TEKNO

Vehicle Set Up Guide

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- Camber
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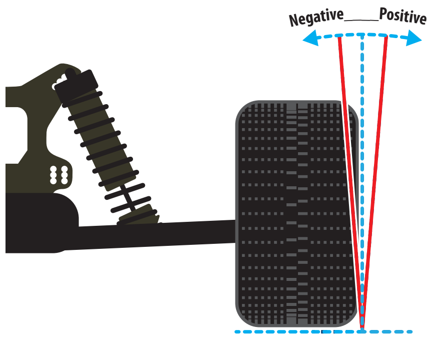
- Ride Height
- Droop
- Roll Centers/Camber Gain

CAMBER



Camber affects the car's side traction. Generally more negative camber means increased grip in corners since the side-traction of the wheel increases. Adjust front camber so that the front tires wear flat. Adjust rear camber so that the rear tires wear slightly more on the inside. The amount of front camber required to maintain the maximum contact patch also depends on the amount of caster. Higher caster angles (more inclined) require less negative camber, while lower caster angles (more upright) require more negative camber.

The amount of front camber required to maintain maximum tire contact largely depends on the amount of caster. A steeper caster angle requires more camber, while a shallower caster angle requires less camber.

Front Camber

More Negative Camber = More Steering

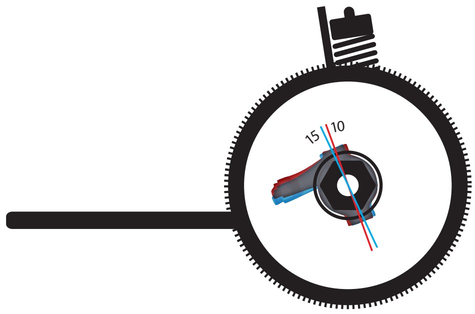
Less Negative Camber = Less Steering

Rear Camber

More Negative Camber = Decreases Traction Entering and While Cornering

Less Negative Camber = Increases Rear Traction Entering and While Cornering to a Point

CASTER



Caster describes the angle of the front steering block with respect to a line perpendicular to the ground. The primary purpose of having caster is to have a self-centering steering system. Caster angle affects on- and off-power steering, as it tilts the chassis more or less depending on how much caster is applied. It is generally recommended that you use a steeper caster angle (more vertical) on slippery, inconsistent and rough surfaces, and use a shallower caster angle (more inclined) on smooth, high-grip surfaces.

Caster has the effect of progressively leaning the front tires into the direction of the corner. The more the caster angle is laid-back, the greater the effective camber change when the wheels are turned. This happens because the tops of the wheels both lean towards the inside of the corner. The wheels dig in to the corner more, counteracting the centrifugal forces pushing the vehicle away from the corner.

The amount of front camber required to maintain maximum tire contact largely depends on the amount of caster. A steeper caster angle requires more camber, while a shallower caster angle requires less camber.

Total caster angle is dependent on the front kick up angle and inner hinge pin inserts. You would need to add the front kick up angle with the inner hinge pin insert used and the caster angle on the spindle carriers to determine the total caster (ie: 11 deg front kick up + .5 deg double dot insert downwards +15 deg caster blocks = 26.5 deg total caster angle)

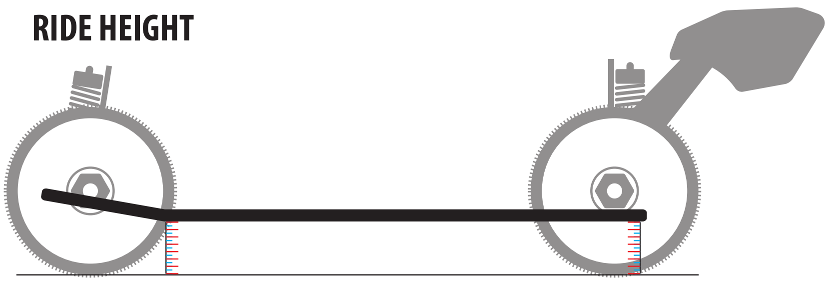
Less Caster

- Decreased Straight Line Stability
- Increased Off-Power Steering at Corner Entry
- Increased Suspension Efficiency

More Caster

- Increased Straight Line Stability
- Decreased Off-Power Steering at Corner Entry
- More Stable Through Bumpy/Rutted Sections

RIDE HEIGHT



Decreased Ride Height

- Increases Overall Stability
- Better Suited for Smooth Tracks

Increased Ride Height

- Decreases Overall Stability
- Better Suited for Bumpy Rough Tracks

More Front Ride Height (or less rear)

- Increases Weight Transfer to the Rear End On-Power
- Increases Stability
- Decreases Steering

More Rear Ride Height (or less front)

- Increases Weight Transfer to the Front End Off-Power
- Decreases Rear Traction
- Increases Steering
- Lowers Nose Angle During Flight/Jumps

