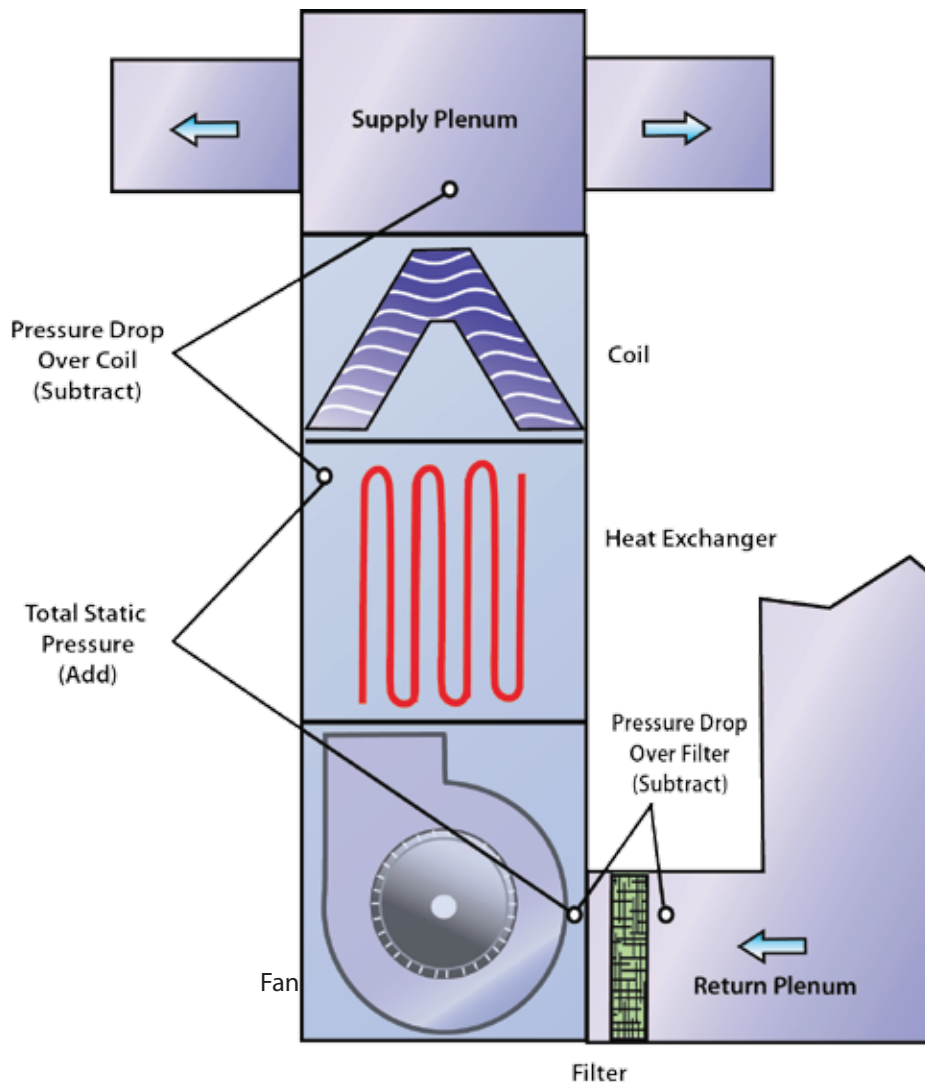


Upflow Gas Furnace with a Return Drop

The following pages contain typical equipment arrangements and show the appropriate locations to drill static pressure test holes in HVAC Systems. Using an appropriate manometer reading in inches of water column, measure total external static pressure and system component pressure drops. Compare measured pressure to equipment manufacturers published specification to effectively interpret operating system performance.



