

**SETUP COMPATIBILITY MATRIX PRESENTED
BY JQSM**

RECOMMENDED	
NOT RECOMMENDED	
AMBIGUOUS	

UNEVEN GRIP

A condition where high and low grip exists mixed. A car will easily spin out in a corner.

SETUP CHANGE **LOW GRIP** **HIGH GRIP** **UNEVEN GRIP** **SMOOTH TRACK** **ROUGH TRACK**

BASICS & ALIGNMENTS						RECOMMENDED:
Higher Ride Height	Recommended	Not Recommended				This means that making an adjustment in this direction will most likely be beneficial
Lower Ride Height	Not Recommended	Recommended				
More Down Travel	Recommended		Recommended		Recommended	
Less Down Travel		SLIGHTLY	Not Recommended	SLIGHTLY		NOT RECOMMENDED:
More Up Travel					Recommended	This means that making an adjustment in this direction will most likely make things worse.
Less Up Travel		Recommended		Recommended	Not Recommended	
More Camber	Not Recommended	Recommended	Not Recommended		Recommended	
Less Camber	Recommended	Not Recommended	Recommended	Recommended	Not Recommended	AMBIGUOUS:
More Front Toe Out		Recommended	Recommended		Recommended	More information is needed, the preferred adjustment could go either way and it is hard to use a general rule.
Less Front Toe Out	Recommended	Not Recommended	Not Recommended	Recommended	Not Recommended	
More Rear Toe In			Recommended			
Less Rear Toe In			Not Recommended			

GEOMETRIC STIFFNESS / INITIAL GRIP / MECHANICAL GRIP						HEXES:
More Anti Squat	Recommended		Not Recommended	Recommended	Not Recommended	Hex width function will depend on your car design. Here C-Hub = Kyosho and P-Ball = Mugen style. Check the additional material.
Less Anti Squat			Recommended		Recommended	
Rear Hub Forward	Recommended		Recommended	Recommended	Not Recommended	
Rear Hub Back	Not Recommended	Recommended			Recommended	
Front Wider Hex (C-Hub)	Recommended	Not Recommended	Not Recommended	Recommended	Not Recommended	Positive Scrub Radius (PSR)
Front Narrower Hex (C-Hub)		Recommended	Recommended		Recommended	Positive Scrub Radius (PSR)
Front Wider Hex (P-Ball)		Recommended	Recommended		Recommended	Negative Scrub Radius (NSR)
Front Narrower Hex (P-Ball)	Recommended	Not Recommended	Not Recommended	Recommended	Not Recommended	Negative Scrub Radius (NSR)
Rear Wider Hex (C-Hub)	Recommended		Recommended	Recommended	Not Recommended	Negative Offset (NO)
Rear Narrower Hex (C-Hub)	Not Recommended				Recommended	Negative Offset (NO)
Rear Wider Hex (P-Ball)			Recommended		Recommended	Positive Offset (PO)
Rear Narrower Hex (P-Ball)						Positive Offset (PO)
High Front Axle Height	Not Recommended	Recommended	Recommended		Recommended	
Low Front Axle Height	Recommended			Recommended	Not Recommended	
High Rear Axle Height	Not Recommended	Recommended			Recommended	Uneven Grip: If the issue is on the high grip, high axle height is good.
Low Rear Axle Height	Recommended			Recommended		Uneven Grip: If the issue is on the low grip, low axle height is good
High Upper Link (same angle)		Recommended			Recommended	
Low Upper Link (same angle)	Recommended			Recommended		
High RC's by Angling Link	Recommended	Not Recommended		Recommended	Not Recommended	Mainly set for "on the track"
Low RC's by Angling Link		Recommended	Recommended		Recommended	Mainly set for "in the track"
High Arm on Inside Front	Not Recommended					
Low Arm on Inside Front	Recommended				Recommended	
High Arm on Inside Rear	Not Recommended	Recommended				
Low Arm on Inside Rear	Recommended				Recommended	

SHOCKS					
Softer Springs	Recommended	Not Recommended			
Harder Springs	Not Recommended	Recommended			
Softer Oil	Recommended	Not Recommended			
Harder Oil	Not Recommended	Recommended			
Bigger Piston Holes	Recommended				
Smaller Piston Holes		Recommended			
More Piston Holes	Recommended				
Less Piston Holes		Recommended	Recommended		
Shocks In On Tower	Recommended				Recommended
Shocks Out On Tower		Recommended			
Shocks In On Arm	Recommended	Not Recommended			Recommended
Shocks Out On Arm		Recommended			Not Recommended
Thinner Anti Roll Bars	Recommended	Not Recommended			Recommended
Thicker Anti Roll Bars	Not Recommended	Recommended			Not Recommended

DIFFS					
Thicker Diff Oils	Not Recommended	Recommended	Recommended	Recommended	Not Recommended
Thinner Diff Oils	Recommended	Not Recommended	Not Recommended		Recommended
Thicker Front Diff	Not Recommended	Recommended	Recommended		Recommended
Thinner Front Diff	Recommended	Not Recommended	Not Recommended		
Thicker Centre Diff	Not Recommended	Recommended			Not Recommended
Thinner Centre Diff	Recommended	Not Recommended			Recommended
Thicker Rear Diff		Recommended	Recommended		
Thinner Rear Diff		Not Recommended	Not Recommended		

Fast vs. Easy

NOTE: Most drivers will be faster with an easy car.

Unless you can run a 5 minute run with your average lap within 0.5s of your best lap, don't worry about making your car faster. Work on your driving, and/or making your car easier to drive.

UNDERSTAND: Fast/Initial Grip/Responsive. It means that the car has more 'geometric stiffness' The links and arms resist roll and transfer load immediately. 'Easy' means that there is less geometric resistance, the car relies more on the shocks for support, drives softer, rolls more, and gives the driver more time to respond.

FAST vs. EASY, YOU HAVE TO COMPROMISE

	FAST	EASY
ANTI SQUAT	MORE	LESS
DROOP	LESS	MORE
TOE IN	LESS	MORE
DIFFS	THICKER	THINNER
ARM HEIGHT INSIDE	HIGHER	LOWER
DIFF HEIGHT	HIGHER	LOWER
ROLL CENTRE HEIGHT	HIGHER	LOWER

INITIAL GRIP (Twitchy) vs. OVERALL GRIP (Smooth)

One difficulty in creating short and fast setup advice is that the solution to a problem you have depends on the reason for the negative handling characteristic occurring. In addition to this the solution will depend on the balance between the front and the rear end of the car. These are two of the hardest things to determine at times, even for top drivers.

If your problem occurs after a peak of traction, for example catching bumps, flipping over entering corners, or entering corners well, then losing rear end suddenly mid corner, or hitting a bump, or dust, and losing grip suddenly: You have too much initial grip, and you need to reduce it, gaining more overall grip. You need to make your car more EASY!

If your problem occurs because your car is not responding, and you are sliding smoothly, not having good rear grip at all, or not having enough steering at all, having difficulty accelerating straight, having the car fishtail, or even if your car is really easy to drive but slow, you don't have enough initial grip. You need to go for more initial grip, and less overall grip. You need to make your car FAST!

