Indar
An Ingeteam brand

Submersible Pumps and Motors

DESALINATION

Desalination is a water treatment process that turns salt water into fresh water. It takes away mineral components from saline water.

Fresh water is a finite resource suffering record-breaking demand. As human population grows, social needs, industries and agriculture become more water demanding, the stress on fresh water supplies raises: there is not enough fresh water to meet all the needs in many world regions.

Desalination is used in areas where fresh water is scarce, like on ships in the ocean or in water-starved areas like the Middle East or Africa. When large quantities of fresh water are needed, desalination might not be as cost effective as using fresh water sources because the process is very energy intensive. But if an area is scarce of water, desalination might prove more economical than transporting water from very far away. Saltwater is desalinated to produce water suitable for human consumption or irrigation.

Due to its energy consumption, desalinating sea water is generally more costly than fresh water from rivers or groundwater, water recycling and water conservation. However, these alternatives are not always available and depletion of reserves is a critical problem worldwide. Currently, approximately 1% of the world's population is dependent on desalinated water to meet daily needs.

There are different methods for desalination; each has advantages and disadvantages but all are useful. Reverse Osmosis is with no question the leading process for desalination in terms of installed capacity and yearly growth.

Figure 1. The Claude "Bud" Lewis Carlsbad Desalination Plant. The Largest, most technologically advanced and energy-efficient sewater desalination plant in the USA (Reverse Osmosis)

Desalination Intake

Seawater desalination facilities require an intake system capable of providing a reliable quantity of clean seawater with a minimum ecological impact.

In the United States, cooling water intake structures are regulated by the **Environmental Protection Agency** (EPA). These structures can have the same impacts to the environment as desalination facility intakes.

According to EPA, water intake structures cause adverse environmental impact by sucking fish and shellfish or their eggs into an industrial system.

There, the organisms may be killed or injured by heat, physical stress, or chemicals. Larger organisms may be killed or injured when they become trapped against screens at the front of an intake structure. Alternative intake types that mitigate these impacts include beach wells (slant or not), but they require more energy and higher costs.

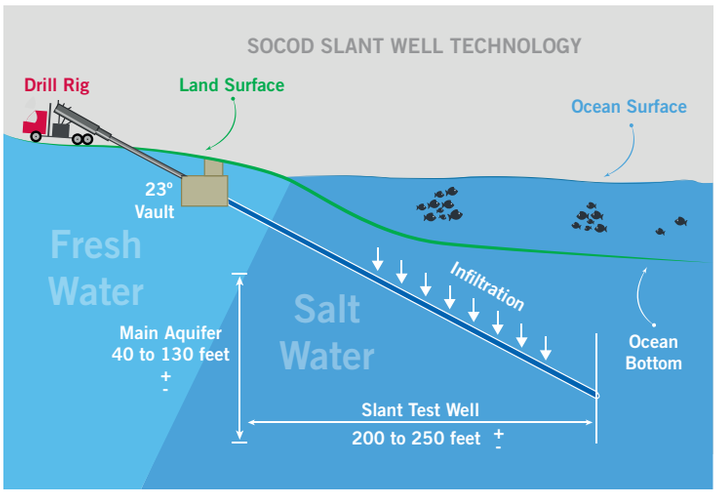

Figure 2. Slant Well Intake.

HYDRAULIC INSTITUTE PROUD MEMBER

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Indar's value proposal

Indar submersible pump sets for desalination water intake projects, open sump and Subsurface (slant or not), are a technically and environmentally friendly alternative due to the efficient use of water.

Backed by our **proven in-house technology**, we offer stiff, high performance and almost maintenance free solutions.

Following the EPA regulation, Indar is also leading the development of Fishfriendly pumps for the intake structures.

100% made in-house • Versatility • Flexibility • Tailor made solutions • Short lead times • Testing in real conditions

Data sheet

Features	Ranges	UGP / UGP-M
Flow	200 USgpm - 35200 USgpm	
Head	100 ft - 3300 ft	
Power	40 HP - 5364 HP	
Voltage	380 V - 13800 V	
Speed	735 rpm - 3500 rpm	

Features	Ranges	H / HE
Flow	5060 USgpm - 92500 USgpm	
Head	5 ft - 250 ft	
Power	70 HP - 2680 HP	
Voltage	380 V - 13800 V	
Speed	235 rpm - 1750 rpm	

Features	Ranges	BF
Flow	3080 USgpm - 44000 USgpm	
Head	10 ft - 330 ft	
Power	70 HP - 1600 HP (larger customized motors upon request)	
Voltage	380 V - 13800 V	
Speed	485 rpm - 1750 rpm	

Materials

Brackish water or briny water: Materials in Stainless Steel (316, Duplex or Super Duplex)
Seawater: Materials in Stainless Steel (Duplex or Super Duplex)