**CHEM.MEDICA.2.0 Medica 7/15 Water Purification System**

**STATEMENT OF PURPOSE**

The Medica water purification system has been specifically designed to provide a supply of purified water to clinical analyzers requiring a pressurized feed. Proper functioning water purification equipment is essential for accurate testing. Daily, weekly, monthly and “as needed” monitoring and procedures must be followed on the Elga Medica Water System to ensure proper function.

**OWNER**

Laboratory manager, St. Vincent Anderson Regional

**PROCESS**

The Medica process links four purification technologies, reverse osmosis, adsorption, ion-exchange and photo oxidation and also incorporates a delivery pump and an option RO feed water boost pump. The unit is designed to operate from a good quality potable water supply, and produces either 7 or 15 liters per hour of purified reverse osmosis grade water which is delivered to a treated water reservoir. The water is then further purified when demanded by the analyzer.

**OPERATION**

The Medica will run automatically and will signal alarm conditions to ensure prompt efficient system management and corrective action.

1. **Replace Ion-exchange cartridge**: The ion-exchange cartridge should be replaced when the water purity alarm indicates, if the system is being re-commissioned or sanitized after an extended period in which it was not used, or immediately before and after use of the emergency by-pass.
2. Switch Medica unit off at top left hand side of the unit.
3. Relieve any residual pressure from the system, by waiting several minutes before proceeding and then slowly opening the bleed nipple on the capsule filter until water flow ceases. Use an absorbent cloth to soak up the water **and retighten the bleed nipple.** (If you forget this you will have a MAJOR flood).

**WARNING: Ensure the unit is bypassed before removing the ion-exchange cartridge.**

1. To remove the Ion-exchange cartridge open the front door and push on the cartridge top cap then lift up on cartridge and slide out. Discard non-hazardous cartridge into the ordinary waste.
2. Remove a new cartridge pack from packaging and remove the sealing plugs from the inlet and outlet ports. Wet the ‘O’ rings and slide new cartridge into position. Position cartridge onto spigots at rear and push into unit. Ensure guide has dropped down past retainer and close door.
3. **RESET TIMER!** Press the left hand touch pad button and at the same time turn the power on. If the graphic of the ion-exchange is not already shown, press **√** to jump to graphic. Press כ to reset timer and √to accept. Press button twice on right upper corner of display to start unit.
4. Slowly open the bleed nipple on the capsule filter until all air bleeds out and water flows. **RETIGHTEN BLEED NIPPLE**. Wait until display reads 18.2. Return all valves to normal.
5. **Replace UV Lamp:** The UV lamp replacement alarm is set at a default of 8760 hours (1 year) of use. Mute alarm and contact your Medica representative.
6. **Replace Pre-treatment Cartridge:** The pre-treatment cartridge replacement alarm is set at a default setting of 4380 hours (6 months) of use. Mute alarm and contact your Medica representative.
7. **Replace 0.2 µm Capsule Filter**: The 0.2 µm capsule filter replacement alarm is set at a default of 4380 (6 months) of use. Mute alarm and contact your Medica representative.
8. **UV Failure:** The UV failure alarm is signaled by an alarm and flashing cross over the replace UV icon. Mute alarm and contact Medica representative.
9. **Low Level Alarm:** When the low level alarm sounds, the mimic reservoir on the display will flash and a crossed bell icon mute symbol will appear. Mute the alarm and the Medica will automatically refill the reservoir.
10. **Water Purity Alarm:** This alarm will signal if the water purity deviates from the preset parameters and will cause the water purity value to flash and an alarm to sound, until water purity improves to within acceptable purity limits. Press the alarm button to mute. If water purity stays outside acceptable purity limits replace the ion-exchange cartridge pack.

**MAINTENANCE**

1. **Sanitization**

The normal sanitization procedure for the MEDICA unit is to sanitize the Reverse Osmosis (RO) module and associated pipework. The RO is sanitized to reduce the growth of microbiological contamination with in the RO module. Recommended maximum frequency of cleaning is once per month.

1. ENSURE that the reservoir level indication on the graphics display is showing > 40%. If display shows > 70% or 100%, dispense water until display changes to >40%.
2. PRESS the PROCESS button to stop the process.
3. TURN OFF the electrical power supply.
4. RELEIVE residual pressure in the system by waiting several minutes before proceeding.

**NOTE:** Follow your site instructions for bypass of valves or refer to Operator Manual.

1. UNSCREW cap on sanitization port.
2. INSERT CT1/CT3 tablet.
3. REFIT cap on sanitization port, hand tight.
4. RESTORE the power.
5. PRESS the PROCESS button to start the sanitization process.
6. ALLOW the sanitization cycle to continue for 30 minutes.
7. PRESS the PROCESS button to stop the sanitization process.
8. TURN electrical supply off.
9. Return valves to normal operation.
10. **Water Culture Collection**

Weekly, a water sample is collected to ensure there is no bacterial contamination within the water system.

1. Ensure that the analyzer and water system are not in process.
2. Clean the inside and outside of water spout with alcohol.
3. Let water drip out at a slow stream for 3 minutes.
4. Collect a full cup of DI water for culture.
5. Order cultures according to your sites ordering procedure for environmental cultures.
6. Send sample/samples to Regional Microbiology.
7. When culture is completed, review results. If growth is ≥10 CFU/ml, recollect for culture. If growth occurs again, perform sanitization procedure and troubleshoot if needed.

**REFERENCES**

1. Operator Manual; MANU 36814 Vivendi Water Systems Ltd. Version 3 2001. Copyright 2001.
2. MEDICA Technical support, 2015.