	MORE INITIAL GRIP	MORE OVERALL GRIP
ANTI SQUAT	MORE	LESS
DROOP	LESS	MORE
AXLE HEIGHT	LOWER	HIGHER
DRIVESHAFT ANGLE	MORE	LESS
DIFF HEIGHT	HIGHER	LOWER
ARM HEIGHT INSIDE	HIGHER	LOWER
ROLL CENTRE HEIGHT	HIGHER	LOWER
UPPER LINK HEIGHT	LOWER	HIGHER
UPPER LINK LENGTH	SHORTER	LONGER
ANTI ROLL BAR	THICKER	THINNER
HEX WIDTH C-HUB FRONT	WIDER	NARROWER
HEX WIDTH C-HUB REAR	WIDER	NARROWER
HEX WIDTH PBS FRONT	WIDER	WIDER mostly, NARROWER High Grip
HEX WIDTH PBS REAR	NARROWER	WIDER

PSR

NO

NSR

PO

Order of Change	Low Grip	High Grip	Bumpy, rocky surface	Edgy, hard surface, sharp bumps	Big Bumps, DNC, Vegas Worlds	Edgy, hard surface, sharp bumps	* Non pro drivers, don't forget about AKA iBeam, cityblock, bigger rounder tyres, big pins, forgiving and consistent grip
1	1. Tyres Looking for best grip and feeling. Big pin, separated pins for dusty tracks. Soft enough compound for grip. Temperature and grip level, abrasiveness of track surface determine compound. 2. Diff oils - finding sweet spot between fast (thick) and easy (thin). Generally thinner on loose tracks	1. Tyres: Looking for harder compound, tread pattern with pins close together, low profile. Smooth grip, without grabbing.	1. Softer suspension oil, possibly also softer spring.	1. Tyre choice, harder compound, easier to drive, better in bumps. Low profile tread, grabs less. PL Fugitive, 6mik weapon, smooth grip.	1. Less antisquat, better in bumps. Lower in C block. 0.5-1deg	1. Tyre compound and tread pattern. Pick a tyre with less sidebite, PL Fugitive, JC Detox, HotRace Amazzonia, AKA Double Down. Softer compound slides over edges, harder compound catches more. 2. Pistons, from 5x1.5 front and rear to 5x1.5 front, 5x1.6 rear. Heavier oil to slow down car movement, more stable at speed. 6 hole piston an option.	
2			2. Diff oils: Thicker oils make car easier and more stable. On power makes car drive more flat, less diffing out, smoother acceleration. Off power car is also more stable. Find the limit, how thick you can go	2. Less antisquat, easier to drive in bumps.	2. Harder suspension oil, normal spring.	2. More kickup, lower B block. Better in bumps.	
3	3. Rear Toe - set for track, increase toe on rough track for consistent grip. Reduce toe on smooth track for speed.	3. Rear Toe: Less toe for more corner speed.	3. More rear toe in for good grip, easy to drive.	3. Diff oils, thicker oils for stability, less reactive, less rotation.	3. Pistons, from 5x1.5 front and rear to 5x1.5 front, 5x1.6 rear. Oil steering, centre and rear for drive and stability off power. 7-10-3 normal, then change to 20-10-4.	3. Heavier front diff oil to numb the 4. Rear higher axle slides over bumps better, but you can lose too much grip.	
4	4. Anti Squat, More for speed. Can lose rear grip in corners.	4. Anti Squat, More for speed. Can lose rear grip in corners. Less antisquat is easy and smoother	4. 1 step harder roll bar front, maybe also rear. More stable feel cornering through bumps. 2.5/2.5 on kyosho on really bumpy track.	4. Lay down shocks on tower, more important on this type of track. Easier to drive.	4. Same or one step softer springs.		
5	5. Lower arm height. Lower arm for grip.	5. Lower arm height. Higher arm height for corner speed.	5. Diffs track dependent, layout, speed, no general rule. 2-3k change either direction.	5. Thicker roll bar front and rear, takes away a bit of grip. A more dead and easy feeling, can be pushed harder.	5. Heavier front diff oil to numb the steering. 7-10-3 normal, then change to 10-7-3.	5. More ackermann with longer arm on steering knuckle for smoother steering.	
6	6. Upper Link: Raise link on rear tower. More grip and forward bite.		6. Lay down shock on tower, smoother handling	6. High rear axle height floats over bumps better, less edgy, lose forward grip but doesn't matter if track has grip. Helps to smooth out cornering.	6. KPI: 17.5/2 base. Rough conditions 17.5/4 to smooth out initial steering.	6. 24/26 base and keep it. Less front droop, 2mm on actual wheel movement. Front end stays lower.	
7	7. Axle height: Low axle height more forward grip. Bad in bumps.	6. Axle Height: Raising rear axle to smooth out exiting corners on power.	7. Line choice, avoiding bumps, wide lines in really bumpy corners, driving through certain bumps. Walk the track to see the line.	7. Open up your corners more, enter wider, make a rounder arc. Your car is more settled, doesn't catch edges as much. Smoother driving and lines.	7. More stood up shocks on tower on lower speed layouts, you feel more comfortable driving through bumps. More traction accelerating through bumps.	7. Lay rear shock down on tower, slides over bumps better in corners.	
8	8. Droop: More on low grip. Easy to drive, more consistent grip.	7. Droop: Less 2mm on shock length, to reduce chassis pitch and roll, you can push the car harder and maintain speed easier.	8. Throttle control, acceleration points are important, accelerate up rough jump faces for a better jump.	8. Lower RC, lower arm on the inside, softer, more forgiving feel. More in the track	8. Shorter plate on knuckle for more responsive, precise steering to be able to hit the correct line every lap.	8. Bladder because it's faster.	
9	9. Ackermann: Shorter steering plate on knuckle.	Ackermann: Typically no change, find good setting and stick to it.	9. Rideheight 1-2mm higher, more ground clearance, grip	9. Smoother initial steering, more ackermann or caster	9. Emulsion = easy Bladder = faster, more cornerspeed	9. KPI: 17.5/2 base. Rough conditions 17.5/4 to smooth out initial steering.	
10	10. Less Caster, 15 from 17.5 More initial steering.	8. Increase caster to 20 for smooth initial steering, if you need to calm down the car.	10. More droop 2mm shock length or so, front and rear.	10. Droop and rideheight at normal setting.	10. Heavier front hexes help to make car easier to drive. Calmer response.	10. 1 step thicker anti roll bar front (2.2-2.4 front, 2.5-2.6)	
11				11. More camber front and rear, reduce grip a bit, easier through corners.	11. Sometimes 1 step lower roll bar rear. Fromt 2.6 to 2.5. Front keep 2.2, or drop to 2.2 from 2.3.		
12				12. Longer upper links smooths out car, less responsive, good in sweepers.	12. Brakes, from more rear brake to 50-50.		
13				13. Rear hub moved back 1-2mm takes a way some rear grip, feels more free on higher grip.	13. Small details of setup are not important. Have a good base, focus on track condition, line choice, watching other cars on track. All radio inputs are smoother, driving with more patience. Be ready to save a crash, smoother longer throttle application, more coasting, or partial throttle.		
14					14. Softer clutch spring, 3x1.0, or 1x 0.9. 3 Alu shoes on very bumpy track due to the softer spring setup. This is smoother overall.		
15					15. Rideheight: from 24/26 to 27/27		

SHOCK SPRING COMPARISON

STANDARD SPRINGS

Front Spring Range 65mm-35mm (30mm)			Rear Spring Range 85mm-45mm (40mm)		
	RH 50mm		RH 67mm		
JQB0347 – JQRacing Grey Front		JQB0348 – JQRacing Grey Rear			
70mm Long, 7.25, 1.4mm		85mm Long, 8.25, 1.4mm			
Compressed N/mm	mm	N/mm	mm	N/mm	Difference
5	3.1	0	5	2.8	0
10	6.5	3.4	10	5.8	3
15	9.9	3.4	15	8.6	2.8
20	13.4	3.5	20	11.4	2.8
25	16.9	3.5	25	14.4	3
30	20.5	3.6	30	17.4	3
			35	20.6	3.2
Average N/5mm	3.48		Average N/5mm	2.97	
SPRING RATE	0.70		SPRING RATE	0.59	

IF350-714 – Kyosho Light Blue Front IS106-814 – Kyosho Light Blue Rear

70mm Long, 1.4mm			84mm Long, 1.4mm		
	mm	N/mm	mm	N/mm	Difference
Compressed N/mm	mm	N/mm	mm	N/mm	Difference
5	3.5	0	5	3	0
10	7	3.5	10	6	3
15	10.4	3.4	15	9	3
20	14	3.6	20	11.9	2.9
25	17.8	3.8	25	15	3.1
30	21.6	3.8	30	18.3	3.3
			35	21.5	3.2
Average N/5mm	3.62		Average N/5mm	3.08	
SPRING RATE	0.72		SPRING RATE	0.62	

