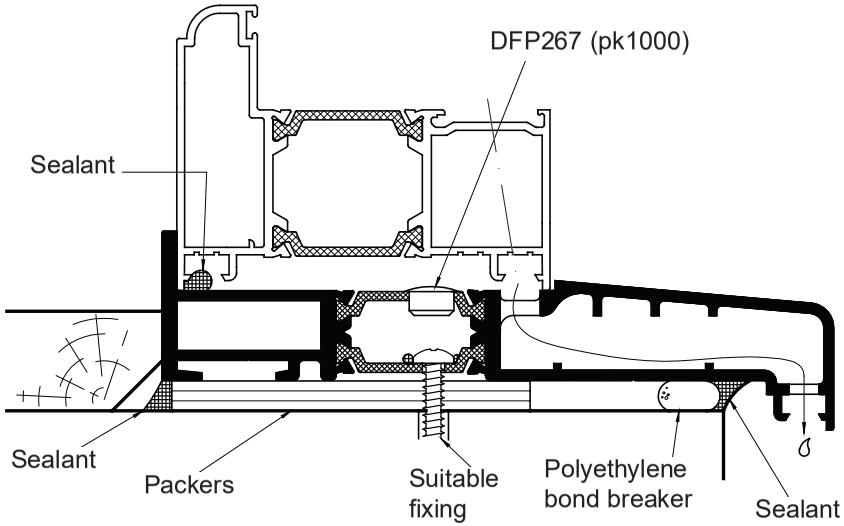
Fitting of Subcill

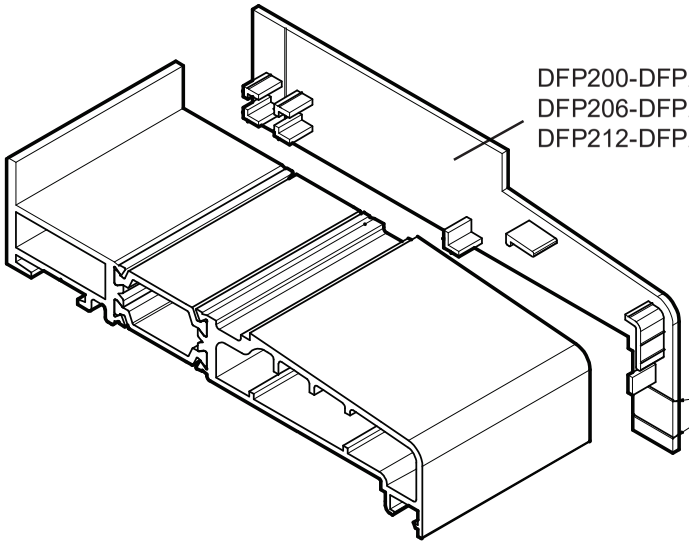
Drainage paths through the sub-cill can be seen on the illustration, care must be taken to ensure drainage preparations are not obstructed and that screw fixings do not penetrate these areas.

When fitting the frame to the subcill silicone sealant must be gunned as shown alongside to ensure that a watertight joint is created on the inside of the frame.

The securing of the frame to the sub-cill should be carried out as shown alongside, using suitable fixings

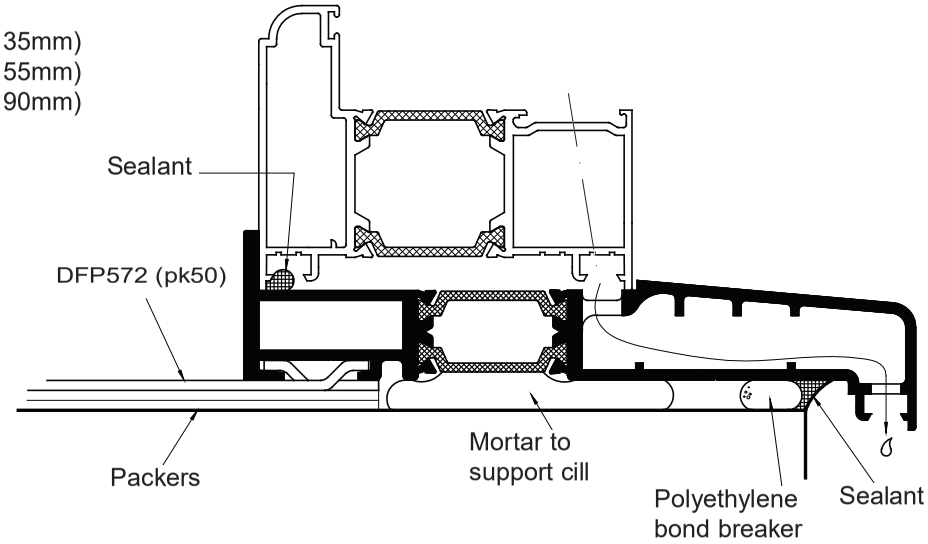
Apply silicone sealant or small gap sealant to each end cap and push them firmly into position.





DFP200-DFP201 end cap for DF703 (135mm)
DFP206-DFP207 end cap for DF704 (155mm)
DFP212-DFP213 end cap for DF705 (190mm)

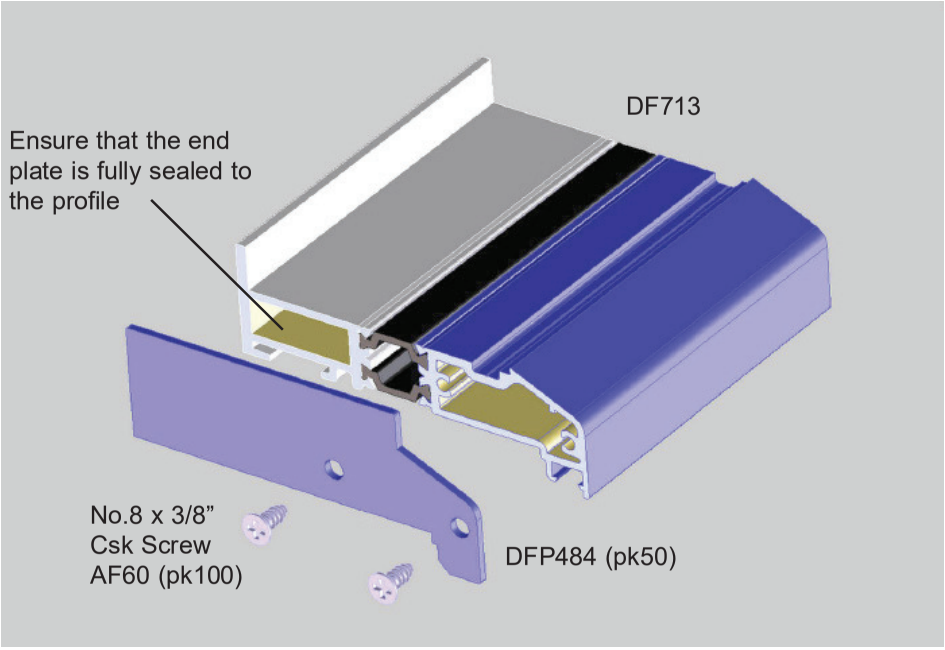
"V" groove to allow leg to be broken off to correspond with any extenders used



INSTALLATION

Assembling the 100mm Subcill

The DF713 subcill must have the DFP484 (pk50) aluminium end plate silicone sealed and screwed to each end of the profile. Care must be take to ensure that the end of the subcill is fully sealed to the plate to prevent any water that enters the subcill penetrating to the structure. Note also that these items are always supplied in mill. The DFP484 (pk50) should be secured using 2 off No.8 x 3/8" Csk screws.



Assembling Subcill Corner Joints

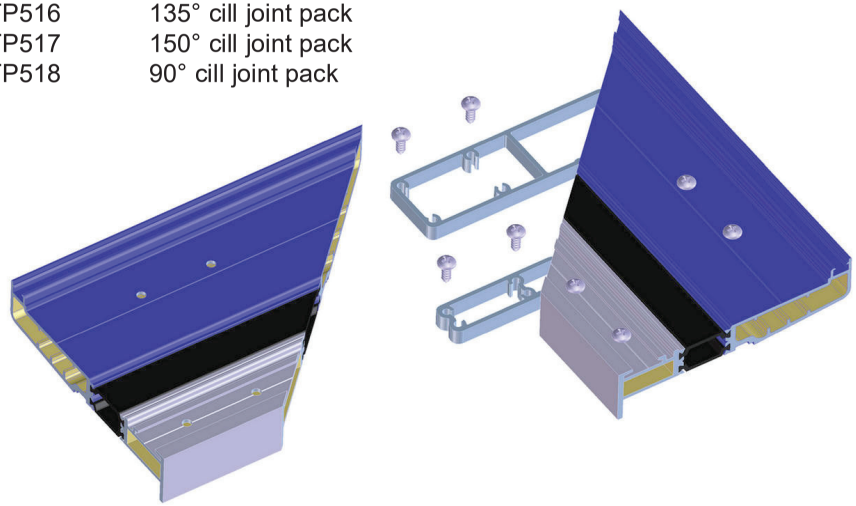
All joints must be sealed with silicone sealant. Sealing over the joint again after assembly in the area covered by the framework is recommended. Only clean sealant off of surfaces that will be visible.

Seal along the mitred ends of the subcill prior to assembly, then assemble with cill joint cleat and screws.

Best results for corner jointing is to start all 8 screws, then before final tightening of the screws apply sealant under the heads.

This detail is applicable to 90°, 135° & 150° corners, by using the correct cill joint pack, 90° corner shown.

DFP516	135° cill joint pack
DFP517	150° cill joint pack
DFP518	90° cill joint pack



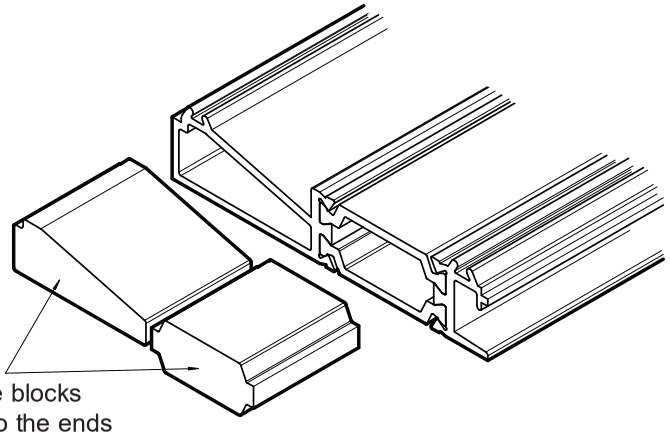
Fitting of Drainage Tray

Drainage paths through the drainage tray are as shown opposite, care must be taken to ensure that they do not become blocked when fitting.

