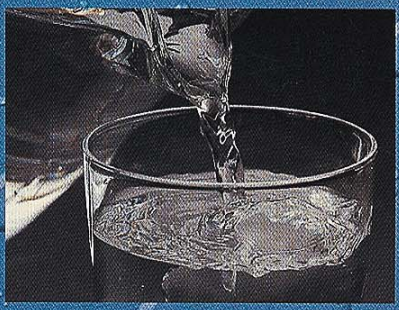
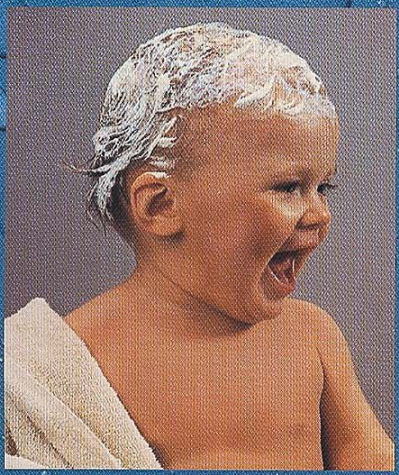
KINETICO®





Owner's Manual

Since 1970, Kinetico Incorporated has been designing and manufacturing products to improve the quality of your water. Today, Kinetico offers a complete line of quality water systems to solve your water problems. Pioneers in non-electric, demand operated water processing, Kinetico continually sets the direction for the entire water quality industry.

Congratulations for choosing Kinetico to improve the quality of your water. You will immediately begin to notice the numerous benefits of having quality water throughout your home and the benefits of having a Kinetico Quality Water System.

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The Kinetico Water Conditioner

Now that your Kinetico Water Conditioner is installed, you can enjoy all the benefits of having soft water. For those of you who are not accustomed to soft water, here are some tips:

HOW TO USE SOFT WATER

1. Use pure soap products.

Most leading brands of laundry soaps, household cleaners and

shampoos contain large amounts of detergents. The harsh chemicals in these detergents are necessary when using hard water, but you won't need them with soft water. With soft water, we recommend you use pure soap products. You'll be able to use less expensive products with excellent results. If you continue to use detergents, you should significantly cut back on the amount used. Your Kinetico dealer can provide you with more information and recommended detergent amounts.

2. Use less soap and household cleaners.

When combining soap or cleaners with water, start by cutting the amount of soap you normally use in half. You may even find you can use as little as one-quarter the amount you were using. Hardness minerals in water interfere with soap's cleaning ability. Once removed, soap can do its job. Even though you'll use less soap, you'll get more suds and cleaner results.

It's especially important to cut down on the amount of laundry soap you use. Washing clothes in soft water not only means you'll need less soap to get your clothes clean, but also that the soap you do use will rinse out completely. Washing in soft water makes your clothes look whiter and brighter, and they'll last longer too.

After bathing in soft water, your skin should feel "slippery." It's not soap left on your skin. What you're feeling is your own smooth skin without any leftover soap curd or residue. When you bathed in hard water, you were never able to rinse this residue off completely. The soap curd that left a ring in your bathtub was also left on your skin. But now that you have soft water, you'll feel soft, smooth and clean.

3. Reduce or eliminate the use of fabric softeners.

Fabrics washed in hard water retain soap curd or residue making them "crackle" when removed

from the dryer or stiff if air-dried. Fabric softeners were necessary with hard water to keep your clothing soft, but with soft water, you can reduce your use of fabric softeners or eliminate them altogether.

4. Take special precautions with automatic dishwashers.

Soft water, when combined with caustic phosphates in some dishwasher detergents and very high temperatures in the dry cycle, can etch dishes and glassware. To prevent this possibility:

- use the "no heat" dry cycle on your dishwasher;
- use the minimum amount of a good quality, low phosphate dishwasher soap needed to clean your dishes. This may be as little as 20 percent of the amount recommended by the appliance manufacturer or on the soap box;
- wash good china and crystal by hand.

5. Special care for plants and fish.

Water your lawn, shrubs and outside plants from an outside hard water faucet or put your water conditioner in by-pass before watering. Be sure to reset the by-pass to the service position when finished. Depending on your water hardness level, amount of rainfall and how often you water, you could use soft water for outside watering, but why waste your soft water?

Many houseplants can be watered with soft water although some houseplants can be highly sensitive to the elevated level of

sodium ions in soft water. You may prefer to water houseplants with hard water or water from a Kinetico Drinking Water System.