MUGE2518 – Mugen 8.75 Front MUGE0558 – Mugen 10.25 Rear

70mm Long, 1.6mm wire			86mm Long, 1.6mm wire		
	mm	N/mm	mm	N/mm	Difference
Compressed N/mm	mm	N/mm	mm	N/mm	Difference
5	4.6	0	5	3.7	0
10	9	4.4	10	7.4	3.7
15	13.6	4.6	15	11.2	3.8
20	18	4.4	20	14.9	3.7
25	22.6	4.6	25	18.6	3.7
30	27.3	4.7	30	22.2	3.6
			35	25.9	3.7
Average N/5mm	4.54		Average N/5mm	3.70	
SPRING RATE	0.91		SPRING RATE	0.74	

MUGE2517 – Mugen 9.0 Front MUGE0554 – Mugen 10.5 Rear

70mm Long, 1.6mm wire			86mm Long, 1.6mm wire		
	mm	N/mm	mm	N/mm	Difference
Compressed N/mm	mm	N/mm	mm	N/mm	Difference
5	3.4	0	5	3.5	0
10	7.8	4.4	10	7	3.5
15	12.2	4.4	15	10.7	3.7
20	16.5	4.3	20	14.2	3.5
25	20.9	4.4	25	17.9	3.7
30	25.1	4.2	30	21.5	3.6
			35	24.9	3.4
Average N/5mm	4.34		Average N/5mm	3.57	
SPRING RATE	0.87		SPRING RATE	0.71	

MUGE2516 – Mugen 9.25 Front MUGE0563 – Mugen 10.75 Rear

70mm Long, 1.6mm wire			86mm Long, 1.6mm wire		
	mm	N/mm	mm	N/mm	Difference
Compressed N/mm	mm	N/mm	mm	N/mm	Difference
5	4.2	0	5	3.3	0
10	8.1	3.9	10	6.7	3.4
15	12	3.9	15	10.2	3.5
20	16.4	4.4	20	13.5	3.3
25	20.4	4	25	16.9	3.4
30	25	4.6	30	20.4	3.5
			35	23.8	3.4
Average N/5mm	4.16		Average N/5mm	3.42	
SPRING RATE	0.83		SPRING RATE	0.68	

PROGRESSIVE SPRINGS

Front Spring Range 60mm-30mm RH 50, Ground 40 (4+7)

Rear Spring Range 80mm-45mm RH 65, Ground 50 (4+7.5)

Front Spring Range 60mm-30mm RH 50, Ground 40 (4+7)			Rear Spring Range 80mm-45mm RH 65, Ground 50 (4+7.5)		
	70mm Long, 1.6mm wire	Silver	85mm Long, 1.6mm wire	Silver	Difference
Compressed N/mm	mm	N/mm	mm	N/mm	Difference
5	3.3	0	5	3	0
10	6.5	3.2	10	6.1	3.1
15	9.6	3.1	15	9.2	3.1
20	13	3.4	20	12.4	3.2
25	16.3	3.3	25	15.5	3.1
30	19.6	3.3	30	18.6	3.1
35	23.7	4.1	35	22.5	3.9
40	28.5	4.8	40	26.8	4.3
Average N/5mm	3.40		Average N/5mm	3.40	
SPRING RATE	0.68		SPRING RATE	0.68	

MYB0146-754 - 4+7.5 Front			MYB0147-754 - 4+7.5 Rear		
	70mm Long, 1.6mm wire	Grey	85mm Long, 1.6mm wire	Grey	Difference
Compressed N/mm	mm	N/mm	mm	N/mm	Difference
5	3.4	0	5	3.1	0
10	6.8	3.4	10	6.2	3.1
15	10	3.2	15	9.5	3.3
20	13.2	3.2	20	12.7	3.2
25	16.6	3.4	25	15.9	3.2
30	20.1	3.5	30	19.5	3.6
35	24.9	4.8	35	23.8	4.3
40			40	28.4	4.6
Average N/5mm	3.58		Average N/5mm	3.61	
SPRING RATE	0.72		SPRING RATE	0.72	

STANDARD SPRINGS

MYB0144-90 – Mayako 9.0 Front MYB0145-1075 – Mayako 10.75 Rear

MYB0144-90 – Mayako 9.0 Front			MYB0145-1075 – Mayako 10.75 Rear		
	65mm Long, 1.6mm wire	Grey	86mm Long, 1.6mm wire	Grey	N/mm
Compressed N/mm	mm	N/mm	mm	N/mm	Difference
5	4.41	0	5	3.48	0
10	8.65	4.24	10	6.71	3.23
15	12.93	4.28	15	10.38	3.67
20	17.34	4.41	20	14.01	3.63
25	22	4.66	25	17.6	3.59
30	26.69	4.69	30	21.1	3.5
			35	24.87	3.77
Average N/5mm	4.46		Average N/5mm	3.57	
SPRING RATE	0.89		SPRING RATE	0.71	

MYB0144-875 – Mayako 8.75 Front			MYB0145-105 – Mayako 10.5 Rear		
	65mm Long, 1.6mm wire	Brown	86mm Long, 1.6mm wire	Brown	N/mm
Compressed N/mm	mm	N/mm	mm	N/mm	Difference
5	4.49	0	5	3.54	0
10	8.83	4.34	10	7.12	3.58
15	13.27	4.44	15	10.76	3.64
20	17.75	4.48	20	14.44	3.68
25	22.2	4.45	25	18.12	3.68
30	26.87	4.67	30	21.82	3.7
			35	25.75	3.93
Average N/5mm	4.48		Average N/5mm	3.70	
SPRING RATE	0.90		SPRING RATE	0.74	

HBXXX – HB Racing Blue Front
Xxmm Long 1,4mm wire
Compressed N/mm

	HBXXX – HB Racing White Rear			
	Xxmm Long	1,5mm wire N/mm	Difference	10.5
5	3.6	0	5	2.7
10	7.3	3.7	10	5.5
15	11	3.7	15	8.3
20	14.7	3.7	20	11.2
25	18.7	4	25	14
30	22.9	4.2	30	16.8
			35	19.9
				3.1
Average N/5mm	3.86	Average N/5mm	2.82	
SPRING RATE	0.77	SPRING RATE	0.56	

HBXXX – HB Racing Yellow Front

	HBXXX – HB Racing Blue Rear			
	Xxmm Long	1,5mm wire N/mm	Difference	10
5	3.52	0	5	2.9
10	7.24	3.72	10	5.9
15	10.96	3.72	15	9
20	14.54	3.58	20	12
25	18.33	3.79	25	15.2
30	22.22	3.89	30	18.3
			35	21.6
				3.3
Average N/5mm	3.74	Average N/5mm	3.08	
SPRING RATE	0.75	SPRING RATE	0.62	

HBXXX – HB Racing Gold Front

	HBXXX – HB Racing Yellow Rear			
	Xxmm Long	1,5mm wire N/mm	Difference	9.5
5	4	0	5	3.1
10	8	4	10	6.2
15	12.1	4.1	15	9.4
20	16	3.9	20	12.8
25	20.2	4.2	25	16
30	24.8	4.6	30	19.3
			35	22.6
				3.3
Average N/5mm	4.16	Average N/5mm	3.25	
SPRING RATE	0.83	SPRING RATE	0.65	

HBXXX – HB Racing Red Front

	HBXXX – HB Racing Gold Rear			
	Xxmm Long	1,5mm wire N/mm	Difference	9
5	4.1	0	5	3.3
10	8.4	4.3	10	6.8
15	12.5	4.1	15	10.2
20	16.7	4.2	20	13.5
25	21.2	4.5	25	17.1
30	25.8	4.6	30	20.6
			35	24.2
				3.6
Average N/5mm	4.34	Average N/5mm	3.46	
SPRING RATE	0.87	SPRING RATE	0.69	

