

Better Water LLC

Clean-in-Place+

Operator Manual



rev. Apr 2013

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Better Water LLC

Clean-in-Place+

Models & Specifications

Model	EQCLEANSTATIONPLUS
Tank Capacity	40 Gallons
Tank Construction	Medium density Polyethylene, Cone-Bottom
Tank Dimensions	30" x 34"
Floor Space	Width 31" x Height 56"
Empty Weight	117 lbs
Weight with 30 Gallons of Water	367 lbs
Pump	1/2 HP, 115 VAC, 60 HZ, 10.8 AMPS
Pump Performance	5 GPM at 30 PSI, 20 GPM at 28 PSI, 47 GPM at 14 PSI
Pump Wetted Materials Construction	Noryl, 300 Series Stainless-Steel, Carbon/Ceramic and Viton
Frame	Welded steel coated with corrosion resistant paint
Supply Hose	7 FT x 1" PVC Nylon reinforced hose with Park quick-disconnects
Product & Reject Hose	6 FT x 3/4" PVC Nylon reinforced hose with Park quick-disconnects
Suction Hose	PVC reinforced ball valves and fittings, either polypropylene or polypropylene reinforced
Pressure Bypass	Wetted parts, Nylon, 300 Series Stainless-Steel, Fairprene, 3/4" NPT connections
Regulated Pressure Gauge	2.5" Dial, 1/4" NPT, bottom-mount, 300 Series Stainless-Steel wetted parts

Central Water Systems Central Delivery Systems Reverse Osmosis Units Portable RO Units
 Pre-Treatment Racks Post-Treatment Racks DI Exchange Accessories Consumables
Hemodialysis Medical Pharmaceutical Laboratories Commercial Industrial

Better Water LLC; 698 Swan Dr; Smyrna, TN 37167; Phone (615) 355-6065, Fax (615) 355-6063, Website www.betterwater.com

Visit our website to see our complete product line of
water purification products!

www.betterwater.com



TABLE OF CONTENTS

Our Company	01
- Contact Us	01
- Technical Phone Support	01
- Technical Support Info Online	01
Warnings	02
Cautions	02
Introduction	03
Product Description	03
General Requirements	05
Operation:	
Fill, Mix, and Circulate.....	06
Draining	07
System Maintenance	
- General	08
Long Term Storage	08
Related Replacement Parts	09
Trouble-Shooting Guide	10
Limited Warranty Terms and Conditions	11
Pre-Ship Test Data	13

Visit our website to see our complete product line of water purification products!

www.betterwater.com



Our Company

Better Water LLC is a leading integrated manufacturer of water treatment equipment and components for the industrial, commercial and institutional markets.



Located in Smyrna, Tennessee, Better Water LLC continues its history of manufacturing and distribution of equipment specifically designed for the renal dialysis market.

Founded in 1971, Better Water LLC has built a reputation for solving our customers' toughest problems with high quality products and unmatched service.

Contact Us

Better Water LLC
698 Swan Dr
Smyrna, TN 37167

Phone (615) 355-6063
Fax (615) 355-6065

Technical Support:
Phone (615) 355-6063, press "1"
Email support@betterwater.com

Customer Service:
Phone (615) 355-6063, press "3"
Email customerservice@betterwater.com

Technical Phone Support

Support is available regarding all Better Water LLC systems, **24 hours a day, 7 days a week.**

- Normal business hours are [Monday through Friday](#) from **8:00 am until 3:30 pm, Central Standard Time** (*excluding holidays*)

Call (615) 355-6063, press "1" for Technical Support

Emergency assistance is available after normal business hours (*including holidays*) by calling **(615) 708-8627.**

BEFORE calling for emergency assistance:

- Check the Troubleshooting guide in this manual
- Check the electrical-power connections, fuses/circuit breakers (*if applicable*)
- Check all valves to ensure each is in the correct position (*if applicable*)

Technical Support Info Online

Our website, www.betterwater.com, which is updated frequently, contains a wealth of technical support information on the **SUPPORT** tab and includes:


- Operator and Service Manuals
- Interactive Frequently Asked Questions for Troubleshooting
- Consumables and Accessories Lists
- Technical Service Bulletins

For your convenience there are also online forms for placing **Orders** and requesting **Returned Goods Authorization**. These are Adobe forms that can be downloaded and either faxed or emailed to us.



