

Please read these acrylic panel instructions in conjunction with the Fusion™ system instructions supplied with all Fusion™ newel base connectors.

Fusion™ acrylic panels are suitable for use on closed string domestic stairs with a pitch between 38° and 45° and handrail heights of 900mm for both stairs and landings.

Fusion™ and acrylic infill panels have been tested by TRADA and FIRA (Test Reports Chilt/P02014 and TCMSF19039) for conformity with UK building regulations domestic strength requirements of 0.36kN/m.

Fusion™ newels, rails and connectors are installed as detailed in the Fusion™ instructions supplied with the Fusion™ newel base connectors apart from the spacing of newels which should be set no greater than 2400mm apart. **For all installations longer than 2400mm an intermediate newel should be installed.**

### Installation of Stair Panels

Acrylic stair panels are supplied over-sized to suit domestic closed string stairs with pitches between 38° to 45° and will need to be marked and cut to suit (**Fig.1**)

For the majority of stair configurations we recommend that 2 panels are installed between newels for both stairs and landings

Fixing the handrails and connectors is best done by 2 people. To establish the correct angle of connectors and lengths of handrail find the angle of the stairs using an adjustable bevel (**Fig.2**) and cut 2 timber battens to a length of 778mm (**Fig.3**)

The bottom, intermediate and top connectors are a two-part assembly. Attach the newel post part of the connectors to the newel posts. Note – the top newel post connector slides over the top newel post and should not be permanently fixed at this stage. The handrail part of the bottom and intermediate newel connectors should be attached to the overlong handrail, being careful to slide the intermediate connector gently along the handrail to avoid damage. Offer the assembly of handrail and connectors to the newel posts connectors using the timber battens to check that everything is vertical and parallel (**Fig.4**). Fix all connectors as detailed in the Fusion™ instructions.

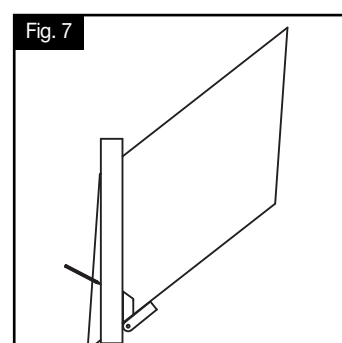
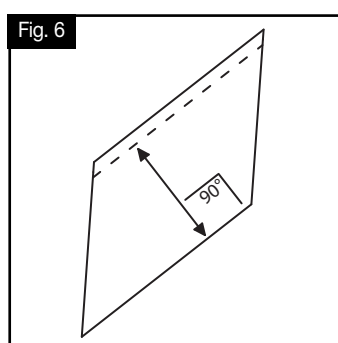
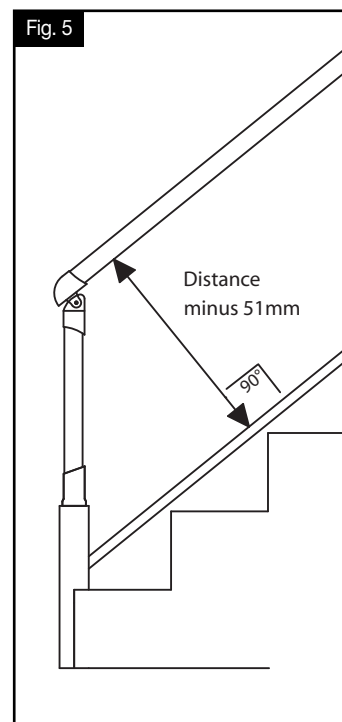
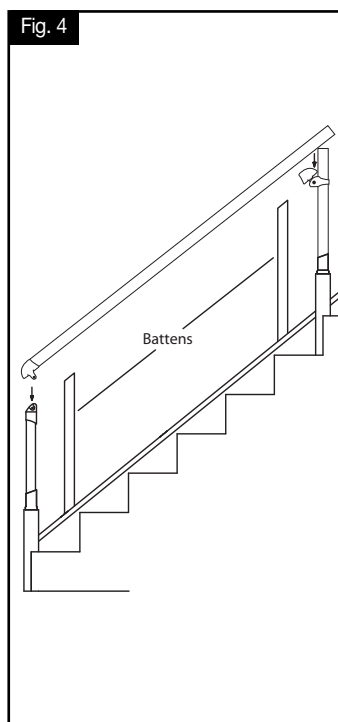
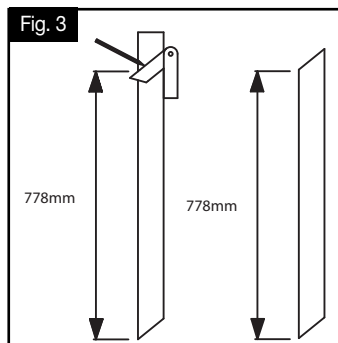
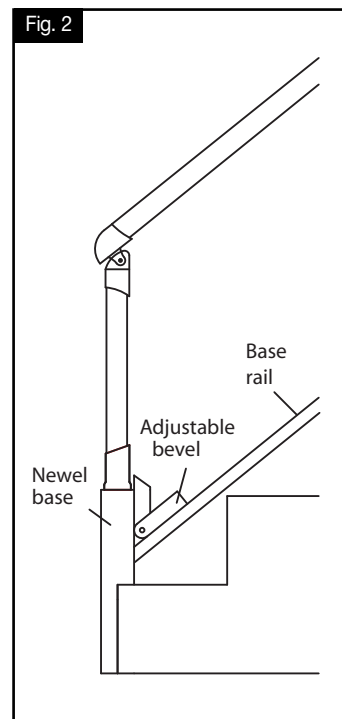
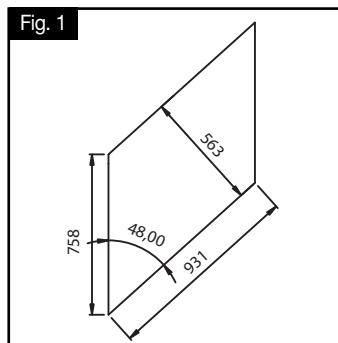
In order to protect the surfaces from scratching and marking during preparatory work we recommend that you do not remove the protective film from the panels until final installation.

