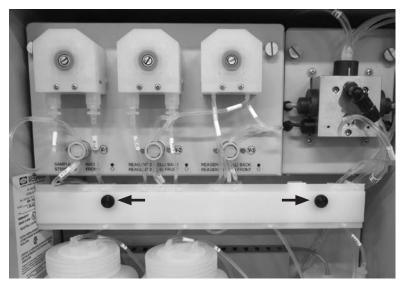


Thermo Scientific Orion 2230

Silica analyzer

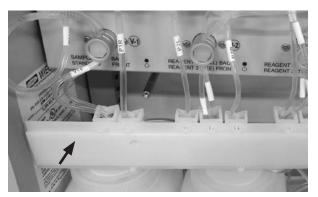
Procedure for Replacing a Pump Head with a New Enhanced Version

- 1. Disconnect the power to the Thermo Scientific[™] Orion[™] 2230 Silica analyzer.
- 2. Remove two black thumb screws from the analyzer.





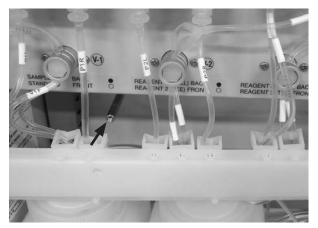
3. Remove the tubing panel. Remove the pump platens and tubing.



- a. **Note:** Do not separate the tubing (2230MK and 2230TK).
- b. Locate a table or stand in front with a height just below the analyzer base. This way reagent bottles can be removed and placed on the table without disconnecting plumbing.
- c. Remove tubing from the pumps and pinch valves and let hang in place.



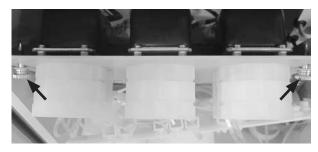
4. Remove/unscrew left tubing panel standoff screw.



5. Remove bottom two hinge screws below pump fluidic panel.



6. Loosen two metal thumb screws and swing down pump panel.



7. Disconnect all electrical pump and valve connectors by unplugging the 6 white connectors.



8. Remove the top two hinge screws to allow removal of the pump panel.



9. Take out the panel and at the back of the panel, loosen all 12 screws on three pump monitors.



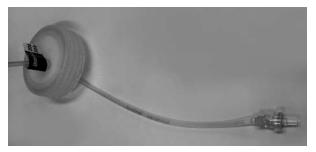
10. These four screws are for the pump head, remove them and replace with new pump head. Repeat procedure for the next two pump heads.



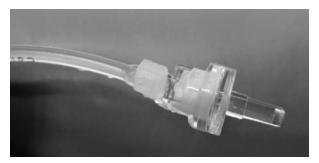
- 11. After all pump heads have been replaced, reinstall pump panel by reversing the above procedure. Lube pumping tubing and the new platens with silicone oil (included in 2230 MK) before reinstalling tubing on new roller assemblies. Note labels on tubing for correct installation on the pump and pinch valves.
- 12. Reconnect power to the analyzer.
- 13. Auto prime all the reagents/ standard/ sample.
- 14. Recalibrate analyzer to confirm proper absorbance.
- 15. Put analyzer in run mode.

Procedure for Adding a Checkvalve on the End of the Silica Standard Solution Tube

1. Open 200ppb bottle cap and insert checkvavle at the end of the draw tube.



2. Place a cable tie on the tube to secure the check valve after inserting into the tubing.



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Water Analysis Instruments

North America Toll Free: 1-800-225-1480 Tel: 1-978-232-6000 info.water@thermo.com Netherlands Tel: (31) 020-4936270 info.water.uk@thermo.com

China Tel: (86) 21-68654588 wai.asia@thermofisher.com India Tel: (91) 22-4157-8800 wai.asia@thermofisher.com

Singapore Tel: (65) 6778-6876 wai.asia@thermofisher.com Japan Tel: (81) 045-453-9175 wai.asia@thermofisher.com

Australia Tel: (613) 9757-4300 in Australia (1300) 735-295 InfoWaterAU@thermofisher.com