Fish accustomed to hard water may have trouble with an abrupt change to soft water. Make the change gradually over a period of seven to 14 days by blending hard and soft water until the tank contains 100 percent soft water. Once using soft water, you should notice that your fish tank will stay cleaner longer.

How Your Water Conditioner Works

Hard water contains calcium and magnesium. When hard water passes through the resin beads inside a Kinetico Water Conditioner, the beads attract and hold the calcium and magnesium ions, giving up sodium ions in exchange. After this ion exchange process, the water leaving your Kinetico Water Conditioner is soft.

Once the resin bed is loaded with calcium and magnesium ions, it must be cleansed (or regenerated) so that it can continue to soften water. The salt in your salt storage tank mixes with water to wash the resin beads. The brine solution loosens the hardness minerals which have built up on the resin beads; then the system backwashes and flushes the hardness minerals away.

Once this is complete, the resin beads hold sodium ions. The system is again ready to exchange the sodium ions for more calcium and magnesium ions.

Unlike most other systems, the Kinetico Water Conditioner's "cleaning" or regeneration process is done with soft water. Since you already know what a difference cleaning with soft water can make throughout your home, it only makes sense that the Kinetico Water Conditioner cleans itself with soft water too. And, only clean, soft water is used for make-up water in the salt storage tank.

What Makes Your Kinetico Water Conditioner Different

Kinetico Water Conditioners are powered by the energy of moving water, not electricity. So there's nothing to plug in, no buttons to push, timers to set and reset, or adjustments to make. You really don't need to know how to operate your Kinetico Water Conditioner - it runs itself, not you.

Your Kinetico Water Conditioner has a built-in water meter which means it operates "on demand" based on your actual water usage. With demand operation, your water conditioner can regenerate at any time of the day or night. It regenerates when necessary, so it could be a simple flush of the toilet or run of a faucet to send your water conditioner into regeneration. Depending on your water usage, your Kinetico could regenerate more frequently (if you have a house full of guests, for instance) or not at all for several days (if you're on vacation). Demand operation ensures maximum efficiency while providing you with a continuous supply of soft water - even as your water usage changes.

The actual regeneration process of a Kinetico Water Conditioner is different from other systems. Kinetico Water Conditioners use a process called countercurrent regeneration (instead of an old fashioned, 4- or 5-cycle regeneration) which has long been recognized as the optimum process for regenerating a resin bed. Kinetico is able to effectively use this process since our water conditioners regenerate with soft water. If soft water isn't used, countercurrent regeneration is less effective.

The twin tank design of a Kinetico Water Conditioner provides you with a continuous supply of soft water any time of the day. When one tank needs to regenerate, service automatically switches to the other. So go ahead and do a week's worth of laundry in one day. Your Kinetico Water Conditioner can handle it.

Maintaining Your Water Conditioner

Your conditioner is engineered to provide you with quality water without requiring extensive maintenance. Some routine maintenance is necessary to keep your conditioner working properly. Should you have any questions or need any assistance, contact your Kinetico dealer. NOTE: Leaky faucets, toilets or pipes should be repaired to ensure proper product performance.

Changing The Prefilter

For certain types of water supplies, Kinetico recommends that an in-line prefilter be installed before the water conditioner. Periodically, you will need to change this prefilter; how often will depend on your water supply. Ask your authorized Kinetico dealer for more information.

To do so:

Shut down the water supply to the prefilter and turn off the valve following the prefilter to avoid draining the lines in your home. Then place a bucket or container underneath the prefilter's housing to catch any spills. Before removing the housing, depressurize the system by pressing the red button on top of the filter housing. Water will leak out around the button. Unscrew the filter housing by taking hold of it and turning it clockwise (as viewed from above). Care should be taken since the housing will be full of water. Place a new prefilter into the housing. Before you reinstall the housing, make sure the black O-Ring near the top of the housing is still securely in place. Tightly screw the housing back in place by turning it counterclockwise. Turn on the water supply. NOTE: Prefilter styles vary, and yours may not be exactly as described above.

Adding Salt

Make sure your salt storage tank never runs out of salt. Use a good grade of salt processed especially for water conditioners which is available from your Kinetico dealer. DO NOT USE ROCK SALT as it often contains dirt or foreign matter.

