



Thinking solutions.

Deaeration systems & separation technology



Servitec, Ex-separators



We are only satisfied if you are

Reflex has set itself the goal of supporting you with well thought-out solutions. Whatever job you need doing in water supply engineering, why not put your trust in our comprehensive range of products and accompanying tailored services? We will ensure that your decision to opt for Reflex is the right one in every respect – from advice and design to installation and ongoing operation.



Thinking solutions.

Reflex's mission is embodied in the company's slogan: "Thinking solutions". Reflex's strength is to think in terms of solutions. Reflex develops ideas that help you to move forward based on decades of experience, in-depth technical understanding and intimate knowledge of the industry!

We make sure that everything fits

Heating, cooling and hot water supply systems the demands on supply equipment are varied and complex. You'll be well-advised for every eventuality with our coordinated product ranges. Reflex can offer you the right components for each specific task – and you can be sure that they can be integrated seamlessly into the interplay of a larger overall solution. The result: well thought-out systems that simply perform better.







In this product guide, we've summarised our entire product range for you meaning you can locate all our available products, series and technical information quickly and easily. All weights given are net weights.

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Count on us - from the initial idea to the solution

Reflex offer a range of services to assist you in finding the solution that best suits your needs. Take advantage of our combined expertise and experience and develop professional solutions together with us, down to the very last detail.



Made-to-measure design: With the Reflex Pro calculation program

Take the easiest route to correct design and sizing: Reflex Pro is the proven, continuously developed software solution you can use to quickly and simply achieve precise results. The software is available in three versions and we also offer a CAD library of our products for integration into your construction programmes.

Visit www.reflex.de/pro for further information and the option of downloading free of charge.



Reflex Pro Web

The online version calculates pressure retention and heat transfer systems in a few simple steps. The results are provided in the form of a PDF or text file for further use.

Reflex Pro App

Reflex Pro is available as an app for Android phone, iPhone, iPad and iPod touch! Whether you need to make a quick calculation on site or design a project on your mobile you will always leave a professional impression with your customers with the Reflex Pro app.

Reflex Pro Win

The full range of services for convenient use even without an Internet connection. The download version for Windows systems is perfect when you are regularly planning and designing pressure retention and heat transfer systems.

Servitec

Deaeration Systems & Separation Technology

For Control Touch:



Control Unit

Control Basic



- 2-line LCD display
- 8 control keys
- 2 status displays
- Integrated control of system pressure, deaeration and water make-up
- Manual and automatic operation
- Common fault output signal
- Input, for contact water meter
- RS-485 interface



Control Touch



- 4.3" touch screen colour display
- Graphic user interface
- Simply structured plain text menus including operating instructions and help texts
- Integrated control of system pressure, deaeration and water make-up
- Manual and automatic operation
- Permanent display of the most important operating parameters in the system diagram
- Intelligent Plug & Play operational management
- Evaluation and storage of the most important operational data
- Extensive interfaces:
 - Input, for contact water meter
 - 2 x dry contact outputs for error messages
 - 2 x analogue outputs for pressure and vessel content
 - 2 x RS-485 interfaces
 - Plugs for Bluetooth module, HMS networks and KNX module, as well as SD card

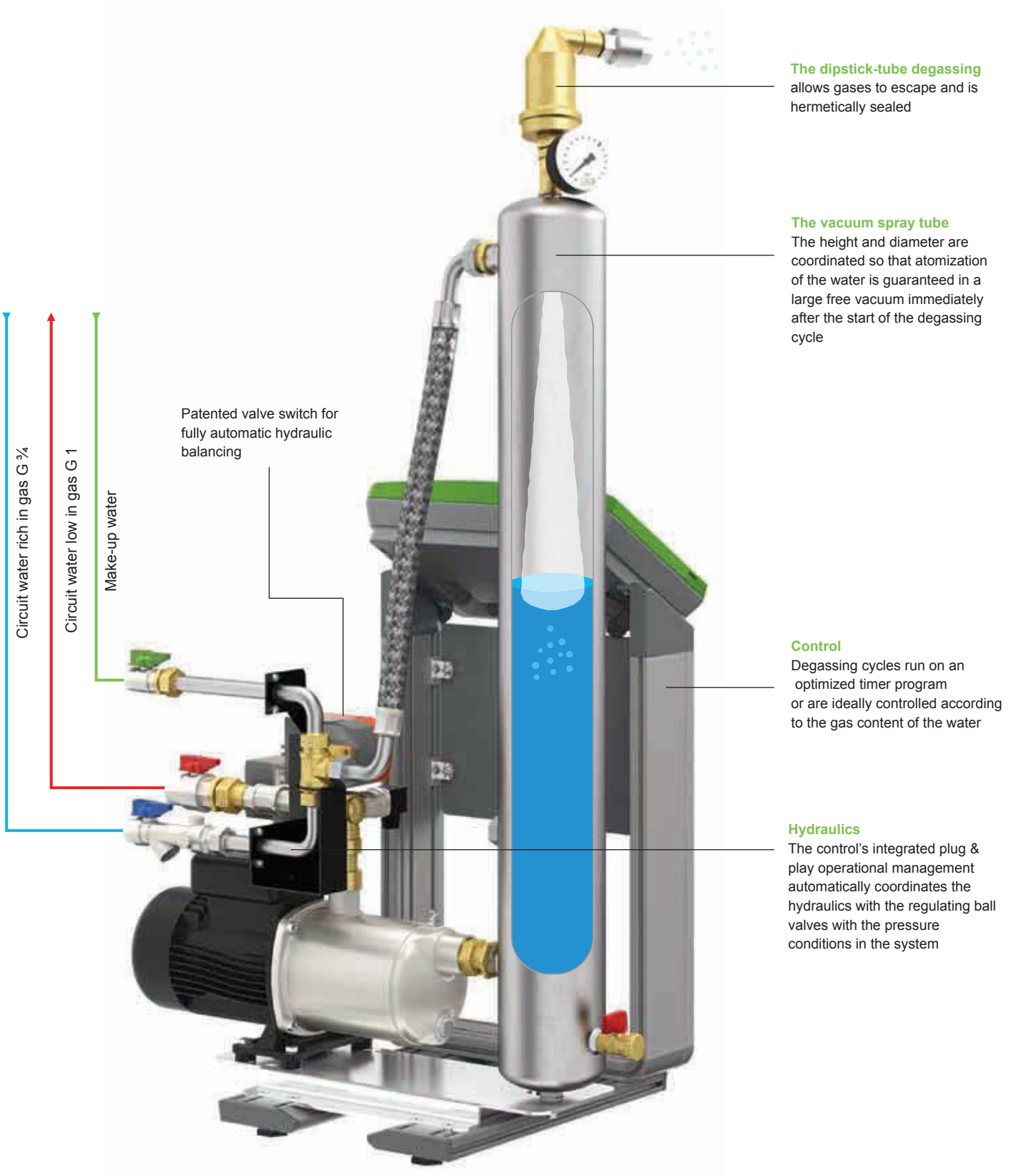


For Control Touch:



Servitec

Patented Technology for Optimum Degassing



The dipstick-tube degassing allows gases to escape and is hermetically sealed

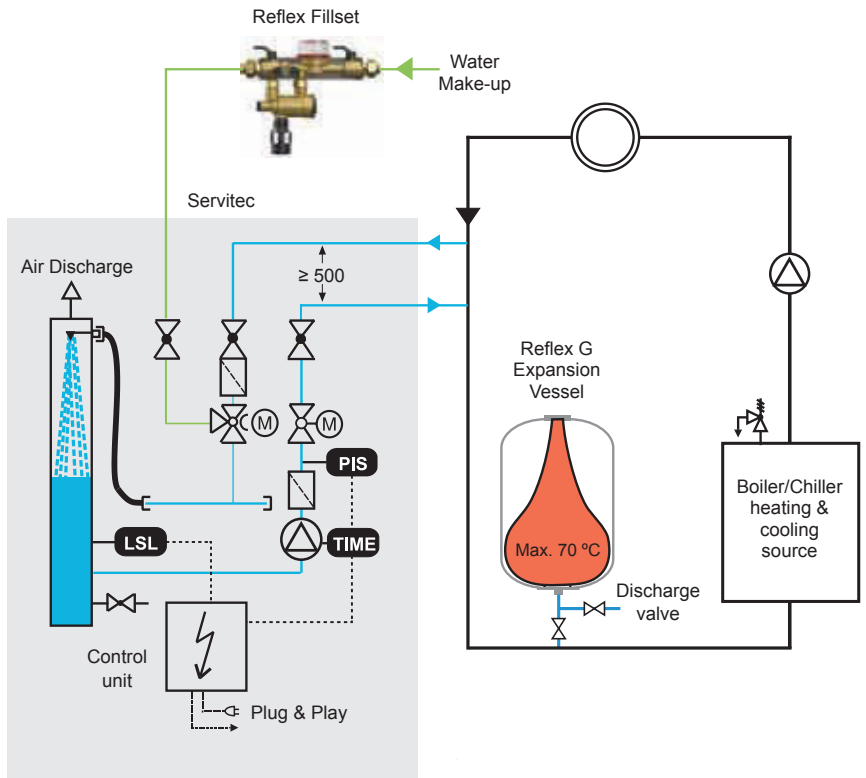
The vacuum spray tube
The height and diameter are coordinated so that atomization of the water is guaranteed in a large free vacuum immediately after the start of the degassing cycle

Control
Degassing cycles run on an optimized timer program or are ideally controlled according to the gas content of the water

Hydraulics
The control's integrated plug & play operational management automatically coordinates the hydraulics with the regulating ball valves with the pressure conditions in the system

Servitec in Magcontrol and Levelcontrol Mode

Reflex Servitec in magcontrol mode combined with expansion vessel system



PIS Filling - Make-Up, Pressure-Dependent - Magcontrol

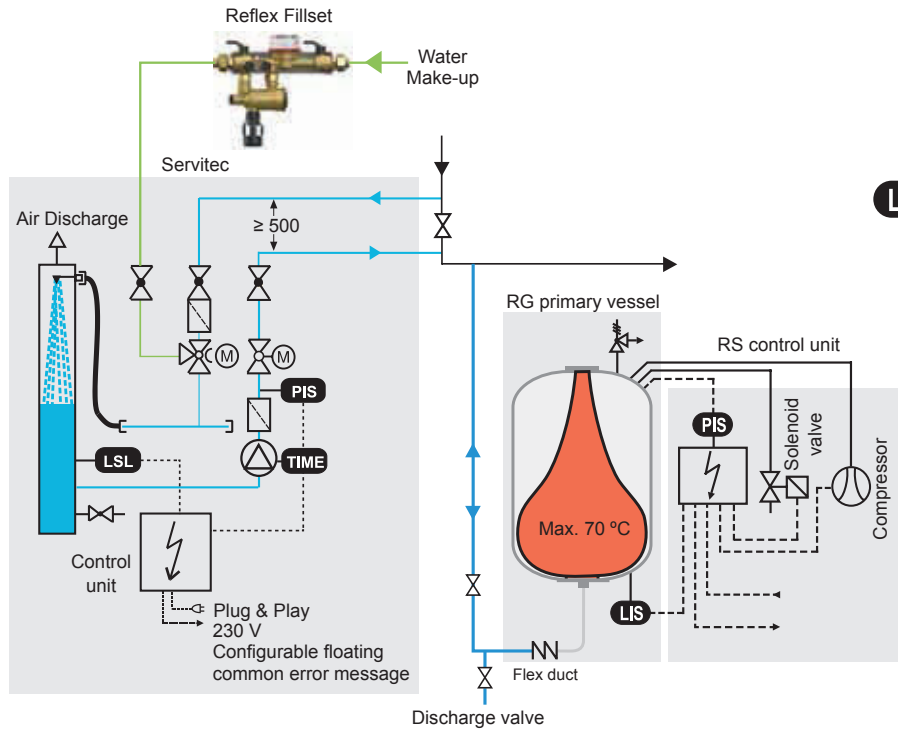
The pressure is shown in the display excess and insufficient pressure levels are signaled automatic, controlled make-up in the event that the system fails to reach the filling pressure of 0.2 bar Servitec degassing of the make-up and filling water

TIME Degassing

Vacuum degassing of a part flow of the circuit water takes place according to an optimized schedule using a selectable degassing mode.

- Continuous degassing (after start-up)
- Interval degassing (automatically activated after continuous degassing)

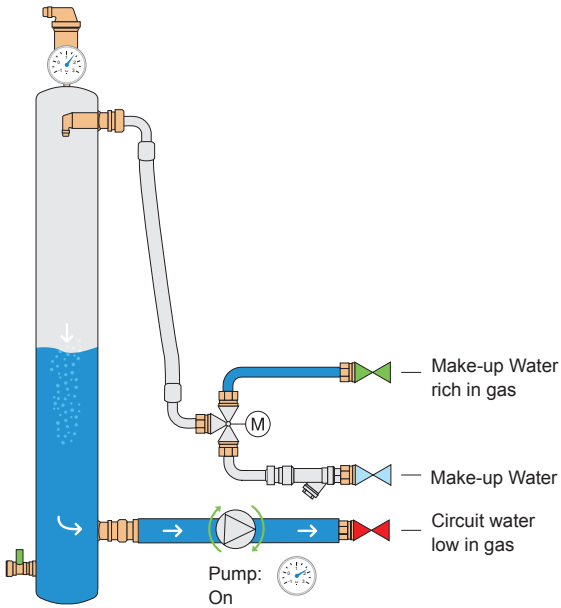
Reflex Servitec in levelcontrol mode for systems with compressor controlled pressure maintaining station



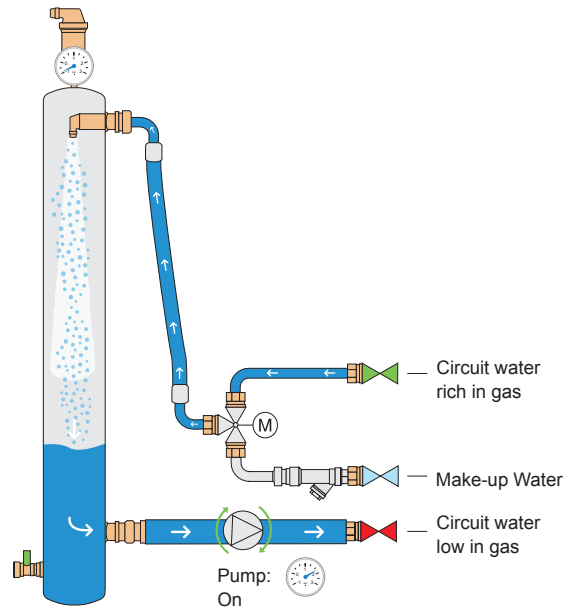
LIS Make-up, Level-Dependent

Automatic, controlled make-up if the minimum water level is not reached in the expansion vessel of the compressor - controlled pressure - maintaining station Servitec degassing of the make-up water

