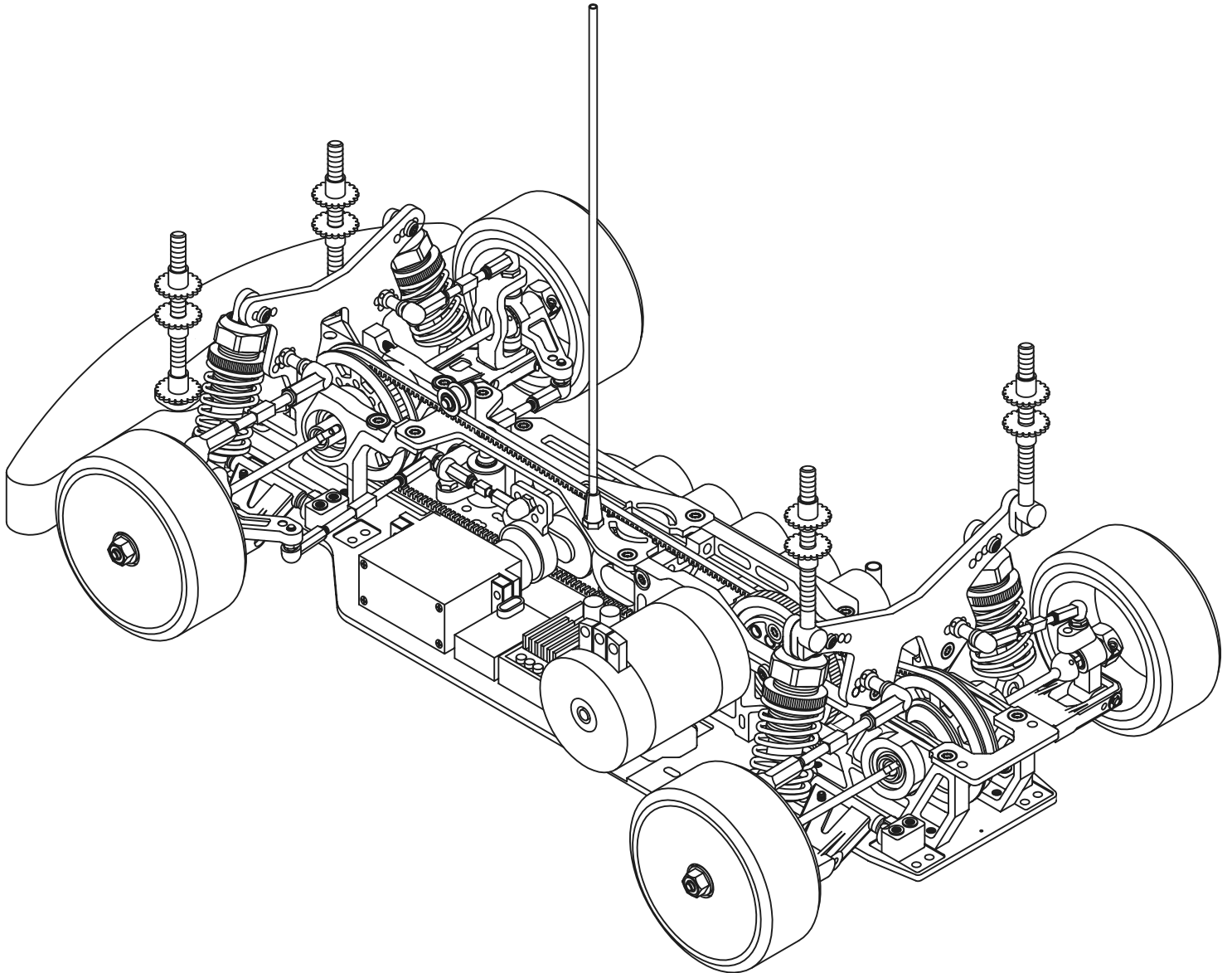


RDX PHI '09

TEAM ORALLY RDX PHI 09 Instruction Manual



#01622 RDX PHI 09

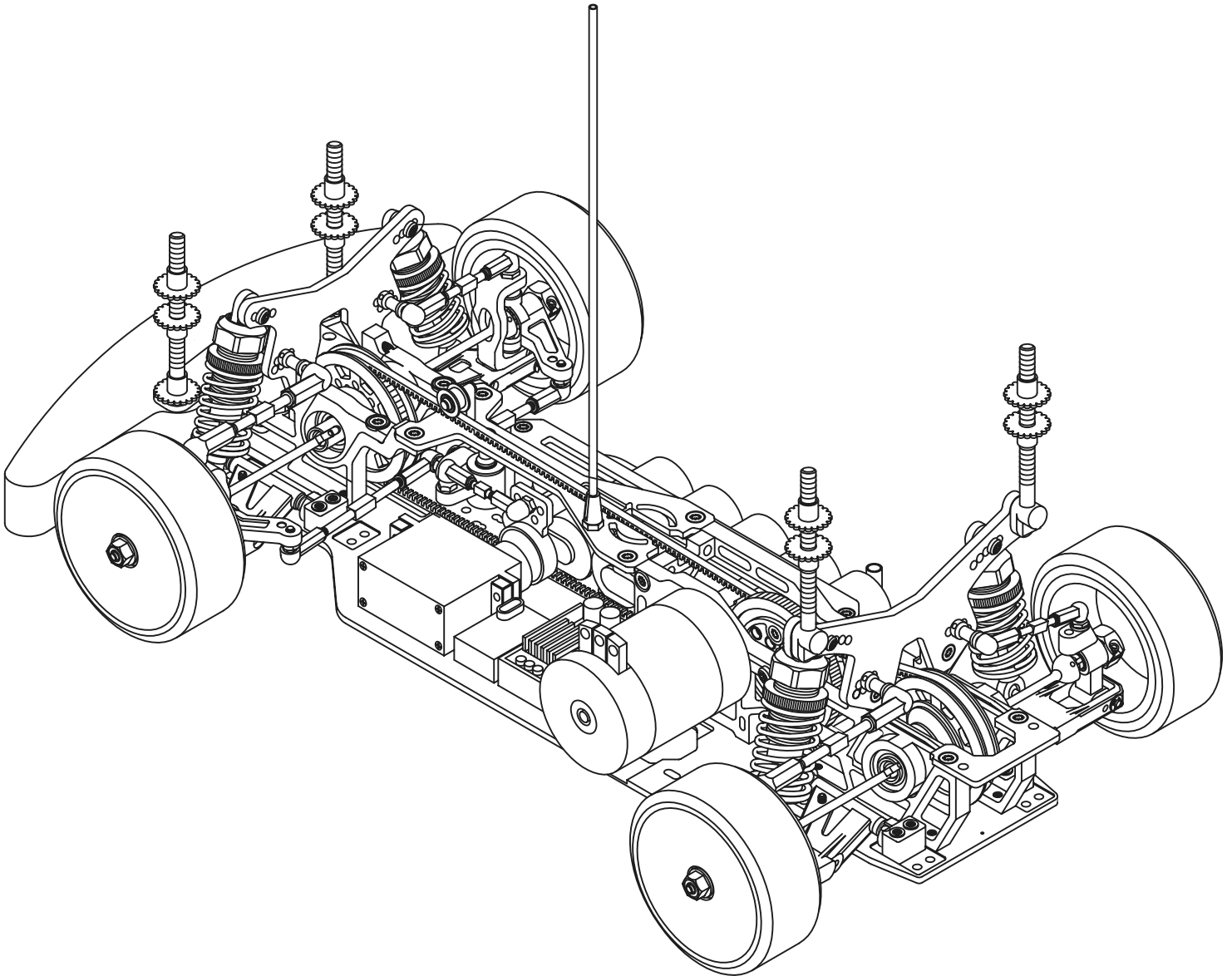
RDX PHI '09

At Corally we use high-tech, quality engineering to provide you, the racers, with superior racing equipment. State of the art production methods and extensive R&D ensure that every Corally product sets the pace of development in the R/C competition world. We are not followers of fashion but leaders in innovation and development. RDX stands for Research and Development Xtreme. The RDX PHI 09 is the highest specification electric touring car on the market today.

Corally RDX PHI 09 Instruction Manual

#01622

This manual will guide you through all steps to get your car running. For best result it is advised to read the manual completely before building the car.



Please note:

During assembly of the RDX PHI 09 you might find some extra small parts. These extra parts have been included for your convenience. They do not necessarily need to be used during assembly.

Tools required (included)

- High-Grip Torx Screwdriver - T 10 - **Corally part #16081**
- Silicone Shock Oil 20WT oil - **Corally part #80120**
- Differential Grease - **Corally part #80010**

Tools required (not included)

Corally Tool Set (#16070) containing:

- High-Grip Torx Screwdriver - T 10 - **Corally part #16081**
- High-Grip Hex Screwdriver - 1.5 mm - **Corally part #16082**
- High-Grip Philips Screwdriver - PH 0 - **Corally part #16085**
- High-Grip Nut Screwdriver - 5.5 mm - **Corally part #16087**
- High-Grip Nut Screwdriver - 6.0 mm - **Corally part #16088**
- High-Grip Nut Screwdriver - 7.0 mm - **Corally part #16089**
- Diff nut wrench - 7 mm hex - Graphite - **Corally part #79685**
- Turnbuckle Tool - **Corally part #79277**
- High-Grip Nut Screwdriver - 5.0 mm - **Corally part #16086**
- Cutting Plier
- Long Nose Pliers
- Vernier Calipers or Precision Ruler
- Hobby Knife
Be careful with the sharp blade!
- Hobby Scissors
- Double-sided Tape - **Corally part #13085**
- Thread Lock - **Corally part #13095**

Items required to complete your car (not included)

- R/C two channel surface frequency radio system
- 7.4V Battery Pack (Lithium Polymer) / 6V or 7.2V Battery Pack (sub-C size)
- Battery Charger (with peak or temperature detection and/or for Li-Po application)
- Servo with Servo saver
- Electronic Speed Control
- Electric Motor
- Pinion gear (short boss), size to be determined by type and wind of motor being used.
- 1:10 Scale Lexan Body 190 mm
- Tires and wheels

Bag 1 Differential

Step 1

LW Output Shaft, Long:

- Place one 1/4 x 3/8" ball bearing on the output shaft.
- Place a diff washer.
- Put some grease on the diff washer, but not too much.
- Now place the pulley on the 1/4 x 3/8" ball bearing
- Place the 2.5mm balls in the pulley.

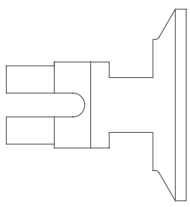
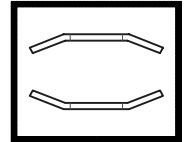
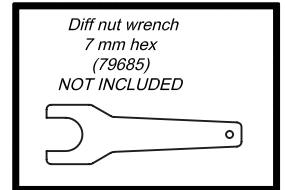
Step 2

LW Output Shaft, Short:

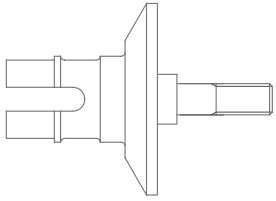
- Place a diff washer.
- Put some grease on the diff washer, but not too much.
- Place a 4x11F ball bearing in the output shaft.
- Place the M4 locknut on top of the 4x11F ball bearing.
- Slide 2 cone washers 10 x 4.2 x 0.5 between the M4 locknut and the 4x11F ball bearing.

Now mount both output shafts together while holding the M4 locknut with the available 7mm diff wrench.

The diff will be damaged if overtightened!
See next page for adjusting the diff.



1x Diff Output Shaft, Short



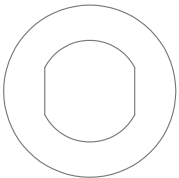
1x Diff Output Shaft, Long



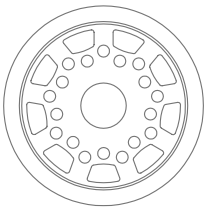
1x Ball Bearing 1/4 x 3/8"



1x Ball Bearing
4 x 11 mm Flanged



2x Diff Washer



1x Diff Pulley 42T



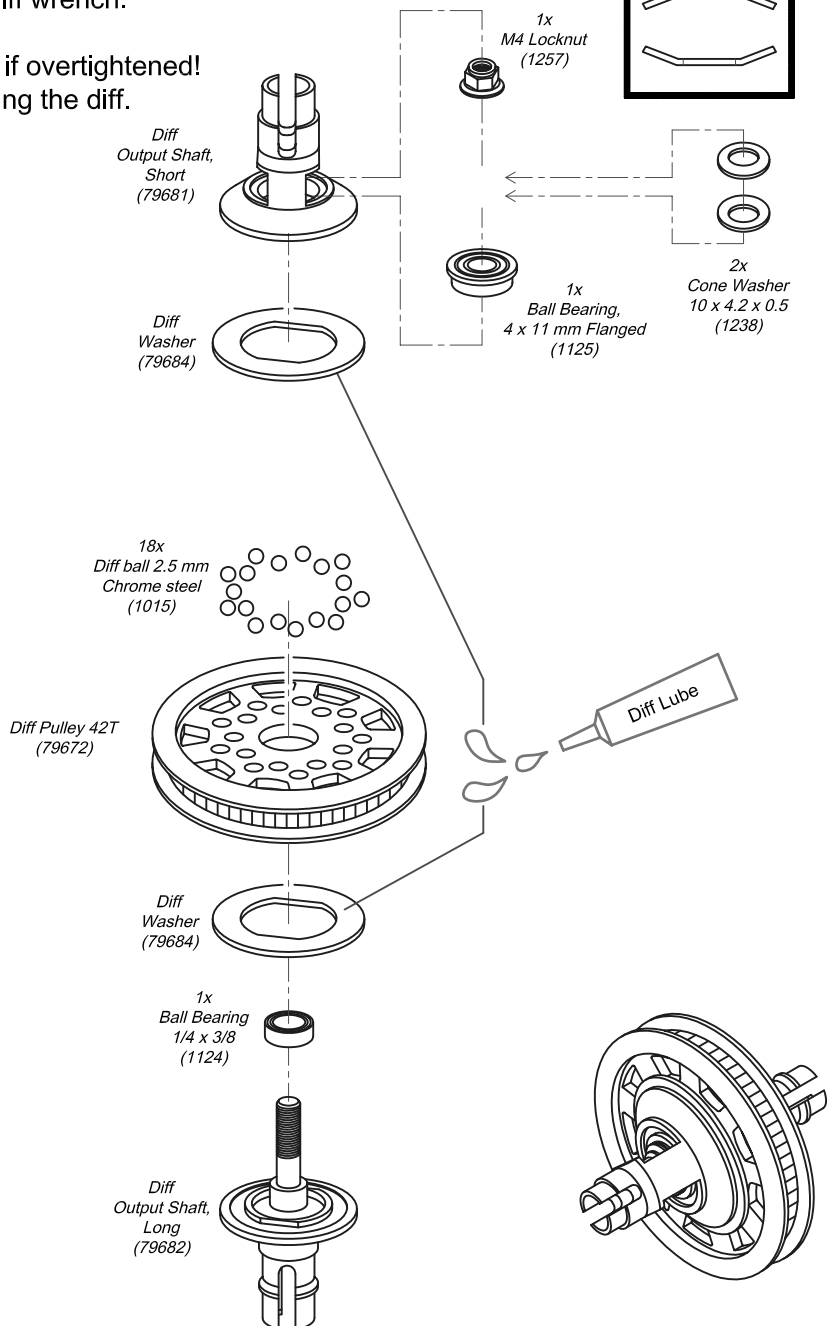
18x 2.5mm Ball



2x Cone Washer 10x4.2x0.5



1x M4 Locknut



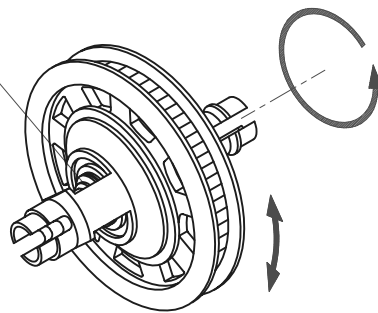
Step 2

Differential Adjustment

The differential is an important component of your car. So build and adjust it very carefully.

