Owner's Manual

Tier1® WATER
WHOLE HOME SOLUTIONS

Whole House Carbon and KDF Water Purification and Salt-Free Water Treatment System

Whole House Carbon and KDF Filter WH-CB-KDF
Whole House Salt-Free System WH-WS-SF

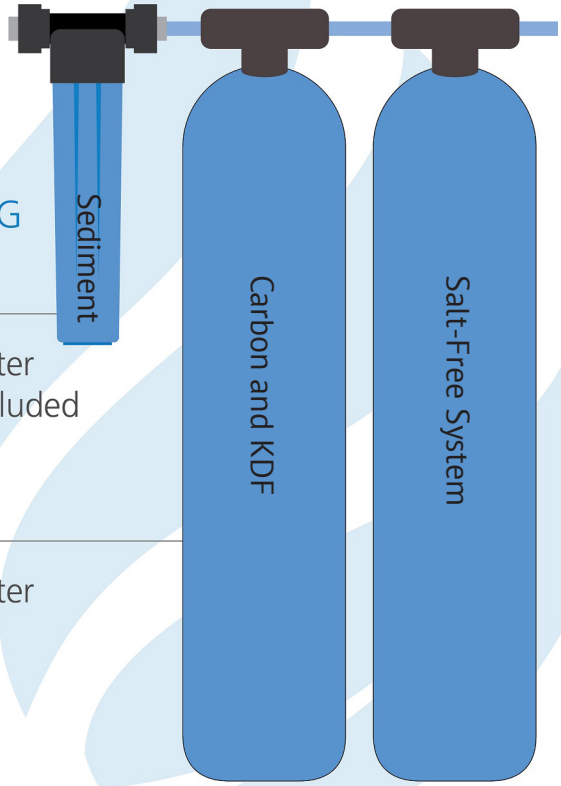
1. Read all instructions carefully before operation.
2. This system is not intended for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

Tier1 Technical Support:
1-855-378-9116

Table of Contents

Tier1®

EFFORTLESS INSTALLATION



CLEANER, GREAT TASTING WATER IN TWO STEPS

1 Connect sediment pre-filter to water supply using included valve and fittings.

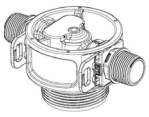
2 Connect sediment pre-filter to next levels of filtration

TIER1_WH_CB_KDF_SF_844
TIER1_WH_CB_KDF_SF_1054

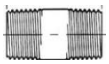
UNPACKING/INSPECTION

Check the entire unit for any shipping-related damage, missing parts, or damage to shipping cartons. Small parts needed to assemble the system are contained in a parts box. To avoid loss of small parts, keep them in the parts box until you are ready to use them.

Inlet/Outlet adapters (6)
Four 3/4", Two 1"



Adapter (cap) (2)



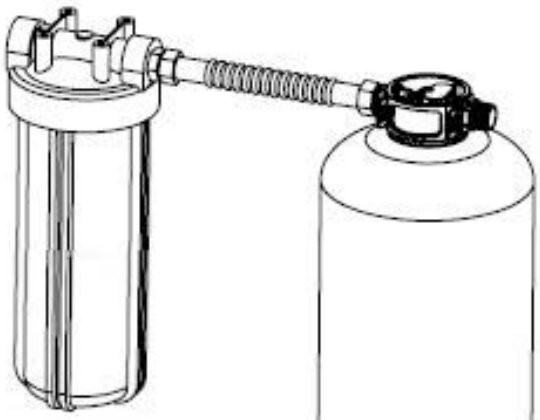
Stainless Steel Nipple (2)
Plastic Nipple (1)

Locking Clips (4)

Flex Connectors (3)

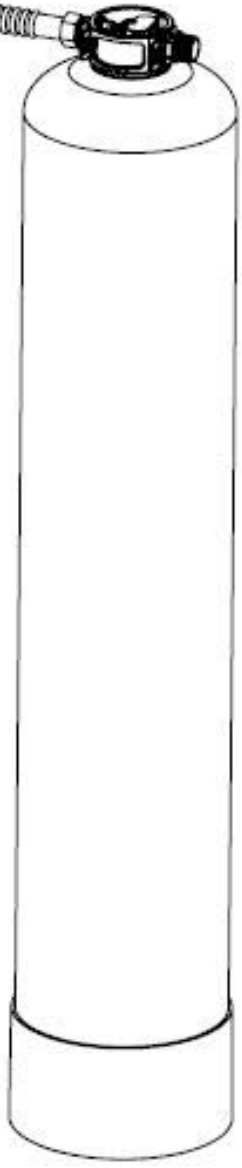
Ball Valve

Prefilter bracket, wrench, screws



Prefiltration System

Zippered Neoprene Tank Cover (Optional Upgrade)



Tank pre-filled with media (2)

OPERATING CONDITIONS

SPECIFICATIONS

Please review operating pressures, temperatures, and water chemistry limitations to ensure compatibility.

