



S.D.S.

## Purified Water Storage and Distribution System

### COMPLETE, COMPACT SYSTEMS FOR THE STORAGE AND DISTRIBUTION OF UP TO 350 LITERS OF PURIFIED WATER

The Millipore Storage and Distribution System (S.D.S.) is designed to store purified water in a compact reservoir, and to distribute it, under pressure, around an external distribution loop.

### Purified Water

Purified water for general laboratory use is often produced by reverse osmosis (RO) and Millipore's patented Electrodeionization (EDI) process. Any one of our RO or Electrodeionization water purification systems (RiOs™, Milli-RO®, Elix® and Milli-RX™) can be conveniently installed above the S.D.S frame. Your nearest Millipore office will provide detailed information and design the water purification and storage solution best suited to your needs.

#### ▲ Key Benefits

- Stores purified water in a compact reservoir
- Ensures water quality does not degrade during storage
- Provides complete water level control and monitoring
- Meets individual needs for water purification and storage

### Maintaining Water Quality

Several protective features built into the S.D.S. System ensure that water quality does not degrade during storage. Ingress of airborne microorganisms is prevented by a highly retentive vent filter in combination with a sanitary overflow device. When storing Type II\* water, resistivity levels greater than 1 megohm-cm can be maintained using the accessory vent filter/CO<sub>2</sub> trap. The reservoir also has a conical bottom to allow complete drainage for effective cleaning and sanitization.

\*A.S.T.M. Type II water: >1 megohm-cm

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## Automatic Sanitization Module

Millipore's Automatic Sanitization Module (A.S.M.), a UV lamp with controls, can easily be added to the top of the S.D.S. reservoir to maintain low bacterial levels in the tank.

## Compact System

The S.D.S. System is extremely compact, requiring only 0.42 m<sup>2</sup> (4.4 ft<sup>2</sup>) of floor space for installation. The S.D.S. System is designed to allow any one of the family of Milli-RX or Milli-RO Water Purification Systems to be installed directly on top of the system frame.

## Distribution Pump Performance

The built-in stainless steel distribution pump was selected for its ability to operate continuously during a 10-hour period at 30 liters/min (8 gal/min) and 3 bar (43 psi) pressure without generating significant temperature or noise level increase (fig. 1 and 2).

## Quiet Operation

The distribution pump was specifically selected for its whisper-quiet operation.

## Engineering Design Capability

Millipore also has engineering capability to help you design the water purification system with storage and distribution to meet your water quality and volume needs. We can help you choose the appropriate equipment including various sizes of tanks and reservoirs, distribution pumps, in-line UV lamps, 0.22 µm filtration units, and water quality monitoring devices.



Fig. 1: Distribution pump performance

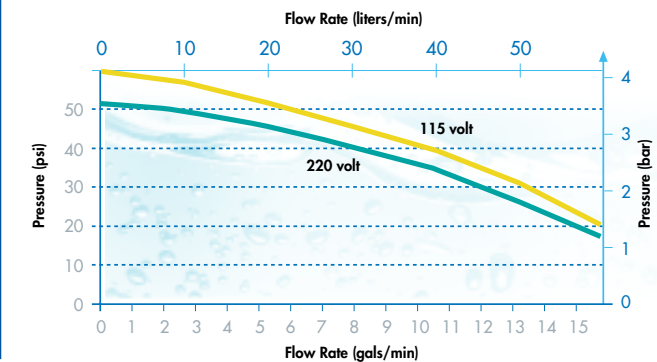
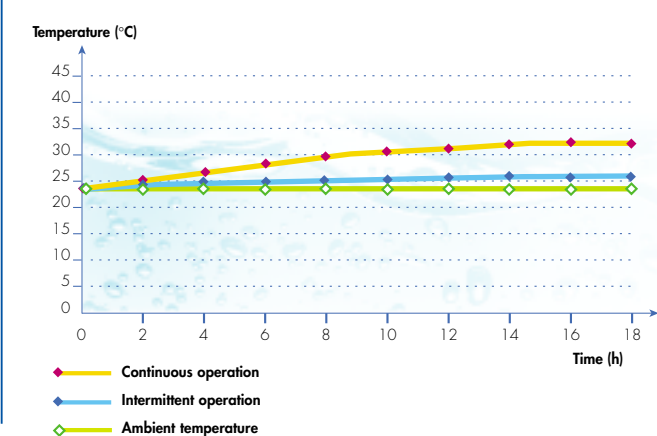
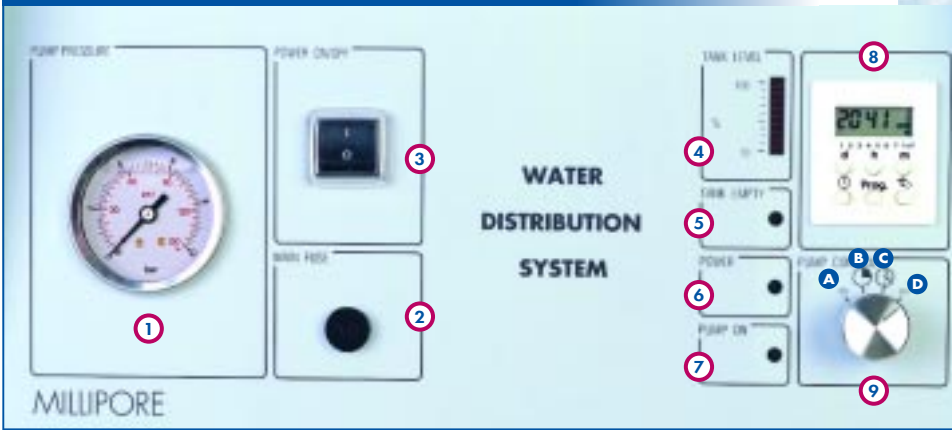