Place the acrylic panels on a soft fabric such as a dust-sheet and mark the panel on the protective film using a soft pencil or waterproof felt tip pen.

Measure the perpendicular height distance between the baserail and handrail and subtract 51mm (**Fig.5**). Transfer this measurement to the panel and mark perpendicularly (**Fig.6**).

Cut the marked edge using a fine-toothed handsaw. Mark and cut all panels to be used on the stairs using this panel as a template.

Using the previously set adjustable bevel and a straight edge, mark and cut the side of a panel (**Fig.7**).



Measure the distance between the newel bases on the stairs, subtract 220mm and divide the remainder by 2 (**Fig.8**). This gives a 70mm clearance gap between the edges of the panels once installed. Mark and cut the panels accordingly (**Fig.9**).

All cut edges can be smoothed using fine grade sandpaper or a small hand plane. The side edges of the panels are covered using edging strips so finishing off the edges is not as critical as the top and bottom edges. The corners of the panels can also be rounded off for a more decorative effect and to avoid sharp points by using a suitable circular template. Cut the rounded edges using a coping saw and smooth using fine grade sandpaper to finish.

Cut and mark all panels for use on the stairs using this panel as a template.

Once all panels for use on the stairs have been cut to size they need to be marked and drilled to accommodate the panel fixing brackets.

Mark a pencil/felt tip pen line 17mm down/up from the top and bottom edges and then mark these lines at 100mm centres (**Fig.10**). Pilot drill these centres with a 3mm drill bit and complete by using a 12mm diameter spade bit. Note – use the timber battens underneath the panel to prevent breakout. Mark and drill all panels for use on the stairs using this panel as a template.

Fix all 2-part brackets to all panels for use on the stairs using the No 8 x 13mm screws supplied but at this stage do not fix the cover caps (**Fig.11**).

