

UAT™ Puremate and Pureflex Series Seawater Desalination Systems: Pleasure Craft and WorkBoat

Severn Trent Services offers the UAT™ Puremate and Pureflex series of seawater desalination membrane filtration systems suitable for commercial and marine specific applications. The UAT Puremate and Pureflex systems range in output capacities from 500 GPD to 1800 GPD (1893 LPD to 6814 LPD) and effectively produce fresh treated water, free of particulate matter or contaminants from a seawater source. The UAT Puremate and Pureflex systems are available in standard and custom-made specifications to meet the requirements of a classified area.



The cost-effective, easy-to-operate and efficient UAT Puremate and Pureflex systems are built to withstand marine environments, always providing a source of fresh water – whenever and wherever it's needed. The UAT Puremate and Pureflex systems feature corrosion resistant components, flexible control features and a variety of other standard features.

The UAT Puremate and Pureflex systems purify seawater to provide fresh water for drinking and other sanitary needs, equipment wash down, boiler makeup feed water, engine cooling, and other requirements.



UAT™ Puremate & Pureflex Series Seawater Systems
Reverse Osmosis Systems from 500 (1893 LPD) to 1800 (6814 LPD) gallons per day

Model Puremate (Compact Systems)	Model Pureflex (Modular Systems)	Permeate Flow Rate GPD/LPD	Feed Water Flow GPM/CMH	System Recovery	Booster Pump Horsepower 50/60	High Pressure Pump Horsepower 50/60	Membrane Model/Qty	Voltage
UAT-500-PM-S-60-1-110	UAT-500-PF-S-60-1-110	500/1893	2.3/0.53	15 %	1/3/1/2	1 1/2	SW30-2540/1	110/60/1
UAT-500-PM-SM-60-1-110	UAT-500-PF-SM-60-1-110	500/1893	2.3/0.53	15 %	1/3/1/2	1 1/2	SW30-2540/1	110/60/1
UAT-500-PM-S-60-1-220	UAT-500-PF-S-60-1-220	500/1893	2.3/0.53	15 %	1/3/1/2	1 1/2	SW30-2540/1	220/60/1
UAT-500-PM-SM-60-1-220	UAT-500-PF-SM-60-1-220	500/1893	2.3/0.53	15 %	1/3/1/2	1 1/2	SW30-2540/1	220/60/1
UAT-500-PM-S-50-1-220	UAT-500-PF-S-50-1-220	500/1893	2.3/0.53	15 %	1/3/1/2	1 1/2	SW30-2540/1	220/50/1
UAT-500-PM-SM-50-1-220	UAT-500-PF-SM-50-1-220	500/1893	2.3/0.53	15 %	1/3/1/2	1 1/2	SW30-2540/1	220/50/1
UAT-600-PM-S-60-1-110	UAT-600-PF-S-60-1-110	600/2272	3.5/0.8	12 %	1/3/1/2	1 1/2	SW30-4021/1	110/60/1
UAT-600-PM-SM-60-1-110	UAT-600-PF-SM-60-1-110	600/2272	3.5/0.8	12 %	1/3/1/2	1 1/2	SW30-4021/1	110/60/1
UAT-600-PM-S-60-1-220	UAT-600-PF-S-60-1-220	600/2272	3.5/0.8	12 %	1/3/1/2	1 1/2	SW30-4021/1	220/60/1
UAT-600-PM-SM-60-1-220	UAT-600-PF-SM-60-1-220	600/2272	3.5/0.8	12 %	1/3/1/2	1 1/2	SW30-4021/1	220/60/1
UAT-600-PM-S-50-1-220	UAT-600-PF-S-50-1-220	600/2272	3.5/0.8	12 %	1/3/1/2	1 1/2	SW30-4021/1	220/50/1
UAT-600-PM-SM-50-1-220	UAT-600-PF-SM-50-1-220	600/2272	3.5/0.8	12 %	1/3/1/2	1 1/2	SW30-4021/1	220/50/1
UAT-1000-PM-S-60-1-220	UAT-1000-PF-S-60-1-220	1000/3786	3.5/0.8	20 %	1/3/1/2	3	SW30-2540/2	220/60/1
UAT-1000-PM-SM-60-1-220	UAT-1000-PF-SM-60-1-220	1000/3786	3.5/0.8	20 %	1/3/1/2	3	SW30-2540/2	220/60/1
UAT-1000-PM-S-50-1-220	UAT-1000-PF-S-50-1-220	1000/3786	3.5/0.8	20 %	1/3/1/2	3	SW30-2540/2	220/50/1
UAT-1000-PM-SM-50-1-220	UAT-1000-PF-SM-50-1-220	1000/3786	3.5/0.8	20 %	1/3/1/2	3	SW30-2540/2	220/50/1

