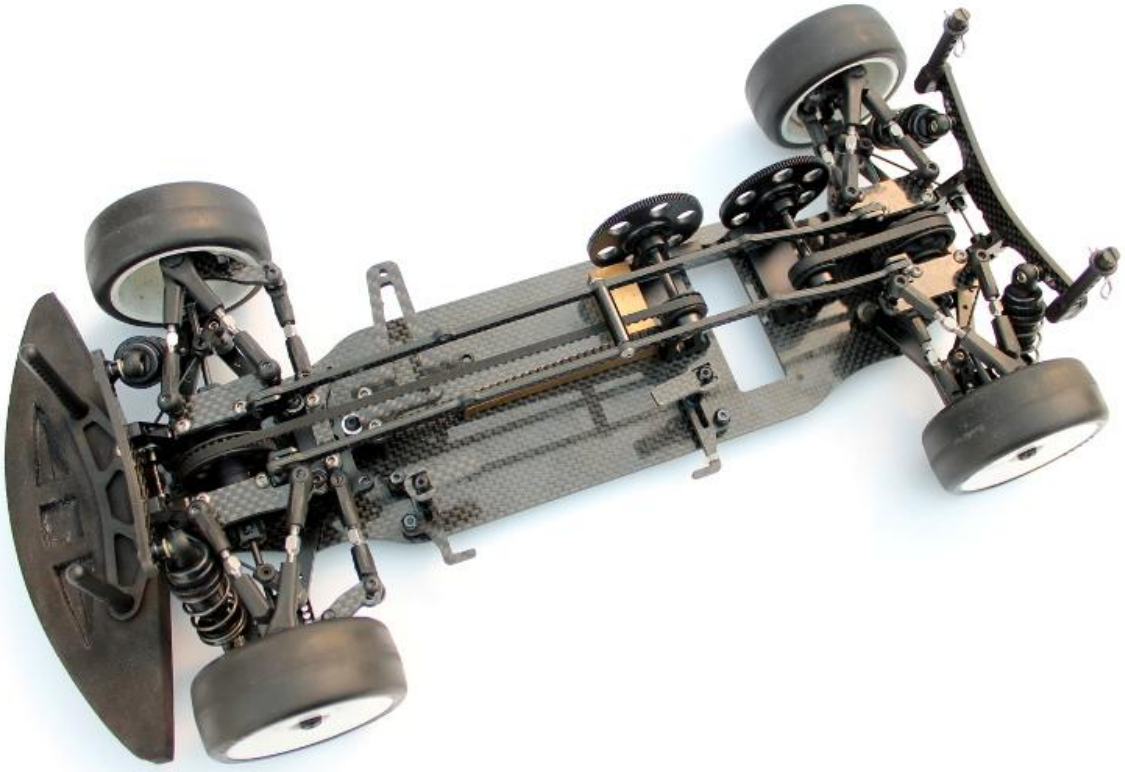
GIZMO RACING USA



GZ2 2018

Instruction Manual

Bag A

Parts		
Part Number	**Part Name**	**Quantity**
7000	Center Weight	1
1104	Lower Wishbone	4
3030	Rollbar Mount	4
3041	Shock Mount	4
5040	Wishbone Insert	8
5050	C-Clip for Wishbone	8
P06	Downstop Collar	4
3280	Ball Joint Balls	8
3281	Balls for Rollbar Mounts	4
3061	Aluminum Bulkhead	4
1055	Aluminum Rail Mount	4
P04	Arm Hasp	4
1052	Carbon Side Rail	2
1012C	Carbon Chassis	1
Screws and Shims		
Part Number	**Part Name**	**Quantity**
B2.5x6	Hex Screw B2.5x6	8
B2.5x8	Hex Screw B2.5x8	12
B3x6	Hex Screw B3x6	8
C3x5	Hex Screw B3x5	4
C3x6	Hex Screw C3x6	16
SH05	Shim 0.5mm	4
P3x3	Set Screw P3x3	4
P3x4	Set Screw P3x4	4
P3x6	Set Screw P3x6	4
P3x8	Set Screw P3x8	4

Notes:

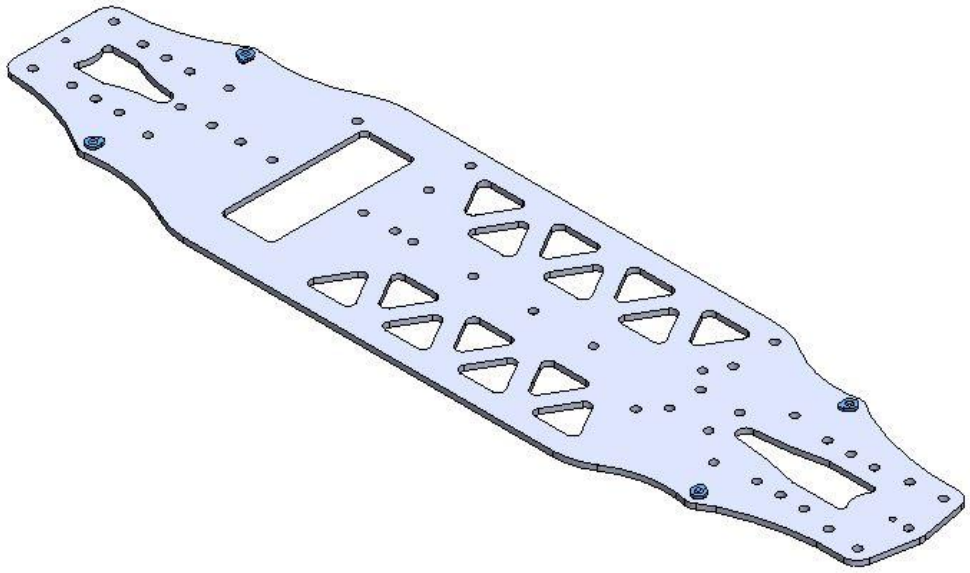
1. Use a M3x3 set screw on the shock mount on the unused hole next to the shock set screw.

2. The shock set screw should be a M3x8

3.Install the side rails in this step or it gets hard to access the top deck screws. Use 0.5mm shims in between the mount and the rail.

A.1 Installation of P06 into the Chassis

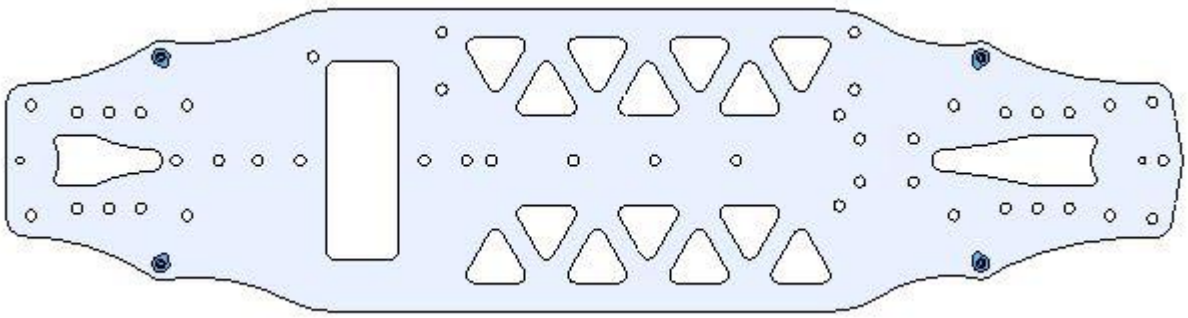
A.1.1



Install the qty4 P06 into the chassis individually. Light filing of the edges of the designated holes in the chassis may be required for easier installation; where the small semi-circle intersects the larger.

Place the P06 with the larger end on a flat surface. Then take the chassis in hand so that the P06 will be installed from the top of the chassis through to the bottom. The large end of P06 will shoulder on the upper side of the chassis. Align the designated hole of the chassis with the P06, and push the chassis onto the P06 piece.

The P06 will snap into place. Repeat for the remaining P06. CA glue can be used to further secure the piece into the chassis if desired.

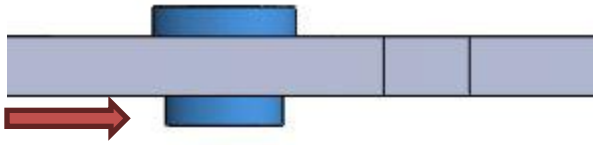


A.1.2

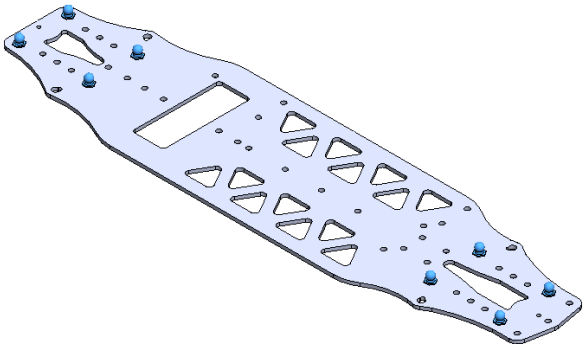
Install a P3x4 set screw into each of the four P06.

A.1.3

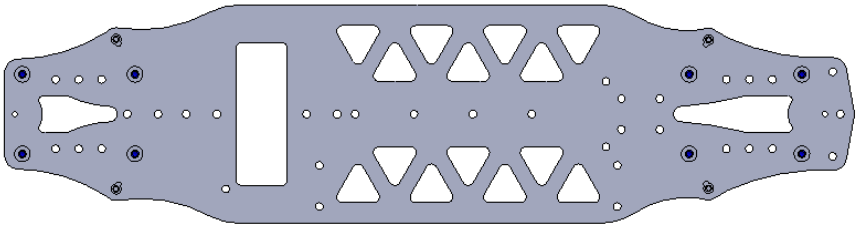
With a hobby-knife, trim off any of the P06 surpassing the bottom side of the chassis.



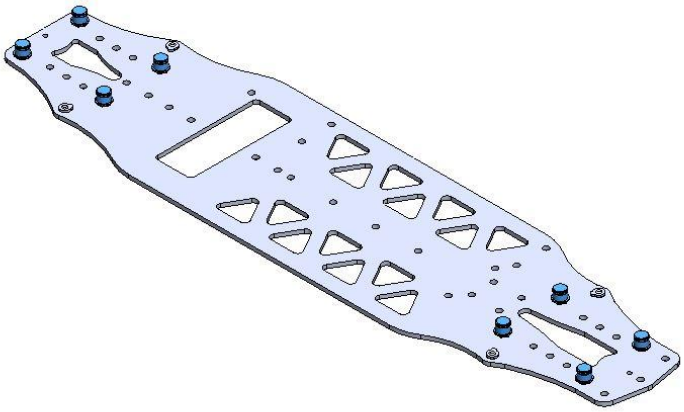
A.2 Install Arm Joints



Install qty8 3280 Ball Joint Balls using qty 8 C3x6 screws in the indicated diagram below. For a starting setup, install a 1mm shim below each 3280 for a starting lower roll-center setting.

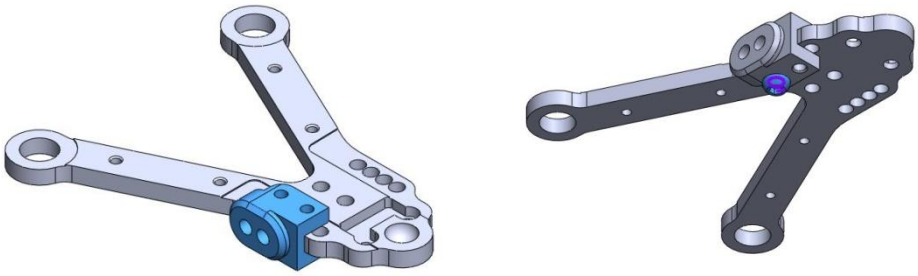


Snap qty 8 5040 Wishbone Inserts onto the already installed 3280's on the chassis.

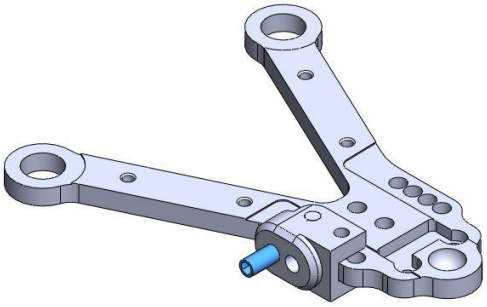


A.3 Arms

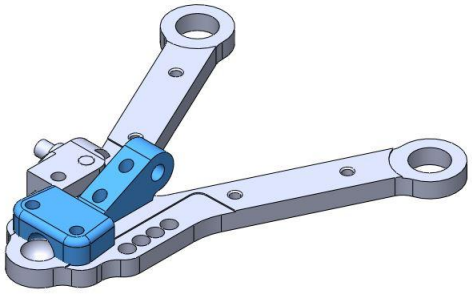
A.3.1 Wishbone Construction

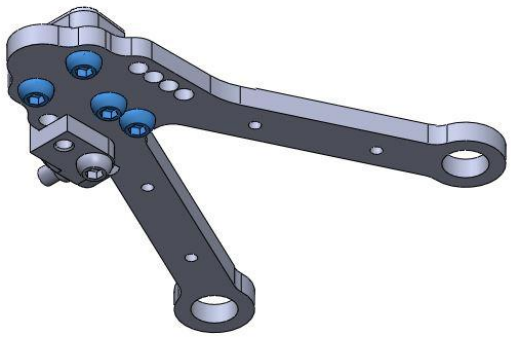


Instal the 3041 Shock Mount onto the arm using qty 2 B2.5x8 screws to mount it from the bottom.

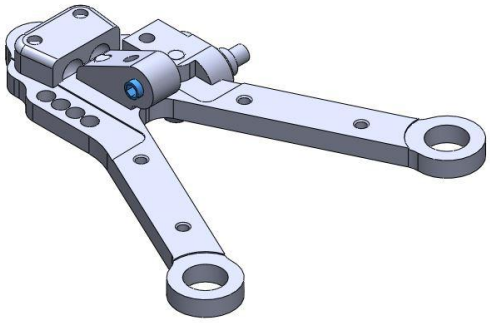


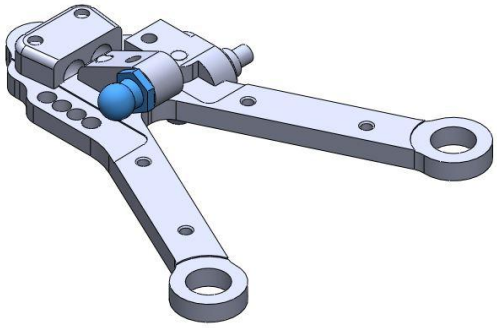
Install the 3x8 set screw into the shock mount.





Install the P04 and the 3030 Roll Bar Mount to the 1100 Lower Wishbone with qty2 B2.5x6, respectively.





Install the P3x6 into the 3030, and then install the 3281 Ball onto the P3x6.

A.3.2 Arm Configuration

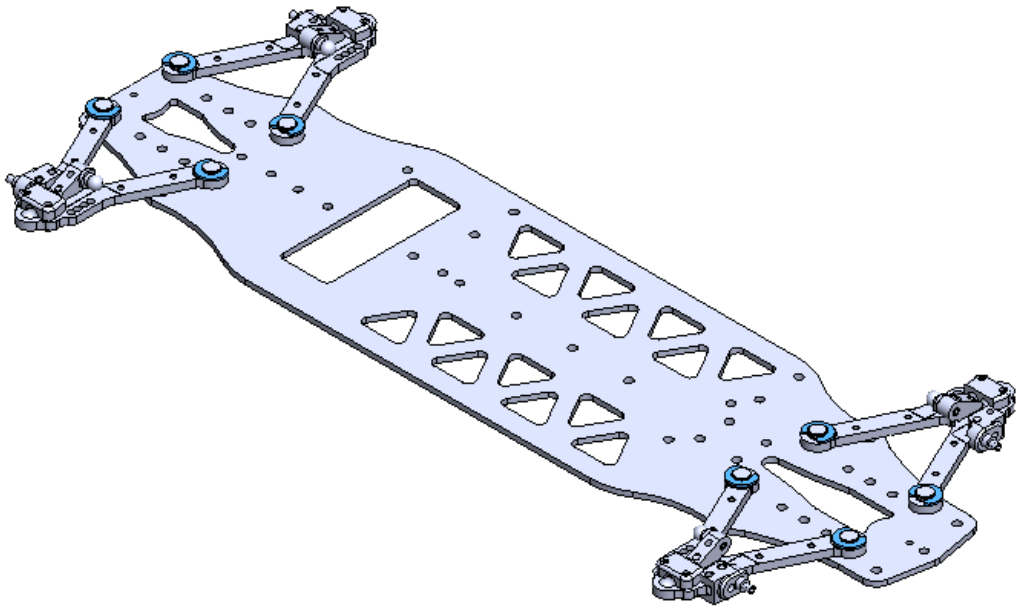
Repeat step A.3.1 for each of the four arms.

In the front, mount the square side of the shock mount to the outside on the arm. Use the most inward position on the arm and the outward mounting hole on the mount for the set screw to mount the shock.

