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Flamcovent Clean Smart
Air & Dirt Separator

BEST SEPARATION • SAVES ENERGY • LOW MAINTENANCE

Flamcovent Clean Smart

COMBINING OPTIMAL PERFORMANCE WITH ENERGY CONSERVATION

FOR CONNECTION SIZES
2” - 24”

a smart concept

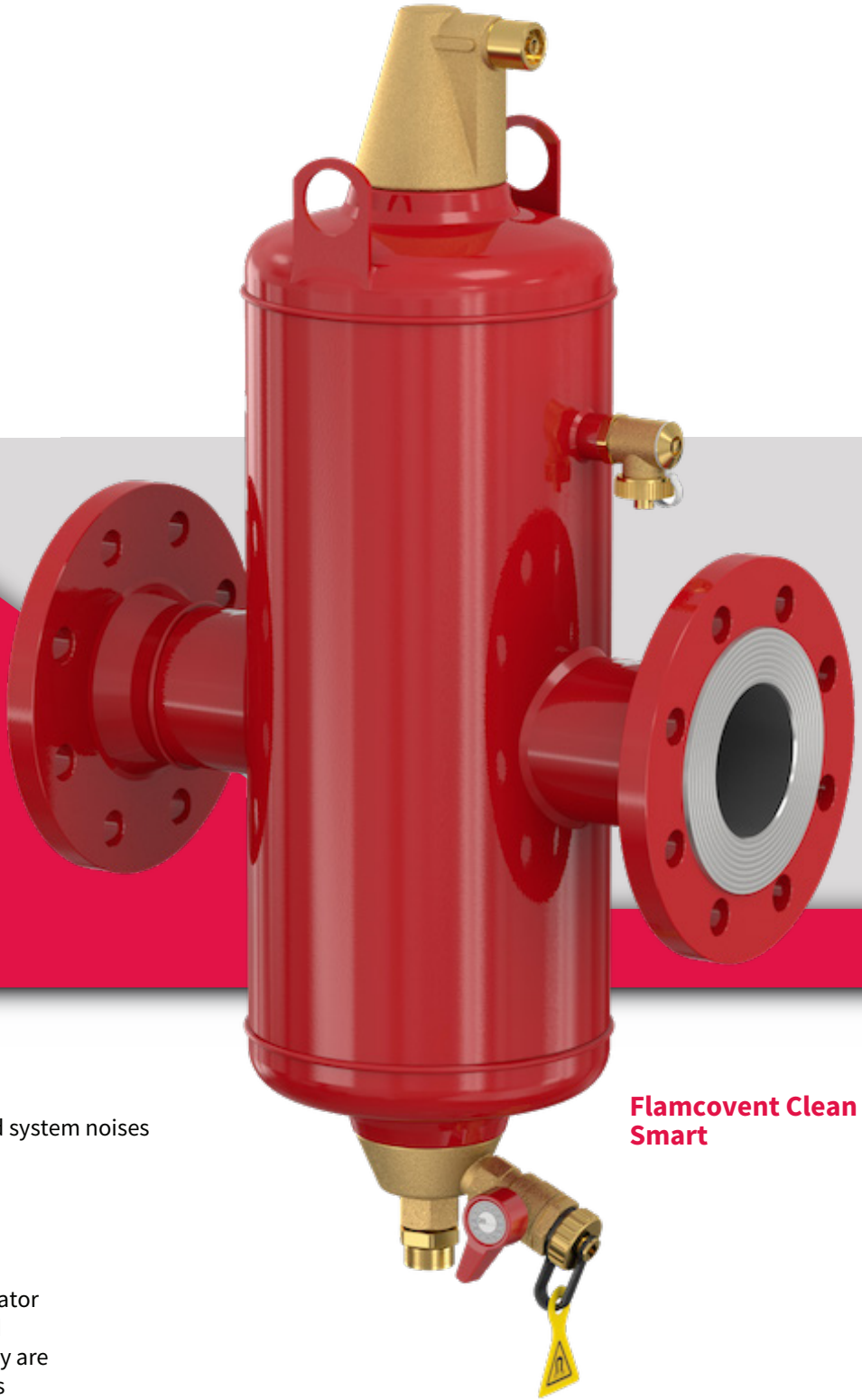
Get rid of air and dirt

Air and dirt in a hydronic system causes problems such as reduced heat transfer, corrosion, noise and can 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 hydronic heating and cooling systems. They are generally a consequence of activities performed (maintenance, draining, 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 alone is not ideal because these do not trap smaller particles, silt up, cause high flow resistance, need regular maintenance, and require replacement of components.



