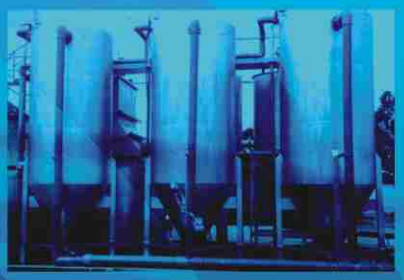
APEC PUMP

APEC PUMP ENTERPRISE CORP.



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Waste Water Treatment Equipment

APEC Separator

Rapidly Separator

APEC Separator

Compared with a sedimentation basin, the APEC separator offers a 90% saving in terms of surface area. This means that every square meter of floor or ground surface provides up to 10 square meters of settling area.

How the APEC separator works

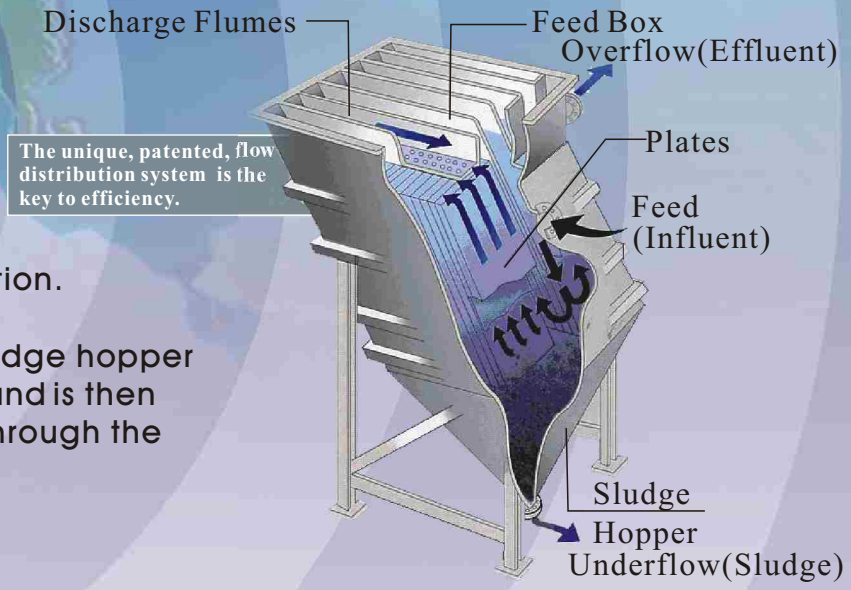
The fluid containing the particles to be separated flows downwards through the inlet pipe and enters the plate unit from the side. When the water flows upwards through the plates, the particles settle on the inclined, parallel plates and slide down into the sludge hopper at the bottom of the APEC separator. The sludge is then thickened in the sludge hopper prior to discharge from the separator through the sludge outlet.

The purified fluid flows out through apertures above the plate unit. These apertures are so designed that a drop in pressure takes place, producing an even flow distribution across all APEC plates.

APEC separator in concrete basin

Plants dealing with large flows are best constructed in a concrete basin. The APEC separator is supplied as complete units ready for installation.

The sludge is conveyed to the sludge hopper using a bottom sludge scraper, and is then discharged from the separator through the sludge outlet.



Specification

Model	Dimension LxWxH(MM)	Setting Area(M^2)	Capacity (CMH)	Surface Loading($M^3/M^2/Hr$)	Mixer Power(HP)
AYCLS-05	1985x906x2500	5	5	1	1/2
AYCLS-10	1873x1160x3100	10	10	1	1/2
AYCLS-20	2340x1400x3240	20	20	1	1/2
AYCLS-30	3200x1400x3700	30	30	1	1/2
AYCLS-40	3178x1830x4000	40	40	1	1/2
AYCLS-60	3690x2100x4650	60	60	1	1/2
AYCLS-100	4510x2688x5020	100	100	1	1/2
AYCLS-120	4400x2790x5600	120	120	1	1/2
AYCLS-200	5782x3650x7720	200	200	1	1
AYCLT-15	2600x1400x3100	15	15	1	1/2
AYCLT-25	3450x1400x3240	25	25	1	1/2
AYCLT-40	3647x2486x4230	40	40	1	1/2
AYCLT-60	3925x2550x4636	60	60	1	1/2
AYCLT-100	5046x3200x4458	100	100	1	1/2
AYCLT-150	5314x3292x5308	150	150	1	1

