

Water Treatment



Engineering & Construction

**Filtration
FAC Mod.**

OVERVIEW

FAC active carbon filters can retain chlorine and its derivatives, ozone, ionic surfactants, solvents, pesticides and organic micropollutants present in water, thereby eliminating any unpleasant odours or tastes. If water contains a modest quantity of non ionic surfactants, FAC filters guarantee good percentages of removal if sized to ensure sufficient contact time. They are also used for removing/adsorption of chlorine derivatives following a process of ammonia oxidation through break-point chlorination.

FAC filters are normally used following a preliminary filtration phase, through FAS multilayer filters in order to eliminate mechanical impurities present in water.

Periodic washing of the filter (backwashing with water and final washing) enables the expulsion of the retained impurities and clearing of the filter bed with elimination of any formed preferential ways.

APPLICATIONS

- Dechlorination
- Removal of residual ozone or other oxidants in general
- At the bottom of an iron separator filter for removal of residual oxidant substances
- Adsorption of surfactants and solvents
- Adsorption of pesticides and organic micropollutants
- Removal of unpleasant odours and tastes
- Adsorption of chlorine derivatives obtained from ammonia oxidation (break-point chlorination process)

OPERATING DATA

- | | | |
|---|---------|------|
| ➤ Operation pressure min/max | 2,5/5 | bar |
| ➤ Project/test pressure | 5/7,5 | bar |
| ➤ Backwashing pressure | 1,5 | bar |
| ➤ Water temperature range | 3÷40 | °C |
| ➤ Electric power voltage/frequency | 220/50 | V/Hz |
| ➤ Electric absorption | 20 | W |
| ➤ Load losses with blocked filter (values read at pressure gauges) medium/high flow | 0,4/0,7 | bar |
| ➤ Service station for valves control | 5-7 | bar |

CONSTRUCTION CHARACTERISTICS

Models from FAS 45⁽¹⁾ to FAS 160

- Tank: vertical cylindrical in electro-welded carbon steel with convex bottoms, complete with 2 inspection hatches for loading filtering media, supplied in bags. The interior and exterior tanks are sanded to a finish class of SA 2.5. The internal surface is subsequently treated with a coat of epoxy food paint to obtain a total dry film of 250 µm. The external surface, after a coat of epoxy base, is protected with epoxy base paint RAL 6024.
- Water distribution system: the lower distributor comprises a robust filter-nozzle star with calibrated holes in PVC/PP. The upper section is fitted with a flow break disk with a calibrated design.
- Automatic valves: butterfly type in painted cast iron, lens in nodular cast iron, double pneumatic actuator with relative solenoid valve. On FAS 45 and FAS 55 models, the valves are membrane type with pneumatic control.
- Filter piping in AISI 304 stainless steel, flat stub in AISI 304, flanges in hard aluminium.
- Pressure gauges diameter 63 mm, scale 0-10 bar, complete with pressure gauge holder valve and test point.

OPTIONS

PVC filter piping is also available, with PVC pneumatic control valves (FAS-PVC Model)

Models from FAS 180 to FAS 250

- Tank: vertical cylindrical in electro-welded carbon steel with convex bottoms, complete with 3 inspection hatches for loading filtering media, supplied in bags. The interior and exterior tanks are sanded to a finish class of SA 2.5. The internal surface is subsequently treated with a coat of epoxy food paint to obtain a total dry film of 250 µm. The external surface, after a coat of epoxy base, is protected with epoxy base paint RAL 6024.
- Water distribution system: the lower distribution system comprises a nozzle plate complete with nozzles and calibrated outlets secured with locknuts. Upper distribution is guaranteed by a central conveyor which terminal section is an upturned truncated cone form.
- Automatic valves: butterfly type in painted cast iron, lens in nodular cast iron, double pneumatic actuator with relative solenoid valve.
- Filter piping in AISI 304 stainless steel, flat stub in AISI 304, flanges in hard aluminium.
- Pressure gauges diameter 100 mm, scale 0-10 bar, complete with pressure gauge holder valve and test point.

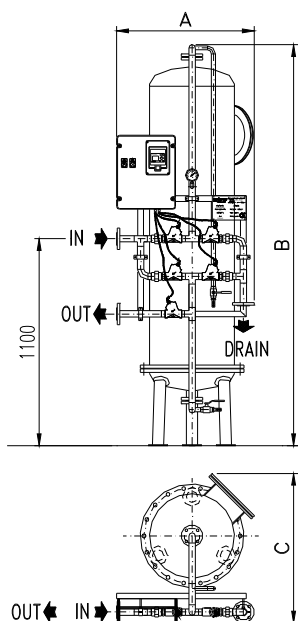
AUTOMATION

- Filter operation and washing cycle are ensured by solenoid valves, pneumatically connected to the valves on the filter piping, and electrically powered by a PLC fitted with an operator panel and display.
- The solenoid valves and PLC are inserted in a small panel in anti-corrosion material with protection rating IP55.
- Operating times, backwashing and final washing are adjustable as required according to the effective working conditions.
- Voltage-free contacts are available for an external permissive.
- Start-up can also be manual.

