

Address: No.78, XingYe Road, Chaolian Town, Jiangmen City, Guangdong, China. (Jiangmen Office)

Address: RM 1902 EASEY COMM BLDG 253-261 HENNESSY ROAD WANCHAI, HK (Hongkong Office)

Tel: +86 137 2595 7662 (Whatsapp) +86-750 3094316 Fax: +86 750 3723909

500 Liters/hour water treatment system

1.Design base:

1.1) Raw water: Borehole (Raw water quality analysis report not available yet.)

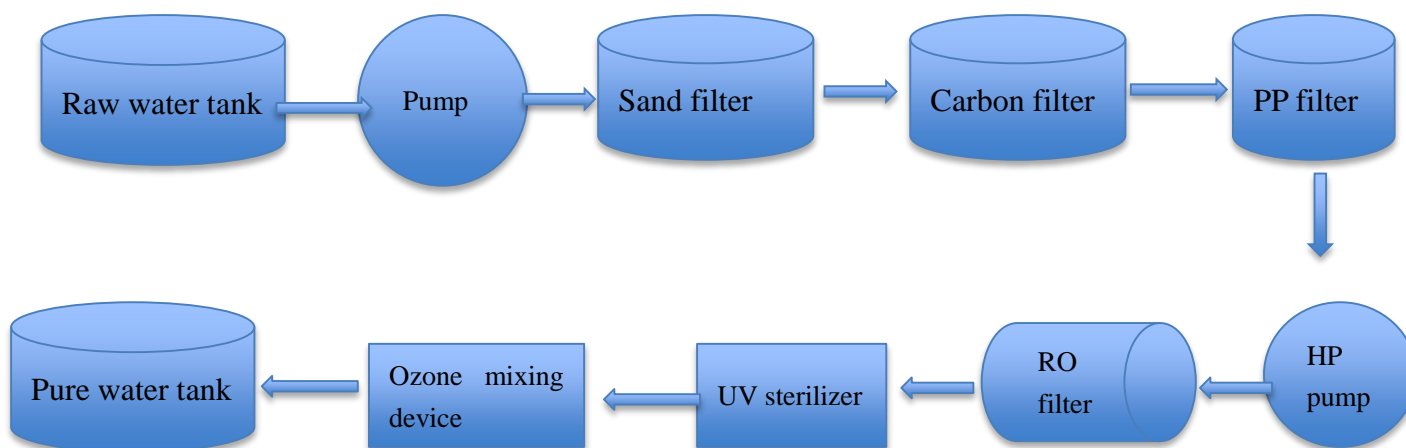
1.2) Produced water's application: Drinking water.

1.3) Capacity: **500Liter/Hour.**

1.4) Designed recovery: 50-60%.

1.5) Voltage: 3 phases, 380V, 50Hz; Power: 2.5KW.

2.Filtration process:



3.Process description:

3.1) The filtration process consists of three parts: pretreatment system (quartz sand filter, activated carbon filter), RO filter, UV sterilizer and ozone generator.

3.2) Quartz sand filter:

The mechanical filtration is a common method for further removal of suspended solids from water.

If the **muddy water** passes through the granular filter layer, the suspended matter in the water can be intercepted, and the outflow is clean water. The granular filter is simple, and when the filter layer fails, it is easy to recover its filtration performance by backwashing method. When the head loss of filter layer increases by about 0.7kg/cm² than one of clean filter material layer, backwashing should be carried out.

Picture of quartz sand:



3.3) Activated carbon filter:

The activated carbon filter (ACF) utilizes the adsorptive capacity generated by the huge specific surface area of the activated carbon to adsorb the substances in water.

Activated carbon filter has a very high removal rate of free chlorine, organic matter, color and odor from water, and also has a high removal rate of some heavy metal ions which are easy to deposit.

Picture of coconut shell activated carbon:



3.4) 5micron PP security filter:

The security filter is used to remove the small suspended matters more than 5 micron, such as the sediment, rust, colloid and other large-scale substances, can reduce the turbidity of water.

The change time of the micron filter is judged by the front and back pressure difference. When the head loss of the filter increases by about 0.5 kg/cm² compared with the one of the new PP filter, then the PP filter must be replaced.

