

1:10 SCALE ELECTRIC
COMPETITION
OFF-ROAD CAR KIT

RB10

FACTORY TEAM



TEAM ASSOCIATED



1:10 Scale 2WD Electric Off Road Competition Buggy Kit Manual

#90060 RB10 Retro Factory Team Kit



CHAMPIONS *by* DESIGN

TeamAssociated.com

TEAM ASSOCIATED

:: Introduction

Thank you for purchasing this Team Associated product. This assembly manual contains instructions and tips for building and maintaining your new RTR. Please take a moment to read through this manual to help familiarize yourself with these steps. We are continually changing and improving our designs; therefore, actual parts may appear slightly different than in the illustrations. New parts will be noted on supplementary sheets.

:: KIT Features

- New Retro Bronze aluminum B5 tub chassis (rear motor)
- New Retro Bronze aluminum front nose plate
- New Bronze aluminum motor plate
- New front and rear molded bulkhead parts
- Exclusive grey plastics throughout
- High downforce 5.5" retro wing included
- 12mm Hex Dish Wheels
- Authentic retro Viper body included
- 13mm Kashima big bore coil-over shock absorbers
- B5 Rear motor stealth transmission
- Rear CVA driveshafts for more durability
- 2.6:1 ratio gearbox with B5 Ball differential
- Adjustable V2 slipper system
- Rugged steel turnbuckles for adjustable camber and front toe-in
- Fully adjustable suspension geometry
- Vertical ball ends for roll center adjustments, front and rear
- Metric hardware throughout
- Full ball bearings included

:: Additional

Your new kit comes unassembled and requires the following items for completion (refer to www.AssociatedElectrics.com and www.Reedypower.com for suggestions):

- R/C two channel surface frequency radio system
- AA-size batteries for transmitter
- Electronic Speed Control ("ESC")
- Steering servo
- R/C electric motor (540 size)
- Pinion gear (48P), size determined by type/turn or kV of motor
- Battery charger (a peak detection charger, or LiPo compatible charger)
- 2 cell LiPo battery pack
- Polycarbonate specific spray paint
- Cyanoacrylate glue ("CA") (#1697)
- Thread locking compound (#1596)
- Tires and Inserts, Fronts and Rears
- Wheels w/12mm Hex
 - Front Wheels #9690 (white), #9691 (yellow)
 - Rear Wheels #9695 (white), #9696 (yellow)
- Slim Front Wheels w/12mm Hex (carpet/astro turf)
 - #91757 (white) #91758 (yellow)

:: Other Helpful Items

- Silicone Shock Fluid (Refer to AssociatedElectrics.com for complete listings)
- Green Slime shock lube (#1105)
- FT Hex/Nut Wrenches (#1519, 1650)
- FT Universal Tire Balancer (#1498)
- Ride Height Gauge
- FT Body Reamer (#1499)
- FT Ballcup Wrench (#1579)
- Calipers or a Precision Ruler
- Shock Pliers (#1681)
- Hobby Knife
- FT Body Scissors (#1737)
- Wire Cutters
- Needle Nose Pliers
- Soldering Iron

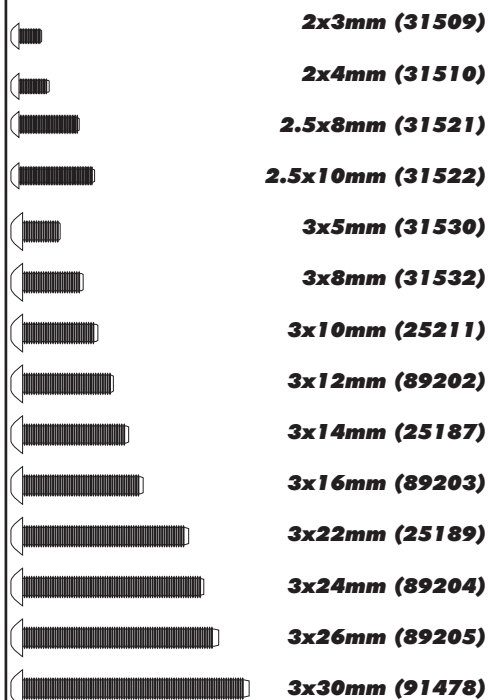
Associated Electrics, Inc.
21062 Bake Parkway.
Lake Forest, CA 92630



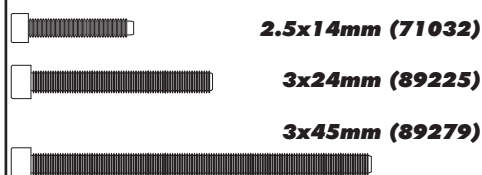
Customer Service
Tel: 949.544.7500
Fax: 949.544.7501

:: Hardware - 1:1 Scale View

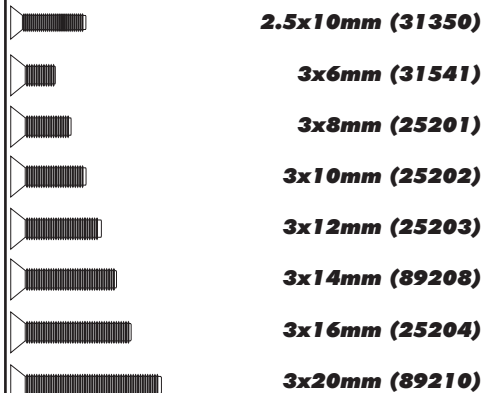
Button Head (bhcs)



Cap Head (shcs)



Flat Head (fhcs)



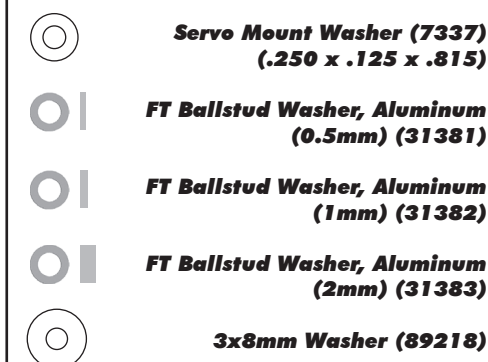
Set Screws



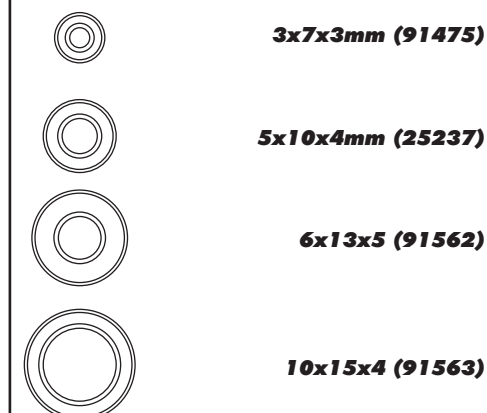
Clips



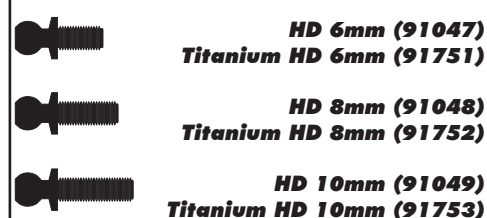
Shims and Washers



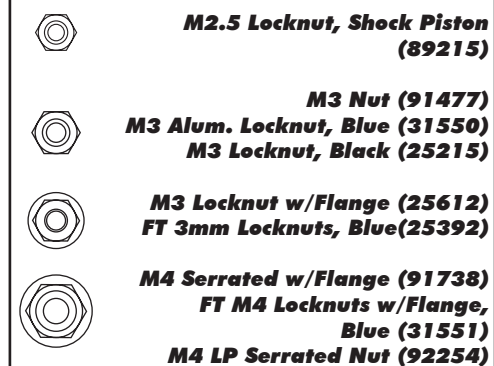
Ball Bearings



Ballstuds



Nuts (lock/plain)



Notes:

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:: Notes



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



This symbol indicates a Racers Tip.



There is a 1:1 hardware foldout page in the front of the manual. To check the size of a part, line up your hardware 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.

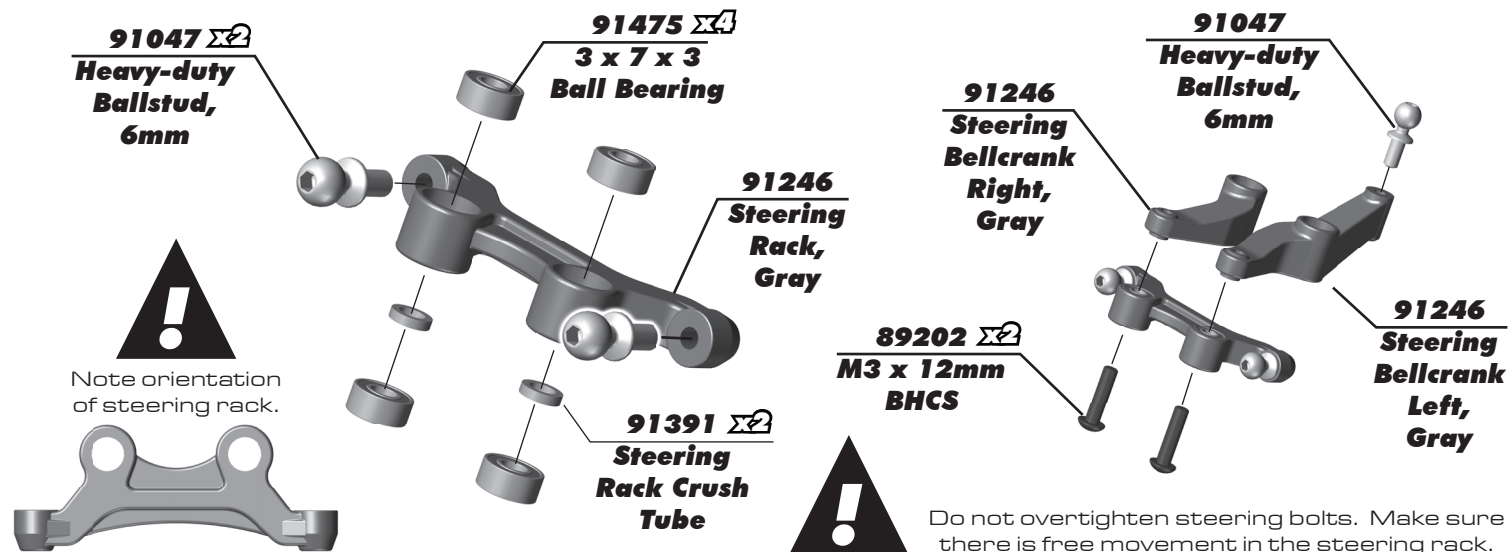
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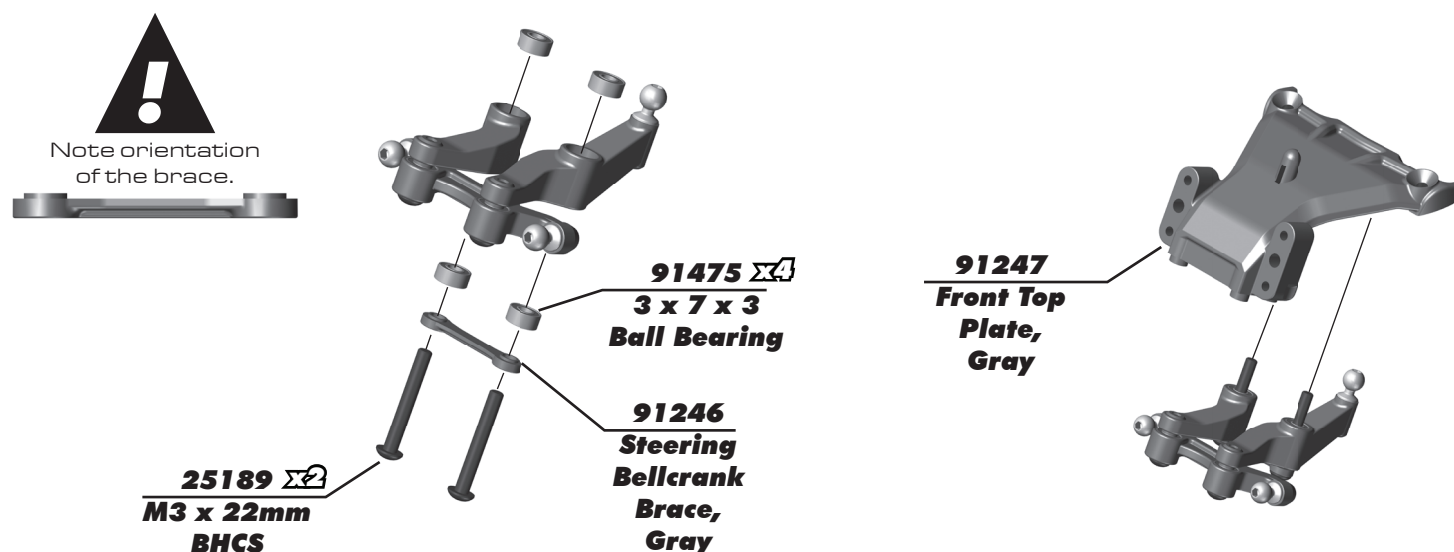
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<http://www.RC10.com> • http://twitter.com/Team_Associated • <http://www.instagram.com/teamassociatedrc/> • <http://www.facebook.com/TeamAssociated/>

