



Innovative Technical Solutions Limited

Representative for Manfred Frank Systems

Manfred Frank Micromaster Hinge

Award winning concealed panel hinging



reddot design award
winner 2009

Variable Geometry Concealed Hinges

Through innovation, Manfred Frank has revolutionised panel-hinging technology and is evolving as a world leader in ground breaking hinging solutions. The award winning Manfred Frank MFH hinges have no equal and achieve this coveted position through the following unique features:

- Single person instant panel adjustment under full load (300kg), without any lifting support equipment
- Installation cost savings of up to 70%- **A perfect fit in record time every time**
- Patented precision controlled 3D, self-locking adjustment features. Physically impossible for any of the adjustments to be affected by even the heaviest panels and therefore **no creep or slippage possible**
- Complete access with full 90° opening
- Maintenance free & Self-lubricating
- **Ultra-Wide** panel applications
- **Fully exposed frameless glass-to-glass mounting**
- Single point panel mounting side-hung and top-hung installations
- Wide range of accessories for all types of installations including active and motorised facades. Can also be adapted to accommodate curved panels and to incorporate spring loading
- Highly effective 3D opening and closing motion prevents any seal damage
- Made from Investment cast CD4-MCU Duplex Stainless Steel and AISI 316 Stainless Steel
- Exceeds the requirements of ISO 9227 and BS EN 1670:1998 corrosion resistance

Applications for the Micromaster Hinge

The Manfred Frank Hinge supports numerous applications and custom solutions.



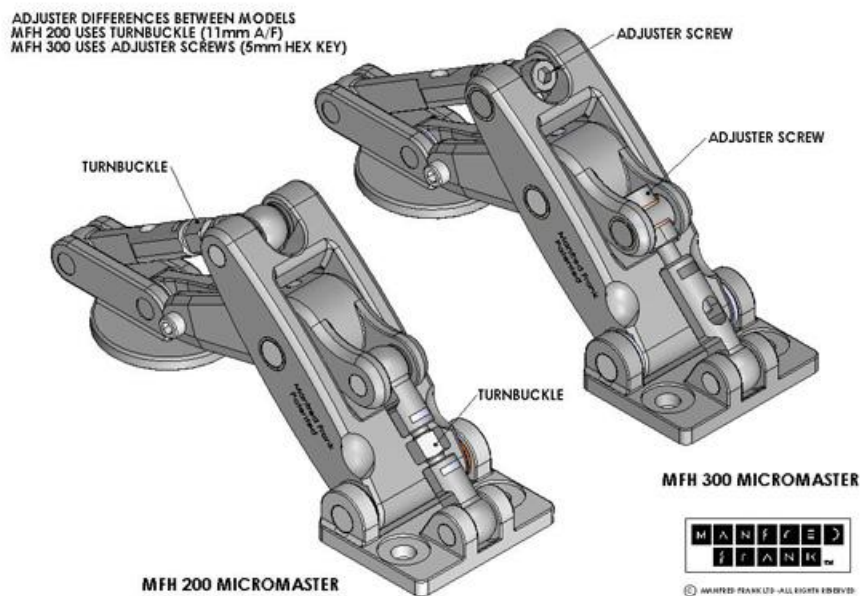
- Museums
- Malls / Shop-Fitting
- Glazed Lift Shafts
- Facades, Glass and Stone
- Airports / Transit Terminals
- LED Screens
- Residential and Commercial
- Marine Industry

Hinge Models – MFH200 & MFH300

Micromaster Hinges are available in two different models MFH 200 and MFH 300. Both models are produced by using the same production methods, identical materials and finishes.

Main Differences

- The MFH 200 is rated for a maximum panel weight of 200kg.
- The MFH 200 is adjusted by using an 11mm open ended spanner (in /out & side to side) and a 4mm Allen Key tool (height).
- The MFH 300 is rated for a maximum panel weight of 300kg.
- The MFH 300 is adjusted by using a 5mm Allen Key tool (in /out & side to side) and a 4mm Allen Key tool (height).



By following this link to the Manfred Frank website you will be able to determine what hinge model will meet your requirements
<http://www.manfredfrank.com/find-model>

Castings Specification

Material	CD4-MCU Duplex Stainless Steel
Process	Lost wax / Investment Cast
Treatment	Heat Treated
Finish	Shot Blast Natural

Machined Components Specification

Material	AISI 316 Stainless Steel
Finish	Electro Polished

Bushes and Bearings Specification

Material	AISI 316 Stainless Steel- Teflon Coated / Self Lubricating
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Adjuster Mechanisms Specification

