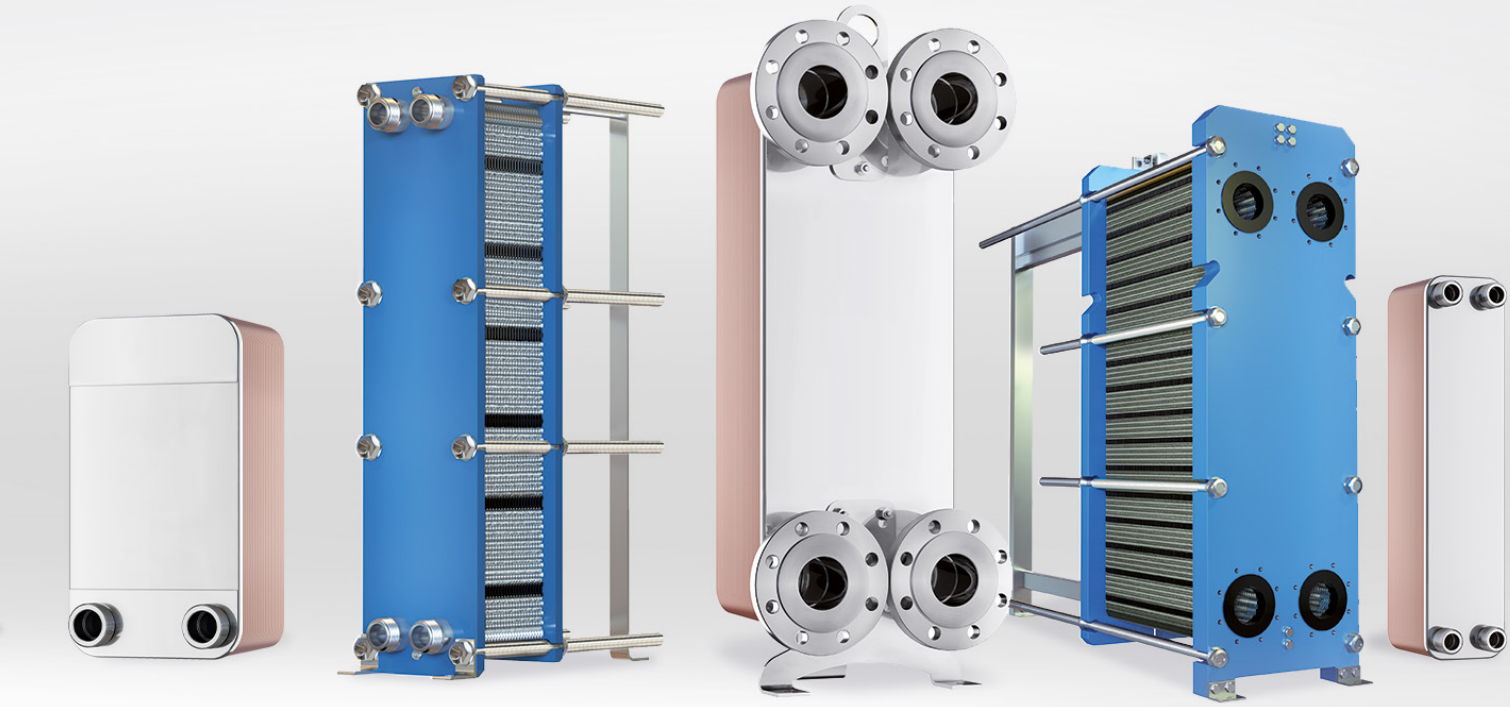
reflex

Thinking solutions.

Longtherm heat exchanger

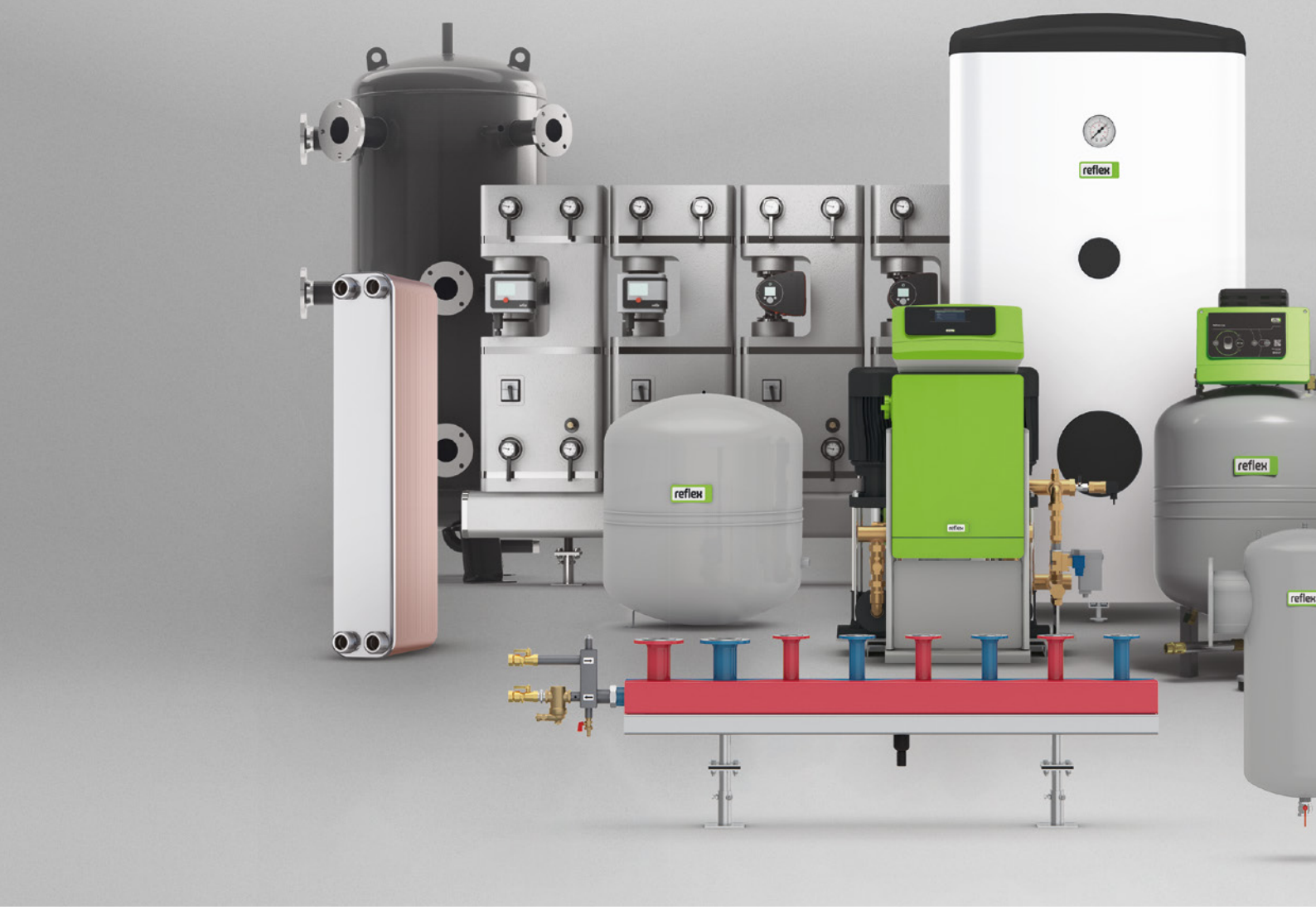


Brazed and gasketed heat exchangers

Reflex—
a powerful brand for decades

Reflex Winkelmann GmbH is a leading provider of highquality heating and hot water supply technology systems. Under its Reflex brand, the company, which has its headquarters in Ahlen in the German region of Westphalia, develops, produces and sells not only diaphragm expansion vessels, but also innovative components and holistic solutions for pressure maintenance, water make-up, degassing and water treatment, storage water tanks and plate heat exchangers, as well as hydraulic manifold and tank components. Reflex Winkelmann GmbH has about 2,000 employees worldwide, giving it an international presence in all major markets.

With its energy-efficient and sustainable products, the company is already doing its bit to help the environment, as evidenced by its commitment to sustainability and the climate policy goals agreed by the German Federal Government. This support is built on proven technologies and future-oriented innovations. What's more, Reflex Winkelmann GmbH works together with others as equals, always maintains its focus on the customer and offers additional services such as its own factory service centre fleet and a comprehensive range of training options.





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Reflex City



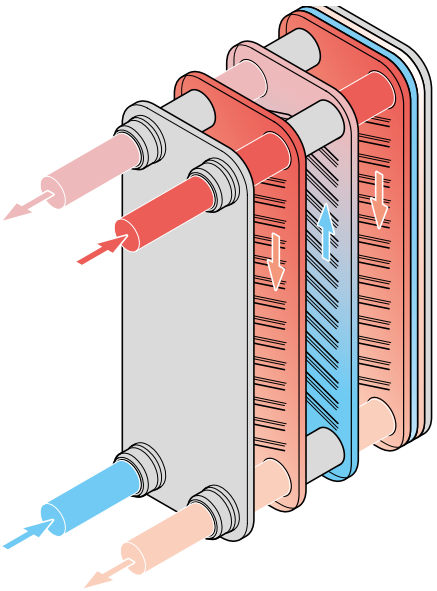


Highly efficient heat exchanger for every application
Urban areas are incredibly diverse places where people live, shop, work and manufacture. And the demands on supply technology are as individual as the buildings themselves. Whether it's a 5-kW system in a single-family home or a safety-related cooling system in a computer centre, Reflex offers products and solutions for systems of all sizes and complexity—as shown in our Reflex City concept.

Reflex heat exchanger systems are used to separate media or circuits and can be adapted to almost any requirement profile—from underfloor heating and solar and potable water systems to machine cooling or indirect district heating connections.

Heat exchanger systems

The task of a heat exchanger is to transfer specific amounts of heat from the hot to the cold side. Heat is transferred from one medium to another by passing through plates. The hot and cold media transfer their heat load between each of the plate channels. The Reflex Longtherm heat exchangers are ideal for heating and cooling applications with liquid media. Due to their high number and specially embossed design, the plates offer the best compromise between low flow resistance and highly efficient heat transfer.



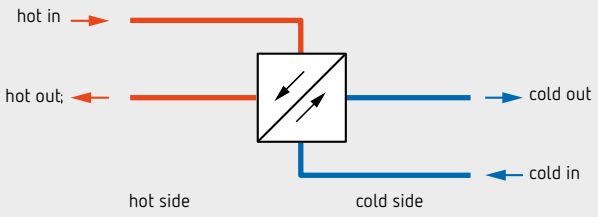
Functional principle

Longtherm heat exchangers operate on the counter-flow principle in which the two fluids flow past each other in the heat exchanger in opposing directions, enabling the most efficient exchange of heat.

As a rule, heat exchangers should be always connected according to the counterflow principle to ensure full output utilisation. When connecting in parallel flow, in certain circumstances significant power losses are to be expected, depending on the operating conditions.

Hot and cold side

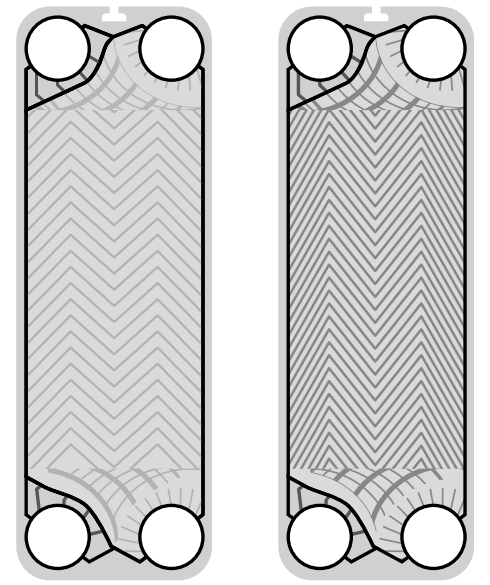
Depending on the application, the assignment of the two system circuits as the primary and secondary side varies. For heating systems, the hot side is usually designated the primary side. For cooling systems and chillers, it is the cold side. The distinction between hot and cold side is clearer and independent of the application.



Construction and material

The corrugated plates used in plate heat exchangers are made of a cold-formed metal or alloy. The most common plate materials include stainless steel and titanium. As standard, Reflex uses AISI 316L with a plate thickness of 0.3 mm for brazed, and 0.5 mm for gasketed heat exchangers. The herringbone pattern is embossed by using a cold imprint process. The material varies according to the task and depends on the fluid properties and corrosion effects that may occur.

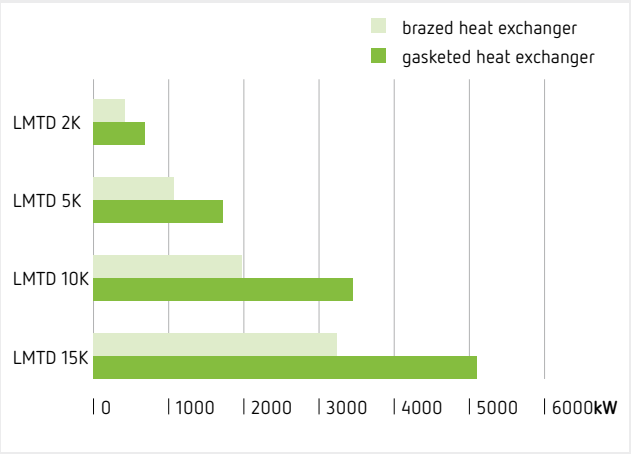
Most plate heat exchangers use one of two types of plates: L (Low) and H (High). H embossing creates flow channels with high turbulence. It is characterized by a higher heating capacity and a higher pressure loss. L embossing creates flow channels with low turbulence and is characterized by a lower heating capacity and a lower pressure loss. With the M channel, the L and H plate types alternate, making a further high-performance design with a comparably low pressure drop also available.



H plate L plate

Capacity range

The transmission capacity is not a device-specific quantity here but is always dependent on the required temperatures and volume flows. There is therefore no x kW heat exchanger, but the heat exchanger can transfer x kW for specified temperature spreads and volume flows.



LMTD: The temperature difference between the two fluid flows is described by the mean temperature difference. A logarithmic mean must be formed from the inlet and outlet temperatures — the logarithmic mean temperature difference (LMTD).