In the rear, use the round part of the shock mount to the outside. Use the second widest position on the arm holes and the outer hole for the set screw for the shock.

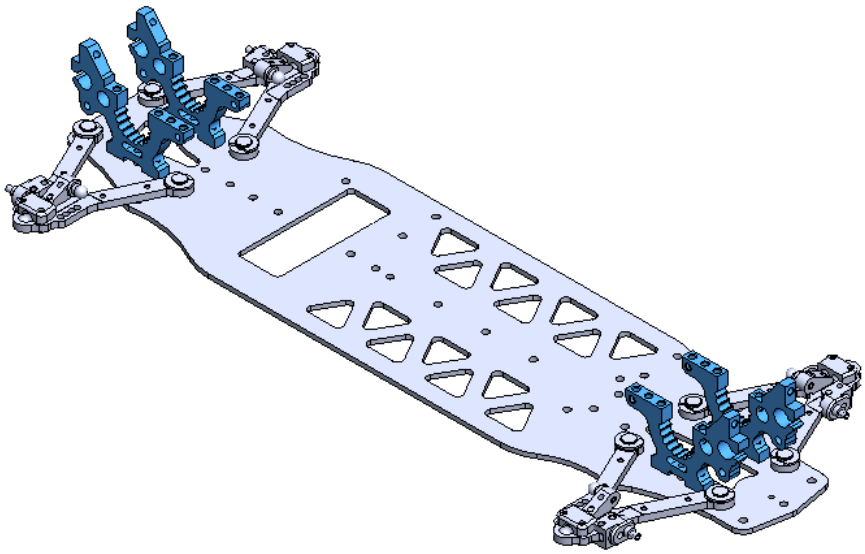
STILL MISSING M3x3 set screw on hole that is not being used to mount shock.

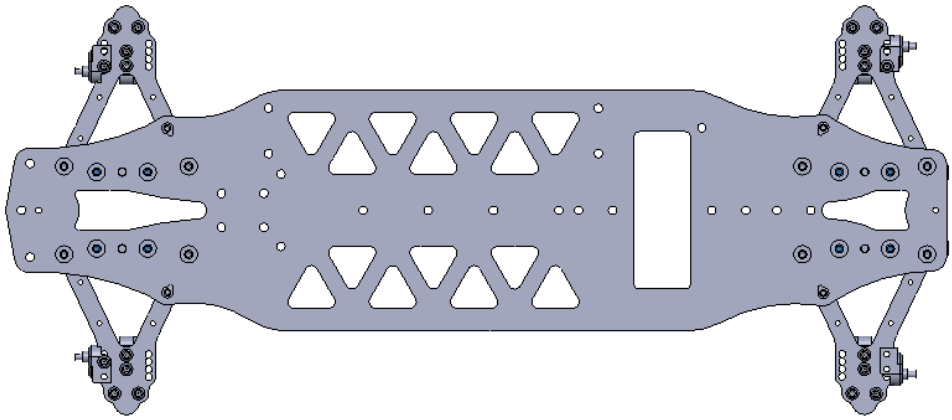
A.3.3 Arm Installation



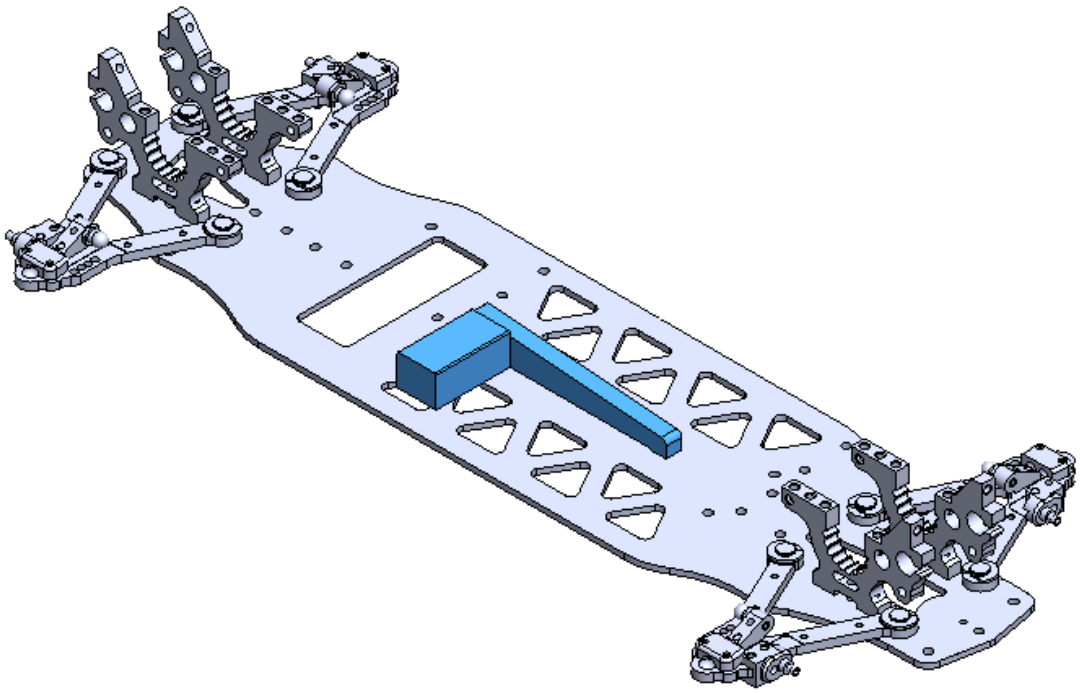
Then, install each of the four lower arms and secure them with qty2 5050 C-Clip For Wishbones per each lower arm, as seen above.

A.4 Bulkheads





Install the 4 bulkheads to the chassis by using qty2 C3x6 for each.



The 7000 Center Weight has four possible mounting screws. The flex of the lower chassis varies depending on which screws are installed. Install with qty2 C3x6 screws.

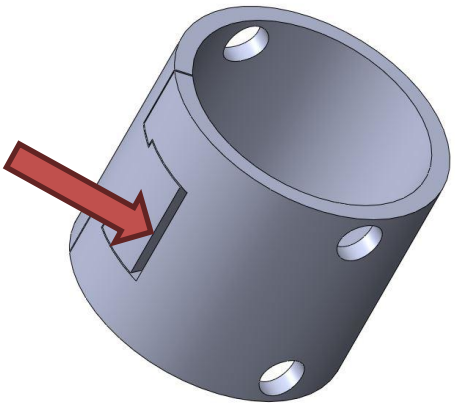
Bag B

Part Number	Part Name	Quantity
ST01	Front Axles	2
PIN01	Pin 1.5x7.8mm	6
ST13	Front Universal Bones	2
ST16	U-Joint Cross	6
UB2	Bushings Kit with ST11	1
ST17	Universal Ring	2
ST02	Rear Axle	2
ST14	Rear Universal Bones	2

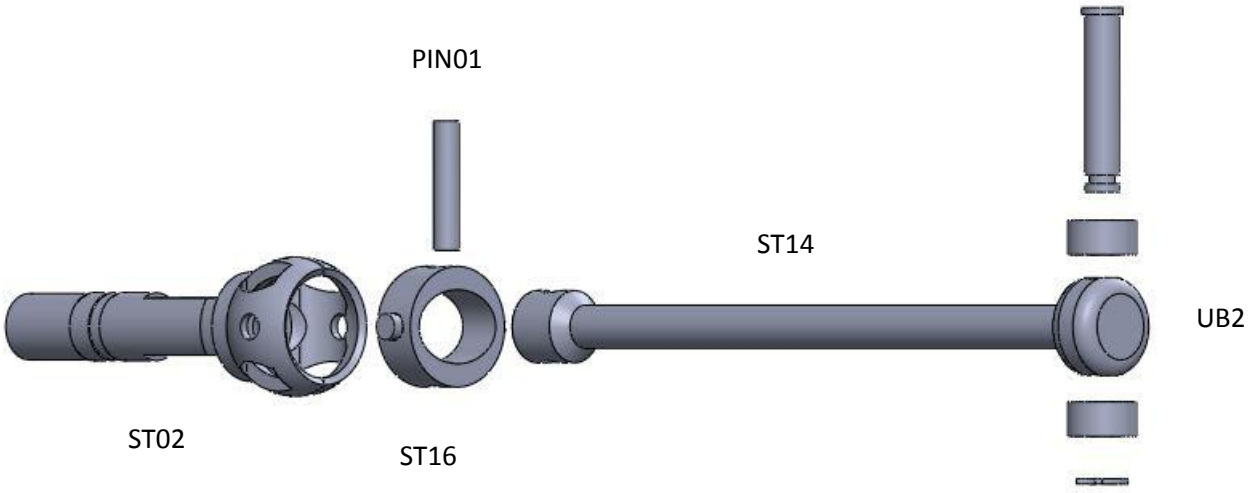
B.1.2 Front Dual Joint Driveshaft

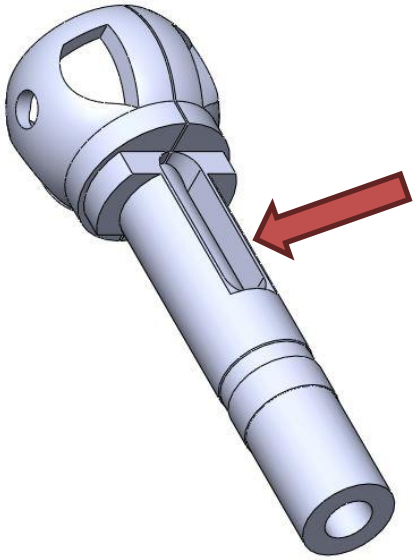
Construct the front axles and the driveshaft bone halves first, to then join them with ST17.

Use a flat-head with a width of 2.6 mm in the slot of the ST17 to pry it open and gain clearance to install the two halves of the driveshaft.



B.1.2 Rear Driveshaft



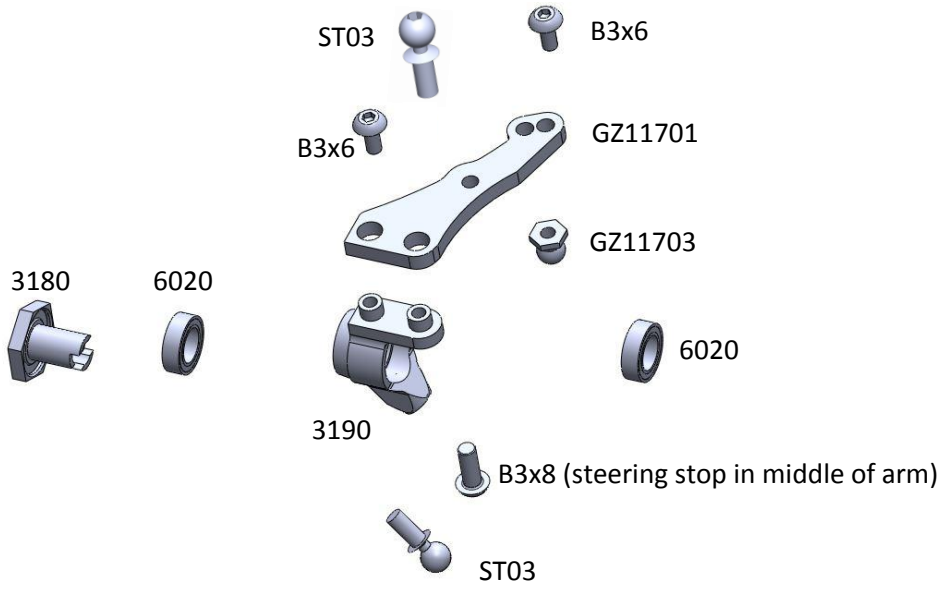


Twist the flathead here in the ST02 to gain the clearance to assemble the driveshaft.

Bag C

Parts		
Part Number	**Part Name**	**Quantity**
6020	6x10x3 Bearing	8
3190	Upright Hubs	4
3180	Wheel Axle	4
GZ11701	Arm for Upright Front	2
GZ11702	Rear Toe in Arm	2
ST03	Upright Ball	8
P16	Lock Ring	4
GZ11701	Pivot Ball	4
Screws and Shims		
Part Number	**Part Name**	**Quantity**
B3x6	Hex Screw B3x6	8
B3x8	Hex Screw B3x8	2
SH10	Shim M3x1.0mm	8

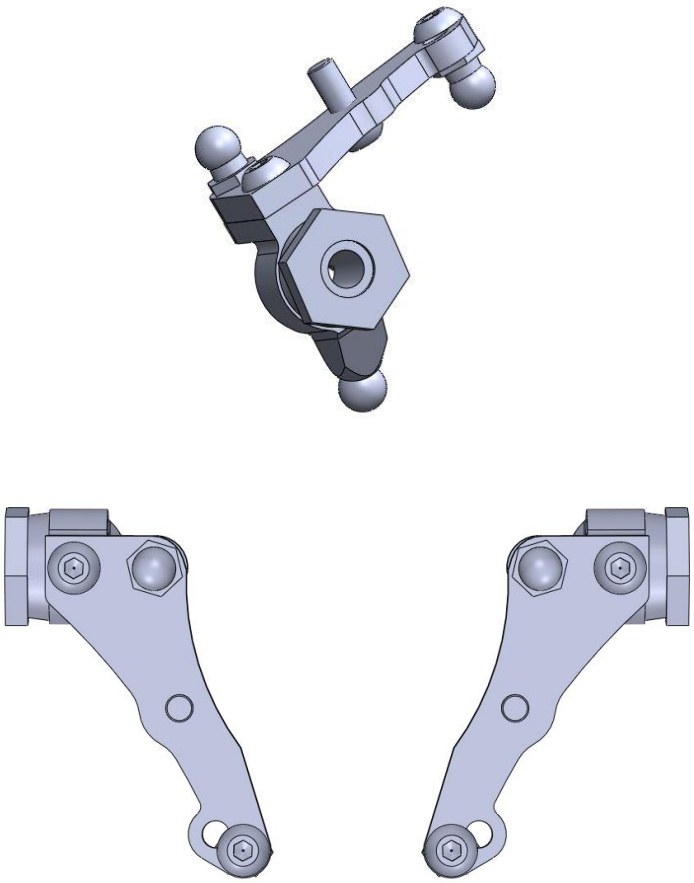
C.1.1 Front Uprights



Assemble the first front upright as depicted by the diagram.

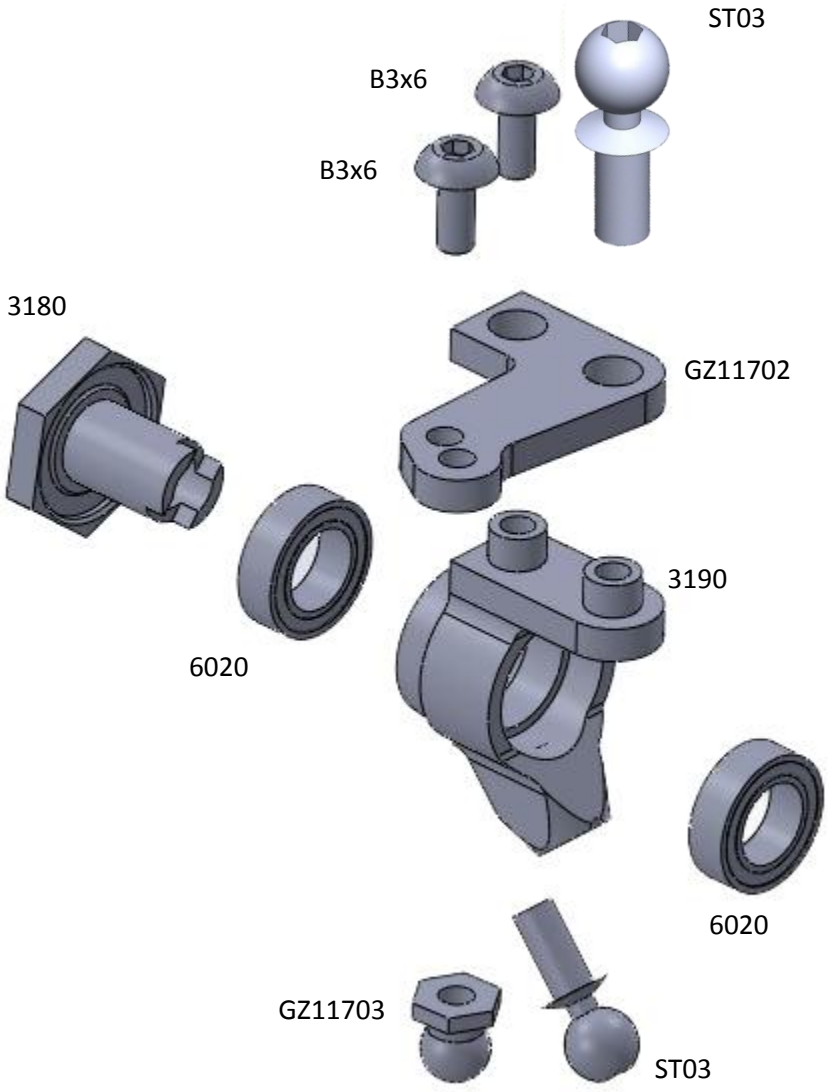
Notes:

- Upper outer roll center can be adjusted with different shim sizes below the ST03. Recommended starting setup is 1mm.
- Roll Center and track-width can also be varied using various shim sizes between the 3190 and ST03. Recommended starting setup is 1.0 mm.
- Bump steer can also be adjusted by varying the shim size on the steering connection of the arm.

