

Venting Range and Air/Dirt Separators

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Systems in which the water is properly deaerated and free of contamination are more efficient, produce less noise and have a longer service life. Our products use proven and innovative technology to remove air and solid particles from the water, i.e. using coalescence and flow velocity reduction. Regardless of whether in a domestic environment or commercial installations with large heating or cooling systems, Flamco's range of automatic air vents and air/dirt separators provide the most efficient solution.

Flexvent



P. 221

Flexvent H



P. 221

Air intake preventer



P. 221

Flexvent Top



P. 221

Flexvent Solar



P. 221

Flexvent Top Solar



P. 221

Flexvent Super / Flexvent Super NPT



P. 221

Flexvent Pro / Flexvent Pro NPT



P. 221

Flexvent Max



P. 221

LTA Air Accumulator



P. 221

Flamcovent Smart / Flamcovent Smart NPT



P. 221

EcoPlus Pack Flamcovent Smart



P. 221

Flamcovent Smart EcoPlus



P. 221

Flamcovent Smart S - 10.0 bar



P. 221

Flamcovent Smart F - 10.0 / 16.0 bar



P. 221

Spare vent cap L



P. 221

Flamcovent IsoPlus



P. 221

Flamco Clean Smart / Flamco Clean Smart NPT



P. 221

Flamco Clean Smart EcoPlus



P. 221

EcoPlus Pack Flamco Clean Smart



P. 221

Magnets Smart 22 mm - 2"



P. 221

Flamco Clean Smart S - 10.0 bar



P. 221

Flamco Clean Smart F - 10.0 / 16.0 bar



P. 221

Dirt collector



P. 221

Flamco Clean IsoPlus



P. 221

Flamcovent Clean Smart / Flamcovent Clean Smart NPT



P. 221

Flamcovent Clean Smart EcoPlus



P. 221

EcoPlus Pack Flamcovent Clean Smart



P. 221

Magnets Smart 22 mm - 2"



P. 221

Flamcovent Clean Smart S - 10.0 bar



P. 221

Flamcovent Clean Smart F - 10.0 / 16.0 bar



P. 221

Flamcovent Clean Smart F - ANSI flanges



P. 221

Dirt collector



P. 221

Flamcovent Clean IsoPlus



P. 221

Spare vent cap L



P. 221

PSD



P. 221

PSD USA 110V



P. 221

Flexfiller Plus & Midifill Plus



P. 221

PressDS Plus



P. 221

Vacumat Eco



P. 221

Impulse Output Water Meter



P. 221

Vacumat Basic



P. 221

Vacumat Basic Floor Console



P. 221

NFE 1 Top-up Unit



P. 221

ENA 7 - 30



P. 221

NFE 1 Top-up Unit



P. 221

NFE 2 Top-up Unit



P. 221

Gas Sensor



P. 221

FLEXVENT AUTOMATIC AIR VENTS

The compact, proven design has high efficiency and guaranteed operation for heating and air conditioning. The water within the installation contains air which can form corrosion and reduce the thermal transfer. A Flexvent is fitted at places where the air collects.

Flexvent float vents are made of brass. Most types are equipped with a shut-off valve for easy fitting and dismantling.

A Flexvent float vent is easy to fit in any installation due to its very small dimensions. The relatively large air cushion at the top of each type of Flexvent float vent protects the valve seat sufficiently against contamination so that the Flexvent will not leak.

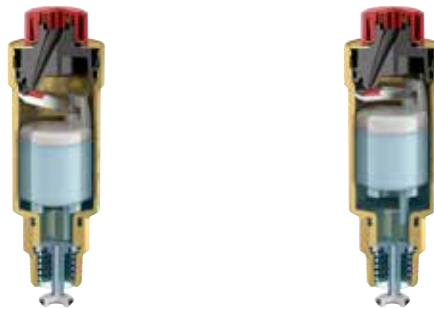
To guarantee top quality, we test all Flexvents before they leave our factory.



How a Flexvent works

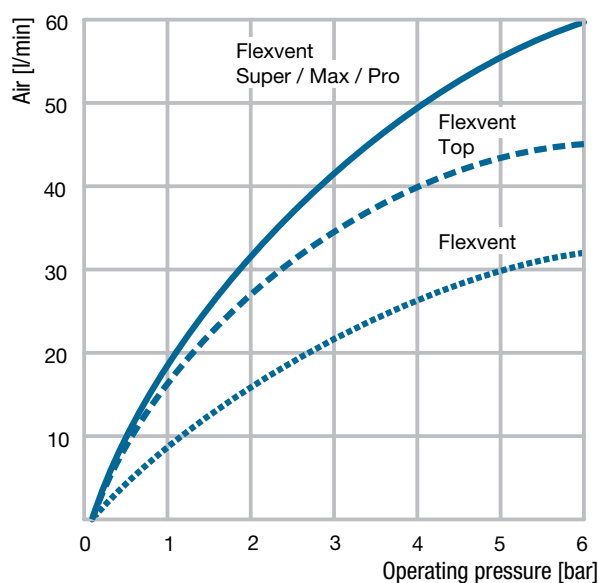
Float operated, the air is collected in the Flexvent causing the float to drop and open the air release valve. The water pressure then pushes the air out, the float rises and closes the valve.

The air cushion in the upper part of each Flexvent protects the valve seat against contamination.



Flexvent capacity graph

The amount of air that is allowed to escape through the Flexvent float vent depends on the system pressure. The graph shows the relationship between the amount of air in litres/min at 15 °C and the system pressure.



Flexvent

- With protective cap including expansion sealer rings to prevent leaks.
- Substantial distance between the water and the closing mechanism, reducing the chance of contamination.
- Suitable for addition of glycol-based anti-freeze up to 50%.
- Minimum/Maximum working temperature: -10 °C / 90 °C (peak load: 120 °C).
- Minimum/Maximum working pressure: 0.2 / 6.0 bar (peak load: 10.0 bar).



Type	Dimensions		Connection	Shut-off valve		Order Code
	Ø [mm]	H. [mm]				
Flexvent 1/8	30	67	R 1/8"	no	1	27775
Flexvent 3/8	30	78	R 3/8"	yes	1	27750
Flexvent 3/8 without shut-off valve	30	66	G 3/8"	no	1	27725
Flexvent 1/8 - 3/8	30	86 - 75.5	R 1/8" / R 3/8"	yes	1	27780
Flexvent 1/2	30	75.5	R 1/2"	yes	1	27740
Flexvent 1/2 - White with bubble breaker	31	71	G 1/2"	no	1	27743
Flexvent 1/2 - Nickel plated	30	80	R 1/2"	yes	1	27742
Flexvent 3/4	30	74.5	R 3/4"	yes	1	27735

Flexvent H



The Flexvent H has a 1/2" 90°-angled connection which means it can be mounted directly on one of the radiator ports.

- Suitable for addition of glycol-based anti-freeze up to 50%.
- Minimum/Maximum working temperature: -10 °C / 90 °C (peak load: 120 °C).
- Minimum/Maximum working pressure: 0.2 / 6.0 bar (peak load: 10.0 bar).

Type	Dimensions			Con- nection	Shut-off valve		Order Code
	Ø [mm]	Ø conn. inc. [mm]	H. [mm]				
Flexvent H 1/2 Nickel plated	31	50.5	70	R 1/2"	no	50	27710
Flexvent H 1/2 White	31	50.5	70	R 1/2"	no	50	27711

Air intake preventer



Prevents air from entering the heating system in case of negative pressure. Replaces the standard cap of the Flexvent.

- Integrated spring rings protect against possible leaks caused by contamination.

Type	Dimensions		Connection		Order Code
	Ø [mm]	H. [mm]			
Air intake preventer	16	28	M 12 x 1	25	27755

Flexvent Top



- Suitable for addition of glycol-based anti-freeze up to 50%.
- Minimum/Maximum working temperature: -10 °C / 120 °C.
- Minimum/Maximum working pressure: 0.2 / 10.0 bar.

Type	Dimensions		Con- nection	Shut-off valve		Order Code
	Ø [mm]	H. [mm]				
Flexvent Top	54	86	Rp 1/2"	no	20	28515
Flexvent Top White	54	86	R 3/8"	yes	20	28510

Flexvent Solar



- Manually operated vent valve for solar systems with glycol based solutions.
- Manual, key operated (not included), without shut off valve.
 - Suitable for addition of glycol-based anti-freeze up to 50%.
 - Minimum/Maximum working temperature: -10 °C / 200 °C.
 - Maximum working pressure: 10 bar.

Type	Dimensions		Con- nection	Shut-off valve		Order Code
	Ø [mm]	H. [mm]				
Flexvent Solar 3/8"	30	75.5	R 3/8"	no	1	27785

Flexvent Top Solar

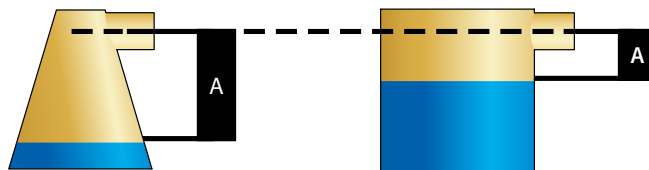


- With ball valve.
- Suitable for addition of glycol-based anti-freeze up to 50%.
- Minimum/Maximum working temperature: -30 °C / 180 °C.
- Minimum/Maximum working pressure: 0.2 / 10.0 bar.

Type	Dimensions		Con- nection	Shut-off valve		Order Code
	Ø [mm]	H. [mm]				
Flexvent Top Solar 3/8"	54	129	G 3/8" M	no	20	28505

Flexvent Super

- The cap of the Flexvent Super is conical in shape. The advantage of this construction is that the clearance between the water level and venting valve is maximized.
- The air escape duct can be opened or closed with an adjusting screw.
- The venting valve forms an integral part of the cap, so that it is impossible to damage the float vent mechanism from outside.
- Suitable for addition of glycol-based anti-freeze up to 50%.
- Minimum/Maximum working temperature: -10 °C / 120 °C.
- Minimum/Maximum working pressure: 0.2 / 10.0 bar.



Type	Dimensions		Connection	Shut-off valve		Order Code
	Ø [mm]	H. [mm]				
Flexvent Super 1/2"	73	119	G 1/2" F	no	1	28520
Shut-off valve Flexvent Super	-	-	1/2"	-	1	28525

Flexvent Super NPT



- Suitable for addition of glycol-based anti-freeze up to 50%.
- Minimum/Maximum working temperature: -10 °C / 120 °C (14 °F / 248 °F).
- Minimum/Maximum working pressure: 0.2 / 10.0 bar (3 / 145 psi).

Type	Dimensions		Con- nection	Shut-off valve		Order Code
	Ø ["]	H. ["]				
Flexvent Super NPT	2.9	4.7	3/4" FNPT	no	1	28545

Flexvent Pro



- Equipped with bubble breaker.
- Outlet: G 3/4" M.
- Suitable for addition of glycol-based anti-freeze up to 50%.
- Minimum/Maximum working temperature: -10 °C / 120 °C.
- Minimum/Maximum working pressure: 0.2 / 10.0 bar.

Type	Dimensions		Con- nection	Shut-off valve		Order Code
	Ø [mm]	H. [mm]				
Flexvent Pro	63	110	Rp 1/2"	no	1	28519

Flexvent Pro NPT



- Equipped with bubble breaker.
- Outlet: G 3/4" M.
- Suitable for addition of glycol-based anti-freeze up to 50%.
- Minimum/Maximum working temperature: -10 °C / 120 °C (14 °F / 248 °F).
- Minimum/Maximum working pressure: 0.2 / 12.0 bar (3 / 175 psi).

Type	Dimensions		Con- nection	Shut-off valve		Order Code
	Ø ["]	H. ["]				
Flexvent Pro NPT	2.5	4.4	1/2" FNPT	no	1	28521

Flexvent Max



- Suitable for addition of glycol-based anti-freeze up to 50%.
- Minimum/Maximum working temperature: -10 °C / 120 °C.
- Minimum/Maximum working pressure: 0.2 / 25.0 bar.

Type	Dimensions		Con- nection	Shut-off valve		Order Code
	Ø [mm]	H. [mm]				
Flexvent Max 3/4	77	120	Rp 3/4"	no	1	28550

AIR ACCUMULATORS

LTA Air Accumulator



The LTA air accumulator is mounted on riser pipes in supply or return lines. In the air pot the water returns to a non-turbulent state and the free air can collect in the upper part. The air can be released from the Flexvent mounted on top of the air pot. The LTA air accumulator can also be provided with a vent line and manually vented.

- Trouble-free and economic operation by avoiding air problems.
- Easy construction.
- Asymmetrical connections.
- Suitable for addition of glycol-based anti-freeze up to 50%.
- Maximum working temperature: 120 °C.
- Maximum working pressure: 10 bar.

Type	Capa- city [l]	Dimensions		Connection		Weight [kg]		Order Code
		Ø [mm]	H. [mm]	Air- vent	Sys- tem			
LTA 1	1.0	110	185	Rp 3/8"	Rp 1/2"	1.3	1	27581
LTA 2	1.6	110	233	Rp 3/8"	Rp 1/2"	1.7	1	27582
LTA 5	5.0	196	221	Rp 1/2"	Rp 1/2"	4.0	1	27585

SEPARATORS

For use in sealed heating and cooling systems.

Air and dirt separators protect the boilers, pumps and fittings from damage caused by the deposit of dirt particles, increase comfort and improve the yield. Air and dirt separators also offer benefits in the event of application in old systems or when an open system is converted to a closed system.

- Increases comfort and yield.
- Prevents deposit of dirt particles in the boiler.
- The removal of air and dirt from the system water extends the service life of pumps, control equipment and other system accessories.



Flamcovent Smart / Flamco Clean Smart / Flamcovent Clean Smart - How it works

The separation element combined with the return flow ensures excellent air and dirt separation and at the same time saves energy because of the negligible flow resistance. An exceptional rate of at least 40% of the air and dirt is separated per cycle while using only 10% extraction of the main flow.

Inside the chamber of the separator the water velocity is heavily reduced down to less than 1% of the main flow. This efficiently separates microbubbles by allowing the air particles to automatically rise to the air release valve at the top and allows the dirt particles to sink to the bottom to the dirt collector. A supermagnet additionally contributes in trapping ferrous particles.

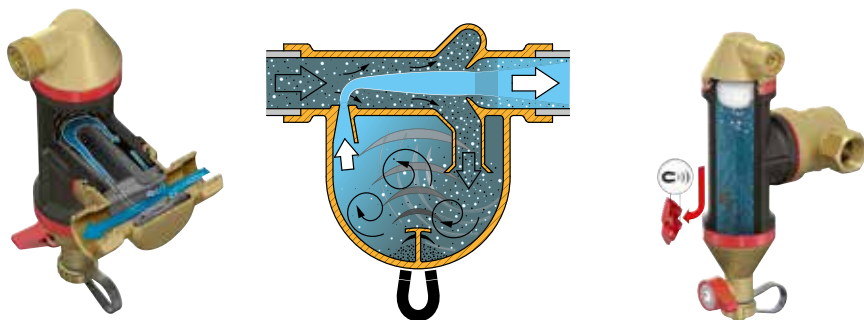
Double thrust function

Two thrust functions ensure efficient deaeration of the system water

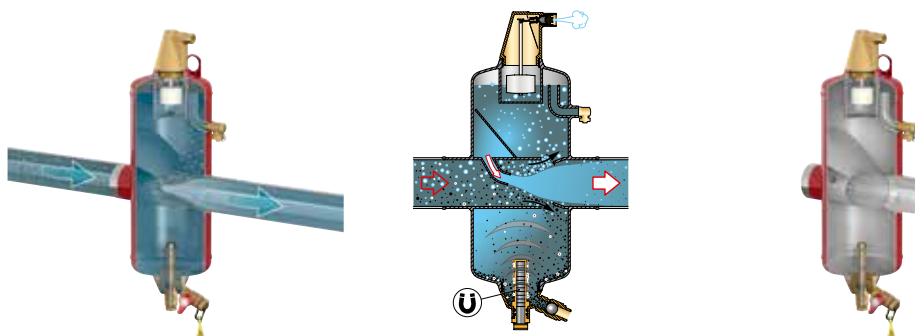
A: The first function is achieved by the separating element in the path of the main flow through the unit, diverting contaminated water into the entrapment chamber.

B: The second effect is achieved by bringing back the clean return flow of water in the centre, upstream of the separating element. This forces the air and dirt particles present in the main flow outwards and into the chambers of the separator to be removed.

22 mm - 2"



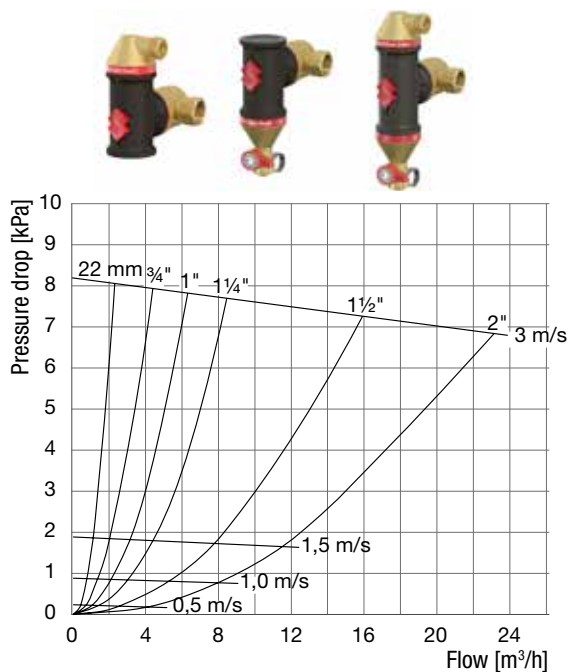
DN 50 - DN 600



Flamcovent Smart / Flamco Clean Smart / Flamcovent Clean Smart - Selection graphs

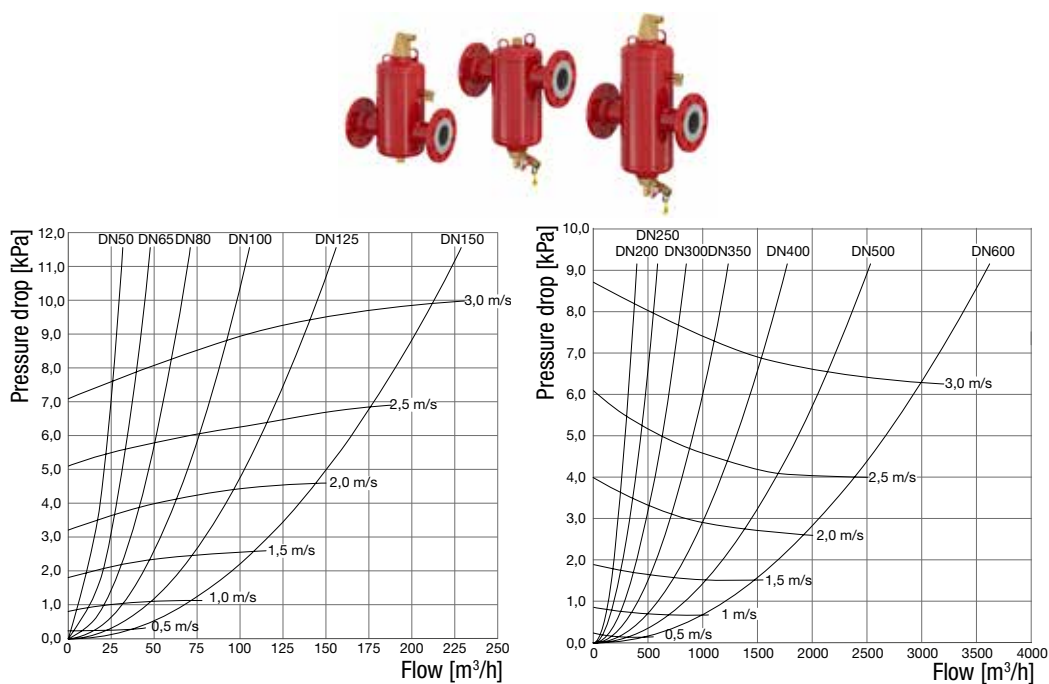
Thanks to the innovative design of the Smart series of air and dirt separators the pressure loss in the system is negligible. Even at flow velocities of 3 m/s, the Smart series delivers the best performance on the market. The high efficiency of these devices ensure that cooling and heating systems provide optimum performance.