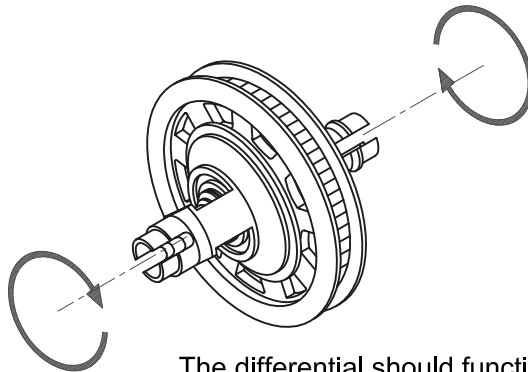
The RDX PHI 09 #01622 has a rear differential and front one-way.

Hold the M4 nut in the output shaft with a 7 mm wrench. (**part #79685**)



Differential adjustment.

The differential should be carefully adjusted by holding the M4 nut using a 7 mm wrench (**Corally part #79685**). Overtightening the M4 nut might damage the bearings, balls and washers in the differential! To test for the correct adjustment, hold both output shafts and try to spin the pulley. If the pulley slips without using extreme force, it means the diff is too loose and needs to be tightened some more by turning the M4 nut.



The differential should function smoothly.

Bag 2 Front One-way

Step 1

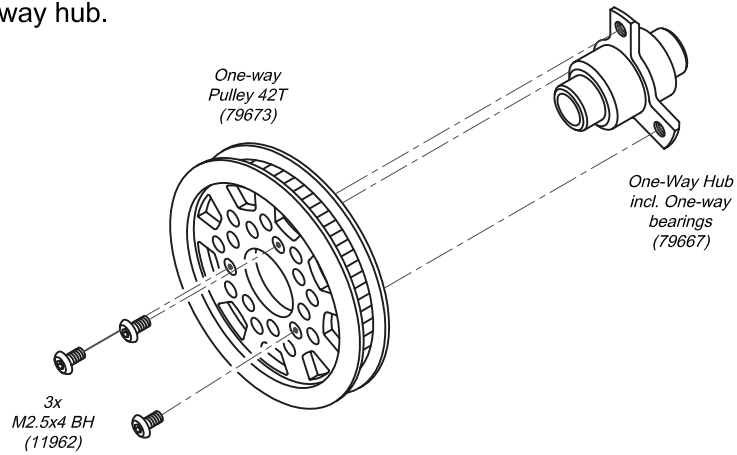
Mount the pulley on the one-way hub.

1x One-way Hub with pre-assembled 1-way bearings

2x LW 1-way Outdrive

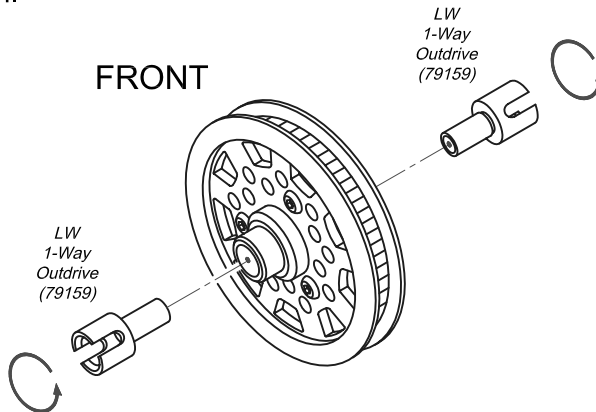
1x One-way Pulley 42T

3x M2.5x4 BH



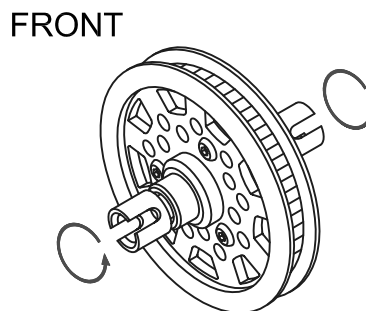
Step 2

Now slide the outdrives in the one-way bearings. Make sure that they rotate in the right direction.



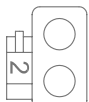

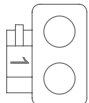

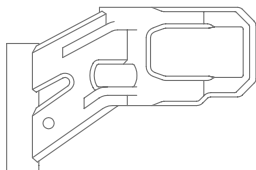
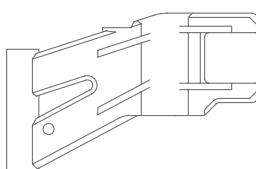
Step 3

The outdrives have to rotate smoothly in forward direction only.



Bag 3 Drivetrain Subassembly

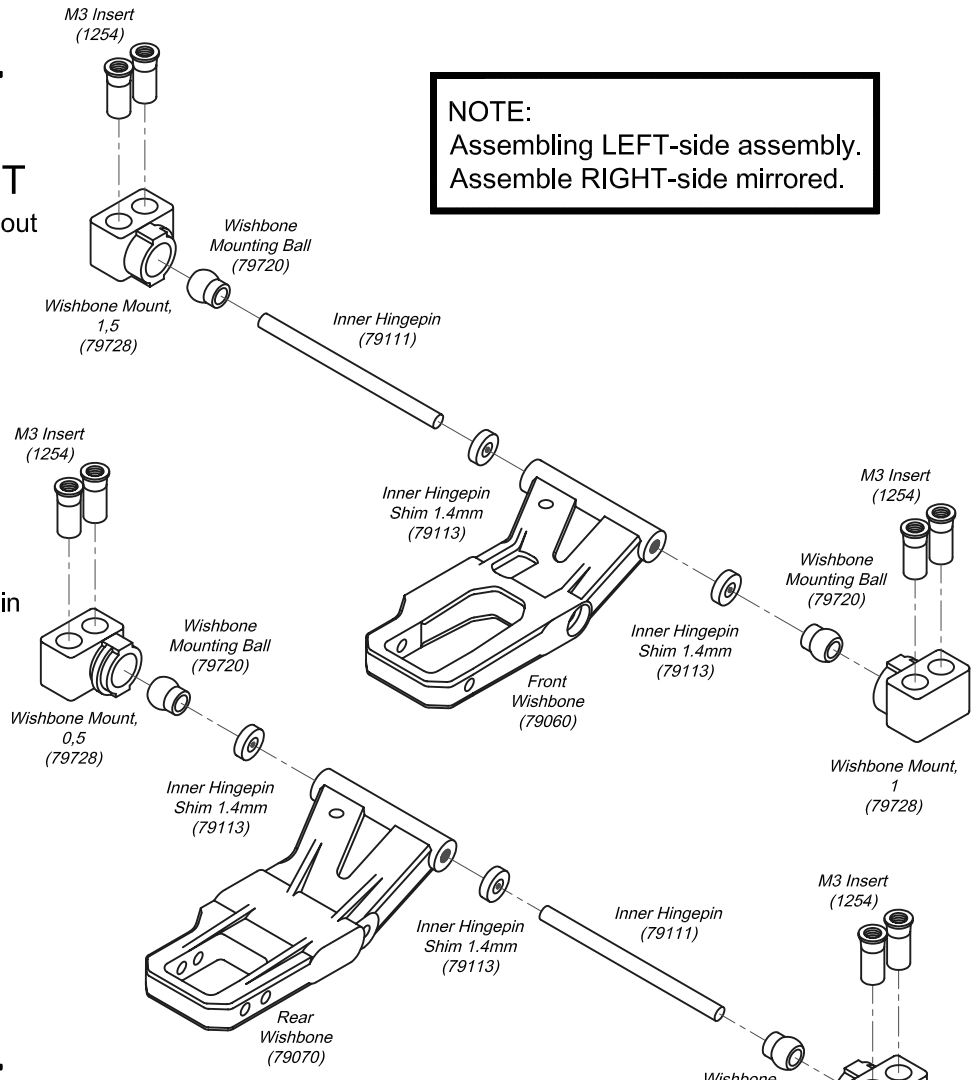
Step 1

-  2x Wishbone Mount 2,0
-  2x Wishbone Mount 1,5
-  2x Wishbone Mount 1
-  2x Wishbone Mount 0,5
-  2x Front Wishbone
-  2x Rear Wishbone





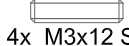


FRONT
0.5° Toe-out

REAR
2.5° Toe-in

NOTE:
Assembling LEFT-side assembly.
Assemble RIGHT-side mirrored.



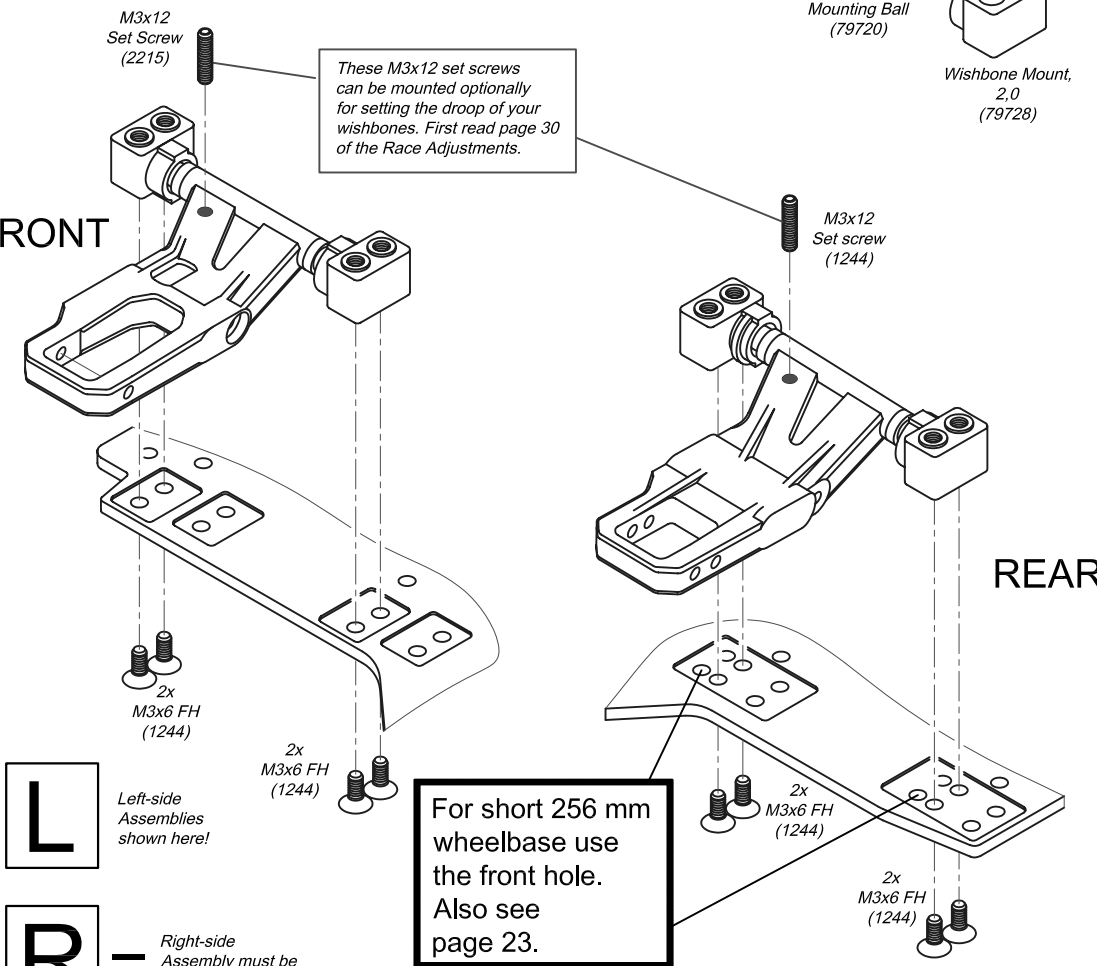
Step 2

-  8x Wishbone Mounting Ball
-  16x M3 Insert
-  4x Inner Hingepin
-  16x M3x6 FH
-  4x M3x12 Set Screw
-  8x Inner Hingepin Shim 1.4 mm (White Nylon)
- Included for fine-tuning**
-  4x Inner Hingepin Shim 0.5 mm (White Nylon)

FRONT

REAR

These M3x12 set screws can be mounted optionally for setting the droop of your wishbones. First read page 30 of the Race Adjustments.



L

Left-side Assemblies shown here!

R

= Right-side Assembly must be mirrored!

For short 256 mm wheelbase use the front hole. Also see page 23.

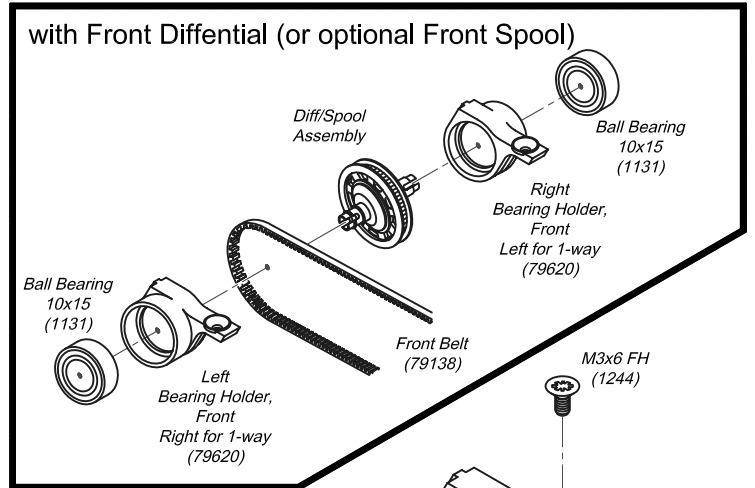
Bag 4 Drivetrain (Front)

Step 1

Mount the front bulkheads to the chassis.

Install the 1-way/diff/spool parts with the ball bearings in the bearing holders.

Mount the assembly with the front belt into the front bulkheads.



1x 6-cell Chassis

1x Front Belt 507 mm

2x Front Bulkhead

1x Bearing Holder, Front
Left f. diff&spool/Right f. 1-way

1x Bearing Holder, Front
Right f. diff&spool/Left f. 1-way

2x Ball Bearing 10x15

2x Shim 10x0.4

6x M3x6 FH

One-way Assembly

Shim 10x0.4 (77165)

Shim 10x0.4 (77165)

Ball Bearing 10x15 (1131)

M3x6 FH (1244)

Ball Bearing 10x15 (1131)

Front Belt (79138)

Left Bearing Holder, Front
Right for diff/spool (79620)

Right Bearing Holder, Front
Left for diff/spool (79620)

Bulkhead, Front (79604)

Bulkhead, Front (79604)

6-cell Chassis - 2.5mm 79840

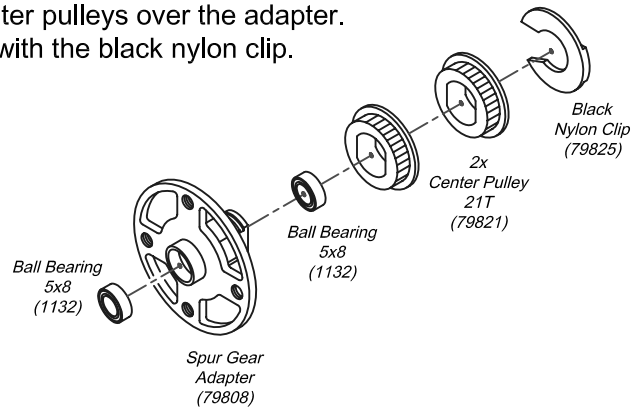
4x M3x6 FH (1244)

FRONT

Bag 4 Center Pulley Assembly

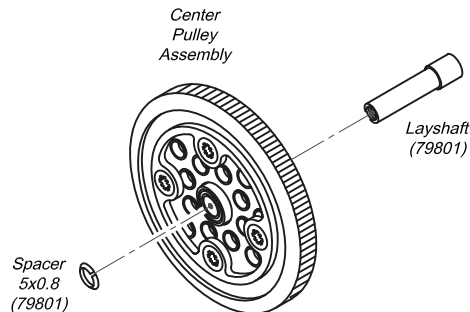
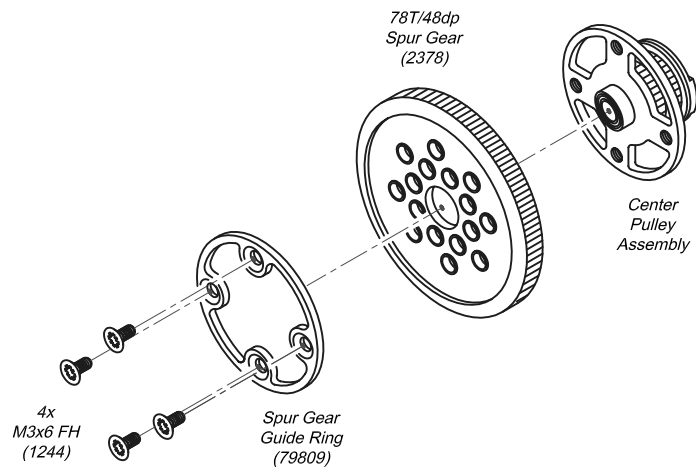
Step 2

Install a ball bearing on each side of the spur gear adapter.
Slide the two center pulleys over the adapter.
Lock the pulleys with the black nylon clip.

