Carpet Knife Generation X Assembly Manual and Tuning Guide

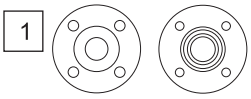
Calandra Racing Concepts, Inc.

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

Center Pivot

Bag 1

Plastic pivots



2-56 Flat Head

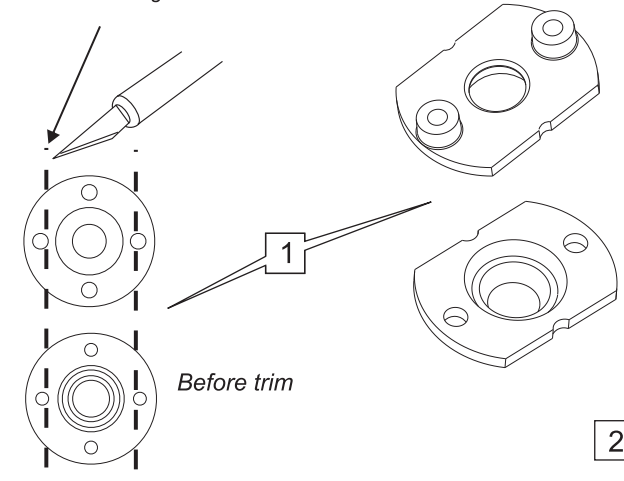
Alum Pivot ball

Using a hobby knife, or Dremel tool, trim the plastic pivots [1] as shown. This gives added motor and battery clearance.

Assemble the Center Pivot assembly as shown in Figure 2. Tighten the 2-56 flat heads [2] enough to remove any up and down play, be sure the flanged pivot ball [4] pivots freely.

1

Trim plastic pivot pieces using the dotted lines as a guide.



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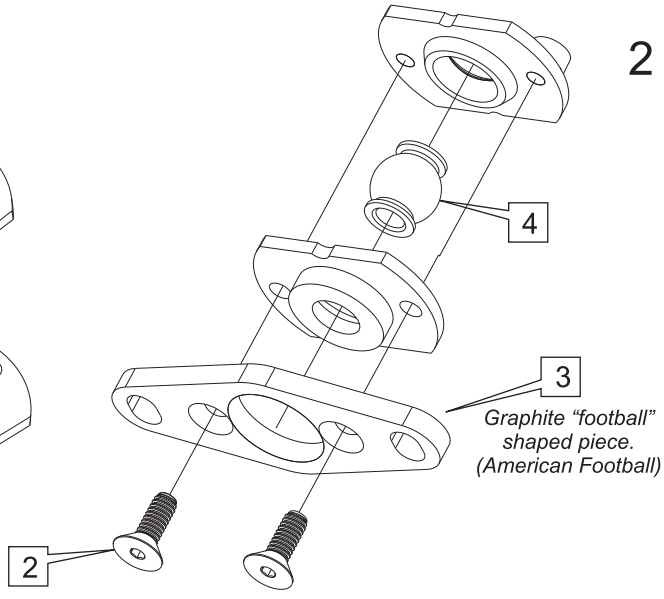
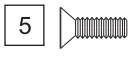


Graphite "football" shaped piece. (American Football)

Center Pivot

Bag 1

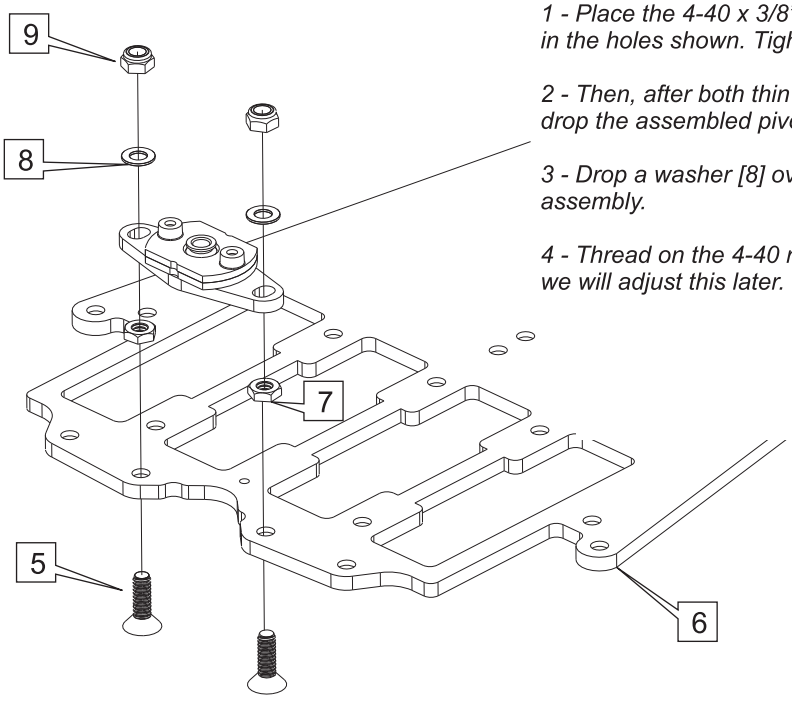
4-40 x 3/8" FH Steel



4-40 Thin Hex Nut

Washer

Red Locknut



1 - Place the 4-40 x 3/8" screws [5] through the graphite chassis [6] in the holes shown. Tighten a 4-40 thin hex nut [7] down fairly tight.

2 - Then, after both thin hex nuts are tight on the 2 mounting screws, drop the assembled pivot plate over the screw posts.

3 - Drop a washer [8] over each screw above the pivot plate assembly.

4 - Thread on the 4-40 red locknuts [9]. Do not tighten them yet as we will adjust this later.

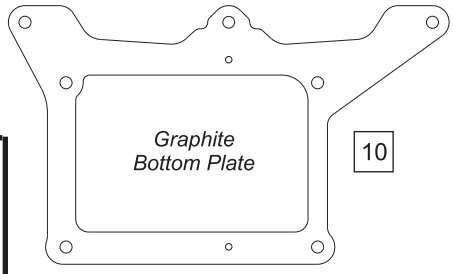
Bag 2

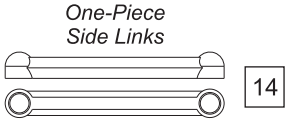
13 4-40 x 5/16" FH steel

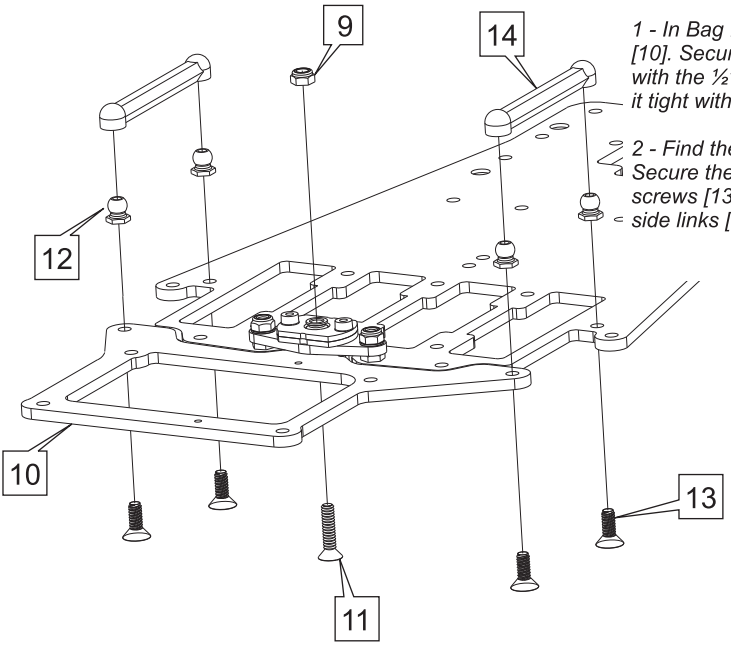
Red Low-Profile Ball 12

9 Red Locknut

11 4-40 x ½" FH Alum



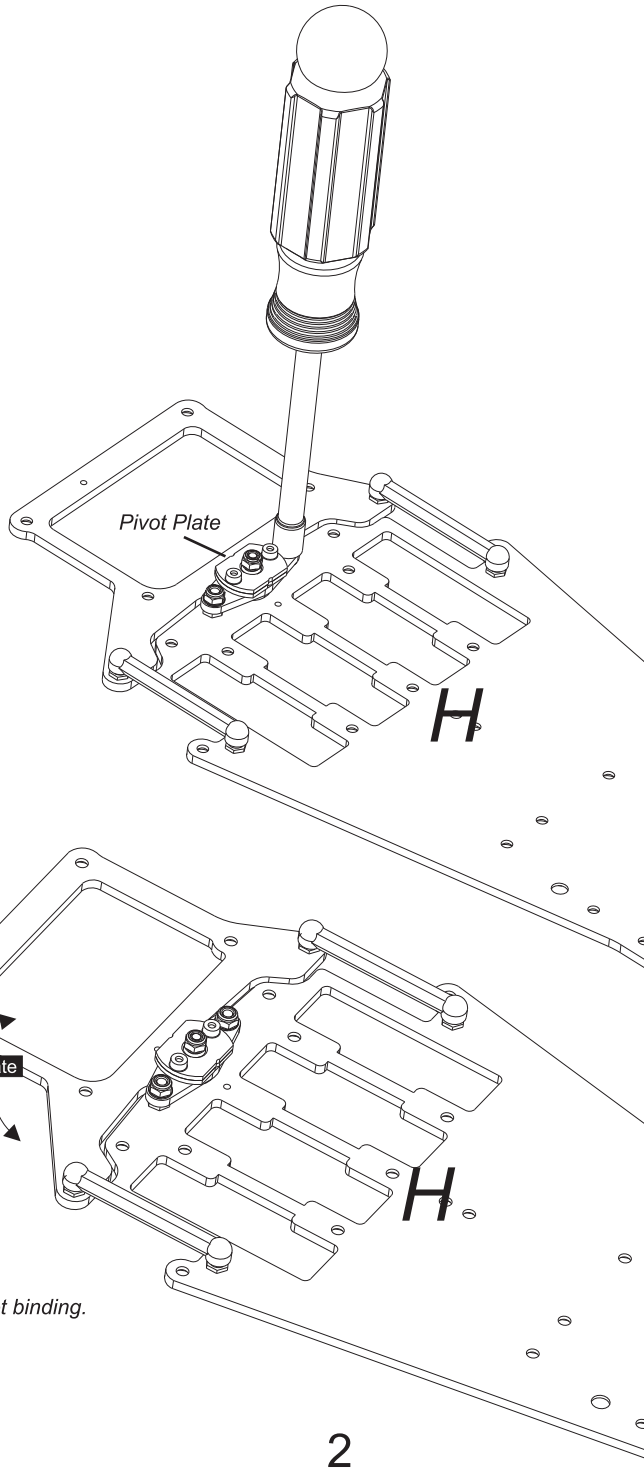




1 - In Bag 2, find the graphite bottom plate [10]. Secure it to the pivot ball assembly with the ½" red flat head screw [11]. Secure it tight with a red locknut [9].

2 - Find the 4 red low profile balls [12]. Secure them as shown with the steel 5/16" screws [13]. When secure, pop the plastic side links [14] on the balls.

Setting the One-piece links



1. *Be sure the 2 aluminum locknuts on top of the pivot plate are slightly loose. There should be a washer under each alum locknut. Notice that the pivot plate "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 Carpet Knife.*

2. *Snap the 2 links on the balls as shown above. They should rock freely on the pivot balls.*

3. *Place the chassis/backplate 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.*

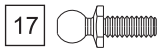
4. *Holding the chassis at the hold point "H" (not the rear pod) by pressing the chassis down to the table. Slowly tighten the 2 locknuts that secure the pivot plate (football shaped part). For now, just lightly snug one side then the other.*

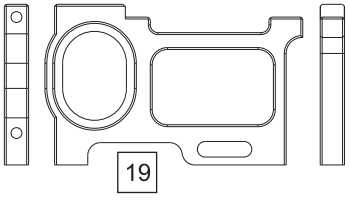
5. *Pick up the car and check the pivoting action of rear lower plate. Rotate the rear plate from side-to-side. It should move free without binding or "clicking". If it does not, loosen the pivot locknuts and repeat steps 3+4.*

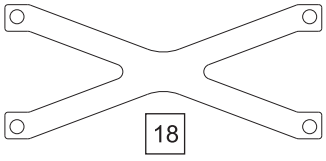
If it rotates smoothly, tighten the locknuts on the football pivot more securely. Do this by again holding the chassis down to the table at the hold point "H". Slowly and carefully fully tighten the locknuts that hold the football piece to the chassis. The handling of the Carpet Knife hinges (pun intended!)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

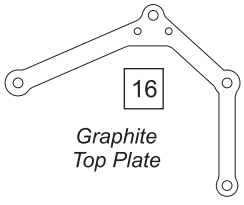
Rear X-Pod

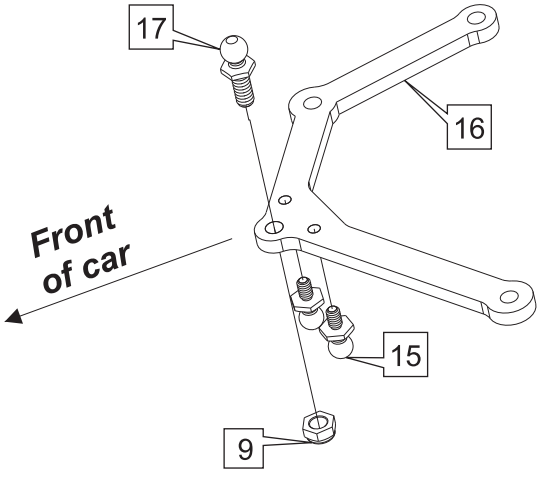
Bag 3







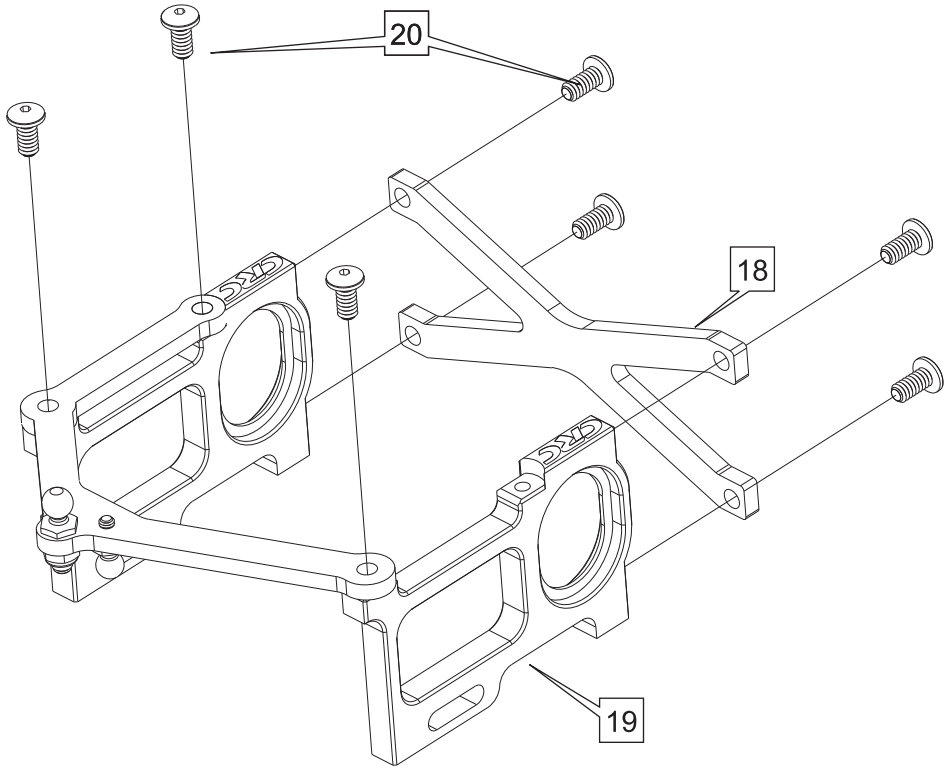




1 - Install the black 2-56 ballstuds [15] into the graphite top plate [16]. These steel balls thread into the graphite, no nut is needed. Be sure to start them straight and square.