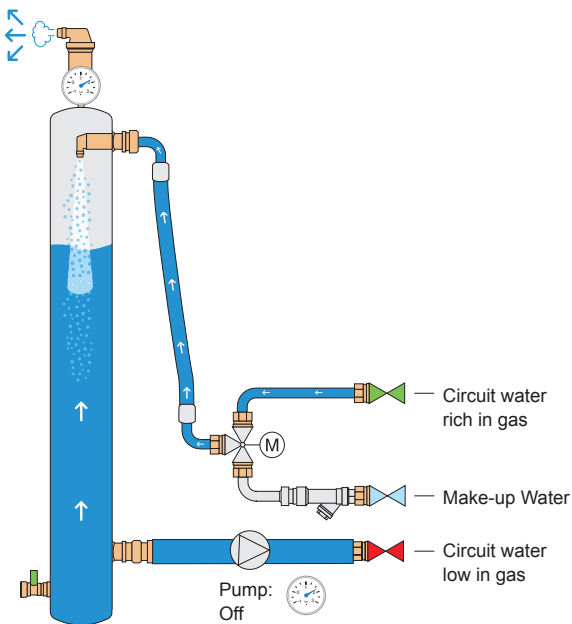
Servitec Working Principle



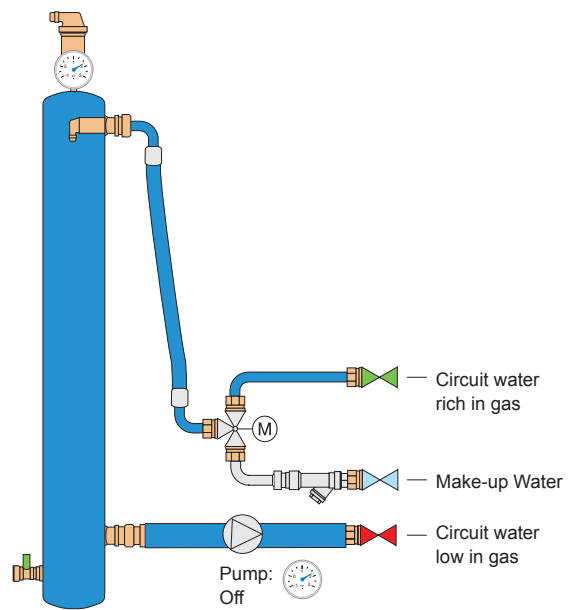
1. Vacuum is drawn
Pump starts to draw vacuum in the spray tube.



2. Atomisation
The media is sprayed into the spray tube where dissolved gasses due to vacuum are released from the media.



3. Discharge
Pump stop and the vacuum in spray tube change back to system pressure. Thus free gas and micro bubbles are de-aerated via the automatic air-vent



4. Idling time
Idling time before next cycle starts.

Servitec 30

- Vacuum spray-tube deaeration with intergrated water make-up systems used in conjunction with diaphragm expansion vessels or pressurisation systems
- Ideally suited for offices and commercial buildings
- Flexible adjustment of the Servitec Magcontrol or Levelcontrol operating modes
- Central deaeration of the water in the system and make-up water
- Max. operating pressure: 8 bar
- Max. flow temperature: 120°C
- Microprocessor controller with plain text display for pressure
- Floating contact for common message
- Simple commissioning with auto setup
- Patented, fully automatic overflow regulation
- Safe control (water make-up using the actuator valve)
- Water make-up is possible from a storage tank (on site)
- Control Touch from Servitec 120



Servitec 30
Wall mounted

For Control Touch:



Permissible maximum operating temperature: 70°C

Type	Control Basic Article No	Material Group	System Volume Vs (m ³), 70°C	Working Pressure (bar) 70°C	Make-up Rate (m ³ /h)	H x W x D mm	Weight kg
30	8830720	71	≤ 12	0.5 - 3.0	≤ 0.05	660 x 545 x 290	13.0
30/gl	8828900	71	≤ 4	0.5 - 3.0	≤ 0.05	660 x 545 x 290	13.0

* Servitec 30 with a working pressure above 0.5 bar and a water make-up pressure of > 0.1 bar

Servitec 35 - 120

- Vacuum spray-tube deaeration with intergrated water make-up systems used in conjunction with diaphragm expansion vessels or pressurisation systems
- Ideally suited for high-rise buildings and district heating / cooling systems
- Flexible adjustment of the Servitec Magcontrol or Levelcontrol operating modes
- Central deaeration of the water in the system and make-up water
- Max. operating pressure:
 - 8 bar - type 25, 35, 60
 - 10 bar - type 75, 95, 120
- Max. flow temperature: 120°C
- Microprocessor controller with plain text display for pressure
- Floating contact for common message
- Simple commissioning with auto setup
- Patented, fully automatic overflow regulation
- Safe control (water make-up using the actuator valve)
- Water make-up is possible from a storage tank (on site)
- Control Touch from Servitec 120

For Control Touch:



Servitec 35-95
Floor standing

Permissible maximum operating temperature: 70°C

Type	Article No	Material Group	System Volume Vs (m ³), 70°C	Working Pressure (bar) 70°C	Make-up Rate (m ³ /h)	H x W x D mm	Weight kg
35	8829000*	71	≤ 220	0.5 - 2.5	≤ 0.35	1.030 x 620 x 440	28.0
60	8829100*	71	≤ 220	0.5 - 4.5	≤ 0.55	1.215 x 685 x 440	34.0
75	8829200*	71	≤ 220	0.5 - 5.4	≤ 0.55	1.215 x 600 x 525	39.0
95	8829300*	71	≤ 220	0.5 - 7.2	≤ 0.55	1.215 x 600 x 525	40.0
Magcontrol 120	8829400**	71	≤ 220	1.3 - 9.0	≤ 0.55	1.215 x 600 x 525	43.0
Levelcontrol 120	8829500**	71	≤ 220	1.3 - 9.0	≤ 0.55	1.215 x 600 x 525	43.0

Version 35–95 with a working pressure above 0.5 bar and a water make-up pressure of > 0.1 bar

* With control basic

** With control touch

Special versions: permissible maximum operating temperature: 90°C

Type	Article No	Material Group	System Volume Vs (m ³), 90°C	Working Pressure (bar) 90°C	Make-up Rate (m ³ /h)	H x W x D mm	Weight kg
75	8825300*	71	≤ 220	1.3 - 5.4	≤ 0.35	1.215 x 600 x 525	39.0
95	8825400*	71	≤ 220	1.3 - 7.2	≤ 0.55	1.215 x 600 x 525	40.0
Magcontrol 120	8825500*	71	≤ 220	1.3 - 9.0	≤ 0.55	1.215 x 600 x 525	43.0
Levelcontrol 120	8825600*	71	≤ 220	1.3 - 9.0	≤ 0.55	1.215 x 600 x 525	43.0

* With control basic

Special versions: permissible maximum operating temperature: 70°C, for use with anti-freeze

Type	Article No	Material Group	System Volume Vs (m ³), 70°C gl*	Working Pressure (bar) 70°C gl*	Make-up Rate (m ³ /h)	H x W x D mm	Weight kg
60/gl	8828100*	71	≤ 50	1.3 - 4.5	≤ 0.55	1.215 x 685 x 440	34.0
75/gl	8828200*	71	≤ 50	1.3 - 4.9	≤ 0.55	1.215 x 600 x 525	39.0
95/gl	8828300*	71	≤ 50	1.3 - 6.7	≤ 0.55	1.215 x 600 x 525	40.0
Magcontrol 120	8828400**	71	≤ 50	1.3 - 8.3	≤ 0.55	1.215 x 600 x 525	43.0
Levelcontrol 120	8828500**	71	≤ 50	1.3 - 8.3	≤ 0.55	1.215 x 600 x 525	43.0

Version with a working pressure above 0.5 bar and a water make-up pressure of > 0.1 bar

* With control basic

** With control touch

I/O Modules

- 2 x analogue outputs for controlling pressure and level
- 6 x freely programmable digital inputs
- 6 x freely programmable floating outputs

Article No : 8997700

Material group : 39



Bus Modules

For data exchange between the control (RS 485) and the central building control system

LonWorksDigital

Article No : 8860000

Material Group : 86

LonWorks

Article No : 8860100

Material Group : 86

Profi bus-DP

Article No : 8860200

Material Group : 86

Ethernet

Article No : 8860300

Material Group : 86



Optional: Servitec for Large Scale Systems

- Special systems are constructed to match your particular specifications even for systems above 10.000 m³ with working pressure above 9 bar.
- Also, for systems with permissible operating temperature up to 90°C
- Take advantage of our combined expertise and experience:
Consult your Reflex Local representative or visit www.reflex.de/pro for further information.

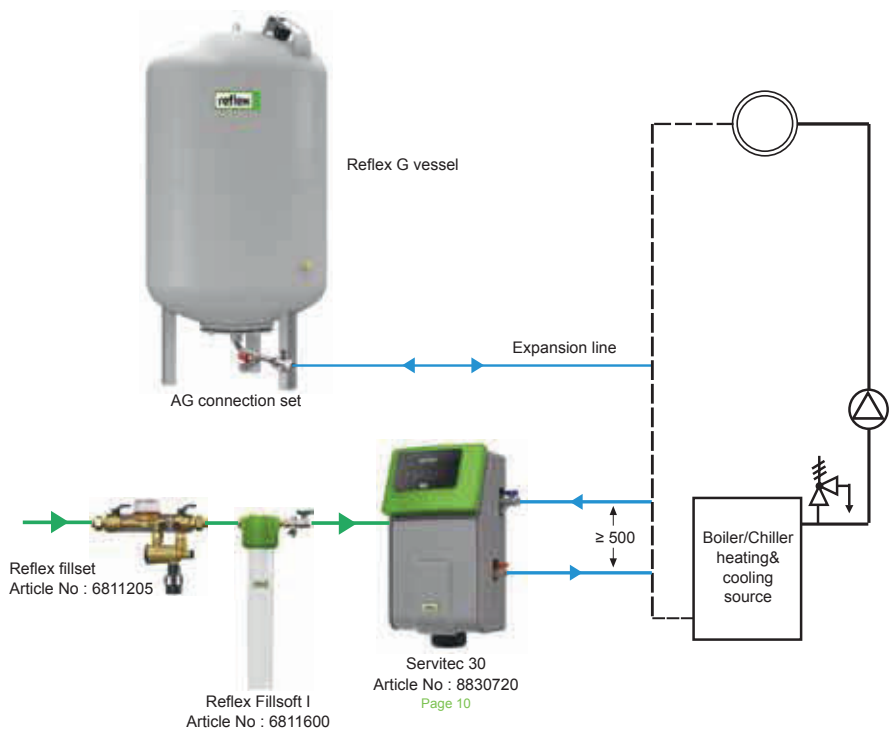


Tailor made Servitec unit
(front view)



Tailor made Servitec unit
(rear view)

Servitec 30 With Reflex G Vessel and Water Make-up

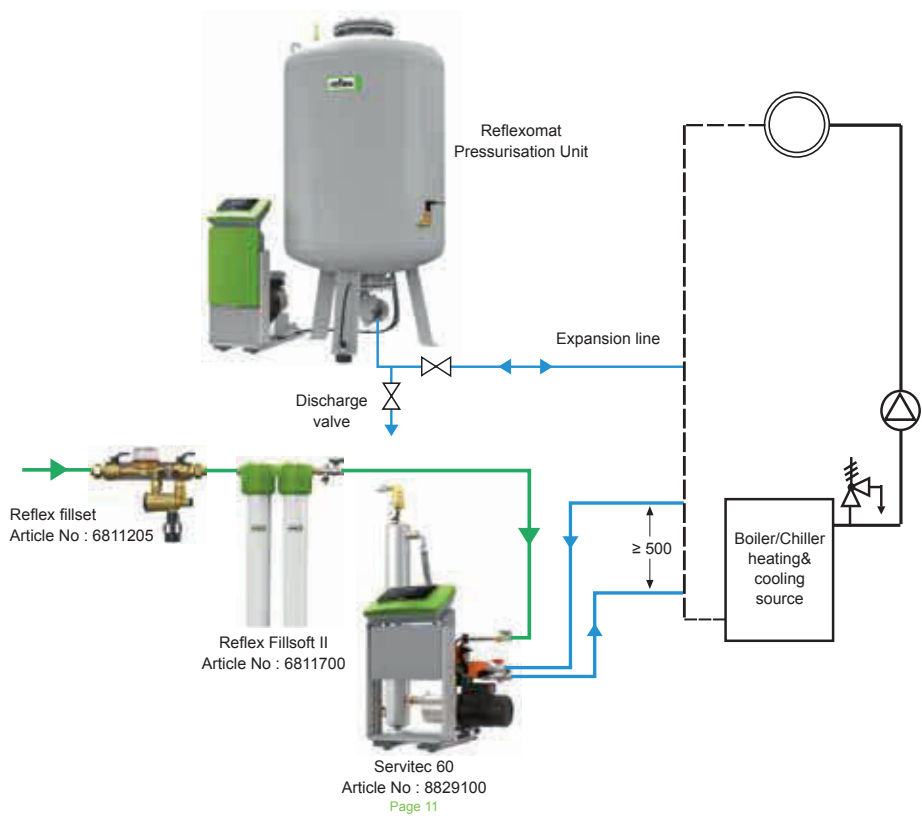


Static vessel in combination with Servitec 30 and Fillset RPZ valve. If the water level in the vessel drops to a critical level, an appropriate amount of water will be filled into the unit from the water mains via the Servitec device.

By connecting the Servitec device in Magcontrol mode make-up water is de-aerated before going into the system. The Fillset RPZ valve protects against backflow, providing protection against the contamination of mains cold water supply according to EN1717.

This combination can also be used for applications where the water supply comes from an adjacent container, as the Servitec device is self priming.

