



Bayonet Mounting Style

The bayonet fitting with the lock cap mounting system is the most common style used to ensure that the temperature sensor has good thermal contact into a blind hole. The material to be measured is drilled and taped (see below) then the bayonet adapter is threaded into place. The sensor assembly with the lock cap is inserted through the hole, when the sensor hits the bottom of the hole the lock cap is pushed down compressing the spring and the lock cap is twisted and locked into place on the bayonet adapters pin. The compressed spring pushes the tip of the sensor firmly against the surface at the bottom of the hole increasing the accuracy and reducing the thermal response time of the measurement. The tip of the sensor in that is in contact with the bottom can have different geometries, round, drill point to match the hole bottom or a copper insert placed in it to increase the thermal transfer to the sensor.

There are many different styles of lock cap assemblies as shown above. The positioning of the lock cap on the sensor can be done in three ways. The length from the tip of the sensor to the back of the lock cap can be fixed distance. The lock cap can have an adjustable length, it is internally threaded so it can be twisted onto a long spring or onto spiral wrapped stainless steel armor. The adjustable length allows the sensor to be used in a variety of applications with varying hole depths. The last style of lock cap assembly uses a compression fitting to mount the lock cap assembly onto a 1/8" diameter probe with a one time adjustable metal ferrule or with a readjustable Teflon ferrule.

The type of temperature sensors that can be used inside these mounting systems can be Resistance Temperature Detectors (RTD's), Thermistors and Thermocouples. This variety of sensor types gives the ability to measure temperature with very high accuracy to lower accuracy and allows for a wide range of sensor costs.

