TC8 FACTORY TEAM STEEL-SPEC

1:10 Scale 4WD Electric On Road Competition Touring Car

TEAM ASSOCIATED

1:10 Scale 4WD Electric On Road Competition Touring Car Kit Manual

#30142 TC8 Steel-Spec Touring Car Team Kit

WeAreAE 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 the manual and familiarize yourself with the steps. We are continually changing and improving our designs; therefore, actual parts may appear slightly different than the illustrations. New parts will be noted on supplementary sheets located in the appropriate parts bags.
Check each bag for these sheets before you start to build.
Check www.rc10.com for the latest versions of our instruction manauls.

:: TC8 Steel-Spec Kit Features

- Mid-Motor Configuration with Symmetrical Belts: Ensures consistent power delivery and balanced performance.
- Split Top Deck Design: Optimizes chassis flex characteristics for enhanced handling.
- Centralized Ultra-Short Shock Design: Enhances cornering speed and promotes ideal weight distribution.
- Long-Arm Pivot Ball Suspension Geometry: Provides superior grip and predictable handling across diverse track conditions.
- Adjustable KPI Steering Blocks: Enables precise tuning of steering feel for driver preference.
- Floating One-Piece Servo and Bell Crank Mount: Maximizes responsiveness and optimizes chassis flex.
- TC8 Steel Chassis: Lowers the center of gravity (CG) and optimizes chassis flex for high-grip surfaces.
- TC8A Carbon Fiber Chassis: Fine-tunes chassis flex for optimal performance on low-grip surfaces.
- Pillow Ball Lower Arm Design: Facilitates easy track width adjustments.
- DCV Drive Shafts Front and Rear: Maximizes cornering efficiency.
- Flexible TPU Front Bumper: Enhances durability and impact resistance.
- Horizontal Rear Body Mount: Improves aerodynamic efficiency when using lightweight polycarbonate bodies.
- High-Volume Rear Differential: Delivers consistent performance and extended run times.
- Wide Range of Differential Height Adjustment: Optimizes DCV bone bind for varying grip levels.
- Floating Fan and Receiver Mount: Maintains consistent chassis flex characteristics.

:: Additional

Your new TC8 Kit comes unassembled
and requires the following items for completion
(refer to AssociatedElectrics.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
- 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
- Pinion gear, size determined by type/turn or kV of motor

:: Other Helpful Items

- Silicone Shock Fluid (Refer to AssociatedElectrics.com for complete listings)
- FT Body Scissors (#1737)
- FT Hex/Nut Wrenches (#1519)
- FT Universal Tire Balancer (#1498)
- FT Dual Turnbuckle Wrench (#1114)
- FT Body Reamer (#1499)
- Needle Nose Pliers
- Calipers or a Precision Ruler
- Green Slime shock lube (#1105)
- Shock Pliers (#1681)
- FT Ballcup Wrench (#1579)
- Soldering Iron
- Wire Cutters
- Hobby Knife

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Since 1984

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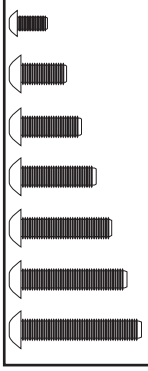
http://www.AssociatedElectrics.com • http://www.instagram.com/teamassociatedrc/ • http://www.facebook.com/TeamAssociated/

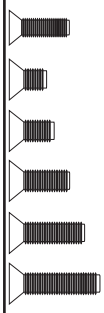
Hardware - 1:1 Scale View

Button Head (bhcs)



2x4mm (31510)
3x6mm (31531)
3x8mm (31532)
3x10mm (25211)
3x12mm (89202)
3x14mm (25187)
3x16mm (89203)

Flat Head (fhcs)



2.5x8mm (31472)
3x5mm (31540)
3x6mm (31541)
3x8mm (25201)
3x10mm (25202)
3x12mm (25203)

Ball Bearings

3x6x2mm (91558)
3x7x3mm (91475)
5x8x2.5mm (31400)
FT 5x8x2.5mm (8680)
FT 5x10x3mm (31734)
FT 10x15x4 (91563)

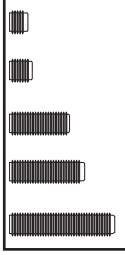
Cap Head (shcs)

1.6x5mm (91611)
2x10mm (41098)

LP Socket Head (lp shcs)

3x6mm (41089)

Set Screws



3x2.5mm (31500)
3x3mm (25225)
3x8mm (4670)
3x10mm (4671)
3x14mm (25222)

Nuts (lock/plain)

M3 Nut (91477)
M3 Alum. Locknut, Blue (31550)
M3 Locknut, Black (25215)

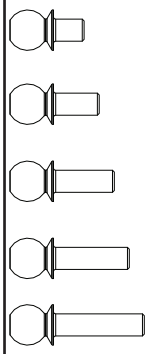
M3 Locknut w/Flange (25612)
FT 3mm Locknuts, Blue(25392)

M4 Locknuts:
Serrated Steel LP (91150)
Serrated Steel (Silver) (91826)
Serrated Aluminum (Black) (91738)

Shims and Washers

5.5x0.5mm (31381)
5.5x1.0mm (31382)
5.5x2.0mm (31383)
3x8mm Washer (89218)
Bulkhead Washer 1mm (31385)
Bulkhead Washer 2mm (31386)
2.55x6x.15mm (RD92292-1)
Pinion Gear Shim
5x6.5x1mm (RD92319)
5.1x8x0.1mm (RD9957-10)
5.1x8x0.2mm (RD9957-20)
HD Oneway Outdrive Shim
10.15x12.5x0.1mm (RD111429)
Drivetrain Shim
10.15x12.5x0.25mm (RD31170-1)

Ballstuds



HD, short neck 4mm (32041)
Ti HD, short neck 4mm (32095)
HD, short neck 6mm (32042)
Ti HD, short neck 6mm (32096)
HD, short neck 8mm (32040)
Ti HD, short neck 8mm (32097)
HD, short neck 10mm (32044)
Ti HD, short neck 10mm (32098)
Ti HD, short neck 12mm (32099)

Notes:

:: Table of Contents

:: Notes

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

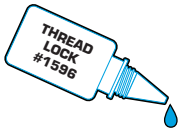
x2 This symbol indicates the number of the same part that is required.

2 This symbol indicates the order within a step to assemble parts.

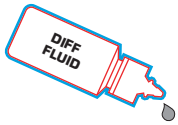
FACTORY TEAM This symbol indicates there are optional FT parts available

This symbol indicates a Racers Tip.

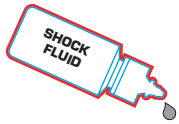
There is a 1:1 hardware foldout page in the front of the manual. To check the size of a part, line up your hardware with the correct drawing until you find the exact size. Each part in the foldout has a number assigned to it for ordering replacement parts.



This symbol indicates where Thread Lock Adhesive should be applied. *not included

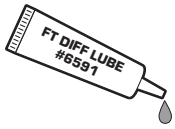


This symbol indicates where Diff Fluid should be applied.



This symbol indicates where Shock Fluid should be applied.

This symbol indicates where FT Silicone Grease should be applied. *not included

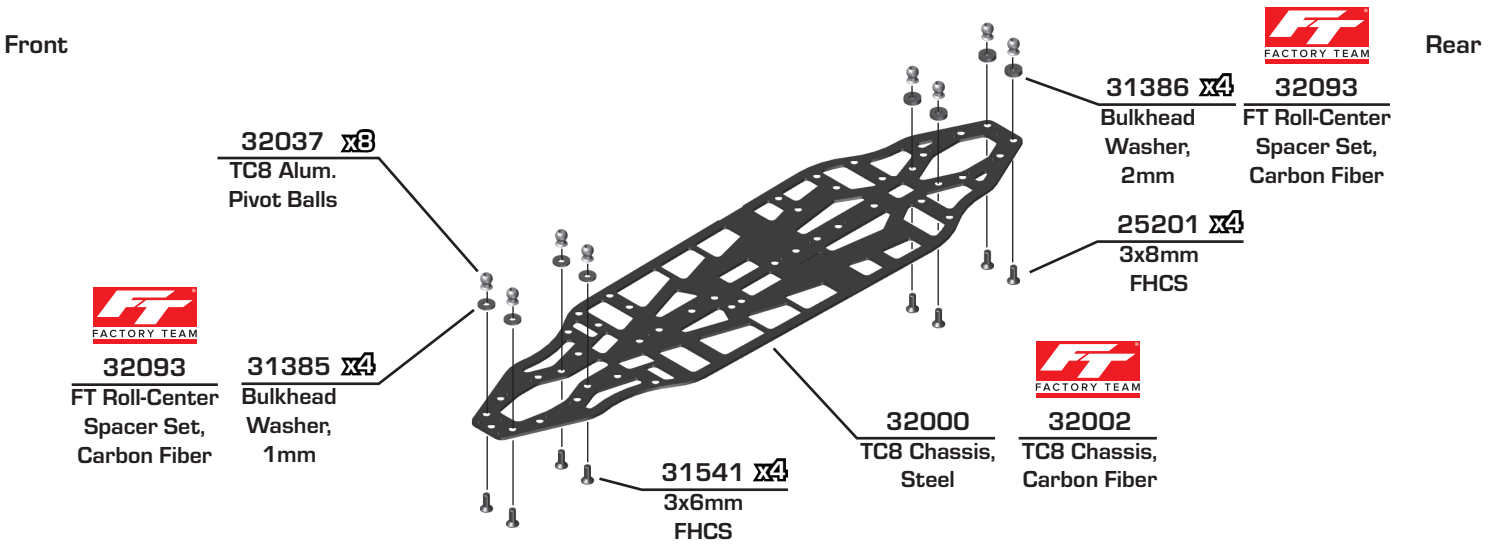


This symbol indicates where FT Diff Lube should be applied. *not included

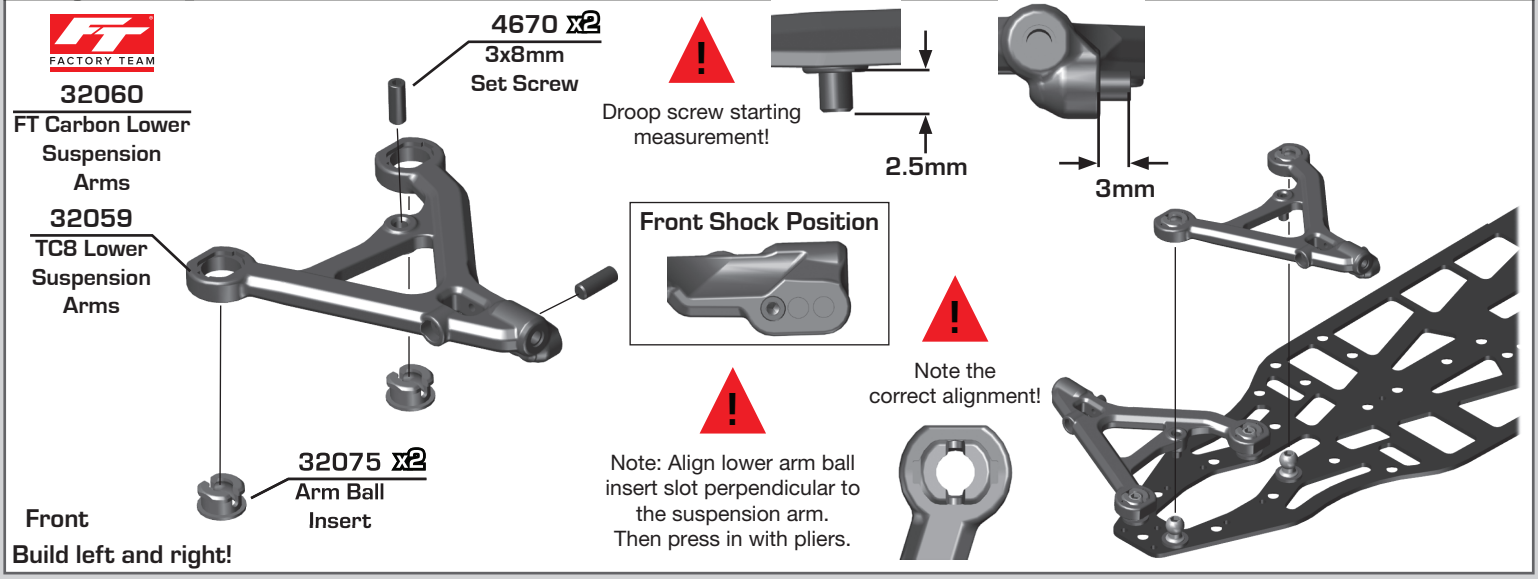
This symbol indicates where Black Grease should be applied.

