



is **Life**

Your Life,
Your Water!



HYUNDAI
WACORTEC

DIRO User manual



Reverse Osmosis System-3,000L/Day

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1. Product information

*This R/O system is automatically operated by Auto controller which is linked to LPS (Low Pressure Switch) and HPS (High Pressure Switch). The status of system operation could be checked through the indication lamp of Auto controller in real time.

MODEL	PRODUCTION CAPACITY (L/DAY)	R.O MEMBRANE	POWER (KW)	SIZE (W*D*H)
DIRO	3,000	300GPD*3	1	1800*510*1600

WATER FLOW DIAGRAM

RAW WATER-->MICRO FILTER-->CARBON(GAC) FILTER-->CARBON(CTO) FILTER-->
R.O MEMBRANE-->DRINKING WATER(HOT & COLD)

1-1. EQUIPMENTS SPECIFICATION & FUNCTION

Item	Specification	Q'ty
	Function	
Micro Filter	10", 5MICRON	1
	Micro filter removes suspended and floating solid(matter) less than 5micron in raw water firstly,	
Carbon Filter(GAC)	10"	1
	Activated carbon filter removes and adsorbs organism, smell, gas and Remain chlorine etc. in water.	
Carbon Filter(CTO)	10"	1
	Block type of carbon filter	
R.O Membrane	300GPD	3
	R/O membrane removes ionic element, turbidity and many kind of Bacteria, heavy metal etc in raw water.	
R.O Pump	150W, 24V	2
	R/O pump pressurizes Pre-treated water into R/O membrane filter.	
LPS	Low pressure switch	1
	It detects inflow water pressure of raw water. When it detects no inflow of raw water through sensing the feed water pressure, it stops the system operation.	
HPS	High pressure switch	1
	It detects becoming full of water in Pressure tank, and over high pressure delivered to R/O membrane, and control the system operation.	
Solenoid Valve	24V, 15A	1
	For Feed water	1
	24V, 1/4"	1
	For Drain bypass	1
Flow sensor	24V, 1/4"	5
	For the outflow of cold and hot water	
Flow sensor	This device is to let cold & hot water flow out by its automatic sensor.	5
U.V Sterilizer	16W	1
	Service life : Aprox. 8,000 hours	
Flow Rate Sensor	This device senses the flow rate and makes U.V Sterilizer operates.	1
Auto Controller	DC24V	1
	Control Automatic operation linked to LPS and HPS.	

2. Product Structure and Parts

(FRONT)



(BACK)



3. How to install and operate the system

3-1. Pre-Caution before installing the system

- 1) The system shall be installed safely in doors.
- 2) The system shall be kept warm against being frozen in the winter time.
- 3) Drainage channels shall be installed in the installation place.
- 4) The electricity is 220V, 50-60Hz and 1PH.
- 5) Power sources shall be stably supplied, or AVR shall be installed for stable power sources
- 6) Drain pipes for drain water shall be lower installed than the system pipe, in order to let go any drain water out safely.
- 7) The system shall be operated after surely raw water inflows into the system.
(If there were no inflow of water during the system operation, it can occur the fatal damage of Hot tank by the pump's idling.)
- 8) The inside installed filters are consisted of basic filters to purify CITY WATER level to be able to protect R/O filter.
If the city water could not meet the below city water's condition, it's required to install additional pre-treatment device,

*The inflow CITY water condition for R/O system

- Water Temperature : 5~30'C
- Ph : 5.8-8.5
- Turbidity : 1NTU or less
- TDS : 300ppm or less
- Total Hardness : 80ppm or less

3-2. How to install the system

- 1) Separation of the front and back doors
Place the system where it will be installed. Separate 4 doors (front and back) by using L wrench.



- 2) Putting R/O membrane in R/O housing
Separate 3pcs of R/O housing cap from all R/O housings(3pcs) and put 3pcs of R/O membranes in R/O housings And tightly lock R/O housing caps by using its housing wrench.
(Firstly check the installed tubings position with all R/O membrane housings and connect them well after putting R/O membranes in housings)

3) Connection of Feed water pipe

-The end of supplied hose shall be connected to the fitting (see the below left picture) of the system and the opposite side of hose shall be connected to the pipe of Feed water supply. At this moment, Feed water hose and Drain hose shall be pulled out through Door holes (see the below middle picture).



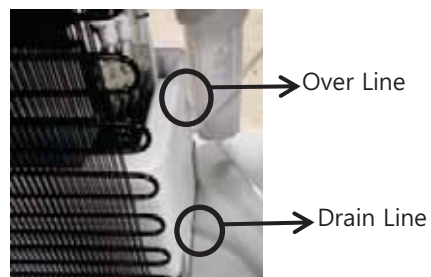
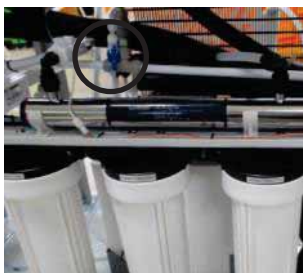
4) Flushing of Carbon Filter

For Flushing of carbon filter at the beginning of the system installation, open Flushing valve to remove the particles of carbon filter. After opening Flushing valve, open the feed water supply valve in order to inflow Feed water. Close Flushing valve after Carbon filter has been flushed for 2 minutes.



