

Focus: Syringes

Challenge: Many medical devices are single-use items, but they are still precision devices with critical dimensions and geometries. Syringes, for example, rely on accurate and consistent dimensions to control dosage. Accurate process control and precise metrology is vital to their quality. Like most molded plastic items, single-use syringes are produced at high rates, so the measurement has to be fast as well as accurate.

Critical Dimensions: Syringes have a number of critical dimensions, the primary ones being inside diameter and length – the features that define the dispensing volume. To measure these dimensions at high speed, a non-contact, optical measuring system is preferred. A gang fixture capable of holding one piece per mold cavity is optimal.

The Multisensor Advantage: The OGP

SmartScope[®] Flash[™] 200 presents an ideal platform for measuring syringes. The system integrates optical, tactile and laser sensors along with ample measuring volume for dedicated part fixturing. In order to measure both inside and outside dimensions quickly, OGP created a fixture holding eight pieces with 45° mirrors that enable the syringe I.D. to be measured optically. With this set-up, all the critical dimensions can be measured in one routine. Optional touch probe and laser sensors add capability for additional measurements where needed.

The Result: The resulting routine enabled eight critical dimensions per part to be measured in under 22 seconds - less than three minutes for all eight pieces in the fixture. SmartScope Flash 200 is a compact and productive solution for quality measurement of single-use medical devices.



Eight syringes on a custom gang fixture.