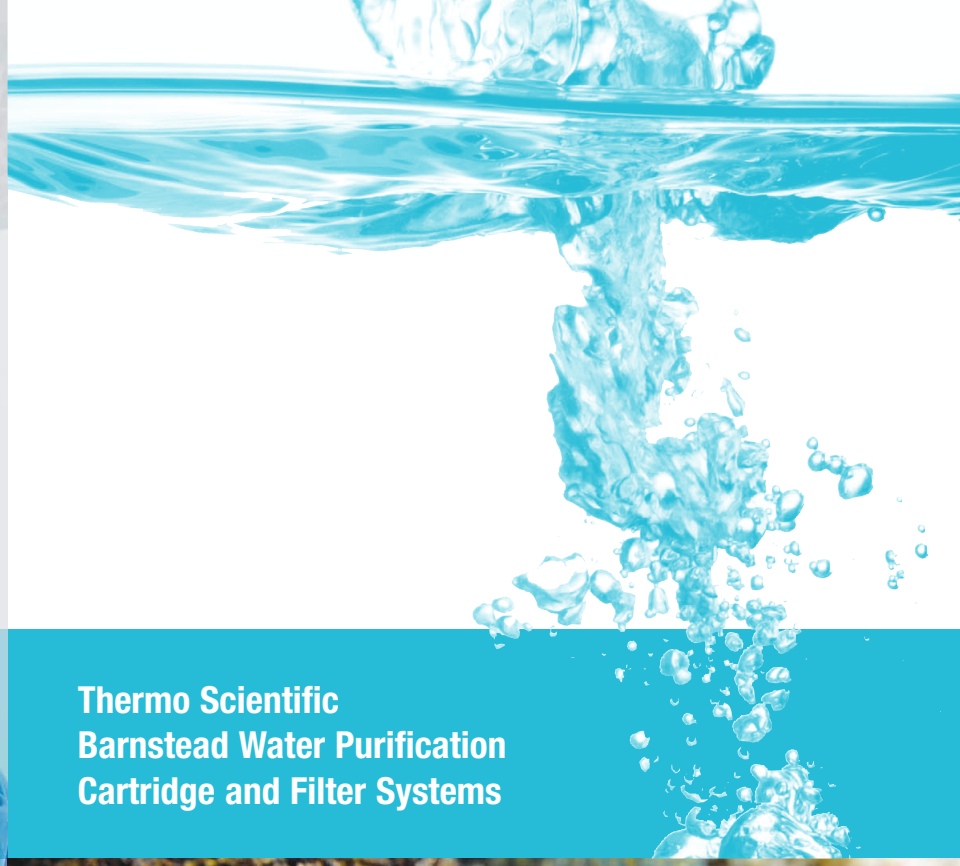


**Thermo Scientific**
**Barnstead Water Purification**
**Cartridge and Filter Systems**



## exceptional value

# versatile configurations

Thermo
SCIENTIFIC

# Thermo Scientific Barnstead **Cartridge and Filter Systems**

## Achieve the desired water types for your specific applications

Our complete line of cartridge and filter systems offers solutions for single step and pretreatment purification at an exceptional value. Cartridge systems are excellent for use with humidification/environmental chambers, autoclaves, water baths, $CO_2$ incubators, stills, ultrapure water systems, and eliminating corrosion and scaling when used with cooling loops for lasers and radar systems.




### Versatile Configurations

- Versatile configurations for an array of specific applications
- Customize modular systems to remove specific impurities. Over-purifying water can waste time and resources, not to mention the possibility of being detrimental to your application
- Quick-release designs provide easy cartridge change-outs and simplify maintenance, bypassing the costs of service calls
- Wall-mounted systems free up bench space
- Cartridge systems are available for installation in pressurized and non-pressurized water line environments
- Wide selection of sizes supports space limitations and volume needs



## Exceptional Value

- Robust polypropylene cartridge casings lengthen system life and prevent impurities leaching into the purified water
- High quality resins reliably remove targeted impurities
- Purity (resistivity) meter options include Pura-Lite “Go/No Go” indicators and digital purity meters for quick-glance purity values and signs cartridge replacement is needed
- Instead of joints and seams that are chemically adhered, ours are ultrasonically welded to prevent contamination and allow for recycling