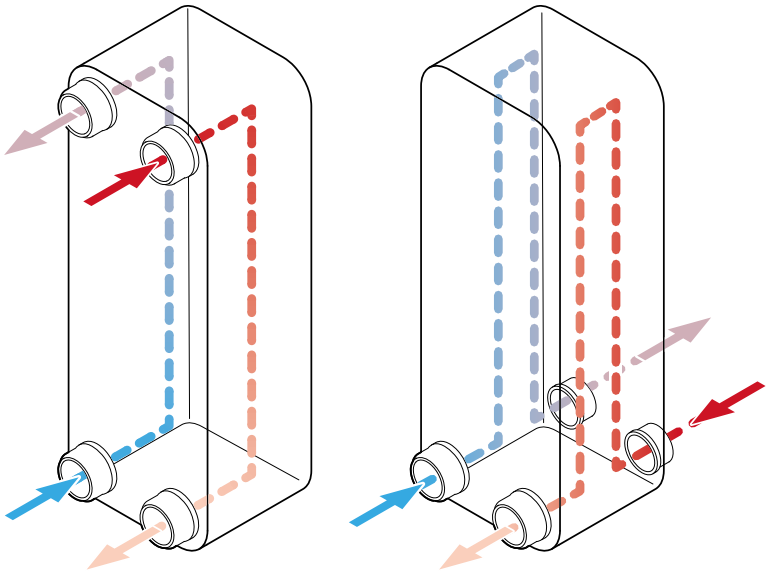
Larger capacities can also be realised on request

Applications

- System separation of media that may not be mixed, e.g.
  - heating water and potable water
  - heating water and solar installation water
  - water circuits and oil circuits
- Separation of circuits with different operating parameters, e.g.
  - operating overpressure of side 1 exceeds the permitted operating overpressure of side 2
  - water content of side 1 is much greater than that of side 2
- Minimizing the influence of the separated circuits
- Examples
  - indirect district heating connections
  - underfloor heating
  - potable water heating
  - solar systems
  - machine cooling

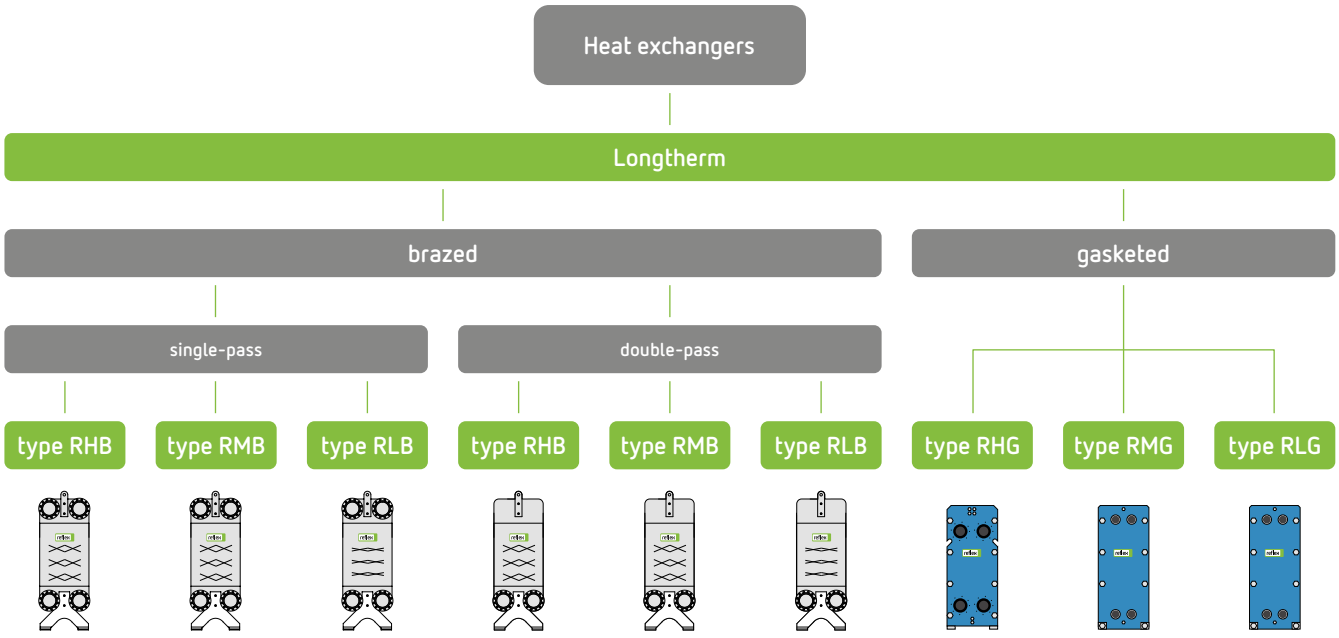
Single- and double-pass heat exchangers

Longtherm brazed heat exchangers are available in two versions, single pass and double pass. Double-pass heat exchangers are suitable for small mass flows and a small logarithmic mean temperature difference.



Product overview

The heat exchangers of the Longtherm series can be adapted to almost any requirement profile. They are available in a wide range of sizes, configurations and connection types, offer the best solution taking into account the flow resistance and highly efficient heat exchange.



RH...-channel: h = high
→ high pressure loss
→ high thermally active length

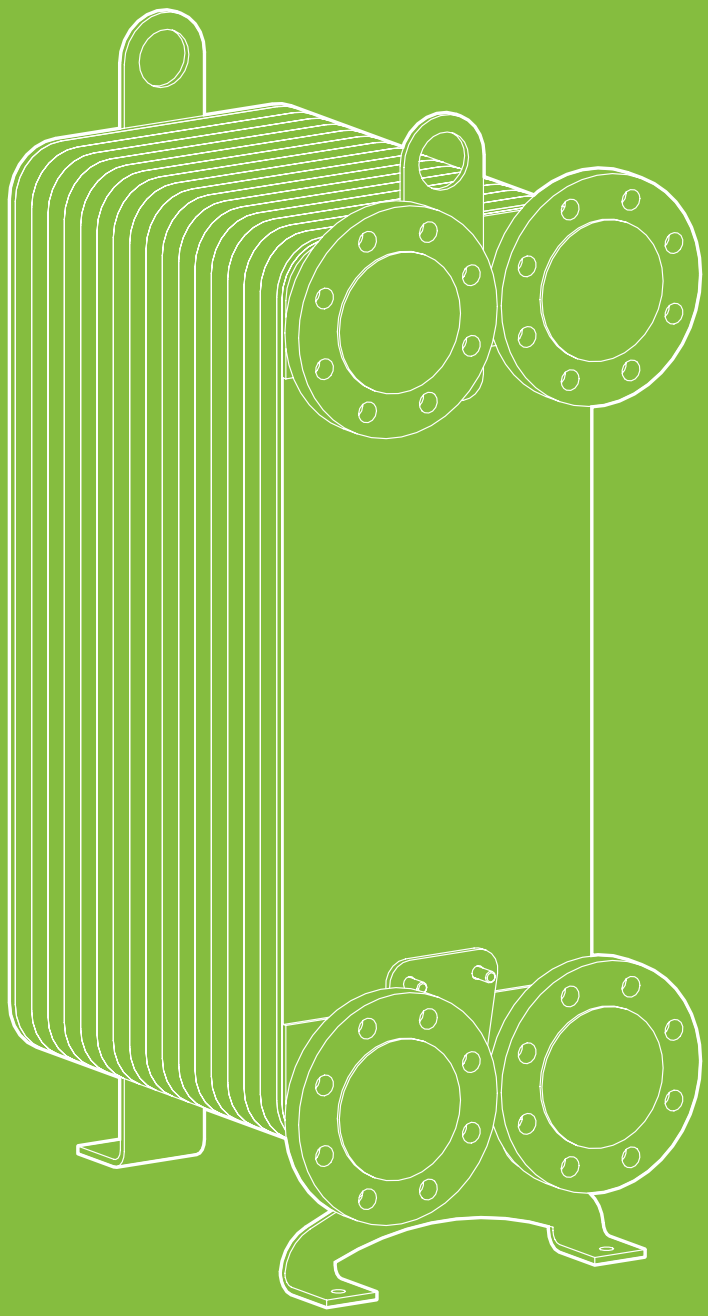
RM...-channel: m = middle
→ middle pressure loss
→ middle thermally active length

RL...-channel: l = low
→ low pressure loss
→ low thermally active length

Longtherm brazed

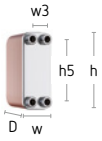
Key benefits

- Stainless steel plates which are brazed with copper for efficient heat transfer
- Full VDI approval
- High-quality product with long operating life
- High-quality materials and robust construction
- Short delivery times due to high stock levels
- Extensive portfolio for a wide range of applications
- Customer-specific adaptations and special sizes available on request
- Available in single-pass and double-pass versions

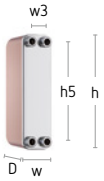


Product range

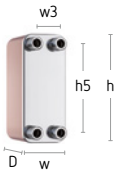
Longtherm brazed single-pass



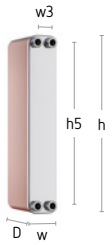
Longtherm R_B-14



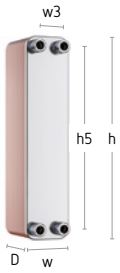
Longtherm R_B-22



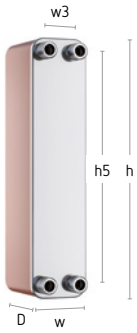
Longtherm R_B-31



Longtherm R_B-34



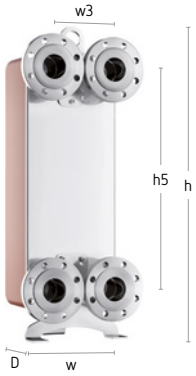
Longtherm R_B-34



Longtherm RHB-110



Longtherm R_B-110



Longtherm R_B-235

Technical Features

- stainless steel (1.4401) heat exchanger soldered with copper solder
- approval according to Pressure Equipment Directive 2014/68/EU
- max. permissible operating temperature 230 °C
- permissible gauge operating pressure for R_B-14 to -60: 30 bar
- permissible gauge operating pressure for R_B-14 to -60: 25 bar
- flange connections solely for R_B-235

Longtherm brazed single-pass

CE

	Type	Number of plates	Art. No.			DG	Overall water content	Connection c	Height h/h5	Width w/w3	Depth D	Weight
			RHB	RLB	RMB		[l]		[mm]	[mm]	[mm]	[kg]
30 bar 230 °C	R_B-14-10	10	–	–	8011100	0067	0.2	AG ¾"	203/164	81/42	32	1.10
	R_B-14-20	20	–	–	8011200	0067	0.4	AG ¾"	203/164	81/42	55	1.60
	R_B-14-30	30	–	–	8011300	0067	0.6	AG ¾"	203/164	81/42	78	2.10
	R_B-14-40	40	–	–	8011400	0067	0.8	AG ¾"	203/164	81/42	101	2.60
	R_B-14-50	50	–	–	8019300	0067	1.0	AG ¾"	203/164	81/42	124	3.10
	R_B-14-60	60	–	–	8031000	0067	1.2	AG ¾"	203/164	81/42	147	3.60
	R_B-22-10	10	–	–	8031700	0067	0.3	AG ¾"	299/260	81/42	32	1.60
	R_B-22-20	20	–	–	8011500	0067	0.6	AG ¾"	299/260	81/42	55	2.10
	R_B-22-30	30	–	–	8021300	0067	1.0	AG ¾"	299/260	81/42	78	2.80
	R_B-22-40	40	–	–	8011700	0067	1.4	AG ¾"	299/260	81/42	101	3.50
	R_B-22-50	50	–	–	8011800	0067	1.8	AG ¾"	299/260	81/42	124	4.20
	R_B-22-60	60	–	–	8031800	0067	2.2	AG ¾"	299/260	81/42	147	5.50
	R_B-31-10	10	8032500	–	8034600	0067	0.6	AG 1 ¼"	286/232	123/68	35	2.80
	R_B-31-15	15	8032600	–	8034700	0067	0.8	AG 1 ¼"	286/232	123/68	47	3.35
	R_B-31-20	20	8032700	–	8034800	0067	1.0	AG 1 ¼"	286/232	123/68	58	3.90
	R_B-31-30	30	8023700	–	8023300	0067	1.4	AG 1 ¼"	286/232	123/68	81	5.01
	R_B-31-40	40	8023800	–	8023400	0067	1.8	AG 1 ¼"	286/232	123/68	104	6.15
	R_B-31-50	50	8023900	–	8023500	0067	2.4	AG 1 ¼"	286/232	123/68	128	7.28
	R_B-31-60	60	8024000	–	8023600	0067	2.9	AG 1 ¼"	286/232	123/68	151	8.42
	R_B-31-70	70	8012300	–	8013300	0067	3.2	AG 1 ¼"	286/232	123/68	174	10.02
	R_B-31-80	80	8012400	–	8013400	0067	3.8	AG 1 ¼"	286/232	123/68	198	11.16
	R_B-31-90	90	8012500	–	8013500	0067	4.2	AG 1 ¼"	286/232	123/68	221	15.00
	R_B-31-100	100	8012600	–	8019400	0067	4.6	AG 1 ¼"	286/232	123/68	245	16.50
	R_B-31-110	110	8012700	–	8019500	0067	5.1	AG 1 ¼"	286/232	123/68	269	18.00
	R_B-31-120	120	8032800	–	8034900	0067	5.4	AG 1 ¼"	286/232	123/68	293	15.50
	R_B-31-130	130	8032900	–	8035000	0067	6.0	AG 1 ¼"	286/232	123/68	316	16.65
	R_B-31-140	140	8012800	–	8019600	0067	6.6	AG 1 ¼"	286/232	123/68	339	22.50
	R_B-31-150	150	8033000	–	8035100	0067	7.0	AG 1 ¼"	286/232	123/68	362	18.85
	R_B-34-10	10	–	–	8036700	0067	1.4	AG ¾"	471/432	81/42	32	2.40
	R_B-34-20	20	–	–	8013600	0067	0.6	AG ¾"	471/432	81/42	55	3.10
	R_B-34-30	30	–	–	8013700	0067	1.1	AG ¾"	471/432	81/42	78	4.20
	R_B-34-40	40	–	–	8013800	0067	1.6	AG ¾"	471/432	81/42	101	5.30
	R_B-34-50	50	–	–	8013900	0067	2.1	AG ¾"	471/432	81/42	124	6.40
	R_B-34-60	60	–	–	8014000	0067	2.6	AG ¾"	471/432	81/42	147	7.50
	R_B-60-10	10	8037400	8039300	8037800	0067	1.2	AG 1 ¼"	538/480	123/68	32	4.80
	R_B-60-20	20	8037500	8039400	8037900	0067	2.0	AG 1 ¼"	538/480	123/68	56	7.00
	R_B-60-30	30	8025500	8039500	8038000	0067	2.8	AG 1 ¼"	538/480	123/68	81	9.17
	R_B-60-40	40	8024100	8039600	8038100	0067	3.6	AG 1 ¼"	538/480	123/68	104	11.36
	R_B-60-50	50	8024200	8039700	8038200	0067	4.4	AG 1 ¼"	538/480	123/68	128	13.55
	R_B-60-60	60	8024300	8039800	8038300	0067	5.4	AG 1 ¼"	538/480	123/68	151	15.74
	R_B-60-70	70	8024400	8039900	8038400	0067	6.2	AG 1 ¼"	538/480	123/68	175	17.92
	R_B-60-80	80	8024500	8040000	8038500	0067	7.2	AG 1 ¼"	538/480	123/68	198	20.11
	R_B-60-90	90	8014600	8040100	8038600	0067	8.0	AG 1 ¼"	538/480	123/68	222	21.40
	R_B-60-100	100	8014700	8040200	8038700	0067	9.0	AG 1 ¼"	538/480	123/68	245	23.50