WARNINGS



1. It is unsafe to operate or service this device without first reading and understanding the **entire** Operator's Manual. Keep this manual and other associated documentation for future reference.
2. Misuse, improper operation, and/or improper monitoring of this system could result in serious injury, death, or other serious reactions to patients undergoing hemodialysis treatment.
3. Misuse, improper use or handling of disinfectants and chemical cleaning solutions could result in serious injury or even death. You must comply with the information contained in the Material Safety Data Sheet (MSDS) for the chemical being used.
4. To avoid electrical shock hazard, do not operate this device when the covers or panels are removed.
5.  **ELECTROMAGNETIC INTERFERENCE: This device can create and radiate radio frequency energy and may cause harmful interference if not installed according to the manufacturer's instructions.**

CAUTIONS



1. When used as a medical device, federal law restricts this device to sale by or on the authority of a physician. Per CFR 801.109 (b)(1).
2. Improper operation of this device could result in a low or no-flow alarm on the dialysis machines.
3. Misuse or improper operation of this device will void any warranty.
4. Where water is mentioned, unless otherwise noted, it must be AAMI standard quality water.
5. Electrical and plumbing connections must adhere to local statutes and any facility codes. Connect this device to a proper ground connection in accordance with the National Electrical Code. Do not remove the ground wire or ground plug. Do not use an extension cord with this device.
6. Do not remove any Caution, Warning or any other descriptive labels from the device.
7. Do not operate this device in an explosive environment or in the presence of flammable materials. Do not use this device to store, mix or transfer flammable liquids.
8. Movement or vibrations during shipment may cause connections to loosen.
9. Do not operate this unit in an environment where temperatures may be below 50° F or above 90° F.
10. This device should not be used for purposes outside the device's stated applications, specifications or limitations.

INTRODUCTION

The Better Water LLC Clean-in-Place+ is manufactured to the utmost quality. With proper care, preventative maintenance, and proper use, it will provide an effective means of disinfecting and/or cleaning the water treatment system.

Before starting you should first read and have a thorough understanding of this entire Operator Manual. It describes in detail the steps and procedures for safe usage of the Divert-to-Drain.

Once the device has been delivered to you, "it is the **responsibility** of the **Medical Director** to ensure that the [device] is operated, monitored, and maintained in such a manner so as to satisfy all applicable standards for which the water may be used". (*Quoted from HHS Publication FDA 89-4234*).

PRODUCT DESCRIPTION

The **Clean-in-Place+** consists of a tank and pump mounted on a frame to allow for portability of this unit when disinfecting and/or cleaning the water treatment system. Users have come to appreciate this light empty weight, durable, and low-maintenance unit, for these processes.

The **Frame** is constructed of welded steel coated with a durable paint finish to greatly reduce rust and corrosion. The floor of the unit is made with High Density Polyethylene (HDPE). The frame is mounted on 3 sturdy casters for ease in moving.

