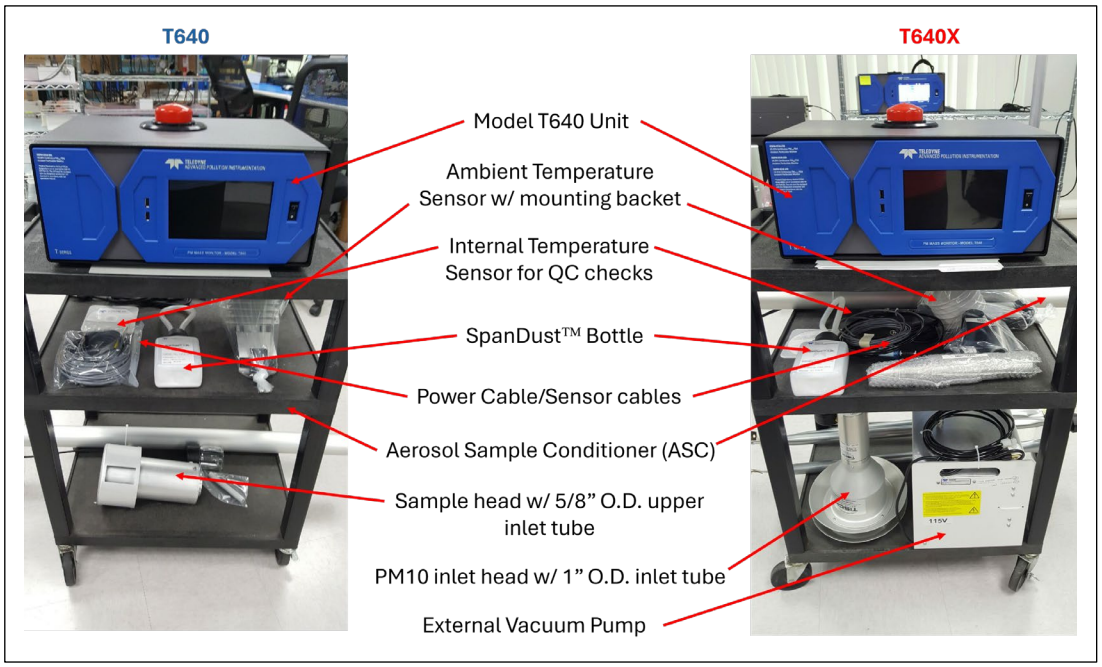
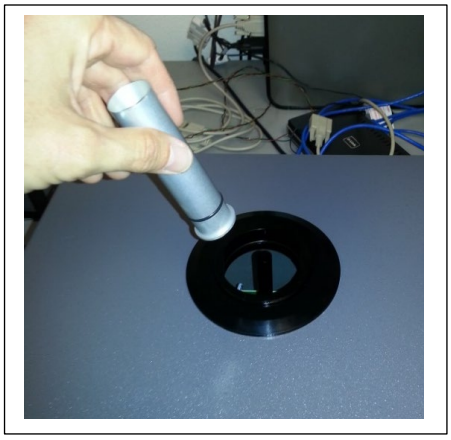
Teledyne API T640 Assembly

1. Identify Components: Model T640 unit, SpanDust™ bottle, Aerosol Sample Conditioner (ASC), Ambient Temperature Sensor, Internal Temperature Sensor, Inlet Nozzle, Inlet Tube or Downtube, Sample Head, PM10 Inlet Head.



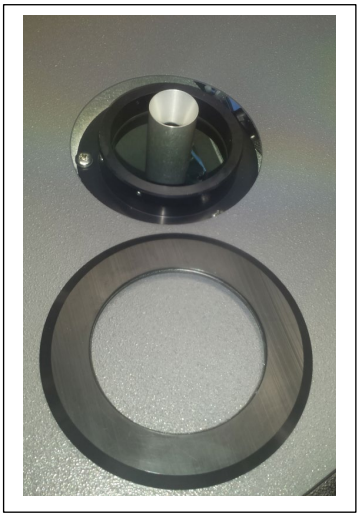
2. The ASC tube requires an inlet nozzle adapter for installation.

