

**Sensitivity Analysis**  
**on CUSUM-Based**  
**HVI Calibration System**  
-춘계 학술발표회-

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It has been reported that HVI(High Volume Instrument) calibration decisions can be made based on statistical control methods such as Shewhart-CUSUM strategy by estimating the necessary variance components and determining proper CUSUM-Shewhart control parameters.

CUSUM (Cumulative Sum) control procedures have been developed and used effectively in many industries as an alternative to the conventional Shewhart control chart methods for quickly detecting small and moderate shifts in process averages. The HVI calibration strategies are in a way almost identical to making the out-of-control decisions in the industrial quality control work. On the other hand, the CUSUM-Shewhart control methods, which combine the key features of the CUSUM and Shewhart control procedures, trigger an out-of-control signal if the most recent subgroup average is found outside of the Shewhart control limits, or if the low or high CUSUM value is greater than a given value.

In order to quickly detect a small shift in the process average and minimize the chance for obtaining the false signals at the same time, it is necessary to obtain proper control parameters. Since the choices are not so trivial, we must experiment with different values to see how the out-of-control decisions are influenced. The effect of the values of the allowable slacks and the decision intervals on the ARL(Average Run Length) is reported.