# Thermo Scientific Barnstead
# Cartridge and Filter Systems Quick Select Guide

## Pressurized Cartridge Systems



| | B-Pure™ Single Holder | B-Pure Double Holder | B-Pure Half-size Holder | High Temperature Stainless Steel | Economy Filter Holder | Harvey DI+ |
|---|---|---|---|---|---|---|
| **Digital Purity Meter** | | ● | | | | |
| **Analog Purity Meter** | ● | ● | | ● | | ● |
| **Color Change Indicator** | | | | | | |
| **Remote Dispenser** | | | | | | ● |
| **Wall-Mounted** | ● | ● | ● | ● | | ● |
| **High Temperature Tolerant** | | | | ● | | |
| **Quick-Release Canisters** | ● | ● | ● | | | ● |
| **Maximum Flow Rate L/min** | 4 | 4 | 2 | 3 | 2 | 4 |

* All Hose Nipple Cartridges except 7373D contain dyes which change color when resin is exhausted

## Identify the best system based on your unique requirements

- Will the cartridge system be installed in a pressurized or non-pressurized water line?
- What is your principal application for pure water?
- What do you need removed from your water?
- What is the quality of the feed water?
- What is the water volume you need on a daily basis?
- Do you have temperature or flow rate parameters?

## Non-pressurized Cartridge Systems





| Hose Nipple* | Bantam™ Deionizer | Benefits | Typical Uses |
|---|---|---|---|
| | | See real-time purity values | With more sensitive applications |
| | 💧 | Indicates when to install new cartridge at quick glance | If cartridge system feeds equipment, such as autoclave, where real-time resistivity is not required |
| 💧 | | Indicates when to install new cartridge | When feeding lab equipment |
| | | Hand-dispense water from the cartridge system | For rinsing glassware or filling water bath |
| 💧 | 💧 | Saves laboratory bench space | For autoclaves and dishwashers |
| | | For use where water temperature exceeds 37.8°C (100°F) | Good option for cooling loops |
| | | Fast and simple cartridge change-outs | For all applications |
| 1.25 | 0.63 | | |

# What You Need to Remove from Feed Water Determines the Right Cartridge

## Organics or Chlorine

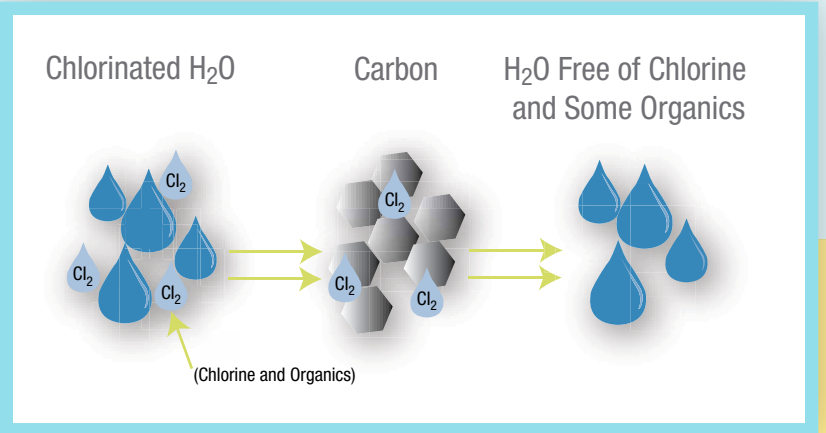
Organic solids are present in water sources from plant and animal decay as well as human activity. These may include proteins, alcohols, chloramines, and residues of pesticides, herbicides, and detergents which foul ion exchange resins and interfere with organic analysis. Chlorine is an additive used to treat drinking water and may need to be removed for biological protocols. Activated carbon will remove both organics and chlorine from the feed water.

**Resin needed -** activated carbon

## Colloids

Colloidal particles typically have a slightly net negative charge ranging in size from 0.01 to 1.0µm and can be either organic or inorganic. Unlike suspended particles, colloids do not settle out by gravity, but remain suspended in liquid. Colloids clog filters, interfere with instrument operation, foul reverse osmosis membranes, and can bypass ion exchange resins, resulting in lower resistivity in deionized water systems. Macroreticular resins enhance performance of deionization resins and extend final filter life.

**Resin needed** - macroreticular resin




**Feed water with organic and chlorine contaminants come into contact with the activated carbon in the cartridge. The impurities adhere to the surface of the carbon, purifying water.**



## Inorganic Ions

Impurities such as silicates, chlorides, fluorides, bicarbonates, sulfates, phosphates, nitrates, and ferrous compounds are present as cations (positively charged ions) and anions (negatively charged ions). Water with a high concentration of ions will conduct electricity and have high conductivity and low resistivity, as the two are inversely related. Ions will adversely affect the results of inorganic analyses such as IC, AA, ICP/MS, and may retard cell and tissue growth in biological research. These ions can also affect the cartridge life in deionized water systems.

