

# WF组合溶气气浮

## WF combined air flotation device



### 工作原理

WF型组合气浮设备是由气浮池体、溶气系统、溶气水回流管路、溶气水释放装置、刮渣机和电控系统组成。

气浮主要起固液分离作用（同时可以降低COD、BOD、色度等）。在原水中加入混凝剂和絮凝剂，经过有效絮凝反应时间后，原水进入组合气浮接触区。在接触区内，溶气水中的微气泡与原水中絮体相互粘合，一起进入分离区，在气泡浮力作用下，絮体与气泡一起上升至液面，形成浮渣。浮渣由刮渣机刮至污泥区。下层的清水通过集水管自流至清水池。其中一部分清水回流，供溶气系统使用，另一部分则排放。

回流清水经过射流吸气装置，在一定的工作压力下，使空气最大限度地溶入水中，成为溶气水，溶气水在气浮池的接触区内，通过释放装置的快速减压释放，形成直径在 $5-10\text{ }\mu\text{m}$ 的微气泡。该微气泡即可与原水中絮体相互粘合。

### Working principle

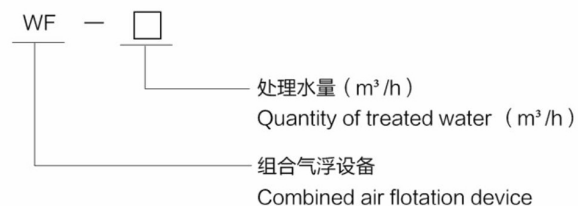
WF combined air flotation device consists of air flotation pool, dissolved air system, dissolved air-water circuit pipeline, dissolved air water release device, scum scraper and electric control system.

Air flotation is mainly used for solid-liquid separation (and can also reduce COD, BOD, and chroma and so on). Coagulant and flocculant are added into the raw water, and after effective flocculation reaction time, raw water goes into the combined air flotation contact zone. In the contact zone, microbubbles in the dissolved-air water adhere to the flocs in the raw water, to flow into the separation zone, and under the floating force of the bubbles, the flocs rise with the bubbles to the liquid surface, thus forming the floating scum. The floating scum is then scraped by the scum scraper into the sludge zone. The lower clean water flows from the water collecting tube to the clean water pool. Some clean water flows back for the use in the dissolved air system, and some clean water is discharged.

The reflux clean water passes through the jet suction device, and under certain working pressure, air is dissolved into water to a maximal extent, thus becoming the dissolved air water, which is subject to quick relief and pressure reduction by the relief device in the contact zone of the air flotation pool, forming the microbubbles with the diameter of  $5-10\text{ }\mu\text{m}$ . Such microbubbles can be adhered with the flocs in raw water.

## 型号意义

### Meaning of the model



## 应用领域

- ▶ 给水中的湖水、河水作为自来水、景观用水的除藻降浊等。
- ▶ 生活污水预处理和污泥浓缩。
- ▶ 造纸白水纸浆回收和清水回用。
- ▶ 印染废水色度及杂质去除。
- ▶ 电镀废水中各种重金属离子的去除。
- ▶ 炼油废水、油污的分离。
- ▶ 制革废水杂质去除。
- ▶ 化工、食品、毛纺、屠宰、酿造、选矿、洗涤等工业废水的处理。

## 技术优势

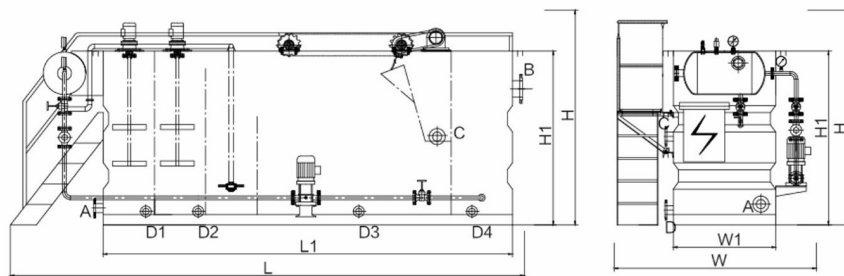
- ▶ 系统采用集成化组合方式，有效减少空间需求，占地小，能耗低，安装运输方便。
- ▶ 自动化程度高，操作方便，管理简单。
- ▶ 溶气效率高，处理效果稳定，根据需要，可调整溶气压力和溶气水回流比。
- ▶ 按不同的水质及工艺要求：可提供单溶气装置或双溶气装置。
- ▶ 采用高效释放器，提高溶气水的利用效率、同时保证气浮设备工作的稳定性。
- ▶ 采用低噪音压缩机，解决长期以来困扰人们的噪音问题。
- ▶ 系统采用标准化配置，任何一个配件一般都可以就地采购或委托加工。

