

Tilt Counterbalance Vertical Sliders

Component requirements for Tilt Counterbalanced Vertical Sliders

Equal Leg Outer Frame (face fix or reverse fix)		Qty
908	Outerframe Jambs	2
908	Outerframe Head & Cill	2
907p	PVC inserts for stops cut to size as required	4
517	Screw cover for outerframe	4
517	Screw cover for panels	5

Components for inner panels

902	Panel side rails	4
903	Handle – Top panel	1
904	Interlock – Bottom panel	1
905	Handle – Bottom panel	1
924	Interlock – Top panel	1

Accessories

322F	4 x ¼ self-tapping flange head screw	2
922	6 x 1 self-tapping pan head screws	16
930	8 x 3/8 self-tapping pan head blunt point screws	12
931	8 x 1 self-tapping Csk head screws	4
QR75	Shackle (as required)	4
927	Pivot bar	4
928	Pivot shoe	4
929	Tilt Latch	4
327LW/B	Locking fitch catch (if required) one per 950mm	1
327R14	Rivet for fitch catch	2
327W	Washer for fitch catch	2
327TKW/B	Keep plate for fitch catch	1
327R12	Rivet for Keep plate	2
955 W/B	Caps for outer frame	8

Tilt Counterbalance Vertical Sliders continued

Accessories continued

			Qty
QR150	150mm Quick release arm	Select arm as chart on page 4	4
QR250	250mm Quick release arm		4
QR350	350mm Quick release arm		4
QR400	400mm Quick release arm		4
QR550	550mm Quick release arm		4
Gaskets	TG4T / GG6 for 6mm and Lami, if tight use GT6.4		as req
WF600	Weatherpile (fits all sections)		as req

Extras by Caldwell

	Qty
Counterbalanced springs	4

Breakdowns

Equal Leg – 908/908 Face Fix or Reverse Fix

Top panel width	=	Track width	-113mm	Glass – further	34mm
Top panel height	=	Top B/L	-44mm	Glass – further	33mm
Bottom panel width	=	Track width	-85mm	Glass – further	34mm
Bottom panel height	=	Bottom B/L	-31mm	Glass – further	33mm

When cutting inner panel sections do not include the pip on the side/front face in your dimensions.

Preparation

Outer frames are best cut with the screw cover (**517**) in place to give a good mitre. If you are using a TCT blade this may chip the screw cover, if so you will need to cut the screw cover to size manually.

Drill the mitre holes through the internal (side) face through both walls in the outer frame widths **908** each end, with a 9/64th drill, using the first hole next to the pin, with jig number **917**. **Hold the jig tight as it will try to move away from the frame, leaving the hole in the wrong position.**

Counter bore the outside face with a 9.1mm drill

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Preparation continued

Counterbalance spring fixing holes should be drilled with a 9/64th drill through the internal (side) face, at the top of the outer frame heights **908** using jig number **917**. In the back track use the second hole from the pin, and in the front track use the third hole from the pin. **Ensure the outer frame heights are orientated the correct way around.**

Drill the outer frame fixing holes (**908**) 125mm in from each end. Divide the rest equally but no more than 250mm apart.