MYB0144-85 – Mayako 8.5 Front BLK
65mm Long 1,6mm wire Black
Compressed N/mm

	Xxmm Long	1,6mm wire N/mm	Difference	10.5
5	4.7	0	5	3.54
10	9.18	4.48	10	7.31
15	13.7	4.52	15	11.06
20	18.04	4.34	20	14.73
25	22.78	4.74	25	18.51
30	27.33	4.55	30	22.53
			35	26.57
				4.04

MYB0145-1025 – Mayako 10.25 Rear

86mm Long 1,6mm wire Black
Compressed N/mm

	Xxmm Long	1,6mm wire N/mm	Difference	10.25
5	4.7	0	5	3.54
10	9.18	4.48	10	7.31
15	13.7	4.52	15	11.06
20	18.04	4.34	20	14.73
25	22.78	4.74	25	18.51
30	27.33	4.55	30	22.53
			35	26.57
				4.04

Average N/5mm

SPRING RATE

4.53

SPRING RATE

0.91

PROTO – Mayako 9.5 Rear
80mm Long 1,6mm wire Black
Compressed N/mm

	Xxmm Long	1,6mm wire N/mm	Difference	9.5
5	4.84	0	5	3.76
10	9.91	5.07	10	7.69
15	14.85	4.94	15	11.64
20	19.77	4.92	20	15.68
25	24.89	5.12	25	19.5
30 Err.			30	23.39
			35	27.26
				3.87

Average N/5mm

SPRING RATE

5.01

SPRING RATE

1.00

SPRING RATE

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Piston Holes	Piston Hole Size	Piston Hole Area*	Piston Hole Circumference*	Area/Circumference Ratio.*	Front/Rear	Oils cSt	Temp Range
Qty	mm	mm^2	mm				C
MOST COMMON SHOCK SETUPS							
5	1.5	8.83125	23.55	38%	F	500-700	10 – 30
5	1.5	8.83125	23.55	38%	R	400-600	10 – 30
5	1.6	10.048	25.12	40%	R	450-650	10 – 30
6	1.3	7.9599	24.492	33%	F	450-650	10 – 30
6	1.4	9.2316	26.376	35%	R	350-550	10 – 30
3	1.35	4.2919875	12.717				10 – 30
3	1.45	4.9513875	13.659				10 – 30
6	1.35/1.45	9.243375	26.376	35%	F	450-650	10 – 30
3	1.35	4.2919875	12.717				10 – 30
3	1.5	5.29875	14.13				10 – 30
6	1.35/1.5	9.5907375	26.847	36%	R	350-550	10 – 30
7	1.25	8.5859375	27.475	31%	F	350-550	10 – 30
7	1.35	10.0146375	29.673	34%	R	300-500	10 – 30
8	1.2	9.0432	30.144	30%	F	450-650	10 – 30
8	1.3	10.6132	32.656	33%	R	450-650	10 – 30
OTHER SHOCK SETUPS							
5	1.45	8.2523125	22.765	36%	F	450-650	10 – 30
5	1.55	9.4298125	24.335	39%	F	550-750	10 – 30
5	1.65	10.6858125	25.905	41%	R	500-700	10 – 30
3	1.3	3.97995	12.246				10 – 30
3	1.4	4.6158	13.188				10 – 30
6	1.3/1.4	8.59575	25.434	34%	R		10 – 30
7	1.2	7.9128	26.376	30%	F		10 – 30
7	1.3	9.28655	28.574	33%	R		10 – 30
7	1.3	9.28655	28.574	33%	F	400-600	10 – 30
7	1.4	10.7702	30.772	35%	R	350-550	10 – 30
8	1.4	12.3088	35.168	35%	R		10 – 30
6	1.35	8.583975	25.434	34%	F		10 – 30
6	1.45	9.902775	27.318	36%	R		10 – 30

Definitions

Piston Hole Area*

Larger number means softer damping, less pack. You need thicker oils.

Piston Hole Circumference*

Larger number means there is more wall surface area causing friction for the oil = more pack depending on ratio, see below.

Area/ Circumference Ratio.*

Smaller % = More aggressive pack at high speed, while being soft and plush at low speed. You run softer oils and suspension feel, achieve good grip and response, while still having enough pack. Good for uneven surface texture, low grip and response.

Larger % = Less aggressive pack at high speed, while being soft and plush at low speed. You run harder oils and suspension feel, achieve less grip and response, without having too much pack. Good for calming the car down on fast or high grip tracks.

SETUP IMPROVEMENT MATRIX

Advice is posted in the recommended order of implementation. Of course this will vary depending on the default handling of the car.

UNEVEN GRIP

A condition where high and low grip exists mixed. A car will easily spin out in a corner.