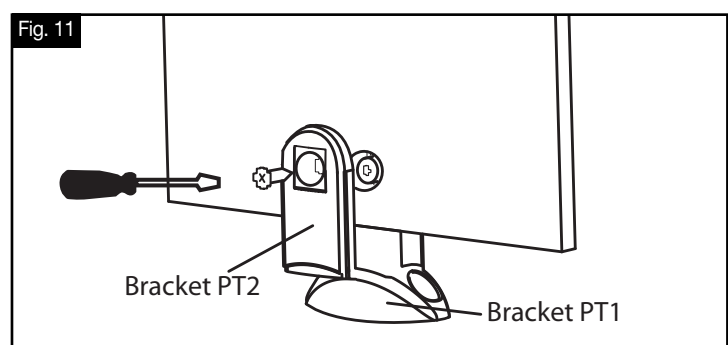
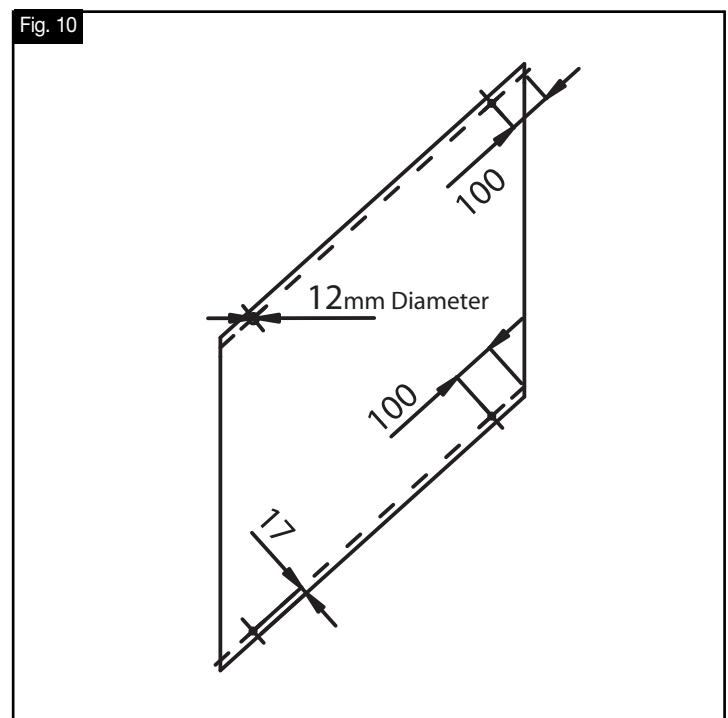
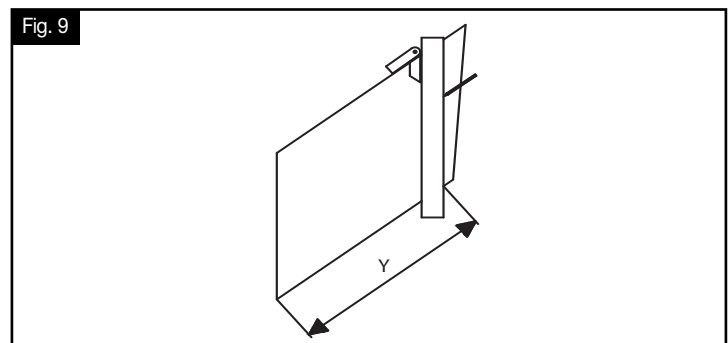
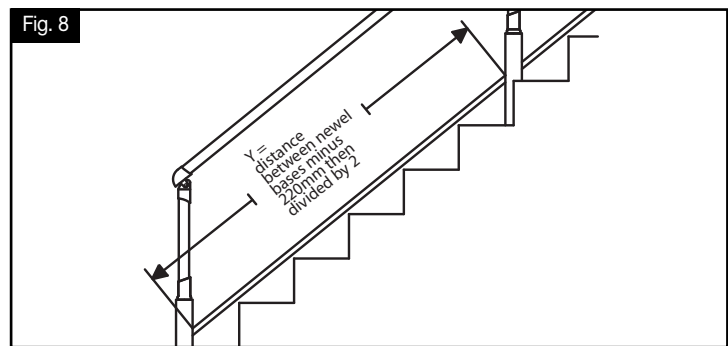
Temporary offer the assembled panel and brackets between the handrail and baserail and using a 70mm wide timber packer to space the edge of the panel from the newel base (**Fig.12**) mark with a pencil the location of the 4 panel brackets to the handrail and baserail using the centre line notches on the brackets (**Fig.13**).

