

Better Water LLC

Acid Concentrate Delivery System Operator Manual



rev. Nov 2017

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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.**

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.



Specific Contacts

Technical Support	Phone (615) 355-6063, option "1"
	Email support@betterwater.com
To Place an Order (purchase orders)	Fax (615) 355-6065
	Email orders@betterwater.com
	Phone (615) 355-6063
Customer Service (returns)	Phone (615) 355-6063, option "2"
	Fax (615) 355-6065
	Email customerservice@betterwater.com

Website www.betterwater.com

Helpful information and forms that can be found on our website:

- Operator & Service Manuals
- Technical Service Bulletins
- Consumables and Replacement Parts List
- Brochures
- Order Form
- Return Goods Authorization Request Form

Introduction

The Better Water LLC **Acid Concentrate Delivery System** is manufactured to the utmost quality. With proper care, preventative maintenance, and proper use, it provide years of use as an important element of the system for dialysis treatments.

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 **Acid Concentrate Delivery System**.

Once the this device has been delivered, it is the responsibility of the Medical Director to ensure that it is used, monitored, and maintained in such a manner so as to satisfy all applicable standards. Guidelines and other related information are available from:

- Food and Drug Administration (FDA)
- National Association of Nephrology Technicians/Technologists (NANT)
- Association for the Advancement of Medical Instrumentation (AAMI)




NOTE concerning pictures in this manual:

Pictures of devices and components may vary slightly due to product changes, and therefore should be for general reference only. Information concerning their use, functionality, or replacement will not differ unless noted.

WARNINGS



1. It is unsafe to operate or service this device without first reading and understanding the **entire** Operator and Service Manuals. 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.

GENERAL REQUIREMENTS & SPECIFICATIONS

- 1. Floor Space:** Level floor, and sufficient space for installation, operation, and service based on the number of and sizes of tanks used.
- 2. Acid Mixer Connection:** 3/4" or 1" FTP
(not supplied by Better Water)
- 3. Drain Requirements:** Sanitary drain capable of discharging 20 gallons per minute or better
- 4. Electrical Requirements:** 110V models
1 phase, 20 amp, 60 Hz (1 hot, 1 neutral, 1 ground)
- 5. Operating Weight:** 450-600 lbs
- 6. Loop:** The distribution loop should be constructed of materials that comply with current AAMI standards.

PRODUCT DESCRIPTION

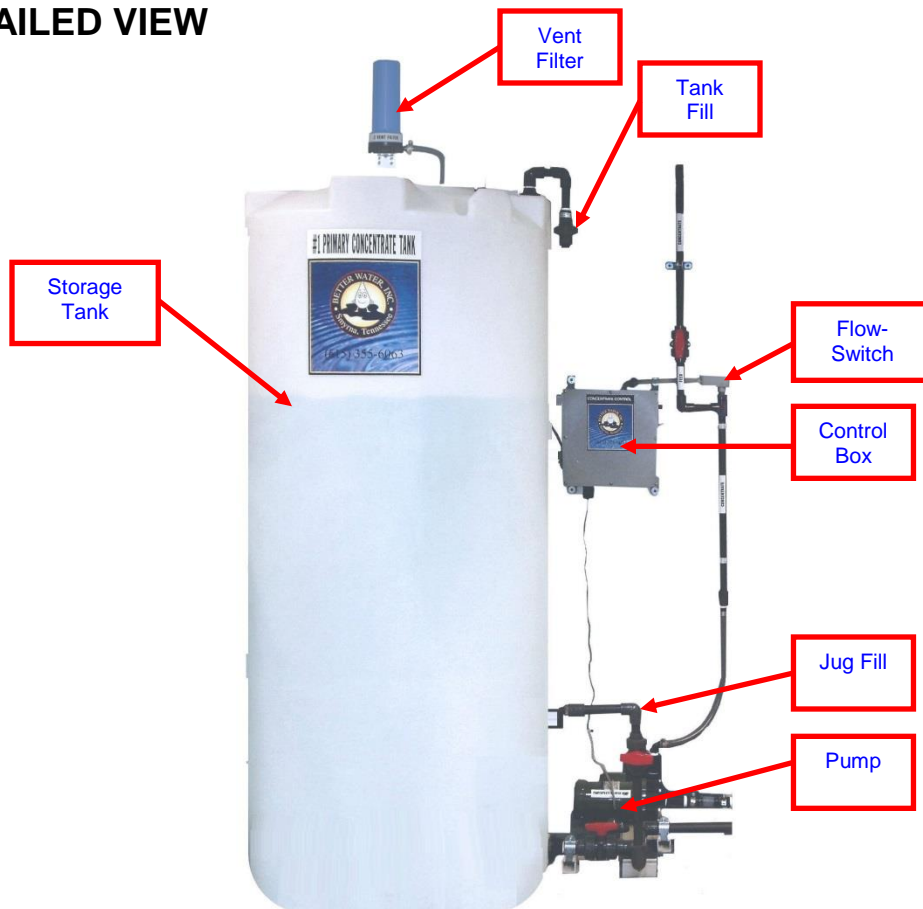
Better Water LLC manufacturers complete acid concentrate delivery systems in a variety of sizes to meet the individual requirements of each facility. A standard system includes an acid storage tank, a pump with flow-switch, and a control box. These can be arranged to provide a primary concentrate system as well as a secondary concentrate system.

