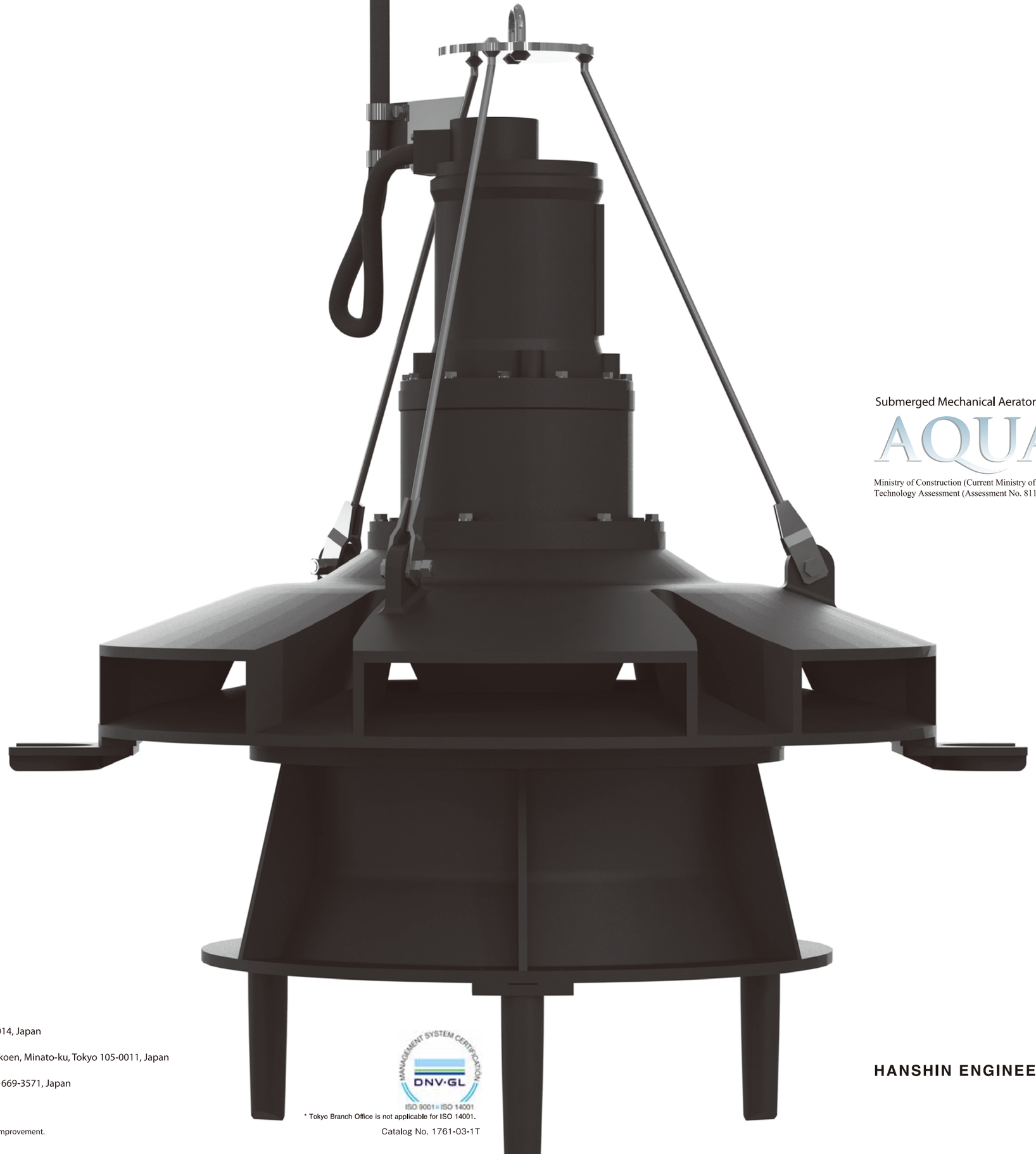

Japan

Submerged Mechanical Aerator/Agitator

AQUARATOR®

Ministry of Construction (Current Ministry of Land, Infrastructure, Transport and Tourism)
Technology Assessment (Assessment No. 81102)

阪神動力機械株式会社
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MANAGEMENT SYSTEM CERTIFICATION DNV·GL ISO 9001 ISO 14001

* Tokyo Branch Office is not applicable for ISO 14001.

