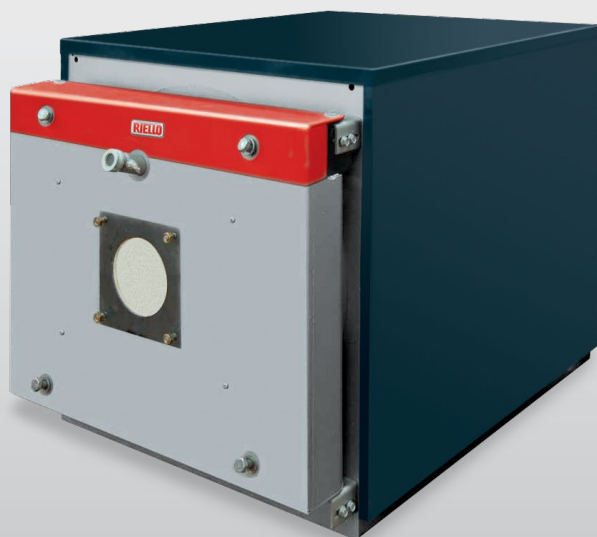
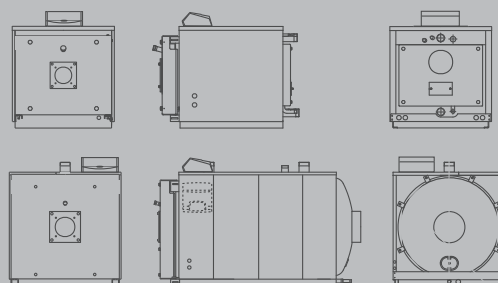




RTQ 2S

Two flue gas passes steel jet burner boilers

Single-piece steel boilers, that can be matched with any fuel jet burners.
Provided with completely wet combustion chamber with free dilation and flame-inversion (square range).
Equipped with removable high-efficiency stainless steel turbulators ensuring an optimized heat exchange and a homogeneous thermal load.



BLOWN AIR BOILERS

Two flue gas passes steel jet burner boilers

RTQ 2S

RTQ 2S DESCRIPTION

RTQ 2S steel boilers are high-water-content hot water generators for heating, suitable for use in systems with significant fluctuations in flow rate.

They are fitted with high-performance stainless steel turbulators that provide a large heat exchange surface area to optimise heat transfer and ensure a uniform thermal load.

The front door is ambidextrous, with a double seal and a ceramic braided gasket offering high thermal insulation.

The casing is made of stove-enamelled sheet metal. Also available in a modular version.

The control panel must be ordered separately.

- High instantaneous and average seasonal efficiency (in compliance with Annex I of Legislative Decree No. 311 of 29 December 2006).
- Sliding temperature operation possible (minimum permitted return temperature 55°C).
- A wide range of system configurations thanks to integration with RIELLOtech control panels (mandatory).
- Maximum operating pressure: 6 bar.

TECHNICAL DATA

DESCRIPTION		RTQ 2S				
		50 (**)	64 (**)	82 (**)	105 (**)	
Device type		Heating				
Fuel		B23				
Device category		Gas / Oil				
		See Burner				
Max. nominal thermal input (Q max)	NCV	54,2	69,3	88,8	113,6	kW
	GCV Gas	60,2	77,0	98,6	126,2	
	GCV Oil	57,5	73,5	94,2	120,5	
Min. nominal thermal input (Q min)	NCV	34,4	54,7	69,5	88,5	kW
	GCV Gas	38,2	60,8	77,2	98,3	
	GCV Oil	36,5	58,0	73,7	93,8	
Nominal output power (80-60°C) P4	max	50	64	82	105	kW
Nominal output power (80-60°C) (Pn min)	min	32	51	65	83	kW
Heat output 30% with return 47°C (P1)		12,6	17,7	22,7	29,0	kW
Efficiency at nominal thermal capacity and high temperature operation h4 (80/60°C)	NCV	92,2	92,3	92,3	92,4	%
	GCV Gas	83,0	83,1	83,1	83,2	
	GCV Oil	86,9	87,0	87,0	87,1	
Useful efficiency at Pn min (80-60°C)	NCV	93,1	93,3	93,5	93,8	%
	GCV Gas	83,8	84	84,2	84,5	
	GCV Oil	87,8	88	88,2	88,5	
Efficiency at 30% nominal thermal capacity h1 with 47°C return	NCV	95,1	95,3	95,4	95,7	%
	GCV Gas	85,6	85,8	85,9	86,2	
	GCV Oil	89,7	89,9	90,0	90,2	
Useful eff. at 30% max. Pn		95,1	95,3	95,4	95,7	%
Standby losses (max. Pn)		< 1,5				%
Flue gas temperature		<180 (*)				°C
Flue gas mass flow rate (Max. Pn) G20 (*)		0,02	0,026	0,033	0,043	kg/s
Flue gas mass flow rate (Max. Pn) DIESEL (*)		0,024	0,031	0,039	0,050	
Furnace pressure		0,3	0,8	0,75	1,4	mbar
Furnace volume		37,8	45,2	80,2	97,43	dm³
Tot. volume of flue gas side		62,2	73,4	119,1	139,7	dm³
Total surface area for heat exchange		1,9	2,5	3,02	3,62	m²
Volumetric thermal load (max. Pn)		1435	1534	1108	1166	kW/m³
Specific thermal load (max. Pn)		26,7	25,8	27,5	29,4	kW/m²
Max. operating pressure		6				bar
Max. admissible temp.		110				°C
Max. operating temp.		95				°C
Min. admissible water return temp.		50				°C
Pressure drops	ΔT 10°C	25	34	59	52	mbar
	ΔT 20°C	5,5	5	13	19	mbar
Water capacity		71	87	103	126	liters

NCV Net calorific value of fuel

GCV Gross calorific value of fuel

(*) Flue gas temperature with boiler in operation 80-60°C and room temperature 20-25°C.

(**) Heating appliance intended only for replacement in accordance with the provisions of article 1, paragraph 2, point G of the EU regulation No. 813/2013.

⚠ The stack must guarantee the minimum draught specified by applicable technical standards, assuming zero pressure at the connection to the flue.

⚠ Values obtained with Riello gas burners calibrated with CO₂ = 9,7%, λ = 1,2 and with Riello diesel burners calibrated with CO₂ = 12,5%.

TECHNICAL DATA

DESCRIPTION		RTQ 2S												
		154 (**)	203 (**)	235 (**)	297 (**)	323 (**)	357 (**)	418	467	537	597	715	837	
Device type		Heating												
Fuel		B23												
Device category		Gas / Oil												
		See Burner												
Max. nominal thermal capacity (Q max)	NCV	166	217	255	318	348	384	448	500	575	639	766	896	kW
	GCV Gas	184,4	241,0	283,2	353,2	386,5	426,5	497,6	555,3	638,6	709,7	850,7	995,1	
	GCV Oil	176,0	230,1	270,4	337,2	369,0	407,2	475,1	530,2	609,8	677,6	812,3	950,2	
Min. nominal thermal capacity (Q min)	NCV	115	166	217	257	318	348	384	448	500	575	639	766	kW
	GCV Gas	127,7	184,4	241,0	285,4	353,2	386,5	426,5	497,6	555,3	638,6	709,7	850,7	
	GCV Oil	122,0	176,0	230,1	272,5	337,2	369,0	407,2	475,1	530,2	609,8	677,6	812,3	
Nominal output power (80/60°C) P4	max	154	203	235	297	323	357	418	467	537	597	715	837	kW
Nominal output power (80/60°C) (Pn min)	min	109	157	203	243	297	325	358	418	466	536	596	714	kW
Heat output 30% with return 47°C (P1)		38,5	53,6	65,7	80,5	93,2	102,4	116,4	132,7	150,4	169,9	196,6	232,6	kW
Efficiency at nominal thermal capacity and high temperature operation h4 (80/60°C)	NCV	92,9	93,4	92,3	93,4	92,8	92,9	93,3	93,4	93,3	93,3	93,3	93,3	%
	GCV Gas	83,6	84,1	83,1	84,1	83,6	83,6	84,0	84,1	84,0	84,0	84,0	84,0	
	GCV Oil	87,6	88,1	87,0	88,1	87,5	87,6	88,0	88,1	88,0	88,0	88,0	88,0	
Useful efficiency at Pn min (80/60°C)	NCV	94,5	94,5	93,4	94,6	93,4	93,3	93,2	93,3	93,2	93,2	93,2	93,2	%
	GCV Gas	85,1	85,1	84,1	85,2	84,1	84,0	83,9	84,0	83,9	83,9	83,9	83,9	
	GCV Oil	89,1	89,1	88,1	89,2	88,1	88,0	87,9	88,0	87,9	87,9	87,9	87,9	
Efficiency at 30% nominal thermal capacity h1 with 47°C return	NCV	91,4	93,3	92,8	93,3	93,3	93,3	93,3	93,3	93,3	93,3	93,3	93,3	%
	GCV Gas	82,3	84,0	83,6	84,0	84,0	84,0	84,0	84,0	84,0	84,0	84,0	84,0	
	GCV Oil	86,2	88,0	87,5	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	88,0	
Useful eff. at 30% max. Pn		91,4	93,3	92,8	93,3	93,3	93,3	93,3	93,3	93,4	93,4	93,3	93,4	%
Standby losses (max. Pn)		< 1,4						< 1,2				< 1		%
Flue gas temperature		<180 (*)												°C
Flue gas mass flow rate (Max. Pn) G20 (*)		0,064	0,082	0,096	0,120	0,131	0,145	0,169	0,188	0,216	0,241	0,288	0,337	kg/s
Flue gas mass flow rate (Max. Pn) DIESEL (*)		0,072	0,096	0,113	0,141	0,155	0,181	0,199	0,222	0,255	0,284	0,340	0,398	
Furnace pressure		1,6	1,8	2,7	3,5	3,9	4,1	2,9	3,3	3,0	5,1	4,7	8,1	mbar
Furnace volume		91	138,4	138,4	199,1	199,1	199,1	298,9	298,9	331,3	331,3	410,5	469,8	dm³
Tot. volume of flue gas side		163,2	234,3	234,3	317,2	317,2	325,6	457,9	457,9	528,3	528,3	676,8	768,8	dm³
Total surface area for heat exchange		4,35	6,68	6,68	8,59	8,59	9,47	12,34	12,34	14,76	14,76	19,04	20,36	m²
Volumetric thermal load (max. Pn)		1824	1568	1842	1597	1748	1928	1499	1673	1736	1929	1866	1816	kW/m³
Specific thermal load (max. Pn)		35,5	30,3	35,2	34,6	37,6	37,7	33,9	37,9	36,4	40,4	37,6	41,1	kW/m²
Max. operating pressure		6												bar
Max. admissible temp.		110												°C
Max. operating temp.		95												°C
Min. admissible water return temp.		50												°C
Pressure drops	ΔT 10°C	33,5	71	97	170	204	299	322	401	142,5	167,5	517	212,5	mbar
	ΔT 20°C	7	18,5	25	40	48	88	83	102	53	61	127,5	55	mbar
Water capacity		161	291	291	268	268	258	308	308	345	345	593	565	liters

NCV Net calorific value of fuel

GCV Gross calorific value of fuel

(*) Flue gas temperature with boiler in operation 80–60°C and room temperature 20–25°C.

(**) Heating appliance intended only for replacement in accordance with the provisions of article 1, paragraph 2, point G of the EU regulation No. 813/2013.

⚠ The stack must guarantee the minimum draught specified by applicable technical standards, assuming zero pressure at the connection to the flue.

⚠ Values obtained with Riello gas burners calibrated with CO₂ = 9,7%, λ = 1,2 and with Riello diesel burners calibrated with CO₂ = 12,5%.

