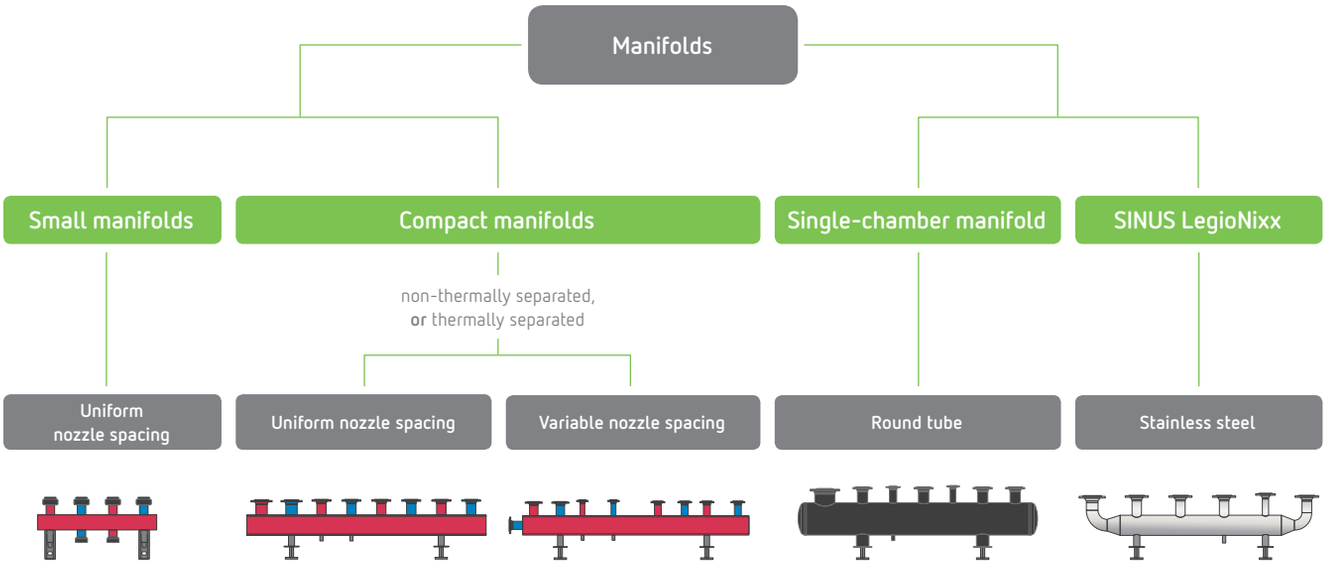
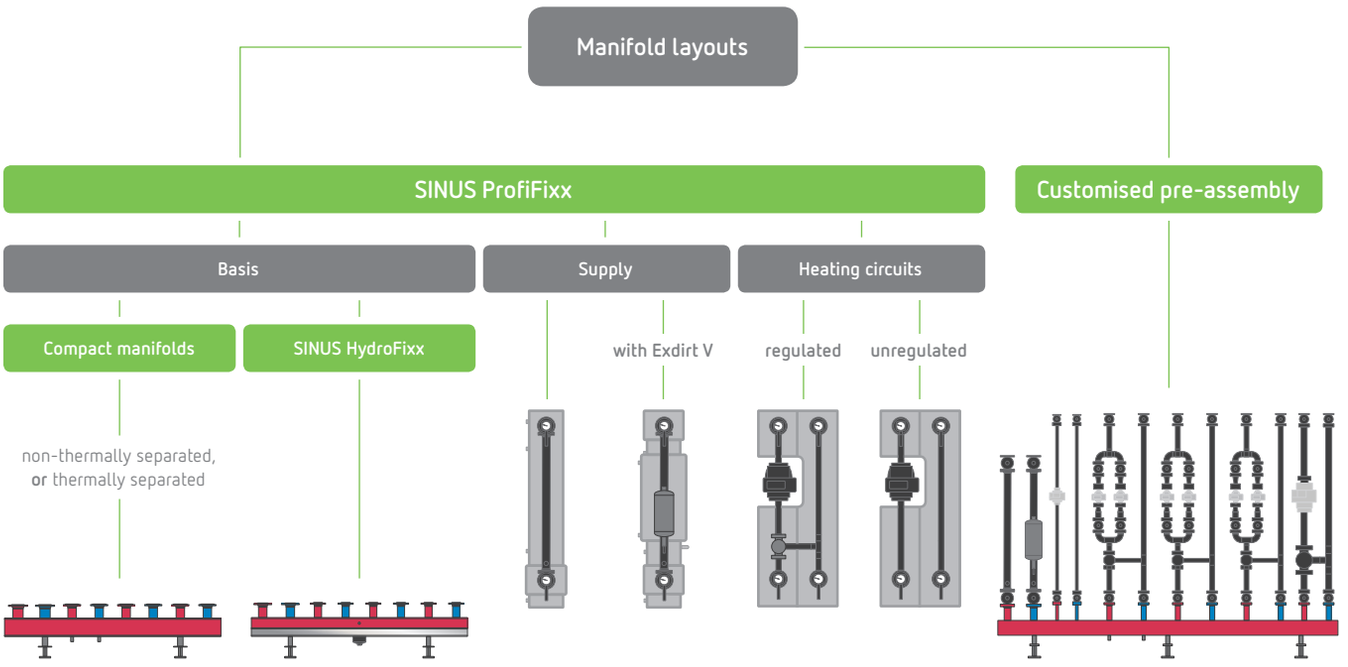
Manifolds & Hydraulic Separators

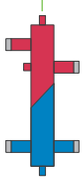




Hydraulic Separators

Small Hydraulic Separators

vertical



horizontal

SINUS MonoFixx



Compact design



Round design

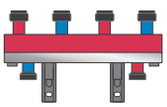


Stainless steel



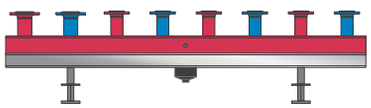
SINUS HydroFixx

SINUS HydroFixx Mini

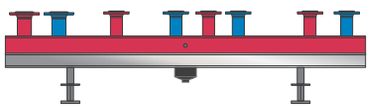


Individual SINUS HydroFixx

Uniform nozzle spacing

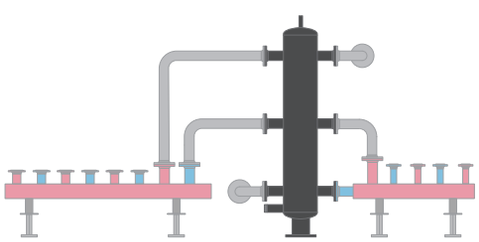


Variable nozzle spacing

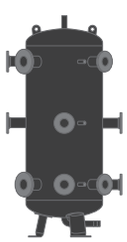


Multivalent solutions

SINUS MultiFlow Expert

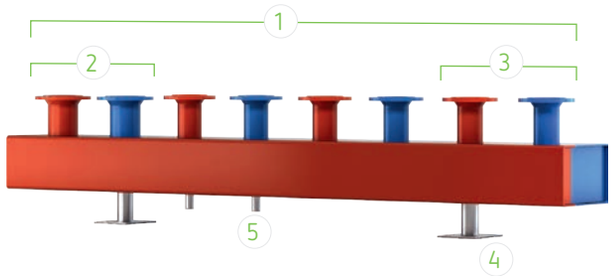


SINUS MultiFlow Center



Manifolds & Hydraulic Separators

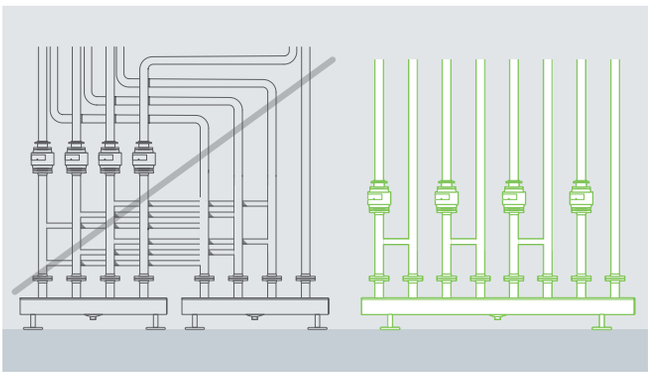
Manifold — construction



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

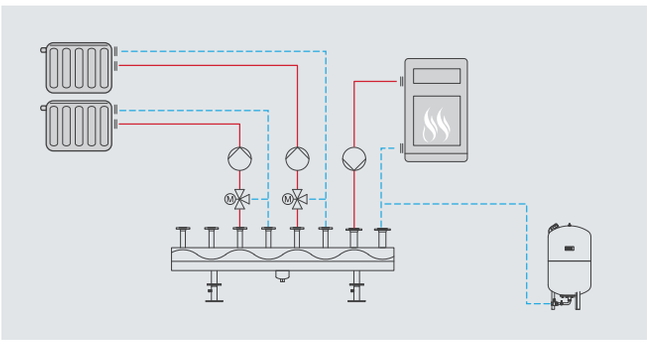
1. Connections
   optionally with flange, sleeve, threaded connection, pipe connection
2. Flow and return
   dimensions are variable
3. Heating circuit
   variable number
4. Console
   as upright console or wall bracket
5. Draining
   for repairs and maintenance work

The Sinus principle



A sinusoidal curve is the trademark of SINUS manifolds. 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.

Product variants

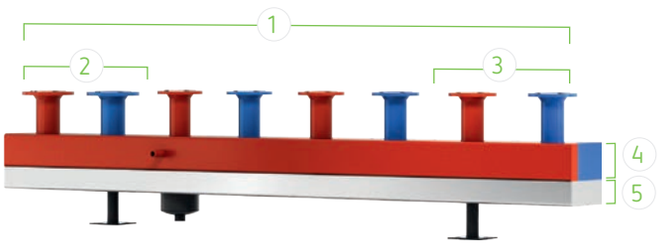


Installation situation of a compact manifold

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

SINUS HydroFixx — construction

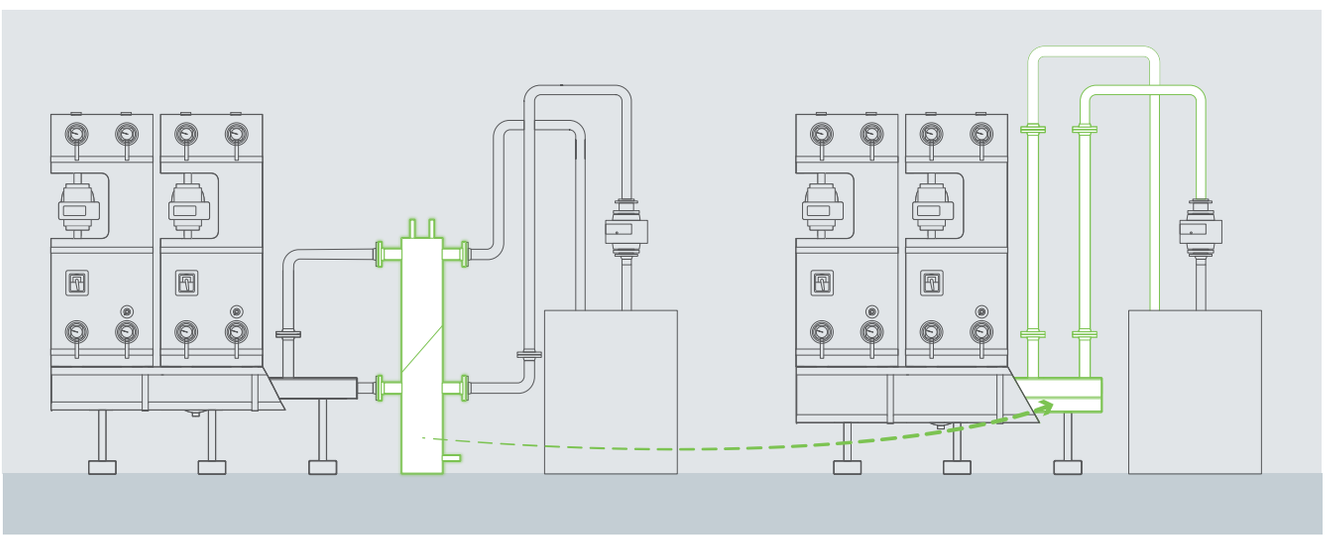


1. Connections
   optionally with flange, sleeve, threaded connection, pipe connection
2. Flow and return
   dimensions are variable
3. Heating circuit
   variable number
4. Manifold
5. Hydraulic separator

Video clips demonstrating the function of this and other products are available under

www.youtube.com/@ReflexWinkelmannUnitedKingdom

Manifold with integrated Hydraulic Separator



Manifold and separate Hydraulic Separator

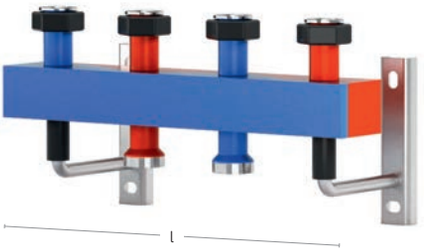
SINUS HydroFixx

A SINUS HydroFixx can be used to combine the characteristics of a manifold and a Hydraulic Separator. To do so, a manifold is supplemented by an underlying horizontal chamber, that assumes the function of the Hydraulic Separator. Accordingly, the chamber is connected with one penetration each for the supply and return chambers. The functioning is equivalent to that of a conventional Hydraulic Separator. The three operating statuses also behave in a similar manner.