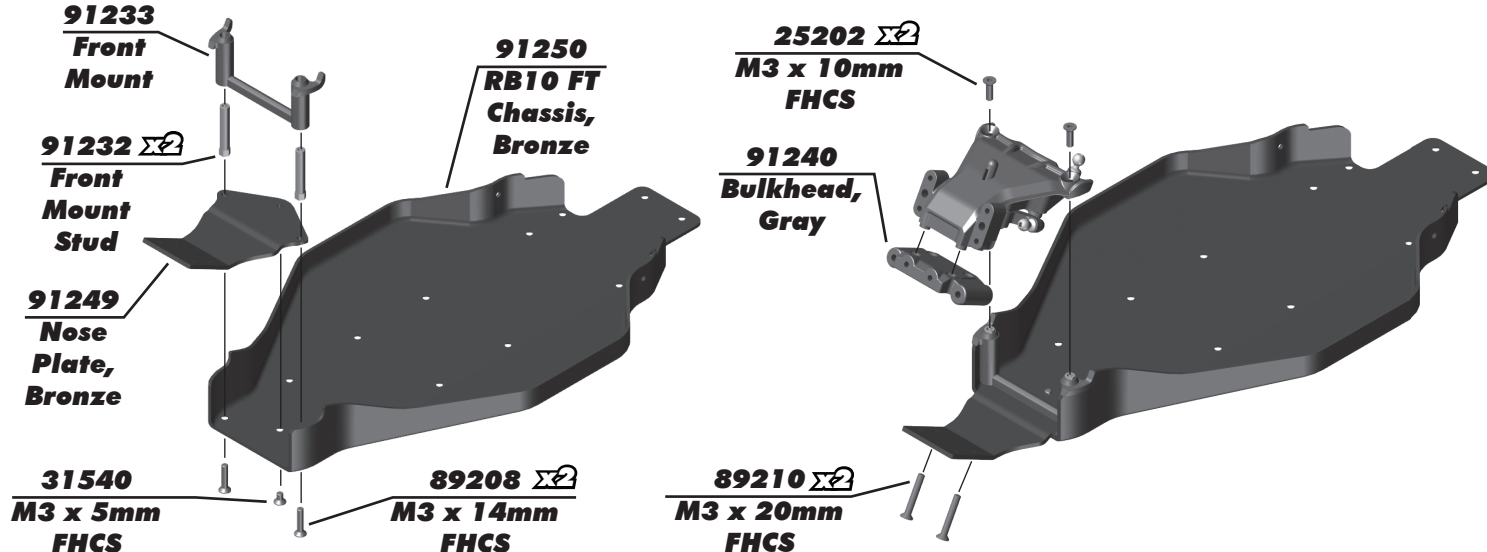
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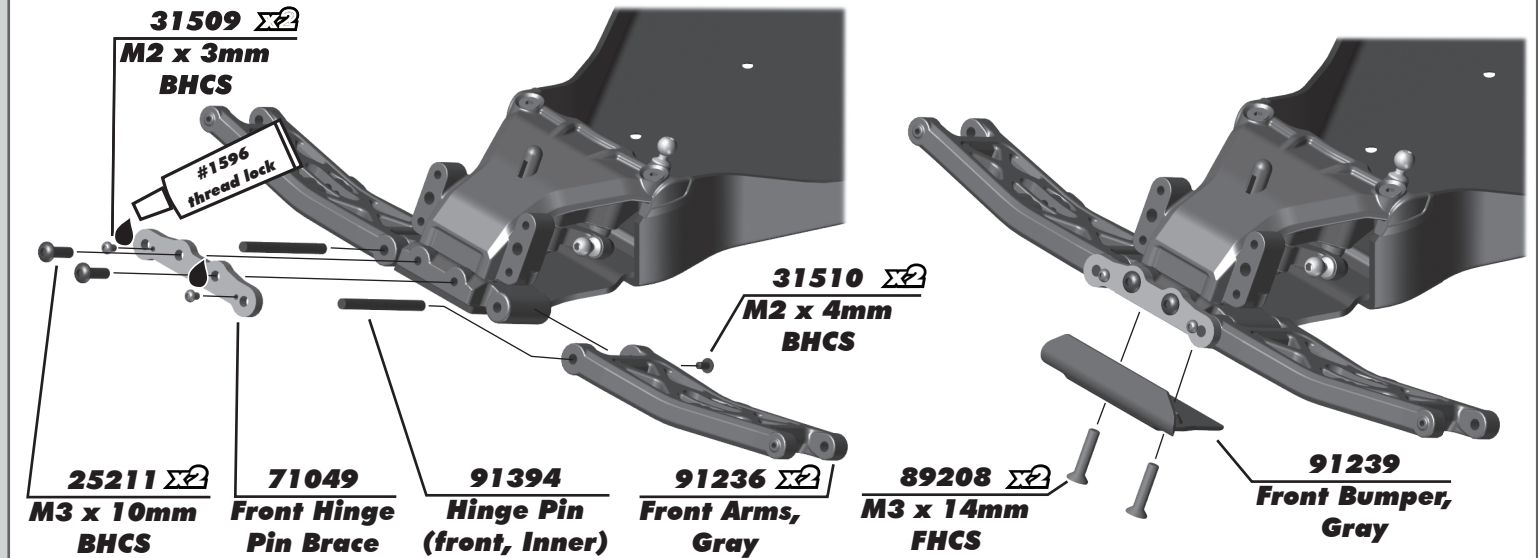
:: Front Top Plate and Steering Build - Bag 1 - Step 2



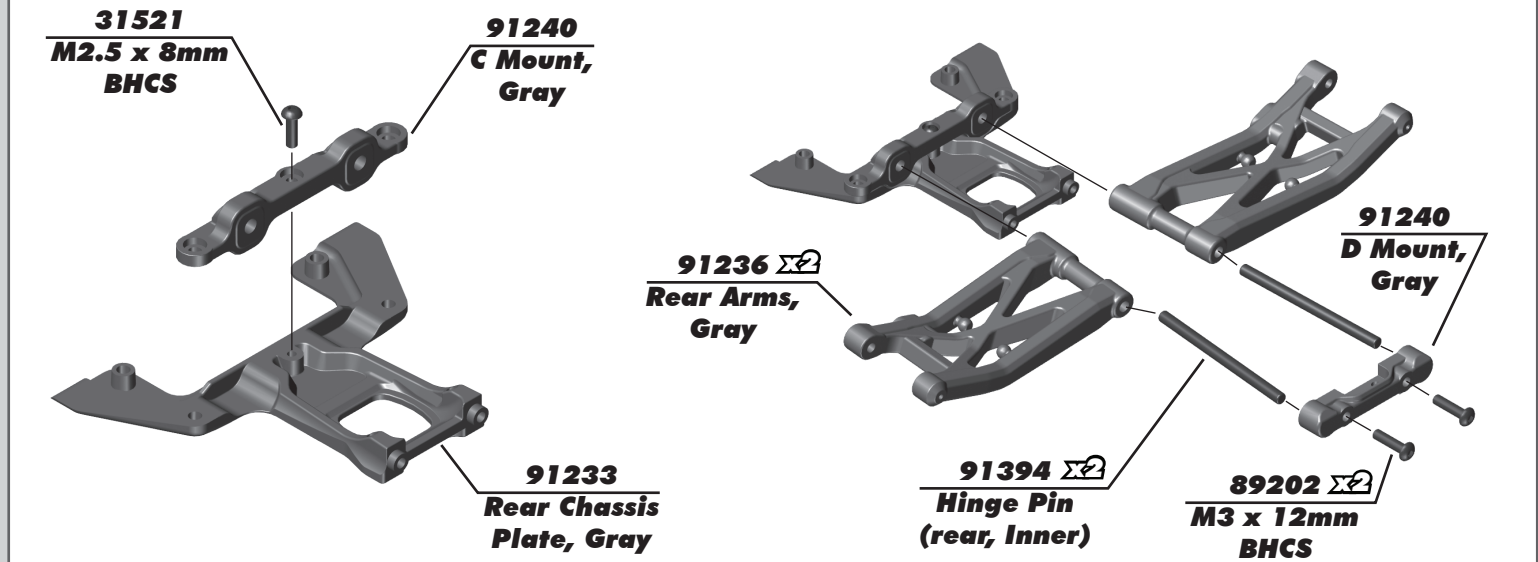
:: Front Top Plate and Steering Build - Bag 1 - Step 3



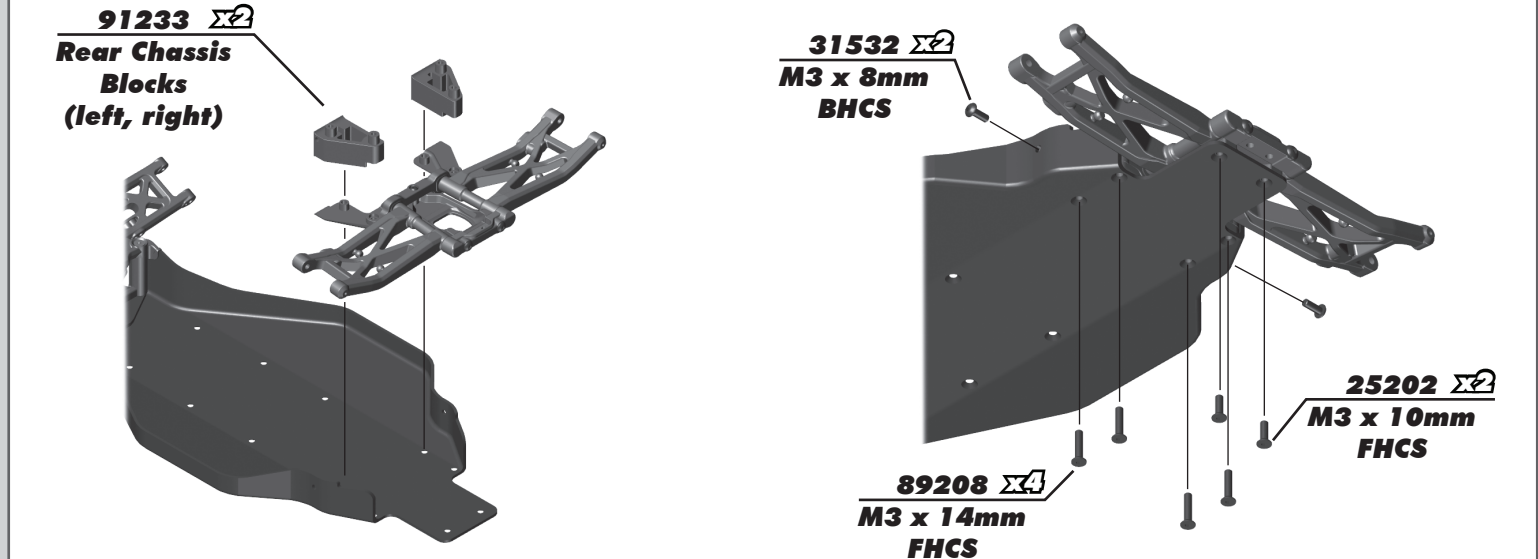
:: Suspension Build - Bag 2 - Step 1



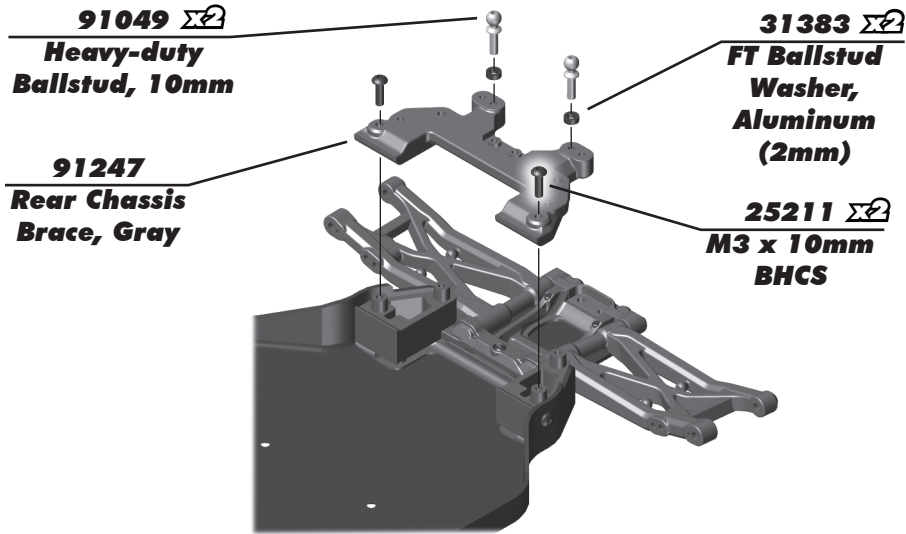
:: Suspension Build - Bag 1 and 2 - Step 2