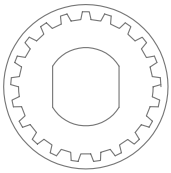


Step 3

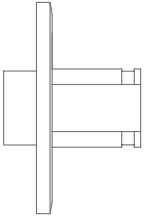
Attach the spur gear by using the spur gear lock ring.



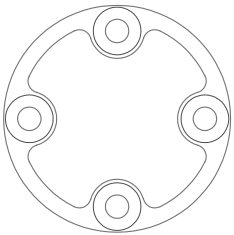
1x Layshaft



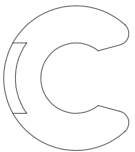
2x Center Pulley



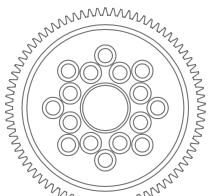
1x Spur Gear Adapter



1x Spur Gear Guide Ring



1x Black Nylon Clip



1x 78T / 48dp Spur Gear



1x Spacer 5x0.8



2x Ball Bearing 5x8x2.5



4x M3x6 FH

Bag 4 Drivetrain (Rear)









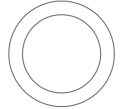




Step 5

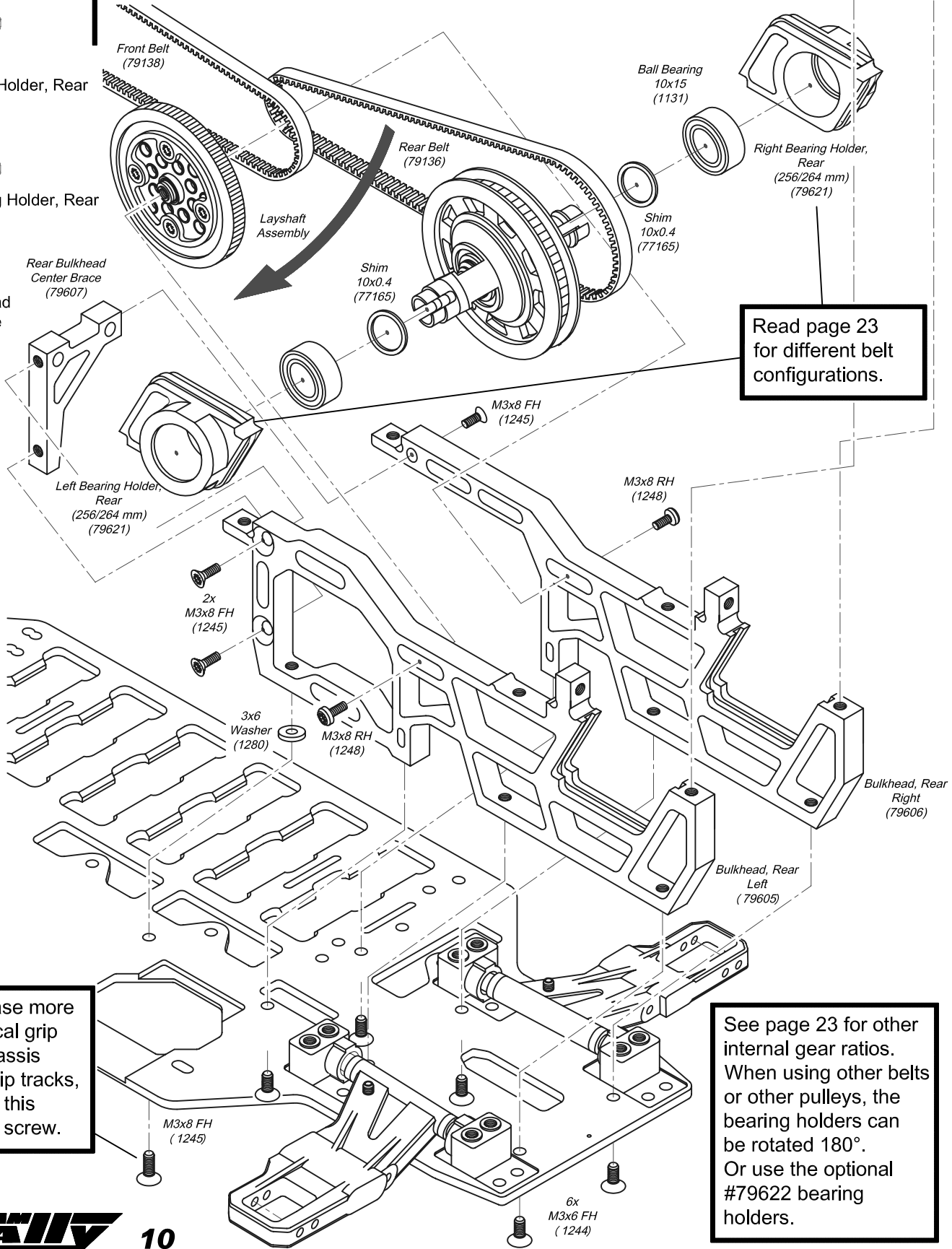
Mount the rear bulkheads on the chassis.

Install the rear differential with rear belt between the rear bearing holders.

This is locked by mounting the rear body post plate.

Install the layshaft assembly

-  1x Rear Bearing Holder Plate
-  1x Rear Belt 213 mm
-  1x Bulkhead, Rear Left
-  1x Bulkhead, Rear Right
-  1x Left Bearing Holder, Rear
-  1x Right Bearing Holder, Rear
-  1x Rear Bulkhead Center Brace
-  2x Ball Bearing 10x15
-  2x Shim 10x0.4
-  2x M3x8 RH
-  4x M3x8 FH
-  8x M3x6 FH
-  1x 3x6 Washer

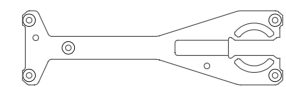


Read page 23 for different belt configurations.

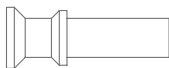
To increase more mechanical grip of the chassis on low grip tracks, don't use this M3x8 FH screw.

See page 23 for other internal gear ratios. When using other belts or other pulleys, the bearing holders can be rotated 180°. Or use the optional #79622 bearing holders.

Bag 5 Chassis



1x Topdeck



1x Steering Lever Post



1x Steering Lever



1x Antenna Holder



4x Pivot Ball 4.3mm
M3x5.5mm



4x Pivot Ball 4.3mm
M3x2.5mm



2x Ball Bearing 5x8



2x Turnbuckle 43mm



1x Turnbuckle 21mm



6x Ballcup



6x M3x6 FH

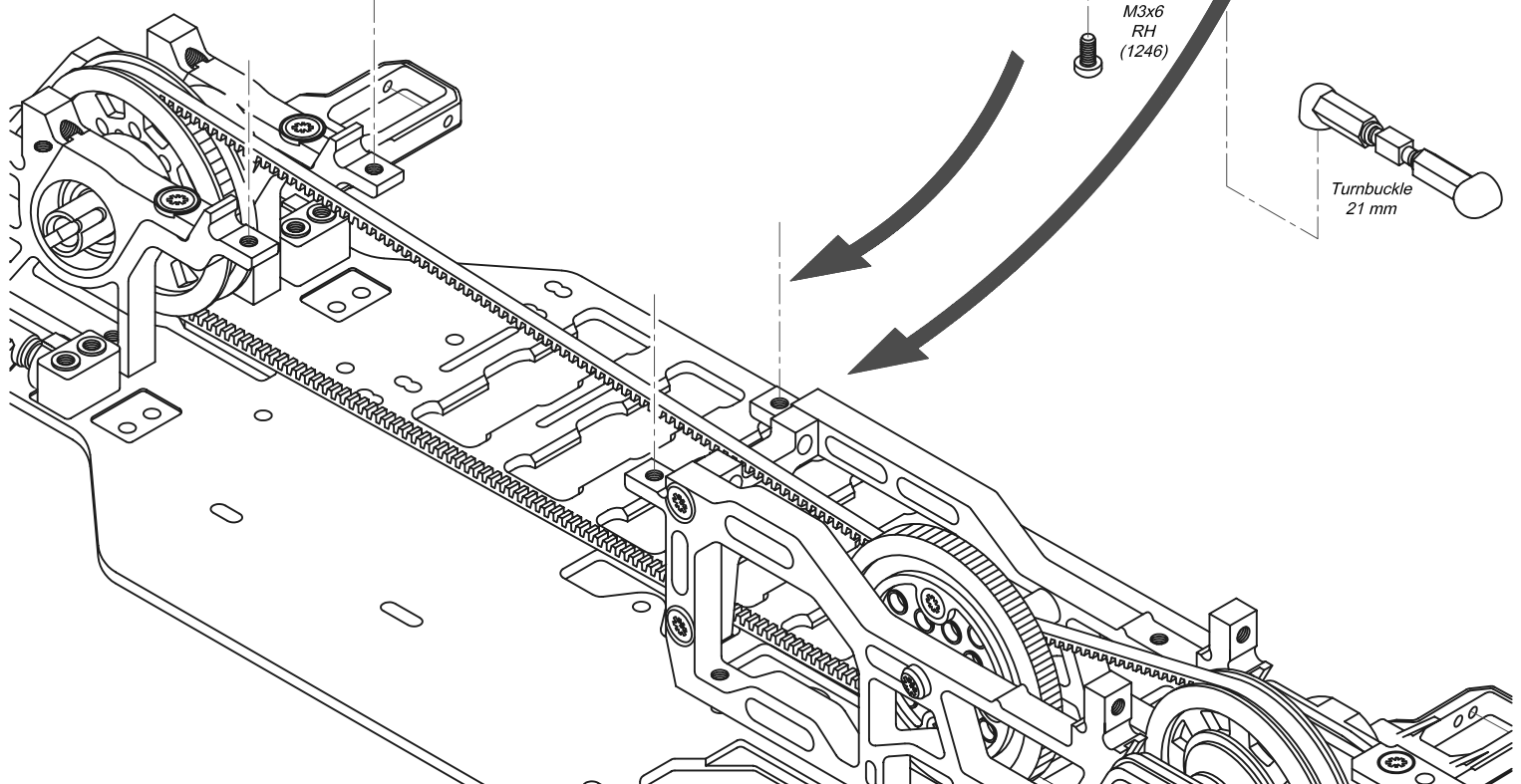
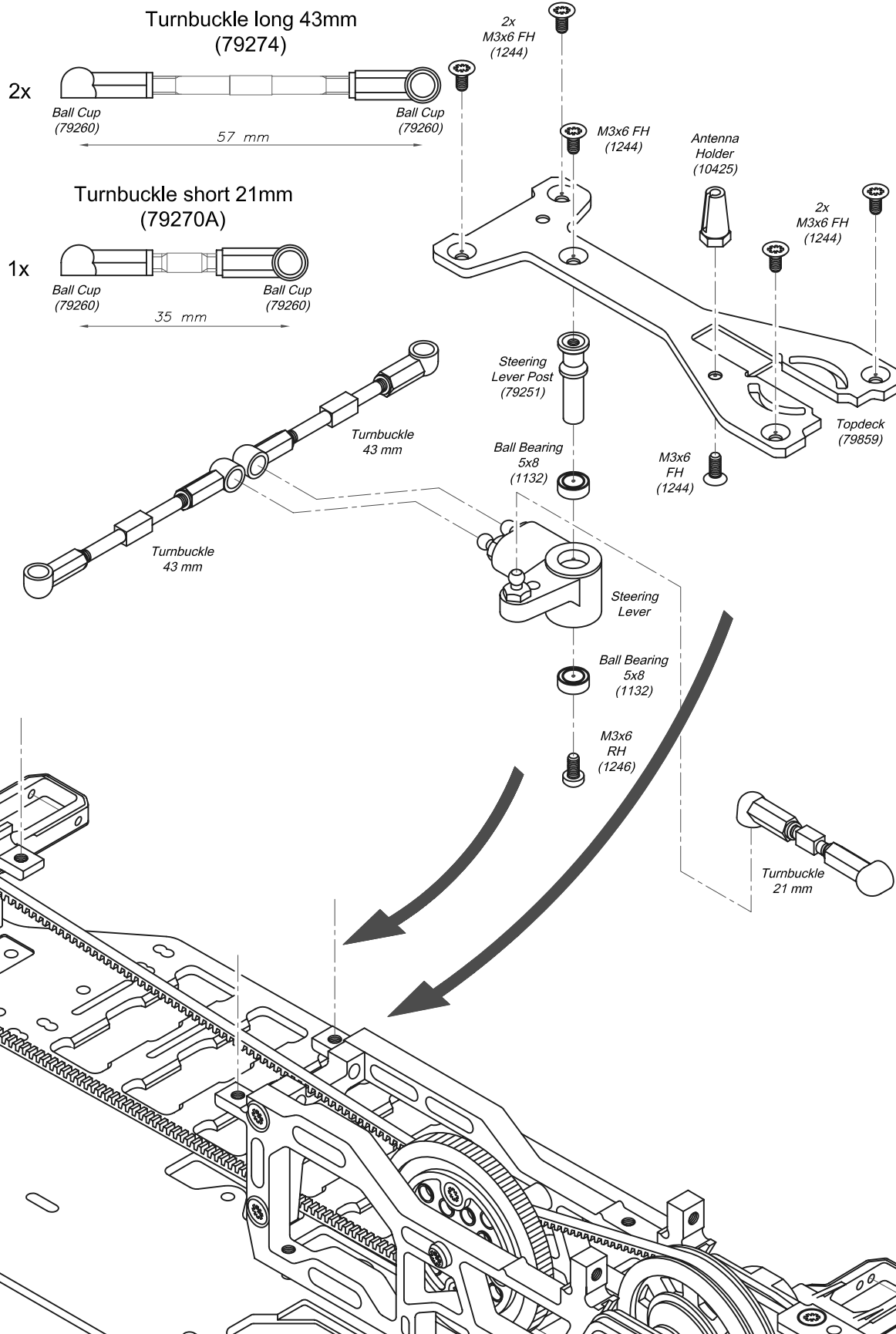
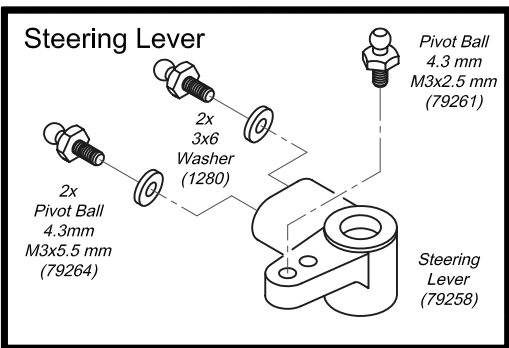


1x M3x6 RH

Screw the pivot balls on the steering lever.

Build 3 turnbuckles as shown. Snap them on the pivot balls.

After assembling the parts to the topdeck, mount the topdeck under the bulkheads.



Bag 5 Chassis (Front)

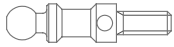
Step 1

Mount the pivot balls for the camber links to the shock tower.