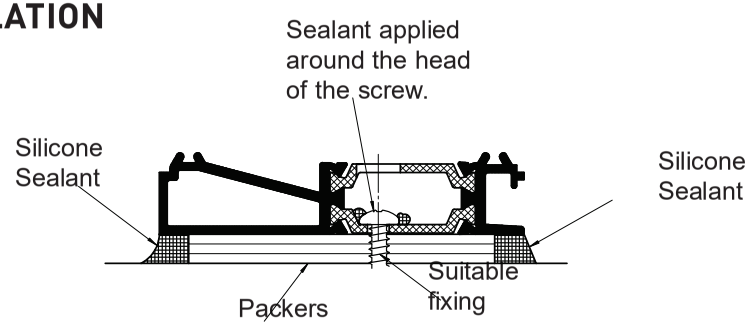
The drainage tray must be secured to the structure as shown, using suitable fixings, and packed as necessary to ensure it is level.

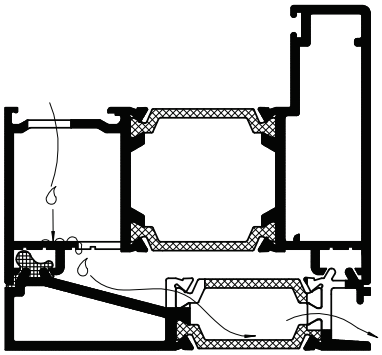
The drainage tray must then be silicone sealed to the structure along its length and across its ends. Take care to ensure that the portion of the drainage tray that adjoins the jambs of the structure are adequately sealed, to prevent water running off of the end of the drainage tray and into the building.

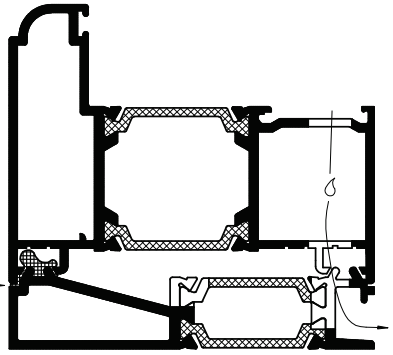
When fitting the frame to the drainage tray silicone sealant must be gunned as shown alongside to ensure that a watertight joint is created on the inside of the frame.



Plastazote blocks sealed into the ends of the drainage tray from DFP286 (pack of 50 pairs)







INSTALLATION

Fitting Frame To Aperture

Prior to installing the frame, the opening should be checked to ensure that it is free of debris, and that any projecting brickwork has been trimmed back. Any damaged damp proof membranes should be replaced or additional membranes incorporated. The frame should be packed to ensure that it is plumb and square within the opening. Ideally the frame should be bedded on mortar.

The frame can then be positioned in the opening and held square by packing at the very corners of the frame, taking care not to damage or deform the door profiles. To check for squareness, measure the diagonals from corner to corner, these diagonal dimensions should not differ by more than 1 or 2mm, if they do, adjust the packing until the frame is square within the opening.

The vertical plumbness of the frame can be checked by using a spirit level on the jambs. In replacement situations, the correct position of the frame might not align with the original. This may require some remedial work to make good the plaster reveal around the frame on the inside as well as any render that is present on the outside.

Fixing of Frames - Screw Fixing

The fixing points can be counter bored to recess the screw in the polyamide cavity. The hole can then be plugged with a DFP267 (pk1000) cap.

There should be a fixing within 150mm of each corner and then at no more than 600mm intervals around the frame, with the exception of hinge jambs where a fixing must occur within 50mm of each hinge. Packing will be required at the fixing points to prevent distortion of the frame along with DFP883 (pk20) outerframe brace (see detail).

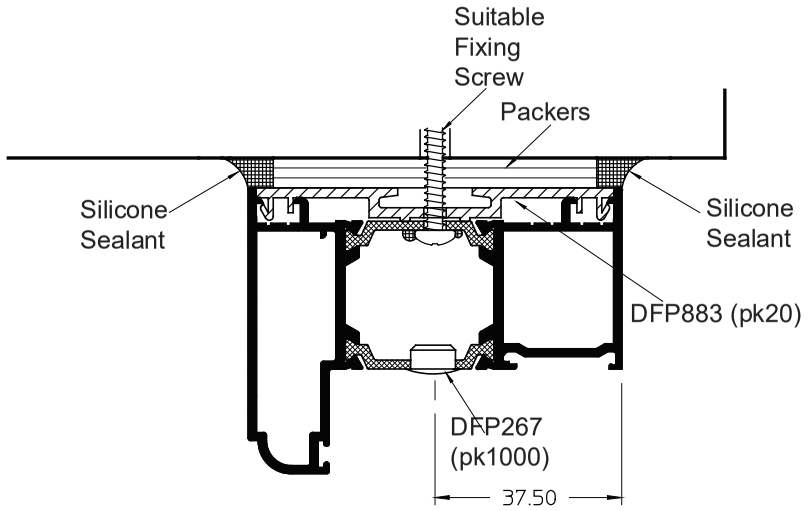
When driving home the fixing screws take care that they are not over tightened and the frame damaged. Drilled holes in the frame should be silicone sealed if there is a possibility of moisture penetrating around the screw.

Sealing of Outerframe

The recommended sealant for the exterior is Low Modulus Neutral Cure Silicone Sealant. Backing foam or alternatively a flipper seal (A3004), can be fitted around the outerframe to give the recommended joint sizes specified by the sealant manufacture.

The internal sealing, if no plasterwork is necessary, can be done with Acrylic sealants "caulking" that can be tooled if required and easily decorated at a later date.

A range of colour matched moulding trims is also available for both inside and outside applications.



Hinge Assembly

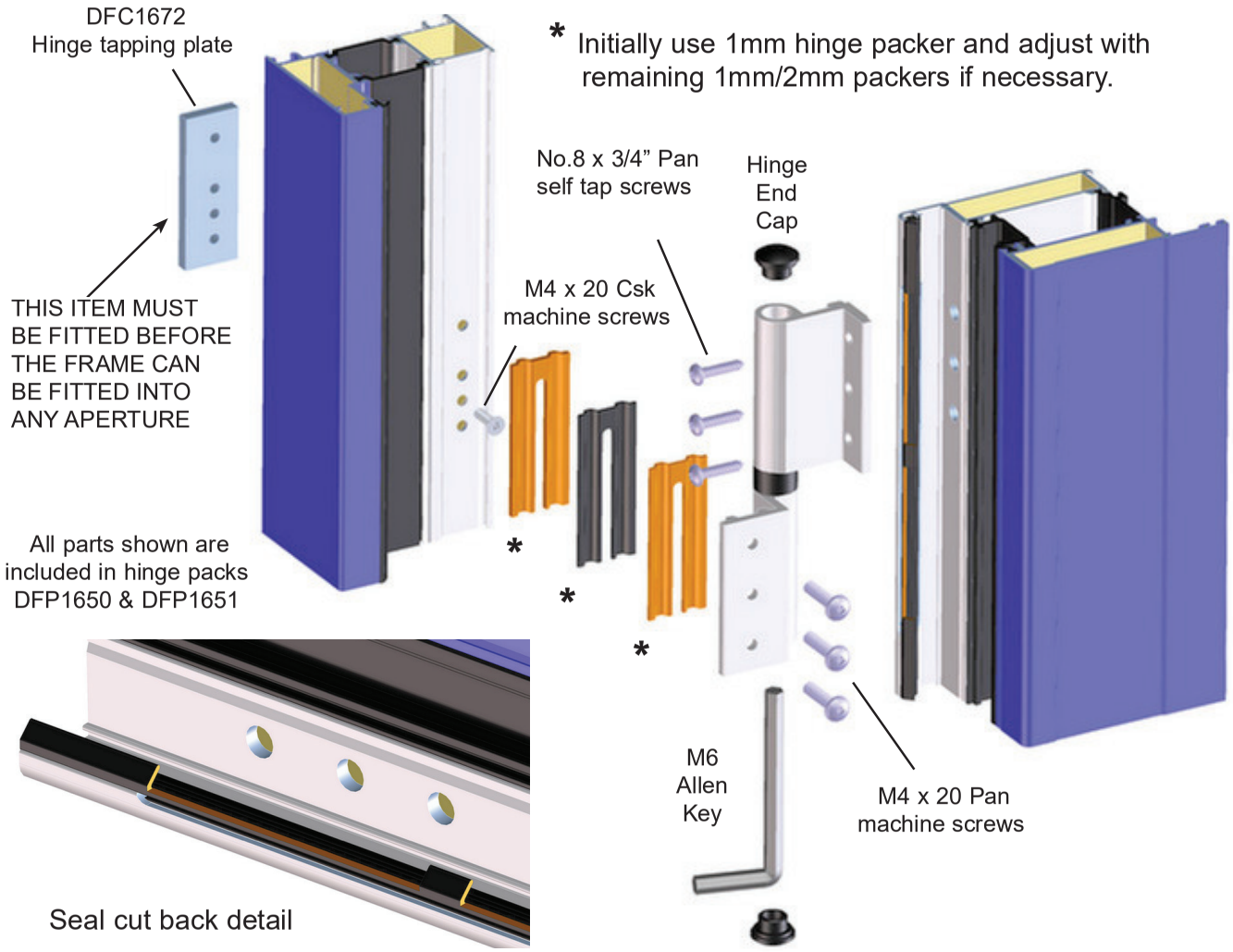
Note where the hinges are fitted, DFC1103 flipper seal is cut back flush with the back of the seal, but a 10mm portion is left untouched at the centre between both hinge halves (see illustration). Use super glue to hold the seal in place at the hinge positions.

Before the frame can be fitted into any aperture, **DFC1672 hinge tapping plate must be secured in place with an M4 x 20 csk machine screw.**

The hinges are secured into the pre-prepared cutouts on the hang stile of the door leaf using three No.8 x 3/4" pan head screws. When the hinges have been attached to the leaf, attach the leaf to the outerframe using three M4 x 20mm pan head machine screws per hinge into the pre-fitted hinge tapping plate in the hinge jamb. A 1mm packer is positioned between the hinge and the outerframe initially.

