TIRE PRESSURES

**LEFT FRONT**
- Plus PSI: Loosen Entry / Center
- Neg PSI: Tighten Entry / Center

**RIGHT FRONT**
- Plus PSI: Tighten Entry / Center
- Neg PSI: Loosen Entry / Center

**LEFT REAR**
- Plus PSI: Tighten Exit / Center
- Neg PSI: Loosen Exit / Center

**RIGHT REAR**
- Plus PSI: Loosen Exit / Center
- Neg PSI: Tighten Exit / Center

**REAR STAGGER**
- More Stagger: Loose Under Acceleration
- Less Stagger: Tighten Under Acceleration

**Tips**
For maximum tire grip, a tire with a higher load should have higher pressures. (Unless there is a loss in traction due to a bumpy surface condition.)

Higher Pressures = More Responsiveness
For maximum grip a tire with a lower load should have lower pressures.
Lower pressures = Less Responsiveness (Sluggish Feel)
Try to maintain higher inside temps/wear, than outside temps (5-10 degrees hotter).

---

**Toe-In / Toe-Out**

**LEFT FRONT**
- Toe In:
  - Plus Toe: Loosen Entry
  - Neg Toe: Tighten Entry

**RIGHT FRONT**
- Toe In:
  - Plus Toe: Tighten Entry
  - Neg Toe: Loosen Entry

**LEFT REAR**
- Toe Out:
  - Plus Toe: Tighten Exit
  - Neg Toe: Loosen Exit

**RIGHT REAR**
- Toe Out:
  - Plus Toe: Loosen Exit
  - Neg Toe: Tighten Exit

**Tips**
Keeping toe at or closer to 0 will result in higher straight-away speeds at the cost of stability or responsiveness.

- Toe in the rear will stabilize the car throughout the corner.
- Toe in the rear will make the car rapidly transition to a loose condition while cornering.
ANTI-ROLL BARS (ARB)

As the suspension on this side travels upward...

...the anti-roll bar twists along its length providing torsional resistance...

...because it is effectively anchored at this end to the other suspension components.

### FRONT ANTI-ROLL BAR EFFECTS

<table>
<thead>
<tr>
<th>Stiffer Anti-Roll Bar</th>
<th>More Stability / Tighter / Better Suited For Smoother Tracks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Softer Anti-Roll Bar</td>
<td>Less Stability / Looser / Front End Complies Better with Bumps</td>
</tr>
<tr>
<td>Higher Assymetry</td>
<td>Better Turn-In / Tighten Off / Set Too High Can Cause Snap Loose</td>
</tr>
<tr>
<td>Lower Assymetry</td>
<td>Tighten Entry / Loosen Center Off</td>
</tr>
<tr>
<td>Positive Pre-Load</td>
<td>Better Turn-In / Tighten Exit / Can Cause Snap Loose</td>
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<td>Negative Pre-Load</td>
<td>Tighten Turn-In / Tighten Exit</td>
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### REAR ANTI-ROLL BAR EFFECTS

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<thead>
<tr>
<th>Stiffer Anti-Roll Bar</th>
<th>Loosen Under Throttle Mid-Corner Out / Can Cause Snap-Loose</th>
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<tbody>
<tr>
<td>Softer Anti-Roll Bar</td>
<td>Tighten Under Throttle Mid-Corner Out / Too Soft = Gradual Loose</td>
</tr>
<tr>
<td>Higher Assymetry</td>
<td>More Grip On Exit</td>
</tr>
<tr>
<td>Lower Assymetry</td>
<td>Less Grip On Exit</td>
</tr>
<tr>
<td>Positive Pre-Load</td>
<td>Tighten Entry</td>
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<td>Negative Pre-Load</td>
<td>Loosen Entry</td>
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</table>

Tips

Larger (or stiffer) bars, increase the load on the outside tire throughout the corner unless both front and back bars are equal to each other, and reduce roll by stiffening the chasis.

**If building a coil binding setup**, a larger sway bar is recommended. 1.75+ This will help keep the nose planted while cornering.

Build your setup around your front sway bar setting if you know what sway bar you are typically comfortable with. Set this size and leave as is.

---

**BRAKE BIAS**

### BRAKE BIAS

<table>
<thead>
<tr>
<th>More Front Bias</th>
<th>Tighter Under Braking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Front Bias</td>
<td>Looser Under Braking</td>
</tr>
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Tips

Brake bias is best left at a standard default until all other chasis adjustments have been made.

