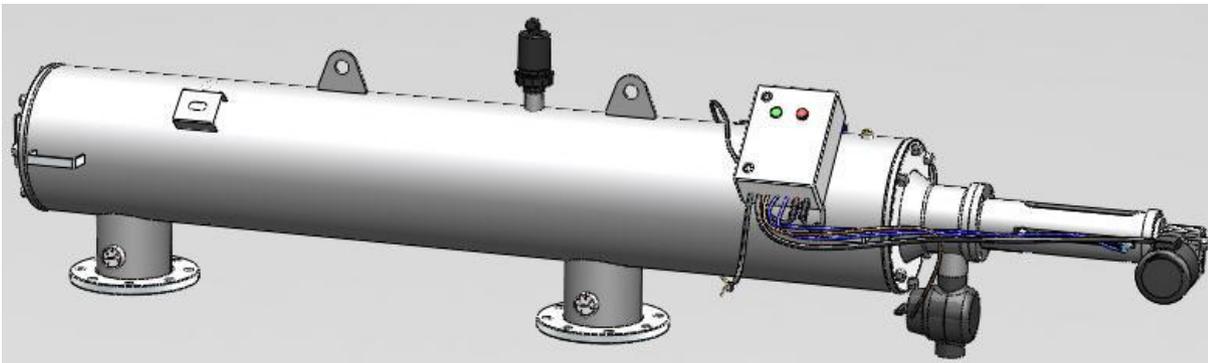


## General

The Solari RAF/CRAF Automatic filters are electronically controlled fully automatic backwash filters with a motor reductor mechanism. This allows for the automatic backwash process. Electrical voltage can be 220V (AC) single phase and 380V (AC), three phase. Normally a three-phase product is provided; should a single phase product be required contact your local Solari Reseller to ensure the correct product is chosen. Pressure occurs within the filter caused both by the water flow and speed through the pump and the filter screens installed within the unit. At the chosen differential pressure setting, the filter will automatically self-clean by backwashing. The filtration process continues while this backwash mechanism is working. Rejected suspended solids and organics in the backwash water is automatically discharged during backwash.