Once the door is hung on the outerframe, close the leaf and check the leaf to frame overlaps and if necessary add or remove the supplied hinge packers. Once you are satisfied with the door leaf position, finish off securing the hinges to the outerframe.

The head/cill overlap can now be adjusted by use of an M6 Allen key inserted into the end of the bottom hinge. After final adjustment, fit both end caps to the hinges.



Seal cut back detail

INSTALLATION

Hinge Protector Assembly

Hinge protector DFP1649 can only be used on doors fitted with DF1650 & DF1651 hinges.

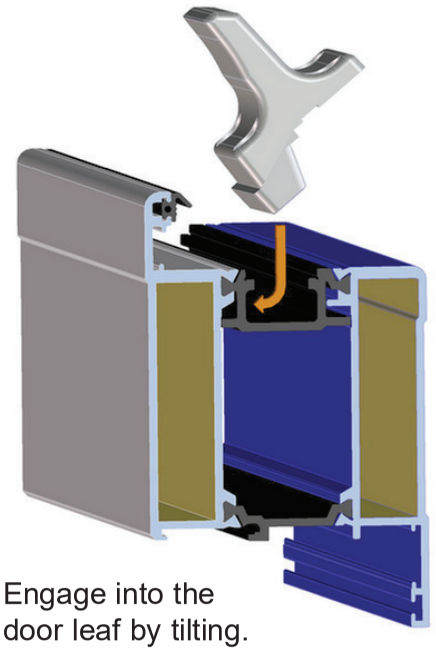
The hinge protector is an optional extra, but its use is mandatory for PAS 23/24 type doors.

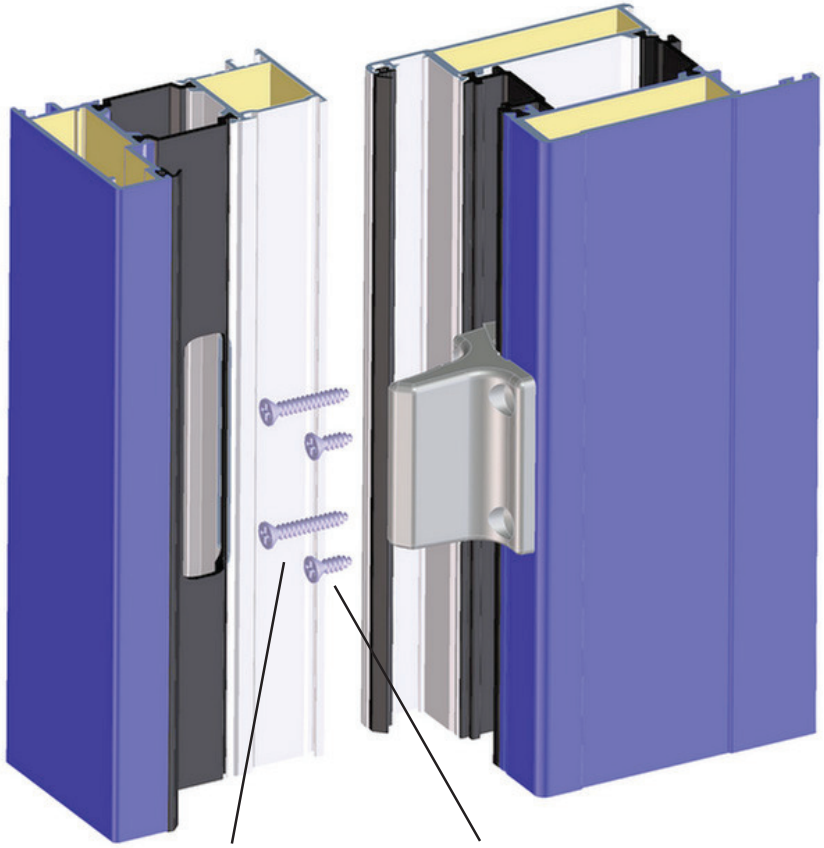
Once the door leaf has been hung and adjusted, engage the hinge protector into the door leaf, and align centrally with the 70 x 15mm machined cutout in the outerframe. Then spot through the two external hinge protector fixing holes with a 3.2 dia drill into the aluminium section.

Now secure in place with two No.8 x 1/2" Csk self tap screws into the aluminium section of the door leaf, and 4.3mm Csk self tap polyamide screws*

Repeat this operation at every machined cutout in the outerframe.

(*N.B. - When using polyamide screws, do not drill pilot holes and take care not to strip the threads when tightening).





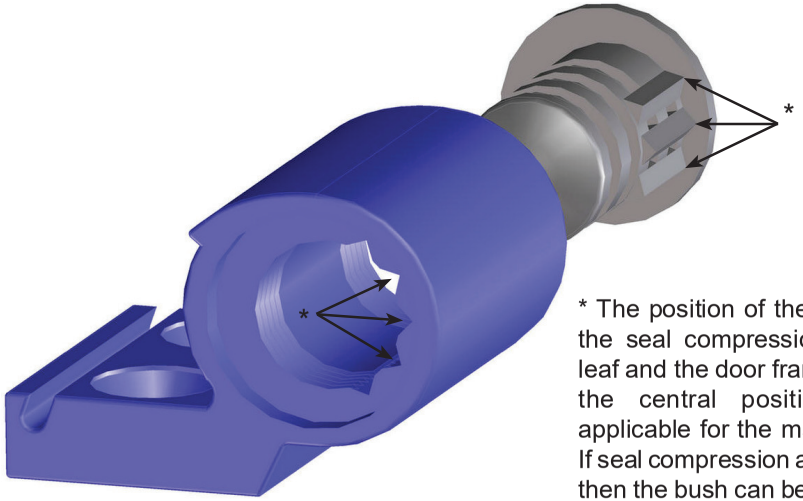
Fitting Of Leafs, Anti Finger Trap Hinges DFP789

The hinge must be pre-fitted prior to frame corner jointing.

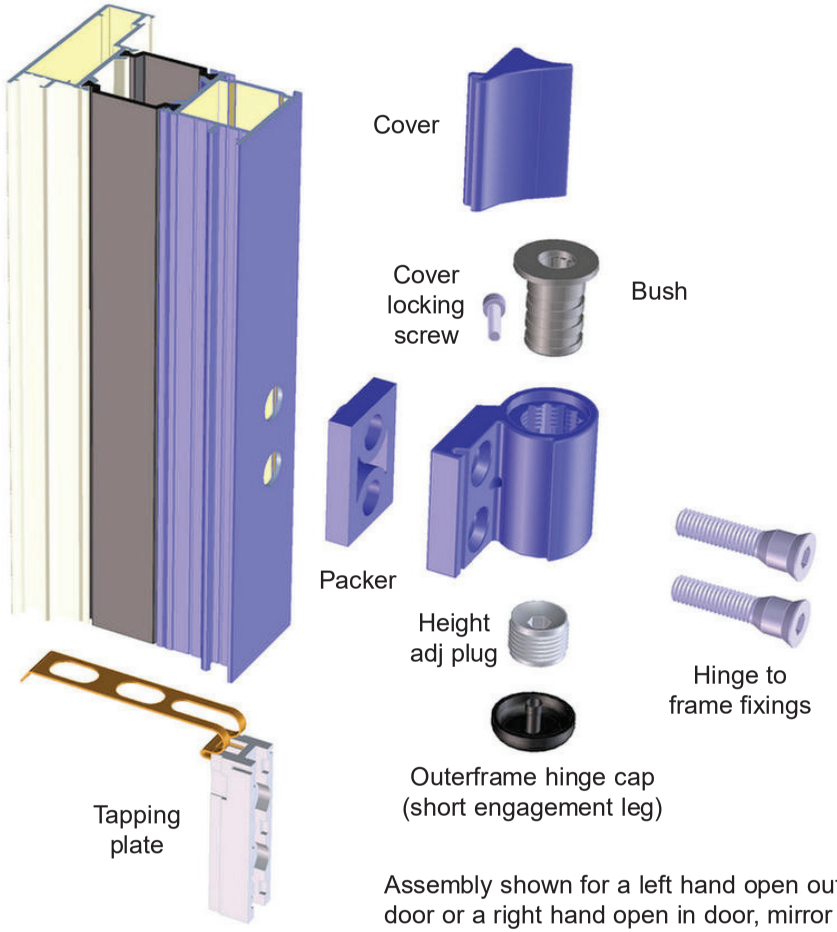
Slide the retaining spring onto the tapping plate, then insert the tapping plate into the jamb and align up with the hinge fixing holes. Position the packer under the hinge and fit the hinge onto the outerframe, with the long machine screws supplied.

Insert the bush into the hinge taking note that the three splines are to align up with the central three splines in the hinge (see below). Now screw in the height adjustment plug into the underside of the hinge half until it just touches the bush.

The cover can now be be fitted and fixed into place with the cover locking screw. The hinge cap is fitted after the door leaf as been hung and the hinge adjusted for correct positioning.



* The position of the three splines dictate the seal compression between the door leaf and the door frame. In most instances the central position shown will be applicable for the majority of installations. If seal compression adjustment is required, then the bush can be rotated by one spline to the left or right increasing or decreasing seal compression by 0.5mm.



Assembly shown for a left hand open out door or a right hand open in door, mirror assembly for opposite handed door.