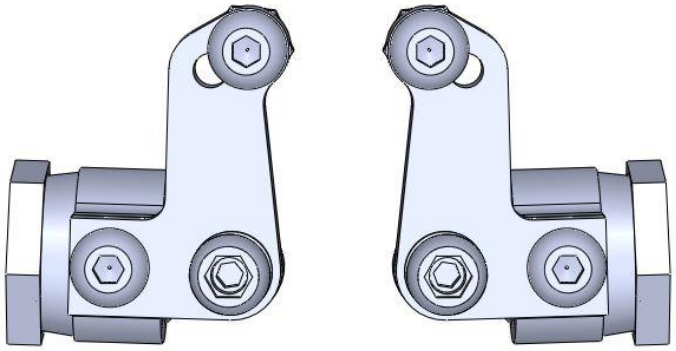


Replicate the other front upright sub-assembly for the opposite side. Thus, flip the GZ11701 and build as depicted above.

C.1.2 Rear Uprights



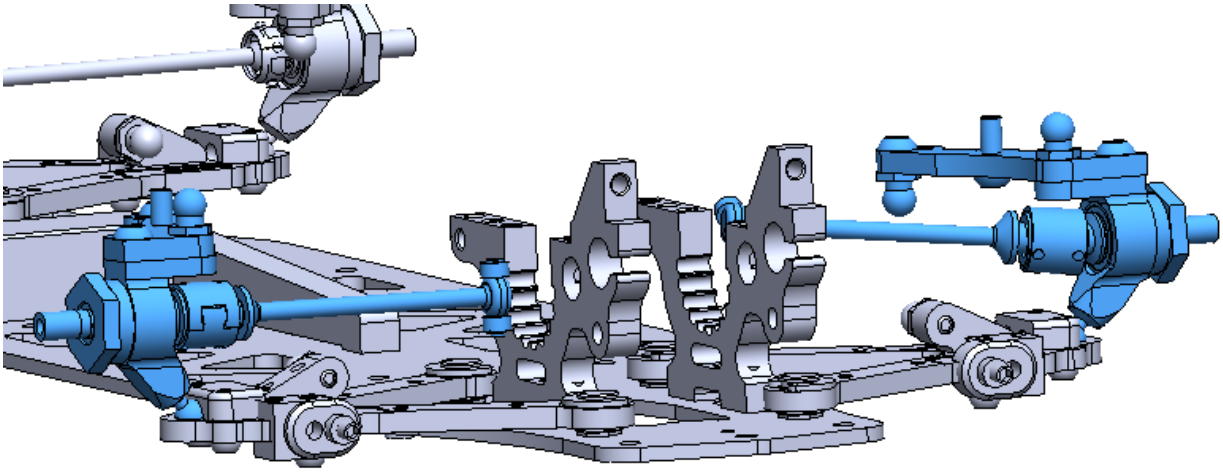
Assemble the first rear upright as indicated by the diagram.

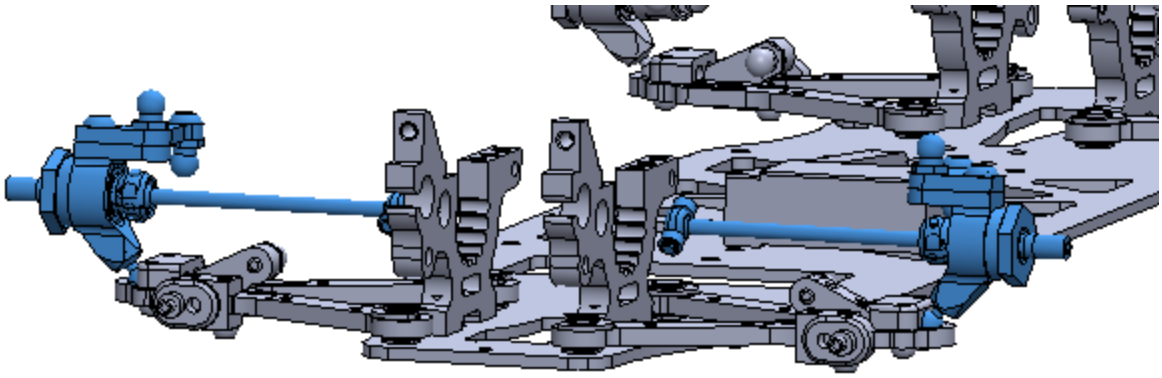


Replicate the other rear upright sub-assembly for the opposite side. Thus, flip the GZ11702 and build as in the orientation above.

C.1.3 Installation of Uprights and Driveshafts

Install the front and rear drive shafts into the front and rear uprights, respectively. Then install the uprights into the lower wishbones and tighten down each of P04 to clamp onto the ST03's. Later, we will explain the necessary tightness needed on the PO4 for free movement.

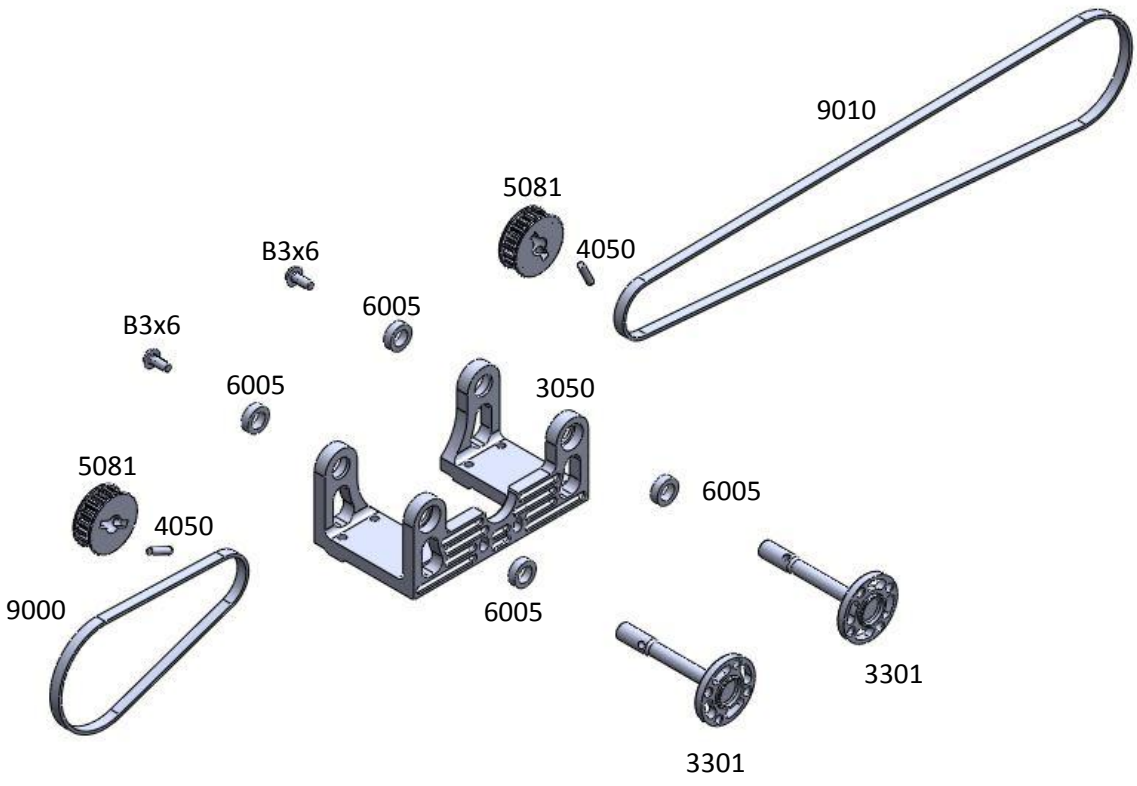




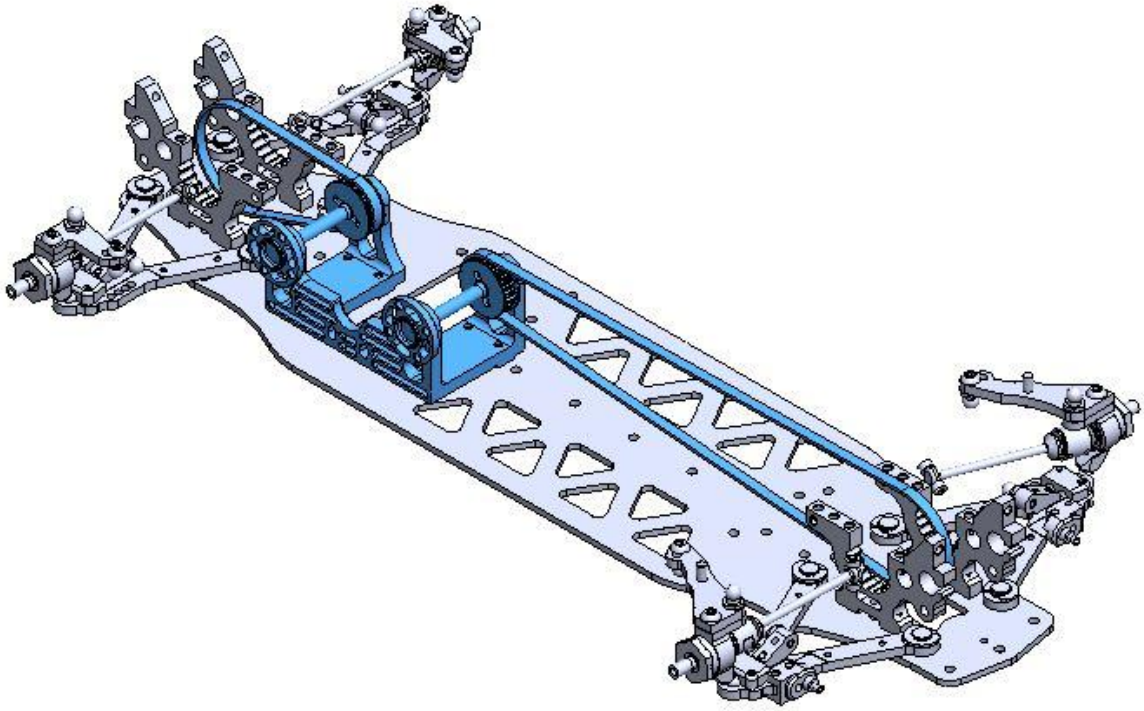
Once the drive shafts are inserted into their respective uprights, install the small plastic retaining ring onto the driveshaft until it is flat with the hex.

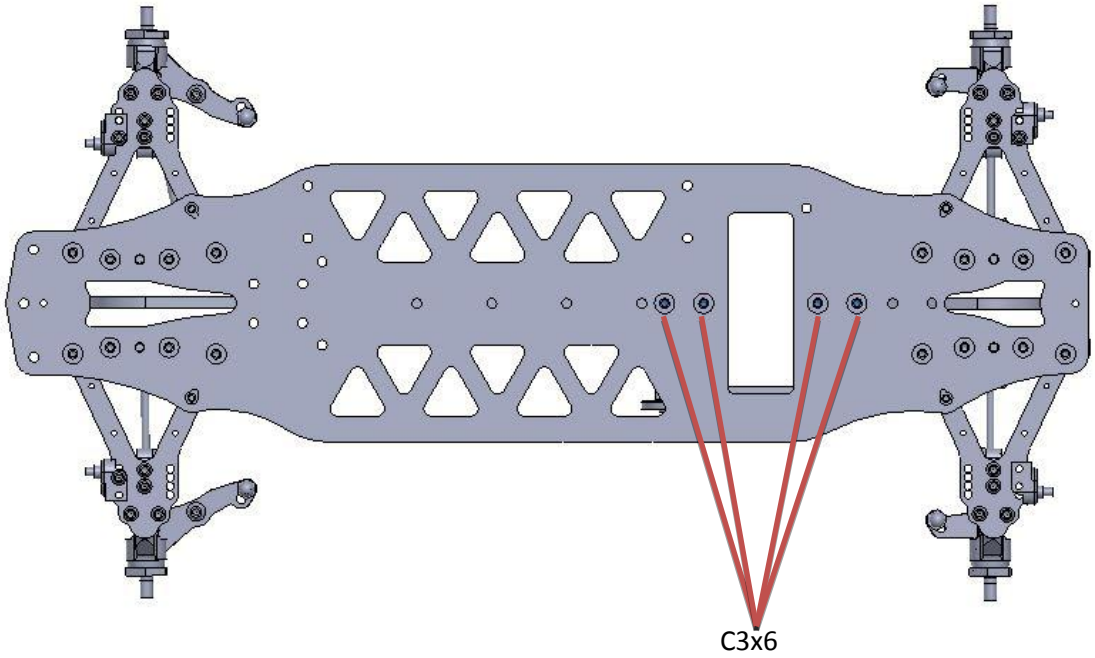
Bag D

Parts		
Part Number	**Part Name**	**Quantity**
3050	Motor Mount	1
6005	Bearing 5x8x2.5	4
3301	Shaft Pulley	2
5081	18T Pulley	2
9000	Rear Belt	1
9010	Front Belt	1
4050	Pin 2x10mm	2
Screws and Shims		
Part Number	**Part Name**	**Quantity**
C3x6	Hex Screw CS	4
SHPS	Shim 5x7x0.1mm	4
B3x6	Hex Screw B3x6	2



The SHPS Shims can be used to shim your spur gears depending on their thickness.



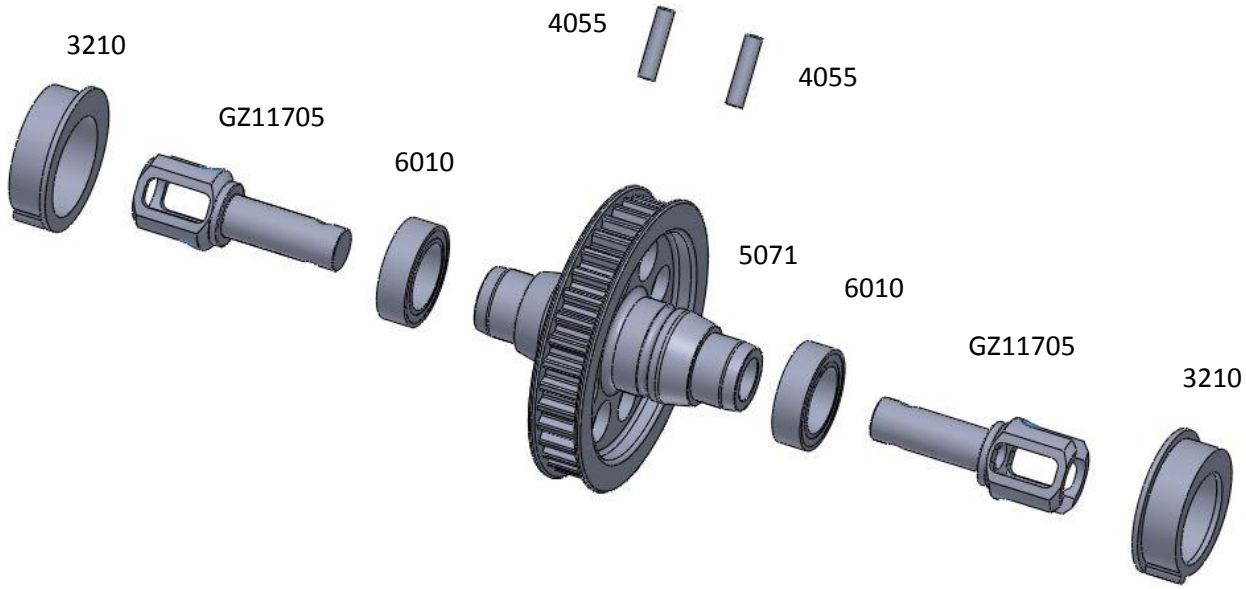


Install the Motor Mount subassembly using qty4 C3x6 screws as indicated above.

