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Aerofloat

Wastewater Treatment Specialists

Aerofloat is a Dissolved Air Flotation (DAF) product which is suitable for a wide range of wastewater treatment applications.

Aerofloat is:

- Compact and highly effective
- Mechanically simple and a low maintenance system
- Affordable and energy efficient

Aerofloat 100



Aerofloat

Wastewater Treatment Specialists

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COMPACT, SIMPLE, LOW MAINTENANCE, AFFORDABLE DISSOLVED AIR FLOTATION (DAF)

Product description

What is the Product?

Aerofloat is a unique and affordable Dissolved Air Flotation (DAF) product with capacities from 2-800 Litres per minute (l/min). It has sealed tank/s with hopper bottoms and hopper tops.

The Treatment Process

The basic principle of the Aerofloat product involves pumping a side stream of treated effluent to an elevated pressure, dissolving air under pressure (supersaturating with air) and then allowing the side stream to decompress suddenly. This causes millions of microscopic bubbles to form as the dissolved air comes out of solution.

This side stream then mixes with the incoming waste stream which has been coagulated and flocculated with suitable chemicals.

The microscopic bubbles attach to the flocculated particles and float them to the surface. The system automatically pushes the thickened float off the top of the tank.



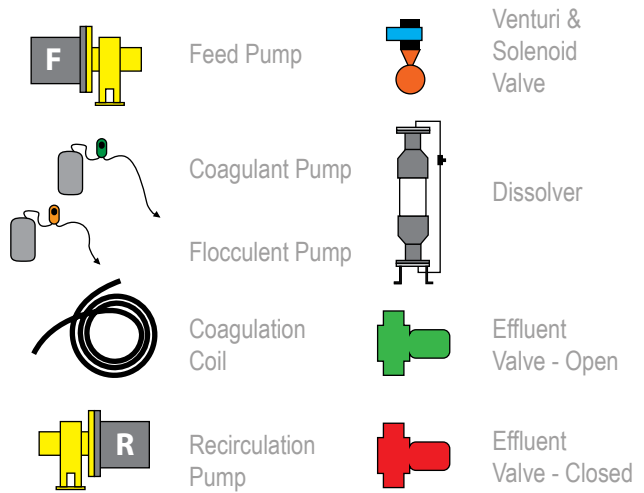
Key components

- Sealed DAF tanks with hopper bottoms and hopper tops. The various models have 1 or more tanks.
- The removable top hopper section, that has a watertight seal arrangement, provides easy access inside the tank.
- A pump for pumping treated water under pressure into the air saturator.
- An electric solenoid valve on the pump pipework assembly for inducing air into the air saturator.
- An air saturator generally manufactured from PVC pipe, PVC fittings and SS flanges for dissolving air in the recirculation stream (up to 500 kPa / 75 psi).
- A unique side stream level sensing device provides a signal to open the solenoid valve when air is required in the headspace of the dissolver.
- One or more electrically actuated valves on the inlet and outlet pipe assemblies controls the push-off of float material to the waste float holding tank.
- A centrally located mixing chamber/s for mixing the flocculated feed stream and the re-circulated stream.
- One or more outlet pipe assemblies beneath each mixing chamber.
- One or more vented outlet pipes arranged for allowing float material to be pushed off the top into a waste float holding tank (tank not included).
- An electrical control panel with an inbuilt PLC for automatically controlling the feed pump, coagulant and flocculent dosing pumps and the entire Aerofloat DAF system.
- The standard design has facilities for easy continuous recording of pH as well as a fully primed line with flanges for the ease of installation of an electromagnetic flow meter.