BLOWN AIR BOILERS

Two flue gas passes steel jet burner boilers

TECHNICAL DATA

DESCRIPTION		RTQ 25							
		920	1020	1250	1510	1700	2020	2320	
Device type		Heating B23							
Fuel		Gas / Oil							
Device category		See Burner							
Max. nominal thermal capacity (Q max)	NCV	990	1100	1338	1617	1820	2162	2485	kW
	GCV Gas	1099,5	1221,7	1486	1797	2021,3	2401,2	2759,9	
	GCV Oil	1049,8	1166,5	1418,9	1715	1930	2292,7	2635,2	
Min. nominal thermal capacity (Q min)	NCV	896	990	1096	1342	1594	1800	2162	kW
	GCV Gas	995,1	1099,5	1217,2	1490,4	1770,3	1999,1	2401,2	
	GCV Oil	950,2	1049,8	1162,2	1423,1	1690,3	1908,8	2292,7	
Nominal output power (80/60°C) P ₄	max	920	1020	1250	1510	1700	2020	2320	kW
Nominal output power (80/60°C) (P _n min)	min	831	916	1021	1251	1486	1678	2014	kW
Heat output 30% with return 47°C (P ₁)		263,1	291,2	340,6	412,6	477,8	554,5	650,3	kW
Efficiency at nominal thermal capacity and high temperature operation h ₄ (80/60°C)	NCV	92,9	92,7	93,4	93,4	93,4	93,4	93,4	%
	GCV Gas	83,7	83,5	84,1	84,1	84,1	84,1	84,1	
	GCV Oil	87,6	87,4	88,1	88,1	88,1	88,1	88,0	
Useful efficiency at P _n min (80/60°C)	NCV	92,8	92,5	93,2	93,2	93,2	93,2	93,2	%
	GCV Gas	83,6	83,3	83,9	83,9	83,9	83,9	83,9	
	GCV Oil	87,5	87,2	87,9	87,9	87,9	87,9	87,9	
Efficiency at 30% nominal thermal capacity h ₁ with 47°C return	NCV	93,0	92,9	93,3	93,3	93,3	93,3	93,3	%
	GCV Gas	83,7	83,6	84,0	84,0	84,0	84,0	84,0	
	GCV Oil	87,7	87,6	88,0	88,0	88,0	88,0	88,0	
Useful eff. at 30% max. P _n		93,0	92,9	93,3	93,3	93,3	93,3	93,3	%
Standby losses (max. P _n)		< 1							%
Flue gas temperature		<180 (*)							°C
Flue gas mass flow rate (Max. P _n) G20 (*)		0,373	0,414	0,504	0,609	0,685	0,814	0,936	kg/s
Flue gas mass flow rate (Max. P _n) DIESEL (*)		0,440	0,489	0,594	0,718	0,809	0,960	1,104	
Furnace pressure		4,6	4,6	5,8	5,4	7,2	4,8	4,2	mbar
Furnace volume		649	757,5	1039,6	1244,6	1479,7	1569,7	1838,1	dm ³
Tot. volume of flue gas side		989,5	1169,4	1554,0	1905,2	2162,7	2474,5	2747,0	dm ³
Total surface area for heat exchange		24,42	28,9	34,65	41,03	42,24	47,34	55,94	m ²
Volumetric thermal load (max. P _n)		1525	1452	1288	1290	1231	1378	1352	kW/m ³
Specific thermal load (max. P _n)		37,7	35,3	36,1	36,6	40,2	42,7	41,5	kW/m ²
Max. operating pressure		6							bar
Max. admissible temp.		110							°C
Max. operating temp.		95							°C
Min. admissible water return temp.		50							°C
Pressure drops	ΔT 10°C	259,5	294	196	290	365	241	119	mbar
	ΔT 20°C	68	93	46	75	94	58	32,5	mbar
Water capacity		657	841	1114	1295	1480	1772	1575	liters

NCV Net calorific value of fuel

GCV Gross calorific value of fuel

(*) Flue gas temperature with boiler in operation 80–60°C and room temperature 20–25°C.

⚠ The stack must guarantee the minimum draught specified by applicable technical standards, assuming zero pressure at the connection to the flue.

⚠ Values obtained with Riello gas burners calibrated with CO₂ = 9,7%, λ = 1,2 and with Riello diesel burners calibrated with CO₂ = 12,5%.

TECHNICAL DATA

DESCRIPTION		RTQ 25							
		2620	2920	3200	3500	4000	4500	5000	
Device type		Heating							
Fuel		B23							
Device category		Gas / Oil							
		See Burner							
Max. nominal thermal capacity (Q max)	NCV	2830	3150	3450	3780	4315	4854	5394	kW
	GCV Gas	3143,0	3498,4	3831,6	4198,1	4792,3	5390,9	5990,7	
	GCV Oil	3001,1	3340,4	3658,5	4008,5	4575,8	5147,4	5720,0	
Min. nominal thermal capacity (Q min)	NCV	2501	2850	3150	3450	3669	4316	4855	kW
	GCV Gas	2777,7	3165,3	3498,4	3831,6	4074,9	4793,4	5392,0	
	GCV Oil	2652,2	3022,3	3340,4	3658,5	3890,8	4576,9	5148,5	
Nominal output power (80/60°C) P4	max	2617,8	2920,1	3198,2	3504,1	4000,0	4499,7	5000,2	kW
Nominal output power (80/60°C) (Pn min)	min	2310,9	2636,3	2913,8	3191,3	3393,8	3992,3	4490,9	kW
Heat output 30% with return 47°C (P1)		743,7	836,1	923,7	1011,8	1117,4	1283,3	1434,3	kW
Efficiency at nominal thermal capacity and high temperature operation h4 (80/60°C)	NCV	92,5	92,7	92,7	92,7	92,7	92,7	92,7	%
	GCV Gas	83,3	83,5	83,5	83,5	83,5	83,5	83,5	
	GCV Oil	87,2	87,4	87,4	87,4	87,4	87,4	87,4	
Useful efficiency at Pn min (80/60°C)	NCV	92,4	92,5	92,5	92,5	92,5	92,5	92,5	%
	GCV Gas	83,2	83,3	83,3	83,3	83,3	83,3	83,3	
	GCV Oil	87,1	87,2	87,2	87,2	87,2	87,2	87,2	
Efficiency at 30% nominal thermal capacity h1 with 47°C return	NCV	93,0	92,9	93,3	93,3	93,3	93,3	93,3	%
	GCV Gas	83,7	83,6	84,0	84,0	84,0	84,0	84,0	
	GCV Oil	87,7	87,6	88,0	88,0	88,0	88,0	88,0	
Standby losses (max. Pn)		< 0,5				< 1			%
Flue gas temperature		<180 (*)							°C
Flue gas mass flow rate (Max. Pn) G20 (*)		1,065	1,186	1,299	1,423	1,625	1,827	2,031	kg/s
Flue gas mass flow rate (Max. Pn) DIESEL (*)		1,257	1,399	1,533	1,679	1,917	2,156	2,396	
Furnace pressure		6	6,3	7,9	7,9	7,7	8	7,9	mbar
Furnace volume		2284,8	2729,8	2772,0	3256,9	3743,0	4235,0	4820,0	dm³
Tot. volume of flue gas side		3260,7	3648,0	3880,0	4464,0	5140,0	5847,0	7335,0	dm³
Total surface area for heat exchange		60,68	69,36	74,14	80,11	94,66	108,30	119,70	m²
Volumetric thermal load (max. Pn)		1239	1154	1245	1100	1153	1146	1119	kW/m³
Specific thermal load (max. Pn)		43,2	42,1	43,2	43,5	42,3	41,6	41,8	kW/m²
Max. operating pressure		6							bar
Max. admissible temp.		110							°C
Max. operating temp.		95							°C
Min. admissible water return temp.		50							°C
Pressure drops	ΔT 10°C	255	315	293	393	282	330	408	mbar
	ΔT 20°C	69,5	80	76	88	68	76	110	mbar
Water capacity		2526	2700	2720	2750	3650	4075	4570	liters

NCV Net calorific value of fuel

GCV Gross calorific value of fuel

(*) Flue gas temperature with boiler in operation 80–60°C and room temperature 20–25°C.

⚠ The stack must guarantee the minimum draught specified by applicable technical standards, assuming zero pressure at the connection to the flue.

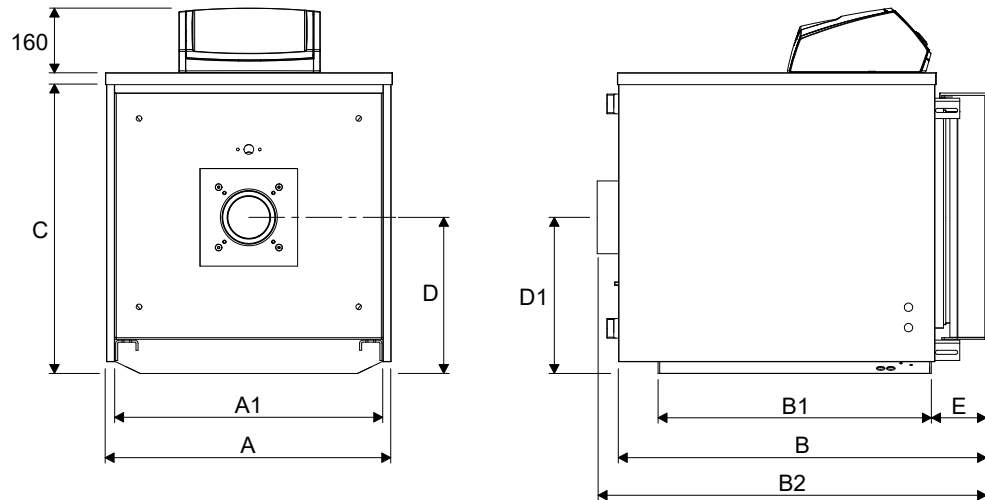
⚠ Values obtained with Riello gas burners calibrated with CO₂ = 9,7%, λ= 1,2 and with Riello diesel burners calibrated with CO₂ = 12,5%.

BLOWN AIR BOILERS

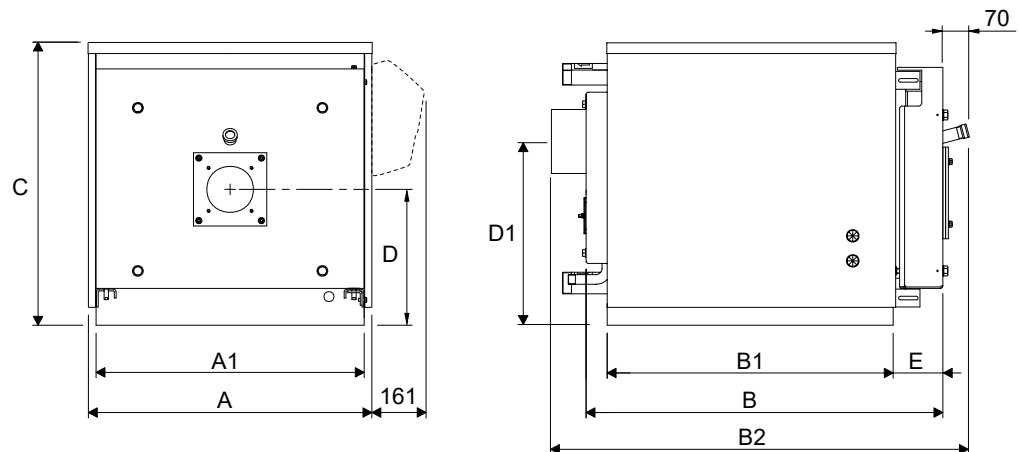
Two flue gas passes steel jet burner boilers