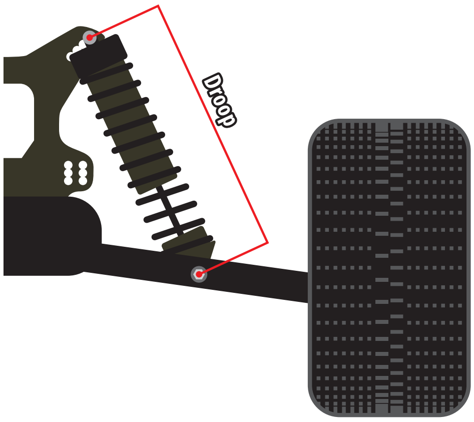
Ride height is the height of the chassis in relation to the surface it is sitting on with the vehicle ready to run (full of fuel or with battery installed). Ride height affects the vehicles traction since it alters the vehicles center of gravity and roll center. Differences in ride height determine the vehicles attitude (angle of the chassis from front to rear), which can effect how it jumps and lands.

Use the shock pre-load collars to raise and lower the ride height. It should be checked with a specific ride height measuring tool. Measurements should be taken from the flat part of the chassis, front and rear (measurethe front ride height before the kick up in the chassis starts). To measure, first drop the vehicle from about 6 inches on a flat surface. After the suspension settles, a measurement is taken.

Angles & Measurement Adjustments

- Camber
- Caster
- Ride Height
- Droop
- Roll Centers/Camber Gain

DROOP



Droop is the measured amount of down travel in the suspension. It is measured from the shocks mounting points and is adjusted by turning the droop screw located in the suspension arms front/rear. This screw limits the suspension travel by providing a stopping point against the chassis. Both left and right sides of the vehicle should be adjusted to have the same amount of droop, however the front and rear of the vehicle can have different values. Droop affects all aspects of chassis performance, including: braking, acceleration, jumping, traction and rough track handling.

More suspension travel makes the vehicle more responsive but less stable and is typically better on a bumpy track or on a track with slow corners. This allows the chassis to "pitch" rearward or forward more under acceleration or braking, which results in more weight transfer.

Less suspension travel makes the vehicle more stable and is typically better on a smooth track. This prevents the chassis from "pitching" rearward or forward too much under acceleration or braking, which results in less weight transfer.

More Front Droop

- Allows Front End to Rise More on Acceleration
- More Rearward Weight Transfer
- Increases Rear Traction on Corner Exit
- Better on Bumpy Tracks

Less Front Droop

- Less Rearward Weight Transfer
- Better on Smooth Tracks
- More On-Power Steering
- More Responsive During Direction Changes

More Rear Droop

- Less Stable Under Braking
- Increases Steering on Corner Entry
- More Turn In
- Better on Bumpy Tracks

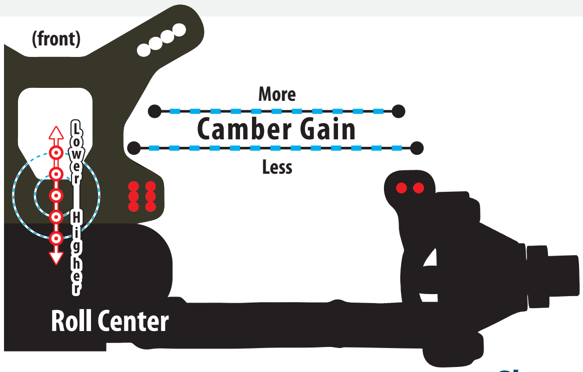
Less Rear Droop

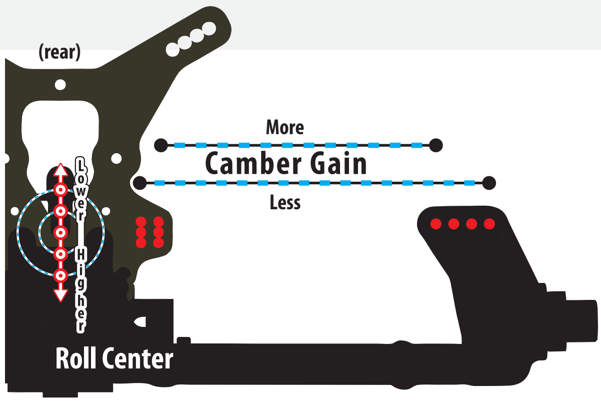
- Less Forward Weight Transfer
- May Bottom Out on Big Jumps
- More Responsive During Direction Changes
- Better on Smooth Tracks

ROLL CENTERS/CAMBER GAIN

Roll center is a theoretical point around which the chassis rolls and is determined by the design of the suspension. Front and rear suspensions normally have different roll centers. The "roll axis" is the imaginary line between the left and right side of the vehicle. The amount that a chassis rolls in a corner depends on the position of the roll axis relative to the vehicles center-of-gravity (CG). The closer the roll axis is to the center of gravity, the less the chassis will roll in a corner. A lower roll center will generally produce more grip due to the chassis rolling, and the outer wheel "digging in" more. Roll-centers have an immediate effect on a vehicles handling, whereas anti-roll bars, shocks and springs require the vehicle to roll before they produce an effect.

