



GF10M

1:10 Scale 2WD Mid-Motor Electric Dirt Oval Race Car Manual



CHAMPIONS *by* DESIGN

AssociatedElectrics.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 vehicle. 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

- Updated Mid Motor Rear Carbon Fiber Shock Tower for Oval
- New Carbon Fiber Chassis Side Braces
- Updated Rear Toe Block for Dirt Oval Racing
- Aluminum 12mm big bore coil-over shock absorbers
- Durable and lightweight aluminum top shaft
- New Mid Motor Low center-of-gravity G10 Fiberglass chassis with updated O-Ring battery straps that accommodate 2S LiPo Shorty battery packs
- Rear CVA drive shafts for more reliability
- 2.6:1 ratio gearbox with heavy-duty sealed gear differential and externally adjustable slipper clutch
- Rugged steel turnbuckles for adjustable camber and front toe-in
- Adjustable suspension geometry
- Vertical ball ends for roll center adjustments, front and rear
- Metric hardware throughout
- 22 precision rubber-sealed ball bearings
- Impact-absorbing front and rear bumpers
- Fully Adjustable front and rear body mounts
- Impact-absorbing front bumper
- Many Factory Team options already available!

:: RTR Features

- 2.4GHz 2-channel radio with new DVC (Dynamic Vehicle Control) receiver featuring built-in adjustable gyro
- High-torque digital metal gear servo with spring style servo saver
- Powerful Reedy 3300kV brushless motor
- Water-resistant high-power Reedy brushless speed control with T-plug connector and LiPo low voltage cutoff
- Factory-finished Street Stock body with integrated rear spoiler
- Lightweight street stock-inspired wheels
- High-grip tires with street stock-inspired tread pattern

:: Other Helpful Items

- | | | |
|---|------------------------------|---|
| • Silicone Shock Fluid (Refer to website for complete listings) | • Body Scissors (AE #1737) | • Reamer / Hole Punch (AE #1499) |
| • Tire Adhesive (AE #1597) | • Shock Pliers (AE #1681) | • Green Slime shock lube (AE #1105) |
| • FT Universal Tire Balancer (#1498) | • FT Ballcup Wrench (#1579) | • FT Hex/Nut Wrenches (AE Part #1519, 1650) |
| • Calipers or a Precision Ruler | • Wire Cutters / Hobby Knife | • Needle Nose Pliers |
| • FT Dual Turnbuckle Wrench (#1114) | | |
| • Soldering Iron | | |

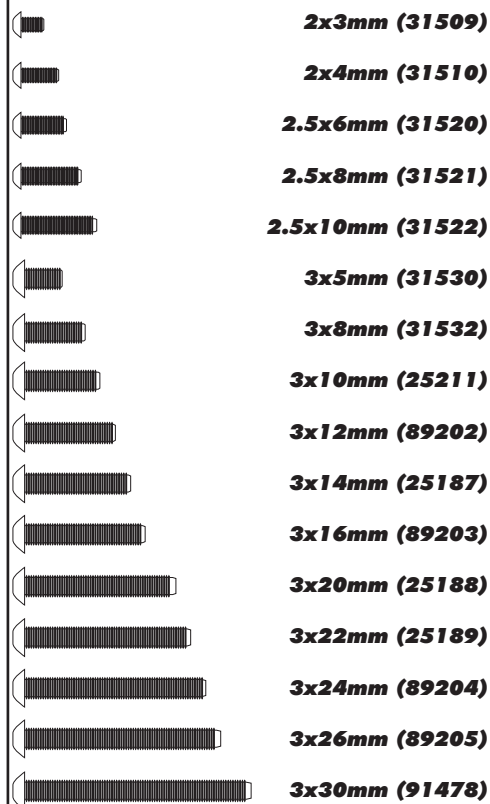
Associated Electrics, Inc.
21062 Bake Parkway
Lake Forest, CA 92630



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Tel: 949.544.7500
Fax: 949.544.7501

:: Hardware - 1:1 Scale View

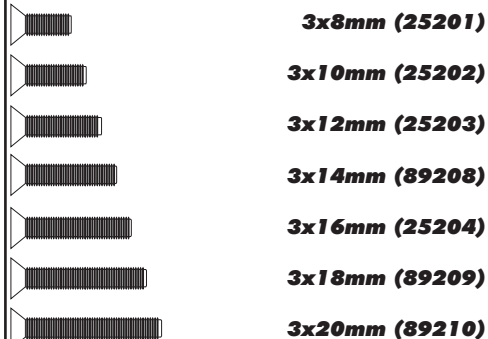
Button Head (bhcs)



Cap Head (shcs)



Flat Head (fhcs)



Set Screws



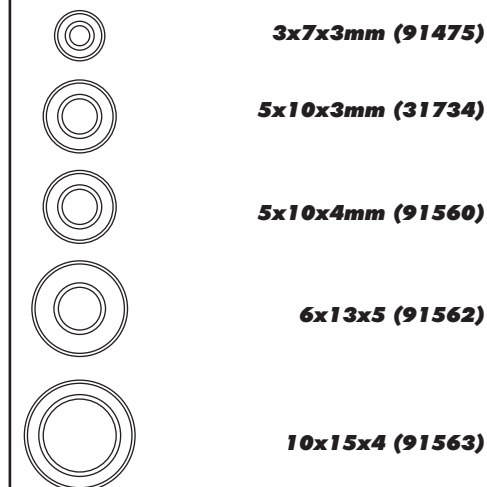
Shims and Washers



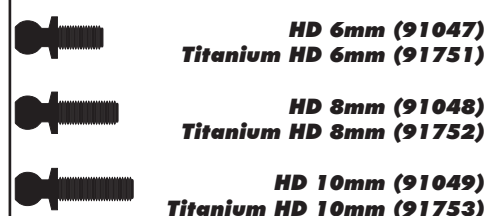
Clips



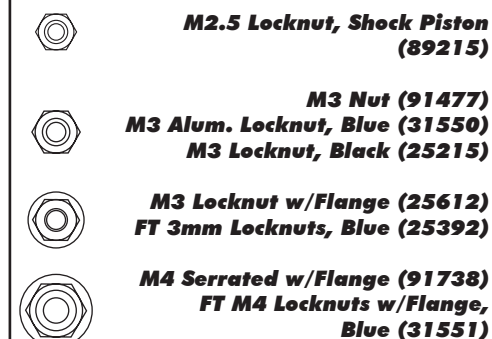
Ball Bearings



Ballstuds



Nuts (lock/plain)



Notes:

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2..... Introduction	12.....Bag 9: Rear Hub Build
3.....1:1 Hardware "Fold Out"	12 - 13.....Bag 10: Turnbuckle Build
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6.....Bag 3: Front Suspension Build	18 - 19..... Tuning Tips
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8.....Bag 5: Rear Bulkhead Build	22..... Back Cover
8 - 9.....Bag 6: Side Brace Build	
9 - 10.....Bag 7: Gear Diff Build	

:: Notes



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



This symbol indicates a Racers Tip.



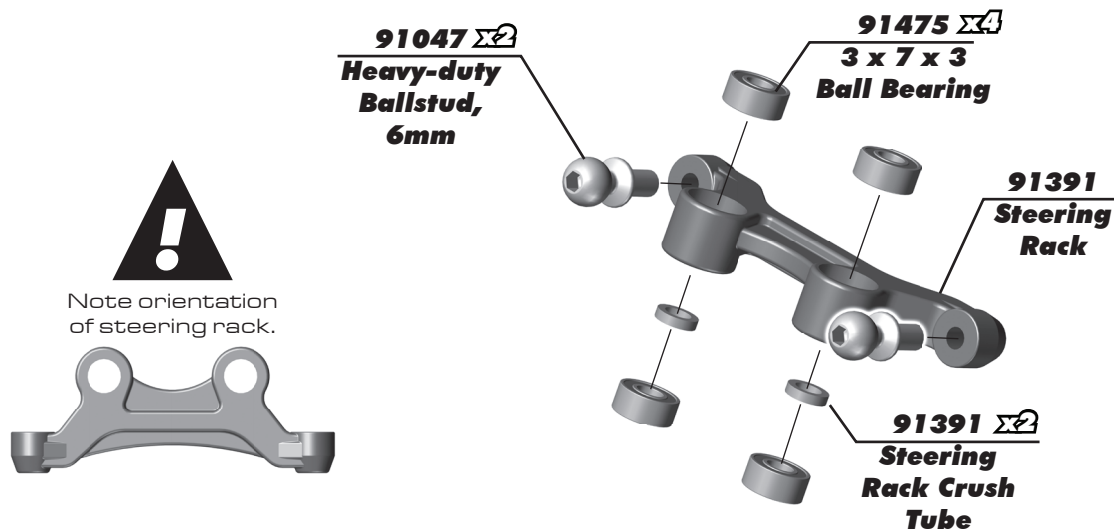
There is a 1:1 hardware foldout page in the front of the manual. To check the size of a part, line up your hardware with the correct drawing until you find the exact size. Each part in the foldout has a number assigned to it for ordering replacement parts.

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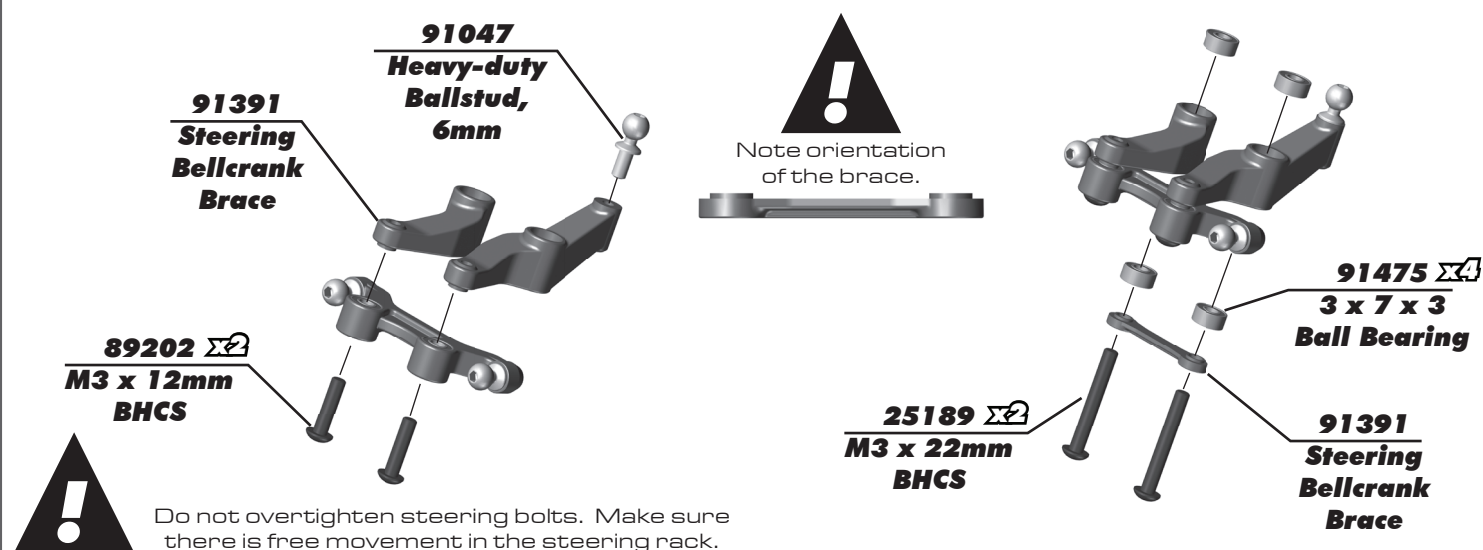