Carbon and KDF Tank		
System Specifications	**844**	**1054**
Service Flow Rate	5.2 gpm	7.2gpm
Filter Media Volume - Cubic Feet	.75 ft	1.5 ft
Filter Tank Size	8" x 44"	10" x 54"
Media Type	Activated Carbon with KDF	
Media Preloaded	Yes	
Water Temperature	41-100 degrees F	
Max Water Pressure	125 psi	
Plumbing Connections	3/4" straight adaptors	
Electrical Requirements	None	

NOTE: When installing both Carbon and KDF and Salt-Free Systems, the Salt-Free tank must be the last stage in the treatment train.

Salt-Free System Tank		
System Specifications	**844**	**1054**
Service Flow Rate	12 gpm	15 gpm
Filter Media Volume - Cubic Feet	.11 ft	.18 ft
Filter Tank Size	8" x 44"	10" x 54"
Media Type	Template Assisted Crystallization	
Media Preloaded	Yes	
Water Temperature	41-100 degrees F	
Max Water Pressure	125 psi	
Plumbing Connections	3/4" straight adaptors	
Electrical Requirements	None	
Hardness Max	75 gpg	
Ferrous Iron Max	0.3 mg/L	
Manganese Max	0.05 mg/L	
Copper Max	1.3 mg/l	
pH level	6.5 to 8.5	

Hydrogen Sulfide MUST be removed upstream.

Do not install any filters after the salt-free tank, or before any devices for which scale prevention is required. Point of use filters, e.g. carbon or Reverse Osmosis, are exempt from this requirement. Do not apply phosphate or any other anti-scalant either before or after the salt-free tank.

TOOLS, PIPE AND FITTINGS AND OTHER MATERIALS

Our systems are complete, self-contained, loaded with media and ready to use. Inlet and outlet fittings are included with the filter. To maintain full valve flow, 3/4" or 1" pipes to and from the filter fittings are recommended. You should maintain the same, or larger pipe size as the water supply pipe, up to the inlet and outlet. Use copper, brass, or PEX pipe and fittings. Some codes may also allow PVC plastic pipe.

Helpful Tools: screwdriver, Teflon tape, adjustable wrenches, razor knife
To avoid pinched o-rings during installation, apply NSF certified lubricant to all seals.

Note: The 1054 series salt-free system tank can support a flow rate up to 20 gpm but is limited by the prefilter to 15 gpm. Use of the prefilter is strongly recommended to help extend the life and efficacy of the salt free system media.

Additional tools may be required if modification into home plumbing is required.

INSTALLATION GUIDELINES

SAFETY GUIDE

For your safety the information in this manual must be followed to minimize the risk of electric shock, property damage, or personal injury.

Check and comply with your state and local codes. You must follow these guidelines.
Use care when handling the filter tank. Do not turn upside down, drop, drag, or set on sharp protrusions.

PROPER INSTALLATION

This system must be properly installed and located in accordance with the installation instructions before it is used.

Use only lead-free solder and flux for all sweat-solder connections, as required by state and federal codes. Maximum allowable inlet water pressure is 125 psi. If daytime pressure is over 80 psi, night time pressure may exceed the maximum. If necessary, use a pressure reducing valve to reduce the flow.