Roll center is determined by the vehicles suspension geometry. Each end of the vehicle has its own roll center, determined by the suspension geometry at that respective end. Camber gain is the adjustment determined by the length of the camber link in relation to the inboard and outboard hinge pins. A camber link that is shorter than the distance between the hinge pins will produce a negative camber effect as the suspension is compressed. A camber link that is exactly the same length as the distance between the hinge pins will produce no camber change as the suspension is compressed.





Shorter Camber Link

- More Camber Gain
- More Steering Entering Corner
- Less Stability Entering Corner
- More Traction

Longer Camber Link

- Less Camber Gain
- More Stability
- Slows Down Vehicle Response

Front Camber Links

Shock Tower Upper Holes (Lower Roll Center)

- More Steering Entering Corners
- More Responsive

Shock Tower Lower Holes (Higher Roll Center)

- Less Steering Entering Corners
- Less Responsive
- Best in High Grip Conditions

Rear Camber Links

Shock Tower Upper Holes (Lower Roll Center)

- Less Rear Traction Entering Corner
- More Steering Entering Corner
- More Stable Mid Corner and Exiting Corner

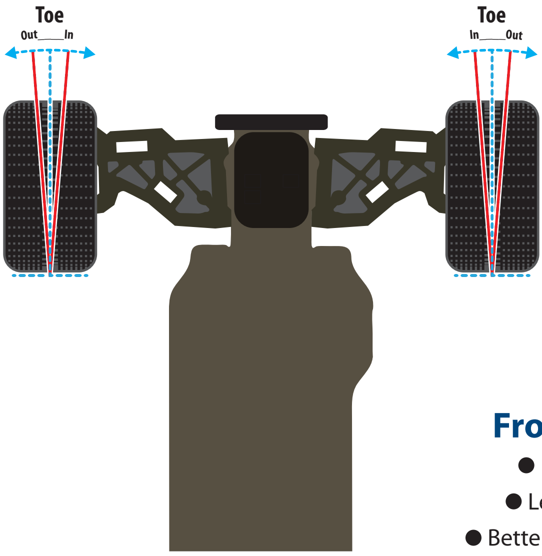
Shock Tower Lower Holes (Higher Roll Center)

- More On Power Traction
- Use to Avoid Traction Rolling Entering Corner
- Use Under Low Traction Conditions

Steering Adjustments

- Front Toe
- Servo Saver
- Ackermann
- Bump Steer
- Steering Stops

FRONT TOE



Toe in and toe out are terms used to describe the angle in which the wheels point when looking down at them from the top of the vehicle. Toe is used to stabilize the vehicle at the expense of traction. Front wheels can be toed in or out to suit various situations. Rear wheels should only have varying degrees of toe in.

Toe can be Adjusted at Either End of a Suspension Arm

Inboard toe is adjusted by altering the angle of the suspension arm at the inner hinge pin. It is measured in degrees and changed with various hinge pin inserts. On the front of the vehicle this is also called "sweep".

Outboard toe is adjusted in two ways: at the front by adjusting the length of the steering rods or at the rear by changing outer rear hub carrier inserts (if available).

Front Toe In Adjustment

- Makes Vehicle Easier to Drive
- Less Initial Turn-In (less twitchy)
- Better for High Traction Rutted Surfaces

Front Toe Out Adjustment

- Increases Steering Entering Corners
- Faster Steering Response
- Less Stable Under Acceleration
- Makes Vehicle Less Easy to Drive

SERVO SAVER

Servo savers are designed to protect the steering servo in a crash, but they are also a valuable tuning option as well.

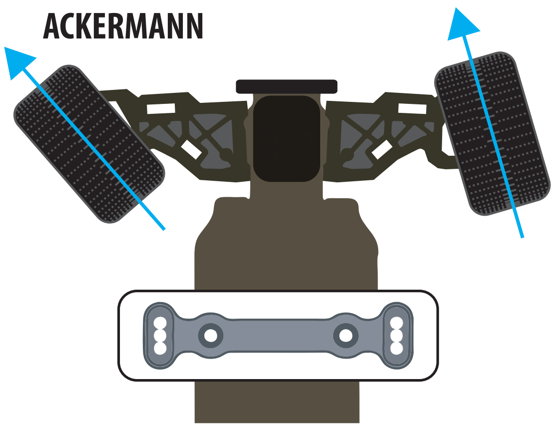
Tighter Servo Saver

- More Steering Response
- Faster Steering Response
- More Abusive to Steering Servo

Looser Servo Saver

- Less Responsive Steering
- Slower Steering Response
- More Protection to Steering Servo

ACKERMANN



Ackermann adjustments effect the vehicles steering response and ackermann effect. Ackermann effect is the phenomenon where the inside wheel turns more than the outside wheel at full turn. The further towards the rear of the vehicle you attach the steering link, the more ackermann effect can be seen. The further towards the front of the vehicle you attach the steering link, the less ackermann effect can be seen (both wheels turn closer to the same amount. The more ackermann a vehicle has increases the amount of steering while entering a corner at the cost of some traction.

