



# Free Motion Headform

## Overview

For the US legislation requirement (FMVSS 201 u), Continental uses a BIA facility for positioning the Free Motion Headform (FMH) within vehicle interiors. It then fires this headform accurately against defined positions at defined angles.

The facility is also used for tests with impactors for front- and side airbags, steering wheels and instrument panels according to FMVSS 226 (Ejection Mitigation), ECE R12 and R21.



## Technical Data

### Drive Unit

- › Hydraulic acceleration cylinder, closed loop controlled
- › Regulation of acceleration on the working piston
- › Small stroke to velocity ratio (100 mm for 24 km/h)
- ›  $V_{\max} = 12 \text{ m/s}$  at  $m = 6 \text{ kg}$
- › Velocity accuracy:  
< 0.2 km/h ( $v < 24 \text{ km/h}$ ) and  
< 1% ( $v > 24 \text{ km/h}$ ) respectively

### Positioning Unit

- › Motor powered positioning unit, computer controlled
- › 6 degrees of freedom in motion
- › Coordinate transformation on vehicle coordination possible
- › Integrated path control
- › Positioning accuracy  $\pm 1 \text{ mm}$
- › Impact point deviation < 2.5 mm

### Data Processing

- › 12-channel data acquisition unit with 14 bit resolution
- › Microsoft Windows based measuring and analysing software
- › Database based storage of all test data
- › Control of additional measurement and film systems
- › Integrated trigger system to control the active systems and airbags in response to the collision time

