

# Cobra GT 3.1e



**EP**

1/8 scale gaspowered

**SERPENT**

## INTRODUCTION

Thank you very much for selecting this Serpent rc car and thus become a member of the ever growing worldwide Serpent racing family. Serpent started in 1980 and has been growing its product-line and fan-base ever since.

The Serpent Cobra GTe 3.1 is a state of the art 1/8 scale 4wd buggy which will give you the true Serpent racing experience. The assembly manual will guide you through all the steps to complete the car, so you can hit the track with a good base-set-up soonest. The Serpent design department succeeded to create a superbly performing car combined with ease of assembly and maintenance. The high quality standards of all parts and hardware will make racing your Serpent car a very rewarding activity !

Through our team, website and social media we will keep you up-to-date on all developments of the Serpent cars. We hope to meet you on the track and through our various media! Enjoy the drive !

Team Serpent  
Multiple World Champions

## INSTRUCTIONS

Serpent's long tradition of excellence extends to the instruction manuals, and this instruction manual is no exception. The easy-to-follow layout is richly illustrated with 3D-rendered full-color images to make your building experience quick and easy. Following the instructions will result in a well-built, high-performance race-car that will soon be able to unleash its full potential at the racetrack. The kit includes bags, with bag numbers, which refer to the same step in the manual. Open only the indicated bag(s) per step and finish that part of the assembly. Remaining parts will be needed later on in the assembly process.

## PLASTIC PARTS

The Serpent moulded parts are very durable and hard. When assembling longer screws in new composite parts, make sure to use new hex bits in your (power) tools. Pre-threading also helps to avoid screw damage.

## SETUP

In certain assembly steps you need to make basic adjustments, which will give you a good initial setup for your Serpent Cobra GTe 3.1. Fine-tuning the initial setup is an essential part of building a high-performance racecar like your Serpent Cobra GTe 3.1.

## EXPLODED VIEWS AND PARTS LIST

The exploded views and parts lists for the Serpent Cobra GTe 3.1 are presented in the Reference Guide section in the back of this manual. The exploded views show all the parts of a particular assembly step along with the Serpent part number and hotlink to the Serpent website. Part numbers in orange indicates that this part is an optional. Optionals part names and numbers are showed below.

## CUSTOMER SERVICE

Serpent has made a strong effort to make this manual as complete and clear as possible. Additional info may be published in our website: [www.serpent.com](http://www.serpent.com) or you may ask your dealer or the Serpent distributor for advice, or email Serpent direct: [info@serpent.com](mailto:info@serpent.com). The Serpent Facebook, Twitter and Youtube pages give additional means of support and communications.

## SAFETY

Read and take note of the 'Read this First section' before proceeding to assemble the car-kit. This car-kit is intended for persons aged 16 or older.

## READ THIS FIRST!

- This is a highly technical hobby product, intended to be used in a safe racing environment. This car is capable of speeds in excess of 80 km/h or 50mph. Please follow these guidelines when building and operating this model.
- Parental guidance is required when the builder/user of this car is under 16.
- Follow the building instructions. If in doubt, contact your dealer or importer.
- Be sure to use the proper tools when assembling the car. Always exercise caution when using electric tools, knives and other sharp objects.
- Be careful when using liquids like lubrication oil, fuel or glue. Do not swallow.
- Follow the manufacturer's instruction in case you experience irritation after using the product.
- Be careful when operating the car. Stay away from any rotating parts such as wheels, gears and transmission. Stay away from motor, engine and exhaust pipe system or speedo during and immediately after use, as these parts may be very hot. We advise to use protective hand gloves.
- Only operate this car in a safe environment, like a special racing track or a closed parking lot. Avoid using this car on public roads, crowded places or near infants.
- Before operating this car, always check the mechanical status of the car. Also check that the transmitter and receiver frequencies correspond and are not used by any other racer at the same time. Check that the batteries of the transmitter and receiver- are fully charged.
- After use, always check all the mechanics of the car. We advise to clean the car immediately after use, and inspect the parts for wear or fractures. Replace when necessary. Do not use water, methanol, thinner or other solvents to clean the car.
- Empty the fuel tank (depending on model) if needed and disconnect the receiver battery.
- Store the car in a dry and heated place to avoid corrosion of metal parts.
- Avoid using this car in wet conditions as the water will cause corrosion on the metal parts and bearings and these parts will cease to function properly. If driven in the wet, ensure that all the electric equipment is waterproofed and after use, that all moving parts are dried immediately.

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## LINES DESCRIPTION

Each step contains a variety of numbers, lines, and symbols. The numbers represent the order in which the parts should be assembled. The lines are described below.



Step number; the order in which you should assemble the indicated parts



Length after assembly



Assembly path of one item into another



Group of items (within lines) should be assembled first



Direction the item should be moved



Glue one item to another



Press/insert one item into another



Connect one item to another



Gap between two items

## ICONS DESCRIPTION

Each step contains a variety of symbols described below.



Carefull, read and check very well.



Apply a small amount of cyano glue. Use wear protection for eyes and hands.



Detail view to explain assembly or order of parts better.



Default set-up: This symbol indicates the default setup.



Grease: apply a small amount of grease to the parts shown.



Left and right parts should be assembled in the same way.



Thread lock: apply a small amount on the parts shown. Before to apply the threadlock, make sure to degrease the parts very well, as otherwise the threadlock will not work.



Silicone oil: use the indicated silicone oil for the shocks and differentials.



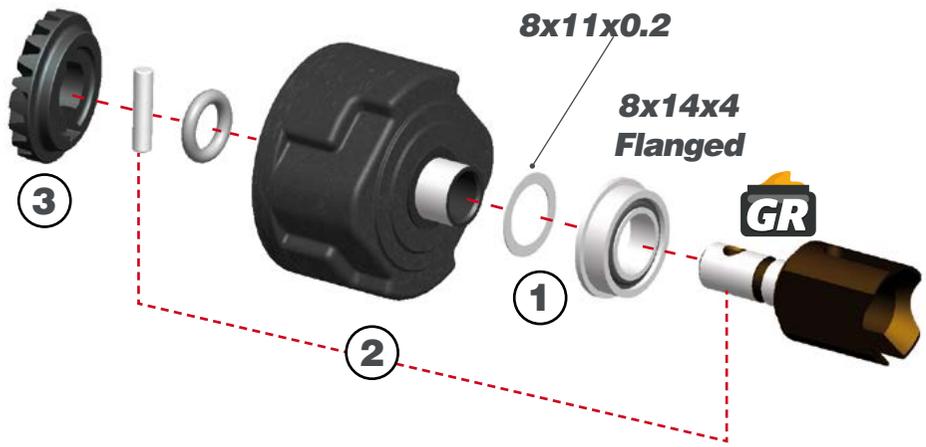
Parts or items not included in the kit.



Optional part, not standard in the kit.

## STEP 1 FR/RR DIFF BAG

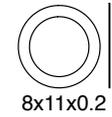
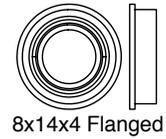
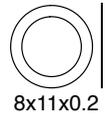
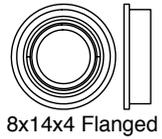
## STEP 2



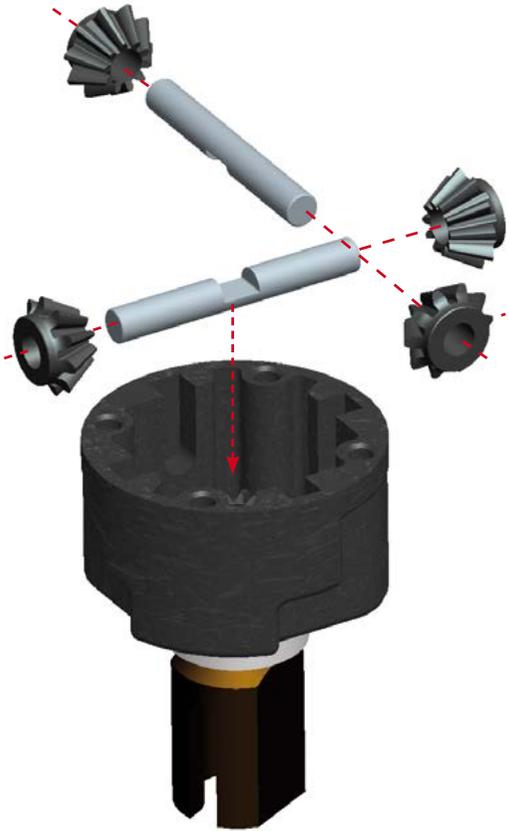
Note the correct way to assemble the pin.

**AMOUNT OF OIL IN THE DIFFS**  
Add 2mm oil before assembling the gear

Note the correct way to assemble the pin.



STEP 3



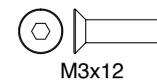
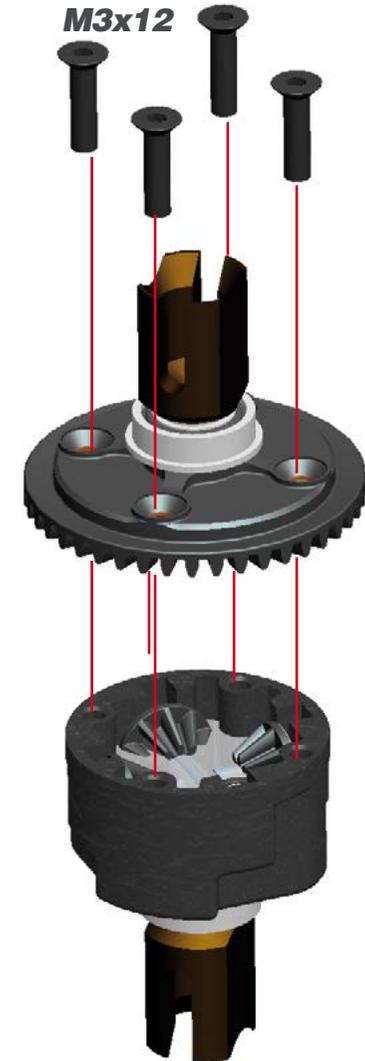
STEP 4



Fill the differential with silicone oil 1 mm above the crosspin, do NOT overfill. Use the silicone oil supplied in the kit. For the correct cst value please check the default setupsheet.

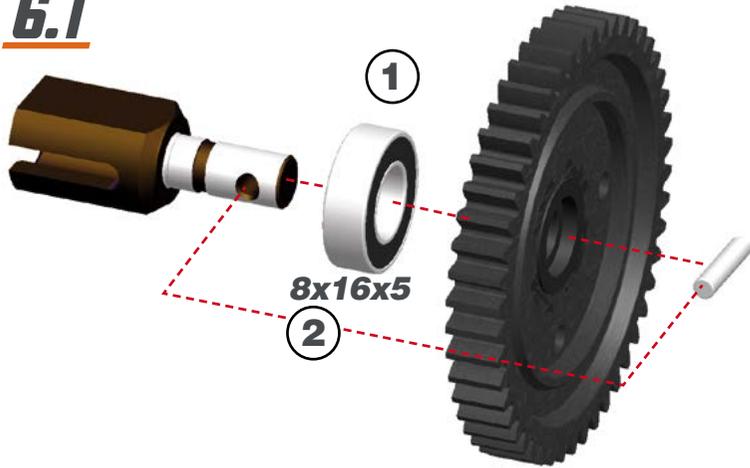


STEP 5

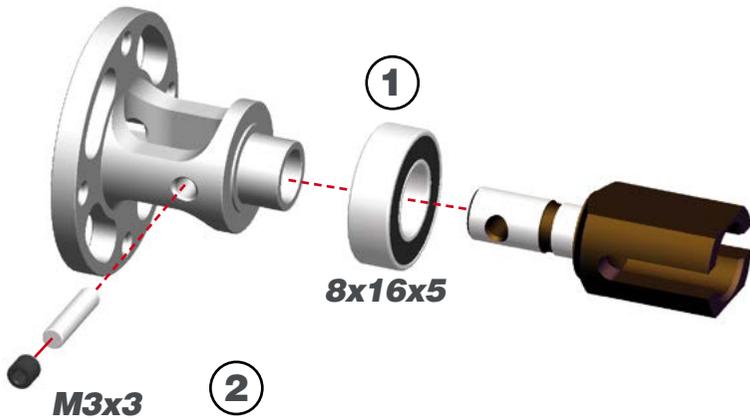


## STEP 6 SOLID AXLE BAG

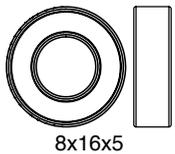
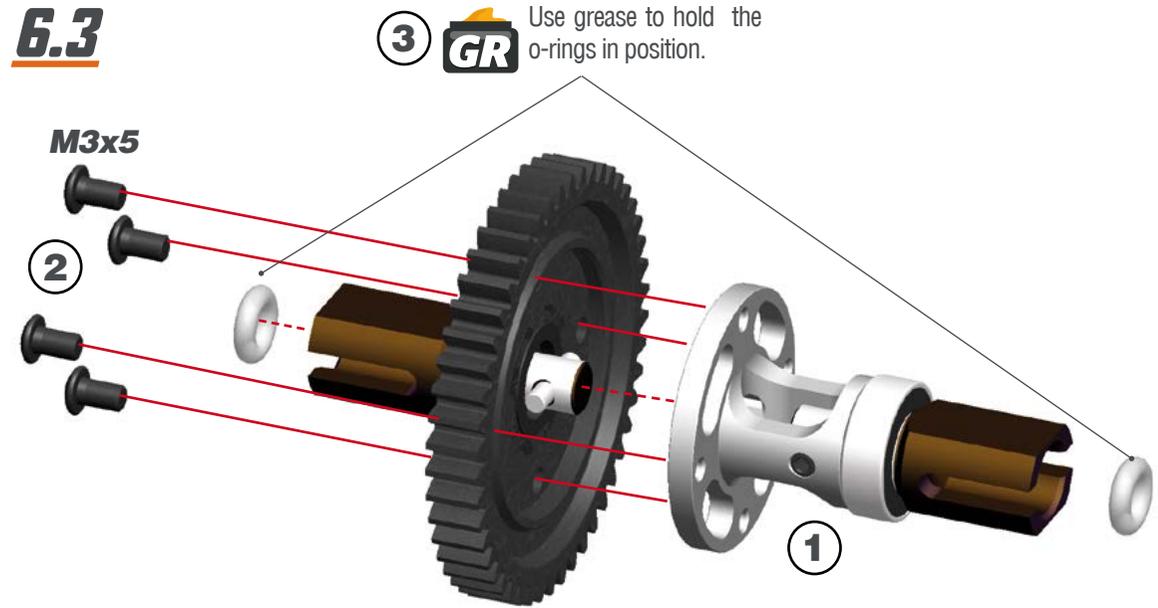
### 6.1



### 6.2

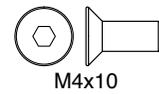
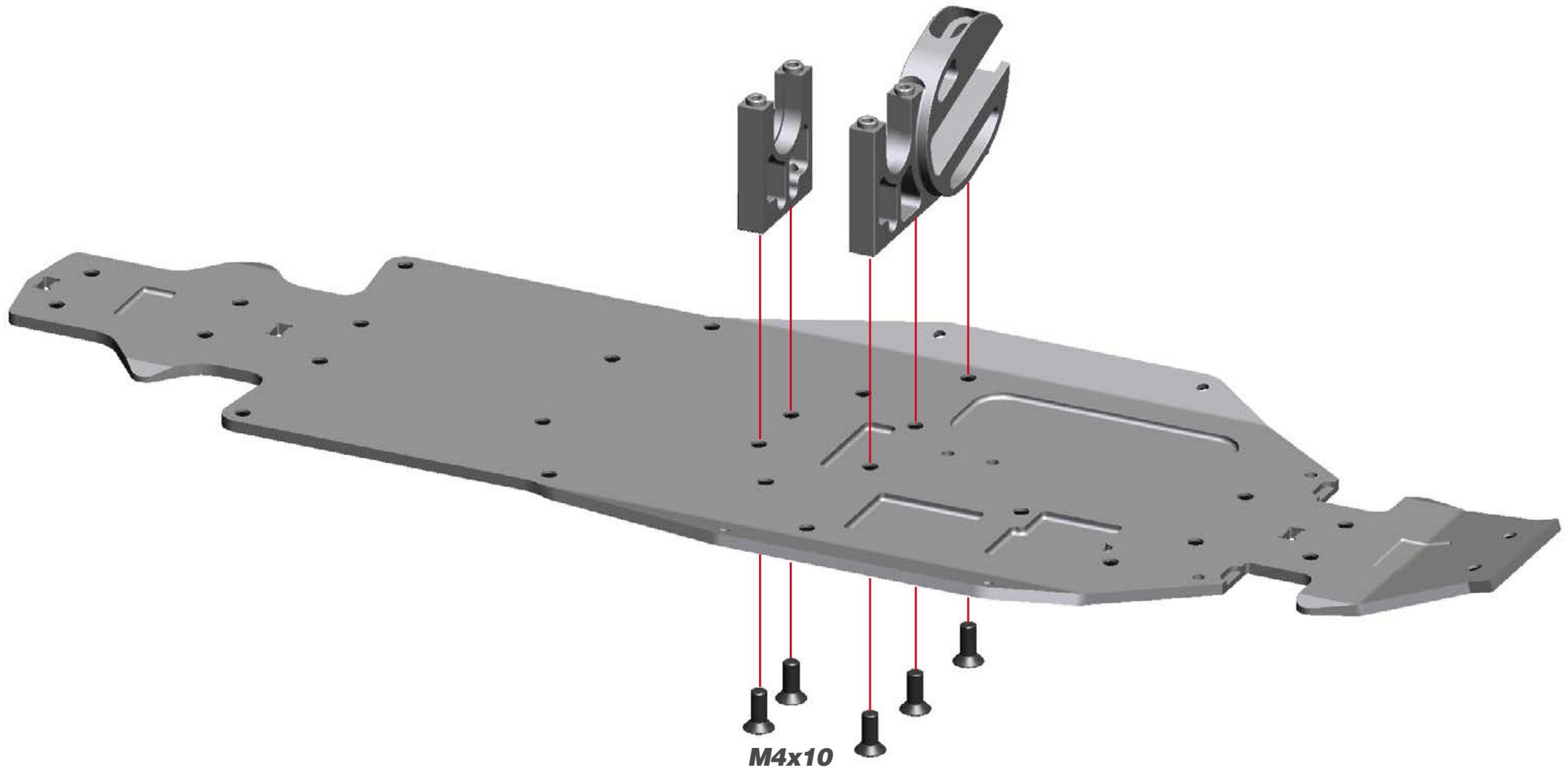


### 6.3



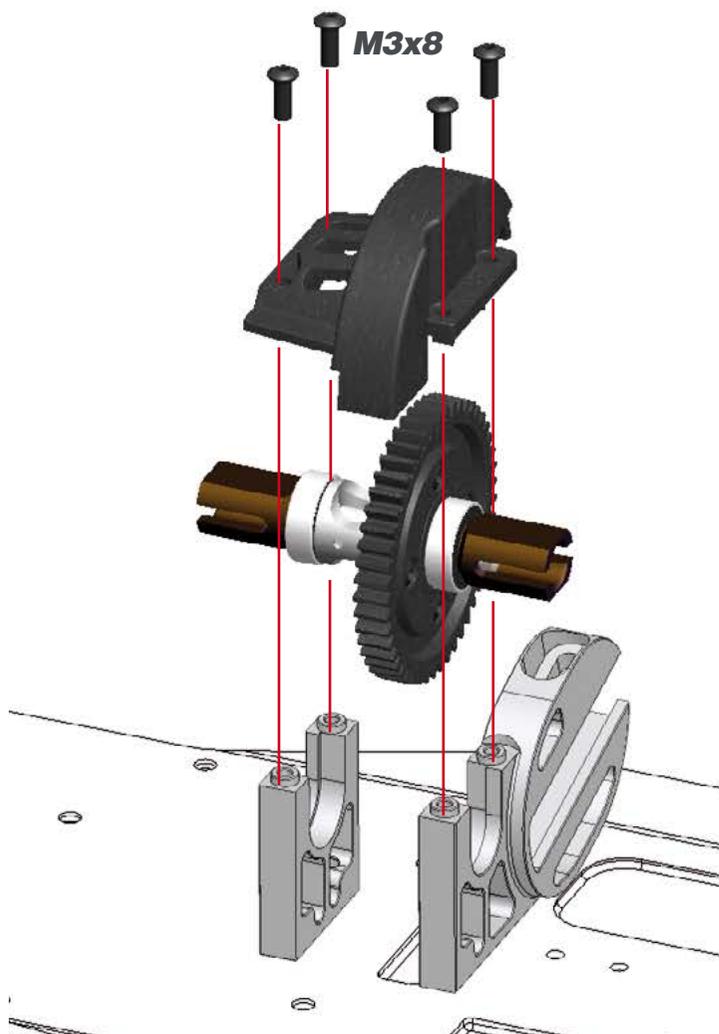
**STEP 7**

**BAG 1**

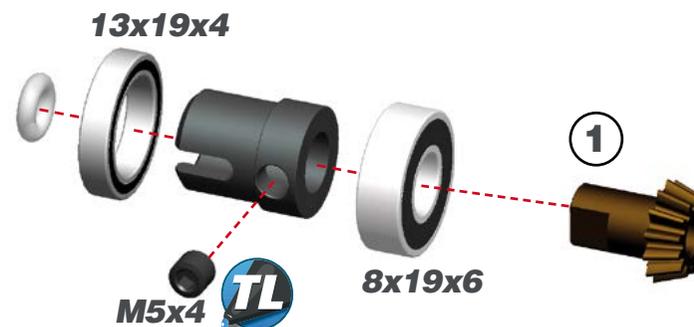


## STEP 8

## STEP 9 BAG 2



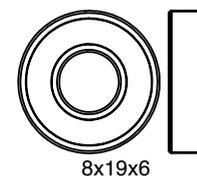
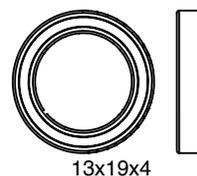
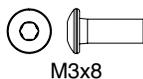
### 9.1



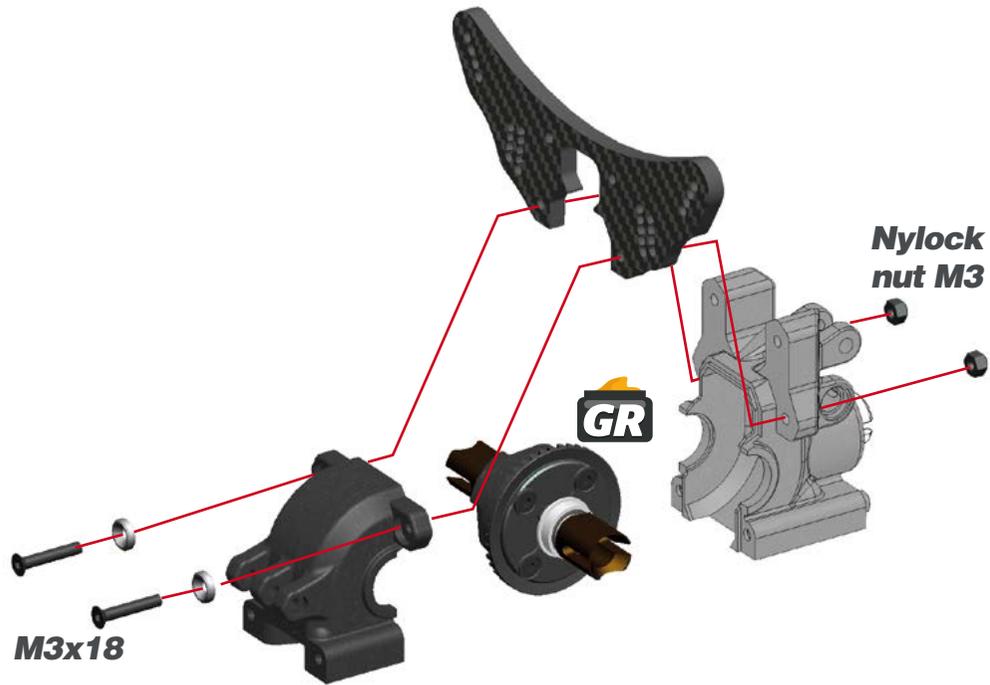
### 9.2



After building the differential with new gears a new differential case and bearings, the differential may feel a little tight. The connected parts need at least an hour run-time to create a perfect match. Attention: When you assemble the diff with too much initial play, the gears will not run-in properly and may wear quickly. After 1 or 2 hours of running the car, re-check the gear-mesh between the ring gear and the pinion. All parts should have run-in properly now. You may add one or more extra shims on the pinion or ring-gear, start off by placing 1 x 0.1mm more, and try again.