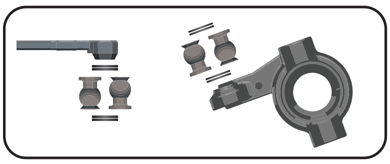
Further Forward

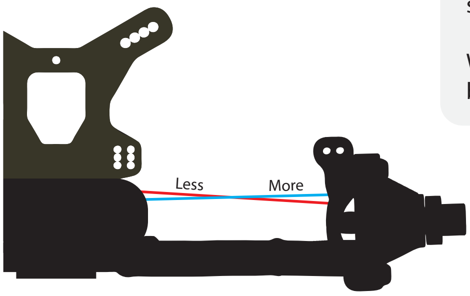
- Slows initial Steering Response
- Smooths Out Overall Steering
- Better for Smooth Tracks with Fast Corners

Further Rearward

- Quickens Initial Steering Response
- Overall Steering Reacts Quicker
- Better for Small Tight Tracks

BUMP STEER





Bump steer is a front suspension tuning option commonly used to change steering characteristics over rough and loose terrain. Bump steer occurs when a vehicles front toe angle changes as the suspension compresses or rebounds, which affects how parallel the front wheels are.

Adjusting bump steer is done by changing the angle of the steering link. This is accomplished by adding or removing washers from the ball studs attached to the ackermann plate and steering spindles. By the same means, you can also flip the ball stud to further adjust the angle.

When your vehicle is properly set up, it should have the bump steer set for the least amount of bump possible (or zero bump) for the most consistent handling on most tracks.

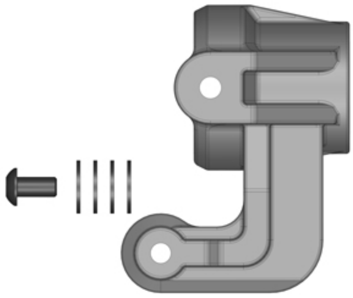
More Bump Steer

- Increased steering Mid-Corner
- Steering May Be Twitchy/Inconsistent
- Easier to Control on Smooth Tracks

Less Bump Steer (more neutral)

- Decreases Steering Mid-Corner
- Smoother/More Consistent Steering
- Better on Rough or Bumpy Tracks

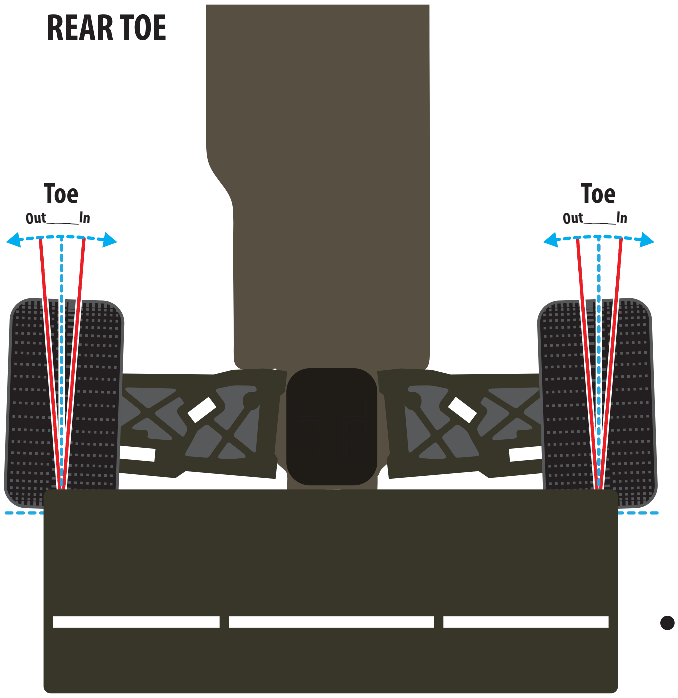
STEERING STOPS



Steering stops simply limit the amount of steering travel and are more accurate at accomplishing this than radio adjustments due to the fact that they are finite. If you set up your end points travel adjustments via your radio, the steering can still travel beyond this in corners when the force of the vehicle can push the servo saver beyond the radio setting.

Hinge Pin Adjustments

REAR TOE



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Toe can be Adjusted at Either End of a Suspension Arm

Inboard toe is adjusted by altering the angle of the suspension arm at the inner hinge pin. It is measured in degrees and changed with various hinge pin inserts. On the front of the vehicle this is also called "sweep".
Outboard toe is adjusted in two ways: at the front by adjusting the length of the steering rods or at the rear by changing outer rear hub carrier inserts (if available).

