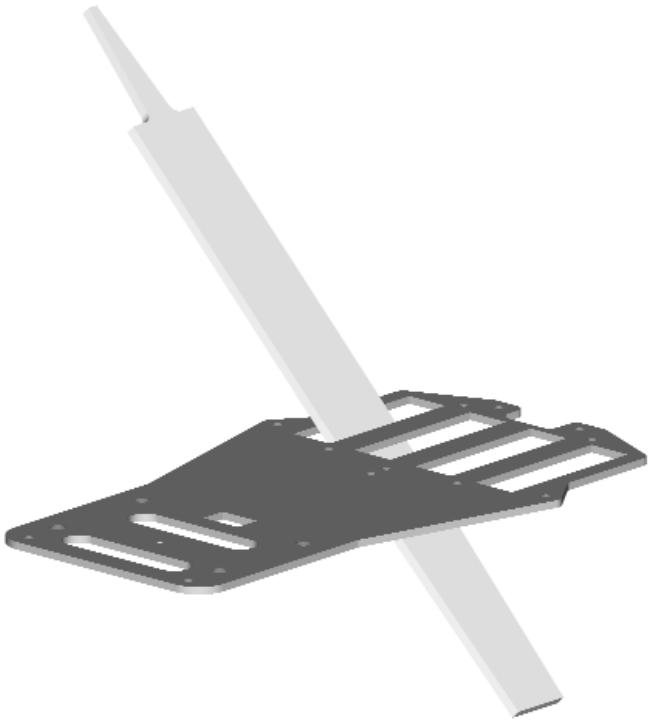
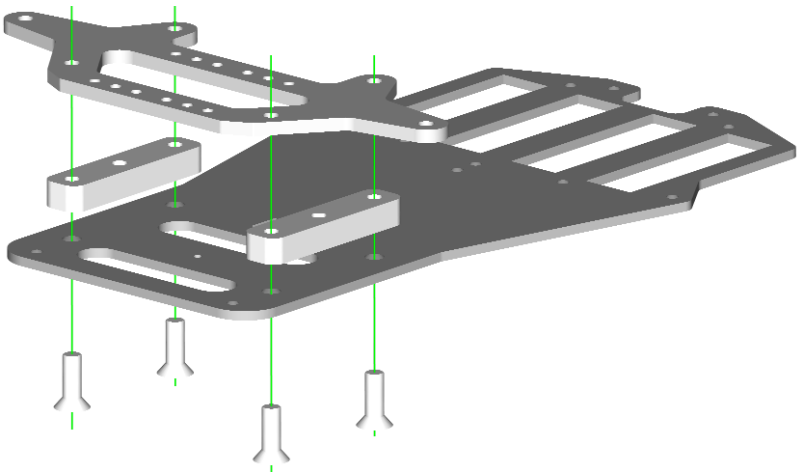
Speed Merchant
Rev. 5

Warning: The carbon fiber plates that make up the components of this chassis do conduct electricity, and care must be taken to ensure that the batteries do not short on the chassis. Carefully, using a fine toothed file, just break over the edge of the battery slots at a 45° angle. The goal is to keep the chassis from cutting the labels on the batteries during regular use. The battery slots have been optimized for newer cells and do not need to have a large amount of material removed. It is best to have a freshly assembled battery pack nearby to check the slots for proper depth. Only remove enough material so that the battery pack will sit flush with the bottom of the chassis, no lower.

Tip: If you filed the slots too low, they can be carefully built back up to proper height by coating the edges with super glue.