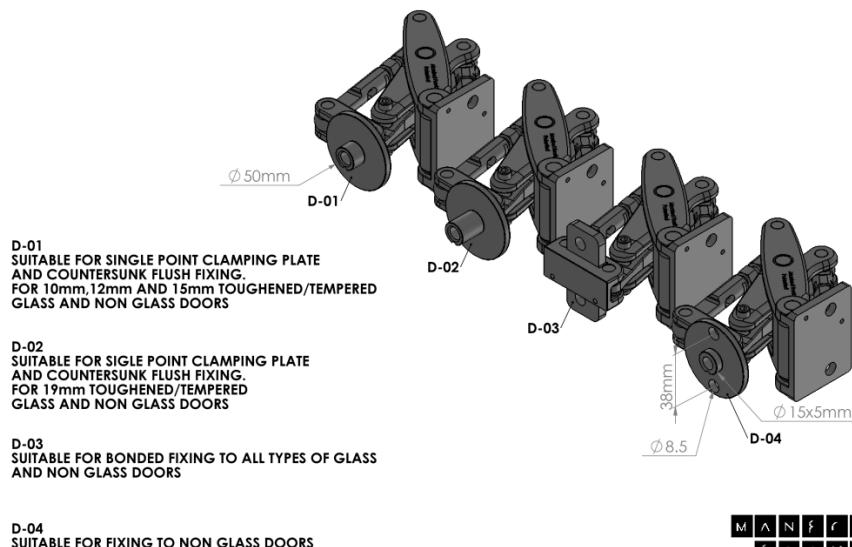
Material	AISI 316 Stainless Steel - Nylon / Self Locking
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Corrosion Resistance

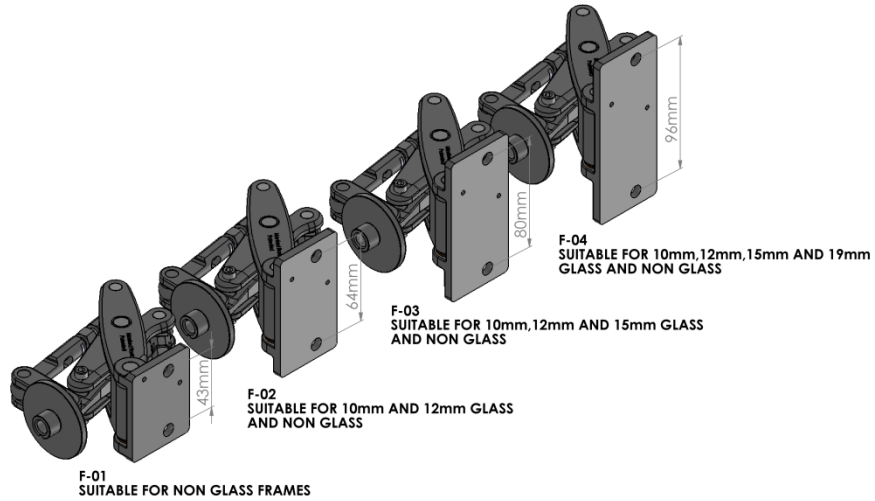
Micromaster Hinges meet and exceed the requirements of ISO 9227 and BS EN 1670:1998 - Continuous, Neutral Salt Spray Test.

All existing frame mounting and door mounting options can be combined with both models. The trajectory/geometry and movement is identical for both hinge models.

HINGE DOOR MOUNT CASTING OPTIONS FOR MFH 200 AND MFH 300 MICROMASTER HINGES

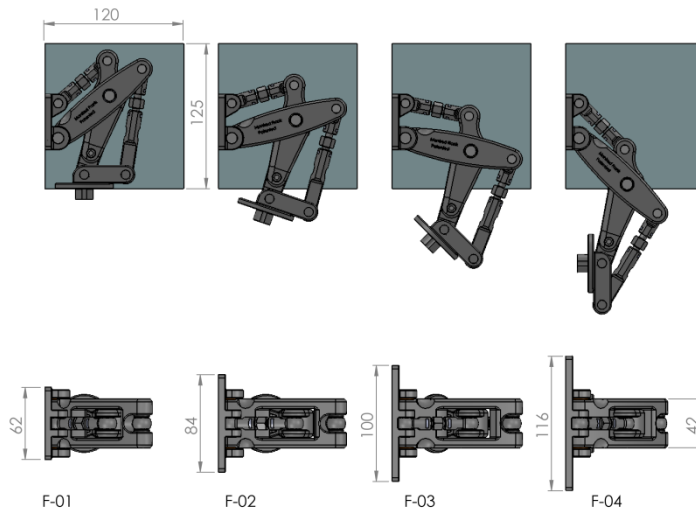


**HINGE FRAME MOUNT CASTING OPTIONS
FOR MFH 200 AND MFH 300 MICROMASTER HINGES**



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CLEARANCES REQUIRED FOR MFH 200 AND MFH 300 MICROMASTER HINGES

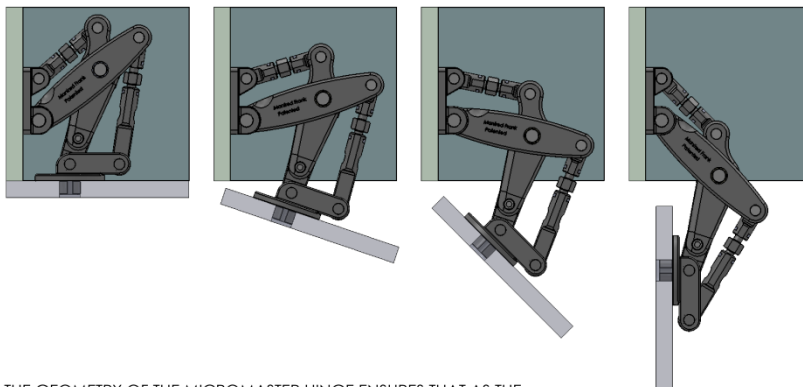


MFH 200 AND MFH 300 MICROMASTER HEIGHTS WITH VARIOUS FRAME MOUNTS



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MFH 200 AND MFH 300 MICROMASTER DOOR TRAJECTORY



THE GEOMETRY OF THE MICROMASTER HINGE ENSURES THAT AS THE DOOR OPENS IT MOVES OUTWARD AWAY FROM THE FRAME

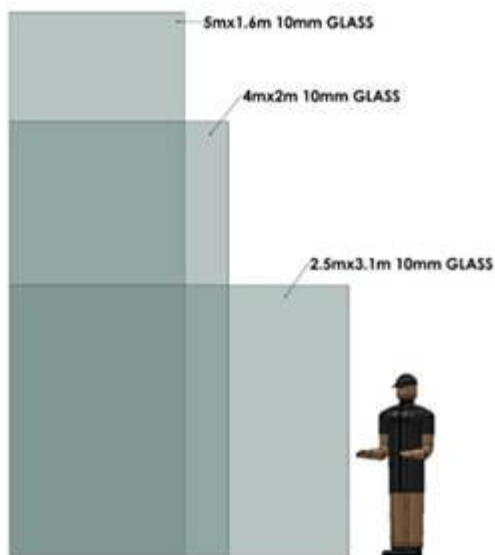


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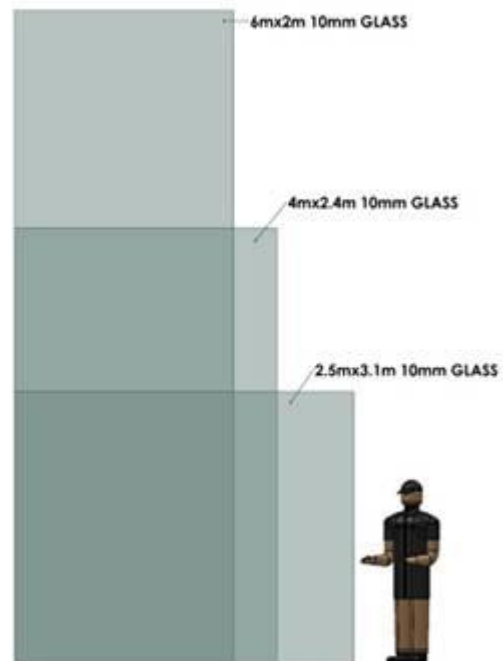
Panel Size Possibilities

The following illustrations are indicative of the panel sizes that can be incorporated using two hinges per panel with single point fixing/mounting. The MFH200 hinge is rated for maximum panel weights of 200kg and the MFH300 hinge for 300kg. There is no other product available that can accommodate these loads or panel sizes using a single point connection.

**PANEL SIZE EXAMPLES
MFH 200 MICROMASTER 10mm GLASS
2 HINGES PER PANEL**



**PANEL SIZE EXAMPLES
MFH 300 MICROMASTER 10mm GLASS
2 HINGES PER PANEL**



In addition to glass, the hinges can be used for doors and panels made of other materials.

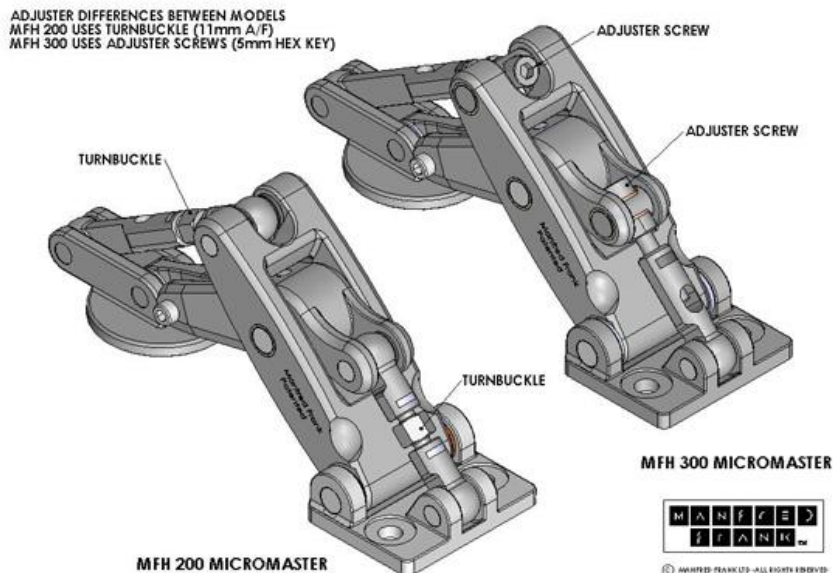
The charts set out within the Manfred Frank website via this link <http://www.manfredfrank.com/products/hinge/panel-size-charts> detail the maximum size panels / loads that can be installed using two micromaster hinges. Examples are provided for the MFH200 and MFH300 hinges with different glass thicknesses.

