[Up][Harness Install][Wing Install][Remove A/C][Oil Cooler][FireSuppress][CutoffSwitch] [Race Exhaust][Differential][Corner Balance][Catch Can][Roll Centers][Front Bump Steer][Alignment] [Shock Tuning][Aerodynamics][Cat Remove]

How I Corner Balanced My Honda S2000

By Rob Robinette

Corner balancing, sometimes referred to as "corner weighting," "weight jacking," or "scaling," involves adjusting the spring perches of a car to get a balanced diagonal weight on the tires. Ideally the car should have 50% of its weight on the Left Front and Right Rear tires, and 50% on the Right Front and Left Rear. If your car's diagonal corner weights are not equal then its handling will be unbalanced--it will turn better in one direction than in the other (all other things being equal). If your car has coil over adjustable shocks you should consider renting/borrowing/buying some scales and corner balancing your car. It's a lot of work but in the end it's worth it. Keep in mind the stiffer your springs the more important corner balancing becomes.



On The Scales

I used this Microsoft Excel spreadsheet I created to do the following corner weight calculations: <u>Corner_Balance.zip</u> The spreadsheet's second page has a good article that goes into more detail of how and why to corner balance a car. You can see the article here: <u>Grassroots Motorsports » Understanding Corner Weights</u> This spreadsheet will also give you an estimated center of gravity height if you raise the rear of the car 10 inches or more and re-weigh it. The CG height values shown below are totally fictional.

You can also use this web page to calculate your corner weights: <u>Corner Weight Calculator</u> if you don't use Microsoft Excel. You can estimate your car's center of gravity (CG) height by using this page: <u>CG Height Calculator</u>

I used these scales to weigh the car: Intercomp SW500 EZ Weigh Scales

The following are screen shots from the <u>Corner_Balance.zip</u> Excel spreadsheet. Note the "Conditions and Changes Made" box in the "Ride Height" section of each spreadsheet.

First some baselines. Here's a box stock 2006 Honda S2000 with 5/8 of a tank of gas, and no driver or passenger:





Now here's the same stock S2000 with a 215lb driver in the seat:

	Corner Weights		Tar	get Corner Wei	ghts
Left Front	Front	Right Front	Left Front	Front	Right Front
710	1467	757	758	1467	709
	48.5%		+48	48.5%	-48
	Cross Weight			Cross Weight	
	1608			1512	
	53.2%			50.0%	
Left	S	Right	Left	the second second	Right
1561	Total	1461	1561	Total	1461
51.7%	3022	48.3%	51.7%	3022	48.3%
Left Rear	Rear	Right Rear	Left Rear	Rear	Right Rear
851	1555	704	803	1555	752
	51.5%		-48	51.5%	+48

I was really surprised to see how far off the stock S2000 was from a balanced Cross Weight. With the stock setup the car should have more grip in left hand turns than in right turns.

You need a nice, flat and level surface for the scales. I highly recommend using a laser level to confirm the 4 scales are level to one another. Even 1/8 inch difference will make a difference, especially if you have stiff springs on your coil overs. I used a laser level to project a horizontal line above the scales and then stood on each scale and placed a ruler on the top of the scale to take a reading. All 4 scales must be within 1/8 of an inch. You're better off not corner balancing the car than doing it on an unlevel surface. I used cheap linoleum tiles (49 cents each at Home Depot) to shim two of my scales to get them exactly level. I put the tiles on top of the scales. The tiles I used are 0.045" thick. I needed 3 tiles on the left front and 1 on the left rear scales.

100	15" square scales	42.5"		
10.2			_	
1				
26		S2000		
		Scale		
		Placement		

and the second	79.5"	ridoomont		
Sec. and Sec.				
26 26 26				
Content of the				
21 A. 21				
2.4.4.2				
and and a second se	0	44.625"		
17. 17. 17.		44 5/8"	_	
al and al				

My **track width** with CE28 17" x 9" wheels and measured between the outside bottom rim edge is 67.75" front and 69.875" rear. The rear is 2.125" wider. Measuring from the center of the tires I got 57.5" front and 59.625" rear. All of these measurements are widened by the camber angle of the wheels (-3.5 front, -3 rear).

I recommend you start with your car at your desired ride height and the shocks set to the exact same spring perch height left to right. Since the front and rear shocks are of different lengths you shouldn't match the front to the rear but your left front and right front shocks should have their spring perches in the same spot and your left rear and right rear should be the same.

