Caldwell Spirex & Spiralift Installation Manual

***Please read all pages carefully before you start installation.**

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CALDWELL
SOLUTIONS THAT SET NEW STANDARDS

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Guide To Travel Stops

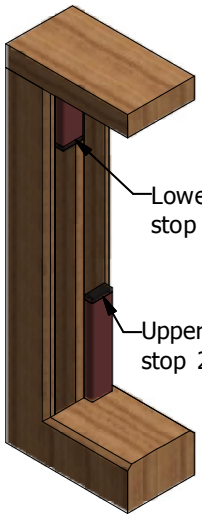
Travel stops are essential whenever spring balances are in use. Travel stops ensure that the spring balances do not become damaged or prematurely worn. Travel stops are required at both the top of the window & at the bottom.

Travel stops are available from most of the major window system companies and these are usually profile specifiic. Caldwell also offer a range of travel stops.

The principal failure mode on spring balances where travel stops are not fitted are over extension & under extension. Both of these failure modes result in the balances being damaged beyond repair and will almost certainly mean that the balances will have to be replaced.

Over extension occurs when the upper sash is pulled downwards beyond the working range of the balance, this can result in internal damage within the spring balance. Travel stops prevent this from happening by limiting the travel of the sash.

Under extension occurs if the lower sash is lifted up until it hits the bottom of the balances, again this can result in internal damage within the spring balance. Travel stops prevent this by limiting the travel of the sash.



DO NOT OPERATE THE WINDOW UNTIL THE UPPER AND LOWER TRAVEL STOPS ARE FITTED.

Travel stop lengths

Caldwell recommend the minimum size of travel stops to be fitted to an equally split vertical slider are:

Upper sash travel stop = 220mm
Lower sash travel stop = 130mm

The above sizes should always be used with Caldwell spring balances, however longer stops can be used if required.

For every 25mm that the upper sash is smaller than equally split, 50mm must be added to the upper sash travel stop length.

If horns are used, reduce the calculated length of the travel stop by the length of the horn.

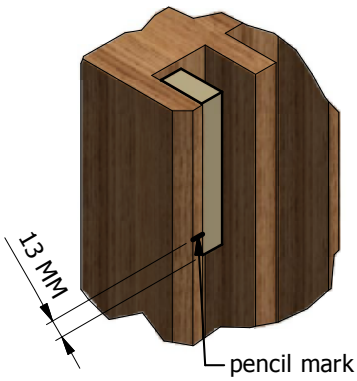
For further information, please contact Caldwell Technical Department.

CONVENTIONAL TIMBER SYSTEM TRAVEL STOPS

On a conventional timber system, a UK190N-Upper Sash Travel Stop and a UK191N-lower Sash Travel Stop can be used (see datasheet 00333). NOTE: If the UK190N & UK191N are used, they need to be positioned correctly to limit travel adequately (method shown below). Alternatively, a block of timber cut to length can be used. All stops should be fitted as described below.

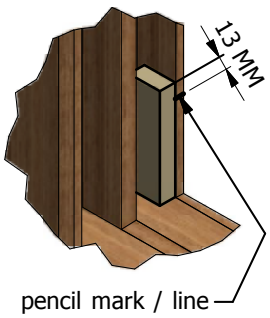
Carefully lift the lower sash until resistance is felt i.e. the balance is fully retracted. Pencil mark one jamb in line with the top of the sash.

Fix a limit stop with its bottom edge 13mm below the mark. Raise the sash to the limit block and fix a second block to the opposite jamb.



Carefully lower the upper sash until resistance is felt i.e. the balance is fully extended. Pencil mark one jamb in line with the bottom of the meeting rail.

Fix a limit stop with its bottom edge 13mm above the mark. Lower the sash to the limit block and fix a second block to the opposite jamb.