Manual Regeneration

If you do let your salt storage tank run out of salt, you will have to manually regenerate the unit after adding salt. Wait a minimum of 30 minutes after adding salt. Depressurize the system by turning the by-pass valve to the "OFF" position (see By-pass section) and opening a soft water faucet somewhere in your home until the pressure is cleared. This will make it easier to manually regenerate your water conditioner.

Locate the black mark on the inside of the meter control disk inside the clear cap on top of the control valve. Using a Phillips

screwdriver, push down on the softener valve screw in the center of the clear cap and turn clockwise, advancing the black mark to the closest "BRINE" position. Return the by-pass valve to the service position. Repeat the manual procedure after the water flow stops (11 - 90 minutes, depending on the model) to be sure both resin tanks are regenerated. Remember, if your hot water tank refilled with hard water, it may take several days for your water to feel soft again.

By-pass

There may be times when you need to shut off the water supply to your entire house. To do this, set the by-pass valve to the off position. No water will flow through the house. To restart the water, set the by-pass valve to the service position. You may put the conditioner into by-pass at any time, if necessary, by putting the by-pass valve into the by-pass position. You will still get water throughout the house; however, all of the water will be untreated. To return the conditioner to service, set the by-pass valve to the service position. NOTE: By-pass styles vary and yours may not be as described.

Cold Weather Protection

If your Kinetico Water Conditioner is installed outside or in an area that is not heated, you may want to take precautionary measures to prevent damage to your unit from freezing. NOTE: Kinetico's warranty doesn't include damage to your system due to freezing.

If you have questions about your Water Conditioner, or if you suspect that it isn't working properly, contact your authorized Kinetico dealer.

Model	25	30	60	100	50 50C/51	Quad 50/51	Quadra-Flo Filter/Softener	Quadra-Flo Carbon/Softener	2000
Certified Flow Rate* @ 15 psi drop	26.5 l/min (7 gpm)	26.5 l/min (7 gpm)	30.3 l/min (8 gpm)	34.1 l/min (9 gpm)	22.7 l/min (6 gpm)	22.7 l/min (6 gpm)	30.3 l/min (8 gpm)	30.3 l/min (8 gpm)	68.2 l/min (18 gpm)
Peak Service Flow rate	45.4 l/min (12 gpm)	56.8 l/min (15 gpm)	56.8 l/min (15 gpm)	56.8 l/min (15 gpm)	56.8 l/min (15 gpm)	56.8 l/min (15 gpm)	56.8 l/min (15 gpm)	56.8 l/min (15 gpm)	113.6 l/min (30 gpm)
Resin per Tank, cu. ft.	0.3	0.4	0.7	1.5	0.4	0.4	Media(Top)0.2 Resin(Bottom)0.7	Carbon(Top)0.25 Resin(Bottom)0.7	2.25
Capacity per Cycle, grains	4,782	7,334	14,888	37,270	5,326	5,326	14,500	14,500	15 lb. SETTING: 58,750 / 30 lb. SETTING: 73,437
Grains Exchange per Pound of Salt	3,825	3,667	3,772	3,727	5,326	5,326	3,295	3,625	15 lb. SETTING: 3,916 / 30 lb. SETTING: 2,448
Salt Used per Cycle	0.56 kg (1.25 lbs)	0.9 kg (2 lbs)	1.8 kg (4 lbs)	4.5 kg (10 lbs)	0.45 kg (1 lb)	0.45 kg (1 lb)	1.98 kg (4.4 lbs)	1.8 kg (4.0 lbs)	15 lbs / 30 lbs
Max. Flow Rate to Drain during Regeneration	9.1 l/min (2.4 gpm)	7.6 l/min (2.0 gpm)	9.1 l/min (2.4 gpm)	12.9 l/min (3.4 gpm)	6.8 l/min (1.8 gpm)	11 l/min (2.9 gpm)	11.4 l/min (3.0 gpm)	9.5 l/min (2.5 gpm)	20.4 l/min (5.4 gpm)
Min./Max. Operating Pressure	103.4 - 861.9 KPa (15 - 125 psi)								172.4 - 861.9 KPa (25 - 125 psi)
Min./Max. Operating Temp.	2° - 49° C (35° - 120° F)								
Max. Working Pressure, psig	861.9 KPa (125 psi)								

SODIUM INFORMATION: Water conditioners using sodium chloride for regeneration add sodium to the water. People who are on sodium-restricted diets should consider the added sodium as part of their overall sodium intake.