22 mm - 2"



8

DN 50 - DN 600



AIR SEPARATORS

For total elimination of air from heating and cooling installations.

Air separators increase comfort and improve the yield. Air separators also offer benefits in the event of application in old systems or when an open system is converted to a closed system.

- Increases comfort and yield.
- The removal of air from the system water extends the service life of pumps, control equipment and other system accessories.

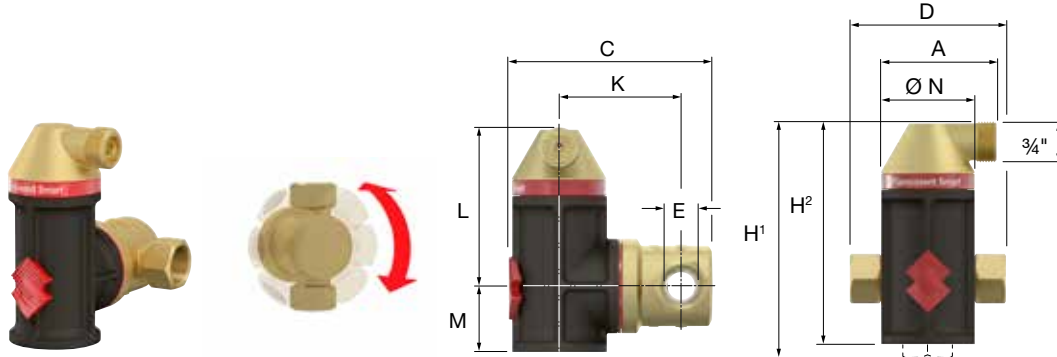


Flamcovent Smart

More compact, lighter, cleaner and even more efficient.

The Flamcovent Smart air separators remove even the smallest microbubbles from the system water. They are virtually maintenance-free and the flow resistance is negligibly low.

- 60% better performance compared to conventional separators.
- Flow velocity up to 3 m/s (9.8 ft/s).
- Can be used with all kinds of pipework.
- Compact dimensions, light weight.
- Extremely low flow resistance and low loss of energy.
- Consistent performance throughout its service life.
- Minimum/Maximum working temperature: -10 °C / 120 °C (14 °F / 248 °F).
- Maximum working pressure: 10 bar (145 psi).
- Suitable for addition of glycol-based anti-freeze up to 50%.



Type	Con- nection (E)	Dimensions									Weight [kg]		Order Code
		A [mm]	C [mm]	D [mm]	K [mm]	L [mm]	M [mm]	H/H1 [mm]	H2 [mm]	Ø N [mm]			
Flamcovent Smart 22	22 mm	74	134	120	78	101	37	161	138	60	0.95	1	30002
Flamcovent Smart ¾	Rp ¾"	74	132	100	78	101	37	151	138	60	0.90	1	30001
Flamcovent Smart 1	Rp 1"	82	155	106	91	139	45	192	184	75	1.12	1	30003
Flamcovent Smart 1 ¼	Rp 1 ¼"	82	165	110	96	139	45	194	184	75	1.27	1	30004
Flamcovent Smart 1 ½	Rp 1 ½"	94	193	129	109	173	54	238	227	92	1.73	1	30005
Flamcovent Smart 2	Rp 2"	94	206	140	117	173	54	243	227	92	2.16	1	30006

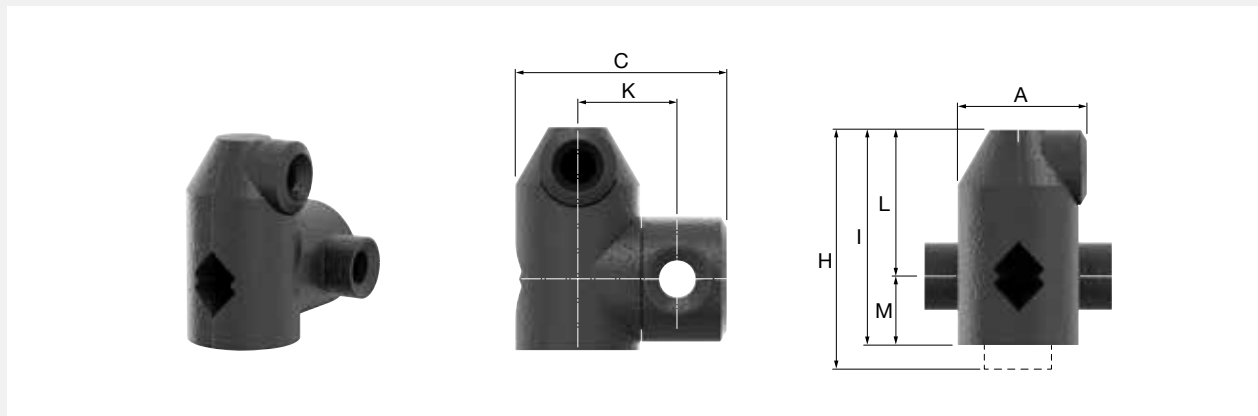
Flamcovent Smart NPT

Type	Con- nection (E)	Dimensions								Weight [lbs]		Order Code
		A ["]	C ["]	D ["]	K ["]	L ["]	M ["]	H/H1 ["]	H2 ["]	Ø N ["]		
Flamcovent Smart 3/4 NPT	3/4" FNPT	2.91	5.20	3.94	3.07	3.98	1.46	5.94	5.43	2.36	1	30201
Flamcovent Smart 1 NPT	1" FNPT	3.23	6.10	4.17	3.58	5.47	1.77	7.56	7.24	2.95	1	30203
Flamcovent Smart 1 1/4 NPT	1 1/4" FNPT	3.23	6.50	4.33	3.78	5.47	1.77	7.64	7.24	2.95	1	30204
Flamcovent Smart 1 1/2 NPT	1 1/2" FNPT	3.70	7.60	5.08	4.29	6.81	2.13	9.37	8.94	3.62	1	30205
Flamcovent Smart 2 NPT	2" FNPT	3.70	8.11	5.51	4.61	6.81	2.13	9.57	8.94	3.62	1	30206

EcoPlus Pack Flamcovent Smart

EPP EcoPlus insulation pack for the Flamcovent Smart.

- EPP insulation thickness: 20 mm.
- Insulation value (λ): 0.036 W/mK.

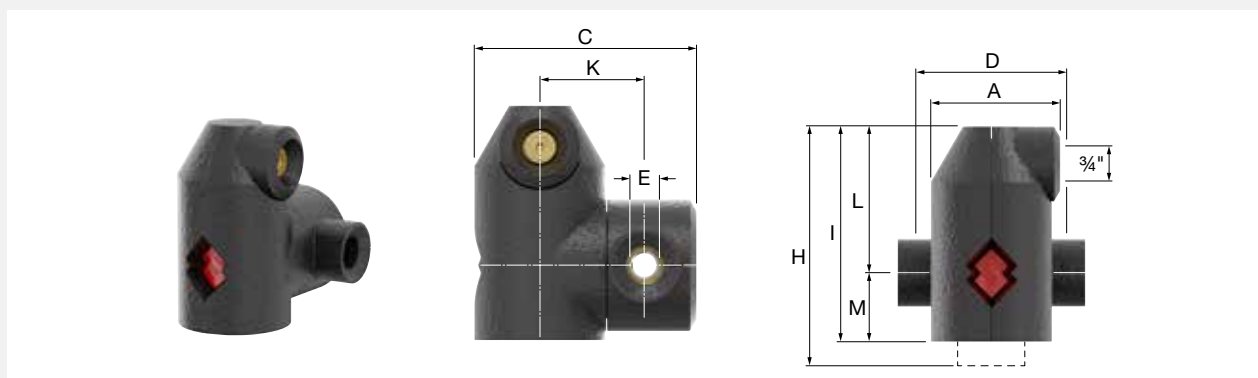


Type	Dimensions							Weight [kg]		Order Code
	A [mm]	C [mm]	K [mm]	L [mm]	M [mm]	H [mm]	I [mm]			
EcoPlus Pack Flamcovent Smart 3/4	104	164	78	118	56	194	174	0.07	1	30251
EcoPlus Pack Flamcovent Smart 1	117	189	91	157	63	233	220	0.11	1	30253
EcoPlus Pack Flamcovent Smart 1 1/4	117	199	96	157	63	233	220	0.11	1	30254
EcoPlus Pack Flamcovent Smart 1 1/2	134	224	109	191	72	279	263	0.16	1	30255
EcoPlus Pack Flamcovent Smart 2	134	237	117	191	72	279	263	0.17	1	30256

Flamcovent Smart EcoPlus

Similar to the Flamcovent Smart but with an EPP insulation mantle included.

- EPP insulation thickness: 20 mm.
- Insulation value (λ): 0.036 W/mK.



Type	Con- nection (E)	Dimensions							Weight [kg]		Order Code
		A [mm]	C [mm]	D [mm]	K [mm]	L [mm]	M [mm]	H [mm]	I [mm]		
Flamcovent Smart EcoPlus 22	22 mm	104	164	120	78	118	56	194	174	1.0	30012
Flamcovent Smart EcoPlus 3/4	Rp 3/4"	104	164	100	78	118	56	194	174	1.0	30011
Flamcovent Smart EcoPlus 1	Rp 1"	117	189	106	91	157	63	233	220	1.2	30013
Flamcovent Smart EcoPlus 1 1/4	Rp 1 1/4"	117	199	110	96	157	63	233	220	1.4	30014
Flamcovent Smart EcoPlus 1 1/2	Rp 1 1/2"	134	224	129	109	191	72	279	263	1.9	30015
Flamcovent Smart EcoPlus 2	Rp 2"	134	237	140	117	191	72	279	263	2.3	30016

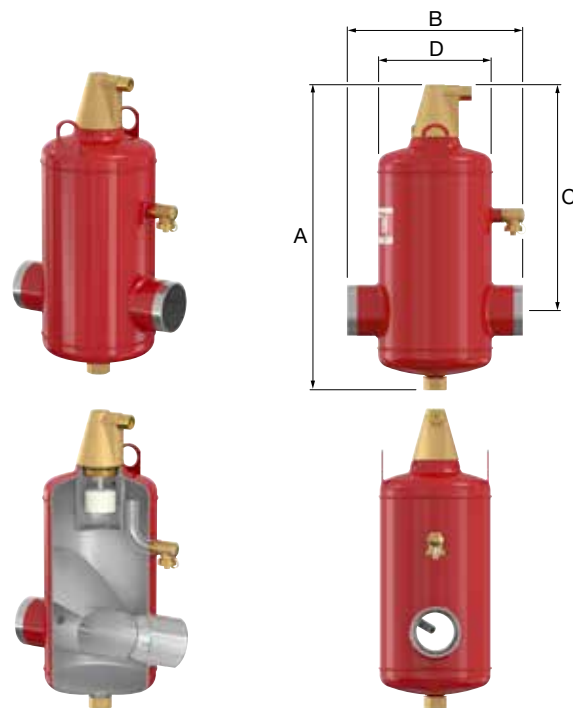
Flamcovent Smart S - 10.0 bar

Optimum deaeration combined with energy retention.

The new steel Flamcovent Smart air separators remove even the tiniest micro-bubbles from the installation water. The Flamcovent Smart performs 60% better than conventional air separators whilst the flow resistance has been reduced to a negligible level.

- Up to 60% better performance compared to conventional air separators.
- Extremely low flow resistance resulting in less energy consumption.
- Standard flow speed up to 3 m/s.
- Constant performance during the entire lifespan.
- Low maintenance.

- Including a welded connection.
- Maximum working pressure: 10 bar.
- Suitable for systems with a maximum flow temperature of 120 °C.
- Suitable for addition of glycol-based anti-freeze up to 50%.
- In accordance with Pressure Equipment Directive 2014/68/EU.



Type	Capacity [l]	Connection		Dimensions				K _v * [m³/h] (ΔP = 1 bar)	Weight [kg]		Order Code
		[DN]	[mm]	A [mm]	B [mm]	C [mm]	D [mm]				
Flamcovent Smart 50 S	8	50	60.3	472	260	338	175	93	9	1	31101
Flamcovent Smart 65 S	8	65	76.1	472	260	338	175	140	10	1	31102
Flamcovent Smart 80 S	25	80	88.9	612	370	435	270	209	17	1	31103
Flamcovent Smart 100 S	25	100	114.3	612	370	435	270	311	20	1	31104
Flamcovent Smart 125 S	59	125	139.7	740	525	510	360	459	36	1	31105
Flamcovent Smart 150 S	60	150	168.3	740	525	510	360	675	37	1	31106
Flamcovent Smart 200 S	123	200	219.1	975	650	670	450	1340	57	1	31107
Flamcovent Smart 250 S	287	250	273.0	1290	850	892	600	1952	125	1	31108

* $K_v = Q / \sqrt{\Delta P}$ Q: Flow [m³/h] ΔP: Pressure drop over the product [bar]

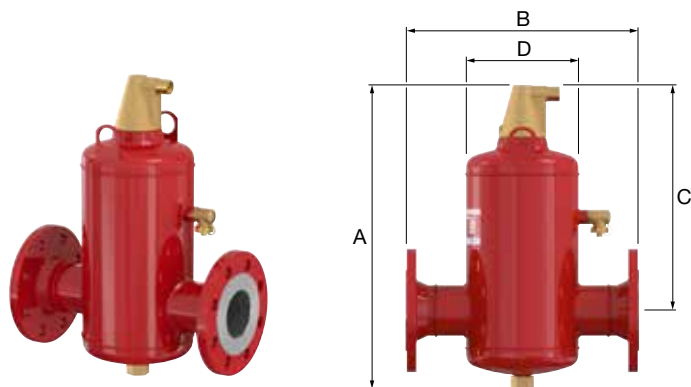
Flow factor K_v: Rate of flow [m³/h] which results in a 1 bar pressure drop across the product. This is different then the maximum allowed flow rate of the product.



Flamcovent Smart F - 10.0 bar

Similar to the Flamcovent Smart S but with flanged connection according to EN 1092-1 PN16.

- Maximum working pressure: 10 bar.
- Models with a maximum working pressure of 25 bar are available upon request.



Type	Capacity [l]	Connection		Dimensions				K _v * [m³/h] (ΔP = 1 bar)	Weight [kg]		Order Code
		[DN]	[mm]	A [mm]	B [mm]	C [mm]	D [mm]				
Flamcovent Smart 50 F	8	50	60.3	472	350	338	175	93	14	1	31001
Flamcovent Smart 65 F	8	65	76.1	472	350	338	175	140	16	1	31002
Flamcovent Smart 65 F **	8	65	76.1	472	350	338	175	140	16	1	31003
Flamcovent Smart 80 F	25	80	88.9	612	470	435	270	209	25	1	31004
Flamcovent Smart 100 F	25	100	114.3	612	470	435	270	311	29	1	31005
Flamcovent Smart 125 F	59	125	139.7	740	635	510	360	459	48	1	31006
Flamcovent Smart 150 F	60	150	168.3	740	635	510	360	675	52	1	31007
Flamcovent Smart 200 F	123	200	219.1	975	774	670	450	1340	80	1	31008
Flamcovent Smart 250 F	287	250	273.0	1290	990	892	600	1952	158	1	31009
Flamcovent Smart 300 F	333	300	323.9	1452	1006	1032	600	2830	184	1	31010
Flamcovent Smart 350 F	646	350	355.6	1600	1214	1109	800	4084	321	1	31011
Flamcovent Smart 400 F	731	400	406.4	1770	1220	1252	800	5866	348	1	31012
Flamcovent Smart 500 F	1384	500	508.0	2096	1580	1470	1000	8387	635	1	31013
Flamcovent Smart 600 F	2390	600	610.0	2492	1870	1760	1200	11939	963	1	31014

* $K_v = Q / \sqrt{\Delta P}$ Q: Flow [m³/h] ΔP: Pressure loss over the product [bar]

Flow factor K_v: Rate of flow [m³/h] which results in a 1 bar pressure drop across the product. This is different then the maximum allowed flow rate of the product.

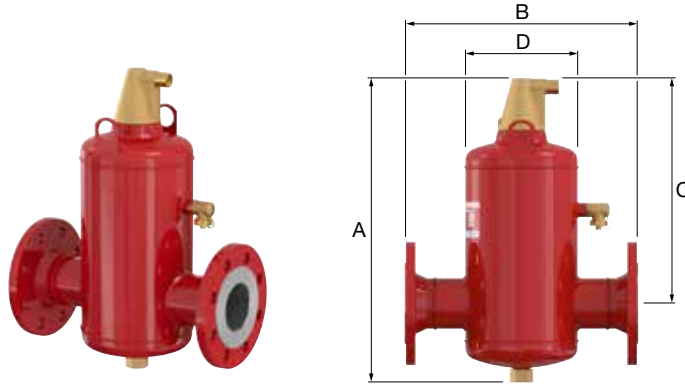
** 4 hole flanged version.



Flamcovent Smart F - 16.0 bar

Similar to the Flamcovent Smart S but with flanged connection according to EN 1092-1 PN16.