Remove the panel and disassemble the 2-piece panel bracket, fix the self-adhesive rubber washers to both parts of the bracket (PT1 & PT2) (**Fig.14**). Fix PT1 part of bracket to the previously marked handrail and baserail using No 8 x 25mm screws supplied (**Fig.15**).

Remove the protective film from both sides of the panel and locate the panel onto the PT1 part of the bracket fixed to the handrail and baserail. Fix the panel into position using PT2 part of bracket and No 8 x 13mm screw. Apply a bead of clear silicone sealant into the groove of the H-section moulding and locate onto the edge of the fixed panel. Repeat for the edging strip on the front edge of the first panel (**Fig.16**).

Assemble the second panel as previously described and offer into groove of H-section moulding (**Fig.17**). Mark the positions of the brackets to the handrail and baserail. Remove the panel and disassemble the 2-piece panel bracket, fix the self-adhesive rubber washers to both parts of the bracket (PT1 & PT2). Fix PT1 part of bracket to the previously marked handrail and baserail using No 8 x 25mm screws supplied.

Apply a bead of clear silicone sealant into the groove of the H-section moulding already fixed to the first panel, remove the protective film from both sides of the second panel and locate this second panel into the groove of the H-section moulding and onto the PT1 part of the bracket fixed to the handrail and baserail. Fix the panel into position using PT2 part of bracket and No 8 x 13mm screw.



Apply a bead of silicone into the groove of the edging strip and fix onto the edge of the second panel (**Fig.18**).

To finish apply a spot of clear silicone sealant to the bracket cover cap and place into the recess of the panel bracket (**Fig.19**).

Repeat for all stair panels.

Panels can be used on short stair runs; the minimum requirement is 220mm from centres of posts (**Fig.20**).

### Installation of Landing Panels

Acrylic landing panels are supplied over-sized and will need to be marked and cut to suit (**Fig.21**).

The landing panels are only cut in length, unlike the stair panel there is no need to cut the panel in height. The height that the landing handrail is set is established once the brackets have been assembled to the panel.

Place an off-cut of handrail loosely into the Fusion™ landing connector. Position an assembled panel onto the baserail and place the handrail and connector on top of this panel and to the side of the top newel to establish the required height of the post. Mark and cut the post to the required height.

Measure the distance from the wall to the centre of the return leg baserail, subtract 135mm and divide the remainder by 2 (**Fig.22**). This gives a 50mm clearance gap between the wall and edges of the panels once installed. Mark and cut the panels accordingly.

Landing panels are supplied 1110mm in length. For landing runs 1210mm or less you will only need to use 1 x panel. Subtract 100mm to allow 50mm gaps either side and cut the panel accordingly.

The maximum span between newels should not exceed 2400mm, for landings greater than 2400mm an intermediate landing newel should be installed.

Note – follow the same formula for landing runs that have a number of newels i.e. measure the horizontal distance between newel bases, subtract 135mm and divide by 2.

The landing panels are fixed with 6 panel brackets (**Fig.23**).

