

**Instruction
Manual**

S772
EVO 2
VIPER_e



Serpent

EP

1/8 scale

INTRODUCTION

The Serpent Viper 977 EVO-2 is the latest generation of the successful 977 Viper gaspowered car, combining ultimate performance into a single package. The 265mm wide gas powered racing car offers superb handling, incredible acceleration and top-speed. Breath taking !

The Serpent Viper 977 EVO-2 is designed to be a world champion, while still being easy to use, assemble, and set up. The Serpent Viper 977 EVO-2 offers state of the art specifications and leads the way in chassis design, using all the knowledge we have from 1/8 scale racing into this design too. Continuously pushing the performance envelope, Serpent's engineers have added new and innovative features that help take your Serpent Viper 977 EVO-2 into the winner's circle.

Designed by Michael Salven

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 Viper 977-EVO-2. Fine-tuning the initial setup is an essential part of building a high-performance racecar like your Serpent Viper 977-EVO-2.

EXPLODED VIEWS AND PARTS LIST

The exploded views and parts lists for the Serpent Viper 977-EVO-2 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 or you may ask your dealer or the Serpent distributor for advice, or email Serpent direct: 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.

CONTENTS

•		
•	TRANSMISSION ASSEMBLY	4
•	REAR ASSEMBLY	12
•	STEERING ASSEMBLY	16
•	FRONT ASSEMBLY	19
•	SHOCKS ASSEMBLY	24
•	ELECTRONICS ASSEMBLY	29
•	EXPLODED VIEWS	33
•	TEAM SERPENT NETWORK	41

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



Connect one item to another



Gap between two items



Press/Insert one item into another

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.



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



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.



Oil: apply a small amount of oil to the parts shown.



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



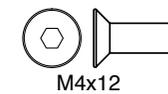
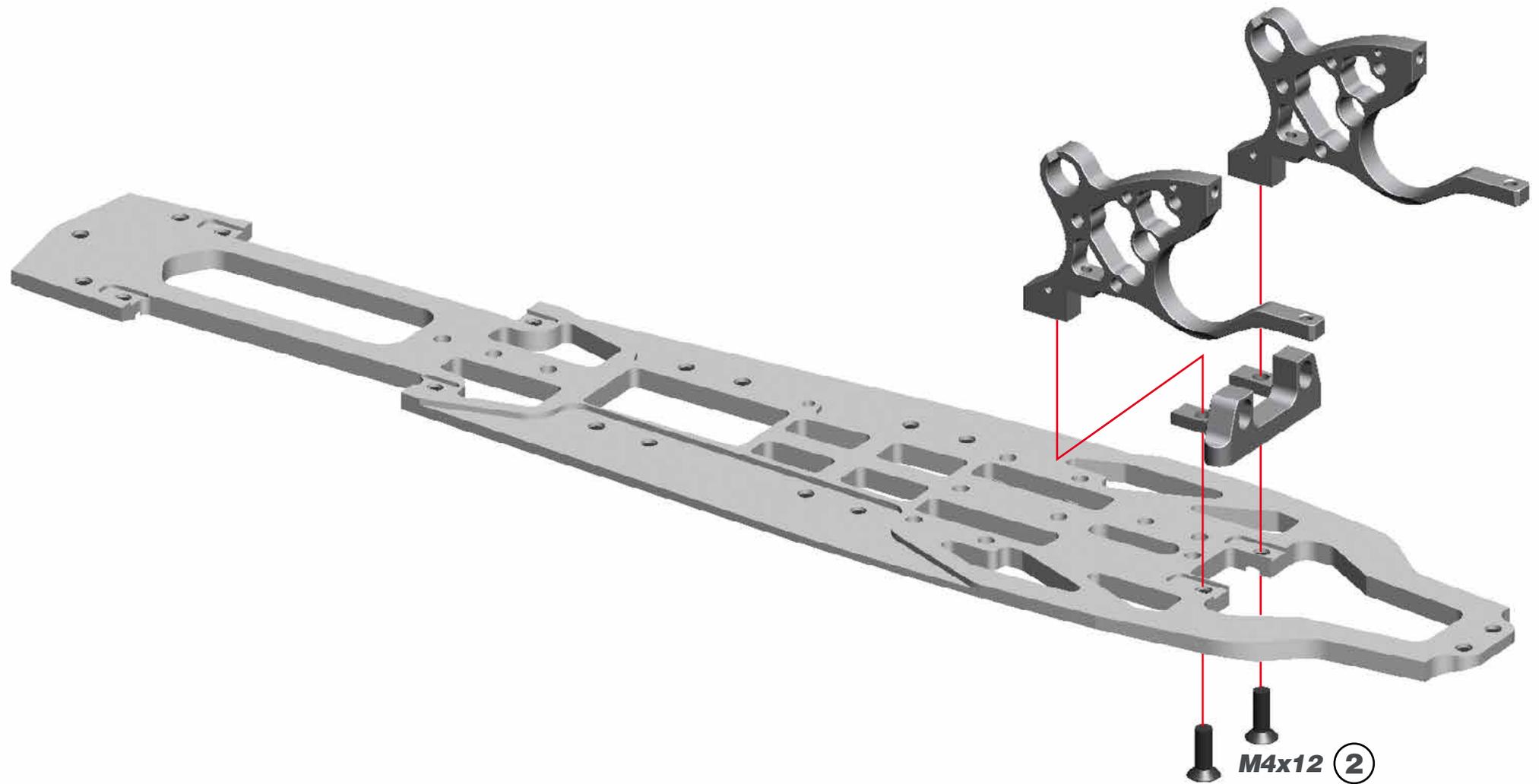
Parts or items not included in the kit.



