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HUBER Dissolved Air Flotation Plant HDF



Effective and efficient wastewater and process water treatment for industrial applications through flotation with micro bubbles

Process water is needed in many production processes as a solvent, for production of material, or for cleaning purposes. Water is recirculated and reused for economical and environmental reasons. Grease, oil, fat, floating and suspended solids, settling material, and dissolved components need to be separated to provide good and uniform water quality.

Recovery of valuable product from the water may be another additional objective. In addition, clogging and excessive wear of pipelines and other associated equipment is prevented, which increases the operating reliability of the production plant.

Where used process water is discharged as wastewater, pre-treatment is often required to prevent toxic or otherwise harmful substances from entering the sewer system and reduce thus surcharges and fees. Conventional gravity clarifiers are often incapable to achieve sufficient pre-treatment. Various types of flotation processes have been developed, whereof dissolved air flotation with pressure water recirculation has proven most effective.

The HUBER Dissolved Air Flotation Plant provides a significantly improved flotation process with a special inlet structure that provides optimum control of the flow within the flotation tank.

HUBER Dissolved Air Flotation Plants are successfully operated for a wide variety of industrial and municipal applications, such as:

- Slaughterhouses
- Meat processing and packing
- Cosmetics industry
- Textile industry

- Fish processing
- Dairies
- Convenience food production
- Margarine production
- Oil and fat refineries
- Canneries
- Industrial kitchens and canteens
- Fast food providers
- Soap works
- Chemical industry
- Petrochemical industry
- Iron and steel industry
- Metal processing
- Galvanizing, electroplating
- Land remediation
- Waste management
- Municipal wastewater treatment

HUBER Chemicals Dosing DIGIT-DOSE

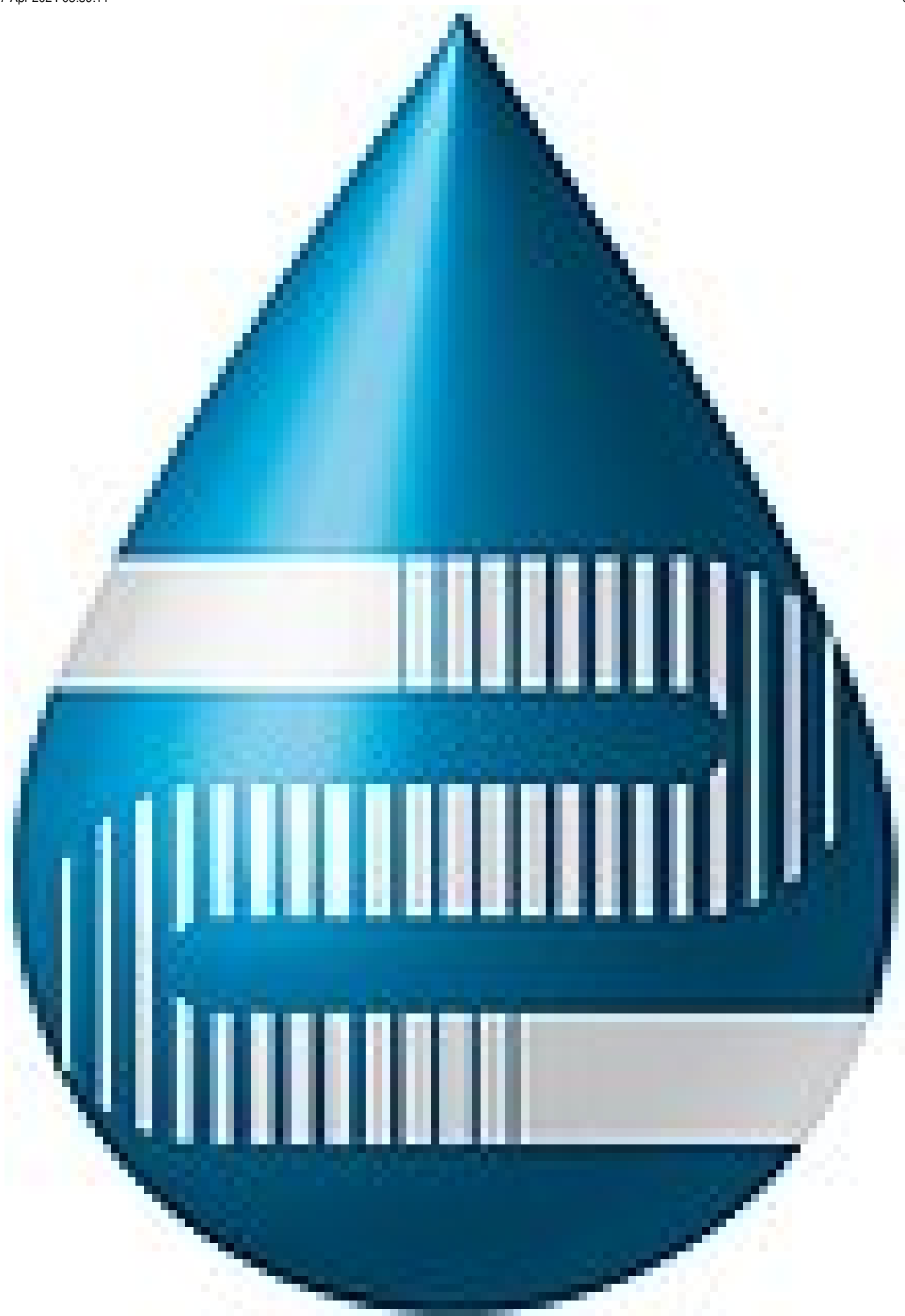
Chemicals dosing is optimal if the flotation system constantly achieves the required performance without overdosing of chemicals and unnecessarily increasing operating costs. In practice, it proves to be difficult to adjust the chemicals dose due to varying volumes and freights.