Fig. 2: Recirculated water temperature during continuous or intermittent operation



## Control and display panel



1. Pump pressure gauge
2. Main fuse
3. Switch "Power on/off"
4. Purified water level (10% - 100%)
5. "Tank empty" (indicator light)
6. "Power on" (indicator light)
7. "Pump on" (indicator light)
8. Seven day programmer
9. Pump control dial switch:
  - Pos. **A** : "Pump on": continuous operating mode
  - Pos. **B** : "Pump on": intermittent operating mode
  - Pos. **C** : Pump programming via seven-day timer
  - Pos. **D** : "Pump off"

## Programmable Operation

The distribution pump operating mode can be pre-programmed for a seven-day cycle, (individual settings are possible for each day), resulting in a fully automatic "hands-off" operation of the system.

Intermittent pump operation during periods of non-use minimizes water temperature increase and helps to avoid bacterial contamination. In this operating mode the pump runs for 20 minutes every 60-minute interval. Manual overriding of the automatic setting is possible at any time by switching the pump to "continuous operation mode."

## Tank Level Control and Indication

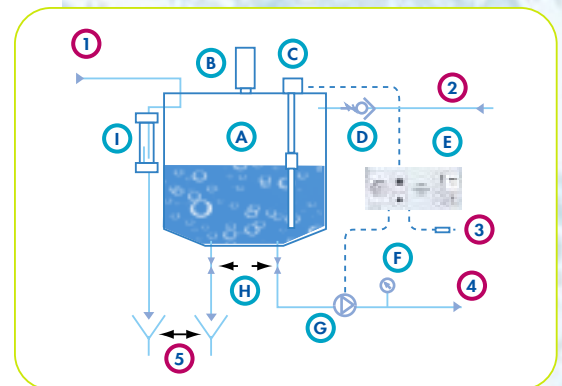
The S.D.S. System has complete water level control and monitoring. The control and display panel includes a water level indicator that displays the water level from 10 to 100 percent. When the water drops below a minimum level, a "tank empty" light is switched on and the distribution pump will shut off until the water level increases. The S.D.S. System will also control Millipore's Milli-RX and Milli-RO water purification systems to turn off when the reservoir is full and turn on when the water level drops.

### System Components

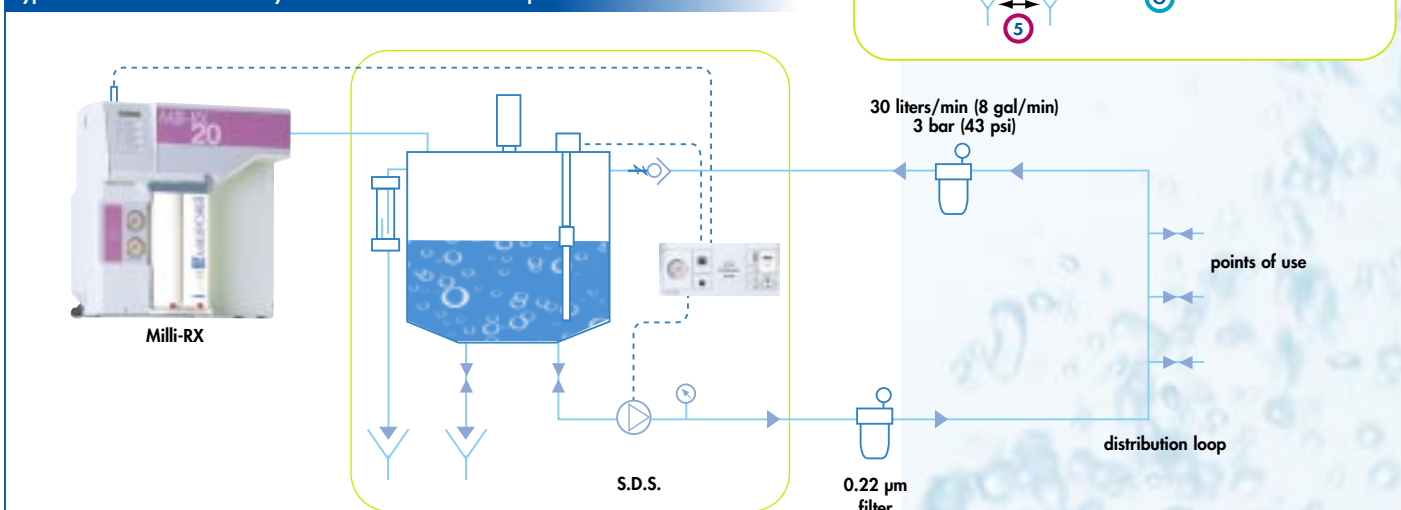
- A. Reservoir
- B. Vent filter
- C. Water level sensor
- D. Back pressure valve
- E. Control/display panel
- F. Pressure gauge (pump pressure)
- G. Distribution pump
- H. Outlet valves
- I. Sanitary overflow

