

SM/DJ rear wing range data

25/04/2016

Forces (and Drag BHP) at 100mph in freestream. NB, forces developed on a car will differ from those developed in freestream; this data is intended for comparisons between our products only.

Single element wings

1700mm span

See page 2 for calculations for other spans and speeds, and configuration notes. Ansys 14.5 CFD-Flo, KE turbulence model

SM183

Angle	Df, N	Drag, N	-L/D	Drag BHP	
0	460.5	31.5	14.62	1.9	To convert Newtons to Kg divide by 9.81
4	672.1	48.4	13.89	2.9	To convert Newtons to lb divide by 4.459
8	856.6	71.3	12.01	4.2	
12	953.5	95.2	10.02	5.7	
14	965.7	108.2	8.93	6.4	
16	964.4	125.7	7.67	7.5	

SM132

Angle	Df, N	Drag, N	-L/D	Drag BHP
0	650.4	58.2	11.18	3.5
4	965.1	80.0	12.06	4.8
8	1178.6	110.6	10.66	6.6
12	1325.5	141.1	9.39	8.4
14	1363.5	154.6	8.82	9.2
16	1386.3	169.8	8.16	10.1
18	1363.9	184.1	7.41	11.0

Dual element wings 1700mm span

183 + flap 120mm, MP= 0deg

Main element at 0deg, 120mm flap

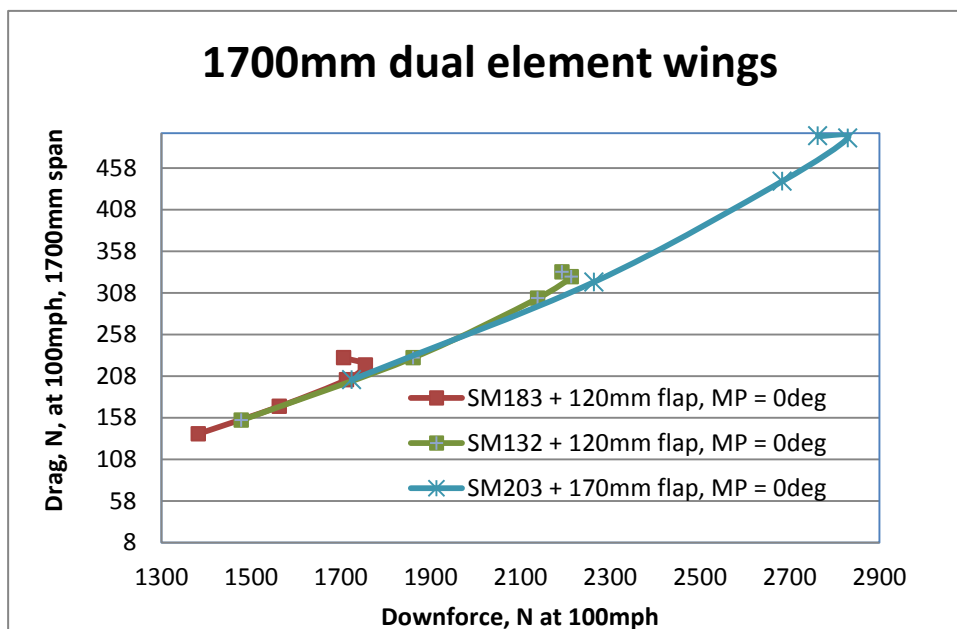
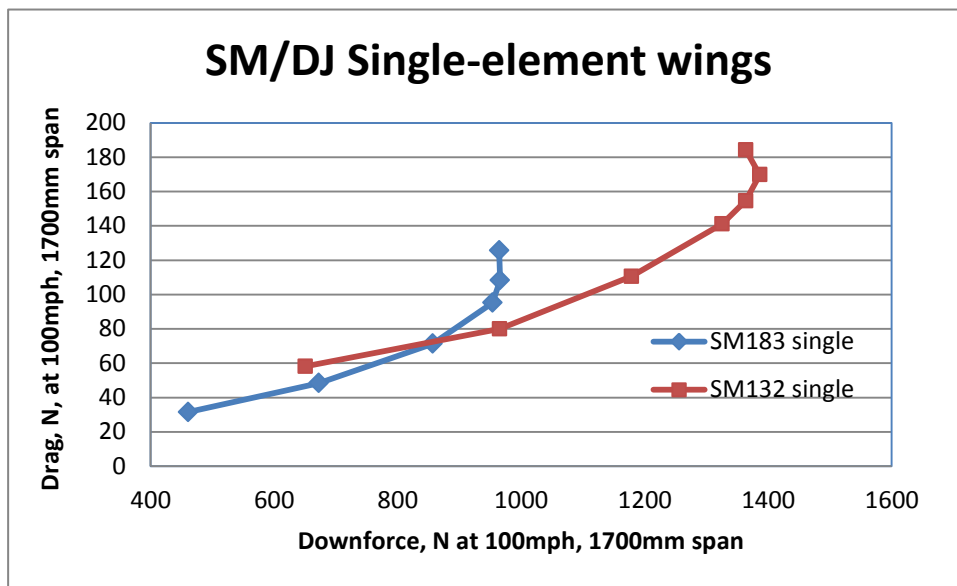
Flap angle	Df, N	Drag, N	-L/D	Drag BHP	
20	1382.6	138.6	9.98	8.3	Flap angle is relative to main element
25	1562.8	171.5	9.11	10.2	
30	1713.0	203.7	8.41	12.1	
35	1755.1	221.3	7.93	13.2	
40	1706.5	230.0	7.42	13.7	

132 + flap 120m, MP=0deg

Flap angle	Df, N	Drag, N	-L/D	Drag BHP
20	1478.3	154.9	9.54	9.2
30	1861.0	230.1	8.09	13.7
40	2138.6	301.5	7.09	18.0
45	2213.8	327.5	6.76	19.5
50	2192.8	333.2	6.58	19.9

203 + flap 170mm, MP = 0deg

Flap angle	Df, N	Drag, N	-L/D	Drag BHP	
20	1724.0	203.5	8.47	12.1	Main element at 0deg, 170mm flap
30	2263.8	321.0	7.05	19.1	Flap angle is relative to main element
40	2683.4	442.2	6.07	26.4	
45	2829.4	494.1	5.73	29.4	
50	2763.0	496.6	5.56	29.6	



These plots are just to illustrate the downforce and drag values covered by our wing range. Please ask about other options and combinations, or multi-element wings as required.

To calculate approximate downforce at other spans, multiply Df or drag by (your span/1700)
 e.g. Df at 1700mm is 2263.8N, so at 1800mm it will be 1800/1700 x 2263.8 = 2397.0N

To calculate approximate downforce at other speeds, multiply Df or drag by (your speed/100mph)²
 e.g. Df at 100mph = 2263.8N, so at 80mph it will be (80/100)² x 2263.8 = 1448.8N

To convert Newtons to Kg divide by 9.81. To convert Newtons to lb divide by 4.459.

Tell us about your requirements and we will do our best to meet them.