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300 SERIES TILT & TURN WINDOW

301 SERIES TILT & TURN DOOR

ADJUSTMENT GUIDE – CONCEALED HINGE CONFIGURATION



Window - Interior view



Door – Interior view

Introduction

Following installation, and if required thereafter, the hardware of Tilt & Turn windows and doors can be adjusted to achieve and maintain optimal performance, and air and water tightness.

Note: Adjustments to Cascadia's window and door hardware should only be performed by skilled and experience window installers or service providers, familiar with European style multi-point hardware.

Adjustments can be made to the window or door sash in all three dimensions: up/down, left/right, and inward/outward. Most adjustments are performed at the hinges. However, adjustments in the inward/outward direction, which affect the gasket tightness, are also performed at the individual lock points of the multi-point hardware. The following pages detail the methods for performing adjustments.

The range of possible adjustments may not be sufficient to compensate for some installation deficiencies. It is always recommended to correct any significant installation deficiency, rather than attempt to compensate for it with hardware adjustments. Hardware adjustments should only be used to optimise the performance and ease of operation of a correctly installed product.

Hardware Type

- NT-Designo, by Roto-Frank of America.

Required Tools

- 4mm Allen wrench (a.k.a. “#4 hex wrench” or “#4 Allen key”)

Summary of Adjustments

- Bottom hinge – 2 possible adjustments:
 - Up/down (entire sash)
 - Left/right (bottom of sash)
- Top hinge – 2 possible adjustments:
 - Left/right (top of sash)
 - Inward/outward (gasket compression at head of sash)
- Individual lock points (cams) of multi-point hardware around sash perimeter:
 - Inward/outward (gasket compression at area of cam)

Note: The bottom hinge is the only location where inward/outward adjustment (for gasket compression) is not possible. This adjustment is not necessary at this location. The bottom hinge design ensures consistent gasket compression at this corner. If gasket compression appears to be a concern at this location, the overall installation must be checked for plumb, square and level. A twisted installation is the only typical condition that could cause a gasket compression issue at the lower hinge corner.

Bottom Hinge

The bottom hinge allows for two possible adjustments:

- Up/down (entire sash)
- Left/right (bottom of sash)

Typically, these adjustments are used in combination to correct minor sash misalignment. Misalignment can be observed where the dimension between the edge of the daylight opening (in the sash) and the nearest edge of the frame (adjacent to the sash) is not consistent on all four sides of the sash. This condition may cause portions of the sash to scrape against the frame. Also, the operation of the hardware may be uneven or difficult. Perform the adjustments described below to correct misalignment. (Adjustments may also be required at the top hinge.)

Method

See following page for figures 1 – 3.

1. Open the sash (turn function) to allow access to the bottom hinge (figures 1 & 2).
2. Up/down: To adjust the vertical position of the entire sash, insert the #4 Allen wrench into the location shown in figure 3. Turn the wrench clockwise to raise the sash, and counter clockwise to lower the sash.
3. Left/right: To adjust the horizontal position of the bottom of the sash, insert the #4 Allen wrench into the location shown in figure 4. Turn the wrench clockwise to move the sash closer to the frame, and counter clockwise to move the sash away from the frame. Note: Left/right adjustments at the bottom hinge may have to be coordinated with similar (or opposite) adjustments at the top hinge.



Figure 1 – Bottom hinge at window
(window open, turn function, viewed from exterior)



Figure 2 – Bottom hinge at door
(door open, turn function, viewed from exterior)



Figure 3 – Up/down adjustment (entire sash)
Rotate wrench indicated at arrow for adjustment



Figure 4 – Left/right adjustment (bottom of sash)
Rotate wrench indicated at arrow for adjustment

Top Hinge

The top hinge allows for two possible adjustments:

- Left/right (top of sash)
- Inward/outward (gasket compression at head of sash)

The left/right adjustment for the top hinge is typically used in combination with a similar (or opposite) adjustment at the bottom hinge, to correct sash misalignment. Refer to the 'Bottom Hinge' section for further detail on potential sash misalignment. Perform the adjustments described below to correct misalignment.

The inward/outward adjustment for the top hinge is used to adjust (increase or decrease) the gasket compression at the head of the sash.

Method

See following page for figures 5 – 8.

1. Open the sash (tilt function) to allow access to the top hinge (figures 5 & 6).
2. Left/right: To adjust the horizontal position of the top of the sash, insert the #4 Allen wrench into the location shown in figure 7. Turn the wrench clockwise to move the sash closer to the frame (hinge side), and counter clockwise to move the sash away from the frame (hinge side). Note: Left/right adjustments at the top hinge may have to be coordinated with similar (or opposite) adjustments at the bottom hinge.
3. Inward/outward: To increase or decrease the gasket compression at the head of the window, insert the #4 Allen wrench into the location shown in figure 8, and adjust as follows:
This adjustment point is a lock cam, which can be rotated in either direction for adjustment. The full range of adjustment occurs over 180 degrees; continuing to turn past 180 degrees reverses the adjustment, until the lock cam returns to its original position (at 360 degrees). Lock cams have an indicator dot on the perimeter of the cam, which shows its position (figure 9). See figure 9 for settings.



Figure 5 – Top hinge
(window open, tilt function, viewed from interior)



Figure 6 – Top hinge
(window open, tilt function, viewed from exterior)



Figure 7 – Left/right adjustment (top of sash)
Rotate wrench indicated at arrow for adjustment



Figure 8 – Inward/outward adjustment (gasket compression at head of sash)
Rotate wrench indicated at arrow for adjustment



Figure 9 – Typical lock cam on multi-point hardware. Dot on left side of cam's perimeter is the adjustment indicator. Loosest setting: indicator dot is on exterior side of cam. Tightest setting: indicator dot is on interior side of cam. Middle setting: indicator is on top or bottom.

Individual Lock Points (Cams)

The individual lock points (cams) allow for the following adjustment:

- Inward/outward (gasket compression around perimeter of sash)

Every lock point (cam) can be independently adjusted to control perimeter gasket compression. The factory setting for cams is in the middle position, for even compression. If uneven compression is observed, adjust the cams closest to where the uneven compression is occurring.

To determine where uneven compression is occurring, pull the window or door closed, and slowly lock the handle. Locations with too much gasket compression will be observed to close and tighten before the rest of the perimeter gasket. Locations with too little compression will be observed to be not sufficiently compressed, even after the handle is locked. Correct these conditions by adjusting the cams, as described below.

Tip: Make small adjustments, and regularly check the results until even gasket compression is achieved.

Method

1. Open the sash (turn function) to allow access to the hardware around the perimeter of the sash.
2. To increase or decrease the gasket compression at any lock cam, insert the #4 Allen wrench into the cam, as shown in figure 10, and adjust as follows:

The lock cam can be rotated in either direction for adjustment. The full range of adjustment occurs over 180 degrees; continuing to turn past 180 degrees reverses the adjustment, until the lock cam returns to its original position (at 360 degrees). Lock cams have an indicator dot on the perimeter of the cam, which shows its position (figure 9). See figure 9 (above) for settings.



Figure 10 – Inward/outward adjustment (gasket compression at lock cam)
Rotate wrench in lock cam for adjustment