



SPRING BALANCES

DOUBLE HUNG
WINDOW

SPRING BALANCES DOUBLE HUNG WINDOWS

DOUBLE HUNG WINDOW SPRING BALANCES

DOUBLE HUNG WINDOWS

Double Hung windows have been installed in Australian houses for decades.

The unique window design allows warm air to escape through the top of the window whilst drawing cool air in through the bottom. This circulation is ideal where ventilation is desired.

As Double Hung windows have become more common and sizes have become larger the challenge has been to provide reliable hardware to meet this requirement.

Doric draws on 30 years of experience to offer a Spring Balance mechanism that is recognised as the most reliable maintenance free balance system available.

BALANCES TO SUIT ALUMINIUM WINDOWS

Designed to complement and work within the dimensional restraints of modern aluminum double hung windows. The Doric Spring balance suits windows from 1.6kg through to 22kg providing a reliable easy to operate mechanism to balance a window.

FEATURES

- Comprehensive range of sizes and strengths. (see size chart)
- Accessories available such as stops, guides, and friction feet.
- Durable materials provide reliability and longevity.
- Compatible with the majority of Australian Double Hung Windows and brands.
- Made in Australia



Spring Balances

BALANCES TO SUIT TIMBER WINDOWS

The Timber spring balance is essentially the same mechanism as the aluminum variant with the addition of an aluminum channel. When installed the timber window is balanced and smooth.

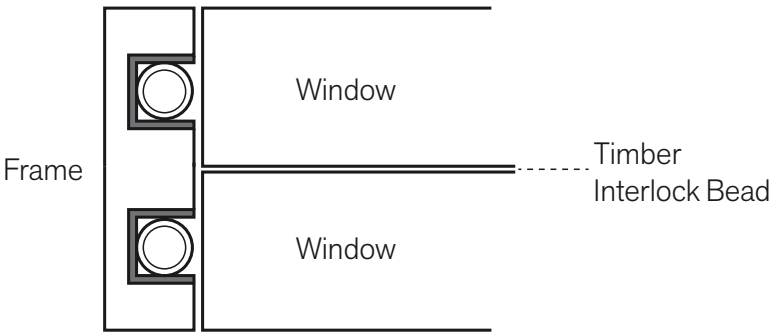
There are two methods to install the Doric Spring Balance into a Timber Window:

1. Trench the window frame to accommodate the supplied aluminum channel and balance mechanism. Install a timber bead to locate, secure, separate and seal each sash in its operation.

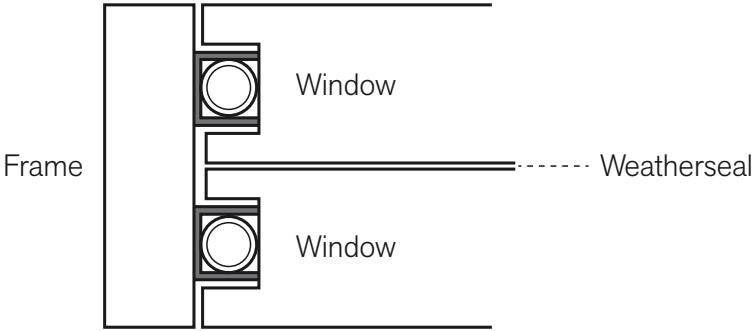
OR

2. Surface mount the channel to the frame. Machine the sash to the dimension of the channel allowing 1 mm - 2 mm clearance. The sash then travels up and down using the aluminium channel as a guide.

Method 1.



Method 2.



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FRICTION FEET

Friction feet are required in every spring balance application. There is a variety of friction feet available to suit the majority of window suite dimensions. The friction feet widths range from 13 mm to 35 mm.

A friction foot is designed specifically to hold the window in the desired position. It is not designed to compensate for an incorrect spring strength. See "SELECTING THE CORRECT BALANCE."

If the window brand is known Doric can provide the exact friction foot for the window. If the window brand isn't known simply measure the channel width where the friction foot will be located and include this dimension on your order sheet and your Doric representative will nominate the appropriate friction foot to suit your application.



Note; DB078 is the most common foot. It is suitable for channel widths of 22 mm - 24 mm

SELECTING THE CORRECT BALANCE

Spring balances are separated by length and strength. The height of the window determines the spring length, the weight of the window determines the spring strength.

To select the correct spring, measure the internal dimensions of the window. See figure 1.

Reference the height, the width and the glass thickness with the "Sash weight chart".

Note: Round the measured window height up to the nearest value found in the chart.

