

Jokaso

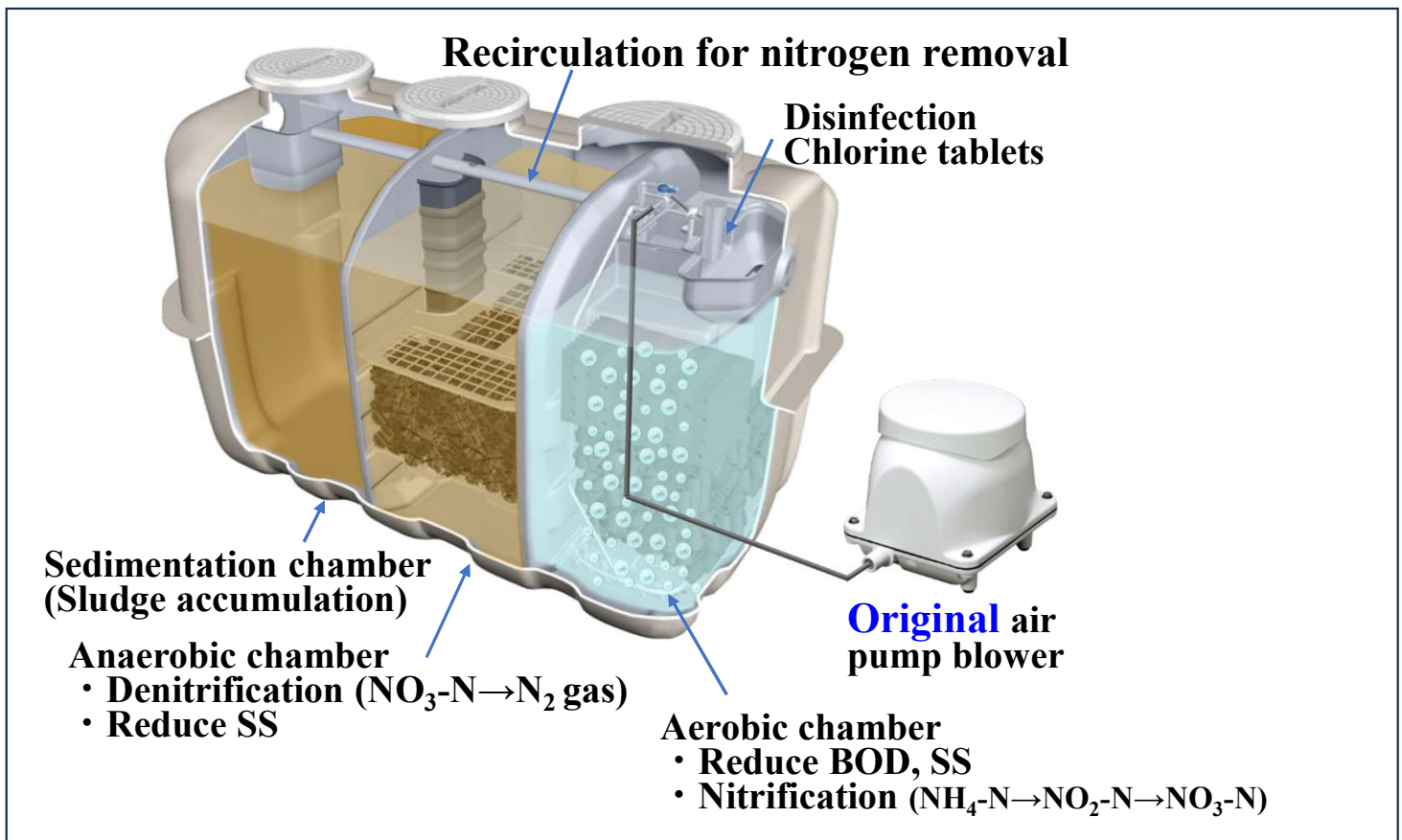
Small Wastewater Treatment System



Contact:
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About Jokaso

- Jokaso is a Japanese-origin small wastewater treatment system.
- It has biological treatment and can meet the Canadian federal regulations (C-BOD<25mg/L, TSS<25mg/l, unionized ammonia<1.25 mg/L)
→We are doing the pilot project with the University of Calgary.
- Jokaso does not require specialized technical knowledge for O&M, and routine operation and maintenance are typically needed only once per month. (Desludging is needed once a year)

