

# Kubota Membrane Bio-Reactor System

Advanced wastewater treatment system by KUBOTA Submerged Membrane Unit

## Features

### About the Membrane Bio-Reactor(MBR) system

**①Space-saving:**

There is no need to have final sedimentation tanks or sludge thickener due to high MLSS operations resulting in smaller reaction tank capacity. Therefore, installation area can be reduced significantly. MBR system enables existing wastewater treatment plant to expand capacity without additional tanks.

**②Clean treated water:**

The system is capable of removing nitrogen as well as BOD and SS. Phosphorus can be removed by adding coagulant. It enables advanced wastewater treatment, and treated water can be reused for toilets, sprinklers, landscaping and RO membrane pretreatment.

**③Easy maintenance:**

In MBR system, Treated water is directly separated from activated sludge by membrane. Therefore, operator does not need to manage sedimentation property of activated sludge. Moreover, MBR system also enables remote monitoring as the operation status can be identified in the indicated data of instrumentation device.

Water quality in a sewage treatment plant (Annual average values)

Item	Raw water	Treated water	Remarks
BOD	98.9	1.0	
COD	75	4.8	
SS	121	Below detection limit	
T-N	35.9	5.8	
T-P	5.3	0.54	Add PAC
Coliform group	—	Below detection limit	

### About KUBOTA Submerged Membrane Unit (Kubota SMU)

**①Strong flat structure against fibrous residues:**

Flat sheet membranes of Kubota SMU reduce the risks of fibrous residues tangling such as hairs and enable stable operation in wastewater treatment plants.

**②Easy membrane cleaning:**

Chemical cleaning for Kubota SMU can be done without lifting work. Moreover, the frequency of chemical cleaning is about 2 to 4 times a year.

**③Sanitary treated water:**

Kubota SMU can perfectly remove E.coli because the maximum pore size of membrane is 0.4 μm.

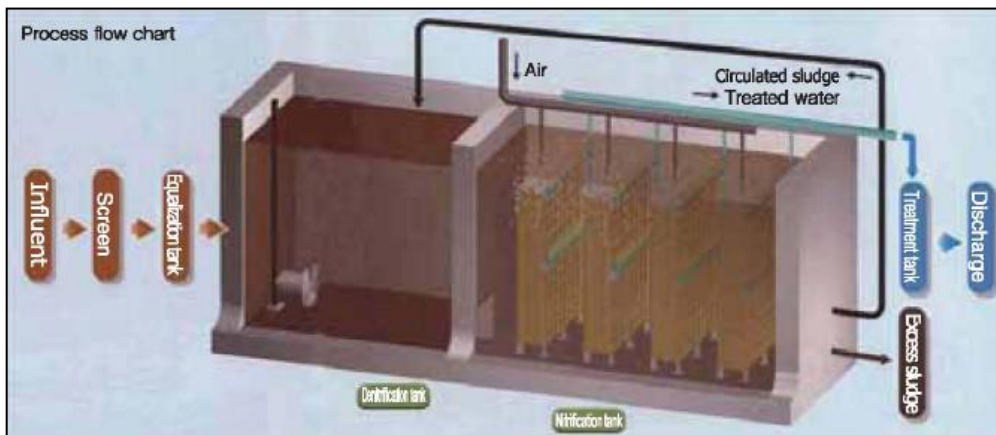
## Overview

There are stable operation, easy maintenance and small footprint in needs to wastewater treatment plant. For satisfying these needs, Kubota developed own MBR system which is compact and high efficiency and has superior operation property.

Around the world, there are over 4,200 plants in which Kubota SMU was installed.

### Flow diagram of Kubota MBR system

Wastewater is removed material by fine screen and flows into equalization tank. Then, it flows into anoxic tank and aerobic tank. These tanks have the function of pollutant degradation, nitrification and denitrification. Treated water flows out after separating from activated sludge by Kubota SMU.

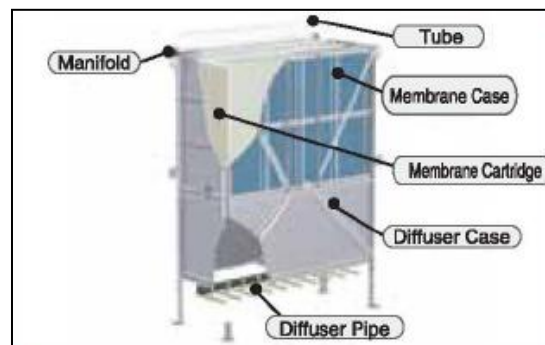


### Structure of Membrane Unit

The Submerged Membrane Unit consists of a membrane case and a diffuser case. The membrane case houses multiple membrane cartridges. Treated water permeates inside from outside of cartridge. Membrane Unit is continuously aerated to prevent membranes from fouling.



Structure of Membrane Cartridge



Structure of Membrane Unit

Inquiries

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