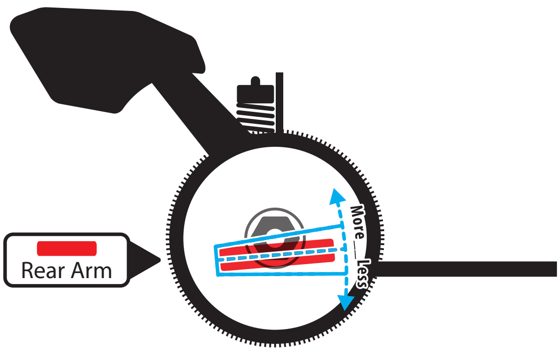
More Rear Toe In

- Increases Understeer
- More Stable On-Power/ Through Corner Exit and During Braking
- Less Chance of Loosing Rear Traction
- Decreased Top Speed

Less Rear Toe In

- Less Stable On-Power/ Through Corner Exit and During Braking
- More Chance of Loosing Rear Traction
- Increased Top Speed

ANTI-SQUAT



Rear anti-squat is the angle of the rear lower suspension arm when viewed from the side of the vehicle. With anti-squat the back of the arm is lower than the front of the arm. Rear anti-squat is used as a tuning aid primarily when a vehicle needs to run a soft rear spring but also has a tendency for the rear end to squat down too much under acceleration. An added benefit of rear anti-squat is quicker initial acceleration at the start of a race. In order to prevent 100% of the vehicles weight transfer force from being exerted onto the soft rear springs, anti-squat is used to allow a certain percentage of the weight transfer to be absorbed by the rear lower arm motion.

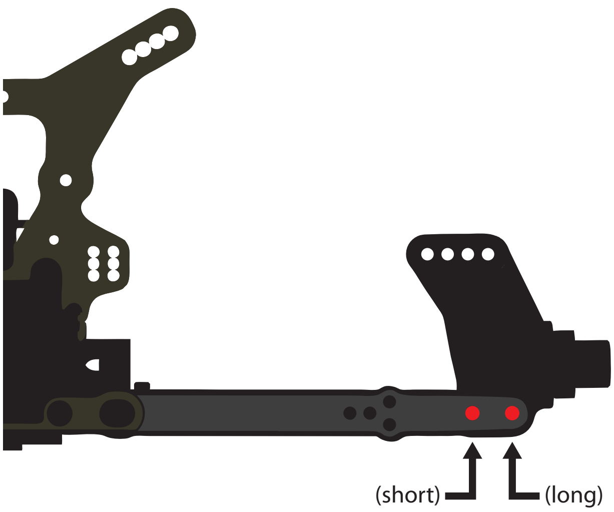
Less Anti-Squat

- More Rear Traction Off Power
- Less Rear Traction On-Power
- Better On Bumpier Tracks

More Anti-Squat

- More Rear Traction During Acceleration
- Less Rear Traction Off Power
- Better on Smooth High Grip Tracks

REAR ARM LENGTH



Rear arm length can be adjusted on our kits to suit various driving styles or track conditions by simply moving the rear outer hinge pin. This will change the point in which the rear hub will articulate.

Short Arm Position

- Less Stable
- Quicker Rear End Rotation

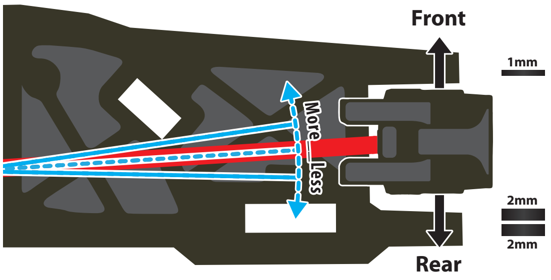
Long Arm Position

- More Stable
- Slower Rear End Rotation
- Slightly Better Bump Handling

Hinge Pin Adjustments

- Rear Toe
- Anti-Squat
- Rear Arm Length
- Wheelbase
- Front Arm Sweep
- Front Kick Up

WHEELBASE



Changes to wheelbase can have a dramatic effect on the handling of your vehicle, since it adjusts the distribution of weight on the rear wheels, which adjusts traction. By shortening the wheelbase at the rear of the vehicle, your placing more weight over the rear wheels, which results in more rear traction). By lengthening the wheelbase, the vehicle feels more stable and the longer vehicle handles bumpy section easier.

Changing the wheelbase also changes the amount of sweep the rear driveshaft will have. More driveshaft sweep creates an effect similar to anti-squat, where the rear end of the vehicle gets pushed upwards on throttle. This allows you to land larger jumps on-power with less chance of bottoming out.

To make changes, all that you have to do is move the spacers around on the rear hinge pin. There are 1mm spacers and 2mm spacers, along with 5mm of empty space around the rear hub. This allows for 6 different settings that can be achived to vary the amount of total wheelbase.

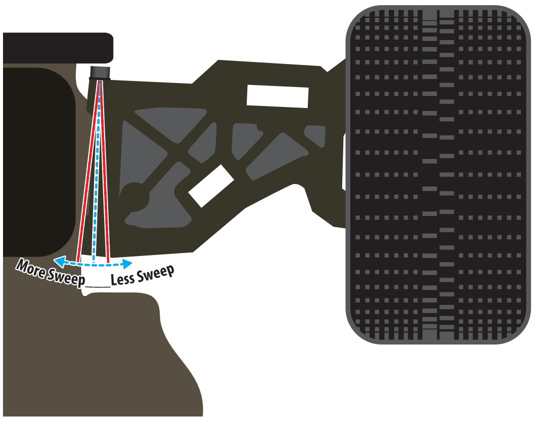
Shorter Wheelbase (rear hub further to the front)

- Increases Rearward Weight Transfer During Acceleration
- Increases On-Power Traction
- Quicker Off-Power Steering Entering Corners
- Tendency to Push On-Power Exiting Corners
- Increases Steering Response

Longer Wheelbase (rear hub further to the rear)

- Decreases Off-Power Steering in to Corners
- Increases Stability
- Slower Off-Power Steering Entering Corners
- Improves On-Power Steering Exiting Corners
- Better Bump Handling
- Better Large Open Tracks with High Speed Corners

FRONT ARM SWEEP



The purpose of sweeping the arm forward or backward is mostly to sweep the driveshafts forward or backward. When the driveshafts are angled it changes how the car reacts on and off power.