INSTALLATION

Fitting Of Leafs, Anti Finger Trap Hinges - Cont

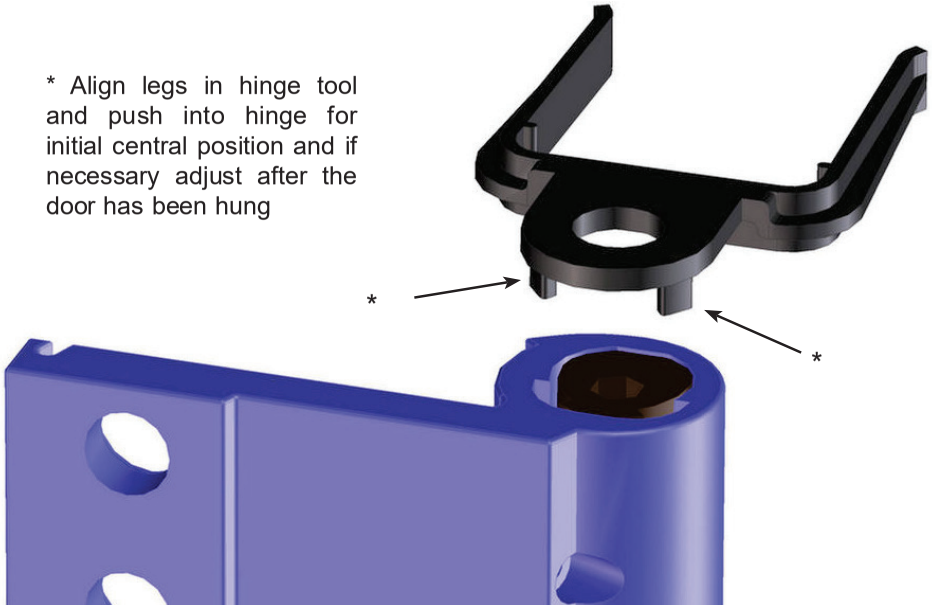
The hinge must be pre-fitted prior to door leaf corner jointing.

Insert the tapping plate into the stile and align up with the hinge fixing holes, note that the retaining spring cannot be used but an M6 threaded rod can be screwed into the end of the tapping plate to help with positioning. Fit the hinge onto the stile with the short machine screws supplied.

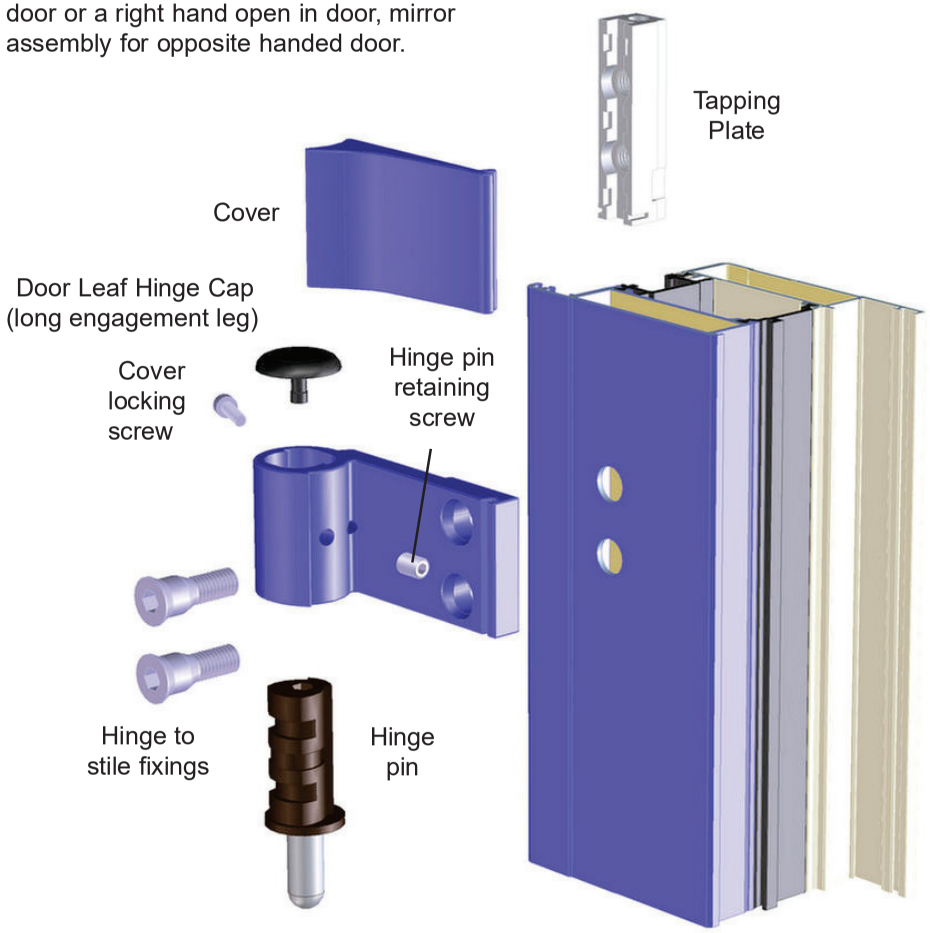
Insert the hinge pin into the hinge taking note of alignment (see below). Now lock the pin in place with the pin retaining screw.

The cover and hinge cap are fitted after the door leaf as been hung and the hinge adjusted for correct positioning.

* Align legs in hinge tool and push into hinge for initial central position and if necessary adjust after the door has been hung



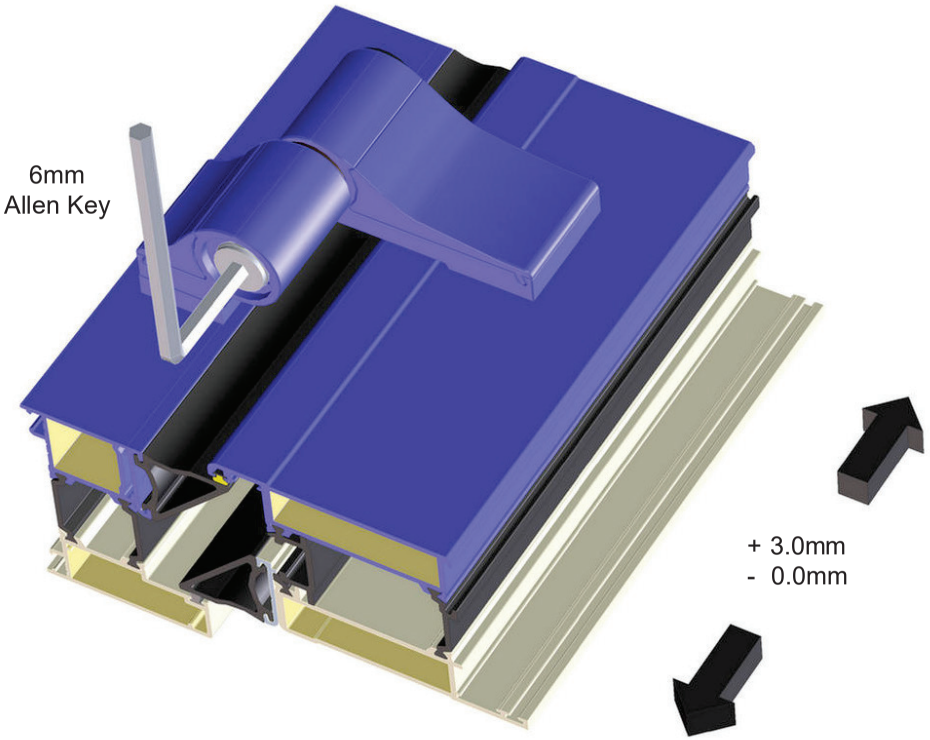
Assembly shown for a left hand open out door or a right hand open in door, mirror assembly for opposite handed door.



Fitting Of Leafs, Anti Finger Trap Hinges - Cont

Lower the door leaf onto the outerframe, engaging the hinge pins with the hinge bushes. Check door alignment and adjust hinge appropriately.

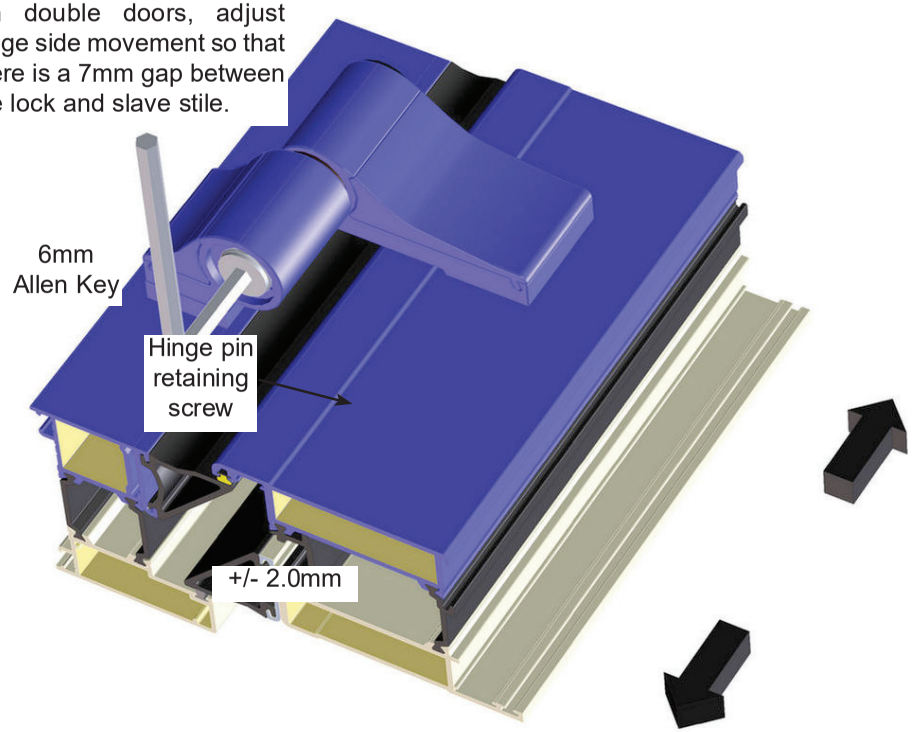
To adjust the height of the door leaf, insert a 6mm Allen key into the height adjustment plug and make the desired adjustment.



Side to side adjustment is available by the use of a 6mm Allen key inserted into the top of the hinge pin. Note, loosen the hinge pin retaining screw before adjustment is made and then re-tighten.

After satisfactory hinge adjustment has been made, the remaining caps and cover can be fitted. Continue with the installation as per the product manual.

On double doors, adjust hinge side movement so that there is a 7mm gap between the lock and slave stile.

