**PTCS Combination Ducted Mini-Split Airflow Measurement**

Combination ductless/ducted mini-split multi head systems can receive either the ductless or PTCS incentive, depending on the square footage area each serves. If the ducted mini-split system serves 51% or more of the floor area, the heat pump must meet PTCS requirements for that incentive. One of the PTCS requirements is airflow (CFM/ton), and airflow must be measured with a TrueFlow plate. This document is provided to assist with questions on how to measure air flow with a TrueFlow plate with ducted mini-split multi head systems.

**What Technicians Have Reported Works for Them**

Discussions with contractors who have installed ducted mini-split have found that most installed a filter grill in the return grill. In these types of installations, the TrueFlow plate replaces the filter in the grill for the airflow measurement.

**What Energy Conservatory Recommends**

The Energy Conservatory, who makes the TrueFlow plate, recommends 3 potential airflow measuring options, if the TrueFlow plate cannot be installed in the filter slot.

1. Angling the plate, no more than 45O, in ducts that are too narrow to accommodate the full height of the plate. Ensure that all the air flows through the plate by using spacers to fit the plate in the duct.
2. A flow hood can be created to cover the return at one end, and fit the TrueFlow plate at the other end, to measure air flow.
3. Create a 12 inch minimum deep box. If technicians want to use this approach to make a flow hood with the TrueFlow plate, the top of the box would cover the return and the bottom of the box would hold the TrueFlow plate.

For options 2 and 3, technicians should multiply the CFM measured by 1.04 since the measurement was taken at the return and not a filter slot at the air handler.

**Other Considerations and Call for Feedback**

The PTCS spec for airflow, allows for less than 325 CFM/ton if this airflow is published in equipment manufactures information.

If you have other thoughts or potential improvements on measuring air flow for ducted mini-split multi head systems let us know by emailing ResHVAC@bpa.gov.