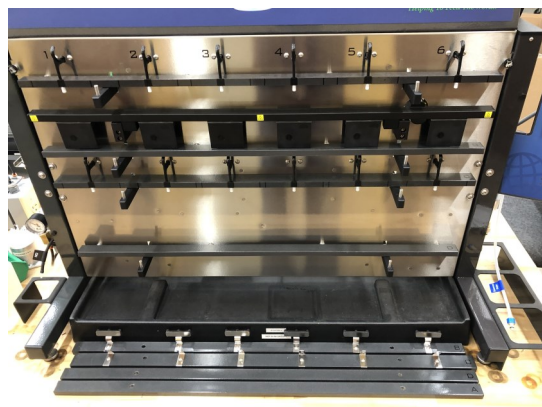


To replace an individual paddle (TDF48) on a TDF24 Paddle Bar, (type B) with the modular paddle design, follow the steps below.

NOTE: The following items are included in a TDF48 Paddle Assembly: 1 - TDF48 Paddle and 1 - 8068 Paddle Insulator.

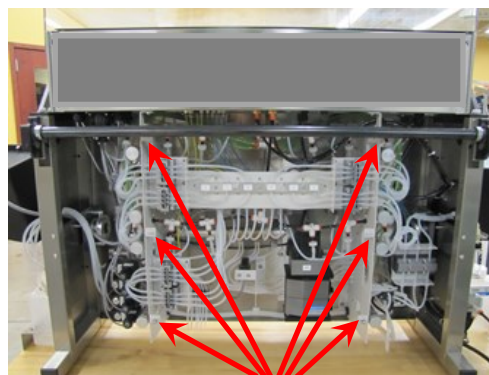
1. Turn off the ANKOM^{TDF} instrument and remove the clamp bars as shown.



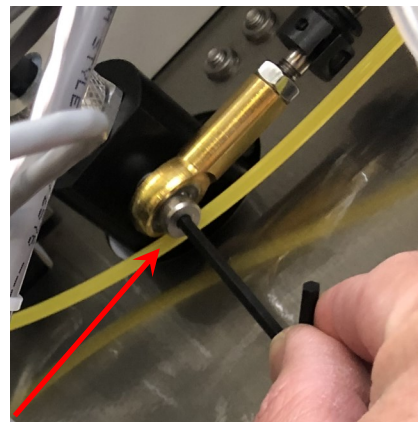
2. Remove the two Service Access screws on the left and right sides of the front of the instrument.



3. With the area in front of the instrument clear, tilt the instrument forward to access the cable and air piston connections. Unscrew the 6 acorn nuts to remove the clear back plastic panel. Set aside for reattachment later.



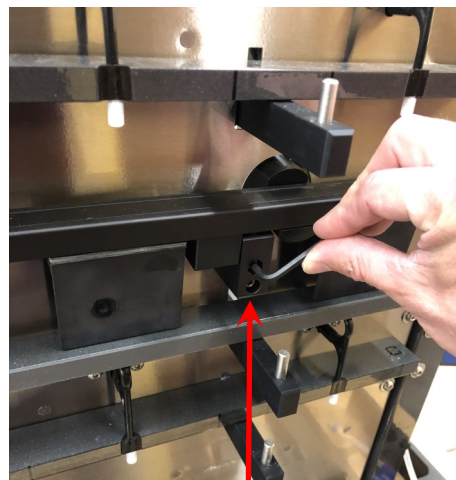
4. With an 1/8" hex wrench, remove the shoulder screw connecting the brass rod-end from the air piston to the cable on the paddle bar.



5. Remove the paddle bar twist-lock connector from the underside of the electrical enclosure.



6. Tilt the instrument back up-right and remove the four screws at the hinge blocks using a 5/32" hex wrench.



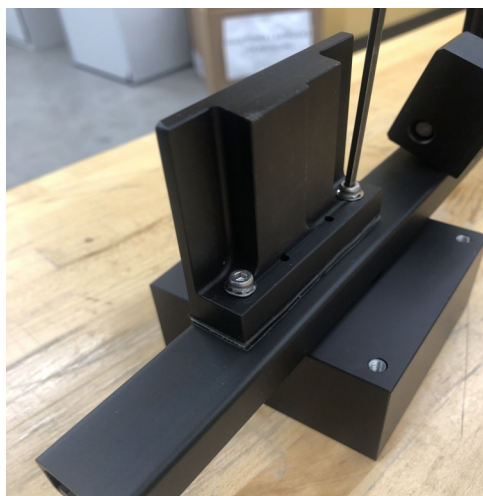
7. Carefully pull the paddle bar cable connector through the hole in the front of the instrument.



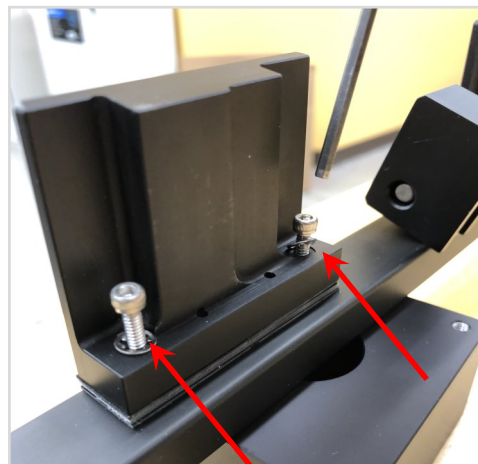
8. Set the paddle bar upside down on approximately 1/2" blocks to keep it stationary. This is important to maintain proper positioning of the 5-pin connector within paddle to the receiving part within the paddle bar.



9. Remove the two screws holding the paddle to the paddle bar, using a 7/64" hex wrench.



10. Set aside the two screws with lock washers.



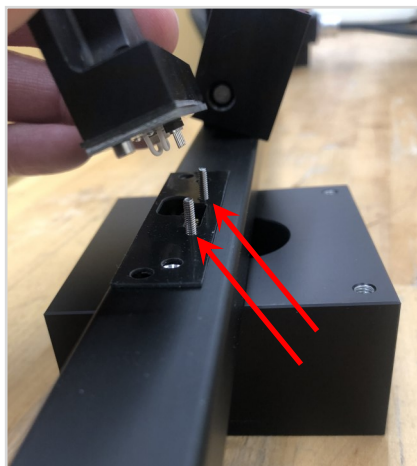
11. Gently pull the paddle to be replaced straight up. Remove the old paddle gasket.



12. Position a new paddle gasket in place over the interface of the paddle and paddle bar. Be sure to align the holes in the new gasket with those of the paddle bar. Gasket might look slightly different.



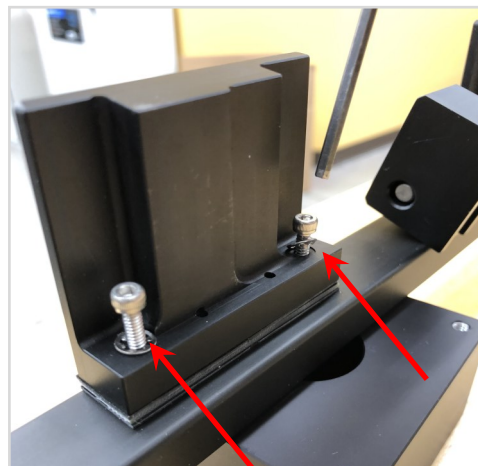
13. Obtain the new replacement TDF 48 Paddle. Before attempting to install, take careful notice of alignment screws (red arrows) that protrude from the paddle bar and the five pins on the paddle (yellow arrows).



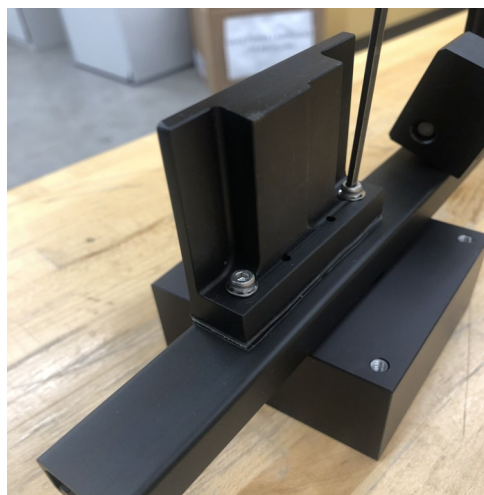
14. Use the two alignment screws as a guide aligning them with the receiving holes in the paddle, keeping the paddle vertically straight. Gently connect the pins and evenly press the paddle down and in position until the paddle meets the gasket.