With less front arm sweep, the stub axles are being twisted down toward the ground, pushing down on the tires and lifting the front of the chassis. This can be helpful in really bumpy sections to keep the front up and not dig in. It will also create more weight transfer to the front during braking which will increase your off-power steering.

With more front arm sweep, the stub axles are being twisted up, lifting the tires and pushing the chassis down. We've found that the biggest benefit to more arm sweep is jump landing. With the arms back, the vehicle settles much faster which allows you to get on the throttle quicker. During breaking and off throttle the front end will drop less and either feel "pushy" or more controlled into the corner.

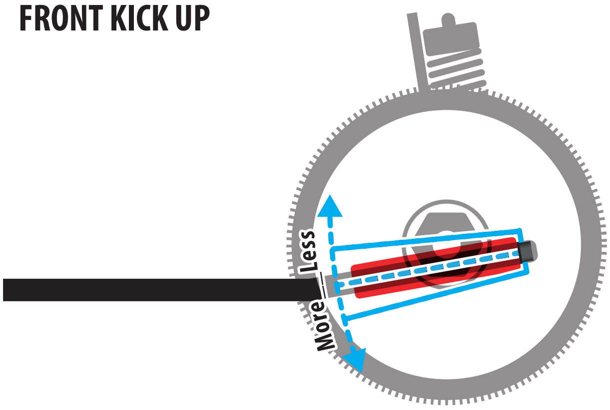
More Front Arm Sweep

- More Control Entering Corner
- Better Jump Landing
- Better On Smooth High Grip Tracks

Less Front Arm Sweep

- More Off-Power Steering
- More Weight Transfer Under Braking
- Better on Bumpier Tracks

FRONT KICK UP



Front kick-up is used to adjust the amount of weight transfer to the front when the vehicle is off-throttle or under braking. Changing the front kick up angle also changes the caster angle (see Caster section).

More Kick Up

- More Weight Transfer Under Braking
- Front End Drops More Under Braking
- Handling Improved on Bumpy tracks
- Decreased Steering Response

Less Kick Up

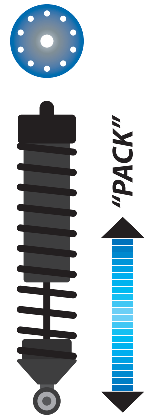
- Less Weight Transfer Under Braking
- Front End Drops Less Under Braking
- Handling is improved on Smooth Tracks
- Increased Steering Response

DAMPING

Shock damping manages the resistance of shock movement as the shock piston moves through the shock oil. Damping comes into play when the suspension is moving (either vertical movement or chassis movement or due to chassis roll). When the shock is compressing or rebounding, the shock oil resists the movement of the piston through it. The amount of resistance is affected by several factors.

- Viscosity (thickness) of the shock oil
- Restriction of oil fl ow through the piston (affected by the number of holes in the piston and the hole diameter)
- Velocity (speed) of the piston

PISTONS/PACK



Shock pistons come in a variety of hole size/number of holes variations. The size of the holes or number of holes affect shock damping by altering the flow of oil through the holes. More holes or larger holes give softer damping. Fewer holes or smaller holes give harder damping.

Pack: The faster the piston travels through it's stroke, the thicker the oil will feel. This phenomenon becomes more pronounced with smaller piston holes and is called "pack".

Smaller Piston Holes

Increase the pack of the shock, which is better suited to big-jump tracks where you will often land on the flat surface and not the down side of the jump. It slows the shock stroke on compression and rebound and is not well suited to very bumpy tracks.

Larger Piston Holes

Decrease the pack of the shock, which is better suited to bumpy tracks and jump sections where you land on the down side of the jump. Compression and rebound are faster.

SHOCK OIL

Shock oil is rated with a "viscosity" number that indicates the thickness of the oil. This determines how much resistance is given to the shock piston as it travels through the stroke. Typically you should use piston hole sizes to suit the track conditions rather than alter the oil viscosity. Start by determining the ideal amount of pack nessesary for your track and use an oil viscosity to suit that piston. Shock oil is also effected by the cold/hot varience of external weather conditions and must be changed to accomidate that varience.

SHOCK BUILD

Standard

The standard build is the most common and widely used shock building method for 1/8th scale shocks. It employs the use of bladder sitting on top of the assembly that compensates for the volume of the shock shaft as it enters the shock body, traveling in to the oil. Because the shock cap is sealed in this build, there is pressure being formed in the air space on top of the bladder as the shock is compressed.

