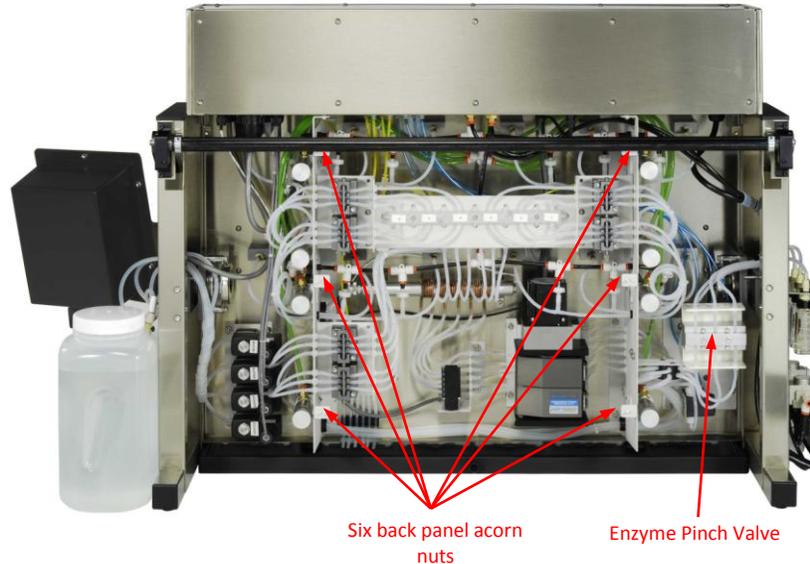


To replace the Enzyme Pinch Valve on the ANKOM<sup>TDF</sup> Dietary Fiber Analyzer, follow the steps below.

**Note:** The following items will be sent in a replacement package: New Enzyme Pinch Valve (TDF47), three 6" tubes, three 11" tubes (8229), 2 hex nuts with star washers 10/32 (167), 2 cable ties (Z10).

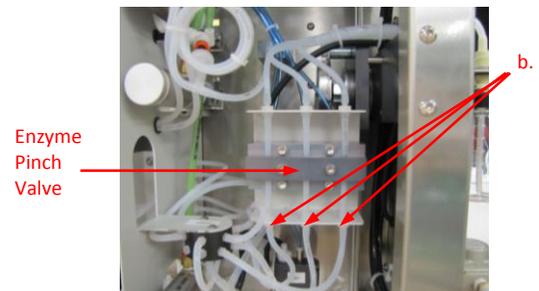


**1. Prepare the instrument for service.**

- a. Power off the instrument.
- b. Turn the valve for the air line to its off position.
- c. Open the back of the TDF by removing the six acorn nuts from the clear back panel, shown in the image above.

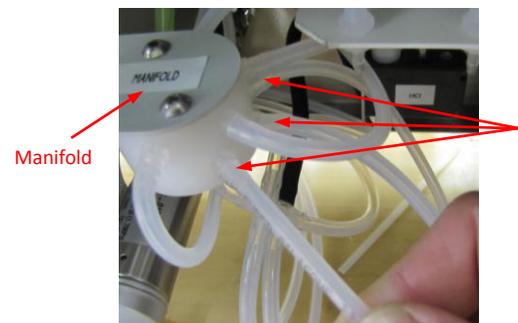
**2. Disconnect the three 6" tubes from the Enzyme Pinch Valve.**

- a. Locate the Enzyme Pinch Valve on the lower right side of the back of the instrument.
- b. Disconnect the three fluid line tubes from the bottom.



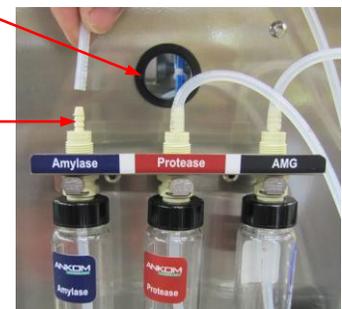
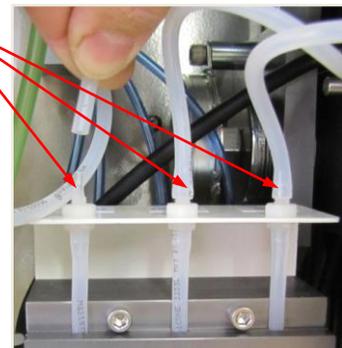
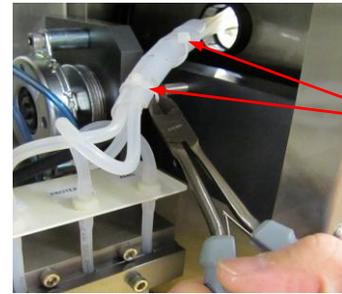
**3. Disconnect the three 6" tubes from the Manifold.**

Disconnect the opposite ends of the three 6" tubes from the previous step by pulling the tubes off of the three lower barbs of the Manifold.