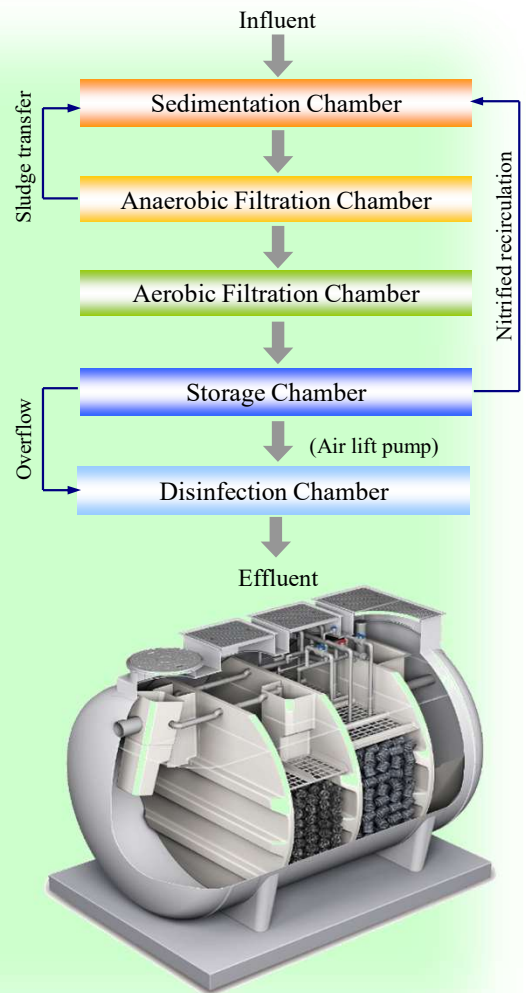
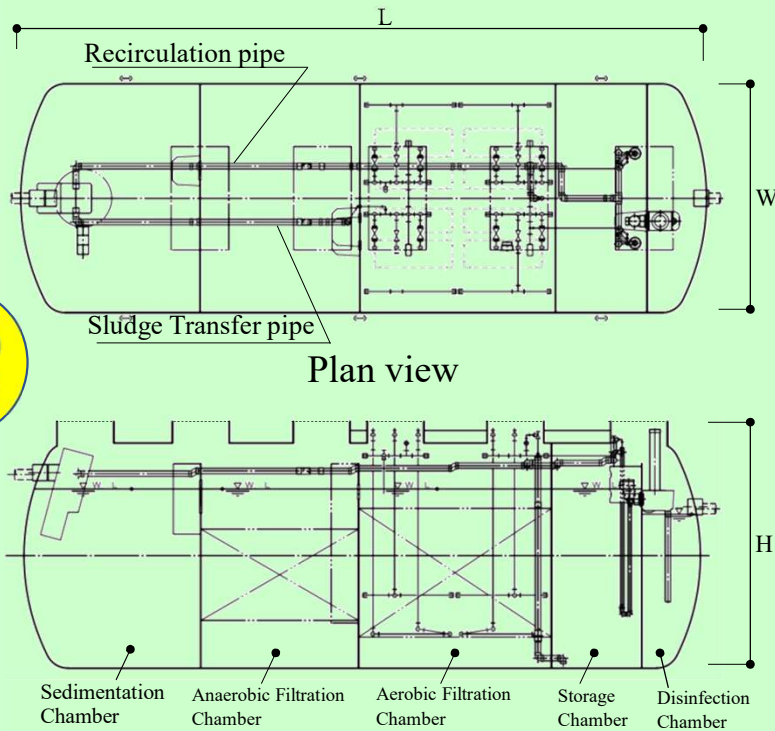


