

Aston Martin DB9

2005



4 Wheels

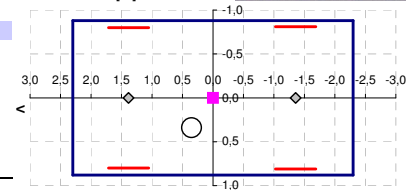
DIMENSIONS

Total height	1,125m	Length	4,600m	Wheelbase	2,740m
Ground clearance	0,125m	Width	1,760m	Front track	1,600m
		Body height	1,000m	Rear track	1,620m

NullPoint (0,0,0)

Supposed at:
of body base

UPPER VIEW [m]



WEIGHTS

Body	1.550kg				
Engine		1.550kg			
Front wheels	90kg	+			
Rear wheels	70kg	160kg			
DISTRIBUTION front	49%	1.710kg			
rear	51%				

Steering wheel		X pitch	Y yaw	Z roll
Center of gravity [m]			-0,16	
Rotational inertias [kg.m ²]		2.530	2.870	540
	Estimated [kg.m ²]	(3.209)	(3.209)	(331)

ENGINE

Maximum power	383 CV	7.500rpm	max
Maximum torque	485 N.m	6.000rpm	(283kW)
		5.000rpm	(49mkp)
		1.500rpm	min
CONSUMPTION		0,0000200	g/J
Fuel tank	50 L Gasoline		

AERODYNAMIC

Frontal area	2,20m ²				
COEFFICIENTS					
overall body lif	width	span	Cx	vertical [Y]	Kd
	1,00	1,00	-9,50	1,00	-0,1072

TRANSMISSION

Drive:	rear		gears	6
Gearbox:	manual		differential ratio	3,07
HELP TO DRIVE:				
	without ABS		SHIFT:	
	without ASD	7.500rpm	At max RPM	

BRAKES

	front	rear			
front	2.100 N.m	12.727 N	75%		
rear	700 N.m	4.242 N	25%		
		16.970 N			

STEERING

Steer lock	3,0	between locks	To front wheel		
Turning diameter	8,77	m	Ackerman	1,30	
STEERING WHEEL POSITION		X	Y	Z	
		m	0,34	0,12	0,35

SUSPENSION

LENGTH					
[m]	hung	min	max	kerb weight	
				inicio	weight [kg]
Front	0,406	0,270	0,410	0,326	333
Rear	0,400	0,140	0,410	0,328	362
STIFFNESS [N/m]				Total	antiroll
Front	270.000	40.950	35.557	41.000	
Rear	260.000	49.550	41.618	28.000	

ROLL CENTER

		X	Y	Z
Front	m	-0,58	1,38	
Rear	m	-0,56	-1,36	
SUSPENSION POSITION		X	Y	Z
Wheel				
	1	0,80	1,38	
	2	-0,80	1,38	
	3	0,81	-1,36	
		-0,81	-1,36	

WHEELS

[m]	Radius	Perimeter	optimal values		
			SR [-]	SA [rad]	
Front	0,330	2,073	0,110	0,157	-
Rear	0,330	2,073	0,110	0,157	-
media	0,330	2,073			-

TEORICAL PERFORMANCE

Speed	303 km/h	By power	(188mph)
	546 km/h	By transmission	(339mph)
Acceleration	4,73 seg	from 0 a 100 km/h	(4,47s Weight/Power)
	13,41 seg	from 0 to 400 m	
	22,85 seg	from 0 to 1000 m	
Brake	14,0m	from 60 to 0 km/h	
	76,1m	from 140 to 0 km/h	
Adelantament	1,77 seg	from 20 a 50 km/h in 2ª	
	4,52 seg	from 60 to 120 km/h in 3ª	
	4,15 seg	from 80 to 120 km/h in 4ª	
Consumption			
100 km	1,4 L	at 90km/h	
	2,0 L	at 120km/h	
	2,495	Km at 120km/h	
TRANSVERSAL DYNAMIC			
V = 303 km/h	Roll over	Longitudinal	Transversal
	1,82G		1,26G
	Amáx 0,71G (471%)		
	Fmáx -0,86G (85%)		
V = 0 km/h	1,82G		1,31G
	Amáx 0,68G (88%)		
	Fmáx -0,96G (95%)		
	(% of available acceleration/braking)		

AERODYNAMIC CHANGES

	V [km/h]	+/- ΔM [kg]	+/- ΔAx	- ΔAz
	100	-8	-0,5%	-0,02G
	150	-19	-1,1%	-0,05G
	200	-34	-2,0%	-0,08G
	250	-53	-3,1%	-0,13G
	300	-76	-4,4%	-0,18G

