

SPEC# _____

QUANTITY _____

application: **COFFEE/ESPRESSO/STEAMERS**

model:

TFS450 Reverse Osmosis System



The 3M™ Water Filtration Products TFS450 Reverse Osmosis Water Filtration System helps produce consistent Recipe Quality Water™ for hot beverages and steamers while maintaining efficient equipment operations in water conditions with high total dissolved solids (TDS) and/or hardness. The unique design allows for filtered water to be blended with RO water for adjustment of beverage quality and production volumes to about 600 gal/day.

The TFS450 offerings include three modules for maximum flexibility. The central Membrane Module is supported by an alternative Pumping Module to boost inlet water pressure when required and a choice of two product water storage tanks.

On-line TDS monitoring and pressure gauges are included. An installation kit is available.

PRODUCT BENEFITS

- Precision lockable, metering valve provides Recipe Quality Water™ with adjustable Total Dissolved Solids (TDS)¹ for coffee and espresso brewing.
- Reduced equipment maintenance and replacement costs from reduced minerals that cause lime scale.
- Daily production from 300 gallons/day (1,136 liters/day) with no blending up to 600 gallons/day (2,271 liters/day) with blending.²
- Conversion of inlet water to product water (water utilization efficiency) is at least 50%; higher with blending.²
- Lower product-water recovery times with the included permeate pump.
- A hydraulic (non-electrical) bypass valve maintains the water flow in high demand situations.
- All product water (including blending and bypass) is pre- and post-filtered with NSF listed carbon and sediment filters, if desired, for cyst reduction and great taste.
- System includes built-in pressure gauges and an in-line product-water TDS meter for monitoring.

PRODUCT SPECIFICATIONS

Model Number	Part Number	Reduction Claims	Capacity ²	Application
TFS450 Membrane	5623901 ³	Approx. 90% TDS Reduction ⁴	300 gallons (1,136 liters) per day	Coffee, Espresso, Steamers
Pumping Module	6233901	–	–	Pressurized Water Supply
Installation Kit	50-91301	–	–	Installation Kit

Softening is recommended when inlet feed water hardness is over 10 grains (171 ppm) and/or when inlet total dissolved solids are > 1,400 ppm.

¹ From 10% to about 50% of inlet-water TDS

² Capacity/Conversion is at 77°F (25°C) and 70 psi feedwater pressure to atmosphere without blending. With blending the system production rate is approximately doubled and the maximum outlet water Total Dissolved Solids (TDS) is about 50% of inlet water TDS. Performance may vary depending on water temperature and pressure.

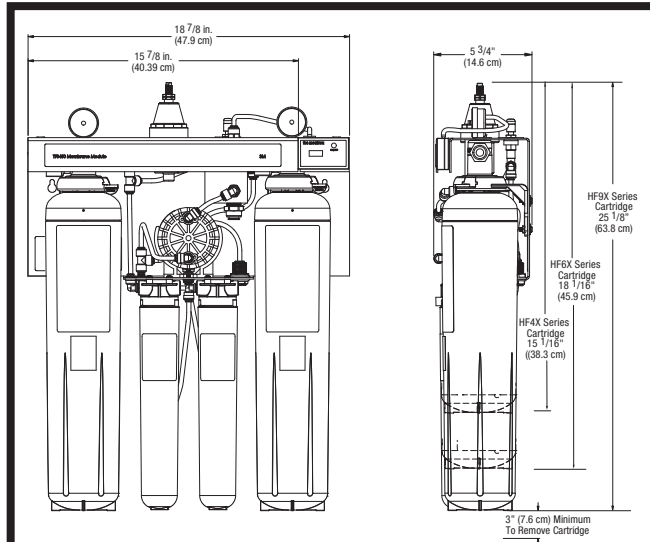
³ Also available without pre-filter and post-filter as part number 5623902

⁴ Without blending



TFS450 Reverse Osmosis System 3M™ Water Filtration Products

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Expected Water Usage over 2 Hour Peak Demand Period (Gallons)	Recommended Tank Size (Gallon Tank)
< 3	Not Recommended
3 - 5	2
5 - 10	5
10 - 20	10
20 - 40	20
40 - 60	40
> 60	Consult Factory

NOTE: It is not recommended to use the TFS450 RO system in applications that require less than 30 gallons per day.

