SC10 4x4

SHORT COURSE

#90004 SC10 4X4 Kit
#90005 SC10 4X4 Lucas Oil RTR
#90006 SC10 4X4 Pro Comp RTR
#90007 SC10 4X4 Rockstar/Makita RTR

IFMAR WORLD CHAMPIONS 24 TIME

1:10 Scale Electric 4WD Off Road Race Truck Manual & Catalog

8/11

TEAM ASSOCIATED

Designed in California, USA

:: Introduction

Thank you for purchasing this Team Associated product. This assembly manual contains instructions and tips for building and maintaining your new SC10 4x4 Kit or RTR. Please take a moment to read through this manual to help familiarize yourself with these steps.

Team Associated, the only RC car company with 24 World Championships is proud to present the SC10 4x4!

Starting with a clean sheet of paper, Team Associated's Area 51 design engineers have created the ultimate four-wheel drive short-course racer, the SC10 4x4.
Its composite modular chassis design with sealed receiver box and removable ESC tray, combined with innovative features such as 13mm big bore shocks, a decoupled slipper clutch, and a hybrid belt/gear drive system, make the SC10 4x4 unlike any other short-course truck on the planet. In addition to these unique features, a long list of competition-proven components create an extremely high performance and durable state-of-the-art race truck.
It's not often a new platform is introduced that redefines a class. The engineers of Area 51 seized the opportunity to create the next legendary vehicle. Once you have driven the SC10 4x4 for yourself, we think you will agree - this is the 4x4 short course race truck that you have been waiting for!

We are continually updating and improving our designs; therefore, actual parts may appear slightly different than in the illustrations. New parts will be noted on supplementary sheets located in the appropriate parts bags. If you are building your 4x4, be sure to check each bag for these sheets before you start.

:: KIT Features

Features in the SC10 4x4 Kit:

- Unique dual gearbox drive train coupled together with a 5mm HD belt system with external tension adjustment.
- 32 pitch front and rear gearboxes with sealed fluid filled differentials.
- Decoupled center slipper clutch allows for front and rear wheel drive to slip independently, resulting in more traction and stability on bumpy track conditions.
- CVAs with captured drive pins and heavy duty 6mm alloy axles.
- 12mm hex drive KMC replica wheels front and rear with aggressive short course racing tires.
- Championship short course racing body (clear), with Team Associated decal sheet.
- 13mm blue aluminum big-bore threaded shocks with low friction X-ring seals.
- Composite modular tub chassis with Low-CG and Low Polar Moment design.
- Enclosed water-resistant receiver box, and removable ESC tray for easy clean up and maintenance.
- Ball bearing steering system with adjustable steering stops.
- All metric hardware and ball bearings throughout.
- Designed for maximum durability and performance.

:: RTR Features

Features in the SC10 4x4 RTR:

- Unique dual gearbox drive train coupled together with a 5mm HD belt system with external tension adjustment.
- 32 pitch front and rear gearboxes with sealed fluid filled differentials.
- Decoupled center slipper clutch allows for front and rear wheel drive to slip independently, resulting in more traction and stability on bumpy track conditions.
- CVAs with captured drive pins and heavy duty 6mm alloy axles.
- 12mm hex drive KMC replica wheels front and rear with aggressive short course racing tires.
- Painted, decaled, and pre-mounted Championship short course racing body.
- 13mm blue aluminum big-bore threaded shocks with low friction X-ring seals.
- Composite modular tub chassis with Low-CG and Low Polar Moment design.
- Enclosed water-resistant receiver box, and removable ESC tray for easy clean up and maintenance.
- Ball bearing steering system with adjustable steering stops.
- All metric hardware and ball bearings throughout.
- XP3-SS 2.4 GHz Radio system
- Water Resistant XP SC1200 speed control with Deans ® Ultra Plug ®
- S2008MG Metal Gear High-Torque steering servo

:: Required to complete your SC10 4X4 Kit:

- AA-size batteries for transmitter (x8) (#302, 303)
- R/C 2-channel surface frequency radio system (AE #29221)
- Battery pack (6 cell NiMh or 2 cell LiPo) (#628, 685, 709, 713, 714, 730-732)
- Battery charger (peak detection charger recommended) (#LRP41281, LRP41555) (#604 LiPo/LiFe, #610 NiCd/NiMH)
- Electronic speed control (#29143, LRP80905, LRP80955)
- R/C electric motor (550 sized recommended) (# 924, 925, 926, LRP50940, LRP50945, LRP50950)
- Steering servo * Some servos may require a wire extension! (# 29126, 29166, 29167)
- Pinion gear - (32 pitch or 48 pitch) - depending on motor type
- Tire Glue (#1597) • Paint for body

:: Required to complete your SC10 4X4 RTR:

- AA-size batteries for transmitter (x8) (#302, 303)
- Battery pack (6 cell NiMh or 2 cell LiPo) (#628, 685, 709, 713, 714, 730-732)
- Battery charger (peak detection charger recommended) (#LRP41281, LRP41555) (#604 LiPo/LiFe, #610 NiCd/NiMH)

:: Other Helpful Items

- Silicone Shock Fluid (Refer to catalog for complete listings)
- Body Scissors (AE Part # 1737)
- FT Hex Wrenches (AE Part # 1541, 1655)
- FT Nut Drivers (AE Part #1561, 1663-1668)
- Reamer / Hole Punch
- Needle Nose Pliers
- Calipers or a Precision Ruler
- FT 4mm Turnbuckle Wrench (#1112)
- Multi Tool (AE Part #7494)
- Green Slime shock lube (AE Part # 1105)
- Hobby Knife
- Wire Cutters
- Soldering Iron

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:: Table of Contents

:: Notes

This symbols indicates a special note or instruction in the manual.

There is a 1:1 hardware foldout page in the back of the manual. To check the size of a part, line up your hardare with the correct drawing until you find the exact size. Each part in the foldout has a number assigned to it for ordering replacement parts.

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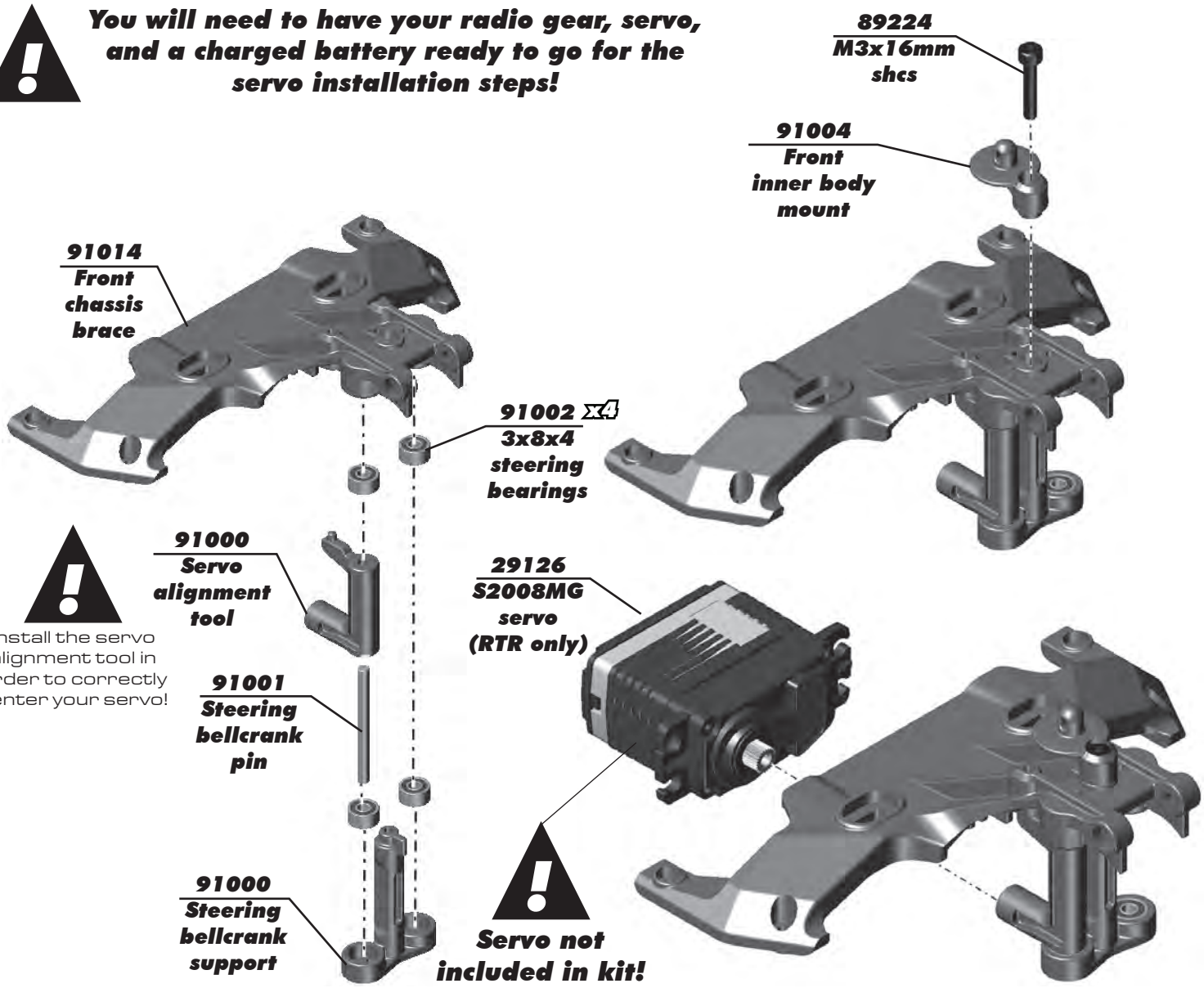
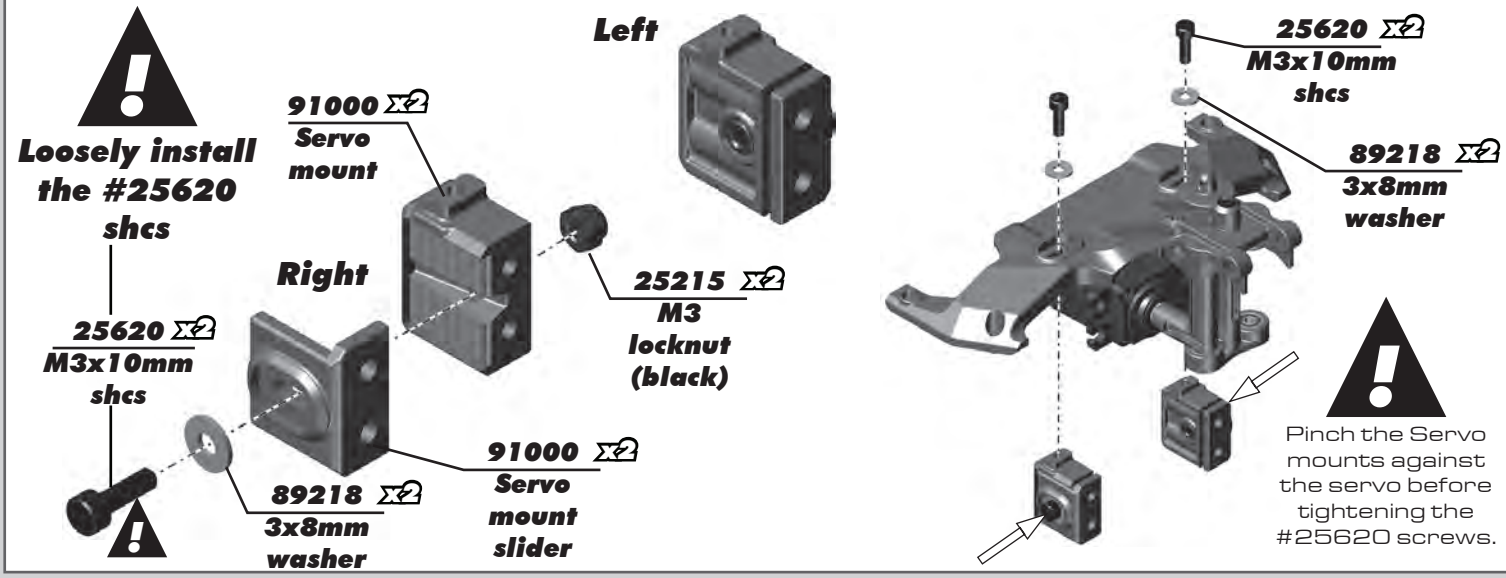
:: Servo Install - Bag A

You will need to have your radio gear, servo, and a charged battery ready to go for the servo installation steps!

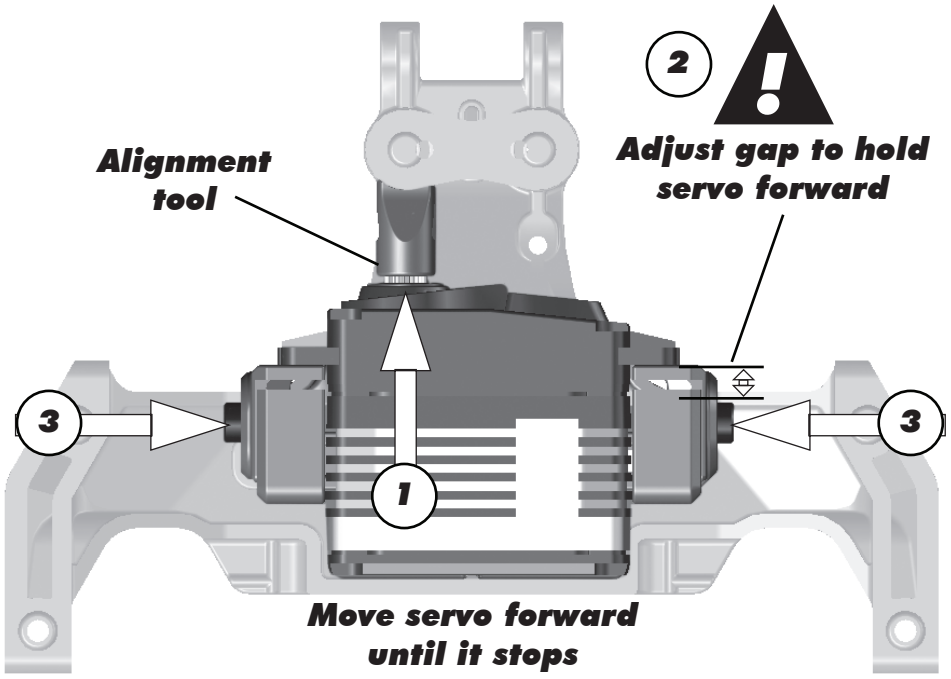


:: Servo Install (cont.) - Bag A

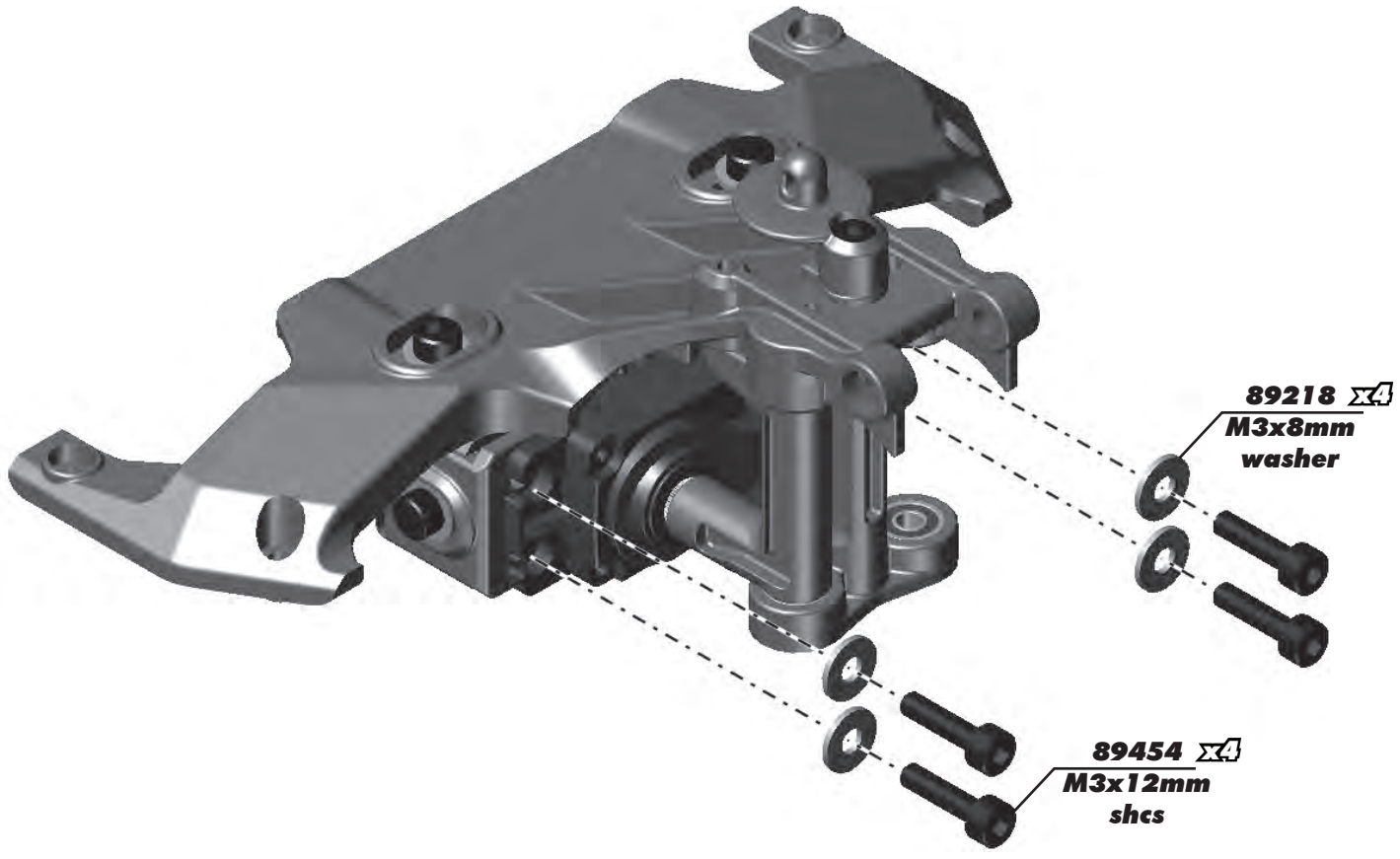


:: Servo Install (cont.) - Bag A

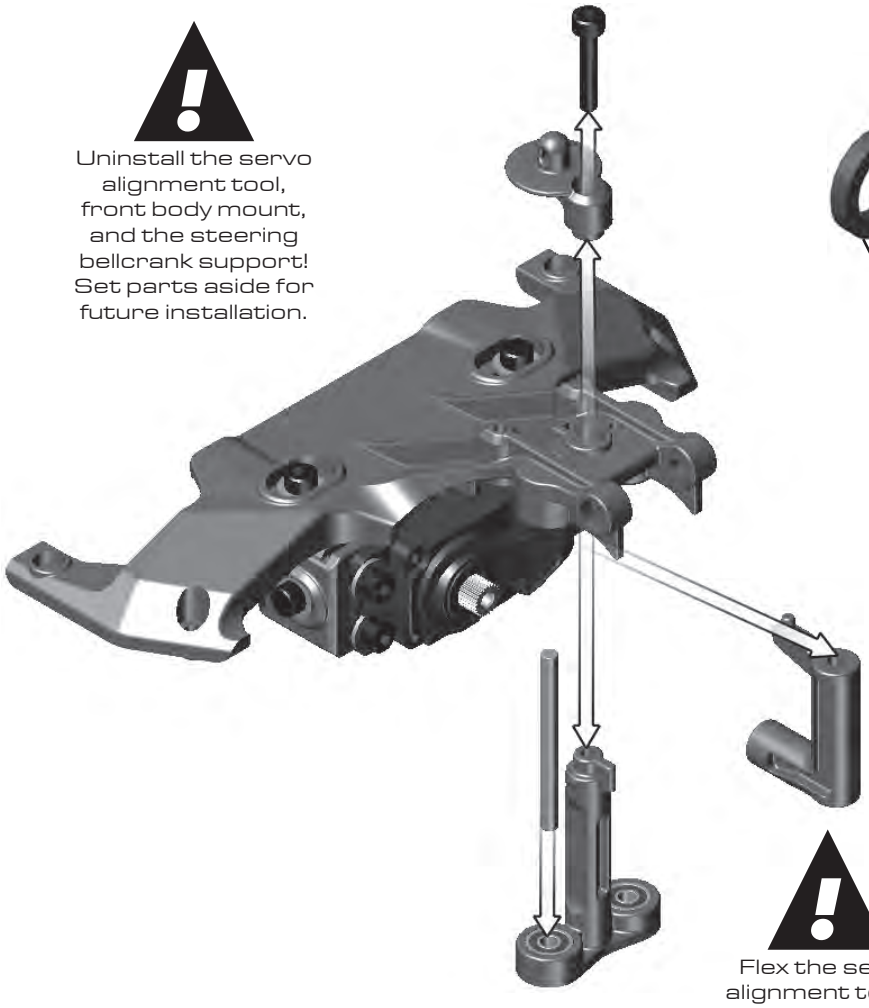
1. Push the servo forward into the alignment tool.
2. Adjust the servo sliders forward to bolt the servo into place.
3. Tighten the slider screws from the side.



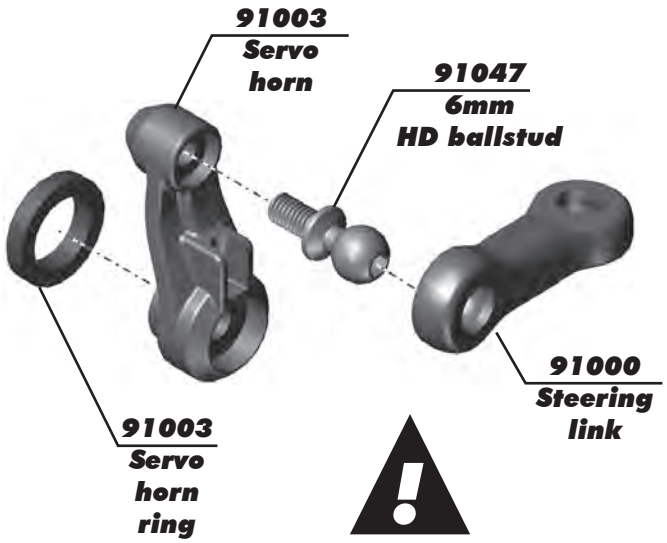
:: Servo Install (cont.) - Bag A



:: Servo Install (cont.) - Bag A



Uninstall the servo alignment tool, front body mount, and the steering bellcrank support! Set parts aside for future installation.



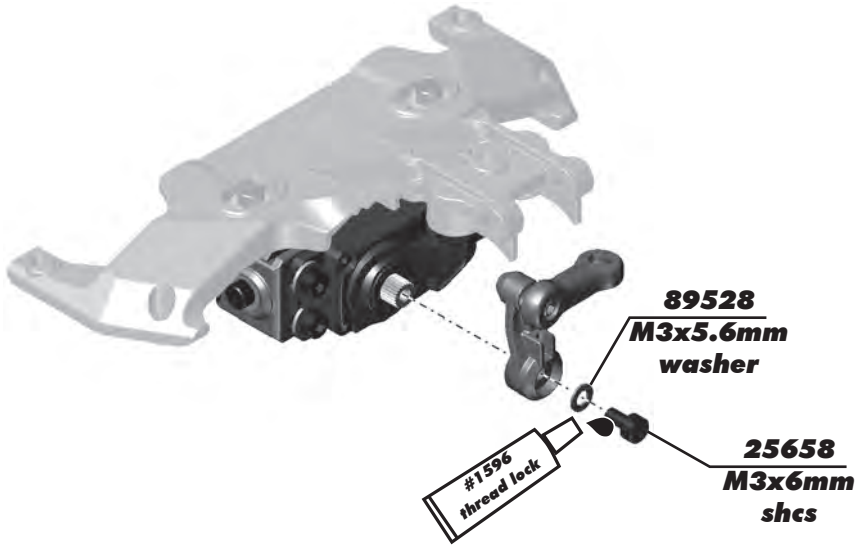
There are multiple servo horns included in your kit. Make sure you install the correct one for your brand servo!

Flex the servo alignment tool in order to remove!

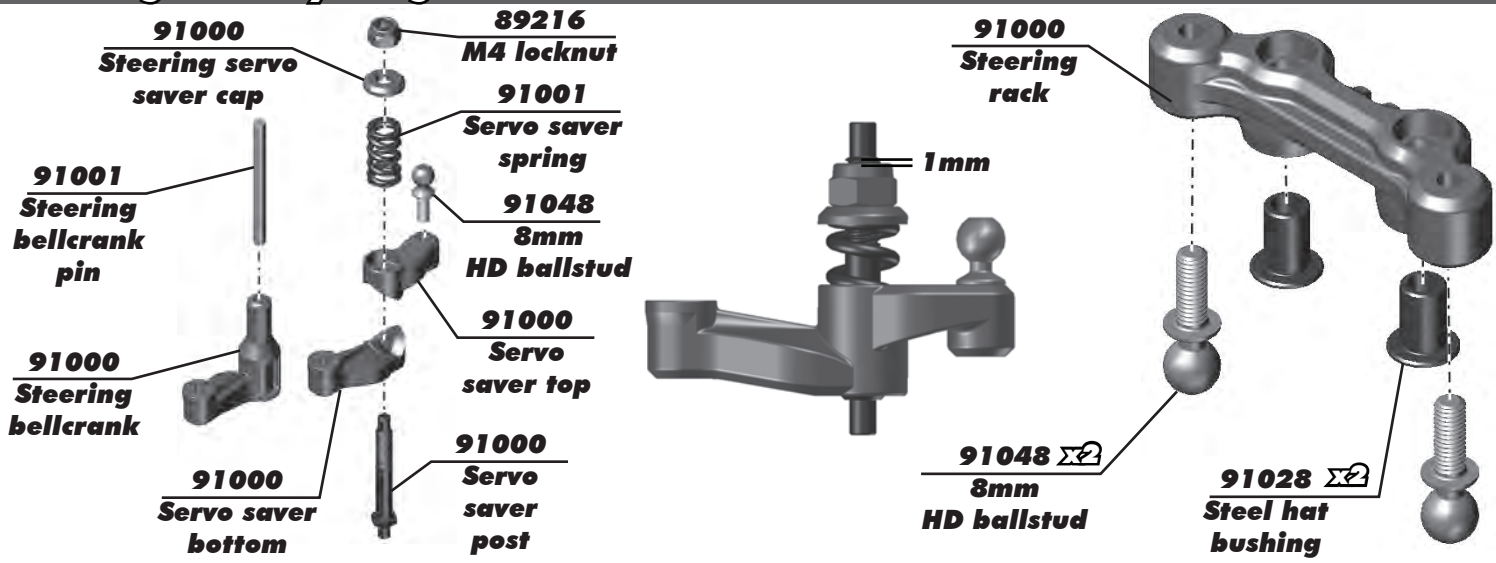
A = JR
Airtronics
Sanwa
F = Futaba, Savox
H = Hitec

:: Servo Install (cont.) - Bag A

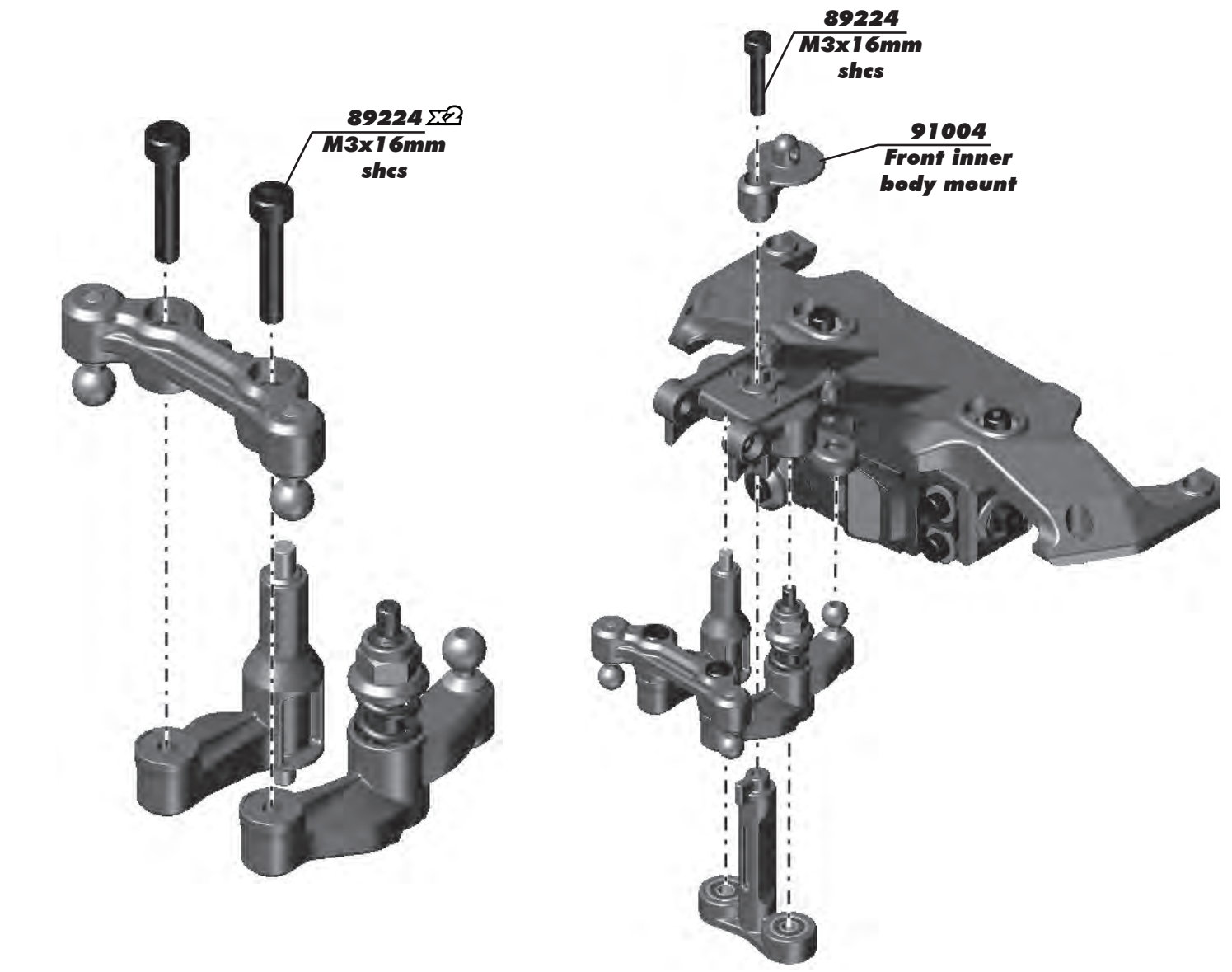
Power on your radio, and center your servo before installing the servo horn!



