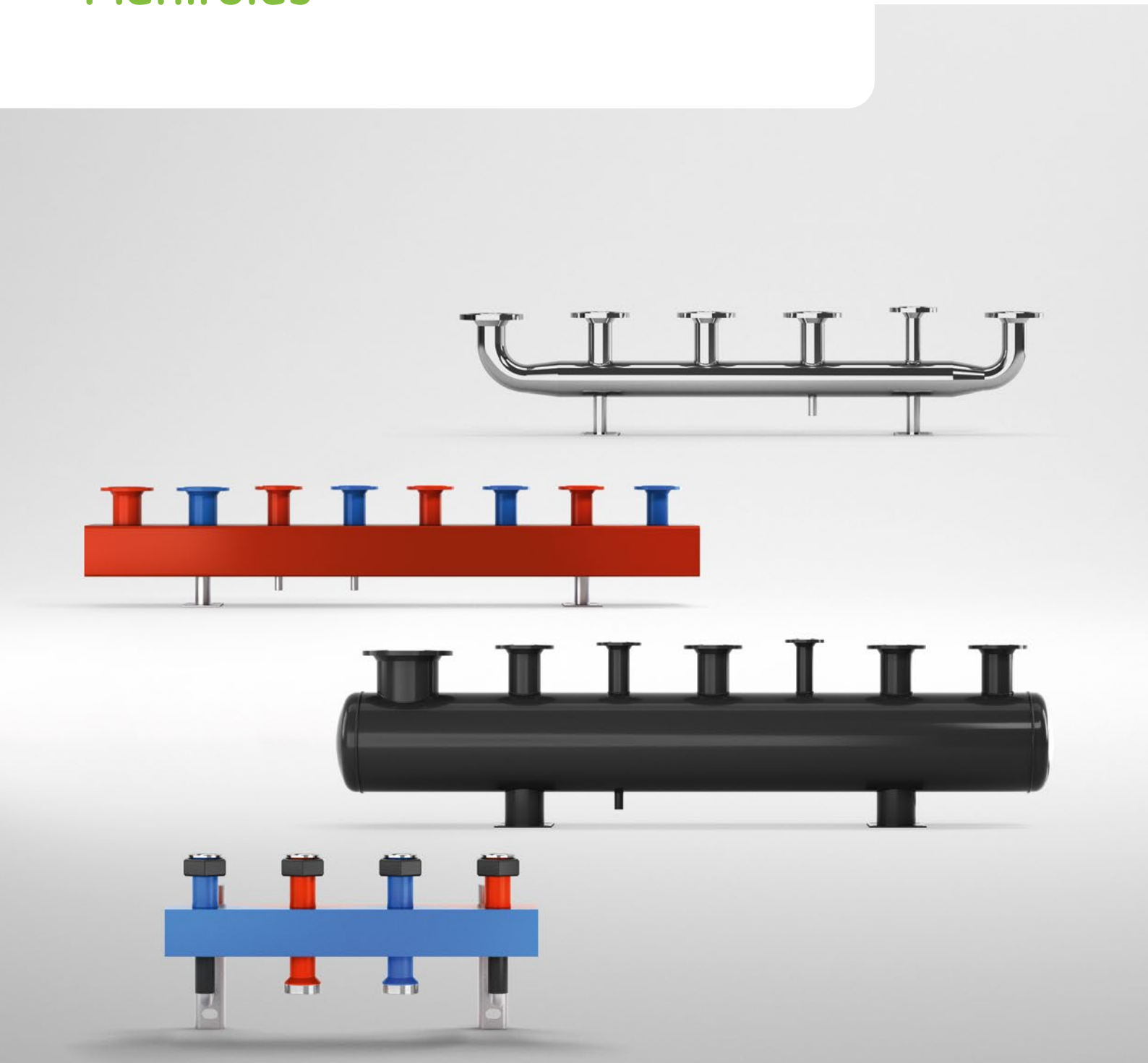
reflex
Thinking solutions.

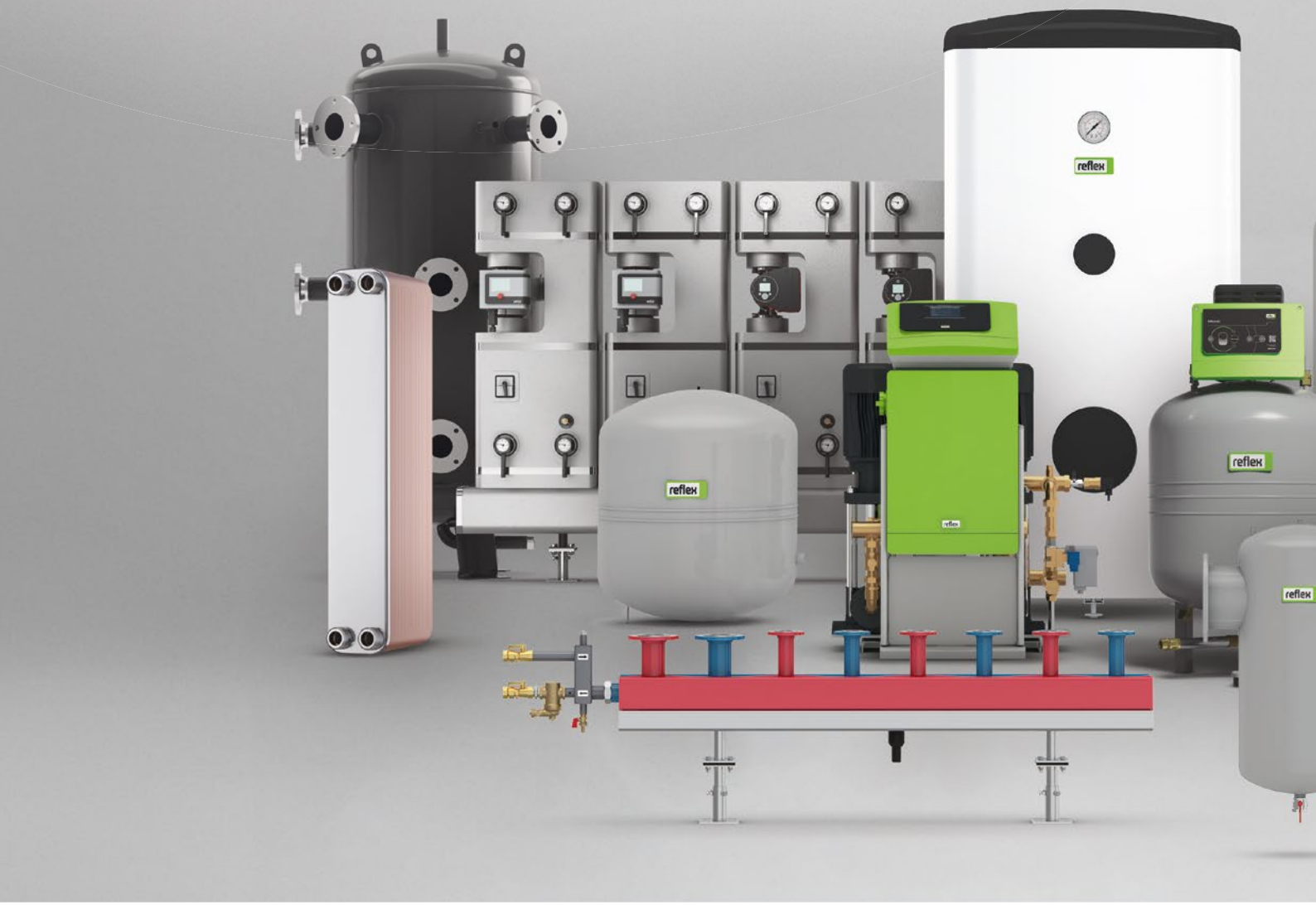
Manifolds



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.



Contents

ProSinusX

Configure at
prosinusx.sinusverteiler.com

→ Find out more on p. 34

Reflex City

Standard or individual: Manifolds for every application
Living, shopping, working and producing — city-life means diversity. And the demands on supply technology are as individual as the buildings themselves. Whether it's a 5 kW system in a detached home or a safety-related cooling system in a computer centre — Reflex offers products and solutions of all sizes and complexities. This self-image is reflected in the Reflex City concept.

SINUS brand manifolds ensure reliable hydraulics in heating and cooling systems. They are an efficient connection between heat generators and heat consumers. Many versions cover the needs of all requirements and can also be individually adapted. In addition, they are a regulative interface for system supplements, for example a Reflex pressure maintenance station or degassing system.

Manifold technology

The functions of manifolds in heating or cooling circuits

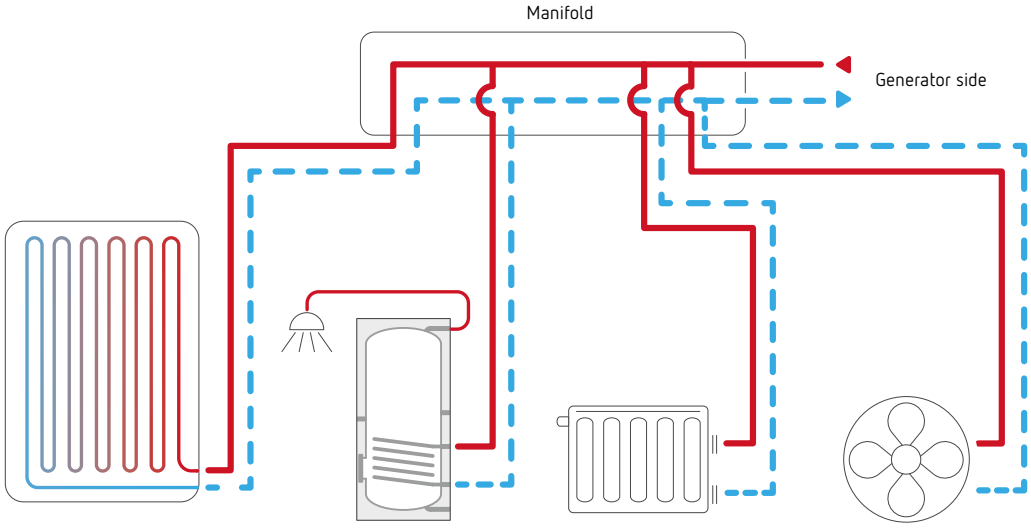
Hydraulic manifolds collect and distribute the media flows in heating and cooling systems. They form the connection between the generator and consumer side and are used for clear and easy-to-install pipe routing.

