



TRACK SETTINGS

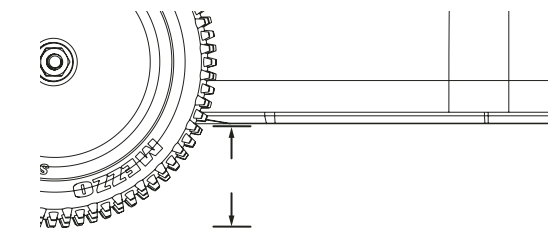
RIDE HEIGHT

Use the spring adjusters on the shock absorbers to adjust the front and rear ride heights. With the car level, we recommend setting the ride height between 16-18mm on astro, 20-21mm on dirt and 12-14mm on carpet.

This is measured between the bottom of the chassis and the ground with the car in running trim. First press the car down on to the ground and release it once or twice to settle the suspension before adjusting the ride height. The chassis should be level when viewed from the side.

Adjusting the spring collars does not increase or decrease the spring stiffness only the preload.

If the suspension needs to be softer or harder change the spring.

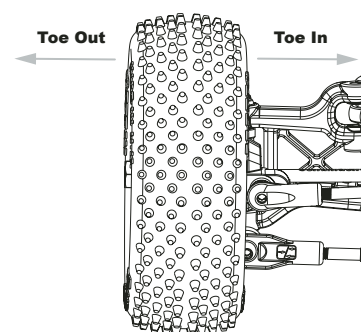


FRONT TOE

See Page 06 Bag B - Step 10

Front toe should be set to 0° (both front wheels pointing straight ahead) this will be the best setting for most track conditions.

Adding toe out will increase initial turn in and make it smoother to drive on power. The team generally run 1° toe out.

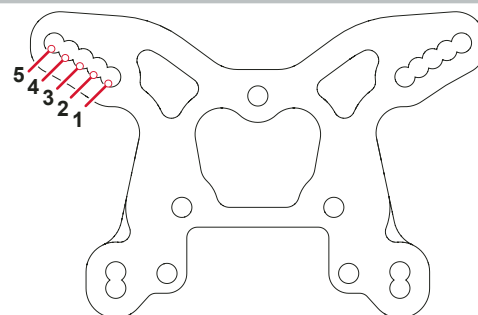


FRONT SHOCK MOUNT

See Page 10 Bag B - Step 16

The kit setting on the front shock mount is position 3. Moving the shock outwards will make the car react faster and increase the initial steering response, it will however stiffen the suspension which may require an oil and spring change so that the cars suspension feels the same. Moving the shock inwards will soften the suspension and slow down the steering reaction and make the car smoother on bumpy tracks. Again you may need to alter the oil and spring combination to get the suspension correct again.

If you are occasionally lifting a rear wheel, the front shock may be too laid over. Standing the front shock up can fix this.

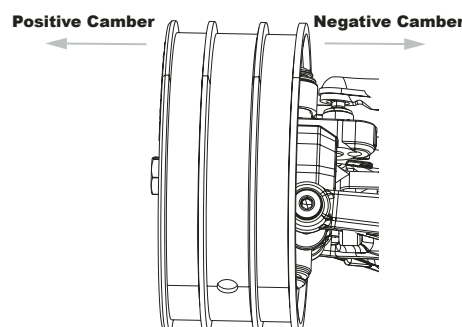


FRONT CAMBER

See Page 06 Bag B - Step 10

The usual team setting for static front camber is between -1.0° and -2.0° negative at ride height (the top of the wheel is leaning inwards towards the car). If more front grip is required, increase camber to between -2.0° and -2.5°.

When racing on high grip dirt, with squarer profile tyres, use between -0.80° and -1.0° front camber to keep the contact patch consistent with the surface.