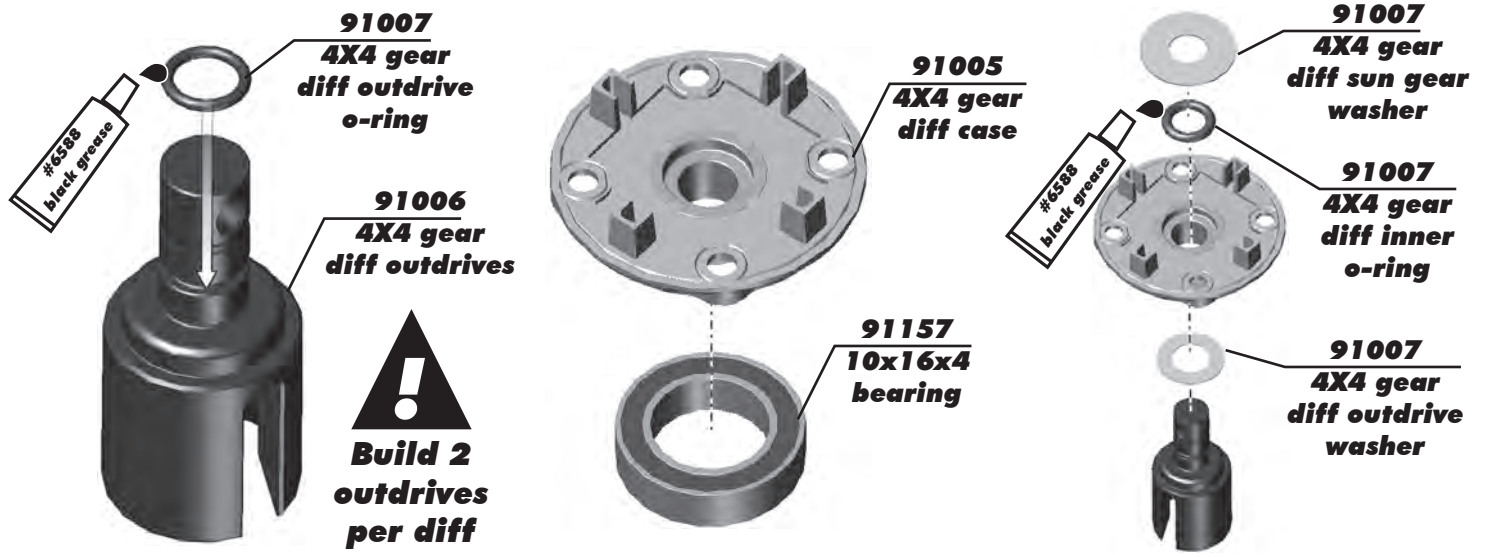
:: Steering Assembly - Bag A



:: Steering Assembly (cont.) - Bag A



:: Differential Assembly - Bag B



:: Differential Assembly (cont.) - Bag B

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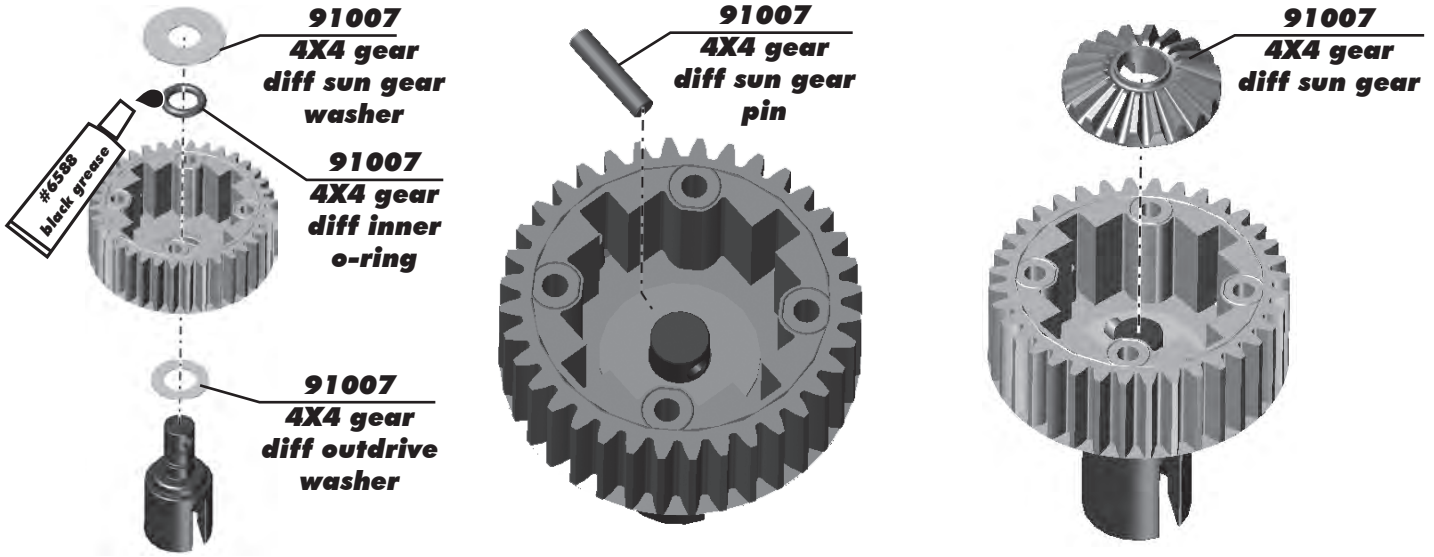
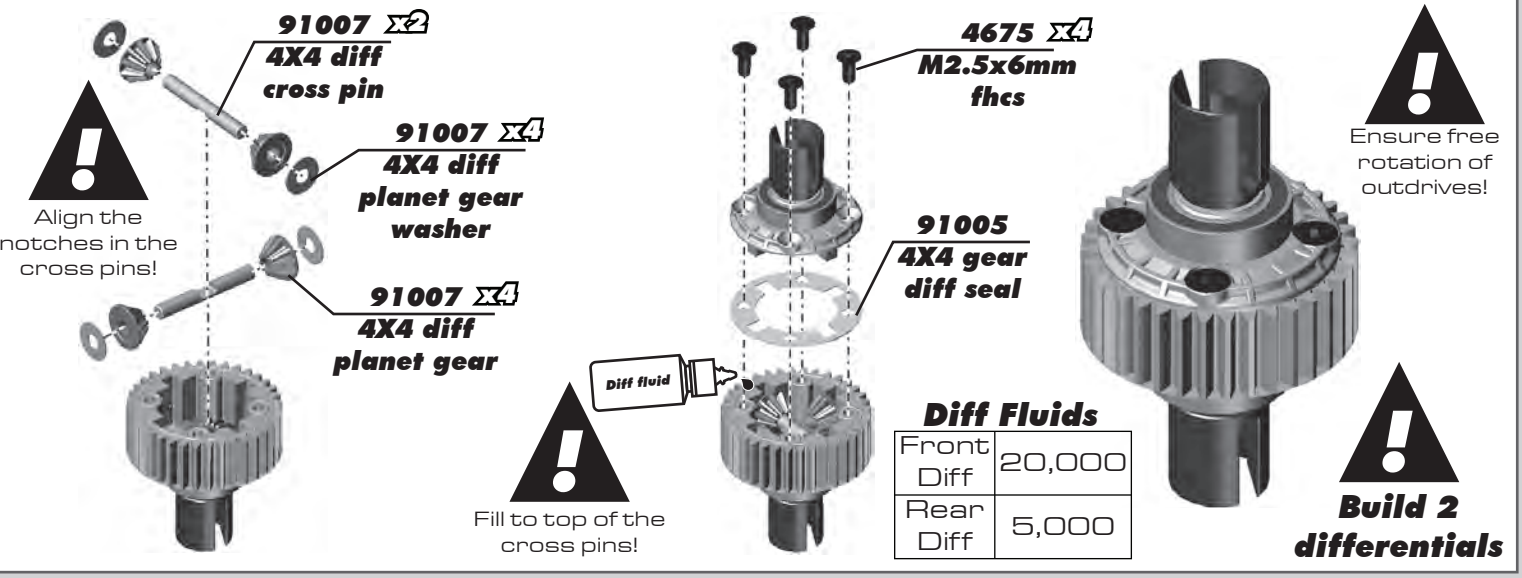


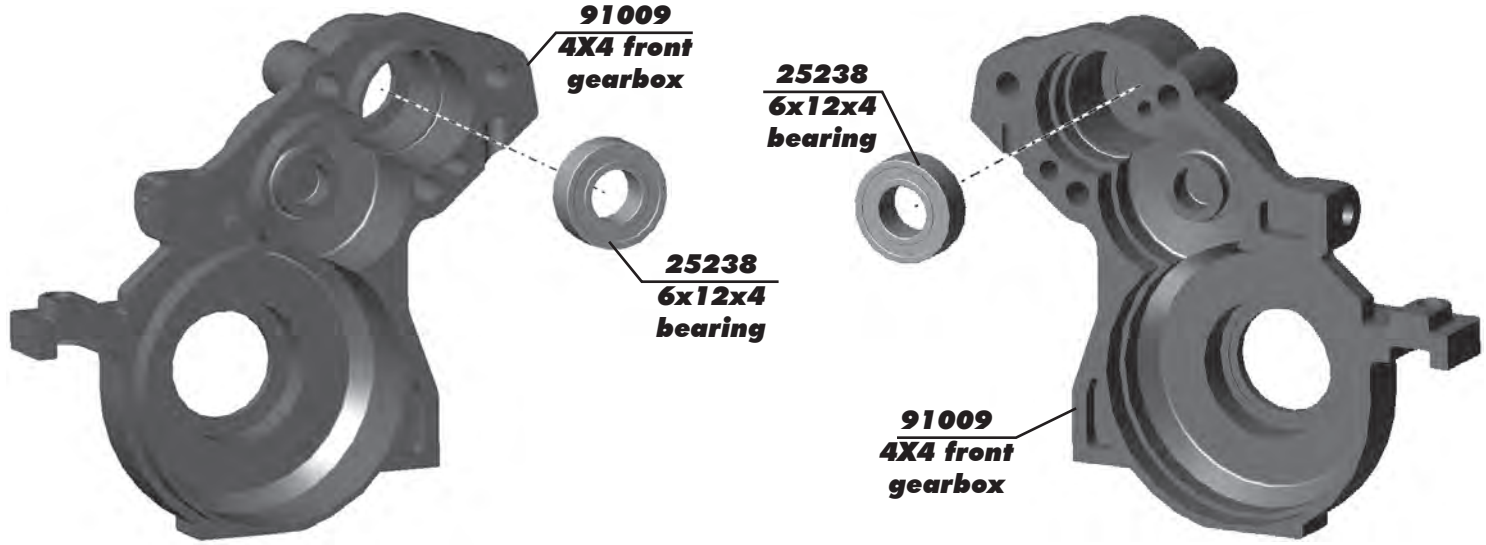
:: Differential Assembly (cont.) - Bag B



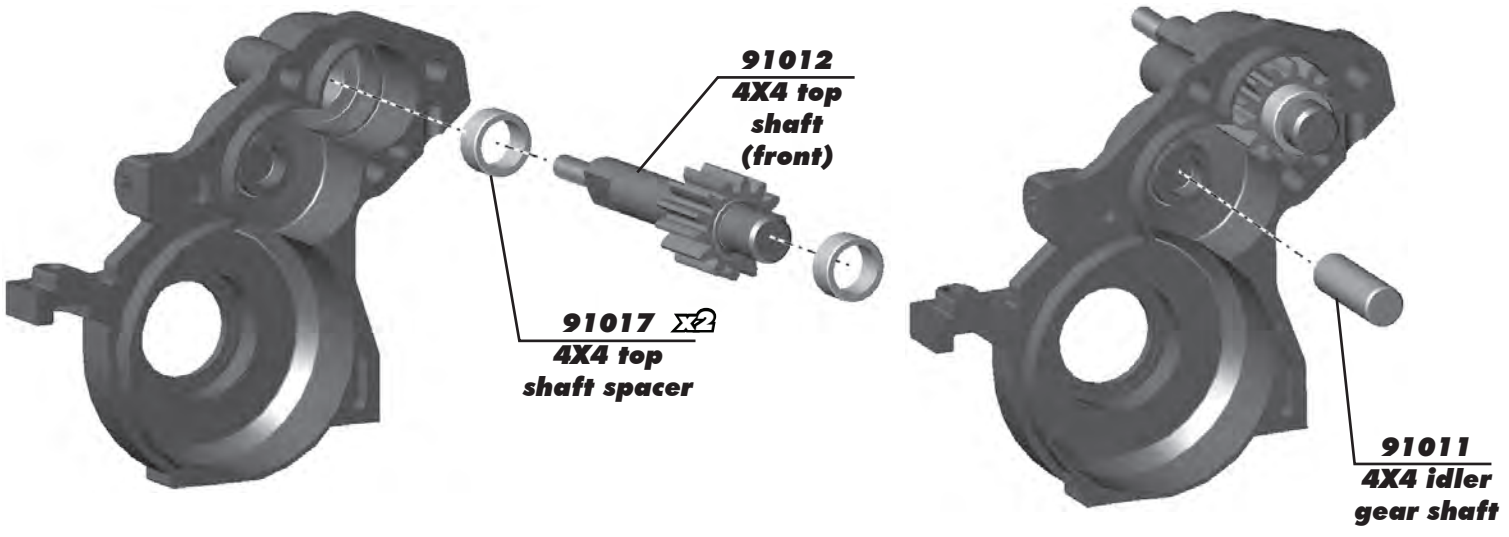
Diff Fluids

Front Diff	20,000
Rear Diff	5,000

:: Front Gearbox Assembly - Bag C

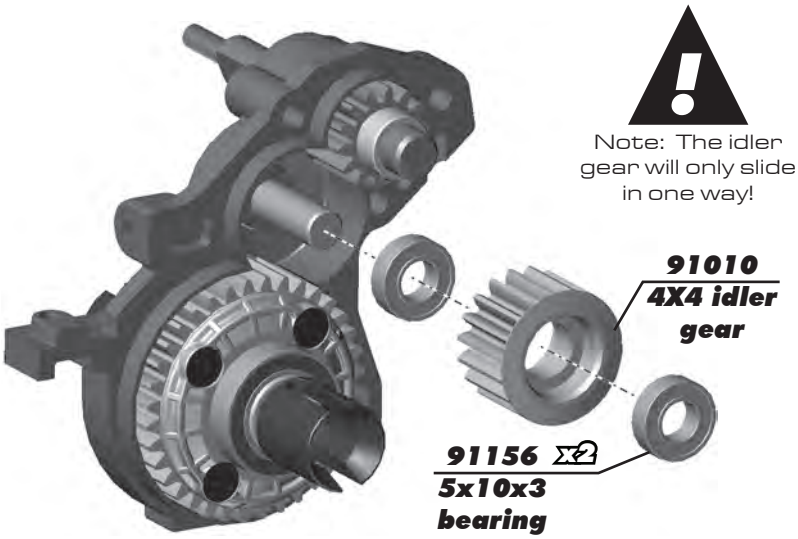


:: Front Gearbox Assembly (cont.) - Bag C

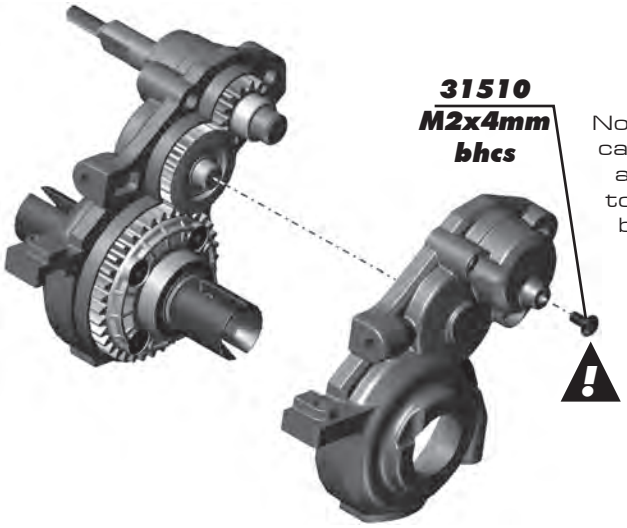


:: Front Gearbox Assembly (cont.) - Bag C

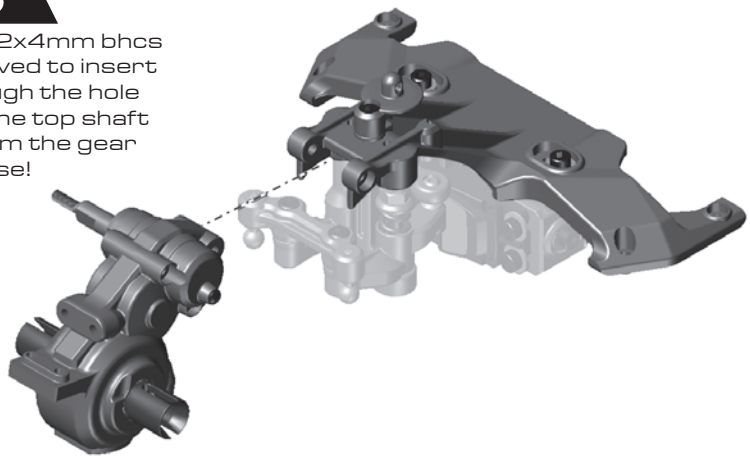
Install the gear diff with the screw heads facing as shown!



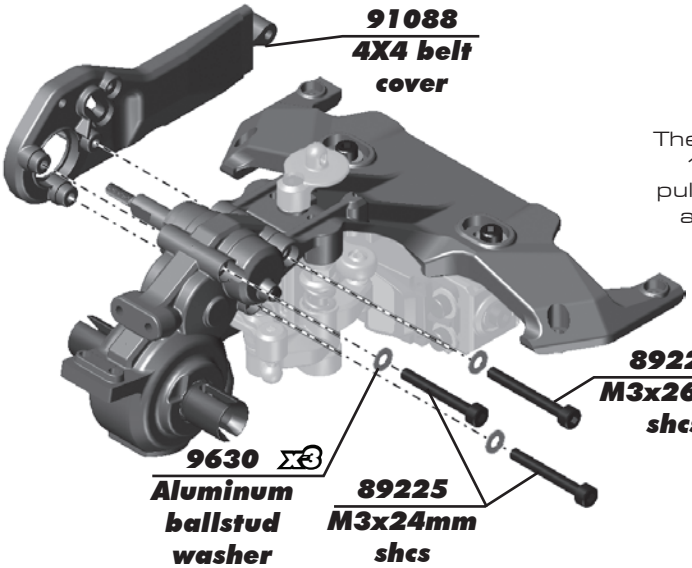
:: Front Gearbox Assembly (cont.) - Bag C



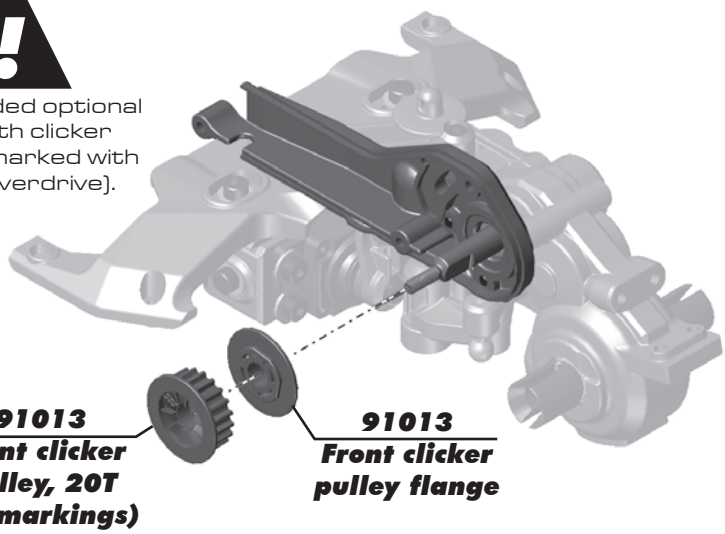
Note: The M2x4mm bhcs can be removed to insert a tool through the hole to remove the top shaft bearing from the gear case!



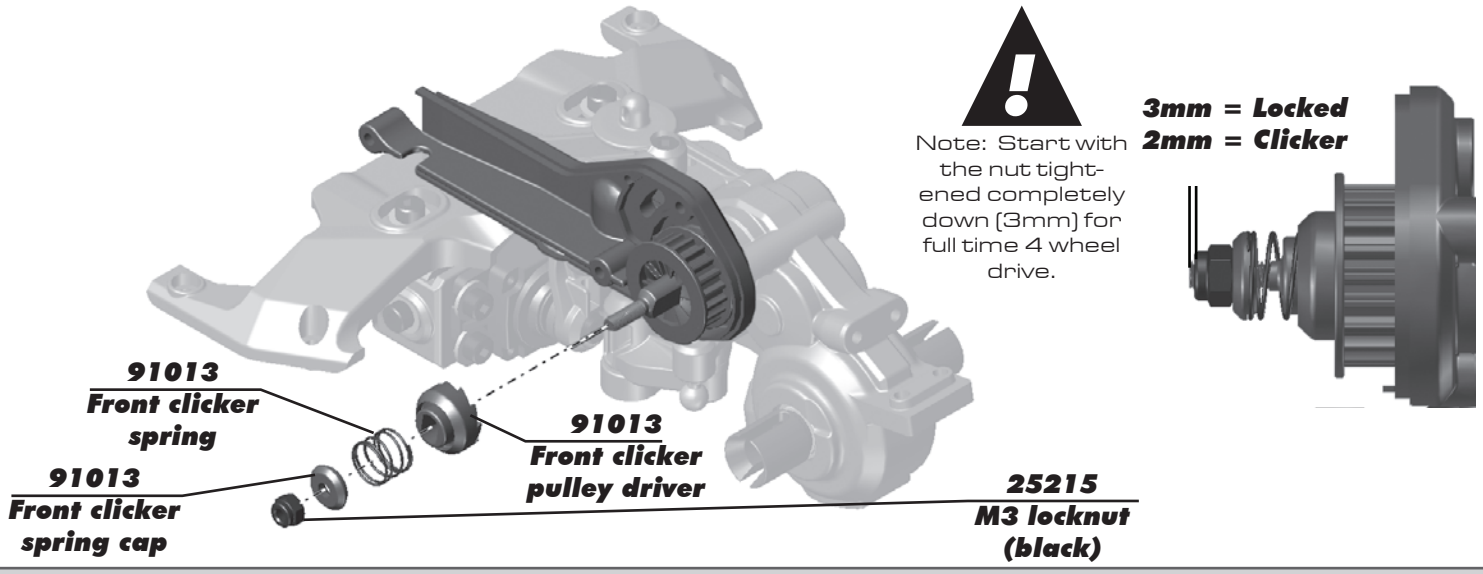
:: Front Gearbox Assembly (cont.) - Bag C



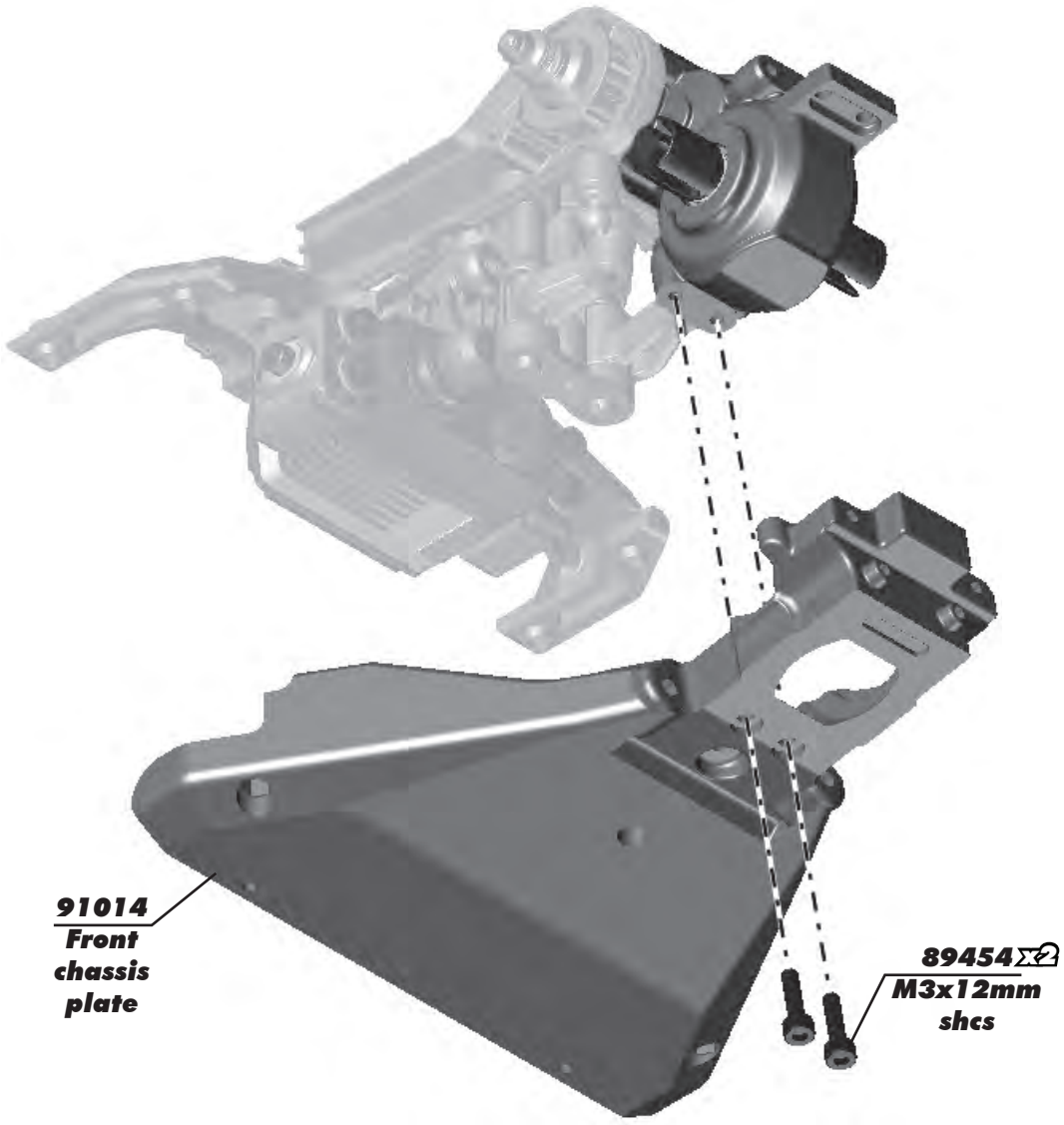
The included optional 19 tooth clicker pulley is marked with a "O" (overdrive).



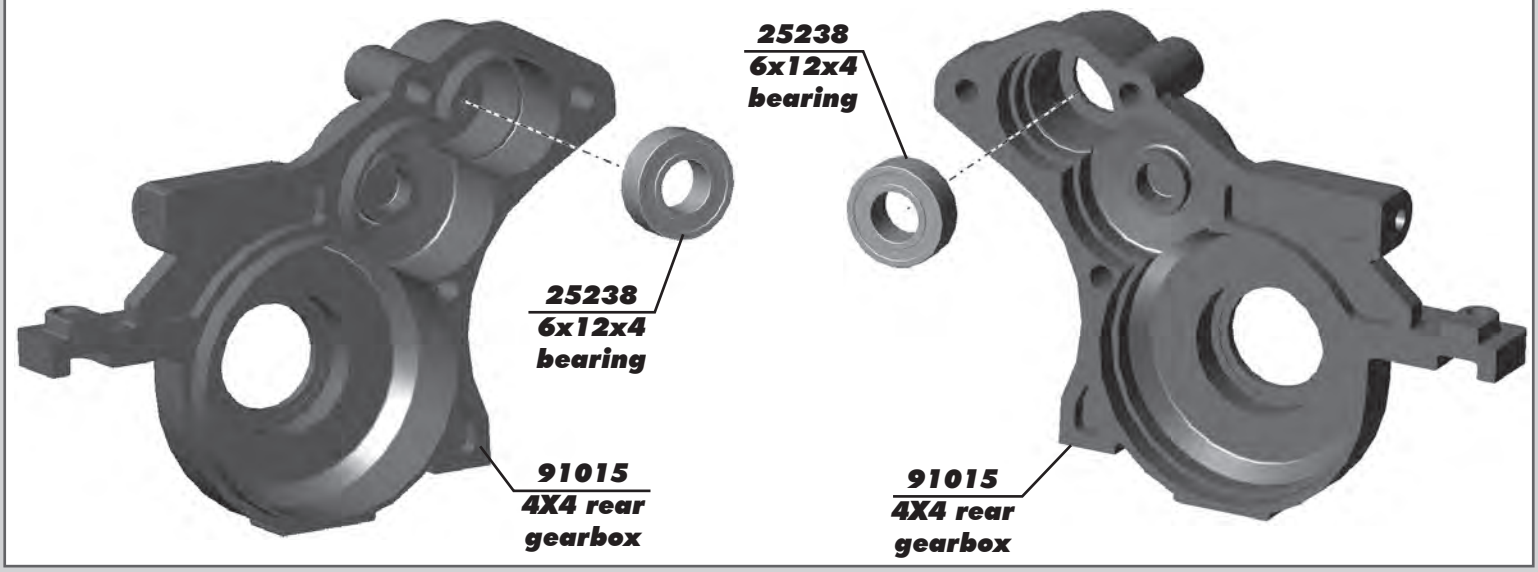
:: Front Gearbox Assembly (cont.) - Bag C



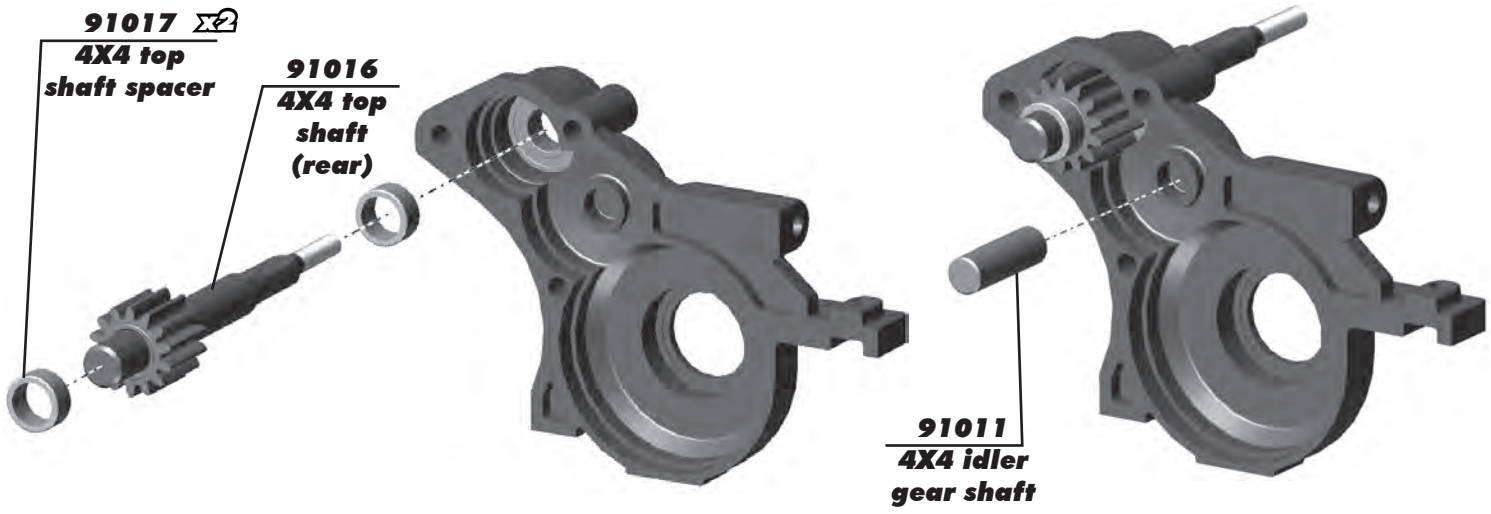
:: Front Gearbox Assembly (cont.) - Bag C



:: Rear Gearbox Assembly - Bag D



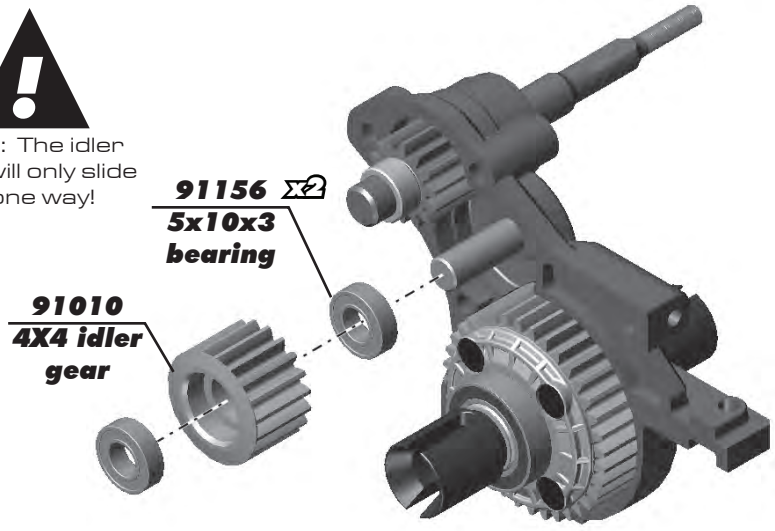
:: Rear Gearbox Assembly (cont.) - Bag D



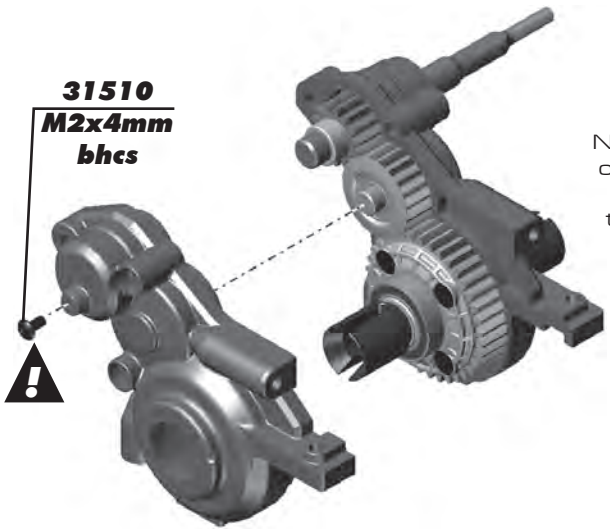
:: Rear Gearbox Assembly (cont.) - Bag D

Install the gear diff with the screw heads facing as shown!