OVERALL DIMENSIONS AND WEIGHTS

RTQ 50÷105



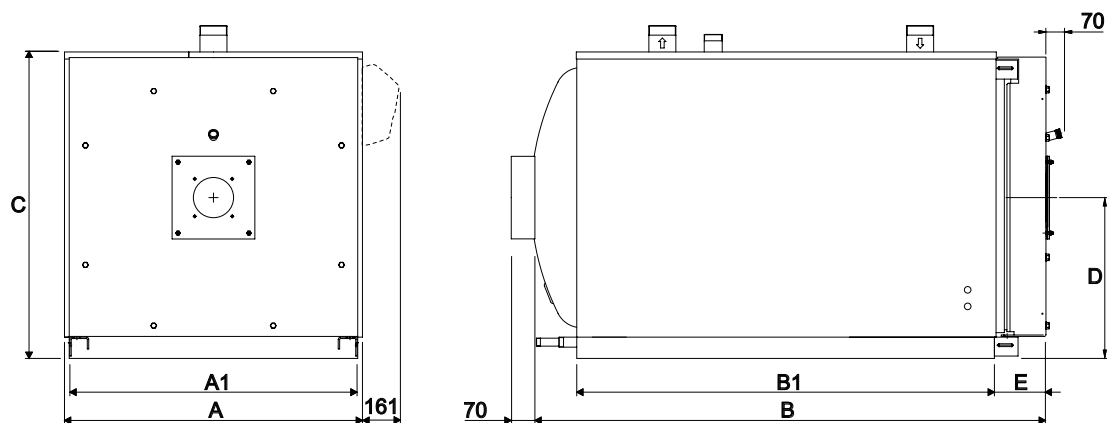
RTQ 154÷235



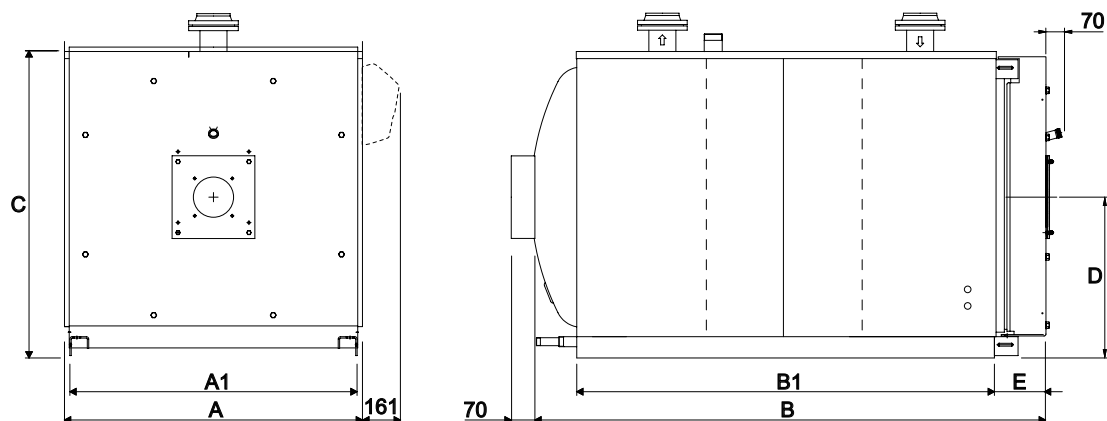
DESCRIPTION			50	64	82	105	154	203	235
Width	A	mm	605	605	705	705	805	853	853
Width of baseplate	A1	mm	560	560	660	660	753	803	803
Length	B	mm	830	980	910	1060	1130	1330	1330
Base depth	B1	mm	623	773	672	822	945	1110	1110
Length (including flue gas outlet)	B2	mm	885	1035	970	1120	1200	1400	1400
Height	C	mm	605	605	740	740	790	840	840
Height of burner plate	D	mm	310	310	384	384	410	435	435
Flue-gas stack axis	D1	mm	325	325	384	384	500	525	525
Door weight	E	mm	110	110	135	135	135	145	145
Boiler body weight		kg	119	140	177	201	266	352	352
Weight of casing		kg	18	20	22	24	25	30	30
Total Boiler Weight (including panelling)		kg	137	160	199	225	291	382	382

OVERALL DIMENSIONS AND WEIGHTS

RTQ 297÷467



RTQ 537÷837



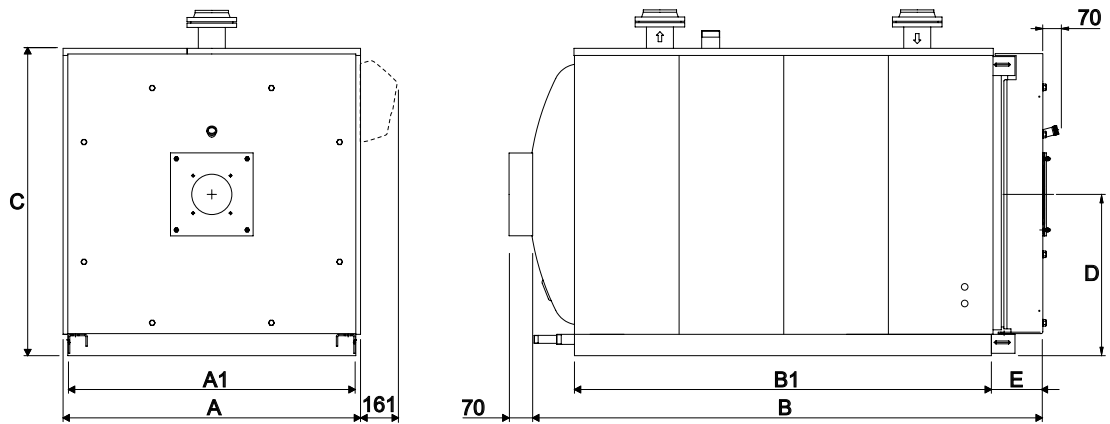
DESCRIPTION			297	323	357	418	467	537	597	715	837
Width	A	mm	925	925	925	975	975	975	975	1150	1150
Width of baseplate	A1	mm	875	875	875	925	925	925	925	1100	1100
Length	B	mm	1480	1480	1480	1710	1710	1877	1877	2045	2140
Base depth	B1	mm	1255	1255	1255	1450	1450	1596	1596	1710	1835
Length (including flue gas outlet)	B2	mm	1550	1550	1550	1780	1780	1947	1947	2115	2210
Height	C	mm	980	980	980	1030	1030	1030	1030	1210	1210
Height of burner plate / Flue-gas stack axis	D	mm	525	525	525	550	550	550	550	655	655
Door weight	E	mm	150	150	150	180	180	170	170	195	195
Boiler body weight		kg	423	423	443	588	588	685	680	932	985
Weight of casing		kg	35	35	35	42	42	46	46	50	51
Total Boiler Weight (including panelling)		kg	458	458	478	630	630	731	726	982	1036

BLOWN AIR BOILERS

Two flue gas passes steel jet burner boilers

OVERALL DIMENSIONS AND WEIGHTS

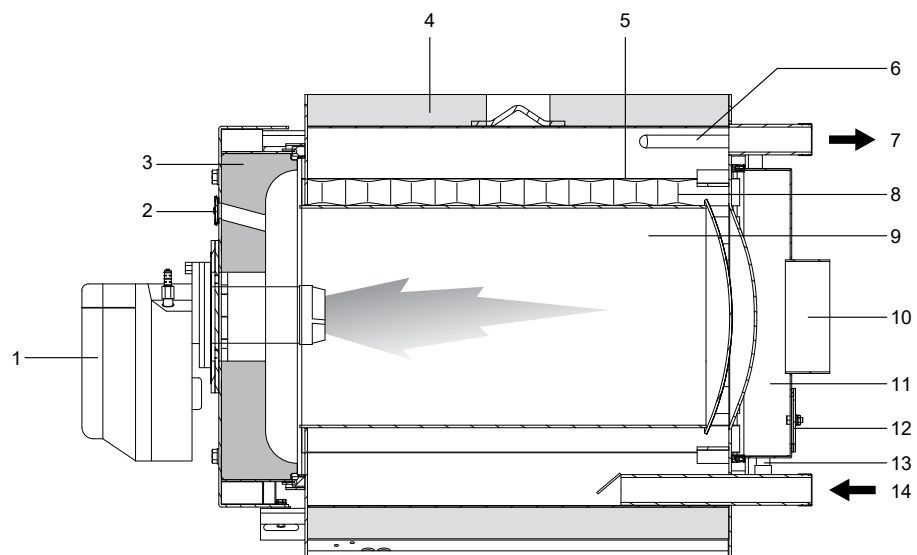
RTQ 920÷5000



DESCRIPTION			920	1020	1250	1510	1700	2020	2320	2620	2920	3200	3500	4000	4500	5000
Width	A	mm	1220	1285	1360	1450	1535	1605	1655	1800	1865	1865	1935	2040	2070	2230
Width of baseplate	A1	mm	1170	1235	1310	1400	1485	1555	1605	1750	1815	1815	1885	1990	2020	2180
Length	B	mm	2310	2450	2765	2860	3055	3045	3121	3385	3490	3555	3570	3934	4184	4451
Base depth	B1	mm	1960	2110	2375	2470	2580	2630	2740	2872	2940	3037	3040	3332	3560	3774
Length (including flue gas outlet)	B2	mm	2380	2520	2835	2930	3125	3115	3191	3455	3560	3625	3640	4004	4254	4521
Height	C	mm	1280	1335	1430	1530	1610	1680	1752	1925	1995	1996	2055	2165	2170	2355
Height of burner plate / Flue-gas stack axis	D	mm	690	715	755	820	865	900	925	1015	1050	1050	1080	1155	1170	1250
Door weight	E	mm	205	215	245	250	290	290	263	265	310	280	280	325	325	325
Boiler body weight		kg	1182	1460	2170	2470	2730	3105	3610	4520	4676	4750	5190	6015	6600	7750
Weight of casing		kg	55	70	87	95	110	115	129	129	150	155	156	180	190	215
Total Boiler Weight (including panelling)		kg	1237	1530	2257	2565	2840	3220	3739	4649	4826	4905	5346	6195	6790	7965

LAYOUT

RTQ 50÷235

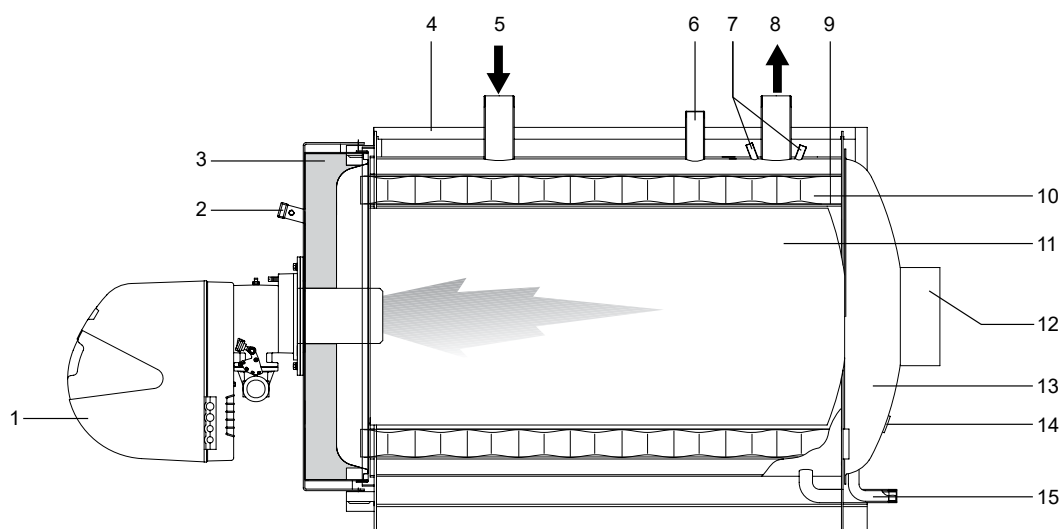


Key:

- | | |
|----------------------------------|---------------------------|
| 1 Burner | 8 Turbulators |
| 2 Flame inspection window | 9 Combustion chamber |
| 3 Door | 10 Flue gas exhaust |
| 4 Casing | 11 Flue gas box |
| 5 Flue gas pipes | 12 Inspection window |
| 6 Instrument bulb/sensor sockets | 13 Condensate outlet |
| 7 Central heating flow | 14 Central heating return |

LAYOUT

RTQ 297÷5000



Key:

- | | |
|---|------------------------|
| 1 Burner | 8 Central heating flow |
| 2 Flame inspection window with pressure measurement/
cooling valve | 9 Flue gas pipes |
| 3 Door | 10 Turbulators |
| 4 Casing | 11 Combustion chamber |
| 5 Central heating return | 12 Flue gas exhaust |
| 6 Safety device fitting | 13 Flue gas box |
| 7 Instrument bulb/sensor sockets | 14 Inspection window |
| | 15 Condensate outlet |

BLOWN AIR BOILERS

Two flue gas passes steel jet burner boilers

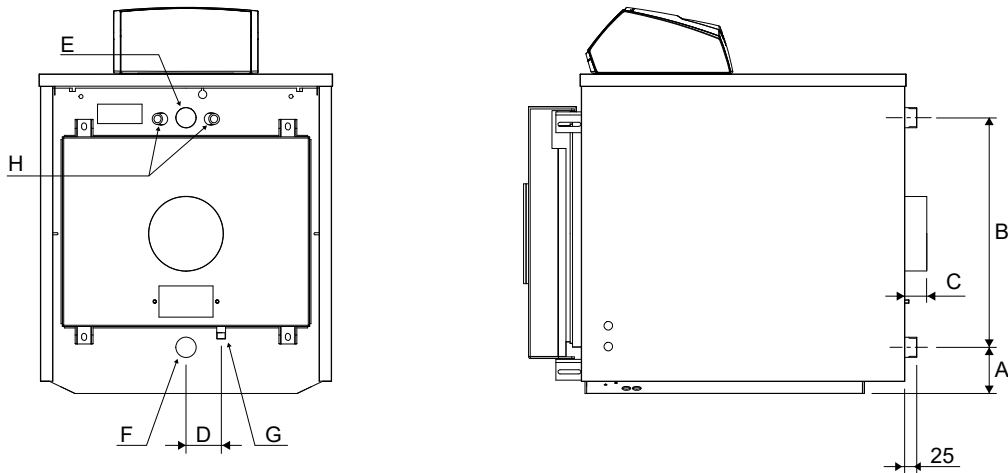
HYDRAULIC CONNECTIONS

RTQ 2S boilers are designed and made for use in central heating installations, but can also be used for domestic hot water production

if connected to a suitable storage cylinder. Water fittings are as specified in the following table.

