

axis

ENTRANCE SYSTEMS



WINNER

LAING O'ROURKE
CONSTRUCTION
NORTH INNOVATION
AWARD 2015

WINNER

IHEEM PRODUCT
INNOVATION
AWARD 2015

WINNER

BBH BEST
INTERNAL PRODUCT
AWARD 2015

WINNER

EUROPEAN
HEALTHCARE
AWARD 2016

flo·motion[®]

*LOW FRICTION MANUAL SLIDING DOOR SYSTEM
OPERATED BY FINGERTIP CONTROL*

Conceived and designed with versatility and flexibility in mind, the **Flo-Motion®** range contains over forty different designs, from a single door sliding over a wall, to an 8400mm glazed screen incorporating two, single telescopic door sets.

The three standard operating formats are *single slide*, *bi-part* and *telescopic doors*, all offered with a variety of glazing options.

MEETING CLIENT NEEDS

The Alder Hey Children's "Hospital in the Park" was inspired by children and is unique and instantly recognisable. It has captured the imagination of children, parents, staff and the wider NHS.

“*The extra-large, easy opening, glazed sliding doors have transformed the way single rooms work to deliver healthcare, with a choice of privacy or social interaction when required, without the loss of clinical observation*”

**DAVID HOUGHTON, PROJECT MANAGER,
CHILDREN'S HEALTH PARK PROJECT,
ALDER HEY CHILDREN'S NHS FOUNDATION TRUST.**

DESIGN CONCEPT

Axis **Flo-Motion®** doors were designed specifically for this hospital to help the Architects realise their vision. Three quarters of patients will be in single rooms rather than Nightingale wards.

The importance of light and airiness was absolutely vital to the whole concept and this meant the doors for each of the patient's room had to be very special. Each had to be large enough for ease of access for beds and equipment, glazed for brightness and airiness, have privacy blinds for examinations or occasional solitude, and finally they had to be easily opened and closed by a child and with no power assistance.

The average opening force of the 200+ **Flo-Motion®** doors installed at Alder Hey was just over 10N - less than 50% of the original force of 22.5N specified by the Architects, BDP.

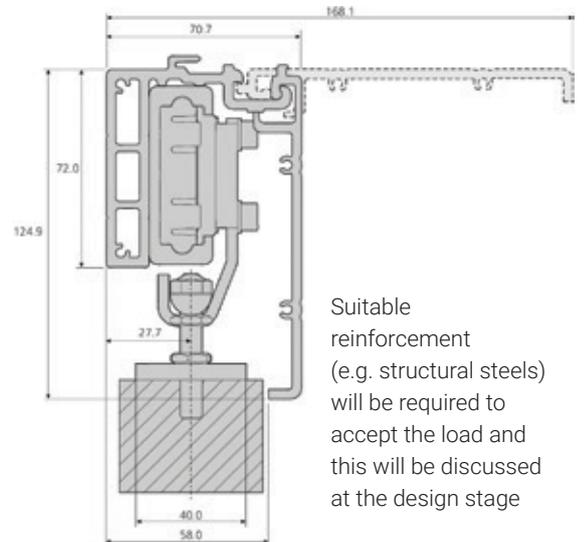
EASY-TO-USE AND VERSATILE

Flo-Motion® doors feature re-circulating ball guides sliding on a special low resistance linear track with damper mechanisms at the fully opened and closed positions. The high number of balls ensure continuous contact with bearing surfaces, as well as the contained roller, which increases the slide load rate capability and decreases the movement force.

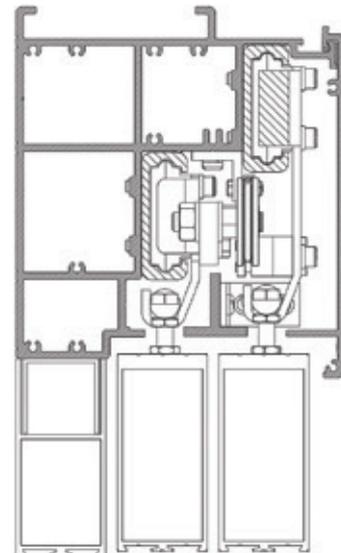
Our sliding doors offer excellent light transfer, privacy, ease of use and more importantly, a better overall patient experience. The telescopic version is ideally suited for applications where space is limited.

**F12 WITH
EXTENDED
GLAZED
SCREENS**

Single Sliding & Bi-Parting Header



Telescopic Header



BIM models have been produced for the most popular door sets and these can be downloaded from www.bimobject.com and searching for Axis Entrance Systems or Flo-Motion.

Brochures, Specifications and CAD Drawings are available on our website at www.axisentrances.com.

