E3RS

BUGGY

TEAM MAGIC

Instruction & Setup Manual

Thank you for choosing the Team Magic B8RS. Before you start building the B8RS, we suggest you read though the instruction manual first. Be sure to check all assembly and performance tips before you start. We hope you enjoy the fine building processes.

General Building Tips:

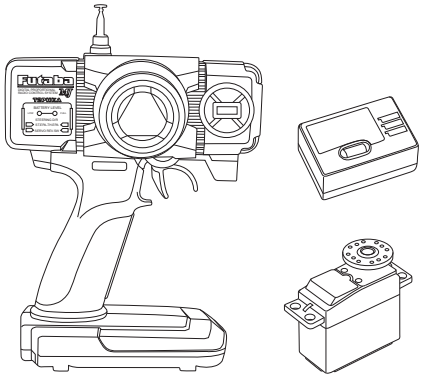
- Read the instruction manual before building.
- Clear a work area and try to work on a light color towel to avoid missing dropped parts.
- Don't forge the thread lock. Be certain to use thread-lock on all the machine screws that thread into metal. Put it on the screws that are secured with locknuts and the setscrews that secure the linkage stops, too. Don't skimp on the thread-lock or you'll be searching in the dirt for screws that vibrated loose.
- Don't over-tighten fasteners. Many assembly problems are caused by over-tightening screws or nuts. Don't use too large a grip. Please go slowly and feel the resistance build. Just snug it up.
- As you put more time and runs on the car, the suspension arms, and basically anything else that moves, can stretch and wear. Though we have a very rigorous quality control program and make every effort to ensure that the parts have the best possible fit when you get them. Unfortunately there is very little, or nothing we can do to prevent these parts from wearing out. When the arms begin to wear you will notice that some slop develops between the carrier or hub and the arms. This slop can be taken out by shimming the arm, hub or carrier. If you take a look at any of the factory driver's cars you will definitely find that they use shims to take up some of the slop that occurs over a period of time. The shims can also be used on the inside of the suspension arms in the same manner. When shimming the parts, care must be taken not to add too many shims. The parts must still move freely without binding.
- When it doesn't fit, please double check. If an assembly is not going together correctly, then either there really is a bad fit (e.g. a part is damaged or defective) or a mistake in assembly. Always re-read the instructions when there are any problems. If you cannot figure out what's wrong, always ask dealer, distributor or Team Magic. Don't use force beyond what the instructions call for.
- Using the right tools makes assembly much easier. The instructions below finely indicate you what tools to get to make things easier. We don't want to scare you by saying that all these tools are required, but you will have an easier time if you have them. Borrow them from a friend to check if necessary.
- The assembly is arranged so that you will open the bag and finish that bag before you go on to the next bag. Sometimes, you will have parts remaining at the end of a bag. These will become part of the following bags.

A Good Dealer Is Extremely Important!!

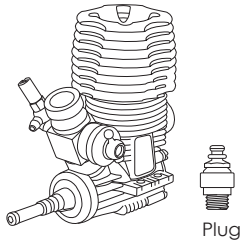
A good hobby dealer can help you with most assembly problems you might encounter. This is the main reason why you should buy your kits from a good dealer rather than from the cheapest dealer. Bring your problematic parts to the dealer and, most likely, you'll walk away soon thereafter with the problem solved. If you think that you really don't have the mechanical skills to complete the assembly, you may pay your dealer to finish the job for you. We can recommend good dealers to you if you need. Please send us mails for more information. Email: service@teammagic.com.tw

1 Additional Items Needed For Operation

■ 2 Channel Radio Set
(Read the instruction manual provided with your radio system before using it)

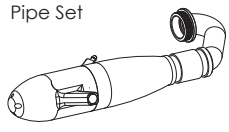


■ 21 Class Off-road Engine



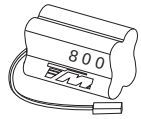
Plug

■ Pipe Set

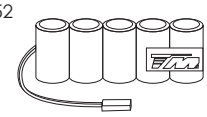


■ Receiver Battery Pack
(Make sure the size is within L86xW30xH23mm). We recommend

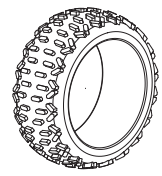
6v-800mah Ni-MH Lightweight Rectangle Receiver Pack (AAA size)
#114045



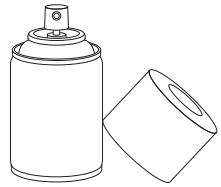
IB 6v-1400mah Ni-MH Receiver Pack (Turbo 35 approved)
#114052



■ Tires

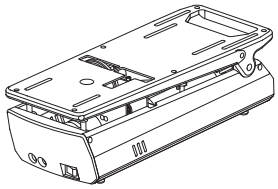


■ Body Paint



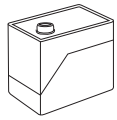
2 Additional Items Needed For Engine Starting

- H5S Starter Box off-Road
  #H6515F

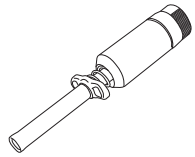


- H.A.R.D 500cc Speed Fuel Bottle
  #H1036

Fuel



- Black Magic Glow Starter
  #114203



3 Tools & Items Supplied

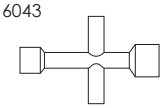
- Differential Silicone Oil #7000
  #560107

- Shock Silicone Oil #300
  #560203

- Shock Silicone Oil #400
  #560276

- Thread Lock

- Cross Wrench
  (4, 5, 5.5 & 7mm)
  #116043



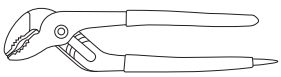
- Differential Silicone Oil #1000
  #560108

- TM Black HC Flare Nut Wrench
  (2.6, 3.5, 4.5 & 6mm)
  #117101

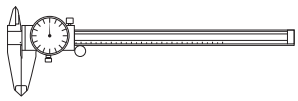
- 5mm Allen Key

4 Extra Stuff Needed

- Tongue and Groove Pliers

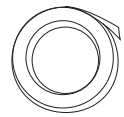


- Caliper



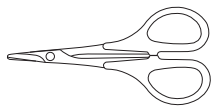
- Hobby Knife
  ⚠ (Warning!! This knife cuts nylon parts and fingers with equal ease. Be careful.)

- Double Sided Tape



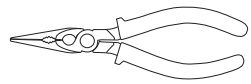
- TM Black
  HC Body Reamer
  (0~18mm)
  #117030

- Body Scissors
  (for body cutting)
  #116006

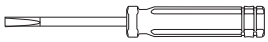


- Instant Adhesive

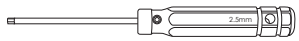
- Needlenose Pliers



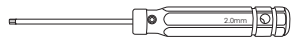
- TM Black HC Carb Tuning Slotted Screw Driver (4mm)
  #117023



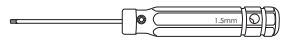
- TM Black HC Hex Wrench
  Metric Size 1.5mm
  #117002-1M



- TM Black HC Hex Wrench
  Metric Size 2.0mm
  #117002-2M

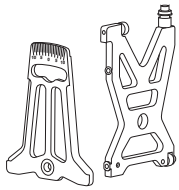


- TM Black HC Hex Wrench
  Metric Size 2.5mm
  #117002-3M

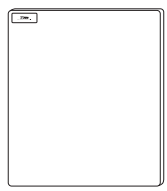


5 Helpful Items (suggested)

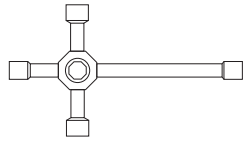
- 1/8 Buggy Cambertoe
  Setup Gauge
  #H7105



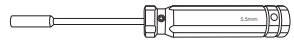
- TM 1/8 Setup Board (500x480mm)
  #116052



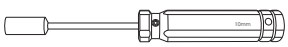
- Cross Wrench
  (7, 8, 10, 12 & 17mm)
  #116025



- TM Black HC Nut Driver
  5.5mm (for 3mm nut)
  #117010



- TM Black HC Push Type
  Clutch Nut Driver 10mm
  #117013



6 Cool Items (It would be good to have these items with the M8)

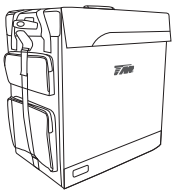
- TM Racing Cap (Black) #119222

- TM Racing T Shirt (Orange) #119223
- TM Racing T Shirt (Black) #119224

- TM Transmitter Bag (Black) #119206

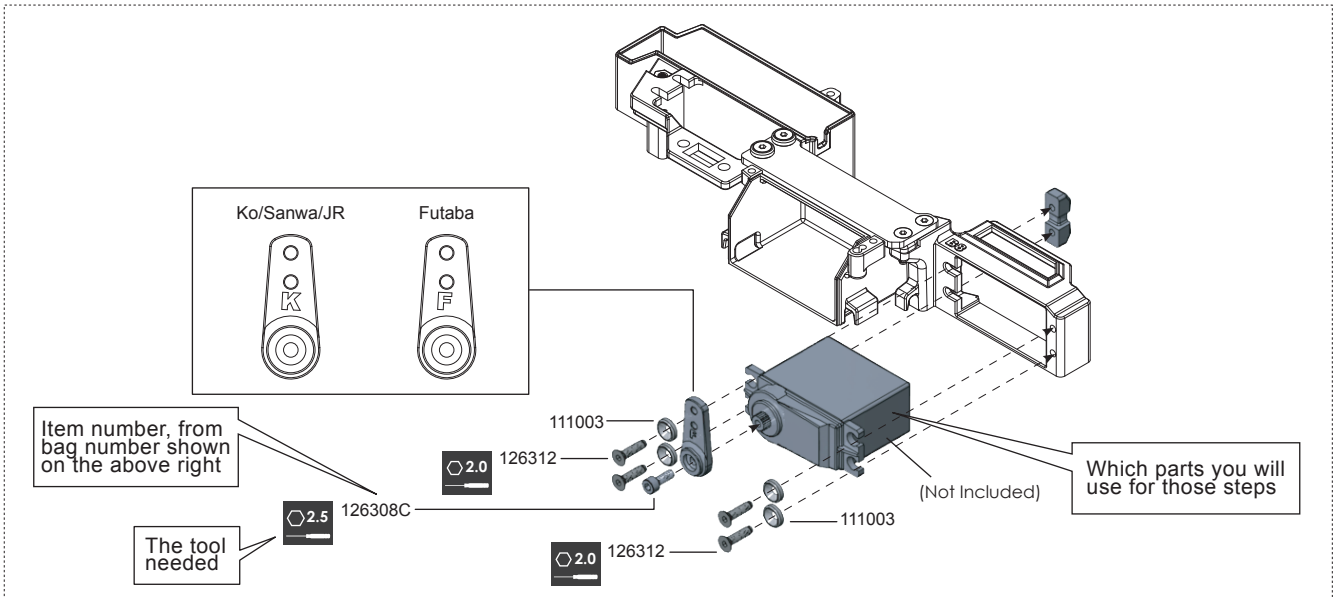
- TM Starter Box Bag - Large (Black) #119213

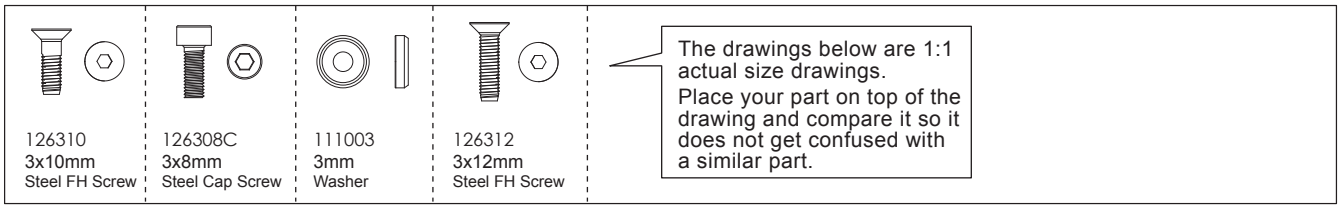
- TM New Formula 8 (F8) Car Bag (for 1/8 cars) #119220



7 Example (Learn how to read the manual here)

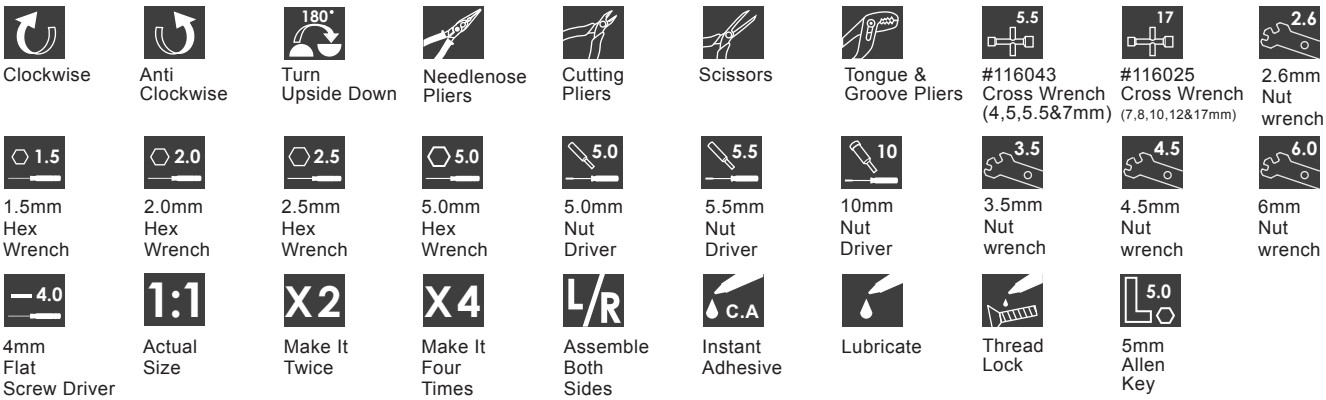
The assembly is arranged so that you will open and finish that bag before you go on to the next bag.
Sometimes you will have parts remaining at the end. These will become part of the following step.





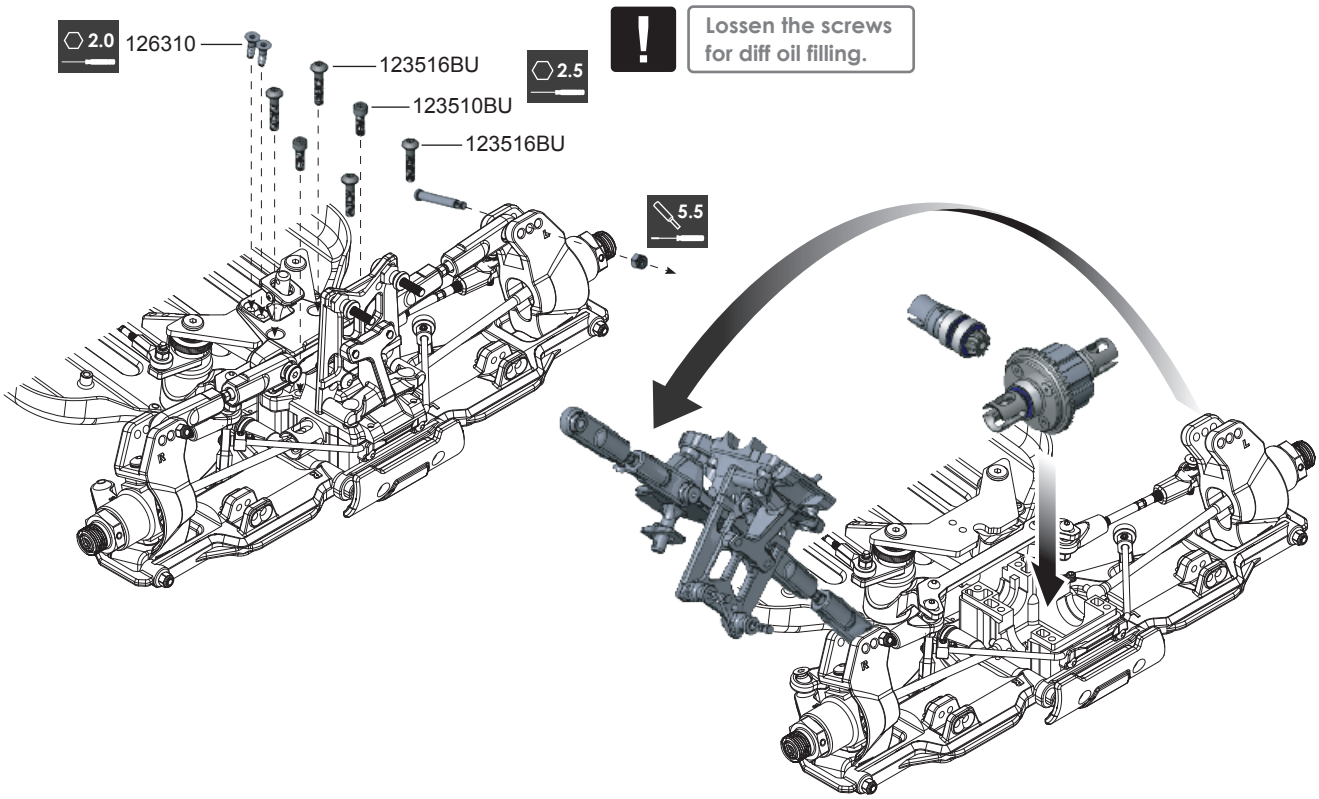
Place your part on top of the drawing and compare it so it does not get confused with a similar part.

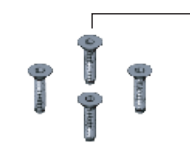
8 Icon (The tool and action needed)



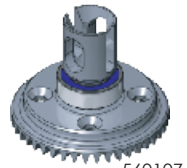
The manual that comes with the M8 is complete. However as development is a continuous process, up-to-date information about the M8 in provided on our web site: www.teammagic.com.tw Here you will find the very latest information about the M8, including reports by team racers and other experts with the latest tips, FAQ, set-ups, etc. So make sure to visit Team Magic site frequently. The parts inside the kit may vary because of the new development. We reserve the right to change any specification without prior notice.