Large-dimensioned mixing and balancing tanks are beneficial but can frequently not be installed due to lack of space. Besides, the investments costs are high for the tanks and the accessory equipment required, such as circulation pumps and aeration systems for homogenisation.

The innovative HUBER Chemicals Dosing DIGIT-DOSE allows optimal dosing of the chemicals even with small mixing and balancing tanks. The specially developed system uses a combination of several measuring principles and constantly determines the optimal chemicals dose in real time.

Chemicals consumption, and therefore also operating costs, are reduced to a minimum. Additional positive effects can be seen in the volume of flotata sludge generated.

The production of hydroxide sludge resulting from overdosing of precipitants is effectively avoided. The further utilisation and disposal of the flotata sludge generated is a main cost factor of flotation plants. Furthermore, DIGIT-DOSE makes life easier for the operating staff as the system adjusts automatically to varying wastewater parameters without the need for any manual intervention.



Benefits

Advantages of the HUBER Dissolved Air Flotation Plant

- Completely made of stainless steel (1.4571)
- With optional chemical treatment stage - increased separation efficiency
- Standardized sizes for different applications
- Compact design, small footprint
- Simple pressure release principle by means of a single valve for maximum operating reliability
- Efficient, gentle mixing of the air bubbles into the wastewater flow
- Defined tank flow due to the optimal design of the blending and feeder construction in the flotation tank
- Large effective clarifier area due to the lamella separator, minimized risk of blocking due to suitably dimensioned gaps between the lamella plates
- Generation of saturated pressure water with a multi-stage pump which is not subject to the pressure tank regulation
- Experience from hundreds of installations in a variety of fields of application

Additional benefits of the DIGIT-DOSE system

- Up to 30% reduction in chemicals consumption
- Stable effluent values even for varying volumes and freights
- Support and relief for operating staff
- Up to 20% reduced disposal costs for flotated sludge
- Integrated automatic cleaning of the measuring equipment used without additional fresh or warm water
- Low investments costs and space requirements for mixing and balancing tanks
- Return on investment within few months, proven with existing plants in operation

Details

SYSTEM APPROACH

We provide complete systems for mechanical-physical water treatment by combining the HUBER HDF with other HUBER components:

- **Chemical pre-treatment** by precipitation, neutralization and flocculation in a tube reactor to improve separation efficiencies, and even remove some dissolved pollutants
- **Mechanical pre-treatment** with
 - [ROTAMAT® Micro Strainer Ro 9](#), or
 - [ROTAMAT® Rotary Drum Fine Screen Ro 2](#), or
 - [ROTAMAT® Complete Plant Ro 5](#)
- **Treatment of the removed scum and sediment** :
 - Sludge thickening with [ROTAMAT® Rotary Screw Thickener RoS 2](#) and
 - Sludge dewatering with [ROTAMAT® Screw Press RoS 3](#)
- **Complete wastewater treatment**:
 - Additional biological treatment with HUBER VRM® Membrane Bioreactor (-> direct discharge).
 - Tertiary filtration with [HUBER CONTIFLOW® CFSF](#)

Case Studies

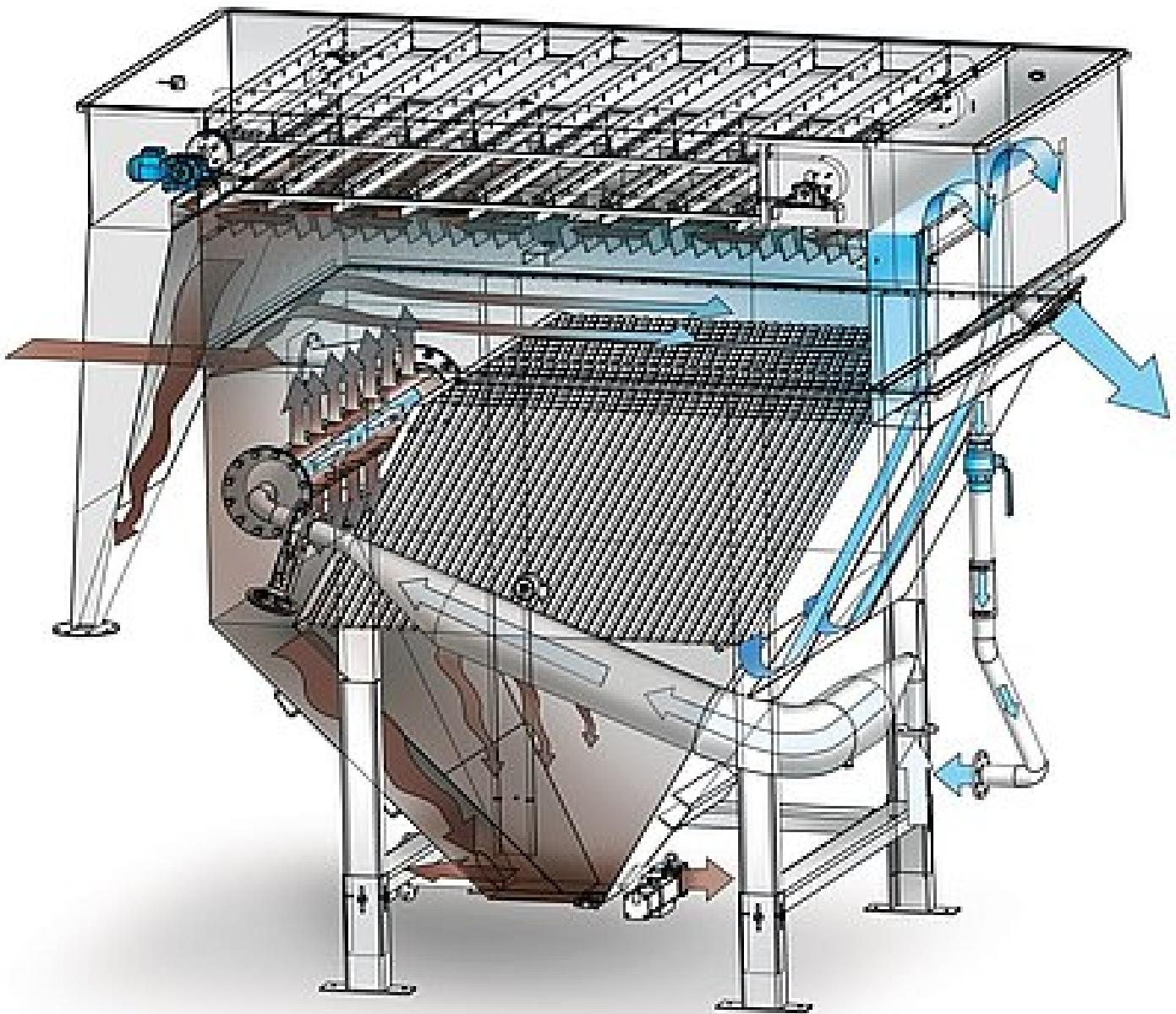
- [Clear Solutions: Navigating Wastewater Challenges with Dissolved Air Flotation in condiment production](#)
- [Wastewater Treatment in a Food Company - DAF Case Study](#)
- [HUBER applications in poultry slaughterhouse Süddeutsche Truthahn AG](#)
- [Wastewater Treatment in the Dairy Industry – Development of customized solutions for direct and indirect discharge](#)