	HIGH GRIP	UNEVEN GRIP	SMOOTH TRACK	ROUGH TRACK
STEERING				
More Overall Steering	Thinner front roll bar. Shorter Plate On Steering Knuckle. Less rear toe in. Thinner front diff. Move shock on in front tower. Wider (PSR) Narrower (NSR) Front Hex. Lower Front Arm on Inside. Weight Bias Forward.	Thinner front roll bar. Shorter Plate On Steering Knuckle. Less rear toe in. Thinner front diff. Move shock in on front tower. Wider (PSR) Narrower (NSR) Front Hex. Lower Front Arm on Inside. Weight Bias Forward.	Thinner front roll bar. Shorter Plate On Steering Knuckle. Less rear toe in. Thinner front diff. Move shock in on front tower. Wider (PSR) Narrower (NSR) Front Hex. Lower Front Arm on Inside. Weight Bias Forward.	Thinner front roll bar. Shorter Plate On Steering Knuckle. Less rear toe in. Thinner front diff. Move shock in on front tower. Wider (PSR) Narrower (NSR) Front Hex. Lower Front Arm on Inside. Weight Bias Forward.
More Steering Into the Corner (Responsive, twitchy)	Shorter Plate On Steering Knuckle. Lower front axle height. Less caster. Less/No KPI. More smaller holes in piston wider (PSR) narrower (NSR) front hex. Shorter front link on hub. Less kick up. More Anti-Squat Thinner front diff. Front shocks out on tower. Harder front spring. Front link down on tower.	Shorter Plate On Steering Knuckle. Lower front axle height. Less caster. Less/No KPI. More smaller holes in piston wider (PSR) narrower (NSR) front hex. Shorter front link on hub. Less kick up. More Anti-Squat Thinner front diff. Front shocks out on tower. Harder front spring. Front link down on tower.	Shorter Plate On Steering Knuckle. Lower front axle height. Less caster. Less/No KPI. More smaller holes in piston wider (PSR) narrower (NSR) front hex. Shorter front link on hub. Less Kick Up. More Anti-Squat Thinner front diff. Front shocks out on tower. Harder front spring. Front link down on tower.	Shorter Plate On Steering Knuckle. Shorter front link on hub. More smaller holes in piston Thinner front diff. Front shocks out on tower. Harder front spring. Less caster. Less/No KPI.
More Steering Mid Corner Rotation).	Steering link forward on Ackermann plate. Short plate on steering knuckle. Less rear toe in. Shock in on rear tower. Move front hub back. Lean front shock in on tower. More KPI Longer front link on hub. Shorter rear link on hub. Higher Rear Arm On Inside	Steering link forward on Ackermann plate. Short plate on steering knuckle. Less rear toe in. Shock in on rear tower. Move front hub back. Lean front shock in on tower. More KPI Longer front link on hub. Shorter rear link on hub. Higher Rear Arm On Inside	Steering link forward on Ackermann plate. Short plate on steering knuckle. Less rear toe in. Shock in on rear tower. Move front hub back. Lean front shock in on tower. More KPI Longer front link on hub. Shorter rear link on hub. Higher Rear Arm On Inside	Steering link forward on Ackermann plate. Short plate on steering knuckle. Less rear toe in. Shock in on rear tower. Move front hub back. Lean front shock in on tower. More KPI Longer front link on hub. Shorter rear link on hub. Higher Rear Arm On Inside
More Steering On-Power	Thicker Centre Diff. Thicker diff oils overall. More Front Drop. Thicker Rear Roll Bar. More castor. Move front hub back. Lean front shock in on tower. Longer front link on hub. Narrow rear hex (PO and NO).	Thicker Centre Diff. Thicker diff oils overall. More Front Drop. Thicker Rear Roll Bar. More castor. Move front hub back. Lean front shock in on tower. Longer front link on hub. Narrow rear hex (PO and NO).	Thicker Centre Diff. Thicker diff oils overall. More Front Drop. Thicker Rear Roll Bar. More castor. Move front hub back. Lean front shock in on tower. Longer front link on hub. Narrow rear hex (PO and NO).	Thicker Centre Diff. Thicker diff oils overall. More Front Drop. Thicker Rear Roll Bar. More castor. Move front hub back. Lean front shock in on tower. Longer front link on hub. Narrow rear hex (PO and NO).
Less Overall Steering Stable)	More rear toe in. Outboard toe in (hub). Long plate on steering knuckle. Thicker front roll bar. Thicker rear diff. Narrower (PSR) Wider (NSR) Front Hex. Weight bias back.	Long plate on steering knuckle. Narrower (PSR) Wider (NSR) Front Hex. Longer rear upper link. Thicker front diff Thicker rear diff. Thicker front roll bar. Weight bias back. More rear toe in. Outboard toe in (hub).	More rear toe in. Outboard toe in (hub). Long plate on steering knuckle. Narrower (PSR) Wider (NSR) Front Hex. Longer rear upper link. Thicker front diff. Thicker front roll bar. Thicker rear diff. Weight bias back.	More rear toe in. Outboard toe in (hub). Long plate on steering knuckle. Thicker front roll bar. Thicker rear diff. Thicker front roll bar. Weight bias back.
Less Steering Into the corner (Less Responsive, more calm)	Long plate on steering knuckle. More castor. Fewer bigger holes in pistons. Higher front axle. More front kick up. Longer front link on hub. Thicker front diff. Thicker rear diff. Narrower (PSR) Wider (NSR) Front Hex. Weight bias back. Higher front link on tower.	Long plate on steering knuckle. More castor. Fewer bigger holes in pistons. Higher front axle. More front kick up. Longer front link on hub. Thicker front diff. Thicker rear diff. Narrower (PSR) Wider (NSR) Front Hex. Weight bias back. Higher front link on tower.	Long plate on steering knuckle. More castor. Fewer bigger holes in pistons. Higher front axle. More front kick up. Longer front link on hub. Thicker front diff. Thicker rear diff. Narrower (PSR) Wider (NSR) Front Hex. Weight bias back. Higher front link on tower.	Long plate on steering knuckle. Narrower (PSR) Wider (NSR) Front Hex. More castor. Fewer bigger holes in pistons. Higher front axle. More front kick up. Longer front link on hub. Thicker front diff. Thicker rear diff. Narrower (PSR) Wider (NSR) Front Hex. Weight bias back. Higher front link on tower.
Less Steering Mid Corner Rotation).	Steering link back on Ackermann plate. Long plate on steering knuckle. More rear toe in. Longer rear link on hub. Move rear shock out on tower. Less Anti-Squat. Lower Rear Arm On Inside Move front hub forward. Move front shock out on tower. Thicker Front Roll Bar.	Steering link back on Ackermann plate. Long plate on steering knuckle. More rear toe in. Longer rear link on hub. Move rear shock out on tower. Less Anti-Squat. Lower Rear Arm On Inside Move front hub forward. Move front shock out on tower. Thicker Front Roll Bar.	Steering link back on Ackermann plate. Long plate on steering knuckle. More rear toe in. Longer rear link on hub. Move rear shock out on tower. Less Anti-Squat. Lower Rear Arm On Inside Move front hub forward. Move front shock out on tower. Thicker Front Roll Bar.	Steering link back on Ackermann plate. Long plate on steering knuckle. More rear toe in. Longer rear link on hub. Move rear shock out on tower. Less Anti-Squat. Lower Rear Arm On Inside Move front hub forward. Move front shock out on tower. Thicker Front Roll Bar.
Less Steering On-Power	Wider rear hex (PO). Thinner centre diff. Thinner Front Diff. Thinner diff overall. Less Front Drop. Thinner Rear Roll Bar. Less castor. Move front hub forward. Shorter front link on hub.	Wider rear hex (PO). Thinner centre diff. Thinner Front Diff. Thinner diff overall. Less Front Drop. Thinner Rear Roll Bar. Less castor. Move front hub forward. Shorter front link on hub.	Wider rear hex (PO). Thinner centre diff. Thinner Front Diff. Thinner diff overall. Less Front Drop. Thinner Rear Roll Bar. Less castor. Move front hub forward. Shorter front link on hub.	Wider rear hex (PO). Thinner centre diff. Thinner Front Diff. Thinner diff overall. Less Front Drop. Thinner Rear Roll Bar. Less castor. Move front hub forward. Shorter front link on hub.
REAR GRIP				
More Rear Grip Off Power	Less rear camber. More rear toe in. Outboard rear toe in. Low rear arm inside. Less Anti-Squat. Thicker rear diff.	Thicker rear diff. If rear end feels soft, opposite to low grip. If rear end feels hard and stiff, same as low grip.	Less rear camber. More rear toe in. Outboard rear toe in. Low rear arm inside. Less Anti-Squat. Thicker rear diff.	Less rear camber. More rear toe in. Outboard rear toe in. Low rear arm inside. Less Anti-Squat. Thicker rear diff.
More Rear Grip On Power More Support)	Higher rear arm inside. More rear toe in. Outboard rear toe in. Adjust rear camber, can be either less or more. Thicker Rear Roll Bar. Move rear shocks out on tower. Thinner centre diff. Thinner rear diff.	Higher rear arm inside. More rear toe in. Outboard rear toe in. Adjust rear camber, can be either less or more. Thicker Rear Roll Bar. Move rear shocks out on tower. Thinner centre diff. Thinner rear diff.	Higher rear arm inside. More rear toe in. Outboard rear toe in. Adjust rear camber, can be either less or more. Thicker Rear Roll Bar. Move rear shocks out on tower. Thinner centre diff. Thinner rear diff.	Higher rear arm inside. More rear toe in. Outboard rear toe in. Adjust rear camber, can be either less or more. Thicker Rear Roll Bar. Move rear shocks out on tower. Thinner centre diff. Thinner rear diff.
More Acceleration and Forward Traction	Thicker diffs overall. More Anti-Squat. Longer upper links. Less Camber. Harder Tyre Compound	Harder Tyre Compound Thicker diffs overall. More Anti-Squat. Longer upper links. Less Camber. Harder Tyre Compound	Thicker diffs overall. More Anti-Squat. Longer upper links. Less Camber. Harder Tyre Compound	Harder Tyre Compound Thicker diffs overall. More Anti-Squat. Longer upper links. Less Camber. Harder Tyre Compound
More stability in long sweeping corners	Thicker diffs overall. More Front Toe Out. Shorter rear link on tower. Higher rear arm on inside. Thicker rear roll bar. Move rear shock out on tower.	Thicker diffs overall. More Front Toe Out. Shorter rear link on tower. Higher rear arm on inside. Thicker rear roll bar. Move rear shock out on tower.	Thicker diffs overall. More Front Toe Out. Shorter rear link on tower. Higher rear arm on inside. Thicker rear roll bar. Move rear shock out on tower.	Thicker diffs overall. More Front Toe Out. Shorter rear link on tower. Higher rear arm on inside. Thicker rear roll bar. Move rear shock out on tower.
BUMP HANDLING				
Better Bump Handling	Less Anti-Squat. Thinner diff overall. Thinner Centre Diff. More kickup. More Caster and KPI. Move Shocks in on towers. Move Shocks in on arms. Move rear hub back. Raise front and rear links on tower. Raise complete rear link inside and outside.	Less Anti-Squat. Thinner diff overall. Thinner Centre Diff. More kickup. More Caster and KPI. Move Shocks in on towers. Move Shocks in on arms. Move rear hub back. Raise front and rear links on tower. Raise complete rear link inside and outside.	Less Anti-Squat. Thinner diff overall. Thinner Centre Diff. More kickup. More Caster and KPI. Move Shocks in on towers. Move Shocks in on arms. Move rear hub back. Raise front and rear links on tower. Raise complete rear link inside and outside.	Less Anti-Squat. Thinner diff overall. Thinner Centre Diff. More kickup. More Caster and KPI. Move Shocks in on towers. Move Shocks in on arms. Move rear hub back. Raise front and rear links on tower. Raise complete rear link inside and outside.
Better Jumping Ability	Move shocks out on towers. More drop. More Anti-Squat. Harder Springs. Smaller Piston Holes. More front kickup	Move shocks out on towers. More drop. More Anti-Squat. Harder Springs. Smaller Piston Holes. More front kickup	Move shocks out on towers. More drop. More Anti-Squat. Harder Springs. Smaller Piston Holes. More front kickup	Move shocks out on towers. More drop. More Anti-Squat. Harder Springs. Smaller Piston Holes. More front kickup
BALANCE ISSUES				
What to do first on a particular track type if your car is oversteering. (Turning too much, nervous, catching pumps, rear loses traction suddenly.)	Less rear camber. Less front camber. More front toe out. Lower overall rear link. Narrower (PSR) Wider (NSR) Front Hex. Wider (NO) Wider (PO) Rear Hex. Thinner rear roll bar. Longer upper links on hubs. Lower overall rear link. Lower rear arm on inside. Higher front axle height. Lower rear axle height.	Less front camber. More front toe out. Higher front axle height. Narrower (PSR) Wider (NSR) Front Hex. Narrower (NO) Wider (PO) Rear Hex. Longer upper links on hubs. Higher overall rear link. Lower rear axle height. Thinner rear roll bar.	Less rear camber. Less front camber. More front toe out. Higher front axle height. Narrower (PSR) Wider (NSR) Front Hex. Wider (NO) Wider (PO) Rear Hex. Longer upper links on hubs. Higher overall rear link. Lower rear camber. Higher rear axle height if grip is causing problem, lower if loose parts are causing problems. Thinner rear roll bar.	Less rear camber. Less front camber. More front toe out. Higher front axle height. Narrower (PSR) Wider (NSR) Front Hex. Narrower (NO) Wider (PO) Rear Hex. Longer upper links on hubs. Higher overall rear link. Lower rear camber. Higher rear axle height if grip is causing problem, lower if loose parts are causing problems. Thinner rear roll bar.
What to do first on a particular track type if your car is understeering. (Not enough steering, too calm, rear end gripping too much.)	More front camber. Less front toe out. Thinner front roll bar. Wider (PSR) Narrower (NSR) Front Hex. Narrower (NO) Wider (PO) Rear Hex. More rear camber. Shorter upper links on hubs. Higher rear arm on inside. Lower front axle height. Higher rear axle height.	More front camber. Less front toe out. Thinner front roll bar. Wider (PSR) Narrower (NSR) Front Hex. Narrower (NO) Wider (PO) Rear Hex. Shorter upper links on hubs. Higher overall rear link. More rear camber. Higher rear axle height.	More front camber. Less front toe out. Thinner front roll bar. Thicker rear roll bar. Lower front axle height. Wider (PSR) Narrower (NSR) Front Hex. Shorter upper links on hubs. Higher overall rear link. More rear camber. Higher rear axle height.	More front camber. Less front toe out. Thinner front roll bar. Wider front axle height. Wider (PSR) Narrower (NSR) Front Hex. Shorter upper links on hubs. Higher overall rear link. More rear camber. Higher rear axle height.
What to do first on a particular track type if your car is disconnected from your inputs, it feels one step behind what you want it to do.	Thinner shock oils. Less droop. Low axle height. Lower front and rear links on towers.	Thinner shock oils. Less droop. Low axle height. Lower front and rear links on towers.	Thinner shock oils. Less droop. Low axle height. Lower front and rear links on towers.	Thinner shock oils. Less droop. Low axle height. Lower front and rear links on towers.