Optional part, not standard in the kit.

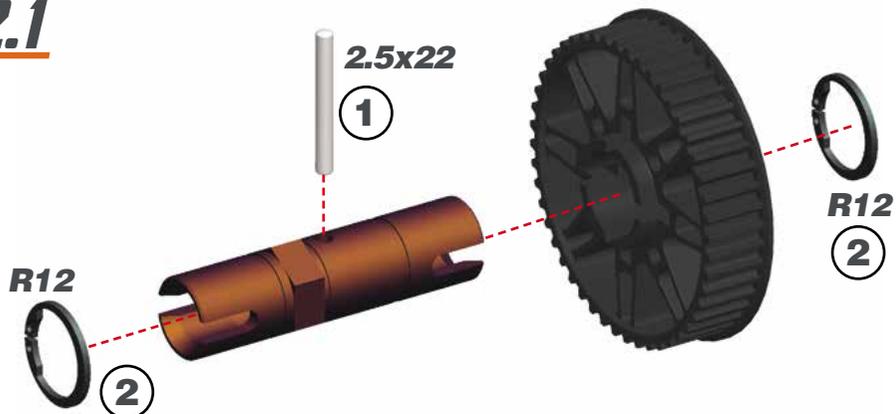
STEP 1

BAG 1

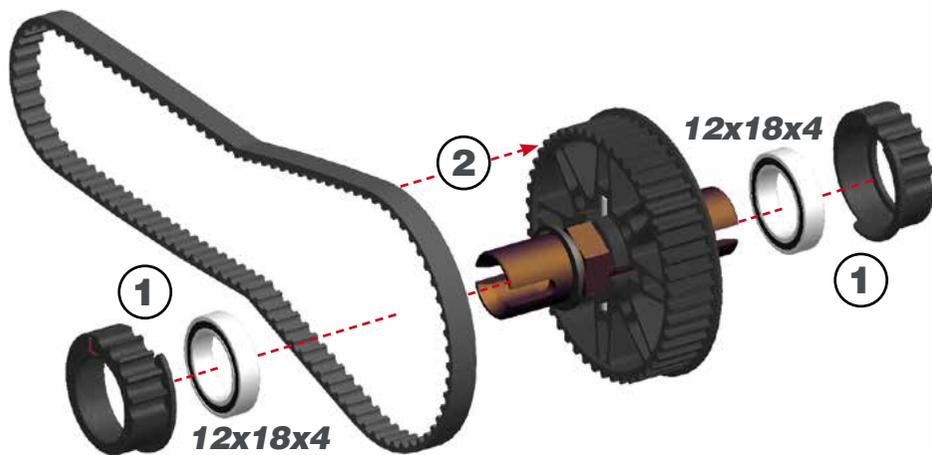


STEP 2

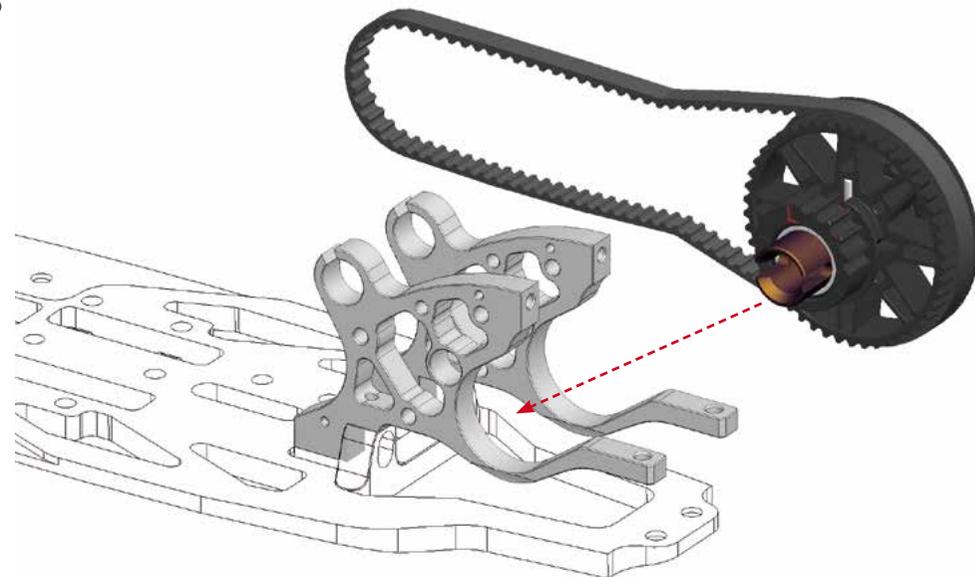
2.1



2.2



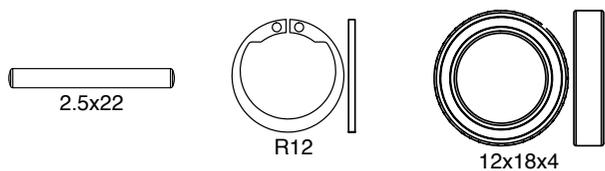
STEP 3



REAR SOLID AXLE EXCENTERS
 Note that the rear solid axle excenters are not symetric and are marked with and L (left) and R (right).

