



WACO Corp.

Model : HCRO - 600

INSTALLATION ,
OPERATION, AND
MAINTENANCE MANUAL



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INTRODUCTION

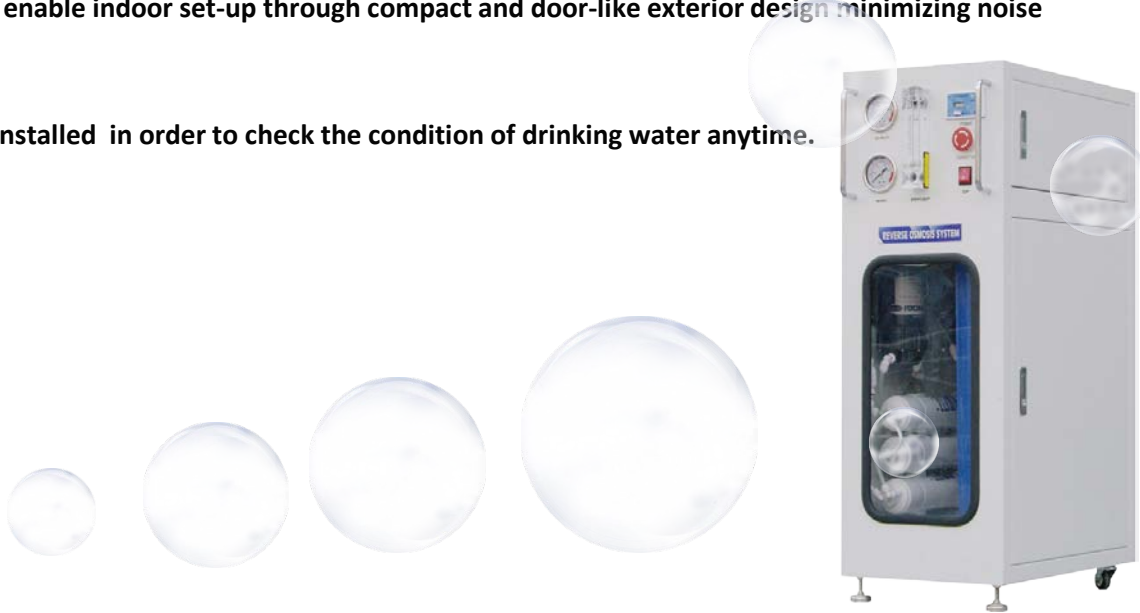
This product is designed and produced for residential use as well commercial use (for small capacity) ,

- Restaurant
- Coffee shop
- Aquarium
- Detached House

It's Reverse Osmosis filter system which was applied of Hyundai Wacortec's highly-advanced RO technology to produce high quality of clean water continuously for drinking water.

Besides, It is made to enable indoor set-up through compact and door-like exterior design minimizing noise from product.

Dual TDS Meter was installed in order to check the condition of drinking water anytime.



Operational Parameters

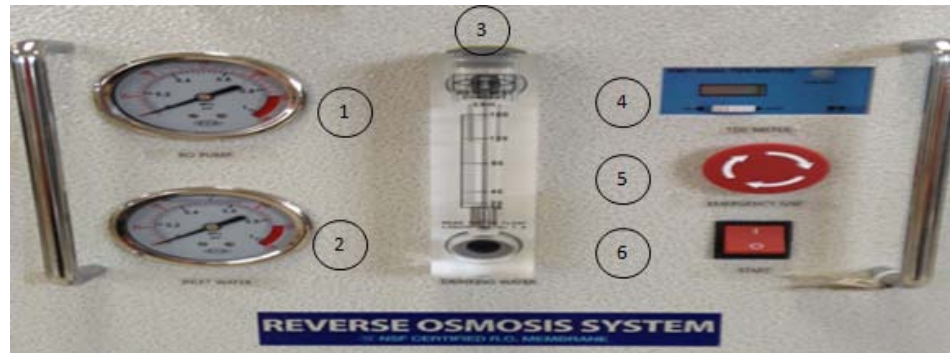
	Maximum	Minimum
Operating Temperatures	113°F (45°C)	40°F (4.4°C)
Operating pressure	125 psi	35psi
pH Range	10 .0	4.0

Specifications

Production	600GPD (at 77°F Water Temp.)
Membrane rejection	96% (typical)
Tank capacity	11 gallons
Pump	DC 24V (water booster pump) x 2
Housing	20" Blue Housing x 3
fitting	One touch fittings
Solenoid Valve	DC 24V 250mA x 2
Pressure gauge	Maximum 150 psi
Transformer	Input 100~240V , 50~60 Hz / Output DC 24V 1.2A
Faucet	HF-05
Filter system	PP 20" - GAC 20" - CTO 20" - 300GPD RO Membrane x 2 - PCB

Names and Function of Each parts

Front panel



① Pressure gauge of RO PUMP

It's the pressure which R/O Membrane undergoes by R/O pump. Although the proper figure of it is 70~80 psi it can be controlled by Flow Restrictor Valve as necessary.