- Maximum working pressure: 16 bar.
- Models with a maximum working pressure of 25 bar are available upon request.



Type	Capacity [l]	Connection		Dimensions				K _v * [m³/h] (ΔP = 1 bar)	Weight [kg]		Order Code
		[DN]	[mm]	A [mm]	B [mm]	C [mm]	D [mm]				
Flamcovent Smart 50 F **	8	50	60.3	472	350	338	175	93	17	1	31061
Flamcovent Smart 65 F **	8	65	76.1	472	350	338	175	140	18	1	31062
Flamcovent Smart 80 F	25	80	88.9	612	470	435	270	209	26	1	31063
Flamcovent Smart 100 F	25	100	114.3	612	470	435	270	311	30	1	31064
Flamcovent Smart 125 F	59	125	139.7	740	635	515	360	459	67	1	31065
Flamcovent Smart 150 F	60	150	168.3	740	635	510	360	675	70	1	31066
Flamcovent Smart 200 F	123	200	219.1	975	774	670	450	1340	103	1	31067
Flamcovent Smart 250 F	287	250	273.0	1290	990	892	600	1952	200	1	31068
Flamcovent Smart 300 F	333	300	323.9	1452	1006	1032	600	2830	239	1	31069
Flamcovent Smart 350 F	646	350	355.6	1600	1214	1109	800	4084	387	1	31070
Flamcovent Smart 400 F	731	400	406.4	1770	1220	1252	800	5866	416	1	31071
Flamcovent Smart 500 F	1384	500	508.0	2096	1580	1470	1000	8387	777	1	31072
Flamcovent Smart 600 F	2390	600	610.0	2492	1870	1760	1200	11939	1465	1	31073

* $K_v = Q / \sqrt{\Delta P}$ Q: Flow [m³/h] ΔP: Pressure loss over the product [bar]

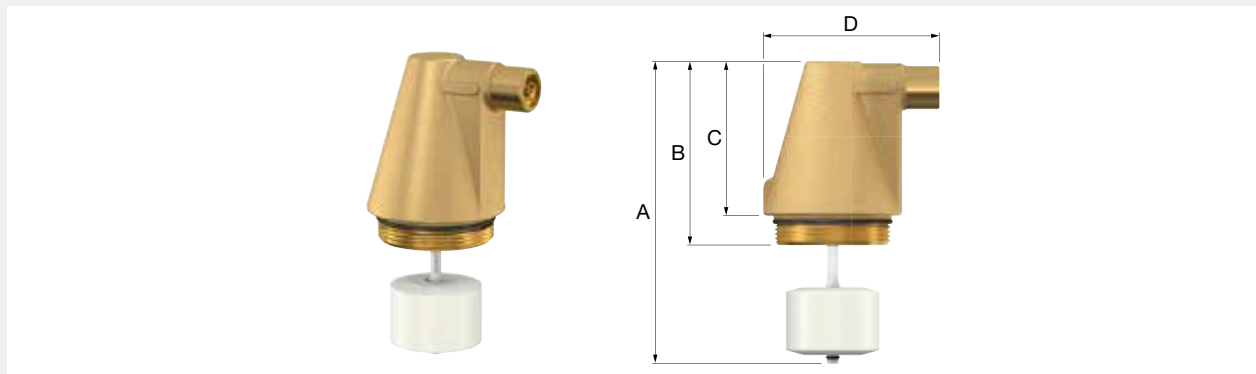
Flow factor K_v: Rate of flow [m³/h] which results in a 1 bar pressure drop across the product. This is different then the maximum allowed flow rate of the product.

** CE Marked.

Spare vent cap L

Cone-shaped air chamber equipped with a long float to create more distance to the vent valve. This reduces the risk of contamination of the valve seat to a minimum.

- Maximum system working pressure: 25 bar.
- Maximum working pressure: 10 bar.

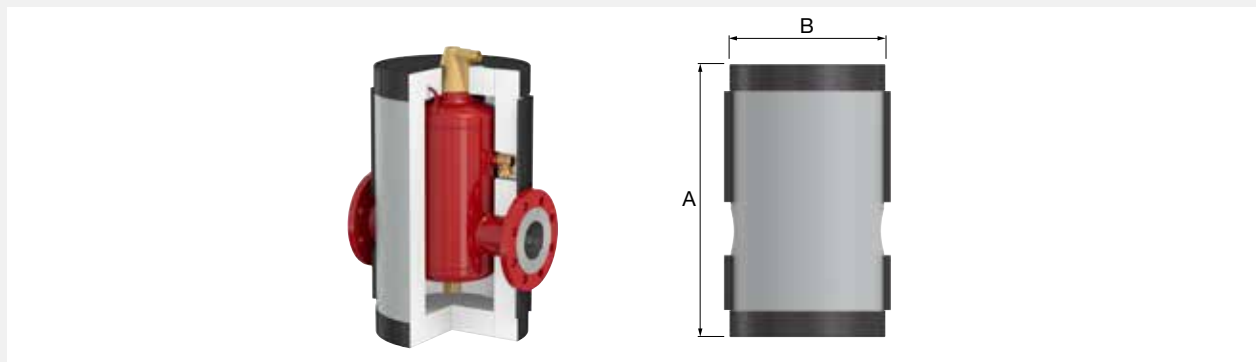


Type	Used for	Dimensions					Order Code
		A [mm]	B [mm]	C [mm]	D [mm]		
Spare vent cap L	Flamcovent (Smart) DN 50 - 600, Flamcovent Clean (Smart) DN 50 - 600, FlexBalance (Plus)	155	94	79	90	1	28555

Flamcovent IsoPlus

This insulation set for Flamcovent (Smart) can be easily attached and consists of two halves that lock into each other by means of hook fasteners and deep-drawn synthetic caps. The melamine insulation foam (thickness 50 mm) is glued to the polystyrene outer jacket (thickness 1 mm).

- Fire class B2 according to DIN 4102.
- Suitable for retrospective installation.
- 100% recyclable.
- Insulation value (λ): 0.035 W/mK.
- Colour: aluminium coloured (RAL 9006).



Type	Dimensions		Weight [kg]		Order Code
	A [mm]	B [mm]			
Flamcovent IsoPlus 50	500	280	1.3	1	28160
Flamcovent IsoPlus 65	500	280	1.4	1	28161
Flamcovent IsoPlus 80	650	380	2.2	1	28162
Flamcovent IsoPlus 100	650	380	2.3	1	28163
Flamcovent IsoPlus 125	790	470	3.4	1	28164
Flamcovent IsoPlus 150	790	470	3.5	1	28165
Flamcovent IsoPlus 200	1000	560	5.0	1	28166

DIRT SEPARATORS

For use in sealed heating and cooling systems.

Dirt separators protect the boilers, pumps and fittings from damage caused by the deposit of dirt particles. Dirt separators also offer benefits in the event of application in old systems or when an open system is converted to a closed system.

- Prevents deposit of dirt particles in the boiler.
- The removal of dirt particles from the system water extends the service life of pumps, control equipment and other system accessories.

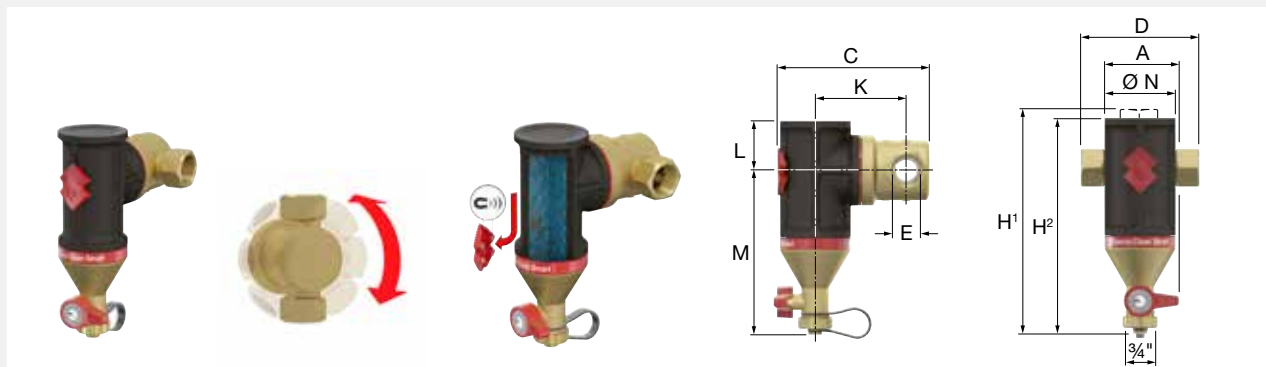


Flamco Clean Smart

More compact, lighter, cleaner and even more efficient.

The Flamco Clean Smart dirt separators remove even minuscule dirt particles from the system water. They are virtually maintenance-free and the flow resistance is negligibly low.

- 60% better performance compared to conventional separators.
- Flow velocity up to 3 m/s (9.8 ft/s).
- Four neodymium supermagnets are incorporated into the logo.
- Can be used with all kinds of pipework.
- Compact dimensions, light weight.
- Extremely low flow resistance and low loss of energy.
- Consistent performance throughout its service life.
- Minimum/Maximum working temperature: -10 °C / 120 °C (14 °F / 248 °F).
- Maximum working pressure: 10 bar (145 psi).
- Suitable for addition of glycol-based anti-freeze up to 50%.



Type	Con- nection (E)	Dimensions									Weight [kg]		Order Code
		A [mm]	C [mm]	D [mm]	K [mm]	L [mm]	M [mm]	H/H1 [mm]	H2 [mm]	Ø N [mm]			
Flamco Clean Smart 22	22 mm	63	136	120	78	37	140	200	177	60	0.98	1	30022
Flamco Clean Smart 3/4	Rp 3/4"	63	133	100	78	37	140	190	177	60	0.94	1	30021
Flamco Clean Smart 1	Rp 1"	76	155	106	91	44	179	231	223	75	1.11	1	30023
Flamco Clean Smart 1 1/4	Rp 1 1/4"	76	165	110	96	44	179	233	223	75	1.26	1	30024
Flamco Clean Smart 1 1/2	Rp 1 1/2"	94	193	129	109	54	212	277	266	92	1.72	1	30025
Flamco Clean Smart 2	Rp 2"	94	206	140	117	54	212	282	266	92	2.15	1	30026

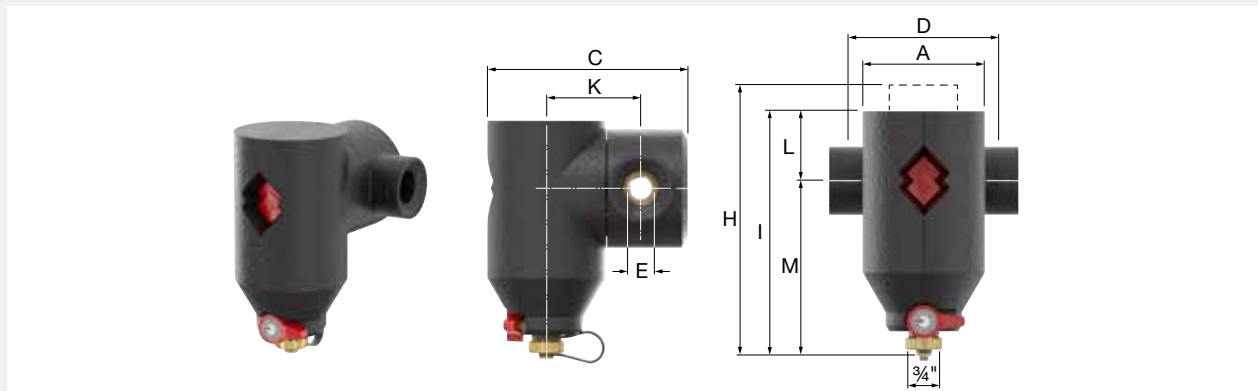
Flamco Clean Smart NPT

Type	Con- nection (E)	Dimensions									Weight [lbs]		Order Code
		A ["]	C ["]	D ["]	K ["]	L ["]	M ["]	H/H1 ["]	H2 ["]	Ø N ["]			
Flamco Clean Smart 3/4 NPT	3/4" FNPT	2.48	5.24	3.94	3.07	1.46	5.51	7.48	6.97	2.36	2.07	1	30221
Flamco Clean Smart 1 NPT	1" FNPT	2.99	6.10	4.17	3.58	1.73	7.05	9.09	8.78	2.95	2.45	1	30223
Flamco Clean Smart 1 1/4 NPT	1 1/4" FNPT	2.99	6.50	4.33	3.78	1.73	7.05	9.17	8.78	2.95	2.78	1	30224
Flamco Clean Smart 1 1/2 NPT	1 1/2" FNPT	3.70	7.60	5.08	4.29	2.13	8.35	10.91	10.47	3.62	3.79	1	30225
Flamco Clean Smart 2 NPT	2" FNPT	3.70	8.11	5.51	4.61	2.13	8.35	11.10	10.47	3.62	4.74	1	30226

Flamco Clean Smart EcoPlus

Similar to the Flamco Clean Smart but with an EPP insulation mantle included.

- EPP insulation thickness: 20 mm.
- Insulation value (λ): 0.036 W/mK.

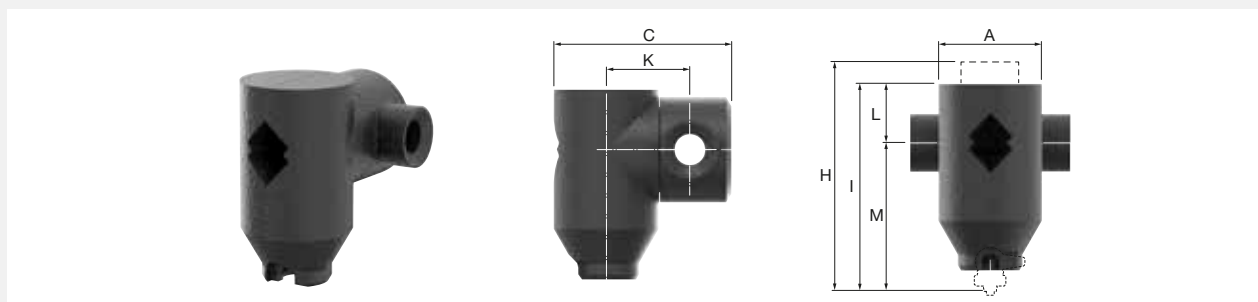


Type	Con- nection (E)	Dimensions								Weight [kg]		Order Code
		A [mm]	C [mm]	D [mm]	K [mm]	L [mm]	M [mm]	H [mm]	I [mm]			
Flamco Clean Smart EcoPlus 22	22 mm	97	164	120	78	56	140	216	196	1.05	1	30032
Flamco Clean Smart EcoPlus 3/4	Rp 3/4"	97	164	100	78	56	140	216	196	1.01	1	30031
Flamco Clean Smart EcoPlus 1	Rp 1"	112	189	106	91	63	178	255	241	1.21	1	30033
Flamco Clean Smart EcoPlus 1 1/4	Rp 1 1/4"	112	199	110	96	63	178	255	241	1.37	1	30034
Flamco Clean Smart EcoPlus 1 1/2	Rp 1 1/2"	131	224	129	109	73	212	300	285	1.88	1	30035
Flamco Clean Smart EcoPlus 2	Rp 2"	131	237	285	117	73	212	300	285	2.32	1	30036

EcoPlus Pack Flamco Clean Smart

EPP EcoPlus insulation pack for the Flamco Clean Smart.

- EPP insulation thickness: 20 mm.
- Insulation value (λ): 0.036 W/mK.



Type	Dimensions							Weight [kg]		Order Code
	A [mm]	C [mm]	K [mm]	L [mm]	M [mm]	H [mm]	I [mm]			
EcoPlus Pack Flamco Clean Smart ¾	97	164	78	56	140	216	196	0.07	1	30261
EcoPlus Pack Flamco Clean Smart 1	112	189	91	63	178	255	241	0.11	1	30263
EcoPlus Pack Flamco Clean Smart 1 ¼	112	199	96	63	178	255	241	0.11	1	30264
EcoPlus Pack Flamco Clean Smart 1 ½	131	224	109	73	212	300	285	0.16	1	30265
EcoPlus Pack Flamco Clean Smart 2	131	237	117	73	212	300	285	0.16	1	30266

Magnets Smart 22 mm - 2"

- Set of five magnets per bag.



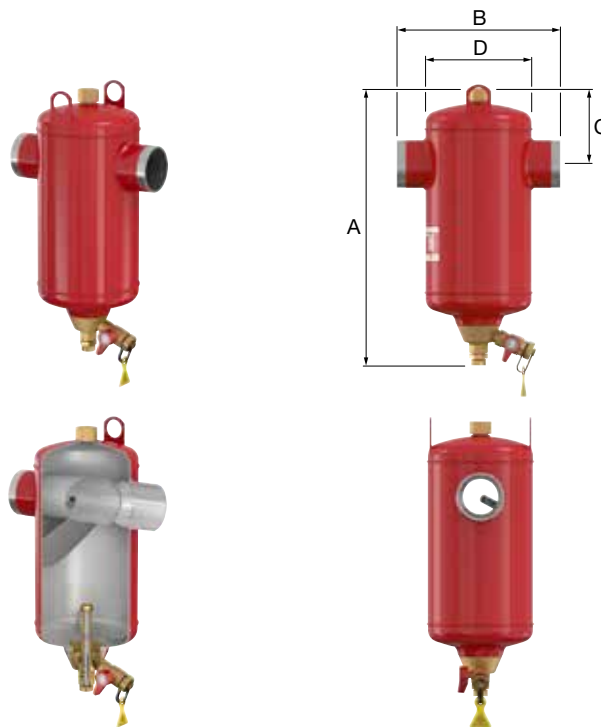
Type	Suitable for		Order Code
Magnets	Flamco(vent) Clean Smart (EcoPlus) 22 mm - 2"	1	40007

Flamco Clean Smart S - 10.0 bar

Optimum dirt separation combined with energy efficiency.

The new steel Flamco Clean Smart dirt separators remove even the most miniscule dirt particles from the installation water. The Flamco Clean Smart performs 60% better than conventional dirt separators whilst the flow resistance has been reduced to a negligible level.

- Up to 60% better performance compared to conventional dirt separators.
- Extremely low flow resistance resulting in less energy consumption.
- Standard flow speed up to 3 m/s.
- Twenty-five neodymium supermagnets are incorporated into the dirt scraper.
- Constant performance during the entire lifespan.
- Low maintenance.
- Including a welded connection.
- Maximum working pressure: 10 bar.
- Suitable for systems with a maximum flow temperature of 120 °C.
- Suitable for addition of glycol-based anti-freeze up to 50%.
- In accordance with Pressure Equipment Directive 2014/68/EU.



