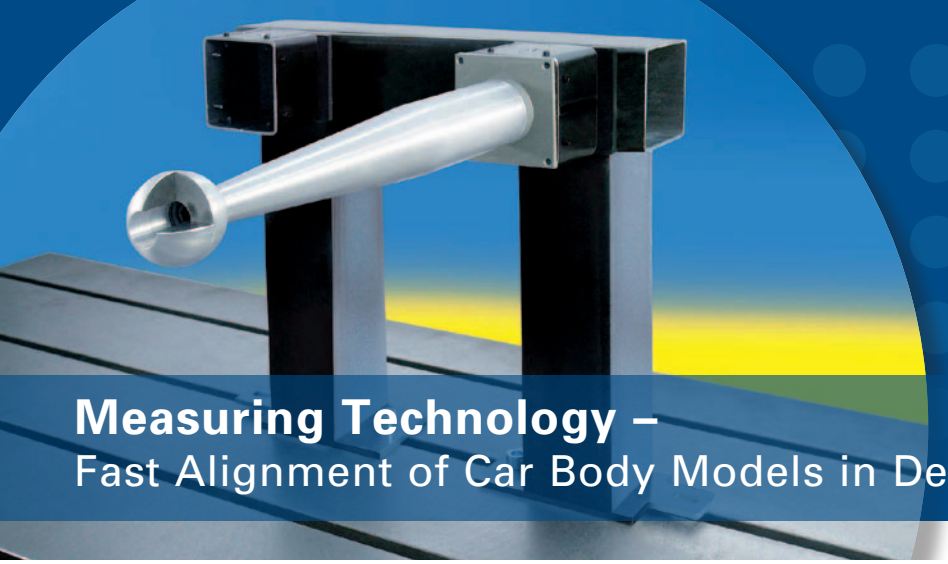


STIEFELMAYER

Measuring Technology –
Fast Alignment of Car Body Models in Design Studios

Alignment device: Reference adapter and ball holding fixture

STIEFELMAYER developed an innovative calibration device for design studios for the fast alignment of car body models prior to the milling process.

The initial situation:

Car body models made of clay or rigid foam are usually built on a substructure.
Due to the above lying clay or foam model the reference points for the alignment are partially no longer accessible. This can lead to inaccurate alignment and dimensional deviations in the processed (milled) model.

The solution:

For this purpose, STIEFELMAYER developed a special calibration device which mainly consists of two components:

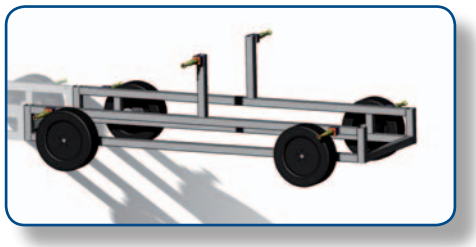
Reference-adapter: This adapter is mounted on the cube head of the measuring machine with a specially developed mounting tool. It is then permanently fixed to the substructure defining by that the position of the adapter accurately.

Ball holding fixture: This holding fixture consists of a highly precise and very slim extension with special reference ball which is screwed outside of the vehicle onto the reference adapter.
This ball holding fixture measures the substructure in the portal milling machine and aligns the model computer-aided in an optimal way.

For the machining of the model, the ball holding fixture is no longer required and would be obstructive. It is therefore simply screwed off before starting the milling process.

Procedure:

- **Fixing of the reference-adapter to the substructure by means of the horizontal-arm measuring machine (only once!)**
- **Fixing of the ball holding fixture onto the reference-adapter**
- **Alignment of the model via the ball holding fixture in the milling machine**
- **Removal of the ball holding fixture**
- **Start of machining**



Sketch of a substructure with alignment device

Clay model with alignment device at wheel house and B-pillar

Advantages:

Faster alignment of the model with clearly improved accuracy at the same time.
The alignment accuracy of our customers could be improved by factor 10 and resulted also in clearly better machining results at the car body models.

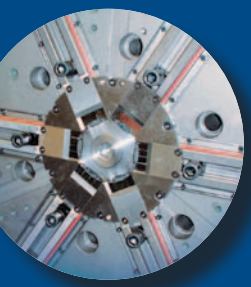
STIEFELMAYER –
The Company Group at a Glance

STIEFELMAYER-Metrology

- 3D coordinate metrology
- Measuring software
- Accessories

STIEFELMAYER-Laser Technology

- Laser cutting
- Laser hardening
- Laser welding



STIEFELMAYER-Clamping Tools

- Special chucks
- Special mandrels

Metrology – the product range:

Horizontal arm measuring machines
- ACTURA manual · motorised
- FUTURA manual · motorised · CNC version
- VENTURA manual · motorised · CNC version
- VENTURA DESIGN manual · motorised · CNC version

Modernisations · Upgrades
- Measuring counter MZ 2000 for manual machines
- Controller modernisations
- Upgrades manual to motorised · CNC version

Accessories
- Probe tools
- Marking-out tools
- Auxiliary equipment
- Extensions
- 3D probe accessories
- Threaded styli
- Scanning sensors

Measuring software

Service
- Calibrations
- Repairs
- Installations
- Machine moving

Second hand machines

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