⚠ Allow for the dimensions of the control panel that needs to be installed on top of the boiler.

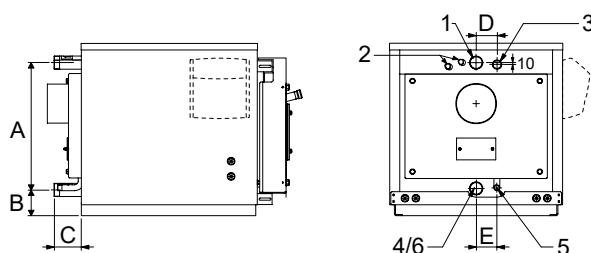
RTQ 50÷105



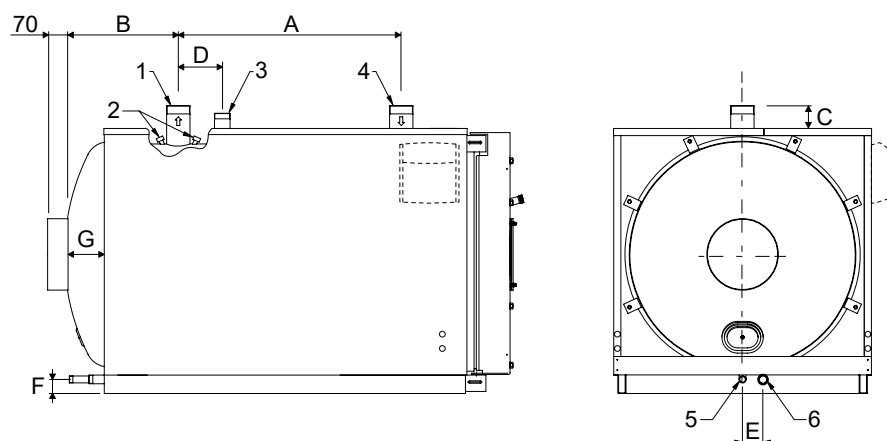
DESCRIPTION		RTQ 2S				
		50	64	82	105	
	Return - baseplate distance	85	85	110	110	mm
	Delivery/Return distance between centres	455	455	552	552	mm
	Flue gas outlet protrusion	50	50	60	60	mm
	Flue gas condensate outlet distance between centres	75	75	85	85	mm
	System Delivery	1" 1/4	1" 1/4	1" 1/2	1" 1/2	Ø
	System Return	1" 1/4	1" 1/4	1" 1/2	1" 1/2	Ø
	Flue-gas stack condensate outlet	1/2"	1/2"	1/2"	1/2"	Ø
	Sensor sheaths	G 1/2" - Ø 16				Ø

HYDRAULIC CONNECTIONS

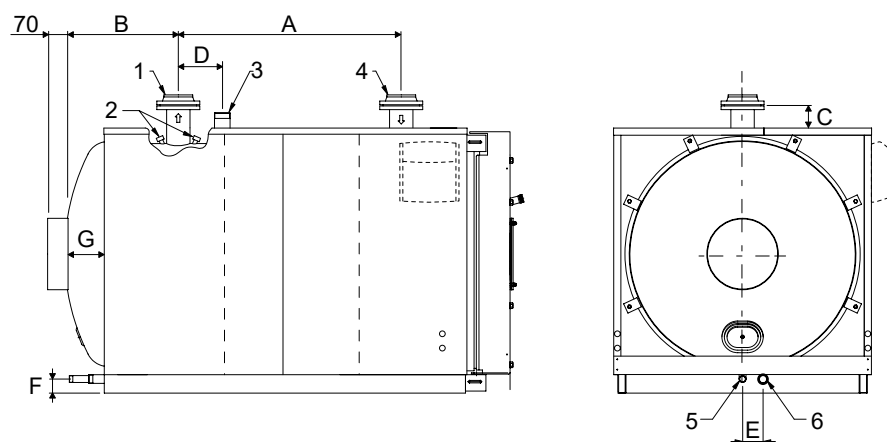
RTQ 154÷235



RTQ 297÷467



RTQ 537÷837



DESCRIPTION		RTQ 2S												
		154	203	235	297	323	357	418	467	537	597	715	837	
1	Central heating flow *	G2"	G2"	G2"	G2"1/2	G2"1/2	G2"1/2	G2"1/2	G2"1/2	DN80	DN80	DN80	DN100	Ø
2	Bulb holder / instrument probes	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	Ø
3	Safety fitting	G1"1/4	G1"1/4	G1"1/4	G1"1/4	G1"1/4	G1"1/4	G1"1/4	G1"1/4	G1"1/2	G1"1/2	G1"1/2	G1"1/2	Ø
4	Central heating return *	G2"	G2"	G2"	G2"1/2	G2"1/2	G2"1/2	G2"1/2	G2"1/2	DN80	DN80	DN80	DN100	Ø
5	Condensate outlet	G3/4"	G3/4"	G3/4"	G3/4"	G3/4"	G3/4"	G3/4"	G3/4"	G3/4"	G3/4"	G1"	G1"	Ø
6	Boiler drain	G2"	G2"	G2"	G1"	G1"	G1"	G1"	G1"	G1"	G1"	G1"1/4	G1"1/4	Ø
A		577	628	628	750	750	750	850	850	1000	1000	1000	1250	mm
B		124	124	124	305	305	305	395	395	400	400	480	392	mm
C		115	115	115	80	80	80	80	80	85	85	75	105	mm
D		95	110	110	205	205	205	205	205	300	300	215	300	mm
E		95	120	120	110	110	110	110	110	110	110	110	110	mm
F		-	-	-	95	95	95	95	95	95	95	95	95	mm
G		-	-	-	85	85	85	85	85	110	110	145	110	mm

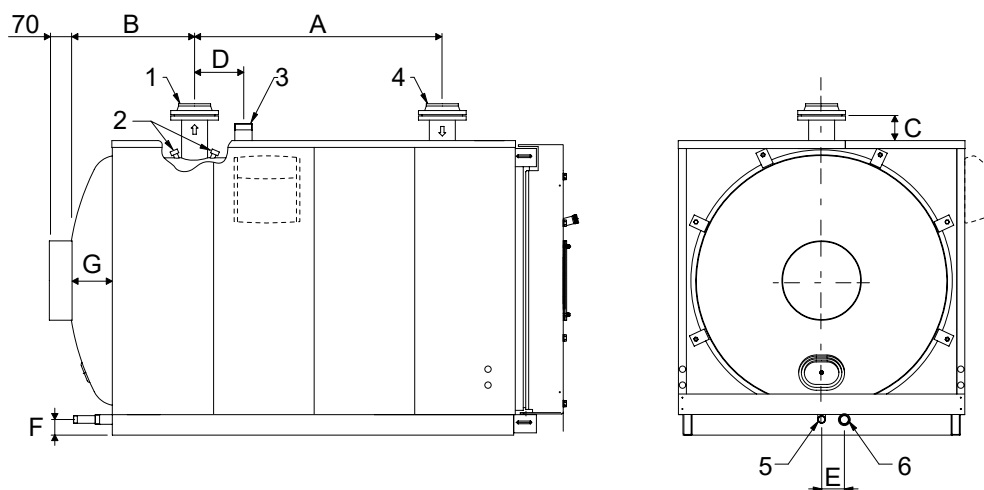
(*) All flanged connections are PN6 according to EN 1092-1.

BLOWN AIR BOILERS

Two flue gas passes steel jet burner boilers

HYDRAULIC CONNECTIONS

RTQ 920÷5000



DESCRIPTION		RTQ 2S							
		920	1020	1250	1510	1700	2020	2320	
1	Central heating flow *	DN100	DN100	DN125	DN125	DN125	DN150	DN150	Ø
2	Bulb holder / instrument probes	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	Ø
3	Safety fitting	G1"1/2	G2"1/2	G2"1/2	G2"1/2	DN 80	DN100	DN100	Ø
4	Central heating return *	DN100	DN100	DN125	DN125	DN125	DN150	DN150	Ø
5	Condensate outlet	G1"	G1"	G1"	G1"	G1"	G1"	G1"1/4	Ø
6	Boiler drain	G1"1/4	G1"1/4	G1"1/4	G1"1/4	G1"1/2	G1"1/2	G1"1/2	Ø
A		1250	1300	1540	1600	1650	1650	1850	mm
B		505	580	590	655	700	645	548	mm
C		105	105	100	115	125	142	120	mm
D		300	250	550	650	380	280	480	mm
E		110	110	115	110	115	115	110	mm
F		95	95	90	115	120	118	105	mm
G		180	125	125	170	180	115	225	mm

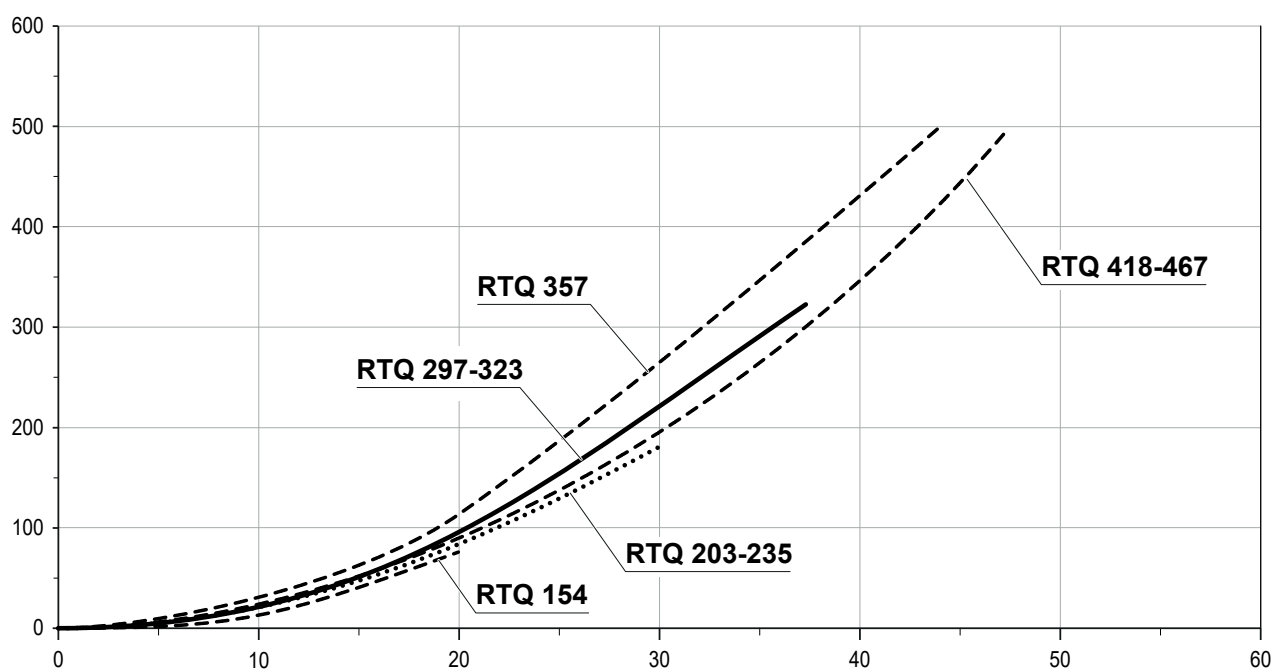
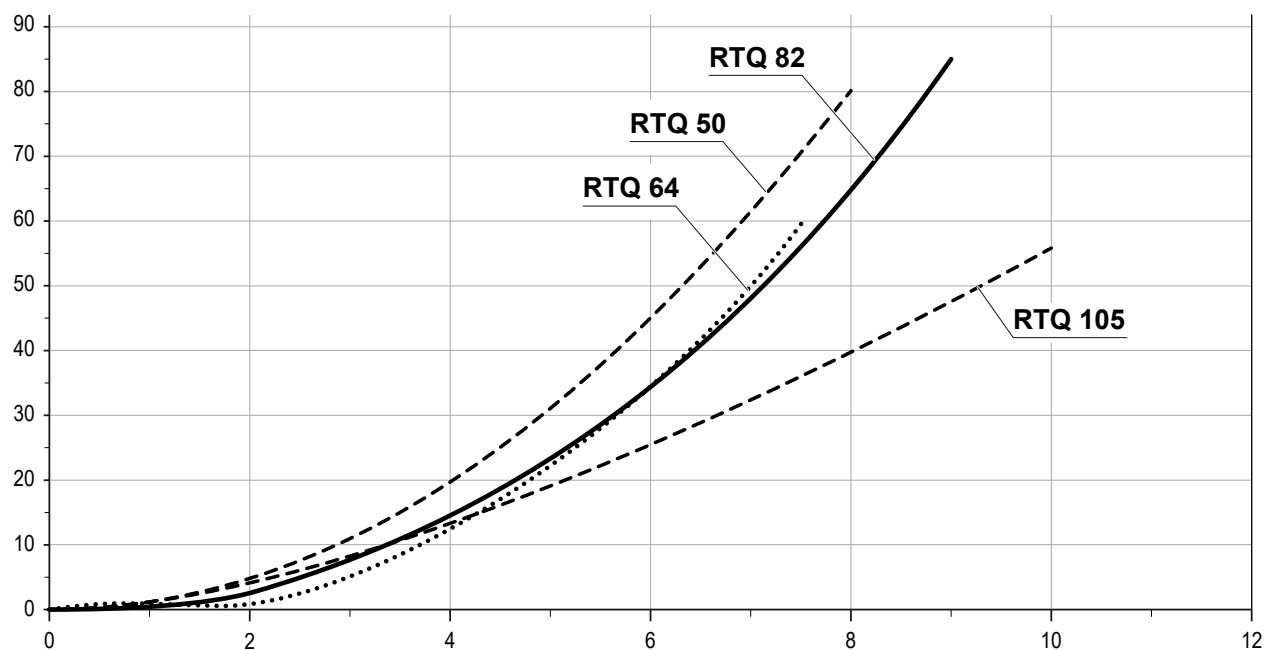
DESCRIPTION		RTQ 2S							
		2620	2920	3200	3500	4000	4500	5000	
1	Central heating flow *	DN150	DN175	DN175	DN175	DN200	DN200	DN200	Ø
2	Bulb holder / instrument probes	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	Ø
3	Safety fitting	DN100	DN100	DN100	DN100	DN125	DN125	DN125	Ø
4	Central heating return *	DN150	DN175	DN175	DN175	DN200	DN200	DN200	Ø
5	Condensate outlet	G1"1/4	G1"1/4	G1"1/4	G1"1/4	G1"1/4	G1"1/4	G1"1/4	Ø
6	Boiler drain	G1"1/2	G1"1/2	G1"1/2	G1"1/2	G1"1/2	G1"1/2	G1"1/2	Ø
A		2050	2115	2215	2215	2410	2660	2850	mm
B		610	610	608	610	690	690	762	mm
C		100	95	95	107	57	100	57	mm
D		500	500	500	500	550	550	550	mm
E		129	129	130	137	150	150	155	mm
F		132	132	135	125	160	160	165	mm
G		245	250	250	250	280	280	350	mm