**Resin needed** - ion exchange resin, cation exchange, or anion exchange

- Two-Bed (high capacity) resin – contains a layer of cation resin followed by a layer of anion resin within the same cartridge. This resin will not remove ions as thoroughly as the mixed-bed, but it will last longer.
- Mixed-Bed (ultrapure) resin – contains a mixture of anion and cation resins to improve ion exchange reaction kinetics. It produces high resistivity water at a pH of 6.8 to 7.2 that is free of silica, carbon dioxide, and other ionized impurities.

## Oxygen

To help prevent corrosion in applications such as closed cooling loop systems for radar, computer, and laser systems choose an oxygen removal resin.

**Resin needed** - oxygen removal



**Only high quality resins are used in our cartridge and filter systems to ensure consistently high quality product water.**

# Thermo Scientific Barnstead
# Pressurized cartridge systems







Digital Purity Meter provides quick-glance notification of when to install a new cartridge

## B-Pure Cartridge Holder Systems

These expandable, modular systems are the best choice when applications require up to 30 L/day with a maximum flow rate of 4 L/min. B-Pure systems are engineered to support feed water pressures up to 100 psi and feature a simple quarter turn, quick-release cartridge exchange design. Standard wall-mounting brackets are included. Interconnect B-Pure Holders to form custom water treatment systems.

- **B-Pure Single Holder** produces water at up to 4 L/min and can be used separately or in series with other single holders. Pura-Lite "Go/No Go" analog resistivity indicators are available.
- **B-Pure Double Holder** includes 2 canisters and draw-off faucet. Water is dispensed at 4 L/min and optional digital or analog purity meters are available.
- **B-Pure Half-size Holder** supports flow rates up to 2 L/min with an optional pressure gauge kit to monitor inlet and outlet water pressure. Can support either half-size cartridges or the 10 in (25.43 cm) filters.

**Typical applications -** pretreatment, deionization, filtration



**Step 1:**
Change cartridge when the resistivity is below the desired level or the cartridge is more than 1 year old. For filters, you'll notice a significant decrease in pressure or flow rate




**Step 2:**
Remove the canister from the head by depressing the thumb lever and rotating the hand ring quarter turn to the left



**Step 3:**
Remove exhausted cartridge and discard



**Step 4:**
Replace old cartridge with a new one



**Step 5:**
Install canister by depressing thumb lever and rotating quarter turn to the right, until the locking pin is in the appropriate position

B-Pure systems offer easy-to-use, easy-to-maintain cartridge replacement

## Other Pressurized Cartridge Systems

### High Temperature Stainless Steel Cartridge System



This unique system is ideal when water system temperature routinely exceeds 100 ºF (37.8 ºC). Available in single or dual cartridge designs, 316 gauge stainless steel withstands higher temperatures and allows for pressures up to 160 psi.

**Typical applications -** cooling loops

### Economy Filter Holder System



This filter holder is a basic holder system. It accepts 10 in (25.43 cm) double open-ended filters and can be piped into any water line.

**Typical applications -** particle filtration

### Harvey DI+ Cartridge System




This turnkey system includes a remote dispenser, Pura-Lite (50 K Ω-cm) indicator and a high capacity, two-bed ion exchange cartridge to remove calcium, magnesium, and other ions from water. It accepts a broad range of other cartridges to remove impurities and produces pure water at a flow rate of 0.5 L/min.