**STEP 10**

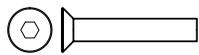
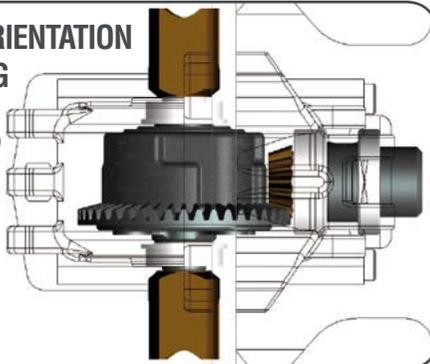


**REAR DIFF ORIENTATION AND SHIMMING**

Notes:

1) Use 14x15.6x0.2 shims to adjust proper gear mesh.

2) Notice orientation of differential.

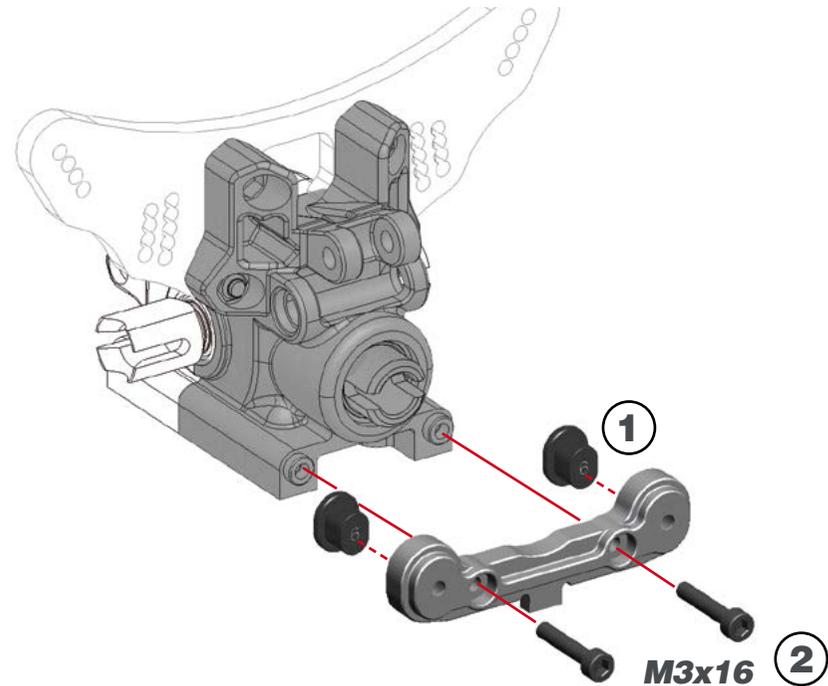


M3x18

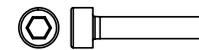
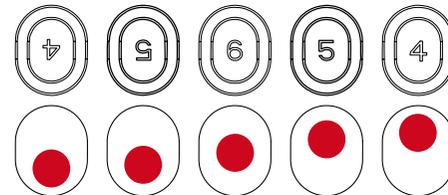


Nylock Nut M3

**STEP 11**

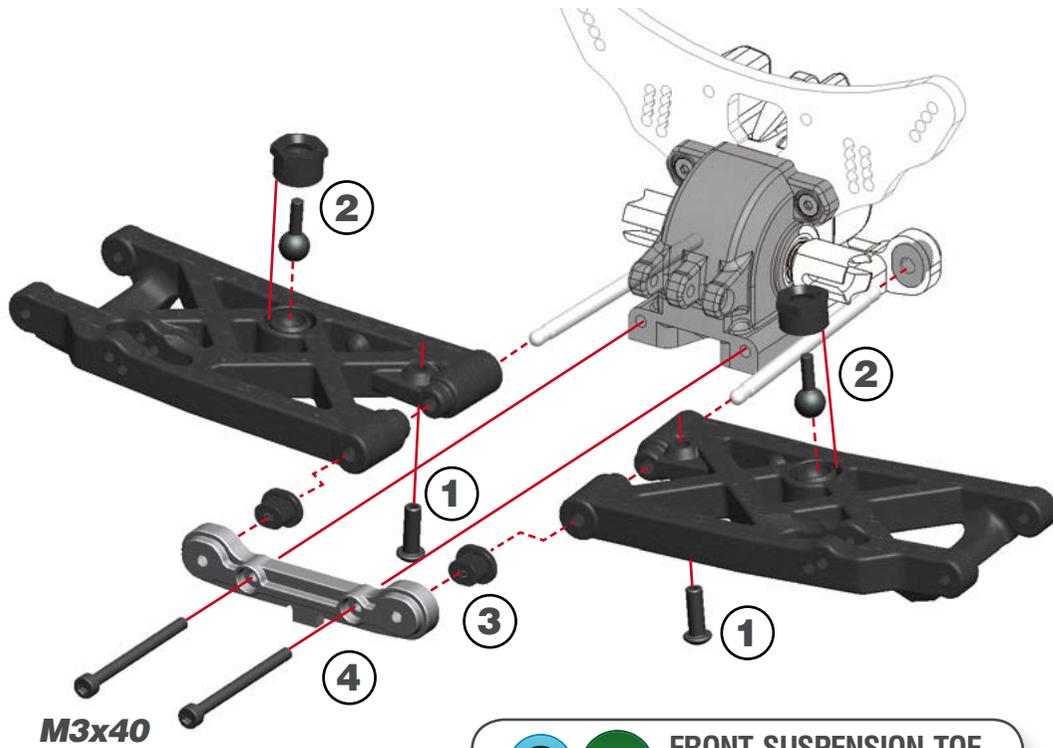


**FRONT SUSPENSION TOE IN INSERTS CHART**



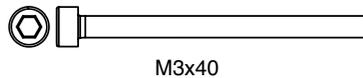
M3x16

**STEP 12**



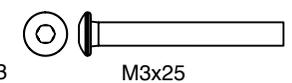
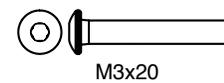
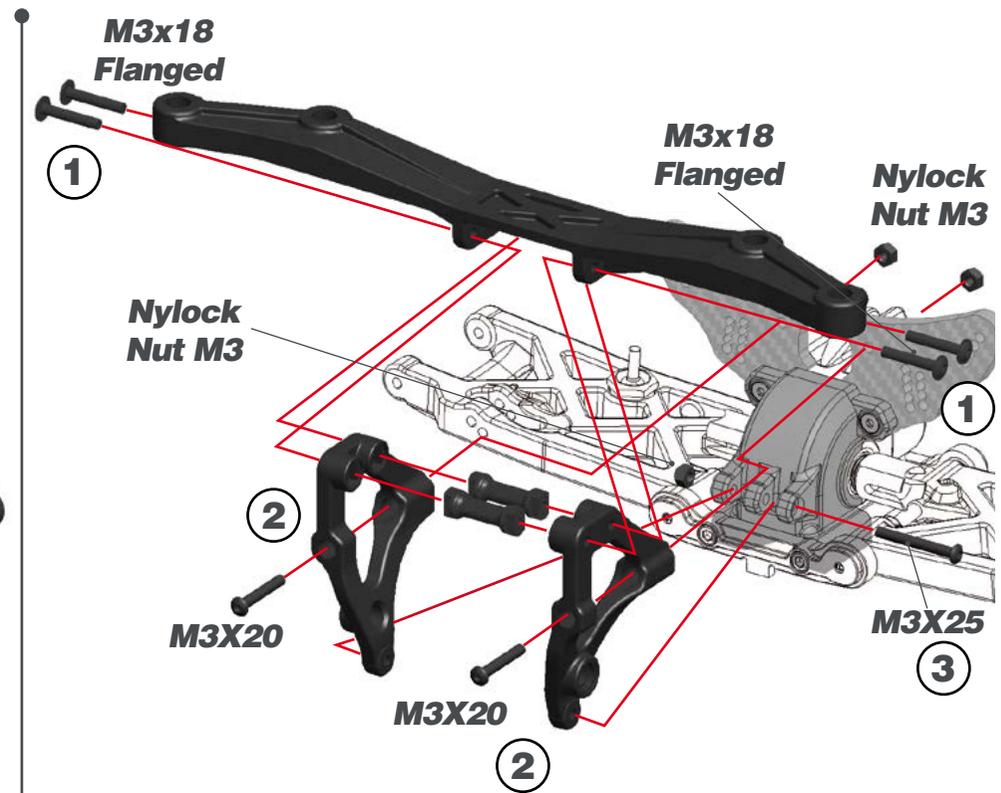
**L-R** FRONT SUSPENSION TOE IN INSERTS CHART


**DEF-SETUP**



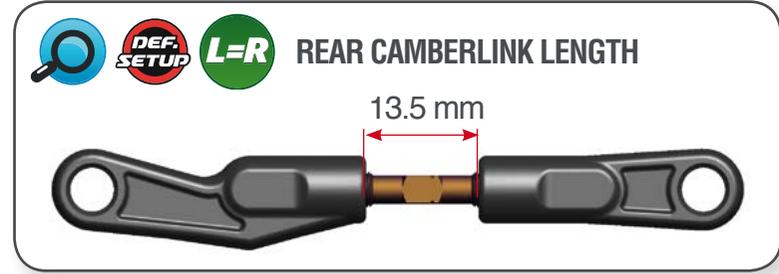
**STEP 13**

**BAG 3**

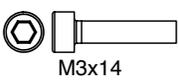
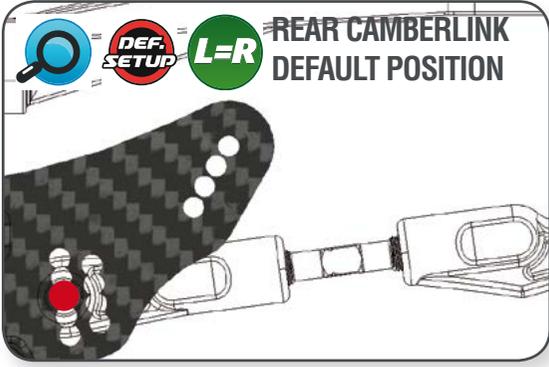
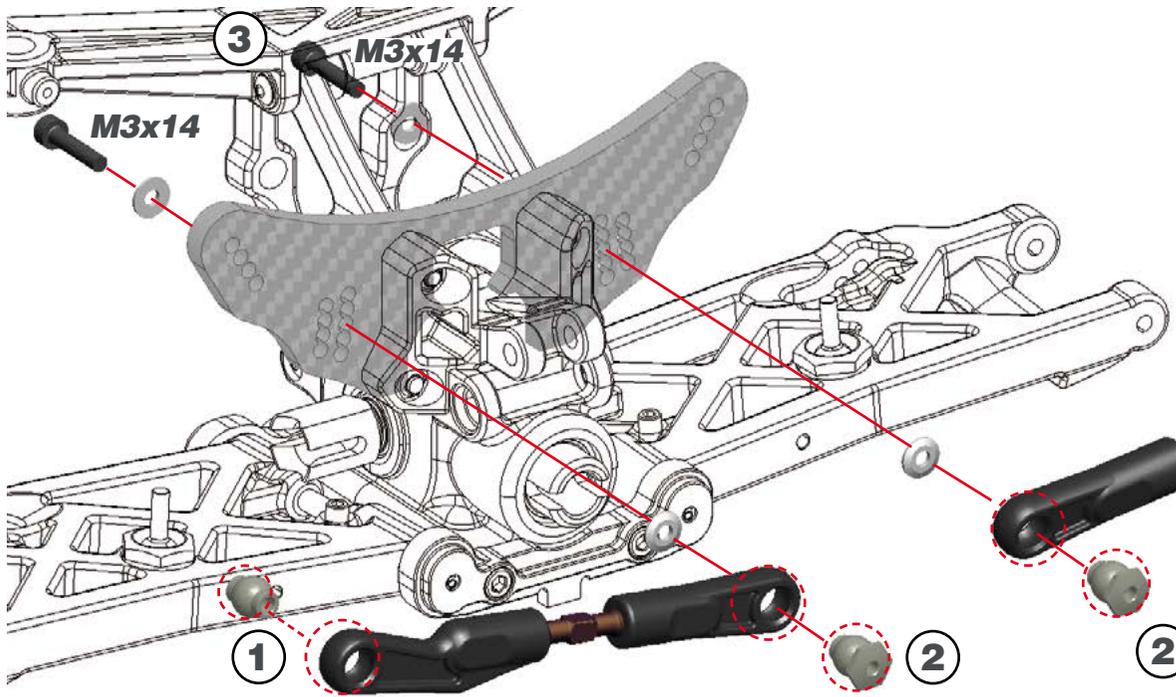


## STEP 14

### 14.1



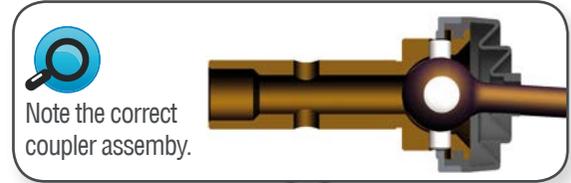
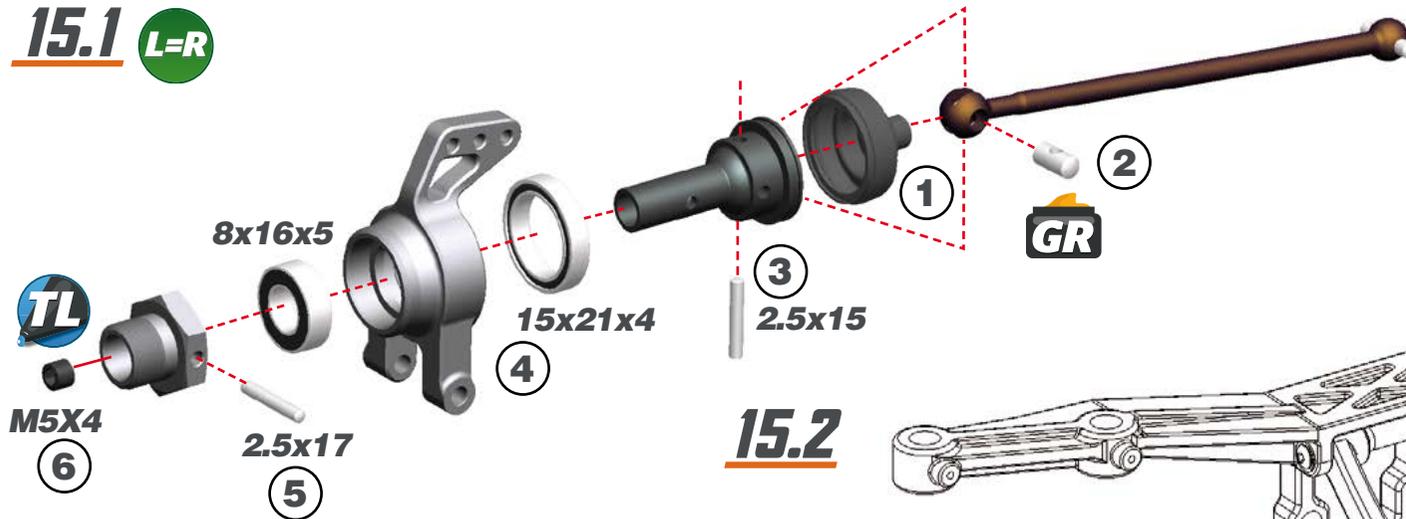
### 14.2



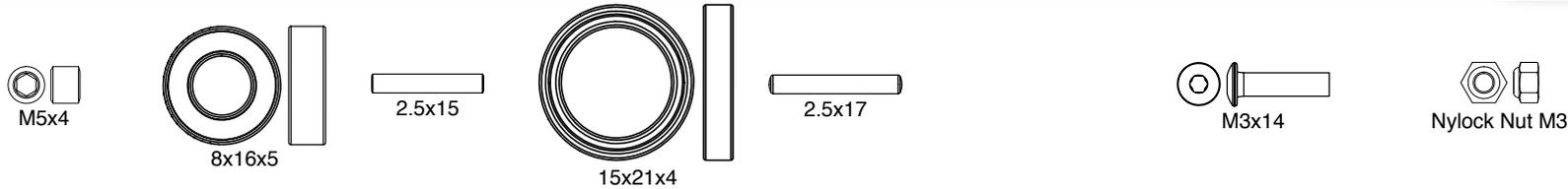
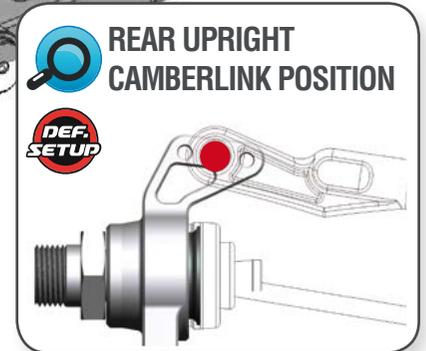
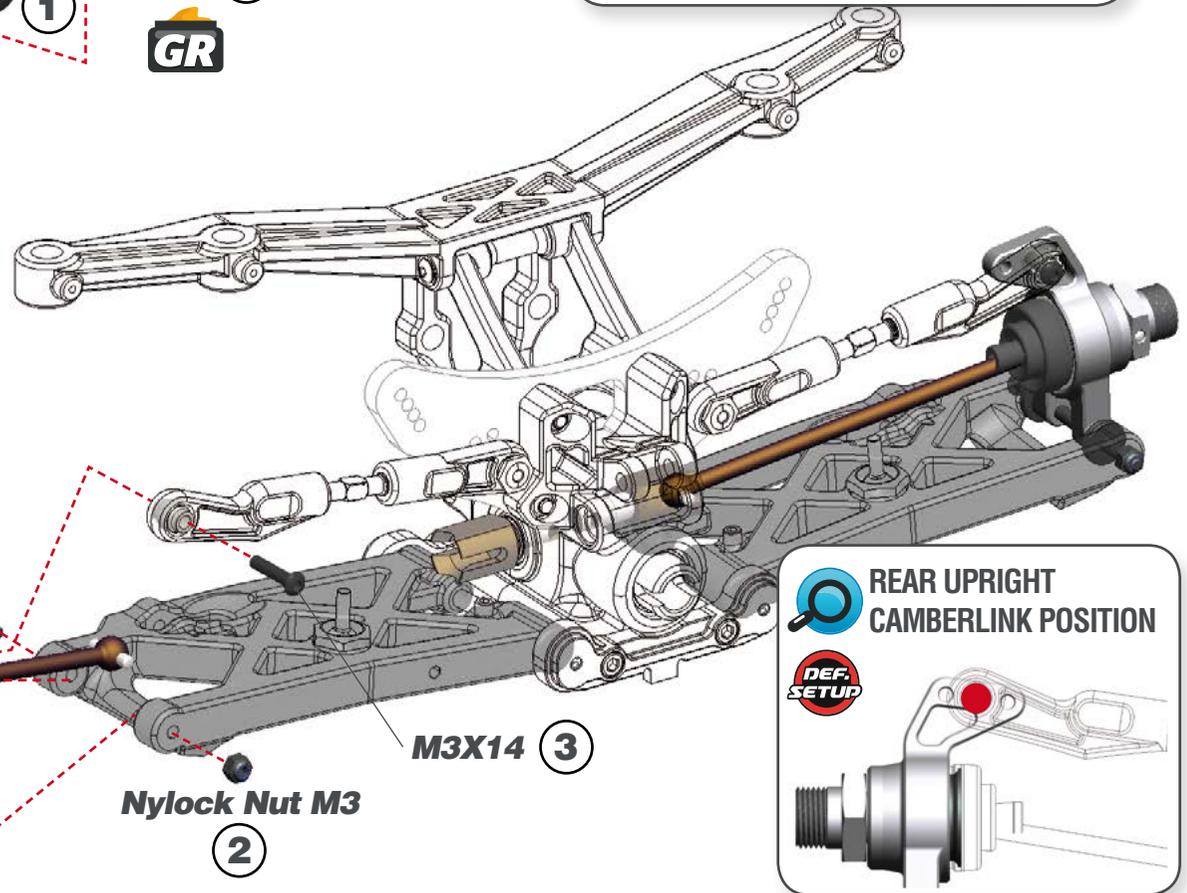
**STEP 15**