This symbol indicates where Green Slime can be applied. *not included

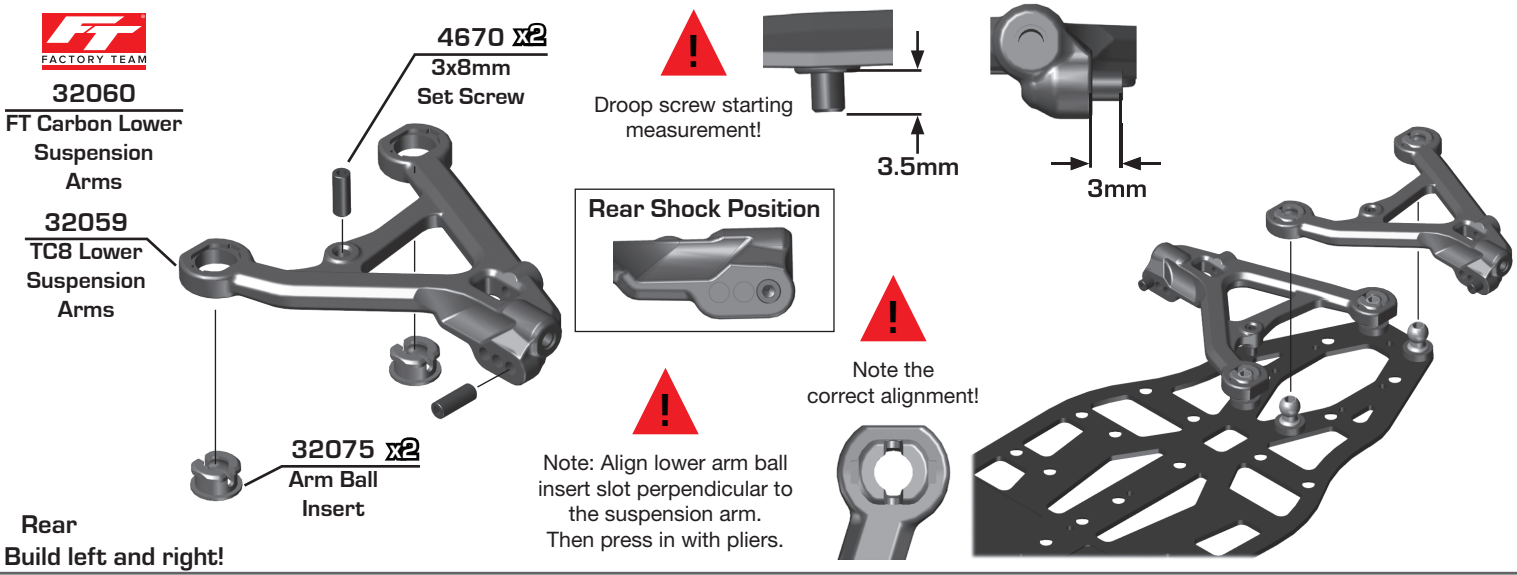
Bag 1 - Step 1



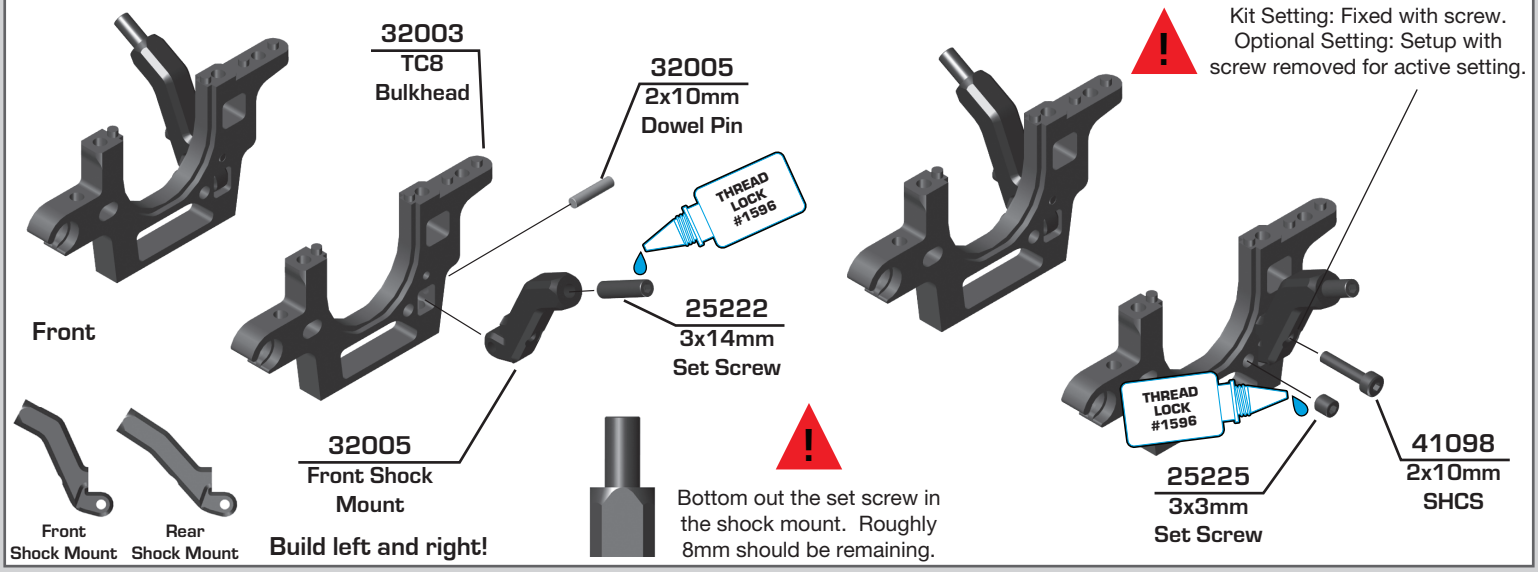
Bag 1 - Step 2



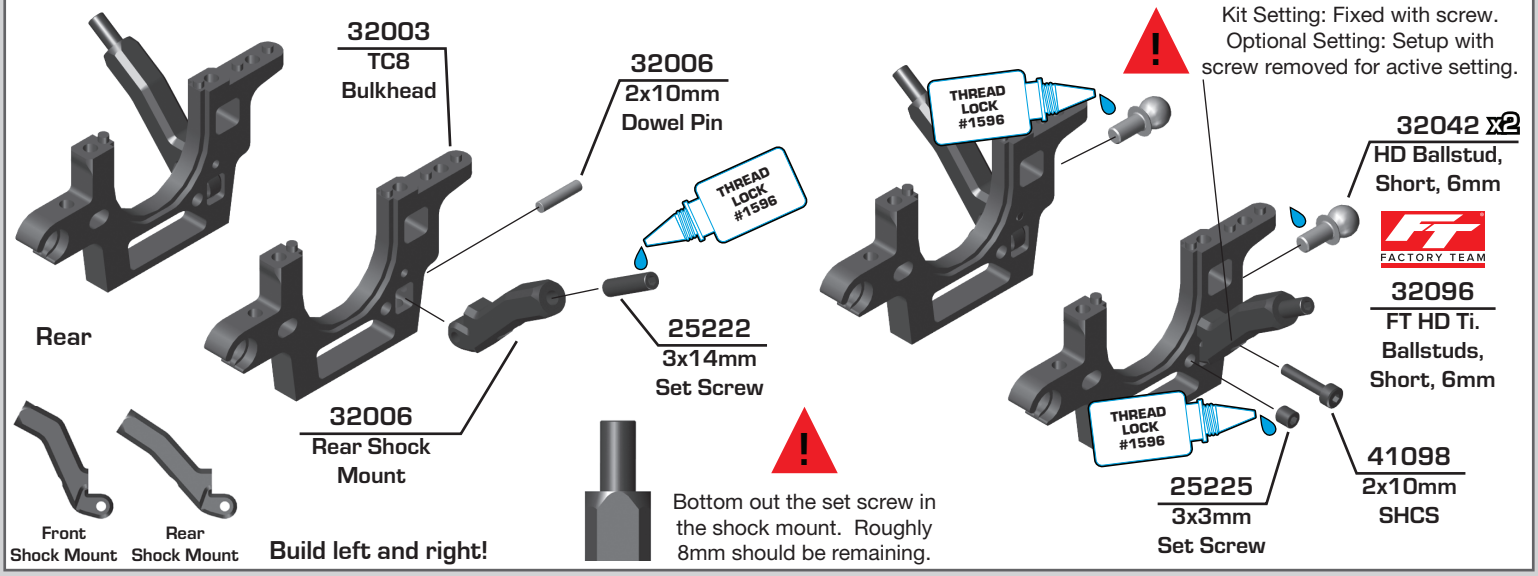
Bag 1 - Step 3



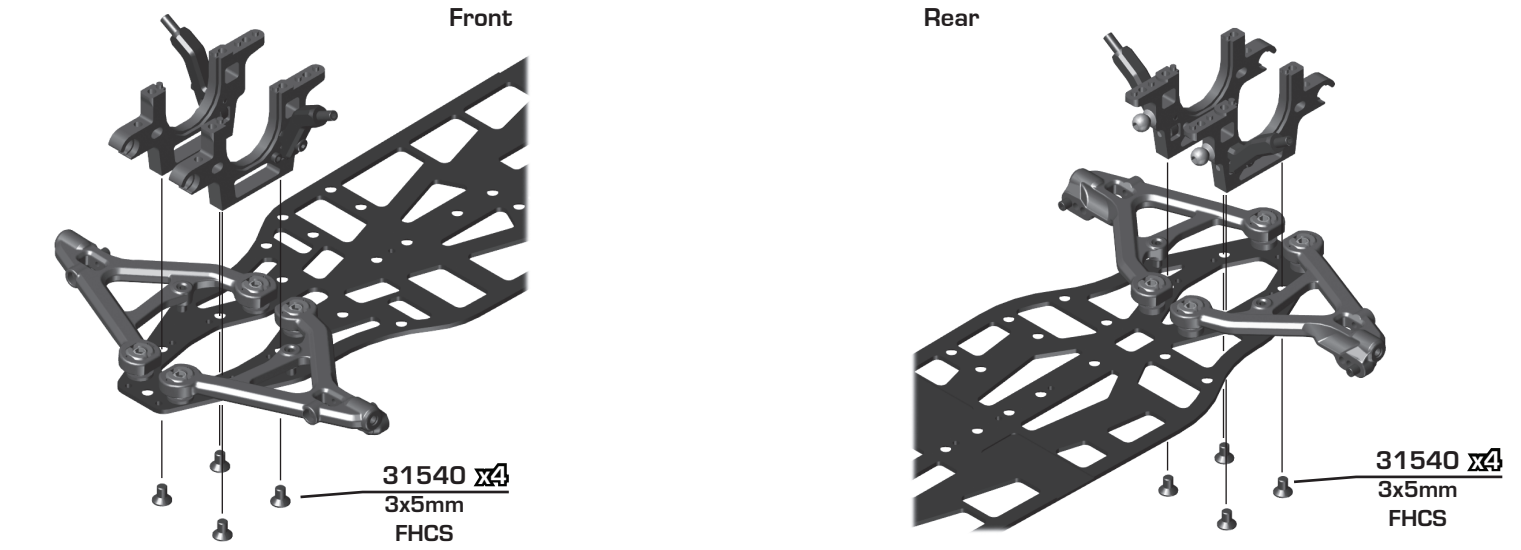
Bag 1 - Step 4



Bag 1 - Step 5

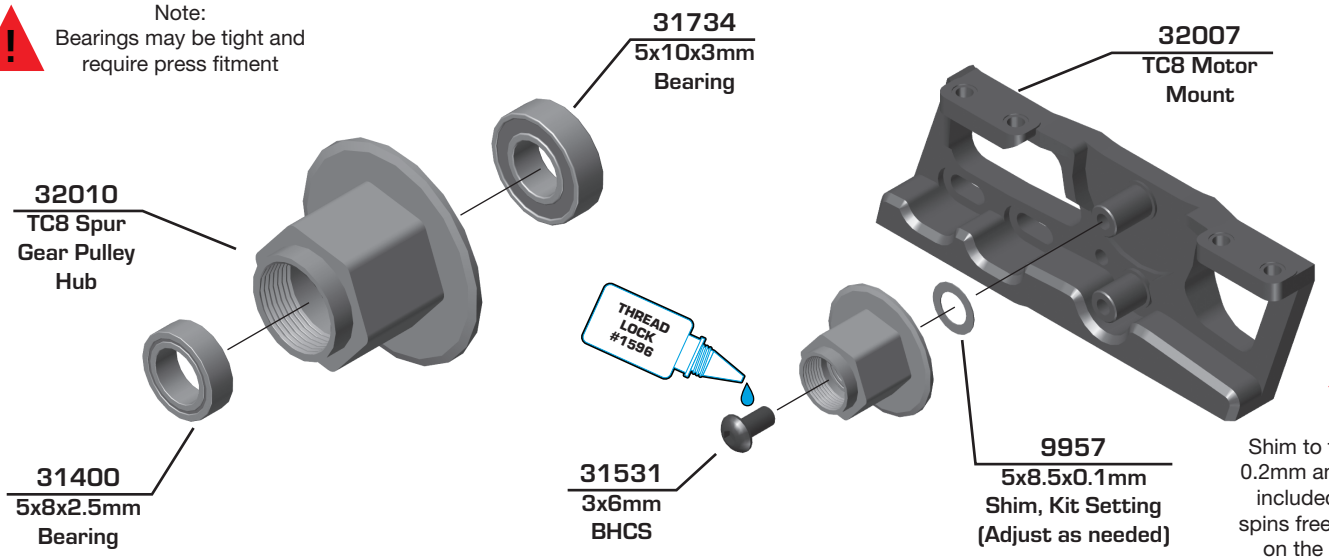


Bag 1 - Step 6



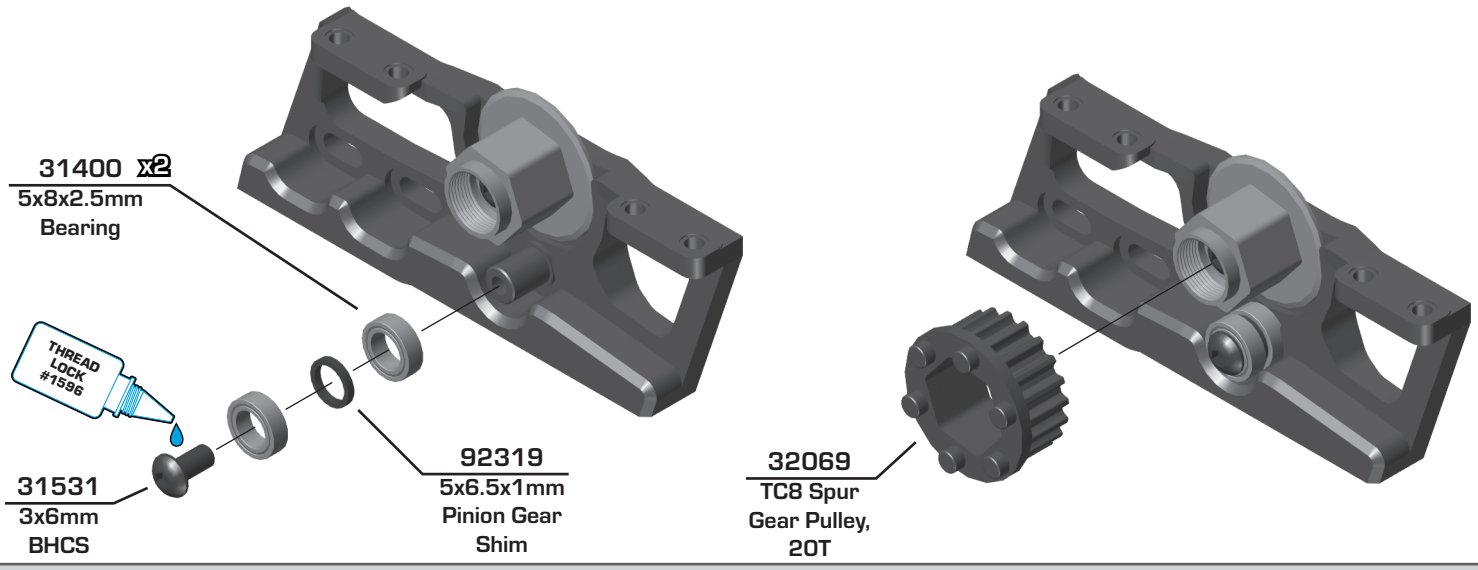
Bag 2 - Step 1

Note:
Bearings may be tight and require press fitment



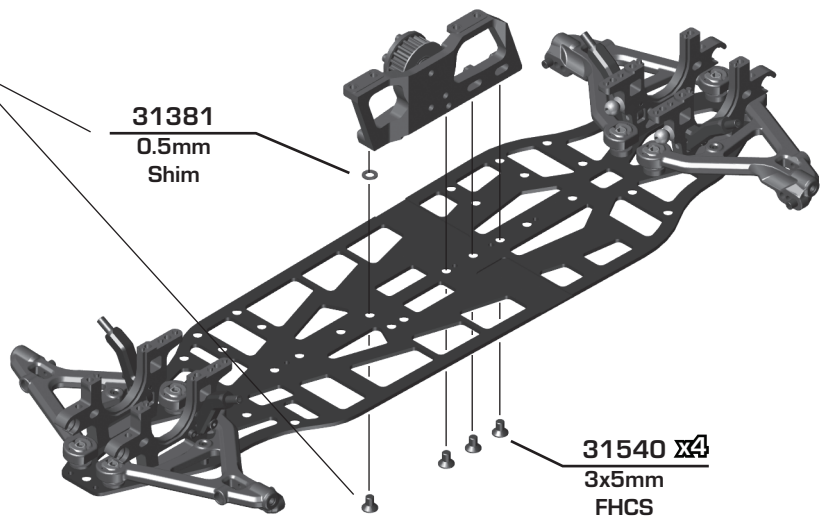
Note:
Shim to the best fit with 0.2mm and 0.1mm shims included. Make sure it spins free with the best fit on the bearing shaft.

Bag 2 - Step 2



Bag 2 - Step 3

Kit Setting:
No screw or shim.
Optional Setting: Screw and shim for increased chassis stiffness



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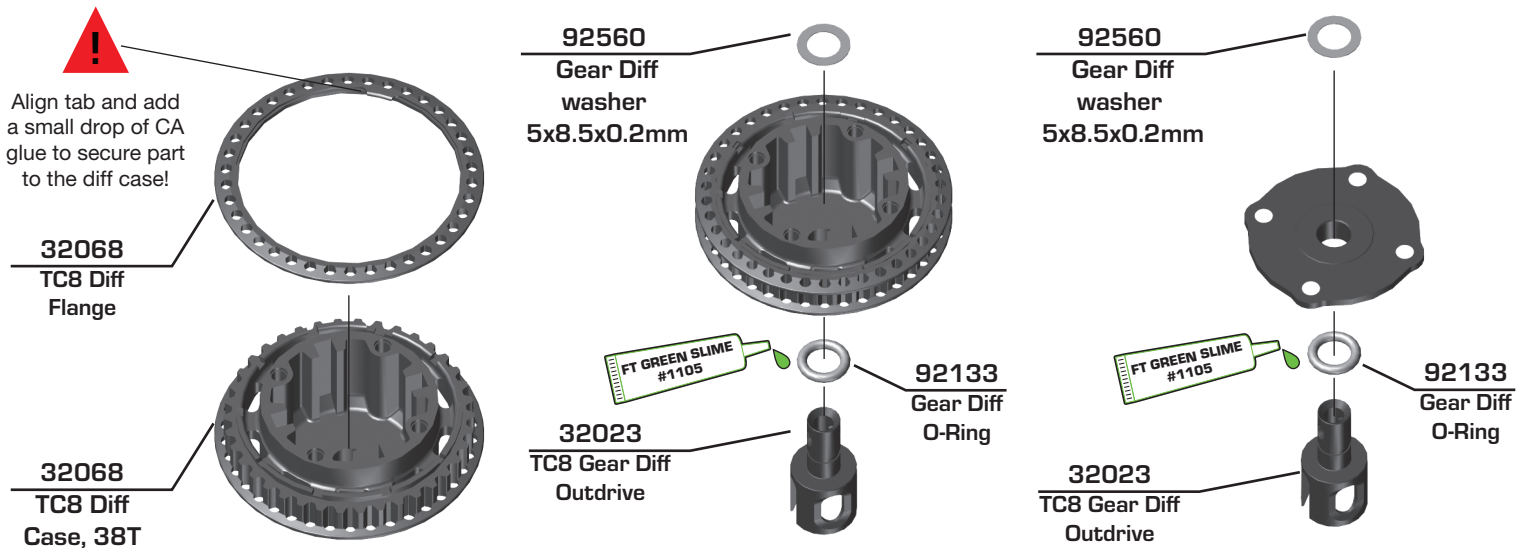

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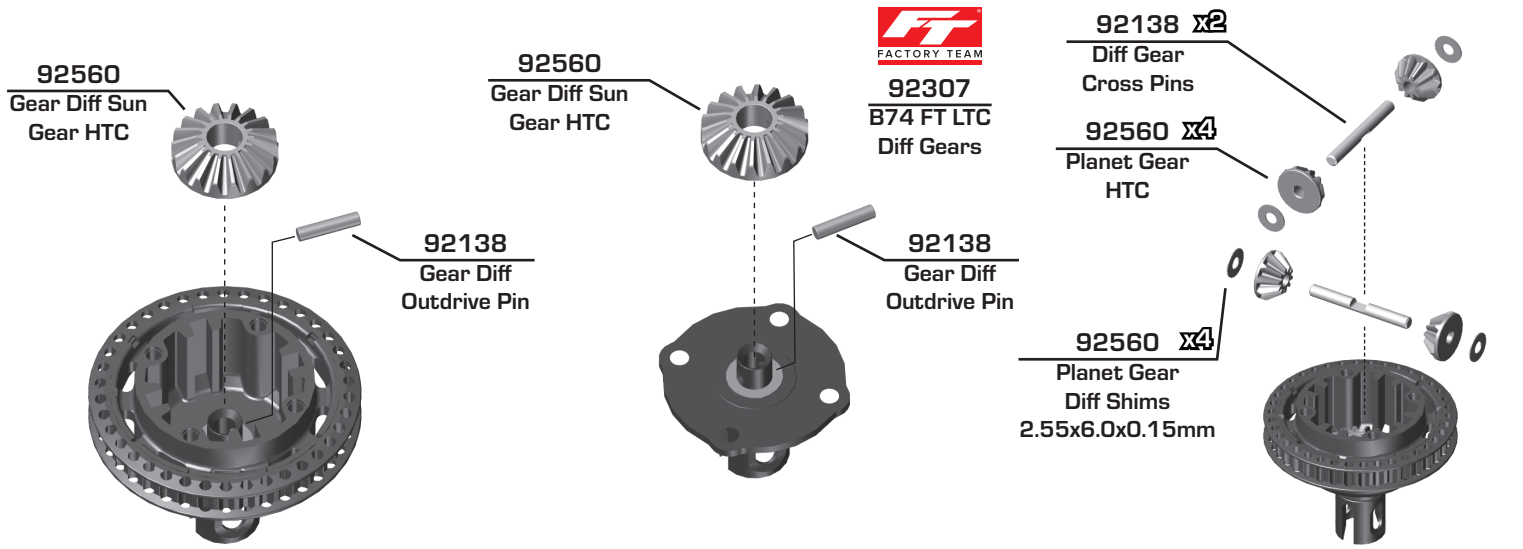
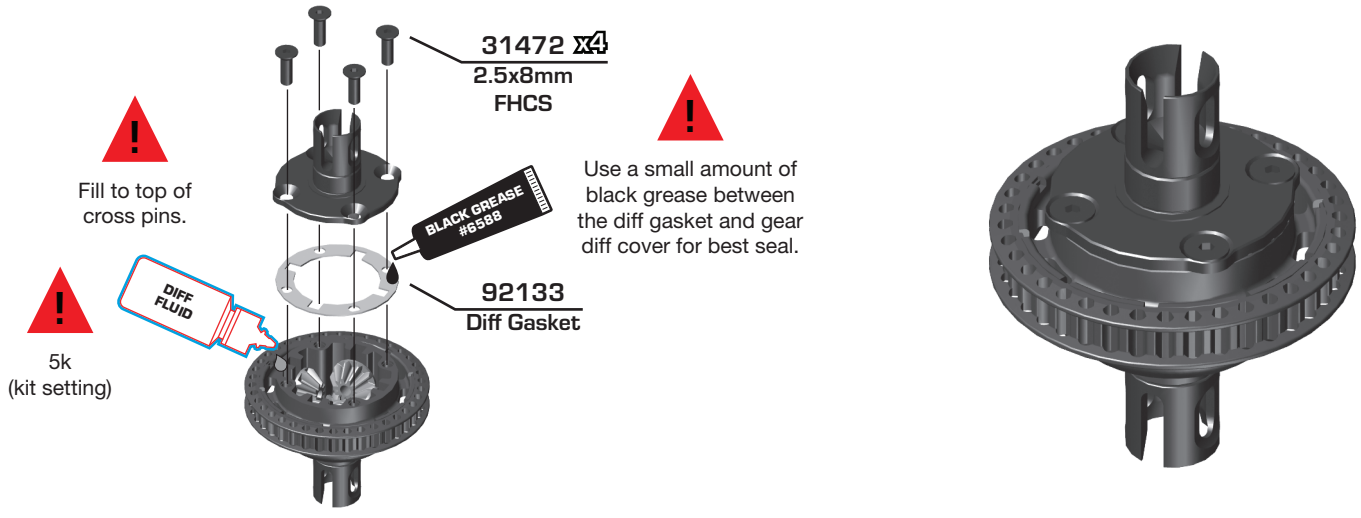
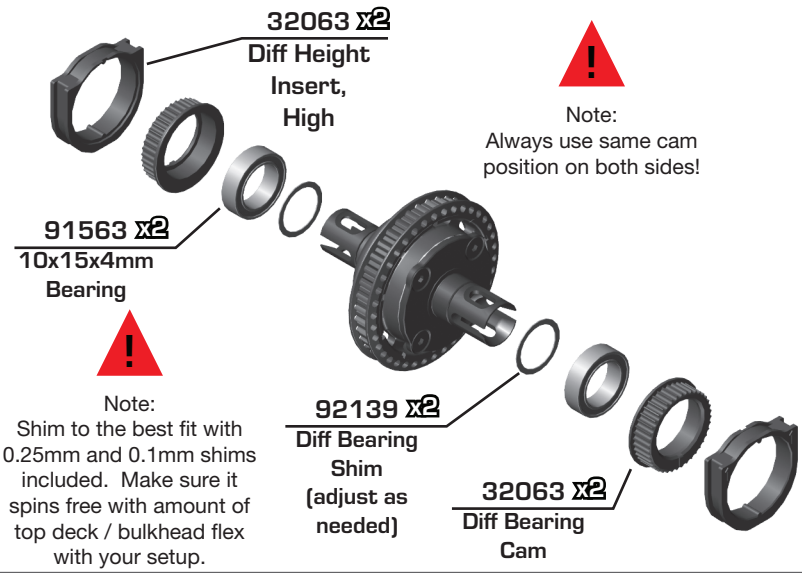


Bag 2 - Step 6



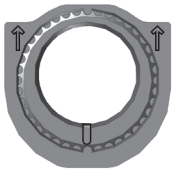
Bag 2 - Step 7



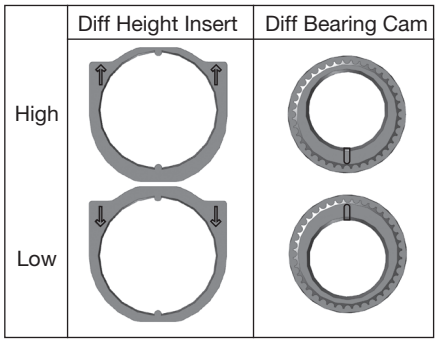
Note:
Always use same cam position on both sides!

Note:
Shim to the best fit with 0.25mm and 0.1mm shims included. Make sure it spins free with amount of top deck / bulkhead flex with your setup.

Recommended starting position

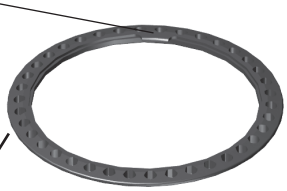


Note:
Rotate diff cam for belt tension adjustment.

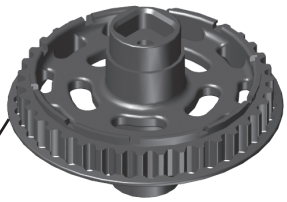


Bag 2 - Step 8

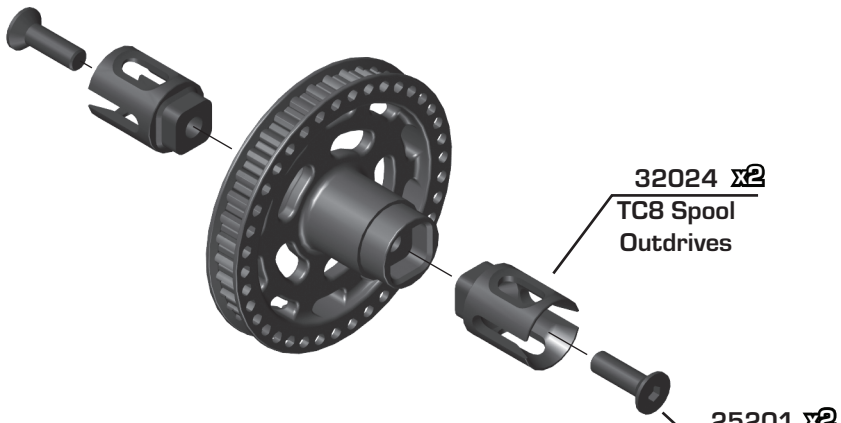
Align tab and add a small drop of CA glue to secure part to the diff case!



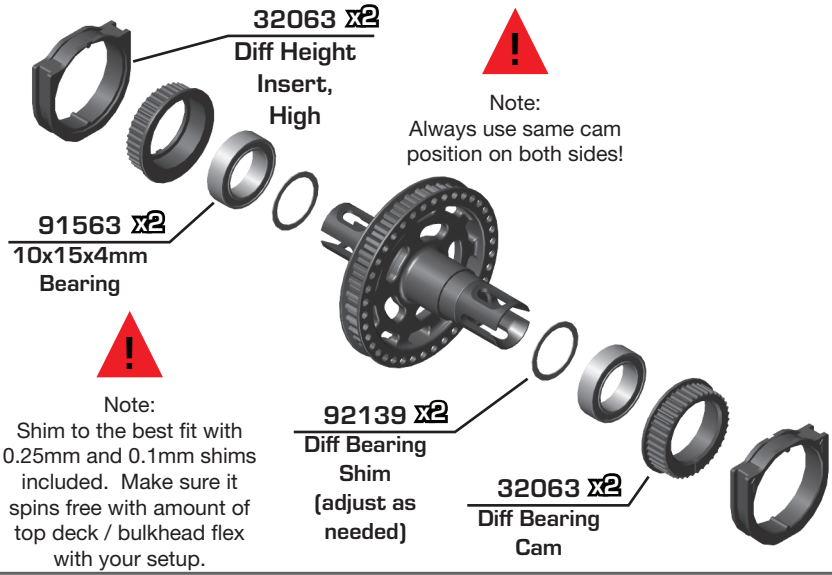
32069
TC8 Spool, Flange



32069
TC8 Spool, 38T



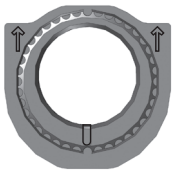
Bag 2 - Step 9



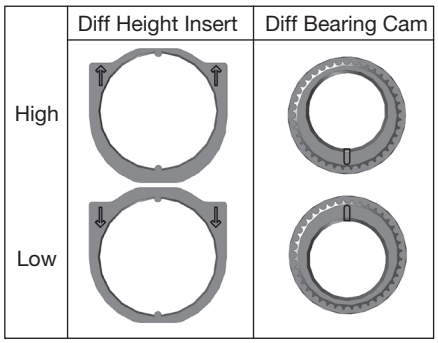
Note:
Always use same cam position on both sides!

Note:
Shim to the best fit with 0.25mm and 0.1mm shims included. Make sure it spins free with amount of top deck / bulkhead flex with your setup.