A manifold has the following advantages in the installation and operation of the system.

- ☑ Space-saving arrangement of the flows and returns
- ☑ Good flow behaviour thanks to sinusoidal arrangement of the flow and return chambers
- ☑ Installation-friendly, compact design
- ☑ Easy maintenance of the components in the heating/cooling circuits

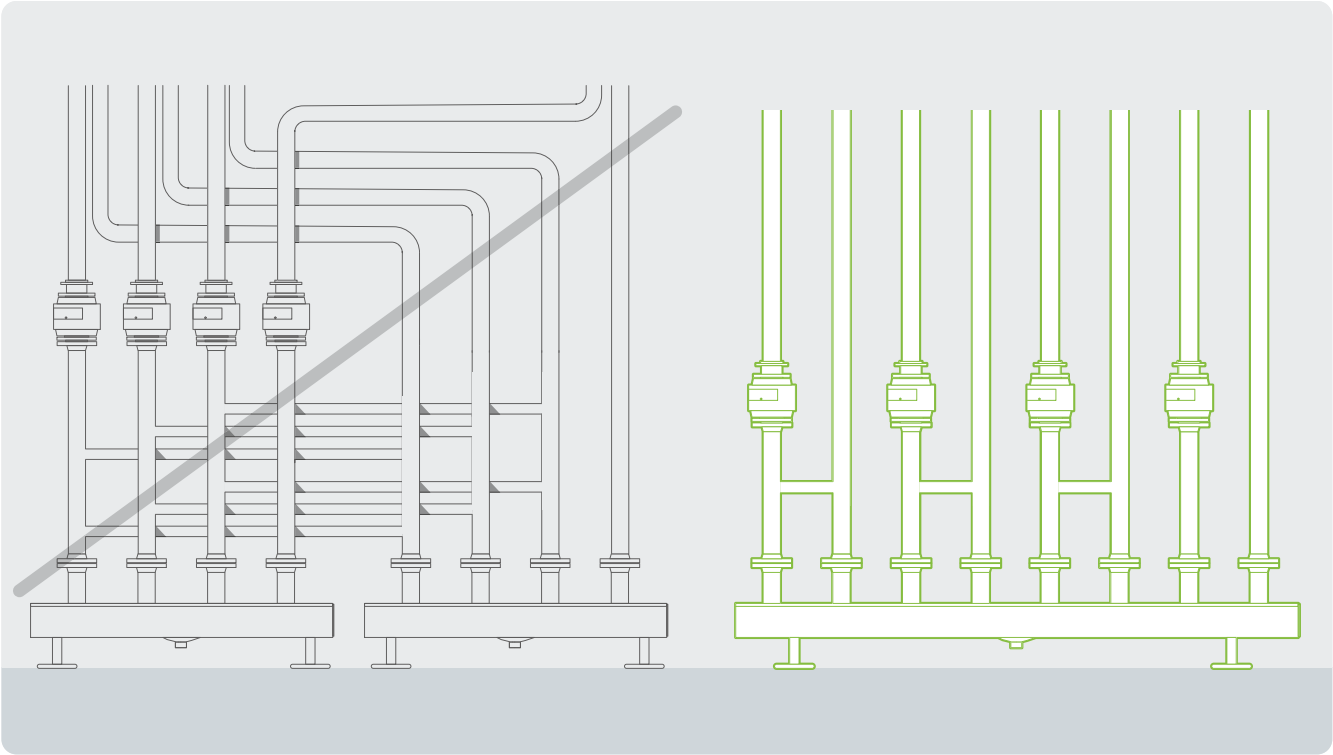
The precise dimensioning and expert installation of the manifold is a requirement for the efficient operation of the overall system.

There are different constructions, which offer other advantages, depending on the set of requirements. What is known as compact manifolds is used most frequently nowadays.



Schematic diagram — Consumer side with heating manifold

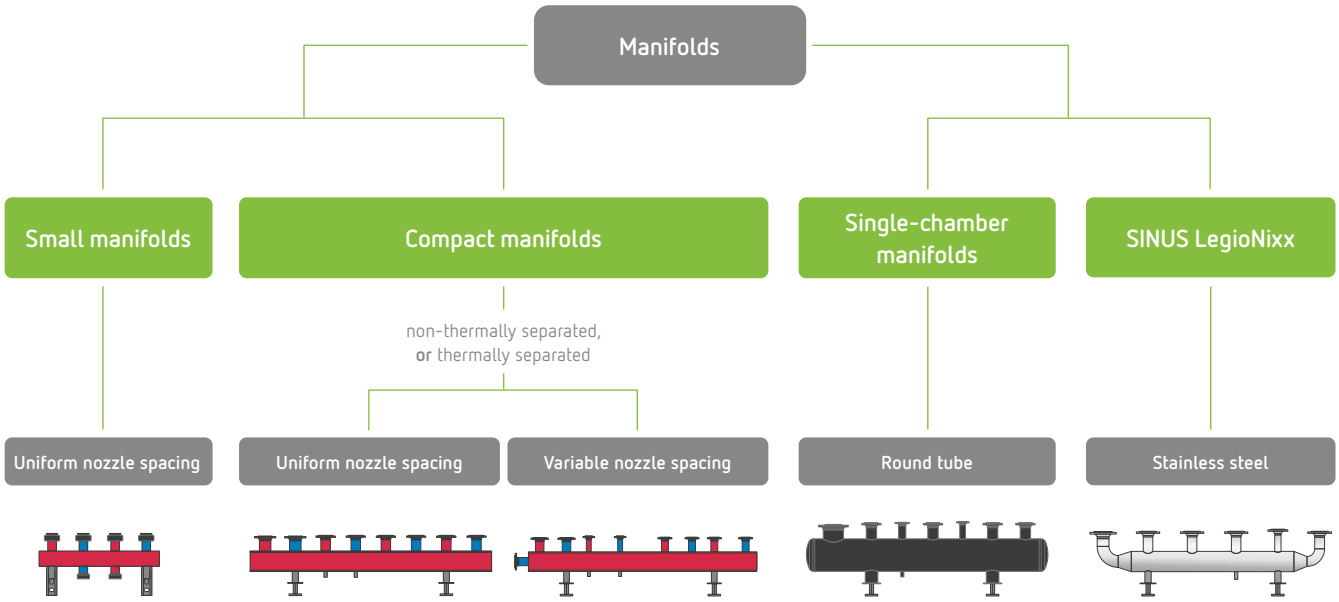
The Sinus principle



Conventional arrangement of manifolds in comparison to manifolds from SINUS

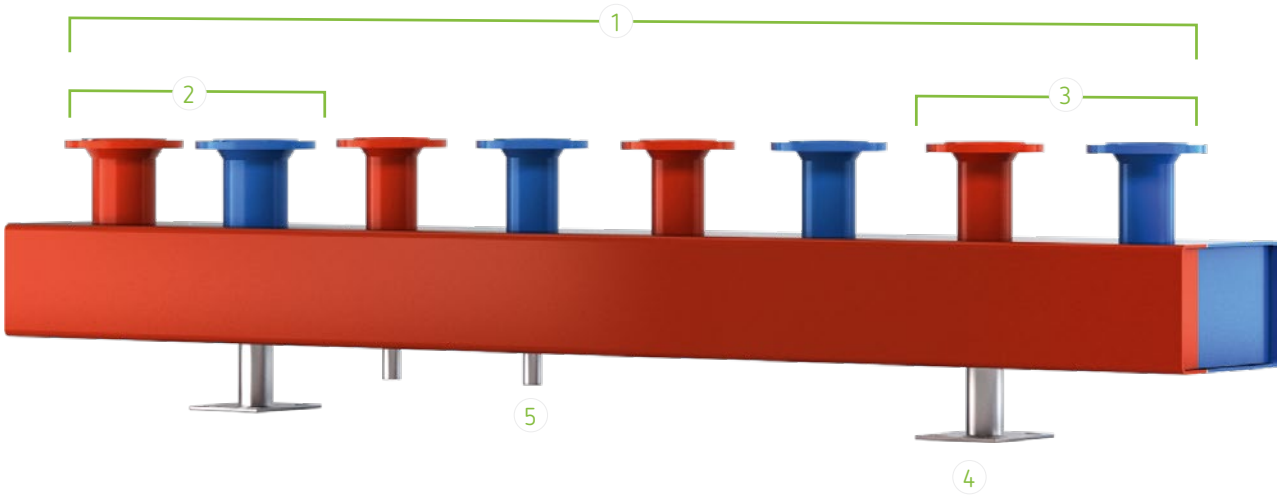
A sinusoidal curve is the trademark of manifolds from SINUS. Here, the flow and return chambers of the manifolds are arranged so that they aligned by the centrally-running sine curve in such a away that the manifold forms a space-saving unit suitable for today's ever smaller central heating systems. This unique construction also comes with the advantage that, with the correct dimensioning, the pressure losses and heat transfer are kept low. Due to the largely laminar flow and low flow velocities in normal heating systems, thermal isolation can normally be dispensed with.

Reflex Solutions — Product Overview



Construction and application

Manifold construction



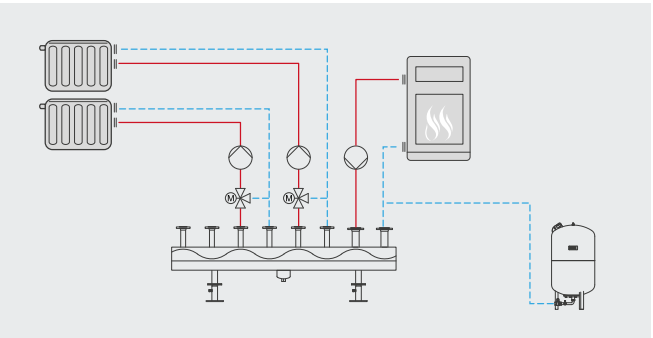
Hydraulic manifolds collect and distribute the media flows in heating and cooling systems.

