YAMAHA
Revs Your Heart

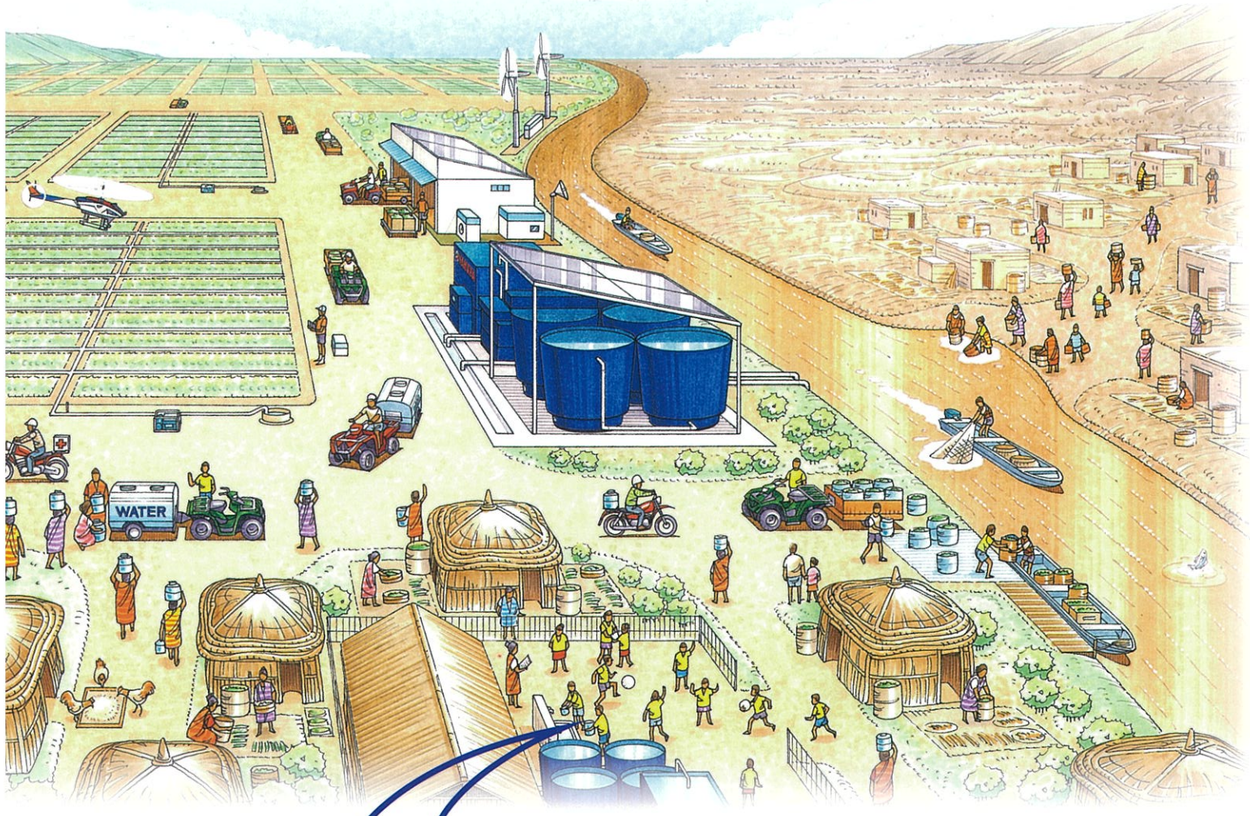
YAMAHA CLEAN WATER SUPPLY SYSTEM

Environmentally-friendly system using slow sand filtration

Easy maintenance

Low running cost

YAMAHA CLEAN WATER SUPPLY SYSTEM



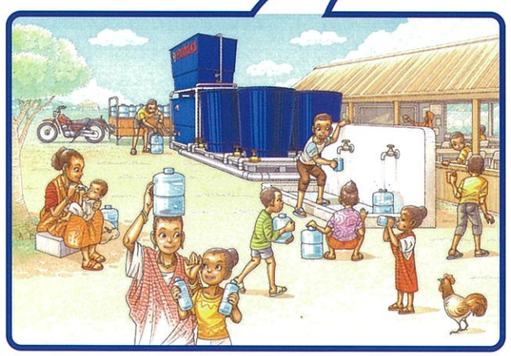
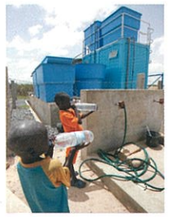
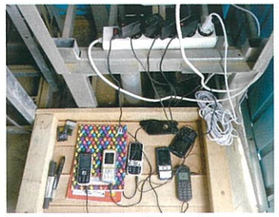


Image of the system in use

Collecting water manually is labor intensive. This time can be used more productively, such as for education. New opportunities arise such as water delivery or creating a water management committee, leading to increased self-governance.



Water selling business



Mobile device charging service
(If unit is equipped with solar power system)

Purified water leads to improved hygiene. This lowers the risk of diarrhea, among other illnesses caused by lack of sanitation.

Change for the better and developing livelihoods through provision of safe water.