Picture 1: RAF series filter – body material is carbon steel

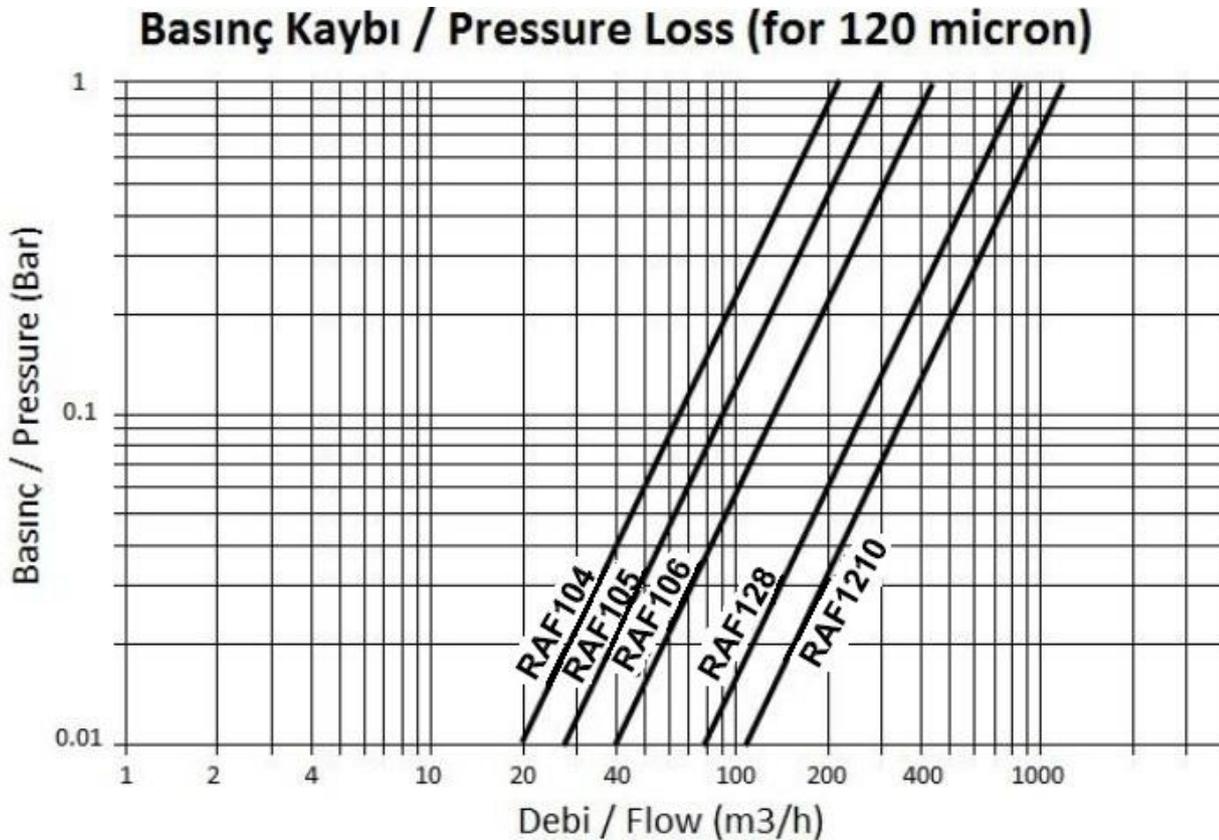


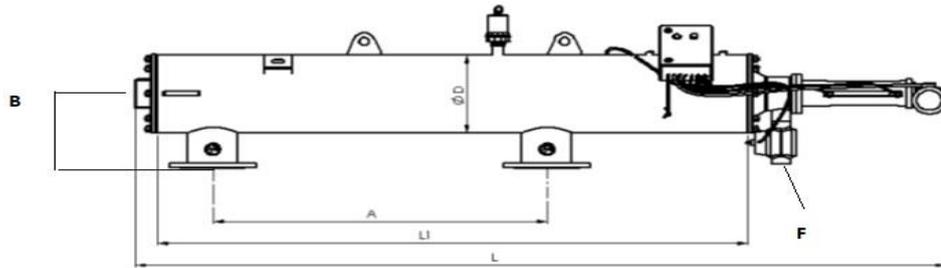
Picture 2: CRAF series filter – body material is stainless steel

## Technical Specifications

|                                  |                                      |
|----------------------------------|--------------------------------------|
| Body Material                    | ST-37(S235JR) / AISI316L             |
| Sieve Material Internal Kit      | AISI304L/AISI316L                    |
| Maximum Working Pressure         | 10 bar; 150Psi                       |
| Minimum Working Pressure         | 1 bar; 14Psi                         |
| Maximum Working Temperature      | 60°C; 140°F                          |
| Back Washing Time                | Timing Setup                         |
| Control System                   | Electronic                           |
| Filtration Filtering Sensitivity | 20-400 $\mu$ (micron)                |
| Paint Coating Material           | Electrostatic polyester powder paint |
| Flow Range                       | 120-380 m <sup>3</sup> /h            |

