

RTQ

Central heating only

Floor Standing Reverse flame boiler manufactured from carbon steel. Designed with wet back horizontal furnace, these boilers can be fired (on oil or gas) with pressure jet burners. Fitted with removable stainless steel turbulators to increase fluegas to water heat transfer and to distribute the thermal load.

Double hinged front door with ceramic insulation and double ceramic rope seal. Casing construed from sheet steel finished in power coating. The range includes 17 boiler models with useful output from 105.3 to 1798 kW.

control panels available as optional.

PRODUCT ADVANTAGES

High efficiency (>90%) with low operating costs. All parts supplied for easy installation. Low noise emissions. Temperature modulation function (minimum return temperature 55°C). Can be used with domestic hot water storage cylinders.

INSTALLATION/MAINTENANCE ADVANTAGES

Easy to transport: boilers are supplied in two separate packages (one for the body, one for the casing).

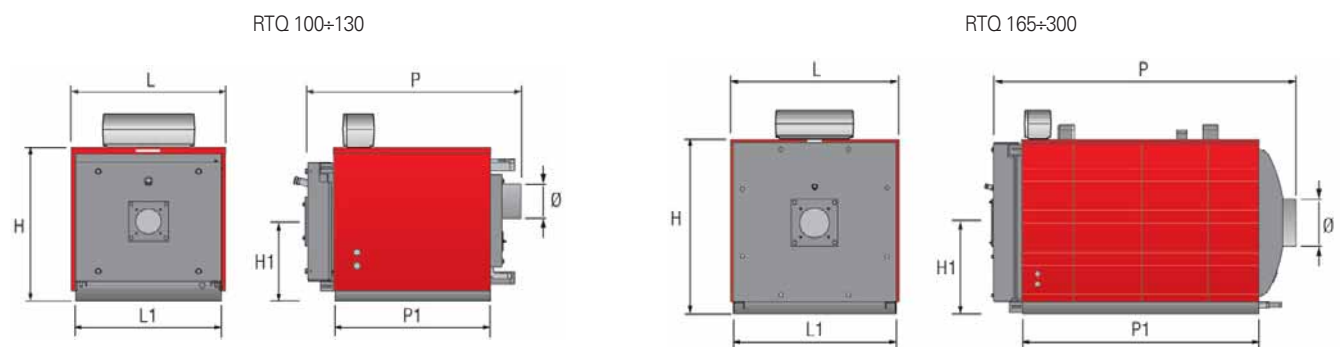
Easy maintenance: the door opens to provide front-on access to the combustion chamber and flue gas tubes; removable rear smoke box cover an inspection door; the turbulators are removable.

Easy installation: standard fittings.

Flexible installation: these boilers can be used in a wide range of applications with Riello 5000 control panels, calorifier and other Riello accessories.

RTQ			RTQ 100	RTQ 130	RTQ 165	RTQ 200	RTQ 250	RTQ 300
Heat input	min/max	kW	81/115	116/166	167/217	218/255	256/318	319/348
	min/max	Mcal/h	69,66/98,9	99,76/142,76	143,62/188,62	187,48/219,3	220,16/273,48	274,34/299,28
Heat output	min/max	kW	75/105,3	107,4/152,9	155,1/200,5	201,4/234,3	234,5/289,7	290,6/315,6
	min/max	Mcal/h	64,50/90,56	92,36/131,49	133,39/172,43	173,20/201,50	201,67/249,14	249,92/271,42
Efficiency at Maximum Output		%	91,6	92,1	92,4	91,9	91,1	90,7
Efficiency at Minimum Output		%	92,6	92,6	92,9	92,4	91,6	91,1
Efficiency at 30% Load		%	93,4	93,2	93,6	93,1	93	92,7
Heat losses through flue gas	burner lock-out	%	0,1	0,1	0,1	0,1	0,1	0,1
	100 % load	%	8	7,5	7,5	7,8	8,2	8,2
Heat losses through insulation		%	0,4	0,4	0,1	0,3	0,7	1,1
Flue Gas temperature (Δ)		$^{\circ}\text{C}$	>160	>160	>160	>160	>160	>160
CO2 Natural Gas/Light Oil			9,5/12,5	9,5/12,5	9,5/12,5	9,5/12,5	9,5/12,5	9,5/12,5
Flue Gas Mass Flow rate		kg/s	0,05	0,072	0,094	0,111	0,139	0,152
Furnace Resistance		mbar	1,1	1,3	1,2	1,6	2,3	3,2
		Pa	110	130	120	160	230	320
Combustion chamber volume		dm ³	96,8	156	216	216	325,5	325,5
Flue Gas volume		dm ³	126	200	289	289	428	428
Volumetric Thermal load		kW/m ³	1188	1064	1005	1181	977	1069
Maximum working pressure		bar	5	5	5	5	5	5
		kPa	500	500	500	500	500	500
Maximum flow temperature		$^{\circ}\text{C}$	100	100	100	100	100	100
Maximum working temperature		$^{\circ}\text{C}$	87	87	87	87	87	87
Minimum water return temperature		$^{\circ}\text{C}$	55	55	55	55	55	55
Water-side pressure drop	Δt 10 $^{\circ}\text{C}$	mbar	62,9	63,9	91,8	144,5	144,5	175
		Pa	6290	6390	9180	14450	14450	17500
	ΔT 20 $^{\circ}\text{C}$	mbar	15,3	17,1	19,8	40,6	40,6	51
		Pa	1530	1710	1980	4060	4060	5100
Water capacity		l	109	149	187	216	216	216
Weight		kg	215	240	415	500	500	500
Casing Weight		kg	18	23	28	33	33	33