Hinge Adjustment

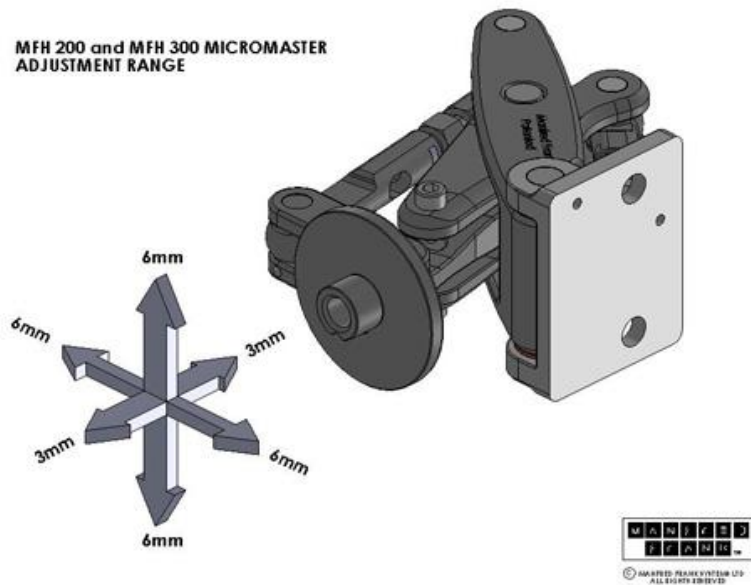
Micromaster hinges feature an ingenious and unique adjustment principle which is protected by worldwide patents.

The result is always a perfect fit in record time

- Full 3D adjustment
- Panels are adjusted under full load without any support or lifting equipment
- A single person can quickly and easily precision adjust even the largest panels.
- Self-locking adjustment screws can be turned with minimum force to align any size panel in a totally controlled process by a fraction of a millimetre.
- No special tools required
- It is physically impossible for any of the adjustments to be affected by even the heaviest panels.
- **No creep or slipping possible.**



Adjustment Range



Detailed instructions on how to adjust the MFH200 and MFH300 hinges can be found on the Manfred Frank website by following this link <http://www.manfredfrank.com/products/hinge/adjustment>

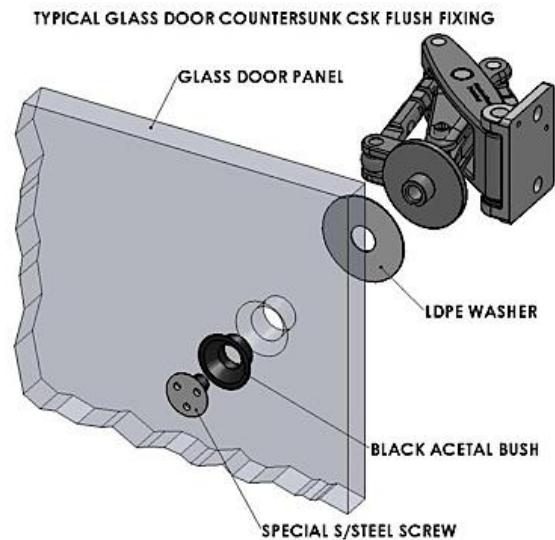
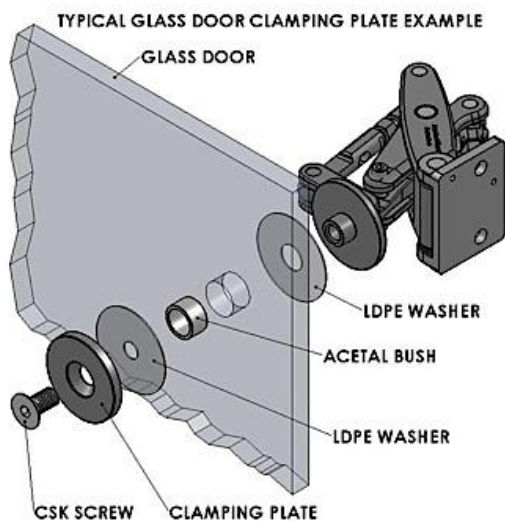
Hinge Mounting Options

As a world first a completely frameless glass side to glass door fully exposed hinge mounting is made possible by using a range of MFH fittings.