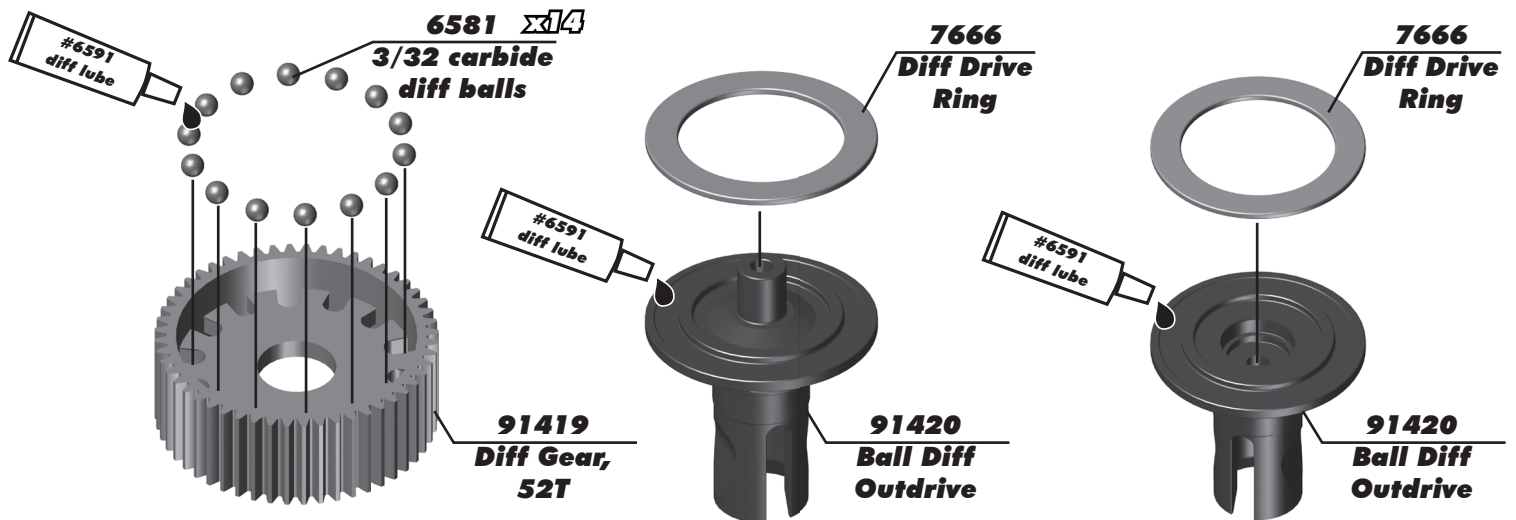
:: Suspension Build - Bag 2 - Step 3



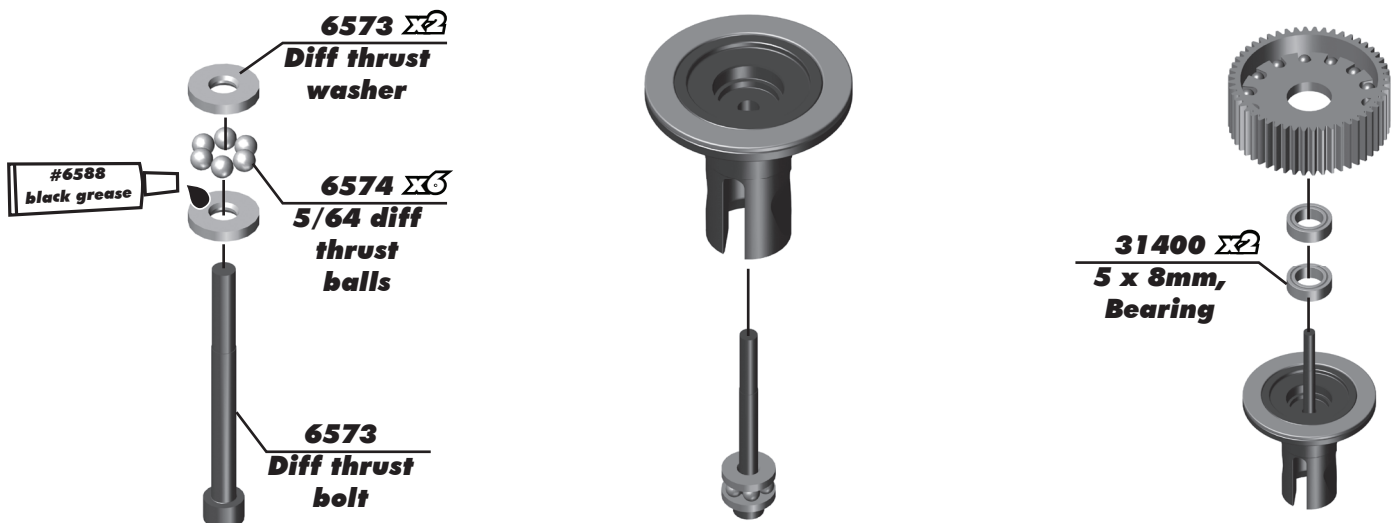
:: Ball Diff Build - Bag 3 - Step 1



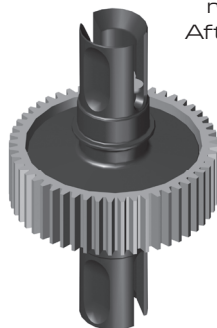
:: Ball Diff Build - Bag 3 - Step 2



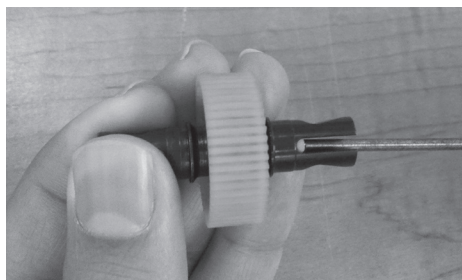
:: Ball Diff Build - Bag 3 - Step 3



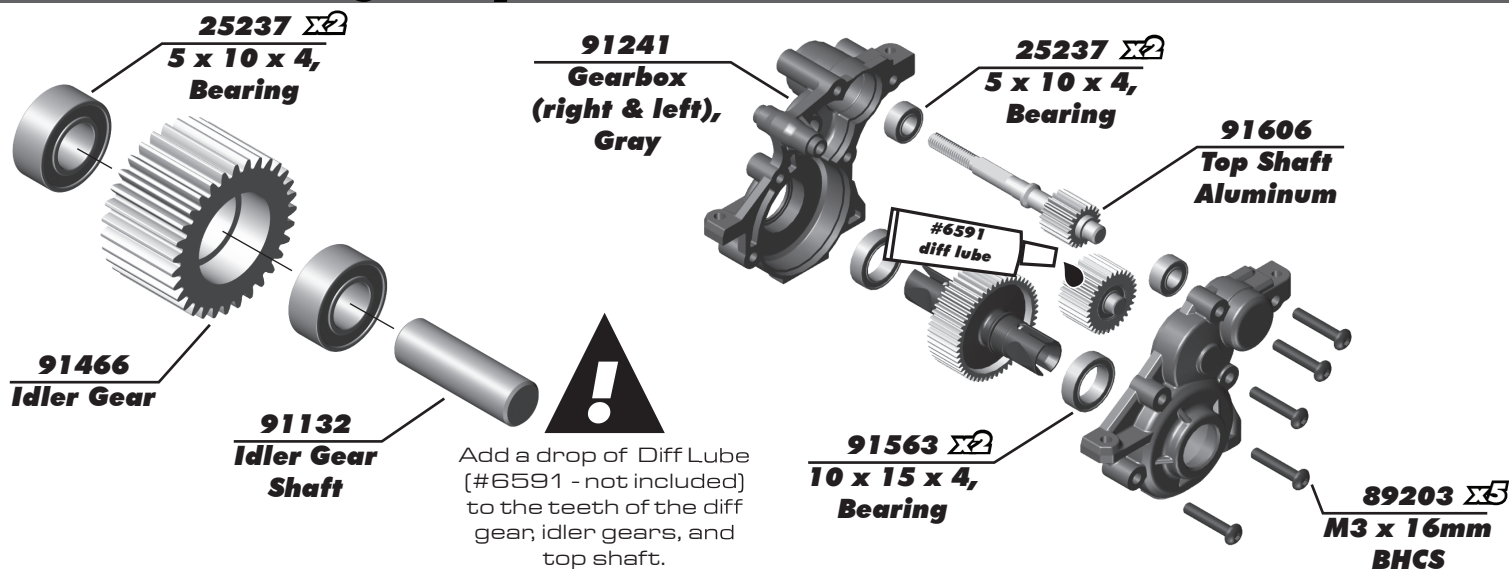
:: Ball Diff Build - Bag 3 - Step 4



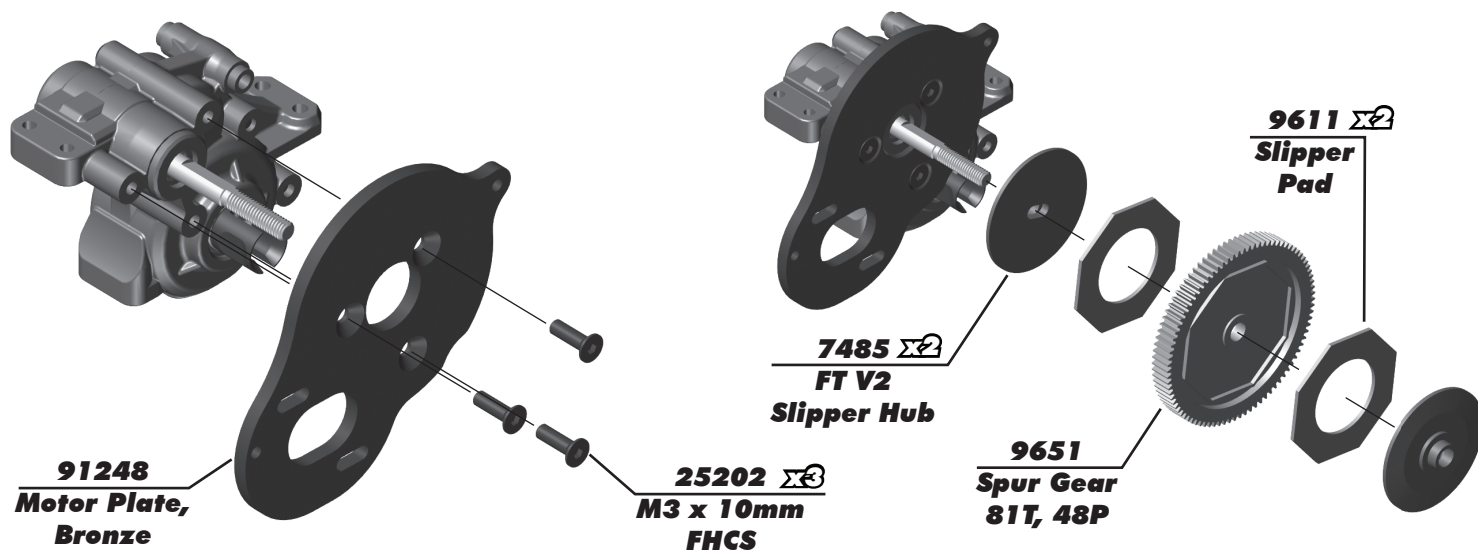
As you tighten the diff bolt, you will notice the T-nut ears moving closer to the bottom of the outdrive slot. This compresses the spring behind the T-nut. The spring should be completely compressed at the same time the T-nut reaches the end of the slot. Caution! Pay close attention to the feeling when the spring is completely compressed. Do not overtighten the bolt. When you feel the spring completely compressed, loosen the diff bolt $1/8$ " of a turn. Your diff should now operate smoothly with resistance as the outdrives move in opposite directions. After you have driven the car once, re-check the diff setting.



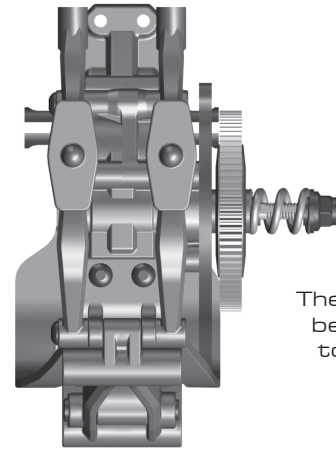
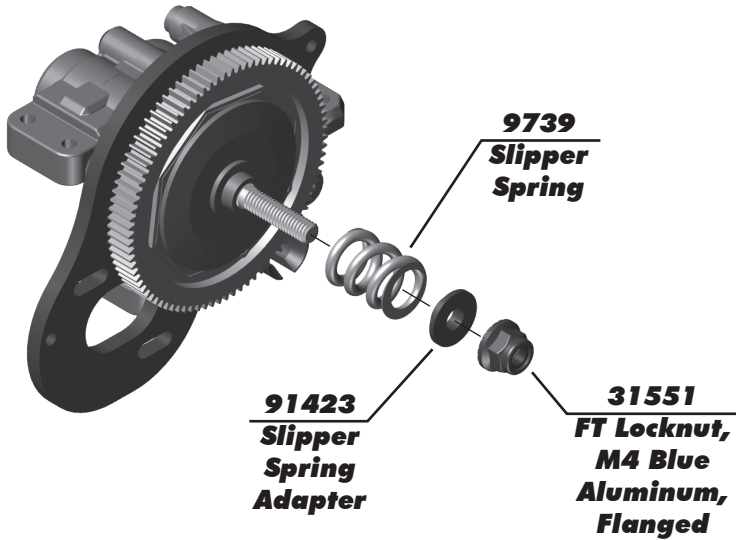
:: Gearbox Build - Bag 3 - Step 5



:: Gearbox Build - Bag 3 - Step 6

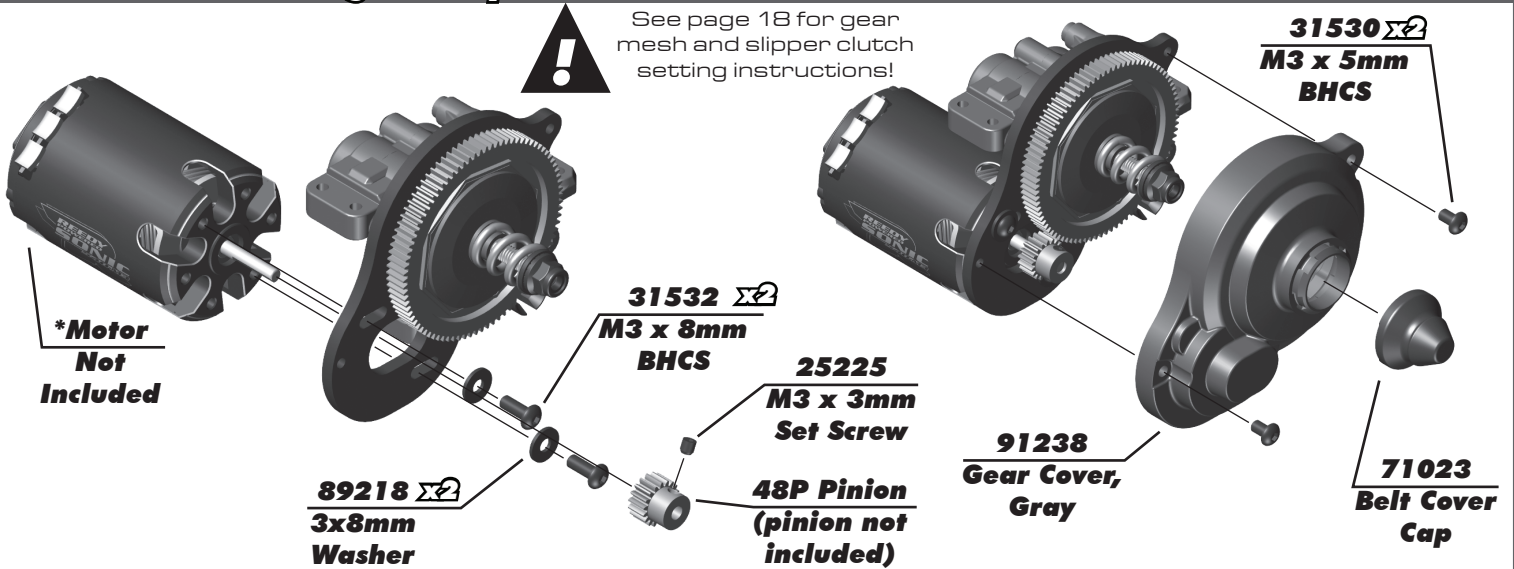


:: Gearbox Build - Bag 3 - Step 7

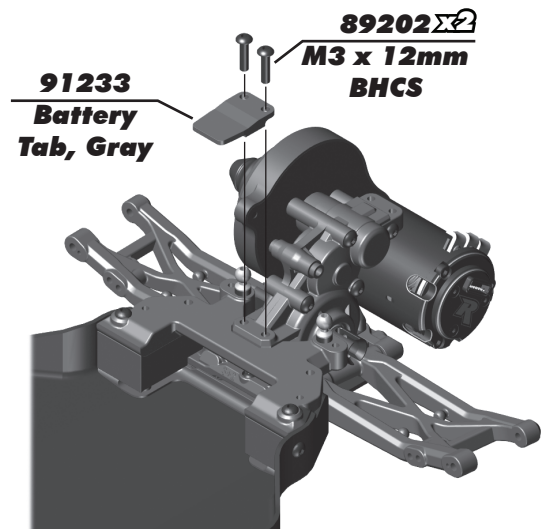
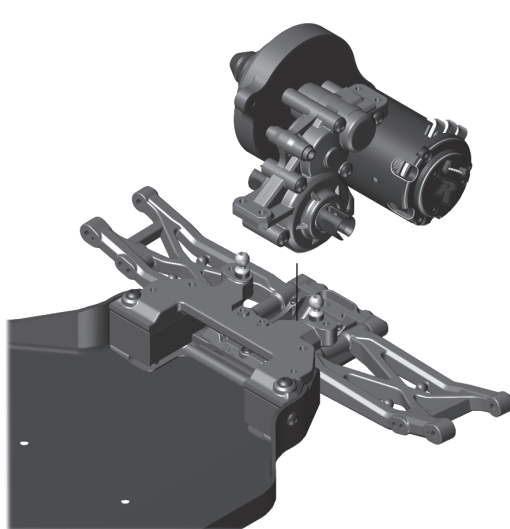


The locknut should be flush with the top shaft when installed.