2 - Push the red ballstud [17] through the graphite plate [16]. Use a red locknut [9] to secure it.

We will install the top plate on the aluminum pods next.

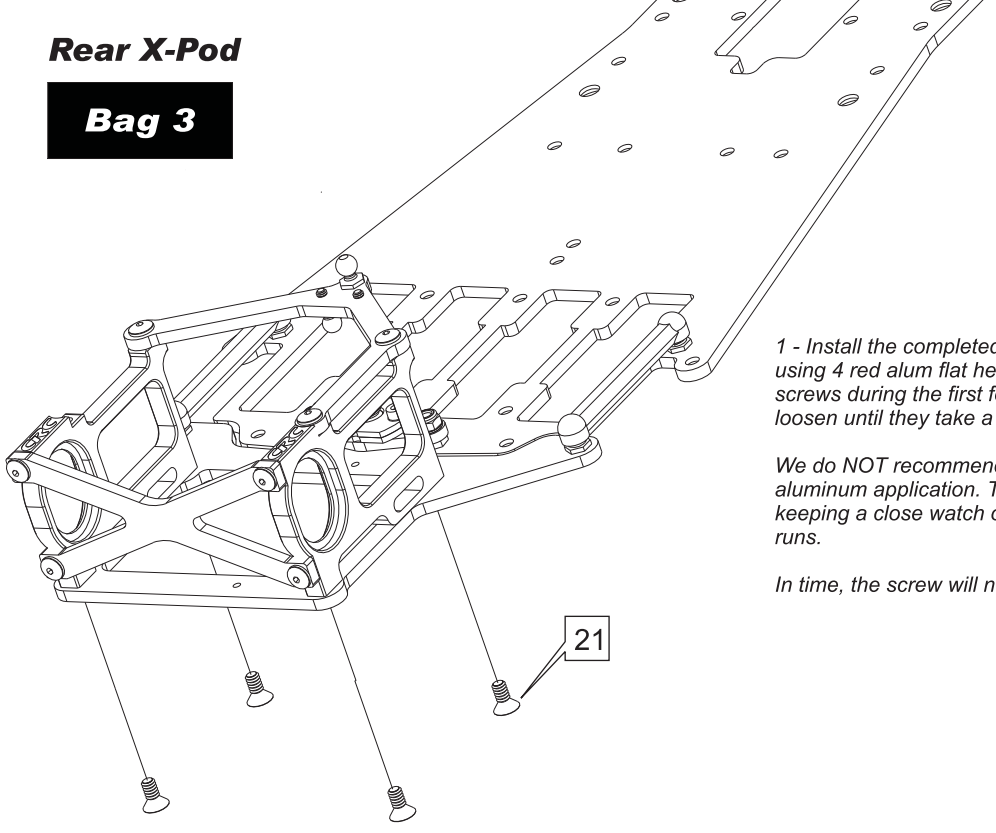


1 - Install the Graphite X-brace [18] to the back of the two aluminum pods [19]. Use 4 red button head screws [20] to attach the graphite piece to the aluminum.

2 - Attach the assembled top plate to the pod plates using 3 red button head screws [20].

Rear X-Pod

Bag 3



1 - Install the completed rear pod to the chassis sub-assembly using 4 red alum flat head screws [21]. Keep an eye on these screws during the first few runs of your car. They tend to loosen until they take a "set" and then after, which stay tight.

We do NOT recommend thread lock in the aluminum to aluminum application. The best way to keep these tight is by keeping a close watch on their tightness after your first few runs.

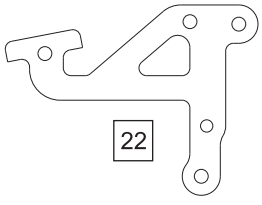
In time, the screw will naturally "seat" and stay tight.

Tweak Plates

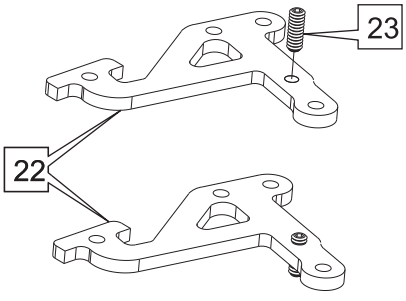
Bag 4

4-40 x 5/16" set screw

Metal Spring Holder



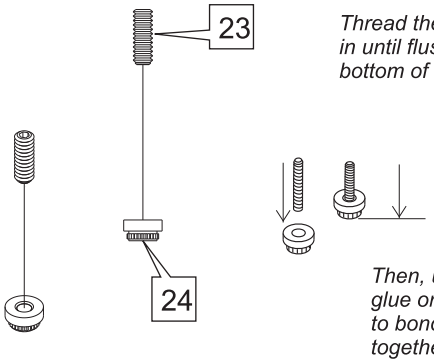
Graphite Tweak Plate (x2)



INSERT TWEAK SCREWS IN BRACE ASSEMBLY

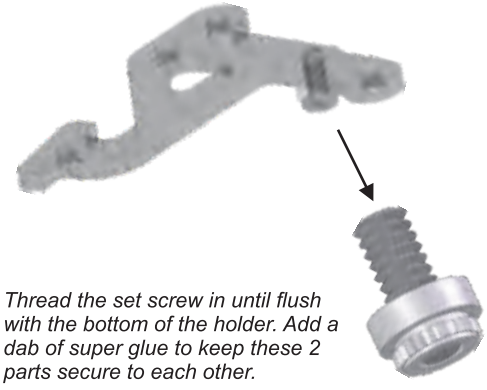
1 - Place the Tweak Brace [22] on a smooth, flat table and thread the Tweak set screws [23] into the brace per the illustration. Try to be careful to thread it in straight and perpendicular.

With the tweak screw threaded through the brace, super glue or thread lock the tweak screw to the metal spring holder [24] as shown in the illustration. The tweak screw should thread in until flush with the bottom of the spring holder.



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

Then, use super glue or threadlock to bond the two together.



Thread the set screw in until flush with the bottom of the holder. Add a dab of super glue to keep these 2 parts secure to each other.

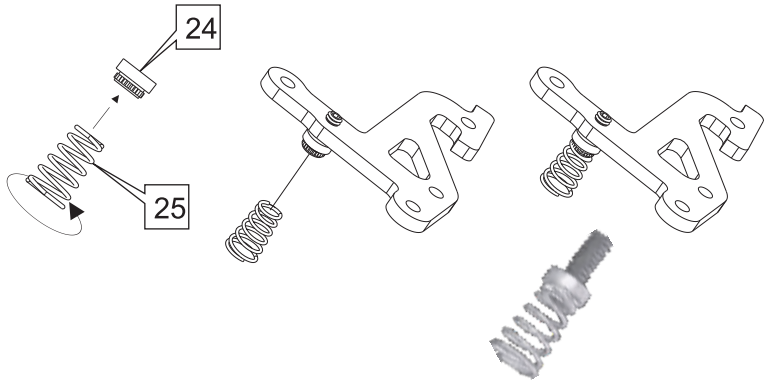
Tweak Plates

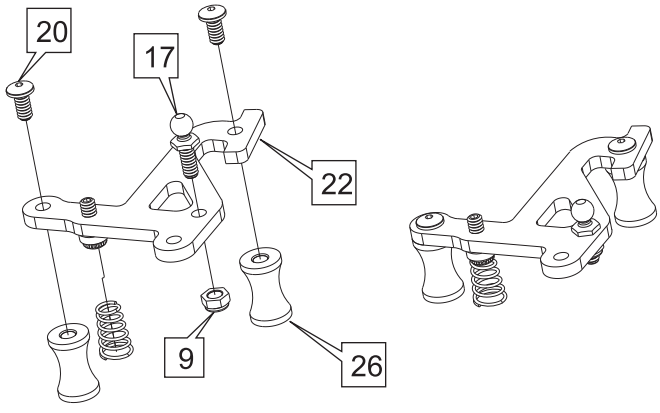
Bag 4

White Side Spring	4-40 x ½" Red Standoff	Red Locknut	Red Alum 4-40 Ballstud	4-40 x 1/4" Red Button Head	4-40 x 1/4" Red Alum FH
25	26	9	17	20	21

Attach Spring to Metal Retainer

Use a small screwdriver or your fingernail to start the spring [25] into the groove on the metal retainer [24]. Pull the leading coil over the retainer and place the top coil into the groove. Then, holding the retainer securely, turn the spring clockwise to "open" the coil and snap the remaining portion over the groove.

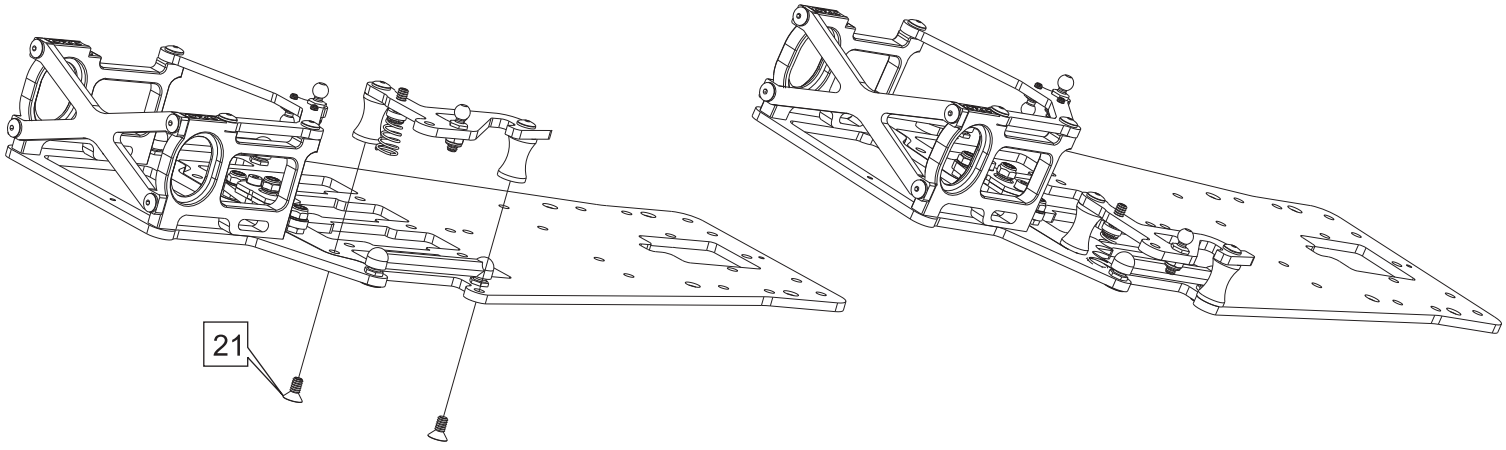




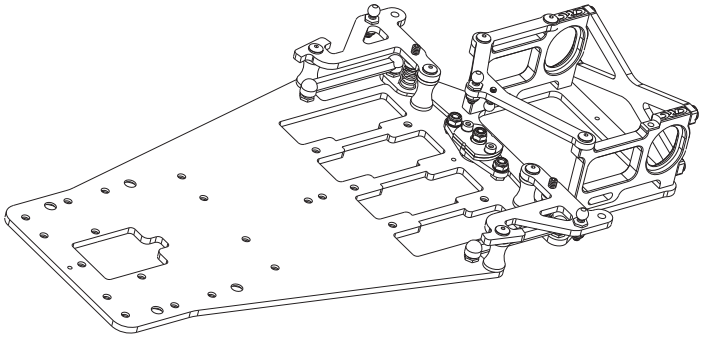
Assemble the Tweak Plates

1 - Use the red button head screws [20] to fasten the red standoffs [26] to the graphite tweak plate [22].

2 - Put the red ball stud [17] through the tweak plate and secure with a red locknut [9] as shown in the illustration.

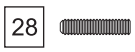


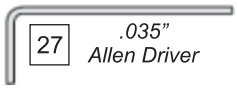
1 - Mount the completed tweak brace assembly to the chassis as shown using the 4-40 x 1/4" red flat head screws [21]. Do this for both left and right side tweak plates.

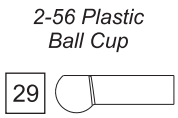


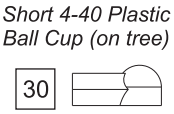
Damper Tubes

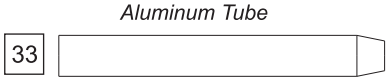
Bag 5

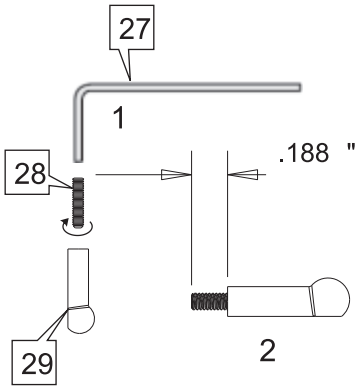


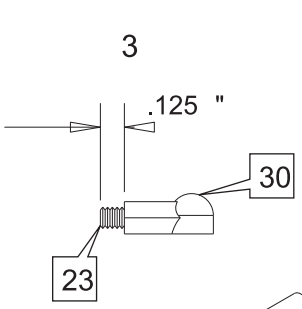


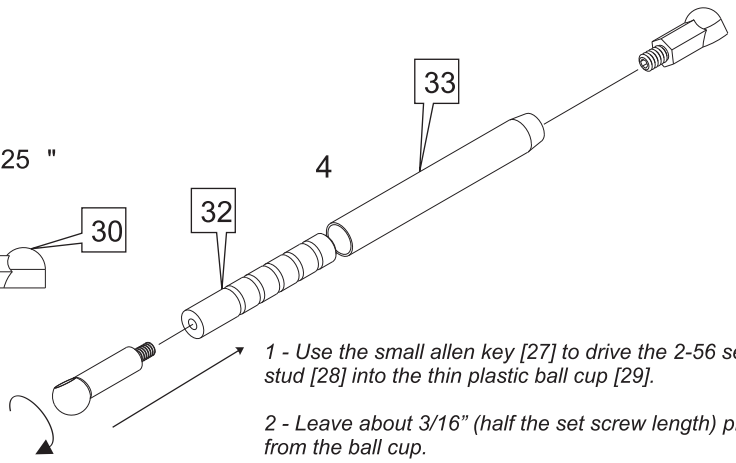












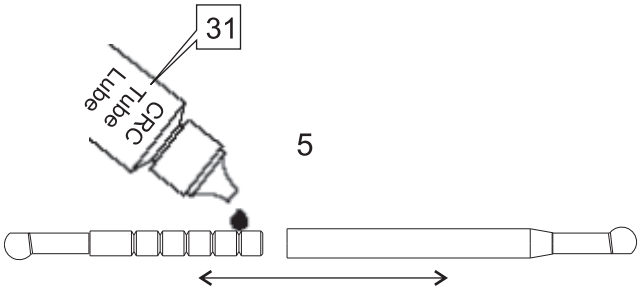
1 - Use the small allen key [27] to drive the 2-56 set screw stud [28] into the thin plastic ball cup [29].

2 - Leave about 3/16" (half the set screw length) protruding from the ball cup.

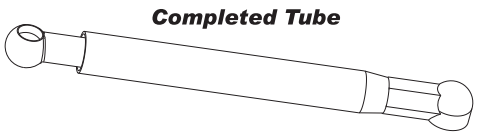
3 - Do the same for the short 4-40 ballcup [30]. Use the 4-40 x 5/16" set screw [23] and the slighty larger .050" allen key. Leave about 1/8" protruding.

