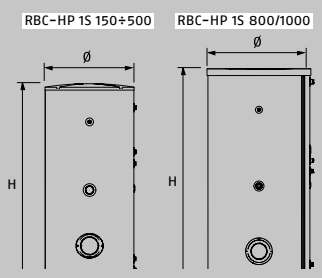
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Riello RBC-HP 1S

Single coil domestic hot water cylinders

Single coil steel vertical DHW cylinder
Domestic hot water production
Suitable for use with cylinders or heat pumps



RIELLO
Energy For Life

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Riello RBC-HP 1S

PRODUCT DESCRIPTION

The RBC-HP 1S range guarantees excellent versatility as it can work in conjunction with both cylinders and heat pumps.

Single coil steel vertical cylinder, internally glazed (as per DIN 4753) to ensure hygiene and limescale cleaning. The range includes 6 models from 150 to 1000 (ErP Ready – Energy class B) while the shape of the cylinder and the elliptical cross-section of the exchanger enable excellent heat exchange performance (minimal heat dispersion) and rapid restore times.

Option to add an extractable coil for use with a solar thermal system.

Option to add a back-up heating element.

TECHNICAL DATA

DESCRIPTION	U.M.	RBC-HP 150 1S	RBC-HP 200 1S	RBC-HP 300 1S	RBC-HP 500 1S	RBC-HP 800 1S	RBC-HP 1000 1S
CYLINDER TYPE							
Exchanger layout		Vertical, Glazed, Vertical with elliptical cross-section			Vertical, Glazed, Vertical with circular cross-section		
Cylinder capacity	l	170	210	305	500	735	890
Cylinder diameter with insulation	mm	604	604	604	755	974	974
Cylinder diameter without insulation	mm	-	-	-	-	790	790
Height with insulation	mm	1138	1354	1838	1793	1835	2155
Height without insulation	mm	-	-	-	-	1745	2070
Insulation thickness	mm	52	52	52	52	92	92
Total net weight	kg	62	78	103	150	203	225
Magnesium anode quantity/diameter/length	mm	1/33/300	1/33/450	1/33/480	1/40/600	1/40/600	1/40/750
Flange inside diameter	mm	130					
Sensor sheath diameter/length	mm	16/180					
Coil water contents	l	4,25	7,3	9	18,9	21	24,4
Coil exchange surface	m^2	0,85	1,38	1,7	2,2	2,5	2,9
Cylinder maximum operating pressure	bar	10				7	
Coils maximum operating pressure	bar	10				7	
Maximum operating pressure	°C	99					
Dispersion as per EN 12897:2006 ΔT=45 °C (20°C ambient and storage at 65°C)	W	55	58	68	84	94	101
Dispersion as per UNI 11300	W/K	1,22	1,31	1,51	1,87	2,09	2,24
Energy class		B	B	B	B	B	B
DATA OBTAINED WITH HEAT PUMP A7/W60							
Nominal power accompanying heat pump A7/W60	kW	6	8	12	16	18	26
Continuous supply hot water (DHW 10-45°C) *							
Coil delivery temperature							
50°C ΔT 5°C	kW	6,3	8,8	12,4	15,8	18,5	24,9
	l/h	155	213	305	388	450	612
Start-up time required to heat the cylinder to 52°C **							
Coil delivery temperature							
60°C Δ T 5°C (cylinder starting temperature 15°C)	h:min	00:58	01:02	01:33	01:42	01:58	01:52
60°C Δ T 5°C (cylinder starting temperature 37°C)	h:min	00:28	00:35	00:43	00:48	00:51	00:50
Quantity hot water achieved in 10', with cylinder pre-heated to 52°C ***							
Coil delivery temperature							
60°C ΔT 5°C	l	223	265	370	613	980	1160
Start-up time required to heat the cylinder to 55°C **							
Coil delivery temperature							
60°C Δ T 5°C (cylinder starting temperature 15°C)	h:min	01:23	01:27	01:58	02:14	02:23	02:17
60°C Δ T 5°C (cylinder starting temperature 37°C)	h:min	00:45	00:52	01:00	01:05	01:08	01:07
Quantity hot water achieved in 10', with cylinder pre-heated to 55°C ***							
Coil delivery temperature							
60°C ΔT 5°C	l	234	278	388	643	1029	1218
DATA OBTAINED WITH HEAT PUMP A7/W75							
Nominal power accompanying heat pump A7/W75	kW	6	8	12	14	14	14
Continuous supply hot water (DHW 10-45°C) *							
Coil delivery temperature							
75°C ΔT 5°C	kW	7,4	10,36	14,6	16	16	16
	l/h	182	251	360	393	393	393
Start-up time required to heat the cylinder to 55°C **							
Coil delivery temperature							
75°C ΔT 5°C (cylinder starting temperature 15°C)	h:mm	00:55	00:57	01:18	01:28	02:20	02:55
75°C ΔT 5°C (cylinder starting temperature 37°C)	h:mm	00:28	00:32	00:37	00:40	01:04	01:20