1x Front Shock Tower



1x Front Bumper with alu inserts



2x Pivot Ball 4.3mm Front Camber Link



3x M3x8 FH



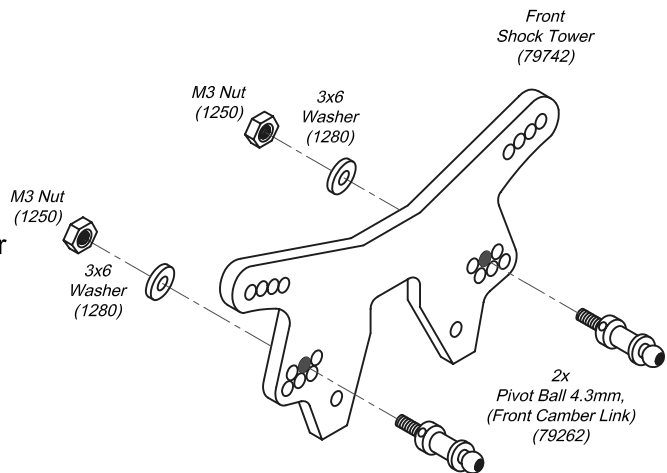
2x M3x6 FH



3x M3 Nut

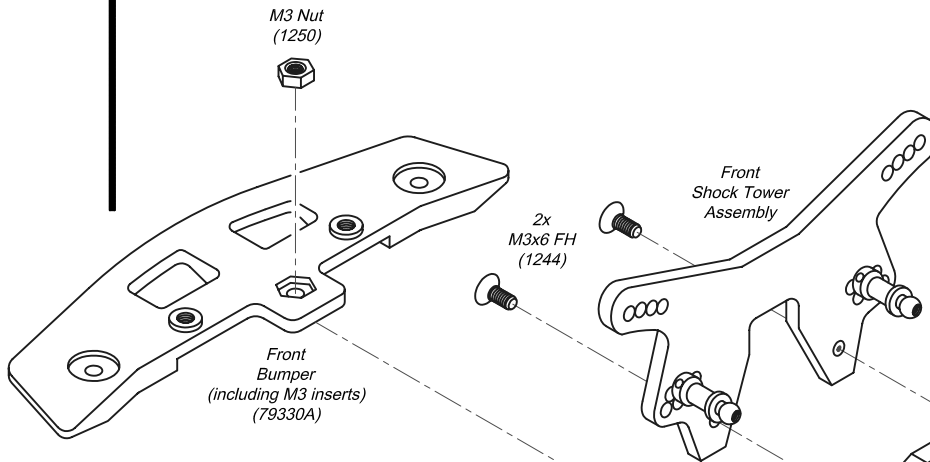


2x 3x6 Washer



Step 2

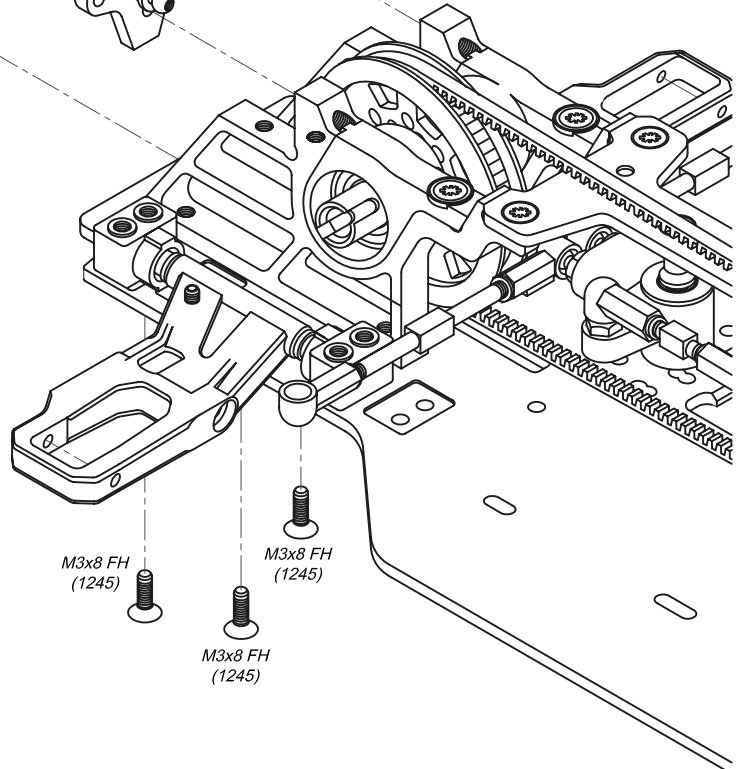
Mount the shock tower assembly to the front bulkheads.

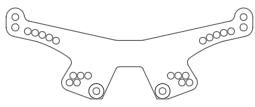


Step 3

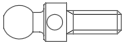
Mount the front bumper. Slide it between the bulkheads and the chassis plate. Loosen the bulkheads screws a couple of turns to make it easier.

Then tighten the screws again.





1x Rear Shock Tower



2x Pivot Ball 4.3mm
Rear Camber Link



2x M3x6 FH



2x M3 Nut



2x 3x6 Washer

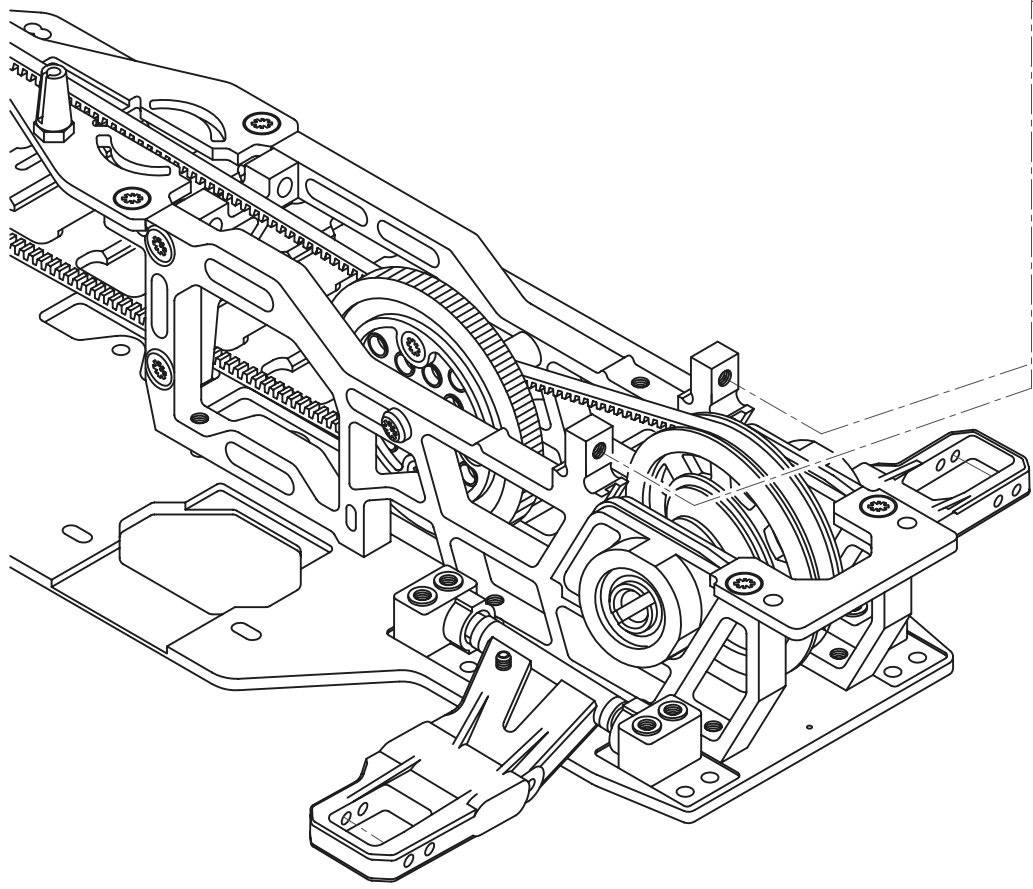
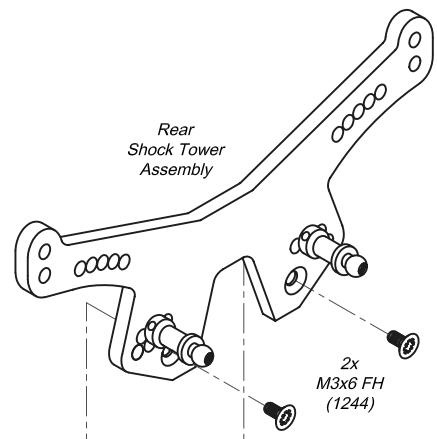
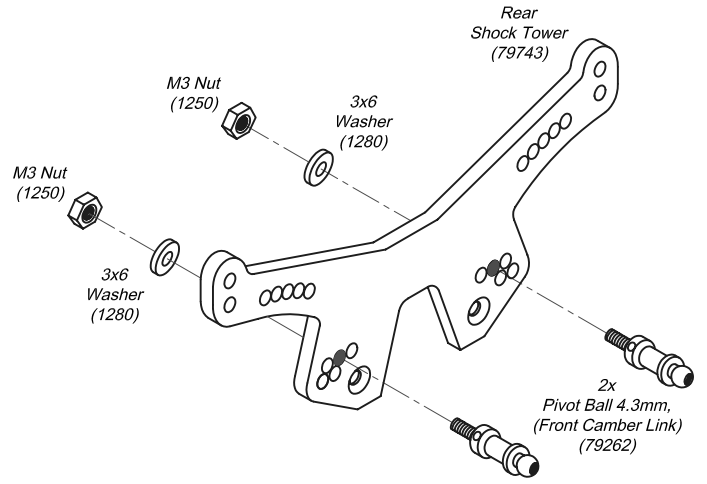
Bag 5 Chassis (Rear)

Step 1

Mount the pivot balls for the camber links to the shock tower.

Step 2

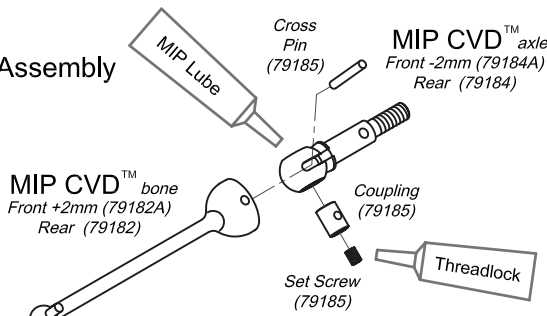
Mount the shock tower assembly to the rear bulkheads.



Bag 6 Suspension 1 (Subassembly)

Step 1

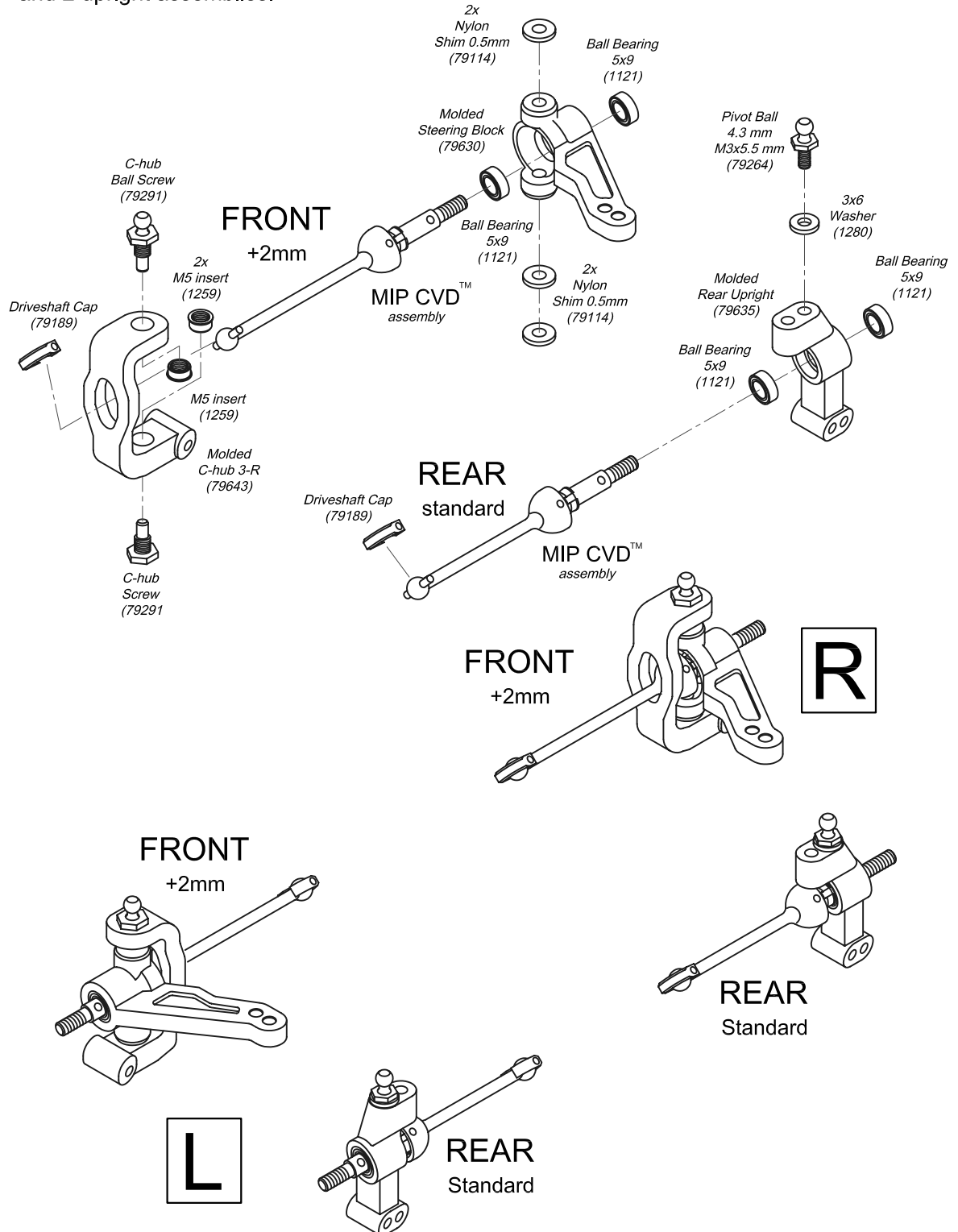
MIP CVD™ Assembly
(4 pieces)



NOTE:
Use long MIP CVD Bones with short Axles in the front and the standard MIP CVD Bones with standard Axles in the rear

Step 2

Build 2 front steering block and 2 upright assemblies.



2x MIP CVD™ Bone +2mm



2x MIP CVD™ Axle -2mm



2x MIP CVD™ Bone Std



2x MIP CVD™ Axle Std



4x MIP CVD™ Coupling



4x MIP CVD™ Cross Pin



4x MIP CVD™ Set Screw



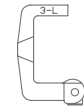
4x MIP CVD™ M4 Lock Nut



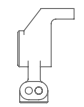
2x MIP CVD™ Set Screw Driver



1x C-hub 2-R (3° Right)



1x C-hub 2-L (3° Left)



2x Rear Upright, Narrow 0°



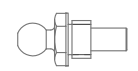
2x Steering Block



4x Driveshaft Cap



2x Pivot Ball 4.3 mm
M3x5.5 mm



2x C-hub Ball Screw



2x C-hub Screw



8x Ball Bearing 5x9



4x M5 Insert



6x Nylon Shim 0.5mm







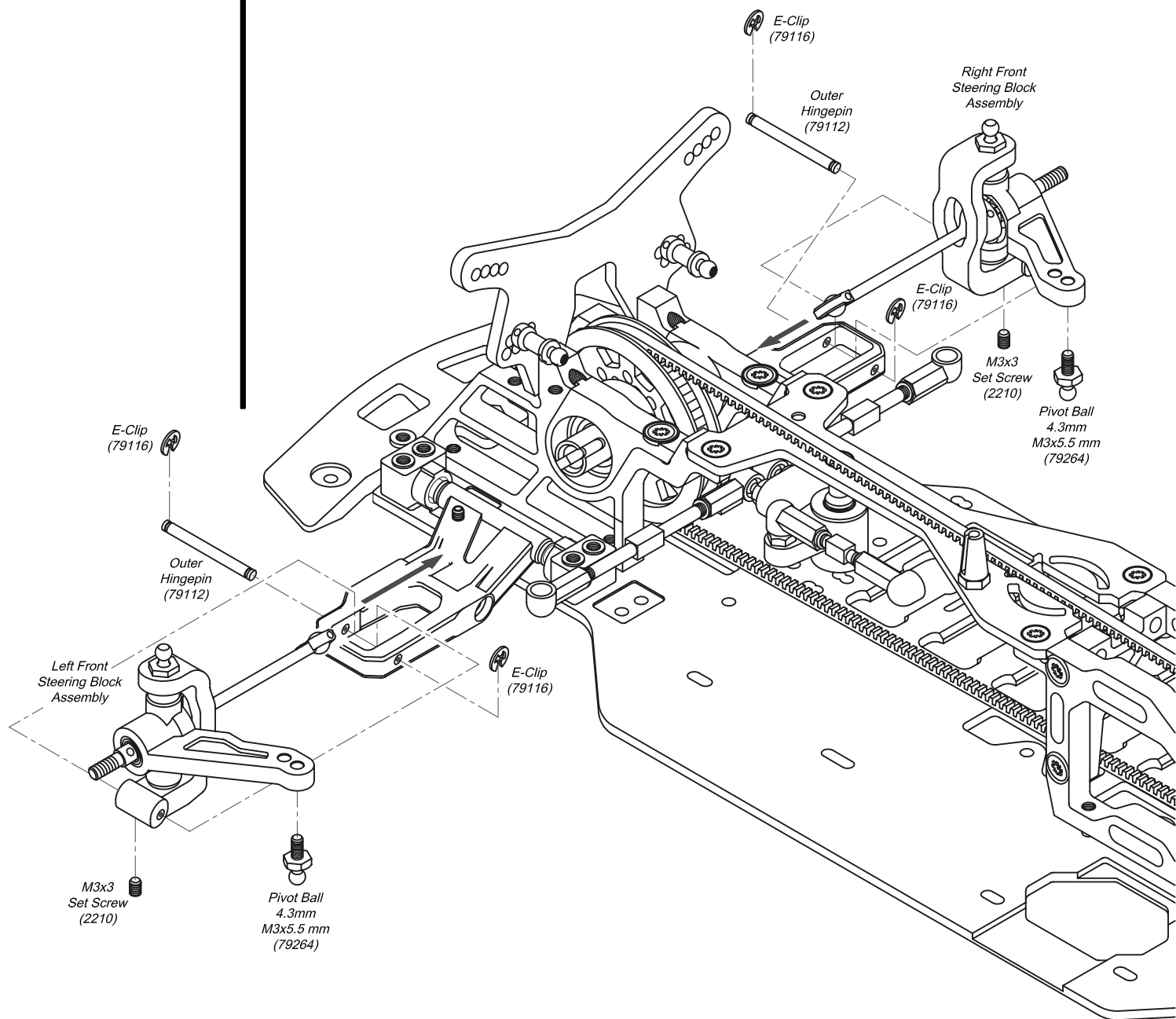
2x 3x6 Washer

Bag 6 Suspension 1 (Front)

Step 1

Mount the front steering block assemblies to the wishbones by using the outer hinge pins. Lock the hinge pin with a set screw. The hinge pins can also be locked with the e-clips.

