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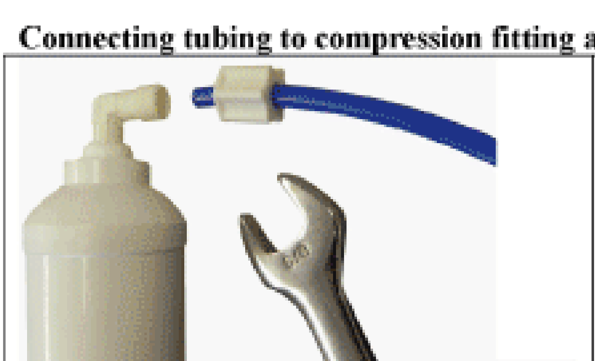
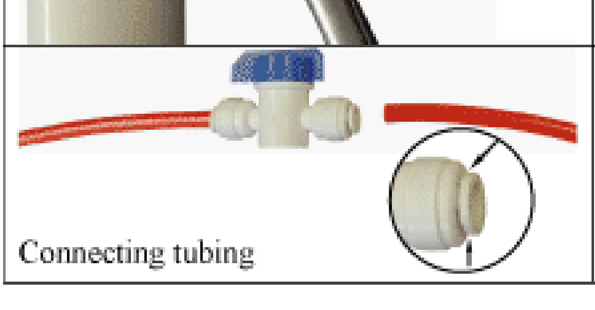
General instruction on installing a RO reverse osmosis water system
Disclaimer: The instructions in these pages are general instructions on how to install a typical RO system. These instructions are not absolute, as there are many variations of plumbing requirements and situations. These instructions may not be suitable for your particular situations. Please follow local plumbing codes. You agree and understand that our company, agents, and distributors are not responsible or liable for any incidental, or consequential damages or personal injuries, or compliance of local plumbing codes, law, statute, or regulation, when you follow the instruction or advise contained in these pages.

Connecting tubing to compression fitting and quick-connect fitting



Compression fitting connections: When connecting tubing to the system, you must first unscrew the compression nut off the fitting, then push about 1" of tubing through the compression nut, then screw on the fitting. Use a 5/8" wrench to tighten the nut until the thread is not visible. (wrench tight)



Connecting tubing

Quick-connect fitting:
Connecting tubing: the tubing should be cut straight. Now push tubing all the way inside with twisting motion; it must go through the small O-ring that is located inside. If the connection leaks this means you did not push the tubing far enough.
Disconnect tubing: Use your finger to hold back the plastic ring against itself (the fitting), then use the other hand to pull the tubing out.

ASSEMBLY QUICK VIEW

1. **Remove** plastic wrap on the filters.
2. **Insert** the filters as shown.

1. Put upper portion of the unit on top of the filter housing.
2. Screw on filter housing **vertically** to the filter housing cap by hand.
3. Then use filter housing wrench to tighten the each housing.

INSTALLATION
STEP 1: TAPPING INTO COLD WATER SUPPLY
CAUTION:
- The water supply to your RO unit MUST come from **COLD water line**. Hot water will damage your RO system.

What do you have under the sink? (for under-the-sink installation)
If you see a flexible stainless steel braided hose connecting between water supply valve to the bottom of your kitchen faucet. There are a couple possible sizes:
- 1/2" FPT pipe thread (about the size of a quarter)
- 3/8" compression fitting (about the size of a dime)

The cold water supply valve could be a 3/8" compression or a 1/2" pipe thread.

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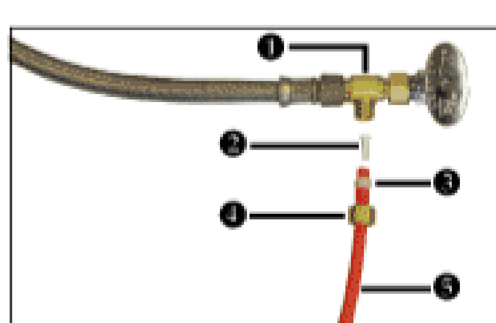
On the bottom of the kitchen faucet, the connection might be a 3/8" compression or a 1/2" pipe thread.