Main advantages

- Up to 60% better performance compared to conventional air & dirt separators
- Low maintenance
- Extremely low flow resistance resulting in the best energy conservation possible
- Standard flow velocities up to 9.8 ft/s
- Consistent performance throughout its service life
- 5 year warranty

Air and dirt in a system lead to:

- Shortened system-life due to corrosion
- Reduced comfort due to poor heat transfer and system noises
- Cavitation and magnetite damage to pumps
- Disruptions of the system

Flamco has the answer

The new 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.

Flamcovent Clean Smart

groundbreaking innovation

High separation performance with energy conservation

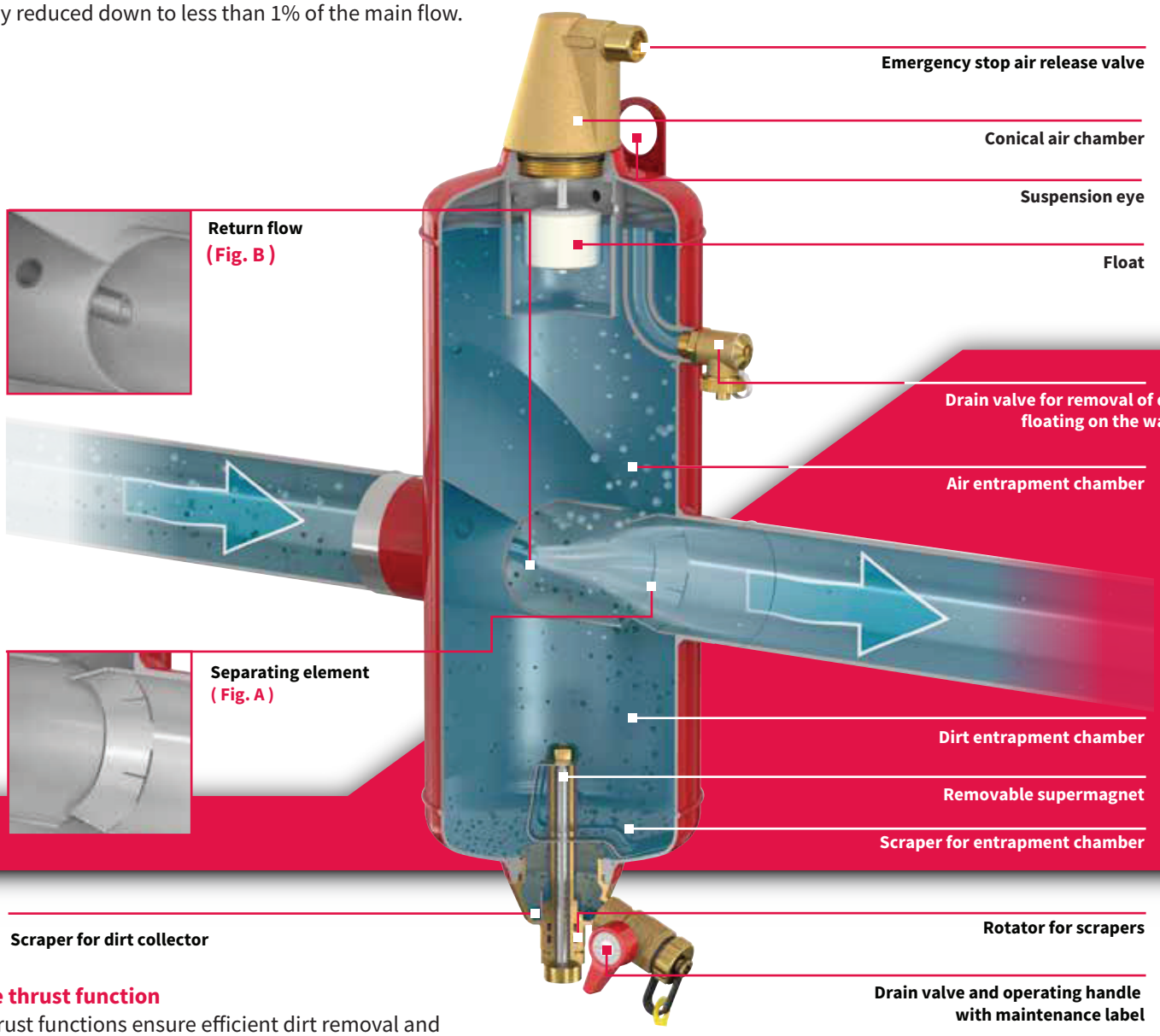
The separation element combined with the return flow ensures excellent air and dirt separation and at the same time saves energy because of the negligible flow resistance. An exceptional rate of at least 40% of the air and dirt is separated per cycle while using only 10% extraction of the main flow.