Type	Capacity [l]	Connection		Dimensions				K _v * [m³/h] (ΔP = 1 bar)	Weight [kg]		Order Code
		[DN]	[mm]	A [mm]	B [mm]	C [mm]	D [mm]				
Flamco Clean Smart 50 S	8	50	60.3	475	260	129	175	93	9	1	31121
Flamco Clean Smart 65 S	8	65	76.1	475	260	129	175	140	10	1	31122
Flamco Clean Smart 80 S	25	80	88.9	620	370	172	270	209	17	1	31123
Flamco Clean Smart 100 S	25	100	114.3	620	370	172	270	311	20	1	31124
Flamco Clean Smart 125 S	59	125	139.7	790	525	219	360	459	36	1	31125
Flamco Clean Smart 150 S	60	150	168.3	790	525	224	360	675	37	1	31126
Flamco Clean Smart 200 S	123	200	219.1	970	650	361	450	1340	57	1	31127
Flamco Clean Smart 250 S	287	250	273.0	1272	850	395	600	1952	125	1	31128

* K_v = Q / √ΔP Q: Flow [m³/h] ΔP: Pressure loss over the product [bar]

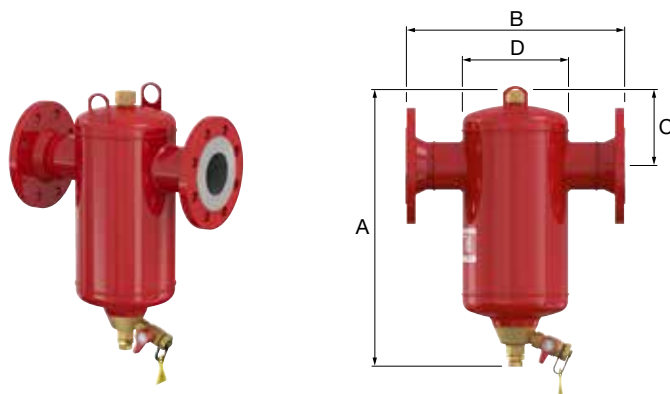
Flow factor K_v: Rate of flow [m³/h] which results in a 1 bar pressure drop across the product. This is different then the maximum allowed flow rate of the product.



Flamco Clean Smart F - 10.0 bar

Similar to the Flamco Clean Smart S but with flanged connection according to EN 1092-1 PN16.

- Maximum working pressure: 10 bar.
- Models with a maximum working pressure of 25 bar are available upon request.



Type	Capacity [l]	Connection		Dimensions				K _v * [m³/h] (ΔP = 1 bar)	Weight [kg]		Order Code
		[DN]	[mm]	A [mm]	B [mm]	C [mm]	D [mm]				
Flamco Clean Smart 50 F	8	50	60.3	475	350	129	175	93	14	1	31021
Flamco Clean Smart 65 F	8	65	76.1	475	350	129	175	140	16	1	31022
Flamco Clean Smart 65 F **	8	65	76.1	475	350	129	175	140	16	1	31023
Flamco Clean Smart 80 F	25	80	88.9	620	470	172	270	209	25	1	31024
Flamco Clean Smart 100 F	25	100	114.3	620	470	172	270	311	29	1	31025
Flamco Clean Smart 125 F	59	125	139.7	790	635	219	360	459	48	1	31026
Flamco Clean Smart 150 F	60	150	168.3	790	635	224	360	675	52	1	31027
Flamco Clean Smart 200 F	123	200	219.1	970	774	361	450	1340	80	1	31028
Flamco Clean Smart 250 F	287	250	273.0	1272	990	395	600	1952	158	1	31029
Flamco Clean Smart 300 F	333	300	323.9	1437	1006	420	600	2830	184	1	31030
Flamco Clean Smart 350 F	646	350	355.6	1581	1214	487	800	4084	321	1	31031
Flamco Clean Smart 400 F	731	400	406.4	1754	1220	517	800	5866	348	1	31032
Flamco Clean Smart 500 F	1384	500	508.0	2081	1580	627	1000	8387	635	1	31033
Flamco Clean Smart 600 F	2390	600	610.0	2477	1870	785	1200	11939	963	1	31034

* $K_v = Q / \sqrt{\Delta P}$ Q: Flow [m³/h] ΔP: Pressure loss over the product [bar]

Flow factor K_v: Rate of flow [m³/h] which results in a 1 bar pressure drop across the product. This is different then the maximum allowed flow rate of the product.

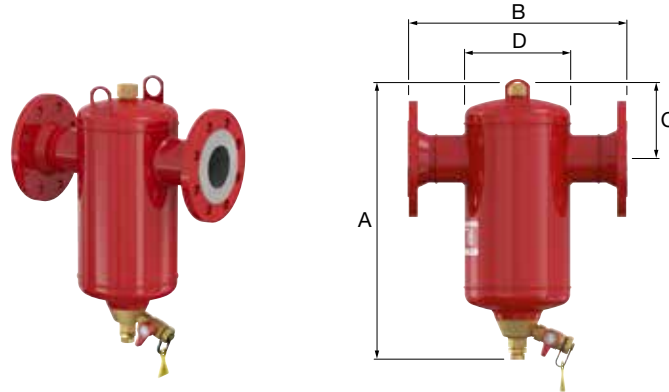
** 4 hole flanged version.



Flamco Clean Smart F - 16.0 bar

Similar to the Flamco Clean Smart S but with flanged connection according to EN 1092-1 PN16.

- Maximum working pressure: 16 bar.
- Models with a maximum working pressure of 25 bar are available upon request.



Type	Capacity [l]	Connection		Dimensions				K _v * [m³/h] (ΔP = 1 bar)	Weight [kg]		Order Code
		[DN]	[mm]	A [mm]	B [mm]	C [mm]	D [mm]				
Flamco Clean Smart 50 F **	8	50	60.3	452	350	129	175	93	17	1	31081
Flamco Clean Smart 65 F **	8	65	76.1	452	350	129	175	140	18	1	31082
Flamco Clean Smart 80 F	25	80	88.9	592	470	172	270	209	26	1	31083
Flamco Clean Smart 100 F	25	100	114.3	592	470	172	270	311	30	1	31084
Flamco Clean Smart 125 F	59	125	139.7	719	635	219	360	459	67	1	31085
Flamco Clean Smart 150 F	60	150	168.3	719	635	224	360	675	70	1	31086
Flamco Clean Smart 200 F	123	200	219.1	951	774	361	450	1340	103	1	31087
Flamco Clean Smart 250 F	287	250	273.0	1272	990	395	600	1952	199	1	31088
Flamco Clean Smart 300 F	333	300	323.9	1437	1006	420	600	2830	238	1	31089
Flamco Clean Smart 350 F	646	350	355.6	1581	1214	487	800	4084	386	1	31090
Flamco Clean Smart 400 F	731	400	406.4	1754	1220	517	800	5866	415	1	31091
Flamco Clean Smart 500 F	1384	500	508.0	2081	1580	627	1000	8387	776	1	31092
Flamco Clean Smart 600 F	2390	600	610.0	2477	1870	785	1200	11939	1464	1	31093

* $K_v = Q / \sqrt{\Delta P}$ Q: Flow [m³/h] ΔP: Pressure loss over the product [bar]

Flow factor K_v: Rate of flow [m³/h] which results in a 1 bar pressure drop across the product. This is different then the maximum allowed flow rate of the product.

** CE Marked.

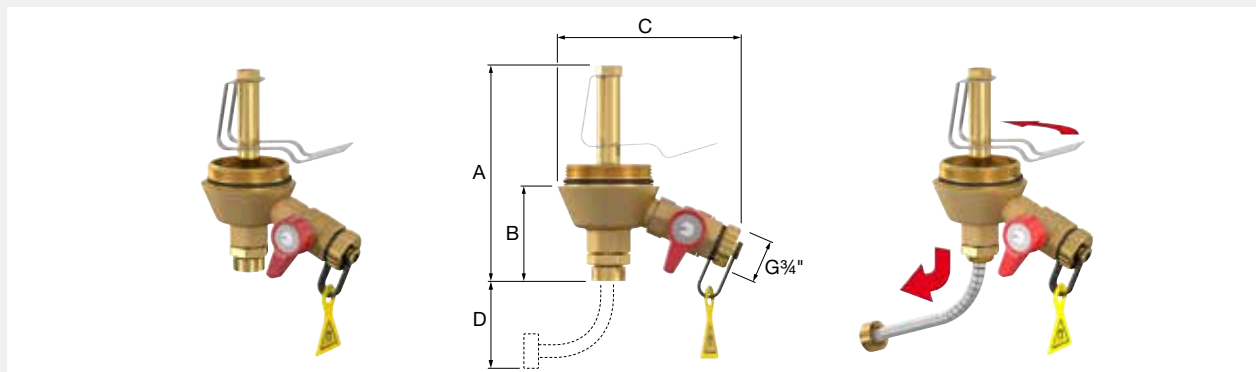
Dirt collector

Removeable dirt collector for Flamco Clean (Smart) and Flamcovent Clean Smart consisting of several parts:

- A double scraper - one at the bottom of the collection vessel and one in the cone of the dirt scraper.
- Magnet holder with 25 neodymium super magnets.
- Drain valve with operating lever and maintenance label.

By pulling the magnet downwards the magnetite particles are attracted to the bottom side of the dirt scraper. There they can be removed easily via the drain valve.

The removable magnet is designed in such a manner that minimum space is needed under the dirt separator in order to remove it.

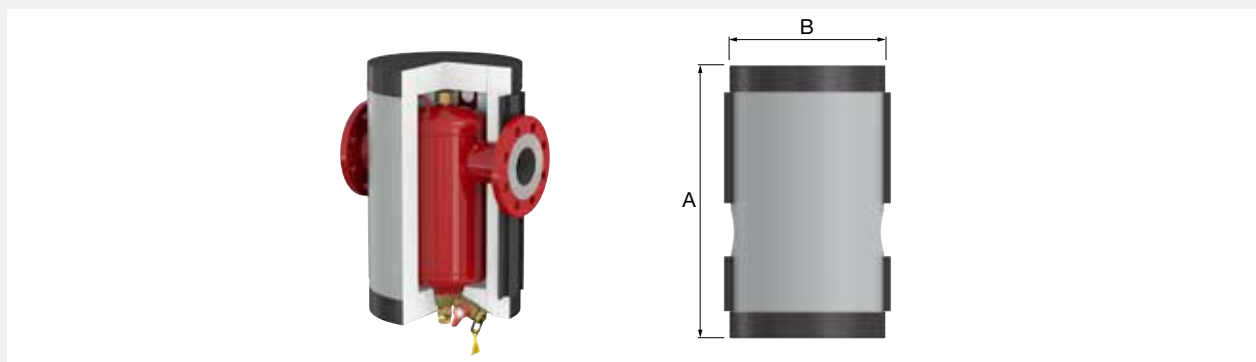


Type	Connection	Dimensions				Weight [kg]		Order Code
		A [mm]	B [mm]	C [mm]	D [mm]			
Dirt Collector	G 2" M	148	66	128	60	0.9	1	31250

Flamco Clean IsoPlus

This insulation set for Flamco Clean (Smart) can be easily attached and consists of two halves that lock into each other by means of hook fasteners and deep-drawn synthetic caps. The melamine insulation foam (thickness 50 mm) is glued to the polystyrene outer jacket (thickness 1 mm).

- Fire class B2 according to DIN 4102.
- Suitable for retrospective installation.
- 100% recyclable.
- Insulation value (λ): 0.035 W/mK.
- Colour: aluminium coloured (RAL 9006).



Type	Dimensions		Weight [kg]		Order Code
	A [mm]	B [mm]			
Flamco Clean IsoPlus 50	460	280	1.3	1	28870
Flamco Clean IsoPlus 65	460	280	1.4	1	28871
Flamco Clean IsoPlus 80	615	380	2.2	1	28872
Flamco Clean IsoPlus 100	615	380	2.3	1	28873
Flamco Clean IsoPlus 125	755	470	3.5	1	28874
Flamco Clean IsoPlus 150	755	470	3.5	1	28875
Flamco Clean IsoPlus 200	965	560	5.0	1	28876

COMBINED AIR & DIRT SEPARATORS

For use in sealed heating and cooling systems.

Air and dirt separators protect the boilers, pumps and fittings from damage caused by the deposit of dirt particles, increase comfort and improve the yield. Air and dirt separators also offer benefits in the event of application in old systems or when an open system is converted to a closed system.

- Increases comfort and yield.
- Prevents deposit of dirt particles in the boiler.
- The removal of air and dirt from the system water extends the service life of pumps, control equipment and other system accessories.

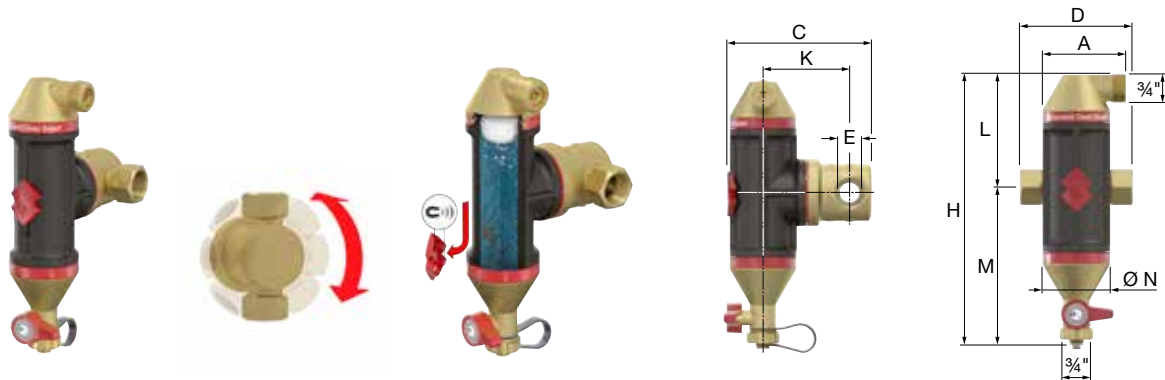


Flamcovent Clean Smart

More compact, lighter, cleaner and even more efficient.

The Flamcovent Clean Smart air and dirt separators remove even the smallest microbubbles and minuscule dirt particles from the system water. They are virtually maintenance-free and the flow resistance is negligibly low.

- 60% better performance compared to conventional separators.
- Flow velocity up to 3 m/s (9.8 ft/s.).
- Four neodymium supermagnets are incorporated into the logo.
- Can be used with all kinds of pipework.
- Compact dimensions, light weight.
- Extremely low flow resistance and low loss of energy.
- Consistent performance throughout its service life.
- Maximum working pressure: 10 bar (145 psi).
- Minimum/Maximum working temperature: -10 °C / 120 °C (14 °F / 248 °F).
- Suitable for addition of glycol-based anti-freeze up to 50%.



Type	Connection (E)	Dimensions								Weight [kg]		Order Code
		A [mm]	C [mm]	D [mm]	K [mm]	L [mm]	M [mm]	H/H1 [mm]	Ø N [mm]			
Flamcovent Clean Smart 22	22 mm	74	136	120	78	101	140	241	60	1.2	1	30042
Flamcovent Clean Smart 3/4	Rp 3/4"	74	133	100	78	101	140	241	60	1.2	1	30041
Flamcovent Clean Smart 1	Rp 1"	82	155	106	91	139	179	318	75	1.5	1	30043
Flamcovent Clean Smart 1 1/4	Rp 1 1/4"	82	165	110	96	139	179	318	75	1.6	1	30044
Flamcovent Clean Smart 1 1/2	Rp 1 1/2"	94	193	129	109	173	212	385	92	2.2	1	30045
Flamcovent Clean Smart 2	Rp 2"	94	206	140	117	173	212	385	92	2.6	1	30046

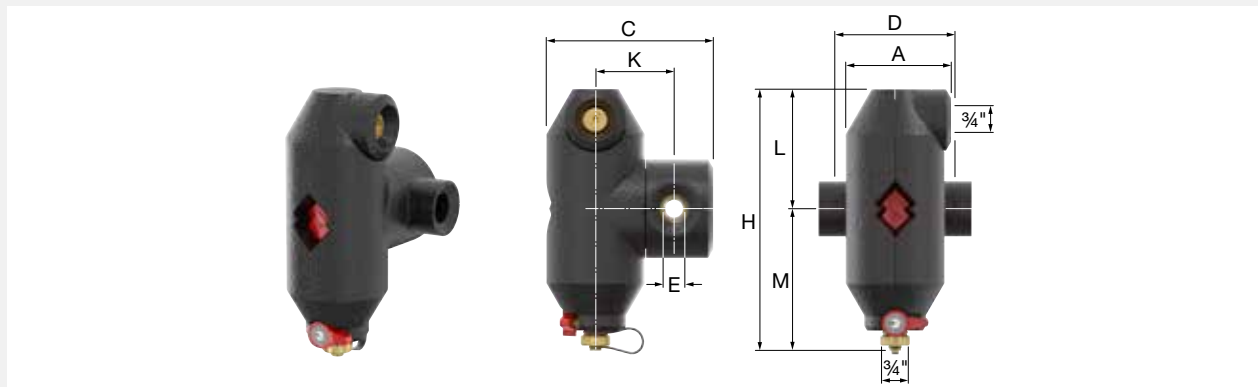
Flamcovent Clean Smart NPT

Type	Connection (E)	Dimensions								Weight [lbs]		Order Code
		A ["]	C ["]	D ["]	K ["]	L ["]	M ["]	H/H1 ["]	Ø N ["]			
Flamcovent Clean Smart 3/4 NPT	3/4" FNPT	2.91	5.24	3.94	3.07	3.98	5.51	9.49	2.36	2.65	1	30241
Flamcovent Clean Smart 1 NPT	1" FNPT	3.23	6.10	4.17	3.58	5.47	7.05	12.52	2.95	3.31	1	30243
Flamcovent Clean Smart 1 1/4 NPT	1 1/4" FNPT	3.23	6.50	4.33	3.78	5.47	7.05	12.52	2.95	3.53	1	30244
Flamcovent Clean Smart 1 1/2 NPT	1 1/2" FNPT	3.70	7.60	5.08	4.29	6.81	8.35	15.16	3.62	4.85	1	30245
Flamcovent Clean Smart 2 NPT	2" FNPT	3.70	8.11	5.51	4.61	6.81	8.35	15.16	3.62	5.73	1	30246

Flamcovent Clean Smart EcoPlus

Similar to the Flamcovent Clean Smart but with an EPP insulation mantle included.

- EPP insulation thickness: 20 mm.
- Insulation value (λ): 0.036 W/mK.