DESCRIPTION	U.M.	RBC-HP 150 1S	RBC-HP 200 1S	RBC-HP 300 1S	RBC-HP 500 1S	RBC-HP 800 1S	RBC-HP 1000 1S
Quantity hot water achieved in 10', with cylinder pre-heated to 55°C ***							
Coil delivery temperature							
75°C ΔT 5°C	l	237	281	393	651	1042	1233
Start-up time required to heat the cylinder to 65°C **							
Coil delivery temperature							
75°C ΔT 5°C (cylinder starting temperature 15°C)	h:mm	01:26	01:35	01:52	02:45	04:45	05:30
75°C ΔT 5°C (cylinder starting temperature 37°C)	h:mm	00:48	00:52	01:05	01:32	02:28	03:05
Quantity hot water achieved in 10', with cylinder pre-heated to 65°C ***							
Coil delivery temperature							
75°C ΔT 5°C	l	250	333	500	834	1334	1668
Start-up time required to heat the cylinder to 70°C **							
Coil delivery temperature							
75°C ΔT 5°C (cylinder starting temperature 15°C)	h:mm	01:40	01:56	02:14	03:10	05:04	06:20
75°C ΔT 5°C (cylinder starting temperature 37°C)	h:mm	01:06	01:10	01:27	02:05	03:21	04:11
Quantity hot water achieved in 10', with cylinder pre-heated to 70°C ***							
Coil delivery temperature							
75°C ΔT 5°C	l	273	364	546	911	1457	1822
DATA OBTAINED WITH A GAS BOILER							
Continuous supply hot water (DHW 10-45°C) *							
80°C ΔT 20°C	kW	27	39	49	57	69	75
	l/h	660	950	1196	1406	1728	1860
70°C ΔT 20°C	kW	19	28	37	41	53	57
	l/h	480	690	921	1008	1300	1403
60°C ΔT 10°C	kW	11	17	23	30	37	39
	l/h	280	410	530	734	910	960
50°C ΔT 10°C	kW	8	9	13	16,3	19	25,3
	l/h	197	220	319	401	460	622
Start-up time required to heat the cylinder to 60°C **							
80°C ΔT 20°C	min.	35	34	38	35	50	52
70°C ΔT 20°C	min.	39	40	47	45	74	77
Start-up time required to heat the cylinder to 55°C **							
60°C ΔT 10°C	min.	45	43	50	51	76	82
Start-up time required to heat the cylinder to 45°C **							
50°C ΔT 10°C	min.	56	53	55	59	80	94
Thermal efficiency coefficient NL ****							
80°C		1,84	2,6	3,28	4,5	5,9	6,83
70°C		1,44	2,01	2,63	3,4	4,9	5,67
60°C		1	1,36	1,81	2,3	3,7	4,23
50°C		0,75	0,86	1,26	1,7	2,37	2,68
Quantity hot water achieved in 10', with cylinder pre-heated to 60°C ***							
80°C ΔT 20°C	l	272	347	440	755	1270	1583
70°C ΔT 20°C	l	250	320	410	660	1177	1445
Quantity hot water achieved in 10', with cylinder pre-heated to 55°C ***							
60°C ΔT 10°C	l	223	265	370	614	975	1163
Quantity hot water achieved in 10', with cylinder pre-heated to 45°C ***							
50°C ΔT 10°C	l	170	208	305	510	720	812

*Efficiency at the various coil inlet temperatures and with the stated delta ΔT °C.
*Temperature at coil sensor point with primary at the stated delivery temperature and delta ΔT °C.
***Temperature at coil sensor point, with primary at the stated delivery temperature, considering a domestic hot water temperature increase of 30°C between the inlet and outlet (as per EN 12897).
**** As per DIN 4708. The NL index refers to the number of flats with 3-5 people that can be fully supplied, with a 140 L bath and two additional draw-off points

RECOMMENDED COMBINATIONS – CYLINDER AND HEAT PUMP

Cylinder	NXHP heat pumps							
Commercial name	**004**	**006**	**008**	**010**	**012**	**014**	**012T**	**014T**
RBC-HP 150 1S	•	•						
RBC-HP 200 1S	•	•	•					
RBC-HP 300 1S	•	•	•	•	•		•	
RBC-HP 500 1S			•	•	•	•	•	•
RBC-HP 800 1S					•	•	•	•
RBC-HP 1000 1S								

For correct cylinder sizing, see the technical data given on the product technical sheets.

