

UNIVERSAL 150MM CHORD CARBON FRONT WING

Designed for Reverie Ltd by aerodynamics writer and designer Simon McBeath (author of Competition Car Aerodynamics) using Ansys CFD-Flo software. Data and images generated by the CFD software are displayed in this document. The wing profile was designed to give a range of downforce levels from moderate to reasonably high, depending on the deployed angle of attack and chosen span, with very good efficiency in terms of downforce to drag ratio. The wing features internal longitudinal stringers and end spars with 2 x M5 threaded inserts for mounting between supports or for affixing end plates.

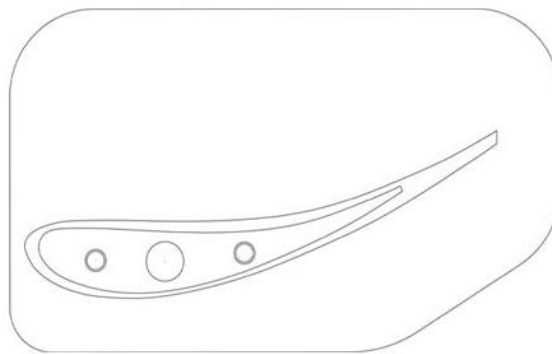
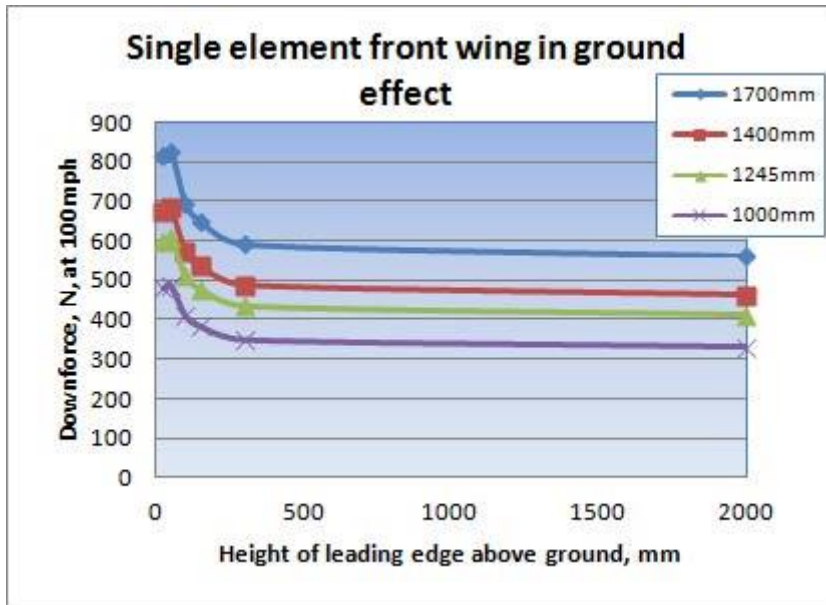
Where to Position a Front Wing?

If you look at the front wing in ground effect data below you will see that there is a sharp rise in downforce from ground effect when the wing gets below 100mm to the ground. To keep the car stable & predictable over bumps or under heavy braking, it is advisable to mount the wing 100mm or higher so its operating in a more linear & predictable region.

The 1700mm data given was produced by Ansys CFD-Flo software, all other widths have been calculated only using the wing width approximation formula found in our FAQ document.

*** Data marked in red show that the wing has either stalled or was close to stalling and has been omitted from the graphs ***

	1000mm Wingspan				1245mm Wingspan			
Height from Ground (mm)	Downforce (N)	Drag (N)	L/D	BHP Absorbed	Downforce (N)	Drag (N)	L/D	BHP Absorbed
2000	331	25	1.5	2.5	411	31	13.3	1.8
450	348	25	1.5	2.5	435	31	14.0	1.8
225	383	26	1.5	2.6	477	32	14.9	1.9
150	409	28	1.7	2.8	509	35	14.7	2.1
100	487	36	2.2	3.7	607	45	13.5	2.7
50	481	46	2.7	4.7	598	57.3	10.4	3.4
	1400mm Wingspan				1700mm Wingspan			
Height from Ground (mm)	Downforce (N)	Drag (N)	L/D	BHP Absorbed	Downforce (N)	Drag (N)	L/D	BHP Absorbed
2000	463	35	13.3	2.1	562	42	13.3	2.5
450	487	35	14.0	2.1	592	42	14.0	2.5
225	536	36	14.9	2.1	651	44	14.9	2.6
150	573	39	14.7	2.3	695	47	14.7	2.8
100	682	51	13.5	3.0	829	62	13.5	3.7
50	673	65	10.4	3.8	817	78	10.4	4.7



Profile with end plate

Figure 5-1 *Wing terminology.*

Image courtesy of Simon McBeath
Competition Car Aerodynamics