15. Install the two screws and lock washers.



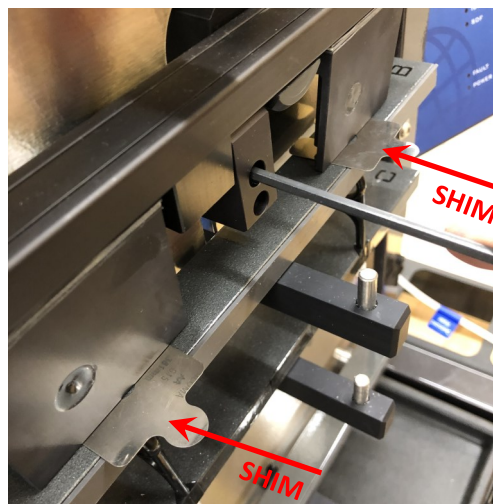
16. Secure the screws with a 7/64" hex wrench.



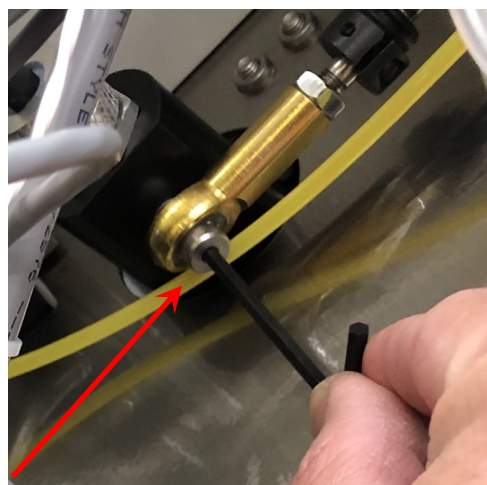
17. Feed the paddle cable connector through the large hole in the front of the instrument.



18. Place the four, 0.015" shims under the outer four paddles, on top of clamp bar B. Only the right two are shown. Shims are used to ensure that the paddles do not scrape clamp bar B. Install the four screws removed earlier to the paddle bar hinge.



19. With the front of the electrical enclosure tilted forward, re-attach the rod-end from the mixer piston to the cable block on the back side of the paddle bar using the shoulder screw removed previously.



20. Reconnect the Paddle bar twist-lock connector on the underside of the electrical enclosure as shown.
21. Tilt the instrument back upright and replace the two Service Access Screws.



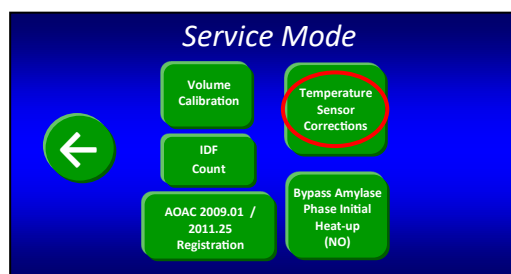
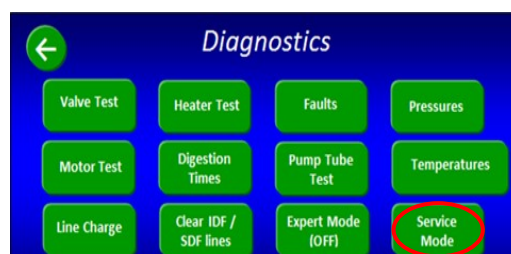
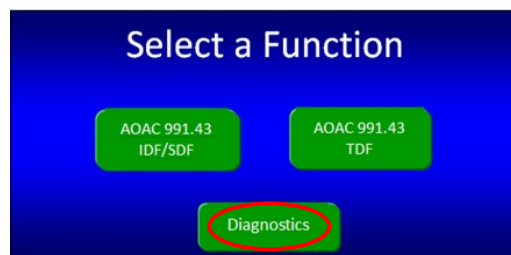
22. Perform a QC test to calibrate the new Paddle temperature sensor and ensure the functionality of the newly installed Paddle(s).