CYLINDERS

Single coil domestic hot water cylinders

Cylinder	NXHM heat pumps												
Commercial name	004	006	008	010	012	014	016	012T	014T	016T	018T	022T	026T
RBC-HP 150 1S	•	•											
RBC-HP 200 1S	•	•	•										
RBC-HP 300 1S	•	•	•	•	•			•					
RBC-HP 500 1S			•	•	•	•	•	•	•	•			
RBC-HP 800 1S					•	•	•	•	•	•	•		
RBC-HP 1000 1S							•			•	•	•	•

For correct cylinder sizing, see the technical data given on the product technical sheets.

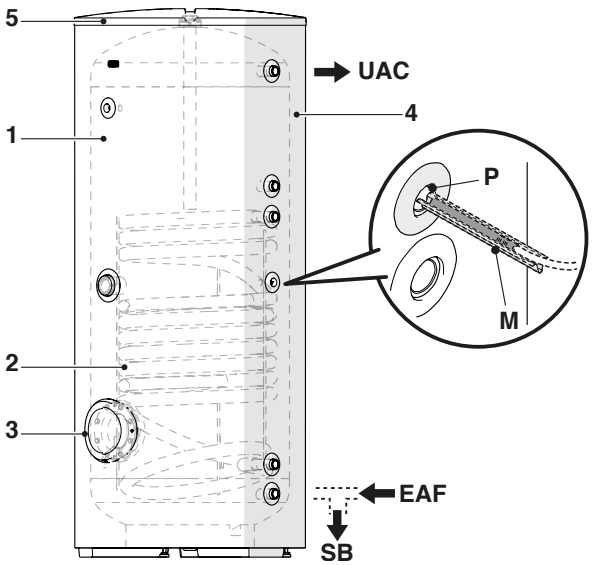
Cylinder	FAMILY SPRINT heat pumps									
Commercial name	4M	6M	8M	10M	12M	14M	16M	12T	14T	16T
RBC-HP 150 1S	•	•								
RBC-HP 200 1S	•	•	•							
RBC-HP 300 1S	•	•	•	•	•			•		
RBC-HP 500 1S			•	•	•	•	•	•	•	•
RBC-HP 800 1S					•	•	•	•	•	•
RBC-HP 1000 1S							•			•

For correct cylinder sizing, see the technical data given on the product technical sheets.

Cylinder	FAMILY ES heat pumps							
Commercial name	5M	7M	9M	12M	15M	12T	15T	18T
RBC-HP 150 1S	•							
RBC-HP 200 1S	•	•						
RBC-HP 300 1S	•	•	•					
RBC-HP 500 1S		•	•	•	•	•		
RBC-HP 800 1S			•	•	•	•	•	
RBC-HP 1000 1S								•

For correct cylinder sizing, see the technical data given on the product technical sheets.