## Application field

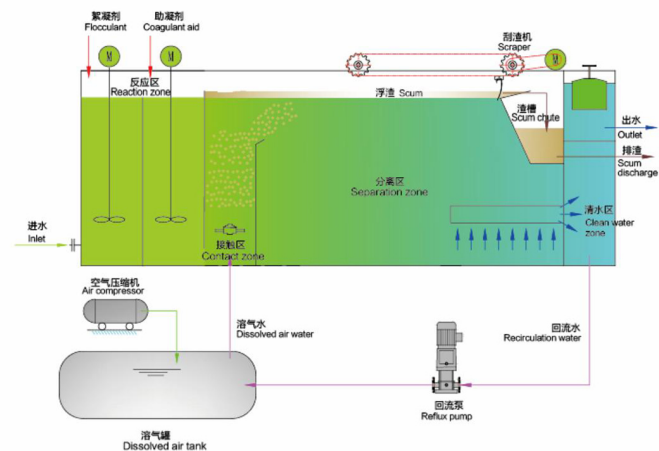
- ▶ Algae removal and turbidity reduction for lake water, river water used as tap water and for landscape use.
- ▶ Domestic sewage pretreatment and sludge thickening.
- ▶ Papermaking white water pulp recovery and clean water reuse.
- ▶ Printing and dyeing wastewater color and impurity removal.
- ▶ Removal of heavy metal ions from electroplating wastewater.
- ▶ Separation of refinery wastewater and oil dirt.
- ▶ Tanning wastewater impurity removal.
- ▶ Treatment of the industrial wastewater in chemical, food, wool spinning, slaughtering, brewing, ore dressing and washing industries.

## Technical advantages

- ▶ The system is used with the integrated combination, thus effectively reducing the space demand, and it is characterized by small floor space, low energy consumption, and convenient installation and transportation.
- ▶ High level of automation, convenient operation and simple management.
- ▶ High air dissolving efficiency, stable treatment effect, and adjustable dissolved air pressure and water reflux ratio of dissolved air.
- ▶ Single dissolved air device or double dissolved air device can be provided according to water quality and process requirements.
- ▶ High-efficiency releaser is used to improve the utilization efficiency of the dissolved-air water, and guarantee the working stability of the air flotation devices.
- ▶ Low-noise compressor is used to solve the noise problem perplexing people for a long time.
- ▶ The system is designed with the standard configuration, and any accessories can be locally purchased or manufactured by OEM.



WF高效组合气浮图  
WF combined air flotation device diagram



WF高效组合气浮工艺流程图  
WF combined air flotation device Process Flow Chart

## 型号规格及相关技术参数 Model specifications and related technical parameters

型号 Model	处理量 Capacity m³/h	溶气量 Dissolved air quantity m³/h	功率表 Power KW				规格尺寸 Dimension ( m )			管口表DN ( Nozzle list )			
			回流泵 Reflow pump	加气机 Exhaust	撇渣机 Scavenger	搅拌机 Mixer	L/L1	W/W1	H/H1	进水口 Inlet (A)	出水口 Outlet (B)	排渣口 Sludge outlet (C)	放空口 Empty mouth (D)
WF-1	~1	~0.7	0.55	0.55	0.2	0.4	2.0/1.7	0.90/0.55	1.5/1.1	32	32	40	32
WF-2	~2	~1	0.55	0.55	0.2	0.4	2.9/2.8	1.15/0.65	1.9/1.5	40	40	50	40
WF-3	~3	~2	0.75	0.55	0.2	0.4	4.1/3.5	1.6/0.8	2.0/1.6	80	80	80	50
WF-5	~5	~3	1.1	0.55	0.2	0.75	4.7/4.0	2.15/1.0	2.1/1.7	80	80	80	50
WF-10	~10	~4	1.5/5.5	0.75	0.55	0.75	5.7/5.0	2.35/1.2	2.5/2.0	100	100	100	80
WF-15	~15	~5	2.2/5.5	0.75	0.55	0.75	6.2/5.5	2.65/1.5	2.5/2.0	125	125	125	80
WF-20	~20	~7	3.0/5.5	0.75	0.55	0.75	6.5/5.8	2.95/1.8	2.5/2.0	150	150	150	80
WF-30	~30	~12	3.0/5.5	0.75	0.55	0.75	6.7/6.0	3.25/2.0	2.6/2.1	150	150	150	80
WF-40	~40	~15	4.0/5.5	1.5	0.55	1.1	7.8/7.0	3.45/2.2	2.7/2.1	200	200	150	80
WF-50	~50	~20	7.5	1.5	0.55	1.1	8.0/7.2	3.95/2.7	2.7/2.1	200	200	150	80
WF-60	~60	~25	7.5	1.5	0.55	1.1	9.3/8.5	4.05/2.8	2.7/2.1	200	200	150	80
WF-70	~70	~30	11	1.5	0.55	1.1	9.9/9.0	4.05/2.8	2.7/2.1	200	200	150	80
WF-80	~80	~30	11	2.2	0.55	1.1	11.4/10.5	4.25/3.0	3.0/2.1	200	200	200	80
WF-100	~100	~40	11	2.2	0.55	1.1	11.7/11.0	4.45/3.2	3.0/2.1	200	200	200	80
WF-120	~120	~45	15	2.2	0.75	1.5	11.9/11.0	4.65/3.4	3.0/2.1	250	250	200	100
WF-150	~150	~55	18.5	3	0.75	1.5	12.0/11.0	4.65/3.4	3.0/2.1	250	250	200	100
WF-200	~200	~75	22	3	0.75	2.2	13.5/12.0	4.85/3.6	3.0/2.1	250	250	250	100
WF-300	~300	~100	30	3	0.75	3	15.5/14.0	4.85/3.6	3.0/2.1	300	400	250	100