(*) All flanged connections are PN6 according to EN 1092-1.

WATER-SIDE PRESSURE DROP

RTQ 50 ÷ 467 2S

Pressure drop [mbar]

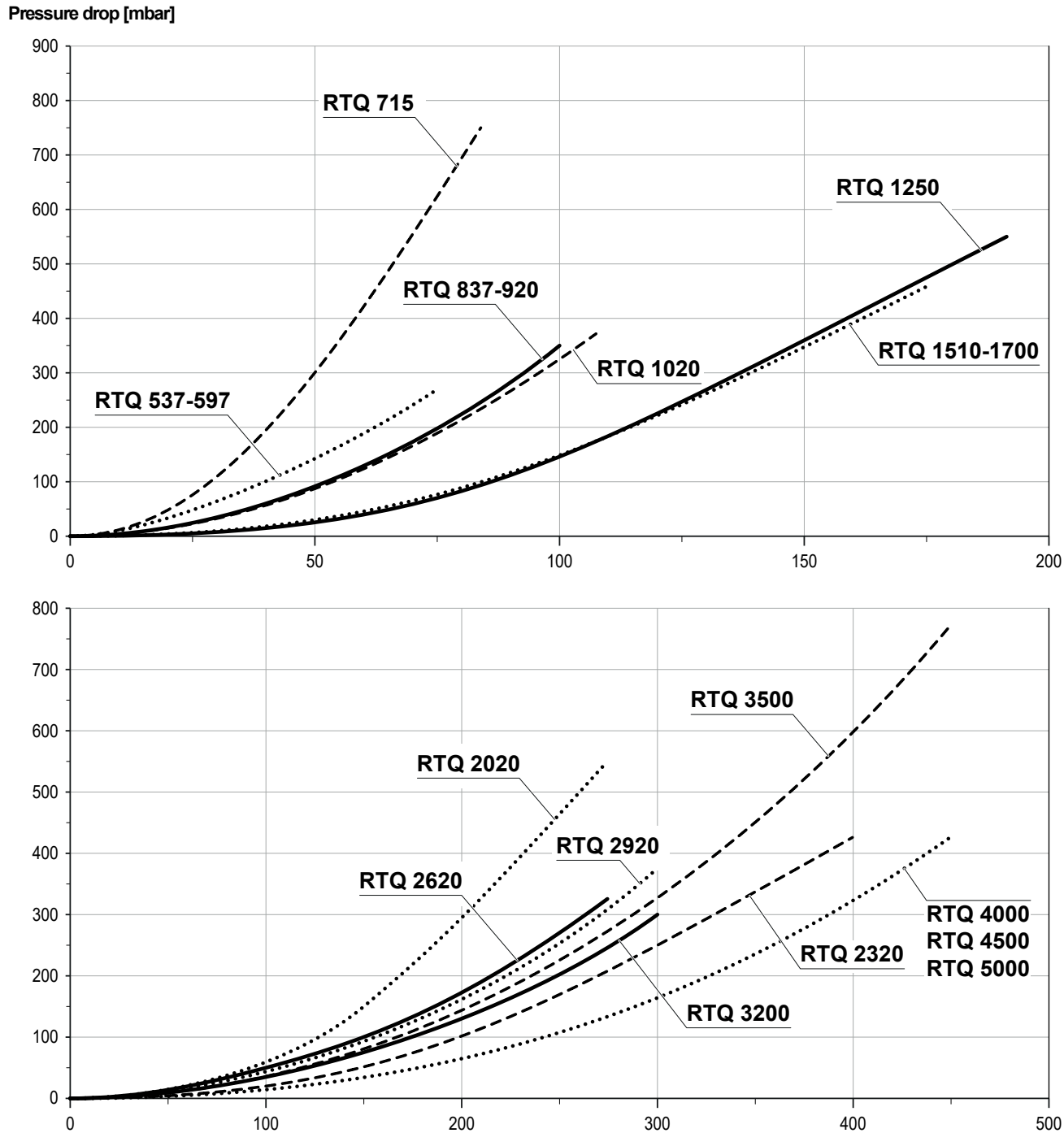


BLOWN AIR BOILERS

Two flue gas passes steel jet burner boilers

WATER-SIDE PRESSURE DROP

RTQ 537 ÷ 5000 2S



WATER IN CENTRAL HEATING SYSTEMS

Water used in central heating systems **MUST** be suitably treated to ensure the correct functioning of those systems and to guarantee an extended working life for boilers and all other system components. This applies not only to existing systems but to newly installed systems too.

Sludge, lime-scale and pollutants present in the water can cause permanent damage to the heating unit, also within a short time and regardless of the quality standards of the materials used. Contact the Technical Assistance Service for any further information on type and use of additives.

 Always conform to the standards and legislation applicable in the country of installation.

WATER IN CENTRAL HEATING SYSTEMS. INSTRUCTIONS FOR THE DESIGN, INSTALLATION AND MANAGEMENT OF CENTRAL HEATING SYSTEMS.

1 – CHEMICAL AND PHYSICAL CHARACTERISTICS OF WATER

The chemical and physical characteristics of the water must comply with the standards and table below:

European Standards:

- EN 14868 Protection of metallic materials against corrosion in closed water circulation systems
- EN 12953-10 Quality requirements for the supply water and the water in the boiler >100°C

National Standards / Leg Dec:

- UNI 8065:2019 Water treatment for domestic use

STEEL BOILERS			
	U/M	Initial filling water	Regular service water (*)
pH (with aluminium)		7 – 8	7 – 8,5
pH (without aluminium)		8,3 – 9,5	8,3 – 9,5
Hardness	°F	< 15	< 15
Electrical conductivity	µs/cm		< 500
Chlorides	mg/l		< 50
Oxygen (O ₂)	mg/l		< 0,1
Iron (Fe)	mg/l	< 0,5	< 0,5 (**)
Copper (Cu)	mg/l	< 0,1	< 0,1 (**)
Aluminium (Al)	mg/l		< 0,1 (**)
Turbidity		Clear	Clear

(*) system water values after 8 weeks of operation;

(**) higher values are due to corrosion, to be eliminated.

General note on water used to top up systems:

- If softened water is used to top up a system, 8 weeks of functioning after topping up, verify that the water in the system respects the above limits, in particular for electrical conductivity.
- This check is not necessary if demineralised water is used to top up the system.

2 – CENTRAL HEATING SYSTEMS

- Do not use automatic filling devices to add water to central heating systems. Use a manual device instead and record top-ups in the system service book.
- If there are more than one boiler, they must all be put into service either contemporarily or with a very low rotation time during the initial period of service, so as to evenly distribute the limited quantity of initial lime-scale.
- A flushing cycle must be programmed after the plant has been installed to flush out any installation debris.
- Water used to fill a system for the first time and water used to top it up must always be filtered (using synthetic or metal mesh filters with a filtration rating of no less than 50 microns) to prevent sludge from forming and triggering deposit corrosion.
- The heating system must be flushed out and cleaned with good workmanship before filling up the existing systems. The boiler may not be filled until after the heating system has been flushed out.

2.1 – NEW CENTRAL HEATING SYSTEMS

The system must be filled up slowly the first time; once it is filled and the air expelled it should never need to be topped up again. Systems should also be operated at maximum working temperature the first time they are started up, in order to facilitate de-aeration. (Gas is not released from the water at low temperatures).

2.2 – RECONDITIONING OLD CENTRAL HEATING SYSTEMS

If a boiler has to be replaced, do not refill the entire central heating circuit if the quality of water in it conforms to requirements. If the quality of water fails to conform to requirements, either recondition the old water or separate the water circuits (water in the boiler circuit must conform to requirements).

BLOWN AIR BOILERS

Two flue gas passes steel jet burner boilers

3 – CORROSION

3.1 – UNDER-DEPOSIT CORROSION

Under-deposit corrosion is an electrochemical process, due to the presence of sand, rust, etc., inside the mass of water. These solid substances generally deposit on the bottom of the boiler (sludge), on tube and pipe heads or in the gaps between pipes and tubes. Micro-corrosion phenomena may be triggered off owing to the difference in electrochemical potential coming to be created between the material in contact with the impurity and the surrounding one.

3.2 – STRAY CURRENT CORROSION

Corrosion from stray currents can occur due to the differing electrical potentials between water in the boiler and the metallic mass of the boiler or piping. This process leaves unmistakable traces i.e. small regular conical holes.

4 – REMOVING AIR AND GASES FROM HEATING SYSTEMS

If oxygen enters a circuit continuously or even intermittently (e.g. in under-floor heating systems whose pipes are not protected by impermeable synthetic sheaths, in circuits with open expansion vessels, or in circuits that require frequent top-ups) always separate the boiler's water circuit from the central heating circuit.

MISTAKES TO AVOID AND PRECAUTIONS

From what we have seen it is therefore important to avoid two factors possibly leading to the above mentioned processes i.e. contact between air and water in the installation and regular topping up with fresh water.

To eliminate contact between air and water (and to prevent the latter from becoming oxidized), it is necessary:

- For the expansion system to be a closed vessel type, correctly scaled and with the correct pre-loading pressure (to be regularly checked)
- For the installation to always be at a higher pressure than that of the atmosphere at any point (comprising the pump suction side) and under all running conditions (all the water sealing and couplings in the installation are designed to resist pressure towards outside, but not for depression)
- That the installation will not be made with materials permeable to gas (e.g. plastic pipes for floor systems without anti-oxygen barrier).

⚠ Lastly we would remind you that the warranty does not cover breakdowns incurred by the boiler due to deposits and corrosion.

GLYCOL

The percentage of propylene glycol which can be used is dependent on the maximum delivery temperature and the project ΔT as defined by the generator.

To calculate the freezing temperature associated with the mix and the maximum percentage to be used, please see the technical datasheet for the product used.

The values given in the tables refer to the Riello product.

