Supply NEW ENGLAND
Where the pros go

There's A Difference

There are two types of technicians in our field – True Technicians and "parts changers". We all know at least one "parts changer". They see an error code and change a part, just to find out that it wasn't the cause of the error. For example, on a no-flame sense error, the unit fired off and then went out on a loss of flame. So, what does the "parts changer" do next? They change the flame sensor.

Then, there are True Technicians - the ones that see the error code, reset the unit, and diagnose the underlying cause of the error. They test the flame sensor and check inlet gas pressure. Then they find that the gas pressure drops to 1 INWC when the unit lights off. In conclusion, they correctly determine that the gas regulator is the **real** issue and that there is nothing actually wrong with the unit.

What type of technician are *you*?

Begin your diagnosis of the system by verifying the presence of proper voltage. Make sure all service switches and breakers are in the "On" position. Also, the furnace/air handler and condenser should each have a dedicated breaker. Next, check the transformer for proper control voltage. Some thermostats receive power from the HVAC equipment, while others use batteries as their only source of power. If there is no display on a battery-powered thermostat, the right place to start is to remove and replace the batteries.

Condenser

Set the thermostat to "cool" mode. Adjust the temperature 3-to-5 degrees below the room temperature and make sure to wait for the time delay, if necessary. If the air handler is running but not producing cold air, check the air handler's secondary drain pad/condensate pump for water. If there is water, check the drain line for blockage. If frost or ice is observed, check the filter and coil for cleanliness. Be aware that a lack of airflow can cause coils to freeze over. If the air handler is iced over, turn the air conditioner off at the thermostat and circuit breaker, but make sure the fan is in the "on" position. When the ice is melted, clean the coils and restart the unit. Continue your diagnosis from this point.

Furnace

Switch the thermostat to "heat" mode and set the thermostat 3-to-5 degrees above the room temperature. Make sure the furnace is receiving the call from the thermostat and that all safeties are closed. Also confirm that the door switch is engaged. If the inducer is operating and the furnace still doesn't ignite, check that the pressure switches are closing. If the switches are not closing, use your manometer to determine if it is a bad switch, bad inducer or blocked vent.

I could go on and on and I still wouldn't be able to cover all possible causes of a unit not working correctly. The bottom line is: Never stop learning. I always say "The day I stop learning is the day I stop coming to work."

Just remember, be a True Technician not a "parts changer".

Some quick industry statistics for you:

- **82.1%** of residential parts returned have no fault found.
- **67.9%** of light commercial parts returned have no fault found.
- **30%** of compressors returned have no fault found.
- **40% to 50%** of motors returned have no fault found.