

Force application machine (FAM)

Seat calibration

Key challenges in the project:

- High precision force control: target value model-dependent
- Adjustable force range: 0 – 1000 N
- Interface to control devices

How did we solve them?

- Force control: variable high-resolution linear motor; actual value measurement via force sensor
- Communication module with CAN bus, LIN bus and K-LINE, 4 communication channels, interface to the measuring PC



Purpose of the project

The installation of passive occupancy detection systems (PODS) is being stipulated for an increasing number of car seats on the worldwide market. Depending on the weight of the occupant, the POD system activates the pretensioner system in an accident and individually controls the triggering of the airbag. Berghof's testing system is designed for car seat calibration e.g. for DELPHI's POD system. In the test cell shown above, the car seat is positioned and then automatically calibrated. For this, a so-called pressure plunger is used to apply differing levels of force onto the car seat one after the other. Afterwards, the calibration results are displayed for the operator on the user interface.

Technical requirements for the test system

Force measurement, scales, angle measurement, distance measurement, Communication with controllers (CAN, LIN); operating modes: online (automatic), offline; light curtains/barriers, emergency stop treatment, measurement program with user interface

Testing keywords:

Berghof FAM (force application machine), pressure plunger (force unit), PODS (passive occupant detection system) by DELPHI, DUT (Device Under Test): OK ("in order") in-spec part / NOK ("not in order") reject part calibrations, material handling (feeding), order master computer.



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PE_FAM_Sitzkalibrierung_CS_en_2D2292003CS00.docx. Subject to change. Printed in Germany