Catalog No. 1761-03-1T

HANSHIN ENGINEERING Co., Ltd.

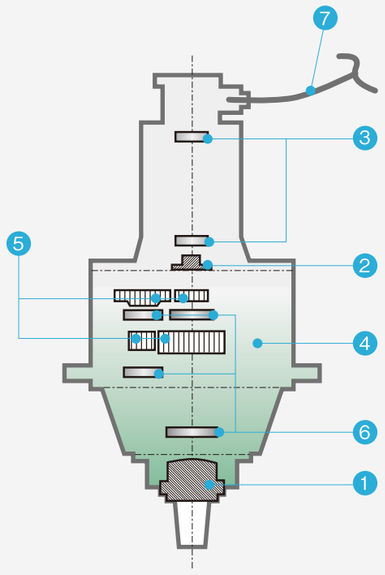
For an excellent water environment

Regular maintenance and repair

Due to its simple design, maintenance can be performed on-site and time required for maintenance can also be drastically reduced. Because the Aquarator is basically placed along a guide pipe, there is no need for water drainage when installing or removing the Aquarator. Appropriate maintenance cycles vary slightly depending on usage conditions. Please refer to the chart below and use them as a guide to perform maintenance according the cycle, ahead of schedule if possible. Please note that pulling up the Aquarator from the tank approximately once a year and performing a visual inspection is highly effective in preventing malfunctions and maintaining life span.

Part to be replaced		Recommended replacement cycle	Pertinent part to be replaced			
			1st time	2nd time	3rd time	4th time
Water seal cassette (for output shaft)		Every 3 years	○	○	○	○
Oil seal cassette (for motor shaft)		〃	○	○	○	○
Bearings for motor shaft		〃	○	○	○	○
O-ring for joints		〃	○	○	○	○
Lubrication gear oil		〃	○	○	○	○
Cathodic protection plate		〃	○	○	○	○
Gears inside gear reducer		Every 6-9 years		○		
Bearings inside gear reducer		〃		○		
Cabtire cable		Depends on condition				
Others	Submerged motor					
	Submerged gear reducer					

1. Water seal cassette (for output shaft)
2. Oil seal cassette (for motor shaft)
3. Motor shaft bearings
4. Lubrication gear oil
5. Gears inside gear reducer
6. Bearings inside gear reducer
7. Cabtire cable



*The proposed maintenance cycle above is just for reference. The maintenance cycle is subjected to the actual site condition and is recommended that you consult HANSHIN ENGINEERING about it.
*Please consult HANSHIN ENGINEERING regarding regular maintenance and repair when using the Aquarator intermittently.

Cases of Aquarator application

Aquarator is suitable for all kinds of applications.

New/Standard Activated Sludge Process

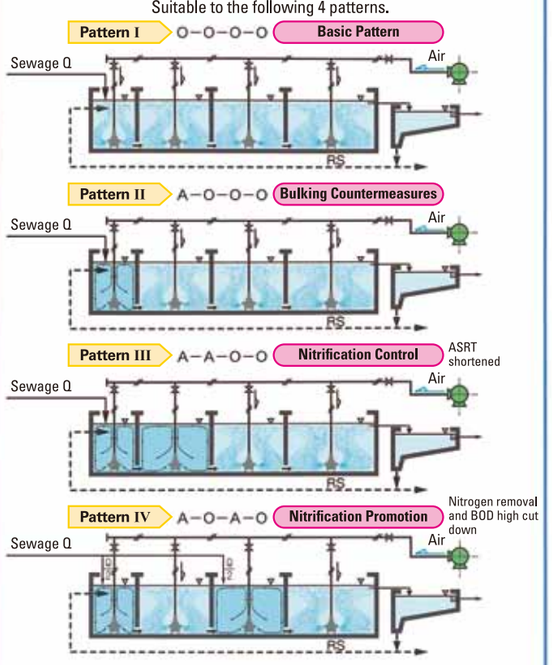
Suitable to the following 4 patterns.

