

MAHLE

Industry

Cricketfilter®

Filtration of beet sugar after carbonation

1. Filtration of beet sugar

The Cricketfilter® is a pressure filter with a large specific filtration area due to the shape of the elements. The Cricketfilter® is unique because of its patented filter elements, which allow to discharge the filter cake by back pulsing. The Cricketfilter® has been introduced successfully into the sugar industry since 1990. The Cricketfilter® is used for direct filtration during carbonation and sulphitation steps and for precoat / body-aid filtration during thick juice, remelt and standard liquor steps (sugar end liquids). The Cricketfilter® is proven in beet sugar and cane sugar applications. Filtration at carbonation steps is thickening filtration. The Cricketfilter® is fed by a top feed. At the end of the filtration cycle the filter cake is back pulsed. The sedimented slurry is discharged during filtration through a bottom valve.



2. System advantages Cricketfilter®

- Fully automated
- Cake discharge section by section
- Effective cleaning
- No rotating parts

The Cricketfilter®, which operates fully automated, produces a high filtrate clarity after a short recirculation time. Elements are mounted on internal filtrate manifolds and cake release is done for manifolds individually, as it is more effective. The cake release is done by back pulsing with air and no extra liquid is needed.

During the short regeneration time the filter medium is cleaned intensively. The whole campaign can be run with the same filter cloths, which remain in the filter throughout the campaign.

4. Standard design data

Material tank	: carbon steel or stainless steel
Material filter elements	: stainless steel
Design pressure	: -1 / 6 bar(g)
Design temperature	: -10 / 150 °C (depending on filter cloth)
Design and approval	: PED 97/23/EC SELO 02257 (China) GOST R (Russia) and others upon request

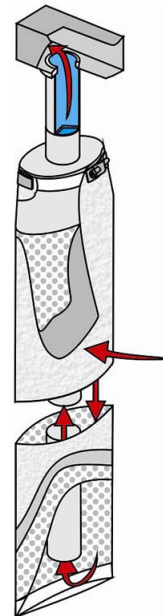
3. Process advantages Cricketfilter®

- High sugar quality
- Short regeneration times
- Higher outputs
- Advanced slurry discharge

A clearer filtrate results in higher sugar quality. This leads to less evaporator scaling and lower load on thick juice strainers or filters. The filter aid consumption for thick juice filtration will be less, also resulting in a longer cycle time for the thick juice filter.

Higher concentration cake slurry results in less liquid being recycled to liming or to first carbonation, leading to more raw juice plant intake capability and higher solids capacity sludge filters.

The Cricketfilter® for first carbonation has a wider element spacing due to the higher solid content. The filter cloth is selected to suit the filtration needs of the application. The Cricketfilter® itself by design is keeping maintenance to a minimum.



5. Specifications

Cricketfilter® for thickening filtration at first carbonation in beet sugar (leaf spacing 110 is recommended)

Models	Filter area [m ²]	Cake volume [dm ³]	Tank volume [dm ³]	Feed/ Drain DN	Filtrate DN	Vent DN	Slurry disch. DN	Weight [kg]	Tank height [mm]
1200S-37-110	37	1070	3400	100	3 x 65	80	200	1450	4655
1400S-49-110	49	1420	5600	150	3 x 65	100	200	2350	4955
1600S-69-110	69	2000	7500	150	4 x 80	100	250	3100	5200
1800S-90-110	90	2610	9700	150	5 x 100	150	250	3500	5495
2000S-109-110	109	3170	12300	150	5 x 100	150	300	5000	5845
2200S-138-110	138	4010	15100	250	7 x 100	150	300	5950	6080
2400S-170-110	170	4920	18500	250	7 x 100	150	300	6620	6420

Cricketfilter® for thickening filtration at second carbonation in beet sugar

Models	Filter area [m ²]	Cake volume [dm ³]	Tank volume [dm ³]	Feed/ Drain DN	Filtrate DN	Vent DN	Slurry disch. DN	Weight [kg]	Tank height [mm]
1200S-56-68	58	690	4010	100	4 x 65	80	200	1660	4655
1400S-78-68	78	1170	5600	150	5 x 80	100	200	2170	4955
1600S-108-68	108	1610	7500	150	6 x 80	100	250	3530	5200
1800S-139-68	139	2090	9700	200	6 x 100	150	250	3400	5495
2000S-180-68	180	2710	12300	200	7 x 100	150	300	5450	5845
2200S-222-68	222	3340	15100	200	9 x 100	150	300	6250	6080
2400S-272-68	272	4080	18500	250	9 x 100	150	300	7840	6420

Other sizes and models upon request

Notes: Dimensions are for reference only. Subject to technical alteration without prior notice.

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