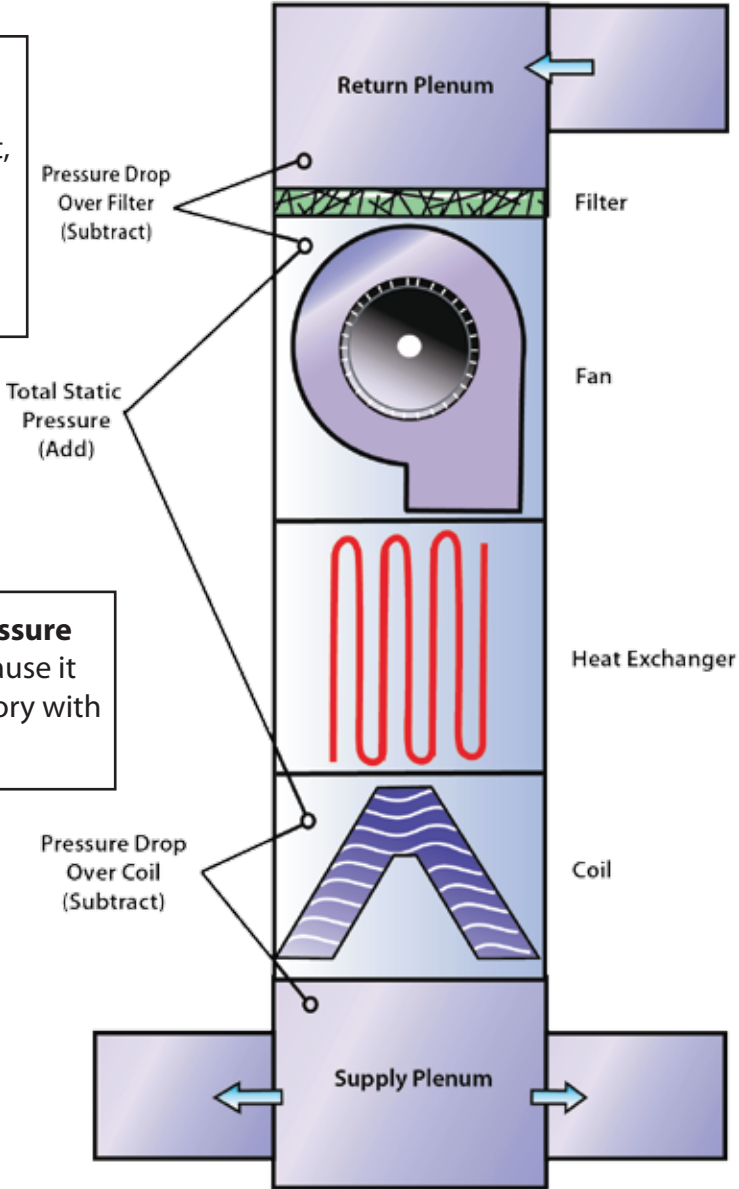
High limit switches may be moved and a **furnace discharge pressure** may be taken at that location. Disconnect power before removing the switch

Pressures taken in the plenum may also be interpreted as the pressure drop of the duct system. Compare measured pressure to NCI's static pressure budgets to interpret duct sizing, and the effectiveness of the duct insulation

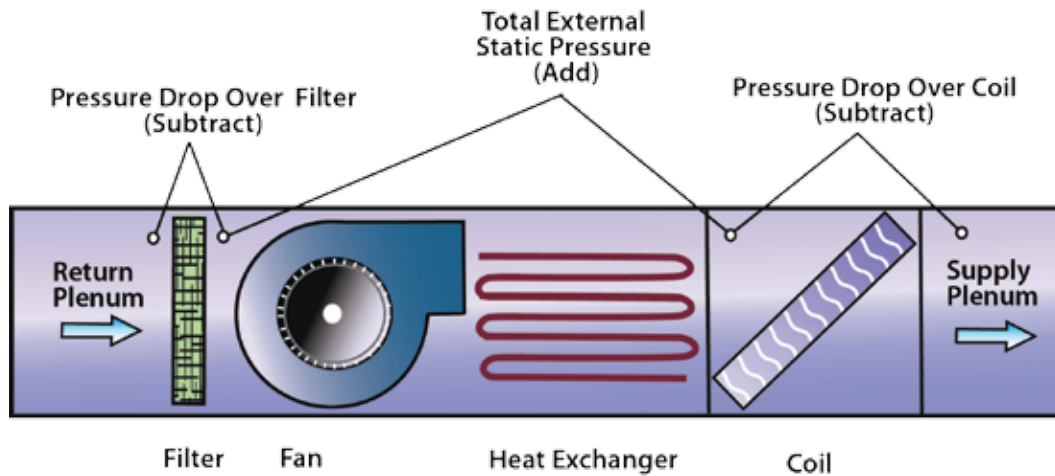
Downflow Gas Furnace

If a manufacturer includes the filter in the internal drop of the equipment, Measure negative pressure drop of the equipment, Measure negative pressure after the filter and then add in the manufacturer's rated clean filter pressure drop to the total external static pressure reading to increase accuracy

Measure the coil pressure drop separately, because it is an optional accessory with a gas furnace

