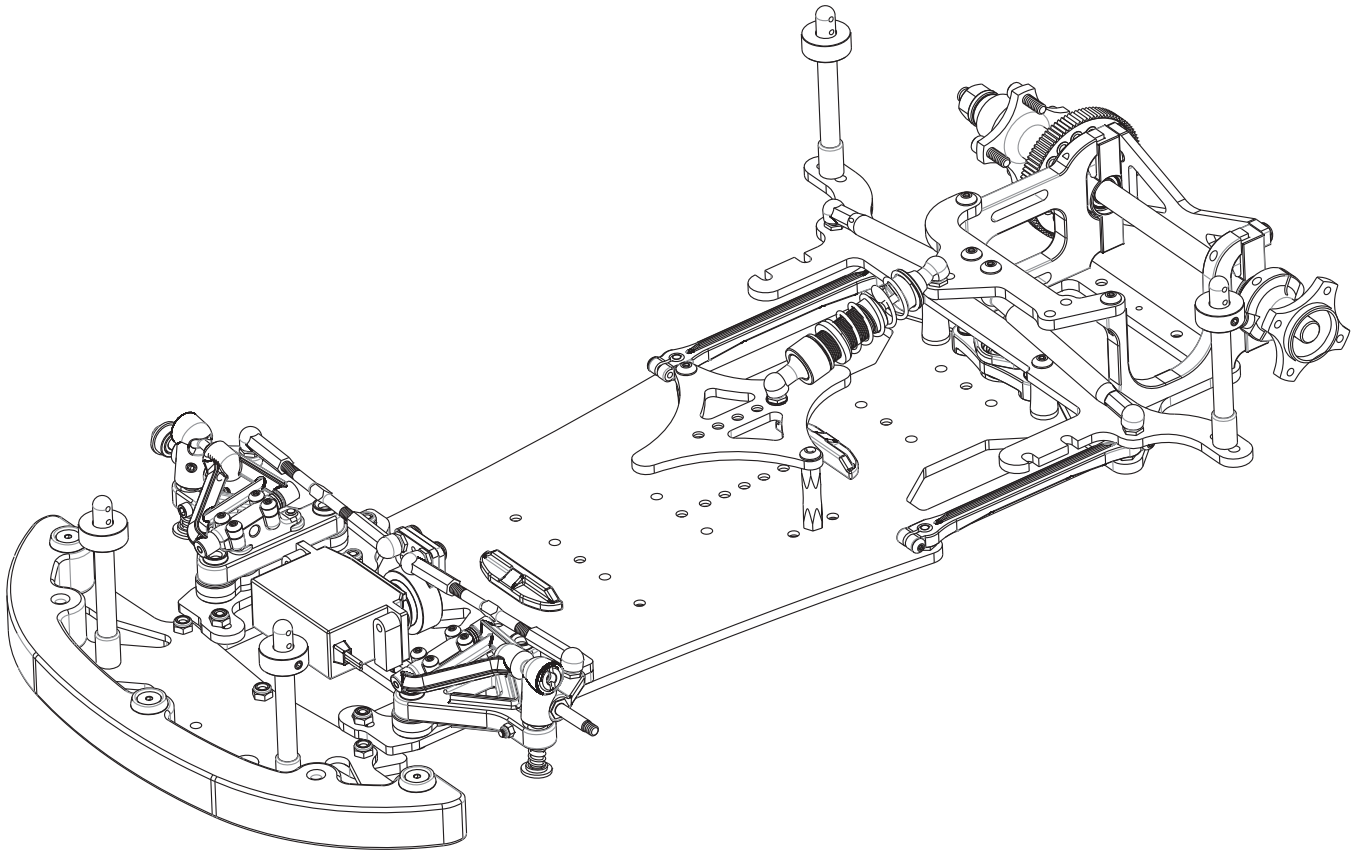
Assembly Manual

Calandra Racing Concepts

Gen-X 10 R/T



1/10th World GT-R car

Calandra Racing Concepts

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Center Pivot

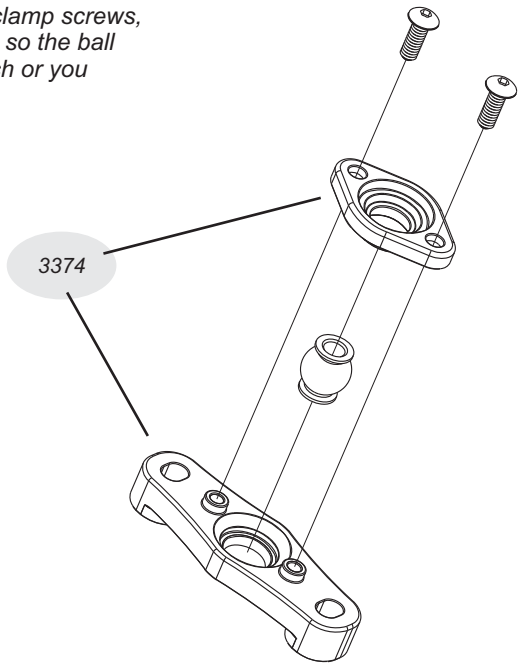
Bag 1

3374 - Center Pivot Socket

40194 - Hard Anodized Alum Pivot ball

3254 - 2-56 Button Head

Note - Sometimes it is helpful to **slightly over-tighten the top clamp screws, then work the ball around by hand, and then loosen the screws so the ball floats around very free. Do not over-tighten the screws too much or you could warp the pivot socket.*