Manifolds

SINUS

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
- max. permissible operating temperature -10 °C – 110 °C
- max. permissible operating overpressure 0 bar – 4 bar
- ideal for use with: maintenance box

SINUS

Small manifolds

Type	Art. No.	DG	Heating circuits [pcs.]	Connection generator	Connection heating circuit	V_{max} [m^3/h]	Output at ΔT 20 °K [kW]	Length l [mm]
Nozzle spacing 125 mm								
80/60	4208563	0001	2	G 1½"	G 1½" coupling nut	3,0	70,00	475
80/60	4211930	0001	2	R 1"	R 1"	3,0	70,00	475
80/60	4205962	0001	3	R 1"	R 1"	3,0	70,00	725
80/60	4208565	0001	3	G 1½"	G 1½" coupling nut	3,0	70,00	725
80/60	4206012	0001	4	R 1"	R 1"	3,0	70,00	975
80/60	4208851	0001	4	G 1½"	G 1½" coupling nut	3,0	70,00	975
80/60	4205899	0001	5	R 1"	R 1"	3,0	70,00	1.225
80/60	4208852	0001	5	G 1½"	G 1½" coupling nut	3,0	70,00	1.225
80/60	4205977	0001	6	R 1"	R 1"	3,0	70,00	1.475
120/80	4208504	0001	2	R 2"	G 1½" coupling nut	6,5	150,00	480
120/80	4208569	0001	3	R 2"	G 1½" coupling nut	6,5	150,00	735
120/80	4208777	0001	4	R 2"	G 1½" coupling nut	6,5	150,00	990
120/80	4208778	0001	5	R 2"	G 1½" coupling nut	6,5	150,00	1.245
120/80	4208781	0001	6	R 2"	G 1½" coupling nut	6,5	150,00	1.500
Nozzle spacing 200 mm								
80/60	4208572	0001	2	R 1¼"	R 1"	3,0	70,00	700
80/60	4208571	0001	3	R 1¼"	R 1"	3,0	70,00	1.100
80/60	4208773	0001	4	R 1¼"	R 1"	3,0	70,00	1.500
120/80	4208574	0001	2	R 2"	Rp 1½"	6,5	150,00	670
120/80	4208580	0001	3	R 2"	Rp 1½"	6,5	150,00	1.070
120/80	4208787	0001	4	R 2"	Rp 1½"	6,5	150,00	1.500
120/80	4208792	0001	5	R 2"	Rp 1½"	6,5	150,00	1.900
120/80	4208793	0001	6	R 2"	Rp 1½"	6,5	150,00	2.300

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 variants (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
- max. permissible operating temperature -10 °C – 110 °C
- max. permissible operating overpressure 0 bar – 4 bar



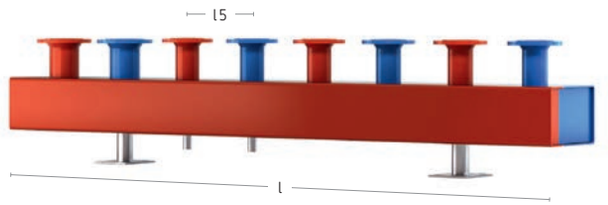
SINUS

Small manifolds accessories

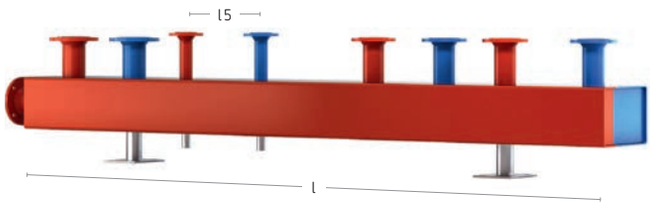
Type	Art. No.	DG	Weight [kg]
adapter piece	4200001	0085	–
threaded flange DN 50/PN 6	4200906	0001	–
name plate			
name plate RD	4200015	0001	–
name plate BU	4200021	0001	–
maintenance box			
maintenance box 80/60	4209770	0003	2,06
maintenance box 120/80	4209771	0003	2,06
reducing nipple			
reducing nipple RN 1½" × ¾"	4205890	0001	–
reducing nipple RN 1½" × 1"	4205891	0001	–
reducing nipple RN 1½" × 1¼"	4205892	0001	–
reducing nipple RN 1½" × 1½"	4205960	0001	–
reducing nipple RN 1½" × 2"	4205961	0001	–
stand bracket			
stand bracket STKO 405 – 600 mm max 120/80	4205850	0001	–
stand bracket STKO 270 – 340 mm max 120/80	4205954	0001	2,85
wall bracket			
wall bracket WAKO 200 mm max 120/80	4207264	0001	2,68

SINUS

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
- max. permissible operating temperature -10 °C – 110 °C
- max. permissible operating overpressure 0 bar – 6 bar (max. 16 bar upon request)
- 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.		DG	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	0001	6	to DN 50	6,5	150,00	1.200	200
120/80	–	4205759	0001	6	to DN 50	6,5	150,00	1.490	250
120/80	–	4205804	0001	8	to DN 50	6,5	150,00	1.600	200
120/80	–	4205799	0001	8	to DN 50	6,5	150,00	2.000	250
120/80	–	4205805	0001	10	to DN 50	6,5	150,00	2.000	200
120/80	–	4205814	0001	10	to DN 50	6,5	150,00	2.400	250
160/80	–	4205942	0001	6	to DN 65	10,8	250,00	1.450	250
160/80	–	4205937	0001	6	to DN 65	10,8	250,00	1.700	300
160/80	–	4205917	0001	8	to DN 65	10,8	250,00	1.950	250
160/80	–	4205943	0001	8	to DN 65	10,8	250,00	2.300	300
160/80	–	4205952	0001	10	to DN 65	10,8	250,00	2.900	300

You can find the enquiry form at **www.reflex-winkelmann.com/en**

SINUS

Compact manifolds

Type	Art. No.		DG	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]
180/110	–	4205936	0001	6	to DN 100	17,2	400,00	1.500	250
180/110	–	4205803	0001	6	to DN 100	17,2	400,00	1.750	300
180/110	–	4205829	0001	6	to DN 100	17,2	400,00	1.950	350
180/110	–	4205761	0001	8	to DN 100	17,2	400,00	2.000	250
180/110	–	4205800	0001	8	to DN 100	17,2	400,00	2.350	300
180/110	–	4205652	0001	8	to DN 100	17,2	400,00	2.650	350
180/110	–	4205827	0001	10	to DN 100	17,2	400,00	2.400	250
180/110	–	4205779	0001	10	to DN 100	17,2	400,00	2.950	300
180/110	–	4205762	0001	10	to DN 100	17,2	400,00	3.350	350
200/120	–	4206245	0001	6	to DN 100	25,8	600,00	1.500	250
200/120	–	4205695	0001	6	to DN 100	25,8	600,00	1.950	350
200/120	–	4206246	0001	8	to DN 100	25,8	600,00	2.000	250
200/120	–	4205757	0001	8	to DN 100	25,8	600,00	2.350	300
200/120	–	4205662	0001	8	to DN 100	25,8	600,00	2.650	350
200/120	–	4206247	0001	10	to DN 100	25,8	600,00	2.400	250
200/120	–	4205838	0001	10	to DN 100	25,8	600,00	3.350	350
280/180	–	4207847	0001	6	to DN 125	53,8	1.250,00	1.800	300
280/180	–	4209319	0001	6	to DN 125	53,8	1.250,00	2.100	350
280/180	–	4209318	0001	8	to DN 125	53,8	1.250,00	2.400	300
280/180	–	4207845	0001	8	to DN 125	53,8	1.250,00	2.800	350
280/180	–	4207846	0001	10	to DN 125	53,8	1.250,00	3.000	300
280/180	–	4207872	0001	10	to DN 125	53,8	1.250,00	3.500	350
300/200	–	4205953	0001	6	to DN 150	68,8	1.600,00	1.800	300
300/200	–	4205832	0001	6	to DN 150	68,8	1.600,00	2.100	350
300/200	–	4205944	0001	8	to DN 150	68,8	1.600,00	2.400	300
300/200	–	4205656	0001	8	to DN 150	68,8	1.600,00	2.800	350
300/200	–	4205950	0001	10	to DN 150	68,8	1.600,00	3.000	300
300/200	–	4205696	0001	10	to DN 150	68,8	1.600,00	3.500	350
Variable nozzle spacing									
120/80	4202245	4200905	0001	–	to DN 50	6,5	150,00	–	–
160/80	4202316	4200967	0001	–	to DN 65	10,8	250,00	–	–
180/110	4202317	4205976	0001	–	to DN 100	17,2	400,00	–	–
200/120	4202328	4200975	0001	–	to DN 100	25,8	600,00	–	–
250/150	4205185	4205184	0001	–	to DN 125	38,7	900,00	–	–
280/180	4207593	4205923	0001	–	to DN 125	53,8	1.250,00	–	–
300/200	4202330	4200989	0001	–	to DN 150	68,8	1.600,00	–	–
400/200	4202331	4200971	0001	–	to DN 150	90,0	2.100,00	–	–
450/250	4202322	4200961	0001	–	to DN 200	150,0	3.500,00	–	–
500/300	4202323	4200956	0001	–	to DN 250	194,0	4.500,00	–	–
600/400	4202324	4200974	0001	–	to DN 300	267,0	6.200,00	–	–
700/500	4202325	4200968	0001	–	to DN 350	391,0	9.100,00	–	–

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
- max. permissible operating temperature 110 °C
- max. permissible operating overpressure 6 bar
- application range:
  - → compact manifold 180/110 – 300/200
  - → thermally insulated 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 variants (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