Recommended starting position



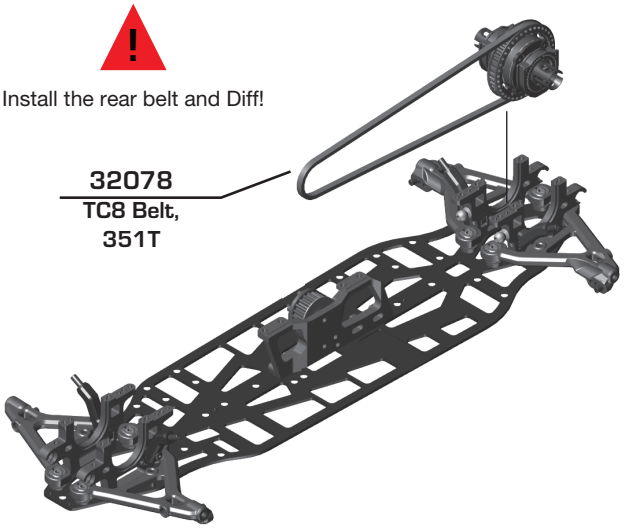
Note:
Rotate diff cam for belt tension adjustment.



Bag 2 - Step 10

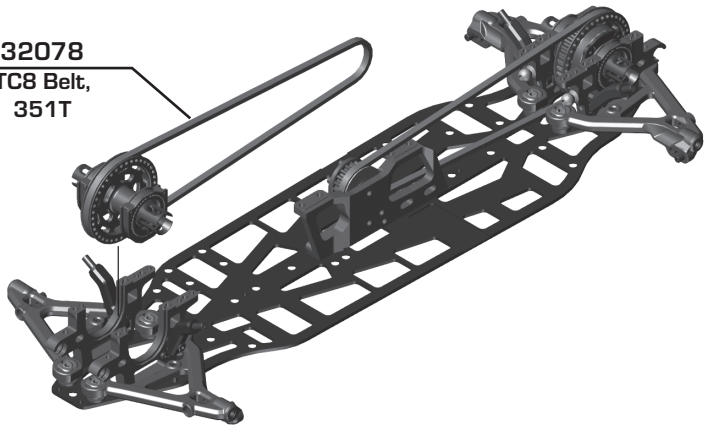
Install the rear belt and Diff!

32078
TC8 Belt,
351T



Install the front belt and Spool!

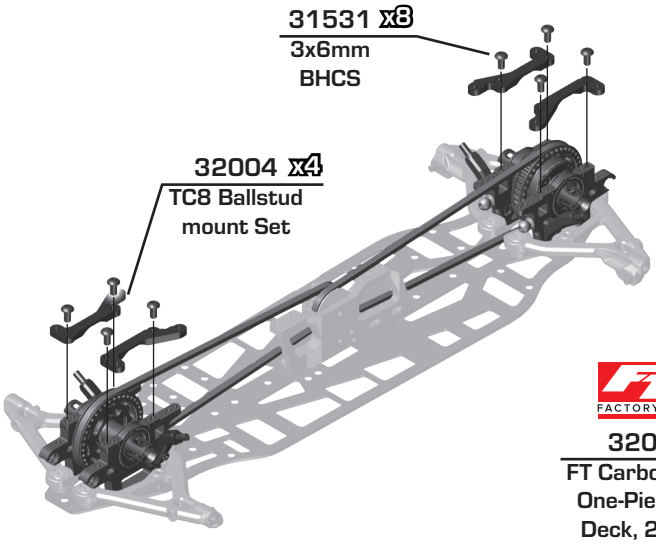
32078
TC8 Belt,
351T



Bag 2 - Step 11

31531 x8
3x6mm
BHCS

32004 x4
TC8 Ballstud
mount Set

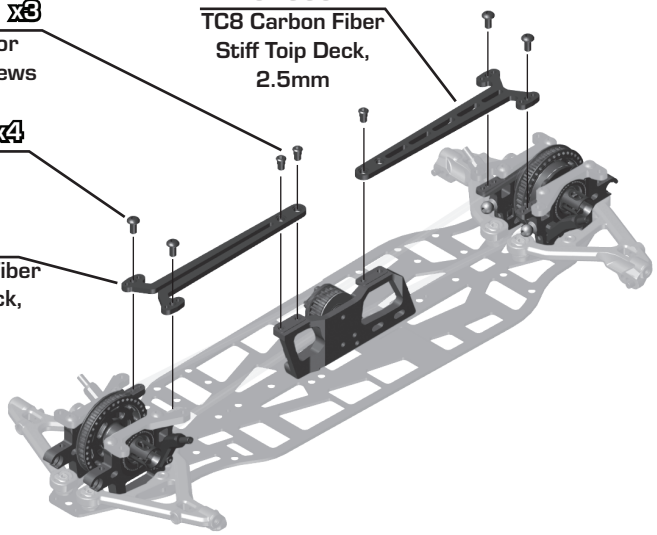


32031 x8
TC8 Motor
Mount Screws

32009
TC8 Carbon Fiber
Stiff Toip Deck,
2.5mm

31531 x4
3x6mm
BHCS

32008
TC8 Carbon Fiber
Flex Top Deck,
2.5mm

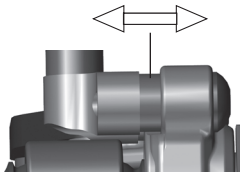


32085
FT Carbon Fiber
One-Piece Top
Deck, 2.5mm

32086
FT G10
Top Deck,
2mm

Bag 3 - Step 1

More KPI shims / Shorter upper arm	Less KPI shims / Longer upper arm
More direct steering feel	Less direct steering feel



31382
Ballstud
Washer,
1mm

32042
HD Ballstud,
Short, 6mm

32096
FT HD Ti
Ballstuds
Short, 6mm

32018
TC8 Steering
Block Ballstud
Mounts

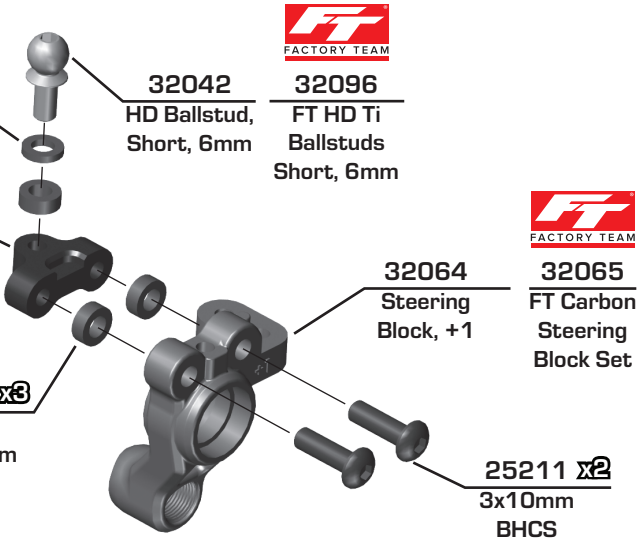
32064
Steering
Block, +1

32065
FT Carbon
Steering
Block Set

32094
FT Carbon Fiber
Steering Block
Mount Shims

31383 x8
Ballstud
Washer, 2mm

25211 x2
3x10mm
BHCS

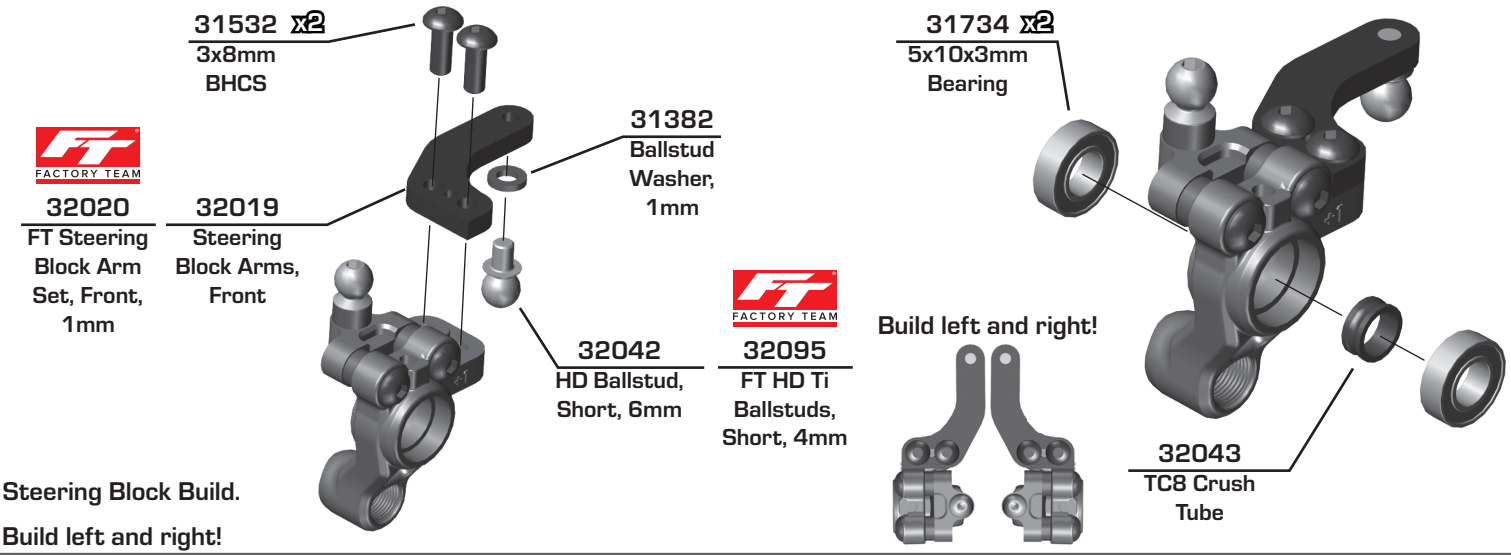


Steering Block Build.

Build left and right!

	Axle Height
+2	
+1 Kit Setup	
0	

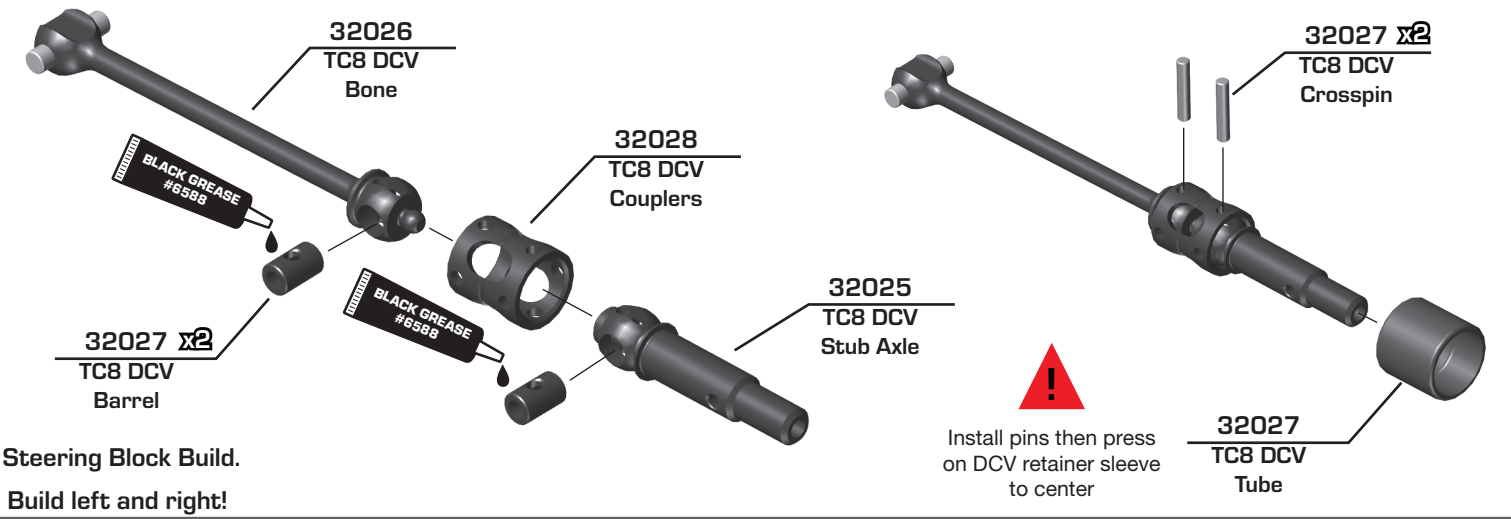
Bag 3 - Step 2



Steering Block Build.

Build left and right!

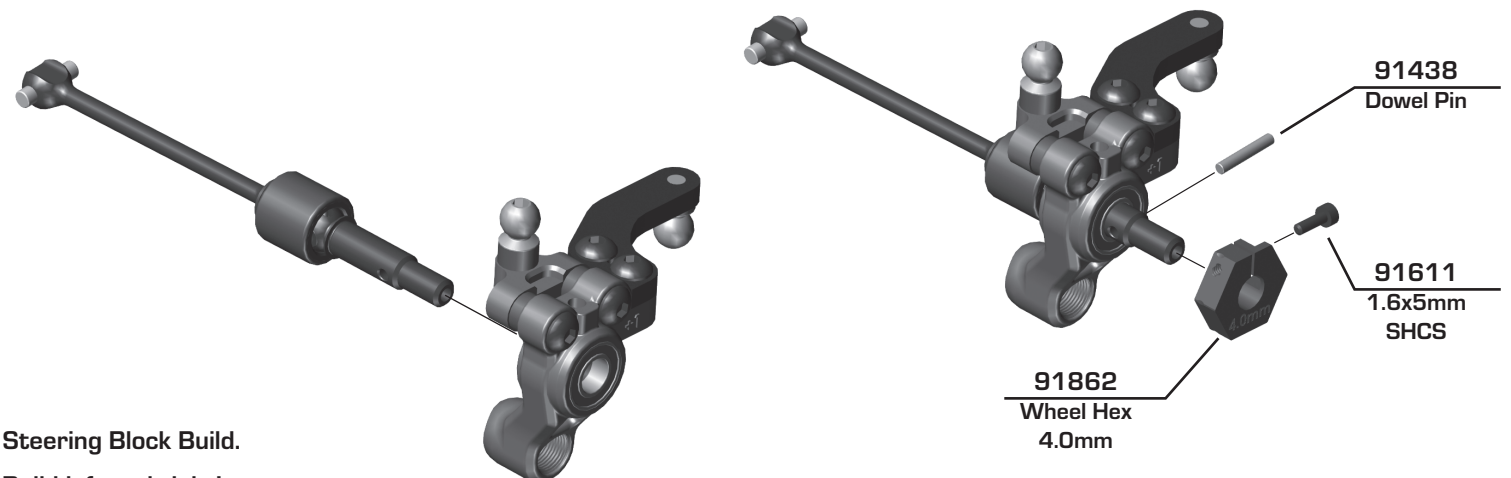
Bag 3 - Step 3



Steering Block Build.

Build left and right!

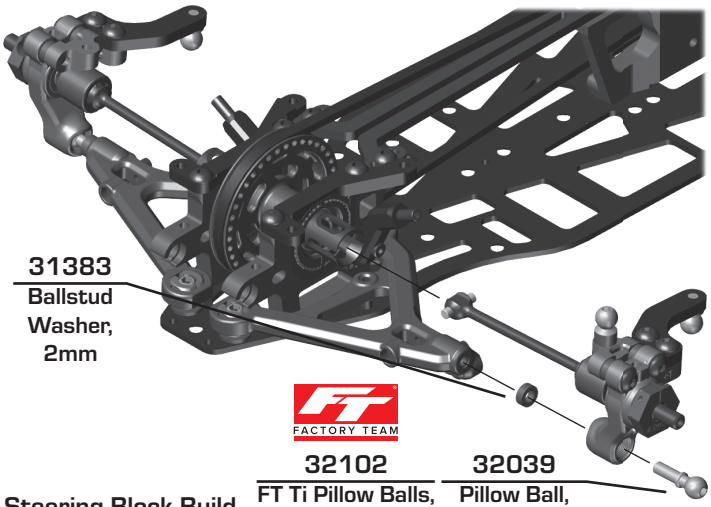
Bag 3 - Step 4



Steering Block Build.

Build left and right!

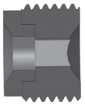
Bag 3 - Step 5

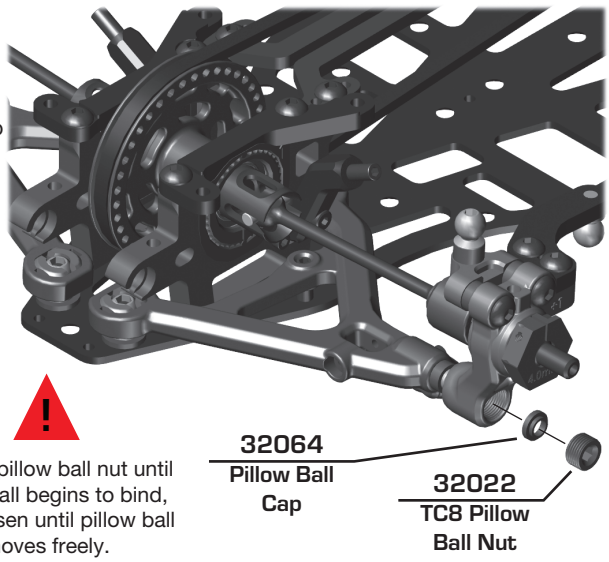


Steering Block Build.

Build left and right!

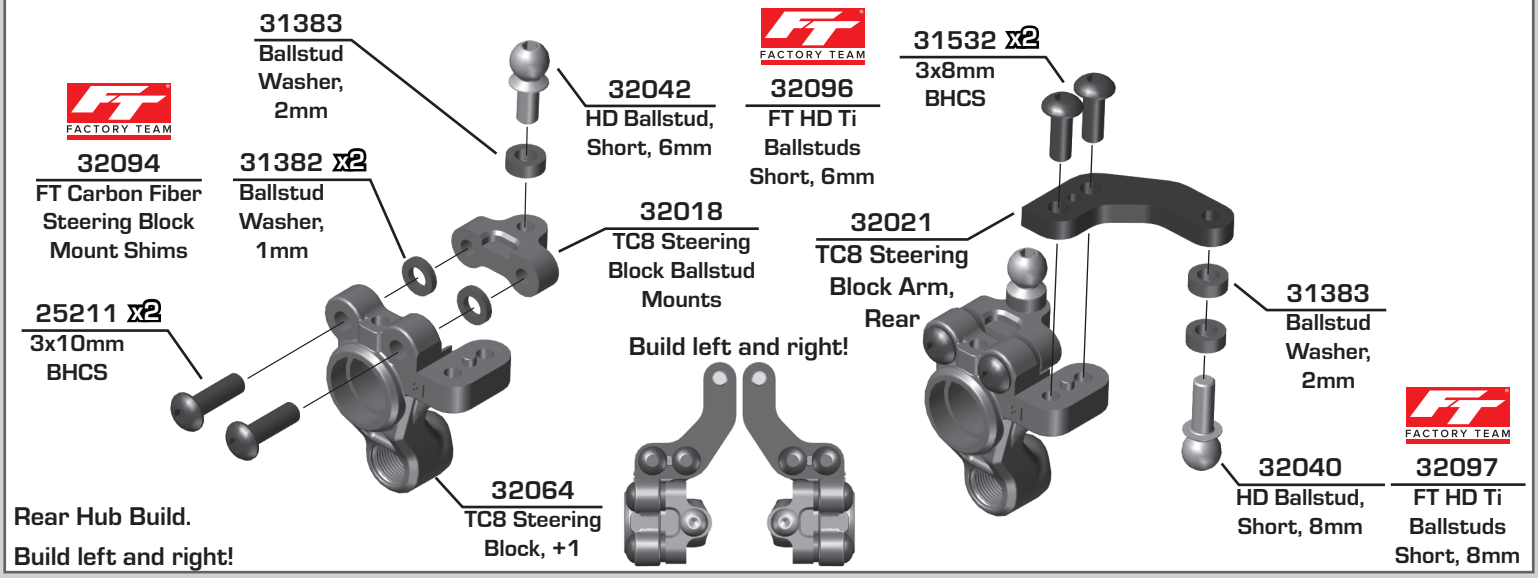
Note the orientation of the pillow ball cap and nut!





Tighten pillow ball nut until pillow ball begins to bind, then loosen until pillow ball moves freely.

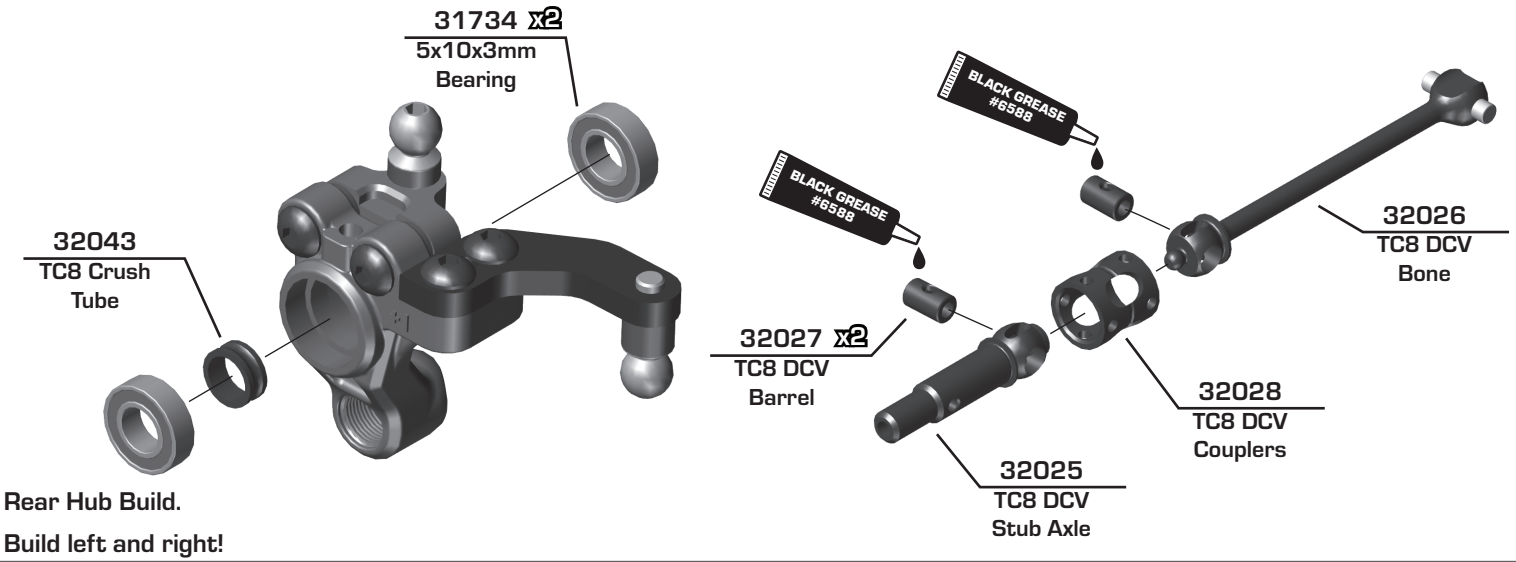
Bag 3 - Step 6



Rear Hub Build.