**Typical applications -** pretreatment, deionization

# Thermo Scientific Barnstead
# Pressurized cartridge systems

## Pressurized Cartridge Systems

| | Inlet Feed Line NPTF inches (cm) | Feed Water Temp. °F (°C) | Dimensions W x D x H inches (cm) | Max Feed Water Pressure (psig) | Max Flow Rate (L/min) | Voltage (VAC) | Model No. |
|---|---|---|---|---|---|---|---|
| **B-Pure Single Holder** | 1/2 (1.3) | 40-120 (4-49) | 7 x 7 x 15 (17.8 x 17.8 x 38.1) | 100 | 4 | 120 | D4511 |
| **B-Pure Double Holder with Digital Purity Meter** | 1/2 (1.3) | 40-120 (4-49) | 15 x 7 x 27 (38.1 x 17.8 x 68.6) | 100 | 4 | 120 | D4521 |
| | | | | | | 240 | D4522-33 |
| **B-Pure Double Holder with Pura-Lite Indicator** (50 kΩ-cm) | 1/2 (1.3) | 40-120 (4-49) | 15 x 7 x 27 (38.1 x 17.8 x 68.6) | 100 | 4 | 120 | D4524 |
| **B-Pure Double Holder with Pura-Lite Indicator** (200 kΩ-cm) | 1/2 (1.3) | 40-120 (4-49) | 15 x 7 x 27 (38.1 x 17.8 x 68.6) | 100 | 4 | 120 | D5831 |
| **B-Pure Double Holder with Pura-Lite Indicator** (1 MΩ-cm) | 1/2 (1.3) | 40-120 (4-49) | 15 x 7 x 27 (38.1 x 17.8 x 68.6) | 100 | 4 | 120 | D5833 |
| **B-Pure Half-size Holder** | 1/2 (1.3) | 40-120 (4-49) | 7 x 7 x 15 (17.8 x 17.8 x 38.1) | 100 | 2 | 120 | D5839 |
| **High Temperature Stainless Steel Single Holder** | 1/4 (.64) | 40-180 (4-82) | 6 x 7 x 22 (15.2 x 17.8 x 55.9) | 100 | 3 | n/a | D0807 |
| **High Temperature Stainless Steel Double Holder** | 1/4 (.64) | 40-180 (4-82) | 13 x 7 x 22 (33 x 17.8 x 55.9) | 100 | 3 | n/a | D0855 |
| **Economy Filter Holder** Use with filters only | 3/4 (1.9) | 40-120 (4-49) | 5.25 x 5.25 x 12 (13.3 x 13.3 x 30.5) | 100 | 2 | n/a | 15840 |
| **Harvey DI+** Ships with Cartridge (D0803), Pura-Lite Indicator (E3450) and Dispenser | 1/4 (.64) | 40-120 (4-49) | 7 x 13 x 21 (17.8 x 33 x 53.3) | 100 | 4 | 120 | AY1273X4 |

## Optional Accessories for Pressurized Cartridge Systems

| Description | | Model No. 120V | Model No. 240V |
|---|---|---|---|
| **Digital Purity Meter** Compatible with B-Pure Double Holders exclusively | Resistivity range of 0.1 - 18.2 MΩ-cm | D2770 | D2769 |
| **Pura-Lite Indicator** Compatible with all systems above, except with Ecomony Filter | Resistivity range of 50 KΩ-cm | E3450 | E3454 |
| | Resistivity range of 200 KΩ-cm | E3451 | E3455 |
| | Resistivity range is up to 1 MΩ-cm | E3452 | E3456 |
| **Flow Meters** Compatible with all systems above, installed in the feed line | 1 to 75 LPH using 1/8 in (.32 cm) NPT inlet | D0787 | D0787 |
| | 0 to 190 LPH using 1/8 in (.32 cm) NPT inlet | D0788 | D0788 |
| **0.2µM Final Filter** For use with B-Pure Double Holders exclusively | | D3750 | D3750 |
| **Dual Pressure Gauge Kit** 0 to 160 psi pressure gauge exclusive to the B-Pure Half-size System. Pressure drop greater than 10 psi indicates need for filter change | | D2780 | D2780 |
| **Single Pressure Gauge Kit** 0 to 160 psi pressure gauge exclusive to the B-Pure Half-size System. Pressure drop greater than 10 psi indicates need for filter change | | D0780 | D0780 |