② Pressure gauge of Raw water

It shows the raw water (inlet water) pressure and 10 psi is required for operating.

③ Flow meter

It shows water purification capacity. Unit is LPH(ℓ / h) indicating what ℓ of water is purified per an hour.

④ TDS meter

It indicates the real time TDS value on raw water and treated water and helps to check and decide R/O membrane filter's condition (right time for filter replacement) and wrong signs of the system.

TDS value : the figures of solids(mineral, salt, metal substances) dissolved in water and the unit of it is ppm

⑤ Emergency switch

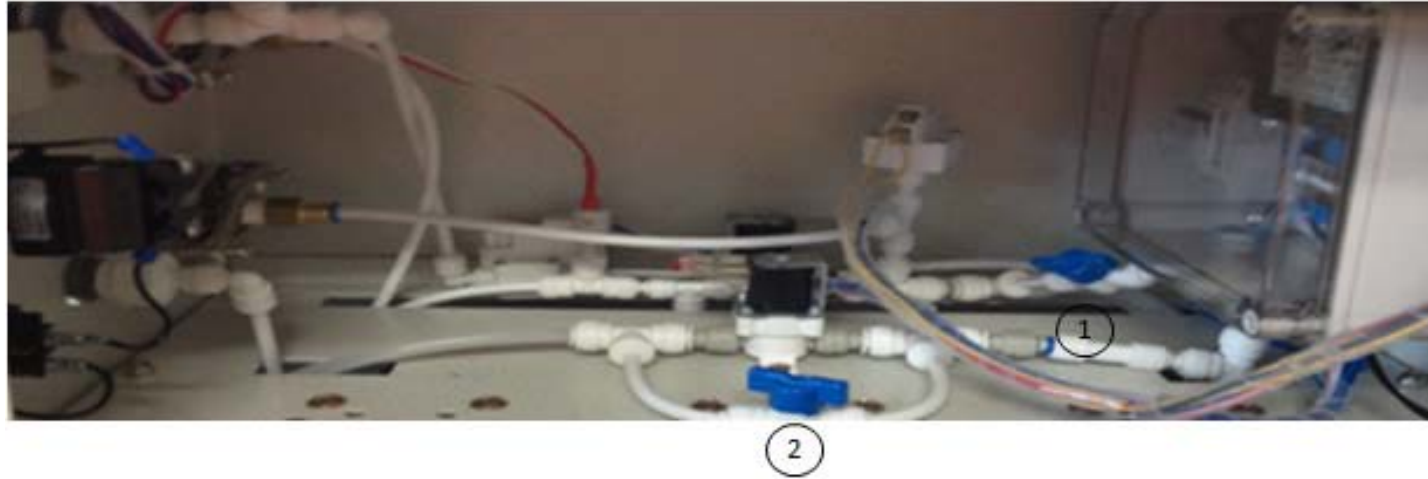
Press this switch to stop the product operation in case you face water leak or other problems.

⑥ Start switch

Press this switch in case you do not use this system for a long time or when turn the system off

Names and Function of Each parts

Inner Parts



① Manual Flushing Valve

It's used to remove the remain of small particles of carbon and to expel remain air from the filter housings when replacing those filters 1st(PP), 2nd(GAC), 3rd(CTO),

It's also used for the filters flushing regularly by opening this valve specially for the area whose water is bad.

** It should be locked for the operation at all times.

② Flow Restrictor Valve

It controls the amount of drain water from R/O membrane filter,

Major role is to protect RO Membrane as it lowers water pressure forced by a pump by draining unpurified water through it

* User Notice and Emergency Coping tips

1. Adjustment of the capacity of purified water

- * After installation of the system by a specialist, the amount of purified water can be rather different at the change of water temperature

For example, the capacity of the treated water is different between summer and winter season. In winter, it decreases around 20 ~ 30 %. This phenomenon occurs because viscosity of water is different according to water temperature. The higher water temperature increases the purified water production.