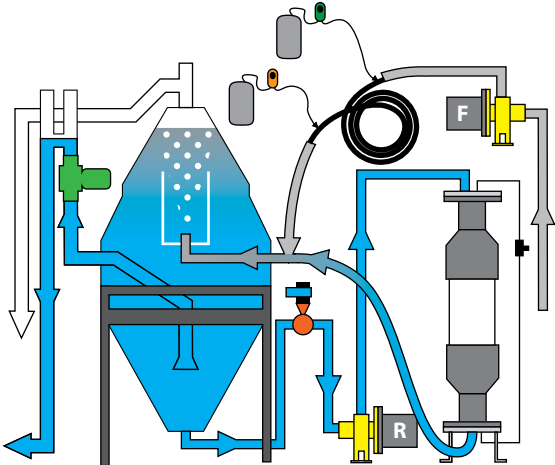


PATENTED
WORLD FIRST
TECHNOLOGY

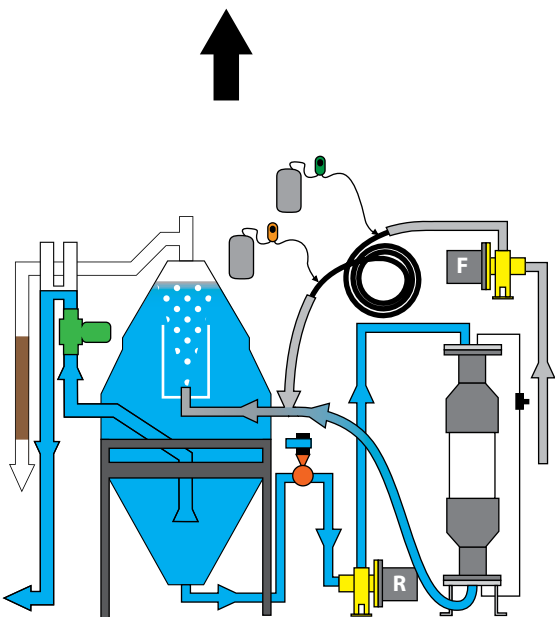
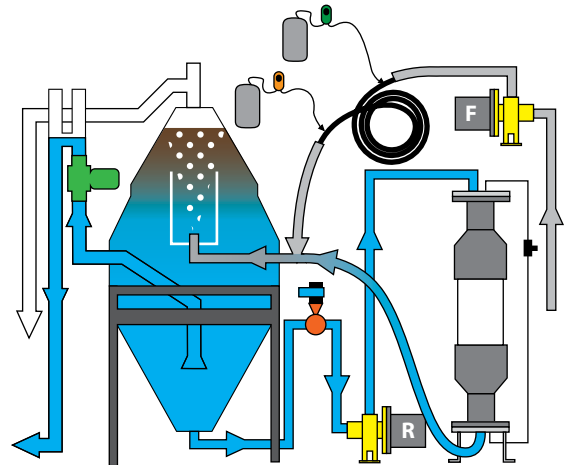
UNIQUE FLOAT REMOVAL PROCESS



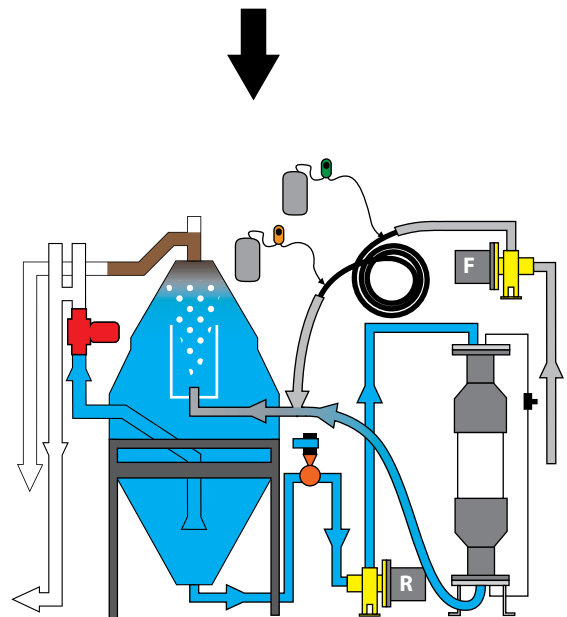
1. Auto Valve OPEN - Dissolved air floats contaminants to the top of the tank. Treated effluent leaves the outlet pipe.



2. Auto Valve OPEN - Continuous floatation thickens float on the top of the tank.



4. Auto Valve OPEN - Effluent continues to discharge and the floatation cycle starts again.



3. Auto Valve CLOSED - Float is discharged to the waste tank.

Specifications

Power and Utility Requirements

- Single or three phase power supply into the electrical control panel.
- Water supply for maintenance purposes.