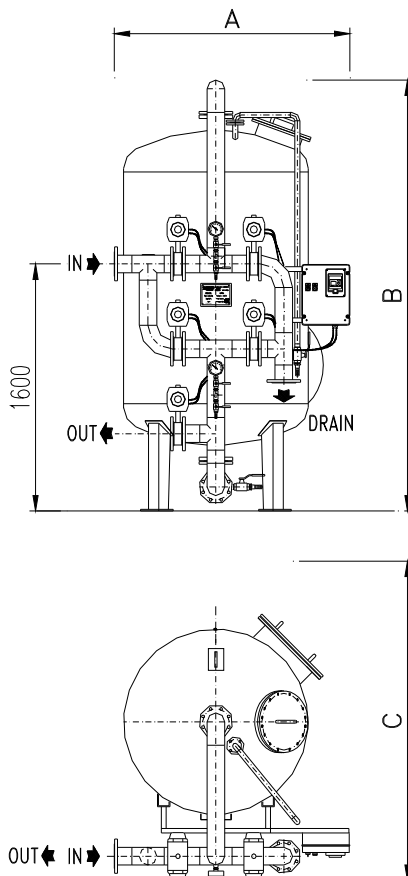
FILTRATION MEDIA

The upper section of the filter bed is composed by an active carbon layer with a high porosity and a very high active surface. Thanks to these properties, the material has the specific adsorption power. The carbon particle size aids the kinetics of the adsorption mechanisms, allowing to use the contact times required. Below the filter bed there are one or more layers of inert material (quartziferous sand) with pre-set piece size and layer depth.

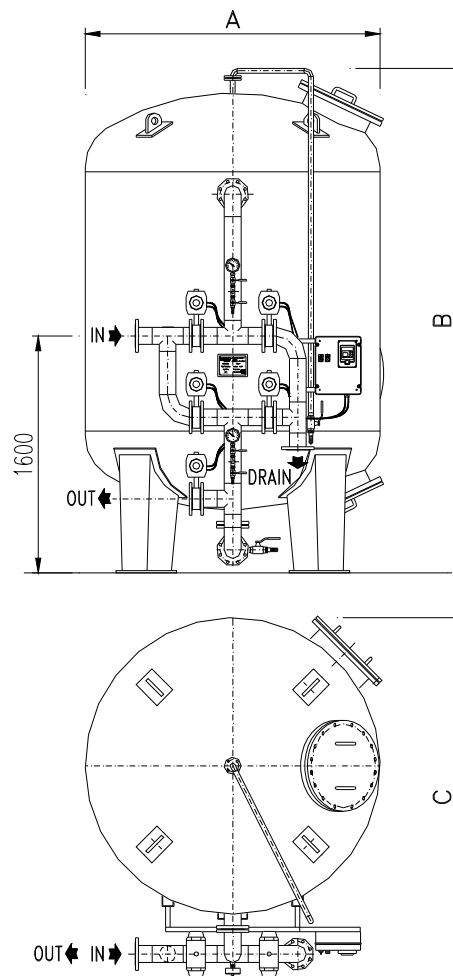
FAC 45 – 55⁽¹⁾



FAC 65 - 160



FAC 180 - 250



⁽¹⁾ **NOTE:** For FAS 45 and FAS 55 models, an upper manhole and flanging of the convex bottom below the plating are envisaged

TECHNICAL DATA

Model	Flow Rates			
	Operating			Back washing
	v = 15 m/h	v = 20 m/h	v = 25 m/h	
m ³ /h	m ³ /h	m ³ /h	m ³ /h	
FAC 45	2.4	3.2	4.0	3.2
FAC 55	3.6	4.7	5.9	4.7
FAC 65	5.0	6.6	8.3	6.6
FAC 80	7.5	10.0	12.6	10.0
FAC 100	11.8	15.7	19.6	15.7
FAC 120	17.0	22.6	28.3	22.6
FAC 140	23.1	30.8	38.5	30.8
FAC 160	30.1	40.2	50.2	40.2
FAC 180	38.2	50.9	63.6	50.9
FAC 200	47.1	62.8	78.5	62.8
FAC 220	57.0	76.0	95.0	76.0
FAC 240	67.8	90.4	113.0	90.4
FAC 250	73.6	98.1	122.7	98.1

NB: - For constructional reasons dimensions and weights are not binding.
 - The company holds the right to modify the technical and aesthetic characteristics of each equipment

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in conformità alla EN ISO 9001 (2000)