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FRAME AND SASH PREPARATION FOR TIMBER WINDOWS

SPIREX & SPIRALIFT BALANCES

(i) MACHINED SASH METHOD

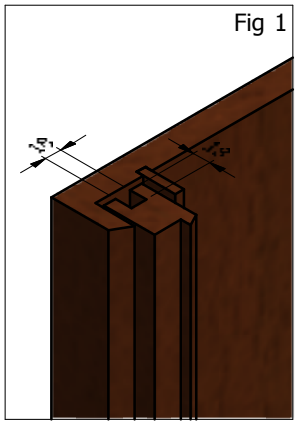

Fig 1: Sash groove dimensions

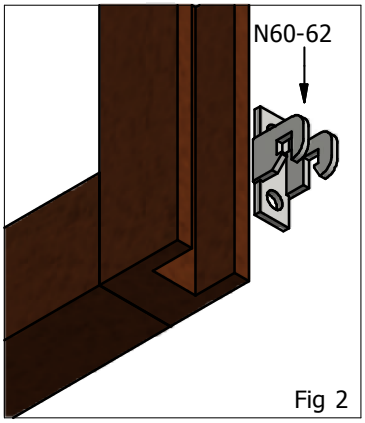

Fig 2: Side fix options

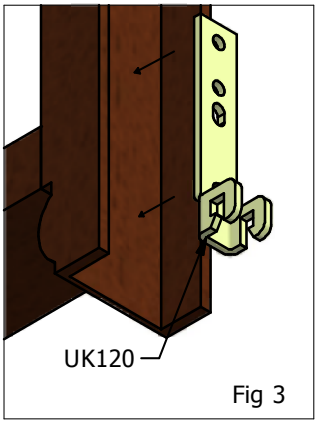

Fig 3: Side fix to horn. When fixing ALWAYS put screws through at least the top

(ii) MACHINED FRAME METHOD

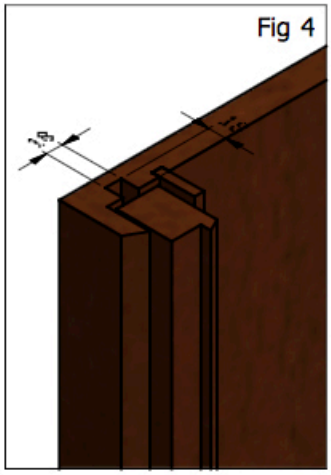

Fig 4: Frame groove dimensions

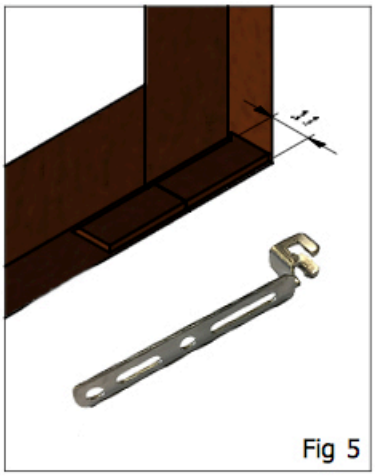

Fig 5: Bottom fix.

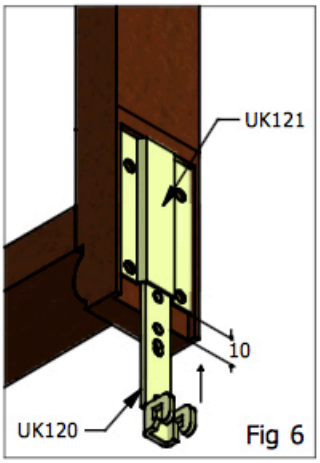

Fig 6: Side fix to horn with sliding bracket facility sink UK121 in unitl it is flush.

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INSTALLATION PROCEDURE

SPIREX & SPIRALIFT BALANCES

IMPORTANT PLEASE REFER TO PAGES 8 & 9 OF THIS MANUAL FOR TRAVEL STOP INFORMATION.
PLEASE READ BEFORE INSTALLING BALANCES.

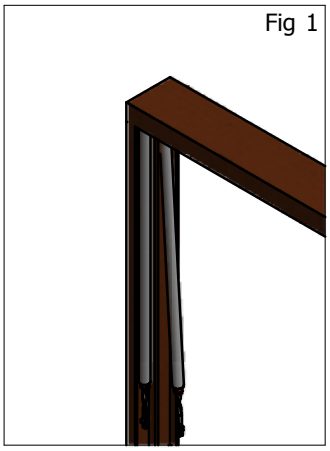

Fig 1: Load balances into outer frame before installing sashes, then load the sash into the frame. If window is already installed see Fig 1A.

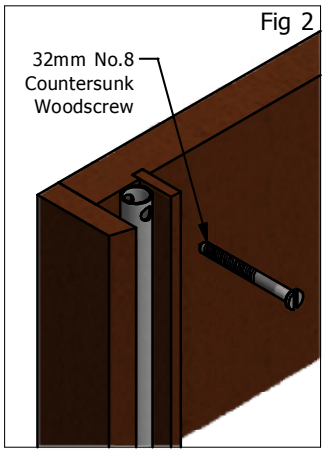

Fig 2: Do not over tighten the top screw as this will distort the balance tube and reduce it's efficiency.

