

iDEC®-SBR Decanting System

Every detail makes a difference!

The development of the **iDEC®**-SBR Decanting System was based on the well known features a decanting system which collects and discharges purified wastewater out of Sequencing Batch Reactors is expected to show. Before the **INVENT** decanters were created, different types of effluent discharge constructions were used in the market with mixed results. This was the reason for **INVENT** to develop the new **iDEC®**-SBR¹ Decanting System.

DESIGN

The **iDEC®**-SBR Decanting System was developed for the discharge of clarified wastewater from SBRs. The **iDEC®**-SBR Decanting System includes the following components:



iDEC®-SBR Decanting System: Schematic representation

1 Collector

The collector is oriented horizontally and equipped with engineered openings through which the clear water flows during the decanting phase. A fluid mechanically optimized baffle plate prevents floating sludge from entering the inlet openings during the dip-in phase of the collector. The entire collector is made from high-grade stainless steel 304 or 316 depending on the specific application.

2 Discharge Pipe

The discharge pipe connects the decanter base unit with the collector. The pipe is divided into two sections for ease of transport and handling. All parts are made from high quality stainless steel in the same grade as the collector.

3 Decanter Base Unit

The decanter base unit is designed for high mechanical loads and built to provide years of trouble free operation. The design of the base unit is predicated on a maintenance free swivel joint. The base unit can be mounted to the basin wall or floor for flexibility of the application at hand.

4 Electrical Winch

The decanter winch controls the position of the collector in the basin. During idle mode the whole collector is removed from the water to prevent mixed liquor to enter the system. During decanting the winch controls the positions of the collector under water and follows the sludge blanket at a defined submergence depth. The connection between the winch and the collector is made with a high-strength textile belt.

5 Decanter Control System

The decanter control system includes an integrated circuit. The circuit controls the winch position during operation. No additional sensors are required to control the winch operation, other than the level sensors in the basin.

¹ Sequencing-Batch-Reactor

iDEC®-SBR DECANTING SYSTEM DESIGN

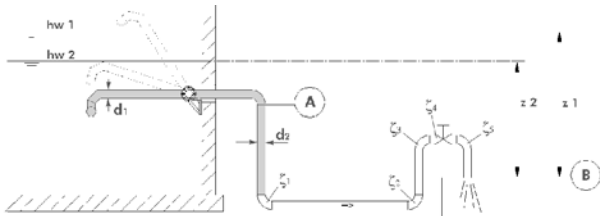
The complete **iDEC®**-SBR Decanting System includes the **iDEC®**-Decanter itself, all piping at the bottom of the tank with connection joints, stainless steel anchors and the **INVENT** application design for the system.



iDEC®-SBR Decanting System: Perspective view – front

PROCESS DESIGN

INVENT provides a complete decanter layout and the piping design within the basin. Further pipe arrangements downstream of the decanting system are also part of the hydraulic system and need to be considered when designing the decanter. Here **INVENT** can assist in the design or review of process needs to a proper hydraulic system for a high quality clean water effluent.



iDEC®-SBR Decanting System: Model sketch

iDEC®-SBR DECANTER UNIT ASSEMBLY

The **iDEC®**-SBR Decanting System is delivered in prefabricated components for low packing volume. On site assembly requires the use of a riveting tool. The **iDEC®**-SBR Decanting System is designed in such a way that no field welding and pickling is needed for the installation. This makes the installation in the field safe, easy and fast.

QUALITY CONTROL

Each **iDEC®**-SBR Decanting unit is factory inspected and tested to verify that all components are within the manufacturing tolerances.



iDEC®-SBR Decanting System: Perspective view – rear

TECHNICAL DATA DECANTER

Flow Rate	1.25 – 2 mgd
Effluent Pipe Diameter	6" – 18"
Water Level	3 – 26 ft

TECHNICAL DATA WINCH

Motor Power	0.75 hp
Motor Protection	IP 65
Supply Voltage	3 ph – 460 V – 60 Hz
Controls	INVENT Decanter Positioning System
Thermal protection	PTC



iDEC®-SBR Decanting System: Winch

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