For most projects, it is the clear opening width that determines which **Flo-Motion®** door set is best suited for your application. To assist you, we have created a '[Clear Opening Calculator](#)' also available on our website.

SLIDING MECHANISM

The recirculating ball slides contain precision balls which move in a loop within the cassettes. This means that a high number of balls are continuously in contact with the bearing surfaces, not just a single roller, increasing the contact area which increases the slide load rate capability and decreases the movement force.

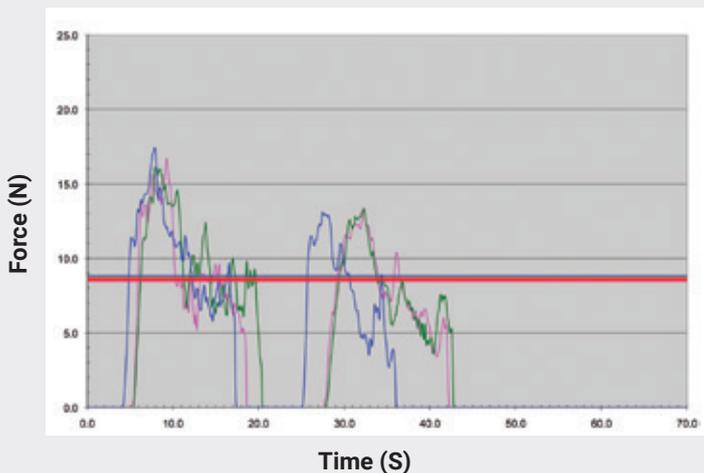
The cassettes used with our standard single sliding door that weighs 135kg, completed a 1 million cycle test (1.2 metres in each direction = 2.4 million metres).

The original test produced an average opening and closing force of 9.9N and when re-measured after one million cycles, an average opening and closing force of 8.6N was recorded. The telescopic door set was force tested producing an average opening and closing force of 11.2N.

WEIGHT LIMITS AND CASSETTES REQUIRED PER DOOR LEAF

Number of cassettes with steel ball bearings	KG
2	290
3	360

Number of cassettes with Delrin ball bearings	KG
2	180
3	240



AXIS - Door Opening Force: Test Door - after 1,000,000 cycles

- Sample 1
 - Sample 1 avg
 - Sample 2
 - Sample 2 avg
 - Sample 3
 - Sample 3 avg
 - OVERALL
- Door opening distance: approx. 1000mm
 - Hand-held force gauge used, pushing forward so as to try to maintain a constant speed
 - Gauge tip pushing on the door handle
 - Door opening followed by door closing

FLO-MOTION® CLEAR OPENING CALCULATOR

Our revolutionary online Clear Opening Calculator allows you to select the best door option to meet your requirements. Standard door parameters are offered and you only need to enter the structural opening dimensions to obtain the achievable clear openings. Where doors are sliding over walls or screens, you will need to enter the clear opening width. For bespoke applications - please contact us to discuss your requirements further.

Clear Opening Width – Approximate distance between frame and leading edge of door when in the fully open position

Clear Opening Height – Approximate distance between bottom of pelmet and FFL

Once installed, each door set is digitally force tested and a certificate issued. The forces will vary depending on the door mass and the type of glass fitted. The anticipated opening forces for each type of standard door set is as follows:

Single Sliding Door leaf at 10N (+/-5)
Telescopic Sliding Door leaves at 15N (+/-5)

Please refer to door parameters for door set dimensions and weights.



Damper mechanism and standard door bracket



Telescopic extended bracket and sequencing device

SINGLE SLIDING DOOR SETS



DOOR PARAMETERS

	F11 Left Hand		F12 Right Hand		F01 Right Hand Shown (F01R)		E32 Left Hand Shown (E32L)	
	Min	Max	Min	Max	Min	Max	Min	Max
Structural Opening Width	2500mm	3800mm	2500mm	3800mm	1650mm	3600mm	1100mm	1905mm
Clear Opening Width	995mm	1645mm	995mm	1645mm	995mm	1645mm	845mm	1650mm
Structural Opening Height	2200mm	2700mm	2200mm	2700mm	2200mm	2700mm	2200mm	2700mm
Clear Opening Height	2060mm	2560mm	2060mm	2560mm	2060mm	2560mm	2060mm	2560mm
Overall Track Length (S/O plus track overhang on wall)					2315mm	3615mm	1960mm	3570mm

DOOR SET WEIGHTS & PANEL TYPES

(depends on overall dimensions and glass type used)