Pattern I O–O–O–O Basic Pattern

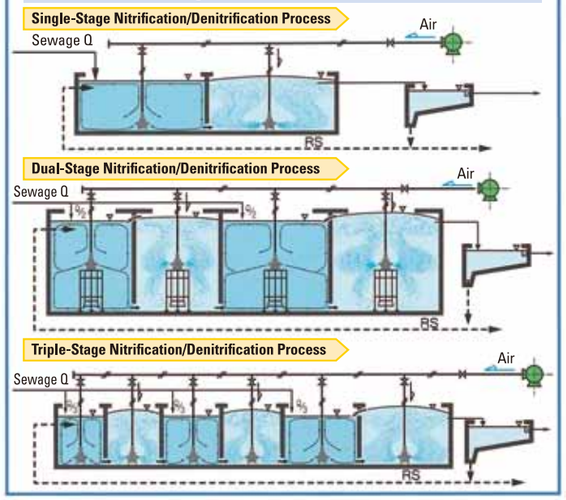
Pattern II A–O–O–O Bulking Countermeasures

Pattern III A–A–O–O Nitrification Control — ASRT shortened

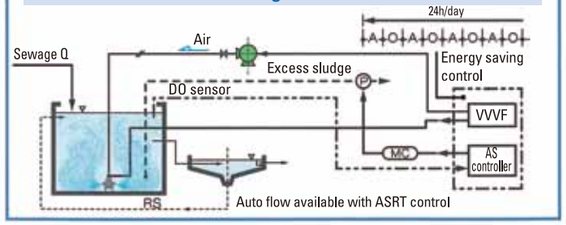
Pattern IV A–O–A–O Nitrification Promotion — Nitrogen removal and BOD high cut down



Air Lift Circulating Nitrification/Denitrification Process

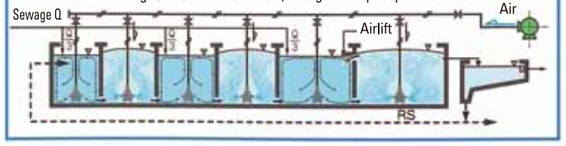


Intermittent Prolonged Aeration Process

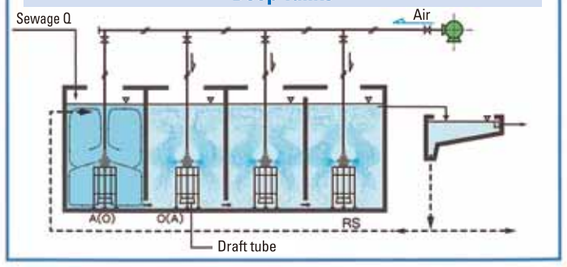


3-Stage Anaerobic/Aerobic Process

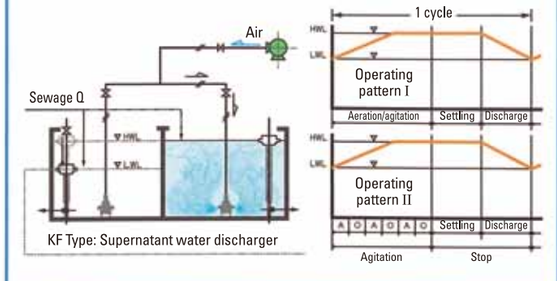
Utilizing air lift circulation at terminal nitrification liquor:
High level removal of BOD, nitrogen and phosphorus.



Deep Tanks



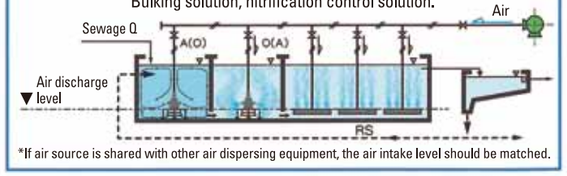
Sequencing Batch Reactor of Activated Sludge Process



KF Type: Supernatant water discharger

Renovation of Installed Tanks

Bulking solution, nitrification control solution.



*If air source is shared with other air dispersing equipment, the air intake level should be matched.