4 - Thread the 2 ball cups into their respective tube halves per the diagram. Finger tighten.

*5 - Add CRC Tube Lube [31] to each slot on the delrin plunger [32]. Build the tube and be sure it has smooth, damped action. *** Note, fill only the slots, not the entire aluminum tube [33]. ****

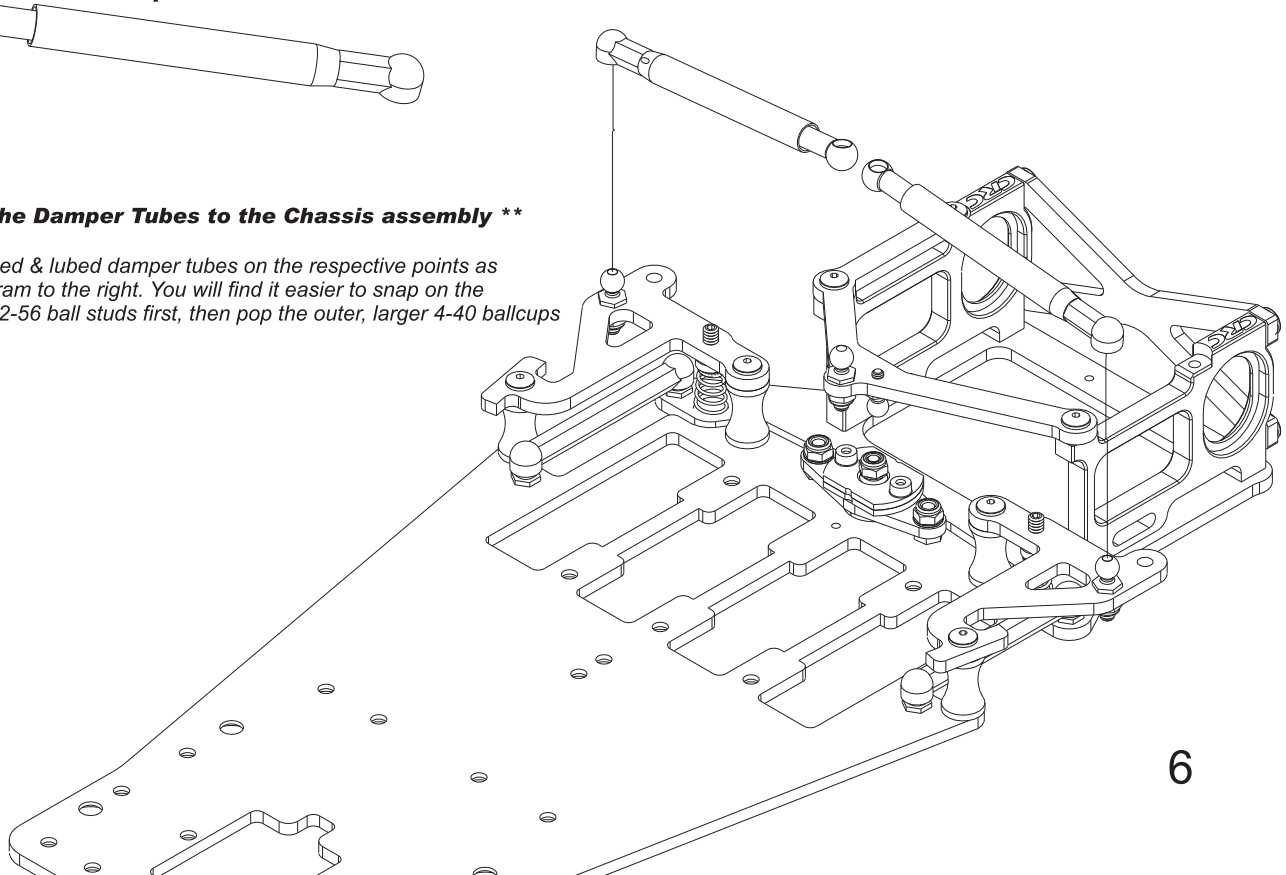


Completed Tube



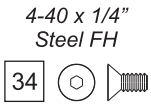
***** Adding the Damper Tubes to the Chassis assembly *****

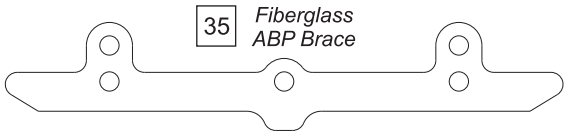
Snap the assembled & lubed damper tubes on the respective points as shown in the diagram to the right. You will find it easier to snap on the centered, smaller 2-56 ball studs first, then pop the outer, larger 4-40 ballcups

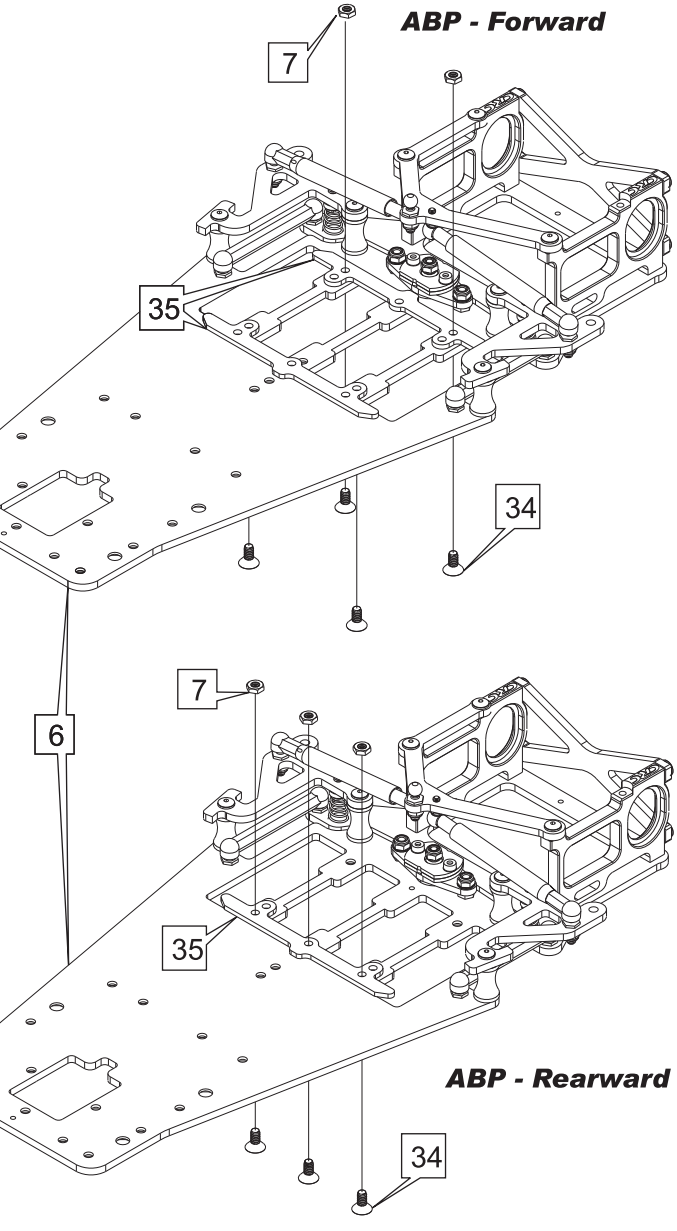


Adjustable Battery Position

Bag 6







Your new Generation X car has CRC's Adjustable Battery Position (ABP) carried over from the 3.2R. This adjustability gives the car a wide range of handling possibilities. We recommend running the battery forward for medium to high grip carpet conditions.

Using the steel 4-40 x 1/4" flat head screws [34], push the screws through the chassis [6] and then THREAD them into the fiberglass ABP brace [35] as shown in the diagram to the left. For the forward battery position, you will use both ABP braces, 4 screws, and 2 nuts [7] on the rear brace.

NOTICE:

When using the "ABP Forward" battery position; DO NOT ADD HEX NUTS TO THE FORWARD ABP MOUNTING SCREWS! Thread the screw into the fiberglass only, DO NOT USE METAL NUTS, AS THEY CAN SHORT OUT THE BATTERIES, damaging the chassis, batteries and braces!

Be careful not to strip the brace out by over tightening. Also, you can add a drop of super glue to the screws in the front brace to secure it further, but again, do NOT add metal hex nuts.

A secondary benefit to the ABP brace... as battery manufacturers "bend" the cell dimension rules, you are able to alter the fiberglass brace to allow inconsistent cells to fit your car. Recently, there have been a rash of both motors and batteries "exceeding" both legal and traditional size limits making it very difficult on the chassis manufacturers.

The rearward ABP position generates more chassis rotation, mid and corner exit. This added rotation makes the car more aggressive and a bit harder to drive. This setup is typical used on lower bite carpet or asphalt. Drivers that like a lot of steering will use this rearward position.

For this position, you will use 3 screws and hex nuts and one brace. The rear brace is NOT needed. Using the steel 4-40 x 1/4" flat head screws [34], push the screws through the chassis [6] and then THREAD them into the fiberglass ABP brace as shown in the diagram to the left.

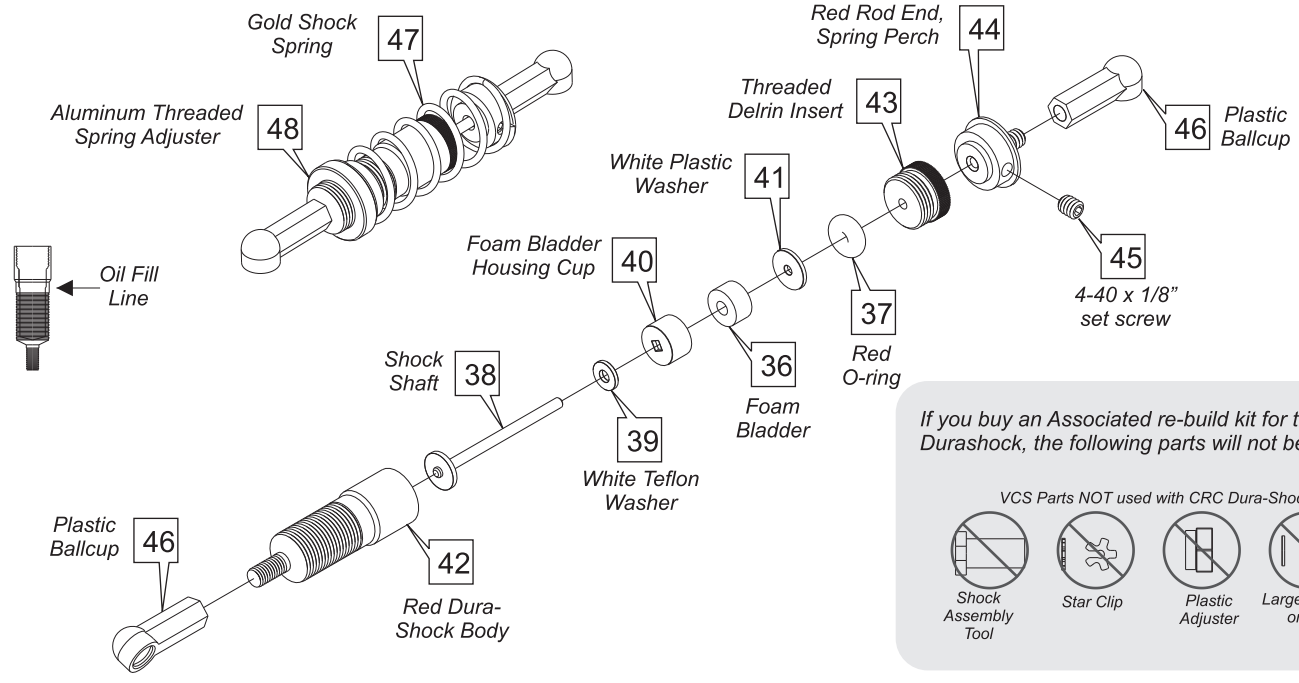
Use the low profile, thin 4-40 hex nuts [7] to lock the brace in position. Tighten securely. ONLY USE THESE NUTS WHEN USING THE " ABP REARWARD" POSITION!

CRC Dura-Shock Assembly Instructions

****Pre assembly inspection - Take the shock shaft and slide it through the black Delrin insert. Be sure the shaft slides through freely. If the shaft drags on the Delrin, simply spin an X-acto Knife tip in each end of the delrin piece. The knife will remove the small manufacturing burr that occasionally forms right near the end of the hole.*

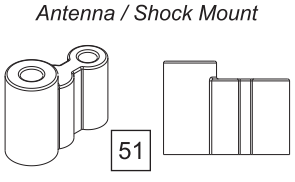
1 - Using the supplied 30 weight silicone oil, soak the foam bladder [36] in oil. Squeeze the foam to ensure the oil has soaked in. Wet the red O-ring [37] as well.
2 - Populate the shock shaft [38] in this order; white washer [39], plastic cup [40] (open end away from piston), soaked foam sponge [36], small washer [41], & the pre-oiled red O-ring [37].
3 - Hold the shock body [42] upright and fill the body with oil to the line shown. Place the populated shaft in the oil slowly.
4 - Press the shaft slowly until it stops at the bottom of the shock. Slip the Delrin insert [43] over the shaft and begin to thread into the shock body.
5 - The insert will stop threading, hydro-locking as the shock has too much oil. Oil will spill out.
6 - Allow the oil to bleed out, tightening and loosening the delrin insert while keeping the shaft fully depressed inside the body. This will bleed the shock.
7 - When the shock is fully bled, no oil will leak and the shaft will rebound out very slowly when fully depressed. The shock shaft will rebound out 1/8".
8 - Be sure that the shock is fully bled, any "pressure" from being overfilled with oil will cause the shock to leak during the first few uses .

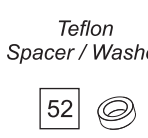
****Post assemble notes: Some oil may seep out of the shock near the Delrin insert. This is simply some remnants of the oil bleed process. Just wipe it off after the first couple uses, and it should go away. This also may happen if the shock was built with too much oil in it. Be sure to bleed fully.*

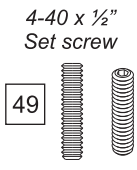


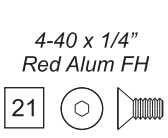
If you buy an Associated re-build kit for the CRC Durashock, the following parts will not be used;

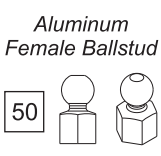
VCS Parts NOT used with CRC Dura-Shock





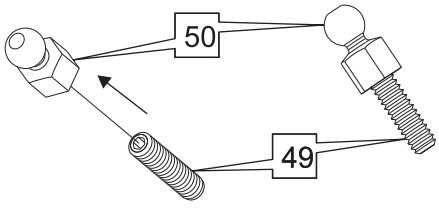






Center Shock

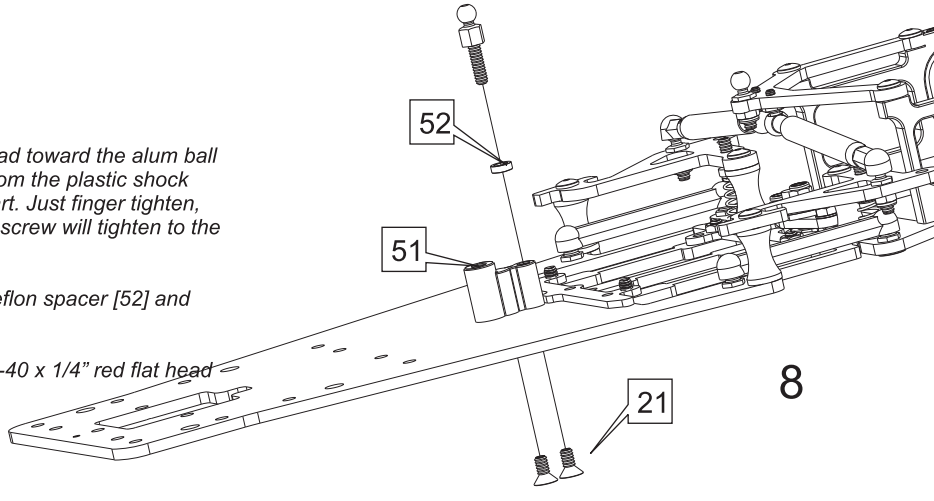
Bag 7



1 - Install the 4-40 x 1/2" set screw [49] with the hex head toward the alum ball stud [50]. This will allow you to remove the set screw from the plastic shock mount [51] should the ballstud and set screw come apart. Just finger tighten, when the assembly is tightened into the mount, the set screw will tighten to the ballstud.