Check your tire pressure and bump it up to the hot pressure you run on the track. I use 2x6 wood planks as ramps to drive the car onto the front ramps then jack up the rear and lower it onto the rear scales. It's difficult to position all 4 scales so you can just drive up on all of them at the same time.

Before putting your car on the scales you need to power up the scales and zero them with no weight on them. Also double check that the scales are connected properly--you can really screw up your suspension settings if you have any of the scales connected improperly (i.e. front left and right swapped).

If you don't have adjustable end links on your anti-roll bars then leave them connected. If you do have adjustable end links then disconnect them for the corner balance. Once the corner balance is complete put someone in the driver seat and reconnect them so there's no preload on them.

Once you get the car up on the scales you'll need to roll the car back and forth a few inches several times, being careful not to push it off the scales, to unbind the suspension (as the car is lowered onto the scales the tires will need to spread out to unbind the suspension). You will have to repeat this every time you lower the car onto the scales. You can also put two linoleum tiles with salt between them on your scales. The salt acts as tiny ball bearings and will allow the tires to spread when the car is lowered onto the scales. I use this technique and it works well. You can also use this technique when adjusting your alignment and turning the front wheels to measure caster.

With my KWV3 shocks I had to remove the wheel to adjust the spring perch so I left my jacks in place between lifts and only put two lug nuts on each wheel to speed shock adjustment.

The first spreadsheet below is what I started with. This is my 2001 S2000 with 1/2 tank gas, 216 lb driver, no passenger, spare tire removed, soft top up, Magnaflow mufflers (-20lbs), Braille battery (-15lbs), ride height lowered approximately 1 inch, all 4 Bilstein PSS9 coil over shocks set to same length left to right (front to rear will be different).

I put the car on the scales and input the four corner weights into the spreadsheet (the blue numbers in the left "Corner Weights" section). You can see in the "Target Corner Weights" section that the Left Front and Right Rear need 51 lbs of additional weight to balance the car. I decided to try 5 turns total of spring perch movement to balance the car.

You can make this adjustment in several ways:

If you don't want to change the ride height of the car then split the adjustment between all four wheels--extend the LF and RR 1 1/4 turns each and retract the RF (Right Front) and LR 1 1/4 turns each.

If you want to raise the ride height then extend both LF and RR coil overs 2 1/2 turns.

If you want to lower the ride height then retract both RF and LR coil overs 2 1/2 turns.

If you want to raise the front of the car then extend only the LF coil over 5 turns.

If you want to lower the front of the car then retract only the RF coil over 5 turns.

If you want to raise the rear of the car then extend the RR coil over 5 turns.

If you want to lower the rear of the car then retract the LR coil over 5 turns.

This was my first adjustment: Four turns of positive coil over preload (extending the shock) to the Left Front, and one positive turn to the Right Front. I added the turn to the RF simply to raise the ride height of the front of the car. I started with the Left Front because I wanted to raise the ride height of the car by about 1/4 inch so most of my

adjustments were positive--they raised the car. If you don't want to change your ride height then a more balanced approach would be appropriate such as making small adjustments to all 4 wheels--add preload to LF and RR (extend coil over), remove preload to RF and LR (shorten the coil over).

Its important to measure and note your ride heights after every change. I saved a copy of the spreadsheet for each adjustment so I have a history of each adjustment. You can see on the right side of the spreadsheet's "Target Corner Weights" section that after this adjustment we still need to add 39lbs to the Left Front and Right Rear.

10 10 10	Corner Weights	i	Та	rget Corner Wei	ghts
Left Front	Front	Right Front	Left Front	Front	Right Front
717	1450	733	756	1450	694
	49.5%		+39	49.5%	-39
	Cross Weight			Cross Weight	
0	1545	-		1466	
12	52.7%		- çe	50.0%	
Left	<u></u>	Right	Left	00.070	Right
1529	Total	1402	1529	Total	1402
52.2%	2931	47.8%	52.2%	2931	47.8%
6 5					
Left Rear	Rear	Right Rear	Left Rear	Rear	Right Rear
812	1481	669	773	1481	708
	50.5%		-39	50.5%	+39
Use the Ri	de Heights section to docui	ment your ride ne	eignt and suspen:	sion changes.	
	Ride Heights				
Left Front		Right Front			
25 5/16		25 1/8	Note your ric	de heights and suspens	ion changes
25 9/16	New Nev	N 25 5/16	here to track	your progress. When you	u adjust your
Condition driver, no magnaflow lowered ap	s: 2001 S2000 1/2 tank gas passenger, spare tire remo mufflers, Braille battery, rid proximately 1 inch.	, 216 lb ved, top up, e height	Collovers to ge height will cha ride heights a weigh and adj changes than step.	et the desired comer weig ange. Always document y nd your coilover changes just. It's better to make m to try to balance your ca	nts your ride our current each time you any small r in one big
Changes	made: Preload turns:				
LF+4 LR+0	RF+1 (want to raise over RR+0 by 1/4 inch)	all ride height			
Left Rear		Right Rear			
25 3/8		25 9/16			
20010		200/10			

