



Flamco

Your reliable partner

BEST SEPARATION • SAVES ENERGY • LOW MAINTENANCE

**Flamcovent Smart
Flamco Clean Smart
Flamcovent Clean Smart**

COMBINING OPTIMAL PERFORMANCE WITH ENERGY CONSERVATION

FOR CONNECTION SIZES
DN 50 - 600



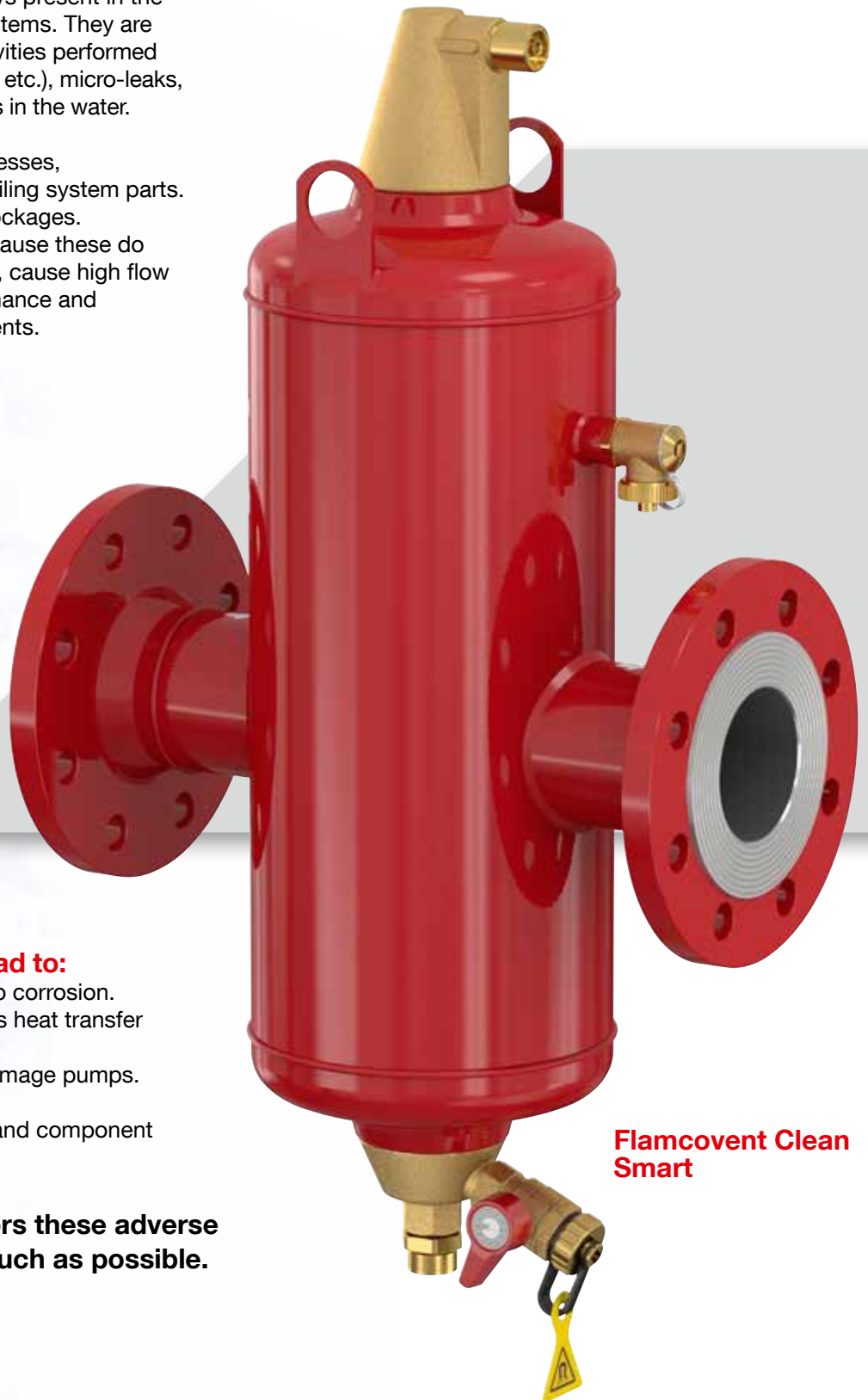
Get rid of air and dirt

Air and dirt in a system causes problems such as reduced heat transfer, unnecessary faults and wear and noise. But also lead to disruptions of the system and reduced pump performance. Higher energy consumption and an unreliable system are the consequence.

Where do air and dirt come from?

Air particles and gases are always present in the water of heating and cooling systems. They are generally a consequence of activities performed (maintenance, draining and filling etc.), micro-leaks, diffusion and chemical processes in the water.