A variety of **acid storage tank** sizes are available and can be setup to utilize from one to four tanks. A common system utilizes an array of two tanks, one tank for a primary concentrate system, and one tank for a secondary concentrate system. These tanks are equipped with a vent filter, isolation valves, drain valves, and jug fill valves. They also have a fill port which can be filled from individual drums, an acid mixing machine, or an outside fill from bulk delivery.

The **concentrate control box** is a water-tight, chemical resistant box, containing the necessary controls to operate the pump for the Acid Concentrate Delivery System. This box is normally mounted on the wall near the pump, and is designed to work in conjunction with a **flow-switch** to shut-down the pump if a “no-flow” situation is detected.

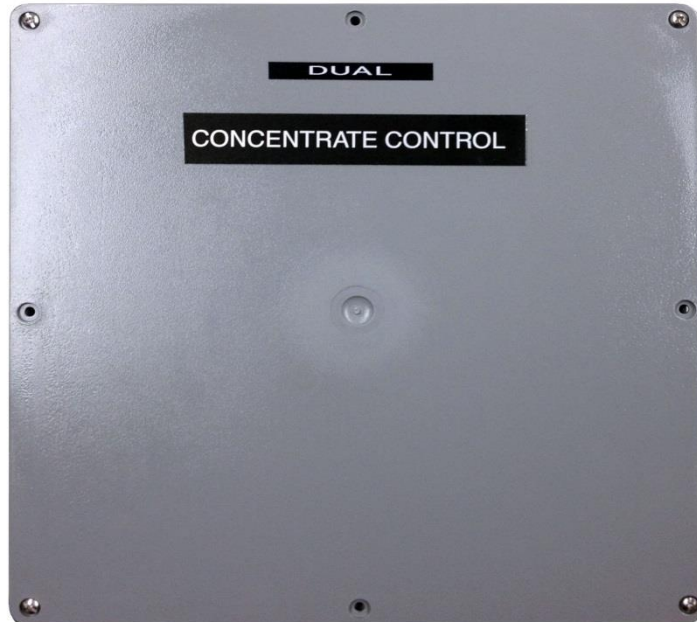
The **pumps** are sized to the individual facility requirements, and are normally a magnetic drive pump designed to run continuously for 24 hours a day, 7 days a week.

DETAILED VIEW



DETAILED VIEW OF CONCENTRATE CONTROL BOX

Below is an example of the Dual Concentrate Control Box. Controls for the primary and secondary acid concentrate delivery systems are on the right and left sides of the box. A single acid system would only have controls on one side of the box.



Front View



Right Side



Left Side

INITIAL START-UP

1. Open the inlet and outlet valves.
2. Start the pump according to the instructions below.

DAILY OPERATION

In most cases the acid concentrate is circulated 24 hours a day. This device runs automatically once started and requires no daily start-up or end-of-day procedures. If a single acid system the controls will only be on one side of the Concentrate Control Box. If a dual acid system, the Primary System controls will be on one side of the Concentrate Control Box, and the Secondary System controls will be on the opposite side.

START PUMP





1. Verify that there is sufficient acid concentrate in the acid storage tank for distribution.
2. Verify that all valves downstream of the pump are open to prevent a “dead-head” situation with the pump.
3. On the concentrate control box, flip the **OPERATE/OFF Switch** to the **OPERATE** position.
4. Press and hold the **PUMP START button** until the pump starts, then release.

STOP PUMP

1. On the concentrate control box, flip the **OPERATE/OFF Switch** to the **OFF** position.

SYSTEM MAINTENANCE, General

Maintenance Task	Frequency (more often if needed)	Notes
Check the system for leaks	Daily	Visual Inspection
Monitor the system for unusual sounds	Daily	Auditory Inspection
Clean external surfaces	Weekly	Use a soft, damp towel or sponge. (DO NOT USE BLEACH)

RELATED CONSUMABLE and REPLACEMENT PARTS		
DESCRIPTION	PART#	PICTURE
MD-100RLT Pump, 1/3HP, 1 Phase	EQPUIW00453	
3/4" Clear Flow-Switch	PLFISS800444	
Vent Filter, .2 micron, 10"	SUCAOO00557	
Wrench, Slim-line housings	SUWROO00582	
<i>Pictures do not reflect the size of the item in relation to the other pictures</i>		

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.