Jokaso treatment process



Jokaso pilot with the University of Calgary

Large Jokaso



Cross section

Municipal sewer project
80 m³/day



Community center
For 250 people



National Park
12 m³/day



Gas station
20 m³/day



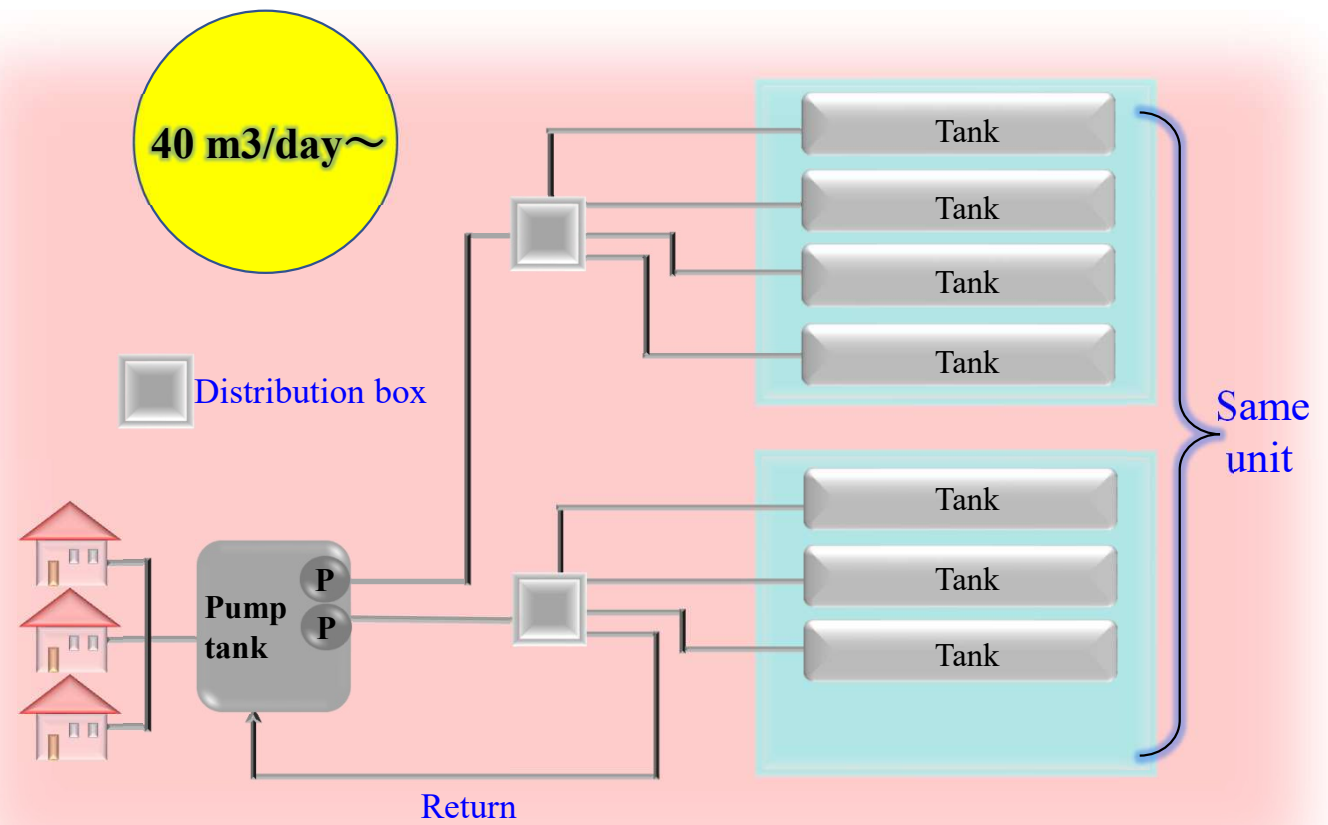
Influent & Effluent design

C-BOD:200 → 15 mg/L

TSS:200 → 15 mg/L

T-N:45 → 20 mg/L

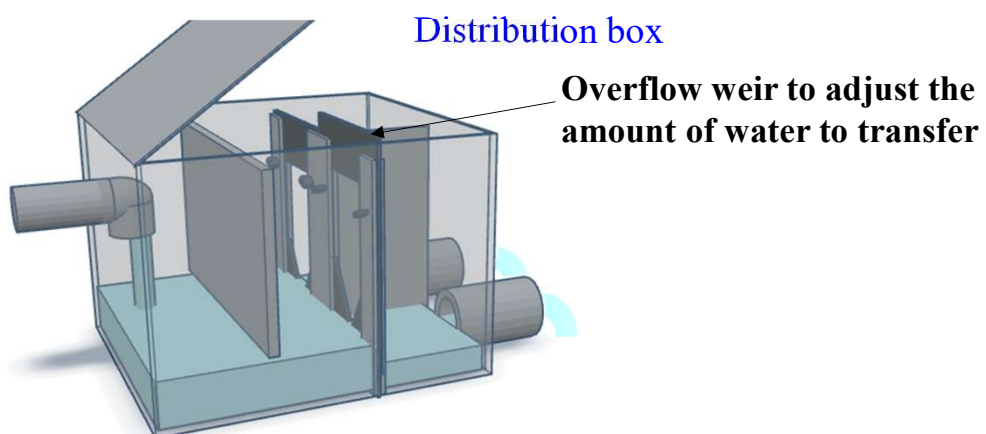
	PVN80	PVN160	PV200
Design Hydraulic Loading(m ³ /day)	16	32	40
Estimated Population (People)	64	128	160
Actual Volume (m ³ /day)	16.12	30.72	39.66
Width(m)	φ2,150		φ2,500
Length(m)	5,770	10,680	10,180
Height(m)	2,700		2,760
Total Weight(kg)	2,145	3,300	3,730
Power Consumption (W)(60Hz, 100V)	780	1,300	2,020