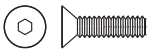


Center Pivot

Bag 1

1857 - Gen-X10-RT Chassis Plate

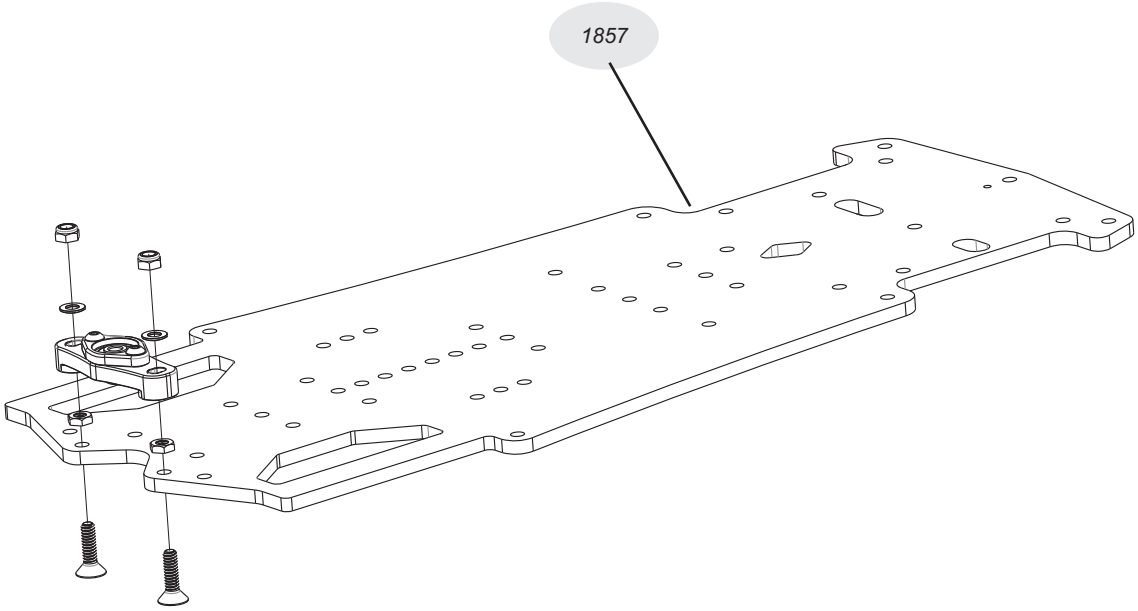
1429 - 4-40 x 7/16" Flat Head



12772 - 4-40 Thin Hex Nut

1209 - Washer

1412 - Red Locknut



Bag 2

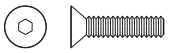
1426 - 4-40 x 5/16" Flat Head

13615 - Red Low-Profile Ball

1412 - Red Locknut

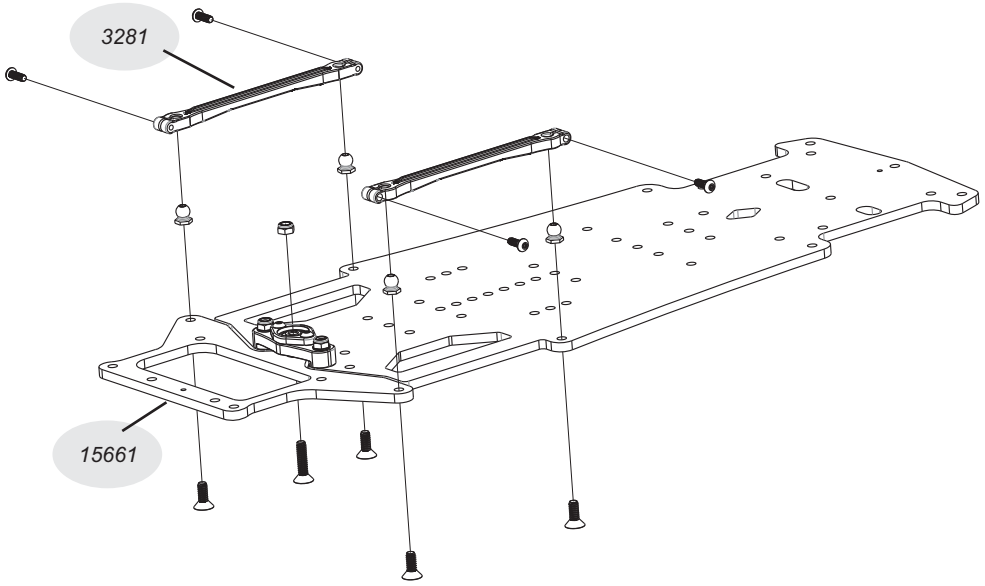
15661 - F1 Rear Bottom Plate-FC16

1430 - 4-40 x ½" Flat Head



3254 - 2-56 Button Head

3281 - One-Piece Side Links



**NOTE - Before installing, inspect the side links and you will notice that the screw holes on one side of the link are larger than the holes on the other side. Before popping the links on the balls, be sure that the larger hole faces toward the outside of the chassis.*

Slide the 2-56 button head screws through the large holes in the outside of the side links, and then thread them into the small inner holes as shown in the illustration. Do not tighten these screws down all the way. Put just enough tension on them so that there is no play in the links, but so they pivot freely on the balls. The car will NOT handle properly if the links are too tight on the balls!

Setting the One-piece links

1 - Be sure the 2 aluminum locknuts on top of the center pivot are slightly loose. There should be a washer under each alum locknut. Notice that the center pivot "floats" or moves slightly on the 2 screws. This "floating" allows the links to "free up". This ensures that the rear pod plate pivots freely on the links and center pivot ball. This is a crucial step when setting up the Gen-X10.

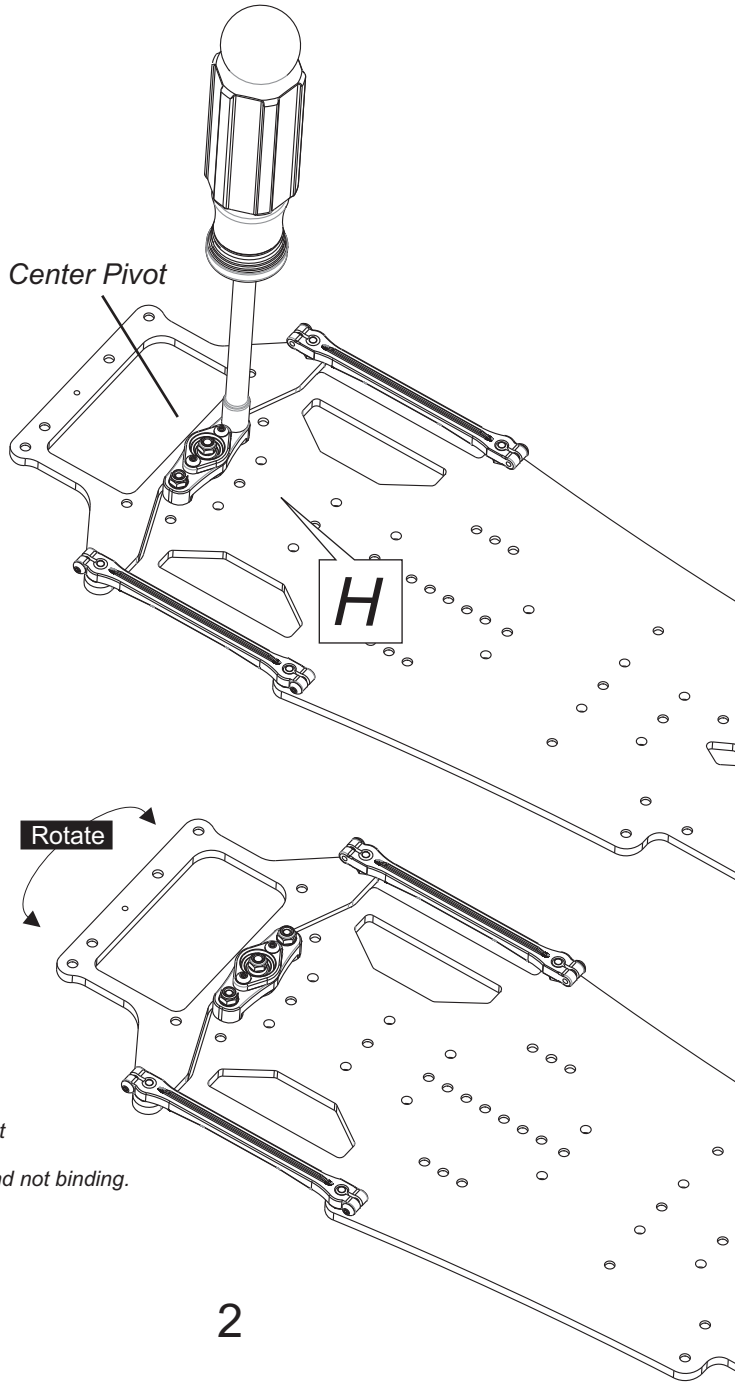
2 - Snap the 2 links on the balls (done in previous step). They should rock freely on the pivot balls.

3 - Place the chassis / rear bottom plate assembly on a flat surface. No tires and no diff on the car! A smooth table or desk should do. Be sure that the rear bottom plate and chassis are in a straight line, flat against the table, again, no tires on the car. Lightly "tap" the chassis and rear pod releasing any tension in the links. Keep the chassis flat on the table for step 4.

4 - Hold the chassis at the hold point "H" (not the rear pod) by pressing the chassis down to the table. Slowly tighten the 2 locknuts that secure the center pivot assembly. For now, just lightly snug one side then the other.

5 - Pick up the car and check the pivoting action of rear lower plate. Rotate the rear plate from side-to-side. It should move free without binding or "clicking". If it does not, loosen the pivot locknuts and repeat steps 3+4.

If it rotates smoothly, tighten the locknuts on the center pivot more securely. Do this by again holding the chassis down to the table at the hold point "H". Slowly and carefully, fully tighten the locknuts that hold the center pivot assembly to the chassis. The handling of the Gen-X10 hinges (pun intended!) on the free movement of this rear plate. Be sure that the rear links and rear plate are free and not binding.



