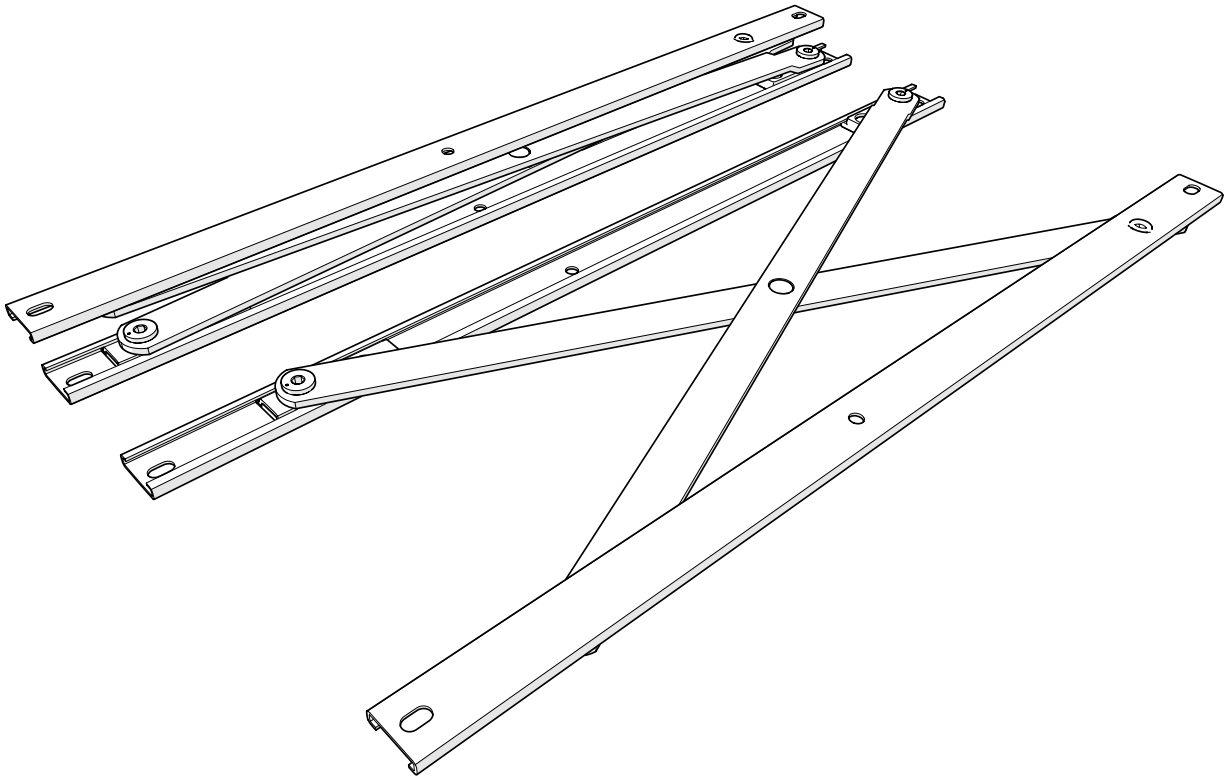
Parallel Plus Hinge

Product Overview

Issue: December 2014



PRODUCT FEATURES

The product features of the Parallel Plus Hinge are:

- Parallel Plus vents can be restricted to 40mm openings and still provide whole perimeter ventilation and effective air exchange to approximately 100mm with top hung vents, which has been tested and proven at the BRE.
- Vents weighing up to 200kg can be operated manually.
- Parallel Plus hinges can be used to create much larger motorised vents.
- Small opening gap ensures greater security for occupants.
- Parallel can be used as a modular solution for vent capacity where larger or non rectangular shaped vents may be carried with a combination of product.
- Sash adjustment feature to adjust parallelism on tall heavy vents.
- Endurance tested to 20,000 cycles.
- Manufactured from austenitic stainless steel for high corrosion resistance.
- 12 year guarantee.

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Parallel Plus Hinge

Product Features

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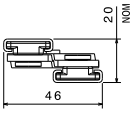
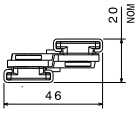
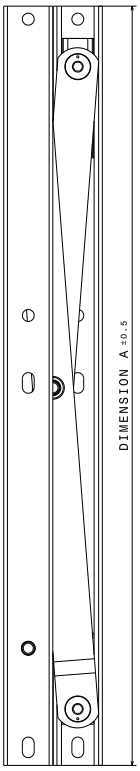




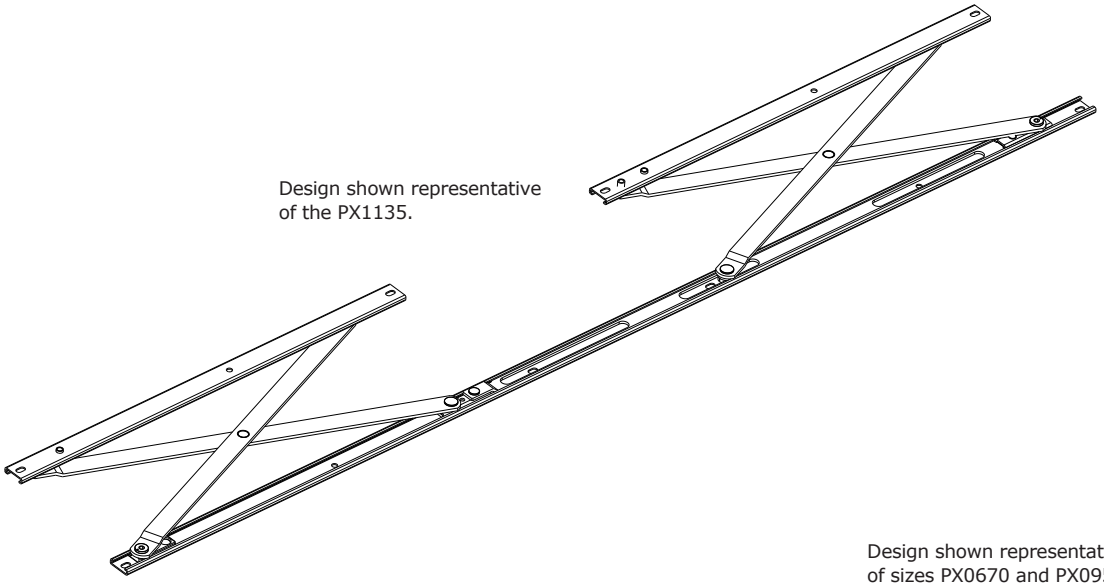
PART CODES AND VARIANTS

Part Code	Overall Length (Dimension A)	Left-hand Variant	Right-hand Variant
PX0250R	250		•
PX0350L	350	•	
PX0350R	350		•
PX0450L	450	•	
PX0450R	450		•
PX0670L	670	•	
PX0670R	670		•
PX0950L	925	•	
PX0950R	925		•
PX1135L	1135	•	
PX1135R	1135		•

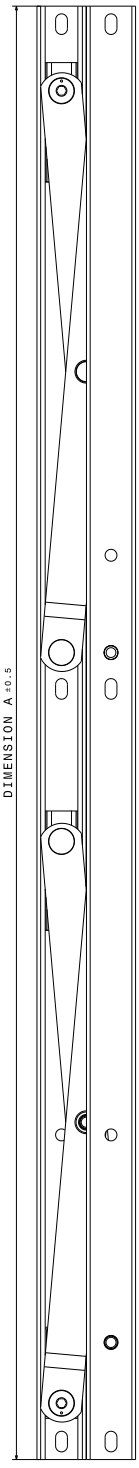
Note: PX1135L and PX1135R allow compatibility with the Sterling Window Lock if the profile design does not allow the hinge and lock gearbox position to coincide, or if the lock gearbox cannot be positioned between the hinges. Please note these hinges have a section removed in the channel to accomodate the gearbox.



Design shown representative of sizes PX0250, PX0350 and PX0450.



Design shown representative of the PX1135.



Design shown representative of sizes PX0670 and PX0950.

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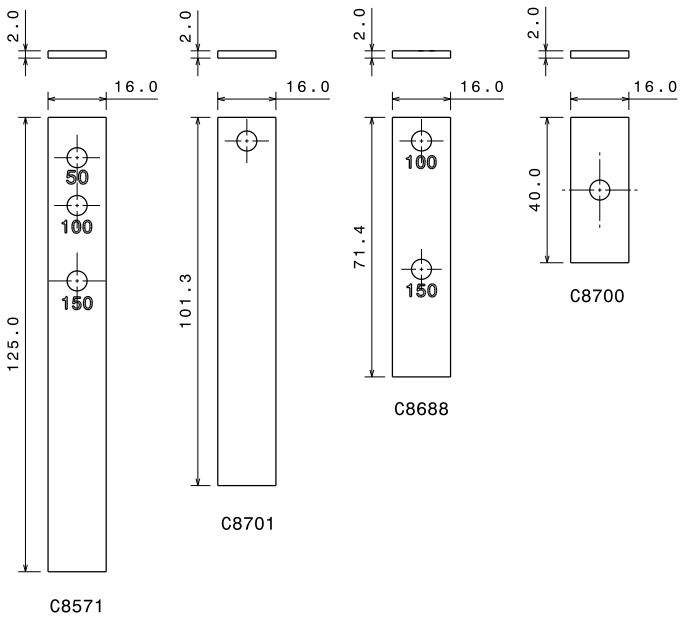
Parallel Plus Hinge

Product Features: Manual Limit Stop

Issue: December 2014

MANUAL LIMIT STOP



A manual limit stop is be added when using the Parallel Plus Hinge in manual operation. All hinges have a maximum opening motion of 150mm, when used with a limit stop; except PX0250 which has a maximum motion of 120mm.
The user is able to select a smaller fixed opening motion on some hinges if required.
When using the parallel hinge in a motorised application, a limit stop is not required. Please see details below regarding preferred and absolute max opening motion.