1. Locate the cold water shut off valve under the sink and turn it off. Open the cold water faucet to release the pressure making sure there is no water. If you still get water, turn off the hot water valve also.
2. Determine the best location for putting the feed water adapter. QUESTIONS TO ASK:
   Do you have a flexible line or a solid copper pipe? Is there enough space for installing a feed water adapter?
   Is the size of fitting thread the same as the feed water adapter?
3. Use a wrench to unscrew the compression nut off the hose, then put the feed water adapter in between. Screw the compression nut back. **CAUTION**: Make sure the threads match and are connected straight, hand tight first, then wrench tight. **Note**: Sometimes it might be easier to connect the tubing to the feed water adapter first.
4. For Solid Copper riser: You can convert your plumbing to using stainless steel braded hose; put a copper Tee fitting to divert water out or put a needle-point self-piercing saddle valve. This is not covered in the instruction manual.

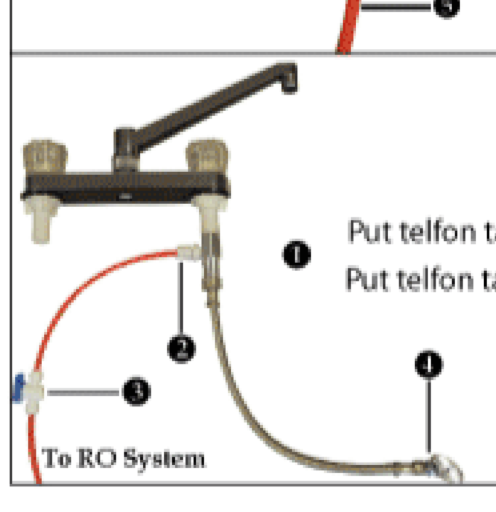
METHODS OF CONNECTING TO WATER SUPPLY:



Optional: May or may not be included with your RO system.

3/8" compression fitting feed water adapter (size of a dime)

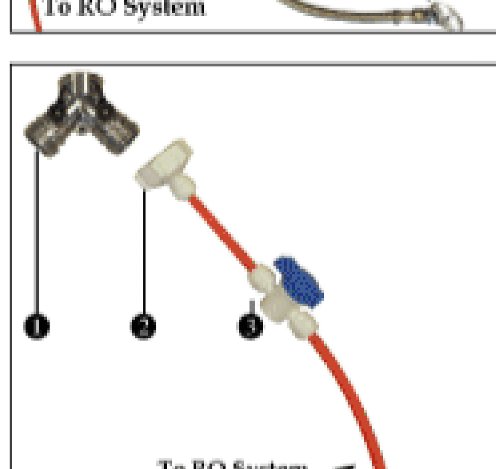
(1) Brass 3/8" compression fitting feed water adapter
(2) Tube insert - push inside the tubing
(3) Sleeve
(4) Compression nut - (wrench tight)
(5) 1/4" tubing going into your first stage water filter.
Put the adapter in between cold water valve and hose. Wrench tight the compression nut.



Optional: May or may not be included with your RO system.

1/2" MPT (pipe thread) feed water adapter (size of a quarter)

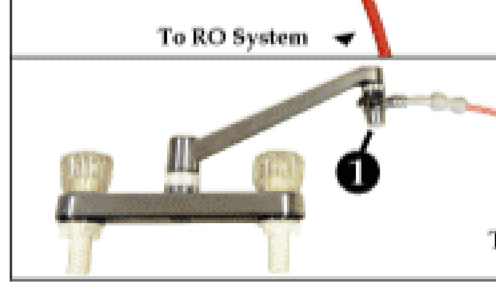
(1) 1/2" MPT feed water adapter; put Teflon tape on the threaded portion of this fitting.
(2) Male connector fitting: 1/4" MPT male thread with 1/4" compression fitting connects to a 1/4" tubing; Put Teflon tape on the 1/4" MPT male thread then use a wrench to screw the fitting into the adapter.
(3) Inline ball valve with 1/4" quick connect fitting; push tubing all the way into fitting to connect.
(4) Your cold water supply valve that's located under the under the sink.



Optional: May or may not be included with your RO system.

Connecting to a garden hose or laundry washer hose spigot:

(1) Y-adapter, 3/4" Hose, 3-way
(2) Garden hose adapter: 3/4" Hose to 1/4" quick connect fitting
(3) Inline ball valve with 1/4" quick connect fitting; push tubing all the way into fitting to connect.