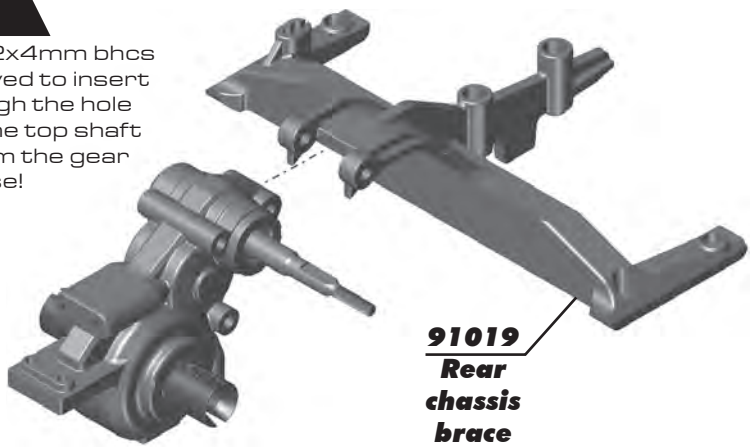
Note: The idler gear will only slide in one way!



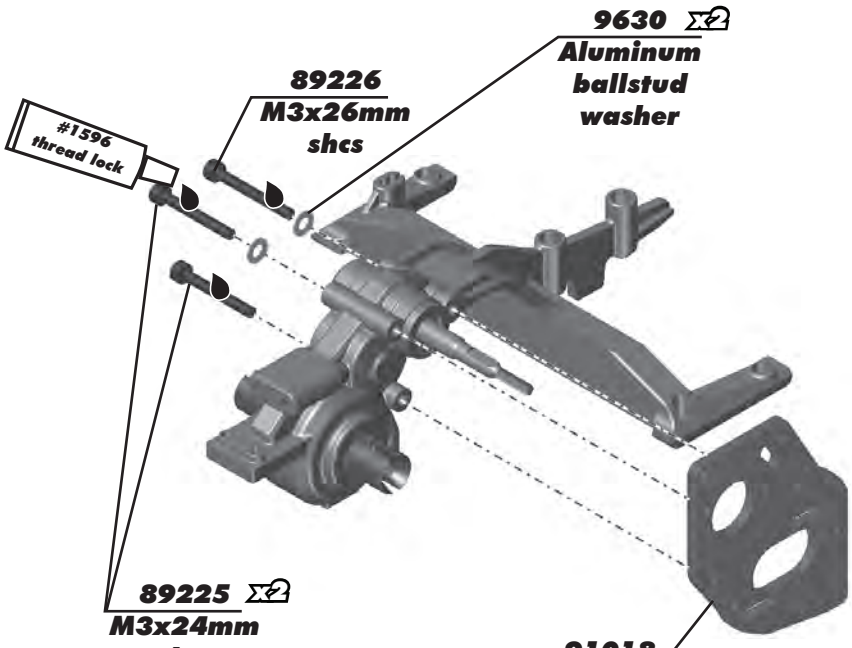
:: Rear Gearbox Assembly (cont.) - Bag D

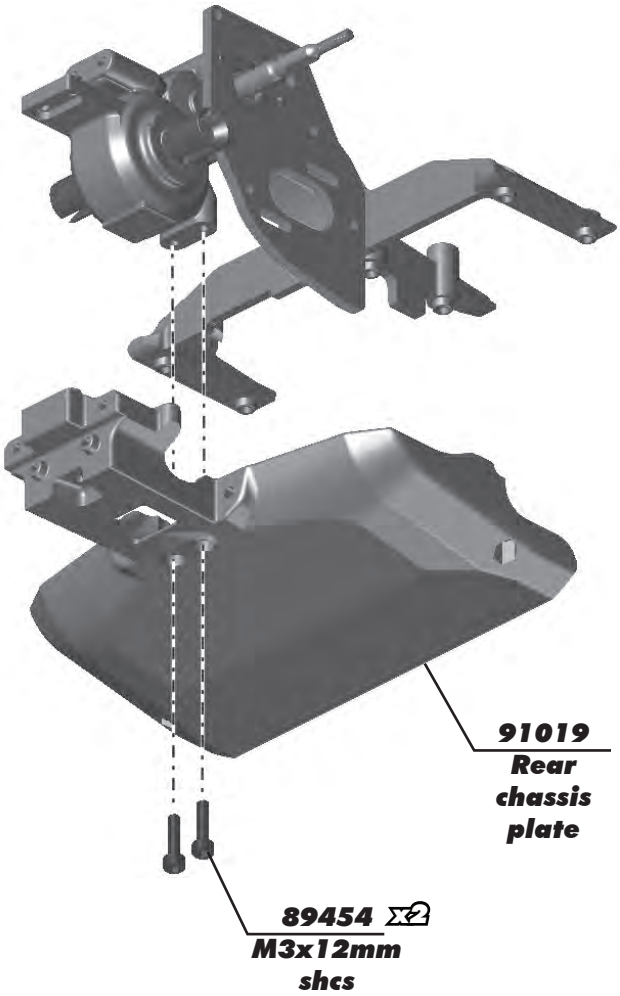


Note: The M2x4mm bhcs can be removed to insert a tool through the hole to remove the top shaft bearing from the gear case!

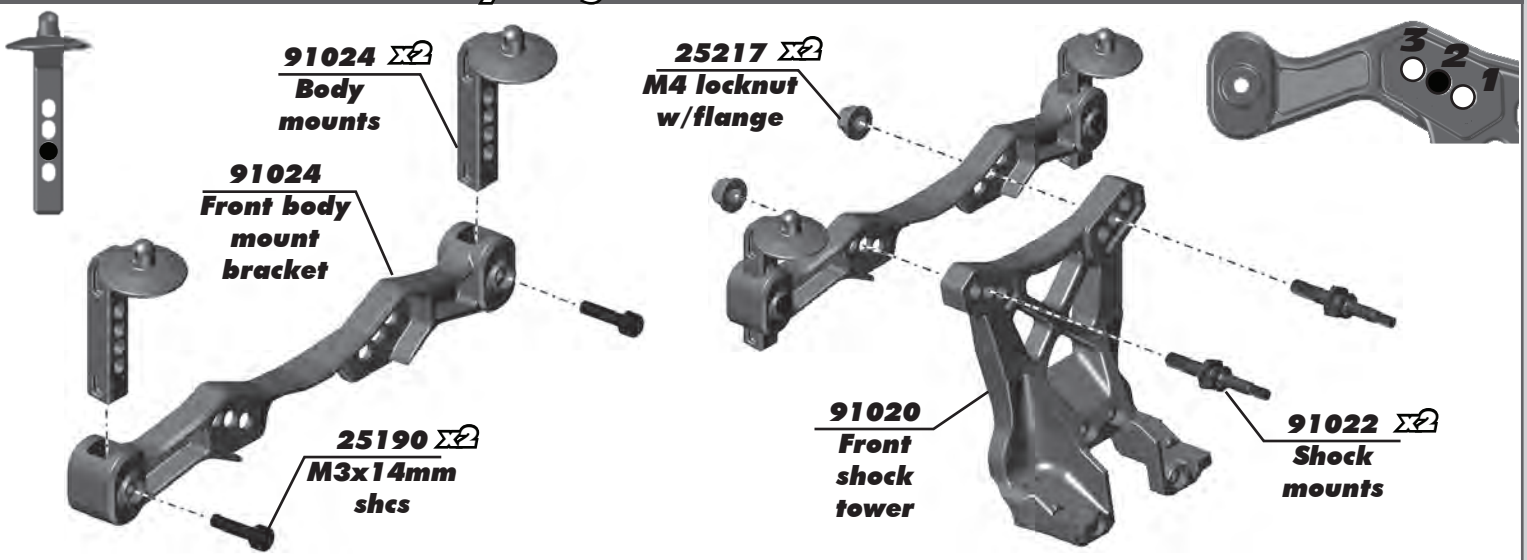


:: Rear Gearbox Assembly (cont.) - Bag D

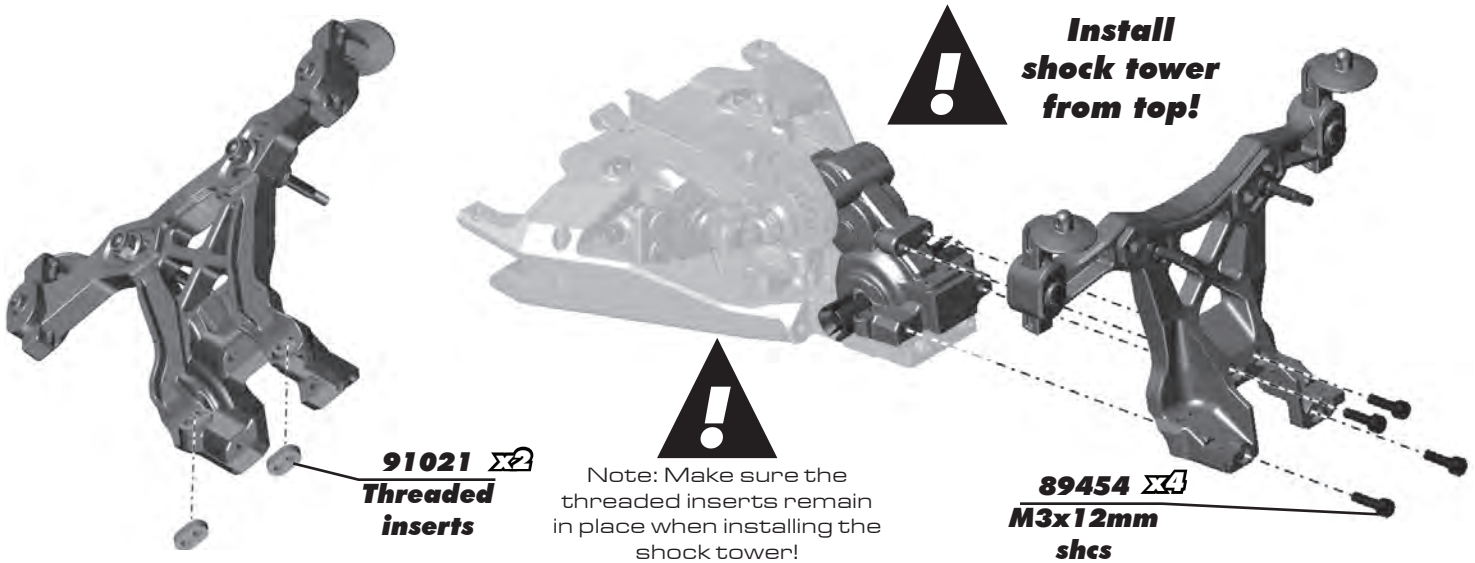




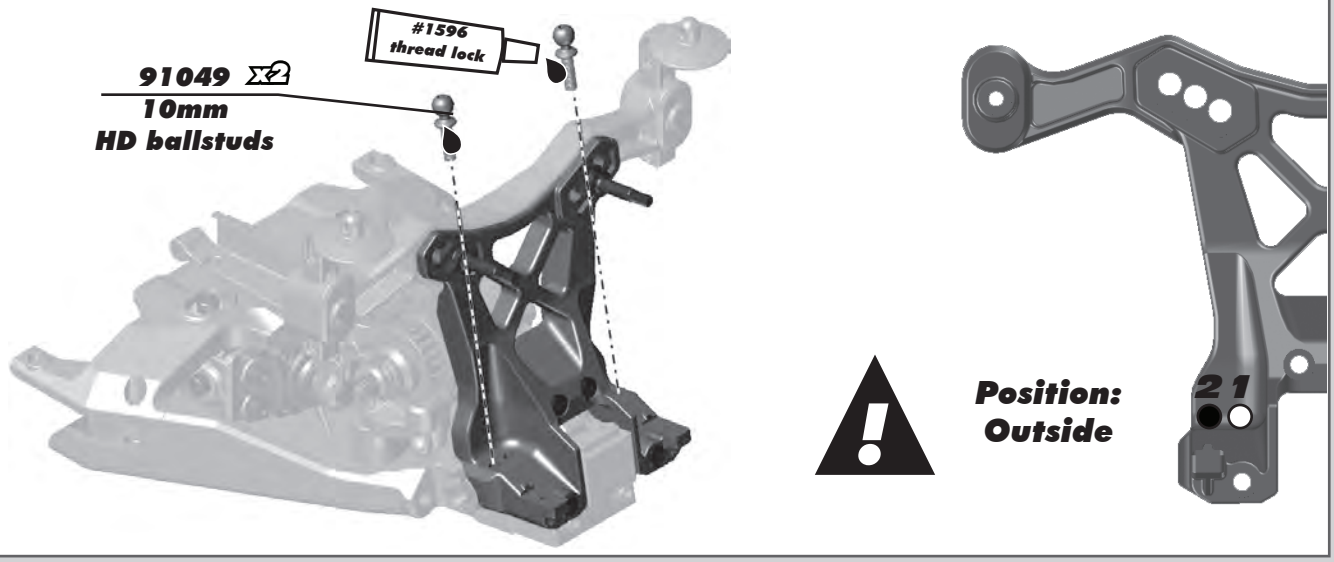
:: Front Shock Tower Assembly - Bag E



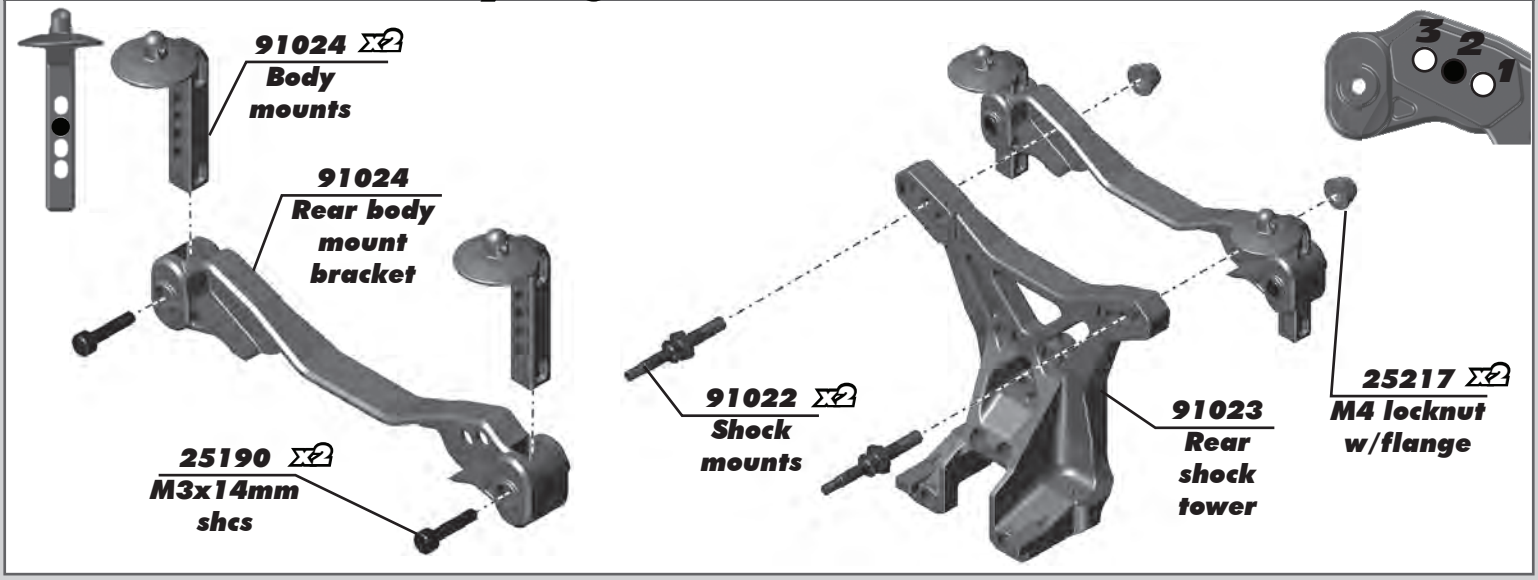
:: Front Shock Tower Assembly (cont.) - Bag E



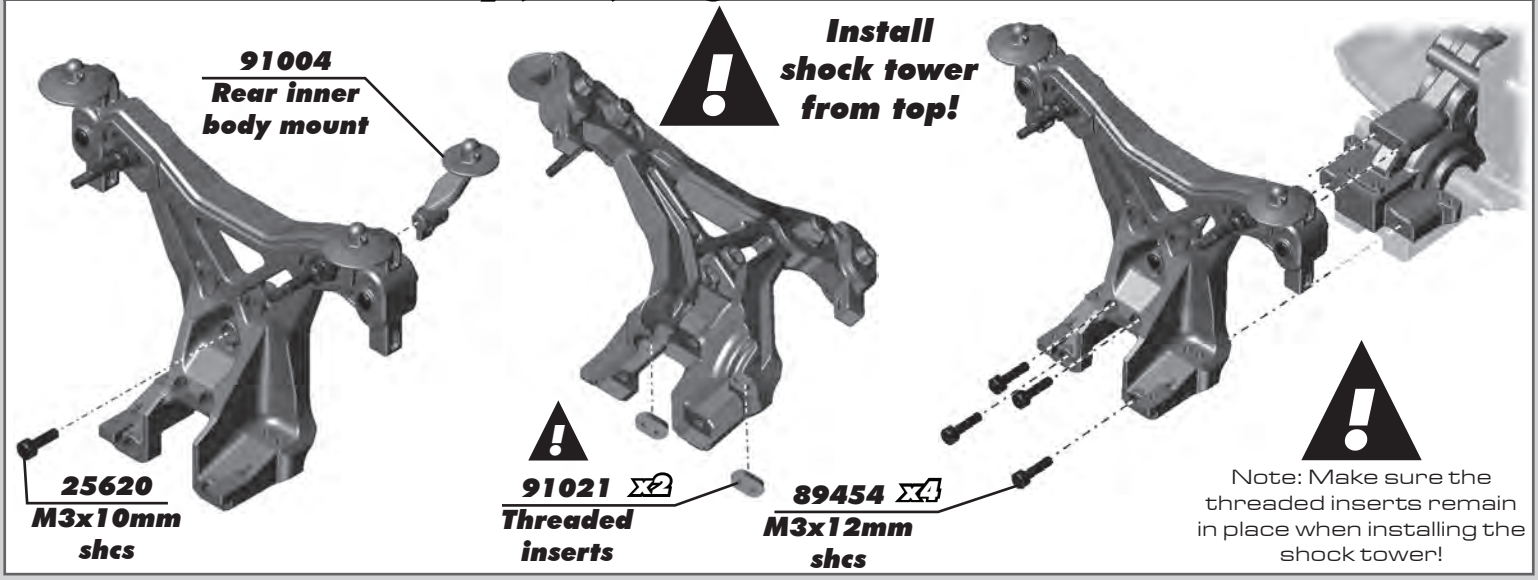
:: Front Shock Tower Assembly (cont.) - Bag E



:: Rear Shock Tower Assembly - Bag F



:: Rear Shock Tower Assembly (cont.) - Bag F



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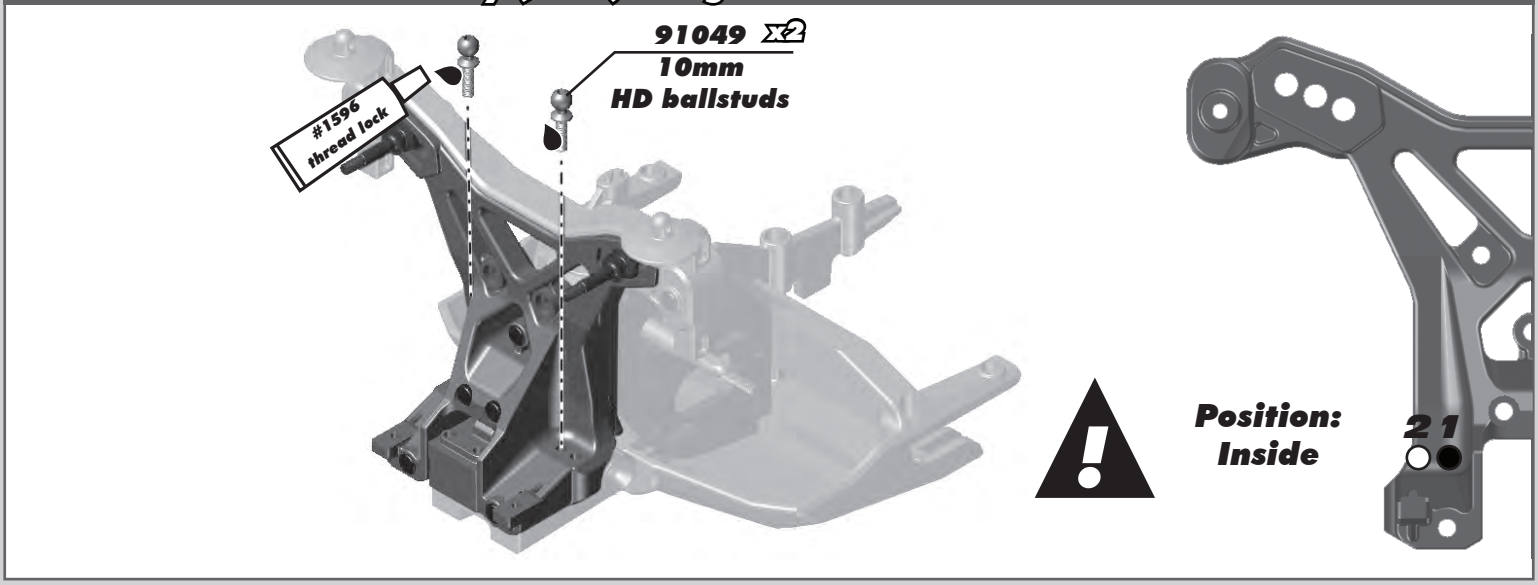
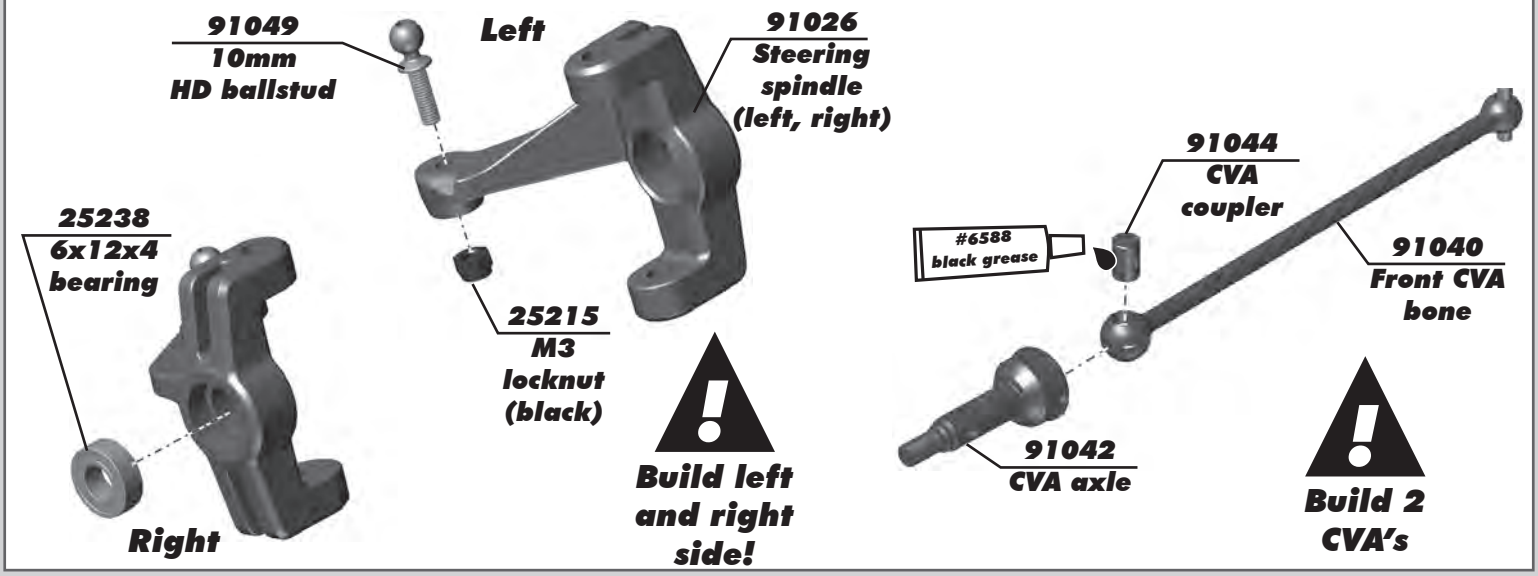


:: Front Suspension Assembly - Bag G



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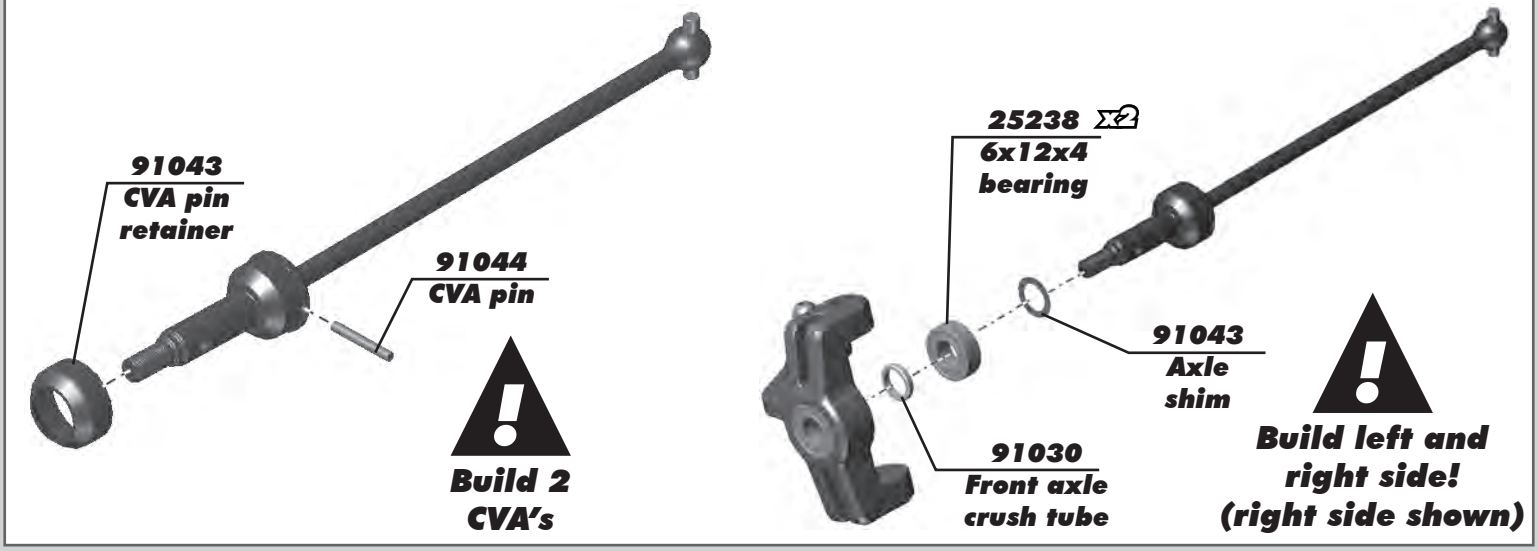
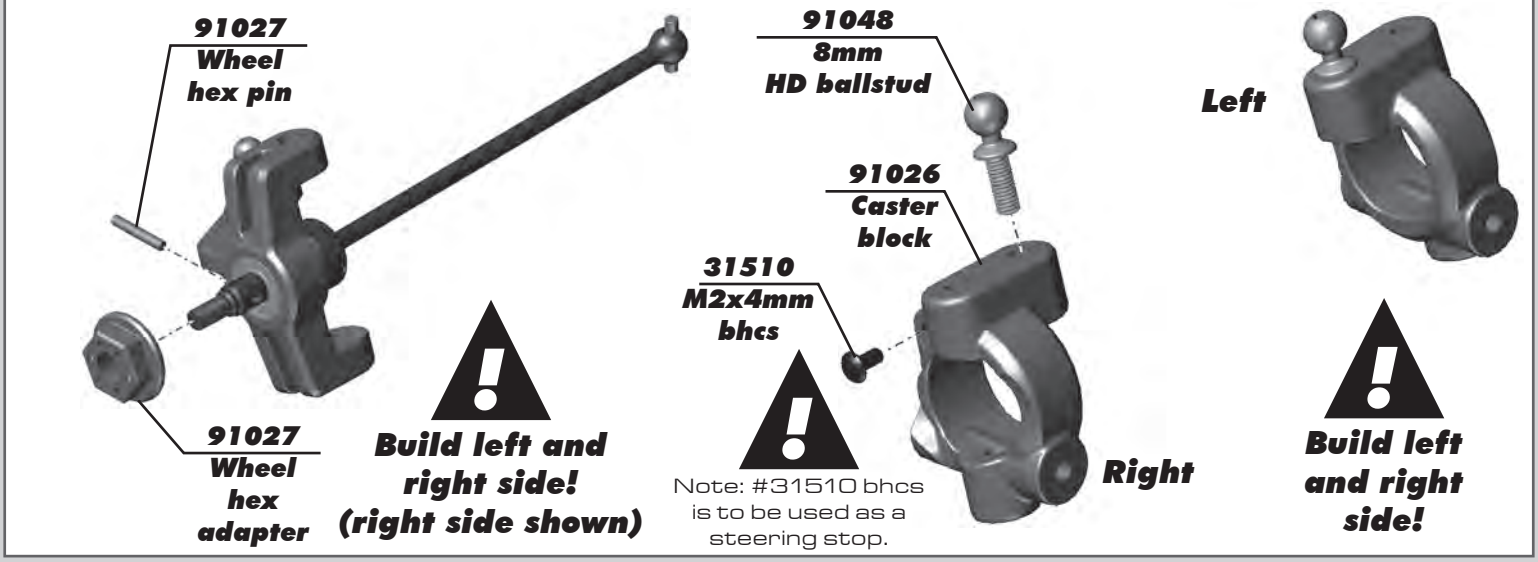
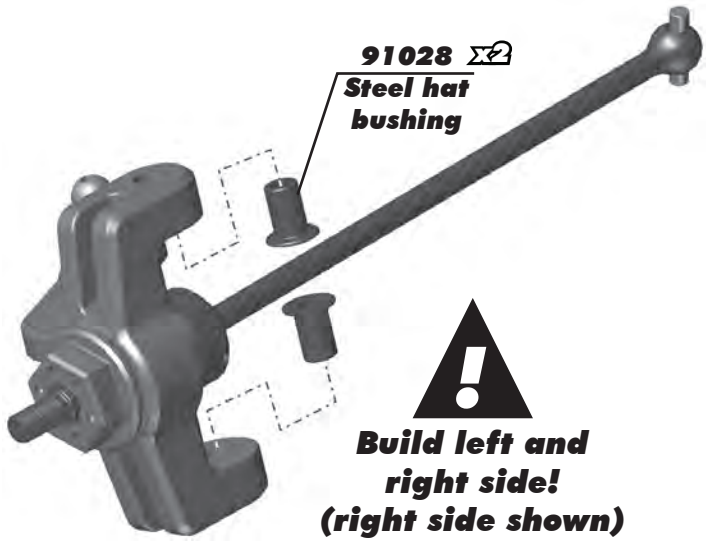
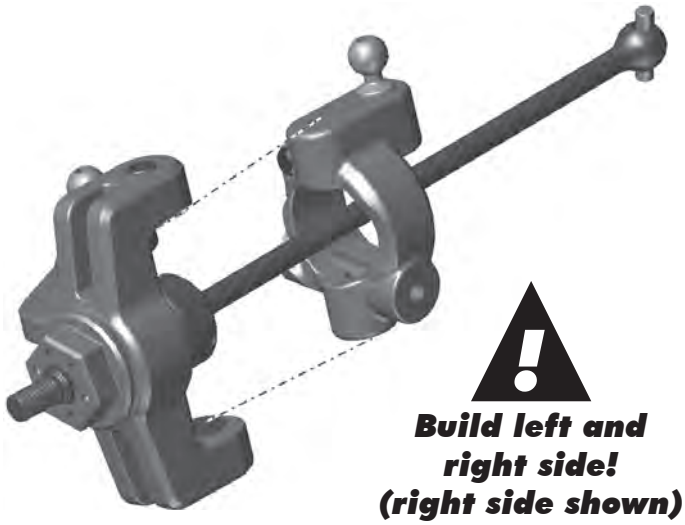