SUPPLY SYSTEM

The environmentally friendly “slow sand filtration" system

The Yamaha Clean Water Supply System is a water purification system that adds improvements to the "slow sand filtration" method that has been used in many regions of the world.
It is an environmentally friendly system because it uses no coagulant chemicals or filters, and it has the capacity to purify 8,000 liters (enough to supply a community of 400 households for 1 day) of surface water daily from sources such as rivers, lakes or ponds. Another big advantage of the Yamaha Clean Water Supply System is its simple structure and easy maintenance.

YCW-008A

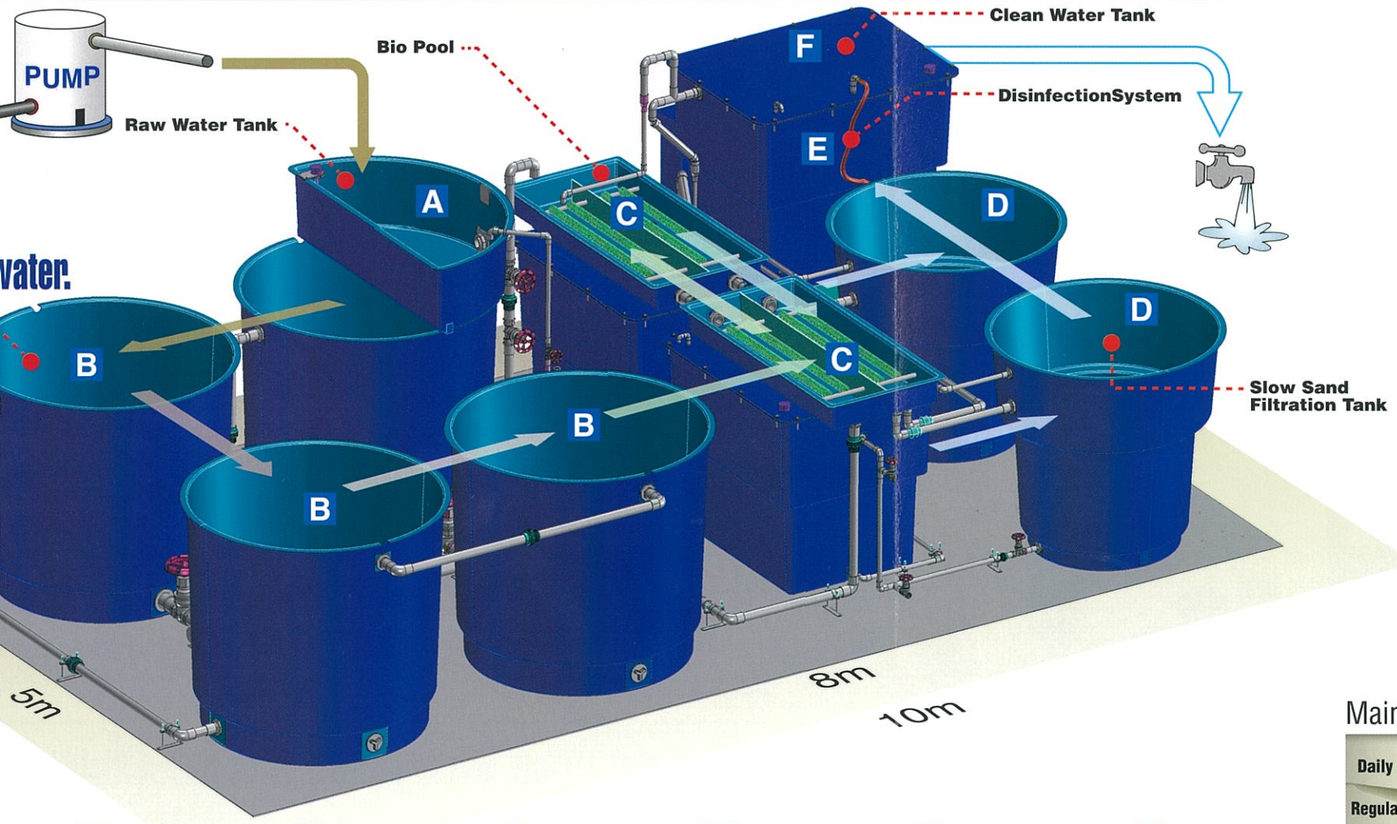
YCW-002A

Feature

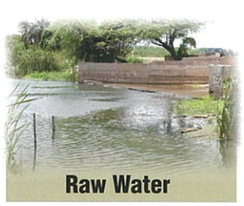
Item	Slow sand filtration YCW-008A YCW-002A	Rapid filtration	Membrane filtration
Filtration system	Microorganism and sand	Coagulants and sand	Membrane
Maintenance	○ No expert staff required	△ Expert staff required	△ Expert staff required
Running cost	○ No need to change gravel and sand	△ Supply coagulants	△ Change membrane
Energy required by main unit	○ None (water flows downwards naturally)	△ Need to supply coagulants / Sand must be rinsed requiring more water pumping	△ Water delivery by high pressure pump
Filtration speed	△ Slow (4-5m/day)	○ Rapidly (120~150m/day)	△ Depend on the filter type
Wastes	○ Drain water	△ Sludge including coagulants	△ Old membranes, untreated water

*According to our survey

FLOW CHART



s through provision of safe water.