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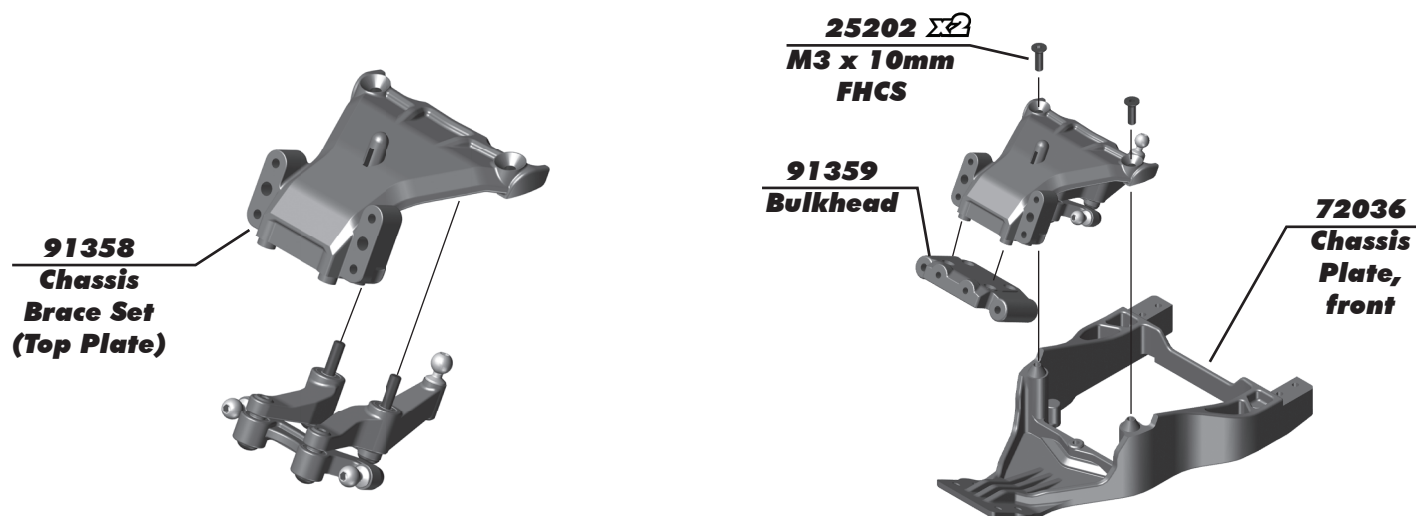
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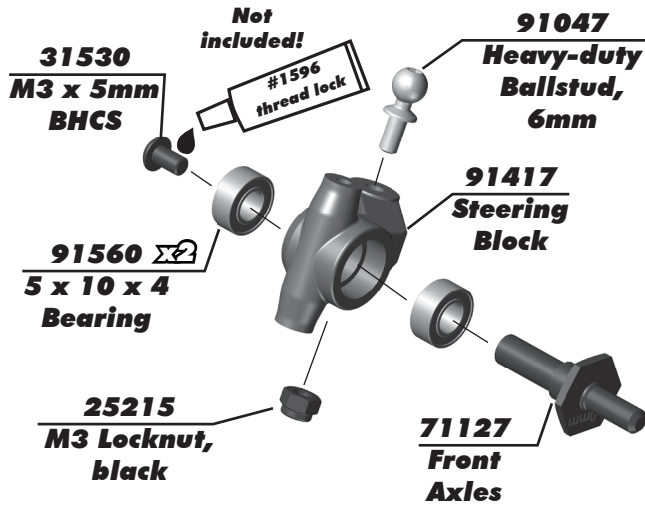
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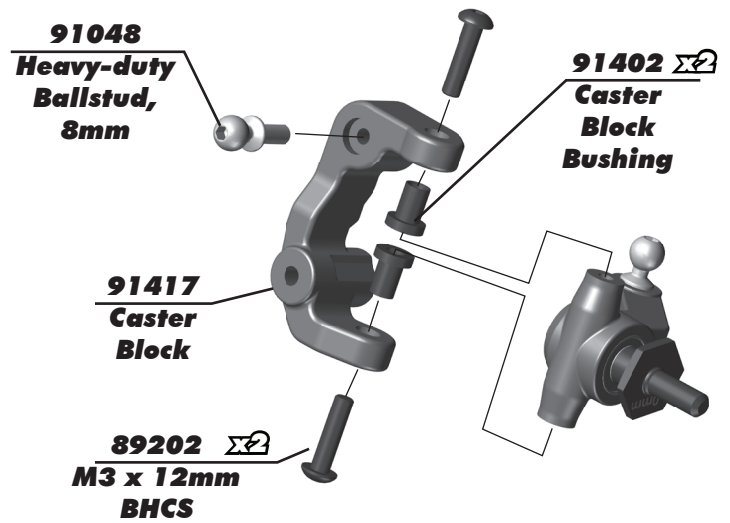
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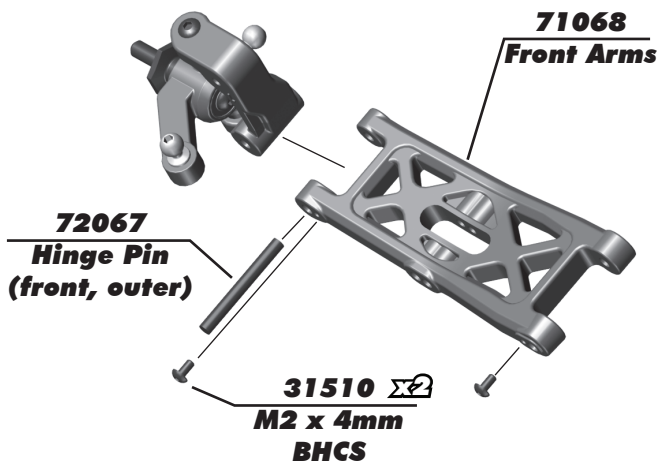
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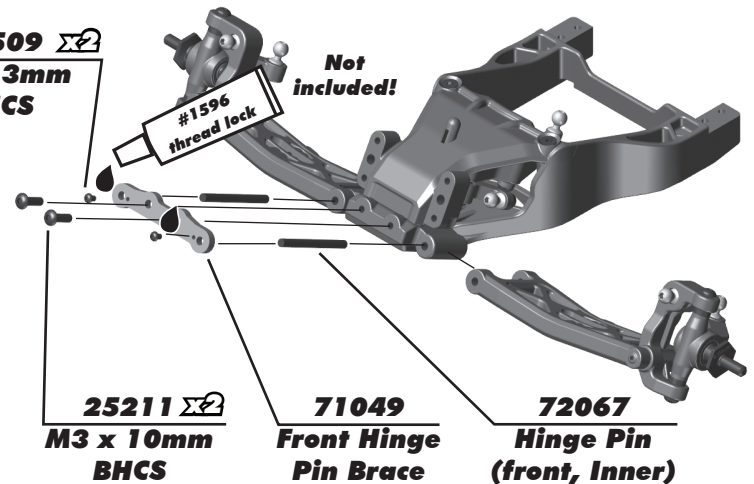
Build 2 (1 left, 1 right)



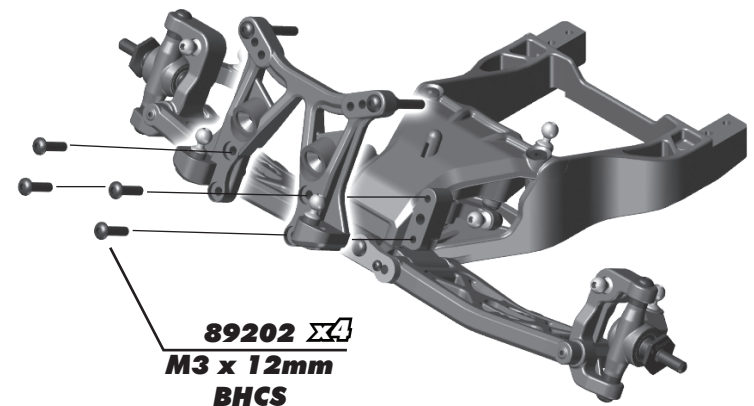
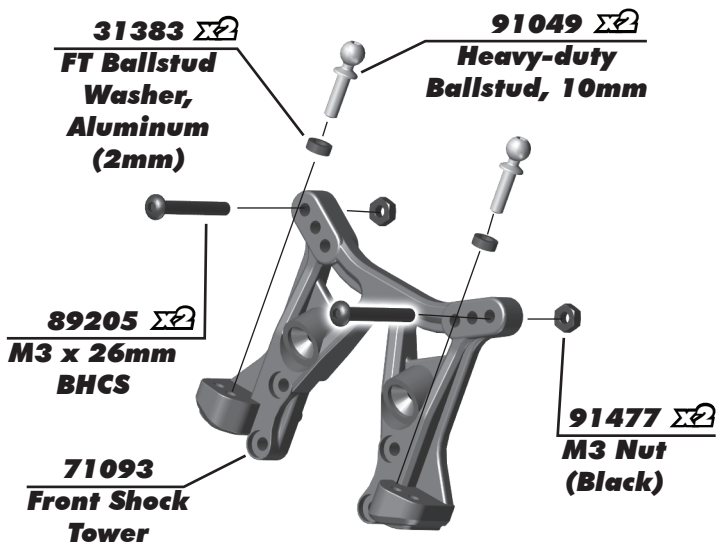
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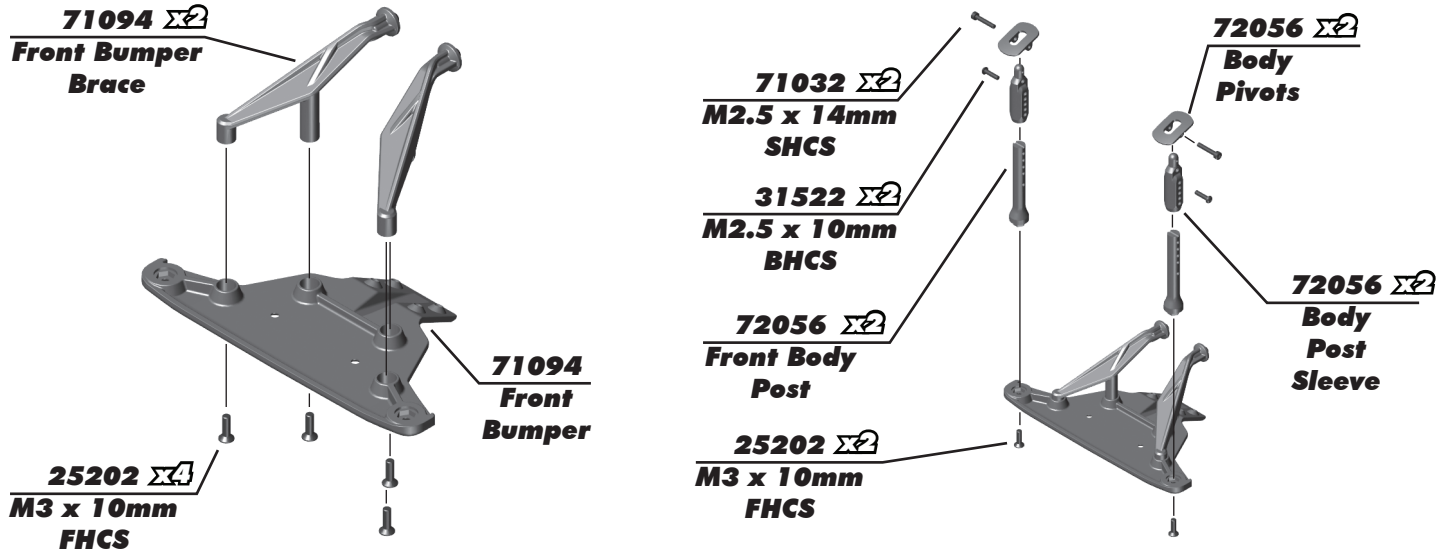
Build 2 (1 left, 1 right)



