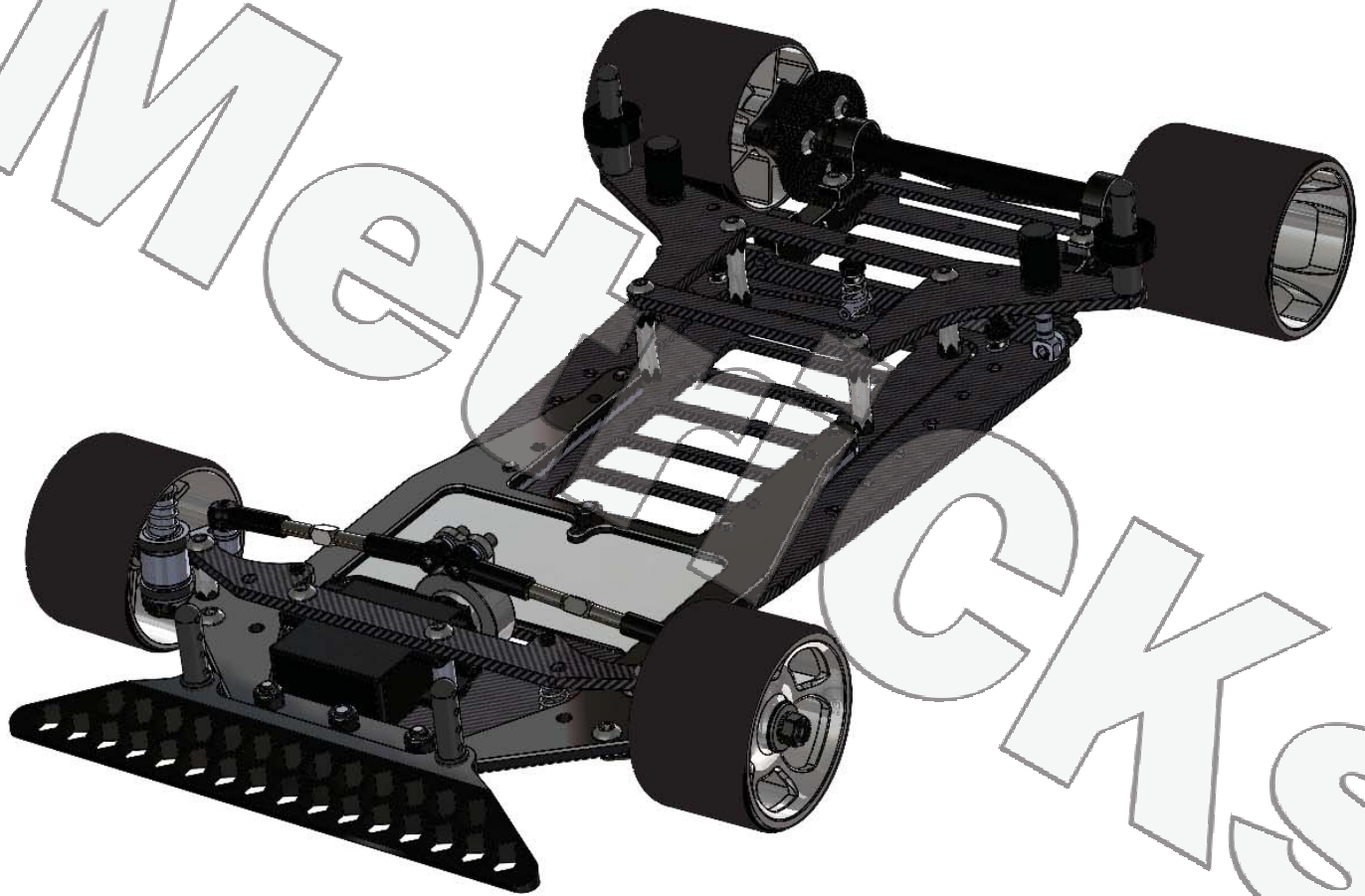


Assembly Manual



1/12th scale road race car kit



6785 Martin Street ~ Rome, NY 13440
Tel + Fax 315-338-0867 ~ www.teamcrc.com



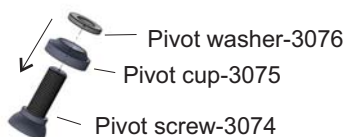
Thank you for choosing another fine road racing machine from the World Champions at Calandra Racing Concepts. The new MetriCKs 1/12th car is the result of well over a year of testing. The MetriCKs is already the 2024 Snowbird, Canadian National and Trinity Shootout Champion.

Looking back...we have built the company by going to races, large and small. Meeting racers all over the world, getting our hands dirty in the pits, rubbing elbows with hobbyists, racers and our customers, all while enjoying the same hobby. When CRC started, the internet didn't exist. Setups and product information was passed along by magazines and word of mouth at R/C race events across the country. CRC was there back then and is there now, supporting our customers and enjoying the hobby, all while trying to win every race we attend by engineering products that are the best. And what company can say the following; "At CRC; we make the cars, we make the tires, we make the batteries, we make the racing surface (Fasttrak carpet) and we make the barriers (Clik Trak)". We have experience in every facet of the hobby/sport. And we have been doing it for 30 years, since 1993.

All of us at CRC are devoted to bringing you top performing products at a great price and value. All CRC staff members take part in the design, building, racing and maintaining CRC products daily. The entire staff races and uses the product. The engineer designing the cars, the CNC operator cutting the parts, the person packing the parts, the staff member shipping the box, the person paying the bills and the guy sweeping the floor. We all race the cars and use the products. We know exactly how the product works and performs in a racing environment as we all enjoy this great hobby just like you.

This assembly manual supplies all the information and guidance you need to build your new MetriCKs with World Championship winning heritage from Calandra Racing Concepts. Please read through the manual to get familiar with the steps needed to build your next winning machine.