**BAG 4**

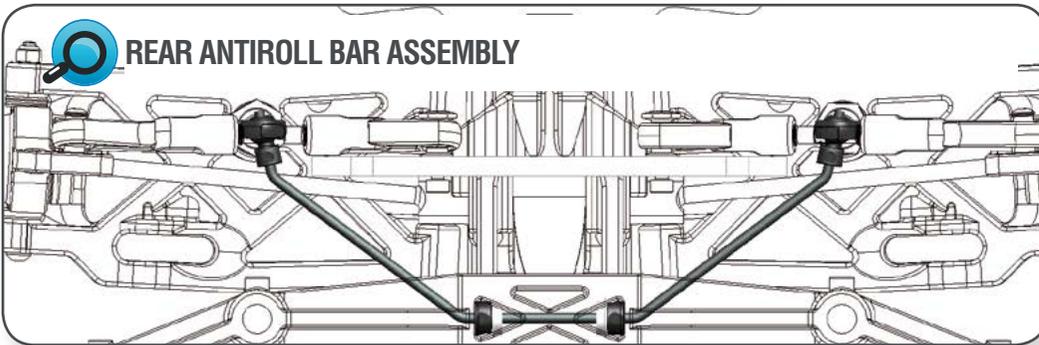
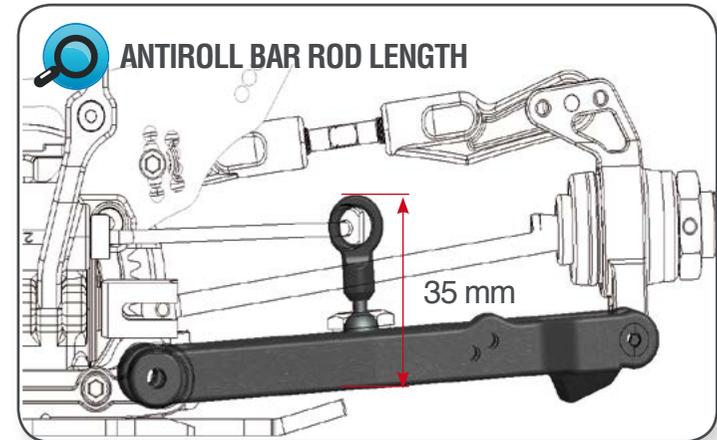
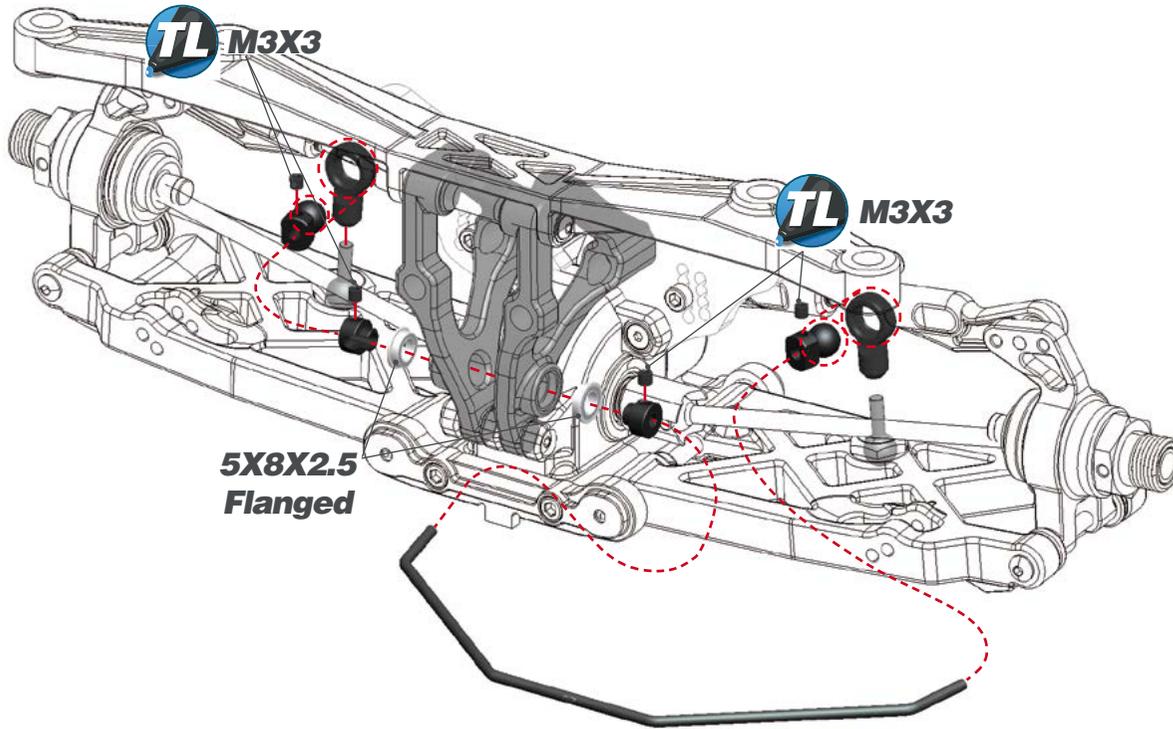
**15.1** **L=R**



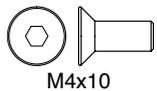
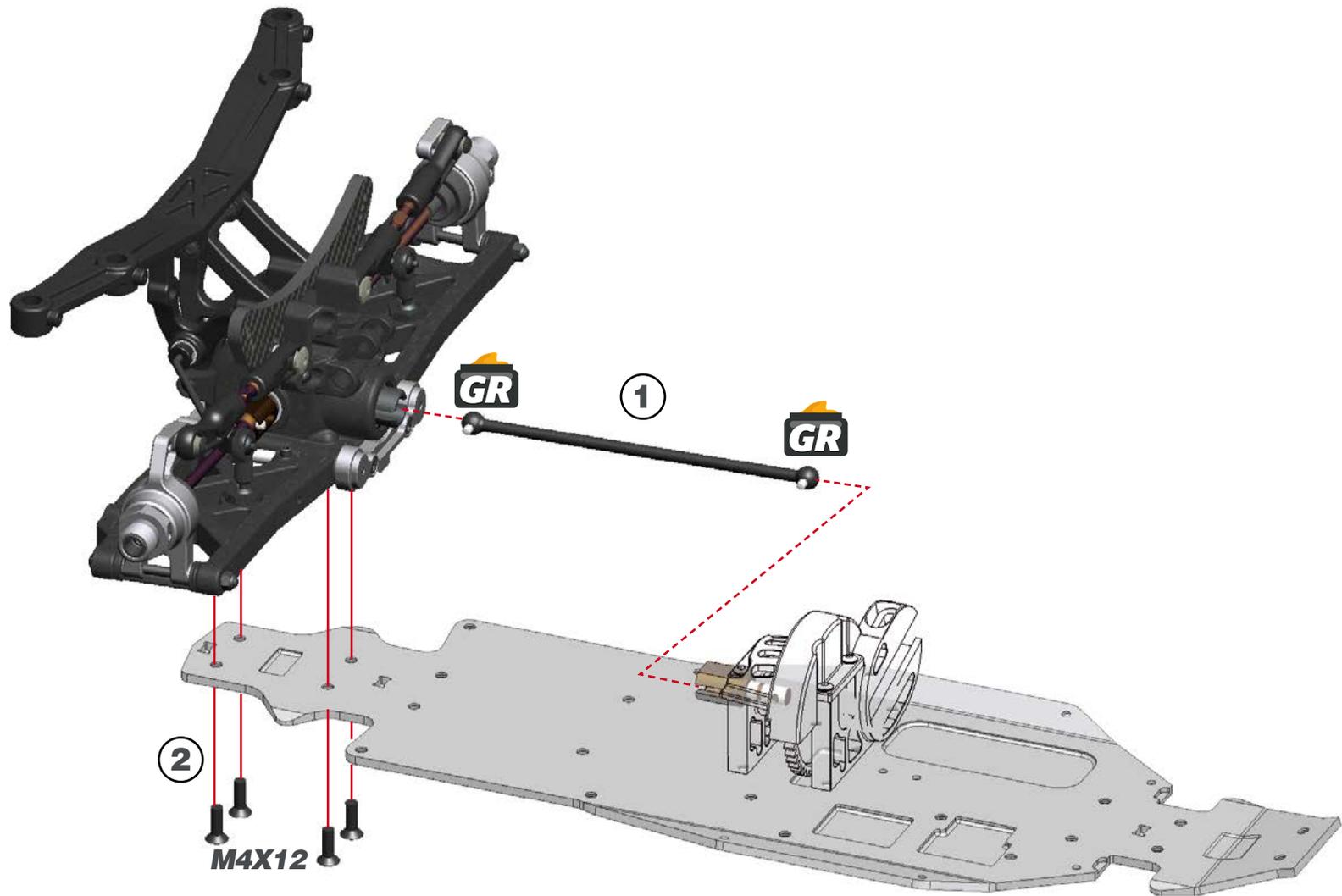
**15.2**



**STEP 16**



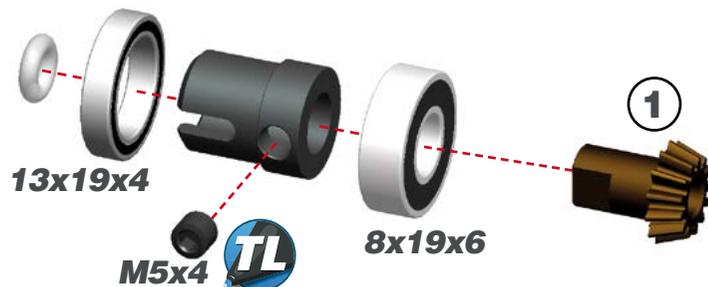
**STEP 17**



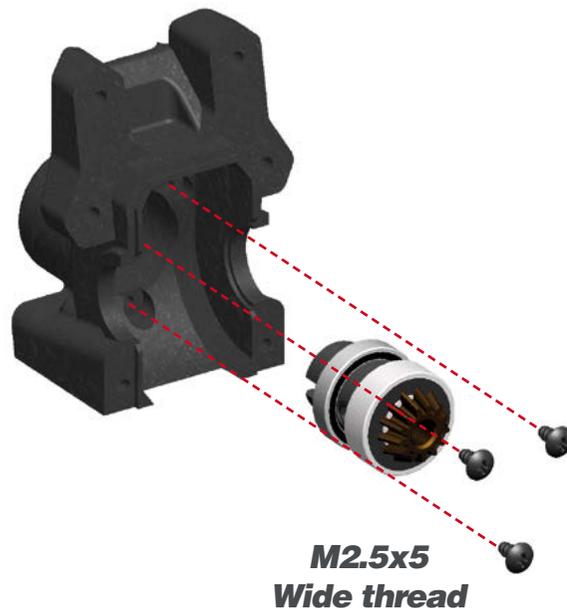
## STEP 18

BAG 5

### 18.1

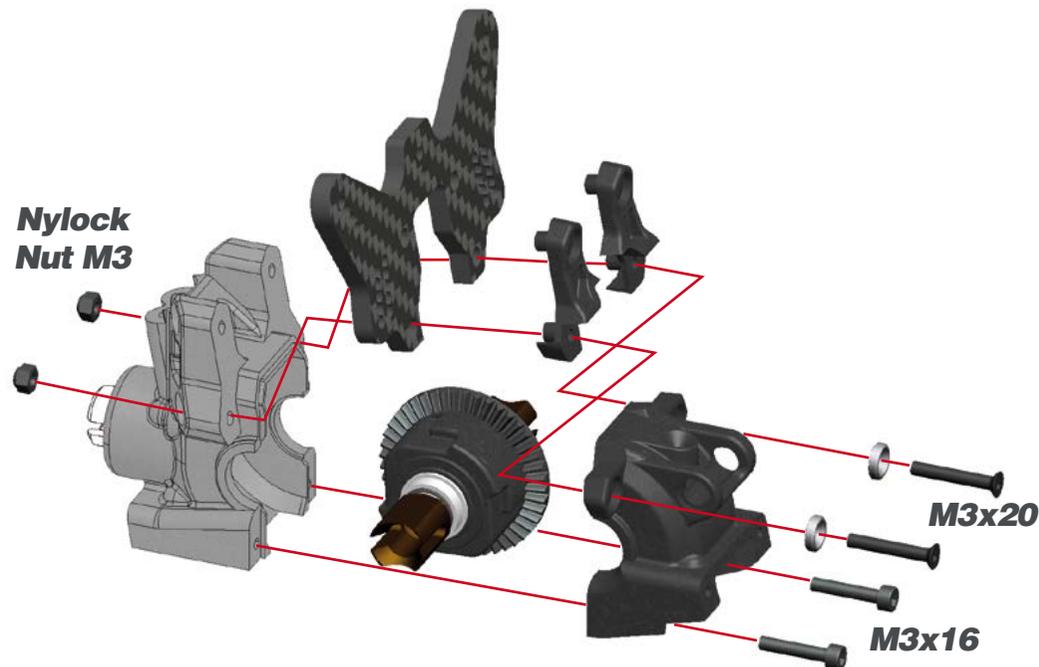


**18.1** After building the differential with new gears a new differential case and bearings, the differential may feel a little tight. The connected parts need at least an hour run-time to create a perfect match. Attention: When you assemble the diff with too much initial play, the gears will not run-in properly and may wear quickly. After 1 or 2 hours of running the car, re-check the gear-mesh between the ring gear and the pinion. All parts should have run-in properly now. You may add one or more extra shims on the pinion or ring-gear, start of by placing 1 x 0.1mm more, and try again.



## STEP 19

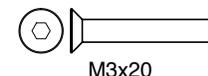
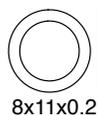
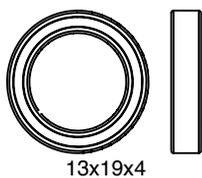
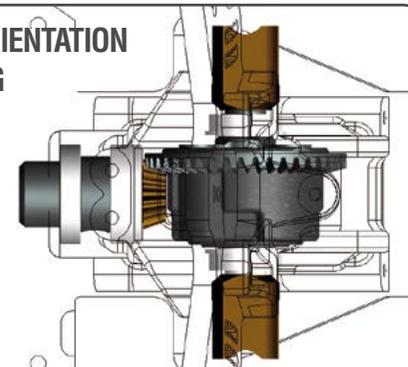
Nylock Nut M3



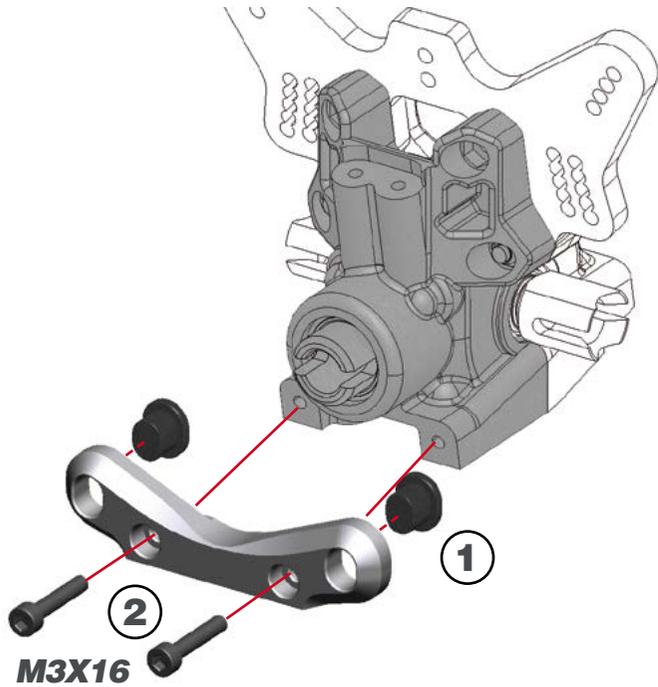
### FRONT DIFF ORIENTATION AND SHIMMING

Notes:

- 1) Use 14x15.6x0.2 shims to adjust proper gear mesh.
- 2) Notice orientation of differential.



**STEP 20**



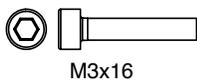
M3X16

**REAR SUSPENSION KICKUP INSERTS CHART**

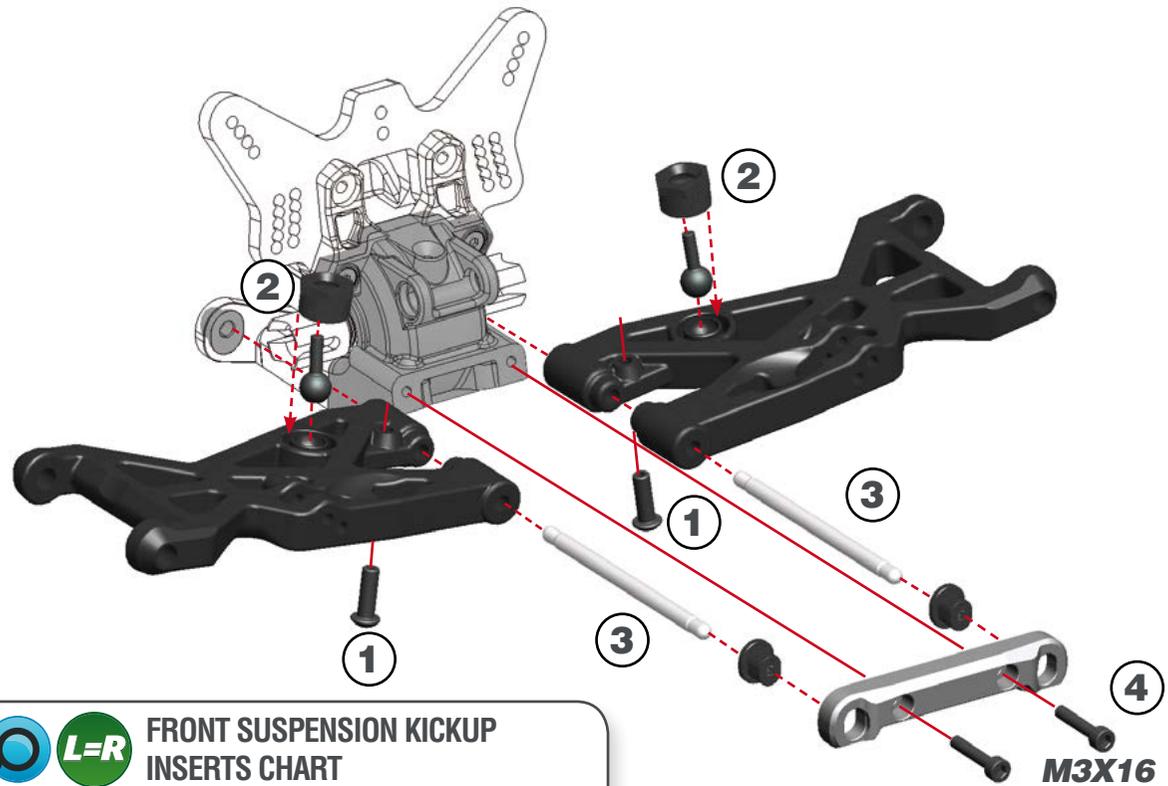
**L=R**

ε	2	1	0	1	2	3
●	●	●	●	●	●	●

**DEF. SETUP**



**STEP 21**



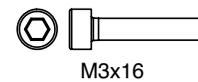
M3X16

**FRONT SUSPENSION KICKUP INSERTS CHART**

**L=R**

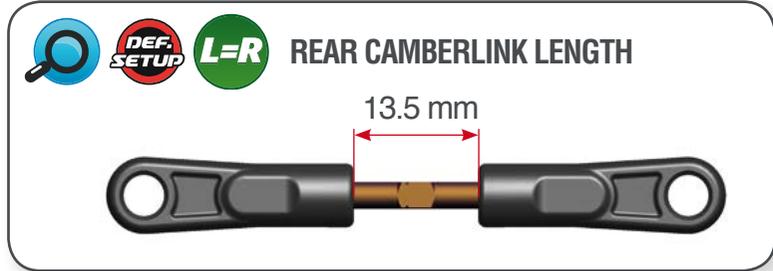
ε	2	1	0	1	2	3
●	●	●	●	●	●	●

**DEF. SETUP**

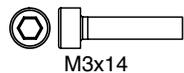
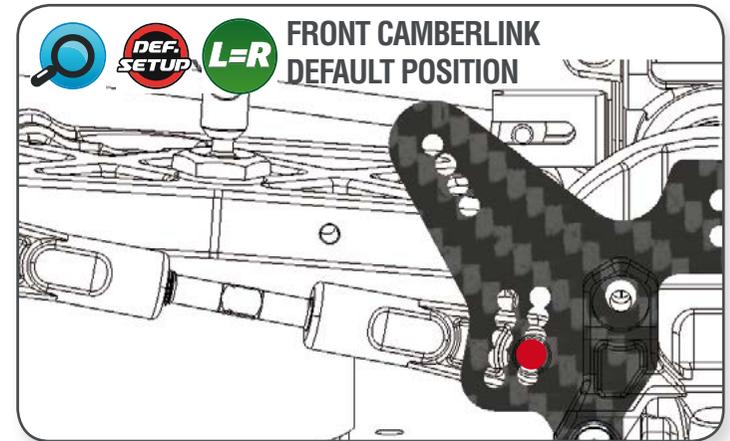
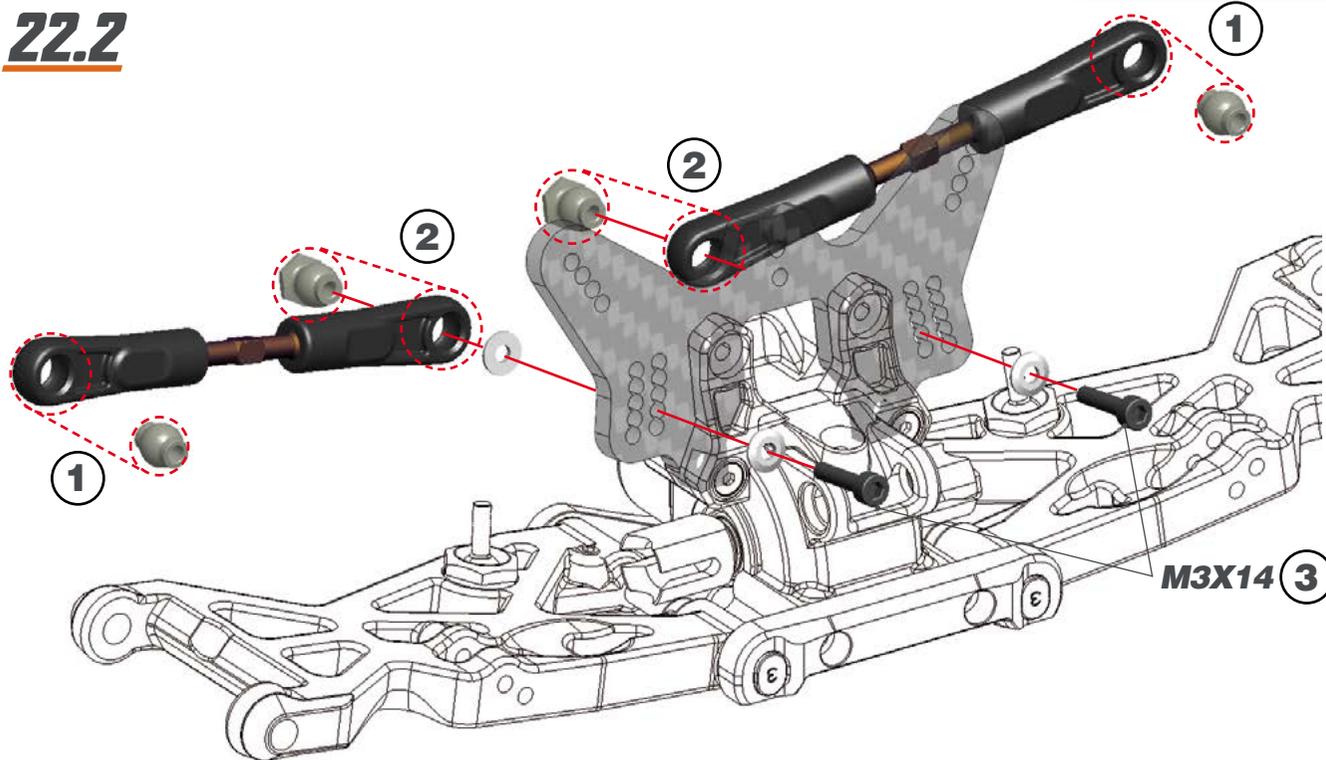