Build left and right!

Bag 3 - Step 7



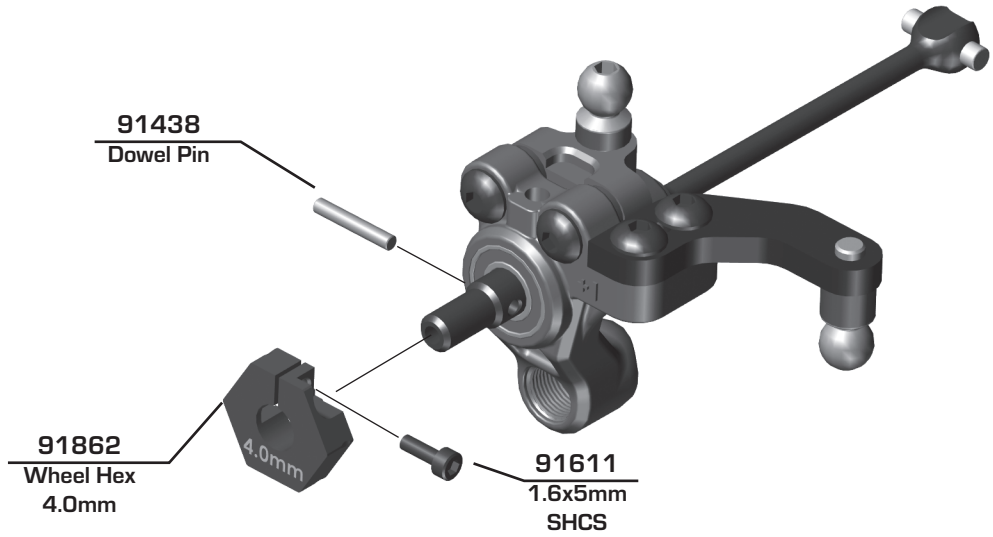
Rear Hub Build.

Build left and right!

Bag 3 - Step 8

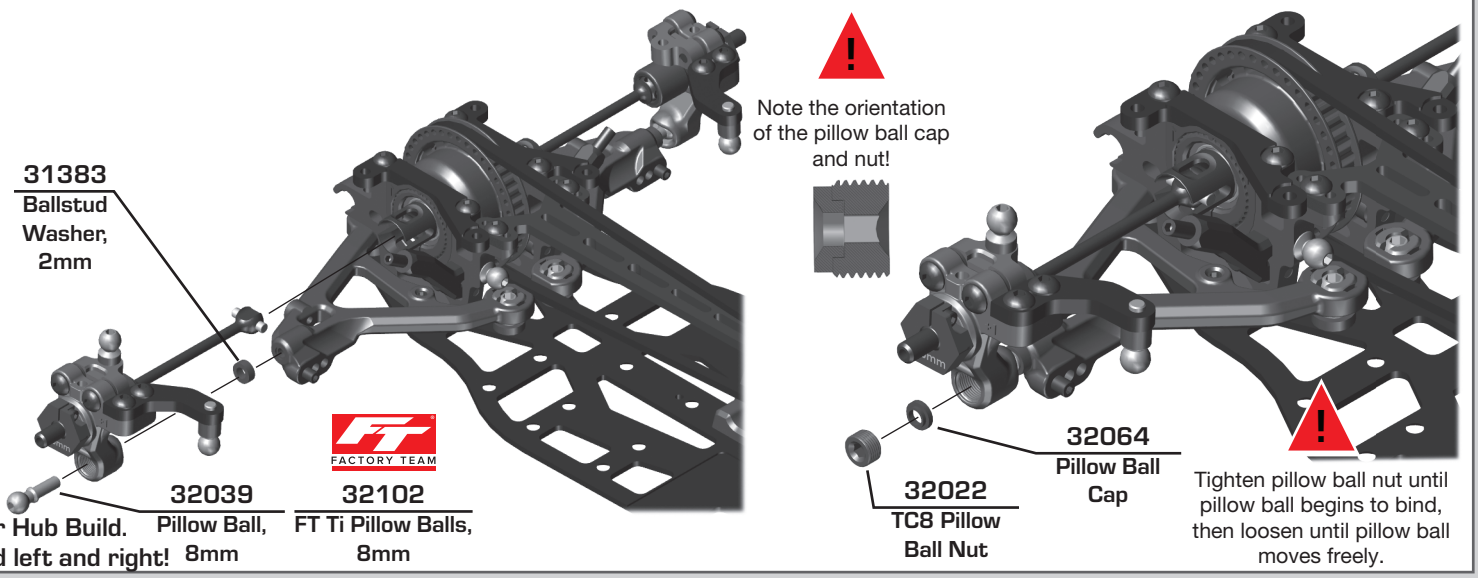
Rear Hub Build.
Build left and right!

Bag 3 - Step 9



Rear Hub Build.
Build left and right!

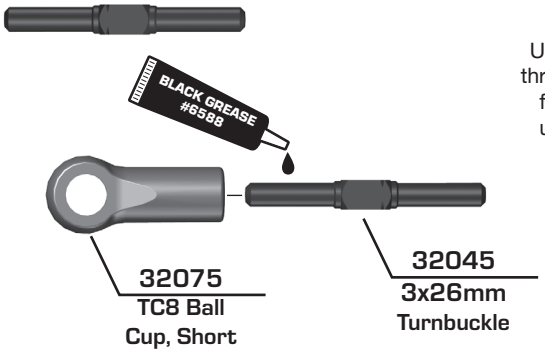
Bag 3 - Step 10



Rear Hub Build.
Build left and right!

Bag 4 - Step 1

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

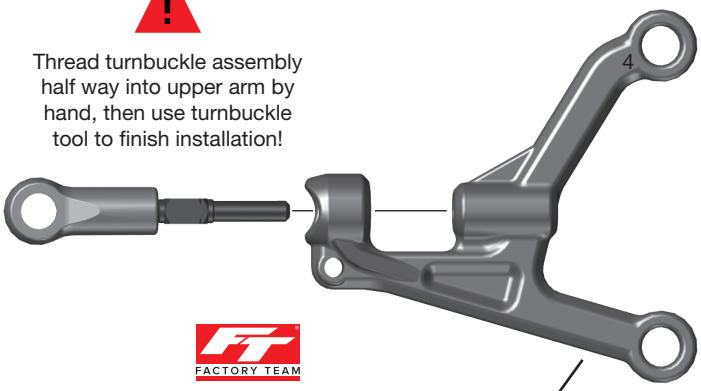


32075
TC8 Ball Cup, Short

32045
3x26mm Turnbuckle

Use black grease on the threads of the turnbuckles for easier ball cup and upper arm installation!

Thread turnbuckle assembly half way into upper arm by hand, then use turnbuckle tool to finish installation!



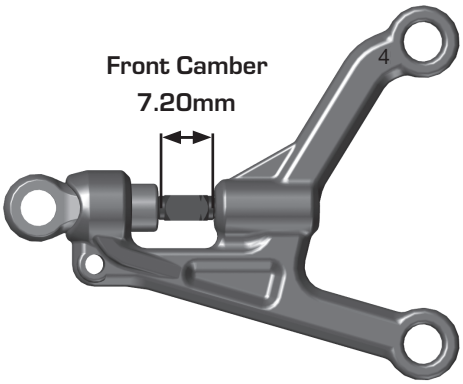
32062
FT Carbon Upper Suspension Arms

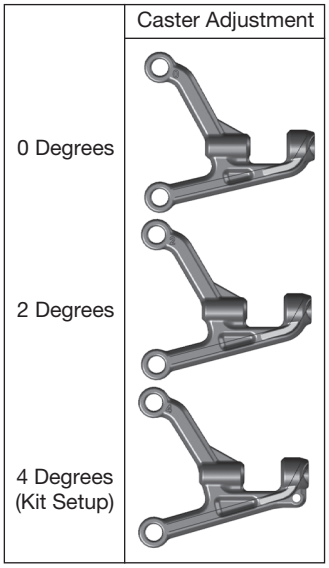
32061
Upper Suspension Arms, 4 Degree

Build left and right!

Bag 4 - Step 2

Measurements given are approximate. Camber should be set with a setup station at ride height.



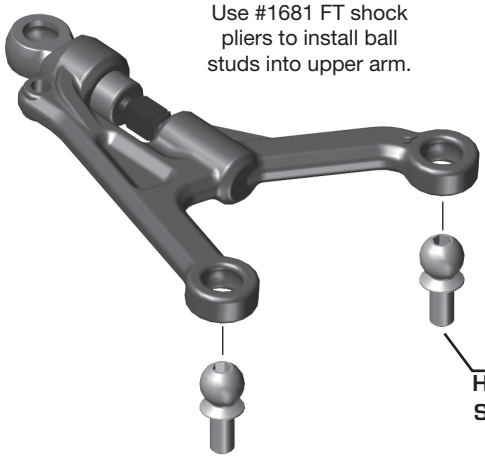


Build left and right!

Bag 4 - Step 3

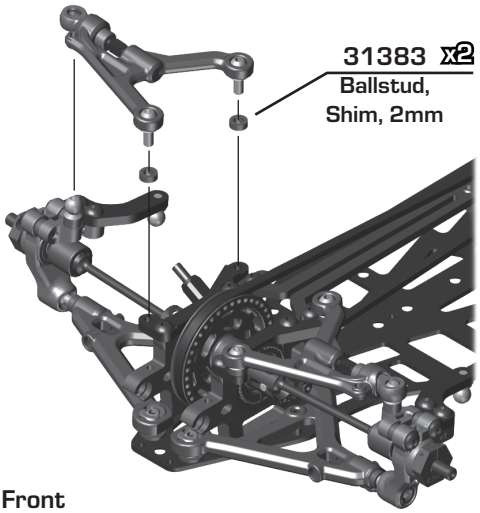
Use #1681 FT shock pliers to install ball studs into upper arm.

Build left and right!



32042 x2
HD Ballstud, Short, 6mm

32096
FT HD Ti Ballstuds Short, 6mm

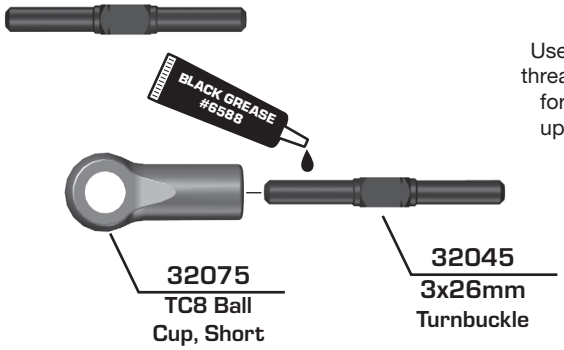


31383 x2
Ballstud, Shim, 2mm

Front

Bag 4 - Step 4

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

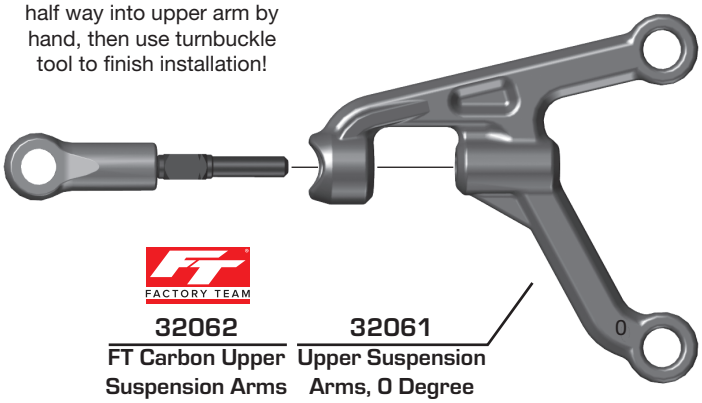


32075
TC8 Ball Cup, Short

32045
3x26mm Turnbuckle

Use black grease on the threads of the turnbuckles for easier ball cup and upper arm installation!

Thread turnbuckle assembly half way into upper arm by hand, then use turnbuckle tool to finish installation!



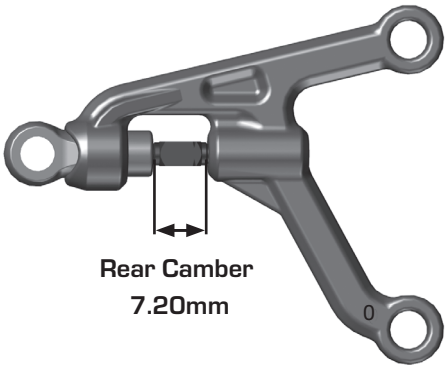
32062
FT Carbon Upper Suspension Arms

32061
Upper Suspension Arms, 0 Degree

Build left and right!

Bag 4 - Step 5

Measurements given are approximate. Camber should be set with a setup station at ride height.



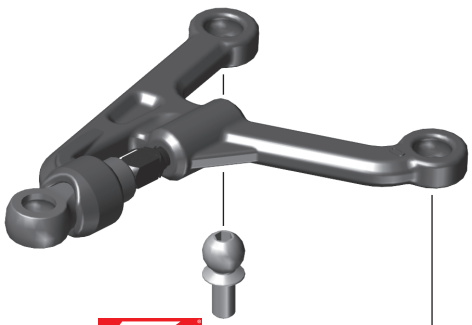
Rear Camber
7.20mm

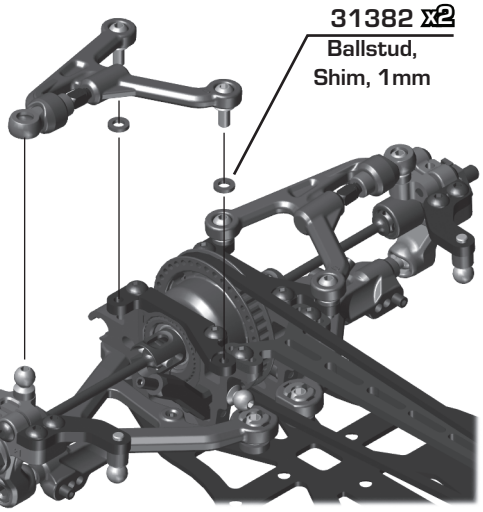
	Caster Adjustment
0 Degrees (Kit Setup)	
2 Degrees	
4 Degrees	

Build left and right!

Bag 4 - Step 6

Build left and right!





32096
FT HD Ti Ballstuds Short, 6mm

32042 x2
HD Ballstud, Short, 6mm

Use #1681 FT shock pliers to install ball studs into upper arm.

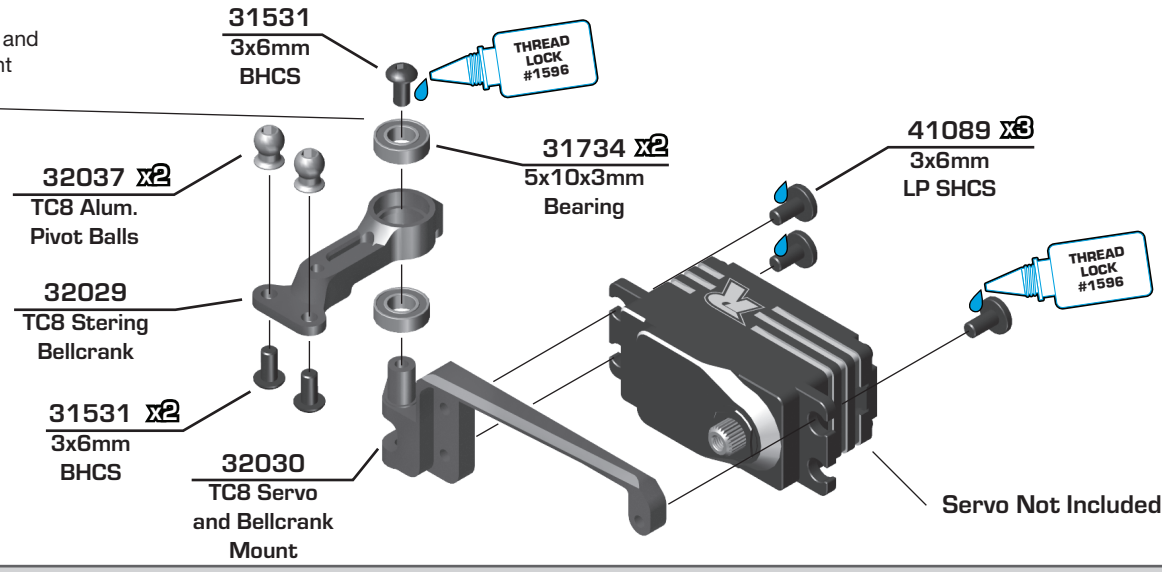
31382 x2
Ballstud, Shim, 1mm

Rear

Bag 4 - Step 7

Note:
Bearings may be tight and require press fitment

Note:
0.1 - 0.2mm shim may be required to remove up and down play.



Bag 4 - Step 8

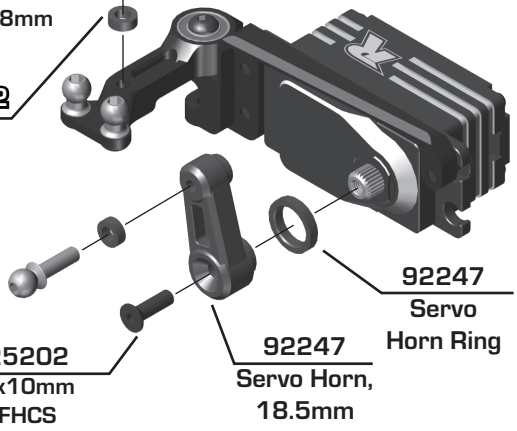
FACTORY TEAM

32097
FT HD Ti
Ballstuds
Short, 8mm

32040 x2
HD Ballstud,
Short, 8mm

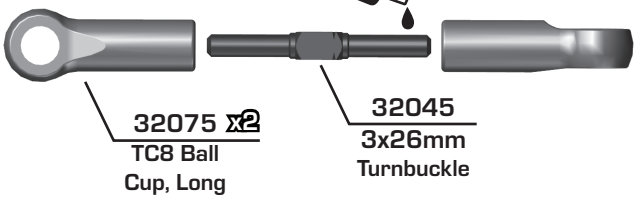
THREAD LOCK #1596

31383 x2
Ballstud,
Shim, 2mm

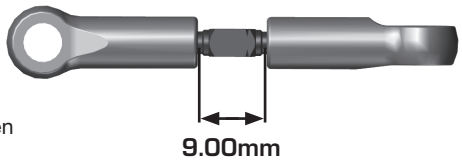


Use black grease on the threads of the turnbuckles for easier ball cup and upper arm installation!

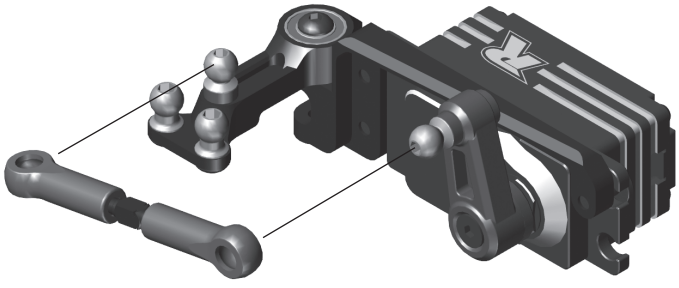
BLACK GREASE #6588

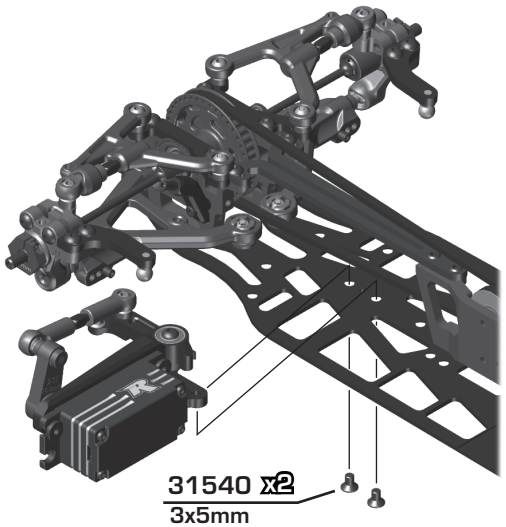


Measurements given are approximate.



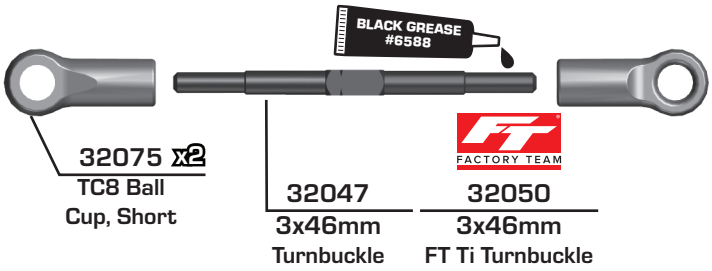
Bag 4 - Step 9





Bag 4 - Step 10

Use black grease on the threads of the turnbuckles for easier ball cup and upper arm installation!



32075 x2
TC8 Ball Cup, Short

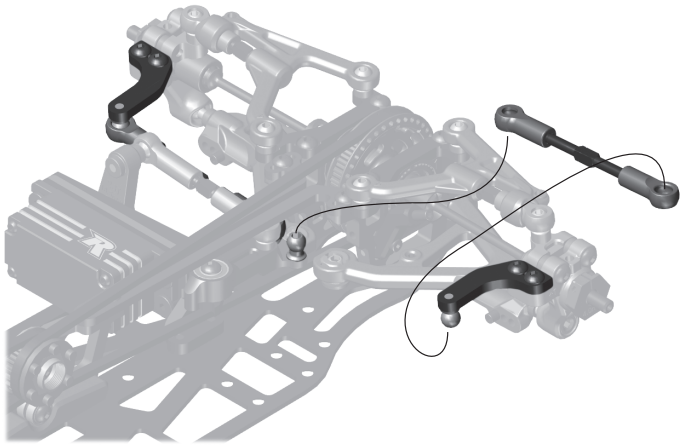
32047
3x46mm Turnbuckle

32050
3x46mm FT Ti Turnbuckle

Steering Link

Build left and right!

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



Measurements given are approximate. Toe should be set with a setup station at ride height.

Bag 4 - Step 11

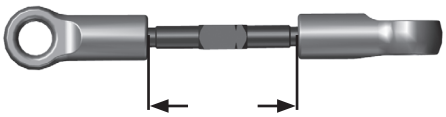
Use black grease on the threads of the turnbuckles for easier ball cup and upper arm installation!