Longtherm brazed single-pass

CE

	Type	Number of plates	Art. No.			DG	Overall water content	Connection c	Height h/h5	Width w/w3	Depth D	Weight
			RHB	RLB	RMB		[l]		[mm]	[mm]	[mm]	[kg]
30 bar 230 °C	R_B-60-110	110	8014800	8040300	8038800	0067	10.0	AG 1¼"	538/480	123/68	268	25.60
	R_B-60-120	120	8019700	8040400	8038900	0067	11.0	AG 1¼"	538/480	123/68	292	27.70
	R_B-60-130	130	8019800	8040500	8039000	0067	12.0	AG 1¼"	538/480	123/68	316	29.80
	R_B-60-140	140	8037600	8040600	8039100	0067	13.0	AG 1¼"	538/480	123/68	340	32.00
	R_B-60-150	150	8037700	8040700	8039200	0067	13.8	AG 1¼"	538/480	123/68	364	34.20
25 bar 230 °C	R_B-110-30	30	8045300	–	–	0067	7.2	AG 2"	620/520	191/91	90	20.90
	R_B-110-40	40	8045400	–	–	0067	9.6	AG 2"	620/520	191/91	116	25.00
	R_B-110-50	50	8045500	–	–	0067	12.0	AG 2"	620/520	191/91	142	29.10
	R_B-110-60	60	8045600	–	–	0067	15.6	AG 2"	620/520	191/91	166	33.20
	R_B-110-70	70	8021000	–	–	0067	16.8	AG 2"	620/520	191/91	192	37.30
	R_B-110-80	80	8016500	–	–	0067	19.2	AG 2"	620/520	191/91	218	41.90
	R_B-110-90	90	8016600	–	–	0067	21.6	AG 2"	620/520	191/91	244	46.50
	R_B-110-100	100	8016700	–	–	0067	24.0	AG 2"	620/520	191/91	270	51.10
	R_B-110-110	110	8016800	–	–	0067	26.4	AG 2"	620/520	191/91	296	55.70
	R_B-110-120	120	8016900	–	–	0067	28.8	AG 2"	620/520	191/91	322	60.30
	R_B-110-130	130	8021400	–	–	0067	31.2	AG 2"	620/520	191/91	348	61.49
	R_B-110-140	140	8017000	–	–	0067	33.6	AG 2"	620/520	191/91	374	69.50
	R_B-110-150	150	8017100	–	–	0067	34.0	AG 2"	620/520	191/91	400	74.10
	R_B-110-160	160	8021100	–	–	0067	36.4	AG 2"	620/520	191/91	426	78.70
	R_B-110-170	170	8017200	–	–	0067	38.8	AG 2"	620/520	191/91	452	85.77
	R_B-110-180	180	8021200	–	–	0067	41.2	AG 2"	620/520	191/91	478	89.86
	R_B-110-190	190	8017300	–	–	0067	43.6	AG 2"	620/520	191/91	504	93.94
	R_B-110-30	30	–	8024600	8119600	0067	4.6	AG 2½"	466/378	258/170	84	20.96
	R_B-110-40	40	–	8024700	8024800	0067	6.4	AG 2½"	466/378	258/170	108	25.04
	R_B-110-50	50	–	8015100	8024900	0067	8.0	AG 2½"	466/378	258/170	132	28.10
	R_B-110-60	60	–	8015200	8025000	0067	9.6	AG 2½"	466/378	258/170	156	35.60
	R_B-110-70	70	–	8015300	8025100	0067	11.2	AG 2½"	466/378	258/170	180	37.30
	R_B-110-80	80	–	8015400	8025200	0067	12.8	AG 2½"	466/378	258/170	204	41.90
	R_B-110-90	90	–	8019900	8025300	0067	14.4	AG 2½"	466/378	258/170	228	46.50
	R_B-110-100	100	–	8020000	8025400	0067	16.0	AG 2½"	466/378	258/170	252	51.10
	R_B-110-110	110	–	8020100	8016100	0067	17.6	AG 2½"	466/378	258/170	276	55.70
	R_B-110-120	120	–	8020200	8016200	0067	19.2	AG 2½"	466/378	258/170	300	60.30
	R_B-110-130	130	–	8020300	8020800	0067	20.8	AG 2½"	466/378	258/170	324	64.90
	R_B-110-140	140	–	8020400	8016300	0067	22.6	AG 2½"	466/378	258/170	348	69.50
	R_B-110-150	150	–	8020500	8020900	0067	24.2	AG 2½"	466/378	258/170	372	74.10
	R_B-110-160	160	–	8020600	8016400	0067	25.8	AG 2½"	466/378	258/170	396	78.70
	R_B-235-30	30	–	8050100	8050800	0067	11.4	DN 80/PN 40	788/682	310/170	85	65.30
	R_B-235-40	40	–	8050200	8050900	0067	15.4	DN 80/PN 40	788/682	310/170	110	73.60
	R_B-235-50	50	–	8050300	8051000	0067	19.4	DN 80/PN 40	788/682	310/170	134	81.90
	R_B-235-60	60	–	8050400	8051100	0067	23.4	DN 80/PN 40	788/682	310/170	159	90.20
	R_B-235-70	70	–	8017400	8119800	0067	27.4	DN 80/PN 40	788/682	310/204	183	98.50
	R_B-235-80	80	–	8017500	8119900	0067	31.4	DN 80/PN 40	788/682	310/204	208	107.00
	R_B-235-90	90	–	8017600	8018000	0067	35.4	DN 80/PN 40	788/682	310/204	232	115.50
	R_B-235-100	100	–	8017700	8018100	0067	39.4	DN 80/PN 40	788/682	310/204	257	124.00

Longtherm brazed single-pass

CE

	Type	Number of plates	Art. No.			DG	Overall water content	Connection c	Height h/h5	Width w/w3	Depth D	Weight
			RHB	RLB	RMB		[l]		[mm]	[mm]	[mm]	[kg]
25 bar 230 °C	R_B-235-110	110	–	8017800	8018200	0067	43.4	DN 80/PN 40	788/682	310/204	281	132.50
	R_B-235-120	120	–	8017900	8018300	0067	47.4	DN 80/PN 40	788/682	310/204	306	141.00
	R_B-235-130	130	–	8022000	8018400	0067	51.4	DN 80/PN 40	788/682	310/204	330	149.50
	R_B-235-140	140	–	8022100	8021600	0067	55.4	DN 80/PN 16	788/682	310/204	355	155.67
	R_B-235-150	150	–	8022200	8018500	0067	59.4	DN 80/PN 40	788/682	310/204	379	166.50
	R_B-235-160	160	–	8022300	8018600	0067	63.4	DN 80/PN 40	788/682	310/204	404	175.00
	R_B-235-170	170	–	8022400	8021700	0067	67.4	DN 80/PN 40	788/682	310/204	428	180.79
	R_B-235-180	180	–	8022500	8018700	0067	71.4	DN 80/PN 40	788/682	310/204	453	192.00
	R_B-235-190	190	–	8022600	8021800	0067	75.4	DN 80/PN 40	788/682	310/204	477	197.35
	R_B-235-200	200	–	8022700	8018800	0067	79.2	DN 80/PN 40	788/682	310/204	502	209.00
	R_B-235-210	210	–	8050500	8051200	0067	83.2	DN 80/PN 40	788/682	310/170	526	213.90
	R_B-235-220	220	–	8022800	8018900	0067	87.2	DN 80/PN 40	788/682	310/204	551	226.00
	R_B-235-230	230	–	8050600	8051300	0067	91.2	DN 80/PN 40	788/682	310/170	575	230.50
	R_B-235-240	240	–	8022900	8019000	0067	95.2	DN 80/PN 40	788/682	310/204	600	243.00
	R_B-235-250	250	–	8050700	8051400	0067	99.2	DN 80/PN 40	788/682	310/170	624	247.20
	R_B-235-260	260	–	8023000	8021900	0067	103.2	DN 80/PN 40	788/682	310/204	649	255.50
	R_B-235-270	270	–	8023100	8019100	0067	107.2	DN 80/PN 40	788/682	310/204	673	268.50
	R_B-235-280	280	–	8023200	8019200	0067	111.2	DN 80/PN 40	788/682	310/204	698	277.00

Longtherm brazed double-pass



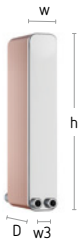
Longtherm R_B-14 – 2



Longtherm R_B-22 – 2



Longtherm R_B-31 – 2



Longtherm R_B-34 – 2



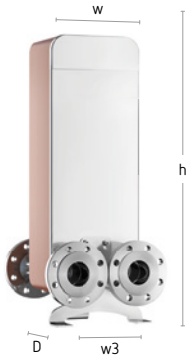
Longtherm R_B-60 – 2



Longtherm RHB-110 – 2



Longtherm R_B-110 – 2



Longtherm R_B-235 – 2

Technical Features

- stainless steel (1.4401) heat exchanger soldered with copper solder
- approval according to Pressure Equipment Directive 2014/68/EU
- high thermal length for small expansion at low mass flows
- max. permissible operating temperature 230 °C
- permissible gauge operating pressure for R_B-14 to -60: 30 bar
- permissible gauge operating pressure for R_B-14 to -60: 25 bar
- flange connections solely for R_B-235

Longtherm brazed double-pass

	Type	Number of plates	Art. No.			DG	Overall water content	Connection c	Height h/h5	Width w/w3	Depth D	Weight
			RHB	RLB	RMB		[l]		[mm]	[mm]	[mm]	[kg]
30 bar 230 °C	R_B-14-2-10	10	–	–	8031100	0067	0.2	AG ¾"	203	81/42	32	1.10
	R_B-14-2-20	20	–	–	8031200	0067	0.4	AG ¾"	203	81/42	55	1.60
	R_B-14-2-30	30	–	–	8031300	0067	0.6	AG ¾"	203	81/42	78	2.20
	R_B-14-2-40	40	–	–	8031400	0067	0.8	AG ¾"	203	81/42	101	2.60
	R_B-14-2-50	50	–	–	8031500	0067	1.0	AG ¾"	203	81/42	124	3.10
	R_B-14-2-60	60	–	–	8031600	0067	1.2	AG ¾"	203	81/42	147	3.60
	R_B-22-2-10	10	–	–	8031900	0067	0.3	AG ¾"	299	81/42	32	1.60
	R_B-22-2-20	20	–	–	8032000	0067	0.6	AG ¾"	299	81/42	55	2.28
	R_B-22-2-30	30	–	–	8032100	0067	1.0	AG ¾"	299	81/42	78	3.01
	R_B-22-2-40	40	–	–	8032200	0067	1.4	AG ¾"	299	81/42	101	3.74
	R_B-22-2-50	50	–	–	8032300	0067	1.8	AG ¾"	299	81/42	124	4.47
	R_B-22-2-60	60	–	–	8032400	0067	2.2	AG ¾"	299	81/42	147	5.50
	R_B-31-2-10	10	8033100	–	8035200	0067	0.6	AG 1 ¼"	286	123/68	35	2.80
	R_B-31-2-20	20	8033300	–	8035400	0067	1.0	AG 1 ¼"	286	123/68	58	3.90
	R_B-31-2-30	30	8033400	–	8035500	0067	1.4	AG 1 ¼"	286	123/68	81	5.01
	R_B-31-2-40	40	8033500	–	8035600	0067	1.8	AG 1 ¼"	286	123/68	104	6.15
	R_B-31-2-50	50	8033600	–	8035700	0067	2.2	AG 1 ¼"	286	123/68	128	7.28
	R_B-31-2-60	60	8033700	–	8035800	0067	2.6	AG 1 ¼"	286	123/68	151	8.42
	R_B-31-2-70	70	8033800	–	8035900	0067	3.0	AG 1 ¼"	286	123/68	174	9.80
	R_B-31-2-80	80	8033900	–	8036000	0067	3.4	AG 1 ¼"	286	123/68	198	10.94
	R_B-31-2-90	90	8034000	–	8036100	0067	3.8	AG 1 ¼"	286	123/68	221	12.08
	R_B-31-2-100	100	8034100	–	8036200	0067	4.2	AG 1 ¼"	286	123/68	245	13.21
	R_B-31-2-110	110	8034200	–	8036300	0067	4.6	AG 1 ¼"	286	123/68	269	14.35
	R_B-31-2-120	120	8034300	–	8036400	0067	5.0	AG 1 ¼"	286	123/68	293	15.50
	R_B-31-2-130	130	8034400	–	8036500	0067	5.4	AG 1 ¼"	286	123/68	316	16.65
	R_B-31-2-140	140	8034500	–	8036600	0067	5.8	AG 1 ¼"	286	123/68	339	17.77
	R_B-34-2-10	10	–	–	8036800	0067	0.3	AG ¾"	471	81/42	32	2.40
	R_B-34-2-20	20	–	–	8036900	0067	0.6	AG ¾"	471	81/42	55	3.51
	R_B-34-2-30	30	–	–	8037000	0067	1.1	AG ¾"	471	81/42	78	4.66
	R_B-34-2-40	40	–	–	8037100	0067	1.6	AG ¾"	471	81/42	101	5.82
	R_B-34-2-50	50	–	–	8037200	0067	2.1	AG ¾"	471	81/42	124	6.98
	R_B-34-2-60	60	–	–	8037300	0067	2.6	AG ¾"	471	81/42	147	8.14
	R_B-60-2-10	10	8040800	8043800	8042300	0067	1.2	AG 1 ¼"	538	123/68	32	4.80
	R_B-60-2-20	20	8040900	8043900	8042400	0067	2.0	AG 1 ¼"	538	123/68	56	7.00
	R_B-60-2-30	30	8041000	8044000	8042500	0067	2.8	AG 1 ¼"	538	123/68	80	9.20
	R_B-60-2-40	40	8041100	8044100	8042600	0067	3.6	AG 1 ¼"	538	123/68	104	11.36
	R_B-60-2-50	50	8041200	8044200	8042700	0067	4.4	AG 1 ¼"	538	123/68	128	13.55
	R_B-60-2-60	60	8041300	8044300	8042800	0067	5.4	AG 1 ¼"	538	123/68	151	15.74
	R_B-60-2-70	70	8041400	8044400	8042900	0067	6.2	AG 1 ¼"	538	123/68	175	17.92
	R_B-60-2-80	80	8041500	8044500	8043000	0067	7.2	AG 1 ¼"	538	123/68	198	20.11
	R_B-60-2-90	90	8041600	8044600	8043100	0067	8.0	AG 1 ¼"	538	123/68	222	22.29
	R_B-60-2-100	100	8041700	8044700	8043200	0067	9.0	AG 1 ¼"	538	123/68	245	24.48
	R_B-60-2-110	110	8041800	8044800	8043300	0067	10.0	AG 1 ¼"	538	123/68	268	26.66
	R_B-60-2-120	120	8041900	8044900	8043400	0067	11.0	AG 1 ¼"	538	123/68	292	27.60