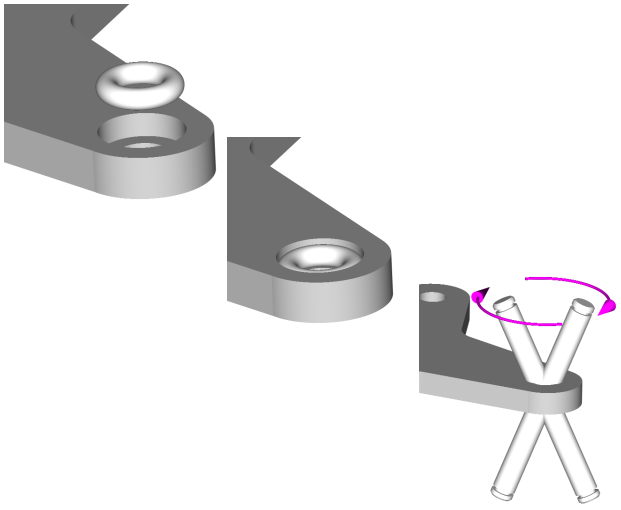


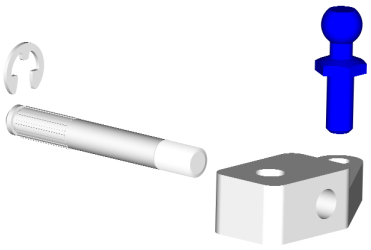


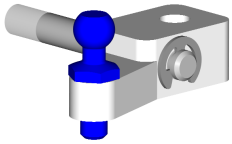
Using the provided stainless steel 8-32 x 1/2” cross point (phillips) screws (x4), attach the lower front suspension arm (be sure the pockets for the pivots are facing down. The screws will thread into the holes shown. Be sure to keep the plate as even as possible, tightening opposite screws a little at a time equally. This will ensure that attaching these two plates together will not introduce any tweak into the chassis. Do not over tighten.

Next, install the Teflon bushings (x2) into the pockets in the bottom of the front suspension arm as shown. This will be a tight fit and may require significant pressure from the back end of a smooth screw driver to press them in. Be sure to support the top of the arm plate while installing.

After installation, using the included drill bit, run it through each of the Teflon bushings (just once and quickly) to remove extra material created during the process of compressing the bushings into the front lower arm. Next, seat the bushing by sliding in a kingpin and rotate it around in circle.







Attach the E-clip into the groove in the front axles (x2), being careful to protect your eyes in the process. E-clips that have not seated properly can become unpredictable flying objects and can do serious damage to sensitive areas on the body (like eyes).

Install the axle assembly (x2) into the steering block as shown. This will be a tight press fit. Be sure the E-clip is fully seated against the steering block.

Install the blue aluminum ball studs as shown. Do not over tighten.

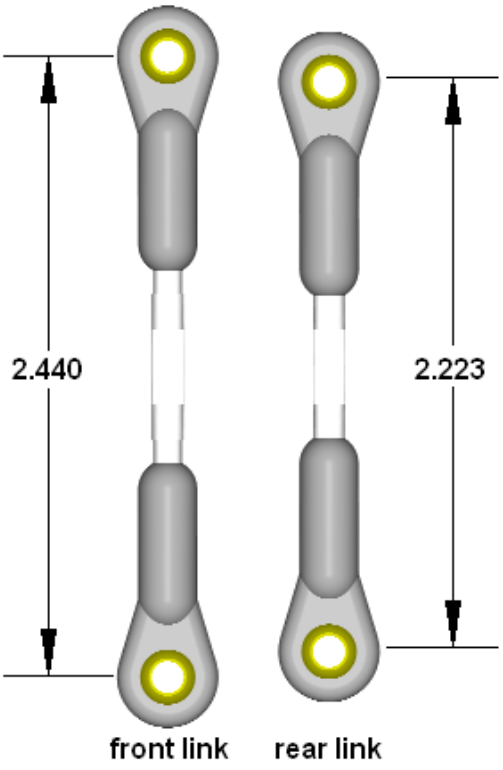
There are 8 captured ball links with brass balls. 4 of the balls in the links have been bored out to slide over the kingpins. Locate a king pin and separate out the 4 bored captured ball links.

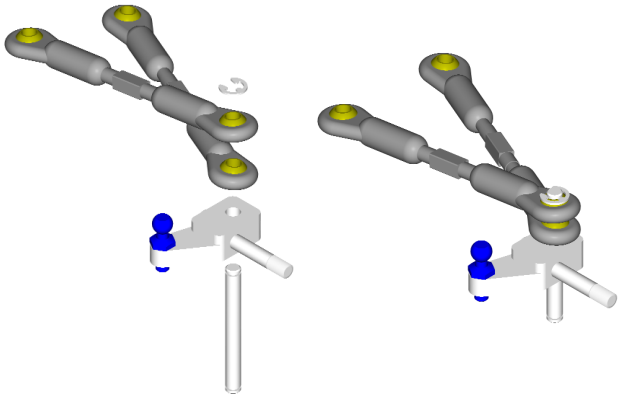
Now locate the 4-40 x 1 3/8” turnbuckles (x4). Assemble a captured ball link onto each end of the turnbuckle, being sure that there is one bored out captured ball link and one non-bored out captured ball link on each turnbuckle.

Starting point on this chassis will be 4° caster and -2° camber. To make the settings easier to obtain, using calipers, set the front links at 2.455” [62.36 mm] center of the ball to center of the other ball, and the rear links at 2.244” *[56.99 mm]* from center to center.