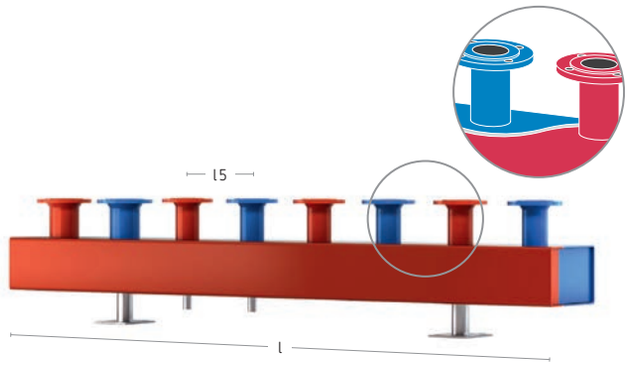
SINUS

Compact manifolds accessories

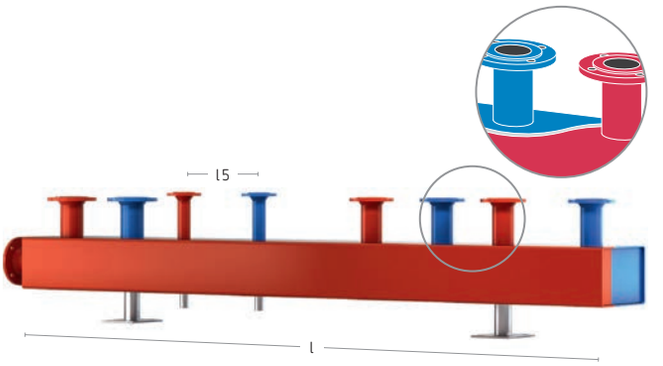
Type	Art. No.	DG	Weight [kg]
SINUS EasyFixx	4202284	0003	4,46
draining gutter			
draining gutter ELR galv	4205889	0001	15,00
stand bracket STKO ELR	4205878	0001	2,40
wall bracket WKO ELR	4205705	0001	1,58
name plate			
name plate RD	4200015	0001	–
name plate BU	4200021	0001	–
insulation 45 mm PUR foam/Aluminium coarse grain jacket, thermal conductivity 0,026 W/m × K			
insulation 120/80	4205731	0001	–
insulation 160/80	4205897	0001	–
insulation 180/110	4205703	0001	–
insulation 200/120	4206010	0001	–
insulation 50 mm PUR foam/Aluminium coarse grain jacket, thermal conductivity 0,026 W/m × K			
insulation 280/180	4201454	0001	–
insulation 300/200	4206448	0001	–
insulation 45 mm PUR foam/galvanised sheet steel jacket, thermal conductivity 0,026 W/m × K			
insulation 120/80	4205658	0001	–
insulation 160/80	4205518	0001	–
insulation 180/110	4205643	0001	–
insulation 200/120	4205956	0001	–
insulation 250/150	4210849	0001	–
insulation 50 mm PUR foam/galvanised sheet steel jacket, thermal conductivity 0,026 W/m × K			
insulation 280/180	4201353	0001	–
insulation 300/200	4205592	0001	–
insulation 60 mm PUR foam/galvanised sheet steel jacket, thermal conductivity 0,026 W/m × K			
insulation 400/200	4206045	0001	–
insulation 450/250	4206046	0001	–
insulation 500/300	4206047	0001	–
insulation 600/400	4206048	0001	–
insulation 700/500	4206049	0001	–
insulation 100 mm mineral wool/galvanised sheet steel jacket, thermal conductivity 0,038 W/m × K			
insulation 120/80	4205659	0001	–
insulation 160/80	4205996	0001	–
insulation 180/110	4205593	0001	–
insulation 200/120	4205704	0001	–
insulation 250/150	4209925	0001	–
insulation 280/180	4201347	0001	–
insulation 300/200	4205517	0001	–
insulation 400/200	4206050	0001	–
insulation 450/250	4206051	0001	–
insulation 500/300	4206052	0001	–
insulation 600/400	4206053	0001	–
insulation 700/500	4206054	0001	–
stand bracket			
stand bracket STKO 270 – 340 mm max 200/120 DN 200	4206574	0001	3,00
stand bracket STKO 270 – 340 mm max 300/200 DN 250	4205957	0001	5,40
stand bracket STKO 270 – 340 mm max 500/300 DN 400	4206097	0001	12,00
stand bracket STKO 300 mm max 700/500 DN 800	4205580	0001	24,00
wall bracket			
wall bracket WAKO 220 mm max 160/80 DN 200	4205900	0001	2,30
wall bracket WAKO 300 mm max 200/120 DN 200	4205955	0001	3,73
wall bracket WAKO 500 mm max 300/200 DN 250	4205581	0001	5,07

SINUS

Compact manifold, 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
- max. permissible operating temperature -10 °C – 110 °C
- max. permissible operating overpressure 0 bar – 6 bar (max. 16 bar upon request)
- 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.		DG	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							
Uniform nozzle spacing									
160/81	–	4205666	0001	6	to DN 65	9,0	210,00	1.500	250
160/81	–	4205649	0001	6	to DN 65	9,0	210,00	1.750	300
160/81	–	4205711	0001	8	to DN 65	9,0	210,00	2.000	250
160/81	–	4205771	0001	8	to DN 65	9,0	210,00	2.350	300
160/81	–	4205712	0001	10	to DN 65	9,0	210,00	2.400	250
160/81	–	4205668	0001	10	to DN 65	9,0	210,00	2.950	300
180/111	–	4205669	0001	6	to DN 80	13,8	320,00	1.500	250
180/111	–	4205845	0001	6	to DN 80	13,8	320,00	1.750	300
180/111	–	4205844	0001	8	to DN 80	13,8	320,00	2.000	250
180/111	–	4205672	0001	8	to DN 80	13,8	320,00	2.350	300
180/111	–	4205670	0001	10	to DN 80	13,8	320,00	2.400	250
180/111	–	4205746	0001	10	to DN 80	13,8	320,00	2.950	300

You can find the enquiry form at
www.reflex-winkelmann.com/en

SINUS

Compact manifold, thermally separated

Type	Art. No.		DG	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	0001	6	to DN 80	22,0	510,00	1.500	250
200/121	–	4205749	0001	6	to DN 80	22,0	510,00	1.750	300
200/121	–	4206256	0001	8	to DN 80	22,0	510,00	2.000	250
200/121	–	4205720	0001	8	to DN 80	22,0	510,00	2.350	300
200/121	–	4206257	0001	10	to DN 80	22,0	510,00	2.400	250
200/121	–	4205674	0001	10	to DN 80	22,0	510,00	2.950	300
280/181	–	4205798	0001	6	to DN 125	42,0	980,00	1.800	300
280/181	–	4205752	0001	6	to DN 125	42,0	980,00	2.100	350
280/181	–	4205675	0001	8	to DN 125	42,0	980,00	2.400	300
280/181	–	4205678	0001	8	to DN 125	42,0	980,00	2.800	350
280/181	–	4205751	0001	10	to DN 125	42,0	980,00	3.000	300
280/181	–	4205679	0001	10	to DN 125	42,0	980,00	3.500	350
300/201	–	4205722	0001	6	to DN 125	60,2	1.400,00	1.800	300
300/201	–	4205683	0001	6	to DN 125	60,2	1.400,00	2.100	350
300/201	–	4205723	0001	8	to DN 125	60,2	1.400,00	2.400	300
300/201	–	4205826	0001	8	to DN 125	60,2	1.400,00	2.800	350
300/201	–	4205724	0001	10	to DN 125	60,2	1.400,00	3.000	300
300/201	–	4205728	0001	10	to DN 125	60,2	1.400,00	3.500	350
Variable nozzle spacing									
160/81	–	4213873	0001	–	to DN 65	9,0	210,00	–	–
180/111	4202333	4200562	0001	–	to DN 80	13,8	320,00	–	–
200/121	4202334	4200754	0001	–	to DN 80	22,0	510,00	–	–
250/151	4204789	4204299	0001	–	to DN 125	32,2	825,00	–	–
280/181	4202335	4200797	0001	–	to DN 125	42,0	980,00	–	–
300/201	4202336	4200798	0001	–	to DN 125	60,2	1.400,00	–	–
400/201	4202337	4200969	0001	–	to DN 150	77,0	1.800,00	–	–
450/251	4202338	4200962	0001	–	to DN 200	125,0	2.900,00	–	–
500/301	4202339	4200963	0001	–	to DN 250	194,0	4.500,00	–	–
600/401	4202340	4200957	0001	–	to DN 300	267,0	6.200,00	–	–
700/501	4202343	4200972	0001	–	to DN 350	391,0	9.100,00	–	–

Compact manifold, 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
- max. permissible operating temperature 110 °C
- max. permissible operating overpressure 6 bar
- application range:
  - → compact manifold 180/110 – 300/200
  - → thermally insulated 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 variants (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

Compact manifold, thermally separated accessories

Type	Art. No.	DG	Weight [kg]
SINUS EasyFixx	4202284	0003	4,46
draining gutter			
draining gutter ELR galv	4205889	0001	15,00
stand bracket STKO ELR	4205878	0001	2,40
wall bracket WKO ELR	4205705	0001	1,58
name plate			
name plate RD	4200015	0001	–
name plate BU	4200021	0001	–
insulation 45 mm PUR foam/Aluminium coarse grain jacket, thermal conductivity 0,026 W/m×K			
insulation 160/80	4205897	0001	–
insulation 180/110	4205703	0001	–
insulation 200/120	4206010	0001	–
insulation 50 mm PUR foam/Aluminium coarse grain jacket, thermal conductivity 0,026 W/m×K			
insulation 280/180	4201454	0001	–
insulation 300/200	4206448	0001	–
insulation 45 mm PUR foam/galvanised sheet steel jacket, thermal conductivity 0,026 W/m×K			
insulation 160/80	4205518	0001	–
insulation 180/110	4205643	0001	–
insulation 200/120	4205956	0001	–
insulation 250/150	4210849	0001	–
insulation 50 mm PUR foam/galvanised sheet steel jacket, thermal conductivity 0,026 W/m×K			
insulation 280/180	4201353	0001	–
insulation 300/200	4205592	0001	–
insulation 60 mm PUR foam/galvanised sheet steel jacket, thermal conductivity 0,026 W/m×K			
insulation 400/200	4206045	0001	–
insulation 450/250	4206046	0001	–
insulation 500/300	4206047	0001	–
insulation 600/400	4206048	0001	–
insulation 700/500	4206049	0001	–
insulation 100 mm mineral wool/galvanised sheet steel jacket, thermal conductivity 0,038 W/m×K			
insulation 160/80	4205996	0001	–
insulation 180/110	4205593	0001	–
insulation 200/120	4205704	0001	–
insulation 250/150	4209925	0001	–
insulation 280/180	4201347	0001	–
insulation 300/200	4205517	0001	–
insulation 400/200	4206050	0001	–
insulation 450/250	4206051	0001	–
insulation 500/300	4206052	0001	–
insulation 600/400	4206053	0001	–
insulation 700/500	4206054	0001	–
stand bracket			
stand bracket STKO 270–340 mm max 200/120 DN 200	4206574	0001	3,00
stand bracket STKO 270–340 mm max 300/200 DN 250	4205957	0001	5,40
stand bracket STKO 270–340 mm max 500/300 DN 400	4206097	0001	12,00
stand bracket STKO 300 mm max 700/500 DN 800	4205580	0001	24,00
wall bracket			
wall bracket WAKO 220 mm max 160/80 DN 200	4205900	0001	2,30
wall bracket WAKO 300 mm max 200/120 DN 200	4205955	0001	3,73
wall bracket WAKO 500 mm max 300/200 DN 250	4205581	0001	5,07