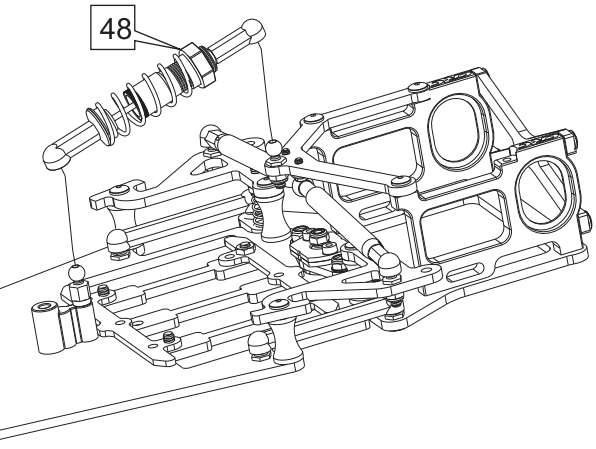
2 - Run this ballstud/set screw assembly through the Teflon spacer [52] and into the plastic shock/antenna mount until tight.

3 - The plastic mount is secured to the chassis with 2 4-40 x 1/4" red flat head screws [21].



Center Shock

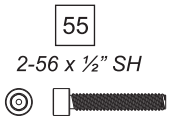
Bag 7

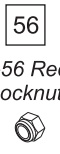


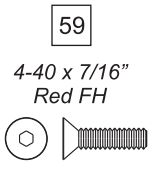
Install the shock on the ball studs as shown. Install shock with the threaded spring adjuster [48] toward the top. While this may seem unconventional, it helps keep the piston in the oil should the shock take on any air. It also makes spring changes easier.

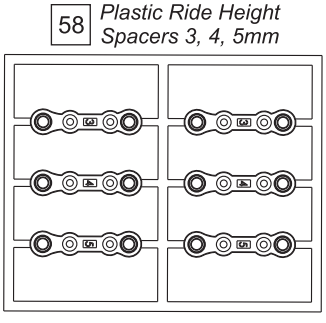
CRC Pro-Strut Front End

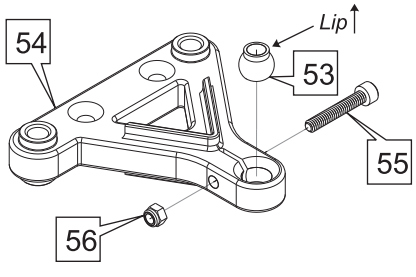
Bag F







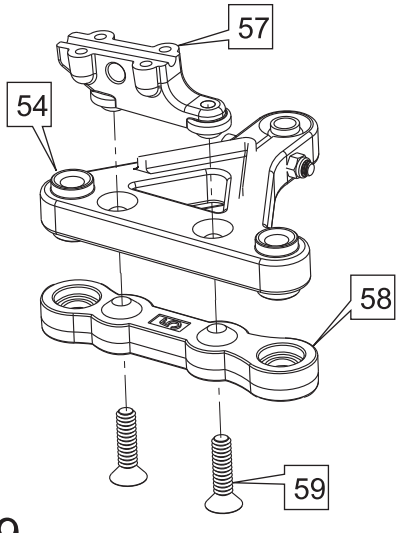




1 - Pop the delrin pivot ball [53] into the lower arm [54]. Place the arm on a strong table and push the ball in with the back of screwdriver handle. Or preferably, you can use CRC's 4279 Ball popper pivot ball tool. Notice the "lip" of the delrin pivot ball is pointing upward. The diagram to the left 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 [55] through the horizontal hole in the lower arm. Thread the 2-56 red locknut [56] 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 [57] 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 - With side cutters or good scissors, cut off (do NOT break off) the 3, 4 and 5 mm spacers [58] from the ride height tree. Use the 5 mm thickness for stock CRC High Roller tires trued to 1.8". For smaller tires, use the 4 and 3 mm versions. 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. After selecting the proper spacer, push the red 4-40 x 7/16" screw [59] through the plastic ride height spacer [58], then through the lower arm [54], and then thread the screw into the upper A-arm mount [57]. Be sure NOT to over tighten. just firm and snug, you are threading an aluminum screw into the plastic upper A-arm mount.

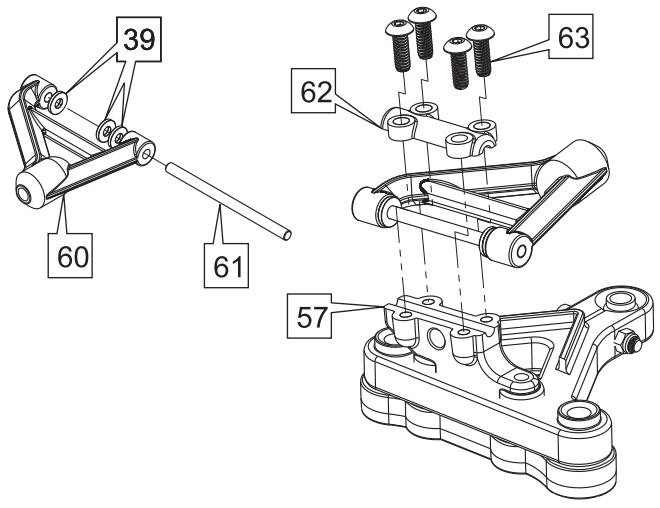
CRC Pro-Strut
Front End - cont.

61 Hinge Pin

39 White Teflon Washer

63 2-56 BH

62 Upper Cap



1 - Break the mold tree from the upper A-arm [60]. You can clean up the mold gates with an X-acto or Dremel tool.

2 - Locate the upper arm hinge pin [61] and slide it into one half of the upper arm. Locate 3 small white teflon washers [39]. Push the hinge pin through the 3 washers. 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 [57]. Put the hinge pin in the channel. At this point you can set your starting caster setting by moving these washers forward and back. The position shown to the left will result in a competitive handling. 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, these washers are made from teflon and and will flatten slightly with use.

4 - Install the upper cap [62] with 4 black 2-56 button head screws [63]. 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.

20 4-40 x 1/4" Red Button Head

65 Graphite Steering Arm

12 Red Low-Profile Ball

66 2-56 SH

67 Dual Axle

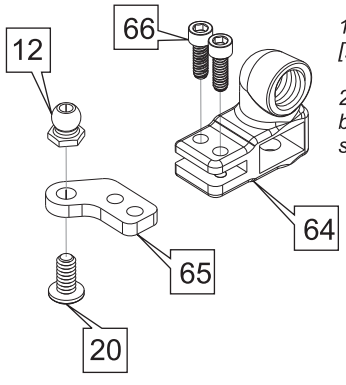
68 King Pin

69 Front End Spring

70 E-Clip

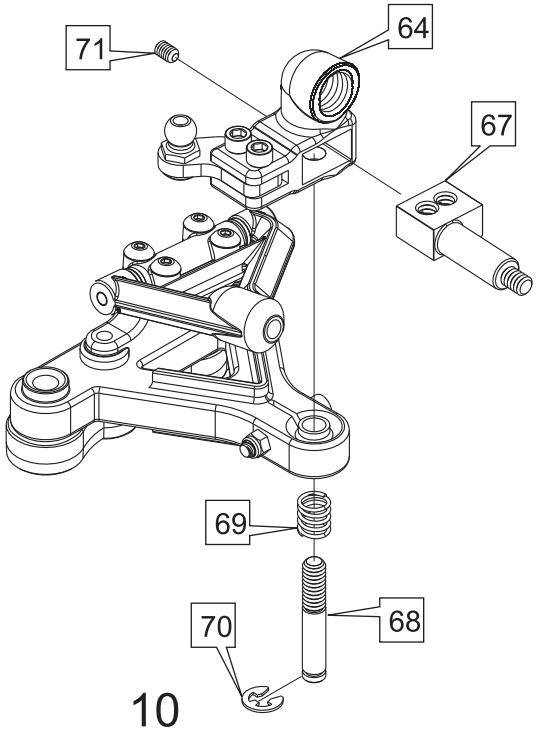
71 Brass Set Screw

72 Upper Ball



1 - Build up the left and right steering blocks [64] as shown to the left. Start by threading the red button head screw [20] through the graphite steering arm [65] and into the red low profile ball [12].

2 - Then, slide the graphite steering arm assembly into the steering block, lining up the 2 mounting holes. Using the black 2-56 socket head screws [66], fasten the arm to the steering block. DO NOT OVER tighten. You will drive the screw through the steering block, deforming the part.

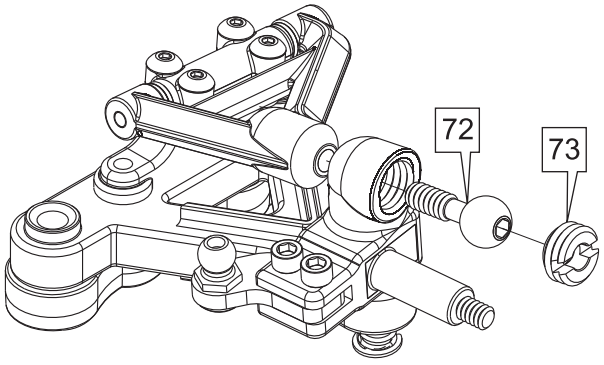


1 - Push the Dual aluminum axle [67] into the plastic steering block [64]. Push it all the way in firmly. Notice you can install the axle inline or trailing. Typically, this is installed trailing for 1/12th road racing. This will slightly slow the steering response as compared to inline.

2 - Take the King pin [68] on the end of the Allen key and slide it through the lower arm pivot ball [53], & then thread it into the steering block. Thread it in until some resistance is met. This is the King pin beginning to thread into the top of the steering block after traveling entirely through the dual axle.

3 - Add the spring [69] to the king pin. The preload on the spring can be adjusted with the king pin length. When on the king pin, you want the end of the spring flush with the e-clip groove. Start by adjusting the king pin so you have to slip the e-clip [70] under the spring to get it in the groove. Just a bit of preload.

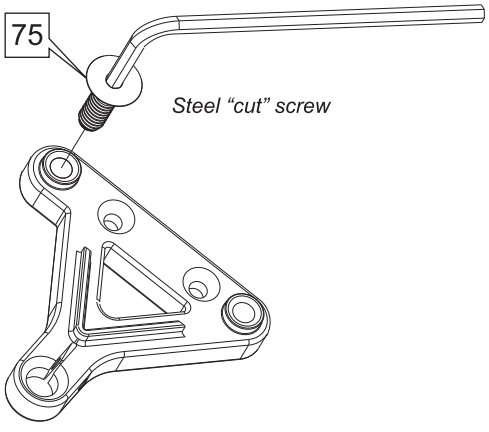
4 - Once happy with the preload position, lock the king pin with the 4-40 brass set screw [71] through the back of the steering block.

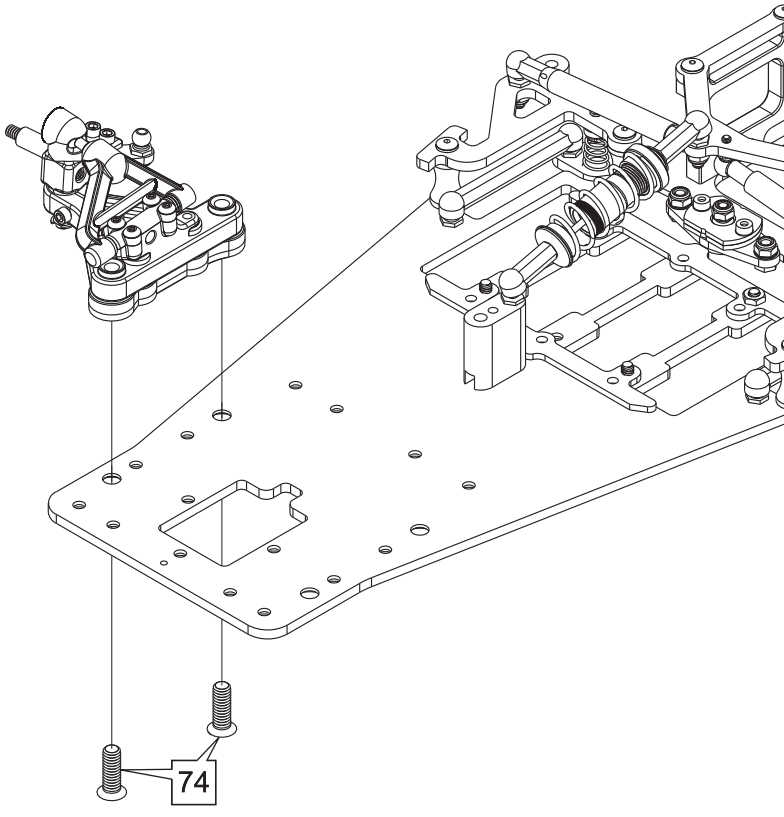


1 - Take the upper pivot ball [72] and push it though the steering block and thread into the upper arm. Thread it in so there are no threads showing.

2 - Take the slotted capture insert [73] 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.





Installing the Lower arm to the Chassis

The lower arm is molded to be very tight on the red aluminum 8-32 screw [74]. This keeps the arm secure on the chassis. However, this tight fit causes a great strain on the red aluminum phillips screw head. To lessen the chance of stripped screws, we have included a steel "Thread Cutting" screw [75]. This screw has a hex head to allow you to drive the screw in the plastic, cutting threads perfect for 8-32 screw.

1 - Before using the aluminum 8-32 screws, cut threads with the steel hex head 8-32 screws.

2 - After the threads are formed, use the aluminum 8-32 screws to mount the front suspension assembly to the chassis [6]. Push the screw through the chassis and then screw into the lower front suspension arm.

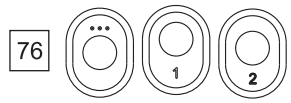
3 - Tighten both screws firmly. Remember, it is an aluminum screw in a plastic arm, so be careful not to strip the head nor the threads in the arm.

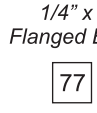
4 - Do both left and right.

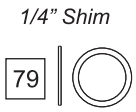
5- You can change ride height spacers or use CRC's 4262 plastic shim kit for fine ride height adjustments.

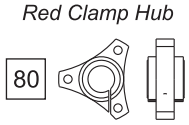
Bag 8

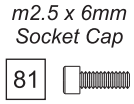
Differential Axle











1 - Locate the 2 trees of rear bearing carrier / ride height inserts [76]. Remove the insert with the 3 dots from each tree. (save the left over inserts as you will use these to increase the rear ride height as the tires wear.)