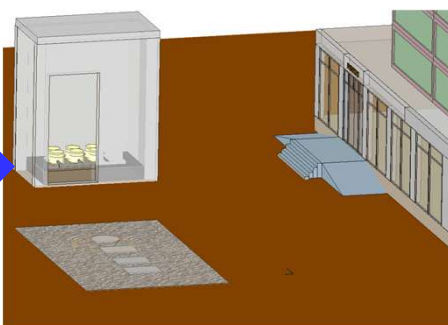
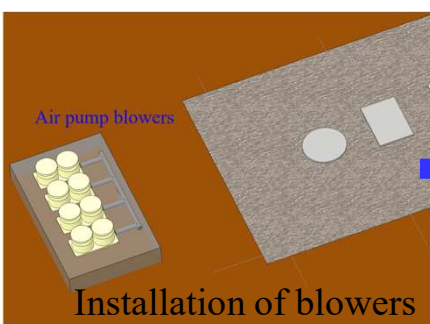
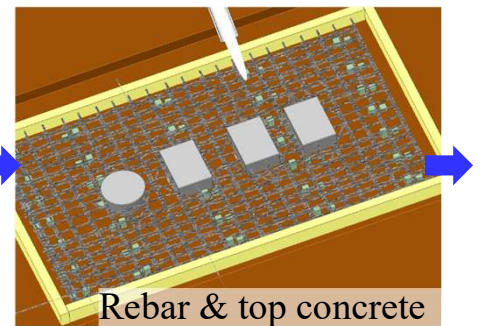
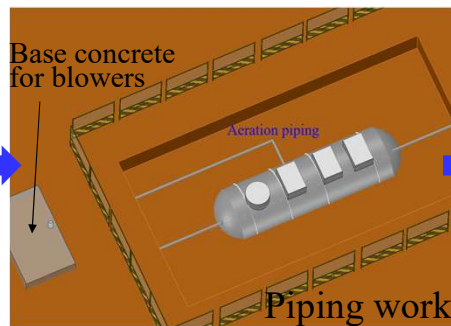
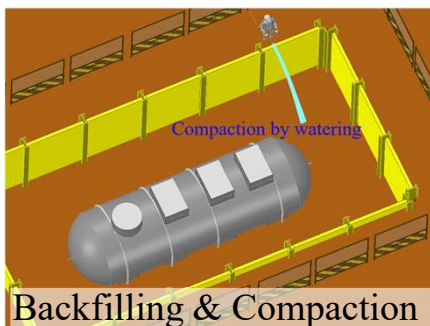
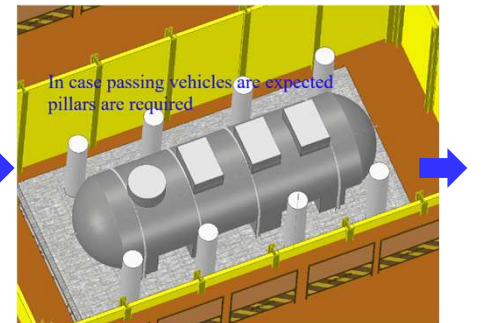
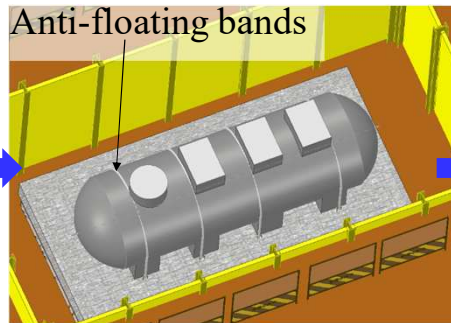
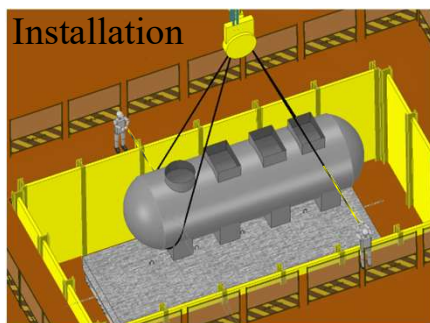
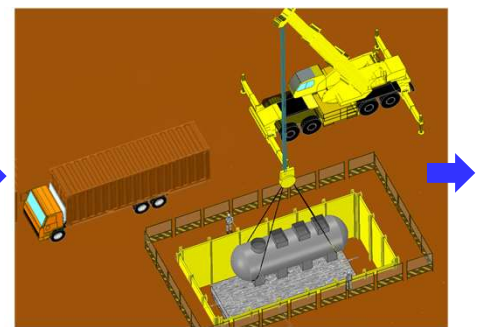
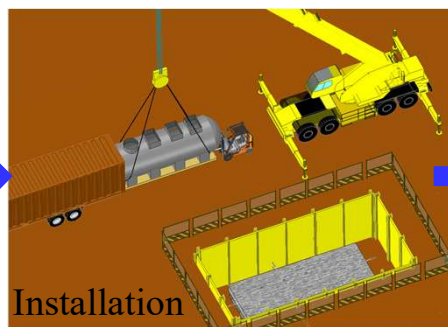
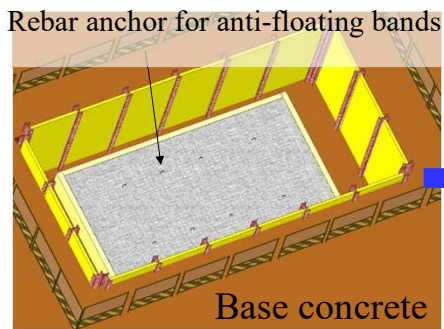
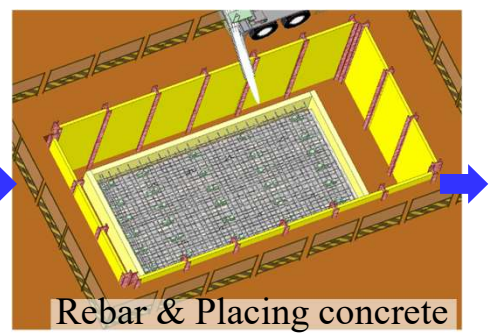
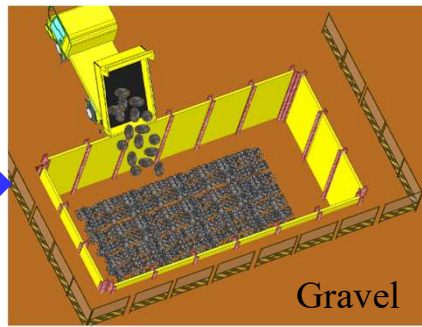
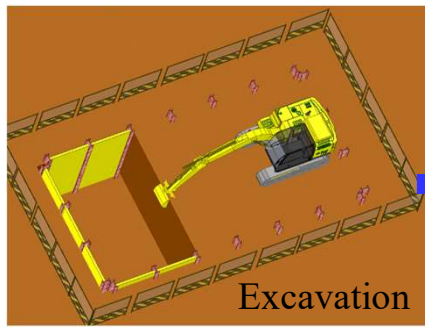
Above ground



