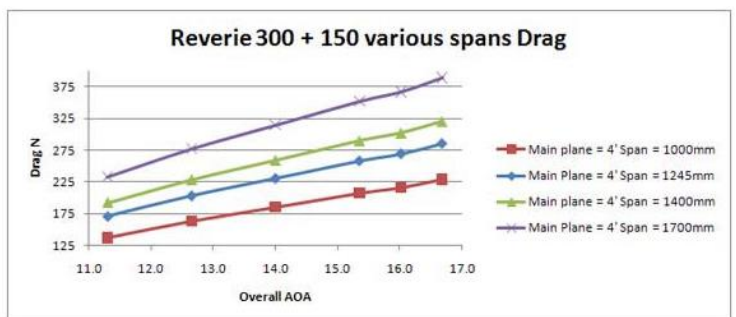
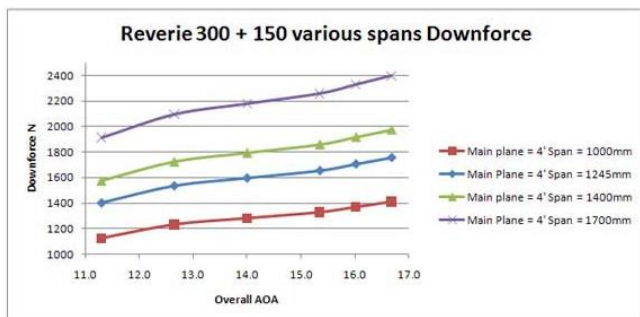


UNIVERSAL DUAL-ELEMENT 310MM + 150MM CHORD CARBON REAR WING

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			
AoA Assy	AoA Flap	Downforce (N)	Drag (N)	L/D	BHP Absorbed	Downforce (N)	Drag (N)	L/D	BHP Absorbed
11.3	11.3	1125	137	8.2	8.2	1401	171	8.2	10.2
12.7	15.4	1232	163	7.6	9.7	1534	203	7.6	12.1
14.0	19.4	1281	185	6.9	11.0	1595	230	6.9	13.7
15.4	23.4	1328	207	6.4	12.3	1653	258	6.4	15.4
16.0	25.4	1369	216	6.3	12.9	1704	269	6.3	16.0
16.7	27.4	1410	229	6.2	13.6	1755	285	6.2	17.0
		1400mm Wingspan				1700mm Wingspan			
11.3	11.3	1575	192	8.2	11.4	1913	233	8.2	14.2
12.7	15.4	1725	228	7.6	13.6	2094	277	7.6	16.9
14.0	19.4	1793	259	6.9	15.4	2178	315	6.9	19.2
15.4	23.4	1859	290	6.4	17.3	2258	352	6.4	21.5
16.0	25.4	1917	302	6.3	18.0	2327	367	6.3	22.4
16.7	27.4	1974	321	6.2	19.1	2397	389	6.2	23.8



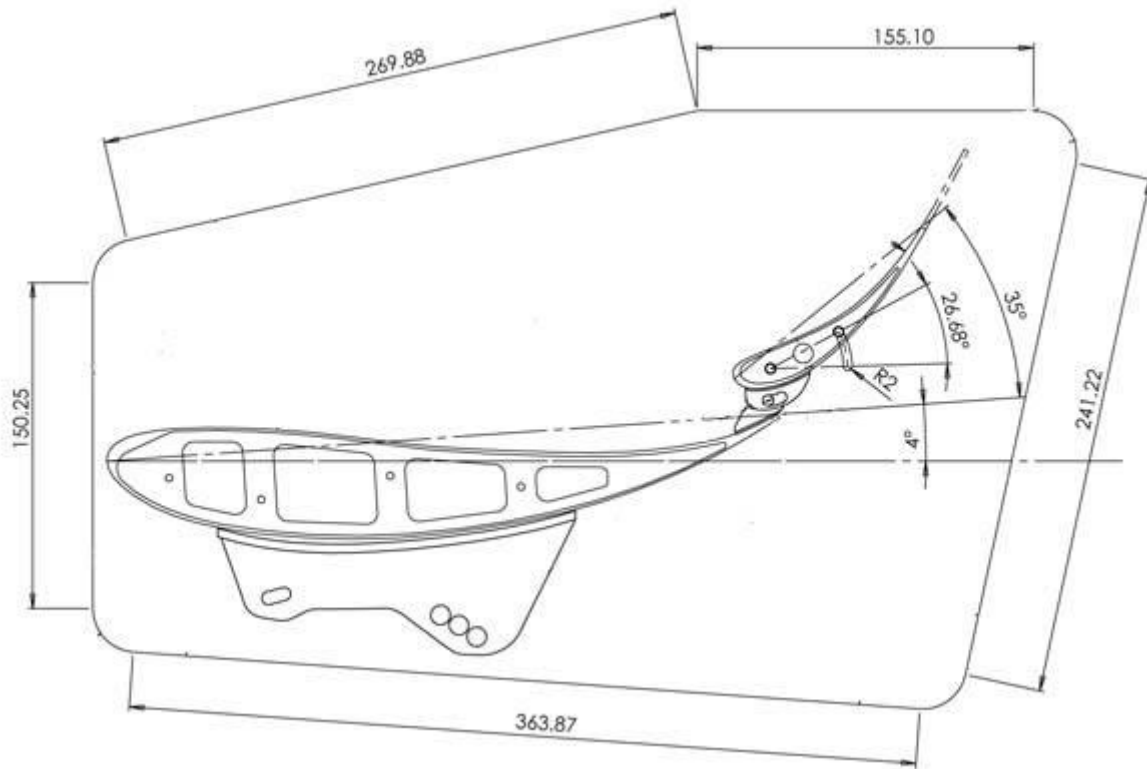
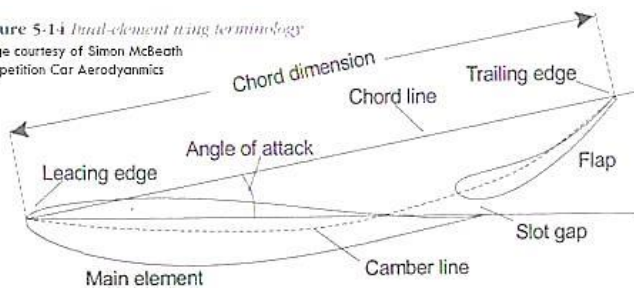