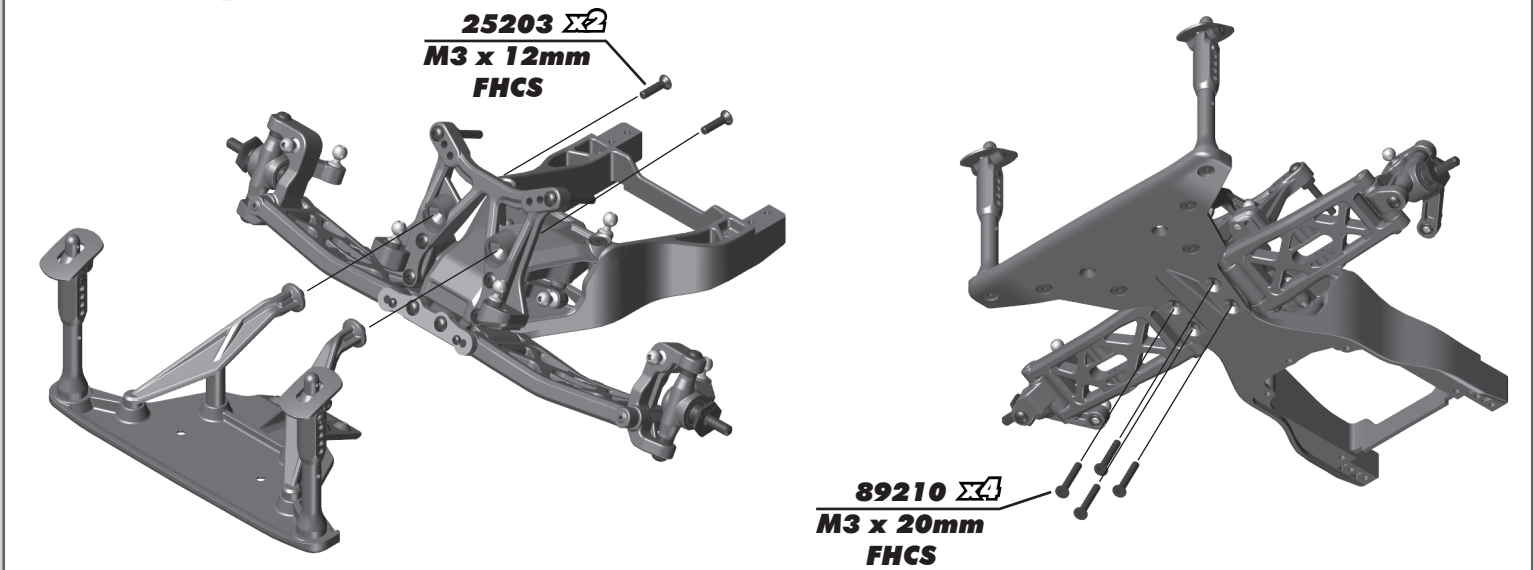
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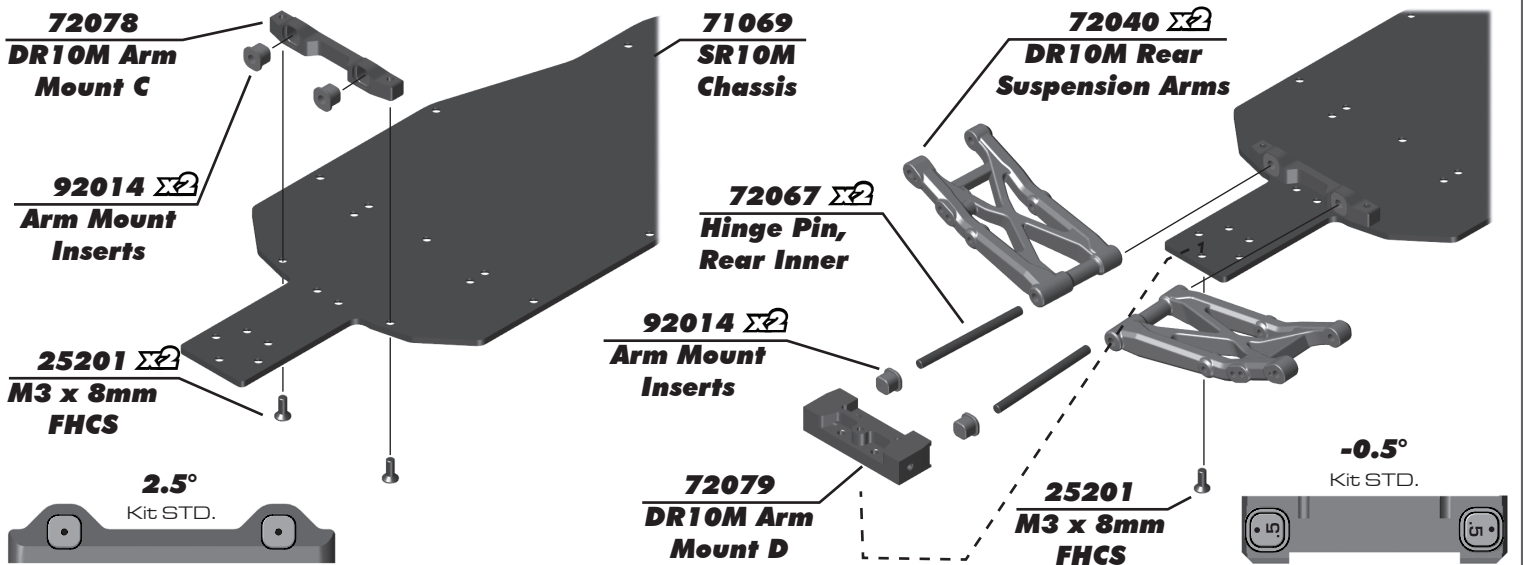
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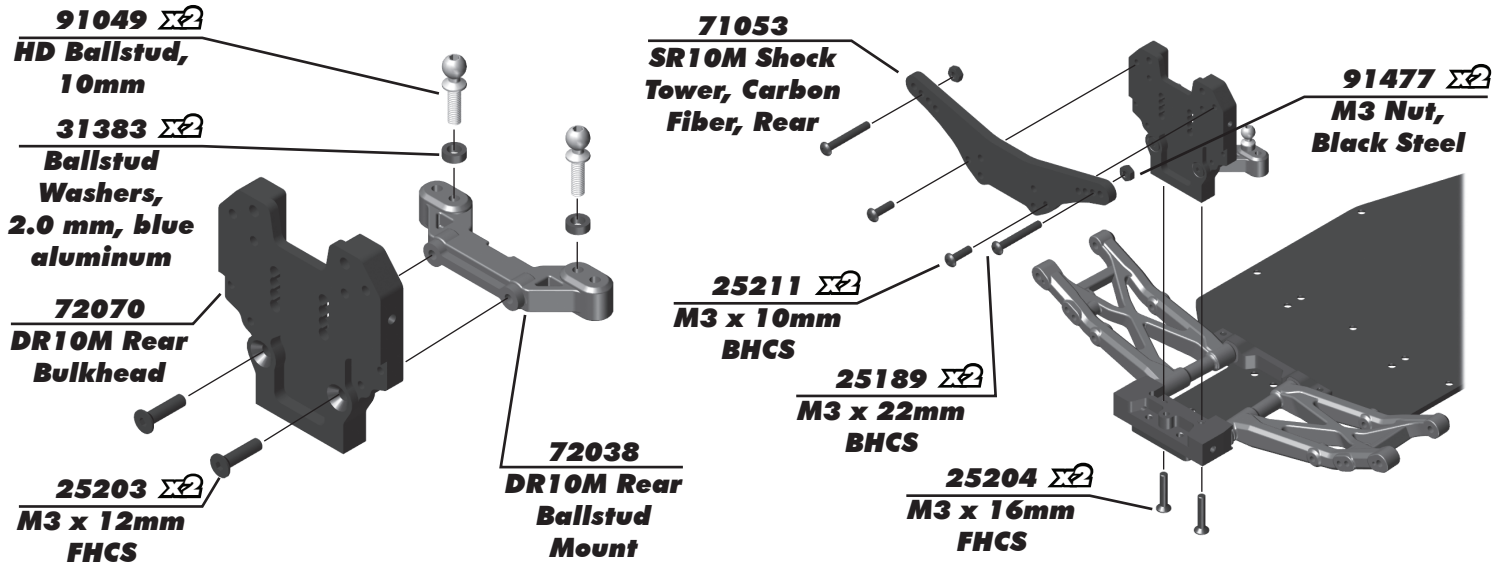
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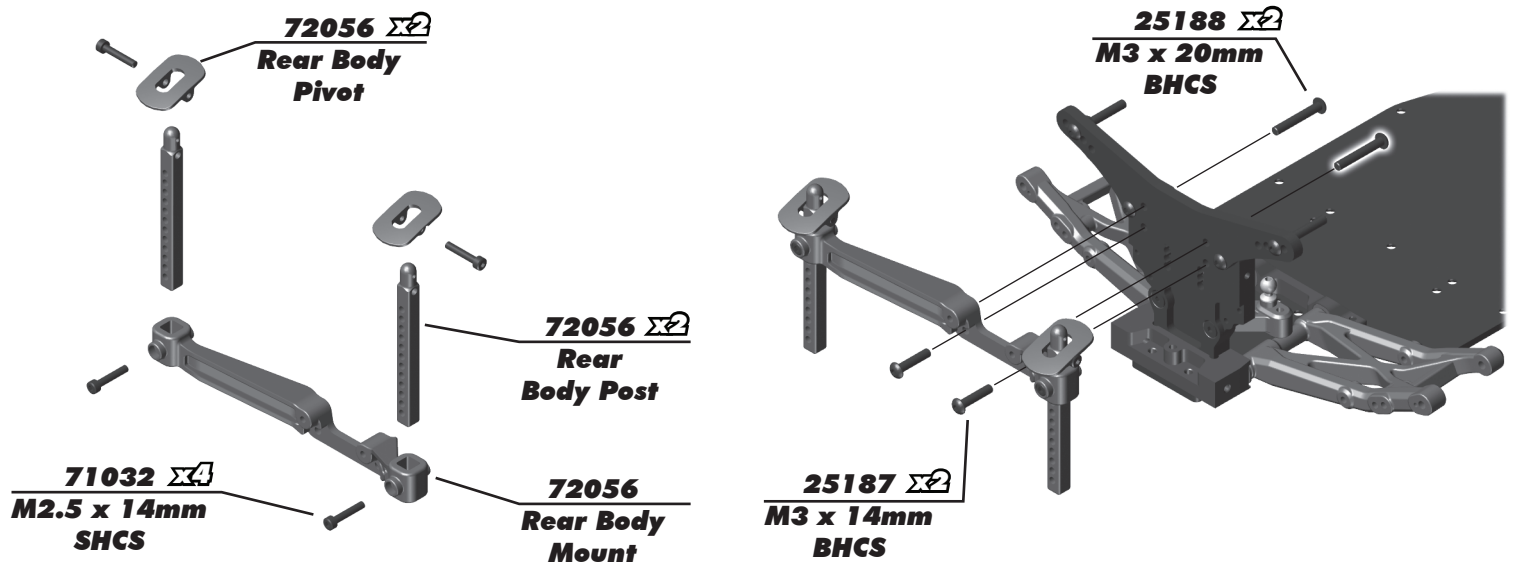
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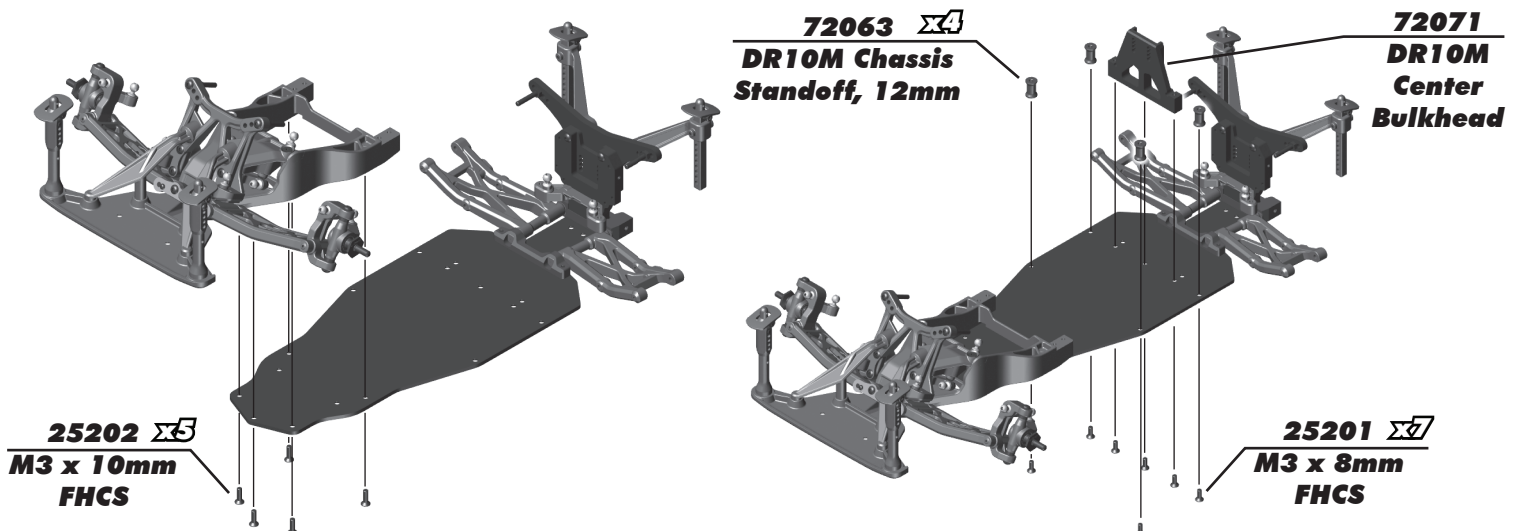
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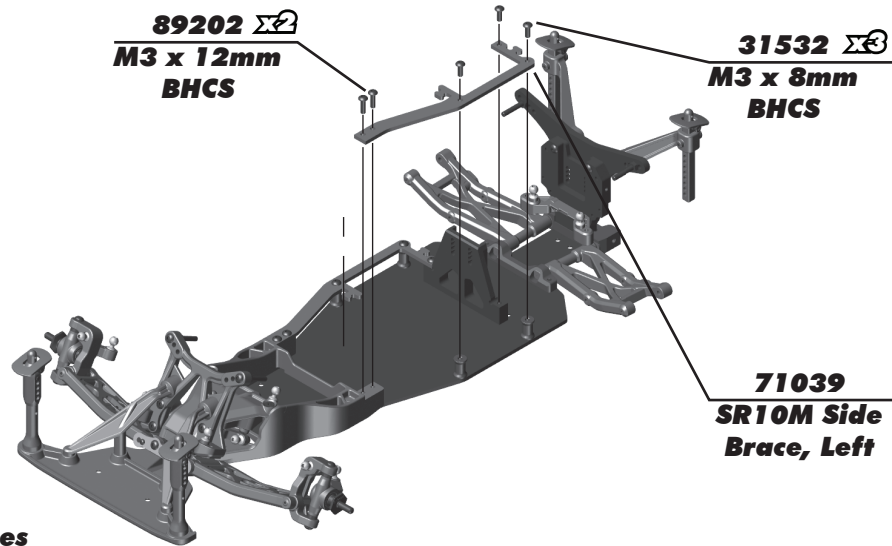
:: Bag 5 - Step 2



