

Slash Spec Racing Setup Guide



Slash Spec Racing Setup Guide Slash racing has taken the club-racing scene by storm. Enthusiastic racers all over the country are enjoying the latest off-road craze engineered by Traxxas, the electric-powered Slash 2WD short-course racing truck. The Slash is the perfect foundation for fun. It's inexpensive, easy to operate, ultra durable, and looks extremely realistic.

The Slash is "Ready-To-Race" right out of the box, but there are a few tricks that can be utilized to get the most out of this distinctive machine. In this article I'll cover all of the base setup principles of the Slash. Since most racing clubs are currently holding stock-spec classes for the Slash, I'll save the hop-ups and go-fast goodies for a future article. For now, let's go over the fundamentals of setting up a Slash for the track using the adjustments that are built into the truck.

Setup features

Suspension Adjustments



Since everyone has the same amount of horsepower in a stock-Slash race, a well-sorted suspension system is the single biggest advantage you can give your machine on the racetrack. The heart of any suspension system is the shock absorbers, and the Slash's shocks are fully tunable. Although springs of different rates can be installed, most tracks' stock-Slash rules do not permit spring changes. With that in mind, let's focus on the adjustments we can make within the rules. These include spring preload and ride height, damping rate, and shock position (see right).

Shock oil

The Slash shocks come filled with 30wt shock fluid. This allows the suspension to absorb bumps easily at slower speeds. However, with the fast-paced action of track racing and hard landings from big jumps, slowing down the dampers by increasing the oil viscosity is generally beneficial. This keeps the chassis from bottoming out harshly and better manages weight transfer under acceleration and braking. I fill the front shocks with 50wt shock fluid and the rears with 60wt shock fluid. The front end of the Slash is much lighter than the rear end. This allows a lighter damping setup to be used up front to balance out the overall feel and sets the chassis up nicely in the corners. The 60wt oil in the rear shocks provides ample 'pack' for jump landings and keeps chassis roll to a minimum.

Shock Preload and Ride Height

How much preload you need to tune into the shocks depends on how much traction and weight transfer you're looking for. The type of battery pack also plays a big part in this. Heavier battery packs, such as 6 or 7-cell NiMH battery packs will require an extra preload clip or two to achieve the same ride height versus a lightweight LiPo battery pack.

