



MassDEP

**Massachusetts Department of Environmental Protection
Bureau of Water Resources
Watershed Planning Program**

**STANDARD OPERATING PROCEDURE
BARNSTEAD E-PURE USE & MAINTENANCE**

Model D4641

CN 4.991

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Prepared by:


Suzanne Flint, Field and Lab Operations Coordinator

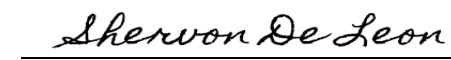
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Approved by:


Jasper Sha, QA Officer

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Approved by:


Shervon De Leon, Monitoring Section Chief

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LIST OF REVISIONS

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BARNSTEAD E-PURE USE & MAINTENANCE

Model D4641

Drawing water from the Barnstead:

- Turn the unit on from the programmable timer at the outlet by pressing the “ON/OFF” button.
 - If the unit is automatically cycled ON, wait for cycle to end and then proceed immediately without the 20 minutes warmup.
- Allow unit to warm up for 20 minutes
- Check for a resistivity reading of 18.2 meg. Ω -cm (no lower than 10.0).
- Remove the bell cap of the dispenser you’ll be using (main or remote).
- Draw off 500 ml of water and discard.
- Fill container(s). Avoid contaminating either the water in the container or the dispenser end and bell.
- When finished, replace the cover on the bell. If additional fills are needed in a short period of time, you can leave the unit running; otherwise, shut off at the timer by pressing the “ON/OFF” button.

The Barnstead is on a programmable time; the daily auto on/off schedule is:

ON	OFF
02:00	02:20
06:00	06:20
10:00	10:20
14:00	14:20
18:00	18:20
22:00	212:20

MAINTENANCE

Daily:

- Make sure unit is plugged into the programmable timer. Power switch on the unit should always be in the “on” position, except when performing maintenance.
- Make sure that the water supply is connected and on.
- Check canisters, valves, and connections for leaks.
- Check to make sure that timer is starting the unit at the scheduled times (posted on wall next to unit; every 4 hours for 20 minutes each cycle).

Monthly (Or when refilling calibration water carboy—this is usually often enough):

- Press “ON/OFF” button on programmable timer, observe resistivity reading on unit and record stabilized reading in logbook.
- Check and record amount of time required to draw 1 liter from both the auxiliary and remote dispensers.

- Cap dispenser bells, shut off, and clean up area.

As Needed:

- Change the 0.2 μm final filter when flow rate drops below approximately 1 liter/minute. [The operating manual recommends changing the 0.2 μm final filter monthly or if there is bacterial breakthrough. We have used so little water in the past that we have seldom needed to change the filters more than once or twice per year.]
- When the resistivity starts dropping below 18.0 consider changing the cartridges **soon**, following the procedures in the instruction sheets LT502X8 for sanitizing the unit and LT502X3 for cartridge replacement (Appendix A).
- Keep other notes and records, as needed, in the logbook.

Manual:

[Barnstead-E-pure Mfgs Manual.pdf](#)

Reorder Parts:

- Sanitization cartridge, cat. #D50223
- 4-module organic free set cat. #D5023
 1. D0836
 2. D0803
 3. D5027
 4. D5021
- Final filter, cat. #D3750 (for auxiliary dispenser)
- Final filter, cat. #FL703X2 (for remote dispenser)

Instruction Sheet LT502X8

Application Sanitization Cartridge

Model D50223

**Important Safety
Information**

Your Thermo Scientific Barnstead Sanitization Cartridge has been designed with function, reliability, and safety in mind. This manual contains important operating and safety information. You must carefully read and understand the contents of this manual prior to the use of this equipment. For safe operation, pay attention to the Note, Caution and Warning alerts throughout these instructions.

Warning Warnings alert you to a possibility of personal injury. ▲

Caution Cautions alert you to a possibility of damage to the equipment. ▲

Note Notes alert you to pertinent facts and conditions. ▲

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Sanitization

This manual contains the necessary information to install the sanitization cartridge (Part #D50223) and perform a complete sanitization of your NANOpure Quad or E-Pure water purification system. Careful attention to the following instructions will ensure that the sanitization cartridge will properly sanitize all water pathways.

Warning Sanitizing/cleaning agents must be used in compliance with the instructions in this manual. Failure to comply with the above could result in explosion and personal injury.

To prevent electrical shock, disconnect the power prior to utilizing the sanitization cartridge.

Avoid splashing disinfecting solutions on clothing or skin.

Ensure all piping connections are tight to avoid leakage of chemicals.

Always depressurize chemical lines before disassembly.

Ensure adequate ventilation.

Consult manufacturer's Material Safety Data Sheets for information on disinfection chemicals prior to use. ▲

Installation of the Sanitization Cartridge

1. Turn system off and disconnect electrical power. Close feedwater valve and depressurize system by opening the remote dispenser and auxiliary draw-off valve (NANOpure Quad system) or the drawoff valve (E-Pure system).
2. Remove all cartridges from the NANOpure Quad or EPure system. If you are sanitizing a Bioresearch grade NANOpure, leave the ultrafilter in place.
3. Remove cross-flow final filter from dispenser and replace with system flush housing if NANOpure. On both E-pure and NANOpure Quad systems, remove the final filter from the draw-off valve.
4. With the cartridges removed from the canisters, wash the inside of the canisters and inside of the heads with soap or detergent, using a sponge or clean cloth. Rinse out the canisters and heads with clean water several times to remove the detergent residues.
5. Place the sanitizing cartridge containing the chlorine pellet in holder number one.
6. Replace remaining canisters (empty).