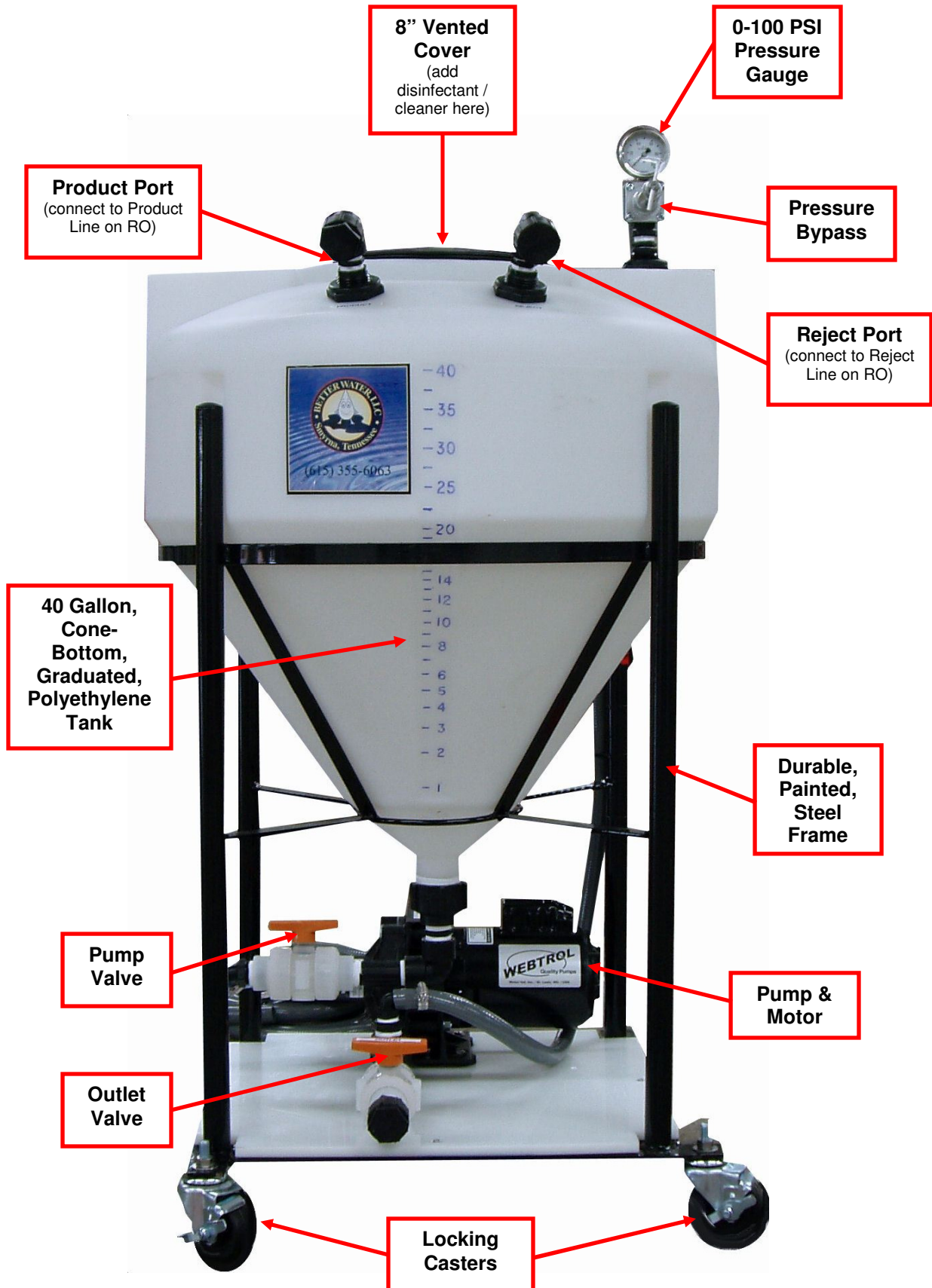
The **Tank** is a 40 gallon, cone bottom, polyethylene tank, with graduation marks. The top includes an 8" vented, removable lid for ease in adding any cleaning or disinfecting chemicals.

The **Pump** is a 1/2 HP, 115 VAC, motor that is operated with a simple ON/OFF switch located on the power cord. The Clean-in-Place+ is equipped with a Pressure By-Pass Valve and Pressure Gauge to regulate and monitor the pump pressure as well as a Pump Discharge Valve.

Three **Hoses** are supplied with the unit for connecting to the water treatment equipment being disinfected and/or cleaned:

- The **Supply Hose** is a 1" hose, 7 feet in length that attaches with a quick-disconnect fitting to the outlet side of the pump.
- The **Product Hose and Reject Hose** are both 3/4" hoses, 6 feet in length that typically attach to the Product and Reject ports on the Reverse Osmosis Machine. Both of these hoses will connect to the top of the tank with quick disconnect fittings. The other ends of all three of these hoses are supplied without fittings, so you can attach those fittings that are compatible with your equipment.

See the picture below detailing the many features of the Clean-in-Place+.



GENERAL REQUIREMENTS

1. Connections:

- a. Supply: 1" hose; CIP+ end=quick disconnect; equipment end=user supplied fitting
- b. Product: 3/4" hose; CIP+ end=quick disconnect; equipment end=user supplied fitting
- c. Reject: 3/4" hose; CIP+ end=quick disconnect; equipment end=user supplied fitting

2. Drain requirement:

- a. 12" x 12", Floor Sink preferred, located in close proximity to the CIP+

3. Electrical requirements:

- a. 115 VAC, 15 AMP, Dedicated GFCI Outlet

4. Floor space:

- a. Width 31" x Length 31" x Height 56"

OPERATION: Fill, Mix, and Circulate

The Clean-in-Place+ is versatile and adaptable to many different types of RO systems, and although applications will vary slightly, the operational steps are basically the same.

WARNING

Chemical cleaners and disinfectants can cause serious injury or death.

Proper protective equipment must be used.

The preparation of these chemical solutions must be done in accordance with the specifications established for the particular chemical.

These chemical solutions must be handled in accordance with their Material Safety Data Sheet (MSDS).