Under ground

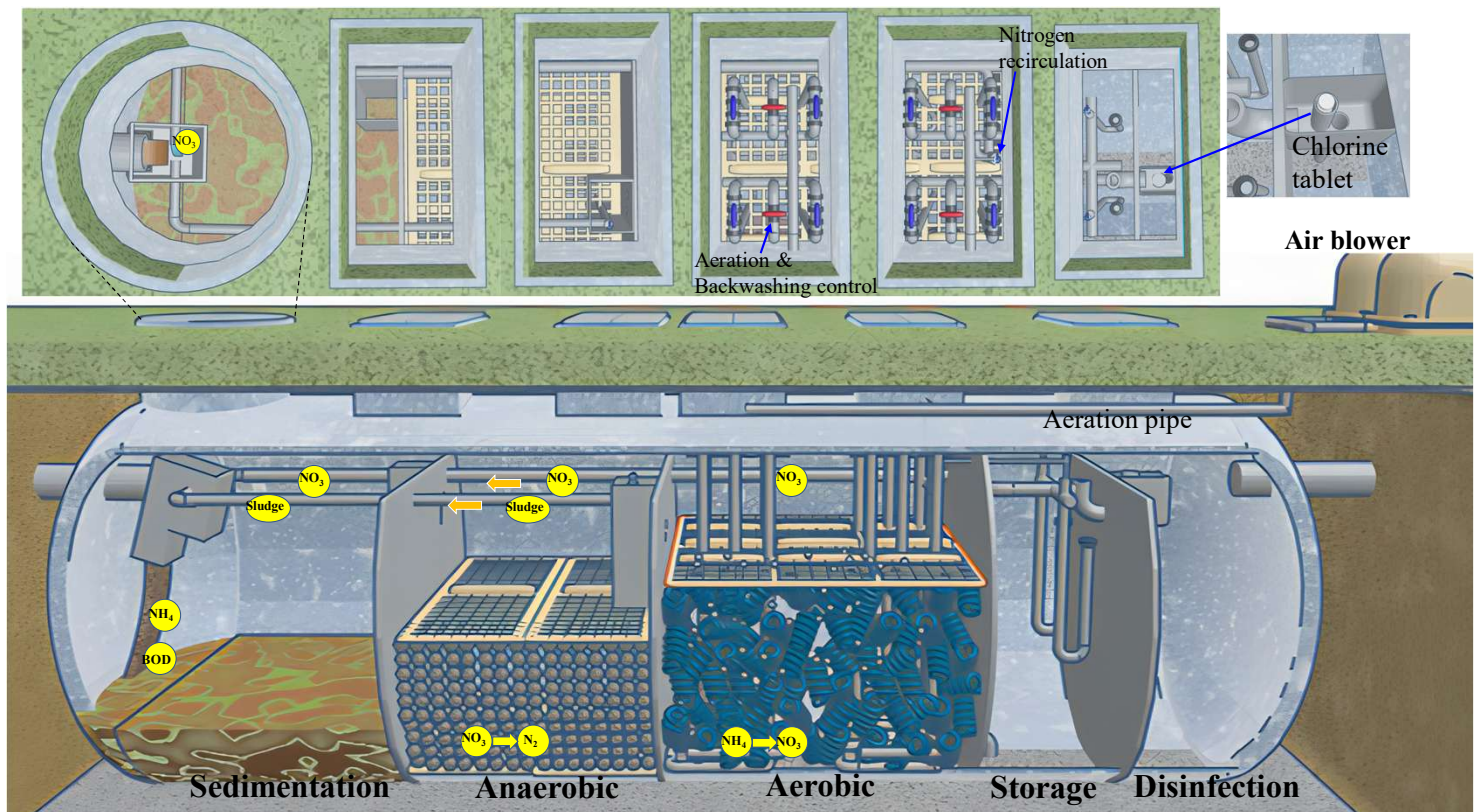


Quick to install



Easy to maintain

Sustainable system with some simple maintenance



① Desludging before the sedimentation chamber is full of sludge.

