

W.E.T.Oxi



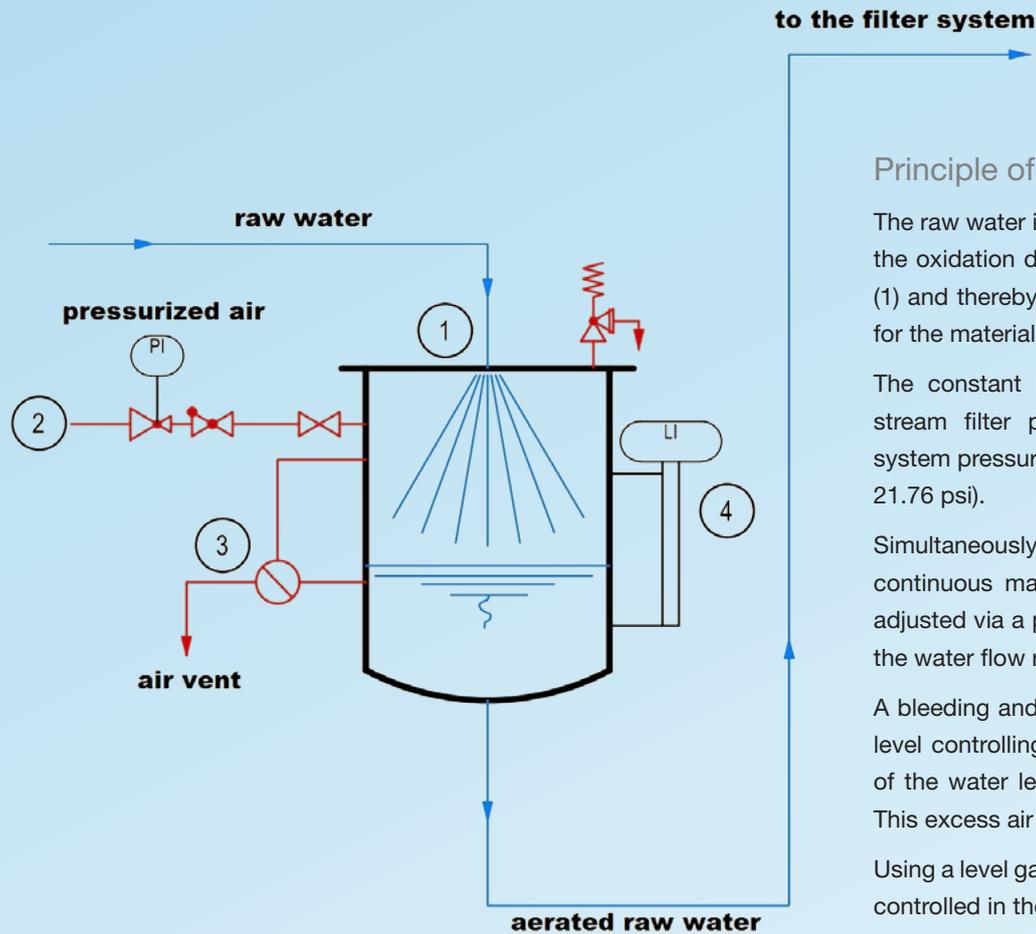
W.E.T.oxi air cushion oxidation device for drinking water treatment

For drinking water supply the enrichment with air derived oxygen is usually the first step during cleaning of reduced ground water. By this measure, interfering substances in the water such as iron, manganese and ammonium are oxidized and subsequently removed by downstream pressure filters. From corrosion-chemical point of view, an oxygen concentration of about 6 mg/l is aimed for at waterworks output .

For this purpose air cushion oxidation devices with the following characteristics were developed:

- pressure ventilation without interruption of the water flow
- low space requirements
- no usage of pollution-prone mounting parts necessary
- no backwashing required
- low air pressure requirements





Principle of operation:

The raw water is sprayed into the air space of the oxidation device using a full cone nozzle (1) and thereby the required phase boundary for the material transfer is produced.

The constant back pressure of the downstream filter plant will usually produce a system pressure from 100 to 150 kPa (14.5 to 21.76 psi).

Simultaneously compressed air is added in a continuous manner (2). The air flow rate is adjusted via a pressure tuner to 10 - 15 % of the water flow rate.

A bleeding and venting aerator (3) acts as a level controlling valve and prevents lowering of the water level in presence of excess air. This excess air is removed.

Using a level gauge (4), the water level can be controlled in the oxidation device.

Specifications:

Cylindrical pressure vessel: Material S235JR	
Pressure drop 30 kPa (4,35 psi) nominal flow rate)	
Design pressure 600 kPa (87 psi)	
Corrosion protection:	
Pretreatment	interior and exterior sandblasting SA 2.5
Inner coating	3 mm (0.118 in) hard rubber lining with KTW approval according to DVGW leaflet W270
External coating	zinc dust primer 80 microns

Size	Flow rate	cylindrical shell height	Capacity
Ø nom. mm (in)	l/s (ft ³ /min)	mm (ft)	m ³ (gal (brit))
500 (19.7)	5 (10.6)	1000 (3.28)	0.21 (46.2)
600 (23.6)	10 (21.2)	1350 (3.88)	0.41 (90.2)
800 (31.5)	20 (42.4)	1750 (5.74)	1.0 (220)
1000 (39.4)	30 (63.5)	2150 (7.05)	1.9 (418)



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