**Note:** The brush suction nozzles in the use of sieve internal kit are between 20 and 50 microns



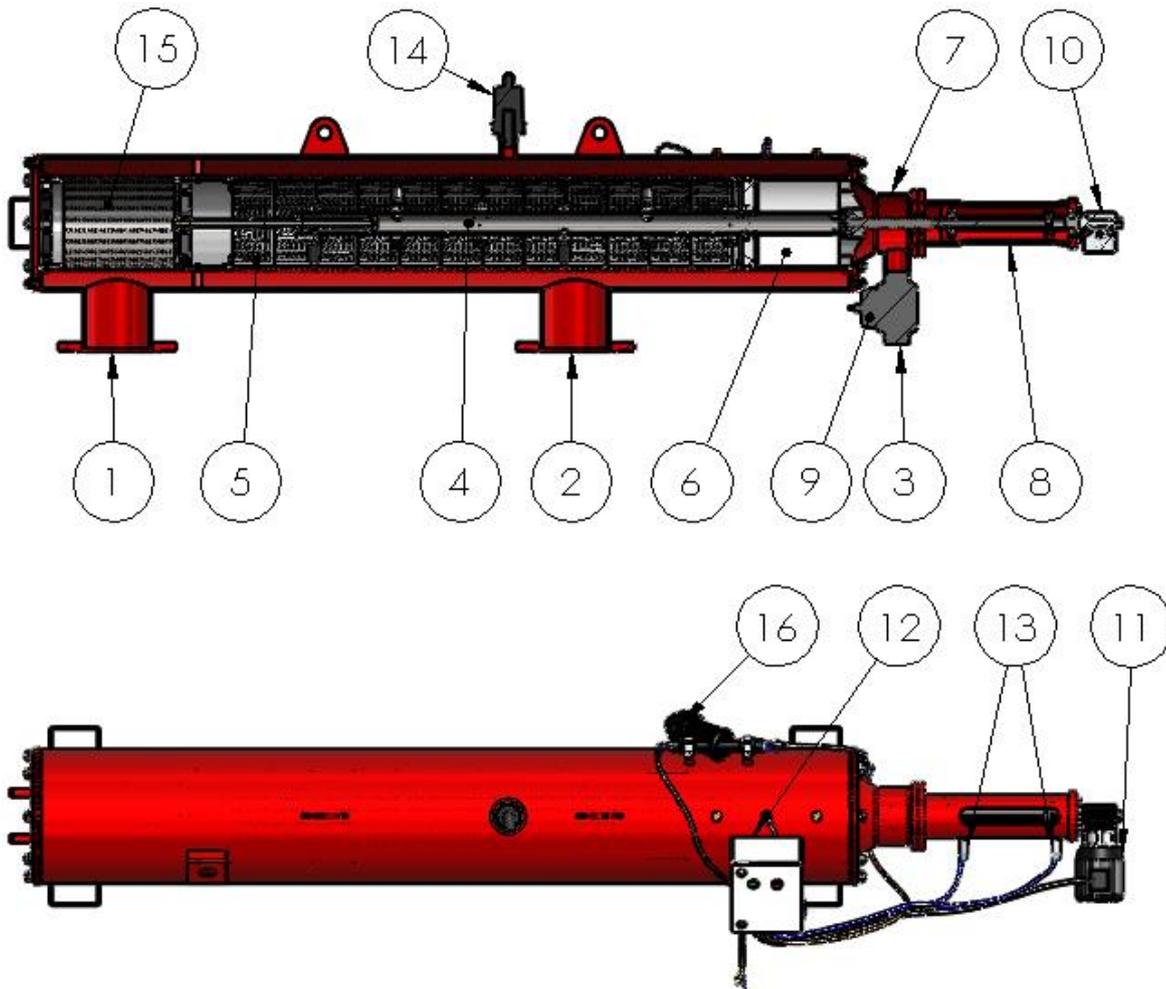


Picture 3: Diagram

| Code    | Input Output |     | A    | B   | L1   | L    | D  | F     | Flush Flow | Flow Rate | Filt. Surface | Weight |
|---------|--------------|-----|------|-----|------|------|----|-------|------------|-----------|---------------|--------|
|         | inch         | dn  |      |     |      |      |    |       |            |           |               |        |
| RAF104  | 4            | 100 | 500  | 287 | 1040 | 1907 | 10 | 1.1/2 | 12         | 120       | 2634          | 91     |
| RAF104S | 4            | 100 | 600  | 287 | 1240 | 2107 | 10 | 2     | 18         | 140       | 3951          | 107    |
| RAF105  | 5            | 125 | 600  | 287 | 1240 | 2107 | 10 | 2     | 18         | 150       | 3951          | 109    |
| RAF105S | 5            | 125 | 900  | 287 | 1550 | 2307 | 10 | 2     | 24         | 160       | 5268          | 142    |
| RAF106  | 6            | 150 | 900  | 287 | 1550 | 2307 | 10 | 2     | 24         | 180       | 5268          | 146    |
| RAF126S | 6            | 150 | 1100 | 312 | 1942 | 2707 | 12 | 2     | 36         | 220       | 7902          | 162    |
| RAF128  | 8            | 200 | 1100 | 312 | 1942 | 2707 | 12 | 2     | 36         | 320       | 7902          | 165    |
| RAF1210 | 10           | 250 | 1100 | 312 | 1942 | 2707 | 12 | 2     | 36         | 380       | 7920          | 178    |

## Working Principles

Dirty water enters the filter from inlet port (1) and passes through the fine screen (15) before encountering the multi-layer fine screen (5). Solid particles remain in the fine screen. Cleaned water passes through the multi-layer screen ready for use from outlet port (2). While this process constantly continues, the solid particles in the screen begins to cover it. This situation forces a decrease in the flow. When the inlet pressure increases, the output pressure decreases and due to this difference ( $\Delta P$  pressure difference) it is detected by the DP pressure which triggers a command in the control panel to backwash.



Picture 4 – Parts of RAF and CRAF Filters

Control panel (12) sends an open command to solenoid valve (9). While the solenoid valve is draining (3) dirty water inside the filter (which is more than atmospheric pressure), the control panel commands the motor to start.

Thus, motor reductor (10) pushes it by turning. The screw shaft connected to reductor begins to return with linear motion. This spiral motion occurs by a combination of rotation and linear motion. The nozzles on suction pipe (4) discharges solid particles held onto the multi-layer sieve to the atmosphere by sucking. Nozzles cleans environmentally each point on the multi-layer sieve with this spiral movement.

#### The Parts of RAF Filter according to Picture 4;

- 1- Dirty water inlet
- 2- Clean water outlet
- 3- Drainage discharge
- 4- Collector (connected to vacuum nozzles)
- 5- Sieve internal kit (multi-layer)
- 6- Rotor pool (dirty water pool)
- 7- Discharge section
- 8- Reductor connection and stroke settings section
- 9- Reductor (56 dv/min)
- 10-Motor (0.25kw,1400dv/min, single phase or three phase)
- 11-Control Unit (electronic)
- 12-Optical sensors (stroke settings alert)
- 13-1” air discharge (vacuum lifter)
- 14-Coarse screen
- 15-Mini plastic filter kit

Note: During the backwash process, the filtering process continues. The unit does not stop filtering whilst backwashing.