Reverse Osmosis System

INSTALLATION AND MAINTENANCE HANDBO

NW-RO400G-800G

Please read through this handbook in detail
before using, and keep it for your reference.

CATALOGUE

Something for our respectable clients

1. Function characteristic
2. Operation principle & technical process
3. Main technical parameter
4. Installation
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Something for our respectable clients

Thank you for purchasing a Reverse Osmosis Water Purifier System.

Now you own one of the most advanced reverse osmosis water treatment systems available. The Reverse Osmosis system is the pioneer in the world water treatment industry. The reverse osmosis water purifier system (RO system) can produce pure and tasty drinking water.

Before the installation, please read the installation instructions carefully. And with proper maintenance, your RO system can give you high quality and tasty drinking water for many years.

1. Function Characteristic

- Using our famous brand reverse osmosis membrane (RO Membrane), the RO system applies the most advanced reverse osmosis water treatment technology currently available in the world. The RO system can distinguish foreign particles, colloid, organic substance, heavy metal, soluble solid, bacteria, virus, pyrogen and other harmful impurities from raw water, and only retain water molecules and dissolved oxygen, more than 96% of above substances will be removed.
- Using our famous-branded high-pressure, low noise, low vibration, long service life and reliable quality pump is an further advantage.
- Pre treating, low cost cartridges can be replaced with ease to ensure continuous great performance.
- The system also have a function for the high pressure washing of the reverse osmosis membrane, this function can extend the service life of RO Membrane.
- Automatic-control of the purification process ensures that when the raw water supply stops, the machine stops automatically. Also when water storage tank reaches the maximum capacity, the machine also stops automatically.

2. Operation Principle &Technical Process

1)Operation Principle:

The RO system adopts U.S. high-tech reverse osmosis technology. This automatic reverse osmosis system is composed of five filtration stages. First, the raw water is filtered by three pre positive cartridges.

The ***first stage***: PPF cartridge, remove suspended substance and other substances up to 5 micron in raw water;

The ***second stage***: granular activated carbon cartridge;

The ***third stage***: high density activated carbon cartridge, to remove odor、chlorine and its outgrowth in raw water.

After above three stages of filtration, the filtered water is pushed into the ***fourth stage***: the reverse osmosis (RO) membrane by a high-pressure pump. Since the aperture of the RO membrane is only 0.0001micron, bacteria and filterable virus can pass the RO membrane only if the bacteria would be reduced in size 4000 times, and filterable virus would be reduced in size more than 200 times. Consequently, any super fine impurities, harmful soluble solid, bacteria and virus in water is blocked by the high density RO membrane. The RO membrane can also filter other impurities and contamination from the filtered water. The harmful substance is automatically removed by means of a waste water outlet. The water filtered through the RO membrane enters a pressure tank for storage. When the user turns on the goose-neck faucet, the purified water will go through the ***fifth stage:*** post positive bacteriostatic activated carbon filtration to flow out.

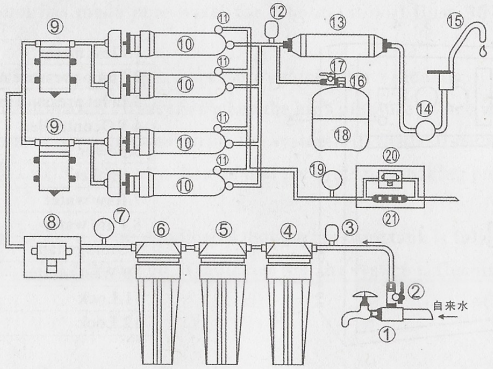
The system controls the water purification process automatically. When the pressure of raw water is too low or the water storage tank is full, the system will stop the purification machine automatically; When the water pressure returns to the normal level, the purification machine will turn on automatically. The water purified by the RO system is pure drinking water without bacteria and impurities, rich in oxygen, tasty and excellent for your health.