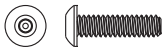
Slider Pod

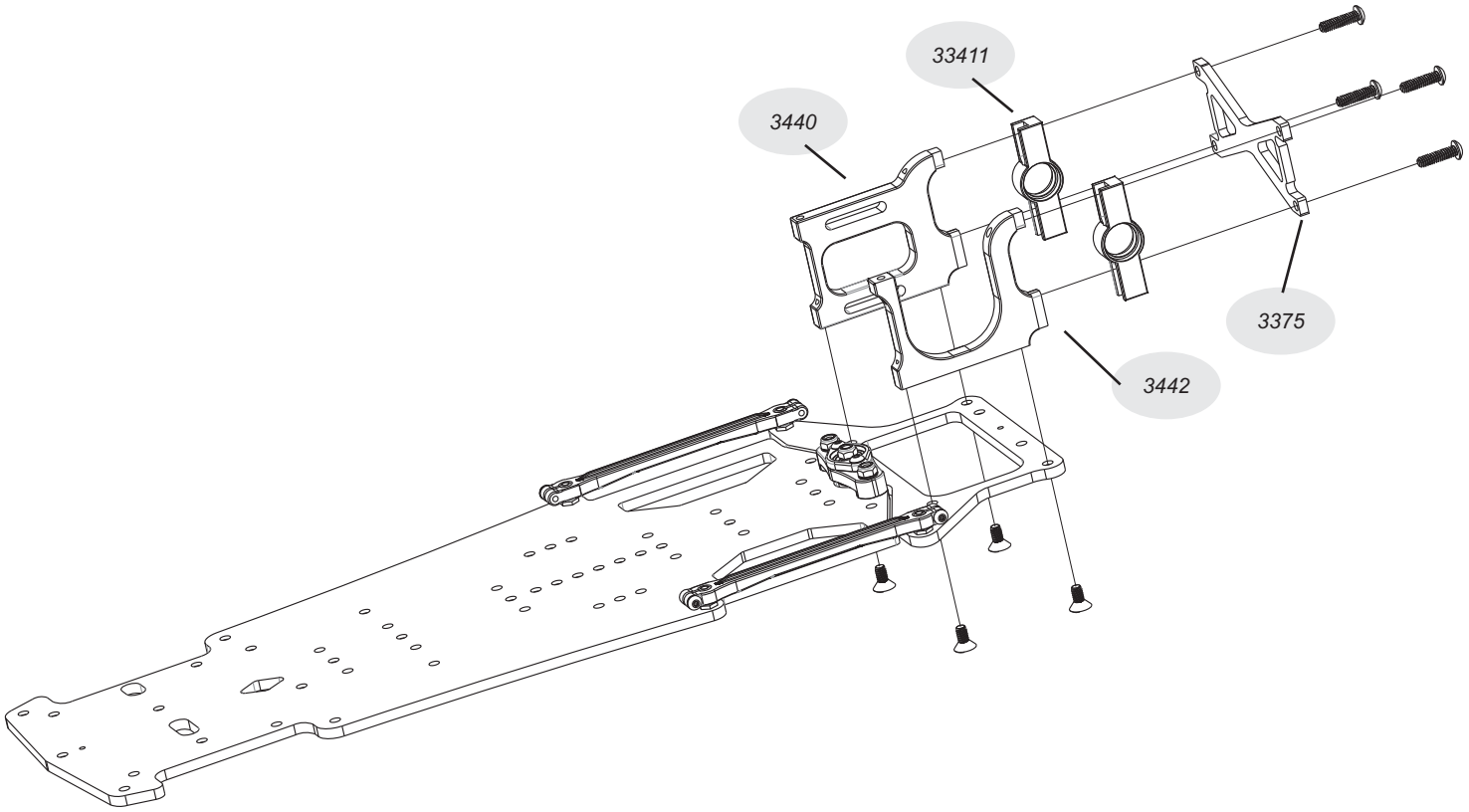
Bag 3

3440 - Big Tire Motor Plate
33411 - Slider Bearing Carrier
3442 - Big Tire Left Side Pod Plate
3375 - Graphite X-brace

1424 - 4-40 x 1/4" Flat Head

1435 - 4-40 x 7/16" Button Head





Tweak Plate

Bag 4

3288 - 4-40 x 3/8" set screw

3387 - Molded Plastic Spring Holder

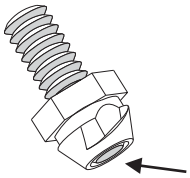
3375 - Molded ½" Standoffs (4)

1793 - Pro Tapered Springs .50mm

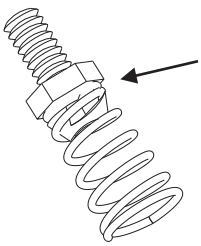
1871 - Tweak Plate

13615 - Red Low-Profile Ball

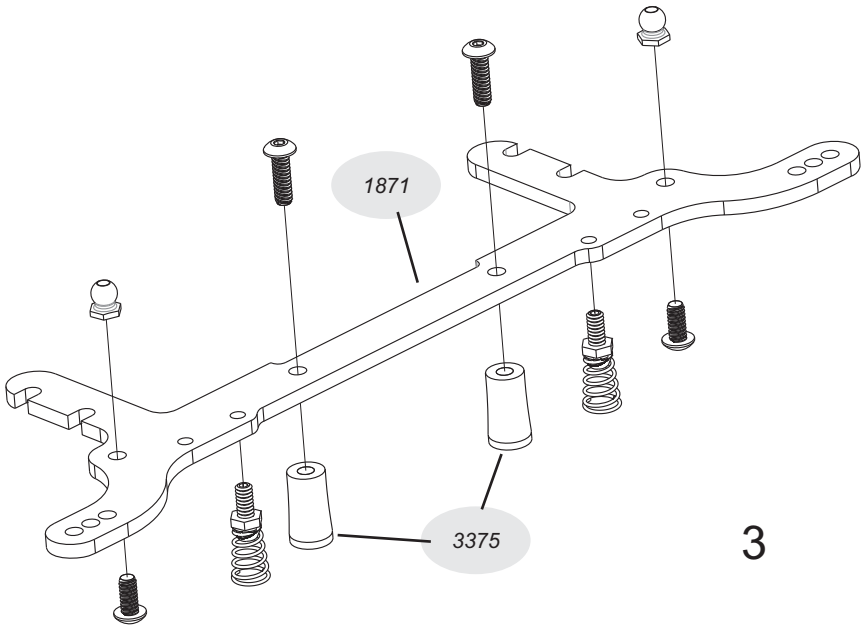
1436 - 4-40 x 3/8" Button Head



Thread the set screw in until flush with the bottom of the holder.



Make sure spring coil is seated into groove on spring holder.



