The difference is measurable™

NEW INSTRON® BIOBOX SYSTEM ENABLES TESTING AT BODY TEMPERATURE

Within the medical device industry, regulatory agencies often test internally-based devices and implants in a physiological state. The Instron® BioBox meets the growing trend of testing actual medical devices and biomaterials at body temperature (37 °C). For large or long devices, testing in a liquid may not be practical. As an alternative, testing inside a controlled air environment at body temperature provides a powerful solution.

The BioBox can be ordered as a standard item on new Instron Series 3340, 5540 or 5940 single-column testing instruments or retrofitted on selected models already in operation. The large dimensions of the BioBox allow the full range of movement of the relevant testing system to be used. Typical applications are testing of sutures, catheter tubing, latex gloves, and a wide variety of other devices and biomaterials at physiologically relevant temperatures. In general, most standard grips and fixings can be used, because, unlike in the case of fluid baths, these do not have to be made from highly corrosion resistant material.

The BioBox testing chamber consists of four polycarbonate side walls with an internal heating tube that provides the appropriate levels of heat. The centrally located, high-level air ducts provide consistent air flow for uniform temperature distribution during testing. The adjustable temperature range is from ambient temperature to 40 °C (maximum), with a deviation from the set temperature of only +/- 2 °C. Two large glass doors arranged one above the other at the front of the enclosure allows for quick access to the test space. For short travel tests, for example, when testing dental implants, the operator only needs to open the lower door to insert and remove the test specimen and preserve the temperature. Although the BioBox fully encloses the test frame, the operating panel and the emergency stop button are ergonomically and conveniently located outside the box.

Optimized Testing System Configurations

Typical applications include tensile testing catheter tubes. An example for a set-up, which is optimized for such tasks, includes the BioBox with an Instron® 5943 electromechanical testing instrument with a nominal force capacity of 1 kN and a test space height of 1123 mm, equipped with a 100 N load cell. For measuring the tensile strength of catheter tubing, which is a critical measure of the quality of these devices, the machine will be equipped with pneumatic grips with a nominal load capacity of 1 kN, which are also suited to tensile testing of cord and yarns. These grips are designed to prevent specimen slippage and reduce the clamping stress applied to the specimen to avoid failure in the jaw area. Instron's Bluehill® 3 Software provides test control, data acquisition, and report generation. Practical experience has shown that this configuration produces highly accurate results characterizing the tensile strength of catheter tubing.

For more information on Instron's products and services, visit www.instron.com. Click on "Contact Us" to locate a Sales or Service office near you.