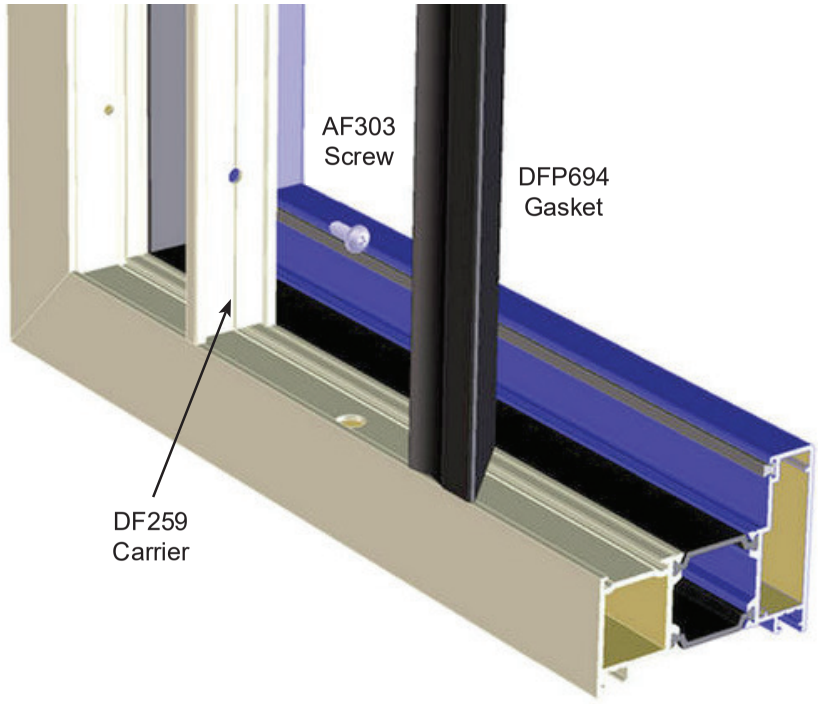


INSTALLATION

Fitting Of DF259 AFT Gasket Carrier To Frame

After the door outerframe has been corner jointed, DF259 can be fitted to the hang jamb with (AF303) No.8 x 1/2" pan head self tap screws, spot through fixings with a 3.5 dia drill. Fully seal with small joint sealant during assembly, then clean off any excess sealant after fitting.

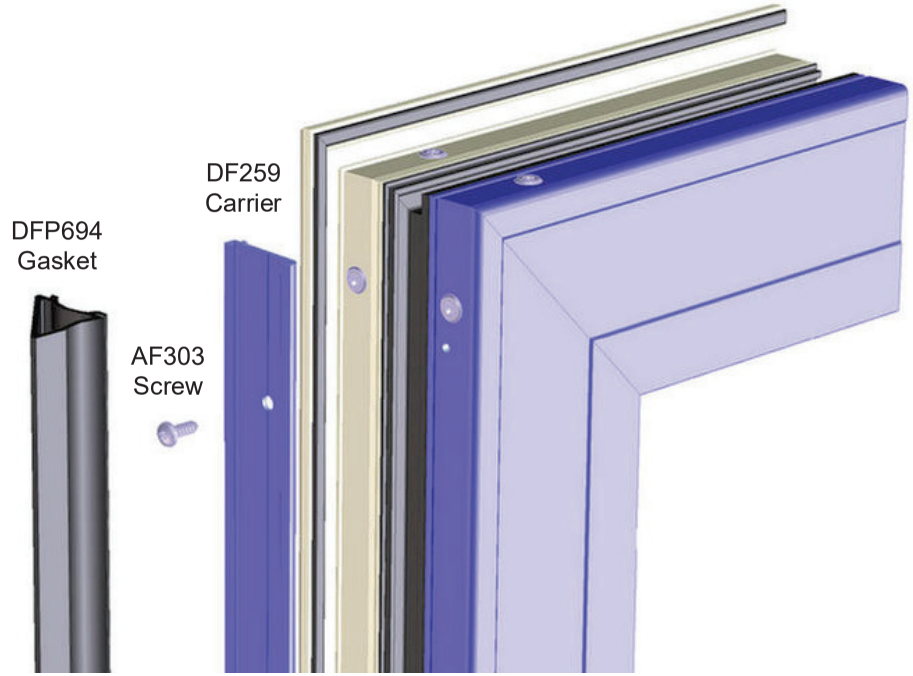
DFP694 Anti Finger Trap gasket can now be fitted, the gasket is to run full length and unbroken along DF259 gasket carrier. Bond into position using GFP900 one part high modulus polythene elastomeric sealant, then clean off any sealant after fitting.



Fitting Of DF259 AFT Gasket Carrier To Stile

After the door leaf has been corner jointed, DF259 can be fitted to the hang stile with No.8 x 1/2" pan head self tap screws, spot through fixings with a 3.5 dia drill. Fully seal with small joint sealant during assembly, then clean off any excess sealant after fitting. Note that the end of the seal carrier must be flush with the top of the door leaf profile.

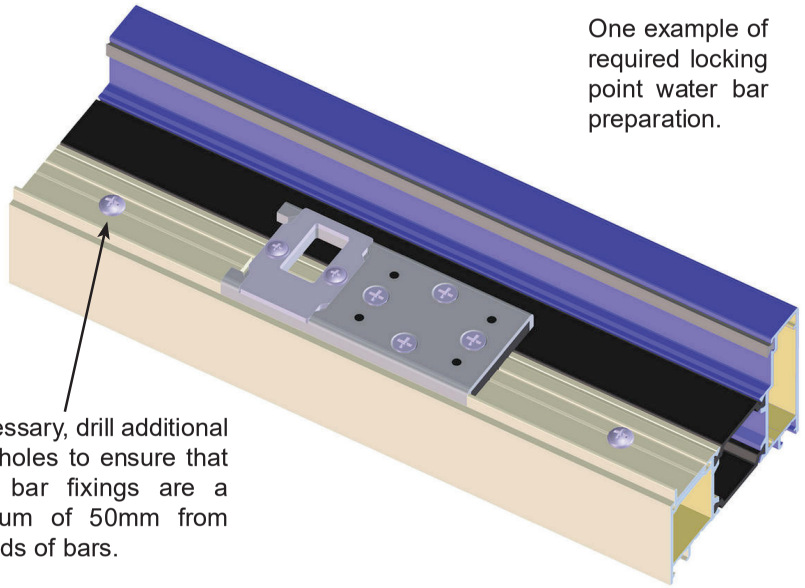
DFP694 Anti Finger Trap gasket can now be fitted, the gasket is to run full length and unbroken along DF259 gasket carrier. Bond into position using GFP900 one part high modulus polythene elastomeric sealant, then clean off any sealant after fitting.



Fitting Of DF126 Water Bar

The water bar is fitted to the cill of open in Anti Finger Trap doors.

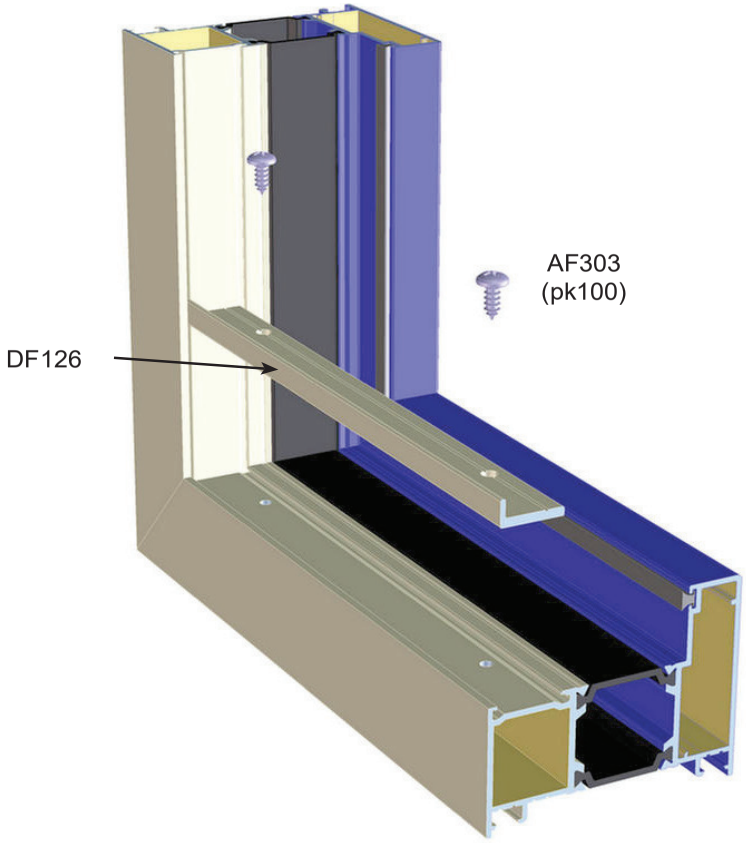
This item is pre drilled with clearance holes for the fixing screws. Some preparation will be required to allow for clearance around the locking points in the cill, and in some cases the water bar might have to be cut into two and butt jointed against the locking point keep. These alterations are to be performed by the installer once all the locking gear has been fitted and fully adjusted for correct operation. Please bear in mind that where possible the upstand in the water bar should run full length between the jambs.



One example of required locking point water bar preparation.

If necessary, drill additional fixing holes to ensure that water bar fixings are a minimum of 50mm from the ends of bars.

Position the water bar onto the cill and drill 3.5 dia fixing holes through the pre drilled clearance fixing holes into the cill. Remove the water bar, apply silicone sealant along the cill bead area, and then reposition the water bar. Now secure in place with No. 8 x 1/2" pan head self tap screws and seal the ends of the water bar again with silicone sealant.



