



Global water treatment solutions

UNICELL® BF DAF solution for large drinking water & tertiary treatment



KWI Group is one of the pioneers of Dissolved Air Flotation (DAF) technology. **Our DAF range includes standard models as well as custom designs to meet all customer requirements.**

KWI is not only an equipment manufacturer, but provides also **complete solutions for water treatment.** Today, it is a member of an international companies Group.

As the market demand for large sea water and fresh water DAF clarifiers was significantly increasing, KWI decided to innovate by using its experiences of the UNICELL design to develop the **UNICELL BIG FLOW (UNCBF)**. The main purpose of this new concept is to offer **design flexibility**.

AN INNOVATIVE CONCEPT

UNC BF is perfectly customisable and can be adapted to:

- Fresh or sea water
- High or low suspended solids content
- Inbuilt or external flocculation tanks
- Single or modular installations

Continuity of Service

1. UNC BF technology is used in **multiple cells** in order to provide **continuous operation of the plant**.

2. Specific diffusers

The pressurisation is made with clarified water. The pressure relief is made through special pressure relief diffusers generating very fine bubbles. Each one of these diffusers can be disassembled and removed individually. **This concept allows inspection and cleaning without interrupting the UNCBF clarifier operation!**

MAIN APPLICATIONS

Drinking or industrial water production

First step of clarification, including coagulation and flocculation processes.

Seawater desalination pretreatment

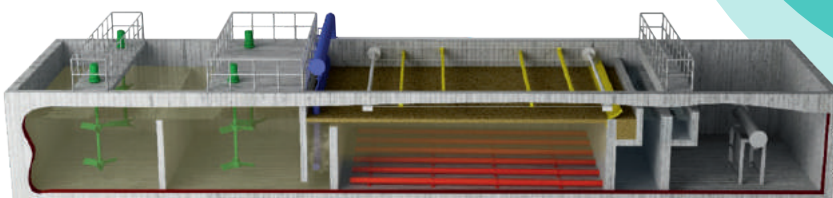
Tertiary treatment

For phosphorus removal.



KEY FEATURES AND BENEFITS

- Outlet turbidity less than 2 NTU
- TSS removal efficiency: 95%-99%
- High hydraulic load: 25 m³/(m².h)
- **High Algae removal efficiency: 95%-98%**
- High sludge concentration: max. 5% of solid content
- Only seawater resistant materials for desalination applications
- Minimum interconnecting pipes and instrumentation
- **Perfectly adapted to multiple concrete tank construction**
- Small footprint



UNICELL® BF

■ Customised design

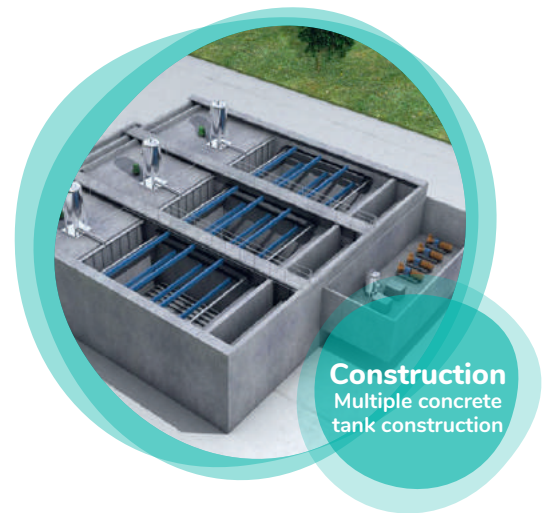
Flocculation: 1 or 2 compartments with 1 or 2 mixers/compartment.

Pressurisation: 2 types of dissolving devices can be used:

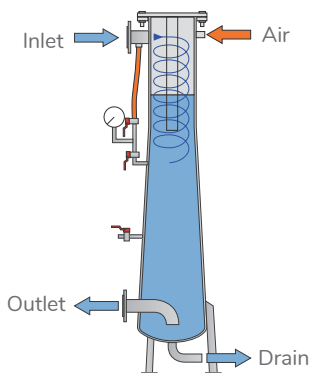
- **ADV: Air Dissolving Vessel**
Suitable for very large flow (over 500 m³/h per unit).
Very competitive for seawater desalination (ebonised mild steel construction).
- **ADR: Air Dissolving Reactor**
The largest unit can pressurise up to 200 m³/h flow in only 16 s retention time.
The saturation efficiency can be as high as 80% if required.

Floated sludge removal: 2 possible ways:

- **Hydraulic desludging**
Automatic outlet weirs.
- **Surface scraper desludging**
Fully non-metallic components to be seawater resistant.
Highly mechanical and UV resistant synthetic materials.



Construction
Multiple concrete tank construction



ADR®, our latest patented Air Dissolving Reactor



ADV®



■ Unicell® BF range

TYPE	MAXIMUM INLET FLOW* (m ³ /hour)	SCRAPER POWER (kW)	FLOTATION AREA SIZE** L x W (m)
UNCBF 30	750	0.25	6.71 x 5.5
UNCBF 40	1000	0.25	7.9 x 6
UNCBF 50	1250	0.25	9 x 6.5
UNCBF 60	1500	0.25	9.9 x 7
UNCBF 70	1750	0.25	10.2 x 8
UNCBF 80	2000	0.25	10.2 x 9
UNCBF 90	2250	0.25	11.2 x 9
UNCBF 100	2500	0.25	11.5 x 10
UNCBF 110	2750	0.25	12.2 x 10
UNCBF 120	3000	0.25	13.4 x 10

*The maximum flow includes recycle flow and depends on SS loading and on the application. **Including flocculated water / pressurized water mixing zone.

KWI specialists have vast expertise and experience ranging from engineering to building and commissioning, and from investment to operation.

Let's work together to make your project a success!



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Member of the **SafBon** Group

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