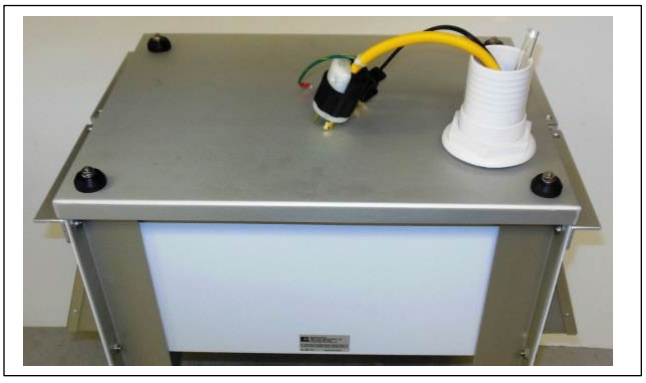
MET ONE BAM-1022 ASSEMBLY

1. Identify the following components: PM10 inlet head, AT/BP sensor, inlet downtube, leak check valve, inlet tube flange, VSCC separator, inlet heater sleeve, pump box assembly, smart inlet tube heater.

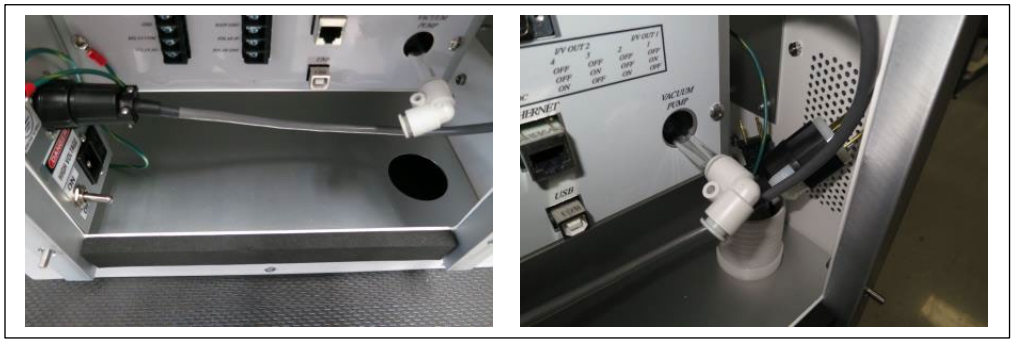
2. Remove cover from top of pump box and remove all packaging from inside the box and gather the loose ends of the cables and tubing.

3. Turn the pump box cover upside down so that the white nipple is protruding upward, feed the cables and tubing through it from the bottom, and then replace it atop the pump box assembly.



4. On the back of the main monitor housing enclosure, undo the four wing nuts holding the rear enclosure cover in place and remove the cover. Set it aside for now.

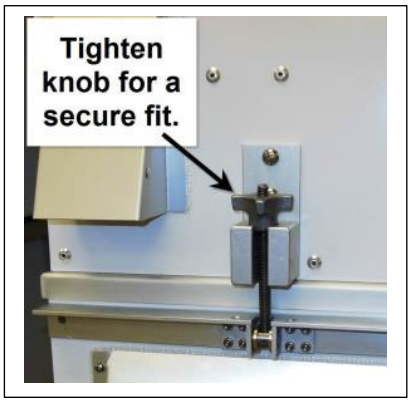
5. Behind the rear enclosure cover, locate the ingress hole on the right-hand side of the bottom of the enclosure. Lift the main monitor housing on top of the pump box assembly so that the white nipple and cables feed through the ingress hole.



6. Carefully lower the main monitor housing so that the monitor is resting flat on top of the pump box assembly.

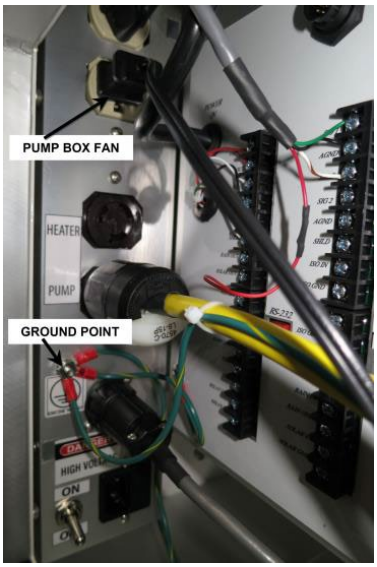
    a. Caution: Do not lift the BAM 1022 monitor using the angled top plate (solar radiation shield) mounted to the top of the enclosure. Instead, firmly grasp the sides of the housing unit and lift. It is easiest to have at least two people for this step.