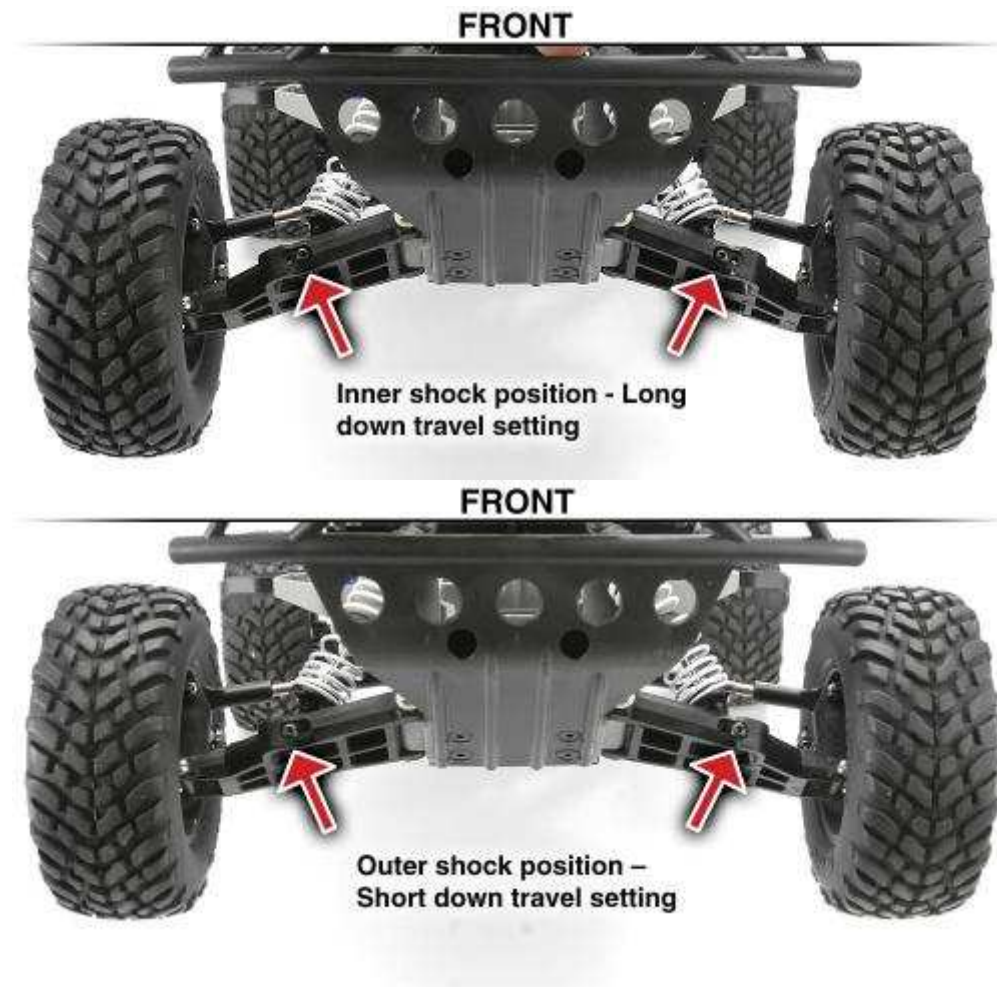


It's also important to note that when setting proper ride height, the truck should be ready to drive. This means the battery should be installed and the body should be mounted (The body was removed in the photos for better visual). Pump the front and rear suspension by hand a few times (evenly, front to back) and let go. Note where the chassis settles. A good base setup is with the rear drive shafts set a little below level, and with the front suspension arms set level with the surface. This allows a slightly lower rear stance, which provides a good weight transfer entering a corner. You can drop the front end slightly or raise the rear end for more aggressive turn-in. Raising the rear end will also provide a little more on-power grip by keeping more weight directly above the rear tires during acceleration.