Bag 1 Upper Deck to Chassis



1

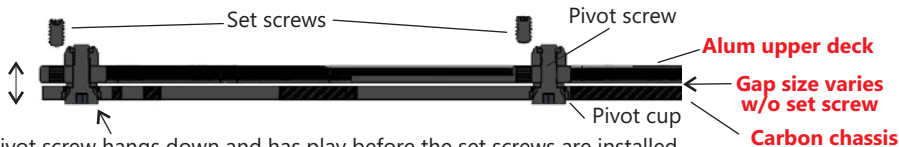
1. To the 3074 pivot screw, add a 3075 pivot cup over the threaded end. Then follow with a 3076 pivot washer. Take all 3 pieces together and push through the underside of the chassis (the side that is countersunk) then thread into the aluminum upper deck. After the pivot screws thread into the upper deck they are secured with 2 lock nuts (1497). You will notice that, at this point, the upper deck and lower chassis move up and down and will touch each other. This will be corrected with the M3 set screws.

2. Apply a drop of thread lock to the M3 set screws. The 3077 M3 set screws thread in from the top of the upper deck and will be threaded in and adjusted to remove this play and movement. The only purpose of the M3 set screws is to remove the up/down play from the pivot assembly and act as a pivot point.

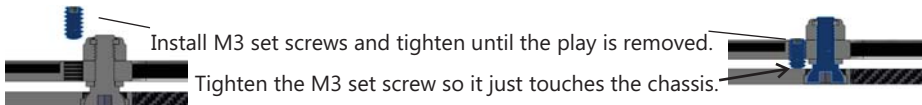
Please refer to the illustrations below on how to set the position and tightness of the two M3 set screws that adjust pivot play. The upper deck should pivot side-to-side freely with no "up and down" play. If the set screw is set too tight, the side-to-side pivot action will be bound.

For tires larger than 41mm, you may need to install 2 (total 4) of the 3076 pivot washers.

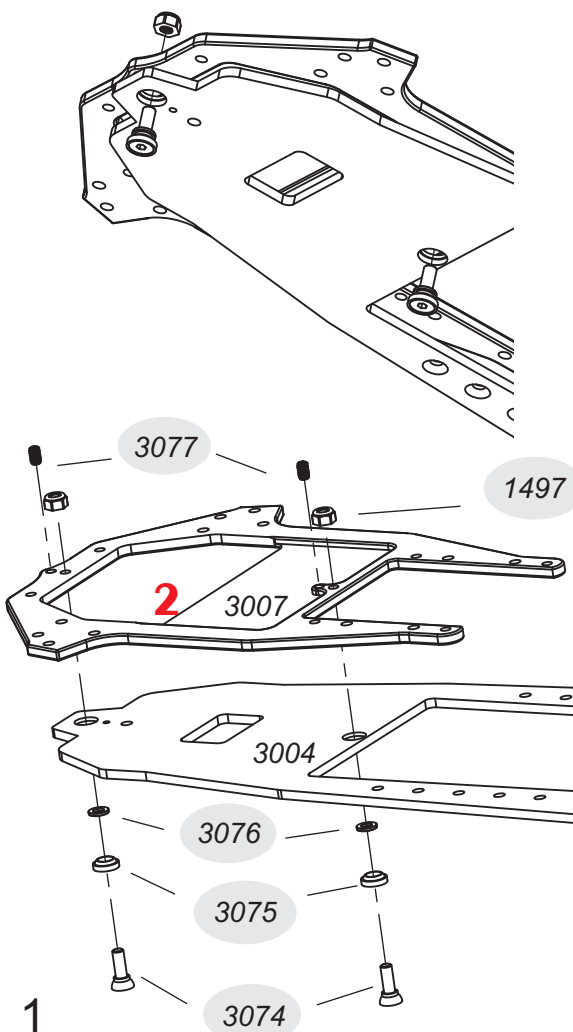
A closer look into installing the CRC pivot system



Pivot screw hangs down and has play before the set screws are installed. Also, upper deck and chassis move up and down without set screw in position.



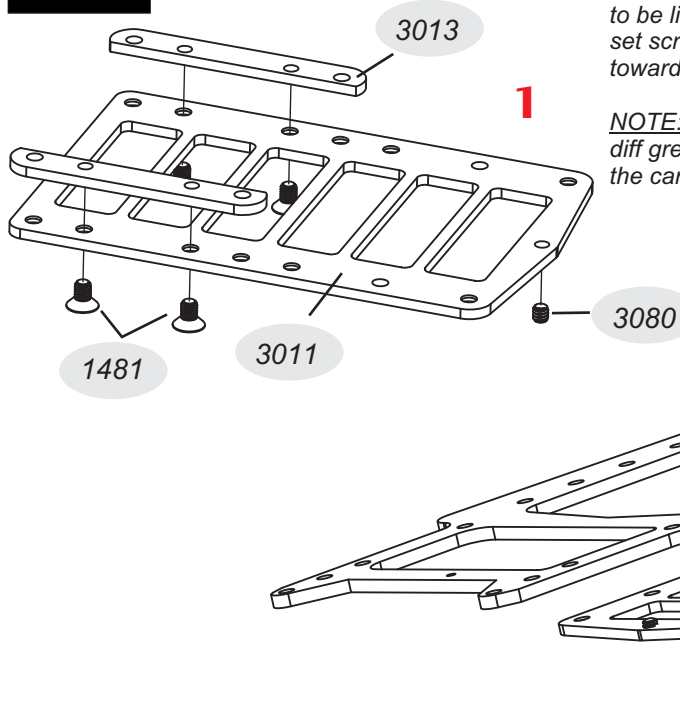
The upper deck should pivot freely, smoothly and without bind. There should be little to NO up/down play between the upper deck and chassis. If the upper plate does not pivot smoothly, one or both of the set screws are too tight. You are better off slightly loose rather than too tight. But be sure there is no bind and it rolls smoothly.



1

Bag 1 cont

Battery plate to upper deck



1. Attach the plastic battery spacers (3013) to the carbon fiber battery plate (3011) with the #1481 M3 x 5 flat head screws. These screws self-thread into the plastic, so use very little force, no need to crank them. The plastic is there only as a spacer, so they only need to be lightly secured. Thread the 3080 M3 x 3 set screw into the battery plate. Later, this set screw will adjust and limit your "up-travel". Be sure the screw does not protrude toward the bottom. It must be flush or sunk in.

NOTE: Any time a metal screw is threaded into carbon, it is a good idea to add a drop of diff grease or even thread lock. This liquid acts as a lubricant as the metal cuts threads in the carbon.

2. Use the #1482 M3 x 8 flat head screws to secure the battery plate and spacer to the upper deck. A little dab of thread lock is a good idea on these screws.