AYCLS: APEC Separator + Mixer
AYCLT: APEC Thickener + Mixer

ADAF

The fine bubble is a state-of-the-art ADAF water clarification system used in hundreds of applications worldwide. Its features a high output, very low retention time, and compact, space saving design (the fine bubble's footprint is smaller than that of other systems of similar capacity). The fine bubble is recommended for cases in which the characteristics of the wastewater are variable. It has been applied to diverse segments including municipal wastewater, algae removal, packing houses, food processing plants, bakeries, laundries, chemical processing plants, oil removal, pulp and paper process, and effluent streams.

Fine Bubble Operation

As a rotating carriage at the top of the unit travels in one direction, untreated water flows into the unit in the opposite direction. The two opposing forces equalize each other, creating 'zero-velocity' within the flotation cell. Zero velocity allows suspended solids (that have attached to microscopic air bubbles created by the Air Dissolving Tube (ADT) and pressure release valve) to freely rise to the surface. Effluent extraction pipes draw clarified water off of the bottom of the tank, depositing it into a common clearwell where it is discharged, by gravity, through the base of the unit. Floated sludge is removed by the spiral scoop and deposited out a central sludge well. A portion of the clarified water is recycled through the ADT and introduced back into the raw water stream to facilitate the flotation.

Air Dissolving Tube (ADT)

A portion of the clarified water, typically 20%, is recycled to feed the air dissolving system. A standard centrifugal pump draws clarified water from its source into the ADT, where it has an 8-12 second retention time. A uniquely designed influent nozzle causes the flow from the recycle pump to enter the ADT in a spiraling pattern. Compressed air, injected across the surface of a panel located inside the ADT, is dispersed evenly throughout the tube. The air mixes with the recycle water stream and is dissolved. A "bleed-off" mechanism prevents too much air from being introduced into the recycle stream, as this could cause air binding in the tube (the formation of coarse air/large air bubbles). The pressurized flow is fed through an inlet header, where it ultimately mixes with the raw water. A globe valve, located on the discharge line, controls the flow. Flow through the tube can be readily gauged by the difference in pressure from the inlet nozzle to the center of the tube. AYCD series provides the valves, gauges, rotometers, site tube, and safety relief valves for this system. The ADT does not usually qualify as a pressure vessel so it is not subject to ASME coding or annual certification.

Capacities and Models

The fine bubble is available in 20 standard sizes ranging from 4' in diameter up to 70' in diameter, cost-effectively processing flows from 5gpm to 12,000 gpm. If space is an issue, units can be easily stacked on top of each other for a smaller footprint.

Material of Construction

All wetted parts on the fine bubble are constructed of 304L stainless steel; 316 stainless steel is an option. On units under 12' in diameter the entire unit, including the carriage assembly, is stainless steel. On units in excess of 12' in diameter, carriage assemblies and substructures may optionally be fabricated in mild steel and then painted with an epoxy coating.

Features and Advantages

There is generally only 18"-22" of water in the clarifier, affording the unit a very low floor loading. Units typically weigh 160 pounds/sf of less. The shallow tank design provides for easy tank inspection and cleaning. A viewing window mounted on the side of the tank facilitates observation of the flotation process and assists in optimizing chemical dosing (if necessary). The shallow, open tank design makes the unit ideal for installation on a wide variety of applications. Because all inlet and outlet connections are on the bottom of the unit, it can be installed in an elevated position. This is beneficial when draining the clarified water or floated sludge by gravity, eliminating the need for an additional pumping stage. The spiral scoop mechanism affords precise sludge removal by 'biting' into only the sludge layer, avoiding the clarified water. This increases floated sludge consistency, benefiting downstream sludge handling equipment by reducing flow and chemical consumption on the press. An automatic level control system monitors flow flocculations and can keep the level in the tank accurate within 1/4" to 1/2" to ensure consistent and precise sludge removal. Stainless steel construction. May be stacked for smaller footprint.