Bag E

Part		
Part Number	**Part Name**	**Quantity**
GZ11705	Outdrives V2	4
5071	Spool	1
5010	Diff Left	1
5020	Diff Right	1
4050	Pin 2x10mm	4
4055	Pin 2x8mm	2
8010	O-Ring 24x1mm	1
304990	Diff Gasket	1
304930	Diff Gear Set	1
964031	Diff Washer 3.5x10x0.2mm	4
964050	Diff Washer 5x15x0.3mm	2
6010	Bearing 8x12x3.5	4
3210	Diff Eccentric	4
304980	Diff Cross	1
8020	O-Ring 5x2mm	2
Screws and Shims		
Part Number	**Part Name**	**Quantity**
C2.5x8	Hex Screw C2.5x8	4

E.1 Spool



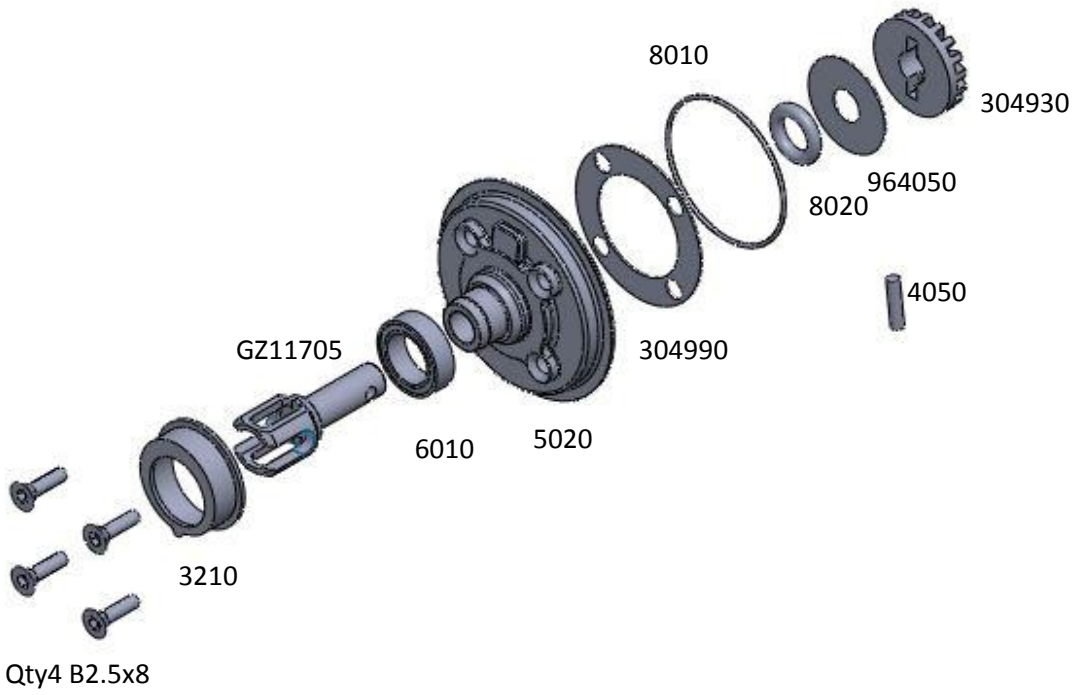
Light sanding of the spool on the two outer diameters where the 6010 bearings sit will aid in smooth assembly.

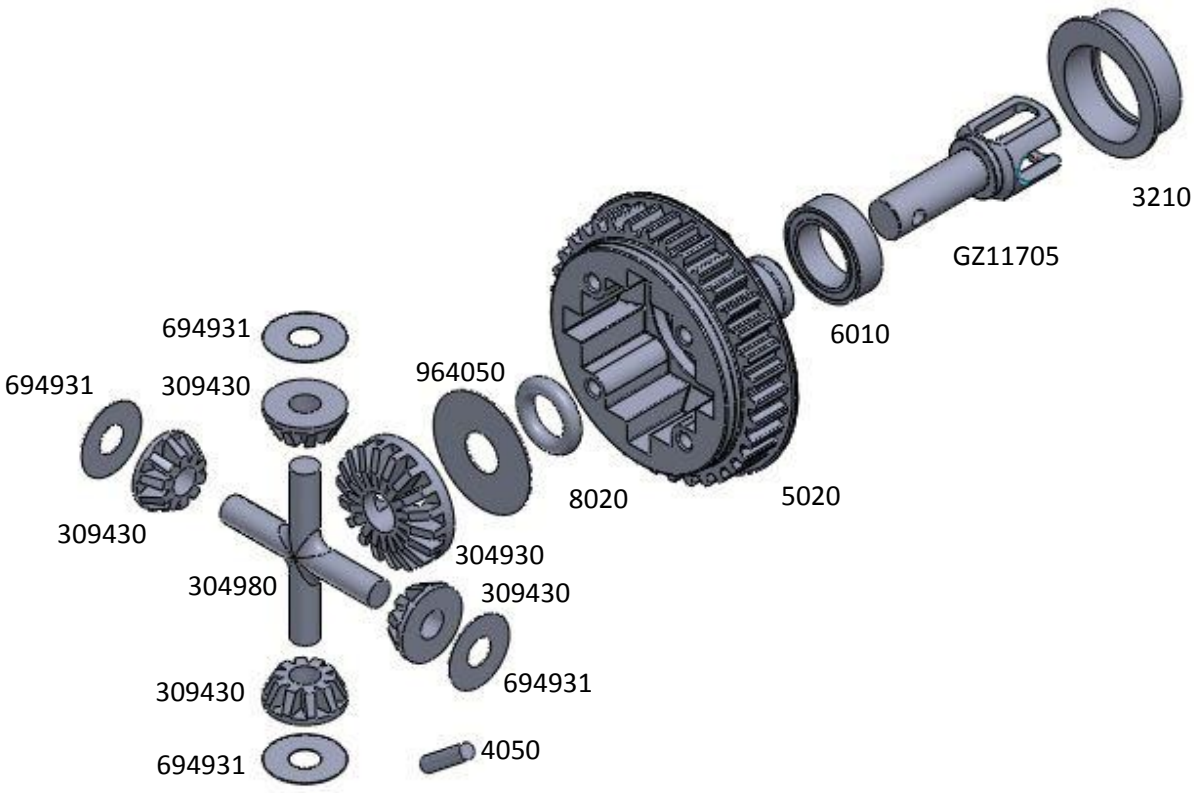
Must install the 6010 bearings before the GZ11705 Outdrives.

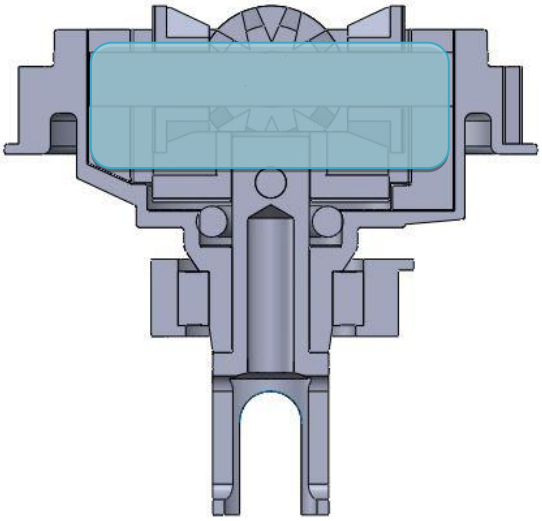
E.2 Rear Differential

Light sanding on the outer diameters where the 6010 bearings sit of the left and right differential housings will aid in smooth assembly.

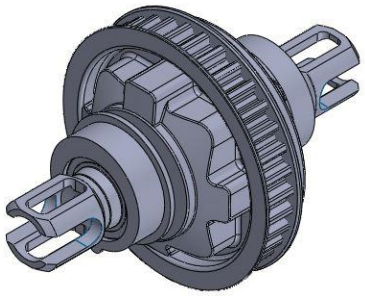
Must install the 6010 bearings before the GZ11705 Outdrives. You also need to install 8020 and 964050, before you install 4050.


8010
304930
964050
8020
4050
GZ11705
304990
6010
5020
3210
Qty4 B2.5x8

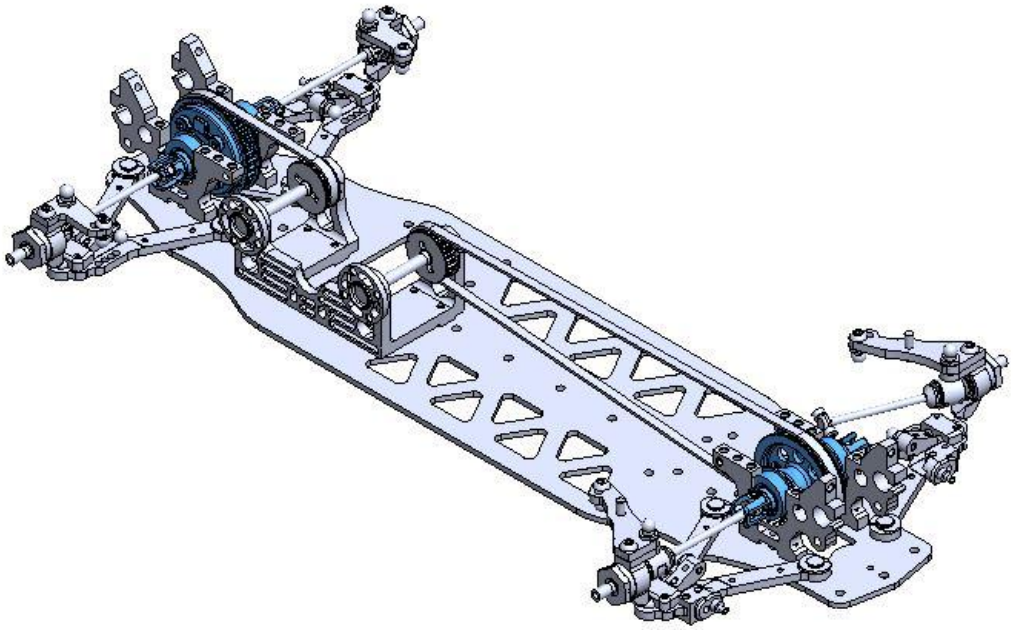

3210
GZ11705
6010
694931
694931
309430
964050
309430
8020
5020
304930
304980
309430
694931
309430
694931
4050

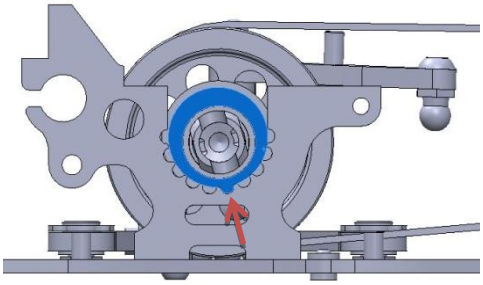


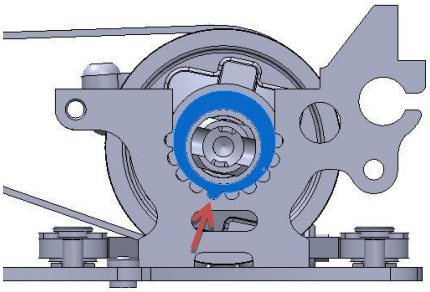
Fill the diff half containing the cross with gears with the oil of your choice, as seen above. Then join the two halves together.



E.3 Install Spool and Rear Differential







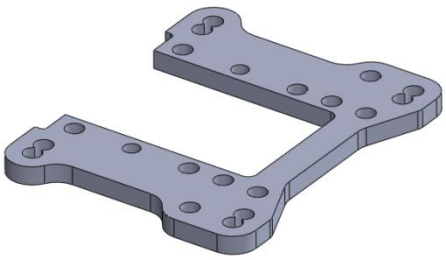
The tension of the front and rear belts can be adjusted using the eccentric 3210 pieces and their position in the sideplates.

Bag F

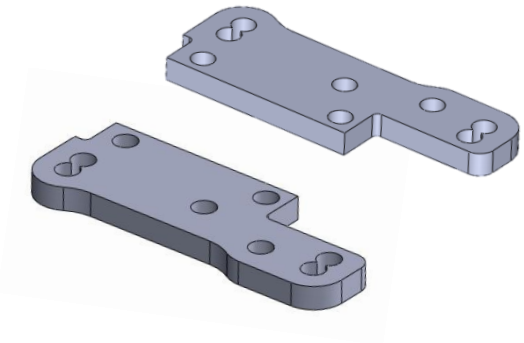
Part		
Part Number	**Part Name**	**Quantity**
1211	Caster Plate - Front	2
1212	Caster Plate - Rear	2
3141	Upper Arm Plastics	4
3270	Turnbuckle 27mm	10
GZ11709	Ball Joint	12
GZ11703	Pivot Ball	10
Screws and Shims		
Part Number	**Part Name**	**Quantity**
B3x6	Hex Screw B3x6	8
B3x8	Hex Screw B3x8 (for toe link in board)	2
B3x10	Hex Screw B3x10 (for Upper arm pivot balls)	8
SH30	Shim M3x3 (For upper arm)	8

F.1 Front and Rear Upper Arms

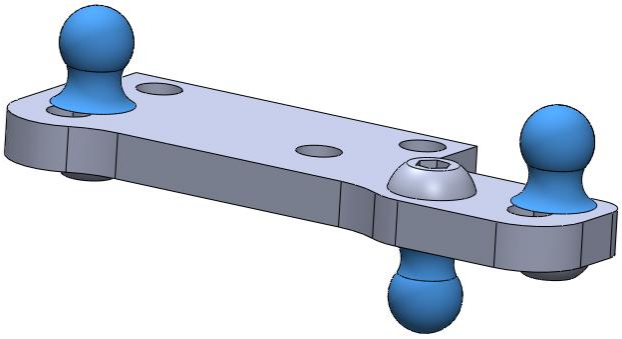
The carpet car will car will have one-piece caster plates for the front and rear, while the asphalt car will have two-piece caster-plates for the front and rear.



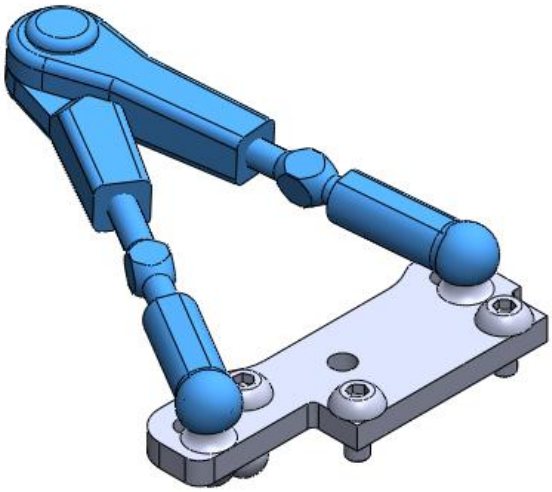
or



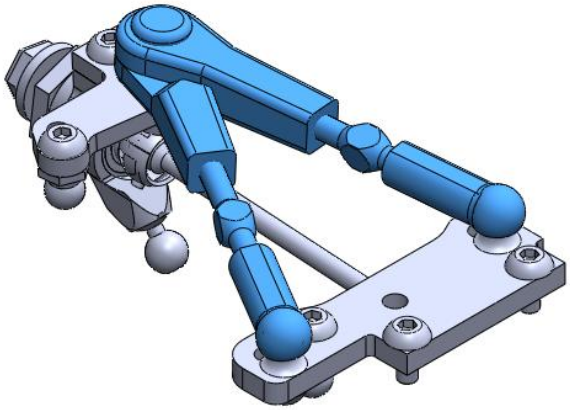
NOTE: while the front and rear are very similar, they are in fact slightly different. The rears can be identified by their extra hole for the rear toe turn-buckle.



Install qty 3 Pivot Balls to each caster plate using B3x10 screws.

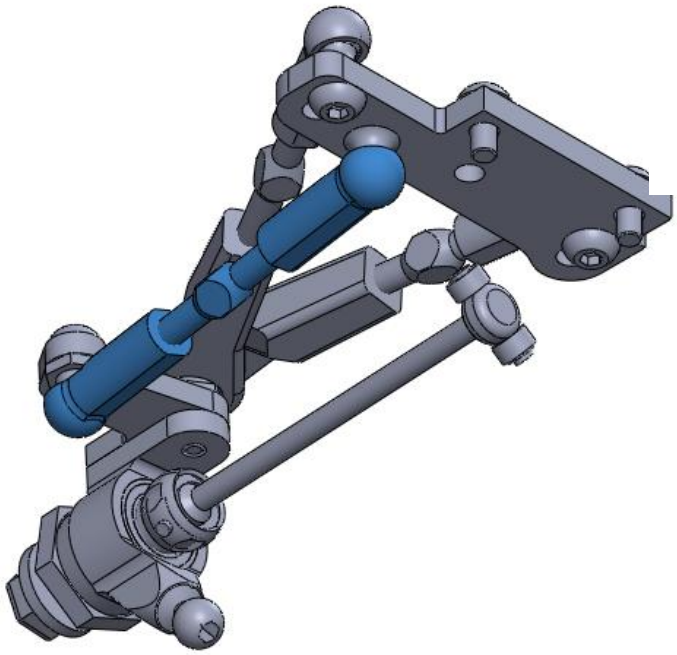


Construct the upper turnbuckles and snap them onto the placed pivot balls and each other.