:: Front Suspension Assembly (cont.) - Bag G

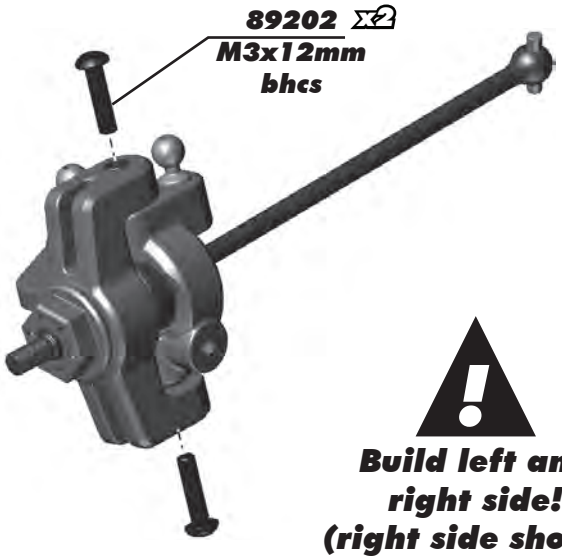


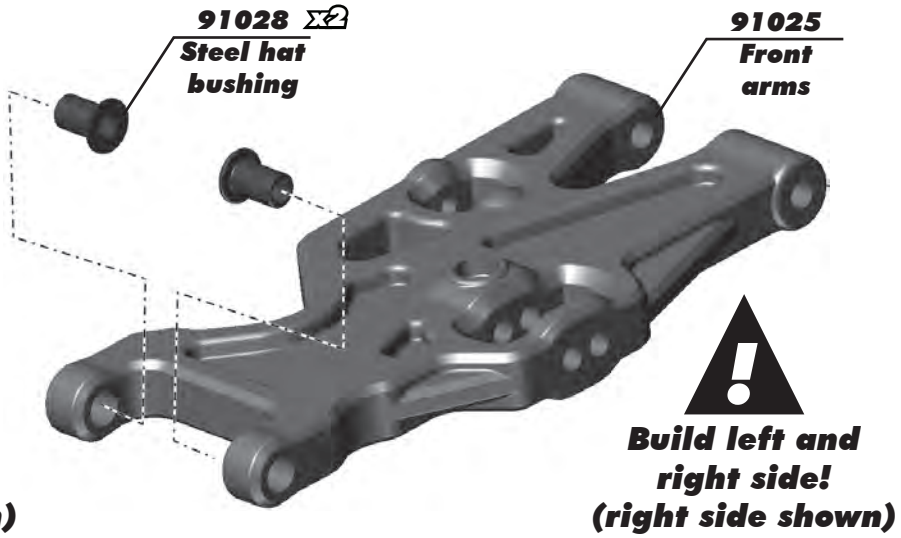
:: Front Suspension Assembly (cont.) - Bag G



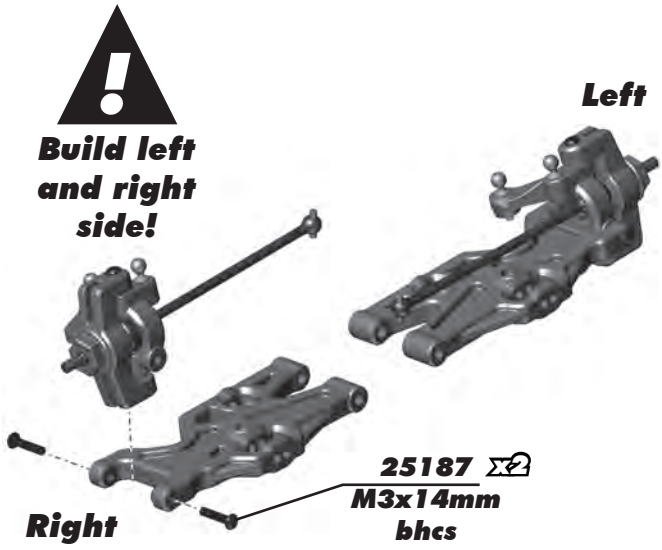


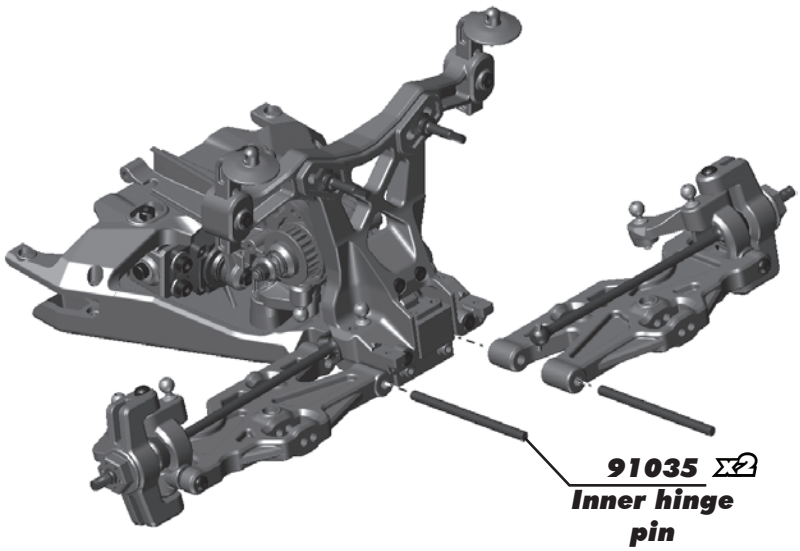
:: Front Suspension Assembly (cont.) - Bag G



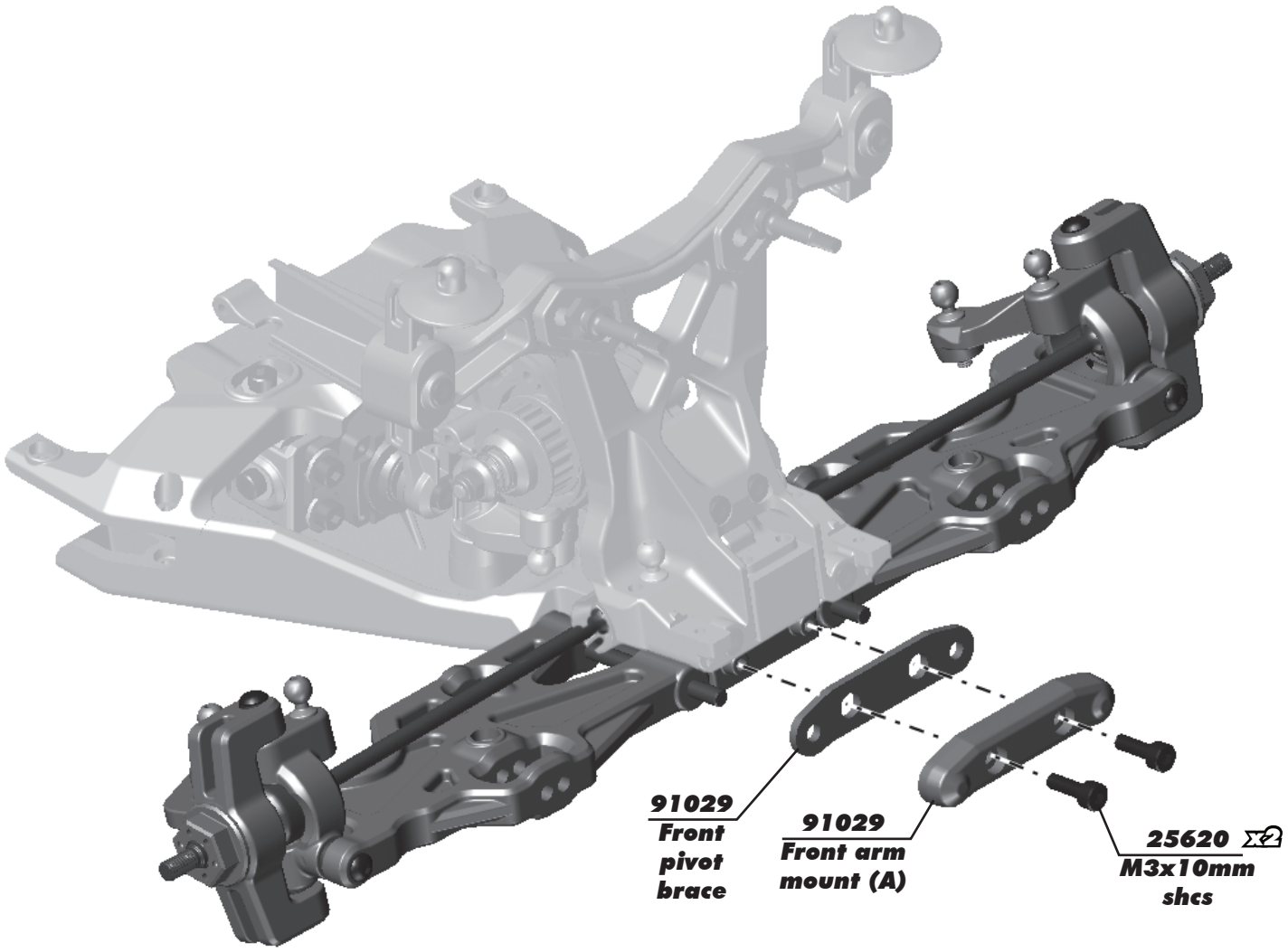


:: Front Suspension Assembly (cont.) - Bag G



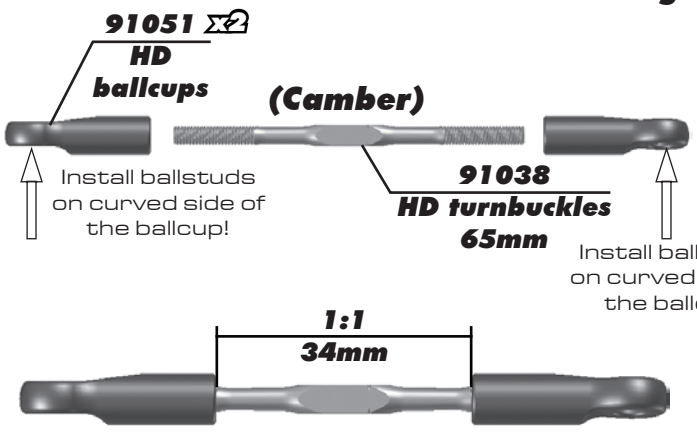


:: Front Suspension Assembly (cont.) - Bag G



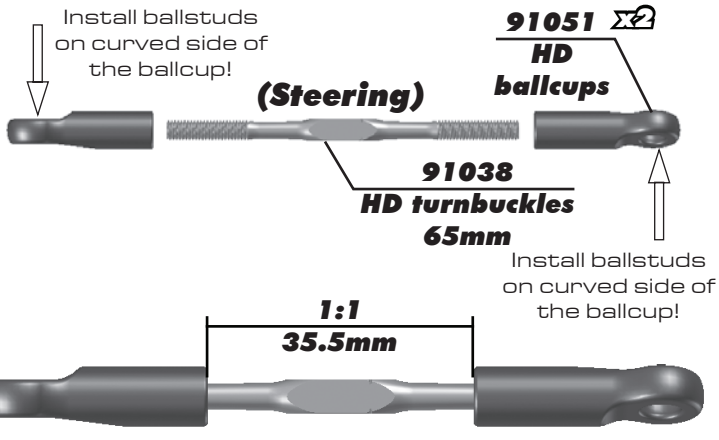
:: Front Suspension Assembly (cont.) - Bag G

Front Camber Link (right side shown)

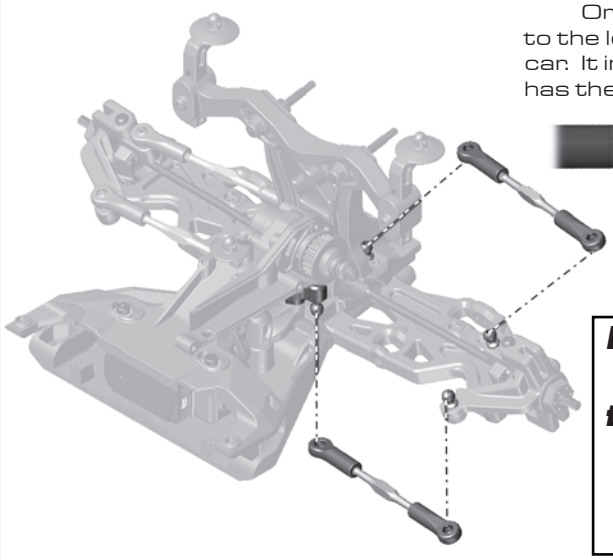


Note the orientation of the ballcups! Build a left and right side!

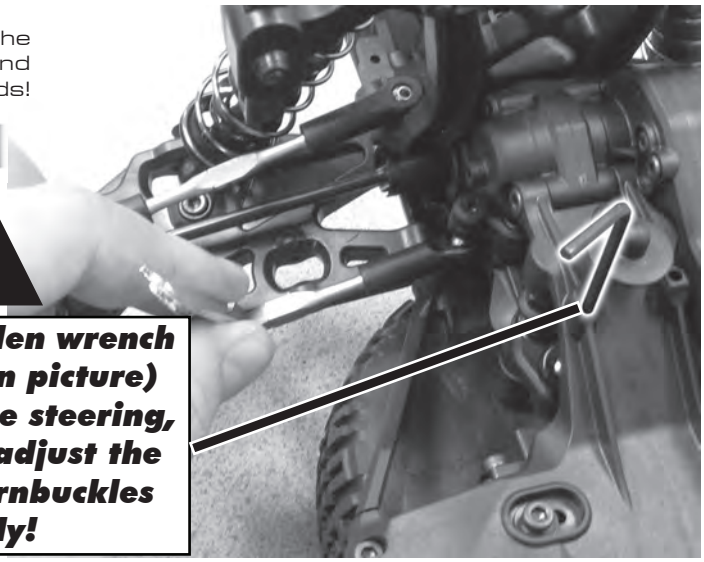
Front Steering Link (right side shown)



:: Front Suspension Assembly (cont.) - Bag G



Orient the notch to the left throughout the car. It indicates which end has the left hand threads!



Install an allen wrench (as shown in picture) to lock up the steering, in order to adjust the steering turnbuckles easily!

:: Rear Suspension Assembly - Bag H

Left

91048
8mm HD ballstud

#1596 thread lock

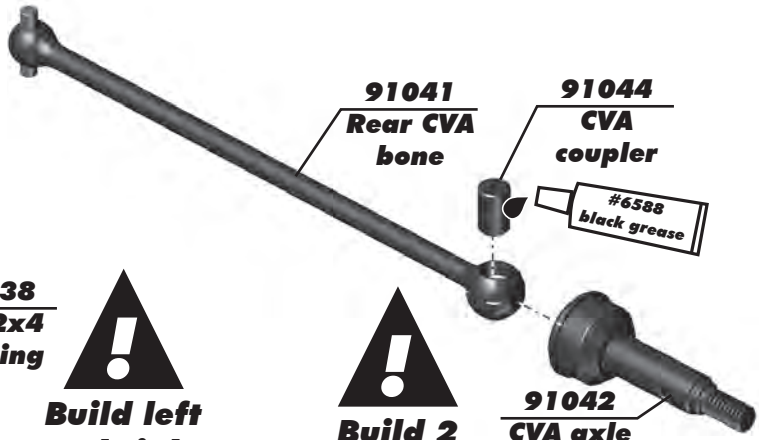
25215
M3 locknut (black)

91032
Rear hub carriers

Right

25238
6x12x4 bearing

Build left and right side!



91041
Rear CVA bone

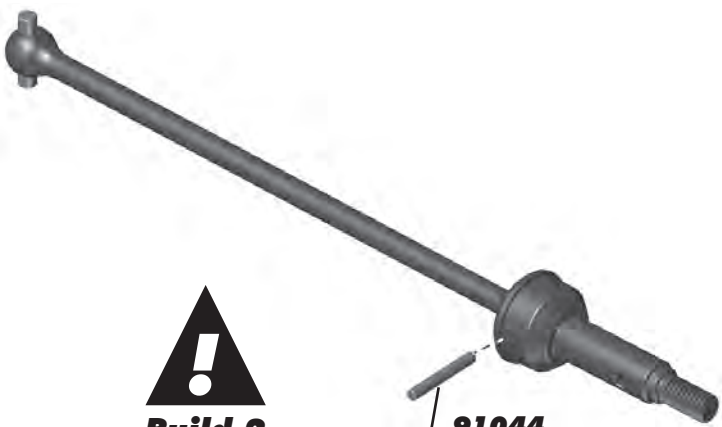
91044
CVA coupler

#6588 black grease

Build 2 CVA's

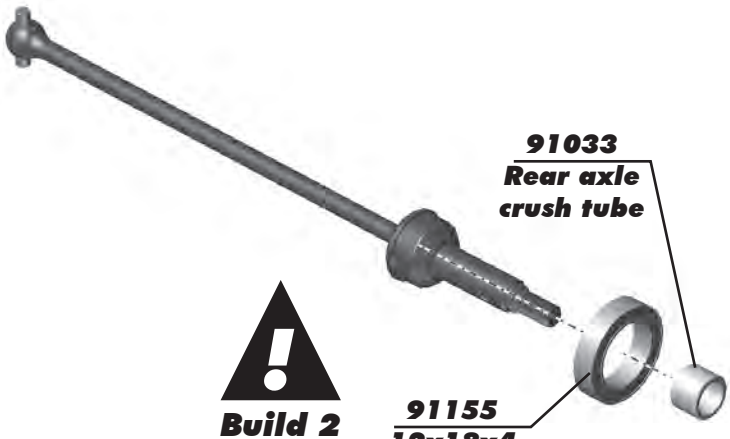
91042
CVA axle

:: Rear Suspension Assembly (cont.) - Bag H



Build 2 CVA's

91044
CVA pin

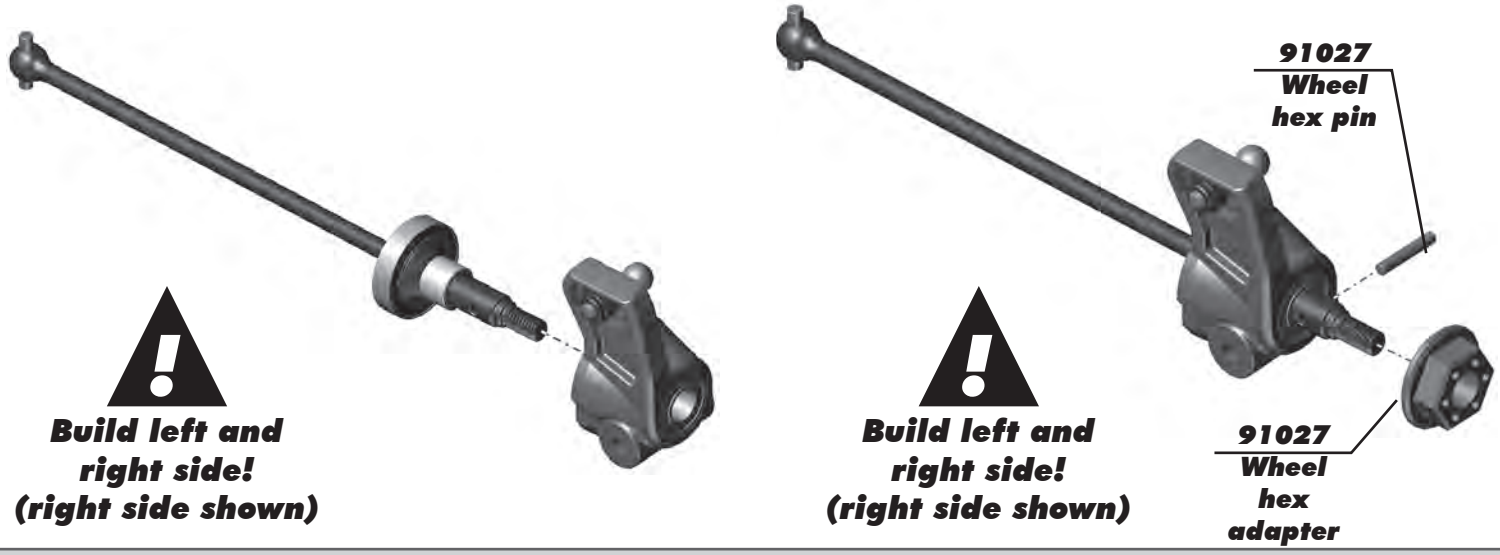


91033
Rear axle crush tube

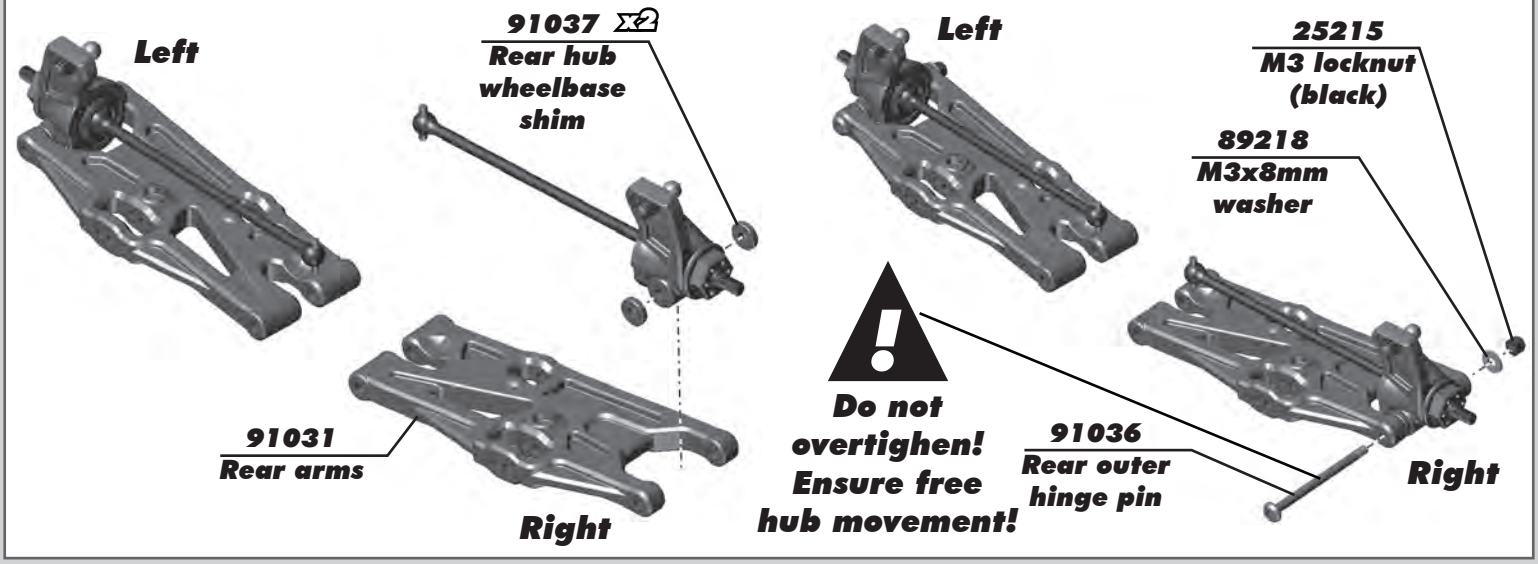
Build 2 CVA's

91155
12x18x4 bearing

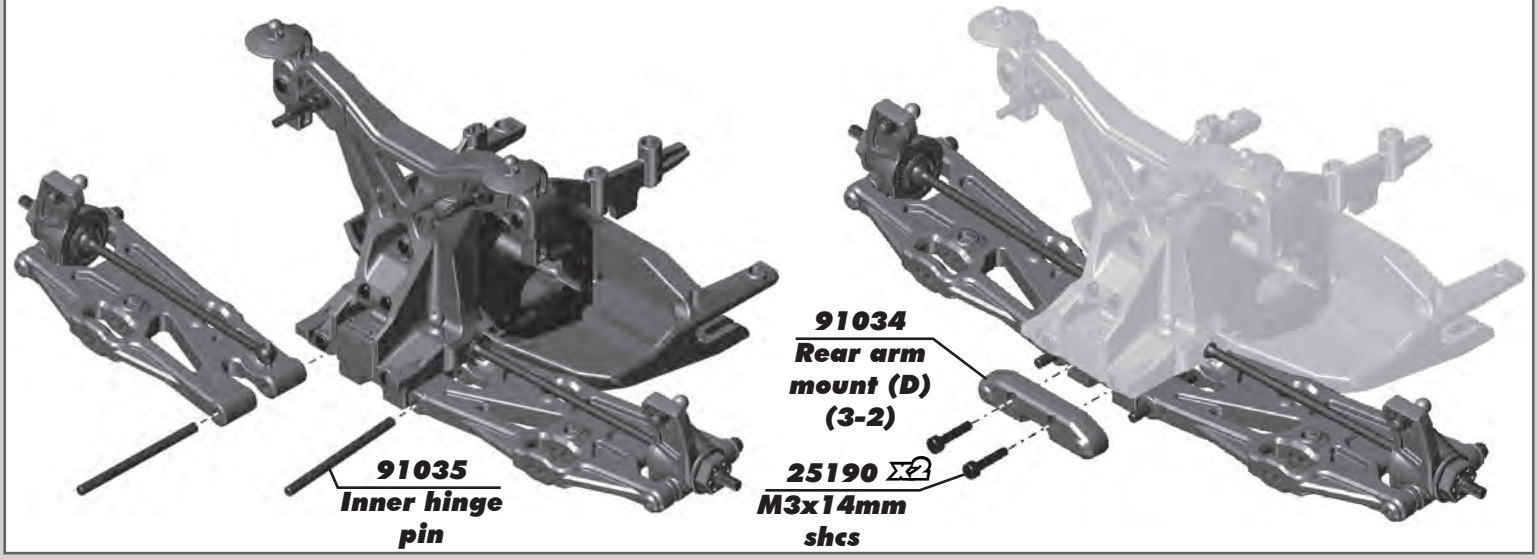
:: Rear Suspension Assembly (cont.) - Bag H



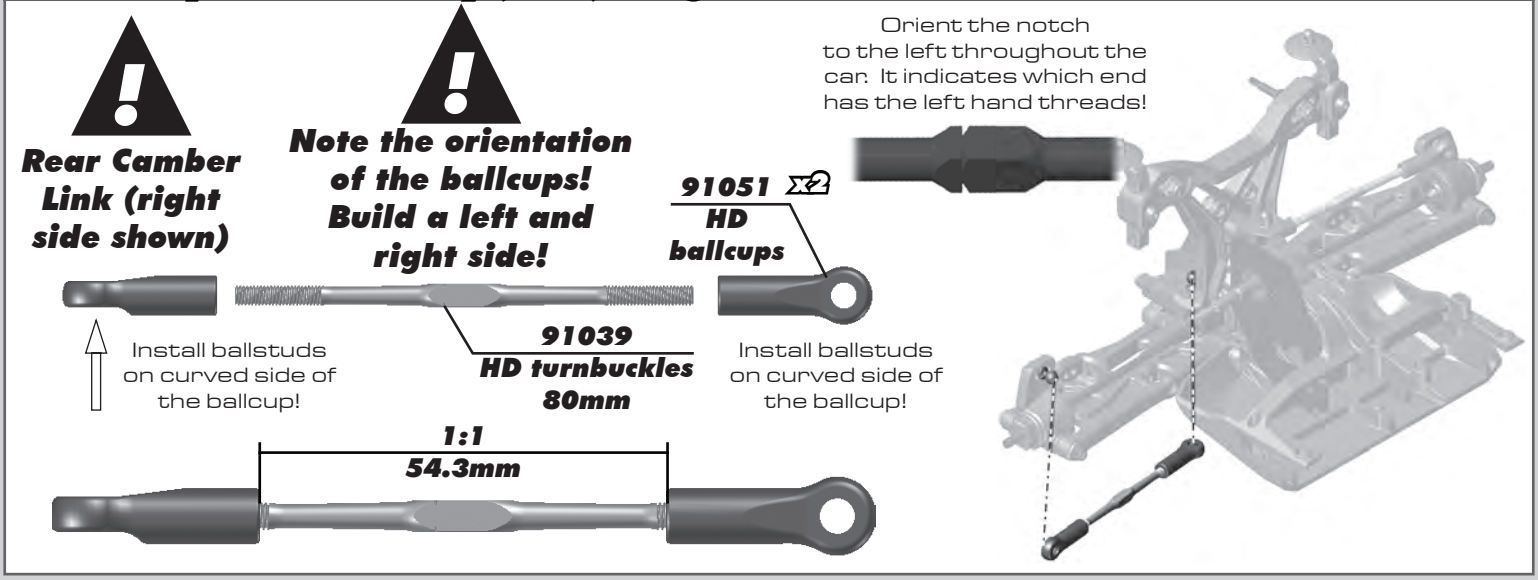
:: Rear Suspension Assembly (cont.) - Bag H



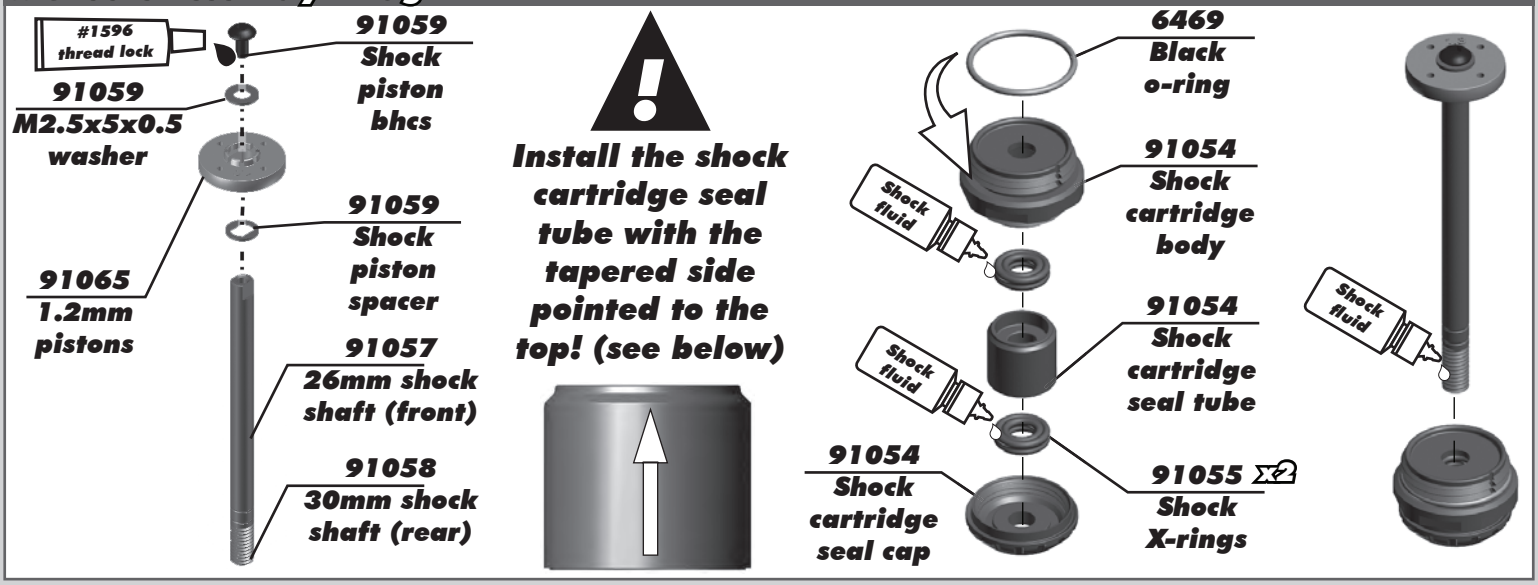
:: Rear Suspension Assembly (cont.) - Bag H



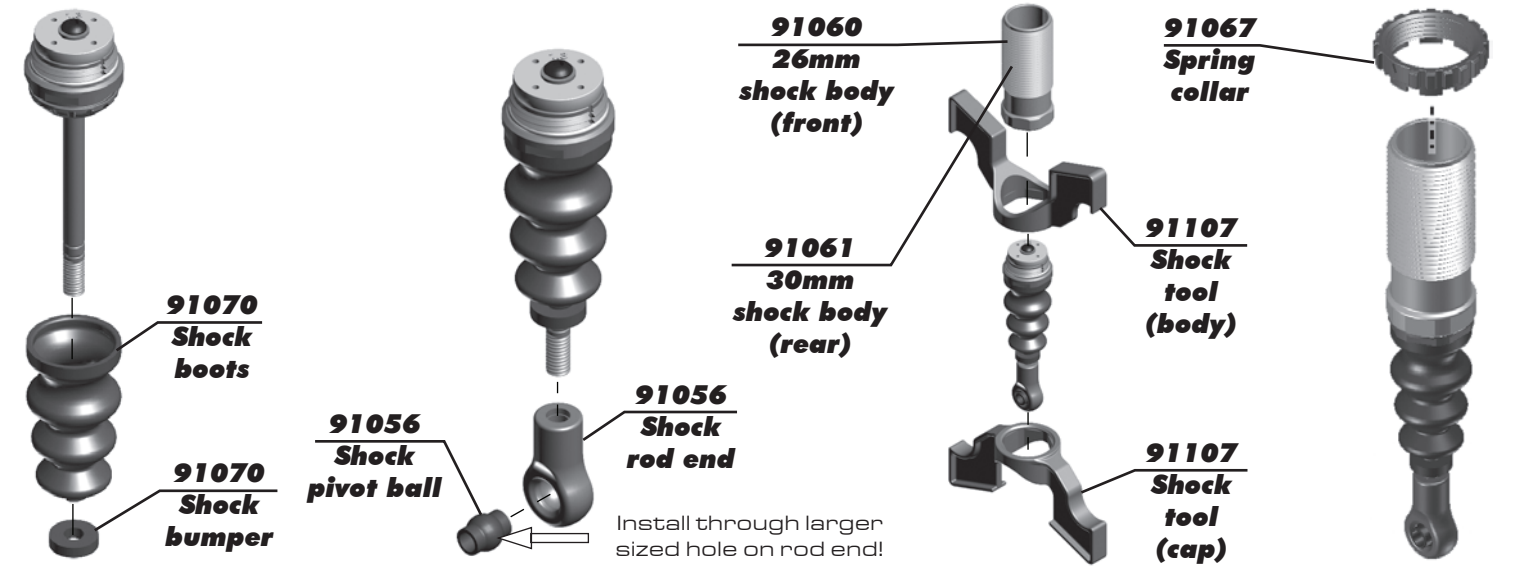
:: Rear Suspension Assembly (cont.) - Bag H



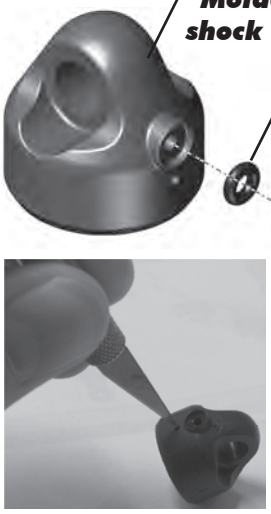
:: Shocks Assembly - Bag I



:: Shocks Assembly (cont.) - Bag I



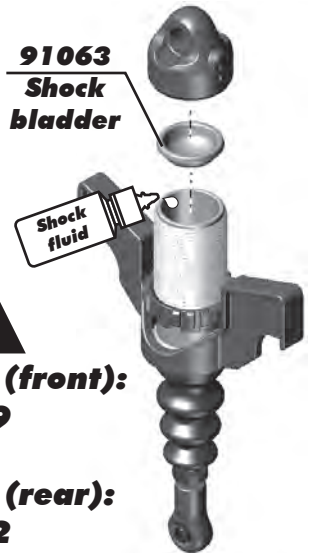
:: Shocks Assembly (cont.) - Bag I



Use a hobby knife to clear out the bleeder hole in each shock cap!

