

Automated Valve Assembly: Component Gaging and Computerized Assembly

Highlights:

- Calculates initial valve position based on dimensions of sub-components
- Supervisory control of assembly process
- Measures actual valve travel after assembly to ensure final part is within specifications
- Built-in calibration procedures ensure correct methodology is used
- SPC charts maintained for dimensions of all sub-components

One of the specifications for a certain style valve is that total valve movement have a maximum error less than the dimensional tolerances of the sub-components. Meeting this specification using conventional assembly and machining methods proved virtually impossible when component stack-up tolerances and final unit production cost targets were considered.

To solve this problem, a Sciometric's Test and Analysis System was installed on the assembly line to pre-measure each component and control the assembly of the valve housing. The system dynamically compensates for variation in component sizes and allows the manufacturer to achieve the required specifications with exceptional reliability.

In addition, the system performs SPC analysis on the dimensions of each component to monitor the consistency of the supplied parts.

