Air flotation water purifier

Principle:

Air floatation method is used to clean water under high pressure, so that water can be dissolved into a large number of gases as working fluids. When suddenly decompressed, numerous tiny bubbles are released, which are adhered to impurities in the mixed and reactive water, so that the specific gravity of the flocs is less than 1, thus floating on the liquid surface, forming a three-phase mixture of foam (i.e. gas, water, particles). Thus, the pollutants can be separated from the wastewater to achieve the purification effect.

Main uses and effects:

a. The removal rates of Cr6 +, Cu2 +, Fe3 +, Zn2 + and other mixed wastewater containing a variety of heavy metal ions in electroplating wastewater are more than 90%. After treatment, it meets the discharge standard, but the total content does not exceed 20mg / L.
b. The pulp fiber recovery rate of papermaking white water can reach 90%, and the COD removal rate is 80%. The treated water can be recycled to save industrial water.
c. For the treatment of printing and dyeing, bleaching and dyeing and wool textile wastewater, the chroma removal rate can reach 70% - 90%, COD removal rate 55% - 80% and BOD removal rate 50%.
d. A large number of organic impurities are removed from tannery wastewater, with COD removal rate of 60 ~ 70% and suspended solids removal rate of 80-90%.
e. The removal rate of COD is 65 ~ 80% and the removal rate of suspended solids is 80-90%.
f. For the separation of various oily wastewater (including emulsified oil and vegetable oil), the oil of oil refining wastewater can be reduced to less than 10mg / L.
g. For industrial wastewater such as pigment and paint, COD removal rate is 70-90%; Rubber wastewater treatment, COD removal rate 70-80%.
h. For large pool foam bath water, the turbidity can be stabilized below 10 °, and the bacteria and coliform in the water can be greatly reduced.
i. The turbidity of domestic drinking water and industrial water can be purified below 5 ° and has a good effect on reducing chromaticity and oxygen consumption.

Main advantages:

Compared with the general sedimentation tank, the main advantages of air flotation water purification are:

a. The water yield per unit area is 3-5 times higher.
b. The residence time in the tank is reduced by 70-85%.
c. The floor area can be reduced by 60-85%.
d. The operation is simple, the waste residue discharge is convenient, and the sludge volume

can be reduced by 50-80%.

e. The utility model has the advantages of low cost, small dosage of coagulant, free start and stop, and convenient management.

Operation:

a. Prepare the coagulant, store it in the storage tank and add it to the dosing device.
b. Start the air compressor and input the compressed air into the dissolved air tank.
c. When the pressure of the dissolved gas tank reaches 0.2-0.3mpa, start the high-pressure water pump, slowly open the valve, put the water pressure into the dissolved gas tank for dissolved gas, and control the flowmeter to make the flow moderate.
d. When the water level of the dissolved gas tank reaches one third of the liquid level gauge, open the release valve and input the dissolved gas water into the reaction tank (the reaction tank shall be filled with clean water before use).
e. Adjust the high-pressure water outlet valve to keep the liquid level of the liquid level gauge between 1 / 3 and 2 / 3.
f. Start the sewage pump and send the wastewater to the reaction tank for treatment.
g. Open the dosing valve and determine the dosage of coagulant according to the wastewater.
h. Adjust the drainage valve of the air flotation reaction tank to keep the water level of the reaction tank at the slag discharge port, that is, start normal operation.
i. When the thickness of scum accumulates about 10-15cm, start the slag scraper to scrape the sludge.
j. After treatment, the wastewater shall be sampled and tested regularly. If it fails to meet the treatment requirements, the cause shall be found in time to solve the problem.

Specifications of main accessories

No.	Processing flow (m3/h)	Dissolved air pump					
		Model	Flow (m3/h)	Highlevel (m)	Motor (kw)	Inlet pipe	Outlet pipe
1	1	32W-30	7	17	1.5	DN50	DN25
2	5	32W-30	7	17	1.5	DN50	DN25
3	10	40W-40	7	17	4	DN50	DN25
4	15	40W-40	7	4	4	DN50	DN25
5	20	1/2GC-5x2	11	15	3	DN50	DN25
6	25	2GC-5x2	11	15	7.5	DN50	DN25
7	30	2GC-5x2	11	15	7.5	DN50	DN25

Sewage pump						Dissolving cylinder		Slag scraping motor
Model	Flow (m3/h)	Highlevel (m)	Motor (kw)	Inlet pipe	Outlet pipe	Diameter (mm)	Height (mm)	Power (kw)
25WGF	7.3	20	1.5	DN25	DN25	200	1600	0.37
25WGF	7.3	20	1.5	DN25	DN25	400	2800	0.37
50WGF	12.1	22	1.5x2	DN25	DN25	500	3000	0.37
50WGF	20.8	28	2.2	DN65	DN50	600	3200	0.37
80WGF	20.8	28	3	DN65	DN50	600	3200	0.55
80WGF	20.8	28	3	DN65	DN50	800	3200	0.55
80WGF	54	38	3	DN80	DN65	800	3200	0.55
80WGF	54	38	3	DN80	DN65	1000	3200	0.55

Air compressor				Sewage flowmeter		Dissolved air water flowmeter	
Model	Type	Air pressure (m3/min)	Motor (kw)	Model	Range (m3/h)	Model	Range (m3/h)
Z-0.025	Single stage air-cooled Mobile	0.025	JY＞134 (0.37）	LZB-40	0.16-1.6	LZB-15	0.04-0.4
Z-0.025		0.025	JY＞134 (0.37）	LZB-80	0.6-6	LZB-40	0.25-2.5
Z-0.025		0.025	JY＞134 (0.37）	LZB-80	1.6-16	LZB-50	2.5-6
Z-0.05/6		0.05	JY2A4 (0.75)	LZB-80	1.6-16	LZB-50	2.5-6
Z-0.05/6		0.05	JY2A4 (0.75)	LZB-100	8-40	LZB-80	1.6-1.6
Z-0.05/6		0.05	JY2A4 (0.75)	LZB-100	8-40	LZB-80	1.6-1.6
V-01/10		0.10	JO3-9064 (1.5)	LZB-100	8-40	LZB-80	1.6-1.6
V-01/10		0.10	JO3-9064 (1.5)	LZB-100X2	8-40	LZB-100	8-40