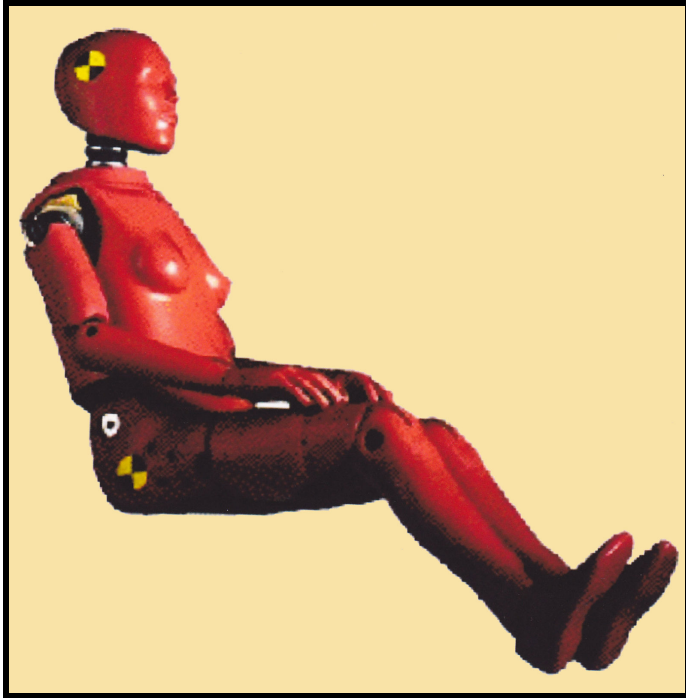


## Hybrid III ATD – 5<sup>th</sup> Female RibEye™ A Better Way to Measure Thorax Displacement

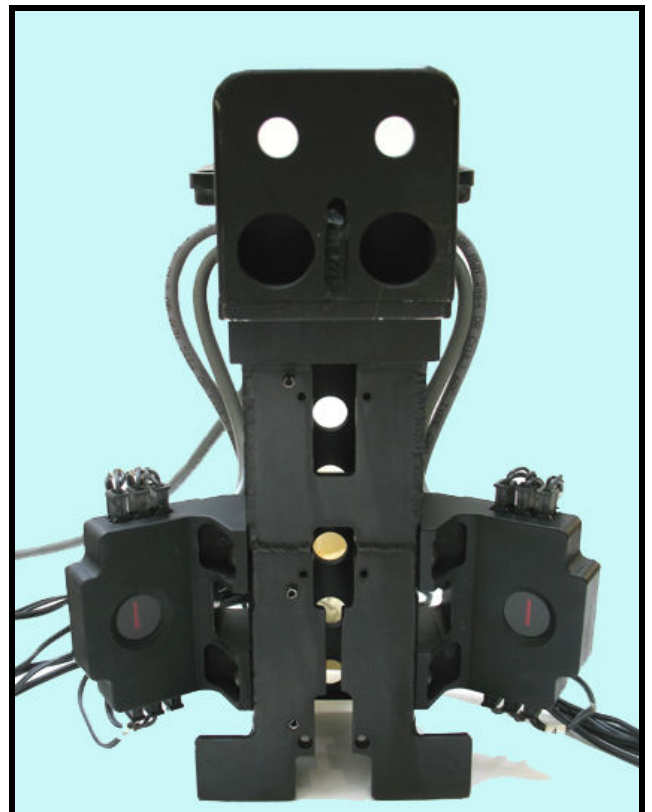


### RibEye Advantages

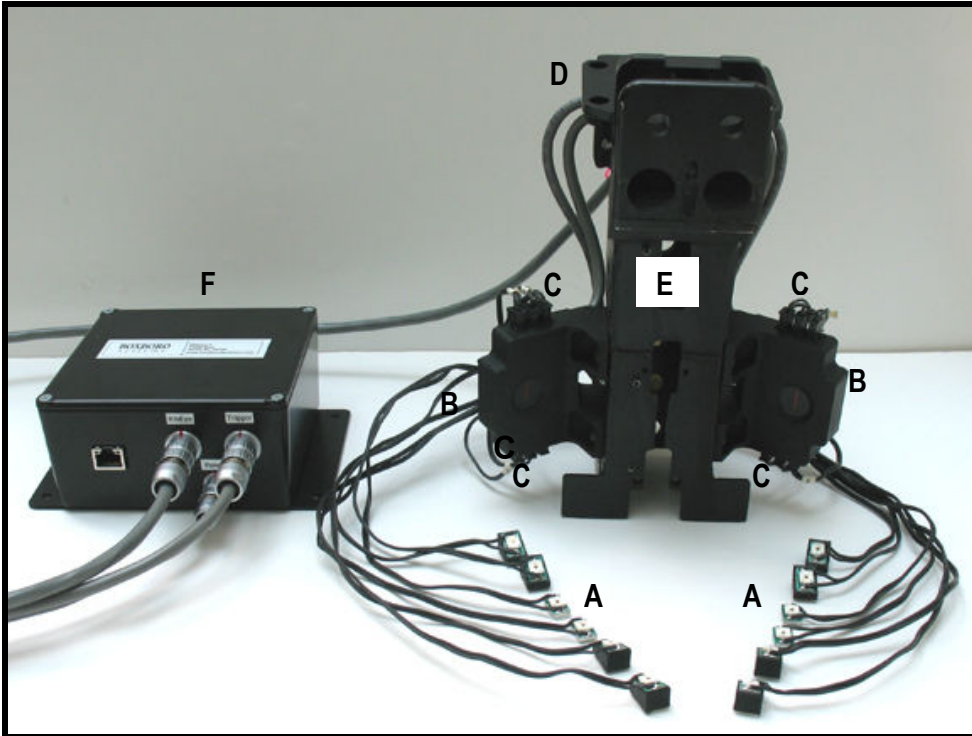
- Multiple point measurement: 12 points @ 10 kHz sample rate, captures linear and oblique loads
- Multiple-axis: measures X and Y positions for each LED
- Non-contact: no mechanical linkages between spine and ribs
- Shows seat-belt loading effects on all ribs
- Simple installation of LEDs
- Interfaces with existing data acquisition systems: open protocol for RibEye operation by DAS software
- Meets ISO 6487-2000 and SAE J211 specifications

### Measurement Capabilities

- Accuracy
  - +/- 0.2 mm typical
  - +/- 1 mm max. error
- Range
  - X axis: up to 60 mm chest compression
  - Y axis: +/- 75 mm from center of spine
  - Z axis from top rib to bottom rib
- Acquisition time @ 10 kHz sample rate
  - 30,000 ms (30 seconds) in RAM
  - 2 seconds in flash memory
  - (500 ms pre-trigger/1500 ms post-trigger)
- Temperature range
  - Operating, -18°-38°C (0°-100°F)
  - Max. accuracy, 18°-29°C (65°-85°F)



## RibEye Components



- A 12 LEDs mounted on ribs at measurement points
- B Two optical sensor heads to derive LED positions
- C LED connector blocks built into sensor heads
- D RibEye controller mounted in back of spine
- E New spine modified for mounting the RibEye
- F Trunk box (power, trigger, and communications connectors), located externally