2)Technical Process:

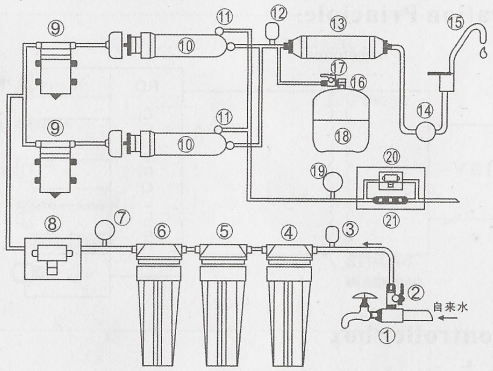
Tap water
→ PPF filter
→ low pressure switch
→ granular activated carbon filter
→ high density activated carbon filter
→ flow in valve
→ high pressure pump
→ RO system
↘waster water outlet
→ high pressure switch
→ postpositive bacteriostatic activated carbon filter
→ purified water
→ flow out from goose-neck faucet
↘pressure tank ↗

3) Reverse osmosis system layout and components(400G-800G):

TYPE 1



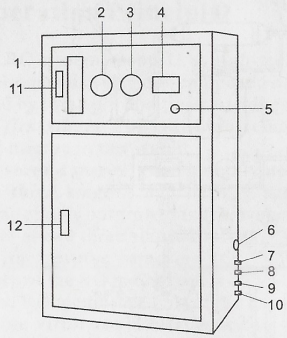
TYPE 2



4) Parts List

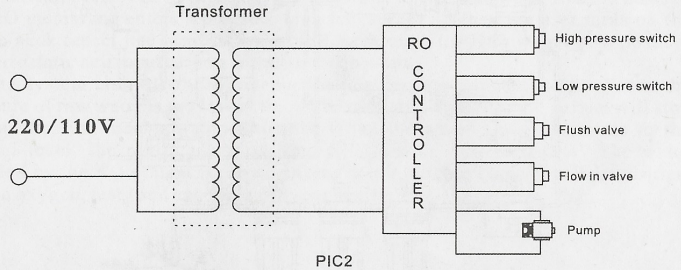
1.Three way feed water connector	2.Ball valve
3.Low pressure switch	4.PP sediment cartridge
5.Granular activated carbon cartridge	6.Block carbon cartridge
7.Water pressure meter	8.Flow in valve
9.Booster pump	10.RO menbrane
11.Checkn valve	12.High pressure swigch
13.Post in-line carbon cartridge	14.Flow meter
15.Goose-neck faucet	16.Pressure tank head
17.Tank valve	18.Pressure tank
19.Pump pressure meter	20.Anti-washing valve
21.Flow limit	

5）RO system built in steel box:



1.Flow meter
2.Pump pressure meter
3.In let pressure meter
4.ROcontroller
5.power
6.Socket
7.Raw water
8.Pure water
9.Storage tank
10.Waste water
11.Lock
12.Lock

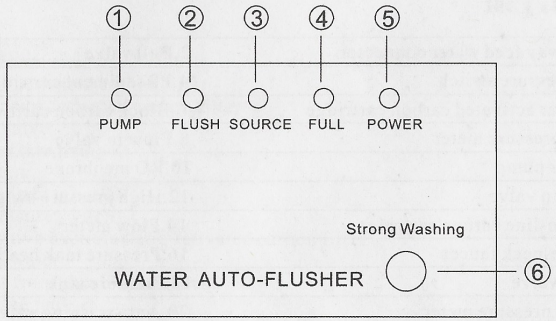
6）Operation Principle:



PIC2

7）RO controller box

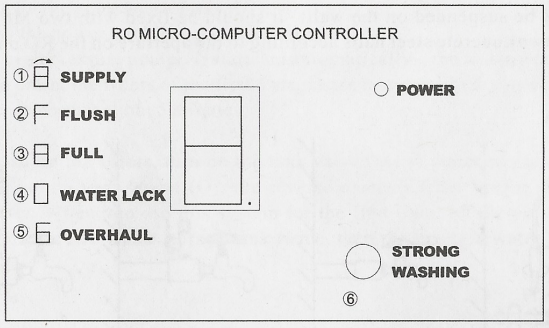
Controller box type1:



PIC3

- When the system is turned on, it will flush 30 seconds automatically.
- After the system has made pure water for 2 hours, it will flush 30 seconds again.
- The system will respond to the low pressure switch after 5 seconds.
- The system will stop after 20 seconds when the high pressure switch works.
- If you push the strong washing button⑥, the system will flush 30 seconds.
- If①、③、⑤ LEDS are on, it indicates that the system is making pure water normally.
- If③、④、⑤ LEDS are on, it indicates that the pressure tank is full.
- If①、②、③、⑤ LEDS are on, it indicates that the system is flushing.

