

Environmental Engineering Businesses

Kansai International Airport utilizes seven numbers of the new type tubular pump for rainwater drainage facilities

We have delivered and installed new type tubular pumps for rain water drainage facilities (the third and fifth drainage areas) in Kansai International Airport.

Rainwater on the vast runway and so on of Kansai International Airport is collected into a few culverts, and is discharged to the sea by the new type tubular pumps at the end of the culverts.

The new type tubular pumps installed are one of the largest drainage facilities in Kansai International Airport.

Features

(1) Fit into the compact pit

Since the facilities are located in the vicinity of a runway, the pumps are installed in entire underground pits not to disturb the flights.

The underground pump pits are required small and shallow in order to save civil construction cost.

By adopting a semi-closed suction conduit achieves shallower pit.

By adopting a built-in type small-size synchronous motor with high efficiency permanent magnet achieves small size pump to fit compact pits.

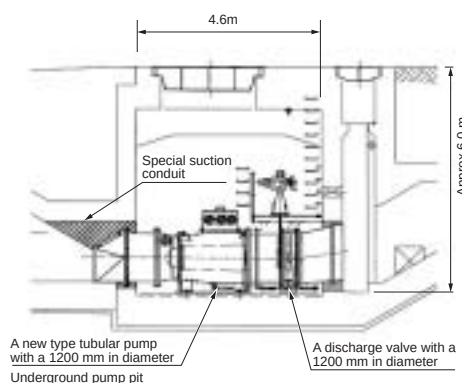
(2) Reliability

Since they are the important facilities of rainwater drainage for the airport, the built-in motor in the pump is watertight in order to keep its reliability.

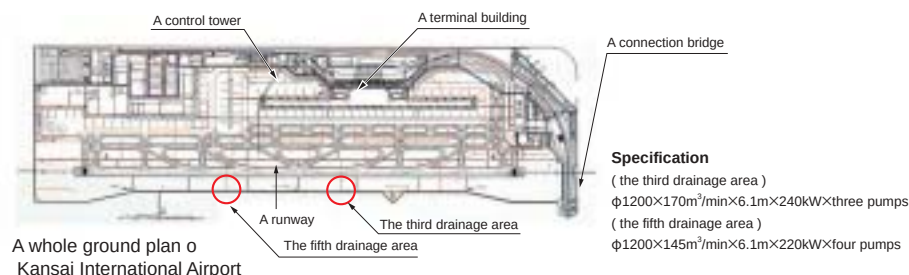
A hard sequence relay is also provided in a pump control circuit as a backup of sequencer in an emergency.

(3) Speed control

The pumps are speed controlled in accordance with the difference of inside and external water levels in order to comply with the wide range of inflow (50 to 170 m³ per minute), and in order to avoid cavitation which is harmful to a pump.



New type tubular pumps



Specification

(the third drainage area)
 $\phi 1200 \times 170 \text{ m}^3/\text{min} \times 6.1 \text{ m} \times 240 \text{ kW} \times \text{three pumps}$
 (the fifth drainage area)
 $\phi 1200 \times 145 \text{ m}^3/\text{min} \times 6.1 \text{ m} \times 220 \text{ kW} \times \text{four pumps}$

Izumo environmental center, the newest sludge recycling treatment facilities, was completed in order to protect a life and environment in Izumo.

The features of the facilities

(1) Sludge is recycled to valuable resource after a complete composting treatment.

*a primary fermentation equipment (Kubota's reverse-conical high-efficiency type)

*a secondary fermentation equipment (a horizontal aeration agitation type)

*a stock yard of products (800 m²)

(2) Garbage from a center for providing meals is treated.

(3) Stable water quality can be kept since Kubota's membrane separation

tion and high-load de-nitrogen treatment system which is used in various facilities is used.

(4) Nitrogen, phosphorous and chromaticity can be removed efficiently.



Flow of composting

Outline of the facilities

Name: Izumo environmental center
 Location: 4295-34, Nishizono-cho, Izumo-shi, Shimane
 Owner: Wide area business association of six cities and towns including Izumo-shi
 Capacity: 193k ℓ /day

Night soil: 104kl/day
 Sludge of septic tank: 89k ℓ /day
 Accepted amount of garbage: 900kg/day

Construction started in December 2001
 Construction completed in March 2004
 Discharged water quality: BOD 10mg/ ℓ or less
 COD: 20mg/ ℓ or less
 SS: mg/ ℓ or less
 total nitrogen: 10mg/ ℓ or less
 total phosphorus: 1mg/ ℓ or less
 chromaticity: 30 degrees or less