NSF

Kinetico Water Conditioners are tested and certified by NSF International against ANSI/NSF Standard 44 for softener performance and chemical reduction of barium and radium, 226/228. The Kinetico Quadra-Flo Filter/Softener is tested and certified by NSF International against the requirement of ANSI/NSF Standard 42 - Particulate Reduction Class III and Standard 44 - softener performance and chemical reduction of barium and radium 226/228. NSF International certifies our product performance and reviews our manufacturing facility and procedures to assure product consistency and integrity. They also assure that our literature accurately reflects our product capabilities.

*Certified Continuous Flow Rate as validated by NSF International/represents continuous service flow of water at 15 psi pressure drop/is not an indication of maximum flow rate or unit limitation.

U.S. Patents:4,298,025;4,336,134;4,579,242;4,889,623;5,022,994;5,490,932

The Kinetico Drinking Water System

Water is the most important liquid in the world. And although the water you use for drinking and cooking constitutes less than one percent of all water used in the home, its quality is probably most important to you.

Experts suggest you drink approximately eight, eight-ounce glasses of water per day. Now that you have a Kinetico Drinking Water System, you can rest assured you're drinking clean, high quality water. And it will taste great too. Drinking those eight glasses of water will be a pleasure, not a chore.

HOW TO USE HIGH QUALITY DRINKING WATER

Since the Kinetico Drinking Water System is significantly reducing heavy metals (such as lead), chemicals, minerals, and unpleasant tastes and odors in your water*, you may have to make some adjustments when using Kinetico Water for cooking.

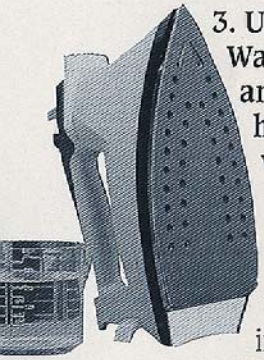
*The contaminants listed are not necessarily in your water

1. Let your taste buds decide how much water to use.

When mixing concentrated juices and drinks or making gelatin, tea or coffee, you may need to adjust the amount of Kinetico Water used. You may discover that you can use less coffee and tea and still get the desired taste. Or in the case of concentrated drinks, you can add more Kinetico Water without getting a watered-down taste. Also, it probably won't be necessary for you to descale your automatic coffee maker with vinegar as recommended.

2. Kinetico Water is ideal for cooking and baking.

Don't forget to use Kinetico Water for cooking pasta, and washing fruits and vegetables. Whenever a recipe calls for water, reach for your special drinking water faucet.

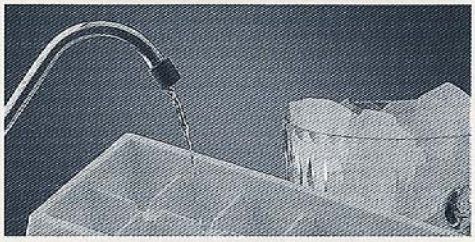


3. Use Kinetico Water in irons and small humidifiers/ vaporizers.

For extended operation and easier maintenance, use Kinetico Water in irons and small humidifiers. You'll no longer have to buy distilled water, or suffer the consequences of using your everyday water in irons and humidifiers. Since Kinetico Water has a reduced mineral content, it's ideal for use in these appliances, and it's right at your kitchen sink.

4. Make ice cubes with Kinetico Water.

If your refrigerator/freezer is equipped with an ice maker, you may want to consider running a line from your Kinetico Drinking Water System to the ice maker. If you don't have an ice maker, be sure to fill your ice cube trays with Kinetico Water. Either way, you'll be able to enjoy better tasting and clearer ice cubes.



5.Houseplants and pets like Kinetico Water too.

Don't forget about your plants and pets. Just like you, they'll love Kinetico Water.

How Your Drinking Water System Works

Your Kinetico Drinking Water System offers exclusive five stage protection to ensure you're always getting good, clean water. The system significantly reduces the heavy metals, minerals, chemicals, and objectionable tastes and odors that may be in your water.

Ⓐ The first filtration stage, the prefilter (part numbers: sediment 3312, carbon sediment 5305), prepares the water for the reverse osmosis process. The five-micron filter captures sediment and small particulate matter protecting the reverse osmosis membrane and enhancing its performance.

Ⓑ After prefiltration, the water travels to the reverse osmosis module where the primary cleaning is done. Here, water is forced through a semipermeable membrane under pressure and processed slowly, drop by drop. Many or most minerals, chemicals or objectionable matter that might have been in your water are flushed to drain.