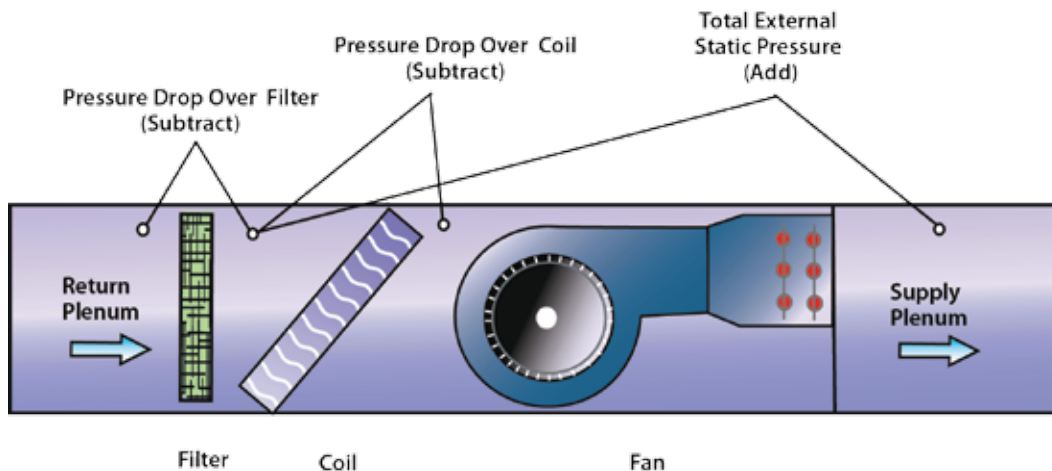


Horizontal Furnace



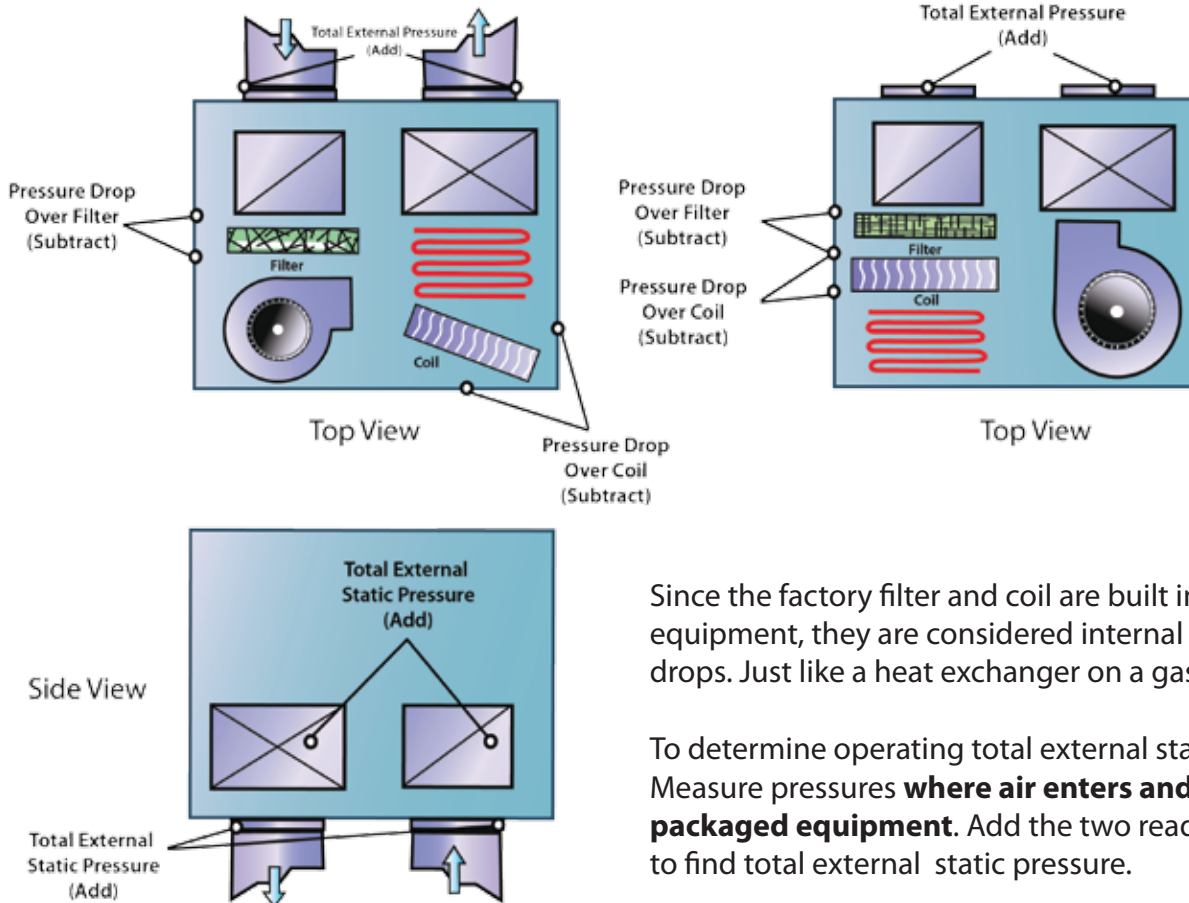
Horizontal Heat Pump

Since heat pumps often do not have a remote cooling coil, **the pressure drop over the internal coil need not be included** in a balancing report.



Do not drill near **electric heat strips**. Find heat strip pressure drop in the manufacturer's engineering data and **add the pressure drop to the measured total external static pressure** for the highest accuracy.

Rooftop/Package Units



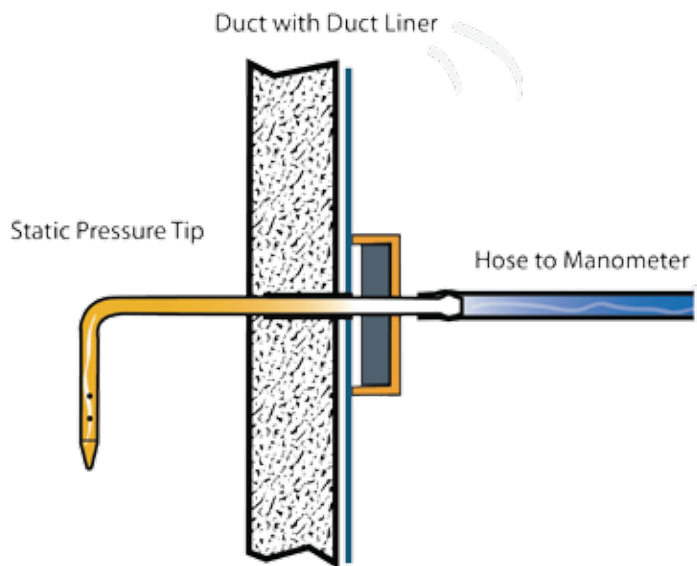
Since the factory filter and coil are built into the equipment, they are considered internal pressure drops. Just like a heat exchanger on a gas furnace.

To determine operating total external static pressure. Measure pressures **where air enters and leaves packaged equipment**. Add the two readings together to find total external static pressure.

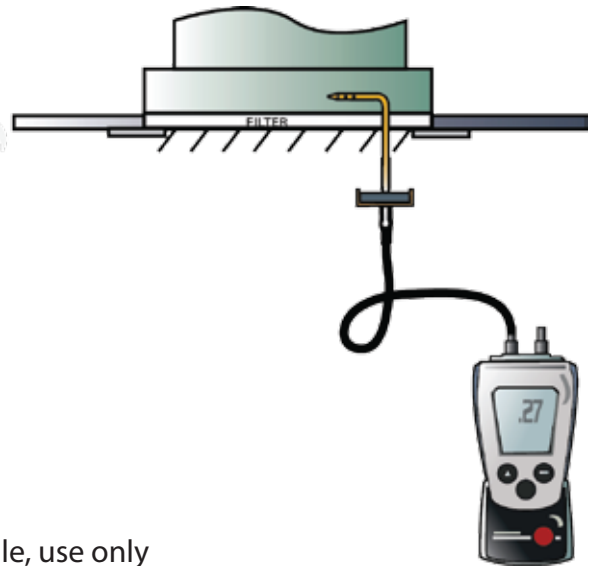
You can still measure the pressure drop of the coil and filter to check for blockage.

If the equipment manufacturer rates any air moving equipment from the factory with a filter installed, verify the factory rated filter pressure drop. Then subtract that pressure from the measured total external static pressure before plotting fan airflow on the fan tables.

Static Pressure Tip



When using a static pressure tip, **face the tip into the airflow**



Return Air Filter Grille Pressure

To measure the pressure drop over a return air filter grille, use only one hose, pierce the filter, the pressure drop over the filter and grille will be displayed on the monometer.

When measuring and interpreting static pressure verify fan speed and inspect the condition of the fan. Plot fan airflow on the equipment manufacturers fan tables. Use fan law two, to interpret the pressure readings and prescribe repair solutions.