Longtherm brazed double-pass

	Type	Number of plates	Art. No.			DG	Overall water content	Connection c	Height h/h5	Width w/w3	Depth D	Weight
			RHB	RLB	RMB		[l]		[mm]	[mm]	[mm]	[kg]
30 bar 230 °C	R_B-60-2-130	130	8042000	8045000	8043500	0067	12.0	AG 1 ¼"	538	123/68	316	29.80
	R_B-60-2-140	140	8042100	8045100	8043600	0067	13.0	AG 1 ¼"	538	123/68	340	32.00
	R_B-60-2-150	150	8042200	8045200	8043700	0067	13.8	AG 1 ¼"	538	123/68	364	34.20
25 bar 230 °C	R_B-110-2-30	30	8045700	–	–	0067	7.2	AG 2"	620	191/91	90	20.90
	R_B-110-2-40	40	8045800	–	–	0067	9.6	AG 2"	620	191/91	116	25.00
	R_B-110-2-50	50	8045900	–	–	0067	12.0	AG 2"	620	191/91	142	29.10
	R_B-110-2-60	60	8046000	–	–	0067	14.4	AG 2"	620	191/91	166	33.20
	R_B-110-2-70	70	8046100	–	–	0067	16.8	AG 2"	620	191/91	192	37.30
	R_B-110-2-80	80	8046200	–	–	0067	19.2	AG 2"	620	191/91	218	41.07
	R_B-110-2-90	90	8046300	–	–	0067	21.6	AG 2"	620	191/91	244	45.16
	R_B-110-2-100	100	8046400	–	–	0067	24.0	AG 2"	620	191/91	270	49.24
	R_B-110-2-110	110	8046500	–	–	0067	26.4	AG 2"	620	191/91	296	53.32
	R_B-110-2-120	120	8046600	–	–	0067	28.8	AG 2"	620	191/91	322	57.41
	R_B-110-2-130	130	8046700	–	–	0067	31.2	AG 2"	620	191/91	348	61.49
	R_B-110-2-140	140	8046800	–	–	0067	33.6	AG 2"	620	191/91	374	65.57
	R_B-110-2-150	150	8056900	–	–	0067	73.6	AG 2"	620	191/91	400	69.65
	R_B-110-2-160	160	8046900	–	–	0067	38.4	AG 2"	620	191/91	426	73.63
	R_B-110-2-170	170	8047000	–	–	0067	40.8	AG 2"	620	191/91	452	77.77
	R_B-110-2-180	180	8047100	–	–	0067	43.6	AG 2"	620	191/91	478	81.86
	R_B-110-2-190	190	8047200	–	–	0067	46.0	AG 2"	620	191/91	504	85.94
	R_B-110-2-30	30	–	8048700	8047300	0067	4.8	AG 2 ½"	466	258/170	84	17.90
	R_B-110-2-40	40	–	8048800	8047400	0067	6.4	AG 2 ½"	466	258/170	108	23.50
	R_B-110-2-50	50	–	8048900	8047500	0067	8.0	AG 2 ½"	466	258/170	132	29.12
	R_B-110-2-60	60	–	8049000	8047600	0067	9.6	AG 2 ½"	466	258/170	156	33.19
	R_B-110-2-70	70	–	8049100	8047700	0067	11.2	AG 2 ½"	466	258/170	180	37.27
	R_B-110-2-80	80	–	8049200	8047800	0067	12.8	AG 2 ½"	466	258/170	204	41.35
	R_B-110-2-90	90	–	8049300	8047900	0067	14.4	AG 2 ½"	466	258/170	228	45.43
	R_B-110-2-100	100	–	8049400	8048000	0067	16.0	AG 2 ½"	466	258/170	252	49.51
	R_B-110-2-110	110	–	8049500	8048100	0067	17.6	AG 2 ½"	466	258/170	276	54.85
	R_B-110-2-120	120	–	8049600	8048200	0067	19.2	AG 2 ½"	466	258/170	300	58.93
	R_B-110-2-130	130	–	8049700	8048300	0067	20.8	AG 2 ½"	466	258/170	324	63.10
	R_B-110-2-140	140	–	8049800	8048400	0067	22.4	AG 2 ½"	466	258/170	348	67.09
	R_B-110-2-150	150	–	8049900	8048500	0067	24.0	AG 2 ½"	466	258/170	372	71.20
	R_B-110-2-160	160	–	8050000	8048600	0067	25.8	AG 2 ½"	466	258/170	396	75.25
	R_B-235-2-30	30	–	8054300	8051500	0067	11.4	DN 80/PN 40	788	310/170	85	65.30
	R_B-235-2-40	40	–	8054400	8051800	0067	15.4	DN 80/PN 40	788	310/170	110	73.60
	R_B-235-2-50	50	–	8054500	8051900	0067	19.4	DN 80/PN 40	788	310/170	134	81.90
	R_B-235-2-60	60	–	8054600	8052000	0067	23.4	DN 80/PN 40	788	310/170	159	90.20
	R_B-235-2-70	70	–	8054700	8052100	0067	27.4	DN 80/PN 40	788	310/170	183	98.50
	R_B-235-2-80	80	–	8054800	8052200	0067	31.4	DN 80/PN 40	788	310/170	208	107.00
	R_B-235-2-90	90	–	8054900	8052300	0067	35.4	DN 80/PN 40	788	310/170	232	114.55
	R_B-235-2-100	100	–	8055000	8052400	0067	39.4	DN 80/PN 40	788	310/170	263	122.83
	R_B-235-2-110	110	–	8055100	8052500	0067	43.4	DN 80/PN 40	788	310/170	281	131.11
	R_B-235-2-120	120	–	8055200	8052600	0067	47.4	DN 80/PN 40	788	310/170	306	139.39

Longtherm brazed double-pass

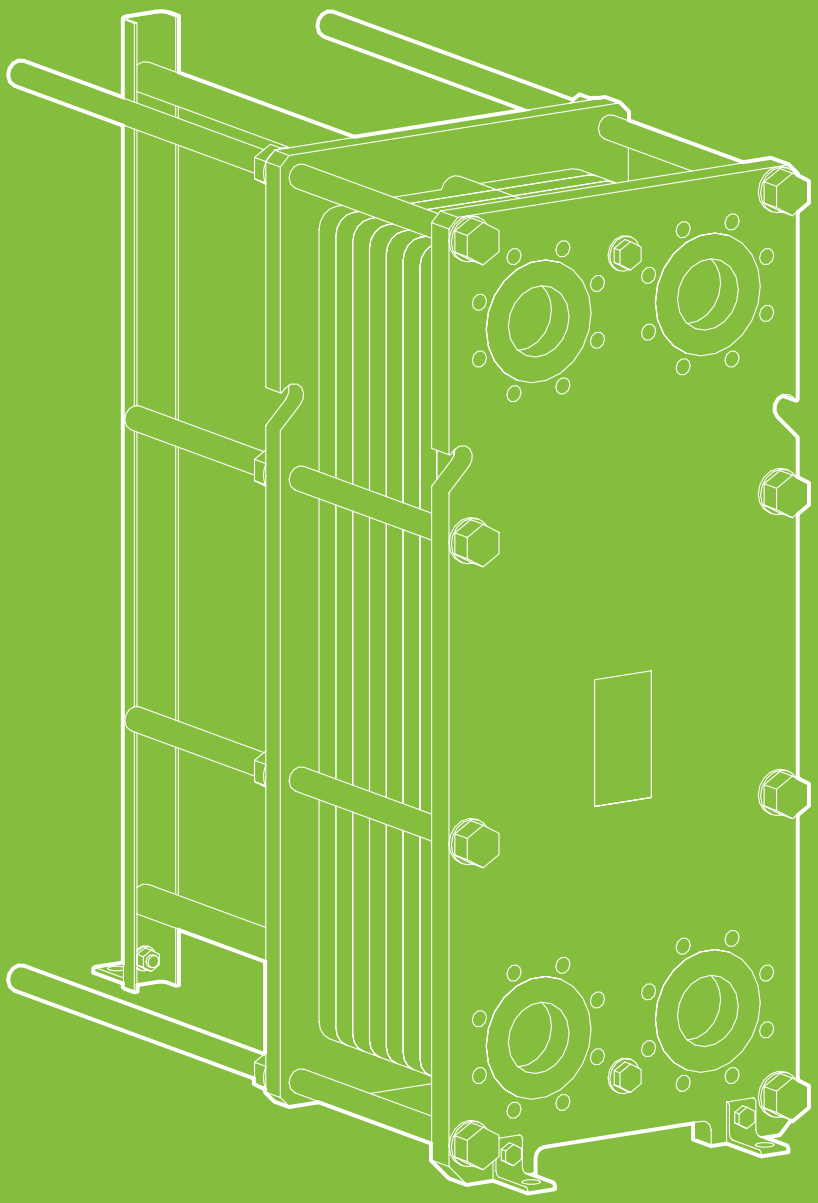
CE

	Type	Number of plates	Art. No.			DG	Overall water content	Connection c	Height h/h5	Width w/w3	Depth D	Weight
			RHB	RLB	RMB		[l]		[mm]	[mm]	[mm]	[kg]
25 bar 230 °C	R_B-235-2-130	130	–	8055300	8052700	0067	51.4	DN 80/PN 40	788	310/170	330	147.67
	R_B-235-2-140	140	–	8055400	8052800	0067	55.4	DN 80/PN 40	788	310/170	355	155.67
	R_B-235-2-150	150	–	8055500	8052900	0067	59.2	DN 80/PN 40	788	310/170	379	164.23
	R_B-235-2-160	160	–	8055600	8053000	0067	63.2	DN 80/PN 40	788	310/170	404	172.51
	R_B-235-2-170	170	–	8055700	8053100	0067	67.2	DN 80/PN 40	788	310/170	428	180.79
	R_B-235-2-180	180	–	8055800	8053200	0067	71.2	DN 80/PN 40	788	310/170	453	189.07
	R_B-235-2-190	190	–	8055900	8053300	0067	75.2	DN 80/PN 40	788	310/170	477	197.35
	R_B-235-2-200	200	–	8056000	8053400	0067	79.2	DN 80/PN 40	788	310/170	502	205.63
	R_B-235-2-210	210	–	8056100	8053500	0067	83.2	DN 80/PN 40	788	310/170	526	213.90
	R_B-235-2-220	220	–	8056200	8053600	0067	87.2	DN 80/PN 40	788	310/170	551	222.19
	R_B-235-2-230	230	–	8056300	8053700	0067	91.2	DN 80/PN 40	788	310/170	575	230.50
	R_B-235-2-240	240	–	8056400	8053800	0067	95.2	DN 80/PN 40	788	310/170	600	238.75
	R_B-235-2-250	250	–	8056500	8053900	0067	99.2	DN 80/PN 40	788	310/170	624	247.20
	R_B-235-2-260	260	–	8056600	8054000	0067	103.2	DN 80/PN 40	788	310/170	649	255.50
	R_B-235-2-270	270	–	8056700	8054100	0067	107.2	DN 80/PN 40	788	310/170	673	263.59
	R_B-235-2-280	280	–	8056800	8054200	0067	111.2	DN 80/PN 40	788	310/170	698	271.87

Longtherm gasketed

Key benefits

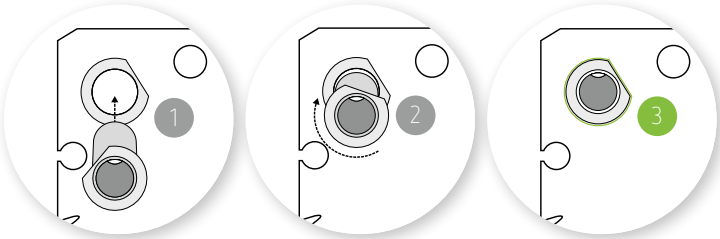
- Because they can be disassembled, gasketed heat exchangers can be cleaned quickly and easily, and extended with further plate packs
- High-quality materials, processing and coating
- Adhesive-free seals for quick and easy maintenance
- Indicators for checking the sealing and plate positions
- Non-rotating connections
- Higher capacities can be realised
- Extensive portfolio for a wide range of applications
- Customer-specific adaptations and special sizes available on request
- For easy selection and calculation of your heat exchanger solution, we support you with the new Reflex Solutions Pro configuration software: **rsp.reflex.de/en**

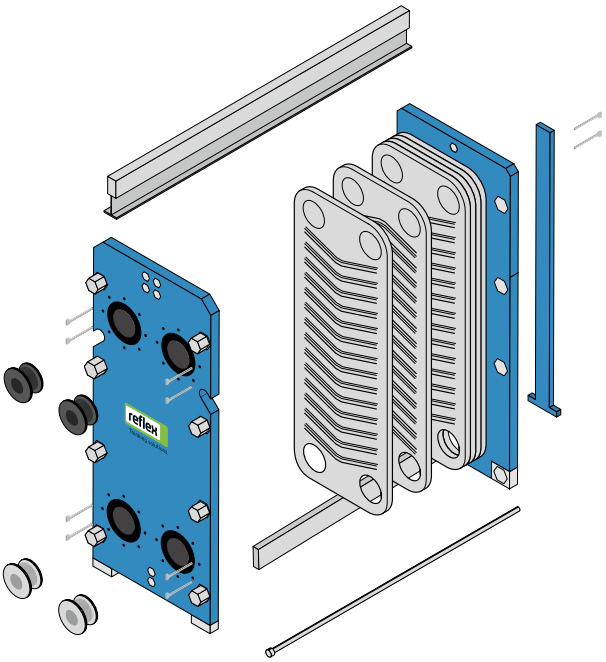


Benefits of the special construction

Non-rotating connections

The gasketed heat exchangers' connections are designed so that they cannot rotate. The heat exchangers thus guarantee maximum operational and functional safety.





Disassembly possible

The plate heat exchanger consists of a front frame (head plate), rear frame (pressure plate), carrying bar, guide bar, clamping bolts, support column and plate pack. The plates are hung on the carrying bar and are kept in line by a lower guide bar. The clamping bolts keep the head and pressure plates under pressure.

Because the system can be disassembled, it can be easily extended with further plate packs. It also means that heat exchangers can be cleaned quickly and easily.

Adhesive-free gaskets

Only adhesive-free gaskets are used in Reflex heat exchangers to ensure quick and easy maintenance.

Indicators for checking the gasket and plate positions

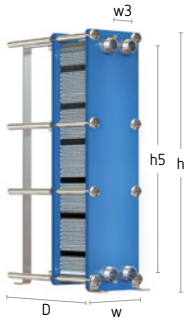
The correct alignment of the plate pack is essential for proper operation. Specially designed indicators on each plate allow the correct position of the plates and gaskets to be checked, ensuring proper installation and maintenance.

System contamination can occur in a variety of ways. It can lead to pressure losses and reduced heat transfer performance in heat exchangers. Regular cleaning is therefore important to avoid under-performance and long-term damage.