1. Connections
   optionally with flange, sleeve, threaded connector, pipe nozzles
2. Flow and return
   dimensions are variable
3. Heating circuit
   variable number
4. Console
   as upright console or wall bracket
5. Draining
   for repairs and maintenance work

Applications

SINUS manifolds are manufactured according to requirements:

- as space-saving compact manifolds for easy and quick installation, without any crossing pipelines
- with uniform or variable nozzle separations
- as thermally isolated or non-isolated manifolds
- as round tube manifolds for systems with high pressures and temperatures
- as individual manifolds and collectors for flow and return
- as a stainless steel version



Installation situation of a compact manifold

Small manifolds

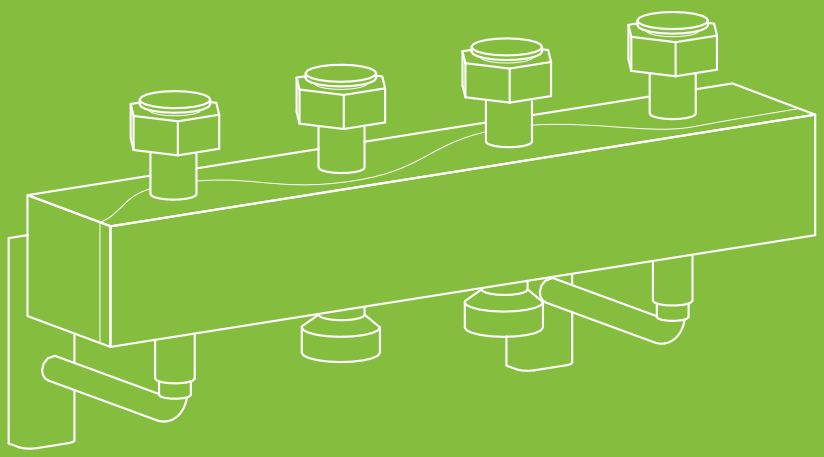
Key advantages

System safety through perfectly functioning hydraulics

- Reliable hydraulics
- High quality due to the laser welding method

Convenient handling

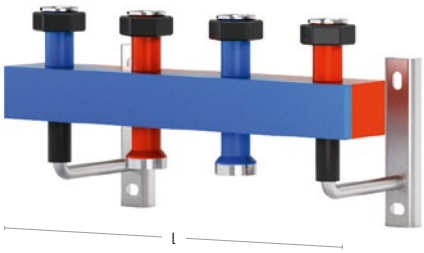
- Suitable for standard commercial pump groups
- Space-saving
- Quick and easy installation
- With bespoke insulation and wall mount



Product portfolio

SINUS Orders for SINUS products to sinus@reflex.de

Small manifolds



Small manifolds 80/60

Technical Features

- combined flow and return manifold, consisting rectangular tube with adjoining chambers divided by sinusoidal dividing wall made from mild steel sheet S235
- 100 % factory-checked for leak tightness and primed
- with thread or union nuts
- packed as a set
- type 80/60: with EPP insulation and wall mount
- type 120/80: with EPP insulation
- permissible operating temperature -10 °C – 110 °C
- permissible operating overpressure 0 bar – 4 bar
- ideal for use with: maintenance box

Type	Art. No.	Heating circuits [pcs.]	Connection generator	Connection heating circuit	V_{max} [m³/h]	Output at ΔT 20 °K [kW]	Length l [mm]
Nozzle spacing 125 mm							
80/60	4208563	2	G 1 ½"	G 1 ½" coupling nut	3.0	70.00	475
80/60	4211930	2	R 1"	R 1"	3.0	70.00	475
80/60	4205962	3	R 1"	R 1"	3.0	70.00	725
80/60	4208565	3	G 1 ½"	G 1 ½" coupling nut	3.0	70.00	725
80/60	4206012	4	R 1"	R 1"	3.0	70.00	975
80/60	4208851	4	G 1 ½"	G 1 ½" coupling nut	3.0	70.00	975
80/60	4205899	5	R 1"	R 1"	3.0	70.00	1,225
80/60	4208852	5	G 1 ½"	G 1 ½" coupling nut	3.0	70.00	1,225
80/60	4205977	6	R 1"	R 1"	3.0	70.00	1,475
80/60	4208853	6	G 1 ½"	G 1 ½" coupling nut	3.0	70.00	1,475
120/80	4208504	2	R 2"	G 1 ½" coupling nut	6.5	150.00	480
120/80	4208569	3	R 2"	G 1 ½" coupling nut	6.5	150.00	735
120/80	4208777	4	R 2"	G 1 ½" coupling nut	6.5	150.00	990
120/80	4208778	5	R 2"	G 1 ½" coupling nut	6.5	150.00	1,245
120/80	4208781	6	R 2"	G 1 ½" coupling nut	6.5	150.00	1,500
Nozzle spacing 200 mm							
80/60	4208572	2	R 1 ¼"	R 1"	3.0	70.00	700
80/60	4208571	3	R 1 ¼"	R 1"	3.0	70.00	1,100
80/60	4208773	4	R 1 ¼"	R 1"	3.0	70.00	1,500
80/60	4208774	5	R 1 ¼"	R 1"	3.0	70.00	1,900
80/60	4208776	6	R 1 ¼"	R 1"	3.0	70.00	2,300
120/80	4208574	2	R 2"	Rp 1 ½"	6.5	150.00	670
120/80	4208580	3	R 2"	Rp 1 ½"	6.5	150.00	1,070
120/80	4208787	4	R 2"	Rp 1 ½"	6.5	150.00	1,500
120/80	4208792	5	R 2"	Rp 1 ½"	6.5	150.00	1,900
120/80	4208793	6	R 2"	Rp 1 ½"	6.5	150.00	2,300

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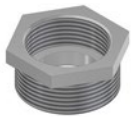
Small manifolds accessories

adapter piece

- to reduce 1½" union nuts to 1¼"



name plate

- for marking the heating circuits, made of galvanised steel sheet for three rows of lettering. The name plate is suitable for screwing to the finished insulation
- size: 100 × 50 mm
- colours: red (RD) for flow & blue (BU) for return

threaded flange

- compression stage flange PN 6
- for 120 / 80 manifold
- for implementation of the boiler feed and return nozzle as a flanged nozzle

reducing nipple

- for 120 / 80 with 200 mm nozzle spacing
- for implementation of the connections as threaded connections, made of malleable cast iron with male threading on both ends

stand bracket

- sound-proofed and galvanised, comprising floor plate with steel tube and head plate with guide tube including connecting screws
- height adjustable in two versions (270 – 340 mm or 405 – 600 mm), the dimension indicates the distance between the floor and bottom edge of the manifold

wall bracket

- sound-proofed and galvanised comprising a head plate fitted on an adjustable guide carriage
- infinitely adjustable in depth
- overhang to manifold middle

maintenance box

- for magnetite slurry removal for all small manifolds, SINUS MonoFixx and SINUS HydroFixx
- enables desludging in pressurised systems
- comprising special section tube 120 × 80 or 80 × 60, steel S235
- provided with a desludging nozzle and ½" ball valve as well as a magnetic rod screwed into the immersion sleeve
- for mounting in the main boiler return of the manifold
- with EPP insulation
- permissible operating temperature -10 °C – 110 °C
- permissible operating overpressure 0 bar – 4 bar

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Small manifolds accessories

Type	Art. No.	Weight [kg]
adapter piece	4200001	–
threaded flange DN 50 / PN 6	4200906	–
name plate		
name plate RD	4200015	–
name plate BU	4200021	–
maintenance box		
maintenance box 80 / 60	4209770	–
maintenance box 120 / 80	4209771	–
reducing nipple		
reducing nipple RN 1 ½" × ¾"	4205890	–
reducing nipple RN 1 ½" × 1"	4205891	–
reducing nipple RN 1 ½" × 1 ¼"	4205892	–
reducing nipple RN 1 ½" × 1 ½"	4205960	–
reducing nipple RN 1 ½" × 2"	4205961	–
stand bracket		
stand bracket STKO 270 – 340 mm max 120 / 80	4205954	–
wall bracket		
wall bracket WAKO 200 mm max 120 / 80	4207264	–

Compact manifolds

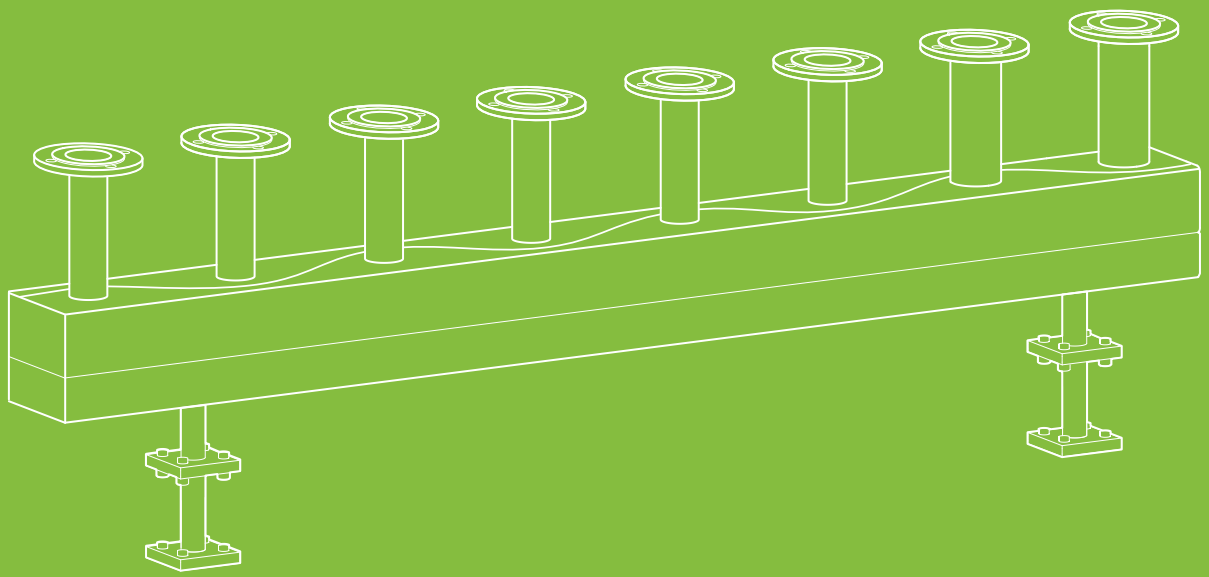
Key advantages

System safety through perfectly functioning hydraulics

- Clear and clean system display
- Reliable hydraulics

Convenient handling

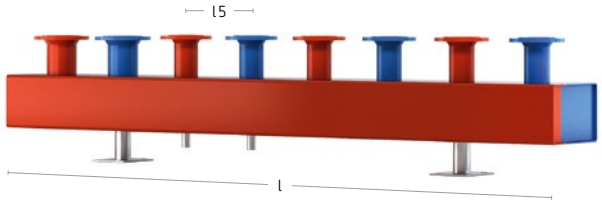
- Can be individually configured with the ProSinusX online tool
- Quick and easy installation
- Easy maintenance of the fittings and pumps installed in circuits
- Can be used flexibly in systems with different system pressures
- Building adaptation in the case of renovation