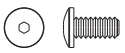
Tweak Plate

Bag 4

1424 - 4-40 x 1/4" Flat Head

15651 - F1 Rear Top Plate-FC16

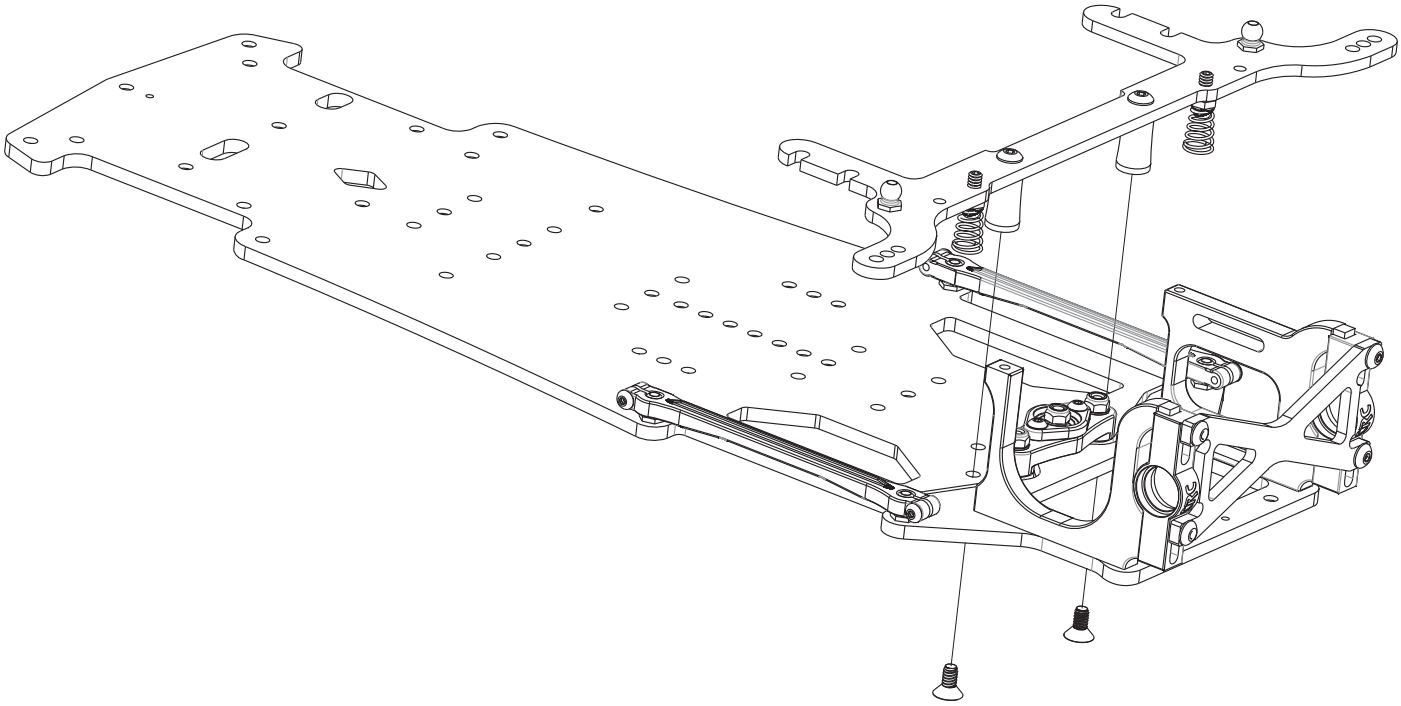
1434 - 4-40 x 1/4" Button Head

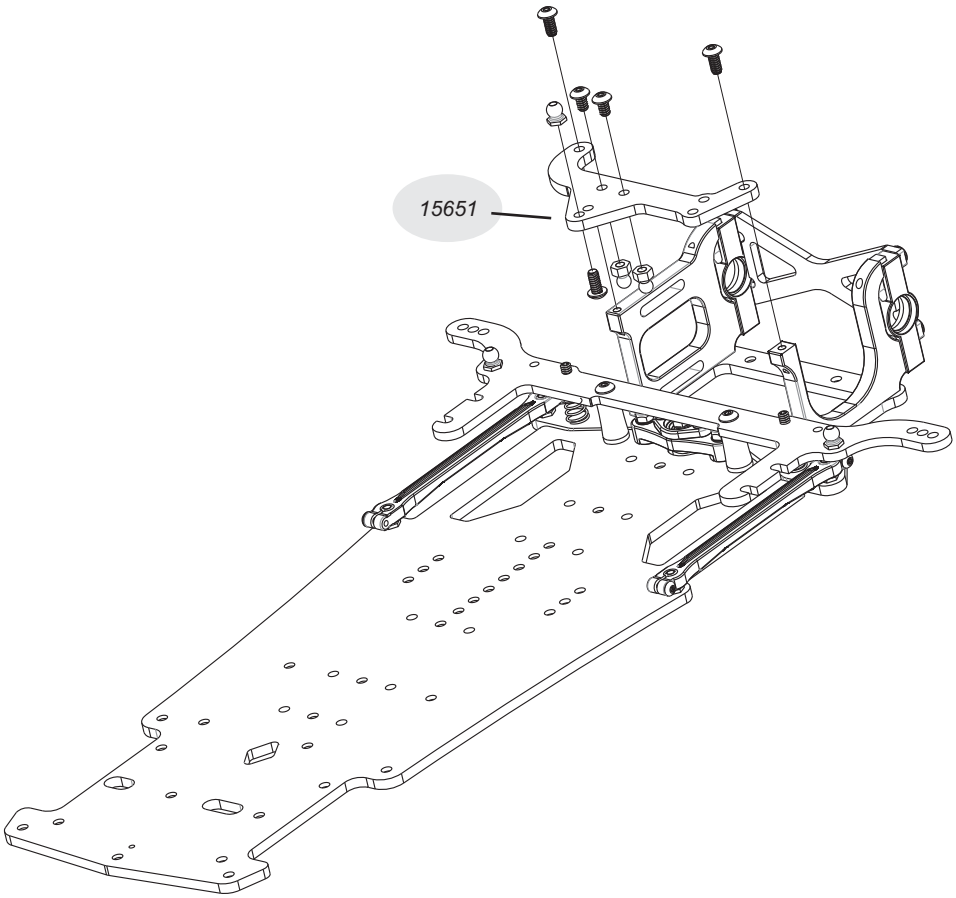


13615 - Red Low-Profile Ball

14332 - 3/16 x 4-40 BH - Red Alum (8)

13844 - Small Hexball - Tubes (4)



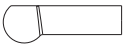


Damper Tubes

Bag 5

1397 - 2-56 set-screw stud

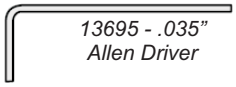
1384 - 2-56 Steel Ballstud & Plastic Ball Cup



1288 - 4-40 x 5/16" set screw

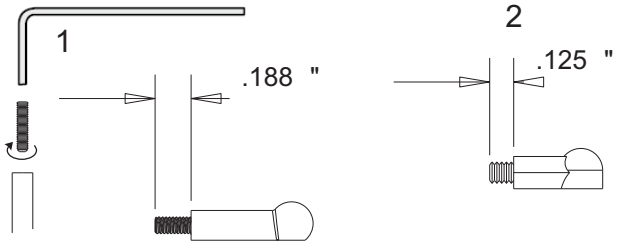
13694 - Short 4-40 Plastic Ball Cup (on tree)

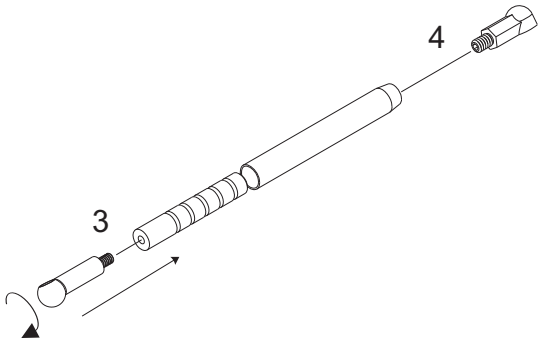
13695 - .035" Allen Driver

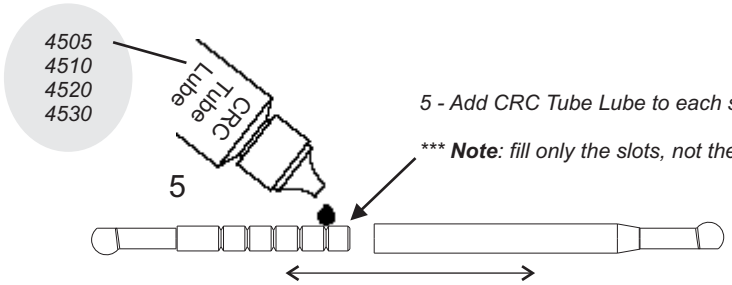


32693 - Delrin Plunger

32691 - Aluminum Tube





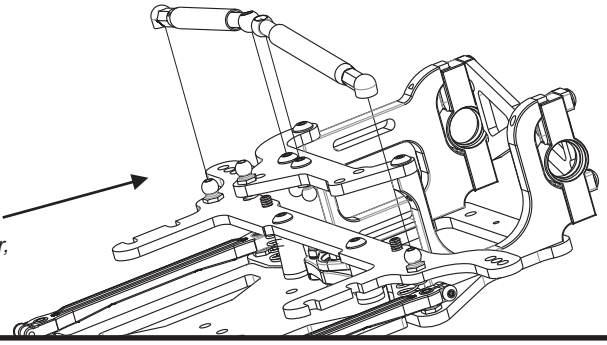


5 - Add CRC Tube Lube to each slot on the delrin plunger.

*** **Note**: fill only the slots, not the entire aluminum tube. ***

** Adding the Damper Tubes to the Chassis assembly **

Snap the assembled & lubed damper tubes on the respective points as shown in the diagram to the right. You will find it easier to snap on the center, small ball studs first, then pop the outer, larger 4-40 ballcups.



Top Deck

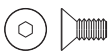
Bag 6

1854 - Top Deck - Gen-X10 SE

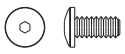
1737 - Hex Standoff - GX10 Top Deck

1209 - Servo Mount Washer

1424 - 4-40 x 1/4" Flat Head

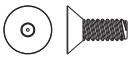


1434 - 4-40 x 1/4" Button Head

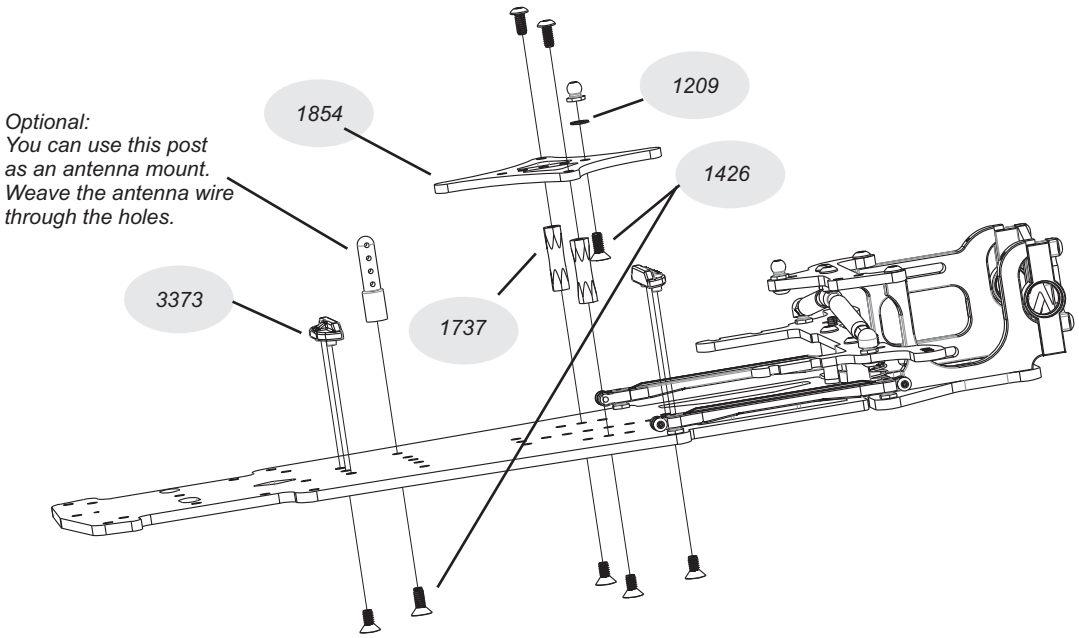


13615 - Red Low-Profile Ball

1426 - 4-40 x 5/16" Flat Head



3373 - Plastic Battery Position Pieces



Center Shock

Bag 7

3290 - *CRC Encore Shock*

*1 - Thread the spring adjuster nut onto the shock body as shown. *This needs to be installed first or you will not be able to get it on later after the lower end of the shock is assembled!**

2 - Insert only 1 of the small o-rings into the lower end of the shock body. Next, install the bottom shock plug and tighten the bottom shock cap.

3 - Insert 1 of the small e-clips into the lower groove of the shock shaft. Slide the piston over the shaft until it stops against the e-clip and then secure it in place with the other e-clip in the end groove.

4 - Put a small dab of the included shock oil on the threads of the shock shaft to lube it and then slide the shock shaft through the bottom end of the shock carefully so you do not damage the o-ring with the threads on the shock shaft. Pull the shaft all the way through until the piston bottoms out in the shock body.