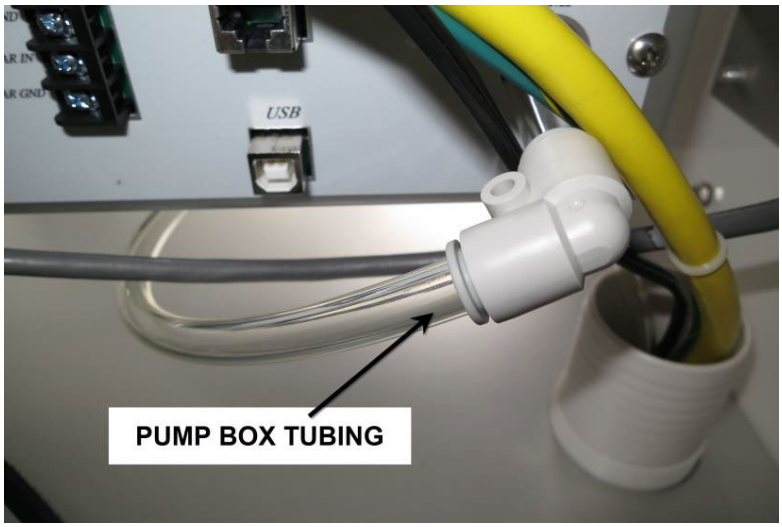
7. Raise the latches on side of the pump box so they secure to the main monitor enclosure housing and secure them in place by tightening the large knob.



8. Route the pump cable, the pump box fan cable, and the pump tubing to the appropriate locations and plug them into the monitor.

a. Connect the ground lead tied to the yellow pump cable to the grounding connection on the BAM 1022 case.
b. The pump cable connection is a twist lock type. Once inserted, rotate it slightly in a clockwise direction to lock it in place.
c. Locate the pump tubing and insert the tubing into the elbow fitting by simply pressing it into the fitting.

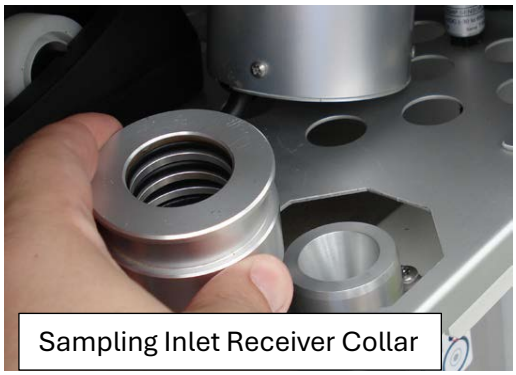




9. Locate the inlet tube flange and install it on the top of the enclosure.

10. Insert the black sealing ring into the threaded pipe section of the inlet tube flange and loosely attach the white clamping ring. If needed, wrap the lower threads of the pipe seal with Teflon tape.