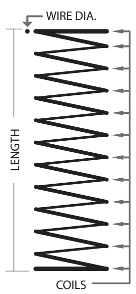
Vented

The vented build is also a very common method of building 1/8th scale shocks. It also employs a bladder sitting on top of the assembly that compensates for the volume of the shock shaft as it enters the shock body, traveling in to the oil. The only difference is that the shock cap has a very small hole or "vent" in the top that allows air to escape as the shock is compressed. This hole alleviates any pressure building up and has less rebound effect than the standard build.

Emulsion

The emulsion build is the least common shock building method for 1/8th scale shocks. It employs a special shock cap that has an angled bleeder hole with a screw and seal (TKR6018). It does not use a bladder and instead only uses a black o-ring to seal the top cap to the shock body. This method…

SPRINGS



Spring tension determines how much the shock resists compression, which is commonly referred to as the "hardness" of the spring. Different spring tensions determine how much of the vehicles weight is transferred to the wheel relative to the other shocks. Spring tension also influences the speed at which a shock rebounds after compression. Spring tension is usually rated in a "spring weight"; higher spring weights are stiffer, while lower spring weights are softer.

Softer Springs

- More Chassis Roll
- More Traction
- Better On Bumpier Tracks
- Increases Chance of Bottoming Out

Stiffer Springs

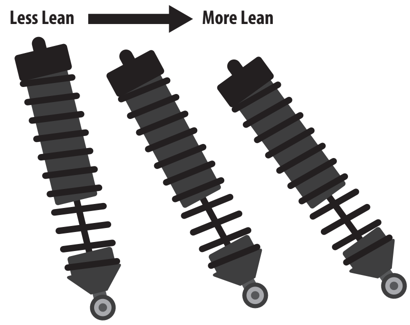
- Less Chassis Roll
- Less Traction
- More Responsive
- Better on Smooth Tracks
- Decreases Chance of Bottoming Out

TEKNO RC

Suspension Adjustments

- Daming
- Pistons/Pack
- Shock Oil
- Shock Build
- Springs
- Shock Mounting Position
- Sway Bars

SHOCK MOUNTING POSITIONS



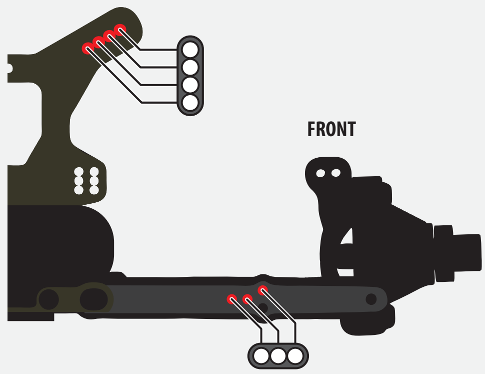
You can manipulate the handling characteristics of the vehicle by changing the shock mounting position. Leaning the shocks at different angles and moving the shock closer or further from the centerline of the vehicle will have different effects on handling.

Less Lean

- Harder Dampening
- More Linear Dampening
- Less Side Traction
- More Responsive
- Better Suited for Technical Tracks

More Lean

- Softer Initial Dampening
- More Progressive Dampening Through Entire Stroke
- More Side Traction
- More Forgiving Handling
- Better for High Bite Tracks
- Easier to Drive



Front Shock Tower Mounting Positions

Inner Holes

- Easier to Drive
- More Side Bite
- Slower Initial Dampening

Outer Holes

- Faster Steering
- Better on Bumps and Jumps

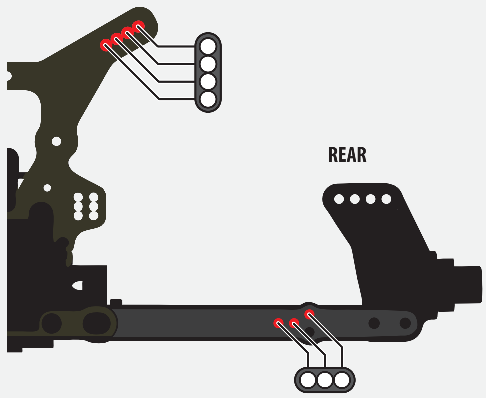
Front Arm Mounting Positions

Inner Holes

- Faster Steering
- Better on Bumps and Jumps

Outer Holes

- Increases Stability
- Easier to Drive
- Bigger Turning Radius



Rear Shock Tower Mounting Positions

Inner Holes

- More Steering Entering Corner
- More Mid-Corner Grip

Outer Holes

- More Traction Entering Corner
- Less Mid-Corner Grip
- Squares Up Rear End Better on Exit

Rear Arm Mounting Positions

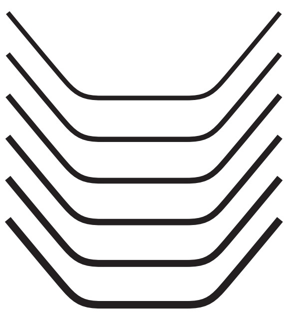
Inner Holes

- Better for Bumps and Jumps
- Less Side Bite
- More Traction on Corner Exit

Outer Holes

- More Stability
- More Lateral Grip in Turns

SWAY BARS



Sway bars are used to adjust a vehicles side (lateral) grip. They can also be used in conjunction with a softer spring rate to handle bumpy tracks more efficiently without excessive chassis roll at mid-corner. Sway bars resist chassis roll and by doing so transfer wheel load from the inside wheel to the outside wheel. The stiffer the sway bar, the more load is transferred. However, as the outside wheel is not able to convert the extra wheel load into extra grip, the sum of the grip of both wheels is actually reduced. Increasing the stiffness of an sway bar on one particular end of the vehicle (front or rear) decreases the side grip that end will have and increases the side grip of the other end of the vehicle.

