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13-011

23 December, 2013

**REPLACING A FLOW METER IN AN S0(X) Model 633**

**I. PURPOSE:**

This service note will guide the user through the replacement of a flow meter in the Model 633. Note that this is for only the S00, S01 or S02 versions of the Model 633. To confirm which version you have, look at the serial number tag on the back of the unit. It will be displayed in the form AE33-S01-00000.

**II. TOOLS:**

Long #1 Philips head screwdriver

**III. PARTS:**

DU0000241 - FLOW SENSOR, 0-10LPM, M633

**IV. PROCEDURE:**

1. Stop the Model 633 from sampling and go through the normal shut down procedure.
2. Turn the power off to the Model 633 and unplug the power cable.
3. Remove the filter tape from the unit.
4. Remove the 4 screws on the top of the unit and remove the top cover. Make sure to disconnect the ground cable as well.  
\*NOTE\* Many screws will be removed during this procedure. Make sure to store and label them properly during this procedure to prevent missing hardware.
5. Reference Figure 1. Remove the 6 screws on the rear panel of the Model 633 and then remove the rear panel. It may be necessary to remove the inlet fitting and any other connectors on the back of the unit. You should now have access to the internals of the Model 633.



**Figure 1** - Rear of Model 633

Replacing a Flow meter in an S0(X) Model 633

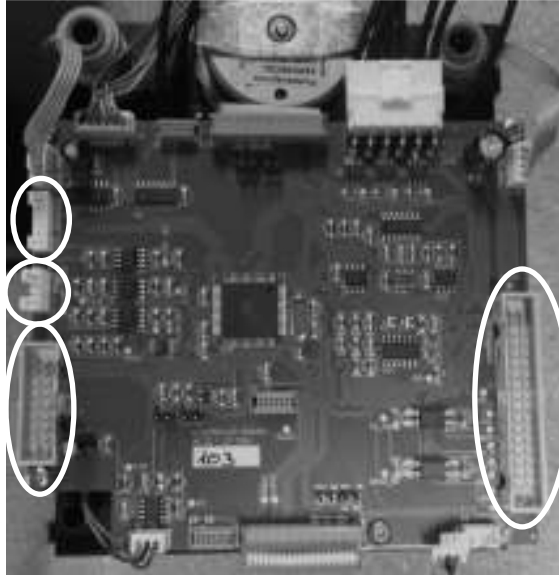
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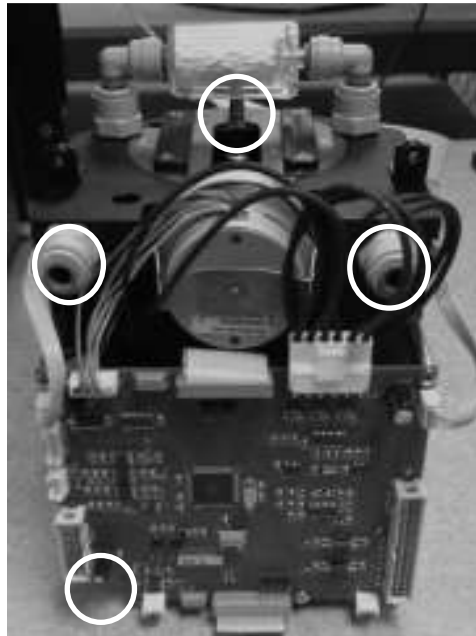
6. Reference Figure 2. On the Controller Board PCA, disconnect the two ribbon cables labeled “Controller” and “Valve”. Disconnect the two cables labeled “Tape Advance” and “Pump”.

**\*\*\*NOTE\*\*\*** - Many cables have small delicate connectors. Always pull on the connector itself, never on the wires or damage may occur



**Figure 2** - Disconnect noted cables

7. Reference Figure 3. Disconnect the pneumatic connections going to the optical head assembly. There should be three on the rear of the assembly and one going directly into the top.