Picture of 5micron PP filter:

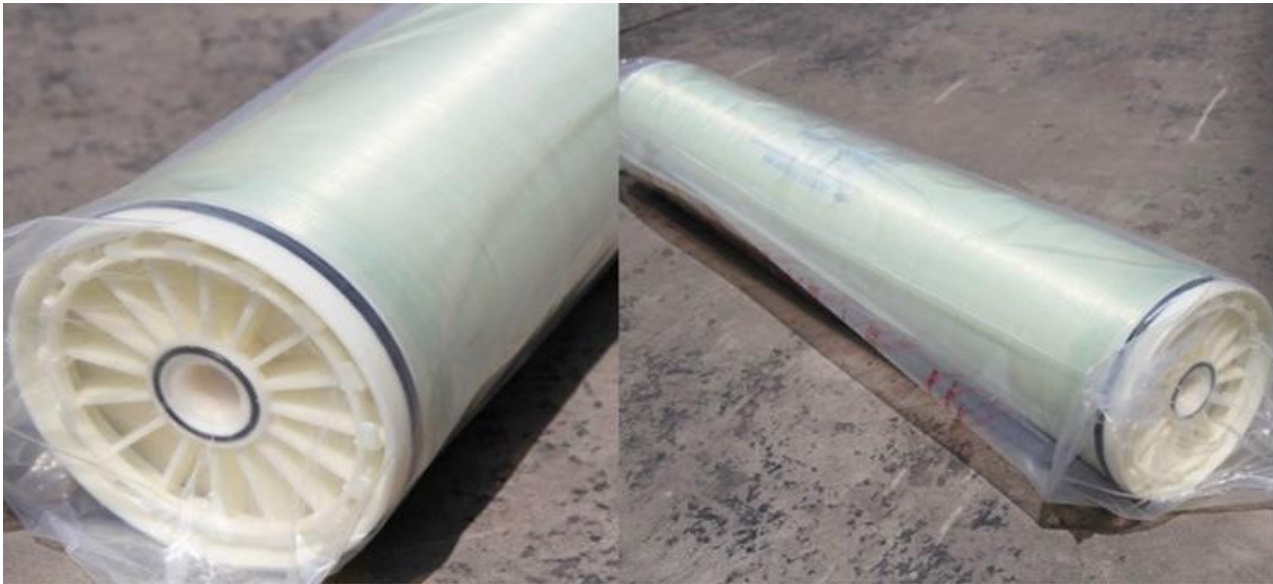


3.5) RO filter:

The RO membrane has the highest filtration precision, which retains greater than 0.0001 microns impurities;

It can effectively remove the dissolved salts, colloid, microorganism, organic matter, and so on, meanwhile it is with low energy consumption, no pollution, simple process, easy operation etc..

Picture of RO membrane:



3.6) UV sterilizer:

The working principle: the water enters into the reactor and flows through the reaction chamber at a certain speed. The microorganism in the water is irradiated by high-intensity UVC, which the wavelength is 253.7 nm, and the internal structure of DNA and RNA of the microorganism is damaged and cannot be copied, so that it can be killed without using any chemical drugs.

Picture of UV sterilizer:



3.7) Ozone generator:

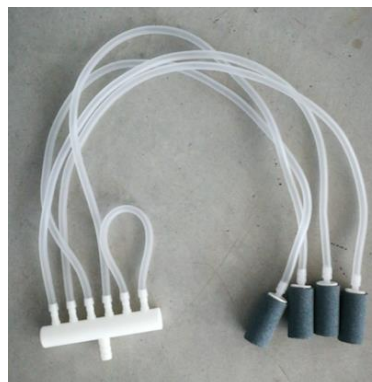
The ozone has stronger oxidizing and disinfecting ability than chlorine, which has a wide range of adaptability, not limited by bacteria.

The difference between chlorine and residual ozone is that the residual ozone can decompose into oxygen by itself without secondary pollution. The water is treated by ozone is colorless and odorless, tastes good, and can improve the quality of drinking water.

3.71) Ozone generator:



3.72) Ozone aeration pipeline (Put it into the water tank):



4.Filter replaced time(Based on raw water quality and working hour):

Filtration stage	Name of filter	Replaced time
First stage	Quartz sand filter	24-36months
Second stage	Activated carbon filter	12months
Third stage	5 micron PP filter	2-3months
Fourth stage	RO filter	24-36 months
Fifth stage	UV lamp	8000 hours

Note: The replacement cycle depends on the working time, raw water quality and operation.

5.Component list:

No.	Equipment	Item	Specification	Material	Remark
5.1	Booster pump	Pump	0.55KW	SUS304	Lingxiao
5.2	Mechanical filter	Tank	Φ300×1400 (10*54)	FRP	Fine quartz sand: 150kg
5.3	Activated carbon filter	Tank	Φ300×1400 (10*54)	FRP	Coconut shell: 40kg
5.4	Security filter	PP filter	20inches	Engineering plastic	5micron

5.5	High pressure pump	HP pump	1.5KW	SUS304	CNP
5.6	RO filter	RO membrane	4040	PA	VONTRON
		Vessel	4'-1M	SUS304	
		Flux meter		Organic glass	
		Pressure meter	0.0~2.5PMa		
		Washing solenoid valve	DN20		
		Pressure controller	0-6 bar		
		RO housing		SUS304	
5.7	Electric control box	Conductivity meter	0-2000 μ S/cm		
		Electrical box		SUS304	
		Wire			
		AC contactor			
		Indicator			
		Relay			
5.8	Pipelines	Pipelines		UVPC	

6. Picture for reference:

