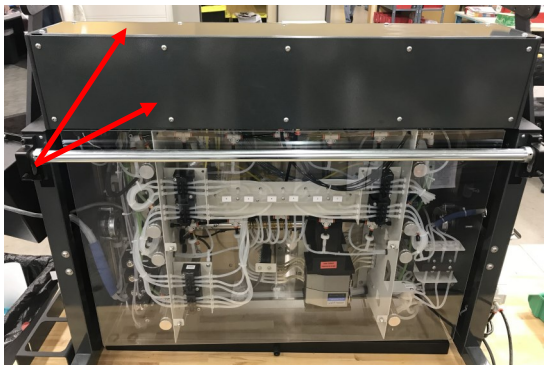
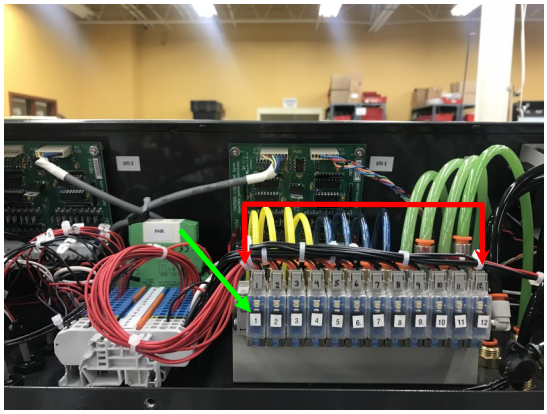
The purpose of installing this new assembly is to better control mixing of the sample in the IDF bags.

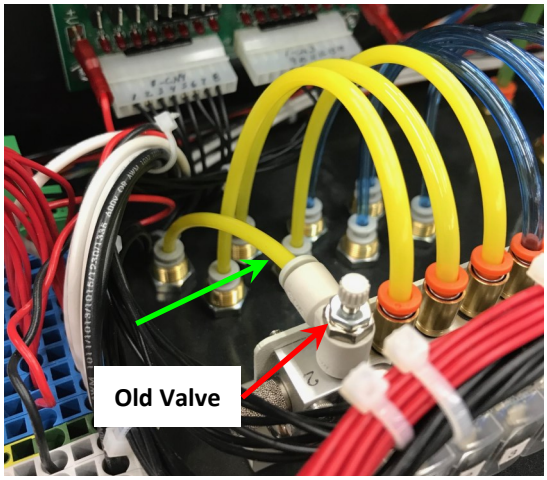
1. ***Turn the power off and unplug the ANKOM^{TDF} instrument***. Remove the top and back panel from the Electrical Enclosure in order to access the 12-station pneumatic control manifold. *Be sure to retain the 17 screws for use in reattaching the panels later*.



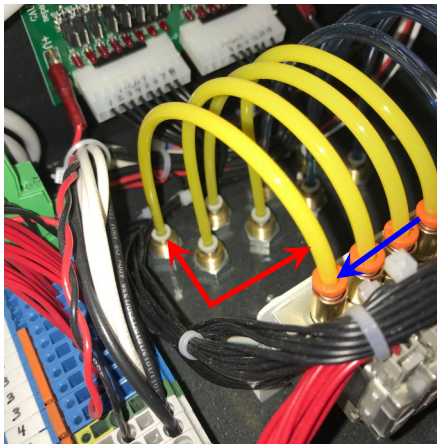
2. The 12-Station Manifold (Red Bracket) is located in front of the "I/O1" circuit board. The 12 solenoid valves are each labeled and solenoid #1 is identified by the green arrow.



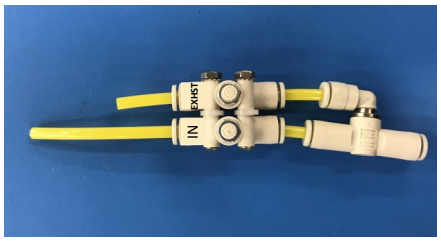
3. Identify the yellow tube coming from solenoid #1 (Green Arrow), which controls the mixer piston. Remove this tube by pushing down on the grey flanges and simultaneously pulling out the tube.



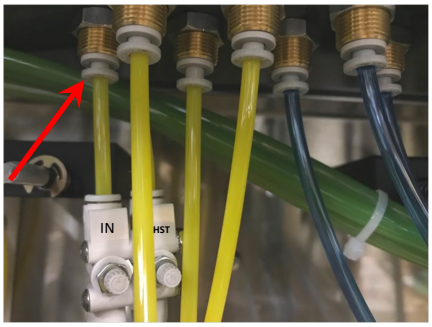
4. Remove the old valve in solenoid #1 using a 5/16" or 8mm wrench. Install a 8312 Brass Fitting (**Blue Arrow**) in its place using a hex wrench. Insert a 7" piece of 8215 Yellow Polyurethane Tubing (**Red Arrows**). After inserting the tubing into each connector, gently tug on it at both ends to be sure that it is secure.