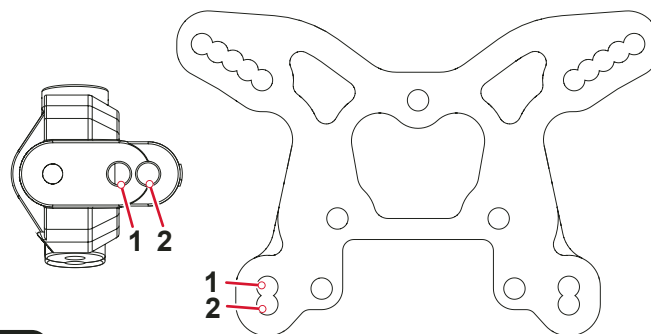




FRONT CAMBER LINKS

See Page 10 Bag B - Step 16
See Page 13 Bag C - Step 21

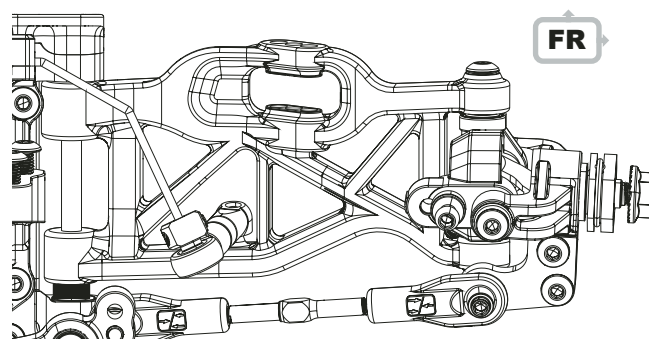
The kit setting for the front camber link is position 2 on the shock tower and position 1 on the yoke.
The length of the camber link can be reduced by moving the ballstud to position 2 on the yoke.
A shorter front link will make the car roll less and speed up the cars initial steering response. This is a better choice for bumpy, low grip tracks.
The angle of the camber link can be adjusted by moving the inner ball stud on the shock tower to position 1. Raising this point will reduce grip to the front, making the car easier to drive.



FRONT WHEELBASE

See Page 16 Bag C - Step 23

Moving the front wishbones backwards offers more load transfer when loading up the front going into the corner. This will promote more steering in general as there is more load over the front wheels. This change also means the drive shaft angle has increased, so naturally gives the car more drive. But all of that comes at the price of bump handling. A softer damper setup would be used in this case.



FRONT YOKE AND HUB HEIGHT

See Page 13/14 Bag C - Step 21
See Page 14/15 Bag C - Step 22

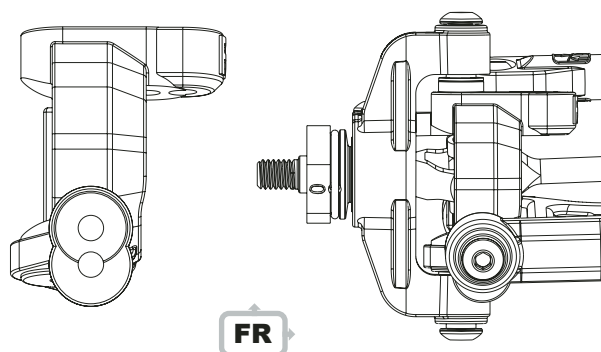
There are two ways to adjust axle height. The yoke holes move the axle height by 3.5mm. The axle height can also be adjusted by moving spacers between the hub and the yoke, to raise or lower the hub.

Changing the height of the yoke also changes the front link angle which can be compensated for using washers.

Raising the axle will increase on power steering, decrease initial steering and give a safer car under braking.

Lowering the axle will increase initial steering.

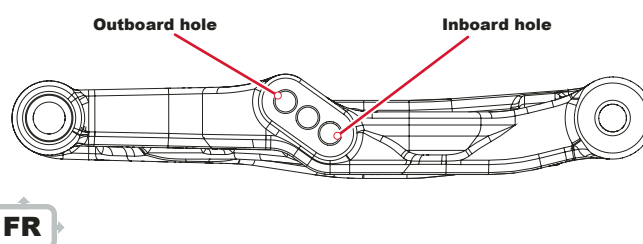
If the car is breaking traction out of corners it's a sign of the axle being too high or too much castor angle.



FRONT WISHBONE SHOCK MOUNTING HOLE

See Page 20 Bag D - Step 28

The middle hole on the wishbone is the standard setting for most tracks. Moving the shock to the outer hole makes the car more reactive and increases suspension stiffness. Using the inner hole makes the car less reactive. This setting also makes the front end softer. Changes to the springs and dampers may be required for different mounting holes. Anti-roll bars can also be changed to suit mounting position.