32075 x2
TC8 Ball Cup, Short

32046
3x34mm Turnbuckle

32049
3x34mm FT Ti Turnbuckle

Toe Link

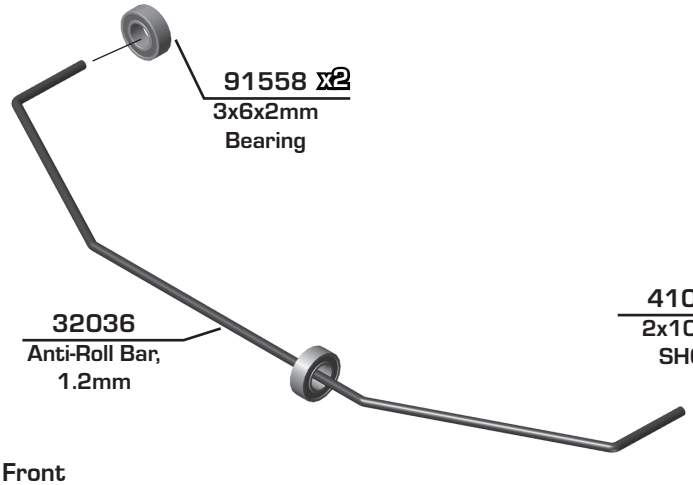


Build left and right!

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

Measurements given are approximate. Toe should be set with a setup station at ride height.

Bag 5 - Step 1



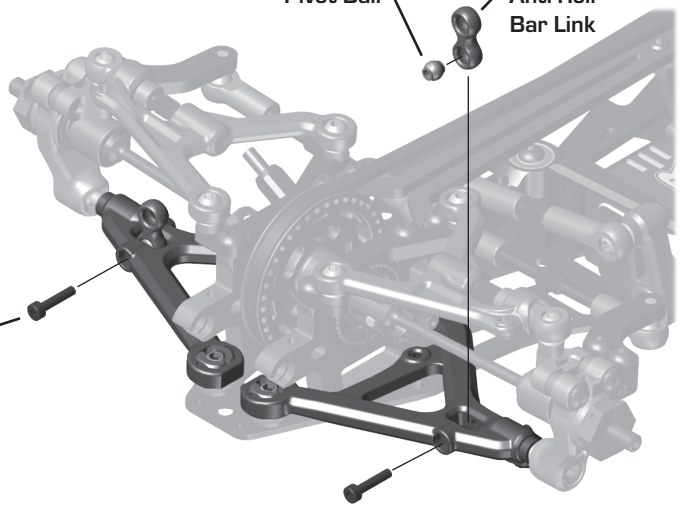
91558 x2
3x6x2mm Bearing

32036
Anti-Roll Bar, 1.2mm

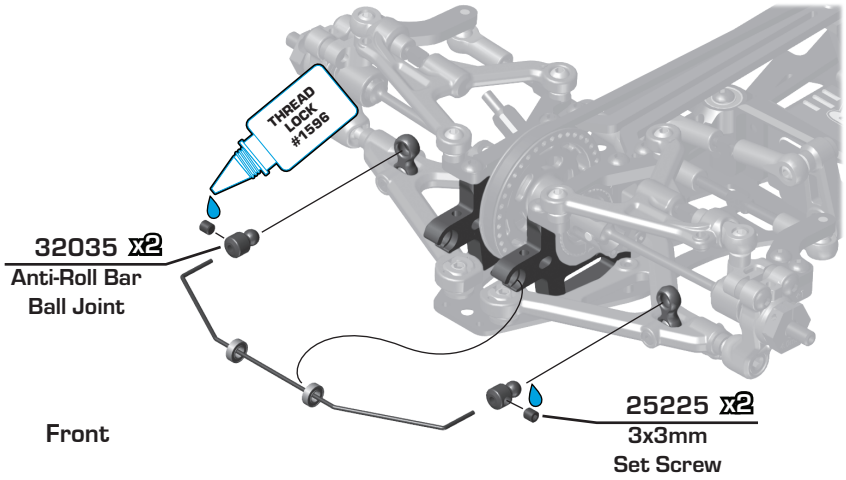
41098 x2
2x10mm SHCS

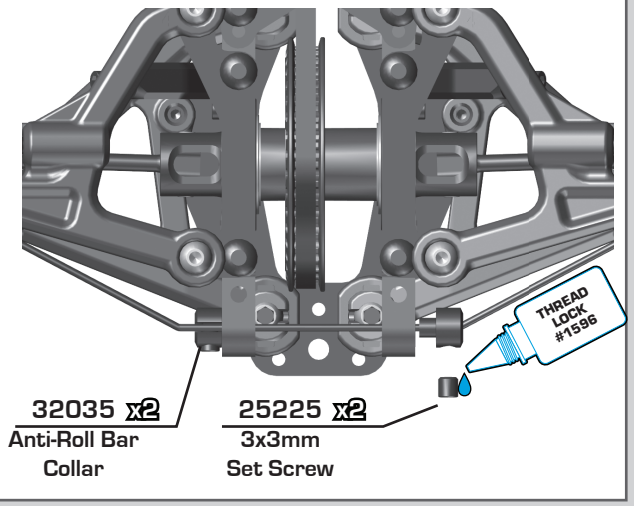
32035
Pivot Ball

32075
Anti-Roll Bar Link

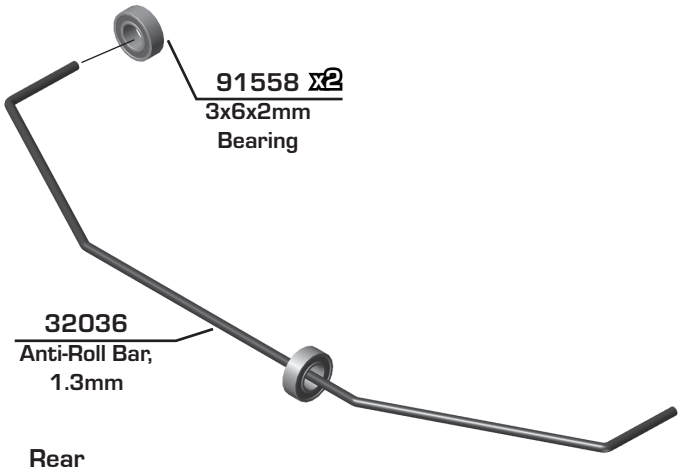


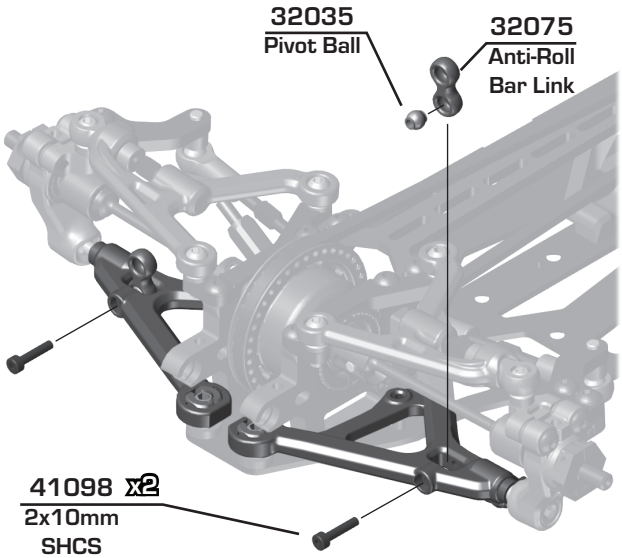
Bag 5 - Step 2



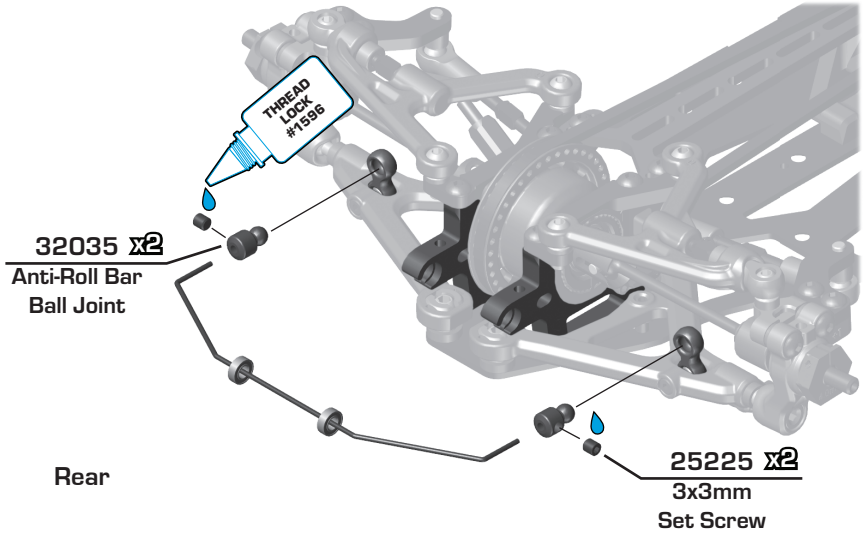


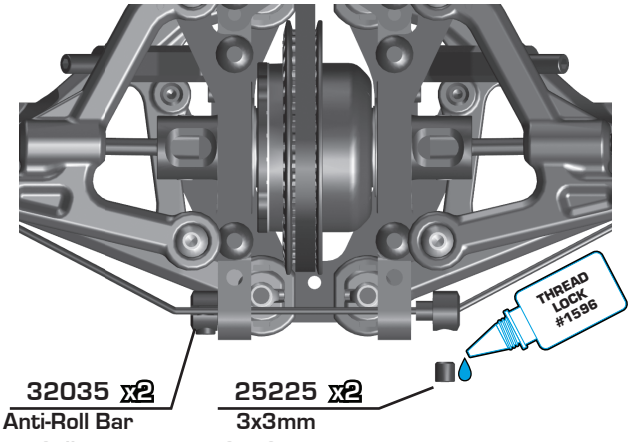
Bag 5 - Step 3



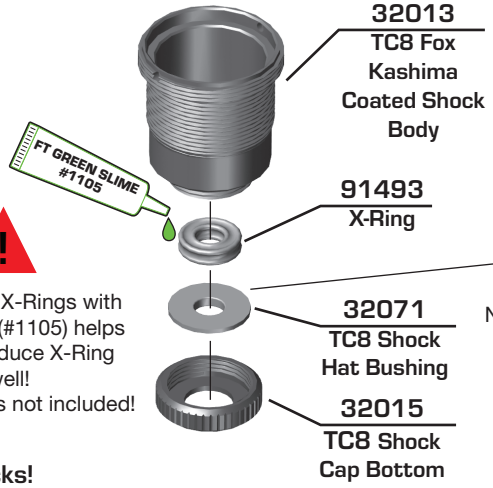


Bag 5 - Step 4



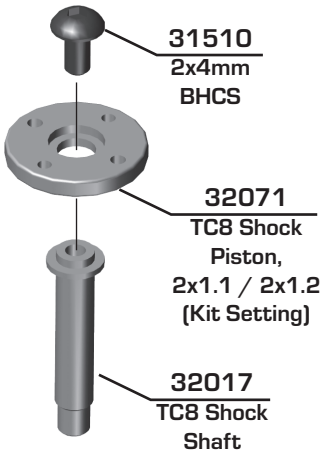


Bag 6 - Step 1



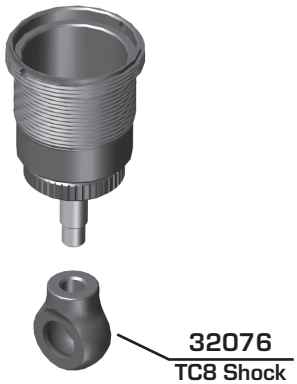
Coating the X-Rings with green slime (#1105) helps seal and reduce X-Ring swell!
Green slime is not included!

Note orientation!

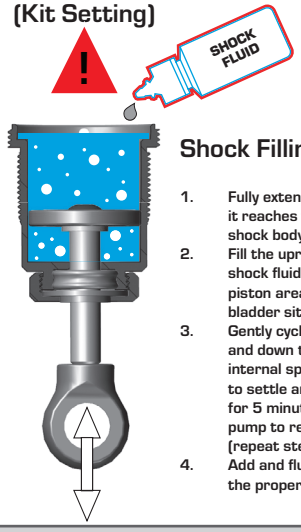


Build x4 Shocks!

Bag 6 - Step 2

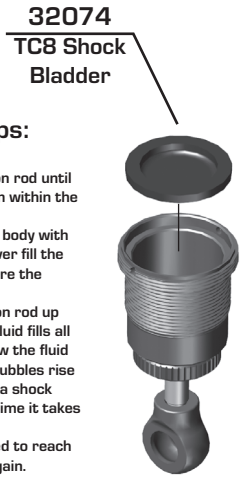


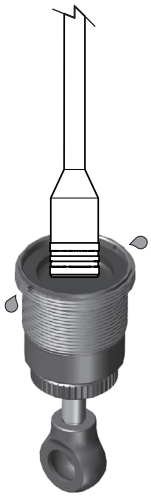
32.5wt
(Kit Setting)



Shock Filling Steps:

1. Fully extend the piston rod until it reaches the bottom within the shock body
2. Fill the upright shock body with shock fluid, slightly over fill the piston area past where the bladder sits
3. Gently cycle the piston rod up and down to ensure fluid fills all internal spaces. Allow the fluid to settle and let air bubbles rise for 5 minutes or use a shock pump to reduce the time it takes (repeat step 2x).
4. Add and fluid if needed to reach the proper fill level again.

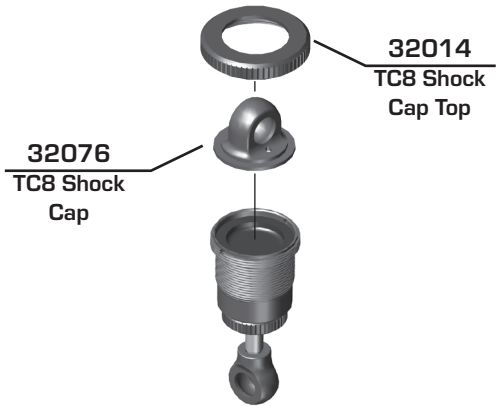


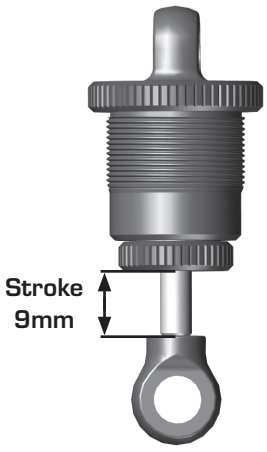


Shock Bleeding Steps:

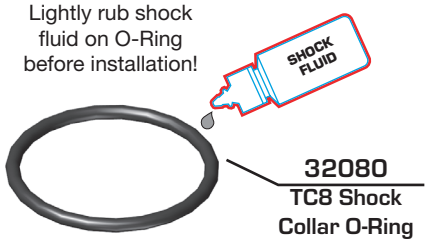
1. Place the shock piston roughly halfway up the shock body and hold them together in this position.
2. Gently place bladder on top of the fluid and slowly press down on the center of the bladder with a wrench or nut driver until it is fully seated and fluid has stopped bleeding from the 2 bleeder holes.
3. With the bladder fully seated and piston still half way up in the shock body, place the shock cap ball end on top and screw down the top shock cap.
4. Clean up extra fluid and check to make sure the shock is air free and has 0-25% rebound. If not, repeat shock build steps.

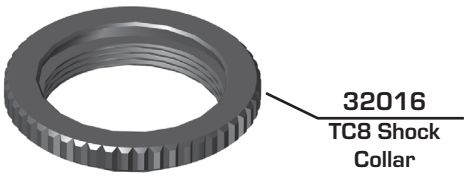
Bag 6 - Step 3





Lightly rub shock fluid on O-Ring before installation!





Bag 6 - Step 4

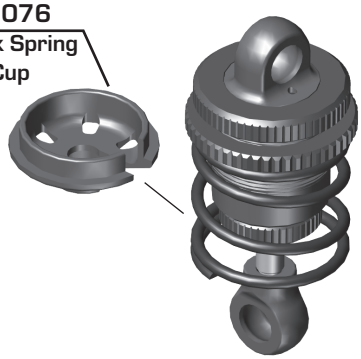
32052
TC8 LP Shock Spring, Gray
15.7 LB/IN
(Kit - Front)

32053
TC8 LP Shock Spring, Blue
16.5 LB/IN
(Kit - Rear)

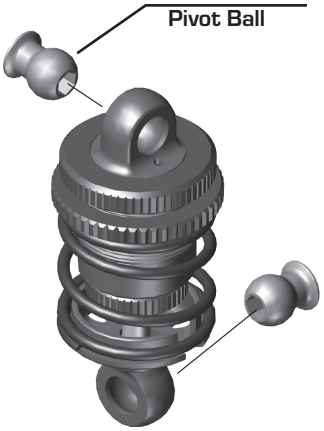
Shock Collar Height:
Front 1.5mm
Rear: 1.5mm

Note:
Measurements given are approximate. Ride height should be set when fully built.

32076 x2
Shock Spring Cup



32037 x2
Pivot Ball

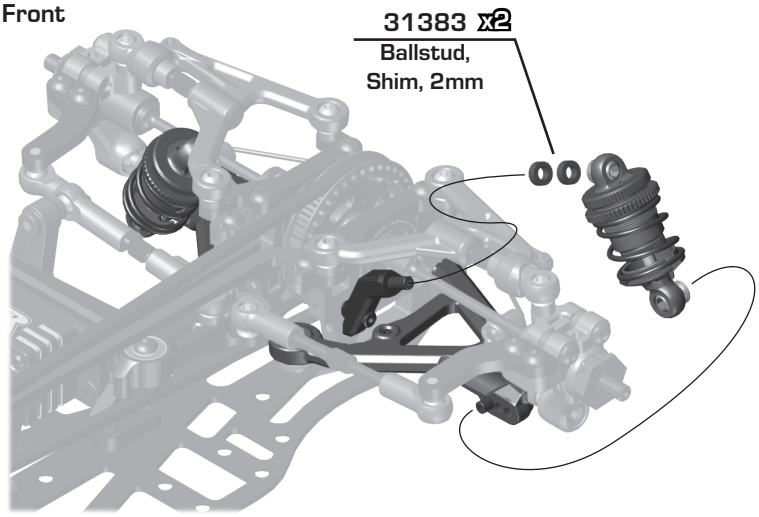


Build x4 Shocks!

Bag 6 - Step 5

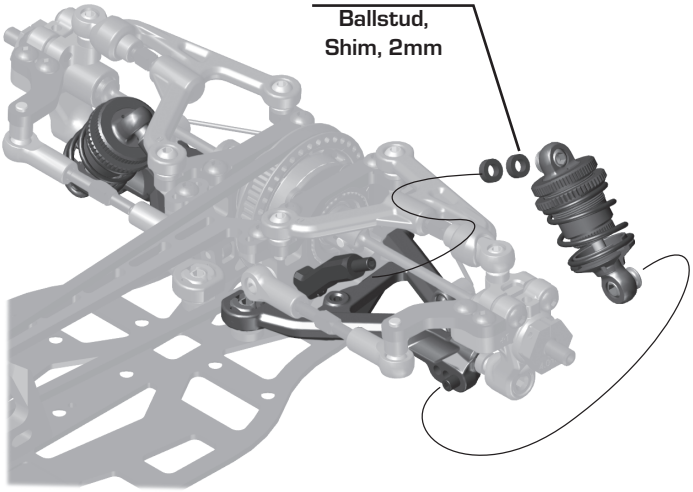
Front

31383 x2
Ballstud, Shim, 2mm



Rear

31383 x2
Ballstud, Shim, 2mm



Install x4 Shocks!