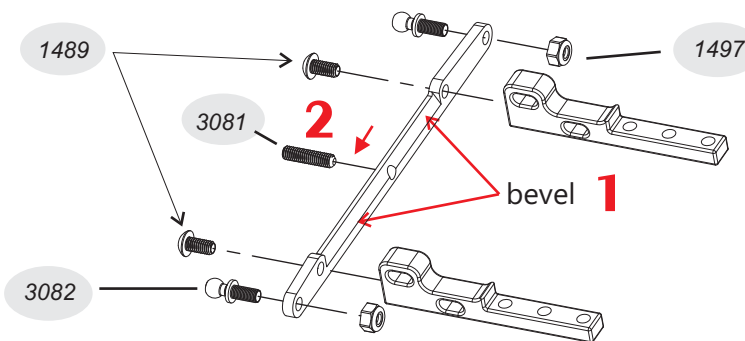
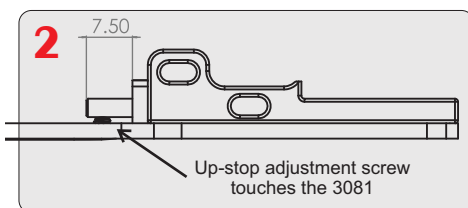
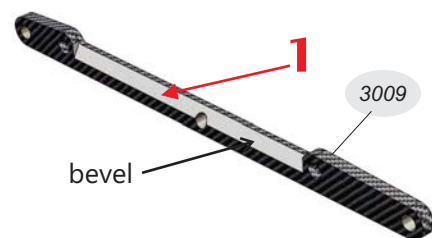
Bag 2

1. To increase the pinion/spur gear range, bevel the edge of the 3009 damper strut with a file or Dremel. This will increase available space to move the motor forward. Just file a 45 degree bevel into the strut as shown to the right. This is NOT mandatory, just a convenience.

2. Carefully install the 3081 center suspension post set screw into the damper strut. Thread into the damper strut so that the screw is flush with the back side of the damper strut. Be sure to thread the set screw straight and perpendicular into the carbon fiber. Put a little oil or grease on the screw first.

Please note the direction and orientation of the damper strut that attaches to the 2 bulkheads. Use M3 x 6mm button head (#1489) screws to mount the strut to the 2 bulkheads. Leave these slightly loose until this assembly is bolted to the chassis.

Attach 2 of the ballstuds (3082) to the damper strut using M3 locknuts.

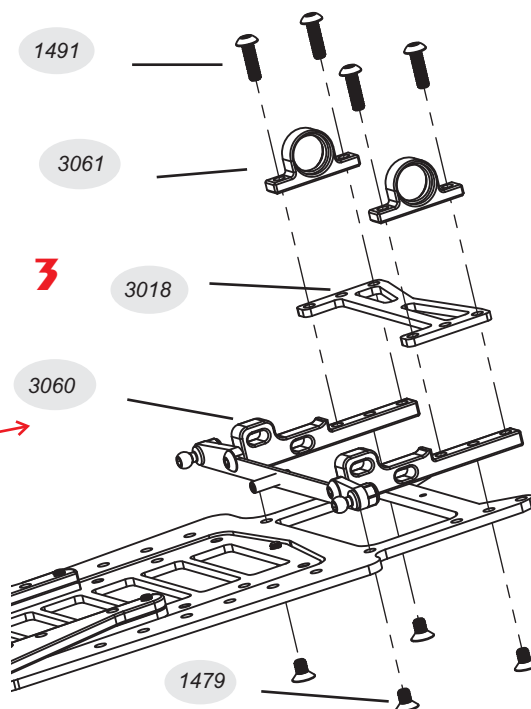


3. The two 3061 axle carriers attach to the motor pods with the 1491 M3 x 10 button head screws. The kit 2.25 mm ride spacer (3018) goes between the axle carriers (3061) and the lower bulkhead (3060). The entire assembly attaches to the chassis with 4 of the M3 x 5 mm flatheads (1479). Be sure to use ONLY the M3 x 5 screws here, nothing longer.

With the entire pod bolted flat to the chassis, don't forget to tighten the 1489 button heads that we left slightly loose from the earlier step.

** Pro TIP **

To alter the ride height in the rear, in addition to the kit 2.25 spacer, CRC has 2 and 2.5 mm thick ride spacers available.



Ultra-tune Front End

Bag 3

Welcome to the best front end in 1/12th scale racing; The CRC Ultra-tune Front End.

1. Use two M3 x 5mm button heads to mount the 4/-1 CC plate to the upper deck.

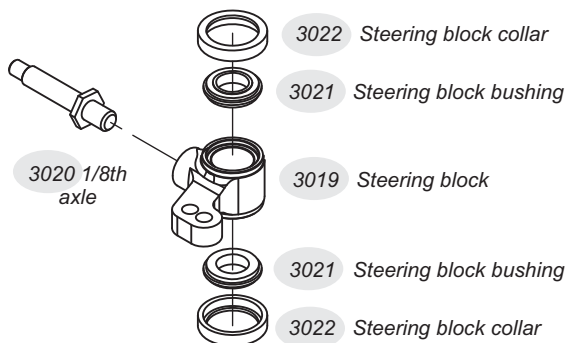
2. Push a small body clip through the vent hole in the king pin. This is a safe way to hold the king pin while securing it to the C/C plate (caster/camber plate). Tighten the king pin to the C/C plate with the M3 x 8 BH (1490) while holding the body clip.

3. Populate the steering block with the 3021 bushing and the 3022 collars, both top and bottom. Be sure the collars are snug, not super tight, just snug. The bushing and the collar should be square and straight in the steering block.