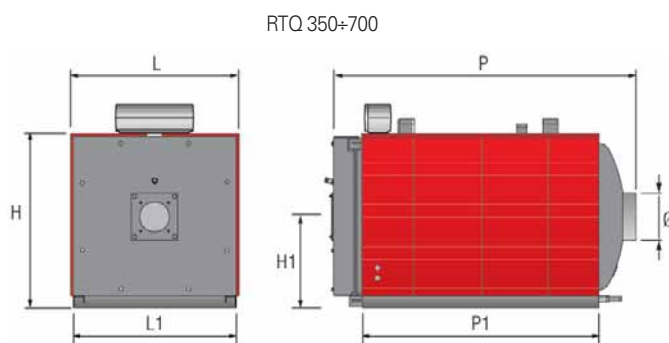
DIMENSIONS (mm)



MODELS		100	130	165	200	250	300
L - Width	mm	795	845	915	915	965	965
L1 - Base width	mm	753	803	875	875	925	925
P - Length	mm	1100	1305	1430	1430	1610	1610
P1 - Base depth	mm	805	1010	1105	1105	1245	1245
H - Height	mm	790	840	980	980	1030	1030
H1 - Overall height	mm	410	435	525	525	550	550
Ø - Exhaust outlet	mm	180	180	200	200	250	250

RTQ			RTQ350	RTQ400	RTQ450	RTQ500	RTQ600	RTQ700 ^W
Heat input	min/max	385/448	449/511	512/575	576/639	640/766	767/896	
		Mcal/h	331,1/385,28	386,14/439,46	440,32/494,5	495,36/549,54	550,4/658,76	659/62/770,56
Heat output	min/max	kW	357,3/413,5	414,4/469,1	476,2/531,9	532,8/587,9	593,3/706,3	707/813
		Mcal/h	307,28/355,61	356,38/403,426	409,53/457,434	458,21/505,594	510,24/607,418	608,02/699,18
Efficiency at Maximum Output		%	92,3	91,8	92,5	92,0	92,2	90,8
Efficiency at Minimum Output		%	92,8	92,3	93	92,5	92,7	92,2
Efficiency at 30% Load		%	93,4	92,9	93,6	93,1	93,3	92,5
Heat losses through flue gas	burner lock-out	%	0,1	0,1	0,1	0,1	0,1	0,1
	100 % load	%	7,2	8	7,4	7,6	7,6	8,2
Heat losses through insulation		%	0,5	0,2	0,1	0,4	0,2	1,0
Flue Gas temperature (Δ)		$^{\circ}$ C	>160	>160	>160	>160	>160	>160
CO2 Natural Gas/Light Oil			9,5/12,5	9,5/12,5	9,5/12,5	9,5/12,5	9,5/12,5	9,5/12,5
Flue Gas Mass Flow rate		kg/s	0,195	0,222	0,25	0,278	0,333	0,389
Furnace Resistance		mbar	2,3	3,3	2,5	3,6	4,4	5,9
		Pa	230	330	250	360	440	590
Combustion chamber volume		dm3	424	424	541	541	704	704
Flue Gas volume		dm3	575	575	726	726	926	926
Volumetric Thermal load		kW/m3	1056	1205	1063	1181	1088	1273
Maximum working pressure		bar	5	5	5	5	5	5
		kPa	500	500	500	500	500	500
Maximum flow temperature		$^{\circ}$ C	100	100	100	100	100	100
Maximum working temperature		$^{\circ}$ C	87	87	87	87	87	87
Minimum water return temperature		$^{\circ}$ C	55	55	55	55	55	55
Water-side pressure drop	Δ t 10 $^{\circ}$ C	mbar	140	180	59,4	63,9	148,5	203
		Pa	14000	18000	5940	6390	14850	20300
	Δ T 20 $^{\circ}$ C	mbar	39,6	67,5	13,5	17,1	38,5	53
		Pa	3960	6750	1350	1710	3850	5300
Water capacity		l	430	430	534	534	652	652
Weight		kg	790	790	970	970	1085	1085
Casing Weight		kg	45	45	50	50	66	66