For example; a window that measures 1230mm high, will require a spring with a length of 1299mm. If the width is 650mm and the glass thickness is 6mm a blue spring is required.

		Window Width									
Window Height	Spring Length	600	650	700	750	800	850	900	950		
		3.3	3.7	4.1	4.4	4.7	5.0	5.3	5.6	5.9	6.2
699	179	3.3	3.7	4.1	4.4	4.7	5.0	5.3	5.6	5.9	6.2
799	229	3.7	4.1	4.4	4.7	5.0	5.3	5.6	5.9	6.2	6.5
899	279	4.1	4.4	4.7	5.0	5.3	5.6	5.9	6.2	6.5	6.8
999	329	4.4	4.7	5.0	5.3	5.6	5.9	6.2	6.5	6.8	7.1
1099	379	4.7	5.0	5.3	5.6	5.9	6.2	6.5	6.8	7.1	7.4
1199	429	5.0	5.3	5.6	5.9	6.2	6.5	6.8	7.1	7.4	7.7
1299	479	5.3	5.6	5.9	6.2	6.5	6.8	7.1	7.4	7.7	8.0
1399	529	5.6	5.9	6.2	6.5	6.8	7.1	7.4	7.7	8.0	8.3

Source; 6mm Glass Sash Weight Chart

If you do not know the glass thickness the sash must be weighed and the weight referenced against the "Sash Weight Chart".

= 0 - 2.75kg	= 2.75 - 4.25kg
= 4.25 - 6.00kg	= 6.00 - 10.00kg
= 10.00 - 14.00kg	= 14.00 - 18.00kg
= 18.00 - 22.00kg	



FRICTION FOOT ADJUSTMENT

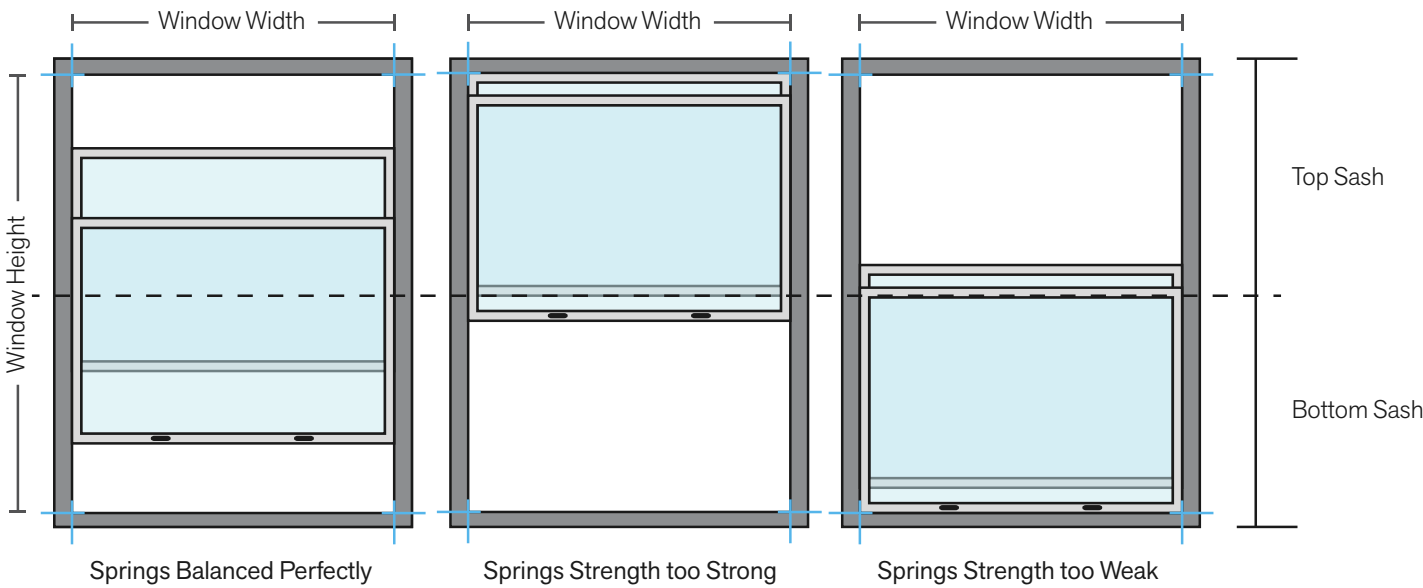
Once the Spring Balance is installed and checked to be the correct weight for the window the following procedure should followed to tension the friction feet:

1. Loosen the friction foot adjustment screw until the friction foot no longer applies friction to the extrusion.
2. Cycle the sash (window) up and down several times to check if the friction feet are disengaged.
3. Tighten the friction foot adjustment screw until a small amount of tension is felt on the screw. Repeat on the opposing side.
4. Cycle the window again to make sure a small amount of friction is present.
5. Tighten the adjustment screw half a turn.
6. Cycle the window and attempt to set the window in the position where the spring is not in tension. The window should remain in place. If the window moves add another half turn to the friction feet and check again.
7. Tighten the adjustment screw an additional quarter turn to account for wear in the friction foot.

