

## **Thermostats**

*Although thermostats are most often blamed for furnace problems, the truth is that they are relatively simple devices and usually very dependable. Thermostats are nothing more than a switch to turn the furnace on, like a light switch turns a light on except they are automatic, what varies is how that switch is activated. Non-digital thermostats, the old dial or slide thermostats, use bi-metal coils to operate the switch. Bi-Metal are two dissimilar metals fused together, since metals expand when heated, but at different rates, fusing two different metals, with different rates of expansion, will cause that metal to bend. Thermostats use that "bending" to make and break contacts, opening and closing the switch, it's just simple physics, almost fail proof. Digital, programmable and non-programmable, use electronics, resistors and diodes to make the switch, and although this may sound a lot more complicated it's really not. Diodes increase and decrease resistance depending on temperature, it's actually a little quicker and more accurate way of reacting to room temperature than bi-metal elements. Obviously, the more functions a thermostat is required to do, such as programming, reading outside temperature, or controlling humidity, the more prone they are to have problems, but programmable thermostats have been around a long time now and the technology has improved. Today's programmable thermostats are very dependable (depending on the brand), and can save you money on your heating bills when set back 10 degrees or more, for periods of 8 hours or more.*