STRUCTURE

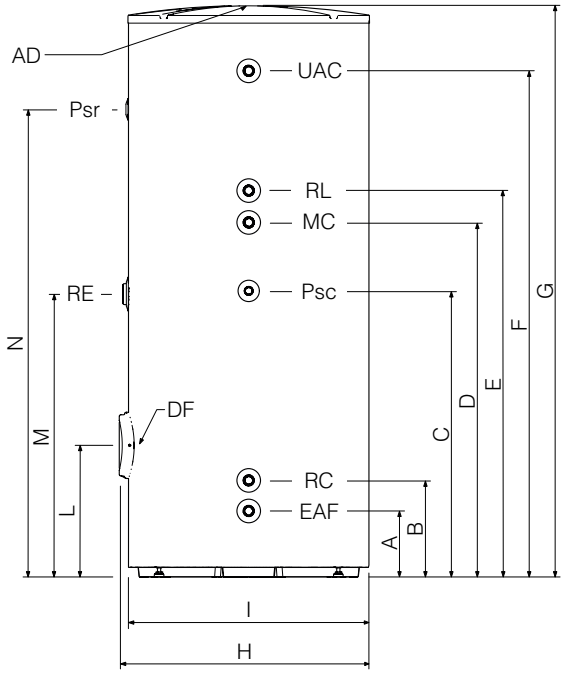


1. Cylinder
2. Coil
3. Cylinder inspection flange
4. Insulation
5. Cover

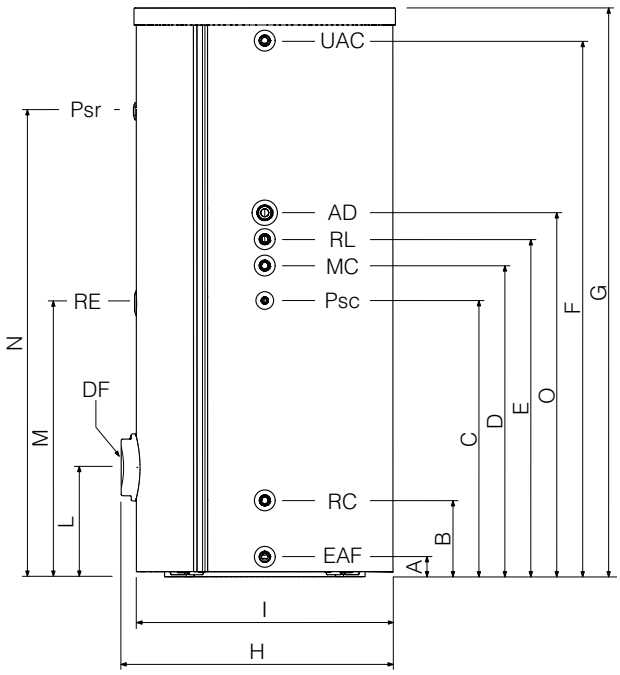
P Sheath
M Spring
UAC Domestic hot water outlet
EAF Domestic cold water inlet
SB SB Cylinder drain

PLUMBING CONNECTIONS

RBC-HP 150-500 1S



RBC-HP 800-1000 1S

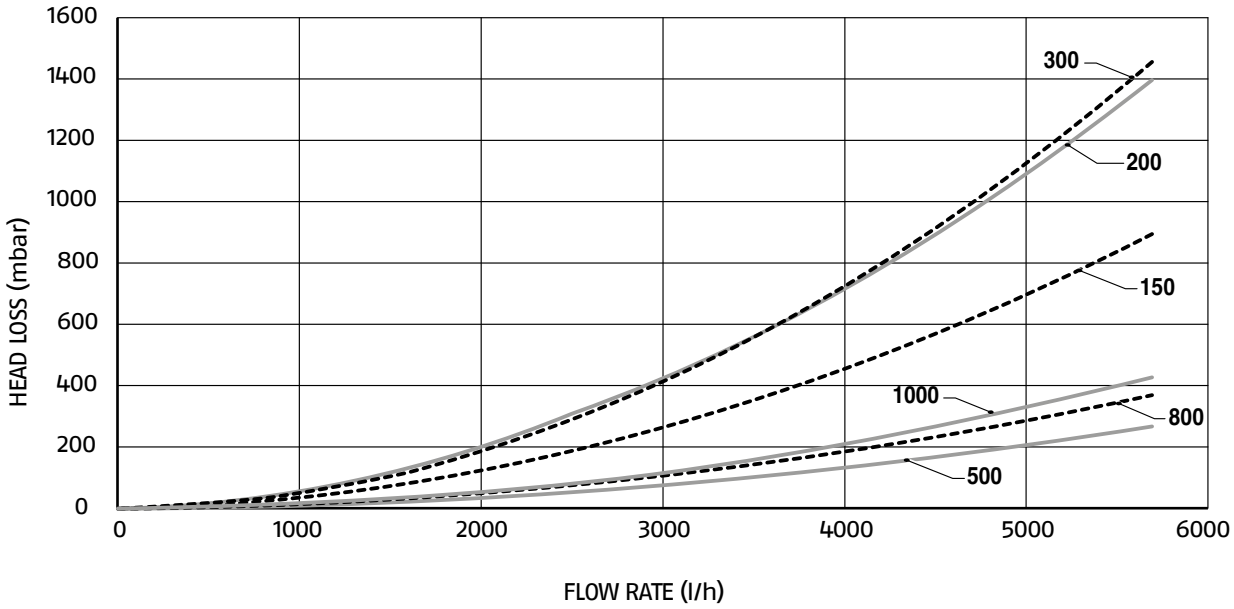


	DESCRIPTION	RBC-HP 1S						
		150	200	300	500	800	1000	U.M.
Psr	Solar regulator sensor sheath diameter/length	16/180						mm
RE	Heating element sleeve (not provided)	1 1/2" F						Ø
DF	Flange inside diameter	130						mm
UAC	Domestic hot water outlet	1" Gas M				1 " 1/4 Gas M		Ø
AD	Magnesium anode quantity/diameter/length	1/33/300	1/33/450	1/40/480	1/40/600	1/40/600	1/40/750	mm
RL	DHW recirculation	1" Gas M						Ø
MC	Cylinder-heat pump delivery	1" Gas M						Ø
Psc	Inside diameter/length of cylinder-heat pump sensor sheath	16/180						mm
RC	Cylinder-heat pump return	1" Gas M						Ø
EAF	Domestic cold water inlet	1" Gas M				1 " 1/4 Gas M		Ø
A		171	174	174	207	75	75	mm
B		243	246	256	303	289	289	mm
C		588	673	928	898	884	1047	mm
D		753	956	1041	1113	1089	1179	mm
E		836	1056	1141	1213	1189	1279	mm
F		970	1189	1673	1589	1706	2032	mm
G		1138	1354	1838	1793	1831	2156	mm
H		626	630	634	786	1030	1030	mm
I		604	604	604	755	974	974	mm
L		363	366	369	413	414	414	mm
M(*)		578	663	918	888	876	1037	mm
N		813	1066	1566	1468	1440	1764	mm
O		-	-	-	-	1294	1379	mm

Shut-off valves are recommended at delivery and return.
Check the seals when filling/charging the cylinder.
If a probe is installed, any electrical junctions between probe cable and extensions for connection to the electrical panel must be sealed and protected with sheathing or suitable electrical insulation.
Remove the outer cladding to access the M8 threaded inserts in models 800 - 1000.
Install the magnesium anode provided (for models 800 and 1000).