Product range

Longtherm gasketed



Longtherm R_G-04, -07, -08, -14, -20



Longtherm R_G-19, -21, -51

Technical **Features**

- heat exchanger made of 0.5 mm stainless-steel plates (AISI 316L) with NBR seals
- flange connections, only for R_G-19, -21 and -51
- carbon steel flange and frame
- permissible operating overpressure for R_G-04 to -19: 16 bar
- permissible operating overpressure for R_G-21 to -51: 10 bar
- further seals and plate materials on request

Longtherm gasketed

CE

	Type	Number of plates	Art. No.			DG	Overall water content	Connection c	Height h/h5	Width w/w3	Depth D	Weight
			RHG	RLG	RMG		[l]		[mm]	[mm]	[mm]	[kg]
16 bar 110 °C	R_G-04-10	10	8026400	–	–	0167	0.9	AG 1¼"	473/381	190/70	355	32.10
	R_G-04-20	20	8026500	–	–	0167	1.9	AG 1¼"	473/381	190/70	355	34.70
	R_G-04-30	30	8026600	–	–	0167	2.9	AG 1¼"	473/381	190/70	355	38.50
	R_G-04-40	40	8026700	–	–	0167	3.9	AG 1¼"	473/381	190/70	505	42.80
	R_G-04-50	50	8026800	–	–	0167	4.9	AG 1¼"	473/381	190/70	505	45.80
	R_G-04-60	60	8026900	–	–	0167	5.9	AG 1¼"	473/381	190/70	505	48.90
	R_G-04-70	70	8027000	–	–	0167	6.9	AG 1¼"	473/381	190/70	605	52.90
	R_G-04-80	80	8027100	–	–	0167	7.9	AG 1¼"	473/381	190/70	605	55.90
	R_G-07-10	10	8028000	8122400	8121600	0167	1.6	AG 2"	596/394	300/126	563	76.30
	R_G-07-20	20	8028100	8122500	8121700	0167	3.4	AG 2"	596/394	300/126	563	81.10
	R_G-07-30	30	8028200	8122600	8121800	0167	5.2	AG 2"	596/394	300/126	563	85.90
	R_G-07-40	40	8028300	8122700	8121900	0167	7.0	AG 2"	596/394	300/126	763	95.00
	R_G-07-50	50	8028400	8122800	8122000	0167	8.8	AG 2"	596/394	300/126	763	99.80
	R_G-07-60	60	8028500	8122900	8122100	0167	10.5	AG 2"	596/394	300/126	763	104.50
	R_G-07-70	70	8028600	8123000	8122200	0167	12.3	AG 2"	596/394	300/126	763	109.30
	R_G-07-80	80	8028700	8123100	8122300	0167	14.0	AG 2"	596/394	300/126	963	118.40
	R_G-08-10	10	8027200	–	–	0167	1.5	AG 1¼"	755/658	190/70	355	51.20
	R_G-08-20	20	8027300	–	–	0167	3.2	AG 1¼"	755/658	190/70	355	55.40
	R_G-08-30	30	8027400	–	–	0167	4.9	AG 1¼"	755/658	190/70	355	59.60
	R_G-08-40	40	8027500	–	–	0167	6.6	AG 1¼"	755/658	190/70	505	65.20
	R_G-08-50	50	8027600	–	–	0167	8.2	AG 1¼"	755/658	190/70	505	69.40
	R_G-08-60	60	8027700	–	–	0167	10.0	AG 1¼"	755/658	190/70	505	73.60
	R_G-08-70	70	8027800	–	–	0167	11.8	AG 1¼"	755/658	190/70	605	79.60
	R_G-08-80	80	8027900	–	–	0167	13.4	AG 1¼"	755/658	190/70	605	83.20
	R_G-14-25	25	8028900	8123200	8028800	0167	7.7	AG 2"	896/694	300/126	563	128.60
	R_G-14-35	35	8111700	8123300	8111100	0167	10.8	AG 2"	896/694	300/126	563	136.00
	R_G-14-45	45	8111800	8123400	8111200	0167	14.0	AG 2"	896/694	300/126	763	149.00
	R_G-14-55	55	8111900	8123500	8111300	0167	17.2	AG 2"	896/694	300/126	763	156.00
	R_G-14-65	65	8112000	8123600	8111400	0167	20.4	AG 2"	896/694	300/126	763	164.00
	R_G-14-75	75	8112100	8123700	8111500	0167	23.6	AG 2"	896/694	300/126	763	171.00
	R_G-14-85	85	8112200	8123800	8111600	0167	26.8	AG 2"	896/694	300/126	963	184.00
	R_G-19-40	40	8029000	8124800	8029400	0167	16.5	DN 65/PN 16	946/700	395/192	558	246.70
	R_G-19-50	50	8029100	8124900	8029500	0167	20.6	DN 65/PN 16	946/700	395/192	558	257.00
	R_G-19-60	60	8029200	8125000	8029600	0167	24.8	DN 65/PN 16	946/700	395/192	758	273.60
	R_G-19-70	70	8112800	8125100	8113600	0167	29.3	DN 65/PN 16	946/700	395/192	758	284.00
	R_G-19-80	80	8112900	8125200	8113700	0167	33.5	DN 65/PN 16	946/700	395/192	758	294.00
	R_G-19-90	90	8113000	8125300	8113800	0167	37.7	DN 65/PN 16	946/700	395/192	958	305.00
	R_G-19-100	100	8113100	8125400	8113900	0167	42.0	DN 65/PN 16	946/700	395/192	958	315.00
	R_G-19-110	110	8113200	8125500	8114000	0167	46.2	DN 65/PN 16	946/700	395/192	1,158	338.00
	R_G-19-120	120	8113300	8125600	8114100	0167	50.5	DN 65/PN 16	946/700	395/192	1,158	348.00
	R_G-19-130	130	8113400	8125700	8114200	0167	54.7	DN 65/PN 16	946/700	395/192	1,158	358.00
	R_G-19-140	140	8113500	8125800	8114300	0167	58.9	DN 65/PN 16	946/700	395/192	1,158	369.00

Longtherm gasketed

CE

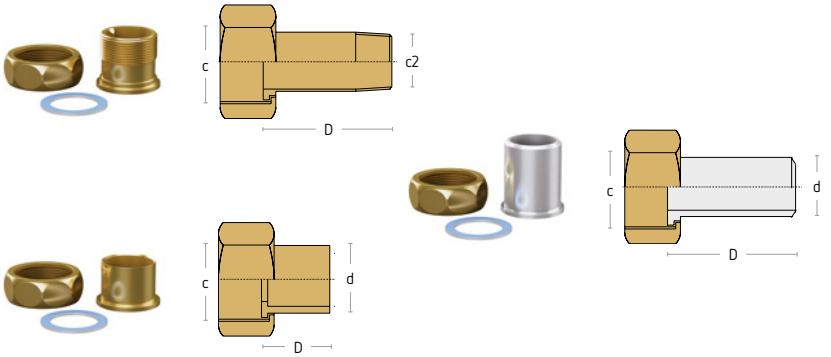
	Type	Number of plates	Art. No.			DG	Overall water content	Connection c	Height h/h5	Width w/w3	Depth D	Weight
			RHG	RLG	RMG		[l]		[mm]	[mm]	[mm]	[kg]
16 bar 110 °C	R_G-19-150	150	8029300	8125900	8030000	0167	63.2	DN 65/PN 16	946/700	395/192	1,158	378.90
	R_G-19-160	160	8124300	8126000	8124700	0167	66.0	DN 65/PN 16	946/700	395/192	1,158	439.60
	R_G-20-55	55	8112300	–	–	0167	22.4	AG 2"	1096/894	300/126	763	193.00
	R_G-20-65	65	8112400	–	–	0167	26.5	AG 2"	1096/894	300/126	763	203.00
	R_G-20-75	75	8112500	–	–	0167	30.6	AG 2"	1096/894	300/126	763	212.00
	R_G-20-85	85	8112600	–	–	0167	34.8	AG 2"	1096/894	300/126	963	228.00
	R_G-20-95	95	8112700	–	–	0167	38.9	AG 2"	1096/894	300/126	963	238.00
10 bar 110 °C	R_G-21-50	50	8116700	8126500	8114400	0167	31.5	DN 100/PN 10	1181/719	480/225	745	341.00
	R_G-21-55	55	8116800	8129300	8114500	0167	34.7	DN 100/PN 10	1181/719	480/225	745	348.00
	R_G-21-60	60	8116900	8126600	8114600	0167	37.9	DN 100/PN 10	1181/719	480/225	745	355.00
	R_G-21-65	65	8117000	8129400	8114700	0167	41.2	DN 100/PN 10	1181/719	480/225	745	362.00
	R_G-21-70	70	8117100	8126700	8114800	0167	44.4	DN 100/PN 10	1181/719	480/225	745	370.00
	R_G-21-80	80	8117200	8126800	8114900	0167	50.8	DN 100/PN 10	1181/719	480/225	1,145	405.00
	R_G-21-90	90	8117300	8126900	8115000	0167	57.2	DN 100/PN 10	1181/719	480/225	1,145	419.00
	R_G-21-100	100	8025700	8127000	8120000	0167	63.6	DN 100/PN 10	1181/719	480/225	1,145	472.50
	R_G-21-110	110	8025800	8127100	8120100	0167	70.1	DN 100/PN 10	1181/719	480/225	1,145	446.10
	R_G-21-120	120	8025900	8127200	8120200	0167	76.6	DN 100/PN 10	1181/719	480/225	1,145	459.70
	R_G-21-130	130	8026000	8127300	8120300	0167	83.0	DN 100/PN 10	1181/719	480/225	1,145	473.30
	R_G-21-140	140	8026100	8127400	8120400	0167	89.4	DN 100/PN 10	1181/719	480/225	1,145	486.90
	R_G-21-150	150	8026200	8127500	8120500	0167	95.8	DN 100/PN 10	1181/719	480/225	1,645	527.80
	R_G-21-160	160	8026300	8127600	8025600	0167	102.2	DN 100/PN 10	1181/719	480/225	1,645	541.40
	R_G-21-170	170	8126100	8127700	8126300	0167	108.3	DN 100/PN 10	1181/719	480/225	1,158	555.80
	R_G-21-180	180	8126200	8127800	8126400	0167	114.7	DN 100/PN 10	1181/719	480/225	1,158	570.20
	R_G-51-60	60	8117400	8128500	8115100	0167	72.9	DN 100/PN 10	1824/1365	480/225	745	570.00
	R_G-51-65	65	8117500	8128600	8115200	0167	79.0	DN 100/PN 10	1824/1365	480/225	745	582.00
	R_G-51-70	70	8117600	8128700	8115300	0167	85.2	DN 100/PN 10	1824/1365	480/225	745	594.00
	R_G-51-75	75	8117700	8128800	8115400	0167	91.4	DN 100/PN 10	1824/1365	480/225	1,145	632.00
	R_G-51-80	80	8117800	8128900	8115500	0167	97.6	DN 100/PN 10	1824/1365	480/225	1,145	644.00
	R_G-51-85	85	8117900	8129000	8115600	0167	103.7	DN 100/PN 10	1824/1365	480/225	1,145	656.00
	R_G-51-90	90	8118000	8129100	8115700	0167	109.9	DN 100/PN 10	1824/1365	480/225	1,145	668.00
	R_G-51-100	100	8118100	8129200	8115800	0167	122.3	DN 100/PN 10	1824/1365	480/225	1,145	691.00
	R_G-51-110	110	8118200	8129500	8115900	0167	134.6	DN 100/PN 10	1824/1365	480/225	1,145	715.00
	R_G-51-120	120	8118300	8129600	8116000	0167	147.0	DN 100/PN 10	1824/1365	480/225	1,145	738.00
	R_G-51-130	130	–	8129700	–	0167	159.4	DN 100/PN 10	1824/1365	480/225	1,145	762.00
	R_G-51-140	140	8118400	8129800	8116100	0167	171.7	DN 100/PN 10	1824/1365	480/225	1,145	785.00
	R_G-51-150	150	8118500	8129900	8116200	0167	184.0	DN 100/PN 10	1824/1365	480/225	1,645	839.00
	R_G-51-160	160	8118600	8130000	8116300	0167	196.4	DN 100/PN 10	1824/1365	480/225	1,645	863.00
	R_G-51-170	170	8127900	8130100	8128200	0167	207.9	DN 100/PN 10	1824/1365	480/225	1,645	917.00
	R_G-51-180	180	8118700	8130200	8116400	0167	221.1	DN 100/PN 10	1824/1365	480/225	1,645	910.00
	R_G-51-190	190	8128000	8130300	8128300	0167	232.4	DN 100/PN 10	1824/1365	480/225	1,645	1,025.00
	R_G-51-200	200	8118800	8130400	8116500	0167	245.6	DN 100/PN 10	1824/1365	480/225	1,645	957.00
	R_G-51-210	210	8128100	8130500	8128400	0167	256.8	DN 100/PN 10	1824/1365	480/225	1,645	1,133.00
	R_G-51-220	220	8118900	8130600	8116600	0167	270.5	DN 100/PN 10	1824/1365	480/225	1,645	1,004.00

Accessories

Longtherm accessories CE

Longtherm connection options

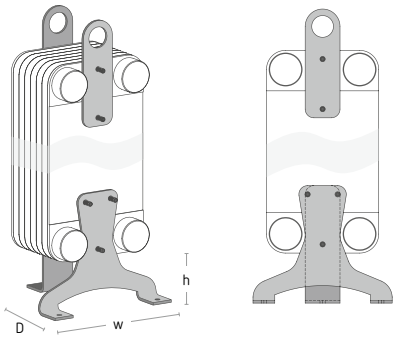
- flat-sealed threaded connections, including seal, system connection as male thread, soldered end, welded end
- from size RMB-235, the heat exchangers are fitted with special flanges
- consisting of 2 units, delivery only as complete set
- two sets are required per heat exchanger



Type 1	Type 2	Type 3	Type 4	Art. No.	DG	Connection inlet	Connection outlet	Ø d [mm]	Depth D [mm]	Weight [kg]
With solder-on end – brass										
RMB-14	RMB-22	RMB-34	–	6761100	0069	G ¾"	–	18	16	0.10
R_B-31	R_B-60	R_G-04	R_G-08	6761300	0069	G 1¼"	–	28	22	0.25
With weld-on end, steel										
RMB-14	RMB-22	RMB-34	–	6760100	0069	G ¾"	–	21	30	0.10
R_B-31	R_B-60	R_G-04	R_G-08	6760300	0069	G 1¼"	–	34	40	0.30
RHB-110	R_G-07	R_G-14	R_G-20	6760400	0069	G 2"	–	48	40	0.50
RLB-110	RMB-110	–	–	6760500	0069	G 2½"	–	60	50	1.00
R_B-235	–	–	–	6770500	0069	DN 80 / PN 40	–	200	21	5.18
With female thread – brass										
RMB-14	RMB-22	RMB-34	–	6762100	0069	G ¾"	R ½"	–	36	0.10
R_B-31	R_B-60	R_G-04	R_G-08	6762300	0069	G 1¼"	R 1"	–	35	0.30
RHB-110	R_G-07	R_G-14	R_G-20	6762400	0069	G 2"	R 1½"	–	55	0.50
RLB-110	RMB-110	–	–	6762500	0069	G 2½"	R 2"	–	66	1.00

Longtherm bracket

- a stable foot construction and transport lugs for on-site assembly are available for sizes 110 and 235



Type	Art. No.	DG	Height h [mm]	Width w [mm]	Depth D [mm]	Weight [kg]
RHB-110	8290400	0069	70	240	320	2.96
R_B-110-235	8290500	0069	115	240	320	2.96

Longtherm insulations

Key benefits

Longtherm Protect EPP

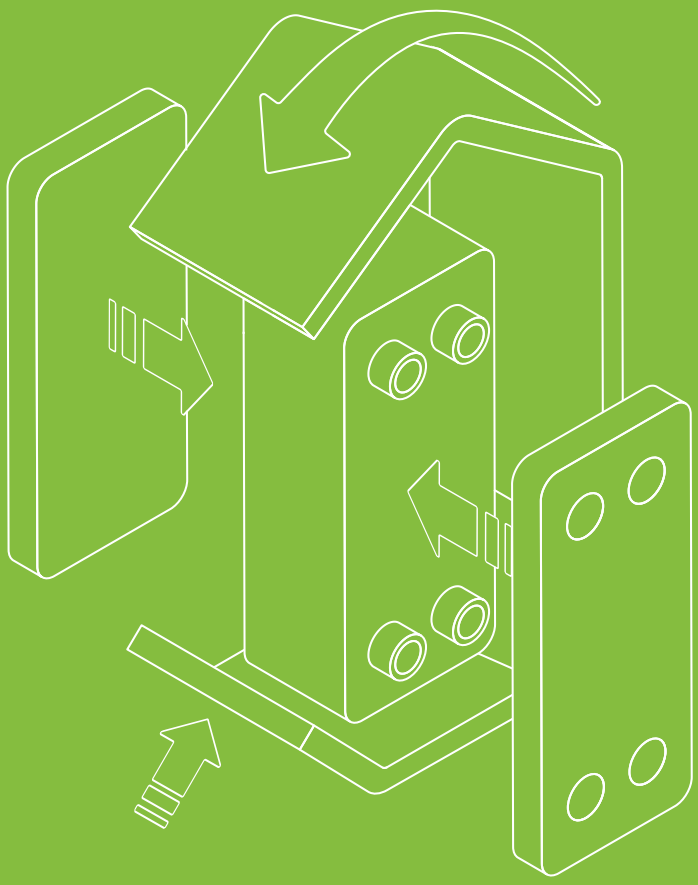
- Installation even under the most difficult conditions: the innovative design requires only two tools per type
- Lightweight yet robust
- State-of-the-art energy efficiency: insulation values comply with the current EnEV (German energy saving regulations)
- Production also extremely environmentally friendly: EPP contains no hydrocarbons or other environmentally harmful components