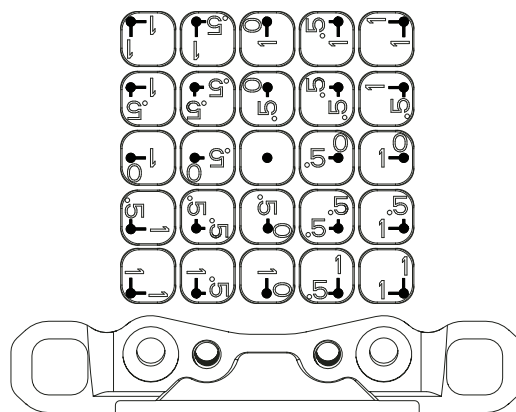




FRONT ROLL CENTRE

See Page 16 Bag C - Step 23

Similar to the rear, it is possible to alter the suspension stiffness on the front of the CAT. The pill system provides 0.35mm increments, allowing for 0.7mm of change overall. Raising the pin raises the roll centre, stiffening the car in roll which will make it pull more from the front out of the corner, giving a more responsive feeling and better drive from the front end. On the contrary, lowering the pin using the pills will provide an overall smoother front end feeling.



FRONT & REAR HEX WIDTH

See Page 15 Bag C - Step 22 & Page 18 Bag C - Step 23

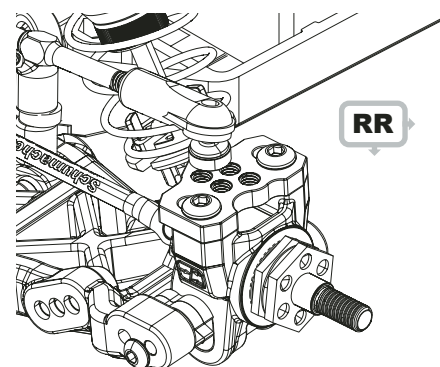
The base setting gives the best balance between steering and stability. Using a wider front hex will make the car more aggressive. Using a wider rear hex will help with more forward drive and initial turn in. Narrowing the rear will give more on power steering and increase side traction.

FRONT HEX OPTIONS

Part Number	Hex	Car Width Change
U8619	-2.00	2.0mm Narrower
U8429	-1.50	1.0mm Narrower
U9217	-1.00	Kit Build
U7646	-0.75	0.5mm Wider
U7398	0.00	2.0mm Wider
U7402	0.75	3.5mm Wider

REAR HEX OPTIONS

Part Number	Hex	Car Width Change
U8619	-2.00	1.0mm Narrower
U8429	-1.50	Kit Build
U9217	-1.00	1.0mm Wider
U7646	-0.75	1.5mm Wider
U7398	0.00	3.0mm Wider
U7402	0.75	4.5mm Wider
U8543	1.50	6.0mm Wider



FRONT AND REAR INNER TRACK WIDTH

See Page 19 Bag C - Step 26 & Page 16 Bag C - Step 23

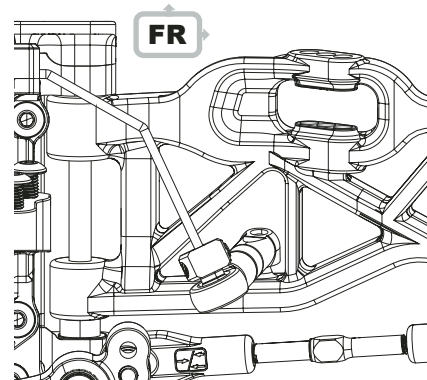
The track width can be adjusted by changing the pills in the suspension mounts/straps. The pill system offers incremental width adjustments of 0.35mm per side or 0.7mm total. It is possible to increase/decrease the rear track width, while maintaining the same rear toe angle in most cases.

Widening the track width on the front of the car will provide less roll and flatten the CAT in the corners.

Narrowing the track width on the front of the car will provide more roll and make the CAT gain a little more mid corner steering.

Widening the track width on the rear of the car will provide more support out of the corner to stop the rear suspension collapsing. It will also help the cars initial turn in.

Narrowing the track width on the rear of the car will provide more roll which will reduce the rear wheels lifting on corner entry. If the CAT is lifting both wheels on one side then narrowing the track width will reduce this also.