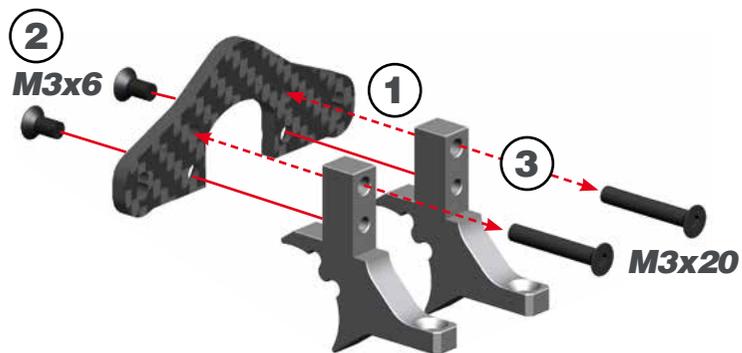
LEFT

RIGHT

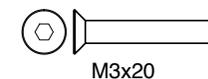
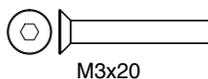
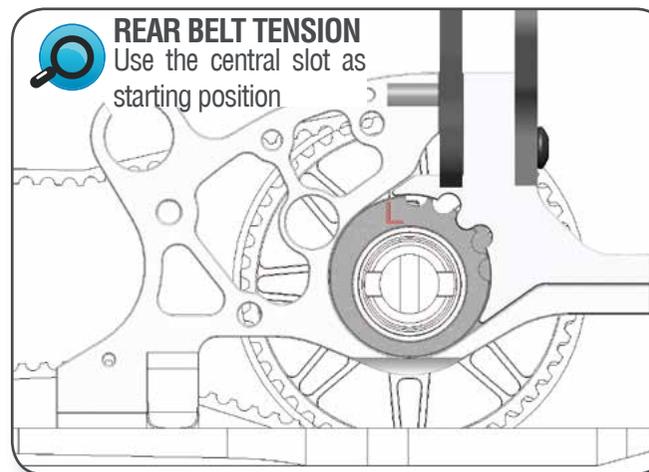
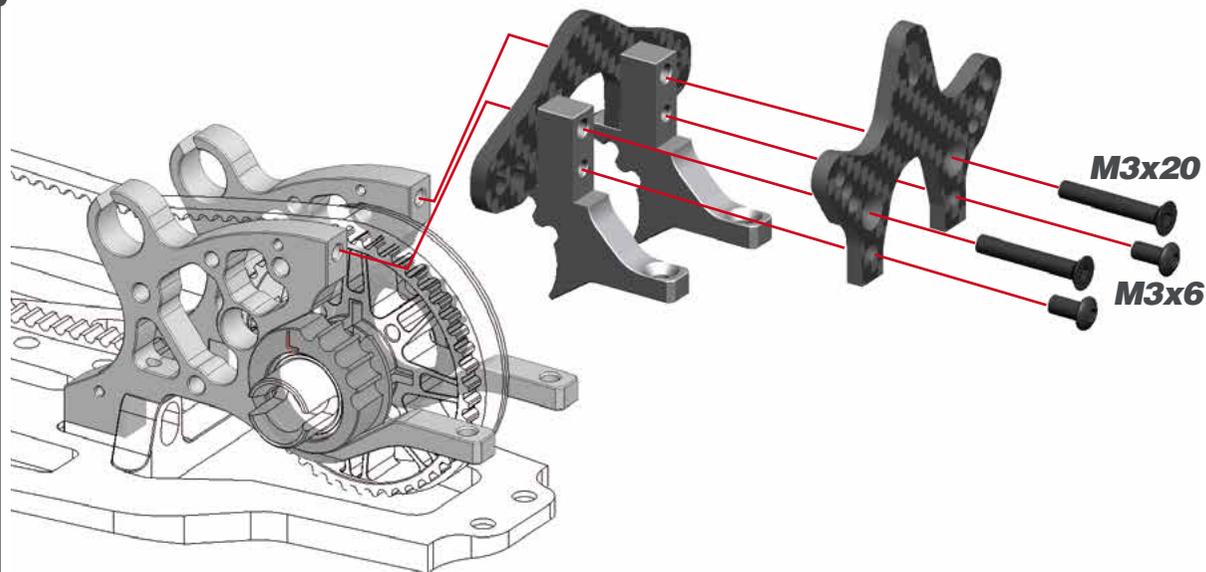


STEP 4

- 1- Assemble M3x20 screws to align the camber bracket.
- 2- Fix the camber bracket with the M3x6 screws.
- 3- Remove M3x20 screws proceed with step 4

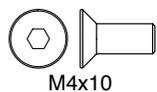
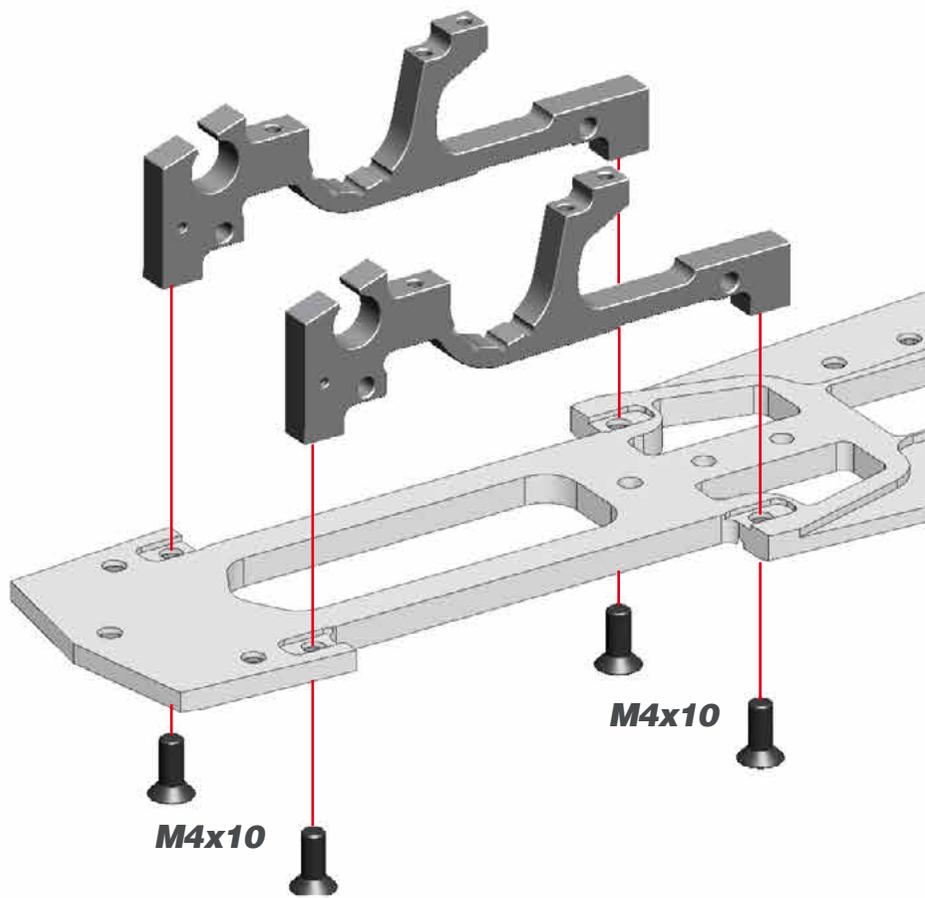