:: Bag 6 - Step 1

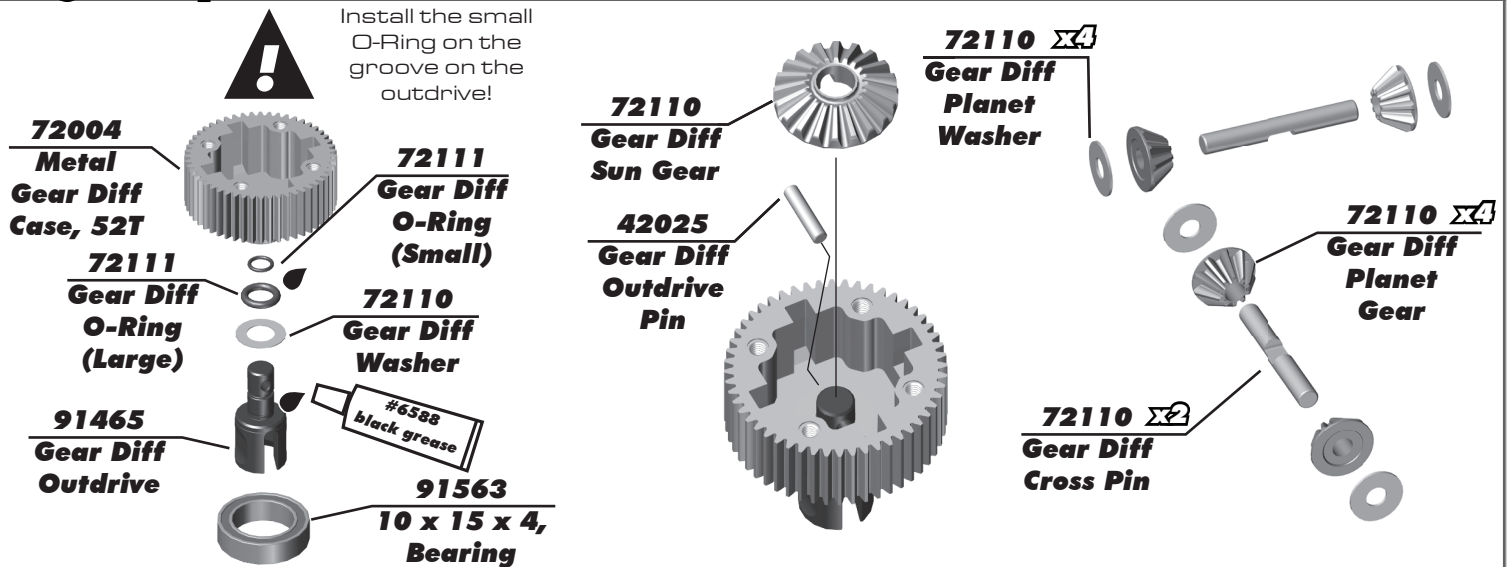


:: Bag 6 - Step 2

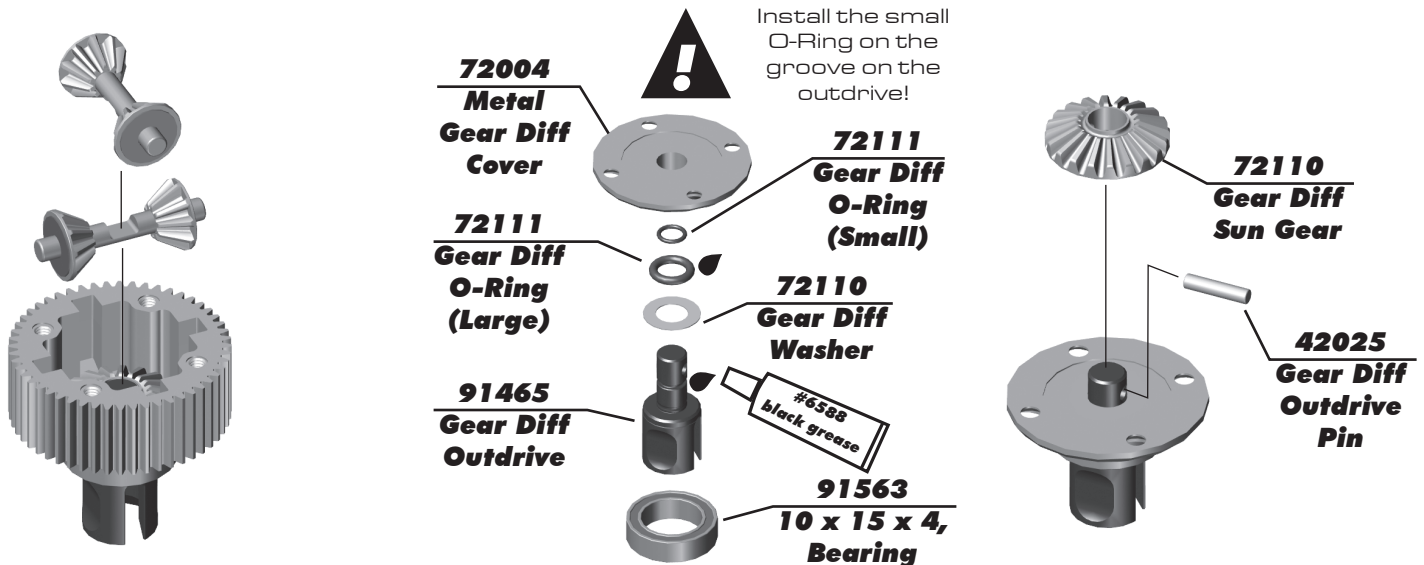


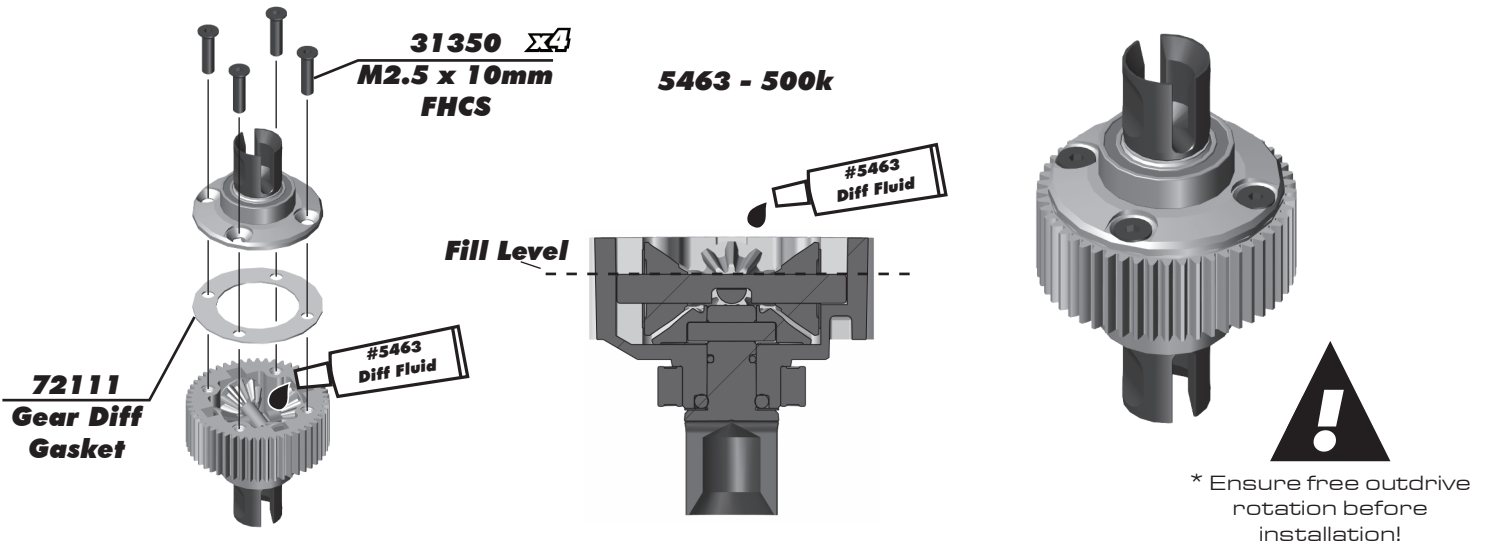
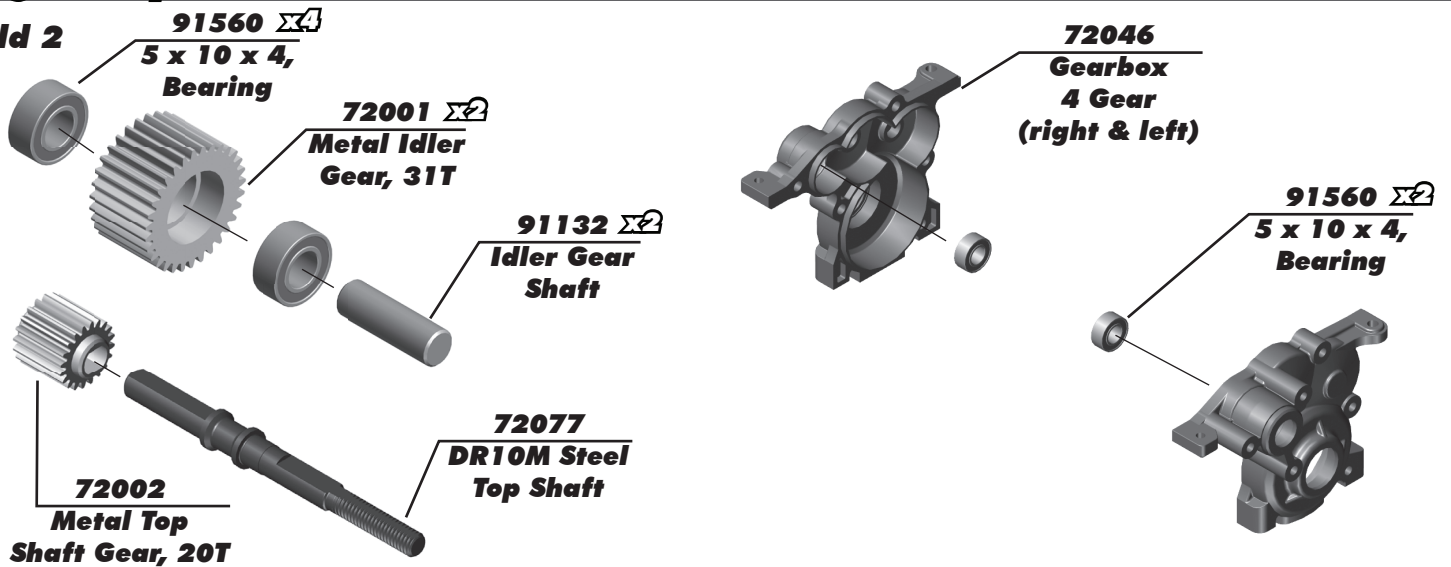
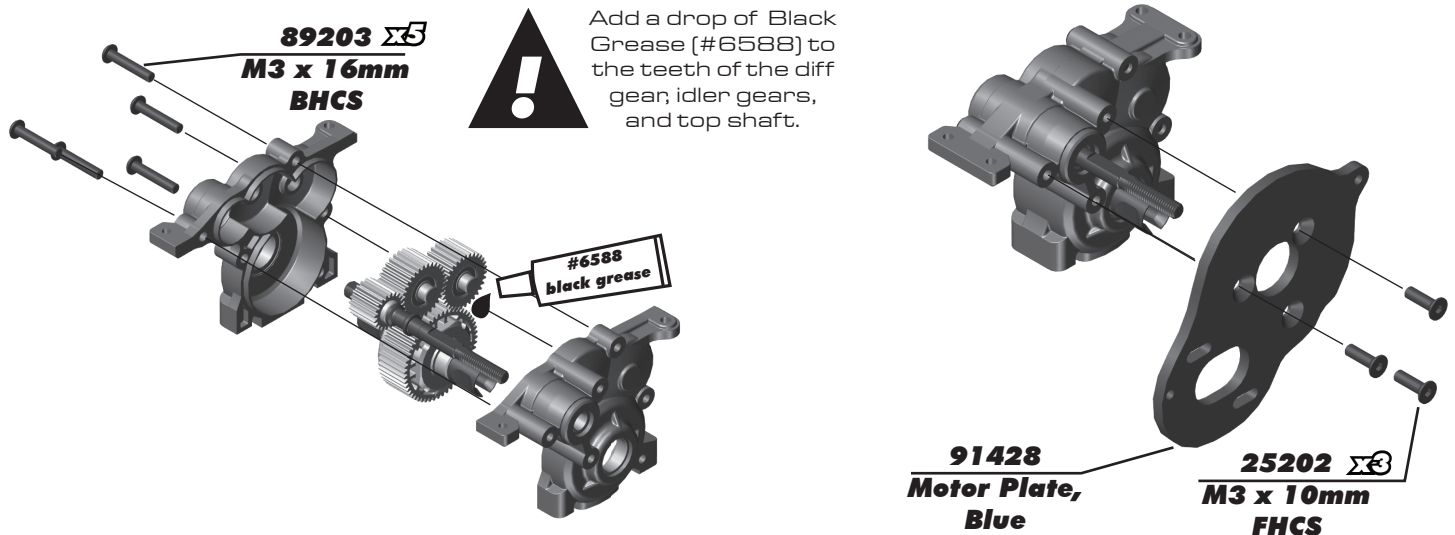
Build right and left side braces