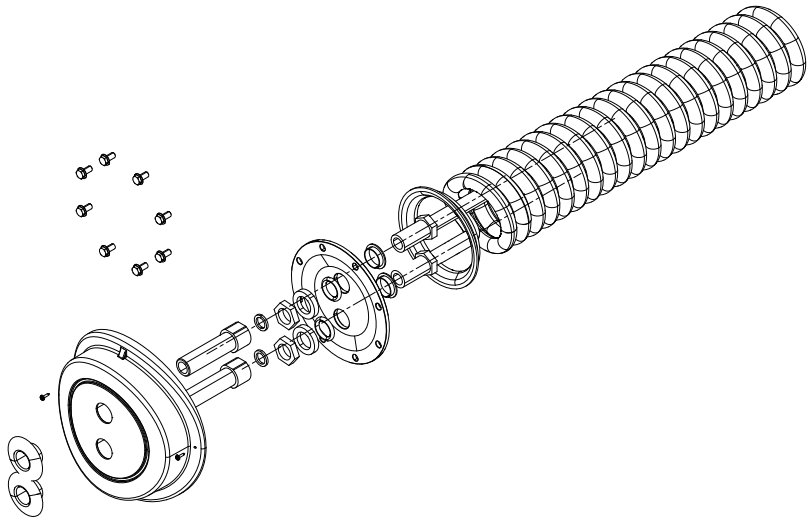
(*) The fitting (M) can be used as an alternative for inserting the first magnesium anode (for installation rooms that are not particularly high).

HEAD LOSS



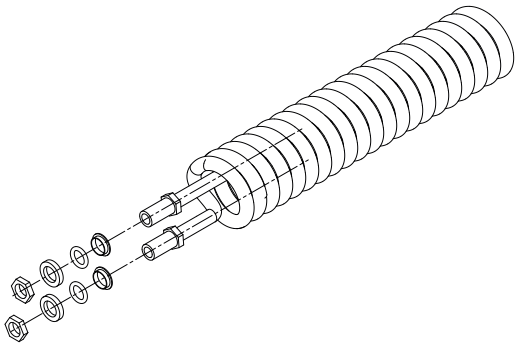
EXTRACTABLE COIL

Kit composition:



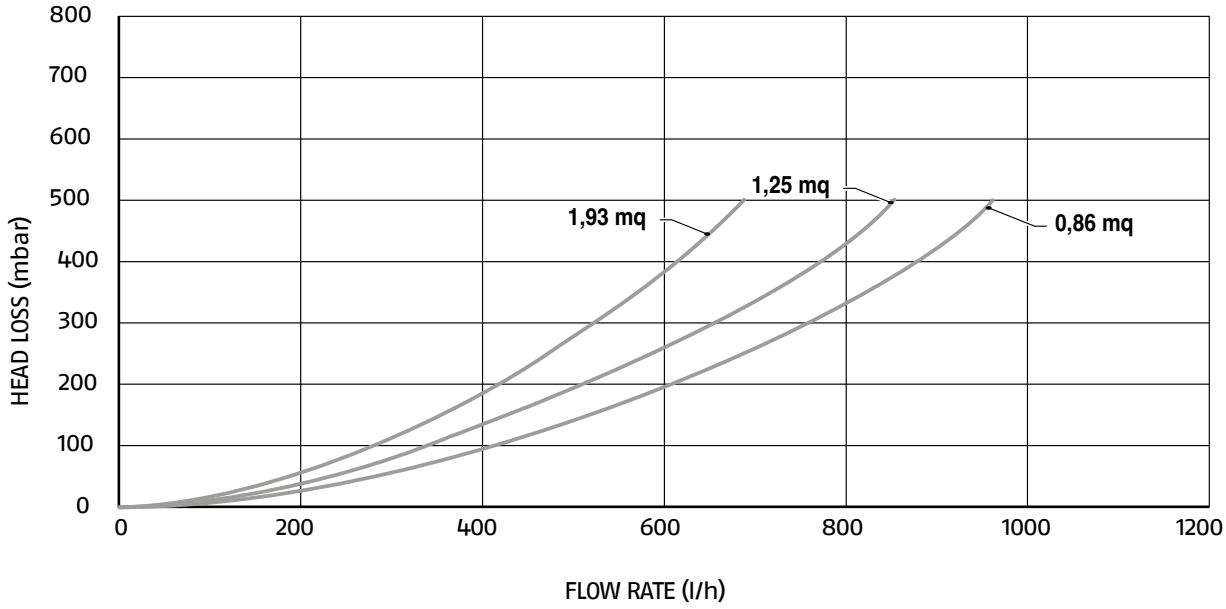
TECHNICAL DATA

Description	U.M.	0.86	1.25	1.93
Exchanger surface	m^2	0.86	1.25	1.93
Power input	kW	15	15	15
Recommended coil flow rate	l/h	600	500	500
L	mm	490	550	690
H	mm	DN125	DN125	DN125
A	mm	60	60	60
Weight	kg	5	6	8.6
Water content	l	0.5	0.7	1.1



Combination	0.86	1.25	1.93
RBC-HP 150 1S	•		
RBC-HP 200 1S	•		
RBC-HP 300 1S	•		
RBC-HP 500 1S		•	
RBC-HP 800 1S			•
RBC-HP 1000 1S			•

HEAD LOSS



HEATING ELEMENT ON FLANGE KIT

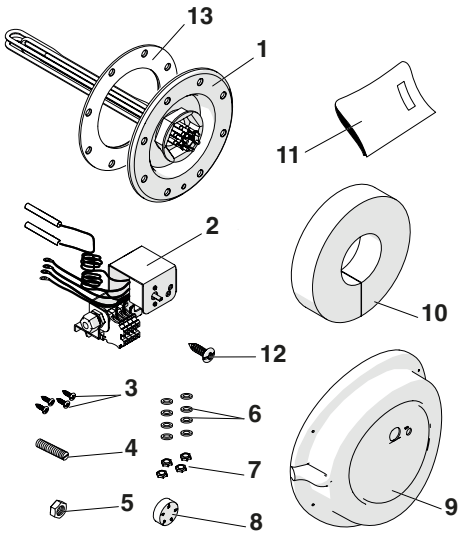
The heating element on flange kit is made up of a 1½" G flange with sleeve, a 1F heating element, a heating element thermostat dial, flange insulation, and a flange and screws cover. Everything is provided in an assembly kit and is partially assembled.

Power	L (mm)	Power supply	"TS"	"TR"	Combined with (litres) cylinder
1500 W (*)	320	1 x 230 V	95°C	30 - 70 °C	all heating elements can be combined with all models, so 200 to 1000 (check correct code in product catalogue)
2200 W (*)	320	1 x 230 V	95°C	30 - 70 °C	
3000 W (*)	320	1 x 230 V	95°C	30 - 70 °C	
3800 W (**)	400	3 x 400 V	98°C	9 - 75 °C	

TS: Safety Thermostat
TR: Adjustment Thermostat
(*) Single-phase
(**) Three-phase

	HEATING ELEMENT		CYLINDERS 150	200	300	500	800	1000	U.M.
Start-up time (DHW at inlet 10°C) Time taken by heating element to reach temperature set on thermostat	1500 W	70°C	417	556	835	1392	2227	2784	min.
		60°C	348	464	696	1160	1856	2320	min.
		50°C	278	371	556	928	1484	1856	min.
	2200 W	70°C	284	379	569	949	1518	1898	min.
		60°C	237	316	474	790	1265	1581	min.
		50°C	189	253	379	632	1012	1265	min.
	3000 W	70°C	208	278	417	696	1113	1392	min.
		60°C	174	232	348	580	928	1160	min.
		50°C	139	185	278	464	742	928	min.
	3800 W	75°C	178	238	357	595	952	1190	min.
		70°C	164	219	329	549	879	1098	min.
		60°C	137	183	274	457	732	915	min.
		50°C	109	146	219	366	586	732	min.

	HEATING ELEMENT		CYLINDERS 150	200	300	500	800	1000	U.M.
Quantity of domestic hot water obtained in 10 minutes with cylinder pre-heated to various temperatures (temperature set on thermostat), considering a domestic hot water temperature increase of 30°C between the inlet and outlet (as per EN 12897).	1500 W	70°C	330	433	661	1101	1777	2205	l
		60°C	274	365	549	917	1738	1851	l
		50°C	218	299	459	755	1232	1546	l
	2200 W	70°C	325	424	651	1078	1775	2196	l
		60°C	267	366	535	927	867	1837	l
		50°C	232	288	447	746	1237	2109	l
	3000 W	70°C	330	420	645	1101	1777	2205	l
		60°C	274	351	549	896	1484	1832	l
		50°C	218	282	459	730	1209	1546	l
	3800 W	75°C	342	455	724	1504	1947	2401	l
		70°C	308	434	636	1058	1779	2176	l
		60°C	271	360	638	915	1465	1855	l
		50°C	201	286	453	720	1228	1549	l



