

HPM Variations

(experience of several calibrations)

HPM Variations Examples

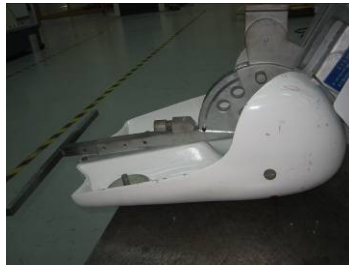
HPM

1. Five or more versions of HPM's, with unknown copies are existing
2. Actual standards for measuring devices are not fulfilled

HPM weight differences about 4 kg!

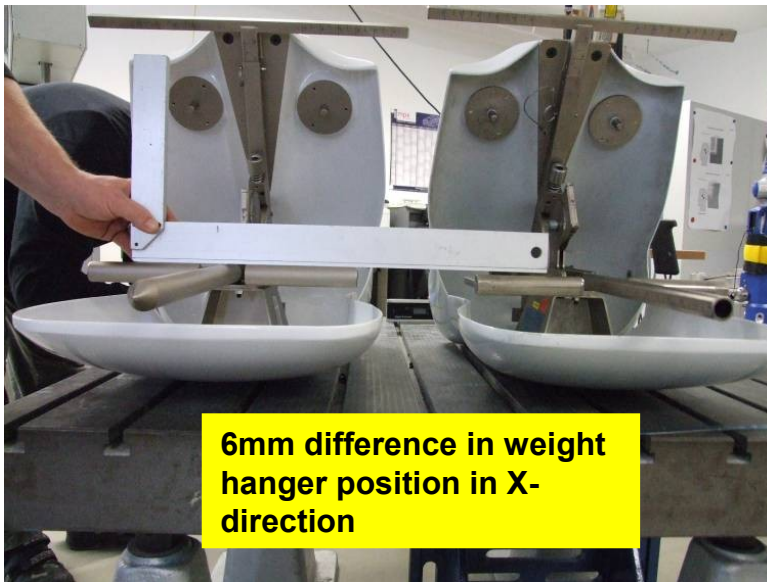
Differences in shape (> 9 mm) and position (> 4 mm) of the cushion and back shell!

H-Pt. markings are not in line with the axis.

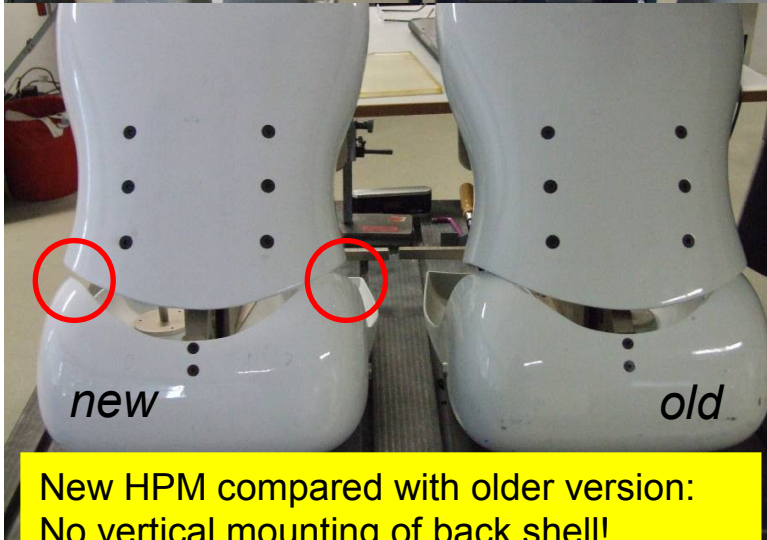


HPM Variations Examples

Caused by: same manufacturer

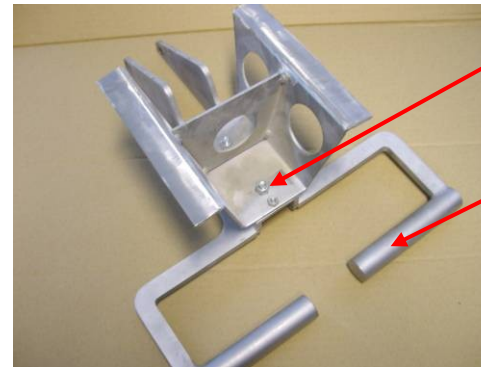


6mm difference in weight hanger position in X-direction



New HPM compared with older version: No vertical mounting of back shell!

structure problems



Contact surfaces of HRMD differs more than 9 mm!