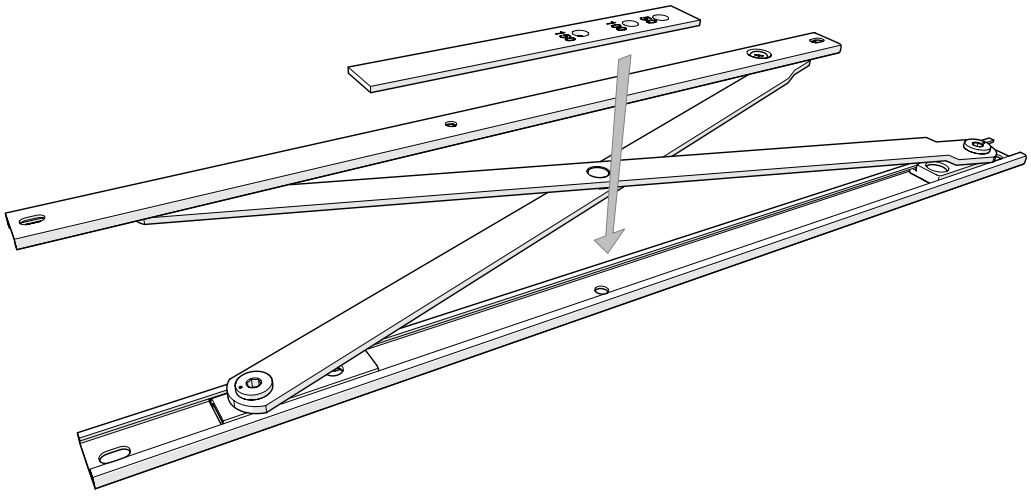
Note:

- Opening motion is the movement measured from the closed position to the recommended open position for the type of operation stated.
- The table below is for guidance only; please contact the Yale DWS Cheltenham customer service department for advice regarding project specific opening distances.
- For larger motorised vents please contact the Yale DWS Cheltenham customer service department for advice regarding project specific hardware specifications.
- Operating motors must have synchronised movement.
- The motor operating devices must arrest the opening motion of the vent at the maximum specified opening distances.

MAXIMUM OPENING DISTANCE FOR MANUAL AND MOTORISED VENTS

Hinge	Max. Manual Opening Motion (mm)	Manual Limit Stop Required	Preferred Max. Motorised Opening Motion (mm)	Absolute Max. Opening Motion (mm)
PX0350	150	C8700	180	180
PX0450	120	C8701	200	250
PX0450	150	C8571	200	250
PX0670	150	C8688	150	150
PX0950	120	C8701	200	250
PX0950	150	C8571	200	250
PX1135	120	C8701	200	250
PX1135	150	C8571	200	250

Note: The Yale DWS Cheltenham Customer Service team must be consulted prior to using the parallel plus hinge to open to its absolute max opening motion.



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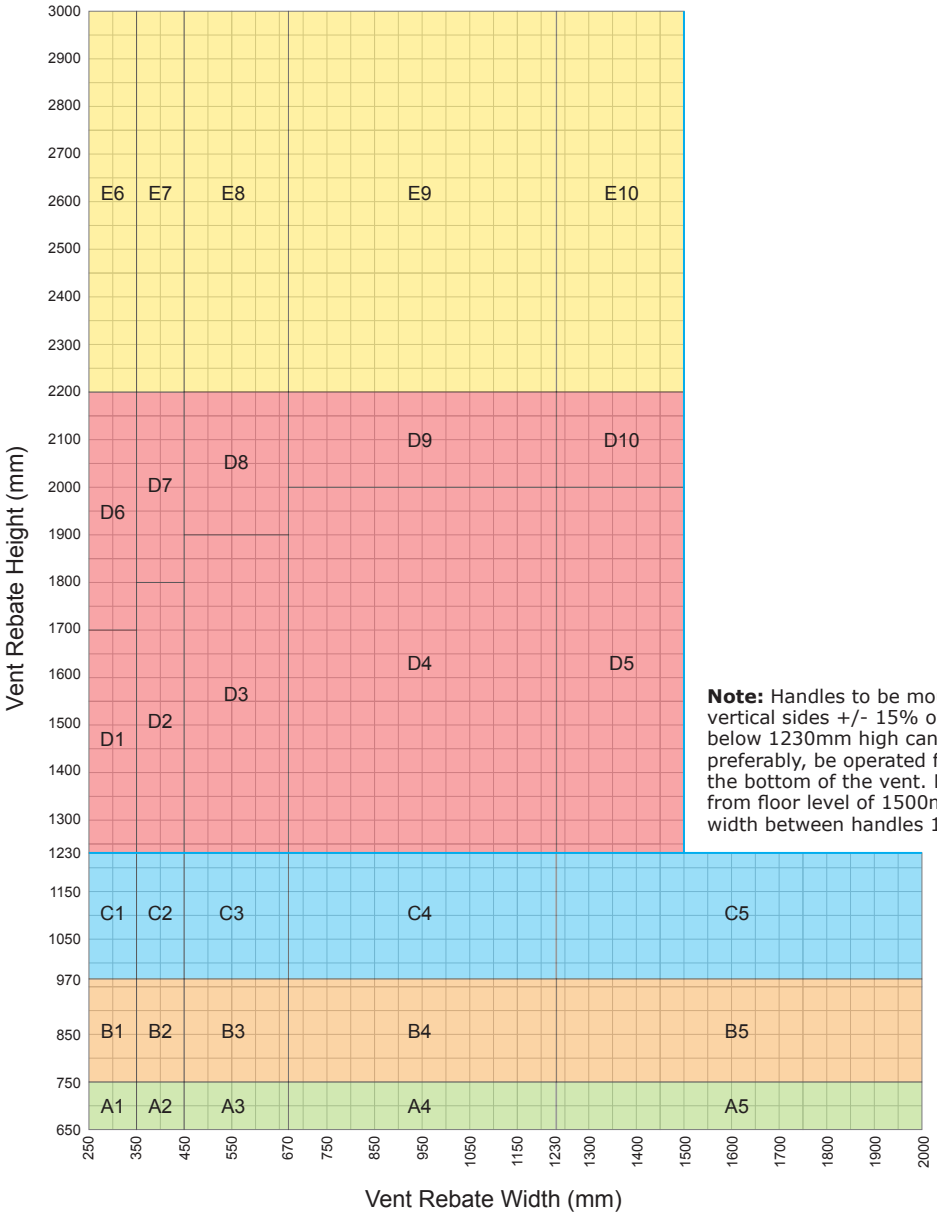
Parallel Plus Hinge

Installation Instructions: Hinge Selection for Manually Operated Vents

Issue: December 2014



Note: Handles to be mounted centrally on the vertical sides +/- 15% of the vent height. Vents below 1230mm high can alternatively, but not preferably, be operated from a single handle at the bottom of the vent. Maximum handle height from floor level of 1500mm and maximum width between handles 1500mm.

	Side Mounted Hinges				Control Stays		
	Left Side	Right Side	Stops	Max. Weight		Top	Bottom
A	1 x PX0350L	1 x PX0350R	2 x C8700	100kg	**1**	1 x PX0250R	-
B	1 x PX0450L	1 x PX0450R	2 x C8571	100kg	**2**	1 x PX0350R	-
C	1 x PX0670L	1 x PX0670R	2 x C8688	200kg	**3**	1 x PX0450R	-
D	1 x PX0950L	1 x PX0950R	2 x C8571	200kg	**4**	1 x PX0670R	-
E	2 x PX0950L	2 x PX0950R	4 x C8571	200kg	**5**	1 x PX0950R	-
					6	1 x PX0250R	1 x PX0250R
					7	1 x PX0350R	1 x PX0350R
					8	1 x PX0450R	1 x PX0450R
					9	1 x PX0670R	1 x PX0450R
					10	1 x PX0950R	1 x PX0450R

Note: When using PX0250R control stays, replace C8571 stops with C8701 stops. Maximum opening motion of parallel hinges = 150mm, with the exception of PX0250 which has a maximum opening motion of 120mm.

Note: For manually operated vents outside these parameters, please contact the customer service department.

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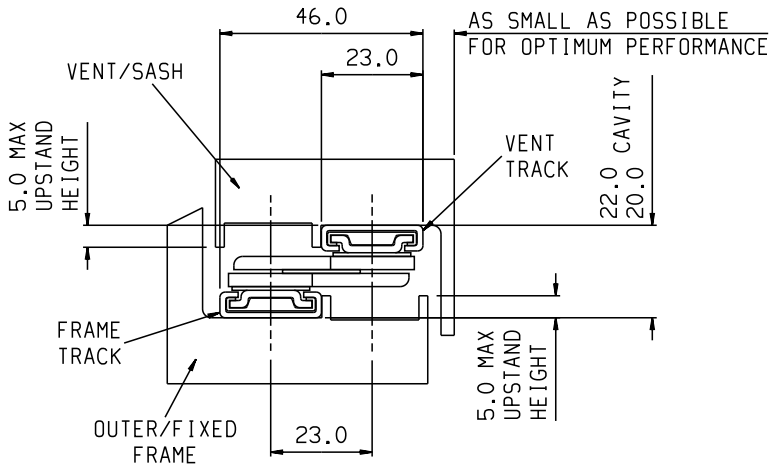
Parallel Plus Hinge