Your window should now be correctly balanced.

IDENTIFYING CORRECT COLOUR

Once installed and without adjustment applied to the friction foot, **a correctly selected spring will balance the sash within the middle third of the window stroke. (see below)** If this is not the case the spring weight colour is not correct and the spring should be changed for the correct colour.



Caution; never use a power drill to adjust a friction foot or over tension the adjustment screw. This causes the friction foot to distort and can damage the window channel surface.

3mm Glass - Sash Weight Chart

		Window Width Range																	
		Spring Length	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400
699	179	179	1.6	1.7	1.8	2.0	2.1	2.2	2.4	2.5	2.6	2.8	2.9	3.0	3.1	3.3	3.4	3.5	3.7
799	229	229	1.8	1.9	2.1	2.2	2.4	2.5	2.7	2.8	3.0	3.1	3.3	3.4	3.6	3.7	3.9	4.0	4.2
899	279	279	2.0	2.2	2.4	2.5	2.7	2.9	3.0	3.2	3.4	3.5	3.7	3.9	4.0	4.2	4.4	4.6	4.7
999	329	329	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.7	3.9	4.1	4.3	4.5	4.7	4.9	5.1	5.2
1099	379	379	2.5	2.7	2.9	3.1	3.3	3.5	3.7	3.9	4.1	4.3	4.5	4.7	4.9	5.2	5.4	5.6	5.8
1199	429	429	2.7	2.9	3.1	3.4	3.6	3.8	4.0	4.3	4.5	4.7	4.9	5.2	5.4	5.6	5.8	6.1	6.3
1299	479	479	2.9	3.2	3.4	3.7	3.9	4.1	4.4	4.6	4.9	5.1	5.4	5.6	5.8	6.1	6.3	6.6	6.8
1399	529	529	3.1	3.4	3.7	3.9	4.2	4.5	4.7	5.0	5.2	5.5	5.8	6.0	6.3	6.6	6.8	7.1	7.3
1499	579	579	3.4	3.7	3.9	4.2	4.5	4.8	5.1	5.3	5.6	5.9	6.2	6.5	6.7	7.0	7.3	7.6	7.9
1599	629	629	3.6	3.9	4.2	4.5	4.8	5.1	5.4	5.7	6.0	6.3	6.6	6.9	7.2	7.5	7.8	8.1	8.4
1699	679	679	3.8	4.1	4.5	4.8	5.1	5.4	5.7	6.1	6.4	6.7	7.0	7.3	7.6	8.0	8.3	8.6	8.9
1799	729	729	4.0	4.4	4.7	5.1	5.4	5.7	6.1	6.4	6.7	7.1	7.4	7.8	8.1	8.4	8.8	9.1	9.4
1899	779	779	4.3	4.6	5.0	5.3	5.7	6.1	6.4	6.8	7.1	7.5	7.8	8.2	8.5	8.9	9.3	9.6	10.0
1999	829	829	4.5	4.9	5.2	5.6	6.0	6.4	6.7	7.1	7.5	7.9	8.2	8.6	9.0	9.4	9.7	10.1	10.5
2099	879	879	4.7	5.1	5.5	5.9	6.3	6.7	7.1	7.5	7.9	8.3	8.7	9.1	9.4	9.8	10.2	10.6	11.0
2199	929	929	4.9	5.4	5.8	6.2	6.6	7.0	7.4	7.8	8.2	8.7	9.1	9.5	9.9	10.3	10.7	11.1	11.5
2299	979	979	5.2	5.6	6.0	6.5	6.9	7.3	7.8	8.2	8.6	9.1	9.5	9.9	10.3	10.8	11.2	11.6	12.1
2399	1029	1029	5.4	5.8	6.3	6.7	7.2	7.6	8.1	8.5	9.0	9.4	9.9	10.3	10.8	11.2	11.7	12.1	12.6
2499	1079	1079	5.6	6.1	6.6	7.0	7.5	8.0	8.4	8.9	9.4	9.8	10.3	10.8	11.2	11.7	12.2	12.7	13.1

