Helmet Retention Tester - Dynamic

Overview

Biokinetics’ Helmet Retention Tester for Dynamic evaluation (HRT-D) evaluates the overall performance of a helmet’s restraint system. This retention system design combines the two performance requirements; dynamic strength and stability. The system complies with national and international standards and is integrated with the helmet impact tower measurement and software system to simplify data collection and reporting.

Operation

The retention system design incorporates two test methods into one apparatus. The first test method evaluates the strength of the retention system by means of placing a helmet on a headform and routing the retention strap under the jaw stirrup assembly. Attached to the jaw stirrup is a free falling mass which strikes an end plate to load the retention strap system. A linear potentiometer on the stirrup records movement of the strap allowing for the measurement of peak and residual strap displacements.

The second test method evaluates the stability of the helmet and retention system. The stability is evaluated by means of hooking a drop mass assembly to the helmet rim and dropping a mass onto an end plate. This loading action attempts to rotate the helmet off the headform and assesses the retention system’s ability to keep the helmet in place.

The dynamic helmet retention tester meets ASTM, CPSC, CSA helmet test standards.
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Specifications

FEATURES:
• Performs helmet retention strap elongation tests and helmet stability tests
• Test apparatus is mounted on wheels for easy mobility
• Linear potentiometer integrated with data acquisition and software system

PHYSICAL:
Mass = 30 kg (66 lbs)
Height = 1.8 m (71 inches)
Width = 1.15 m (45 inches)
Depth = 0.72 m (28 inches)

COMPONENTS:
Desktop computer with colour printer
Various drop masses to meet requirements of the standards.
Headforms:
• Full ISO headforms (A, E, J, M and O sizes)
• Half ISO headforms (A, E, J, M and O sizes)

CUSTOM SOFTWARE:
• graphical user interface and intuitive layout
• automated data collection, data analysis and reporting
• allows testing of multiple helmets
• integrates with Biokinetics' helmet impact drop tower system and mass properties instrument
• user manual

On-site installation and training available.
Specifications are subject to change.

PRICE and DELIVERY: Please contact Biokinetics