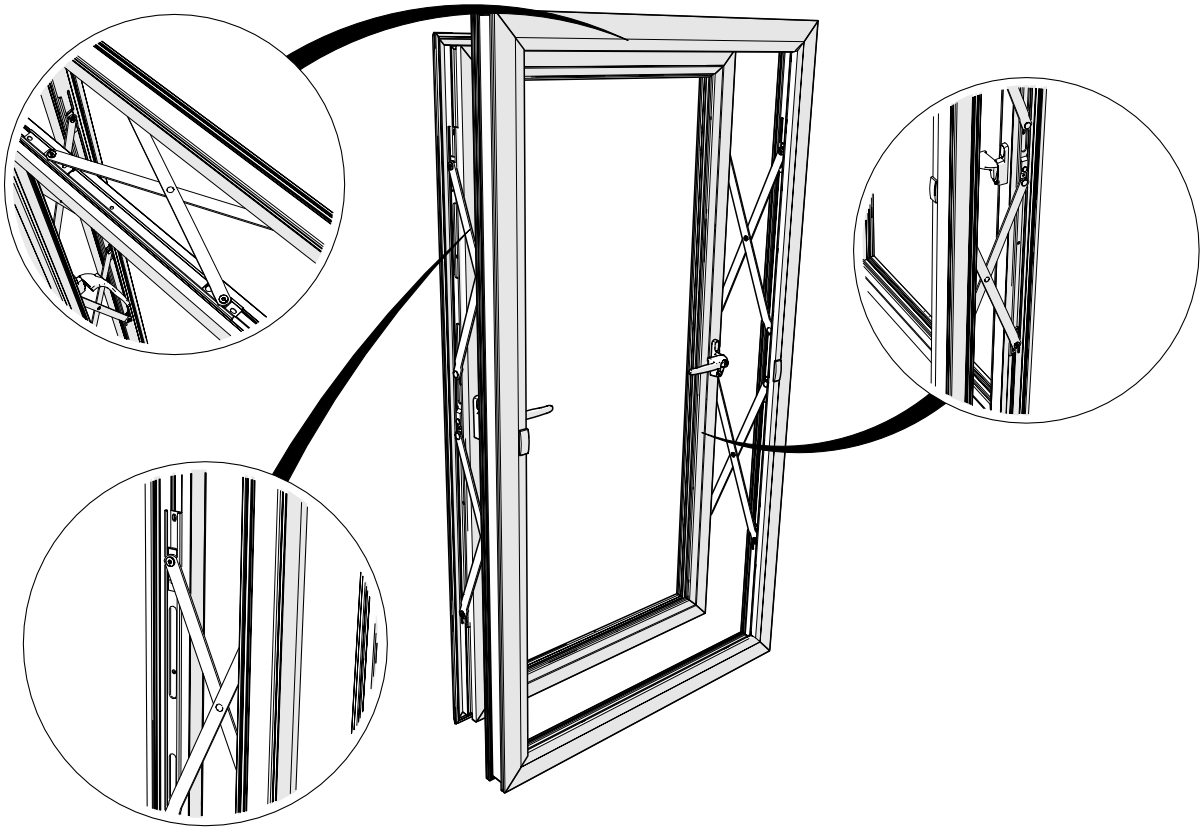
Installation Instructions: Overview

Issue: December 2014



POSITION AND CLEARANCES

- The hinges are designed to be fitted between two flat and parallel rigid faces that conform to the measurements (shown to the left).
- Each hinge should be fitted with the vent track parallel to the vent profile and the frame track parallel to the frame profile.
- Any sash and frame up-stands must be within the maximum dimensions (shown to the left).
- **NOTE:** Locking points, lock gearboxes, lock actuating motors and any other cavity fitted hardware **must** be positioned to avoid clash with the hinges.



HARDWARE LAYOUT

- The Parallel Plus Hinge must be fitted in accordance with recommendations by Yale DWS Cheltenham and the window profile manufacturer.
- The above image shows an example of a manually operated parallel window set-up with the various positions and orientations of the hinges.
- If the window is to be motorised with two synchronised chain drive motors, they must be fitted centrally on the top and bottom sides of the vent opposite each other.
- If four chain drive motors are used, they must be positioned close to each vent corner (unless otherwise specified).
- Please note: parallel hinges do not provide weather sealing; if the window is manually operated this should be provided by a seperate multi point perimenter lock. If the window is motor operated this can be provided by either the motors or a synchronised motor operated seperate multi point perimeter lock.

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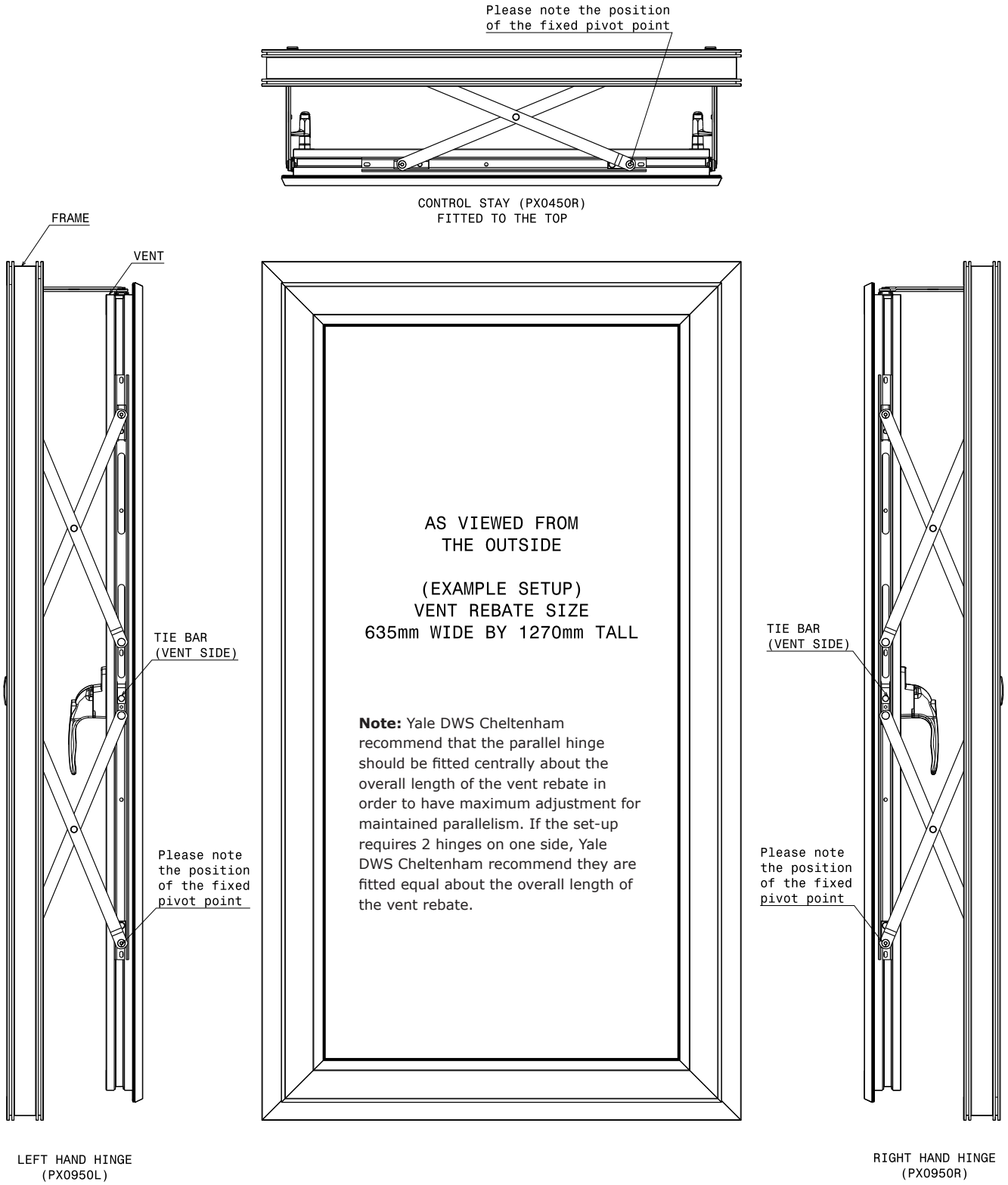
Parallel Plus Hinge

Installation Instructions: Example Hardware Layout

Issue: December 2014



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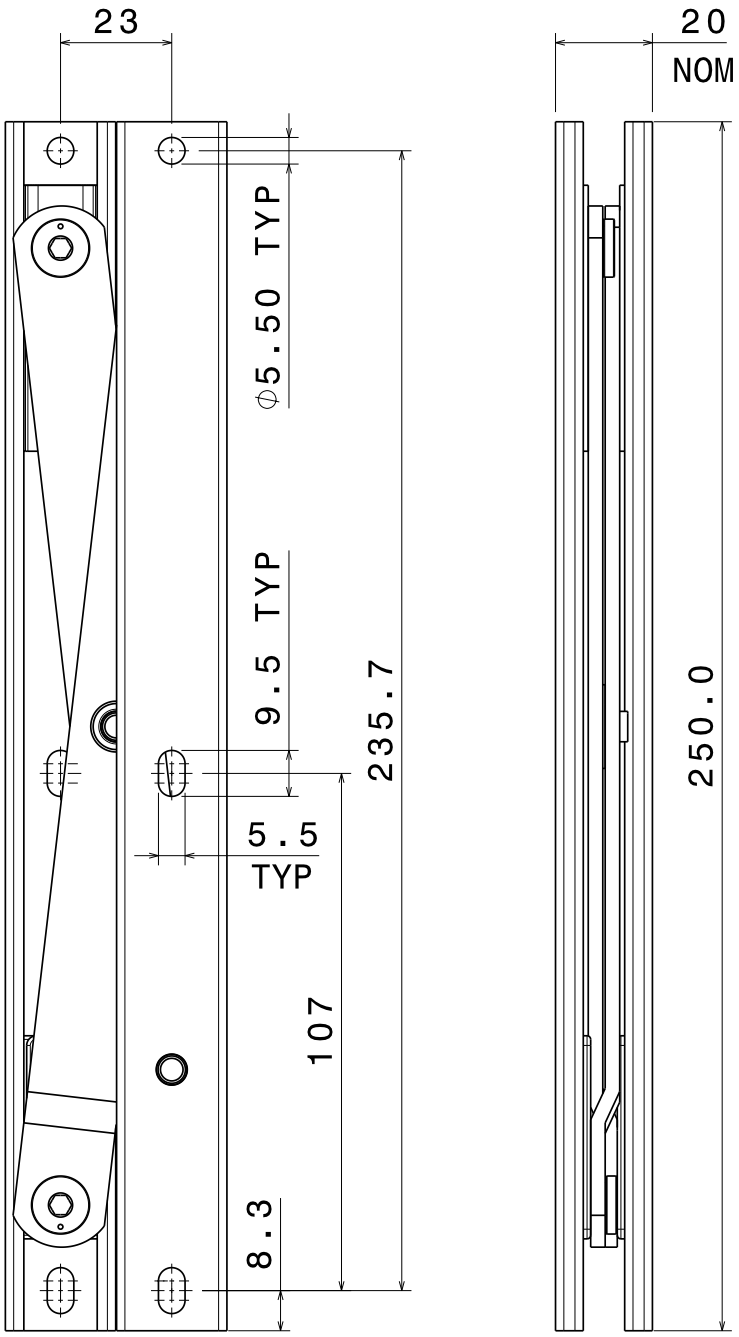
Parallel Plus Hinge

Installation Instructions: Fixing Hole Positions

Issue: December 2014

PX0250R



Note: Yale DWS Cheltenham recommend that all frame fixing holes should be pre-drilled, as per the drawing above. Where adjustment of the vent is required, only the vent fixings corresponding to the slotted screw holes should be pre-drilled; otherwise all vent fixing holes should be pre-drilled.