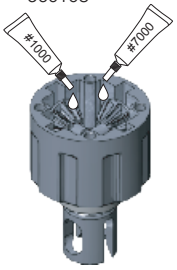
01 Front Gear Differential Oil Filling



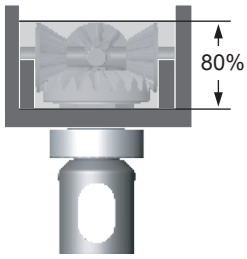


Apply a small amount of grease on the bevel gears to ensure that they work smoothly.

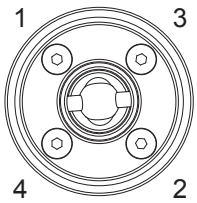




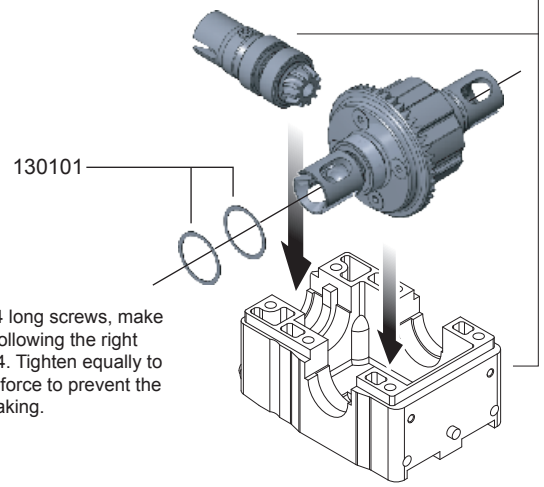
Holding the diff. case upright , fill with half #7000 silicone oil and half #1000 silicone oil to have the basic set up.

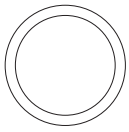
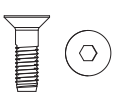
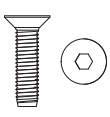
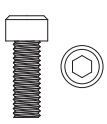
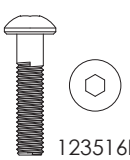


Fill the oil to 80% capacity.

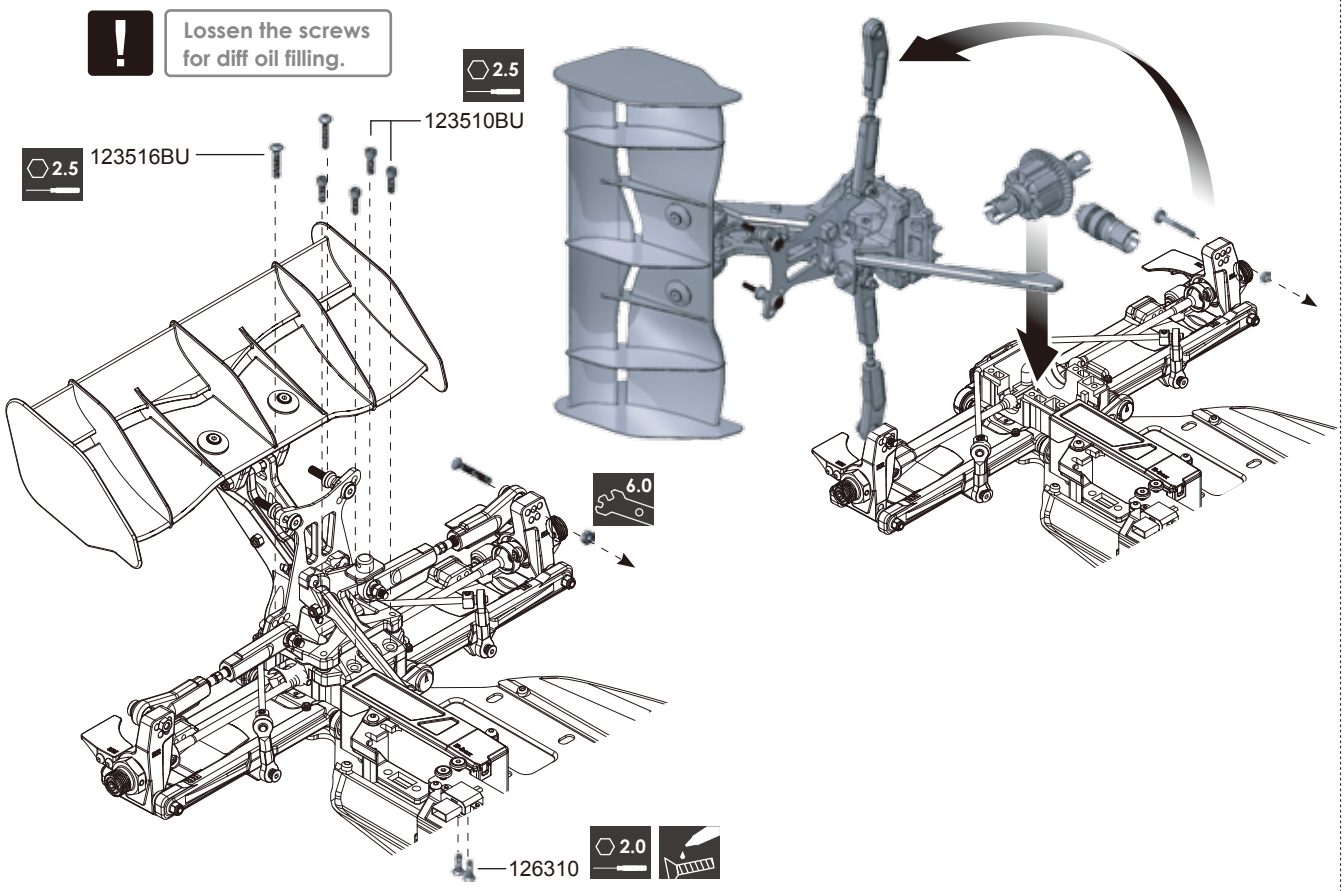


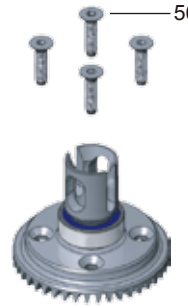
When tighten the 4 long screws, make sure that you are following the right procedures 1-2-3-4. Tighten equally to get average down force to prevent the differential from leaking.



				
130101 13.2x15.9x0.2mm Shim	126310 3x10mm Steel FH Screw	561302 3x12mm Steel FH Screw	123510BU 3.5x10mm Steel Cap Screw	123516BU 3.5x16mm Steel BH Screw

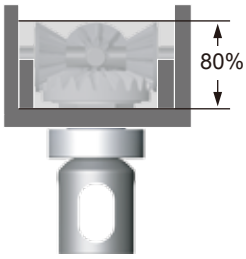
02 Rear Gear Differential Oil Filling



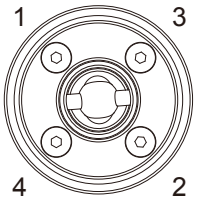


560108

Holding the diff. case upright, fill with #1000 silicone oil to have the basic set up.



Fill the oil to 80% capacity.



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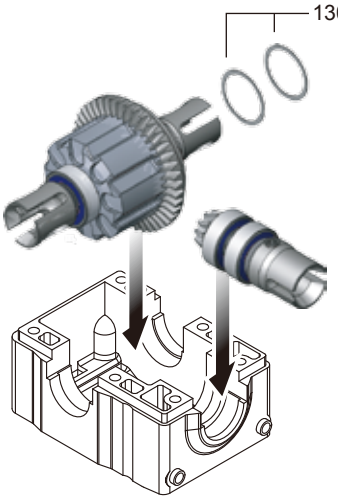
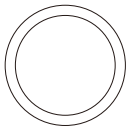
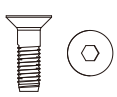
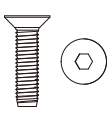
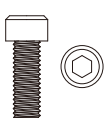
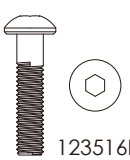
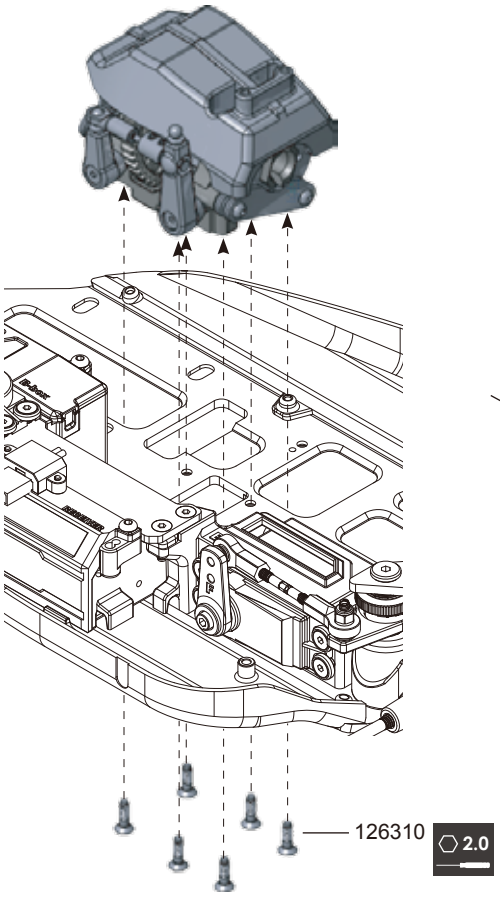
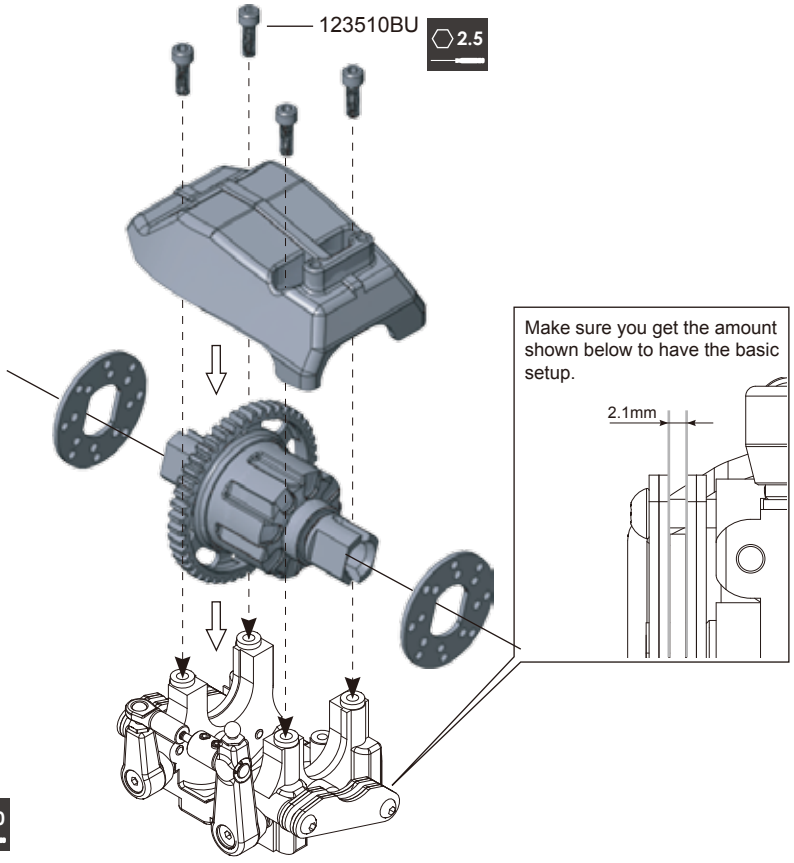
Apply a small amount of grease on the bevel gears to ensure that they work smoothly.



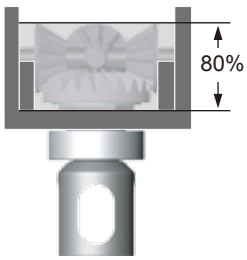
					
130101 13.2x15.9x0.2mm Shim	126310 3x10mm Steel FH Screw	561302 3x12mm Steel FH Screw	123510BU 3.5x10mm Steel Cap Screw	123516BU 3.5x16mm Steel BH Screw	

03 Center Gear Differential Oil Filling

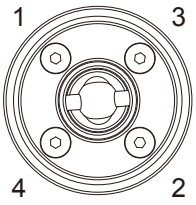




Holding the diff. case upright, fill with #7000 silicone oil to have the basic set up.

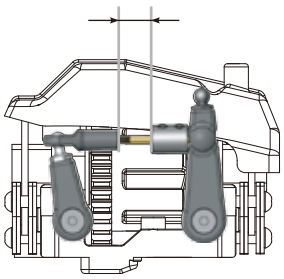


Fill the oil to 80% capacity.

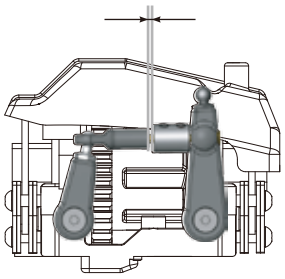


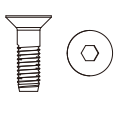
When tighten the 4 long screws, make sure that you are following the right procedures 1-2-3-4. Tighten equally to get average down force to prevent the differential from leaking.

Long distance then tighter the rear brake.

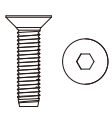


Short distance then tighter the front brake.

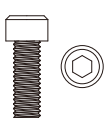




126310
3x10mm
Steel FH Screw

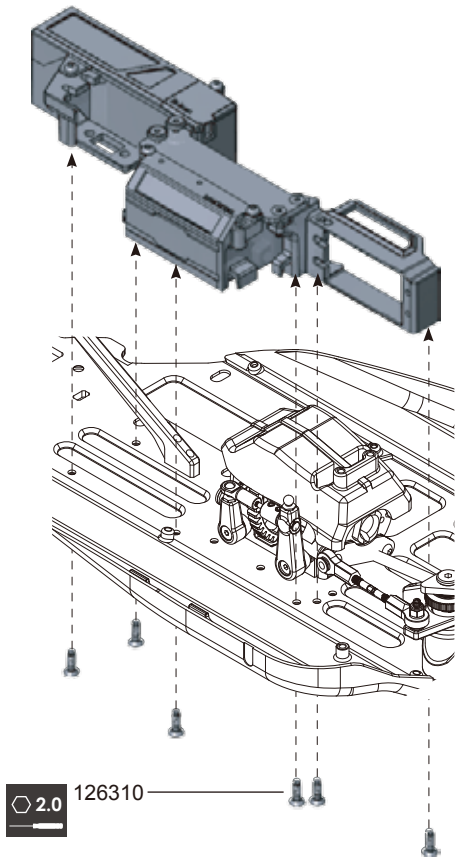


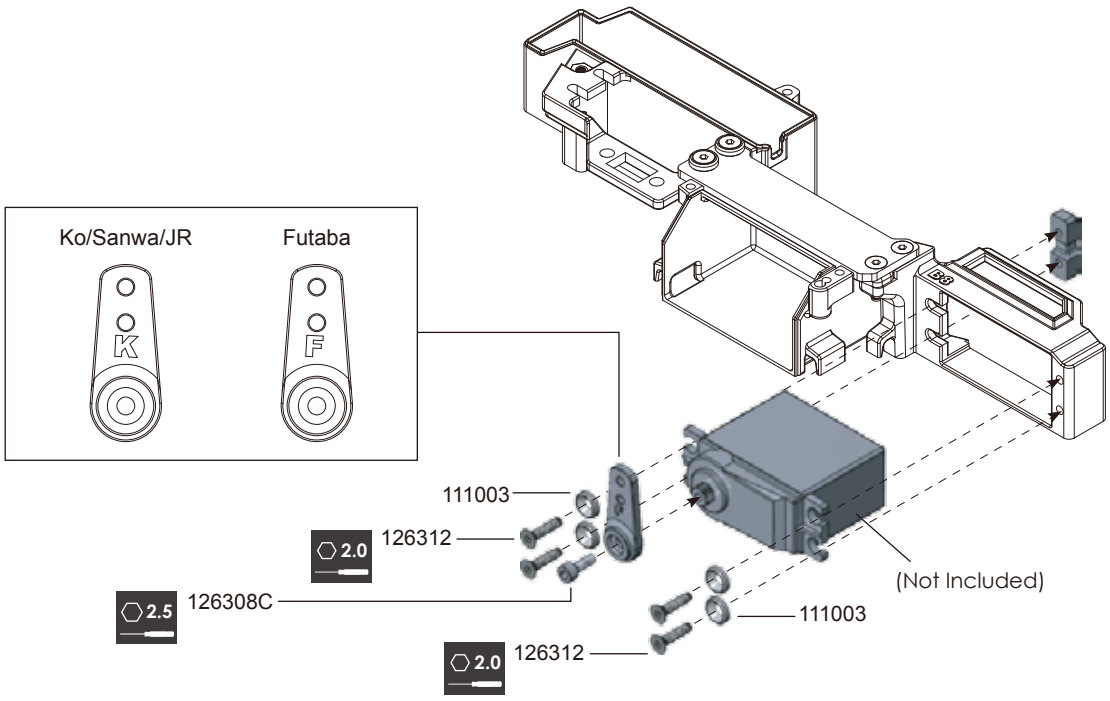
561302
3x12mm
Steel FH Screw

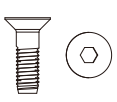
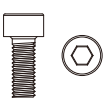
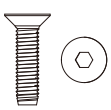