Tip: install the ball links onto the turnbuckles so that the adjustment directions are in the same direction for each link. I.E., two of the bored out captured ball links should be on a left-hand thread, and two should be on a right-hand thread. When installing these on the front of the car, be sure that the left-threaded, bored captured ball links are on the same sides of the chassis. This way, the same direction the wrench is turned on all links causes the turnbuckles to screw in or out is the same for all the links.

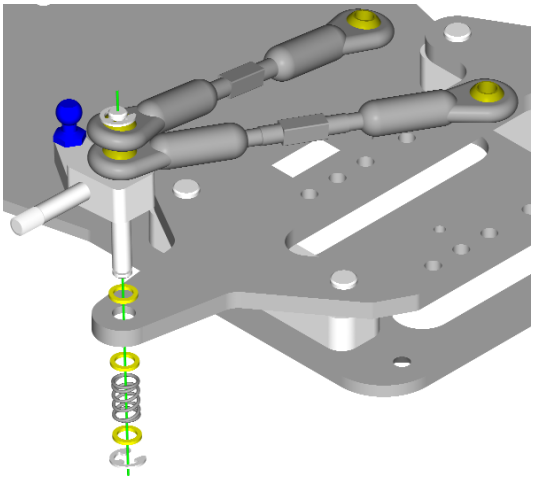
Tip: carefully remove the balls from the plastic end and polish the ball with some polishing compound for smooth operation.



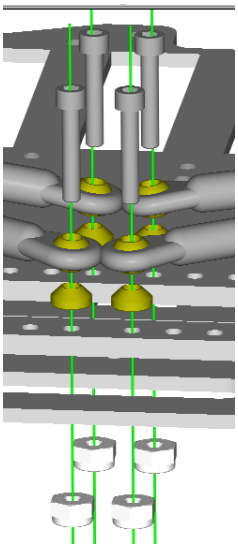


Locating the kingpins (x2), and the previously assembled front links and steering blocks, along with 1/8” E-clips, assemble as follows; Install the kingpin into the steering block to about the middle of the kingpin. Next, slid on the longer link (front) first followed by the shorter link (rear). Install the E-clip onto the top of the the king pin. Now slide the steering block to the top of the kingpin, taking up the slack at the top of the kingpin.

Tip: the steering block will be a tight fit, and should remain that way. It will ensure a slop-free suspension for the long term.



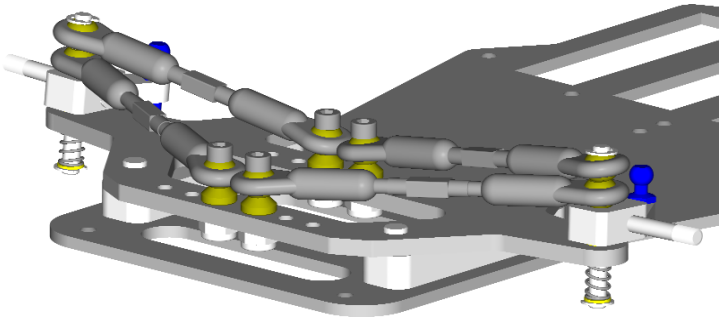
To install the strut assembly into the chassis, start by locating the .022” brass shims (x3), .020” springs (x2) and another E-clip. Slide a shim onto the bottom of the kingpin, then slide the kingpin through the lower arm and through the previously installed teflon bushings. Next follow this by installing another .022” shim, the spring, another shim followed by an E-clip.



Using the 4-40 x 5/8” socket head cap screws (x4), brass cone washers (x4) and large 4-40 lock-nuts (x4), attach the links to the lower arm. Slide the screws through the captured ball ends then through the cone washers, then thread them into the holes closest to the center of the chassis. Keeping a hex driver in the screw, use a nut driver to install the 4-40 nuts from below the chassis. The screws should be held snug to the carbon lower arm when tightening the nuts.

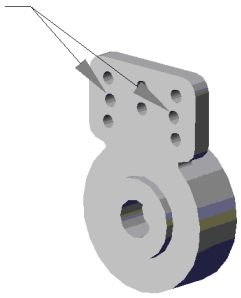
Tip: do not clearance drill the carbon plate. These screws were meant to be threaded into the carbon. This will keep the suspension accurate over a longer period of time.

Completed assembly.