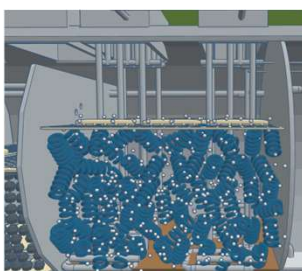
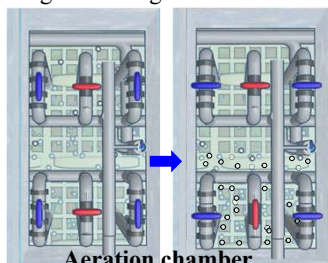


Mainly $\text{NH}_4\text{-N}$ and organic matter (BOD) flows into the system. Solids and sludge are stored in the sedimentation chamber with time.

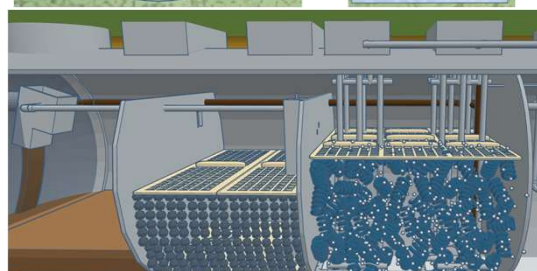
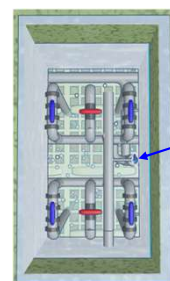
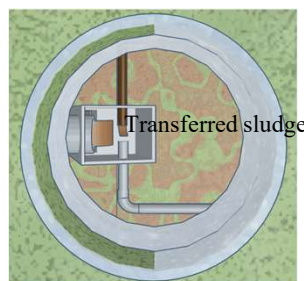
② Backwash of Filter media and sludge transfer

Organic matter is oxidized and gets stuck on the filter media with suspended solid (SS).

Turn some valves to concentrate the aeration for backwashing. The sludge settles at bottom

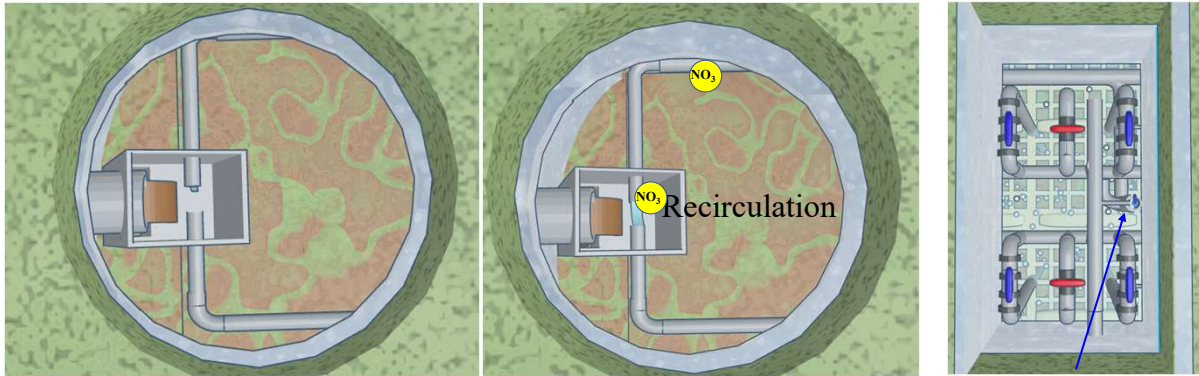


Turn a valve to transfer the sludge to the sedimentation chamber



③ Adjusting amount of recirculation

Microbes turn $\text{NH}_4\text{-N}$ into $\text{NO}_3\text{-N}$. Part of it is recirculated for denitrification.

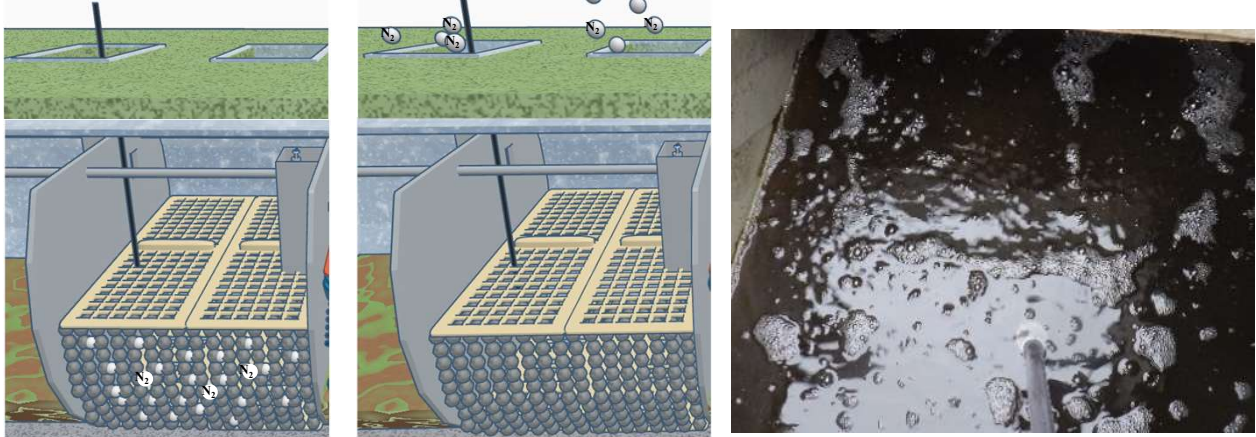


Just turn the valve to adjust recirculation

④ N_2 gas release

Microbes convert $\text{NO}_3\text{-N}$ to N_2 gas ($\text{Organics} + \text{NO}_3\text{-N} \rightarrow 1/2\text{N}_2 + 2\text{H}_2\text{O} + \text{CO}_2$)

