

Mercedes-Benz Museum – Glass Display

- The requirement was for a totally frameless glass panel hinging system capable of supporting 4.5m high panels (over 240kg).
- Each curtain wall consisted of a large number of adjoining hinged panels to be installed with precise minimal gaps.
- All panel hinges were required to be mounted visibly exposed to a single steel lug embedded into the floor and ceiling.
- The **Micromaster** was found to be the only system capable of fulfilling all the design requirements for this project and was selected and specified by Prof. Werner Sobek, a world-renowned architect and engineer.
- **Installation was completed below budget, ahead of schedule and with excellent results. The architects, engineers and the client are delighted with the installation.**



The Alcazar of Toledo, Spain – Glass display

- The architect stipulated freestanding display cases with only a minimal single floor-to-ceiling steel pole available for hinged panel mounting.
- The project included several hundred panels some of them measuring more than 3m x 3m and weighing over 300kg.
- These panels were specified to be frameless laminated security glass with hinges bonded directly onto the glass surface.
- Full precision 3D adjustment was required to produce consistent minimal gaps with even door-seal pressures to guarantee air-tightness of the case interiors.
- The **Micromaster** was found to be the only hinge capable of direct bonding to glass and also the only concealed 3D adjustable hinge capable of carrying the required panel weights and sizes.
- **Nearly two thousand hinges were installed exceeding all the expectations of both the architect and the client, who has subsequently specified the Micromaster for a number of future projects.**



Parliament Buildings Germany – Frameless Glass Lift Shaft

- Foster + Partners were the architects, and Arup Group were the engineers, selected for this prestigious project.
- The brief for the lift shaft design was to be frameless and fully glazed with hinged panel access for maintenance and cleaning on every floor.
- All fixed and hinged panels were to be mounted with identical; industry standard, single point, and surface flush countersunk fittings.
- The frameless construction required all hinges to be exposed, mountable onto single steel attachments and able to carry heavy (300 kg) floor-to-ceiling glass panels.
- These highly visible structures required hinges with precise and permanent full 3D adjustment and alignment.
- **Norman Foster and Arup found the Micromaster to be the only hinge capable of fulfilling (and even exceeding) all their performance requirements.**



Auckland Art Gallery – Glass Facade

- “We were looking for very large glass panel sizes to provide maximum visibility out into the park and, more importantly, for park users to see into the gallery. It was all about making art more accessible, not just for a select few. We wanted people to see a vibrant and lively place to encourage them to visit the gallery.”
- The design team simply found out how big a piece of glass they could get into New Zealand and designed around that. The glass provider, Thermosash, approved the use of only two hinges per each 835-pound panel, allowing for easy cleaning between the two panes.
- There was no other product available that would allow for panels of this size to be adjusted in three-dimensions in order to maintain this long line of flush overlay panels, especially with the settling that can happen in a new building.
- **With Manfred Frank hinges, it only takes one person with a few small tools to fine tune them, under full load and without the assistance of lifting equipment.**



Residential – Stone Column

- “The problem we had was an opening in a "stone" column behind our fire. The fire supports a wetback water heater, and the column houses the hot water cylinder.”
- Manfred Frank ANGUTEC hinges were the perfect solution for this installation, as they can be concealed inside the stone and applied to very heavy doors.
- A single pair of ANGUTEC hinges can carry doors or panels that weigh up to 100kg.
- In this example, the hinges have been installed onto a steel door and stone frame.
- “Engineering friends have commented that it's a real pity that the hinges have to be hidden away, as they are a work of art by themselves.”



Abu Dhabi Airport – Stone Access Panels

- The Manfred Frank ANGUTEC hinges made it possible to create hidden access to services within Abu Dhabi airport.
- The toilet block is made in stone tile. The multi pivot Manfred Frank hinges allows the stone tile to lift up and out for access to the service pipes while maintaining tight tolerances in each cubical.
- Each opening panel is required to open between the glass dividers with millimetres each side.

