Sheet Version V05 11/01/2011

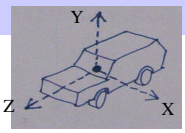
Chevrolet Van G20 - 1986

4 Wheels

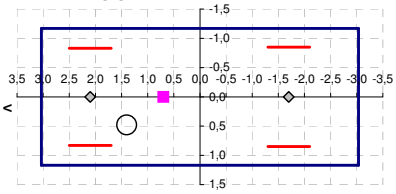
DIMENSIONS

Total height	1,890m	Length	6,070m	Wheelbase	3,800m
Ground clearance	0,200m	Width	2,340m	Front track	1,660m
		Body heigth	1,690m	Rear track	1,700m

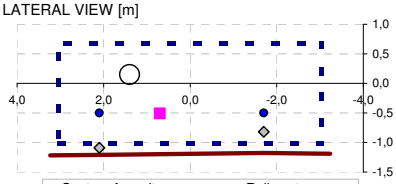
NullPoint (0,0,0)
Supossed at: 1,019m of body base



UPPER VIEW [m]



LATERAL VIEW [m]



■ Center of gravity ♦ Roll centers
● Suspension position o Steering wheel
Wheels ---- Body Floor

WEIGHTS

Body	2.131kg		
Engine		2.131kg	SPRUNG WEIGHT
Front wheels	30kg	+	
Rear wheels	30kg	60kg	UNSPRUNG WEIGHT
DISTRIBUTION front	63%	2.191kg	TOTAL MASS
rear	37%		

	X pitch	Y yaw	Z roll
Steering wheel			
Center of gravity [m]		-0,51	0,70
Rotational inertias [kg.m2]	5.138	6.547	1.601
Estimated [kg.m2]	(7.362)	(7.362)	(750)

ENGINE

		5.850rpm	max
Maximum power	227 CV	4.250rpm	(168kW)
Maximum torque	435 N.m	2.400rpm	(44mkp)
		650rpm	min
CONSUMPTION		0,0000200	g/J
Fuel tank	50 L	Gasoline	

(default values)

AERODYNAMIC

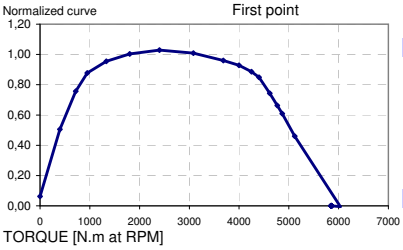
Frontal area 1,81m2 →→→ ↓↓↓↓↓↓

COEFFICIENTS	width	longitudinal [Z] span	Cx 0,357 Cd	vertical [Y] angle	Kd

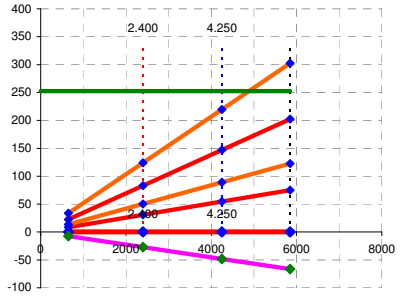
AERODYNAMIC CHANGES

V [km/h]	+/- ΔM [kg]	+/- ΔAx	- ΔAz
100			-0,02G
150			-0,03G
200			-0,06G
250			-0,09G
300			-0,14G

Normalized curve First point



TORQUE [N.m at RPM]



SPEED BY GEAR [km/h at RPM] Vmáx

TRANSMISION

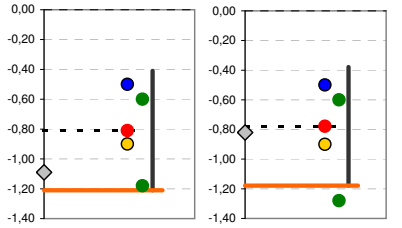
Drive:	rear	gears	4
Gearbox:	manual	differential ratio	3,89
HELP TO DRIVE:			
	without ABS	SHIFT:	
	without ASD	5.850rpm	At max RPM

0,20 +Fz

GEAR RATIOS		V [km/h]	+ Az
1ª	3,020	75	0,59G
2ª	1,850	123	0,36G
3ª	1,120	202	0,22G
4ª	0,750	302	0,15G
5ª			
6ª			
7ª			
8ª			
9ª			
MA	-3,42	-66	-0,67G

BRAKES

	BRAKE TORQUE	BRAKE FORCE		Handbrake:
front	3.500 N.m	17.500 N	78%	To wheels rear
rear	1.000 N.m	5.000 N	22%	Az [m/s2]
		22.500 N		-1,05G



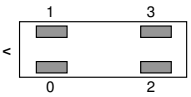
SUSPENSION GEOMETRY [cm]

STEERING

Steer lock	3,0	between locks		To front wheels	
Turning diameter	14,60	m		Ackerman	1,10
STEERING WHEEL POSITION		X	Y	Z	
	m	0,48	0,15	1,40	