## Cartridges and Filters for Pressurized Systems

| Cartridge | Resin Type(s) | Capacity as $CaCO_3$ | Model No. |
|---|---|---|---|
| **Cartridges Compatible with B-Pure Double/Single Holder and Harvey DI+ Cartridge Systems** | | | |
| Anion Removal | Strong Anion Exchange | 1680 gr | D0760 |
| Cation Removal | Strong Cation Exchange | 3170 gr | D0815 |
| High Capacity, Two-Bed Ion Exchange | Two-Bed Ion Exchange | 1760 gr | D0803 |
| Macroreticular and Organic Removal | Macroreticular, Activated Carbon | 2000 gal | D0836 |
| Organic Removal | Activated Carbon | 5000 gal | D0813 |
| Oxygen Removal | Oxygen Removal | 30 g | D0811 |
| Ultrapure | Mixed-Bed | 875 gr | D0809 |
| Ultrapure and Organic Removal | Mixed-Bed, Activated Carbon | 785 gr/ 1000 gal | D0832 |
| Ultrapure and Oxygen Removal | Ultrapure, Oxygen Removal | 455 gr/ 30 g | D8809 |
| Ultrapure, Oxygen, and Organic Removal | Ultrapure, Oxygen Removal, Organic Removal | 365 gr/2000 gal /12 g | D8811 |
| **Cartridges Compatible with B-Pure Half-size Holder Cartridge Systems** | | | |
| Organic Removal | Activated Carbon | 5000 gal | D50215 |
| Mixed-Bed with Organic Removal | Mixed-Bed Activated Carbon | 275 gr/2000 gal | D50217 |
| Oxygen Removal | Porous Strong Anion Exchange | 18 g | D50214 |
| Mixed-Bed with Oxygen Removal | Oxygen Removal Mixed-Bed | 275 gr/ 9g | D50216 |
| Ultrapure | Mixed-Bed | 550 gr | D50213 |
| **Cartridges Compatible with High Temperature Stainless Steel Double/Single Holder Cartridge Systems** | | | |
| High Temp, Organic Removal | Activated Carbon | 5000 gal | D8815 |
| High Temp, Oxygen Removal | Oxygen Removal | 30 g | D8817 |
| High Temp, Ultrapure | Mixed-Bed | 915 gr | D8816 |
| High Temp, Ultrapure, Oxygen, and Organic Removal | Ultrapure, Oxygen Removal, Organic Removal | 365 gr / 2000 gal / 12 g | D8818 |
| High Temp, Mixed-Bed, Oxygen Removal | Ultrapure, Oxygen Removal, Organic Removal | 455 gr / 30 g | D8825 |
| **Filters Compatible with B-Pure Half-size Holder Cartridge Systems** | | | |
| 1 µM Pre-filter | | | FL583X4 |
| 5 µM Pre-filter | | | FL583X1 |
| 10 µM Pre-filter | | | FL583X2 |
| 15 µM Pre-filter | | | FL583X3 |
| 0.2 µM Pre-filter | | | FL583X6 |
| 0.45 µM Pre-filter | | | FL583X5 |
| **Filters Compatible with Economy Filter Holder** | | | |
| 5 µM Pre-filter | | | D2729 |
| 10 µM Pre-filter | | | 18011 |
| 15 µM Pre-filter | | | 18018 |

**Capacity (grains shown as $CaCO_3$)**
**gr = grain | gal = gallon | g = grams of oxygen**

### CALCULATING ION EXCHANGE CAPACITY

$$\frac{\text{Cartridge Grain Capacity}}{\text{Total Dissolved Solids (Grains/Gal)}} = \text{Gallons Processed}$$

### CARTRIDGE LIFE CALCULATION

$$\frac{\text{Cartridge Grain Capacity}}{\text{[Feed Water TDS (ppm)]}} \times 64.7 = \text{Pure Water Output (Liters)}$$

$$\frac{\text{Cartridge Grain Capacity}}{\text{[Feed Water TDS (ppm)]}} \times 17.1 = \text{Pure Water Output (Gallons)}$$