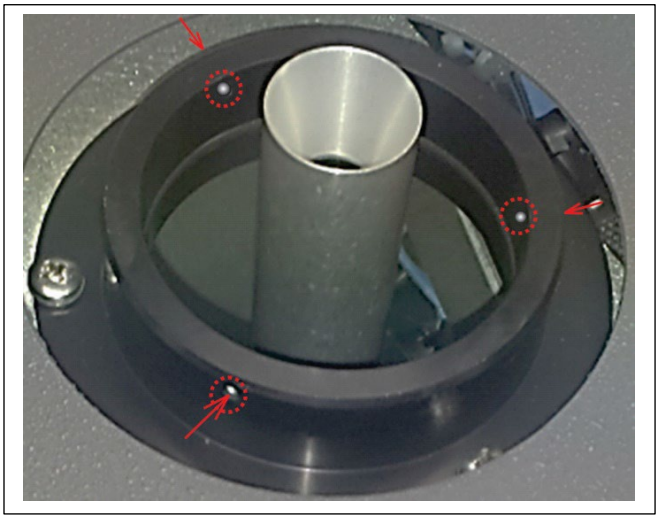


3. Identify the black inlet nozzle. Slide the aluminum adapter over the black inlet nozzle, ensuring its base is flush with the top of the optical sensor.

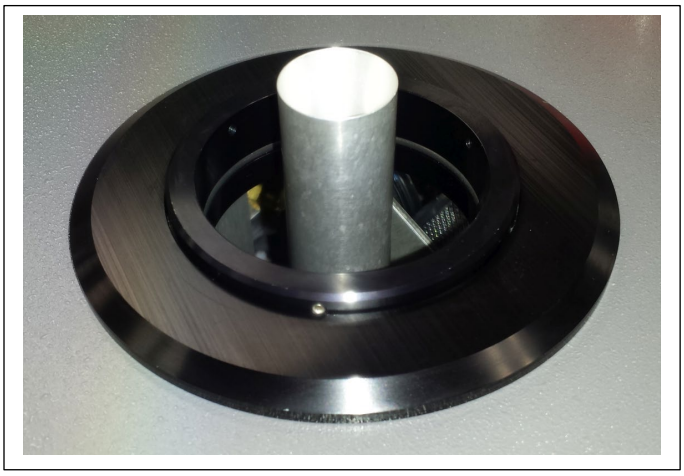
NOTE: to the optical sensor is specific to the instrument and is not interchangeable with other T640 instruments. Use caution when handling and contact TAPI Tech Support if this piece is ever damaged as it could affect the instrument's performance.

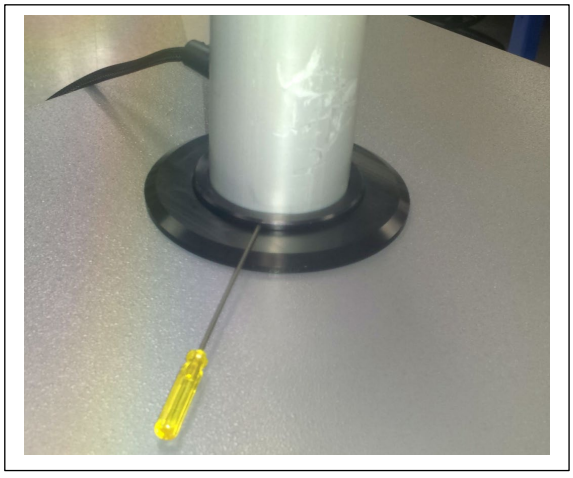
4. Remove collar from lower flange of the instrument as shown:





5. Identify the three openings on the lower flange ASC support and insert set screws on them. Use a 1/16" Hex/Allen Wrench to slightly loosen the screws.