Anti-freeze effect		
Glycol (%)	Temperature (°C)	Temperature (°F)
55	-40,4	-40,7
50	-32,4	-26,3
45	-26,0	-14,8
40	-21,5	-6,7
35	-17,6	0,3
30	-14,0	6,8
25	-10,7	12,7
20	-7,0	19,4
15	-4,0	24,8
10	-2,0	28,4

Mix boiling point							
P (bar)	Glycol (%)						
	25	30	35	40	45	50	55
11,0	186,0	187,0	186,0	188,0	189,0	189,0	189,5
	366,8	368,6	366,8	370,4	372,2	372,2	373,1
10,0	181,5	182,0	182,5	183,0	184,0	185,0	186,5
	358,7	359,6	360,5	361,4	363,2	365,0	367,7
9,0	176,5	177,0	177,5	178,0	179,5	181,0	182,5
	349,7	350,6	351,5	352,4	355,1	357,8	360,5
8,0	171,5	172,0	172,5	173,0	174,0	175,0	176,0
	340,7	341,6	342,5	343,4	345,2	347,0	348,8
7,0	166,0	166,5	167,0	167,5	168,0	168,5	170,0
	330,8	331,7	332,6	333,5	334,4	335,3	338,0
6,0	159,0	159,5	160,5	161,0	161,5	162,0	163,5
	318,2	319,1	320,9	321,8	322,7	323,6	326,3
5,0	152,5	153,0	154,0	155,0	156,0	157,0	158,0
	306,5	307,4	309,2	311,0	312,8	314,6	316,4
4,0	144,5	145,0	145,5	146,0	147,0	148,0	149,0
	292,1	293,0	293,9	294,8	296,6	298,4	300,2
3,5	141,5	142,0	142,5	143,0	143,5	144,0	145,0
	286,7	287,6	288,5	289,4	290,3	291,2	293,0
2,0	122,5	123,0	123,5	124,0	125,0	126,0	127,0
	252,5	253,4	254,3	255,2	257,0	258,8	260,6
1,0	100,5	101,0	101,5	102,0	103,0	104,0	105,0
	212,9	213,8	214,7	215,6	217,4	219,2	221,0

IMPORTANT INFORMATION ON HEAT TRANSFER FLUIDS

Heat transfer fluids are of considerable importance for the protection of the system: they ensure efficient heat exchange thanks to their high specific heat capacity, possess important antifreeze properties to ensure the system's operation during winter, and have anti-corrosive properties to preserve the system's components.

When selecting a heat transfer fluid, it is important to consider the following aspects:

- toxicity in the event of leaks or seepage resulting in contamination of domestic water or any water intended for contact with or use by humans or animals;
- biodegradability in the event of leaks into the environment.

All heat transfer fluids supplied by R are non-toxic and largely biodegradable.

To minimise the need for checks, maintenance or fluid changes, it is essential to choose the correct fluid and manage the heating system properly.

Use a non-polluting, concentrated antifreeze fluid containing corrosion inhibitors for heating systems, based on propylene glycol.

Do not mix with other antifreeze fluids; always use the same type.

Use a fluid that is not chemically hazardous.

It is essential to check the product data sheet for the purchased product to verify the glycol percentage required for the desired antifreeze effect.

It is recommended to check the compatibility of the purchased product with the circuit's sealing materials, such as elastomers or plastics.

It is recommended to use a filter on the primary circuit to purify the propylene glycol.

The system must not contain any galvanised tanks or pipes on the primary side, as zinc can be dissolved by mixtures of propylene glycol and water.

BLOWN AIR BOILERS

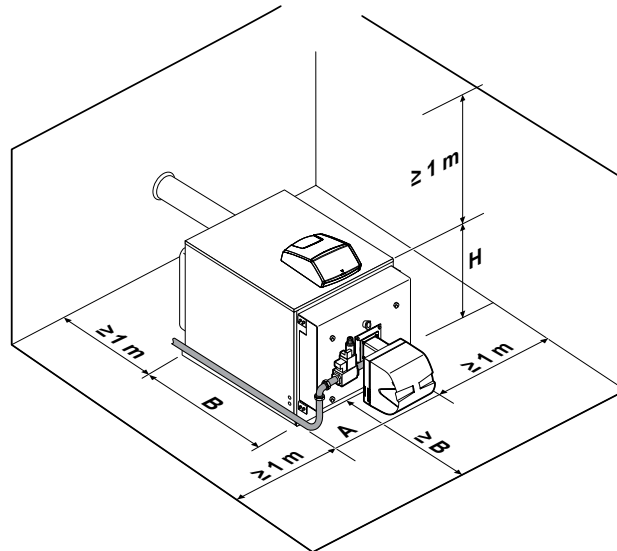
Two flue gas passes steel jet burner boilers

PLACE OF INSTALLATION

the RTQ 2S steel boilers must be installed in a dedicated boiler room, with adequately sized vents, in compliance with applicable laws and standards.

If at all possible, the boiler should be installed on a raised base to prevent the burner fan sucking up dust.

- ⚠ In Belgium, boilers must be installed according to standards NBN D51.003, NBN D30.003, NBN B61.002 (heat output <70 kW), and NBN B61.001 (heat output >70 kW).
- ⚠ When installing the boiler, allow sufficient space around it to access all safety and control devices and to permit easy maintenance.
- ⚠ If the specific weight of the gas supply to the burner is greater than the specific weight of air, install all electrical parts at least 500 mm above floor level.
- ⊖ Do not install the boiler outdoors. It is not designed to work outdoors and is not fitted with the necessary automatic anti-frost systems to do so.



DESCRIPTION		RTQ 2S																
		50	64	82	105	154	203	235	297	323	357	418	467	537	597	715	837	
A	Width	605	605	705	705	805	853	853	925	925	925	975	975	975	975	1150	1150	mm
B	Length	830	980	910	1060	1130	1330	1330	1480	1480	1480	1710	1710	1877	1877	2045	2140	mm
H	Total height of boiler	605	605	740	740	790	840	840	980	980	980	1030	1030	1030	1030	1210	1210	mm

DESCRIPTION		RTQ 2S														
		920	1020	1250	1510	1700	2020	2320	2620	2920	3200	3500	4000	4500	5000	
A	Width	1220	1285	1360	1450	1535	1605	1655	1800	1865	1865	1935	2040	2070	2230	mm
B	Length	2310	2450	2765	2860	3055	3045	3121	3385	3490	3555	3570	3934	4184	4451	mm
H	Total height of boiler	1280	1335	1430	1530	1610	1680	1752	1925	1995	1996	2055	2165	2170	2355	mm

INSTALLATION ON OLD OR MODERNIZED SYSTEMS

When the boiler is installed on old or modernized systems, check that:

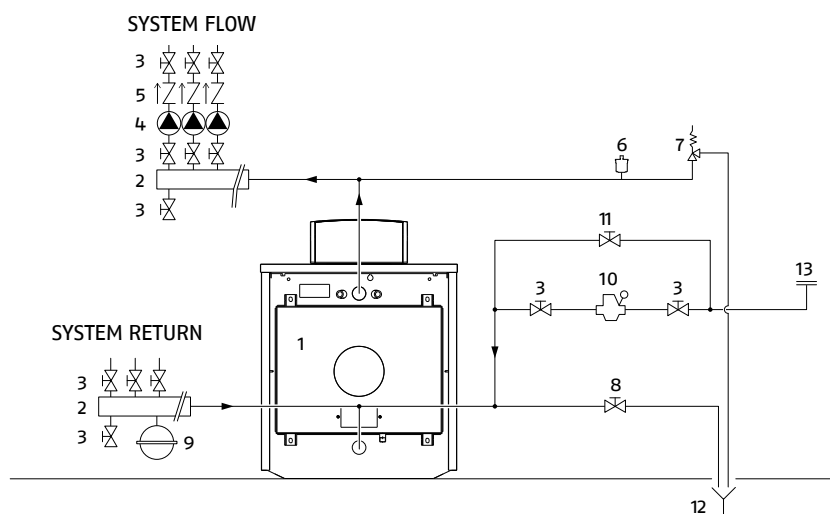
- The flue is suitable for the temperatures of the combustion products, calculated and built according to the Standard, is as straight as possible, sealed, insulated and has no occlusions or restrictions
- The electrical system is created in compliance with specific standards and by qualified personnel
- The fuel supply line and any tank are made according to specific standards
- The expansion vessels ensure total absorption of the expansion of the fluid contained in the system
- The flow rate, head and flow direction of the circulation pumps are appropriate
- The system is washed, cleaned of sludge and encrustations, deaerated and the seals have been checked
- A treatment system is provided when the supply/

replenishment water is particular (those shown in the table can be considered as reference values) according to Presidential Decree 59/09 and subsequent amendments.

Particular supply/replenishment waters must be conditioned with appropriate treatment systems. Those shown in the table can be considered as reference values.

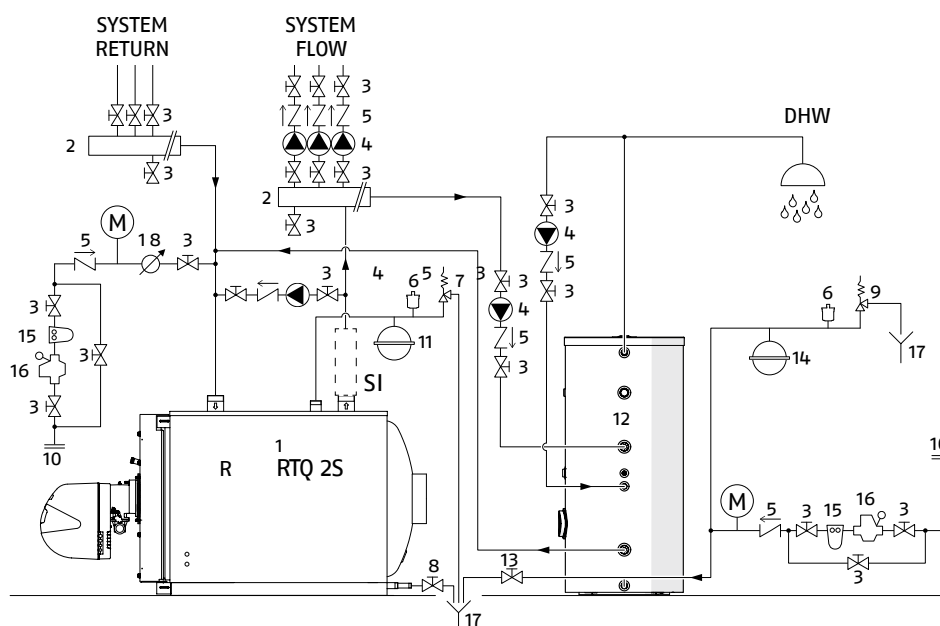
REFERENCE VALUES	
PH	6-8
Electrical conductivity	less than 200 mV/cm (25°C)
Chlorine ions	less than 50 ppm
Sulfuric acid ions	less than 50 ppm
Total iron	less than 0,3 ppm
Alkalinity M	less than 50 ppm
Total hardness	less than 35°F
Sulfur ions	none
Ammonia ions	none
Silicon ions	less than 30 ppm

ANTI-CONDENSATION PUMP



HEATING-ONLY SYSTEM

- | | |
|----------------------------|----------------------------|
| 1 RTQ 2S boiler | 7 Boiler safety valve |
| 2 System manifolds | 8 Boiler drain tap |
| 3 Shut-off valves | 9 Expansion vessel |
| 4 System circulation pumps | 10 Pressure-reducing unit |
| 5 Non-return valves | 11 Manual rapid-fill valve |
| 6 Automatic air vent | 12 Drain |
| | 13 System filling |



HEATING AND DOMESTIC HOT WATER SYSTEM

- | | |
|-----------------------------|--|
| 1 RTQ 2S boiler | 11 System expansion vessel |
| 2 System manifolds | 12 Remote water heater |
| 3 Shut-off valves | 13 Hot water tank drain valve |
| 4 System circulation pumps | 14 Domestic hot water expansion vessel |
| 5 Non-return valves | 15 Water softener filter |
| 6 Automatic air vent valve | 16 Pressure reducer |
| 7 Boiler safety valve | 17 Drain |
| 8 Boiler drain tap | 18 Feed/top-up water meter |
| 9 Water heater safety valve | SI System safety kit |
| 10 System filling valve | (install in accordance with local regulations) |
| | M Pressure gauge |

BLOWN AIR BOILERS

Two flue gas passes steel jet burner boilers

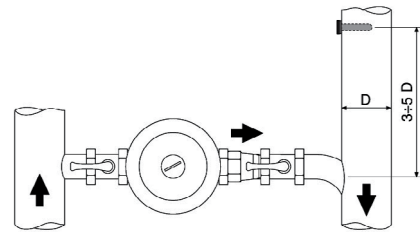
ANTI-CONDENSATION PUMP

To prevent damage to the boiler during transient conditions and before the system reaches steady state, an anti-condensation pump must be used.

