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Nitto Denko Group Launches New High-performance, High Energy-saving RO Membrane Element for Chinese Industrial Water Market

World's Highest-level Energy Savings with 30% Lower Electric Power Consumption

Japan's leading diversified materials company Nitto Denko Corporation (Nitto Denko) and its wholly owned U.S. water technology subsidiary, Hydranautics (HY), have launched a significantly higher-performance and energy-saving model of the "PROC" series of reverse osmosis (RO) membrane elements used to create pure industrial water from raw water heavily loaded with salt (sodium chloride) and contaminants, Nitto Denko announced today.

The new, "ultra-low operating pressure and ultra-low fouling" RO membrane element "PROC20" is less electric power-consuming in plant operation by more than 30 percent, as compared to the earlier "PROC10" model. Launched in 2006 targeting the Chinese water treatment market, PROC10 was already endowed with a salt rejection capability at the highest level in the world at the time.

Nitto Denko plans to enter into full-scale commercial production of PROC20 for marketing it in the Chinese market where water shortage and environmental problems are expected to become increasingly serious from now on.

Background of the Development

With the need for industrial water constantly on the rise in China due to the country's rapid economic growth, the market for our PROC Series continues to show significant growth. Too, the rising environmental consciousness in China has prompted Beijing to target energy savings in the form of a 20-percent reduction in Unit GDP Energy Consumption and water conservation of 69 billion tons, respectively, in 2010 with 2005 as the base year.

It is with such a backdrop that the market has started to voice its desire to "Promote water conservation by beneficially reusing conventionally discarded wastewater with as little energy usage as possible." In line with such views of Chinese customers, ND/HY has developed as a way to tackle the environmental issues the latest PROC20 model capable of purifying wastewater with a 30 percent-plus less electric power consumption as compared to its predecessor.

Product Features

1 . High Water Permeate Flow

High water permeate flow with a 30-percent lower energy consumption has been achieved by leveraging one of Nitto Denko's competencies, the advanced skin-layer surface constitution configuration technology.

2 . Improved Fouling Resistance of Raw Water Passage

Because raw water in China has heavy concentrations of foulant substances, the desired performance level of the RO membrane element sometimes cannot be achieved due to fouling during operation. The structure of the membrane element was therefore designed to have a unique raw water passage, to make it difficult for the in-coming foulants to become trapped inside.

3 . Improved Chemical Resistance of RO Membranes

Once RO elements become fouled, they need to be cleaned with chemicals to remove the foulants. PROC Series RO membranes are provided with improved chemical resistance to allow cleaning with chemicals stronger than those used conventionally.

4 . Air Purge System

RO elements are typically installed in pressure vessels, so that the elements may become damaged if air trapped between the elements and the vessels is not adequately purged out. With the PROC Series elements, an air purge system is provided for swiftly discharging the trapped air, to prevent damage to the elements.

External View of "PROC20" Element Structural schema of "PROC20" Element

Sales Target

Projected Sales Revenue of PROC20 for fiscal year 2009 is 500 million Japanese yen.

Outline and Future Direction of Nitto Denko's Water Treatment Business

Leveraging the world's top-level membrane fabrication technology, the Nitto Denko/Hydranautics group has high achievements records to show in ultra-pure water creation and seawater desalination, as well as in the wastewater treatment fields. The group boasts a highest-level share together with Dow Chemical Company in the world market for RO membrane elements for producing industrial and public-use ultra-pure water.

Not stopping at the latest development of PROC20, Nitto Denko/Hydranautics will continue to strengthen its product offering also for microfiltration and ultrafiltration membrane elements for pretreatment use and aims to move even further, into the MBR (Membrane Bio Reactor) applications as well as plant maintenance and administration fields, to provide total solution to customers in the domain of water treatment membranes business.

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