Servitec With Reflexomat and Water Make-up

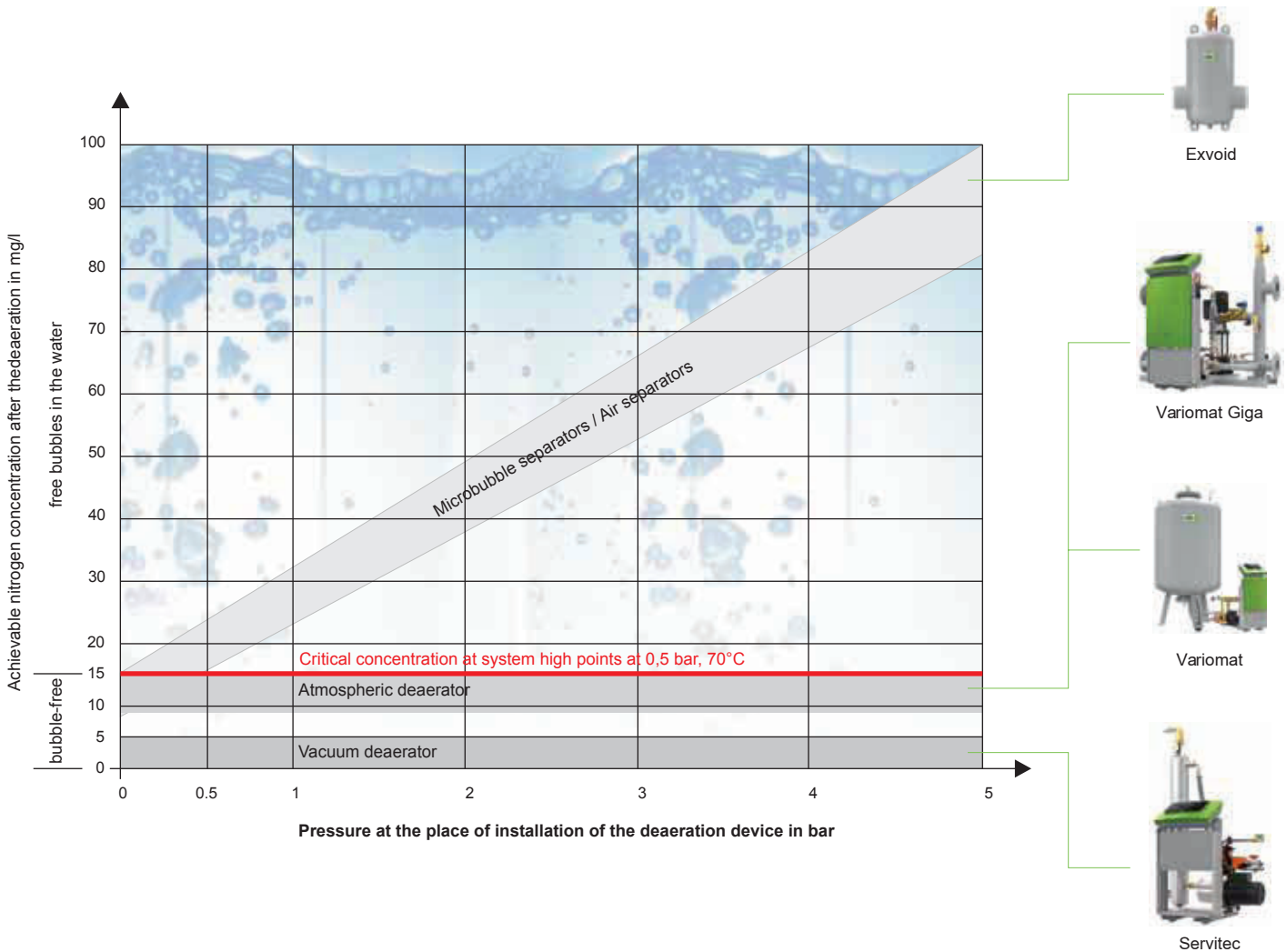


Reflexomat unit in combination with Servitec, Fillsoft II water softening device and Fillset RPZ valve. If the water level in the vessel drops to a critical level, an appropriate amount of water will be filled through the Servitec from the water mains. By the Fillsoft device the system water can be totally softened or adjusted to the required level by Servitec.

The Fillset RPZ valve protects against backflow, providing protection against the contamination of mains cold water supply according to EN1717. By connecting the contact water meter to the Variomat control unit the Fillmeter function is available.

Comparison of Different Deaeration Systems

In order to illustrate the effectiveness of different deaeration systems, we would like to show the physically and technically achievable, minimum nitrogen content in the network water in dependence on the pressure conditions at the place of installation. Nitrogen serves as “measurement gas” because it is an inert gas and is, thus, not consumed in secondary reactions. This leads to an unbiased measurement result.



Mechanical air separators

Can only work effectively if they are installed at high points.

Atmospheric deaerators

Can prevent the formation of free gas bubbles in the circulation water. They are the best solution as a central bleeding device, but not for the purposeful oxygen separation. Erosion due to two-phase flow can be avoided to the greatest possible extent.

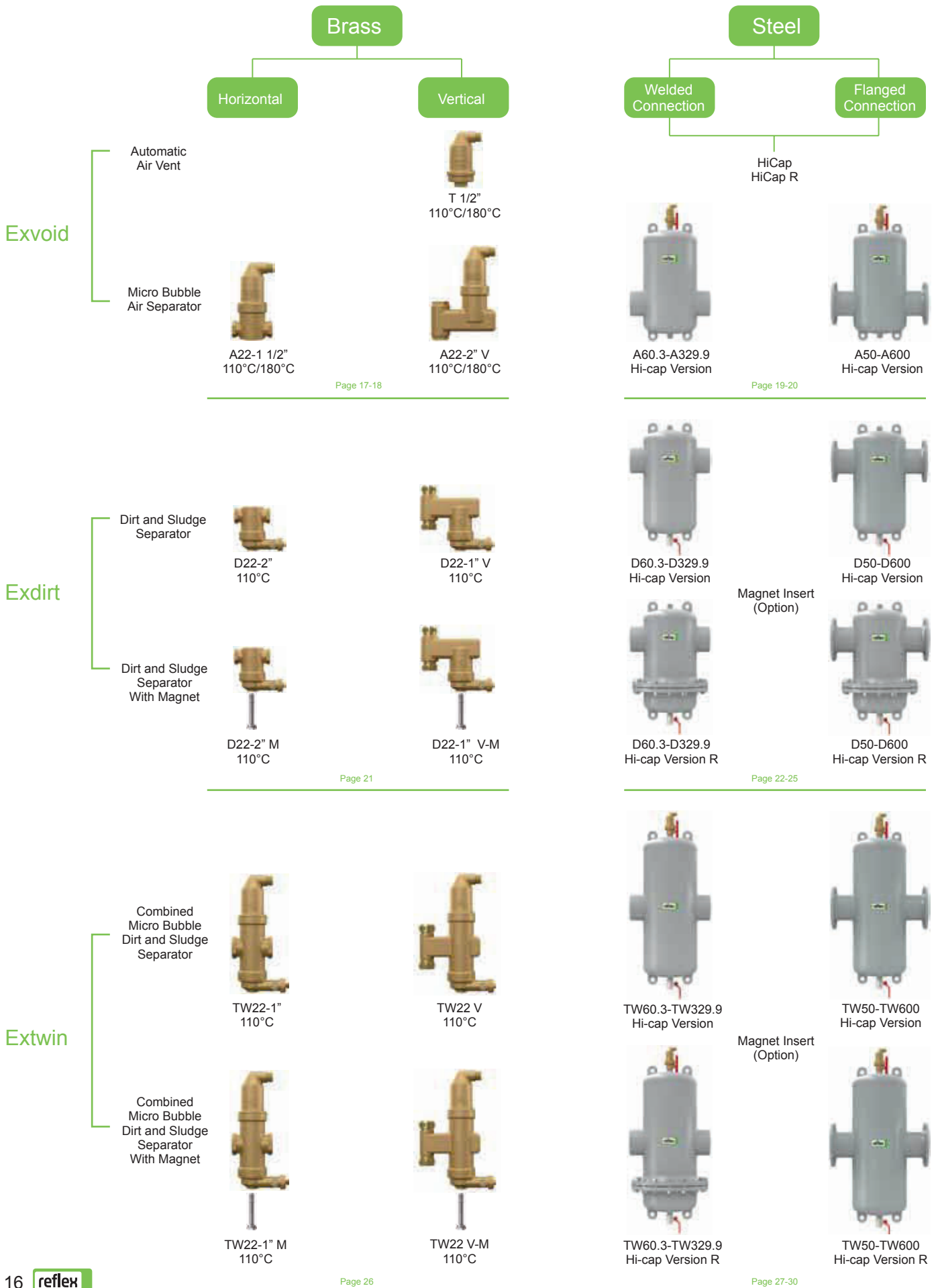
Vacuum deaerators

Can reduce the overall gas content almost to zero. They combat corrosion (reactive gases) as well as erosion (inert gases). High degrees of separation are achieved using dynamic vacuum deaerators.

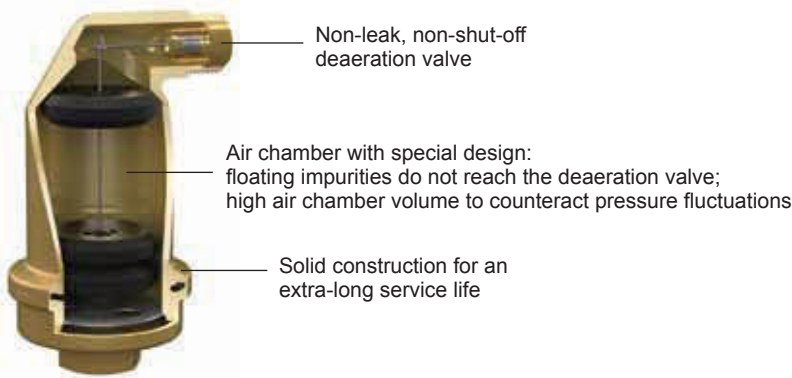
Separation Technology

Deaeration Systems & Separation Technology



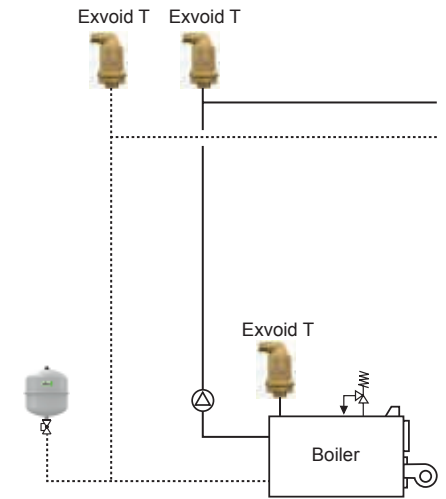


Exvoid T



Overview

- Brass casing
- Multiple testing procedure on the deaeration valve
- Vertical installation
- Rp 1/2 system connection and a G 1/2 connection thread on the deaeration valve
- Application limits 110 / 180°C and 10 bar
- Reflex Extop, now with it's new name Reflex Exvoid



Exvoid T Automatic Air Vent

Fields of application

The automatic air vent in the Reflex Exvoid T series is an ongoing and effective way of removing air and other gases from heating, solar, and cooling systems, including under constant operating conditions, in filling processes after having emptied the system, and in new installations. The vents are applied at high points within the system or at specially identified collection points

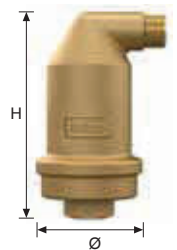
Mode of operation

In order to ensure ongoing safe and automatic operation, Reflex Exvoid T automatic air vents follow a sound engineering design formula: Gases collect in a generously sized chamber. This causes the water level in the chamber to drop and a float to fall, which opens the deaeration valve once it reaches a certain depth. The combination of a multiple-tested valve and a generously sized air chamber ensures flawless operation, even in extreme pressure fluctuations

T, brass

- 110°C 10 bar

Type	Article No	Weight kg	Material Group	Connection	Ø (mm)	H (mm)
T 1 / 2	9250000	0.7	82	Rp ½	63	120



T Solar, brass

- 180°C 10 bar

Type	Article No	Weight kg	Material Group	Connection	Ø (mm)	H (mm)
T 1 / 2 S	9250600	0.7	82	Rp ½	63	120

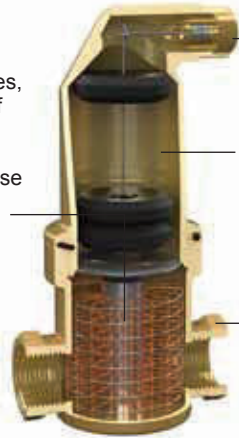


Benefits in brief

- Reliable, automatic deaeration
- Reduces flow noise, circulation problems, drop in performance and helps to avoid corrosion damage
- Optimum function reliability, even in tough conditions
- Reduces maintenance requirements
- Suitable for a variety of temperatures and applications

Exvoid

The core element is a tube mesh construction that has proven itself over the decades, with an extremely low rate of pressure loss in the flow direction and a high rate of pressure loss in the transverse direction. This drastically reduces the amount of turbulence and guides the gas bubbles to a part-stabilized area



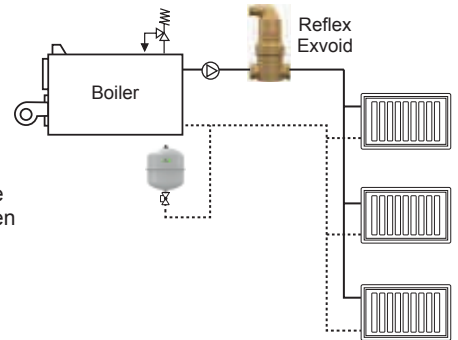
Non-leak, non-shut-off deaeration valve

Air chamber with special design: its large volume means that driving impurities do not reach the deaeration valve. The large distance between the water surface and the valve ensures flawless operation, even in high pressure fluctuations

Several connections are available from A22 to 2"

Volumetric flow:
1.25 - 8 m³/h

Exiso thermal insulation:
A22 - 2"



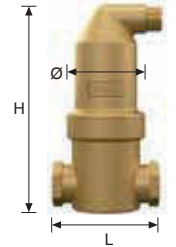
Exvoid "brass" system deaeration sketch

Exvoid (Brass) Micro Bubble Air Separator

Brass, 110°C 10 bar

• Horizontal

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	Ø (mm)	H (mm)
A 22	9251000	1.1	22 mm ¹⁾	1.25	106	63	165
A ¾	9251010	1.0	Rp ¾	1.25	85	63	165
A 1	9251020	1.1	Rp 1	2.00	88	63	180
A1 ¼	9251030	1.3	Rp 1 ¼	3.70	88	63	202
A1 ½	9251040	1.5	Rp 1 ½	5.00	88	63	236
A 2	9251050	3.2	Rp 2	8.00	132	100	277



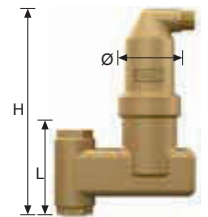
Material Group : 82

¹⁾ Clamp ring

Brass, 110°C 10 bar

• Vertical

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	Ø (mm)	H (mm)
A 22 V	9251500	1.7	22 mm ¹⁾	1.25	84	63	206
A ¾ V	9251510	1.6	Rp ¾	1.25	84	63	206
A 1 V	9251520	1.6	Rp 1	1.25	84	63	206