Estimated Door Set Weight	225kg	425kg	225kg	425kg	170kg	400kg	120kg	235kg
Estimated Average Opening Force per Cycle (+/-5N)	10N	15N	10N	15N	10N	15N	10N	15N
Top and Bottom Rail Dimensions	100mm x 45mm							
Leading and Rear Edge Stile Dimensions	100mm x 47mm							
Equal Panel Sizes	●		●					
Variable Fixed Panel Sizes (e.g. door sliding over wall and screen)					●			

GLASS & INFILLS FOR PANELS

(db ratings apply to glass only)

DGU - 28mm clear (35db)	○		○		○		○	
DGU - 32.8mm c/w with integral blind (35db) (magnet operated and lift only)	○		○		○		○	
Single Glazed - 8.8mm clear laminated glass (34db)	○		○		○		○	
Single Glazed - 10.8mm clear laminated glass (35db)	○		○		○		○	
Other Glass Types	○		○		○		○	
Insulated Solid Infill panels	○		○		○		○	
Midrails	○		○		○		○	

DOOR FRAME

Integral Transom Bar - 125mm x 100mm	●		●		●		●	
Jambs - 100mm x 45mm (x1)	●		●		●		●	
Jambs - 152mm x 45mm (x1)	●		●		●		●	
Other Jamb Types	○		○		○		○	
Threshold	○		○		○		○	

DOOR SET FINISH

Satin Anodised Aluminium (SAA)	●		●		●		●	
Polyester Powder Coat (PPC)	○		○		○		○	

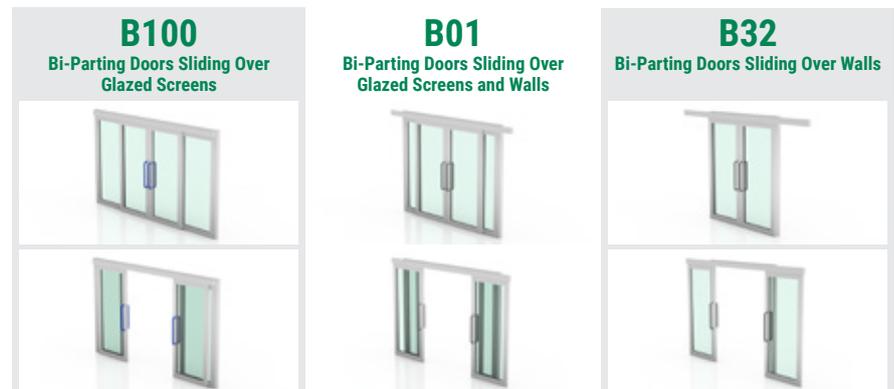
DOOR SET HANDLES

600mm Straight (nylon - back to back)	●		●		●		●	
Other Handle Types	○		○		○		○	

LOCKS

Manual - Cylinder Operated Euro Profile Deadlock	○		○		○		○	
Electromagnetic Shearlock (12/24vdc) Fail Unlocked	○		○		○		○	
Other Manual and Electronic Lock Types	○		○		○		○	

BI-PARTING DOOR SETS



DOOR PARAMETERS

	B100		B01		B32	
	Min	Max	Min	Max	Min	Max
Structural Opening Width	3000mm	5000mm	2550mm	4500mm	1410mm	2410mm
Clear Opening Width	1045mm	2040mm	1045mm	2040mm	1000mm	2000mm
Structural Opening Height	2200mm	2700mm	2200mm	2700mm	2200mm	2700mm
Clear Opening Height	2060mm	2560mm	2060mm	2560mm	2060mm	2560mm

DOOR SET WEIGHTS & PANEL TYPES

(depends on overall dimensions and glass type used)

	B100		B01		B32	
Estimated Door Set Weight	275kg	575kg	225kg	550kg	150kg	300kg
Estimated Average Opening Force per Cycle (+/-5N)	10N	15N	10N	15N	10N	15N
Top and Bottom Rail Dimensions	100mm x 45mm		100mm x 45mm		100mm x 45mm	
Leading and Rear Edge Stile Dimensions	100mm x 47mm		100mm x 47mm		100mm x 47mm	
Equal Panel Sizes	●				●	
Variable Fixed Panel			●			

GLASS & INFILLS FOR PANELS

(db ratings apply to glass only)

	B100	B01	B32
DGU - 28mm clear (35db)	○	○	○
DGU - 32.8mm c/w with Integral Blind (35db) (magnet operated and lift only)	○	○	○
Single Glazed - 8.8mm Clear Laminated Glass (34db)	○	○	○
Single Glazed - 10.8mm Clear Laminated Glass (35db)	○	○	○
Other Glass Types	○	○	○
Insulated Solid Infill Panels	○	○	○
Midrails	○	○	○