During periods when the system is in operation, the pump must ensure a flow rate of between 20 and 30 % of the total flow rate, must ensure that the return water temperature is not less than 55°C, and must delay its own shutdown by at least 3 minutes at the start of prolonged periods when the boiler is switched off (complete shutdown at night, at weekends, etc.).

To measure the actual return temperature of the system, for the purpose of controlling the anti-condensation pump or managing the start-up functions in temperature control systems, a sensor well must be fitted at a distance of 3÷5 pipe diameters upstream of the hydraulic connection point.

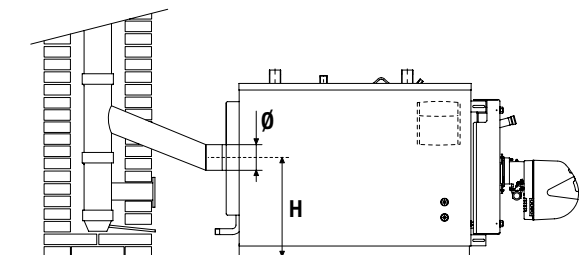
Any temperature control devices located outside the boiler control panel must be compatible in terms of both electrical connections and functional logic.



DISCHARGE OF COMBUSTION PRODUCTS

The flue gas exhaust and stack connection must be made in compliance with applicable laws and standards, using heat resistant, condensate resistant and stress resistant rigid pipe and sealed joints.

- ⚠ Uninsulated flues are potentially dangerous and can cause burns.
- ⚠ The stack must guarantee the minimum draught specified by applicable technical standards, assuming zero pressure at the connection to the flue gas exhaust. Draught at the stack must not exceed 0,2 mbar. Fit a draught limiter if draught exceeds this value.
- ⚠ Inadequate or badly dimensioned stacks and exhausts can increase combustion noise, cause condensation problems and affect combustion parameters.
- ⚠ Joints must be sealed using materials capable of withstanding temperatures of at least 200°C (e.g. filler, mastic or silicone based sealant).
- ⚠ The connection between the horizontal section of flue and the vertical stack must be either straight or at an angle of no more than 45°.
- ⚠ If more than one boiler is installed in the same utility room, separate flues must be provided for each boiler. If this is not possible, the burners should definitely be equipped with automatic closing of the air damper.



	50	64	82	105	154	203	235	297	323	357	418	467	537	597	715	837
Ø (mm)	139	139	179	179	180	180	180	200	200	200	250	250	250	250	300	300
H (mm)	325	325	384	384	500	525	525	525	525	525	550	550	550	550	655	655

	920	1020	1250	1510	1700	2020	2320	2620	2920	3200	3500	4000	4500	5000
Ø (mm)	300	350	400	400	450	450	450	450	500	500	500	550	600	650
H (mm)	690	715	755	820	865	900	925	1015	1050	1050	1080	1155	1170	1250

RECOMMENDED COMBINATIONS WITH GAS AND LIGHT OIL BURNERS

Description	Back-pressure in combustion chamber (mbar)	Gas burner															Burner flange					Control panels									
		Yellow flame (Standard)																													
		One stage	Two stage					Modulating																							
		-	-					Mechanical cam																							
		RS 44/1 MZ TL	RS 44 MZ TL	RS 50 TL	RS 70 TL	RS 100 TL	RS 130 TL	RS 150 TL	RS 190 TL	RS 44/M MZ TL	RS 50/M MZ TL	RS 70/M TL	RS 100/M TL	RS 150/M TL	RS 190/M TL	RS 250/M MZ TL	RS 310/M MZ F51	RS 410/M MZ F51	RS 510/M MZ F51	RS 610/M MZ F51	Burner flange	Burner flange	Burner flange	Burner flange	Burner flange	Burner flange	Burner flange	Riellotech Prime	Riellotech Clima Comfort	Riellotech Clima Comfort	Two stage burner management kit
3788611	3789111	3784703	20194356	20194293	20194295	20044637	20030087	3788811	3781623	3789611	3789711	20044639	20052616	3788411	20068343	20068356	20068027	20066706	20043900	20047680	4031188	4031395	20076596	20076618	20067631	20010820	4031069	4031064	4031067	20013035	
RTQ 418 2S	2.9	●																				●				●					
	2.9		●																			●				●			●		
	2.9								●													●						●		●	
RTQ 467 2S	3.3			●																		●				●			●		
	3.3									●												●						●		●	
RTQ 537 2S	3.0				●																	●				●			●		
	3.0										●											●						●		●	
RTQ 597 2S	5.1				●																	●				●			●		
	5.1										●											●						●		●	
RTQ 715 2S	4.7				●																	●				●			●		
	4.7											●										●					●		●		●
RTQ 837 2S	8.1					●																●				●			●		
	8.1											●										●						●		●	
RTQ 920 2S	4.6					●																●				●			●		
	4.6											●										●						●		●	
RTQ 1020 2S	4.6					●														●							●		●		
	4.6											●								●								●		●	
RTQ 1250 2S	5.8						●													●							●		●		
	5.8												●							●								●		●	
RTQ 1500 2S	5.4							●												●							●		●		
	5.4												●							●								●		●	
RTQ 1700 2S	7.2								●												●						●			●	
	7.2													●							●							●		●	
RTQ 2020 2S	4.8								●																		●	●		●	
	4.8													●													●		●		●
RTQ 2320 2S	4.2														●												●		●		●
RTQ 2620 2S	6.0															●							●					●		●	
RTQ 2920 2S	6.3															●							●					●		●	
RTQ 3200 2S	7.9																●						●					●		●	
RTQ 3500 2S	7.9																●						●					●		●	
RTQ 4000 2S	7.7																	●							●			●		●	
RTQ 4500 2S	8.0																		●							●		●		●	
RTQ 5000 2S	7.9																		●							●		●		●	

NOTE: the gas burners must be completed with the gas train.

NOTE: for specific accessories, connection MODBUS and more details on control panels, please refer to page 349.

BLOWN AIR BOILERS

Two flue gas passes steel jet burner boilers

Description	Back-pressure in combustion chamber (mbar)	Light oil burner												Dual fuel burner								Burner accessory	Burner flange						Control panels							
		Yellow flame (Standard)																																		
		Two stage						Modulating						Two stage				Modulating																		
		-						Mechanical cam						-				Mechanical cam																		
		RL 50 TL	RL 70 TL	RL 100 TL	RL 130 TL	RL 190 TC	RL 250 MZ TC	RL 38/M TL	RL 50/M TL	RL 70/M TL	RL 100/M TL	RL 130/M TL	RL 190/M TL	RLS 38	RLS 50	RLS 70	RLS 100	RLS 130	RLS 190/M MZ	RLS 250/M MZ	Extended head		Extended head	Extended head	Burner flange	Burner flange	Burner flange	Burner flange	Burner flange	Burner flange	Burner flange	Riellotech Prime	Riellotech Clima Comfort	Riellotech Clima Comfort	Two stage burner management kit	3-point modulation kit
3474633	3475033	3475233	3475433	2001008	20204865	20206288	20208625	20205576	20205603	20205765	20208601	20208942	20208939	20208897	20208902	20208905	20205672	20205746	20097868	20097869	3010422	20043900	20047680	4031188	4031196	4031395	20076596	20067631	20010820	4031069	4031064	4031067	20013035			
RTQ 418 2S	2.9	●																									●		●				●			
	2.9						●																				●				●			●		
	2.9												●							●							●		●				●			
RTQ 467 2S	3.3	●																										●		●				●		
	3.3							●																			●				●			●		
	3.3													●							●						●			●				●		
RTQ 537 2S	3	●																									●		●					●		
	3							●																			●				●			●		
	3														●										●						●			●		
RTQ 597 2S	5.1		●																								●				●				●	
	5.1									●																●					●				●	
	5.1														●											●					●				●	
RTQ 715 2S	4.7		●																								●				●				●	
	4.7								●																	●					●				●	
	4.7														●											●					●				●	
RTQ 837 2S	8.1			●																							●				●				●	
	8.1									●																●					●				●	
	8.1															●										●					●				●	
RTQ 920 2S	4.6			●																							●				●				●	
	4.6									●																●					●				●	
	4.6															●										●					●				●	
RTQ 1020 2S	4.6			●																							●				●				●	
	4.6									●																●					●				●	
	4.6															●										●					●				●	
RTQ 1250 2S	5.8				●																						●				●				●	
	5.8										●															●					●				●	
	5.8																●									●					●				●	
RTQ 1500 2S	5.4					●																					●				●				●	
	5.4									●																●					●				●	
	5.4																	●								●					●				●	
RTQ 1700 2S	7.2					●																					●				●				●	
	7.2										●															●					●				●	
	7.2																		●							●					●				●	
RTQ 2020 2S	4.8					●																									●	●			●	
	4.8											●																			●			●		●
	4.8																		●												●	●			●	
RTQ 2320 2S	4.2						●															●									●	●			●	
	4.2																																●		●	
RTQ 2620 2S	6.0						●																					●				●			●	

NOTE: the light oil burners must be completed with the light oil nozzles.

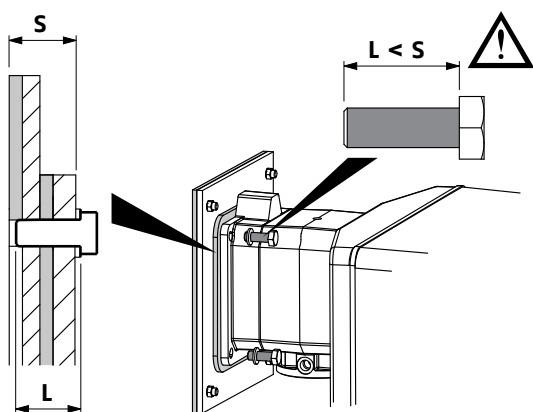
NOTE: for specific accessories, connection MODBUS and more details on control panels, please refer to page 349.

IMPORTANT NOTES FOR FITTING THE BURNER

Before fixing the burner to the boiler, make sure that:

- The door opens the right way (see the relevant sections for details on how to reverse the door)
- The length (L) of the burner fixing bolts is less than (S), i.e. the total depth of the seal, plates and washer. **Longer bolts can cause the door to warp, compromising its ability to seal the boiler hermetically and permitting the release of combustion fumes.**

To ensure correct burner installation, also refer to the burner's own manual.

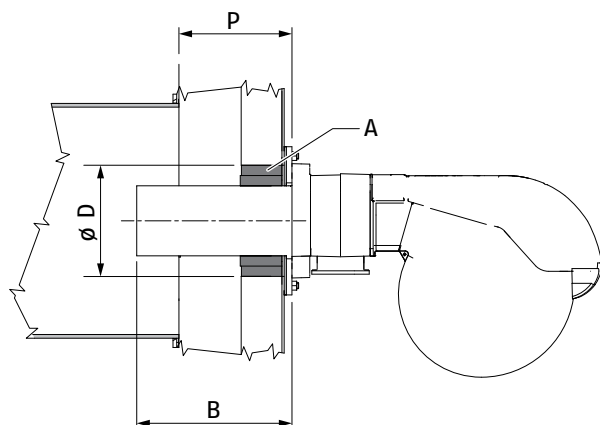


IMPORTANT

If you are installing a new boiler but re-using an old burner, always perform the following checks:

- make sure that the performance of the old burner is adequate for the requirements of the boiler; make sure that the length and diameter of the burner's blast tube are as specified in the following table.

⚠ When you finish installing the burner in the boiler, fill the gap between the burner's blast tube and the refractory material in the door with the ceramic insulation (A) supplied with the boiler.



			BOILER RTQ						
			50	64	82	105	154	203	
B	Burner head	min	160	160	180	180	180	190	mm
		max	200	200	225	270	270	300	mm
D	Door hole diameter		110	110	140	140	160	160	∅ mm
P	Inspection door depth (including flange)		125	125	145	145	150	160	mm

			BOILER RTQ					
			235	297	323	357	418	
B	Burner head	min	190	200	200	220	220	mm
		max	300	350	350	350	350	mm
D	Door hole diameter		160	180	180	195	195	∅ mm
P	Inspection door depth (including flange)		160	160	160	160	180	mm

			BOILER RTQ					
			467	537	597	715	837	
B	Burner head	min	220	250	250	250	250	mm
		max	350	385	385	385	385	mm
D	Door hole diameter		195	195	195	195	195	∅ mm
P	Inspection door depth (including flange)		180	180	180	205	205	mm

			BOILER RTQ					
			920	1020	1250	1510	1700	
B	Burner head	min	250	280	300	370	400	mm
		max	385	400	415	525	525	mm
D	Door hole diameter		205	260	260	320	320	∅ mm
P	Inspection door depth (including flange)		215	220	260	285	310	mm

			BOILER RTQ				
			2020	2320	2620	2920	
B	Burner head	min	400	400	400	400	mm
		max	525	525	525	525	mm
D	Door hole diameter		350	390	390	390	∅ mm
P	Inspection door depth (including flange)		315	290	290	290	mm

			BOILER RTQ					
			3200	3500	4000	4500	5000	
B	Burner head	min	430	430	470	470	470	mm
		max	525	525	600	600	600	mm
D	Door hole diameter		390	390	440	480	480	∅ mm
P	Inspection door depth (including flange)		290	290	350	350	350	mm

⊖ The use of burners with a head length shorter than the depth (P) of the inspection door is prohibited.