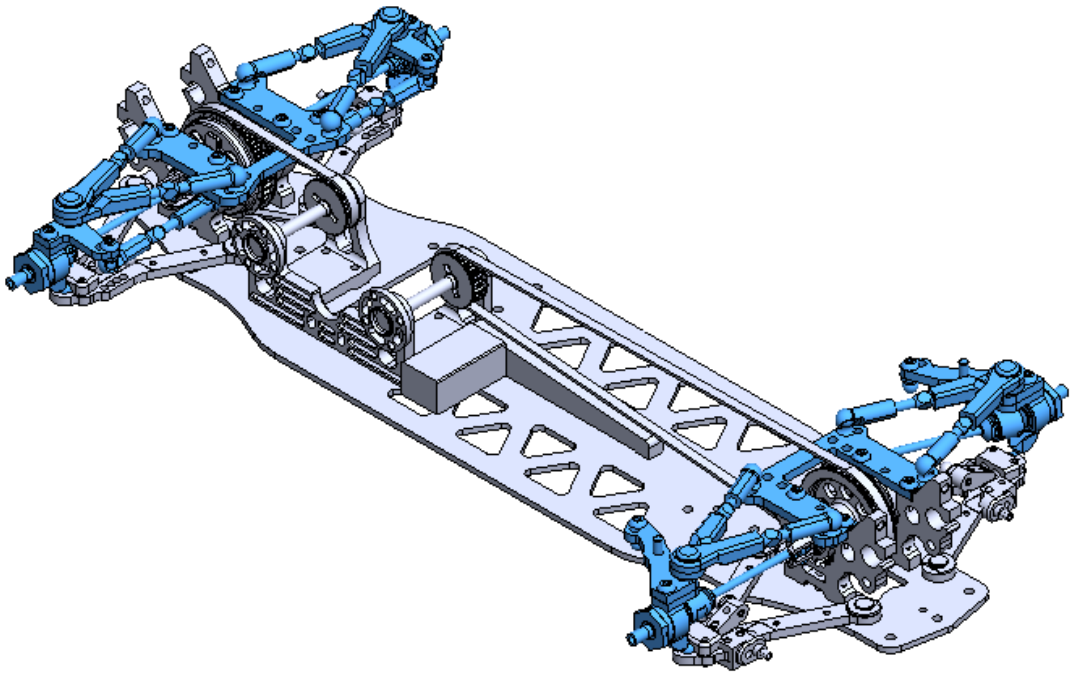
Snap the upper arm onto the ball of the upright.

F.2 Rear Toe Linkages



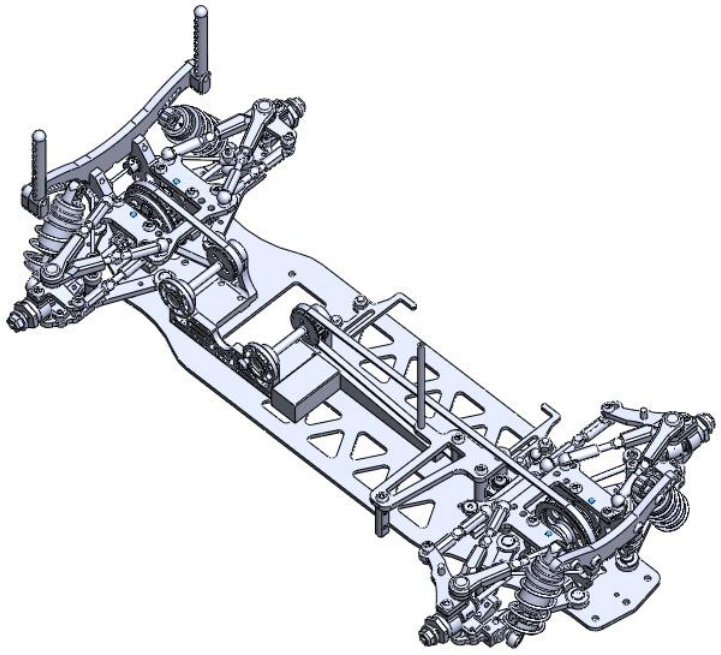
Construct 2 rear-toe linkages. For each linkage, use qty1 3260 3x27mm turnbuckle and qty2 GZ11709 Ball Joints. After the turnbuckles are built, install them by connecting them to the ballstud that was placed on the bottom of the caster plate and the available ball end on the rear toe-in arm.

Attach each caster plate to the respective bulkhead using qty2 B3x6 for each.



Spool/Diff Adjustment

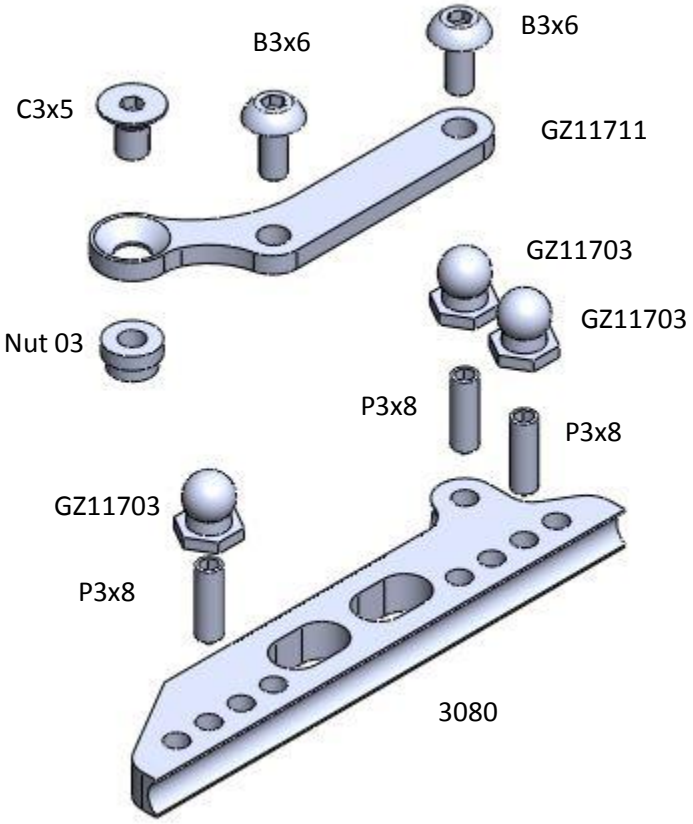
Install four p3x3 set screws for spool and differential tightness.



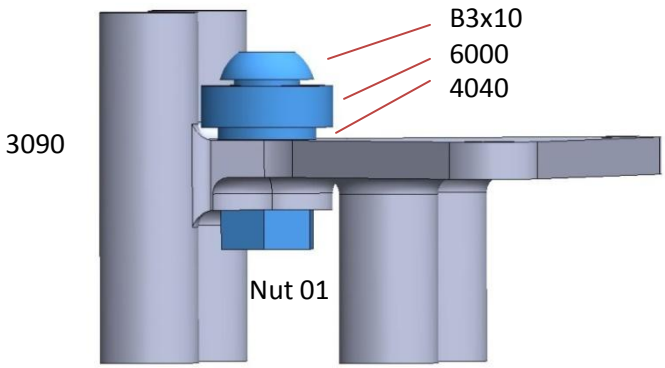
Bag G

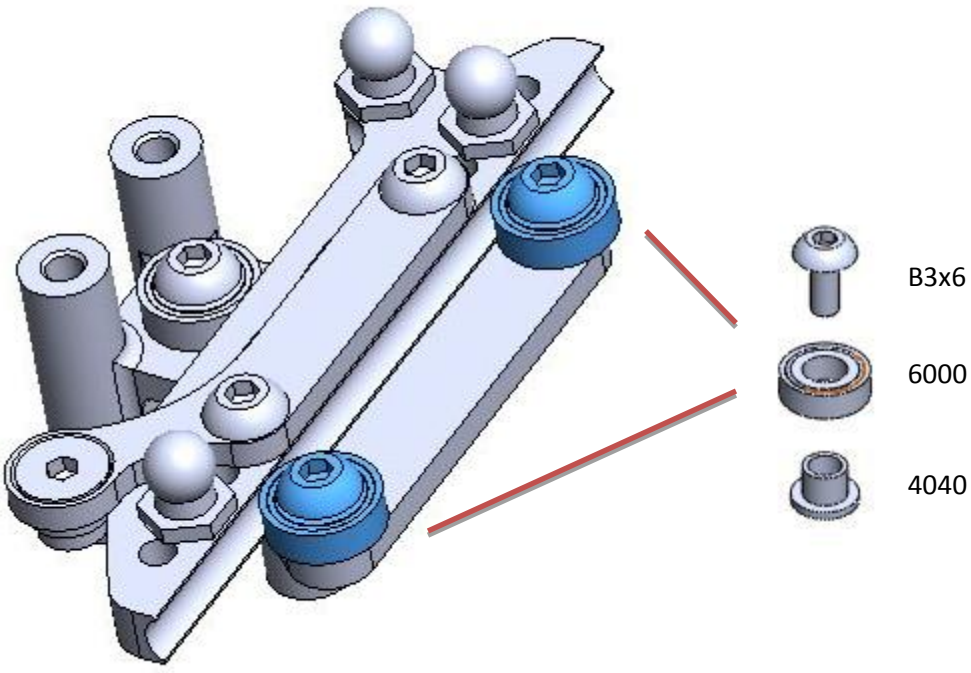
Parts		
Part Number	**Part Name**	**Quantity**
3080	Steering Rack	1
3090	Steering Mount	1
3010	Servo Mount Short	1
3100	Servo Mount Long	1
GZ11703	Balls for V2 Ball Joints	3
4040	Steering Post	3
6000	Bearing 4x8x3	3
3260	Turnbuckle 3x27mm	2
3270	Turnbuckle 3x39mm	1
5060	Ball Joints	6
1150	Servo Plate	1
GZ11711	Stop Rack	1
Screws and Shims		
Part Number	**Part Name**	**Quantity**
B3x6	Hex Screw B3x6	8
B3x10	Hex Screw B3x10	1
C3x5	Hex Screw C3x5	1
C3x6	Hex Screw C3x6	4
P3x5	Set Screw P3x5	1
P3x8	Set Screw P3x8	3
NUT01	M3 Nut	1
NUT03	Nut for Stop Rack	1

G.1 Steering Rack Sub-Assembly

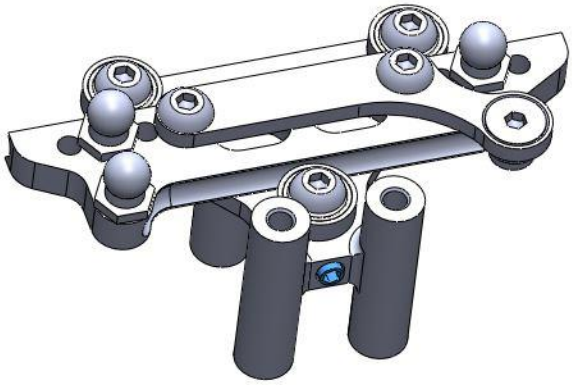


Construct the steering rack itself as seen above.



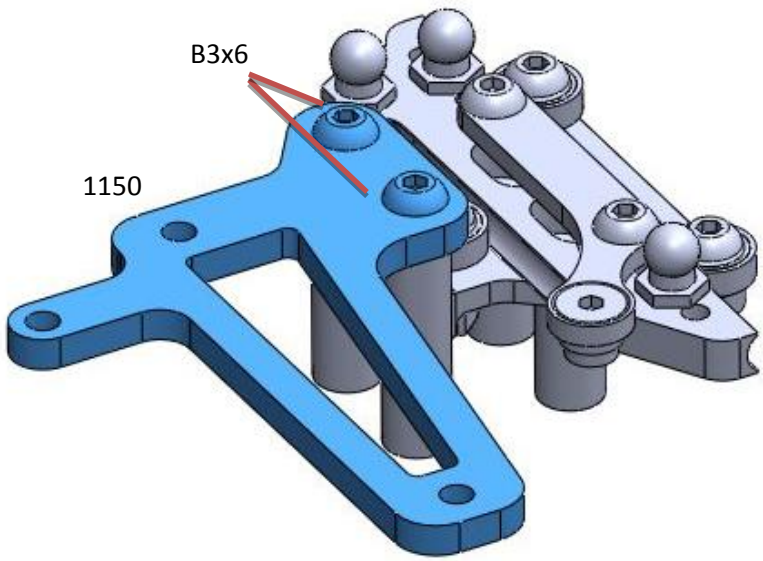


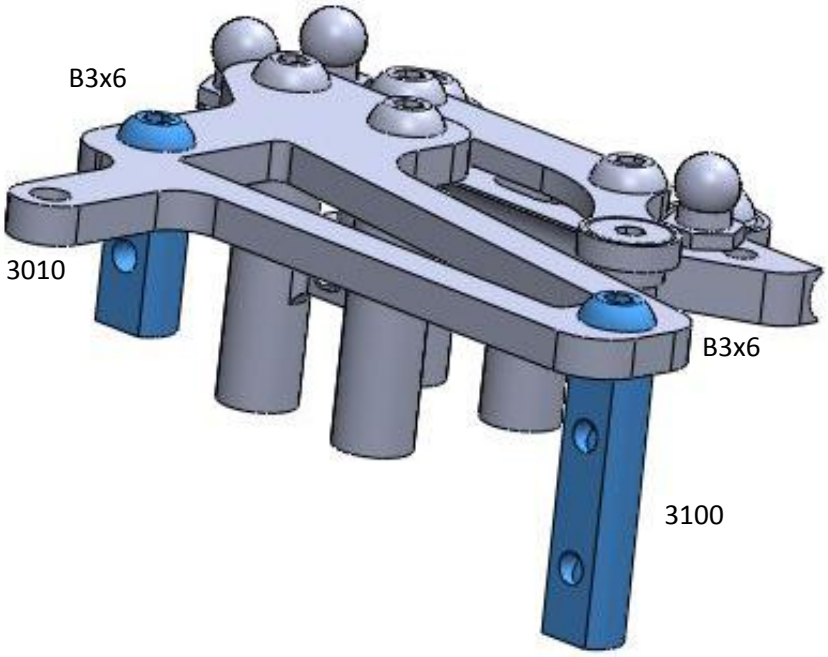
Place the steering rack onto the 3090 piece, and then secure it into its general position using the bearings as depicted in the image above. Next we will adjust the slop in the system by installing the P3x5 set screw in the back (a thread locker is recommended here).



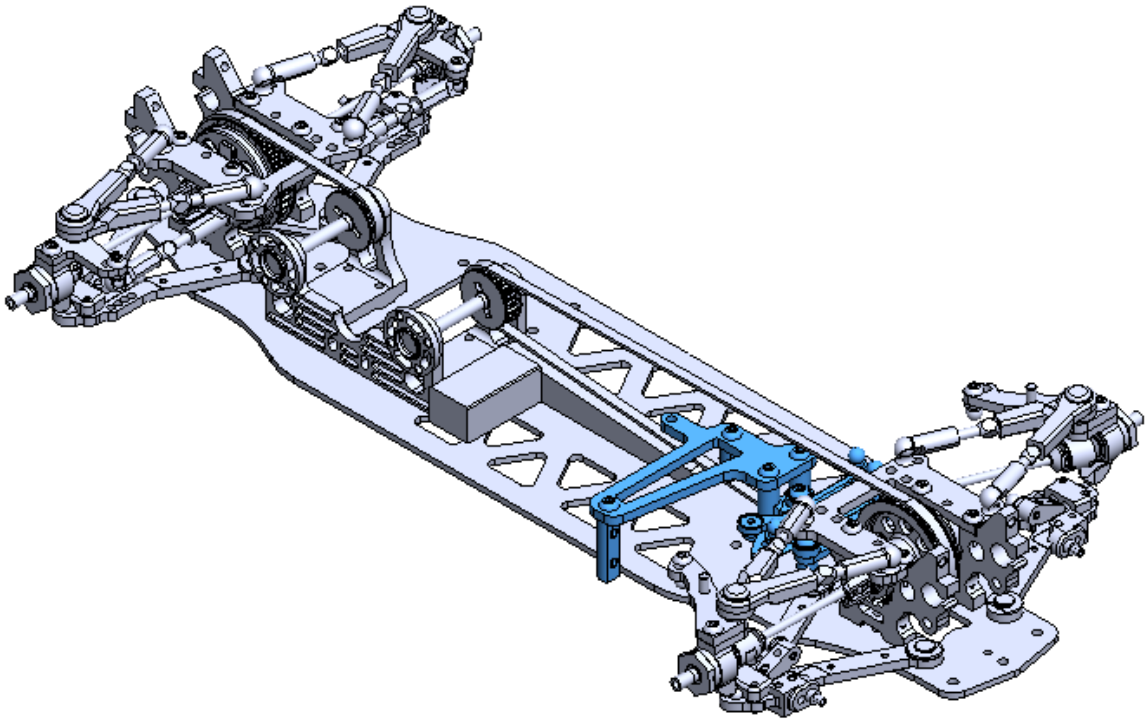
Tighten the set screw until slop of the rack between the bearings is eliminated. However, do not overtighten; you want the rack to be able to slide side-to-side under its own weight.

There will be a small break in period for this, so regularly check the fitment of the rack and tighten the set screw as play develops.

