

IRON & MANGANESE FILTER SYSTEM WITH TURBIDITY & HYDROGEN SUPHIDE REDUCTION

Iron and Manganese are commonly found in underground water, borehole water and well water can frequently be contaminated with Iron or Manganese rendering it unsuitable for drinking without treatment.

Iron is usually dissolved in the water when extracted from an underground source, however, as soon as the water is exposed to air the iron will begin to oxidise causing it to precipitate into a fine particle which accumulates into a reddish brown sludge. This sludge settles in pipes and tanks, chokes valves, pipework etc. and causes staining on baths, sinks, showers etc. Iron is also toxic and must be kept below the MAC limit of 0.2 mg/l if the water is for human consumption.

Manganese is similar to Iron but forms a black precipitate and a undesirable taste in drinking water where levels are high. The drinking water MAC limit is 0.05 mg/l.

Hydrogen Sulphide gives a "bad egg" smell to water and can be common in water with high iron levels.

Pozzani's Iron and Manganese filter system comprises of two cylinders. The first cylinder introduces air into the water by a venturi injector, air is mixed with water to precipitate the iron and manganese, surplus air is then vented off. The second cylinder contains a mixture of media which acts as a catalyst to remove the unwanted particulates, a valve on top of this cylinder automatically initiates a backwash of the filter bed to remove the captured particles at a user adjustable interval. The backwash is programmed to start at 2 am (user adjustable) and flushes water through the filter bed washing the captured particles to drain and cleaning the bed, backwash is at times the designed flowrate and takes approximately 12 minutes.