STEP 22

22.1



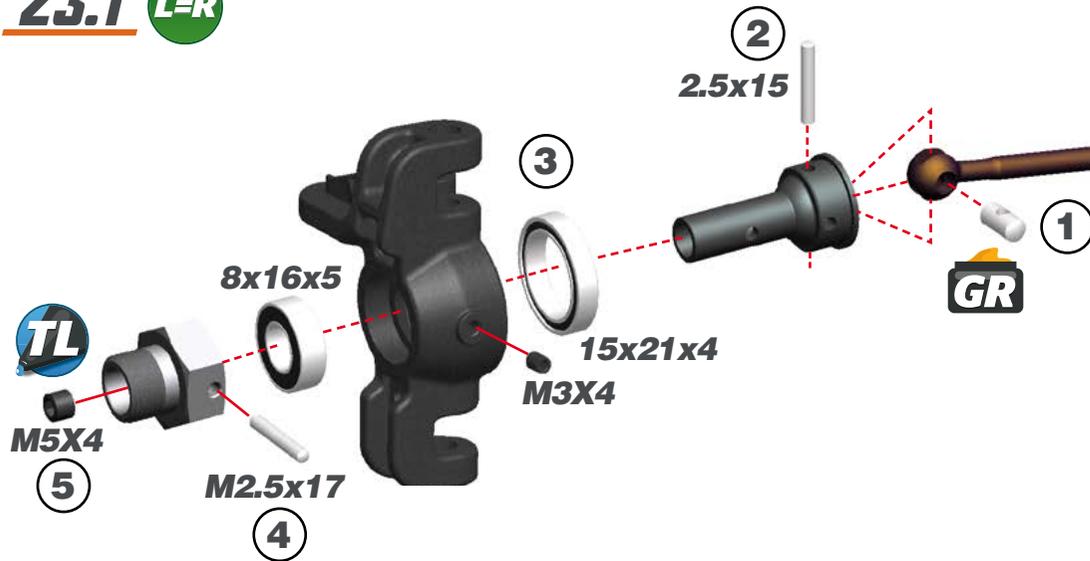
22.2



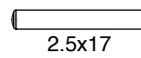
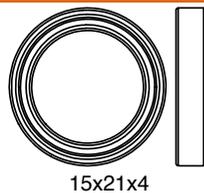
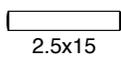
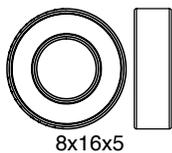
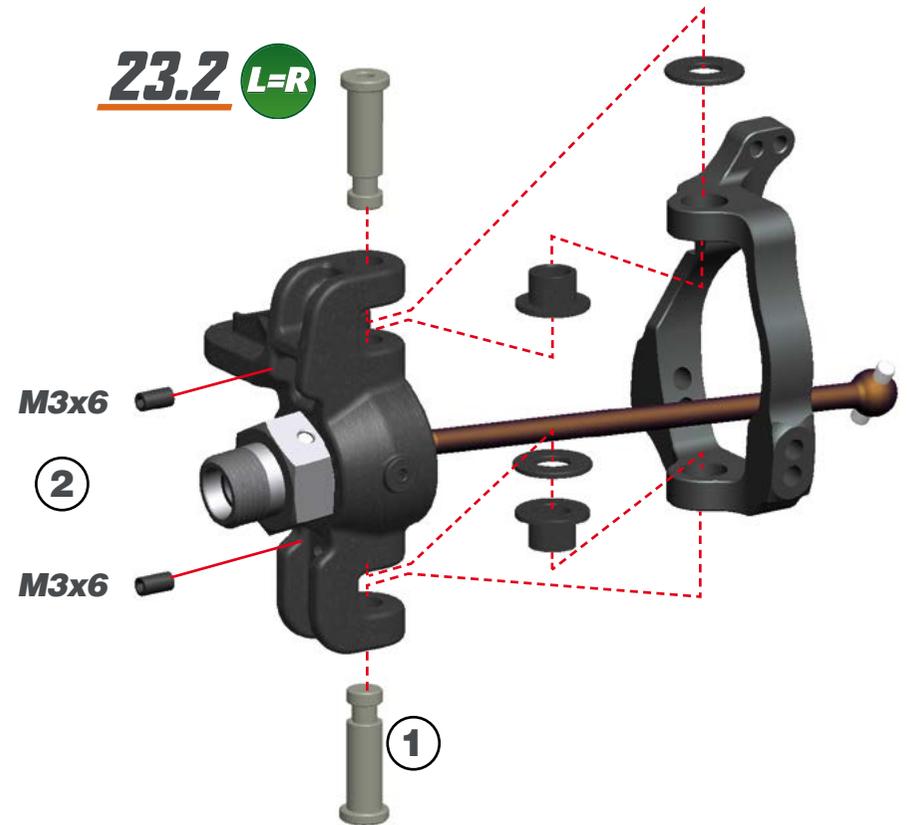
**STEP 23**

**BAG 6**

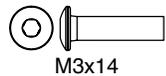
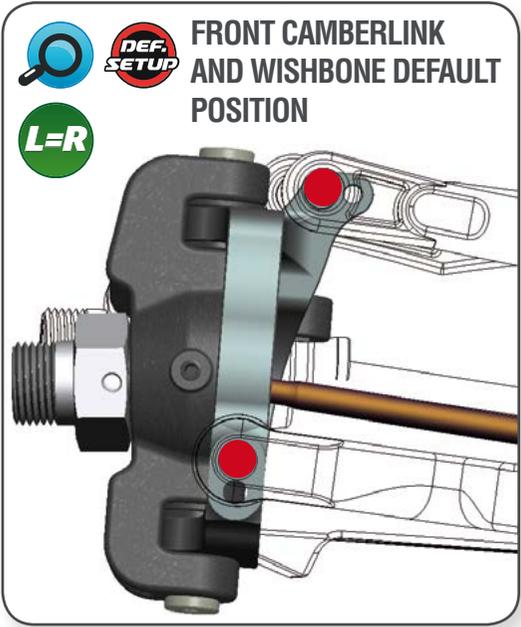
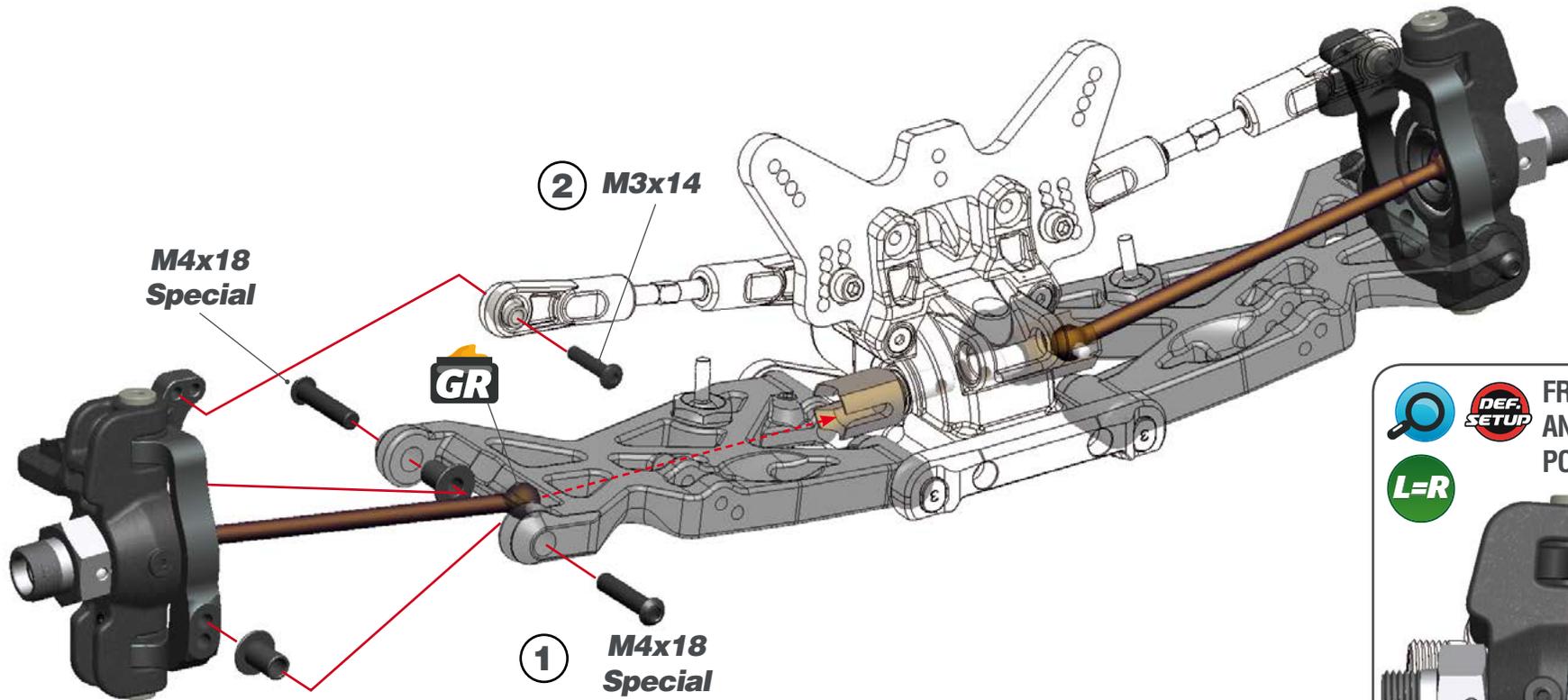
**23.1** L=R



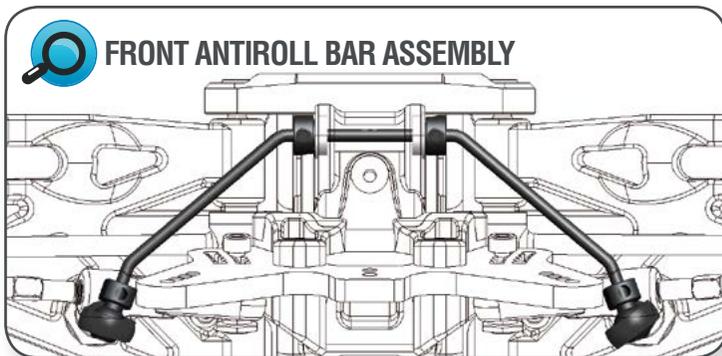
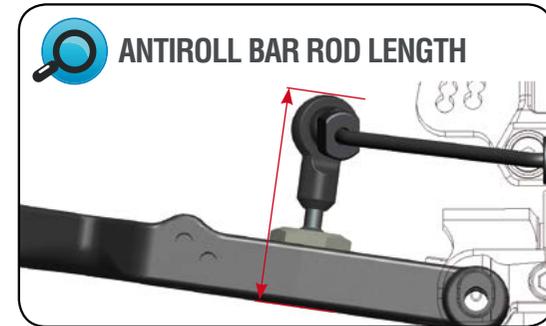
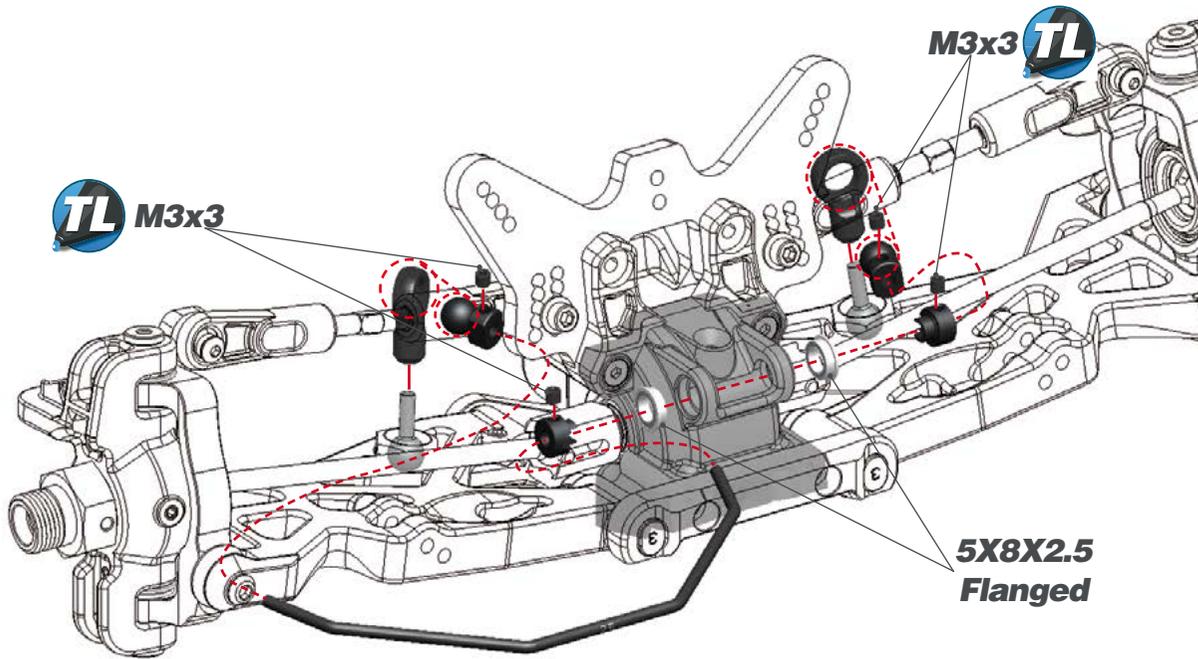
**23.2** L=R



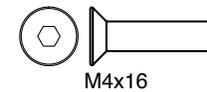
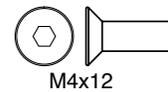
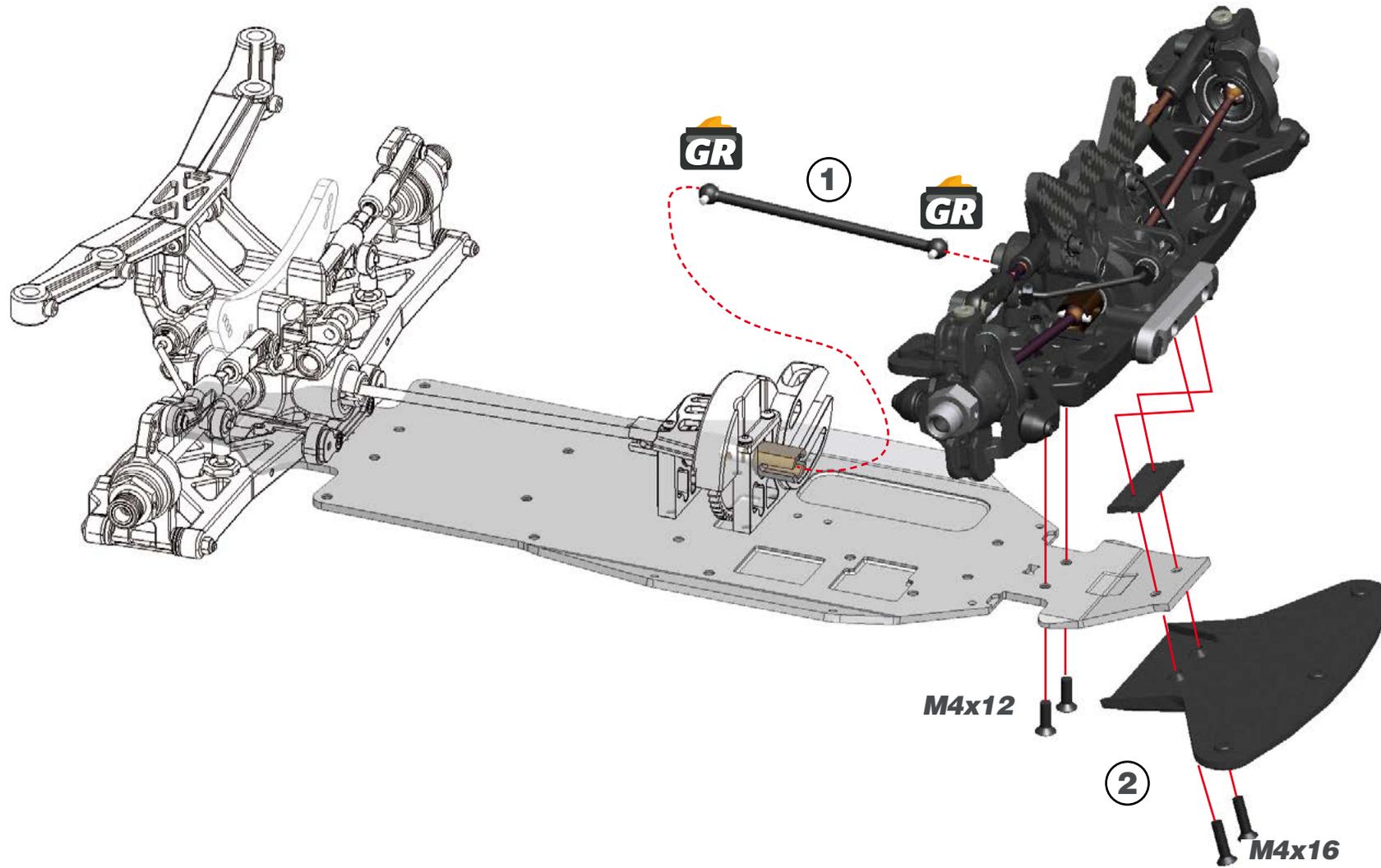
**STEP 24**



**STEP 25**

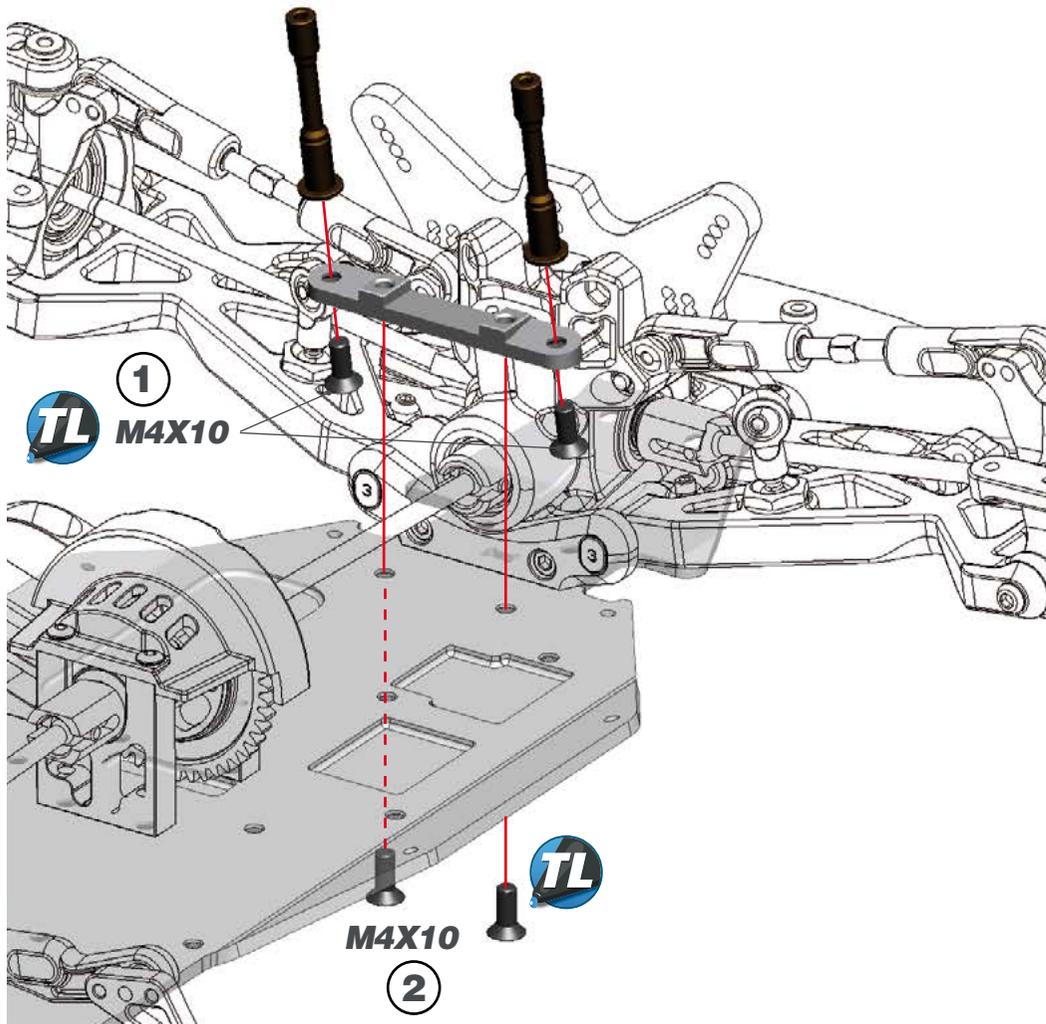


**STEP 26**

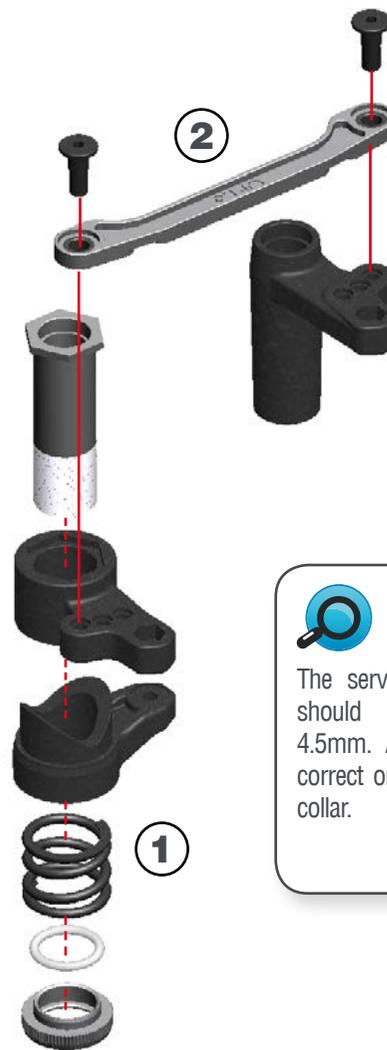


## STEP 27

BAG 7

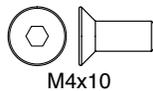


## STEP 28



The servo saver spring should be preloaded 4.5mm. Also notice the correct orientation of the collar.