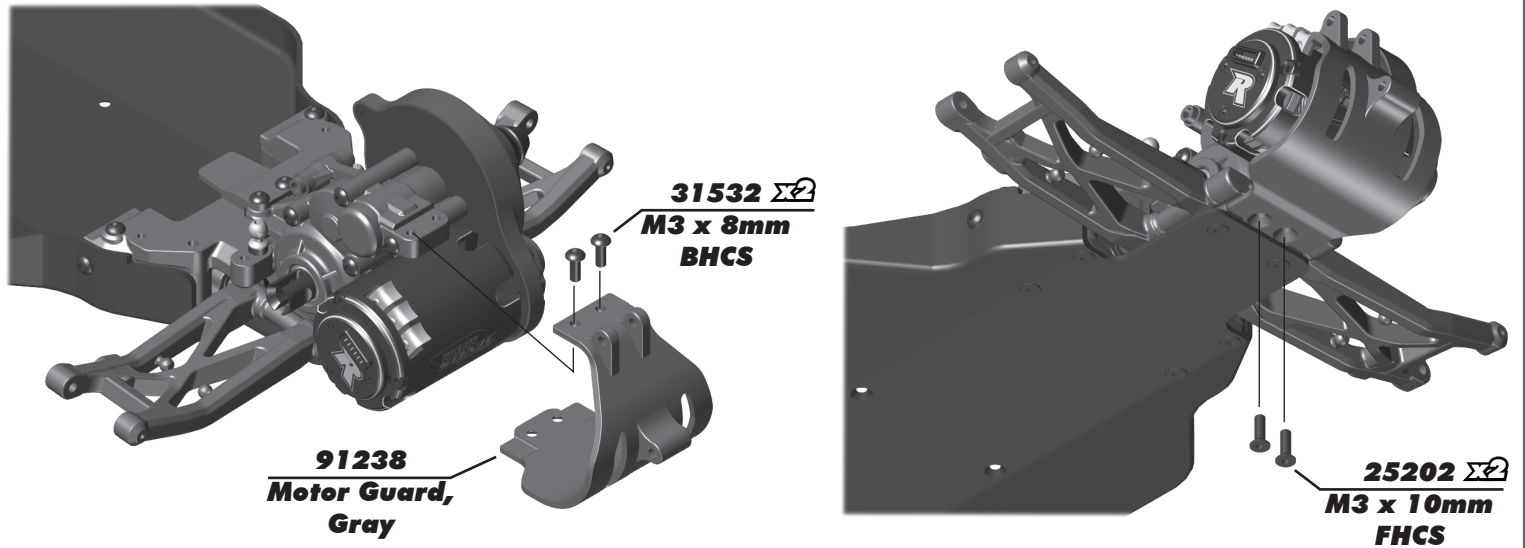
:: Gearbox Build - Bag 3 - Step 8



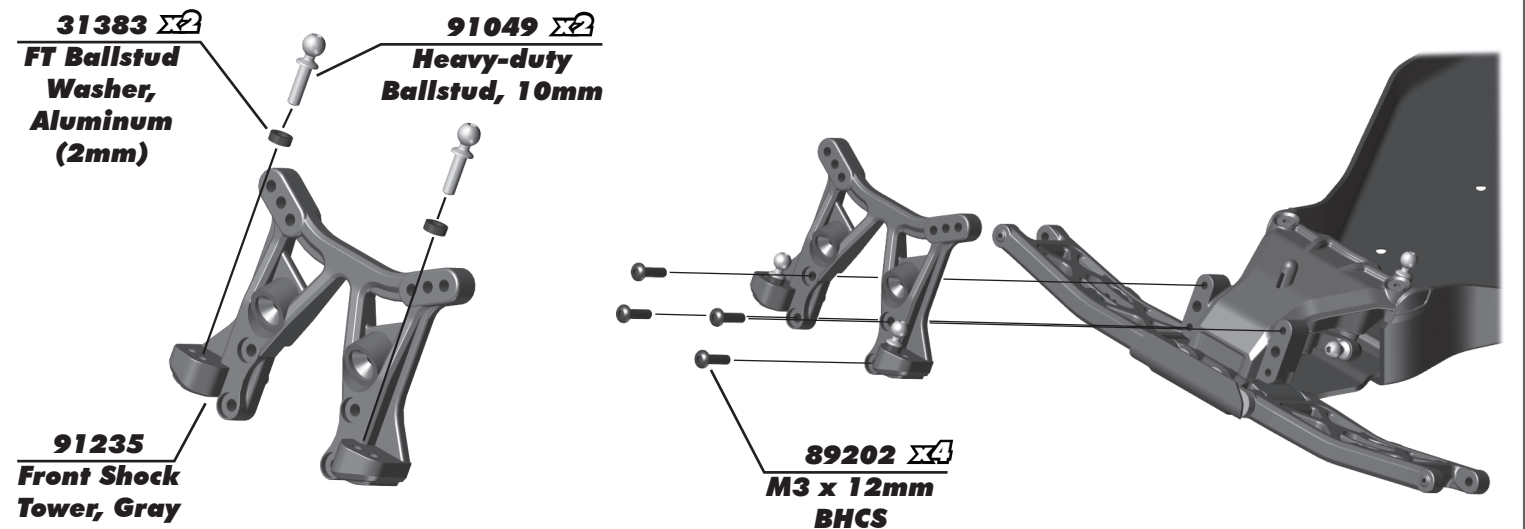
:: Gearbox Build - Bag 3 - Step 9



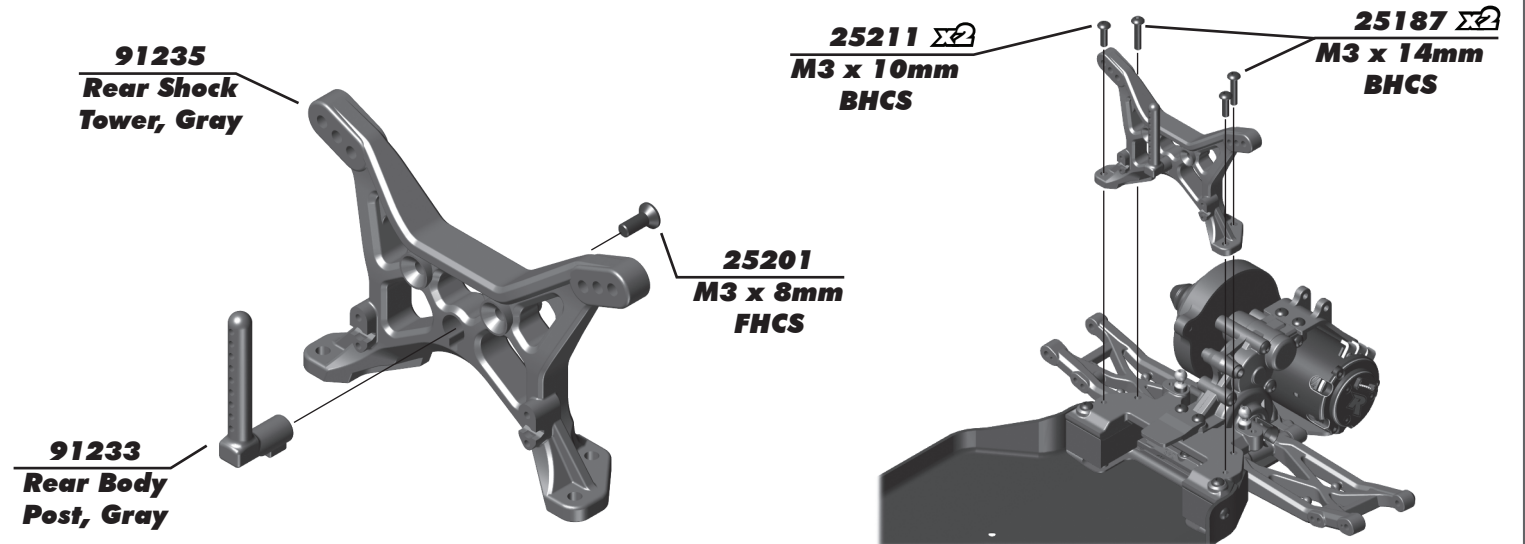
:: Gearbox Build - Bag 3 - Step 10



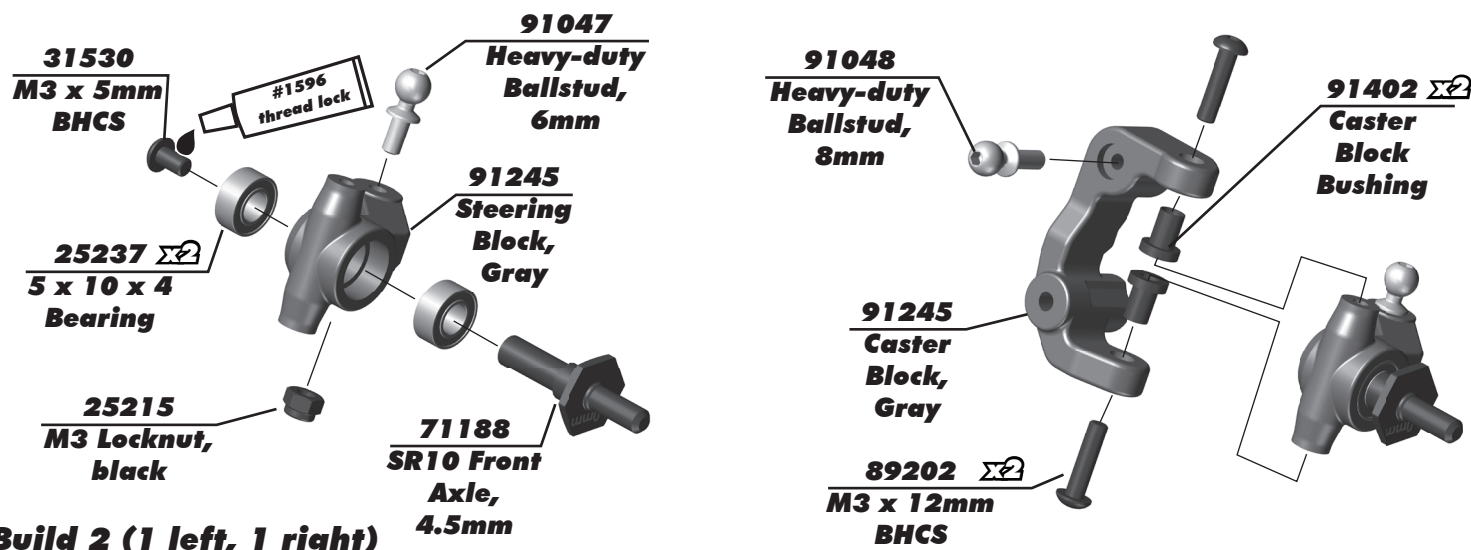
:: Shock Towers Build - Bag 4 - Step 1



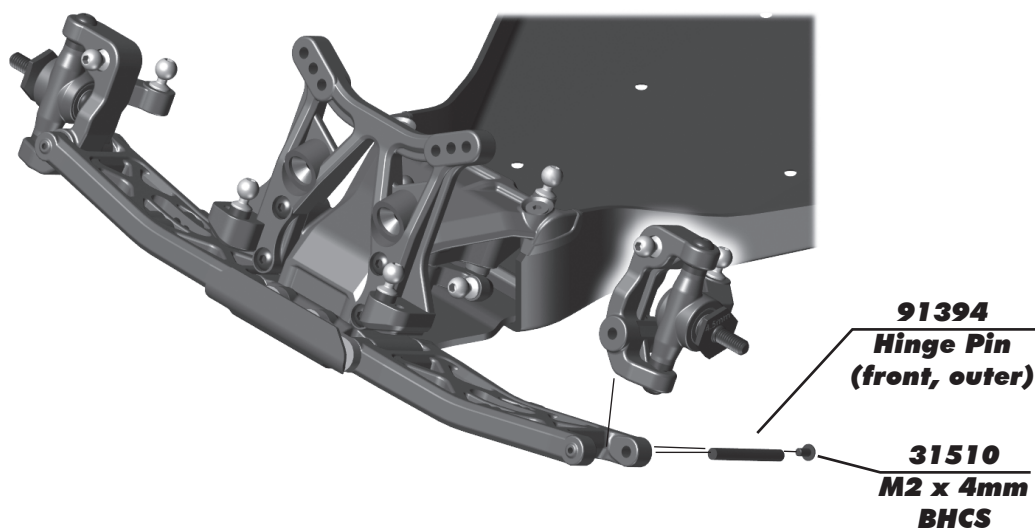
:: Shock Towers Build - Bag 4 - Step 2



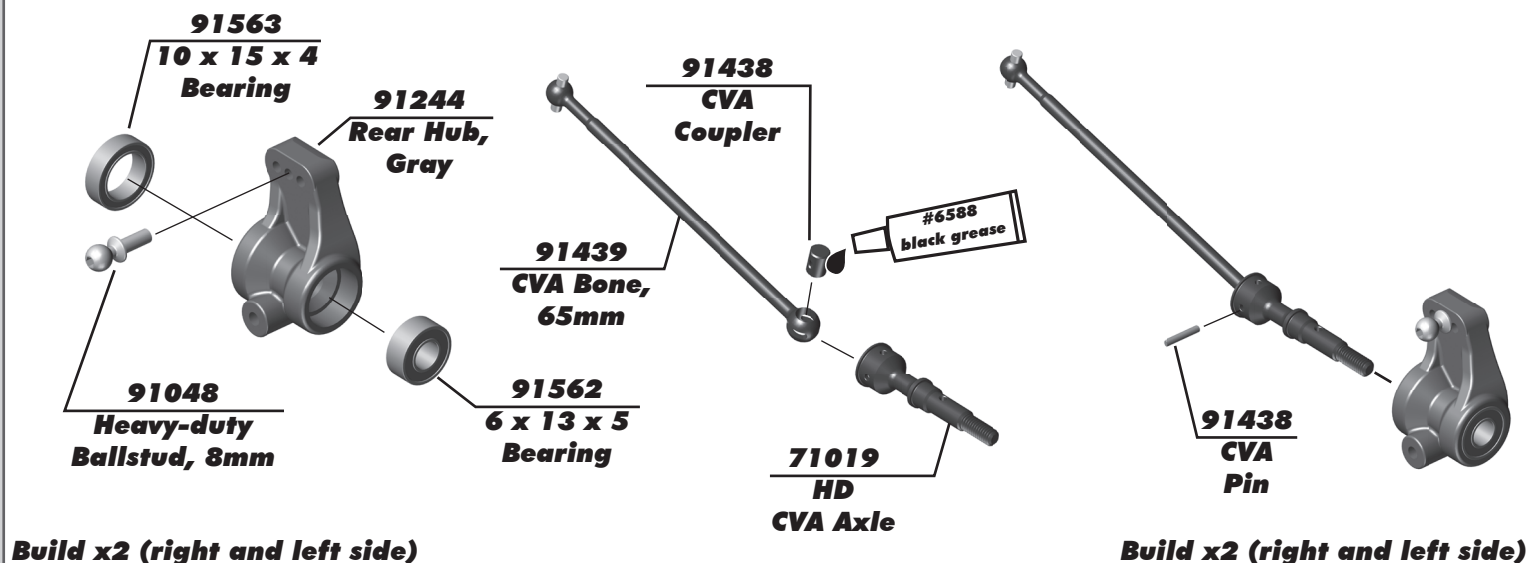
:: Front Caster / Steering Blocks Build - Bag 5 - Step 1



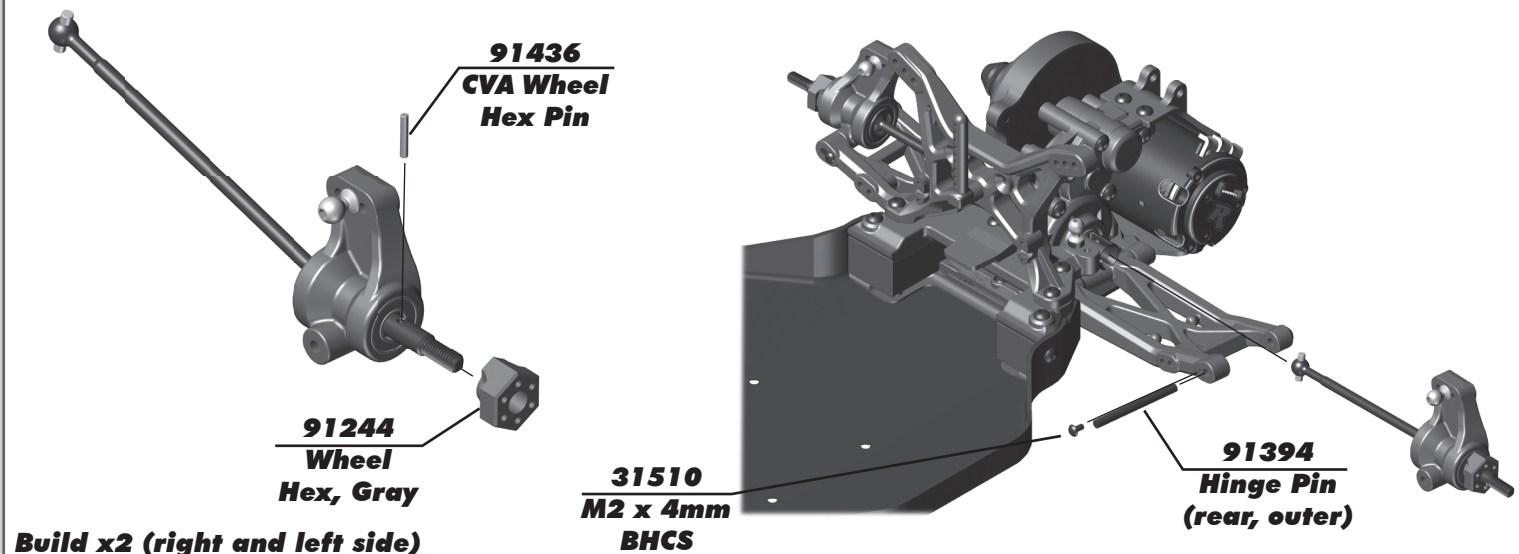
:: Front Caster / Steering Blocks Build - Bag 5 - Step 2



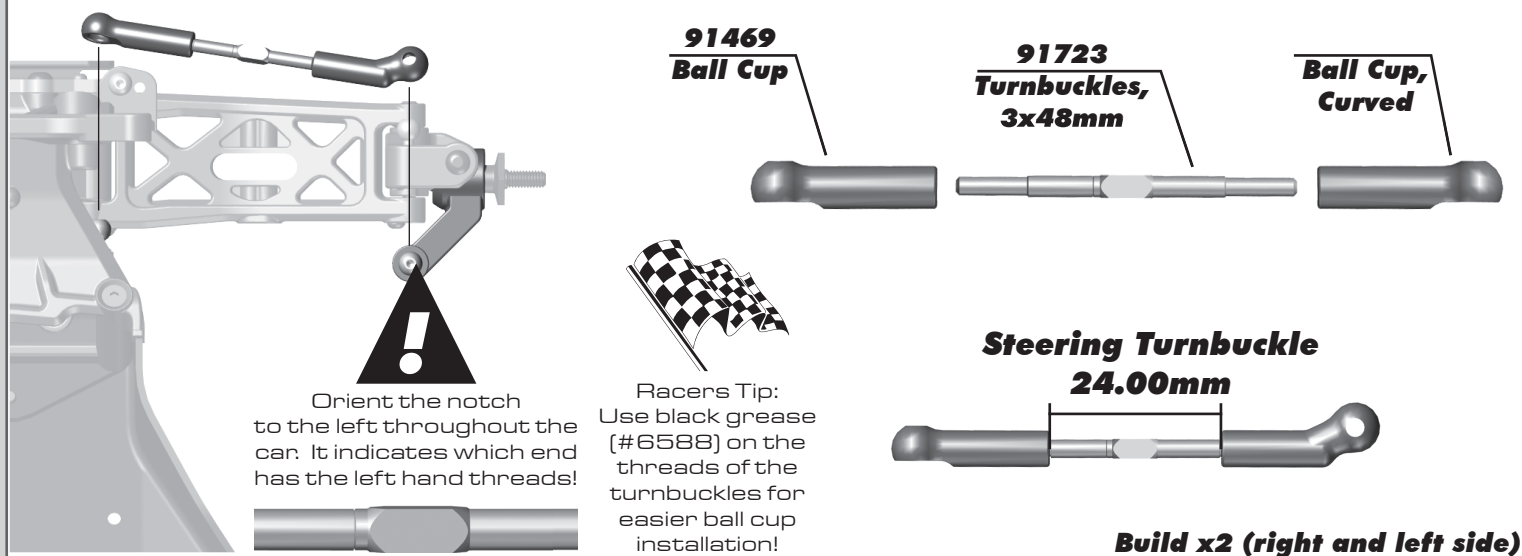
:: Rear Hub and CVA Build - Bag 5 - Step 3



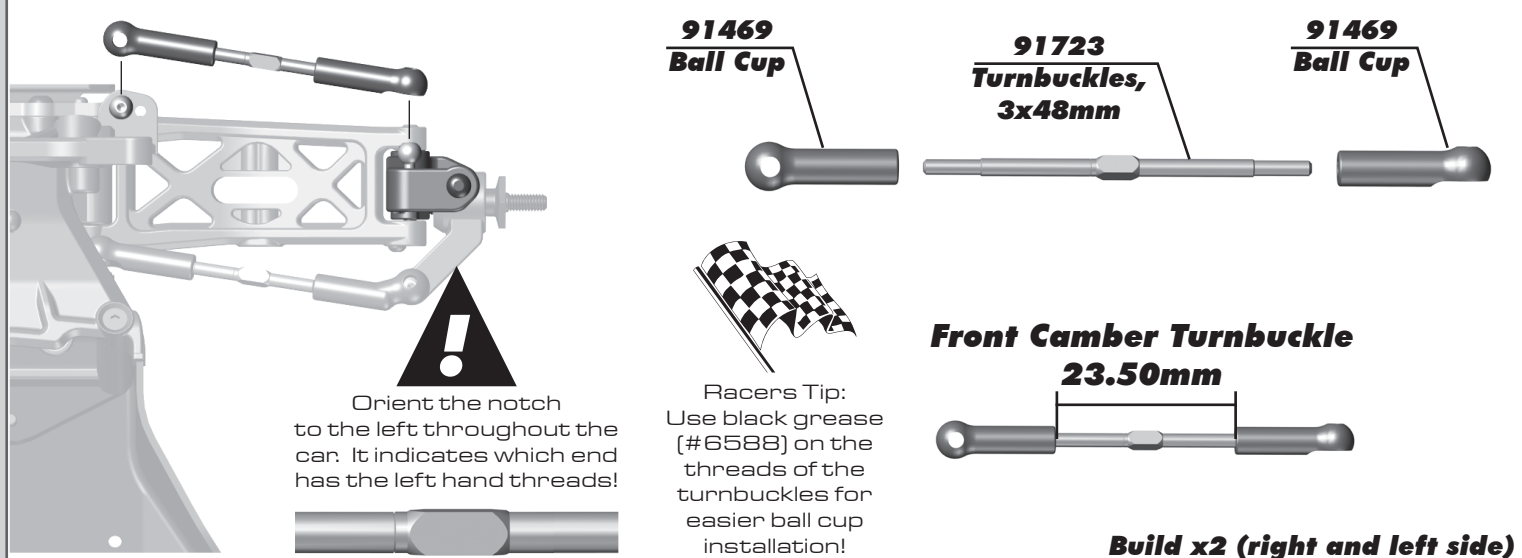
:: Rear Hub and CVA Build - Bag 5 - Step 4



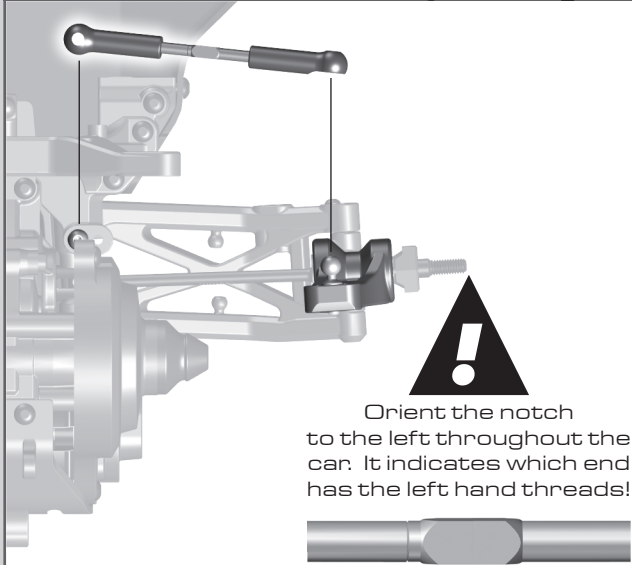
:: Turnbuckles Build - Bag 5 - Step 5



:: Turnbuckles Build - Bag 5 - Step 6



:: Turnbuckles Build - Bag 5 - Step 7



91469
Ball Cup

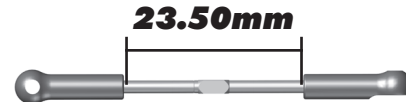
91723
Turnbuckles,
3x48mm

91469
Ball Cup



Racers Tip:
Use black grease (#6588) on the threads of the turnbuckles for easier ball cup installation!

Rear Camber Turnbuckle



Build x2 (right and left side)

:: Shocks Build - Bag 6 - Step 1

91934
FT 13mm
Shock Piston,
2.5mm
[2x1.8]
(front)

31510
M2 x 4mm
BHCS

89278
2.5mm
Washer

92428
FT 13mm
Shock Piston,
2.5mm
[2x1.9]
(rear)

91615
V2 3x21mm
Shock Shaft
TiN (front)

91619
V2 3x27.5mm
Shock Shaft
TiN (rear)

Mount the shock pistons with the number facing up!



Racers Tip:

Use a marker over the numbers on the pistons to make them easily visible!