DIMENSIONS (mm)



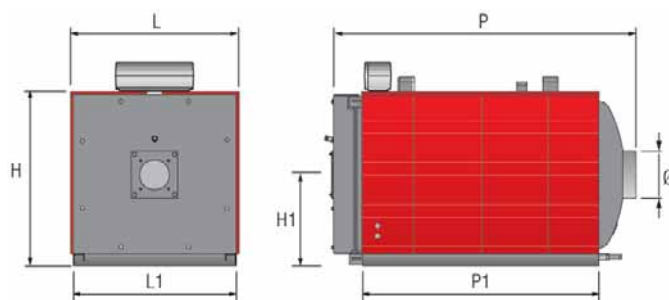
MODELS		350	400	450	500	600	700
L - Width	mm	1140	1140	1210	1210	1275	1275
L1 - Base width	mm	1100	1100	1170	1170	1235	1235
P - Length	mm	1890	1890	2045	2045	2260	2260
P1 - Base depth	mm	1450	1450	1555	1555	1820	1820
H - Height	mm	1210	1210	1280	1280	1335	1335
H1 - Overall height	mm	655	655	690	690	715	715
Ø - Exhaust outlet	Ø mm	300	300	300	300	350	350

RTQ

			RTQ800	RTQ900	RTQ1000	RTQ1250	RTQ1500
Heat input	min/max	kW	896/1022	1023/1140	1151/1277	1278/1594	1595/1950
	min/max	Mcal/h	770,56/878,92	879,78/980,4	989,86/1098,22	1099,08/1370,84	1371,71/1677
Heat output	min/max	kW	836/948,4	947/1047	1075/1188	1189/1466	1476/1798
	min/max	Mcal/h	718,96/815,624	814,42/900,42	924,50/1021,68	1022,54/1260,76	1269,36/1546,28
Efficiency at Maximum Output		%	92,8	91,8	93,0	92,0	92,2
Efficiency at Minimum Output		%	93,3	92,6	93,4	93	92,6
Efficiency at 30% Load		%	93,5	93	94,2	93,6	93,1
Heat losses through flue gas	burner lock-out	%	0,1	0,1	0,1	0,1	0,1
	100 % load	%	7	7	6,5	7,5	7,6
Heat losses through insulation		%	0,2	1,2	0,5	0,5	0,2
Flue Gas temperature (Δ)		$^{\circ}\text{C}$	>160	>160	>160	>160	>160
CO2	Natural Gas/Light Oil		9,5/12,5	9,5/12,5	9,5/12,5	9,5/12,5	9,5/12,5
Flue Gas Mass Flow rate		kg/s	0,444	0,495	0,555	0,693	0,847
Furnace Resistance		mbar	6,2	6,9	6,8	8,4	7,3
		Pa	620	690	680	840	730
Combustion chamber volume		dm ³	928	928	1166	1470	1746
Flue Gas volume		dm ³	1243	1243	1522	1950	2322
Volumetric Thermal load		kW/m ³	1101	1229	1095	1084	1117
Maximum working pressure		bar	5	5	5	5	5
		kPa	500	500	500	500	500
Maximum flow temperature		$^{\circ}\text{C}$	100	100	100	100	100
Maximum working temperature		$^{\circ}\text{C}$	87	87	87	87	87
Minimum water return temperature		$^{\circ}\text{C}$	55	55	55	55	55
Water-side pressure drop	Δt 10 $^{\circ}\text{C}$	mbar	211	260	280	203	205
		Pa	21100	26000	28000	20300	20500
	ΔT 20 $^{\circ}\text{C}$	mbar	45	56	65	46	52
		Pa	4500	5600	6500	4600	5200
Water capacity		l	822	822	1105	1236	1432
Weight		kg	1620	1620	1900	2300	2860
Casing Weight		kg	78	78	86	96	111

DIMENSIONS (mm)