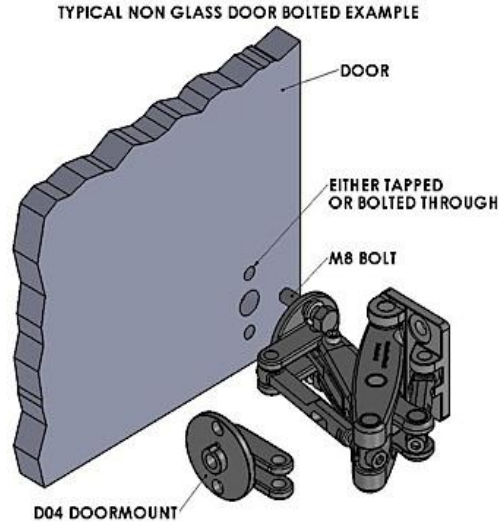
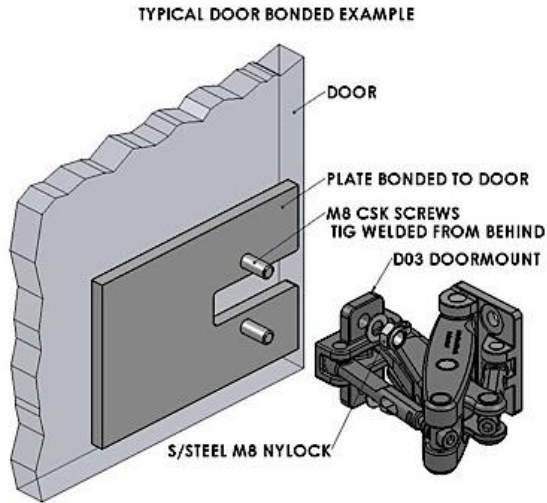
Micromaster hinges are suitable for all common applications of panel mounting.



Door Mounting Options

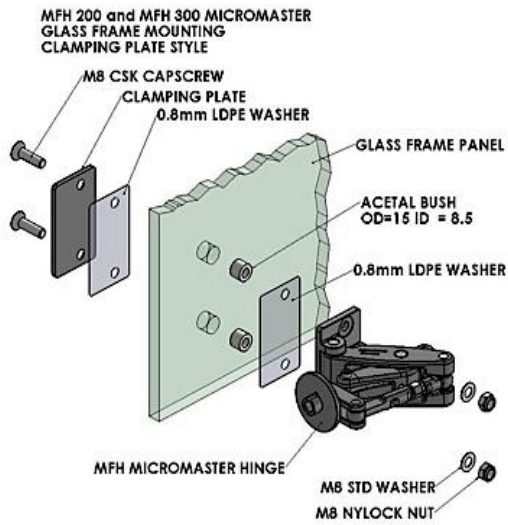


Door Mounting Options (Cont'd)

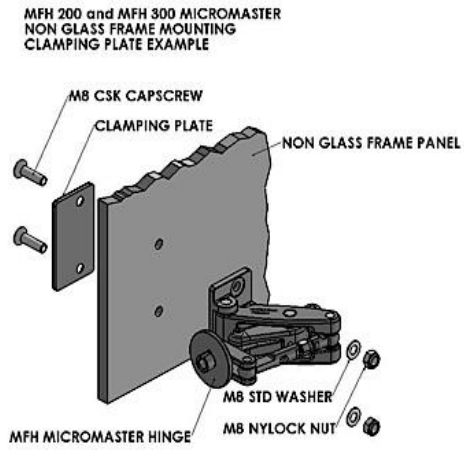


Frame Mounting Options

Clamping Plate – Glass

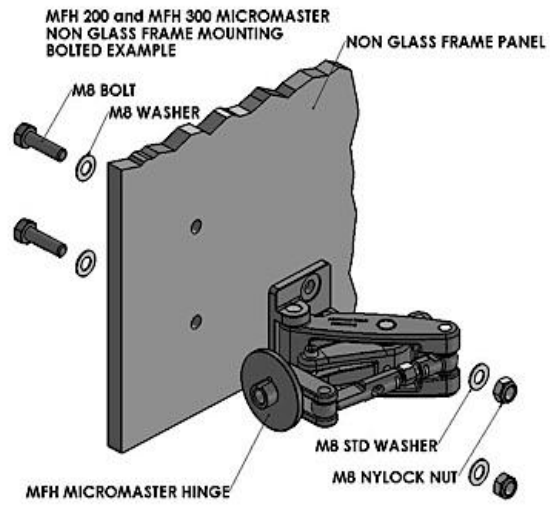


Clamping Plate – Non Glass



Frame Mounting Options (Cont'd)

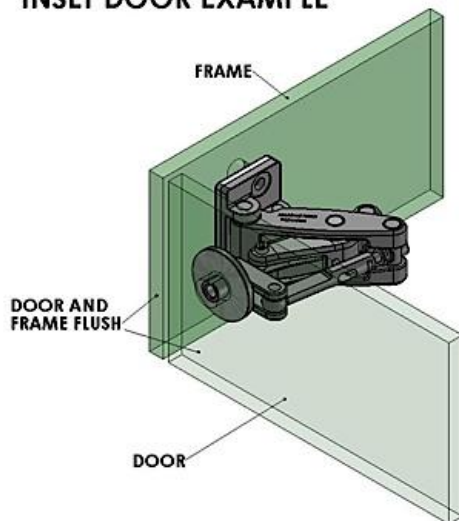
Bolted



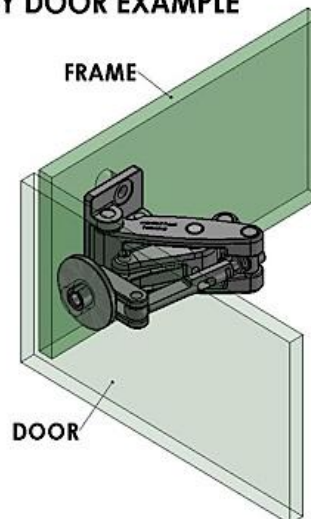
NOTE: HINGE CAN BE ATTACHED BY THROUGH BOLTS AS SHOWN OR THE FRAME CAN HAVE TAPPED HOLES FOR BOLTING THE HINGE TO.