Ⓒ After the water is processed, it is stored in a tank until needed. To keep the water fresh, it is circulated within the storage tank to eliminate the potential for stale water.

Ⓓ After leaving the storage tank, the water travels to the next protection stage of your drinking water system - the MACguard Filter™ (part number 2760, *Plus* models part number 7273). Containing activated carbon, the MACguard Filter gives a final polish to your water.

Ⓔ The final protection stage is a special lead-free faucet which is mounted on your sink. With this faucet, you can be sure that lead won't be added back into your drinking water.

What Makes Your Kinetico Drinking Water System Different?

Like other Kinetico equipment, the Kinetico Drinking Water System is non-electric and demand operated. With demand operation, the system produces high quality water and maximizes water efficiency. When the storage tank is full, the system shuts down. It will only begin making water again when the storage tank is nearly depleted. This storage tank turnover feature ensures fresher, better-tasting water and prevents unnecessary continuous water production. Unlike other systems, processed water is not constantly sent to drain.

Kinetico Drinking Water System-Plus models - After shutdown, the system initiates the EverClean Rinse™, which is patented and exclusive to Kinetico. The membrane's surface is cleansed and left to bathe in clean, processed water. This extends the useful life of the membrane, enables it to maintain a high level of performance and prevents inorganic contaminants from migrating into the treated water during shutoff.

One of the system's most unique features is the automatic shutoff of the MACguard Filter.

After 500 gallons of water have been processed through the MACguard Filter, a snap valve completely stops the water flow. The filter cannot be reset, and no more water can be drawn from the system. This signals the need to change the cartridge, but more importantly, it prevents you from using the cartridge beyond its capacity. If overused, contaminants previously removed will dump into the treated water making it worse rather than better.

Patented
EVERCLEAN™
RINSE

FILTER
MACGUARD™
Patented

Maintaining Your Drinking Water System

The Kinetico Drinking Water System is engineered to take the guesswork out of quality water. It will tell you when the routine maintenance needs to be performed to keep your drinking water system working properly.

Filter Changes

If you open your faucet and don't get any water, it could mean two things: your storage tank is out of water and the drinking water system is making more, or your MACguard Filter has shut off. Wait an hour or two and try to draw water from the faucet again. If you still don't get any water, your MACguard Filter has shut off.

How long a MAC cartridge will last depends on your drinking water usage. It could last for a few months or a few years. An average family of four with average drinking water use can expect the cartridge to last approximately nine months to one year.

When your MACguard Filter does shut off, we recommend you call your local authorized Kinetico dealer. They will change your MAC cartridge and prefilter, completely sanitize your system, check your water and make sure your system is operating properly. If you choose to install your new MAC cartridge yourself, follow the instructions carefully. Be sure to completely sanitize your system by following the instructions provided in the "Sanitation Procedure" section of this owner's manual to prevent contamination from human contact.

Shutting Off The System

If you should ever discover a problem with your drinking water system, turn off the water supply to the system. Then call your authorized Kinetico dealer for service.

NOTE: The Kinetico Drinking Water System's operational, maintenance and replacement instructions must be followed to ensure proper system performance. Recommended hardness is zero to 10 gpg for extended product life. Do not use where water is microbiologically unsafe or with water of totally unknown quality. Systems claiming cyst reduction may be used on disinfected water containing cysts.

Specifications for Drinking Water Systems with CA/CTA Membranes (520,521)

TDS ppm maximum level:.....1000
pH Range:.....4-9
Pressure Range:.....40-100 psi/275.8 - 689.5 KPa
Water Supply:.....0-10 gpg hardness 0-.5 ppm iron
Temperature Range:.....35˚-100˚F/2˚-38˚C
Discharge Water/Product Water Ratio:.....4 to 1
Typical Product Water Production Rate:.....8 gpd

Specifications for Drinking Water Systems with Thin Film Composite Membranes (526,527,528,529) (516,517,517N,518,519)

TDS ppm maximum level:.....4000
pH Range:.....3-11
Pressure Range:.....35-100 psi/241.3 - 689.5 KPa/517N 40-100 psi
Water Supply:.....0-10 gpg hardness 0-.5 ppm iron
Temperature Range:.....35˚-100˚F/2˚-38˚C
Discharge Water/Product Water Ratio:.....7.7 to 1.....3 to 1
Typical Product Water Production Rate:.....10.4 gpd....12.7 gpd

NSF

Kinetico Reverse Osmosis Drinking Water Systems are tested and certified by NSF International against the requirements of ANSI/NSF Standard 58 for barium, radium 226/228, cadmium, cyst, fluoride, hexavalent chromium, lead, mercury, nitrate (517N only), selenium, TDS, trivalent chromium and turbidity. VOC reduction capabilities on Plus models only.