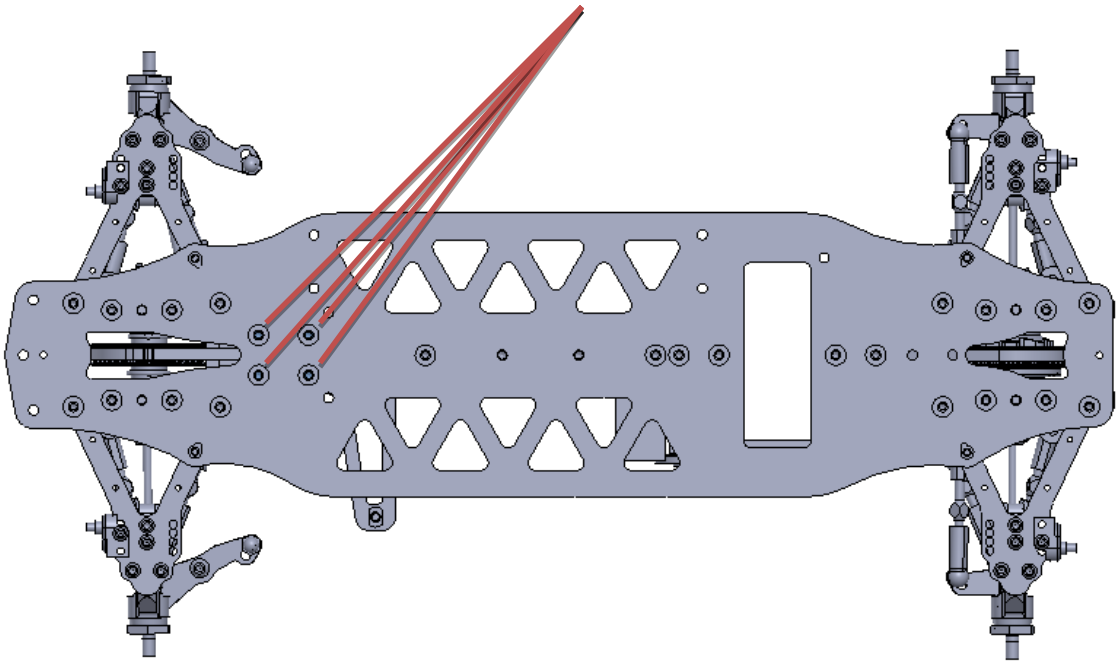




Now install the steering subassembly into the chassis.

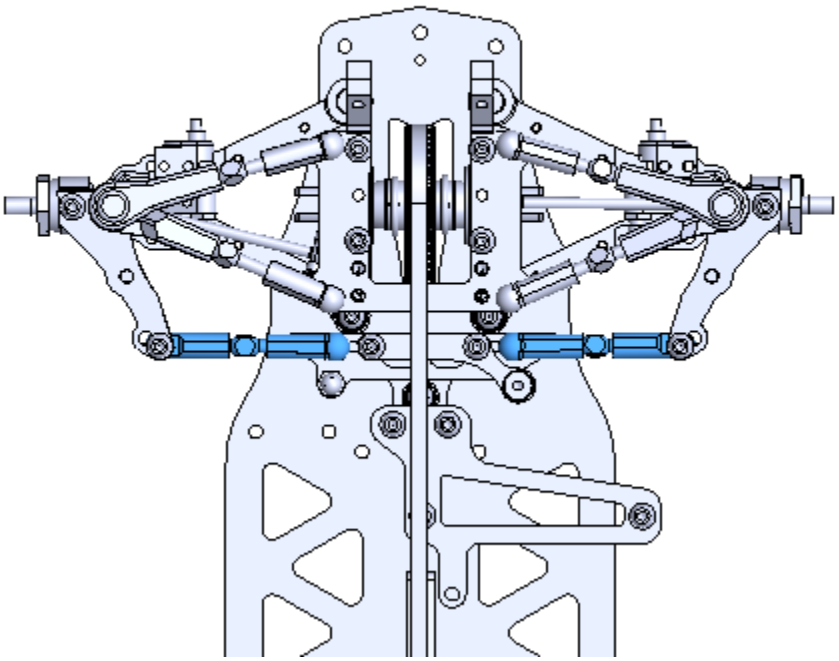


Qty 4 C3x6 secure the steering subassembly to the chassis.



G.2 Steering Linkages

Construct qty2 steering linkages using one 3260 and two 5060 for each. Then install them into chassis to connect the

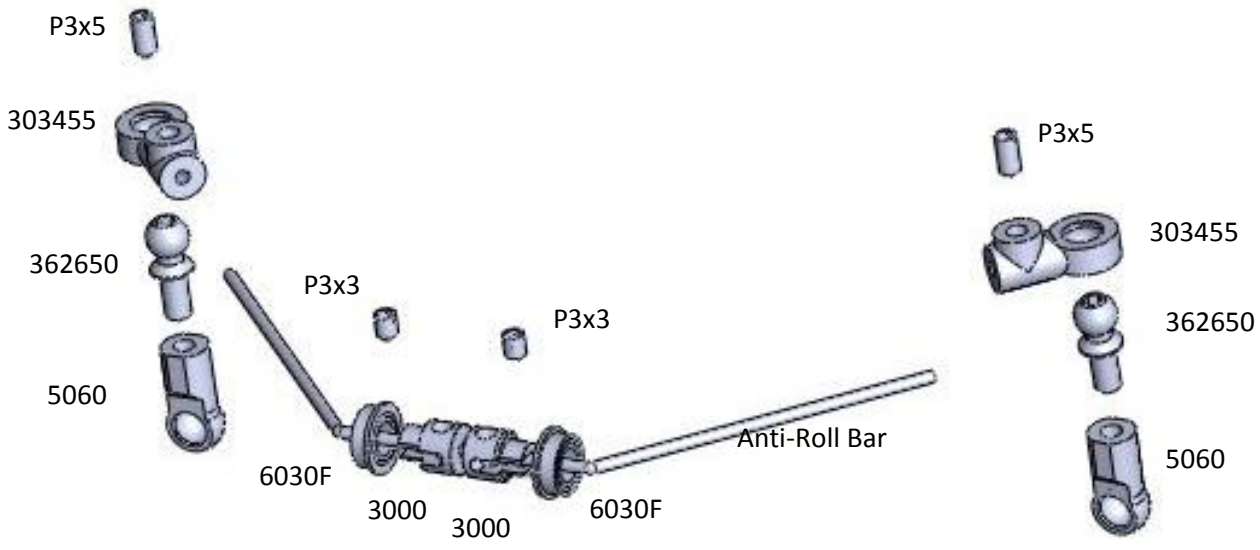


Bag H

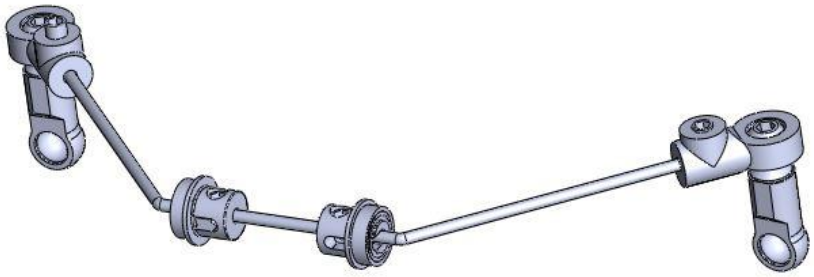
Parts		
Part Number	**Part Name**	**Quantity**
5060	Ball Joints	4
4000	Anti Roll Bar 1.4mm	1
4010	Anti Roll Bar 1.3mm	2
4015	Anti Roll Bar 1.2mm	1
3000	Roll Bar Side Steer	4
303455	Anti Roll Bar Ball Joint	2
362650	Anti Roll Bar Screw	4
6030F	Bearing 4x7x2.5mm Flange	4
Screws and Shims		
Part Number	**Part Name**	**Quantity**
P3x3	Set Screw P3x3	4
P3x5	Set Screw P3x5	4

H.1 Front and Rear Anti-Roll Bars

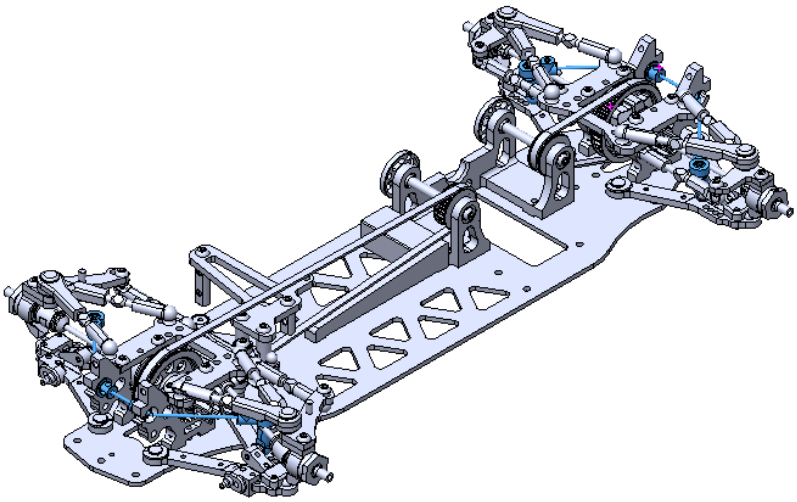
The anti-roll bar systems are identical front and rear. The kit includes 4 anti roll bars of different thicknesses (1.2, two 1.3, and a 1.4) to fine tune the handling of the car.

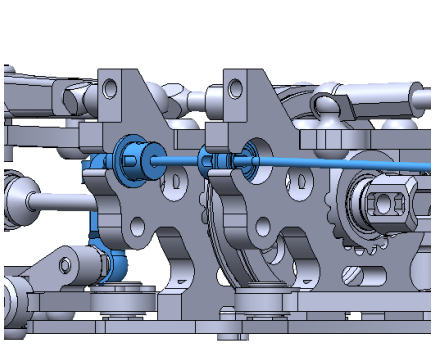


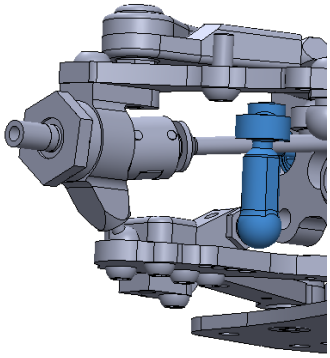
<u>The 5060 Ball Joints must be trimmed 5mm shorter for the anti-roll bar.</u>



Install the front and rear roll bar subassemblies into the chassis by securing the bearings in the sideplates from the middle out and the 5060 ball joints to the lower arms.



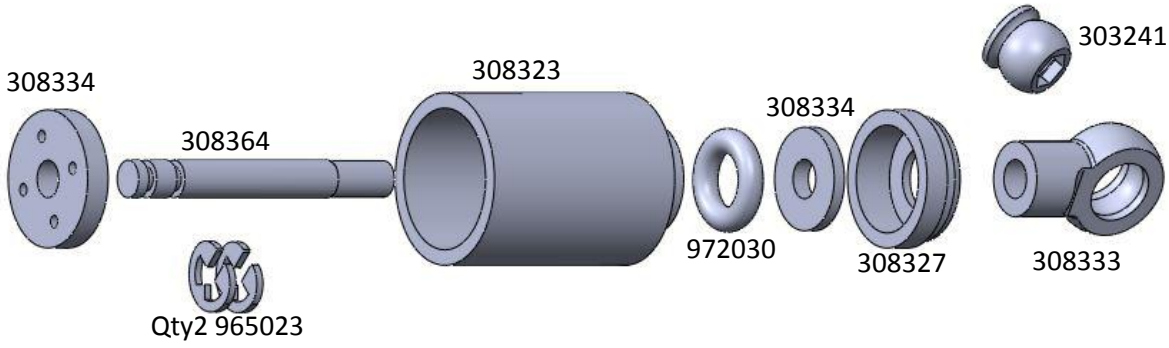




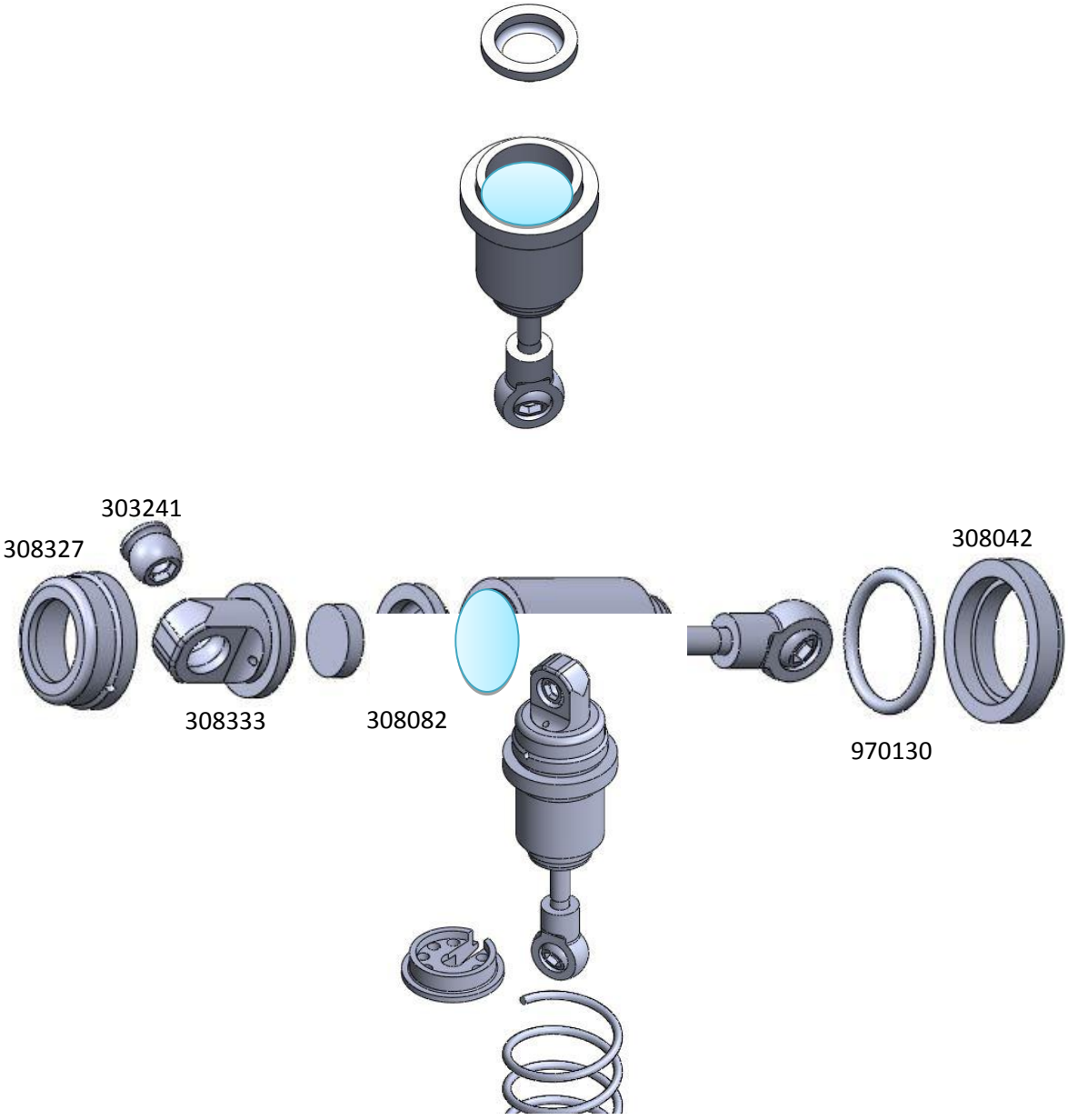
Bag I

Parts		
Part Number	**Part Name**	**Quantity**
308333	Shock Parts	2
308334	Shock Piston Complete	2
308323	Alu Shock Body	4
308353	Alu Shock Cap Top	4
308042	Alu Shock Adjustable Nut	4
303241	Ball Universal (5.8mm)	8
308082	Shock Membrane	4
965023	E-Clip 2.3mm	4
308364	Shock Shaft	4
972030	O-Ring 3x2mm	4
970130	O-Ring 13x1.5mm	4
1120	Shock Tower Front	1
1140	Shock Tower Rear	1
Screws and Shims		
Part Number	**Part Name**	**Quantity**
B3x8	Hex Screw B3x8	4
SH2	Shim 2mm	8

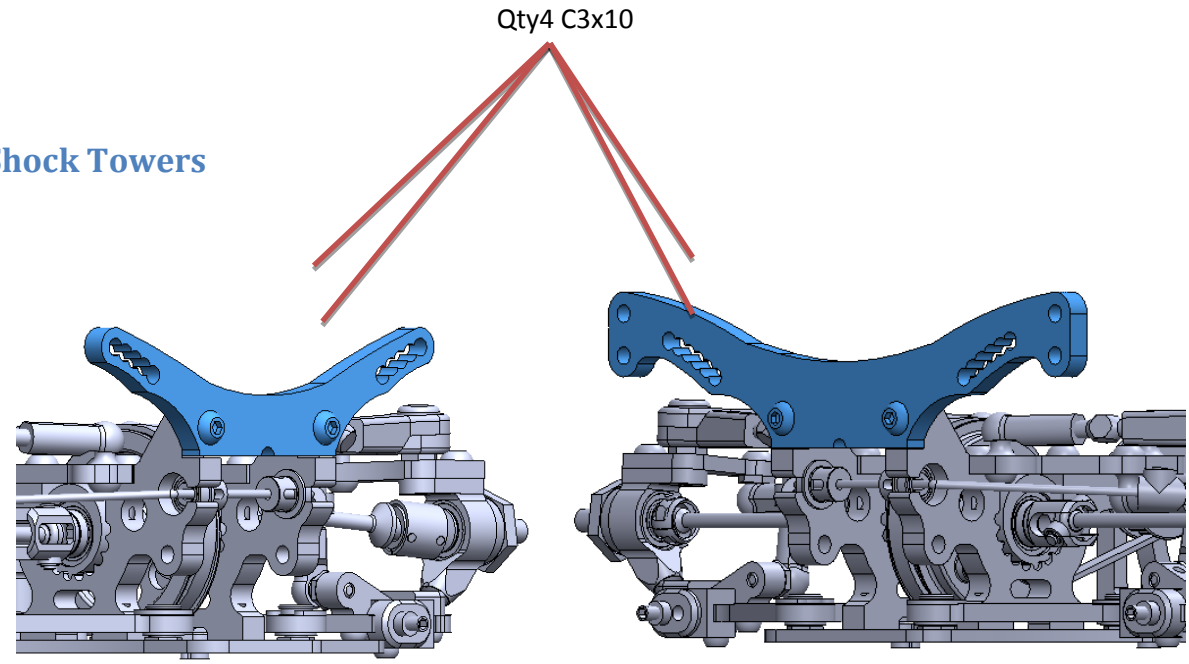
I.1 Shock Assembly



Qty 4 Shocks are to be assembled. The first step is to assembly the internal and lower components in the order depicted below. The Piston of the shock must be secured to the shaft using the two E-Clips; one on each side. Then the shaft can be passed through the Shock Body. Before installing the lower plastic pivot piece to the shaft, it is necessary to install the O-Ring, Plastic Retainer, and Lower Aluminum Shock Cap around the Shaft and onto the lower part of the Shock Body. Then the Universal Ball can be installed; install it from the shiny side of the plastic.