Optional: Faucet-Diverter

Connecting to water supply using a diverter valve:

(1) Diverter valve; turn lever to divert water into the RO system
Optional:
May or may not be included with your RO system.

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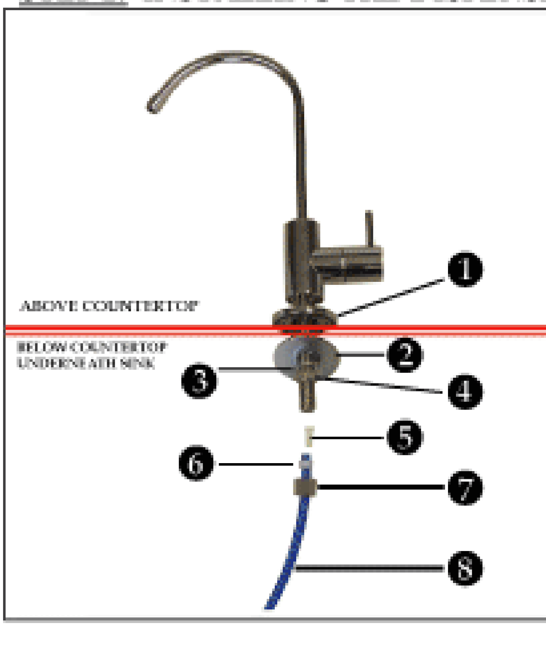
STEP 2: INSTALLING THE DISPENSING FAUCET



1. Faucet baseplate 1¾" kitchen sink.
2. Under sinkbig washer 1¾"
3. Lock washer
4. Lock nut
5. Tube insert
6. Sleeve
7. Compression nut
8. 1/4" tubing from RO unit

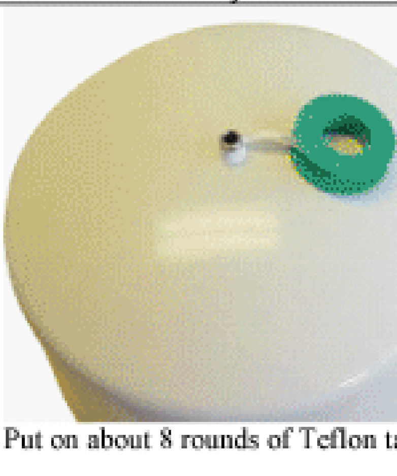
Drill a 1/2" or 5/8" hole on the sink.

The faucet should be positioned with aesthetics, function and convenience in mind. An ample flat surface is required for the faucet base so that it can be drawn down tight. Also check the area the sink of the desired location to see if there is ample space to complete the faucet installation hardwares.

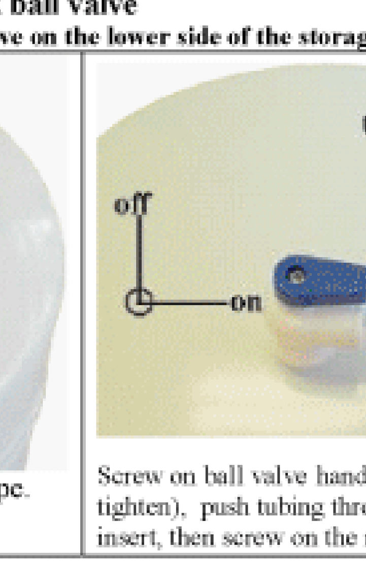
PORCELAIN ENAMEL SINK/ STAINLESS STEEL SINK/ ALUMIUM SINK/ GRANITE COUNTER
A 1/2" or 5/8" hole is required for the faucet. It is recommended that you get special drill bits for granite, porcelain, tile, or stainless steel counters.

1. Place a piece of masking tape or duct tape on the determined location where the hole is to be drilled.
2. Drill a 1/2" or 5/8" hole. Determine the correct type of drill bit to be used for the counter top. The drill bit for drilling a stainless steel counter is diff erent from the drill bit for a granite counter top.
3. Pause occasionally to cool drill bits.
4. File or clean the surrounding area and remove the masking or duct tape. (**NOTE:** the metal chips on porcelain will stain very fast)
5. On the counter top, there should be the faucet and the base plate showing.
6. Underneath counter, install the under sink steel plate, lock washer, and lock nut. Then screw them tightly.
7. Connecting the tubing: Push the BLUE tubing through the compression nut first. The plastic sleeve is next, then the plastic insert. Push the white plastic sleeve against the insert.
8. Screw on the Blue tubing with compression nut to the faucet shank. Use a wrench to tighten the nut, wrench tight.
9. The spout can swivel 360-degrees. The faucet lever can turn in clockwise or counter-clockwise to open or close.

