

KEY

YELLOW	Tuned Parameters
RED	Resultant Specs

Driver Mass	147	Mass Total w/ Driver	2430
Battle Bimmer Mass	2283	Sprung Mass	1940

Front		Rear	
Weight %	54.200	Weight %	45.800
Corner Unsprung Mass	112	Corner Unsprung Mass	133
Sprung Weight (lbs)	1093.060	Sprung Weight (lbs)	846.940
Sprung Weight (kg)	496.249	Sprung Weight (kg)	384.511
Track Width	63.000	Track Width	65.000
Roll Couple Length		Roll Couple Length	
Spring Motion Ratio W:S	1.053	Spring Motion Ratio W:S	1.471
Damper Motion Ratio W:D	1.053	Damper Motion Ratio W:D	1.030

Ride Frequency F	1.907 Hz
Ride Rate R/F	105 %
Ride Frequency R	2.002 Hz
Crossover Input Freq. F	2.697 Hz
Crossover Input Freq. R	2.832 Hz

Spring Stiffnesses

Spring Rate F	78863.0 N/m
Spring Rate R	131489.2 N/m
Spring Rate F	450.3 lbs/in
Spring Rate R	750.8 lbs/in
Wheel Rate F	406.4 lbs/in
Wheel Rate R	347.2 lbs/in
Tire Rate	300,000 N/m
Tire Rate	1713 lbs/in
Roll Rate (Springs Only) F	1590.6 Nm/deg roll
Roll Rate (Springs Only) R	1446.4 Nm/deg roll
Roll Gradient (Springs Only)	1.401 deg/gforce

Damper Stiffnesses (Optimum G Recommendations)

Nominal Start Damping Ratio	0.7		
Virtual Rear Spring Rate at Damper	64503.3 N/m		
Critical Damping Stiffness F	8404.8 N/(mm/s)		
Critical Damping Stiffness R	6837.9 N/(mm/s)		
Initial Slope F	5883.3 N/(m/s)		
Initial Slope R	4786.5 N/(m/s)		
	Adjusted Slopes (N/(m/s, wheel))	Adjusted Damping Ratios	
Low Speed Compression F	3922.2	0.47	
High Speed Compression F	1961.1	0.23	** Non-Origin
Low Speed Rebound F	8825.0	1.06	
High Speed Rebound F	4412.5	0.53	** Non-Origin
Low Speed Compression R	3191.0	0.46	
High Speed Compression R	1595.5	0.23	** Non-Origin
Low Speed Rebound R	7179.8	1.03	
High Speed Rebound R	3589.9	0.51	** Non-Origin

*adjusted with A39 to de-couple spring and damper MR

Damper Stiffness (Koni Application)

	Koni Factory Full-Soft Spec (N/(m/s, damper travel))	Koni Factory Full-Soft Spec (N/(m/s, wheel travel))	Koni Factory Full-Soft Damping Ratio	Adjustment	Revalved Damping Ratio	Revalved Spec (N at m/s, damper travel)
Low Speed Compression F	3846.0	3653.7	0.43	300%	1.30	1500 0.13

High Speed Compression F	2121.2	2015.1	0.24	300%	0.72	2100	0.33
Low Speed Rebound F	6153.0	5845.4	0.70	250%	1.74	2000	0.13
High Speed Rebound F	3939.0	3742.1	0.45	250%	1.11	3250	0.33
Low Speed Compression R	2384.0	2314.6	0.34	380%	1.29	1178	0.13
High Speed Compression R	1363.6	1323.9	0.19	380%	0.74	1710	0.33
Low Speed Rebound R	4615.4	4481.0	0.66	250%	1.64	1500	0.13
High Speed Rebound R	3484.0	3382.5	0.49	250%	1.24	2874	0.33

ARB Stiffness

Total Roll Gradient	0.6	deg/gfroce
F:R Later Load Transfer Ratio	47.5	Front%
Total Roll Rate	7090.93	Nm/deg roll

Avg Track Width	1.63	m
Avg Wheel Rate	65987.22	N/m

Roll Rate (ARBs only, Optimum G formula)	-286755.42	Nm/deg roll
Roll Rate (ARBs only, common formula)	4053.92	Nm/deg roll

Front ARB Motion Ratio	1.1	deg roll chassis /deg twist bar	** Check MR
Rear ARB Motion Ratio	1.125	deg roll chassis /deg twist bar	** Check MR

Front ARB Torsion Stiffness	2330.0	Nm/deg twist
Rear ARB Torional Stiffness	2693.6	Nm/deg twist