Dirt is caused by corrosion processes, maintenance to the system or failing system parts. It can accumulate and cause blockages. The use of filters is not ideal because these do not trap smaller particles, silt up, cause high flow resistance, need regular maintenance and require replacement of components.



Flamcovent Clean Smart

Air and dirt in a system lead to:

- Shortened system-life due to corrosion.
- Reduced comfort due to less heat transfer and noises.
- Cavitation and magnetite damage pumps.
- Disruptions of the system.
- Loss of image for installers and component suppliers.

With air and dirt separators these adverse factors are reduced as much as possible.

The new standard

Flamco has the answer

The new Flamcovent, Flamco Clean and Flamcovent Clean Smart air and dirt separator range removes even the smallest microbubbles and minuscule dirt particles from the system water. They are close to maintenance-free and the flow resistance is negligibly low, which saves energy.

The new and proven standard

The Smart air and dirt separators are smart products in every aspect. And just as in other innovations from Flamco, their new technology delivers optimal performance.

Just like the Smart range with connection sizes up to 2", the proven effectiveness makes them future ready and the new standard in air and dirt separation.



Flamcovent Smart

Flamco Clean Smart

Main advantages

- Up to 60% better performance compared to conventional air and dirt separators.
- Extremely low flow resistance resulting in the best energy conservation possible.
- Standard flow velocities up to 3 m/s.
- Consistent performance throughout its service life.
- Low maintenance.