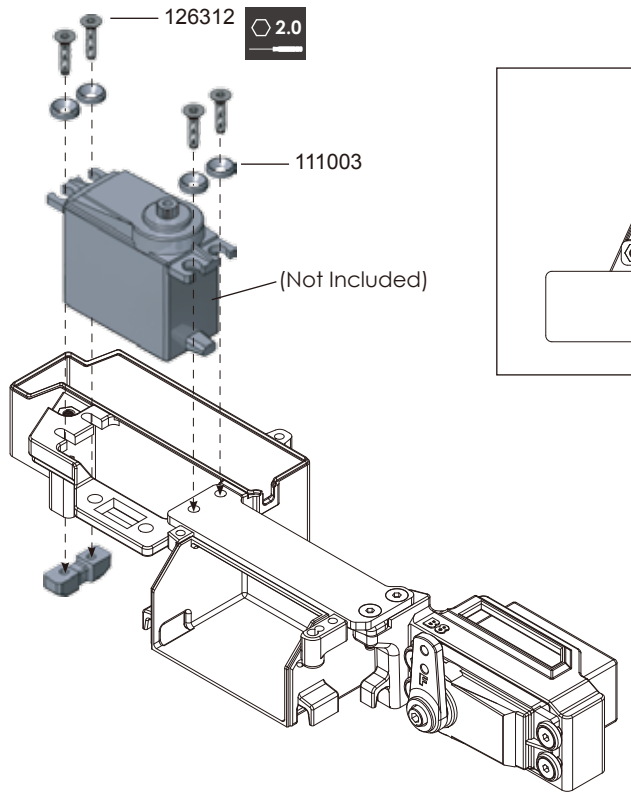
123510BU
3.5x10mm
Steel Cap Screw

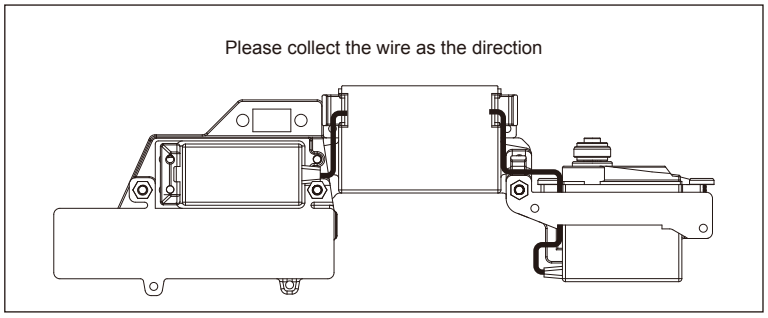
04 Transponder Holder

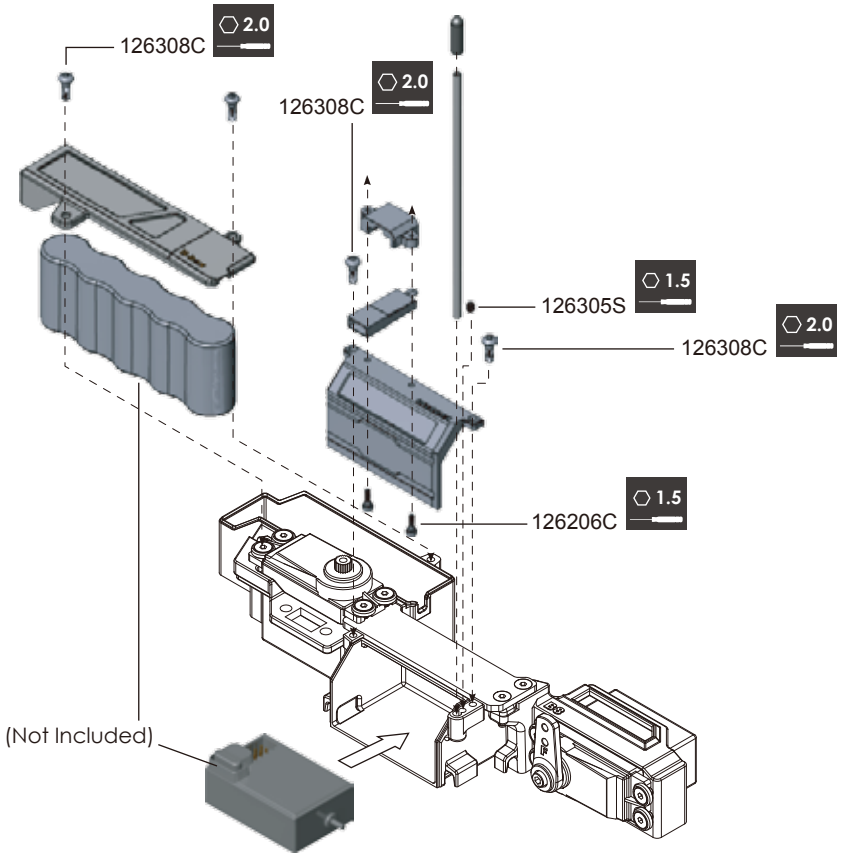


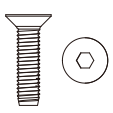
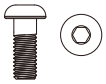


			
126310 3x10mm Steel FH Screw	126308C 3x8mm Steel Cap Screw	111003 3mm Washer	126312 3x12mm Steel FH Screw



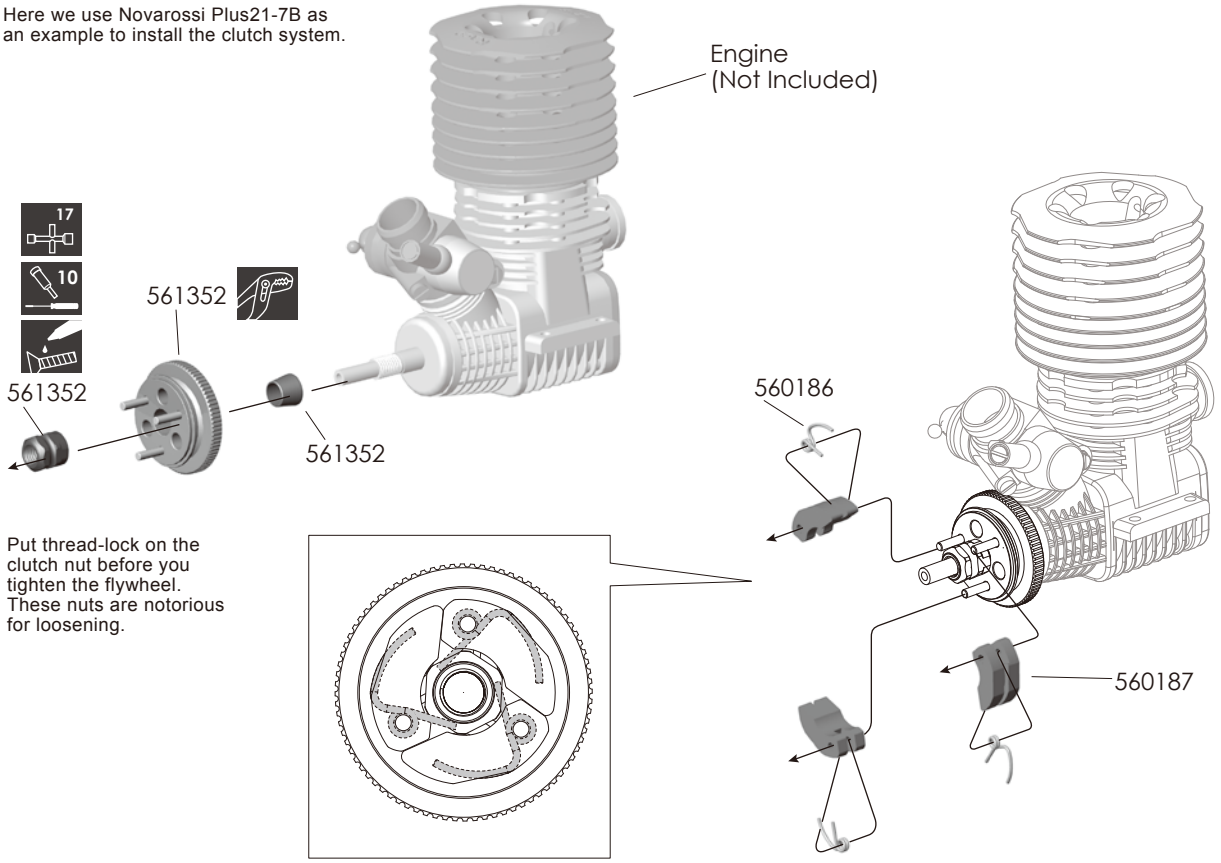




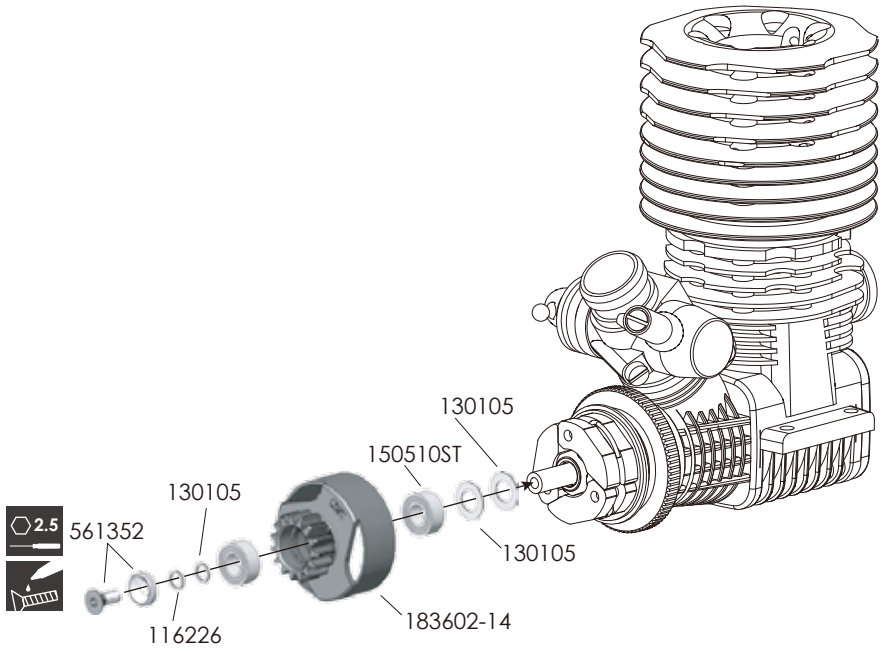
				
126312 3x12mm Steel FH Screw	111003 3mm Washer	126305S 3x3mm Set Screw	126206C 2x6mm Steel Cap Screw	126308C 3x8mm Steel BH Screw

05 Clutch Set

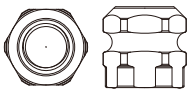
Here we use Novarossi Plus21-7B as an example to install the clutch system.



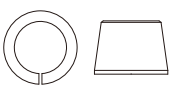
Put thread-lock on the clutch nut before you tighten the flywheel. These nuts are notorious for loosening.



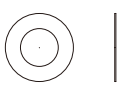
561352
3mm
Washer



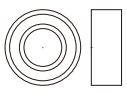
561352
Clutch Nut



561352
Clutch Collet



130105
5x9x0.15mm



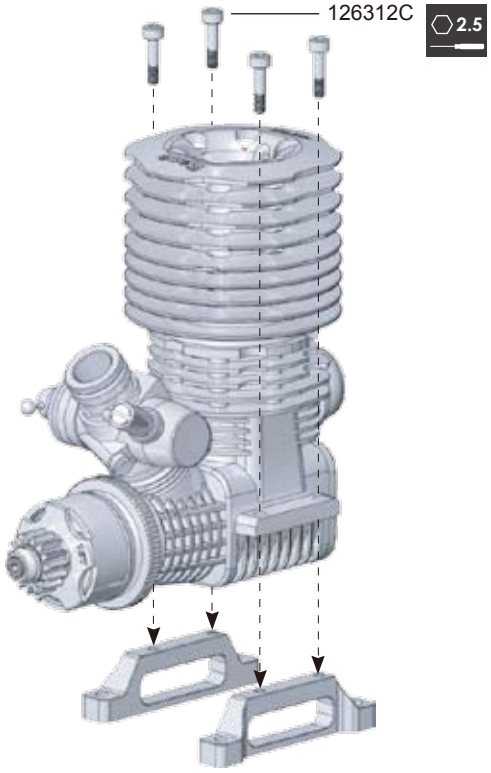
150510ST
5x10x4mm
Steel Bearing

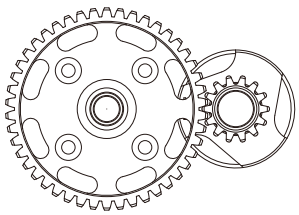
116226
3.1x4.8x0.5mm
Shim

561352
3.1x4.8x0.3mm
Shim

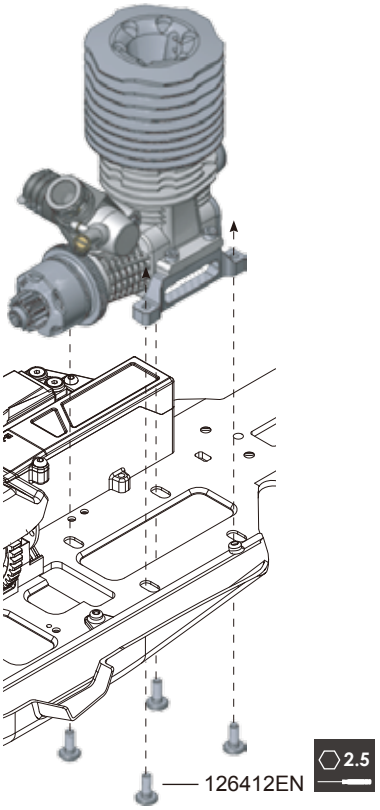
561352
3x8mm
Steel FH Screw

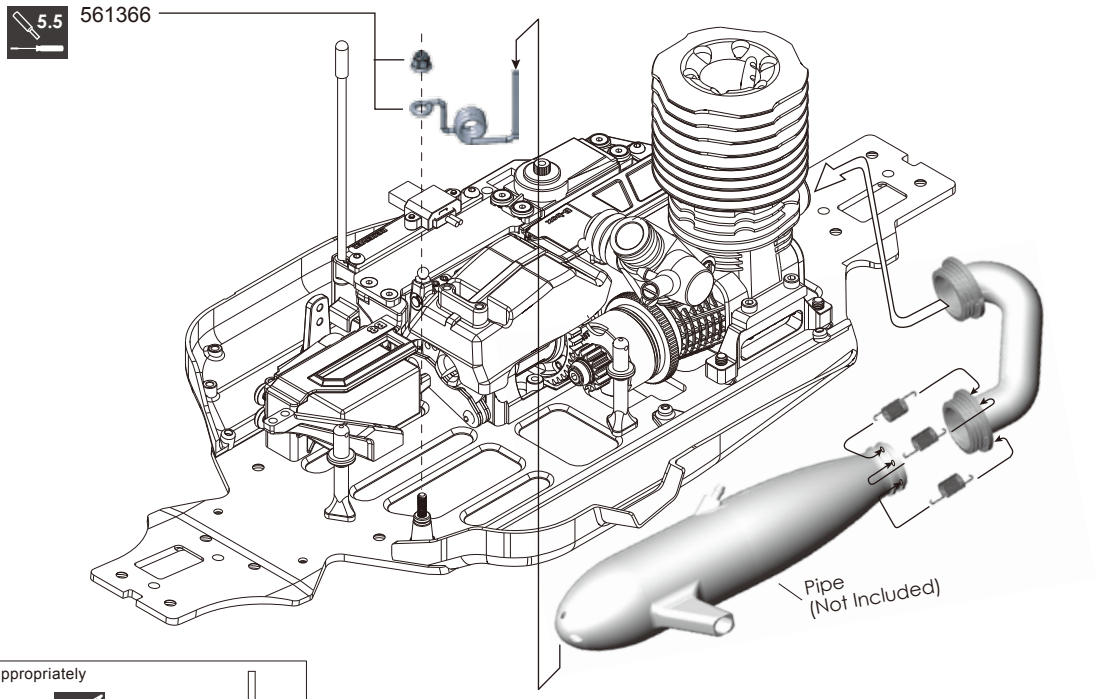
06 Engine Mount & Pipe Assembly

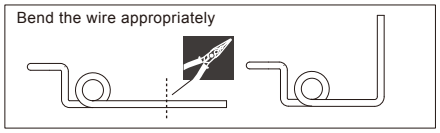


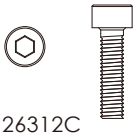


Now we set the main gear to pinion gear spacing, known as gear mesh. Make sure you can still slide your engine, then mesh the clutch bell pinions with the main gear. The correct gear spacing is when the pinion is close to the main gear, but if you hold the clutch bell, you should still be able to rock the main gear back and forth slightly with light pressure. Roll the gears and check the mesh in several different locations on the main gear. Then, tighten the four motor screws. For more information, please check **Gear Ratio setup page.**