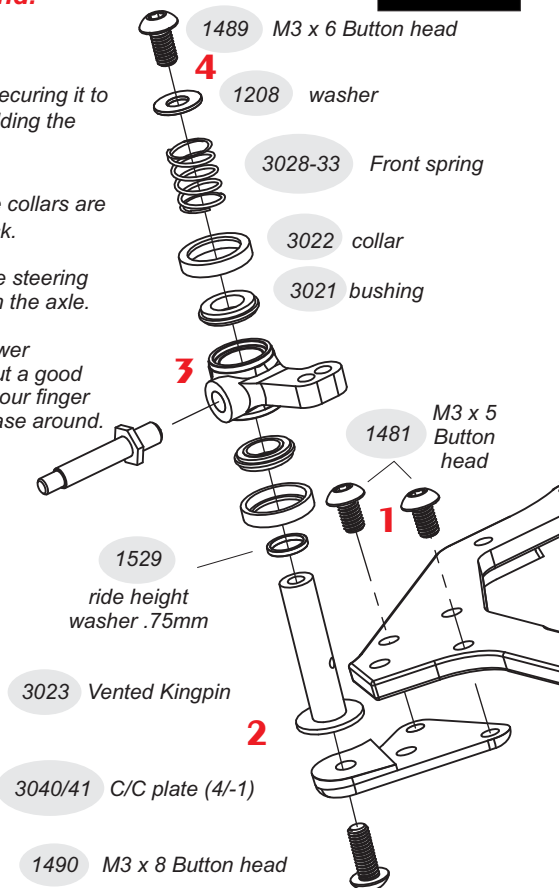
Add a drop of thread locker to the front axle (3020) and tighten FIRMLY into the 3019 steering block. Drop the steering block over the kingpin to help hold the steering block while tightening. Use a deep 5.5mm nut driver to tighten the axle.

The CRC team uses grease (not silicone fluid) to damp and smooth the front suspension. Place ONLY the lower bushing/steering block over the kingpin and add Kyosho 15k Diff grease to the gap between the bushings. Put a good amount in the gap between bushings. Before installing the top of the steering block fully over kingpin, place your finger over the bushing hole to keep the grease trapped in the block. Work the block up and down, working the grease around.

4. Put the front spring over the kingpin and top off with the washer and M3 x 6 button head.



**** Pro TIP ****
The CRC kingpin and bushing fit is very good in stock form. For an even smoother, more plush front suspension, use Mothers Aluminum polish on the kingpins to make them super smooth.



Servo Plate

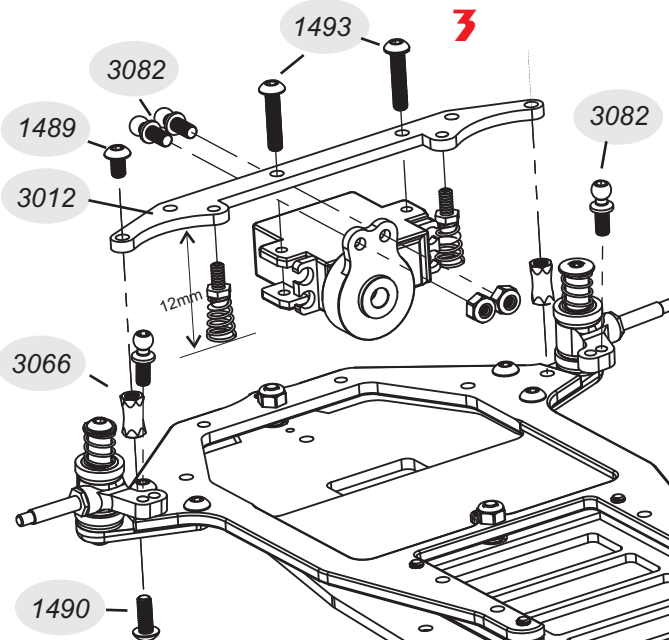
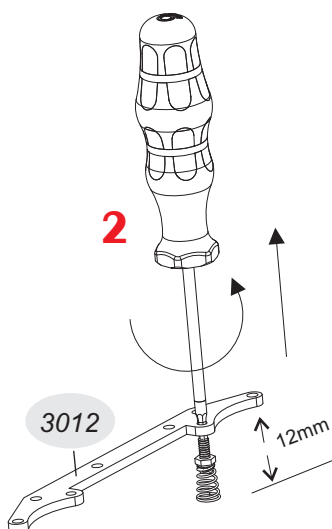
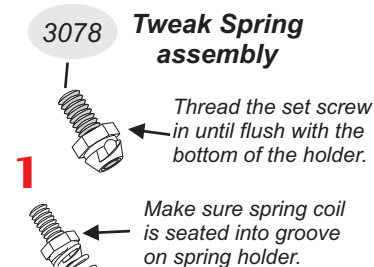
Bag 4

1. Thread a M3 x 12 set screw into a plastic spring holder. Turn the set screw until the base of the screw is FLUSH with the bottom of the spring holder. Snap the tapered side roll spring onto the plastic spring holder.

2. Put a 1.5mm hex driver through the tweak hole in the 3012 carbon servo plate from the top. Apply some pressure from below while turning counter-clockwise drawing the tweak spring assembly up into the carbon. Keep it perpendicular and square. Continue until there is 12mm from the bottom of the spring to the underside of the servo plate. This is a good start before tweaking the car after fully assembled. Again, when self-threading into carbon, a little grease or oil on the screw is beneficial.

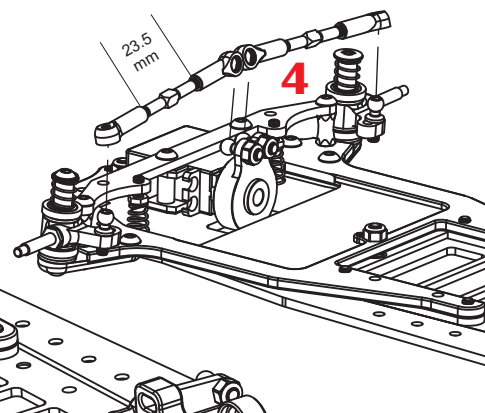
3. The car accepts Sanwa (SXR) mini servos and similar clones (Exalt HB112, MKS HV50). Don't break off any servo ears! We use both the upper and lower ears for added strength. The M3 x 14 self-threads into both ears. These Sanwa style servos are sized correctly to fit the car. The Sanwa is available at CRC. We recommend the Tamiya TAM54799 servo saver.

4. Pop the tie rods and ball cups on the ball studs



Less ackerman,
tires more parallel
better for sharper,
aggressive tracks

More ackerman, inside
tire angled more than outside
Suited for more flowing track.

