High pressure pump for RO plant

WEIL INDUSTRIEANLAGEN GMBH IS A SPECIALIST IN WATER PURIFICATION AND WATER TREATMENT AND WAS ESTABLISHED IN 1986. THE WATER PURIFICATION AND WATER TREATMENT TECHNIQUES BOTH USE MEMBRANE TECHNOLOGY, (REVERSE OSMOSIS, NANO-FILTRATION, AND MICRO-FILTRATION). THE COMPANY FOCUSES MAINLY ON THREE TECHNOLOGY AREAS: BUILDING TECHNOLOGY, ENERGY TECHNOLOGY AND PHARMACEUTICAL AND MEDICAL TECHNOLOGY.

TOPIC:

High pressure pumps - Compact construction - Maintenance-free pumps - High-grade stainless-steel qualities

LOCATION:

Germany

COMPANY:

Weil Industrieanlagen GmbH

Weil is a specialist in building customer-specific installations, and prides itself on in inventing installations tailored for every single client’s need. Their ability to develop new solutions from scratch, the high degree of flexibility and the profitable cost-structure, have made Weil an important player in the customisation of the water purification and water treatment segment.

THE SITUATION

Recently, Weil was asked to develop a solution for a spirit distillery. Normal water from the tap is unsuitable for the production of destilled spirits, because it does not comply with German portable water regulations as to mineral content. If alcohol is added to mineral substances, sediments in the product may occur. Therefore, it is necessary to desalt the water by the means of desalination methods that do not affect neither the taste nor the odour of the water.

Weil decided to construct a RO system for the spirit distillery. First of all, the RO process demands that no chemicals are used, and thus, do not affect the water quality as to taste and smell. Second of all, the RO process results in economic advantages compared to other desalination methods. To be able to push the

water across the membrane, high-pressure pumps are needed to obtain a pressure of 20 bar.

THE GRUNDFOS SOLUTION

The Grundfos BM booster submersible pump is characterised by its ability to deliver a high constant pressure and a considerable flow. In connection with membrane techniques, where pressurised raw water flows through a membrane, pumps with special characteristics are needed. When dealing with water purification, corrosion-resistance is a key word. Thus, the BM boosters are available in different high-grade stainless-steel qualities, (AISI 304, 316 and 904L), capable of handling different aggressive liquids.

Thanks to the BM booster's compact design it is easy to integrate the pump into existing piping systems, because it does not take up any additional room. Due to the encapsulation of the pump, the BM booster is a low-maintenance and low-noise pump and can deliver a high static pressure of up to 80 bar.

THE OUTCOME

According to Weil, the construction of the BM booster has at least three advantages worth mentioning:

Firstly, due to the BM booster's compact design, no space-consuming foundation is necessary, and therefore, the pumps are easy to install in Weil's RO plants.
Secondly, the pump's pipe-like construction makes it easy to integrate the BM boosters into the present piping of the RO system. Thus, there is no need for further motor and pump alignment.
Thirdly, the BM booster is to a large extent a maintenance-free pump. The pump's motor units are encapsulated in the pressure sleeve and are thereby hermetically sealed and protected.

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