5. Obtain the TDF113 Mixer Flow Control Valve Assembly.

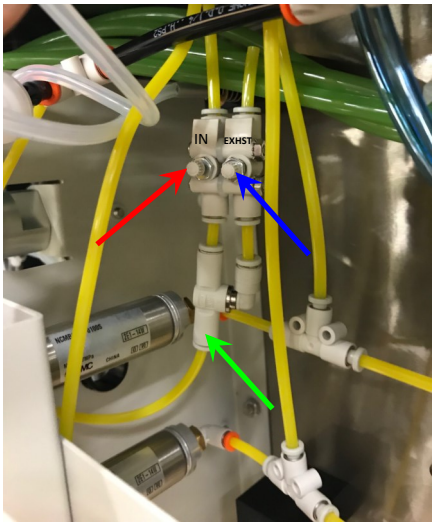


6. On the underside of the electrical enclosure, disconnect the 8215 Yellow Polyurethane Tubing in the leftmost position (as viewed from back of instrument). This tube is about 21" in length and goes to the mixer piston. Remove it and insert the 2½" piece of 8215 Tubing from the TDF113 Mixer Flow Control Valve Assembly (**Red Arrow**). Gently tug at the tubing to make sure there is a good connection.

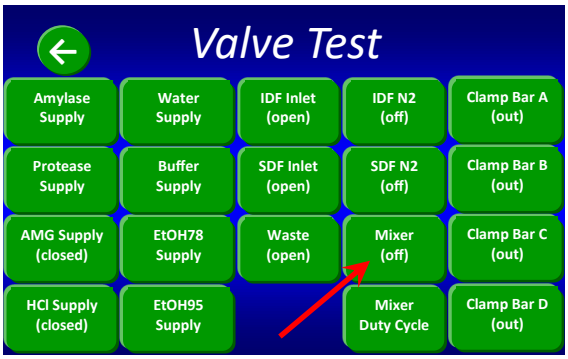


7. Take the tubing disconnected in step 6 and connect it to the open connector on the three -way Valve (**Green Arrow**). Perform a tug test to ensure good connection.

   NOTE: The flow control valve identified with the **RED** arrow controls the inrush of air to the mixer piston (marked IN). This controls the forward kick of the paddle bar. The exhaust flow control valve identified with the **BLUE** arrow (marked EXHST) controls the rate at which air exits the mixer piston. This controls the back stroke of the paddle bar.

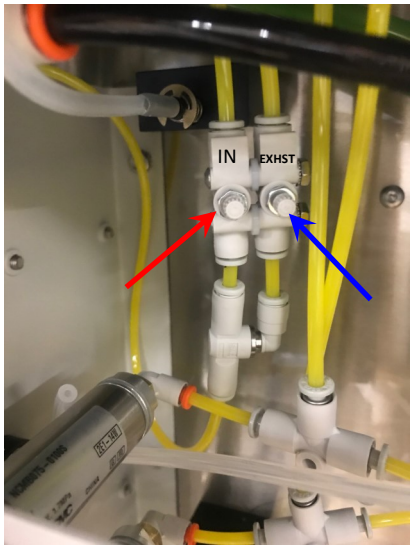


8. On the Touch Screen Display, go to the Diagnostics screen and select Valve Test. Close Clamp Bar B and turn the Mixer on. Observe the travel of the paddle bar when the mixing pads are pressed against the paddles. The paddles should travel forward about 1/8" (3mm) and back about 5/16" (8mm). If the forward/back stroke of the paddles needs adjustment, refer to step 9.



9. In order to make adjustments, You will need a 7mm wrench to loosen the lock nuts first. If the forward stroke is limited/sluggish, it can be increased by opening up the adjustment knob (**Red Arrow**). If the back stroke of the paddles is limited/sluggish, this can be improved by opening up the adjustment knob on the Exhaust Flow Control Valve (**Blue Arrow**).

   NOTE: These adjustments can be fine-tuned further while an IDF digestion and mixing is in process. The ideal level of mixing intensity is set when sample is agitating and swirling consistently (not settling in the corners) in the IDF bag without causing splashing of the sample and sticking to the upper part of the bag. Make sure to re-tighten the lock nuts on each valve once adjustments are complete.



10. With the adjustments done, reinstall the top and back panels to the Electrical Enclosure using the 17 screws from step 1.