Setup Improvement Matrix Presented by JSM						
Advice is posted in the recommended order of implementation. Of course this will vary depending on the default handling of the car.			UNEVEN GRIP			
SETUP IMPROVEMENT		LOW GRIP	HIGH GRIP	UNEVEN GRIP	SMOOTH TRACK	
STEERING						
Front End Is Too Twitchy		Less front camber More front toe out Long plate on steering knuckle. More castor. More front kick up. Longer front link on hub. Thicker front diff. Thicker rear diff. Narrower (PSR) Wider (NSR) Front Hex. Weight bias back. Higher front link on tower.	Less front camber More front toe out Long plate on steering knuckle. More castor. More front kick up. Longer front link on hub. Thicker front diff. Thicker rear diff. Narrower (PSR) Wider (NSR) Front Hex. Weight bias back. Higher front link on tower.	Less front camber More front toe out Long plate on steering knuckle. More castor. More front kick up. Longer front link on hub. Thicker front diff. Thicker rear diff. Narrower (PSR) Wider (NSR) Front Hex. Weight bias back. Higher front link on tower.	Less front camber More front toe out Long plate on steering knuckle. More castor. More front kick up. Longer front link on hub. Thicker front diff. Thicker rear diff. Narrower (PSR) Wider (NSR) Front Hex. Weight bias back. Higher front link on tower.	Less front camber More front toe out Long plate on steering knuckle. More castor. More front kick up. Longer front link on hub. Thicker front diff. Thicker rear diff. Narrower (PSR) Wider (NSR) Front Hex. Weight bias back. Higher front link on tower.
Front End Turns In Well, Then Car Pushes Too Much.		Steering link forward on Ackermann plate. Short plate on steering knuckle. Thinner front roll bar. Less rear toe in. Shock on rear tower. Move front hub back. Lean front shock in on tower. Longer front link on hub. Shorter rear link on hub. Shock in on rear tower.	Steering link forward on Ackermann plate. Short plate on steering knuckle. Thinner front roll bar. Less rear toe in. Shock on rear tower. Move front hub back. Lean front shock in on tower. Longer front link on hub. Shorter rear link on hub. Shock in on rear tower.	Steering link forward on Ackermann plate. Short plate on steering knuckle. Thinner front roll bar. Less rear toe in. Shock on rear tower. Move front hub back. Lean front shock in on tower. Longer front link on hub. Shorter rear link on hub. Shock in on rear tower.	Steering link forward on Ackermann plate. Short plate on steering knuckle. Thinner front roll bar. Less rear toe in. Shock on rear tower. Move front hub back. Lean front shock in on tower. Longer front link on hub. Shorter rear link on hub.	Steering link forward on Ackermann plate. Short plate on steering knuckle. Thinner front roll bar. Less rear toe in. Shock on rear tower. Move front hub back. Lean front shock in on tower. Longer front link on hub. Shorter rear link on hub.
Front End Pushes/Turns OK On Entry, Then Oversteers Mid Corner		Wider front hex on NSR car. Less rear camber. Lower rear arm on inside. More rear toe in. Longer rear link on hub. Thinner rear roll bar. Steering link back on Ackermann plate. Long plate on steering knuckle. Move rear shock out on tower. Move front hub forward. Move front shock out on tower.	Longer rear link on hub. Steering link back on Ackermann plate. Long plate on steering knuckle. Move rear shock out on tower. Move front hub forward. Move front shock out on tower. Less rear camber. More rear toe in.	Wider front hex on NSR car. Less rear camber. More rear toe in. Longer rear link on hub. Lower rear arm on inside. Steering link back on Ackermann plate. Long plate on steering knuckle. Move rear shock out on tower. Move front hub forward. Move front shock out on tower.	Wider front hex on NSR car. Less rear camber. More rear toe in. Longer rear link on hub. Steering link back on Ackermann plate. Long plate on steering knuckle. Move rear shock out on tower. Lower rear arm on inside. Move front hub forward. Move front shock out on tower.	Wider front hex on NSR car. Longer rear link on hub. Lower rear arm on inside. Steering link back on Ackermann plate. Long plate on steering knuckle. Move rear shock out on tower. Lower rear camber. More rear toe in.
Steering Is Difficult In Long Sweepers		More front toe out. Long plate on steering knuckle. More castor. Long links on front and rear hubs. Thicker diffs overall.	More front toe out. Long plate on steering knuckle. Thicker diffs overall. More castor. Long links on front and rear hubs.	More front toe out. Long plate on steering knuckle. Thicker diffs overall. More castor. Long links on front and rear hubs.	More front toe out. Long plate on steering knuckle. Thicker diffs overall. More castor. Long links on front and rear hubs.	More front toe out. Long plate on steering knuckle. Thicker diffs overall. More castor. Long links on front and rear hubs.
REAR GRIP						
Rear End Spins Out Mid Corner		Less rear camber. Lower rear arm on inside. Thinner rear roll bar. More rear toe in. Thicker rear diff off. Move rear shocks out on tower. Run a rear driveshaft with joint further out, for example CVD with joint inside bearing.	Less rear camber. Lower rear arm on inside. Thinner rear roll bar. More rear toe in. Thicker rear diff off. Move rear shocks out on tower. Run a rear driveshaft with joint further out, for example CVD with joint inside bearing.	Less rear camber. Lower rear arm on inside. Thinner rear roll bar. More rear toe in. Thicker rear diff off. Move rear shocks out on tower. Run a rear driveshaft with joint further out, for example CVD with joint inside bearing.	Less rear camber. Lower rear arm on inside. Thinner rear roll bar. More rear toe in. Thicker rear diff off. Move rear shocks out on tower. Run a rear driveshaft with joint further out, for example CVD with joint inside bearing.	Less rear camber. Lower rear arm on inside. Thinner rear roll bar. More rear toe in. Thicker rear diff off. Move rear shocks out on tower. Run a rear driveshaft with joint further out, for example CVD with joint inside bearing.
Rear End Is Stuck In Corners, With Too Much Grip		Less rear toe in. Narrower (PO) Wider (NO) Rear Hex. Thicker rear roll bar. Thinner rear diff	Less rear toe in. Narrower (PO) Wider (NO) Rear Hex. Thicker rear roll bar. Thinner rear diff	Less rear toe in. Narrower (PO) Wider (NO) Rear Hex. Thicker rear roll bar. Thinner rear diff	Less rear toe in. Narrower (PO) Wider (NO) Rear Hex. Thicker rear roll bar. Thinner rear diff	Less rear toe in. Narrower (PO) Wider (NO) Rear Hex. Thicker rear roll bar. Thinner rear diff
Rear End Steps Out On Power		More rear toe in. Wider (NO) Wider (PO) Rear Hex. Thinner rear roll bar if rear end slides, thicker if rear end squats onto outside corner. Thinner centre or rear diff	More rear toe in. Wider (NO) Wider (PO) Rear Hex. Thinner rear roll bar if rear end slides, thicker if rear end squats onto outside corner. Thinner centre or rear diff	More rear toe in. Wider (NO) Wider (PO) Rear Hex. Thinner rear roll bar if rear end slides, thicker if rear end squats onto outside corner. Thinner centre or rear diff	More rear toe in. Wider (NO) Wider (PO) Rear Hex. Thinner rear roll bar if rear end slides, thicker if rear end squats onto outside corner. Thinner centre or rear diff	More rear toe in. Wider (NO) Wider (PO) Rear Hex. Thinner rear roll bar if rear end slides, thinner if rear end squats onto outside corner. Thinner centre or rear diff
BUMP HANDLING						
Car Not Soaking Up Small Sharp Bumps & Ruts, like Tractor Tracks		Thinner shock oils. More, larger holes in piston. Tapered piston, taper down.	Thinner shock oils. More, larger holes in piston. Tapered piston, taper down.	Thinner shock oils. More, larger holes in piston. Tapered piston, taper down.	Thinner shock oils. More, larger holes in piston. Tapered piston, taper down.	Thinner shock oils. More, larger holes in piston. Tapered piston, taper down.
Front End Catching Bumps & Ruts In Corners		Raise front axle height. Add bump steer (be out as suspension compresses. Narrow front hex PSR, wide front hex NSR. Raise entire rear link) raise equal amount on hub and tower, or 1 more hole on tower) Raise Cut outside and inside rows of pins on tyres.	Raise front axle height. Add bump steer (be out as suspension compresses. Narrow front hex PSR, wide front hex NSR. Raise entire rear link) raise equal amount on hub and tower, or 1 more hole on tower) Raise Cut outside and inside rows of pins on tyres.	Raise front axle height. Add bump steer (be out as suspension compresses. Narrow front hex PSR, wide front hex NSR. Raise entire rear link) raise equal amount on hub and tower, or 1 more hole on tower) Raise Cut outside and inside rows of pins on tyres.	Raise front axle height. Add bump steer (be out as suspension compresses. Narrow front hex PSR, wide front hex NSR. Raise entire rear link) raise equal amount on hub and tower, or 1 more hole on tower) Raise Cut outside and inside rows of pins on tyres.	Raise front axle height. Add bump steer (be out as suspension compresses. Narrow front hex PSR, wide front hex NSR. Raise entire rear link) raise equal amount on hub and tower, or 1 more hole on tower) Raise Cut outside and inside rows of pins on tyres.