:: Bag 7 - Step 1

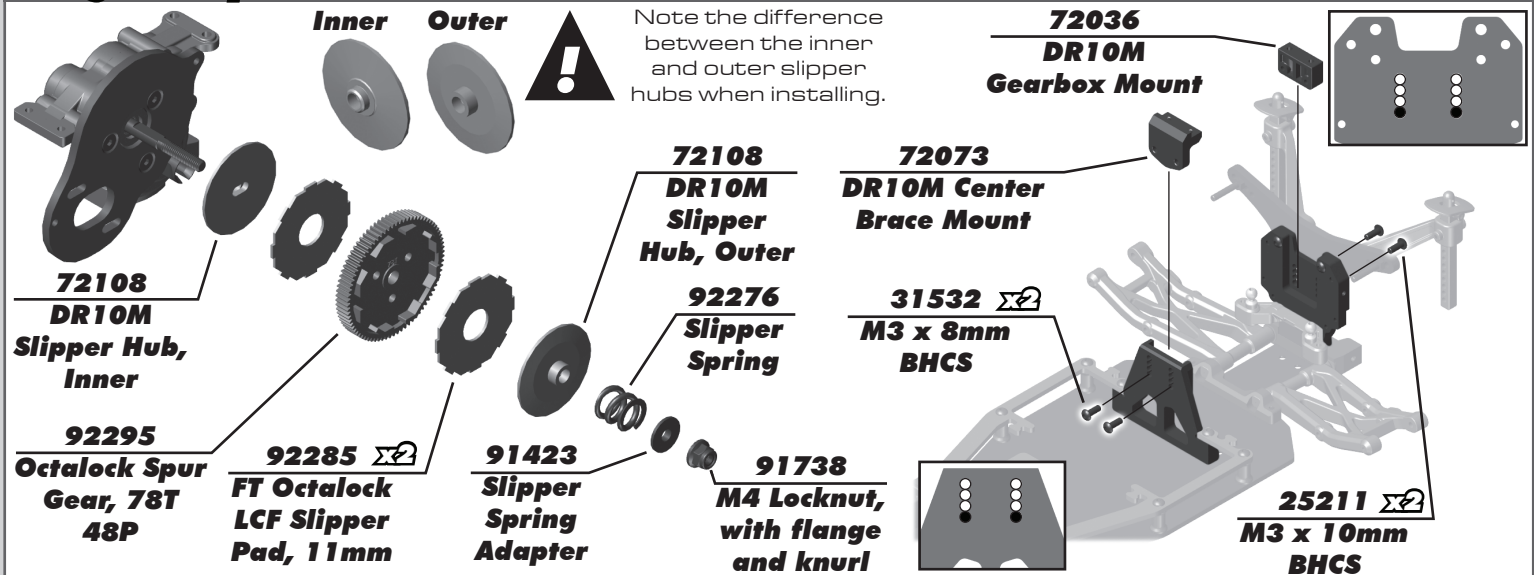


:: Bag 7 - Step 2

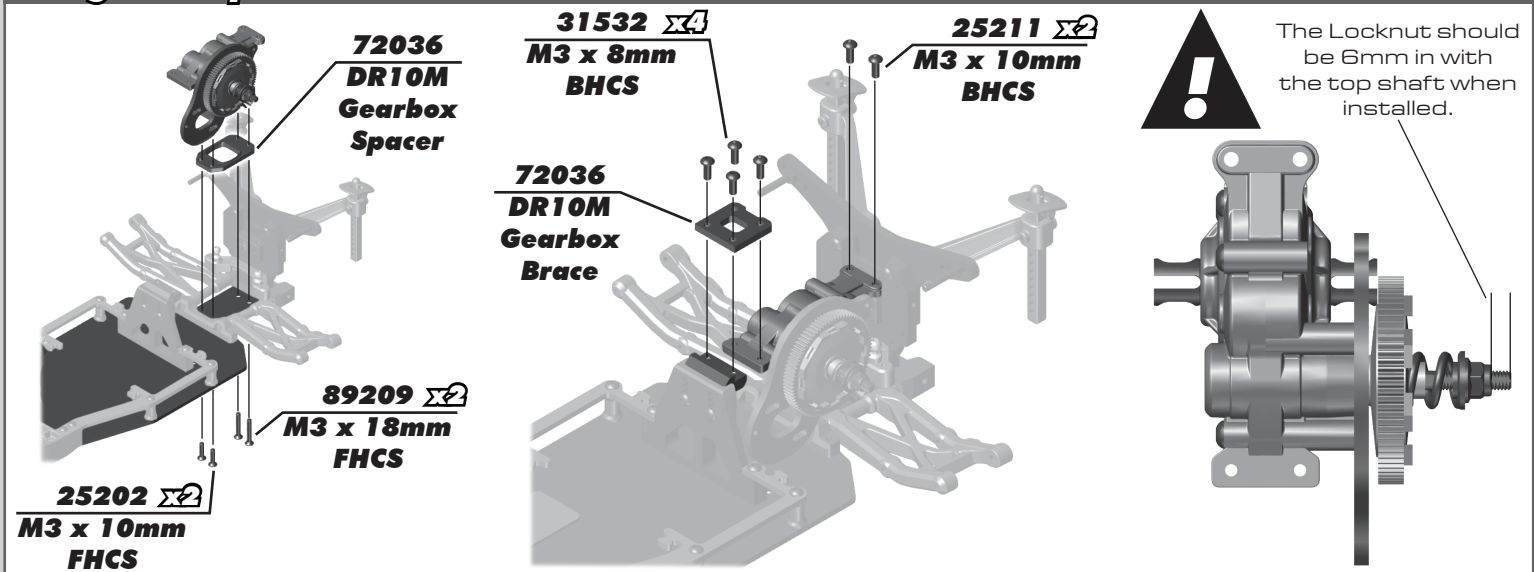


:: Bag 7 - Step 3**:: Bag 8 - Step 1****Build 2****:: Bag 8 - Step 2**

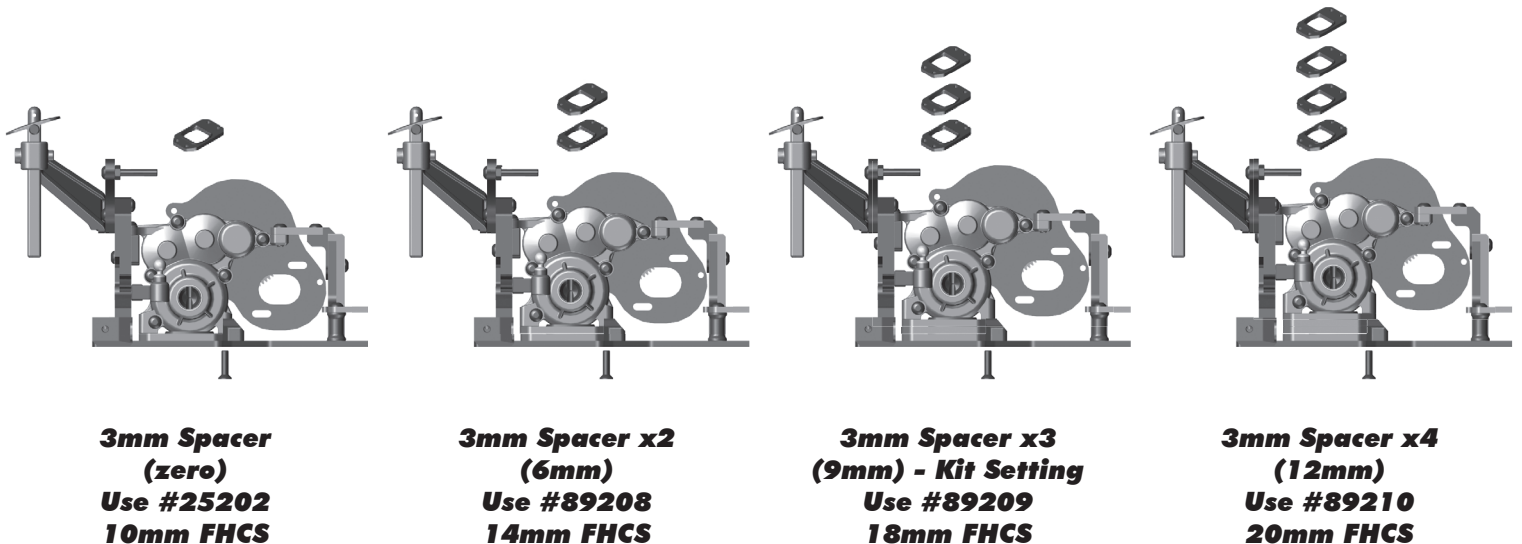
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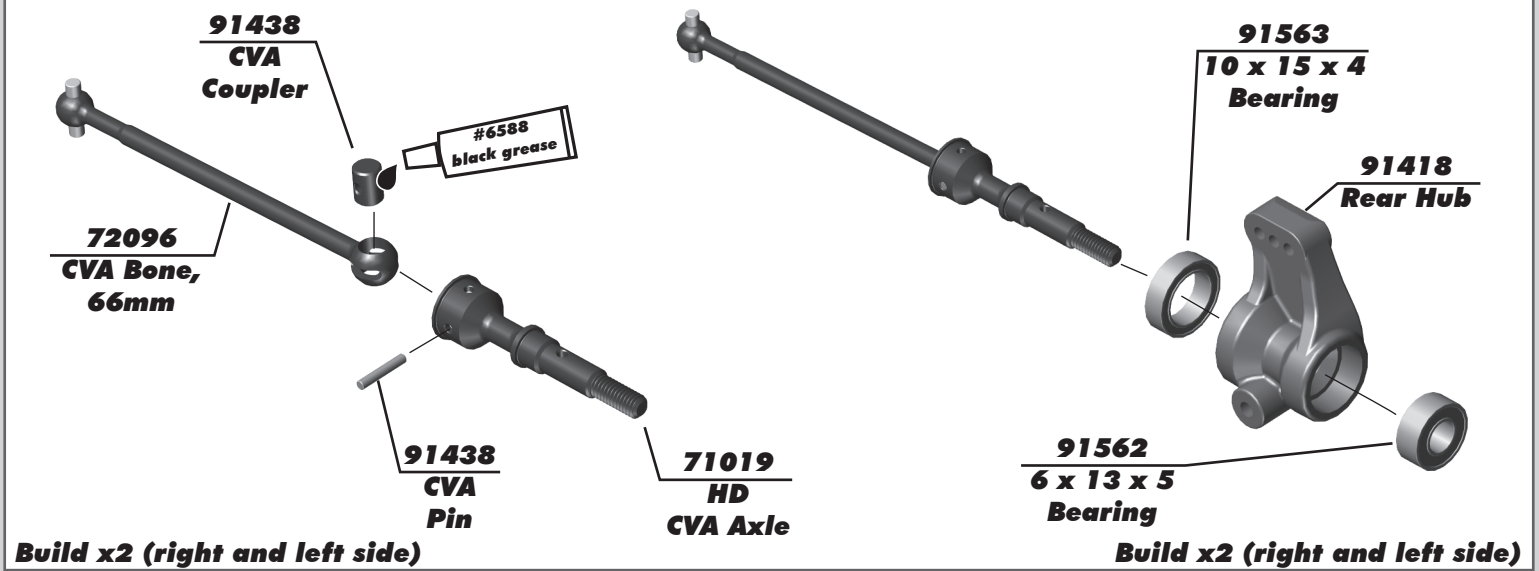
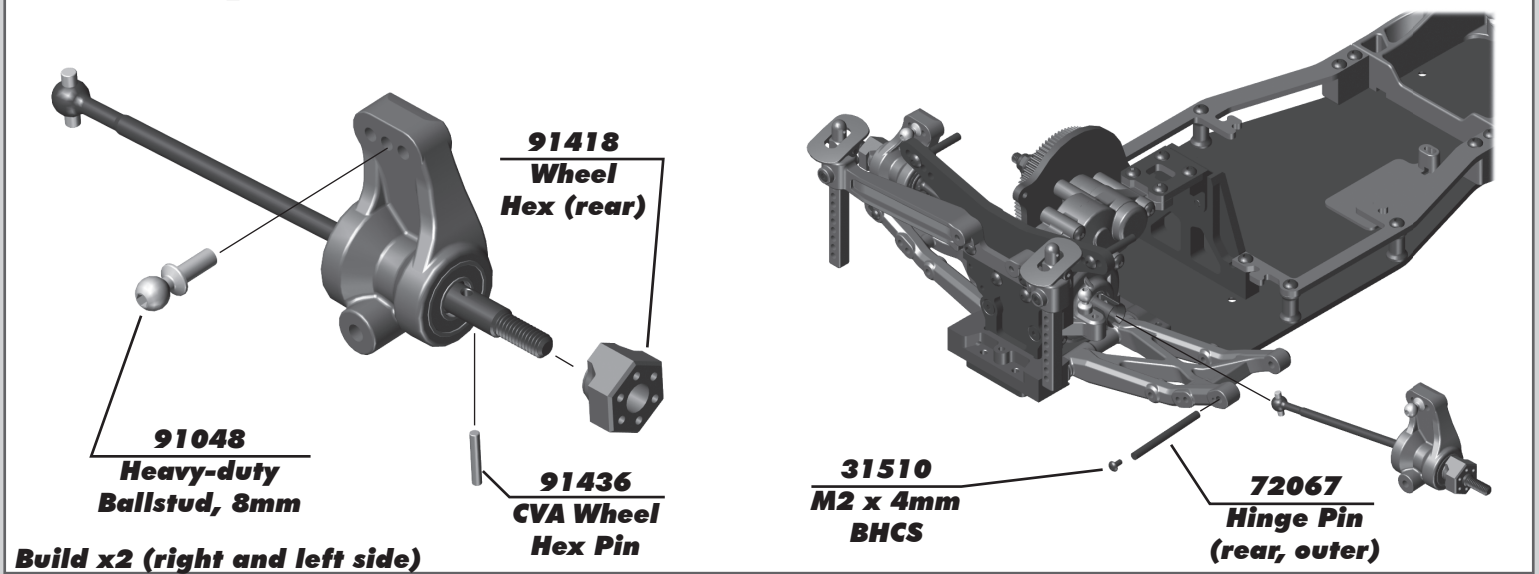
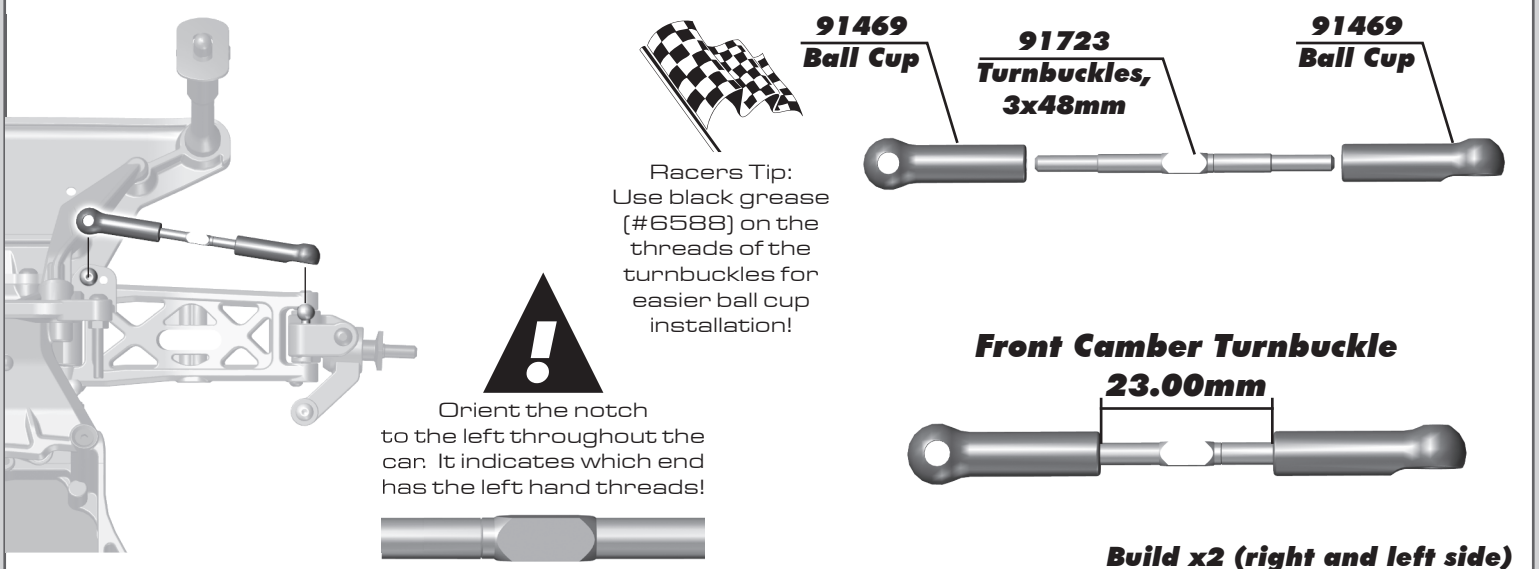


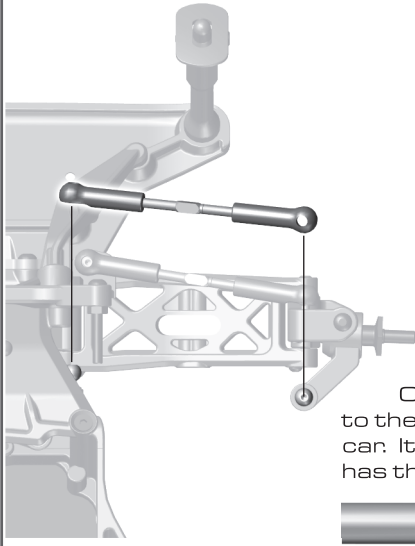
:: Bag 8 - Step 4



:: Bag 8 - Optional Gearbox Settings



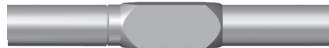
:: Bag 9 - Step 1**:: Bag 9 - Step 2****:: Bag 10 - Step 1**

:: Bag 10 - Step 2

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



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



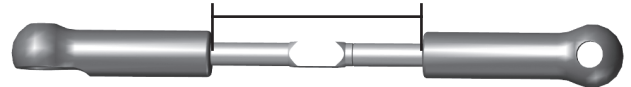
91469
Ball Cup

91723
Turnbuckles,
3x48mm

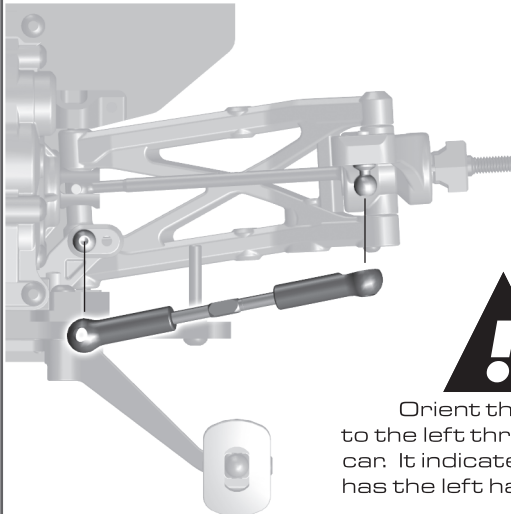
91469
Ball Cup



Steering Turnbuckle
28.00mm



Build x2 (right and left side)