SINUS

Single-chamber manifold



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
- max. permissible operating temperature -10 °C – 110 °C
- max. permissible operating overpressure 0 bar – 6 bar / 16 bar, the actual operating overpressure is limited by the pressure rating of the flange nozzle
- nozzles aligned at the height of the shut-off valves
- with threaded, Victaulic and / or PN 6 / PN 16 flange nozzle
- drain 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. 6 bar	Art. No. 10 bar	Art. No. 16 bar	DG	Flow velocity 0,4 m/s V_{max} [m³/h]	Flow velocity 0,4 m/s Output at ΔT 20 °K [kW]	Flow velocity 0,6 m/s V_{max} [m³/h]	Flow velocity 0,6 m/s Output at ΔT 20 °K [kW]
variable nozzle spacing								
DN 50	4206421	–	4208130	0001	3,5	80	5,0	115
DN 65	4206420	–	4208131	0001	5,5	125	8,5	200
DN 80	4206415	–	4208132	0001	7,0	160	12,0	280
DN 100	4206160	–	4208135	0001	10,0	245	17,0	395
DN 125	4205821	–	4208136	0001	17,0	410	27,0	630
DN 150	4205822	–	4208137	0001	24,0	560	38,0	880
DN 200	4206159	–	4208141	0001	44,0	1.020	72,0	1.670
DN 250	4205939	–	4208142	0001	70,0	1.625	115,0	2.670
DN 300	4205913	–	4208143	0001	100,0	2.350	153,0	3.560
DN 350	4205914	4208147	–	0001	140,0	3.250	208,0	4.840
DN 400	4205915	4208148	–	0001	180,0	4.200	271,0	6.300
DN 500	4205933	4206425	–	0001	280,0	6.500	424,0	9.860
DN 600	4205934	4206426	–	0001	400,0	9.330	611,0	14.200
DN 700	4205916	4206427	–	0001	550,0	12.850	830,0	19.370
DN 800	4205935	4206428	–	0001	700,0	17.500	1.085,0	25.320

Single-chamber manifold 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
- max. permissible operating temperature 110 °C
- max. permissible operating overpressure 6 bar
- application range:
  - → compact manifold 180/110 – 300/200
  - → thermally insulated 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



- galvanised standing support for secure locating of the trough behind or in front of the manifold
- the height can be adjusted on-site

wall bracket



- sound-proofed and galvanised comprising a head plate fitted on an adjustable guide carriage
- infinitely adjustable in depth
- overhang to manifold middle 160 – 500 mm

Single-chamber manifold Accessories

Type	Art. No.	DG	Weight [kg]
SINUS EasyFixx	4202284	0003	4,46
draining gutter			
draining gutter ELR galv	4205889	0001	15,00
stand bracket STKO ELR	4205878	0001	2,40
wall bracket WKO ELR	4205705	0001	1,58
name plate			
name plate RD	4200015	0001	–
name plate BU	4200021	0001	–
insulation 60 mm PUR foam/galvanised sheet steel jacket, thermal conductivity 0,026 W/m×K			
insulation DN 50	4207255	0001	–
insulation DN 65	4207254	0001	–
insulation DN 80	4205639	0001	–
insulation DN 100	4205573	0001	–
insulation DN 125	4205574	0001	–
insulation DN 150	4205575	0001	–
insulation DN 200	4205576	0001	–
insulation DN 250	4205577	0001	–
insulation DN 300	4205578	0001	–
insulation DN 350	4205579	0001	–
insulation DN 400	4205640	0001	–
insulation DN 500	4207256	0001	–
insulation 50 mm mineral wool/galvanised sheet steel jacket, thermal conductivity 0,038 W/m×K			
insulation DN 50	4207284	0001	–
insulation 70 mm mineral wool/galvanised sheet steel jacket, thermal conductivity 0,038 W/m×K			
insulation DN 65	4207007	0001	–
insulation 80 mm mineral wool/galvanised sheet steel jacket, thermal conductivity 0,038 W/m×K			
insulation DN 80	4207014	0001	–
insulation 100 mm mineral wool/galvanised sheet steel jacket, thermal conductivity 0,038 W/m×K			
insulation DN 100	4207019	0001	–
insulation DN 125	4207021	0001	–
insulation DN 150	4207026	0001	–
insulation DN 200	4207027	0001	–
insulation DN 250	4207032	0001	–
insulation DN 300	4207033	0001	–
insulation DN 350	4207035	0001	–
insulation DN 400	4207038	0001	–
insulation DN 500	4207274	0001	–
stand bracket			
stand bracket STKO 270–340 mm max 200/120 DN 200	4206574	0001	3,00
stand bracket STKO 270–340 mm max 300/200 DN 250	4205957	0001	5,40
stand bracket STKO 405–600 mm max 300/200 DN 250	4205504	0001	6,06
stand bracket STKO 300 mm max 700/500 DN 800	4205580	0001	24,00
wall bracket			
wall bracket WAKO 220 mm max 160/80 DN 200	4205900	0001	2,30
wall bracket WAKO 500 mm max 300/200 DN 250	4205581	0001	5,07

SINUS

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
- max. permissible operating temperature -10 °C – 110 °C
- max. permissible operating overpressure 0 bar – 10 bar
- nozzles aligned at the height of the shut-off valves

Type	Art. No.	DG	Flow velocity 1,5 m/s V_{max} [m³/h]	Dimension [mm]
DN 50	4206078	0001	13,5	60 × 2,0
DN 65	4206079	0001	22,1	76 × 2,0
DN 80	4206080	0001	30,6	88 × 2,0
DN 100	4206081	0001	50,5	114 × 2,6
DN 125	4206082	0001	76,6	139 × 2,6
DN 150	4206083	0001	112,8	168 × 2,6
DN 200	4206084	0001	192,0	219 × 3,0
DN 250	4206085	0001	302,0	273 × 3,0

SINUS LegioNixx 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



stand bracket

- galvanised standing support for secure locating of the trough behind or in front of the manifold
- the height can be adjusted on-site



wall bracket

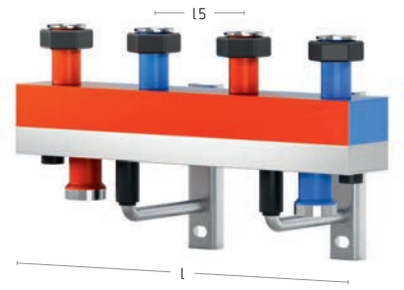
- sound-proofed and galvanised comprising a head plate fitted on an adjustable guide carriage
- infinitely adjustable in depth
- overhang to manifold middle 160 – 500 mm



Type	Art. No.	DG	Weight [kg]
draining gutter ELR galv	4205889	0001	15,00
stand bracket STKO ELR	4205878	0001	2,40
wall bracket WKO ELR	4205705	0001	1,58

SINUS HydroFixx

SINUS HydroFixx Mini



SINUS HydroFixx Mini

Technical Features

- no interacting pumps at partial and full load
- 100 % factory-checked for leak tightness and primed
- packed as a set
- including EPP thermal insulation and wall mount
- ½" sleeve for temperature sensor
- with horizontal welded Hydraulic Separator located directly underneath
- ensures optimum hydraulic decoupling of the various primary and secondary circuits under all operating conditions
- can also be used with several different heat generators or chillers
- the boiler connection is made from below and the respective heating circuits are connected from above in a space-saving and clear manner
- max. permissible operating overpressure 0 bar – 4 bar
- max. permissible operating temperature -10 °C – 110 °C
- ideal for use with: maintenance box

Type	Art. No.	DG	Heating circuits [pcs.]	Connection consumer circuit	Connection generator circuit	V_{max} [m^3/h]	Output at ΔT 20 °K [kW]	Length l [mm]	Connection separation l5 [mm]
80/80	4200041	0001	2	G 1½" coupling nut	G 1½"	3,0	70,00	460	125
80/80	4208061	0001	3	G 1½" coupling nut	G 1½"	3,0	70,00	710	125
80/80	4200089	0001	4	G 1½" coupling nut	G 1½"	3,0	70,00	960	125
120/120	4208581	0001	2	G 1½" coupling nut	G 2"	7,0	160,00	515	125
120/120	4208505	0001	3	G 1½" coupling nut	G 2"	7,0	160,00	765	125
120/120	4200268	0001	4	G 1½" coupling nut	G 2"	7,0	160,00	1.015	125

You can find the enquiry form at **www.reflex-winkelmann.com/en**

SINUS HydroFixx Mini accessories

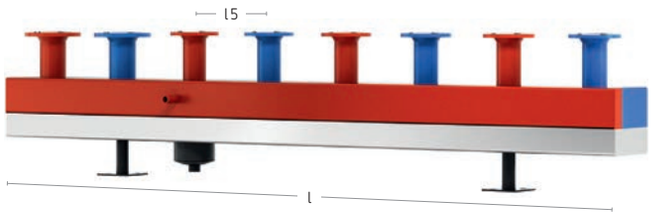
maintenance box

- 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
- max. permissible operating temperature -10 °C – 110 °C
- max. permissible operating overpressure 0 bar – 4 bar



Type	Art. No.	DG	Weight [kg]
maintenance box			
maintenance box 80/60	4209770	0003	2,06
maintenance box 120/80	4209771	0003	2,06

SINUS HydroFixx with uniform nozzle spacings



SINUS HydroFixx with uniform nozzle spacings

Technical Features

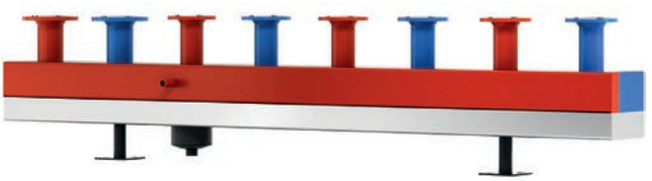
- combined flow and return manifold, consisting rectangular tube with adjoining chambers divided by sinusoidal dividing wall made from mild steel sheet S235
- no interacting pumps at partial and full load
- 100 % factory-checked for leak tightness and primed
- max. permissible operating overpressure 0 bar – 6 bar
- max. permissible operating temperature -10 °C – 110 °C
- nozzles aligned at the height of the shut-off valves — optionally possible from above, the side or below
- with threaded or PN 6 / PN 16 flange nozzle
- sludge trap is provided as standard
- with horizontal welded Hydraulic Separator located directly underneath
- ensures optimum hydraulic decoupling of the various primary and secondary circuits under all operating conditions
- can also be used with several different heat generators or chillers
- space-saving and clear layout of the respective heating or cooling circuits
- with downward-directed outgoing sludge trap inclusive of desludging sleeve
- fitted as standard is a sleeve for locating the Hydraulic Separator's sensor, which is used for measuring the secondary-side flow temperature for system control; it is positioned in the correct location on site
- supplementary sensor sleeves can be fitted for an additional charge
- **article numbers, prices and delivery time available on request**

SINUS HydroFixx with uniform nozzle spacing **available on request**

You can find the enquiry form at **www.reflex-winkelmann.com/en**

SINUS

SINUS HydroFixx with variable nozzle spacings



SINUS HydroFixx 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
- no interacting pumps at partial and full load
- 100 % factory-checked for leak tightness and primed
- max. permissible operating overpressure 0 bar – 6 bar
- max. permissible operating temperature -10 °C – 110 °C
- optionally possible from above, the side or below
- with threaded and/or PN 6/PN 16 flange nozzle
- draining sleeves for flow and return chambers are fitted as standard
- with horizontal welded Hydraulic Separator located directly underneath
- ensures optimum hydraulic decoupling of the various primary and secondary circuits under all operating conditions
- can also be used with several different heat generators or chillers
- space-saving and clear layout of the respective heating or cooling circuits
- with downward-directed outgoing sludge trap inclusive of desludging sleeve
- fitted as standard is a sleeve for locating the Hydraulic Separator's sensor, which is used for measuring the secondary-side flow temperature for system control; it is positioned in the correct location on site
- supplementary sensor sleeves can be fitted for an additional charge

