

A compact Sewage Treatment Plant(STP) to perform advanced purification of domestic wastewater.

# FRP Johkasou(STP)

## Features

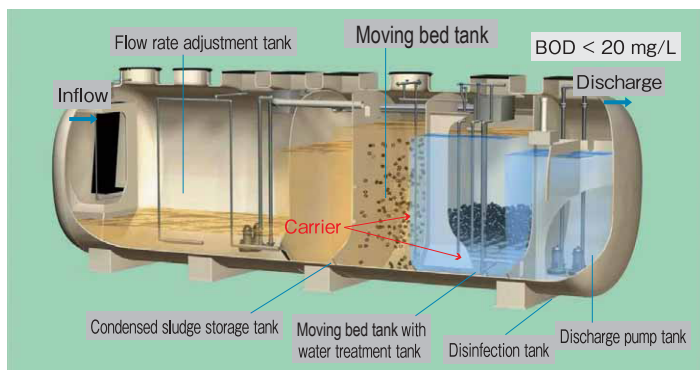
- Compact shape: Provides compact household-type Johkasou(STP) (each with a processing rate up to 2 m<sup>3</sup> per day), medium-sized ones (up to 10 m<sup>3</sup> per day), and large-sized ones (10.2 m<sup>3</sup> per day or more) that are approximately 70%, 60%, and 50% in size Johkasous of Japan's standard construction.
- Provides a moving bed bio reactor process (MBBR process) that enables the high-performance processing of wastewater in compact Johkasous (each with a BOD reduction to 20 mg/L or less).
- Applies a Membrane BioReactor(MBR) system to a lineup of large-sized Johkasous for the advanced treatment of wastewater (with a BOD reduction to 10 mg/L or less and a T-N reduction to 10 mg/L or less), thus making it possible to support water recycling facilities.

## Overview

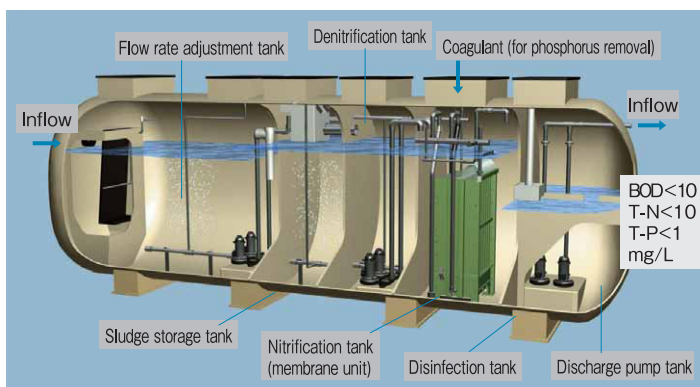
(Technical principles, actions, etc.)

In Kubota's moving bed media filter process, the moving bed tank accepts wastewater after solids are removed from the wastewater at the time of primary treatment. Aeration is always performed in the moving bed tank with swirling plastic carriers. The microorganisms on the carriers perform the fast oxidative degradation of organic matter and nitrification in the moving bed tank. The processed water in the tank is transferred to the media filter, where the sludge in the water is filtered. The automatic backwashing of the media filter tank is performed at least once a day, and the surplus sludge in the tank is transferred to the primary processing side. A carrier has a smooth surface, which makes it possible to separate the captured sludge on the carrier with ease at the time of backwashing.

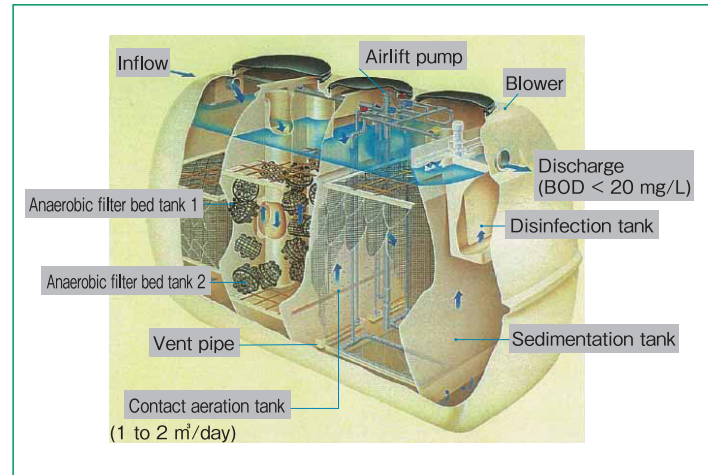
The membrane bioreactor (MBR) system incorporates a high-concentration activated sludge tank with a membrane separator in it, thus performing the breaking down of organic matter and nitrification in the tank. The processed water is suctioned and filtered by a membrane that is cleaned with aeration. Therefore, there will be only a little accumulation of sludge on the surface of membrane. The system ensures ease of maintenance, because the system can be maintained by chemical cleaning for a few hours several times a year. Two pumps for processed water discharge will come into suction operation when a large quantity of wastewater flows in. When there is no flow of water, the energy-saving automatic operation of the system will be possible with intermittent blower aeration.



Moving Bed Bio Reactor Type Johkasou(K-HC-R)



Membrane Separation Type Johkasou (KM-SG-NP)



Home-use Johkasou (HS-P)

## Introductory Track Record

- Large-sized Johkasous for the treatment of human sewage from factories and home-use Johkasous were delivered to Vietnam. The dissemination of Johkasou in Southeast Asia will occur in future. Johkasou of advanced treatment type incorporating a nitrogen elimination function were delivered to Saudi Arabia for the treatment of human sewage from plants.

## Effects

- Kubota's Johkasous are of factory-made FRP structure. They can be installed on site quickly, the required period of which is approximately 1/3 of that of concrete tanks. Furthermore, Kubota's Johkasous are so compact that they can be installed in small areas. The required installation cost is less than that of conventional Johkasous. The standard type processes wastewater at a BOD elimination efficiency of 90% or over with a residual BOD rate of 20 mg/L. Products of advanced nitrogen removal type, such as Johkasous incorporating an MBR system are prepared for applications that require high-level wastewater treatment. Compared with large-scale sewerage facilities, Kubota's Johkasous involve low piping costs, thus allowing efficient water environment planning. Decentralized Johkasou can construct a sturdy wastewater treatment system less influenced by differences in elevation of the terrain, and minimizes the impact of earthquakes.

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