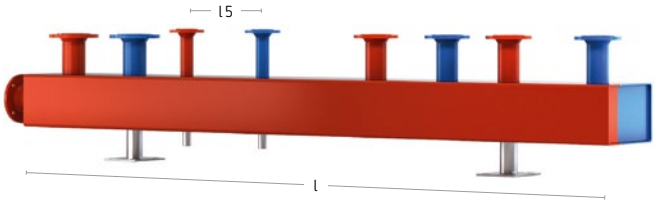
Product portfolio

SINUS Orders for SINUS products to **sinus@reflex.de**

Compact manifolds



Compact manifold with uniform nozzle spacings



Compact manifold with variable nozzle spacings

Technical Features

- combined flow and return manifold, consisting rectangular tube with adjoining chambers divided by sinusoidal dividing wall made from mild steel sheet S235
- 100 % factory-checked for leak tightness and primed
- with threaded or PN 6/PN 16 flange nozzle
- permissible operating temperature -10 °C – 110 °C
- permissible operating overpressure 0 bar – 6 bar
- nozzles aligned at the height of the shut-off valves
- optionally possible from above, the side or below
- draining sleeves for flow and return chambers are fitted as standard
- possible special configurations:
  → larger dimensions, other version
  → corrosion protection according to AGI, worksheet Q 151

Type	Art. No.		Number of nozzles	Largest nozzle	V_{max}	Output at ΔT 20 °K	Length	Connection separation l5
	16 bar	6 bar	[pcs.]		[m³/h]	[kW]	[mm]	[mm]
Uniform nozzle spacing								
120/80	–	4205817	6	to DN 50	6.5	150.00	1,200	200
120/80	–	4205759	6	to DN 50	6.5	150.00	1,490	250
120/80	–	4205804	8	to DN 50	6.5	150.00	1,600	200
120/80	–	4205799	8	to DN 50	6.5	150.00	2,000	250
120/80	–	4205805	10	to DN 50	6.5	150.00	2,000	200
120/80	–	4205814	10	to DN 50	6.5	150.00	2,400	250
160/80	–	4205942	6	to DN 65	10.8	250.00	1,450	250
160/80	–	4205937	6	to DN 65	10.8	250.00	1,700	300
160/80	–	4205917	8	to DN 65	10.8	250.00	1,950	250
160/80	–	4205943	8	to DN 65	10.8	250.00	2,300	300
160/80	–	4205952	10	to DN 65	10.8	250.00	2,900	300

Compact manifolds continued

Type	Art. No.		Number of nozzles [pcs.]	Largest nozzle	V_{max} [m³/h]	Output at ΔT 20 °K [kW]	Length [mm]	Connection separation l5 [mm]
	16 bar	6 bar						
180/110	–	4205936	6	to DN 100	17.2	400.00	1,500	250
180/110	–	4205803	6	to DN 100	17.2	400.00	1,750	300
180/110	–	4205829	6	to DN 100	17.2	400.00	1,950	350
180/110	–	4205761	8	to DN 100	17.2	400.00	2,000	250
180/110	–	4205800	8	to DN 100	17.2	400.00	2,350	300
180/110	–	4205652	8	to DN 100	17.2	400.00	2,650	350
180/110	–	4205827	10	to DN 100	17.2	400.00	2,400	250
180/110	–	4205779	10	to DN 100	17.2	400.00	2,950	300
180/110	–	4205762	10	to DN 100	17.2	400.00	3,350	350
200/120	–	4206245	6	to DN 100	25.8	600.00	1,500	250
200/120	–	4205695	6	to DN 100	25.8	600.00	1,950	350
200/120	–	4206246	8	to DN 100	25.8	600.00	2,000	250
200/120	–	4205757	8	to DN 100	25.8	600.00	2,350	300
200/120	–	4205662	8	to DN 100	25.8	600.00	2,650	350
200/120	–	4206247	10	to DN 100	25.8	600.00	2,400	250
200/120	–	4205838	10	to DN 100	25.8	600.00	3,350	350
280/180	–	4207847	6	to DN 125	53.8	1,250.00	1,800	300
280/180	–	4209319	6	to DN 125	53.8	1,250.00	2,100	350
280/180	–	4209318	8	to DN 125	53.8	1,250.00	2,400	300
280/180	–	4207845	8	to DN 125	53.8	1,250.00	2,800	350
280/180	–	4207846	10	to DN 125	53.8	1,250.00	3,000	300
280/180	–	4207872	10	to DN 125	53.8	1,250.00	3,500	350
300/200	–	4205953	6	to DN 150	68.8	1,600.00	1,800	300
300/200	–	4205832	6	to DN 150	68.8	1,600.00	2,100	350
300/200	–	4205944	8	to DN 150	68.8	1,600.00	2,400	300
300/200	–	4205656	8	to DN 150	68.8	1,600.00	2,800	350
300/200	–	4205950	10	to DN 150	68.8	1,600.00	3,000	300
300/200	–	4205696	10	to DN 150	68.8	1,600.00	3,500	350
Variable nozzle spacing								
120/80	4202245	4200905	–	to DN 50	6.5	150.00	–	–
160/80	4202316	4200967	–	to DN 65	10.8	250.00	–	–
180/110	4202317	4205976	–	to DN 100	17.2	400.00	–	–
200/120	4202328	4200975	–	to DN 100	25.8	600.00	–	–
250/150	4205185	4205184	–	to DN 125	38.7	900.00	–	–
280/180	4207593	4205923	–	to DN 125	53.8	1,250.00	–	–
300/200	4202330	4200989	–	to DN 150	68.8	1,600.00	–	–
400/200	4202331	4200971	–	to DN 150	90.0	2,100.00	–	–
450/250	4202322	4200961	–	to DN 200	150.0	3,500.00	–	–
500/300	4202323	4200956	–	to DN 250	194.0	4,500.00	–	–
600/400	4202324	4200974	–	to DN 300	267.0	6,200.00	–	–
700/500	4202325	4200968	–	to DN 350	391.0	9,100.00	–	–

SINUS Orders for SINUS products to **sinus@reflex.de**

Compact manifolds accessories

name plate

- for marking the heating circuits, made of galvanised steel sheet for three rows of lettering. The name plate is suitable for screwing to the finished insulation
- size: 100 × 50 mm
- colours: red (RD) for flow & blue (BU) for return

insulation

- comprising interlocking half shells with end-pieces
- customised and precisely fitting cut-outs for all connection nozzles are provided in the factory
- the half shells are fitted using stainless-steel clamping straps and quick-release fasteners
- this enables simple installation and disassembly for overhaul purposes

SINUS EasyFixx

- can be used in combination with dynamic pressure maintenance and/or degassing
- capacity range approx. 250 kW to 2,100 kW
- permissible operating temperature 110 °C
- permissible operating overpressure 6 bar
- application range:
  - → compact manifold 180/110 – 300/200
  - → thermally separated compact manifold: 250/151 – 300/201
  - → SINUS HydroFixx: 180/180 – 300/350
  - → round tube manifold DN 65 – DN 300

draining gutter

- discharge trough for safe and clean collection and capture of the system water to be drained from the respective heating or cooling circuits
- comprising galvanised steel plate edged in the form of a U-section
- the length of the trough depends on the corresponding manifold and is prefabricated in the factory to ensure a precise fit
- to prevent spray water, a spray water lip of 30 mm is provided
- a chrome plated flow sieve with a 2" male thread is included

stand bracket

- sound-proofed and galvanised, comprising floor plate with steel tube and head plate with guide tube including connecting screws
- height adjustable in two versions (270 – 340 mm or 405 – 600 mm), the dimension indicates the distance between the floor and bottom edge of the manifold

wall bracket

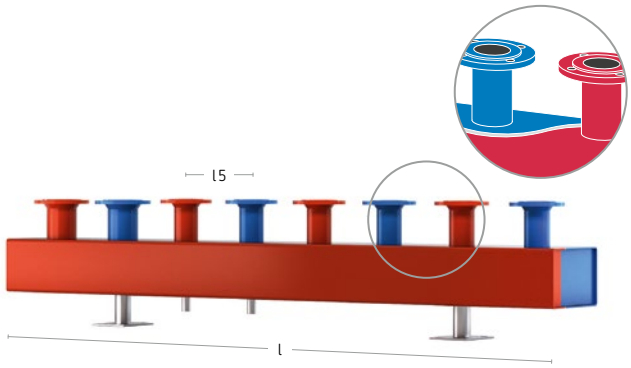
- sound-proofed and galvanised comprising a head plate fitted on an adjustable guide carriage
- infinitely adjustable in depth
- overhang to manifold middle