A. Plug in the instrument and turn the power back on.

B. On the bottom of the “Select a Function” screen, press the “Diagnostics” button.

C. On the “Diagnostics” screen, press the “Service Mode” button.

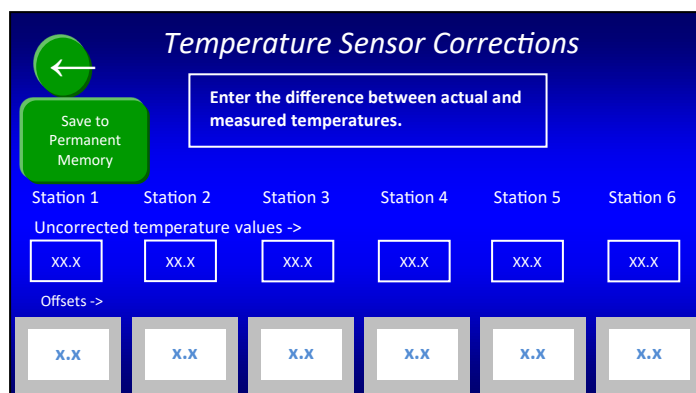
D. Select “Temperature Sensor Corrections”.



23. Once in the “Temperature Sensors Corrections” screen, use a calibrated thermometer or Infrared thermometer to determine the **actual temperature** of the paddles. If using a liquid thermometer, allow it and the paddles to equilibrate with the environment for at least 30 minutes.

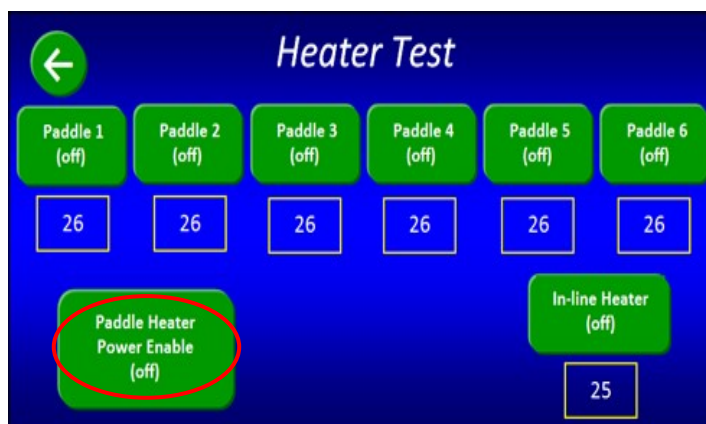
24. Note the six **“uncorrected temperature values”**. Subtract the **actual temperature** from the **uncorrected temperature value** to determine the offsets to enter into the six white fields. For example, if the actual temperature is 21.5°C and the Station 1 uncorrected temperature value is 22.1°C, then: $21.5 - 22.1 = -0.6^\circ\text{C}$. Enter this into the white field. This operation will serve to calibrate the readings of the six temperature sensors.

25. When finished, press “Save to Permanent Memory”.

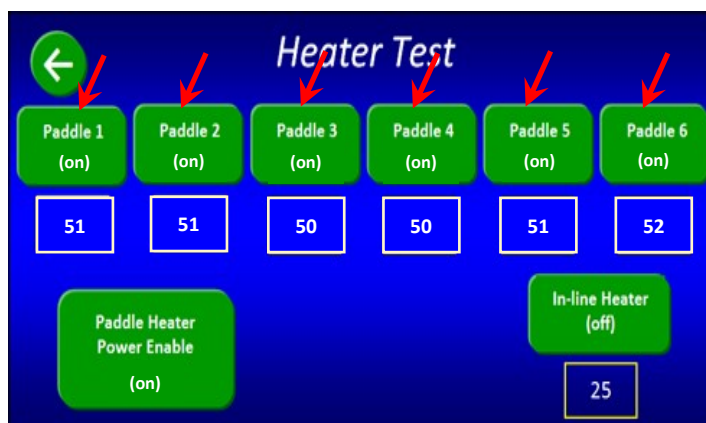


26. Return to the Diagnostics screen and press “Heater Test”.

27. Press “Paddle Heater Power Enable”, turning this on.



28. Turn on each individual paddle heater and immediately start a timer. Observe the temperatures as they climb to 50°C. This should take only 2 - 3 minutes. Some minor variation in heating times is normal.



29. Confirm that no temperature related faults occur during the heating process.

30. Press the “Paddle Heater Power Enable” button to turn all six heaters off.

31. The ANKOM^{TDF} instrument is now ready to be returned to service.