Thermo Scientific Barnstead

# Non-pressurized cartridge systems

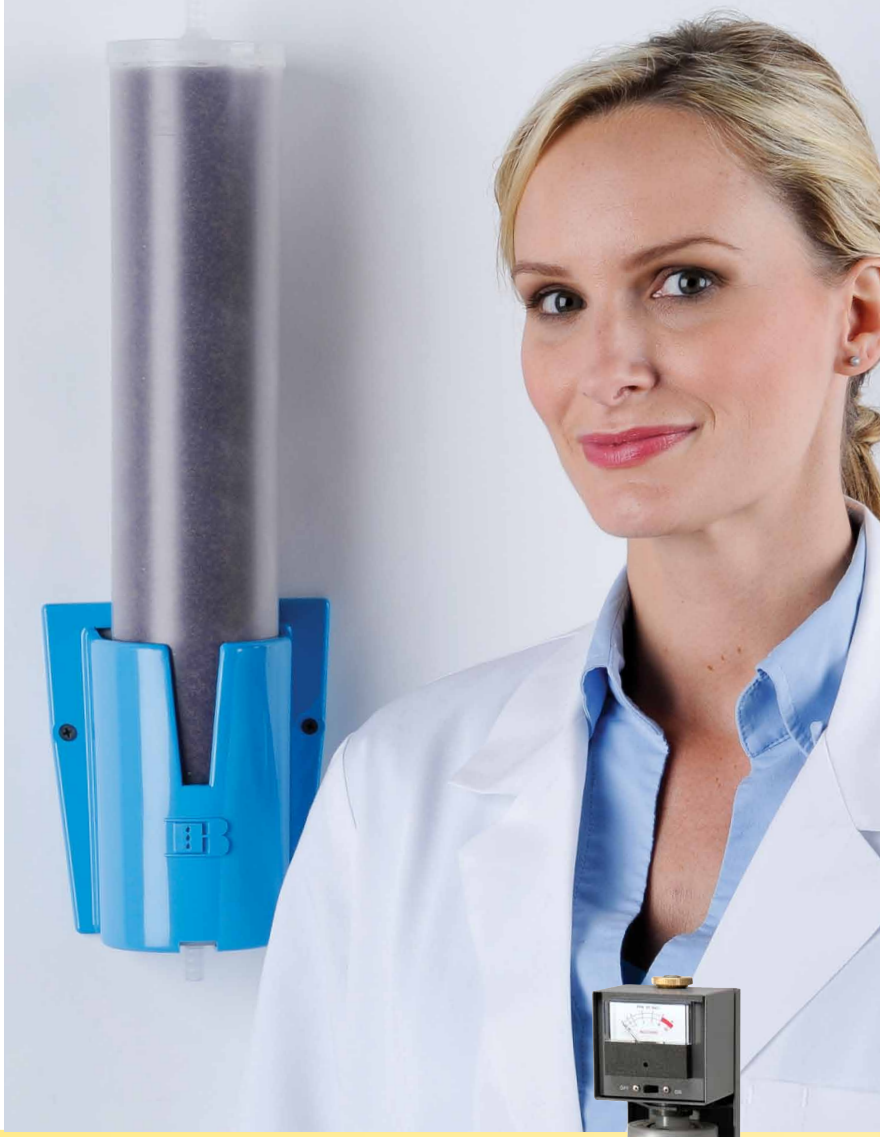
## Hose Nipple Cartridge Systems

An economical and simple approach for purifying water, this system can be installed by itself or in a series using simple tubing. Cartridges for this system provide a selection of removal properties, such as organic, ion, metal, and oxygen removal within a 100% virgin polypropylene cartridge housing. This holder offers the flexibility of accepting half-size, two-third size and full-size cartridges as needed. Cartridges are also available with color change indicators so you know when it is time to replace the cartridge.

**Typical applications -** deionization, organic removal, chlorine removal



**Shown here installed in a series for greater capacity, our most common Hose Nipple Cartridge, D8901 and D8902, is used for generating deionized water for glassware washing and rinsing**



## Bantam Deionizer Cartridge Systems

A good choice for deionization or pretreatment of lab water. Ideal for applications requiring up to 38 L/hr of purified water, this system includes an integrated resistivity meter that measures up to 18 MΩ - cm tolerating inlet pressure ranging from 5 -70 psi. Designed for non-pressurized applications, this sytstem requires diverting output water to an atmospherically vented receptacle as no back pressure can be accepted.

**Typical applications -** deionization



## Non-pressurized Cartridge Systems

| | Inlet Feed Line NPTF inches (cm) | Feed Water Temp. °F (°C) | Dimensions W x D x H inches (cm) | Max Feed Water Pressure (psig) | Max Flow Rate (L/min) | Voltage (VAC) | Model No. |
|---|---|---|---|---|---|---|---|
| **Hose Nipple Cartridge Holder** | n/a | 40-120 (4-49) | n/a | n/a | 1.25 | n/a | D8900 |
| **Bantam Deioinizer Cartridge System** Integrated purity indicator (25 kΩ - 18 MΩ-cm) | 3/8 (.95 cm) | 40-120 (4-49) | 6 x 9 x 28.5 (15.2 x 22.2 x 72.4) | 70 | 0.3 | 120<br>240 | D0800<br>D0805 |