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.

Return flow
(Fig. B)

Separating element
(Fig. A)



Double thrust function

Two thrust functions ensure efficient dirt removal and deaeration of the system water.

Fig. A: The separating element in the path of the main flow diverts contaminated water into the entrapment chamber.

Fig. B: The return flow brings back the clean water from the center, 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.

Supermagnets

There are 25 Neodymium supermagnets with a rating of 13,000 Gauss per magnet incorporated into the dirt scraper of the Flamcovent Clean Smart. Low flow velocity allows the magnets to trap even the smallest particles. 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.

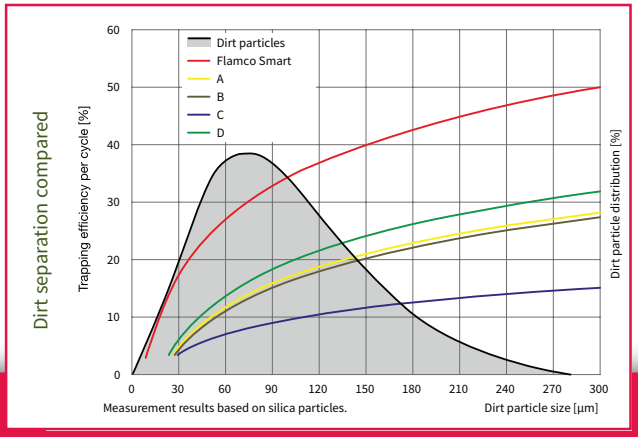
advanced solutions

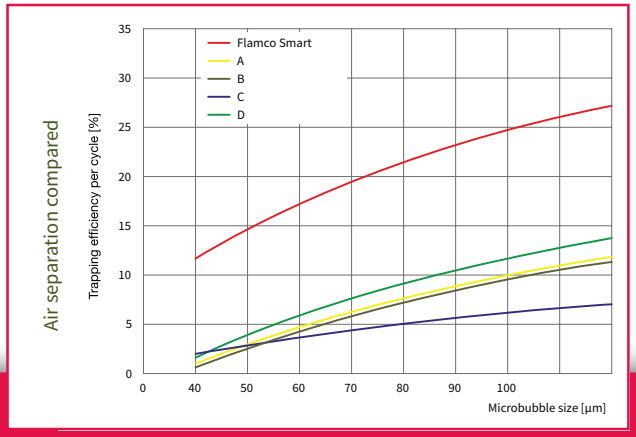
Continuous operation and a long service life

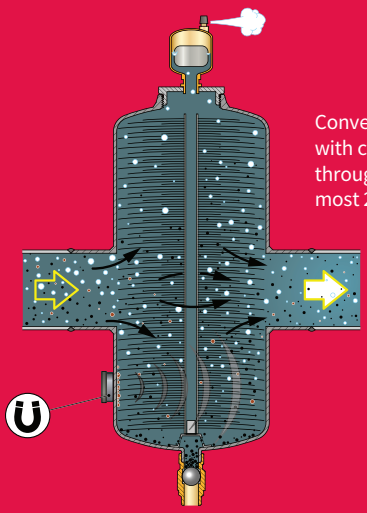
Flamcovent Clean Smart performs 60% better than conventional air and dirt separators, while the flow resistance has been reduced to a negligible level. This avoids wear to the pump of the central heating boiler and reduces energy costs.