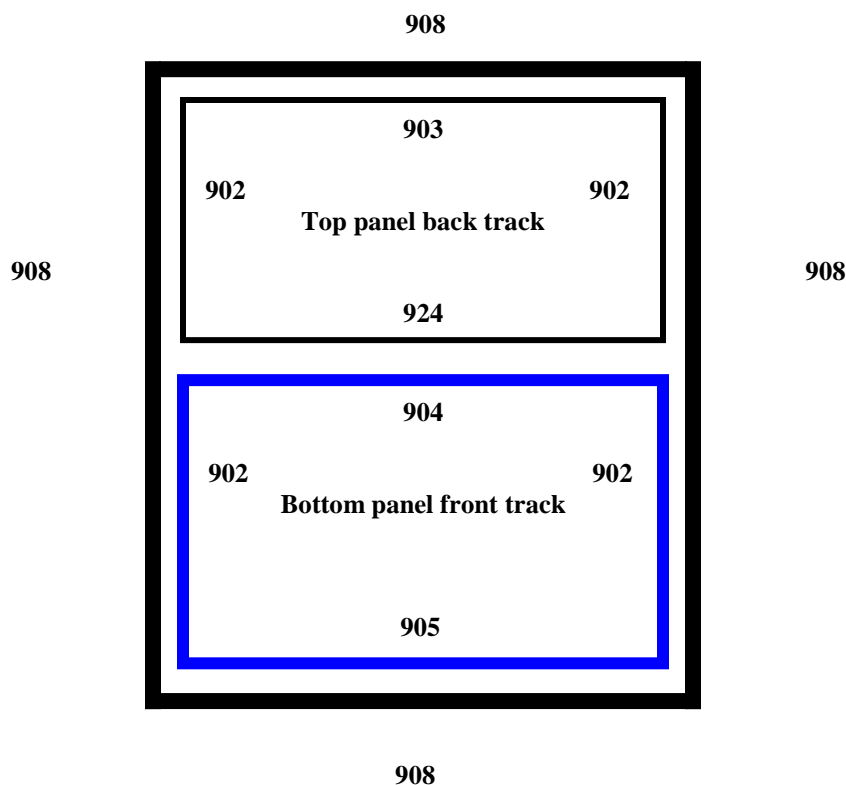
Place the counterbalance springs into the outer frame heights (**908**) and secure with 8 x 1" self-tapping countersunk screws (**931**) for 14mm diameter springs or 8 x 1 ¼" self-tapping countersunk screws (**932**) for 17mm to 18mm springs. The springs can be tensioned now (recommended) or when the frame is screwed together.

Slide into the outer frame heights (**908**) 4 x pivot shoes, **brass plate to the top (928)**, the 4 plates from the quick release arms **QR150/QR250/QR350/QR400/QR550** and 4 plates from the shackles if required (**QR75**).

Shackles are generally used with stay arms QR400 and QR550.

The plates are inserted with the large hole towards the bottom.

Screw the outer frame together with 6 x 1 self-tapping pan head screws (**922**). Insert 8 x screw hole cover caps (**955**).



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Preparation continued

File the mitred handle back (**903**) to a flat edge. Drill 1 x 9/64th and 1 x 3/32nd hole each end using jig number **913**. In the 3/32nd holes insert a 4 x 1/4 self tapping flange head screw (**322F**).

File the mitred handle back (**905**) to a flat edge. Drill 1 x 9/64th hole each end using jig number **914**.

Interlock **924** drill 1 x 9/64th hole each end using jig number **914**.

