

Concept[®] - FREE MOTION HEADFORM TEST SYSTEM



Functional Description:

The FMH-Test system, designed by Concept, is used for the testing of vehicle interior components according to FMVSS 201. Using a free-flying testing head, legislative defined targets are tested.

The measured accelerations (three-dimensional) on the testing head allow conclusions to be drawn regarding the components and head forces.

Due to the robust design with hydraulic clamp mechanisms, the possibility to carry out FMH and FGS test with one system exists. Hereby the customer is offered a higher investment protection!

Technical Data:

- Work and Control Medium: Nitrogen
- Supply Pressure: 5 bar (FMH)
- Selectable Test Speed: up to 30 km/h free
- Repeat Precision: $\pm 0,1$ km/h
- Total Weight: ca. 7.000 kg
- Vertical Pivot Range: $\pm 125^\circ$
- Launch Mechanism Rotation Angle: $\pm 170^\circ$
- Control System: SPS Siemens S7
- E- Connection Power: ca. 2,5 kW

Benefits at a Glance:

- ✓ Reproducible measuring results (repeat precision $\pm 0,1$ km/h) due to backlash-free axes, hydraulic brake assembly and patented launch mechanism
- ✓ Due to a long axial traverse path, up to 2 vehicles can be tested parallel and bilaterally
- ✓ Large cost savings due to the „comparison matrix“ and thereby avoiding comparison tests
- ✓ Long lifespan due to robust construction, symmetrical force diversion via patented pillar design and section modulus of all axes
- ✓ Simple adjustment to the test points using a compact canon-form with 6 positioning possibilities, \rightarrow all room angles are reachable
- ✓ Quick, cost-effective adjustment via the option: starting aid (glass head)

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System Description

- 1 electrically powered rack and pinion gear (Y- axial)
- 2 electrically powered spindle stroke gears (X and Z- axial)
- 1 electrically powered chain gearing (tower rotation around Z axial)
- 1 Servo-axial with hydraulic clamping (rotation around Y- axial)
- 1 Manual pivot axial with eccentric clamping (vertical test head positioning)
- 1 Wireless remote control with digital traverse path indicator (optional)
- 1 Proportional valve for regulating the launch speed, continuous adjustability of all transverse paths via FC / rapid transverse 50%, as well as incremental relative measuring

System Measurements:

X- Direction:	ca. 5.000 mm
Y- Direction:	ca. 3.000 mm
Z- Direction:	ca. 3.000 mm

FROM USER TO USER

As a user and system developer, we offer our customers our know-how.

Concept[®]-FMH-Positioning Tool (FPT):

The virtual positioning tool for FMH-test points was developed by Concept Technologie in order to illustrate the configuration of legislative test points.

When the original target is not reachable, it calculates alternative positions considering all allowed angle definitions.

The FPT-Software shows all the necessary parameter and angle definitions for the test point positioning.