25℃ water temperature is the optimal condition.

- * In order to increase the purified water in winter season, we can control it by this flow restrictor valve.

The capacity of the purified water increases when you reduce the amount of drain water by closing Flow restrictor valve little by little (at this moment, the RO membrane gets to undergo high pressure)

At this time, you can check the pressure of R/O membrane through the pressure gauge and should be careful not to exceed max 125psi.

2. The function of Auto Flushing

- * It's on the R/O Membrane flushing for one and half minute every 2hours based on the product operating hours

The amount of water can rapidly decreases at this time however it is a normal condition,

3. Actions in case of water leak

- * At first, press Emergency switch, close water valve to prevent water influx and contact the agent where you bought for repair.

4. In case of short-time use.

- * Turn the power off after locking water valve.

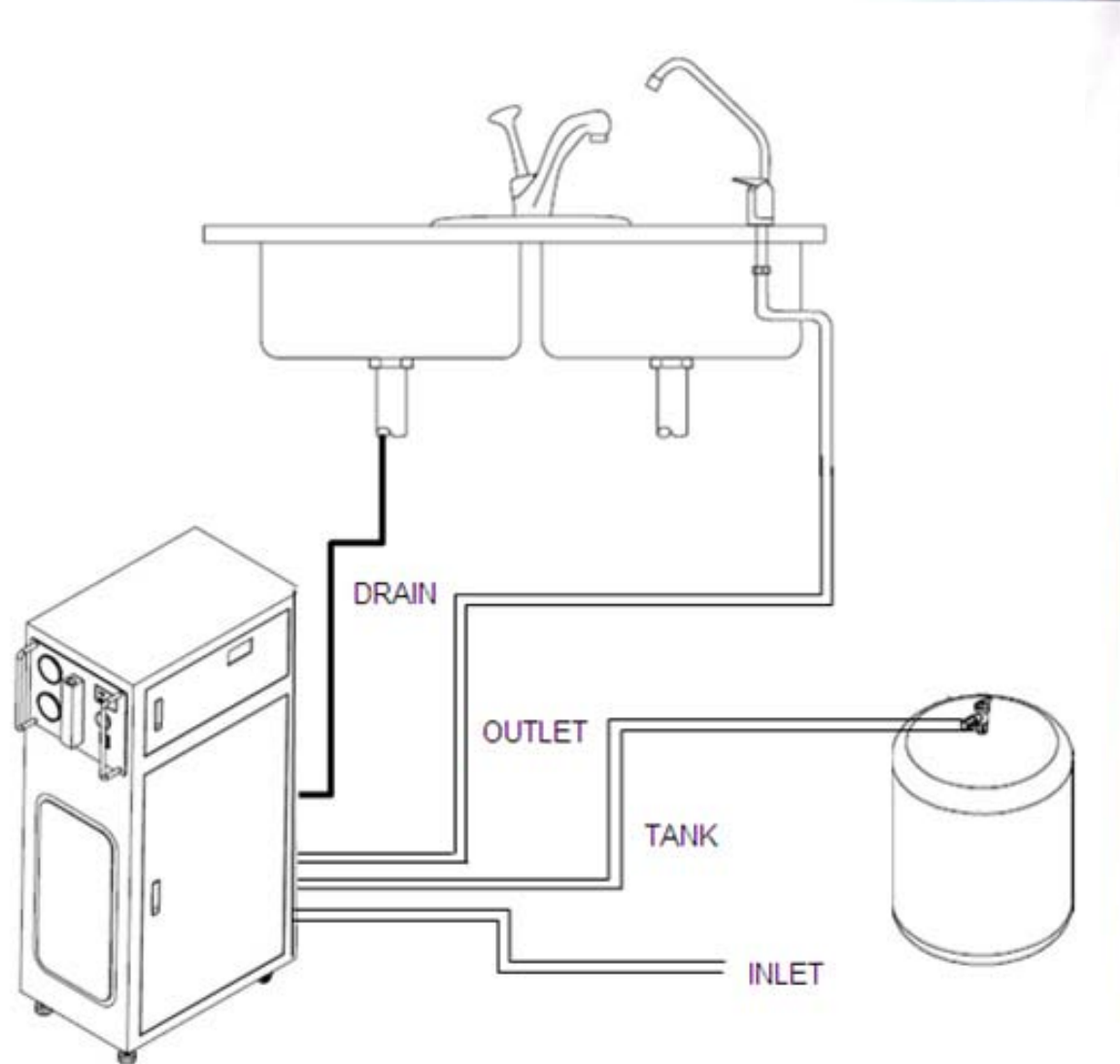
**** Do not manage or operate electrical control box except specialist**