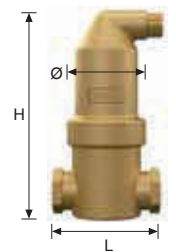
Material Group : 82

¹⁾ Clamp ring

Brass, 180°C 10 bar

• For solar systems

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	ØD (mm)	H (mm)
A 22 S	9251600	1.2	22 mm ¹⁾	1.25	106	63	165
A ¾ S	9251610	1.1	Rp ¾	1.25	85	63	165
A 1 S	9251620	1.2	Rp 1	2.00	88	63	185
A 1 ¼ S	9251630	1.4	Rp 1 ¼	3.70	88	63	202
A 1 ½ S	9251640	1.6	Rp 1 ½	5.00	88	63	236



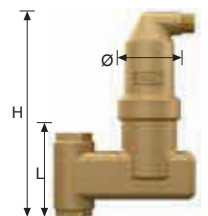
Material Group : 82

¹⁾ Clamp ring

Brass, 180°C 10 bar

• For solar systems

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	ØD (mm)	H (mm)
A 22 S	9251700	1.8	22 mm ¹⁾	1.25	104	63	220
A ¾ SV	9251710	1.7	Rp ¾	1.25	84	63	206
A 1 SV	9251720	1.7	Rp 1	2.00	84	63	206

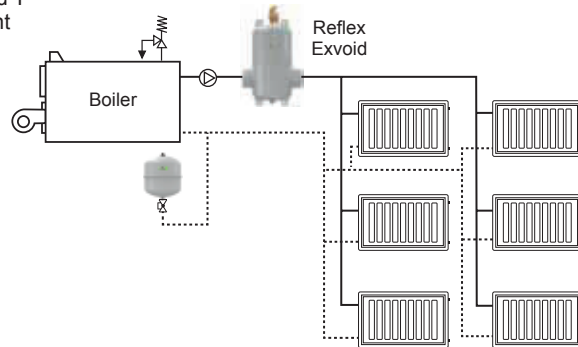
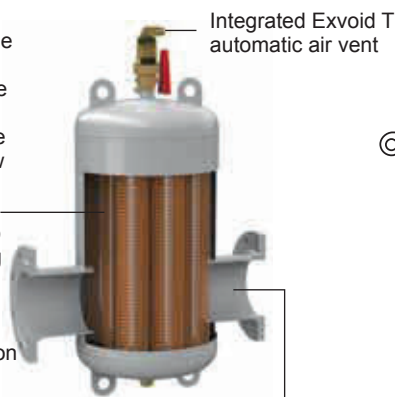


Material Group : 82

¹⁾ Clamp ring

Exvoid

Because micro-bubbles are carried along by the flow, special measures are required in order to remove them from the system efficiently. The casings of Reflex Exvoid micro-bubble separators have a larger cross-section than the connection dimensions, which reduces the flow speed in the separator. At the same time, the volume flow is guided by a special wire mesh. The ensuing turbulence causes gas bubbles to move in an undetermined direction. Depending on the volume flow, density, and volume of the particles, parts of these gas bubbles are supported in their natural breakaway motion and removed from the system via the deaeration top section



Exvoid "steel" system deaeration sketch

Several connections are available from DN 50 to DN 600

Overview

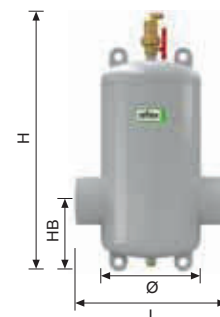
- Connection: DN 50 - DN 600
- Volumetric flow: 12.5 - 1530 m³/h
- Exiso thermal insulation: DN 50 - DN 150

Exvoid (Steel) Micro Bubble Air Separator

Steel, 110°C 10 bar

- Welded connection

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	Ø D (mm)	H (mm)	H B (mm)
A 60.3	8251100	5	60.3	12.5	260	132	629 ¹⁾	145
A 76.1	8251110	5	76.1	20.0	260	132	629 ¹⁾	155
A 88.9	8251120	11	88.9	27.0	370	206	743 ¹⁾	151
A 114.3	8251130	11	114.3	47.0	370	206	743 ¹⁾	161
A 139.7	8251140	24	139.7	72.0	525	354	767 ¹⁾	206
A 168.3	8251150	26	168.3	108.0	525	354	767 ¹⁾	221
A 219.1	8251160	70	219.1	180.0	650	409	1050	276
A 273.0	8251170	108	273.0	288.0	750	480	1157	338
A 323.9	8251180	150	323.9	405.0	850	634	1426	393



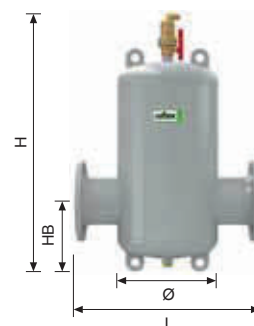
Material Group : 83

- ¹⁾ Thermal insulation available

Steel, 110°C 10 bar

- Flange connection

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	Ø D (mm)	H (mm)	H B (mm)
A 50	8251300	11	DN 50/PN 16	12.5	350	132	629 ¹⁾	145
A 65	8251310	12	DN 65/PN 16	20.0	350	132	629 ¹⁾	155
A 80	8251320	18	DN 80/PN 16	27.0	470	206	743 ¹⁾	151
A 100	8251330	21	DN 100/PN 16	47.0	475	206	743 ¹⁾	161
A 125	8251340	60	DN 125/PN 16	72.0	635	354	767 ¹⁾	206
A 150	8251350	64	DN 150/PN 16	108.0	635	354	767 ¹⁾	221
A 200	8251360	90	DN 200/PN 16	180.0	775	409	1050	276
A 250	8251370	146	DN 250/PN 16	288.0	890	480	1157	338
A 300	8251380	194	DN 300/PN 16	405.0	1005	634	1426	393
A 350	8251910	Upon request	DN 350/PN 16	500.0	1128	634	1950	Upon request
A 400	8251920	Upon request	DN 400/PN 16	650.0	1226	750	2150	Upon request
A 450	8251940	Upon request	DN 450/PN 16	850.0	1330	750	2360	Upon request
A 500	8251950	Upon request	DN 500/PN 16	1060.0	1430	1000	2580	Upon request
A 600	8251960	Upon request	DN 600/PN 16	1530.0	1630	1200	3020	Upon request



Material Group : 83

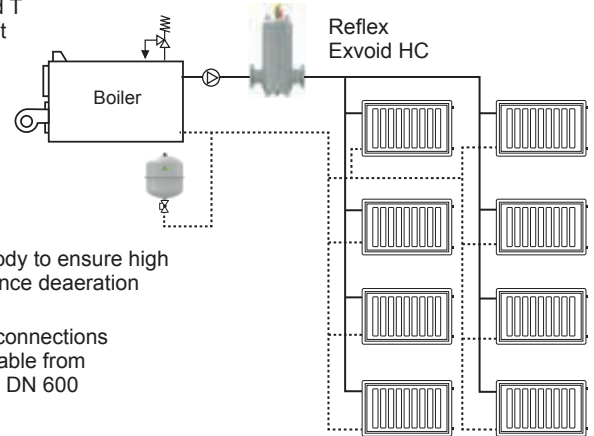
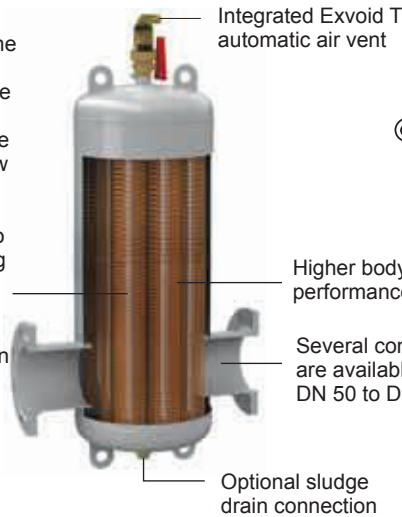
- ¹⁾ Thermal insulation available

Benefits in brief

- Removes free circulating air and gas bubbles
- Robust heavy gauge steel construction
- Functions in fully automated, continuous operation
- Produces just a minimal, constant drop in pressure
- Enables much faster hydraulic balancing after filling processes
- Prevents development of noise, wear through corrosion, and loss in performance through the formation of larger air bubbles
- Full range in terms of operating pressures, temperatures, and materials

Exvoid HC

Because micro-bubbles are carried along by the flow, special measures are required in order to remove them from the system efficiently. The casings of Reflex Exvoid HC micro-bubble separators have a larger cross-section than the connection dimensions, which reduces the flow speed in the separator. At the same time, the volume flow is guided by a special wire mesh. The ensuing turbulence causes gas bubbles to move in an undetermined direction. Depending on the volume flow, density, and volume of the particles, parts of these gas bubbles are supported in their natural breakaway motion and removed from the system via the deaeration top section



Exvoid "steel" HiCap system deaeration sketch

Overview

- Connection: DN 50 - DN 200
- Volumetric flow: 25 - 3000 m³/h

Exvoid (Steel) Micro Bubble Air Separator

Steel, 110°C 10 bar

- Welded connection

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	ØD (mm)	H (mm)	HB (mm)
A 60.3 HC	9251105	5	60.3	25.0	260	132	810	145
A 76.1 HC	9251115	5	76.1	40.0	260	132	810	155
A 88.9 HC	9251125	11	88.9	54.0	370	206	965	151
A 114.3 HC	9251135	11	114.3	94.0	370	206	965	161
A 139.7 HC	9251145	24	139.7	144.0	525	354	1205	206
A 168.3 HC	9251155	26	168.3	215.0	525	354	1205	221
A 219.1 HC	9251165	70	219.1	360.0	650	409	1495	276
A 273.0 HC	9251175	108	273.0	575.0	750	480	1895	338
A 323.9 HC	9251185	150	323.9	810.0	850	634	2205	393



Material Group : 83

Steel, 110°C 10 bar

- Flange connection

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	ØD (mm)	H (mm)	HB (mm)
A 50 HC	9251305	11	DN 50/PN 16	25.0	350	132	810	145
A 65 HC	9251315	12	DN 65/PN 16	40.0	350	132	810	155
A 80 HC	9251325	18	DN 80/PN 16	54.0	470	206	965	151
A 100 HC	9251335	21	DN 100/PN 16	94.0	475	206	965	161
A 125 HC	9251345	60	DN 125/PN 16	144.0	635	354	1205	206
A 150 HC	9251355	64	DN 150/PN 16	215.0	635	354	1025	221
A 200 HC	9251365	90	DN 200/PN 16	360.0	775	409	1495	276
A 250 HC	9251375	146	DN 250/PN 16	575.0	890	480	1895	338
A 300 HC	9251385	194	DN 300/PN 16	810.0	1005	634	2205	393
A 350 HC	9251915	Upon request	DN 350/PN 16	1000.0	1128	634	2460	Upon request
A 400 HC	9251925	Upon request	DN 400/PN 16	1300.0	1226	750	2740	Upon request
A 450 HC	9251945	Upon request	DN 450/PN 16	1700.0	1330	750	3030	Upon request
A 500 HC	9251955	Upon request	DN 500/PN 16	2120.0	1430	1000	3310	Upon request
A 600 HC	9251965	Upon request	DN 600/PN 16	3000.0	1630	1200	3160	Upon request



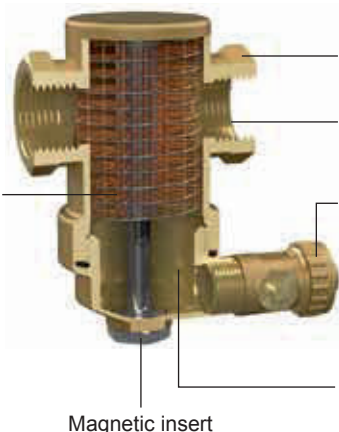
Material Group : 83

Benefits in brief

- Removes free circulating air and gas bubbles
- Functions in fully automated, continuous operation
- Produces just a minimal, constant drop in pressure
- Enables much faster hydraulic balancing after filling processes
- Prevents development of noise, wear through corrosion, and loss in performance through the formation of larger air bubbles
- Full range in terms of operating pressures, temperatures, and materials
- Specially designed for bigger systems with longer heights and higher volumetric flow

Exdirt

The core element is a tube mesh construction that has proven itself over the decades, with an extremely low rate of pressure loss in the flow direction and a high rate of pressure loss in the transverse direction. This drastically reduces the amount of turbulence and guides the sludge particles to a part-stabilized area

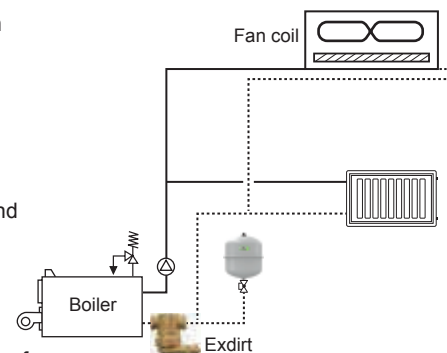


Several connections are available from A22 to 2"

Through flow is not impeded by sludge

Space-saving, perpendicular draining tap. The collected sludge is quickly and forcefully pressed out when the tap is opened so that it can be closed again right away. The entire process takes just a few seconds

The capacity to capture large amounts of sludge results in longer intervals before cleaning becomes necessary



Exdirt "brass" system dirt and sludge separation sketch

Volumetric flow:
1.25 - 8 m³/h

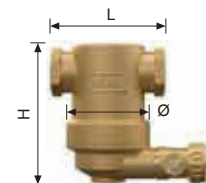
Exiso thermal insulation:
DN 20 - DN 40 and 2"

Exdirt (Brass) Dirt and Sludge Separator

Brass, 110°C 10 bar

• Horizontal

Type	Article No	Weight kg	Connection	\dot{V}_{max} m ³ /h	L (mm)	Ø (mm)	H (mm)
D 22	9252000	1.0	22 mm ¹⁾	1.25	85	63	103 ²⁾
D 3/4	9252010	0.9	Rp 3/4	1.25	85	63	103 ²⁾
D 1	9252020	1.0	Rp 1	2.00	88	63	120 ²⁾
D 1 1/4	9252030	1.2	Rp 1 1/4	3.70	88	63	140 ²⁾
D 1 1/2	9252040	1.3	Rp 1 1/2	5.00	88	63	174 ²⁾
D 2	9252050	3.1	Rp 2	8.00	132	100	215

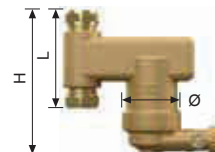


Material Group : 82

Brass, 110°C 10 bar

• Vertical

Type	Article No	Weight kg	Connection	\dot{V}_{max} m ³ /h	L (mm)	Ø (mm)	H (mm)
D 22 V	9252500	1.5	22 mm ¹⁾	1.25	84	63	144 ²⁾
D ¾ V	9252510	1.4	Rp ¾	1.25	84	63	144 ²⁾
D 1 V	9252520	1.5	Rp 1	1.25	84	63	144 ²⁾