STEP 5



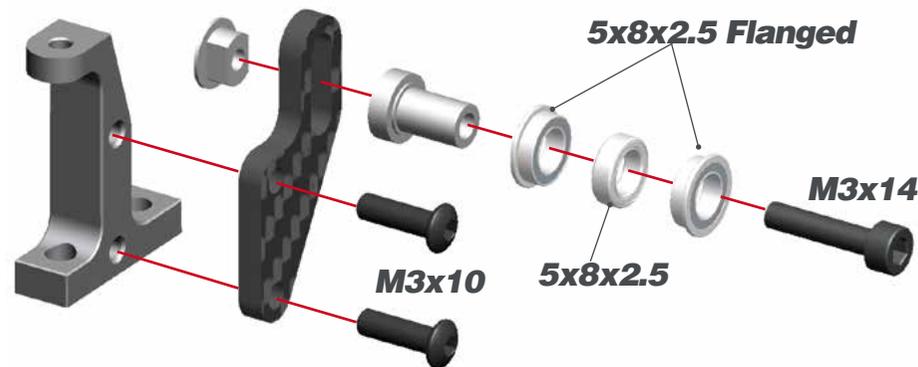
STEP 6

BAG 2

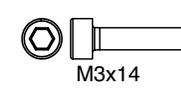
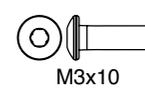
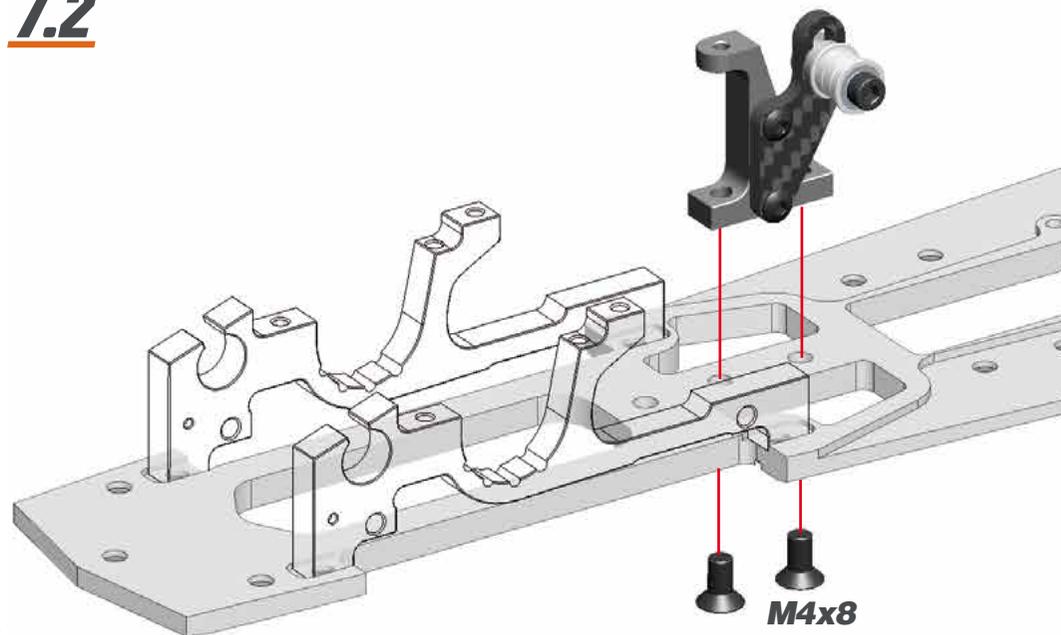