GEAR RATIOS

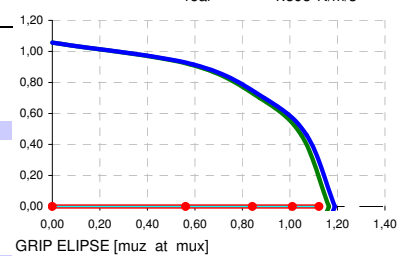
	V [km/h]	+ Az
1ª	2,877	106
2ª	1,983	153
3ª	1,445	210
4ª	1,120	271
5ª	0,833	365
6ª	0,557	546
7ª		
8ª		
9ª		
MA	-3,75	-81
		-1,01G

WHEELS ANGLE

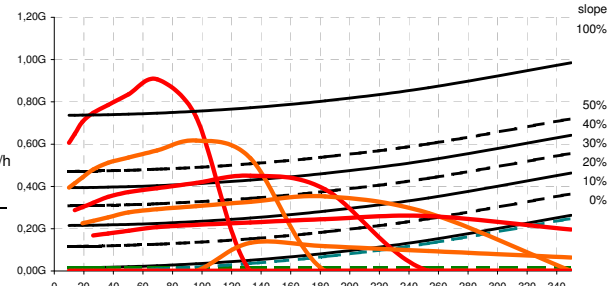
	° out	° in
1,25	1,65	
2,50	3,34	
5,00	6,85	
10,00	14,47	

RESUME

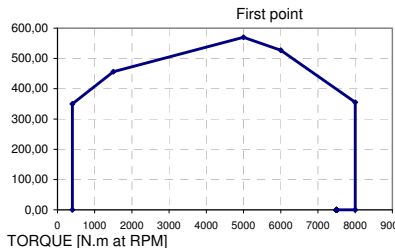
Vertical stiffness	k 154.351 N/m
Frecuencie	w 1,59 Hz
Wheel vertical stiffness	k 1.060.000 N/m
Frecuencie	w 12,95 Hz

Damping 5%
critical real
30.935 N/m/s
1.595 N/m/s

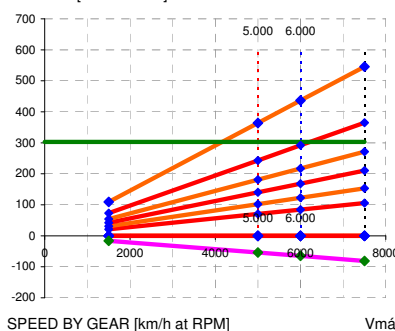
GRIP ELIPSE [muzz at mux]

ROLL COEFFICIENT
0,015 (default values)

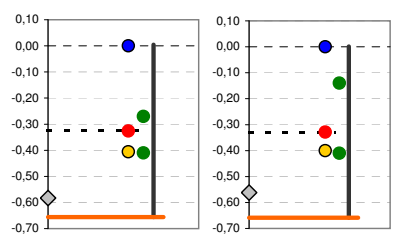
MARCH DIAGRAM [Az m/s² at V km/h, and climbing slope %]



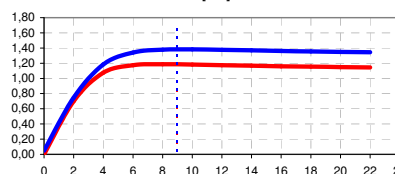
TORQUE [N.m at RPM]



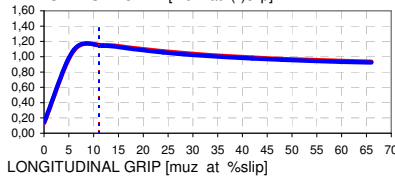
SPEED BY GEAR [km/h at RPM]



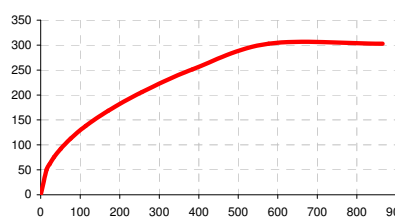
SUSPENSION GEOMETRY [cm]



LONGITUDINAL GRIP [muzz at %slip]



TRANSVERSAL GRIP [muzz at %slip]



SPEED AT CURVE [km/h at R curve, m]

With Az = 0

COMMENTS BY MODELERS

6-liter V12 British luxury Coupé
By Bumper, full credits in Readme