several mm in every direction and of angle more than 0,5°

different manufacturers



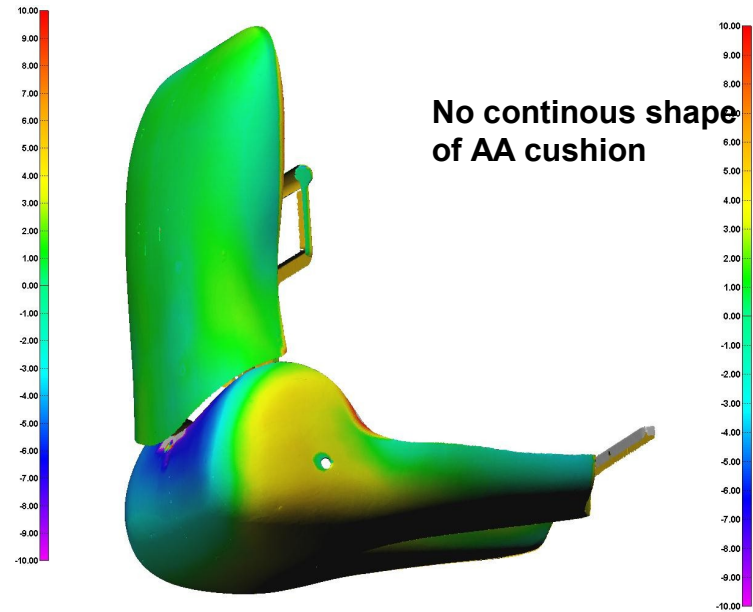
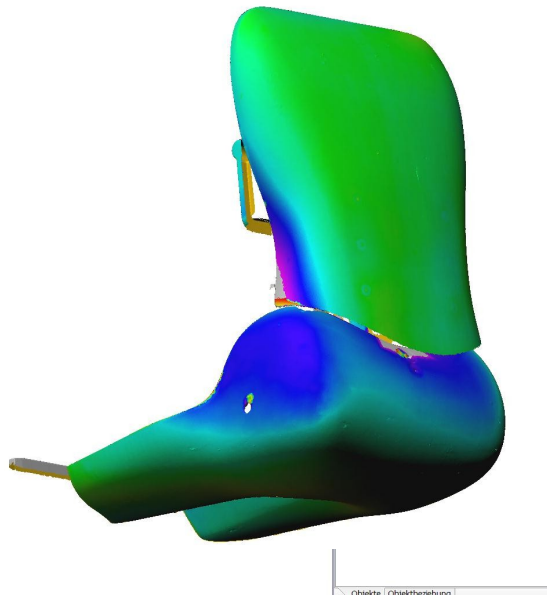
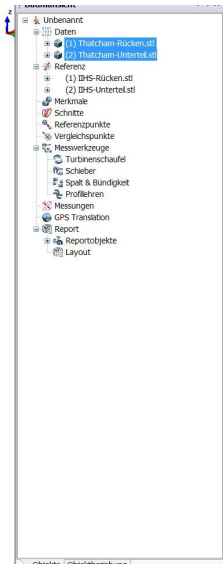
Black back shell is smaller over all compared to the white version

HPM Variations Surface Comparison Example

Technosports/Automotive Accessories

Parts overlay done based on best fit over the shells!

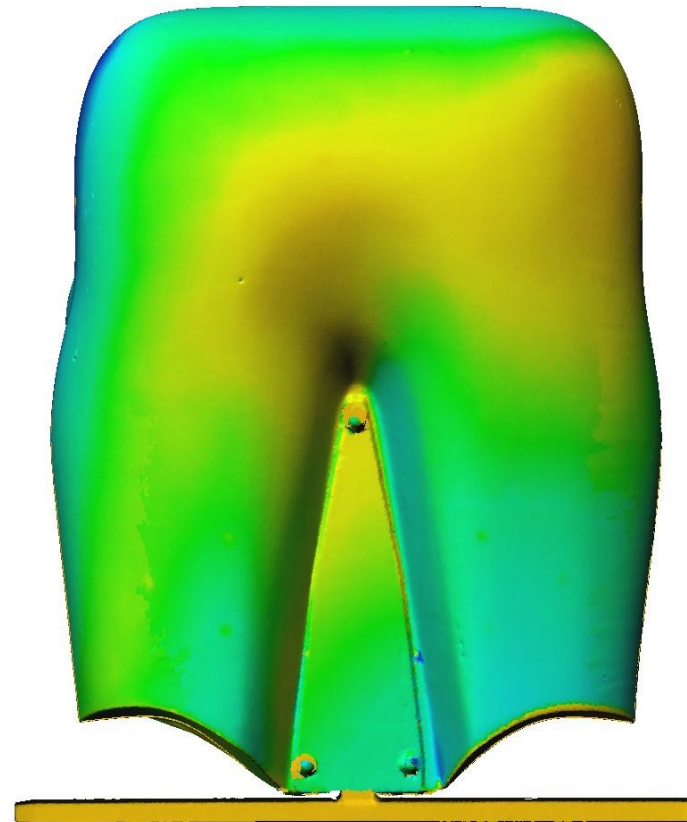
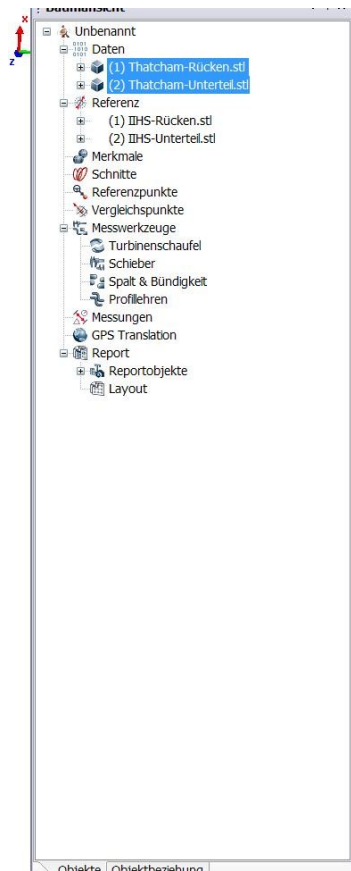
AA HPM with smaller (>5 mm) contour in the hips area



