

Case Studies

Jet-Injection Type High-Speed Oxygen Dissolution System

① Land-based Aquaculture Facility



Biofilter Tank

- Aquaculture Tank
By combining the system with a PSA (oxygen generator), the dissolved oxygen (DO) concentration in the aquaculture tank is maintained above saturation.
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② Wastewater Treatment Facility



- Aeration tank at a wastewater treatment facility in a food processing plant
By installing the system, the number of operating conventional aeration units was reduced, leading to a decrease in total energy consumption.



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Simple, Cost-Effective, and Energy-Saving,
Liquid-Film Oxygen Dissolution System



Is your dissolved
oxygen sufficient?



AQUA RECOVERY

Liquid-Film Oxygen Dissolution

Is your dissolved oxygen sufficient?

For Algae Bloom Prevention and Water Quality Improvement in Ponds, Lakes, and Reservoirs

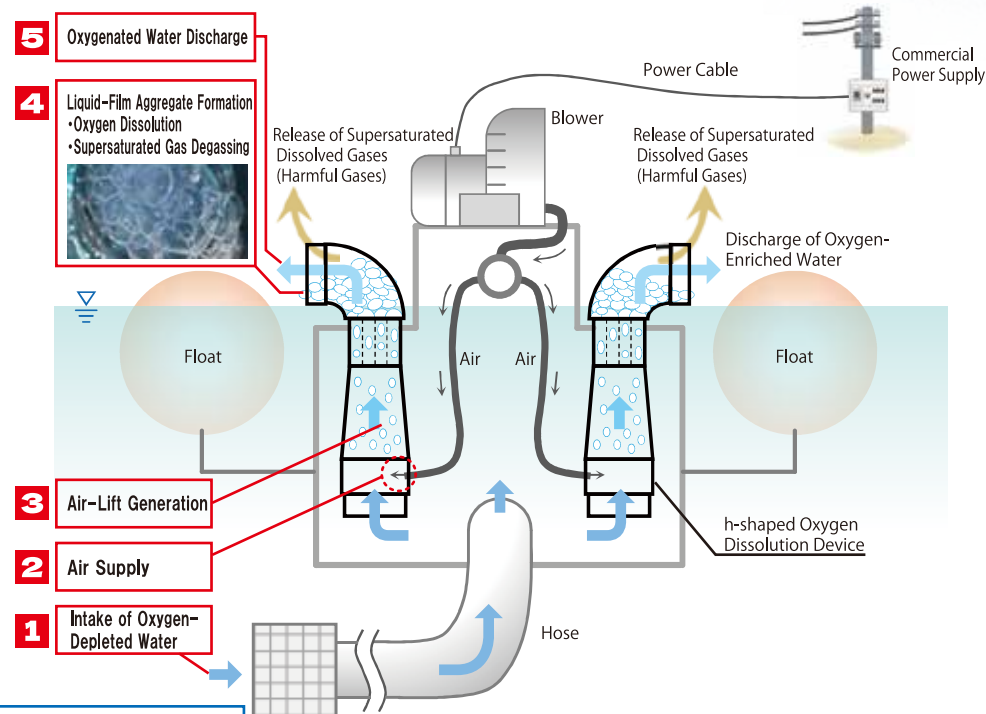
AQUA RECOVERY

h-shaped Oxygen Dissolution System
<Patent granted>

Power Consumption : 100W
Treatment Capacity : 300m³/day
h-shaped Oxygen Dissolution Devices: 20 units used
Oxygen Dissolution Capacity: +3 to 4 mg/L
Possible installation depth : 0.5m or more

Optional Features

UV Sterilization Lamp
Solar Panel (×4) for 24-Hours Operation



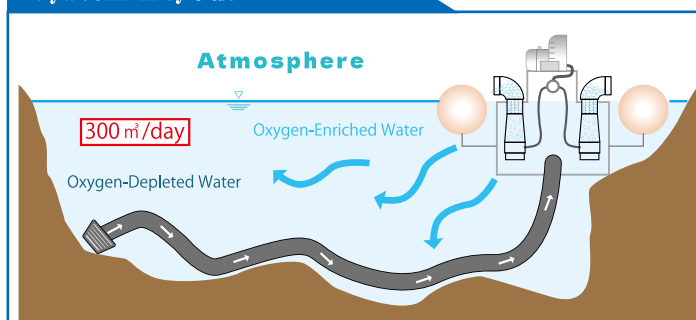
Features



Horizontally arranged oxygen dissolution devices supply oxygen from a shallow depth of about 0.2m below the surface, covering various water depths. The system is highly energy-efficient, operating with minimal power consumption. It supports 24-hours operation using either commercial power or solar panels.