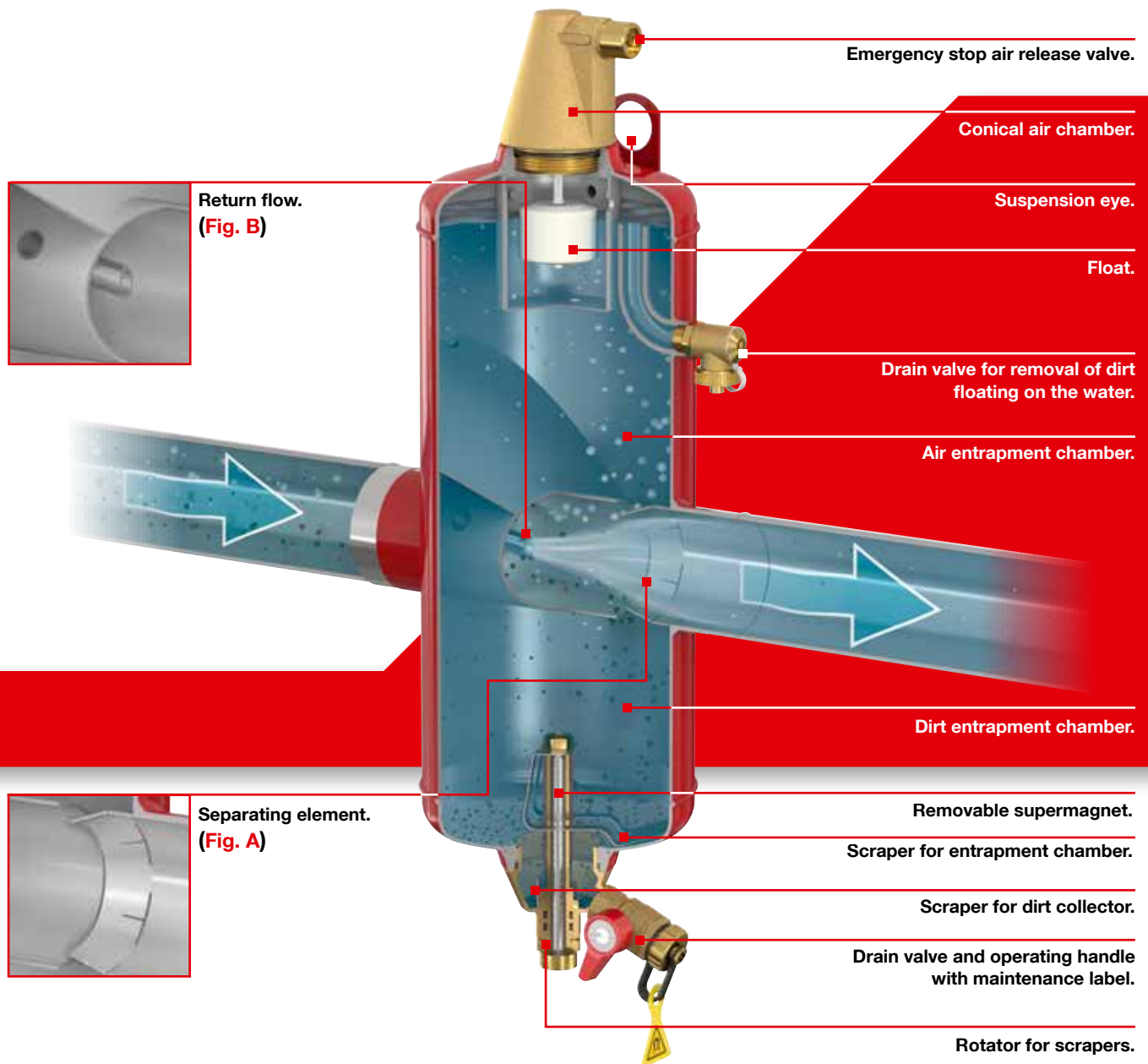
Smart in every regard

High separation performance with energy conservation

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 and dirt particles by allowing the air particles to automatically rise to the air release valve at the top and 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 dirt removal and de-aeration of the system water.

Fig. 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.

Fig. 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 microbubbles and dirt particles present in the main flow outwards and into the chambers of the separator to be removed.

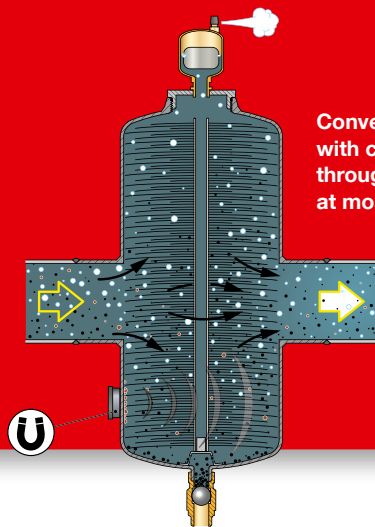
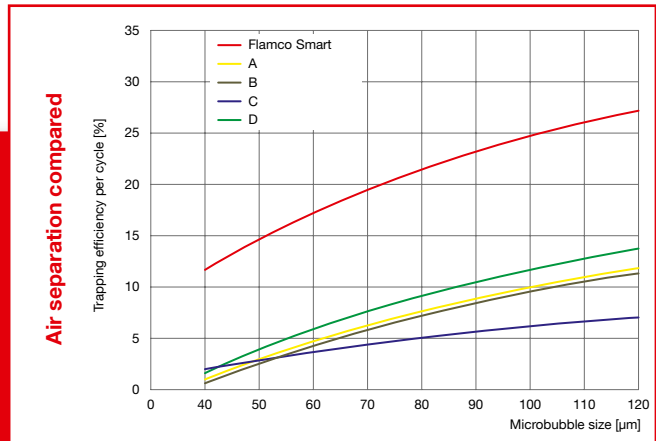
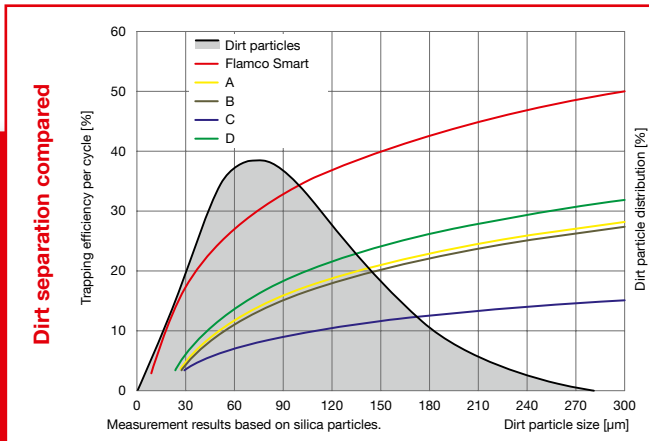
A smart concept

Continuous operation and a long service life

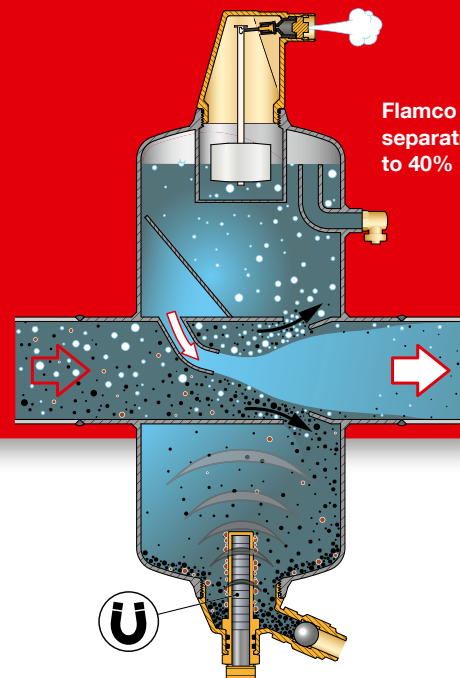
Flamco Smart performs 60% better than conventional air and dirt separators, while the flow resistance has been reduced to a negligible level. This avoids wear to the pump of the central heating boiler and reduces energy costs.