STEP 3: Connecting the tank ball valve
*** *Do not release air from the air valve on the lower side of the storage tank.* It is pre -charged at 7 psi at the factory.**



Put on about 8 rounds of Teflon tape.



Screw on ball valve handtight (*DO NOT* over tighten), push tubing through the nut, put tube insert, then screw on the nut with a wrench.

The tank can be positioned laying down or standing upright.

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STEP 4: Installing the Drain Clamp (avoid placing in the blue/shaded area)

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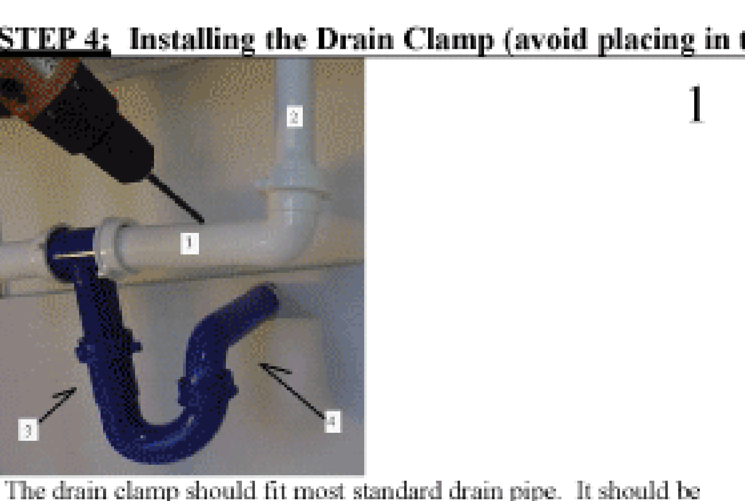
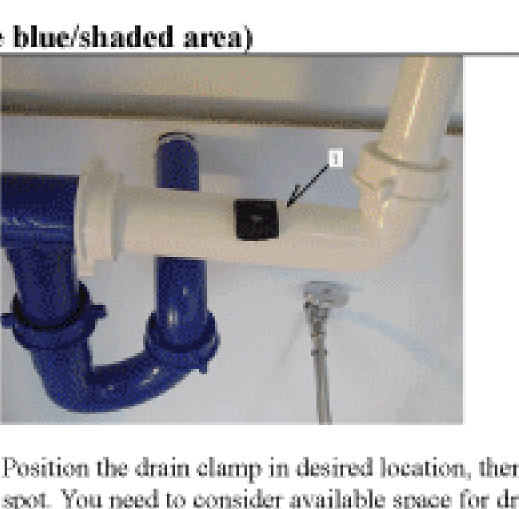


The drain clamp should fit most standard drain pipe. It should be installed above the trap, and on the horizontal pipe (1) or vertical pipe (2). Drill 1/ 4" hole into the drainpipe at a 45 degree angle from the top. (At a 45 degree angle the drain noise is reduced.)
DO NOT place at position (3), (4), or shaded/blue section.

2



Position the drain clamp in desired location, then mark spot. You need to consider available space for drain tubing. Peel off the sticky foam pad, then put it around the drilled hole.

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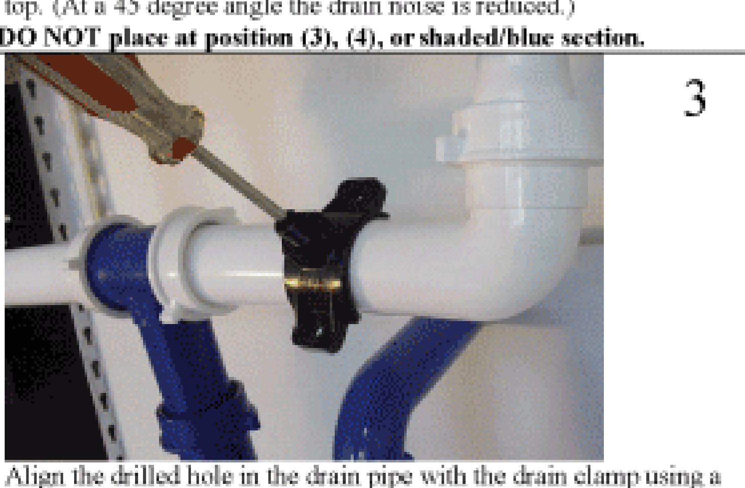

Align the drilled hole in the drain pipe with the drain clamp using a drill bit or narrow screwdriver.