91923
FT 13x23mm
Shock Bodies
(front)

91925
FT 13x27.5mm
Shock Bodies
(rear)

91493
X-Ring

91996
Shock
Spacer

91996
Shock Hat
Bushing

91996
13mm
Shock Cap
O-Ring

31327
VCS3 Shock
Bottom Cap
O-Ring

#1105
green slime

31327
VCS3 Shock
Bottom Cap

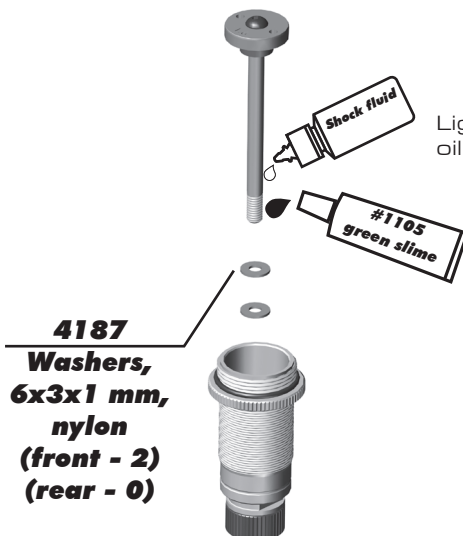
Lightly rub shock oil on the o-ring before installation!



Racers Tip:

Coating the o-rings with green slime (#1105) helps seal & reduce o-ring swell! **Green slime not included in kit!**

:: Shocks Build - Bag 6 - Step 2



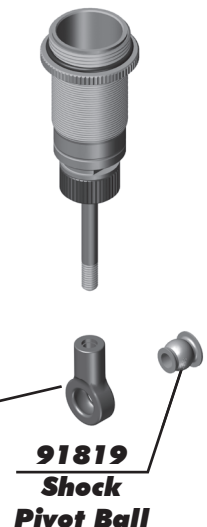
Lightly rub shock oil or green slime on threads



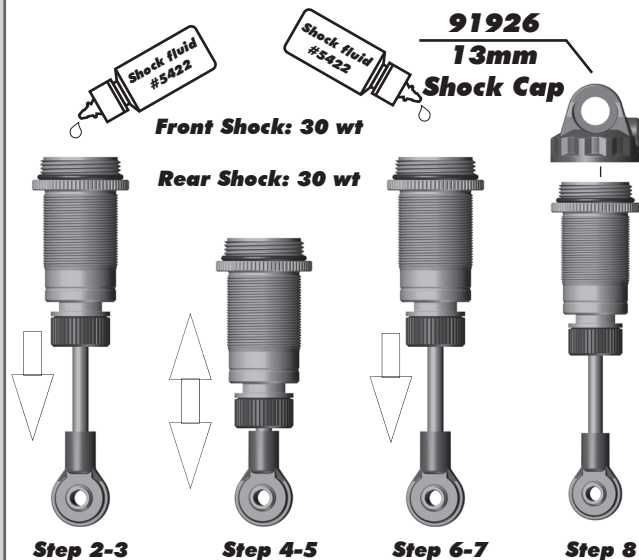
There are 3 lengths of shock eyelet in the kit. Pay attention to length when building as these affect your droop and uptravel.



91820
Shock Eyelet
Front Shocks - 0mm
Rear Shocks - +2mm



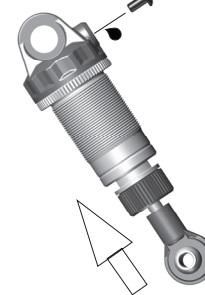
:: Shocks Build - Bag 6 - Step 3



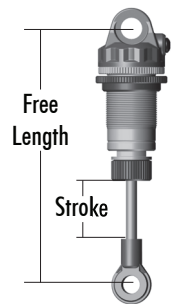
Shock Bleeding Steps:

1. Before assembly, get each bleed screw and thread it 1-2 turns into the shock cap. This will make it easier when you are bleeding your shocks.
2. Pull shock shaft down.
3. Fill shock body 3/4 full with silicone shock fluid.
4. Slowly move the shock shaft up and down to remove air from under the piston.
5. Wait for bubbles to come to surface.
6. Fill shock body to top with silicone shock fluid.
7. Place a drop of oil in the cap and on cap threads.
8. Install cap (without bleed screw) and tighten completely.
9. Slowly compress shaft all the way to bleed excess silicone shock fluid out the hole in the cap (use rag around shock to catch excess fluid).
10. Install M2x4mm button head screw until snug while shaft is fully compressed.

31510
M2 x 4mm
BHCS



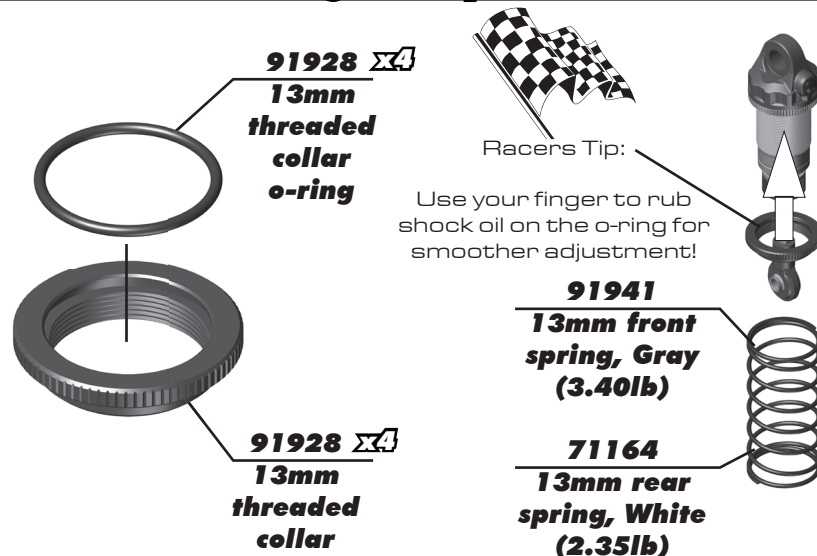
Step 9-10



Stroke
Front: 22mm
Rear: 28mm

Free Length
Front: 78mm
Rear: 100mm

:: Shocks Build - Bag 6 - Step 4



#91966 13mm Shock Spring Cups
0mm 5mm 9mm

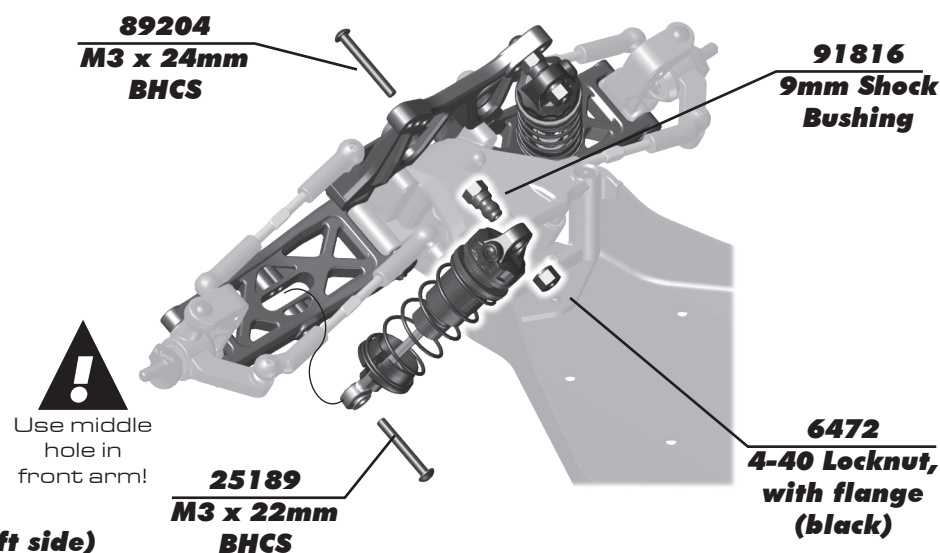


Front: 5mm
Rear: 7mm

91966 13mm shock spring cup
(Front: 5mm)
(Rear: 5mm)

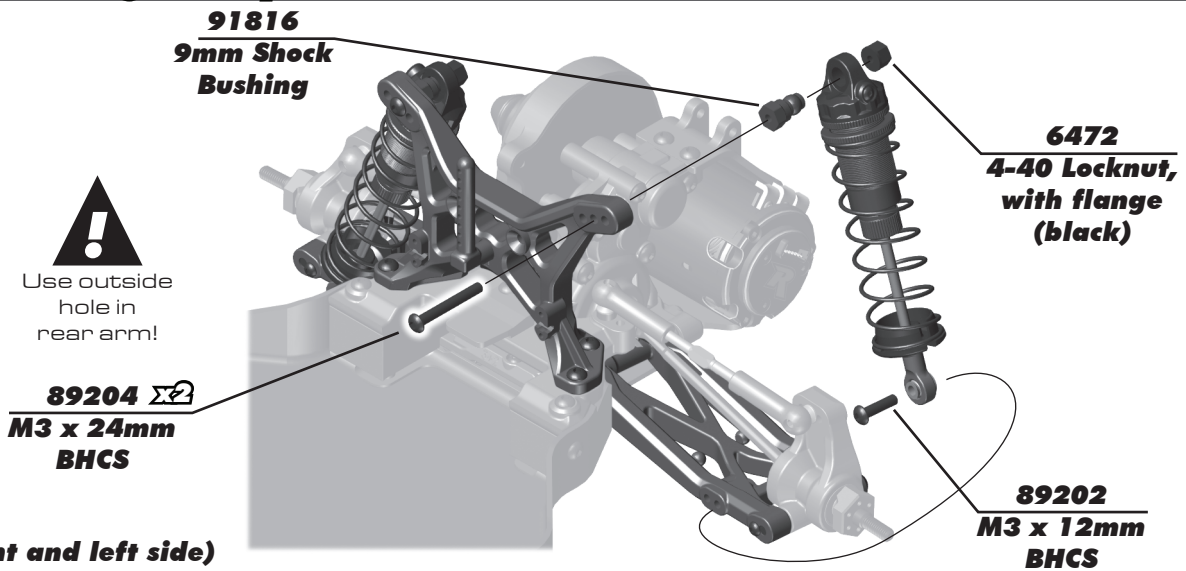
Build x2 front and x2 rear shocks

:: Shocks Build - Bag 6 - Step 5

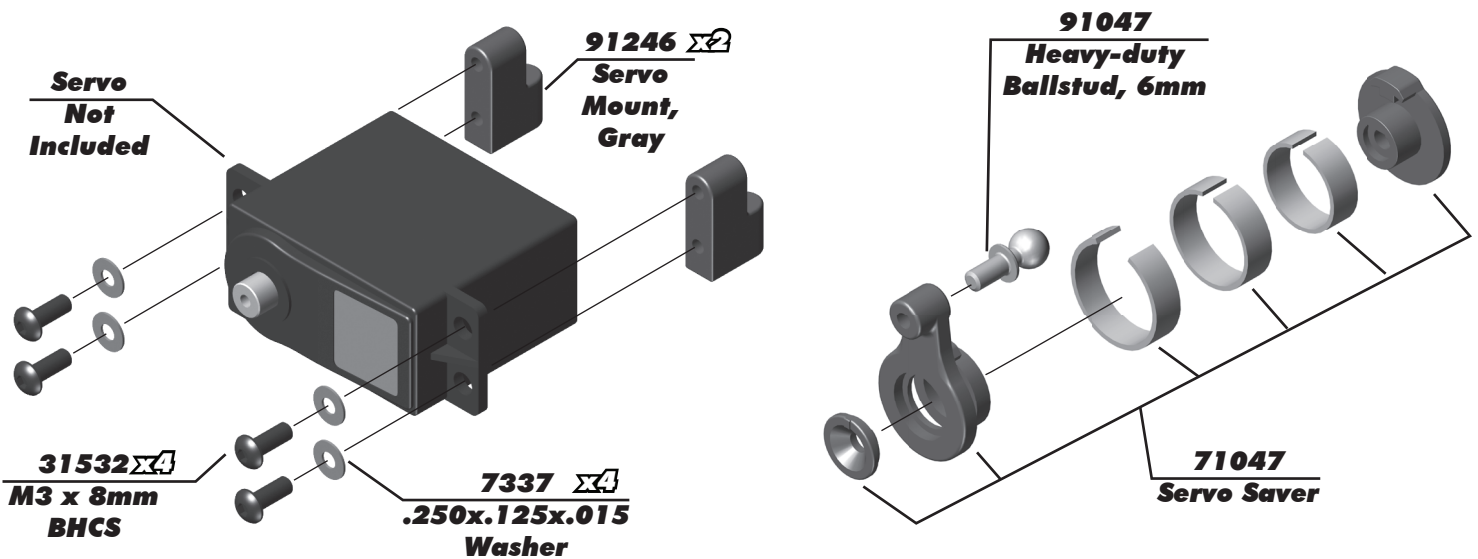


Build x2 (right and left side)