SINUS Orders for SINUS products to sinus@reflex.de

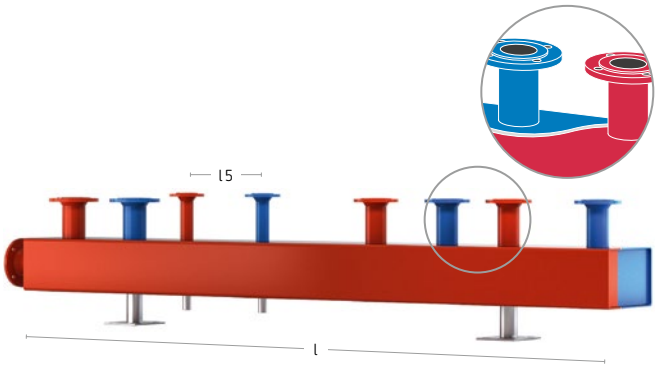
Compact manifolds accessories

Type	Art. No.	Weight [kg]
SINUS EasyFixx	4202284	4.46
draining gutter		
draining gutter ELR galv	4205889	–
stand bracket STKO ELR	4205878	2.40
wall bracket WKO ELR	4205705	1.58
name plate		
name plate RD	4200015	–
name plate BU	4200021	–
insulation 45 mm PUR foam/Aluminium coarse grain jacket, thermal conductivity 0,026 W/m × K		
insulation 120/80	4205731	–
insulation 160/80	4205897	–
insulation 180/110	4205703	–
insulation 200/120	4206010	–
insulation 50 mm PUR foam/Aluminium coarse grain jacket, thermal conductivity 0,026 W/m × K		
insulation 280/180	4201454	–
insulation 300/200	4206448	–
insulation 45 mm PUR foam/galvanised sheet steel jacket, thermal conductivity 0,026 W/m × K		
insulation 120/80	4205658	–
insulation 160/80	4205518	–
insulation 180/110	4205643	–
insulation 200/120	4205956	–
insulation 250/150	4210849	–
insulation 50 mm PUR foam/galvanised sheet steel jacket, thermal conductivity 0,026 W/m × K		
insulation 280/180	4201353	–
insulation 300/200	4205592	–
insulation 60 mm PUR foam/galvanised sheet steel jacket, thermal conductivity 0,026 W/m × K		
insulation 400/200	4206045	–
insulation 450/250	4206046	–
insulation 500/300	4206047	–
insulation 600/400	4206048	–
insulation 700/500	4206049	–
insulation 100 mm mineral wool/galvanised sheet steel jacket, thermal conductivity 0,038 W/m × K		
insulation 120/80	4205659	–
insulation 160/80	4205996	–
insulation 180/110	4205593	–
insulation 200/120	4205704	–
insulation 250/150	4209925	–
insulation 280/180	4201347	–
insulation 300/200	4205517	–
insulation 400/200	4206050	–
insulation 450/250	4206051	–
insulation 500/300	4206052	–
insulation 600/400	4206053	–
insulation 700/500	4206054	–
stand bracket		
stand bracket STKO 270 – 340 mm max 200/120 DN 200	4206574	–
stand bracket STKO 270 – 340 mm max 300/200 DN 250	4205957	5.40
stand bracket STKO 270 – 340 mm max 500/300 DN 400	4206097	12.00
stand bracket STKO 300 mm max 700/500 DN 800	4205580	24.00
wall bracket		
wall bracket WAKO 220 mm max 160/80 DN 200	4205900	–
wall bracket WAKO 300 mm max 200/120 DN 200	4205955	–
wall bracket WAKO 500 mm max 300/200 DN 250	4205581	–

Compact manifolds thermally separated



Compact manifold, thermally separated with uniform nozzle spacings



Compact manifold, thermally separated with variable nozzle spacings

Technical Features

- combined flow and return manifold, comprising rectangular tube with adjoining chambers divided by sinusoidal dividing walls and 20 mm thick air layer made from black steel sheet S235. The air layer reduces the heat transfer between the flow and return chambers.
- 100 % factory-checked for leak tightness and primed
- permissible operating temperature -10 °C – 110 °C
- permissible operating overpressure 0 bar – 6 bar
- nozzles aligned at the height of the shut-off valves
- optionally possible from above, the side or below
- draining sleeves for flow and return chambers are fitted as standard
- possible special configurations:
  → larger dimensions, other version
  → corrosion protection according to AGI, worksheet Q 151

Type	Art. No.		Number of nozzles	Largest nozzle	V_{max}	Output at ΔT 20 °K	Length	Connection separation l5
	16 bar	6 bar	[pcs.]		[m³/h]	[kW]	[mm]	[mm]
Uniform nozzle spacing								
160/81	–	4205666	6	to DN 65	9.0	210.00	1,500	250
160/81	–	4205649	6	to DN 65	9.0	210.00	1,750	300
160/81	–	4205711	8	to DN 65	9.0	210.00	2,000	250
160/81	–	4205771	8	to DN 65	9.0	210.00	2,350	300
160/81	–	4205712	10	to DN 65	9.0	210.00	2,400	250
160/81	–	4205668	10	to DN 65	9.0	210.00	2,950	300
180/111	–	4205669	6	to DN 80	13.8	320.00	1,500	250
180/111	–	4205845	6	to DN 80	13.8	320.00	1,750	300
180/111	–	4205844	8	to DN 80	13.8	320.00	2,000	250
180/111	–	4205672	8	to DN 80	13.8	320.00	2,350	300
180/111	–	4205670	10	to DN 80	13.8	320.00	2,400	250
180/111	–	4205746	10	to DN 80	13.8	320.00	2,950	300

Compact manifolds thermally separated continued

Type	Art. No.		Number of nozzles	Largest nozzle	V_{max}	Output at ΔT 20 °K	Length	Connection separation l5
	16 bar	6 bar	[pcs.]		[m³/h]	[kW]	[mm]	[mm]
200/121	–	4206255	6	to DN 80	22.0	510.00	1,500	250
200/121	–	4205749	6	to DN 80	22.0	510.00	1,750	300
200/121	–	4206256	8	to DN 80	22.0	510.00	2,000	250
200/121	–	4205720	8	to DN 80	22.0	510.00	2,350	300
200/121	–	4206257	10	to DN 80	22.0	510.00	2,400	250
200/121	–	4205674	10	to DN 80	22.0	510.00	2,950	300
280/181	–	4205798	6	to DN 125	42.0	980.00	1,800	300
280/181	–	4205752	6	to DN 125	42.0	980.00	2,100	350
280/181	–	4205675	8	to DN 125	42.0	980.00	2,400	300
280/181	–	4205678	8	to DN 125	42.0	980.00	2,800	350
280/181	–	4205751	10	to DN 125	42.0	980.00	3,000	300
280/181	–	4205679	10	to DN 125	42.0	980.00	3,500	350
300/201	–	4205722	6	to DN 125	60.2	1,400.00	1,800	300
300/201	–	4205683	6	to DN 125	60.2	1,400.00	2,100	350
300/201	–	4205723	8	to DN 125	60.2	1,400.00	2,400	300
300/201	–	4205826	8	to DN 125	60.2	1,400.00	2,800	350
300/201	–	4205724	10	to DN 125	60.2	1,400.00	3,000	300
300/201	–	4205728	10	to DN 125	60.2	1,400.00	3,500	350
Variable nozzle spacing								
160/81	–	4213873	–	to DN 65	9.0	210.00	–	–
180/111	4202333	4200562	–	to DN 80	13.8	320.00	–	–
200/121	4202334	4200754	–	to DN 80	22.0	510.00	–	–
250/151	4204789	4204299	–	to DN 100	32.2	825.00	–	–
280/181	4202335	4200797	–	to DN 125	42.0	980.00	–	–
300/201	4202336	4200798	–	to DN 125	60.2	1,400.00	–	–
400/201	4202337	4200969	–	to DN 150	77.0	1,800.00	–	–
450/251	4202338	4200962	–	to DN 200	125.0	2,900.00	–	–
500/301	4202339	4200963	–	to DN 250	194.0	4,500.00	–	–
600/401	4202340	4200957	–	to DN 300	267.0	6,200.00	–	–
700/501	4202343	4200972	–	to DN 350	391.0	9,100.00	–	–

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Compact manifolds thermally separated accessories

name plate

- for marking the heating circuits, made of galvanised steel sheet for three rows of lettering. The name plate is suitable for screwing to the finished insulation
- size: 100 × 50 mm
- colours: red (RD) for flow & blue (BU) for return

insulation

- comprising interlocking half shells with end-pieces
- customised and precisely fitting cut-outs for all connection nozzles are provided in the factory
- the half shells are fitted using stainless-steel clamping straps and quick-release fasteners
- this enables simple installation and disassembly for overhaul purposes

SINUS EasyFixx

- can be used in combination with dynamic pressure maintenance and/or degassing
- capacity range approx. 250 kW to 2,100 kW
- permissible operating temperature 110 °C
- permissible operating overpressure 6 bar
- application range:
  - → compact manifold 180/110 – 300/200
  - → thermally separated compact manifold: 250/151 – 300/201
  - → SINUS HydroFixx: 180/180 – 300/350
  - → round tube manifold DN 65 – DN 300

draining gutter

- discharge trough for safe and clean collection and capture of the system water to be drained from the respective heating or cooling circuits
- comprising galvanised steel plate edged in the form of a U-section
- the length of the trough depends on the corresponding manifold and is prefabricated in the factory to ensure a precise fit
- to prevent spray water, a spray water lip of 30 mm is provided
- a chrome plated flow sieve with a 2" male thread is included

stand bracket

- sound-proofed and galvanised, comprising floor plate with steel tube and head plate with guide tube including connecting screws
- height adjustable in two versions (270 – 340 mm or 405 – 600 mm), the dimension indicates the distance between the floor and bottom edge of the manifold

wall bracket

- sound-proofed and galvanised comprising a head plate fitted on an adjustable guide carriage
- infinitely adjustable in depth
- overhang to manifold middle

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Compact manifolds thermally separated accessories

