

FIL MAX INC.

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Applying membrane technology to high solid, high viscosity, and difficult applications

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As membrane filtration technology has become a popular choice for liquid-liquid separation or wastewater treatment, people starts to realize that the membrane filtration also has its shortcomings. Fouling is often the major concern when membrane filtration is put into consideration. As foulants start forming a boundary layer on the membrane surface during the separation process, the permeate flow rate decreases dramatically. A flush or chemical cleaning is then required to remedy the problem. This inability often limits conventional membrane filtration systems to low-solid feed streams and requires complicated pretreatments prior to the membrane filtration systems.

FMX is a revolutionary membrane filtration machine. It utilizes vortex generated on the membrane surface to prevent fouling. When the throughput from conventional membrane filtration systems are decreased due to the buildup of foulants on the membrane surface and form boundary layers, the FMX's specially designed blades generate strong vortex which disrupts the accumulation of boundary layers and maintains consistent permeate flow rate.

The vortex-generating blade was developed jointly between KIMM (Korean Institute of Machinery & Materials) and Fil Max Corporation's Research & Development team. The bodies of blades are made with special lightweight engineering plastic that is resistant to chemicals and corrosion. The design concept allows a continuous turbulent flow to work efficiently on the membrane surface with minimum energy consumption.

Each FMX unit is designed with optimal safety and stability to provide superior performance. FMX employs minimum energy consumption while maximizing flow efficiency. It can handle near maximum flow capacity of the membrane and still maintain stable operation under heavy-load conditions, such as high solid and viscosity.