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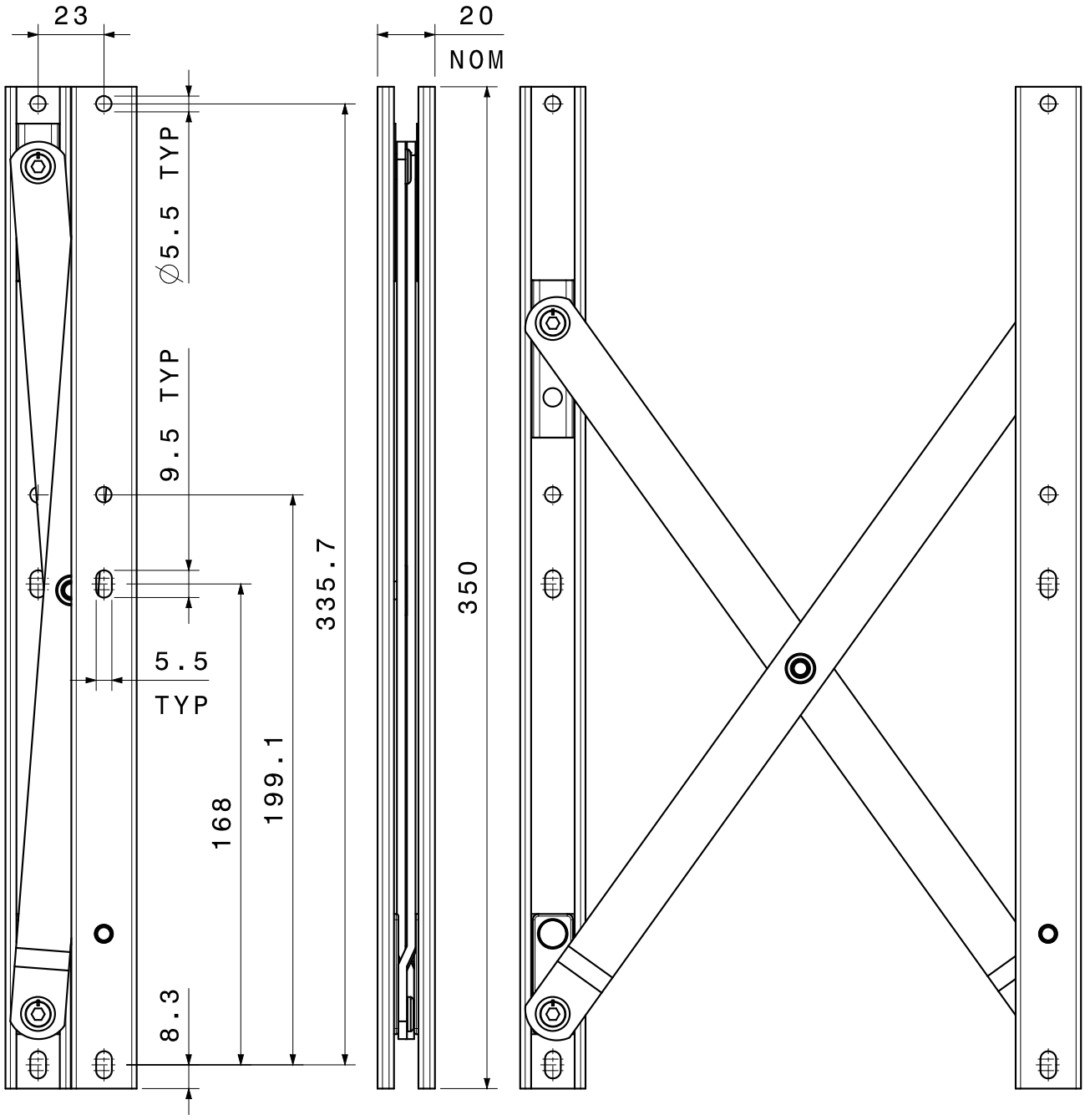
Parallel Plus Hinge

Installation Instructions: Fixing Hole Positions

Issue: December 2014

PX0350 (RIGHT HAND HINGE SHOWN)



Note: Yale DWS Cheltenham recommend that all frame fixing holes should be pre-drilled, as per the drawing above. Where adjustment of the vent is required, only the vent fixings corresponding to the slotted screw holes should be pre-drilled; otherwise all vent fixing holes should be pre-drilled.

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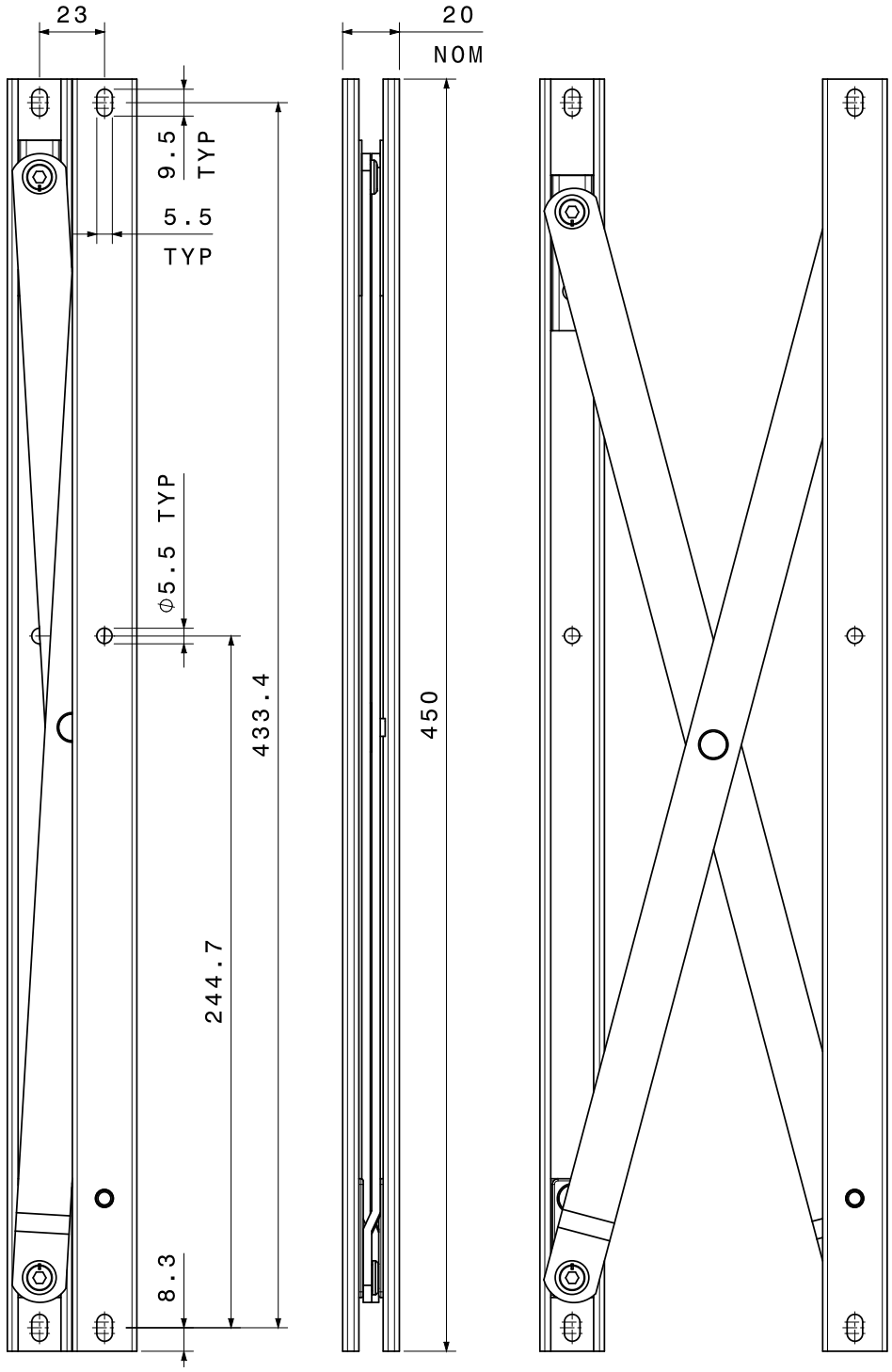
Parallel Plus Hinge

Installation Instructions: Fixing Hole Positions

Issue: December 2014

PX0450 (RIGHT HAND HINGE SHOWN)



Note: Yale DWS Cheltenham recommend that all frame fixing holes should be pre-drilled, as per the drawing above. Where adjustment of the vent is required, only the vent fixings corresponding to the slotted screw holes should be pre-drilled; otherwise all vent fixing holes should be pre-drilled.

