



## WQF浅层气浮

WQF shallow air flotation

### 工作原理

浅层气浮是一个先进的快速气浮系统，在传统气浮理论的基础上，又成功地运用了“浅层理论”和“零速”原理，设备主体由池体、旋转布水机构、溶气释放机构、框架机构、集水机构组成。进水口、出水口与浮渣排出口全部集中在池体区域内，布水机构、集水机构、溶气释放机构都与框架紧密连接在一起，围绕池体中心转动。

高效浅层气浮在原水进入混合反应器，在管道混合反应器中加入混凝剂和絮凝剂，以形成可分离的絮凝物，经过溶气释放机构释放的微小气泡（气泡直径范围 $5 \sim 10 \mu\text{m}$ ）混合。这些微小气泡粘附在污水中的絮体上，形成比重小于水的气浮体。气浮体上升至水面凝聚成浮油（或浮渣），通过刮油（渣）机刮至收油（渣）槽。

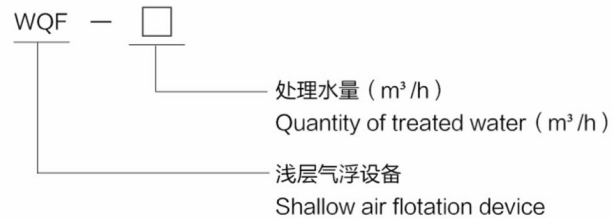
### Working principle

Shallow air flotation is an advanced and rapid air flotation system. It successfully applied the "shallow theory" and "zero speed" principles on the basis of traditional air flotation theory. The devices are mainly composed of pool, rotary water distribution mechanism, dissolved air release mechanism, frame mechanism, and water collection mechanism. The water inlet, water outlet, and scum discharge outlet are mainly distributed in the pool water body, where water distribution mechanism, water collection mechanism, dissolved air release mechanism and frame mechanism are closely connected, turning around the pool center.

High-efficiency shallow air flotation goes into the mixing reactor in the raw water, coagulant and flocculant are added into the pipe mixing reactor, to form the separable flocculate, and mix it with minimal bubbles (bubble diameter range  $5 \sim 10 \mu\text{m}$ ) released by the dissolved air release mechanism. Such minimal bubbles are adhered to the flocs in the sewage, to form the air flotation body with the specific gravity smaller than that of water. Oil spill (or scum) is accumulated on the rising surface of the air flotation body, and is then collected by oil (scum) scraper into the oil (scum) collecting tank.



## 型号意义 Meaning of the model



## 应用领域

- 河道黑臭水体、景观用水的除藻降浊等。
- 生活污水预处理和污泥浓缩。
- 造纸白水印浆回收和清水回用。
- 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。
- 海水淡化预处理。

## 技术优势

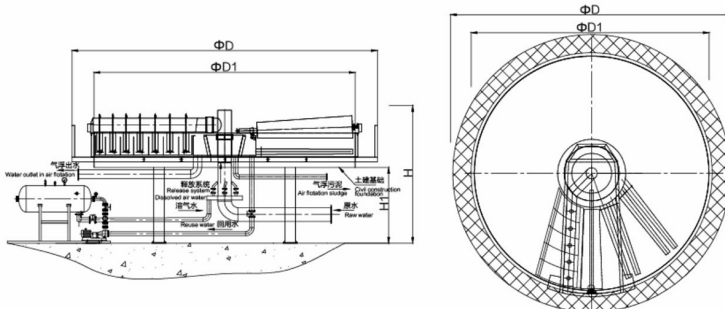
- 净化程度高，悬浮物去除率达98%以上
- 设备轻巧、外形紧凑、便于运输和安装，电耗省。
- 停留时间短，仅有3-5分钟，效率高。
- 表面负荷大，净化处理量大。
- 运用了“零速”原理，强制布水、进出水都是静态的，由于对水中絮体的扰动降到最小，浮渣瞬时清除，因而稳定性更高。
- 运用了“浅池理论”，有效池深仅为730mm，占地面积小。
- 采用高效无堵塞释放机构，提高溶气水的利用效率、同时保证气浮设备工作的稳定性。
- 处理效果稳定，机电仪实现了一体控制。

