

1. Characteristics of RO-KIT

Clean water is essential for keeping aquatic organisms, such as fish and aquatic plants, in an aquarium. 99% of the chemical substances found in tap water can be removed with the use of RO-KIT combined with NA-WATER (sold separately.) It produces nearly pure water with few impurities that is suitable for marine aquariums as well.

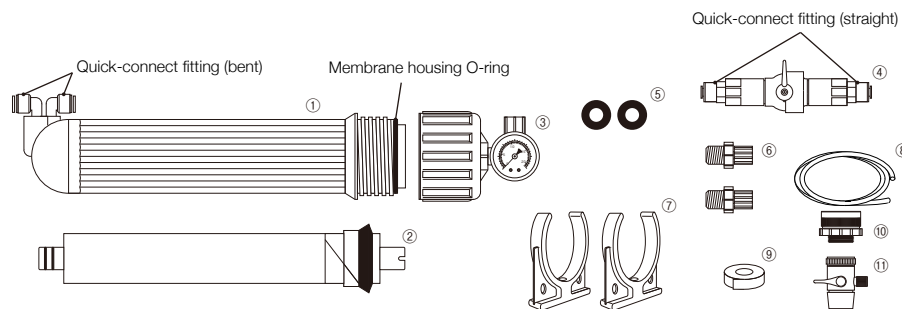
* This product is an optional kit that is specially made for NA-WATER (sold separately.) It cannot be used by itself.

2. What is a reverse osmosis membrane (RO)?

Reverse osmosis is a technology developed by the United States Navy to purify ocean water as drinking water. Reverse osmosis filtration forces water through the tiny pores of a semi-permeable membrane to remove salts and impurities contained in tap water and produces pure water. A reverse osmosis membrane works by reversing the natural osmotic process. Applying a pressure to salt water enables the water to pass through the membrane, separating out pure water from the salts. This is the principle of a reverse osmosis process which works in reverse of the natural osmotic process. Pure water is produced by removing salts and impurities through this process.