-  2x Pivot Ball 4.3 mm M3x5.5 mm
-  2x Outer Hinge Pin
-  2x M3x3 Set Screw
-  4x E-clip



2x Outer Hingepin

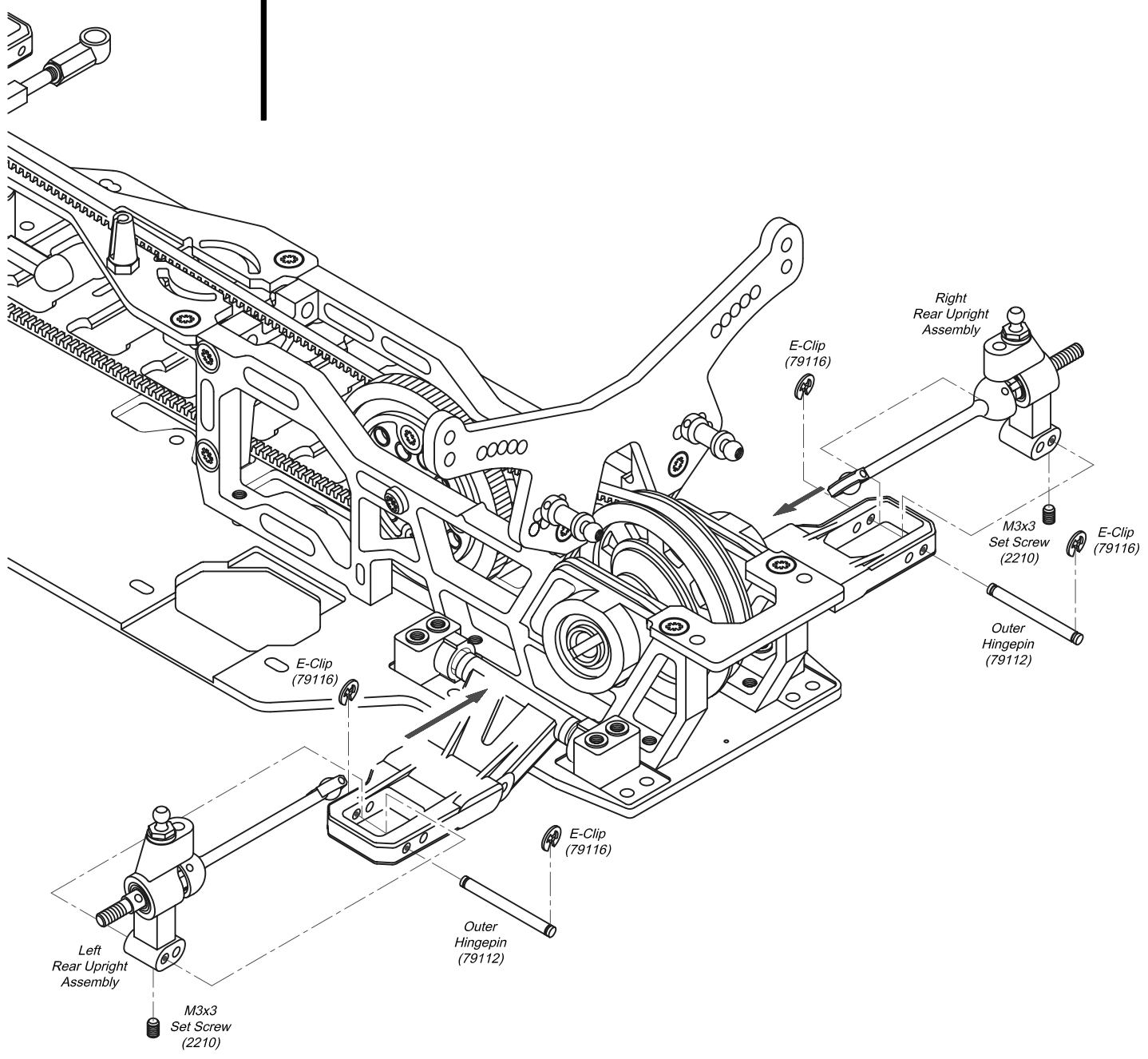
2x M3x3 Set Screw

4x E-clip

Bag 6 Suspension 1 (Rear)

Step 1

Mount the rear upright assemblies to the wishbones by using the outer hingepins. Lock the hingepin with a set screw. The hingepins can also be locked with the e-clips.



Bag 7 Suspension 2 (Shocks) - PRE-ASSEMBLED

NOTE: NO OIL in pre-assembled shocks

4x Shock Body



4x Spring Adjustment Nut



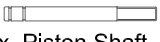
4x 13x1mm O-ring



8x Silicone O-ring



4x Shock Cap



4x Piston Shaft



4x Shock Top



4x Piston



4x Spring Collar



4x Ball End



4x Shock Diaphragm



4x Spring Clip



8x E-clip



4x Spring 17.0 lbs



4x Small Delrin Spacer

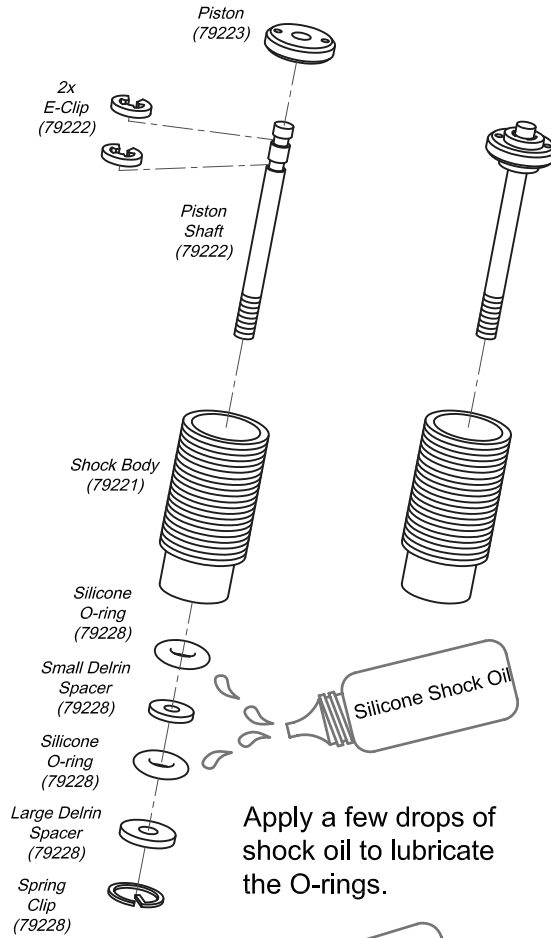


4x Large Delrin Spacer

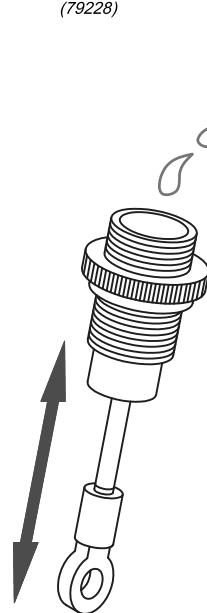
Build 4 identical Shock Absorbers (79220).
Build them very carefully.

Use plier to hold shaft, but do not damage the shaft.

Grip it close to thread.

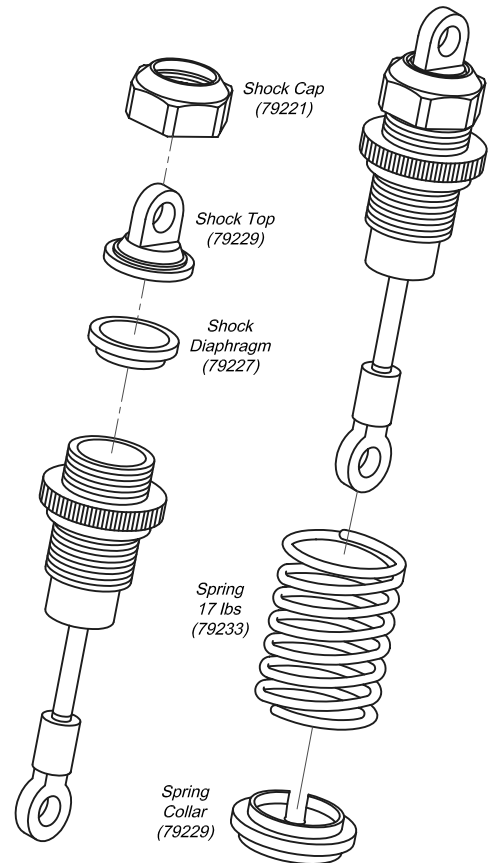
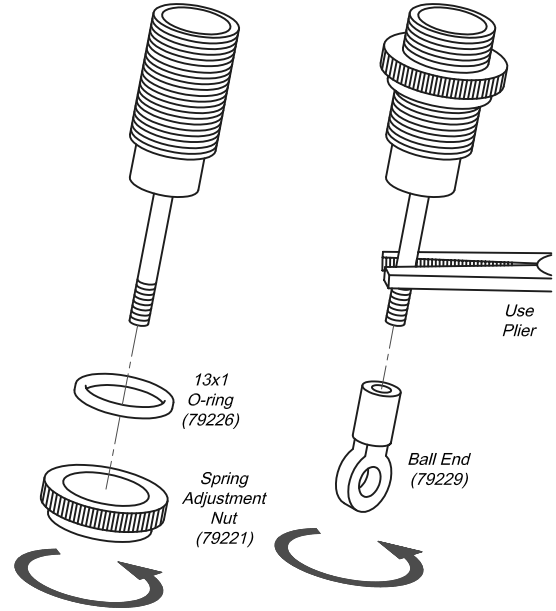


Apply a few drops of shock oil to lubricate the O-rings.



Holding the shock straight up, fill with shock oil to the top of the body. Then slowly move the shaft up and down several times to allow air bubbles to escape to the top.

Make sure all air bubbles escape to the top then install shock diaphragm, shock top and aluminium shock cap.



Team CORALLY Shock oils

Small bottle 1 Oz / 30 ml

80120	Team CORALLY SHG SHOCK OIL, 1 Oz./30 ML - 20 Wt/200 Cst
80125	Team CORALLY SHG SHOCK OIL, 1 Oz./30 ML - 25 Wt/250 Cst
80130	Team CORALLY SHG SHOCK OIL, 1 Oz./30 ML - 30 Wt/350 Cst
80135	Team CORALLY SHG SHOCK OIL, 1 Oz./30 ML - 35 Wt/400 Cst
80140	Team CORALLY SHG SHOCK OIL, 1 Oz./30 ML - 40 Wt/500 Cst
80145	Team CORALLY SHG SHOCK OIL, 1 Oz./30 ML - 45 Wt/550 Cst
80150	Team CORALLY SHG SHOCK OIL, 1 Oz./30 ML - 50 Wt/600 Cst
80155	Team CORALLY SHG SHOCK OIL, 1 Oz./30 ML - 55 Wt/650 Cst
80160	Team CORALLY SHG SHOCK OIL, 1 Oz./30 ML - 60 Wt/700 Cst
80165	Team CORALLY SHG SHOCK OIL, 1 Oz./30 ML - 65 Wt/750 Cst
80170	Team CORALLY SHG SHOCK OIL, 1 Oz./30 ML - 70 Wt/800 Cst
80180	Team CORALLY SHG SHOCK OIL, 1 Oz./30 ML - 80 Wt/900 Cst

Large bottle 2 Oz / 60 ml

80220	Team CORALLY SHG SHOCK OIL, 2 Oz./60 ML - 20 Wt/200 Cst
80225	Team CORALLY SHG SHOCK OIL, 2 Oz./60 ML - 25 Wt/250 Cst
80230	Team CORALLY SHG SHOCK OIL, 2 Oz./60 ML - 30 Wt/350 Cst
80235	Team CORALLY SHG SHOCK OIL, 2 Oz./60 ML - 35 Wt/400 Cst
80240	Team CORALLY SHG SHOCK OIL, 2 Oz./60 ML - 40 Wt/500 Cst
80245	Team CORALLY SHG SHOCK OIL, 2 Oz./60 ML - 45 Wt/550 Cst
80250	Team CORALLY SHG SHOCK OIL, 2 Oz./60 ML - 50 Wt/600 Cst
80255	Team CORALLY SHG SHOCK OIL, 2 Oz./60 ML - 55 Wt/650 Cst
80260	Team CORALLY SHG SHOCK OIL, 2 Oz./60 ML - 60 Wt/700 Cst
80265	Team CORALLY SHG SHOCK OIL, 2 Oz./60 ML - 65 Wt/750 Cst
80270	Team CORALLY SHG SHOCK OIL, 2 Oz./60 ML - 70 Wt/800 Cst
80280	Team CORALLY SHG SHOCK OIL, 2 Oz./60 ML - 80 Wt/900 Cst

Bag 7 Suspension 2(Front)

2x Turnbuckle 33mm



4x Ball Cup



2x Pivot Ball 5.8 mm Short



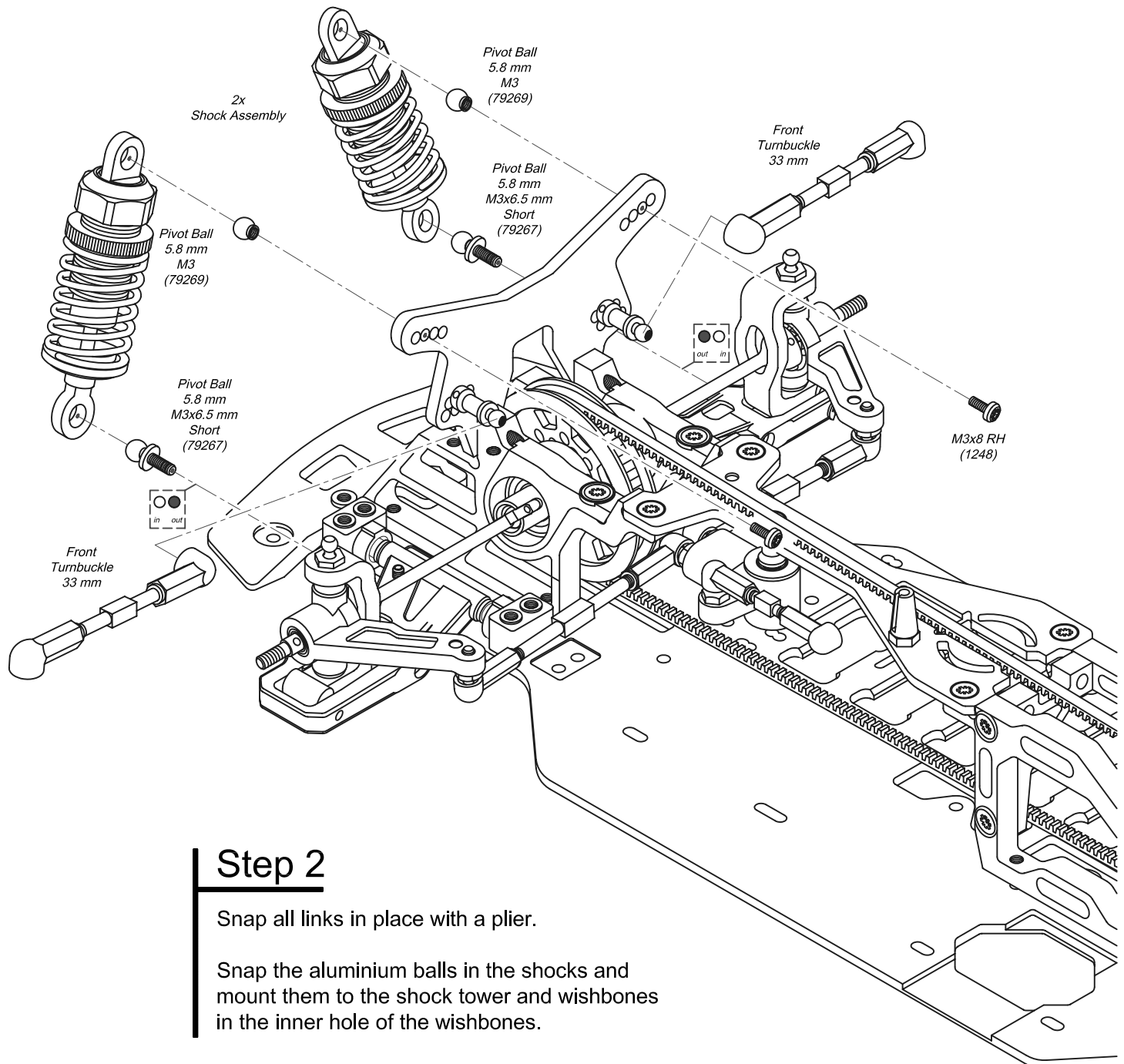
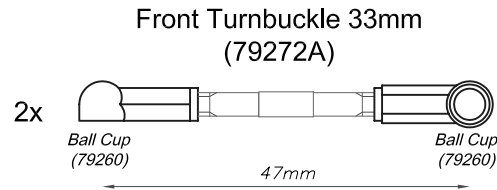
2x Pivot Ball 5.8 mm



2x M3x8 RH

Step 1

Assemble 2 Turnbuckles as shown.