I still needed more weight on the Left Front and Right Rear so I added + 4 turns to the Right Rear:

	Corner Weights	\$	Targ	jet Corner We	ights
Left Front	Front	Right Front	Left Front	Front	Right Front
722	1447	725	755	1447	692
	49.4%		+33	49.4%	-33
	Cross Weight			Cross Weight	
	1531			1466	
	52.3%			50.0%	
Left	and the second	Right	Left	a follower fo	Right
1528	Total	1402	1528	Total	1402
52.2%	2930	47.8%	52.2%	2930	47.8%
<u>.</u>		11 12 12 22 12 12 12 12 12 12 12 12 12 12 12 12 1			
Left Rear	Rear	Right Rear	Left Rear	Rear	Right Rear
806	1483	677	773	1483	710
	50.6%		-33	50.6%	+33
1. Enter your 2. Your targe Use the Ride	r current corner weights fr at corner weights are calc a Heights section to docu	rom the scales (bl ulated to give a 50 ment your ride he	ue numbers above) D/50 diagonal weigh ight and suspensio	nt distribution n changes.	
	Ride Heights		12 35 34 34		
Left Front		Right Front			
25 5/16	Old Ol	d 25 1/8	Note your ride	heights and suspens	sion changes
25 9/16	New Ne	w 🕺 25 5/16	-here to track yo	ur progress. When yo)u adjust your 📙
Conditions:	2001 S2000 1/2 tank gas	s. 216 lb	height will chang	ie. Alwaγs document	your current

driver, no passenger, spare tire removed, top up, nagnaflow mufflers. Braille hattery, ride heigh

ride heights and your coilover changes each time you weigh and adjust. It's better to make many small

lowered ap	proxima	itely 1 inch.		changes step.	than to try 1	to balance yo	ur car in one big
Changes I LF+4 LR+0	nade: RF+1 RR+4	⊃reload turns: (want to raise o by 1/4 ind	verall ride height ch)				
Left Rear			Right Rear	Change	s to make:	RR +4	
25 3/8	2		25 9/16				
3				10	10	10 10	10

I still needed more weight on the LF and RR so I added +4 to the LF:

	Co	ner Weig	hts		Target Corner Weights				
Lat Frank		Encirt		Disht Esset		Encet	Diskt Day		
	£	Front				Front	Right Front		
130		1449		713	756	1449	693		
		49.4%		12 12	+20	49.4%	-20		
	0	cross Weight	5	10		Cross Weight			
		1507				1466			
		51.4%	-		21	50.0%	8		
Left	-			Right	Left	State Constant and	Right		
1530		Total		1401	1530	Total	1401		
52.2%		2931		47.8%	52.2%	2931	47.8%		
	1			1					
Left Rear		Rear		Right Rear	Left Rear	Rear	Right Rear		
794		1482		688	774	1482	708		
		50.6%			-20	50.6%	+20		
Use the Ri	de Heigl	hts section to d	ocume	nt your ride he	ight and suspensi	on changes.			
	Ri	de Height	S						
Left Front	0			Right Front					
25 5/16	DId	-	DId	25 1/8	Note your ride	e heights and suspension	on changes		
25 3/4	New		New	25 7/16	here to track y	our progress. When you	adjust your		
Condition driver, no magnaflow lowered ap	s: 2001 passen(mufflers proxima	S2000 1/2 tank ger, spare tire r , Braille battery tely 1 inch.	gas, 2 emove: /, ride	16 lb J, top up, neight	collovers to get height will chan ride heights and weigh and adju changes than t step.	the desired corner weigh ige. Always document yo d your coilover changes e st. It's better to make ma o try to balance your car	nts your ride our current each time you iny small in one big		
Changes	nade: F	^o reload turns:		-					
LF+8	RF+1	(want to raise	overall	ride height	10		32		
LK+U	RR+4	by 1/4 i	ncn)	10	Changes to m	ake: Add to RR			
Left Rear				Right Rear			42		
25 3/8	Old		Old	25 9/16					
25 1/2	New		New	25 11/16					

