USSU

DAF WASTEWATER TREATMENT SYSTEMS

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General Overview

Dissolved Air Flotation (DAF) is an efficient water treatment process that clarifies wastewaters by the removal of suspended matter such as oil, grease, and total suspended solids (TSS). It is an essential technology for industrial pretreatment and sludge thickening applications.

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Güngören Mah. İnönü Cad. Diyar Sok. No: 30/32 D.6 Çekmeköy/ISTANBUL
Tel: (+90) 216 465 60 32 Fax: (+90) 216 465 60 32
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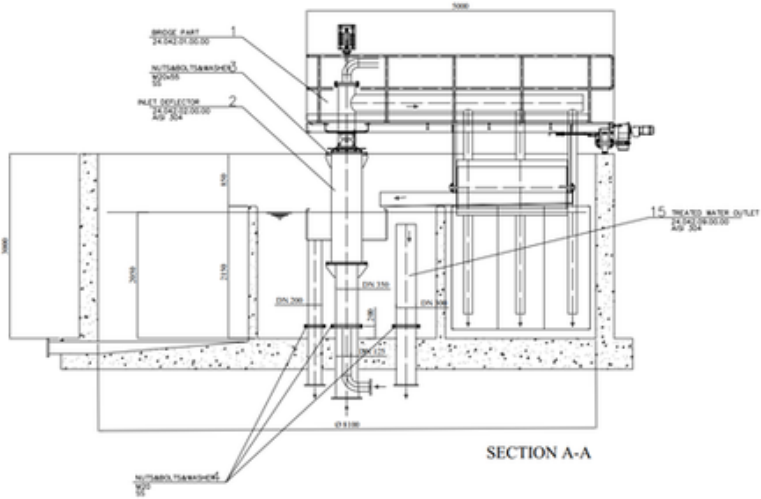
Working Principle

- Micro-Bubble Formation: Air is dissolved into the water under pressure and then released at atmospheric pressure in a flotation tank.

- Flotation Process: Millions of microscopic bubbles attach to the solid particles, causing them to float to the surface.

- Skimming: A mechanical skimming device removes the thickened sludge (scum) from the surface, while the clarified water is withdrawn from the bottom.



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MAIN COMPONENTS

- Flotation Tank: Available in Carbon Steel, Concrete, or Stainless Steel (SS) configurations.
- Saturation System: Includes a pressure vessel (Saturation Tank) and a specialized recycle pump.
- Air Injection System: Comprising air compressors and fine-bubble diffusers.
- Mechanical Skimmer: Chain-driven or carriage-type sludge removal system.
- Chemical Dosing: Coagulation and Flocculation units for enhanced particle separation.
- Control System: Integrated PLC control panel for automated operation.

Typical Operating Parameters

Parameter	Typical Range
Surface Loading Rate	5 – 15 $m^3/m^2.h$
Recycle Ratio	10 % – 30 %
Operating Pressure	4 – 6 bar
TSS Removal Efficiency	>90 %
Oil & Grease Removal	>95 %

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TYPICAL APPLICATIONS

- Food & Beverage Industry (Dairies, Slaughterhouses).
- Oil & Gas Facilities and Petrochemical Plants.
- Pulp & Paper Industry.
- Textile Industry and Industrial Effluent Treatment.
- Pretreatment for MBR or Reverse Osmosis systems.

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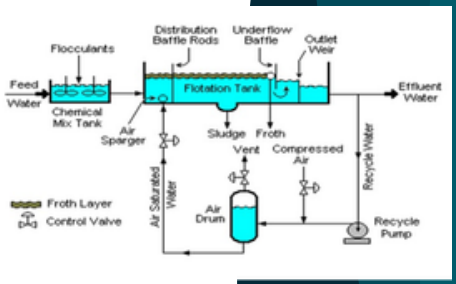

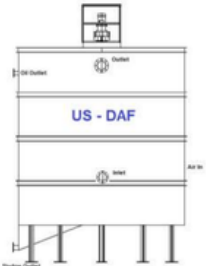

Advantages of MBR Technology

- High Efficiency: Superior removal of non-soluble organics and greases.
- Compact Footprint: Requires significantly less space than conventional sedimentation tanks.
- Reliability: Stable operation even with fluctuating influent characteristics.
- Thickened Sludge: Produces a higher solids content in the floated sludge compared to settling.