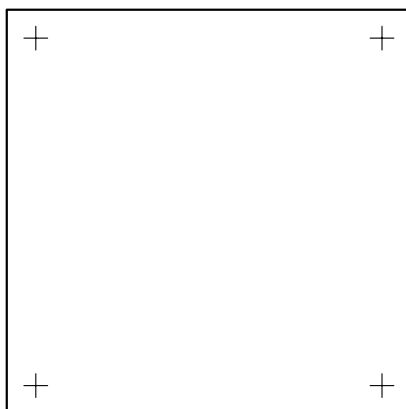
⚠ In the case of greater burner head lengths, they must not exceed the indicated maximum value by 20 %.

BLOWN AIR BOILERS

Two flue gas passes steel jet burner boilers

BURNER PLATE

RTQ 2S boilers are equipped as standard with blind burner plates for housing the recommended or different models of burners, including of other makes. Holes are to be drilled during the installation in relation to the chosen burner.



THERMOREGULATIONS – RIELLOTECH

RIELLOtech is the range of RIELLO controls created for the management of any type of system. Ideal for complex systems as well as for managing simpler installations. The range includes:

RIELLOtech Clima Comfort: it is the climatic regulation of even complex systems in single-family installations. It manages single and two-stage burners (with a specific kit), boiler cascades, solar systems, and the integration of multiple types of heat generators. On the system side it manages a mixed area (expandable to 2 with a specific kit), a direct one and the production of domestic hot water.

RIELLOtech Prime ACS: is the thermostatic line capable of managing single and two-stage burners (using a specific kit), the production of domestic hot water and a direct zone.

RIELLOtech Prime: is the thermostatic line capable of managing single and two-stage burners (via a specific kit) and a direct area.

RIELLOtech Clima Comfort version is complete with a boiler probe and an outdoor probe.

All RIELLOtech Clima controls can be integrated via BUS. The Clima series is also available in a control panel version.

Electrical protection rating: IPX4D.



APPLICATION PROCEDURE

	BURNER	BOILERS CASCADE	ALTERNATIVE GENERATOR	SOLAR SYSTEM	DOMESTIC HOT WATER TANK	DIRECT ZONE	1 st MIXED ZONE	2 nd MIXED ZONE
MANDATORY ACCESSORIES		Immersion probe or cuff probe		2 tank probes and 1 solar collector probe	tank probe (for climate box)		Immersion probe or cuff probe	Immersion probe or cuff probe
OPTIONAL ACCESSORIES			Immersion probe (only for biomass boiler)				Room probe or Remote Control RC3	Room probe or Remote Control RC3
RIELLOtech CLIMA COMFORT	 modulating							with kit additional dedicated mix area management
RIELLOtech CLIMA MIX								with kit additional mix area management
RIELLOtech Prime	 Two-stage with special kit							
RIELLOtech Prime ACS	 Two-stage with special kit							

ERP THERMOREGULATION CLASS

DESCRIPTION ACCESSORIES	OUTDOOR PROBE	BURNERS	CLASS	RELAY KIT 3 POINTS MODULATION	ONE ROOM PROBE	TWO ROOM PROBES	THREE ROOM PROBES	MIX ZONE MANAGEMENT ADD + RELATED ROOM PROBE
RIELLOtech CLIMA COMFORT	Si	Modul On/off	II III	II III	VI VII	VI VII	VIII VII	VIII VII
RC3 REMOTE CONTROL			V					
ROOM PROBE			V					

BLOWN AIR BOILERS

Two flue gas passes steel jet burner boilers

RTQ 2S

CONSTRUCTION DESCRIPTION FOR SUMMARY SPECIFICATIONS

High-efficiency boiler, comprising a floor-standing steel structure with a pressurised combustion chamber featuring three flue passes and flame reversal within the combustion chamber.

The maximum operating pressure is 6 bar.

CONSTRUCTION DESCRIPTION FOR SPECIFICATIONS

The boiler comprises:

- An outer casing consisting of pre-painted steel sheet panels to be assembled, with snap-fit, removable joints to allow full access to the boiler.
- A double-sided, vacuum-sealed ceramic fibre-insulated door.
- Thermal insulation comprising a double layer of high-density glass wool, protected by an aluminium foil, fitted to the boiler body.
- A pressurised, horizontal combustion chamber with three flue passes and flame reversal, featuring stainless steel flue tubes and turbulators.
- Burner mounting plate.
- Flame sight glass with pressure/cooling tap.
- Boiler drain.
- Expansion tank/safety valve connection.
- Instrument panel to be selected according to the type of system to be served.
- Maximum permissible temperature 110°C and maximum operating temperature 95°C.
- Minimum return temperature 55°C.
- Maximum operating pressure 6 bar.

RTQ 2S boilers comply with the Low Voltage Directive 2014/35/EU.

Models up to 400 kW comply with the Ecodesign Directive for energy-related products 2009/125/EC and Delegated Regulation (EU) No 813/2013.

When fitted with a CE-marked forced-draught gas burner, they also comply with:

- Regulation (EU) 2016/426.
- The applicable parts of the Electromagnetic Compatibility Directive 2014/30/EU.

SUPPLIED ACCESSORIES

- Ceramic gasket for the air inlet.
- appliance warranty certificate.
- installation, use and maintenance manual.
- hydraulic test certificate.
- product identification plate.
- spare parts catalogue.

The boiler is supplied in 3 separate sections: the boiler body, the panelling and the front panel.

The modular boiler is supplied completely disassembled.

RTQ 50 2S

- Max nominal thermal input (NCV): 54,2 kW
- Max nominal thermal output (80–60°C): 50 kW
- Dimensions (HxLxW): 605x885x605 mm – excluded burner

RTQ 64 2S

- Max nominal thermal input (NCV): 69,3 kW
- Max nominal thermal output (80–60°C): 64 kW
- Dimensions (HxLxW): 605x1035x605 mm – excluded burner

RTQ 82 2S

- Max nominal thermal input (NCV): 88,8 kW
- Max nominal thermal output (80–60°C): 82 kW
- Dimensions (HxLxW): 740x970x705 mm – excluded burner

RTQ 105 2S

- Max nominal thermal input (NCV): 113,6 kW
- Max nominal thermal output (80–60°C): 105 kW
- Dimensions (HxLxW): 740x1120x705 mm – excluded burner

RTQ 154 2S

- Max nominal thermal input (NCV): 166 kW
- Max nominal thermal output (80–60°C): 154 kW
- Dimensions (HxLxW): 790x1200x805 mm – excluded burner

RTQ 203 2S

- Max nominal thermal input (NCV): 217 kW
- Max nominal thermal output (80–60°C): 203 kW
- Dimensions (HxLxP): 840x1400x853 mm – excluded burner

RTQ 235 2S

- Max nominal thermal input (NCV): 255 kW
- Max nominal thermal output (80–60°C): 235 kW
- Dimensions (HxLxP): 840x1400x853 mm – excluded burner

RTQ 297 2S

- Max nominal thermal input (NCV): 315 kW
- Max nominal thermal output (80–60°C): 297 kW
- Dimensions (HxLxP): 980x1550x925 mm – excluded burner

RTQ 323 2S

- Max nominal thermal input (NCV): 348 kW
- Max nominal thermal output (80–60°C): 323 kW
- Dimensions (HxLxP): 980x1550x925 mm – excluded burner

RTQ 357 2S

- Max nominal thermal input (NCV): 384 kW
- Max nominal thermal output (80–60°C): 357 kW
- Dimensions (HxLxP): 980x1550x925 mm – excluded burner

RTQ 418 2S

- Max nominal thermal input (NCV): 448 kW
- Max nominal thermal output (80–60°C): 418 kW
- Dimensions (HxLxP): 1030x1780x975 mm – excluded burner

RTQ 467 2S

- Max nominal thermal input (NCV): 500 kW
- Max nominal thermal output (80–60°C): 467 kW
- Dimensions (HxLxP): 1030x1780x975 mm – excluded burner

RTQ 537 2S

- Max nominal thermal input (NCV): 575 kW
- Max nominal thermal output (80–60°C): 537 kW
- Dimensions (HxLxP): 1030x1947x975 mm – excluded burner

RTQ 597 2S

- Max nominal thermal input (NCV): 639 kW
- Max nominal thermal output (80–60°C): 597 kW
- Dimensions (HxLxP): 1030x1947x975 mm – excluded burner

RTQ 715 2S

- Max nominal thermal input (NCV): 766 kW
- Max nominal thermal output (80–60°C): 715 kW
- Dimensions (HxLxP): 1210x2115x1150 mm – excluded burner

RTQ 837 2S

- Max nominal thermal input (NCV): 896 kW
- Max nominal thermal output (80–60°C): 837 kW
- Dimensions (HxLxP): 1210x2210x1150 mm – excluded burner

RTQ 920 2S

- Max nominal thermal input (NCV): 990 kW
- Max nominal thermal output (80–60°C): 920 kW
- Dimensions (HxLxP): 1280x2380x1220 mm – excluded burner

RTQ 1020 2S

- Max nominal thermal input (NCV): 1100 kW
- Max nominal thermal output (80–60°C): 1020 kW
- Dimensions (HxLxP): 1335x2520x1285 mm – excluded burner

RTQ 1250 2S

- Max nominal thermal input (NCV): 1338 kW
- Max nominal thermal output (80–60°C): 1250 kW
- Dimensions (HxLxP): 1430x2835x1360 mm – excluded burner

RTQ 1510 2S

- Max nominal thermal input (NCV): 1617 kW
- Max nominal thermal output (80–60°C): 1510 kW
- Dimensions (HxLxP): 1530x2930x1450 mm – excluded burner

RTQ 1700 2S

- Max nominal thermal input (NCV): 1820 kW
- Max nominal thermal output (80–60°C): 1700 kW
- Dimensions (HxLxP): 1610x3125x1535 mm – excluded burner

RTQ 2020 2S

- Max nominal thermal input (NCV): 2162 kW
- Max nominal thermal output (80–60°C): 2020 kW
- Dimensions (HxLxP): 1680x3115x1605 mm – excluded burner

RTQ 2320 2S

- Max nominal thermal input (NCV): 2485 kW
- Max nominal thermal output (80–60°C): 2320 kW
- Dimensions (HxLxP): 1752x3191x1655 mm – excluded burner

RTQ 2620 2S

- Max nominal thermal input (NCV): 2830 kW
- Max nominal thermal output (80–60°C): 2617,8 kW
- Dimensions (HxLxP): 1925x3455x1800 mm – excluded burner

RTQ 2920 2S

- Max nominal thermal input (NCV): 3150 kW
- Max nominal thermal output (80–60°C): 2920,1 kW
- Dimensions (HxLxP): 1995x3560x1865 mm – excluded burner

RTQ 3200 2S

- Max nominal thermal input (NCV): 3450 kW
- Max nominal thermal output (80–60°C): 3198,2 kW
- Dimensions (HxLxP): 1996x3625x1865 mm – excluded burner

RTQ 3500 2S

- Max nominal thermal input (NCV): 3780 kW
- Max nominal thermal output (80–60°C): 3504,1 kW
- Dimensions (HxLxP): 2055x3640x1935 mm – excluded burner

RTQ 4000 2S

- Max nominal thermal input (NCV): 4315 kW
- Max nominal thermal output (80–60°C): 4000 kW
- Dimensions (HxLxP): 2165x4004x2040 mm – excluded burner

RTQ 4500 2S

- Max nominal thermal input (NCV): 4854 kW
- Max nominal thermal output (80–60°C): 4499,7 kW
- Dimensions (HxLxP): 2170x4254x2070 mm – excluded burner

RTQ 5000 2S

- Max nominal thermal input (NCV): 5394 kW
- Max nominal thermal output (80–60°C): 5000,2 kW
- Dimensions (HxLxP): 2355x4521x2230 mm – excluded burner

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RTQ 2S

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