Longtherm Protect Heating

- Only minimal heat loss thanks to rigid polyurethane foam
- Insulated diffusion-tight on site
- Two stable PU half-shells make installation extremely simple

Longtherm Protect Cooling

- Long-term energy efficiency thanks to stable thermal conductivity
- Integrated antimicrobial protection
- Corrosion protection thanks to integrated water vapour barrier



Product range

Longtherm Protect EPP



Longtherm Protect EPP

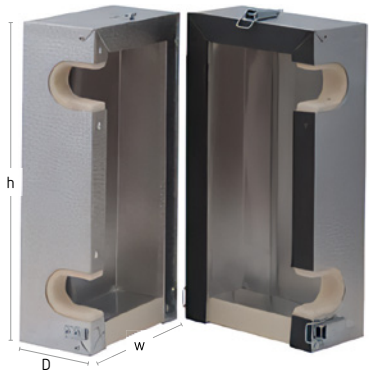
Technical Features

- compatible with single- and double-pass heat exchangers
- insulation material: EPP
- colour: black
- insulation strength: 25 mm
- fire protection class: EN 13501-1 class E
- thermal conductivity at 40 °C: 0.035 W / m × K

Type	Art. No.	DG	RHB	RLB	RMB	Perm. operating temperature [°C]	Height h [mm]	Width w [mm]	Depth D [mm]	Weight [kg]
R_B-14-10	8141000	0069	X	X	X	110	82	135	257	0.06
R_B-14-20	8141100	0069	X	X	X	110	105	135	257	0.07
R_B-14-30	8141200	0069	X	X	X	110	128	135	257	0.08
R_B-14-40	8141300	0069	X	X	X	110	151	135	257	0.10
R_B-14-50	8141400	0069	X	X	X	110	174	135	257	0.11
R_B-14-60	8141500	0069	X	X	X	110	197	135	257	0.12
R_B-22-10	8141600	0069	X	X	X	110	82	135	353	0.08
R_B-22-20	8141700	0069	X	X	X	110	105	135	353	0.10
R_B-22-30	8141800	0069	X	X	X	110	128	135	353	0.11
R_B-22-40	8141900	0069	X	X	X	110	151	135	353	0.13
R_B-22-50	8142000	0069	X	X	X	110	174	135	353	0.14
R_B-22-60	8142100	0069	X	X	X	110	197	135	353	0.16
R_B-31-10	8142200	0069	X	X	X	110	84	177	344	0.10
R_B-31-20	8142300	0069	X	X	X	110	107	177	344	0.11
R_B-31-30	8142400	0069	X	X	X	110	131	177	344	0.13
R_B-31-40	8142500	0069	X	X	X	110	154	177	344	0.15
R_B-31-50	8142600	0069	X	X	X	110	178	177	344	0.16
R_B-31-60	8142700	0069	X	X	X	110	201	177	344	0.18
R_B-31-70	8142800	0069	X	X	X	110	225	177	344	0.20
R_B-31-80	8142900	0069	X	X	X	110	248	177	344	0.21
R_B-31-90	8143000	0069	X	X	X	110	272	177	344	0.23
R_B-31-100	8143100	0069	X	X	X	110	295	177	344	0.25
R_B-31-110	8143200	0069	X	X	X	110	319	177	344	0.26
R_B-31-120	8143300	0069	X	X	X	110	342	177	344	0.28
R_B-31-130	8143400	0069	X	X	X	110	366	177	344	0.30
R_B-31-140	8143500	0069	X	X	X	110	389	177	344	0.31
R_B-31-150	8143600	0069	X	X	X	110	413	177	344	0.33
R_B-34-10	8143700	0069	X	X	X	110	82	135	525	0.13
R_B-34-20	8143800	0069	X	X	X	110	105	135	525	0.15
R_B-34-30	8143900	0069	X	X	X	110	128	135	525	0.17
R_B-34-40	8144000	0069	X	X	X	110	151	135	525	0.19

Type	Art. No.	DG	RHB	RLB	RMB	Perm. operating temperature [°C]	Height h [mm]	Width w [mm]	Depth D [mm]	Weight [kg]
R_B-34-50	8144100	0069	X	X	X	110	174	135	525	0.21
R_B-34-60	8144200	0069	X	X	X	110	197	135	525	0.23
R_B-60-10	8144300	0069	X	X	X	110	83	177	592	0.17
R_B-60-20	8144400	0069	X	X	X	110	107	177	592	0.20
R_B-60-30	8144500	0069	X	X	X	110	130	177	592	0.22
R_B-60-40	8144600	0069	X	X	X	110	154	177	592	0.25
R_B-60-50	8144700	0069	X	X	X	110	177	177	592	0.27
R_B-60-60	8144800	0069	X	X	X	110	201	177	592	0.30
R_B-60-70	8144900	0069	X	X	X	110	224	177	592	0.32
R_B-60-80	8145000	0069	X	X	X	110	248	177	592	0.35
R_B-60-90	8145100	0069	X	X	X	110	271	177	592	0.37
R_B-60-100	8145200	0069	X	X	X	110	295	177	592	0.40
R_B-60-110	8145300	0069	X	X	X	110	318	177	592	0.42
R_B-60-120	8145400	0069	X	X	X	110	342	177	592	0.45
R_B-60-130	8145500	0069	X	X	X	110	365	177	592	0.47
R_B-60-140	8145600	0069	X	X	X	110	389	177	592	0.50
R_B-60-150	8145700	0069	X	X	X	110	412	177	592	0.52
R_B-110-30	8145800	0069	–	X	X	110	184	322	530	0.40
R_B-110-40	8145900	0069	–	X	X	110	208	322	530	0.43
R_B-110-50	8146000	0069	–	X	X	110	232	322	530	0.46
R_B-110-60	8146100	0069	–	X	X	110	256	322	530	0.49
R_B-110-70	8146200	0069	–	X	X	110	280	322	530	0.52
R_B-110-80	8146300	0069	–	X	X	110	304	322	530	0.55
R_B-110-90	8146400	0069	–	X	X	110	328	322	530	0.58
R_B-110-100	8146500	0069	–	X	X	110	352	322	530	0.61
R_B-110-110	8146600	0069	–	X	X	110	376	322	530	0.64
R_B-110-120	8146700	0069	–	X	X	110	400	322	530	0.67
R_B-110-130	8146800	0069	–	X	X	110	424	322	530	0.70
R_B-110-140	8146900	0069	–	X	X	110	448	322	530	0.73
R_B-110-150	8147000	0069	–	X	X	110	472	322	530	0.76
R_B-110-160	8147100	0069	–	X	X	110	496	322	530	0.79
RHB-110-30	8147200	0069	X	–	–	110	178	244	673	0.40
RHB-110-40	8147300	0069	X	–	–	110	204	244	673	0.44
RHB-110-50	8147400	0069	X	–	–	110	230	244	673	0.47
RHB-110-60	8147500	0069	X	–	–	110	256	244	673	0.50
RHB-110-70	8147600	0069	X	–	–	110	282	244	673	0.54
RHB-110-80	8147700	0069	X	–	–	110	308	244	673	0.57
RHB-110-90	8147800	0069	X	–	–	110	334	244	673	0.61
RHB-110-100	8147900	0069	X	–	–	110	360	244	673	0.64
RHB-110-110	8148000	0069	X	–	–	110	386	244	673	0.67
RHB-110-120	8148100	0069	X	–	–	110	412	244	673	0.71
RHB-110-130	8148200	0069	X	–	–	110	438	244	673	0.74
RHB-110-140	8148300	0069	X	–	–	110	464	244	673	0.78
RHB-110-150	8148400	0069	X	–	–	110	490	244	673	0.81
RHB-110-160	8148500	0069	X	–	–	110	516	244	673	0.85
RHB-110-170	8148600	0069	X	–	–	110	542	244	673	0.88
RHB-110-180	8148700	0069	X	–	–	110	568	244	673	0.91
RHB-110-190	8148800	0069	X	–	–	110	594	244	673	0.95

Longtherm Protect Heating



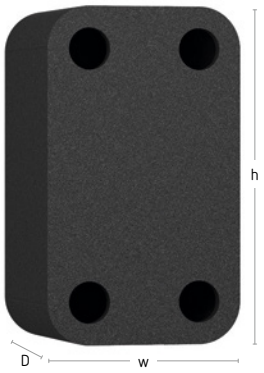
Longtherm Protect Heating

Technical Features

- Longtherm heat insulation made of 25 mm rigid polyurethane foam for minimum heat loss up to 110 plates
- Longtherm heat insulation made of 32 mm rigid polyurethane foam for minimum heat loss above 110 plates
- made of two easily assembled semispheres for increased impact resistance, up to 110 plates, clad in 2 mm PS material
- insulation clad in aluminium above 110 plates
- max. operating temperature 110 °C up to 110 plates and above 135 °C
- diffusion-tight insulation on site

Type	Art. No.	DG	RHB	RLB	RMB	Perm. operating temperature [°C]	Height h [mm]	Width w [mm]	Depth D [mm]	Weight [kg]
R_B-235-30	8309000	0069	–	X	X	110	864	376	208	4.65
R_B-235-40	8309100	0069	–	X	X	110	864	376	233	5.00
R_B-235-50	8309200	0069	–	X	X	110	864	376	258	5.40
R_B-235-60	8309300	0069	–	X	X	110	864	376	283	5.75
R_B-235-70	8301600	0069	–	X	X	110	864	376	308	6.15
R_B-235-80	8301700	0069	–	X	X	110	864	376	333	6.45
R_B-235-90	8301800	0069	–	X	X	110	864	376	358	6.80
R_B-235-100	8301900	0069	–	X	X	110	864	376	383	7.10
R_B-235-110	8302000	0069	–	X	X	110	864	376	408	7.50
R_B-235-120	8302100	0069	–	X	X	135	864	376	433	7.80
R_B-235-130	8302200	0069	–	X	X	135	864	376	458	8.10
R_B-235-140	8297800	0069	–	X	X	135	864	376	483	8.40
R_B-235-150	8302300	0069	–	X	X	135	864	376	508	8.80
R_B-235-160	8302400	0069	–	X	X	135	864	376	533	9.10
R_B-235-170	8297900	0069	–	X	X	135	864	376	558	9.40
R_B-235-180	8302500	0069	–	X	X	135	864	376	583	9.80
R_B-235-190	8298000	0069	–	X	X	135	864	376	608	10.10
R_B-235-200	8302600	0069	–	X	X	135	864	376	633	10.40
R_B-235-210	8309400	0069	–	X	X	135	864	376	658	10.80
R_B-235-220	8302700	0069	–	X	X	135	864	376	683	11.10
R_B-235-230	8309500	0069	–	X	X	135	864	376	708	11.40
R_B-235-240	8302800	0069	–	X	X	135	864	376	733	11.80
R_B-235-250	8309600	0069	–	X	X	135	864	376	758	12.10
R_B-235-260	8298100	0069	–	X	X	135	864	376	783	12.40
R_B-235-270	8302900	0069	–	X	X	135	864	376	808	12.80
R_B-235-280	8303000	0069	–	X	X	135	864	376	833	13.10

Longtherm Protect Cooling



Longtherm Protect Cooling

Technical Features

- self-adhesive diffusion resistant insulation
- with more than 100 plates, the insulation is required twice
- insulation material: elastomer foam
- colour: black
- insulation strength: 20 mm

Type	Art. No.	DG	RHB	RLB	RMB	Perm. operating temperature [°C]	Height h [mm]	Width w [mm]	Depth D [mm]	Weight [kg]
R_B-14	8296000	0069	X	X	X	110	243	121	141	0.10
R_B-22	8296100	0069	X	X	X	110	339	121	164	0.20
R_B-31	8296200	0069	X	X	X	110	334	163	285	0.45
R_B-34	8296300	0069	X	X	X	110	511	121	187	0.30
R_B-60	8296400	0069	X	X	X	110	578	163	285	0.58
R_B-110	8296500	0069	–	X	X	110	621	298	294	1.00
RHB-110	8297000	0069	X	–	–	110	616	231	289	0.80

Selection and calculation

Calculation notes

Initial data
When configuring a heat exchanger, the following variables must be taken into account and need to be known:

- Type of fluid (e.g. water, water-glycol mixture, oil)
- Substance data for fluids other than water (e.g. concentrations, density, thermal conductivity and capacity, viscosity)
- Inlet temperatures and required outlet temperatures
- Transmissible capacity
- Permissible pressure losses

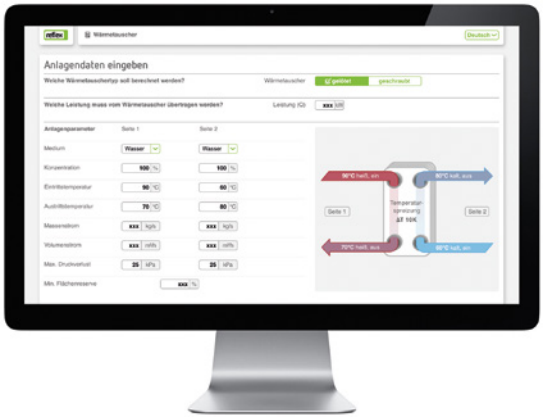
If the system operates under diverse conditions depending on the time of year, as is the case with district heating networks, the heat exchangers must also be dimensioned to accommodate these extremes.

Inlet/outlet
When configuring heat exchangers, the terms flow and return always cause problems as the calculation software cannot accommodate confusion between the inlet and the outlet. A clear distinction must be made between the hot heating flow on the outlet side of the heat exchanger and the inlet on the plate heat exchanger, which comes cooled from the heating system. In the Reflex calculation software, inlet always means the feed to the heat exchanger (similarly for the outlet).

Pressure losses
An important criteria for configuring a heat exchanger is the permitted pressure loss. As with the temperature differential, very low pressure losses are often only achieved with very large heat exchangers. In such cases, the flow to be circulated, and thus also the pressure loss across the heat exchanger, can be reduced by increasing the temperature spread. If a higher pressure loss is present in the system, e.g. in district heating networks, it makes sense to allow a slightly higher pressure loss in order to significantly reduce the system's size.

Flow properties
The flow conditions in the fluid is vitally important when calculating the size of a heat exchanger. The more turbulent the fluid that flow in the unit, the higher the transmissible power, but also the pressure losses. This relationship between power, unit size and flow properties is described by the heat transfer coefficient.