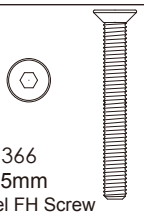




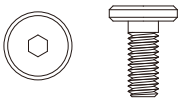


126312C
3x12mm
Steel Cap Screw

561366
3mm
Steel Flanged Nut

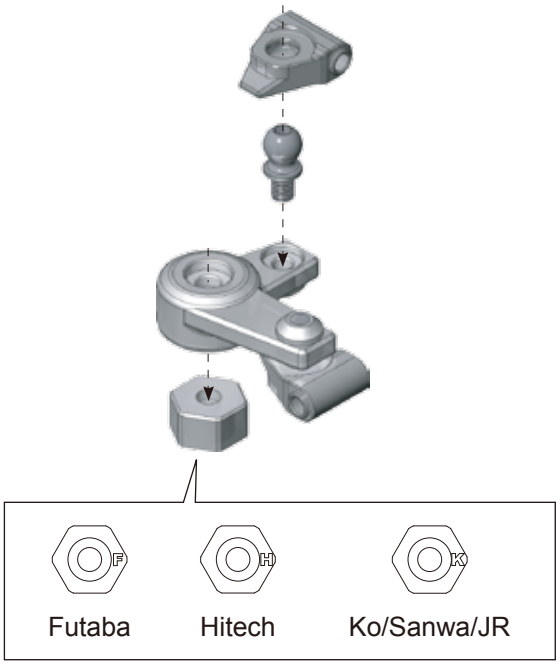


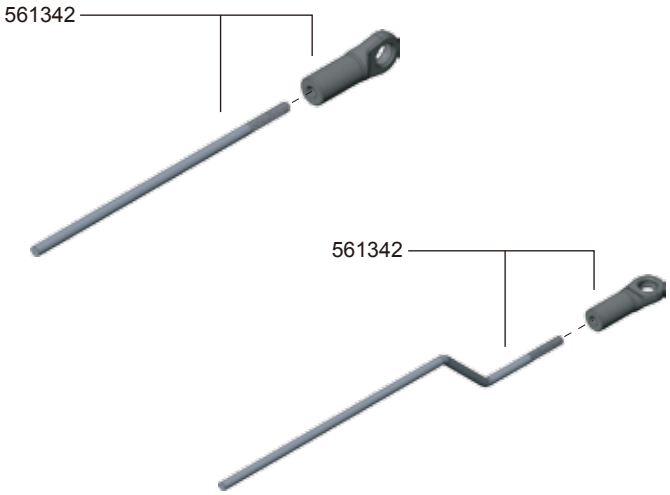
561366
3x25mm
Steel FH Screw

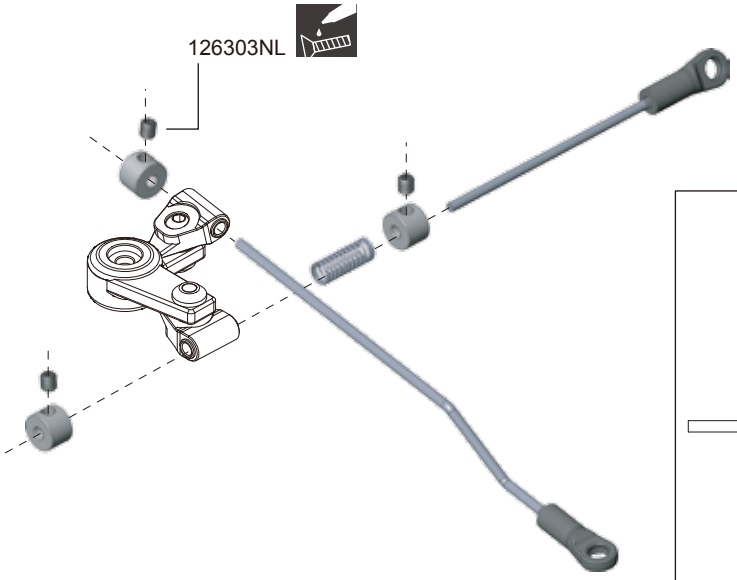


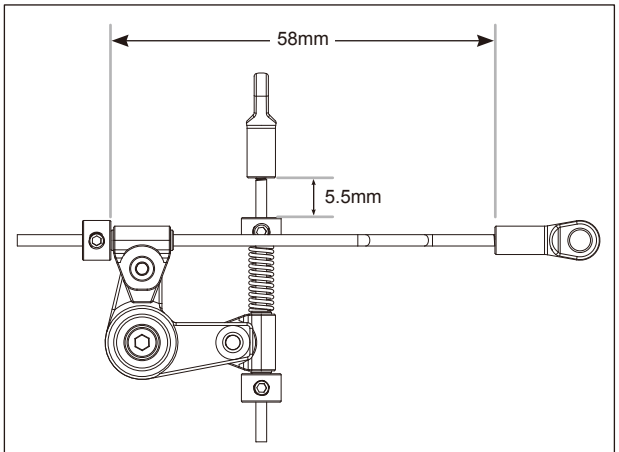
126412EN
4x12mm
Steel Flat Round Engine Mount Screw

07 Throttle/Brake Linkage



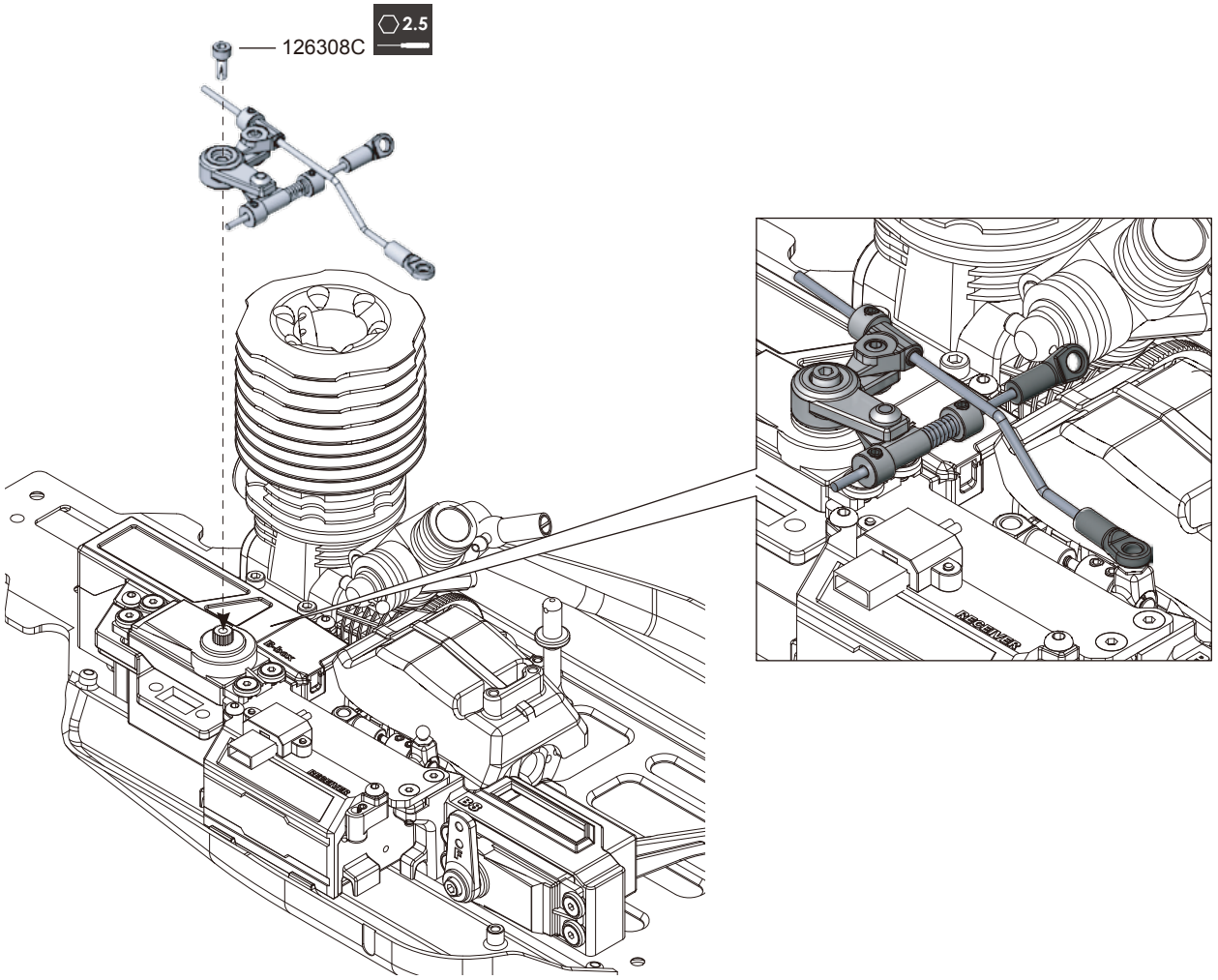




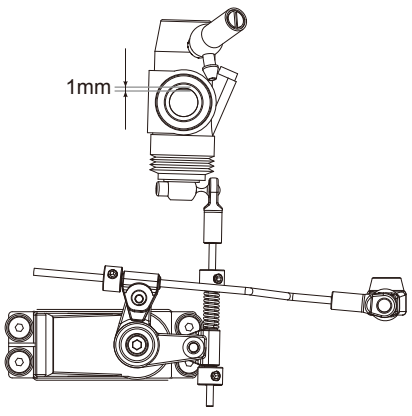


Basic setup data. Adjust to practical situation if needed.

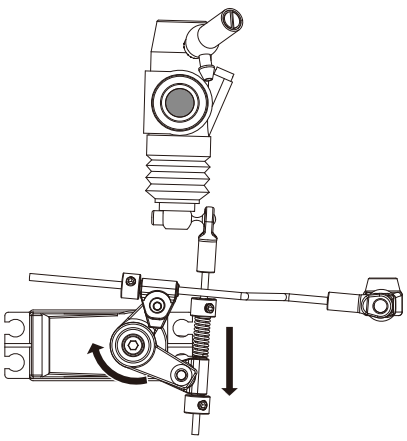
126303NL
3x3mm
Set Screw



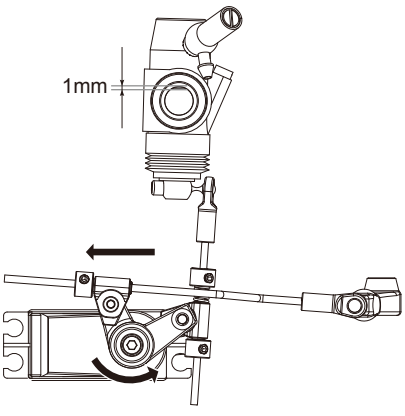
Neutral Position (Idle)



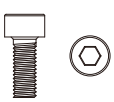
Full speed throttle position



Brake throttle position



Basic setup data. Adjust to practical situation if needed.



126308C
3x8mm
Steel BH Screw

08 Shock Absorber Oil Filling

! Shock Oil Filling

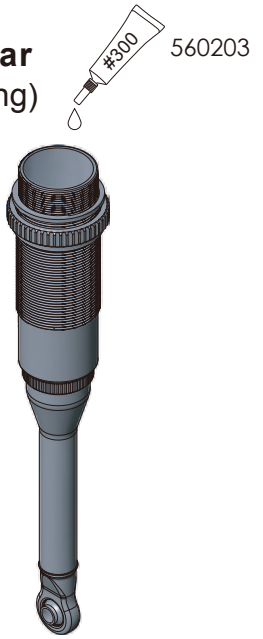
Front
(Short)

560276

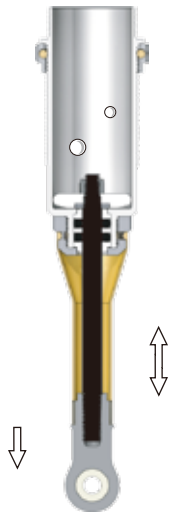
Fill with #400 shock silicone oil to the top of the shock body.

Rear
(Long)

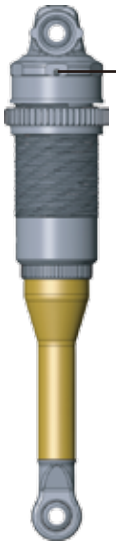
560203

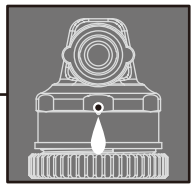


Fill with #300 shock silicone oil to the top of the shock body.

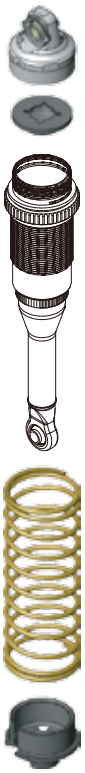


Slowly move the shaft up and down several times. Let the oil settle and allow the air to escape. Refill with oil to the top of the body. Install the shock cap assembly onto the shock body assembly.



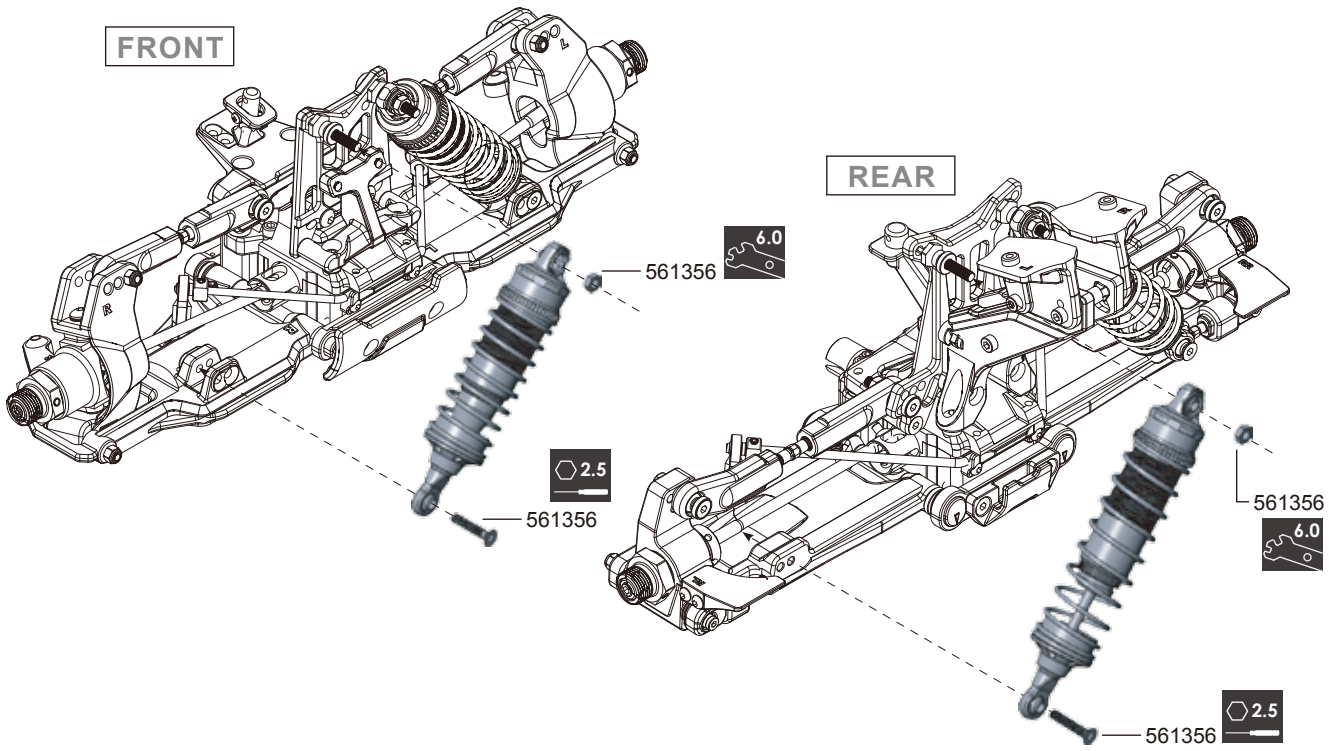


Slowly tighter the shock upper cap and let the surplus oil flow out from the hole.



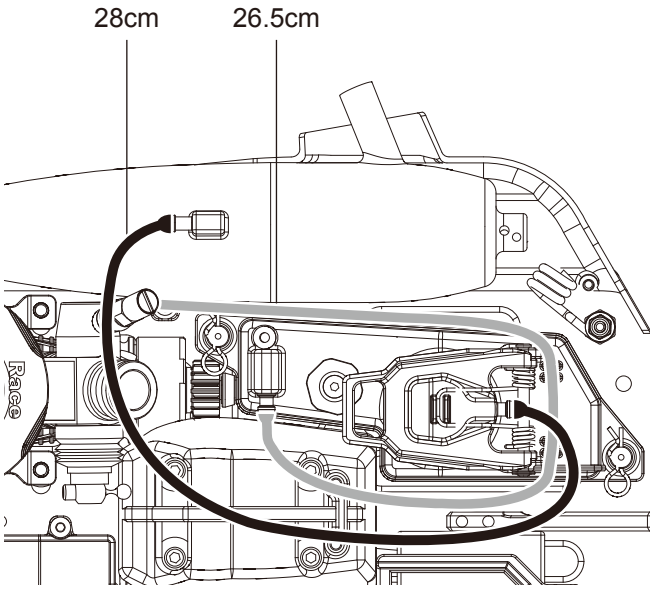
561356
6.8mm
Alum Ball

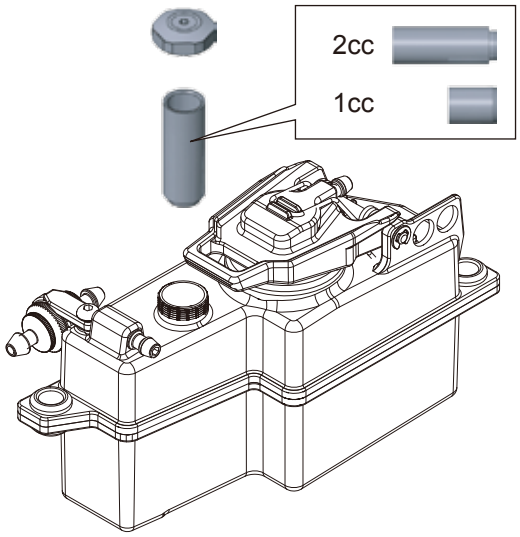
09 Front & Rear Shock Installation

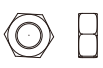


10 Fuel Tube

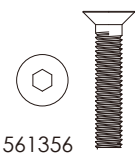
Use adjuster & Fuel Tube to adjust the oil capacity.
(adjstment range : 0~2c.c)