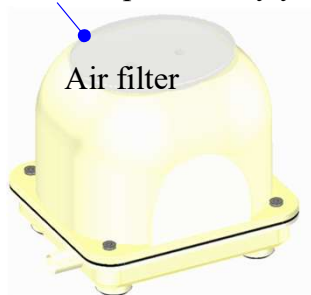
N_2 gas gets stuck on filter media. It needs to be removed by poking the media.



⑤ Replacement of Air pump blowers

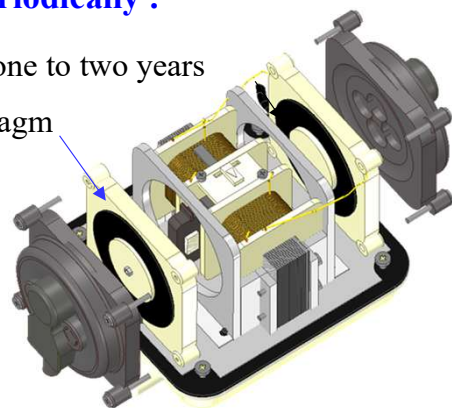
Diaphragms keep moving 24/7 and are replaced periodically .

Clean every time and replace every year

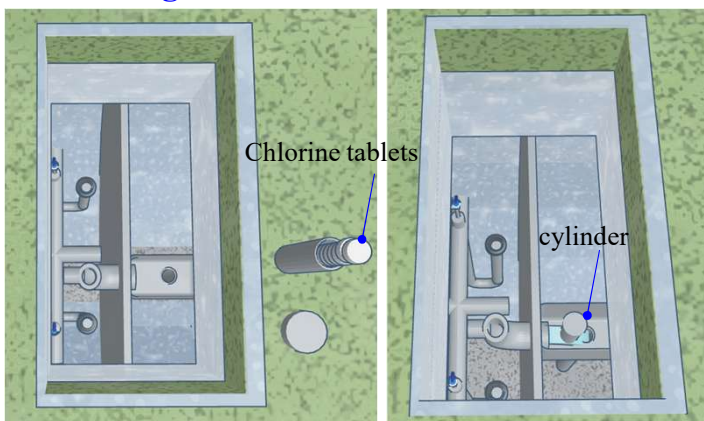


Replace every one to two years

Diaphragm

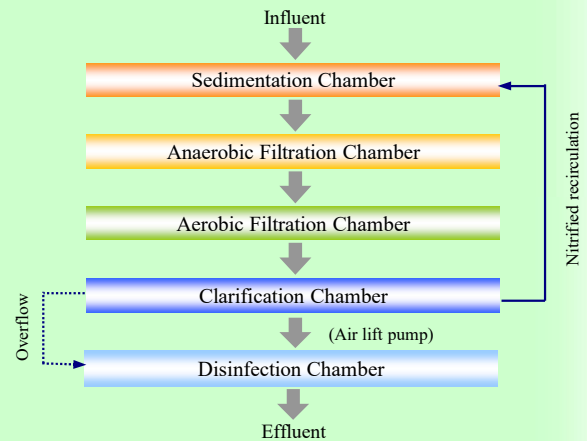
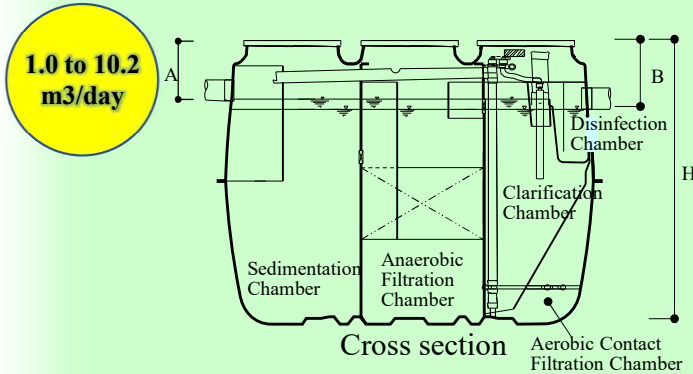
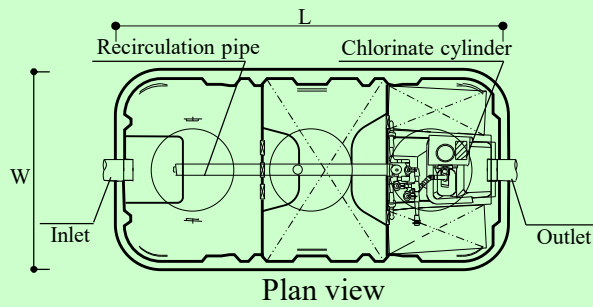


⑥ Refilling of chlorine tablets



Chlorine tablets in the cylinder disinfect treated water.
Just refill the tablets at the time of the maintenance.

