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Aluminium Cap Break-off Force

Specification

A major global supplier of medical gas devices and components required quality control tests to assess part of a new product. One of their components, a 5ml pressurised aluminium cylinder filled with helium gas, is incorporated into a needle-free powder intradermal analgesic injection system for children.

To ensure consistent quality and good manufacturing practices, the supplier needed to test the break-off force of the aluminium cylinder cap at its stem. The company used to perform the test manually, but required a motorised system, which could perform the test at a consistent speed to gain better result accuracy.

Solution

Mecmesin provided a MultiTest motorised test system with an Advanced Force Gauge (AFG), a chisel point accessory, to break-off the cap, and special fixturing to securely hold the sample in place.

It was vital that the sample would always break at the same point, therefore, a special cantilever-operated sample holder was manufactured. This enables each cap to be loaded and precisely positioned using the same amount of pressure each time, which minimises variability.

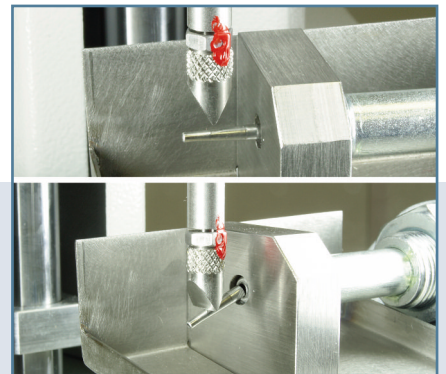
A specially designed non-adjustable base plate also ensures the sample and fixturing remain static for consistency during and between measurements. Tests are performed at a constant speed of 50mm/min, with the force displayed and recorded by the AFG.

System

- MultiTest 1 motorised test stand
- Advanced Force Gauge (AFG) 50N
- Chisel point accessory
- Special cantilever-operated sample holder



Aluminium cylinder caps



Chisel point shown breaking cap



MultiTest 1 shown with AFG and special cantilever-operated sample holder

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medical industry