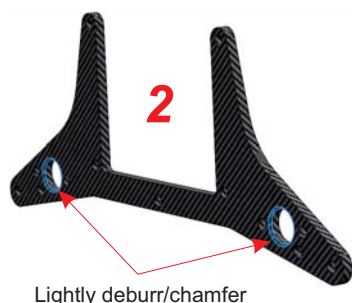
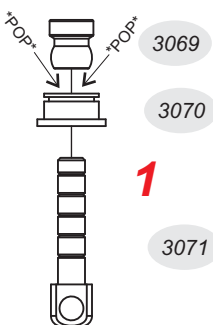


Tweak Assembly

Bag 5

** Build the vertical dampers **

1. Snap the 3069 damper pivot ball into the 3070 damper cup. Carefully snap it in with needle nose pliers. Please NOTE the orientation of the ball and the cup as shown to the left before snapping it in. The CRC 4279 "ball popper" tool works great here for installing and removing the damper ball.



2. Use a hobby knife, deburr and slightly chamfer the underside of the 3008 tweak plate where the damper cup will be placed (large 8mm holes). While this is not mandatory, it will help the installation of the damper cup and make the cup sit perfect in the carbon.

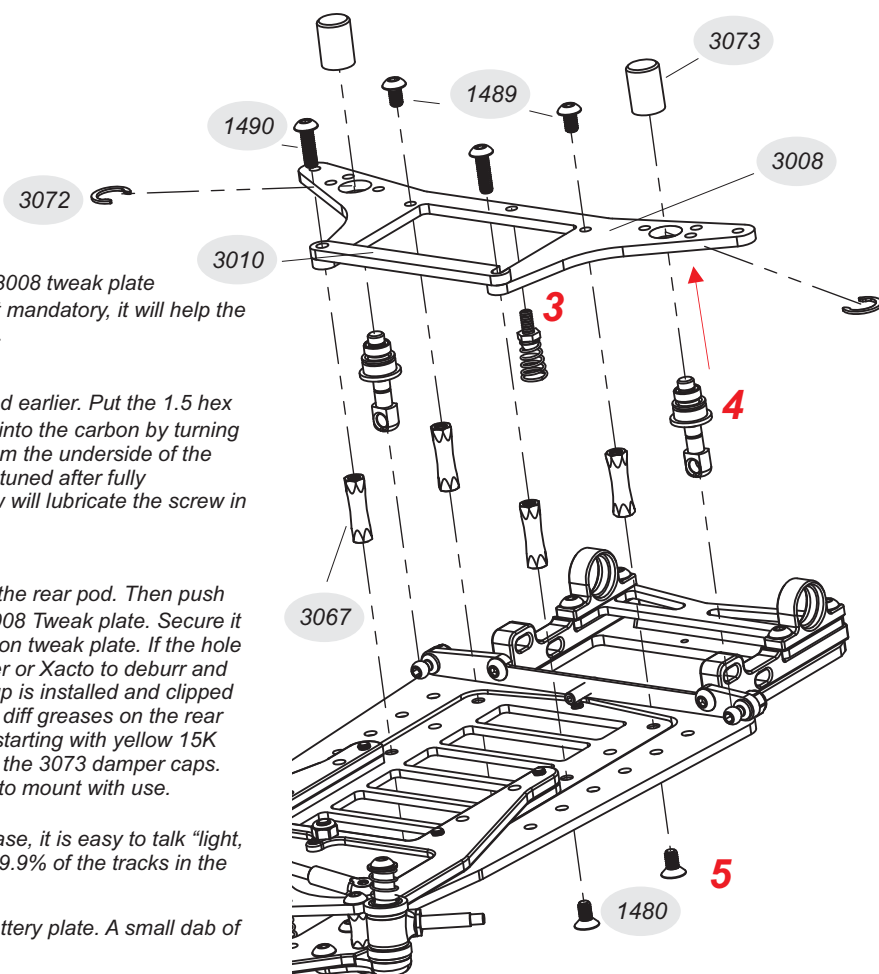
3. Install the center "bump" spring similar to the side roll springs installed earlier. Put the 1.5 hex through the carbon tweak plate and draw the center spring assembly up into the carbon by turning counter-clockwise. Adjust so that there is the same 12mm of distance from the underside of the carbon to the bottom of the spring. The preload of this spring will be fine-tuned after fully assembled. Again, a little oil, grease or even thread lock on the set screw will lubricate the screw in the carbon and assist the process.

4. Snap the bottom ballcup end of the damper rod over the ballstud on the rear pod. Then push the complete damper up from the bottom through the large hole in the 3008 Tweak plate. Secure it with the 3072 C-clip. The plastic cup NEEDS to fit smoothly into the carbon tweak plate. If the hole is too tight, the compression will bind the damper ball. Use a body reamer or Xacto to deburr and slight enlarge the hole. The ball needs to pivot FREELY after the pivot cup is installed and clipped in. For damping lubrication, we recommend the Kyosho range of colored diff greases on the rear dampers. This is advantageous to using silicone fluids. We recommend starting with yellow 15K Kyosho diff grease. Later, after adding the damper grease, cap it off with the 3073 damper caps. The first installation of the caps is very firm, but the caps become easier to mount with use.

With the red, yellow, blue (5k, 15k, 30K) thickness of the Kyosho diff grease, it is easy to talk "light, medium and heavy) for damping. These 3 damping fluids should cover 99.9% of the tracks in the world, both front and rear.

5. Use the 1480 M3x6 flat heads to secure the 3067 standoffs to the battery plate. A small dab of thread lock is recommended on the 3067 standoffs.

The 3010 battery bar is mounted with the 1490 M3 x 8 button heads. This bar secures the ROAR legal 1s battery pack.