## Cartridges for Non-pressurized Systems

| Cartridge | Resin Type(s) | Color Indicator* | Capacity as $CaCO_3$ | Model No. |
|---|---|---|---|---|
| **Cartridges Compatible with Hose Nipple Cartridge Systems** | | | | |
| 1/2 Size Mixed-Bed | Ultrapure Ion Exchange | no | 430 gr | D50220 |
| 1/2 Size Mixed-Bed with Oxygen Removal** | Ultrapure Mixed-Bed with Strong Anion Exchange | no | 280 gr/4.4 g | D8822 |
| 2/3 Size High Capacity** | Two-Bed Ion Exchange with Strong Cation Exchange | yes | 1100 gr | D8950 |
| 2/3 Size Mixed-Bed and Organic Removal** | Mixed-Bed Ion Exchange with Activated Carbon | yes | 470 gr/200 gal | D8951 |
| Full Size Cation Removal | Cation Exchange | yes | 3000 gr | D8905 |
| Full Size High Capacity | Two-Bed Ion Exchange | yes | 1650 gr | D8901 |
| Full Size Macroreticular, Cation Removal | Macroreticular Cation Exchange | no | n/a | D8908 |
| Full Size Organic Removal | Activated Carbon | no | 5000 gal | D8904 |
| Full Size Oxygen Removal | Strong Anion Exchange | no | 30 g | D8903 |
| Full Size Pretreatment and Scale Eliminator | Mixed-Bed and Strong Cation Exchange, Activated Charcoal | yes | 1250 gr/1000 gal | D8921 |
| Full Size Ultrapure | Ultrapure Ion Exchange | no | 915 gr | D8911 |
| Full Size Ultrapure | Ultrapure Mixed-Bed Ion Exchange | yes | 915 gr | D8902 |
| Full Size Ultrapure with Organic Removal | Mixed-Bed Ion Exchange with Activated Carbon | yes | 730 gr/2000 gal | D8922 |
| **Cartridges Compatible with Bantam Deionizer Cartridge Systems** | | | | |
| Anion Removal | Strong Anion Exchange | no | 1680 gr | D0760 |
| Cation Removal | Strong Cation Exchange | no | 3170 gr | D0815 |
| High Capacity, Two-Bed Ion Exchange | Two-Bed Ion Exchange | no | 1760 gr | D0803 |
| Ultrapure | Mixed-Bed | no | 875 gr | D0809 |
| Ultrapure and Organic Removal | Mixed-Bed, Activated Carbon | no | 785 gr/ 1000 gal | D0832 |

***Hose Nipple Cartridge with color indicator to notify user cartridge is expired; Alcohol-containing samples cannot be used with these models**
****Hose Nipple Cartridge with tapered straight nipple for 3/8in (.95 cm) ID tubing**

**Capacity (grains shown as $CaCO_3$)**
**gr = grain | gal = gallon | g = grams of oxygen**

### CALCULATING ION EXCHANGE CAPACITY

$$\frac{\text{Cartridge Grain Capacity}}{\text{Total Dissolved Solids (Grains/Gal)}} = \text{Gallons Processed}$$

### CARTRIDGE LIFE CALCULATION

$$\frac{\text{Cartridge Grain Capacity}}{\text{[Feed Water TDS (ppm)]}} \times 64.7 = \text{Pure Water Output (Liters)}$$

$$\frac{\text{Cartridge Grain Capacity}}{\text{[Feed Water TDS (ppm)]}} \times 17.1 = \text{Pure Water Output (Gallons)}$$

# Common Applications for Cartridge Systems

**Thermo Scientific Barnstead cartridge systems are ideal for treating water used in many common laboratory settings:**

## Supply purified water for general lab equipment

*($CO_2$ incubators, environmental chambers, and water baths)*

Pure water is frequently required for humidification and decontamination in common laboratory equipment. The equipment often requires water with a resistivity ranging from 50 kΩ - 1 MΩ. The use of ultrapure water may damage equipment, yet poor quality water can cause mineral deposits or contamination. Water used with this equipment typically does not need to be sterile.



**Thermo Scientific Environmental Chamber**



**Thermo Scientific General Purpose Water Bath**



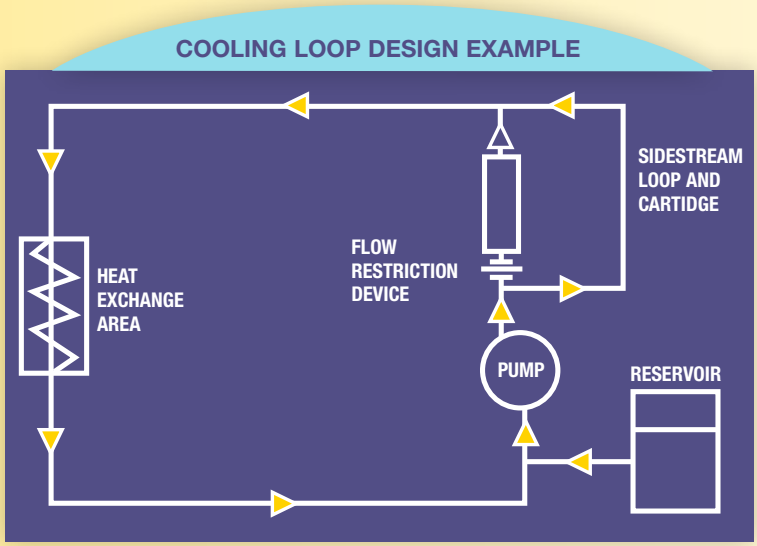
**Thermo Scientific Forma Direct Heat $CO_2$ Incubator**

