Overview

Biokinetics’ Ballistic Load Sensing (BLS) Headform system consists of load measuring and penetration headforms to assess the ballistic impact protection performance of helmets. The BLS Headforms enable a direct measurement of the dynamic loads imparted to the skull by the deformation of a ballistic helmet caused by non-penetrating projectiles. The forces can be correlated to risk of injury such as skull fracture.

Operation

Initial testing with the sacrificial Penetration Headform is used to determine the velocity at which a helmet design can successfully defeat a given ballistic projectile. The Penetration Headform consists of an ISO shaped headform fabricated from an elastomer.

The BLS Headforms are used to evaluate Behind Armour Blunt Trauma (BABT) protection resistance. Each BLS Headform is equipped with two sets of impact pads which bear on an array of seven load cells. In operation, these impact pads are covered by a skin cover to better simulate normal skull load distribution response.

The headform design is based on the ISO shapes and sizes. They are mounted on a flexible neck from the Hybrid III anthropomorphic test device.
Ballistic Load Sensing Headform

Specifications

Basic System:
- Two medium size *Penetration Headforms*
- One neck adaptor
- One medium front-rear *BLSH* instrumented with 14 load cells
- One medium left-right *BLSH* instrumented with 14 load cells
- One Hybrid III neck with quick release
- One neck support and one base support
- Load cell cables (qty 28)
- Three sets of skin impact pads (qty 12)

Optional Equipment:
- Signal conditioning package
- Custom data collection and processing software package
- Tri-axial accelerometer package (qty 3)
- 6-axis neck load cell package
- Turn-key system with computer software for data collection, processing and reporting
- Installation, start up, and training
- Technical support

*Specifications and configurations subject to change

**Penetration Headform**

**BLS Headform (load cells exposed)**

**BLS Headform with helmet**

Typical *BLS Headform* load cell responses

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