### External Connections

1. Purified water inlet
2. Distribution loop return
3. Water level sensor connection to control water purification system
4. Distribution loop inlet
5. Drain



## Typical installation of the S.D.S. System in a water distribution loop



## Specifications

### Water Volume

S.D.S. 200 System: 200 liters

S.D.S. 350 System: 350 liters

### Pump Performance\*

30 l/min (8 gal/min) at 3 bar (43 psi) pressure

### Operating Weight\*\*

S.D.S. 200 System: 250 kg (551 lb)

S.D.S. 350 System: 390 kg (860 lb)

### Dimensions H x W x D mm (in)

S.D.S. 200 System: 1020 (39.78) x 600 (23.4) x 700 (27.3)

S.D.S. 350 System: 1420 (55.38) x 600 (23.4) x 700 (27.3)

### Materials

Reservoir: Polyethylene

Frame: Epoxy painted passivated steel

Valves: Polypropylene

### Electrical Requirements

See "Ordering Information Section"

### Connections

Water Inlet to Reservoir: 8 mm (.31") female, quick connect

Distribution Pump Outlet: 20 mm (.78") hose barb

Inlet to Back Pressure Valve (loop return): 20 mm (.78") hose barb

Reservoir Drain Valve: 20 mm (.78") hose barb

Inlet/outlet of distribution loop: 20 mm (.78") hose barb

Water Level Sensor Connection to Milli-RX and Milli-RO Water Systems: Male jack plug connector

\* For system with pump

\*\* Weight of water purification system filled with water.

## Ordering Information

Description	Catalogue No.
<b>S.D.S Storage and Distribution Systems</b>	
200 l S.D.S. System with pump, 230 V/50 Hz, 500 VA, 3.15 Amp fuse	<b>ZFRE 5P2 00</b>
115 V/60 Hz, 500 VA, 5 Amp fuse	<b>ZFRE 6P2 00</b>
200 l S.D.S. System without pump, 230 V/50 Hz, 10 VA, 0.5 Amp fuse	<b>ZFRE 502 00</b>
115 V/60 Hz, 10 VA, 0.5 Amp fuse	<b>ZFRE 602 00</b>
350 l S.D.S. System with pump, 230 V/50 Hz, 500 VA, 3.15 Amp fuse	<b>ZFRE 5P3 50</b>
115 V/60 Hz, 500 VA, 5 Amp fuse	<b>ZFRE 6P3 50</b>
350 l S.D.S. System without pump, 230 V/50 Hz, 10 VA, 0.5 Amp fuse	<b>ZFRE 503 50</b>
115 V/60 Hz, 10 VA, 0.5 Amp fuse	<b>ZFRE 603 50</b>
<b>Tank Accessories</b>	
Vent Filter, 1/pk	<b>ZFRE 012 FO</b>
Vent Filter with CO <sub>2</sub> trap, 1/pk	<b>ZFRE 012 FC</b>
Automatic Sanitization Module	<b>ZFRE 550 UV</b>
(tank UV lamp with control)	<b>ZFRE 560 UV</b>
<b>Distribution Loop Accessories</b>	
Millipore can help design and select the appropriate distribution loop accessories and equipment to meet your application, including: pumps, in-line UV lamps, 0.22 µm filtration units, and water quality monitoring devices.	

### Water purification system literature:

Electrodeionization systems:		Reverse Osmosis systems:	
Elix Systems	PB140	RiOs Systems	PB142
Milli-RX Systems	EU395	Milli-RO Systems	EU339

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In the U.S., Canada and Puerto Rico, fax orders toll-free to **1-800-MILLIFX (1-800-645-5439)**

For additional information call your nearest Millipore office.

or e-mail: [tech\\_service@millipore.com](mailto:tech_service@millipore.com)

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