Type	Art. No.	Weight [kg]
SINUS EasyFixx	4202284	4.46
draining gutter		
draining gutter ELR galv	4205889	–
stand bracket STKO ELR	4205878	2.40
wall bracket WKO ELR	4205705	1.58
name plate		
name plate RD	4200015	–
name plate BU	4200021	–
insulation 45 mm PUR foam/Aluminium coarse grain jacket, thermal conductivity 0,026 W/m × K		
insulation 160/80	4205897	–
insulation 180/110	4205703	–
insulation 200/120	4206010	–
insulation 50 mm PUR foam/Aluminium coarse grain jacket, thermal conductivity 0,026 W/m × K		
insulation 280/180	4201454	–
insulation 300/200	4206448	–
insulation 45 mm PUR foam/galvanised sheet steel jacket, thermal conductivity 0,026 W/m × K		
insulation 160/80	4205518	–
insulation 180/110	4205643	–
insulation 200/120	4205956	–
insulation 250/150	4210849	–
insulation 50 mm PUR foam/galvanised sheet steel jacket, thermal conductivity 0,026 W/m × K		
insulation 280/180	4201353	–
insulation 300/200	4205592	–
insulation 60 mm PUR foam/galvanised sheet steel jacket, thermal conductivity 0,026 W/m × K		
insulation 400/200	4206045	–
insulation 450/250	4206046	–
insulation 500/300	4206047	–
insulation 600/400	4206048	–
insulation 700/500	4206049	–
insulation 100 mm mineral wool/galvanised sheet steel jacket, thermal conductivity 0,038 W/m × K		
insulation 160/80	4205996	–
insulation 180/110	4205593	–
insulation 200/120	4205704	–
insulation 250/150	4209925	–
insulation 280/180	4201347	–
insulation 300/200	4205517	–
insulation 400/200	4206050	–
insulation 450/250	4206051	–
insulation 500/300	4206052	–
insulation 600/400	4206053	–
insulation 700/500	4206054	–
stand bracket		
stand bracket STKO 270 – 340 mm max 200/120 DN 200	4206574	–
stand bracket STKO 270 – 340 mm max 300/200 DN 250	4205957	5.40
stand bracket STKO 270 – 340 mm max 500/300 DN 400	4206097	12.00
stand bracket STKO 300 mm max 700/500 DN 800	4205580	24.00
wall bracket		
wall bracket WAKO 220 mm max 160/80 DN 200	4205900	–
wall bracket WAKO 300 mm max 200/120 DN 200	4205955	–
wall bracket WAKO 500 mm max 300/200 DN 250	4205581	–

Single-chamber manifolds

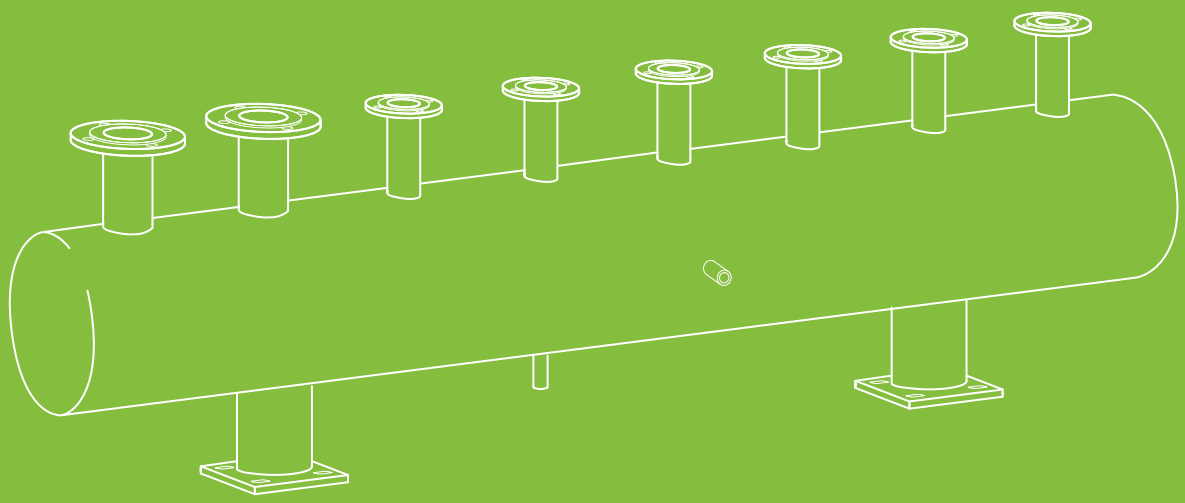
Key advantages

System safety through perfectly functioning hydraulics

- Can be used in heating and cooling systems
- If necessary, also for high operating pressures and temperatures, e.g., pressure, air and gas
- Clear and clean system display
- Reliable hydraulics

Convenient handling

- Can be individually configured with the ProSinusX online tool
- If necessary, including TÜV approval
- Various welding methods and materials possible



Product portfolio

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Single-chamber manifolds

Round tube manifold

Technical Features

- single-chamber manifold- / collector from welded pipe, provided with boiler ends at both ends
- material P235 TR1 according to EN 10217-1
- 100 % factory-checked for leak tightness and primed
- permissible operating temperature -10 °C – 110 °C
- permissible operating overpressure 0 bar – 6 bar / 16 bar, the actual operating overpressure is limited by the compression stage of the flange nozzle
- nozzles aligned at the height of the shut-off valves
- with threaded and / or PN 6 / PN 16 flange nozzle
- draining sleeve ½"
- nozzle spacing variabel
- possible special configurations:
  → higher design temperatures
  → larger dimensions, other version
  → corrosion protection according to AGI, worksheet Q 151

Type	Art. No.			Flow velocity 0.4 m/s		Flow velocity 0.6 m/s	
	10 bar	16 bar	6 bar	V_{max} [m³/h]	Output at ΔT 20 °K [kW]	V_{max} [m³/h]	Output at ΔT 20 °K [kW]
variable nozzle spacing							
DN 50	–	4208130	4206421	3.5	80	5.0	115
DN 65	–	4208131	4206420	5.5	125	8.5	200
DN 80	–	4208132	4206415	7.0	160	12.0	280
DN 100	–	4208135	4206160	10.0	245	17.0	395
DN 125	–	4208136	4205821	17.0	410	27.0	630
DN 150	–	4208137	4205822	24.0	560	38.0	880
DN 200	–	4208141	4206159	44.0	1,020	72.0	1,670
DN 250	–	4208142	4205939	70.0	1,625	115.0	2,670
DN 300	–	4208143	4205913	100.0	2,350	153.0	3,560
DN 350	4208147	–	4205914	140.0	3,250	208.0	4,840
DN 400	4208148	–	4205915	180.0	4,200	271.0	6,300
DN 500	4206425	–	4205933	280.0	6,500	424.0	9,860
DN 600	4206426	–	4205934	400.0	9,330	611.0	14,200
DN 700	4206427	–	4205916	550.0	12,850	830.0	19,370
DN 800	4206428	–	4205935	700.0	17,500	1,085.0	25,320

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Single-chamber manifolds accessories

name plate

- for marking the heating circuits, made of galvanised steel sheet for three rows of lettering. The name plate is suitable for screwing to the finished insulation
- size: 100 × 50 mm
- colours: red (RD) for flow & blue (BU) for return

insulation

- comprising interlocking half shells with end-pieces
- customised and precisely fitting cut-outs for all connection nozzles are provided in the factory
- the half shells are fitted using stainless-steel clamping straps and quick-release fasteners
- this enables simple installation and disassembly for overhaul purposes

SINUS EasyFixx

- can be used in combination with dynamic pressure maintenance and/or degassing
- capacity range approx. 250 kW to 2,100 kW
- permissible operating temperature 110 °C
- permissible operating overpressure 6 bar
- application range:
  - → compact manifold 180/110 – 300/200
  - → thermally separated compact manifold: 250/151 – 300/201
  - → SINUS HydroFixx: 180/180 – 300/350
  - → round tube manifold DN 65 – DN 300

draining gutter

- discharge trough for safe and clean collection and capture of the system water to be drained from the respective heating or cooling circuits
- comprising galvanised steel plate edged in the form of a U-section
- the length of the trough depends on the corresponding manifold and is prefabricated in the factory to ensure a precise fit
- to prevent spray water, a spray water lip of 30 mm is provided
- a chrome plated flow sieve with a 2" male thread is included

stand bracket

- sound-proofed and galvanised, comprising floor plate with steel tube and head plate with guide tube including connecting screws
- height adjustable in two versions (270 – 340 mm or 405 – 600 mm), the dimension indicates the distance between the floor and bottom edge of the manifold

wall bracket

- sound-proofed and galvanised comprising a head plate fitted on an adjustable guide carriage
- infinitely adjustable in depth
- overhang to manifold middle

SINUS Orders for SINUS products to sinus@reflex.de

Single-chamber manifolds accessories

Type	Art. No.	Weight [kg]
SINUS EasyFixx	4202284	4.46
draining gutter		
draining gutter ELR galv	4205889	–
stand bracket STKO ELR	4205878	2.40
wall bracket WKO ELR	4205705	1.58
name plate		
name plate RD	4200015	–
name plate BU	4200021	–
insulation 60 mm PUR foam/galvanised sheet steel jacket, thermal conductivity 0,026 W/m×K		
insulation DN 500	4207256	–
insulation DN 50	4207255	–
insulation DN 65	4207254	–
insulation DN 80	4205639	–
insulation DN 100	4205573	–
insulation DN 125	4205574	–
insulation DN 150	4205575	–
insulation DN 200	4205576	–
insulation DN 250	4205577	–
insulation DN 300	4205578	–
insulation DN 350	4205579	–
insulation DN 400	4205640	–
insulation 50 mm mineral wool/galvanised sheet steel jacket, thermal conductivity 0,038 W/m×K		
insulation DN 50	4207284	–
insulation 70 mm mineral wool/galvanised sheet steel jacket, thermal conductivity 0,038 W/m×K		
insulation DN 65	4207007	–
insulation 80 mm mineral wool/galvanised sheet steel jacket, thermal conductivity 0,038 W/m×K		
insulation DN 80	4207014	–
insulation 100 mm mineral wool/galvanised sheet steel jacket, thermal conductivity 0,038 W/m×K		
insulation DN 500	4207274	–
insulation DN 100	4207019	–
insulation DN 125	4207021	–
insulation DN 150	4207026	–
insulation DN 200	4207027	–
insulation DN 250	4207032	–
insulation DN 300	4207033	–
insulation DN 350	4207035	–
insulation DN 400	4207038	–
stand bracket		
stand bracket STKO 270 – 340 mm max 200/120 DN 200	4206574	–
stand bracket STKO 270 – 340 mm max 300/200 DN 250	4205957	5.40
stand bracket STKO 405 – 600 mm max 300/200 DN 250	4205504	–
stand bracket STKO 300 mm max 700/500 DN 800	4205580	24.00
wall bracket		
wall bracket WAKO 220 mm max 160/80 DN 200	4205900	–
wall bracket WAKO 500 mm max 300/200 DN 250	4205581	–