Door Installation Types

INSET DOOR EXAMPLE

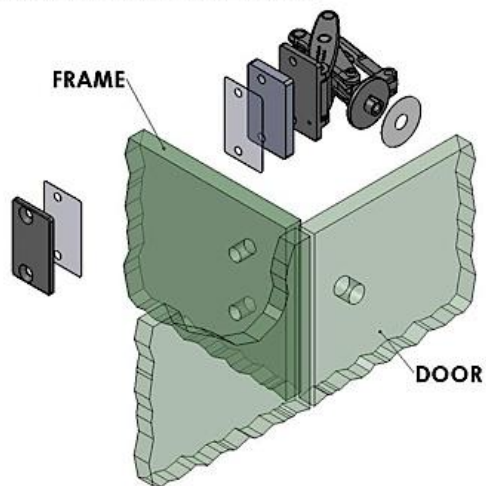


OVERLAY DOOR EXAMPLE

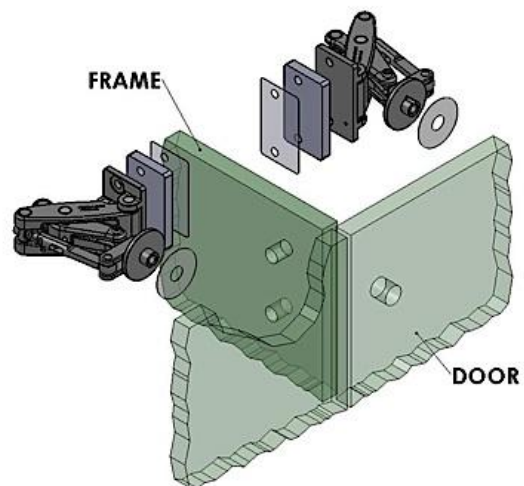


Door Installation Types (Continued)

CURTAIN WALL EXAMPLE



CURTAIN WALL BACK TO BACK EXAMPLE



Installation manuals for the different mounting options / type of installation can be downloaded from the Manfred Frank website by following this link <http://www.manfredfrank.com/products/hinge/installation-manuals>

Custom Solutions

Micromaster Hinges can be customised and adapted to fulfill even the most demanding requirements. Among the many solutions for Micromaster Hinges are motorized glass facades, slide and rotate systems for ultra thick panels with almost zero gaps (large LED Module screens) and others.

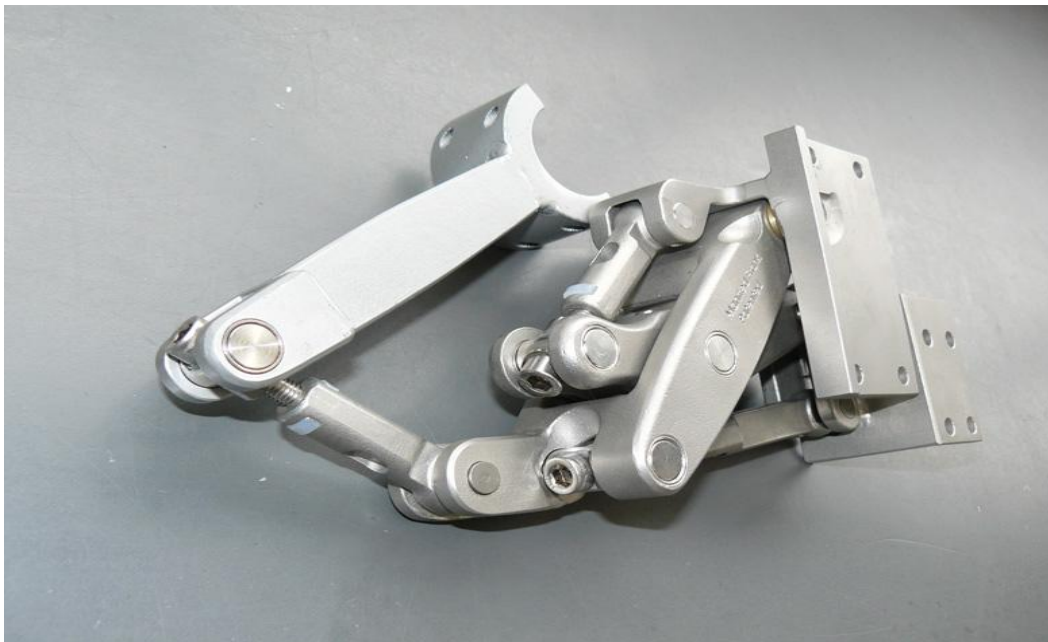
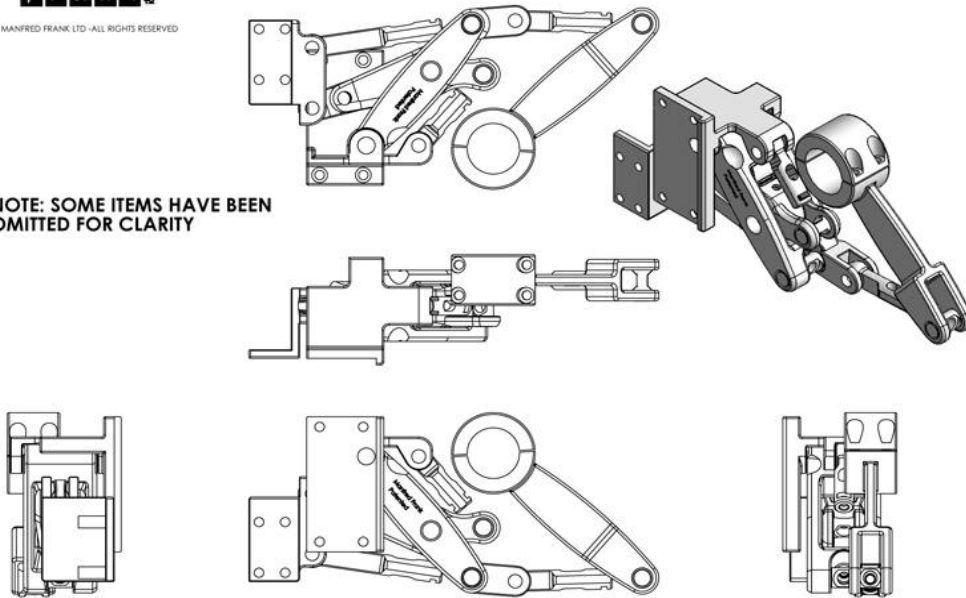
Glass Facade Customisation