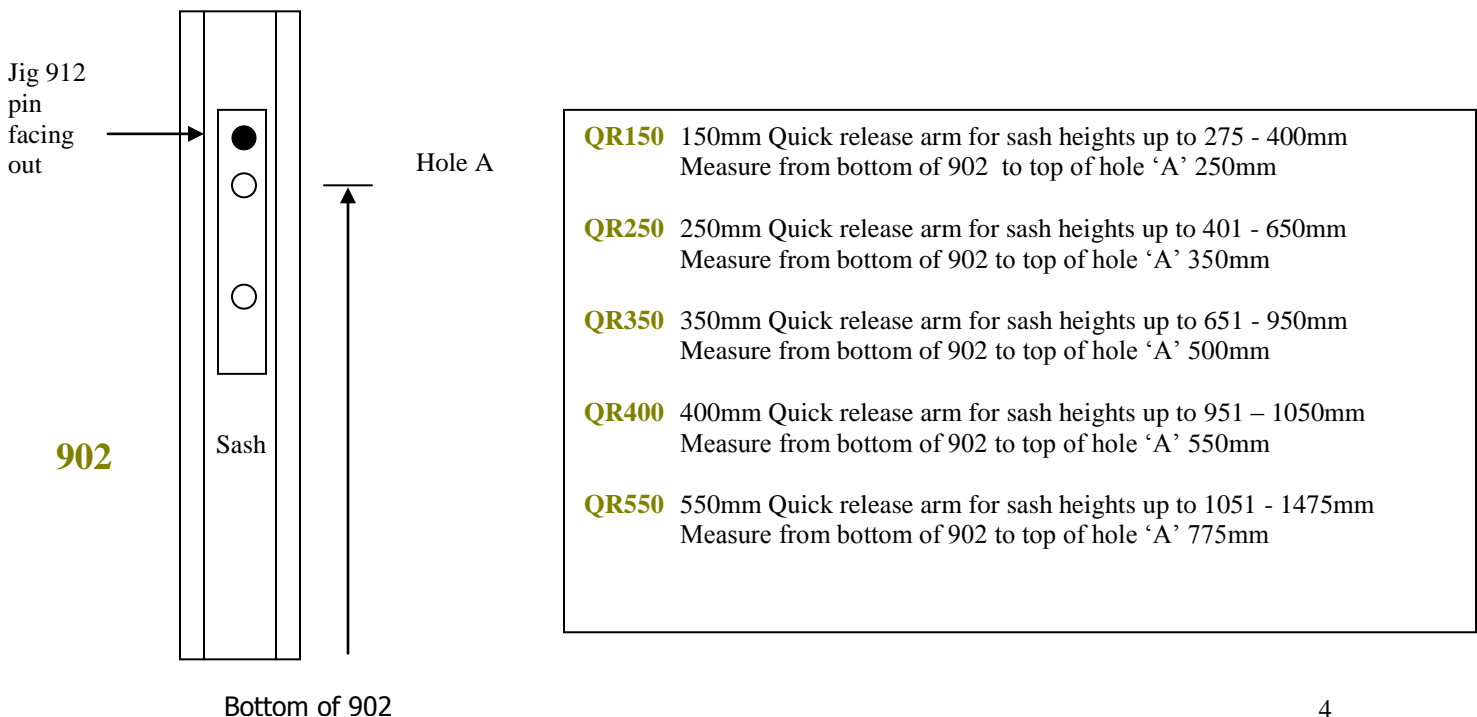
If locking fitch catches are required see page 7.

Interlock **904**, router using jig number **R904** a slot 27mm from the end, 14mm long by 6 mm wide. **Use a 16mm Guide Bush on your router, and a 7mm router bit (270).**

All four sash sides (**902**) for the top and bottom panels, drill a 9/64th hole each end using jig number **915**. The hole in jig **915** is offset therefore insert jig with the hole towards the front of section **902**.

Drill 2 x 9/64th holes in all four sash sides using jig number **912** for the quick release bar, as chart below.

Fit weatherpile (**WF600**) to all inner panel sections.
For fitting of fitch catch see page 7.



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Assembly of Panels

Assemble both panels with the handle on first then the two sides.

Before fitting the interlock, slide in the Quick release restrictor bar and centre the black plastic part of the stay arm between the two holes in the **902**. Fix the plastic washer with 8 x 3/8 (**930**) Pan head self tapping blunt point screws.

Do not allow the stay arm to fall forwards in front of the panel, as the pip on the side/front edge can bend the arm.

Screw the mitres together with 6 x 1 self-tapping pan head screws (**922**).

Cut a length of **517** screw cover, (**Top panel width -2mm**) and punch each end using punch number **940**. Insert the screw cover into the top, of the top panel. A dab of silicon in the centre keeps the screw cover from moving.

(Slot dimensions are 27mm from the end by 14mm long and 6mm wide)

Assembly of Tilt Counterbalance Vertical

Lay the assembled outer frame on a bench and slide the plates from the quick release bars and shackles above the height of the shoes before panel assembly. Place the top panel in the frame and slide into the bottom of the panel two pivot bars **927** with the scored line on the pivot bar facing the outer frame. Locate the pivot bar into the pivot shoe up to the scored line and fix the pivot bar with a 8 x 3/8 self-tapping pan head blunt point screw (**930**).