Controller box type2:



PIC4

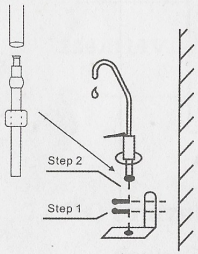
- When the system is turned on, it will flush 30 seconds, the display will be like②.
- After flushing, the system will start to make pure water, the display will be like①.
- The system will stop after the pressure tank gets full, the display will be like③.
- The system will warn by buzzer, when the inlet water is lack or inlet water pressure is too low, the display will be like④.
- After the system has made pure water for 2 hours, it will flush 30 seconds again.
- If the system has been working for long time abnormally, it will stop automatically, and displays like⑤ with buzzer call.
- If you push the strong washing button⑥, the system will flush 30 seconds.

3. Main Technical Parameter

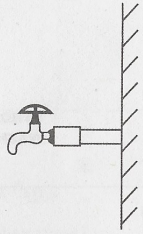
1) Volt: AC220V/110V --- DC24V / 50~60HZ
2) Power: ☐105W ☐145W ☐240W
3) Purified water output: 400G-800G/25℃
4) Water storage tank capacity: 11G/40L
5) Applying water pressure: 0.1~0.35Mpa
6) Pretreatment filters total water output: more than 1000L
7) Inlet water temperature: 4~42℃
8) The type of guard against electric shock: type II
9) Water supply: tap water or ground water TDS 1000ppm less

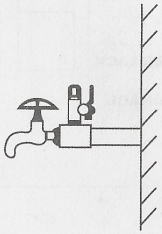
4. Installation

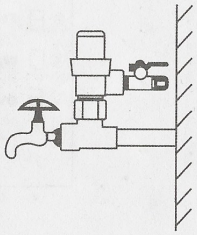
The system installation method should be determined in accordance with the layout of your kitchen. Please refer to the installation maps as follows. If the RO unit would be suspended on the wall, it should be fixed with two M6 swelling screws or two concrete steel nails according to the aperture on the RO unit hanger plate.

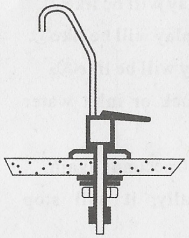


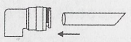
PIC9. Faucet on the wall

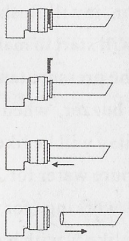

PIC10. Three way connector

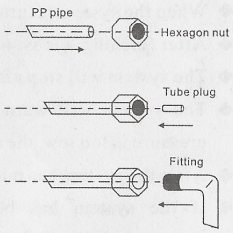

PIC11. Ball valve


PIC12. Reduce valve


PIC13. Faucet on the countertop


PIC14.
Quick fitting
Connect PE hose


PIC15.
Quick fitting
Disconnect PE hose



PIC16.
JACO fitting
Connect PE hose

1) To install the ball valve, fit a three way feed water connector (A) and place the ball valve(B) on the three way feed water connector(A), then connect the tap water faucet with three way feed water connector (PIC 1,10 and 11).If you use reduce valve, you should connect the reduce valve (PIC12).
2) The storage tank should be connected with in let of T33 carbon filter.
3) The goose-neck faucet connect with outlet of T33 carbon filtr.
4) Put the RO membrane into membrane housing.
5) Assembly first, second,third stage cartridge filter.

5. Operational Approach

1) After the installation, please wash the filters of each stage before using the system for the first time. The steps is as follows:
turn on the ball valve(B) of the faucet tubing,
turn off the tank valve(M) of water storage tank(N),
turn on the goose-neck faucet(Q),
plug the power cord into power supply socket,
then the high pressure pump(H) starts up automatically, the waste water outlet begins to drain, the filters of the first 4 stages are being washed automatically.
Please wash it about 5 minutes.