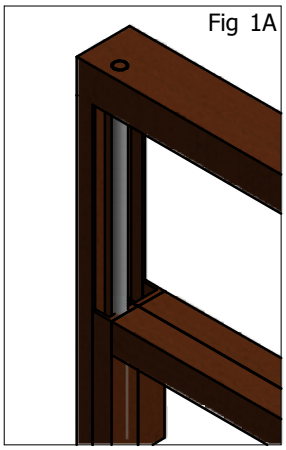

Fig 1A: If window is already installed. Fully lower the sash before attempting to insert the balance into the machined groove in the sash or frame.

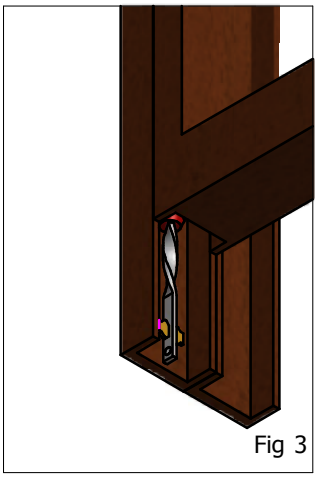

Fig 3: Raise the sash and support it's weight on a suitable strut.
Unhook and clear the spiral rod of its fixing bracket. Lower the rod by up to a maximum of 50mm.
Should the rod extend out of the balance by more than 50mm, gently push the rod back into the balance, allowing it to rotate freely.

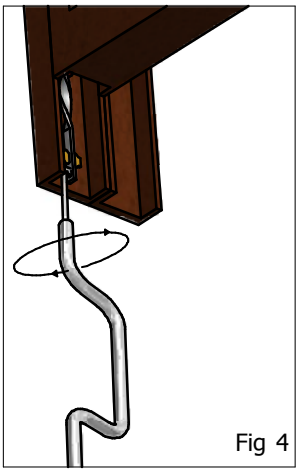

Fig 4: Apply tension clockwise, using a hook tensioning tool. Check the Balance Tensioning Chart on page 9 for the correct number of turns.
WARNING: do not move the sashes fully up or down until limit stops have been fitted as below.

Limit stops must be fitted for both upper and lower sashes. They should be of adequate length to prevent over extending of the balance spiral rod

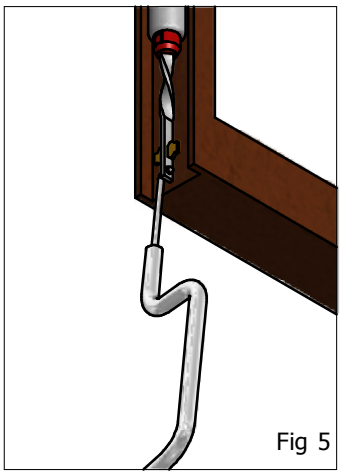

Fig 5: Latch the cross pin into the bracket seat and remove the tension tool.
Finally check for a smooth operation of the sash.

THE SPIRAL ROD OR BALANCE TUBE SHOULD NOT BE DISTORTED IN ANY WAY DURING INSTALLATION.

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Tensioning Chart for Spiral Balances