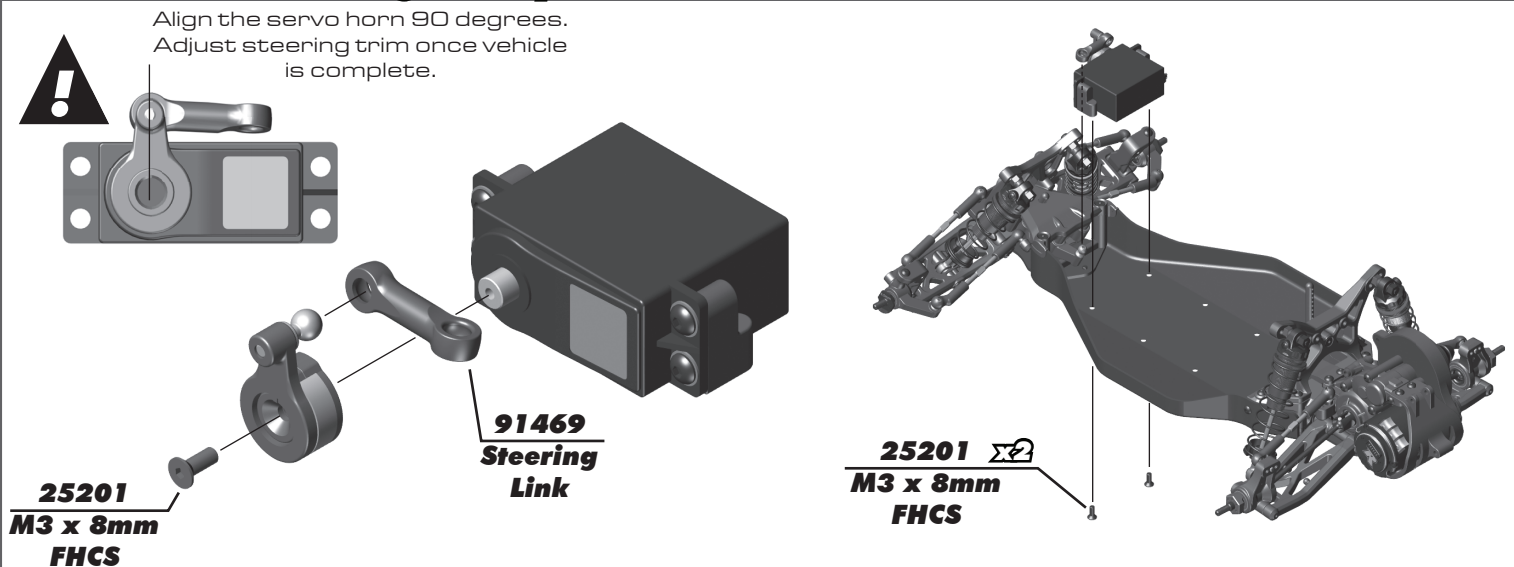
:: Shocks Build - Bag 6 - Step 6



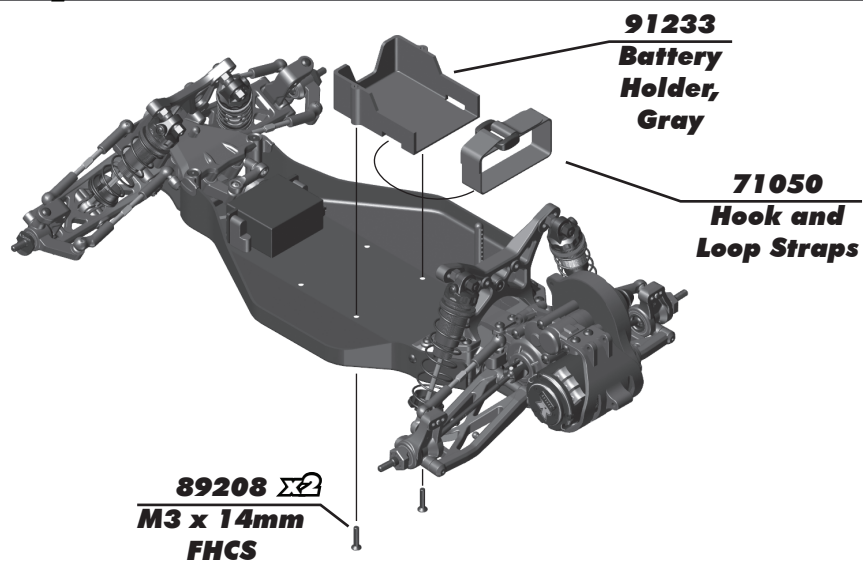
:: Electronics Build - Bag 7 - Step 1



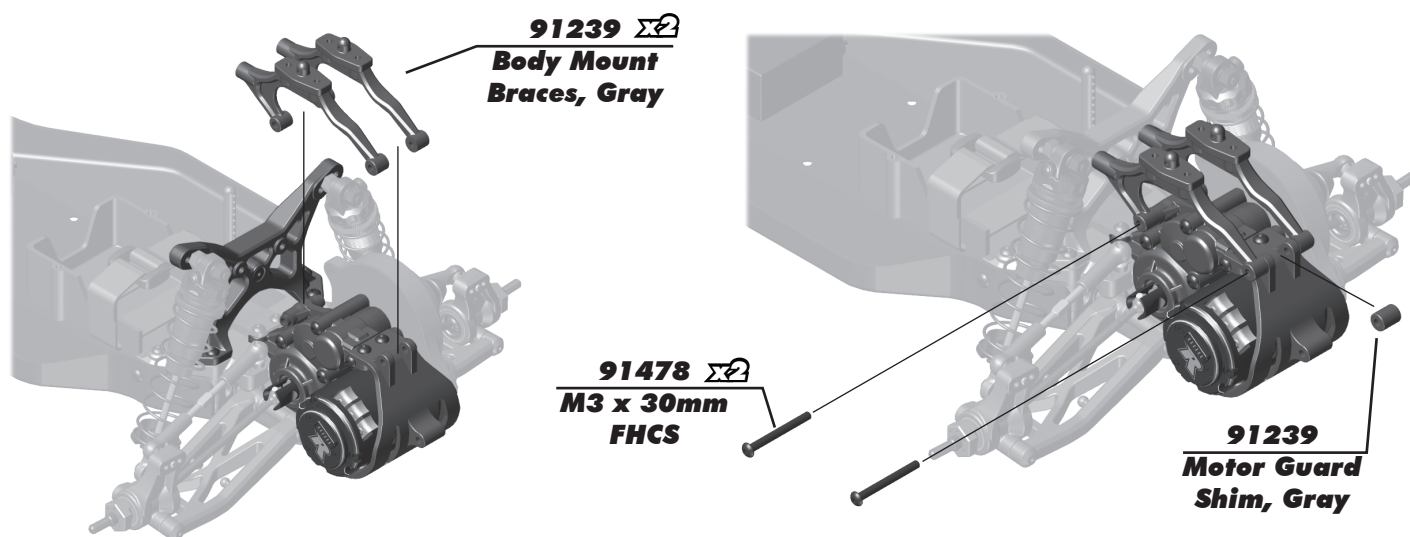
:: Electronics Build - Bag 7 - Step 2



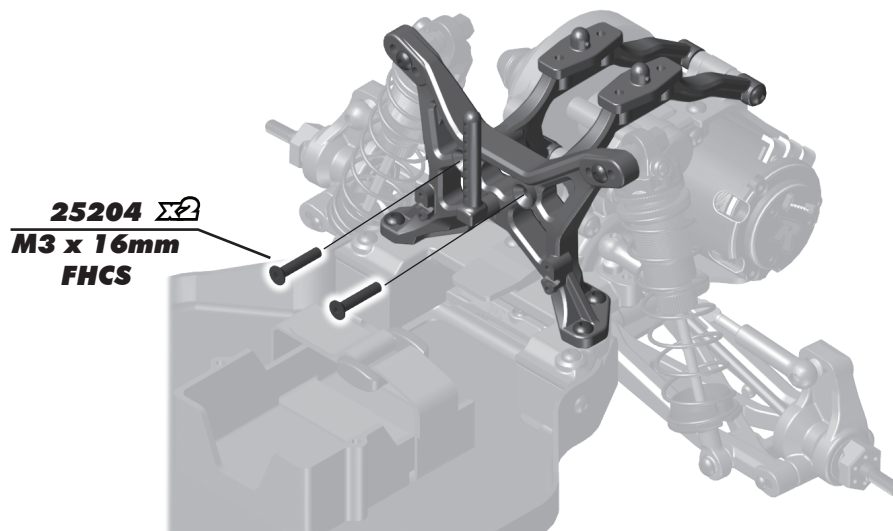
:: Electronics Build - Bag 7 - Step 3



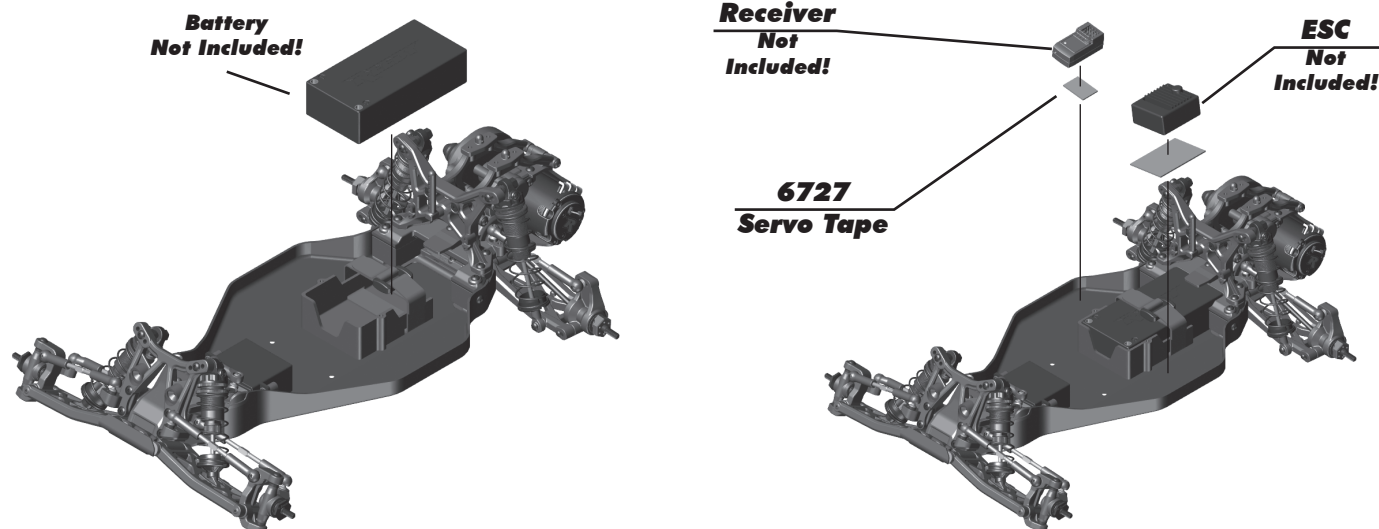
:: Wing Mount Build - Bag 8 - Step 1



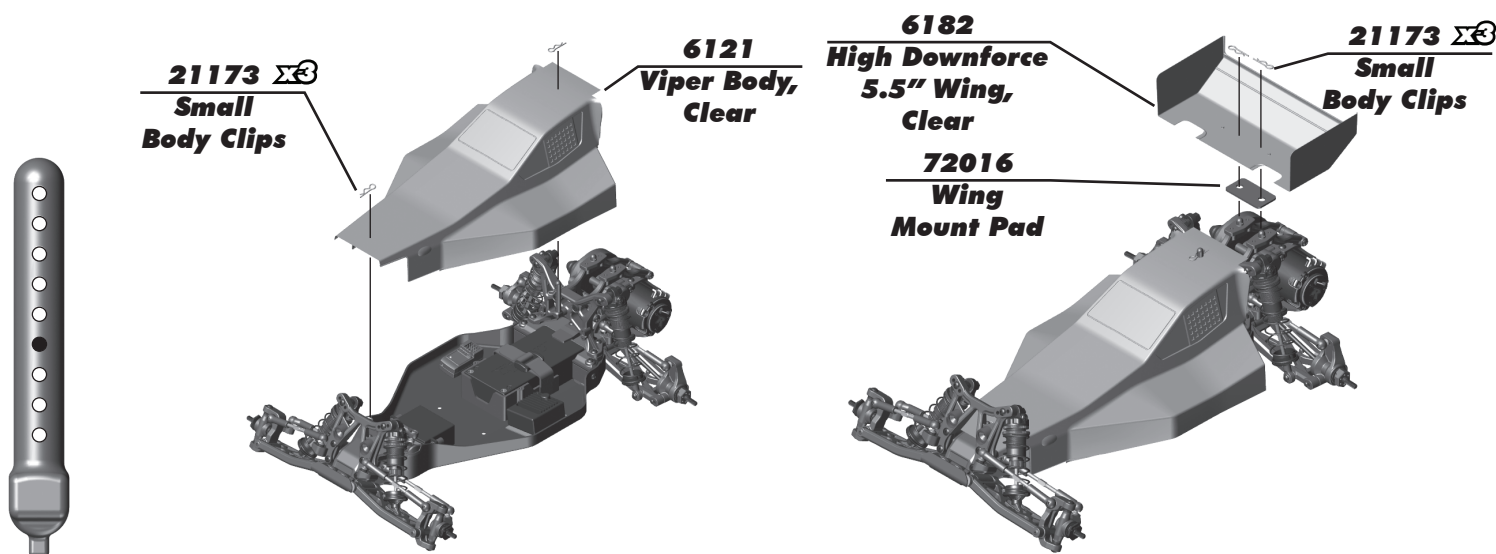
:: Wing Mount Build - Bag 8 - Step 2



:: Wing Mount Build - Bag 8 - Step 3

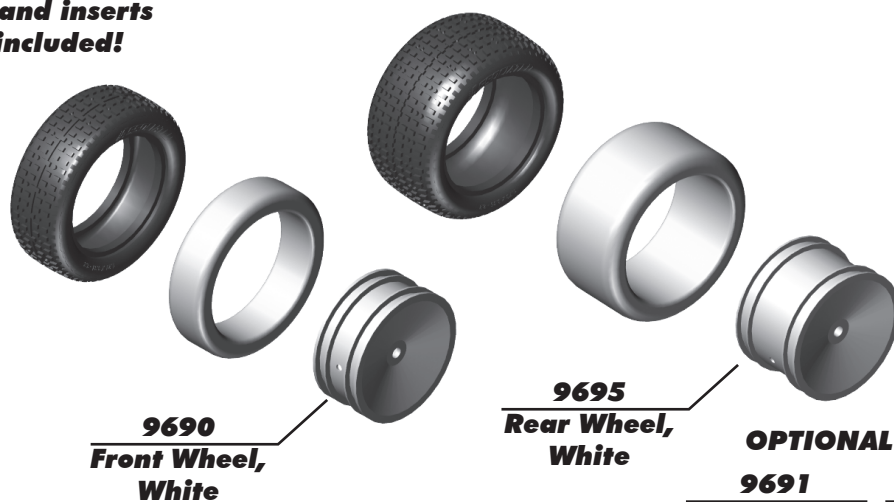


:: Body and Wing Build - Step 1

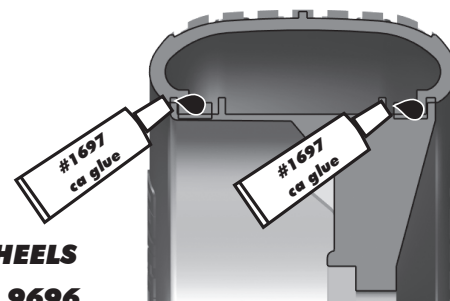


:: Wheels and Tires Build - Bag 9 - Step 1

***Tires and inserts not included!**

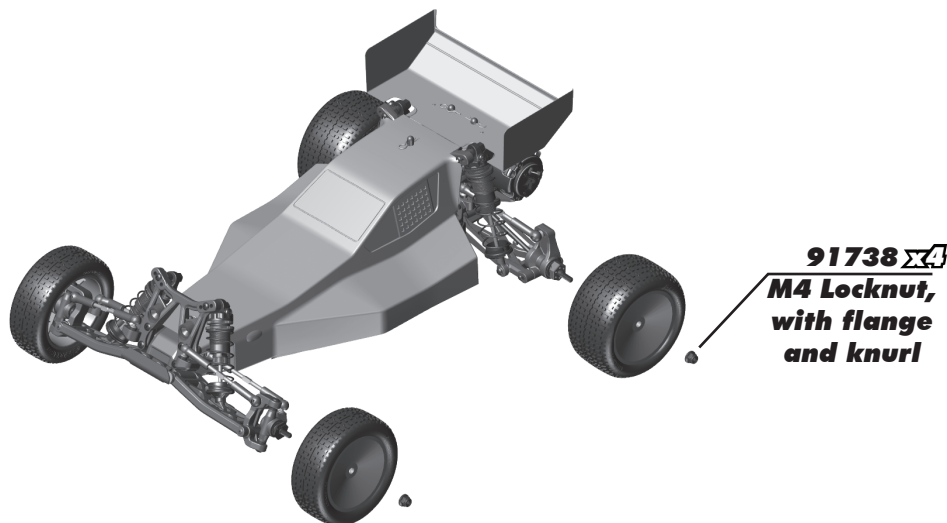


Clean the tire and wheel bead. Carefully apply CA glue (tire adhesive) to the tire bead on both sides. Do one side at a time, allow it to dry before gluing the other side!
CA glue not included!