System Layout



Installation Example

Equipment: 20 h-shaped Oxygen Dissolution Devices

Location: Shishizuka Pond, Tsuchiura City, Ibaraki Prefecture Installation Date: February 5, 2020

Before



After



Photo taken on February 5, 2020

Photo taken on September 19, 2020
(Approximately 7 months after system startup)

AQUA RECOVERY

Jet-Injection Type High-Speed
Oxygen Dissolution System
<Patent granted>

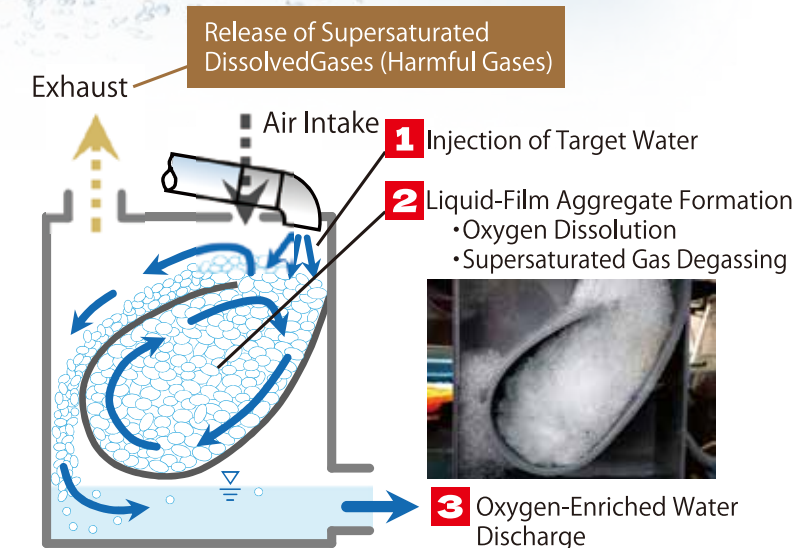
Model	T-60	T-150	T-600
Power Consumption	400W Submersible Pump	750W Submersible Pump	2.2kw Submersible Pump
Treatment Capacity	60~65L/min ≒ 90m ³ /day	130~150L/min ≒ 200m ³ /day	600~650L/min ≒ 900m ³ /day
Oxygen Dissolution Capacity	75~90% DO saturation in one pass		



For Aquaculture tank and Aeration tank in wastewater treatment facility

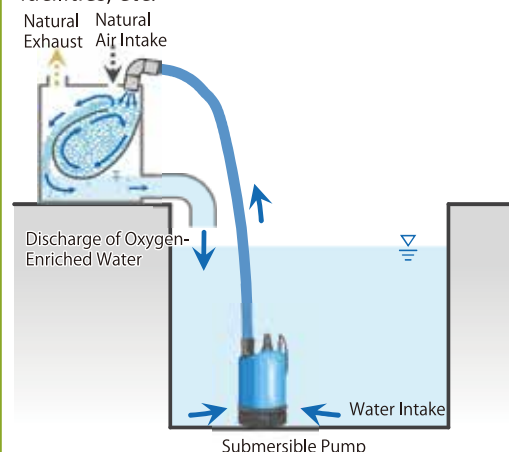
High-Speed Oxygen Dissolution System -Compatible with Aeration Tanks

Enhanced Performance with a PSA (Oxygen Generator) or Oxygen Cylinders



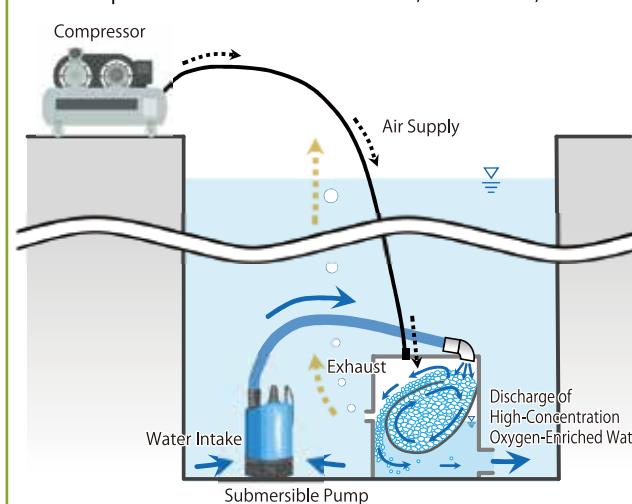
Land-Based Operation

For shallow water areas: land-based aquaculture facilities, etc.



Underwater Operation (Generates High-Concentration Oxygen-Enriched Water)

For deep water areas: aeration tanks, dam lakes, etc.



Features of Underwater Operation

By submerging the unit underwater, the effect of water pressure allows the generation of high-concentration oxygen-enriched water. (At a depth of 10m, the dissolved oxygen concentration can reach twice the level under atmospheric pressure.)

Field Test

Device Model: T-60

Test Location: [Undisclosed] Dam Lake Test Date: October 26, 2023

At water depths of 10m, 20m, and 30m, the device was operated and dissolved oxygen (DO) levels were measured before and after treatment. High-concentration oxygen-enriched water was generated in proportion to the depth.

Mechanism of Liquid-Film Oxygen Dissolution

Air-exposed water typically contains dissolved gases with a saturation balance of approximately 37% oxygen, 58% nitrogen, and 5% carbon dioxide. This system transforms the entire volume of target water into a liquid-film form, dramatically increasing the gas-liquid contact surface area. This enables simultaneous degassing of oversaturated components and dissolution of insufficient components. As a result, it efficiently increases the DO (dissolved oxygen) concentration in oxygen-depleted water.