REGULAR ALUMATILT & SPIREX

BALANCE LENGTH mm	203	228	254	279	305	330	356	381	406	432	457	483	508	533	559	584	610	635	660	686	711	737	762	787	813	838	864	889	914	940	965	991	1016	1041	1067	1092	1118	1143	1169	1194	1220
INCHES	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
3	1	1	1	1																																					
6	2	1	1	1	1	1½	1½	1½	2	2	2	2½	3	3	3	3	2½	2½	2½	2½	2½	3	3	3	3	3	2	2	2												
9	3	2	2	2	2	2½	2½	2½	3	3	3½	4	4½	5	5	5½	3½	3½	3½	3½	3½	3½	4	4	4	4	4	3	3	3½	3½										
12	4	2	2½	3	3	3½	4	4	4½	4½	5	5	5½	6	6½	6½	4½	4½	4½	4½	5	5	5	5½	6	6½	6½	6½	3½	4	4½	4½	5	5	5	5	5½	5½	5½	6	6
15	5	3	3½	4	4	4½	5	5	5½	5½	6	6	6½	7	7½	7½	5½	5½	5½	5½	6	6	6	6½	7	7½	7½	7½	4½	5	6	6	6½	6½	7	7	7	7	7½	7½	8	8
18	6	2	2½	3	3	3½	4	4	4½	4½	4	4	4½	5	5½	5½	6½	6½	7	7	7	7½	7½	8	8½	8½	5½	6	7	7	7½	8	8½	8½	8½	9	9	9	9½	9½	9½	10
21	7	3	3½	4	4	4½	5	5	5	5	5½	5½	5½	6	6	6½	5	5	5½	5½	6	6	6½	6½	7	7	6	7	8	8	8½	9	8	9½	9½	9½	9½	10	10	10	10½	11
24	8	2	2½	3	3	3	3½	3½	3½	3½	4	4½	5	5	5½	6	6½	6½	7	7	7½	7½	8	8	8½	8½	8	8½	9	9	9½	9½	10	10	10½	10½	10½	11	11	11	11½	12
27	9	2½	3	3½	3½	4	4½	4½	4½	4½	5	5½	5½	6	7	7	7½	7½	8	8	8½	8½	8½	9	9	9	9	9½	10	10½	10½	11	11	11	11½	11½	11½	12	12	12	12½	13
30	10	3½	4	4½	4½	4½	5	5	5	5	5½	5½	6	6½	8	8½	9	9	9	9	9½	9½	9½	9½	10	10	8	8	8	8	8½	8½	9	9	9	9½	9½	9½	10	10	10½	11
13.5	11	4	4½	5	5	5	5½	5½	5½	5½	6	6	6½	7	8½	9½	10	10	10½	10½	11	11	11	11½	11½	11½	8½	8½	8½	8½	9	9	9½	9½	10	10½	10½	11	11	11	11½	12
SASH WEIGHT lbs	12	4½	5	5½	6	6	6	6	6	6	6½	6½	7	7	9½	10½	6½	6½	7	7	7½	7½	8	8	8½	8½	9	9	9	9	9½	10	10½	11½	11½	12	12	12	12	12½	13	13
WEIGHT kg	13	5½	6	6	6½	6½	6½	6½	6½	6½	7	7½	8	9½	10	11	7½	7½	8	8	8	8½	9	9	9½	9½	10	10	10½	10½	11	11½	12	12	12	12½	12½	13	13	13	13½	13½
	30	6	6	6½	7	7	7	7	7	7	7½	8	8½	10	10	11½	8	8	8½	8½	9	9	9½	9½	10	10	10½	11	11½	11½	12	12½	13	13	13½	13½	14	14	14½	14½	14½	

WHITE COUPLING

BLUE COUPLING

RED COUPLING

HEAVY DUTY ALUMATILT & SPIRALIFT

BALANCE LENGTH mm	432	457	483	508	533	559	584	610	635	660	686	711	737	762	787	813	838	864	889	914	940	965	991	1016	1041	1067	1092	1118	1143	1169	1194	1220
INCHES	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
30	14	2	2½	3	3½	4	4½	5	5½	5½	6	6	6½	7	7½	8	8	8½	8½	9	9	9½	9½	10	10	10½	11	11	12	12½	13	13½	14
33	15	2	2½	3	3½	4½	5	5½	6	6	7	7½	7½	8	8½	9	9	9½	10	10	10½	11	11½	11½	12	12	12½	13	13½	14	14½	14½	15
36	16	3	3½	4	4½	5	5½	6	6	6½	7	8	8½	9	9½	10	10½	11	11	11	11½	12	12½	12½	13	13	13	13½	13½	14	14½	15	15½
40	17	4	4½	5	5½	6	6½	7	7	7½	8	8½	9	9½	10	11	11½	12	12	12½	12½	13	13	13½	13½	14	14	14½	15	15	15½	16	16
	18	5	5½	6	6½	7	7½	8	8	8½	9	9	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	15	15	15½	15½	16	16	16½	17	17
SASH WEIGHT lbs																																
WEIGHT kg																																

BLACK COUPLING

To establish spring colour and tension turns required:
Find appropriate balance length and read down until it coincides with required sash weight. That figure is the number of tension turns and the colour is that of the coupling required.

For sashes over 40lbs (18kg) refer to Ultralift or Torso information sheets.

Note: Tensioning chart is for guidance purposes only.

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