Shock Fluid (front):
35wt #5429

Shock Fluid (rear):
30wt #5422

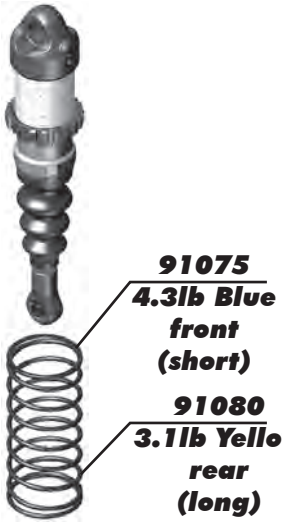


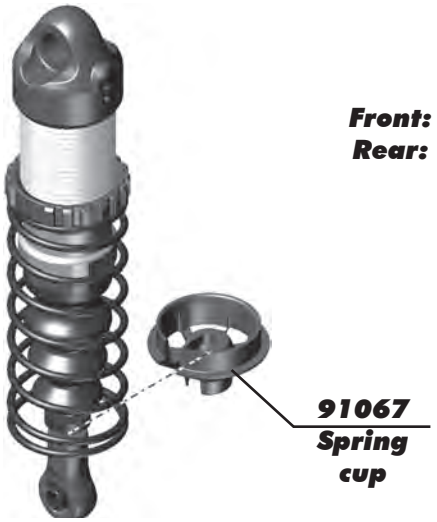
**** Shock Bleeding Steps:***

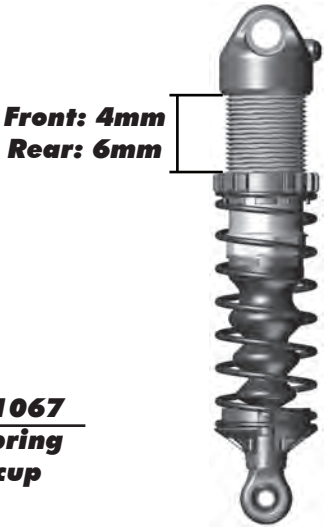
1. Fill shock body 3/4 full with silicone fluid
2. Pump the shock shaft up and down to remove any air bubbles.
3. Wait for the air bubbles to surface, then compress the shock shaft half way.
4. Fill the shock within 0.5mm from the top with silicone shock fluid.
5. Gently seat the bladder into the shock cap
6. Thread the shock cap onto the shock, excess fluid will exit thru the bleed hole.
7. Tighten cap by hand, and pump the shock up and down to check for leaks or air bubbles.
8. If the shock is leaking, tighten the cartridge or shock cap and retry.
9. If the shock has air bubbles, remove the cap and start at step 2.

Note: This setting is known as half rebound.

:: Shocks Assembly (cont.) - Bag I



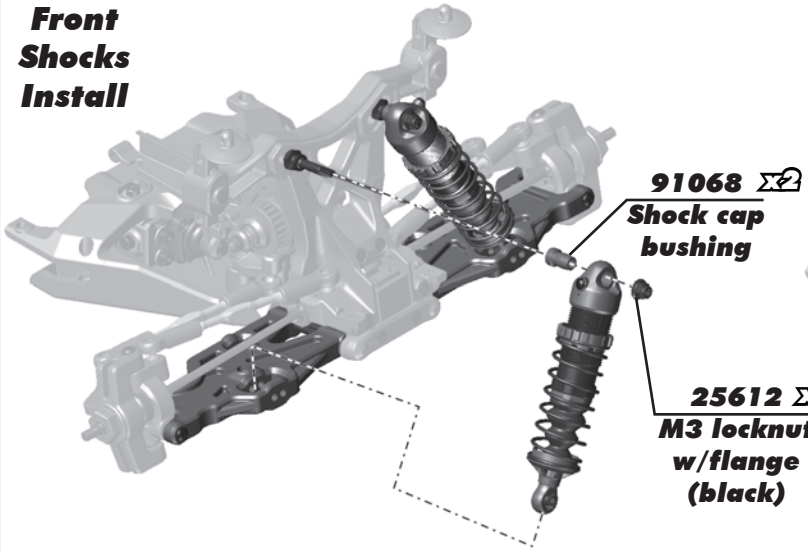


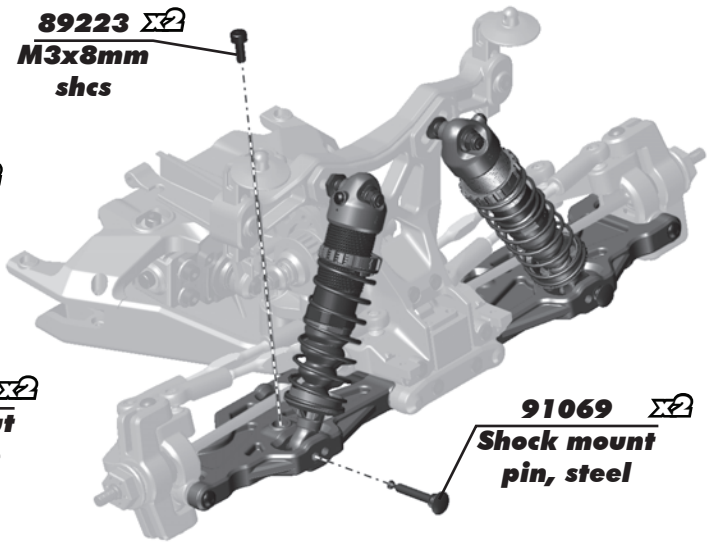


Build two front and two rear shocks!

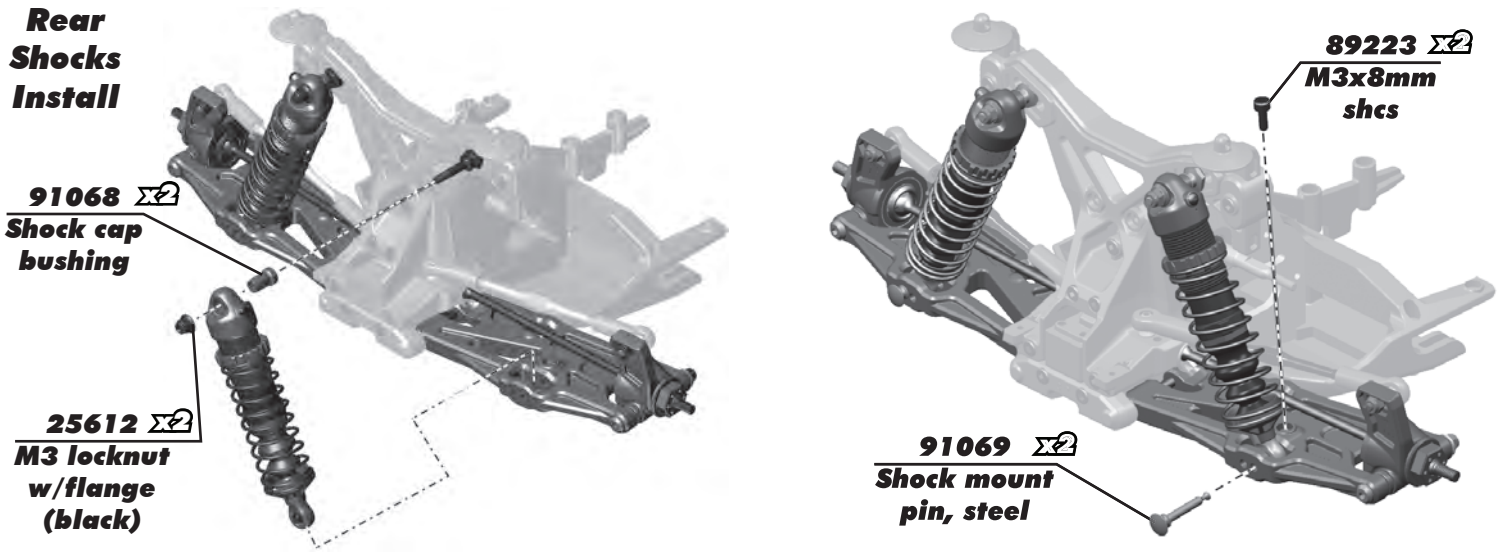
:: Shocks Assembly (cont.) - Bag I

Front Shocks Install

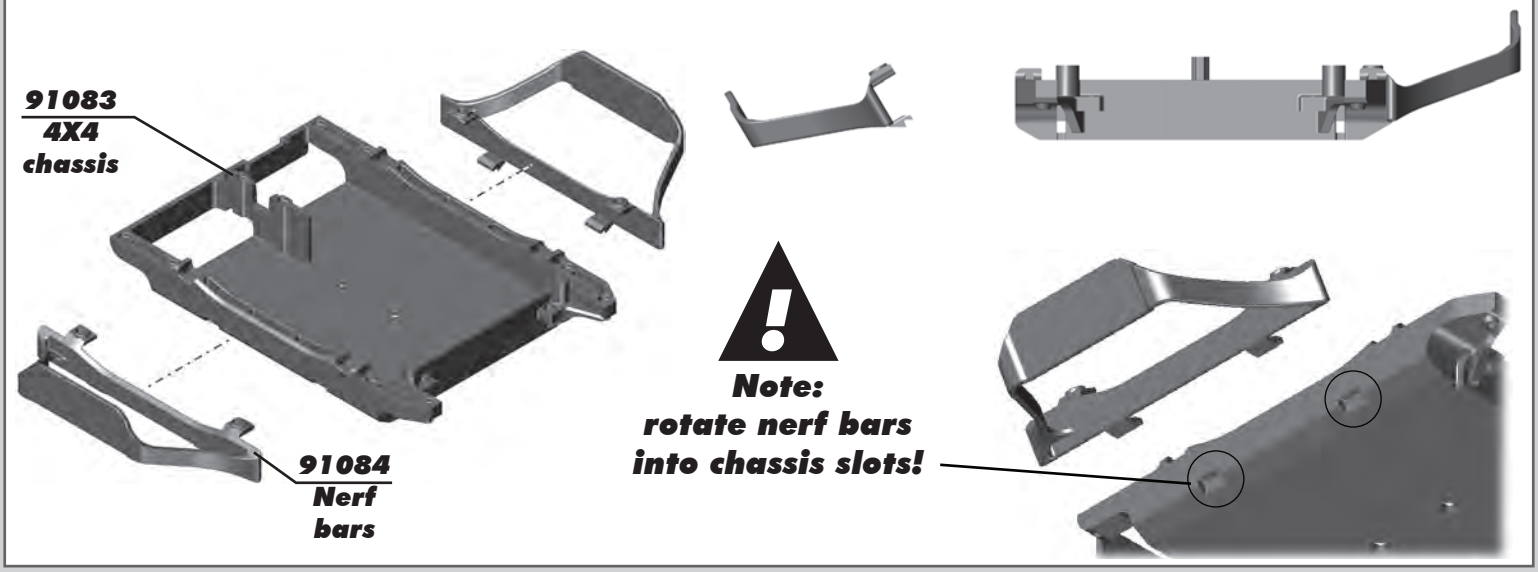




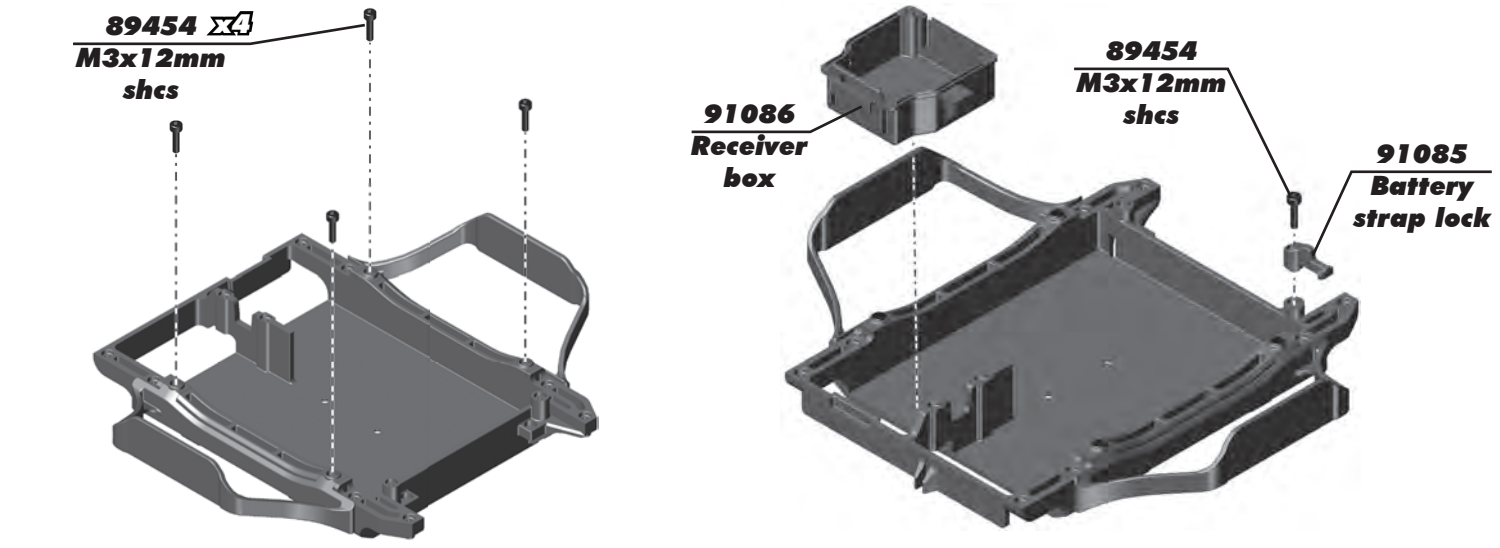
:: Shocks Assembly (cont.) - Bag I



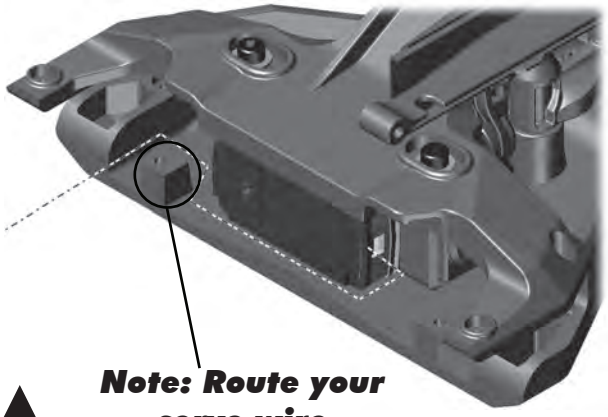
:: Chassis Assembly - Bag J



:: Chassis Assembly (cont.) - Bag J

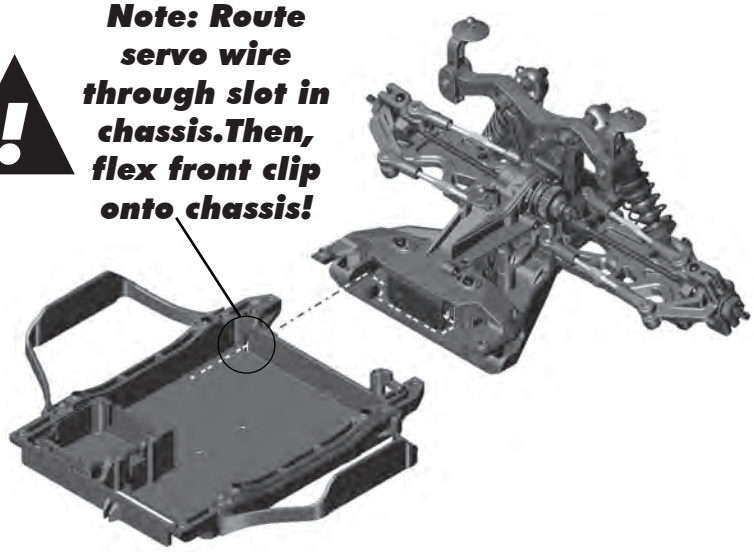


:: Chassis Assembly (cont.) - Bag J

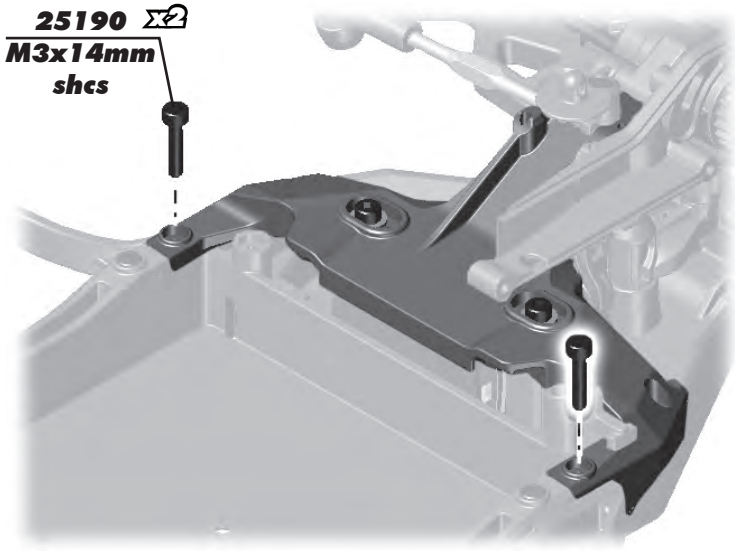


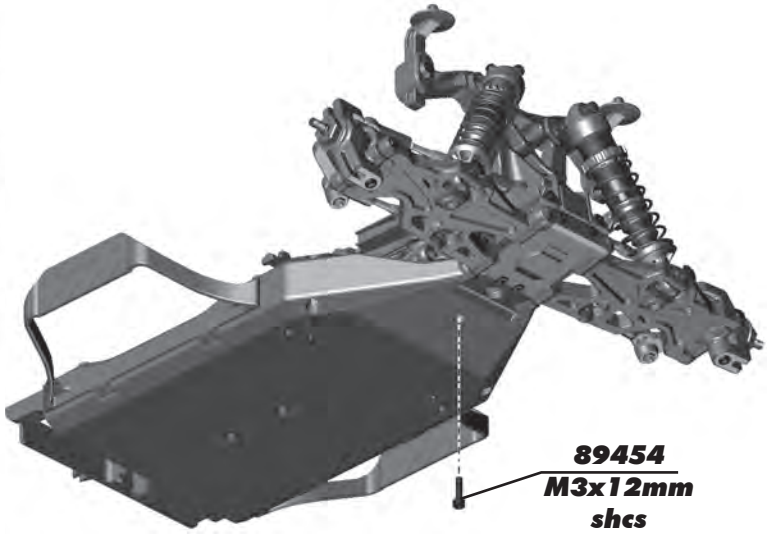
Note: Route your servo wire around the left side bump!

Note: Route servo wire through slot in chassis.Then, flex front clip onto chassis!

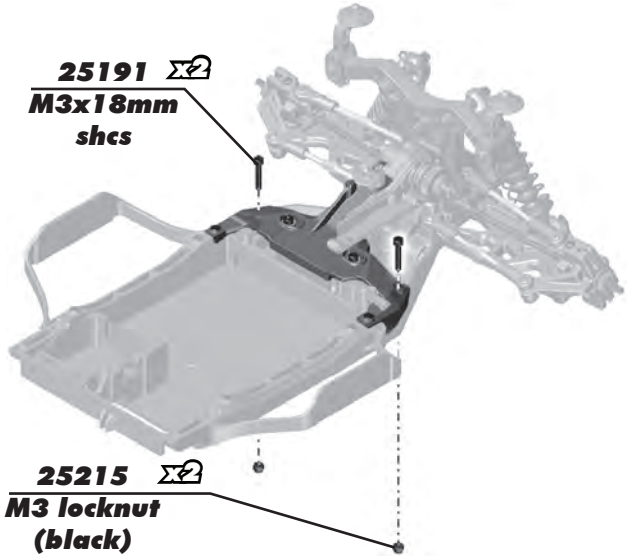


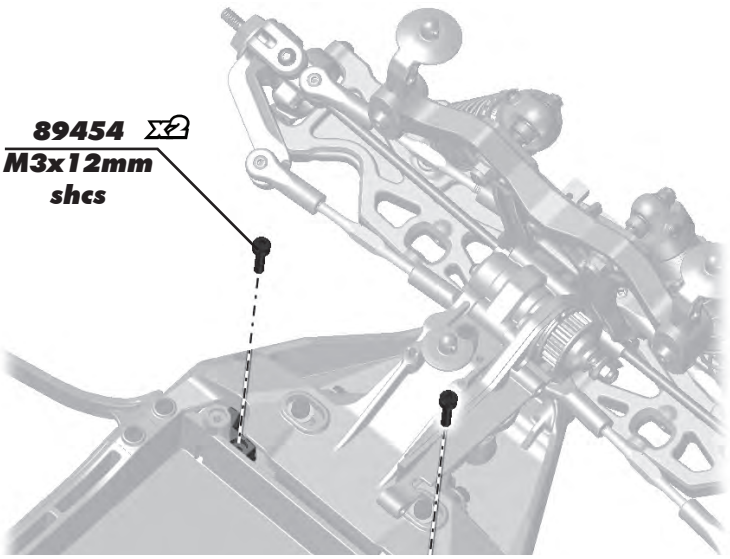
:: Chassis Assembly (cont.) - Bag J



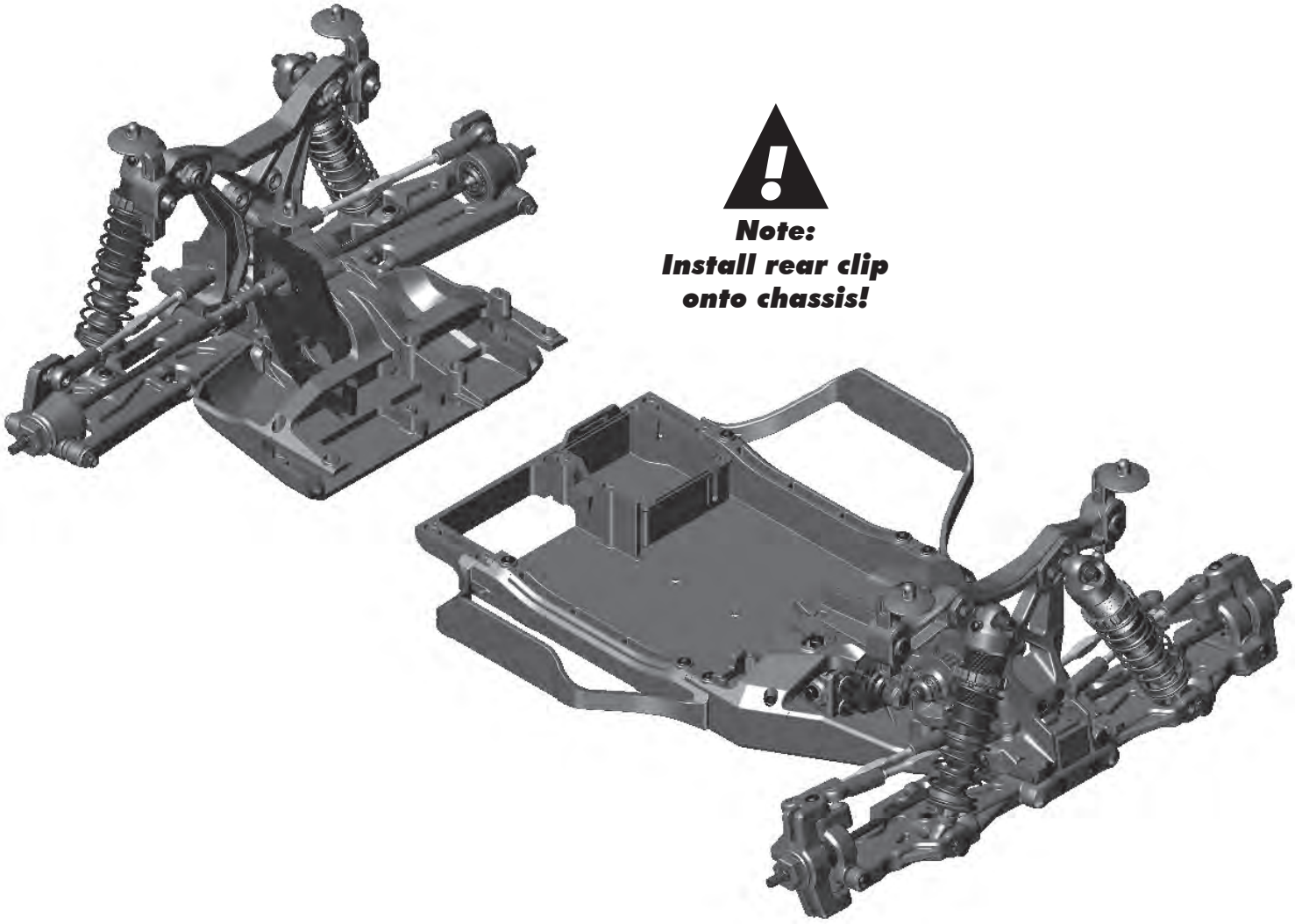


:: Chassis Assembly (cont.) - Bag J



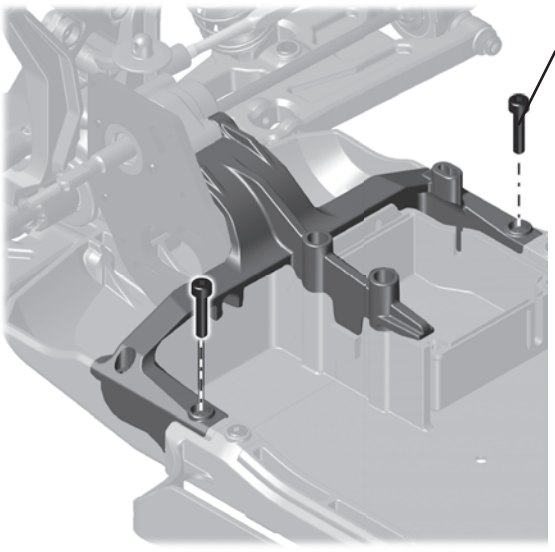


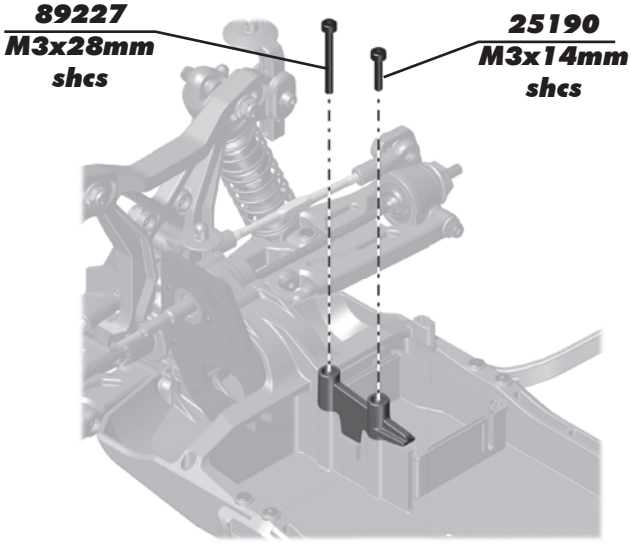
:: Chassis Assembly (cont.) - Bag J



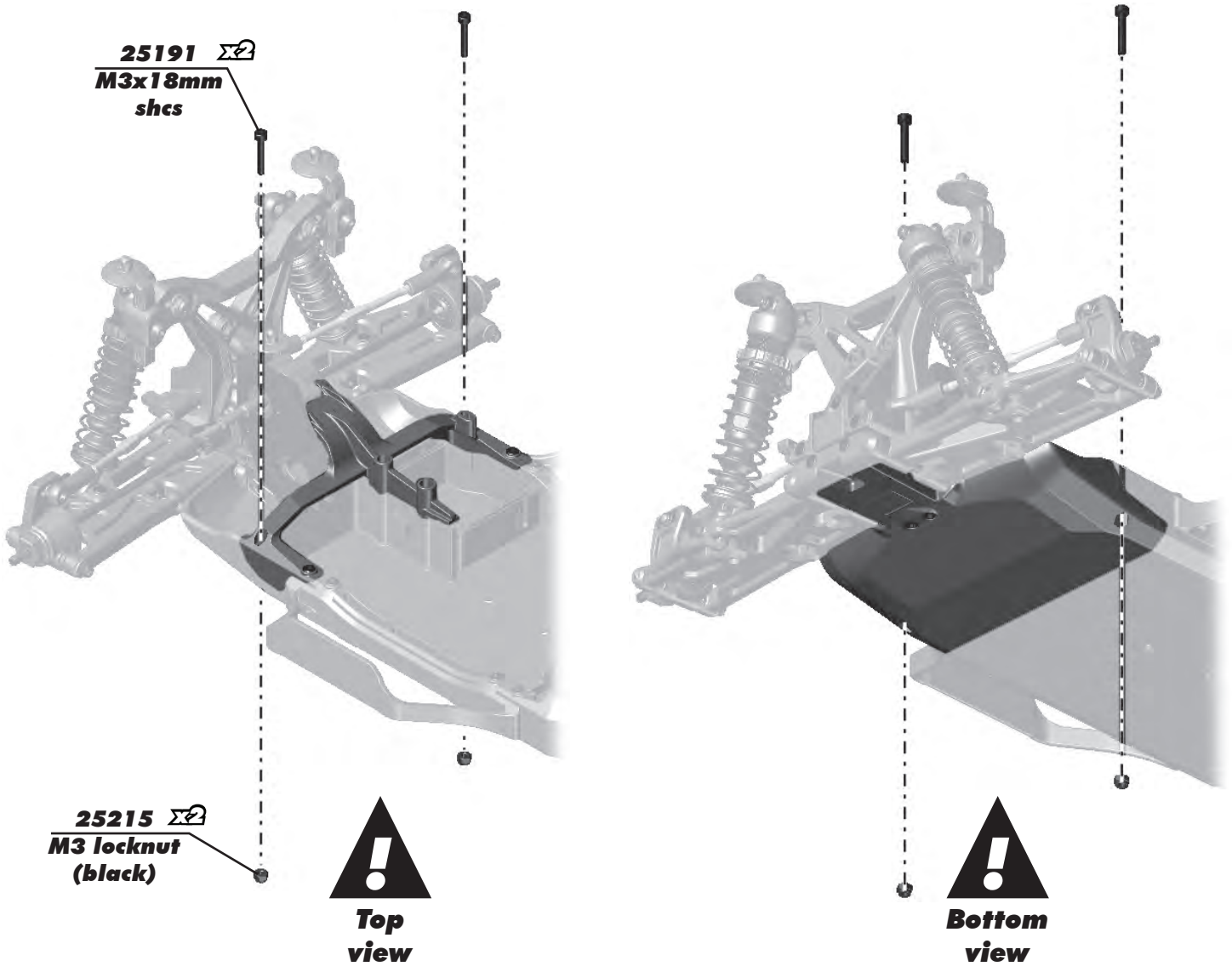
Note:
Install rear clip onto chassis!