Excess area
To determine the size of a heat exchanger, the first step is to determine the necessary transfer area from the boundary conditions. This can lead to the calculation of systems that may sometimes have considerable excessive areas due, for example, to entering a maximum pressure loss. This excess area is a theoretical value. During operation of the plate heat exchanger, the temperatures of the two fluids are equalised until the excess surface area is reduced. As a rule, the target temperature is specified at a controller in a heating circuit. A theoretically identified excess area is removed by reducing the heating mass flow via the controller. As a result, the temperature at the outlet side of the hot fluid reduces accordingly. The reduced mass flow is to be considered when dimensioning the control fittings so that they are not oversized.



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Water quality requirements

Corrosion resistance of brazed plate heat exchangers to water-borne substances

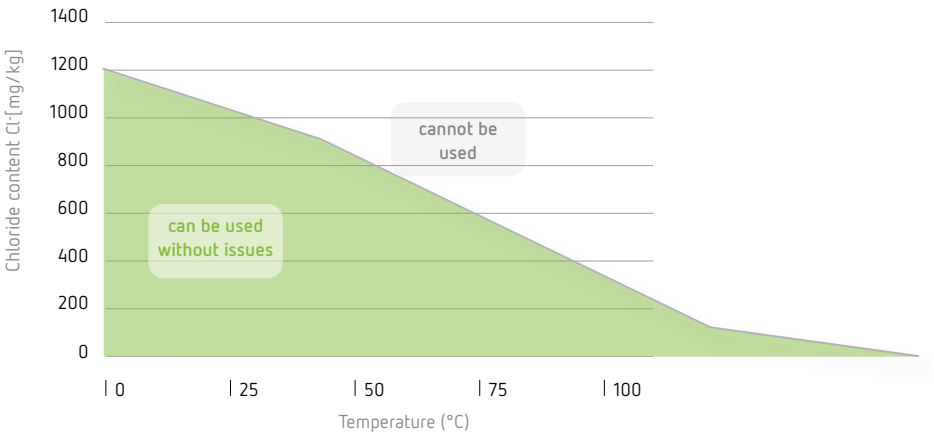
The copper-brazed plate heat exchanger consists of stamped stainless steel plates (alloy 1.4401). Therefore, the corrosion behaviour of stainless steel and the copper brazing agent must be taken into account. The following limit values for water-borne substances should therefore be observed when planning a brazed plate heat exchanger.

Based on VDI 2035 and only permissible in respect of sealed heating and cooling systems. Deviating applications must be individually checked as part of project planning. Open systems are specified separately.

Element		Value
Water pH value (at 25 °C)		7 – 10
electrical conductivity (open systems)		10 – 500 uS/cm
electrical conductivity (sealed systems)		10 – 1500 uS/cm
free ammonia	NH_3	<2.0 mg/l
carbon dioxide	CO_2	<20 mg/l
iron	Fe^{3+}	<1.5 mg/l
manganese	Mn^{2+}	<0.1 mg/l
chlorine	Cl^-	Fig.10
nitrate	NO^{3-}	<80 mg/l
sulphate	SO_4^{2-}	<80 mg/l

Element		Value
water hardness (open systems)		up to 50 °C: 15°dH up to 60°C: 8.4°dH
water hardness (sealed systems)		0.1 – 16.8°dH dependent on the system volume listed in VDI 2035
free chlorine	Cl_2	<0.4 mg/l
hydrogen sulphide	H_2S	<0.04 mg/l
hydrogen carbonate	HCO_3^-	<250 mg/l
sulphates	SO_3^{2-}	<1.0 mg/l
sulphide	S^{2-}	<1 mg/l
nitrite	NO_{2-}	<0.1 mg/l
aggressive carbonic acid	H_2CO_3	<20 mg/l

Limit values for chlorides when using plate heat exchangers



Longtherm brazed — quick selection

Output	System separation		Low-temperature		Underfloor heating		District heating		Cold water		Potable water / charge water tank / flow heater	
primary	70 °C	50 °C	50 °C	40 °C	55 °C	49 °C	110 °C	55 °C	14 °C	8 °C	70 °C	50 °C
secondary	40 °C	60 °C	35 °C	50 °C	40 °C	45 °C	50 °C	70 °C	6 °C	12 °C	10 °C	60 °C
log. temperature difference*	10 K		5 K		9.5 K		16.8 K		2 K		21.6 K	
water / glycol	water / water		water / water		water / water		water / water		water / 34 % glycol		water / 38 % glycol	
max. pressure loss	25 kPa		25 kPa		25 kPa		25 kPa		35 kPa		25 kPa	
Thermal output [kW]	Heat exchanger type (Art.- No.)											
3	**RMB-14-20** (8011200)		**RMB-14-20** (8011200)		**RMB-14-10** (8011100)		**RMB-14-10** (8011100)		**RMB-34-20** (8013600)		**RMB-14-10** (8011100)	
6	**RMB-14-20** (8011200)		**RMB-22-20** (8011500)		**RMB-14-10** (8011100)		**RMB-14-20** (8011200)		**RMB-34-30** (8013700)		**RMB-14-10** (8011100)	
10	**RMB-14-30** (8011300)		**RMB-22-20** (8011500)		**RMB-14-20** (8011200)		**RMB-14-20** (8011200)		**RMB-34-50** (8013900)		**RMB-14-20** (8011200)	
15	**RMB-22-20** (8011500)		**RMB-22-30** (8021300)		**RMB-14-30** (8011300)		**RMB-14-30** (8011300)		**RHB-60-30** (8025500)		**RMB-14-20** (8011200)	
20	**RMB-22-20** (8011500)		**RMB-22-40** (8011700)		**RMB-14-40** (8011400)		**RMB-14-30** (8011300)		**RHB-60-40** (8024100)		**RMB-14-30** (8011300)	
25	**RMB-22-30** (8021300)		**RHB-31-30** (8023700)		**RMB-31-30** (8023300)		**RMB-14-40** (8011400)		**RHB-60-50** (8024200)		**RMB-14-30** (8011300)	
30	**RMB-22-30** (8021300)		**RHB-31-30** (8023700)		**RMB-31-40** (8023400)		**RMB-22-20** (8011500)		**RHB-60-60** (8024300)		**RMB-22-20** (8011500)	
35	**RMB-22-30** (8021300)		**RHB-31-30** (8023700)		**RMB-31-40** (8023400)		**RMB-22-20** (8011500)		**RHB-60-70** (8024400)		**RMB-22-20** (8011500)	
40	**RMB-22-40** (8011700)		**RHB-31-30** (8023700)		**RMB-31-50** (8023500)		**RMB-22-20** (8011500)		**RHB-60-70** (8024400)		**RMB-22-30** (8021300)	
45	**RMB-22-40** (8011700)		**RHB-31-40** (8023800)		**RMB-31-50** (8023500)		**RMB-22-30** (8021300)		**RHB-60-80** (8024500)		**RMB-22-30** (8021300)	
50	**RMB-22-40** (8011700)		**RHB-31-40** (8023800)		**RMB-31-60** (8023600)		**RMB-22-30** (8021300)		**RHB-60-90** (8014600)		**RMB-22-40** (8011700)	
60	**RMB-22-50** (8011800)		**RHB-31-50** (8023900)		**RMB-31-90** (8013500)		**RMB-22-40** (8011700)		**RHB-60-110** (8014800)		**RMB-22-40** (8011700)	
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80	**RHB-31-30** (8023700)		**RHB-31-70** (8012300)		**RLB-110-30** (8024600)		**RHB-31-30** (8023700)		**RHB-110-80** (8016500)		**RHB-31-30** (8023700)	
90	**RHB-31-40** (8023800)		**RHB-31-80** (8012400)		**RLB-110-40** (8024700)		**RHB-31-40** (8023800)		**RHB-110-90** (8016600)		**RHB-31-40** (8023800)	
100	**RHB-31-40** (8023800)		**RHB-31-90** (8012500)		**RLB-110-40** (8024700)		**RHB-31-40** (8023800)		**RHB-110-100** (8016700)		**RHB-31-40** (8023800)	
110	**RHB-31-50** (8023900)		**RHB-31-100** (8012600)		**RLB-110-50** (8015100)		**RHB-31-40** (8023800)		**RHB-110-110** (8016800)		**RHB-31-40** (8023800)	
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200	**RHB-31-90** (8012500)		**RMB-110-60** (8025000)		**RLB-110-110** (8020100)		**RHB-31-100** (8012600)		**RMB-235-100** (8018100)		**RMB-31-80** (8013400)	
225	**RHB-31-100** (8012600)		**RMB-110-70** (8025100)		**RLB-235-80** (8017500)		**RHB-31-110** (8012700)		**RMB-235-120** (8018300)		**RMB-31-90** (8013500)	
250	**RHB-31-140** (8012800)		**RMB-110-80** (8025200)		**RLB-235-90** (8017600)		**RHB-31-140** (8012800)		**RMB-235-130** (8018400)		**RMB-31-100** (8019400)	
275	**RMB-110-40** (8024800)		**RMB-110-90** (8025300)		**RLB-235-100** (8017700)		**RMB-110-40** (8024800)		**RMB-235-140** (8021600)		**RLB-110-40** (8024700)	
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525	**RMB-110-80** (8025200)		**RLB-235-130** (8022000)				**RMB-110-90** (8025300)				**RLB-110-80** (8015400)	
550	**RMB-110-90** (8025300)		**RLB-235-130** (8022000)				**RMB-110-90** (8025300)				**RLB-110-80** (8015400)	
575	**RMB-110-90** (8025300)		**RLB-235-140** (8022100)				**RMB-110-100** (8025400)				**RLB-110-80** (8015400)	
600	**RMB-110-100** (8025400)		**RLB-235-140** (8022100)				**RMB-110-100** (8025400)				**RLB-110-90** (8019900)	
625	**RMB-110-110** (8016100)		**RLB-235-150** (8022200)				**RMB-110-110** (8016100)				**RLB-110-90** (8019900)	
650	**RMB-110-120** (8016200)		**RLB-235-150** (8022200)				**RMB-110-110** (8016100)				**RLB-110-90** (8019900)	
675	**RMB-110-120** (8016200)		**RLB-235-160** (8022300)				**RMB-110-120** (8016200)				**RLB-110-100** (8020000)	
700	**RMB-110-130** (8020800)		**RLB-235-160** (8022300)				**RMB-110-130** (8020800)				**RLB-110-100** (8020000)	
725	**RMB-110-140** (8016300)		**RLB-235-170** (8022400)				**RLB-110-140** (8020400)				**RLB-110-100** (8020000)	
750	**RMB-110-150** (8020900)		**RLB-235-180** (8022500)				**RLB-110-140** (8020400)				**RLB-110-110** (8020100)	
775	**RMB-110-150** (8020900)		**RLB-235-180** (8022500)				**RLB-110-140** (8020400)				**RLB-110-110** (8020100)	
800	**RLB-235-90** (8017600)		**RLB-235-190** (8022600)				**RLB-110-150** (8020500)				**RLB-110-120** (8020200)	
825	**RLB-235-90** (8017600)		**RLB-235-190** (8022600)				**RLB-110-150** (8020500)				**RLB-110-130** (8020300)	
850	**RLB-235-100** (8017700)		**RLB-235-200** (8022700)				**RLB-110-160** (8020600)				**RLB-110-140** (8020400)	
875	**RLB-235-100** (8017700)		**RLB-235-220** (8022800)				**RLB-235-70** (8017400)				**RLB-235-80** (8017500)	
900	**RLB-235-100** (8017700)		**RLB-235-220** (8022800)				**RLB-235-80** (8017500)				**RLB-235-80** (8017500)	
925	**RLB-235-110** (8017800)		**RLB-235-260** (8023000)				**RLB-235-80** (8017500)				**RLB-235-80** (8017500)	
950	**RLB-235-110** (8017800)		**RLB-235-280** (8023200)				**RLB-235-80** (8017500)				**RLB-235-80** (8017500)	
975	**RLB-235-110** (8017800)						**RLB-235-80** (8017500)				**RLB-235-90** (8017600)	
1000	**RLB-235-110** (8017800)						**RLB-130-90** (8017600)				**RLB-235-90** (8017600)	

* If the logarithmic temperature differences and the medium remain identical, then the same heat exchanger can be selected even if the temperature profiles change. However, the maximum pressure loss can vary and must be checked accordingly.