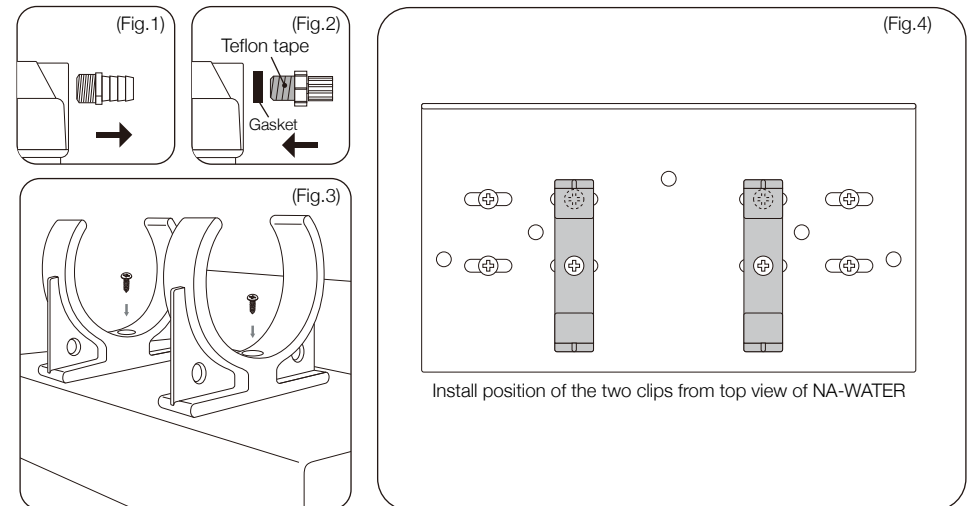
3. Parts

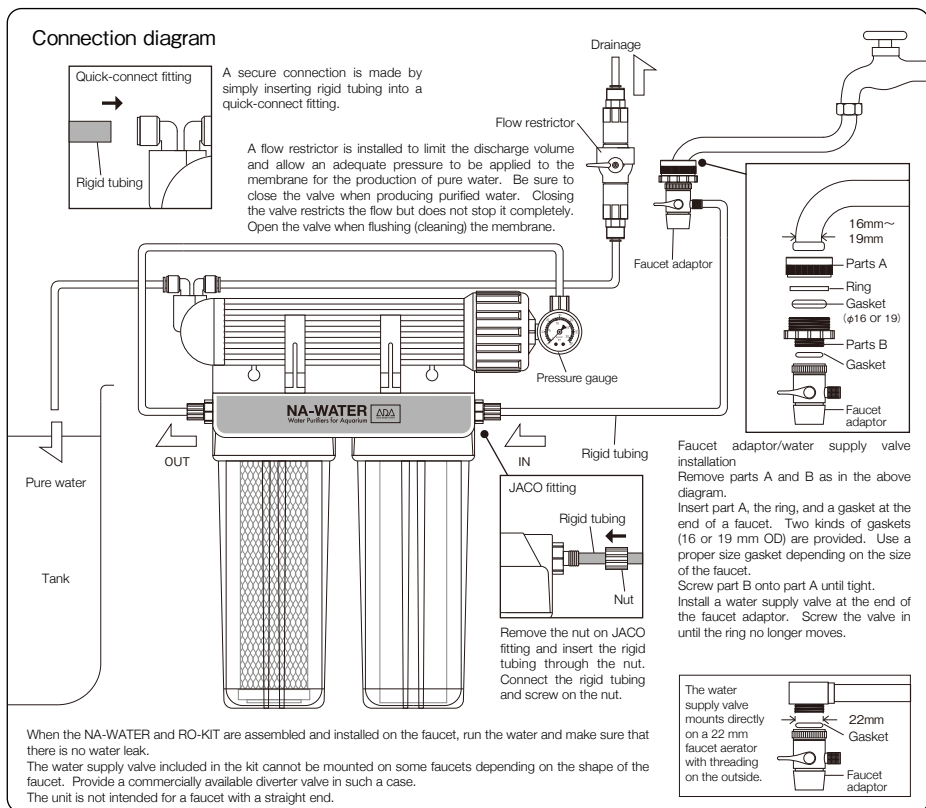
- | | |
|--|------------------------------|
| ① Membrane housing | ⑦ Membrane housing clips (2) |
| ② Membrane (100 GPD) | ⑧ Rigid tubing (white) |
| ③ Pressure gauge (with a membrane connector) | ⑨ Teflon tape |
| ④ Flow restrictor (with a valve) | ⑩ Water supply valve |
| ⑤ Gasket (2) | ⑪ Faucet adaptor |
| ⑥ JACO fitting (2) | |



4. Connecting method

1. Remove the hose connectors on both the inlet and the outlet sides of the NA Water using a tool, such as a monkey wrench. (Fig.1)
2. Attach JACO fittings to both the inlet and the outlet of the NA-WATER. Apply Teflon tape on the threaded part of JACO fittings to prevent a water leak. Attach the fittings using a tool such as a monkey wrench after inserting the provided gasket without fail. (Fig.2)
3. Insert the membrane inside the membrane housing according to the procedure found in "Section 6. Membrane replacement." Install the two clips for the membrane housing using a screw driver, and then secure the housing. (Fig.3,4)
4. Connect rigid tubing to each fitting according to the diagram. Cut the rigid tubing to a desired length. Install a flow restrictor on the drain side of the rigid tubing midway through the line. Make sure the flow restrictor is oriented correctly.
5. Install a faucet adaptor intended for a 16 or 19 mm OD faucet with a flared end and a water supply valve on the faucet. Tighten a hose clamp using a screw driver.
6. Connect the water supply valve and the inlet side JACO fitting with rigid tubing according to the connection diagram.





5. Start-Up Procedure

1. Make sure that the flow restrictor valve is closed. If it is open, purified water cannot be produced. (Fig.1)
2. Raise the lever on the water supply valve and slowly open the faucet. Water will flow out slowly from the outlet side rigid tubing in a few minutes after the faucet is opened. (Fig.2)
3. The water purification system is now ready for operation. Store the produced purified water in a storage tank for later use.
4. To stop the production of purified water, close the faucet and lower the lever on the water supply valve. Open the flow restrictor valve if it is necessary to drain water from the membrane housing.

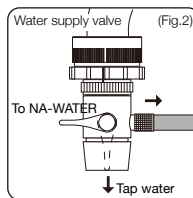
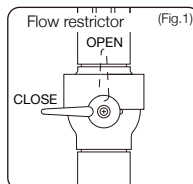
*Replace filters regularly every 6 months. If filters are left in use more than 6 months, residual chlorine not filtered out may cause the membrane to degrade.