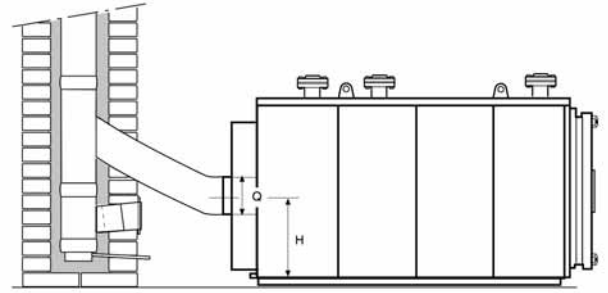
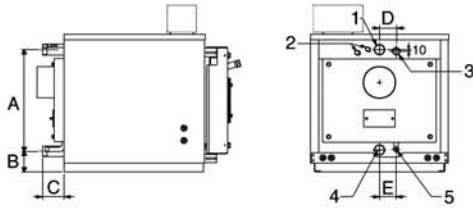
RTQ 350+700



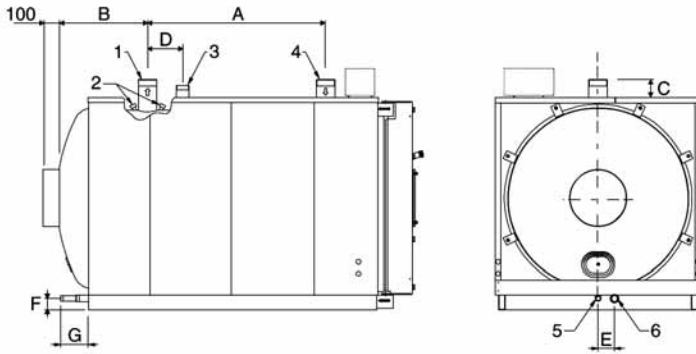
MODELS		800	900	1000	1250	1500
L - Width	mm	1350	1350	1460	1545	1615
L1 - Base width	mm	1310	1310	1400	1485	1555
P - Length	mm	2560	2560	2760	2850	3230
P1 - Base depth	mm	2070	2070	2220	2470	2620
H - Height	mm	1415	1415	1510	1590	1660
H1 - Overall height	mm	755	755	820	865	900
Ø - Exhaust outlet	Ø mm	400	400	400	450	500