Weights and Dimensions

- Total operating weight (Model 100): Approximately 1200kg
- Dimensions: 230cm High x 200cm Wide x 150cm Deep

Likely Additional Requirements:

- Waste holding tank for scum storage.
- Most waste streams will require pre-screening of the total flow and in some instances primary solids and grease removal for the removal of heavy gritty solids and readily flatable fats, oil and grease.
- Pre-balance tank to balance peak flow production and blend the wastewater. pH correction is also generally required.
- Standby feed pumps, acid and alkali dosing pumps, coagulant and flocculent dosing pumps; continuous pH monitoring and flow measurement using an electromagnetic flow meter may also be required.

Aerofloat Model Number	Capacity – Litres per minute (l/min)
Model 7	7
Model 13	13
Model 100	100
Model 200	200
Model 400	400
Model 600	600
Model 800	800



Features & benefits

Size:

The footprint of the Aerofloat DAF is significantly smaller than traditional DAF products.

Mechanical Simplicity:

The patented scum removal system means mechanical scrapers are not required. This not only provides a system that is mechanically simpler to operate but reduces ongoing maintenance expenses.

Cost:

The smaller footprint, the simple scum removal process, the tank shape and simple saturator design means that the product can be produced at a significantly lower cost than competing products in comparable flow ranges.

Some of the other key competitive features include:

- The system has standard in its design - facilities for easy continuous recording of pH as well as a fully primed line with flanges for the ease of installation of an electromagnetic flow meter.
- Due to the relative small size, the model 7, 13 & 100 Aerofloat tanks are manufactured using low cost polyethylene.
- The patented scum removal system has removed the need for complex scraping mechanisms, geared motor drives and shutes.
- The tank hopper bottom arrangement removes the need for bottom scraping mechanisms driven by geared motor drives.
- The Aerofloat units are fully sealed making it more aesthetically pleasing and easy to vent odorous gases.

MECHANICALLY SIMPLE



PREFABRICATED MAJOR COMPONENTS ONSITE ASSEMBLY

System deliverables

Most models are delivered fully assembled on a skid.
Some minor assembly may be required with certain models.



Aerofloat 200



Aerofloat 400



Aerofloat 600



Aerofloat 800



Aerofloat 100



Aerofloat 13



Aerofloat 100



Typical applications

Industrial Wastewater Treatment

The Aerofloat DAFs are ideal for treatment of industrial wastewater.

Typical applications include:

- Small food processors
- Commercial kitchens
- Food processing manufacturers
- Commercial laundries
- Heavy vehicle and car washing
- Cleaning of heavy mining and earth moving equipment
- Marine craft cleaning
- Grass cutting equipment on golf courses
- Bilge water from boats
- Small manufacturing industries
- Metal finishing industries

Residential Greywater Treatment and/or Reuse

Depending on the influent quality and effluent discharge specifications, the Aerofloat DAF can be used either as a treatment step in a total treatment train OR as a standalone product for the treatment and/or reuse of greywater from residential facilities.

Typical Applications Include:

- Houseboats on lakes or rivers
- Commercial marine vessels
- Boarding schools or universities (with large grounds to irrigate)
- Larger residential apartment blocks to irrigate surrounding grounds OR use the treated effluent for toilet flushing to save water
- Small temporary mining communities, which can be designed to capture and treat the greywater separately from the black water
- Rural communities with extreme water shortages in time of drought
- New housing estates that can build segregated pipework for collection and distribution to a centralized greywater treatment facility



INDUSTRIAL WASTEWATER GREYWATER

Performance data (typical)

Proven Performance: the Aerofloat core design is the same for all model sizes. The technology has been proven under rigorous independent certification testing conditions.

The capacity of the Aerofloat DAF for some industrial wastewaters may depend on the concentration of Fats, Oil and Grease (FOG) in the wastewater.

Generally jar testing with different chemicals is required for industrial wastewater applications.

PROVEN TECHNOLOGY INDEPENDENT CERTIFICATION TESTING

AEROFLOAT CERTIFICATION to AS4995-2009 Summary of Results - Greywater treatment			
	Influent* (mg/L)	Effluent* (mg/L)	% removal
BOD ₅ (Depending on soluble component)	664	71.6	89%
Fats, Oil and Grease	389	9.9	97%
Phosphorus - Total	11.7	0.4	96%
Suspended Solids	321	24	92%

*average data given

% removal from High Strength industrial wastewater	
	% removal
BOD ₅ (Depending on soluble component)	75%
Fats, Oil and Grease	95%
Phosphorus - Total	95%
Suspended Solids	95%