The absence of obstructions in the main flow ensures that clogging or blockage is prevented which guarantees superior and continuous operation over its service life. Moreover, this feature also considerably prolongs the service life of the product.

Performs 60% better



Conventional separator with complete flow through: separation of at most 25% per cycle.



Flamco Smart: separation of up to 40% per cycle.

Supermagnets

25 Neodymium supermagnets are incorporated into the dirt scraper of the Flamco Clean Smart and the Flamcovent Clean Smart. The magnetic rating per magnet is 13,000 Gauss/1,3 Tesla.

The complete flow in the entrapment chamber is directed to pass the magnet. Due to the low flow velocity, the magnets are able to trap even the smallest particles (as small as 4 µm).

By extracting the magnet, the magnetic particles are moved downwards, where two dirt scrapers and the drain valve are situated. This allows for easy and efficient removal of dirt.



Low-maintenance

The low-maintenance characteristic of the air and dirt separators is a great advantage. The renewed technology ensures extended periods between necessary maintenance.

A label can be affixed to the handle of the drain valve that makes it simple to show when maintenance was last performed.



Smart in all details



Conical air chamber

The air chamber of the Flamcovent Smart and Flamcovent Clean Smart is conical in shape and fitted with an elongated float for extra distance to the venting valve. This reduces the chance of contamination of the valve seat to a minimum.

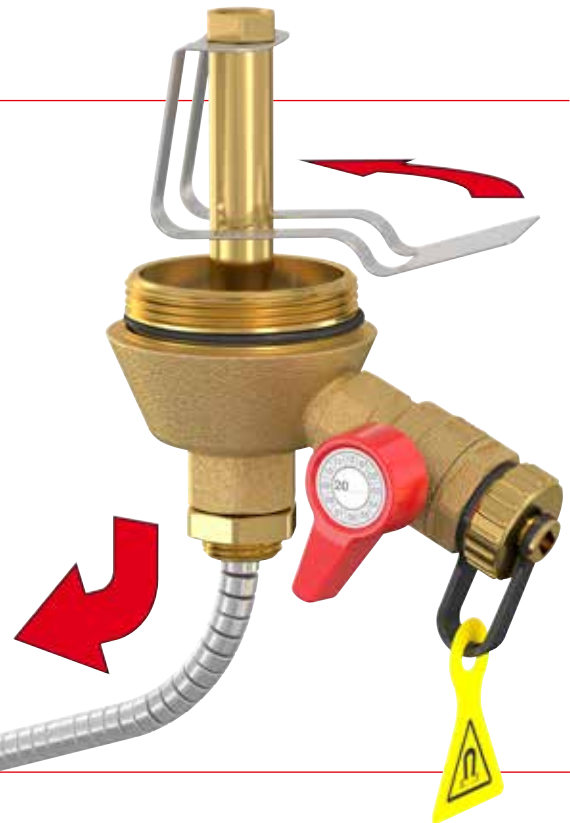
Floating dirt particles collected in the upper entrapment chamber can be drained away periodically with the drain valve.



Dirt scraper with magnet holder and drain valve

The removable dirt scraper consists of several parts: A double scraper, one for the base of the entrapment chamber and one in the cone of the dirt scraper itself. It has also a magnet holder with supermagnets. By pulling the magnet downwards, the magnetite particles are drawn to the underside of the dirt scraper where they can easily be removed via the drain valve.

The removable magnet is designed to allow a minimum of space below the dirt separator when extracting.



IsoPlus insulation

This easy to install insulation set consists of two halves which are joined together by attached hook fasteners and thermoformed deep-drawn covers. The outer polystyrene surface layer (thickness 1 mm) is laminated on the melamine insulation foam (thickness 50 mm).

- Fire class B2, according to DIN 4102.
- Suitable for retrospective installation.
- 100 % recyclable.
- λ -value: 0.035 W/mK.
- Available for connection sizes DN 50 up to DN 200.