:: Bag 10 - Step 3

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



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



91469
Ball Cup

91723
Turnbuckles,
3x48mm

91469
Ball Cup



Rear Camber Turnbuckle
25.00mm



Build x2 (right and left side)

:: Bag 11 - Step 1

91444
12mm
Shock Piston

6299
1/8 E-Clip

6299
1/8 E-Clip

91488
3 x 21mm
Shock Shaft
(front, rear)



Racers Tip:

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



91480
Shock Body
12 x 23mm
(front, rear)



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

31327
Shock
Bottom Cap
O-Ring

91444
Shock
Internals

#1105
green slime

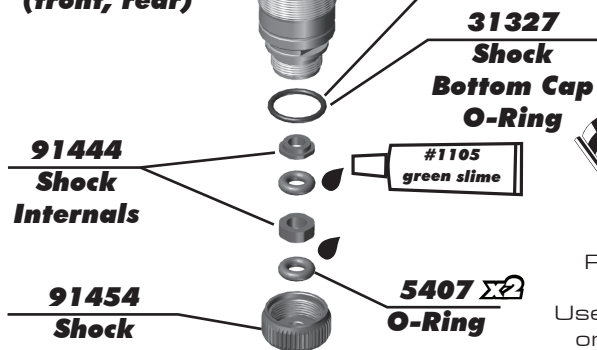
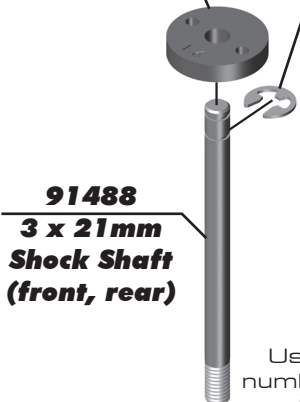
91454
Shock
Bottom Cap

5407
O-Ring



Racers Tip:

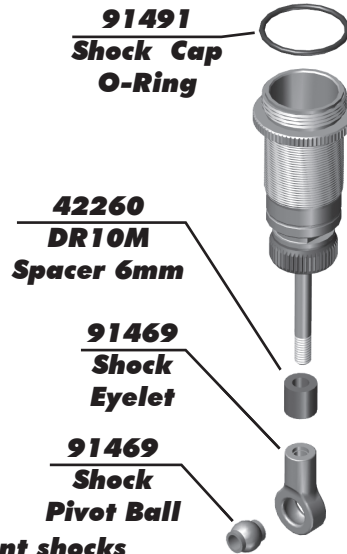
Use green slime
on all o-rings.
Not included!



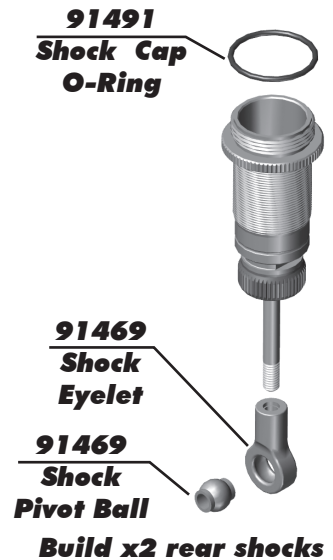
:: Bag 11 - Step 2

Racers Tip:

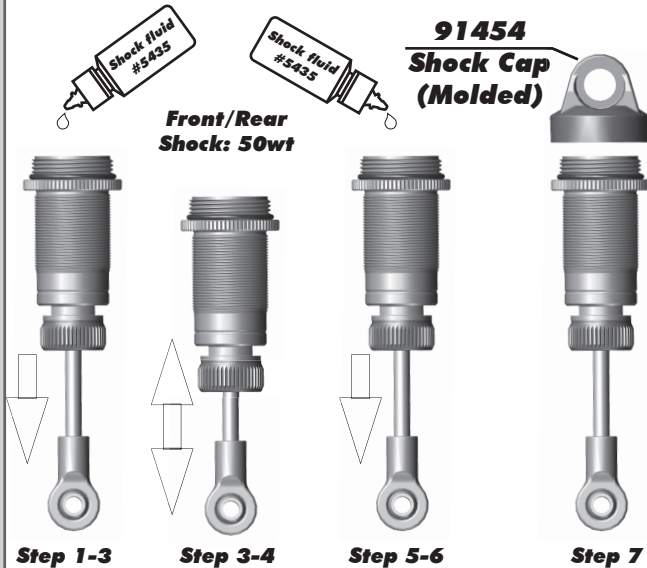
Coating the o-rings with green slime (#1105) helps seal & reduce o-ring swell! **Green slime not included in kit!**



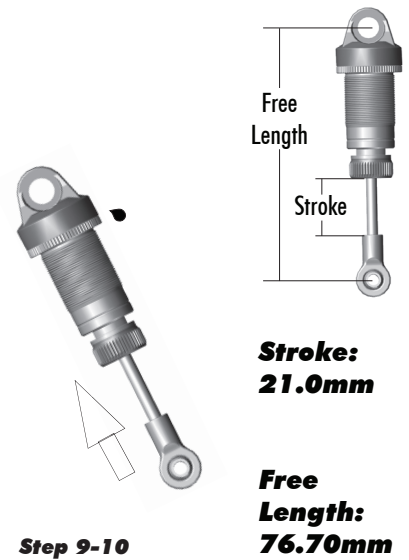
Build x2 front shocks



Build x2 rear shocks

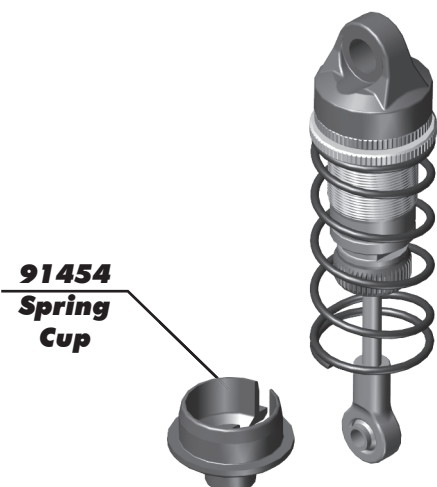
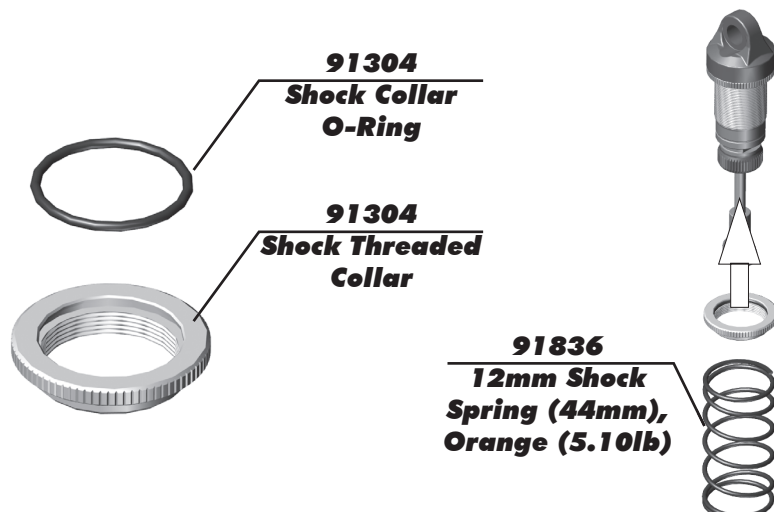
:: Bag 11 - Step 3**Shock Bleeding Steps:**

1. Pull shock shaft down.
2. Fill shock body 3/4 full with silicone fluid.
3. Slowly move the shock shaft up and down to remove air from under piston.
4. Wait for bubbles to come to surface.
5. Fill shock body to top with silicone fluid.
6. Place a drop of oil in the cap and on cap threads.
7. Install cap and tighten completely.
8. Slowly compress shaft all the way to the top. If there is pressure at the top of the stroke, there is too much oil or air. You must bleed it out.
9. Slowly pull shaft out.
10. Unscrew the cap 3/4 turn and tilt the shock at a slight angle.
11. Slowly compress the shaft to push out excess oil and air. You should see bubbles coming out from under the cap.
12. With the shaft compressed, tighten the cap and re-check for pressure at the top of the stroke. If there is still pressure, repeat steps 9 thru 11.

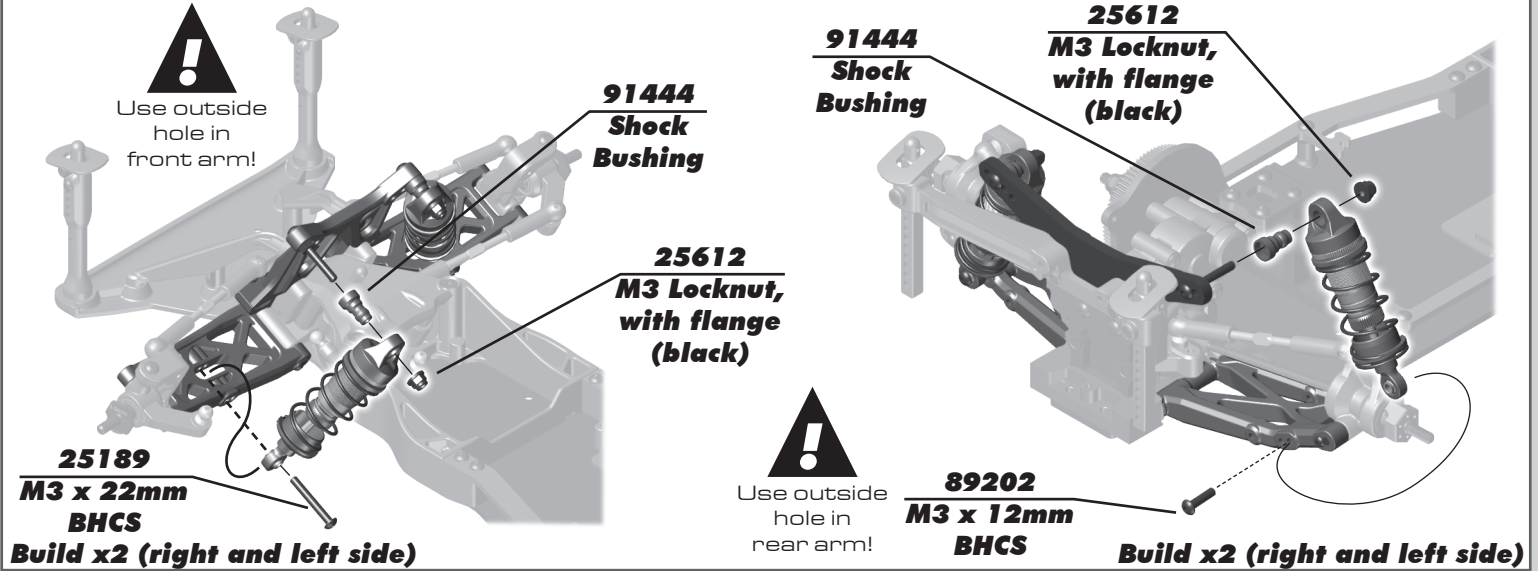


**Stroke:
21.0mm**

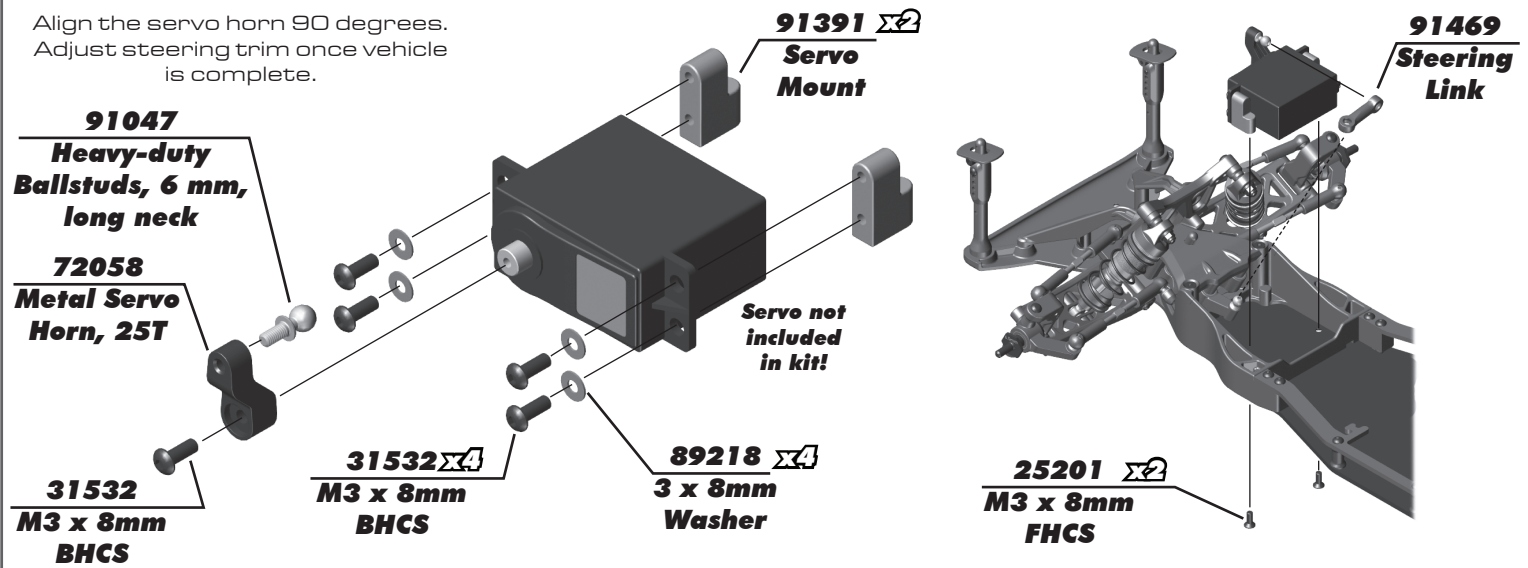
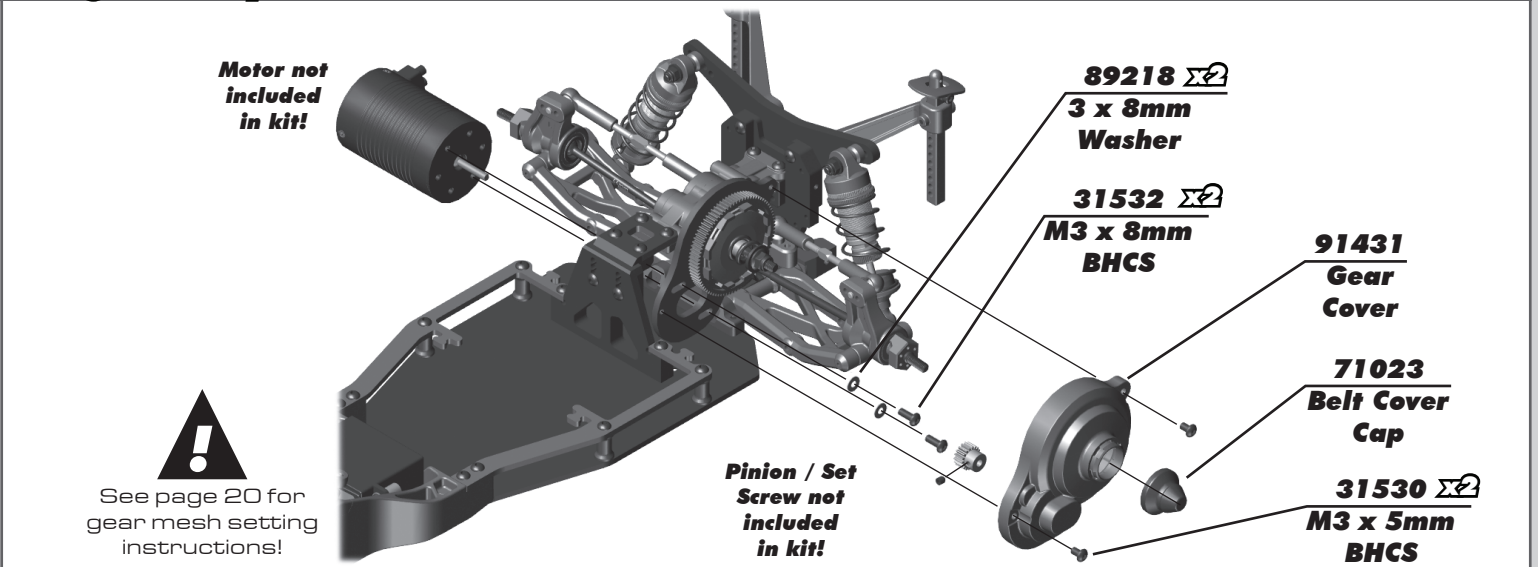
**Free
Length:
76.70mm**