STEP 7

7.1

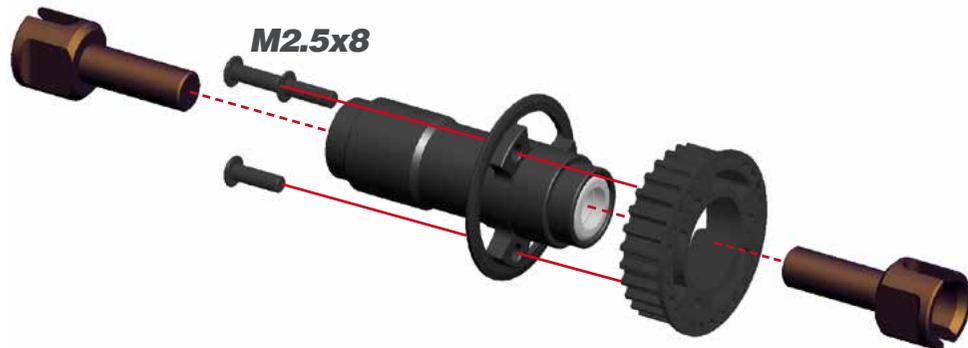


7.2

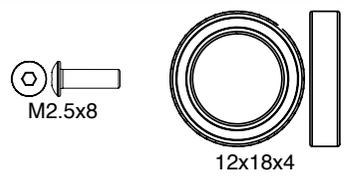
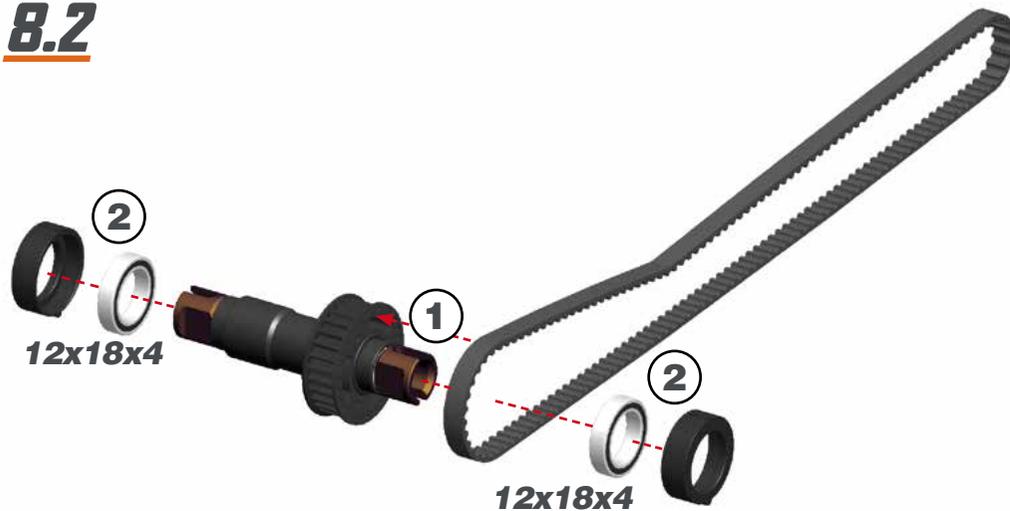