Rear End Catching Bumps & Ruts In Corners		Raise rear axle height. Raise entire rear link (raise equal amount on hub and tower, or 1 more hole on tower) Narrow rear hex NO, wide rear hex PO. Lower rideheight Cut outside and inside rows of pins on tyres.	Raise rear axle height. Raise entire rear link (raise equal amount on hub and tower, or 1 more hole on tower) Narrow rear hex NO, wide rear hex PO. Lower rideheight Cut outside and inside rows of pins on tyres.	Raise rear axle height. Raise entire rear link (raise equal amount on hub and tower, or 1 more hole on tower) Narrow rear hex NO, wide rear hex PO. Lower rideheight Cut outside and inside rows of pins on tyres.	Raise rear axle height. Raise entire rear link (raise equal amount on hub and tower, or 1 more hole on tower) Narrow rear hex NO, wide rear hex PO. Lower rideheight Cut outside and inside rows of pins on tyres.	Raise rear axle height. Raise entire rear link (raise equal amount on hub and tower, or 1 more hole on tower) Narrow rear hex NO, wide rear hex PO. Lower rideheight Cut outside and inside rows of pins on tyres.
Car Wanting To Flip Over Due To Bumps		Lower RC. Best way is with links. Raise front and rear links on towers. Lower front and rear arms on inside. Long links front and rear on hubs. Lower rideheight More droop	Lower RC. Best way is with links. Raise front and rear links on towers. Lower front and rear arms on inside. Long links front and rear on hubs. Lower rideheight More droop	Lower RC. Best way is with links. Raise front and rear links on towers. Lower front and rear arms on inside. Long links front and rear on hubs. Lower rideheight More droop	Lower RC. Best way is with links. Raise front and rear links on towers. Lower front and rear arms on inside. Long links front and rear on hubs. Lower rideheight More droop	Lower RC. Best way is with links. Raise front and rear links on towers. Lower front and rear arms on inside. Long links front and rear on hubs. Lower rideheight More droop
Car Not Good Over Bumps On Power		Less antisquat. Change piston. Impossible to give a straight answer, try extremes. 5 hole vs 8 hole to see which has more potential. Thinner diffs, specially centre diff.	Less antisquat. Change piston. Impossible to give a straight answer, try extremes. 5 hole vs 8 hole to see which has more potential. Thinner diffs, specially centre diff.	Less antisquat. Change piston. Impossible to give a straight answer, try extremes. 5 hole vs 8 hole to see which has more potential. Thinner diffs, specially centre diff.	Less antisquat. Change piston. Impossible to give a straight answer, try extremes. 5 hole vs 8 hole to see which has more potential. Thinner diffs, specially centre diff.	Less antisquat. Change piston. Impossible to give a straight answer, try extremes. 5 hole vs 8 hole to see which has more potential. Thinner diffs, specially centre diff.
Car Bad In Huge Holes		This is mostly a piston problem. Again, impossible to give a straight answer. Try 5 hole vs 8 hole to see which has more potential. MOSTLY fewer holes of a larger size will be better. It slows suspension movement down and doesn't have too much pack. It will depend on the bumps. More drop most of the time, but sometimes less drop will help not to go into the holes, but skip over them. More castor. More kick up. More rear antisu	This is mostly a piston problem. Again, impossible to give a straight answer. Try 5 hole vs 8 hole to see which has more potential. MOSTLY fewer holes of a larger size will be better. It slows suspension movement down and doesn't have too much pack. It will depend on the bumps. More drop most of the time, but sometimes less drop will help not to go into the holes, but skip over them. More castor. More kick up. More rear antisu	This is mostly a piston problem. Again, impossible to give a straight answer. Try 5 hole vs 8 hole to see which has more potential. MOSTLY fewer holes of a larger size will be better. It slows suspension movement down and doesn't have too much pack. It will depend on the bumps. More drop most of the time, but sometimes less drop will help not to go into the holes, but skip over them. More castor. More kick up. More rear antisu	This is mostly a piston problem. Again, impossible to give a straight answer. Try 5 hole vs 8 hole to see which has more potential. MOSTLY fewer holes of a larger size will be better. It slows suspension movement down and doesn't have too much pack. It will depend on the bumps. More drop most of the time, but sometimes less drop will help not to go into the holes, but skip over them. More castor. More kick up. More rear antisu	This is mostly a piston problem. Again, impossible to give a straight answer. Try 5 hole vs 8 hole to see which has more potential. MOSTLY fewer holes of a larger size will be better. It slows suspension movement down and doesn't have too much pack. It will depend on the bumps. More drop most of the time, but sometimes less drop will help not to go into the holes, but skip over them. More castor. More kick up. More rear antisu
BALANCE ISSUES						
Car Feels Tippy, Responsive, On The Track		Lower RC by raising front and rear links on towers. Lower front and rear arms on inside.	Lower RC by raising front and rear links on towers. Lower front and rear arms on inside. Compensate as needed: Thicker roll bars. More Camber.	Lower RC by raising front and rear links on towers. Lower front and rear arms on inside.	Lower RC by raising front and rear links on towers. Lower front and rear arms on inside.	Lower RC by raising front and rear links on towers. Lower front and rear arms on inside.
Car Feels Numb, Too Soft, Not Enough Support		Lower axles front and rear. Shorter links on hubs front and rear. More, smaller holes in pistons, for example going to 8 holes from 5. Raise arms on inside. More antisquat. Less caster. Raise RC by lowering links on towers for more on the track feel, and more support on power.	Lower axles front and rear. Shorter links on hubs front and rear. More, smaller holes in pistons, for example going to 8 holes from 5. Raise arms on inside. More antisquat. Less caster. Raise RC by lowering links on towers for more on the track feel, and more support on power.	Lower axles front and rear. Shorter links on hubs front and rear. More, smaller holes in pistons, for example going to 8 holes from 5. Raise arms on inside. More antisquat. Less caster. Raise RC by lowering links on towers for more on the track feel, and more support on power.	Lower axles front and rear. Shorter links on hubs front and rear. More, smaller holes in pistons, for example going to 8 holes from 5. Raise arms on inside. More antisquat. Less caster. Raise RC by lowering links on towers for more on the track feel, and more support on power.	Lower axles front and rear. Shorter links on hubs front and rear. More, smaller holes in pistons, for example going to 8 holes from 5. Raise arms on inside. More antisquat. Less caster. Raise RC by lowering links on towers for more on the track feel, and more support on power.
Rear End Feels Soft when pushed on power in a corner, Fishtails On Power when accelerating straight.		Raise rear RC, lower link on tower. Raise rear arm on inside. More antisquat. Move rear hub forward. Lower rear axle height. Move rear driveshaft joint further in, for example universal instead of CVD in the bearing.	Raise rear RC, lower link on tower. Raise rear arm on inside. More antisquat. Move rear hub forward. Lower rear axle height. Move rear driveshaft joint further in, for example universal instead of CVD in the bearing.	Raise rear RC, lower link on tower. Raise rear arm on inside. More antisquat. Move rear hub forward. Lower rear axle height. Move rear driveshaft joint further in, for example universal instead of CVD in the bearing.	Raise rear RC, lower link on tower. Raise rear arm on inside. More antisquat. Move rear hub forward. Lower rear axle height. Move rear driveshaft joint further in, for example universal instead of CVD in the bearing.	Raise rear RC, lower link on tower. Raise rear arm on inside. More antisquat. Move rear hub forward. Lower rear axle height. Move rear driveshaft joint further in, for example universal instead of CVD in the bearing.
INVISIBLE SPEED						
Everything Feels Good But Car Is Slow		Make small changes. Higher diffs. More antisquat. Less drop. Less toe (front and rear). Less camber. Smoother clutch for more acceleration. A more aggressive tyre	Make small changes. Higher diffs. More antisquat. Less drop. Less toe (front and rear). Less camber. Smoother clutch for more acceleration. A more aggressive tyre	Make small changes. Higher diffs. More antisquat. Less drop. Less toe (front and rear). Less camber. Smoother clutch for more acceleration. A more aggressive tyre	Make small changes. Higher diffs. More antisquat. Less drop. Less toe (front and rear). Less camber. Smoother clutch for more acceleration. A more aggressive tyre	Make small changes. Higher diffs. More antisquat. Less drop. Less toe (front and rear). Less camber. Smoother clutch for more acceleration. A more aggressive tyre
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**SETUP IMPROVEMENT MATRIX PRESENTED
BY JQSM**