Longtherm gasketed — quick selection

Output	System separation		Process heating		District heating		Cold Water		Swimming pool	
primary	80 °C	60 °C	90 °C	80 °C	110 °C	55 °C	14 °C	8 °C	40 °C	25 °C
secondary	50 °C	70 °C	77 °C	87 °C	50 °C	70 °C	6 °C	12 °C	15 °C	25 °C
log. temperature difference*	10 K		3 K		16.8 K		2 K		12.3 K	
water / glycol	water / water		water / water		water / water		water / 34 % glycol		38 % glycol / water	
max. pressure loss	20 kPa		35 kPa		25 kPa		40 kPa		25 kPa	
Thermal output [kW]	Heat exchanger type (Art.- No.)									
15	**RHG-04-10** (8026400)		**RHG-08-10** (8027200)		**RHG-04-10** (8026400)		**RHG-08-30** (8027400)		**RHG-04-10** (8026400)	
25	**RHG-04-20** (8026500)		**RHG-08-20** (8027300)		**RHG-04-10** (8026400)		**RHG-08-50** (8027600)		**RHG-04-20** (8026500)	
50	**RHG-04-30** (8026600)		**RHG-08-30** (8027400)		**RHG-04-20** (8026500)		**RHG-14-55** (8111900)		**RHG-04-20** (8026500)	
75	**RHG-04-30** (8026600)		**RHG-08-40** (8027500)		**RHG-04-20** (8026500)		**RHG-14-75** (8112100)		**RHG-04-40** (8026700)	
100	**RHG-04-40** (8026700)		**RHG-08-60** (8027700)		**RHG-04-30** (8026600)		**RHG-20-55** (8112300)		**RHG-04-60** (8026900)	
125	**RHG-04-50** (8026800)		**RHG-14-35** (8111700)		**RHG-04-30** (8026600)		**RHG-20-75** (8112500)		**RHG-07-30** (8028200)	
150	**RHG-04-60** (8026900)		**RHG-14-45** (8111800)		**RHG-04-40** (8026700)		**RHG-20-85** (8112600)		**RHG-07-40** (8028300)	
175	**RHG-04-70** (8027000)		**RHG-14-45** (8111800)		**RHG-04-40** (8026700)		**RHG-19-90** (8113000)		**RHG-07-40** (8028300)	
200	**RMG-14-25** (8028800)		**RHG-14-55** (8111900)		**RHG-04-60** (8026900)		**RHG-19-110** (8113200)		**RHG-07-50** (8028400)	
225	**RMG-14-35** (8111100)		**RHG-14-55** (8111900)		**RHG-07-40** (8028300)		**RHG-19-120** (8113300)		**RHG-07-50** (8028400)	
250	**RMG-14-35** (8111100)		**RHG-14-65** (8112000)		**RHG-07-40** (8028300)		**RHG-19-130** (8113400)		**RHG-07-60** (8028500)	
275	**RMG-14-35** (8111100)		**RHG-14-75** (8112100)		**RHG-07-40** (8028300)		**RHG-19-140** (8113500)		**RHG-07-60** (8028500)	
300	**RMG-14-35** (8111100)		**RHG-14-75** (8112100)		**RHG-07-50** (8028400)		**RMG-51-65** (8115200)		**RHG-07-70** (8028600)	
325	**RMG-14-45** (8111200)		**RHG-14-85** (8112200)		**RHG-07-50** (8028400)		**RMG-51-70** (8115300)		**RHG-07-80** (8028700)	
350	**RMG-14-45** (8111200)		**RHG-21-50** (8116700)		**RHG-07-50** (8028400)		**RMG-51-75** (8115400)		**RMG-19-50** (8029500)	
375	**RMG-14-45** (8111200)		**RHG-21-50** (8116700)		**RHG-07-60** (8028500)		**RMG-51-80** (8115500)		**RMG-19-60** (8029600)	
400	**RMG-14-45** (8111200)		**RHG-21-55** (8116800)		**RHG-07-60** (8028500)		**RMG-51-85** (8115600)		**RMG-19-60** (8029600)	
425	**RMG-14-55** (8111300)		**RHG-21-55** (8116800)		**RHG-07-60** (8028500)		**RMG-51-90** (8115700)		**RMG-19-70** (8113600)	
450	**RMG-14-55** (8111300)		**RHG-21-60** (8116900)		**RHG-07-70** (8028600)		**RMG-51-100** (8115800)		**RMG-19-70** (8113600)	
475	**RMG-14-55** (8111300)		**RHG-21-65** (8117000)		**RHG-07-70** (8028600)		**RMG-51-100** (8115800)		**RMG-19-80** (8113700)	
500	**RMG-14-55** (8111300)		**RHG-21-65** (8117000)		**RHG-07-70** (8028600)		**RMG-51-110** (8115900)		**RMG-21-50** (8114400)	
550	**RMG-14-65** (8111400)		**RHG-21-70** (8117100)		**RHG-07-80** (8028700)		**RMG-51-120** (8116000)		**RMG-21-50** (8114400)	
600	**RMG-14-65** (8111400)		**RHG-21-80** (8117200)		**RMG-14-55** (8111300)		**RMG-51-140** (8116100)		**RMG-21-55** (8114500)	
650	**RMG-14-75** (8111500)		**RHG-21-90** (8117300)		**RMG-14-65** (8111400)		**RMG-51-150** (8116200)		**RMG-21-60** (8114600)	
700	**RMG-14-85** (8111600)		**RHG-21-90** (8117300)		**RMG-19-50** (8029500)		**RMG-51-180** (8116400)		**RMG-21-65** (8114700)	
750	**RMG-19-70** (8113600)		**RHG-21-100** (8025700)		**RMG-19-60** (8029600)		**RMG-51-180** (8116400)		**RMG-21-70** (8114800)	
800	**RMG-19-70** (8113600)		**RHG-21-110** (8025800)		**RMG-19-60** (8029600)		**RMG-51-200** (8116500)		**RMG-21-80** (8114900)	
850	**RMG-19-80** (8113700)		**RHG-21-110** (8025800)		**RMG-19-70** (8113600)				**RMG-21-80** (8114900)	
900	**RMG-19-90** (8113800)		**RHG-21-120** (8025900)		**RMG-19-70** (8113600)				**RMG-21-90** (8115000)	
950	**RMG-21-60** (8114600)		**RHG-21-120** (8025900)		**RMG-19-80** (8113700)				**RMG-21-90** (8115000)	
1000	**RMG-21-65** (8114700)		**RHG-21-130** (8026000)		**RMG-19-80** (8113700)				**RMG-21-100** (8120000)	
1100	**RMG-21-70** (8114800)		**RHG-21-150** (8026200)		**RMG-21-50** (8114400)				**RMG-21-110** (8120100)	
1200	**RMG-21-80** (8114900)		**RHG-21-160** (8026300)		**RMG-21-50** (8114400)				**RMG-21-130** (8120300)	
1300	**RMG-21-90** (8115000)		**RMG-51-160** (8116300)		**RMG-21-60** (8114600)				**RMG-21-150** (8120500)	
1400	**RMG-21-90** (8115000)		**RMG-51-180** (8116400)		**RMG-21-60** (8114600)				**RHB-31-100** (8012600)	
1500	**RMG-21-100** (8120000)		**RMG-51-200** (8116500)		**RMG-21-70** (8114800)				**RMB-14-20** (8011200)	
1600	**RMG-21-100** (8120000)				**RMG-21-70** (8114800)				**RMB-14-10** (8011100)	
1700	**RMG-21-110** (8120100)				**RMG-21-80** (8114900)				**RMB-14-20** (8011200)	
1800	**RMG-21-110** (8120100)				**RMG-21-80** (8114900)				**RHB-31-90** (8012500)	
1900	**RMG-21-120** (8120200)				**RMG-21-90** (8115000				**RHB-31-40** (8023800)	
2000	**RMG-21-130** (8120300)				**RMG-21-100** (8120000)					

* If the logarithmic temperature differences and the medium remain identical, then the same heat exchanger can be selected even if the temperature profiles change. However, the maximum pressure loss can vary and must be checked accordingly.

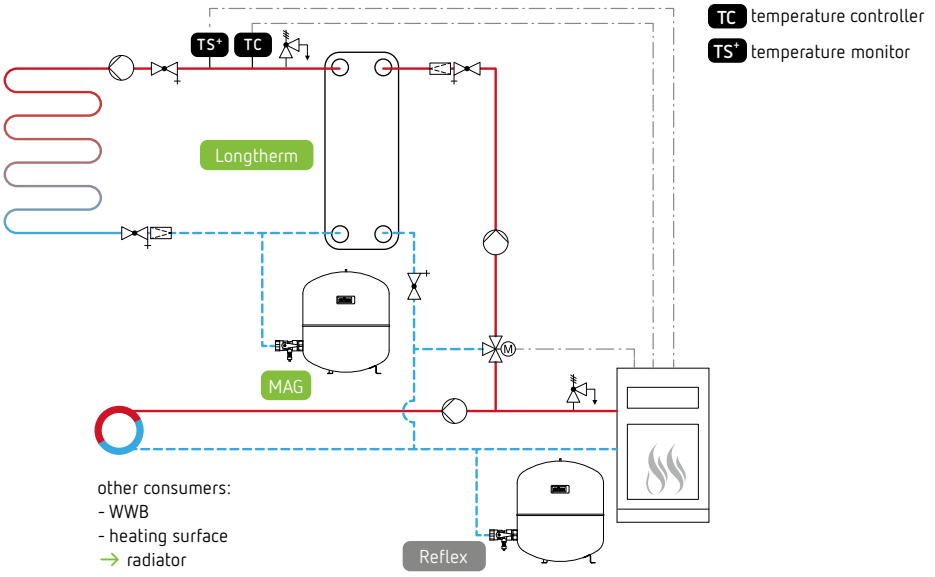
Typical installations

System separation in underfloor heating with Longtherm

When retrofitting Reflex Longtherm for system separation in "old" systems, always flush the underfloor and boiler circuits beforehand.

Controls on the boiler side allows for low return temperatures for efficient use of the calorific value.

Use corrosion-protected expansion vessel in the underfloor heating circuit.

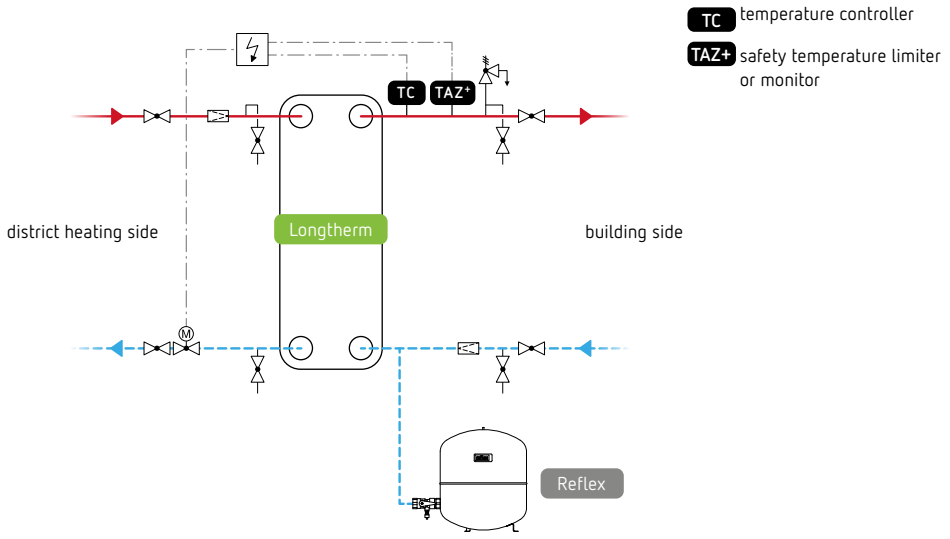


System separation in a district heating transfer station

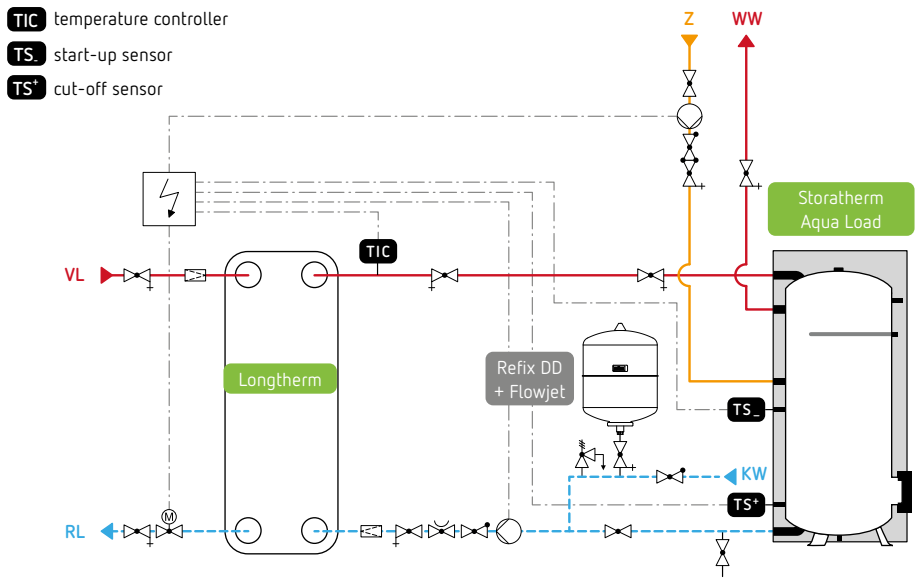
The specific technical connection conditions of the heat supplier must be taken into account.

Due to the often high temperature and pressure loads and variable modes of operation, ensure absolute compliance with the installation, operation and maintenance instructions.

When connecting constant heat consumers (e.g. potable water heating, industrial requirement), always observe the summer temperatures of the district heating network.



Storage-tank charging system for potable water heating

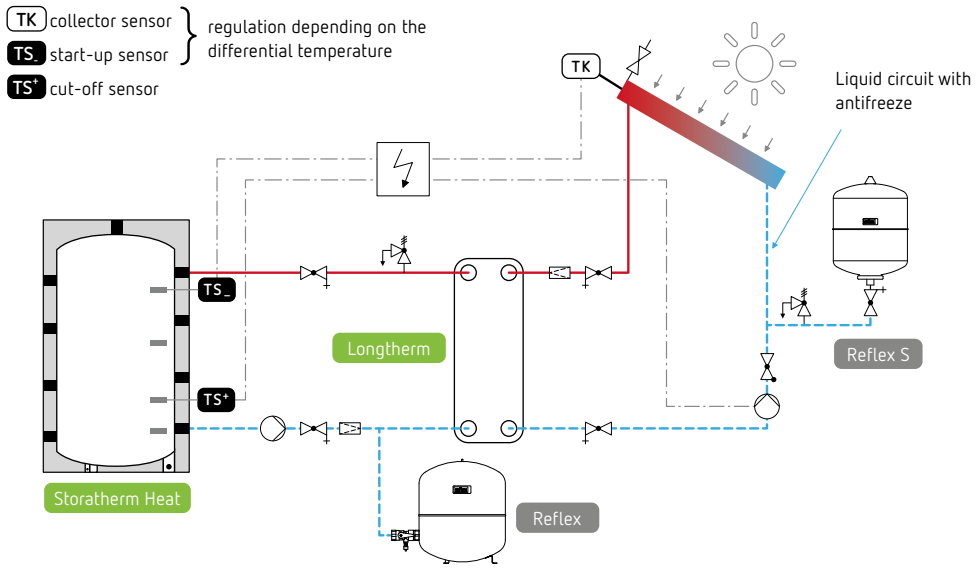


Select a potable water outlet temperature ≤ 60 °C if possible, to minimise the risk of calcification (heating medium temperature ≤ 70 °C).
For a continuous through flow on the potable water side, the calcification risk is lower; if necessary, incorporate the circulation line on the cold water side after the charging pump.

Important:
when configuring the heat exchanger, the sum of the maximum potable water flow ($\dot{V}_{Lade}$) and the circulation flow ($\dot{V}_{Zirk}$) is to be used.

If used as flow heater without a downstream hot water storage tank, always use quick controllers.

Longtherm in a solar system with buffer tank



According to DIN EN 12953 or TRD 402, 18.6: "For pressure expansion vessels and collecting tanks, the actually occurring operating temperature can be used as the calculation temperature."
TRD 604 sheet 2, 1.3.: "With expansion vessel, the installation of a water level limiter is not necessary if there is a response from a minimum pressure limiter on the expansion vessel ... if the water level falls below the lowest water level."

We recommend:
Reflex V intermediate vessel > 120 °C with Reflex BoB-expansion vessel fitting section with one max. / min. pressure limiter (PAZ⁺ / PAZ)and pressure monitor (PAS / PAS) as well as a safety temperature limiter (TAZ⁺) for on-site installation.

The diagrams merely illustrate the different connections.
They have to be adapted to local conditions and detail added.

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Auslegungsdatenblatt / Questionnaire

Reflex Wärmeübertrager / Reflex Heat exchangers

Thinking solutions.

Anschrift / Address

Datum / Date: _____

Ansprechpartner / Contact person:

_____

E-mail: _____

Tel. / Phone: _____

Telefax: _____

Projekt / Project: _____

Auslegungsdaten / Design data

Übertragerleistung / Nominal output: _____ kW ☐ geschraubt / gasketed ☐ gelötet / brazed

Wenn Leistung nicht bekannt, dann mindestens auf einer Seite Volumenstrom und Temperaturen angeben.
If capacity is not known, then please fill in at least the flow rate and temperature for one side.

	Primärseite / Primary side	Sekundärseite / Secondary side	
Medium / Media:	Wasser / Water	Wasser / Water	
Glykol / Glycol:	_____	_____	%
Eintrittstemperatur: Inlet temperature:	_____	_____	°C
Austrittstemperatur: Outlet temperature:	_____	_____	°C
Zul. Druckverluste: Max. pressure drop:	_____	_____	kPa
Volumenstrom: Flow rate:	_____	_____	m^3/h

Zubehör / Accessories:

- ☐ Wärmedämmung für Longtherm / Insulation for Longtherm
- ☐ Anschlussverschraubung mit Gewinde / Connection set with thread
- ☐ Anschlussverschraubung mit Lötende / Connection set for soldering
- ☐ Anschlussverschraubung mit Schweißende / Connection set for welding

Besonderheiten:
Comments:

_____

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Antwort / Answer:
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angebote@reflex.de · www.reflex-winkelmann.com

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