:: Chassis Assembly (cont.) - Bag J

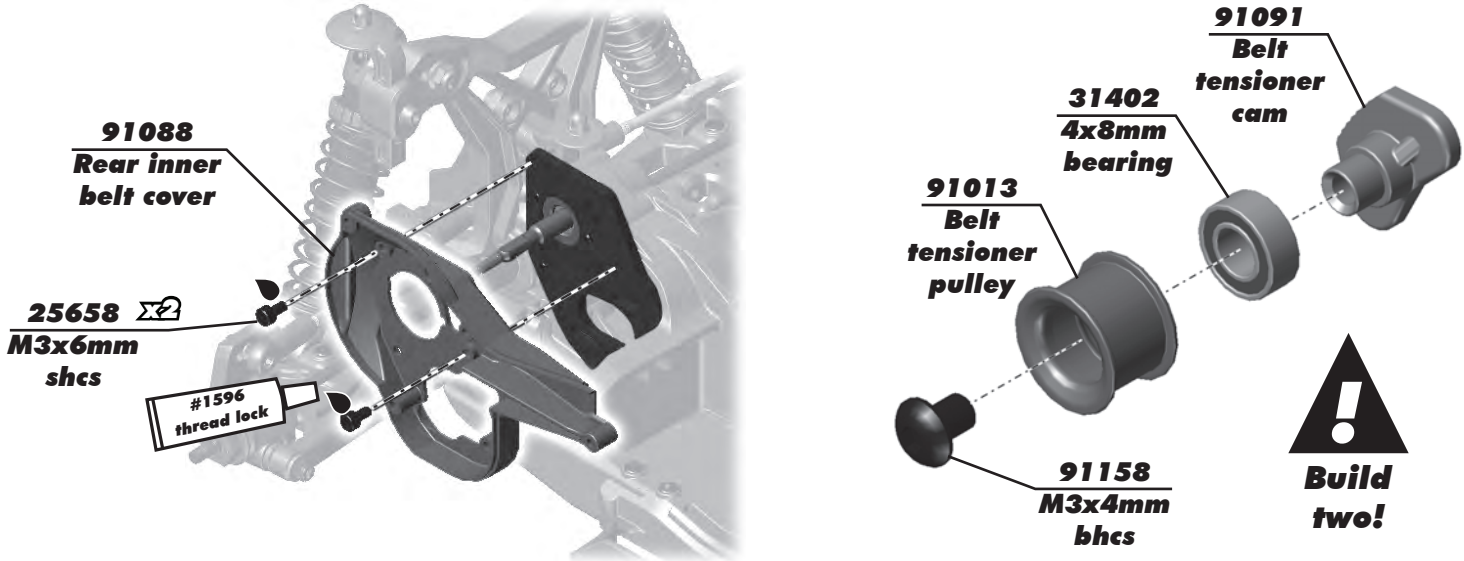




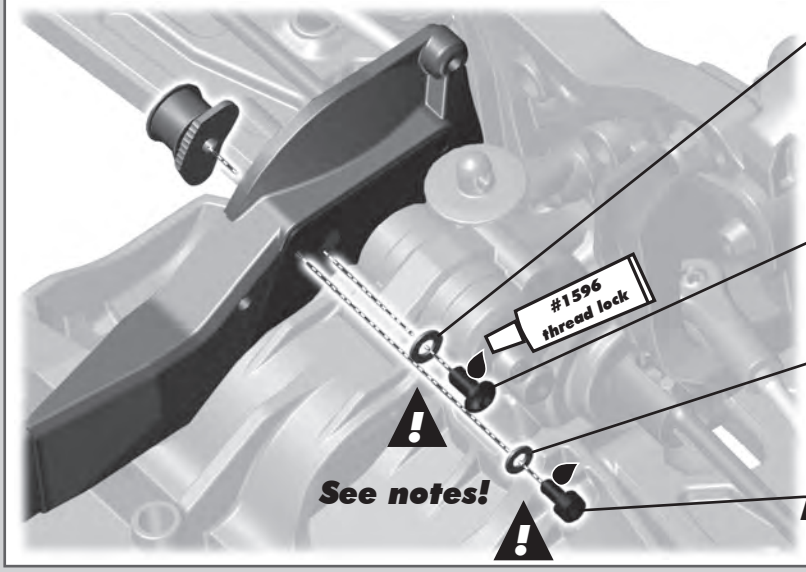
:: Chassis Assembly (cont.) - Bag J



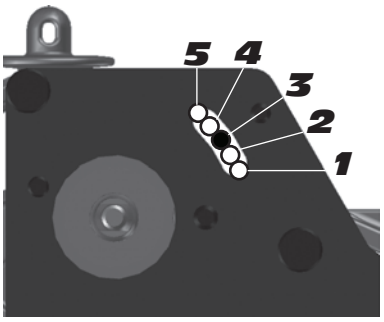
:: Belt, Tensioners, Spur Gear, and Covers Assembly - Bag K



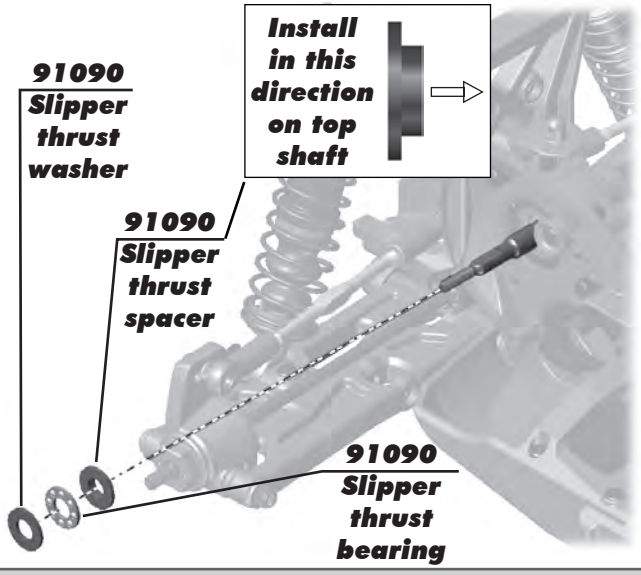
:: Belt, Tensioners, Spur Gear, and Covers Assembly (cont.) - Bag K



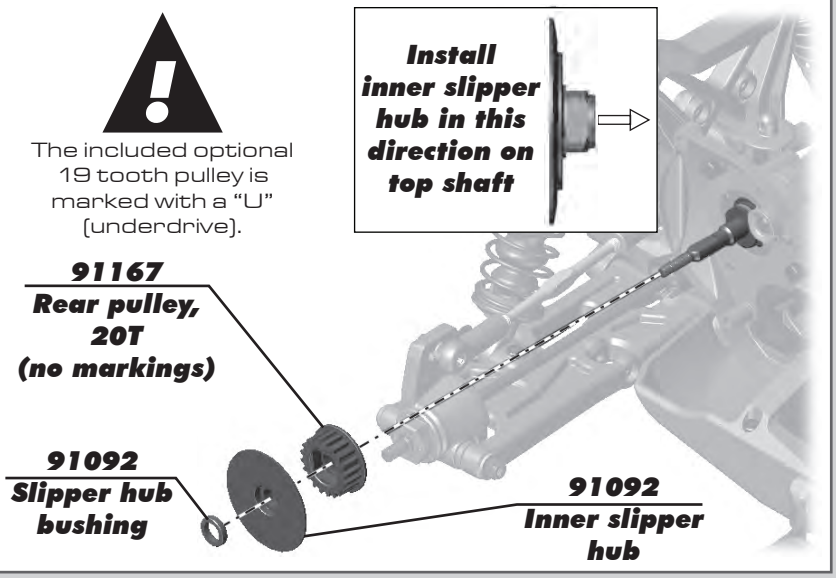
To adjust the belt tensioner, you need to remove the #91159 shcs and the #91091 washer. Loosen the #31531, adjust the belt tensioner, and reinstall the #91091 washer and the #91159 shcs.



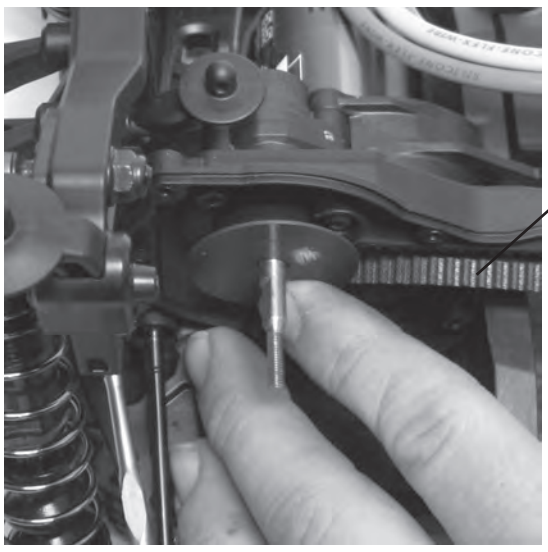
:: Belt, Tensioners, Spur Gear, and Covers Assembly (cont.) - Bag K



The included optional 19 tooth pulley is marked with a "U" (underdrive).

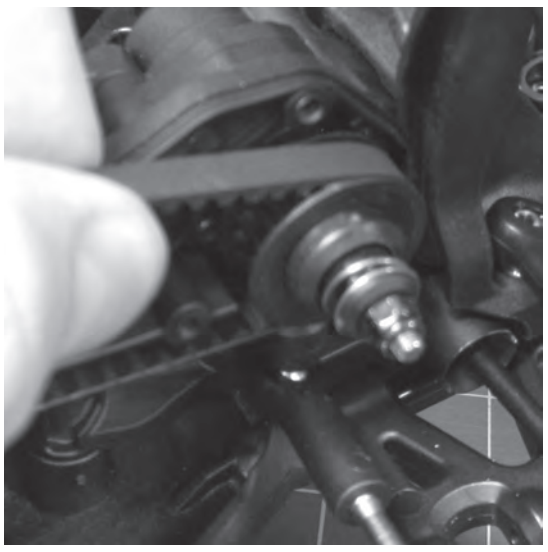


:: Belt, Tensioners, Spur Gear, and Covers Assembly (cont.) - Bag K

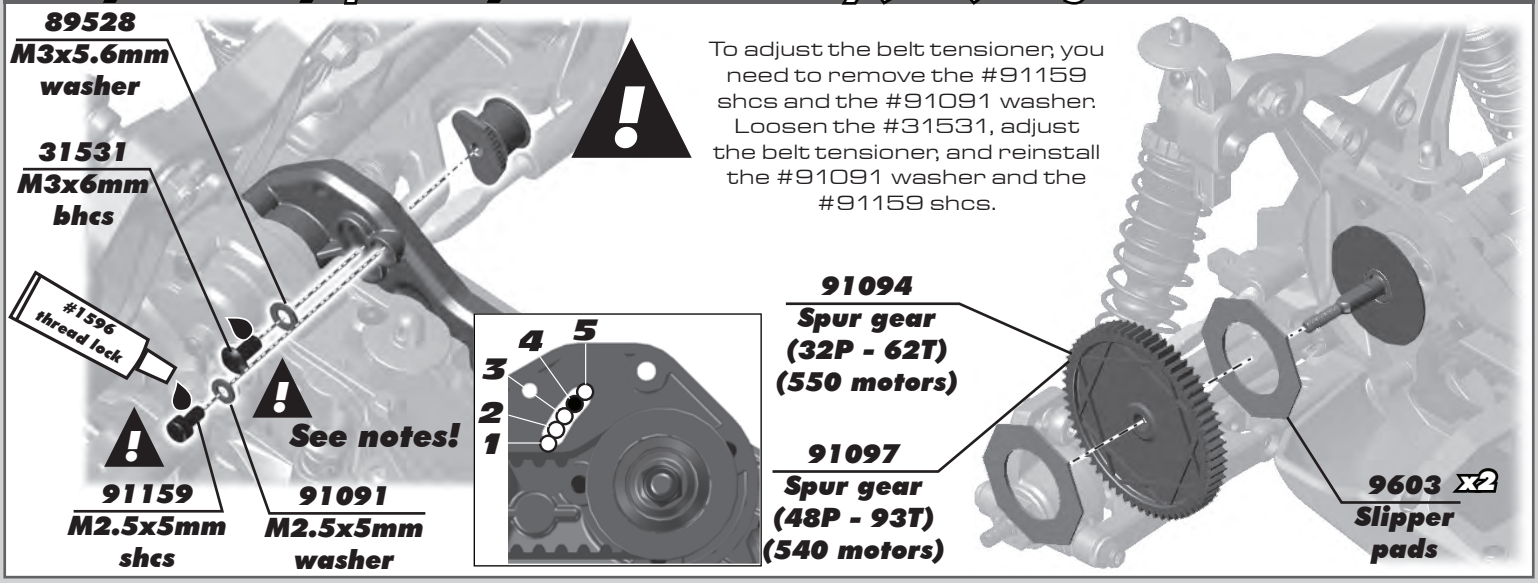


91093
4X4 drive
belt

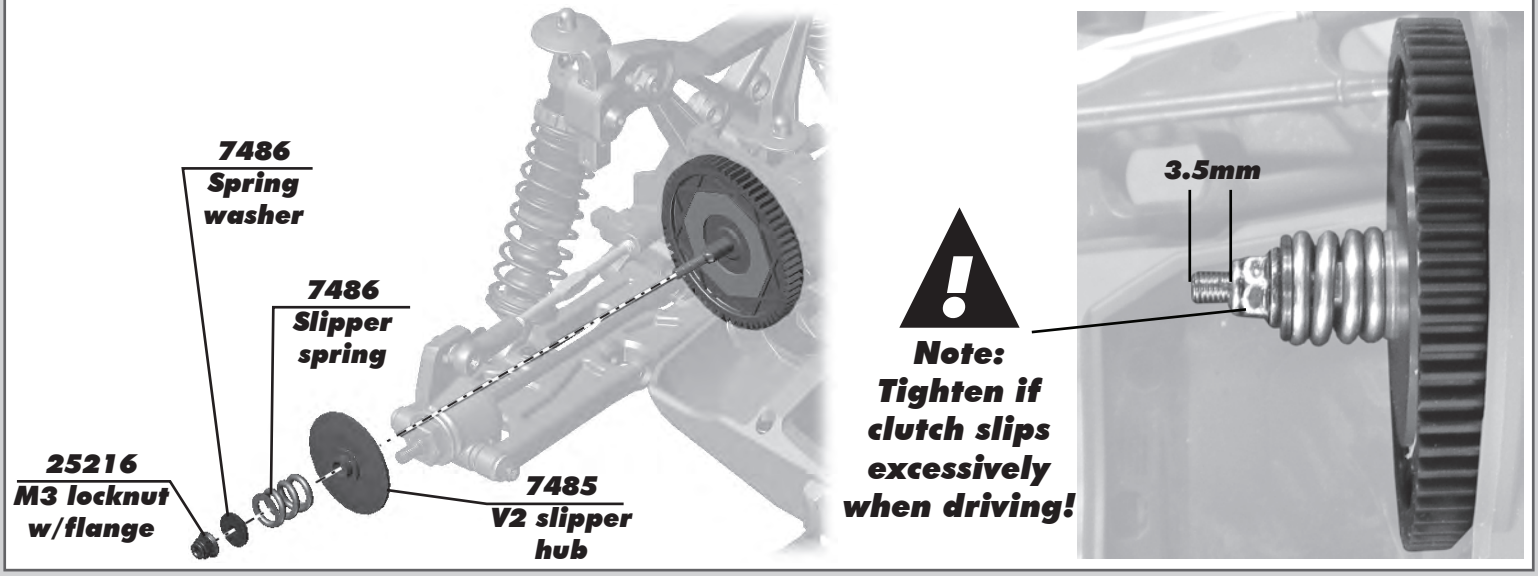
Install the belt between the rear pulley and the rear belt tensioner. Then slide the belt over the front pulley. Ensure free rotation!



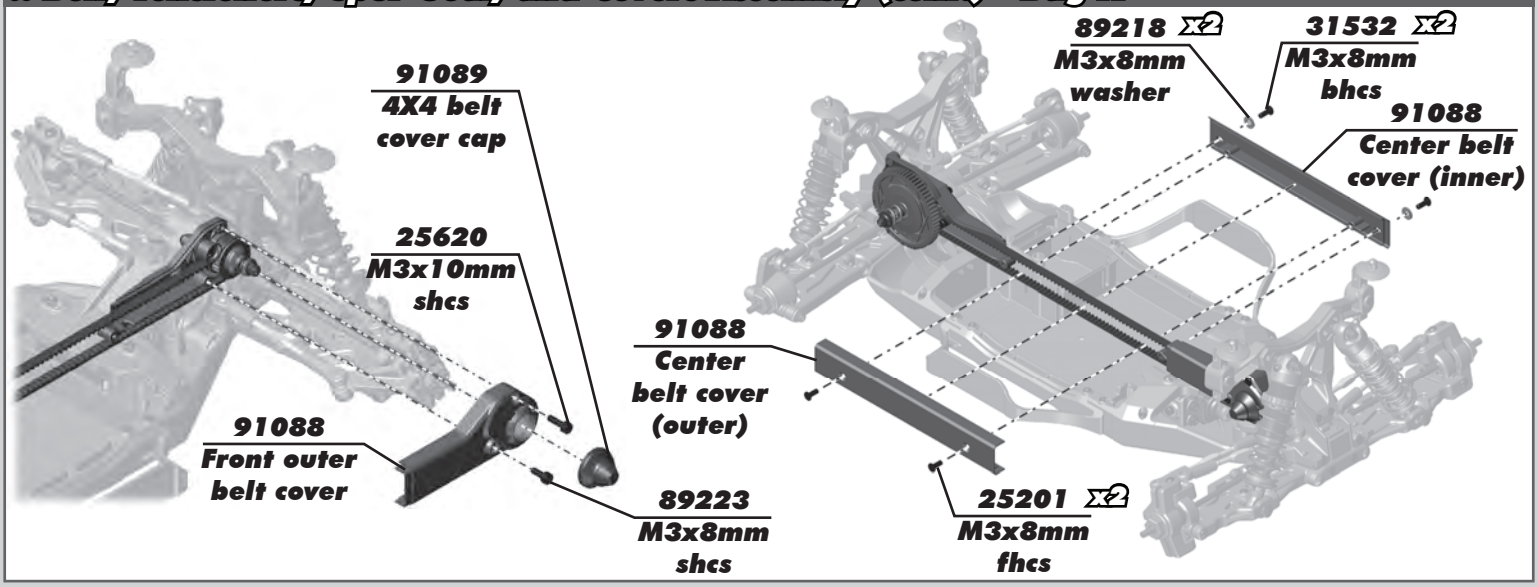
:: Belt, Tensioners, Spur Gear, and Covers Assembly (cont.) - Bag K



:: Belt, Tensioners, Spur Gear, and Covers Assembly (cont.) - Bag K

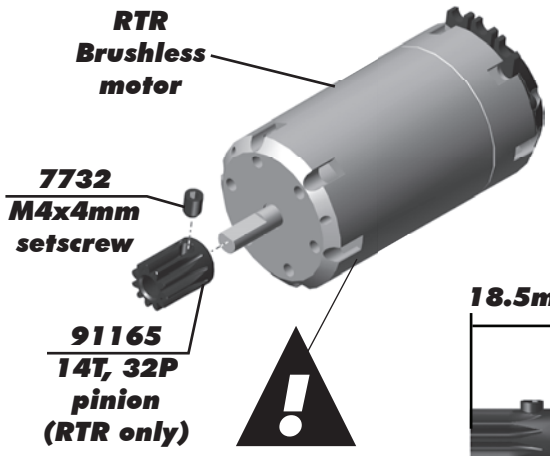


:: Belt, Tensioners, Spur Gear, and Covers Assembly (cont.) - Bag K



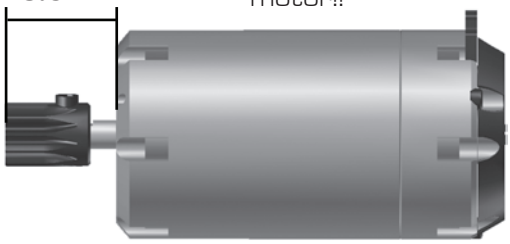
:: Electronics Installation - Bag L

Do not overtighten the belt cover screws!

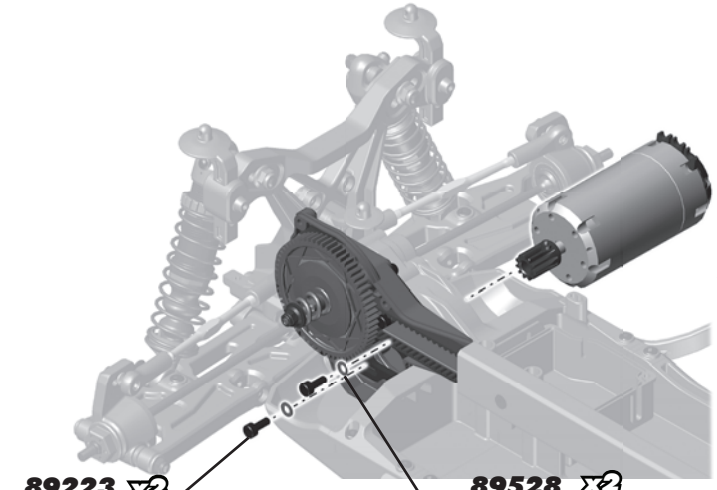


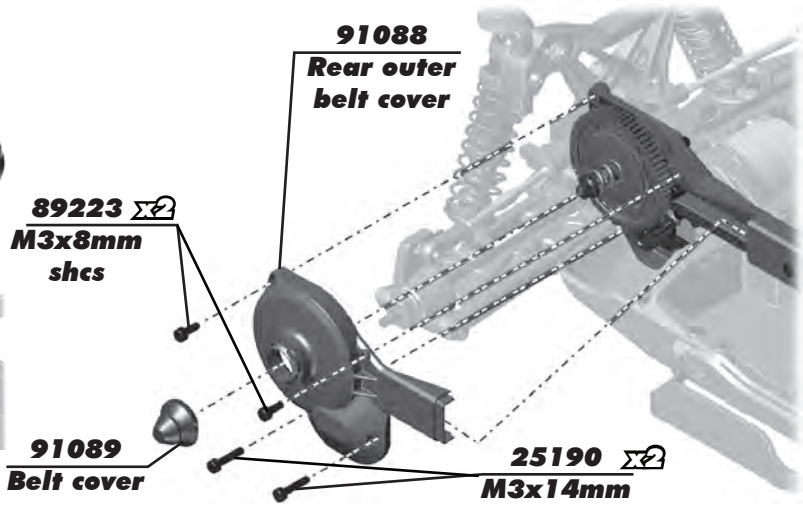
Motor, pinion, and setscrew not included in kit!

Install the pinion to the motor shaft so the end of the pinion sticks out 18.5mm from the face of the motor!!

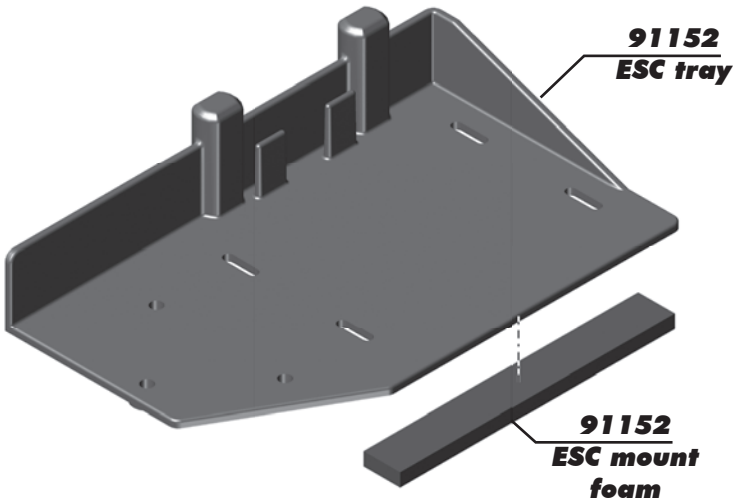


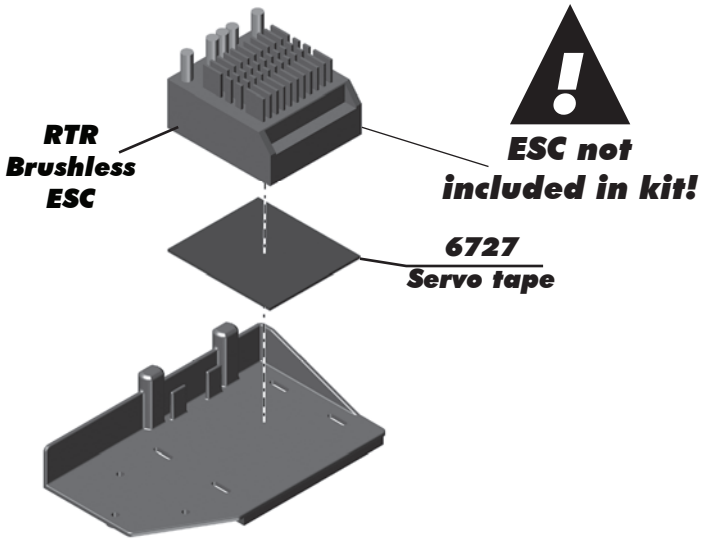
:: Electronics Installation (cont.) - Bag L



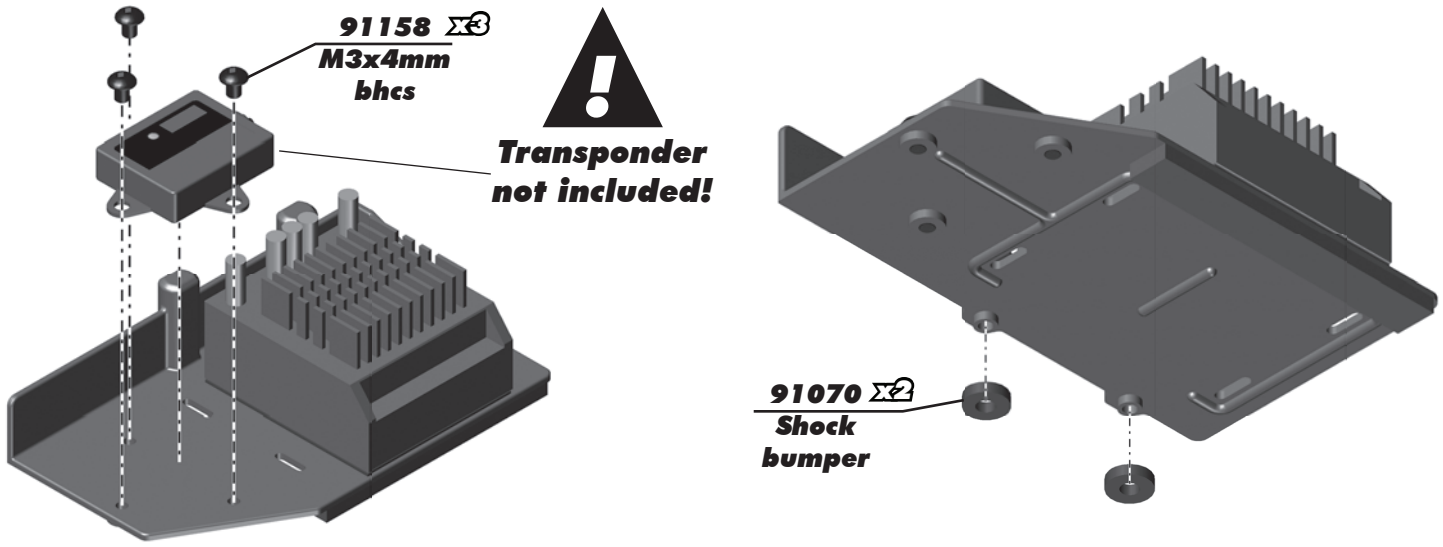


:: Electronics Installation (cont.) - Bag L

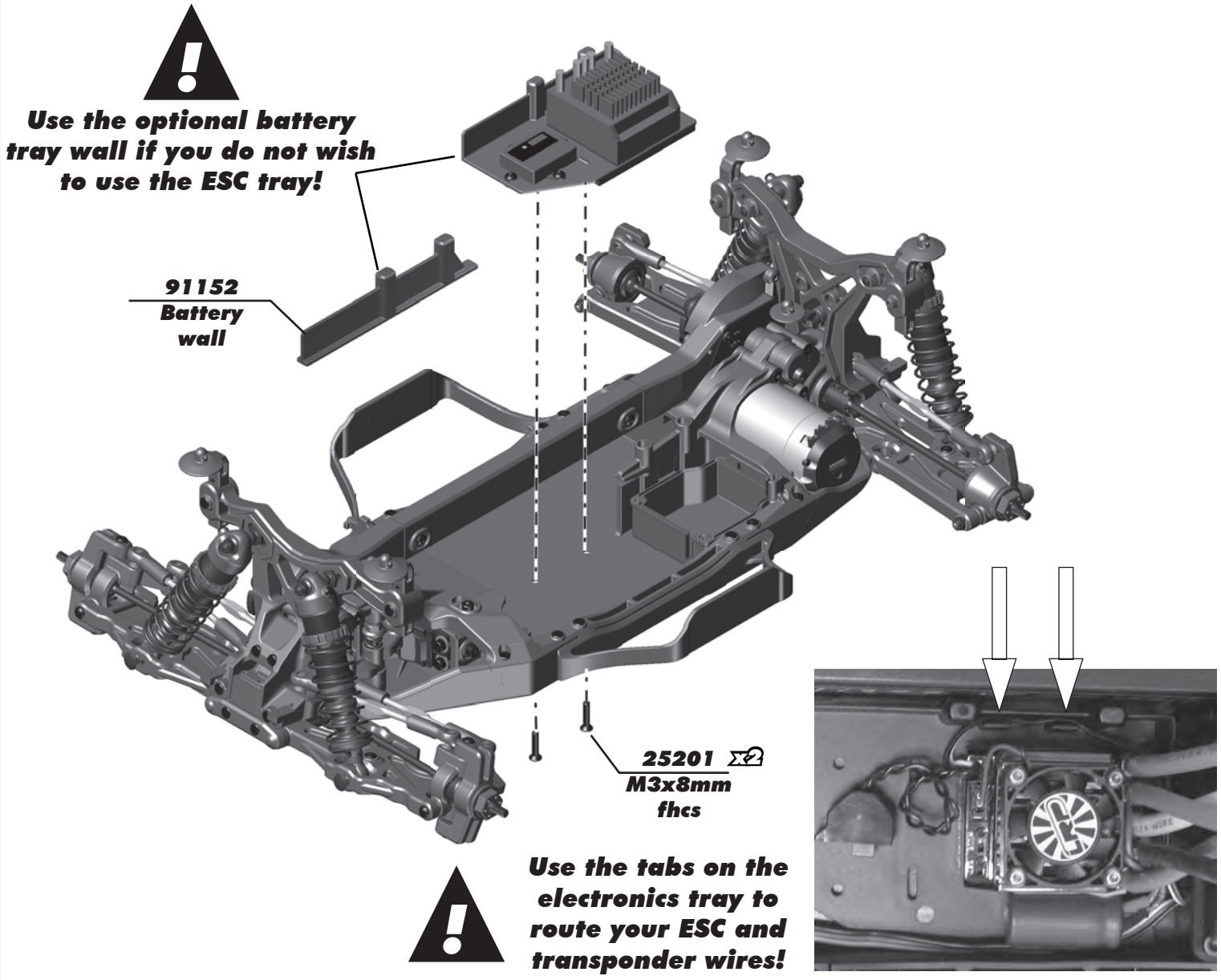




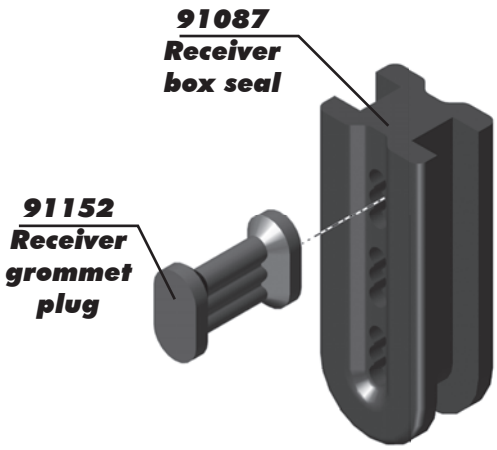
:: Electronics Installation (cont.) - Bag L



:: Electronics Installation (cont.) - Bag L

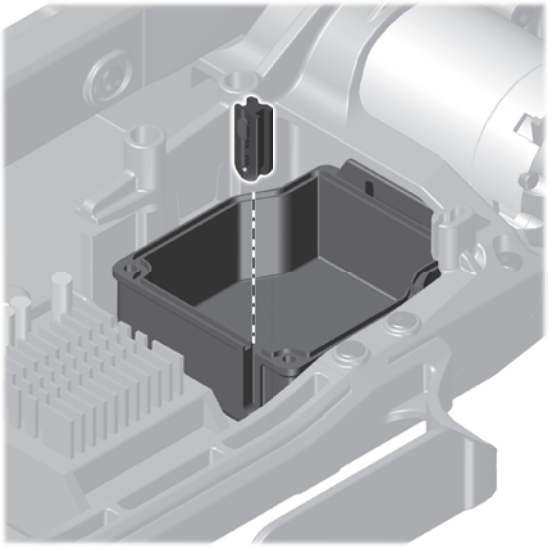


:: Electronics Installation (cont.) - Bag L



Receiver grommet plug can be removed if you use a personal transponder!