Bag 7 - Step 1

32066
TC8 Bumper Brace

32066 x2
Front Body Post, Short

32032
TC8 Bumper

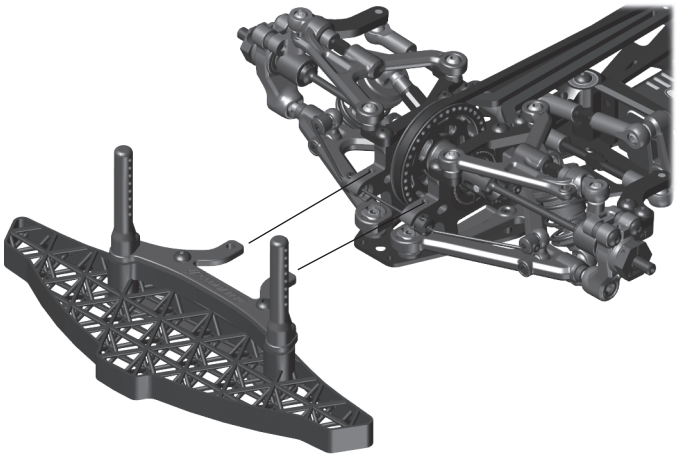
31532 x2
3x8mm BHCS

32066
TC8 Bumper Mount

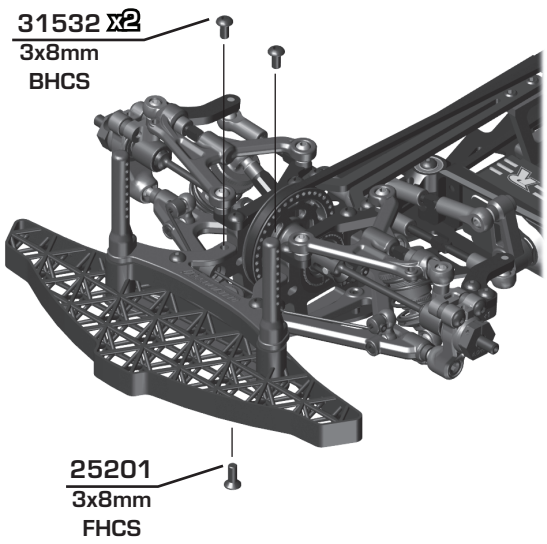
89202 x2
3x12mm BHCS

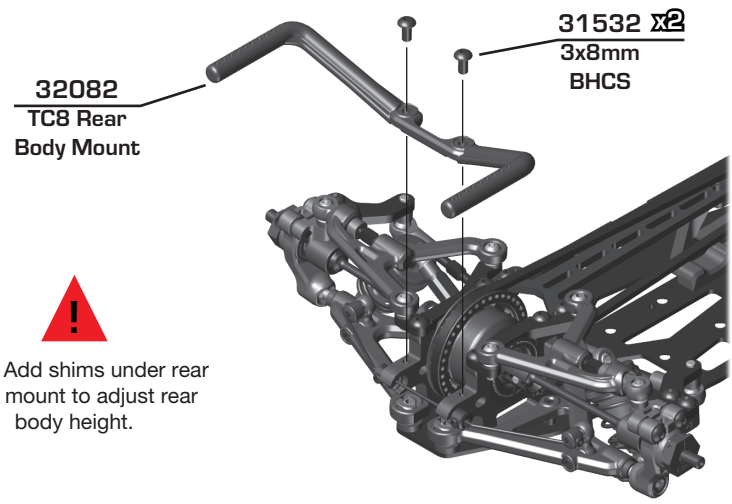
FACTORY TEAM

32087
FT Carbon Fiber Bumper Brace



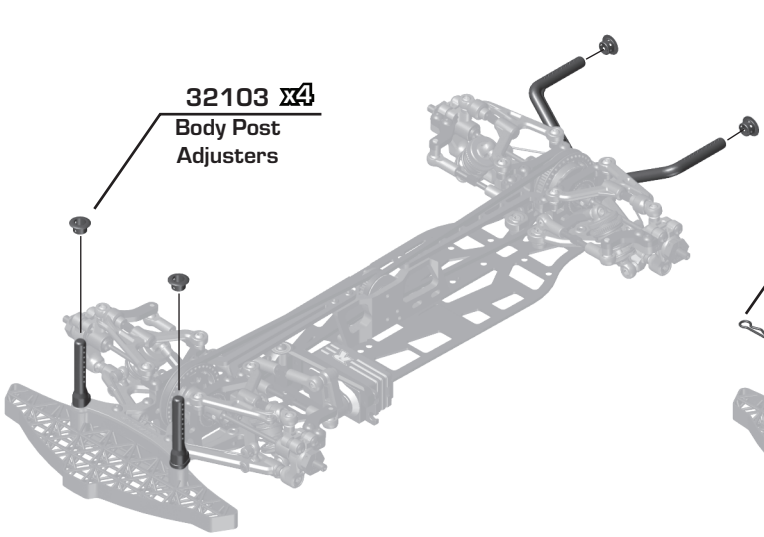
Bag 7 - Step 2

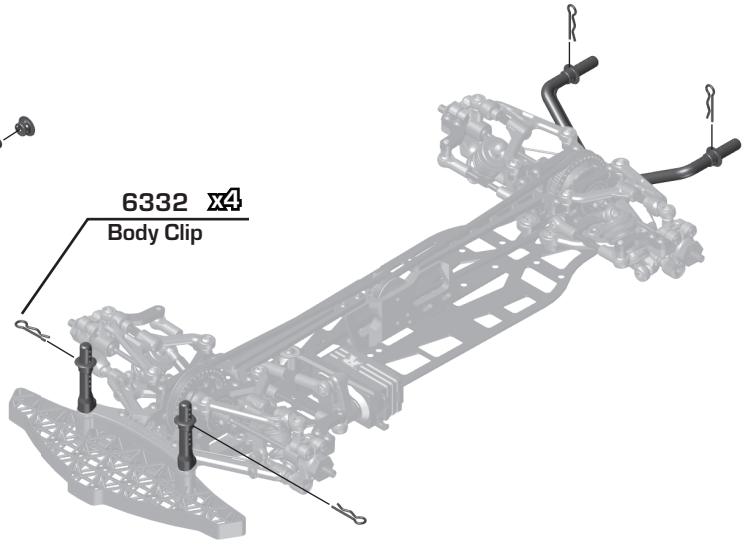




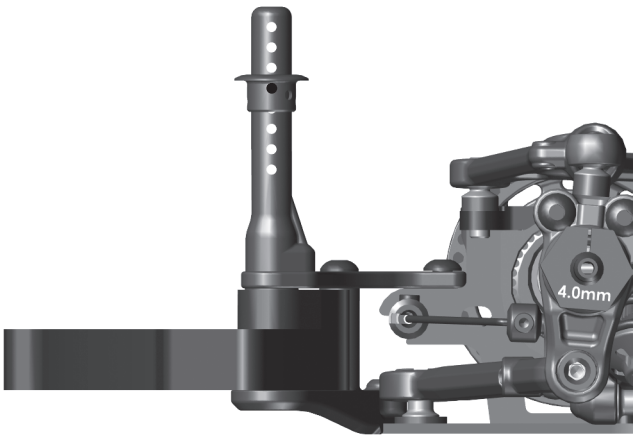
Note: Add shims under rear body mount to adjust rear body height.

Bag 7 - Step 3

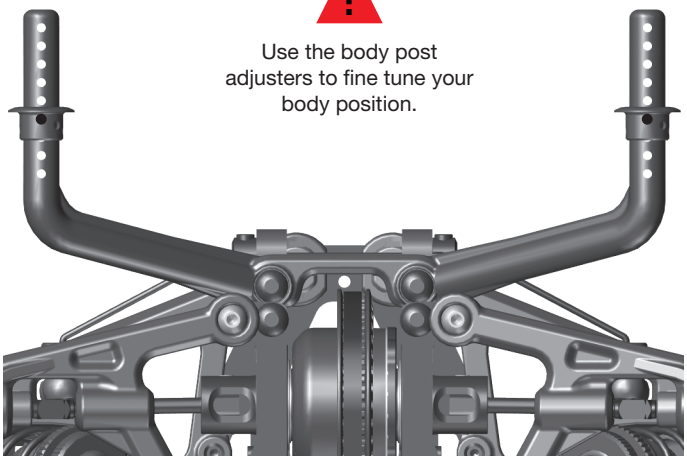




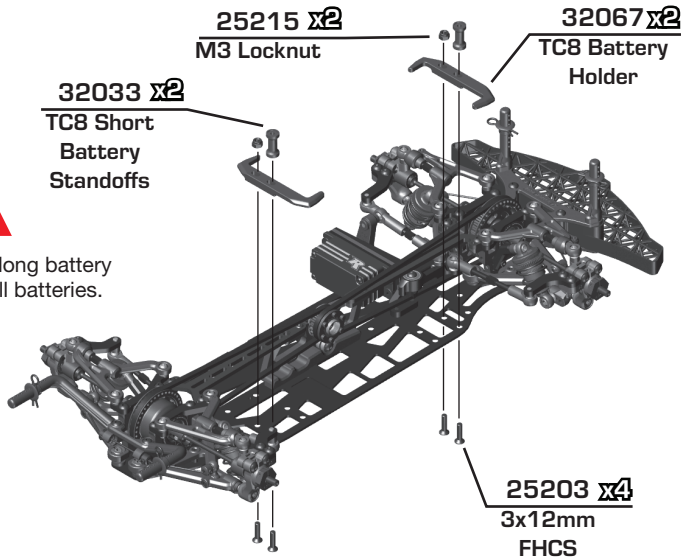
Bag 7 - Step 4



Use the body post adjusters to fine tune your body position.



Bag 8 - Step 1



25215 x2
M3 Locknut

32067 x2
TC8 Battery Holder

32033 x2
TC8 Short Battery Standoffs

25203 x4
3x12mm FHCS

Note: Use TC8 long battery standoffs for tall batteries.

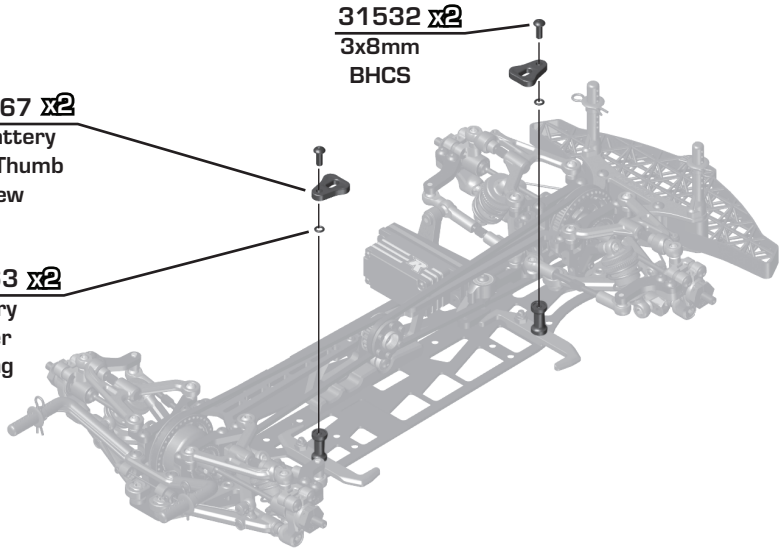
32101
FT Carbon Fiber Battery Holder set

Note:
Optional FT chassis weights are shown on page 25.

32090
FT Steel Front and Rear Battery Weight Set, 42g

32091
FT Steel Front and Rear Battery Weight Set, 60g

Bag 8 - Step 2



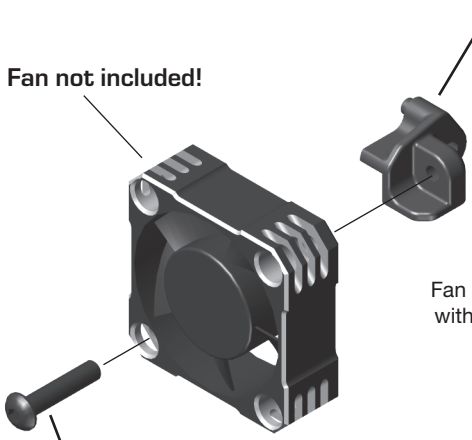
32101
FT Carbon Fiber Battery Holder set

32067 x2
TC8 Battery Holder Thumb Screw

31532 x2
3x8mm BHCS

92463 x2
Battery Holder O-Ring

Bag 8 - Step 3

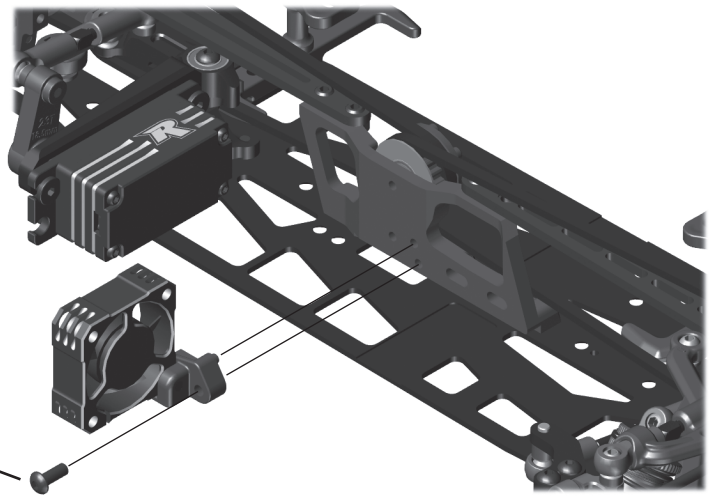


Fan not included!

32067
TC8 Fan Mount

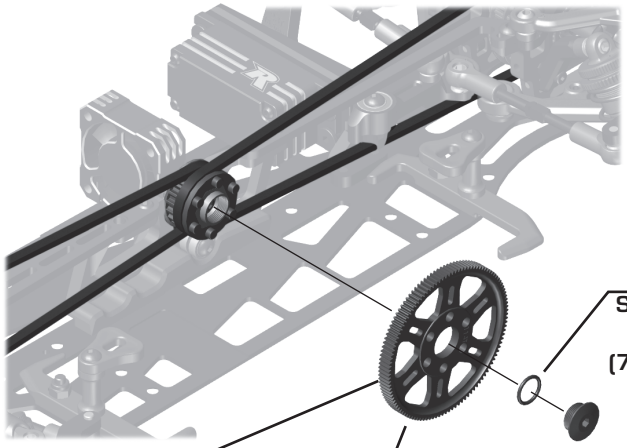
Fan mount works with 30mm fans.

25187
3x14mm BHCS



31532
3x8mm BHCS

Bag 8 - Step 4

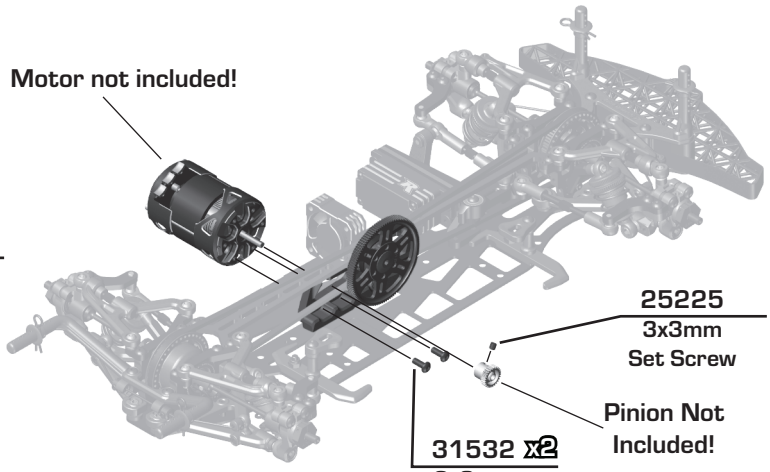


32072
Spur Gear
92T, 64P
Stock

32070
Spur Gear
114T, 64P
Mod

32011
Spur Gear
O-Ring
(7x9x1mm)

32012
Spur Gear
Screw

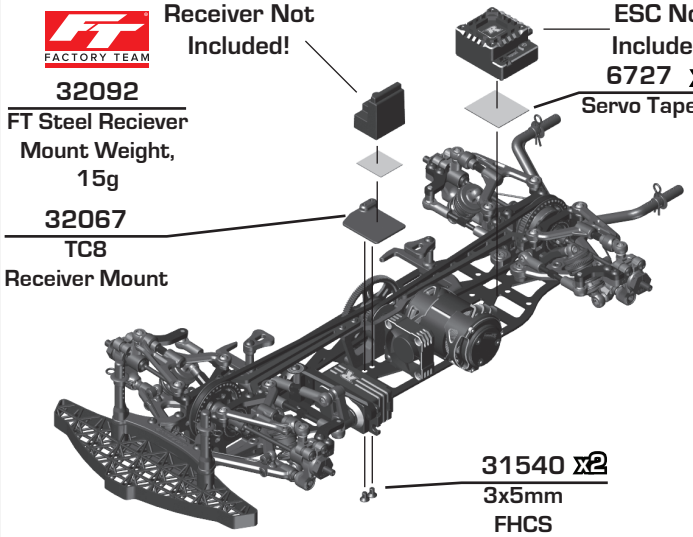


25225
3x3mm
Set Screw

Pinion Not
Included!

31532 x2
3x8mm
BHCS

Bag 8 - Step 5

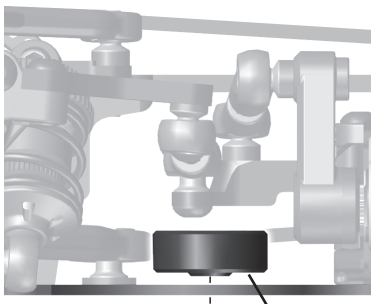


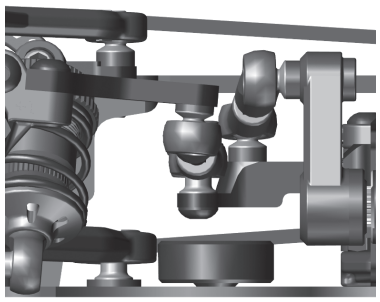
32092
FT Steel Reciever
Mount Weight,
15g

6727 x2
Servo Tape

32067
TC8
Receiver Mount

31540 x2
3x5mm
FHCS





31540
3x5mm
FHCS

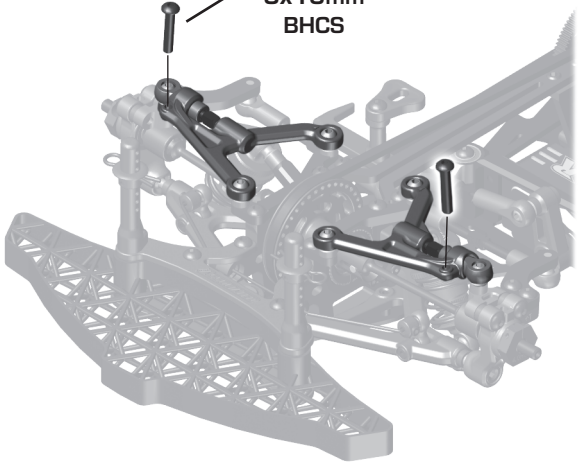
32088 x2
Chassis
Weight,
10g

Recommended Kit Position!

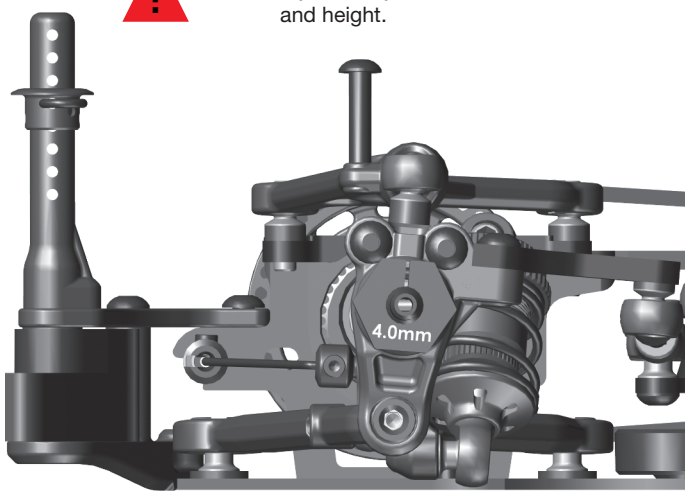
Bag 8 - Step 6

Optional,
included
in kit!

89203 x2
3x16mm
BHCS

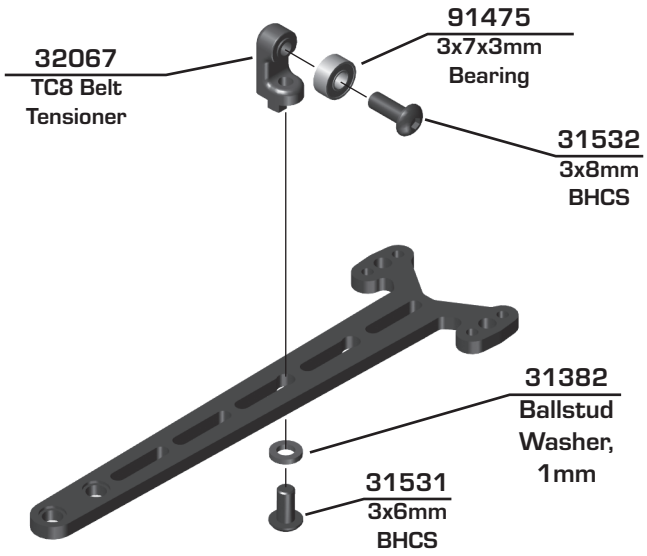


Adjust the body stop screw
based on your body choice
and height.

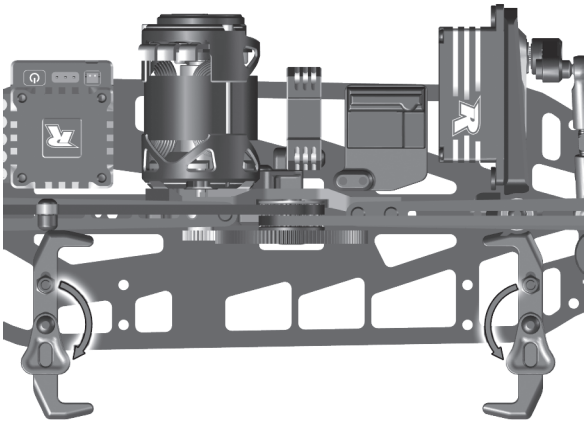


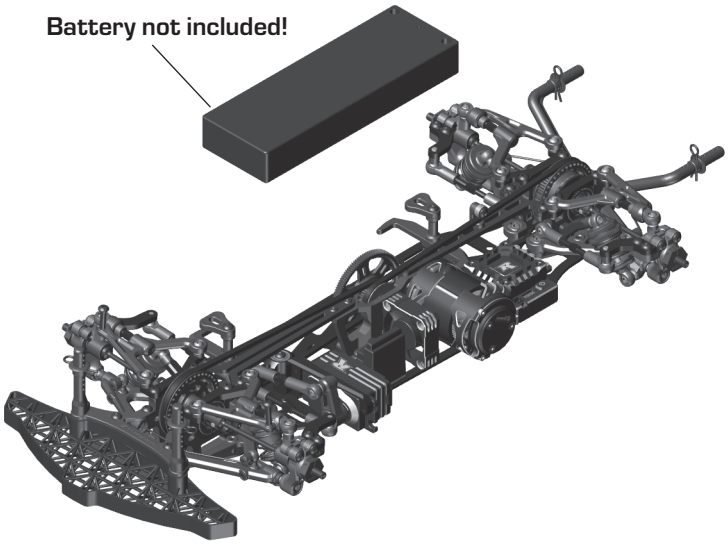
Bag 8 - Step 7

Optional belt tensioner installation steps. Included in kit! (Recommended for Mod)

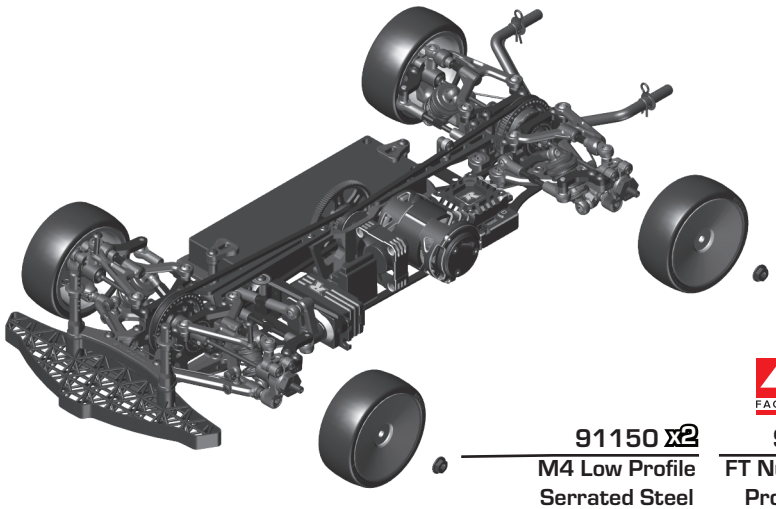


Bag 8 - Step 8





Bag 8 - Step 9

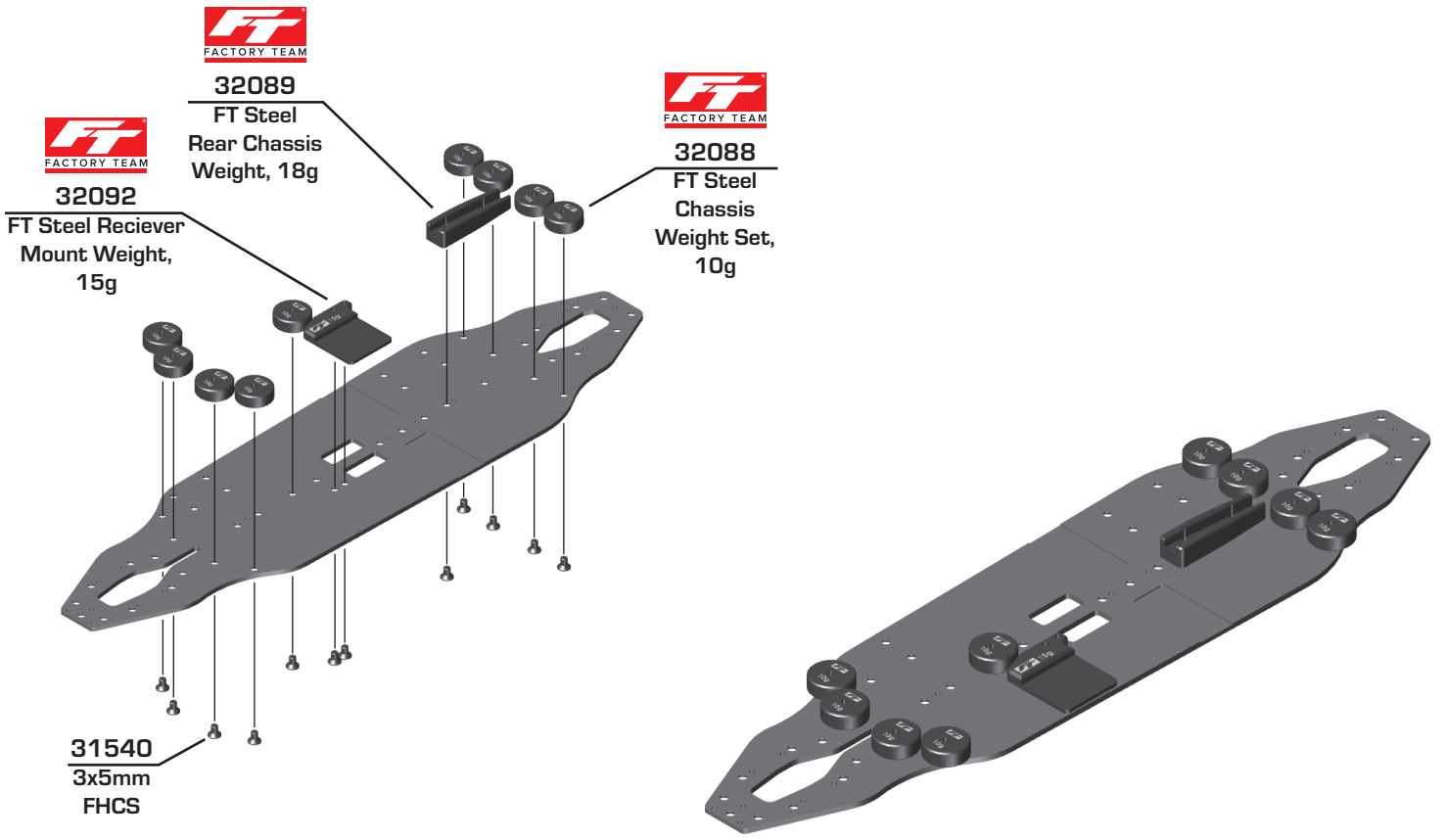


Build and Install x4 Wheels/Tires!