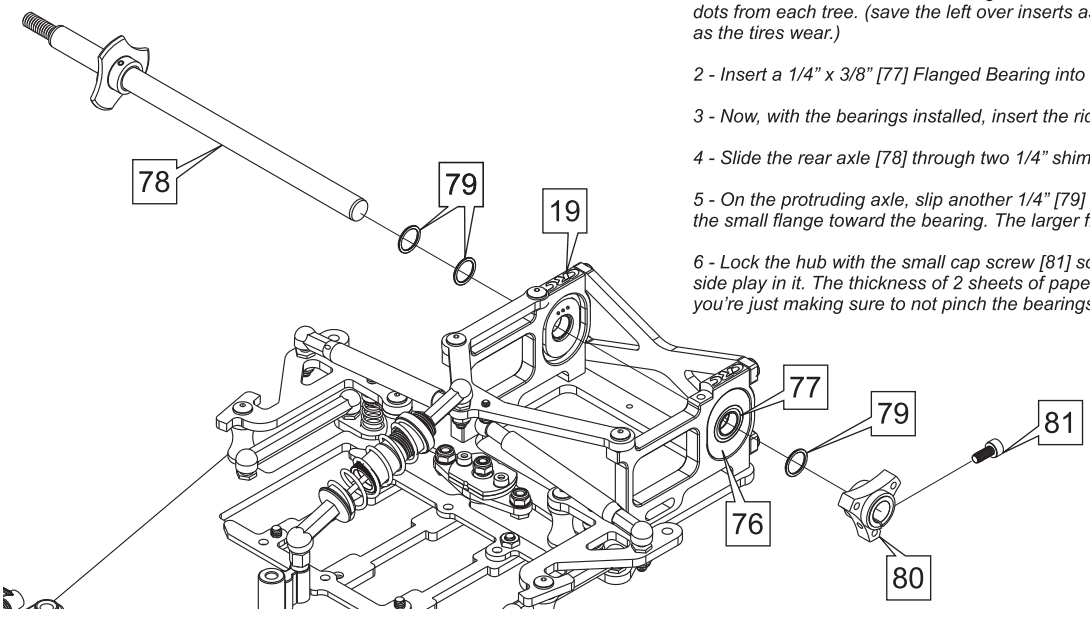
2 - Insert a 1/4" x 3/8" [77] Flanged Bearing into each of the #3 spacers.

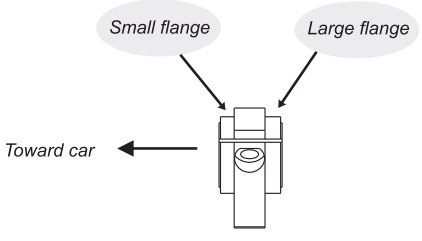
3 - Now, with the bearings installed, insert the ride height spacers into the rear pod plates [19].

4 - Slide the rear axle [78] through two 1/4" shims [79] and into the 2 rear pod bearings.

5 - On the protruding axle, slip another 1/4" [79] shim over the axle. Then slip the hub [80] on with the small flange toward the bearing. The larger flange should face out.

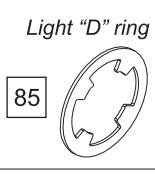
6 - Lock the hub with the small cap screw [81] so that the axle has a very small amount of side to side play in it. The thickness of 2 sheets of paper is plenty. You don't want excessive play here, you're just making sure to not pinch the bearings.

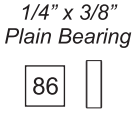


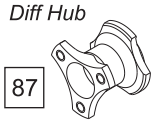


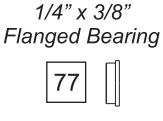
Bag 9

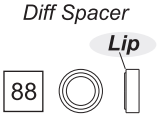
Differential

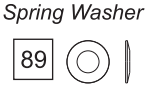


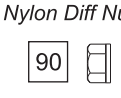




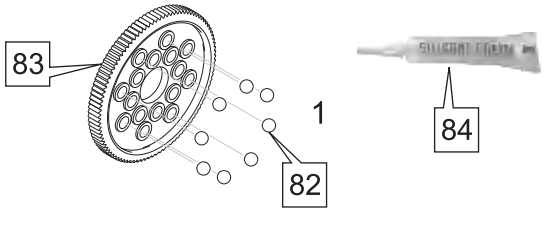








*** Balls in outer ring of holes in gear ***

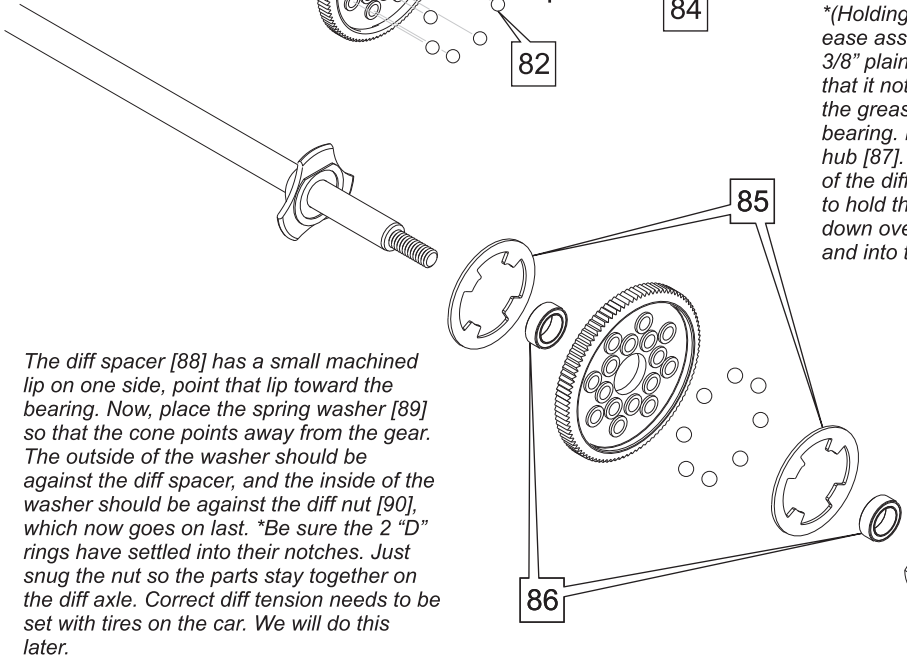


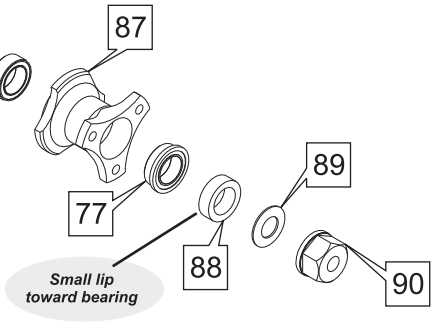
1 - INSTALL AND GREASE THE DIFF BALLS

Pop the 1/8" diff balls [82] into each of the outer ring of holes in the diff gear [83]. The balls snap into the socket. Place a small dab of silicone diff grease [84] on each ball. Use very little!

2 - DIFF ASSEMBLY

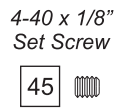
**(Holding the car on it's side, with the rear axle pointing upright will ease assembly of the diff.) Place 1 diff ring [85], and then a 1/4" x 3/8" plain bearing [86] over the end of the axle. Align the diff ring so that it notches into the axle flange. Place the assembled gear with the greased diff 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 [87]. 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 [77] over the axle and into the front of the diff hub.*

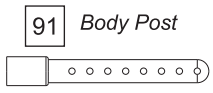


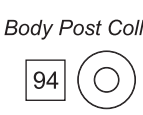


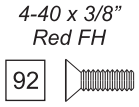
*The diff spacer [88] has a small machined lip on one side, point that lip toward the bearing. Now, place the spring washer [89] so that the cone points away from the gear. The outside of the washer should be against the diff spacer, and the inside of the washer should be against the diff nut [90], which 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. Correct diff tension needs to be set with tires on the car. We will do this later.*

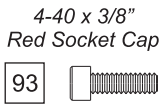
Bag 10

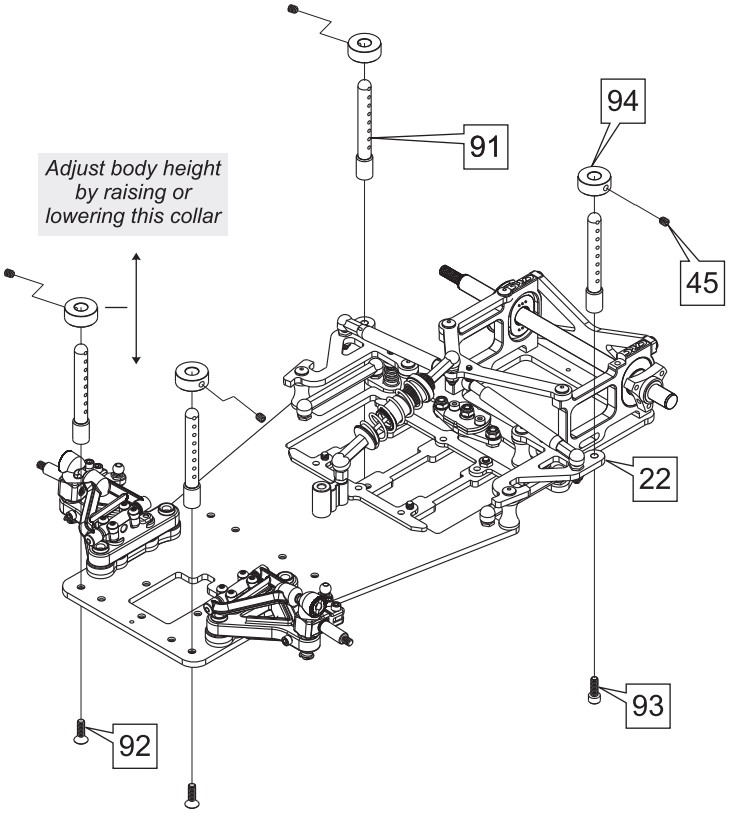












Body Posts

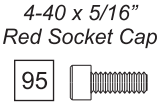
Secure both front body posts [91] to the chassis with the red 4-40 x 3/8" screws [92].

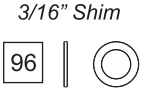
For the rear body posts, use the red socket cap screw [93]. Mount the body post to the Tweak Plate [22].

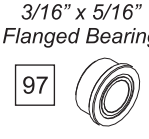
Thread the 1/8" set screw [45] into the plastic collar [94]. Adjust the collar up and down the body post to accommodate the body shell used. Lock the collar with the set screw.

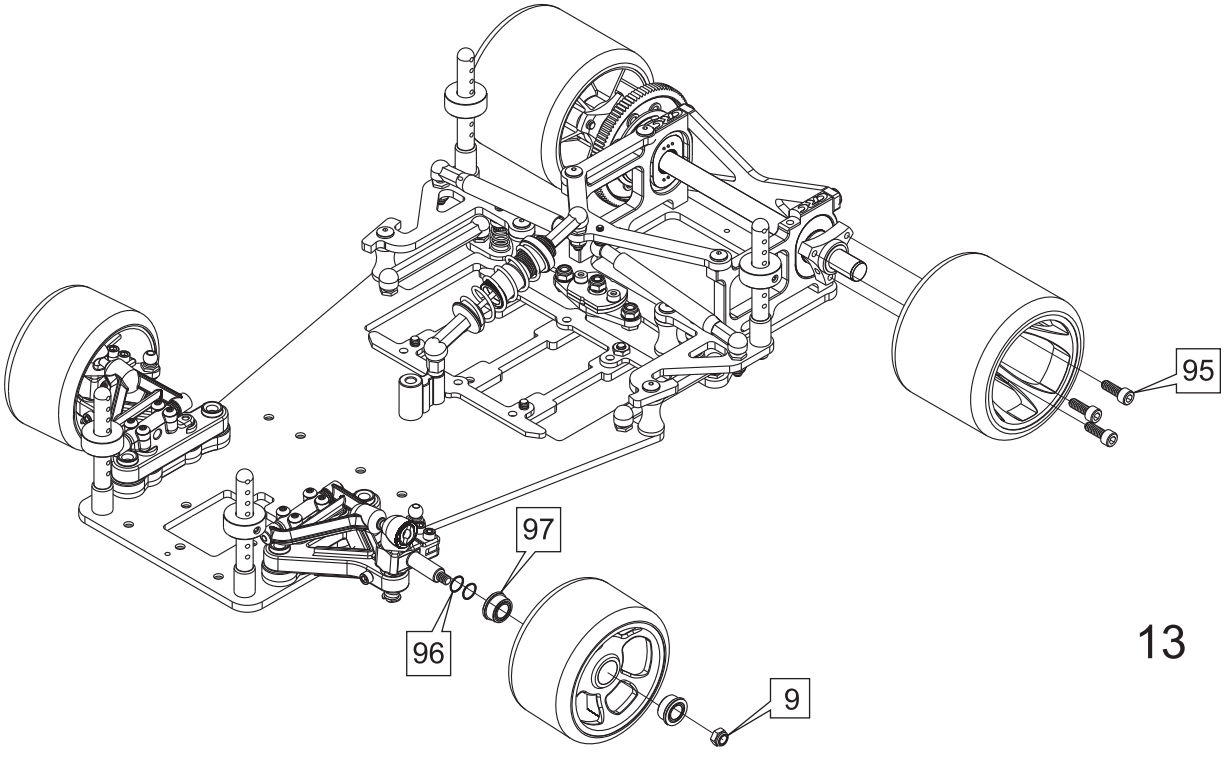
Mounting Tires

Bag 11

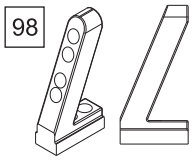








Red Servo Mount



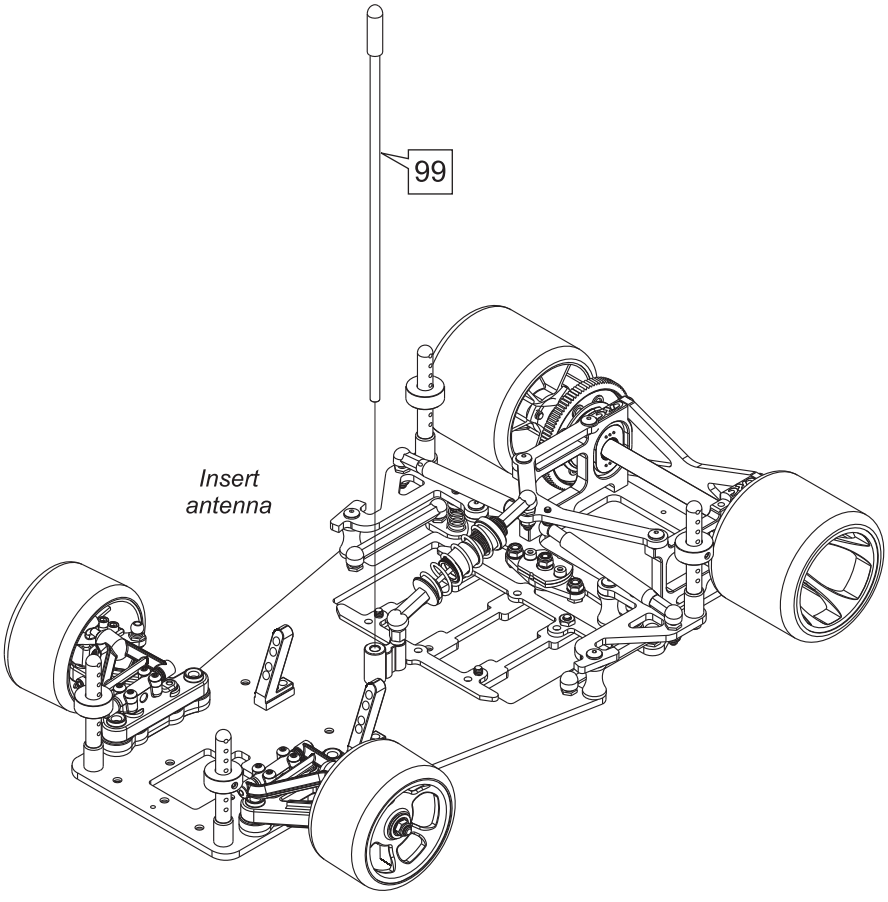
4-40 x 1/4"
Red Alum FH

Red Aluminum Servo Mounts

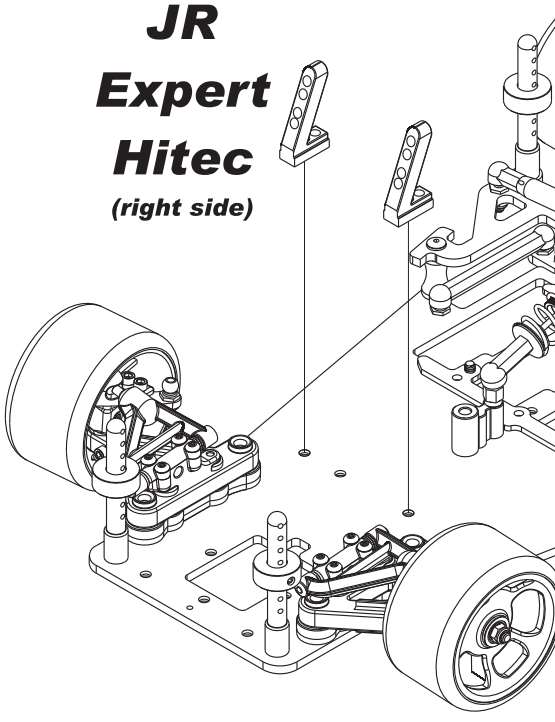
CRC has pre-drilled the Generation X for both JR, Expert and Hitec on one side, and Futaba/KO/Sanwa on the other side. Refer to the diagrams on the right for instruction on what brand to use and in which locations.

