

TECNICANARIAS

TECNICANARIAS, S.A. – ACSA. ENVIRONMENT SOLUTIONS

DESALINATION PLANTS

General description:

Desalination plants with inverse osmosis system recovering pressure, is composed by the following subsystems and/or stages:

- Prefiltrate
- Block of membranes containers
- Module of recovers pressure
- High-pressure bomb
- Auxiliary circulation bomb
- Drinkable water treatment
- Electric system
- Control system

The reduced size of the components and their disposition make possible the occupation of the modules to be minimum (for example, 70 m² for a plant of 5.000 m³/day). Together with the small specific sizes (1.000 to 5.000 m³/day) make them perfectly integrables in limited spaces.

They have, thanks to the energy recovery effect that later on is explained, a low specific consumption, of 2 kWh/m³ of desalted water, lower to the 3-4 kWh/m³ of the traditional processes. The high efficiency of the system is independent of the size of the plant and, together to its modular character, it offers a great reliability on the implementation of a high capacity plant.

Innovation:

In the purpose of reducing costs of production in the traditional systems, basically by means of the reduction in the energy consumption of the process, the recover of pressure uses the energy associated to the rejection of the brine to pressurize the seawater. The recovery unit acts like a bomb of high pressure, pressurizing the seawater that crosses the membranes and lowering the necessary initial pressure to a traditional system. As a result, the plant operates to smaller pressure, and, due to a lower saline concentration in the membranes, the use of chemical preservatives also decreases, at the same time increasing, the membranes life.

Technical specifications:

- Standardized modules of modular compact design 00; 1000; 2000; 5000 m³/day
- Energy consumption 2kWh/m³
- Work pressure.55-58 bar

Technician-economic advantages:

- Lower electric consumption compared to traditional processes (2 kWh/m³ in front of 3-4 kWh/m³), what means the depreciation of the produced water cost.
- Automatic operation with possibility of remote control and emission of alarms, and low cost of maintenance.
- Longer durability of the membranes, as the system works with smaller pressure, bigger flow and less use of chemical products, to avoid the precipitation of salts in the membranes.
- Possibility of modular growth of the size of the plant, to form bigger facilities.

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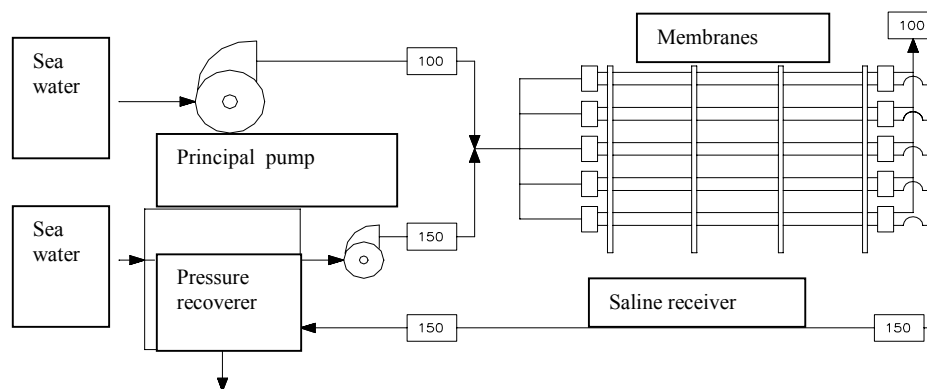
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- Decrease in costs of water distribution low cost of pumping and less loses in the system because of locating the plant next to the consumption point.

Considerations and environmental advantages:

- The low specific energy consumption impacts in a less global contamination because of producing the necessary electric power in the process.
- The compact and reduced size of the modules that can be located even in the underground minimizes the visual impact of the facilities, thanks to its easy integration in the environment.
- The generating components of noise are settled under a concrete camera with acoustic isolation, to cancel or to minimize their effect.
- Low concentration of salts in the poured rejection.
- Low or non-quantity of chemical products used in the process of water production.

Outline of the process:



The manufacturer reserves the right of modifying the technical characteristics contained in this brochure, without previous notification.

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