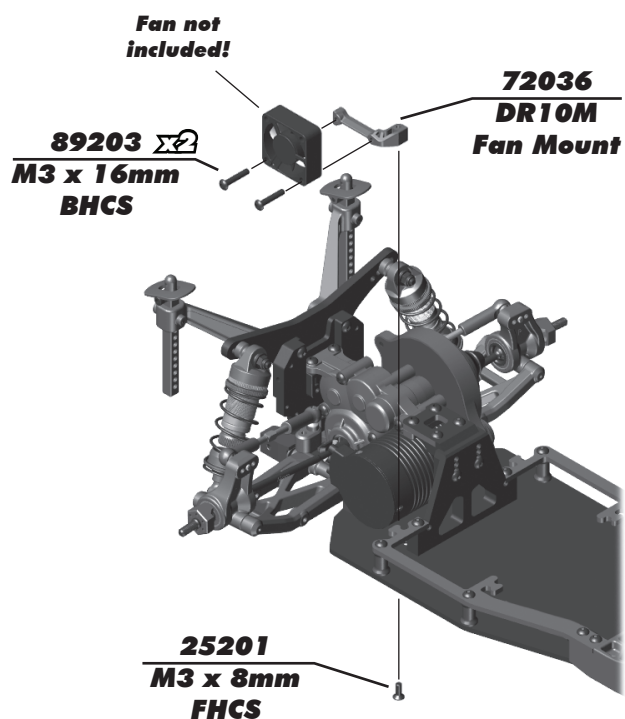
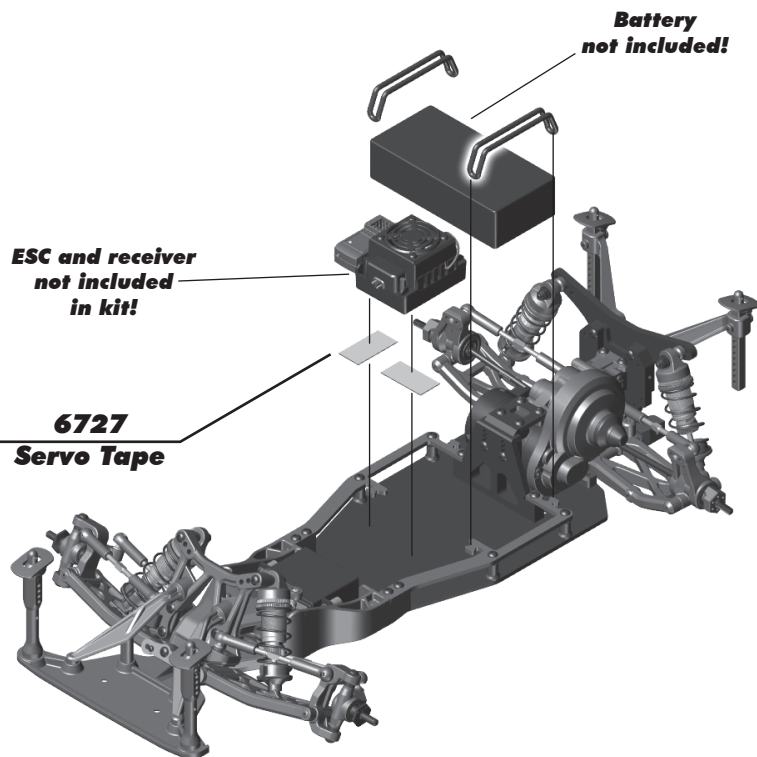
:: Bag 11 - Step 4

Build x2 front and x2 rear shocks

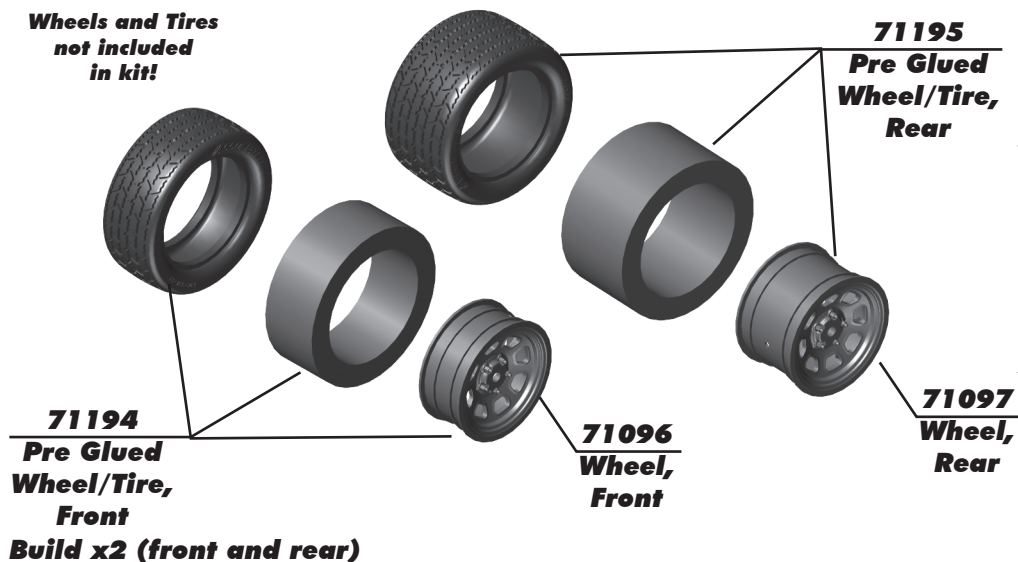
:: Bag 11 - Step 5**:: Bag 12 - Step 1**

Align the servo horn 90 degrees.
Adjust steering trim once vehicle is complete.

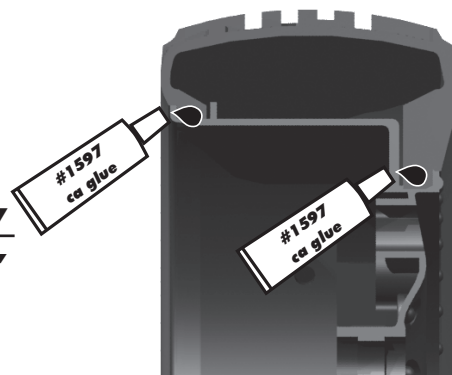
**:: Bag 12 - Step 2**

:: Bag 12- Step 3**:: Box - Step 1**

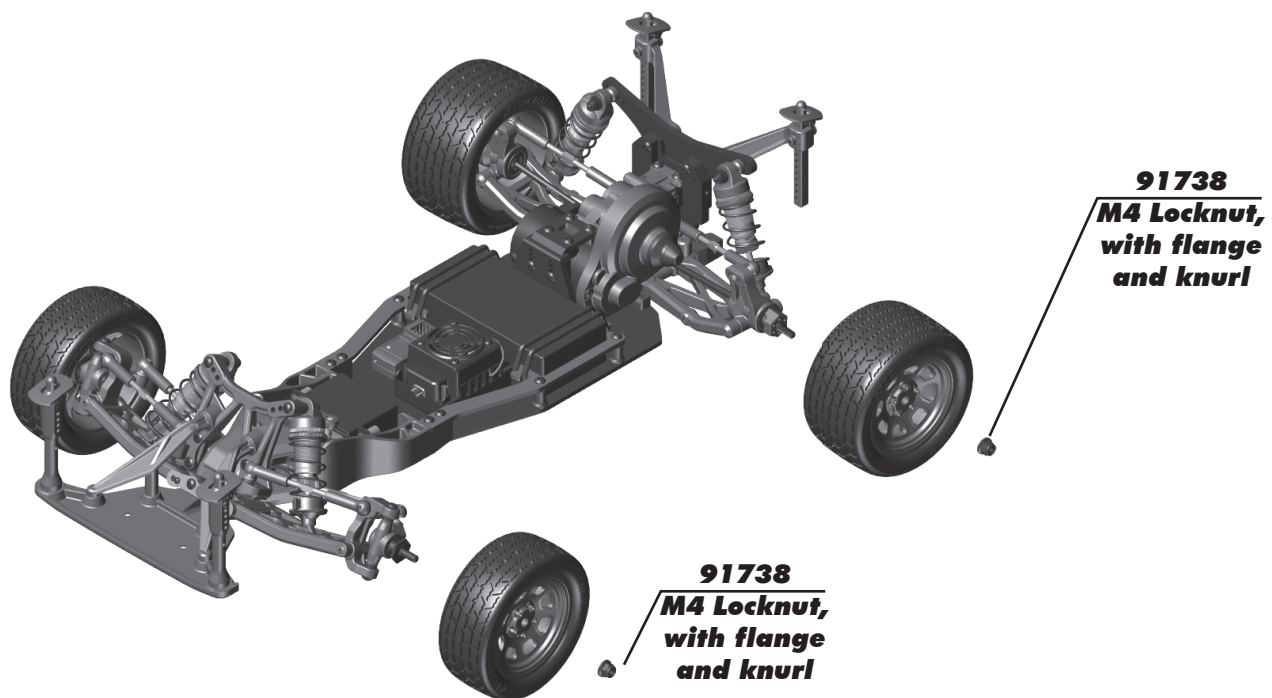
Wheels and Tires not included in kit!



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!



:: Box - Step 2

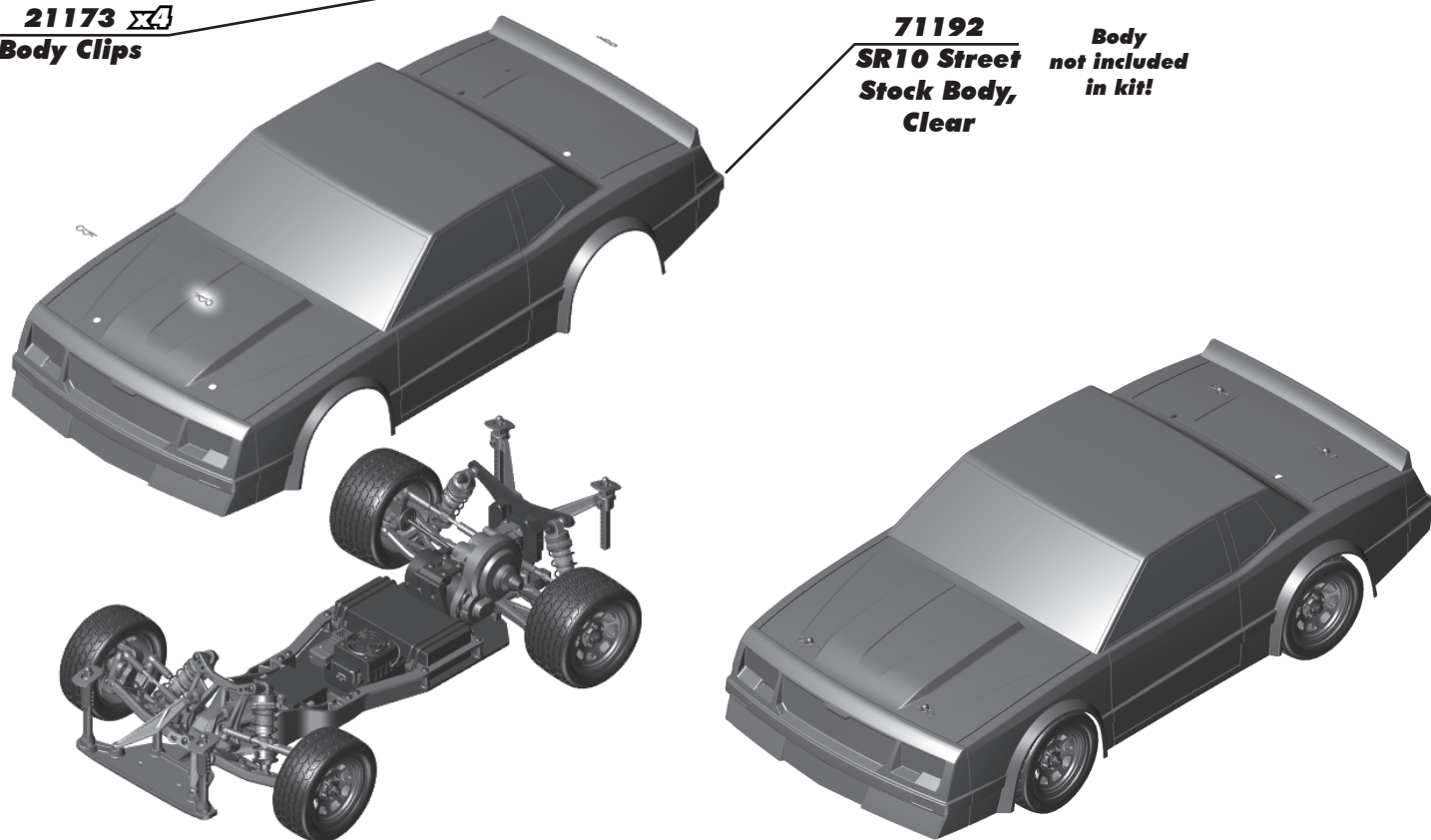


:: Box - Step 3

21173 x4
Body Clips

71192
SR10 Street
Stock Body,
Clear

Body
not included
in kit!