WHEELS ANGLE

º out	º in
1,25	1,39
2,50	2,80
5,00	5,72
10,00	11,91



SUSPENSION

LENGTH				kerb weight	
[m]	hung	mín	max	inicio ●	weight [kg]
Front	0,400	0,100	0,680	0,310	662
Rear	0,400	0,100	0,780	0,279	374

STIFFNESS [N/m]	Wheels	Susp.	Total	antiroll
Front	195.000	72.130	52.654	38.500
Rear	195.000	30.203	26.152	5.000

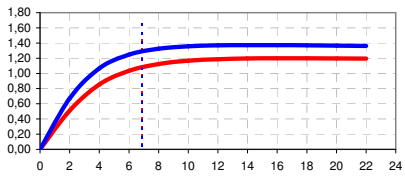
RESUME

Vertical stiffness	k 157.612 N/m
Frecuencie	w 1,37 Hz
Wheel vertical stiffness	k 780.000 N/m
Frecuencie	w 18,15 Hz

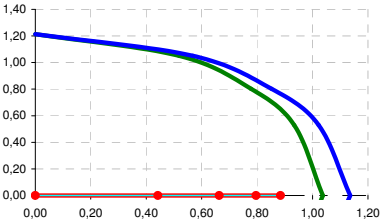
ROLL CENTER	X	Y	Z
Front m		-1,09	2,10
Rear m		-0,82	-1,70

Damping 3%
critical 36.654 N/m/s
real 1.196 N/m/s

SUSPENSION POSITION	[m] X	Y	Z
Wheel 0	0,83	-0,50	2,10
1	-0,83	-0,50	2,10
2	0,85	-0,50	-1,70
3	-0,85	-0,50	-1,70



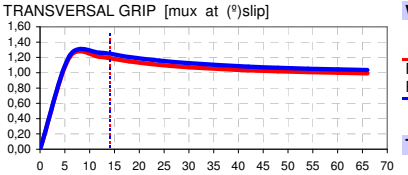
TRANSVERSAL GRIP [mux at (º)slip]



GRIP ELIPSE [muz at mux]

WHEELS

[m]	Radius	Perimeter	optimal values SR [-]	SA [rad]	
Front	0,400	2,513	0,140	0,120	-
Rear	0,400	2,513	0,140	0,120	
media	0,400	2,513			-



LONGITUDINAL GRIP [muz at %slip]

TEORICAL PERFORMANCE

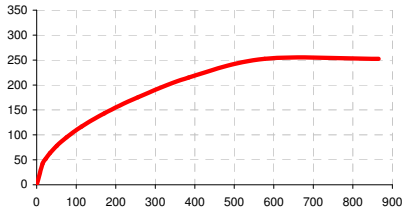
Speed	253 km/h	By power	(157mph)
	302 km/h	By transmision	(188mph)
Acceleration	7,84 seg	from 0 a 100 km/h	(9,67s Weight/Power)
	17,07 seg	from 0 to 400 m	
	29,69 seg	from 0 to 1000 m	
Brake	13,5m	from 60 to 0 km/h	
	73,6m	from 140 to 0 km/h	
Adelantament	2,54 seg	from 20 a 50 km/h in 2ª	
	8,71 seg	from 60 to 120 km/h in 3ª	
	9,63 seg	from 80 to 120 km/h in 4ª	
Consumption		1,6 L	at 90km/h
100 km		2,2 L	at 120km/h
Autonomy		2.316	Km at 120km/h

ROLL COEFFICIENT
0,016 -

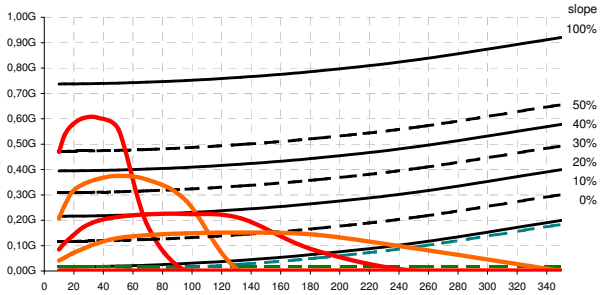
TRANSVERSAL DYNAMIC

	Roll over	Longitudinal	Transversal
V = 253 km/h	1,24G		0,93G
		Amáx 0,67G (454%)	
		Fmáx -1,18G (112%)	
V = 0 km/h	1,24G		0,92G
		Amáx 0,6G (101%)	
		Fmáx -1,04G (100%)	

(% of available aceleration/braking)



SPEED AT CURVE [km/h at R curve,m]
With Az = 0



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

COMMENTS BY MODELERS

A Great Classical American Van,
Model By Bumper3D New Sounds/Ini by Alex Forbin

version RACER: 050b6