STEP 8

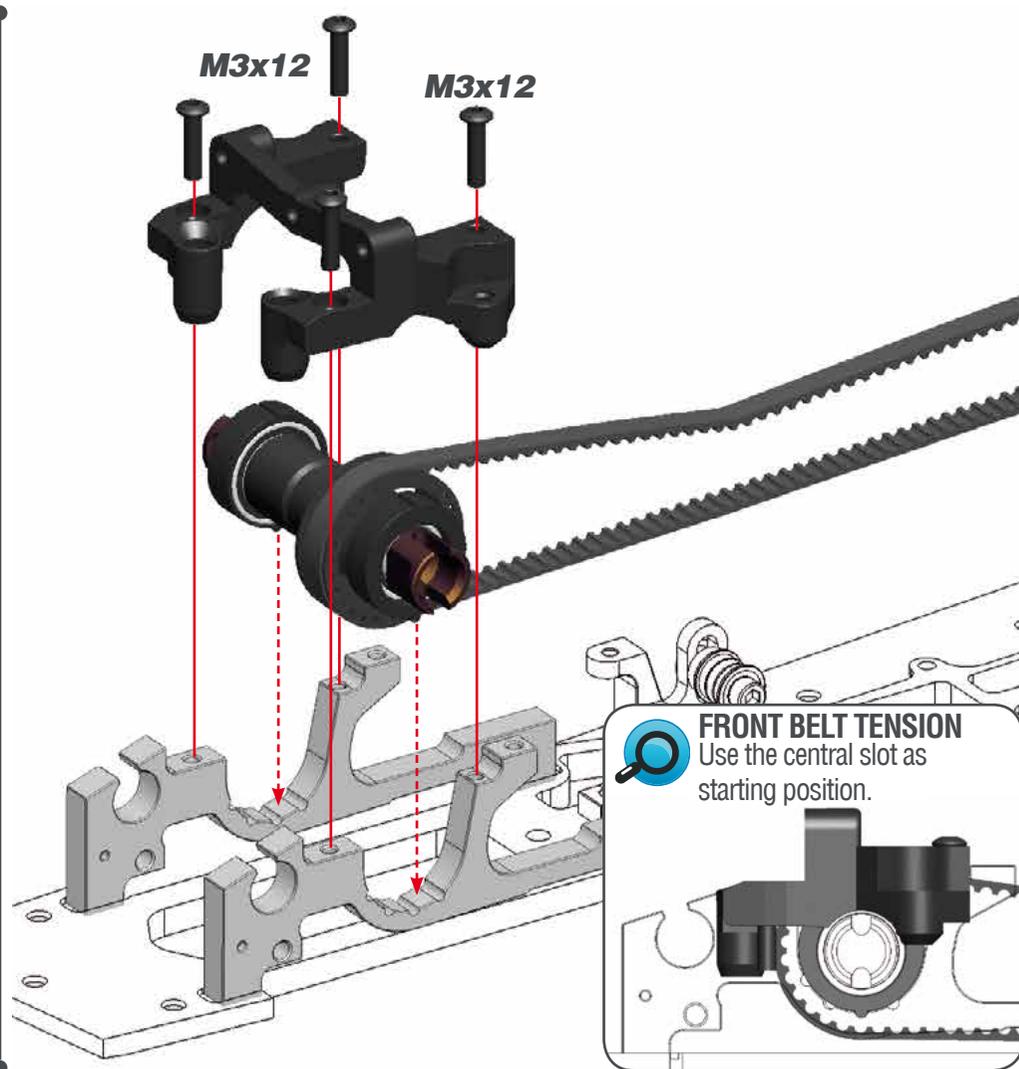
8.1



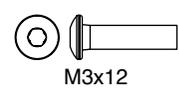
8.2



STEP 9

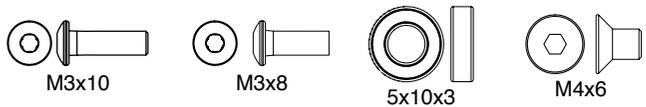
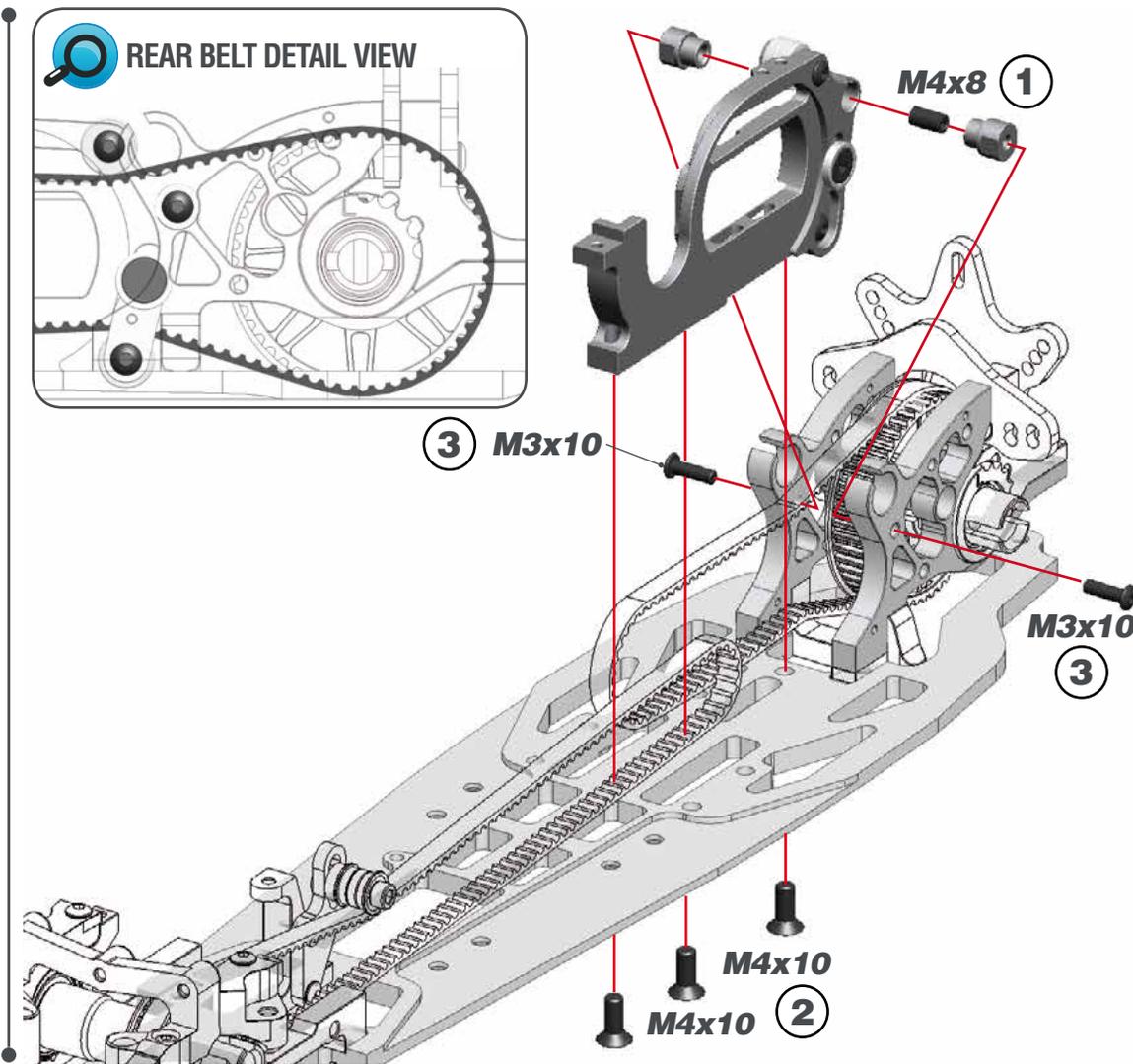
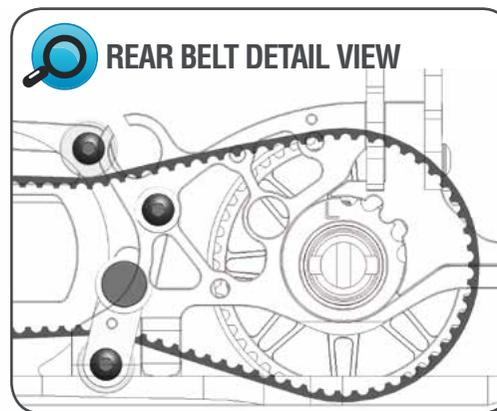
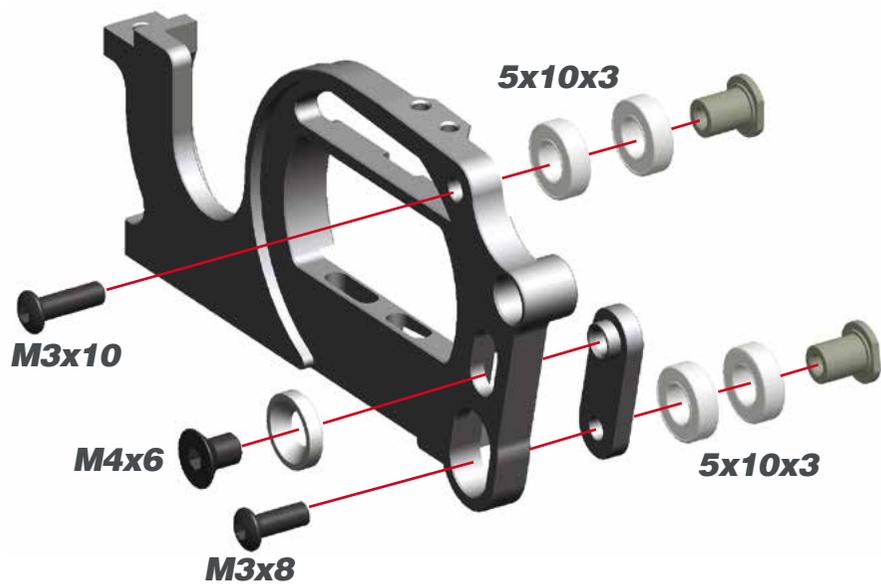


