

All Speed/Water Level Type Horizontal Submersible Pump

Developer : JS, Ishigaki Company, Ltd.

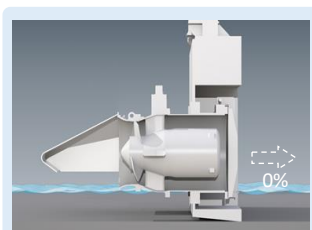
Background

A pump gate combining floodgates and submersible pumps has a low-cost and a short period of construction. So, it suits a small-scale rainwater pump station. Pump operation should start as low water level as possible to avoid the risk of overflows caused by heavy rains. But on the other hand, when a submersible pump starts running at low water level, it stops at short intervals. A submersible pump has a conflict between the low water level operation to control overflows and frequent on/off operation that causes electric trouble.

Summary

All speed/water level* type horizontal submersible pump solves the problem. The pump is operable at low water level that works for overflow control at stormwater. Besides, since it allows continuous operation without a frequent on/off, the pump is friendly to electric devices.

* All speed/water level operation: The pump runs at full-speed while changing its operation modes which are **pre-standby**, **all-drain**, **air-water**, and **idling mode** depending on water levels.



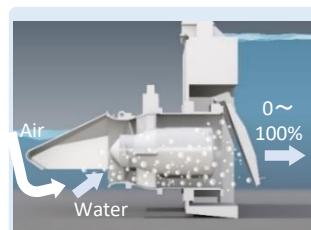
Pre-standby mode

Waiting while waiting for the inflow of water.



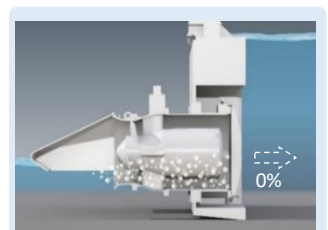
All-drain mode

Same operation as the conventional pumps.



Air/water mode

Mixed drainage of air and water. Drainage amount changes depending on the water level.



Idling mode

Running without drainage. A timer stops operation after a certain period.

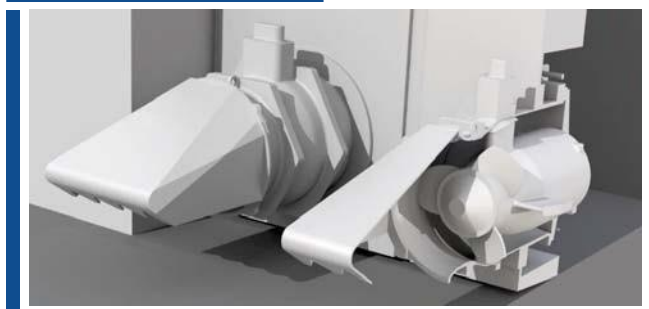
Features

- Discharge volume changes depending on water levels of suction side (No inverter required). For examples, discharge volume increases at high water level while it decreases at a low water level.
- At low water level and no drainage condition, the pump runs standby operation. After a certain time, the standby operation automatically stops. Runoff starts when water level increases. This mechanism reduces frequent on/off operation and load of electric devices.

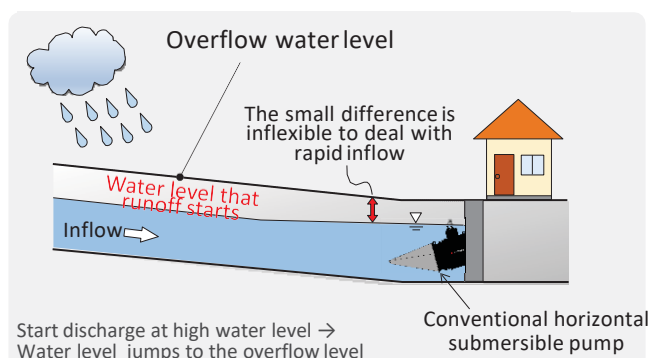
Benefits

- **Reduction of inundation damage**
Runoff operation starts at low water level and continues. The water level in the channel can stay low to deal with a rapid increase in water level in the time of stormwater.
- **Stable operation**
Reducing load to electric devices reduces failure risks
- **LCC reduction**
No inverter is required. Simple & compact configuration

Image of Installation



Conventional pump



New pump