Brake bias can be known to mask chasis entry problems when braking otherwise.
**CASTER**

Less caster in the LF will help the car turn from entry of the corner through the center. 
Increasing caster split will loosen the car 
A set once adjustment that should be driver preference and track type particular.

**Tips**
- Less Caster required on smaller track and more caster on longer wider tracks.
- Higher banking calls for higher caster split.

---

**CAMBER**

I M O Below shows the effect each adjustment will have on temps across tires with adjustment.

Green = Will Increase Temp   Red = Will Decrease Temp

<table>
<thead>
<tr>
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<th>TE MP S</th>
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<td>Loosen Entry</td>
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<td>Neg Camber</td>
<td>Tighten Middle-Out</td>
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**Tips**
- Inside temps should maintain up to 5-10 degrees hotter than Outside temps for maximum tire effectiveness on ovals.
- Camber can have a large effect both on straight away speeds and cornering speeds as it controls how much tire contact is available. More contact with tire patch = better cornering while less = better straight line speeds.

---

**Weight/Ballast**

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<td>Pos Front Weight</td>
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<td>Neg Front Weight</td>
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</table>

**Tips:**
- When adjusting weight throughout the corners of your car or front to back, imagine that it is a grocery cart and what effect weight would have in each corner of the cart. Example: Weight in the RR of the cart would make the right rear of the cart want to pass the front in a corner.
- If having an issue with one particular tire overheating first check corner weights for a huge difference between left and right side.
Springs have a very large effect on car handling and should be one of the first chassis settings that you work with in building a setup.

If building a coil binding setup, too soft of a front spring will make the car feel very loose but if too stiff they may not bind causing a very tight condition.

Be sure to keep an eye on ride heights and cambers following spring adjustments and reset them to your desired settings.

Change only one shock setting at a time. Afterwards, reset ride height and test.

Tips

Dialing a car in is often done using rear ride heights.

By running a higher LF Ride Height than RF it will help mid-corner turn in.

A higher front end height %, will tighten the car on corner exit.

Most adjustments in the garage such as balast forward, tire pressures, cambers, springs etc., also effect ride height. It is generally a good idea to check your ride heights often, and use the spring perches to compensate.

When building a coil binding setup, a high-crossweight car will usually bind the RF first, while a low crossweight car will usually bind the LF first.
Tip
Shocks are a great way of fine tuning your setup once you have gotten fairly close. Starting with default shock settings is recommended until you feel that your setup is fairly close to what you desire.

Bump and Rebounds have an effect on center as well, and can be used to fine tune the center of the corner in stages. (Early Center, Late Center Etc.)

---

**BUMP STOPS**

Bump stops limit the travel of shocks and are used to allow softer spring use on the front end while still avoiding bottoming the chassis out on high speed ovals, used most commonly with coil binding setups. Typically the higher the speed of the oval and more banking it has, the stiffer the bump stop needs to be, if it is needed. Bump stops can only be added to the front shocks and in effect, limit the travel of the shock to prevent bottoming out the front splitter with the track surface. Though they may be used on traditional setups, this makes bump stops invaluable to many coil binding setups.

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**PACKER SHIMS**

Packer Shims control the height at which the bump stops sit, which in turn controls how much travel is available to the shocks.
**REAR TRACK-BAR**

<table>
<thead>
<tr>
<th>LEFT REAR</th>
<th>OVERALL</th>
<th>RIGHT REAR</th>
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<tbody>
<tr>
<td>Raise = Tighten Exit / Loosen Entry</td>
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<td>Lower = Loosen Exit / Tighten Entry</td>
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Note: A traditional setup has lower left side track bars and higher right sides. Reversing this and running a higher left side track bar than right is commonly referred to as "Hillbyillying the Track Bars".

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**REAR TRUCK ARM MOUNTS**

<table>
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Tip

Using truck arm mounts has an effect on weight distribution dynamics. Sometimes changing truck arm mounts can benefit a spring package or setup that is prone to bottoming out issues.

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**ACKNOWLEDGEMENTS**

This guide was created and edited by Chris Allex (LoWliNE Racing Founder and Admin). Note that this is a work in progress and may be updated occasionally. Many thanks to all of our members who contribute weekly to the growth of setup knowledge.

Please feel free to take the time and visit us at

www.lowlineracing.net