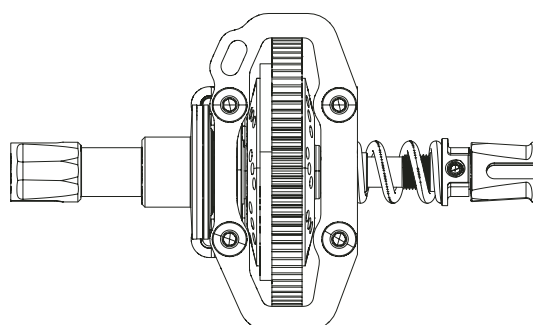


SLIPPER & F.A.B.

See Page 24 Bag D - Step 33

The front adjustable brake (F.A.B.) should be set tight with a small amount of slip to stop the car loading up the front too much and causing grip roll. As you loosen the F.A.B. you will get more initial steering but reduced braking.

On most tracks it is best to start with the slipper on a LOOSE setting, and gradually tighten the spring tension until you achieve the most consistent drive away from turns without spinning the car or pulling wheelies. Make sure you still have enough drive when launching the car from the up ramps. **WARNING**, do not run the slipper too loose as it could melt the plastic spur gear, also too tight may damage the transmission parts.

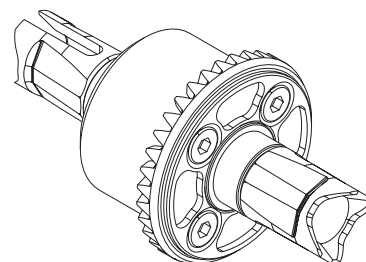




GEAR DIFFERENTIAL

See Page 04 Bag A - Step 09
See Page 06 Bag A - Step 09

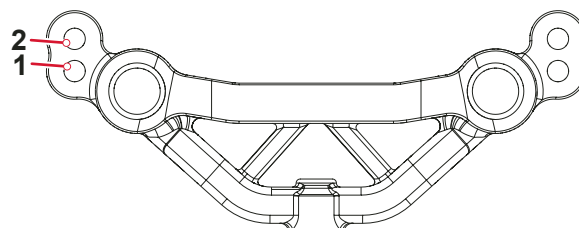
Geared Diffs can give variable driving characteristics. The handling of the diff is tuned by changing the oil. A recommended starting point is 12,000 cSt (CR229). Recommended option oils would be 10,000 cSt (CR222) and 7,000 cSt (CR221). Running 4 gears will give less drive and off power steering. It will also make the car drive out of the corner with a smoother arc. A 2 gear diff will make the car drive out of the corner squarer and feel like it has more drive. 2 gear diffs are also more aggressive on steering and rotation. Use 7,000cSt on high grip tracks, if you start spinning a wheel on power, go up on oil until it stops. We recommend changing the oil less often when running 4 gears.



ACKERMANN

See Page 12 Bag C - Step 19

The Ackermann plate has two settings available, one forward and one rearward. The rear hole will give more on power and mid corner steering whereas the forward hole gives more initial steering and then is smoother on corner exit.

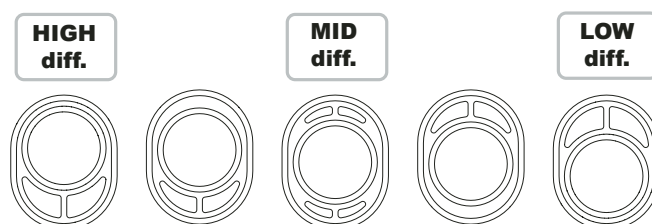


DIFFERENTIAL HEIGHT

See Page 10 Bag B - Step 15

The base diff height setting is MID at the rear and MID at the front. Lowering the rear diff increases the traction in low grip conditions like on dirt surfaces. Lowering the front diff increases traction but has the additional affect of increasing steering. Running the diff high on carpet will help remove side grip. On more open tracks a lower diff will help increase corner speed.

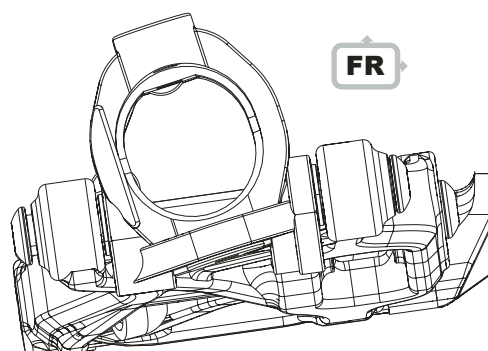
IMPORTANT - Ensure the diff pinion insert height matches the diff insert for height.