Kinetico Drinking Water System-Plus conforms to ANSI/NSF Standard 53 for VOC reduction. See performance data sheet for individual contaminants and reduction performance.

Model 517N is acceptable for treatment of influent concentrations of no more than 27 mg/L nitrate and 3 mg/L nitrite in combination measured as N and is certified for nitrate/nitrite reduction only for water supplies with a pressure of 280 KPa (40 psig) or greater.

NSF International certifies our product performance, and reviews our manufacturing facility and procedures to assure product consistency and integrity. They also assure that our literature accurately reflects our product capabilities.

U.S. Patent Numbers 4,698,164; 4,629,568; 4,650,586

Plus Models Only

Sanitation Procedures

If you choose to change the cartridges on your Kinetico Drinking Water System yourself, follow these instructions to fully sanitize your system. Wash your hands thoroughly and do not touch any internal portions of the system. Or call your local Kinetico dealer who can change the necessary filters, disinfect your system and analyze your water to be sure it is of the best quality.

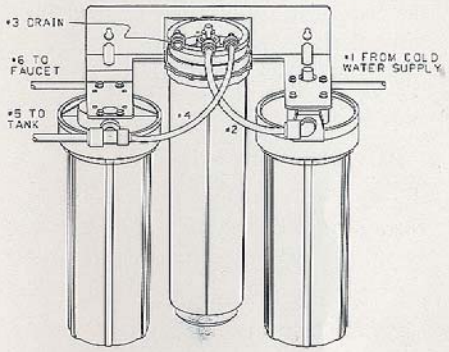
Note: Be prepared to catch any water when disconnecting and sanitizing your Drinking Water System.

Sanitation Procedure for Kinetico Drinking Water System-Plus

❶ Close the inlet valve and storage tank valve. Open the drinking water faucet at the sink to depressurize the system. Leave the faucet open. Disconnect the permeate line (#4) from the the R.O. module permeate port. Disconnect line #2 from the prefilter outlet. Connect the open end of line #4 to the prefilter outlet.

❷ Remove the MACguard Filter housing by turning it in a clockwise direction (when viewed from above). Be prepared to catch any residual water when removing this housing. Discard the MAC cartridge. Reinstall the empty housing, and open the storage tank valve. Any remaining water in the storage tank should discharge through the open drinking water faucet.

❸ Remove the prefilter housing and discard the cartridge inside. Put two teaspoons of bleach into the empty housing, then fill it with clean water. Allow the housing to sit for one minute, then discard the



bleach and water mixture. Insert a new prefilter cartridge and fill the housing 3/4 full with clean water. Put two teaspoons of bleach in the center of the prefilter cartridge and install the housing.

❹ Close the drinking water faucet. The storage tank valve should still be open. Open the inlet valve. This should allow chlorinated water to fill the storage tank. After approximately five minutes, close the storage tank valve and the inlet valve. Open the drinking water faucet to depressurize the filter housings. Remove the MACguard Filter housing and discard the water. Fill the housing

with approximately one teaspoon of household bleach and clean water. Let sit for about one minute. Empty the housing and install a new MAC cartridge. Reinstall the housing.

❺ Open the inlet valve to rinse the new MAC cartridge. The drinking water faucet should still be open and water should begin to flow from it. Close the inlet valve after rinsing the cartridge for 25 minutes. Close the drinking water faucet.

❻ Remove line #4 from the prefilter outlet. Reconnect line #2 to the prefilter outlet. Line #2 should now connect the prefilter outlet to the R.O. module inlet port (see illustration).

Find the serial number located on the bracket assembly. A "C" after the number indicates that the unit utilizes a Cellulose Acetate/ Cellulose Tri Acetate blend membrane (CA/CTA). This unit should have a polypropylene (white) prefilter cartridge to remove sediment only. A "T" after the serial number indicates that the unit utilizes a Thin Film membrane (TF). If used with a chlorinated water source, a combination carbon/sediment prefilter (black) cartridge must be used to remove the chlorine as it can damage the reverse osmosis membrane. If used on a non-chlorinated water source, a polypropylene prefilter cartridge should be used.