6mm Glass - Sash Weight Chart

		Window Width Range																	
		Spring Length	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400
699	179	179	3.3	3.5	3.8	4.1	4.4	4.6	4.9	5.2	5.5	5.7	6.0	6.3	6.5	6.8	7.1	7.4	7.6
799	229	229	3.7	4.1	4.4	4.7	5.0	5.3	5.6	5.9	6.2	6.5	6.9	7.2	7.5	7.8	8.1	8.4	8.7
899	279	279	4.2	4.6	4.9	5.3	5.6	6.0	6.3	6.7	7.0	7.4	7.7	8.1	8.4	8.8	9.1	9.5	9.8
999	329	329	4.7	5.1	5.5	5.8	6.2	6.6	7.0	7.4	7.8	8.2	8.6	9.0	9.4	9.7	10.1	10.5	10.9
1099	379	379	5.1	5.6	6.0	6.4	6.9	7.3	7.7	8.1	8.6	9.0	9.4	9.9	10.3	10.7	11.1	11.6	12.0
1199	429	429	5.6	6.1	6.5	7.0	7.5	7.9	8.4	8.9	9.4	9.8	10.3	10.8	11.2	11.7	12.2	12.6	13.1
1299	479	479	6.1	6.6	7.1	7.6	8.1	8.6	9.1	9.6	10.1	10.6	11.1	11.7	12.2	12.7	13.2	13.7	14.2
1399	529	529	6.5	7.1	7.6	8.2	8.7	9.3	9.8	10.4	10.9	11.5	12.0	12.5	13.1	13.6	14.2	14.7	15.3
1499	579	579	7.0	7.6	8.2	8.8	9.4	9.9	10.5	11.1	11.7	12.3	12.9	13.4	14.0	14.6	15.2	15.8	16.4
1599	629	629	7.5	8.1	8.7	9.4	10.0	10.6	11.2	11.8	12.5	13.1	13.7	14.3	15.0	15.6	16.2	16.8	17.5
1699	679	679	8.0	8.6	9.3	9.9	10.6	11.3	11.9	12.6	13.3	13.9	14.6	15.2	15.9	16.6	17.2	17.9	18.6
1799	729	729	8.4	9.1	9.8	10.5	11.2	11.9	12.6	13.3	14.0	14.7	15.4	16.1	16.8	17.5			19.6
1899	779	779	8.9	9.6	10.4	11.1	11.8	12.6	13.3	14.1	14.8	15.6	16.3	17.0	17.8				20.7
1999	829	829	9.4	10.1	10.9	11.7	12.5	13.3	14.0	14.8	15.6	16.4	17.2	17.9					21.8
2099	879	879	9.8	10.6	11.5	12.3	13.1	13.9	14.7	15.6	16.4	17.2							
2199	929	929	10.3	11.1	12.0	12.9	13.7	14.6	15.4	16.3	17.2								
2299	979	979	10.8	11.7	12.6	13.4	14.3	15.2	16.1	17.0	17.9								
2399	1029	1029	11.2	12.2	13.1	14.0	15.0	15.9	16.8	17.8									
2499	1079	1079	11.7	12.7	13.6	14.6	15.6	16.6	17.5										