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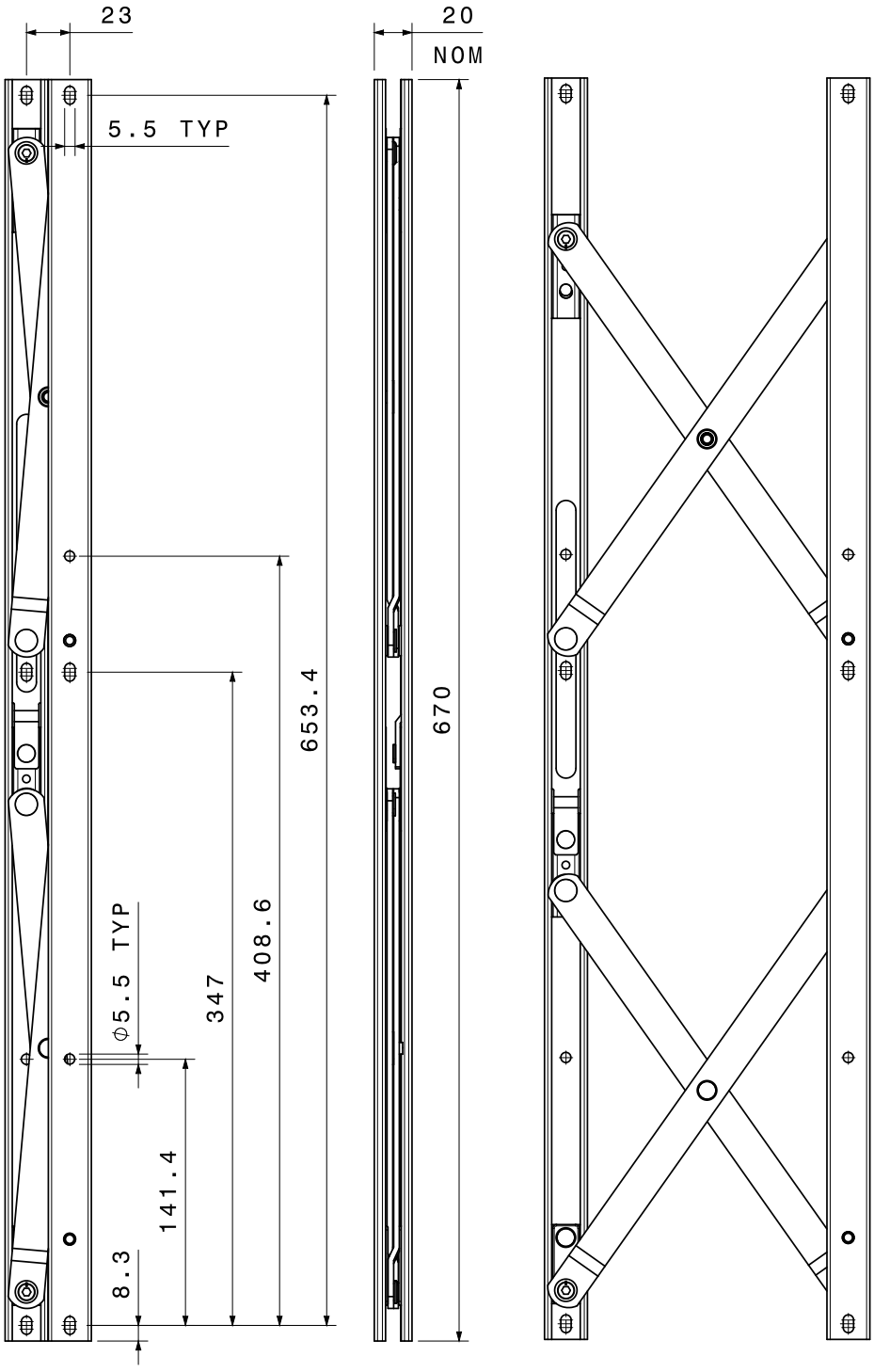
Parallel Plus Hinge

Installation Instructions: Fixing Hole Positions

Issue: December 2014

PX0670 (RIGHT HAND HINGE SHOWN)



Note: Yale DWS Cheltenham recommend that all frame fixing holes should be pre-drilled, as per the drawing above. Where adjustment of the vent is required, only the vent fixings corresponding to the slotted screw holes should be pre-drilled; otherwise all vent fixing holes should be pre-drilled.

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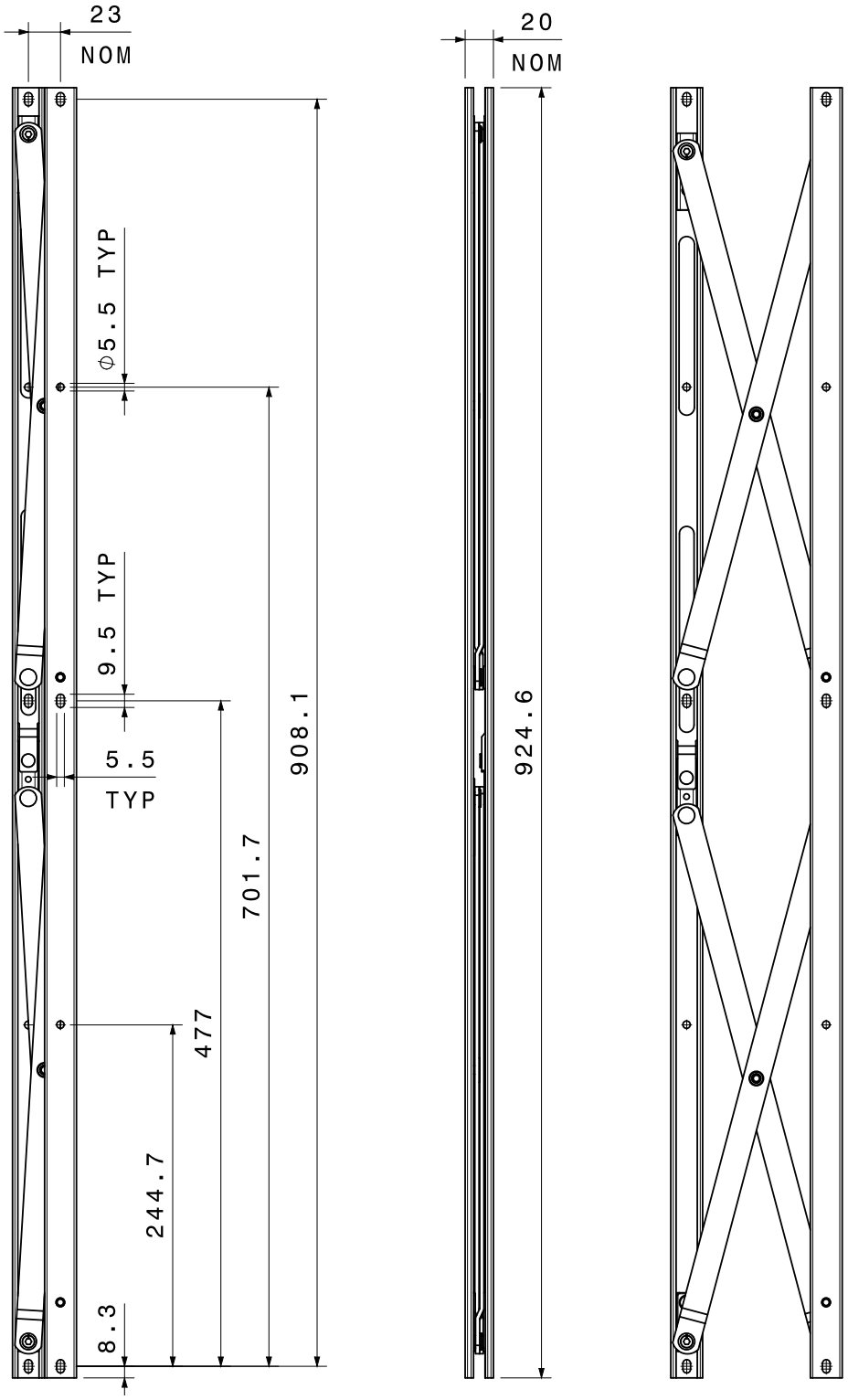
Parallel Plus Hinge

Installation Instructions: Fixing Hole Positions

Issue: December 2014

PX0950 (RIGHT HAND HINGE SHOWN)



Note: Yale DWS Cheltenham recommend that all frame fixing holes should be pre-drilled, as per the drawing above. Where adjustment of the vent is required, only the vent fixings corresponding to the slotted screw holes should be pre-drilled; otherwise all vent fixing holes should be pre-drilled.