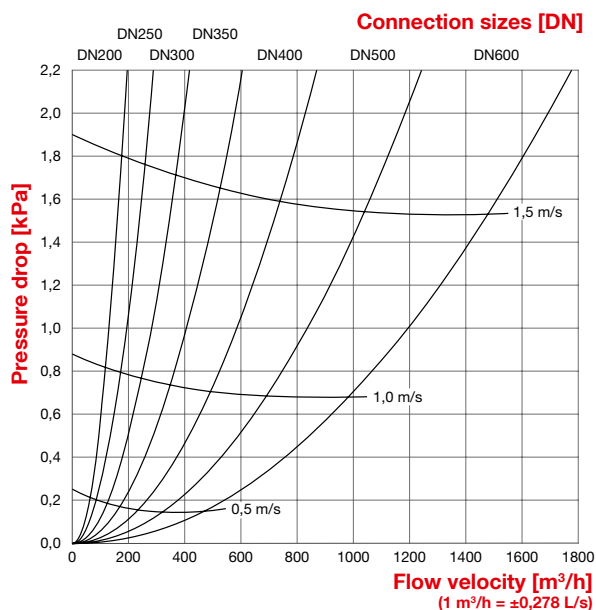
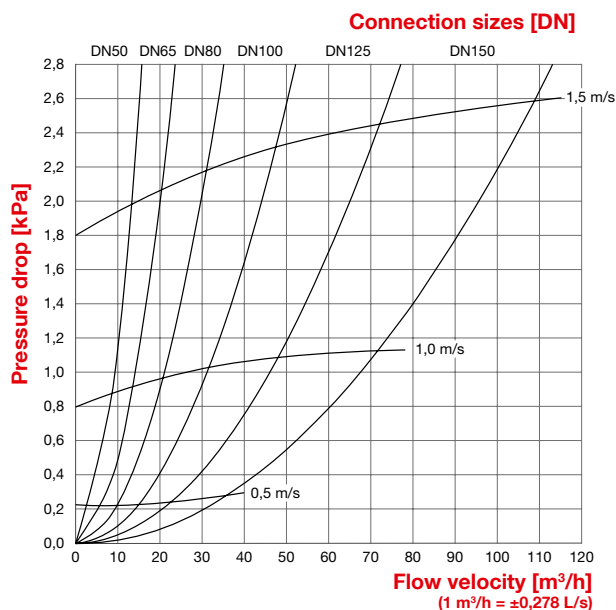
Selection and Installation

Selection graphs

Thanks to the innovative design of this Smart series of Flamco air and dirt separators the pressure loss in the system is kept to a negligible minimum. Even at flow velocities of 3 m/s, the Smart series deliver the best

performance in separation and pressure drop on the market.

The two graphs below are simple tools for selecting the correct model for your installation.



Installation

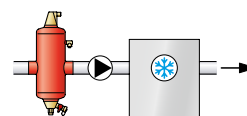
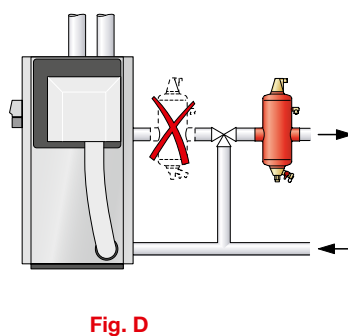
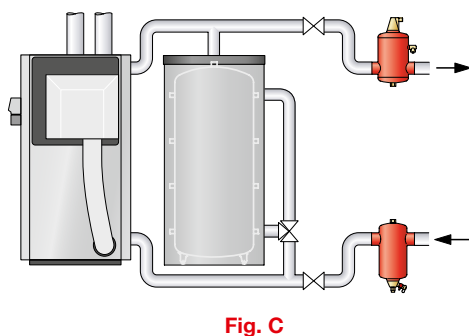
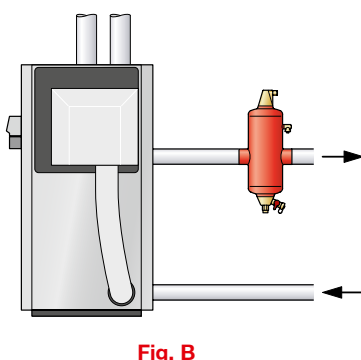
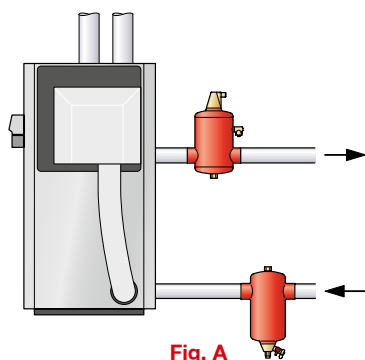
Depending on the primary function (dirt or air separator), the air, dirt and combined air/dirt separators can be installed in a variety of ways.

Place the product upstream of the boiler in the return line, if dirt separation is the primary function (**A, C**).

