**Milli-Q System Protocol**

**To Use**

* Make sure system is in ready mode and is reading 18.2uM resistivity.  
  Don't worry if the system is recirculating, it will stop once you start using it.
* To dispense press the blue button on the handle either halfway to use while holding or all the way down to toggle on/off
* You may also select a fixed amount of water to be dispensed from the Volume option in the home screen.  This isn't an exact amount, but close enough to fill the carboy without having to watch it. (Flow rate can be calibrated if the volume is way off, see page 33 of attached manual.)
* The machine should not be placed into standby or turned off unless service is required, even on weekends.

**When To Replace Consumables**

*READ ALL OF THESE INSTRUCTIONS****AND****THE INSTRUCTIONS INCLUDED WITH THE REPLACEMENT PARTS.*

1. BEFORE removing any filters, place the system into standby mode.
2. While in standby mode, press on the blue plunger to release any latent pressure.  Don't do anything until the water stops flowing.
3. Remove the old BioPak POD pack by unscrewing it.  Check to see the condition of the o-ring in the POD handle.  Remove and replace if needed.  Currently using #83 o-rings from Lowes/HomeDepot.    
   Do not put on the new BioPak until the end of this procedure.
4. Open the front doors to remove the old Quantum and Q-Gard packs.
   1. The black Quantum can be lifted from the bottom and swung out slightly.  Then pull the assembly away from the unit to remove.
   2. The Q-Gard must be unlocked by lifting the locking bar above the filter (looks like a hook).  Then pull the filter straight out to remove.
5. To replace the Quantum pack:
   1. Remove the new Quantum pack from the box.  Remove any covers that might be on port.  Each port should have an o-ring which you can wet sightly with clean DI from one of our bottles.
   2. Put the Quantum pack in at downwards angle so the ports meet the ports of the system.  The push the bottom in to seat the system.  The Pack should be cleanly seated into its holder, but loose enough to easily remove and replace.
6. To replace the Q-Gard:
   1. Remove the new Q-Gard from the box.  Remove any covers that are on the port.  Make sure the 2 o-rings are seated well inside of the ports.
   2. With the locking bar raised, push the Q-Gard into place to align the ports.
   3. Lower the locking bar.  
        
      IMPORTANT: IF THE LOCKING BAR DOES NOT GO IN EASILY, YOU PROBABLY DID IT WRONG.  REMOVE THE Q-GARD AND TRY AGAIN.
7. Put the system back into READY Mode.  Press on the blue plunger to start the flow of water.  
     
   IMPORTANT:
   1. LISTEN:  if the water sounds like it is bubbling, you may have a problem, likely with the Q-Gard.  Turn off the flow, go into standby mode, release the pressure by pressing on the blue plunger, then reset the Q-Gard.
   2. LOOK:  The Quantum pack should quickly fill up with water.  You will be able to see the water fill up the system.  Usually this is a problem in the flow based on the Q-Gard, but reset both filters.  Before resetting the filters make sure to turn off the flow, go into standby mode, release the pressure by pressing on the blue plunger.
   3. TIME:  if the water does not come out of the POD quickly (and smoothly), (within 1 min or 1L of water), there is a problem with installation.  Usually this is a problem in the flow based on the Q-Gard, but reset both filters.  Before resetting the filters make sure to turn off the flow, go into standby mode, release the pressure by pressing on the blue plunger.
8. Flow water through the system for about 10 minutes to flush out all of the air.  Then turn off flow.
9. Replace the BioPak
   1. Remove the BioPak from the box, attach any parts (splash gaurd, etc).
   2. Screw the BioPak into the POD.  Unscrew the pressure relief valve on the side of the BioPak a bit to allow air to flow out.
   3. Start the flow of water by pressing on the blue plunger.  You will hear gurgling and get turbulent water out of the side port.  when the water comes out smoothly, close the valve.
   4. If the system is not in standby, put it into standby and go the the  Menu->Maninance->Install PODPak to reset the expiration counter.  The Q-gard and Quantum packs will automatically update.  Put the system back into Ready mode.
10. Water should now be flowing quickly and smoothly out of the BioPak.  If it is not, go back to the troubleshooting in step 7 above.

**General Installation/Replacement Tips**

* It is best to purge the Q-Guard and Quantum filters before installing the Biopak.
* If you have replaced the Q-Guard and Quantum filters but get a low resistivity error, purge the system with 10L of water.  The resistivity should return to 18.2Mohm.  If it doesn't, contact Millipore.
* If the system does not eject water from the handle within ~30 seconds or 1L, make sure that the Q-Guard is installed properly.
* To enter secure maintenance mode:  up, check, down,check, up, check
* To enter manager menu use Login: "USER" and Password: "PASS".  (See diagram on page36 of attached manual.)

**Replacing UV Lamp**

Summary: Remove the 3 screws on the side panel and lift off panel.  Disconnect lamp wire then slide bulb out of the steel tube.  Slide in new bulb, connect wire and replace panel.

Follow the instructions that come with the lamp bulb.

1. To remove the side cover: Find TORX screw driver or carefully use 2mm, or 5/64 Hex to remove the external cover.
2. To disconnect the lamp: Locate the white connector (This is a picture from above.  The wall is the top of the imaage, the front of the Milli-Q Reference is the bottom.  In the middle-right of this picture, you will see the white square connector for the bulb.  It has white, black and green wire visible here.  The bulb itself is the  white circle under the square connector.)
3. Disconnect the connector from the bulb.  You may need to pry out the bulb.  The bulb can move slightly up and down.  If the shelf is installed above the Milli-Qunit, you will likely need to remove it before pulling the bulb out.
4. Make sure to use the gloves provided with the new bulb.  The new bulb may have a ball of Mg (mercury) rolling around.  That is apparently normal.

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