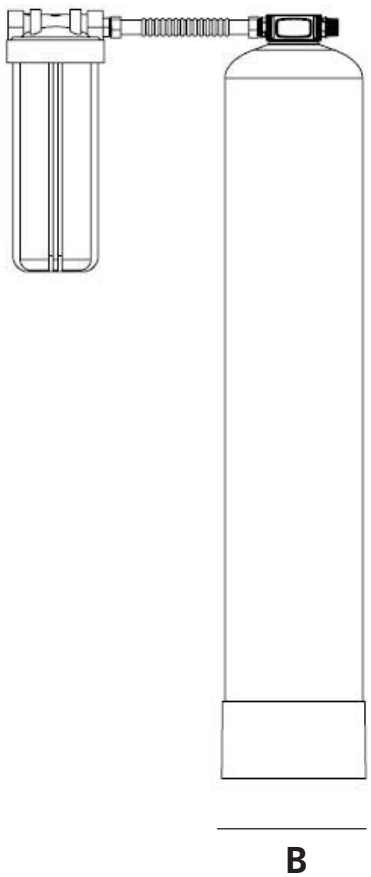
WARNING: Pre-filter must be installed level with tank head, as shown in below diagram.

Discard all unused parts and packaging material after installation. Small parts remaining after the installation could be a choking hazard.

Note: Because this system is designed to be an upflow system, the water flow direction through the media tanks will be opposite of the arrows on the tank caps.

SYSTEM DIMENSIONS

Models	A	B
844	48″	8″
1054	58″	10″



INSTALLATION

WHERE TO INSTALL

Place the filter tank as close as possible to the pressure tank (well system) or water meter (city water). Connect the filter to the main water supply pipe BEFORE the water heater.

DO NOT RUN HOT WATER THROUGH THE FILTER. Temperature of water passing through the filter must be less than 100° F. Keep the filter out of direct sunlight as its heat may soften and distort plastic parts.

Do not install the filter in a place where it could freeze as water freezing may damage the system. Install the filter in a place water damage is least likely to occur if a leak develops. The manufacturer will not repair or pay for water damage.

If installing in an outside location, you must take the steps necessary to ensure the filter, installation plumbing, wiring, etc., are as well protected from the elements, contamination, vandalism, etc., as when installed indoors.

INSTALLATION INSTRUCTIONS

1. If your hot water tank is electric, turn off the power to it to avoid damage to the tank's element.
2. If you have a private well, turn off the power to the pump, then shut off the main water valve. If you have municipal water, shut off the main valve. Turn on a cold water faucet,(preferably on the lowest floor of the house) until all pressure is relieved and the water flow stops.
3. **ON COPPER PLUMBING SYSTEMS BE SURE TO INSTALL A GROUNDING WIRE BETWEEN THE INLET AND OUTLET PIPING TO MAINTAIN GROUNDING.**
4. Solder joints near the adapter must be done before connecting piping to the adapter. Always leave at least 6" (152 mm) between the adapter and joints when soldering pipes connected to the valve. Failure to do so could damage the valve.
5. Attach the pre-filtration system to wall at height equal with tank adapter. Make sure you have the appropriate amount of space needed before attaching to walls/pipes.
6. Thread steel nipples into inlet and outlet on pre-filter housing cap.
7. Lubricate tank cap adapter o-rings with NSF certified lubricant and insert into inlet/outlets of tank caps. Insert red locking clips to lock in adapters. **Note the water flow should be opposite of the direction indicated by arrows on caps**.
8. Attach flex connectors to tank cap adaptors. Do not apply tape as they include a sealing washer.
9. Install system ball valve/shut-off valve prior to prefilter. Close ball valve.
10. Connect the ball valve, prefilter and tank together with the flex connectors. Make sure not to over tighten any plastic parts, and do not over bend the flex connectors.
11. Slowly turn on the main water supply. Check any new plumbing for leaks.
12. Slowly turn the ball valve, allowing water to flow through the system, watching for leaks.
13. **Note : Carbon filter special instruction:** Once the unit has filled sufficiently that water is at least equal to the height of the media, shut down the water for 15 – 20 minutes for the carbon to soak.
14. After soaking, remove the aerator screen from the nearest faucet, and run water at this faucet for at least 10 minutes until all carbon fines (black specks) are gone from the water and the system is free of any air or foreign material resulting from the plumbing work.
15. To verify water is clear, fill an 8 oz. glass with water. Wait 30 seconds, visually verify no sediment has settled to the bottom of glass. If sediment still present, flush and repeat until water remains clear.
16. If provided, cover tanks with zip-on neoprene sleeves. Your system is now ready for use.