Specification

TYPE	Dimension (MM)			Capacity (CMH)	Drive Machine	Sraper Machine	Flotation Skimmer Area M^2	Flotation Skimmer capacity M^3
	A(ψ)	B	C					
AYCD-24	2400	900	650	21	1/2 x 1.5-9	1/2 x 1.5-9	3.5	1.58
AYCD-32	3200	900	650	42	1 x 1.5-9	1/2 x 1.5-9	6.5	2.93
AYCD-39	3900	900	650	65	1 x 1.5-9	1/2 x 1.5-9	11	4.50
AYCD-45	4500	900	650	90	1 x 1.5-9	1 x 1.5-9	13.5	6.08
AYCD-55	5500	950	650	120	2 x 1.5-9	1 x 1.5-9	20	9.00
AYCD-61	6100	950	650	150	2 x 1.5-9	1 x 1.5-9	25	11.25
AYCD-67	6700	950	650	180	2 x 1.5-9	1 x 1.5-9	30	13.50
AYCD-72	7200	950	650	216	2 x 1.5-9	1 x 1.5-9	36	16.20
AYCD-81	8100	950	650	250	2 x 1.5-9	2 x 1.5-9	45	20.25
AYCD-90	9000	1100	750	335	3 x 1.5-9	2 x 1.5-9	56	25.20
AYCD-100	10000	1100	750	380	3 x 1.5-9	2 x 1.5-9	69	31.05
AYCD-110	11000	1100	750	456	3 x 1.5-9	2 x 1.5-9	76	34.20

Continuous Sand Filter

The CSF Filter

The continuous sand filter (CSF) never needs to be taken out of service for backwashing. Treatment of both the water and the filter sand take place without interruption. The filter has no moving parts, minimising the need for superintendence. Energy consumption is low.

The continuous sand filter has a wide range of applications, which may be classified under two main groups:

- treatment of raw water for drinking water and industrial process purposes.
- treatment of waste water and used process water.

The continuous sand filter provides a high and even filter quality and even deals with water that is severely contaminated. It is available in a range of heights and diameters, making custom installation easy. Filters are often placed in old basins which are no longer needed when CSF technology is applied.

The CSF in concrete basins

CSF installation for large flows are often built of concrete, reducing costs per square metre of filter surface. All filter cells in a concrete installation share a common sand bed.

CSF for nitrogen reduction

CSF may also be used for nitrogen reduction. CSF oxygen is used for nitrification and CSF denitrificationi for denitrification.

CSF oxygen and CSF nitrifies the water that needs oxygen. The filter therefore has non-blocking aeration hoods.
CSF denitrification has a raised filter bed, which improves the denitrification process substantially.

CSF oxygen and CSF denitrification may be connected in series, so that nitrification is followed by denitrification.

How the CSF filter works

The water to be treated enters the inlet distributor in the lower section of the unit and flows upwards through the sand bed.

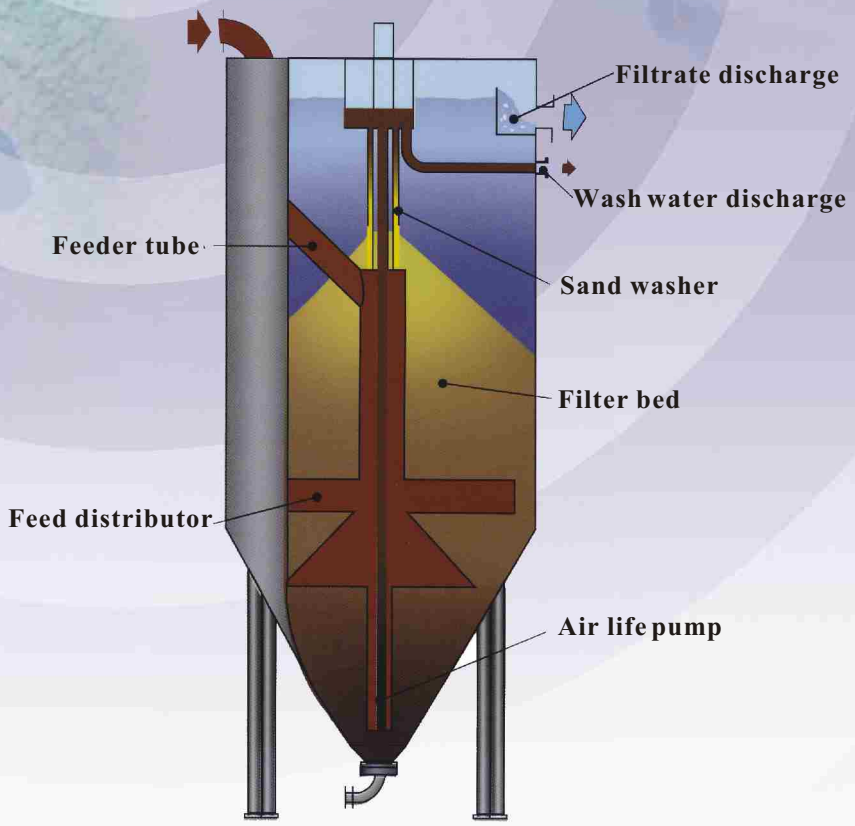
The impurities are trapped in the sand bed. The sand containing the impurities is conveyed from the tapered bottom section using an airlift pump, and purified in the washer labyrinth in the upper section of the filter.