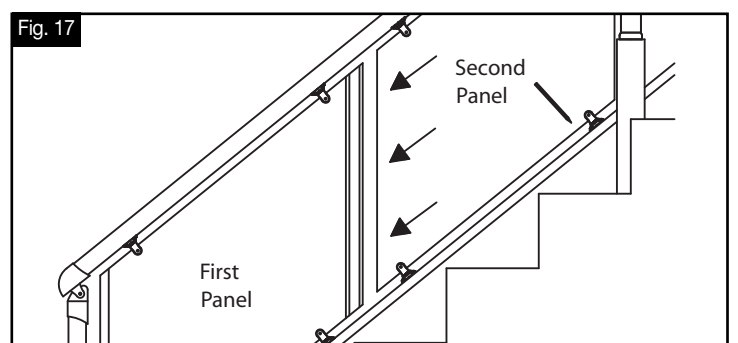
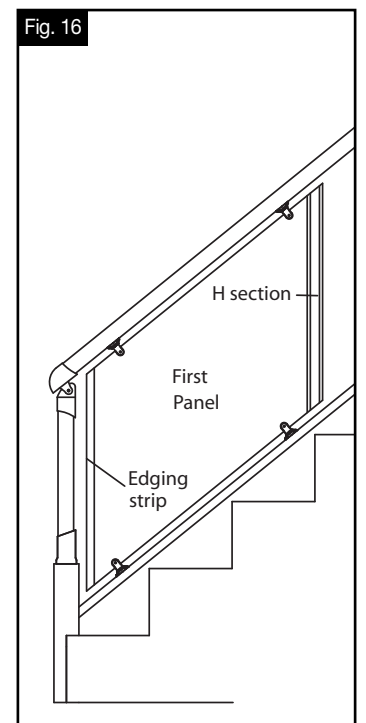
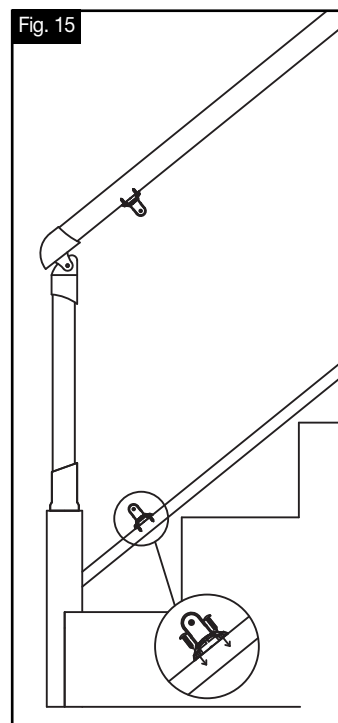
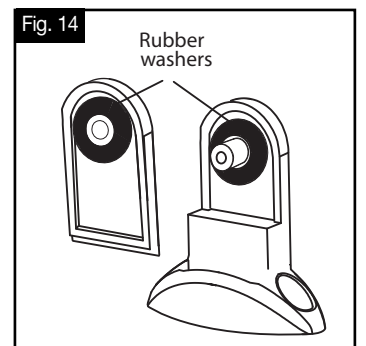
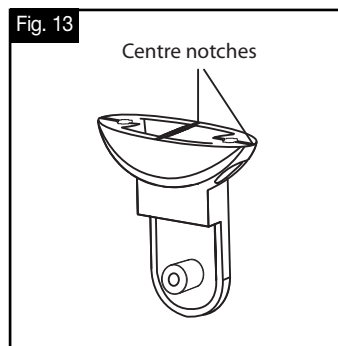
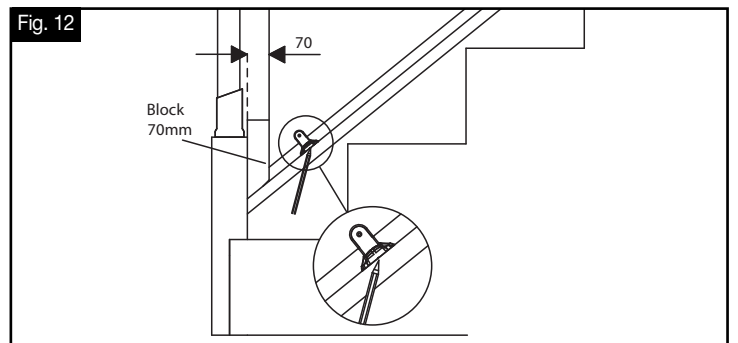
Mark a pencil/felt tip pen line 17mm down/up from the top and bottom edges of the panel and then mark these lines at 100mm centres for the 4 outside edge panel brackets. The 2 remaining panel brackets should be fixed so they are central to the panel (**Fig.24**).

Pilot drill these centres with a 3mm drill bit and complete by using a 12mm diameter spade bit. Note – use the timber battens underneath the panel to prevent breakout. Mark all panels for use on the stairs using this panel as a template.

Panels, H-section mouldings, edging strips and bracket cover caps are then installed exactly as described in the stair panel instructions.