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.

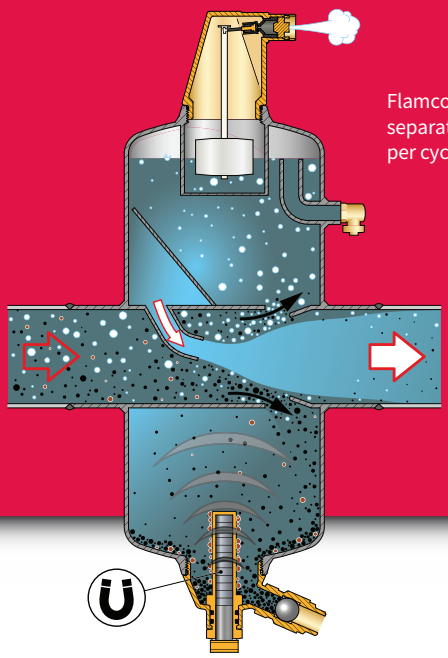
Performs 60% better







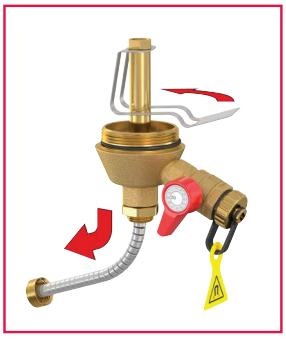
Conventional separator with complete flow through: separation of at most 25% per cycle



Flamcovent Clean Smart: separation of up to 40% per cycle

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.



Conical air chamber

The air chamber 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.