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5. Place the sanitizing cartridge containing the chlorine pellet in holder number one.
6. Replace remaining canisters (empty).

Sanitization Procedure (continued)

9. Install fresh cartridges in the system as described under "Cartridge Replacement" in the NANOpure/E-Pure instruction manual. DO NOT REINSTALL USED CARTRIDGES (They may contain large amounts of bacteria).
10. Restart the system following initial start-up procedure in the instruction manuals.

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Instruction Sheet LT502XB (322217)

0	--	7/12/10	Transfer to Marietta (was LT502XB 1/10/07)	CCS
Rev	ECR/ECN	Date	Description	By
4	Sanitization Cartridge		Controlled Environment Equipment	401 Millcreek Road Marietta, OH 45750 (800) 438-4851 (740) 373-4763

Instruction Sheet LT502X3 (322199)

Application E-pure Cartridge Replacement

Kit Number D5022 and D5023

Replacement **Warning** Ensure that locking pin on canister ring is in fully locked position before pressurizing. E-pure or canister may release when system is pressurized. ▲

1. Turn E-pure power off.
2. Turn off water supply to E-pure.
3. Depressurize E-pure by opening drawoff valve.
4. Disengage locking pin on canister ring and turn canister 1/4 turn to the left and remove canister and cartridge; repeat for all canisters and cartridges. Sanitize the system in accordance with the owner's manual.

Caution Pretreatment cartridge (D0835 or D0836) must be rinsed in system by itself to avoid plugging of other purification cartridges. Remove 0.2 micron hollow fiber filter from remote dispenser during installation and rinsing to avoid fouling or plugging a filter. ▲

Always shut off the water to the E-pure and depressurize the system prior to removing canisters or filters.

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Replacement (continued)

Caution To avoid the possibility of contaminating the outer surface of the cartridges during installation, use the following procedure when installing new cartridges:

- a. Remove the new cartridge from its shipping box. Do not remove the plastic bag around the cartridge.
 - b. Stand the cartridge up on a bench, nipple end up.
 - c. Open the top end (nipple end) of the plastic bag. Pull the bag down to expose the top third of the cartridge.
5. Install pretreatment cartridge (D0835 or D0836) in position No. 1. Reinstall remaining three canisters **WITHOUT CARTRIDGES**.
 6. Ensure that the locking pin on all canister rings are in position before operating E-pure.
 7. Remove the 0.2 micron filter from the drawoff.
 8. Turn on water supply and turn E-pure on, allow water from drawoff to run to drain for 10 minutes to remove carbon and resin fines from system.
 9. Turn power and water off to E-pure.
 10. Depressurize E-pure.
 11. Remove canisters 2, 3 and (4) from E-pure and discard water to drain.
 12. Install cartridges in canisters 2, 3 and (4) according to Table 1.
 13. Turn water supply and power to E-pure on.
 14. Allow approximately 20 liters of water to run to drain, then close outlet valve.
 15. Turn water supply and power to E-pure off.
 16. Install new D3750, 0.2 micron final filter at faucet block.

Note D3750, 0.2 micron final filter should be changed every 30 days to maximize system performance. 10 liters of water should be rinsed through a new filter prior to use. ▲

Organic free water systems must be recirculated for 2 hours immediately following start-up or cartridge change and for 10 minutes prior to each use to attain lowest organic levels.

Table 1. Correct Cartridge Sequence (left to right)

3 Module Type 1 Cat. No. D5029	3 Module ORGANICfree Cat. No. D5022
1. D0835-Pretreatment	1. D0836-MACROpure
2. D5027-ULTRApure DI SG	2. D5027-ULTRApure DI SG
3. D5027-ULTRApure DI SG	3. D5021-ORGANICfree
4 Module Type 1 Cat. No. D5028	4 Module ORGANICfree Cat. No. D5023
1. D0835-Pretreatment	1. D0836-MACROpure
2. D0803-High Capacity	2. D0803-High Capacity
3. D5027-ULTRApure DI SG	3. D5027-ULTRApure DI SG
4. D5027-ULTRApure DI SG	4. D5021-ORGANICfree
4 Module Type 1 Pretreat Feed	4 Module ORGANICfree Pretreat Feed
Cat. No. D50227	Cat. No. D50228
1. D0835-Pretreatment	1. D0836-MACROpure
2. D0809-ULTRApure SPG	2. D0809-ULTRApure SPG
3. D5027-ULTRApure DI SG	3. D5027-ULTRApure DI SG
4. D5027-ULTRApure DI SG	4. D5021-ORGANICfree

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Instruction Sheet LT502X3 (322199)

0	—	7/15/10	Transfer to Marietta (was LT502X3 3/10/08)	CCS
Rev	ECR/ECN	Date	Description	By
1	E-pure Cartridge Replacement		Controlled Environment Equipment	401 Millcreek Road Marietta, OH 45750 (800) 438-4851 (740) 373-4763