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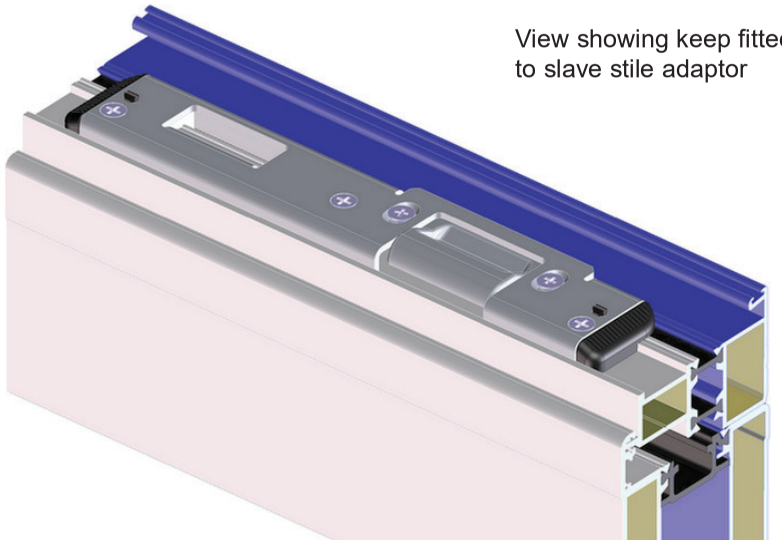
Fitting Of Centre Keep

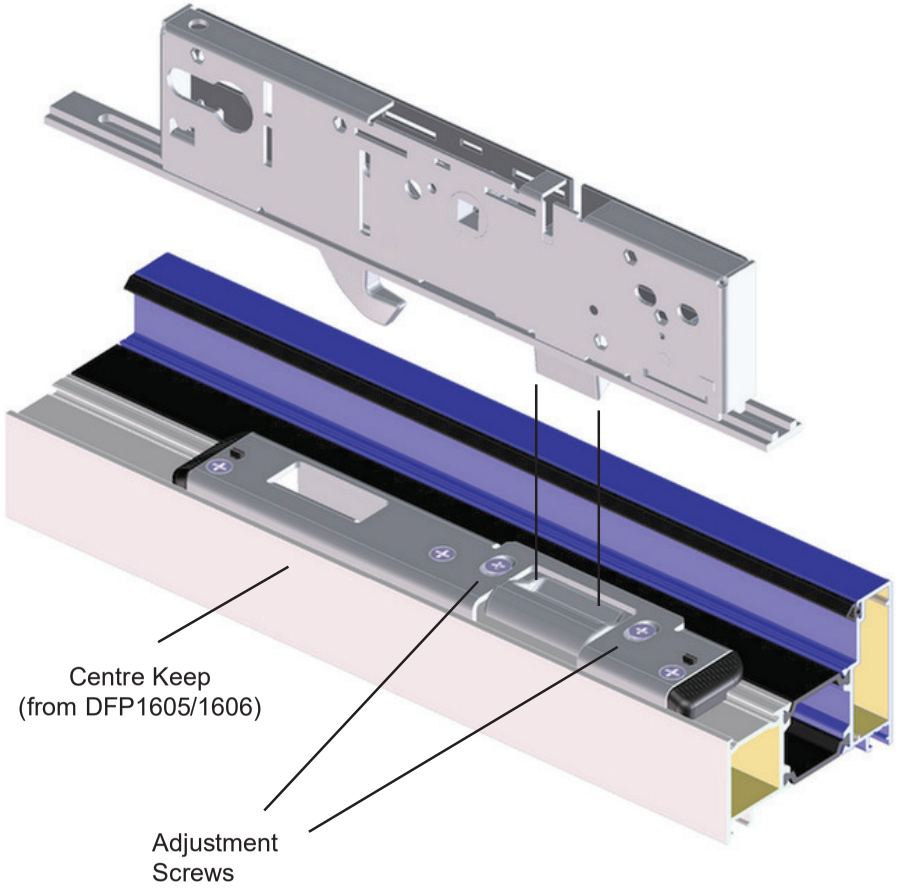
Before fitting the centre keep, mark the position of the latch on the jamb and position the keep so that the latch engagement area aligns centrally with the latch. Offer the keep onto the section, and drill 3.5 dia pilot holes through the keep fixing holes and secure the keep in place with three No. 8 x 3/4" self tap screws (from DFP1605/1606).

Once the keep has been secured, adjust latch until satisfactory latching force is obtained and tighten off the adjustment screws. The operation of the bolts should now be checked by closing the leaf and throwing the bolts with the handle.

N.B. it may be necessary to slacken the keep centre fixing to enable this adjustment.



View showing keep fitted to slave stile adaptor



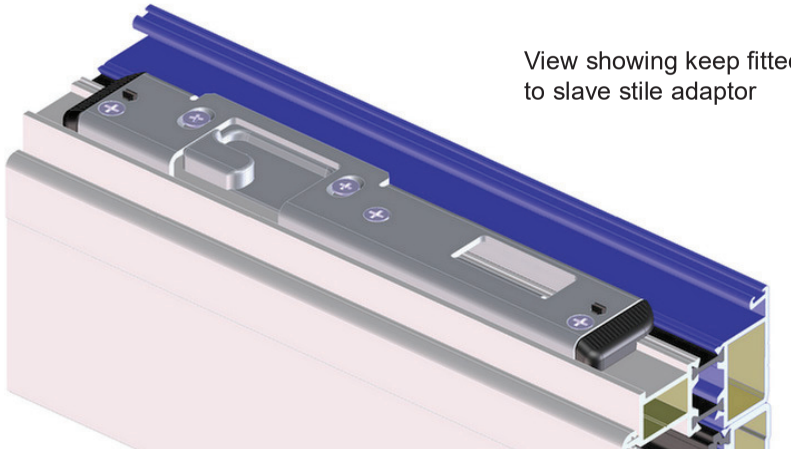
INSTALLATION

Fitting Of Roller Keep

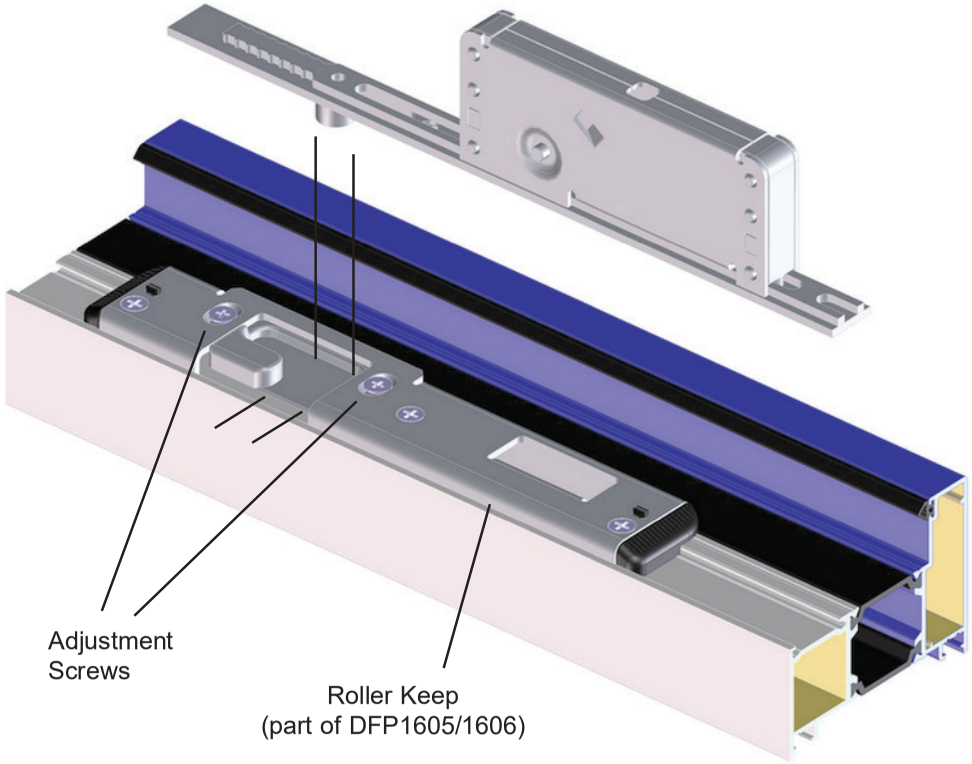
Before fitting the roller keep, with the lock in the unlocked position. Mark the position of the roller on the jamb and position the keep so that the roller engagement area aligns centrally with the roller. Now drill 3.5 dia pilot holes through the keep fixing holes and secure the keep in place with three No. 8 x 3/4" self tap screws (Part of DFP1605/1606).

Once the keep has been secured, the operation of the lock should now be checked by closing the leaf and throwing the hook and roller with the handle. If the compression is found to be too fierce, slacken the adjusting screw on the roller keep and move it slightly away from the rebate and resecure. Repeat this process until a satisfactory closing force has been achieved. Likewise if it is felt the compression is inadequate then loosen the screws and move the adjustable portion towards the rebate, resecure the plate then retry the operation, again repeating as necessary.

N.B. it may be necessary to slacken the keep centre fixing to enable this adjustment.



View showing keep fitted to slave stile adaptor



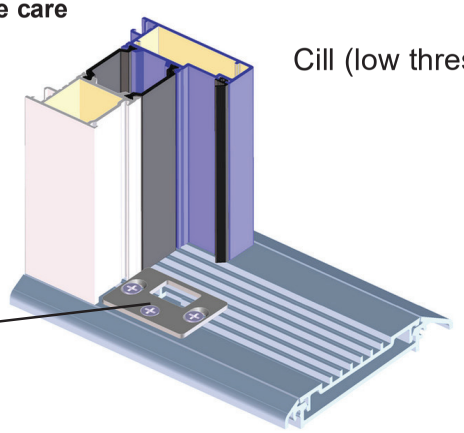
Single Door - Additional Shootbolts (DFP1612/14/31)

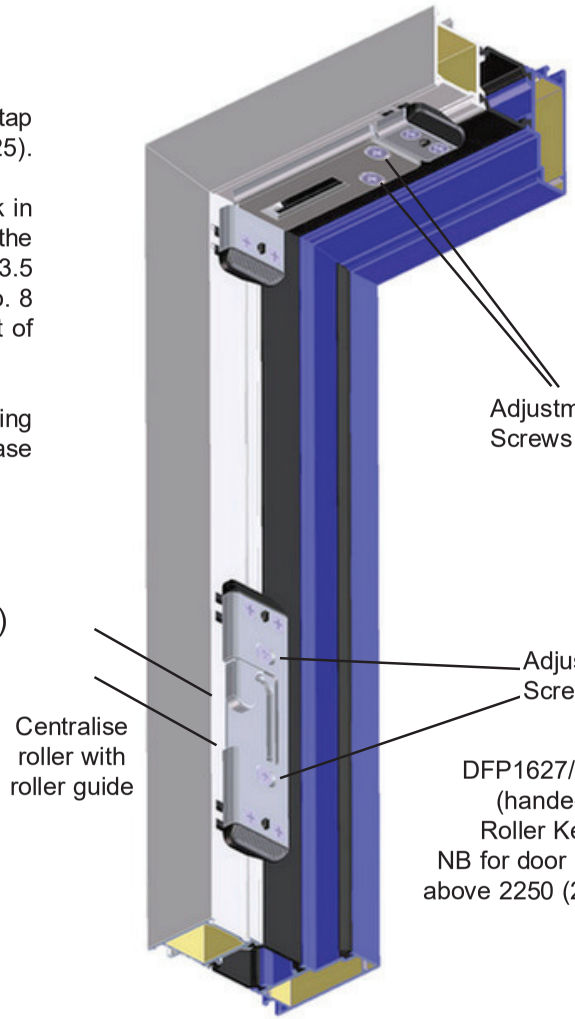
Position top keep into the corner of the door and fix with two No. 8 x 3/4" Csk self tap screws and two 4.3 x 25mm polyamide self tap screws* (part of pack DFP1623/1625).