Right side
JR - 3550, 3650, Expert 451, Hitec 225

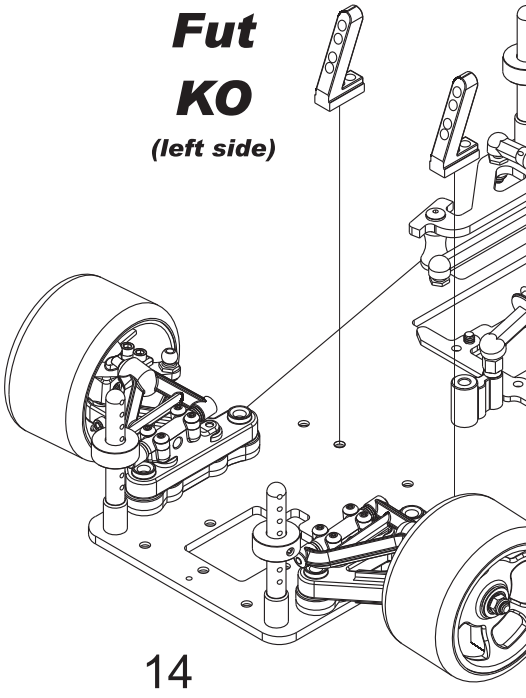
Left side
Futaba 9650, KO 949, Air/Sanwa 94141,94145



JR
Expert
Hitec
(right side)



Air/Sanwa
Fut
KO
(left side)



Plastic Ball Cups

46

Red Locknut

9

4-40 x 3/8"
Red Socket Cap

93

100 Steering Tie Rod

Red Alum
4-40 Ballstud

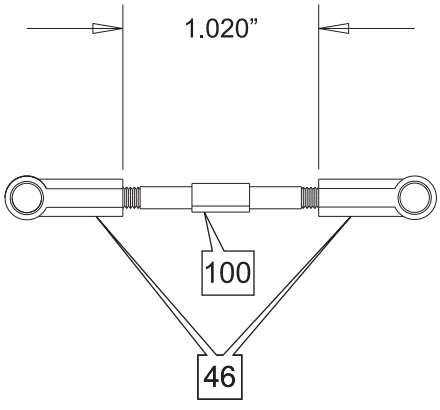
17

Servo Saver Brace

101

Washer

8



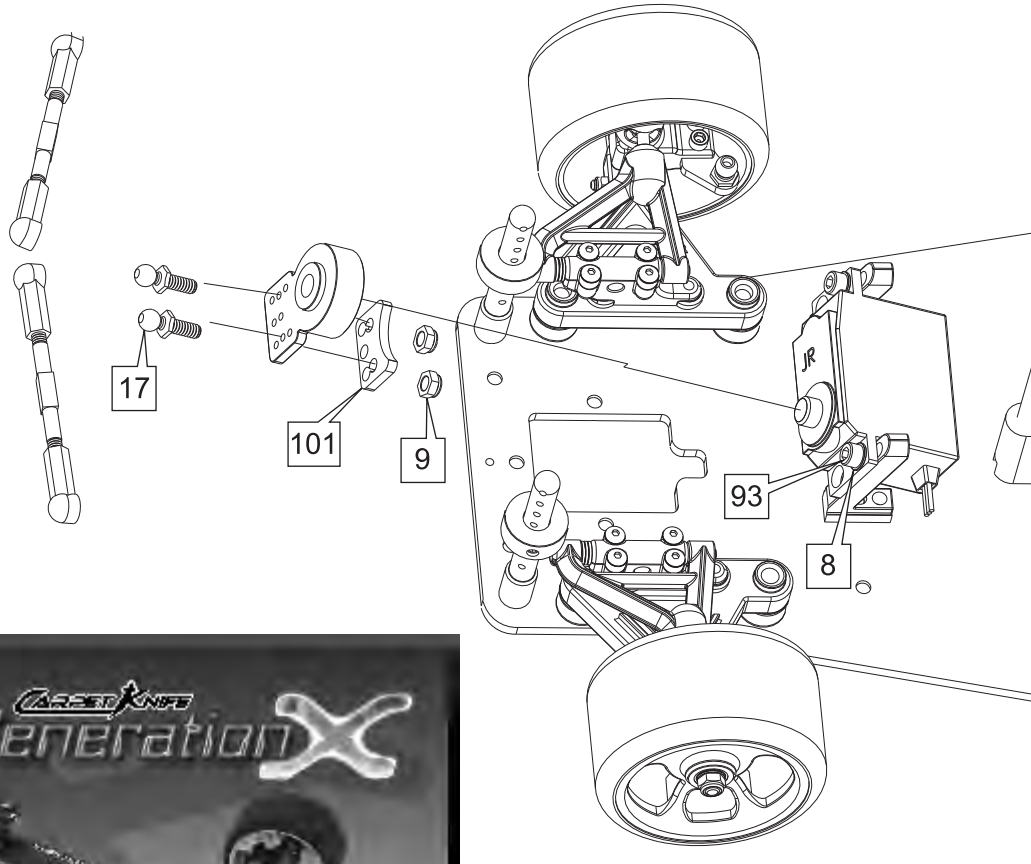
Make 2 tie rods as shown to the left. This 1.02" gap should be a good starting point for toe-in adjustment. You will need to adjust the final length after the car is fully ready to run.

Install the servo saver (not included) and assorted hardware in the order shown below. Put the ballstuds [17] through the bottom holes of the servo saver (closest to chassis, furthest from servo).

NOT Included:

Kimbrough Servo Saver:

113 - Airtronics, JR, KO
114 - Futaba
131 - Hitec



Calandra Racing Concepts, Inc.
6785 Martin Street ~ Rome, NY 13440
Tel + Fax 315-338-0867
www.teamcrc.com information@teamcrc.com

Tuning the Front Suspension of the Gen X

Springs: The Gen X comes with .50mm front springs. Going to a softer front spring will allow the car to roll more, which will yield more overall steering, but will be most noticeable on corner entry. Using a stiffer spring will do just the opposite. The car will stay flatter and transition less weight side to side giving you less total steering, but again most noticeably on corner entry. Preloading the front springs should not be used as a tuning aid (if you need the front end to be stiffer, use a stiffer spring), but rather just to correct ride height. As an example, sometimes when using soft front springs, you will notice that the car sits down into the spring (or "sags"), creating a gap between the spring and lower pivot ball, causing loss of ride height. You do want the car to "set" into the spring slightly (never bound tight at the top of its travel). But if this gap is more than .010" (or .25mm), you can preload the spring slightly (either by turning the king pins in farther, or adding a thin shim) to get the ride height back up.

Caster: Caster is the angle of the king pin in relation to vertical when viewing it from the side of the car. Zero caster is having the king pin perfectly straight up & down. Adding caster tilts the king pin back (top of king pin towards rear of car). Caster is adjusted on the Gen X by moving the white spacers on the upper hinge pin forward or back. Moving them back adds caster. Adding caster adds more mid-corner & exit steering. Decreasing caster makes the car react faster off center (or also called making it "twitchy"), but decreases mid & exit steering.

Dynamic Caster: This refers to the angle of the upper arm hinge pin in relation to the lower arm hinge pin (in this case, since there is no lower hinge pin, it is always in relation to level, or horizontal). (*This would vary on other vehicles such as off-road or touring cars where the lower arm hinges as well and the angle of kick-up/anti-dive is adjustable.*) This is adjusted on the Gen X by changing the upper arm mount blocks (or, dynamic caster blocks). The car comes with all 3 options in the kit. The 0 degree block, or 0 degrees of dynamic caster, is having the upper hinge pin parallel with the chassis so that when the suspension compresses, the upper arm pivots straight up & down, having no effect on your caster setting. Increasing dynamic caster (changing to the 5 or 10 degree blocks) tilts the front of the hinge pin down toward the chassis. By increasing this angle, the upper arm pivots forward slightly, decreasing the amount of caster as the suspension compresses. This option is designed to give you the "best of both worlds". *(see above section on effects of Caster.)*

Camber: Camber refers to the angle of the wheel/tire in relation to the track surface when viewing from the front or rear. Negative camber means that the top of the tire leans in toward the chassis. Positive camber means the top of the tire leans out, away from the chassis. Camber can be precisely measured with after market camber gauges, sold at a local hobby shop. It can be measured roughly using any square (to the ground) object *(such as a credit card, business card, hotel door key, etc.)* by checking the gap between the square edge and the top of the tire. Increasing negative camber (in the range of 0-2 degrees) will increase steering. Changing the camber has a tremendous effect on the handling of the car. This is, most often, a very critical adjustment in tuning your car.

Camber Gain: Camber gain refers to the amount of camber that is added as the suspension moves through its range of motion. This can be adjusted by changing the height of the upper arm hinge pin and/or changing the length of the upper arm (by moving the upper arm mount in/out). The stock location for both height and length will yield the most camber gain. *(Both height & length are only adjustable with the addition of optional parts.)* Moving the upper arm hinge pin upward or inward will decrease the amount of camber gain. Running the upper arm mount in the stock location gives the most on and off-power steering, however the car may seem a little aggressive to some drivers. If the upper arm hinge pin is raised, or moved inward, the car will lose some steering but will feel smoother and easier to drive.

Toe In/Out: This is the parallel relationship of the front tires to one another. Toe-in/out adjustments are made by changing the overall length of the steering tie-rods. Toe-in (the front of the tires point inward) will make the car "lazy" around center and will decrease steering on corner entry, but will help the car to "track" better on long straights. Toe-out (the front of the tires point outward) will make the car more aggressive and increase steering on corner entry, but has a tendency to make the car wander on the straights. On the Gen X, we recommend setting your toe between 0 (parallel) and 1 degree of toe-out at the most.

Bump-In/Out: Bump-out (front of the front tires toe-outward under suspension compression) will result in more off-power steering. This effect is obtained by adding washers under the ball stud on the steering block. Bump-In (front of the front tires toe-inward under suspension compression) will result in less off-power steering and running too much bump-in can make the steering feel very inconsistent. This effect is obtained by mounting the servo flat on the chassis with the servo saver pointing upward. This method is NOT recommended. Testing has shown that running the kit setup offers the most consistent performance, but adding bump-out in some instances can have positive results.

Tuning the Rear Suspension of the Gen X

Center Shock: The center shock on the Gen X can be tuned just like shocks on other types of cars (via spring-rate & oil viscosity). On a smooth track, a stiffer spring and oil combination will result in more overall steering, but will be most noticeable from mid-corner to exit. If the track is bumpy, being too stiff here will cause the car to be "bouncy", losing contact with the racing surface and handling very unpredictably. Softening the center shock will not only help the car perform better in the bumps, but it will also help generate more rear traction (exiting the corner) on low to medium grip surfaces (such as asphalt), even when the track is smooth.

Shock Angle: On the Gen X, you can alter the shock angle by adding washers under either of the two ballstuds that the shock mounts to. Raising the front ballstud (on the antenna mount) will reduce steering slightly, but will help make the car feel more connected to the track in bumpy sections. Raising the rear ballstud (on the rear pod top plate) makes the car have more overall steering. Keep in mind that as you alter this angle, you will also alter the *rear pod droop*. This can be corrected by shortening or lengthening the ballcups on the center shock.

Pod Plane Angle – Unloaded Droop: This refers to the angle between the rear bottom plate and the chassis plate when the car is suspended in the air. Imagine a line drawn through the chassis exiting out the back of the car, this is the chassis plane. With the rear pod hinging at the at the center pivot, unloaded droop is the angle of this pod compared to the chassis plane. The shock length (and only the shock length), dictates the amount of unloaded rear pod droop.

The car is set up with zero unloaded droop, when, with the car held in the air, the pod and chassis form a straight line. Loosening the plastic ball-cups on the shock will increase its length, causing the rear pod to drop below the chassis plane. This unloaded droop is best measured with a droop gauge like the Dynamite 2528 (Precision Droop Gauge with Blocks). Placing the front and middle of the chassis on the blocks, you can measure the unloaded droop with the gauge. Typically, the Gen X should be setup with about 1mm of pod droop. Adding unloaded rear droop (up to about 3mm max) can give the car more rear grip and a more consistent feel on bumpy tracks. Even without droop gauges, close inspection of the relationship between the rear pod plate and the chassis will allow you to monitor and adjust for the proper unloaded droop.

Pod Plane Angle – Race Ready Droop: This refers to the angle between the rear bottom plate and the chassis plate when the car is loaded, race ready, sitting on a flat level surface. This race ready droop is dependant on the amount of shock spring preload. Increasing the center shock spring preload will stiffen the shock, decreasing the amount the car settles into the suspension. Typically, with the unloaded droop set at about 1 mm, we set the race ready droop to zero, meaning when placed on the ground, the car settles into the suspension 1 mm, enough to cause the rear bottom plate and the chassis to form a straight line.

Keep in mind, adjustments to these droop measurements effect the ride height of the car. Be sure to confirm ride height settings after adjusting droop settings.

Side Springs: Going to a softer side spring will give the car more rear grip and a smoother steering feel around center. A stiffer side spring makes the car more aggressive off center, and in low bite conditions could make the car loose, or oversteer. Preload on the side springs should only be just enough to get the pod to return to center (about ½ turn per side), so you can accurately tweak the car flat. Just like what was mentioned for the front end – if you want the sides stiffer, you should use a stiffer spring, not add more preload.

Damper Tubes: The effects of dampening are not always the same and will change with different levels of grip in the track. On high bite carpet tracks, where traction rolling is sometimes an issue, using a thicker damper tube fluid will slow the side to side weight transfer and prevent traction rolling, giving a smoother, more consistent steering feel. On low bite carpet (or on asphalt), too thick of a damper fluid will actually cause the car to be loose, or oversteer, because the weight can not transfer quickly enough. Going to a thinner fluid here will tighten the car up by allowing more weight transfer. *Helpful Hint* – A quick way to determine which way to adjust the dampening is to go out and run a few laps (preferably on the clock), bring the car in and pull 1 of the tubes off and go back out and run again. You can then make a decision (based on lap times and feel) on which way to go with your dampening, saving yourself a couple of re-lubes.