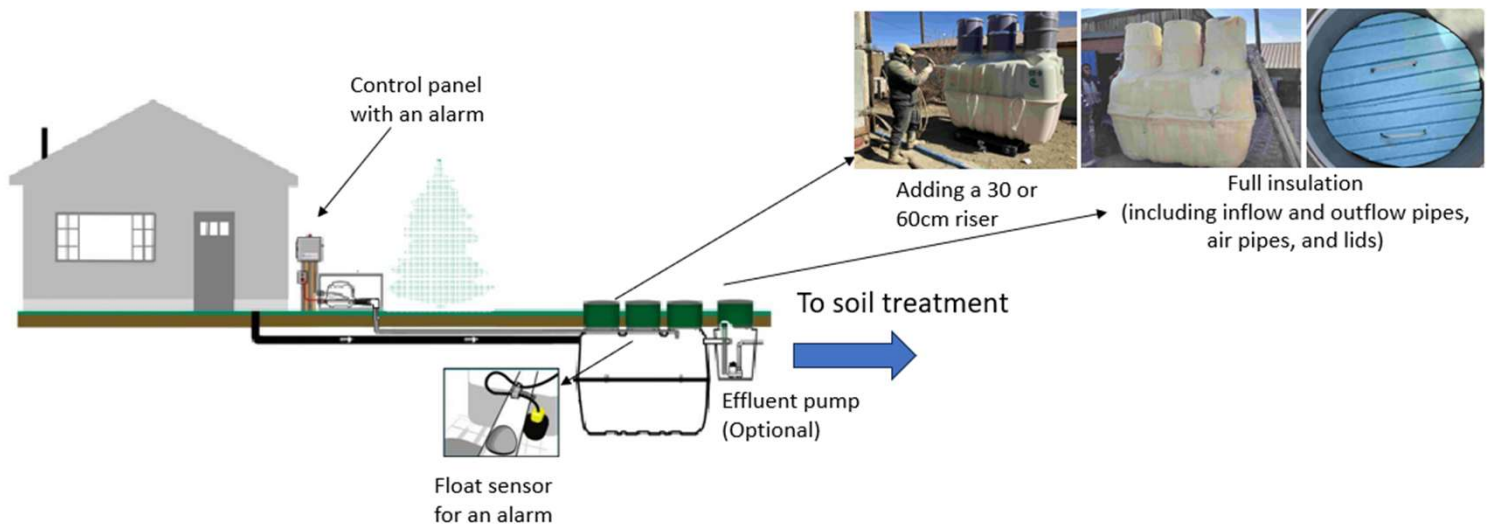
Small Jokaso



Design Specification Table	CE Series BOD, TSS, TN*					
Effluent :	NSF40 NSF Test Effluent (Avg.) CBOD:11mg/L, TSS:12mg/L					
Model:	CE5	CE7	CE10	CE14	CE21	CE30
Design inflow (m³/day)	1.89	2.65	3.79	5.11	7.19	10.22
Blower Detail:						
Blower Model	80R11	80R11	100R11	150R11	200R11	150R11 (2)
Normal Pressure (kPa)	15	15	18	20	20	20
CFM; L/Min	2.8 CFM 80 L/MIN	2.8 CFM 80 L/MIN	3.5 CFM 100 L/MIN	5.3 CFM 150 L/MIN	7.0 CFM 200 L/MIN	11.0 CFM 300 L/MIN
Power Use (kWh/day)	1.2	1.2	1.7	2.7	3.7	5.4
Weight (lbs.)	11	11	11	13	13	13 x 2
Outlet Diameter (OD-inches)	0.70	0.70	0.70	1.0	1.0	1.0 x 2
Tank Detail:						
Material	Fiber-reinforced plastic					
Height (inches)	61.8	65.4	73.2	77.4	81.3	87.2
Length (inches)	85	95.7	98.8	118.9	152.8	183.7
Width (inches)	43.7	49.2	56.7	68.9	72.4	78.3
Weight (lbs.)	397	463	705	926	1,168	1,543
Inlet Invert (inches)	49	53	61	62	65	71
Outlet Invert (inches)	47	51	59	59.5	63	69
Access Ports (number)	3	3	3	3	3	3
Access Port Diameter (inches)	3@20"	2@20" 1@24"	2@20" 1@24"	2@20" 1@24"	2@20" 1@24"	2@20" 1@24"
Volume Total (gallons)	545	749	1,069	1,498	2,252	3,199

* TN removal for CE systems from field testing is available. Contact FujiClean USA for details.

ON-SITE INSTALLATION



CONTACT INFORMATION

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- Technical information

WaterSmart

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- Installer