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Put the complementary piece and clamp them together with the two bolts. (1) Tighten the two bolts evenly. (2) Now connect.

STEP 5: SYSTEM START UP

1. Make sure all tubing are not kinked.
2. Turn Tank Valve to OFF position.
3. Turn RO faucet lever to continuous flow position.
4. Turn cold water supply main valve on slowly. Also turn input ball valve ON. When the system is pressurized, check for leaks. If a leak is found, then turn off the water supply and tighten the connection.
5. Wait 15-20 minutes. The water should start dripping out of the RO faucet, and then wait 15 more minutes to allow water to flow through the system, so the air inside the system can be purged.
6. Turn Tank Valve to ON position (lever is pointing parallel to the tubing).
7. Turn the RO faucet lever to OFF. Now the purified water will start filling the storage tank.
8. **Wait 2 hours for the storage tank to be filled.**
9. DO NOT DRINK THE FIRST BATCH OF WATER PRODUCED BY THE SYSTEM.
10. After storage tank is full, turn the RO faucet lever to continuous flow position to empty the first batch of water. It takes about 5 minutes to completely empty the tank. When the tank is emptied, you will notice just a steady trickle of water coming out.
11. After emptying the tank or about 5 minutes, turn the RO faucet to OFF position. Now the RO system is refilling the tank.
12. After the tank is filled up again, you can start enjoying the purified water. Job Well Done! **In some cases, you will have to purge out the second batch of water that the system makes.
13. It is normal to see some black or gray color carbon powder coming out of the RO system when you turn on the dispensing faucet. For the first week of use, you should turn on the dispensing faucet for 2 seconds before you catch the water into your cup. This carbon powder is coming from the 5th stage polishing carbon filter. The loose carbon powder should be completely purdged out after a week of use.

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NOTE: Check for leaks daily for the first week after installation.

Water saving tip: In order to save water and to improve the water producing efficiency, it is better to dispense 1 gallon or more of water at a time, instead of one cup at a time. You can dispense 1 gallon to a gallon pitcher or container, then use the pitcher to pour water into the cup.

TROUBLE SHOOTING
***For more detailed tech suppor notes, & troubleshooting, go to our website. All parts, components and filters can be ordered at www.filterdirect.com. Information on parts, components and filters are also listed at www.filterdirect.com**
NOTE: Turn off the water supply valve and tank valve before servicing.

Installation Troubleshooting

PROBLEM	POSSIBLE CAUSE	SOLUTION
No or low water production	1. Feed water valve in not turn on 2. Tank valve is not turn on 3. Tubing is kinked 4. Filter clog	1. Turn on feed water valve 2. Turn on tank valve 3. Straighten the tubing 4. Change filters
Leak at filter housing	1. Housing is not tighten 2. Damaged or misaligned O-ring 3. Housing has cracks	1. Tighten housing 2. Re-aligned O-ring or replace 3. Replace housing
Leak at fitting thread at tubing connection or at threaded portion going into the housing	1. Not properly tighten 2. Fitting has cracks	1. If leaking is at tubing connection, make sure the tubing goes through the compression nut 2A. If the leaking is at the thread going into the filter housing, then use more Teflon tape. 2B. Replaced it
Bad-tasting water	1. Not yet flush the system 2. Tubing connection incorrect	1. Discharge water from tank 2. Check flow diagram
Milky/Cloudy water	1. Air in system/filters	1. This is normal, let water come out for 2 second before catching it
Noise from drain	1. Saddle valve mounted too high	1. Lower the saddle valve When system is making water, waste water to drain is normal, when storage tank is full, drain should stop
When turn on the RO faucet, only small amount of water come out.	1. Lifting the tank to see if there is still water inside. Heavy or light ?	1A. If it's heavy, you need to recharge tank, following recharge procedure 1B. If its light, the water either is not going in or the system is not making water.
Vibrating noise or very loud high pitch noise	1. From the auto shut-off valve	1. If the noise is too unbearable, shut-off valve should be replaced.
Drain water never shut off	1. Auto shut-off valve is worn out or becoming ineffective 2. Storage tank not enough pressure 3. Water supply pressure is near 40 psi or below 4. Cold water temperature 5. Filters are clogged up	1. Replace auto shut-off valve 2. Follow recharging tank procedure 3. Increase feed water pressure 4. Can't do anything about it. 5. Replace filters
Low water production	1. Storage tank problem 2. Clogged filters 3. Kinked tubing 4. Clog flow restrictor	1. Follow recharging tank procedure 2. Replace filters 3. Straighten the tubing 4. Replace flow restrictor

