

AQUA DAF

A REVOLUTIONARY SYSTEM OF DISSOLVED AIR FLOTATION



PRINCIPLE OF OPERATION

The feed stream, after saturation with dissolved air, is introduced into the flotation cell from the upper compartment of the multi-functional central column.

The flow spreads uniformly at 360° due to a series of slots, sized to induce a calculated pressure drop, ensuring the feed is hydraulically distributed evenly.

Since the feed mix - composed of water, suspended solids and micro air bubbles - has a significantly lower density than that of the treated water present in the cell, it quickly rises to the surface and distributes itself rapidly toward the periphery of the cell.

The micro air bubbles adhere to the suspended particles creating a floating action on these particles. A thick blanket is formed by the solids at the surface of the cell.

Before reaching the outlet slots, the under current is forced to pass through a filtering bed consisting of a relatively deep section of micro-bubbles.

This section is continuously supplied by a stream of recycle pressurized water fed through discharge holes from the middle compartment of the central column.



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PRINCIPLE OF OPERATION

The clarified water finally exits through slots in the lower section of the central column. These slots are sized to take a specific pressure drop on the clarified effluent to ensure uniform flow distribution without short-circuiting.

A radial skimmer with a rotating double scoop continuously removes the floated sludge and pours it into the open compartment at the top section of the central column.

The flow-rate and the thickness of the sludge removed can be adjusted by acting on the draft depth and/or the rotation speed of the scoop. Any heavy solids which might have settled are conveyed into a sump by the bottom scraper.

FEATURES

The AQUA-DAF, from Colloide Engineering Systems, is a high rate Dissolved Air flotation unit..

The system has been developed using the most advanced solids/liquid separation techniques available today. The simplicity of design of the AQUA-DAF system is at the core of its high operational reliability and of its remarkable versatility of application.

Excellent performances are achieved thanks to the circular low head geometry of the cell, the innovative hydrodynamics of fluids in both entering and exiting the cell, and the proven efficiency of the floating sludge removal system.

The performance of the AQUA-DAF flotation unit is superior to that of similar or alternative technologies both as a clarifier of primary or secondary effluent waters and as a thickener for biological sludge.

Unprecedented clarification efficiency is attained by the unique micro-bubble screening system: a recent exclusive break-through in this technology.



Aqua DAF 10



Aqua DAF 30



TYPICAL APPLICATIONS

- WWTP: Primary / Secondary clarification
- Sludge thickening
- Refinery oil wastewaters treatment
- Paper industry: white water clarification / fibre recovery
- Surface waters clarification
- Algae removal
- Oil and grease removal
- Juice clarification (winery and beverage industry)



Aqua DAF 75 - Installed in concrete basin

OPTIONAL FEATURES

- Construction in 316 and other stainless steel grades
- FRP / Titanium construction for special applications
- Installation into an existing/new concrete basin
- Sludge blanket thickness control system
- Tank coverage



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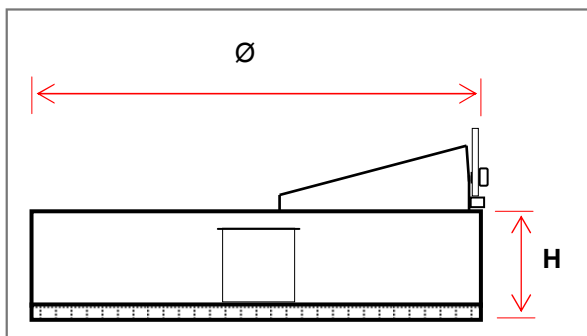
VARIOUS MODELS AVAILABLE

Model	Ø Tank inner diameter (m)	H Tank height (m)	Effective flotation area (m ²)
A-DAF 2	1.65	0.92	2
A-DAF 6	3.00	1.25	6
A-DAF 10	3.70	1.25	10
A-DAF 20	5.10	1.25	20
A-DAF 30	6.40	1.25	30
A-DAF 40	7.30	1.25	40
A-DAF 60	9.00	1.25	60
A-DAF 75	10.00	1.25	75
A-DAF 90	10.90	1.25	90
A-DAF 120	12.60	1.25	120
A-DAF 160	14.50	1.25	160
A-DAF 210	16.50	1.25	210
A-DAF 260	18.30	1.25	260

Colloide reserve the right to alter these dimensions without notice



Aqua DAF 30



Aqua DAF 10



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