Step 2

Snap all links in place with a plier.

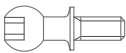
Snap the aluminium balls in the shocks and mount them to the shock tower and wishbones in the inner hole of the wishbones.



2x Turnbuckle 33mm



4x Ball Cup



2x Pivot Ball 5.8 mm Long



2x Pivot Ball 5.8 mm

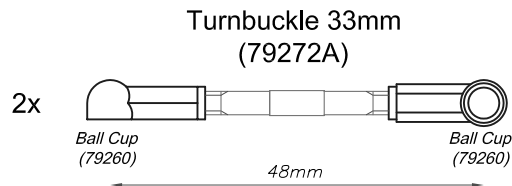


2x M3x8 RH

Bag 7 Suspension 2(Rear)

Step 1

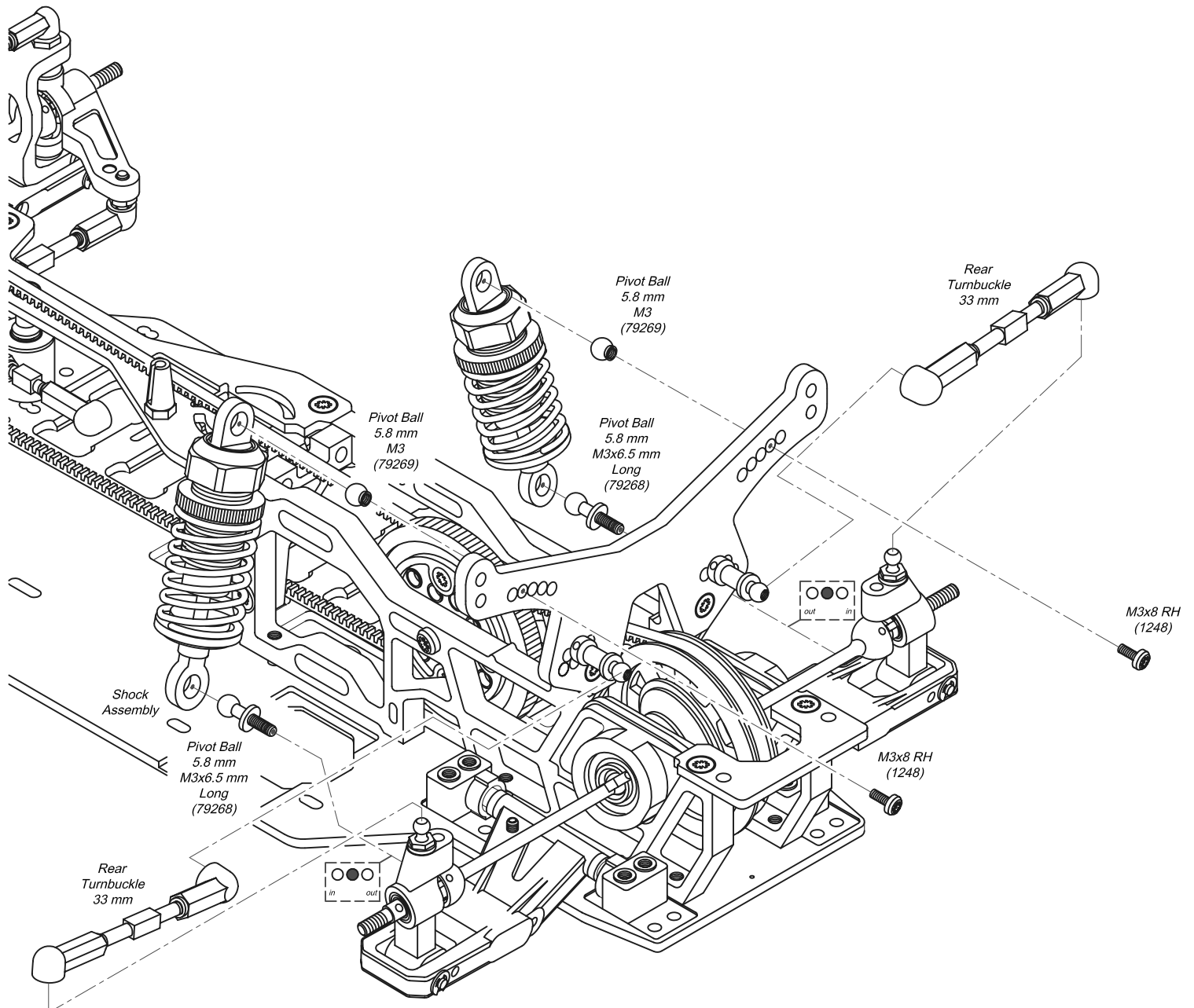
Assemble 2 Turnbuckles as shown.



Step 2

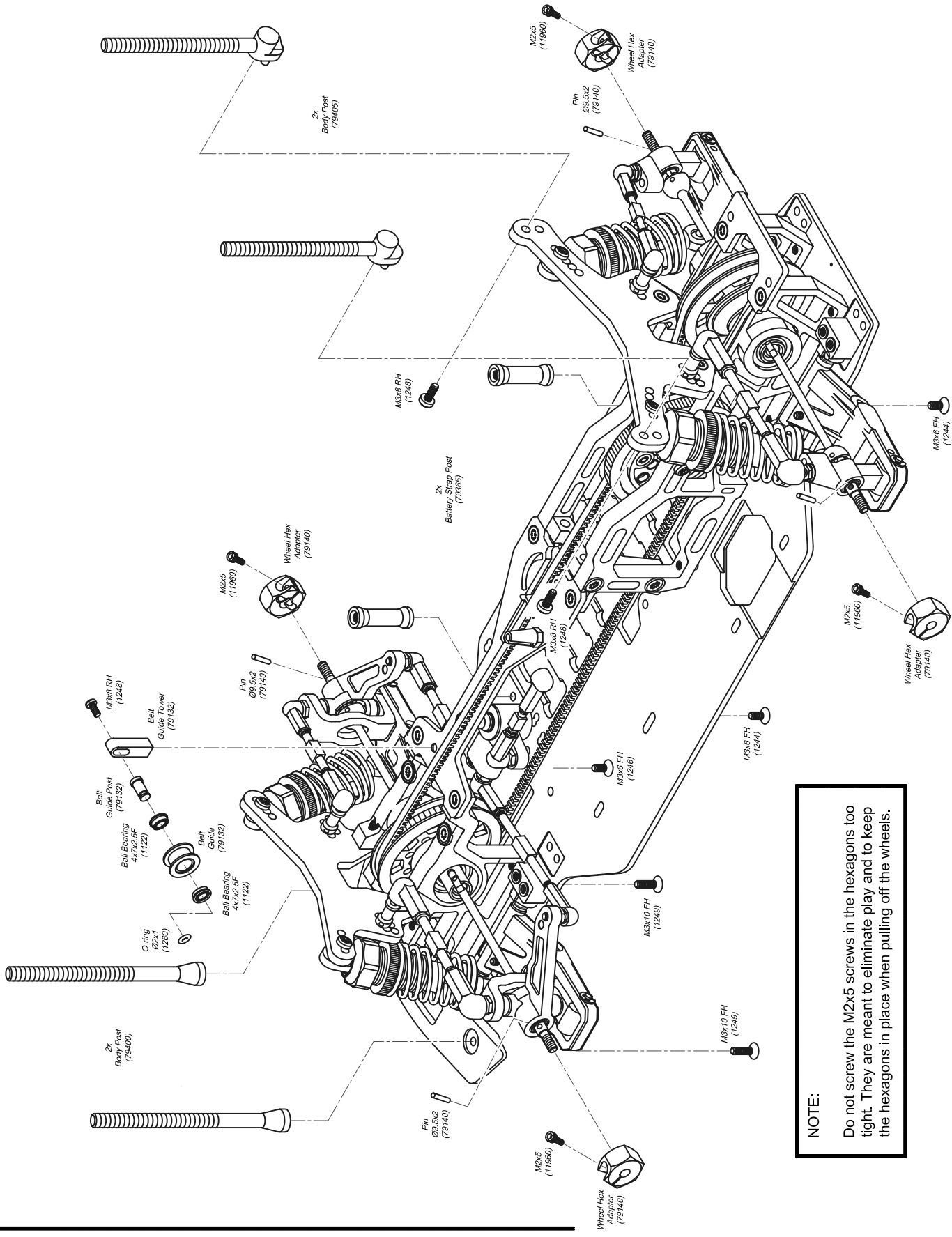
Snap the rear turnbuckles in place with a plier.

Snap the aluminium balls in the shocks and mount them to the shock tower and in middle hole of the wishbones.



Bag 8 Finals (Wheelhex & Bodyposts)

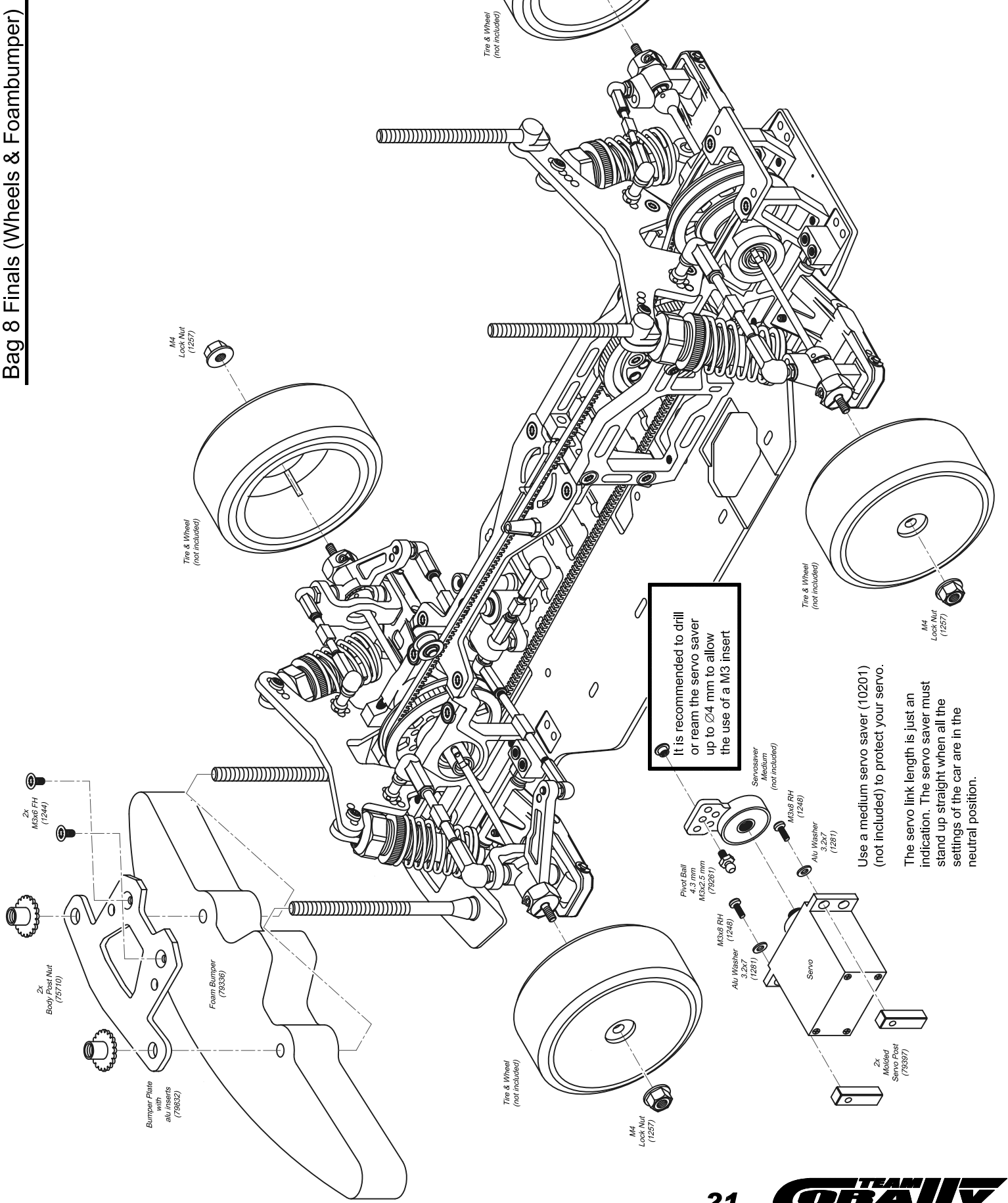
- 1x Belt Guide Tower
- 1x Belt Guide Post
- 1x Belt Guide
- 2x Front Body Post
- 2x Rear Body Post
- 2x Battery Strap Post
- 4x Wheel Hex Adapter
- 4x Pin Ø9.5x2
- 3x M3x8 RH
- 2x M3x10 FH
- 3x M3x6 FH
- 4x M2x5
- 2x Ball Bearing 4x7x2.5F
- 1x O-ring 2x1



NOTE:
Do not screw the M2x5 screws in the hexagons too tight. They are meant to eliminate play and to keep the hexagons in place when pulling off the wheels.

Bag 8 Finals (Wheels & Foambumper)

- 1x Foam Bumper
- 1x Bumper Plate with alu M3 inserts
- 2x Body Post Nut
- 2x Molded Servo Post
- 2x Alu Washer Ø3,2x7
- 2x M3x8 RH
- 2x M3x6 FH



Not Included:

- 4x Tires on wheels
- 1x Servo with Servo-Saver
- #1257 Aluminium Locknuts, M4 Black - Flanged

It is recommended to drill or ream the servo saver up to Ø4 mm to allow the use of a M3 insert

Use a medium servo saver (10201) (not included) to protect your servo.

The servo link length is just an indication. The servo saver must stand up straight when all the settings of the car are in the neutral position.

Bag 8 Finals (Electronics)

Install the electronics and the body post nuts.