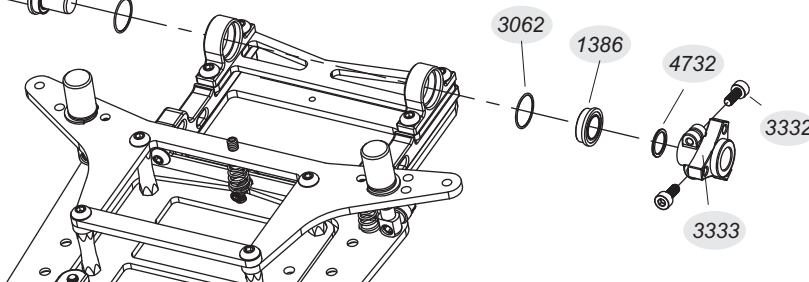
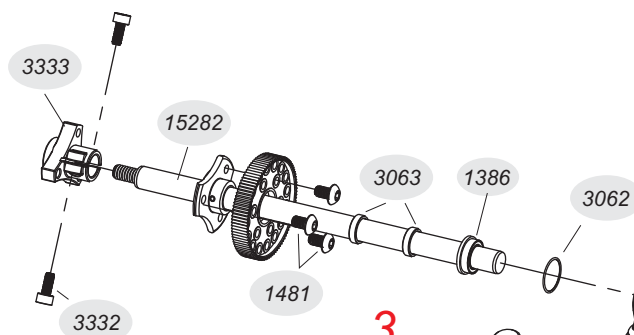
Rear Axle

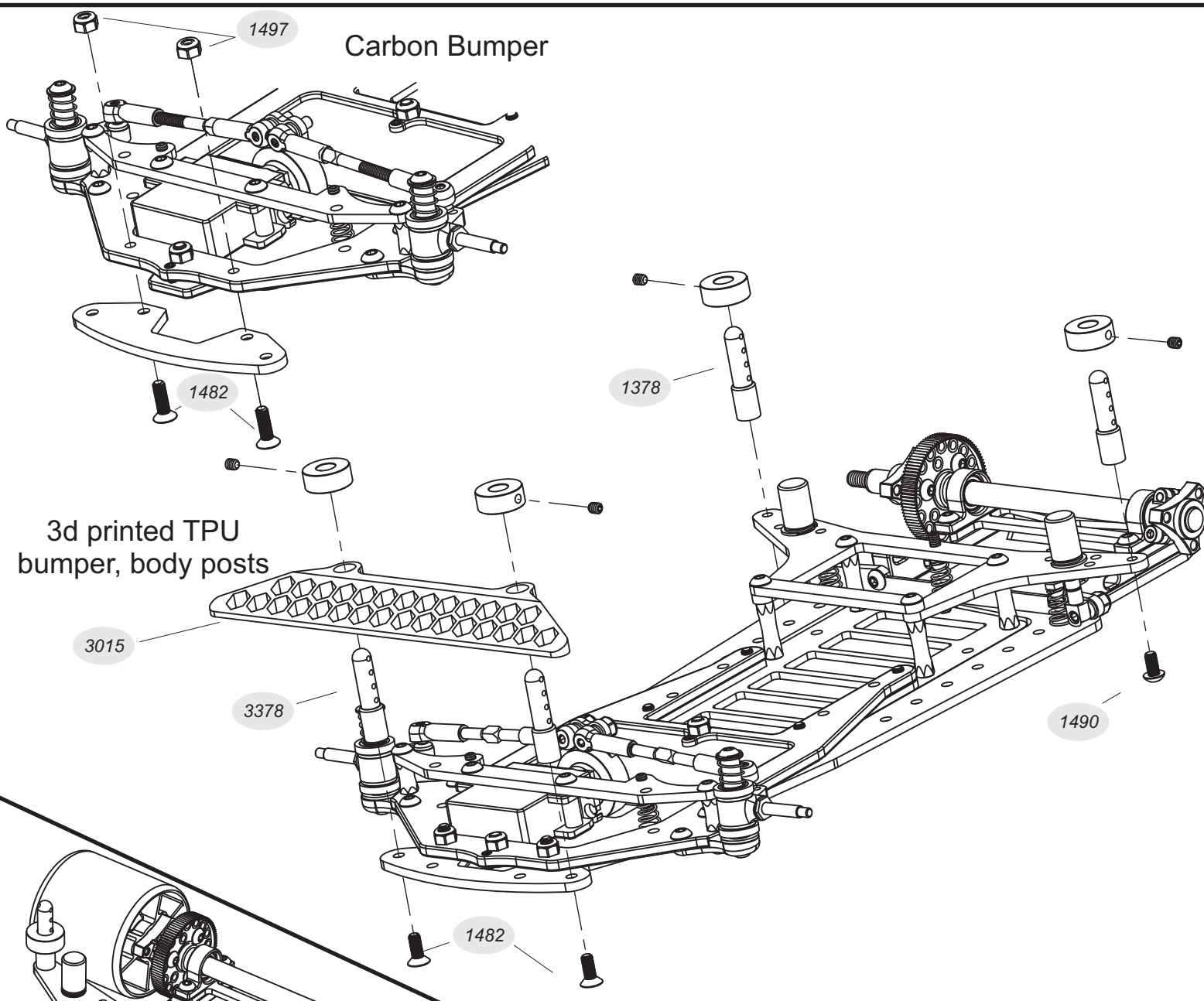
Bag 6

1. The inner collar on the CRC spur gear needs to be removed when using the gear in a solid axle application. Take a hobby knife and trim off the "flange" of plastic that faces the back side of the axle flange.

2. Slip/stretch the 3062 O-ring over both rear axle flanged bearings.

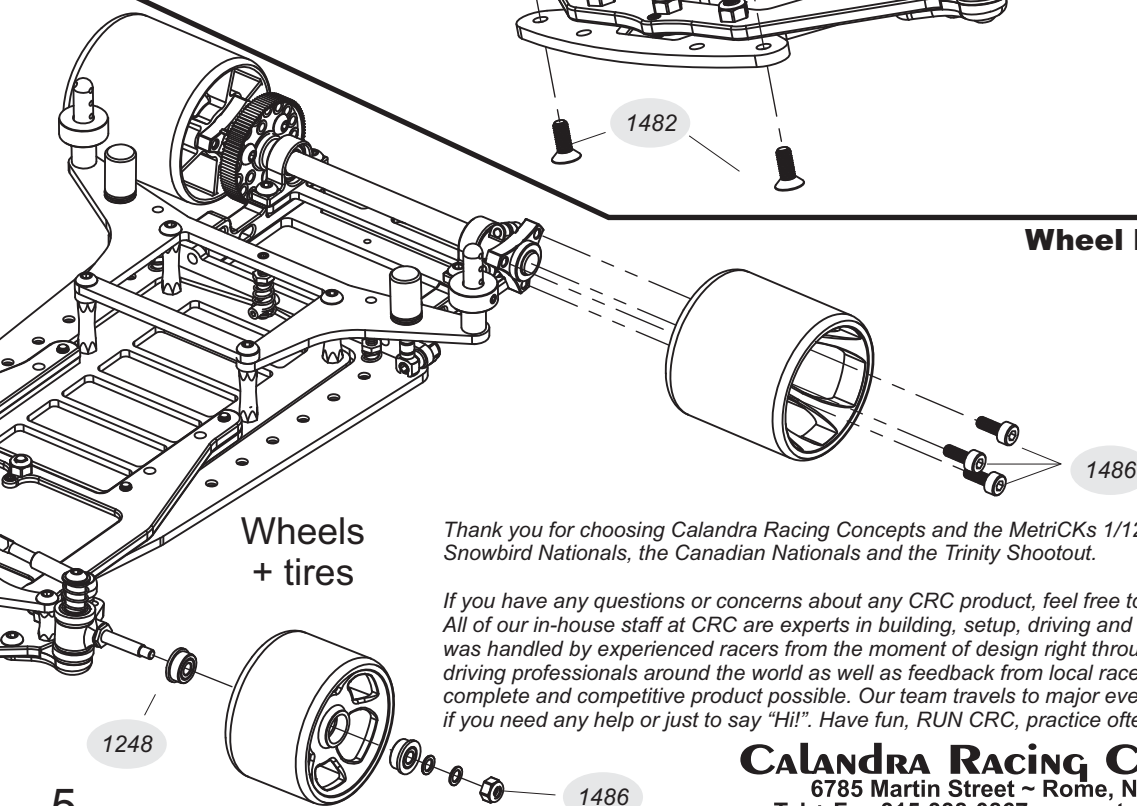
3. Assemble the axle as shown.





