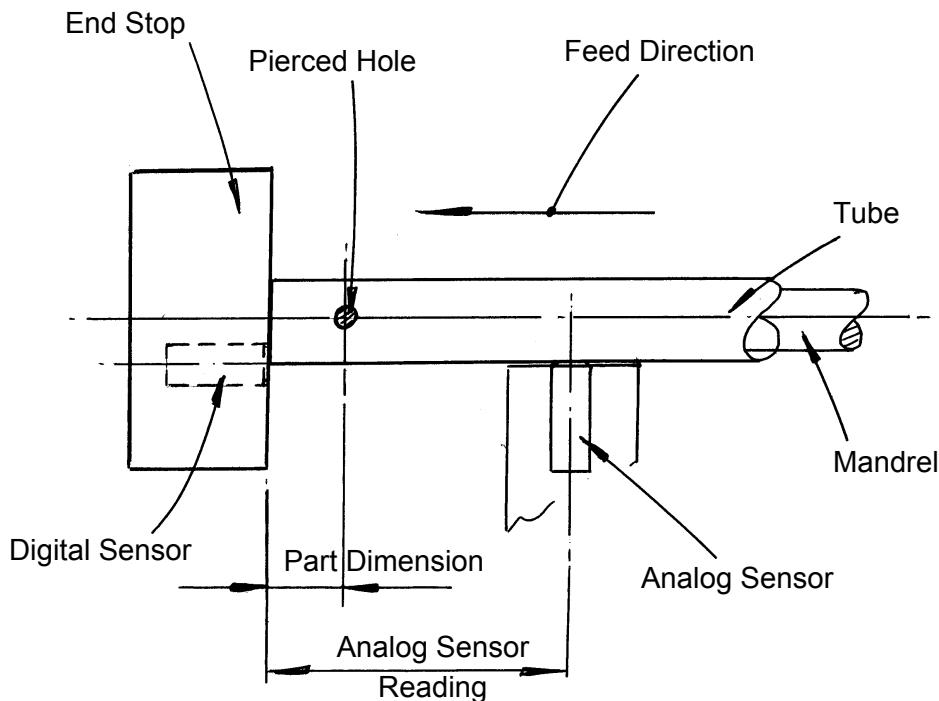


If a die requires the stock (flat sheet or tube) to be inserted into the die by a set amount, then either type of sensor could be used.

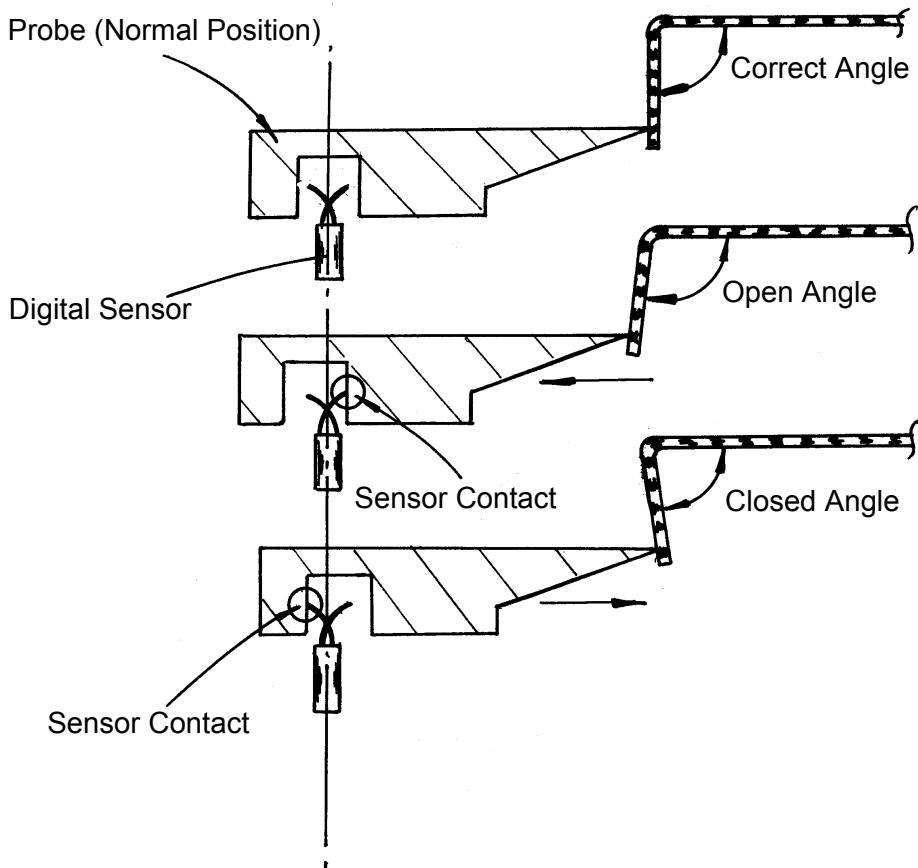


**Figure 1-24. Tube Position for Hole Piercing**

The figure shows a steel tube, which has to be slid over a mandrel and into the die, for a hole to be pierced. In this example, an analog sensor can determine how much material has been fed into the die, while the digital sensor could be mounted as an integral part of the backstop.

Both sensors will work in this application, however, the analog sensor will ensure that the correct distance for the hole from the end of the stock is always maintained. The digital sensor may become troublesome due to dirt or oil being pushed against its face.

Another example is shown here:



**Figure 1-25. Sensing Flange Angle with a Probe**

In this example, the sensor is used to check the angle of a flange. If it is intended to be used as a simple "go" "no-go" gage, then the use of a digital sensor would be the preferred choice. However, as the analog sensor has the ability to sense distances, there is another type of application which it can fulfill, apart from determining the simple travel of something fed into a die. That application is in the newly developing areas of self-adjusting dies, where using analog output sensors are better suited. Instead of simply rejecting bad parts, the ability to self-adjust helps to eliminate the production of bad parts in the first place.