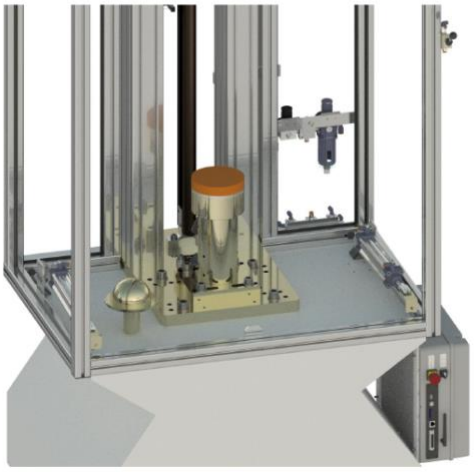
1003/1	**MAU 1005/M/CF/ALU/STD**	**Monorail shock absorption testing system, compliant with DOT, CPSC, ASTM, and similar standards. Features: guided-fall headform method, 3.2m drop height, base and electrical system included. Frame constructed with double 80×80 mm aluminium profiles; includes a drop carriage with ball joint and clamp, 2 anvils, standard safety cage, and automatic doors**



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GTM & SYSTEMS
GENERAL TESTING MACHINES
MADE IN SWITZERLAND

Technical Specification Datasheet

System Overview

- **Application:** Monorail shock absorption testing system utilizing the guided-free-fall headform method.
- **Compliance:** Fully compliant with DOT, CPSC, ASTM, Snell, ANSI, ISO, and similar international standards when equipped with the appropriate accessories and headforms.
- **Configuration:** 3.2-meter vertical drop version featuring a soft-release mechanisms and a heavy-duty double column support frame. Standard supply includes the structural ballast base, integrated electrical system, drop carriage assembly, 2 impact anvils, and a full-height safety enclosure equipped with automated protective doors.

Technical Features

- **Chassis Frame:** Robust structure engineered from 40×40 mm and 120×80 mm heavy-duty aluminium ITEM profiles.
- **Guide Support Structure:** Double-column layout manufactured from square 120×80 mm ITEM aluminium profiles, integrated with a high-thickness (30 mm) lower foundation base and top structural support.
- **Safety Enclosure:** Integrated aluminium protection cage extending to a height of 2.2 m, constructed from 40×40 mm ITEM profiles and fitted with 3 mm thick impact-resistant transparent polycarbonate panels.
- **Main Ballast Base:** Hybrid steel and concrete structural box enclosure (dimensions: 860×860×600 mm) with a total mass of approximately 700 kg.
- **Enclosure Safety Doors:** Automated protective doors driven by twin pneumatic cylinders; frame built from aluminium ITEM profiles and fitted with transparent polycarbonate viewing panels.
- **Monorail Guidance Assembly:** High-hardness TMT Speed Rail™ aluminium monorail system, engineered with dedicated upper and lower rigid fixing interfaces.
- **Leveling System:** Adjustable foundation base equipped with 14 grub screws (Ø 16 mm) for absolute vertical axis alignment.
- **Frame Anchoring:** Secured directly to the structural ballast base via 6 high-tensile anchor bolts (Ø 16 mm thread).
- **Headform Positioning:** Fully adjustable helmeted headform mounting assembly, allowing multi-axis orientation to execute impacts at various standardized helmet locations.
- **Drop Carriage:** Precision assembly manufactured from anodized Ergal 75 (high-strength aluminium alloy), equipped with four high-load ball bearings and adjustable low-friction nylon guide wheels. Includes an integrated ball joint and clamping module.
- **Hoist System:** Fully motorized winch assembly featuring an integrated pulley and electronic encoder, driven by automated variable-frequency inverter technology.
- **Lift Carriage:** Dedicated hoisting carriage featuring an automated pneumatic release system and limit-switch control via infrared photoelectric sensors.
- **Catch Mechanism:** Automated drop carriage latching and hooking system, operational during descent phases.
- **Impact Anvils:** Two standard steel impact anvils supplied: Hemispherical (R 48 mm ± 0.5 mm) and Flat (Ø 150 mm). Components are fully interchangeable and rigidly anchored to the lower assembly base.Other geometries avilable .
- **Anvil Alignment:** Anvil holder features an integrated laser alignment pointer to define exact impact point coordinates on the test specimen.
- **Data Acquisition & Instrumentation:** Electronic encoder for precision drop height monitoring. High-speed multi-channel data acquisition interface supporting sampling rates of ≥ 10 kHz per channel. Supplied complete with all necessary transducer cabling and rugged connectors.
- **Electrical Integration:** Complete electrical distribution and routing networks fully vanished within the hollow channels of the structural frame columns.
- **Pneumatics:** Complete pneumatic regulation circuit equipped with an integrated inline filter and analog pressure gauges.
- **Velocity Measurement:** High-frequency (10 kHz) infrared photoelectric barrier device for precise pre-impact speed monitoring.
- **Surface Treatment:** Structural and mechanical components finished with zinc-plating and anodizing treatments for enhanced corrosion resistance.

Technical Data & Installation Requirements

- **System Power Rating:** Driven via integrated inverter technology.
- **System Weight:** 210 kg (net weight, excluding the 700 kg concrete ballast base).
- **Anvil Base Assembly Dimensions:** Width: 36 cm; Depth: 40 cm; Thickness: 3 cm.
- **Overall Footprint & Dimensions (W × D × H):** 860 × 860 × 5300 mm.