



Neck Pendulum Test Stand

Model Number: TF-200-0000



DESCRIPTION

The neck pendulum test is accomplished by releasing the pendulum and allowing it to fall freely to achieve a given impact velocity. The aluminum honeycomb stops the pendulum with a specified acceleration versus time pulse.

Velocity measurements are made by means of an infrared velocity measurement system. This system is made up of an infrared emitter, detector, and a precision slotted vane. The slotted vane is attached to the pendulum, and when dropped, the vane passes between the infrared emitter and detector generating a series of on/off pulses that can be converted into velocity by the data acquisition system.

Honeycomb material is positioned on four (4) aluminum dowel pins mounted on the face of the back stop which locates this material in the proper position between the pendulum striker plate and the back stop.

An upper neck load cell and one uniaxial accelerometer required for the test are not included.

Dimensions	Fixture	Work Area
Length	11.0 ft	13.0 ft
Width	2.5 ft	5.0 ft
Height	12.9 ft	—

INTRODUCTION

The TF-200 Neck Pendulum Test Stand is a complete system used for the calibration and testing of the neck component for the Hybrid III family, Hybrid II 50th, SA-106C, SA-103C, BioSID, EuroSID-1, ES-2, SID-HIII and SID-IIs. The neck can be tested in both the flexion and extension modes. The neck performance specifications for these tests are velocity at impact, pendulum acceleration, total rotation of the head/neck system, moment about the occipital condyle, and force.

The neck pendulum is in compliance with the specifications as written in the United States Code of Federal Regulation, Title 49, Part 572 relating to weight, center-of-gravity, moment of inertia, and mounting location of the pendulum accelerometer.

Standard Equipment

- 'A' frame welded steel structure
- Pendulum assembly; Part 572 compliant
- Structural back stop
- Infrared velocity measurement system
- Mechanical Angle Indicator
- Torque wrench 0 - 30 in-lb.
- Calibration unit for potentiometers
- Condyle Pin Removal Fixture
- Scissors

Optional Equipment

- Neck Mounting Adaptation packages are available for the following dummies:
 - * Hybrid III 50th/Hybrid III 95th
 - * Hybrid III 5th
 - * Hybrid III 10 Y.O.
 - * Hybrid III 6 Y.O.
 - * Hybrid III 3 Y.O.
 - * CRABI 12-Month-Old
 - * Hybrid II 50th
 - * SA-106C
 - * SA-103C
 - * SID-HIII
 - * SID-IIs
 - * EuroSID-1
 - * ES-2
- Hybrid III 5th/Hybrid III 6 Y.O. Adapter Plate for condyle pin removal fixture
- Aluminum honeycomb 4 ft x 8 ft x 6 inches
- Aluminum honeycomb 4 ft x 8 ft x 3 inches
- Electric hoist
- Electro-mechanical quick release
- Electronic inclinometer with display
- Pendulum rope hoist with snap release mechanism