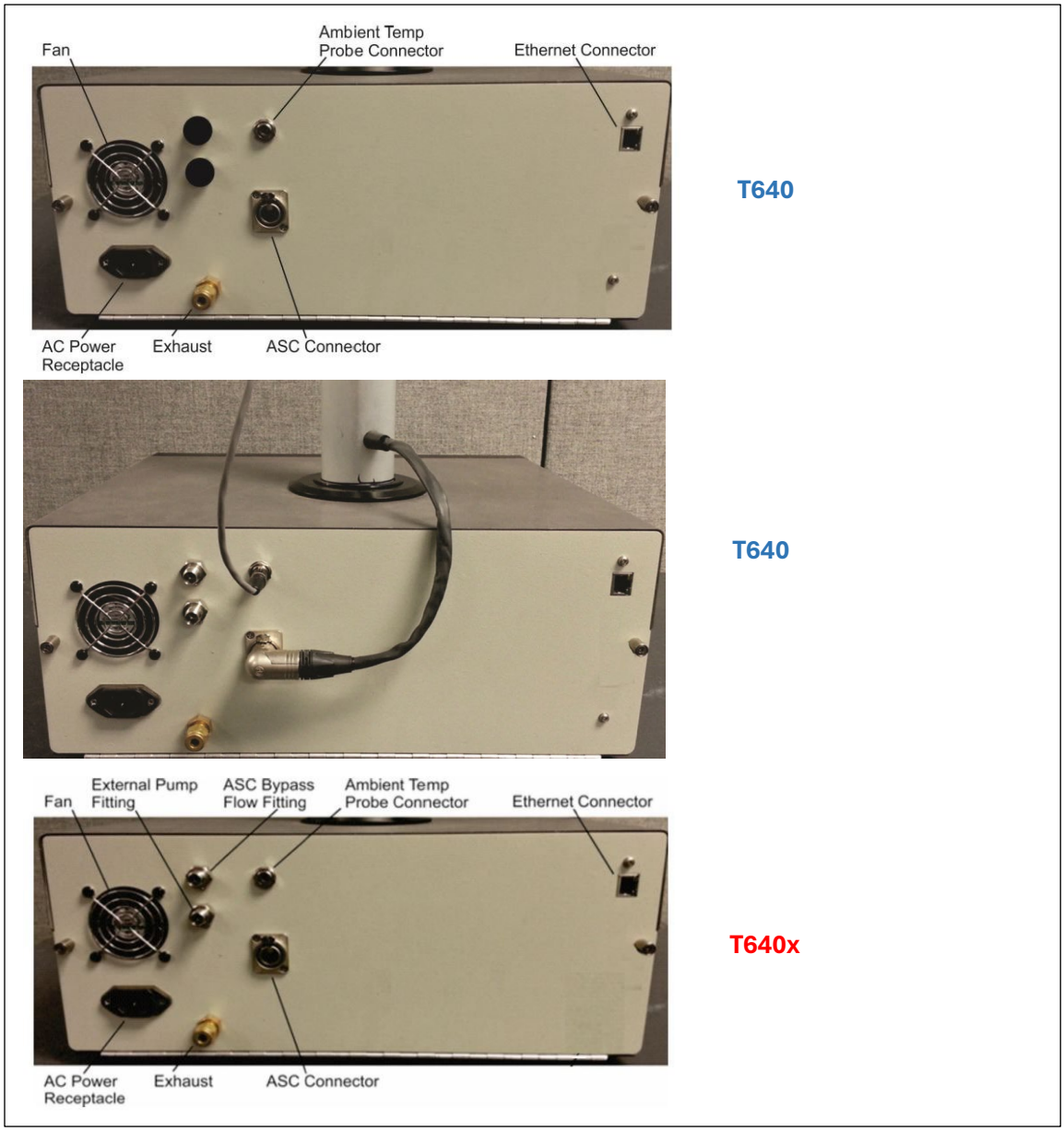
6. Carefully place ASC tube over sample inlet making sure it properly seated by applying sufficient pressure to slide past the internal o-rings at the base of the inlet nozzle adapter. Be sure the ASC is oriented squarely, by using a plumb bob or level:

7. Once the ASC is leveled, set screws should be hand tightened until snug. Do not over-tighten; the screws should be relatively easy to loosen when necessary.

8. Connect the ASC power and communications cable to the rear panel of the T640 labeled **ASC Connector**. Plug the power cable into rear panel label **AC Power Receptacle**.