You can find the enquiry form at **www.reflex-winkelmann.com/en**

SINUS HydroFixx with variable nozzle spacings

Type	Art. No.	DG	Largest connection nozzle	V_{max} [m^3/h]	Output at ΔT 20 °K [kW]
120/120	4208461	0001	DN 50	7,0	160,00
160/160	4207954	0001	DN 65	10,8	250,00
180/180	4207992	0001	DN 100	17,2	400,00
200/200	4207993	0001	DN 125	25,8	600,00
280/320	4207994	0001	DN 125	53,8	1.250,00
300/350	4207995	0001	DN 150	68,8	1.600,00
400/400	4206361	0001	DN 150	90,0	2.100,00
450/450	4208462	0001	DN 200	150,0	3.500,00
500/550	4208464	0001	DN 250	194,0	4.500,00
600/650	4210556	0001	DN 300	267,0	6.200,00
700/750	4210559	0001	DN 350	387,0	9.000,00

SINUS HydroFixx accessories

name plate



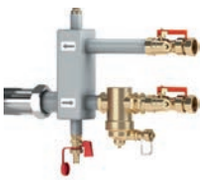
- for marking the heating circuits, made of galvanised steel sheet for three rows of lettering. The name plate is suitable for screwing to the finished insulation
- size: 100 × 50 mm
- colours: red (RD) for flow & blue (BU) for return

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
- max. permissible operating temperature 110 °C
- max. permissible operating overpressure 6 bar
- application range:
  - → compact manifold 180/110 – 300/200
  - → thermally insulated 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 variants (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 HydroFixx accessories

Type	Art. No.	DG	Weight [kg]
SINUS EasyFixx	4202284	0003	4,46
draining gutter			
draining gutter ELR galv	4205889	0001	15,00
stand bracket STKO ELR	4205878	0001	2,40
wall bracket WKO ELR	4205705	0001	1,58
name plate			
name plate BU	4200021	0001	–
name plate RD	4200015	0001	–
insulation 60 mm PUR foam / Aluminium coarse grain jacket, Thermal conductivity 0,026 W/m×K			
insulation 120/120	4208466	0001	–
insulation 160/160	4208276	0001	–
insulation 180/180	4208277	0001	–
insulation 200/200	4208278	0001	–
insulation 60 mm PUR foam / galvanised sheet steel jacket, Thermal conductivity 0,026 W/m×K			
insulation 120/120	4203382	0001	–
insulation 160/160	4203370	0001	–
insulation 180/180	4203372	0001	–
insulation 200/200	4203374	0001	–
insulation 280/320	4203375	0001	–
insulation 300/350	4203380	0001	–
insulation 400/400	4206362	0001	–
insulation 450/450	4208470	0001	–
insulation 500/550	4208471	0001	–
insulation 600/650	4210691	0001	–
insulation 700/750	4210692	0001	–
insulation 100 mm mineral wool / galvanised sheet steel jacket, Thermal conductivity 0,038 W/m×K			
insulation 120/120	4203384	0001	–
insulation 160/160	4203196	0001	–
insulation 180/180	4203197	0001	–
insulation 200/200	4208279	0001	–
insulation 280/320	4208280	0001	–
insulation 300/350	4208283	0001	–
insulation 400/400	4206363	0001	–
insulation 450/450	4208472	0001	–
insulation 500/550	4208476	0001	130,00
insulation 600/650	4210693	0001	–
insulation 700/750	4210721	0001	–
stand bracket			
stand bracket STKO 270–340 mm max 200/120 DN 200	4206574	0001	3,00
stand bracket STKO 270–340 mm max 300/200 DN 250	4205957	0001	5,40
stand bracket STKO 270–340 mm max 500/300 DN 400	4206097	0001	12,00
stand bracket STKO 300 mm max 700/500 DN 800	4205580	0001	24,00
wall bracket			
wall bracket WAKO 300 mm max 200/120 DN 200	4205955	0001	3,73
wall bracket WAKO 500 mm max 300/200 DN 250	4205581	0001	5,07

Theoretical principles

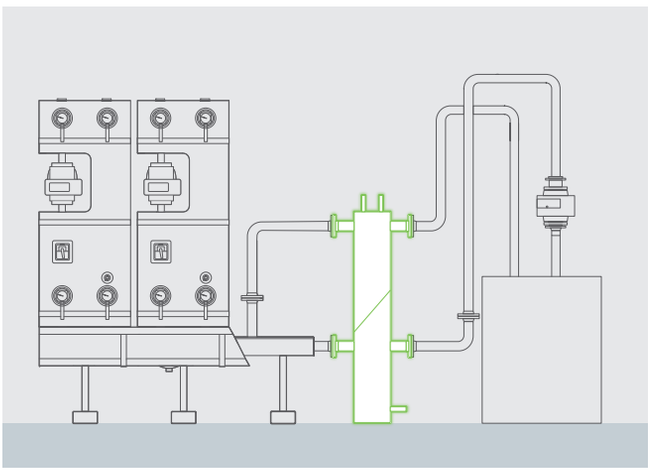
Hydraulic Separator — construction



The basic principle behind a Hydraulic Separator is thermal stratification, according to which, hot water (low density) collects in the upper area and cold water (high density) in the lower area.

1. Venting
   continuously removes free air bubbles from the system
2. Temperature sensor
   detects the secondary side supply temperature for a safe system control
3. Draining
   for discharging free suspended solids such as magnetite
4. Hot medium
5. Cold medium

Hydraulic Separator — connection



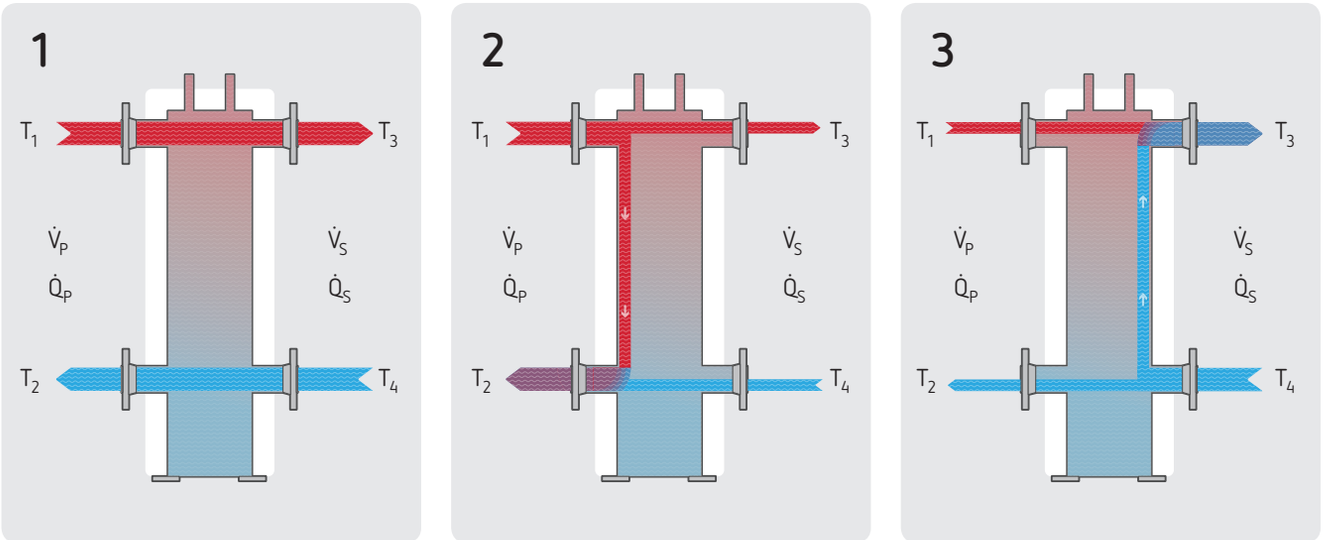
Hydraulic Separators provide hydraulic decoupling of the primary and secondary side, if these circuits each have their own pumps. Due to their design, Hydraulic Separators balance out oscillating volume flows and, in so doing, prevent hydraulic problems because the pumps do not influence each other. In particular, in current heating and cooling systems, dynamic power requirements are present that result in fluctuating volume flows. A Hydraulic Separator is positioned between the primary and secondary sides.

Hydraulic Separator — dimensioning

Decisive for reliable functioning is the flow velocity inside the body of the Hydraulic Separator. If the flow velocity is too high, there is a risk of turbulence. Therefore, the maximum expected volume flow must be taken into account to achieve the correct dimensioning. The correct dimensioning can be selected based on the product tables → p. 220

In addition, there must be a sufficient minimum distance between the flow and return connections to prevent any undesirable mixing. This is automatically ensured with the standard designs. In the event of limited space, custom solutions are available.

Hydraulic Separator — operating principle



1. Primary circuit volume flow = Secondary circuit volume flow
   - In this case, the Hydraulic Separator is in a neutral situation.
   - The volume flow of the primary circuit ($\dot{V}_P$) and the volume flow of the secondary circuit ($\dot{V}_S$) are the same.
   - The temperatures (T) in the primary circuit are the same as those in the secondary circuit.
   - The heat quantity ($\dot{Q}$) is also the same.
   - Under normal circumstances this operating status only exists for very short transition periods.

2. Primary circuit volume flow > Secondary circuit volume flow
   - In the partial load range, the primary pump delivers more water through the heat generator than the consumer side requires.
   - Hot flow water is mixed with the primary-side return; the return temperature increases.
   - As in this operating status, the provided heating capacity is greater than that actually required, the feedback control system counteracts this by reducing the generator output. For example, this is achieved by reducing the primary volume flow. In general, the increasing return temperature, as measured by a sensor, provides a measured variable for the feedback control system.

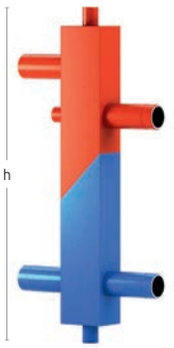
3. Primary circuit volume flow < Secondary circuit volume flow
   - The consumer requires more volume flow than the generator circuit makes available.
   - This frequently occurs automatically because modern heat and cold generators only have very small water volumes.
   - The Hydraulic Separator balances the circuits by mixing return water from the consumer circuits with the flow water from the primary circuit.
   - The reduction in the secondary flow temperature is initially not a problem because the provided flow temperatures are generally higher than the ones actually required.
   - As soon as the secondary-side flow temperature falls below the required target value, the generator output is increased, for example by increasing the primary volume flow.
   - To measure the setpoint temperature, each Hydraulic Separator has a correctly positioned sensor sleeve.

Note:
The operating statuses behave in an equivalent way in cooling systems. However, it should be noted that here the flows must be connected at the bottom in the area of the low temperatures and the returns connected at the top where high temperatures are present.