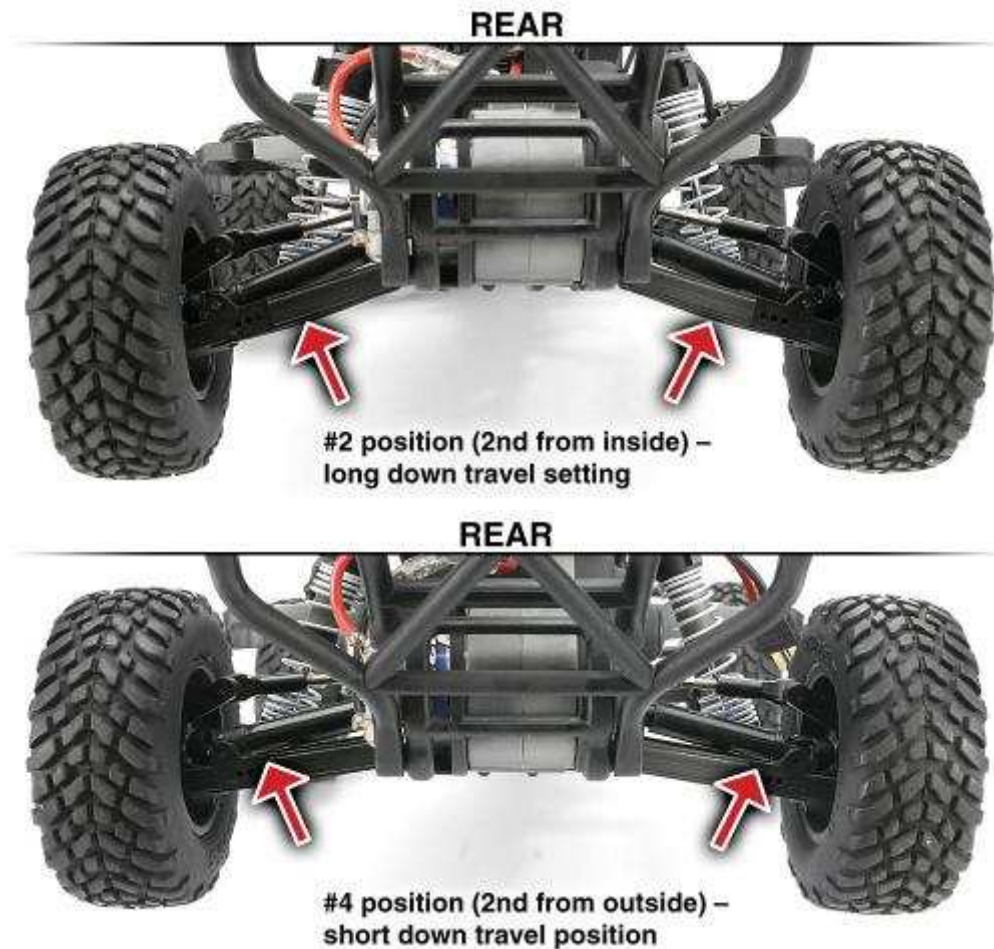
Shock Position

The lower position of each shock can be adjusted to achieve different handling characteristics. There are two positions located on each front suspension and there are five possible positions on each the rear suspension arms. Moving the shocks outward on the arms will decrease the leverage the arms have to compress the shock, making the suspension feel stiffer. Moving the shocks inward on the arms has the opposite effect. The angle of the shock also changes as you move them in or out on the arms, and this effects their spring and damping rates. The closer the shocks get to vertical, the less the spring and damping rates will change from full

extension to full compression. The more the shocks are laid down, the greater the difference in rate change; the spring and damping rates increase as the shock is compressed.



Shock position also affects the overall down travel of the suspension arm. Down travel is reduced by moving the lower shock mount further away from the chassis. Getting an ample amount of down travel is what should be looked at first, and then you can determine what damping rate is desired. Remember that if you change shock position to alter down travel, then the damping and spring rate will also change, according to which direction the shocks are moved.



My base setup for shock position up front is the inner hole. Out back, I start with the second hole from the inside. This setup offers ample down travel to soak up bumps and jumps. Smooth tracks with small jumps can benefit from moving the shock positions out one hole. This will reduce body roll and enhance the truck's agility. However, on a bumpy track, a lack of down travel will cause the chassis to bounce and upset handling.

Alignment

Proper alignment settings are a very important part of setup. An ill-handling truck can be fixed in many cases just by correcting the camber and toe settings. When adjusting chassis alignment settings, always remember that it's most important that the left and right sides are set and adjusted equally.

Toe (front only)

Toe angle is described as the direction the wheels are pointing (in relation to one another) when looking down at the chassis from above. The rear toe angle is not adjustable on the Slash. The toe angle is preset by the factory and is built into the rear suspension design. Adjusting the front toe angle is easily done by changing the length of the steering links. With the front wheels pointed straight ahead, check to see if the fronts of the tires are pointed in toward each other or away from each other. A zero toe angle is when both the left and right side tires are pointing perfectly straight ahead with no angle.

0-Degree Toe Angle – wheels straight forward



On two-wheel drive vehicles, the front toe angle is generally set with small angles. Pointing the fronts of the tires inward (toe-in) provides better straight-line stability and more steering through and out of a corner. Pointing the tires outward (toe-out) increases 'instant' steering response. It never hurts to run zero toe up front on a two-drive chassis, but if you're looking for a slight change in steering sensitivity, then try making small adjustments to the front toe angle. My base front toe setting for the Slash is 1.0-degree of toe out per side.

Camber Front and Rear

Camber defines the angle at which the tops of the front and rear tires are leaned in from a perpendicular (wheels straight up and down – no angle) setting. This is known as 'negative' camber. Positive camber is when the tops of the tires are leaned outward, and is very rarely used. There are different ways to measure camber, but the most common method is to measure the angle when the truck is resting at its race-ready ride height.

Tuning in negative camber is very common in on and off-road racing. The angle of the tire changes as the chassis leans into and through a corner. The outside of the tire digs into the surface while the inside of the tires lift up away from the surface. This changes the contact patch of the tire in relation to the ground. It's ideal to keep as much of the contact patch connected to the surface through a corner as possible. However, it is sometimes necessary to detune (decrease) the contact patch to scrub the ruts and imperfections on the track surface.

Front

My base front camber setting is -2.0 degree. This means that the angle of the tires point inward toward the chassis is set at 2.0 degree from straight up and down. This allows a good contact patch through the corner. I'll dial in more camber angle on heavily rutted tracks.