If the primary function is air separation (**A, C**) or a combined air/dirt separator is being used (**B, D**), the optimum location is immediately downstream of the boiler or mixing valve, and upstream of the circulation pump. This traps bubbles produced immediately after heating the water.

In a cooling system that is just before the chiller (**E**).

The separators are manufactured with a G 3/4" connection. This enables the connection of any drain line when disposing of captured dirt.



The complete series

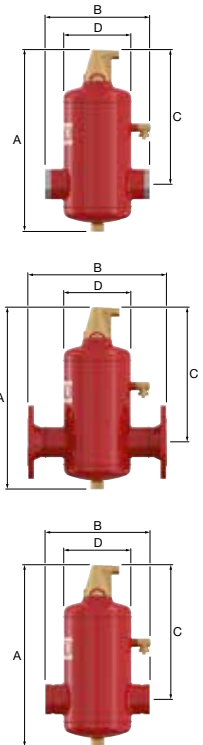
Wide product range

The new air and dirt separators from Flamco are supplied in various connection sizes: DN 50 up to DN 600. Available with welded (S), flanged (F) and grooved (R) connections and with maximum working pressures of 10, 16 or 25 bar.

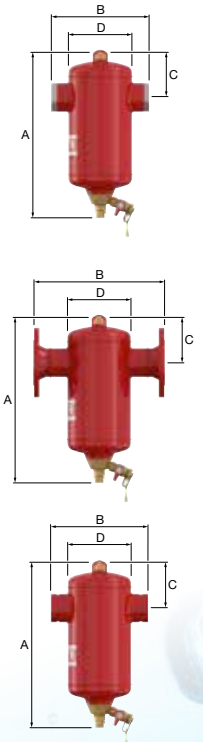
Replacement parts

The dirt collector and conical air chamber are available as replacement parts. IsoPlus insulation mantles are also available, for connection sizes up to DN 200.

Flamcovent Smart										
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	31101
Flamcovent Smart 65 S	8	65	76,1	472	260	338	175	140	10	31102
Flamcovent Smart 80 S	25	80	88,9	612	370	435	270	209	17	31103
Flamcovent Smart 100 S	25	100	114,3	612	370	435	270	311	20	31104
Flamcovent Smart 125 S	59	125	139,7	740	525	515	360	459	36	31105
Flamcovent Smart 150 S	60	150	168,3	740	525	510	360	675	37	31106
Flamcovent Smart 200 S	123	200	219,1	975	650	670	450	1340	57	31107
Flamcovent Smart 250 S	287	250	273,0	1290	850	892	600	1952	125	31108
Flamcovent Smart 300 S	333	300	323,9	1452	850	1032	600	2830	140	31109
Flamcovent Smart 350 S	646	350	355,6	1600	1050	1109	800	4084	256	31110
Flamcovent Smart 400 S	731	400	406,4	1770	1050	1252	800	5866	265	31111
Flamcovent Smart 500 S	1384	500	508,0	2096	1400	1469	1000	8387	503	31112
Flamcovent Smart 600 S	2390	600	610,0	2500	1680	1707	1200	11939	755	31113
Flamcovent Smart 50 F	8	50	60,3	472	350	338	175	93	14	31001
Flamcovent Smart 65 F	8	65	76,1	472	350	338	175	140	16	31002
Flamcovent Smart 80 F	25	80	88,9	612	470	435	270	209	25	31004
Flamcovent Smart 100 F	25	100	114,3	612	470	435	270	311	29	31005
Flamcovent Smart 125 F	59	125	139,7	740	635	515	360	459	48	31006
Flamcovent Smart 150 F	60	150	168,3	740	635	510	360	675	52	31007
Flamcovent Smart 200 F	123	200	219,1	975	774	670	450	1340	80	31008
Flamcovent Smart 250 F	287	250	273,0	1290	990	892	600	1952	158	31009
Flamcovent Smart 300 F	333	300	323,9	1452	1006	1032	600	2830	184	31010
Flamcovent Smart 350 F	646	350	355,6	1600	1214	1109	800	4084	321	31011
Flamcovent Smart 400 F	731	400	406,4	1770	1220	1252	800	5866	348	31012
Flamcovent Smart 500 F	1384	500	508,0	2096	1580	1469	1000	8387	635	31013
Flamcovent Smart 600 F	2390	600	610,0	2492	1870	1707	1200	11939	963	31014
Flamcovent Smart 50 R	8	50	60,3	472	260	338	175	93	9	31201
Flamcovent Smart 65 R	8	65	76,1	472	260	338	175	140	10	31202
Flamcovent Smart 80 R	25	80	88,9	612	370	435	270	209	17	31203
Flamcovent Smart 100 R	25	100	114,3	612	370	435	270	311	20	31204
Flamcovent Smart 125 R	59	125	139,7	740	525	515	360	459	36	31205
Flamcovent Smart 150 R	60	150	168,3	740	525	510	360	675	37	31206
Flamcovent Smart 200 R	123	200	219,1	975	650	670	450	1340	57	31207