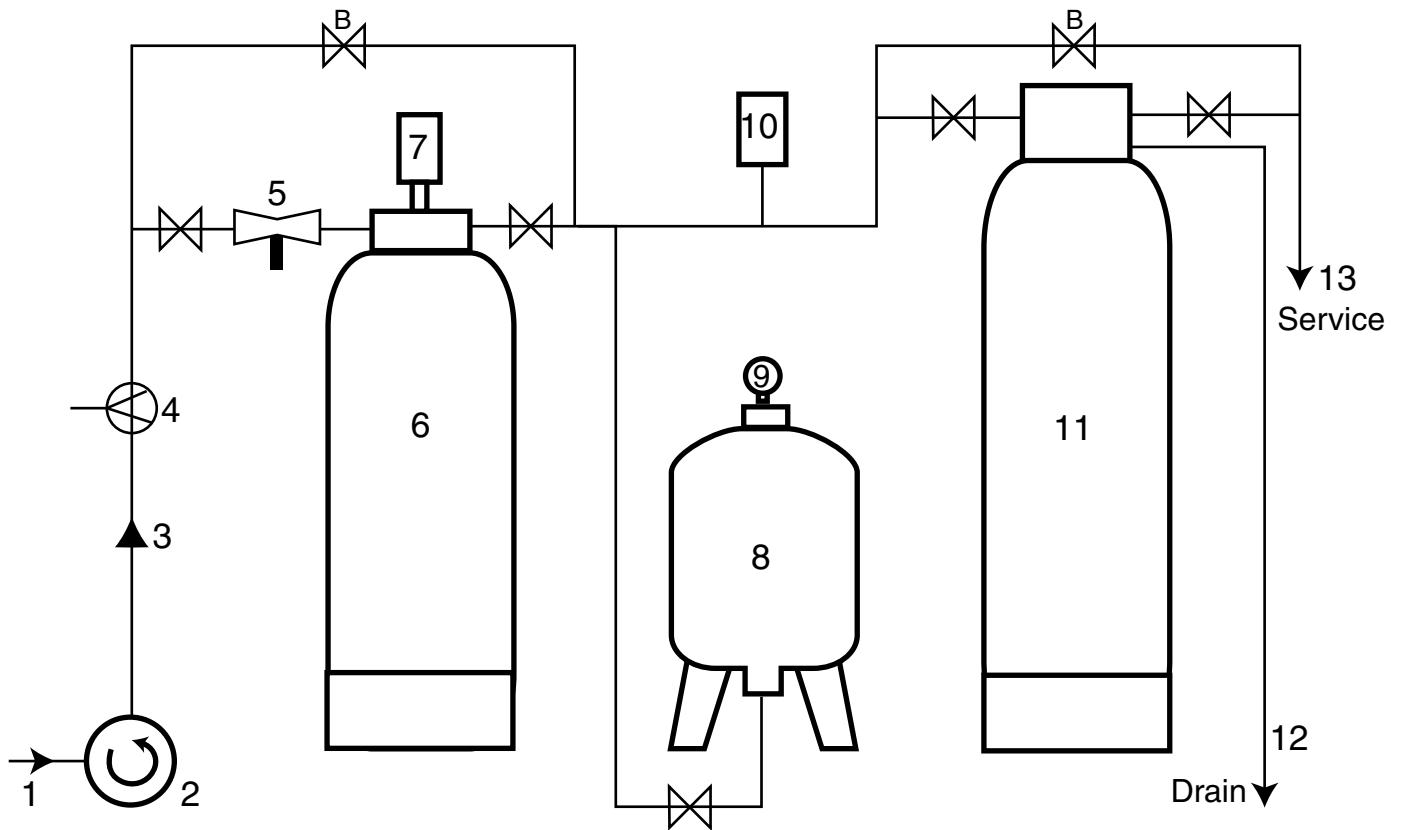


Main Picture: Iron and Manganese Filter System. Inset: Controller. (The Pressure Vessel pictured centre is available at an additional cost).

This system is very efficient, it produces consistent results with very low running costs and maintenance - key features of the system are as follows:-

- Two stage system for reliable and consistent performance
- Simple and efficient air injection system
- Durable catalytic filter bed (some beds have been in operation for over 10 years)
- Simple maintenance with automatic backwash
- Very low running costs
- Hydrogen Sulphide and turbidity are also reduced

SCHEMATIC DIAGRAM OF TYPICAL INSTALLATION



- 1 Water In
- 2 Pump
- 3 Check Valve (+ Vacuum Relief on mains water)
- 4 Pressure Relief Valve
- 5 Venturi Air Injector
- 6 Contact Air Vessel
- 7 Air off Vent

- 8 Pressure Vessel
- 9 Pressure Gauge
- 10 Pressure Switch
- 11 Filter Vessel with Automatic Backwash Valve
- 12 Drain Line
- 13 Filtered water to service
- Shut off Valve
- By-pass Valve

OPERATING PARAMETERS:-

- pH range for effective operation is 6.0 to 9.0
- Organic Iron below 0.5ppm
- Exact contaminant removal properties will be entirely dependent upon the local water quality
- For Manganese levels above 2ppm (with low pH) may require additional oxidation for effective removal

ADDITIONAL INFORMATION:-

- All Systems are supplied with an aerator system to optimise oxidation of contaminants, and service and drain line flow controllers
- All Fleck valves are supplied with 24v motors and a 240 to 24v transformer as standard
- The lifetime of the media depends entirely upon site conditions and the frequency of backwashing
- Regular and efficient backwashing is essential to maintain filter performance and preserve filter bed life

TECHNICAL SPECIFICATIONS

	T250	T500	T750
Service Flowrate Lts/min	26	41	70
Backwash Flowrate Lts/min	26	41	70
Fleck Valve Model	F2510	F2510	F2750
Connection Ports			
Inlet/Oulet	1"BSP(F)	1"BSP(F)	1"BSP(F)
Drain	3/4"	3/4"	1"
By-pass as standard	YES	YES	NO
Filter Vessel Size	13 x 54	16 x 65	21 x 60
Overall Height (mm)	1610	1895	1850
Air Contact Vessel	10 x 44	13 x 54	13 x 54
Backwash Volume (Lts)	310	490	840



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