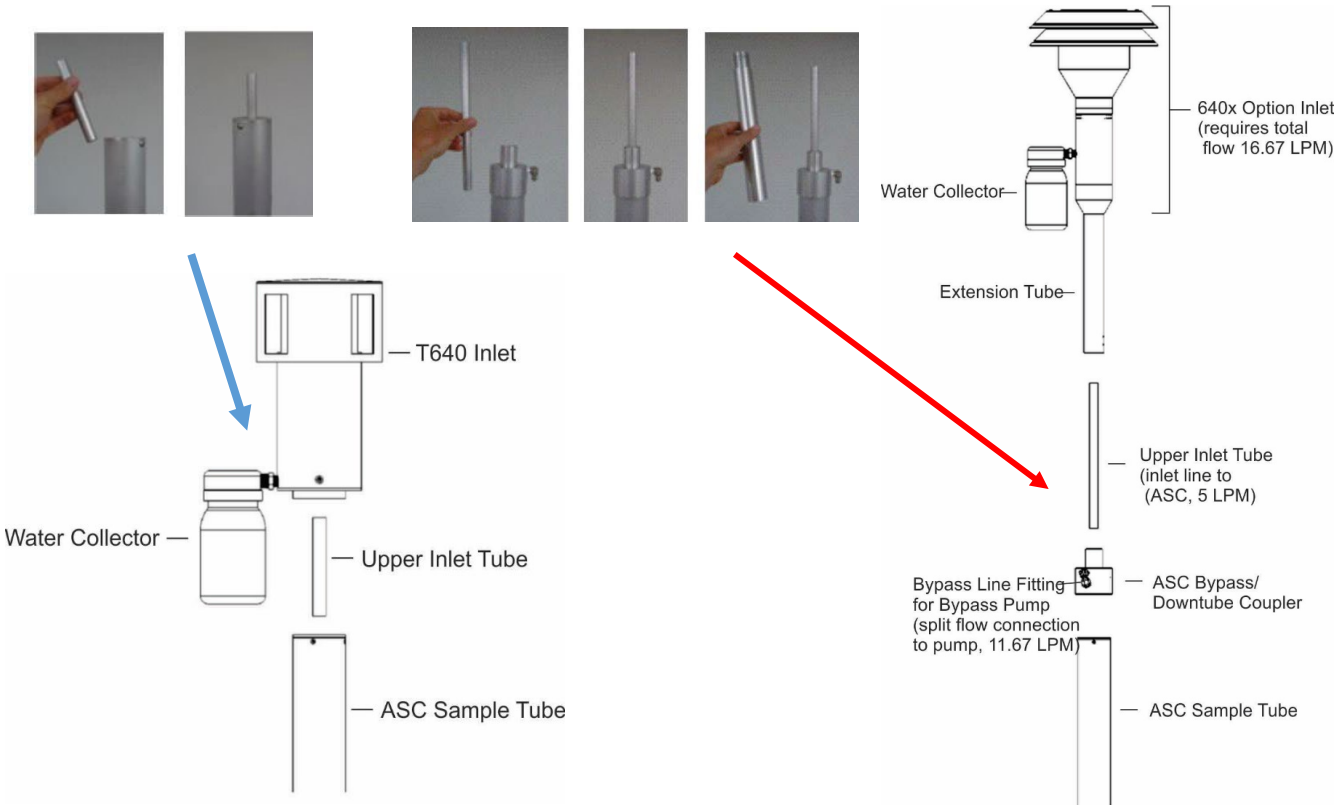
9. Locate the 25' temperature sensor cable (15' in some cases). Plug the **ambient temperature probe connector** into its respective rear panel electrical port.

10. If using the T640x, locate the Bypass tubing and connect it to the **elbow Swagelok fitting** on the ASC tube. Connect the other end of the Bypass tubing into the **ACS Bypass Fitting** port on the rear panel. Locate the external vacuum pump tubing and connect the tubing from the pump to the **External Pump Fitting** on the rear panel.



11. To complete the installation will depend on whether the instrument is being installed in an Outdoor Enclosure or Walk-in Shelter. Since we are performing testing in the learning center, you can proceed with attaching the inlet.