INSTALLATION

IMPORTANT: IRON AND MANGANESE IN YOUR WATER

Iron and Manganese
Just as with conventional water softening media, the salt-free (scaleless) media needs to be protected from excess levels of certain metals that can easily coat the active surface, reducing its effectiveness over time. Public water supplies rarely present a problem, but if the water supply is from a private well you should confirm that the levels of iron (Fe) and manganese (Mn) are less than 0.3 mg/L and 0.05 mg/L respectively. Copper should be less than 1.3 mg/L.

Copper
Copper usually originates from new copper plumbing installed upstream of the salt-free system. If this condition exists, we recommend waiting 3-4 weeks before placing the system in operation. This will allow the copper surfaces to be fully flushed and to develop a natural protective surface. To further minimize any problem with excess copper, plumbers are advised to avoid applying excess flux on the inner surfaces of the pipe and to use a low-corrosivity water soluble flux listed under the ASTM B813 standard. Once the plumbing connections are complete, place the salt-free system in bypass prior to following the startup procedure, and flush the plumbing for at least 10 minutes.

Things to watch for during the first 30-90 days:
Faucet aerators and drains may plug occasionally as old scale is removed from your plumbing system and water heater. You may also see milky water while the descaling is taking place. This is because the salt-free system media is removing old scale deposits from your pipes.

INSTALLER NOTES RE: SALT-FREE SYSTEM

The salt-free, or scaleless, system differs from a conventional softener or media filter in a number of key respects. The system is light and only partially filled with media - please note this is normal. The Up-Flow operation of the system requires a lot of freeboard to allow the bed to fully fluidize. The system has no underbed, so you can tip the system over without any fear of upsetting the media. This makes transportation and installation much easier than conventional systems. Because the scaleless system operates in the Up-Flow mode, the tank connections are **opposite of the indicator arrows on the caps**. Please see the "important note about iron, manganese and copper" above. To retain the attractive appearance of your new water filter, clean occasionally with mild soap solution. Do not use abrasive cleaners, ammonia, or solvents. Never subject your system to freezing or to temperatures above 100° F.

SALT-FREE SYSTEM GOOD PRACTICES

If your dishwasher is severely coated with scale at the time of installation, we recommend that you purchase a product like Jet-Dry Dishwasher cleaner to accelerate the cleaning. After this initial cleaning the salt-free system media should keep it clean. We also recommend that you drain your water heater tank. This should be done 30 to 60 days after the salt-free system is installed, and again in one year. This is a good practice that can dramatically increase the life of your water heating appliance.

If you have an electric "tank type" water heater, for optimum results and higher efficiency, we recommend you change the heating elements to a "low watt density" model. Please insure that the watt density is specified at less than 70 watts per square inch, and is compatible with the brand you own. If you can only change one heating element, change the lower unit which operates most of the time. The salt-free system media will help keep the tank and heating elements free of scale and operating at peak efficiency.

TROUBLESHOOTING

ISSUES

ISSUE	POTENTIAL CAUSE	SOLUTION
Filter bleeds taste and odor or sediment	Bypass valve open	Close bypass valve
	Defective or stripped media bed.	Replace Media
	Quality of water has changed.	Analyze water sample to determine change.
	Filter capacity too small	Replace with larger unit or add another
	Leak between valve and central tube	Check if central tube is cracked or o-ring is damaged. Replace faulty parts.
Low water pressure	Iron or scale build-up in line feeding unit.	Clean pipes

REPLACING THE MEDIA BED

Under normal operating conditions the effective life of the carbon and KDF filter media and the salt-free system media will be several years, depending upon water quality and usage. After this time, scaling, or taste and odor problems may return. When this happens, contact Tier1 for a replacement media bed. www.tier1water.com.

REPLACING THE SEDIMENT PRE-FILTER

The sediment filter in the pre-filter housing should be replaced every six months or sooner as necessary. Filter specs: 20" x 4.5" spun polypropylene 5 micron sediment filter. We recommend replacing your O-ring with each filter change. Sediment filter replacement is available at www.tier1water.com.
Part number: TIER1-P5-20BB.

QUESTIONS?

For questions about your Tier1 whole home water system product installation or performance troubleshooting, please call Tier1 Technical Support at **1-855-378-9116** Monday - Friday, 8 am - 5 pm central time or send an email to support@tier1water.com.

Tier1® WATER
WHOLE HOME SOLUTIONS

www.tier1water.com

TIER1_WH_CB_KDF_SF_844/1054 05.11.22