These procedures should be performed by trained and qualified technicians.

WARNING

Do not disinfect or clean the RO or distribution loop while patients are dialyzing.

1. Verify that the CIP+ is unplugged from the electrical outlet.
2. Connect the 1" Supply Hose to the Outlet Valve and run the other end to drain.
3. Open the Outlet Valve.
4. Rinse the CIP+ out with product water and allow to completely drain
5. Close the Outlet Valve.
6. Disconnect the Supply Hose from the Outlet Valve.
7. Connect the Product Hose from the CIP+ Product Port, then to the equipment supplying the water.
8. Connect the Supply Hose from the CIP+ Pump Valve, then to the equipment being disinfected.
9. Fill the Tank with the specified amount of product water.
10. Connect the Reject Hose from the CIP+ Reject Port, then to the equipment being disinfected.
** If only one hose is necessary, skip this step.*
11. Remove the Tank Lid, and slowly pour the desired amount of disinfectant or cleaner into the Tank, then mix thoroughly.
12. Plug the Pump's Power Cord into an electrical outlet.
13. Turn the Power Switch on the Power Cord to **ON**.
14. Open the Outlet Valve.

15. Allow the disinfect/cleaning agent to circulate for the desired amount of time.
16. Adjust the pump pressure on the CIP+ by turning the T-Handle on the Pressure Regulating Valve on top of the Tank.
 - Turn clockwise to increase pump pressure and increase flow
 - Turn counter-clockwise to decrease pump pressure and decrease flow
17. Turn the Pump's Power Switch to **OFF**, and disconnect from the electrical outlet.
18. Close the Outlet Valve on the CIP+.
19. Close the appropriate valves on the equipment to stop any flow of water/solution to the CIP+ Tank.
20. Disconnect the Supply Hose, Product Hose, and Reject Hose from both the CIP+ Tank and the equipment.
21. Drain the CIP+ Tank.
** See instructions below*

OPERATION: Draining

1. Connect the 1" Supply Hose to the Outlet Valve and run the other end to drain.
2. Open the Outlet Valve on the bottom of the Tank to start the draining process.
3. When the Tank is empty...
 - a. Disconnect the Supply Hose from the Outlet Valve
 - b. Close the Outlet Valve

SYSTEM MAINTENANCE, General

Maintenance Task	Frequency (more often if needed)	Notes
Check the system for leaks	While in use	Visual Inspection

LONG TERM STORAGE of the Clean-in-Place+


PUTTING CIP+ UNIT INTO STORAGE

1. Disconnect power, then coil and secure the power cord.
2. Disconnect and store the Supply Hose, Product Hose, and Reject Hose.
3. Allow unit to completely air dry.
4. Zip-tie plastic bags over all openings to prevent contamination:

BRINGING CIP+ UNIT BACK FROM STORAGE

1. Remove protective plastic bags from openings.
2. Rinse and drain tank of any contaminants.
3. Ready for use.

RELATED REPLACEMENT PARTS

DESCRIPTION	PART#	PICTURE
Webtrol 1/2 HP Pump	EQPUWE01900	
Pump Power Cord with switch on cord	EQSUB120BMPC001	
0-100 Pressure Gauge, SS, LM 2 1/2" x 1/4"	PLGAOO00431	
Poly Pressure Bypass Valve	PLVAPO00436	
1" Polypro Ball Valve, Orange	PLVAPO01000	
1" Clear Suction Hose	PLHOSU01237	
3/4" Hose, Style 5000 * Product Hose and Reject Hose * Connections for hoses separate	PLHOST00315	
1" Hose, Style 5000 * Supply Hose * Connection for hose separate	PLHOST00316	

Pictures do not reflect the size of the item in relation to the other pictures

TROUBLE-SHOOTING GUIDE

The information in this document is intended to serve as a guide only for qualified operators. It is not all inclusive of the problems that may be encountered. This guide should aid operators with reminders and routine trouble-shooting tasks.

For any problem outside the confines of this guide, call for technical assistance.