1. Heating element (quantity 1)
2. Thermostat (quantity 1)
3. Cover fastening screws (quantity 4)
4. Threaded pin (quantity 1)
5. Thermostat M8 fastening nut (quantity 1)
6. Washers between eyelets (quantity 4)
7. Eyelet fastening nuts (quantity depends on model)
8. Dial (quantity 1)
9. Cover (quantity 1)
10. Insulation (quantity depends on model)
11. Instruction manual (quantity 1)
12. Earth eyelet fastening screw (quantity 1, three-phase model only)
13. Flange seal (quantity 1)

HEATING ELEMENT ON HOLE KIT

The heating element kit must be used solely in conjunction with the cylinders stated in the table below. Before proceeding with the installation, make sure the cylinder's domestic hot water circuit is empty.

Power	L (mm)	Power supply	"TS"	"TR"	Combined with (litres) cylinder
1500 W (*)	341	1 x 230 V	95°C	30 - 70 °C	150 - 300
2200 W (*)	341	1 x 230 V	95°C	30 - 70 °C	300 - 500
3000 W (*)	341	1 x 230 V	95°C	30 - 70 °C	500
3800 W (**)	340	3 x 400 V	98°C	30 - 75 °C	500 - 800 - 1000
6000 W (*)	480	1 x 230 V	98°C	30 - 75 °C	1000

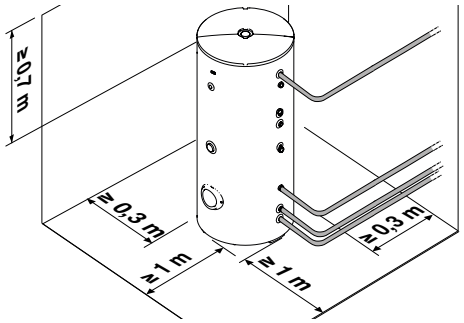
TS: Safety Thermostat
TR: Adjustment Thermostat
(*) Single-phase
(**) Three-phase

	HEATING ELEMENT		CYLINDERS						U.M.
			150	200	300	500	800	1000	
Start-up time (DHW at inlet 10°C) Time taken by heating element to reach temperature set on thermostat	1500 W	70°C	260	330	390	720	1040	1300	min.
		60°C	200	250	300	550	790	990	min.
		50°C	140	170	200	370	530	660	min.
	2200 W	70°C	180	230	270	490	710	890	min.
		60°C	140	170	210	370	540	680	min.
		50°C	90	120	140	250	360	330	min.
	3000 W	70°C	130	170	200	360	520	650	min.
		60°C	100	130	150	270	400	500	min.
		50°C	70	90	100	180	270	330	min.
	3800 W	75°C	120	150	170	320	450	570	min.
		70°C	110	130	160	290	410	520	min.
		60°C	80	100	102	220	320	390	min.
		50°C	60	70	80	150	210	260	min.
	6000 W	75°C	70	90	110	200	290	360	min.
		70°C	65	85	100	180	260	325	min.
		60°C	50	65	75	135	200	250	min.
		50°C	35	45	50	90	135	165	min.

	HEATING ELEMENT		CYLINDERS						U.M.
			150	200	300	500	800	1000	
Quantity of domestic hot water obtained in 10 minutes with cylinder pre-heated to various temperatures (temperature set on thermostat), considering a domestic hot water temperature increase of 30°C between the inlet and outlet (as per EN 12897).	1500 W	70°C	206	257	309	443	830	1030	l
		60°C	158	197	237	340	740	790	l
		50°C	110	137	165	236	440	550	l
	2200 W	70°C	206	257	309	443	830	1030	l
		60°C	158	197	237	340	370	790	l
		50°C	110	137	165	236	440	550	l
	3000 W	70°C	206	257	309	443	830	1030	l
		60°C	158	197	237	340	640	790	l
		50°C	110	137	165	236	440	550	l
	3800 W	75°C	230	287	345	632	920	1150	l
		70°C	206	257	309	443	830	1030	l
		60°C	158	197	237	340	640	790	l
		50°C	110	137	165	236	440	550	l
	6000 W	75°C	230	287	345	632	920	1150	l
		70°C	206	257	309	443	830	1030	l
		60°C	158	197	237	340	640	790	l
		50°C	110	137	165	236	440	550	l