**Figure 3** - Disconnect noted tubing

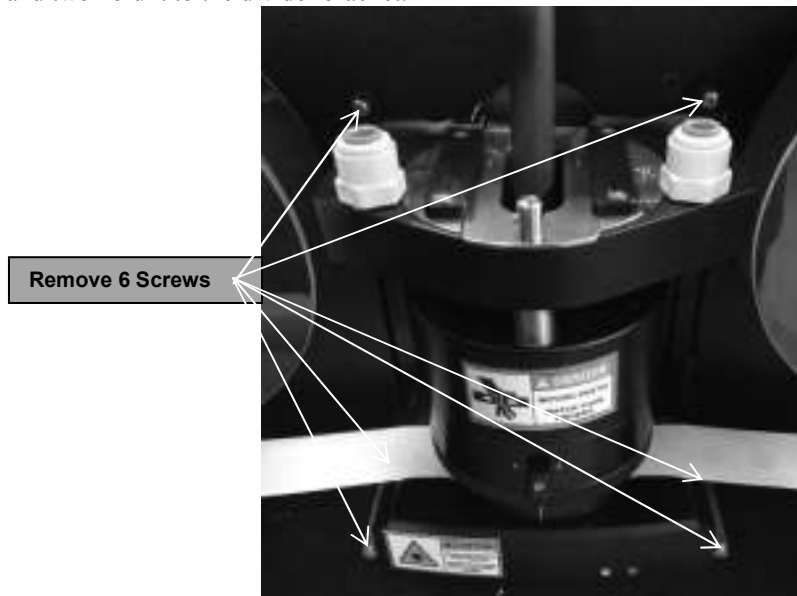
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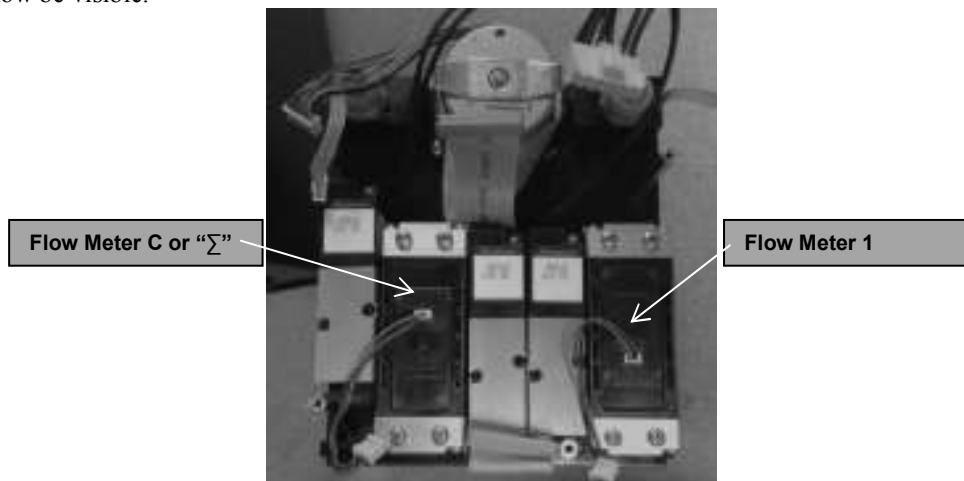
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8. Reference Figure 4. Remove the six screws that hold the optical chamber in place. These can be accessed from the front of the unit. Four screws hold the optical chamber to the bottom of the unit, and two hold it to the divider bracket.



**Figure 4**

9. The optical chamber plus controller board can now be removed from the unit. Slide it forward making sure not to catch any cables. Once the optical chamber has been removed, disconnect the remaining cables attached to the controller board.
10. Reference Figure 5. Remove the 4 Philips head screws that hold the controller board onto the optical chamber and remove the controller board. The three valves and two flow meters should now be visible.



**Figure 5**

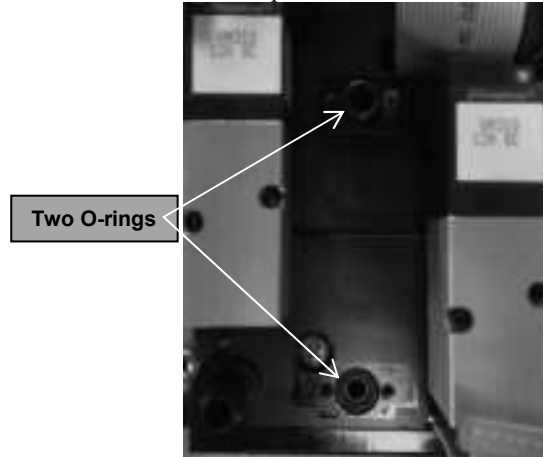
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11. Reference Figure 6. Depending on which flow meter is being replaced, remove the four Philips head screws that hold the flow meter and then remove the flow meter. Take note that there are two O-rings that may be stuck to either the flow meter or the optical head. If they are stuck to the flow meter, replace them back into the optical head.



**Figure 6**

12. Remove the cable from the old flow meter and install into the new flow meter.
13. Install the new flow meter back into the unit. Take note that the two flow meters are orientated differently. Use Figure 5 as a reference to the orientation of the individual flow meter.
14. Reinstall all tubing, electrical connections and screws that were previously removed/disconnected by following steps 10 through 3.
15. Once the Model 633 has been put back together, please perform a flow calibration as indicated in the Model 633 Operators Manual.

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