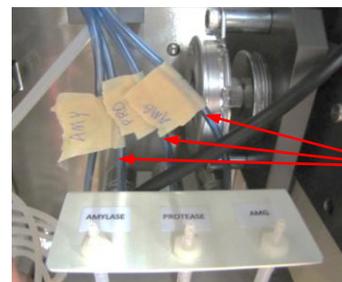
**4. Remove the tubes going from the Enzyme Pinch Valve to the Enzyme Containers.**

- a. Cut the two cable ties that are holding the spiral bundling in place.
- b. Remove the spiral bundling that is holding the three tubes together and set it aside for later use.
- c. Disconnect the three 11" tubes from the top of the Enzyme Pinch Valve assembly.
- d. Pull the tubes out of the instrument through the grommet.
- e. Disconnect the tubes from the three barb fittings on top of the enzyme container ports.



**5. Label the three blue air tubes.**

Place temporary labels on the three blue air tubes to identify the enzyme they are connected to. This is necessary so that when they are disconnected and reconnected, they will match up to the proper enzyme valves.



**6. Release the tubes from the orange flange.**

- a. Reach behind the Enzyme Pinch Valve and push down on the orange flange to release the tubes.
- b. Pull out each of the three blue tubes.



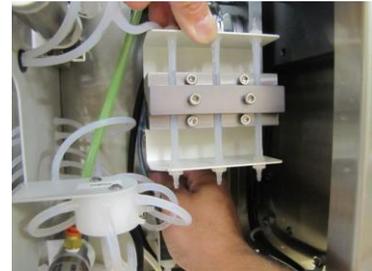
**7. Remove the Enzyme Pinch Valve.**

Using the supplied 3/8" nut driver, remove the Enzyme Pinch Valve from the instrument by unscrewing the two star washer nuts that secure the bracket to the instrument. Set aside the star washer nuts for re-use.



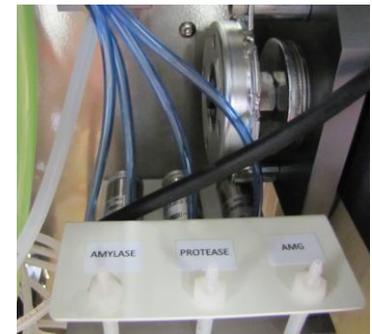
**8. Install the new Enzyme Pinch Valve.**

- a. Set the new Enzyme Pinch Valve in place.
- b. Tightly screw the two star washer nuts into the instrument using the 3/8" nut driver.



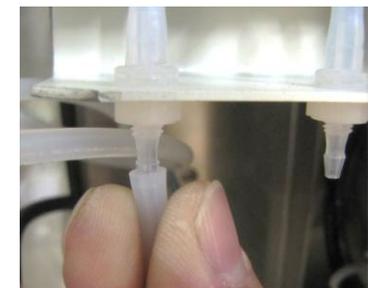
**9. Reconnect the blue air tubes and remove the labels.**

- a. Insert the three blue air tubes into their designated valves, pressing each tube end into its correct orange flange socket.
- b. Gently pull the tubes to ensure they are securely connected.
- c. Remove the temporary blue tube labels.



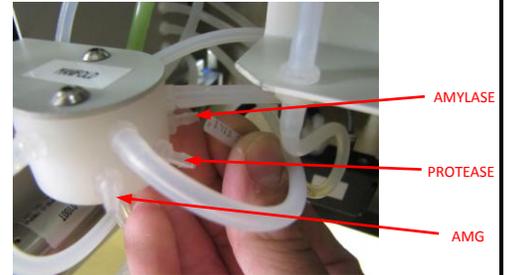
**10. Reconnect the 6" tubing to the Enzyme Pinch Valve barsbs.**

Slowly push the 6" tubing onto the correct barbed fitting so as not to cut the inside or edge of the tubing.



**11. Connect the 6" tubes to the Manifold barbs.**

Connect the opposite ends of the three 6" tubes from the previous step to the correct lower three barbs on the Manifold.



**12. Soften the 11" tube ends prior to installation.**

To improve the connection of the 11" tubes to the barb fittings on the Enzyme Container Ports, the ends of the tubes must be softened prior to installation by rolling a rod (pen, pencil, etc.) over them while pressing down on the rod.

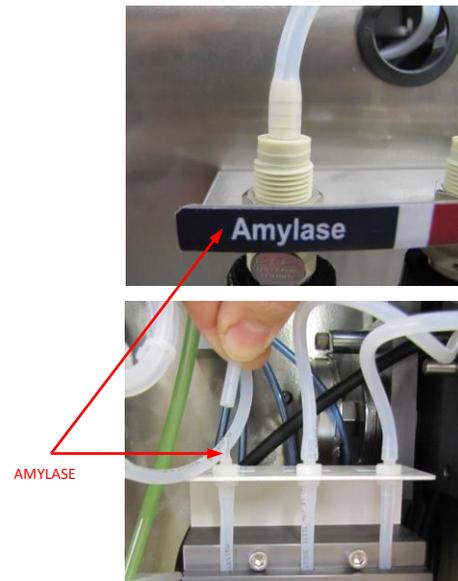
It is Not necessary to soften the ends of the tubes that will connect to the barb fittings on the Enzyme Pinch Valve.