SINUS LegioNixx

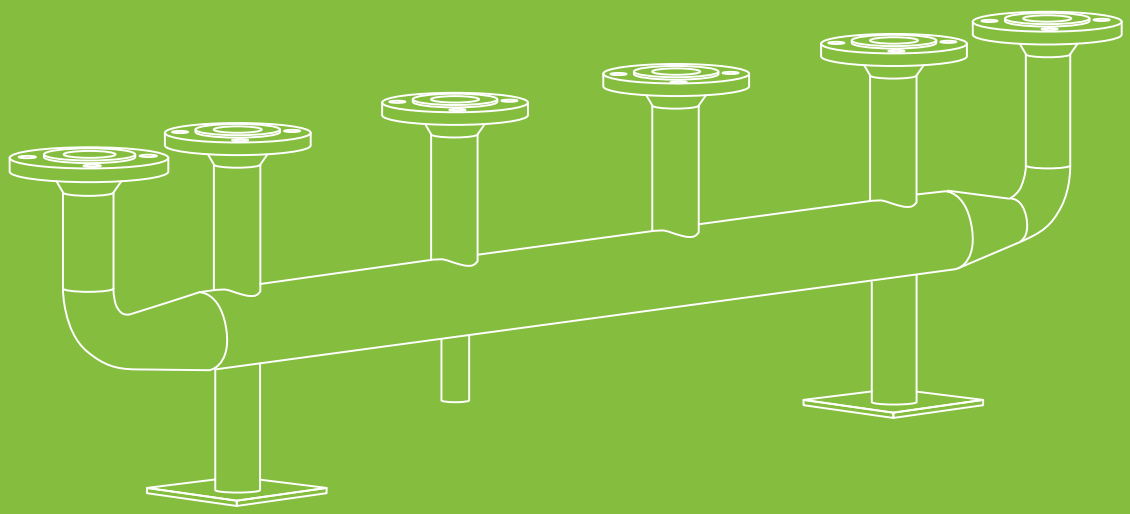
Key advantages

No formation of legionella bacteria

- No dead zones and, therefore, no formation of legionella bacteria
- High levels of hygiene
- Materials used comply with the local requirements

Convenient handling

- Can be individually configured with the ProSinusX online tool
- Building adaptation in the case of renovation



Product portfolio

SINUS Orders for SINUS products to sinus@reflex.de

SINUS LegioNixx Stainless steel potable water manifold

SINUS LegioNixx potable water manifold

Technical Features

- potable water manifold made of stainless steel 1.4571 (V4 A)
- thanks to its design, water flows uniformly through the manifold, this prevents any stagnant water, avoids dead zones and prevents legionella
- 100 % factory-checked for leak tightness
- TIG-welded, pickled and passivated
- permissible operating temperature -10 °C – 110 °C
- permissible operating overpressure 0 bar – 10 bar
- nozzles aligned at the height of the shut-off valves

Type	Art. No.	Flow velocity 1.5 m/s V_{max} [m³/h]	Dimension [mm]
DN 50	4206078	13.5	60 × 2.0
DN 65	4206079	22.1	76 × 2.0
DN 80	4206080	30.6	88 × 2.0
DN 100	4206081	50.5	114 × 2.6
DN 125	4206082	76.6	139 × 2.6
DN 150	4206083	112.8	168 × 2.6
DN 200	4206084	192.0	219 × 3.0
DN 250	4206085	302.0	273 × 3.0

SINUS Orders for SINUS products to **sinus@reflex.de**

SINUS LegioNixx Stainless steel potable water manifold Accessories

draining gutter

- discharge trough for safe and clean collection and capture of the system water to be drained from the respective heating or cooling circuits
- comprising galvanised steel plate edged in the form of a U-section
- the length of the trough depends on the corresponding manifold and is prefabricated in the factory to ensure a precise fit
- to prevent spray water, a spray water lip of 30 mm is provided
- a chrome plated flow sieve with a 2" male thread is included

Type	Art. No.	Weight [kg]
draining gutter ELR galv	4205889	–
stand bracket STKO ELR	4205878	2.40
wall bracket WKO ELR	4205705	1.58

Selection and calculation

Manifold type

Compact manifolds are usually the first choice because they are the most space-saving model that is also the quickest to install. They can be used with or without thermal separation.

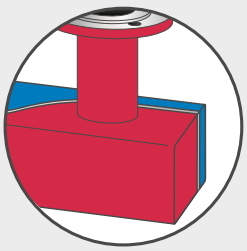
The following rule of thumb applies to this:

The smaller the temperature difference, the smaller the heat transfer between the two media. In most heating systems (e.g., heat pumps, condensing boilers, pellets) and in cooling systems with very low spreads, a manifold without thermal separation is therefore sufficient.

In the case of greater spreads, such as with district heating, however, a thermally separated manifold is beneficial.

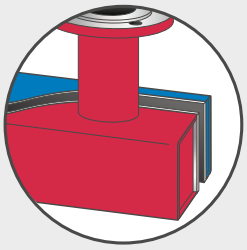
Temperature spread between flow and return chamber

≤ 25 K ›



without thermal separation

> 25 K ›



with thermal separation

Size

Manifolds are designed on the basis of the maximum expected volume flow. This is the key criterion for pressure loss. In principle, manifolds are designed so that the flow velocity is always lower than than in the biggest connection nozzle. As a result, the pressure loss via the base chamber should be considered to be low.

The maximum volume flow can be read from the selection table. If the volume flow is not included, it can be calculated with the help of the equation on the right.

$$\dot{V} = \frac{\dot{Q}}{1.163 \; \frac{W \times h}{kg \times K}^{*} \times \Delta\vartheta}$$

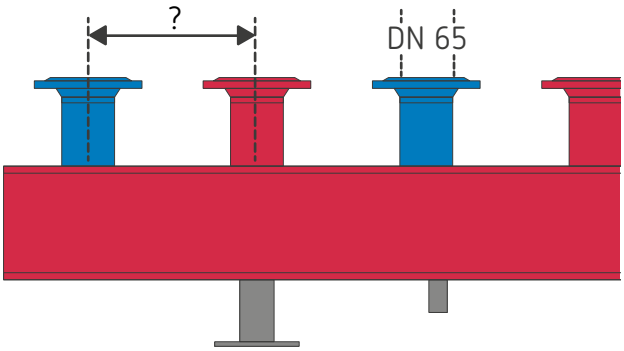
$\dot{V}$ = Volume flow [m³/h]
$\dot{Q}$ = Thermal output [kW]
ϑ = Temperature difference between flow and return [K]
* = specific heat capacity of water (constant)

Type	Prod. no.		Number of nozzles	Biggest nozzle	V_{max}	Output at ΔT 20 °K	Length	Nozzle distance l5
	6 bar	16 bar	[pc]		[m³/h]	[kW]	[mm]	[mm]
Variable nozzle distance								
160/81	4213873	–	–	up to DN65	9.0	210.00	–	–
180/111	4200562	4202333	–	up to DN80	13.8	320.00	–	–
200/121	4200754	4202334	–	up to DN80	22.0	510.00	–	–
250/151	4204299	4204789	–	up to DN100	32.2	825.00	–	–
280/181	4200797	4202335	–	up to DN125	42.0	980.00	–	–
300/201	4200798	4202336	–	up to DN125	60.2	1,400.00	–	–

Nozzle distance and dimension

Choosing the right nozzle distance and the dimension is the last configuration step. The dimension (nominal diameter) of the connection nozzles is based on the pipe network calculation and is therefore determined by it.

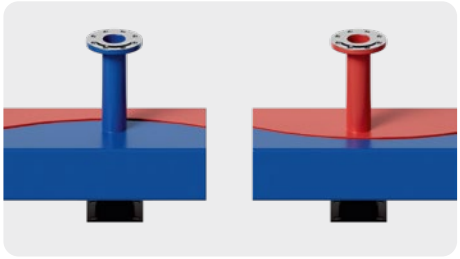
In new systems in particular, an uniform nozzle distances has certain advantages. Manifolds of this kind are available much more quickly, they are more affordable and it is also much easier to prepare the pipeline routing.



ProSinusX

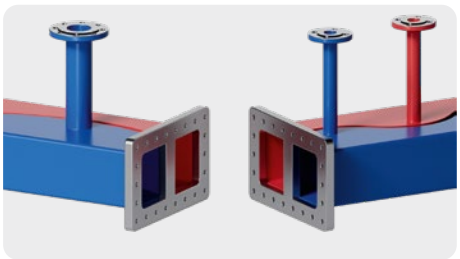
Configure at:
prosinusx.sinusverteiler.com

Special designs



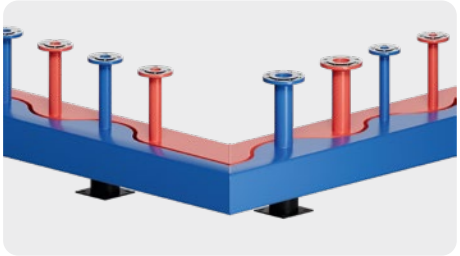
Window welding

Because of excessive length, the compact manifold (with or without thermal separation) or the SINUS HydroFixx (manifold with an integrated hydraulic separator) is delivered in two or more pieces. It is welded together on-site by the client.



Flange connections

The compact manifold (with or without thermal separation) is also delivered in pieces, but welded at the factory with a flange connection, including screws, nuts and seals.