4mm Glass - Sash Weight Chart

		Window Width Range																	
		Spring Length	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400
699	179	179	2.1	2.3	2.4	2.6	2.8	3.0	3.1	3.3	3.5	3.7	3.8	4.0	4.2	4.4	4.5	4.7	4.9
799	229	229	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.0	5.2	5.4	5.6
899	279	279	2.7	2.9	3.1	3.4	3.6	3.8	4.0	4.3	4.5	4.7	4.9	5.2	5.4	5.6	5.8	6.1	6.3
999	329	329	3.0	3.2	3.5	3.7	4.0	4.2	4.5	4.7	5.0	5.2	5.5	5.7	6.0	6.2	6.5	6.7	7.0
1099	379	379	3.3	3.6	3.8	4.1	4.4	4.7	4.9	5.2	5.5	5.8	6.0	6.3	6.6	6.9	7.1	7.4	7.7
1199	429	429	3.6	3.9	4.2	4.5	4.8	5.1	5.4	5.7	6.0	6.3	6.6	6.9	7.2	7.5	7.8	8.1	8.4
1299	479	479	3.9	4.2	4.5	4.9	5.2	5.5	5.8	6.2	6.5	6.8	7.1	7.5	7.8	8.1	8.4	8.8	9.1
1399	529	529	4.2	4.5	4.9	5.2	5.6	5.9	6.3	6.6	7.0	7.3	7.7	8.0	8.4	8.7	9.1	9.4	9.8
1499	579	579	4.5	4.9	5.2	5.6	6.0	6.4	6.7	7.1	7.5	7.9	8.2	8.6	9.0	9.4	9.7	10.1	10.5
1599	629	629	4.8	5.2	5.6	6.0	6.4	6.8	7.2	7.6	8.0	8.4	8.8	9.2	9.6	10.0	10.4	10.8	11.2
1699	679	679	5.1	5.5	5.9	6.4	6.8	7.2	7.6	8.1	8.5	8.9	9.3	9.8	10.2	10.6	11.0	11.5	11.9
1799	729	729	5.4	5.8	6.3	6.7	7.2	7.6	8.1	8.5	9.0	9.4	9.9	10.3	10.8	11.2	11.7	12.1	12.6
1899	779	779	5.7	6.2	6.6	7.1	7.6	8.1	8.5	9.0	9.5	10.0	10.4	10.9	11.4	11.9	12.3	12.8	13.3
1999	829	829	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0
2099	879	879	6.3	6.8	7.3	7.9	8.4	8.9	9.4	10.0	10.5	11.0	11.5	12.1	12.6	13.1	13.6	14.2	14.7
2199	929	929	6.6	7.1	7.7	8.2	8.8	9.3	9.9	10.4	11.0	11.5	12.1	12.6	13.2	13.7	14.3	14.8	15.4
2299	979	979	6.9	7.5	8.0	8.6	9.2	9.8	10.3	10.9	11.5	12.1	12.6	13.2	13.8	14.4	14.9	15.5	16.1
2399	1029	1029	7.2	7.8	8.4	9.0	9.6	10.2	10.8	11.4	12.0	12.6	13.2	13.8	14.4	15.0	15.6	16.2	16.8
2499	1079	1079	7.5	8.1	8.7	9.4	10.0	10.6	11.2	11.9	12.5	13.1	13.7	14.4	15.0	15.6	16.2	16.9	17.5

8mm Glass - Sash Weight Chart

		Window Width Range																	
		Spring Length	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400
Window Height Range	699	179	4.2	4.5	4.9	5.2	5.6	5.9	6.3	6.6	7.0	7.3	7.7	8.0	8.4	8.7	9.1	9.4	9.8
	799	229	4.8	5.2	5.6	6.0	6.4	6.8	7.2	7.6	8.0	8.4	8.8	9.2	9.6	10.0	10.4	10.8	11.2
	899	279	5.4	5.8	6.3	6.7	7.2	7.6	8.1	8.5	9.0	9.4	9.9	10.3	10.8	11.2	11.7	12.1	12.6
	999	329	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0
	1099	379	6.6	7.1	7.7	8.2	8.8	9.3	9.9	10.4	11.0	11.5	12.1	12.6	13.2	13.7	14.3	14.8	15.4
	1199	429	7.2	7.8	8.4	9.0	9.6	10.2	10.8	11.4	12.0	12.6	13.2	13.8	14.4	15.0	15.6	16.2	16.8
	1299	479	7.8	8.4	9.1	9.7	10.4	11.0	11.7	12.3	13.0	13.6	14.3	14.9	15.6	16.2	16.9	17.5	
	1399	529	8.4	9.1	9.8	10.5	11.2	11.9	12.6	13.3	14.0	14.7	15.4	16.1	16.8	17.5			
	1499	579	9.0	9.7	10.5	11.2	12.0	12.7	13.5	14.2	15.0	15.7	16.5	17.2	18.0				
	1599	629	9.6	10.4	11.2	12.0	12.8	13.6	14.4	15.2	16.0	16.8	17.6	18.4					
	1699	679	10.2	11.0	11.9	12.7	13.6	14.4	15.3	16.1	17.0	17.8	18.7						
	1799	729	10.8	11.7	12.6	13.5	14.4	15.3	16.2	17.1	18.0	18.9							
	1899	779	11.4	12.3	13.3	14.2	15.2	16.1	17.1	18.0									
	1999	829	12.0	13.0	14.0	15.0	16.0	17.0	18.0										
	2099	879	12.6	13.6	14.7	15.7	16.8	17.8	18.9										
	2199	929	13.2	14.3	15.4	16.5	17.6	18.7											
2299	979	13.8	14.9	16.1	17.2	18.4													
2399	1029	14.4	15.6	16.8	18.0														
2499	1079	15.0	16.2	17.5															

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