Hydraulic Separators

SINUS

Small Hydraulic Separators



Upright small Hydraulic Separator



SINUS MonoFixx small horizontal Hydraulic Separator

Technical Features

- ensures optimum hydraulic decoupling of the various primary and secondary circuits under all operating conditions
- no interacting pumps at partial and full load
- with four connection nozzles for heat consumers and heat generators
- 100 % factory-checked for leak tightness and primed
- packed as a set
- max. permissible operating temperature -10 °C – 110 °C
- max. permissible operating overpressure 0 bar – 4 bar
- with EPP insulation
- ½" sleeves for venting, draining and sensors
- Ideal for use with: Maintenance box & magnetite separation module for small hydraulic separators – threaded

Type	Art. No.	DG	Connection consumer circuit	Connection generator circuit	V_{max} [m^3/h]	Height h [mm]
Vertical						
60/50	4207263	0002	Rp 1"	Rp 1"	3,0	500
80/60	4205730	0002	R 1¼"	R 1¼"	4,5	500
120/80	4205684	0002	R 2"	R 2"	8,0	800
Horizontal						
80/80	4200160	0002	G 1½" coupling nut	G 1½"	3,0	–
120/80	4206338	0002	G 2" coupling nut	G 1½"	6,5	–

SINUS

Small Hydraulic Separators Accessories

wall-fastening set

- wall mounting kit comprising two wall brackets



maintenance box

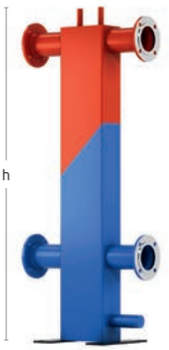
- for magnetite slurry removal for all small manifolds, SINUS MonoFixx and SINUS HydroFixx
- enables desludging in pressurised systems
- comprising special section tube 120 × 80 or 80 × 60, steel S235
- provided with a desludging nozzle and ½" ball valve as well as a magnetic rod screwed into the immersion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



Type	Art. No.	DG	Weight [kg]
maintenance box			
maintenance box 80/60	4209770	0003	2,06
maintenance box 120/80	4209771	0003	2,06
wall-fastening set			
wall-fastening set 60/50	4208188	0002	–
wall-fastening set 80/60	4208191	0002	–
wall-fastening set 120/80	4208174	0002	–
wall-fastening set SINUS MonoFixx 80/80	4208354	0002	1,53
wall-fastening set SINUS MonoFixx 120/80	4208060	0002	1,70

SINUS

Hydraulic Separators Compact design



Compact Hydraulic Separator

Technical Features

- vertical-design Hydraulic Separator
- ensures optimum hydraulic decoupling of the various primary and secondary circuits under all operating conditions
- made from a rectangular chamber from rectangular hollow section steel S235 with welded cover and bottom
- no interacting pumps at partial and full load
- with four connection nozzles for heat consumers and heat generators
- with PN 6 / PN 16 weld-neck flanges
- 100 % factory-checked for leak tightness and primed
- max. permissible operating temperature -10 °C – 110 °C
- max. permissible operating overpressure 0 bar – 6 bar
- 2" threaded connections for desludging
- ½" sleeve for temperature sensor
- standing foot with holes for attachment to the floor

Type	Art. No.	DG	Connection consumer circuit	Connection generator circuit	V_{max} [m³/h]	Height h [mm]
Compact Hydraulic Separator						
160/80	6310060	0002	DN 65/PN 6	DN 65/PN 6	10,0	1.440
200/120	6310065	0002	DN 80/PN 6	DN 80/PN 6	18,0	1.450
250/150	6310070	0002	DN 100/PN 6	DN 100/PN 6	27,0	1.470
300/200	6310075	0002	DN 125/PN 6	DN 125/PN 6	43,0	1.480
400/200	6310250	0002	DN 150/PN 6	DN 150/PN 6	57,0	1.495
450/250	6310255	0002	DN 200/PN 6	DN 200/PN 6	85,0	1.520
500/300	6310260	0002	DN 200/PN 6	DN 200/PN 6	110,0	1.820

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Hydraulic Separators Accessories

insulation

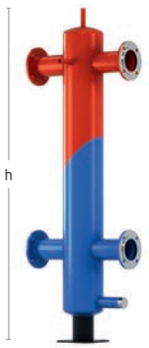
- comprising interlocking half shells with end-pieces
- customised and precisely fitting cut-outs for all connection nozzles are provided in the factory
- the half-shells are fitted using stainless-steel clamping straps and quick-release fasteners
- this enables simple installation and disassembly for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



Type	Art. No.	DG	Weight [kg]
insulation 65 mm PUR foam/Aluminium coarse grain jacket, thermal conductivity 0,026 W/m×K			
insulation 160/80	9120214	0001	6,00
insulation 200/120	9120215	0001	9,20
insulation 250/150	9120216	0001	11,50
insulation 300/200	9120217	0001	13,50
insulation 400/200	9120218	0001	15,50
insulation 100 mm mineral wool/galvanised sheet steel jacket, thermal conductivity 0,038 W/m×K			
insulation 160/80	4201009	0001	23,50
insulation 250/150	4201010	0001	28,50
insulation 300/200	4201011	0001	24,50
insulation 400/200	9120219	0001	35,50
insulation 450/250	9120220	0001	42,50
insulation 500/300	9120221	0001	55,00

SINUS

Hydraulic Separators Round design



Round Hydraulic Separator

Technical Features

- vertical-design Hydraulic Separator
- ensures optimum hydraulic decoupling of the various primary and secondary circuits under all operating conditions
- from vertical round chamber from welded P235 pipe with welded dished boiler ends
- no interacting pumps at partial and full load
- with four connection nozzles for heat consumers and heat generators
- with PN 6/PN 16 weld-neck flanges
- 100 % factory-checked for leak tightness and primed
- max. permissible operating temperature -10 °C – 110 °C
- max. permissible operating overpressure 0 bar – 6 bar
- 2" threaded connections for desludging
- ½" sleeve for temperature sensor
- standing foot with holes for attachment to the floor
- **stainless steel round switching points available on request**

Type	Art. No.	DG	Connection consumer circuit	Connection generator circuit	V_{max} [m^3/h]	Height h [mm]
Round Hydraulic Separator						
DN 150	4205738	0002	DN 65/PN 6	DN 65/PN 6	12,0	1.700
DN 200	4205631	0002	DN 80/PN 6	DN 80/PN 6	18,0	1.700
DN 200	4205632	0002	DN 100/PN 6	DN 100/PN 6	28,0	1.700
DN 250	4205633	0002	DN 125/PN 6	DN 125/PN 6	40,0	1.700
DN 300	4205512	0002	DN 150/PN 6	DN 150/PN 6	65,0	1.800
DN 350	4207939	0002	DN 200/PN 6	DN 200/PN 6	85,0	1.850
DN 400	4205739	0002	DN 200/PN 6	DN 200/PN 6	125,0	1.900
DN 500	4205740	0002	DN 250/PN 6	DN 250/PN 6	215,0	2.000
DN 500	4207411	0002	DN 300/PN 6	DN 300/PN 6	225,0	2.050
DN 600	4205741	0002	DN 350/PN 6	DN 350/PN 6	350,0	2.450
DN 600	4207412	0002	DN 400/PN 6	DN 400/PN 6	395,0	2.550
DN 700	4207413	0002	DN 400/PN 6	DN 400/PN 6	480,0	2.750
DN 800	4207423	0002	DN 500/PN 6	DN 500/PN 6	700,0	2.975

SINUS

Hydraulic Separators Accessories

insulation

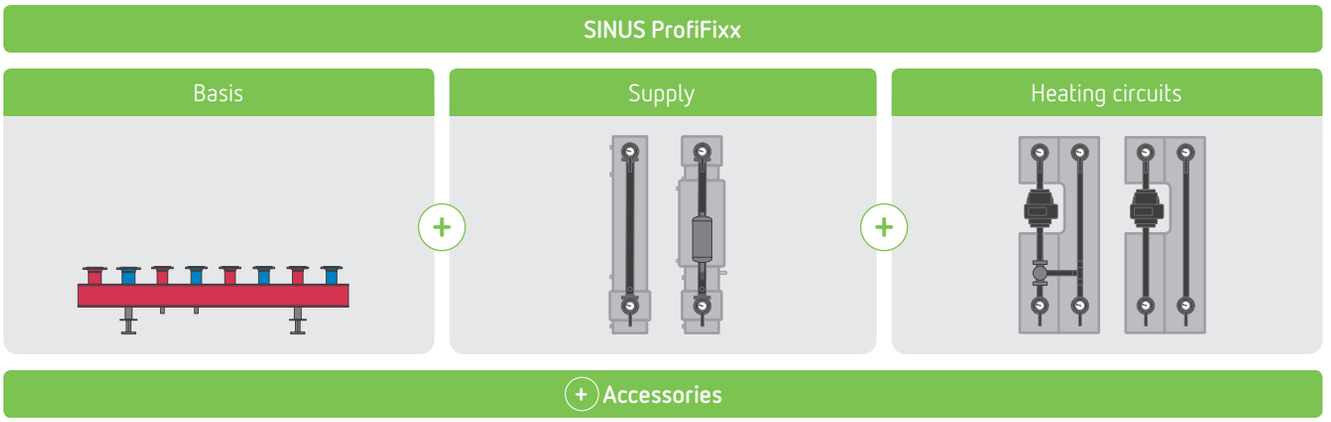
- comprising interlocking half shells with end-pieces
- customised and precisely fitting cut-outs for all connection nozzles are provided in the factory
- the half-shells are fitted using stainless-steel clamping straps and quick-release fasteners
- this enables simple installation and disassembly for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



Type	Art. No.	DG	Weight [kg]
insulation 60 mm PUR foam/galvanised sheet steel jacket, thermal conductivity 0,026 W/m×K			
insulation DN 300	4206029	0001	23,00
insulation DN 200	4208254	0001	14,60
insulation DN 200	4206948	0001	14,60
insulation DN 250	4206028	0001	17,00
insulation DN 150	4206027	0001	15,35
insulation DN 400	4206030	0001	24,00
insulation DN 500	4208395	0001	30,80
insulation DN 350	4208255	0001	24,80
insulation 100 mm mineral wool/galvanised sheet steel jacket, thermal conductivity 0,038 W/m×K			
insulation DN 300	4207932	0001	44,50
insulation DN 200	4208023	0001	34,50
insulation DN 200	4208024	0001	34,50
insulation DN 250	4207931	0001	39,80
insulation DN 150	4207930	0001	23,50
insulation DN 400	4207424	0001	26,70
insulation DN 500	4207425	0001	32,70
insulation DN 350	4207933	0001	55,50

Theoretical principles

SINUS ProfiFixx — combination matrix



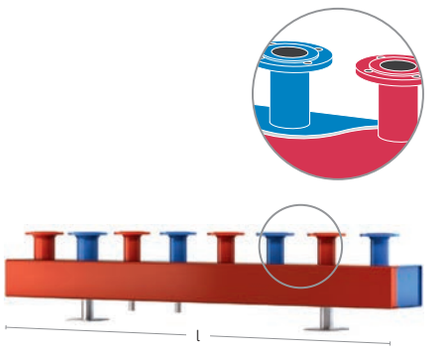
SINUS ProfiFixx — construction



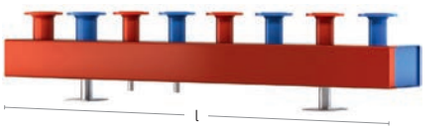
1. Basis
   optionally as compact manifold, thermally separated manifold or SINUS HydroFixx
2. Supply
   optional with Exdirt V
3. Heating circuits
   variable number, optionally regulated or unregulated
4. SINUS EasyFixx
   configurable in conjunction with base

SINUS ProfiFixx

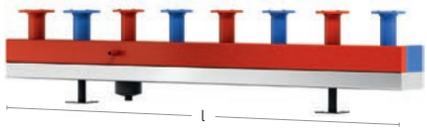
SINUS ProfiFixx Basis



Compact manifold, thermally separated



Compact manifold not thermally separated



SINUS HydroFixx

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
- max. permissible operating temperature -10 °C – 110 °C
- max. permissible operating overpressure 0 bar – 6 bar
- nozzles aligned at the height of the shut-off valves
- space-saving and clear layout of the respective heating or cooling circuits
- optionally also available as a thermally separated version or as a SINUS HydroFixx