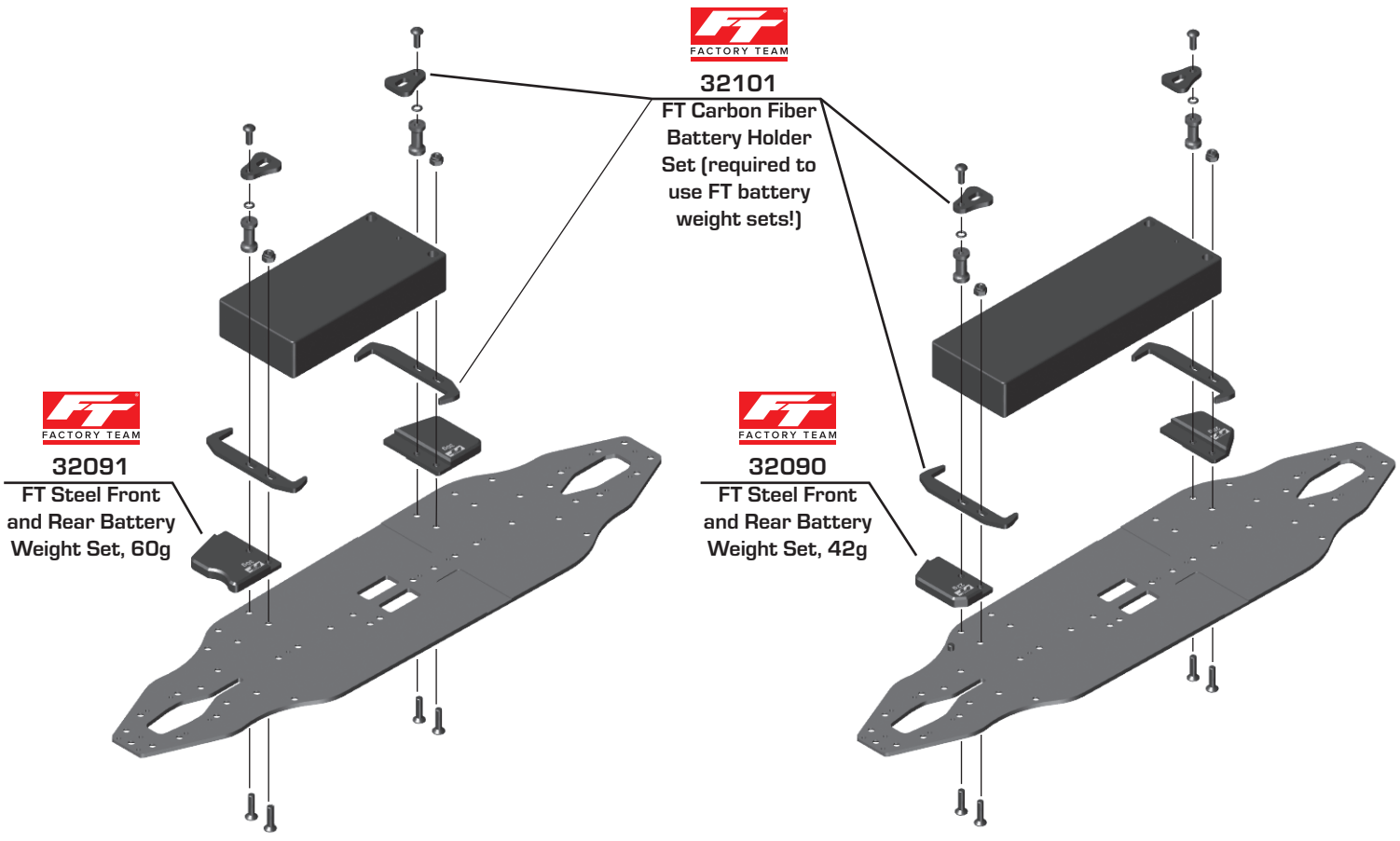
91150 x2
M4 Low Profile Serrated Steel Wheel Nuts

92254
FT Nuts, M4 Low Profile Wheel Nuts, black

:: Optional FT Chassis Weights



:: Optional FT Chassis Weights



:: Tuning Tips

Painting:

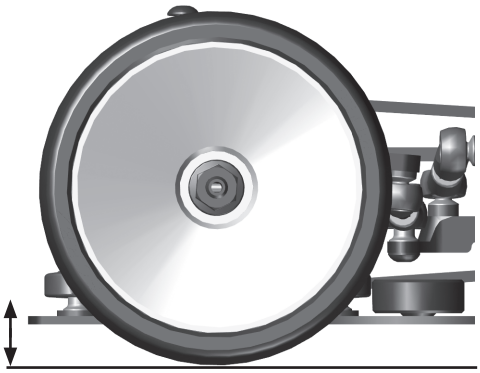
Your Kit requires a clear polycarbonate body. You will need to prep the body before you can paint it.
Wash the INSIDE thoroughly with warm water and liquid detergent (do not use any detergents with scents or added hand lotion ingredients!). Dry the body using a clean, soft, lint-free cloth. Use the supplied window masks to cover the windows from the INSIDE of the body (RC bodies 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.

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

Ride Height:

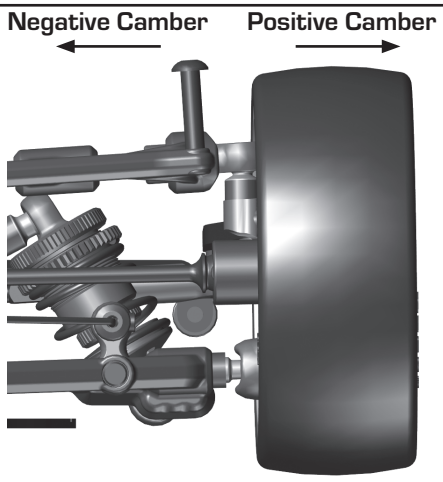
Ride height refers to the distance of the chassis to the ground, use the spring collars on the shocks to adjust this setting. A good starting point is 5.0mm for high grip surfaces like carpet or high-traction asphalt. For asphalt or lower grip carpet, try 5.5mm to start.To measure this, put your car on a flat surface. Measure the distance between the bottom of the chassis and a flat surface. Before you measure, make sure you have everything installed (including the battery) then push the car down and let it come back up a couple of times to let the suspension settle.



Notes:
If the track is smooth and high grip, aim for a lower ride height (4.6mm to 5.2mm).
If the track is bumpy or low grip, go for a higher ride height (5.4mm to 6.0mm).

Camber:

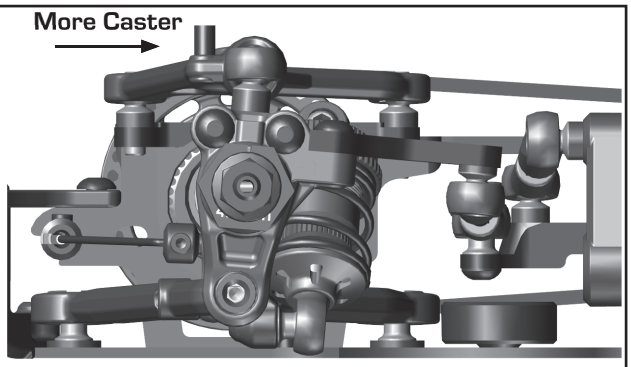
Camber refers to the angle of the tire when looking from the front or back of the car. Fine-tune your car's camber by adjusting the upper arm turnbuckle. To get more negative camber (for more grip), turn the turnbuckles to shorten them.To reduce negative camber (for less grip), turn the turnbuckles to lengthen them. Increasing both front and rear negative camber improves traction by maximizing tire contact during cornering, but it can also make the car less forgiving leading to a sudden loss of grip when the limits are exceeded. Reducing camber provides a more progressive slide, giving you better control when the car begins to lose traction, though in most cases it results in less overall grip. This should be checked on a setup station.



Notes:
Typically camber rages from -0.5° to -2.5° depending on the grip level. We recommend starting with -2° rear camber and -1.5° front camber. It's generally recommended to set the rear camber to a more negative value than the front. To increase traction at either end of the car, simply increase the negative camber setting on the corresponding end.

Caster:

Caster refers to the angle of the hub relative to vertical from the side of the car. Adjusting caster involves the replacement of the upper arms for the TC8. The kit supplies three upper arm options, enabling caster adjustments of 0°, 2°, or 4°. Increasing front caster provides a smoother, more stable initial steering feel while enhancing mid-corner and on-power grip. Conversely, reducing front caster delivers a sharper, more aggressive initial turn-in, but may diminish steering response through the rest of the corner. The recommended kit front setting is 4°.



Note:
Front caster is set at 4° for consistent handling on all tracks.

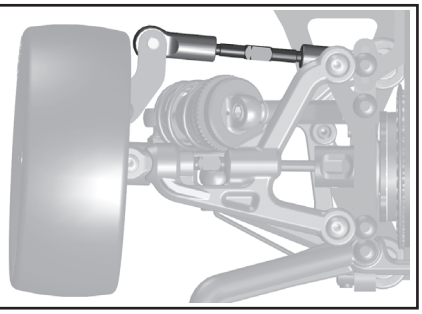
:: Tuning Tips

Wheelbase:

Wheelbase refers to the distance between the front and rear axles. Similar to caster, the wheelbase is adjusted using the upper arm options on the rear of the TC8. The “0” arm provides the longest wheelbase option, while the “4” arm is the shortest. Increasing the wheelbase (reducing rear ‘caster’) enhances stability in long, sweeping corners.
Conversely, decreasing the wheelbase improves rotation in tight turns, but can make the car more difficult to drive. The kit setting is 0°.

Note: Rear caster varies: 0° for large tracks with long wheelbases, and 4° for small tracks with short wheelbases.

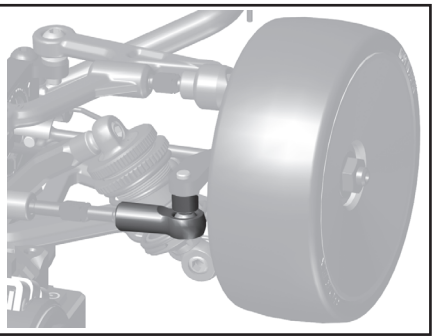
Rear Toe:



Rear toe refers to the angle of the rear tires in relation to the centerline of the car when viewed from above. The length of the rear turnbuckles controls rear static toe-in. More toe-in provides greater stability, rear grip, and improved forward traction. Less toe-in increases the vehicle’s rotation, but can reduce forward traction. This should be checked on a setup station.

Notes:
In low-traction scenarios, a toe-in setting between 3° and 4° is advised. For high-traction conditions, a setting between 2° and 3° is recommended.

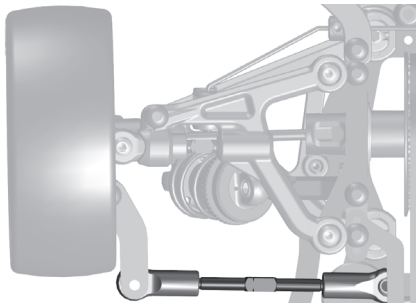
Rear Bump Toe:



Rear bump toe refers to the toe-in angle that varies with vehicle roll or squat. This creates a progressive toe-in effect through corners, improving entry steering while enhancing mid-corner stability and exit traction. Roll center or rear wheelbase adjustments influence how much bump toe is possible. To maximize rear grip in low-traction environments, increase rear bump toe by reducing shim thickness. For high-traction conditions, less rear bump toe provides better handling

Note:
In low-traction scenarios, rear bump toe shims between 0mm and 2mm is advised.
For high-traction conditions, a setting between 3mm and 5mm is recommended.

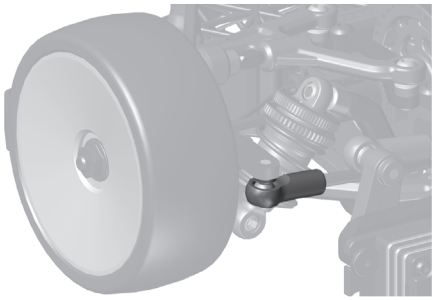
Front Toe:



Front toe refers to the angle of the front tires in relation to the centerline of the car when viewed from above. This is adjusted by changing the length of the steering turnbuckles. Toe-in enhances low-speed stability while diminishing steering response, and at high speeds, increases steering sensitivity while reducing overall stability. Toe-out improves low-speed responsiveness and high-speed stability, but reduces high-speed steering input.

Note:
0° to 1° toe-out setting is recommended for balanced performance. Front toe-in is rarely used.

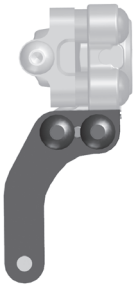
Front Bump Toe:



The front bump toe setting, which dictates the toe-out angle change during vehicle roll or squat, influences cornering dynamics. It produces a progressive toe-out effect. Increasing shimming to reduce bump toe-out provides a sharper, more aggressive high-speed steering response, especially noticeable during mid-corner exit. Conversely, reducing shims increases bump toe-out and reduces the aggressive steering feeling.

Note:
For low-grip conditions, add shims to enhance steering aggressiveness. On high-grip surfaces, remove shims to reduce mid-exit over-rotation and traction rolling. The typical rage is between 0-2mm.

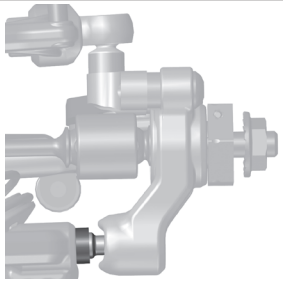
Ackermann:



The front steering arm options allow for Ackermann adjustments, influencing steering feel. The kit plate minimizes Ackermann, promoting smooth, predictable steering and enhanced drivability. Optional steering plates increase Ackermann, resulting in sharper, more aggressive steering and increased mid-corner rotation, best suited for demanding, technical tracks requiring maximum steering response.

:: Tuning Tips

Track Width:



Track width refers to the width of the car. Widening the rear track results in a less reactive handling, but improves rotational capability; narrowing the rear track has an opposite effect. Widening the front track decreases steering aggression and overall grip, narrowing front track increases both. A wider track configuration is preferred for high-traction surfaces, while a narrower configuration is better suited for low-traction conditions. For adjustments, pillow ball shims are preferred, though optional wheel hexes can be used. Be mindful that each approach produces unique handling outcomes.

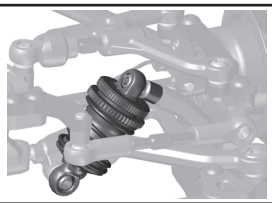
Note:
Pillow ball settings are typically 1-2mm. Rear is often 1mm narrower per side, but equal front/rear width improves corner speed in high-grip conditions.

Shock Springs:

Shock springs control suspension stiffness, directly impacting handling. Stiffer springs enhance responsiveness, forward traction, and high-speed stability, ideal for smooth tracks. They offer quicker directional changes and sharper steering. Softer springs slow directional changes but increase low-grip traction, though they may compromise high-speed stability. They excel on bumpy tracks. In high-traction, softer springs prevent traction rolling by absorbing lateral forces, preventing abrupt weight transfer. Balancing spring stiffness with track conditions is crucial for optimal performance. Progressive springs allow for an increased spring rate change with vehicle roll, which may improve responsiveness, however, they can make the vehicle more challenging to control.

Note:
The gray (front) and blue (rear) springs in the kit are versatile for general use. Spring changes provide major adjustments, shock angle changes offer finer tuning.

Shock Angle:



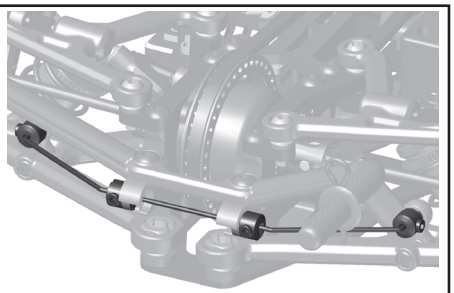
Shock angles offer fine-tuning of suspension stiffness, similar to spring adjustments. A more angled shock (reduced shims) creates a softer, less responsive setup, suitable for high traction. A more upright shock (increased shims) results in a stiffer, more responsive setup, ideal for low traction.

Shock Fluid:

Shock fluid viscosity is tuned to improve bump handling and weight transfer. Increase viscosity for enhanced bump absorption on rough tracks. Lower viscosity optimizes weight transfer and grip in low-traction conditions. Higher viscosity promotes smoother, predictable handling in high-traction. In high-temperature conditions, increased viscosity aids in tire temperature management.

Note:
The recommended range is between 27.5wt and 35wt with the kit 4 hole pistons.

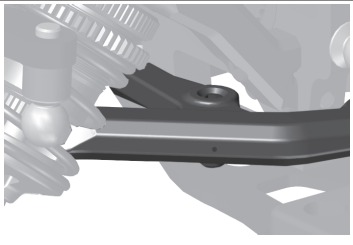
Anti-Roll Bar:



Anti-roll bars adjust roll stiffness and weight transfer, influencing handling. A stiffer rear bar reduces entry traction but can improves on-power traction. A stiffer front bar enhances entry steering and smooth's mid-corner handling. Balance bar stiffness for optimal cornering based on track conditions and driving style. For faster transitions, stiffen anti-roll bars all the way around, sacrificing grip. For more grip, soften bars all the way around, slowing transition speed.

Note:
Equal front and rear anti-roll bar stiffness is common. Alternatively, a one-step stiffer front bar is frequently used if the front end is too agressive.

Droop:

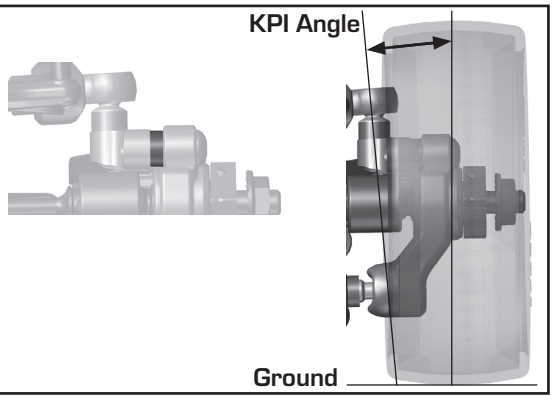


Droop is the distance between the bottom of the chassis and the axle center. The bottom of the hub directly below the pillow ball serves as the measurement reference for the TC8. Adjustment is performed using the illustrated set screw. Increasing rear droop (loosening the screw, increasing the travel) typically improves stability, whereas increasing front droop leads to a more aggressive handling characteristic.

Note:
This section needs more work, including starting points

:: Tuning Tips

KPI:



Kingpin inclination (KPI) is adjusted by adding or removing shims between the steering block ball stud mount and the steering block, altering the angle between the tire plane and the steering block's rotational axis. On the front, increased KPI provides a more precise steering feel, while zero shims (zero KPI) yields the least direct response.
On the rear, due to static tire behavior, KPI adjustment primarily functions as an upper arm length tuning method.

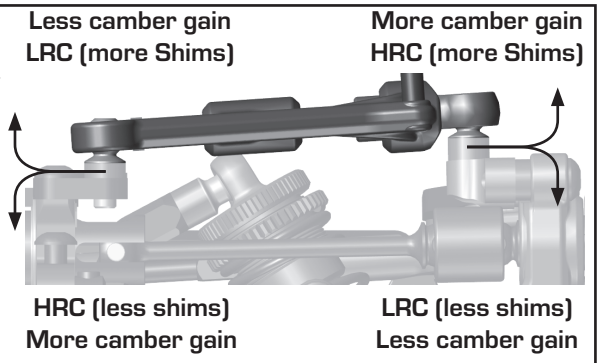
Note:
Adding shims increases KPI, resulting in a more direct steering feel and a shorter upper arm length. Removing shims has the opposite effect.