INSTALLATION ON OLD OR RETROFITTED SYSTEMS

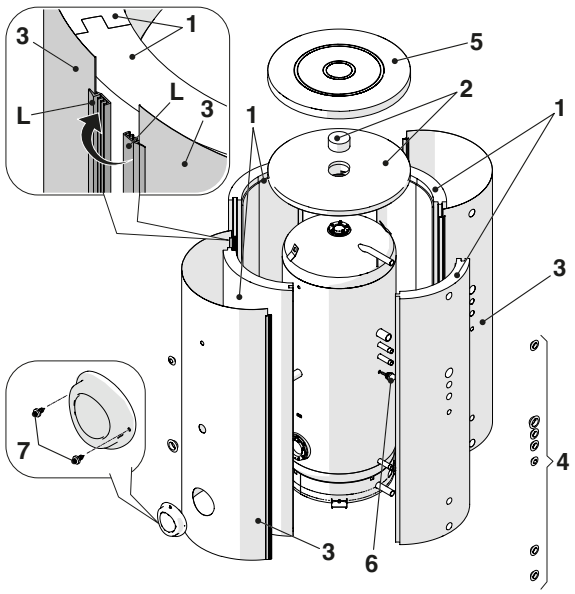
When the solar cylinders in the RBC-HP 1S range are to be installed on old or retrofitted systems, check that:
- The installation is equipped with safety and control devices in accordance with specific standards
- The system is flushed, cleaned of sludge, build-up, de-aerated and the hydraulic seals have been checked
- A treatment system is provided in the event of special supply/reintegration water (the values stated in the table can be used as a reference).



REFERENCE VALUES	
PH	6-8
Electrical conductivity	below 200 mV/cm (25°C)
Chlorine ions	below 50 ppm
Sulphuric acid ions	below 50 ppm
Total iron	below 0.3 ppm
Alkalinity M	below 50 ppm
Total hardness	below 35°F
Sulphur ions	none
Ammonia ions	none
Silicon ions	below 30 ppm

FITTING THE INSULATION AND CLADDING (MODELS 800 - 1000)

The insulation and cladding must be fitted inside the installation room to facilitate access into the room through doors and/or passageways. To do this:
- Insert the magnesium anode (6) with its seal into the sleeve and fasten it
- Fit the insulation panels (1) around the cylinder, checking that the interlocking edges are positioned correctly. The edges do not have to be completely sealed
- Position the front protection sheet (3) on the fittings
- Apply the washers to the fittings and the inspection flange protection (4)
- Position the rear protection sheet by fitting the interlocking edges (L) together without closing them completely (leave one tooth open)
- Apply the top insulation (2) and the top cover (5) (exert gentle even pressure to fit the cover into place)
- Completely close the interlocking edges (L) previously left with one tooth open
- Fasten the inspection flange protection using the two self-tapping screws provided (7)
- Apply the data plate and serial number plate.



RIELLO RBC-HP 1S

PRODUCT DESCRIPTION FOR SPECIFICATIONS

Extremely versatile steel vertical DHW cylinder, with single coil heat exchanger and high insulation, internally glazed with rotocoating (as per DIN 4753) to ensure hygiene and limescale cleaning. ErP Ready – Energy class B, with the shape of the cylinder and the elliptical cross-section of the exchanger enabling excellent heat exchange performance (minimal heat dispersion) and rapid restore times.
Six different capacities for maximum adaptability to different contexts, usable in domestic hot water production systems.

The RBC-HP 1S range guarantees excellent versatility as it can work in conjunction with both cylinders and heat pumps. It is made up of:

- Steel vertical structure, internal glazing as per Graslining Bayer procedure in accordance with DIN 4753;
- Heat exchanger with elliptical cross-section optimised for increasing turbulent flow and heat exchange, with 150 coil (actual 162), 200 (actual 207), 300 (actual 305), 500 (actual 500), 800 (actual 735) and 1000 (actual 890);
- The carefully designed insulation minimises the internal convective effect, reduces heat loss and facilitates installation on site. It is available in:
  - closed-cell expanded polyurethane with a minimum thickness of 50mm, cfc free, for models up to 550;
  - felt + expanded polystyrene self-supporting mix easily assembled in 4 interlocking segments without the need for straps (total 100 mm) for models 800 and 1000;
- Insulation provided disassembled for models 800 and 1000 to enable access through 800 mm doorways;
- Energy class B. Declared dispersion:
  - 55 W for model 150;
  - 58 W for model 200;
  - 68 W for model 300;
  - 84 W for model 500;
  - 95 W for model 800;
  - 103 W for model 1000.
- Cladding in embossed ABS colour RAL 9006
- Cylinder inspection and cleaning flange positioned at the side and above the coil to facilitate cleaning, recessed and carefully insulated to minimise heat dispersion
- Sensor sheath
- Corrosion protection magnesium anode
- Cylinder and coil maximum operating pressure 10 bar (up to model 550) and 7 bar (up to model 1000).

Notes

Notes

RIELLO

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RBC-HP 1S

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