Chart is continued on next page

- Puremate “PM” is for a compact configuration seawater system
- Pureflex “PF” is for a modular configuration seawater system
- “S” in the model number denotes “Standard” system without options included
- “SM” in the model number denotes “Smart” Series with added options included
- The final water quality and permeate flow will depend on actual raw water conditions
- Equipment is offered based on Severn Trent Water Purification, Inc. Terms and Conditions
- The designed flow rate is based on 36,500 PPM/TDS @ 25°C

UAT™ Puremate & Pureflex Series Seawater Systems
Reverse Osmosis Systems from 500 (1893 LPD) to 1800 (6814 LPD) gallons per day

Model Puremate (Compact Systems)	Model Pureflex (Modular Systems)	Permeate Flow Rate GPD/LPD	Feed Water Flow GPM/CMH	System Recovery	Booster Pump Horsepower 50/60	High Pressure Pump Horsepower 50/60	Membrane Model/Qty	Voltage
UAT-1300-PM-S-60-1-220	UAT-1300-PF-S-60-1-220	1300/4921	4.0/0.93	22 %	1/2/1/2	3	SW30-2540/3	220/60/1
UAT-1300-PM-SM-60-1-220	UAT-1300-PF-SM-60-1-220	1300/4921	4.0/0.93	22 %	1/2/1/2	3	SW30-2540/3	220/60/1
UAT-1300-PM-S-50-1-220	UAT-1300-PF-S-50-1-220	1300/4921	4.0/0.93	22 %	1/2/1/2	3	SW30-2540/3	220/50/1
UAT-1300-PM-SM-50-1-220	UAT-1300-PF-SM-50-1-220	1300/4921	4.0/0.93	22 %	1/2/1/2	3	SW30-2540/3	220/50/1
UAT-1300-PM-S-60-3-220	UAT-1300-PF-S-60-3-220	1300/4921	4.0/0.93	22 %	1/2/1/2	3	SW30-2540/3	220/60/3
UAT-1300-PM-SM-60-3-220	UAT-1300-PF-SM-60-3-220	1300/4921	4.0/0.93	22 %	1/2/1/2	3	SW30-2540/3	220/60/3
UAT-1300-PM-S-60-3-440	UAT-1300-PF-S-60-3-440	1300/4921	4.0/0.93	22 %	1/2/1/2	3	SW30-2540/3	440/60/3
UAT-1300-PM-SM-60-3-440	UAT-1300-PF-SM-60-3-440	1300/4921	4.0/0.93	22 %	1/2/1/2	3	SW30-2540/3	440/60/3
UAT-1300-PM-S-50-3-380	UAT-1300-PF-S-50-3-380	1300/4921	4.0/0.93	22 %	1/2/1/2	3	SW30-2540/3	380/50/3
UAT-1300-PM-SM-50-3-380	UAT-1300-PF-SM-50-3-380	1300/4921	4.0/0.93	22 %	1/2/1/2	3	SW30-2540/3	380/50/3
UAT-1800-PM-S-50-1-220	UAT-1800-PF-S-50-1-220	1800/6814	3.9/0.89	32 %	1/2/1/2	3	SW30-2540/4	220/50/1
UAT-1800-PM-SM-50-1-220	UAT-1800-PF-SM-50-1-220	1800/6814	3.9/0.89	32 %	1/2/1/2	3	SW30-2540/4	220/50/1
UAT-1800-PM-S-60-3-220	UAT-1800-PF-S-60-3-220	1800/6814	3.9/0.89	32 %	1/2/1/2	3	SW30-2540/4	440/60/3
UAT-1800-PM-SM-60-3-220	UAT-1800-PF-SM-60-3-220	1800/6814	3.9/0.89	32 %	1/2/1/2	3	SW30-2540/4	440/60/3
UAT-1800-PM-S-60-3-440	UAT-1800-PF-S-60-3-440	1800/6814	3.9/0.89	32 %	1/2/1/2	3	SW30-2540/4	220/60/3
UAT-1800-PM-SM-60-3-440	UAT-1800-PF-SM-60-3-440	1800/6814	3.9/0.89	32 %	1/2/1/2	3	SW30-2540/4	220/60/3
UAT-1800-PM-S-50-3-380	UAT-1800-PF-S-50-3-380	1800/6814	3.9/0.89	32 %	1/2/1/2	3	SW30-2540/4	380/50/3
UAT-1800-PM-SM-50-3-380	UAT-1800-PF-SM-50-3-380	1800/6814	3.9/0.89	32 %	1/2/1/2	3	SW30-2540/4	380/50/3

- Puremate “PM” is for a compact configuration seawater system
- Pureflex “PF” is for a modular configuration seawater system
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- “SM” in the model number denotes “Smart” Series with added options included
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UAT™ Puremate and Pureflex Series: Standard Features

Raw Water Booster Pump and Motor

- 316 stainless steel fluid end
- Positive suction pump to deliver water up to pretreatment stage
- Motor is totally enclosed fan cooled (TEFC)

Pre-Filtration

- In-line strainer
- 20 and 05 micron pre-filter with a pleated/washable sediment cartridge
- Centrifugal oil/water separator