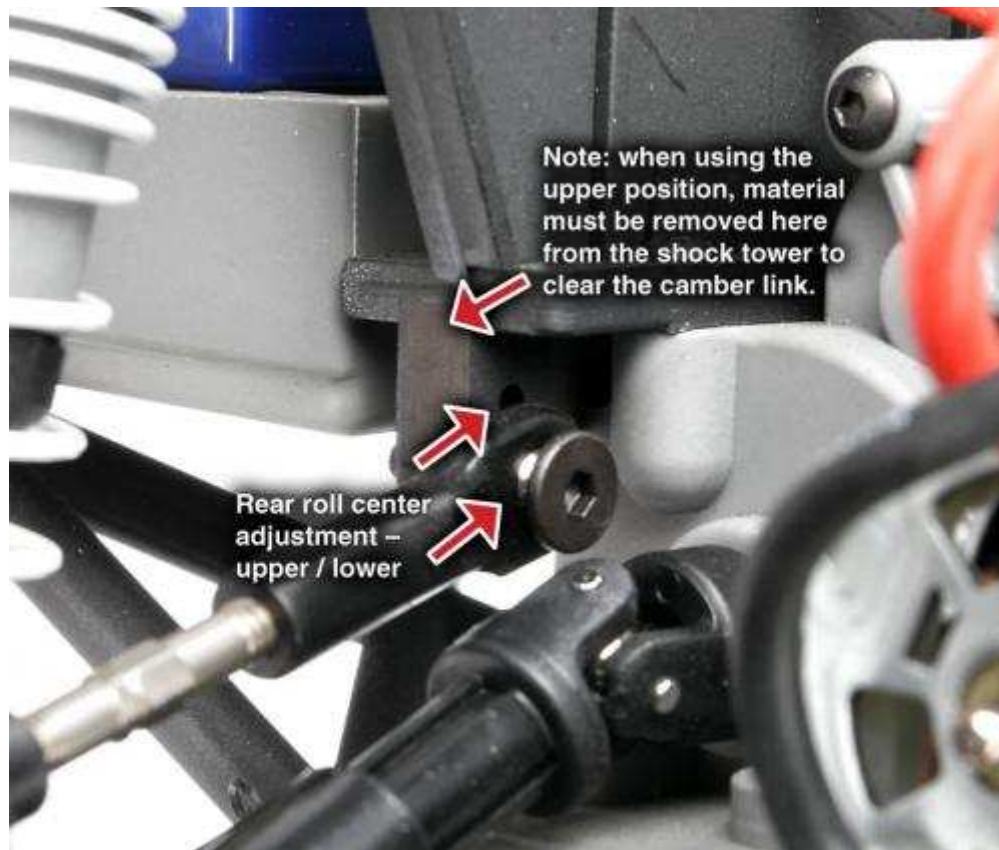
Rear

My base rear camber setting is -2.5 degree from perpendicular. The rear camber changes more drastically as the suspension arms move up and down through the entire range. I'll make changes to the rear camber setting based on how much rear traction is needed for the current track conditions.



Roll Center (rear only)

There are two different roll center positions located on the rear shock tower of the Slash, upper and lower. Basically, this changes the inner location of the upper camber link. The lower (stock) location provides the most stability for the rear end, but if you're looking for more steering and turn-in, the upper position will help.



The upper camber link controls the camber angle as the wheel moves up and down through the suspension range. The lower adjustment position increases the angle of the camber more progressively as the suspension arm is compressed through its upstroke. This generally improves or maintains an ample level of traction as the chassis leans into a corner. The upper adjustment position allows the contact patch to decrease slightly as the truck leans in a corner, which slightly reduces overall grip though the corner. This frees up the rear end to rotate more aggressively, thus enhancing turn-in. I use the lower (stock) location as a base setup on my Slash, and in the event I need more turn-in on a very tight track, then I'll change to the upper position.

Note: when using the upper rear camber link position, a small amount of material will need to be removed from the shock tower just above the camber link. This is for proper clearance to attain full up travel from the suspension.

Differential

The differential inside the transmission of the Slash is a planetary gear-type differential and is not sealed. However, it is still tunable. There are multiple ways of changing the 'action' of the diff, but the longest lasting method that I've found, without having to have special tools to modify the diff case is to use a very thick diff lube, but only use a little bit though. The thick fluid will not escape as easily, and when only a small amount is used, the results can be very effective without being too tight.

I use 300Kwt diff fluid in the diff. Remove the factory grease from inside the diff case using a rag, and apply a small amount (approx 25% to 30% full) of 300Kwt diff fluid to the gears inside of the case. An alternative to get the same action would be to fill the diff case up with 10K to 20K weight fluid, but then the lighter viscosity will leak out over a short period of

time. The 300K holds up and stays consistent for many weeks of racing. Experiment by trying different amounts of 300K fluid to get your ideal result.

Custom Painted Slash Body