Engineering & Project Experience

- Custom process design and capacity calculations.
- GA drawings.
- P&ID drawings and documentation.
- Hydraulic analysis.
- Containerized and modular system designs for rapid deployment.
- Factory Acceptance Test (FAT) and commissioning support.

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WHY CHOOSE US?

T.C.
TÜRK PATENT ve MARKA KURUMU

MARKA TESCİL BELGESİ

Marka No : 2020 144180 - Ticaret - Hizmet

Marka Sahibi : USSU MÜHENDİSLİK ARITMA VE MAKİNA TİCARET SANAYİ LİMİTED ŞİRKETİ
TÜRKİYE CUMHURİYETİ
GÜNGÖREN MAH. DİYAR SK. 30 -32/6 Çekmeköy İstanbul

Emtiası : 11 , 35 , 42
İlişiktedir.

İşbu Marka 19/11/2020 tarihinden itibaren ON YIL süreyle 30/04/2021 tarihinde tescil edilmiştir.

Prof. Dr. Habip ASAN
Türk Patent ve Marka Kurumu Başkanı

TÜRK PATENT

- **QUICK FEEDBACK**
- **BEST COMPETITIVE PRICING**
- **CONTINUOUS TECHNICAL SERVICE SUPPORT**
- **WESTERN EUROPE EQUIPMENT**

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Superior Separation Performance

- Engineered for exceptional removal rates
- Up to 95% Oil & Grease removal efficiency
- Over 90% Total Suspended Solids (TSS) removal
- High-efficiency saturation system for optimal bubble-to-particle attachment
- Guaranteed maximum clarification for industrial wastewater

Process-Driven Engineering

- Custom calculated solutions beyond standard tank supply
- Design based on specific wastewater characterization
- Precise surface loading rate optimization
- Accurate recycle ratio calculations for process stability
- Performance-guaranteed engineering approach

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Compact and Space-Saving Design

- Significantly smaller footprint than conventional sedimentation
- Easy integration into existing treatment plant layouts
- Ideal for facilities with limited installation space
- Containerized and mobile system options available
- Plug-and-play modular configurations

Advanced Micro-Bubble Technology

- High-precision saturation vessel design
- Specialized heavy-duty recycle pumps
- Generation of millions of microscopic bubbles (20-50 microns)
- Gentle flotation to ensure delicate floc integrity
- Maximum air-to-solids ratio for efficient lifting

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Robust Industrial Construction

- Carbon Steel (epoxy coated) or Stainless Steel (SS304/316) options
- Built to withstand harsh and corrosive industrial environments
- Heavy-duty mechanical components for 24/7 operation
- Long-term structural reliability
- Minimal maintenance requirements and easy access design

Automated Operation & Control

- Integrated PLC-based control panels
- Fully automated mechanical skimming cycles
- Smart chemical dosing synchronization
- Precise pressure and flow management
- Stable operation even under fluctuating influent loads

We build according to project requirements, not catalog limitations.

- Custom flotation tank sizing
- Skid-mounted or containerized deployment
- Tailored engineering to fit specific industrial needs

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SERVICES TO:

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We're excited to work with you

Contact Information

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info@ussumuhendislik.com

Güngören Mah. İnönü Cad.
Diyar Sok. No: 30/32 D.6
Çekmeköy/ISTANBUL

T.C.
TÜRK PATENT ve MARKA KURUMU

MARKA YENİLEME BELGESİ

Marka No : 2012 39938 - Ticaret - Hizmet

Marka Sahibi : belkıs cin (T.C. Kimlik No: 15538981820)
TÜRKİYE CUMHURİYETİ
Necip Fazıl Mah. Çorbacıyolu Cad. No:5/A Ulaş Sitesi A Blok D:35 Ümraniye İstanbul

Emtiası : 11 , 35
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T.C. TÜRK PATENT ve MARKA KURUMU MARKALAR DAİRESİ BAŞKANLIĞI 1923

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