You can find the enquiry form at **www.reflex-winkelmann.com/en**

SINUS

SINUS ProfiFixx Basis

Type	Art. No.	DG	Number of nozzles [pcs.]	Largest nozzle	V_{max} [m^3/h]	Output at ΔT 20 °K [kW]	Length [mm]
160/80	4209393	0001	6	to DN 65	10,8	250,00	1.830
160/80	4209394	0001	8	to DN 65	10,8	250,00	2.450
160/80	4209356	0001	10	to DN 65	10,8	250,00	3.070
160/80	4209360	0001	12	to DN 65	10,8	250,00	3.690
160/80	4209361	0001	14	to DN 65	10,8	250,00	4.310
160/80	4209362	0001	16	to DN 65	10,8	250,00	4.930
180/110	4209434	0001	6	to DN 100	17,2	400,00	1.830
180/110	4209435	0001	8	to DN 100	17,2	400,00	2.450
180/110	4209437	0001	10	to DN 100	17,2	400,00	3.070
180/110	4209438	0001	12	to DN 100	17,2	400,00	3.690
180/110	4209439	0001	14	to DN 100	17,2	400,00	4.310
180/110	4209397	0001	16	to DN 100	17,2	400,00	4.930
200/120	4209367	0001	6	to DN 100	25,8	600,00	1.830
200/120	4209370	0001	8	to DN 100	25,8	600,00	2.450
200/120	4209371	0001	10	to DN 100	25,8	600,00	3.070
200/120	4209374	0001	12	to DN 100	25,8	600,00	3.690
200/120	4209375	0001	14	to DN 100	25,8	600,00	4.310
200/120	4209378	0001	16	to DN 100	25,8	600,00	4.930
280/180	4209325	0001	6	to DN 125	53,8	1.250,00	1.830
280/180	4209326	0001	8	to DN 125	53,8	1.250,00	2.450
280/180	4209327	0001	10	to DN 125	53,8	1.250,00	3.070
280/180	4209328	0001	12	to DN 125	53,8	1.250,00	3.690
280/180	4209333	0001	14	to DN 125	53,8	1.250,00	4.310
280/180	4209336	0001	16	to DN 125	53,8	1.250,00	4.930
300/200	4209341	0001	6	to DN 150	68,8	1.600,00	1.830
300/200	4209342	0001	8	to DN 150	68,8	1.600,00	2.450
300/200	4209389	0001	10	to DN 150	68,8	1.600,00	3.070
300/200	4209390	0001	12	to DN 150	68,8	1.600,00	3.690
300/200	4209391	0001	14	to DN 150	68,8	1.600,00	4.310
300/200	4209316	0001	16	to DN 150	68,8	1.600,00	4.930

SINUS ProfiFixx Basis 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

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 variants (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

Type	Art. No.	DG	Weight [kg]
name plate			
name plate RD	4200015	0001	–
name plate BU	4200021	0001	–
stand bracket			
stand bracket STKO 270 – 340 mm max 200/120 DN 200	4206574	0001	3,00
stand bracket STKO 270 – 340 mm max 300/200 DN 250	4205957	0001	5,40
wall bracket			
wall bracket WAKO 220 mm max 160/80 DN 200	4205900	0001	2,30
wall bracket WAKO 300 mm max 200/120 DN 200	4205955	0001	3,73
wall bracket WAKO 500 mm max 300/200 DN 250	4205581	0001	5,07

SINUS

SINUS ProfiFixx supply



SINUS ProfiFixx supply



SINUS ProfiFixx supply with Exdirt V

Technical Features

- 100 % factory-checked for leak tightness and primed
- the insulation is fitted using the supplied stainless-steel straps including quick-release connections and can be opened and closed again for maintenance purposes
- the pump groups are provided with upper threaded flanges (female thread) for system-side connection
- comprising welded flange adapter pieces inclusive of isolating valves and draining
- pre-insulated according to the current building regulations (GEG)
- supplied:
  → shut-off valves incl. thermometers
  → flange adapter incl. screws and gaskets
  → insulation box according to GEG

Type	Art. No.	DG	Input dimension
SINUS ProfiFixx supply			
FPG ESP	4204745	0001	DN 40
FPG ESP	4203824	0001	DN 50
FPG ESP	4203819	0001	DN 65
FPG ESP	4203818	0001	DN 80
FPG ESP	4203859	0001	DN 100
FPG ESP	4203813	0001	DN 125
FPG ESP	4203817	0001	DN 150
SINUS ProfiFixx supply with Exdirt V			
FPG ESP	4205382	0001	DN 50
FPG ESP	4211961	0001	DN 65
FPG ESP	4211962	0001	DN 80
FPG ESP	4211963	0001	DN 100

SINUS ProfiFixx heating circuits



SINUS ProfiFixx with regulated heating circuits incl. 3-way mixer



SINUS ProfiFixx with unregulated heating circuits

Technical Features

- flange pump group comprising pre-assembled and pre-insulated heating circuits compliant with the current building regulations (GEG) for direct installation without any on-site welding
- 100 % factory-checked for leak tightness and primed
- implemented with regulated circuits with a 3-way mixer
- the entire SINUS ProfiFixx system is insulated in a visually uniform manner
- the insulation is fitted using the supplied stainless-steel straps including quick-release connections and can be opened and closed again for maintenance purposes
- the on-site pump is also freely accessible during operation, without it being necessary to remove the insulation
- the pump groups are provided with upper threaded flanges (female thread) for system-side connection
- supplied:
  - → shut-off valves incl. thermometers
  - → dummy adapter for on-site pump
  - → non-return valve with air lock
  - → KFE filling and drain valve ½"
  - → flange adapter incl. screws and gaskets
  - → insulation box according to GEG
  - → two sensor sleeves
- additional with regulated heating circuits:
  - → three-way mixer incl. 230 V 3 point actuator
  - → 24 V actuator motors on request

Type	Art. No.	DG	Dimension pump group	Dimension pump	Installed length installer supplied pump [mm]	K_{vs} three-way mixer	Actuator type	Power supply
SINUS ProfiFixx with regulated heating circuits incl. 3-way mixer								
MK25 P25	4216214	0001	DN 25	DN 25	180	2,5	ESBE ARA659 3-point 24 V	24 V
MK25 P25	4216209	0001	DN 25	DN 25	180	2,5	ESBE ARA661 3-point 230 V	230 V
MK25 P25	4209392	0001	DN 25	DN 25	180	4,0	ESBE ARA659 3-point 24 V	24 V
MK25 P25	4209268	0001	DN 25	DN 25	180	4,0	ESBE ARA661 3-point 230 V	230 V
MK25 P25	4216215	0001	DN 25	DN 25	180	6,3	ESBE ARA659 3-point 24 V	24 V
MK25 P25	4216210	0001	DN 25	DN 25	180	6,3	ESBE ARA661 3-point 230 V	230 V
MK32 P25	4216216	0001	DN 32	DN 25	180	6,3	ESBE ARA659 3-point 24 V	24 V
MK32 P25	4216211	0001	DN 32	DN 25	180	6,3	ESBE ARA661 3-point 230 V	230 V

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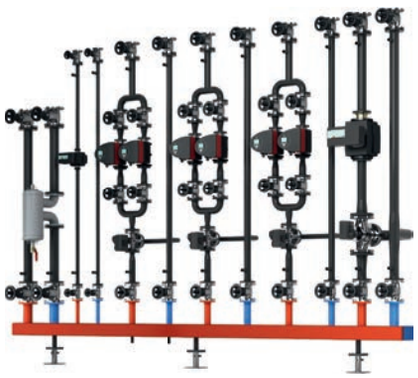
SINUS ProfiFixx supply

Type	Art. No.	DG	Dimension pump group	Dimension pump	Installed length installer supplied pump [mm]	K_{vs} three-way mixer	Actuator type	Power supply
MK32 P25	4209386	0001	DN 32	DN 25	180	10,0	ESBE ARA659 3-point 24V	24V
MK32 P25	4209267	0001	DN 32	DN 25	180	10,0	ESBE ARA661 3-point 230V	230V
MK32 P32	4216217	0001	DN 32	DN 32	180	6,3	ESBE ARA659 3-point 24V	24V
MK32 P32	4216218	0001	DN 32	DN 32	220	6,3	ESBE ARA659 3-point 24V	24V
MK32 P32	4216212	0001	DN 32	DN 32	180	6,3	ESBE ARA661 3-point 230V	230V
MK32 P32	4216213	0001	DN 32	DN 32	220	6,3	ESBE ARA661 3-point 230V	230V
MK32 P32	4209384	0001	DN 32	DN 32	220	10,0	ESBE ARA659 3-point 24V	24V
MK32 P32	4209385	0001	DN 32	DN 32	180	10,0	ESBE ARA659 3-point 24V	24V
MK32 P32	4209260	0001	DN 32	DN 32	220	10,0	ESBE ARA661 3-point 230V	230V
MK32 P32	4209261	0001	DN 32	DN 32	180	10,0	ESBE ARA661 3-point 230V	230V
MK 40 P25	4209355	0001	DN 40	DN 25	180	16,0	ESBE ARA659 3-point 24V	24V
MK40 P25	4209259	0001	DN 40	DN 25	180	16,0	ESBE ARA661 3-point 230V	230V
MK 40 P32	4209347	0001	DN 40	DN 32	220	16,0	ESBE ARA659 3-point 24V	24V
MK 40 P32	4209348	0001	DN 40	DN 32	180	16,0	ESBE ARA659 3-point 24V	24V
MK40 P32	4209241	0001	DN 40	DN 32	220	16,0	ESBE ARA661 3-point 230V	230V
MK40 P32	4209254	0001	DN 40	DN 32	180	16,0	ESBE ARA661 3-point 230V	230V
MK40 P40	4209343	0001	DN 40	DN 40	250	16,0	ESBE ARA659 3-point 24V	24V
MK40 P40	4209236	0001	DN 40	DN 40	250	16,0	ESBE ARA661 3-point 230V	230V
MK50 P32	4209339	0001	DN 50	DN 32	220	25,0	ESBE ARA659 3-point 24V	24V
MK50 P32	4209340	0001	DN 50	DN 32	180	25,0	ESBE ARA659 3-point 24V	24V
MK50 P32	4209232	0001	DN 50	DN 32	220	25,0	ESBE ARA661 3-point 230V	230V
MK50 P32	4209235	0001	DN 50	DN 32	180	25,0	ESBE ARA661 3-point 230V	230V
MK50 P40	4209335	0001	DN 50	DN 40	250	25,0	ESBE ARA659 3-point 24V	24V
MK50 P40	4209230	0001	DN 50	DN 40	250	25,0	ESBE ARA661 3-point 230V	230V
MK50 P50	4209330	0001	DN 50	DN 50	280	25,0	ESBE ARA659 3-point 24V	24V
MK50 P50	4209225	0001	DN 50	DN 50	280	25,0	ESBE ARA661 3-point 230V	230V
MK65 P40	4209323	0001	DN 65	DN 40	250	40,0	ESBE ARA659 3-point 24V	24V
MK65 P40	4209220	0001	DN 65	DN 40	250	40,0	ESBE ARA661 3-point 230V	230V
MK65 P50	4209300	0001	DN 65	DN 50	280	40,0	ESBE ARA659 3-point 24V	24V
MK65 P50	4209210	0001	DN 65	DN 50	280	40,0	ESBE ARA661 3-point 230V	230V
MK80 P50	4209299	0001	DN 80	DN 50	280	60,0	ESBE ARA659 3-point 24V	24V
MK80 P50	4209215	0001	DN 80	DN 50	280	60,0	ESBE ARA661 3-point 230V	230V
MK80 P65	4209298	0001	DN 80	DN 65	340	60,0	ESBE ARA659 3-point 24V	24V
MK80 P65	4209216	0001	DN 80	DN 65	340	60,0	ESBE ARA661 3-point 230V	230V
SINUS ProfiFixx with unregulated heating circuits								
UK25 P25	4203802	0001	DN 25	DN 25	180	–	–	–
UK32 P25	4203801	0001	DN 32	DN 25	180	–	–	–
UK32 P32	4203797	0001	DN 32	DN 32	220	–	–	–
UK32 P32	4203798	0001	DN 32	DN 32	180	–	–	–
UK40 P25	4203796	0001	DN 40	DN 25	180	–	–	–
UK40 P32	4203792	0001	DN 40	DN 32	220	–	–	–
UK40 P32	4203793	0001	DN 40	DN 32	180	–	–	–
UK40 P40	4203788	0001	DN 40	DN 40	250	–	–	–
UK50 P32	4203785	0001	DN 50	DN 32	220	–	–	–
UK50 P32	4203787	0001	DN 50	DN 32	180	–	–	–
UK50 P40	4203781	0001	DN 50	DN 40	250	–	–	–
UK50 P50	4203779	0001	DN 50	DN 50	280	–	–	–
UK65 P40	4203826	0001	DN 65	DN 40	250	–	–	–
UK65 P50	4203814	0001	DN 65	DN 50	280	–	–	–
UK80 P50	4203820	0001	DN 80	DN 50	280	–	–	–
UK80 P65	4203821	0001	DN 80	DN 65	340	–	–	–