HPM Variations Surface Comparison Example

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Parts overlay done based on best fit over the shells!

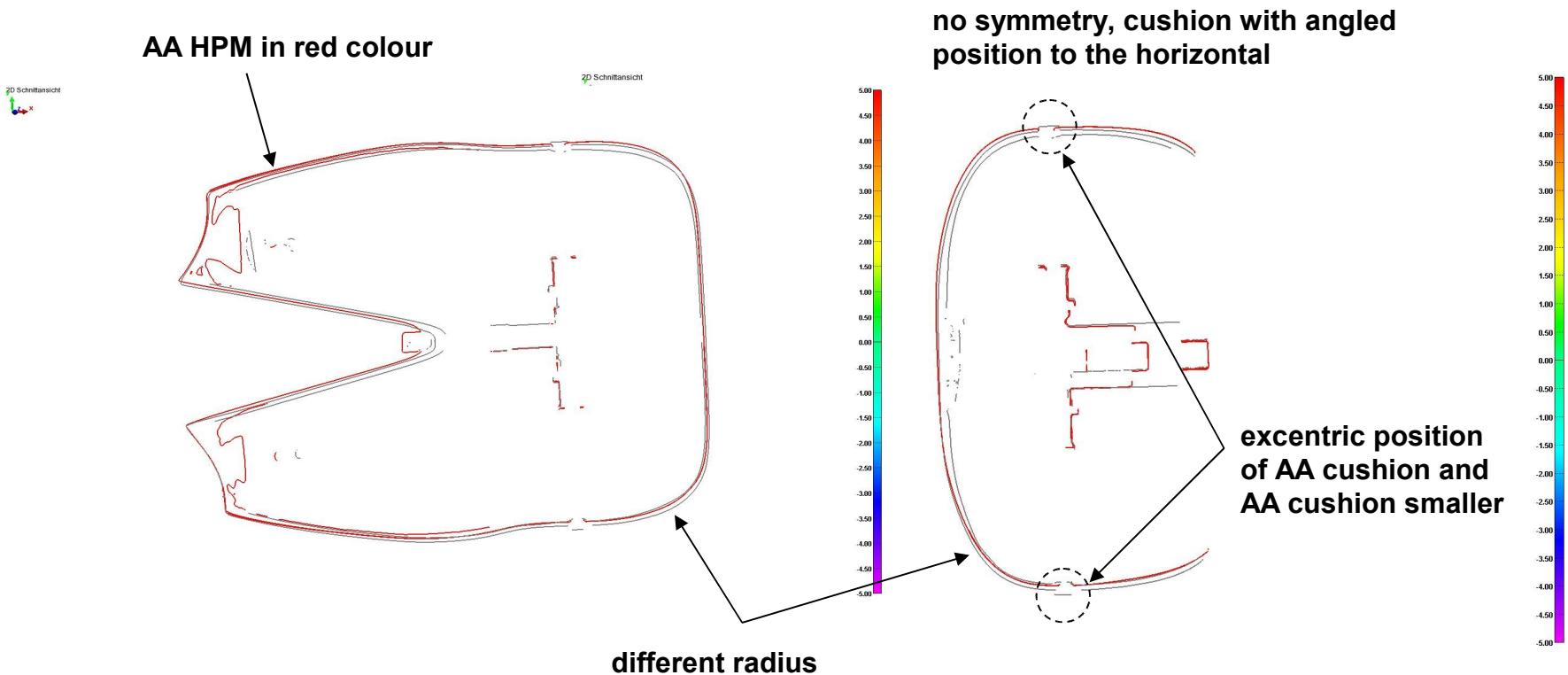


No continuous shape
in comparison with
the TS HPM (angle,
parallelism?)