High Pressure Pump and Motor

- Triplex ceramic plunger design
- 316 stainless steel valves and seats for maximum life
- 316 stainless steel fluid end
- Motor is totally enclosed fan cooled (TEFC)
- Direct couple pump and motor

Reverse Osmosis Membrane / Pressure Vessel

- White fiberglass pressure vessels
- US Made Thin Film composite (TFC) reverse osmosis membrane made by Filmtec™ Div. of Dow Chemical

Plumbing

- 316L stainless steel high-pressure hoses/fittings (rigid and flexible type tubing)
- Low-pressure hoses and fittings will be polyethylene/PVC SCH.80

Built-In Integrated Reverse Osmosis Membrane Cleaning System

- System will include a built-in cleaning valve and loop to facilitate the cleaning of the RO membranes. This feature will clean the system without the need to disconnect any connection



Raw Seawater
SS Feed Pump



Inlet Seawater Strainer

UAT™ Puremate and Pureflex Series: Standard Features

Main Control Panel Instrumentation and Safety Features

- Panel mounted product and reject water flow meter
- Hand held pocket TDS meter
- 316L stainless steel high pressure and low pressure gauges glycerin filled
- 316L stainless steel high pressure regulating by-pass valve
- Automatic low-pressure cut-off switches to protect booster pump and high pressure pump from low flow rate or pressure
- Automatic low vacuum-pressure cut-off switches to protect booster pump and high pressure pump due to restricted flow rate or pressure
- Automatic high-pressure cut-off switch to protect high-pressure pump due to exceeded pressure
- On/off RO controls

Frame/Skid

- System is skid mounted on high grade, lightweight, non-corrosive, aluminum frame. The surface is first sand blasted and then painted with a fuse coated electrically applied enamel oven baked at 204° C for maximum corrosion resistant

Packaging for Transportation

Export Crate



PLC Controls with Full Diagnostics

UAT™ Puremate and Pureflex Series: Optional SMART Features

(“SM” in the model number denotes “SMART” series with these added features included)

- Variable Frequency Drive (VFD) for the high pressure motor. This feature will reduce the amount of amperage required at start up and will extend the life of the high pressure pump*
(* VFD feature is not available in the 110 volts unit)
- Permeate digital TDS reading
- High level permeate TDS Alarm
- Automatic 3 way bypass diverter valve for high TDS. This feature will divert product water to dump if quality is not met
- Low pressure alarm
- Motor overload alarm
- Cleaning enable cycle
- VFD secondary speed
- Low level alarm dosage tank (purchase of dosage kit is required)
- Start-up time delay to safe guard high pressure pump
- Automatic fresh flush cycle (purchase of RO fresh water flush is required)
- Total accumulative hour meter
- Cycle running hour meter
- Maintenance schedule for pre-filters
- Maintenance schedule for high pressure motor
- Maintenance schedule for RO membrane
- Pre-Wired permeate water float system

UAT™ Puremate and Pureflex Series: Additional Optional Accessories

(To be purchased separately if required)

Dosage Pump System

The dosage injection pump includes a chemical storage tank and a low level float safety feature. This unit will facilitate injecting a chemical or anti-scalant into the feed raw water line to prevent premature RO membrane scaling or will facilitate injecting chlorine in the product to prevent organic growth.

- UAT- PMPF-DS-60-KIT (Voltage: 110 / 60 / 1)
- UAT- PMPF-DS-50-KIT (Voltage: 220 / 50 / 1)

Max Turbi™ Filter

An exclusive media filtration system used to filter sand and sediment (turbidity) down to 5-15 Microns. This filter is supplied with a manual backwash valve.

- UAT-PMPF-MM-0840-KIT
Note: to be used with 500 GPD (1893 LPD), 600 GPD (2272 LPD), 1000 GPD (3786 LPD) units
- UAT- PMPF-MM-1054-KIT
Note: to be used with 1300 GPD (4921 LPD) and 1800 GPD (6814 LPD) units

Maxi Filter

The Maxi cartridge filter has the capability to collect a large amount of sedimentation and large particles down to 10 microns.

- UAT-PMPF-MF-B-KIT

Reverse Osmosis Fresh Water Flush

This Automatic fresh flush will allow flushing of the reverse osmosis membrane with non chlorinated product water at every shut down. This feature will extend the time between each shut downs and reduce the use of the preservative. This feature is only available on SMART Series.

- UAT- PMPF-FF-60-KIT (Voltage:110/60/1)
- UAT- PMPF-FF-50-KIT (Voltage:220/50/1)

Ultraviolet Sterilization System

The ultraviolet system will disinfect product water. The chamber is constructed of stainless steel. This system features an LED display, and view port for visual inspection. Capacity up to 6 GPM (22 LPM).

- UAT- PMPF-UV-50/60-KIT (Voltage: 110/240-50/60-1)

Carbon Block Filter

A cartridge filter used to remove taste odors and chlorine, and enhance permeate (product) water taste.

- UAT-PMPF-CB-KIT

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