

CLAIMS

1. A filter arrangement (1) comprising:
- a chamber (12) comprising a chamber inlet for unfiltered liquid (14), a
5 chamber outlet for filtered liquid (16) and a wall (18) arranged to keep the
unfiltered liquid and the filtered liquid separated;
 - a filter element (2) having a longitudinal extension arranged inside of
said chamber (12), wherein said filter element (2) comprises a semi-
permeable filtration wall (22) comprising a folded filter (24) arranged in a zig-
10 zag configuration between an inner perforated cylinder (26) and an outer
perforated cylinder (28); and
 - an internally located back-washing arrangement (3);
wherein said back-washing arrangement (3) comprises:
 - an elongated and hollow body (32) having a longitudinal
15 extension, which is substantially parallel to the longitudinal extension of the
filter element (2);
 - a mechanism configured to drive said body (32) in a rotational
and/or an axial movement;
 - a plurality of nozzles (34) arranged in fluid communication with a
20 cavity inside of said body (32), said plurality of nozzles (34) projecting laterally
from said body (32) such that a distal end (36) of each of said plurality of
nozzles (34) is arranged in close proximity to said inner perforated cylinder
(26); and
 - an outlet (320) arranged in fluid communication with said cavity
25 of said elongated and hollow body;wherein said plurality of nozzles (34) are arranged parallel to each other
along a straight line on said body (32) such that they all project in the same
direction.
- 30 2. The filter arrangement (1) according to claim 1, wherein said plurality of
nozzles (34) comprises 2-20 nozzles, or 5-15 nozzles, or 5-10 nozzles.

3. The filter arrangement (1) according to any one of the preceding claims, wherein each one of said plurality of nozzles (34) is arranged adjacent to at least another one of said plurality of nozzles (34).

5 4. The filter arrangement (1) according to any one of the preceding claims, comprising a cap which covers the distal end (36) of at least one of said plurality of nozzles (34).

5. The filter arrangement (1) according to claim 4, wherein said cap is
10 common for all of said plurality of nozzles (34), covering each one of said distal ends (36).

6. The filter arrangement (1) according to anyone of claim 4 or 5, wherein said cap comprises at least one opening which is arranged over an opening
15 of one of said plurality of nozzles (34) such that a liquid is allowed to flow into said nozzle from the opposite side of said filter wall (22).

7. The filter arrangement (1) according to anyone of the preceding claims, wherein said back-washing arrangement (3) further comprises a balancing
20 piece or a plurality of balancing pieces arranged on said elongated body, said balancing piece or said plurality of balancing pieces projecting laterally from said elongated body (32) such that a distal end (36) of said balancing piece or of each one of said plurality of balancing pieces (34) is arranged in close proximity to said inner perforated cylinder (26).

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8. The filter arrangement according to claim 7, wherein said balancing piece is a dummy, or wherein said plurality of balancing pieces is a plurality of dummies.

30 9. The filter arrangement according to claim 7, wherein said plurality of nozzles is a first plurality of nozzles and wherein said plurality of balancing

pieces is a second plurality of nozzles in fluid communication with said cavity inside of said body (32);

wherein said second plurality of nozzles (34) are arranged parallel to each other along a straight line on said body (32) such that they all project in
5 the same direction.

10. The filter arrangement (1) according to any one of the preceding claims wherein perforations of said folded filter (24) have a size which is smaller than the perforations of said inner and outer perforated cylinder (26, 28).
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11. The filter arrangement (1) according to any one of the preceding claims wherein said filter element (2) is a first filter element, wherein said filter arrangement (1) comprises additional filter elements having the same or corresponding features as said first filter element.
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12. A method for back-washing a filter arrangement according to any one of the preceding claims wherein said method comprises the steps of:
- creating a pressure difference between said chamber and the
20 inside of each one of said plurality of nozzles such that a liquid is caused to flow in a reverse direction through the filter where each one of said plurality of nozzles are located; and
- moving said body rotationally and/or axially.

25 13. The method according to claim 12, wherein said step of creating a pressure difference is initiated when there is a pressure-drop over said filter of 0,2-1 bar, or 0,3-0,8 bar, or 0,4-0,6 bar.

14. A back-washing arrangement for cleaning a filter arrangement, wherein
30 said back-washing arrangement comprises:
- an elongated and hollow body (32) having a longitudinal extension;

- a mechanism configured to drive said elongated body in a rotational and/or an axial movement;
- a plurality of nozzles (34) arranged in fluid communication with a cavity inside of said body, said plurality of nozzles projecting laterally from
5 said body (32) such that a distal end (36) of each of said plurality of nozzles is arranged in close proximity to an inner perforated cylinder (26) of a filter element (2) of a filter arrangement (1);
- an outlet arranged in fluid communication with said cavity of said elongated and hollow body;
- 10 wherein said plurality of nozzles (34) are arranged parallel to each other along a straight line on said body such that they project in the same direction.