HPM Variations Surface Comparison Example

Technosports/Automotive Accessories

Parts overlay done based on the axis of the middle t-bar tube. Cut section through H-Pt. Markings horizontal and vertical,



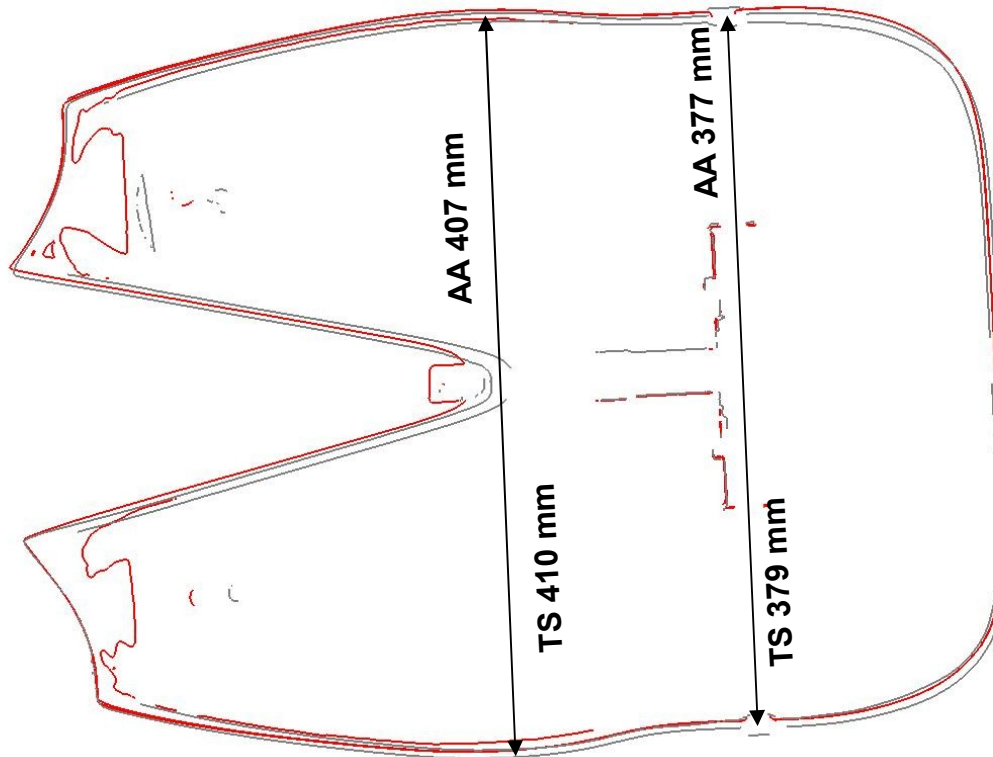
HPM Variations Surface Comparison Example

Technosports/Automotive Accessories

Parts overlay done based on the axis of the middle t-bar tube. Cut section through H-Pt. Markings horizontal and vertical,

2D Schnittansicht


AA HPM in red colour



HPM Variations Surface Comparison Example

OEM's and competitors like

Audi

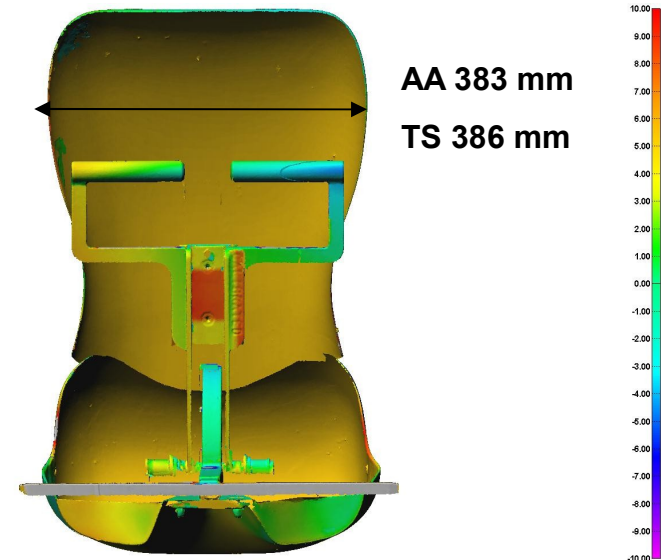
BMW

VW

Johnson Controls

Faurecia

did studies also with same or even worse results.



Scan comparison of AA and TS HPM weight hanger show difference of 3.5 mm in X-direction

HPM Variations Summary



About 4 kg weight difference has effect in H-Pt. measuring and backset.

Excentric shell positions on the metal structure and differences in critical dimensions with big influence in H-Pt. measuring and backsets, pending on the seat shape, especially the position and hardness of sidebolsters.