Wheel bearings + screws

Bag 8



Thank you for choosing Calandra Racing Concepts and the MetriCKs 1/12th race car. This car has already won the Snowbird Nationals, the Canadian Nationals and the Trinity Shootout.

If you have any questions or concerns about any CRC product, feel free to call or e-mail the staff at CRC for assistance. All of our in-house staff at CRC are experts in building, setup, driving and racing R/C model cars. Your new MetriCKs was handled by experienced racers from the moment of design right through the completion of the kit. We utilize our top driving professionals around the world as well as feedback from local racers at the CRC test track to build you the most complete and competitive product possible. Our team travels to major events around the world, please stop in at a race if you need any help or just to say "Hi!". Have fun, RUN CRC, practice often and good luck!

Calandra Racing Concepts

6785 Martin Street ~ Rome, NY 13440

Tel + Fax 315-338-0867 ~ www.teamcrc.com

CALANDRA RACING CONCEPTS

METRICs

| Kit Parts | | Kit Hardware | | Option Parts | |
|-----------|---------------------------------------|--------------|-----------------------------|--------------|-----------------------------------|
| 1208 | washer | 1479 | M3 x 5 Flat Head | 3005 | Aluminum chassis - 2.5mm |
| 1248 | Front bearing 1/8 x 5/16 | 1480 | M3 x 6 Flat Head | 3006 | Carbon upper deck - 3mm |
| 1378 | 2" Body post w/ collars | 1481 | M3 x 5 Button Head | 3016 | 2mm rear ride plt - carbon |
| 1386 | Rear axle bearing - 1/4 x 3/8 | 1482 | M3 x 8 Flat Head | 3017 | 2.5mm rear ride plt - carbon |
| 1795 | Roll Spring .55mm (2) | 1483 | M3 x 10 Flat Head | 3025 | Low profile spring retainer |
| 3004 | Carbon 2.5mm chassis | 1484 | M3 x 12 Flat Head | 3034 | Camber/Caster plate 4-.25 Left |
| 3007 | Aluminum upper deck | 1486 | M3 x 8 Cap head Aluminum | 3035 | C/C plate 4-.25 Right |
| 3008 | Tweak plate - 2.5 | 1487 | M3 x 5 Button Head | 3036 | C/C plate 4-.5 Left |
| 3009 | Damper strut - 2.5 | 1489 | M3 x 6 Button Head | 3037 | C/C plate 4-.5 Right |
| 3010 | Battery lock bar - 2.5 | 1490 | M3 x 8 Button Head | 3038 | C/C plate 4-.75 Left |
| 3011 | Battery lower Plate Carbon - 2mm | 1491 | M3 x 10 Button Head | 3039 | C/C plate 4-.75 Right |
| 3012 | Servo mount plate - 2.5 | 1492 | M3 x 12 Button Head | 3042 | C/C plate 4-1.5 Left |
| 3013 | Battery spacer plates (2) | 1493 | M3 x 14 Button Head | 3043 | C/C plate 4-1.5 Right |
| 3014 | Carbon bumper | 1497 | M3 Aluminum Mini Locknut | 3044 | C/C plate 4-2 Left |
| 3015 | 3d printed soft bumper | 1529 | Front ride washer 5 x .75mm | 3045 | C/C plate 4-2 Right |
| 3018 | 2.25 rear ride plate | 1790 | Roll Spring .40mm (2) | 3047 | C/C plate 5-.25 Left |
| 3019 | Steering block, trailing-for 1/8 axle | 1791 | Roll Spring .45mm (2) | 3048 | C/C plate 5-.25 Right |
| 3020 | 1/8" Axle for steering block | 1793 | Roll Spring .50mm (2) | 3049 | C/C plate 5-.5 Left |
| 3021 | Steering bushing | 1796 | Roll Spring .60mm (2) | 3050 | C/C plate 5-.5 Right |
| 3022 | Steering block collars | 3028 | Front Springs .40 (2) | 3051 | C/C plate 5-.75 Left |
| 3023 | Vented kingpin-5mm | 3029 | Front Springs .45 (2) | 3052 | C/C plate 5-.75 Right |
| 3024 | Kingpin ride spacer-.75mm (6) | 3030 | Front Springs .50 (2) | 3053 | C/C plate 5-1 Left |
| 3025 | Kingpin low profile spring retainer | 3032 | Front Springs .60 (2) | 3054 | C/C plate 5-1 Right |
| 3031 | Front Springs .55 (2) | 3033 | Front Springs .65 (2) | 3055 | C/C plate 5-1.5 Left |
| 3040 | C/C plate 4-1 Left | 3077 | M3 x 6 set screw (4) | 3056 | C/C plate 5-1.5 Right |
| 3041 | C/C plate 4-1 Right | 3078 | M3 x 12 set screw (4) | 3057 | C/C plate 5-2 Left |
| 3060 | Motor plate | 3080 | M3 x 3 set screw (4) | 3058 | C/C plate 5-2 Right |
| 3061 | Bearing carrier | 3081 | M3 x 10 set screw (4) | 3079 | Pivot cup, +1 roll center (1mm) |
| 3062 | Bearing o-rings (10) | 3082 | M3 4.3mm x 6 ballstud (4) | 3083 | 2, 2.5, 2.75, 3mm ride spacer |
| 3063 | 2mm axle spacer (2) | 3332 | M2.5 x 6 clamp screw (6) | 4744 | 3mm .125" kingpin stack shim .4mm |
| 3066 | 4.5 x 9 x M3 Standoff (4) | 4732 | 1/4" rear axle shim (20) | 33575 | Tungsten carbide ballast |
| 3067 | 4.5 x 16 x M3 Standoff (4) | 4744 | 1/8 front axle shim (20) | | |
| 3069 | Damper cup (2) | | | | |
| 3070 | Damper ball (2) | | | | |
| 3071 | Damper Plunger (2) | | | | |
| 3072 | Damper cup retaining rings (4) | | | | |
| 3073 | Damper Cap (4) | | | | |
| 3074 | Pivot Screw (2) | | | | |
| 3075 | Pivot cup - Standard roll center cup | | | | |
| 3076 | Pivot washer (4) | | | | |
| 3333 | Clamp hub M3-Black | | | | |
| 3378 | 1" Body post w/collars | | | | |
| 3387 | Molded Spring Retainers | | | | |
| 15282 | Diff/solid rear axle - carbon | | | | |
| 64172 | 72 tooth spur gear | | | | |