11. Locate the inlet receiver collar and remove the red cap covering the inlet tube receiver.



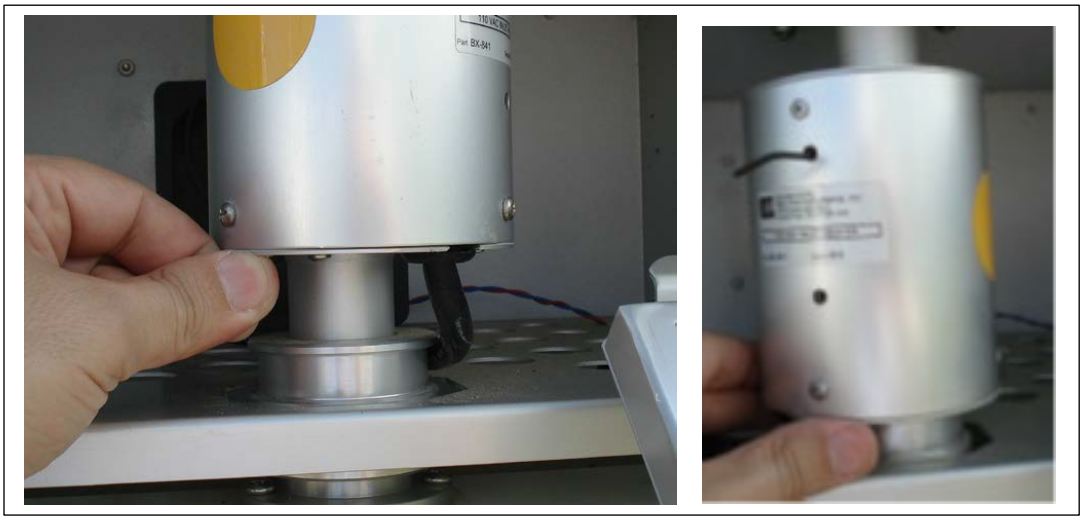
Sampling Inlet Receiver Collar

12. Slide the inlet downtube through the inlet pipe flange (through the black sealing ring or pipe seal) on top of the enclosure until you can see it inside the enclosure.

13. Position the smart inlet heater beneath the inlet downtube and slide the tube through the heater until it comes in contact with the O-rings within the inlet receiver collar.

14. Raise the smart heater so it is near (but not touching) the top of the enclosure.

15. Rotate the smart heater so the set screws become accessible. Tighten the screws with a hex wrench to fasten the heater in position, allowing 1 – 1.5 inches of clearance between the smart heater and the sampling inlet receiver collar.



16. Rotate the inlet downtube so the heater power cable is facing the back left corner of the enclosure and route the cable down the large empty hole located near that corner.

17. Push the inlet downtube all the way into the inlet receive collar so it seats into the collar O-rings and tighten the white collar on the inlet tube flange.

18. Wrap the smart heater with the white insulation sleeve and route the heater power cable to the power connection labeled HEATER on the back of the BAM 1022 and plug it in.

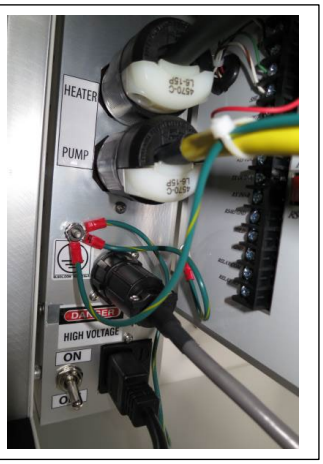
a. The heater power cable connection is a twist lock type. Once inserted, rotate it slightly in a clockwise direction to lock it in place.

19. Install the temperature sensor probe (597) onto the inlet downtube above the BAM 1022 enclosure using the U-bolt with nuts and washers.

20. Connect the silver connector of the temperature cable to the silver connection on the bottom of the sensor.



21. Route the sensor cable to the back of the enclosure and attach it to the connection labeled as EXTERNAL AMBIENT SENSOR.



22. Install the AC power supply cable to the remaining connection on the bottom of the internal power strip. It is located next to the ON/OFF switch.

23. Connect grounding cable to the ground connection on the internal power strip and route the cable out the bottom of the rear enclosure cover and connect it to an isolated site grounding rod.

24. Route the power cable and the sensor cable out of the bottom of the rear enclosure cover.

25. Install the PM2.5 VSCC separator on top of the inlet downtube and then the PM10 inlet head directly above it.

26. Plug the AC power cable into an electrical outlet and turn the power switch to ON. Verify the fans startup in both the pump box and main enclosure. The touchscreen display should also turn. Allow monitor to warm-up.

27. Replace the rear enclosure cover panel on the back of the enclosure and affix it in place with the four wing nut fasteners. Be sure the flange is on the bottom so that the power cable and sensor cable will be pinned between the foam strips and held in place.

28. Proceed to post assembly instructions and filter tape loading

BAM 1022 Setup Menu Configuration Parameters to View Post Assembly

Menu	Sub-Menu	Selection	Setting
SETUP	CLOCK		Verify clock is same as data logger clock
	SAMPLE	Data Average	1 HR or whatever is specified by Calibration and Repair Lab
		RealTime Period	60
		Conc Units	µg/m^3
	INLET HEATER	FT Set Point	+45.0
	REPORTS	Time Stamp	ENDING
	SERIAL PORT	RS-232	9600
		Flow Control-232	NONE
	STATION ID		1
	TAPE ADVANCE	Tape Period	1 HR
		Tape Pressure	PRESSURE = +250

BAM 1022 Main Operating Screen (left) and Setup