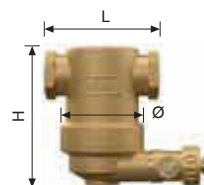
Material Group : 82

Exdirt (Brass) Dirt and Sludge Separator - with magnetic insert

Brass, 110°C 10 bar

• Horizontal M with magnetic insert

Type	Article No	Weight kg	Connection	\dot{V}_{max} m ³ /h	L (mm)	Ø (mm)	H (mm)
D 22 M	9256000	1.1	22 mm ¹⁾	1.25	85	63	103 ²⁾
D ¾ M	9256010	1.0	Rp ¾	1.25	85	63	103 ²⁾
D 1 M	9256020	1.1	Rp 1	2.00	88	63	120 ²⁾
D 1 ¼ M	9256030	1.3	Rp 1 ¼	3.70	88	63	140 ²⁾
D 1 ½ M	9256040	1.4	Rp 1 ½	5.00	88	63	174 ²⁾
D 2 M	9256050	3.3	Rp 2	8.00	132	100	215



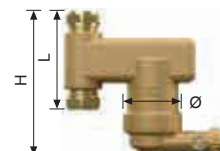
Magnetic insert

Material Group : 82

Brass, 110°C 10 bar

• Vertical M with magnetic insert

Type	Article No	Weight kg	Connection	\dot{V}_{max} m ³ /h	L (mm)	Ø (mm)	H (mm)
D 22 V-M	9256500	1.6	22 mm ¹⁾	1.25	84	63	144 ²⁾
D ¾ V-M	9256510	1.5	Rp ¾	1.25	84	63	144 ²⁾
D 1 V-M	9256520	1.6	Rp 1	1.25	84	63	144 ²⁾



Magnetic insert

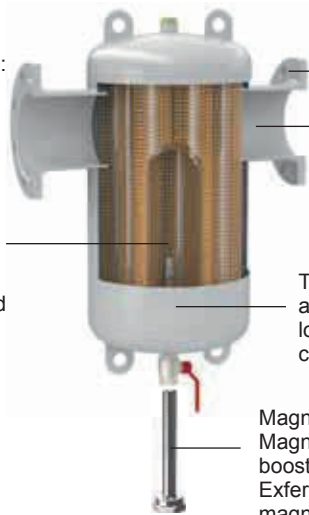
Material Group : 82

¹⁾ Clamping ring

²⁾ Thermal insulation available

Exdirt

The sludge/dirt separation in the Reflex Exdirt works on a similar principle to micro-bubble separation: The flow is guided through an area with a greater cross-section than the connection dimensions in order to reduce the flow speed. The ensuing turbulence caused by the tube mesh causes heavy materials to move in an undetermined direction. Depending on the volume flow, density, and volume, parts of these sludge particles are supported in their natural breakaway motion and guided to the bottom section of the casing

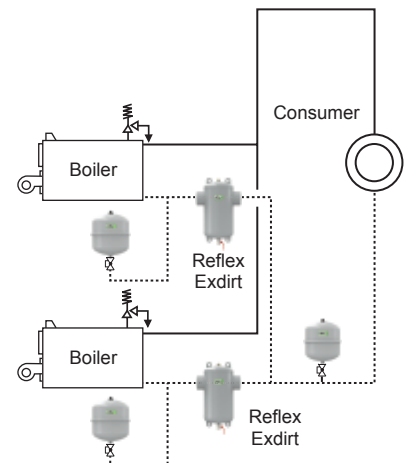


Several connections are available from DN 50 - DN 600

Through flow is not impeded by sludge

The capacity to capture large amounts of sludge results in longer intervals before cleaning becomes necessary

Magnetic insert: Magnetic removal can be boosted by insertion of Exferro high performance magnets



Exdirt "steel" system dirt and sludge separation sketch

Overview

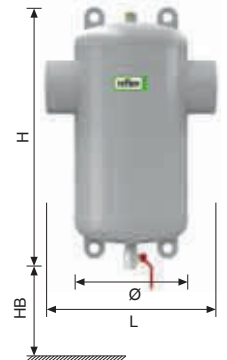
- Connection: DN 50 - DN 600
- Volumetric flow: 12.5 - 1530 m³/h
- Exiso thermal insulation: DN 50 - DN 150

Exdirt (Steel) Dirt and Sludge Separator

Steel, 110°C 10 bar

- Welded connection

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	Ø (mm)	H (mm)	HB (mm)
D 60.3	8252100	5	60.3	12.5	260	132	502 ¹⁾	370
D 76.1	8252110	5	76.1	20.0	260	132	502 ¹⁾	370
D 88.9	8252120	11	88.9	27.0	370	206	617 ¹⁾	430
D 114.3	8252130	11	114.3	47.0	370	206	617 ¹⁾	430
D 139.7	8252140	24	139.7	72.0	525	354	792 ¹⁾	550
D 168.3	8252150	26	168.3	108.0	525	354	792 ¹⁾	550
D 219.1	8252160	90	219.1	180.0	650	409	1002	600
D 273.0	8252170	108	273.0	288.0	750	480	1266	800
D 323.9	8252180	150	323.9	405.0	850	634	1476	900



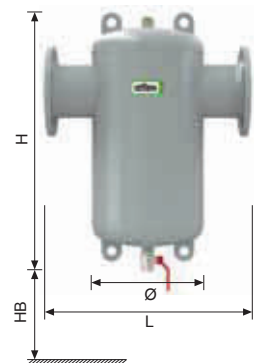
Material Group : 83

- ¹⁾ Thermal insulation available

Steel, 110°C 10 bar

- Flange connection

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	Ø (mm)	H (mm)	HB (mm)
D 50	8252300	11	DN 50/PN 16	12.5	350	132	502 ¹⁾	370
D 65	8252310	12	DN 65/PN 16	20.0	350	132	502 ¹⁾	370
D 80	8252320	18	DN 80/PN 16	27.0	470	206	617 ¹⁾	430
D 100	8252330	21	DN 100/PN 16	47.0	470	206	617 ¹⁾	430
D 125	8252340	60	DN 125/PN 16	72.0	635	354	792 ¹⁾	550
D 150	8252350	64	DN 150/PN 16	108.0	635	354	792 ¹⁾	550
D 200	8252360	110	DN 200/PN 16	180.0	775	409	1002	600
D 250	8252370	146	DN 250/PN 16	288.0	890	480	1266	800
D 300	8252380	194	DN 300/PN 16	405.0	1005	634	1476	900
D 350	8252910	Upon request	DN 350/PN 16	500.0	1128	634	1890	Upon request
D 400	8252920	Upon request	DN 400/PN 16	650.0	1226	750	2090	Upon request
D 450	8252940	Upon request	DN 450/PN 16	850.0	1330	750	2300	Upon request
D 500	8252950	Upon request	DN 500/PN 16	1060.0	1430	1000	2520	Upon request
D 600	8252960	Upon request	DN 600/PN 16	1530.0	1630	1200	2660	Upon request



Material Group : 83

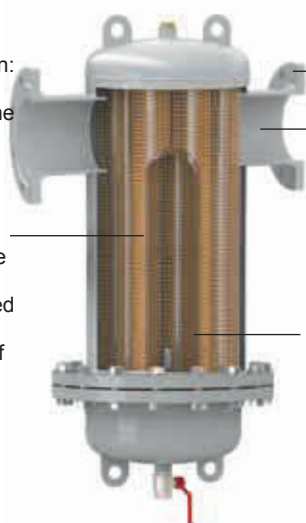
- ¹⁾ Thermal insulation available

Benefits in brief

- Removes free circulating dirt and sludge particles < 5 micrometer
- Functions in fully automated continuous operation, produces just a minimal constant drop in pressure
- Maintenance takes just 5 seconds Permanent free throughflow opening for the water
- No shut-off valves or bypass lines required. Desludging possible during system operation
- Full range in terms of operating pressures and materials
- Continually ensures flawless functionality of heat generators, thermostat valves, etc.
- Reduces the risk of system defects and breakdowns in the long term

Exdirt R

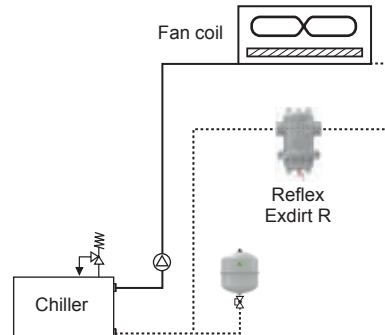
The sludge/dirt separation in the Reflex Exdirt R works on a similar principle to micro-bubble separation: The flow is guided through an area with a greater cross-section than the connection dimensions in order to reduce the flow speed. The ensuing turbulence caused by the tube mesh causes heavy materials to move in an undetermined direction. Depending on the volume flow, density, and volume, parts of these sludge particles are supported in their natural breakaway motion and guided to the bottom section of the casing



Several connections are available from DN 50 - DN 600

Through flow is not impeded by sludge

The capacity to capture large amounts of sludge results in longer intervals before cleaning becomes necessary. Maintenance is much easier with its detachable base



Exdirt "steel" system dirt and sludge separation sketch

Overview

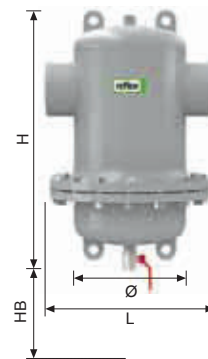
- Connection: DN 50 - DN 600
- Volumetric flow: 12.5 - 1530 m³/h

Exdirt (Steel) Dirt and Sludge Separator - with inspection flange

Steel, 110°C 10 bar

- Welded connection, inspection flange

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	Ø (mm)	H (mm)	HB (mm)
D 60.3 R	8252200	18	60,3	12,5	260	132	502 ¹⁾	370
D 76.1 R	8252210	19	76,1	20,0	260	132	502 ¹⁾	370
D 88.9 R	8252220	57	88,9	27,0	370	206	617 ¹⁾	430
D 114.3 R	8252230	70	114,3	47,0	370	206	617 ¹⁾	430
D 139.7 R	8252240	120	139,7	72,0	525	354	792 ¹⁾	550
D 168.3 R	8252250	125	168,3	108,0	525	354	792 ¹⁾	550
D 219.1 R	8252260	140	219,1	180,0	650	409	1002	600
D 273.0 R	8252270	196	273,0	288,0	750	480	1266	800
D 323.9 R	8252280	277	323,9	405,0	850	634	1476	900



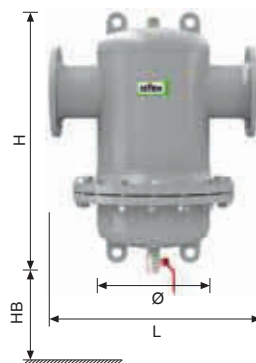
Material Group : 83

¹⁾ Thermal insulation available

Steel, 110°C 10 bar

- Flange connection, inspection flange

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	Ø (mm)	H (mm)	HB (mm)
D 50 R	8252400	20	DN 50/PN 16	12,5	350	132	502 ¹⁾	370
D 65 R	8252410	21	DN 65/PN 16	20,0	350	132	502 ¹⁾	370
D 80 R	8252420	68	DN 80/PN 16	27,0	470	206	617 ¹⁾	430
D 100 R	8252430	76	DN 100/PN 16	47,0	475	206	617 ¹⁾	430
D 125 R	8252440	120	DN 125/PN 16	72,0	635	354	792 ¹⁾	550
D 150 R	8252450	140	DN 150/PN 16	108,0	635	354	792 ¹⁾	550
D 200 R	8252460	181	DN 200/PN 16	180,0	775	409	1002	600
D 250 R	8252470	220	DN 250/PN 16	288,0	890	480	1266	800
D 300 R	8252480	305	DN 300/PN 16	405,0	1005	634	1476	900
D 350 R	8252912	Upon request	DN 350/PN 16	500,0	1128	634	1890	Upon request
D 400 R	8252922	Upon request	DN 400/PN 16	650,0	1226	750	2090	Upon request
D 450 R	8252942	Upon request	DN 450/PN 16	850,0	1330	750	2300	Upon request
D 500 R	8252952	Upon request	DN 500/PN 16	1060,0	1430	1000	2520	Upon request
D 600 R	8252962	Upon request	DN 600/PN 16	1530,0	1630	1200	2960	Upon request



Material Group : 83

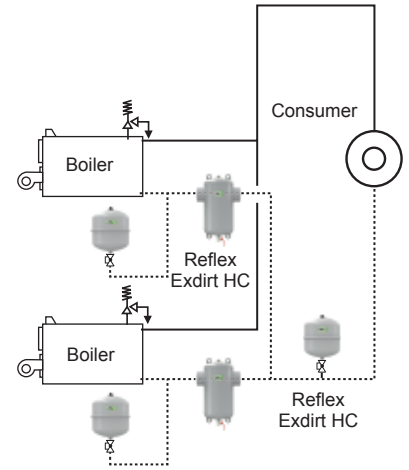
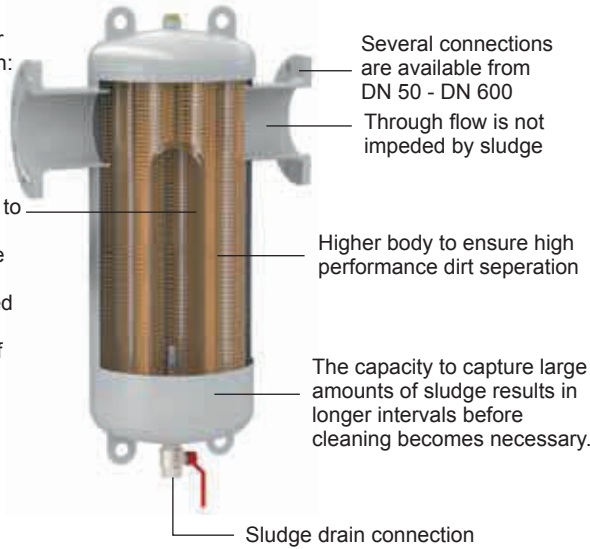
¹⁾ Thermal insulation available

Benefits in brief

- Removes free circulating dirt and sludge particles < 5 micrometer
- Functions in fully automated continuous operation, produces just a minimal constant drop in pressure
- Maintenance takes just 5 seconds Permanent free throughflow opening for the water
- No shut-off valves or bypass lines required. Desludging possible during system operation
- Full range in terms of operating pressures and materials
- Continually ensures flawless functionality of heat generators, thermostat valves, etc.
- Reduces the risk of system defects and breakdowns in the long term
- Easier maintenance due to detachable base

Exdirt HC

The sludge/dirt separation in the Reflex Exdirt HC works on a similar principle to micro-bubble separation: The flow is guided through an area with a greater cross-section than the connection dimensions in order to reduce the flow speed. The ensuing turbulence caused by the tube mesh causes heavy materials to move in an undetermined direction. Depending on the volume flow, density, and volume, parts of these sludge particles are supported in their natural breakaway motion and guided to the bottom section of the casing. Specially designed for bigger systems with longer heights and higher volumetric flow.