FRONT YOKE

See Page 13 Bag C - Step 21

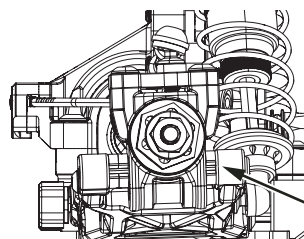
The kit build uses Medium Flex 10 degree yokes, with options of 6, 8 and 10 degree alloy versions. When using one of the alloy options the team generally uses 8 degree yokes. Decreasing the angle offers more initial steering and on power stability. Increasing the angle increases stability into the corner and gives more on power steering. More caster improves bump handling.



REAR HUB HEIGHT

See Page 17 Bag C - Step 24

The rear hub height is the relative distance between the hinge pin in the outer wishbone and axle centre. The kit setting is '3' in the low option which means the axle is in its closest position to the hinge pin. Raising the axle (relative to the hinge pin) will stiffen the wheel stiffness. When doing so, it is possible that other areas of the suspension will need to be softened, for example, lowering the inner hinge pin. Raising the axle can provide more forward drive and initial steering as the wheel is being stiffened. As mentioned in step 24A, the droop setting will need to be adjusted as well as the up-travel using 'O' rings. Lowering the axle, making it closer to the hinge pin, will soften the wheel stiffness – allowing the wheel to roll more and make the car easier to drive.



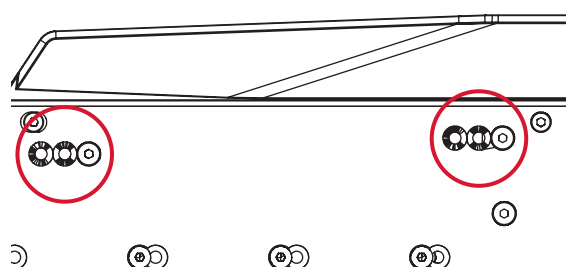
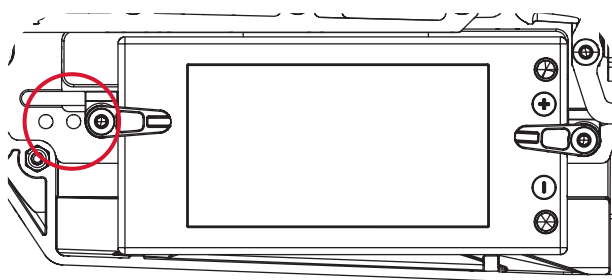
Suspension Inserts	Hub Height
0	0.0mm
1	+0.5mm
2	+1.0mm
3	+1.5mm
4	+2.0mm
5	+2.5mm
6	+3.0mm

KB
KB

LIPO POSITION

See Page 22 Bag D - Step 31

There are 3 shorty LiPo positions to fine tune the chassis balance. The team generally run the forward position as it gives the best balance. Sometimes it is moved back to calm down the rear of the car.



ANTI-ROLL BARS (SWAY BARS) *Options

See Page 20 Bag D - Step 28
See Page 21 Bag D - Step 29

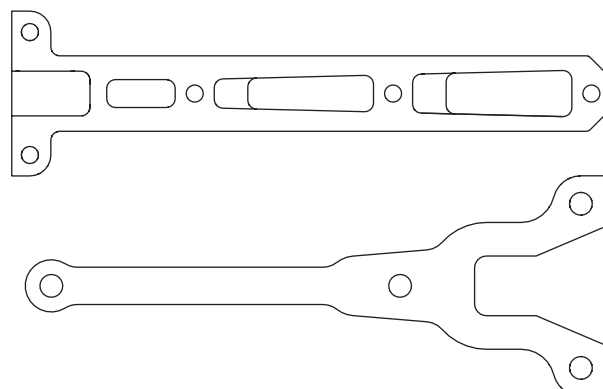
Anti-roll bars are an often overlooked set up aid that allows fine tuning of the suspension without major changes to the shock and spring settings. They are mainly used to add roll stiffness to the car without affecting the handling on bumps and jumps. Running anti-roll bars allows you to run softer suspension on bumpy tracks while reducing the roll in corners, thus maintaining stability through the turns. Softening the front bar will allow the front to roll into the corner more and give the feeling of more initial steering. You may find you lift up a rear wheel so you may need to change it back or soften the rear bar. A stiffer front bar will smooth out the steering and can be used to reduce grip roll due to it scrubbing off some grip.