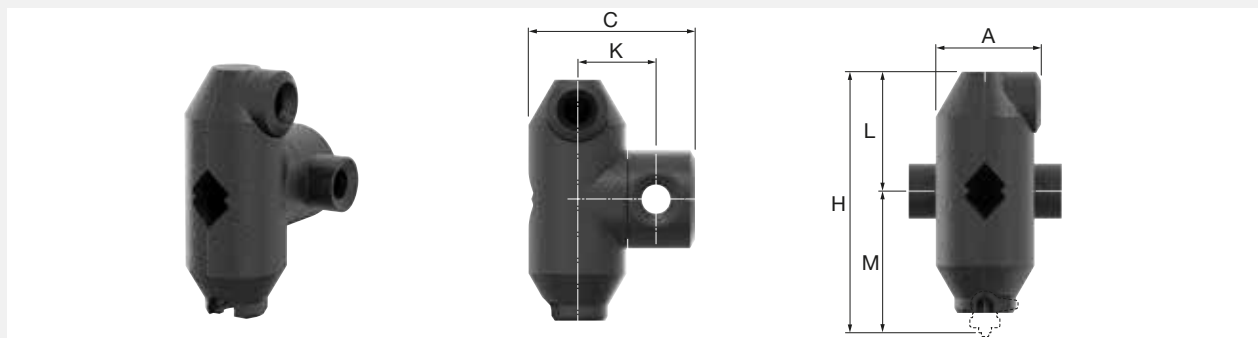


Type	Con- nection (E)	Dimensions							Weight [kg]		Order Code
		A [mm]	C [mm]	D [mm]	K [mm]	L [mm]	M [mm]	H [mm]			
Flamcovent Clean Smart EcoPlus 22	22 mm	104	164	120	78	118	140	258	1.3	1	30052
Flamcovent Clean Smart EcoPlus 3/4	Rp 3/4"	104	164	100	78	118	140	258	1.3	1	30051
Flamcovent Clean Smart EcoPlus 1	Rp 1"	117	189	106	91	157	178	335	1.6	1	30053
Flamcovent Clean Smart EcoPlus 1 1/4	Rp 1 1/4"	117	199	110	96	157	178	335	1.7	1	30054
Flamcovent Clean Smart EcoPlus 1 1/2	Rp 1 1/2"	134	224	129	109	191	212	403	2.4	1	30055
Flamcovent Clean Smart EcoPlus 2	Rp 2"	134	237	140	117	191	212	403	2.8	1	30056

EcoPlus Pack Flamcovent Clean Smart

EPP EcoPlus insulation pack for the Flamcovent Clean Smart.

- EPP insulation thickness: 20 mm.
- Insulation value (λ): 0.036 W/mK.



Type	Dimensions							Weight [kg]		Order Code
	A [mm]	C [mm]	K [mm]	L [mm]	M [mm]	H [mm]				
EcoPlus Pack Flamcovent Clean Smart 3/4	104	164	78	118	140	258	0.07	1		30271
EcoPlus Pack Flamcovent Clean Smart 1	117	189	91	157	178	335	0.13	1		30273
EcoPlus Pack Flamcovent Clean Smart 1 1/4	117	199	96	157	178	335	0.13	1		30274
EcoPlus Pack Flamcovent Clean Smart 1 1/2	134	224	109	191	212	403	0.19	1		30275
EcoPlus Pack Flamcovent Clean Smart 2	134	237	117	191	212	403	0.20	1		30276

Magnets Smart 22 mm - 2"



- Set of five magnets per bag.

Type	Suitable for		Order Code
Magnets	Flamco(vent) Clean Smart (EcoPlus) 22 mm - 2"	1	40007

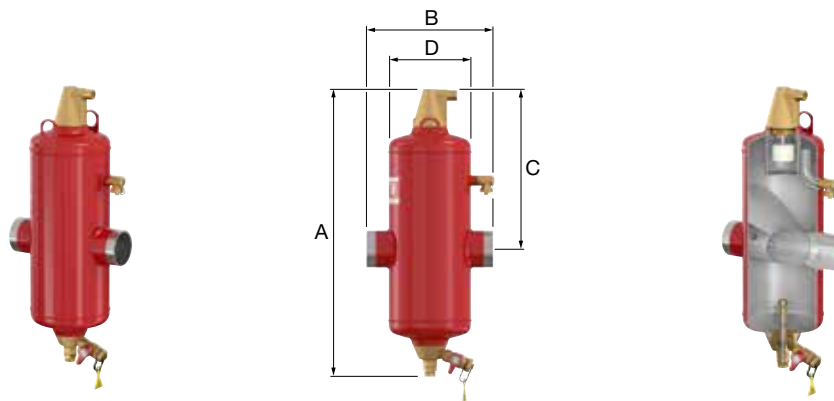
Flamcovent Clean Smart S - 10.0 bar

Optimum air and dirt separation combined with energy efficiency.

The new steel Flamcovent Clean Smart air and dirt separators remove even the tiniest microbubbles and minuscule dirt particles from the system water. The Flamco Clean Smart performs 60% better than conventional air and dirt separators whilst the flow resistance has been reduced to a negligible level.

- Up to 60% better performance compared to conventional air and dirt separators.
- Extremely low flow resistance resulting in less energy consumption.
- Standard flow speed up to 3 m/s (9.8 ft/s).
- Twenty-five neodymium supermagnets are incorporated into the dirt scraper.
- Constant performance during the entire lifespan.
- Low maintenance.

- Including a welded connection.
- Maximum working pressure: 10 bar.
- Suitable for systems with a maximum flow temperature of 120 °C.
- Suitable for addition of glycol-based anti-freeze up to 50%.
- In accordance with Pressure Equipment Directive 2014/68/EU.



Type	Capacity [l]	Connection		Dimensions				K _v * [m³/h] (ΔP = 1 bar)	Weight [kg]		Order Code
		[DN]	[mm]	A [mm]	B [mm]	C [mm]	D [mm]				
Flamcovent Clean Smart 50 S	10	50	60.3	603	260	338	175	93	11	1	31141
Flamcovent Clean Smart 65 S	10	65	76.1	603	260	338	175	140	11	1	31142
Flamcovent Clean Smart 80 S	33	80	88.9	795	370	435	270	209	20	1	31143
Flamcovent Clean Smart 100 S	33	100	114.3	795	370	435	270	311	23	1	31144
Flamcovent Clean Smart 125 S	78	125	139.7	967	525	510	360	459	42	1	31145
Flamcovent Clean Smart 150 S	78	150	168.3	967	525	510	360	675	47	1	31146
Flamcovent Clean Smart 200 S	158	200	219.1	1280	650	705	450	1340	63	1	31147
Flamcovent Clean Smart 250 S	370	250	273.0	1620	850	892	600	1952	132	1	31148

* K_v = Q / √ΔP Q: Flow [m³/h] ΔP: Pressure loss over the product [bar]

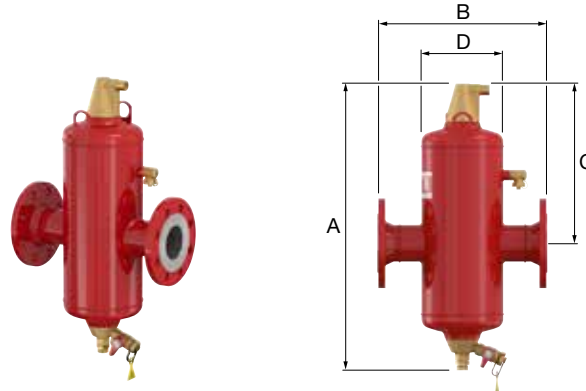
Flow factor K_v: Rate of flow [m³/h] which results in a 1 bar pressure drop across the product. This is different then the maximum allowed flow rate of the product.



Flamcovent Clean Smart F - 10.0 bar

Similar to the Flamcovent Clean Smart S but with flanged connection according to EN 1092-1 PN16.

- Maximum working pressure: 10 bar.
- Models with a maximum working pressure of 25 bar are available upon request.



Type	Capacity [l]	Connection [DN]	Connection [mm]	Dimensions A [mm]	Dimensions B [mm]	Dimensions C [mm]	Dimensions D [mm]	K _v * [m³/h] (ΔP = 1 bar)	Weight [kg]		Order Code
Flamcovent Clean Smart 50 F	8	50	60.3	603	350	338	175	93	16	1	31041
Flamcovent Clean Smart 65 F	10	65	76.1	603	350	338	175	140	17	1	31042
Flamcovent Clean Smart 65 F**	10	65	76.1	603	350	338	175	140	17	1	31043
Flamcovent Clean Smart 80 F	33	80	88.9	795	470	435	270	209	28	1	31044
Flamcovent Clean Smart 100 F	33	100	114.3	795	470	435	270	311	32	1	31045
Flamcovent Clean Smart 125 F	78	125	139.7	967	635	510	360	459	55	1	31046
Flamcovent Clean Smart 150 F	78	150	168.3	967	635	510	360	675	63	1	31047
Flamcovent Clean Smart 200 F	158	200	219.1	1280	774	705	450	1340	86	1	31048
Flamcovent Clean Smart 250 F	370	250	273.1	1620	990	892	600	1952	165	1	31049
Flamcovent Clean Smart 300 F	415	300	323.9	1784	1006	1032	600	2830	200	1	31050
Flamcovent Clean Smart 350 F	840	350	355.6	2028	1214	1109	800	4084	350	1	31051
Flamcovent Clean Smart 400 F	927	400	406.4	2201	1220	1252	800	5866	385	1	31052
Flamcovent Clean Smart 500 F	1768	500	508.0	2628	1580	1470	1000	8387	745	1	31053
Flamcovent Clean Smart 600 F	3056	600	610.0	3124	1870	1757	1200	11939	1075	1	31054

* K_v = Q / √ΔP Q: Flow [m³/h] ΔP: Pressure loss over the product [bar]

Flow factor K_v: Rate of flow [m³/h] which results in a 1 bar pressure drop across the product. This is different then the maximum allowed flow rate of the product.

** 4 hole flanged connection.



Flamcovent Clean Smart F - 16.0 bar

Similar to the Flamcovent Clean Smart S but with flanged connection according to EN 1092-1 PN16.

- Maximum working pressure: 16 bar.
- Models with a maximum working pressure of 25 bar are available upon request.

Type	Capacity [l]	Connection [DN]	Connection [mm]	Dimensions A [mm]	Dimensions B [mm]	Dimensions C [mm]	Dimensions D [mm]	K _v * [m³/h] (ΔP = 1 bar)	Weight [kg]		Order Code
Flamcovent Clean Smart 50 F**	8	50	60.3	603	350	333	175	93	19	1	31074
Flamcovent Clean Smart 65 F**	10	65	76.1	603	350	333	175	140	20	1	31075
Flamcovent Clean Smart 80 F	33	80	88.9	795	470	435	270	209	30	1	31076
Flamcovent Clean Smart 100 F	33	100	114.3	795	470	435	270	311	34	1	31077
Flamcovent Clean Smart 125 F	78	125	139.7	967	635	515	360	459	77	1	31078
Flamcovent Clean Smart 150 F	78	150	168.3	967	635	515	360	675	80	1	31079
Flamcovent Clean Smart 200 F	158	200	219.1	1280	774	705	450	1340	118	1	31080
Flamcovent Clean Smart 250 F	370	250	273.1	1620	990	892	600	1952	228	1	31094
Flamcovent Clean Smart 300 F	415	300	323.9	1784	1006	1032	600	2830	267	1	31095
Flamcovent Clean Smart 350 F	840	350	355.6	2028	1214	1109	800	4084	451	1	31096
Flamcovent Clean Smart 400 F	927	400	406.4	2201	1220	1252	800	5866	480	1	31097
Flamcovent Clean Smart 500 F	1768	500	508.0	2628	1580	1470	1000	8387	877	1	31098
Flamcovent Clean Smart 600 F	3056	600	610.0	3124	1870	1757	1200	11939	1679	1	31099

* K_v = Q / √ΔP Q: Flow [m³/h] ΔP: Pressure loss over the product [bar]

Flow factor K_v: Rate of flow [m³/h] which results in a 1 bar pressure drop across the product. This is different then the maximum allowed flow rate of the product.

** CE Marked.

Flamcovent Clean Smart F - ANSI flanges

Similar to the Flamcovent Clean Smart F but with ANSI flange connection sizes (4 hole).

- Minimum/Maximum working temperature: -10 °C / 120 °C (14 °F / 248 °F).
- Maximum working pressure: 10 bar (145 psi).
- ANSI flange connection sizes (4 hole).
- Available in ASME approved and non-ASME approved executions.

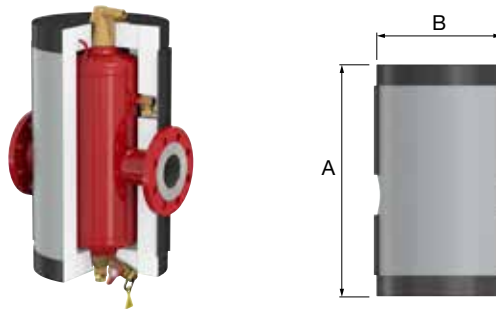
Type	Capacity [gal]	Connection		Dimensions				C _v [gal/min]	Weight [lbs]		Order Code
		[DN]	["]	A ["]	B ["]	C ["]	D ["]				
Flamcovent Clean Smart 65 F	2.6	65	2.5	23.74	13.78	13.11	6.89	162	35	1	30360
Flamcovent Clean Smart 80 F	8.7	80	3.0	31.30	18.50	17.13	10.63	242	55	1	30361
Flamcovent Clean Smart 100 F	8.7	100	4.0	31.30	18.50	17.13	10.63	360	64	1	30632
Flamcovent Clean Smart 125 F	20.6	125	5.0	38.07	25.00	20.28	14.17	531	106	1	30363
Flamcovent Clean Smart 150 F	20.6	150	6.0	38.07	25.00	20.28	14.17	780	115	1	30364
Flamcovent Clean Smart 65 F *	2.6	65	2.5	23.74	13.78	13.11	6.89	162	35	1	30370
Flamcovent Clean Smart 80 F *	8.7	80	3.0	31.30	18.50	17.13	10.63	242	55	1	30371
Flamcovent Clean Smart 100 F *	8.7	100	4.0	31.30	18.50	17.13	10.63	360	64	1	30372
Flamcovent Clean Smart 125 F *	20.6	125	5.0	38.07	25.00	20.28	14.17	531	106	1	30373
Flamcovent Clean Smart 150 F *	20.6	150	6.0	38.07	25.00	20.28	14.17	780	115	1	30374

* ASME approved.

Flamcovent Clean IsoPlus

This insulation set for Flamcovent Clean (Smart) can be easily attached and consists of two halves that lock into each other by means of hook fasteners and deep-drawn synthetic caps. The melamine insulation foam (thickness 50 mm) is glued to the polystyrene outer jacket (thickness 1 mm).

- Fire class B2 according to DIN 4102.
- Suitable for retrospective installation.
- 100% recyclable.
- λ-value: 0.035 W/mK.
- Colour: aluminium coloured (RAL 9006).

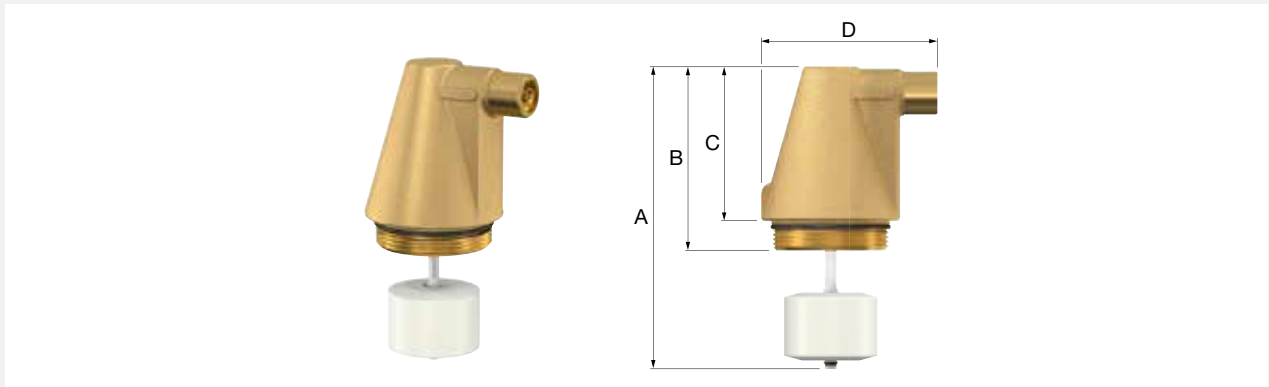


Type	Dimensions		Weight [kg]		Order Code
	A [mm]	B [mm]			
Flamcovent Clean IsoPlus 50	502	280	1.4	1	28860
Flamcovent Clean IsoPlus 65	502	280	1.5	1	28861
Flamcovent Clean IsoPlus 80	694	380	2.3	1	28862
Flamcovent Clean IsoPlus 100	694	380	2.4	1	28863
Flamcovent Clean IsoPlus 125	866	470	3.5	1	28864
Flamcovent Clean IsoPlus 150	866	470	3.6	1	28865
Flamcovent Clean IsoPlus 200	1178	560	5.5	1	28866

Spare vent cap L

Cone-shaped air chamber equipped with a long float to create more distance to the vent valve. This reduces the risk of contamination of the valve seat to a minimum.

- Maximum system working pressure: 25 bar.
- Maximum working pressure: 10 bar.



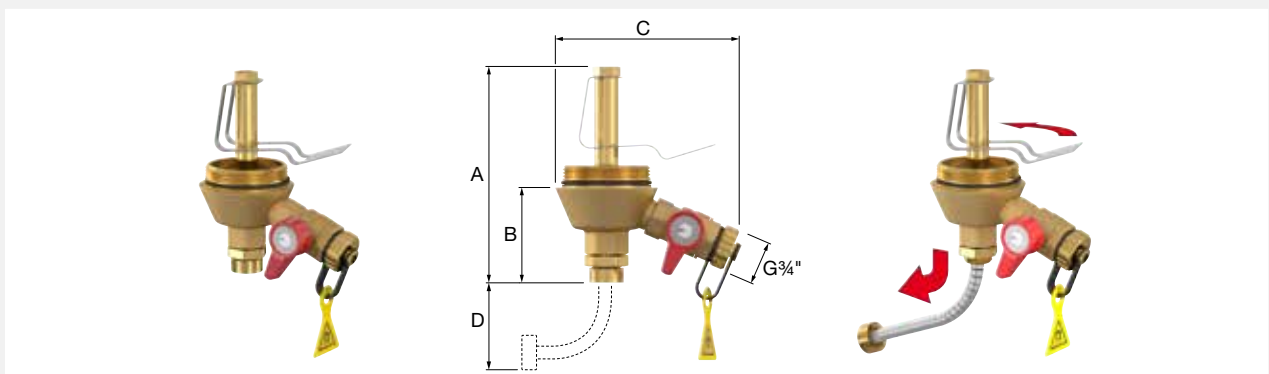
Type	Used for	Dimensions					Order Code
		A [mm]	B [mm]	C [mm]	D [mm]		
Spare vent cap L	Flamcovent (Smart) DN 50 - 600, Flamcovent Clean (Smart) DN 50 - 600, FlexBalance (Plus)	155	94	79	90	1	28555

Dirt collector

Removeable dirt collector for Flamco Clean (Smart) and Flamcovent Clean Smart consisting of several parts:

- A double scraper - one at the bottom of the collection vessel and one in the cone of the dirt scraper.
- Magnet holder with 25 neodymium super magnets.
- Drain valve with operating lever and maintenance label.

