Guideline for reading Phoenix valve flows:

1. **Verify valve was installed in correct orientation.**
    a. All valves include a directional arrow for airflow and valve must be installed with the flow in direction indicated by sticker. This sticker also indicates horizontal, vertical up or vertical down flow. In addition, the valves need to be installed level or plumb depending on the orientation.

2. **Verify zip tie was cut loose and linkage was connected by installer**. Refer to valve installation instructions.

3. **Verify proper DP across the venturi**. The valve must be in the controllable range of the venturi at both minimum and maximum flows. For low pressure valves that is 0.3" to 3.0" WC. For medium pressure valves that is 0.6" – 3.0" WC.
    a. Verify fan is running.
    b. **Measure DP across valve**. It can be measured across the pressure ports on the venturi. This may require removal of the poly tubing. I typically use the poly and plug my Shortridge tubing directly on the ends of the poly tubing. You can also drill your own sampling holes adjacent to the valve body in the ductwork (verify drilling holes in ductwork is acceptable to owner/engineer).
    c. If fan is running and DP is low verify all outlet dampers on diffusers and any manual balance dampers are open. The valve needs to be the device that regulates the gross flow. Manual balance dampers on branch ducts or diffusers are for proportional balancing.

4. **Duct traverse readings are preferred for total flow verification**. Utilizing a hood in a multiple inlet/outlet configuration will not give an accurate total flow.

5. **Flow hood should be used for flow proportioning in a multi inlet/outlet configuration**. There are only a couple conditions where a hood can be used for total flow.
    a. If there is only one outlet or you are using multiple hoods simultaneously on all inlet/outlets.
    b. If you have multiple rooms that are similar in configuration, and you could only feasibly traverse 4 of them. You could create an average correction factor for the hood readings on the remaining 2 rooms.

    When using this method with a meter that has correction capability it should be used in the non-corrected mode. The meter does not have the capability to compensate for the Phoenix valve adjusting to the back pressure created by the hood. Using a single hood in a multiple inlet/outlet condition will force some of the air through the other inlet/outlets giving a false low reading.

6. If all of the above check out then valve may need field adjustment but not until all of the above has been verified.
    a. Adjustment of constant volume valves is done by the TAB contractor same as they would be the ones to adjust a manual balance damper. All that is required is to loosen the lock nut and turn the screw with a 7/16" wrench.
    b. Controllable valves will require adjustment by qualified Phoenix personnel as this will require manipulation of the flow curve in the programming. In order to complete this procedure we will need the max flow reading and min flow reading. This is needed to determine if the correction is linear across the entire flow curve or if the curve just needs adjustment on one end of the curve.

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