## Application field

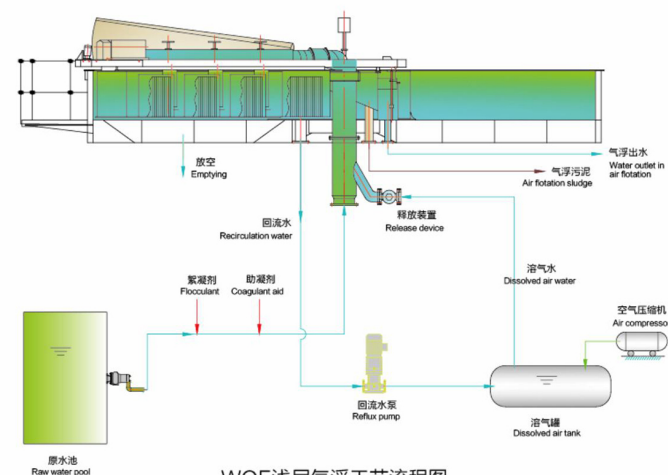
- Algae removal and turbidity reduction in the black and odorous water body in the riverway and water for landscape use.
- Domestic sewage pretreatment and sludge thickening.
- Papermaking white water pulp recovery and clean water reuse.
- Printing and dyeing wastewater color and impurity removal.
- Removal of heavy metal ions from electroplating wastewater.
- Separation of refinery wastewater and oil dirt.
- Tanning wastewater impurity removal.
- Pretreatment for seawater desalination.

## Technical advantages

- High purification level with suspension removal rate over 98%.
- Lightweight, compact structure, convenient for transportation and installation, reducing the power consumption.
- Short retention time, only 3-5 minutes, and high efficiency.
- High surface load, and large purification quantity.
- "Zero speed" principle is used, and the forced water distribution and water intake and discharge are static. Since the disturbance to the flocs in the water body is minimized, the scum is instantaneously removed, thus achieving higher stability.
- "Shallow pool theory" is used, and the effective pool length is only 730mm, indicating small floor space.
- High-efficiency block-free releasing mechanism is used to improve the utilization efficiency of the dissolved-air water, and guarantee the working stability of the air flotation devices.
- With stable handling effect, the electromechanical instruments have realized the integrated control.



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WQF浅层气浮工艺流程图  
WQF shallow air flotation 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	行走电机 Walking motor	池径 Pool Trail ( m )	D/D1	H/H1	进水口 Inlet (A)	出水口 Outlet (B)	排渣口 Sludge outlet (C)
WQF-2	15~20	~7	2.2	1.5	0.75	1.5	Φ2	3.4/2.0	4.2/2.5	100	100	100
WQF-3	30~40	~13	5.5	1.5	0.75	1.5	Φ3	4.8/3.0	4.2/2.5	150	150	100
WQF-4	50~80	~15	7.5	1.5	0.75	1.5	Φ4	5.9/4.0	4.2/2.5	200	200	100
WQF-5	80~100	~30	11	2.2	1.1	2.2	Φ5	6.9/5.0	4.2/2.5	300	300	125
WQF-6	100~150	~40	11	2.2	1.1	2.2	Φ6	7.9/6.0	4.2/2.5	300	300	125
WQF-7	150~180	~60	15	3	1.1	2.2	Φ7	8.9/7.0	4.2/2.5	350	350	150
WQF-8	200~250	~70	22	4	1.5	3	Φ8	9.9/8.0	4.7/3.0	400	400	150
WQF-9	250~300	~90	30	4	1.5	3	Φ9	10.9/9.0	4.7/3.0	400	400	150
WQF-10	300~400	~110	30	4	1.5	3	Φ10	11.9/10.0	4.7/3.0	450	450	150
WQF-11	400~500	~150	45	5.5	2.2	3	Φ11	12.9/11.0	4.7/3.0	450	450	200
WQF-12	500~625	~200	45	5.5	2.2	4	Φ12	13.9/12.0	5.7/4.0	450	450	200
WQF-13	625~750	~240	55	5.5	2.2	4	Φ13	14.9/13.0	5.7/4.0	500	500	200
WQF-14	800~950	~280	55	5.5	2.2	4	Φ14	15.9/14.0	5.7/4.0	500	500	200
WQF-15	1000~1150	~300	55	5.5	2.2	4	Φ15	16.9/15.0	5.7/4.0	600	600	200
WQF-16	1250~1400	~300	55	5.5	2.2	4	Φ16	17.9/16.0	5.7/4.0	700	700	200
WQF-18	1500~1800	~480	75	7.5	3	4	Φ18	19.9/18.0	5.7/4.0	700	700	250

注：由于产品不断创新，本资料仅供参考；根据不同水质情况来选型。

Note: due to the continuous innovation of the product, this information is only for reference; the model is selected according to different water quality conditions.