⚠ WARNING: To reduce the risk associated with the ingestion of contaminants:
 • Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

3M Purification Inc. recommends regularly scheduled maintenance and replacement of the filter cartridge in order for the product to perform as advertised/sold. 3M Purification Inc. shall not be liable for system failures due to improper maintenance.

LIMITED WARRANTY

3M Purification Inc. warrants this Product will be free from defects in material and manufacture for five (5) years from the date of purchase: The filter cartridge or filter membrane is warranted to be free from defects in material and manufacture for one (1) year. This warranty does not cover failures resulting from abuse, misuse, alteration or damage not caused by 3M Purification Inc. or failure to follow installation and use instructions. No warranty is given as to the service life of any filter cartridge or membrane as it will vary with local water conditions and water consumption. **3M PURIFICATION INC. MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOMER OR USAGE OF TRADE.** If the Product fails to satisfy this Limited Warranty during the warranty period, 3M Purification Inc. will replace the Product or refund your Product purchase price. This warranty does not cover labor. **The remedy stated in this paragraph is Customer's sole remedy and 3M Purification Inc.'s exclusive obligation.** For additional information, see the entire Limited Warranty located in the product Installation and Operating Instruction Manual.

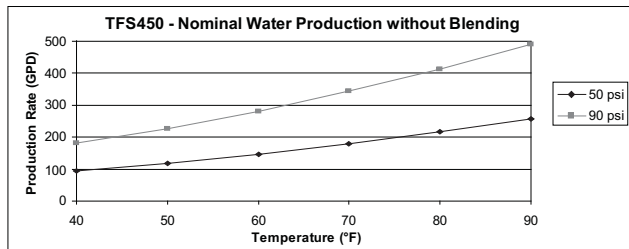
PHYSICAL SPECIFICATIONS

- System materials are NSF and/or FDA CFR-21 compliant.
- System is mountable with a powder-coated rust-resistant bracket design.
- Pumping Module connections are 3/8" NPT (female) and include 1/2" NPT bushings.
- Membrane Module inlet/outlet connections are 1/2" NPT (female).
- Maximum inlet water pressure of 100 psi (689 kPa) and inlet water temperature of 100°F (37.8°C).

IMPORTANT: INSTALLATION TIPS

These installation tips are for informational purposes only and are not intended to be used as actual installation instructions. **CAUTION:** To reduce the risk associated with property damage due to water leakage:

- **Read and follow** Use Instructions before installation and use of this system.
- Installation and use **MUST** comply with all state and local plumbing codes.
- **Protect from freezing**, remove filter cartridge when temperatures are expected to drop below 40°F (4.4°C).
- **Do not install on hot water supply lines.** The maximum operating water temperature of this filter system is 100°F (37.8°C).
- **Do not install** if water pressure exceeds 100 psi (689 kPa). If your water pressure exceeds 80 psi (552 kPa), you must install a pressure limiting valve. Contact a plumbing professional if you are uncertain how to check your water pressure.
- **Do not install** where water hammer conditions may occur. If water hammer conditions exist you must install a water hammer arrester. Contact a plumbing professional if you are uncertain how to check for this condition.
- The disposable filter pre and post cartridges **MUST** be replaced every 12 months, at the rated capacity or if a noticeable reduction in flow rate occurs.



Replacement Cartridges and Cartpaks

Part Number	Function	Description	Qty. Req'd
56248-01	All Filters	Pre & Final and 2 RO Cartridges	1
56248-02	RO Cartpak	2 RO Filters	1
56135-07	Pre-Filter	HF95	1
56135-03	Final (Post) Filter	HF90	1
56250-01	RO Filter	RO Membrane	2



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