*5 - Wipe off any excess oil from the threads of the shock shaft and then thread on the longer of the 2 included ballcups. *If you need to hold the shaft with pliers, be sure to wrap a rag around the shaft first so the pliers do not damage the shaft. If there is any damage to the shaft, the sharp edges will damage the o-ring and cause the shock to leak.*

6 - Now with the shaft still fully extended, hold the shock body upright and fill with the included shock oil. Press the shaft in about half way and then return it to full extension. Look inside the shock and you will notice small air bubbles in the oil. This is the rest of the air that was trapped below the piston. Allow enough time for the air bubbles to work their way to the surface and pop.

7 - Once satisfied that all of the air is out of the shock, top off with oil and then insert the shock bladder by laying one side into the oil and then rolling your finger across the top of the bladder to expel any excess air and/or oil.

*8 - Insert the flanged ballcup into the upper shock cap and then tighten this down over the shock bladder, being careful to not knock the bladder off its seat and allowing air to enter the shock. *Double check that the shock is working smoothly through its range of motion and that you can fully compress the shock. If it binds up before being fully compressed, then it has too much oil and you will need to crack the top cap loose and expel a very small amount of oil and re-tighten.*

9 - Slide the shock spring over the shock body and keep in place by clicking the spring retainer over the shock shaft and sliding it down over the short ballcup to keep it in place.

Encore Shock Parts List:

3291 - Encore Shock-Body + alum parts

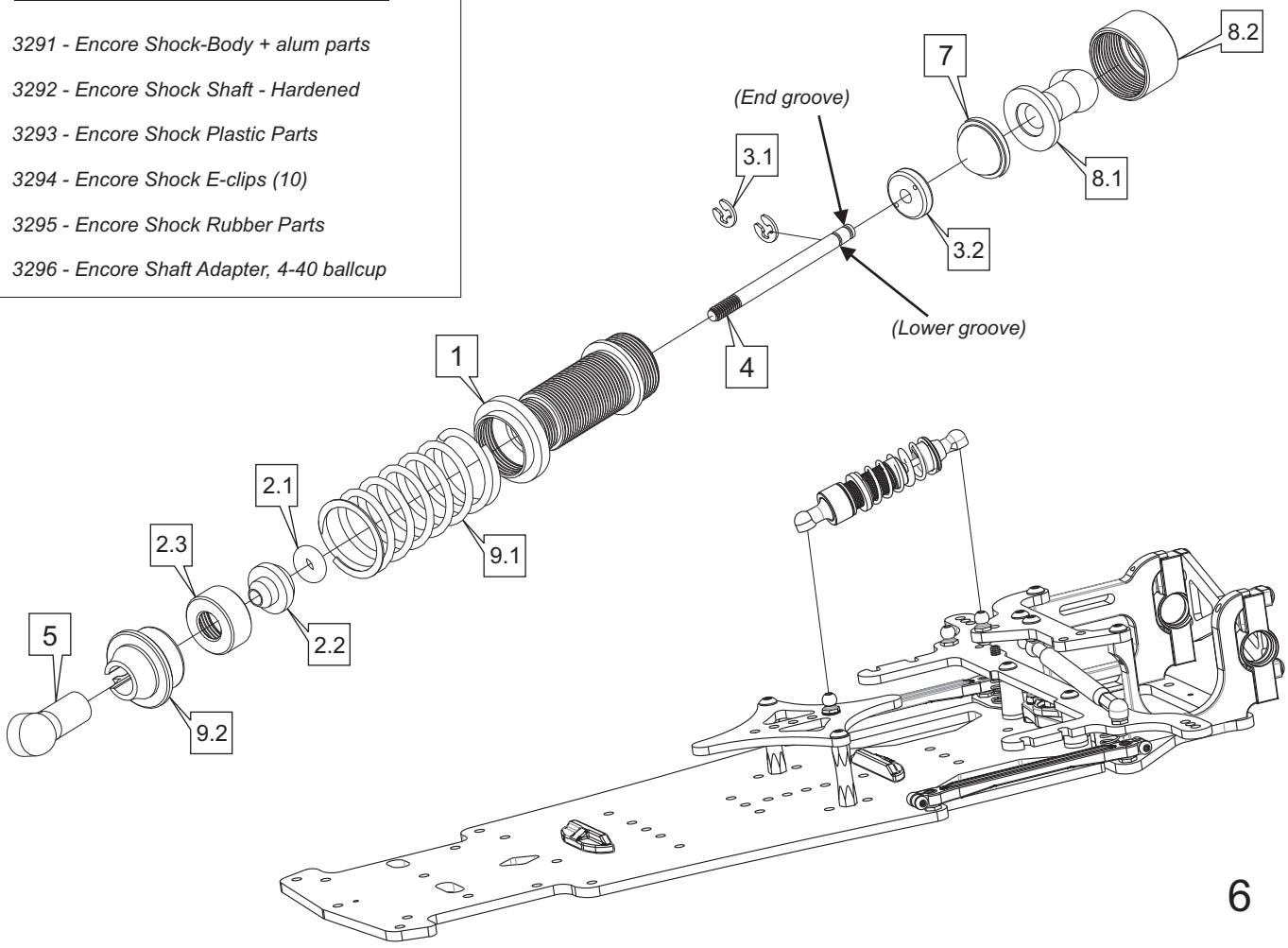
3292 - Encore Shock Shaft - Hardened

3293 - Encore Shock Plastic Parts

3294 - Encore Shock E-clips (10)

3295 - Encore Shock Rubber Parts

3296 - Encore Shaft Adapter, 4-40 ballcup

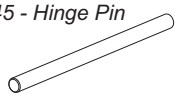


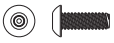
CRC Pro-Strut Front End

Bag F


32462 - Brass Pivot Ball

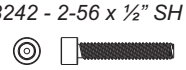

3242 & 1472 - 2-56 Red Locknut

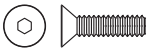

3245 - Hinge Pin


3254 - 2-56 Button Head

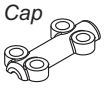
3247 - CRC Front Arm set

3243 - Upper Arm mnt set-0,5,10

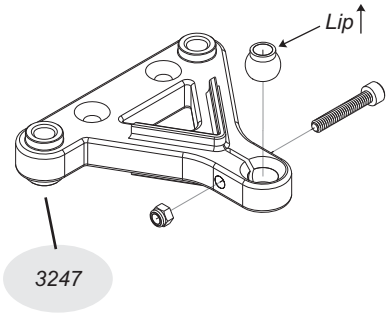

3242 - 2-56 x ½" SH


1429 - 4-40 x 7/16" Flat Head


1253 - Caster Shim


3243 & 3230 - Upper Cap

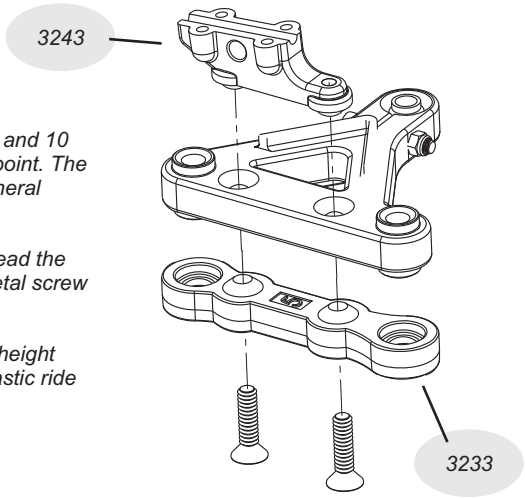
3233 - Molded Ride Height Spacers - 3, 4, & 5mm



1 - Pop the brass pivot ball into the lower arm. Place the arm on a strong table and push the ball in with the back of screwdriver handle. Or preferably, you can use CRC's 4279 Ball popper pivot ball tool. Notice the "lip" of the brss pivot ball is pointing upward. The diagram to the left represents a right side lower arm. For the left side, flip the second arm over and be sure the pivot ball is installed with the lip again facing up.

2 - Once the ball is popped in, insert the black 2-56 clamp screw through the horizontal hole in the lower arm. Thread the 2-56 red locknut onto the black screw. Tighten the screw slowly continuously checking the pivot ball. When it begins to bind a bit, back the 2-56 screw off a bit. The ball should be free to pivot with just a bit of drag. There is no need to have this ball super loose and free, a slight drag will be just the right amount of clamping force.

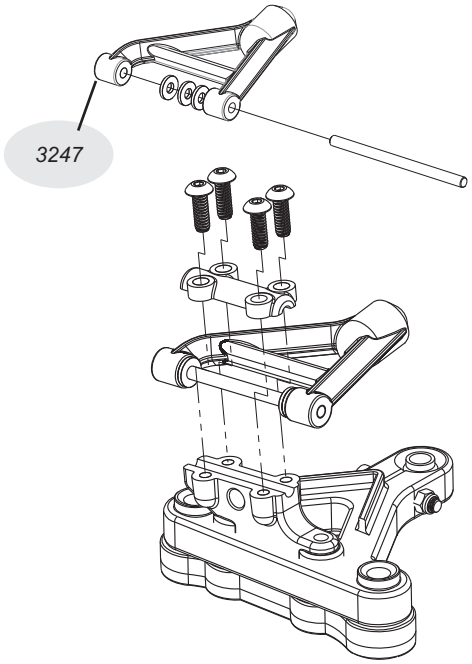
Check this fit after a few runs as the ball will wear and require additional clamping force.