WATER AND FLUE CONNECTIONS

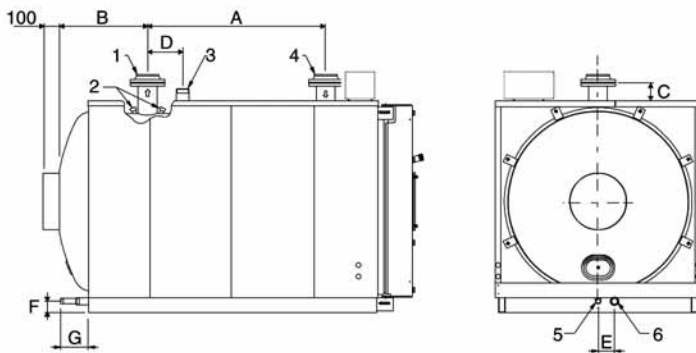
RTQ 100 ÷ 130



RTQ 165÷ 300

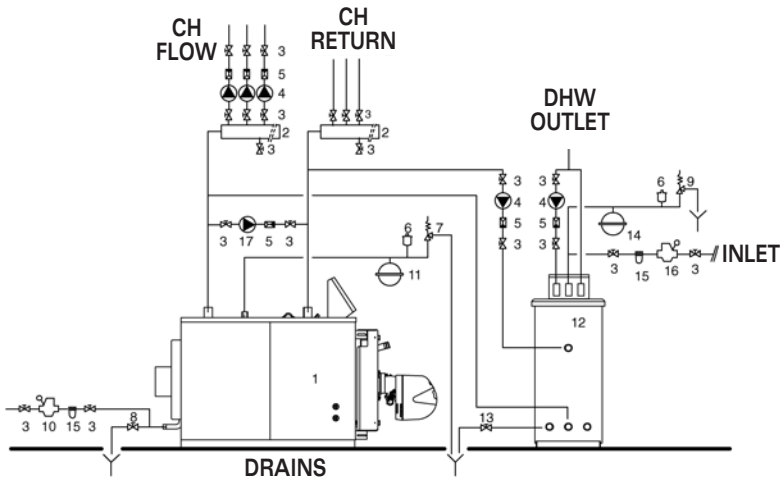


RTQ 350÷ 1500



MODELS		100	130	165	200	250	300	350	400	450	500	600	700	800	900	1000	1250	1500
1 - CH Flow	Ø-DN	2"	2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	80	80	100	100	100	100	125	125	125	125	150
2 - Sensor/control probe wells /high	Ø	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
3 - Safety valve fitting	Ø-DN	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	80	100
4 - CH Return	Ø-DN	2"	2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	80	80	100	100	100	100	125	125	125	125	150
5 - Condensate drain	Ø	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"
6 - Boiler drain	Ø	-	-	1"	1"	1"	1"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/2"	1 1/2"
A	mm	575	630	600	600	700	700	800	800	1000	1000	1090	1090	1240	1240	1355	1550	1650
B	mm	105	123	305	305	315	315	480	480	445	445	540	540	600	600	635	705	730
C	mm	125	120	80	80	80	80	75	75	105	105	105	105	105	105	116	145	145
D	mm	95	95	205	205	205	205	215	215	215	215	215	215	250	250	250	280	280
E	mm	95	95	110	110	110	110	110	110	110	110	110	110	110	110	110	115	115
F	mm	-	-	95	95	95	95	95	95	95	95	95	95	95	95	110	120	120
G	mm	-	-	85	85	85	85	145	145	180	180	125	125	125	125	170	180	210
Ø - Flue Gas outlet	mm	180	180	200	200	250	250	300	300	300	300	350	350	400	400	400	450	500
H - Flue Gas Outlet Central Line	mm	500	525	525	525	550	550	655	655	690	690	715	715	755	755	820	865	900

Typical Boiler/Calorifier Water Connection scheme



Key

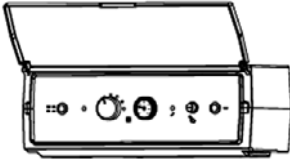
- 1 Boiler
- 2 CH system Header
- 3 Isolating valves
- 4 System pumps
- 5 Non-return valves
- 6 Automatic vent valve
- 7 Boiler safety valve
- 8 Boiler drain cock
- 9 Storage cylinder safety valve
- 10 CH fill cock
- 11 CH expansion vessel
- 12 Riello 7200 Calorifier
- 13 Calorifier drain cock
- 14 DHW expansion vessel
- 15 Filter
- 16 Pressure reducing Unit
- 17 Shunt Pump

CONTROL PANELS

RIELLO 5000 control panels that can be used with RTQ carbon steel boilers are listed below. These control panels cater for all the needs of the heating system and of all the devices installed in it.

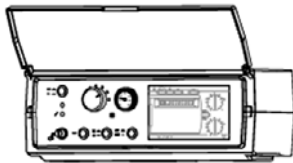
These control panels have an index of protection of IP 54.

Refer to the appropriate data sheet to select the right control panel and accessories.



TMR
for central heating only, with a one-stage thermostatic burner.

TMK
for central heating and domestic hot water production with the RIELLO 7300 storage cylinder and a one-stage burner.



BOX
for control of boiler functions with a Riello Esatto series electronic control unit.

ACCESSORIES

DESCRIPTION FOR SUMMARY SPECIFICATIONS

High efficiency floor standing hot water boiler, with a steel frame and a pressurised, reverse flame combustion chamber with three flue passes.

Maximum working pressure is 5 bar.

DESCRIPTION FOR SPECIFICATIONS

These boilers comprise:

- ready to assemble painted steel casing with quick fit couplings, panels being removable for easy access to the boiler
- Double hinged front door with ceramic insulation
- Boiler lagged with high density double layer fibre-glass wool of glass wool protected by aluminium foil inside the boiler body
- pressurised, horizontal, 3 pass, reverse flame combustion chamber; flue gas tubes with turbulators manufactured from stainless steel
- burner mounting plate
- flame visor with pressure gauge/cooling fitting
- flame inspection glass with pressure gauge fitting
- for fitting
- boiler drain
- expansion vessel/safety valve fitting
- control panels to suit different types of installation
- maximum flow temperature 100°C; maximum working temperature 87°C
- minimum return temperature 55°C
- maximum working pressure 5 bar
- compliant with 90/396/EEC directive (gas - CE marking)
- compliant with 89/336/EEC directive (electromagnetic compatibility)
- compliant with 72/23/EEC directive (low voltage)
- compliant with 92/42/EEC directive (efficiency)

MATERIAL SUPPLIED

- casing assembly accessories
- ceramic gasket for burner draught tube
- installation, operation and maintenance manual
- hydraulic test certificate
- product identification plate
- spare parts catalogue

The boiler is supplied in 2 separate packages: one for boiler body and one for the casing.

Accessories available:

- RIELLO 5000 support shelf (only for RTQ 1250-1500)
- RIELLO 5000 TMR control panel
- RIELLO 5000 TMK control panel
- RIELLO 5000 EB/T control panel
- RIELLO 5000 BOX control panel