Helmet Retention Tester - Static

Overview

Biokinetics’ Helmet Retention Tester for Static evaluations (HRT-S) evaluates the overall strength and displacement of a helmet’s restraint system under load. The apparatus can apply loads to the restraint system reaching 2000 N (450 lbf). The system complies with international standards and is integrated with the Helmet Testing Software (HTS) to simplify application of loads, data collection and reporting.

Operation

The motorcycle helmet is placed on the headform and the retention strap routed under the jaw stirrup assembly. The HRT-S pneumatically loads the retention system to the designated preload. A linear potentiometer fitted between the jaw stirrup and a sliding element supported by the top of the test helmet records the initial position. The final test load is applied the potentiometer records the maximum displacement.

An instrumentation box contains an electronically controlled pressure regulator. This device, along with the HTS allows for any load to be applied to the helmet retention for any given duration.

The quasi-static helmet retention tester was designed to comply with the DOT (FMVSS 218) helmet test standard. However, the retention tester’s versatility allows the apparatus to be used for research and as an evaluation tool for other types of helmets. This is accomplished by varying the load and duration settings in the custom designed software and hardware.
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Specifications

FEATURES:
• Performs helmet retention strap elongation tests
• Frame is mounted on wheels for easy mobility
• Linear potentiometer integrated with data acquisition and software system
• Uses standard shop pressures

PHYSICAL:
Mass = 28 kg (62 lbs)
Height = 1.8 m (70 inches)
Width = 0.6 m (24 inches)
Depth = 0.5 m (19 inches)

COMPONENTS:
Desktop computer with colour printer
Headforms:
• DOT headforms (A, C and D sizes)
• Half ISO headforms (A, E, J, M, O) optional

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 systems
• user manual

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

PRICE and DELIVERY: Please contact Biokinetics