When using DFP1614 top shootbolt, fit DFP1627/1629 roller keep. With the lock in the unlocked position. Mark the position of the roller on the jamb and position the keep so that the roller engagement area aligns centrally with the roller. Now drill 3.5 dia holes through the keep fixing holes and secure the keep in place with two No. 8 x 3/4" Csk self tap screws and two 4.3 x 25mm polyamide self tap screws* (part of pack DFP1627/1629).

The operation of the lock should now be checked by closing the leaf and throwing the bolts with the handle. Adjust top plate and roller guide to increase/decrease compression until a satisfactory closing force has been achieved.

*** (N.B. - When using polyamide screws, do not drill pilot holes and take care not to strip the threads when tightening).**





View showing keep fitted to slave stile adaptor

INSTALLATION

Shootbolt Keep Arrangements And Fitting.

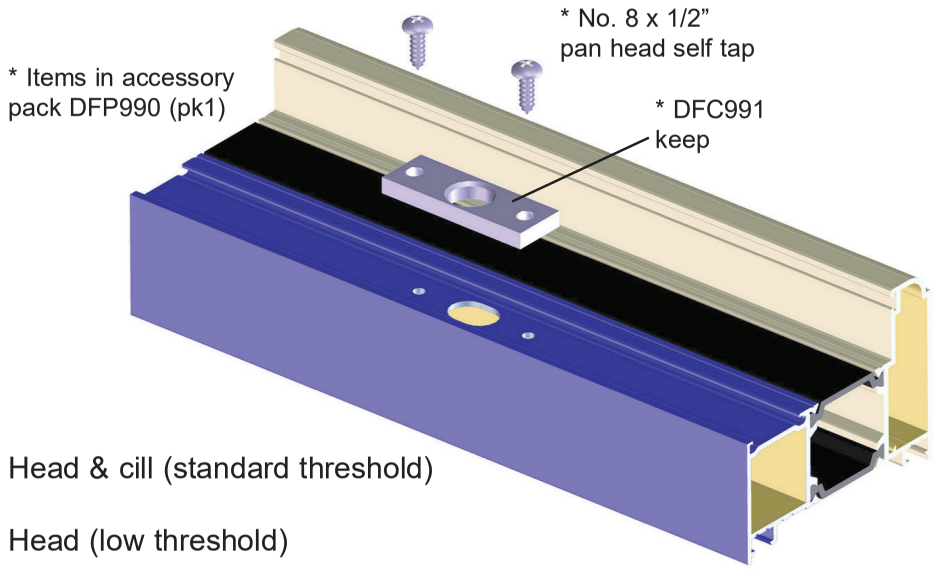
Depending on the configuration of door, and hardware choices made, shootbolt keeps will need to be selected and fitted in accordance with the following instructions.

Double Door - Slave Leaf Standard Shootbolt Lock (DFP1666&1668) Only

The shootbolt clearance slots will already have been prepared. Before fitting the keeps, note that they have front to back adjustment (slotted fixing holes) but no side to side adjustment. Therefore mark the centre of the shootbolt on the head and cill, then position the keeps centrally over the mark (side to side alignment), and centrally over the slots (front to back alignment). Now using the keep as a guide spot through the centre of the slotted holes in the keep with a 3.5 dia drill.

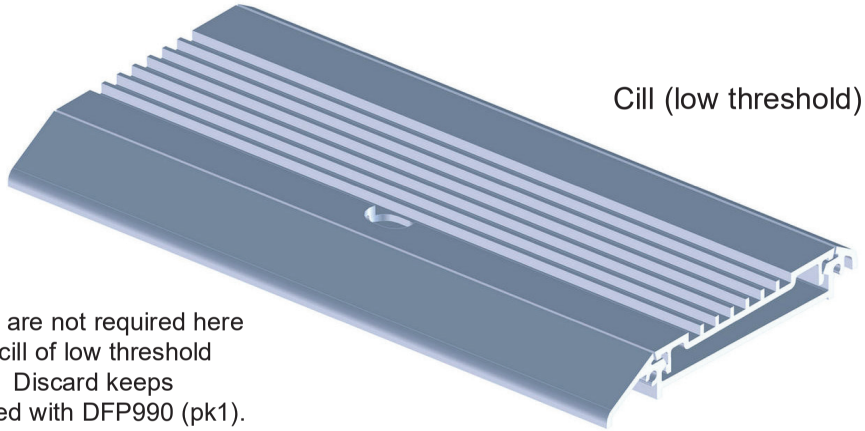
Now use two No. 8 x 1/2" pan head self tap screws to secure each keep into position. The operation of the bolts should now be checked by closing the leaf and throwing the bolts. If the compression is found to be too fierce when trying to throw the bolts, slacken the fixing screws on the keep and move it slightly away from the rebate and resecure. Repeat this process until a satisfactory closing force has been achieved. Likewise if it is felt the compression is inadequate then loosen the screws and move the keep towards the rebate, resecure the keep then retry the operation. Again repeating as necessary.

Note:- keep is only to be fitted at the head when assembling low threshold doors, where shootbolt throws into prep located in the low threshold section.



Head & cill (standard threshold)

Head (low threshold)



Cill (low threshold)

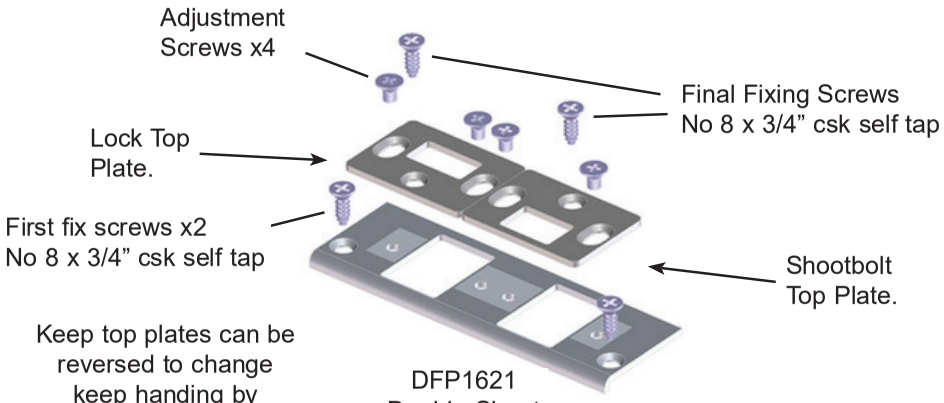
Keeps are not required here in the cill of low threshold doors. Discard keeps supplied with DFP990 (pk1).

Double Door - Slave Leaf Standard Shootbolt Lock (DFP1666&1668), Master Leaf With Additional Shootbolts (DFP1612/14/31)

Before fitting double door shootbolt keep, check top plate handing as shown and if necessary, reverse the top plates. Align the keep to the preps in the outerframe and fit with two No. 8 x 5/8" Csk self tap screws (part of pack DFP1621).

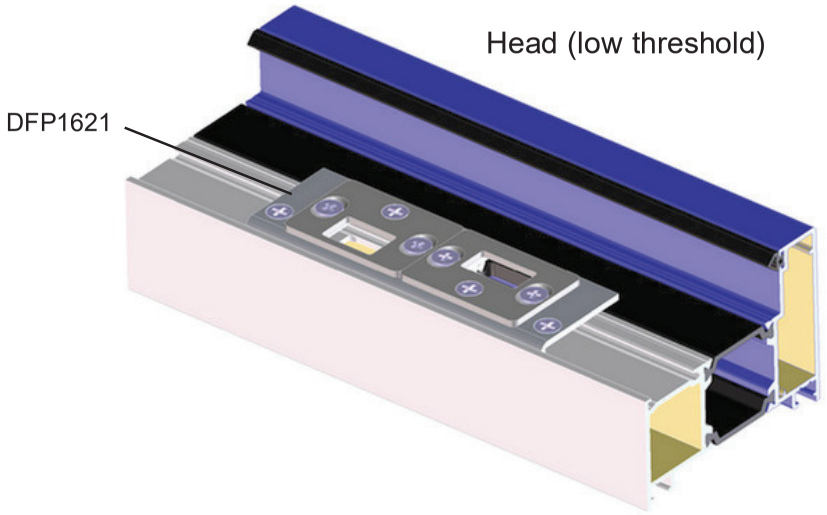
The operation of the bolts should now be checked by closing the leaf and throwing the bolts with the handle. Adjust top plates to increase/decrease compression until a satisfactory closing force has been achieved. Drill 3.5 dia final fixing holes through the keep (see illustration opposite) and secure with two No. 8 self tap screws (part of pack DFP162).

Note:- these keeps are not used on the low threshold cill, where the keep from LT Shootbolt Extension Pack DFP1631 is used, as shown opposite.

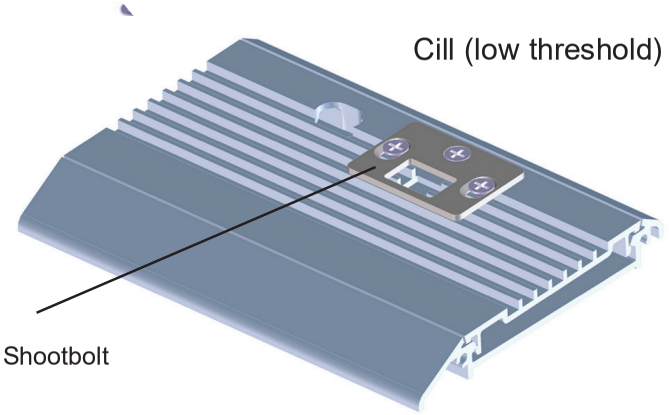


Head & cill (standard threshold)

Head (low threshold)



Cill (low threshold)



Part of DFP1631 LT Shootbolt Extension Pack

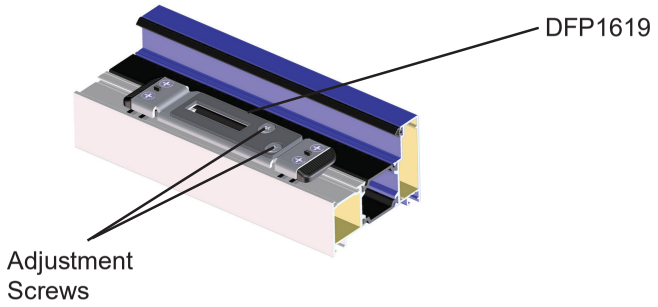
INSTALLATION

Double Door - Alternative Slave Leaf Lock (DFC1602/1603) Only

Align the keep to the preps in the outerframe and fit with two No. 8 x 3/4" Csk self tap screws and two 4.3 x 25mm polyamide self tap screws* (part of pack DFP1619).