Build x2 (front and rear)

:: Wheels and Tires Build - Bag 9 - Step 2



:: Tuning Tips

Tips for Beginners:

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 additional 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.

Periodically check all moving suspension parts. Suspension components must be kept clean and move freely without binding to prevent poor and/or inconsistent handling.

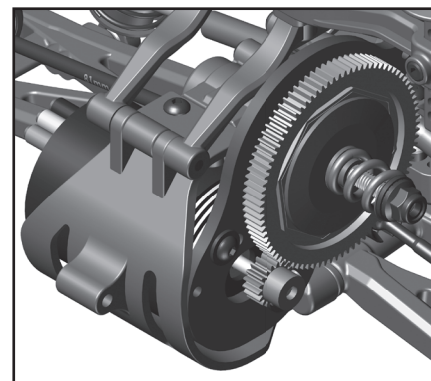
Motor Gearing:

Proper motor gearing will result in maximum performance and run time while reducing the chance of overheating and premature motor failure. The gear ratio chart lists recommended **suggested starting gear ratios** for the most widely used motor types. Gear Ratios will vary depending upon motor turns or KV, electronic speed control specifications and whether you are running 6-cell NiMh or 2S or 3S LiPo batteries. Gear ratios listed below are suggested based on 6-cell NiMh and or 2S LiPo battery. Team Associated is not responsible for motor damage due to improper gearing.

Gear Ratio Chart (Internal Gear Ratio 2.60:1)

Motor	Pinion	Spur	Final Drive Ratio
17.5 Reedy Sonic Brushless	*28	*75	6.96:1
13.5 Reedy Sonic Brushless	*26	*75	7.50:1
17.5 Reedy Sonic Brushless	*29	81	7.26:1
13.5 Reedy Sonic Brushless	*26	81	8.10:1

*** Optional spur gear / pinion used**



Set The Gear Mesh:

You should be able to rock the spur gear back and forth in the teeth of the pinion gear without making the pinion gear move. If the spur gear mesh is tight, then loosen the #31532 screws and move the motor away, then try again. A gear mesh that is too tight or too loose will reduce power and damage the gear teeth.

:: Tuning Tips (cont.)

Slipper Clutch:

The assembly instructions give you a base setting for your slipper clutch. Turn the nut on the shaft so that the end of the top shaft is flush with the nut. At the track, tighten or loosen the nut in 1/8 turn increments until you hear a faint slipping sound for 1-2 feet on takeoff. Another popular way to set the clutch is to hold both rear tires firmly in place and apply short bursts of throttle. If the clutch is properly set, the front tires should lift slightly up off the surface.

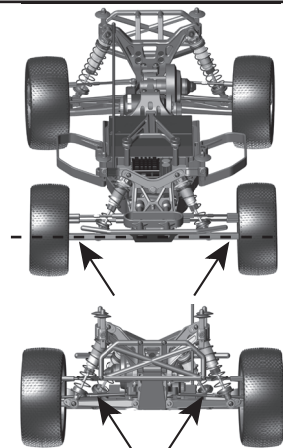
Ride Height:

Ride height is the distance from the ground to the bottom of the chassis. The standard front ride height setting is with the front arms level (referred to as "arms level") or 30mm.

Check the ride height by lifting up the entire car about 8-12 inches off the bench and drop it. After the suspension "settles" into place, measure ride height. Add or remove pre-load spacers as necessary so that the left & right arms appear to be level.

The rear ride height setting you should use most often is with the outdrive, driveshaft, and axles all on the same imaginary horizontal line (referred to as "bones level") or 28mm.

Check the ride height by lifting up the entire car about 8-12 inches off the bench and drop it. After the suspension "settles" into place, measure ride height. Add or remove spring clips as necessary so that the left & right driveshafts appear to be level.



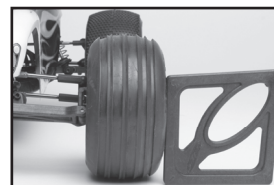
Front arms inner and outer hinge pins should be in a imaginary horizontal line when ride height is set



CVA bones should be in a straight line when ride height is set at "CVA bones level"

Front Camber:

Camber describes the angle at which the tire and wheel rides when looked at from the front. Negative camber means that the tire leans inward at the top. A good starting camber setting is -1°. Positive camber, where the top of the tire is leaning out, is not recommended. A camber gauge can be used to more accurately set camber.



Testing camber with camber gauge

Rear Camber:

Camber describes the angle at which the tire and wheel rides when looked at from the back. Negative camber means that the tire leans inward at the top. A good starting camber setting is -1°. 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. A camber gauge can be used to more accurately set camber.

Front Camber Links:

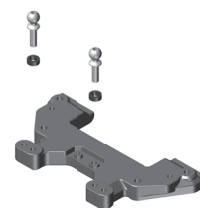
Changing the length of the camber link is considered a bigger step than adjusting the ball end height on the tower. Shortening the camber link (or lowering the ball end) will give the front end less roll and quicken steering response. Lengthening the camber link (or raising the ball end) will give the front more roll and slower steering response. Longer camber links are typically used on high grip tracks and shorter links tend to work better on medium-grip loose tracks.



Raise or lower the ball end by adding or subtracting washers here

Rear Camber Link:

Changing the length of the camber link (see page 15) is considered a bigger step than adjusting the ball end height on the rear chassis brace. Shortening the camber link (or lowering the ball end) 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 ball end) will give the rear more roll and more cornering grip. Longer camber links are typically used on high grip tracks, while shorter links tend to work better on medium grip loose tracks. The kit setting is the best compromise of cornering grip and acceleration.



Raise or lower the ball end by adding or subtracting washers here

Ackermann:

Ackermann is the angle difference between the front wheels when they are turned to steer the car. For minimal tire slip, it is standard for the inside wheel to steer to a greater angle than the outside wheel. The RB10 allows Ackermann adjustments by changing the washer thickness used behind the steering rack ballstuds. If corner entry steering is too aggressive, try increasing the Ackermann by removing shims from behind the steering rack ballstuds. Increasing the Ackermann will increase the angle difference of the front wheels when steered, resulting in a more stable car on corner entry.

Front Suspension:

Ride Height:	Arms level
Camber:	-2 degrees
Toe:	0 degrees
Anti-Roll Bar:	None
Arm Type:	Stock
Tower Type:	Stock, molded
Caster Block Insert:	2.5 degrees
Steering Block:	Stock
Bulkhead Type:	Stock, molded
Kick-Up Angle:	+2.5 degrees
Wheel Hex:	4.5mm stock
Notes:	

Bump Steer Spacing:	☐
Axle Height:	Middle
Caster Block Spacing:	☐

Ball Stud Spacing:	☐
Ball Stud Spacing:	2mm

Rear Suspension:

Ride Height:	Dog bones level
Camber:	-3 degrees
Anti-Roll Bar:	None
Arm Type:	Stock
Arm Spacing:	None
Hub Spacing:	Forward ☐ Middle ☒ Back ☐
Shock Mounting Position:	Front of Arm ☒ Rear of Arm ☐
Tower Type:	Stock, molded
Wheel Hex:	8mm
CVA Bone Length:	65mm
CVA Axle:	Stock
Notes:	

C Mount:	Aluminum ☐ Plastic ☒
D Mount:	Aluminum ☐ Plastic ☒

Ball Stud Spacing:	2mm
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Electronics:

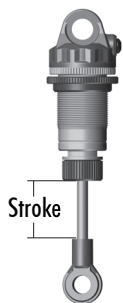
Radio:	Servo:
EPA: Throttle:	% Brake: %
ESC:	
ESC Settings:	
Motor:	
Wind:	Timing:
Pinion:	Spur:
Battery:	
Battery Position:	
Battery Weight:	

Drivetrain:

Differential:	Ball Diff: ☒
Height:	Gear Diff: ☐
Gear Diff Mass:	
Notes:	
Slipper Clutch:	
Type:	V2
# of Pads:	2
Notes:	

Shocks:

	Front	Rear
Piston:	1.8 x 2 hole	1.9 x 2 hole
Fluid:	30wt	30wt
Spring:	Gray	White
Int. Limiters:	2	0
Ext. Limiters:	0	0
Stroke:	22mm	29mm
Eyelet Length:	0mm	+2mm
Cup Offset:	+5mm	+5mm
Notes:		



Track Info:

Size:	Small ☐ Medium ☐ Large ☐ Extra Large ☐
Surface:	Dirt ☐ Carpet ☐ Astroturf ☐ Multi Surface ☐
Traction:	Low ☐ Medium ☐ High ☐ Very High ☐
Moisture:	Dry ☐ Damp ☐ Wet ☐
Condition:	Indoor ☐ Outdoor ☐ Dusty ☐ Hard Packed ☐ Bumpy ☐ Grooved ☐ Smooth ☐ Loamy ☐
Temperature:	Ambient: _____ Track: _____
Notes:	
Vehicle Comments:	

Tires:

Front Tires:	
Front Compound:	
Front Insert:	
Rear Tires:	
Rear Compound:	
Rear Insert:	
Wheel (F/R):	
Notes:	

Chassis, Body, Wing:

Body:	Viper
Front Wing:	None
Rear Wing:	High downforce 5.5"
Wing Angle:	0° ☒ 3° ☐ 6° ☐
Chassis Length:	
Servo Weights:	
Electronic Weights:	
Total Vehicle Weight:	

Front Suspension:

Ride Height: _____
Camber: _____
Toe: _____
Anti-Roll Bar: _____
Arm Type: _____
Tower Type: _____
Caster Block Insert: _____
Steering Block: _____
Bulkhead Type: _____
Kick-Up Angle: _____
Wheel Hex: _____
Notes: _____

Bump Steer Spacing: _____

Axle Height: _____

Caster Block Spacing: _____

Ball Stud Spacing: _____

Ball Stud Spacing: _____

Rear Suspension:

Ride Height: _____
Camber: _____
Anti-Roll Bar: _____
Arm Type: _____
Arm Spacing: _____
Hub Spacing: _____
 Forward ☐ Middle ☐ Back ☐
Shock Mounting Position: _____
 Front of Arm ☐ Rear of Arm ☐
Tower Type: _____
Wheel Hex: _____
CVA Bone Length: _____
CVA Axle: _____
Notes: _____

C Mount:

Aluminum ☐ Plastic ☐

D Mount:

Aluminum ☐ Plastic ☐

Ball Stud Spacing: _____

Electronics:

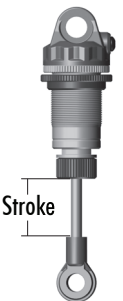
Radio: _____ **Servo:** _____
EPA: Throttle: _____ % Brake: _____ %
ESC: _____
ESC Settings: _____
Motor: _____
Wind: _____ **Timing:** _____
Pinion: _____ **Spur:** _____
Battery: _____
Battery Position: _____
Battery Weight: _____

Drivetrain:

Differential: _____ **Ball Diff:** ☐
Height: _____ **Gear Diff:** ☐
Gear Diff Mass: _____
Notes: _____
Slipper Clutch: _____
Type: _____
of Pads: _____
Notes: _____

Shocks:

	Front	Rear
Piston:		
Fluid:		
Spring:		
Int. Limiters:		
Ext. Limiters:		
Stroke:		
Eyelet Length:		
Cup Offset:		
Notes:		



Track Info:

Size: Small ☐ Medium ☐ Large ☐ Extra Large ☐
Surface: Dirt ☐ Carpet ☐ Astroturf ☐ Multi Surface ☐
Traction: Low ☐ Medium ☐ High ☐ Very High ☐
Moisture: Dry ☐ Damp ☐ Wet ☐
Condition: Indoor ☐ Outdoor ☐ Dusty ☐ Hard Packed ☐
 Bumpy ☐ Grooved ☐ Smooth ☐ Loamy ☐
Temperature: Ambient: _____ Track: _____
Notes: _____
Vehicle Comments: _____

Tires:

Front Tires: _____
Front Compound: _____
Front Insert: _____
Rear Tires: _____
Rear Compound: _____
Rear Insert: _____
Wheel (F/R): _____
Notes: _____

Chassis, Body, Wing:

Body: _____
Front Wing: _____
Rear Wing: _____
Wing Angle: 0° ☐ 3° ☐ 6° ☐
Chassis Length: _____
Servo Weights: _____
Electronic Weights: _____
Total Vehicle Weight: _____



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