INSTALLATION STEP



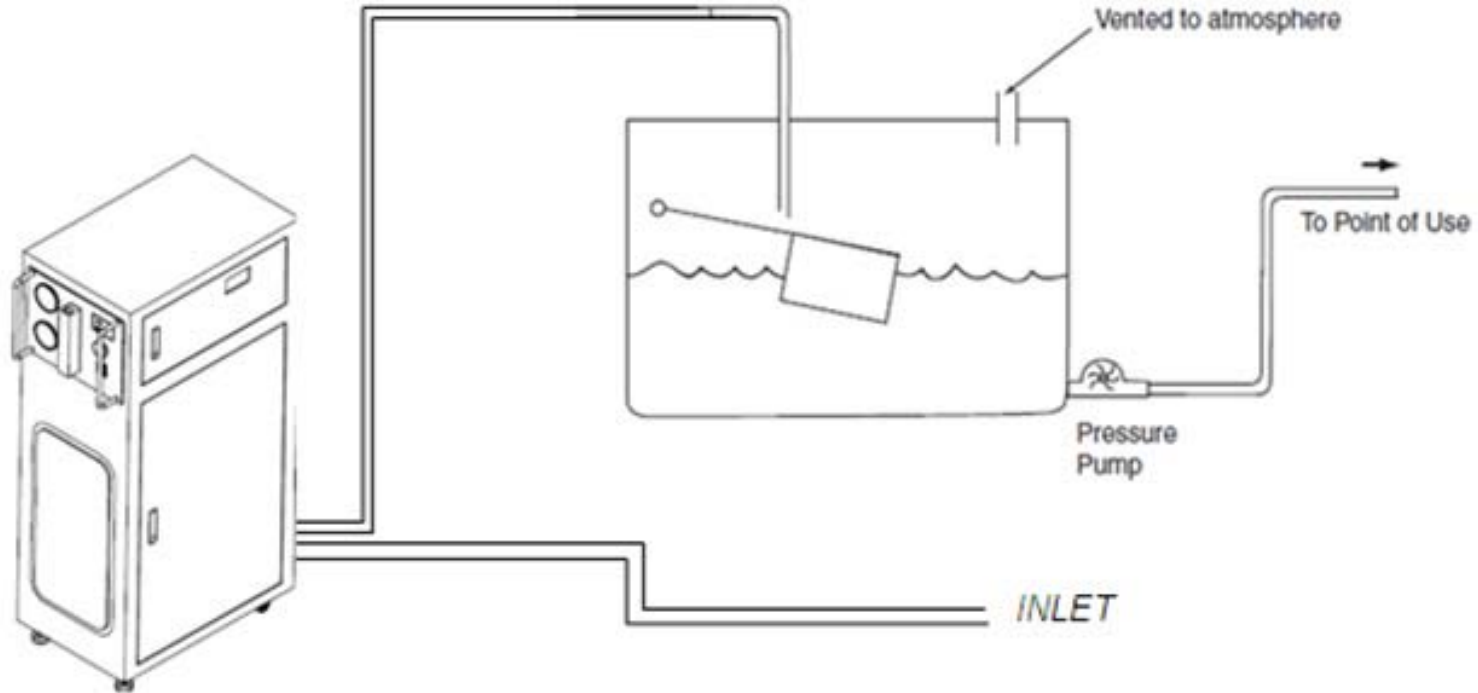
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Type Of Pressure Tank



INSTALLATION STEP

Type Of Storage Tank



1. Connect each tubing to tubing connectors(1/2" or 1/4") placed onto the backside of the system for Inlet water, Outlet Water(clean), Tank, Drain. (If the reservoir tank is not a pressure tank, you have to install the water level switch separately)
2. After the initial system installation, Flush the Carbon Filter for 2-3 minutes by using Manual Flushing Valve.
3. Turn on the system for the operation.
- 4 Set the pressure gauge of R/O pump for 70~80PSI by flow restrictor valve and check that the treated water capacity can reach to 95LPH,
5. If the pressure tank is filled with clean water and the system stops automatically, Turn on the Faucet to drain all stored water for cleaning the tank before use.

#Auto Flushing

It's on the RO membrane flushing for 1~2mintues every 2hours optimize R/O membrane efficiency and water treatment capacity.

