

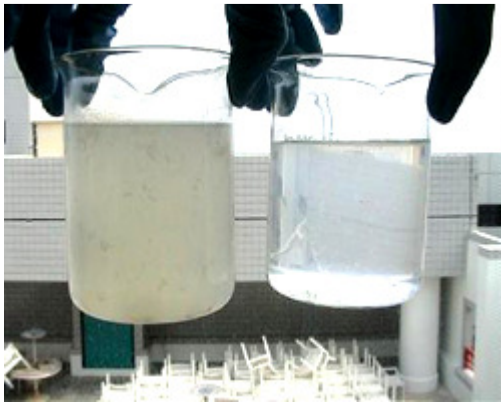
DISSOLVED AIR FLOTATION (DAF) SEPARATORS

PROVEN DESIGNS, ENGINEERED AND MANUFACTURED EXCLUSIVELY BY EXTOL HYDRO TECH FOR BOTH OILFIELD AND INDUSTRIAL OIL, SOLID & WATER SEPARATION APPLICATIONS.

- Standard Models to 2,000 GPM
- Fully Customizable Design
- High Performance and Reliability
- ASME Code & None Code Designs Available
- Complete Skid Mounted Packages Available

Dissolved Air Flotation (DAF) is a proven and effective physical and chemical technology for treating a variety of industrial process and wastewater streams. Unlike the aforementioned methods, DAF system meets the special needs and the changing official requirements to water management head on. DAF system is designed to removed suspended solids (TSS), biochemical oxygen demands (BOD5), chemical oxygen demand (COD) and Oils & Grease (O&G) from wastewater streams, including those from:

- Food industries (e.g. brewing, bakery)
- Food processing (e.g. dairy, meat, vegetables)
- Restaurants
- Automobile repair & service centers



Comparison between DAF and Gravity Clarifiers Methods

DAF system, being developed refined by a group of engineers and scientists, is a state-of-the-art DAF water treatment facility with unprecedented compactness and efficiency in the market. Contaminants are removed through the micro-size gas bubbles released from a solution resulting in flotation of suspended solids and scratched away by a surface skimmer.

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HIGH-EFFICIENCY OIL AND SOLID REMOVAL:

Take advantage of top-notch technology and experience solutions to your water problems with the performance packed Dissolved Air Flotation (DAF) separator engineered and manufactured by Extol Hydro Tech. Accomplish water discharge or re-use goals, customize your DAF to improve facility or field integration, and optimize your DAF with performance options and tightly integrated auxiliary equipment.



Commercial Unit

Our DAF is one of the most effective and efficient technologies available for removing oil and suspended solids from large volumes of produced water or wastewater streams.

EHT offers an advanced flotation system, which utilizes a proven saturation vessel design and couples it with a special educator technology to create and induce a myriad of micro-bubbles into a stream.

Our system's of micro-bubbles massive surface area creates exponential contacting potential, producing superior separation performance of oil and suspended solids from the process water. Available on skid packages or standalone configurations, EHT routinely builds to our US industrial standards or customer specifications.

APPLICATIONS:

- Oil/Water Separation in Petroleum Refineries
- Injection Well Oil/Produced Water Separation

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- Treating Ship/Terminal Bilge & Ballast Water
- Oil Separation from Industrial Wastewaters
- Oil/Water Separation: Power & Chemical Plants
- Oil Removal From Environmental Remediation

OPERATION OF DAF SEPARATOR (Circular Design):

Operation of our DAF Separator is simple and efficient.



- (1) Liquid flow is introduced into the DAF Separator via gravity or at a specific process pressure.
- (2) The Monarch DAF Separator creates “plug flow” via a central distribution well, which also serves as the primary contactor for micro-bubbles, which are created from a special Educator technology. The micro-bubbles created by DAF contact oil and/or suspended solids from the process inlet, making them buoyant, and raising them to the surface for skimming.
- (3) The DAF Separator has a unique oil and solid skimming trough and skimming system which is automatically set and adjustable external from the unit.
- (4) Clean water is maintained via level transmitters and discharged for disposal or additional treatment.
- (5) A percentage of the collected clean water is recycled and used by DAF Saturation Vessel, which saturates blanket gas into recycled water and

subsequently provides the necessary pressure drop to form a myriad of mirco-bubbles required by the DAF for flotation. As with all our products, the DAF Separator is designed to many U.S. industrial codes and incorporates advanced features such as a unique packaging design to enhance space and maintainability, long lasting materials of construction to extend the life of the system, and a flexible design providing an array of sizes, connections, and ancillary choices to meet individual client needs and requirements.

GENERAL SPECIFICATIONS

FUNCTIONAL:

- SERVICE**
- Oil Production
 - Refining
 - Chemical Processing
 - Wastewater Treatment
 - Hazardous Waste Remediation

- DESIGN TEMPERATURES**
- Up to 200F (93C) Standard
 - Custom Available

- DESIGN FLOW RATES**
- 2,000 GPM Standard
 - Larger Flow Rates Available.

- DESIGN PRESSURES**
- Standard
- Atmospheric/ Vessel per Code
 - Custom Available

MATERIAL OF CONSTRUCTION

| | |
|--------------------------------------|-------------------------------|
| VESSEL: | Blasting & Coating |
| • A-36 or 516 Gr. 70 | • SSPC-SP-10 Standard |
| • 304 or 316 SS | • In/Out 6-8 Mils C.T.E. |
| • Custom Available | • Custom Available |
| Hardware | Gasket |
| • 304 or 316 SS | • Neoprene |
| • Teflon Coated Available | • Viton |
| • Custom Available | • Custom Available |
| Saturation Vessel – ASME Code | Eductors |
| • 516 Gr. 70 | • 304 or 316 SS |
| | • Custom Available |