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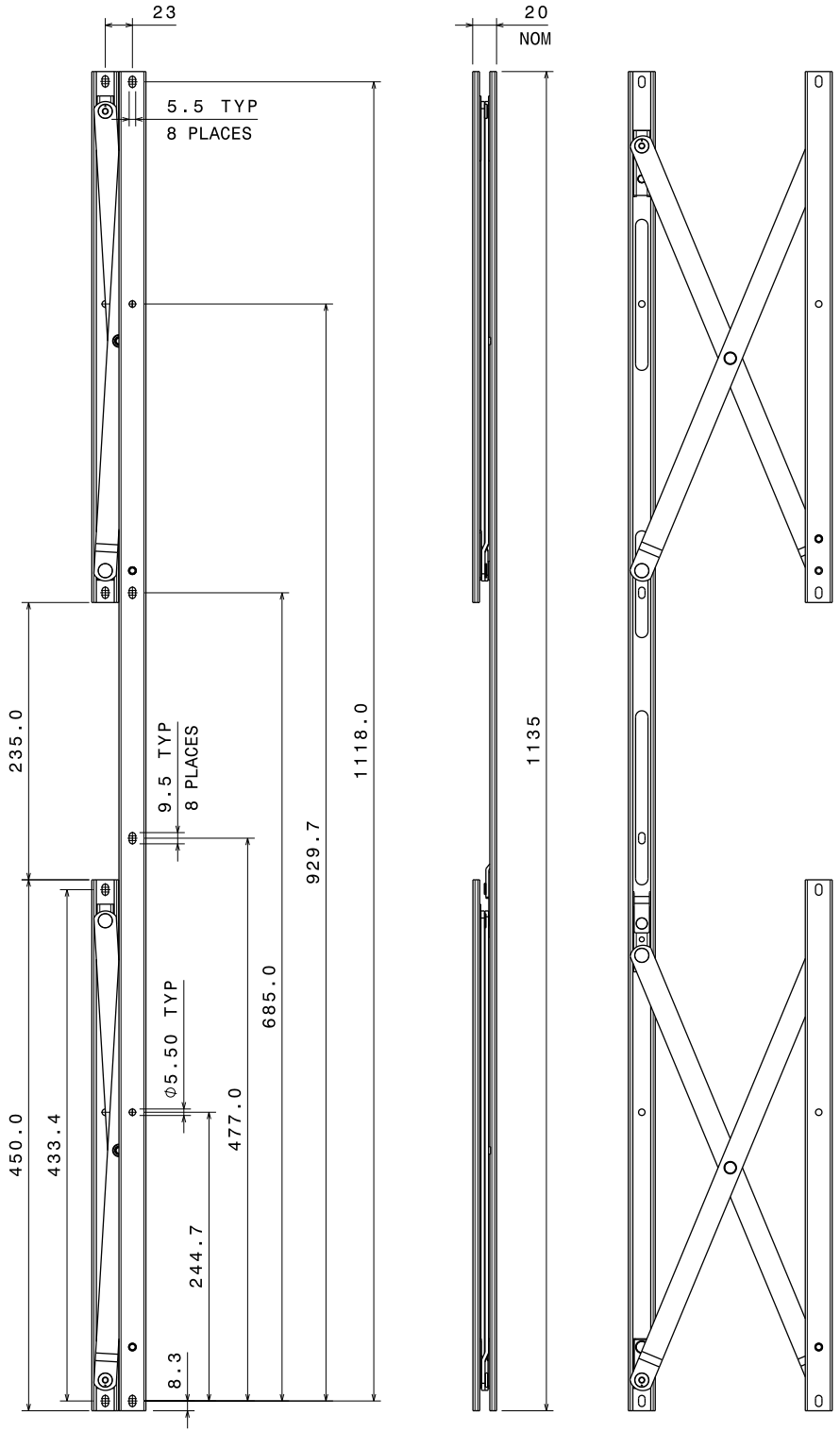
Parallel Plus Hinge

Installation Instructions: Fixing Hole Positions

Issue: December 2014

PX1135 (RIGHT HAND HINGE SHOWN)



Note: Yale DWS Cheltenham recommend that all frame fixing holes should be pre-drilled, as per the drawing above. Where adjustment of the vent is required, only the vent fixings corresponding to the slotted screw holes should be pre-drilled; otherwise all vent fixing holes should be pre-drilled.

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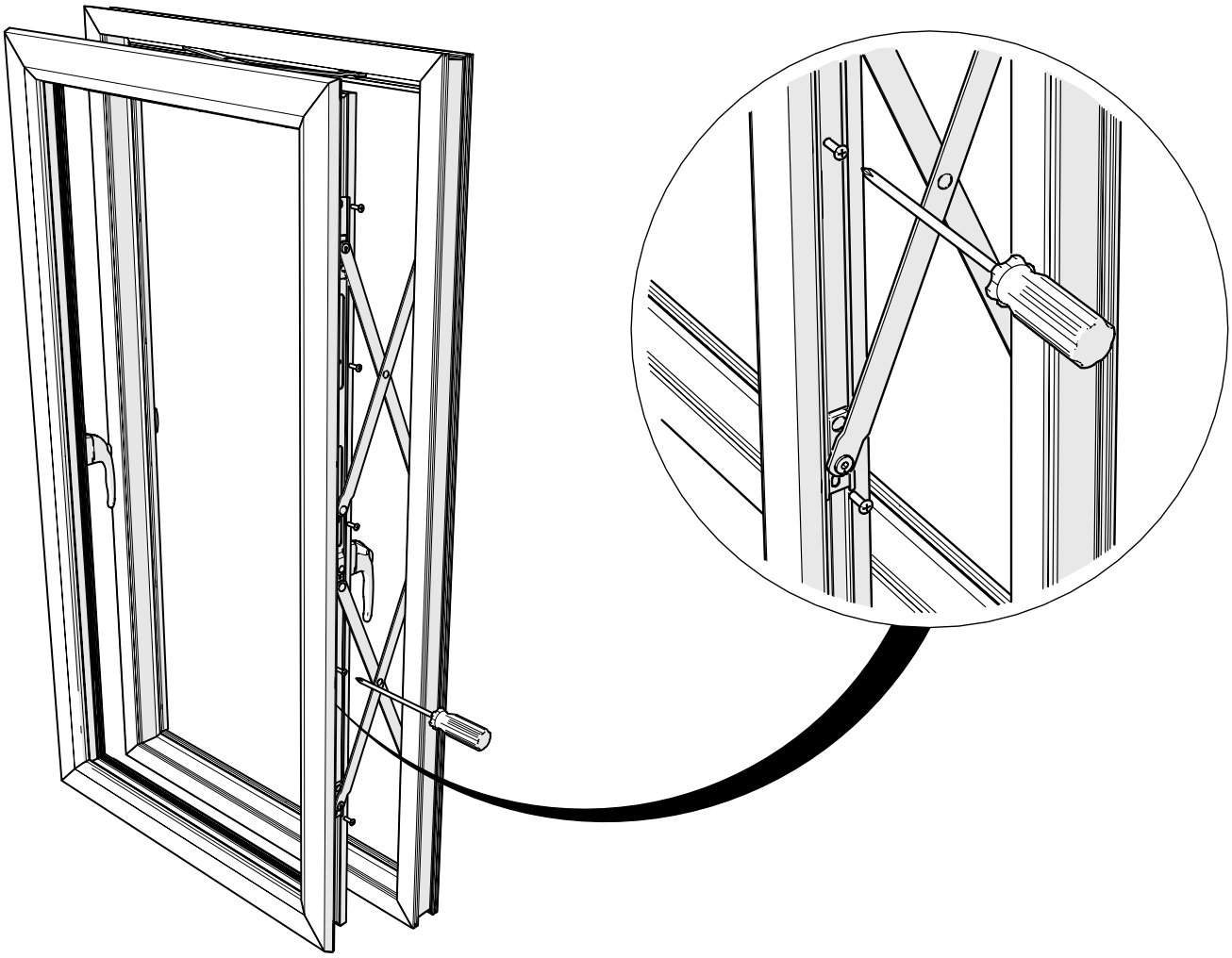
Parallel Plus Hinge

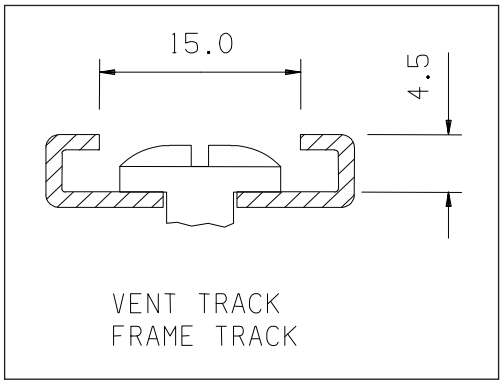
Installation Instructions: Fixing the Hinge

Issue: December 2014



FITTING THE HINGE TO THE FRAME

- The fixing of the parallel hinge to the frame / vent should be done is accordance with the recommended hardware layout and the given fixing hole positions included within this manual.
- Yale DWS Cheltenham recommend the use of M5 or no.1 pan head screws for fixing the vent track and frame track (channel) on all Parallel Plus Hinges. (Dimensional constraints can be seen to the right).
- All hinge fixings should go through sufficient profile thickness or into screw channels. If this cannot be achieved, Riv-Nuts or similar should be used to provide a strong thread.
- Screw manufacturer's recommendations must be adhered to at all times and if any instructions are supplied by window system manufacturers / suppliers, it is important they are followed.
- Extreme care must be taken not to strip the thread as deterioration in performance will result.
- Austenitic and certain types of modified Martensitic fixings provide superior corrosion resistance when subject to BS EN ISO 9227 / BS EN 1670.