The overall traction of a vehicle cannot be changed, but it can be balanced by distributing wheel loads. Sway bars are a useful tool to change the balance of the vehicle. Chassis stiffness plays an important role in the effectiveness of sway bars, and a stiffer chassis makes the vehicle more responsive to sway bar changes.

The front sway bar affects mainly off-power steering at corner entry. The rear sway bar affects mainly on-power steering and stability in mid-corner and at corner exit.

Front Sway Bar

Thinner

Increases Front Chassis Roll
Increases Front Traction
Decreases Rear Traction
Increases Off-Power Steering

Thicker

Decreases Front Chassis Roll
Decreases Front Traction
Decreases Off-Power Steering Entering Corner
Quicker Steering Response

Rear Sway Bar

Thinner

Increases Rear Chassis Roll
Increases Rear Traction
Decreases Front Traction
Decreases On-Power Steering

Thicker

Decreases Chassis Roll
Decreases Rear Traction
Increases Front Traction
Increases On-Power Steering

Differentials and Gearing Recommendations

- Differential Adjustments
- Gearing Recommendations

DIFFERENTIAL ADJUSTMENTS

Front Differential
Thinner front diff oil will increase off power steering however going too thin can cause the steering to become inconsistent and cause a lack of forward traction out of turns on power. Thicker front diff oil increases on power steering and add stability (slight push) into turns but if you go too thick it will decrease off power steering.

Center Differential
Thicker center diff oil mostly increases the power to the rear more than the front. Typically a balance is achievable to have the front and rear end of the vehicle powered the same, however sometimes you want the vehicle to drive from the front more than the rear and this is the case when you would want a thinner center diff oil to increase the drive of the front end of the vehicle.

Rear Differential
Thinner rear diff oil increases off power steering and rear traction however going too thin can cause the steering and traction to become inconsistent and grabby. Thicker rear diff oil decreases off power steering.

- Changing front diff oil affects overall steering response.
- Changing center diff oil affects the front-to-rear drive.
- Changing rear diff oil affects cornering traction and overall steering.

Front Diff Oil

Thinner Oil
- More Steering Entering Corners Off Power
- Less Traction Exiting Corners On Power

Thicker Oil
- More Traction Entering Corners Off Power
- More Steering Exiting Corners On Power

Center Diff Oil

Thinner Oil
- More Steering Off Power
- Better Suited to Rough Tracks
- Front Wheels Unload

Thicker Oil
- More Steering On Power
- Better Suited to Smooth Tracks
- Better Acceleration

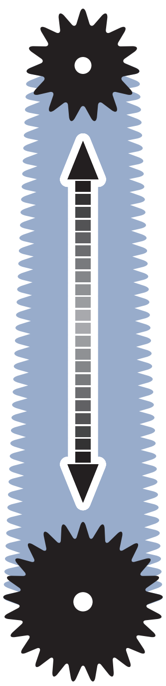
Rear Diff Oil

Thinner Oil
- More Corner Traction
- More Steering Entering Corners

Thicker Oil
- Less Corner Traction
- Less Wheelspin

GEARING RECOMMENDATIONS

Finding the proper gearing can be easy if you follow the steps and recommendations below. Start with a proper tooth size as shown below for you particular situation and if you need more speed go up one tooth at a time. If you motor is getting too hot, this may not be an issue with the vehicle being over geared, even an undergeared electric motor can get hot. Finding the "sweet" spot for your particular situation is ideally what you want.



Vehicle	Motor	Small Track (50-100 ft Straight)	Medium Track (100-150 ft Straight)	Large Track (150-200 ft Straight)
SCT410 (2 cell)	4000-4600kv	14 - 15 tooth	15 - 16 tooth	16 - 17 tooth
	4600-5400kv	13 - 14 tooth	14 - 15 tooth	15 - 16 tooth
EB48 (4 cell)	1900-2050kv	15 - 16 tooth	16 - 17 tooth	17 - 18 tooth
	2050-2200kv	14 - 15 tooth	15 - 16 tooth	16 - 17 tooth
ET48 (4 cell)	1800-2000kv	13 - 14 tooth	14 - 15 tooth	15 - 16 tooth
	2000-2200kv	12 - 13 tooth	13 - 14 tooth	14 - 15 tooth
NB48	.21	14 tooth	15 tooth	15 tooth
NT48	.21-.28	13 tooth	13 tooth	13 tooth