I still needed more so I added +2 to the RR and drove the car for a week to let the suspension settle:

C	orner Weigh	ts	Targ	et Corner We	ights
Left Front	Front	Right Front	Left Front	Front	Right Front
740	1448	708	755	1448	693
	49.5%		+15	49.5%	-15
	Cross Weight			Cross Weight	
	1495			1465	
	51.1%			50.0%	
Left	service of the second	Right	Left	1	Right
1527	Total	1401	1527	Total	1401
52.2%	2928	47.8%	52.2%	2928	47.8%
Left Rear	Rear	Right Rear	Left Rear	Rear	Right Rear
787	1480	693	772	1480	708
	50.5%		-15	50.5%	+15
1. Enter your c 2. Your target o Use the Ride H	urrent corner weights corner weights are ca leights section to doo	from the scales (bl Iculated to give a 50 cument your ride he	ue numbers above) D/50 diagonal weigh ight and suspensio	it distribution n changes.	
	Ride Heights			4	

Right Front

Left Front

25 5/16 25 11/16	Old New	O Ne	ld ew	25 1/8 25 7/16	here to tra	ack your pr o get the d	nts and st ogress. VV esired corr	hen you adji er weights i	ust your
Condition driver, no magnaflow lowered ap	s: 2001 passen; mufflers proxima	S2000 1/2 tank ga ger, spare tire rem s, Braille battery, ri tely 1 inch.	s, 21 oved de h	16 lb , top up, eight	height will ride height weigh and changes tl step.	change. Al s and your adjust. It's han to try to	ways docu coilover ch better to n o balance y	iment your o nanges each nake many your car in c	surrent n time you small one big
Changes I LF+8 LR+0	made:F RF+1 RR+6	^o reload turns: (want to raise ove by 1/4 inch	erall r n)	ride height					
L Left Rear			_	Right Rear	Changes	to make: [)isconnec	t sway bar	end links
25 3/8	Old	0	ld	25 9/16					
25 11/16	New	N	ew.	25 13/16					

I decided to disconnect the front and rear sway bars to see what difference that made. It changed the wheel weights by 10 pounds at each wheel:

	Corner Weights	:	Tarç	get Corner We	ights
Left Front	Front	Right Front	Left Front	Front	Right Front
751	1449	698	756	1449	693
	49.5%		+5	49.5%	-5
	Cross Weight			Cross Weight	
	1476			1466	
	50.4%			50.0%	
Left		Right	Left	the second second	Right
1529	Total	1401	1529	Total	1401
52.2%	2930	47.8%	52.2%	2930	47.8%
	Deer	Dight Door	Left Deer	Deer	Dight Door
	Real			Real	
118	1481	703	113	1481	708
	50.5%		-5	50.5%	+5
1. Enter your 2. Your target	current corner weights fr t corner weights are calc	om the scales (bl ulated to give a 50	ue numbers above)/50 diagonal weig) ht distribution	
1. Enter your 2. Your target Use the Ride	r current corner weights fr t corner weights are calc Heights section to docu	om the scales (bl ulated to give a 50 ment your ride he	ue numbers above D/50 diagonal weig ight and suspensio) ht distribution on changes.	
1. Enter your 2. Your targe Use the Ride	current corner weights fr t corner weights are calc Heights section to docu Ride Heights	om the scales (bl ulated to give a 50 ment your ride he	ue numbers above J/50 diagonal weig ight and suspensio) ht distribution on changes.	
1. Enter your 2. Your targe Use the Ride	current corner weights fr t corner weights are calc Heights section to docu Ride Heights	om the scales (bl ulated to give a 50 ment your ride he Right Front	ue numbers above)/50 diagonal weig ight and suspensio) ht distribution on changes.	
1. Enter your 2. Your targe Use the Ride Left Front 25 5/16	current corner weights fr t corner weights are calc Heights section to docu Ride Heights	om the scales (bl ulated to give a 50 ment your ride he Right Front d 25 1/8	ue numbers above D/50 diagonal weig ight and suspensio Note your ride) ht distribution on changes. heights and suspen	sion changes
1. Enter your 2. Your target Use the Ride Left Front 25 5/16 (25 11/16 1	Current corner weights fit t corner weights are calc Heights section to docu Ride Heights Old Ole New Net	om the scales (bl ulated to give a 50 ment your ride he Right Front d 25 1/8 w 25 7/16	ue numbers above 1/50 diagonal weig ight and suspension Note your ride here to track your collegere to get) ht distribution on changes. heights and suspen our progress. When yo	sion changes
1. Enter your 2. Your target Use the Ride Left Front 25 5/16 (25 11/16) Conditions: 2 driver, no pa magnaflow m disconnecte inch.	current corner weights fr t corner weights are calc Heights section to docu Ride Heights Old Old New Ner 2001 S2000 1/2 tank gas ssenger, spare tire remo ufflers, Braille battery, sv d, ride height lowered ap	om the scales (bl ulated to give a 50 ment your ride he Right Front d 25 1/8 w 25 7/16 s, 216 lb ved, top up, vay bars proximately 1	ue numbers above J/50 diagonal weig ight and suspension Note your ride here to track your coilovers to get height will chan ride heights and weigh and adjus changes than to step.) ht distribution on changes. heights and suspen our progress. When your the desired corner wei ge. Always document I your coilover changes st. It's better to make r o try to balance your c	sion changes ou adjust your ights your ride your current s each time you nany small ar in one big
1. Enter your 2. Your target Use the Ride Left Front 25 5/16 (25 11/16 1 Conditions: 2 driver, no pa magnaflow m disconnecte inch. Changes ma	current corner weights fr t corner weights are calc Heights section to docu Ride Heights Old Ole New Ner 2001 S2000 1/2 tank gas ssenger, spare tire remo ufflers, Braille battery, sv d, ride height lowered ap ide: Preload turns:	om the scales (bl ulated to give a 50 ment your ride he Right Front d 25 1/8 w 25 7/16 s, 216 lb ved, top up, vay bars proximately 1	ue numbers above D/50 diagonal weig ight and suspension Note your ride here to track your coilovers to get height will chan ride heights and weigh and adjus changes than to step.) ht distribution on changes. heights and suspen our progress. When yo the desired corner wei ge. Always document I your coilover changes st. It's better to make r o try to balance your c	sion changes ou adjust your ights your ride your current s each time you nany small ar in one big
1. Enter your 2. Your target Use the Ride Left Front 25 5/16 (25 11/16 1 Conditions: 2 driver, no pa magnaflow m disconnecte inch. Changes ma LF+8 RI LR+0 R	current corner weights fr t corner weights are calc Heights section to docu Ride Heights Old Old New Ner 2001 S2000 1/2 tank gas issenger, spare tire remo ufflers, Braille battery, sv d, ride height lowered ap ide: Preload turns: F+1 (want to raise over R+6 by 1/4 inch)	om the scales (bl ulated to give a 50 ment your ride he Right Front d 25 1/8 w 25 7/16 s, 216 lb ved, top up, vay bars proximately 1 all ride height	ue numbers above D/50 diagonal weig ight and suspension Note your ride here to track your coilovers to get height will chan ride heights and weigh and adjus changes than to step.) ht distribution on changes. heights and suspen our progress. When your the desired corner wei ge. Always document I your coilover changes st. It's better to make r o try to balance your c	sion changes ou adjust your ights your ride your current s each time you nany small ar in one big
1. Enter your 2. Your target Use the Ride Left Front 25 5/16 25 11/16 1 Conditions: 2 driver, no pa magnaflow m disconnecte inch. Changes ma LF+8 RI LR+0 R	current corner weights fit corner weights are calc Heights section to docu Ride Heights Old Old New Ner 2001 S2000 1/2 tank gas Issenger, spare tire remoufflers, Braille battery, switch, ride height lowered ap Ide: Preload turns: F+1 (want to raise over R+6 by 1/4 inch)	om the scales (bl ulated to give a 50 ment your ride he Right Front d 25 1/8 w 25 7/16 s, 216 lb ved, top up, vay bars proximately 1 all ride height Right Rear	ue numbers above J/50 diagonal weig ight and suspension Note your ride here to track your coilovers to get height will chan ride heights and weigh and adjus changes than to step. Changes to ma) ht distribution on changes. heights and suspen our progress. When your the desired corner wei ge. Always document I your coilover changes st. It's better to make r o try to balance your c ake: RF -2	sion changes ou adjust your ghts your ride your current s each time you nany small ar in one big
1. Enter your 2. Your target Use the Ride	current corner weights free calce t corner weights are calce Heights section to docu Ride Heights Old Old New Ner 2001 S2000 1/2 tank gas rssenger, spare tire remo ufflers, Braille battery, sv d, ride height lowered ap rde: Preload turns: F+1 (want to raise over R+6 by 1/4 inch) Old Old	om the scales (bl ulated to give a 50 ment your ride he Right Front d 25 1/8 w 25 7/16 s, 216 lb ved, top up, vay bars proximately 1 all ride height Right Rear	ue numbers above J/50 diagonal weig ight and suspension Note your ride here to track your coilovers to get height will chan ride heights and weigh and adjus changes than to step. Changes to ma) ht distribution on changes. heights and suspen our progress. When your the desired corner wei ge. Always document I your coilover changes st. It's better to make r o try to balance your c ake: RF -2	sion changes ou adjust your ights your ride your current s each time you nany small ar in one big