optimal performance

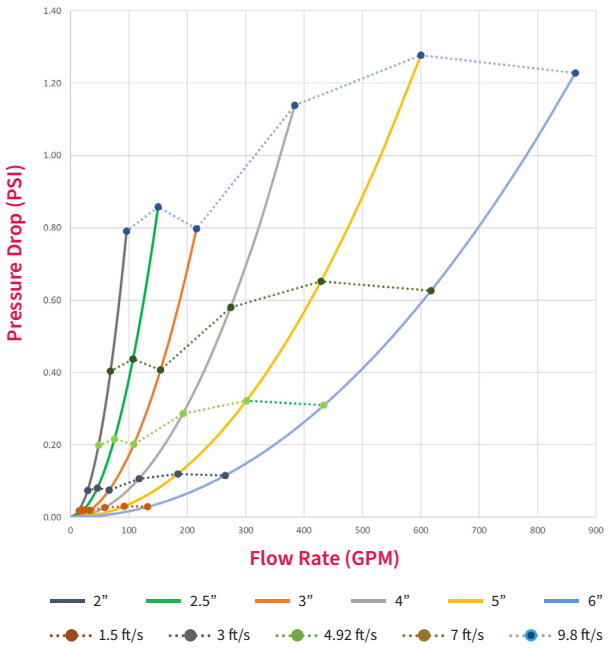
Selection and Installation

Selection graphs

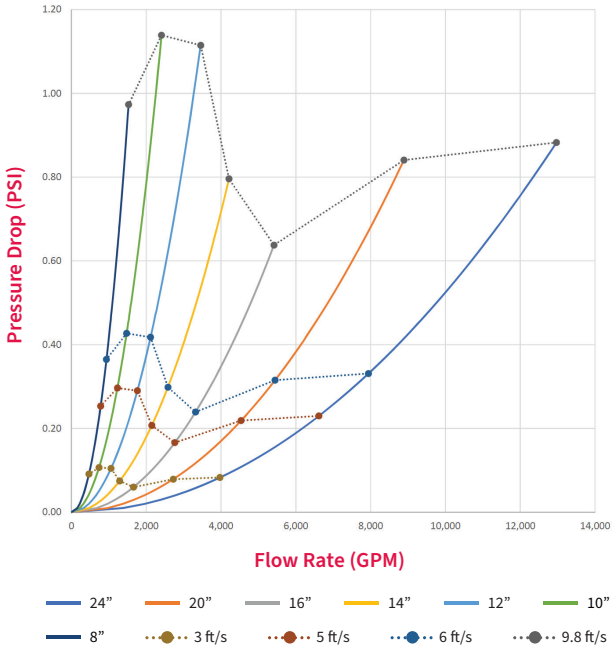
Thanks to the innovative design of the Smart Series air and dirt separators the pressure loss in the system is kept to a negligible minimum. Even at flow velocities of 9.8 ft/s, the Smart series delivers the best performance in separation and pressure drop on the market.

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

2" - 6" Connection Size



8" - 24" Connection Size



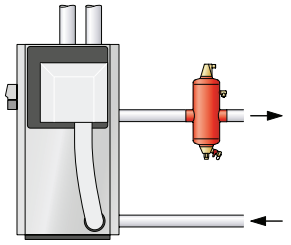


Fig. 1A

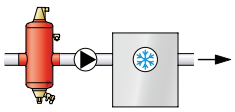


Fig. 1C

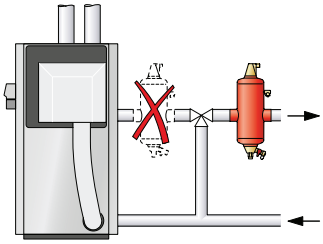


Fig. 1B

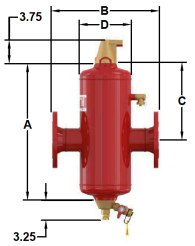
Installation

The optimum location for the Flamcovent Clean Smart is immediately downstream of the boiler or mixing valve, and upstream of the circulation pump (see fig. 1A and 1B). This traps bubbles produced immediately after heating the water. In a cooling system it is just before the chiller (see fig. 1C).

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

Flamcovent Clean Smart

Type	Capacity (gallons)	Connection (in)	Dimensions A (in)	B (in)	C (in)	D (in)	Cv	Weight (lbs)	ASME Part Number	NON-ASME Part Number
Flamcovent Clean Smart 50 F	2.1	2	17.88	13.75	10.03	6.63	108	45	FSADS250A	FSADS250N
Flamcovent Clean Smart 65 F	2.6	2 ½	17.88	13.75	10.03	6.63	162	52	FSADS250A	FSADS250N
Flamcovent Clean Smart 80 F	8.7	3	25.38	18.50	13.94	10.75	242	86	FSADS300A	FSADS300N
Flamcovent Clean Smart 100 F	8.7	4	25.38	18.50	13.94	10.75	360	94	FSADS400A	FSADS400N
Flamcovent Clean Smart 125 F	20.6	5	32.25	25.00	17.00	14.00	531	102	FSADS500A	FSADS500N
Flamcovent Clean Smart 150 F	20.6	6	32.25	25.00	17.00	14.00	780	113	FSADS600A	FSADS600N
Flamcovent Clean Smart 200 F	41.7	8	44.56	30.50	24.69	18.00	1549	209	FSADS800A	FSADS800N
Flamcovent Clean Smart 250 F	97.7	10	57.88	39.00	32.00	24.00	2257	423	FSADS1000A	FSADS1000N
Flamcovent Clean Smart 300 F	109.6	12	65.38	39.63	38.00	24.00	3272	515	FSADS1200A	FSADS1200N
Flamcovent Clean Smart 350 F	221.8	14	73.06	48.00	39.00	30.00	4721	771	FSADS1400A	FSADS1400N
Flamcovent Clean Smart 400 F	244.7	16	79.50	48.00	45.50	30.00	6782	883	FSADS1600A	FSADS1600N
Flamcovent Clean Smart 500 F	466.8	20	103.46	62.20	57.87	39.37	9696	1639	FSADS2000A	FSADS2000N
Flamcovent Clean Smart 600 F	806.8	24	122.99	73.62	69.17	47.24	13802	2365	FSADS2400A	FSADS2400N



