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WELCOME

This newsletter is a free service intended to benefit racers and enthusiasts by offering answers to chassis questions. Selected questions will be presented, at my discretion. Readers are invited to submit questions by mail to: 155 Wankel Dr., Kannapolis, NC 28083; by phone at 704-933-8876;

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Mark Ortiz

We race on 1/3 mile high-banked and 1/2 mile flat asphalt tracks. Car is Chevy metric with rear weight jacks, 3200# minimum, stock lower and upper A-frames, stock 4-link rear end with Ford 9" axle, coil springs all around.

Without really getting into specific spring rates, my question has to do with the relative stiffness of the rear springs. Isn't it a generally accepted principle that the LR spring is stiffer than the RR spring, by 25 pounds or so?

I thought that on dirt the opposite was true, but on asphalt the LR is the stiffer spring.

Comments? What characteristics would a stiffer RR produce?

Actually, stiffer LR is more common on both dirt and pavement.

Let's assume we're comparing setups using the same pair of springs, and just swapping them side to side.

On a truly flat track (no banking at all), mid-turn behavior should be about the same either way. The steeper the banking, the more the right-stiff split will loosen the car mid-turn.

In general, the right-stiff split will loosen exit on any track. Steeper banking will intensify the effect. This assumes that the rear suspension compresses under power. Rear anti-squat will reduce the effect. If anti-squat is great enough so the rear end rises under power, the effect reverses.

The right-stiff split will tighten entry on a flat track, assuming that the rear lifts in braking and that the car has a reasonable amount of front brake. Extreme amounts of anti-lift or rear brake can cause the effect to reverse. Steeper banking will diminish the normal effect and can reverse it in extreme cases.

I have seen brake floaters being used in several ways. Some use a floater only on the right side. I've also seen them with the floater rods mounted on the top or mounted on the bottom of the right side. What would be the proper position of the rods, and should you have them on both left and right sides?

There is really no right or wrong way to set up brake floaters – just predictable effects.

Most often, brake floaters are set up to produce pro-lift. For links above the axle running forward, this means the forward end of the link is above the rear end. For a link below the axle, the link runs downhill toward the front or uphill toward the rear.

Floaters can also be set up for anti-lift, which really makes more sense for shortening braking distances as it lowers rather than raises the center of gravity. Pro-lift has the advantage of allowing you to use lots of rear brake without wheel hop. In some cases, rear lift is used to promote rear steer effects.

When a floater is used on the right only, it is usually intended to give more pro-lift on the right, de-wedging the car and loosening entry. (Note that de-wedging the car can tighten entry instead if the car has a lot of rear brake.) The left brake torque reacts through whatever means are provided to resist it at the axle housing.

It is possible, especially with telescoping links on the axle, to get almost any desired properties using only one floater. The one thing you can't do is separately tune engine braking torque reaction and left brake torque reaction.

I think two floaters are worth having, since the added expense is pretty small. But a car with one can be made to do most of the same things.

CORRECTION

Last month's newsletter contained a statement in the response to a question about rear wheel offset/lateral position that read: "If you had only one rear wheel, the car would try to turn right under power..." That should have been: "If you had only the left rear wheel, the car would try to turn right under power..."

My apologies for any confusion this may have created.