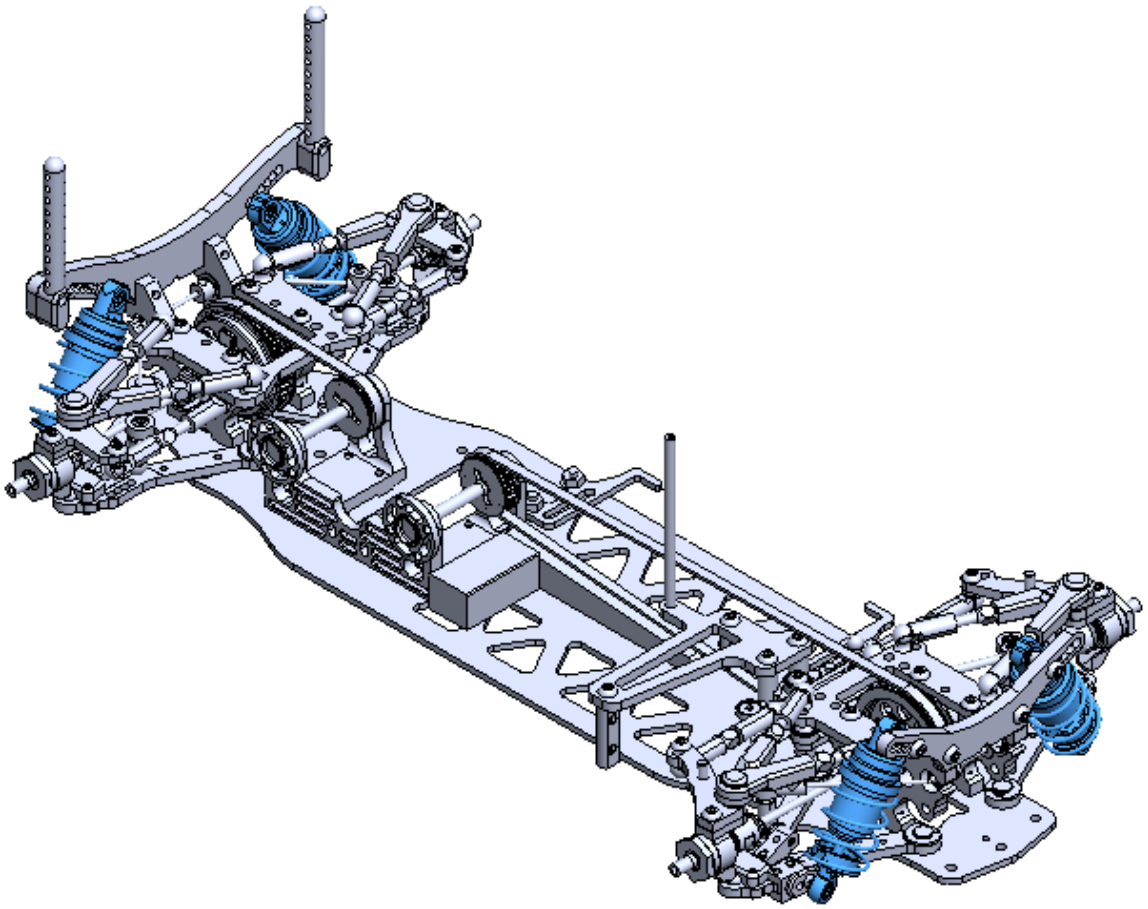


I.2 Shock Towers



Install each shock tower to the respective bulkheads using B3x6 screws.

I.3 Shock Installation

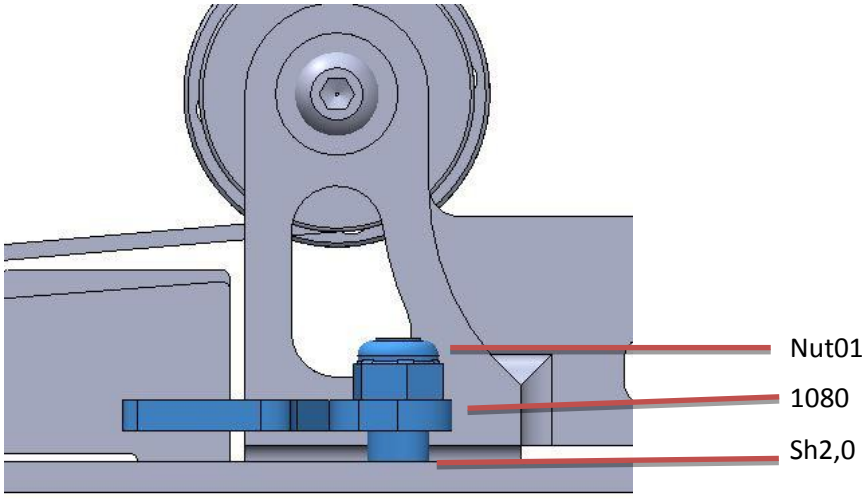


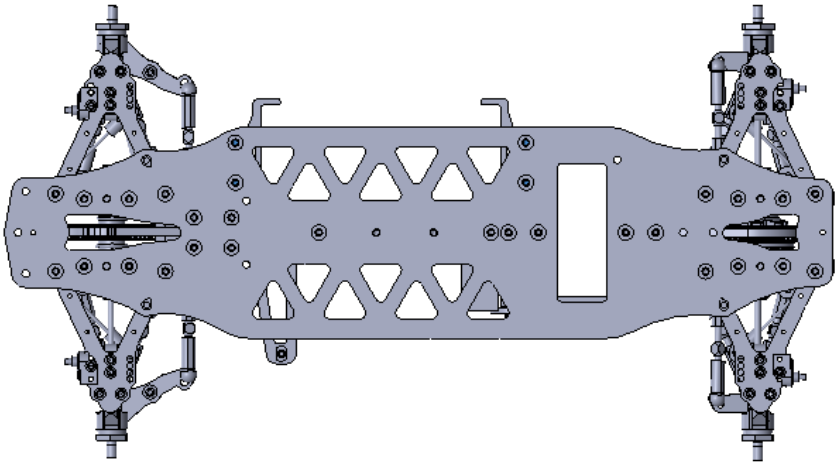
Qty4 B3x8 to attach each Shock Absorber to the Shock Towers, respectively. Attach lower end of Shock Absorber to the Set Screw of the Shock Mounts on the Lower Wishbones. Use 2mm Shims Behind the upper and lower eyelets to space the shocks out appropriately.

Bag J

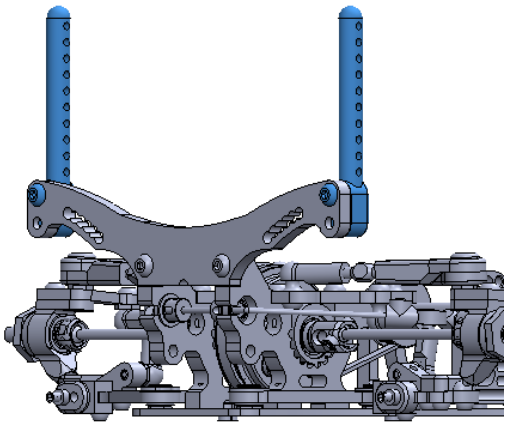
Parts		
Part Number	**Part Name**	**Quantity**
301332	Rear Body Mount	2
P14	Bumper Set (bottom plastic, top plastic 2 body post)	2
RSD100	RSD Bumper	1
1080	Battery Mount	2
4050	Pin 2x12	2
Screws and Shims		
Part	Name	Quantity
B3x5	Hex Screw B3x5	6
B3x6	Hex Screw B3x6	5
C3x8	Hex Screw C3x8	4
C3x10	Hex Screw C3x10	4
Sh2,0	Shim 2mm	4
Nut01	M3 Nut	4
WH01	Wheel Nuts	4

J.1 Battery Stops



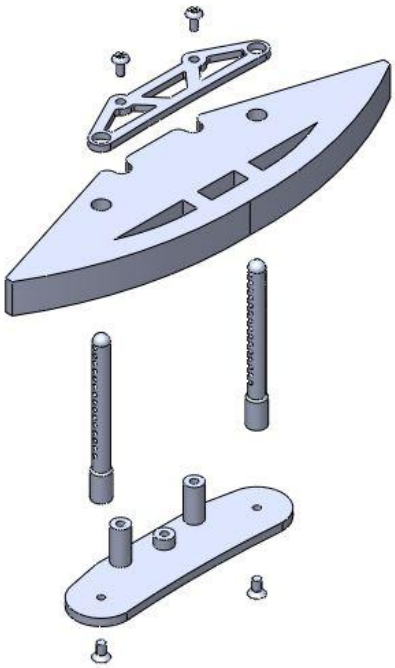


I.3 Rear Body Posts

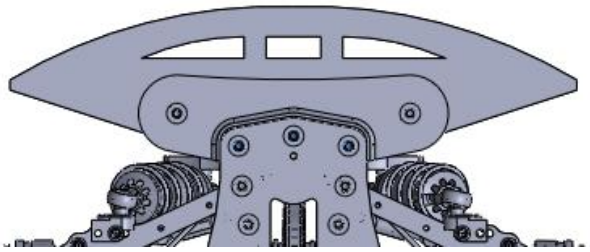


Install the rear body posts to the rear shock tower using one B3x6 screw for each.

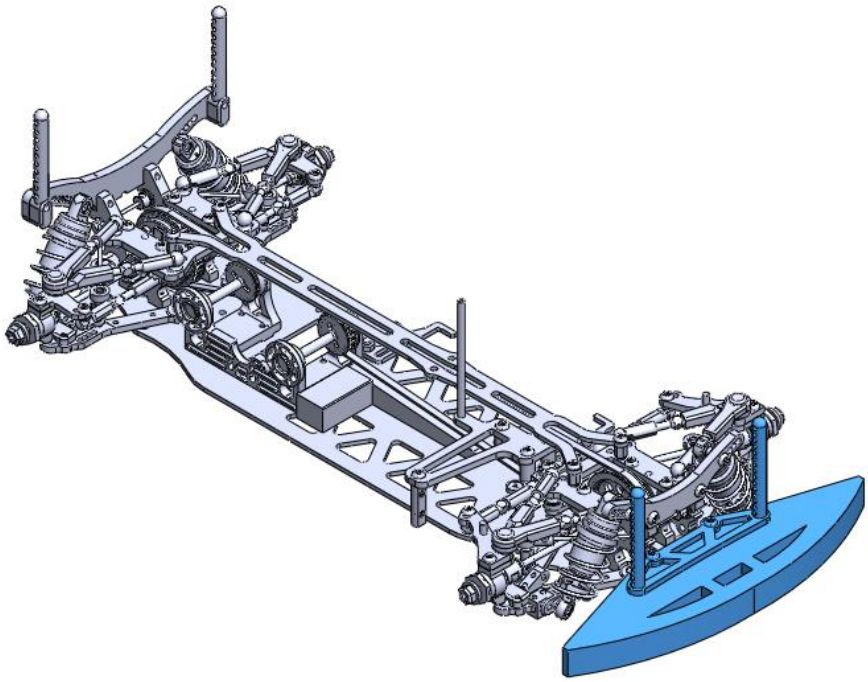
I.4 Bumper



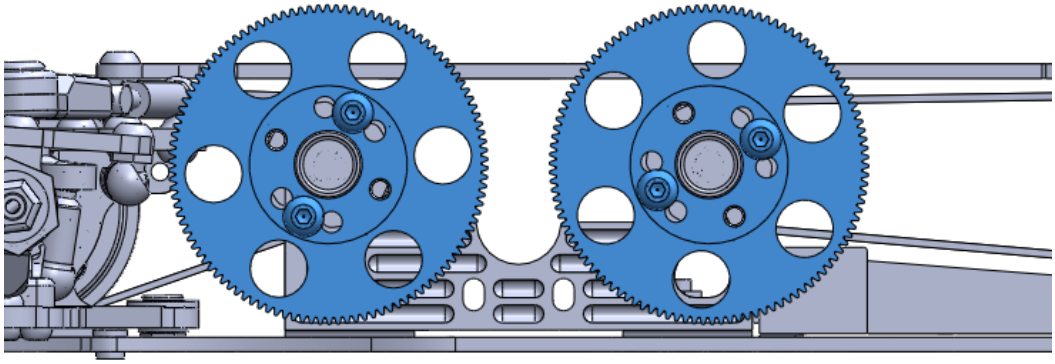
Use M3x8 CS Screws to secure the posts to the plastic bumper. Use some M3x6 BH for the upper bumper brace.



Qty3 c3x8 to attach bumper to chassis.