FRONT BELT TENSION
Use the central slot as starting position.



STEP 10 **BAG 3**

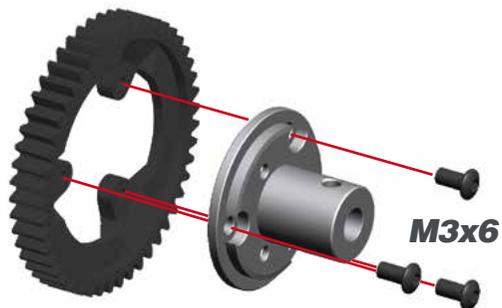
STEP 11



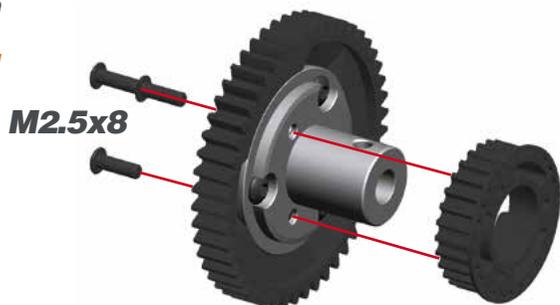
STEP 12

STEP 13

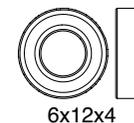
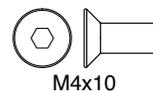
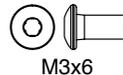
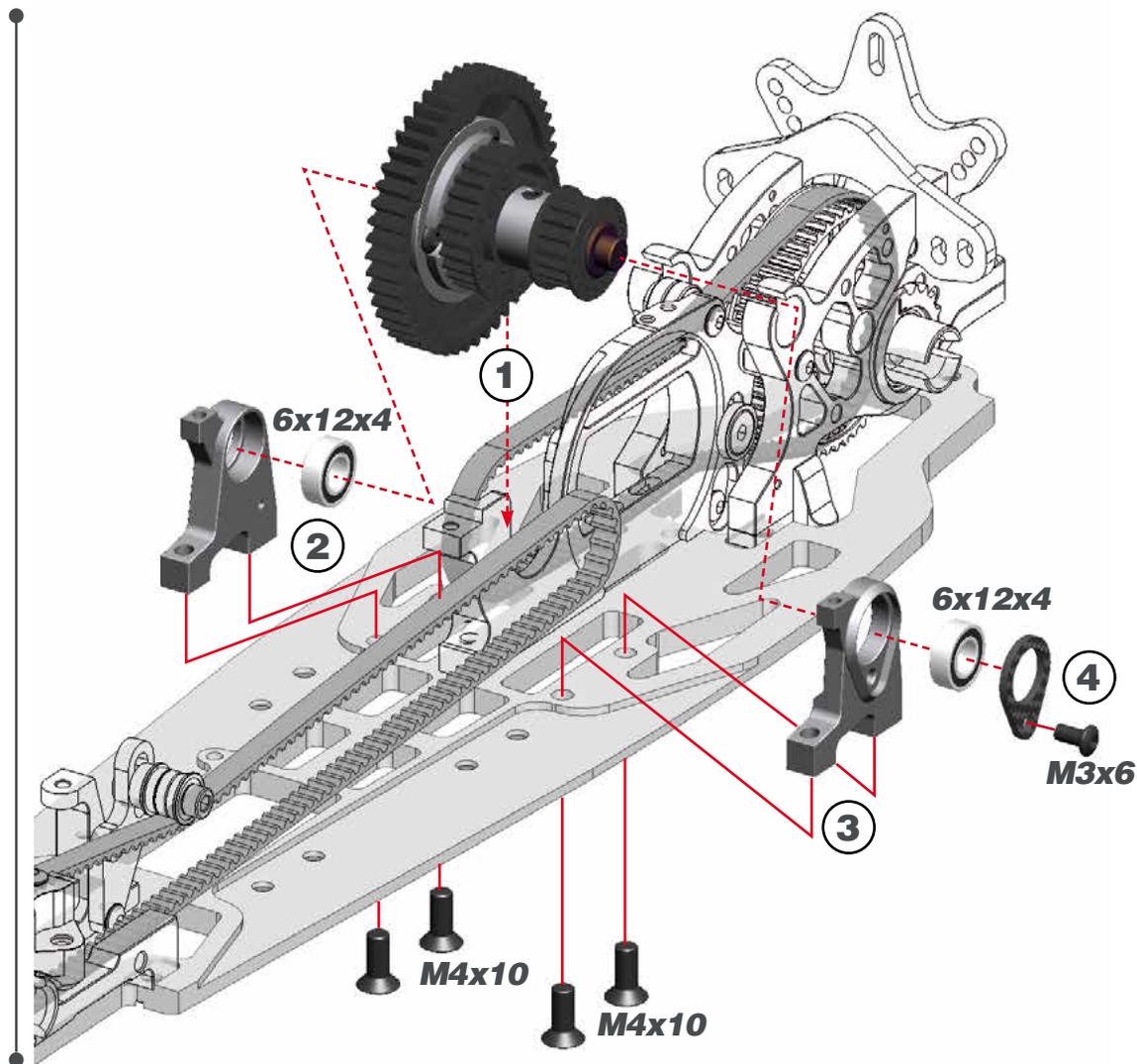
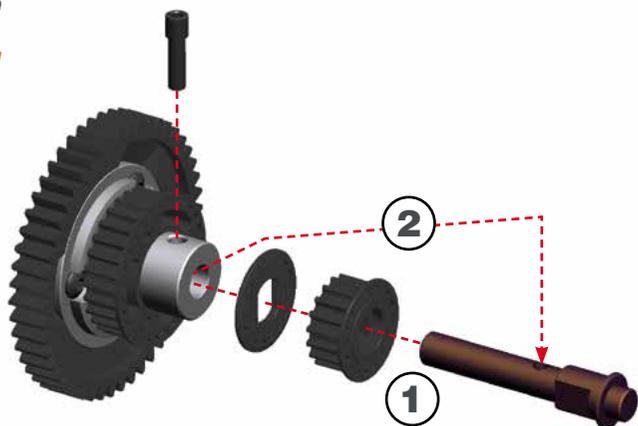
12.1



