

Adjusting Weight Percentages And Frame Heights

A few things should be noted before we start. All information is based on a 2050-2250 pound race car after ballast weight is added and WITHOUT DRIVER.

- 1 turn on a torsion stop bolt will change the weight on that tire aprox. 12 pounds. It will also change the frame height of that corner aprox. 1/4".
- 2 turns on a standard coil over front shock nut will have the same effect - 1/4" of ride height and 12 pounds of weight.
- Left rear torsion bars should have 5-6 turns of pre-load with no rear shocks installed.
- Right rear torsion bars should have 6-7 turns of pre-load with no rear shocks installed
- Always never seize your torsion stop bolts.
- Always set your frame heights first.

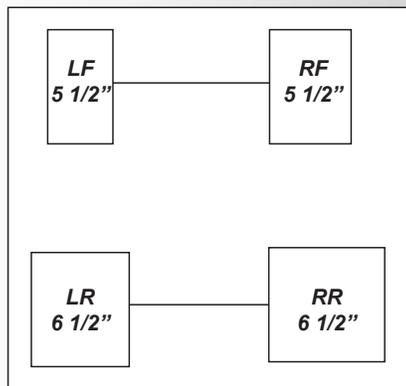
Note:
a standard coil nut is 8 threads per inch, which means every turn is moving the nut 1/8". Some shocks have different threads per inch so you will need to figure out how many turns it takes to move your coil nut 1/8". If it is 12 threads per inch, it would take 3 turns to move the nut 1/8" or 6 turns to move the nut 1/4".

Formula For Adjusting Left Rear Weight

1- Put your car on scales and set left side percentage between 54% - 54.2% before adding any ballast weight to car. First, shorten the front panhard bar as much as possible until the lower mounting bolt of the left front shock is 1/4" away from the shock tower. If the left side percentage still is low, you can shorten the rear panhard bar until you acheive the necessary left side percentage.

2- Set your rear percentage to 64.5% - 66%. Using ballast weight is okay to acheive this, but remember to maintain your left side percentage.

3- For example, if at this point the car has 100 pounds of left rear weight and we are trying to acheive 0 pounds left rear weight - here is the formula to achieve it. (note- if you are going by cross weight percentage, 100 pounds of left rear weight will be aprox.50% cross)



The easy solution might be to just wind one corner and take all that weight out.... But we have our frame heights to worry about! What you need to do is take that 100 pounds of left rear weight and divide it by all 4 corners of the car. 100 divided by 4 = 25 pounds of weight per corner. Why 4 you ask? Because we are going to take out left rear weight by adjusting all 4 corners of the car to maintain our frame heights. Basically, we need to change all 4 corners of the car by 25 pounds of weight.

We already know from above that 1 turn on a torsion bar is equal to 12 pounds of weight adjustment on that corner, and 2 turns on a coil nut is also 12 pounds of weight adjustment on that corner.

Always remember that all weights are diagonal on a race car... If you increase weight on a corner, it will always put weight on the diagonal corner.

So, we need to take 2 turns out of the left rear torsion stop, and put 2 turns into the right rear torsion stop. We do diagonally the same we need to take 4 turns out of the right front coil nut and put 4 turns into the left front coil nut. Recheck your wheel weights and frame heights and you will see that you are very close... a few slight adjustments may be necessary.

Left Rear Weight Quick Checks

ADDING 25 # LEFT REAR			
LF	RF		
1 turn out	1 turn in		
LR	RF		
1/2 turn in	1/2 turn out		

ADDING 50 # LEFT REAR			
LF	RF		
2 turn out	2 turn in		
LR	RR		
1 turn in	1 turn out		

REMOVING 25 # LEFT REAR			
LF	RF		
1 turn in	1 turn out		
LR	RF		
1/2 turn out	1/2 turn in		

REMOVING 50 # LEFT REAR			
LF	RF		
2 turn in	2 turn out		
LR	RR		
1 turn out	1 turn in		

WARNING

ALL CHASSIS SETTING AND ADJUSTMENTS ARE INTENDED FOR USE BY PROFESSIONAL RACE TEAMS AND TO BE PERFORMED BY QUALIFIED TECHNICIANS. IF YOU ARE NOT QUALIFIED TO DO THE WORK, SEEK THE ASSISTANCE OF A QUALIFIED TECHNICIAN. IF YOUR DRIVER IS NOT EXPERIENCED IN THE OPERATION OF A RACE CAR OF THIS TYPE, SEEK THE ASSISTANCE OF A QUALIFIED RACE DRIVING INSTRUCTOR OR SCHOOL BEFORE OPERATING THIS RACE CAR.

SERIOUS INJURY OR DEATH CAN OCCUR IN AUTO RACING.

DO NOT WORK ON RACE CAR BEFORE SUPPORTING IT ON ADEQUATE JACK STANDS OR OTHER SUITABLE WORK STANDS. NEVER WORK NEAR OR UNDER A RACE CAR SUPPORTED ONLY ON A JACK. WORK ONLY ON A LEVEL, HARD SURFACE CAPABLE OF SUPPORTING STANDS.