

3M™ Water Filtration Products
TFS450 Reverse Osmosis Water Filtration System



Better Water.
Better Coffee.
Better Business.



For A Better Tasting Cup of Coffee



Recipe Quality Water™



The TFS450 Reverse Osmosis Water Filtration System helps produce consistent Recipe Quality Water™ for better tasting hot beverages while maintaining high operational efficiency in water conditions with high Total Dissolved Solids (TDS) and/or hardness. The unique design allows filtered water to be blended with RO water for the adjustment of beverage quality and maximum production capabilities.

Now You Can Have Consistent Water For Quality-Tasting Coffee

Coffee is 98 - 99% water; the better the water, the better the brewed cup quality.

In order to achieve the Golden Cup Standards of the Specialty Coffee Association of America, it is recommended that filtered water that contains between 100-200 parts per million (ppm) of Total Dissolved Solids (TDS) produces the best-tasting coffee (espresso-brewing water is recommended with a TDS level closer to 50 ppm). Recommendations also include water free from objectionable tastes and odors, such as chlorine and chloramines.

With a blending feature to adjust the level of minerals* and a final carbon filtration of your brewing water, the TFS450 satisfies both needs so you are able provide a higher-quality finished cup to your customers.

*From 10 to about 50% of incoming feed water



In a controlled study
of 108 people,**
**100% of Customers
Chose Coffee Made
With 3M Filtered Water.**

** study conducted in 2006



The Difference Is Clear...

The benefits of using the very best brewing water include not only great taste, but longer equipment life too. The TFS450 system reduces the minerals that cause lime scale, thus reducing equipment damage and maintenance costs.

Scale causes equipment down time, reduces energy efficiency, and affects both water-level and temperature controls.

1/8" of scale = 25% energy loss = \$300 per year (average)

- Scaled spray heads may cause inconsistent volumes and incorrect flavor profiles
- Scaled level indicators may cause overflow of the equipment
- Scaled coils typically cause longer brewing times and incorrect (lowered) brewing temperatures
- Service calls for scale problems may cost hundreds of dollars, including travel, parts and labor

With A TFS450 Reverse Osmosis Water Filtration System, You Can Save Hundreds Or Thousands Of Dollars A Year On Scale-Related Energy and Maintenance Costs.

untreated water



3M filtered water



Coffee-boiler photographs used with permission of BUNN® Corporation, Springfield, IL

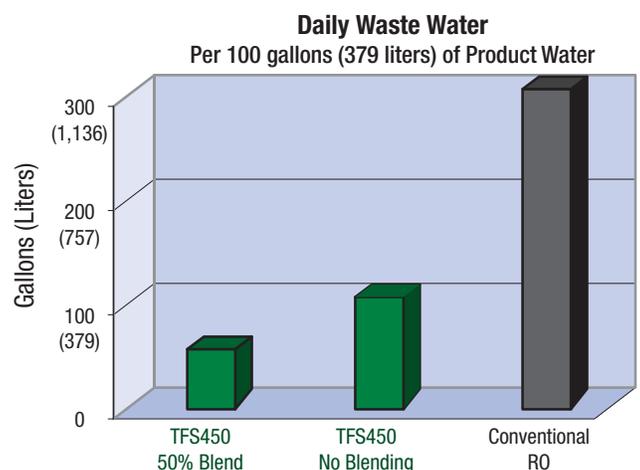
How Does the TFS450 Reverse Osmosis System Make a Better-Tasting Cup of Coffee?

The TFS450 uses a reverse osmosis membrane to separate the contaminants from your water. As the tightest of all filtration processes, reverse osmosis (RO) removes about 90% or more of TDS, including particles, off taste, and scale-causing calcium and magnesium ions.

The TFS450 allows you to blend back just the right amount of TDS to brew a cup that matches the taste preferences of your customers regardless of incoming water quality.

Sustainability

Reverse osmosis is a cross-flow filtration process that results in a waste-water stream with the minerals concentrated by the RO membrane. With conventional RO systems, the waste stream can be from 2 to 4 times the volume of the filtered water. For the production of 100 gallons (379 liters) of filtered water, the “Green” TFS450 conserves up to 250 gallons (946 liters) of water per day — over 90,000 gallons (340,687 liters) per year — than conventional RO systems. (See figure to the right.)