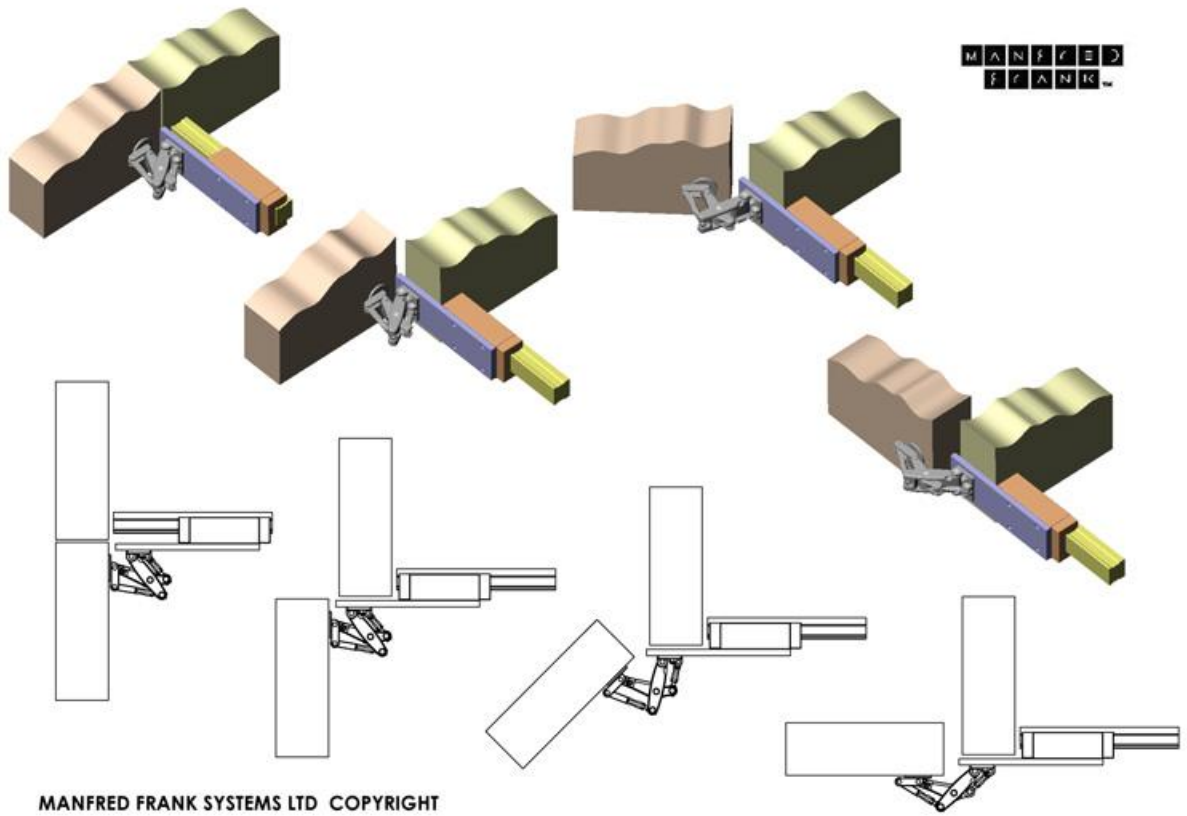
CUSTOMISED DOOR AND FRAME MOUNTS FOR AUTOMATED TOP HUNG GLASS FACADE PANEL

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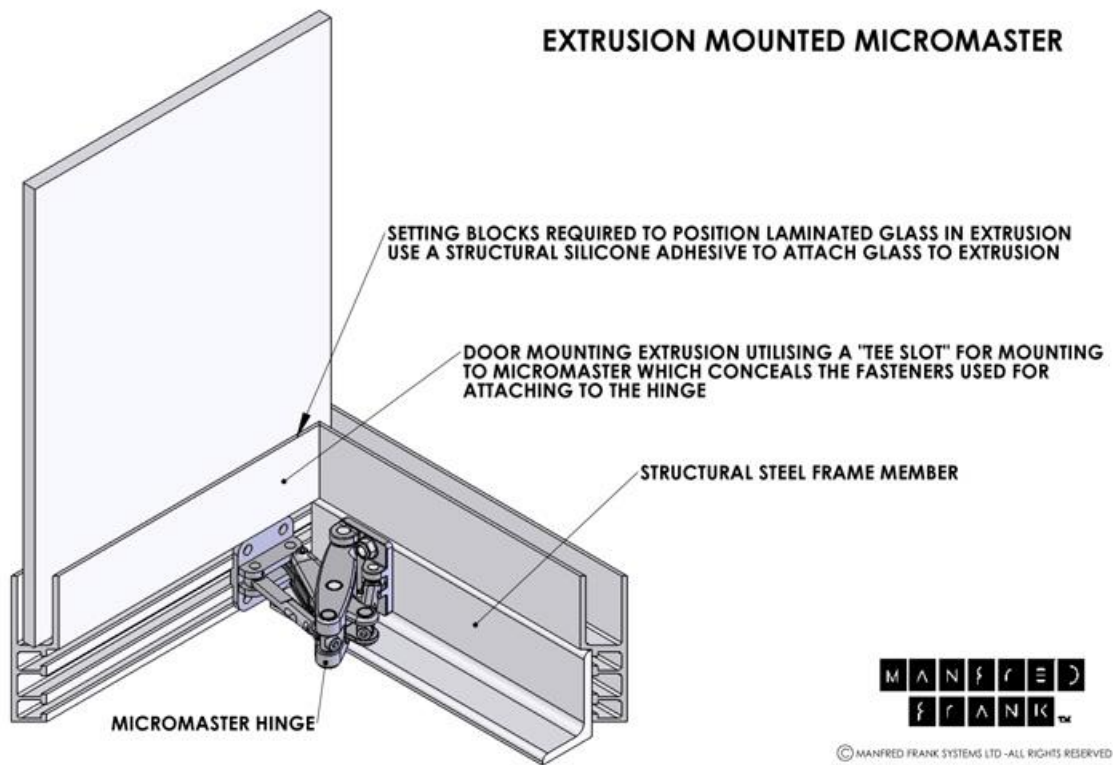
NOTE: SOME ITEMS HAVE BEEN OMITTED FOR CLARITY



Pull and Slide Customisation for LED Screen Modules



Extrusion Mounted Solution (Laminated Example)



Countersunk (CSK) Glass Frame Attachment



References

Manfred Frank products are being used in a large number of prestigious international institutions and architectural projects including:

National Gallery of Australia, Canberra;
Melbourne Museum, Australia;
War Memorial Museum, Canberra;
Museum of Sydney, Australia;
Australian Museum, Sydney;
Museum of Queensland, Brisbane;
Australian National Maritime Museum, Sydney;
Victoria & Albert Museum, London;
National Maritime Museum, London;
National Army Museum, London;
Courtauld Gallery, London;
National Museum of New Zealand Te Papa Tongarewa, Wellington;
Museum of City and Sea, Wellington, New Zealand;
University of British Columbia, Museum of Anthropology, Vancouver, Canada;
The National History Museum of Los Angeles County;
The British Library, London;
The National Museum of Scotland, Edinburgh;
Körperwelten/Bodyworlds, Singapore, Frankfurt, Taipei, Kaohsiung, Los Angeles, Chicago, Cleveland;
Museum of London;
Daimler Chrysler, Sindelfingen und Bremen;
The Smithsonian Institution, The National Museum of the American Indian, Washington DC;
The Smithsonian Institution National Air and Space Museum, Washington, DC;
The Smithsonian Institution National Museum of Natural History, Washington DC;
The Smithsonian Institution National Museum of American History, Washington DC;
The New York State Museum,
The New Mercedes Museum, Stuttgart;
Canadian War Museum, Ottawa;
Canadian Hockey Hall of Fame, Toronto;
National Germanic Museum, Nürnberg;
Liverpool Museum, UK;
The British Museum, London;
Bundestag, German Parliament, Berlin, Germany;
Alcázar de Toledo, Toledo, Spain;
Ozeaneum Stralsund, Germany;
The New MZTV Museum of Television, Toronto, Canada;
The Doge's Palace - Palazzo Ducale Venice, Italy;
Newseum - The Interactive Museum of News, Washington DC, USA;
Opera Tower, Frankfurt, Germany;
Burj Dubai Tower, UAE and others.

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