Exdirt "steel" HiCap system dirt and sludge separation sketch

Overview

- Connection: DN 50 - DN 600
- Volumetric flow: 25 - 3000 m³/h

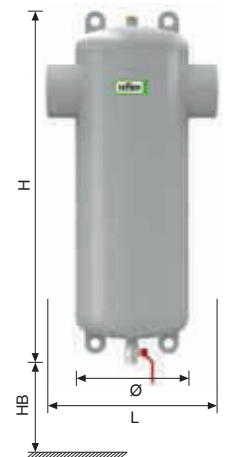
Exdirt HiCap (Steel) Dirt and Sludge Separator

Steel, 110°C 10 bar

- Welded connection

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L mm	Ø mm	H mm	HB mm
D 60.3 HC	8252105	5	60.3	25.0	260	132	710	370
D 76.1 HC	8252115	5	76.1	40.0	260	132	710	370
D 88.9 HC	8252125	11	88.9	54.0	370	206	865	430
D 114.3 HC	8252135	11	114.3	94.0	370	206	865	430
D 139.7 HC	8252145	24	139.7	144.0	525	354	1125	550
D 168.3 HC	8252155	26	168.3	215.0	525	354	1125	550
D 219.1 HC	8252165	90	219.1	360.0	650	409	1395	600
D 273.0 HC	8252175	108	273.0	575.0	750	480	1509	800
D 323.9 HC	8252185	150	323.9	810.0	850	634	2125	900

Material Group : 83

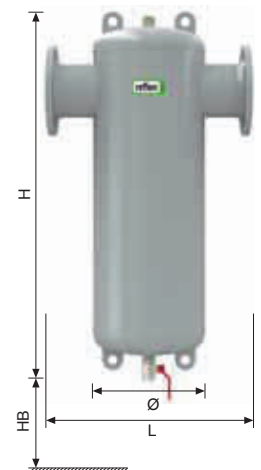


Steel, 110°C 10 bar

- Flange connection

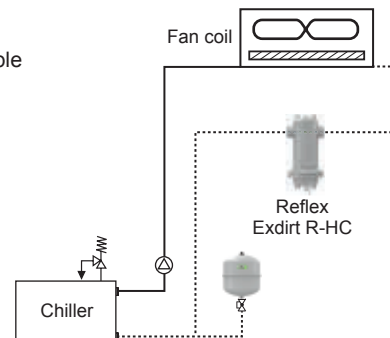
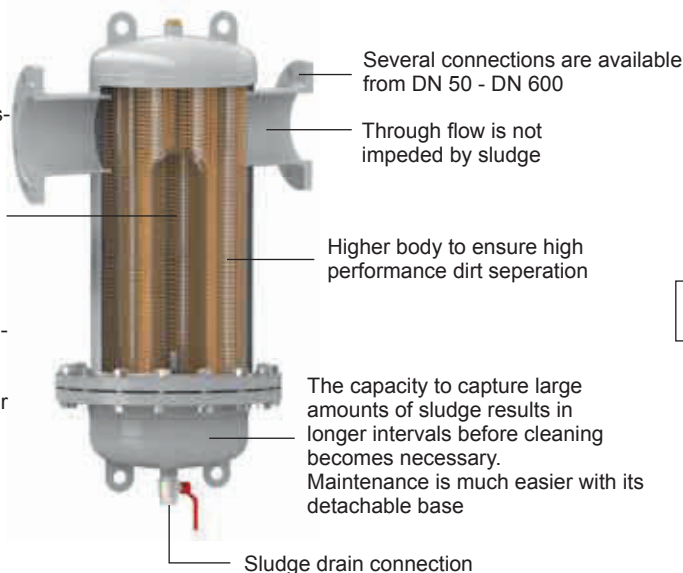
Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L mm	Ø mm	H mm	HB mm
D 50 HC	8252305	11	DN 50/PN 16	25.0	350	132	710 ¹⁾	370
D 65 HC	8252315	12	DN 65/PN 16	40.0	350	132	710 ¹⁾	370
D 80 HC	8252325	18	DN 80/PN 16	54.0	470	206	865 ¹⁾	430
D 100 HC	8252335	21	DN 100/PN 16	94.0	470	206	865 ¹⁾	430
D 125 HC	8252345	60	DN 125/PN 16	144.0	635	354	1125 ¹⁾	550
D 150 HC	8252355	64	DN 150/PN 16	215.0	635	354	1125 ¹⁾	550
D 200 HC	8252365	110	DN 200/PN 16	360.0	775	409	1395	600
D 250 HC	8252375	146	DN 250/PN 16	575.0	890	480	1509	800
D 300 HC	8252385	194	DN 300/PN 16	810.0	1005	634	2125	900
D 350 HC	8252915	273	DN 350/PN 16	1000.0	1128	634	2400	Upon request
D 400 HC	8252925	354	DN 400/PN 16	1300.0	1226	750	2680	Upon request
D 450 HC	8252945	467	DN 450/PN 16	1700.0	1330	750	2970	Upon request
D 500 HC	8252955	701	DN 500/PN 16	2120.0	1430	1000	3100	Upon request
D 600 HC	8252965	913	DN 600/PN 16	3000.0	1630	1200	3250	Upon request

Material Group : 83



Exdirt R-HC

The sludge/dirt separation in the Reflex Exdirt R - HC works on a similar principle to micro-bubble separation: The flow is guided through an area with a greater cross-section than the connection dimensions in order to reduce the flow speed. The ensuing turbulence caused by the tube mesh causes heavy materials to move in an undetermined direction. Depending on the volume flow, density, and volume, parts of these sludge particles are supported in their natural breakaway motion and guided to the bottom section of the casing. Specially designed for bigger systems with longer heights and higher volumetric flow



Exdirt "steel" HiCap system with inspection flange dirt and sludge separation sketch

Overview

- Connection: DN 50 - DN 600
- Volumetric flow: 25 - 3000 m³/h

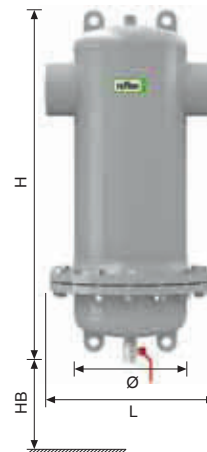
Exdirt HiCap (Steel) Dirt and Sludge Separator - with inspection flange

Steel, 110°C 10 bar

- Welded connection, inspection flange

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	Ø (mm)	H (mm)	HB (mm)
D 60.3 R-HC	8252205	18	60.3	25.0	260	132	710	370
D 76.1 R-HC	8252215	19	76.1	40.0	260	132	710	370
D 88.9 R-HC	8252225	57	88.9	54.0	370	206	865	430
D 114.3 R-HC	8252235	70	114.3	94.0	370	206	865	430
D 139.7 R-HC	8252245	120	139.7	144.0	525	354	1125	550
D 168.3 R-HC	8252255	125	168.3	215.0	525	354	1125	550
D 219.1 R-HC	8252265	140	219.1	360.0	650	409	1395	600
D 273.0 R-HC	8252275	196	273.0	575.0	750	480	1509	800
D 323.9 R-HC	8252285	277	323.9	810.0	850	634	2125	900

Material Group : 83

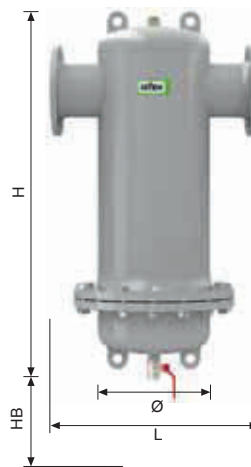


Steel, 110°C 10 bar

- Flange connection, inspection flange

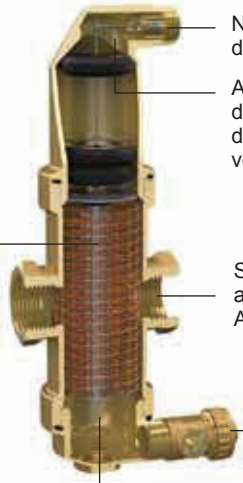
Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	Ø (mm)	H (mm)	HB (mm)
D 50 R-HC	8252405	20	DN 50/PN 16	25.0	350	132	710	370
D 65 R-HC	8252415	21	DN 65/PN 16	40.0	350	132	710	370
D 80 R-HC	8252425	68	DN 80/PN 16	54.0	470	206	865	430
D 100 R-HC	8252435	76	DN 100/PN 16	94.0	475	206	865	430
D 125 R-HC	8252445	120	DN 125/PN 16	144.0	635	354	1125	550
D 150 R-HC	8252455	140	DN 150/PN 16	215.0	635	354	1125	550
D 200 R-HC	8252465	181	DN 200/PN 16	360.0	775	409	1395	600
D 250 R-HC	8252475	220	DN 250/PN 16	575.0	890	480	1509	800
D 300 R-HC	8252485	305	DN 300/PN 16	810.0	1005	634	2125	900
D 350 R-HC	8252917	Upon request	DN 350/PN 16	1000.0	1128	634	2400	Upon request
D 400 R-HC	8252927	Upon request	DN 400/PN 16	1300.0	1226	750	2680	Upon request
D 450 R-HC	8252947	Upon request	DN 450/PN 16	1700.0	1330	750	2970	Upon request
D 500 R-HC	8252957	Upon request	DN 500/PN 16	2120.0	1430	1000	3100	Upon request
D 600 R-HC	8252967	Upon request	DN 600/PN 16	3000.0	1630	1200	3250	Upon request

Material Group : 83



Extwin

The core element is a tube mesh construction that has proven itself over the decades, with an extremely low rate of pressure loss in the flow direction and a high rate of pressure loss in the transverse direction. This drastically reduces the amount of turbulence and guides the sludge particles to a part-stabilized area

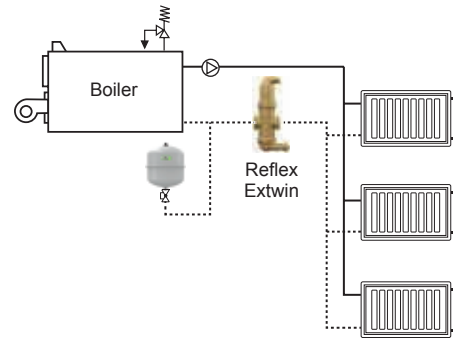


Non-leak, non-shut-off deaeration valve
 Air chamber with special design; driving impurities do not reach the deaeration valve; high air chamber volume to counteract pressure fluctuations

Several connections are available from A22 to 1"

The capacity to capture large amounts of sludge results in longer intervals before cleaning becomes necessary

Space-saving, perpendicular draining tap. The collected sludge is quickly and forcefully pressed out when the tap is opened so that it can be closed again right away. The entire process takes just a few seconds



Extwin "brass" system combined micro-bubble, dirt and sludge separation sketch

Overview

- Dimension-dependent brass designs
- Installation: horizontal, vertical
- Connection options: thread and clamping ring,
- Connection diameter A22 - 1"
- Max. operating pressure: 10 bar
- Max. operating temperature 110°C

Benefits in brief

- Removes free circulating dirt and sludge particles
- Functions in fully automated continuous operation
- Maintenance takes just 5 seconds
- Permanent free throughflow opening for the water
- No shut-off valves or bypass lines required. Desludging possible during system operation
- Full range in terms of operating pressures and materials
- Continually ensures flawless functionality of heat generators, thermostat valves, etc.
- Reduces the risk of system defects and breakdowns in the long term

Extwin (Brass) Combined Micro-Bubble, Dirt, and Sludge Separator

Brass, 110°C 10 bar

- Horizontal

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	Ø (mm)	H (mm)
TW 22	9253000	1,7	22 mm ¹⁾	1.25	105	63	261
TW 1	9253010	1,7	Rp 1	2.00	84	63	261

Material Group : 82

Brass, 110°C 10 bar

- Horizontal M with magnetic insert

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	Ø (mm)	H (mm)
TW 22 M	9257000	1,8	22 mm ¹⁾	1.25	105	63	261
TW 1 M	9257010	1,8	Rp 1	2.00	84	63	261

Material Group : 82

Brass, 110°C 10 bar

- Vertical

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	Ø (mm)	H (mm)
TW 22 V	9253500	2,1	22 mm ¹⁾	1.25	105	63	261

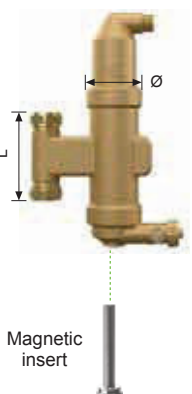
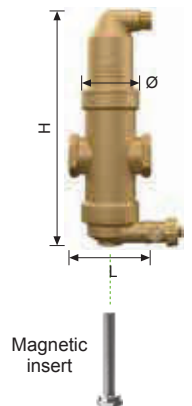
Material Group : 82

Brass, 110°C 10 bar

- Vertical M with magnetic insert

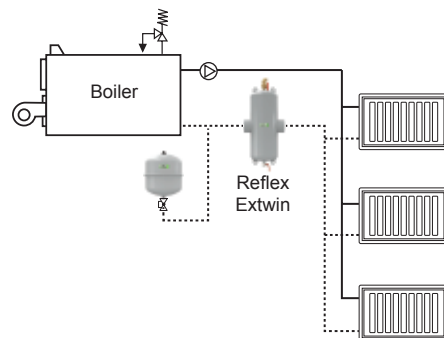
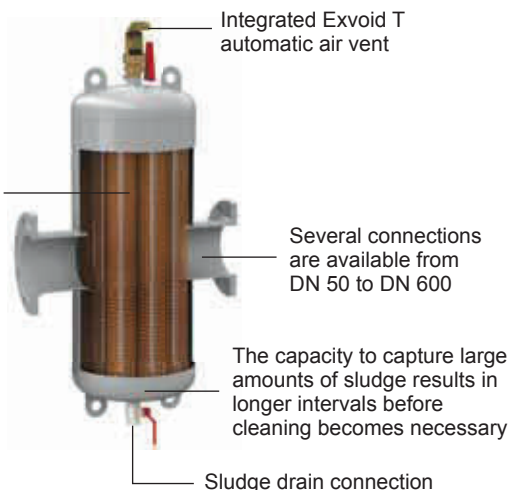
Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	Ø (mm)	H (mm)
TW 22 V-M	9257500	2,1	22 mm ¹⁾	1.25	105	63	261

Material Group : 82



Extwin

The Reflex Extwin combines the modes of operation of the Exvoid and Exdirt, the principle corresponding with the functionality set out on pages 19-22