Calandra Racing Concepts METRICKs

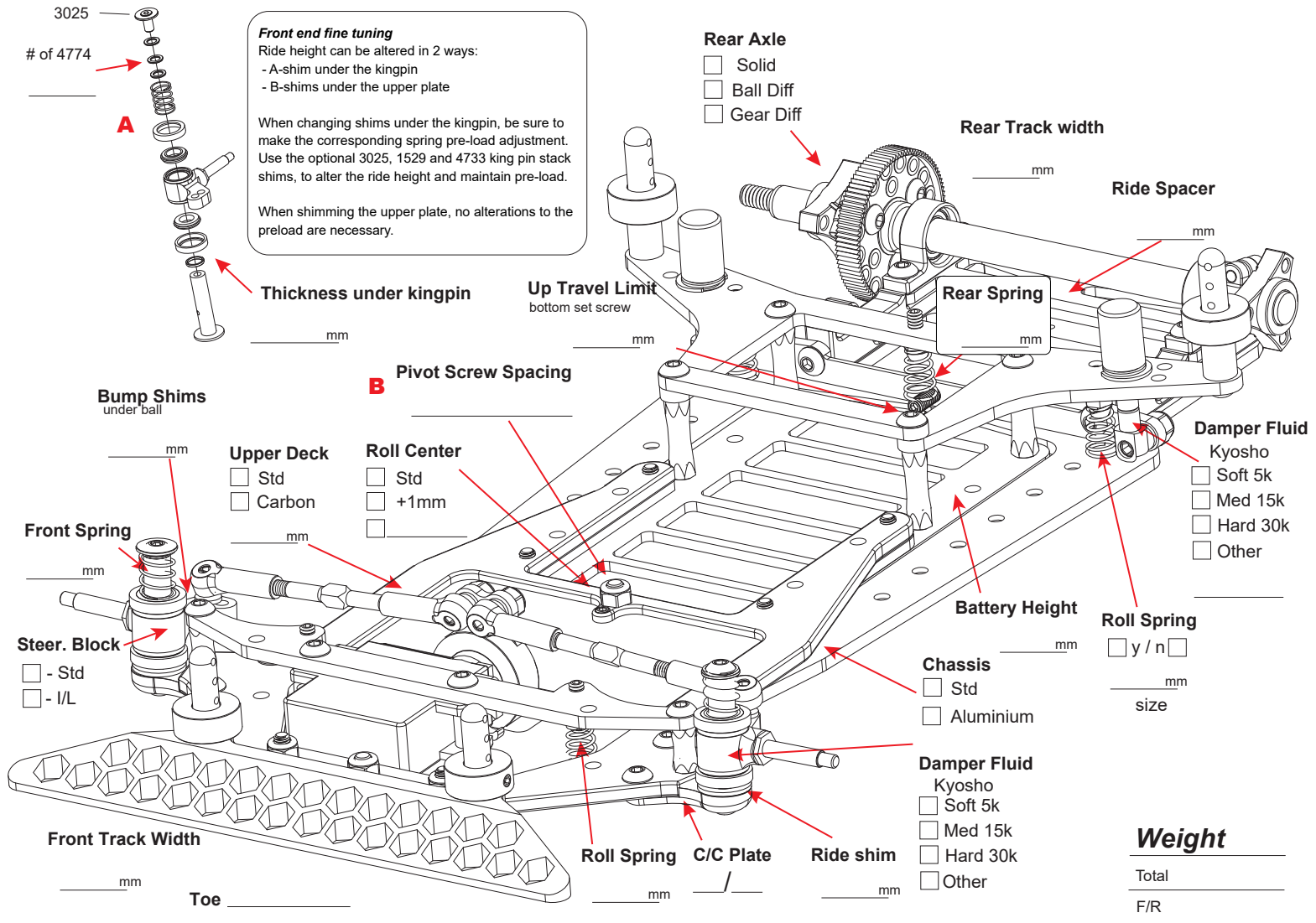
Name: _____
Date: _____
Track: _____
Event: _____

Track Conditions

Traction: Low ☐ ☐ ☐ ☐ ☐ High Surface: Smooth ☐ ☐ ☐ Bumpy Temperature: _____
Layout: Open ☐ Mixed ☐ Tight ☐ Comments: _____

Electronics

Motor: _____ Timing: _____ Battery: _____ Gearing: _____
ESC: _____ Servo: _____ Receiver: _____



| Tyres | | Ride Height | |
|----------|-------|-------------|------------|
| Brand | Front | Rear | Front |
| Compound | | | Battery |
| Diameter | | | Chassis |
| Additive | | | Rear |
| Surface | | | Sag |
| | | | Front: |
| | | | Rear: |
| Time | | | |