A harder rear bar will make the car drive flatter through the corners and feel like it has more initial steering as well as better forward drive. A softer rear bar will make the car roll more but you may need to stiffen the roll in another place if the car becomes too lazy.

TOPDECKS

See Page 07 Bag B - Step 12

The brace stiffeners that are attached to the braces can be used to adjust the flex of the chassis. The team have found that running a softer rear brace to be the best option so far. You can achieve this by removing some of the forward screws which hold it onto the brace. There is an option for an S2 stiffener If you wish to find a medium setting.





GEAR RATIO (2.50:1)

See Page 24 Bag D - Step 33

	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
71							8.87	8.45	8.06	7.71	7.39	7.10	6.82	6.57	6.33	6.12	5.91	5.72	5.54	5.37	5.22
72						9.47	9.00	8.57	8.18	7.82	7.50	7.20	6.92	6.66	6.42	6.20	6.00	5.80	5.62	5.45	5.29
76		12.66	11.87	11.17	10.55	10.00	9.50	9.04	8.63	8.26	7.91	7.60	7.30	7.03	6.78	6.55	6.33	6.12	5.93	5.75	
78	13.92	13.00	12.18	11.47	10.83	10.26	9.75	9.28	8.86	8.47	8.12	7.80	7.50	7.22	6.96	6.72	6.50	6.29			
80	14.28	13.33	12.50	11.76	11.11	10.52	10.00	9.52	9.09	8.69	8.33	8.00	7.69	7.40	7.14	6.89					
82	14.64	13.66	12.81	12.05	11.38	10.78	10.25	9.76	9.31	8.91	8.54	8.20	7.88	7.59							
83 _{KB}	14.82	13.83	12.96	12.20	11.52	10.92	10.37	9.88	9.43	9.02	8.64	8.30	7.98								

Tooth Sum 91 Minimum to 109 Maximum

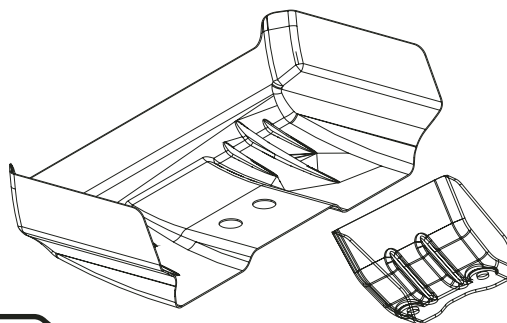
REAR WING & FRONT WINGS *Options

See Page 29 Bag D - Step 35

Both the front and rear wings will add downforce to the car. Trimming the gurney on the rear wing will reduce the downforce.

If the front of the car goes high over the jumps cut away the gurney on the rear wing until stable flight is achieved.

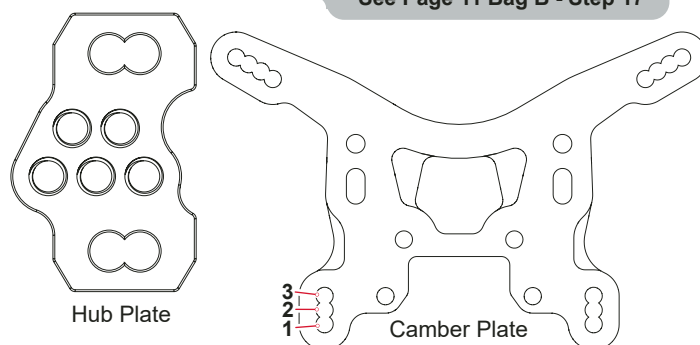
Adding the front wing will increase front downforce and help keep the nose down when jumping.