Carbon Filter Flushing

For the initial system installation or after the replacement of carbon filter, you have to flush carbon filter for 2-3 minutes by opening the manual flushing valve before operation,
 (Procedure : Power Off-->Manual Flushing Valve "Open"-->Raw Water Open--> inflow of raw water for 2-3 minutes-->Manual Flushing Valve "Close"-->Power On-->System Start)

FILTER STAGE

Cartridge Filter	Filter Description	Service Life
Stage 1 Sediment Filter	Sediment filter is made by high density below 5 μ m polypropylene to maximize water purification effect by removing more than 5 μ m sized sediments and pollutants from the first stage . In this regard, this filter can prolong service life of next stage filters.	3-4month
Stage 2 Carbon Filter	Activated carbon as a special carbon is the embodiment of amorphous carbon which is formed during the activation process ,of molecular sized micro-pores. With a large internal surface area for absorption, it can absorb existing various pollutants in water and have a great effect for removing residual chlorine, bad smell and absorbing organic matter.	6month
Stage 3 Carbon Block Filter	The carbon block filter is activated carbon formed by powdered activated carbon and PE resin which has some pore, in high temperature. And It has wide surface area available for absorption. It can remove and absorbs organism, smell, color, remain chlorine, heavy metal and chemical etc in water.	6month
Stage 4 RO Membrane Filter (Q'ty : 2)	RO membrane filter removes all pollutants such as heavy metal, virus, bacteria and organic chemicals through the membrane pore sized of 0.001- .0001 μ m, which is 1/1,000,000 of thickness of human hair. It remove the smallest particles and even ionic substance.	12-16month
Stage 5 PCB Filter	The PCB filter is the high quality carbon made by coconut shells materials and it makes better water taste by removing remain gas and odor substance in water.	9-12month

Fault diagnosis and Solution

Fault diagnosis	Check Point	Solution	Fault diagnosis	Check Point	Solution
The system does not work.	1. Check the pressure and flow rate of the raw water.	Check Raw water valve 's status, If the raw water valve is closed, open the valve for inflow of raw water to the system,	The system work normally, but It does not make drain water and treated water.	1. Check condition of solenoid valve(whether it opens and closes well)	Replace the solenoid valve.
	2. Check whether Low Pressure S/W works normally.(If It has a trouble, connect with each other terminal of Low pressure switch, then it will work well	Replace the Low pressure S / W		2. Check PP sediment filter condition whether it is piled with many foreign substances.	Replace the PP sediment filter cartridge
	3. Check switch ON/ OFF condition	The system does not work in case emergency switch is ON. Check whether the terminal of Start switch or Emergency switch is in normal(or missing)		3. Check whether RO membrane is blocked	Replace the RO membrane.
	4. Check disconnection of switch	Check the disconnection of each wiring and reconnect or manage it properly,	The pressure of PUMP gauge rises rapidly.	1. If RO Membrane is blocked , the pressure of RO PUMP increases	Replace the RO membrane.
Capacity of Clean water does not reach to 600 GPD.	The amount of drain water is still steady in comparison with before but treated water capacity decreases more than 30%.	2. Check the flow restrictor valve status,		If the flow restrictor valve is blocked or It was adjusted differently with the initial set, increase drain water rate by controlling the flow restrictor valve to reduce the pressure of the Pump	
		1. Check whether two pumps work normally. Otherwise check disconnection of pump 2. If two Pumps work normally, need to check Membrane condition on replacement of it,			

Fault diagnosis and Solution

Fault diagnosis	Check Point	Solution
The inflow amount of clean water to tank decreases	1. If air leaks from the pressure tank, Inflow amount of treated water to tank decreases	Inject air into pressure tank. Please Contact A/S TEAM for injecting air.
	2. Check the condition of the High pressure S/W	High pressure s/w controls the inflow rate to the tank and the amount of water can be different according to the condition of High pressure S/W. Check and decide the replacement of this switch,
TDS values increase rapidly	1. Check RO MEMBRANE service life	Replace RO membrane.
	2. Check Damage of RO MEMBRANE film	Replace RO membrane.
	3. If you connect the drain water outlet with treated water outlet conversely, TDS value Increase (Normality: TDS of treated water should be decreased more 94% from the value of raw water.) It takes some time to have the normal TDS value of treated water in case of the initial operation,	Check RO Membrane housing was installed correctly (Drain water, Treated water)
Water Leakage	1. Check each fitting part	Check and Replace each part if necessary
	2. Check housing O ring	
	3. Check housing connector	



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Thank you



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