By pulling the magnet downwards the magnetite particles are attracted to the bottom side of the dirt scraper. There they can be removed easily via the drain valve.
The removable magnet is designed in such a manner that minimum space is needed under the dirt separator in order to remove it.



Type	Connection	Dimensions				Weight [kg]		Order Code
		A [mm]	B [mm]	C [mm]	D [mm]			
Dirt Collector	G 2" M	148	66	128	60	0.9	1	31250

Flamco Vacuum Degassers

The Flamco Vacuum Degasser range is used to remove dissolved gasses from sealed chilled and heating systems. The equipment utilises a multifunction digital controller with a simple user interface. The equipment is an advanced product that combines a pressure step principle with side system configuration to minimize the effects on the sealed system. The real-time displays show the status of the equipment while monitoring the system pressure and health of its own components.

PSD

- Floor standing vacuum degasser unit.
- Effective, automatically repeated and controlled deaeration.
- With turbo mode for rapid deaeration.



Flexfiller Plus / Midifill Plus

- Floor standing, combined digital top-up pressurisation unit with vacuum degasser.
- 18 litre break tank (Midifill: 4 litre).



PressDS Plus

- Floor standing, combined digital top-up pressurisation unit with vacuum degasser and additive tank.
- 4 litre break tank.
- 18 litre additive tank.



General Technical Data

Housing: Mild Steel CR4, Powder Coating.
Break Tank: WRAS Approved material (Plus only).
Pump: See pump details.
Fluid Category Protection: Type AB Weir Overflow gap / Category 5 (Plus only).
Controller: MODBUS.
Directive: PED 2014/68/EU.
International Protection Marking: IP 54.

Type		Number of pumps	Pressure Rating [PN]	Max. Delivery Pressure [bar]	Max. Delivery Flow Rate [l/min]	Floor Standing / Wall Mounted	Break Tank Capacity [l]	System Volume (guide) [l]
PSD	Midi PSD	1	10	5.0	12	wall	N/A	< 50000
	250D	2	10	6.0	18	floor	N/A	< 300000
	280D	2	10	8.0	18	floor	N/A	< 300000
	2160D	2	16	16.0	18	floor	N/A	< 300000
Flexfiller Plus	Midifill Plus	1	10	5.0	12	wall	4	< 50000
	250D	2	10	6.0	18	floor	18	< 300000
	280D	2	10	8.0	18	floor	18	< 300000
	2160D	2	16	16.0	18	floor	18	< 300000
PressDS Plus	250	2	10	6.0	18	floor	4	< 300000
	280	2	10	8.0	18	floor	4	< 300000
	2160	2	16	16.0	18	floor	4	< 300000

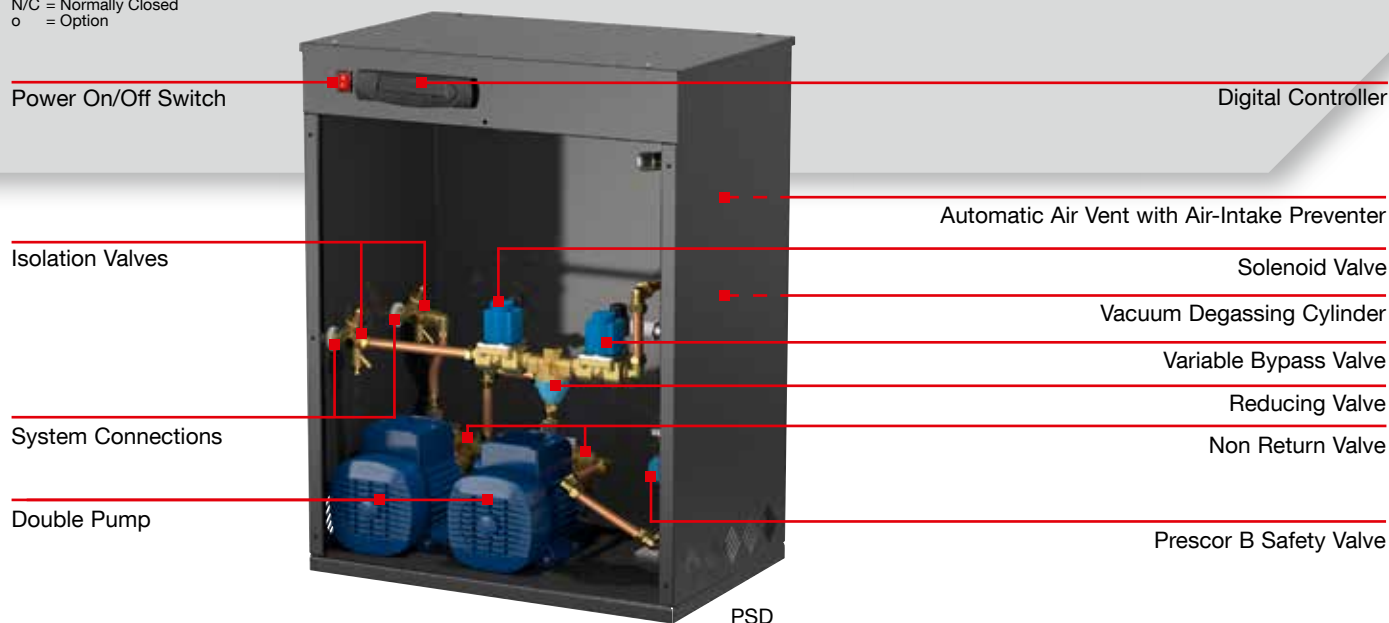
The Flamco active deaeration range is designed to utilise Henry's Law on the solubility of gasses. By creating a low pressure zone (a pressure step) within the equipment, dissolved gasses are dragged out of solution and vented to atmosphere. Flamco equipment is fully configurable and is able to achieve vacuum

pressures as low as -0.95 bar (gauge), typically however Chilled systems are degassed to -0.5 bar (gauge) and heating systems to 0.0 bar (gauge). Flamco also offer a CIBSE approved CPD training module on air removal to help determine exactly what level of pressure step is required for different systems.

Features and Options

		Function	Mechanical Features														Electrical Features														Volt Free Contacts 8A/230V																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Type		Degasser Pressurisation Dosing Cabinet	Wall mounted Floor mounted Duty pump Vacuum Cylinder Duty / Standby pumps Pump inlet Strainer Pump Non return valve Category 5 A/B air gap to BS13077 WRAS approved float Additive Tank Break Tank Cold fill pressure 3.5-6.0 bar Cold fill pressure 6.0-8.0 bar Cold fill pressure 8.0-16.0 bar Microprocessor control with LED display Pressure transducer control Password protection Pump trip and fail monitoring Pump check routine System quick-fill mode System flood detection Service due reminder Adjustable differential Cascade - duty / assist Manual run Turbo Mode Perge Seconds Low water alarm High water alarm Excessive starts alarm Hours run Pump activation counter Pump interrupted counter Alarm logging Audible alarm Anti seize run (60 days) Automatic duty rotation (twin pumps units) MODBUS BACnet RS485 Connectivity Boiler interlock (N/C) Common alarm (N/C) Fail safe Low pressure (N/O) High pressure (N/O) Sensor Health (N/O) Pump trip with VF contacts (N/O) High/low alarm set points with auto reset with VF contacts (N/O)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

N/O = Normally Open
N/C = Normally Closed
o = Option



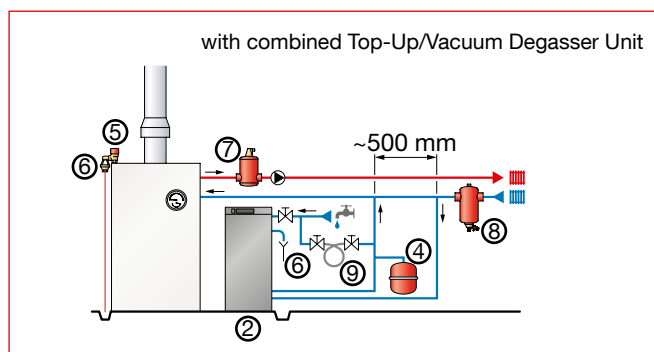
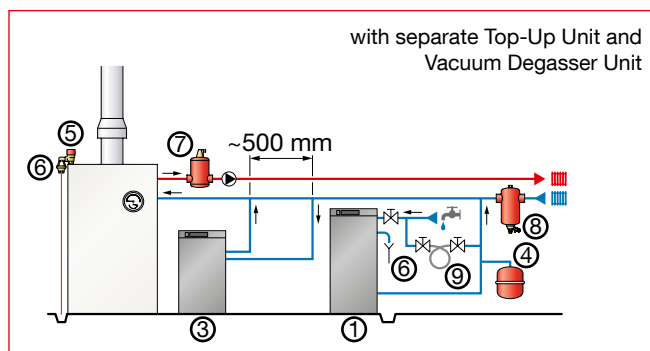
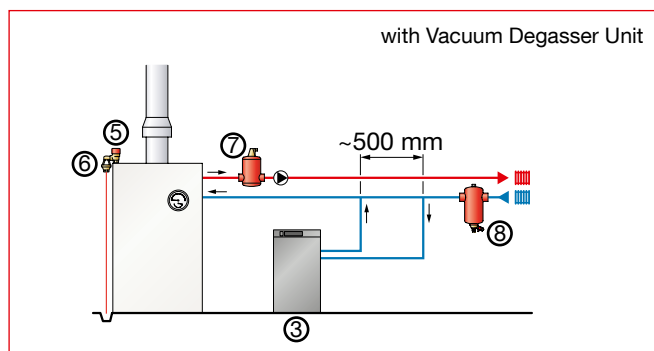
Installation and Pump Details

Installation and Placement

The vacuum degasser should be installed in the return header of the system, on the suction side of the circulating pump, in a frost-free and humidity free area. The point of connection will be the same as the

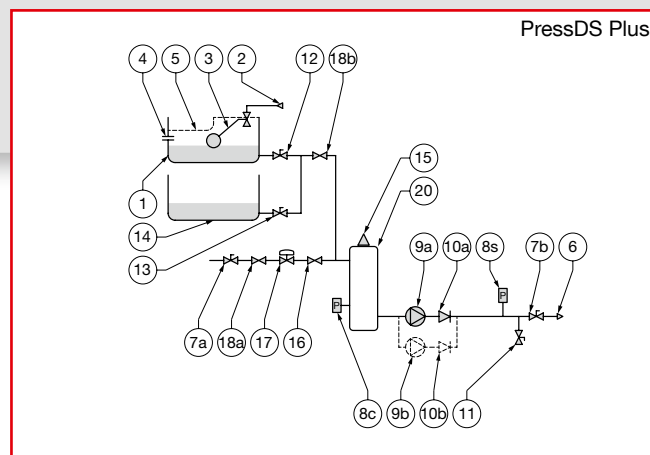
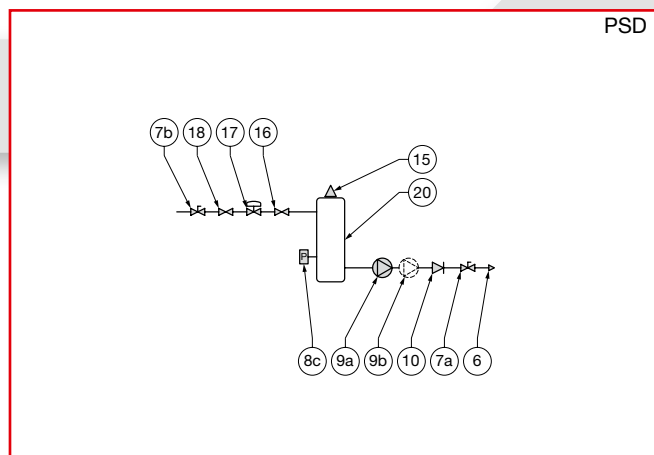
system expansion vessel to provide a neutral pressure reading. The two system connections must be installed on the return pipe approximately 0.5 metre apart.

System Schematics

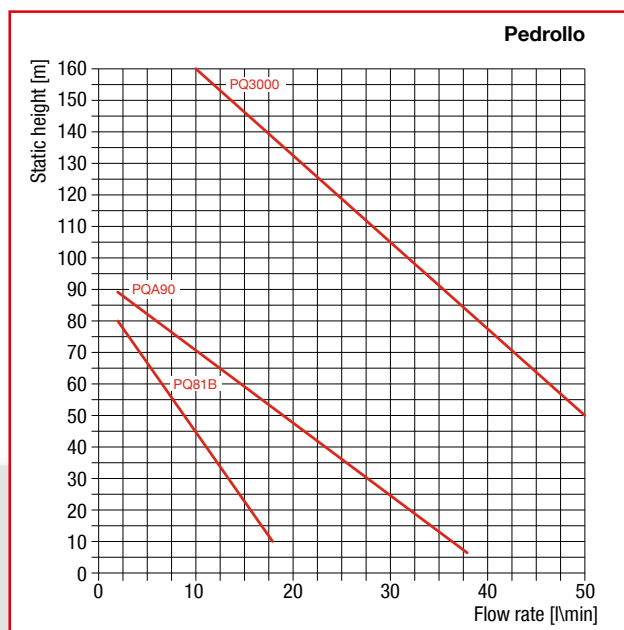


Nr	Description
1	Flexfiller Top-Up Unit
2	Flexfiller Plus / PressDS Plus Combined Unit
3	PSD Pressure Step Degasser
4	Flexcon Expansion Vessel
5	Prescor Safety Valve
6	Tundish
7	Flamcovent Smart Deaerator
8	Flamco Clean Smart Dirt Separator
9	Filling Loop (Optional)

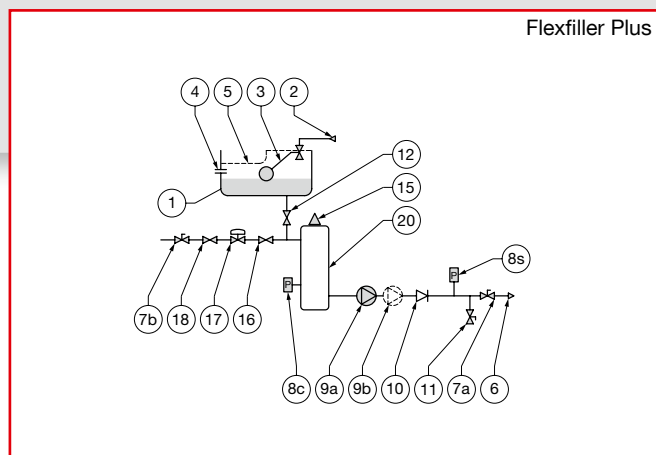
Product Schematics



Pump Details



Type		Pump Qty	Pump Type	Pump Body	Impeller	Insulation Class	IP rating
PSD	Midi PSD	1	Pedrollo PQ81B	Brass	Brass	F	IPX4
	250D	2	Pedrollo PQ81B	Brass	Brass	F	IPX4
	280D	2	Pedrollo PQA90	Ryton	Brass	F	IPX4
	2160D	2	Pedrollo PQ3000	Cast Iron	Bronze	H	IPX5
Flexfiller Plus	Midifill Plus	1	Pedrollo PQ81B	Brass	Brass	F	IPX4
	250D	2	Pedrollo PQ81B	Brass	Brass	F	IPX4
	280D	2	Pedrollo PQA90	Ryton	Brass	F	IPX4
	2160D	2	Pedrollo PQ3000	Cast Iron	Bronze	H	IPX5
PressDS Plus	250	2	Pedrollo PQ81B	Brass	Brass	F	IPX4
	280	2	Pedrollo PQA90	Brass	Brass	F	IPX4
	2160	2	Pedrollo PQ3000	Cast Iron	Bronze	H	IPX5



Number	Description
1	Break tank
2	Mains water inlet
3	Float Operated valve
4	Overflow connection
5	AB air gap backflow protection
6	Supply to sealed system
7 (7a/7b)	Isolation valve
8 (8a/8b)	Pressure transmitter
8s	Pressure sensor (system)
8c	Pressure sensor (cylinder)
9 (9a/9b)	Pump(s)
10 (10a/10b)	Non Return valve
11 (11a/11b)	Drain valve
12	Water balancing valve
13	Additive balancing valve
14	Additive tank
15	Automatic air vent
16	Variable bypass valve
17	Reducing valve
18(18a/18b)	Solenoid valve
20	Cylinder

Spare Parts Vacuum Degassers

Type		Spare Part																																						
		Article number																																						
		Micro Control	EL-TRANS-001	BSS F014	1-6V TRANSDUCER	060G3853	FCCG NO	FC SC1	BSS F16	BSS P33	BSS M003	BSS M021	EL-TK-FSW-L90	EL-TK-FSW-L55	FLOAT SWT GLYCOL	N/A	BSS F18	BSS F11	FC044	BSS P61	BSS F12	PSD Controller	PSD SS Cylinder	MIDI CYLINDER	Vac Transducer	PSD S001A	PSD S001A Mod	PSD S001B/C	PSD Float Switch	FC PRV 050WG	FC Ventisuper AIV	FC336	FC361	FCBP 75	FCSV050	BSS Flexhose	BSS PQ81b	FC039	FC042	
PSD	Midi PSD																																							
	250																																							
	280																																							
	2160																																							
Flexfiller Plus	Midifill Plus																																							
	250D																																							
	280D																																							
	2160D																																							
PressDS Plus	250D																																							
	280D																																							
	2160D																																							



PSD PRESSURE STEP DEGASSERS

The Flamco PSD is used to remove dissolved air from sealed chilled and heating water systems. The equipment utilises a multifunction digital controller with a simple user interface. The equipment is an advanced product that combines a pressure step principle with side system configuration to minimize the effects on the sealed system. The real-time display shows the status of the equipment while monitoring the system pressure and health of its own components.

