

# Automated Torso Flexion Test Stand TMA-001

The Humanetics Automated Torso Flexion Test Stand is capable of performing the certification test on all the test dummies specified by the U.S., National Highway Traffic Safety Administration (NHTSA) (Title 49 CFR, Part 572) and the tests designed by the Society of Automotive Engineers (SAE) (found in each ATDs respective Engineering Aids). By following the software setup descriptions in the manual, the operator can quickly and easily add new test configurations.

## Description

The test stand includes all the mounting hardware and transducers (load cell and angle sensor) necessary to perform the torso flexion test on the HIII-3YO, HIII-6YO and HIII-5F. The software is configured for these three dummies but tests for up to eight dummy types can be stored and each dummy type can be configured for up to four different tests (NHTSA, SAE, Company and Other). Not only can up to thirty-two different tests be stored but all corridors and test parameters for each test can be easily adjusted by the customer through the controller unit key pad. This provision allows the customer to modify the testing software without expensive upgrades or purchasing new dummy type configurations.

The test stand is fully automated. After starting the software, the integrated control unit will conduct the full forty minute test without supervision or aid. The test stand is integrated with a single-board computer that controls the drive motor and clutches and collects, analyzes and displays the quick results in standard engineering units for easy operation. All testing functions are performed through the integrated controller unit with a user-friendly key pad on the test stand. The easy to use built-in software allows the operator to check the transducers with a real-time voltage display. It also provides



the added flexibility of performing tests in “manual” mode to allow the operator to move the upper torso through its range of motion, or to any position, and view transducer outputs throughout the entire range of motion. Analog outputs for the force and angle are provided on the bottom of the controller so that data can be collected by the user’s DAS and software.

The Automated Torso Flexion Stand uses one uniaxial load cell (capacity: 890 N (200 lbf)) and one angle sensor (range:  $\pm 70^\circ$ ). Both are included with the fixture.

## Standard Equipment

- Fully automatic test operation; requires no operator assistance after initial program setup.
- Performs NHTSA (see 49CFR, Part 572) and SAE (see individual Engineering Aids) tests.
- User configurable software.
- Operator can change or add up to 32 different tests.
- Programmable pull rate, wait times, on/off safety devices (light, beeper).

(Con’t)

# Automated Torso Flexion Test Stand (con't)

## Standard Equipment (con't)

- Portable; the test can be conducted in any level area.
- Power requirements are 100-240 VAC, 50-60 Hz, 200 watts
- Additional external warning light and enclosure switches can be easily added.
- Built-in channel gain and angle transducer calibration software.
- "Manual" mode for adjusting dummy position using force or angle input.
- Table and Pulling hardware labeled for each ATD to eliminate setup error and minimize setup time.
- CE Marked

## Optional Equipment

- Mounting Hardware for HIII-50M, HIII-5F, HIII-95M, HIII-3YO, HIII-6YO, HIII-10YO

## Specifications

- Force Limit: 200 lbf
- Max Angle: 65 deg (from vertical)

Dimensions	Fixture	Work Area
Length	4' 8"	7.0 ft
Width	2' 6"	5.0 ft
Height	5.0 ft	-