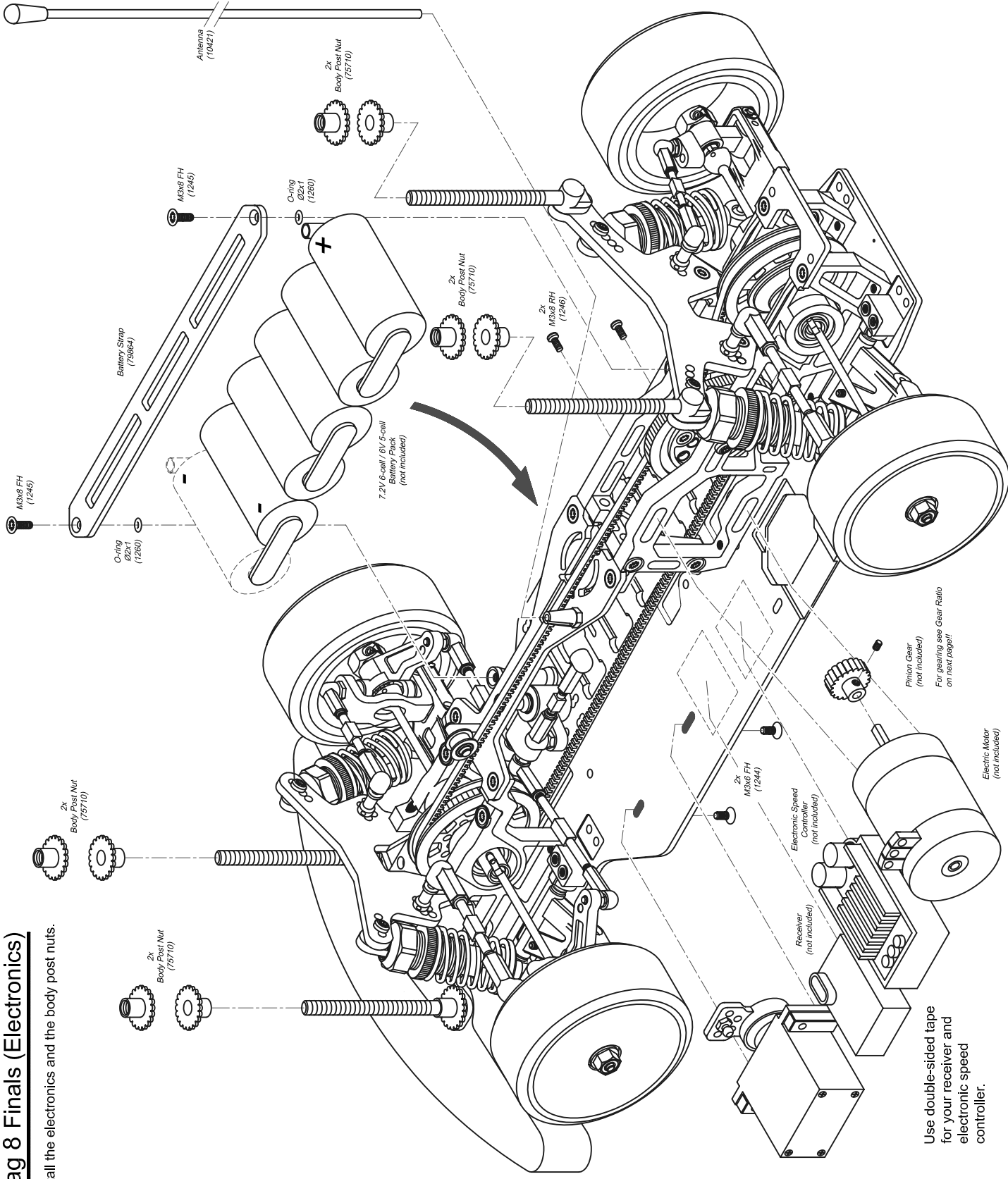


Not Included:

- Double-sided Tape
- Electronic Speed Control
- Receiver
- Battery-pack
- Electric Motor
- Pinion Gear

Mount the servo with servo saver to the chassis.

Then snap the turnbuckle 21mm to the pivot balls on the steering lever and the servo saver.



Anti-roll bar mounting instructions (option part)

1x Anti-roll Bar Front

1x Anti-roll Bar Rear

2x Pivot Ball 5.8 mm Short

2x Pivot Ball 5.8 mm

4x Pivot Ball 5.8mm

4x Anti-roll Bar Clamp

4x Ball End 5.8mm

4x M3x12 Set Screw

4x M3x3 Set Screw

2x M3x16 RH

4x M3x8 FH

Ball End
5.8 mm
(79259)

M3x12
Set Screw
(2215)

Ball End
5.8 mm
(79259)

Pivot Ball
5.8 mm
M3
(79269)

M3x16 RH
(1243)

Ball End
5.8 mm
(79259)

M3x12
Set Screw
(2215)

5.8 mm
Ball End
(79259)

Pivot Ball
5.8 mm
M3x6.5
Short
(79267)

Anti-roll bar clamps:

Use the big slot for Black 1.9mm Anti-roll Bar and the small slot for Silver 1.3mm Anti-roll Bar. When using the Brass 1.6mm Anti-roll Bar, sand 0.3mm off the bottom of the clamp so the 1.9mm slot will fit the 1.6mm Anti-roll Bar wire.

2x
M3x8 FH
(1245)

2x
Anti-roll Bar
Clamp
(79430)

Pivot Ball
5.8 mm
(79432)

M3x3
Set Screw
(2210)

Anti-roll Bar
Front

2x
M3x8 FH
(1245)

2x
Anti-roll Bar
Clamp
(79430)

Pivot Ball
5.8 mm
(79432)

Anti-roll Bar
Rear

Pivot Ball
5.8 mm
(79432)

M3x3
Set Screw
(2210)

M3x3
Set Screw
(2210)

79910 Anti-roll bar set 1.0 mm, Black - Rear
79912 Anti-roll bar set 1.3 mm, Silver - Rear
79913 Anti-roll bar set 1.3 mm, Silver - Front
79914 Anti-roll bar set 1.6 mm, Brass - Rear
79915 Anti-roll bar set 1.6 mm, Brass - Front
79916 Anti-roll bar set 1.9 mm, Black - Rear
79917 Anti-roll bar set 1.9 mm, Black - Front

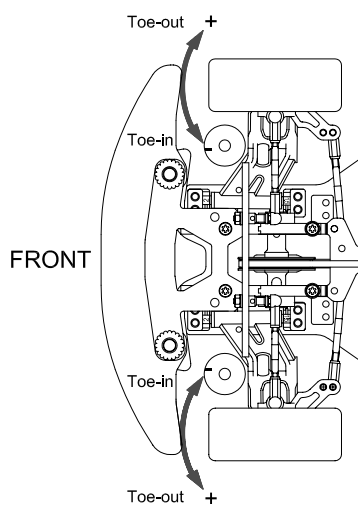
79920 Anti-roll bar wire 1.0 mm, Black - Rear
79922 Anti-roll bar wire 1.3 mm, Silver - Rear
79923 Anti-roll bar wire 1.3 mm, Silver - Front
79924 Anti-roll bar wire 1.6 mm, Brass - Rear
79925 Anti-roll bar wire 1.6 mm, Brass - Front
79926 Anti-roll bar wire 1.9 mm, Black - Rear
79927 Anti-roll bar wire 1.9 mm, Black - Front

Race adjustments:

Your RDX PHI 09 Touring Car comes with many possible geometry adjustments, shock adjustments, camber changes, etc. The standard setup in this manual is a good starting point to begin with. For optimising your car's performance, improvements can be made with the following tuning tips. Always make one step at a time, and see if there are any improvements or the performance is getting worse. On www.corally.com you can download the latest setup sheets from Team Corally to help you find a good setup.

Front toe-in / toe-out:

Setting toe-in of the front wishbones in the center of the car will make the suspension work better on bumpy conditions. Toe-out will give a better steering response and stability.



Toe-in:

Stabilizes the car on the straight, and coming out of the corners.

It smoothes out the steering response, making the car easier to drive.

It can make the car turn in a little more in the middle and exit part of a corner.

Toe-out:

Increases turn-in steering a lot.

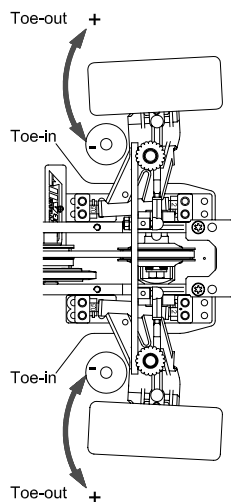
But can make the car very nervous on the straight.

More than 1° of front toe-out make the front even more nervous, so it's better not to use more than 1° toe-out.

Adjust for neutral feeling 0° toe. A slight amount of toe-out will increase the turn-in of the car but too much of it will make the car difficult to drive.

[min. = -1 / max. = +1]

Rear toe-in:



Toe-in:

This is one of the most sensitive adjustments! One degree goes a long way. Stabilizes the car greatly. It makes the rear end "stick". The more toe-in you use, the more the rear of the car sticks. This becomes especially apparent going in and coming out of the corners.

But more toe-in make more difference between sticking and breaking loose. Large amount of toe-in (2.5°... 3°) scrub off a little speed on the straights.

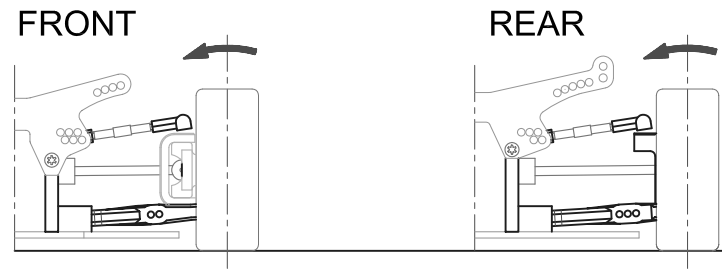
Toe-out:

Rear toe-out is never used. It makes the rear of the car very unstable.

Toe-in is set standard on 2.5° in the rear with the coupler clamps. To increase or decrease toe-in in the rear, use the optional wishbone mounts #1.0 and #1.5 to set more or less toe-in.

[min. 0 / max. 3]

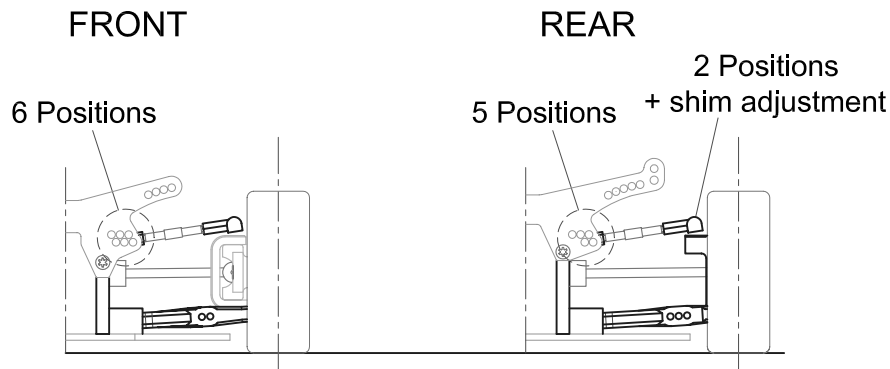
Camber:



Camber is best set when the contact patches of the tires are always as big as possible. So with a stiff suspension and firm tires you'll need less camber than with soft suspension or tires with big, flexible sidewalls. If the tire wear evenly across their contact patches, the camber is about right. When using camber on the front in combination with caster blocks something must be kept in mind. Caster will cause camber in the front when steering and the front will lift up.

[min. 0 / max. 2]

Camber Link Locations:



The RDX Phi 09 has a couple of camber-link locations. We recommend to start off by mounting the camber links in 1 of the lower positions on the shocktower. This will give more camber-change while cornering, thus stability. The longer or higher the link, the more traction and less stability. The shorter or lower the link, the less traction and greater stability.

Long Link: A long link gives a lot of body roll in turns. It feels as if the body is willing to keep on rolling until it can't, but the springs prevent it from rolling any further.

The car has more grip in corners, especially in the middle part. But if there already is a lot of traction, long camber links can slow down in turns.

Short Link: A short link will make the chassis roll less. Its tendency to roll drops as it rolls. It feels as if the car generates a little less grip.

More Parallel Link: A parallel link gives a little more roll than an angled one. It feels smooth, and consistent as the body rolls in turns.

Angled Link: An angled link makes the car feel as if it has a tendency to center itself (level, no roll), other than through the spring or anti-roll bar. It will give more initial grip, steering into corners.

It makes it very easy to "throw" the car. The body rolls a little less than with parallel links. It's possible to use softer springs and a softer damping than with parallel links, without destabilising the car.

Always keep an eye on the balance of the car; large differences in roll-center front versus rear will make the car feel less consistent!

Inner Hinge Pin Locations:

It is possible to mount the wishbones on different heights to the bulkheads. This will change the roll-center of the car.

Low mounting: The roll-center becomes lower, which generates more chassis-roll into the corner.

Higher mounting: The roll-center becomes higher, which generates less chassis-roll. Car changes quicker from direction, but less grip will be generated. Feels very stable.

Front Caster:

Caster can be very important to the handling of the car. Adding or removing caster can transform the steering balance of a car. The total of Caster is degrees Kick-up + degrees Caster C-hub.

More Caster: Will give stability, especially at high speeds. More Caster generally suits large high-speed open tracks.

Less Caster: Will increase steering drastically. Steering feels more direct, so the car turns tighter and faster. Small amounts of caster are suitable for tight tracks.

These settings can be arranged with the optional C-hubs and the inner hinge pin settings.
[min. 0 / 2 / 4 / max. 6]

Front Kick-up and anti-dive:

Refers to the angle in which the front suspension is mounted in relation to horizontal when looked from the side of car. **Kick-up** and **anti-dive** are adjusted by changing the angle of the front wishbones, which can be done by the 0.6mm (**#79729**) and 1.5mm (**#79730**) Wishbone Mount Shims.

These can be put under the Wishbone Mounts. The setting of 0° kick-up will have more aggressive steering feeling but will not absorb bumps well. The setting of a small amount of kick-up will work better in most conditions, especially in bumpy conditions. An anti-dive setting give a very aggressive steering feeling and will improve the front braking traction by entering corners. When using anti-dive a differential must be used in the front. Use at least 2° caster C-hubs. Anti-dive will not work on bumpy conditions.

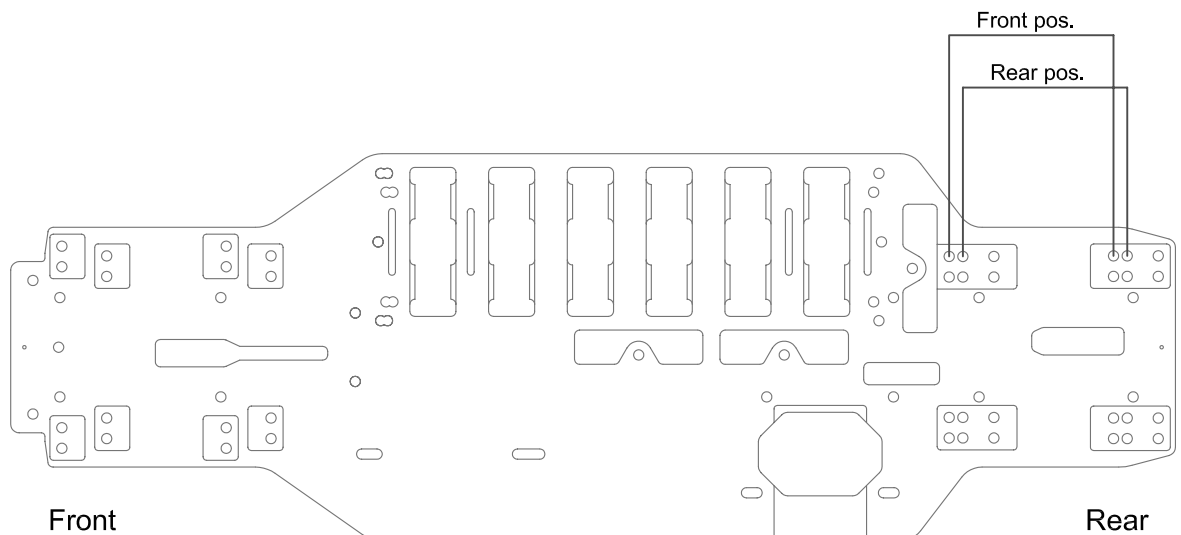
Rear anti-squat:

Describes the angle at which the rear suspension is mounted when looked sideways at the car.

Generally more anti-squat make the car more sensitive by throttle input. The car has more steering while braking (when diff is used), and also a little more powering out of the corners. Less anti-squat gives more side-bite, on-power and while braking. It feels easier to drive in low-grip situations.

Wheelbase adjustment:

The Wishbone Mounts for the rear wishbones can be mounted in two position. For a short wheelbase and for a long wheelbase. Positions shown below.