Tuning the Chassis of the Gen X

Differential: The diff on 12th scale cars (not only the Gen X, but all 12th cars) is NOT meant to be a tuning option. There is ONE way to properly set the diff. The spur gear should be locked (meaning the motor can not slip the spur gear), while still having free & smooth rotation of the rear tires (in opposite directions) while holding the spur gear. The handling of 12th cars greatly depends on the smooth, free operation of the diff without it slipping at all. When the diff slips, it flat spots the balls, making the diff action very "gritty" and this will turn a good handling car into a poor handling car real quick. A low turn modified motor may require more tension on the diff nut than a 27T stock motor to keep the diff from slipping, but over tightening the diff nut will cause premature diff failure as well, as this will crush the outer bearing in the hub. The key is to ***never*** have the diff slip on the track, while maintaining that ***smooth, free rotation*** of the tires.

Battery Placement: The Gen X comes equipped with CRC's ABP *(Adjustable Battery Position)* chassis *(first introduced as an option part for the CK3.2R)*. Testing has shown that moving the battery forward actually smoothes out initial steering input and will help prevent traction rolling on high bite carpet. Forward battery will also make the car rotate more from mid-corner to exit while on-power. Rear battery will actually steer more off-power on corner entry, but does not rotate as much on-power.

Track Width: The rear end of the Gen X is already maxed out at 172mm *(when using CRC High Roller wheels & tires)*, however you can alter the front track by adding or removing shims between the inner front wheel bearing and the steering block. Widening the front track width is a good way to add some stability on corner entry as it will slightly reduce front grip. This is especially helpful when there is a problem with traction rolling.

Ride Height: This is the height of the chassis in relation to the surface of the track. Ride height needs to be measured with the car "race ready" (all electronics, motor, battery, etc. installed). A higher ride height may be used on bumpy or slick surfaces, improving overall handling by generating more weight transfer and chassis roll. A lower ride height will make the car change direction quicker and should be helpful on high-bite surfaces such as carpet. Testing has shown that offsetting the ride height, front to rear (running the rear ride height 1/2mm higher than the front) will increase steering into the turn. Generally for carpet racing, the desired ride height is 3mm. On lower grip surfaces, such as asphalt, the ride height is kept between 3.5 to 4mm. Please check with your local track for their minimum ride height requirements.

Gen-X Spare Parts List

(Sorted by kit ID#)

ID#	Kit / Part Description	Part #	Packaged Part Description
1	Plastic Pivot Pieces	1274	Plastic Center Pivot Pieces
2	2-56 Flat Head screw	12753	2-56 x 1/4" Flat Head - Hex (4)
3	Graphite Football	3272	Graphite Pivot Plate - Gen X
4	Flanged Pivot Ball	4019	Aluminum Pivot Balls
5	4-40 x 3/8 steel flat head	1428	3/8" x 4-40 FH Allen-SS
6	Graphite Main Chassis	3255	Chassis-Gen X
7	4-40 thin hex nut	12772	Small Hex Nuts CK Pivot Plate (10)
		3273	ABP adjusting plates (2) GenX
8	Small Washer	1209	Servo Mount Washer (10)
9	4-40 red locknut	1412	Alum Locknuts-Red Anodized (10)
		1410	Andzd Alum Screw Set - CK
10	Graphite Bottom Plate	3266	Bottom plate- Gen X
11	Long red flat head screw	1410	Andzd Alum Screw Set - CK
12	Red pivot Ball	13615	Anodized Low Roll Center Balls (4)
13	4-40 x 5/16 steel flat head	1426	5/16 x 4-40 FH Allen-SS (4)
14	One-Piece side links	1380	One-Piece Links for CK (2)
15	Black 2-56 ballstud	1384	2-56 Ballstuds & Ballcups for Damper tubes (4)
16	Graphite Top Plate	3265	Top plate - Gen X
17	Red Ball Stud	1409	Anodized 4-40 Ball Studs (4)
18	X-Brace	3274	Rear X-brace - Gen X
19	Aluminum Pods	3340	Low Profile Motor Pod-Gen X
20	Red Button Head screw	1410	Andzd Alum Screw Set - CK
21	4-40 x 1/4 alum flathead	1410	Andzd Alum Screw Set - CK
22	Graphite Tweak Plate	3270	Tweak plate- Gen X (1)
23	Tweak Screw	1288	5/16 x 4-40 set screw-twk 3.2 & Gen X
24	Metal Spring Holder	12871	Metal Spring Holders
25	Side Spring	1296	Side Spring- White - Med
		1280	Rear Side Spring Set
26	Red Standoffs	1260	CRC Hour-glass Standoff 1/2
27	.035 allen wrench	13695	.035 Allen wrench
28	2-56 set screw stud	1397	2-56 Stud for Damper Tubes w/ .035 hex head
		3269	Red Torpedo Tube (1) Gen X
29	2-56 Plastic Ball Cup	1384	2-56 Ballstuds & Ballcups for Damper tubes (4)
		3269	Red Torpedo Tube (1) Gen X
30	Short 4-40 Ball Cup	32694	Short ball cup-(4) Gen X damper tube
		3269	Red Torpedo Tube (1) Gen X
31	CRC Tube Lube	4212	CRC Tube Lube - Heavy (white cap)
32	Delrin Plunger	32693	Delrin Plunger for Short Gen X Damper Tube
		3269	Red Torpedo Tube (1) Gen X
33	Aluminum Tube	32691	Red Aluminum Tube - Gen X (Tube Only)
		3269	Red Torpedo Tube (1) Gen X
34	Steel 4-40 x 1/4" flathead	1424	1/4 x 4-40 FH Allen-SS (4)
		3273	ABP adjusting plates (2) GenX
35	ABP Braces	3273	ABP adjusting plates (2) GenX
36	Foam Bladder	13451	Durashock rebuild kit (2)
		4281	DuraShock Complete - Red
37	Red Shock O-Ring	13451	Durashock rebuild kit (2)
		4281	DuraShock Complete - Red
38	Shock Shaft	4283	Dura-Shaft for VCS/Dura shock
		4281	DuraShock Complete - Red

Gen-X Spare Parts List

(Sorted by kit ID#)

ID#	Kit / Part Description	Part #	Packaged Part Description
39	White Teflon Washer	1253	Front Hinge pin Teflon washers - (8)
40	Plastic Cup for foam	13451	Durashock rebuild kit (2)
		4281	DuraShock Complete - Red
41	Small Washer	13451	Durashock rebuild kit (2)
		4281	DuraShock Complete - Red
42	Shock Body	4285	Dura-Shock Conversion - Red
		4281	DuraShock Complete - Red
43	Threaded Delrin Plug	13458	Threaded Shock Insert - Durashock
		4281	DuraShock Complete - Red
44	Rod End, Spring Perch	13456	VCS Rod end/Sprng Pearch - Anodized
		4281	DuraShock Complete - Red
45	4-40 x 1/8 set screw	13783	1/8th Set Screw (6)
46	Plastic Ball Cup	1231	Steering Plastic Ballcups (8)
47	Shock Spring	1348	Gold Spring - VCS
48	Threaded Spring Retainer	13459	Alum VCS Spring Adj Collar (2)
		4281	DuraShock Complete - Red
49	4-40 x 1/2 set screw	1391	4-40 x 1/2 Set Screws
50	Female Hex Ballstud	1407	Anodized Hex Balls
51	Antenna Mount	3346	Antenna/shock mnt-plastic
52	Teflon Spacer	3346	Antenna/shock mnt-plastic
53	Delrin Pivot ball	3246	Delrin pivot ball (4) Pro Strut
54	Lower Arm	3247	CRC Front Arm set-up and low
55	2-56 Clamp Screw	3242	Clamp screw+nut-Pivot ball (2)
56	2-56 Locknut	3242	Clamp screw+nut-Pivot ball (2)
		1472	2-56 mini locknuts (red) (8)
57	Upper A-arm Mount	3243	Upper Arm mnt set-0,5,10 (2)
58	Plastic Ride Height Spacers	3233	Molded ride height spacers - 3, 4, & 5mm
59	4-40 x 7/16" Red FH	1453	4-40 x 7/16" FH Alum 7075-Red
60	Upper A-arm	3247	CRC Front Arm set-up and low
61	Upper Hinge Pin	3245	CRC FE Hinge Pin (2)
62	Upper Cap	3243	Upper Arm mnt set-0,5,10 (2)
63	2-56 Button Head	3254	2-56 x 1/4 BH-for upper cap (10)
64	Steering Blocks	3251	CRC Steering Block set
65	Graphite Steering Arm	3252	Graphite Steering arm (pr.)
66	Socket Head 2-56 screw	3253	2-56x1/4 SH-steering arm (10)
67	Dual Aluminum Axle	3235	CRC Dual Front Axle (pr.)
68	King Pin	3250	CRC 1/12 King Pin set-polished
69	Front End Spring	3392	Front End Spring .50mm (pr.)
70	E-Clip	1382	1/8 E-clips-100 pieces
71	Brass Set Screw	3234	Brass 4-40 Set screws-2 pr.
72	Upper Pivot Ball	3244	CRC Big Upper Ball Stud (2)
73	Capture Insert	3251	CRC Steering Block set
74	Red 8-32 Front End Screws	12392	8-32 Front End screws (red)
		1410	Andzd Alum Screw Set - CK
75	Thread Cutting Screw	N/A	
76	Axle Carrier / Ride Height Spacer	1385	Plastic Ride Heights 1-4
77	1/4 x 3/8 Flanged Axle bearing	13861	1/4 x 3/8 Flanged Axle bearing (1)
		1386	1/4 x 3/8 Flanged Axle bearing (10)
78	Rear Axle	4228	Large D-ring Axle - Red
		4220	Complete Large D Ring Diff Assembly - Red

Gen-X Spare Parts List

(Sorted by kit ID#)

ID#	Kit / Part Description	Part #	Packaged Part Description
79	1/4" rear axle shim	4732	1/4 Shim Set (20)
		4220	Complete Large D Ring Diff Assembly - Red
80	Left Clamp Hub	3333	Super light left clamp hub-red
		4220	Complete Large D Ring Diff Assembly - Red
81	Socket Head Clamp Screw	3332	M2.5 x 6mm Cap Head Screw (6)
		3333	Super light left clamp hub-red
82	1/8" Diff Balls	1229	Diff Balls for gear (100 pcs.)
83	Diff Gear	1230	Spur gear for 1/12th (98T)
84	Silicone Diff Grease	4205	Diff Lube - Silicone 4cc
85	Diff Ring	4202	Lightened Large D-rings
		4220	Complete Large D Ring Diff Assembly - Red
86	1/4 x 3/8 Unflanged Axle bearing	13871	1/4 x 3/8 Unflanged Axle bearing (1)
		1387	1/4 x 3/8 Unflanged Axle bearing (10)
87	Diff Hub	4224	Large Ring Diff Hub - Red
		4220	Complete Large D Ring Diff Assembly - Red
88	Diff Spacer	4121	Aerodiff Spacer collar
		4220	Complete Large D Ring Diff Assembly - Red
89	Spring Washer	4123	Belleville Spng wash-3 bolt(2)
		4220	Complete Large D Ring Diff Assembly - Red
90	Plastic Locknut	4126	8-32 Nylon Locknut (2)
		4220	Complete Large D Ring Diff Assembly - Red
91	Body Mounts	1378	Body Post Set-for CK
92	4-40 x 3/8 Red Flat Head Screw	1410	Andzd Alum Screw Set - CK
93	4-40 x 3/8 Socket Cap Screw	1410	Andzd Alum Screw Set - CK
94	Plastic Collar	1378	Body Post Set-for CK
95	4-40 x 5/16 Cap Head Screw	1410	Andzd Alum Screw Set - CK
96	3/16 front wheel shim	4745	3/16 Shim Set (20) x .010
97	3/16 x 5/16 Flanged Bearing	32481	3/16 x 5/16 Flanged Bearing (1)
		3248	3/16 x 5/16 Flanged Bearing (10)
98	Servo Mount	4017	Aluminum Servo Mount - 4 hole Anodized
99	Antenna Mast	1347	Fiberglass rollover w/Tip
100	Steering Tie Rod	3217	Steering Tie Rod (2)
101	Servo Saver Brace	4088	Graphite Servo Saver Brace

Gen-X Spare Parts List

(Sorted by Part #) - ***(Bold = option part)***

Part #	Packaged Part Description	ID#	Kit / Part Description
1209	Servo Mount Washer (10)	8	Small Washer
1229	Diff Balls for gear (100 pcs.)	82	1/8" Diff Balls
1230	Spur gear for 1/12th (98T)	83	Diff Gear
1231	Steering Plastic Ballcups (8)	46	Plastic Ball Cup
1253	Front Hinge pin Teflon washers - (8)	39	White Teflon Washer
1260	CRC Hour-glass Standoff 1/2	26	Red Standoffs
1274	Plastic Center Pivot Pieces	1	Plastic Pivot Pieces
1280	***Rear Side Spring Set***	25	Side Spring
1288	5/16 x 4-40 set screw-twk 3.2 & Gen X	23	Tweak Screw
1295	**Side Spring- Blue - Soft**		
1296	Side Spring- White - Med	25	Side Spring
1297	***Side Spring- Red - firm***		
1298	***Side Spring- Green X-firm***		
1299	***Side Spring Purple XX-Firm***		
1339	***Blue Spring - VCS***		
1340	***Red Spring - VCS***		
1341	***Copper Spring - VCS***		
1342	***CRC Stiff Silver .050***		
1343	***CRC Super Stiff Silver .055***		
1344	***Center Spring Set*** - (includes 1340,1341,1342,1343)		
1347	Fiberglass rollover w/Tip	99	Antenna Mast
1348	Gold Spring - VCS	47	Shock Spring
1357	***1/12th Scale Kydex Bumper***		Front Bumper
1378	Body Post Set-for CK	91	Body Mounts
		94	Plastic Collar
1380	One-Piece Links for CK (2)	14	One-Piece side links
1382	1/8 E-clips-100 pieces	70	E-Clip
1384	2-56 Ballstuds & Ballcups for Damper tubes (4)	15	Black 2-56 ballstud
		29	2-56 Plastic Ball Cup
1385	Plastic Ride Heights 1-4	76	Axle Carrier / Ride Height Spacer
1386	1/4 x 3/8 Flanged Axle bearing (10)	77	1/4 x 3/8 Flanged Axle bearing
1387	1/4 x 3/8 Unflanged Axle bearing (10)	86	1/4 x 3/8 Unflanged Axle bearing
1391	4-40 x 1/2 Set Screws	49	4-40 x 1/2 set screw
1397	2-56 Stud for Damper Tubes w/ .035 hex head	28	2-56 set screw stud
1407	Anodized Hex Balls	50	Female Hex Ballstud
1409	Anodized 4-40 Ball Studs (4)	17	Red Ball Stud
1410	Andzd Alum Screw Set - CK	9	4-40 red locknut
		11	Long red flat head screw
		20	Red Button Head screw
		21	4-40 x 1/4 alum flathead
		74	Red 8-32 Front End Screws
		92	4-40 x 3/8 Red Flat Head Screw
		93	4-40 x 3/8 Socket Cap Screw
		95	4-40 x 5/16 Cap Head Screw
1412	Alum Locknuts-Red Anodized (10)	9	4-40 red locknut
1424	1/4 x 4-40 FH Allen-SS (4)	34	Steel 4-40 x 1/4" flathead
1426	5/16 x 4-40 FH Allen-SS (4)	13	4-40 x 5/16 steel flat head
1428	3/8" x 4-40 FH Allen-SS	5	4-40 x 3/8 steel flat head
1453	4-40 x 7/16" FH Alum 7075-Red	59	4-40 x 7/16" Red FH
1472	2-56 mini locknuts (red) (8)	56	2-56 Locknut