1 - Install the upper A-arm mount with the amount of Dynamic Caster desired. The options are 0, 5 and 10 degrees. The part shown to the right in the diagram is the 5 degree version and is a good starting point. The 10 will angle down more toward the front of the car with the 0 being parallel to the chassis. The general thought is the more Dynamic Caster, more steering the car will have at corner entry.

2 - Push the 4-40 x 7/16" screw through the ride height spacer, then through the lower arm and thread the screw into the upper A-arm mount. Be sure NOT to over tighten. Just snug, you are threading a metal screw into the plastic upper A-arm mount.

**Note - For the rubber tire R/T car, we recommend the 5mm spacer in the 3233. For fine front ride height adjustments, use the CRC #4262 optional front shim set. This set contains .010, .020 and .030" plastic ride height shims.*



1 - Break the mold tree from the upper A-arm. You can clean up the mold gates with a hobby knife or rotary tool.

2 - Locate the upper arm hinge pin and slide it into one half of the upper arm. Locate 3 small caster shims. Push the hinge pin through the 3 shims. Then continue to push the hinge pin all the way into the upper arm.

3 - Now, install the arm/pin/washer assembly onto the upper arm mount. Put the hinge pin in the channel. At this point you can set your starting caster setting by moving these washers forward and back. We suggest starting with one shim to the front and 2 to the rear. Moving them to the rear will increase steering from the center and exit of the corner.

If the fit of the upper arm is tight, trim the upper arm mount SLIGHTLY with a hobby knife, or you can "ream" the upper arm holes by spinning the hinge pin in the arm with a rotary tool. DO NOT ream the upper arm mount. This piece is meant to clamp the pin in place so it doesn't fall out.

4 - Install the upper cap with 4 black 2-56 button head screws. The topper is the "clamp" for the hinge pin. Be sure to tighten so that any gap is gone, however, do not tighten beyond that point as damage can occur to the upper a-arm mount holes.

CRC Pro-Strut Front End - cont.

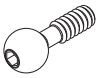
1434 - 4-40 x 1/4" Button Head

1412 - Red Locknut

3234 - Brass Set Screw

1382 - E-Clip

3235 - Upper Pivot Ball

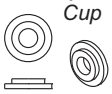


13615 - Red Low-Profile Ball

1236 - Steel Stub Axle

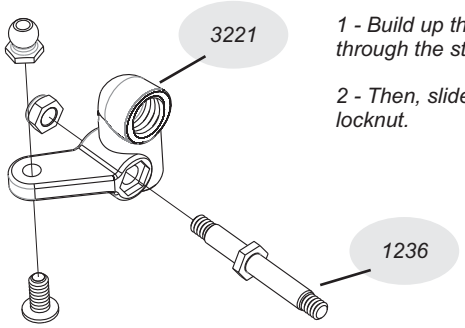
3221 - Steering Block Set

3287 - Nylon Spring Cup



3228 - CRC King Pin - Long 1:10

3393 - .50mm Front Spring



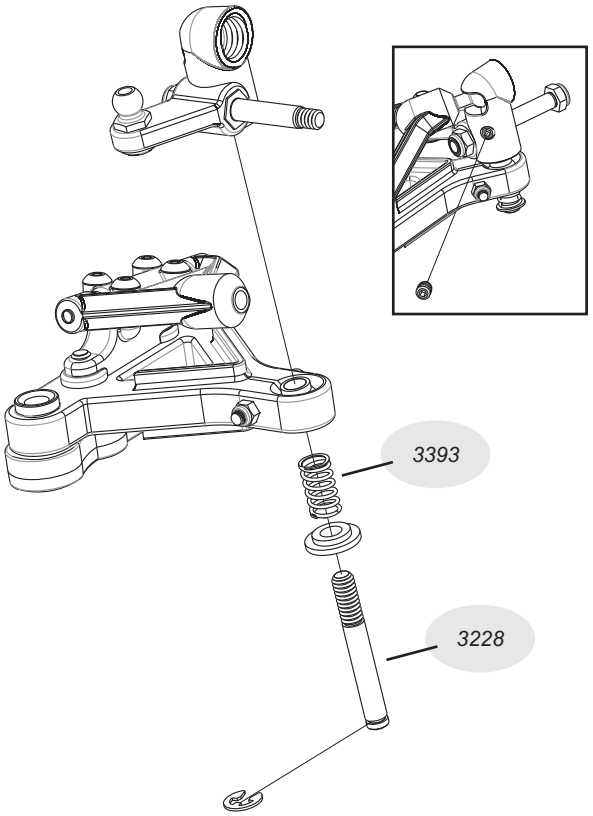
1 - Build up the left and right steering blocks as shown to the left. Start by threading the 1/4" button head screw through the steering arm of the block and into the red low profile ball.

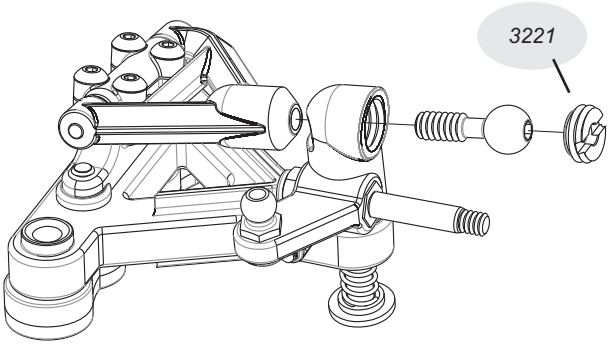
2 - Then, slide the steel stub axle into the steering block as shown, and secure it in place using the red 4-40 locknut.

1 - Locate the e-clip and snap it into the groove of the King Pin. Slide the Nylon Spring Cup and then the Front End Spring down over the threaded end of the King Pin until it rests against the e-clip.

2 - Using a .050" hex wrench, slide the King Pin/spring/e-clip assembly through the lower arm pivot ball, & then thread it into the steering block. Thread it in until the front spring just touches the lower arm pivot ball. You do not want any preload on this spring, but you don't want play either. Only run the king pin in until the spring just touches the ball.

3 - Once happy with the king pin/spring preload position, lock the king pin with the 4-40 brass set screw through the hole in the side of the steering block.





1 - Take the upper pivot ball and push it through the steering block and thread into the upper arm. Thread it in so there are no threads showing.

2 - Take the slotted capture insert and thread it into the steering block. THIS IS A BIT TRICKY .... as the insert must be fitted at a down angle as shown to the left. DO NOT try to insert it horizontally into the steering block. It is actually threaded in at a down angle toward the center of the car.

3 - Tighten this capture insert so that the steering movement is bound and slow. Yes, we are actually slightly over tightening this piece FOR NOW. With the steering movement bound from over tightening, move the steering to it's limits, back and forth. What we are doing is "breaking in" the upper ball/capture insert. After a minute or so of break in, loosen the insert just enough so the steering is free. Not too much or you will induce excessive free play.

CRC Pro-Strut Front End - cont.