**Note:** One of the aluminum rods from the IDF/SDF/Waste Pinch Valves can work well for this process.



**13. Reconnect the 11" tubes to the Enzyme Containers and to the Enzyme Pinch Valve.**

- a. One at a time, reconnect the three 11" tubes to each enzyme.
- b. Once a tube is placed on the enzyme fitting, feed it through the grommet and connect it to its designated place on the Enzyme Pinch Valve.
- c. Make sure the tubes completely cover the 3 barbs on the fittings.



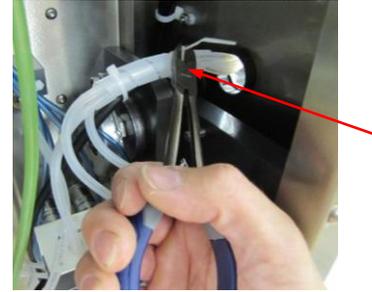
**14. Place the spiral bundling around the three tubes.**

Re-wrap the spiral bundling around the three tubes going through the grommet to the enzymes.



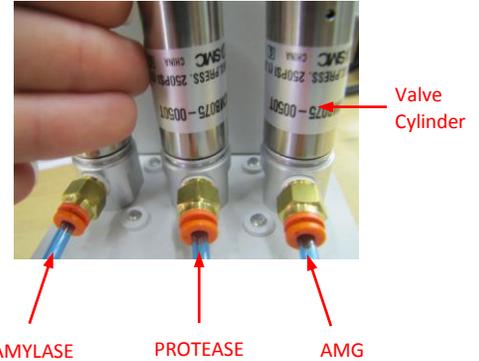
**15. Secure the four tubes.**

Secure the spiral bundling to the black HCL tubing with two cable ties and cut the excess.

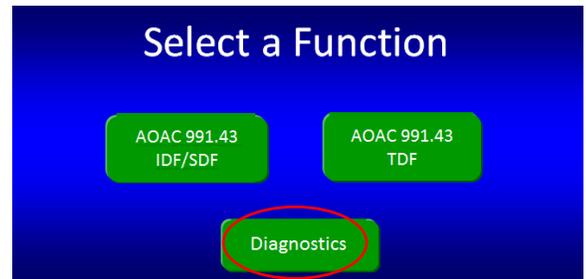


**16. Perform a QC Test of the installation.**

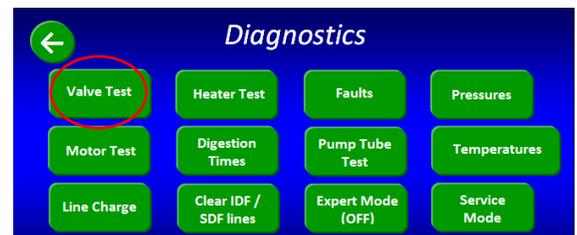
You will use two technicians for this test. Technician #1 will be located in the front of the instrument to operate the controls and Technician #2 will be located in the back of the instrument to observe the function of the new Enzyme Pinch Valve.



a. Technician #1 powers on the instrument. When the instrument is powered up, the “Select a Function” screen will show on the Touch Screen Display.



b. Technician #1 presses the “Diagnostics” button on the Display. This will bring up the “Diagnostics” screen.



c. Technician #1 presses the “Valve Test” button on the Display. This will bring up the “Valve Test” screen.

d. As Technician #1 presses the “Amylase Supply” button on the Display until the button shows “(open)”, Technician #2 touches the cylinder to feel for the air pressure that opens and closes the valve piston.

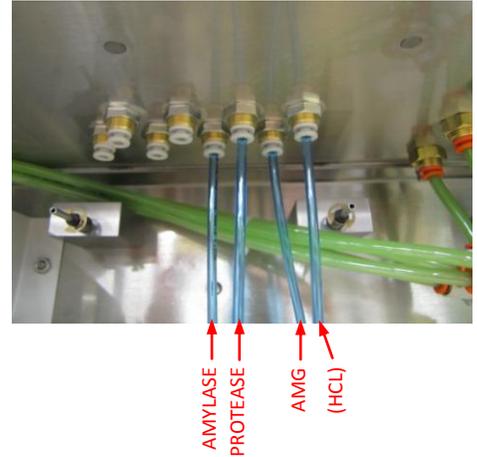


e. Technician #1 presses the “Amylase Supply” button on the Display until the button shows “(closed)”.

f. Repeat steps d and e for the Protease and AMG valve.

**17. If the valves did not pass the Valve Test:**

- a. Double check that all tubing is securely attached.
- b. Ensure that the three blue air tubes are connected to the correct enzymes on the Enzyme Pinch Valve (Do not use the right side HCL tube). Using the image shown on the right, find the tubes beneath the electrical cabinet and make sure each tube runs to its proper location on the Enzyme Pinch Valve.
- c. Perform a second Valve Test. If this fails, contact ANKOM Technology by email [service@ankom.com](mailto:service@ankom.com) or by phone 315.986.8090

**18. Reinstall the back panel.**

Replace the clear back panel of the TDF instrument securing it with six acorn nuts removed in step #1.

With this completed you are now ready to return your TDF instrument to service.