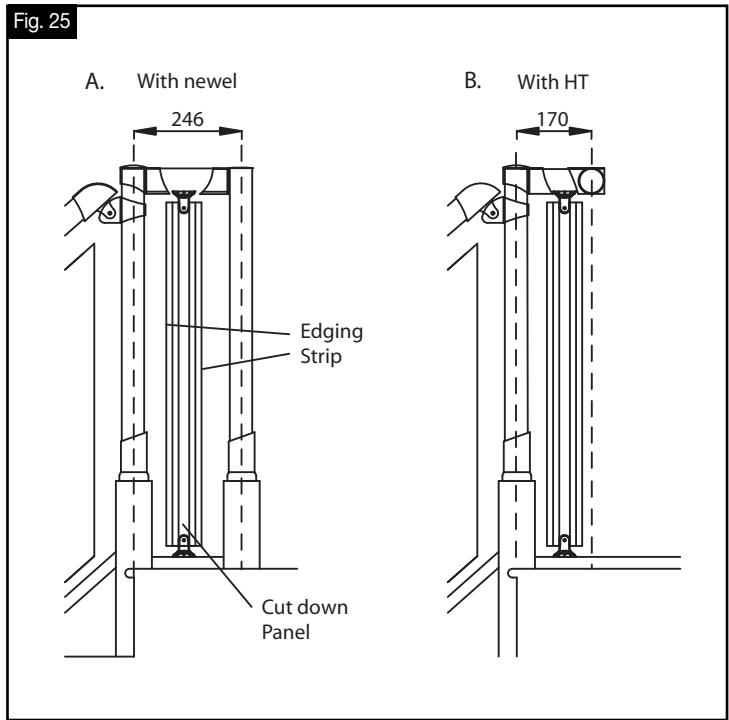
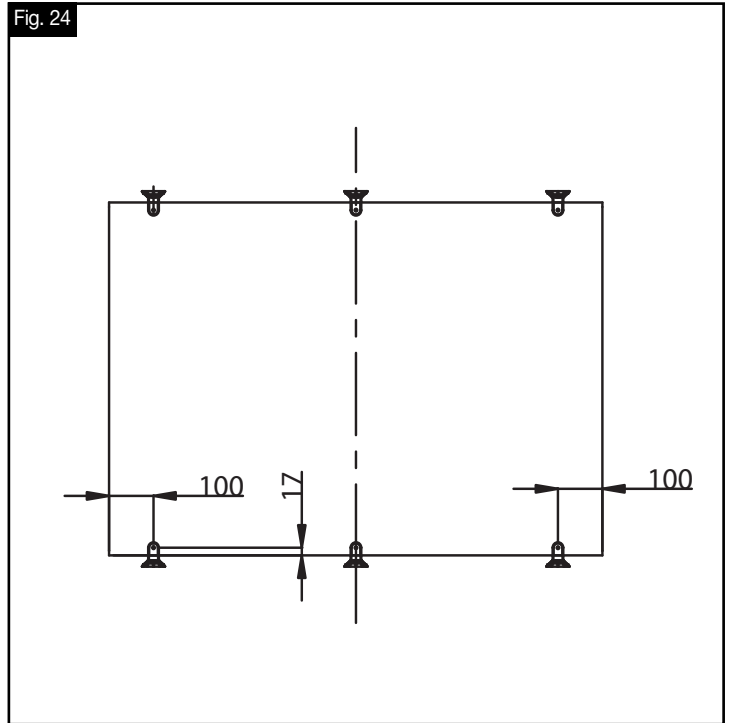
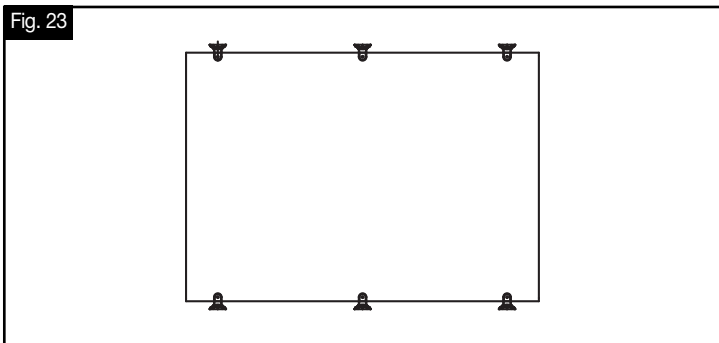
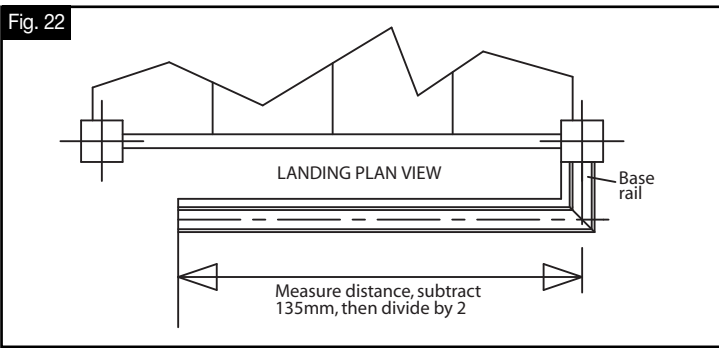
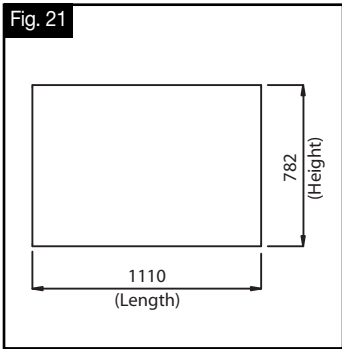
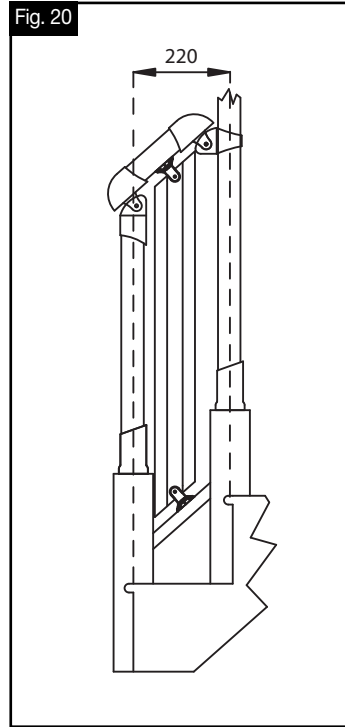
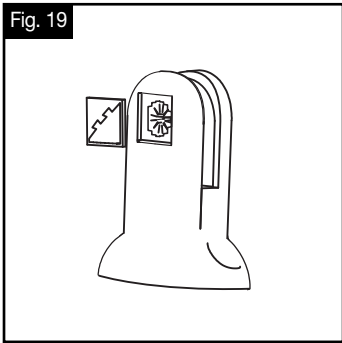
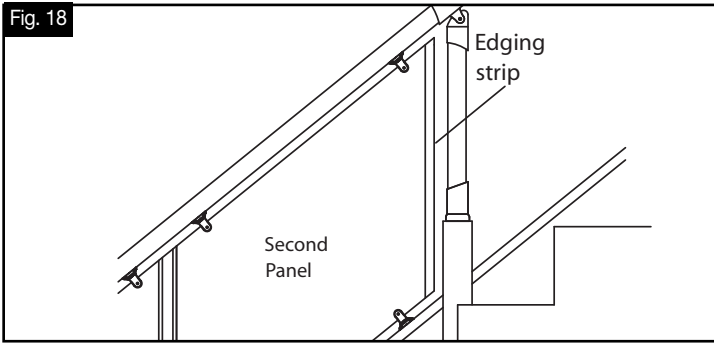
Acrylic panels have a smooth surface and need the minimum of maintenance. Occasional cleaning should be carried out using luke warm water and a soft cloth or sponge. The panels should not be wiped dry.

Landing panels can be cut down for use on short runs. The minimum requirements when using 1 x panel bracket are detailed in (**Fig.25**). 2 x panel brackets for panel should be used when the minimum distance for A = 296mm and B = 220mm. Brackets for cut-down panels should be spaced and positioned accordingly.





# FUSION™ ACRYLIC PANEL INSTALLATION INSTRUCTIONS



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