For CTA Membranes

Remove the prefilter housing, add one teaspoon of bleach to the center of the prefilter cartridge and reinstall the housing.

For TF Membranes

Remove the prefilter housing and discard the water inside. Fill the housing 3/4 full with clean water. Add a solution containing approximately 1/3 cup clean water and one level teaspoon of Iron Out or sodium meta bisulfite to the center of the prefilter cartridge. Reinstall the prefilter housing.

❼ Open the inlet valve and flush the solution through the R.O. module for 20 minutes. Allow the permeate to discharge into a drain or bucket.

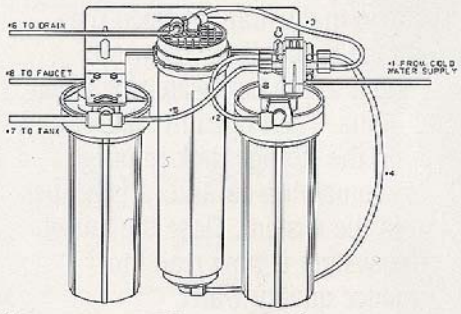
❽ Close the inlet valve. Reconnect the permeate line #4 to the R.O. module permeate port. All tubing should now be properly installed. Open the inlet valve and the storage tank valve. Examine the system for leaks.

❾ Fully open the drinking water faucet and allow the water to discharge from the storage tank. When the flow slows to a trickle, the water has been dispensed and all carbon fines have been flushed from the new MAC cartridge. Close

the drinking water faucet. The system is now ready to produce quality water.

Sanitation Procedure for Kinetico Drinking Water System

❶ Close the inlet valve and the storage tank valve. Open the drinking water faucet at the sink to depressurize the system. Leave the



faucet open. Disconnect the permeate line (#5) from the tee fitting on the MACguard Filter. Disconnect line #4 from the bottom of the R.O. module. (Be prepared to catch any water that may run out of the R.O. module.) Connect line #4 to the tee fitting on the MACguard Filter.

❷ Remove the MACguard Filter housing by turning it in a clockwise direction (when viewed from above). Be prepared to catch any residual water when removing this housing. Discard the MAC cartridge. Reinstall the empty housing, and open the storage tank valve. Any remaining water in the storage tank should discharge through the open drinking water faucet.

❸ Remove the prefilter housing and discard the cartridge inside. Put two teaspoons of bleach into the empty housing, then fill it with clean water. Allow the housing to sit for one minute, then discard the bleach and water mixture. Insert a new prefilter cartridge and fill the housing 3/4 full with clean water. Put two teaspoons of bleach in the center of the prefilter cartridge and install the housing.

❹ Close the drinking water faucet. The storage tank valve should still be open. Open the inlet valve. This should allow chlorinated water to fill the storage tank. After approximately five minutes, close the storage tank valve and the inlet valve. Open the drinking water faucet to depressurize the filter housings. Remove the MACguard filter housing and discard the water. Fill the housing with approximately one teaspoon of household bleach and clean water. Let sit for about one minute. Empty the housing and install a new MAC cartridge. Reinstall the housing.

❺ Open the storage tank valve. The drinking water faucet should still be open. Water should begin

to flow from the storage tank through the open faucet. This will help rinse any carbon fines from the new MAC cartridge. After about 2-5 minutes, the flow should stop. Close the faucet.

6 Remove line #4 from the tee fitting on the MACguard filter. Reconnect line #4 to the bottom of the R.O. module. Line #5 should still be disconnected as described in step 1. Remove the prefilter housing and discard the water inside. Fill the housing 3/4 full with clean water. Add a solution containing approximately 1/3 cup clean water and one level teaspoon of Iron Out or sodium meta bisulfite to cartridge. Reinstall the prefilter housing.

7 Open the inlet valve and flush the solution through the R.O. module for 20 minutes. Allow the permeate to discharge from line #5 into a bucket or pan.

8 Reconnect the permeate line #5 to the tee fitting on the MACguard Filter. All tubing should now be properly installed as shown in illustration. Open the storage tank valve. Allow the system to produce water for several hours. Then open the faucet and drain the storage tank to purge any remaining air and carbon fines from the system. Close the faucet. The system is now ready to produce quality water.

Problem Water Systems

Problem water can generally be defined as water containing the following: iron, hydrogen sulfide, manganese, bacterial iron, excessive chlorine, sediment, silt, tannin and low pH.