Note: Clogged filters:
If the system comes with a pressure gauge, you can check the pressure gauge to tell you if the filters are clogging or not. When the system is making water and the pressure gauge shows a pressure of below 40 psi, then the filters are clogged. If the pressure drop is 10 to 15 psi, the filters are clogged. For example, when you have new filters, the pressure gauge shows 55 psi, and if it drops to 40 psi, then that means the filters are clogged.

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Note: Checking a clogged membrane uses different method. Use a water quality meter TDS meter to check the condition and performance of the RO membrane (4th stage filter). If the bottom 3 filters are fine, and the system is not making water, then that means the membrane filter is clogged.

SERVICE RECORD:
DATE OF PURCHASE:____________
DATE OF INSTALLATION/SERVICE:____________
Water Pressure at the pressure gauge (when the making water)__________psi
Water Pressure at the pressure gauge (when the system shut-off and the tank is full)__________psi

Service Date	Date	Date	Date	Date
1st stage sediment				
2nd stage carbon				
3rd stage carbon				
4th stage membrane				
5th stage inline carbon				
Pressure tank				
Auto-shut-off valve				
Check valve				
Flow restrictor				

LIMITED ONE-YEAR WARRANTY

1. **What your warranty covers:**
   Koolermax Reverse Osmosis Systems are warranted to the original owner to be free of defects in material and workmanship from the date of manufacture for one year as follows:
   a. Manufacturer will, within one year of purchase, replace the defected parts (excluding filters) at no charge.
   b. The replaceable filters are not warranted since the service life of replaceable filter varies with local water conditions and thus not warranted.
2. **Conditions of Warranty:**
   a. System must be maintained and serviced with the manufacturer original replacement parts and filters. The performance of your drinking water system is directly related to the conditions of the water been treated and the particular application in which it is used. Therefore, manufacturer's liability is limited to the cost of repair of the RO systems. **The manufacturer is not liable for incidental or consequential damages of any kind.** Systems must be installed and operated in accordance with manufacture's recommended procedures and guidelines. Warrenty is voided if the system is modified in any way without an records with manufacturer.
3. **What Koolermax Reverse Osmosis Systems will not do:**
   a. Warranty is void if product failure or damage results from freezing, neglect, misapplication, fouling with sediment, scale or failure to operate the system in accordance with the instructions contained in this manual.
   b. The following operating conditions must also be followed for this warranty to be valid:
      - The hardness of the water cannot exceed 7 grains per gallon or 120 ppm.
      - No iron can be present in feed water. Or iron should be removed from feed water.
      - The pH of the water must not be lower than 3 or higher than 11
      - Feed water Total Dissolved solids (TDS) should not exceed 1000 ppm.
      - Feed water temperature between 90 F and 45 F or (32C and 5 C)
4. **Obtaining Warranty Service:**
   For Warranty service, obtain a Return Merchandise Authorization (RMA #) number from the manufacture or distributor. You can also contact our technical support department to obtain the RMA #, visit our web site at http://www.koolermax.com or email your request to tech@koolermax.com
5. **Limitations and exclusions:**
   Manufacturer will not be responsible for any implied warranties, including those of merchantability and fitness for a particular purpose. Manufacturer assumes no liability whatsoever for any incidental and consequential damages, including loss of revenue, loss of time, travel expenses, inconvenience, and any damage caused by the equipment and its failure to function properly.