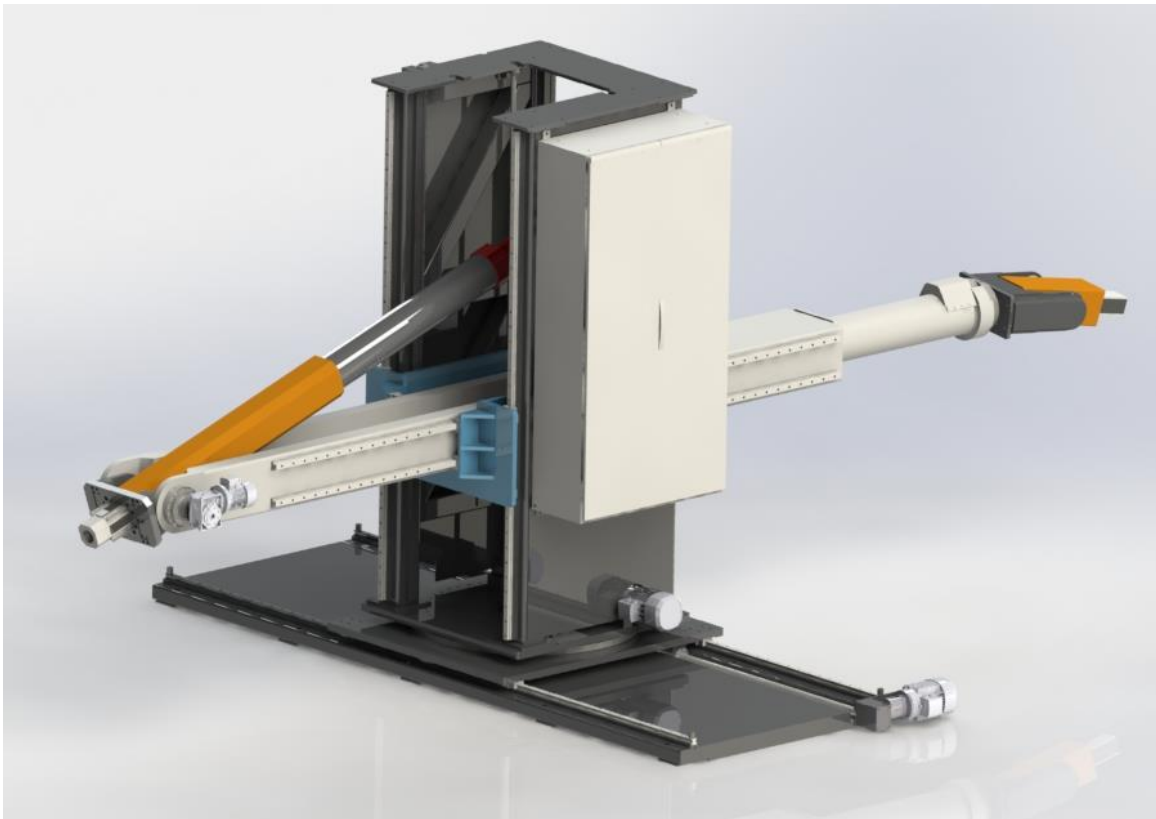


VZERO designs and supplies a wide variety of Passive Safety Testing Systems such as Full Scale Crash Facilities, Crash Simulation Sleds, Universal Launchers for Anthropomorphic Forms, Seat and Head Restraints Test Benches, Roof Crush and Side Intrusion Testing Systems, Seat Belts and Anchorages Testing Systems, Coupling Devices Testing Systems, Impact Pendulums, etc.



UNIVERSAL LAUNCHER TESTING SYSTEM KEY FEATURES

- **Impactors/Regulations:** Linear headform (UN ECE R12). Bodyblock (UN ECE R12). Child and adult headform (JARI/GTR 9/JNCAP/J-MLIT/TRIA 63-2004/EU directive 78/2009 and EuroNCAP). Adult headform, upper legform and lower legform (EEVC WG 17). Ejection mitigation (FMVSS 226), FMH201U (FMVSS 201). Pendulum (UN ECE R21). Knee. Misuse tests.
- **Propulsion system based on ELECTRICAL LINEAR MOTORS.** Clean, accurate and extremely repeatable operation
- **High stiffness optimized frame.** Excellent impact point accuracy
- **Automatic positioning.** Able to work in vehicle or local reference system. Positioning learning and reproduction mode.
- **Closed loop control of propulsion speed.** Extremely fast control loop with a unique predictive/adaptive control loop. **NO NEED FOR CALIBRATION OR SECOND SHOTS**



VZERO reserves the right to change specifications in this brochure without prior notice

TECHNICAL FEATURES

RANGES OF POSITIONING (BASE UNIT)

- X (longitudinal): 3 m
- Y (lateral): 3.5 m
- Z (vertical): 0.6 to 3.1 m
- Theta (azimuth): 360 degrees
- Alpha (elevation): -10 to 90 degrees

RANGES OF POSITIONING (FMH)

- X fmh (same as main arm): 3 m
- Y (same as base unit): 3.5 m
- Z fmh (same as base unit): 0.6 to 3.1 m
- Phi fmh (roll): 360 degrees
- Alpha fmh (elevation): -90 to 90 degrees

BASE UNIT PROPULSION SYSTEM

- Propulsion technology: based on electrical linear motors controlled by a real time speed control loop
- Impactors mass range: up to 40 kg
- Maximum release speed: 12 m/s
- Speed repeatability: 0.2 km/h
- Speed accuracy: 0.2 km/h
- Impact point accuracy: 5 mm radius

FMH UNIT PROPULSION SYSTEM

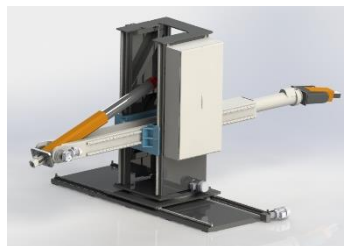
- Propulsion technology: based on electrical linear motors controlled by a real time speed control loop
- Impactors mass range: up to 8 kg
- Maximum release speed: 8 m/s
- Speed repeatability: 0.2 km/h
- Speed accuracy: 0.2 km/h
- Impact point accuracy: 5 mm radius

CONTROL SYSTEM

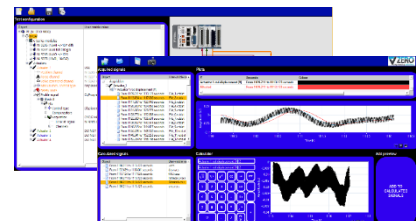
- Real time speed closed loop control with predictive/adaptive feature
- FPGA based architecture for extremely fast control loop execution
- Control PC and Surface tablet for remote operation
- VZERO UNIVERSAL LAUNCHER SOFTWARE SUITE
- Triggering outputs: relay, closed contact
- Positioning control modes: Automatic and manual.
- Positioning trajectory learning and reproduction mode
- Identification of vehicle reference system. Able to work in different reference systems

AUXILIARY EQUIPMENT

- Laser speed measurement device
- Lighting system
- High speed filming system
- Airbag firing unit
- Data acquisition system
- Calibration rigs



Different launcher configurations. Customizable solution



Software programmed in NI LabVIEW



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