The idea of combinations of setups is that when you make a change, it usually has one positive effect, and a negative one. By combining changes, you can eliminate a negative effect caused by a change. Also, if you look at the Fast vs. Easy tab, you can see that there are many ways of adding geometric stiffness/initial grip to a car. When you want to make a car more easy to drive, you change some of these to 'Easy' and keep some as 'Fast'. Finding the right combinations is key to finding the best performance.

SETUP IMPROVEMENT	CHANGE 1	CHANGE 2	CHANGE 3	CHANGE 4	CHANGE 5	CHANGE 6
An EDGY, BUMPY, ROUGH TRACK, car catches bumps.	Raise links on front and rear towers 1 hole.	Raise front and rear axle heights	Raise complete rear link, inside and out equal amount. (front also if possible)	Increase camber slightly (0.5-1 deg)	Run as thin roll bars as you can. Raise arms on inside for stiffness in roll.	
Going to less toe in on consistent grip track, can be any traction level, just needs to be consistent. Also flowing layout where you maintain speed well.	Go to 1.5 deg toe in from 3 deg.	Move rear hub 2mm forward to maintain same wheelbase.				
A HIGH GRIP SMOOTH track	Thicker diffs all round. Increase in same ratio, for example, 10-10-5 becomes 15-15-7 (or 8). 50% more. Or 100% more becomes 20-20-10.	Raise links on front and rear towers 1 hole.	Raise front and rear axle heights	Raise complete rear link, inside and out equal amount. (front also if possible)	Increase camber slightly (0.5-1 deg)	Run as thin roll bars as you can. Raise arms on inside for stiffness in roll.
A LOW GRIP SMOOTH track, car feels good but you need more speed.	Slightly less camber.	More rear anti squat	Less rear toe in	Shorter plate on steering knuckle	8 hole conical piston with angled holes.	
Car is flipping over and it's nervous	Raise front and rear links on towers	Lengthen front and rear links on hubs	Increase camber 0.5-1 degree			
Car is easy but slow on a loose to medium grip track	Lower front and rear links on towers	Shorten front and rear links on hubs unless you are already running your standard short setting (which on some cars is a middle length)	Reduce camber 0.5-1 degree			
A ROUGH INCONSISTENT track where the rear end isn't settled.	Run driveshafts with joint further out, universals if option, or CVDs with joint inside bearing.	Raise rear shocks one hole on tower, and/or go up 0.1 on rear roll bar for regaining support.				

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