1429 - 4-40 x 7/16" Flat Head

1232 - Long Ballcups

1317 - 42mm Turnbuckles

1412 - Red Locknut

1843 - GX10RT Servo Mount Plate

8-32 x 5/8" Low Head

1842 - GX10RT Front End Plates

1451 - 4-40 x 5/16" FH RED

1434 - 4-40 x 1/4" Button Head

3355 - Servo Mounts

17571 - Graphite Bumper

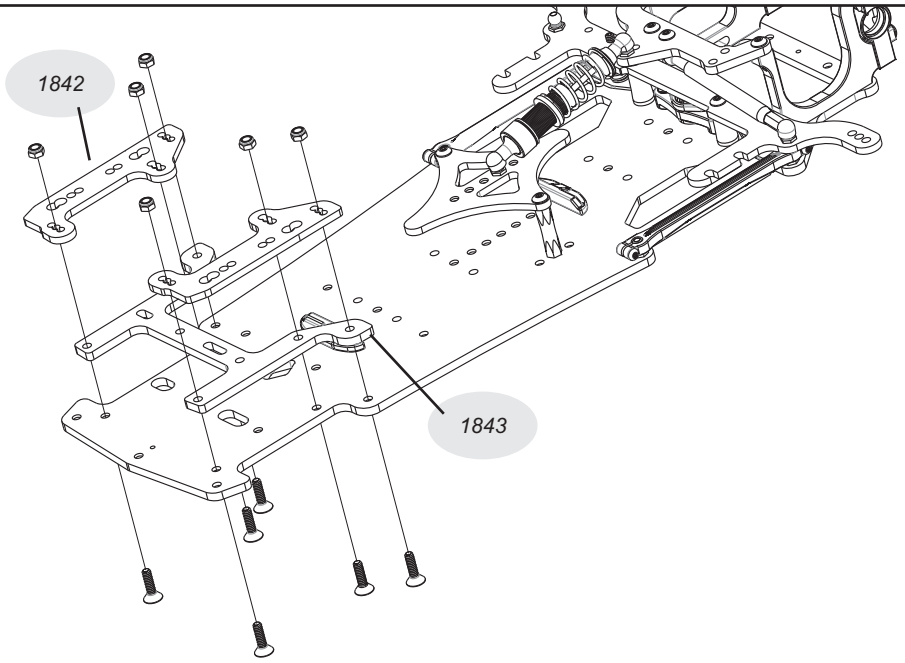
1760 - Foam Bumper

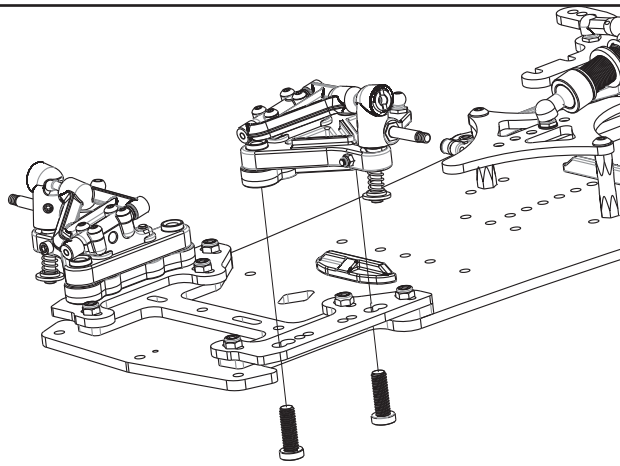
1262 - Short Standoff

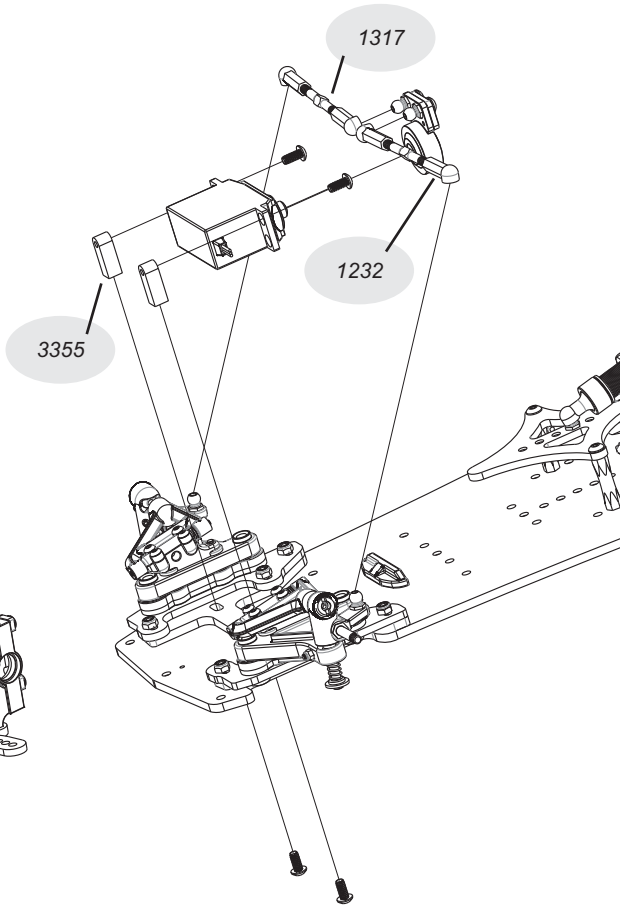
1263 - Finish Washer

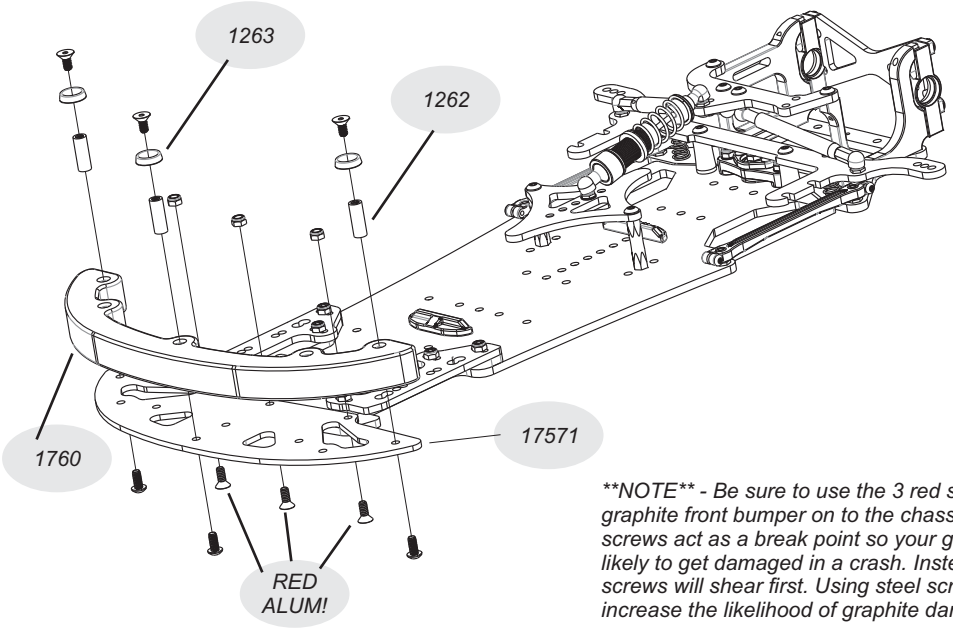
1424 - 4-40 x 1/4" Flat Head

13615 - Red Low-Profile Ball









NOTE - Be sure to use the 3 red screws for holding the graphite front bumper on to the chassis. These aluminum screws act as a break point so your graphite is much less likely to get damaged in a crash. Instead, the aluminum screws will shear first. Using steel screws here will drastically increase the likelihood of graphite damage occuring.