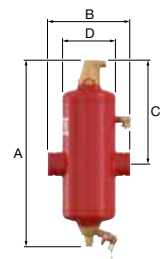
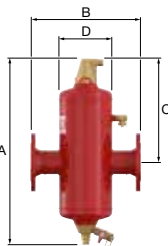
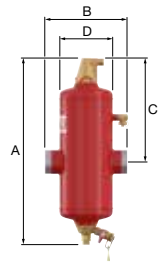


Flamco Clean Smart										
Type	Capacity [l]	Connection		Dimensions				K _v * [m³/h] (ΔP = 1 bar)	Weight [kg]	Order Code
		[DN]	[mm]	A [mm]	B [mm]	C [mm]	D [mm]			
Flamco Clean Smart 50 S	8	50	60,3	452	260	129	175	93	9	31121
Flamco Clean Smart 65 S	8	65	76,1	452	260	129	175	140	10	31122
Flamco Clean Smart 80 S	25	80	88,9	592	370	172	270	209	17	31123
Flamco Clean Smart 100 S	25	100	114,3	592	370	172	270	311	20	31124
Flamco Clean Smart 125 S	59	125	139,7	719	525	219	360	459	36	31125
Flamco Clean Smart 150 S	60	150	168,3	719	525	224	360	675	37	31126
Flamco Clean Smart 200 S	123	200	219,1	951	650	361	450	1340	57	31127
Flamco Clean Smart 250 S	287	250	273,0	1272	850	395	600	1952	125	31128
Flamco Clean Smart 300 S	333	300	323,9	1437	850	420	600	2830	140	31129
Flamco Clean Smart 350 S	646	350	355,6	1581	1050	487	800	4084	256	31130
Flamco Clean Smart 400 S	731	400	406,4	1754	1050	517	800	5866	265	31131
Flamco Clean Smart 500 S	1384	500	508,0	2081	1400	627	1000	8387	503	31132
Flamco Clean Smart 600 S	2390	600	610,0	2477	1680	785	1200	11939	755	31133
Flamco Clean Smart 50 F	8	50	60,3	452	350	129	175	93	14	31021
Flamco Clean Smart 65 F	8	65	76,1	452	350	129	175	140	16	31022
Flamco Clean Smart 80 F	25	80	88,9	592	470	172	270	209	25	31024
Flamco Clean Smart 100 F	25	100	114,3	592	470	172	270	311	29	31025
Flamco Clean Smart 125 F	59	125	139,7	719	635	219	360	459	48	31026
Flamco Clean Smart 150 F	60	150	168,3	719	635	224	360	675	52	31027
Flamco Clean Smart 200 F	123	200	219,1	951	774	361	450	1340	80	31028
Flamco Clean Smart 250 F	287	250	273,0	1272	990	395	600	1952	158	31029
Flamco Clean Smart 300 F	333	300	323,9	1437	1006	420	600	2830	184	31030
Flamco Clean Smart 350 F	646	350	355,6	1581	1214	487	800	4084	321	31031
Flamco Clean Smart 400 F	731	400	406,4	1754	1220	517	800	5866	348	31032
Flamco Clean Smart 500 F	1384	500	508,0	2081	1580	627	1000	8387	635	31033
Flamco Clean Smart 600 F	2390	600	610,0	2477	1870	785	1200	11939	963	31034
Flamco Clean Smart 50 R	8	50	60,3	452	260	129	175	93	9	31221
Flamco Clean Smart 65 R	8	65	76,1	452	260	129	175	140	10	31222
Flamco Clean Smart 80 R	25	80	88,9	592	370	172	270	209	17	31223
Flamco Clean Smart 100 R	25	100	114,3	592	370	172	270	311	20	31224
Flamco Clean Smart 125 R	59	125	139,7	719	525	219	360	459	36	31225
Flamco Clean Smart 150 R	60	150	168,3	719	525	224	360	675	37	31226
Flamco Clean Smart 200 R	123	200	219,1	951	650	361	450	1340	57	31227