The operation of the bolts should now be checked by closing the leaf and throwing the bolts with the handle. Adjust top plate to increase/decrease compression until a satisfactory closing force has been achieved.

Note:- these keeps are only to be fitted at the head when assembling low threshold doors, where keep from DFP1631 is utilised as shown .

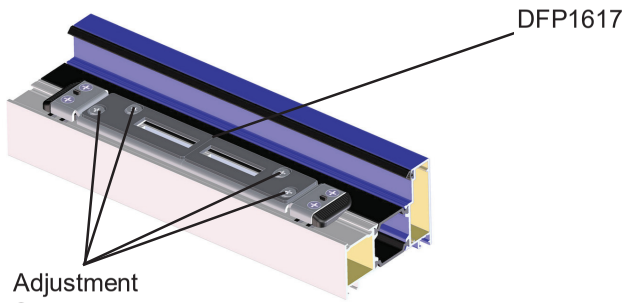


Double Door - Alternative Slave Leaf Lock (DFC1602/1603) and Master Leaf with Additional Shootbolts (DFP1612/14/31)

Align the keep to the preps in the outerframe and fit with two No. 8 x 3/4" Csk self tap screws and two 4.3 x 25mm polyamide self tap screws* (part of pack DFP1617).

The operation of the bolts should now be checked by closing the leaf and throwing the bolts with the handle. Adjust top plate to increase/decrease compression until a satisfactory closing force has been achieved.

Note:- these keeps are only to be fitted at the head when assembling low threshold doors, where keeps from DFP1631 are utilised as shown .



(N.B.for Slave leaf lock only, only one keep required)

*** (N.B. - When using polyamide screws, do not drill pilot holes and take care not to strip the threads when tightening).**

Glazing - Glaze In Leaves

Before proceeding, check that the retained gasket W274 in the top rail is cut back by 25mm at each end, positioned 25mm in from the corners. This will allow air into the inner cavity to pressure equalise the door and reduce any water ingress into this cavity.

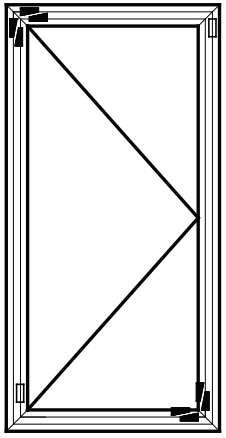
Position the adjustable glazing packers 202/481, and any resilient glass packers into the frame. A small amount of silicone sealant may be used to retain these in position, however care must be exercised to ensure that the sealant does not obstruct any of the drainage paths.

Once the glazing packers have been positioned then the glass should be carefully offered in, and the adjustable glazing packers tightened to retain the glass centrally within the opening. Care should be exercised so that the packers are not over tightened and the frame distorted. The position and type of packer is shown on the illustration alongside.

Once the glass is positioned correctly within the door leaf, with the door leaf having been checked for squareness, clip the beads into position. Once all beads have been fitted a plastic wedge should be pressed between the glass and the glazing rebate on all sides to force the glass forward. This will ease the glazing process as the outer gasket will be slightly compressed.

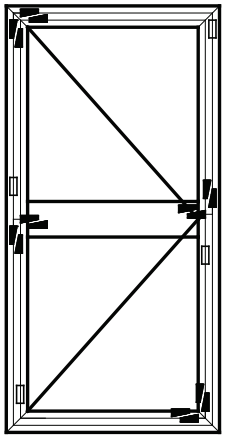
The Inner gasket DFC266 must now be fitted, this gasket runs in one piece across the head and the cill with the gasket in the jambs butting to the top of the horizontals. A small amount of sealant must be applied to these butted areas to ensure a good airtight joint is achieved. If the gasket proves difficult to fit it may be lubricated with warm soapy water.

Alternatively, DFC266 may be replaced with DFC879 (11mm) wedge gasket. This gasket is fitted in exactly the same manner as DFC266 glazing infill.



Adjustable Packer

Resilient Packer



INSTALLATION

Glazing - Glaze Out Leaves

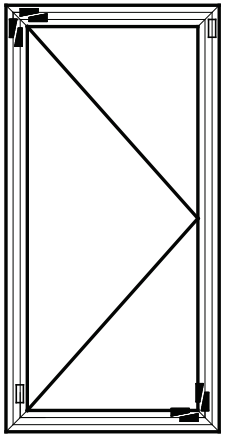
Position the adjustable glazing packers 202/481, and any resilient glass packers into the frame. A small amount of silicone sealant may be used to retain these in position, however care must be exercised to ensure that the sealant does not obstruct any of the drainage paths.

Once the glazing packers have been positioned then the glass should be carefully offered in, and the adjustable glazing packers tightened to retain the glass centrally within the opening. Care should be exercised so that the packers are not over tightened and the frame distorted. The position and type of packer is shown on the illustration alongside.

Once the glass is positioned correctly within the door leaf, with the door leaf having been checked for squareness, W274 retained gasket is fitted to the beads and trimmed to length. The beads are then clipped into position. To provide pressure equalisation, it will be necessary at this stage to cut back retained gasket W274 in the top beads of any pane by 25mm at each end, positioned 25mm in from the corners. Once all beads have been fitted a plastic wedge should be pressed between the glass and the glazing rebate on all sides to force the glass forward. This will ease the glazing process as the outer gasket will be slightly compressed.

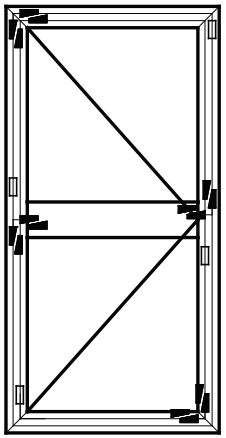
The Inner gasket DFC266 must now be fitted, this gasket runs in one piece across the head and the cill with the gasket in the jambs butting to the top of the horizontals. A small amount of sealant must be applied to these butted areas to ensure a good airtight joint is achieved. If the gasket proves difficult to fit it may be lubricated with warm soapy water.

Alternatively, DFC266 may be replaced with DFC879 wedge gasket. This gasket is fitted in exactly the same manner as DFC266 glazing infill.



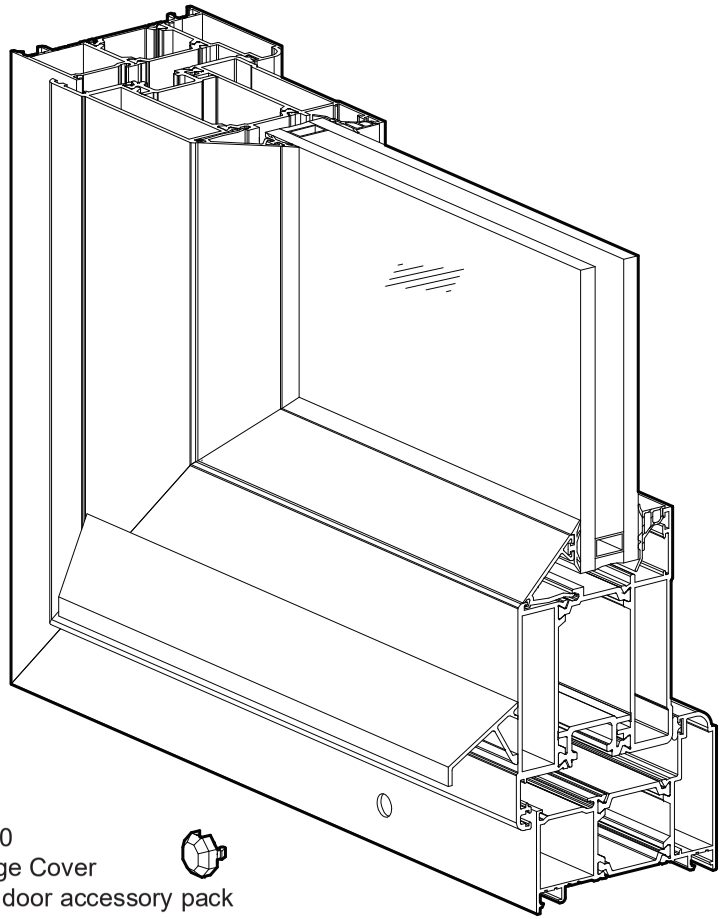
Adjustable Packer

Resilient Packer



Finishing Off

Depending on door configuration, the drainage covers can now be glued into drainage holes in the cill.



DFC150
Drainage Cover
Part of door accessory pack

Sealing Check

A final check of the internal and external perimeter seals should be undertaken. Any weak spots that are identified should be rectified and tooled to a high visual finish. Any excess sealant must be cleaned off of the finished surfaces using appropriate cleaner.

Cleaning after installation

If excess sealant is to be cleaned off. Ensure that any solvent used will not damage any of the metal finishes, synthetic rubbers or plastics which may be present.

Warning

Take particular care if there is any cement or plaster on the aluminium. It is harmful to the metal finish and should be washed off while still wet. DO NOT RUB or particles of grit will permanently damage the metal or paint finish.

Routine cleaning

No aluminium finish is “Maintenance Free” and hence should be cleaned at regular intervals. See surface treatment suppliers literature/website for cleaning and maintenance requirements.

Maintenance

Periodic maintenance must be carried out on the locking gear as specified by Yale Security Products (uk) Ltd.

Note that in marine & environmentally corrosive environments, the maintenance procedures must be repeated more frequently (ideally twice the frequency as specified).