After washing the filters, turn on the tank valve (M) of water storage tank (N), turn off the goose-neck faucet (Q), the reverse osmosis filter begins to generate purified water. When you use this system for the first time, let the purified water flow out from the full water storage tank twice, then the purified water is suitable for drinking.

Notes:

A) When you use the system for the first time, turn on the goose-neck faucet to drain the water. (There could be a little bit of black water flowing out from faucet, it is a little bit of carbon from the post in-line carbon filter, please continue washing to drain it.)

B) When you use the system for the first time, TDS test data may be a bit high, please continue washing until the TDS test data becomes normal.

C) When you use the system for the first time, the purified water is not drinkable until steps A and B are done. The concentrated waste water used for the making of the purified water can not be used for drinking.

2) After the installation & adjustment, the system begins to produce purified water automatically. Usually, turn off the goose-neck faucet(Q)、turn on the tank valve(M) of water storage tank, let the purified water flow into tank. When the water storage tank is full of purified water, the system stops working automatically. Turn on the goose-neck faucet (Q) to use the purified water.

6. Maintenance

It is highly recommended to replace filters periodically to keep the high quality of water. This helps to take full advantage of filters and guarantee the standard of water quality. If a user takes care of the filters and replaces them periodically, the water purifier system could have a longer lifetime. The period of filter-replacement depends on the quality of the raw water, the impurity quantity of the raw water. Based on empirical statistics, a family of four persons usually consumes 10L (10kgs) purified water each day. If the water is municipal tap water, the suggested period of replacement is shown as follows:

Brief introduction to filters:

Filter	Materials	Functions	Material life in average(depending on water quality and volume)
1st Stage	PP 5 micron	Un-dissolved contaminants removal, i.e. sand, silt, rust, etc.	About 3-6 months
2nd Stage	Granular activated carbon	Activated carbon germicidal adhesion removal of chlorine, organic fertilizer, agricultural chemical, insecticide	About 6-12 months
3rd Stage	Block carbon	Same as 2nd stage, but re-filtration again	About 6-12 months
4th Stage	RO membrane	Heavy metal removal: particles, heavy metal, ray, bacteria. etc.	About 1-2 years
5th Stage	In-line carbon	Adhere odor & taste and make water delicious	About 6-12 months

If the filters are replaced frequently, it ensures that system produces a high quality of drinking water and works longer. Because of the difference of the environment conditions, above data of the period of the filters replacement is only used as reference.

RO membrane pressure washing:

When RO membrane purifies the water, there is impurity and bacteria left on the surface of the water, which may affect the quality and volume of the purified water. Thus the RO membrane must be cleaned periodically. In our system, the RO system will flush the RO membrane automatically. And you can also flush the RO membrane manually by pushing the strong flush button on the RO controller box.

Notice: In order to make you system work efficiently, please use the specified filters, provided by the same vendor of the purification system.

7. Warning

1) Don't drink the water of first two tanks; let it drain or use it for other utilities upon Installation. And test the RO unit for about 2 hours until the above operations is completed successfully.
   Clean the remaining contaminants and sediment in the unit.
   Check if the unit works normally and without water leakage.
2) Don't take apart the parts of system. Any wrong operation may lead to water leakage and system failure/damage.
3) Don't apply the system to purify hot water.
4) Don't place air valve discharged on the pressure tank.
5) To ensure the quality of purified water, please replace the first and the second filters in a period of no longer than 10 months.
6) Please check the power supply and make sure it is a suitable voltage.
7) Keep the RO unit away from sunshine.
8) When the system is not used for a long period, please turn off the power and shut off the ball valve.
9) Follow the initial operation before reusing the system after longtime standing idle.
10) Load move and install it carefully.

8. Packing List

1). Reverse osmosis unit ---------- 1 pc

2). Water storage tank ---------- 1 pc

3). Goose-neck faucet ---------- 1 pc

4). Accessories ---------- 1 set

5). Hose ---------- 8 meters

6). Handbook ---------- 1 copy