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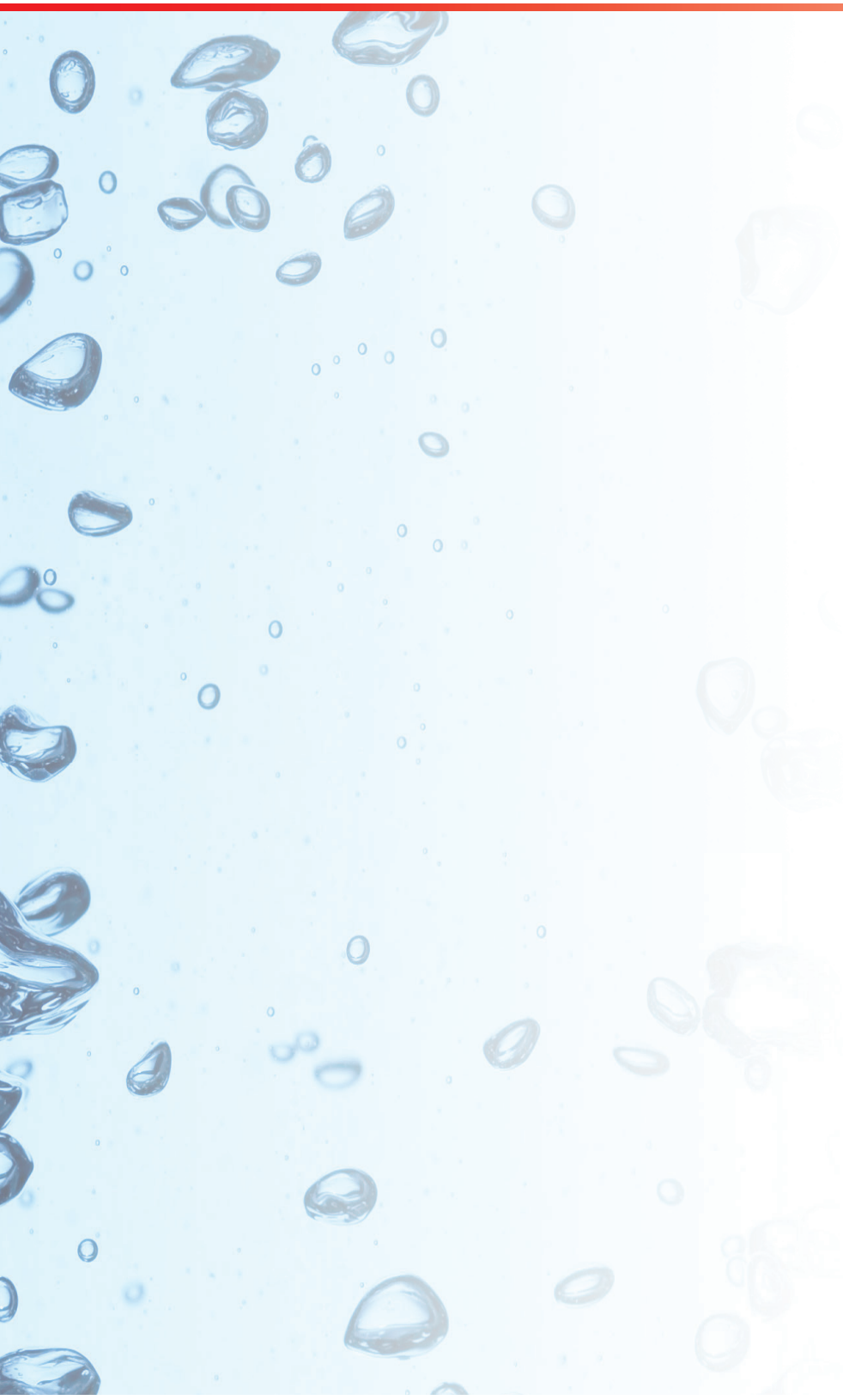

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