Kinetico has developed several systems to treat many different types of problem water. They include the Aeration Building Block System, Extreme Iron Filter, Tannin Plus Softener, Quadra-Flo Carbon/Softener, Quadra-Flo Filter/Softener and Para-Flo Backwashing Filters. These systems utilize the same valving concept as Kinetico's standard softeners; some of the control valve functions have been modified due to specific needs.

With the exception of the Tannin Plus Softener, all of Kinetico problem water units utilize parallel flow. This means that both tanks are being utilized during the service cycle, and this is important for filter systems. Para-Flo systems offer several advantages when compared to single tank systems.

1. Utilizing both tanks for service allows more contact time between the feed water and tank process media when compared to same size, single tank filters.
2. Using a twin tank, parallel system allows you to backwash with clean process water which will protect your problem water unit and your distribution system.
3. Keeping water flowing through both tanks helps reduce bacteria growth should bacteria be present in the problem water being treated.
4. Backwashing or regenerating one tank at a time requires less flow demand from your well pump and discharges less water to a septic system when compared to a larger, single tank system.

Keep in mind that problem water conditions vary from place to place and application to application. To recommend the proper equipment necessary to solve your water problem (or problems), several things must be taken into consideration. In addition to an accurate water test, information on your water usage, water supply and plumbing must also be analyzed. Your authorized Kinetico dealer has chosen your Kinetico system based on your particular situation.

System Information

AERATION BUILDING BLOCK SYSTEM

A complete aeration system consists of four different processes: neutralization, air oxidation, filtration and softening. This system is designed for ferrous and ferric iron, low pH neutralization, hardness removal and less than one ppm of hydrogen sulfide. The components of the system can be used together or stand alone.

EXTREME IRON FILTER

The Kinetico Iron Filter for Extreme Water is intended for use in residential applications that have high iron content, low pH and hardness levels below 30 grains per gallon. This system is capable of softening, neutralizing and removing iron all in one process.

To ensure the proper operation of your system, be sure the necessary regenerants are always used. Absence of a regenerant will result in a call for service.

TANNIN PLUS® SOFTENER

The Tannin Plus Softener units are designed to remove tannins and their related color. These softeners use a bed of standard high-capacity cation resin with a layer of special tannin removal resin on top. By a process of ion exchange/absorption, the tannin removal resin beads "attract" the tannic acid. Then during the regeneration, the tannin is released from the resin beads and flushed out the drain. The tannin removal resin also demonstrates high resistance to iron fouling.

If your water supply contains a high amount of alkalinity, a Tannin Plus T.A. system has been installed. This system utilizes an FDA approved, non-toxic additive during regeneration to eliminate any scale build-up inside the resin tanks.

QUADRA-FLO CARBON/SOFTENER

This system consists of an over-under tank design. The two top tanks contain activated carbon to remove chlorine from the water. The two lower tanks contain resin to soften the water. The system utilizes a special regeneration that backwashes first, then proceeds through the normal brining cycle, then backwashes again.

QUAD-50/51 CARBON/SOFTENER

A high-efficiency version of the Quadra-Flo Carbon/Softener, this system utilizes the same quality features to remove chlorine and soften water that is already virtually free of iron and other problems. The difference is a quicker regeneration, lower water consumption and less money spent on salt.

QUADRA-FLO FILTER/SOFTENER

This system consists of an over-under tank design. The two top tanks contain a unique ceramic filter media which filters oxidized iron. The two lower tanks contain resin to soften the water. The system utilizes a special regeneration cycle that backwashes first, then proceeds through the normal brining cycle, then backwashes again.

PARA-FLO BACKWASHING FILTERS

Kinetico's backwashing filters are designed to handle a wide variety of problem water. Our backwashing filter can be used with several different medias including activated carbon, birm, calcite, ceramic media and filter-ag.

These medias can handle such problems as turbidity, iron, low pH, chlorine and oxidized hydrogen sulfide. The solutions, once again, depend on an accurate water test so that the proper media and equipment can be recommended.

Maintenance Of Your Problem Water System

The problem water system installed in your home is the finest on the market. It is important that your system is maintained properly to ensure excellent water quality. Some Kinetico Problem Water Systems require periodic maintenance. Be sure to ask your authorized Kinetico dealer about the operation of your system and what, if any, maintenance is required.

If at any time you suspect your problem water system is not working properly, please call your authorized Kinetico dealer.

KINETICO INCORPORATED NEWBURY, OHIO 44065

Product No. 655 1/98 Printed in USA