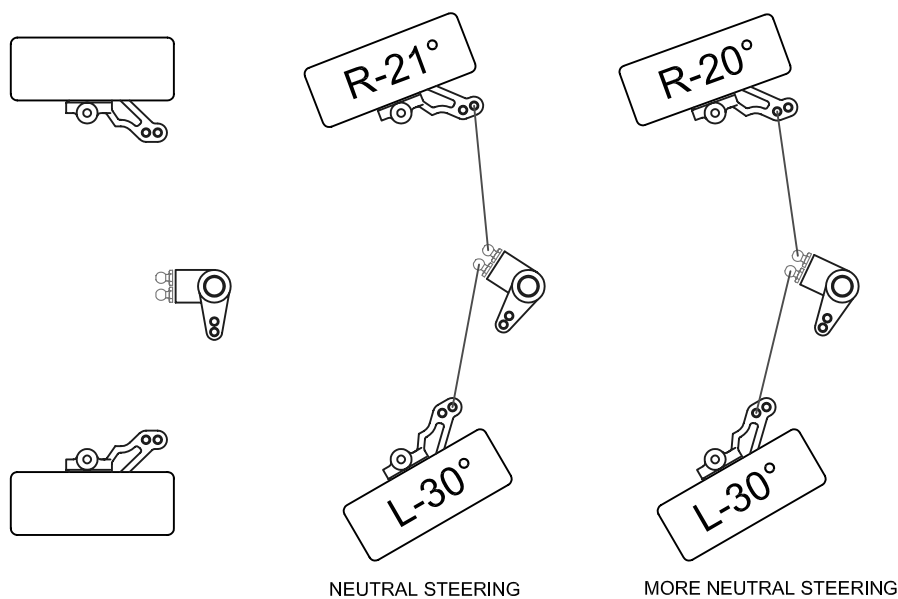


Use the shims **#79113** and **#79114** to fine tune the wheelbase to your needs.

Adjust the wheelbase by moving the white inner hinge pin shims. A short wheelbase makes the car feel good in tight turns. Use a short wheelbase on very small and tight tracks. A longer wheelbase makes the car feel a lot more stable, and better in wide, high-speed turns. Use a longer wheelbase on wide open tracks. Moving the shims to the front of the front wishbones will shorten the wheelbase and decrease rear traction and greater stability. Moving the shims to the rear of the front wishbones will lengthen wheelbase and increase rear traction. Moving the shims to the front of the rear wishbones will lengthen the wheelbase and decrease rear traction and greater stability. Moving the shims to the rear of the rear wishbones will shorten the wheelbase and increase rear traction.

Ackermann:

This is a term describing the effect of the inner front wheel turning tighter than the outside front wheel. The perfect angle (no slip in theory) between the two front tires is called "the Ackermann angle". The angle can be varied by adjusting the steering linkages. The Ackermann setup works well in most conditions and will provide a very smooth, predictable steering.



Shock Springs:

Try to keep your car level during acceleration, deceleration and cornering. Stiffer springs make the car feel more responsive, more direct. The car reacts faster to driver input. Stiff springs are suited for tight, high-traction tracks, which aren't too bumpy. Usually, when you stiffen the whole car, you lose a small amount of steering.

Softer springs are better for bumpy and very large and open tracks. They can also make the car feel as sluggish and slow.

Stiffer Front:

The car has less front traction, and less steering. It's harder to get the car to turn, the turn radius is bigger and the car has a lot less steering exiting corners. On very high-grip tracks, if the track itself feels tacky or sticky, very stiff springs are the way to go.

Softer Front:

The car has more steering, especially in the middle part and the exit of the corner. Front springs that are too soft can make the car hook and spin.

Stiffer Rear:

The car has more steering, in the middle and exit of the turn. This is especially apparent in long, high-speed corners. But rear traction is reduced.

Softer rear:

The car has generally more rear traction, in turns as well through bumpy sections and while accelerating.

Damping:

Thicker oil (heavier damping) makes the car more stable, and makes it handle more smoothly. If damping is too heavy, traction could be lost in bumpy sections. The car will also change direction slower. Soft damping makes the car react quicker. Damping should always be adapted to the spring ratio; the suspension should never feel to "springy" or too slow.

Heavier Front or Softer Rear: The turn radius is wider, but smoother. The car doesn't hook up suddenly. The car is easier to drive, and high-speed steering feels very nice. Easy to drive.

Softer Front or Heavier Rear: The steering reacts quicker. More and better low-speed steering.

Shock Pistons:

The assumption is made that if pistons are changed, the viscosity of oil is also adapted, to give the same static feel. (Same low-speed damping)

Smaller holes (#79223) means more "pack". Pack means the damping gets very stiff, or almost locks up, over sharp bumps. Small holes are good for smooth tracks.

Bigger holes (#79224) mean less pack. The point at which the damping gets stiff (where the shock "packs up") occurs a lot later, at higher shock shaft speeds. Big holes are very good for bumpy tracks. The car is more stable and has more traction in the bumpy sections. It won't be thrown up over sharp bumps, the suspension will soak them up a lot better.

Ride Height:

This describes the height of the chassis in relation to the surface sitting on. This adjustment must be made with the chassis ready-to-run but with no body. By turning the spring adjustment nut the chassis can be raised or lowered. Start with about 6mm clearance between the chassis and ground. Try using a slightly lower ride height for high traction conditions as carpet racing. Do not use a ride height lower than 4mm.

Higher: The car feels better in bumpy sections. It can feel tippy, or even flip over in high-grip conditions.

Lower: The car feels more direct, and it can potentially corner a bit faster. It's also harder to flip the car over. Lowering one end of the car, or putting the other end higher up, gives a little more grip at the lowest end, but try to avoid big differences in ride height between the front and the rear.

Anti-Roll Bars:

Before using anti-roll bars first try to play with the droop settings. Anti-roll bars can be used to stabilize a car from excessive roll (which occurs when your car leans through the turns by centrifugal force). Anti-roll bars are generally used on smooth, high traction track conditions. If the conditions are very bumpy, then anti-roll bars are probably not necessary. If you are driving on a high traction surface and your car wants to oversteer, then use the optional **#79913** (soft), **#79915** (medium) anti-roll bar or **#79917** (hard) on the front only. This will decrease the front chassis roll and decrease steering throughout the corner. This has the feeling of increasing rear traction. If your car is understeering, then try the optional **#79912** (soft), **#79914** (medium) anti-roll bar or **#79916** (hard) anti-roll bar on the rear only. The rear anti-roll bar will decrease rear chassis roll and decrease rear traction (this has the feeling of increasing steering).

Downstops (droop-setting):

When the Wishbones have a lot of droop the chassis is free to roll in turns. The center of gravity of the car won't change much. Chassis rolls around its roll-center. But if the wishbones almost have no droop the chassis will be pulled down as it rolls. It cannot roll anymore around its roll-center, because the chassis will become one-piece with the wishbone as it rolls. Then the center of gravity will become lower.

Front:

- **Less droop** makes the car smoother in the middle of a corner and gives more steering under acceleration. Sometimes too little droop makes a car difficult to accelerate out from corners.
- **More droop** gives more steering response in the middle of a corner and makes the car push on throttle.

Rear:

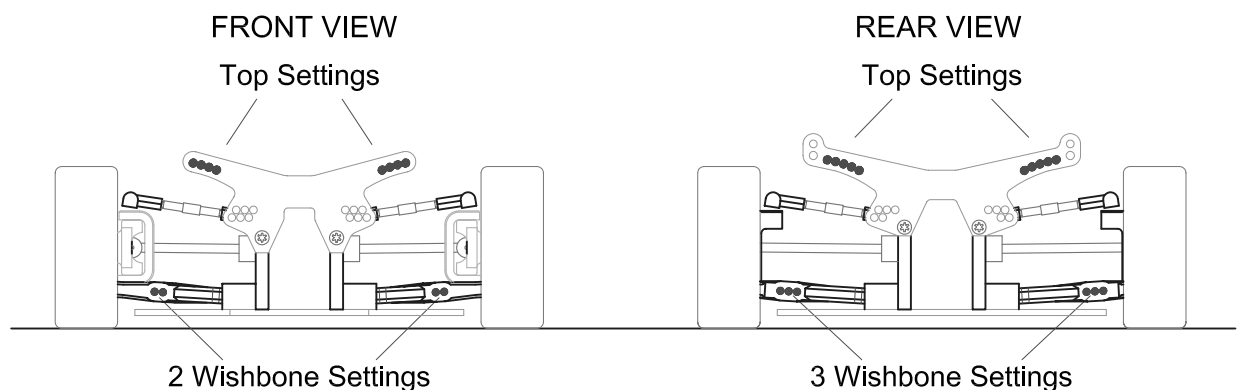
- **Less droop** makes the rear more stable to the corner and gives less grip in the middle and out of the corner.
Less droop will heat up tires more.
- **More droop** reduces rear grip into the corner, but rear tires stay cooler and the car works more stable through your heat.

Before using anti-roll bars, the droop-setting is a better option first to play with. The wishbones are already prepared for using downstops. See the instructions on page 7 for installing the M3x12 set screws which are required for adjusting the droop. The adjustment of left and right should be the same. But don't use your downstops for lowering your chassis, because this isn't the way to do so. This must be done by the spring adjustment of your dampers.

Front Drive:

- **Ball Differential (#79690)** can be adjusted for tightness (and slippage), so it makes them very versatile. By adjusting the front diff a little tighter, some more understeer will be experienced. But there will be a little more steering and traction exiting the corner. It feels more stable. When tighten the rear diff, the rear of the car will become easier to break loose. But adjusting the diffs is not really a good solution to solve the problem of under/oversteer balance.
- **One-way (#79667)** contains two one-way bearings; one for each wheel. It acts like a diff in only the forward direction. The front wheels can only turn faster than the rear wheels, but not slower. Left and right wheel can rotate independantly from each other, when power off entering a corner. This will give slightly more steering, so the corner can be taken faster. With a one-way front diff there will be no front braking, no differential action off power, high cornering speed, and excellent acceleration out of the corner. On really high-grip, open tracks with smooth, flowing high speed corners it is a one to have thing. So it comes standard in this kit.
- **Spool (#79655)** is like a fully locked diff but has no moving parts. It's super-solid with no adjustments. Because there's no differential action at all, a lot of speed is scrubbed off in corners. A spool at the front will make the car very hard to turn in. But gives stability under acceleration and deceleration. A spool at the rear will give a lot of steering.

Shock position:



The RDX Phi allows 4 front and 5 rear top fixing positions for the shock absorbers.

More Inclined: Has a more progressive smoother feel. More lateral grip. Having all shocks inclined makes the car very easy to drive, and it feels like the car has more grip, but it's not always fast...

Less Inclined (more vertical): More direct feel. Less lateral grip. (site-bite)

Front more inclined than rear: Steering feels very smooth. A little more mid-corner steering. Mounting the rear shocks very much upright can result in the rear end feeling unpredictable. It also makes the rear end jitter in turns.

Rear more inclined than front: Feels aggressive turning in, but for most of time the car has a little less steering. The car has a lot of side traction in the rear, and the turn radius isn't very tight.

Wishbones:

It's possible to use different kind of Wishbones:

Medium 5 : **Front (#79040) - Rear (#79050)**

Hard 35 : **Front (#79060) - Rear (#79070)**

X-Hard 80 : **Front (#79080) - Rear (#79090)**

Softer Wishbones can add a little more grip because they flex a bit more.

Harder Wishbones can be used if there is plenty of traction but suspension setup will be more important. Suspension setup feels better and more consistent.

Tire Additives:

Corally tire additives come in a large can (150ml) complete with brush for easy application.

TC-1: Classic formula for use on foam tires on carpet tracks.

TC-2: JACK THE GRIPPER is odorless and EFRA legal. This is the most popular choice for use on rubber and foam tires on any surface.

TC-3: Formulated for outdoor use.

TC-4: CARPET JACK is upgraded Jack The Gripper specially formulated to provide maximum grip for rubber tires on carpet tracks - odorless.

TC-5: ASPHALT JACK is specially formulated to provide maximum grip for rubber tires on tarmac. - odorless. Note: Using tire warmers will improve results.

- **TC-1 (#13788)** Formulated for foam tires on carpet

- **TC-2 (#13779)** Jack the Gripper (Minimum Odor)

- **TC-3 (#13789)** Unpleasant Smell, Maximum Traction

- **TC-4 (#13790)** Carpet Jack

- **TC-5 (#13792)** Asphalt Jack

Setup Sheet:

There's a setup sheet included in this manual. Set up your RDX Phi 09 with the standard settings at right, then deviate from them in response to your track conditions and driving style, as noted below.

For best result, make only one setup change at a time, testing it before making another change. Make a copy of the setup sheet included in this manual to help keep track of your changes. Before make any changes to standard setting, make sure you can get around the track without crashing. None of your setup changes will work if you cannot stay on the track. Your goal is consistent lap times. Inconsistent lap times may indicate poor control. When you have consistent lap times, then make changes to your car. If the change results in a faster lap, then mark the change in your setup sheet. If performance is worse, then revert to previous setup and try another change. Fill out your setup sheet thoroughly when you are satisfied with it and file it away. It can be a practical guide for future track lay-outs and conditions you encounter. Always keep in mind that your car stays in balance. Too much difference in front and rear setup can make the car feel unpredictable.

We at Team Corally wish you best luck and see you at the track!

Contact:

Corally RIC BV
Ploegstraat 49
3319 LG Dordrecht
Holland

<http://www.corally.com>
e-mail: team@corally.com
Fax: (+31) 78 621 26 89



Driver: _____

Track / City: _____

HIGH PERFORMANCE 1:10 ELECTRIC TOURING CAR

SETUP SHEET

Event: _____ Date: _____

Front

Caster _____ Downstops _____ mm Oil _____ WT

Toe-out _____ Anti-roll bar _____ Piston _____

Camber _____ Front width _____ mm Rebound _____

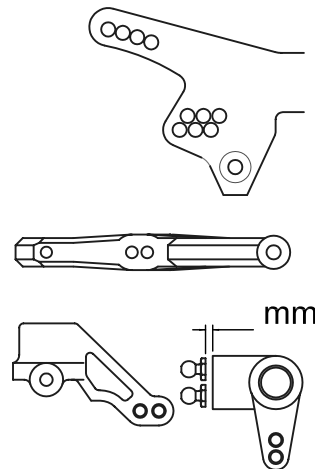
Ride Height _____ Front drive _____ Spring _____ lbs

Wishbone _____ Front pulley _____ Shock tower _____

Wheelbase _____ Steering _____ Steering block _____

F Mount _____ F Height shims _____ mm F WB shims _____ mm

R Mount _____ R Height shims _____ mm R WB shims _____ mm



Rear

Anti-squat _____ Downstops _____ mm Oil _____ WT

Toe-in _____ Anti-roll bar _____ Piston _____

Camber _____ Rear width _____ mm Rebound _____

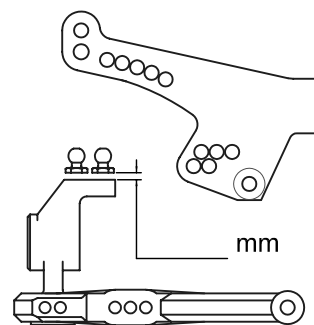
Ride Height _____ Center pulley _____ T Spring _____ lbs

Wishbone _____ Rear pulley _____ T Shock tower _____

Wheelbase _____ Upright _____ toe-in

F Mount _____ F Height shims _____ mm F WB shims _____ mm

R Mount _____ R Height shims _____ mm R WB shims _____ mm



Others

Tires _____ Tire additive _____

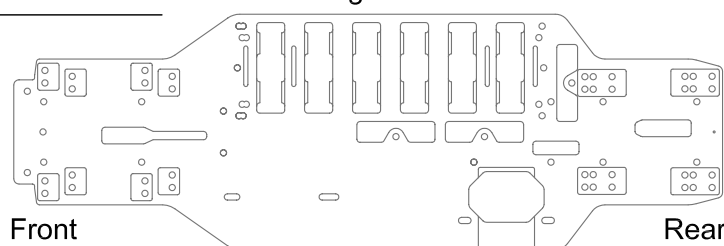
Motor _____ Motor setup _____ Spur / Pinion _____ T / _____ T

Radio _____ Servo _____ ESC _____

Body _____ Wing _____

Lead Weights _____ g

Weight balance



Track Conditions

Surface _____

Traction _____

Temp. _____

Notes _____

Race Comments

Main _____ Finish _____ Qual. Pos. _____ Time _____ Laps _____