Customised pre-assembly

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Customised pre-assembly



Customised pre-assembly

Technical Features

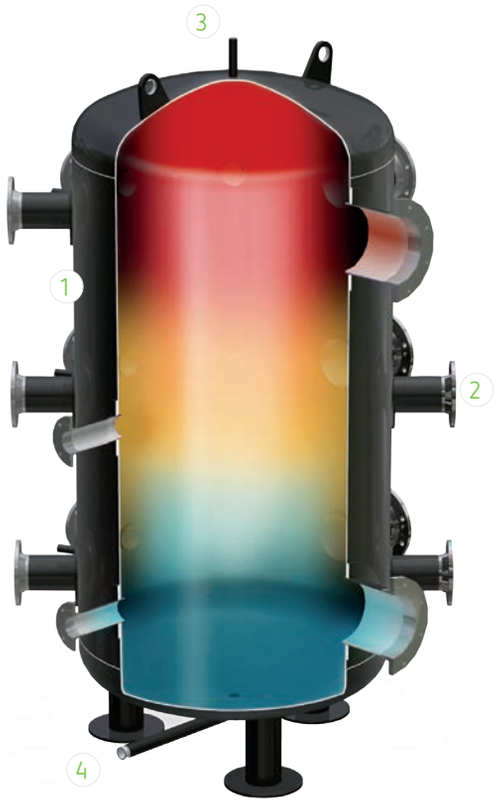
- for all requirements that are not solved by the modular design of the SINUS ProfiFixx
- all construction parts are designed and manufactured based on a manifold
- all supplied components are individually leak tested and primed at the factory
- all components are marked and can be quickly and easily installed according of the assembly drawing provided
- your advantages at a glance:
  - → individual manifold assemblies according to your specifications
  - → quick and clean installation thanks to prefabrication
  - → advantages: Cost, time and personnel control
  - → detailed CAD drawing for testing and production release
  - → numbering of all adapters
  - → CAD bill of materials with item number for each adapter
  - → precise manufacturing, priming and pressure testing of all parts

NEW:
Factory pre-assembled constructions
anfragen@sinusverteiler.com

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Theoretical principles

Multivalent solutions — construction

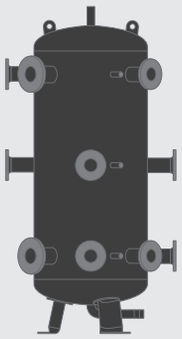


1. Hot water storage tank
   always planned and manufactured in an individual and project-specific manner
2. Connections
   the type and number of connections can be individually selected
3. Venting
4. Draining

SINUS MultiFlow — possible applications

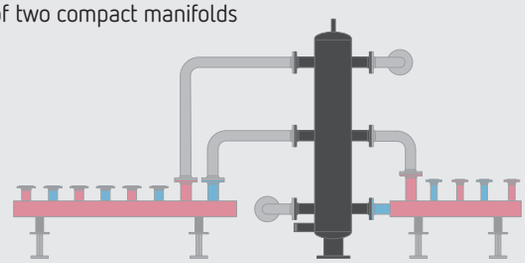
SINUS MultiFlow Center

- combines multivalent distribution, energy storage and hydraulic decoupling
- both minimum generator run times and peak loads are covered, while safe and fault-free operation are also ensured

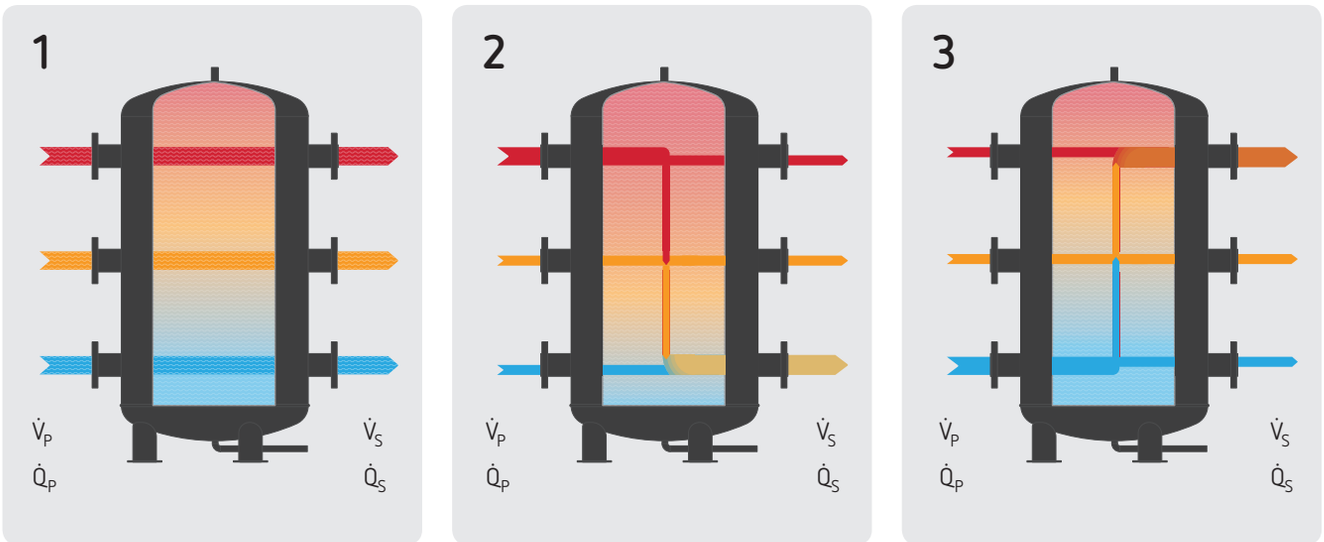


SINUS MultiFlow Expert

- functions hydraulically in a manner identical to the SINUS MultiFlow
- even clearer and easier installation through the addition of two compact manifolds



Multivalent solutions — operating states based on the example of a SINUS MultiFlow Center

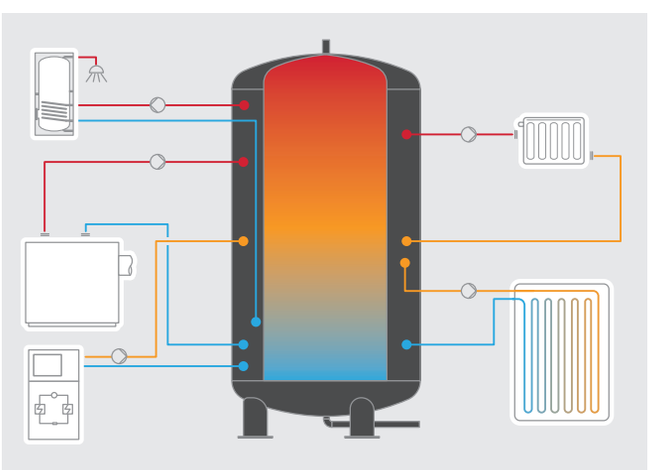


1. Heat generator volume flow = Heat consumer volume flow
   - Equal heat quantities in the generator circuit and consumer circuit.
   - The same stratification in the SINUS MultiFlow.
   - Temperatures on the generator and consumer side are identical.

2. Heat generator volume flow > Heat consumer volume flow
   - Heat supply is greater than heat consumption.
   - Hot flow water is added to the primary return via the SINUS MultiFlow Center.
   - However due to the design of the SINUS MultiFlow Center, only the differing water quantity is added. Otherwise the stratification is retained.

3. Heat generator volume flow < Heat consumer volume flow
   - Heat consumption is greater than heat supply.
   - Cold return water is added to the secondary flows via the SINUS MultiFlow Center.
   - However due to the design of the SINUS MultiFlow Center, only the differing water quantity is added. Otherwise the stratification is retained.

Function of multivalent solutions



Systems with different technologies for heat or cold generation are multivalent systems. Where the hydraulics are concerned, challenges arise because of different temperature levels. By using a SINUS MultiFlow Expert or SINUS MultiFlow Center, the systems can be reliably divided into the respective temperature levels. A SINUS MultiFlow Center functions as a Hydraulic Separator, a manifold and an energy storage tank in one unit. Simultaneously, the system is divided into different hydraulic temperature zones. As a result, very efficient functioning with maximum system safety are achieved.

Multivalent solutions

SINUS MultiFlow Expert



SINUS MultiFlow Expert

Technical Features

- multi-temperature zone switching point for collecting and distributing volume flows and temperatures of different sizes in different temperature zones using patented SINUS diffuser tubes
- undesirable mixing of temperatures is prevented by internal pressure loss-free nozzle chambers
- in this way, an influencing of pumps and different control loops is prevented
- comprising a vertical round chamber from welded P235 pipe with welded dished cover and bottom
- connection nozzles from welded steel pipe with PN 6 / PN 16 weld-neck flanges
- can be used as a low-loss header distribution centre, hydraulic centre and, in refrigeration engineering simultaneously as a buffer tank
- 100 % factory-checked for leak tightness and primed
- max. permissible operating temperature -10 °C – 110 °C
- max. permissible operating overpressure 0 bar – 6 bar
- 2" threaded connections for desludging
- ½" sleeve for temperature sensor

Type	Art. No.	DG	Largest connection nozzle	V_{max} [m^3/h]	Chamber size
MTW-150	4206366	0003	DN 65	12,0	DN 150
MTW-200	4206469	0003	DN 100	28,0	DN 200
MTW-250	4206464	0003	DN 125	40,0	DN 250
MTW-300	4206465	0003	DN 150	65,0	DN 300
MTW-350	4206482	0003	DN 200	85,0	DN 350
MTW-400	4206452	0003	DN 200	125,0	DN 400
MTW-500	4206491	0003	DN 300	215,0	DN 500
MTW-600	4206463	0003	DN 400	300,0	DN 600
MTW-700	4206657	0003	DN 400	400,0	DN 700

SINUS

SINUS MultiFlow Center



SINUS MultiFlow Center

Technical Features

- is designed as a hydraulic centre for collecting and distributing various temperature-controlled generator and consumer circuits
- as a cylindrical version with dished boiler ends, standing on three feet
- manufactured from S 235 JRG2 or P 265 GH
- perfectly functioning hydraulics under partial and full load
- between two adjacent temperature zones, one dimensioned ring plate each for optimum temperature zone formation and for ensuring a sufficient buffer volume
- the ring plate is designed in such a way that only differential mass flows are exchanged between two adjacent temperature zones
- pumps do not interfere with each other because of reliable hydraulic decoupling of the generator and consumer circuits
- specially integrated inlet pipes for steady-flow media introduction
- in combination with the star-shaped deflection plates used, ensures an even temperature distribution is achieved within a zone
- designed and manufactured according to PED Art. 4. para. 3 and a supplementary factory standard
- tested for leak tightness to 1,43 times the operating pressure by means of a hydrostatic test
- max. permissible operating temperature -10 °C – 110 °C
- max. permissible operating overpressure 0 bar – 10 bar
- diameter & contents as required

You can find the enquiry form at **www.reflex-winkelmann.com/en**