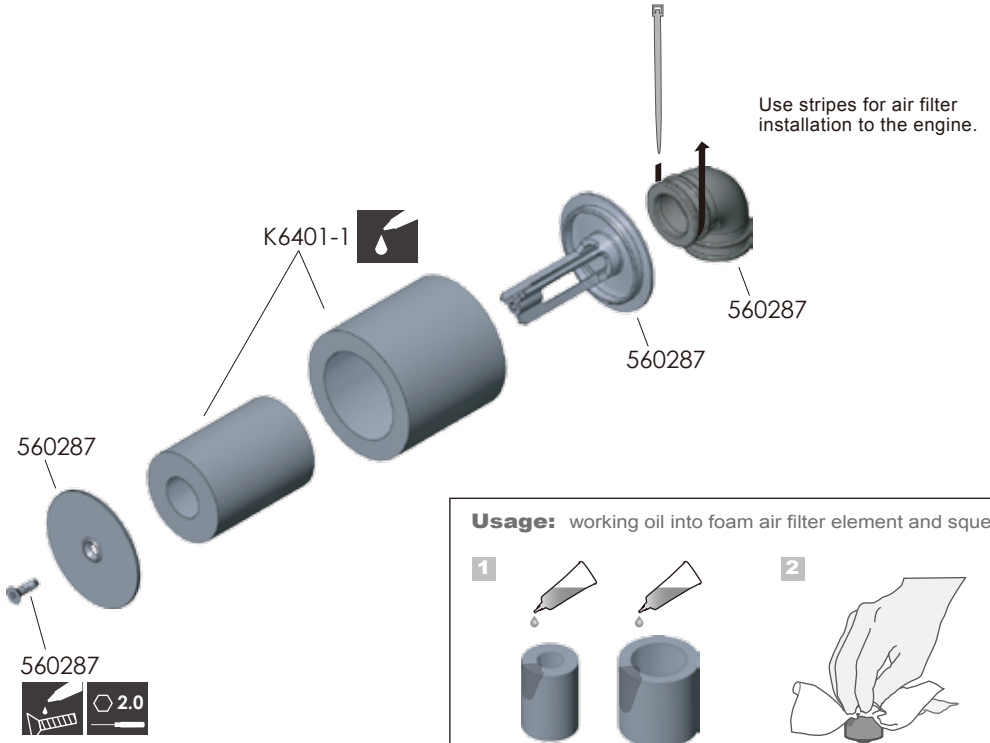


561356
3.5mm
Flat Locknut

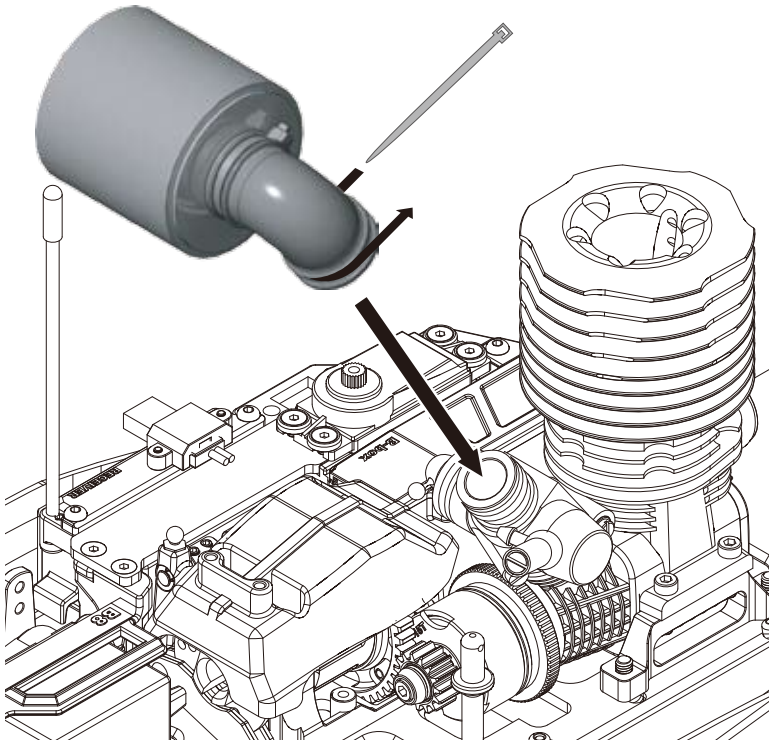


561356
3.5x18mm
Steel FH Screw

11 Air Filter

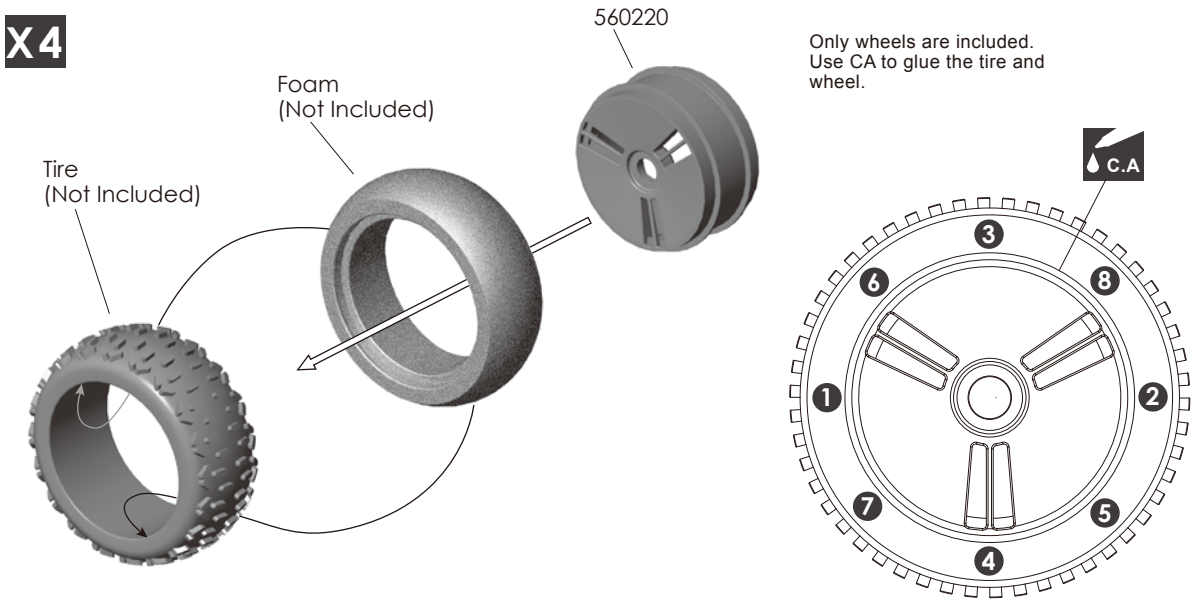


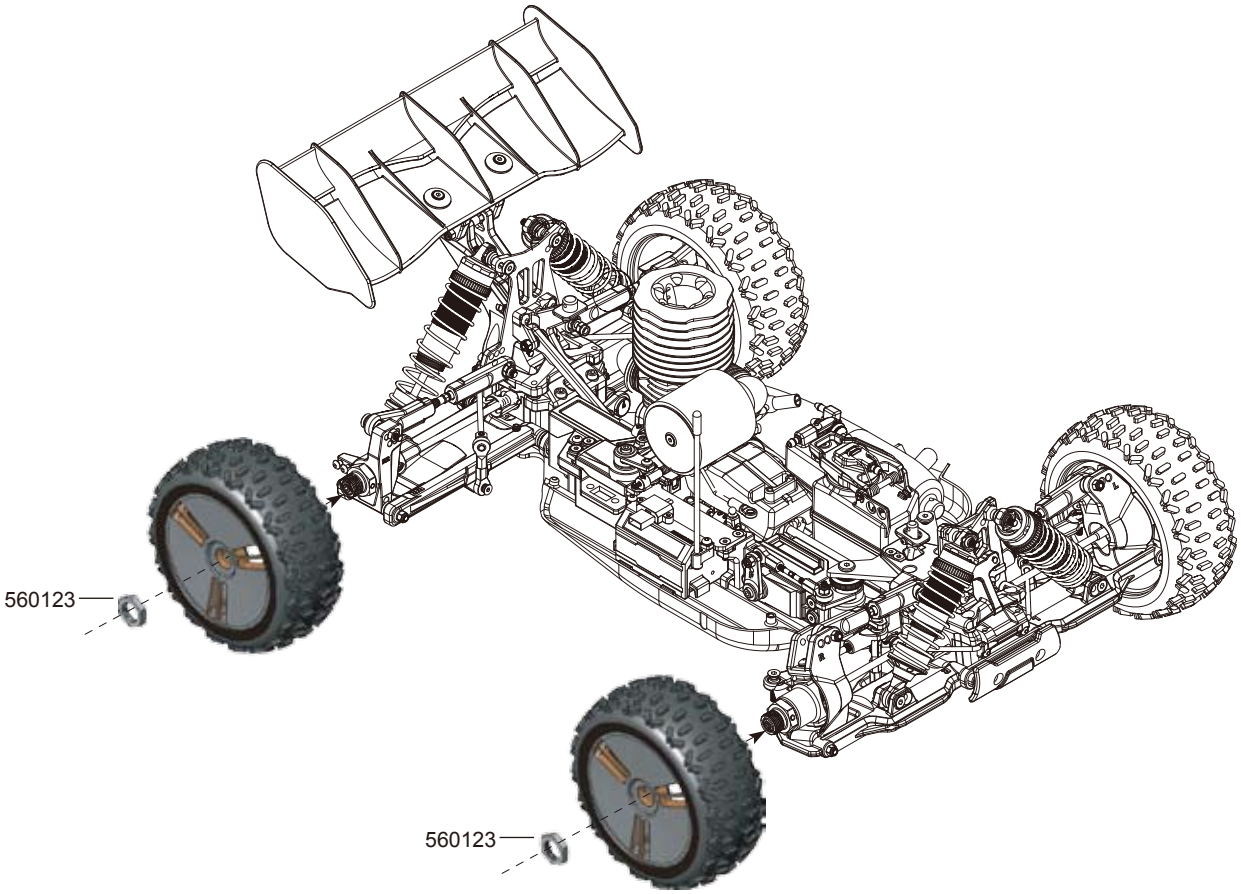
Usage: working oil into foam air filter element and squeezing out the excess.

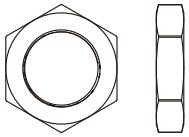


126308
3x8mm
Steel FH Screw

12 Tire

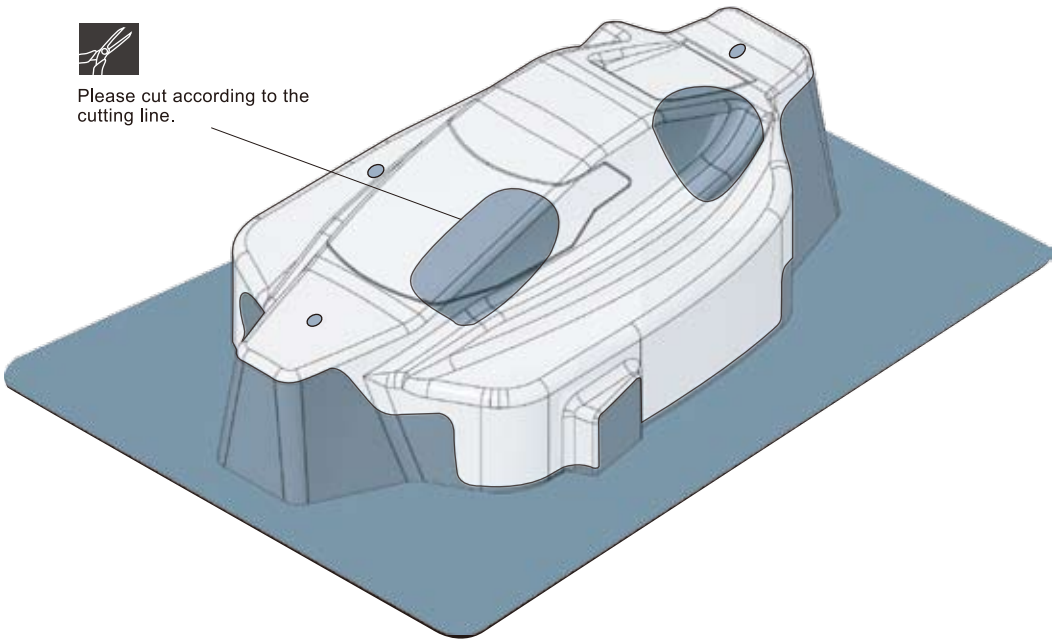


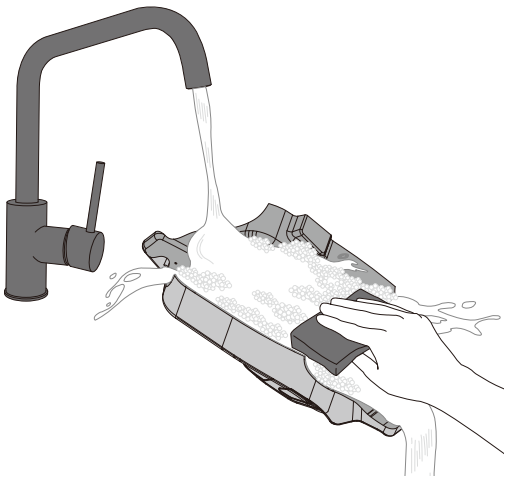




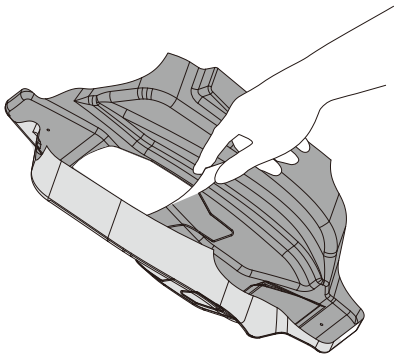
560123
17mm
Alum Nut

13 Body

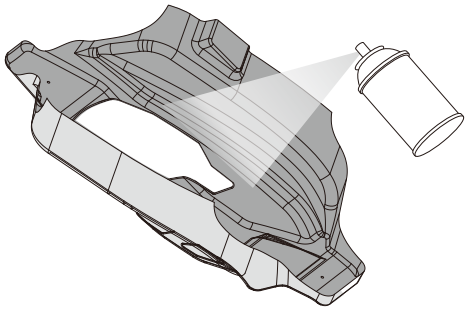




1. Before paining, use a neutral detergent to remove any oil residues and dirt.

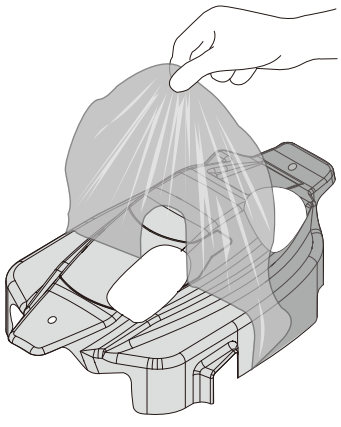


2. Please put on window masks on each windows.



3. Please choose your favorite color to paint the main color or refer to the pictures on the box for color scheme.

   (Paint the body shell from the inside using RC Body Paint.)



4. After painting, remove the protective film from the body shell.

B8RS Setup & Tuning Guide

If you follow all the steps on the instruction manual, you should get a B8RS with the basic setup. This is the also the basic setup we suggest you to start from. With the basic setup, the B8RS should work properly on most off-road tracks and proper terrains. If you need more from the B8RS, please learn all the information and setup procedures below.

B8RS Specification

Length: 503mm
Width: 304mm
Wheelbase: 318-326mm (depends on caster angle)
Weight: 3290g (racing status w/o fuel)
Gear Ratio: 11.98 : 1

Basic Principles

Before start to setup the car, please always keep the following principles in mind.

- **Try to ask and learn**
  We are not born to know all the setup knowledge. Always read, ask and learn more from dealers, web sites, expert drivers and magazines. After you have some basic knowledge, you can judge the problems. Driving skills, assembly quality and tuning ability all can affect the car performance. It's important to evaluate what's the problem first.
- **Every part functions properly**
  Always make sure that suspension and transmission systems are free without additional play and binding. It's quite often that a poor handling car is caused by mechanical problems, instead of poor setting. In addition, please always check when every part is still of good shape. Normally, some parts get damaged or bent after crashes. These broken or bent parts can generate the most unpredictable car. No setup can compromise these problems. If you cannot judge the problems, please always ask help from dealers or experts.
- **Feel and use time counter**
  Feeling is helpful, but may cheat you. Sometimes, you feel the car is getting faster, but actually it's slower. Always use time counter to check your lap time if you are at a track.
- **Make only one change every time**
  If you make many setup changes at a time, then you don't know which change make the difference. This is extremely important. To help better judge the difference, a large change can be helpful. For example, instead of add 0.5 degree to the toe setting, you may try 2 degree. Also, don't forget to write down all these experiment results. You can always check the record to better evaluate what changes should be made when you need better lap times.
- **Compromise**
  Things are not perfect. When you need more rear toe-in to have a stable car, you probably lose some high-end speed. Always find the best compromise. What is the best compromise? Better handling and faster lap times can help you to make decisions.

Where To Start The Setting?

It's always good to start from our basic setup or your own basic setup when you are at a new track. Before start to drive the car, always do following things first:

- **Check the track layout and surface**
  It's good to walk and feel every part of the track. Then, you can know the bumpy area and find good racing lines. It's normal that you cannot find these things on the driver stand.

- **Check what other drivers are doing**
  Please try to find out the current best lap times. These are good benchmarkers. Check the setup from other good drivers who drive the same car as you. You can save some try and error time. Listen and see where good drivers apply throttle and brakes, also find out their racing lines.

- **Choose right tires**
  Tires are the only contact between the car and ground. Without a good set of tires, your car is going no where. You can always check what tires are used the most at the track. This is always a good starting point.

1 Tires

Tires are the most and first choice you should make. If you've got the right tires, you're 90% there. Without suitable tires, the setup job will be very difficult. Always find out the best tires for the track first. What we can do with the tires to get the best possible performance? There are mainly 2 ways we can work on.

Ask

Local racers can always tell you what tire brands are the best at that particular track. Some tires are good for qualification and some are good for the long final. Even the durability of wheel can make difference. Some wheels brake easily and may cost you champion title. All these information are quite open to all racers. Always check with your racing pal. Don't forget to check the price as well!!