*The frequency of the membrane replacement is generally every 2 years. Make sure to inspect the membrane once a year. We recommend replacing the membrane if clogging reduces the output drastically or if the TDS value of the product water increases, even if it is in use for less than the aforementioned period. The optimum production volume is based on the water temperature of 23°C and the water pressure of 4 kg/cm².

*This water purification system can produce up to 380 liters of purified water per day. The production volume varies depending on water temperature, water quality, and water pressure of the source water.

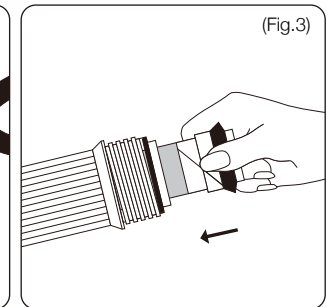
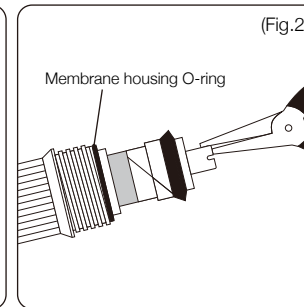
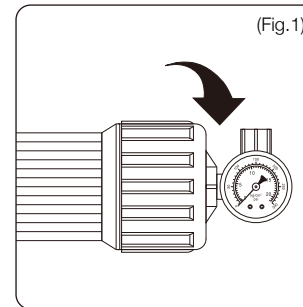
*The production volume changes depending on water temperature. The optimum temperature is 23°C. If the water temperature is low, the production volume decreases. If it is too high, the rejection rate of salts decreases. Although reverse osmosis can occur at the water temperature of 4.5°C, the output is approximately one half of the production volume at 23°C. The upper limit for the water temperature is 29°C.

*The water pressure in some tall buildings may not be high enough to achieve the pressure necessary to operate a reverse osmosis unit.



6. Membrane replacement

1. Turn off the tap water before replacing the membrane.
2. Disconnect rigid tubing connected to the membrane housing and remove the membrane housing from the clips.
3. Turn the cap of the membrane housing counterclockwise to remove the cap. (Fig.1)
4. Pull out the membrane using a pair of pliers. (Fig.2)
5. Insert a new membrane into the housing and press it until the membrane is completely seated in the housing. (Fig.3)
6. Make sure that the O-ring is positioned correctly. Replace the cap and connect the rigid tubing.



Safety Precautions

- The optimum temperature for the RO (reverse osmosis membrane) is 23°C. The upper limit is 29°C. Do not put water any warmer than 45°C through the unit since it can deform the fixture. Do not ever connect it to a hot water heater.
- Excessive pressure may result in breakage. The clear housing is rated for 150 psi (10 kg/cm²) of pressure. Open the faucet gradually so that excess pressure is not applied to the unit.
- Be sure to provide an overflow line for the water storage tank for safety.
- Do not install this product where it may freeze. Freezing can damage the unit.
- Do not install this unit in the location that receives direct sunlight. Algae may develop inside the unit.
- Drain the water inside the unit if it is not going to be used for more than 5 days. Mold may develop inside the unit if left unused for a long period of time.
- The performance of the natural cotton sediment filter, the carbon block filter, and the membrane depends on the local water quality. This product is not recommended for groundwater, which tends to have a large amount of minerals and will shorten the life of the filters.
- Replace the membrane periodically. Replacement with a genuine membrane is recommended.
- Do not use this unit for drinking water.
- Check the water quality (pH, residual chlorine, etc.) and temperature of the product water from NA Water and RO kit before adding it to an aquarium. ADA does not assume any responsibility for the sickness and loss of the livestock and aquatic plants.
- If a faucet is loose, an undue load will be placed on the faucet and water may leak from where the unit is attached to the faucet, or from the faucet or a pipe.
- Damage to the faucet and its parts and the water leak resulting from the damage are not covered under the warranty.
- ADA does not assume any liability for the water leak and any incidental and consequential damages resulting from the mishandling of the product. Careful consideration should be given for the place of installation and a water storage method to ensure no accident occurs due to a water leak.