I finally went too far when I took two turns off the Right Front (went from +1 overall to -1):

Co	orner Weigh	ts	Target Corner Weights				
Left Front	Front	Right Front	Left Front	Front	Right Front		
755	1448	693	731	1448	717		
	51.2%		-24	51.2%	+24		
n P	Cross Weight			Cross Weight			
	1364			1413			
	48.3%			50.0%			
Left		Right	Left	Constraint and the second	Right		
1426	Total	1400	1426	Total	1400		
50.5%	2826	49.5%	50.5%	2826	49.5%		
Lea Deces		Dista Dista	1-8 D	D H LEVA	D: H D		
Len Rear	Rear	Right Rear	Left Rear	Rear	Right Rear		
671	1378	707	695	1378	683		
10 A 44	48.8%		+24	48.8%	-24		

2. Your target corner weights are calculated to give a 50/50 diagonal weight distribution

Use the Ride Heights section to document your ride height and suspension changes.

7	Di	da Uaiab	te		- A.L.	6				
1	RI	ue neign	is				-		10	
Left Front	1			Right Front	1					
25 5/16	Old	N	Old	25 1/8	Note you	r ride heigl	nts and su	spension	changes	
25 11/16	New		New	25 7/16	here to track your progress. When you adjust your collowers to get the desired corner weights your ride					
magnaflow disconnect inch. Changes r LF+8 LR+0	mufflers, ed, ride I nade: P RF -1 RR +6	Braille batter neight lowered reload turns: (want to rais by 1/4	y, sway 1 approx e overal inch)	y bars kimately 1 I ride height	weigh and changes t step. Changes	l adjust. It's han to try to to make: R	better to n balance y F + 3/4	nake many vour car in	small one big	
Left Rear				Right Rear						
25 3/8	Old		Old	25 9/16						
25 11/16	New		New	25 13/16			0			

I put + 3/4 of a turn back on the Right Front and ended up very close to ideal. I installed <u>McMaster-Carr adjustable</u> <u>end links</u> for the front and rear sway bars and installed them with my girl friend sitting in the driver's seat to load the suspension. Adjustable end links are more important for cars with upgraded (stiffer) sway bars because they can exert a lot of force to the suspension.

Here's my final results:

	Corner Weig	nts	Tar	get Corner Wei	er Weights		
Left Front	Front	Right Front	Left Front	Front	Right Front		
751	1449	698	757	1449	692		
	49.5%		+6	49.5%	-6		
6	Cross Weight			Cross Weight	1		
	1478			1466			
	50.4%			50.0%			
Left		Right	Left	La contra de la	Right		
1531	Total	1399	1531	Total	1399		
52.3%	2930	47.7%	52.3%	2930	47.7%		
Left Rear	Rear	Right Rear	Left Rear	Rear	Right Rear		
780	1/91	701	774	1/91	707		
100	50.5%	701	-6	50.5%	+6		
Use the Ri	de Heights section to d Ride Height	ocument your ride he	ight and suspens	ion changes.			
Left Front		Right Front	Note your rid	e heights and suspens	ion changes		
25 5/16		Via 25 1/8	here to track	your progress. When yo	u adjust your 📙		
25 11/16	INEW	INEW 257716	coilovers to ge	t the desired corner wei	ghts your ride —		
Conditions driver, no magnaflow disconnect	s: 2001 S2000 1/2 tank passenger, spare tire re mufflers, Braille battery ed, ride height lowered	gas, 216 lb emoved, top up, , sway bars approximately 1	height will chai ride heights an weigh and adju changes than t step.	nge. Always document ; Id your coilover changes Ist. It's better to make n to try to balance your ca	your current each time you nany small rr in one big		
inch.							
inch. Changes r	nade: Preload turns:						
inch. Changes r LF+8 LR+0	nade: Preload turns: RF - 1/4 (want to raise RR + 6 bv 1/4	overall ride height					
inch. Changes r LF+8 LR+0 Left Rear	nade: Preload turns: RF - 1/4 (want to raise RR + 6 by 1/4	overall ride height inch)	Changes to m	nake: Done			
inch. Changes r LF+8 LR+0 Left Rear 25 3/8	nade: Preload turns: RF - 1/4 (want to raise RR + 6 by 1/4	overall ride height inch) Right Rear Old 25 9/16	Changes to m	nake: Done			

