Milli-Q®
Lab Water Solutions

Data Sheet

Milli-Q® Services:
Preventive Maintenance Visit

Your purification system is a sophisticated laboratory instrument that contains highly sensitive and complex technologies to accurately measure water quality. Critical mechanical and electrical components are in regular contact with water and must be routinely inspected, calibrated and serviced to prevent damage and guarantee your water meets manufacturer's specifications.

Receive a complete review of your water purification system

During the Preventive Maintenance Visit, a Milli-Q®-certified Field Service Engineer performs a complete review of your water purification system following auditable Standard Operating Procedures. The visit includes:

- Comprehensive check of system specifications
- Replacement of aging parts using Maintenance Kit
- Hydraulics and mechanics inspection
- Control of electronic settings & monitoring devices
- Review and testing of events, alarms and alerts
- Software updates
- Operator training
- Application assistance
- Record of service history with traceability of system parameters (Diagnostic Report)

Optimize the performance of your water system

During an annual Preventive Maintenance Visit, the Milli-Q®-certified Field Service Engineer performs a full check-up of all critical components and replaces aging connections and tubing, including:

Verification of electrical components
Display, touchscreen and/or keypad(s)
Main and interface board(s)
Power supply board
UV ballast
Solenoid valve(s)
Pressurization/recirculation/distribution pump(s)
Pressure sensor(s)
Resistivity/Conductivity cell(s) and thermistor(s)
Pack Tag Reader(s) or Pack detection microswitch(s)
Flow meter(s)
Level sensor(s)
Alarm relay
RC/Link and POD connections

Verification of mechanical/hydraulic components
Bodies of solenoid valve, 3-way valve and motorized valve
Pressurization/recirculation/distribution pump(s)
Pressure regulator(s) and pressure gauge(s)
Sanitary overflow
Reverse osmosis housing and chevron seal

Verification & regulation of hydraulics
Product/distribution water flow rates
Rejection flow rates
Pump pressure

Adjustments of power supplies & set points
Motor voltage(s)
EDI module power supply voltage(s)
UV lamp ballast voltage
Pressure set point(s)
Conductivity and resistivity set points
Rejection set points

Measuring & recording
Feed water conductivity
Product resistivity
Total Organic Carbon (TOC)
Export of system history
Motor(s) voltage(s)
EDI module power supply voltages
UV ballast voltage

Software updates
Software upgrade for qualified systems
Software upgrade for non-qualified systems

Maintenance Kit to replace aging parts
Internal/external tubing
Internal/external fittings
Pump inlet/outlet fittings
Solenoid valve coils
Sanitary overflow solution
O-ring(s) for cleaning port and point-of-use
O-ring(s) and strainer(s) for conductivity cell(s) or inlet fittings
Check valve(s)

We also offer a set of tailor-made options for your lab's specific needs, including:

- Verification
- Calibration
- Pharmacopeia suitability tests
- Sanitization
- Customized user training
- Extended guarantees
- Scheduled shipments of consumables and parts
- Additional Preventive Maintenance Visits

As part of our Qualification program, Preventive Maintenance Visits that are done within the framework of a Service Pharma™ Plan, are performed and documented according to a Maintenance Procedure (MP) in compliance with GLP and cGMP.

Service history traceability

Via the provided Diagnostic Report and Service Visit Report, you benefit from full traceability and archiving of your system's service history and system parameters.

Extract of the Diagnostic Report

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System Diagnostics Report

Information	
Work Order Number	
Work Order Type	
Business Field Name	
Product Name	
Serial Number	
Scheduled Date Time	

Work to be performed
Preventive Maintenance Visit according to SOP

Work Performed
Inspection of external hydraulic & electrical connections, motors and capacitors, pumps, sensors, solenoid valves, wires and connectors, tubing & fittings connections. Replacement of maintenance kit. Tank Sanitization. TOC Cleaning and RO Cleaning Software Upgrade

Reverse Osmosis Diagnosis and Maintenance

Parameters	System Specification	Pre Maintenance Value	Post Maintenance Value	Units	Comments
Regulator Pressure	1 b <=P<= 2.5 b	2	2	bar	
RO Feed Temperature	5° C <=T<= 35 °C	18	18	°C	
RO Feed Conductivity	1 µS <=C<= 2000 µS	733	735	µS	
RO Membrane Pressure	3 b <=P<= 7.5 b	2.5	5	bar	Performed a RO Cleaning
RO Permeate Conductivity	1 µS <=C<= 200 µS	70	25	µS	
RO Reject Flowrate	12 l/h <=Q<= 22 l/h	11.5	17.5	l/h	
RO Rejection	rej> 92 %	90.45	96.60	%	RO rejection is back to normal after cleaning
RO Pump Voltage	4 V <=U<= 40 V	23	23	V	

UV Lamp Diagnosis and Maintenance

Parameters	System Specification	Pre Maintenance Value	Post Maintenance Value	Units	Comments
254nm UV Lamp Current	I > 21 mA	22	23	mA	
185nm UV lamp Current	I > 65 mA	72	72	mA	

Point of Use Performance & Quality

Parameters	System Specification	Pre Maintenance Value	Post Maintenance Value	Units	Comments
Product Flowrate	Q>4.25 l/h	5	5.2	l/h	
EDI Product Resistivity	R> 5 MOhm.cm@25°C	9	10	MOhm.cm@25°C	
Product temperature	5° C <=T<= 35 °C	20.3	20.4	°C	
Milli-Q Product resistivity	R= 18.2 MOhm.cm@25°C	18.2	18.2	MOhm.cm@25°C	
Total Organic Carbon (TOC)	TOC<= 5 ppb*	7	2	ppb	Performed a TOC Cleaning
E-Pod Flowrate	1.3 l/mn <=Q<= 2.16 l/mn	1.86	2	l/min	
Q-Pod Flowrate	1.3 l/mn <=Q<= 2.16 l/mn	1.7	2	l/min	
Recirculation Pump Voltage	4 V <=U<= 24 V	23	23	V	

For more information, visit our website:

EMDMillipore.com/Milli-QServices

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