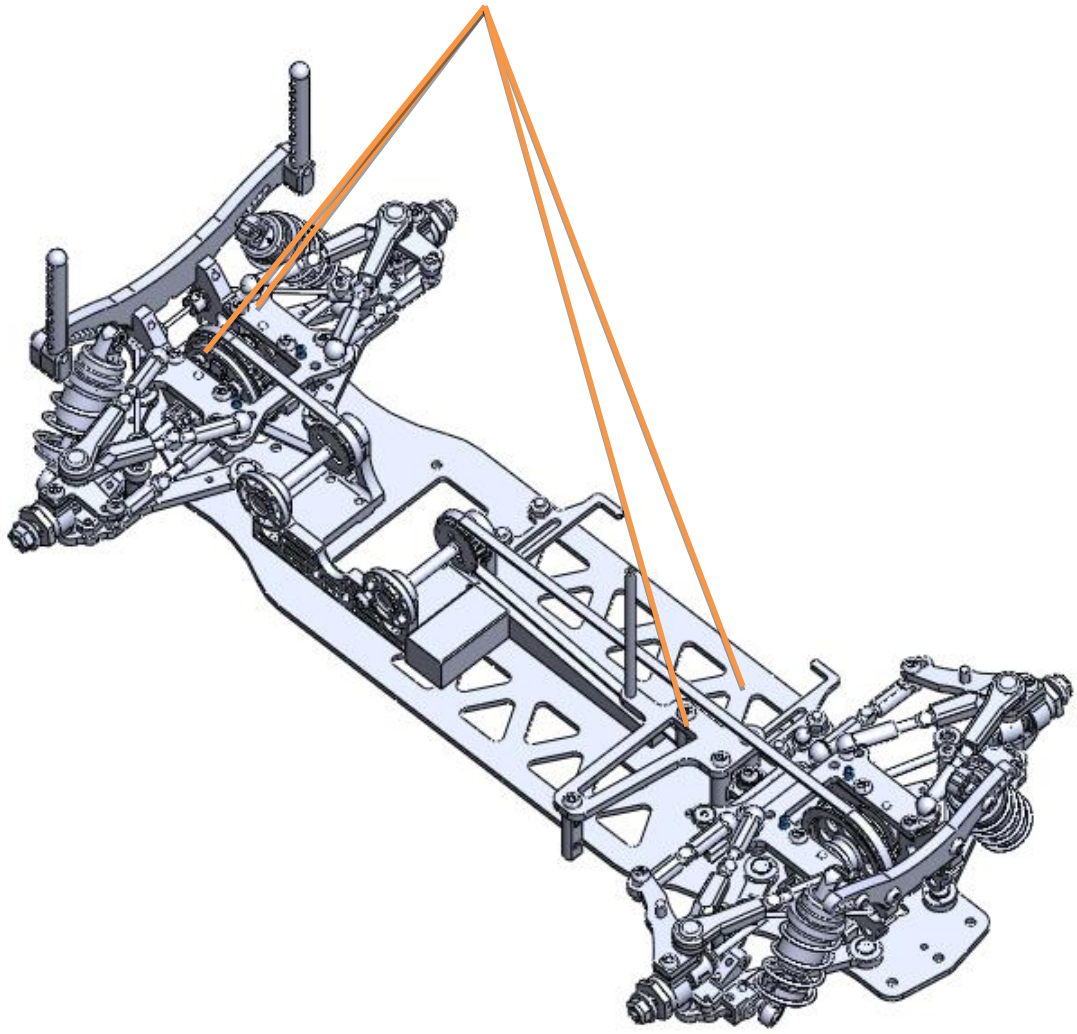
I.5 Spur Gears

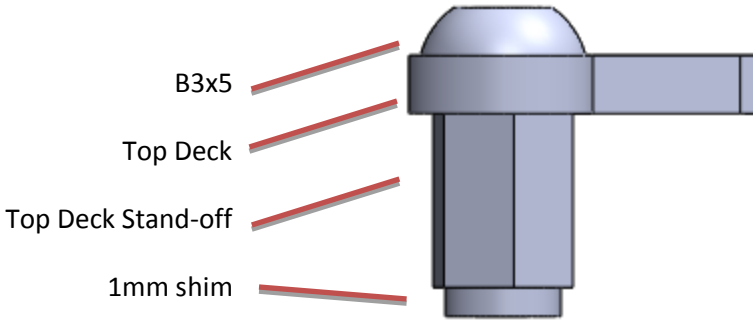


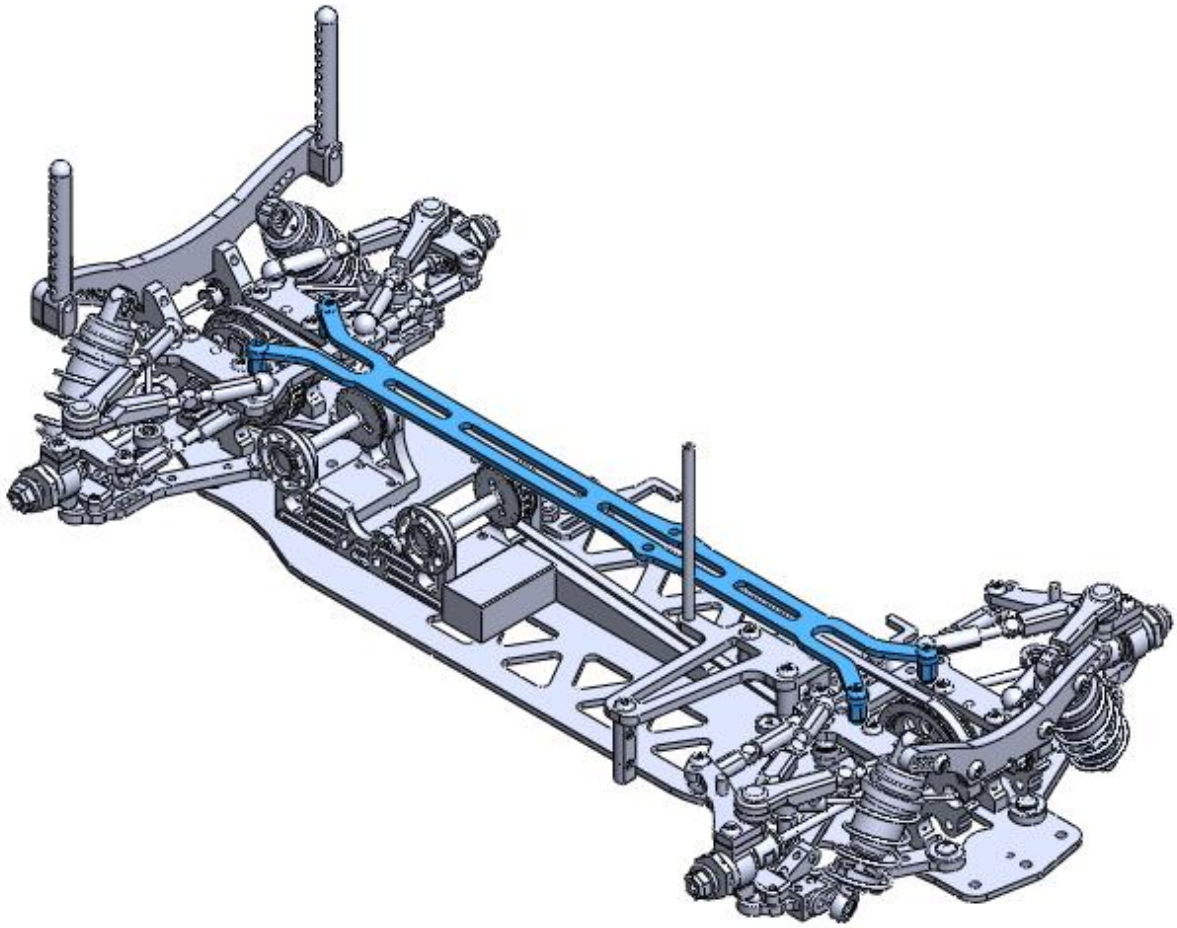
Use 3x M3x6 BH screws to secure each Spur gear.

Top-Deck version

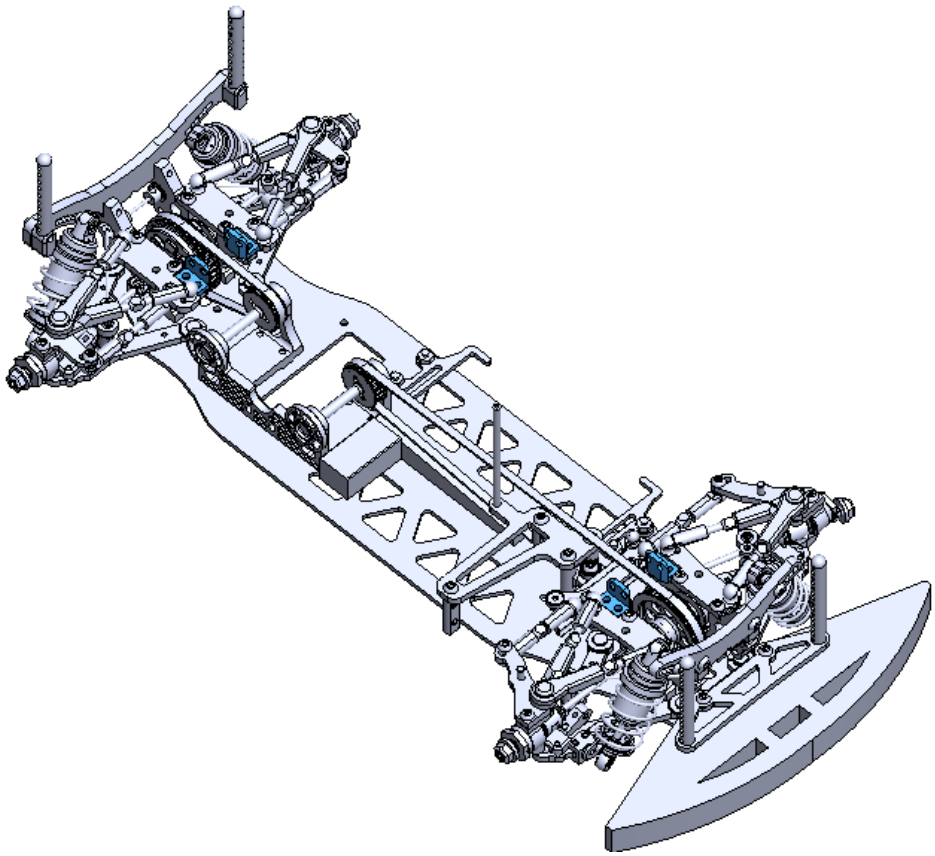
Qty4 set screws for top deck mount.



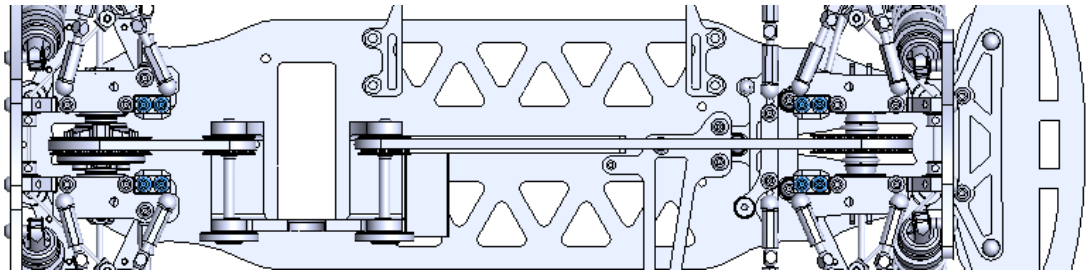

B3x5
Top Deck
Top Deck Stand-off
1mm shim

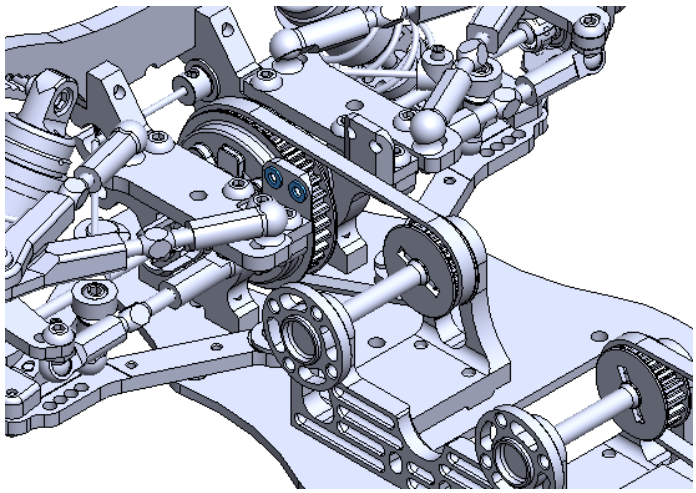


Side-Rail version

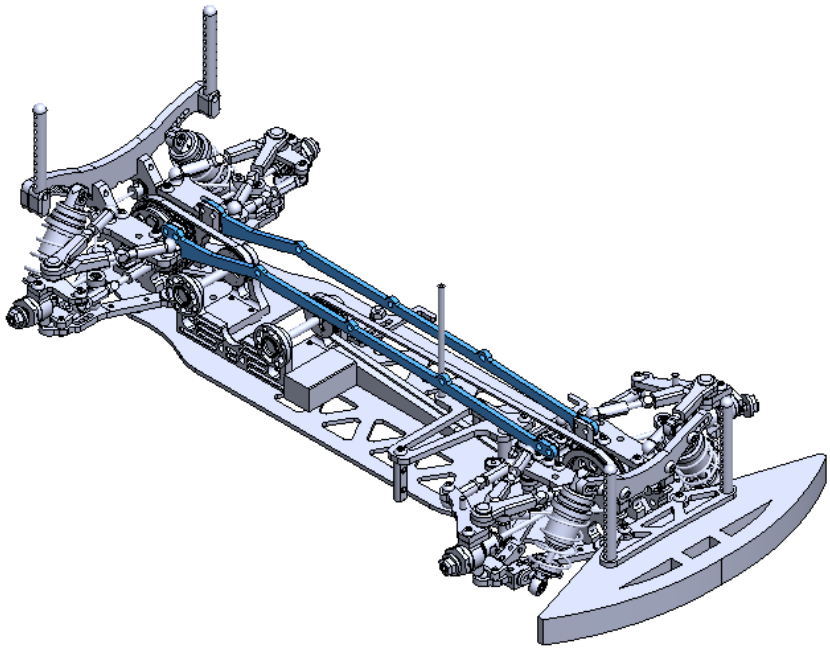


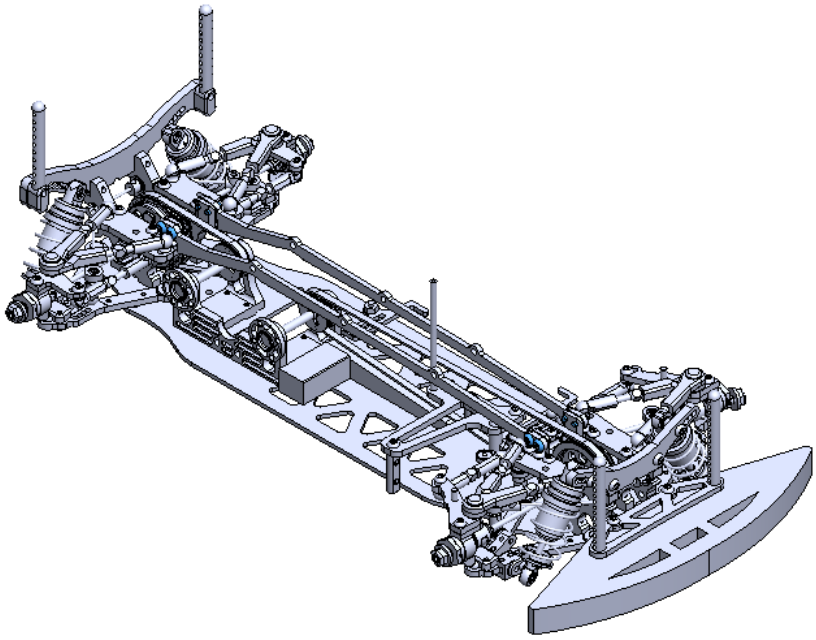
Install the Side-Rail Mounts on each of the respective bulkheads using qty2 B3x6 for each.





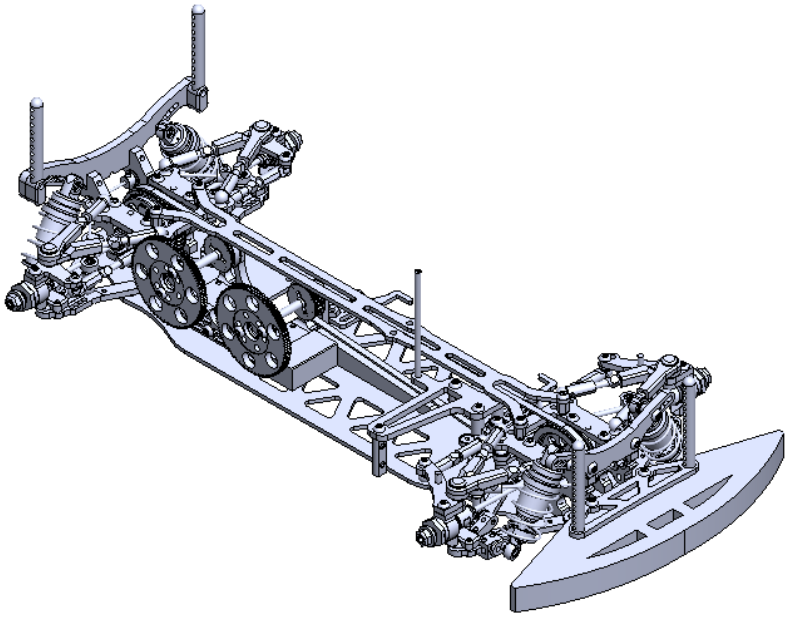
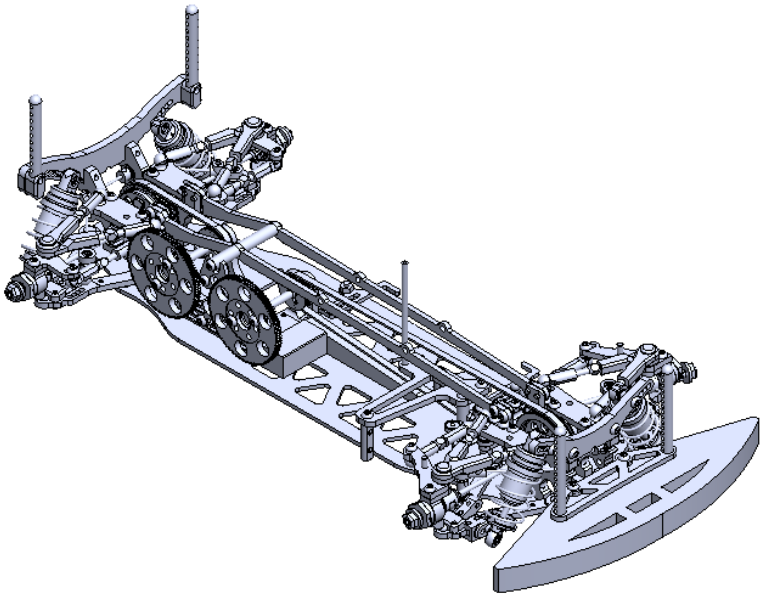
Use 0.5mm shims between each mount and the siderails.





Secure the side-rails to the side-rail mounts using B3x5 screws. Use the provided 0.5mm shim in between the rail and the mount to get proper spacing in order to fit the center chassis stiffeners as well. It may be a good idea to disconnect the upper arms to get easier access to the screws or a ball 2mm Hex wrench.

Top-Deck version



Side-Rail version