### Cartridge Systems Suggested for General Lab Equipment

| Application | Solution | System Model No. | Cartridge Model No. |
|---|---|---|---|
| Supply water for one piece of lab equipment, such as a $CO_2$ incubator or a water purifcation system | **Hose Nipple Cartridge System with High Capacity Cartridge**<br>• Non-pressurized system<br>• High capacity ion exchange cartridge produces required resistivity and features color indicator to notify user when cartridge is exhausted. | D8900 | D8901 |
| Supply water for multiple pieces of lab equipment, such as a water bath or environmental chamber | **B-Pure Double Holder Cartridge System including Pura-Lite Indicator with Pretreatment, Organic, and Ultrapure Cartridges**<br>• Pressurized system accomodating two cartridges for increased capacity<br>• Pura-Lite indicates when to change cartridge<br>• Pretreatment, organic, and an ultrapure cartridge extends useful life of cartridges while removing organics and ions | D4524 | D0832 and D0809 |
| Supply water for a couple of pieces of lab equipment and rinse dishes | **Harvey DI+ System**<br>• Complete out of the box, Harvey DI+ includes a single pressurized cartridge system, Pura-Lite Indicator (E3450), a high capacity cartridge (D0803), and a dispenser | AY1273X4 | included |

## Purify the water used in cooling loops

Impurities in water can adversely impact the operational life of laser, radar, sonar, and other heat exchange systems equipped with water cooling loops. Untreated or improperly treated cooling loop water can lead to corrosion, scaling, inefficient heat transfer, and ultimately system failures.




### Cartridge Systems Suggested for Typical Water Cooling Loops

| Application | Solution | System Model No. | Cartridge Model No. | Accessory Model No. |
|---|---|---|---|---|
| Cooling loops where cartridge system will experience back pressure; normal temperatures, is not open to atmosphere | **B-Pure Single Holder Cartridge System, Ultrapure/ Oxygen Removal Cartridge and Pura-Lite Indicator**<br>• Pressurized system to accomodate back pressure<br>• Ultrapure/oxygen removal cartridge produces required resistivity and maintains low oxygen level to prevent oxidation<br>• Pura-Lite indicates when to change cartridge | D4511 | D8809 | E3450 |
| Cooling loops where cartridge system will NOT experience back pressure; no extreme temperatures; open to atmosphere | **Hose Nipple Cartridge System with High Capacity Cartridge**<br>• Non-pressurized system<br>• High capacity ion exchange cartridge produces required resistivity and features color indicator to indicate when to change cartridge. Since the loop is open to the atmosphere, there is no need for oxygen removal | D8900 | D8901 | n/a |
| Cooling loops where temperature is typcially 120.2 °F (49 °C); cartridge system may experience back pressure; is not open to atmosphere | **High Temperature Cartridge System, Mixed-Bed Oxygen Removal Cartridge and Pura-Lite Indicator**<br>• Non-pressurized system<br>• High capacity ion exchange cartridge produces required resistivity. Since the loop is not open to the atmosphere, there is a need for oxygen removal | D0855 | D8816 and D8825* | E3450 |

* See other cartridge options on page 11

## Cartridge and Filter System Applications

- **Microbiology** - nutrient media preparation; glassware rinsing; environmental monitoring
- **Biochemistry** - sample preparation; spectroscopy
- **Chemistry** - sample preparation; dilutions; reagent prep
- **Environmental sciences** - use in Biochemical Oxygen Demand (BOD); Total Soluble Solids (TSS); Mixed-Liquor Volatile Suspended Solids (MLVSS)
- **Education** - fly food preparation; humidifiers

# Customized Cartridges

## Don't see the right cartridge for your needs?

**We can custom build cartridges. Call your local sales representative to walk you through the process.**

# Let our experts recommend the right water purification products for you!

## Request a FREE, no obligation Thermo Scientific $H_2O$ Select Analysis Kit

Our comprehensive water analysis program is designed to identify the best water system and ancillary equipment based on a sample of your feed water. Upon evaluation, you will receive a recommendation along with estimated cartridge life. Request one today at www.thermoscientific.com/select.




For more information about these products or our complete water purification portfolio, please visit www.thermoscientific.com/purewater

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