4.5 mm



**STEP 29**

**29.1**



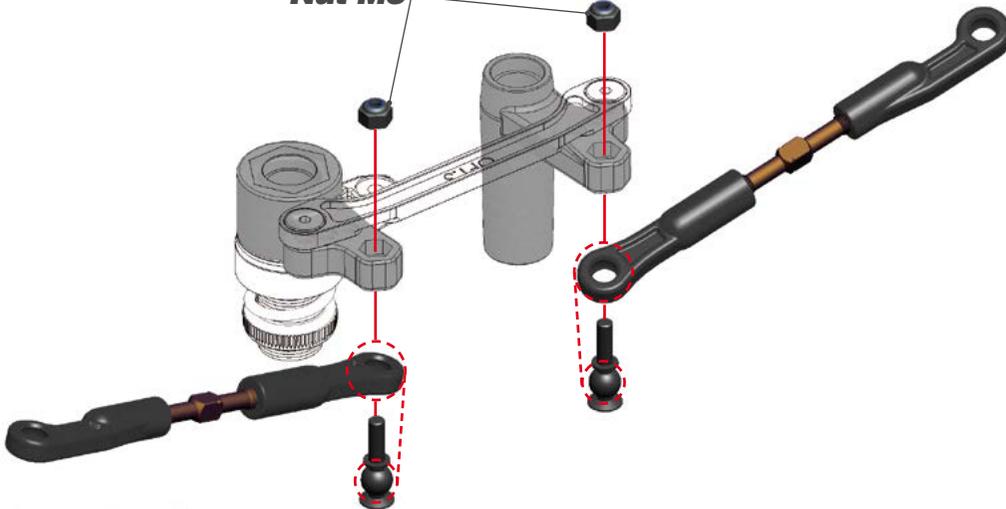
STEERING TRACKROD LENGTH

21 mm

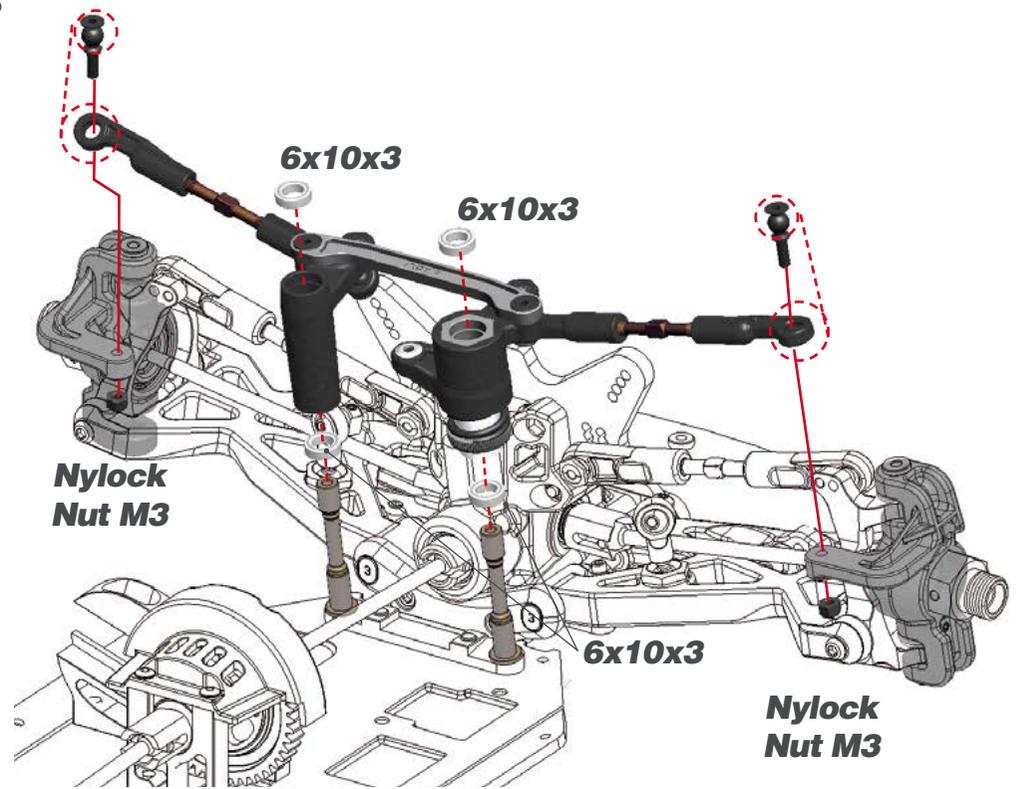


**29.2**

Nylock Nut M3



**STEP 30**



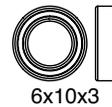
6x10x3

6x10x3

Nylock Nut M3

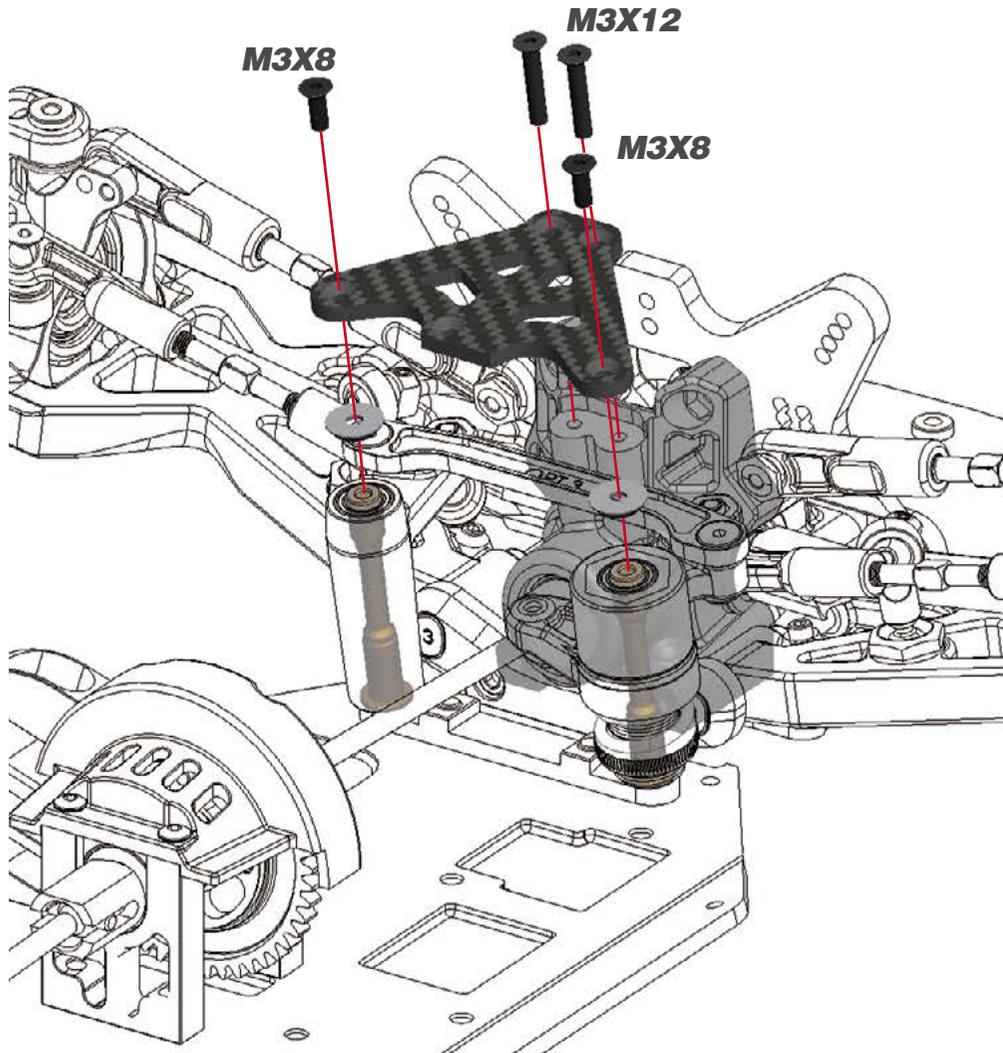
6x10x3

Nylock Nut M3



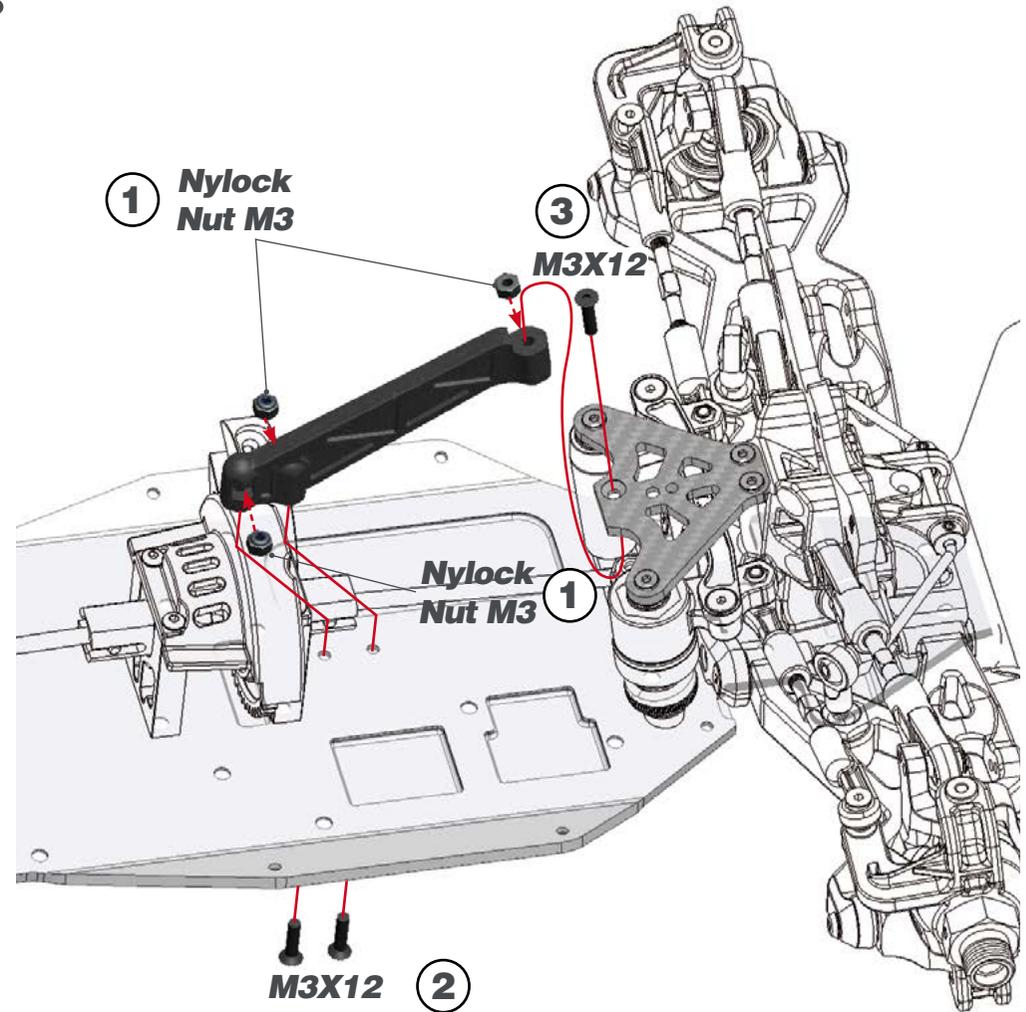
Nylock Nut M3

**STEP 31**

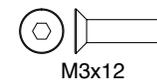
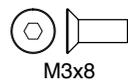
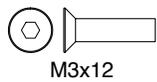


**M3X8**  
**M3X12**  
**M3X8**

**STEP 32**

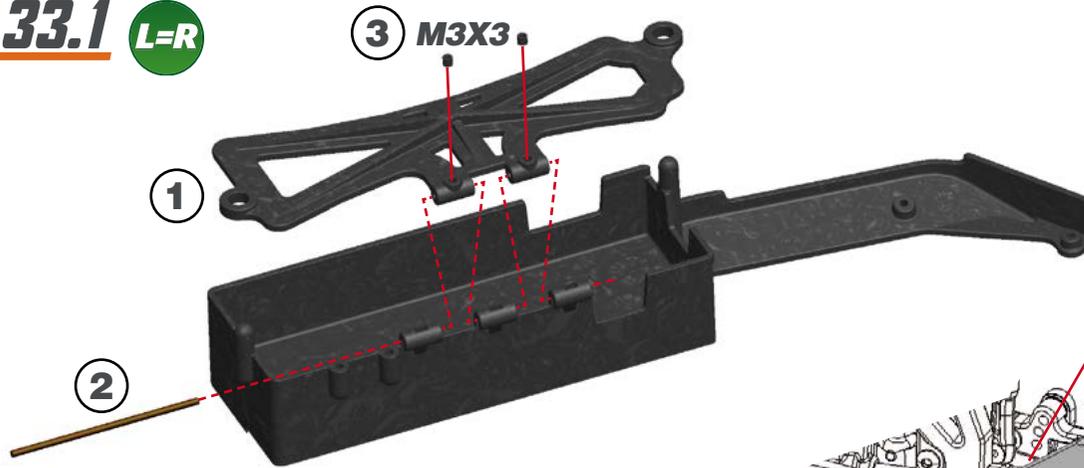


**1** **Nylock Nut M3**  
**M3X12**  
**3**  
**Nylock Nut M3** **1**  
**M3X12** **2**

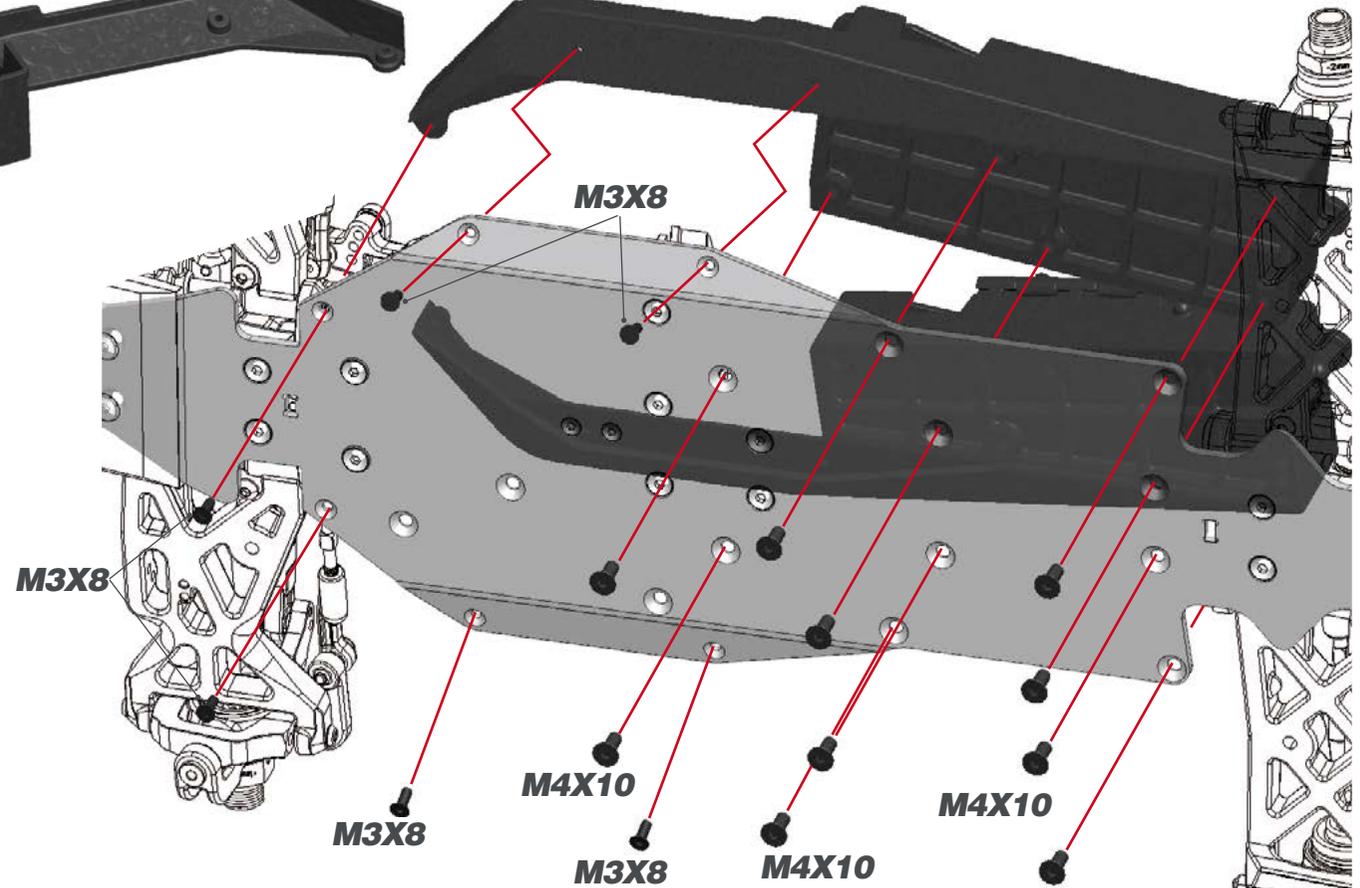


## STEP 33 BAG 8

**33.1** L=R



**33.2**



M3x3



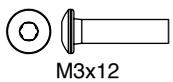
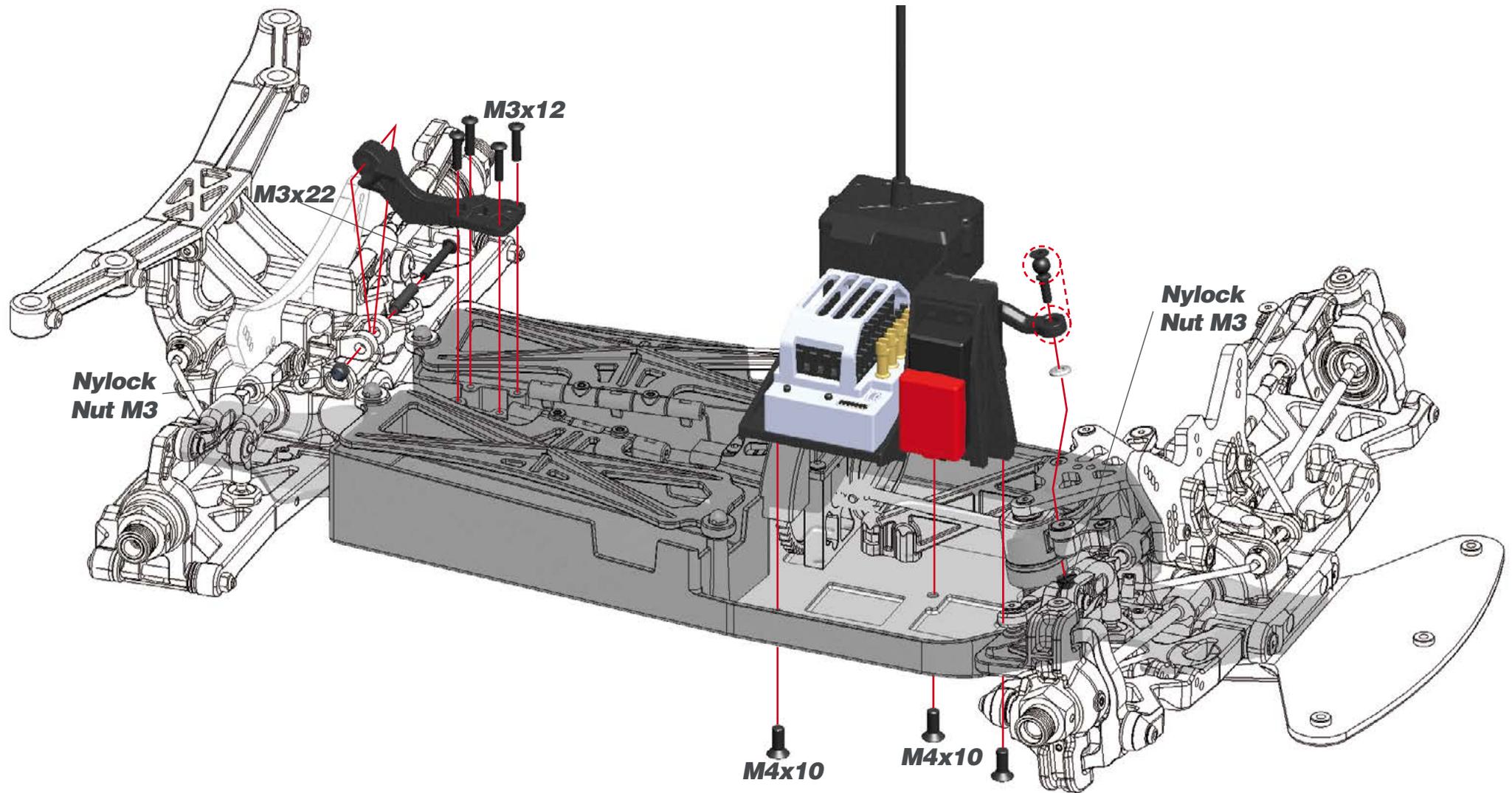
M3x8



M3x10



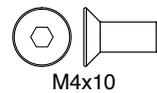
**STEP 37**



M3x12



M3x22



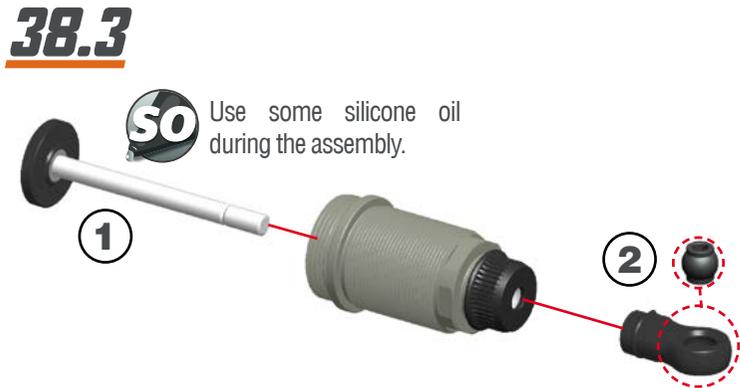
M4x10



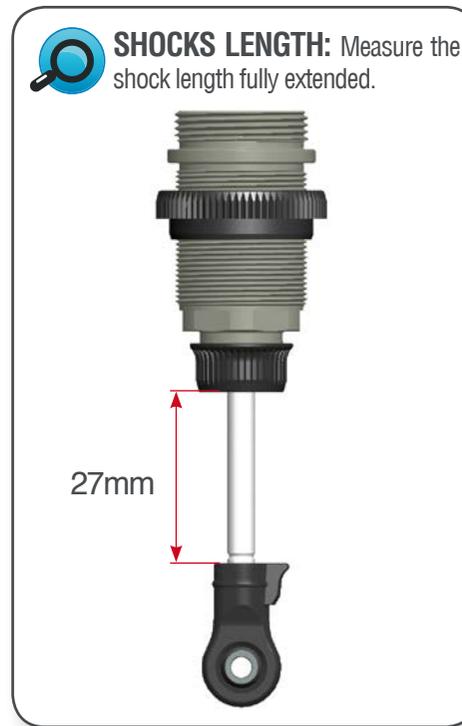
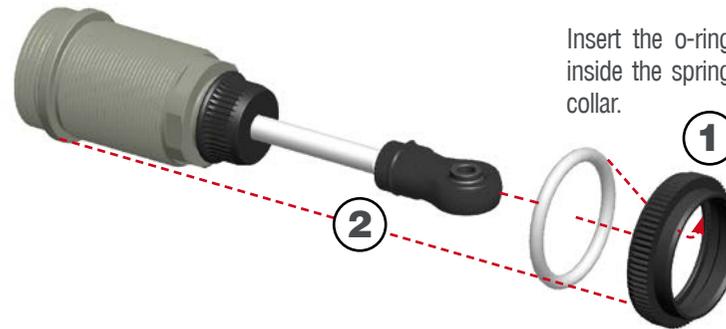
Nylock Nut M3

## STEP 38

### SHOCK BAG



## STEP 39



## STEP 40

- 1- Fill up with silicone oil fully using the silicone oil supplied in the kit. For the correct cst value please check the default setupsheet.
- 2- Extend the shockrod fully
- 3- Move the shockrod slowly up and down to let ALL air bubbles escape.



**STEP 41****41.1**

Push the membrane into the shock cap.