REAR CAMBER LINK

See Page 17 Bag C - Step 24
See Page 11 Bag B - Step 17

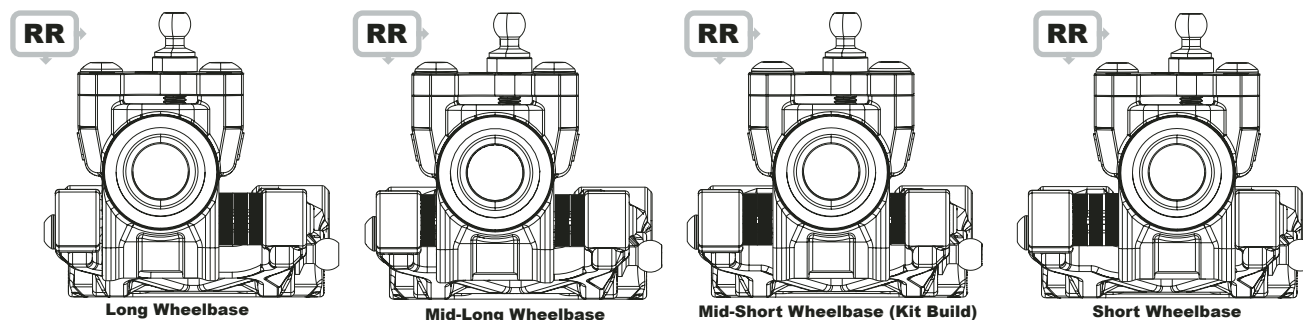
The kit setting for the rear camber link is the best compromise for most tracks. The outboard link option on the camber plate gives good stability and straight line traction while allowing the rear of the car to free up on high speed turns. This reduces power on understeer on high grip tracks. Shortening the rear camber link will make the rear of the car roll less in the corners, and square up faster when accelerating away from tight turns, longer links are generally used on high grip tracks and shorter links on low grip tracks. Lowering the inside ball stud will generate more grip, but reduce steering.



REAR WHEELBASE OPTIONS

See Page 17 Bag C - Step 24

The CAT PB has 4 wheelbase options at the rear, short, mid-short, mid-long and long. The adjustment is provided by re positioning the kwik clips on the outer wishbone pin. Moving the rear hub carrier forwards will give more traction at the expense of stability over rough sections of the track, and moving the hub carrier to the middle or rear position usually improves stability over the rough sections, running the car in long wheelbase form also free's up the car on sweeping sections of the track. Generally you will run long wheelbase on carpet, mid on astro and short on dirt.



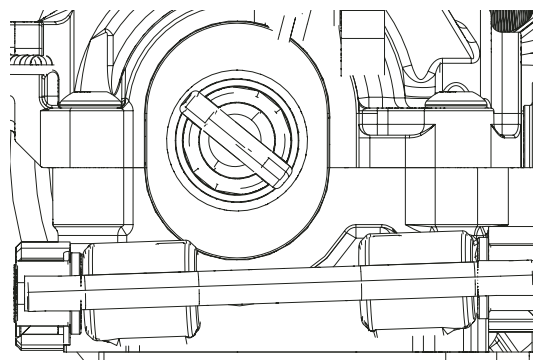


REAR ROLL CENTRE

See Page 19 Bag C - Step 26

Both of the rear straps are built in the kit to the High position with the arrows up ^^ . This position is 2mm higher than if you ran with the arrows down while using the same pills. Running the position in the high setting is the stiffer of the two settings and lower is softer in regards to roll.

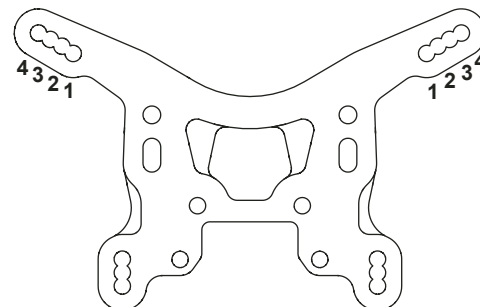
You would run the rear roll centre in the lower setting if you wished for the rear suspension to roll more which will help with the balance of the car if the rear is staying to flat or lifting a wheel. This also another way to gain some more on-power/exit steering and in turn reducing initial/Entry steering. Using the straps both in the high position as kit will make the car more responsive and from the rear and stiffen the suspension in roll. With the pills you can make small adjustments to the roll centre also, this allows you to avoid large changes if you only need a minor change.