Flamcovent Clean Smart

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	333	175	93	11	31141
Flamcovent Clean Smart 65 S	10	65	76,1	603	260	333	175	140	11	31142
Flamcovent Clean Smart 80 S	33	80	88,9	795	370	435	270	209	20	31143
Flamcovent Clean Smart 100 S	33	100	114,3	795	370	435	270	311	23	31144
Flamcovent Clean Smart 125 S	78	125	139,7	967	525	515	360	459	42	31145
Flamcovent Clean Smart 150 S	78	150	168,3	967	525	515	360	675	47	31146
Flamcovent Clean Smart 200 S	158	200	219,1	1280	650	705	450	1340	63	31147
Flamcovent Clean Smart 250 S	370	250	273,0	1620	850	892	600	1952	132	31148
Flamcovent Clean Smart 300 S	415	300	323,9	1784	850	1032	600	2830	156	31149
Flamcovent Clean Smart 350 S	840	350	355,6	2028	1050	1109	800	4084	285	31150
Flamcovent Clean Smart 400 S	927	400	406,4	2201	1050	1252	800	5866	303	31151
Flamcovent Clean Smart 500 S	1768	500	508,0	2628	1400	1470	1000	8387	613	31152
Flamcovent Clean Smart 600 S	3056	600	610,0	3124	1680	1757	1200	11939	867	31153
Flamcovent Clean Smart 50 F	8	50	60,3	603	350	333	175	93	16	31041
Flamcovent Clean Smart 65 F	10	65	76,1	603	350	333	175	140	17	31042
Flamcovent Clean Smart 80 F	33	80	88,9	795	470	435	270	209	28	31044
Flamcovent Clean Smart 100 F	33	100	114,3	795	470	435	270	311	32	31045
Flamcovent Clean Smart 125 F	78	125	139,7	967	635	515	360	459	55	31046
Flamcovent Clean Smart 150 F	78	150	168,3	967	635	515	360	675	63	31047
Flamcovent Clean Smart 200 F	158	200	219,1	1280	774	705	450	1340	86	31048
Flamcovent Clean Smart 250 F	370	250	273,1	1620	990	892	600	1952	165	31049
Flamcovent Clean Smart 300 F	415	300	323,9	1784	1006	1032	600	2830	200	31050
Flamcovent Clean Smart 350 F	840	350	355,6	2028	1214	1109	800	4084	350	31051
Flamcovent Clean Smart 400 F	927	400	406,4	2201	1220	1252	800	5866	385	31052
Flamcovent Clean Smart 500 F	1768	500	508,0	2628	1580	1470	1000	8387	745	31053
Flamcovent Clean Smart 600 F	3056	600	610,0	3124	1870	1757	1200	11939	1075	31054
Flamcovent Clean Smart 50 R	10	50	60,3	603	260	333	175	93	11	31241
Flamcovent Clean Smart 65 R	10	65	76,1	603	260	333	175	140	11	31242
Flamcovent Clean Smart 80 R	33	80	88,9	795	370	435	270	209	20	31243
Flamcovent Clean Smart 100 R	33	100	114,3	795	370	435	270	311	23	31244
Flamcovent Clean Smart 125 R	78	125	139,7	967	525	515	360	459	42	31245
Flamcovent Clean Smart 150 R	78	150	168,3	967	525	515	360	675	47	31246
Flamcovent Clean Smart 200 R	158	200	219,1	1280	650	705	450	1340	63	31247



ACCESSORIES

IsoPlus Insulation

Available for connection sizes from DN 50 up to DN 200.

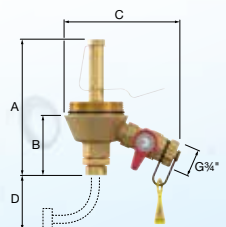
Type	Order Code	
	Flamcovent Smart / Flamco Clean Smart	Flamcovent Clean Smart
IsoPlus 50	28160	28860
IsoPlus 65	28161	28861
IsoPlus 80	28162	28862
IsoPlus 100	28163	28863
IsoPlus 125	28164	28864
IsoPlus 150	28165	28865
IsoPlus 200	28166	28866



Dirt Collector Smart

Available for Flamco Clean Smart and Flamcovent Clean Smart.

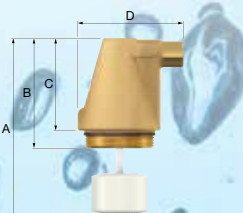
Type	Connection	Dimensions				Weight [kg]	Order Code
		A [mm]	B [mm]	C [mm]	D [mm]		
Dirt Collector Smart	G 2" M	148	66	128	60	0,9	31250



Automatic Air Vent

Available for Flamcovent Smart and Flamcovent Clean Smart.

Type	Dimensions				Order Code
	A [mm]	B [mm]	C [mm]	D [mm]	
Automatic Air Vent 10 L	155	94	79	90	28555



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



Flamco



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