**41.2**

Close top step by step only 3/4

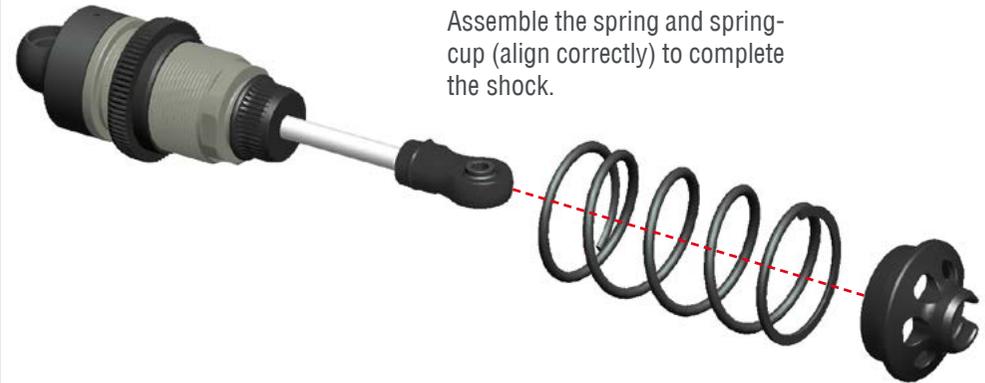
**STEP 42**

1-Bleed: push the shock-rod all the way in slowly, to allow excessive oil to escape.

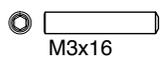
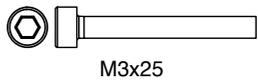
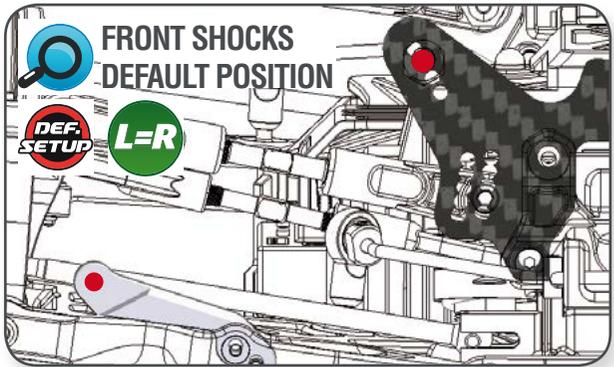
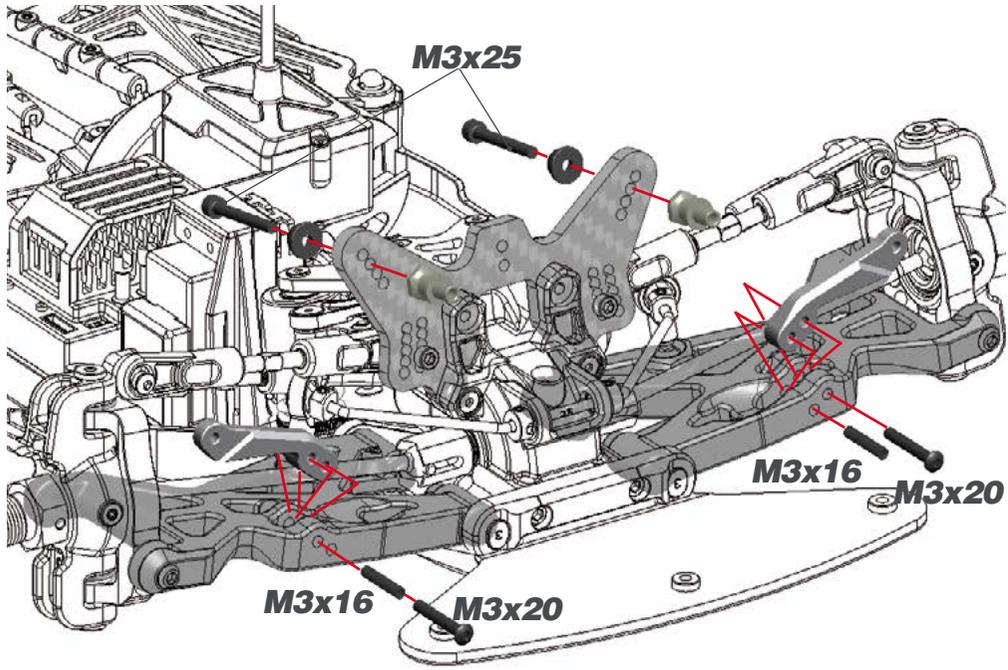
2- With shockrod fully in, close fullu the shock cap.

**STEP 43**

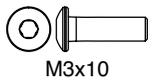
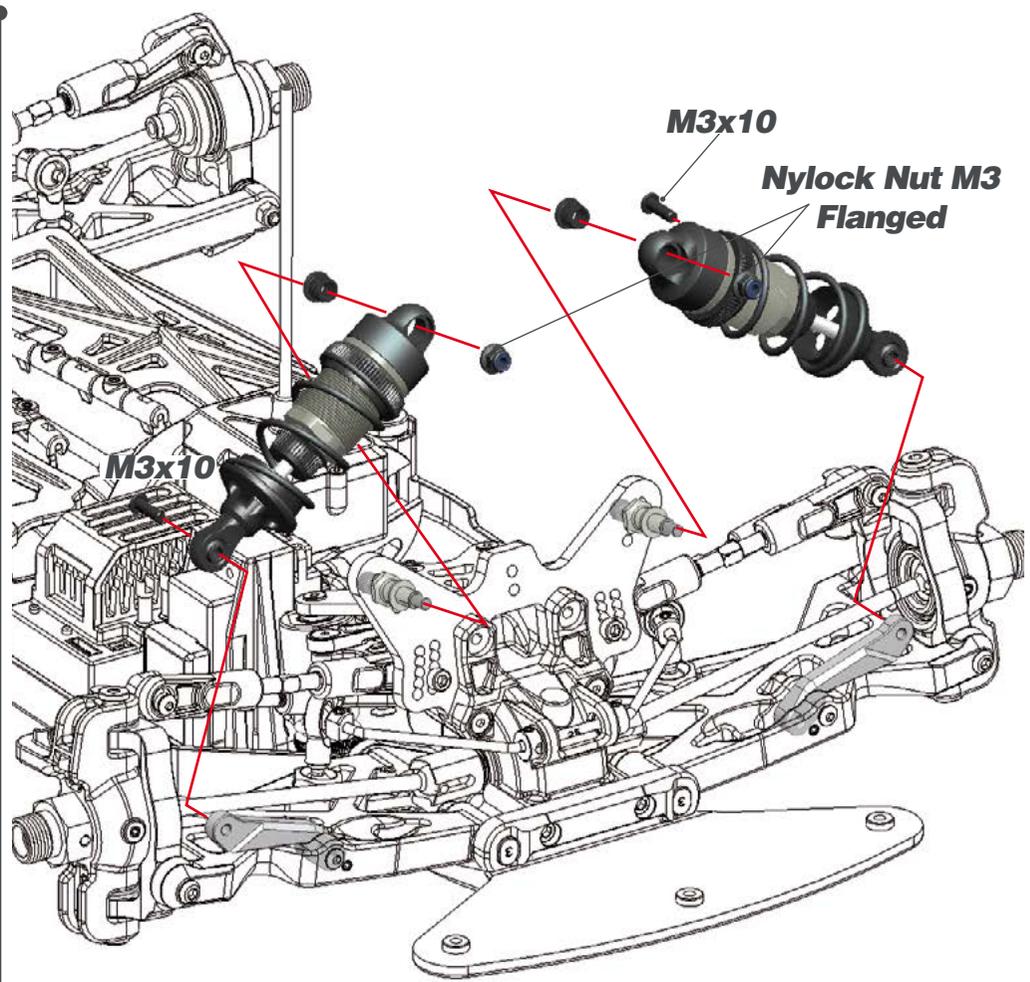
Assemble the spring and spring-cup (align correctly) to complete the shock.



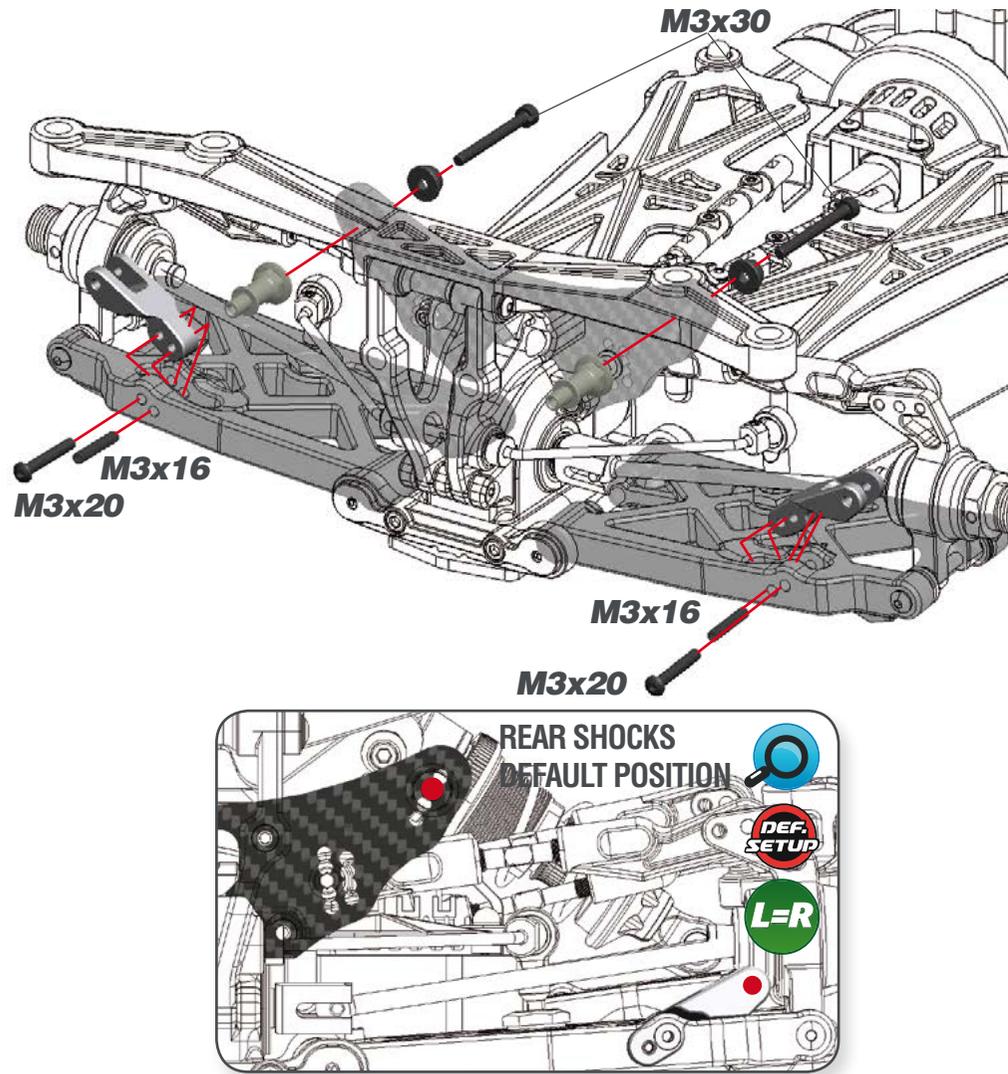
**STEP 44**



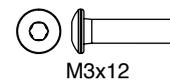
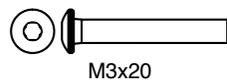
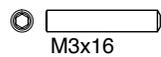
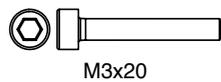
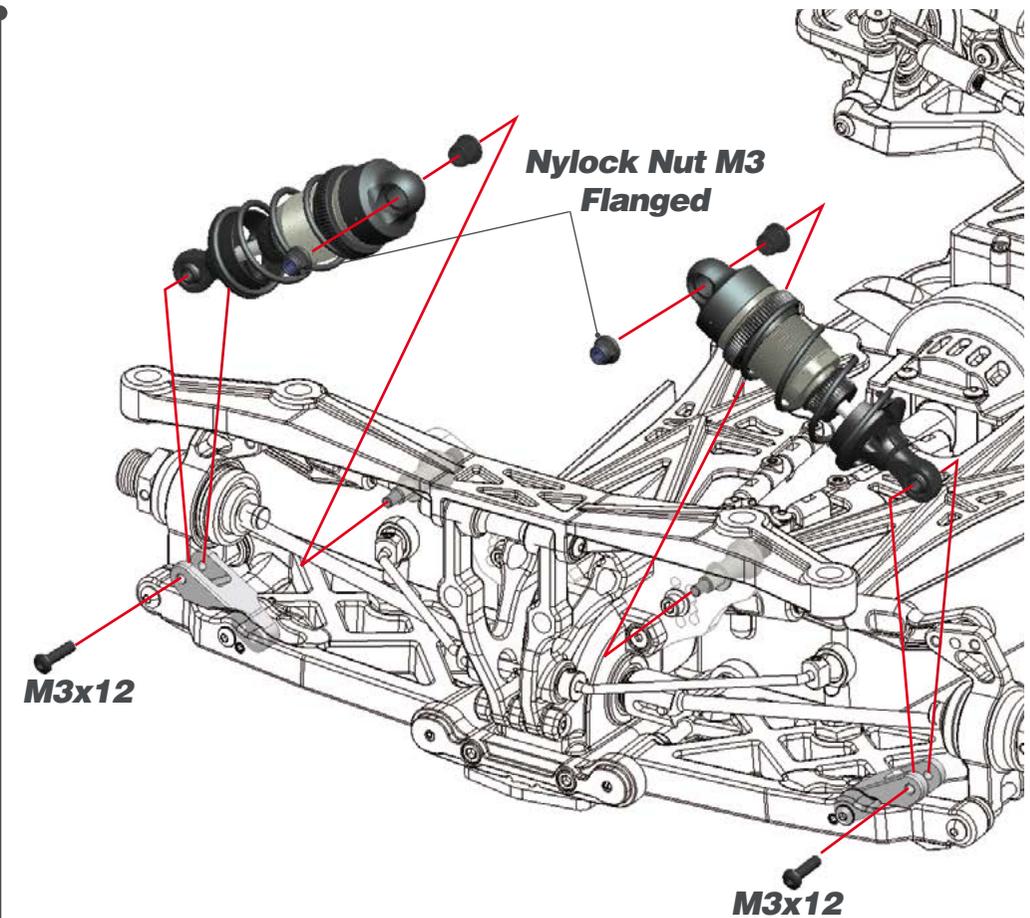
**STEP 45**



**STEP 46**

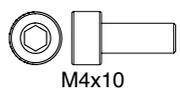
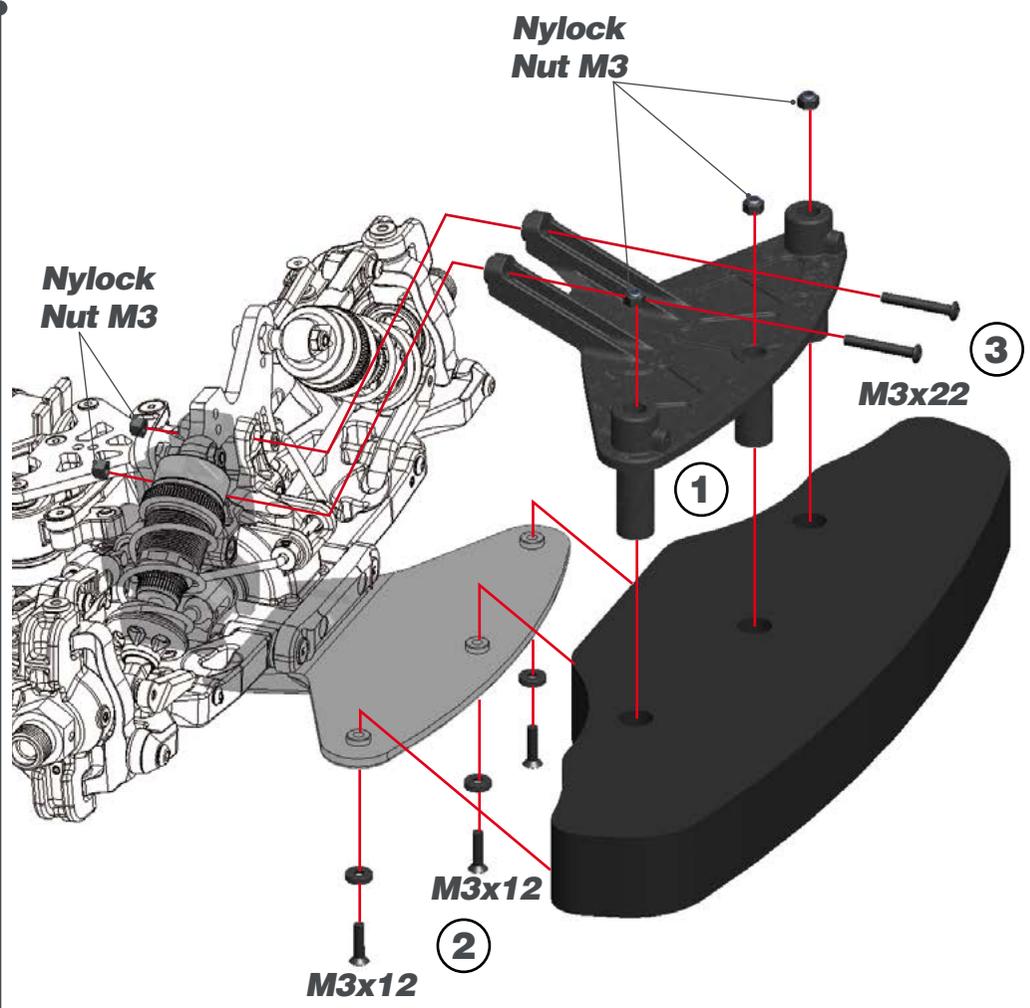
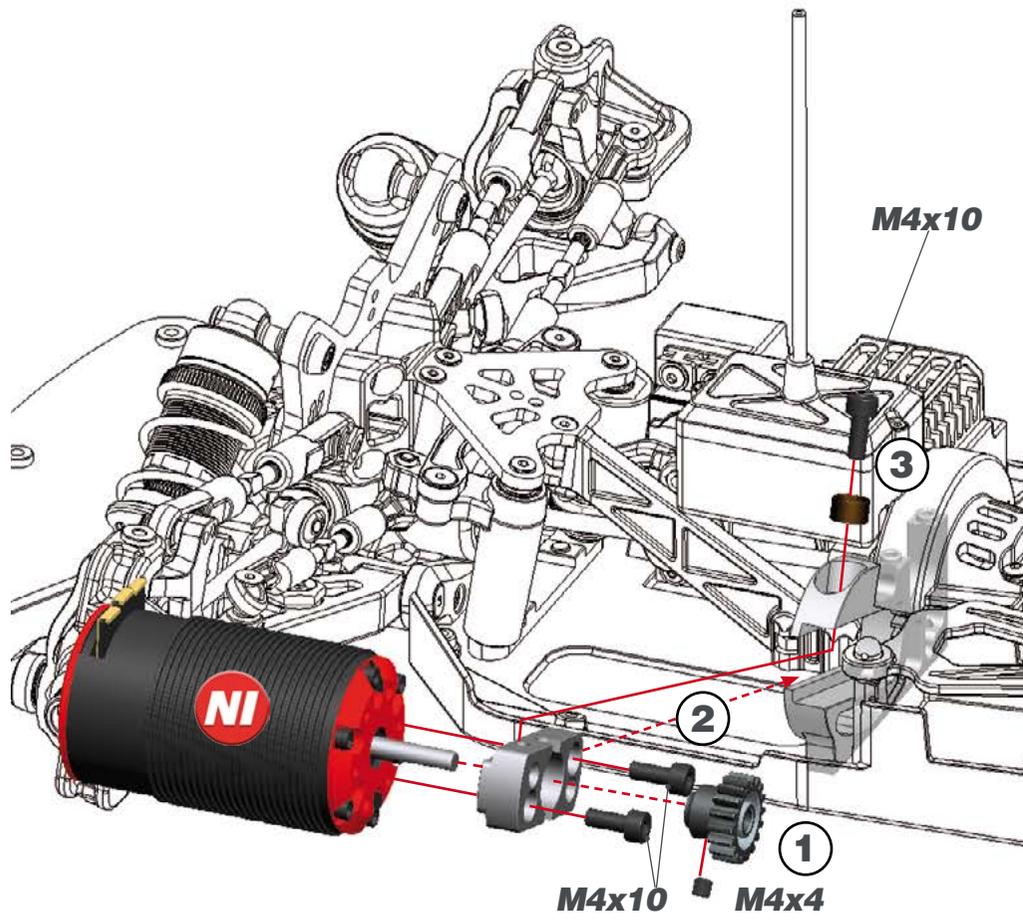


**STEP 47**



## STEP 48 BAG 9

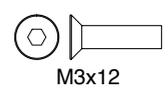
## STEP 49



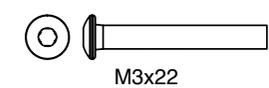
M4x10



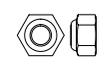
M4x4



M3x12

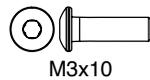
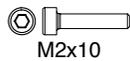
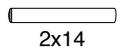
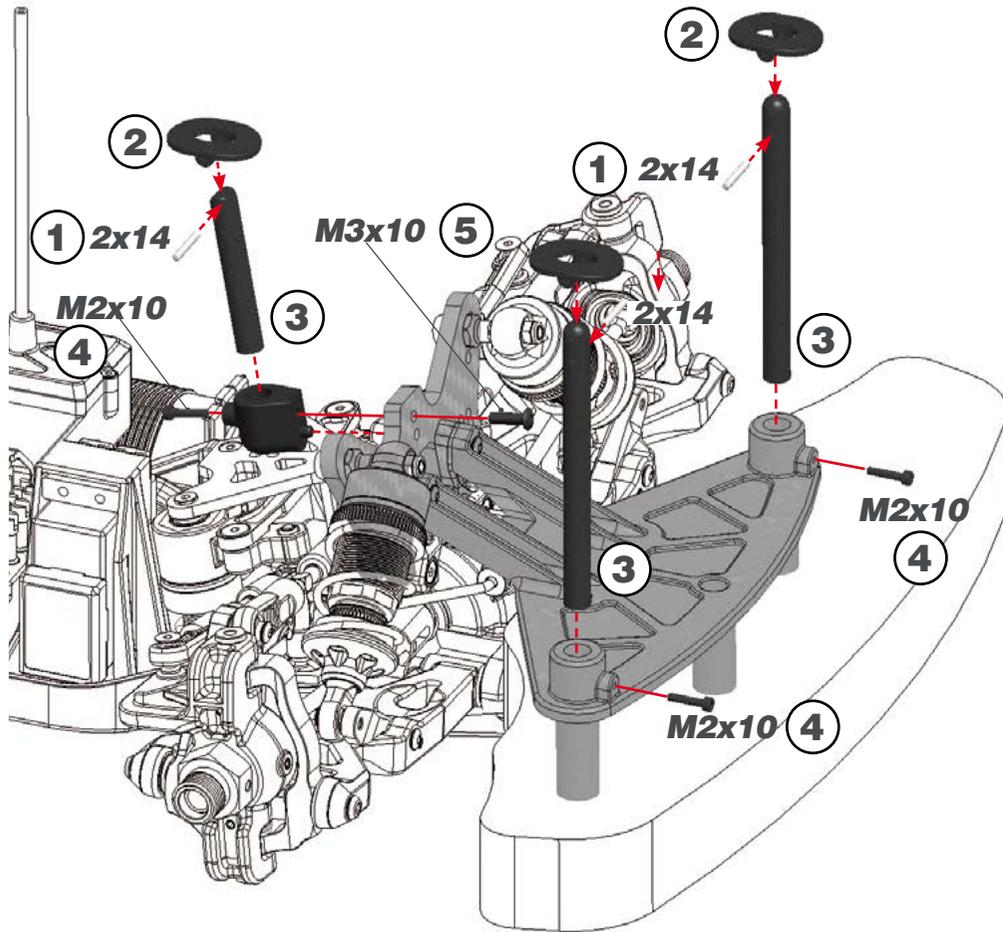