Here's the car with the same settings but empty:

	Corner Weights		Target Corner Weights				
Left Front	Front	Right Front	Left Front	Front	Right Front		
696	1378	682	696	1378	682		
	50.7%		-0	50.7%	+0		
6	Cross Weight		-	Cross Weight			
	1358			1358			
	50.0%			50.0%			
Left	a service and a	Right	Left		Right		
4070		4045	4070	이 요구 않는 것이 같아.	4045		

	TULAI		1040	1372	rotai	1343		
50.5%	2717		49.5%	50.5%	2717	49.5%		
	1							
			1					
C	<u>1</u> 14					1		
Left Rear	Rear		Right Rear	Left Rear	Rear	Right Rear		
676	1339	10	663	676	1339	663		
	49.3%	5 ¹		+D	49.3%	-0		
	40.070				40.070			
1. Enter you	ur current corner v	eights fror	n the scales (bl	ue numbers above)				
2. Your targ	get corner weights	are calcul	ated to give a 50)/50 diagonal weigh	t distribution			
Use the Ric	de Heights section	to docum	ent your ride he	ght and suspensio	n changes.			
				-				
	Ride Hei	ghts						
Left Front	2	-	Right Front					
25 5/16	DId	DId	25 1/8	Note your ride	heights and suspen	sion changes		
25.5/8	New	New	25 7/16	here to track yo	ur progress. When yo	ou adjust your 🔶		
	11011	11011	201110	— coilovers to get t	he desired corner we	ghts your ride		
0 11/1	2004 02000 4 2			1 2 1 4 20 1	A 1			
Conditions	: 2001 S2000 1/2	tan k gas, i	no driver,	height will chang	e. Always document	your current		
Conditions no passeng	: 2001 S2000 1/2 jer, spare tire remo mufflers, Braille ba	tank gas, i ived, top u tterv swa	no driver, p, v hars	height will chang ride heights and weigh and adjust	e. Always document your coilover change: t's hetter to make r	your current s each time you nany small		
Conditions no passeng magnaflow i disconnect	: 2001 S2000 1/2 jer, spare tire remo mufflers, Braille ba ted. ride height lov	tank gas, i ived, top u ttery, swa vered appr	no driver, p, y bars oximately 1	height will chang ride heights and weigh and adjust changes than to	e. Always document your coilover change: It's better to make r trv to balance vour c	your current s each time you nany small ar in one big		
Conditions no passeng magnaflow i disconnect inch.	: 2001 S2000 1/2 jer, spare tire remo mufflers, Braille ba ted, ride height lov	tank gas, i ived, top u ttery, swa vered appr	no driver, p, y bars oximately 1	height will chang ride heights and weigh and adjust changes than to step.	e. Always document your coilover change: It's better to make r try to balance your c	your current s each time you nany small ar in one big		
Conditions no passeng magnaflow i disconnect inch. Changes n	:: 2001 S2000 1/2 jer, spare tire remo mufflers, Braille ba ted, ride height lov nade: Preload turr	tank gas, i ived, top u ttery, swa vered appr is:	no driver, p, y bars oximately 1	height will chang ride heights and weigh and adjust changes than to step.	e. Always document your coilover change: It's better to make r try to balance your c	your current s each time you nany small ar in one big		
Conditions no passeng magnaflow I disconnect inch. Changes n LF+8	: 2001 S2000 1/2 jer, spare tire remo mufflers, Braille ba ted, ride height lov nade: Preload turr RF -1/4 (want to	tank gas, i ived, top u ttery, swa vered appr is: raise overa	no driver, p, y bars oximately 1 all ride height	height will chang ride heights and weigh and adjust changes than to step.	e. Always document your coilover changes It's better to make r try to balance your c	your current s each time you nany small ar in one big		
Conditions no passeng magnaflow I disconnect inch. Changes n LF+8 LR+0	: 2001 S2000 1/2 jer, spare tire remo mufflers, Braille ba ted, ride height lov nade: Preload turr RF -1/4 (want to RR+6 by	tank gas, wed, top u ttery, swa vered appr us: raise overa 1/4 inch)	no driver, p, y bars oximately 1 all ride height	height will chang ride heights and weigh and adjust changes than to step.	e. Always document your coilover changes It's better to make r try to balance your c	your current s each time you nany small ar in one big		
Conditions no passeng magnaflow I disconnect inch. Changes n LF+8 LR+0 Left Rear	: 2001 S2000 1/2 jer, spare tire remo mufflers, Braille ba ted, ride height lov nade: Preload turn RF -1/4 (want to RR+6 by	tank gas, i wed, top u ttery, swa vered appr ns: raise overa 1/4 inch)	no driver, p, y bars oximately 1 all ride height Right Rear	height will chang ride heights and weigh and adjust changes than to step. Changes to ma	e. Always document your coilover change: It's better to make r try to balance your c ke: Done	your current s each time you nany small ar in one big		
Conditions no passeng magnaflow i disconnect inch. Changes n LF+8 LR+0 Left Rear 25 3/8	2001 S2000 1/2 jer, spare tire remo mufflers, Braille ba ted, ride height low nade: Preload turn RF -1/4 (want to RR+6 by Old	tank gas, i wed, top u ttery, swa vered appr is: raise overa 1/4 inch) Old	no driver, p, y bars oximately 1 all ride height Right Rear 25 9/16	height will chang ride heights and weigh and adjust changes than to step. Changes to ma	e. Always document your coilover change: It's better to make r try to balance your c ke: Done	your current s each time you nany small ar in one big		