DOOR FRAME

	B100	B01	B32
Integral Transom Bar - 125mm x 100mm	●	●	●
Jambs - 100mm x 45mm	●	●	●
Jambs - 152mm x 45mm	○	○	○
Other Jamb Types	○	○	○
Threshold	○	○	○

DOOR SET FINISH

	B100	B01	B32
Satin Anodised Aluminium (SAA)	●	●	●
Polyester Powder Coat (PPC)	○	○	○

DOOR HANDLES

	B100	B01	B32
600mm Straight (nylon - back to back)	●	●	●
Other Handle Types	○	○	○

LOCKS

	B100	B01	B32
Manual - Cylinder Operated Euro Profile Deadlock	○	○	○
Other Manual and Electronic Lock Types	○	○	○

TELESCOPIC DOOR SETS



T55

with 55mm Stiles



T100

with 100mm Stiles



DOOR PARAMETERS

	Min	Max	Min	Max
Structural Opening Width	2200mm	3000mm	2500mm	3000mm
Clear Opening Width	1054mm	1586mm	1224mm	1556mm
Structural Opening Height	2200mm	2700mm	2200mm	2700mm
Clear Opening Height	2002mm	2502mm	2002mm	2502mm

DOOR SET WEIGHTS & PANEL TYPES

(depends on overall dimensions and glass type used)

	Min	Max	Min	Max
Estimated Door Set Weight	225kg	375kg	250kg	375kg
Estimated Opening Forces - (+/-5N)	10N	15N	10N	15N
Top and Bottom Rail Dimensions	100mm x 45mm		100mm x 45mm	
Leading and Rear Edge Stile Dimensions	55mm x 47mm		100mm x 47mm	
Equal Panel Sizes	●		●	
Variable Fixed Panel	○		○	

GLASS & INFILLS FOR PANELS

(db ratings apply to glass only)

DGU - 28mm Clear (35db)	○	○
DGU - 32.8mm c/w with Integral Blind (35db) (magnet operated and lift only)	○	○
Single Glazed - 8.8mm Clear Laminated Glass (34db)	○	○
Single Glazed - 10.8mm Clear Laminated Glass (35db)	○	○
Other Glass Types	○	○
Insulated Solid Infill Panels	○	○
Midrails	○	○

DOOR FRAME

Integral Transom Bar - 165mm x 178mm	●	●
Jambs - 152mm x 45mm	●	●
Jambs - 200mm x 45mm (100 x 45mm x2)	○	○
Other Jamb Types	○	○
Threshold	○	○

DOOR SET FINISH

Satin Anodised Aluminium (SAA)	●	●
Polyester Powder Coat (PPC)	○	○

DOOR HANDLES

600mm Offset (PPC steel - back to back)	●	●
600mm Straight (nylon - back to back)	○	○
Other Handle Types	○	○

LOCKS

Manual - Cylinder Operated Euro Profile Deadlock	○	○
Electromagnetic Shearlock (12/24vdc) Fail Unlocked	○	○
Other Manual and Electronic Lock Types	○	○

STANDARD SPECIFICATION

The door set is fabricated using non-thermally broken aluminium profiles and includes an 'in-line goal post' frame with the jambs fixed to suitable and solid supports or structural steels installed by the Building Contractor. The integral transom bar has reinforced fixing points and is supported by the jambs.

The doors and fixed screens are fabricated using various profiles for the rails (100mm) and stiles (55mm and 100mm). The sliding door is prepared with a bottom channel to operate with a floor mounted nylon guide. The fixed screen offers support to the frame and transom and is secured within the frame structure by two aluminium channels. Material finish is satin anodised aluminium (SAA) or powder coated (PPC) to a standard RAL or BS colour.

The sliding door will employ a recirculating bearing system and track offering a minimum clear opening width as specified. A 'stop' mechanism (damper not self- or soft-closing) is installed for when the doors approach their closing and fully open positions. A pelmet conceals the track and is complete with a 'hold open' lid for ease of maintenance.



All panels will incorporate double-glazed units secured using a 3mm bead and appropriate gaskets. Alternative glazing options include clear or obscure, 'switchable' glass, DGU with integral blinds or single glazed clear laminate glass using a beveled bead profile. Midrails can be included. Neoprene seals are included for the leading edge of the sliding doors and the rear stiles internal face. One pair of 600mm 'back-to-back' handles are fitted to the sliding door leaf although there are various options available.

The sliding door can easily be operated by hand. Once installed, every sliding door panel will be digitally force tested three times as specified and a certificate to be issued showing the mean average opening and closing force with test data in graph format. The system will work in conjunction with doors of a larger mass and weight, refer to the individual door parameters or our Clear Opening Calculator.

Flo-Motion® Doors are not fire-rated or hermetically sealed. For bespoke designs, please contact us.

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