System Volume (Guide): < 300,000 Litres (Midi PSD 150D: 50,000 Litres)

Application of Use:

- Commercial.
- Industrial.
- Residential.

Certifications and Standards Applied:

- PED 2014/68/EU Sound Engineering Practice.
- IEE - Electrical Safety Guidance.
- EMC 2004/108/EC.
- BS 7074 Parts 1 to 3.
- Machinery Directive 95/16/EC.
- Electronic Components have been tested and comply with the EMC Directives.
- EN 61000-6-2: Generic Standards – Immunity standard for industrial environments.
- EN 61000-6-3: Generic Standards – Emission standard for residential, commercial and light industrial environment.
- CE marked components, where applicable.
- IP54 (BS EN60529) Rated Controller.
- WRAS Approved Pump.

Operating Conditions:

- Design Pressure: 10.0 bar @ 100 °C.
- System Temperature Range: 0 - 90 °C.
- Ambient Temperature Range: 0 - 45 °C.
- Max. temperature at point of connection: 70 °C.
- Fuse Rating: 13 Amps.
- Safety Rating: IP 54.
- Max. Turbo Runtime: 168 hours (1 week).
- Max. Normal Downtime: 180 minutes (3 hours).
- Volt Free Contacts: Common Fault Contact.
- Relative humidity 95% non-condensing.
- Noise Rating Data: < 75 dBA.

Material of Construction:

- Cabinet: Mild steel CR4.
- Cylinder: Stainless Steel 304.
- Pump: PEDROLLO (Unit dependant. See pump details for more information).
- Valves: Brass.
- Connection: Brass / Polypropylene.
- Pipework: Braided flexihose / EPDM.
- Finish: Powder Coating.



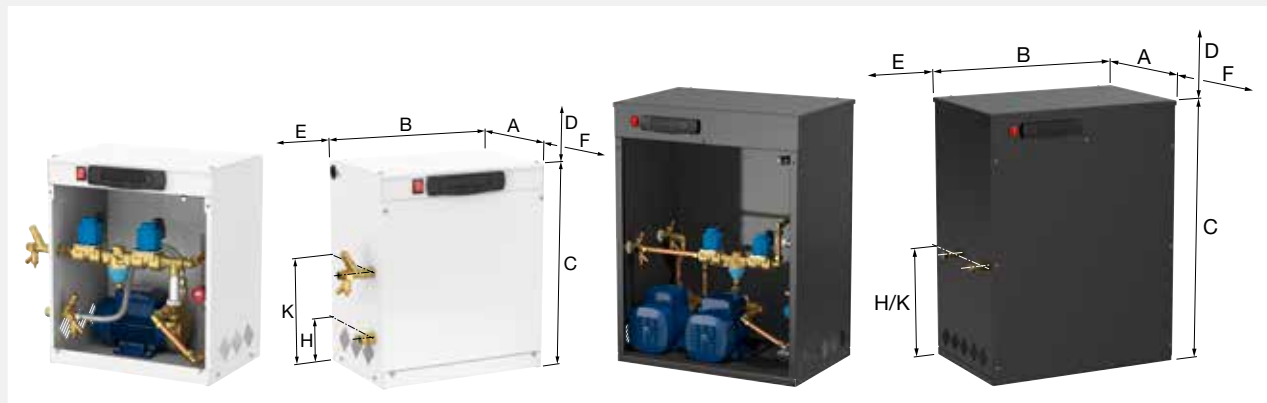
PSD

Compact, totally enclosed vacuum degasser unit (Pressure Step Degasser) for use on sealed systems in order to provide effective dissolved gas removal.

- System fluid is sampled from the system, isolated and subjected to a full vacuum.
- All dissolved air within the sample is liberated in accordance with Henry's Law and vented to atmosphere.
- The deaerated fluid is then reintroduced to the system.
- This process is automatically repeated and controlled with a digital processor.
- A turbo mode is available for initial system setup to allow for rapid deaeration of new installations.
- The real-time display shows the status of the mechanical components.

Product Features:

- For system volumes up to 30,000 litres (Flamco Midi PSD: 50,000 litres).
- System quick-fill mode.
- Password protection for parameter entry.
- Pressure settings in 0.1 bar increments.
- Service reminder option (12 months).
- Pump pulse option (2 second pulse if inactive for 60 days).
- Flood protection options.
- Event logging for pump start, pump run hours counter, electrical interruption and common alarm.
- Volt free contacts for common fault.
- Pump fault, pressure transducer.
- Vacuum degassing, turbo and normal interval modes.
- Electric pump, 230V 50Hz 1ph (2160D: 415V 50Hz 3ph).



Type	Pump Quantity	Moun-ting	Connections [mm]	Pres-sure Rating [PN]	Opera-tion Pressure [bar]	Power Con-sumption [kW]	Full Load Current [A]	Nom. Weight [kg]		Order Code
Midi PSD 150D	1	Wall	2 x 15 (Rp 1/2")	10	1 - 5	0.5	3.4	31	1	17106
PSD 250D	2	Floor	2 x 15 (Rp 1/2")	10	1 - 6	2 x 0.5	2 x 3.4	40	1	17375
PSD 280D	2	Floor	2 x 15 (Rp 1/2")	10	1 - 8	2 x 0.75	2 x 5.6	46	1	17105
PSD 2160D	2	Floor	2 x 15 (Rp 1/2")	16	8 - 16	2 x 2.2	2 x 6.6	64	1	17104

Dimensions PSD

Type	Dimensions							
	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	H [mm]	K [mm]
Midi PSD 150D	280	410	480	500	150	800		
PSD 250D	310	465	790	500	150	800	445	445
PSD 280D - 2160D	390	600	790	500	150	800	445	445

PSD PRESSURE STEP DEAERATORS (USA - 110V)

The Flamco PSD is used to remove dissolved air from sealed chilled and heating water systems. The equipment utilises a multifunction digital controller with a simple user interface. The equipment is an advanced product that combines a pressure step principle with side system configuration to minimize the effects on the sealed system. The real-time display show the status of the equipment while monitoring the system pressure and health of its own components.

System Volume: < 39,625 gallons

Application of Use:

- Commercial.
- Industrial.
- Residential.

Certifications and Standards Applied:

- PED 97/23/EC Sound Engineering Practice.
- IEE - Electrical Safety Guidance.
- EMC 2004/108/EC.
- BS 7074 Parts 1 to 3.
- Machine Directive 95/16/EC.
- Electronic Components have been tested and comply with the EMC Directives.
- EN 61000-6-2: Generic Standards - Immunity standard for industrial environments.
- EN 61000-6-3: Generic Standards - Emission standard for residential, commercial and light industrial environment.
- CE marked components, where applicable.
- IP54 (BS EN60529) Rated Controller.

Operating Conditions:

- Design Pressure: 145 psi @ 212 °F / 100 °C.
- System Temperature Range: 32 - 194 °F / 0 - 90 °C.
- Ambient Temperature Range: 32 - 113 °F / 0 - 45 °C.
- Max. temperature at point of connection: 158 °F / 70 °C (Pressure step 'Stop' Pressure to be set no lower than 0.0 psi Gauge).
- Fuse Rating: 10 Amps.
- Safety Rating: IP 54.
- Max. Turbo Runtime: 168 hours (1 week).
- Max. Normal Downtime: 180 minutes (3 hours).
- Volt Free Contacts: Common Fault Contact.
- Relative humidity 95% non-condensing.
- Noise output: < 75 dBA.

Material of Construction:

- Cabinet: Mild Steel AISI 1010.
- Pump: WRAS Approved / Insulation Class F.
- Cylinder: Stainless Steel 304.
- Valves: Brass.
- Connection: Brass / Polypropylene.
- Pipework: Braided flexihose / Copper.
- Finish: Powder Coating - Blue (RAL 5007).

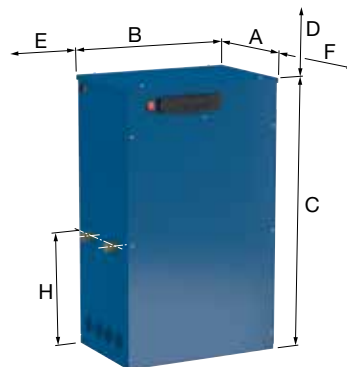


PSD USA 110V

Compact, totally enclosed vacuum deaerator unit (Pressure Step Deaerator) for use on sealed systems in order to provide effective dissolved gas removal.

Product Features:

- For system volumes up to 39,625 gallons.
- System quick-fill mode.
- Password protection for parameter entry.
- Pressure settings in 1 psi increments.
- Service reminder option (12 months).
- Pump exercising option (2 second pulse if inactive for 60 days).
- Event logging for pump start, pump run hours counter, electrical.
- Interruption and common alarm.
- Auxiliary contacts for common fault.
- Pump fault, pressure transducer.
- Vacuum deaerating, turbo and normal interval modes.
- Pump inlet strainer and pump check valve.
- Glycol mixture up to 50%.
- Vacuum cylinder.
- Adjustable differential.
- MODBUS and RS485 connectivity.
- Electric pump, 110V 60Hz 1ph.



Type	Pump Quantity	Mounting	Connections (Iso threads)	Pressure Rating [psi]	Operating Pressure [psi]	Power Consumption [W]	Full Load Current [A]	Nom. Weight [lbs]		Order Code
PSD USA 110V 250D	2	Floor	1/2" NPT	150	14 - 87	1430	3.4	88	1	17377

Dimensions PSD USA 110V

Type	Dimensions						
	A ["]	B ["]	C ["]	D ["]	E ["]	F ["]	H ["]
PSD USA 110V 250D	12.2	18.3	31.1	19.68	5.9	31.49	17.51

COMBINED PRESSURISATION AND DEGASSING PRODUCT RANGE

Flexfiller Plus & Midifill Plus

Compact, totally enclosed combined digital pressurisation unit with vacuum degasser for use on sealed systems in order to provide a minimum system pressure requirement and effective dissolved gas removal.

Available with single pump (Midifill Plus) or double pump (for duty/standby configuration).

PressDS Plus

Compact, totally enclosed combined digital pressurisation unit with vacuum degasser and additive tank for use on sealed systems in order to provide a minimum system pressure requirement and effective dissolved gas removal and adding additive to system. The correct fluid mix is blended on demand at the time of system top-up.

Available with double pump (for duty/standby configuration).

System Volume (Guide): < 300,000 litres (Midifill Plus 150D: < 50,000 litres)

Application:

- Commercial.
- Industrial.
- Residential.

Certifications and Standards Applied:

- PED 2014/68/EU Sound Engineering Practice.
- IEE - Electrical Safety Guidance.
- EMC 2004/108/EC.
- BS7074 Parts 1 to 3.
- Machinery Directive 95/16/EC.
- Electronic Components have been tested and comply with the EMC Directives.
- EN61000-6-2: Generic Standards – Immunity standard for industrial environments.
- EN61000-6-3: Generic Standards – Emission standard for residential, commercial and light industrial environment.
- CE marked components, where applicable.
- WRAS approved float valve to BS1212 part 2.
- IP54 (BS EN60529) rated controller.

Material of Construction:

- Cabinet: Mild steel CR4.
- Float: WRAS Approved Beta Side Entry.
- Break Tank: WRAS Approved Polypropylene.
- Cylinder: Stainless steel 304.
- Pump: PEDROLLO (Unit dependant. See pump details for more information).
- Valves: Brass.
- Connection: Brass / Polypropylene.
- Pipework: Braided flexihose / EPDM / Copper.
- Finish: Powder coated.



Flexfiller Plus & Midifill Plus

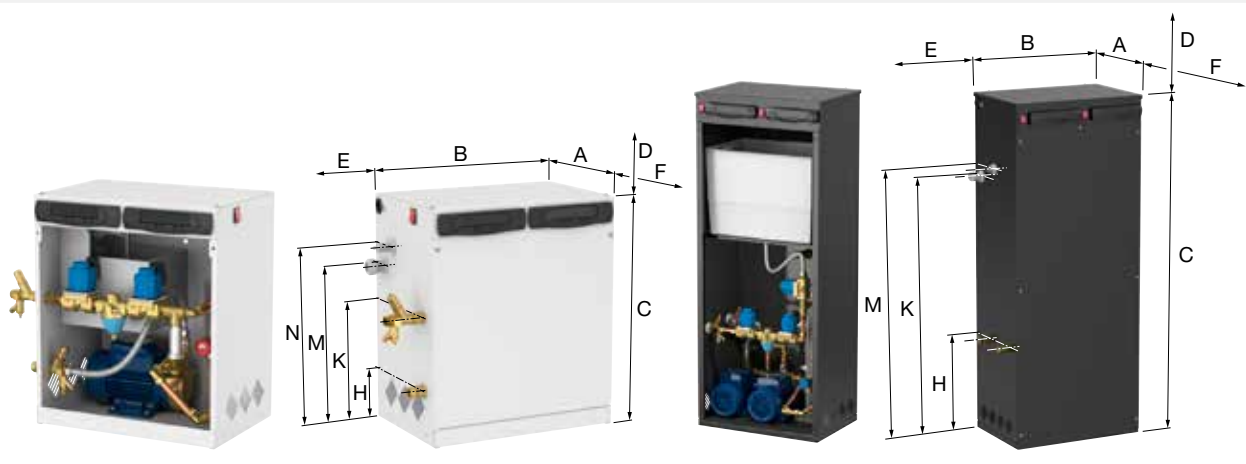
The Flexfiller Plus and Midifill Plus are compact, totally enclosed combined digital pressurisation units with vacuum degasser for use on sealed systems in order to provide a minimum system pressure requirement and effective dissolved gas removal.

Product Features:

- For system volumes up to 300,000 litres.
- Break Tank: 18 litre break tank with type AB Air Gap Fluid Cat 5 (Midifill Plus: 4 litre).
- System quick-fill mode.
- Password protection for parameter entry.
- Pressure settings in 0.1 bar increments.
- Service reminder option (12 months).
- Pump pulse option (2 second pulse if inactive for 60 days).
- Flood protection options.
- Event logging for pump start, individual pump run hours counter, electrical interruption and common alarm.
- Volt free contacts for common fault, high pressure, low pressure, pump fault, pressure transducer (Top-up controller only).
- Individual controllers for pressurisation and degassing function.
- Vacuum degassing, turbo and normal interval modes.
- Electric pump, 230V 50Hz 1ph (2160D: 415V 50Hz 3ph).

Operating Conditions:

- System Temperature Range: 0 - 90 °C.
- Ambient Temperature Range: 0 - 45 °C.
- Maximum system temperature at the Point of connection: 70 °C.
- Safety Rating: IP 54.
- Maximum Turbo Runtime: 168 hours (1 week).
- Maximum Normal Downtime: 180 minutes (3 hours).
- Relative humidity 95% non-condensing.
- Noise Rating Data: < 75 dBA.



Type	Pump quantity	Mounting	Dimensions System [mm]	Dimensions Overflow [mm]	Pressure Rating [PN]	Operating Pressure [bar]	Power Consumption [kW]	Full Load Current [A]		Order Code
Midifill Plus 150D	1	Wall	2 x 15 (1/2")	22	10	1 - 5	0.5	3.4	1	45053
Flexfiller Plus 250D	2	Floor	2 x 15 (1/2")	22	10	1 - 6	2 x 0.52	2 x 3.4	1	45045
Flexfiller Plus 280D	2	Floor	2 x 15 (1/2")	22	10	1 - 8	2 x 0.75	2 x 5.6	1	45121
Flexfiller Plus 2160D	2	Floor	2 x 15 (1/2")	22	16	8 - 16	2 x 2.2	2 x 2.2	1	45043

Dimensions Flexfiller Plus & Midifill Plus

Type	Dimensions									
	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	H [mm]	K [mm]	M [mm]	N [mm]
Midifill Plus 150D	280	410	480	500	150	800				
Flexfiller Plus 250D	320	470	1160	500	150	800	455	915	955	-
Flexfiller Plus 280D	320	600	1160	500	150	800	455	915	955	-
Flexfiller Plus 2160D	320	600	1160	500	150	800	455	915	955	-

PressDS Plus

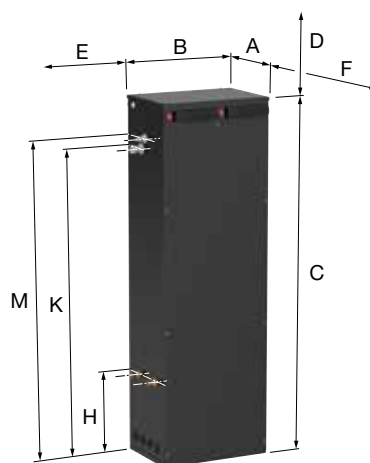
The PressDS Plus (Pressurisation/Degassing/Dosing System) is a compact, totally enclosed combined digital pressurisation unit with vacuum degasser and additive tank for use on sealed systems in order to provide a minimum system pressure requirement, effective dissolved gas removal and adding additives to the system. The correct fluid mix is blended on demand at the time of system top-up.

Product Features:

- For system volumes up to 300,000 litres.
- Break Tank: 4 litre break tank with type AB Air Gap Fluid Cat 5.
- MODBUS Communication output.
- System quick-fill mode.
- Password protection for parameter entry.
- Pressure settings in 0.1 bar increments.
- Service reminder option (12 months).
- Pump pulse option (2 second pulse if inactive for 60 days).
- Flood protection options.
- Event logging for pump start, individual pump run hours counter, electrical interruption and common alarm.
- Volt free contacts for common fault, high pressure, low pressure, pump fault, pressure transducer (Top-up controller only).
- Individual controllers for pressurisation and degassing function.
- Vacuum degassing, turbo and normal interval modes.
- 18 litre additive tank.
- Mix ratios from 1% to 50% user configurable balancing valves.
- Top-up pressurisation unit (<18.0 l/min).
- Electric pump, 230V 50Hz 1ph (2160D: 415V 50Hz 3ph).

Operating Conditions:

- Maximum system temperature: 85 °C.
- Maximum ambient temperature: 40 °C.
- Relative humidity 95% non-condensing.