Extwin "Steel" system with combined micro-bubble dirt and sludge separation sketch

Overview

- Connection: DN 50 - DN 600
- Volumetric flow: 12.5-405 m³/h
- Exiso thermal insulation: DN 50 - DN 125

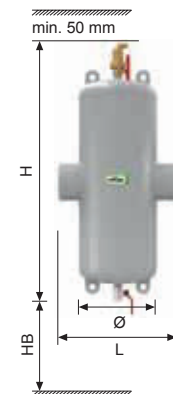
Extwin (Steel) Combined Micro-Bubble, Dirt, and Sludge Separator

Steel, 110°C 10 bar

- Welded connection

Type	Article No	Weight kg	Connection	V _{max} m ³ /h	L (mm)	Ø (mm)	H (mm)	HB (mm)
TW 60.3	8253100	7	60,3	12,5	260	132	770	370
TW 76.1	8253110	8	76,1	20,0	260	132	770	370
TW 88.9	8253120	15	88,9	27,0	370	206	925	430
TW 114.3	8253130	17	114,3	47,0	370	206	925	430
TW 139.7	8253140	32	139,7	72,0	525	354	1185	550
TW 168.3	8253150	40	168,3	108,0	525	354	1185	550
TW 219.1	8253160	92	219,1	180,0	650	409	1455	600
TW 273.0	8253170	196	273,0	288,0	750	480	1855	800
TW 323.9	8253180	266	323,9	405,0	850	634	2175	900

Material Group : 83

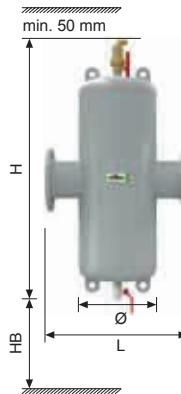


Steel, 110°C 10 bar

- Flange connection

Type	Article No	Weight kg	Connection	V _{max} m ³ /h	L (mm)	Ø (mm)	H (mm)	HB (mm)
TW 50	8253300	13	DN 50/PN 16	12.5	350	132	770	370
TW 65	8253310	13	DN 65/PN 16	20.0	350	132	770	370
TW 80	8253320	37	DN 80/PN 16	27.0	470	206	925	430
TW 100	8253330	43	DN 100/PN 16	47.0	475	206	925	430
TW 125	8253340	70	DN 125/PN 16	72.0	635	354	1185	550
TW 150	8253350	75	DN 150/PN 16	108.0	635	354	1185	550
TW 200	8253360	108	DN 200/PN 16	180.0	775	409	1455	600
TW 250	8253370	230	DN 250/PN 16	288.0	890	480	1855	800
TW 300	8253380	300	DN 300/PN 16	405.0	1005	634	2175	900
TW 350	8253910	Upon request	DN 350/PN 16	500.0	1128	634	DN 2600	Upon request
TW 400	8253920	Upon request	DN 400/PN 16	650.0	1226	750	2900	Upon request
TW 450	8253940	Upon request	DN 450/PN 16	850.0	1330	750	3150	Upon request
TW 500	8253950	Upon request	DN 500/PN 16	1060.0	1430	1000	3500	Upon request
TW 600	8253960	Upon request	DN 600/PN 16	1530.0	1630	1200	4100	Upon request

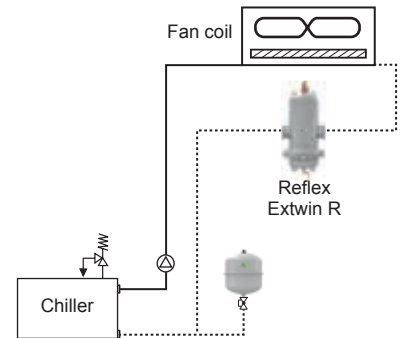
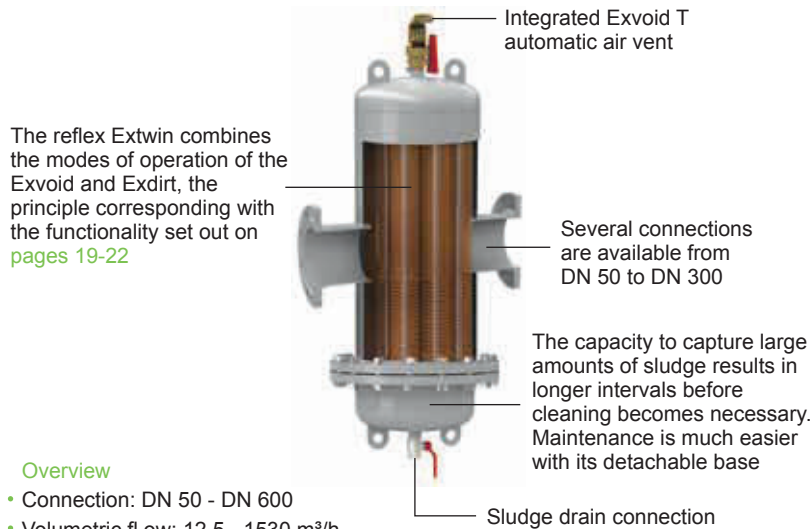
Material Group : 83



Benefits in brief

- Combines the protective functions of Reflex Exvoid and Exdirt in a single component in chilled water systems
- Single installation, doubled effect
- A far more cost-effective solution than using both the individual components
- Full range in terms of operating pressures and materials

Extwin R



Extwin "Steel" system with inspection flange combined micro-bubble, dirt and sludge separation sketch

Overview

- Connection: DN 50 - DN 600
- Volumetric flow: 12.5 - 1530 m³/h
- Exiso thermal insulation: DN 50 - DN 125

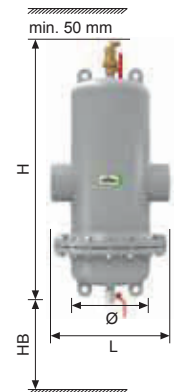
Extwin (Steel) Combined Micro-Bubble, Dirt, and Sludge Separator - with inspection flange

Steel, 110°C 10 bar

- Welded connection, inspection flange

Type	Article No	Weight kg	Connection	V _{max} m³/h	L (mm)	Ø (mm)	H (mm)	HB (mm)
TW 60.3 R	8253200	16	60,3	12,5	350	132	770	370
TW 76.1 R	8253210	16	76,1	20,0	350	132	770	370
TW 88.9 R	8253220	50	88,9	27,0	470	206	925	430
TW 114.3 R	8253230	65	114,3	47,0	475	206	925	430
TW 139.7 R	8253240	102	139,7	72,0	635	354	1185	550
TW 168.3 R	8253250	110	168,3	108,0	635	354	1185	550
TW 219.1 R	8253260	180	219,1	180,0	775	409	1455	600
TW 273.0 R	8253270	219	273,0	288,0	890	480	1855	800
TW 323.9 R	8253280	320	323,9	405,0	1005	634	2175	900

Material Group : 83



Steel, 110°C 10 bar

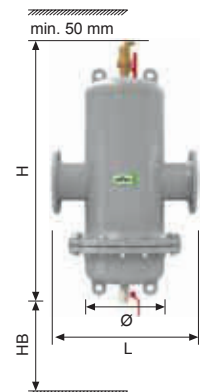
- Flange connection, inspection flange

Type	Article No	Weight kg	Connection	V _{max} m³/h	L (mm)	Ø (mm)	H (mm)	HB (mm)
TW 50 R	8253400	21	DN 50/PN 16	12.5	350	132	770	370
TW 65 R	8253410	22	DN 65/PN 16	20.0	350	132	770	370
TW 80 R	8253420	71	DN 80/PN 16	27.0	470	206	925	430
TW 100 R	8253430	78	DN 100/PN 16	47.0	475	206	925	430
TW 125 R	8253440	114	DN 125/PN 16	72.0	635	354	1185	550
TW 150 R	8253450	120	DN 150/PN 16	108.0	635	354	1185	550
TW 200 R	8253460	200	DN 200/PN 16	180.0	775	409	1455	600
TW 250 R	8253470	235	DN 250/PN 16	288.0	890	480	1855	800
TW 300 R	8253480	340	DN 300/PN 16	405.0	1005	634	2175	900
TW 350 R	8253912	Upon request	DN 350/PN 16	500.0	1128	634	2600	Upon request
TW 400 R	8253922	Upon request	DN 400/PN 16	650.0	1226	750	2900	Upon request
TW 450 R	8253942	Upon request	DN 450/PN 16	850.0	1330	750	3150	Upon request
TW 500 R	8253952	Upon request	DN 500/PN 16	1060.0	1430	1000	3500	Upon request
TW 600 R	8253962	Upon request	DN 600/PN 16	1530.0	1630	1200	4100	Upon request

Material Group : 83

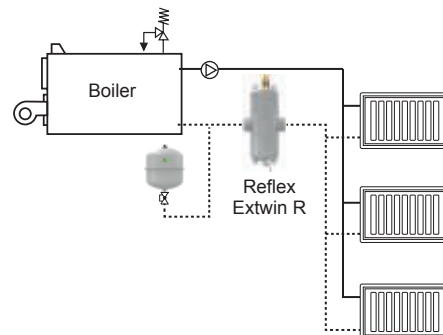
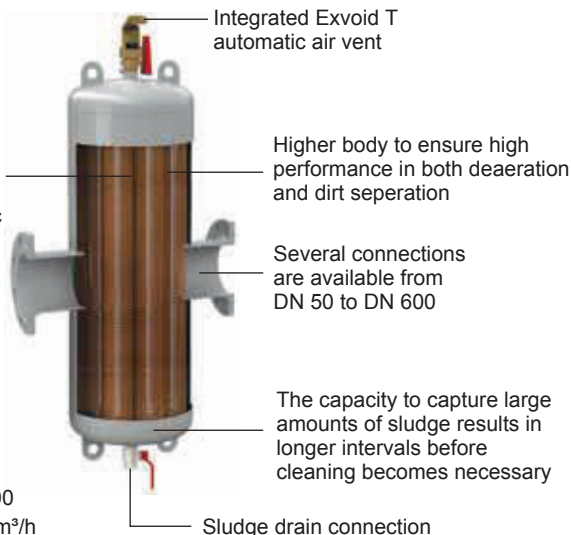
Benefits in brief

- Combines the protective functions of Reflex Exvoid and Exdirt in a single component in chilled water systems
- Single installation, doubled effect
- A far more cost-effective solution than using both the individual components
- Full range in terms of operating pressures and materials
- Easier maintenance due to detachable base



Extwin HC

The Reflex Extwin HC combines the modes of operation of the Exvoid and Exdirt, the principle corresponding with the functionality set out on pages 19-22. Specially designed for bigger systems with longer heights and higher volumetric flow.



Extwin "Steel" HiCap system combined micro-bubble, dirt and sludge separation sketch

Overview

- Connection: DN 50 - DN 600
- Volumetric flow: 25 - 3000 m³/h

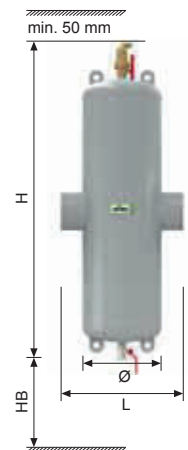
Extwin HiCap (Steel) Combined Micro-Bubble, Dirt, and Sludge Separator

Steel, 110°C 10 bar

- Welded connection

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	Ø (mm)	H (mm)	HB (mm)
TW 60.3 HC	8252105	Upon request	60,3	25.0	260	132	1050	Upon request
TW 76.1 HC	8252115	Upon request	76,1	40.0	260	132	1050	Upon request
TW 88.9 HC	8252125	Upon request	88,9	54.0	370	206	1285	Upon request
TW 114.3 HC	8252135	Upon request	114,3	94.0	370	206	1285	Upon request
TW 139.7 HC	8252145	Upon request	139,7	144.0	525	354	1710	Upon request
TW 168.3 HC	8252155	Upon request	168,3	215.0	525	354	1710	Upon request
TW 219.1 HC	8252165	Upon request	219,1	360.0	650	409	2035	Upon request
TW 273.0 HC	8252175	Upon request	273,0	575.0	750	480	2764	Upon request
TW 323.9 HC	8252185	Upon request	323,9	810.0	850	634	3330	Upon request

Material Group : 83



Steel, 110°C 10 bar

- Flange connection

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	Ø (mm)	H (mm)	HB (mm)
TW 50 HC	8253305	13	DN 50/PN 16	25.0	350	132	1050	370
TW 65 HC	8253315	13	DN 65/PN 16	40.0	350	132	1050	370
TW 80 HC	8253325	37	DN 80/PN 16	54.0	470	206	1285	430
TW 100 HC	8253335	43	DN 100/PN 16	94.0	475	206	1285	430
TW 125 HC	8253345	70	DN 125/PN 16	144.0	635	354	1710	550
TW 150 HC	8253355	75	DN 150/PN 16	215.0	635	354	1710	550
TW 200 HC	8253365	108	DN 200/PN 16	360.0	775	409	2035	600
TW 250 HC	8253375	230	DN 250/PN 16	575.0	890	480	2764	800
TW 300 HC	8253385	300	DN 300/PN 16	810.0	1005	634	3330	900
TW 350 HC	8253915	331	DN 350/PN 16	1000.0	1128	634	3600	Upon request
TW 400 HC	8253925	429	DN 400/PN 16	1300.0	1226	750	4000	Upon request
TW 450 HC	8253945	573	DN 450/PN 16	1700.0	1330	750	4500	Upon request
TW 500 HC	8253955	853	DN 500/PN 16	2120.0	1430	1000	4900	Upon request
TW 600 HC	8253965	1217	DN 600/PN 16	3000.0	1630	1200	5800	Upon request

Material Group : 83

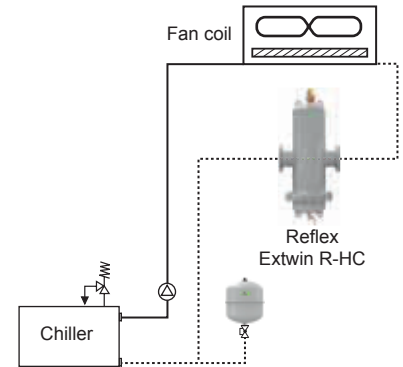
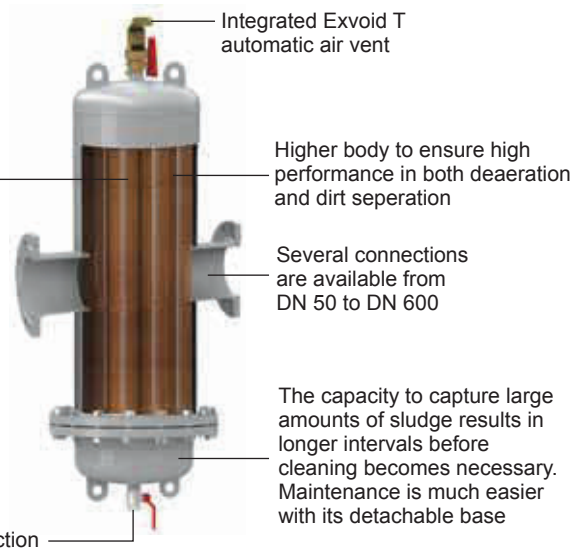