Differential Axle

Bag 8


4720 - Axle Spacer- Xti-2 + 5mm

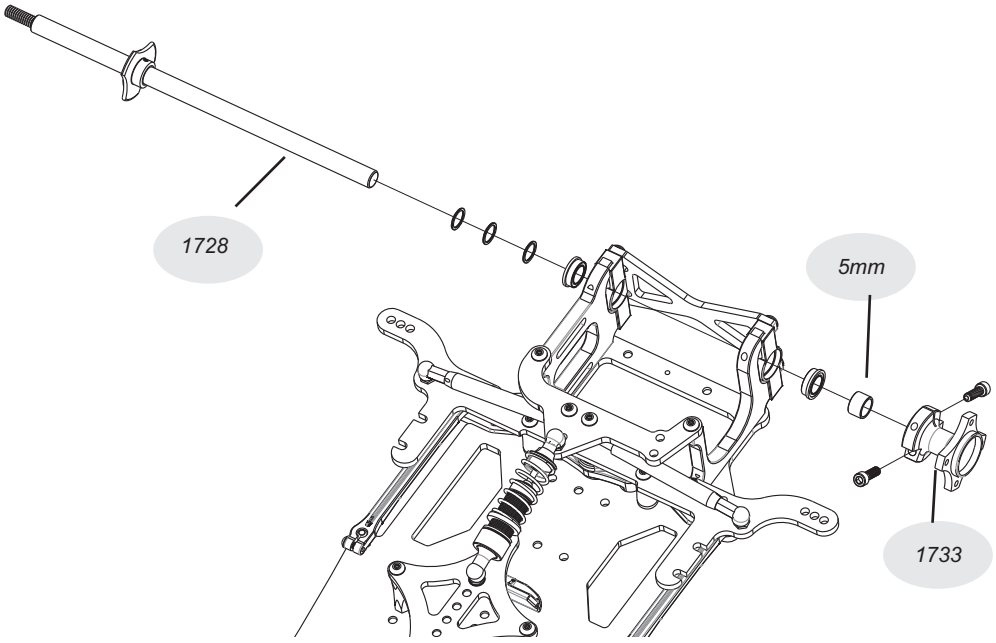

1386 - 1/4" x 3/8" Flanged Bearing


4732 - 1/4" Shim


4-40 x 3/8" Steel Socket Cap

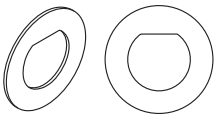
1728 - 1/10 Graphite Axle

1733 - Left Clamp Hub

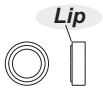


Differential

Bag 9


4201 - Diff Ring


1387 - 1/4" x 3/8" Plain Bearing



4121 - Diff Spacer


4123 - Spring Washer

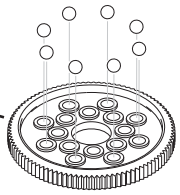

4126 - Nylon Diff Nut

1725 - Diff Hub

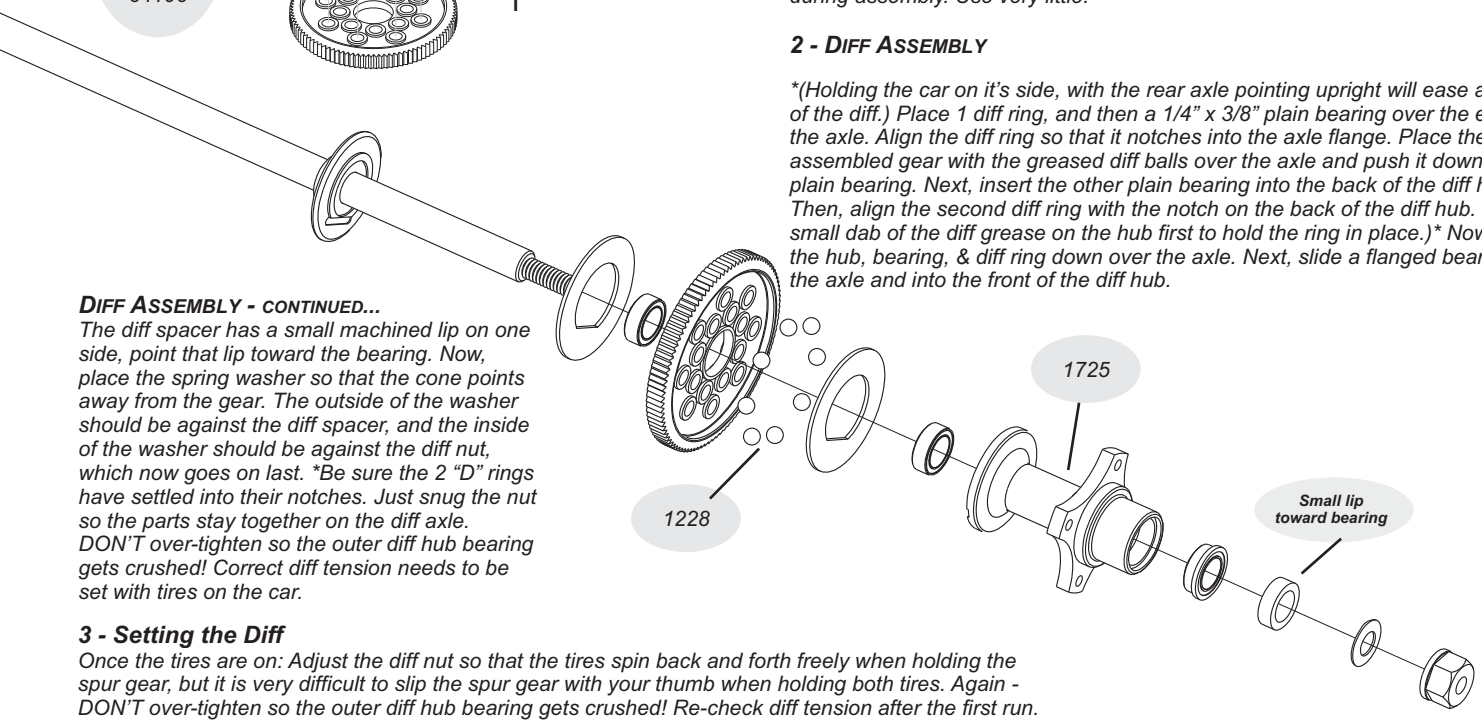
1227 - 2.5mm Diff Balls (100)

** Balls in outer ring of holes in gear **

64172
64180
64188
64196



1



1 - Install and grease the diff balls

Place the spur gear flat on the table in front of you with the side that says "CRC" facing down. The diff balls will fall into each of the outer ring of holes in the diff gear, but won't fall out the other side. Place a small dab of silicone diff grease on each ball to lube the ball and prevent the balls from falling back out of the holes during assembly. Use very little!

2 - Diff Assembly

**(Holding the car on it's side, with the rear axle pointing upright will ease assembly of the diff.) Place 1 diff ring, and then a 1/4" x 3/8" plain bearing over the end of the axle. Align the diff ring so that it notches into the axle flange. Place the assembled gear with the greased diff balls over the axle and push it down over the plain bearing. Next, insert the other plain bearing into the back of the diff hub. Then, align the second diff ring with the notch on the back of the diff hub. *(place a small dab of the diff grease on the hub first to hold the ring in place.)* Now, slide the hub, bearing, & diff ring down over the axle. Next, slide a flanged bearing over the axle and into the front of the diff hub.*

Diff Assembly - continued...

*The diff spacer has a small machined lip on one side, point that lip toward the bearing. Now, place the spring washer so that the cone points away from the gear. The outside of the washer should be against the diff spacer, and the inside of the washer should be against the diff nut, which now goes on last. *Be sure the 2 "D" rings have settled into their notches. Just snug the nut so the parts stay together on the diff axle. DON'T over-tighten so the outer diff hub bearing gets crushed! Correct diff tension needs to be set with tires on the car.*

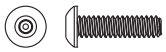
3 - Setting the Diff

Once the tires are on: Adjust the diff nut so that the tires spin back and forth freely when holding the spur gear, but it is very difficult to slip the spur gear with your thumb when holding both tires. Again - DON'T over-tighten so the outer diff hub bearing gets crushed! Re-check diff tension after the first run.

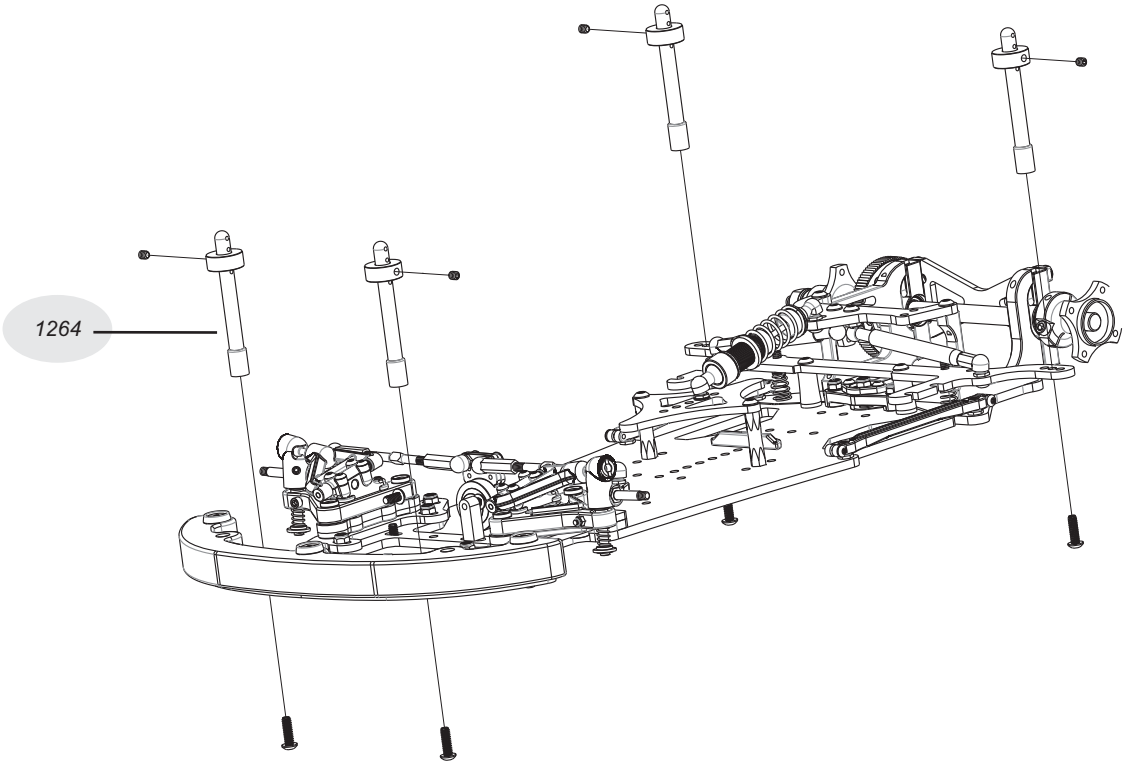
Bag 10

13783 - 4-40 x 1/8" Set Screw

1436 - 4-40 x 3/8" Button Head



1264 - Body Posts w/ collars (3 in.)



Bag 11

1462 - 4-40 x 3/8" Red Socket Cap

1248 - 1/8" x 5/16" Flanged Bearing

1412 - Red Locknut

4731 - 1/8th shim

1 - Use the 4-40 x 3/8" red cap head screws to bolt the rear wheels to the hubs. (Tires not included)

2 - At least one 4731 shim should be added on the front axle first. The second shim can be used to widen the front end or used before the locknut. After the inner shim(s), insert the flanged bearings into the front wheels. Slide the front wheel onto the axle, & secure with a red locknut. The front wheels should spin very free. Do not over-tighten the front wheel nuts so that the bearings are pinched.