M3x22

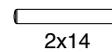
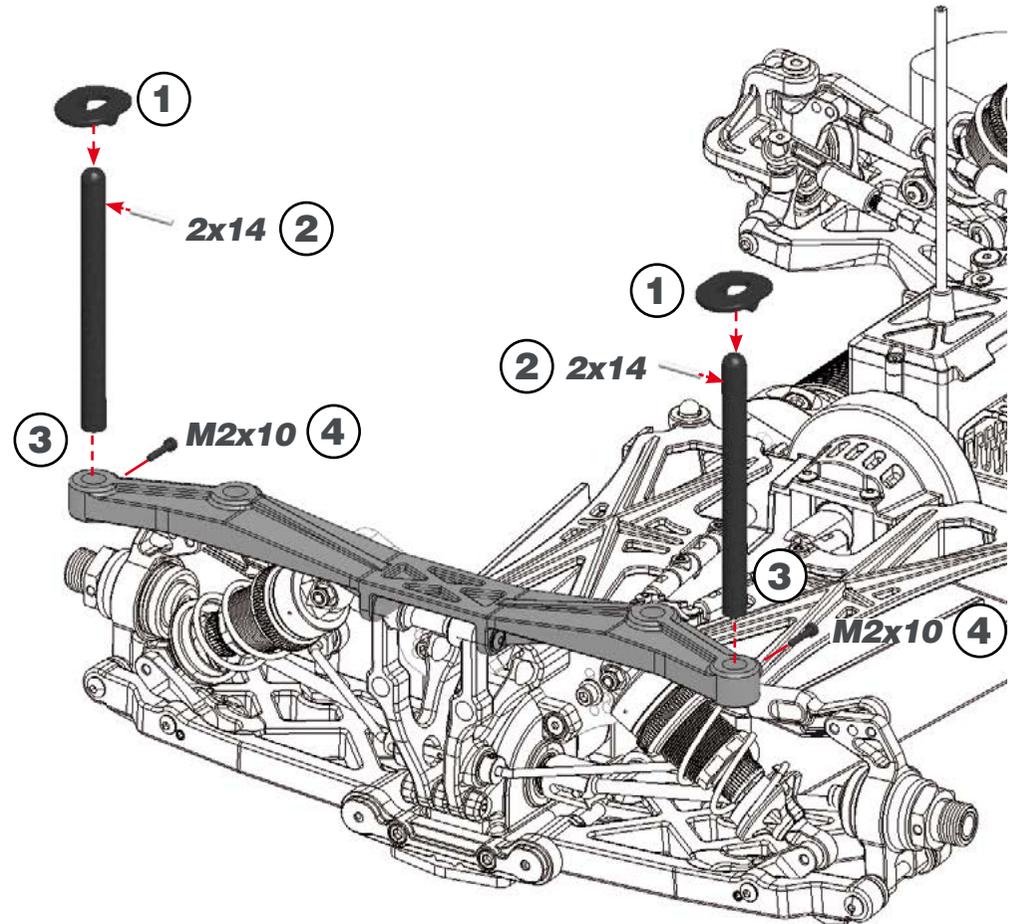


Nylock Nut M3

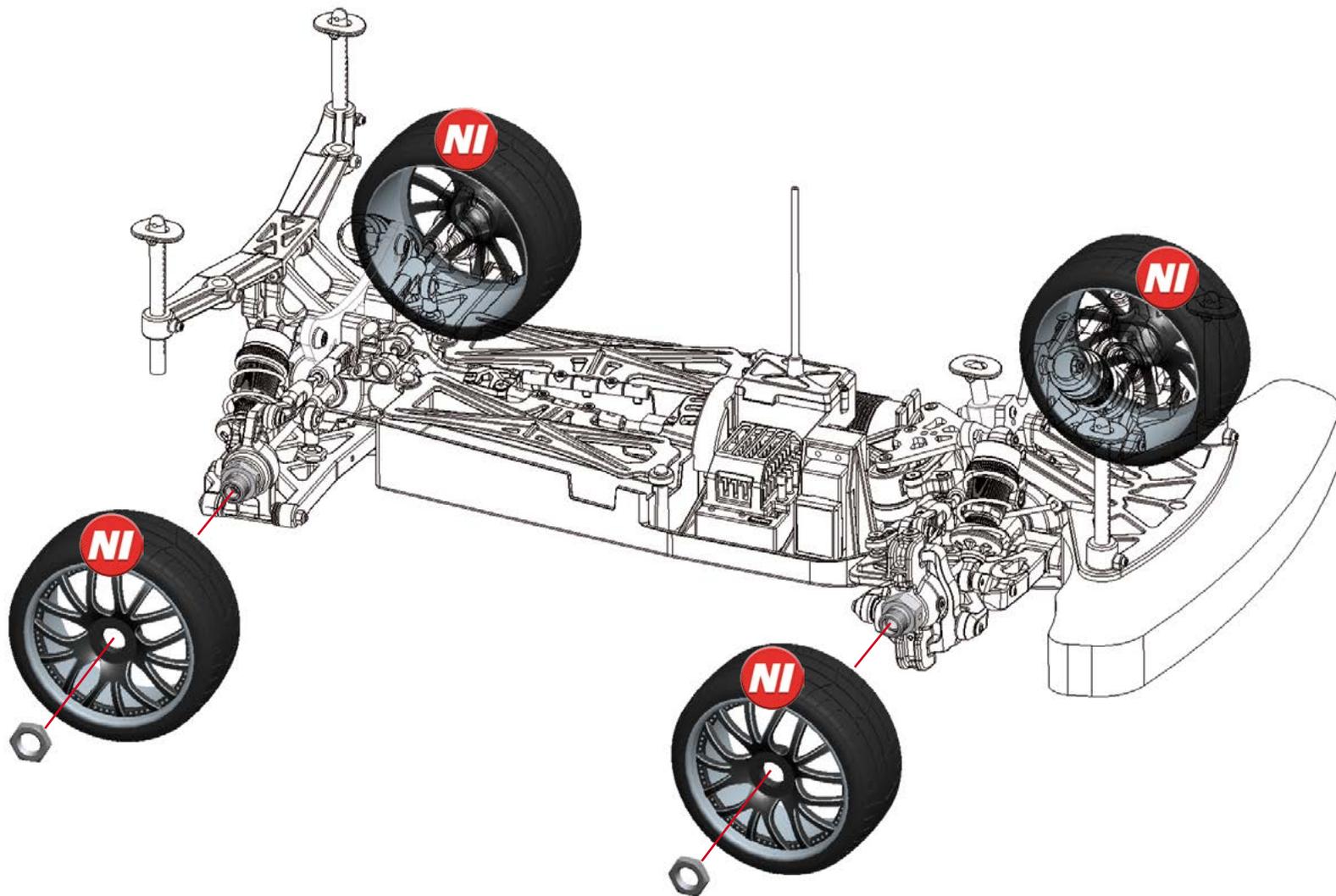
**STEP 50**



**STEP 51**



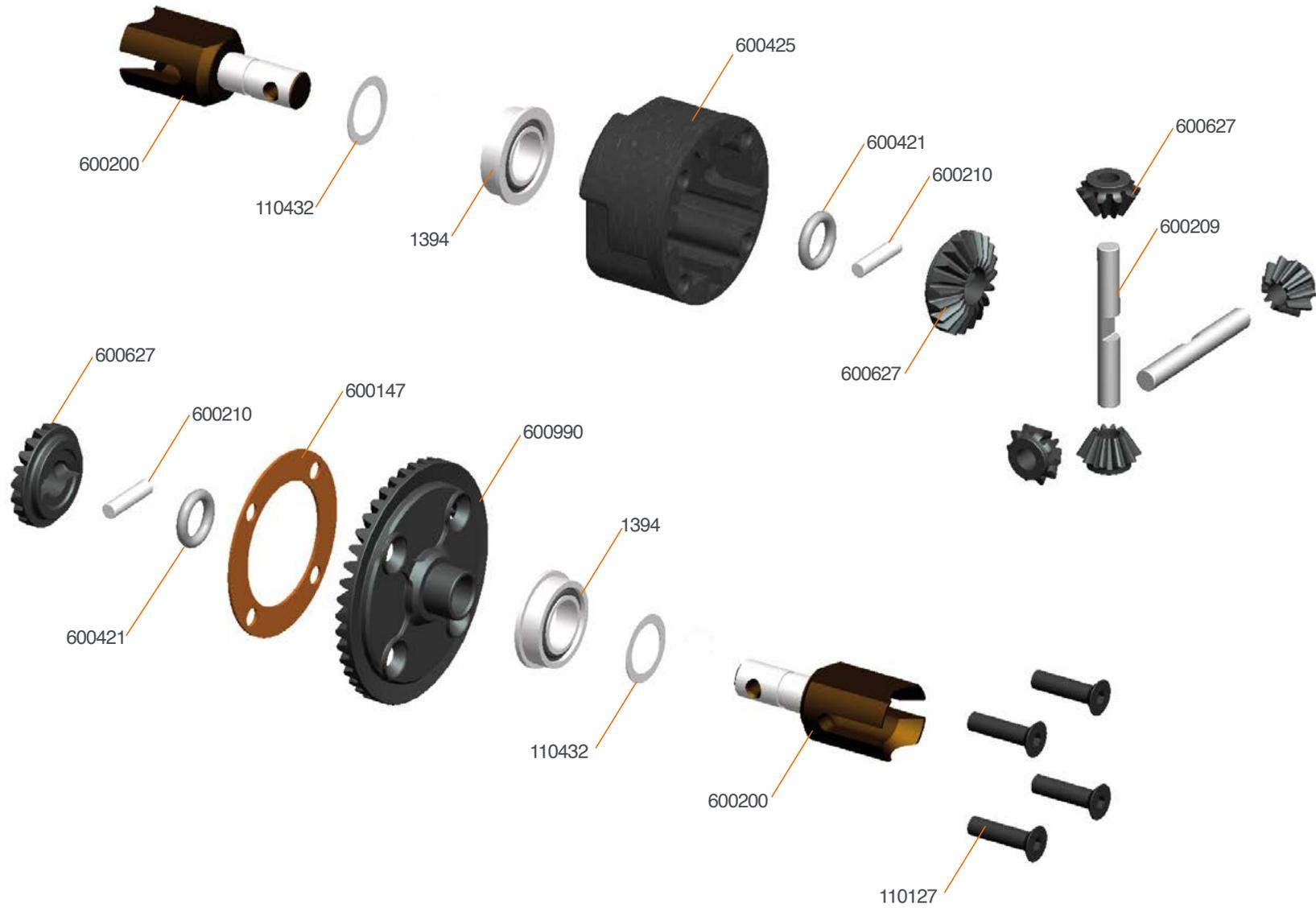
**STEP 52**

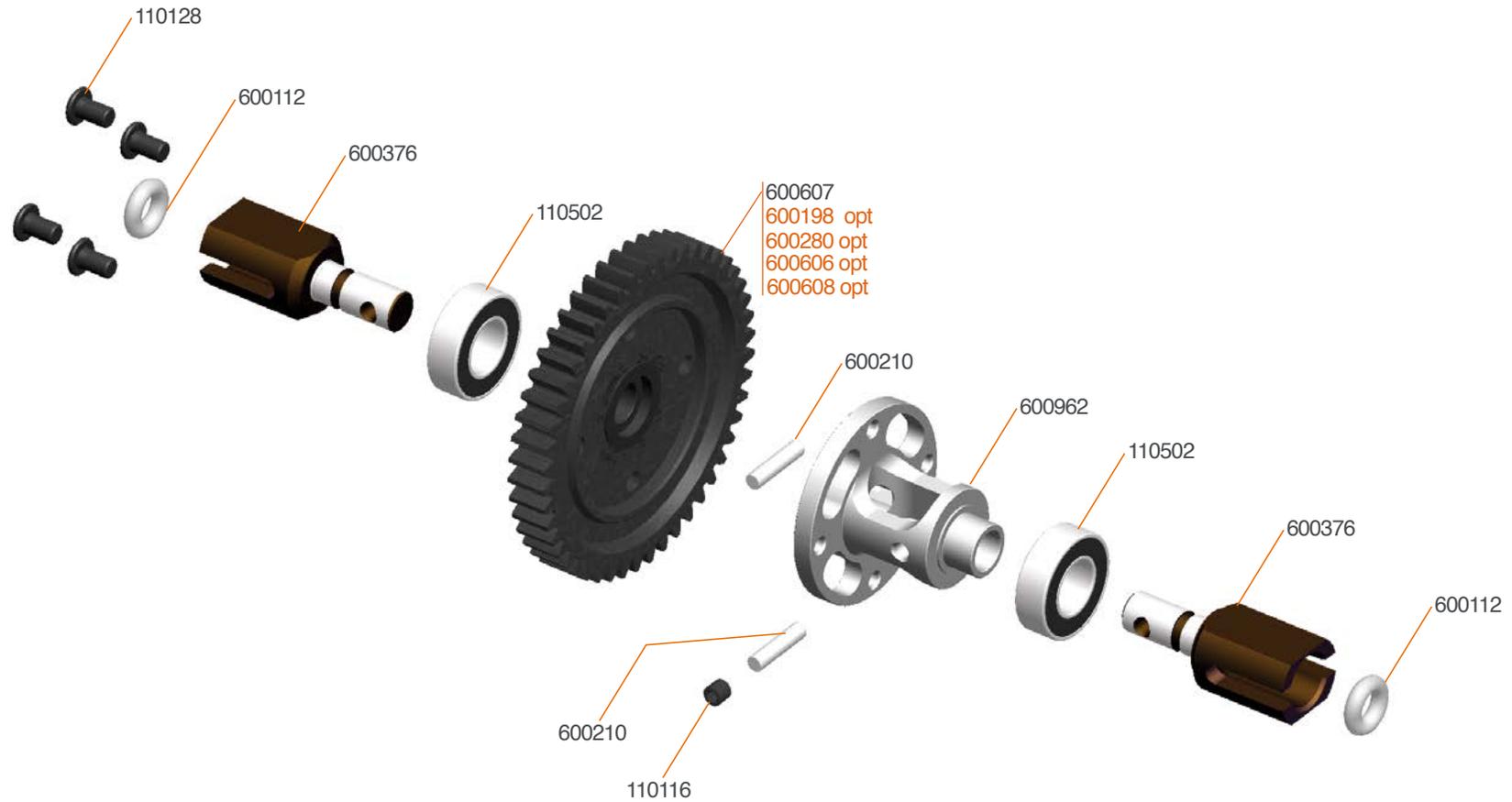


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# DIFFERENTIAL EXPLODED VIEW

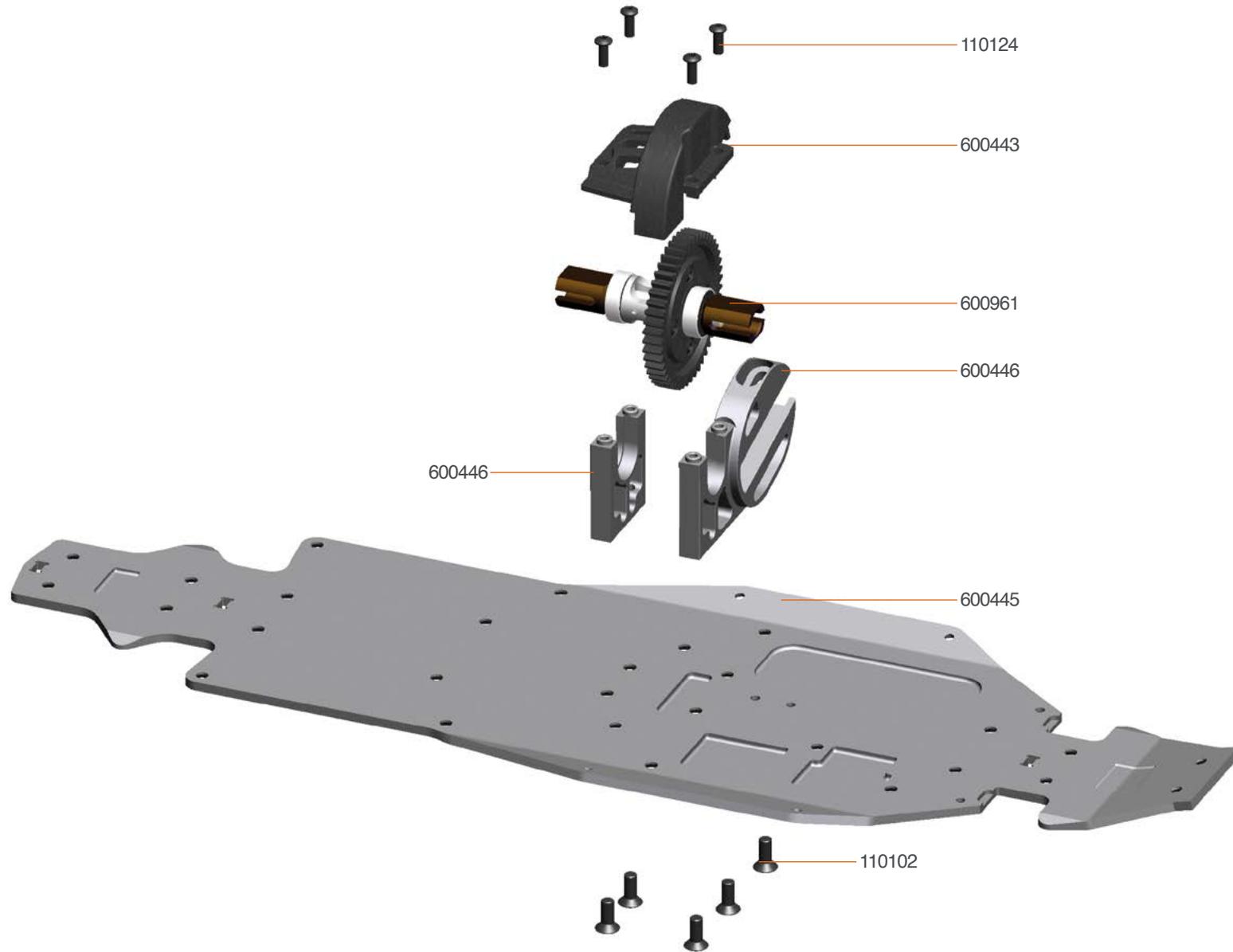




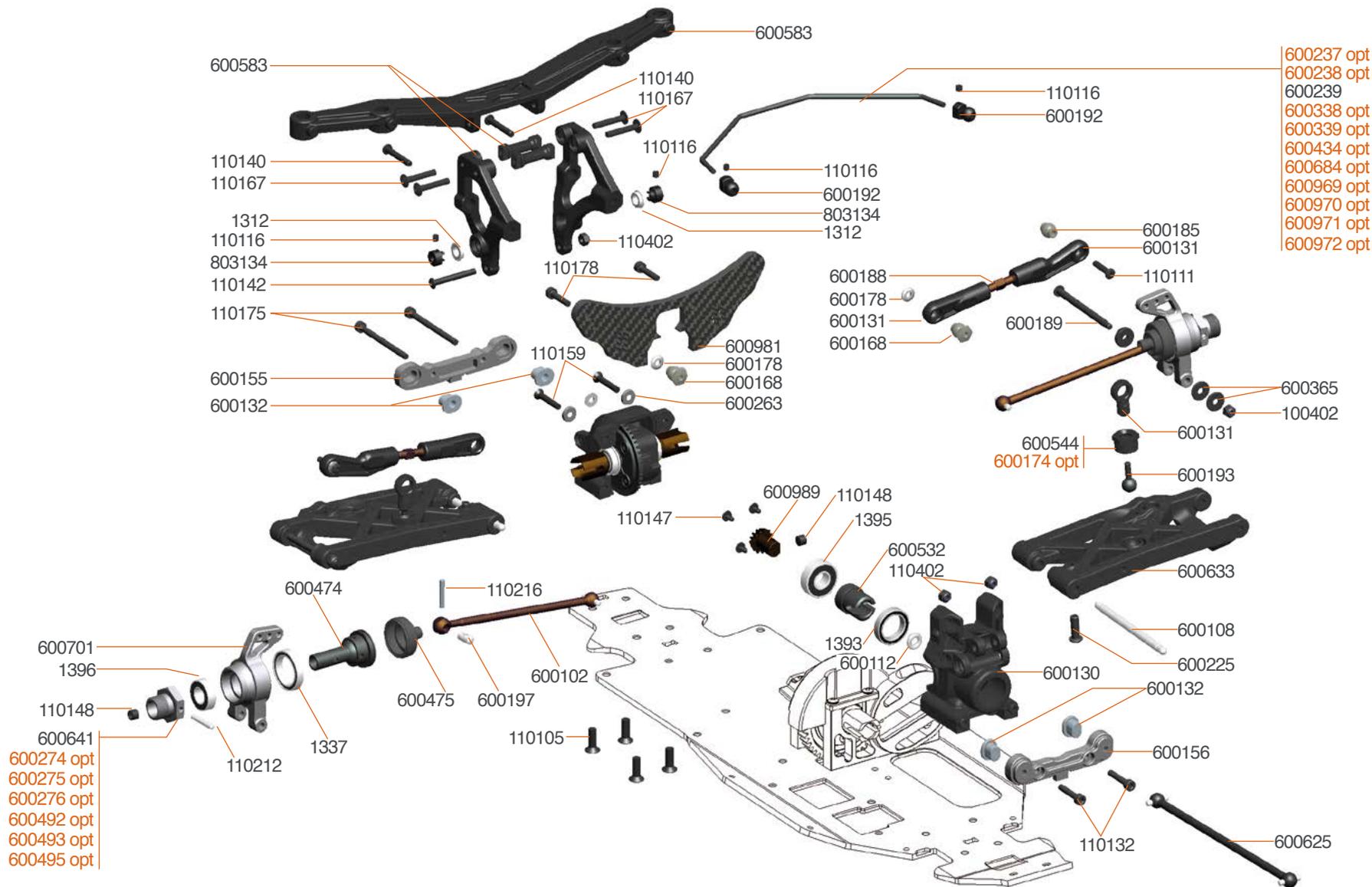
600198 Spurgear 46T opt  
600280 Spurgear 48T opt  
600606 Spurgear 46T composite opt  
600608 Spurgear 50T composite opt

600961 Solid axle center set Cobra GTE





# REAR EXPLODED VIEW



600237 opt  
600238 opt  
600239  
600338 opt  
600339 opt  
600434 opt  
600684 opt  
600969 opt  
600970 opt  
600971 opt  
600972 opt