Experience

Reading a track or the surface that you are running is not easy. So, choosing the right buggy tires for the conditions can be very difficult. In addition to ask, experience is also the best teacher when it comes to "reading" a track or surface. Things get real difficult when track conditions are changing. If a track is drying up or has both hard sections and soft breaking up sections. Then the only solution is doing back to back testing with different compounds. Then choosing the best tire that suits your driving style. So, reading a racing surface can be difficult. But, it is part of the fun of racing r/c cars and trucks.

2 Shock Tuning

Shock Tuning is the 2nd important thing when you setup the car. Measure your shocks after the assembly. The right and left front shocks should be of the same length. In addition, bleed them so that they all rebound to the same degree when they are compressed and released and so should the right and left rear shocks.

Four adjustments can be used to tune your shocks: Preload, Springs, Damping and shock mounting position. Below you will find all the related setup information.

Springs

Basic Setup: Fluorescent White (included)

Compared with other shock-tuning adjustments, changing the springs offers the most noticeable improvement in performance. Soft springs are the easiest to compress, and they provide more grip because they allow the suspension to move with the bumps and the tires to stay on the ground. However, keep in mind that damping and spring rate complement each other. Dramatic changes in spring rate must be accompanied by changes in damping-mainly lighter damping with softer springs and heavier damping with stiffer springs.

	Softer Springs	Stiffer Springs
Front	▶ More steering ▶ Good for bumpy tracks ▶ React sluggishly	▶ Less steering ▶ Jump better and further ▶ Good for high-grip tracks
Rear	▶ More rear traction ▶ Less steering	▶ More steering ▶ Jump better

Damping

Basic Setup: Front #400wt Rear #300wt

Having the correct piston and shock oil combination is very important to shock tuning. A shock that has thinner shock oil and a piston with more (or large) holes will compress and rebound faster than a shock with thicker oil and less (smaller) piston holes. Keep in mind that the size or number of the piston's holes dictates the range of shock oil that work best with it; small (less) holes work best with thinner oil, and larger (more) holes work best with thicker oil. The suspension should never feel too 'springy' or too slow.

	Lighter Damping	Thicker Damping
Front	▶ React quicker ▶ More steering	▶ Easier to drive ▶ Good for high speed steering ▶ Less steering
Rear	▶ Less steering ▶ Easy to drive ▶ More rear traction while accelerating	▶ Quick and responsive steering while the rear stays relatively stable ▶ More steering
Front&Rear	▶ Bounce less over small bumps ▶ Better for shallow,ripply bumps	▶ More stable and smooth ▶ Jump and land better ▶ Lean less in corners

Shock Mounting Position

Before experiment with different shock angles, make sure you get the best damping and spring setup. Basically, shocks that are more horizontal than vertical feel softer when they are compressed. Changing shock angle has a much less noticeable effect on performance than other shock adjustments.

	More Horizontal	More Vertical
Front	▶ Stable, but less low-speed steering ▶ Less steering response	▶ More steering response ▶ Hard to drive
Rear	▶ Stable ▶ Good for high-grip tracks	▶ Soak up bumps better ▶ Corner faster ▶ Reduced stability

Vertical front & horizontal rear	▶ Aggressive turning in ▶ Good side traction ▶ Larger turn radius
Horizontal front & vertical rear	▶ Smooth steering ▶ More response in mid-turns and exits

3 Differential Setup

There are three differentials on the B8RS: one for the front, one for the center, and one for the rear of the car. The effects that the diffs have in the handling of the car are noticeable; they can alter the way a car handles bumps, exits a corner, and accelerates. As the B8RS differentials are adjustable and pre-assembled in the factory with neutral setting, you can always make the diff setting slightly tighter.

▶ Front Differential

Basic Setup: Front #5000 wt

You can alter the amount of steering by altering the diff oil weights in the front diff. If you want more steering entering the corner, try running lighter oil, such as 3000wt. More off-power steering will be generated as well. Also, lighter oils are better for bumpy conditions. Heavier oils will give the car better on-power steering. If the oil is too heavy, it will make the car oversteer in the rough or rhythm sections.

▶ Center Differential

Basic Setup: Front #7000 wt

Running lighter oils in the center helps the car track straight while accelerating (such as 3000~5000wt), but reduces acceleration out of corners. Heavier oils in the center (such as 7000wt) will give the car better acceleration. However, for really bumpy sections have lighter oil in the center will allow the car to accelerate better and straighter.

▶ Rear Differential

Basic Setup: Rear #1000 wt

Lighter oil in the rear diff gives the car more off-power steering, but may make the car feel inconsistent around the track. If the car is not consistent, you can try to adjust the setscrews on the rear diff to make the diff tighter.

4 Anti-Roll Bar

Basic Setup: Front 2.3mm Rear 2.7mm

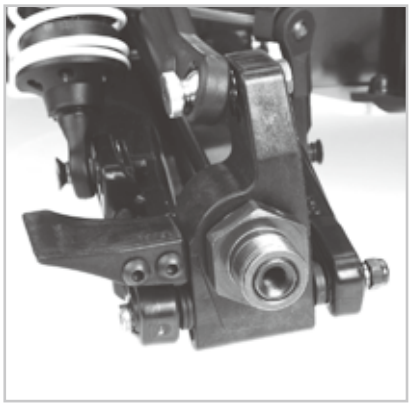
Adding an anti-roll car, or stiffening it, reduces traction at that end of the car. Therefore, it feels like the opposite end has more grip. As anti-roll bars reduce body roll in turns, so they make the car feel more direct, and make it change direction quicker. Normally, different thickness of anti-roll bars are used to adjust the setup.

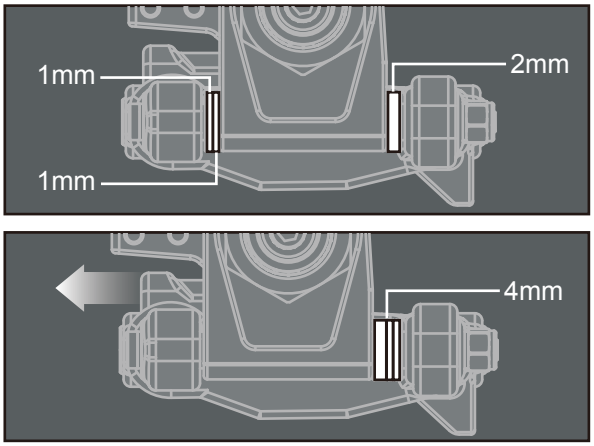
	Soft (or none)	Stiff
Front	▶ More steering ▶ Slow response	▶ Reduce low-speed steering ▶ Faster steering response
Rear	▶ More traction	▶ More steering ▶ Better power out of corners

5 Wheelbase

Basic Setup: 2mm

The shorter the wheelbase the easier it is for the car to rotate in the corner. Also, when you adjust the wheelbase by moving the rear axles forward, more weight will be put over the rear axle of the car. It can cause an oversteer situation



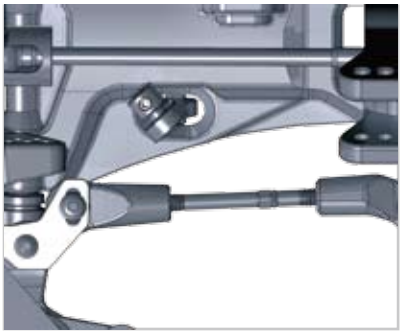


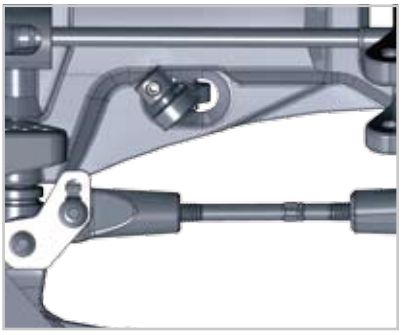
Longer	Shorter
▶ More stable ▶ Good on wide-open tracks	▶ Good for small and tight tracks ▶ May be too twitchy

6 Ackerman

Basic Setup: Middle Location

More Ackermann means bigger difference in steering angle between the two front wheels and vice verse. Add more shims generates more Ackermann effect. Less shims means less Ackermann effect.



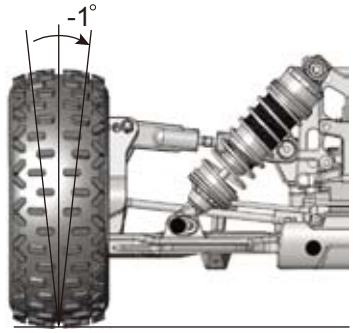


More Ackermann (bigger difference in steering angle between the two front wheels)	Less Ackermann (smaller, or no difference in steering angle between the two front wheels)
▶ Consistent steering ▶ Smooth ▶ Good for low speed and tight turns	▶ More Aggressive at high speeds ▶ Aggressive turn-in ▶ Good for mid-to-high traction tracks with higher cornering speed

7 Front Camber

Basic Setup: Front -1°

Camber describes the angle of the wheels as their tops lean to or away from the chassis. Negative camber means the tire leans inward at the top. We don't use positive camber. Front camber is largely affected by the caster angle. Higher caster angle (lean backward) requires less front camber. Less caster angle needs more negative camber. Normally, we adjust upper arm adjustable linkage rod to get the camber angle with the included 4.5mm flare nut wrench. H.A.R.D. H7105 1/8 Buggy Cambertoe Setup Gauge is the right tool to setup the camber angle.

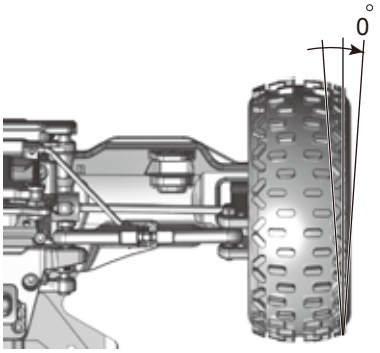


More Camber	Less Camber
▶ More side traction ▶ Better steering ▶ Too much negative camber can actually reduce the cornering grip	▶ Less side traction ▶ Less steering

8 Front Toe

Basic Setup: Front 0°

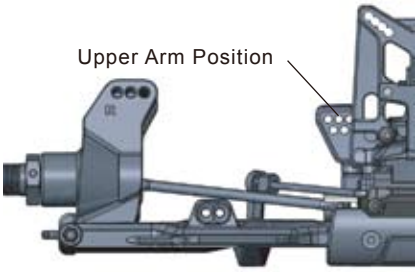
Toe-in/toe-out describes the angle of the wheels when viewed from above. Inward means toe-in and outward means toe-out. The included 5mm flare nut wrench is used to adjust the steering linkage rod to get the front toe angle you need. H.A.R.D. H7105 1/8 Buggy Cambertoe Setup Gauge is the right tool to setup the camber angle.



Toe-out	Toe-in
▶ More steering entering a corner ▶ Instant steering response ▶ Instability on bumpy/slippery surfaces	▶ More stable ▶ Decrease steering into a corner ▶ Better steering out of a turn

9 Front Roll Center Setup

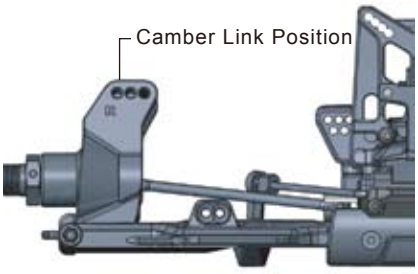
Roll center is determined by the car's suspension geometry. The roll center is a point around which the chassis rolls. More chassis roll equals more grip. After adjusting the roll center, always make sure the camber remains the same.



▶ Front Upper Arm Inner Position

Upper Hole (Parallel Link)	Lower Hole (Angled Link)
▶ Higher Roll Center w/less roll ▶ More initial grip into corners ▶ Less grip ▶ Quick direction change	▶ Lower Roll Center w/more roll ▶ Smooth and consistent ▶ Less responsive

Hinge Pin Position	Inner	Outer
Effect	1.More grip 2.Good for bumpy tracks	1. Less grip 2. Good for flat high traction tracks



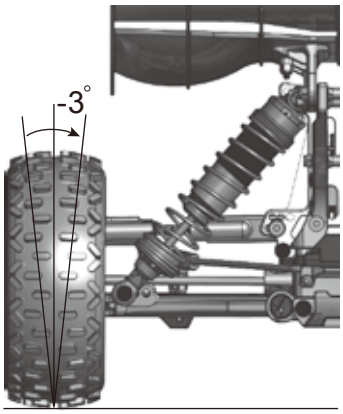
▶ Front Upper Arm Link Length

Outside Hole (Longer Link)	Inside Hole (Shorter Link)
▶ More roll and more grip in corners, especially the middle part ▶ Rolls and dives more in turns ▶ Make the car hook	▶ Less roll, a little less grip ▶ Stable in bumps and curves sections ▶ A little more turn-in, but less steering in mid-corner

10 Rear Camber

Basic Setup: Rear -3°

Camber describes the angle of the wheels as their tops lean to or away from the chassis. Negative camber means the tire leans inward at the top. We don't use positive camber. Normally, we adjust upper arm pivot ball to get the camber angle with the included 6mm flare nut wrench. H.A.R.D. H7105 1/8 Buggy Cambertoe Setup Gauge is the right tool to setup the camber angle.

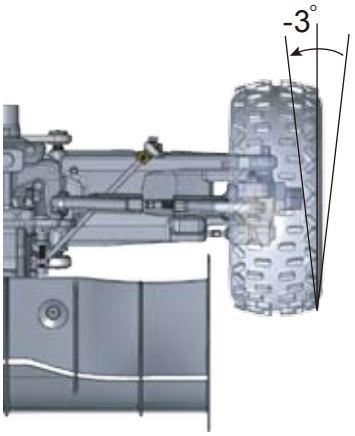


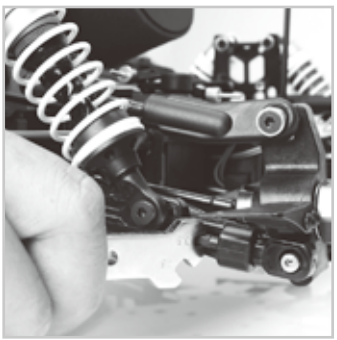
More Camber	Less Camber
▶ More side traction ▶ More traction under braking ▶ Too much negative camber can actually reduce the straight line stability	▶ Less side traction ▶ Less traction under braking ▶ Better steering

11 Rear Toe

Basic Setup: Rear -3°

Toe-in/toe-out describes the angle of the wheels when viewed from above. Inward means toe-in and outward means toe-out . We don't use toe-out for the rear. Please use arm toe rod to adjust the Toe-in/Toe-out and adjust the distance. (0.6 mm→1 degree , 1.2 mm→ 2 degree, 1.9 mm→ 3 degree) H.A.R.D. H7105 1/8 Buggy Cambertoe Setup Gauge is the right tool to setup the camber angle.

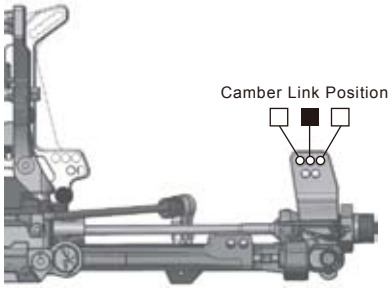




Less Rear Toe-in	More Rear Toe-in
▶ Higher top speed ▶ Breaking loose rear end ▶ More steering	▶ More straight line stability ▶ Less top speed ▶ More traction ▶ Less steering

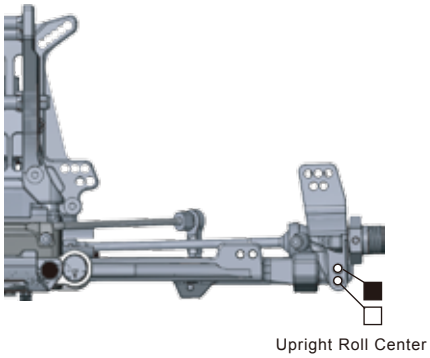
12 Rear Roll Center Setup

Roll center is determined by the car's suspension geometry. The roll center is a point around which the chassis rolls. More chassis roll equals more grip. After adjusting the roll center, always make sure the camber remains the same.



▶ Rear Upper Arm Link Length

Outside Hole (Longer Link)	Inside Hole (Shorter Link)
▶ More roll ▶ More rear traction in turns, and coming out of them ▶ Enough rear camber is important	▶ Less roll ▶ The rear feels stable ▶ More steering, especially when braking



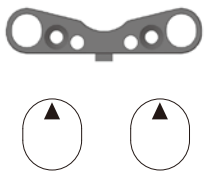
▶ Rear Lower Arm Outside Position

Upper Hole	Lower Hole
▶ Lower Roll Center w/more roll ▶ More traction	▶ Higher Roll Center w/less roll ▶ Less Traction

13 Rear Anti-Squat

Rear anti-squat design is used to prevent the rear end from squatting down too much under acceleration. It also helps the car to have a quicker initial acceleration. The harder you brake or accelerate, the bigger the effect of anti-squat is.

More Anti-Squat	Less Anti-Squat
▶ A little more powering out of corners ▶ Jump a little higher and further ▶ Resist squatting on corner exit ▶ Better ability to handle large and successive bumps ▶ Too much anti-squat can make the car spin out in turns	▶ More rear traction while accelerating on a slippery or dusty track ▶ More side bite ▶ Little anti-squat makes the rear end stable.



