THOR-AV-50M

REPRESENTING A RECLINING MALE OCCUPANT IN AN AUTONOMOUS VEHICLE

Autonomous vehicles are shaping the future of mobility and redefining vehicle safety. As automated driving systems take control, occupants can spend less time driving and more time relaxing, working, or interacting with other passengers.

Current crash test protocols assume standard forward-facing seats, typically with a front driver and passenger seat and rear bench seating with limited recline. Autonomous vehicle concept cars, however, introduce entirely new seating layouts. These include lounge-style interiors with rear-facing front rows, diagonal seating, and greater seatback recline for comfort. These new configurations create new occupant protection challenges that standard crash test dummies may not adequately address.

Humanetics developed Autonomous Vehicle Dummies using the latest THOR technology, featuring 150 data channels and a more flexible pelvic structure. This design allows the dummy to adapt to reclined and nontraditional seating positions.

The THOR-AV-50M builds on the THOR-50M platform and more accurately represents a 50th percentile male in crash scenarios across both conventional and autonomous vehicle seating environments.

THOR-AV-50M incorporates an advanced abdomen design that meets UMTRI AMVO anthropometry requirements and includes integrated pressure sensors. Engineers developed the finite element model alongside the physical ATD and used it to support the dummy's design.

The THOR-AV 50M has been evaluated in all six configurations used in PMHS testing, including the NHTSA Autonomous Vehicle Occupant Kinematics (AVOK) research program. Testing covered both forward- and rear-facing orientations and seatback angles of 25 and 45 degrees. The THOR-AV physical dummy (SBL-A) and FE model (v0.6) are now available for purchase.

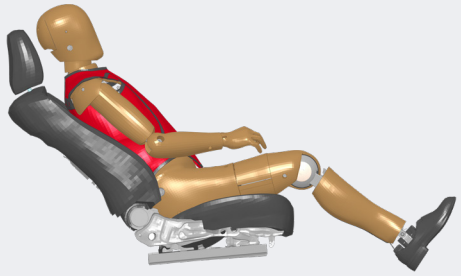
ADVANCED AV FEATURES

- New neck with superior biofidelity
- Restructured upper thoracic spine
- New pelvis with correct bone geometry and proper buttock flesh compression
- New lumbar and abdomen with pressure sensors
- Updated joint range of motion

25° 45° 60°

SIMULATION MODELS

Humanetics offers highly detailed and fully validated Finite Element models of our dummies, along with FE modeling consultancy services.



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