:: Tuning Tips

Painting:

You will need to prep the clear polycarbonate body before you can paint it. Wash the INSIDE thoroughly with warm water and liquid detergent (do not use any detergents with scents or added hand lotion ingredients!). 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 on the inside). Using high quality masking tape, apply tape to the inside of the body to create a design. Spray (use either rattle can or airbrush) the paint on the inside of the body (preferably dark colors first, lighter colors last). NOTE: ONLY use paint that is recommended for (polycarbonate) plastics. If you do not, you can destroy the body! After the paint has completely dried (usually after 24 hours), cut the body along the trim lines. Make sure to drill or use a body reamer to make the holes for the antenna if needed! Use hook and loop tape to secure the body to the side rails of the vehicle.

Tips for Beginners:

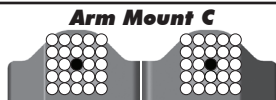
Before making any changes to the standard setup, make sure you can get down the track without crashing. Changes to your vehicle will not be beneficial if you can't stay on the track. Your goal is consistent passes. Once you can get down the track consistently, start tuning your vehicle. Make only ONE adjustment at a time, testing it before making another change. If the result of your adjustment is a faster pass, 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 pass, 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. Periodically check all moving suspension parts. Suspension components must be kept clean and move freely without binding to prevent poor and/or inconsistent handling.

Rear Arm Mount Pill Insert Setup:

The aluminum rear arm mounts utilize eccentric pill inserts to make fine adjustments to anti-squat, toe, pin heights, and pin width. Adjustments can be made using the supplied inserts (#92014)

Standard Position

Use this position as a reference when changing pill locations.



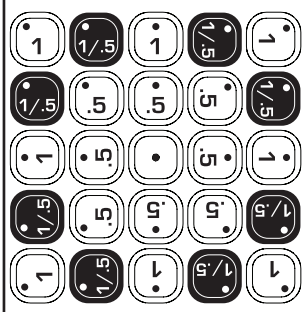
Arm Mount D



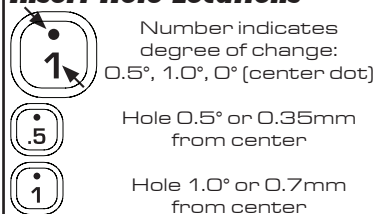
Toe: 0.5°
Anti-squat: 2.5°
Roll Center: 0.0°
Pivot Width: 0.0°

Additional toe settings are achievable using option part #72011 DR10 Aluminum rear hubs.

Possible Insert Locations

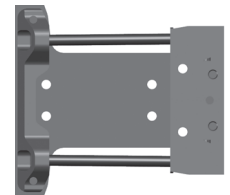


Insert Hole Locations



Toe Angle

More angle = More toe in
Less angle = Less toe in
*Shown in 1° changes



C Mount

D Mount



-2.0°



-1.0°



-1.5°



0.0°



-0.5°

Kit STD.

Anti-squat Angle

More angle = More anti-squat
Less angle = Less anti-squat
*Shown in 1° changes



C Mount

D Mount



3.0°



2.5°

Kit STD.



2.0°



:: Tuning Tips (cont.)

Motor Gearing:

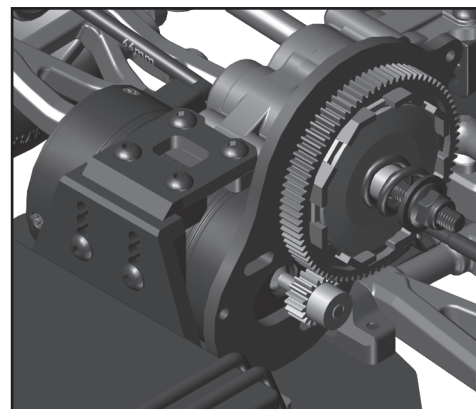
Proper motor gearing will result in maximum performance and run time while reducing the chance of overheating and premature motor failure. The gear ratio chart lists recommended **starting gear ratios** for the most widely used motor types. Gear ratios will vary depending upon motor brand, wind, and electronic speed control. Consult your motor and electronic speed control manufacturers for more information.

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	*27	78	7.51:1
10.5 Reedy Sonic Brushless	*24	78	8.45:1
3300KV Brushless	*23	78	8.81:1

*** 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 motor mounting 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.

Gearbox Height Adjustment:

Adjusting the gearbox height will effectively change rear driveshaft angle. This angle will change how the power is transmitted to the tires. Standard setting is 9mm. Lower setting might be more desirable for low traction conditions.

Slipper Clutch:

The assembly instructions give you a base setting for your clutch. Turn the nut on the shaft so that there is 6mm of thread showing. 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 takeoffs. 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 28mm (Ride Height Gauge).

Check the front ride height by cycling the suspension up and down. After the suspension "settles" into place, measure ride height (Ride Height Gauge). Raise or lower the shock collars as necessary.

The rear ride height setting you should use most often is 26mm (Ride Height Gauge).

Check the rear ride height by cycling the suspension up and down. After the suspension "settles" into place, measure ride height (Ride Height Gauge). Raise or lower the shock collars as necessary.

Caster:

Caster describes the angle of the caster block as it leans toward the rear of the vehicle.

Positive caster means the kingpin leans rearward at the top.

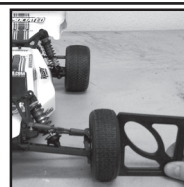
The total caster angle is the sum of the kick-up angle and the caster block angle.

For less entry steering and more exit steering, try 0° caster block angle.

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:

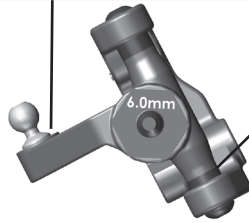
Camber describes the angle at which the tire and wheel rides when looked at from the back. Negative camber means that the tire leans inward at the top. A good starting camber setting is -1°. Adding a small amount of positive camber, where the top of the tire is leaning out, will tend to improve straight-line acceleration on loose tracks.

A camber gauge can be used to more accurately set camber.

Front Suspension:

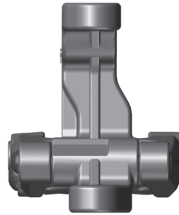
Ride Height: _____
 Camber: _____
 Toe: _____
 Arm Type: _____
 Tower Type: _____
 Wheel Hex Width: _____
 Steering Block: _____
 Bulkhead Type: _____
 Kick-Up Angle: _____
 Notes: _____

Bump Steer Spacing: _____

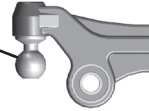


Axle Height:

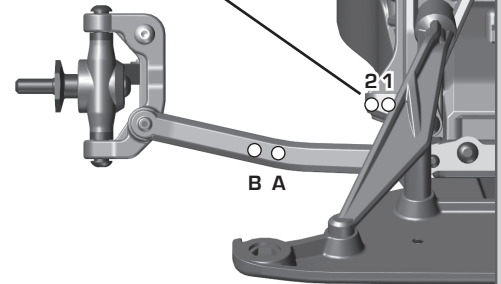
+3 ☐
 +2 ☐
 +1 ☐
 0 ☐



Ball Stud Spacing: _____



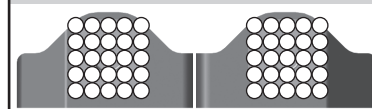
Ball Stud Spacing: _____



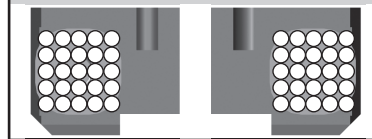
Rear Suspension:

Ride Height: _____
 Camber: _____
 Toe: _____
 Anti-Roll Bar: Yes ☐ No ☐
 Arm Type: _____
 Wheel Hex Width: _____
 Notes: _____

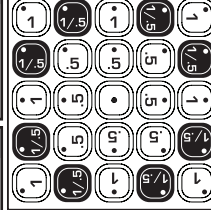
Alum. C Mount:



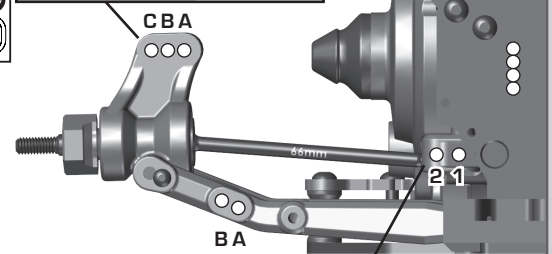
Alum. D Mount:



Possible Insert Locations



Ball Stud Spacing: _____

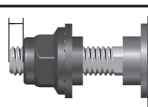


Ball Stud Spacing: _____

Electronics:

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

Drivetrain:

Differential Setting:
 Diff Fluid: _____
 Notes: _____
 Slipper Clutch:
 Type: _____
 # of Pads: _____
 Setting: _____

 Notes: _____

Shocks:

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



Track Info:

Burnout: Yes ☐ No ☐ Length: _____
 Burnout Surface: _____
 Surface: Asphalt ☐ Concrete ☐ Prep ☐ No-Prep ☐
 Traction: Low ☐ Medium ☐ High ☐ Very High ☐
 Temperature: Ambient: _____ Track: _____
 Tire Warmers: Yes ☐ No ☐ Time: _____ Temp: _____
 Notes: _____

 Vehicle Comments: _____

Tires:

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

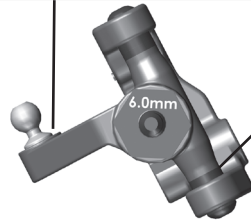
Body, Weight:

Body: _____
 Body Notes: _____
 Chassis Weights: _____
 Chassis Notes: _____
 Vehicle Weight: Front: _____ Rear: _____
 Total Vehicle Weight: _____
 Notes: _____

Front Suspension:

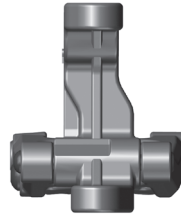
Ride Height: _____
 Camber: _____
 Toe: _____
 Arm Type: _____
 Tower Type: _____
 Wheel Hex Width: _____
 Steering Block: _____
 Bulkhead Type: _____
 Kick-Up Angle: _____
 Notes: _____

Bump Steer Spacing: _____

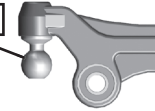


Axle Height:

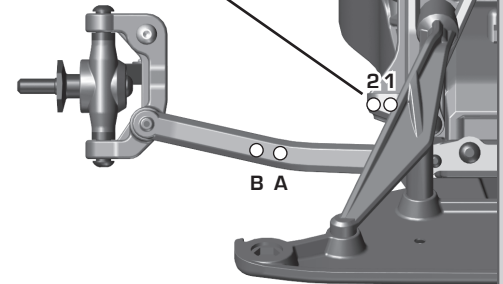
+3 ☐
 +2 ☐
 +1 ☐
 0 ☐



Ball Stud Spacing: _____



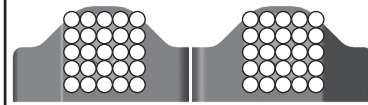
Ball Stud Spacing: _____



Rear Suspension:

Ride Height: _____
 Camber: _____
 Toe: _____
 Anti-Roll Bar: Yes ☐ No ☐
 Arm Type: _____
 Wheel Hex Width: _____
 Notes: _____

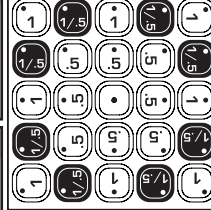
Alum. C Mount:



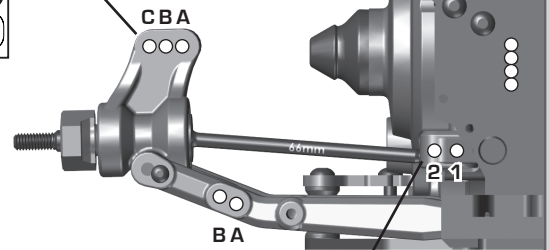
Alum. D Mount:



Possible Insert Locations



Ball Stud Spacing: _____

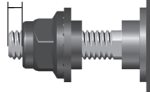


Ball Stud Spacing: _____

Electronics:

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

Drivetrain:

Differential Setting:
 Diff Fluid: _____
 Notes: _____
 Slipper Clutch:
 Type: _____
 # of Pads: _____
 Setting: _____

 Notes: _____

Shocks:

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



Track Info:

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 Burnout Surface: _____
 Surface: Asphalt ☐ Concrete ☐ Prep ☐ No-Prep ☐
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 Temperature: Ambient: _____ Track: _____
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 Vehicle Comments: _____

Tires:

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

Body, Weight:

Body: _____
 Body Notes: _____
 Chassis Weights: _____
 Chassis Notes: _____
 Vehicle Weight: Front: _____ Rear: _____
 Total Vehicle Weight: _____
 Notes: _____

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