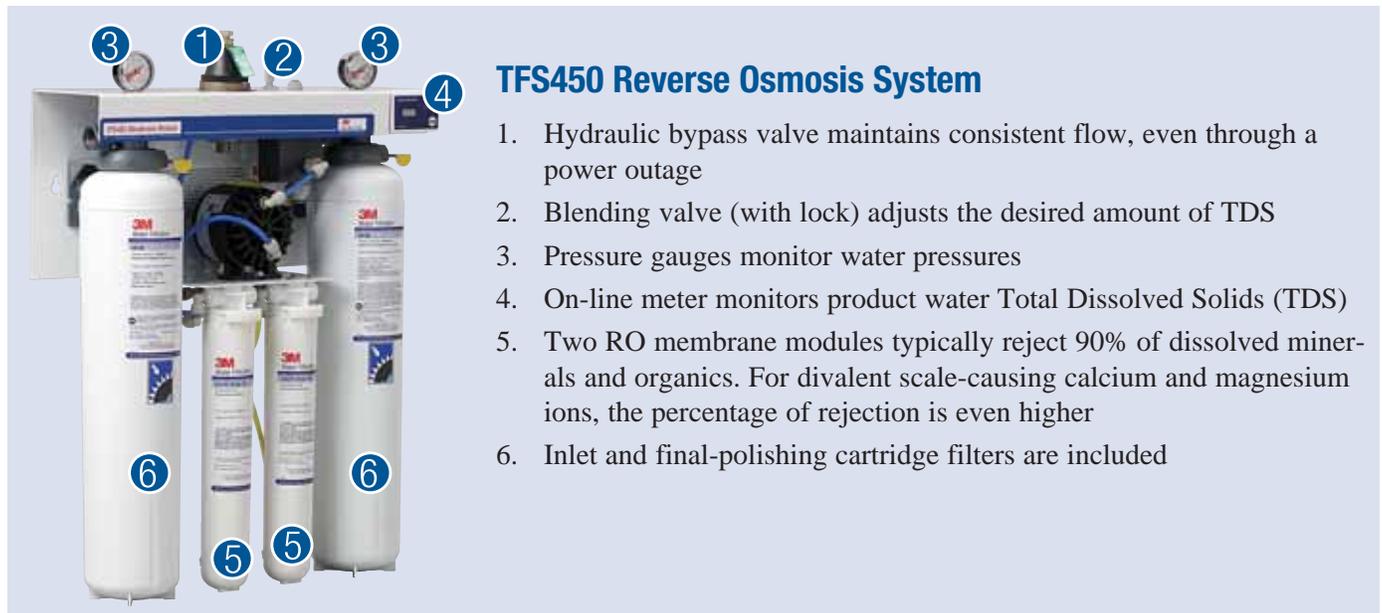
Product Specifications

TFS450 Reverse Osmosis System

Product Benefits

- Helps meet your coffee specs for quality-tasting water with adjustable TDS levels from 10% to about 50% of incoming water
- Makes 300 gal/day (1135 liters/day) without blending¹ and up to 600 gal/day (2270 liters/day) of blended water
- Keeps running during high demand periods and power outages with automatic non-electrical by-pass
- All product water (including bypass) is pre- and post-filtered
- Easy to maintain with rapid changeout of Sanitary Quick Change (SQC) disposable cartridges
- Compact, uses very small space, and is easy to install (requires external storage tank)
- Minimum water waste with 50% conversion of inlet water into product water; higher with blending (see chart on page 3)
- Optional pumping module is available for low inlet water pressure areas

¹ at 77°F (25°C) and 70 psi (482 kPa)



TFS450 Reverse Osmosis System

1. Hydraulic bypass valve maintains consistent flow, even through a power outage
2. Blending valve (with lock) adjusts the desired amount of TDS
3. Pressure gauges monitor water pressures
4. On-line meter monitors product water Total Dissolved Solids (TDS)
5. Two RO membrane modules typically reject 90% of dissolved minerals and organics. For divalent scale-causing calcium and magnesium ions, the percentage of rejection is even higher
6. Inlet and final-polishing cartridge filters are included

For more information please call us at **888.218.2866**

or visit **www.cunofoodservice.com**



3M Purification Inc.
400 Research Parkway
Meriden, CT 06450
U.S.A.
(888) 218-2866
(203) 237-5541
Fax (230) 238-8701
www.cunofoodservice.com

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