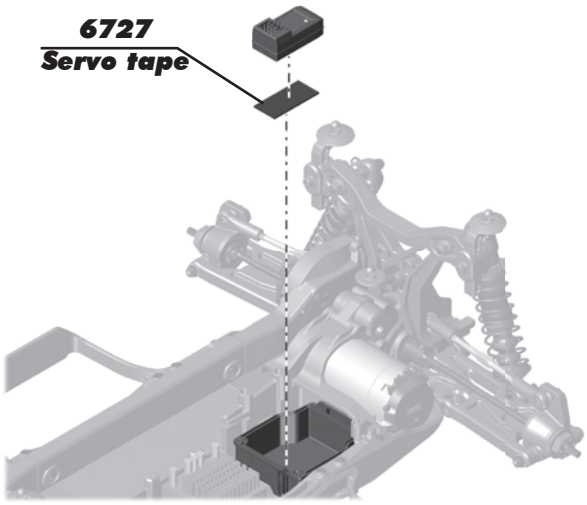
:: Electronics Installation (cont.) - Bag L



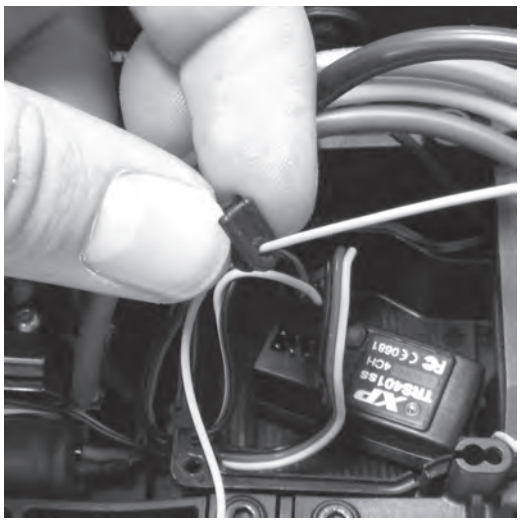
29222
XP TRS401-ss 2.4GHz 4CH Receiver (RTR only)

Receiver not included in kit!

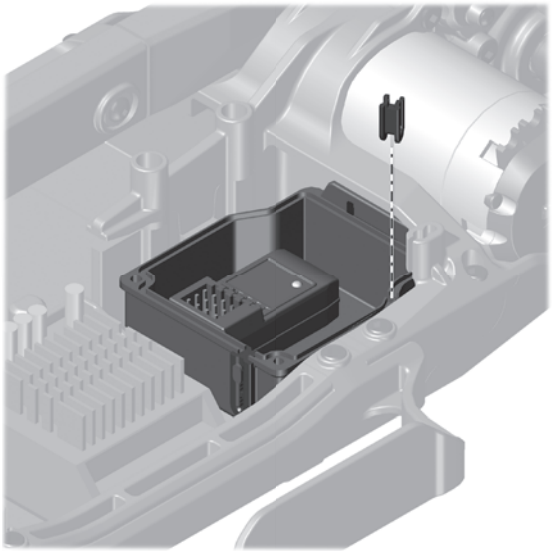
:: Electronics Installation (cont.) - Bag L



Install antenna wire through the hole as shown!

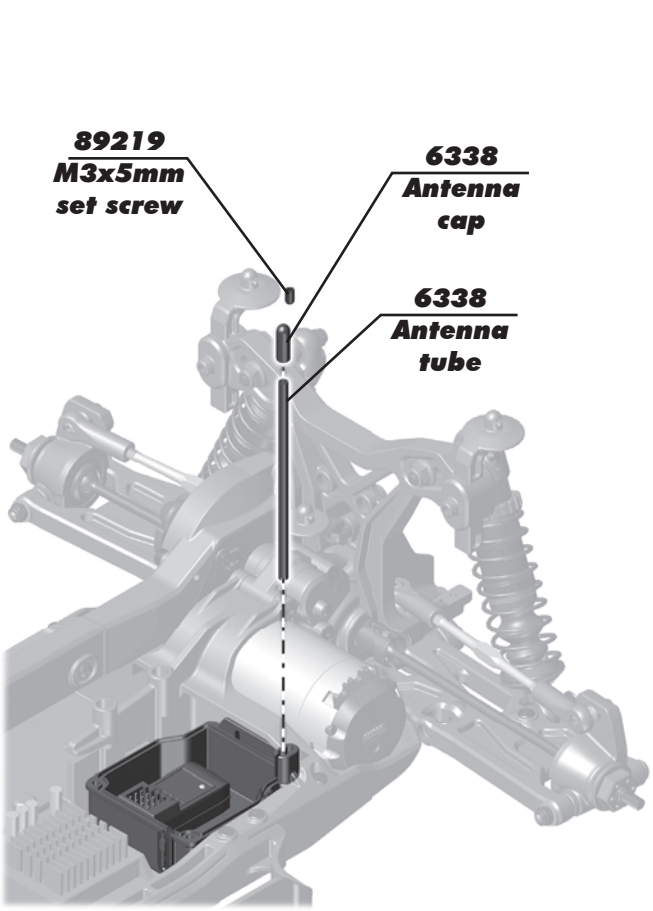


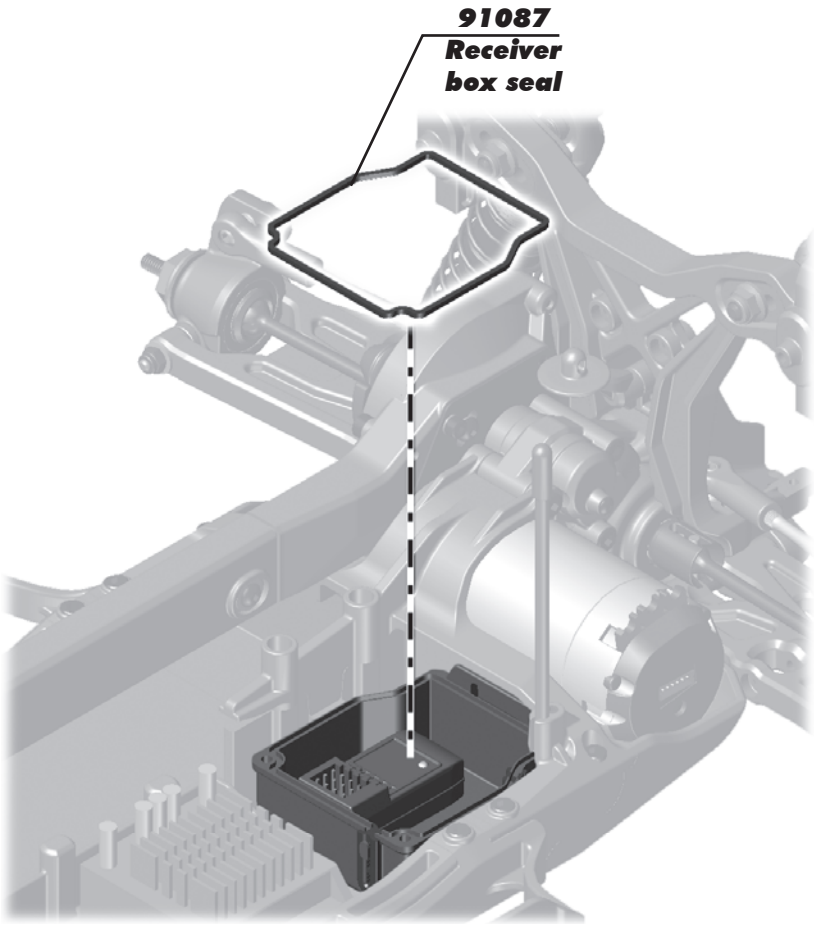
:: Electronics Installation (cont.) - Bag L



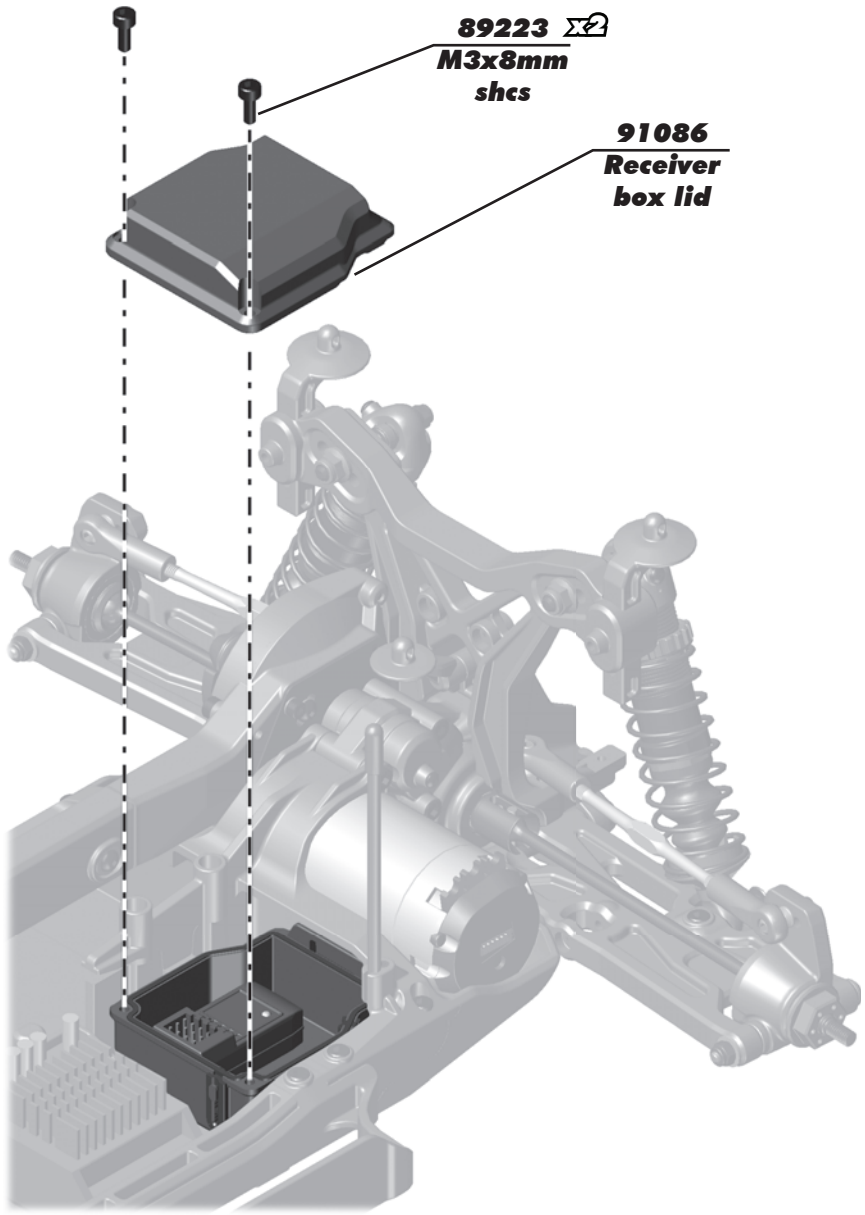
Trim the antenna tube to fit the amount of antenna wire that will be sticking out of the receiver box before installation!

:: Electronics Installation (cont.) - Bag L



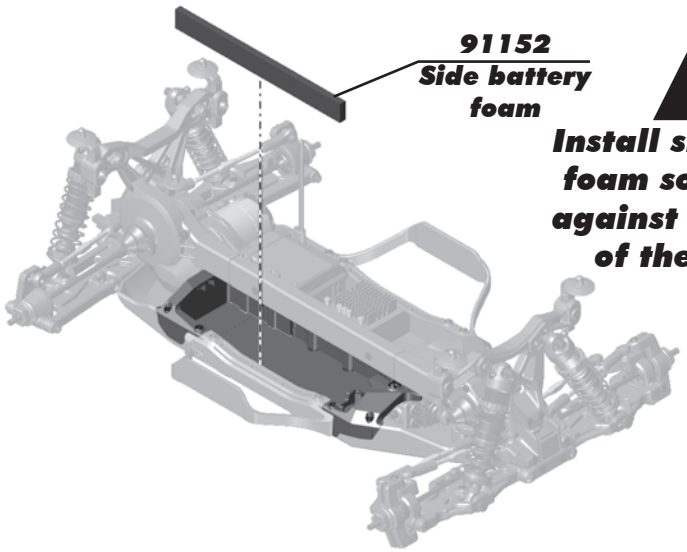


:: Electronics Installation (cont.) - Bag L

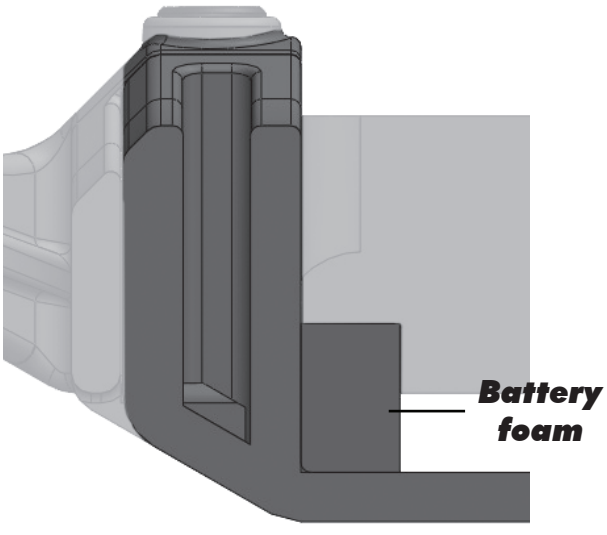


The receiver box lid will have to be installed at an angle due to the tabs on the back of the lid!

:: Electronics Installation (cont.) - Bag L



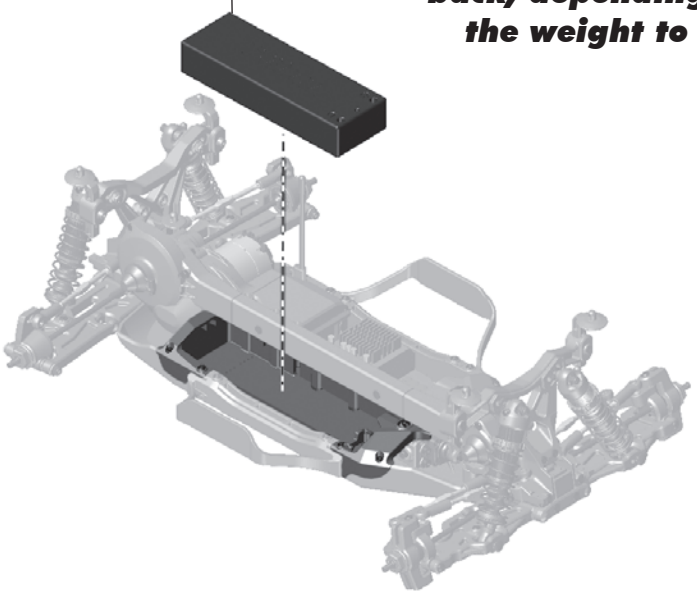
Install side battery foam so it is flush against the bottom of the chassis!



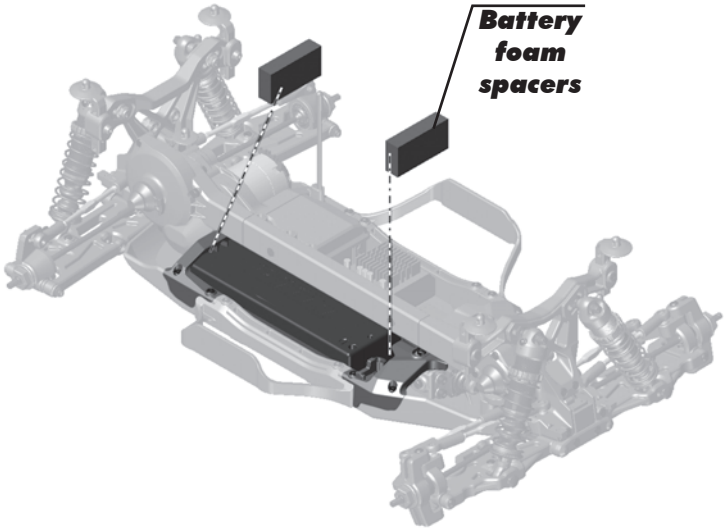
:: Electronics Installation (cont.) - Bag L

Battery not included!

You can install the battery foam spacers to either have the battery positioned forward, middle, or back, depending on how you want the weight to be transferred !

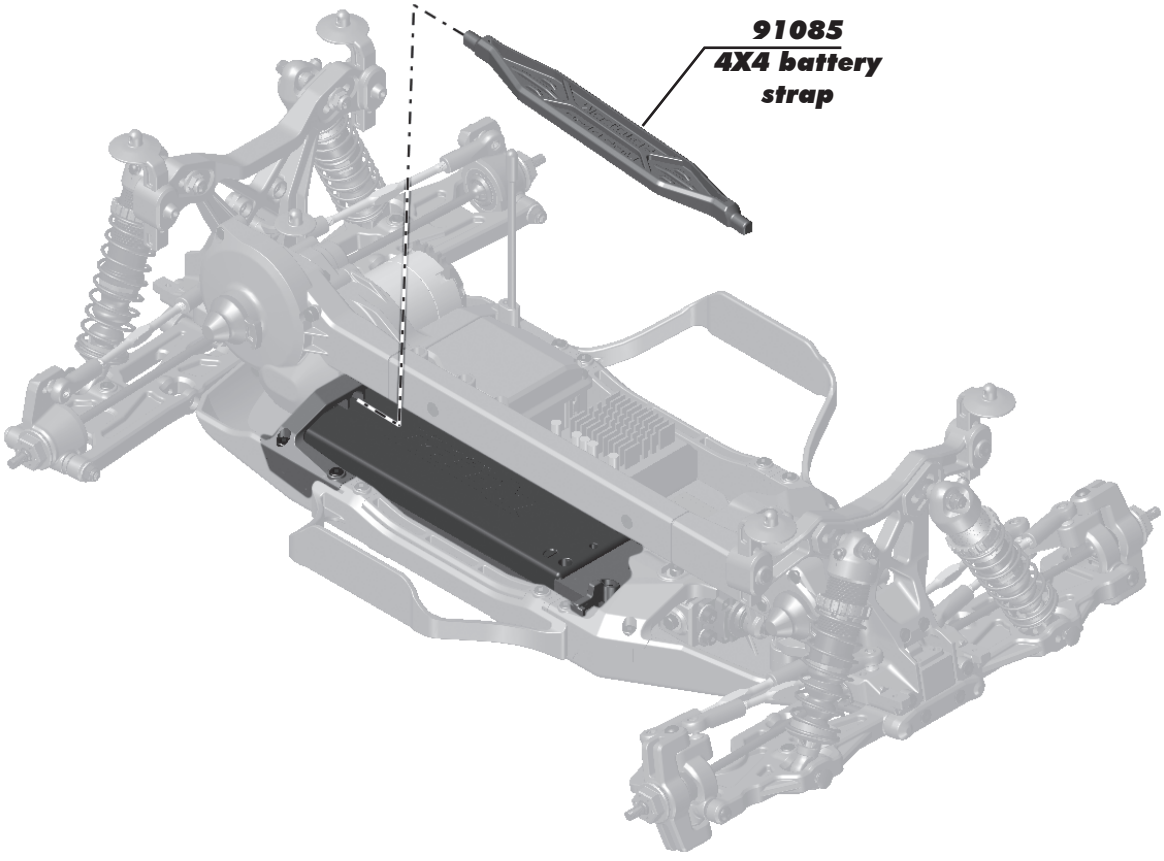


9238 x2
Battery foam spacers

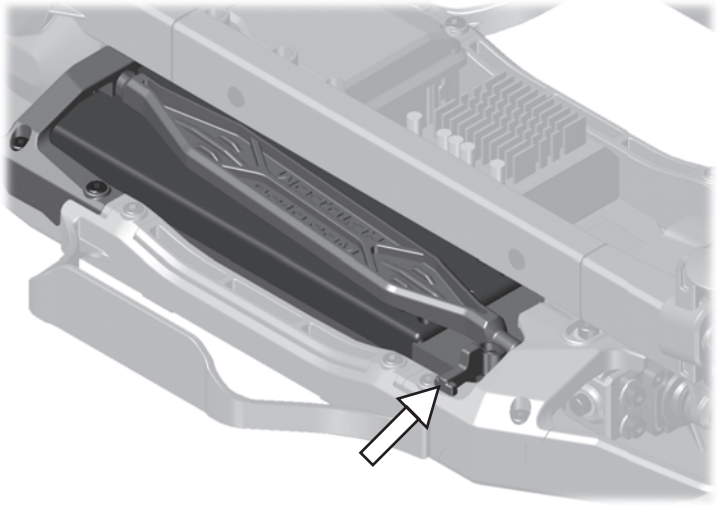


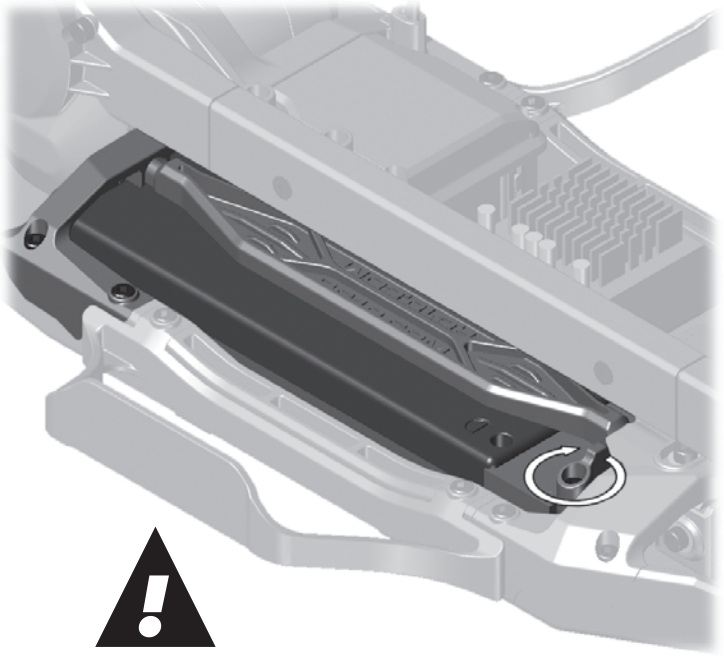
:: Electronics Installation (cont.) - Bag L

91085
4X4 battery strap



:: Electronics Installation (cont.) - Bag L

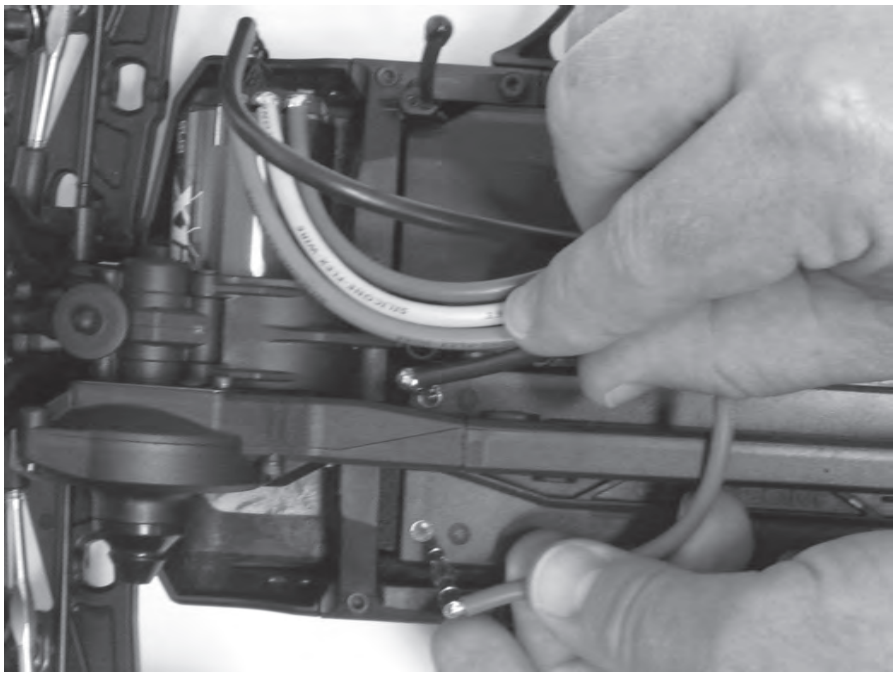




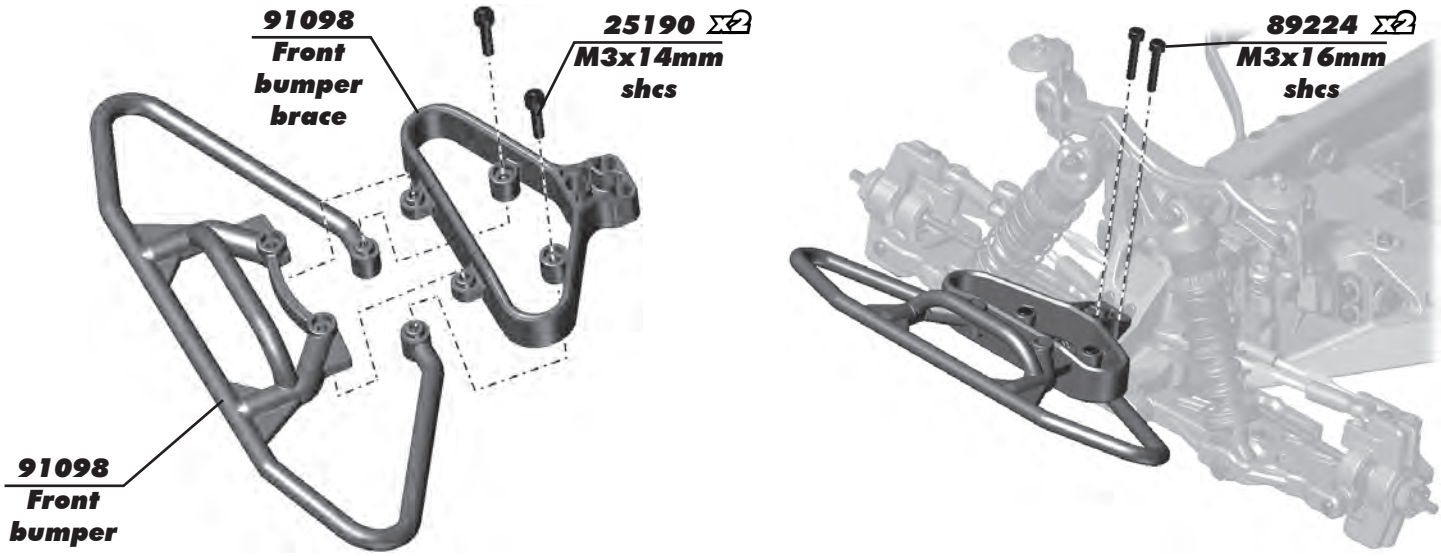
Twist the battery strap knob to the right to lock the battery strap into place!

:: Electronics Installation (cont.) - Bag L

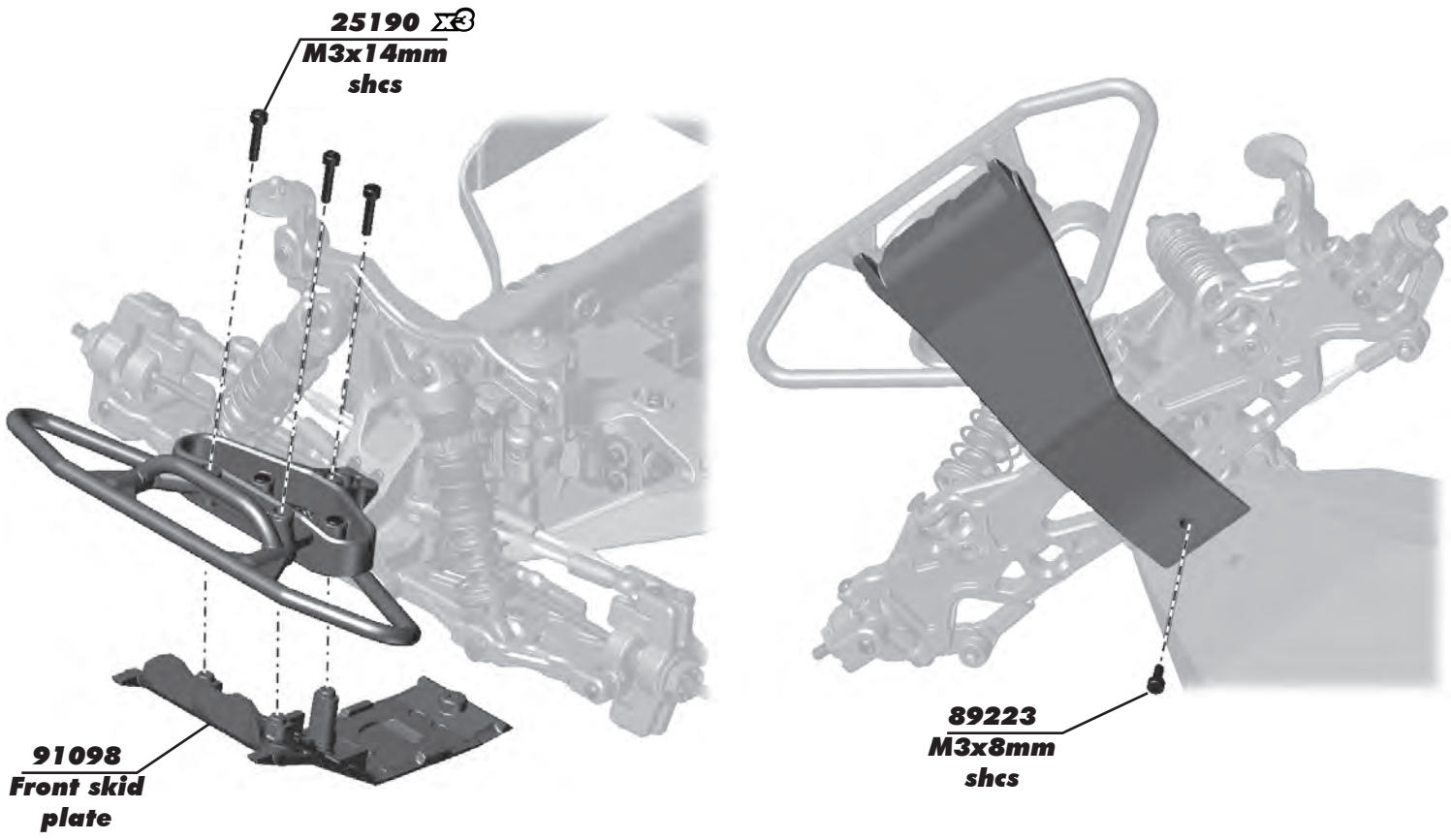
You can run the battery wires above or below the belt cover!