In the top of the panel slide in the Tilt Latch **929** and wind in the grub screw but do not tighten. Locate the plates from the quick release arms and remove the red button, place the arms into the key hole slot and replace the red button. Slide the quick release plates downwards and lower the panel into the frame. Slide the tilt latch into the frame and tighten the grub screw.

The procedure is the same for the bottom panel.

With the panels at the top of the outer frame, lift the completed window off the bench and stand upright. Slide the panels up and down stopping in various places checking there is no creeping up or down when the panel is released. Lock the panels out fully and check that all is sealing properly and the interlocks line through. Check the tilt facility is working correctly.

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Slide the top panel down **carefully** to the bottom of its travel, allow for fitch catches, measure from the bottom inside of the track to the underneath of the panel and add 10mm. Cut two **907p** to size and silicon into the back track at the bottom, to act as panel stops.

The sloped edge of the **907p** should face the front.

Slide the bottom panel up **carefully** to the top of its travel, allow for fitch catches, measure from the inside of the track to the top of the panel and add 10mm. Cut two **907p** to size and silicon into the front track at the top to act as panel stops.

Important: Before moving a counterbalanced vertical slider make sure both panels are at the top of the frame. E.G. Top panel closed and bottom panel fully open. Then turn the window upside down.

With the window upside down, cut 2 x **517** screw cover to the panel widths, and fit to the bottom of each panel. This covers the pivot bars. A dab of silicon helps keep them in place.

Additional information

You should have a sheet from your spring supplier detailing the springs needed and the required turns to tension each spring. **Push each spring spiral right to the top**, attach the hook of the winding tool (**942**) on to the pins at the bottom of the spring and apply the correct amount of turns. Slot the end of the spring into the pivot shoe ensuring it clips in fully.

The 17mm or 18mm diameter springs are pre-tensioned and just need a slight twist clockwise for Caldwell springs, and anticlockwise for other manufacturers, then pull the spring down and insert into the shoe.

For transportation of tilt counterbalanced windows the sides are best held together by strapping around the sides of the window.

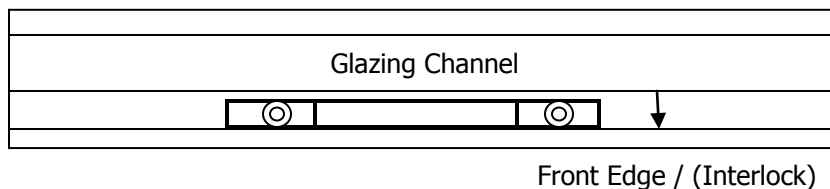
Tilt Counterbalance Vertical Sliders continued

Jig requirements and tools

<i>Jig Number</i>	<i>Section</i>	<i>Requirement</i>
917	908	End holes for screwing frame together
917	908	Spring fixing holes
913	903	Tilt latch stop and grub screw location
914	905	Pivot bar fixing
914	924	Pivot bar fixing
R904	904	Slot for tilt latch
912	902	Quick release restrictor location holes
915	902	End holes for screwing sash together
940	517/903	Slot for tilt latch stop
943	924/904	Fitch catch
942	Springs	Winding tool

Fitch catches **(327)** should be fitted prior to assembling the panels using jig number **943**.

Interlock **(924)** keep the glazing channel upwards with the front face towards you, place the long leg of the jig on top, but don't allow the jig to tilt on the front face chamfer. Drill 2 x 3.32nd holes then enlarge to 9/64th. **Hold the keep (327TK) towards the front face** and rivet with 3.2 x 12mm rivets.



For interlock **904** keep the glazing channel downwards, with the front face towards you, place the long leg of the jig on top and drill 2 x 9/64th holes through the top. Fit the lock **Flush** with the back of the interlock with 3.2 x 14mm rivets and washers