REAR SHOCK MOUNT

See Page 11 Bag B - Step 17

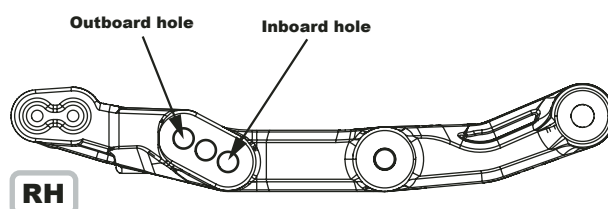
The Third hole on the shock mount (3) gives best all round results. Moving the shock to the inboard position increases on power steering and reduces initial steering. Moving the shock to the outer holes will stiffen the suspension, increasing initial steering and forward drive but could cause the rear wheel lifting. Moving the shock to these holes may require an oil or spring change to maintain the suspension performance.



REAR WISHBONE SHOCK MOUNTING HOLE

See Page 18 Bag C - Step 25

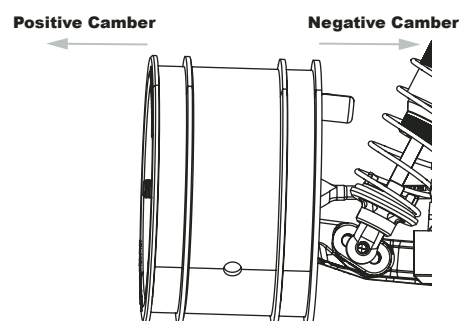
The middle hole works best for most track conditions giving good traction and drive through the turns whilst maintaining good stability over the bumps. Moving to the outer hole on the wishbone will decrease traction but will allow the rear to free up more in the turns. This setting would usually only get used on high grip tracks and when moving the shock out you may have to change the oil and spring settings to get the same suspension feel. If the grip level is low and the track is bumpy, try the inside hole with harder springs and thicker oil. This should help improve the handling.



REAR CAMBER

See Page 06 Bag B - Step 10

The usual team setting for static rear camber is between -1.0° and -1.5° at ride height (the top of the tyre leaning inwards towards the car). If more rear grip is required, increase camber to between -2.0° and -3.0° . When racing on high grip dirt, with squarer profile tyres, use between -0.80° and -1.0° rear camber to keep the contact patch consistent with the surface.





PILL SETTINGS

REAR TOE

'C' Mount

	2.0	1.5	1.0	0.5	0.0
	2.5	2.0	1.5	1.0	0.5
	3.0	2.5	2.0	1.5	1.0
	3.5	3.0	2.5	2.0	1.5
	4.0	3.5	3.0 KB	2.5 KB	2.0

The base setting for rear toe in is 3°, this is a good compromise between forward traction and the car binding in the turns. This setting is fine for most tracks. You can alter the toe in by changing the toe in inserts. If you are running too much toe in, your car may suffer from instability at high speeds. Decreasing the toe in will reduce forward traction but will free the car up in the turns. Usually the team use less toe in on high grip tracks and more for low grip tracks. A good starting position is 1.5° on carpet and 4.0° on low grip dirt and wet astro. The eight blocks have indicators on top of them to show the amount of toe-in each one has. The range is 0.5° to 4.0°.

RAKE (KICK UP)

The kit is built with 8 degrees front rake, using the pills it is possible to down to 6 and up to 10 degrees. Reducing the front rake angle to a lesser degree will soften the car in roll and smoothen out the steering initially but will maybe make the car feel unsafe/grabby when you get to the middle of the corner. Running a narrower hinge pin setting will not only reduce the track width but soften the front suspension in roll. This will make the car generate a roll and also have little too much mid corner steering. By going wider will offer more stability and help keep the car flatter in the corner.

'A' Mount

	8.0	8.5	9.0	9.5	10.0
	7.5	8.0	8.5	9.0	9.5
	7.0	7.5	8.0 KB	8.5	9.0
	6.5	7.0	7.5	8.0	8.5
	6.0	6.5	7.0	7.5	8.0

ANTI-SQUAT

'C' Mount

	2.0	2.5	3.0	3.5	4.0
	1.5	2.0	2.5	3.0	3.5
	1.0	1.5	2.0 KB	2.5	3.0
	0.5	1.0	1.5	2.0	2.5
	0.0	0.5	1.0	1.5	2.0

The Kit build anti squat is set at 2°. This works best on most tracks, and with the included parts can be increased or decreased. Generally less anti squat allows the suspension to work better over the large bumps and gives more power on steering. Reducing the anti squat makes the car handle better over small ripples, but not so good on the tracks with large bumps.