Gen-X Spare Parts List

(Sorted by Part #) - ***(Bold = option part)***

Part #	Packaged Part Description	ID#	Kit / Part Description
2172	***1/12th Magenta Front Pro-Cuts***		Tires
2173	1/12th Purple Front Pro-Cuts		Tires
2174	***1/12th Black Front Pro-Cuts***		Tires
2175	***1/12th Pink Rear Pro-Cuts***		Tires
2176	***1/12th Magenta Rear Pro-Cuts***		Tires
2178	1/12th Grey Rear Pro-Cuts		Tires
2179	***1/12th White Rear Pro-Cuts***		Tires
2180	***1/12th Grey Front Pro-Cuts***		Tires
3217	Steering Tie Rod (2)	100	Steering Tie Rod
3233	Molded ride height spacers - 3, 4, & 5mm	58	Plastic Ride Height Spacers
3234	Brass 4-40 Set screws-2 pr.	71	Brass Set Screw
3235	CRC Dual Front Axle (pr.)	67	Dual Aluminum Axle
3236	***3 mm Graphite Ride Height Spacer***		
3242	Clamp screw+nut-Pivot ball (2)	55	2-56 Clamp Screw
		56	2-56 Locknut
3243	Upper Arm mnt set-0,5,10 (2)	57	Upper A-arm Mount
		62	Upper Cap
3244	CRC Big Upper Ball Stud (2)	72	Upper Pivot Ball
3245	CRC FE Hinge Pin (2)	61	Upper Hinge Pin
3246	Delrin pivot ball (4) Pro Strut	53	Delrin Pivot ball
3247	CRC Front Arm set-up and low	54	Lower Arm
		60	Upper A-arm
3248	3/16 x 5/16 Flanged Bearing (10)	97	3/16 x 5/16 Flanged Bearing
3249	***3/16 x 5/16 unflanged (10)***		
3250	CRC 1/12 King Pin set-polished	68	King Pin
3251	CRC Steering Block set	64	Steering Blocks
		73	Capture Insert
3252	Graphite Steering arm (pr.)	65	Graphite Steering Arm
3253	2-56x1/4 SH-steering arm (10)	66	Socket Head 2-56 screw
3254	2-56 x 1/4 BH-for upper cap (10)	63	2-56 Button Head
3255	Chassis-Gen X	6	Graphite Main Chassis
3265	Top plate - Gen X	16	Graphite Top Plate
3266	Bottom plate- Gen X	10	Graphite Bottom Plate
3269	Red Torpedo Tube (1) Gen X	28	2-56 set screw stud
		29	2-56 Plastic Ball Cup
		30	Short 4-40 Ball Cup
		32	Delrin Plunger
		33	Aluminum Tube
3270	Tweak plate- Gen X (1)	22	Graphite Tweak Plate
3272	Graphite Pivot Plate - Gen X	3	Graphite Football
3273	ABP adjusting plates (2) GenX	7	4-40 thin hex nut
		34	Steel 4-40 x 1/4" flathead
		35	ABP Braces
3274	Rear X-brace - Gen X	18	X-Brace
3332	M2.5 x 6mm Cap Head Screw (6)	81	Socket Head Clamp Screw
3333	Super light left clamp hub-red	80	Left Clamp Hub
		81	Socket Head Clamp Screw
3340	Low Profile Motor Pod-Gen X	19	Aluminum Pods
3342	***Option Left Bulkhead Gen-X***		

Gen-X Spare Parts List

(Sorted by Part #) - ***(Bold = option part)***

Part #	Packaged Part Description	ID#	Kit / Part Description
3346	Antenna/shock mnt-plastic	51	Antenna Mount
		52	Teflon Spacer
3390	***Front End Spring .45mm (pr.)***		
3392	Front End Spring .50mm (pr.)	69	Front End Spring
3394	***Front End Spring .55mm (pr.)***		
3396	***Front End Spring .60mm (pr.)***		
4017	Aluminum Servo Mount - 4 hole Anodized	98	Servo Mount
4019	Aluminum Pivot Balls	4	Flanged Pivot Ball
4020	***Wire Keepers -Clips and Ties***		
4088	Graphite Servo Saver Brace	101	Servo Saver Brace
4121	Aerodiff Spacer collar	88	Diff Spacer
4123	Belleville Spng wash-3 bolt(2)	89	Spring Washer
4126	8-32 Nylon Locknut (2)	90	Plastic Locknut
4160	***1/12 Courage C-60 Evo-3 LMP Body - Lightweight***		
4202	Lightened Large D-rings	85	Diff Ring
4205	Diff Lube - Silicone 4cc	84	Silicone Diff Grease
4210	***CRC Tube Lube - Light***		
4212	CRC Tube Lube - Heavy (white cap)	31	CRC Tube Lube
4214	***CRC Tube Lube - Super Heavy***		
4220	Complete Large D Ring Diff Assembly - Red	78	Rear Axle
		79	1/4" rear axle shim
		80	Left Clamp Hub
		85	Diff Ring
		87	Diff Hub
		88	Diff Spacer
		89	Spring Washer
		90	Plastic Locknut
4224	Large Ring Diff Hub - Red	87	Diff Hub
4228	Large D-ring Axle - Red	78	Rear Axle
4262	***Front ride height shim set. .010, .020, .030"***		
4278	***Machined Delrin Pivot w/alum***	1	Plastic Pivot Pieces
4279	***Steel Ball Popper Tool***		
4281	DuraShock Complete - Red	36	Foam Bladder
		37	Red Shock O-Ring
		38	Shock Shaft
		40	Plastic Cup for foam
		41	Small Washer
		42	Shock Body
		43	Threaded Delrin Plug
		44	Rod End, Spring Perch
		48	Threaded Spring Retainer
4283	Dura-Shaft for VCS/Dura shock	38	Shock Shaft
4285	Dura-Shock Conversion - Red	42	Shock Body
4732	1/4 Shim Set (20)	79	1/4" rear axle shim
4745	3/16 Shim Set (20) x .010	96	3/16 front wheel shim
6405	***100T 64P Spur Gear***	83	Diff Gear
12392	8-32 Front End screws (red)	74	Red 8-32 Front End Screws
12753	2-56 x 1/4" Flat Head - Hex (4)	2	2-56 Flat Head screw
12772	Small Hex Nuts CK Pivot Plate (10)	7	4-40 thin hex nut

Gen-X Spare Parts List

(Sorted by Part #) - ***(Bold = option part)***

Part #	Packaged Part Description	ID#	Kit / Part Description
12871	Metal Spring Holders	24	Metal Spring Holder
13451	Durashock rebuild kit (2)	36	Foam Bladder
		37	Red Shock O-Ring
		40	Plastic Cup for foam
		41	Small Washer
13456	VCS Rod end/Sprng Pearch - Anodized	44	Rod End, Spring Perch
13458	Threaded Shock Insert - Durashock	43	Threaded Delrin Plug
13459	Alum VCS Spring Adj Collar (2)	48	Threaded Spring Retainer
13615	Anodized Low Roll Center Balls (4)	12	Red pivot Ball
13695	.035 Allen wrench	27	.035 allen wrench
13783	1/8th Set Screw (6)	45	4-40 x 1/8 set screw
13861	1/4 x 3/8 Flanged Axle bearing (1)	77	1/4 x 3/8 Flanged Axle bearing
13871	1/4 x 3/8 Unflanged Axle bearing (1)	86	1/4 x 3/8 Unflanged Axle bearing
32481	3/16 x 5/16 Flanged Bearing (1)	97	3/16 x 5/16 Flanged Bearing
32691	Red Aluminum Tube - Gen X (Tube Only)	33	Aluminum Tube
32693	Delrin Plunger for Short Gen X Damper Tube	32	Delrin Plunger
32694	Short ball cup-(4) Gen X damper tube	30	Short 4-40 Ball Cup

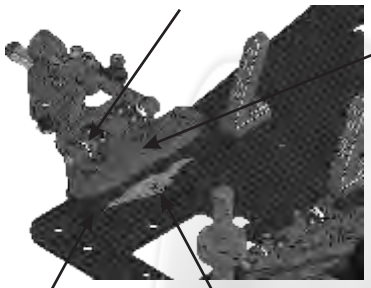
Carpet Knife Generation X

teamcrc.com

Pro-Strut Front End Setting

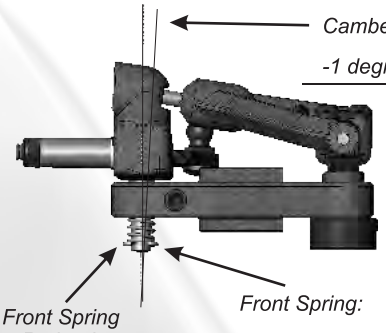
Caster Shim Position:

- ❑ 0 Forward
- ❑ 2 Forward
- ☒ 1 Forward
- ❑ 3 Forward



Dynamic Caster:

- ❑ 0 Degree
- ☒ 5 Degree
- ❑ 10 Degree



Camber: -1 degree

Front Spring Preload: .015" (e-clip)

Front Spring: .50 mm

Course ride height spacer:

- ❑ 3 mm
- ❑ 4 mm
- ☒ 5 mm

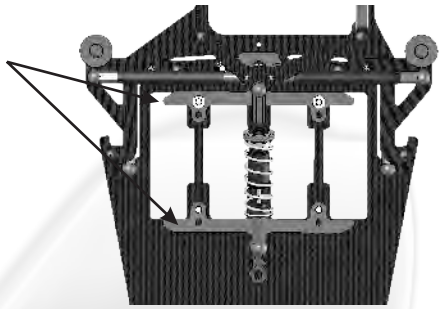
Fine ride height spacer:

- ❑ .25 mm
- ❑ .50 mm
- ❑ .75 mm

Adjustable Battery Position

Battery Position:

- ☒ Foward
- ❑ Rearward



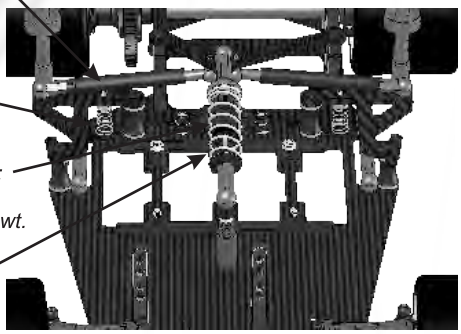
Rear Chassis Adjustments

Tube Lube: white - med

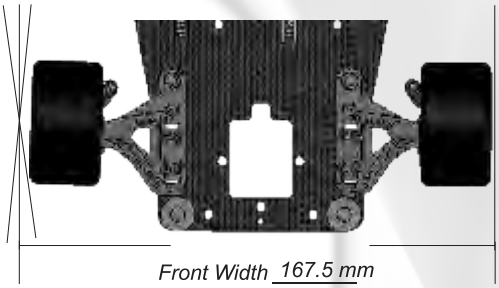
Side Spring: white

Shock Oil: 30 wt.

Center Spring: Gold



Front Toe Angle : 1 degree out



Front Width 167.5 mm

Shims 2 shims each side

Tires + Ride Height

Front Tires

Size: 1.8 Inches

Compound: Purple

Shore: 40

Rear Tires

Size: 1.9 Inches

Compound: Gray

Shore: 35

Front Ride Height 3 mm

Mid Ride Height 3.25 mm

Rear Ride Height 3.5 mm

Pod Plane Unloaded: 1 mm

Race Ready: Level

Driver: Standard Setup from Kit

Race: _____

Date: _____

Track Type: _____

Grip Level: Low - Med - High - Insane

Notes: Kit setup for neutral handling on medium grip tracks. Use red or copper center spring for more steering, gold best for bumpy tracks

Calandra Racing Concepts, Inc.

6785 Martin Street ~ Rome, NY 13440

Tel + Fax ~ 315-338-0867

info@teamcrc.com ~ www.teamcrc.com

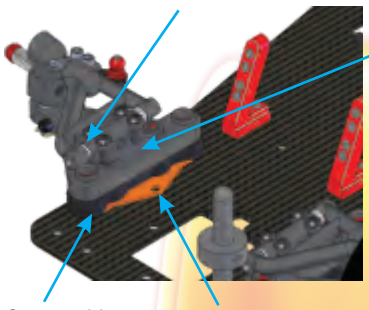
Carpet Knife Generation X

teamcrc.com

Pro-Strut Front End Setting

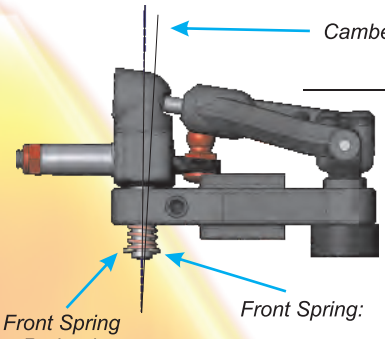
Caster Shim Position:
- ❑ 0 Forward
- ❑ 1 Forward
- ❑ 2 Forward
- ❑ 3 Forward

Dynamic Caster:
- ❑ 0 Degree
- ❑ 5 Degree
- ❑ 10 Degree



Course ride height spacer:
- ❑ 3 mm
- ❑ 4 mm
- ❑ 5 mm

Fine ride height spacer:
- ❑ .25 mm
- ❑ .50 mm
- ❑ .75 mm



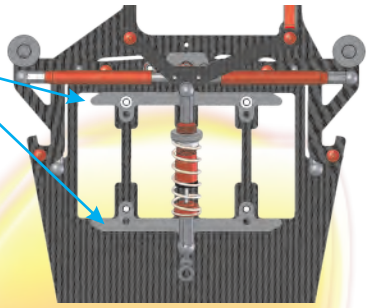
Camber: _____

Front Spring Preload: _____

Front Spring: _____

Adjustable Battery Position

Battery Position:
- ❑ Foward
- ❑ Rearward



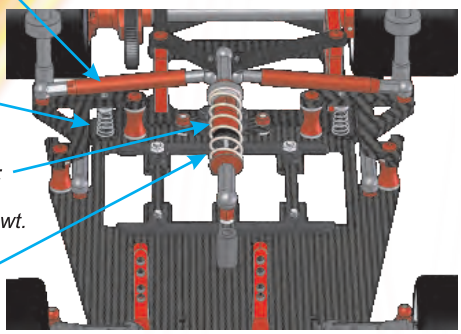
Rear Chassis Adjustments

Tube Lube: _____

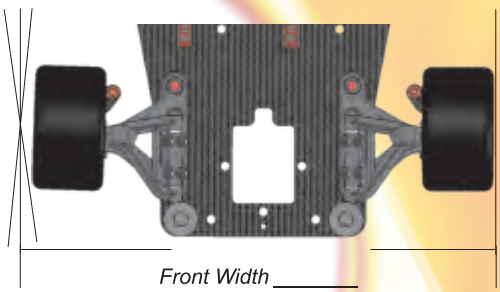
Side Spring: _____

Shock Oil: _____ wt.

Center Spring: _____



Front Toe Angle : _____



Front Width _____

Shims _____

Tires + Ride Height

Front Tires
- Size: _____
- Compound: _____
- Shore: _____

Rear Tires
- Size: _____
- Compound: _____
- Shore: _____

Front Ride Height 3 mm

Mid Ride Height 3.25 mm

Rear Ride Height 3.5 mm

Pod Plane Unloaded: _____

Race Ready: _____

Driver: _____

Race: _____

Date: _____

Track Type: _____

Grip Level: Low - Med - High - Insane

Notes: _____

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