5) Cooling water supply for cooling tank

-Open the below marked valve to fill Cooling water tank with cooling water
-Check the level of Cooling water in tank with the naked eyes, and lock the valve once the Cooling water level reaches "Over Line".



**Check regularly the level of Cooling water once/2-3 months and refill the tank on any shortage by natural evaporation.

**Drain line must be always locked. Drain line is only used to remove Cooling water in tank for moving the system.

6) Cleaning of R/O membrane and Connection of Power sources

Open the below marked Pressure Tank Drain Valve in order to clean R/O membrane.

In order to operate R/O pump, open the cover of power box and turn on the main power switch.

****At this moment, Hot Tank Switch shall be in "OFF".**

Close Pressure Tank Drain Valve after cleaning R/O membrane for 3 minutes.

Open Hot Tank Supply Valve.

Power box

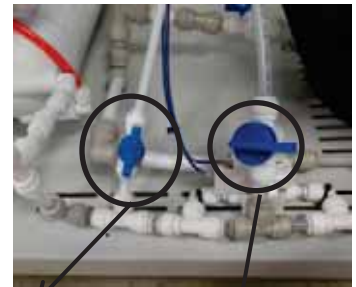


Pressure Tank Drain Valve



Main Power S/W

HOT Tank S/W-"OFF"



HOT Tank Supply Valve

Pressure Tank Drain Valve

7) Open Pressure Tank Valve

Open the below marked Pressure Tank Valve.

The system is automatically operated by Auto Controller and the clean water will be filled into Pressure tank. (In case Pressure tank becomes full of water, Full lamp is lit on and R/O system stops working automatically.)



Pressure tank valve



8) Deflate Air from Hot & Cold Water Taps / Check of Cup Sensor

-In order to deflate Air inside Hot Tank, place a cup in front of Hot water tap and keep pushing Safety Button until water flows out. At this moment, also check whether Cup sensor works well or not.

**Cup sensor can sense only semitransparent cups but not transparent cups.

(Sense distance : Aprox. 2 cm)

-Deflate Air through 4 pcs of Cold water taps, at the same time also check working status of Cup sensors

-After conducting all above 6 processes, turn on Hot tank switch.

**Before turning on Hot tank switch, all above 8 processes must be done.



9) DISPLAY PANEL

- After finishing all installation processes, Display panel will be the same as the below picture and the system will be automatically operated.



10) Function of Auto Controller

Automatic Operating : Sense the inflow of raw water by the signal of LPS & HPS linked to this controller.

Flushing : In the beginning of the system installation, Auto Flushing is automatically executed every 2 hours since R/O pump operation or switch on in the beginning of the system installation.

4. Maintenance Guide and Fault Diagnosis of the system

4-1. Replacement of consumable parts and Maintenance

- 1) Regularly check each consumable part and cyclically replace them on time.
- 2) Cycle of replacement
 - Micro filter and Carbon filter : about 3 months
 - R/O membrane : about 2 years (depending on raw water condition and concentration/cycle of replacement of the pre-treatment filters)

4-2. Fault Diagnosis

- 1) Power supply failure
 - Check the proper power connection from outside.
 - Check whether the circuit breaker of control box is "ON or OFF"
 - Check any case of wire disconnection.
- 2) No production of treated water
 - Check whether raw water supply is OK / whether each valve is open or not.
 - Check whether Solenoid valve is OK.
 - Check the pre-filtration condition - whether it's blocked or not.
- 3) No outflow of water from Hot & Cold water taps
 - Check whether Cup sensor works or not. (1 lamp is lit on Cup sensor. And another lamp will be lit once cups approach Cup sensor.)
 - Check whether Solenoid valve linked to Cup sensor works or not.
 - Check whether raw water flows into the system / whether water flows out from Pressure tank.
- 4) No Hot water (in case water flows out from Hot water tap but not hot)
 - Check whether Solenoid valve linked to Cup sensor works or not.
 - Check whether Bimetal works or not. (2 pcs of automatic bimetals are installed)
- 5) No Cold water (in case water flows out from Cold water tap but not cold)
 - Check whether Cooling water in tank is enough
 - Check whether there is Ice on the outside of copper pipes or not.
 - Check whether Compressor works or not.

*Caution (Hot Tank Switch)

Hot Tank Switch linked to Control Box must be turned on after checking these two points- (being full of water in Hot tank and outflow of water through Hot water tap)
 The system can be damaged by overheating if Hot tank switch is turned on without water in Hot tank.