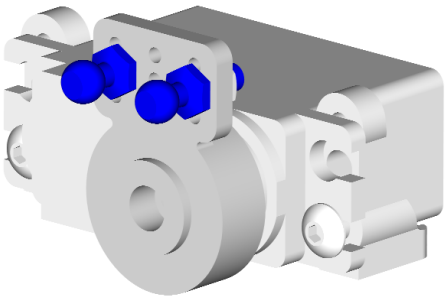


You will need a small servo saver to match the servo you chose for your car. We recommend the smaller servos that manufacturers designed for 12th scale applications.

Ream these holes



Locate the aluminum ball studs (blue anodized) and the mini (flat) 4-40 hex nuts. To install the ball studs, you will need to either drill with a no.34 drill (slightly small to thread in the stud), or ream out the holes with a hobby knife. Be sure to ream equally from both sides of the servo saver, and only enough material to thread in the ball studs. Back the studs with the mini nuts, with some blue thread lock for good measure.

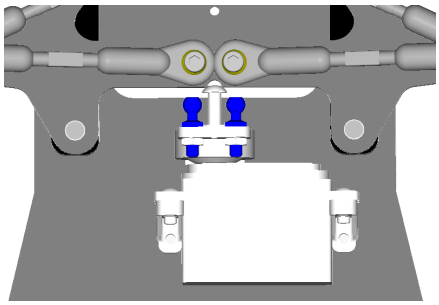


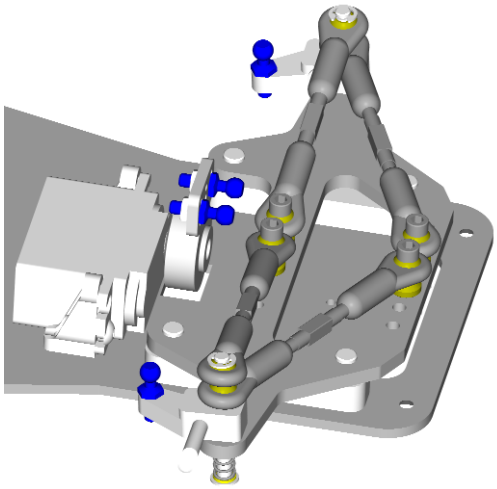
Install your servo mounts of choice, mounting the servo as low to the mounts as possible, keeping the mounting surface of the mounts square to the servo.

Center the servo saver within the travel of the servo. Power the servo up and center the trim on the radio and position the servo saver as shown.

Installing a button head screw into the mounting hole of the servo will allow alignment with the alignment notch in the lower arm. Once the servo is squared onto the arm, mark the hole locations for the servo mounts from side to side.

Pull the button head screw out, and align the servo saver with the slot in the chassis and mark the position on the chassis for the front to rear placement of the servo mounting holes.



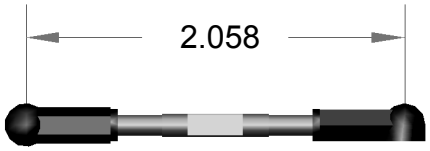


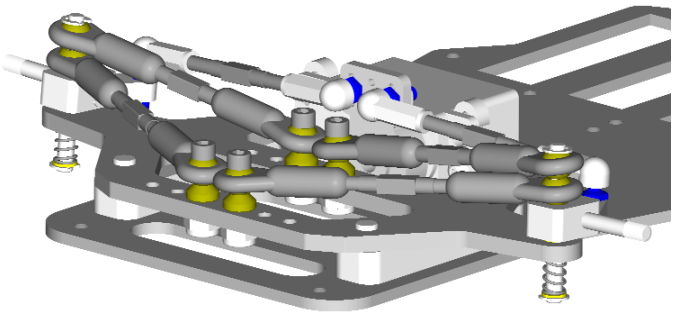
After carefully marking the center of the servo mounting holes, place the assembled servo back on the chassis to make sure the marked holes appear where they should be.

Tip: A mis-aligned servo from side to side will make the car have a permanently 'tweaked' feel, and the car will never corner the same to the left as it does to the right. Taking your time and getting this part correct will lead to a more pleasant experience, and a correctly handling Rev. 5.

Next, remove the servo and drill the holes and countersink them from the bottom so that the screw heads are flush.

Locate the ballcups and 4-40 x 1 3/8” turnbuckles (x2). Assemble one as shown and the other opposite hand, to the length shown (2.058”), measuring with a caliper from center to center. This number should get the links close, and can be fine-tuned later for proper toe-in / out.





This completes the Speed Merchant Formula front suspension.