12. Assemble the inlet and the ASC for the T640 and T540x, respectively as depicted below.

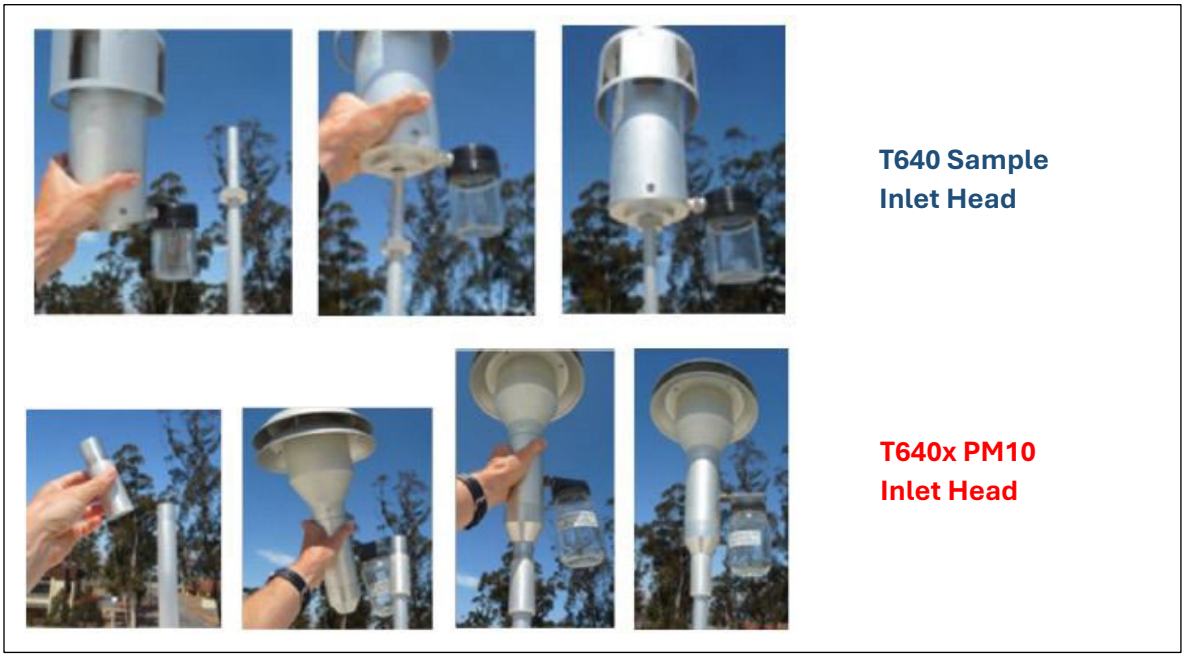


13. At the top of the ASC, insert the ~6” 5/8” OD Upper Inlet Tube into the end of the ASC. The Upper Inlet Tube should slide into the top of the ASC (about 2”) and bottom out when completely inserted.

14. If using the T640x, insert the at the top of the ASC, insert the 11” long (5/8” OD) upper inlet tube into the ASC. Make sure to install with the tapered end facing up. The upper inlet tube should slide into the top of the ASC (about 2”) and bottom out when completely inserted.

    a. Place the 12” long, 1.25” OD extension tube over the upper inlet tube and seat onto the bypass flow coupler that is on the top of the ASC.
    b. Place the 1.25” to 1” fitting on top of the 12” long extension tube (this coupler allows for usage of the 1” extension tube or to insert PM10 inlet head).

15. Place the Sample Head inlet (T640) or PM10 inlet Head (T640x) on top of the sample line.



16. Install the radiation shield either onto the instrument sample inlet tube or nearby guard rail using the supplied ratcheting ribbon.

17. Loosen the retention screw and insert the ambient temperature sensor probe into the bottom of the radiation shield. Position the end of the probe into the upper center portion of the radiation shield and tighten down on the retention screw so that it maintains the proper position within the radiation shield.

18. With power cable, ASC, ambient temperature sensor cable and external pump (if using T640x) properly connected power up the instrument and wait until the LED temperature stabilizes (~10 minutes).