Benefits in brief

- Combines the protective functions of Reflex Exvoid and Exdirt in a single component in chilled water systems
- Single installation, doubled effect
- A far more cost-effective solution than using both the individual components
- Full range in terms of operating pressures and materials
- Specially designed for bigger systems with longer heights and higher volumetric flow

Extwin R-HC

The reflex Extwin combines the modes of operation of the Exvoid and Exdirt, the principle corresponding with the functionality set out on pages 19-22. Specially designed for bigger systems with longer heights and higher volumetric flow



Extwin "Steel" HiCap with inspection opening system combined micro-bubble, dirt and sludge separation sketch

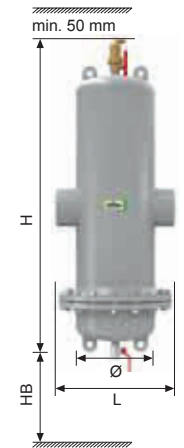
Extwin HiCap (Steel) Combined Micro-Bubble, Dirt, and Sludge Separator - with inspection flange

Steel, 110°C 10 bar

- Welded connection, inspection flange

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	Ø (mm)	H (mm)	HB (mm)
TW 60.3 R-HC	8253205	16	60.3	25.0	260	132	1050	370
TW 76.1 R-HC	8253215	16	76.1	40.0	260	132	1050	370
TW 88.9 R-HC	8253225	50	88.9	54.0	370	206	1285	430
TW 114.3 R-HC	8253235	65	114.3	94.0	370	206	1285	430
TW 139.7 R-HC	8253245	102	139.7	144.0	525	354	1710	550
TW 168.3 R-HC	8253255	110	168.3	215.0	525	354	1710	550
TW 219.1 R-HC	8253265	180	219.1	360.0	650	409	2035	600
TW 273.0 R-HC	8253275	219	273.0	575.0	750	480	2764	800
TW 323.9 R-HC	8253285	320	323.9	810.0	850	634	3330	900

Material Group : 83



Steel, 110°C 10 bar

- Flange connection, inspection flange

Type	Article No	Weight kg	Connection	\dot{V}_{max} m³/h	L (mm)	Ø (mm)	H (mm)	HB (mm)
TW 50 R-HC	8253405	21	DN 50/PN 16	25.0	350	132	1050	370
TW 65 R-HC	8253415	22	DN 65/PN 16	40.0	350	132	1050	370
TW 80 R-HC	8253425	71	DN 80/PN 16	54.0	470	206	1285	430
TW 100 R-HC	8253435	78	DN 100/PN 16	94.0	475	206	1285	430
TW 125 R-HC	8253445	114	DN 125/PN 16	144.0	635	354	1710	550
TW 150 R-HC	8253455	120	DN 150/PN 16	215.0	635	354	1710	550
TW 200 R-HC	8253465	200	DN 200/PN 16	360.0	775	409	2035	600
TW 250 R-HC	8253475	235	DN 250/PN 16	575.0	890	480	2764	800
TW 300 R-HC	8253485	340	DN 300/PN 16	810.0	1005	634	3330	900
TW 350 R-HC	8253917	Upon request	DN 350/PN 16	1000.0	1128	634	3600	Upon request
TW 400 R-HC	8253927	Upon request	DN 400/PN 16	1300.0	1226	750	4000	Upon request
TW 450 R-HC	8253947	Upon request	DN 450/PN 16	1700.0	1330	750	4500	Upon request
TW 500 R-HC	8253957	Upon request	DN 500/PN 16	2120.0	1430	1000	4900	Upon request
TW 600 R-HC	8253967	Upon request	DN 600/PN 16	3000.0	1630	1200	5800	Upon request

Material Group : 83



Benefits in brief

- Combines the protective functions of Reflex Exvoid and Exdirt in a single component in chilled water systems
- Single installation, doubled effect
- A far more cost-effective solution than using both the individual components
- Full range in terms of operating pressures and materials
- Specially designed for bigger systems with longer heights and higher volumetric flow
- Easier maintenance due to detachable base

Accessories

Reflex Exferro

- Solenoid insert for sludge separator
- 110°C/10 bar
- Magnetic bar screwed into thermowell/T-piece
- For uptake of ferromagnetic substances



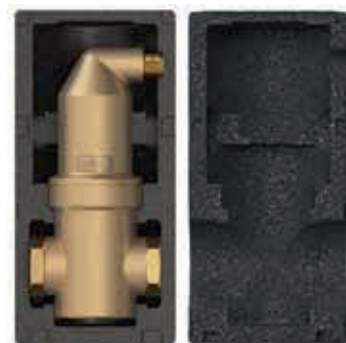
Type	Article No	Area Of Application	Installation Length (mm)
DN 50/114.3	9258300	DN 50 - DN 100	300
D 125/219.1	9258310	DN 125 - DN 200	350
D 250/323.9	9258320	DN 250 - DN 300	400
D 350/600	9258330	> DN 100	500

Material Group : 83

Reflex Exiso

- Brass Exvoid, A 22-A 1 ½ - 2"
- Brass Exdirt D 22-D 1 ½ - 2"

Type	Article No	Material Group	Insulation thickness (mm)	Ø (mm)	H (mm)
A/D 22-1 ½	9254811	82	15	1252	15-275
A/D 2"	9254801	82	15	Upon request	



- Thermal insulation for Exvoid and Exdirt, steel version

Type	Article No	Material Group	Insulation thickness (mm)	Ø (mm)	H (mm)
50-76.1	9254831	83	30.5	228	447
80-114.1	9254841	83	30.5	290	567
125-168.3	9254851	83	30.5	395	742

Pressure Loss Chart

- Exvoid, Exdirt, Extwin

Connection	kvs, m³/h	V max. m³/h	Connection	kvs, m³/h	V max. m³/h
Rp ¾	10.7	1.25	DN 80	158.5	27.0
Rp 1	17.2	2.00	DN 100	244.3	47.0
Rp 1 ¼	31.8	3.70	DN 125	351.3	72.0
Rp 1 ½	40.0	5.00	DN 150	487.9	108.0
Rp 2	56.1	7.50	DN 200	780.6	180.0
DN 50	72.2	12.50	DN 250	1185.7	288.0
DN 65	121.7	20.00	DN 300	1696.4	405.0

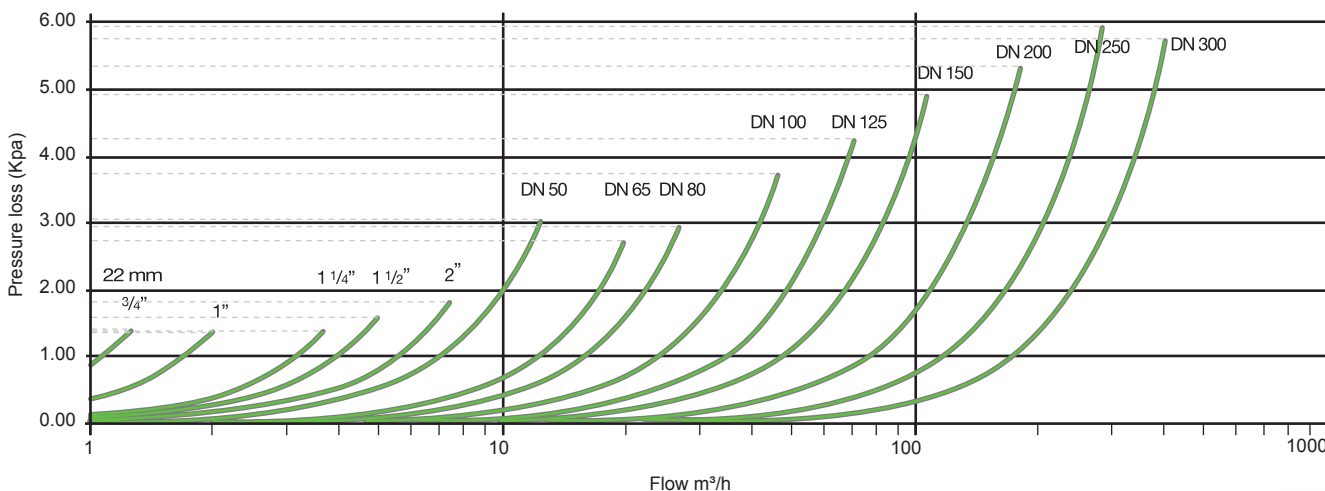
Pressure loss calculation for all volume flows

$$\Delta p = \left(\frac{\dot{V}}{Kvs} \right)^2 \times 1 \text{ bar}, \dot{V} \leq \dot{V}_{max}$$

Example:
 Heating circuit 70/55°C, heat generator output 40 kW
 $\Delta p = \left(\frac{2.3 \text{ m}^3/\text{h}}{31.8 \text{ m}^3/\text{h}} \right)^2 \times 100 \text{ Kpa} = 0.523 \text{ Kpa} \times 10^{-3} \text{ bar}$

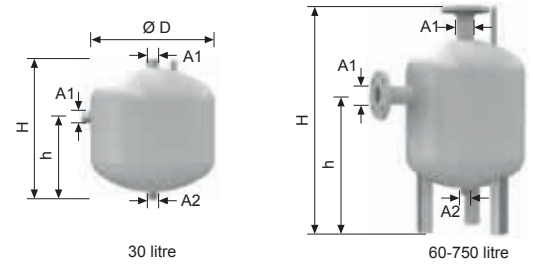
$$\dot{V} = \frac{40 \text{ kW}}{4.2 \text{ kJ} / (\text{kg K}) \cdot (70-55) \text{ K}} \times 3.600 \frac{\text{s}}{\text{h}} \times \frac{1 \text{ m}^3}{1.000 \text{ kg}}$$

= 2.3 m³/h → selected size Rp 1 ¼



Reflex EB Dirt Collector

- Separates and collects dirt (magnetite, welding grid, sand etc.) from the systemwater
- Protects and improves average lifetime of components (pumps, valves, heat exchangers etc.)
- Minimum pressure drop
- Meets or exceeds EC norms for pressure vessels 97/23/EC
- Durable epoxy coating with attractive new colour

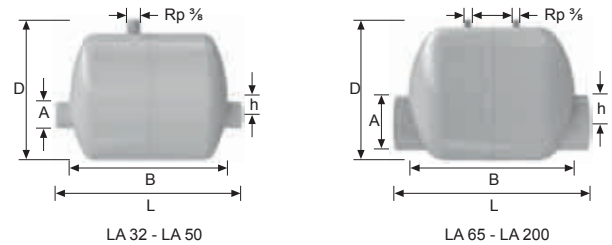


10 bar	Type	Article No	Material Group	Ø D (mm)	H (mm)	h (mm)	A1	A2
	10 Bar / 120°C							
	EB 30	8636000	25	409	455	270	R 1 ¼	R 1
	EB 60	8635100	25	409	770	465	DN 50/PN 16	R 1
	EB 80	8636200	25	480	765	468	DN 65/PN 16	R 1
	EB 100	8636300	25	480	870	535	DN 80/PN 16	R 1

6 bar	Type	Article No	Material Group	Ø D (mm)	H (mm)	h (mm)	A1	A2
	6 Bar / 120°C							
	EB 180	8632000	25	600	1110	726	DN 100/PN 6	R 1
	EB 300	8633000	25	600	1600	1141	DN 125/PN 6	R 1
	EB 400	8634000	25	750	1500	1027	DN 150/PN 6	R 1
	EB 750	8634100	25	750	2215	1677	DN 250/PN 6	R 1

Reflex LA Air Separator

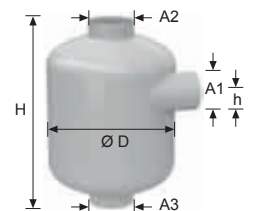
- Separates gas bubbles (air, nitrogen etc.) from heating and cooling systems
- Increases system efficiency and average lifetime of components
- Minimum pressure drop
- Most suitable for rooftop plantrooms at low pressure
- Welded collection
- Durable epoxy coating with attractive new colour



10 bar	Type	Article No	Material Group	L (mm)	Ø D (mm)	H (mm)	A
	10 Bar / 120°C						
	LA 32	8671000	72	300	30	206	DN 32
	LA 40	8672000	72	300	40	206	DN 40
	LA 50	8673000	72	300	40	206	DN 50
	LA 65	8674000	72	390	60	280	DN 65
	LA 80	8675000	72	390	60	280	DN 80
	LA 100	8676000	72	390	50	280	DN 100
	LA 125	8677000	72	390	40	280	DN 125
	LA 150	8678000	72	590	90	409	DN 150
	LA 200	8679000	72	590	40	409	DN 200

Reflex T Expansion Trap

- Separates water from steam in heating installation ≥ 100°C
- To be connected to the safety valve according to DIN EN 12828
- Allows evaporation without danger to the ambience
- Durable epoxy coating with attractive new colour



Type	Article No	Material Group	H (mm)	h (mm)	Ø D (mm)	A1 DN	A2 DN	A3 DN
T 170	8680000	73	328	55	206	50	65	65
T 270	8681000	73	400	65	280	65	80	80
T 380	8682000	73	528	75	490	80	100	100
T 480	8683000	73	710	115	480	125	150	150
T 550	8684000	73	896	125	634	150	200	200

Notes

A series of horizontal dashed lines for writing notes.



The Reflex brand name is well known in Europe and throughout the world as a major leader in pressure control technology for heating, chilled and potable water applications. Our world wide growth has allowed us to build several state-of-the-art manufacturing facilities supplying the industry with outstanding quality products. Reflex Winkelmann GmbH having its headquarters in the Westfalian city of Ahlen is not only a recognized leader in expansion vessels but also a significant manufacturer of advanced system solutions such as compressor and pump-controlled pressurisation systems, automatic air separation systems and hot water heaters.



Reflex has achieved its significant global growth today thanks to the unique combination of its world-class manufacturing skills, dedication to high-product quality at an affordable price and its commitment to continuous technical training of its people, our most precious resource. Our tradition goes back to 1898. This family oriented company started its core business in the elaboration of steel. A business in which we are recognised leaders today. The Heinrich Winkelmann Group form the parent company to a whole group of diversified manufacturing companies serving the heating segment and the whole automotive industry with over 3.100 employees. A tradition of more than a hundred years in this business makes us real experts today.



Thinking solutions.

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