Figure 5-14 Dual-element wing terminology

Image courtesy of Simon McBeath
Competition Car Aerodynamics



310 & 110 Main Plane and Flap angle Optimisation swings

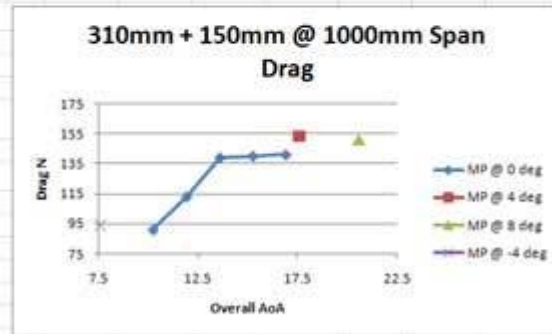
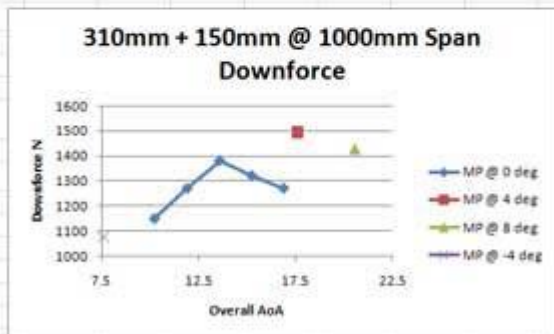
Forces @ 100 MPH				
310mm LD Wing with 150mm Flap @ 1000mm Span				
15mm Slot Gap, 20mm Overlap @ 0 deg MP				
MP @ 0 deg				
Flap Angle	Overall AoA	Downforce N	Drag N	L/D
20	10.2	1151	91	12.6
25	11.9	1271	113	11.2
30	13.6	1380	139	9.9
35	15.3	1321	140	9.4
40	16.9	1271	141	9.0
MP @ 4 deg				
Flap Angle	Overall AoA	Downforce N	Drag N	L/D
35	17.6	1494	153	9.8
MP @ 8 deg				
Flap Angle	Overall AoA	Downforce N	Drag N	L/D
35	20.6	1427	151	9.5
MP @ -4 deg				
Flap Angle	Overall AoA	Downforce N	Drag N	L/D
20	7.6	1074	94	11.4

Conclusion - The best angles to run the dual element wing for a Downforce vrs Drag trade off are MP @ 0 deg with a Flap angle of 20 deg, overall AoA 10.2 deg. The highest downforce was produced with a MP @ 4 deg, Flap angle of 35 deg and overall AoA of 17.6 deg - Note this is the limit of Overall AoA as @ 8 deg MP Flap of 35 produced Less Downforce than MP @ 4 deg, flap angle of 35 deg Therefore is stalling.

310mm & 110mm Downforce and Drag @ various Flap Angles



Downforce and Drag @ various Overall AoA



Downforce vrs L/D @ various Overall AoA