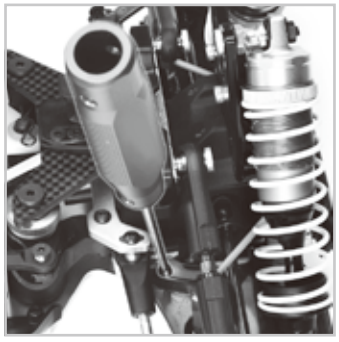
Basic Setup

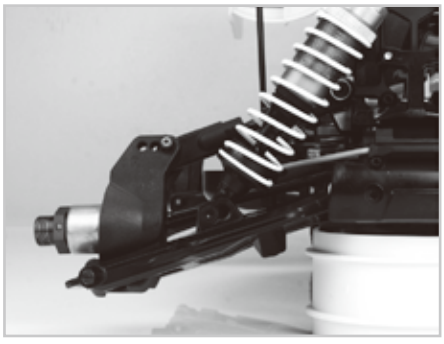
14 Droop

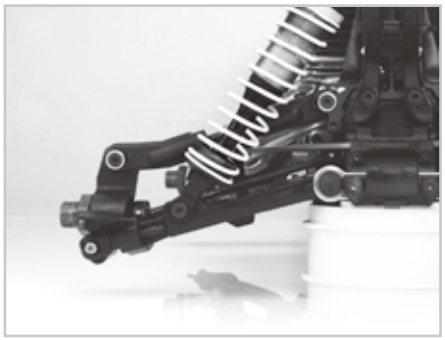
Basic Setup: Front - Max Rear - Max

Droop (or Down Stop) is used to limit the downward travel of the rear suspension. The droop (down stop) point is measured as the distance between the ground and the bottom of suspension arm (need to place the car on the wheels). Before start to measure the rear droop, please make sure both left and right hub carriers are of the same level.

If the suspension is going to be able to absorb ruts and holes without upset the car, an adequate droop setting is critical.







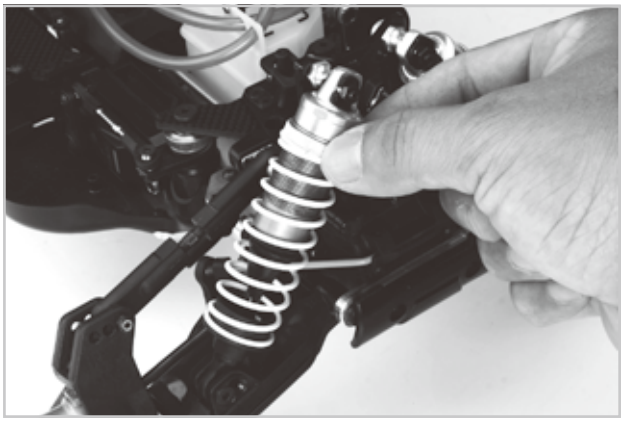
More Droop	Less Droop
▶ Better handling on bumpy tracks ▶ Consistent traction ▶ Land better after jumps	▶ Change direction and cornering faster ▶ Good for smooth surfaces

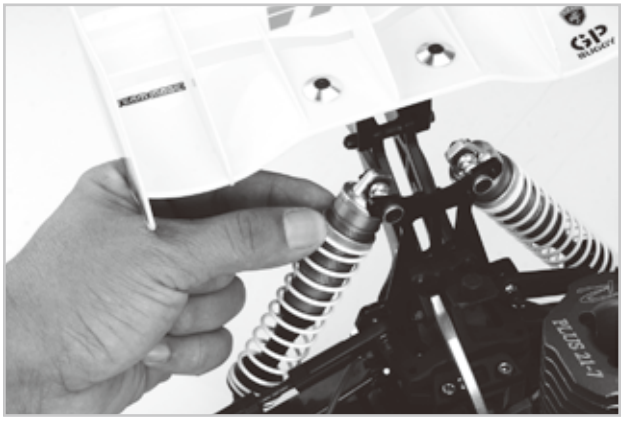
15 Ride Height

Basic Setup: Front 27mm Rear 29mm

Ride height describes the distance of the car from the bottom of the chassis to the ground. To setup the ride height, you will need to have the car fully equipped. Always check the ride height after finishing all other adjustments. We suggest you to use ride height gauge to measure the distance.

One a low-bite track you can increase the traction by raising the ride height. Normally, the higher the ride height, the more grip you are going to have. Less ride height generally means less grip because you have less weight transfer. When adjusting ride height, don't raise the height so much that the car no longer has any droop (please find the next section).





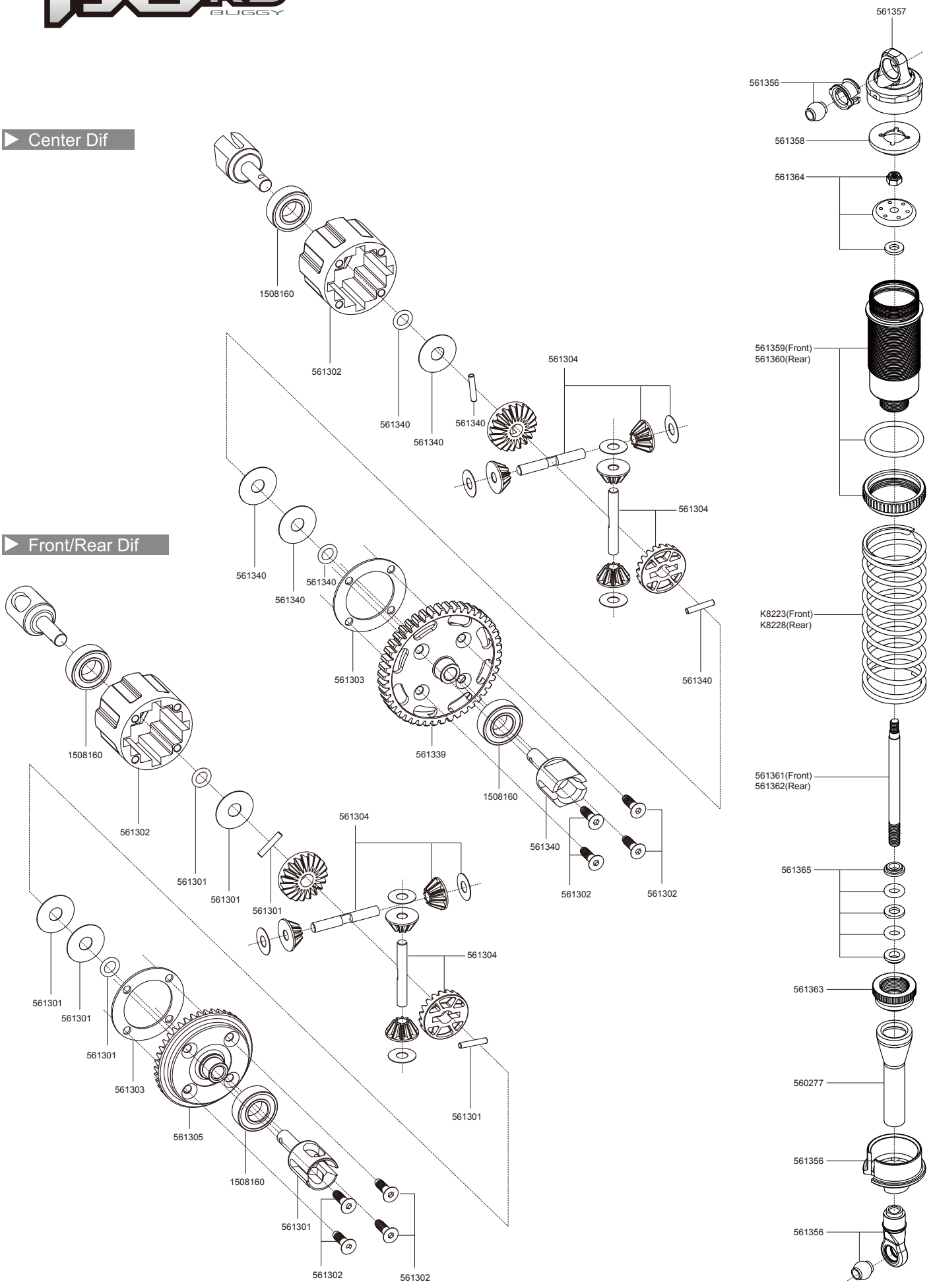
	Lower Ride Height	Higher Ride Height
Front	▶ Quicker steering response ▶ Less chance of traction roll	▶ Slower steering response ▶ More traction ▶ More chance to traction roll Jump higher and farther
Rear	▶ More traction under braking ▶ Less chance of traction roll	▶ More traction ▶ Jump higher and farther

16 Rear Wing

A bigger wing or at more of an angle can add rear downforce and generate more rear traction. Side wing is more for cornering traction.

▶ Center Dif

▶ Front/Rear Dif



B3RS BUGGY

561353 561353 561353 126330 126335 561330 123516BU 123510BU 561342 561342 561342 561342 561342 126330 561330 561356 561330 561356 561330 561330 123518 K5114 111007ST 111007ST 123518 126326-5 126306S 561329 561309 123518 561334 123516BU 561334 560243 561334 561334 123518 561311 561333 561332 561332 126208BU-6 561309 560535 561305 130102 1508160 560244 560245 152001 560116 561309 561332 561332 561331 123518 115001BK 126312S 115001BK 126314 561335 561335 561335 561355 561356 561336 561368 561368 561337 561367 1508160 560228 561336 560123 561337 111007ST 561338 561337 560123 561345 126308BU 126312 126312 111003 111003 561345 561348 561344 561344 561343 126308 115016 126303NL 115028BK 560164 561341 561341 561341 126308 126308BU 114046 126308BU 561346 114046 561346 111003 126312 560178 111003 126312 561344 561348 561347 560286 560286 560286 560164 560284 560164 560286 560286 560286 560285 560285 123510C 123510C 560284 115027BK 126314 115027BK 116133-5C 111007F 130108 561324 150610 561324 130108 150610 561326 561325 150307 561326 561325 150307 561324 561323 561325 150610 561323 111007ST 126312C 126312C 561349 561349 561352 150510O K6505-15 150510O 130105 116226 561352 K6511 561352 560187 560186 130105 130105 560245 152001 561313 561315 561314 123516BU 126310 561306 561314 123510C 123516BU 126306S 561356 561308 123510C 561356 561306 561309 123510 123510 123510 561307 126313BU-5 560244 1508160 561305 130102 561350 123518 561312 560316 560316 561309 560316 561310 561311 123518 560316 561322 123522 115001BK 560116 126314 126312S 560530 561309 126208BU-6 561319 561322 561354 561320 111007ST 561321 1508160 561325 561319 1508160 560123 560123 560123 560123 561319 561317 561367 561318 560130 561317 111007ST 561356 561356 561366 561366 561351 111118 111118 561351 561327 561328 126412 126412 126412EN 126308 126308 126310 126310 126412EN 126310 126308 126310 126308 126310 126412 126412 126412

B8RS BUGGY Parts List

1	B8RS Spare Parts
Item No.	Item Description
561301	ST Steel F/R Differential Outdrive (2)
561302	Diff Case Set
561303	Diff Case Gasket (4)
561304	Differential Bevel Gear Set (for 1 diff)
561305	Bevel Gear 43T&11T
561306	Front Upper Arm Mount (w/Alum. Stiffener Brace)
561307	Front Shock Tower Stiffener
561308	Hard Coated 7075 Aluminum Front Shock Tower
561309	Front & Rear Diff Gear Box (1 set)
561310	7075 Aluminum Front Lower Front Hinge Pin Plate
561311	Front & Rear Nylon Bumper
561312	7075 Aluminum Front Lower Rear Hinge Pin Plate
561313	Carbon Triangle Plate (Front)
561314	Front Body Post Set
561315	Front 7075 Aluminum Chassis Stiffener
561316	Front Lower Hinge Pin Nylon Cap (4)
561317	Front Lower Arm(2)
561318	Front Hub Carrier Lower Hinge Pin(2)
561319	Front Steering Block(1 pair)
561320	Front Hub Carrier Upper Hinge Pin(2)
561321	Caster Block (1 pair)
561322	Front Upper Arm Set
561323	Servo Saver Post (2)
561324	Servo Saver Set
561325	Steering Rod Nylon Ball & Ball End Set
561326	7075 Aluminum Steering Linkage Plate
561327	7075 Aluminum 3mm Chassis
561328	Chassis Side Guard (1 pair)
561329	Hard Coated 7075 Aluminum Rear Shock Tower
561330	Wing Mount & Holding Set
561331	7075 Aluminum Rear Lower(1 & 2 Toe Degree) Hinge Pin Mount (Front)
561332	Rear Lower Hinge Pin Nylon Cap (4)
561333	7075 Aluminum Rear Lower Rear Hinge Pin Plate
561334	Rear 7075 Aluminum Chassis Stiffener
561335	Rear Upper Arm(2)
561336	Rear Hub Carrier & Mud Sweeper (1 pair)
561337	Rear Lower Arm(2)
561338	Rear Hub Carrier Lower Hinge Pin(2)
561339	46T Main Gear
561340	ST Steel Brake Cup (2)
561341	Brake Lever Set
561342	Throttle Servo Linkage Set
561343	Carbon Radio Plate
561344	Aluminum Radio Plate Support (3)
561345	Receiver Battery Pack Box
561346	Receiver Box
561347	Steering Servo Mount
561348	Servo Mount(4)
561349	Aluminum Engine Mount (2)
561350	Fuel Tank
561351	Fuel Tank Post (2)
561352	Clutch Flywheel, Collet & Clutch Nut
561353	Rear Wing
561354	Front CVD Driveshaft 128.75mm (2)
561355	Rear CVD Driveshaft 127.25mm (2)
561356	Shock Ball End, Spring Cap & Hardware Set (2)

Item No.	Item Description
561357	Aluminum Shock Upper Cap (2)
561358	Shock Bladder 16mm
561359	Hard Coated Front Shock Body (2)
561360	Hard Coated Rear Shock Body (2)
561361	ST Steel 4x55 mm Front Shock Shaft (2)
561362	ST Steel 4x65mm Rear Shock Shaft (2)
561363	Shock End Cap
561364	Shock Piston 16mm (2)
561365	Shock O-Ring & Washer (4pcs/each)
561366	Pipe Holder
561367	Arm Shaft & Adjustment Washer (6)
561368	Rear Hub Carrier Washer
561369	Clear Body (0.8mm)
561370	Front Shock Absorber Set (2)
561371	Rear Shock Absorber Set (2)
K8223	B8 Shock Spring 66L #09
K8228	B8 Shock Spring 86L #07
560107	Differential Silicone Oil #7000 (20ml)
560108	Differential Silicone Oil #1000 (20ml)
560116	Hard Anodized Aluminum Anti-Roll Bar Ball Stud (4)
560123	Aluminum Wheel Adapter, Pin & Nut (2)
560130	ST Steel 4x68.8mm Hinge Pin (for Front Lower) (2)
560164	Hard Coated 7075 Aluminum Brake Cam Post & Cam (2pcs/each)
560178	Servo Arm (Futaba) (2)
560179	Servo Arm (KO, Sanwa, Airtronics & JR) (2)
560182	Clutch Flywheel, Collet & Clutch Nut (for SG shaft)
560186	Clutch Spring 1.1mm (3)
560187	Clutch Shoe (3)
560188	Pipe Spring Set
560203	Shock Silicone Oil #300
560228	ST Steel 4x68.2mm Hinge Pin (for Rear Lower) (2)
560243	Rear Body Mount
560244	ST Steel Small Bevel Gear Outdrive (2)
560245	Hard Coated Alum. 7075 Center Drive Shaft (2)
560276	Shock Silicone Oil #400
560277	Buggy Shock Boot (4)
560284	Center Differential Mount (1 set)
560285	Brake Disc (2)
560286	Brake Plate & Brake Pad
560287	Air Filter Set
560530	Front Anti-Roll Bar 2.3mm Yellow
560535	Rear Anti-Roll Bar 2.7mm Purple
101205	R Clip R8 (10)
111003	3mm Alum. Flat Head Washer (6)
111007F	3mm Flat Locknut (10)
111007ST	3mm Steel Locknut (10)
111051	Round Type Fuel Filter (Small)
111118	R5 R-clip (10)
111146S	TM Dual Alum. Stopper (6) Silver
111147F	3.5mm Steel Flat Nut (6)
114046	Special 24cm Receiver Battery Pack Wire Set (w/mount)
115001BK	Ball End & Steel Ball (6) BLACK
115016	Antenna Rod (2)
115027BK	Ball End & 5.8mm Single Flanged Steel Ball (6) Black
115028BK	Throttle/Brake Ball Cup (4)
116043	Cross Wrench (4, 5, 5.5 & 7mm)
116207	Throttle/Brake Linkage Spring (4)

Item No.	Item Description
117001	Alum. Stopper (4)
117101	TM Black HC Flare Nut Wrench (2.6, 3.5, 4.5, 6mm)
123510	3.5x10mm Steel FH Screw (6)
123510C	3.5x10mm Steel Cap Screw (6)
123516BU	3.5x16mm Steel BH Screw (6)
123518	3.5x18mm Steel FH Screw (6)
123522	3.5x22mm Steel FH Screw (6)
126208BU-6	2.6x8mm Steel Button Head Screw (6)
126303NL	3x3mm Thread Lock Set Screw (6)
126306S	3x6mm Set Screw (6)
126308	3x8mm Steel F.H. Screw (6)
126308BU	3x8mm Steel Button Head Screw (6)
126308SE	3x8mm Steel Flat Round Servo Mount Screw (6)
126310	3x10mm Steel F.H. Screw (6)
126312	3x12mm Steel F.H. Screw (6)
126312C	3x12mm Cap Screw (6)
126312S	3x12mm Set Screw (6)
126313BU-5	3.5x13mm Steel Button Head Screw (6)
126314	3x14mm Steel FH Screw (6)
126326-5	3.5x26mm Steel FH Screw (6)
126330	3x30mm Cap Screw (6)
126335	3x35mm Cap Screw (6)
126412	4x12mm Steel F.H. Screw (6)
126412EN	4mm Steel Flat Round Engine Mount Screw (6)
130102	8.1x12x0.2mm Shim (10)
130105	5x9x0.15mm (5), 5x9x0.3mm (3), 5.2x12x0.2mm (2) Shim
150307	3x7x3mm Bearing (2)
150510O	5x10x4mm Dust-Resistant Bearing (4) Orange
150610	6x10x3mm Bearing (2)
150816O	8x16x5mm Dust-Resistant Bearing (4) Orange
152001	O-RING P5(10)
K5114	K Factory Alum. 3.5mm Locknut (6)
K6401-1	Dual Stage Foam Element (w/air filter oil) (2)
K6505-15	K Factory 1/8 Buggy Clutch Housing 15T
K6511	K Factory Alum. Clutch Shoe (3)