Angled manifold

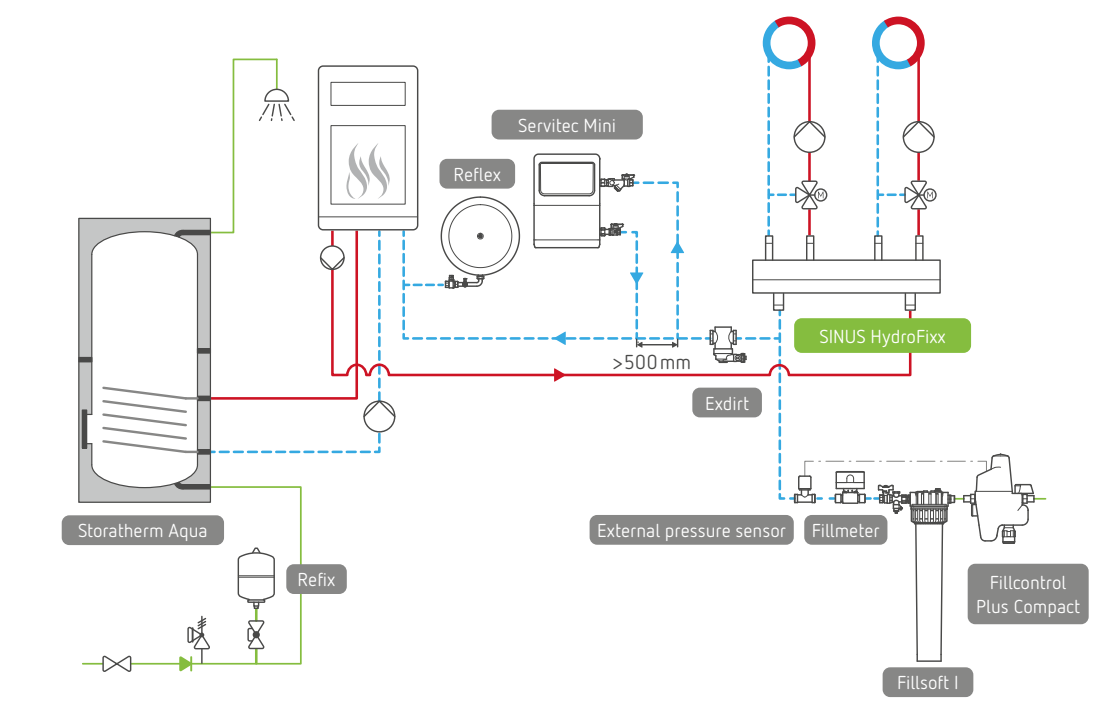
Delivery of the compact manifold (with or without thermal separation) or the SINUS HydroFixx (manifold with integrated hydraulic separator) in an angled version, typically of 90°.

Installation examples

Solution № 01 System with manifold in small residential units

Optimum hydraulics and structured system display.

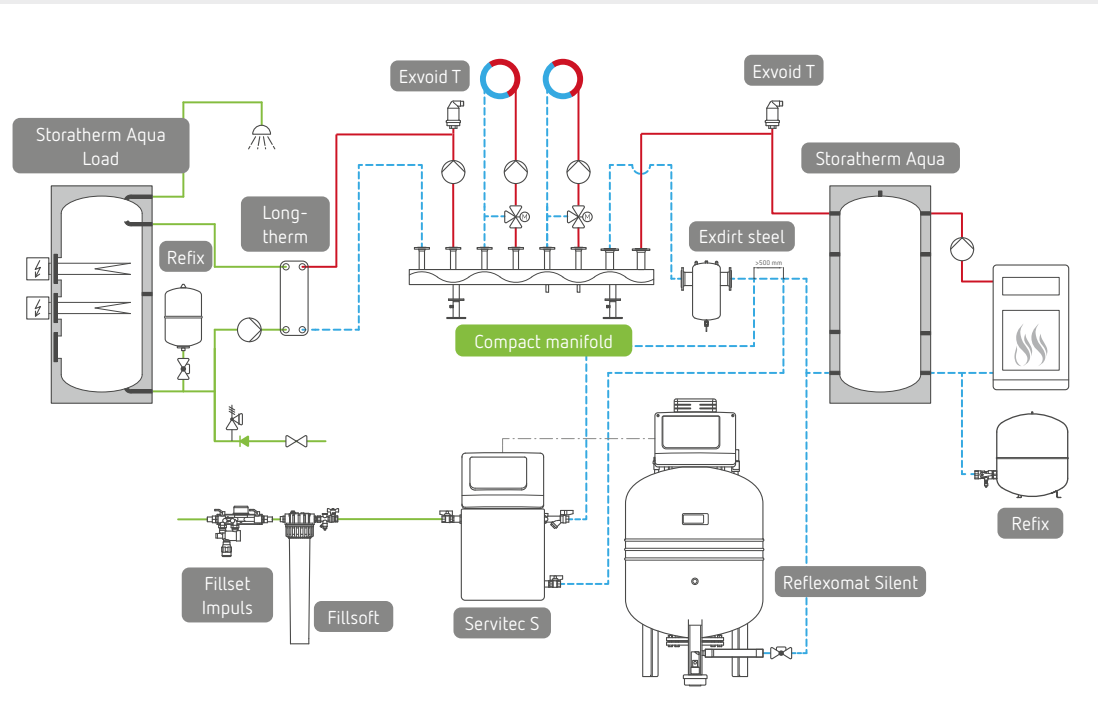
Manifold with integrated hydraulic separator. This ensures safe operation of the heat generator.



Solution № 06 System with manifold in large systems

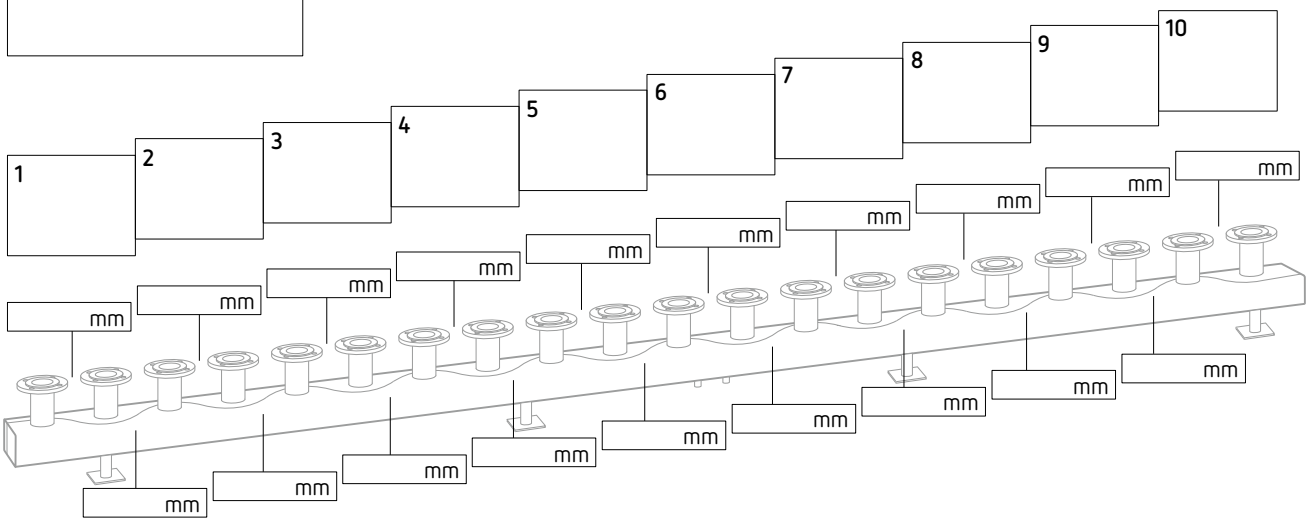
Optimum hydraulics and structured system display.

For large systems, the construction of the manifold can be adapted to individual needs.



Enquiry form for manifolds

Project name:*



Manifolds:

Number*	
Manifold size*	
Manifold length*	mm
Nozzle spacing*	mm
Flanges PN 6/16*	
Thread/Bushings	

Power data:

Capacity	kW
Design pressure*	bar
Design temperature*	°C
Temperature difference	K
Volume flow rate*	m^3/h

Accessories:

Stand brackets

☐ 270 – 340 mm
☐ 405 – 600 mm

Wall brackets

Insulation

☐ PUR foam, coarse-grained aluminium
☐ PUR foam, galvanised
☐ Mineral wool, galvanised (100 mm)

Name plates

Drainage channel

Remarks:

Options:

☐ Thermally separated

☐ Corrosion protection AGI Q-151 (inside untreated)

☐ Including SINUS EasyFixx (from sizes 180/110)

Make/model Fittings

☐ FTF-1 (F1 long) (AriWedi, AriEuroWedi, Boa H/W, etc.)

☐ FTF-14 (F4 long) (AriEuroWedi, BoaCompact, etc.)

☐ FTF-20 flaps, made by:

☐ KSB Super Compact

☐ Gate valves

☐ Ball valves

Start your configuration with ProSinusX
prosinusx.sinusverteiler.com/en/index

This form can also be downloaded at
www.reflex-winkelmann.com/en

*mandatory

Reflex added value

Our digital services

Higher performance and more features
A good configurator should be easy to understand and use, as well as convenient and fast. It must also provide optimal support for specialist tradespeople and planners. The SINUS product configurator does this. SINUS has been recognised on the market for more than three decades as a reliable and competent provider of innovative heating distributors in domestic and industrial technology — with small 30 kW manifolds, large distributors with outputs of over 9,000 kW and tailor-made heating manifolds.

The SINUS product configurator allows users with a planning task to individually configure specific buffer tanks up to 25,000 litres and other hydraulic components in just a few steps. Finalised plans can then transferred to a user's CAD drawing software via the most commonly used interfaces.

The free-to-use and user-friendly 3D configurator has recently been updated to make everyday use even easier and more straightforward for specialist tradespeople such as planners. Associated BIM data are now also presented at the same time as the specific configuration. This takes place in the background during configuration and can then be called up using the project number via sinus@reflex.de. The information is then sent quickly and easily by email. This step allows the configuration to be checked in advance which ensures optimum quality of results for the user.

Start designing your configuration now for free:

prosinusx.sinusverteiler.com

Reflex Solutions Pro — complete product solutions quickly and easily
The current generation of the proven configuration tool allows products from the entire Reflex portfolio to be individually compiled and configured to suit a specific system, irrespective of size — from a single-family home to residential buildings and industrial premises. Whether a single product or a complete system, just choose the application, then enter the relevant system parameters, Reflex Solutions Pro will work out the appropriate configuration quickly and precisely. With one click, you can download the entire documentation such as product data, tender texts and BIM data.

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- Compliance with statutory regulations and therefore also with liability and warranty provisions
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RE2410en / 9147024 / 04-2024
Subject to technical modifications

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