- Intelligent chemicals dosing reduces operating costs for flotation plants
- Flotation for biomass separation replacing secondary settling tanks and secondary treatment systems
- HUBER flotation plant and screw press are a great help with the apple harvest in Serbia
- Fresh water savings in breweries: HUBER SE develops innovative process chain with Bavarian project partners
- New machine to dewater fermentation residues in dry fermentation
- New plant in Switzerland for innovative sewer grit treatment with process water recycling
- A gourmet meat processing plant upgrading their onsite effluent treatment plant - a Dissolved Air Flotation Plant case study
- HUBER Plant Technology for rent – the smart solution for industry and municipalities

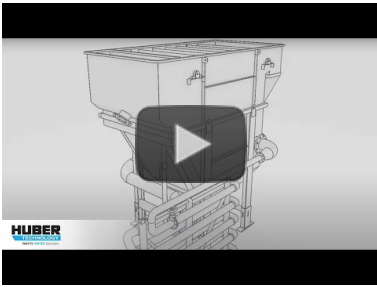
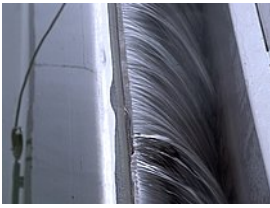
Downloads

 [Brochure: HUBER Dissolved Air Flotation Plant HDF](#) [pdf, 0.99 MB]

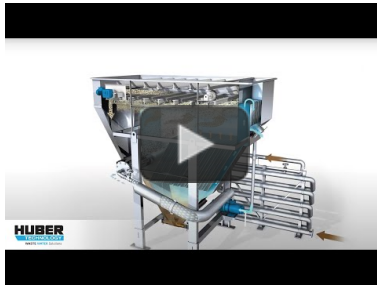
Graphic Rendering



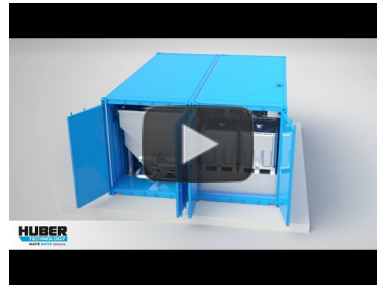
Media



Animation: HUBER Dissolved Air Flotation Plant HDF
<https://www.youtube.com/watch?v=exZb8jk7Ils>



Chemical-physical waste water treatment
<https://www.youtube.com/watch?v=LtqL1Iijl0M>



Animation: HUBER Flotation Plants in Container Design
<https://www.youtube.com/watch?v=eW4aFe65YZI>



Video: Dissolved Air Flotation for wastewater treatment in a dairy
<https://www.youtube.com/watch?v=HkqDkDsi070>



Video: Video: HUBER Dissolved Air Flotation HDF in meat processing industry
<https://www.youtube.com/watch?v=HvwV0BaLd68>



Video: HUBER Dissolved Air Flotation Plant HDF in a grit treatment process
<https://www.youtube.com/watch?v=nNstEvZA-24>

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