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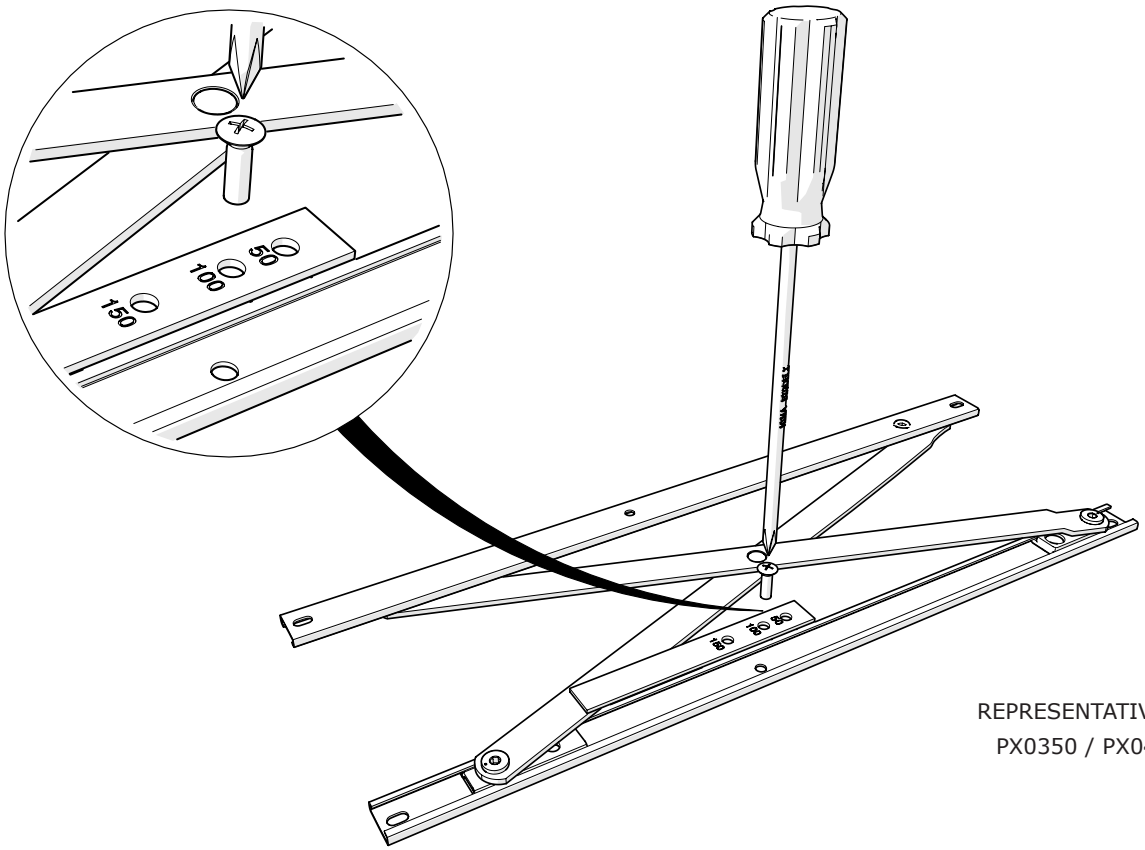
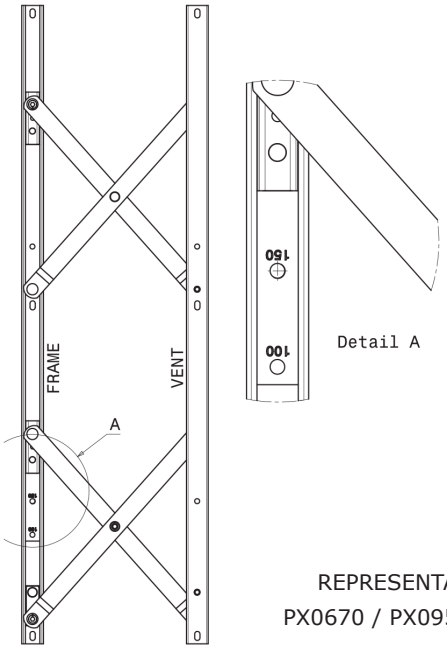
Parallel Plus Hinge

Installation Instructions: Manual Limit Stop

Issue: December 2014



REPRESENTATIVE OF
PX0350 / PX0450



REPRESENTATIVE OF
PX0670 / PX0950 / PX1135

INSTALLING THE MANUAL LIMIT STOP

- Please first ensure that you have the correct manual stop for the given hinge and general window arrangement. Please note the manual limit stop is only used when using the parallel hinge manually. A limit stop is not required when using the parallel hinge with a motorised operation.
- Yale DWS Cheltenham recommend that the limit stop is placed in the channel section of the hinge which is fixed to the window frame.
- The limit stop should be fixed in place by screwing the hinge into the frame thus clamping the stop in place.
- The circular hole in the limit stop must line up concentrically with the circular fixing hole located in the middle section of the channel.
- Limit stops (part numbers C8571 and C8688) give you the option to restrict the opening distance at certain intervals below 150mm. Refer to page 003 for full details.
- The text closest to each fixing hole relates to the maximum restricted opening distance of the hinge when the limit stop is fixed using that hole.
- Please note the orientation of an asymmetrical limit stop in relation to the hinge slider section of the hinge.

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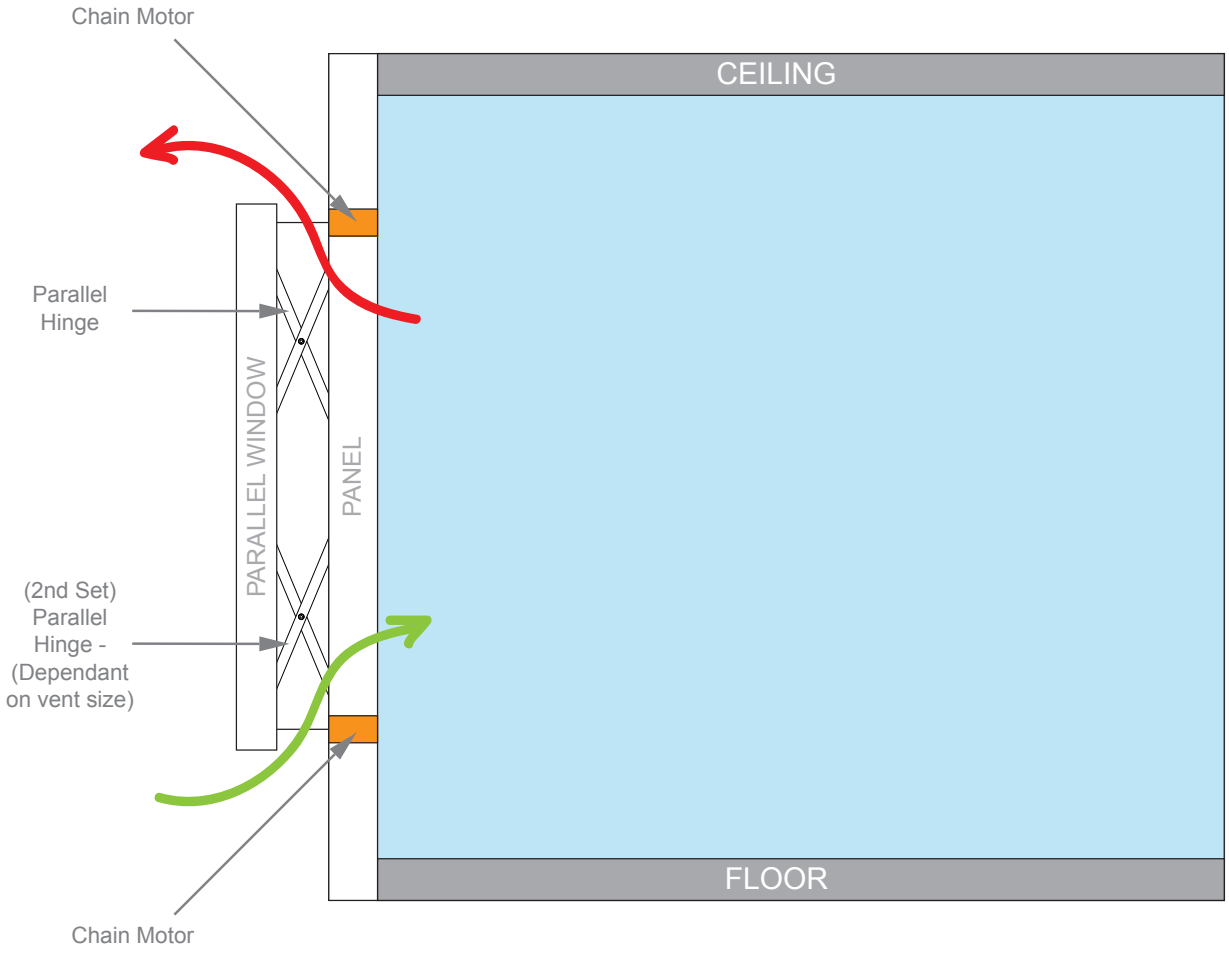
Parallel Plus Hinge

Product Operation: Enhanced Ventilation

Issue: December 2014



ENHANCED VENTILATION

- The natural ventilation function of a parallel opening window in a single sided ventilated room is shown above.
- As this window type is open at both the top and bottom, it can effectively ventilate comparatively deep rooms with a simple single natural ventilation concept. This is in contrast to the more complicated cross-ventilation with windows set into each side of the room.
- The parallel window is also ideal for offices and high rise buildings, where the precise control system in connection with this unique window type makes it possible to secure the airflow needed at any time, without draught.

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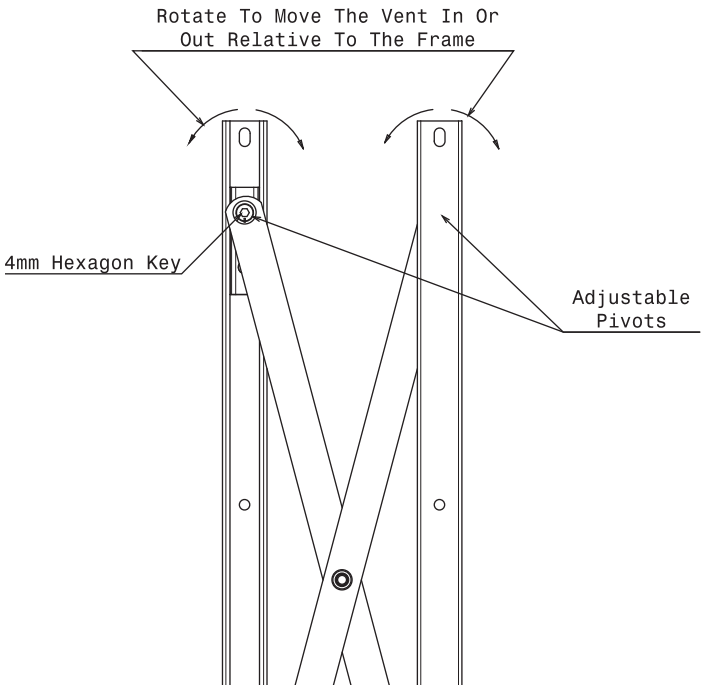
Parallel Plus Hinge

Product Operation: Parallelism Adjustment

Issue: December 2014



ADJUSTMENT

- All Parallel Plus Hinges feature adjustable pivots at the top and bottom of each track, which can be used to help maintain parallelism between the vent and frame.
- In order to achieve this follow these steps:

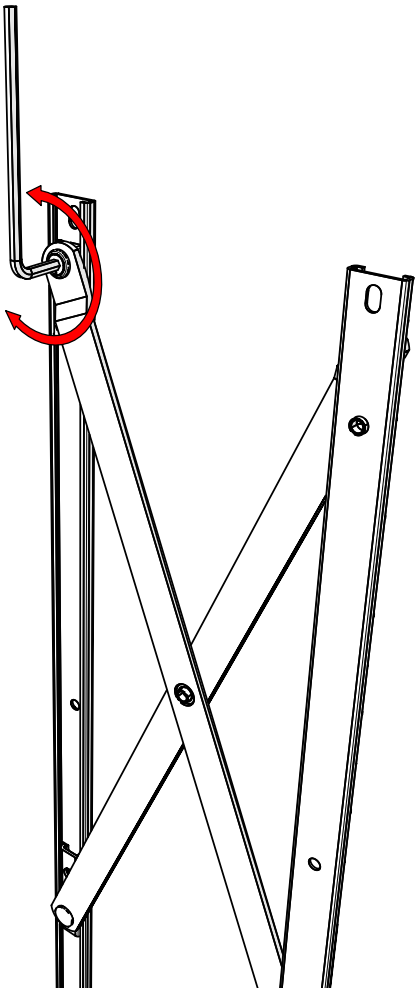
1. Open the parallel vent to a specified maximum opening position.
2. Insert a 4mm hexagon (Allen) key into the top pivot on the frame track side and rotate to move the vent in or out relative to the frame.
3. If further adjustment is required, repeat the process on the bottom pivot on the frame track and the top/bottom pivots on the vent track.