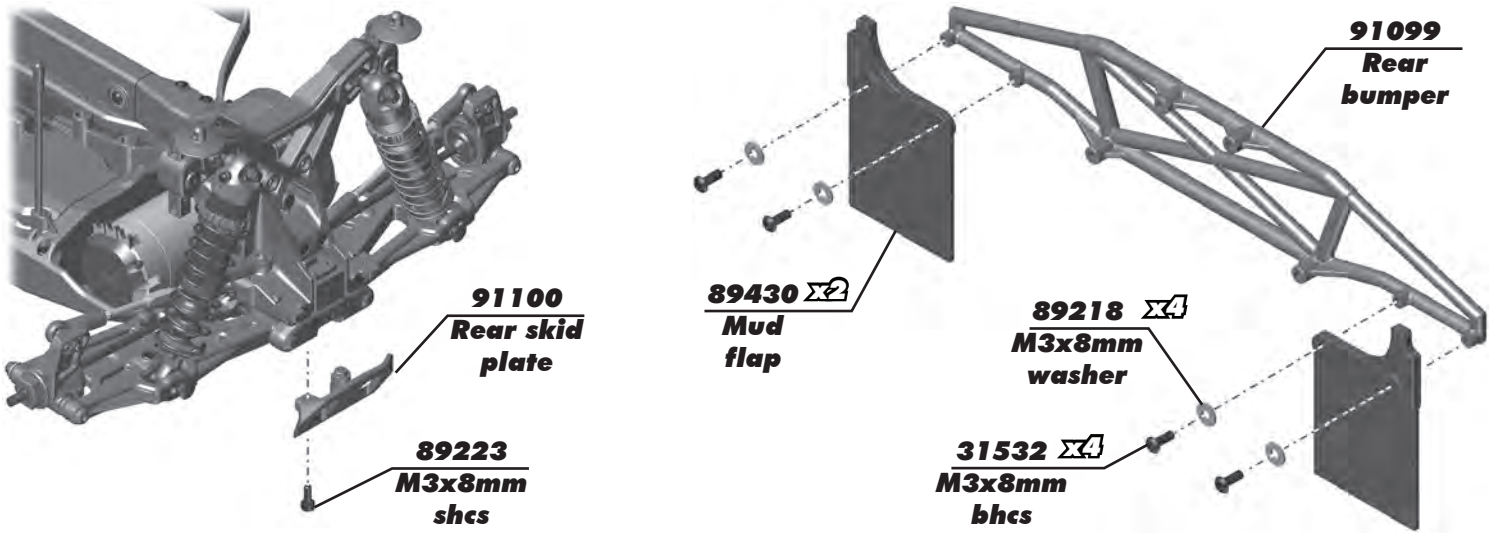
:: Front Bumper Assembly - Bag M



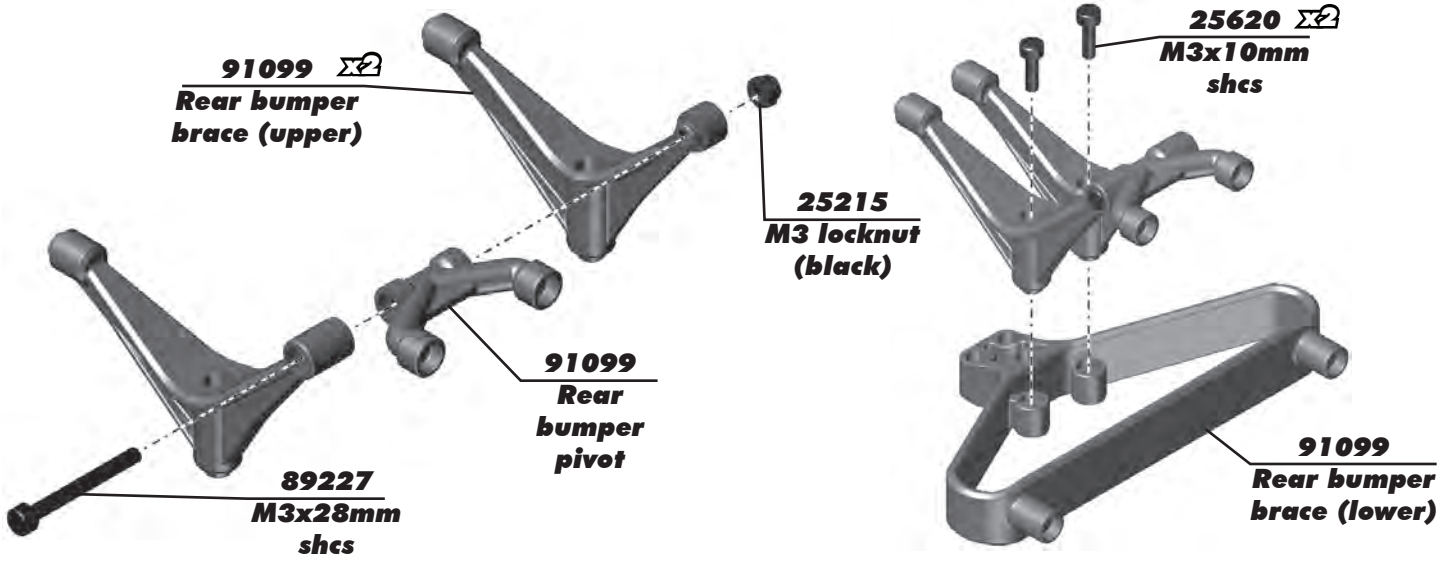
:: Front Bumper Assembly (cont.) - Bag M



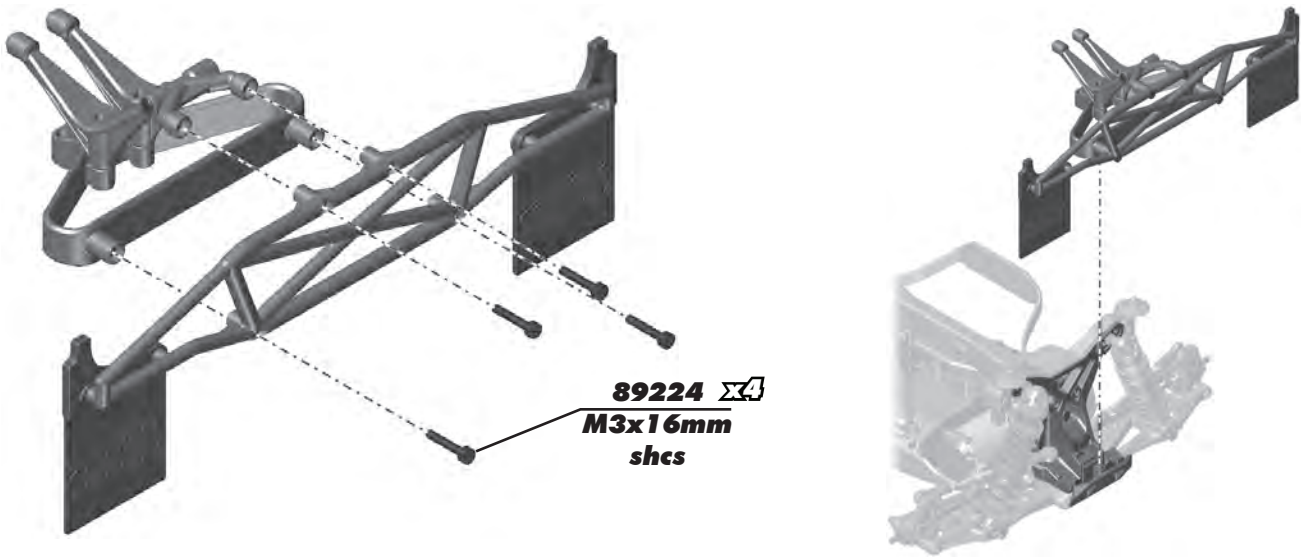
:: Rear Bumper Assembly - Bag N



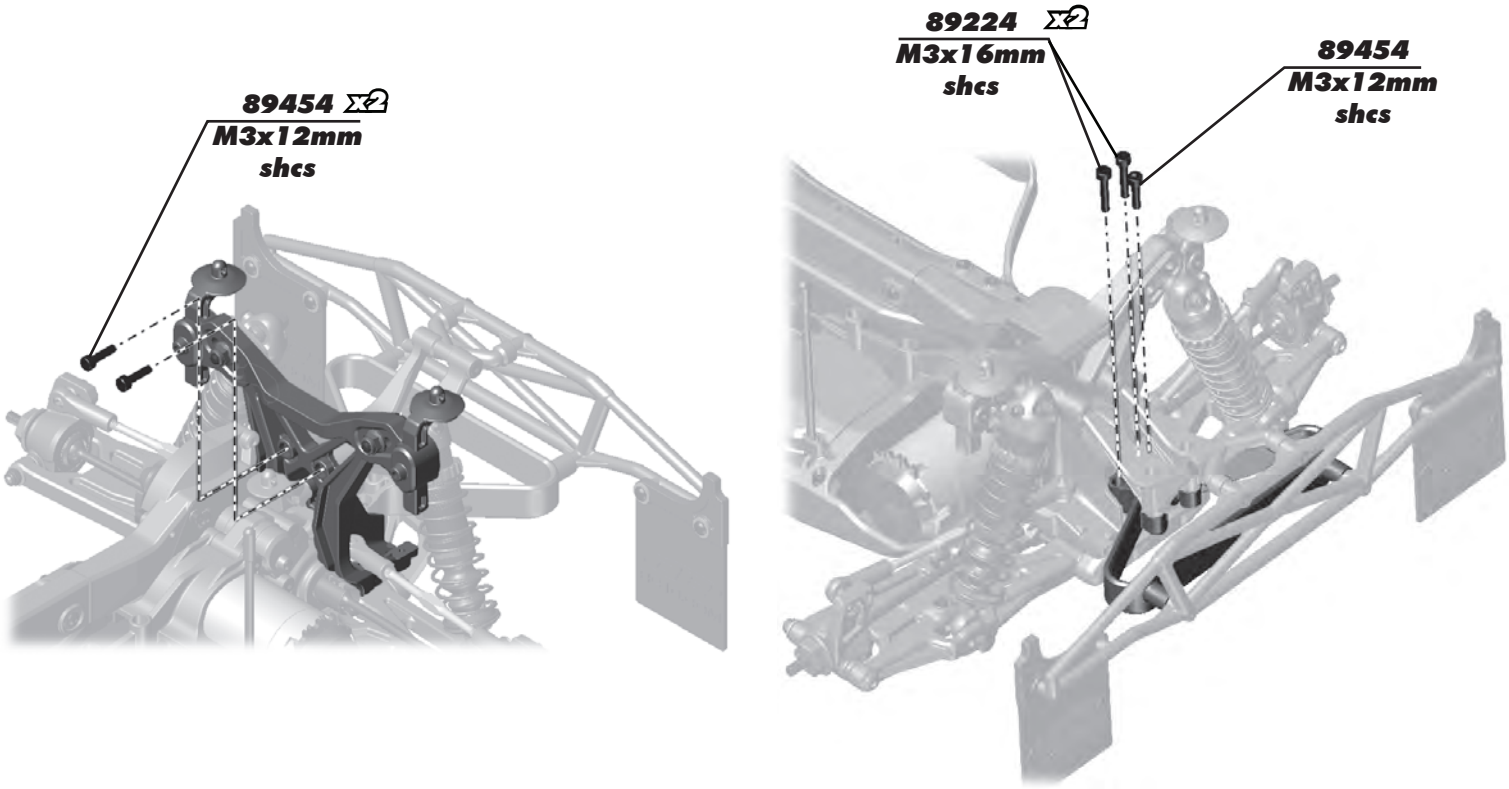
:: Rear Bumper Assembly (cont.) - Bag N



:: Rear Bumper Assembly (cont.) - Bag N



:: Rear Bumper Assembly (cont.) - Bag N



:: Wheel and Tire Assembly - Bag O

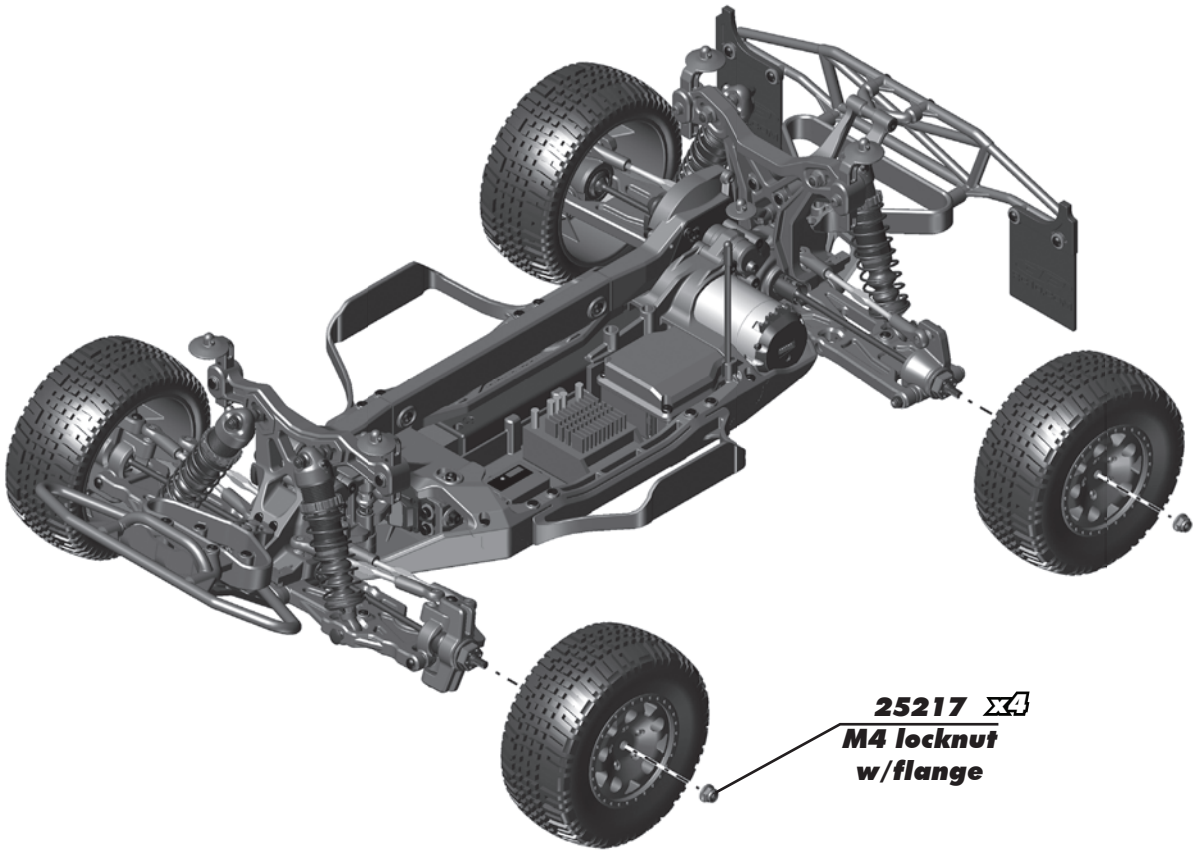
Note: Clean the rims and tires where the two will mount to each other before you glue them together. You can clean them with either rubbing alchohol, or r/c electric motor spray.

Use CA glue #1597 to glue the tire to the wheel. Glue one side at a time, allowing enough time for the glue to dry before continuing to the other side. Tip: You can use a rubber band to hold the tire tight against the wheel while the glue is drying.

CA glue is not included!

Build 4!

:: Wheel and Tire Assembly (cont.) - Bag O

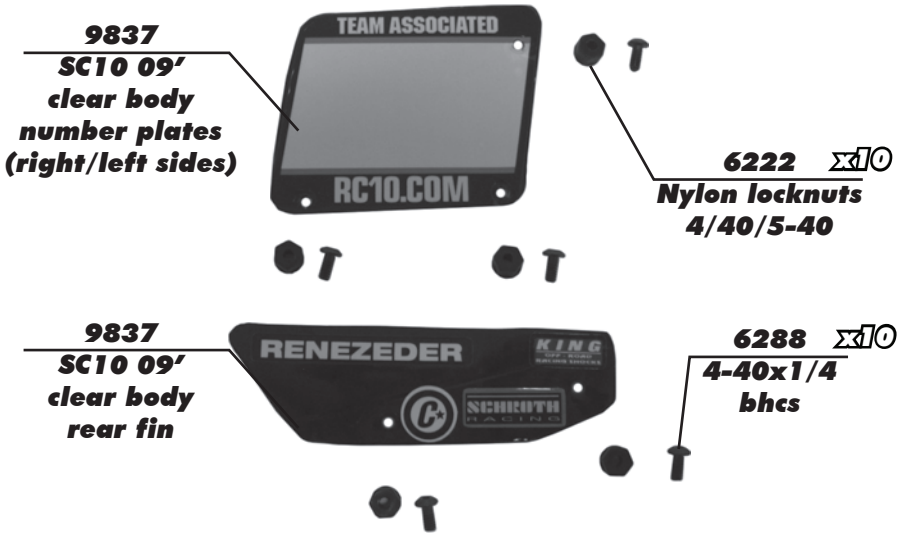


:: Body

Body :
Your SC10 4x4 kit comes with a clear polycarbonate body. You will need to prep the body before you can paint it. Wash the inside thoroughly with warm water and liquid detergent. Dry the body using a clean, soft, lint-free cloth. Use the supplied window masks to cover the windows from the INSIDE of the body (RC cars get painted from the inside).
Using high quality masking tape, apply tape to the inside of the body to create a design. Spray (either rattle can or airbrush) the paint to the inside of the body (prefferably dark colors first, lighter colors last).
NOTE: use ONLY paint that is recommended for use with (polycarbonate) plastics. If you don't, you can destroy the plastic body!!!!).

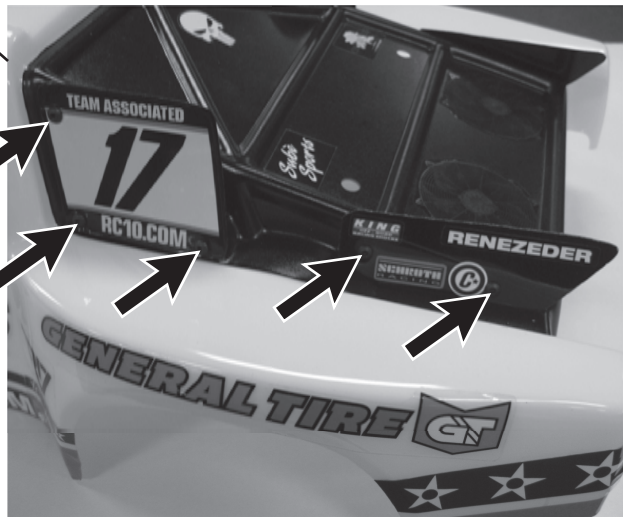
After painting, cut the body along the trim lines.
NOTE: The number plates are located in the wheel wells of the body. The rear fins are located behind the bed of the body. Cut these out before you throw away the scrap pieces. Remove overspray protectant film. Make sure to drill or use a body reamer to make the holes for the body mounts, antenna, and number plates. Add some stickers, and your ready to race!

The SC10 4x4 RTR comes with a pre-painted body. Install the body and you are ready to go.

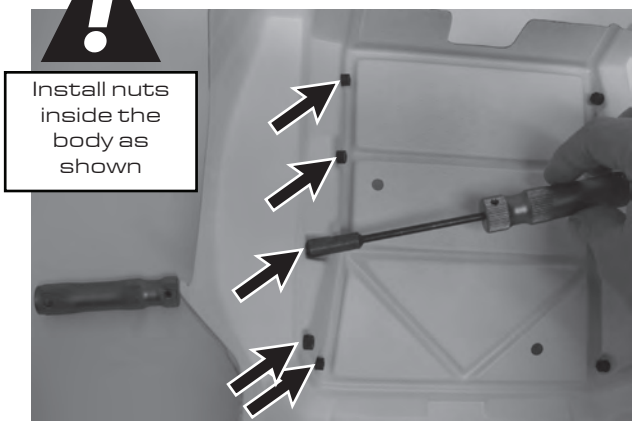


:: Body (Cont.)

9837
SC10 09' body (clear)



Install screws outside the body as shown



Install nuts inside the body as shown

:: Body (cont.)

91160 x4
Body clip 1.3mm

:: Final Adjustments

Tips for Beginners:

1. Place your car on a block or stand so that all 4 wheels are elevated and free to move. Remove the body.
2. Turn the transmitter ON.
3. Connect your battery pack and turn the ESC (electronic speed control) power switch ON.
4. Turn the steering wheel on the transmitter. If the vehicle does not respond, check your battery connection, ESC plug, and servo plug are all installed correctly. If both systems are powered on, then refer to your transmitter manual for help on setting up your radio systems.
5. If the steering is working, check that the wheels turn left when you turn the transmitter wheel to the left. If not, then you must check the servo reversing switches (see transmitter manual).
6. Adjust the steering trim setting on the transmitter until the steering rack (page 7) is centered in the car. Then, adjust the steering turnbuckles (page 19) so that both front wheels point straight forward. Use the steering trim to fine-tune the centering adjustment once you finish the checklist and start driving your car.
7. Now connect the motor to the ESC (refer to ESC instructions for proper installation).
8. Set the ESC according to the manufacturer's instructions. WARNING: Some ESC's have the motor dis-connected during setup and some do not. You risk damaging your brushless system if you do not follow the manufacturer's instructions.
9. Check that your ESC settings are working by lightly applying the throttle and brake.
10. Re-install the body. You are now ready to drive !
11. REMEMBER that the transmitter is the first to be turned on and the last to be turned off. Always operate your R/C vehicle in a safe area clear of any vehicles, pedestrians, or animals.

:: Tuning Tips

Tips for Beginners:

Before making any changes to the standard setup, make sure you can get around the track without crashing. Changes to your vehicle will not be beneficial if you can't stay on the track. Your goal is consistent laps.

Once you can get around the track consistently, start tuning your vehicle. Make only ONE adjustment at a time, testing it before making another change. If the result of your adjustment is a faster lap, mark the change on the included setup sheet (make adddtional copies of the sheet before writing on it). If your adjustment results in a slower lap, revert back to the previous setup and try another change.

When you are satisfied with your vehicle, fill in the setup sheet thoroughly and file it away. Use this as a guide for future track days or conditions.

Recommended Motor Gearing:

To calculate your SC10 4x4 Final Drive Ration (a.k.a. gear ratio), use the following formula:
(spur gear # teeth) / (pinion gear # teeth) x 2.57 = Final Drive Ratio

Motor Gearing Chart

Motor	Gear Pitch	Pinion	Spur	(Final Drive Ratio) : 1
4.5 turn, 550 size	32	12	62	13.28
5.5 turn, 550 size	32	13	62	12.26
5.5 turn, 540 size	48	15	93	15.94
6.5 turn, 540 size	48	16	93	14.94
7.5 turn, 540 size	48	17	93	14.06

SC10 4X4 32 pitch gear chart - 2.57:1

	58	60	62
11	13.55	14.02	14.49
12	12.42	12.85	13.28
13	11.47	11.86	12.26
14	10.65	11.01	11.38
15	9.94	10.28	10.62

SC10 4X4 48 pitch gear chart - 2.57:1

	87	93
15	14.91	15.93
16	13.97	14.94
17	13.15	14.06
18	12.42	13.28
19	11.77	12.58
20	11.18	11.95
21	10.65	11.38
22	10.16	10.86

Differential:

The SC10 4wd heavy duty differentials (a.k.a. "diffs") are o-ring sealed, and can be filled with silicone fluid.
The recommended starting setup is 3000 CST, and normally between 2000-7000 CST differential fluid will work best. For less low-speed steering, try running the front differential thicker than the rear (example, 3000 CST rear, 5000 CST in front). The truck will have the best cornering balance with more similar fluids in the front and rear diffs.

Slipper Clutch:

The assembly instructions give you a base setting for your slipper clutch. The SC10 4wd clutch is de-coupled, so the outer slipper hub drives the rear wheels and the inner slipper hub drives the belt to the front. The Team recommend making slipper settings at the track, where the grip level is at race conditions.
Torque bias front and rear is adjustable by changing the center hole diameter in the slipper pads.

Belt Tension:

The SC10 4x4 belt is 5mm wide neoprene canvas backed. It will stretch slightly over its life, so the belt tensioners will need to be adjusted from the initial settings after about 20-30 minutes of running. By touch, the belt should feel tight when pressing on top surface between the pulleys, and you should only be able to depress the belt about 3mm or 1/8". After an initial run-in on the truck and setting the belt tension, you can verify that there is not excessive belt drag. With the motor pinion removed, the truck should roll 10-15 feet with a slight push on level, smooth ground.

On the setup sheet, the tension slots are broken into 5 tension locations, with 3 being the middle. Since the rear pulley is the drive, we will start with tension setting 3 in rear, and 4 in front. As the belt breaks-in, adjust the front tensioner tighter until you are at the mid 3 setting. After that, any future tension adjustments to tighten the belt should be made equally front and rear.

Belt Tension with 19 Tooth Front Over-Drive or Rear Under-Drive Pulleys:

WARNING: Do not run the 19 tooth pulley for both front and rear. Only run one 19 tooth pulley on the truck at any time. Changing the drive pulleys only affects front wheel speed. The drive speed of the rear wheels is fixed through the gearbox. If you want to try the optional 19 tooth over-drive "O" front pulley OR 19 tooth under-drive "U" rear pulley, then you will need to set the tensioner to setting 1 (tightest setting) on the end of the car with the smaller 19T pulley. Then adjust the belt tension on the opposite pulley to get the proper overall tension (usually 3 or 2 tension setting on the opposite gearbox). The Team recommend to start with the standard 20 tooth pulleys (equal drive) and then test the alternate pulleys to determine which works best for you.

Front over-drive ("O" pulley in front) makes the front wheels turn faster than the rear, and gives the front end more drive mid-to-exit. This can improve the steering feel in lower grip situations, or whenever you want more grip and steering.

Front under-drive ("U" pulley in rear) makes the front wheels turn slower than the rear, which can also help stabilize the truck in certain conditions. You must dis-assemble the slipper clutch to change the rear pulley.

:: Tuning Tips (cont.)

Front Clicker:

For your first run with the SC10 4x4, we recommend to start with full-time 4wd until you get a feel for the truck. Then, you can try loosening the front clicker nut which will allow the clicker to operate.

The front clicker will take away front wheel braking and let the front tires spin freely off-power. This gives the front end more grip, and gives more steering in the turns. To allow the clicker to operate, set the nut at 2mm gap between the nut and the end of the front topshaft. If you want to lock the clicker (called "full-time 4wd") then tighten the nut until it bottoms (about 3mm or more gap from the nut to the end of the topshaft).

If you are running full-time 4wd with the clicker nut locked down, you may hear the belt skip 4-5 teeth as it changes direction from drive to brakes at top speed. Under normal circumstances, the belt should not skip under braking from anything but top-speed (30+ m.p.h.). Running full-time 4wd will put more stress on the belt, and belt wear should be monitored more closely, inspecting the belt and pulleys after every day of running (about 45 minutes run time).

Shock Piston and Fluid:

The SC10 4x4 kit is built with 4 hole, 1.2mm hole diameter pistons. All pistons have a number molded into the top. 12 denotes 1.2mm diameter holes. The optional 1.1 and 1.3mm hole diameter pistons are included.

As a rule of thumb, larger hole pistons decrease damping which can help the truck in bumpy and low-grip situations. On smoother tracks, or for large jumps, you may want use smaller hole pistons which increase damping and take away some grip.

Typically, your SC10 4x4 shocks will work best with shock fluid rates between 25 and 35 wt (275 - 425 CST). Use the thicker fluids in the range when changing to larger hole pistons, and also use the thinner weight fluids when changing to a smaller hole pistons.

Front Camber Link Length & Number of Washers Under Ballstuds:

Changing the length of the camber link is considered a bigger step than adjusting the ballstud height. Your first setting change on the track should be to try the inside vs. outside locations on the shock tower. Typically shortening the camber link (or lowering the ballstud) will give the front end less grip which is more stable. Lengthening the camber link (or raising the ballstud) will give the front more grip at low speed but it can have slower steering response mid-to -exit of the turns.

Front Camber:

A good starting camber setting is –1 degrees (top of the tire leaning in). Positive camber, where the top of the tire is leaning out, is typically not recommended. Trick: Set your car on a flat surface, and set a soda can next to your tire as a reference for vertical, or zero camber. Both sides should be equal in setting. For serious racers, Associated makes the #1719 Factory Team camber gauge.

Front Toe-in:

Zero degree toe-in (tires pointing straight forward) is the setting that should be used in almost all track conditions. Occasionally you can increase turn in by adding a little toe-out (front of tires point slightly out). Front toe in is not a typical tuning adjustment used by The Team.

Front Arm Hole:

The kit blue springs and outside front arm hole will work best in most cases. Changing to the inner hole will soften the suspension and give more front end grip. Typically you will want to change to a heavier spring when changing arm hole location inward.

Front Tower hole:

The kit setting of the middle hole is a good standard setting for most tracks. Moving the shock out on the tower will make the truck easier to drive and normally will decrease entry steering but increase mid to exit steering. When running the inside tower hole, try running a heavier spring to compensate for the steeper shock angle.

Front Ride Height:

The standard front ride height setting is 27mm (without body). Check the ride height by lifting up the entire truck about 8-12 inches off the bench and drop it. After the suspension "settles" into place, raise or lower the shock collars as necessary until there is 27mm gap from the bottom of the chassis to the ground.

Tuning Guide: Making large ride height adjustments up or down from this setting will tend to make the truck feel unpredictable.

:: Tuning Tips (cont.)

Anti-Squat:

Anti-squat denotes the angle of the rear arms relative to the ground. Zero anti-squat means that the rear arms are flat, parallel with the ground. The kit setting is 2 degrees, and can increased to 3 degrees of anti-squat by changing to the included 3+3 rear suspension mount. Adding anti-squat tends to make the car "rotate" more in corners, but doesn't handle as well through the bumps.

Rear Camber Link Length & Number of Washers Under Ballstuds:

Changing the length of the camber link is considered a bigger step than adjusting the ballstud height on the rear chassis brace. Typically shortening the camber link (or lowering the ballstud) will give the rear end less roll and the car will tend to accelerate or "square up" better. Lengthening the camber link (or raising the ballstud) will give the rear more roll and more cornering grip. You should normally use the kit setting (inside on tower, middle "B" hole on hub) and only adjust the ballstud height.

Rear Hub Spacing:

You have 3 options for rear hub spacing, FORWARD, MIDDLE, & BACK. The kit setting MIDDLE provides the most rear traction, and will be used most often. For additional weight on the rear tires in slick conditions, run hubs FORWARD. For improved handling in bumps or rhythm sections, try moving the hubs to BACK. This can also make the car handle better in 180 degree turns.

Rear Camber:

A good starting camber setting is –1 degrees. Use the included #1719 camber gage to set your camber as seen below. Adding a small amount of positive camber, where the top of the tire is leaning out, will tend to improve straight-line acceleration on loose tracks.

Front and Rear Swaybars:

The optional #91123 4x4 front and #91124 rear swaybar set (a.k.a. anti-roll bar set) allows you to add roll resistance to stabilize the truck in turns. The recommended bars are 1.5. 2.0, and 2.2 mm (from softest to stiffest).

Start with the same diameter wire front and rear. A swaybar has minimal effect on handling over bumps and jumps. It is especially helpful tuning item if your truck needs high-speed stability to stop traction rolling.

Rear Arm Hole:

The inner hole in the arm tends to work the best over the bumps and jump sections. Changing to the outer hole in the rear arm will tend to make the rear end feel more "locked in" and less responsive. You may need to run a softer spring when using outside in the rear arm.

Rear Tower Hole:

Try adjusting the shock tower hole before changing springs or arm mount location. The kit setting of the middle hole will be optimal on most tracks. Moving the shock out on the tower will increase typically yield more sidebite (cornering traction) on corner exit and less bite on entry. Moving the shock in on the tower will yield more stability on entry and less cornering traction on exit, and is typically better in bumps.

Rear Ride Height:

The rear ride height setting you should use most often is 27mm (without body). Check the ride height by lifting up the entire truck about 8-12 inches off the bench and drop it. After the suspension "settles" into place, raise or lower the shock collars as necessary until there is 27mm gap from the bottom of the chassis to the ground. The chassis should look level from the side.

Tuning Guide: Making large ride height adjustments up or down from this setting will tend to make the car feel unpredictable.

Setup Sheets:

Most often, the best way to get your car handling right is to go to our website www.rc10.com and click on the links to Setup Sheets, then SC10 4x4 setups. Our team of professional drivers help develop these setups at National events. Also, most drivers have a "base" setup that they use as a starting point for every event. Try running some of our base setups OR look for track conditions and tires that are similar to your local track and mimic that setup.

Remember, each adjustment has a purpose, so copy everything from the setup sheet and then make adjustments based on the recommendations in here and in our online tuning guide.