## Other information

- PC-based control software exports data in Diadem, ISO, or CSV formats (PC not included)
- Power requirement:
  - 12-36 Volts DC
  - 8.3 W (data acquisition)
  - 5.3 W (idle)
  - 12.3 W (max.)
- U.S. Patent Number 7508530
- For more data, please see our website literature, including papers from the 2011 ESV Conference about third-party testing using the RibEye

[www.boxborosystems.com](http://www.boxborosystems.com)

**RibEye Ver 3.0**

Connect/Setup | Plot | Live Display | Export

RibEye Status: Connected - Idle

RibEye Type: 50th Male  
 Serial Number: 00075  
 Calibration Date: 25 January 2010  
 Firmware Version: 50 S0005

Connect to RibEye via: IP Address  
 Ethernet | 192.168.0.152 | DISCONNECT  
 Find RibEyes

RibEye Installed in ATD: Hill 50TH  
 Trigger Setting: Rising Edge  
 Show Current XY's

ISO Test Object: 1 - Vehicle 1  
 ISO Position: 1 - Front Left

LED	RIB	POSITION	ISO CODES	X (mm)	Y (mm)
1	1	LEFT	1 1 RIBS 01 LE H3 DS X/Y	0.0	0.0
2	2	LEFT	1 1 RIBS 02 LE H3 DS X/Y	0.0	0.0
3	3	LEFT	1 1 RIBS 03 LE H3 DS X/Y	0.0	0.0
4	4	LEFT	1 1 RIBS 04 LE H3 DS X/Y	0.0	0.0
5	5	LEFT	1 1 RIBS 05 LE H3 DS X/Y	0.0	0.0
6	6	LEFT	1 1 RIBS 06 LE H3 DS X/Y	0.0	0.0
7	1	RIGHT	1 1 RIBS 01 RT H3 DS X/Y	0.0	0.0

ARM | Data Buffer Operation: Circular (selected) | Linear  
 ERASE MEMORY | Data to collect after Trigger (ms): 2000  
 DOWNLOAD DATA | Data in RibEye (ms): Start Time: -500, Stop Time: 1500  
 Data To Download (ms): Start Time: -10, Stop Time: 400

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