Raw Water

A Raw Water Tank
Storage of raw water

B Pre-Treatment Tank
Prior reduction of mud ingredients.

C Bio-Pool
Increase in dissolved oxygen levels by photosynthesis of algae

D Slow Sand Filtration Tank
Harmful bacteria is reduced and turbidity and color ingredients are reduced with sand and microorganism.

E Disinfection System
Disinfect and prevent deterioration of purified water

F Clean Water Tank
Storage of purified water

Installation Process

01	SURVEY	• Check raw water quality • Check installation site etc.
02	QUOTATION	• Yamaha Clean Water Supply System • Local construction
03	CONTRACTS	• Contract with concerned parties • Confirm necessary permits
04	LOCAL CONSTRUCTION	• Foundation for basement • Electricity supply • Intake • Drain
05	SET UP	• Install the Clean Water Supply System, and water running test (1 week) • Stabilize water quality (2-3 weeks)
06	TRAINING	• Maintenance training (1 day)
07	WATER QUALITY CHECK / HAND OVER	• Water quality check by official organizations (2 weeks) • Transfer ownership from Yamaha to purchaser

Basic Requirements

01	Piping distance from raw water intake to YCW	**Within 300m** (In case exceeded, will investigate if it applicable with additional water pump.)
02	Elevation difference between raw water intake and YCW	**Within 10m** (In case exceeded, will investigate if it applicable with additional water pump.)
03	Measurements	**YCW-008A : 10m x 7m, YCW-002A : 4m x 3m**
04	AC Power	**Single phase 220-240V***
05	Raw water quality	**Raw water shall not contain - sea water, -heavy metals, -agrichemicals, -industrial wastewater**

*Solar power system can be fitted if no electricity is available.

Maintenance

Daily Maintenance	Check: water intake, power supply, total system, water flow rate Cleaning: bio-pool, slow sand filtration tank Water quality check: transparency, odor, taste Drain: raw water tank, pre-treatment tank	Everyday
Regular Maintenance 1	Water quality check: pH, residual chlorine Refill chlorine solution	Once a week
Regular Maintenance 2	Sand scrape: slow sand filtration tank	Every 3-4 months
Regular Maintenance 3	Sand scrape: pre-treatment 4th tank, Cleaning: raw water tank, clean water tank, overflow tank and bio-pool	Every 6 months
Water Quality Check	Request water quality check to official organizations according to local regulations	Every 6 months

*Each item requires approximately one hour.

Specifications

Model	YCW-008A	YCW-002A
Purification method	Physical filter + Biological filter + Chlorine disinfection	
Standard installation measurements	Total length : 10m X 7m Total height : 2m	Total length : 4m X 3m Total height : 2.4m
Basement	Concrete foundation	Plastic pallet (included in parts)
Total weight *Including water and filter media	Approximately 27 tons	Approximately 7 tons
Transportation of YCW *Including filter media	20FT container X 2	20FT container X 1
Water supply *24 hours	Approximately 8,000 liters	Approximately 2,500 liters
Households *5 people/household	400 households	125 households
Stored water	Approximately 3,000 liters	Approximately 600 liters
AC Power	Single phase 220-240V	
Operation time	24 hour full-auto operation	
Electric power consumption *24 hours	Approximately 5.5 kWh	Approximately 1.7 kWh
Pump	4 (suction, 2 X supply, chlorine)	1 (suction)
Water level sensor	4	1
Chlorine solution supply	Automatic	Manual

●Specifications are subject to change without notice. ●Due to factors such as specification changes, actual products may be different in some aspects from those pictured or described here.
●Be sure to read the owner's manual thoroughly before using to ensure proper use.

Items	Allowance values in Raw Water	Values after purification by YCW	Guideline of drinking water by WHO
Turbidity	300 NTU	5 NTU	5 NTU
Color	470 CU	15 TCU	15 TCU
Iron	1 mg/L	0.3 mg/L	0.3 mg/L
Manganese	1 mg/L	0.1 mg/L	0.1 mg/L
Aluminum	0.4 mg/L	0.2 mg/L	0.2 mg/L
Ammonia	3 mg/L	1.5 mg/L	1.5 mg/L
Coli forms	600 /100 mL	0 /100 mL	0 /100 mL
Total coli forms	32,000 /100 mL	0 /100 mL	0 /100 mL

●NTU (nephelometric turbidity unit) is a turbidity unit defined by WHO water quality guidelines. ●CU (color unit) is a unit of chromaticity. Here, it refers to the appearance color.
●TCU (true color unit) is an absolute color unit defined by WHO water quality guidelines.
●The following items cannot be purified by the Yamaha Clean Water Supply System. - Sea water, agrichemicals, heavy metals/organic and inorganic substances other than those specified above.
●The above table indicates the removal rate when microorganisms are maintained in an optimal matured state at Yamaha's test site.

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