Type	Pump quantity	Connections		Pressure Rating [PN]	Operating Pressure [bar]	Power Rating [kW]	Full Load Current [A]	Nom. Weight [kg]		Order Code
		System [mm]	Overflow [mm]							
PressDS Plus 250D	2	2 x 15 (1/2")	22	10	1 - 6	2 x 0.52	2 x 3.4	62.7	1	45102
PressDS Plus 280D	2	2 x 15 (1/2")	22	10	1 - 8	3 x 0.52	3 x 3.4	71.5	1	45119
PressDS Plus 2160D	2	2 x 15 (1/2")	22	16	8 - 16	4 x 0.52	4 x 3.4	91.3	1	45120

Dimensions PressDS Plus

Type	Dimensions								
	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	H [mm]	K [mm]	M [mm]
PressDS Plus 250D	470	320	1475						
PressDS Plus 280D	600	320	1475						
PressDS Plus 2160D	600	320	1475						

VACUMAT ECO DEGASSING AND TOP-UP AUTOMATS

The Vacumat Eco degasses extremely accurately and effectively. This pressure-temperature controlled degasser degasses faster through the much greater and fully continuous degassing capacity. Removing gases more quickly limits damage to the system as much as possible, avoids unnecessary faults and expensive repairs, and extends the life of the system.

- Degasses up to seven times quicker than comparable products.
- Is eight times more energy-efficient thanks to innovative technologies.
- Gives real-time insight into system performance.
- Automatic standby function for optimal energy saving.
- Control unit can be set to any level within a given range.
- The menu of the control unit is available in 19 languages.
- Compact and rugged design.
- Pressure- and level-controlled topping-up with a wide range of available settings.

How the Vacumat Eco works

1. Creating a vacuum

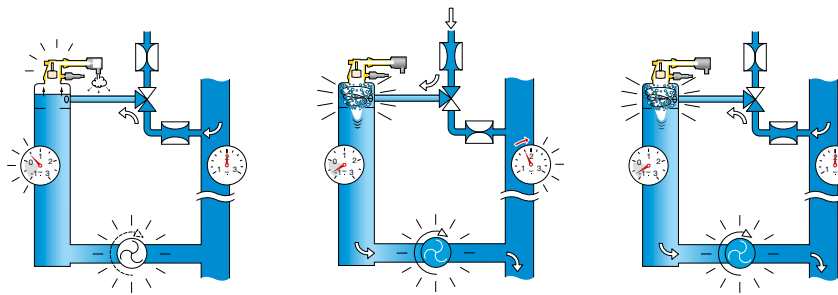
Because the pump extracts more water from the column than can flow in a vacuum is created towards the boiling point. Gas is released and collects above the water line.

2. Deaeration

The pressure in the column is briefly raised by reducing the speed of the pump so that released gases can be vented.

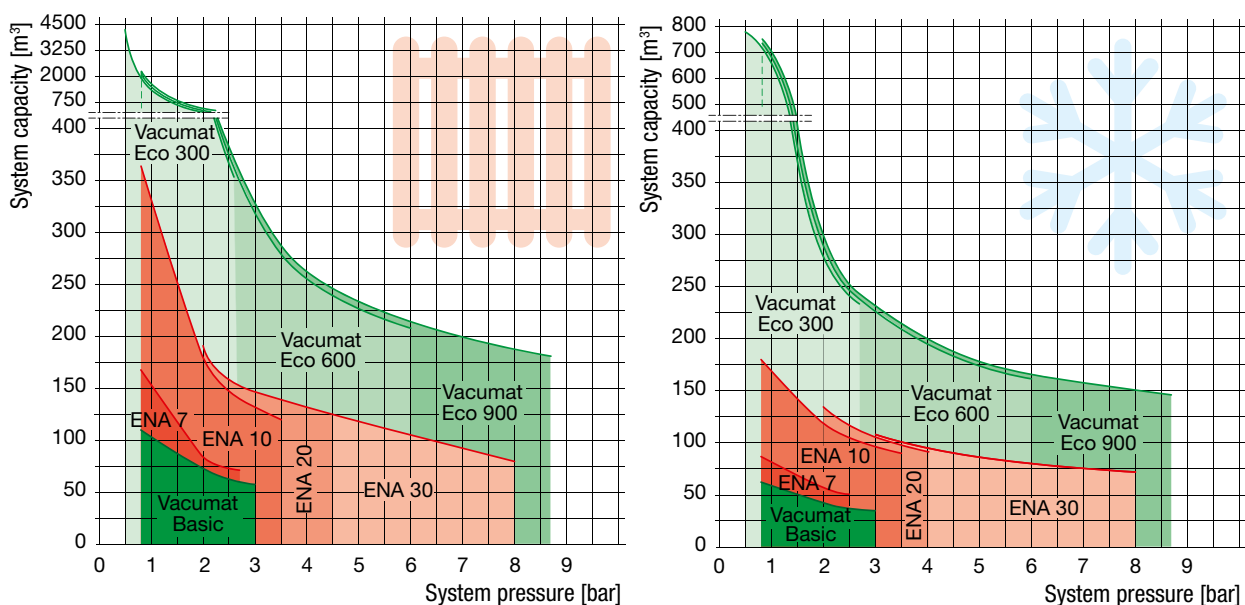
3. Topping up

If the system pressure is too low, deaerated water is added until the correct pressure is reached.



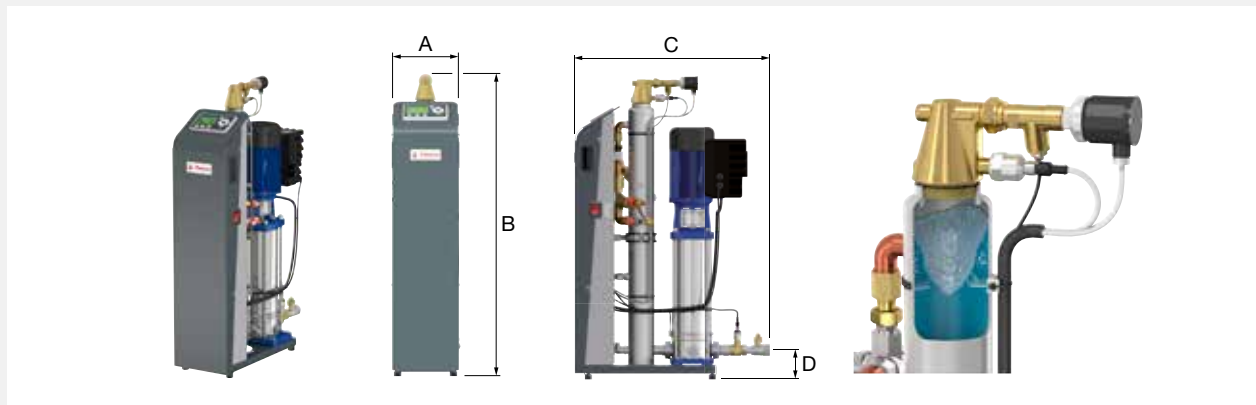
Vacumat Eco - Selection graphs heating/cooling

The Vacumat Eco can be used for a large system capacity and therefore in more situations. In contrast to the ENA series, the appliance makes use of the new technology of sensitive deaeration. This allows the process to run quickly, quietly and extremely economically.



Vacumat Eco

- Complies with the following guidelines:
Machinery Directive 2006/42/EC.
PED 2014/68/EU.



Type	System operating pressure [bar]	Connections			Dimensions				Weight [kg]		Order Code
		To system	From system	To supply	A [mm]	B [mm]	C [mm]	D [mm]			
Vacumat Eco 300	0.6 - 2.7	Rp 1"	Rp 1/2"	Rp 1/2"	260	1030	670	100	37.5	1	17003
Vacumat Eco 600	0.8 - 5.4	Rp 1"	Rp 1/2"	Rp 1/2"	260	1030	670	100	41.5	1	17006
Vacumat Eco 900	0.8 - 8.7	Rp 1"	Rp 1/2"	Rp 1/2"	260	1030	670	100	51.5	1	17009

Vacumat Eco - Performance

Specifications	Vacumat Eco			
	300	600	900	
Nominal pressure [PN]	10	10	10	
Working pressure range [bar]	0.6 - 2.7	0.8 - 5.4	0.8 - 8.7	
Max. glycol	30%	30%	30%	
System flow temperature [°C]	3 - 120	3 - 120	3 - 120	
System water temperature range for deaeration [°C]	3 - 90	3 - 90	3 - 90	
Top-up temperature [°C]	3 - 90	3 - 90	3 - 90	
Ambient temperature range [°C]	3 - 45	3 - 45	3 - 45	
Electrical requirements [V]	1 ~ 230 V 50/60 Hz	1 ~ 230 V 50/60 Hz	1 ~ 230 V 50/60 Hz	
Power supply [kW]	0.4	1.1	1.1	
Degree of protection / motor position valves	IP 54 / IP 42	IP 54 / IP 42	IP 54 / IP 42	
Nominal current [A]	2.85	5.18	6.80	
Noise output [dB(A)]	52	55	~55	
Saturation level of gasses [ml/l] (acc. to VDI 2035-2 and 4708-2)	Min	15	15	15
	Med	12	12	12
	Max	8	8	8

Impulse Output Water Meter



- PN 10, 90 °C.
- 50 Hz.

Type	Features	Length [mm]		Order Code
Impulse output water meter	1 impulse/10 litres	80	1	17739

VACUMAT BASIC DEGASSING AND TOP-UP AUTOMAT

The Vacumat Basic is a vacuum degasser for sealed heating and chilled water (cooling) installations according to EN12828 that uses vacuum degassing technology for highly efficient degassing of closed systems. Moreover, the Vacumat Basic ensures automatic topping-up of the system after the top-up water has been degassed.

- Compact, easy to use and reliable design.
- Fully assembled and ready to connect.
- Highly efficient degassing through vortex technology.
- Dry run protection.
- The menu of the control unit is available in 18 languages.
- Wall mounted. Floor standing optional with the Vacumat Basic Floor Console (17001).

Vacumat Basic

- Max system volume: 115 m³.
- Complies with the following guidelines:
Machinery Directive 2006/42/EC.
PED 2014/68/EU.



Type	System operating pressure [bar]	Connections			Dimensions			Weight [kg]		Order Code
		To system	From system	To supply	Width [mm]	Height [mm]	Length [mm]			
Vacumat Basic	0.8 - 3.0	G 1/2" F	G 1/2" F	G 1/2" F	260	705	255	21	1	17002

Vacumat Basic - Performance

Specifications	Vacumat Basic
Nominal pressure [PN]	10
Working pressure range [bar]	0.8 - 3.0
Max. glycol	30%
System flow temperature [°C]	3 - 120
Working temperature [°C]	3 - 70
Ambient temperature [°C]	3 - 45
Top-up temperature [°C]	3 - 30
Pressure top-up water [bar]	0.8 - 8.0
Max. top-up volume [l/h]	180
Electrical requirements [V]	1 ~ 230 V - 50/60 Hz
Power supply [kW]	0.68
IP rating	IP 54
Nominal current [A]	3.4
Noise output [dB(A)]	~64 (max.)

Vacumat Basic Floor Console



For mounting the Vacumat Basic on the floor.

Type	Height [mm]	Weight [kg]		Order Code
Vacumat Basic Floor Console	1000	8	1	17001

NFE 1 Top-up Unit



Used for direct top up from potable water supply according to DIN 1988 and DIN EN 1717.

- Consists of a backflow preventer, water meter, ball valve and non-return valve.
- Maximum working pressure: 10 bar.
- Maximum working temperature: 65 °C.

Type	L. [mm]	Connection to		K _{vs} (Backflow-preventer) [m³/h]	Weight [kg]		Order Code
		Potable water	System				
NFE 1.1	355	Rp 1/2"	G 3/4"	2	3	1	23780
NFE 1.2 *	355	Rp 1/2"	G 3/4"	2	3	1	23781

* NFE 1.2 has an impulse output water meter (10 litres / impulse).

ENA DEGASSING AND TOP-UP AUTOMATS

For active degassing and automatic topping up of closed heating and cooling systems.

The ENA is a pressure step degasser that makes use of vacuum for highly efficient degassing of closed systems. Moreover, the ENA ensures automatic topping-up of the system after the top-up water has been degassed.

Can be easily used in combination with a Flexcon diaphragm pressure expansion vessel or pressure expansion automat.

- Active degassing by patented PALL-Ring technology.
- The menu of the control unit is available in 18 languages.
- Easy to use.
- Fully assembled and ready to connect.
- Compact and robust design.
- Controller can be programmed as required. Connection to BMS possible (RS 485).

How the ENA works

1. Not active

When the ENA is inactive, the stainless steel column is filled with water and the pressure is equal to the system pressure.

2. Creating a vacuum

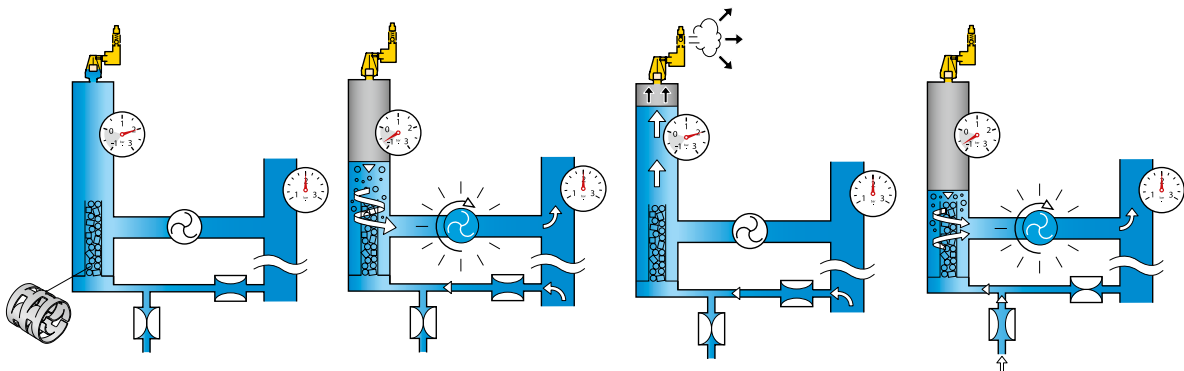
As the pump draws more water out of the column than can flow back in a vacuum is created. Gas is released and collects on the surface of the water.

3. Water intake

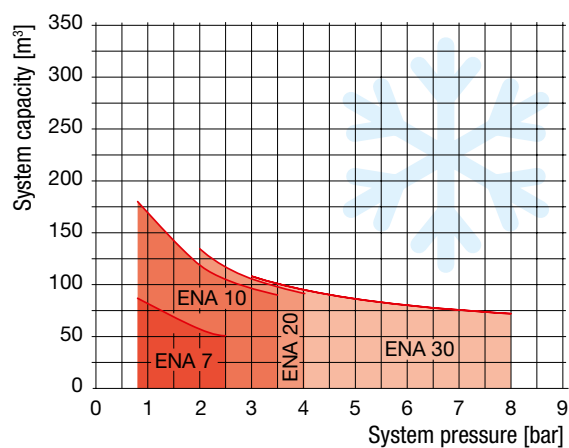
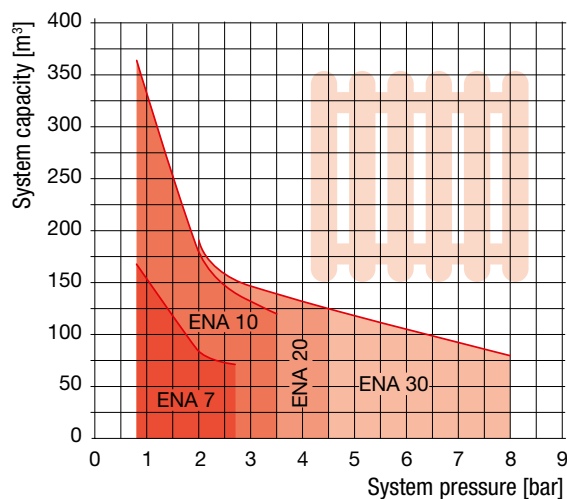
The pump stops and the column fills up again with water. The gas is then expelled via the automatic air vent.

4. Topping-up

If water is lost from the system installation the volume and, as a consequence, the pressure will drop. Water for topping-up is deaerated in the column and fed into the system in small doses (until the correct pressure has been restored).



ENA - Selection graphs heating/cooling



ENA 7 - 30

- Working temperature: 3 °C to 70 °C.
- Maximum (feed) supply temperature in the system: 120 °C.
- Ambient temperature: > 3 °C to 45 °C.
- Maximum pressure in the suppletion feed line: 2 to 8 bar.
- Noise production: approx. 55 dB(A).
- Electrical connection 230 V 50 Hz.
- Suitable for addition of glycol-based anti-freeze up to 30%.
- Complies with the following guidelines:
Machinery Directive 2006/42/EC.
PED 2014/68/EU.



Type	Max. work. press. [bar]	Operating pressure [bar]	Syst. conn.	Dimensions			Weight [kg]		Order Code
				W. [mm]	D. [mm]	H. [mm]			
ENA 7	8	0.8 - 2.7	Rp 3/4"	740	325	1270	40	1	17070
ENA 10	8	0.8 - 3.5	Rp 3/4"	740	325	1270	40	1	17090
ENA 20	8	2.0 - 4.5	Rp 3/4"	740	325	1270	45	1	17091
ENA 30	10	3.0 - 8.0	Rp 3/4"	710	525	1270	60	1	17092

NFE 1 Top-up Unit

Used for direct top up from potable water supply according to DIN 1988 and DIN EN 1717.

- Consists of a backflow preventer, water meter, ball valve and non-return valve.
- Maximum working pressure: 10 bar.
- Maximum working temperature: 65 °C.

Type	L. [mm]	Connection to		K _{vs} (Backflow-preventer) [m³/h]	Weight [kg]		Order Code
		Potable water	System				
NFE 1.1	355	Rp 1/2"	G 3/4"	2	3	1	23780
NFE 1.2 *	355	Rp 1/2"	G 3/4"	2	3	1	23781

* NFE 1.2 has an impulse output water meter (10 litres / impulse).

NFE 2 Top-up Unit



Used for top up from a water supply where a backflow preventer is not needed.

- Consists of a water meter, ball valve and non-return valve.
- Maximum working pressure: 10 bar.
- Maximum working temperature: 90 °C.

Type	L. [mm]	Connection to		Weight [kg]		Order Code
		Potable water	System			
NFE 2.1	200	Rp 1/2"	G 3/4"	2	1	23782
NFE 2.2 *	200	Rp 1/2"	G 3/4"	2	1	23783

* NFE 2.2 has an impulse output water meter (10 litres / impulse).

Gas Sensor



The gas sensor reduces the energy consumption of the ENA pressure stage deaerator and ensures a longer service life of the components. As soon as gases are removed by the ENA, this is recorded by the gas sensor. If no deaeration is registered, the ENA automatically switches off in order to subsequently start up again after a preset period.

- Energy-saving.
- Reduces wear and tear.
- Suitable for the ENA 7 - 30.
- The gas sensor is mounted on the outlet of the deaeration unit.

Type	Dimensions		Weight [kg]		Order Code
	W. [mm]	H. [mm]			
Gas sensor	120	190	0.7	1	17071