600274 opt  
600275 opt  
600276 opt  
600492 opt  
600493 opt  
600495 opt

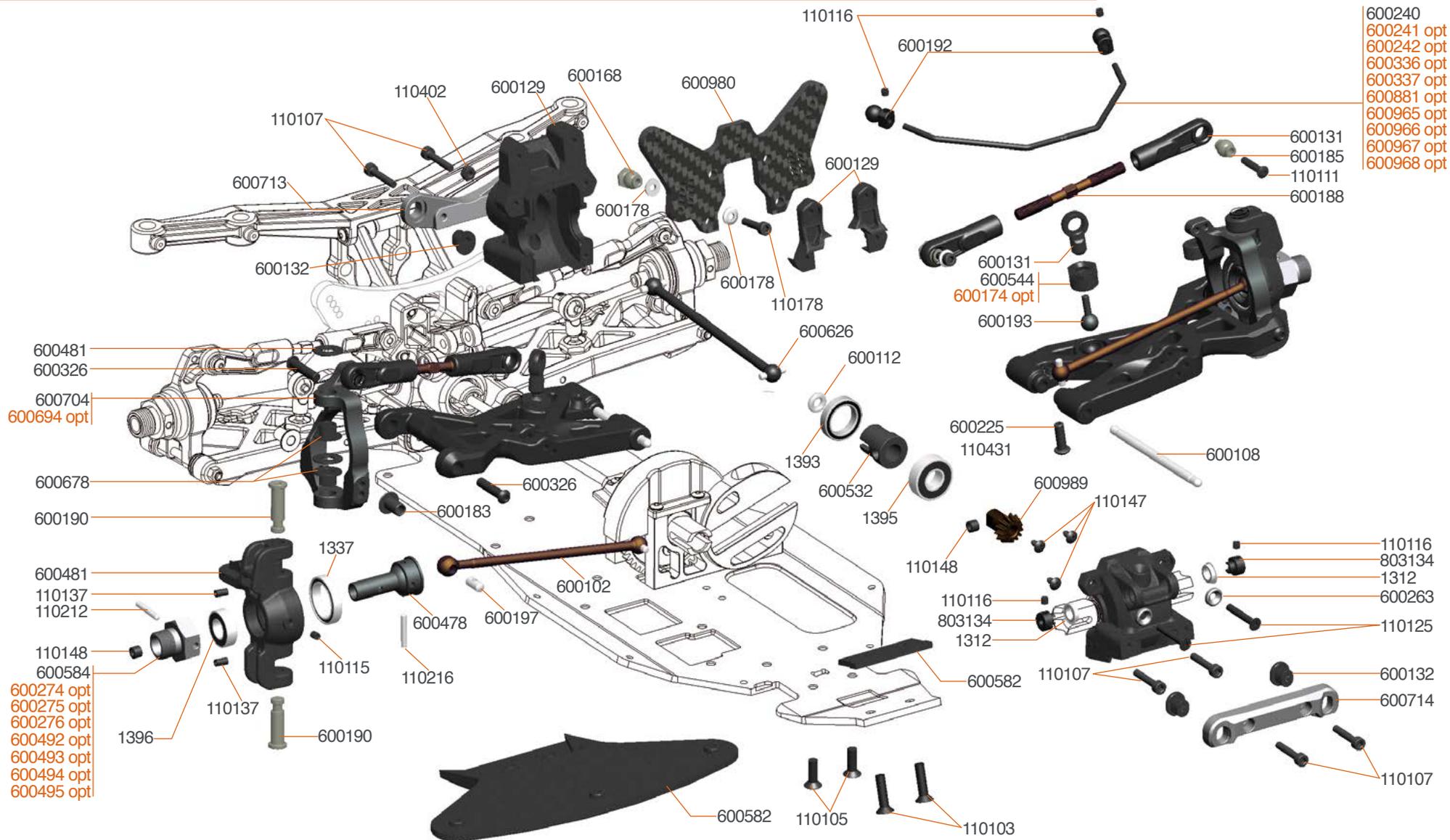
110431 Shim 8X11X0.1 (10)  
600174 Antirollbar nut (2)  
600237 Antiroll bar rear 2.3mm  
600238 Antiroll bar rear 2.5mm  
600338 Antiroll bar rear 2.5mm  
600339 Antiroll bar rear 2.0mm  
600434 Antiroll bar rear 2.4mm

600684 Antiroll bar rear 3.0mm  
600969 Antiroll bar rear 2.2 mm  
600970 Antiroll bar rear 2.4 mm  
600971 Antiroll bar rear 2.6 mm  
600972 Antiroll bar rear 2.8 mm  
600274 Wheelhexagon light -2mm /nut/pin (2)  
600275 Wheelhexagon light -1mm /nut/pin (2)

600276 Wheelhexagon light -0mm /nut/pin (2)  
600492 Wheelhexagon light +1mm /nut/pin (2)  
600493 Wheelhexagon light +2mm /nut/pin (2)  
600495 Wheelhexagon light +3mm /nut/pin (2)



# FRONT EXPLODED VIEW



- 600240
- 600241 opt
- 600242 opt
- 600336 opt
- 600337 opt
- 600881 opt
- 600965 opt
- 600966 opt
- 600967 opt
- 600968 opt

- 600131
- 600185
- 110111
- 600188

- 600131
- 600544
- 600174 opt
- 600193

- 600481
- 600326
- 600704
- 600694 opt

- 600678
- 600190

- 600481
- 110137
- 110212

- 110148
- 600584

- 600274 opt
- 600275 opt
- 600276 opt
- 600492 opt
- 600493 opt
- 600494 opt
- 600495 opt

- 110116
- 803134
- 1312
- 600263

- 110125

- 600132
- 600714

- 110107

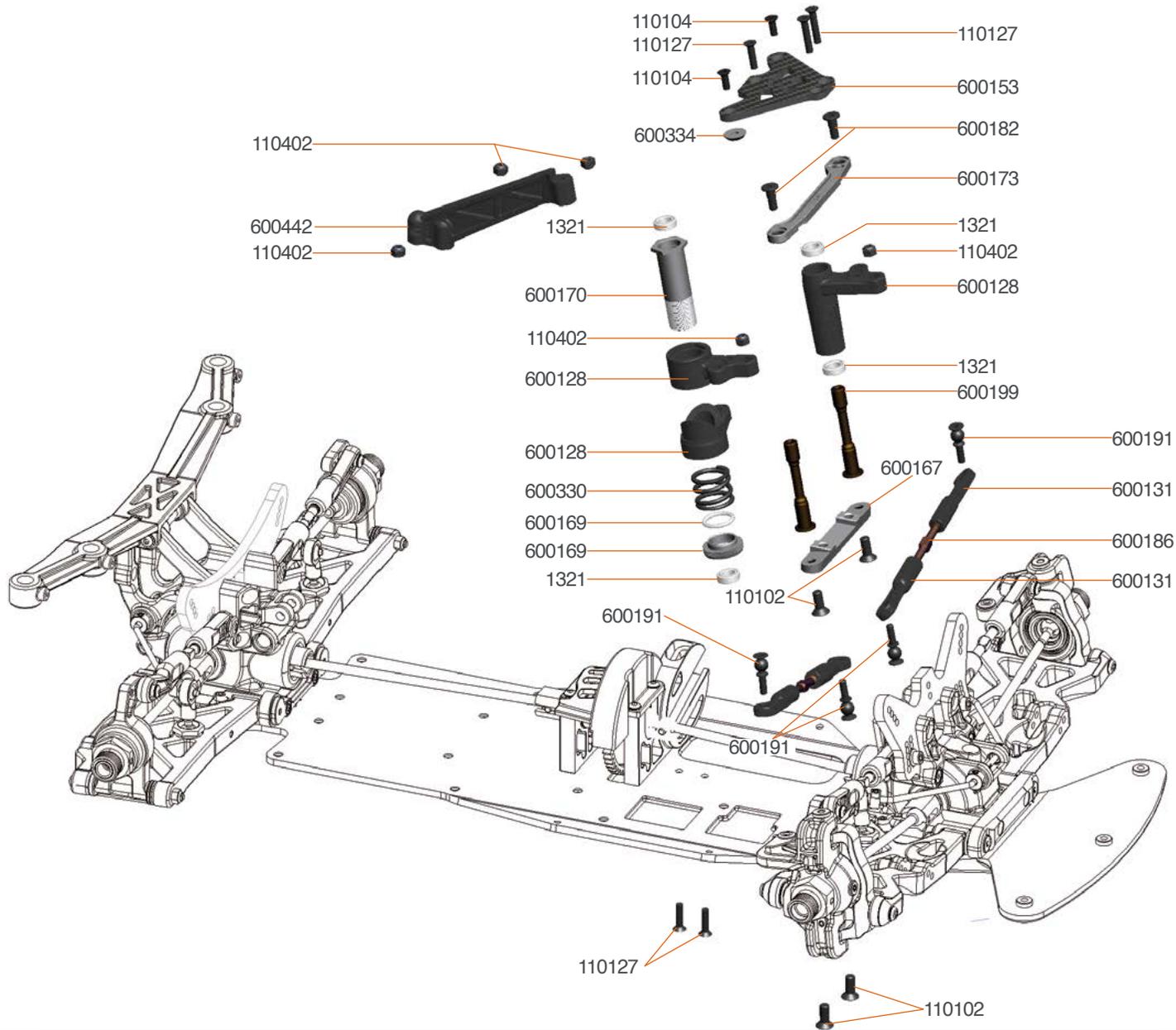
- 110431 Shim 8X11X0.1 (10)
- 600174 Antirollbar nut (2)
- 600274 Wheelhexagon light -2mm /nut/pin (2)
- 600275 Wheelhexagon light -1mm /nut/pin (2)
- 600276 Wheelhexagon light -0mm /nut/pin (2)
- 600492 Wheelhexagon light +1mm /nut/pin (2)
- 600493 Wheelhexagon light +2mm /nut/pin (2)

- 600494 Wheelhexagon light +3mm /nut/pin (2)
- 600495 Wheelhexagon light +3mm /nut/pin (2)
- 600241 Antiroll bar front 2.5mm opt
- 600242 Antiroll bar front 2.7mm opt
- 600336 Antiroll bar front 1.8mm opt
- 600337 Antiroll bar front 2.0mm opt
- 600881 Antiroll bar front 3.0 mm opt

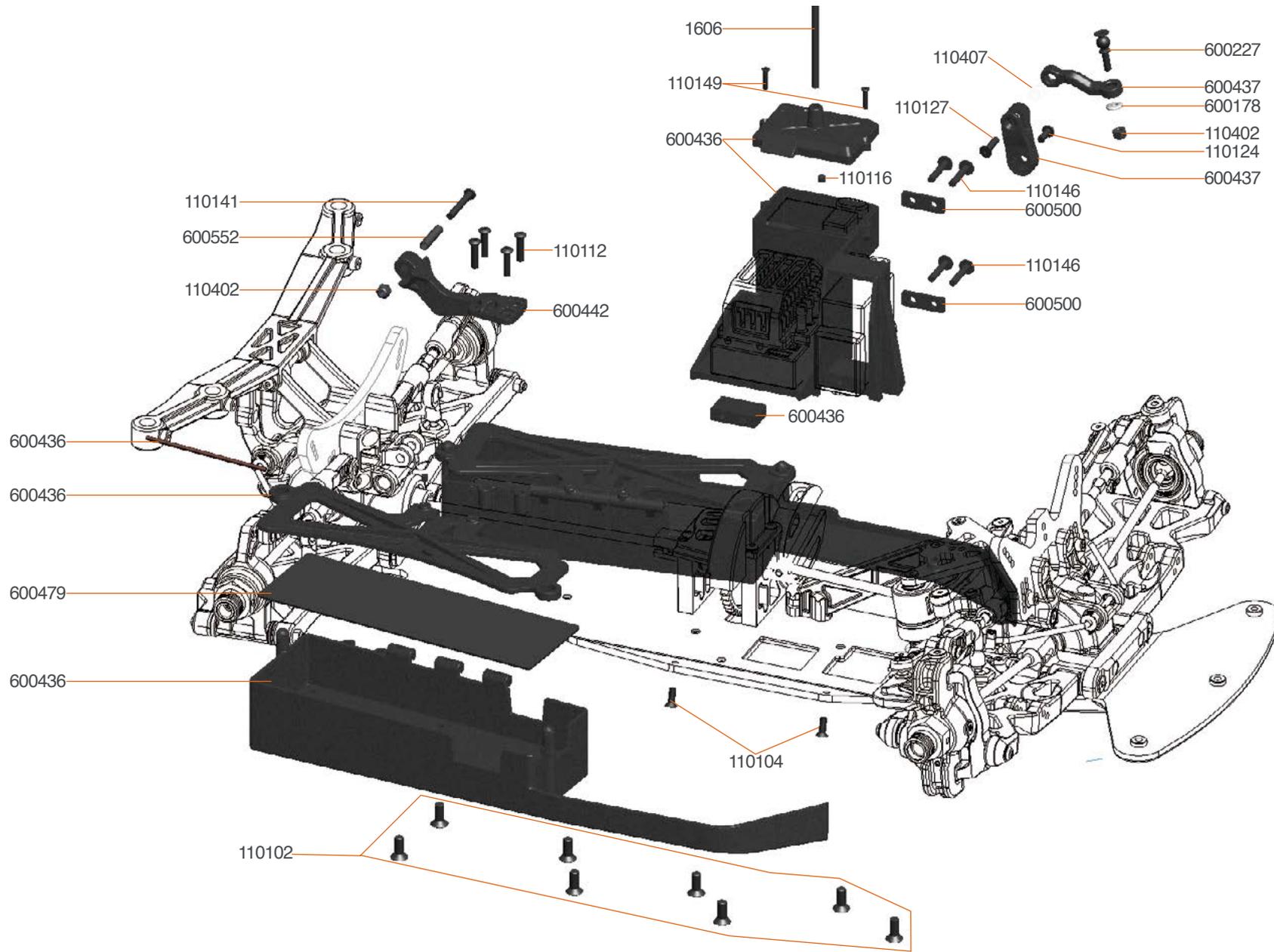
- 600965 Antiroll bar front 2.2 mm opt
- 600966 Antiroll bar front 2.4 mm opt
- 600967 Antiroll bar front 2.6 mm opt
- 600968 Antiroll bar front 2.8 mm opt
- 600694 C-hub 0 deg L+R alu opt

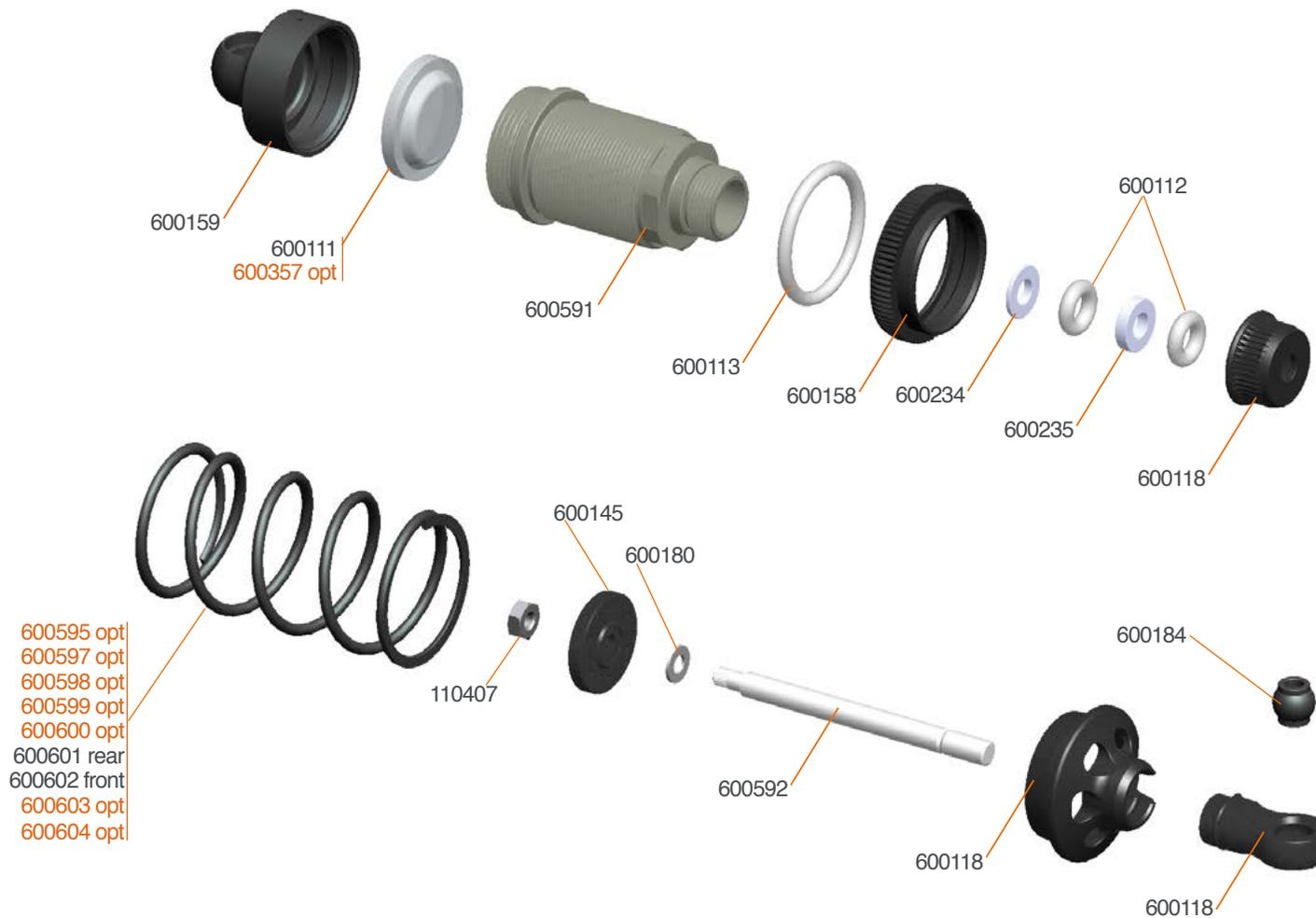


# STEERING EXPLODED VIEW



# RADIO EXPLODED VIEW

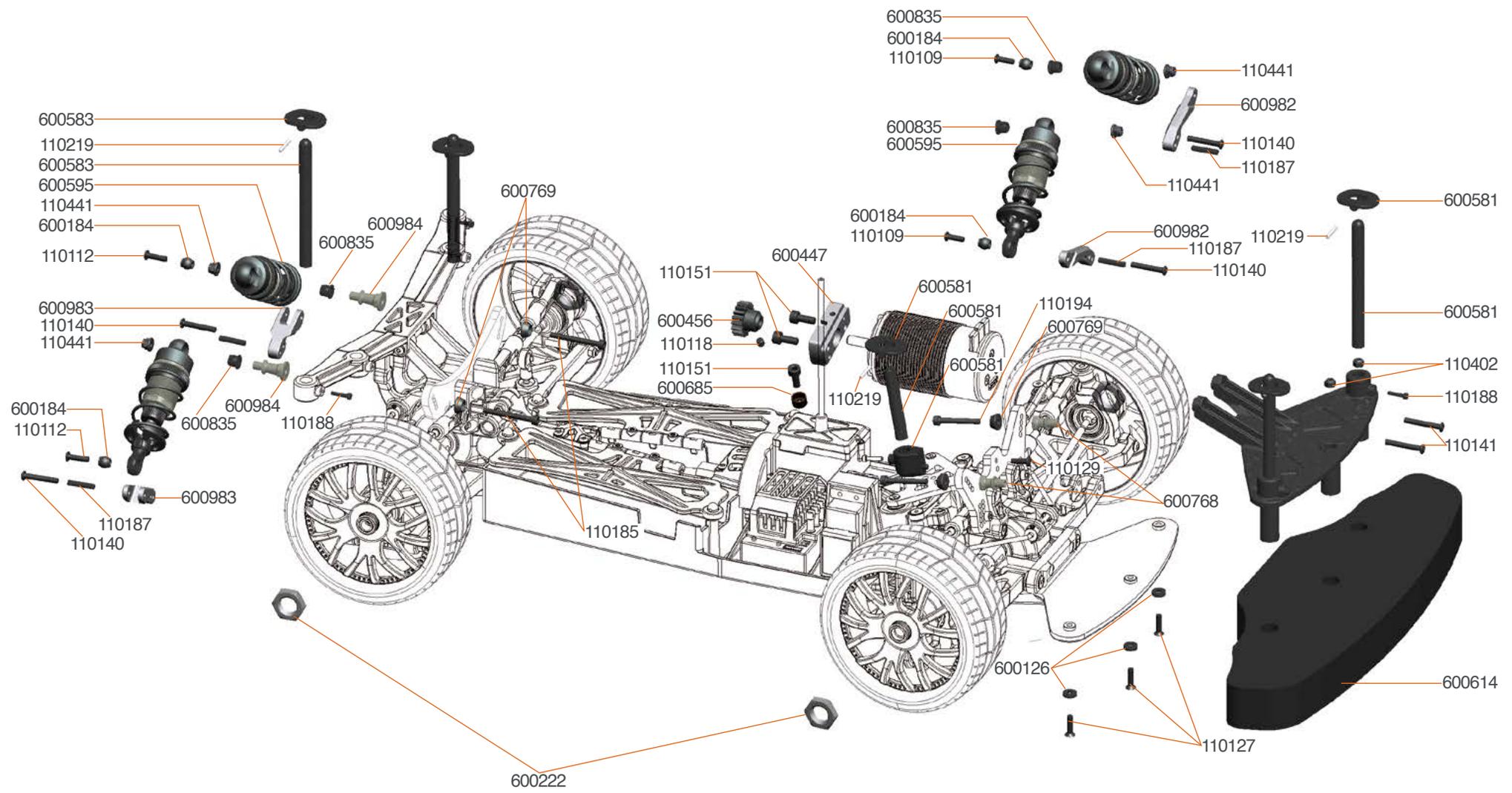




- 600357 Membrane webbed silicone (4) opt
- 600597 Spring Fr/Rr Red 811GT 18lbs (2) opt
- 600598 Spring Fr/Rr Purple 811GT 21lbs (2) opt
- 600599 Spring Fr/Rr Yellow 811GT 29lbs (2) opt
- 600600 Spring Fr/Rr White 811GT 31.5lbs (2) opt
- 600603 Spring Fr/Rr hard 811GT 39,5 lbs (2) opt

- 600604 Spring Fr/Rr X-hard 811GT 42 lbs (2) opt





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**GTE 3.1 OPTIONALS PARTS** [www.serpent.com/XXXXXX/Optionals/](http://www.serpent.com/XXXXXX/Optionals/)



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**SERPENT MERCHANDISING** [www.serpent.com/product/Merchandising/](http://www.serpent.com/product/Merchandising/)



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[www.weibo.com/teamserpent](http://www.weibo.com/teamserpent)

# SD

# Cobra GT 3.1e



# SERPENT



**EP**

1/8 scale gaspowered

# Cobra GTE 3.1e



**EP**

1/8 scale gaspowered

**SERPENT**



Manual Cobra GTE 3.1 #82452 1