2 B8RS Optional Parts

Item No.	Item Description
114052	IB 6v-1400mah Ni-MH Receiver Pack (Turbo 35 approved)
114055	6v-1400mah Ni-MH Receiver Pack (Turbo 35 approved)
114203-43	Black Magic Metered Glow Starter w/GP 4300mah Battery
116006	Curved Model Scissors
116025	Cross Wrench (7, 8, 10, 12 & 17mm)
116133-5C	3x35mm CR Adjustable Rod (2)
116226	3.1x4.8x0.5mm Shim (10)
117002-1M	TM Black HC Hex Wrench Metric Size 1.5mm
117002-2M	TM Black HC Hex Wrench Metric Size 2.0mm
117002-3M	TM Black HC Hex Wrench Metric Size 2.5mm
117002-4M	TM Black HC Hex Wrench Metric Size 3.0mm
117006	TM Black HC Pivot Ball Nut Hex Wrench 5mm
117009	TM Black HC Metric Ball Stud Nut Driver 5mm
117010	TM Black HC Nut Driver 5.5mm (for 3mm nut)
117012	TM Black HC Nut Driver 8mm (for glow plug & 5mm nut)
117013	TM Black HC Push Type Clutch Nut Driver 10mm
117023	TM Black HC Carb Tuning Slotted Screw Driver (4mm)
119206	TM Transmitter Bag (Black)

Item No.	Item Description
119213	TM Starter Box Bag - Large (Black)
119220	TM New Formula 8 (F8) Car Bag (for 1/8 cars)
119232	TM T Shirt (Black)
H6515F	H5S Starter Box Off-Road
H7106	1/8 Truggy Cambertoe Setup Gauge
K6505-12	K Factory 1/8 Buggy Clutch Housing 12T
K6505-13	K Factory 1/8 Buggy Clutch Housing 13T
K6505-14	K Factory 1/8 Buggy Clutch Housing 14T
K6505-15	K Factory 1/8 Buggy Clutch Housing 15T
K6505-16	K Factory 1/8 Buggy Clutch Housing 16T
K6505-17	K Factory 1/8 Buggy Clutch Housing 17T
K6505-18	K Factory 1/8 Buggy Clutch Housing 18T
K8221	Shock Spring 66L #07
K8222	Shock Spring 66L #08
K8224	Shock Spring 66L #10
K8225	Shock Spring 66L #11
K8226	Shock Spring 86L #05
K8227	Shock Spring 86L #06
K8229	Shock Spring 86L #08
K8230	Shock Spring 86L #09

B3RS BUGGY

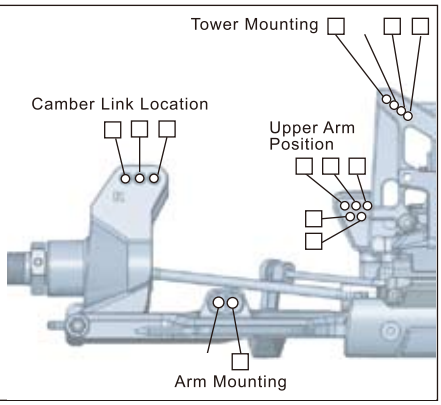
Date: _____ Driver: _____

Event: _____ Car: _____

Track: _____ Weight: _____

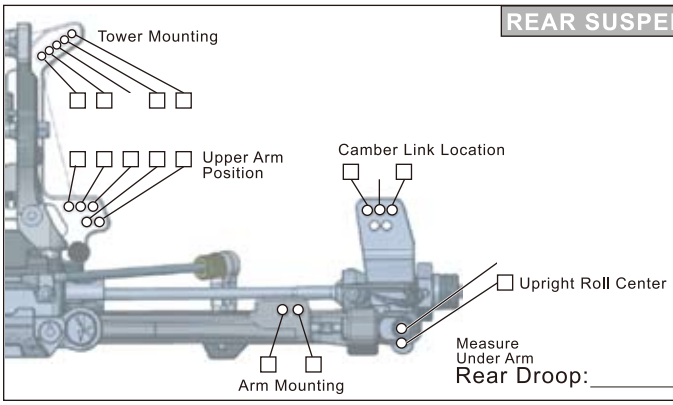
standard SETUP SHEET

FRONT SUSPENSION



Measure Under Arm
Front Droop: _____ mm

REAR SUSPENSION

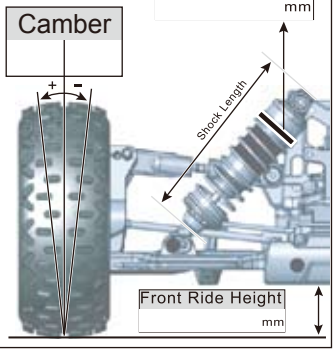


Measure Under Arm
Rear Droop: _____ mm

FRONT SUSPENSION

Holder Position _____ mm

Camber



Front Ride Height _____ mm

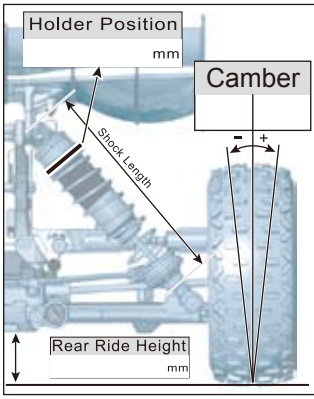
Shocks

Shock Length _____ mm
Oil _____ wt
Pison _____
Spring _____

REAR SUSPENSION

Holder Position _____ mm

Camber



Rear Ride Height _____ mm

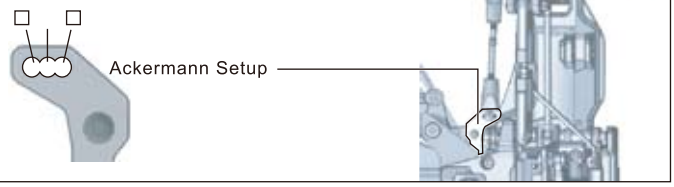
Shocks

Shock Length _____ mm
Oil _____ wt
Pison _____
Spring _____

FRONT SUSPENSION

Toe Angle

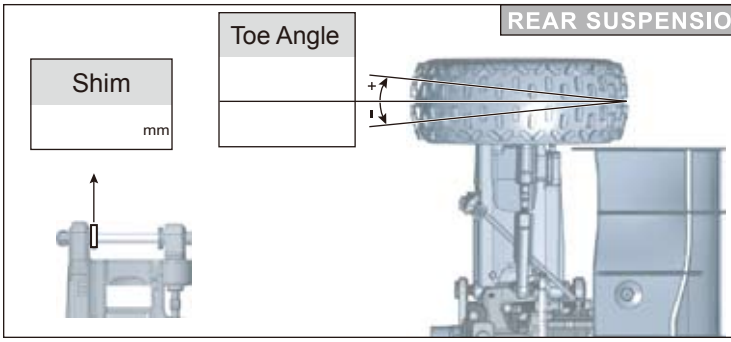
Toeinout



REAR SUSPENSION

Shim _____ mm

Toe Angle

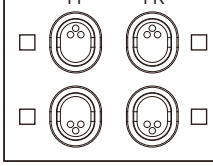


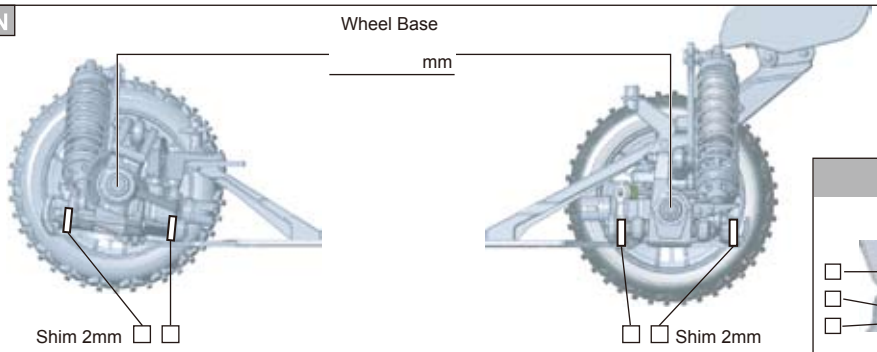
FRONT SUSPENSION

Wheel Base _____ mm

Roll Center

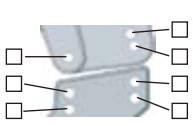
FF FR





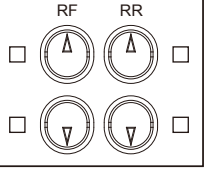
REAR SUSPENSION

Wing



Roll Center

RF RR



ENGINE

Gear Ratio _____ T / _____ T

Clutch Spring _____ mm
Air Filter _____

Clutch Shoe _____
Plug _____

Engine _____
Manifold _____

Gasket _____ mm
Muffler _____

Reducer _____
Fuel _____

ANTI ROLL BAR

FRONT /mm

REAR /mm

COMMENTS

Race Time / Lap: _____

Best Lap Time: _____

Position: _____

Notes: _____

_____

DIFF OIL

Front _____ wt Other _____

Center _____ wt Other _____

Rear _____ wt Other _____

TIRE

Front		Rear
_____	Type	_____
_____	Inserts	_____
_____	Wheels	_____

B3RS BUGGY

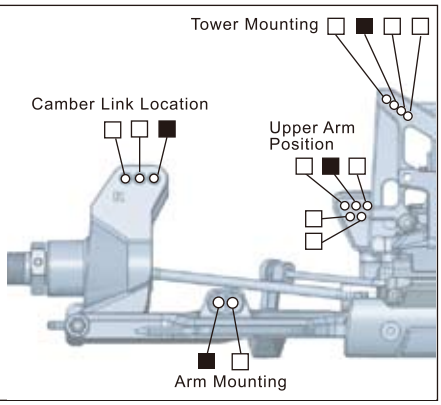
Date: _____ Driver: _____

Event: _____ Car: _____

Track: _____ Weight: _____

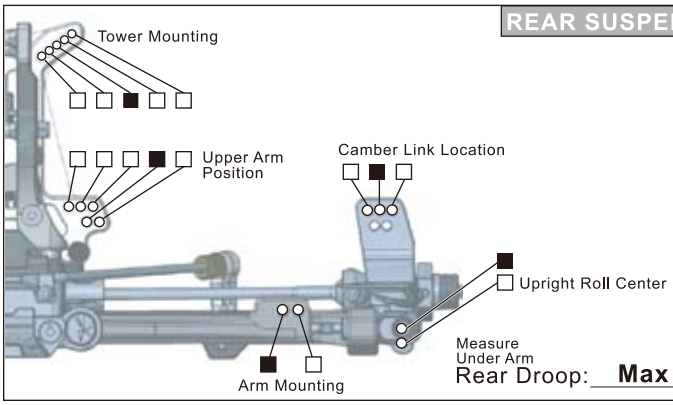
standard SETUP SHEET

FRONT SUSPENSION



Measure Under Arm
Front Droop: **Max** mm

REAR SUSPENSION

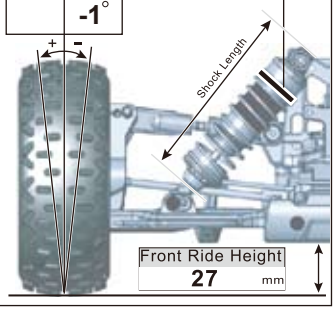


Measure Under Arm
Rear Droop: **Max** mm

FRONT SUSPENSION

Holder Position **0** mm

Camber **-1°**



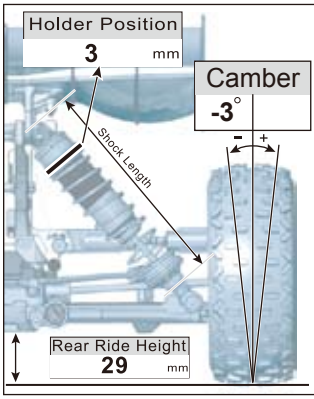
Shocks

Shock Length **90** mm
Oil **400** wt
Pison **Ø 1.3**
Spring **White**

REAR SUSPENSION

Holder Position **3** mm

Camber **-3°**

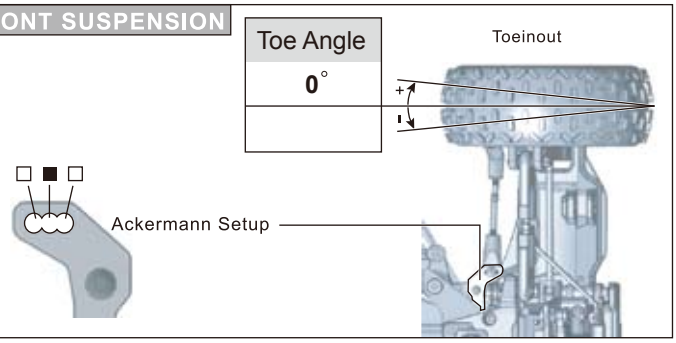


Shocks

Shock Length **105** mm
Oil **300** wt
Pison **Ø 1.3**
Spring **White**

FRONT SUSPENSION

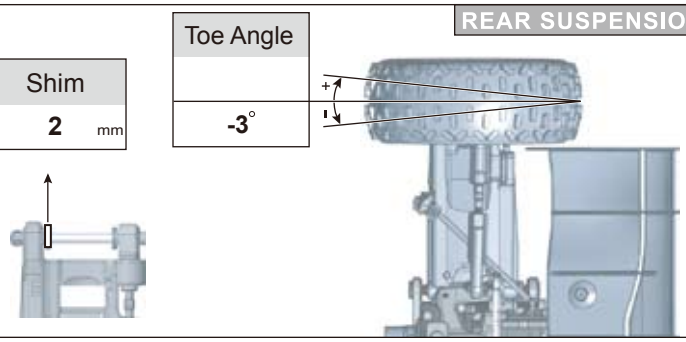
Toe Angle **0°**



REAR SUSPENSION

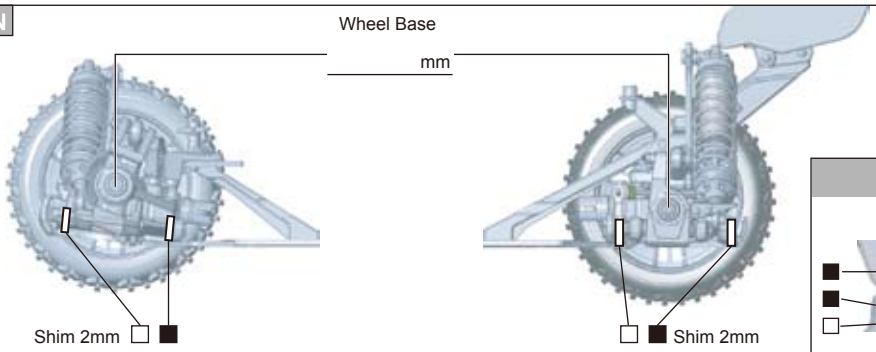
Shim **2** mm

Toe Angle **-3°**

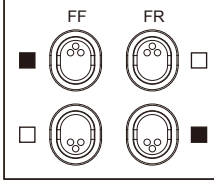


FRONT SUSPENSION

Wheel Base _____ mm



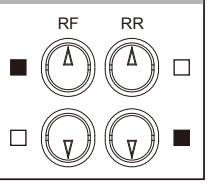
Roll Center



REAR SUSPENSION

Wing

Roll Center



ENGINE

Gear Ratio **15** T / **46** T

Clutch Spring _____ mm
Air Filter _____

Clutch Shoe _____
Plug _____

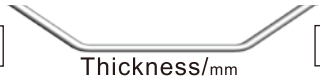
Engine _____
Manifold _____

Gasket _____ mm
Muffler _____

Reducer _____
Fuel _____

ANTI ROLL BAR

FRONT **2.4** /mm



REAR **2.7** /mm

COMMENTS

Race Time / Lap: _____
Best Lap Time: _____
Position: _____
Notes: _____

DIFF OIL

Front **5000** wt Other _____
Center **7000** wt Other _____
Rear **1000** wt Other _____

TIRE

Front		Rear
_____	Type	_____
_____	Inserts	_____
_____	Wheels	_____

⚠ Cautions !!

To prevent any serious personal injury or damage to property, please be responsible when operating this radio controlled car. Team Magic and its distributors have no control over damage resulting from shipping, improper construction or improper usage. Team Magic accepts no responsibility for damages resulting from the use of improper building equipment and operations. By the act of assembling or operating this product, the user accepts all liability. If the buyer is not prepared to accept this liability, then he/she should return this product in a new, unassembled and unused condition to the place of purchase.

▶ This is not a toy. It is a high speed r/c car for persons age 15 and older.

▶ Choose the right place to drive your r/c model
Don't run on streets or highways. This could cause serious accidents.
Don't run r/c cars near people or animals.
Don't run in the house. There is a high risk of fire.
Don't run nearby hospitals or schools. Loud noises may disturb others.

▶ Always inspect your model before operation
Always make sure air filter is clear, oiled and well installed on the car.
Always make sure that no one else is using the same frequency when you are using
Always make sure your transmitter and receiver batteries are fully charged to avoid losing control of the model.
Always make sure the brakes and the throttle function properly before starting your engine.

▶ Fire and fuel safety
Never use real car gasoline in your r/c model engine.
Never store fuel near heating devices or flames. No exposure to direct sunlight as well.
Keep r/c fuel away from children.
Be aware that some parts will be hot after operation, such as engine, chassis and pipe set. Don't touch these parts until they have cooled.
R/C fuel is flammable and poisonous. Please avoid direct contact. Also, be aware of spilled or leaking fuel. They can cause fires or explosions.
This produce contains a chemical known to the state of California to cause cancer and birth defects or other reproductive harm.

Based on continuous product development, the up-to-date specifications of the kit may vary. We reserve all rights to changeany specification without prior notice.

THE POWER OF TEAM MAGIC

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