



# A Problem Solver Application Bulletin

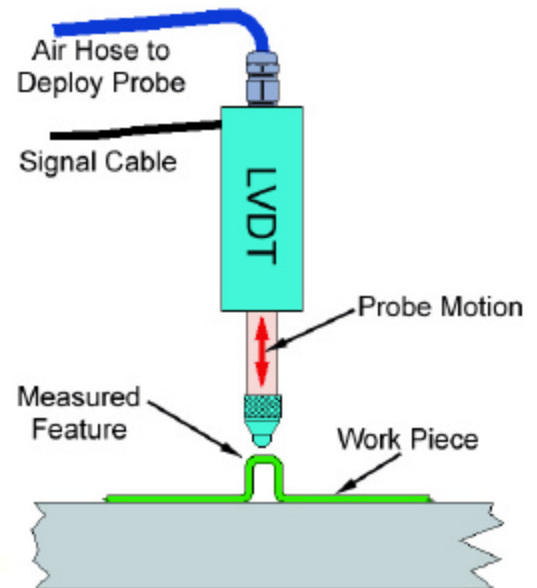
## Position/Displacement of Part Features

The **Signature Technologies SA-2000 “SAM”** module, and **Signature Technologies “SAMview™”** Software package can be used to measure the position or displacement of specific features on manufactured parts

Instead of sampling selected parts using an off-line gauging fixture, the illustrated method can perform the same type of test every stroke of the machine so that each part can be individually verified as having been formed acceptably to tolerance.

The system works by measuring the position of the formed portion of the work piece relative to the die surface. The measurement is performed by a stationary LVDT device, which is deployed by the **SAM™**, based on the crankshaft position of the machine using the programmable cam outputs of the SAM and a pneumatic control valve.

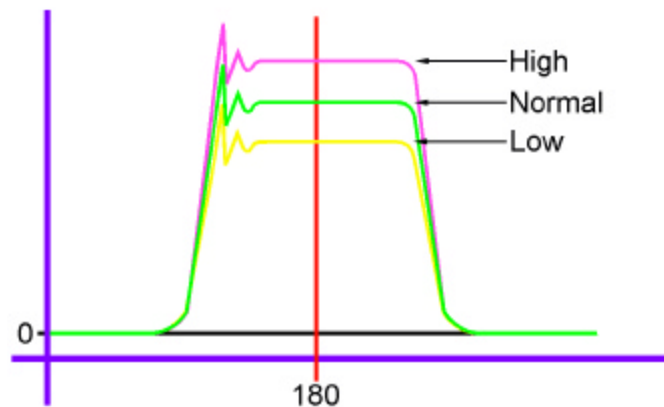
Timing of the measurement is critical since the probe must not deploy until the part is in position, and referenced by the tooling.



The measurement can either be calibrated, or comparative depending on the application. Calibrated measurements will give the dimensional variation from nominal at the sensing point, or absolute measurements of the chosen feature.

Multiple sensors can be used in cases where there are several different features to measure, or where multiple measurements are required to insure proper formation of a single feature. The **SAM™** module can handle inputs in groups of 8 up to 56 total points. If desired, **Signature Technologies** can provide controls to adjust the forming station(s) dynamically based on the dimensional measurements.

**Signature Technologies** can supply a wide variety of solutions to various manufacturing process problems dealing with measurement, verification of properties, tool condition, and machine health. We can also “close the loop” by performing process adjustments in response to specific variations in force, location, or shape of the work piece, as well as more simple controls which can track and reject specific parts which don’t meet specific quality criteria.



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