Problem	Possible Causes	Possible Solutions
Pump won't run	1. Pump not plugged into an electrical outlet	1. Plug pump into electrical outlet
“ “	1. Bad or damaged power cord/switch	1. Replace power cord/switch

LIMITED WARRANTY TERMS and CONDITIONS

- a. This limited warranty is given only to the original buyer and covers the equipment delivered with this limited warranty.
- b. The buyer shall be barred from any recovery on this limited warranty or otherwise for damages due in whole or in part to...
 - ... unreasonable use
 - ... improper operation
 - ... use beyond normal fashion
 - ... failure to follow instructions
 - ... failure to maintain the product in good condition and repair
 - ... or the like.
- c. If the buyer discovers or should have discovered a defect in which it is reasonable to conclude that damage, either personal, property, or economic, may result, the buyer's continued use of the product shall constitute any assumption of risk by the buyer and a bar to any recovery for breach of this limited warranty or otherwise.
- d. No oral or written representation, information, or advice given by Better Water LLC or any of its representatives shall create a warranty or in any way increase the scope of this express limited warranty and shall not form a part of the basis for bargain.

WHAT IS WARRANTED AND FOR HOW LONG?

- a. All equipment, excluding ion exchange and filtration media and cartridges, are warranted to be free from factory defects in materials, and workmanship under normal use for a period of one (1) year from the date of shipment.
- b. It is a condition precedent to recovery on this limited warranty that the buyer strictly comply with all operating and maintenance guidelines established by Better Water LLC and that the serial number (*if applicable*) is intact and legible on the equipment.
- c. It is a condition precedent to recovery on this limited warranty for damage to the external finish of the equipment that the buyer notifies Better Water LLC at the time of the installation that the finish is damaged.

WHAT IS REMEDY FOR BREACH OF THIS LIMITED WARRANTY or NEGLIGENCE BY BETTER WATER LLC

- a. Buyer's sole and exclusive remedy for any breach of this limited warranty or negligence by Better Water LLC shall be repair or replacement of the defective part, at the option of Better Water LLC, provided such defective part is returned to Better Water LLC for inspection.
- b. Better Water LLC shall not be obligated to supply an exact replacement of the defective part and reserves the right to substitute new and improved parts.
- c. Better Water LLC shall provide at no cost to buyer, labor to remove and/or replace defective parts covered by this limited warranty for a period of ninety (90) days from the date of installation by Better Water LLC of the equipment.
- d. After such ninety (90) day period, buyer shall be responsible for any labor or service charge for the removal and/or replacement of any defective parts.
- e. Buyer shall be responsible for all travel expenses and freight charges at all times.
- f. Better Water LLC shall have no obligation to repair or replace any defective part if buyer fails to follow the procedure set forth in "HOW TO OBTAIN A REPLACEMENT PART UNDER LIMITED WARRANTY".

IN NO EVENT SHALL THIS LIMITED WARRANTY BE CONSTRUED TO COVER, NOR SHALL BETTER WATER LLC BE LIABLE TO BUYER AS ANY OTHER PERSON FOR, ANY CONSEQUENTIAL, INCIDENTAL, ECONOMIC, DIRECT, INDIRECT, GENERAL OR SPECIAL DAMAGES, WHICH ARE HEREBY EXPRESSLY DISCLAIMED.

HOW TO OBTAIN A REPLACEMENT PART UNDER LIMITED WARRANTY

- a. Buyer should contact the Customer Service or Technical Support Departments and request a Return Goods Authorization.
- b. Described part(s) will be sent with a purchase order.
- c. The returned part(s) will be returned to the factory for limited warranty consideration. If part(s) are not covered under the limited warranty, part(s) will be considered billable against the purchase order supplied.

WHAT IS NOT COVERED BY THIS LIMITED WARRANTY:

By way of example and not limitation, this limited warranty does not cover:

- Damage to or replacement of any ion exchange resin or filter media
- Labor or service charges for the removal and/or replacement of any defective parts after the ninety (90) day period from the date of installation or sale by Better Water LLC
- Freight charges and travel expenses
- Damage from inadequate or defective wiring, improper voltage, improper connections or electrical service, inadequate or defective plumbing, water supply, or water pressure, or in violation of applicable building, plumbing or electrical codes, laws, ordinances or regulations.
- Damage from improper installation or operation, including but not limited to, abuse, accident, neglect, improper maintenance, freezing and fires, or abnormal use.
- Damage caused by contaminants in Buyer's water supply, including hardness, chlorine, chloramines, sulfur, bacterial iron, tannin, algae, oil, organic matter or other unusual substances, if special equipment has not been installed by Better Water LLC to remove such contaminants
- Damage to or caused by filters/membranes or other replacement parts not purchased from Better Water LLC or damage caused by modification, alteration, repair or service of the equipment or any of its parts by anyone other than Better Water LLC or its expressly authorized representatives.

PRE-SHIP TEST DATA