I took the newly corner balanced S2000 to a Summit Point Raceway Friday at The Track (FATT) event and it handled superbly. Corner weighting your car is hard work but it makes all that high dollar suspension work together the way its supposed to.

In April 2013 I corner balanced the S for the first time in two years. Since I went to 800 front and 700lb rear springs over the winter I knew I needed to put the car on the scales. Don't be in a hurry to set ride height and corner balance new springs. I was surprised how much these high rate springs settled over the first 3 months. Speaking of springs, it's a good idea to measure your new springs and put the longest spring in the left front--this is especially true if you don't have adjustable spring perches.

I painstakingly leveled the scales and marked their locations on my garage floor for future reference. I needed 3 linoleum tiles (0.045" thick tiles) on the left front and 1 on the left rear to level the scales. I tried the "two linoleum tiles & salt" technique to allow the tires to slide on the scales so the suspension can settle and unbind. I still rolled the car back and forth a few inches several times on the scales before each reading though just for good measure (literally). The tiles & salt seemed to help because the weight never shifted by more than 1 pound after rolling the car on the scales.

Just to confirm the theory I checked the corner weights with and without me in the driver seat and yup, the theory is right--the

cross weight does not change when a driver is added.

The following weights are with the front Comptech adjustable and stock rear sway bars connected. I gave up on running adjustable end links on the sway bars because they fail so often and the bars only added a couple of pounds of preload to the scale weights.

I started out with the KW spring perches set exactly the same left to right (measured with a digital caliper) and my ride height was pretty close to where I wanted it. My starting cross weight was 50.6%, I was off 7lbs per wheel.

I lowered the right front spring perch 1 full turn (equates to about 1/8" of wheel movement) to reduce the weight on the right front and left rear and tried again but I still needed more weight off the right front and left rear.

I lowered the left rear spring perch 1 1/4 turn and put it on the scales. I overshot by a little so I raised the left rear spring perch by 1/2 turn and ended up with a perfect 50.0% cross weight. The total spring perch adjustments were 1 turn to the right front and 3/4 turn to the left rear.

Here's the ending corner weights with no driver and 9/10 fuel:



1. Enter your current corner weights from the scales (blue numbers above-left)

2. Your target corner weights are calculated to give a 50/50 diagonal weight distribution (above-right)

Use the Ride Heights section below to document your ride height and suspension changes.

Rob Robinette

[Home][Up][Harness Install][Wing Install][Remove A/C][Oil Cooler][FireSuppress][CutoffSwitch] [Race Exhaust][Differential][Corner Balance][Catch Can][Roll Centers][Front Bump Steer][Alignment] [Shock Tuning][Aerodynamics][Cat Remove]