



Device description and purpose

Nici is our female upper body. It simulates movements from walking to running. In addition to realistic amplitudes and step frequencies, the inclination can also be taken into account.

With the integrated load cells, the forces and moments are recorded in all three directions. This allows loads and asymmetries to be detected.

The relative movements are recorded with special sensors that precisely register the position and orientation.

For bra evaluation, breast prostheses of different cup sizes are used.

In combination with surface matrix pressure sensors, a universal analysis device is available for the investigation of interactions with the female upper body.

Technical details

Construction	Nici is based on a hard shell part covered with a skin-coloured soft foam used in the manufacture of orthoses. The dimensions correspond to anthropometric data of a 175 cm tall woman with an 80 cm under bust circumference and were modelled with clo3d.
Forces	The forces and moments are recorded in all three directions.
Movement	The relative movements are recorded at up to 8 positions. The sensors precisely register the position and orientation.
Pressure	The interaction forces and contact pressure can be analyzed locally with surface matrix pressure sensors.
Walking	The walking system of the manikin allows to adjust the amplitude and step frequency according to the movement pattern. A range from slow walking up to 16 km/h running could be covered.

Sample requirements

The typical bra size is 80B. By changing the breast prosthesis, a size of 80C and 80D can be achieved.

Outcome and its practical meaning

- Comparing products (different prototypes, market screening, formal standardized values) for which standard methods and classification schemes are used
- Identifying zones with increased pressure and interaction forces on the skin/product interface.

Contact

If you have any queries regarding the suitability, cost or time frames associated with this testing, please do not hesitate to contact us. Please, also check on our website ([link](#)) the possible formats of collaboration with our team.

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