The impurities are carried upwards and leave the filter via the wash-water outlet. The purified sand sinks down to the sand bed.

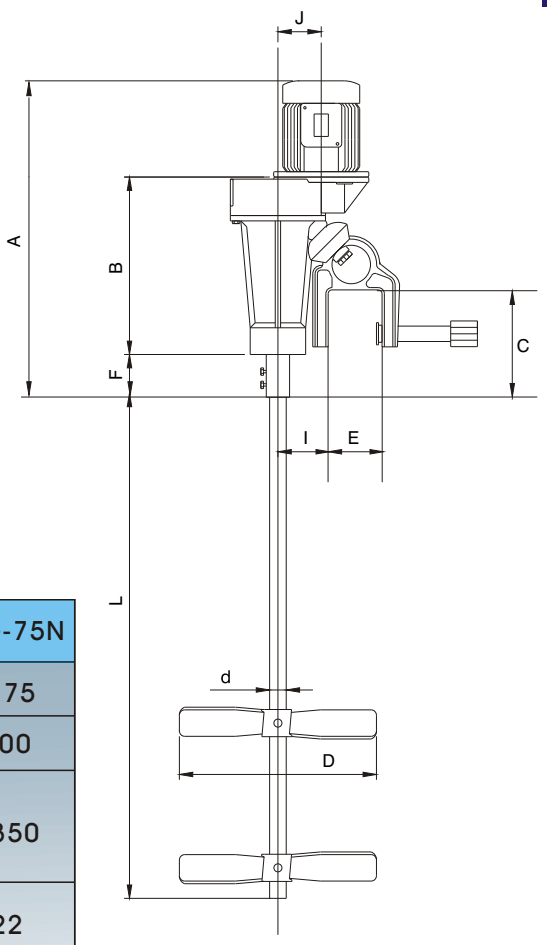
This completes the cycle, and the sand is now ready to purify further water. The filter never needs to be taken out of service for backwashing.

Specification

Model	Diameter (MM)	Height (MM)	Filter Area (M^2)
AYCF-03	638	2700	0.3
AYCF-07	958	3625	0.7
AYCF-15	1435	4450	1.5
AYCF-30	1913	5300	3.0
AYCF-50	2551	6350	5.0
AYCF-80	3200	6850	8.0



MIXER SERIES (Portable Type)



Features

- Quiet running-Use flange motor and noiseless gear.
- Small size and easy to operation.
- New-type and practical clamp - complete avoid shocking.
- Easy to maintain and check - use sealed bearing. Don't worry leak oil and don't need to add oil.
- Spare parts are in current use and design rationalization - Stable quality.

Model		ATG-10N	ATG-20N	ATG-40N	ATG-75N
Motor	Power(kw)	0.1	0.2	0.4	0.75
	Voltage(V)	200	200	200	200
Shaft	Max. Length (L m/m)	800	1000	1200	1350
	Diameter (dø m/m)	16	16	22	22
Propeller Three blades Two stages	Diameter (dø m/m)	160	200	250	300
Measurement (m/m)	A	449	449	570	650
	B	189	189	260	265
	C	140	140	150	180
	I	80	80	80	80
	E	40	40	40	40
	F	50	50	60	100
Max. mix capacity	Thinner	620	1250	2500	5000
	Middle viscosity	200	400	600	1300
(rpm) 50Hz		295	295	295	295
Weight (Kg)		19.5	21.5	30	53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