ADJUSTMENT (INSTALLING THE VENT IN THE BUILDING)

- When installing the vent in to the building, the parallelism should be adjusted on the frame track from inside the building. This is achieved by rotating the cam adjuster to move the vent in or out relative to the frame.
- The vent track adjusters can be altered if further adjustment is necessary - this can be done on both the top and bottom adjusters.

ADJUSTMENT (INSTALLING THE HINGE IN THE FACTORY)

- When installing the hinge in the factory, the parallelism should be adjusted on the vent side only, by rotating the cam adjuster, to then move the vent in or out relative to the frame.
- This can be done on both the top and bottom cam adjusters.



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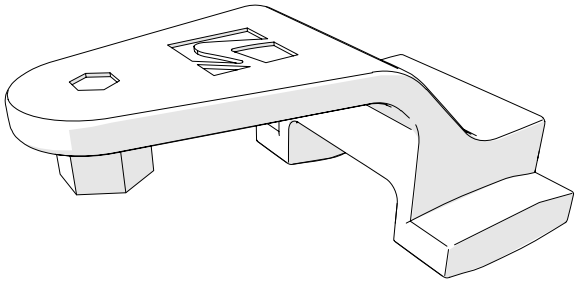
Parallel Plus Hinge

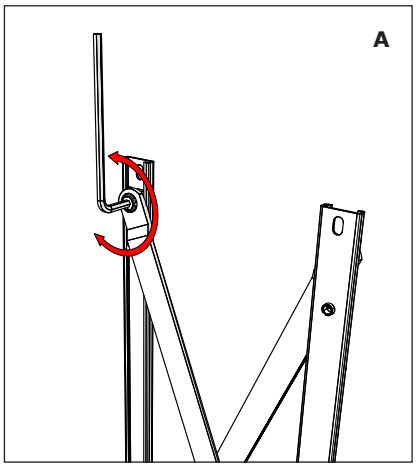
Product Operation: Anti-Tamper Device

Issue: December 2014

ANTI-TAMPER COMPONENT (PART CODE R8703)

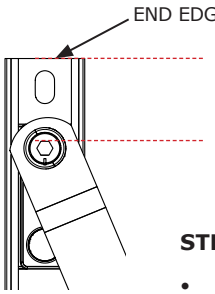
- Each Parallel Plus Hinge comes complete with a bag of 4 anti-tamper devices. The part code for a bag of 4 components is S8711.
- The purpose of the anti-tamper component is to ensure that once each Parallel Plus Hinge has been adjusted to achieve the optimum parallelism for the window, the device can be installed in the channel and secure the adjustable pivot by means of a hexagonal section.
- Each bag of components comes complete with a fitting instructions leaflet (part code R8707).
- To install the anti-tamper device, please follow these steps:





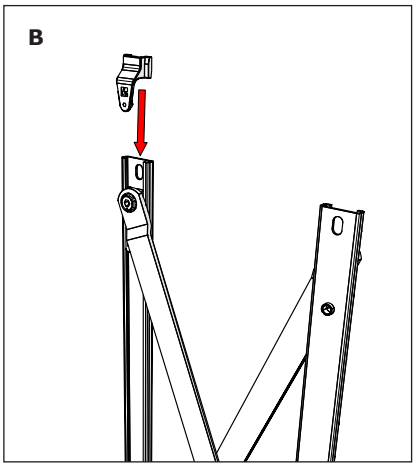
STEP A

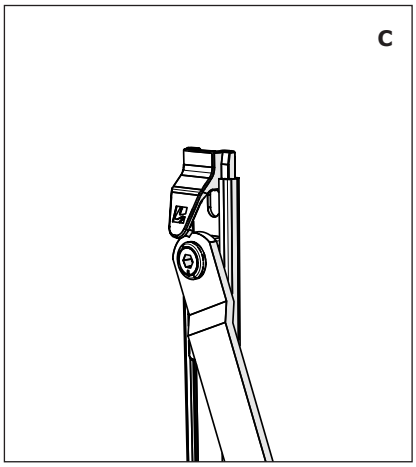
- Rotate the adjustable pivots (as per page 016) to achieve the optimum parallelism.
- You must ensure that one of the hexagonal flat of the hex (Allen) key section is parallel with the end edge of the channel.



STEP B

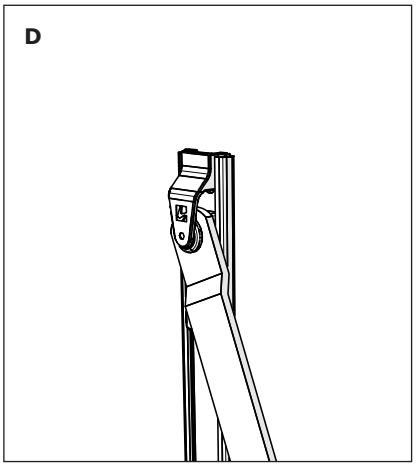
- Allign the anti-tamper device so that it can enter the channel in the correct orientation (shown right).
- The legs of the moulding will slide into the section of the channel.





STEP C

- Once the moulding is part way within the channel, lift the nose so that it bends up and can be moved further up the channel section.



STEP D

- Once the hexagonal pad section of the moulding is above the corresponding hex section of the adjustable cam, release the pressure and press fit the pad into the hexagonal adjustable cam.

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Parallel Plus Hinge
Specification

Issue: December 2014

MATERIALS

- Surface Finish - All surface finishes are of good commercial quality.
- Stainless steel links are of cold rolled finish and are edge dressed to remove any sharp edges as far as practical.
- Stainless steel track is of bright cold rolled finish.
- Stainless steel components will not display surface blemishes, pits or scratches of greater than 20 sq. mm or 0.25mm maximum depth.
- Plastic components are of uniform finish and colour. Visible surfaces will not display blemishes, pits or scratches of greater than 15 sq. mm or 0.2mm maximum depth.
- Die cast components are finished with copper nickel chrome plating.
- Links - Stainless steel to BS EN 10088-2 GRADE 1.4301
- Track - Stainless steel to BS EN 10088-2 GRADE 1.4301
- Pivots - Stainless steel to BS EN 10263-5 GRADE 1.4567
- Slider Inner - Stainless Steel to BS EN 10088-2 GRADE 1.4301
- Slider Outer - Zytel HTN FE8200 NC010
- Pivot Washer - Nylon
- Pivot Blocks - Zinc Alloy ZA5 plated with Copper Nickel Chrome
- Bush - Phosphor Bronze PB102

RECOMMENDATIONS

- If a hinge is fitted in an area where it is exposed to a corrosive atmosphere, e.g. salt laden sea air in coastal locations, we recommend that in addition to the general maintenance and lubrication:
- All metal surfaces are lightly coated with lubrication oil or sprayed with a proprietary anticorrosion spray. It is important to follow the manufacturer's instructions for any products used.
- Maintenance operations may need to be carried out more frequently. This is dependent on the severity of the prevailing conditions.

COMPATIBLE PRODUCTS

- Blade Window Lock
- Sterling Window Lock

TESTING AND ACCREDITATION

- Corrosion Resistance: When subjected to a 500 hour neutral salt spray test to EN ISO 9227 the hinge remains functional. There is no significant surface pitting caused by corrosion. Some surface discolouration is to be expected.

ENVIRONMENTAL CONSTRAINTS

- Normal operating conditions for all hinges are:
- Operating temperature range -20°C to +60°C
- Operating humidity range 10% Relative Humidity to 95% Relative Humidity
- The materials used will not degrade due to ultra violet light, or when using neutral acidity non solvent cleaning chemicals, at a rate faster than other parts of the window assembly.

HEAT AND SMOKE VENTILATION

- Operating temperature range -20°C to +300°C. The product will resist the maximum temperature for 5 minutes and will operate once to fully opened position when maximum temperature is achieved in accordance with EN 12101-2.

MAINTENANCE AND LUBRICATION

- As with most mechanical devices, hinges require periodic maintenance and lubrication. The hinge in general and particularly the pivots, sliding parts and track must be kept free from dirt, debris and any obstructions at all times.
- At Time of Installation - lubricate all pivot points with general light engineering oil and wipe away excess. One drop per pivot is sufficient.
- Every Five Years - carry out the following checks:

1. Clean any dirt or debris from the hinge and clear any obstructions from the pivots, sliding parts and track.
2. Apply lubrication.
3. Check the tightness and security of all fixing screws and rivets.

DETERMINING THE PARALLEL PLUS HINGE PART CODE

- Each part code contains 2 pieces of variable information: the length of the hinge and handing (left-hand L / right-hand R).

PX[0950][L]

- [L] → Hinge Handing - Can be 'L' for left-hand or 'R' for right-hand. Please note the PX0250 is only available as right-hand.
- [0950] → Hinge Length - Always 4 digits, options are: 0250, 0350, 0450, 0670, 0950, 1135.

DISCLAIMER

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