Upper Arm Length:

Adjusting upper arm length alters responsiveness. Lengthening arms stabilizes the car on low-traction surfaces by smoothing grip transitions, making it easier to drive, but may sacrifice corner speed. Shortening arms increases responsiveness and corner speed but makes the car less stable in low traction. this can be adjusted with the 2 upper arm position or by changing the shims on the steering block ballstud mount.
Keep in mind adjusting the steering block ballstud mount also adjust the KPI.

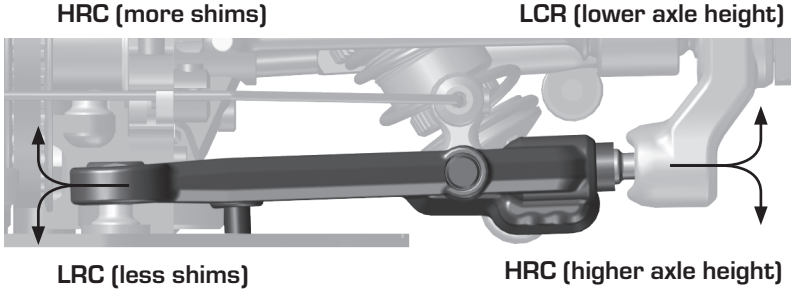
Note:
The short arm mount position is used in most situations. Fine tuning is done with the steering block ballstud mount.

Upper Arm Angle and Roll Center:



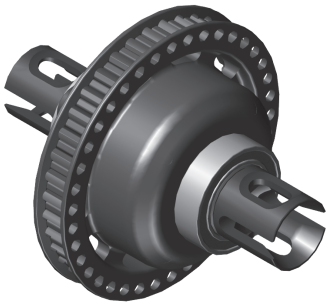
Upper arm shim adjustments influence both camber gain and roll center, significantly affecting handling. Adding camber gain increases camber during roll, enhancing grip on low-traction surfaces. Removing camber gain or "flattening" the arm reduces grip, beneficial for maximizing corner speed and preventing traction rolling on high-traction surfaces. A high roll center (HRC) increases initial grip and vehicle reactivity, potentially improving corner speed, but too high a setting can cause abrupt grip loss and inconsistent handling. Conversely, a low roll center (LRC) reduces reactivity and increases chassis roll, generally improving driveability and making grip loss more manageable.

Lower Arm Roll Center Shims and Axle Height:



Lower arm roll center adjustments have a more pronounced effect than upper arm adjustments. As with the upper, a high roll center (HRC) increases initial grip and reactivity, potentially enhancing corner speed, but excessive HRC can lead to sudden grip loss and inconsistency. Conversely, a low roll center (LRC) reduces reactivity and increases chassis roll, improving driveability and recovery. Axle height adjustments provide the most significant roll center change and are typically infrequent, requiring setup optimization for each height.

Gear Differential:



Thicker gear differential oil smooths off-power and corner entry, reducing over-rotation and off-power slides, but increases on-power steering, potentially causing oversteer. Thinner oil enhances corner entry aggression and off-power steering, while reducing on-power steering. Gear sets (HTC/LTC) also impact torque delivery. HTC gears, typically preferred, enhance on-power grip at all speeds. LTC gears offer more free rotation and sharper slow-speed cornering, but sacrifice on-power response.

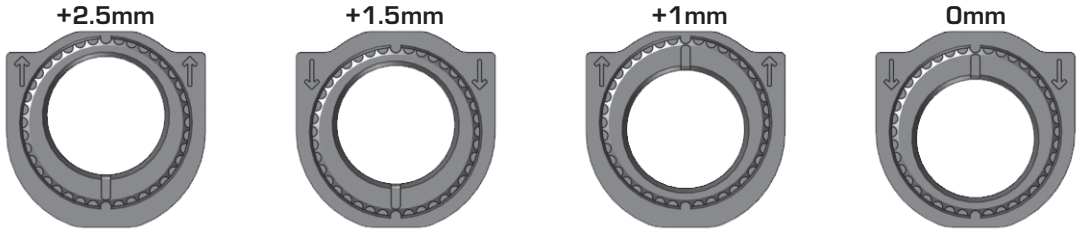
Note:
High-traction conditions: 7k-15k gear differential oil. Low-traction: 3k-7k. LTC gears simulate lower viscosity, requiring potentially thicker oil than HTC gears.

:: Tuning Tips

Differential and Spool Height:

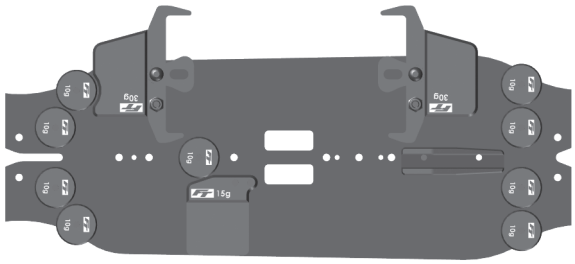
This adjustment profoundly influences drivetrain bind, affecting the vehicle's handling characteristics across the board, with particular emphasis on on-power and hard braking scenarios. Increasing this height typically improves grip at the corresponding end of the car, while decreasing it reduces grip. These adjustments are substantial and highly noticeable. We generally aim for the highest possible setting to maximize grip, unless drivability becomes challenging or, in high-traction conditions, we lower it to drastically calm the car, albeit at the expense of overall grip. Equal front and rear differential height is common. However, lowering the front differential can reduce front-end aggression and traction rolling on high-grip tracks

Note:
Increased height enhances grip at that end; decreased height reduces grip.



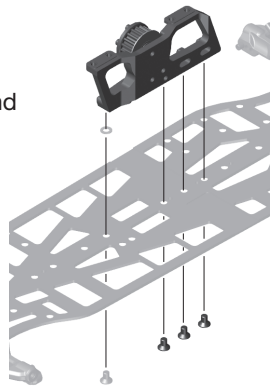
Weight Distribution:

The chassis incorporates multiple weight placement positions at both the front and rear. Consult the setup sheet for recommended FT weight configurations. A 50:50 weight distribution, easily obtained with additional FT weights and the central positioning of electronics, yields the most neutral vehicle balance. Shifting weight rearward typically increases steering aggressiveness, whereas shifting weight forward promotes smoother handling and reduces steering input.



Chassis Material and Flex Options:

High-grip conditions favor a stiff chassis setup; low-grip conditions may require a flexible setup. The steel chassis provides maximum stiffness, optimal for medium to high grip, offering the lowest center of gravity and quickest response. The carbon fiber chassis is best suited for low to medium grip, generating increased traction but slower reactivity. Chassis stiffness can be further adjusted using the front motor mount screws and shim: more screws increase stiffness, with a minimum of two required at the back of the motor mount.



Top Deck Material and Flex Options:

Chassis flex can be further modified utilizing top deck and motor mount screw adjustments, increasing the effects of chassis plate tuning. Stiffer top decks are preferred for high-traction conditions, whereas flexible top decks enhance grip in low-traction environments. Top deck configuration allows for localized flex tuning at each end of the car. A softer rear top deck generally maximizes rear grip, and the same principle applies to the front. A common practice is to employ a stiff rear and flexible front top deck setup for optimal handling balance and corner speed.

Belt Tension:

Belt tension, adjusted via the diff and spool bearing cams, impacts drivetrain performance.
Tighter belts, common in modified classes, prevent skipping and enhance longevity.
Looser belts improve efficiency in stock classes. Aim for the loosest tension without skipping.
Power delivery can be tuned by varying front or rear belt tension. A rear top deck belt tensioner can be added to increase durability, primarily for modified motors.

Notes

TC8 FACTORY TEAM GRAPHITE-SPEC TC8 FACTORY TEAM STEEL-SPEC

Driver: Steel Spec Kit Setup Event: _____ Qualify: _____ Main: _____

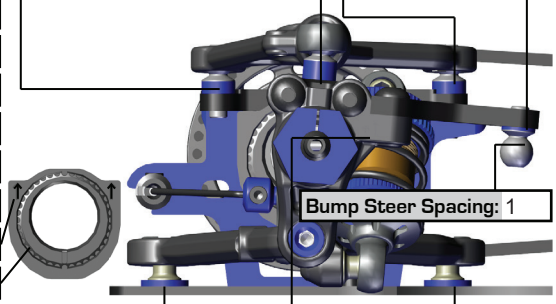
Date: _____ Track: _____ Finish: _____ Best Lap Time: _____

Front Suspension:

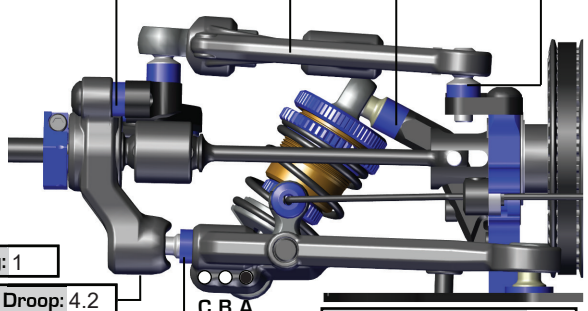
RESET

Ride Height: 5.2mm
Camber: - 1 deg
Toe: 1 deg out
Anti-Roll Bar: 1.2mm
Wheel Hex: 4mm
Steering Block Type: Kit
Lower Arm Type: Kit
Upper Arm Type: Kit
Diff Height Insert: High ■ Low ☐
Diff Bearing Cam: High ■ Low ☐
Notes:

FF Ball Stud Spacing: 2
FR Ball Stud Spacing: 2
Ball Stud Spacing: 3
Steering Arm: 0
Upper Arm Position: Long ☐ Short ■
Upper Arm Caster: 0 ☐ -2 ☐ -4 ■
KPI Spacing: 2
Shock Spacing: 4



Bump Steer Spacing: 1
FF Roll Center Spacing: 1
FR Roll Center Spacing: 1
Axle Height: +0 ☐ +1 ■ +2 ☐
Droop: 4.2

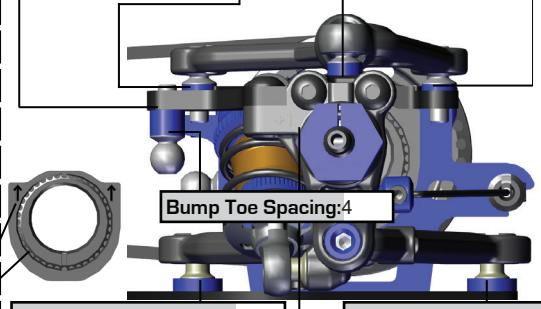


Track Width Spacing: 2

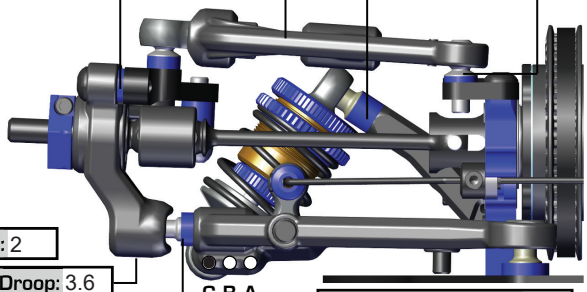
Rear Suspension:

Ride Height: 5.2mm
Camber: -2 deg
Toe: -3 deg
Anti-Roll Bar: 1.3mm
Wheel Hex: 4mm
Steering Block Type: Kit
Lower Arm Type: Kit
Upper Arm Type: Kit
Diff Height Insert: High ■ Low ☐
Diff Bearing Cam: High ■ Low ☐
Notes:

RF Ball Stud Spacing: 1
RR Ball Stud Spacing: 1
Steering Arm: kit
Ball Stud Spacing: 2
Upper Arm Position: Long ☐ Short ■
Upper Arm Caster: 0 ■ -2 ☐ -4 ☐
KPI Spacing: 1
Shock Spacing: 4



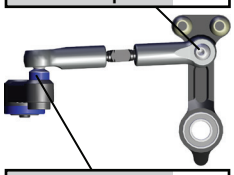
Bump Toe Spacing:4
RF Roll Center Spacing: 2
RR Roll Center Spacing: 2
Axle Height: +0 ☐ +1 ■ +2 ☐
Droop: 3.6



Track Width Spacing: 2

Steering and Electronics:

Ball Stud Spacer: 2



Ball Stud Spacer: 2
Motor / Turn:
Spur:
Pinion:
ESC:

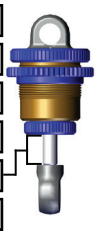
Servo Horn Type
Servo Horn: ■
Servo Saver: ☐
Servo Horn Height: 18.5
Servo:
Steering Lock (In): 25 deg
Radio:
Timing:
Battery:
Note:

Drivetrain:

	Front	Rear
Type:	Spool: ■ Diff: ☐	Diff: ■
Fluid:		5k
Gear Material:		Plastic
Gear Type:		HTC
Notes:		
Tires:	Body:	
Additive:	Wing:	
Body Position:	Fwd: ☐ Mid: ☐ Back: ☐	
Note:		

Shocks:

	Front	Rear
Piston:	Kit 1.1 x2 / 1.2 x2	Kit 1.1 x2 / 1.2 x2
Fluid:	32.5 wt	32.5 wt
Spring:	Gray	Blue
Stroke:	9mm	9mm
Limiters:	Int: ____ Ext: ____	Int: ____ Ext: ____
PSD Sleeve:		
Shock Mount:	Fixed: ■ Active: ☐	Fixed: ■ Active: ☐



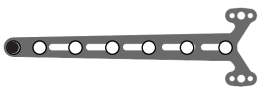
Notes:

Track Info:

Size:
Surface:
Traction:
Temp:
Notes:

Top Deck Flex:

Split: ■ One-Piece: ☐ Carbon Fiber: ☐ G10: ☐

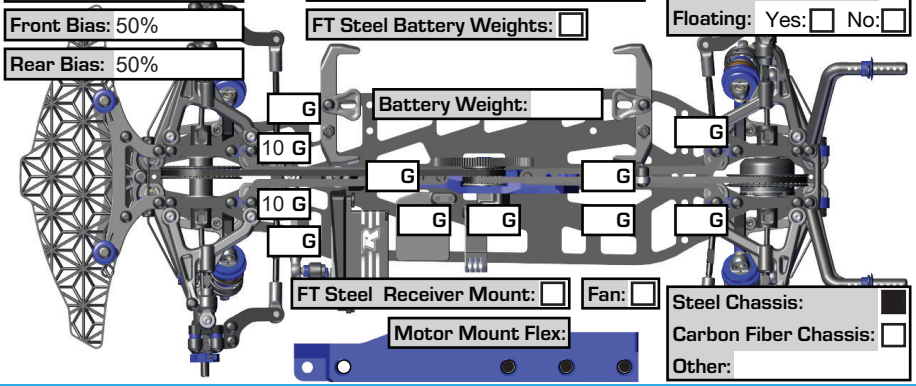


Front Top Deck Type:
Rear Top Deck Type:
Notes:

Weight Bias and Chassis Flex:

Total Weight: 1330g
Front Bias: 50%
Rear Bias: 50%

FT Steel Short Battery Weights: ☐
FT Steel Battery Weights: ☐
FT Steel Rear Weight: ☐
Floating: Yes: ☐ No: ☐



FT Steel Receiver Mount: ☐
Fan: ☐
Motor Mount Flex:
Steel Chassis: ■
Carbon Fiber Chassis: ☐
Other:

:: For more setups, visit https://www.associatedelectrics.com/teamassociated/manuals_and_setup_sheets/

TC8 FACTORY TEAM GRAPHITE-SPEC TC8 FACTORY TEAM STEEL-SPEC

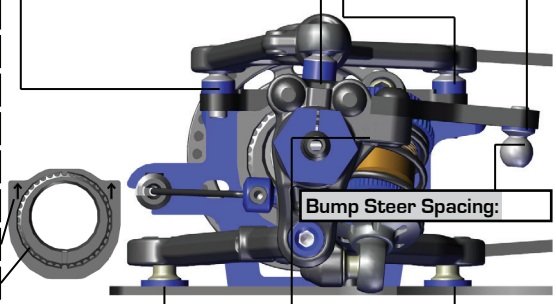
Driver: _____ Event: _____ Qualify: _____ Main: _____

Date: _____ Track: _____ Finish: _____ Best Lap Time: _____

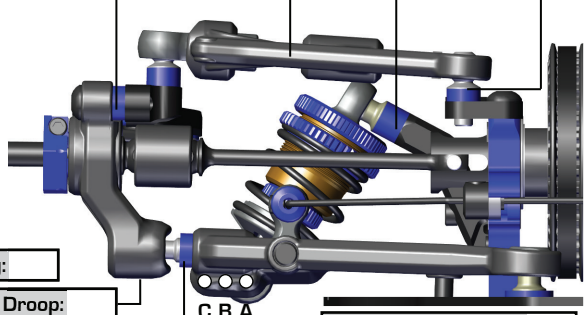
Front Suspension:

Ride Height:
Camber:
Toe:
Anti-Roll Bar:
Wheel Hex:
Steering Block Type:
Lower Arm Type:
Upper Arm Type:
Diff Height Insert: High ☐ Low ☐
Diff Bearing Cam: High ☐ Low ☐
Notes:

FF Ball Stud Spacing:
FR Ball Stud Spacing:
Ball Stud Spacing:
Steering Arm:
Upper Arm Position: Long ☐ Short ☐
Upper Arm Caster: 0 ☐ -2 ☐ -4 ☐
KPI Spacing:
Shock Spacing:



Bump Steer Spacing:
FF Roll Center Spacing:
FR Roll Center Spacing:
Axle Height: +0 ☐ +1 ☐ +2 ☐
Droop:

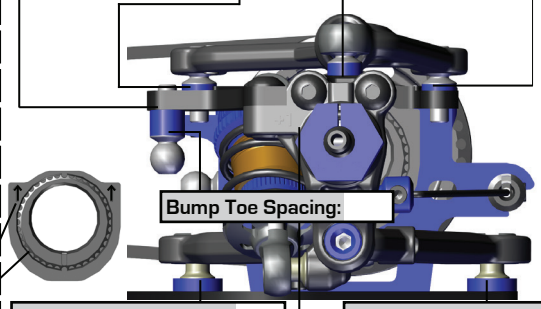


Track Width Spacing:

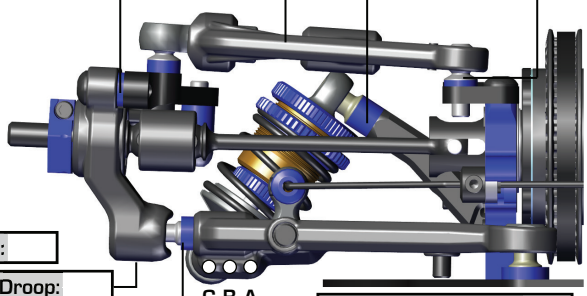
Rear Suspension:

Ride Height:
Camber:
Toe:
Anti-Roll Bar:
Wheel Hex:
Steering Block Type:
Lower Arm Type:
Upper Arm Type:
Diff Height Insert: High ☐ Low ☐
Diff Bearing Cam: High ☐ Low ☐
Notes:

RF Ball Stud Spacing:
RR Ball Stud Spacing:
Steering Arm:
Ball Stud Spacing:
Upper Arm Position: Long ☐ Short ☐
Upper Arm Caster: 0 ☐ -2 ☐ -4 ☐
KPI Spacing:
Shock Spacing:



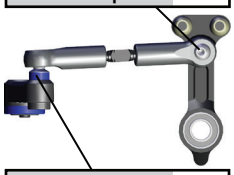
Bump Toe Spacing:
RF Roll Center Spacing:
RR Roll Center Spacing:
Axle Height: +0 ☐ +1 ☐ +2 ☐
Droop:



Track Width Spacing:

Steering and Electronics:

Ball Stud Spacer:



Ball Stud Spacer:
Motor / Turn:
Spur:
Pinion:
ESC:

Servo Horn Type
Servo Horn: ☐
Servo Saver: ☐
Servo Horn Height:
Servo:
Steering Lock (In):
Radio:
Timing:
Battery:
Note:

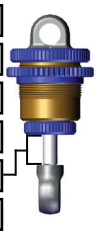
Drivetrain:

	Front	Rear
Type:	Spool: ☐ Diff: ☐	Diff: ☐
Fluid:		
Gear Material:		
Gear Type:		

Notes:
Tires:
Body:
Additive:
Wing:
Body Position: Fwd: ☐ Mid: ☐ Back: ☐
Note:

Shocks:

	Front	Rear
Piston:		
Fluid:		
Spring:		
Stroke:		
Limiters:	Int: ____ Ext: ____	Int: ____ Ext: ____
PSD Sleeve:		
Shock Mount:	Fixed: ☐ Active: ☐	Fixed: ☐ Active: ☐



Notes:

Track Info:

Size:
Surface:
Traction:
Temp:
Notes:

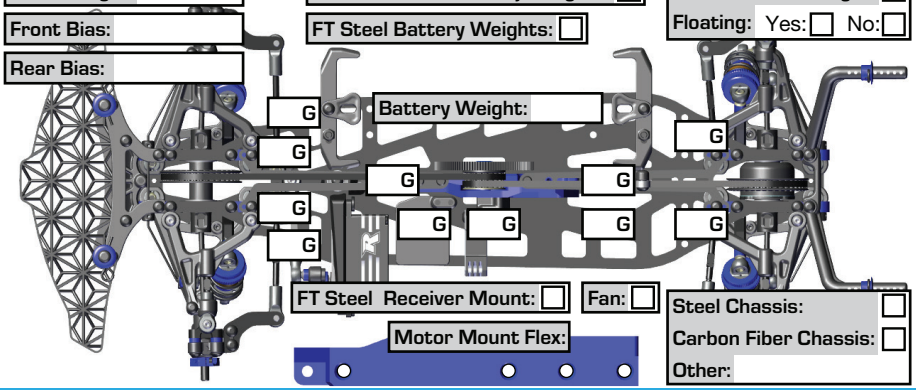
Top Deck Flex:

Split: ☐ One-Piece: ☐ Carbon Fiber: ☐ G10: ☐

Front Top Deck Type:
Rear Top Deck Type:
Notes:

Weight Bias and Chassis Flex:

Total Weight:
Front Bias:
Rear Bias:
FT Steel Short Battery Weights: ☐
FT Steel Battery Weights: ☐
FT Steel Rear Weight: ☐
Floating: Yes: ☐ No: ☐



Battery Weight:
FT Steel Receiver Mount: ☐
Fan: ☐
Motor Mount Flex:
Steel Chassis: ☐
Carbon Fiber Chassis: ☐
Other:

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