12.2



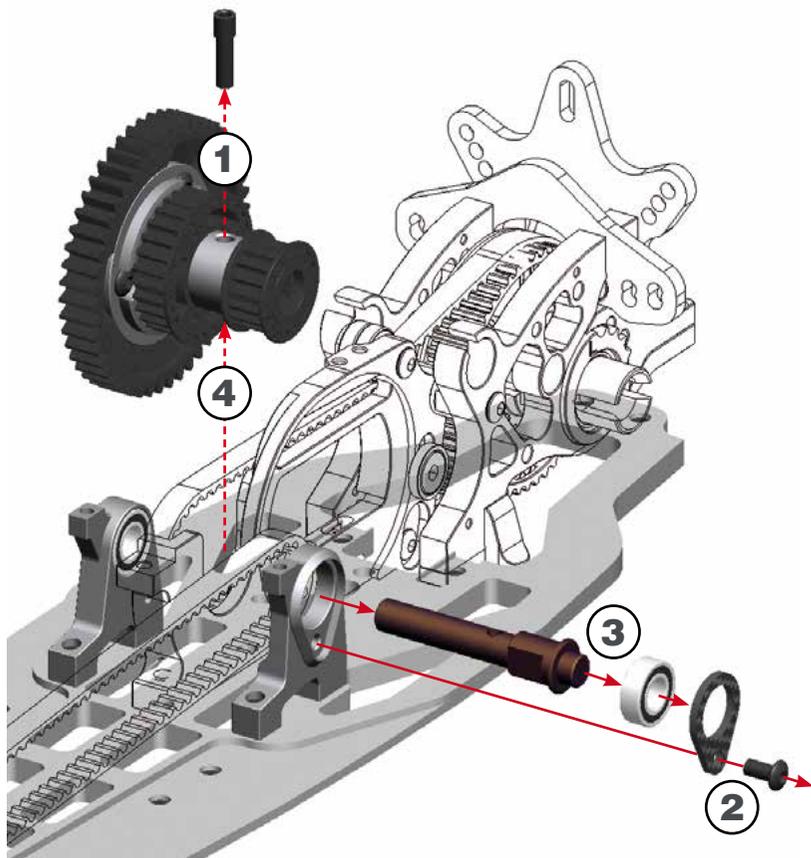
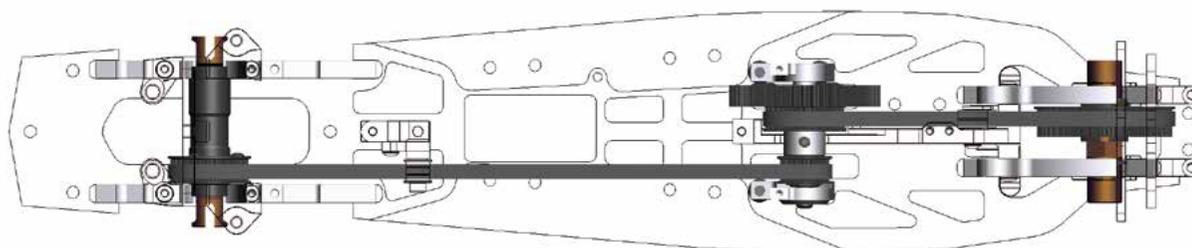
12.3



STEP 13A

How to disassemble the midshaft:

- 1) Remove the screw of inner shaft.
- 2) Remove the M3x6 screw and the carbon bracket.
- 3) Remove the inner midshaft
- 4) Take out the midshaft

**TRANSMISSION DETAIL VIEW**

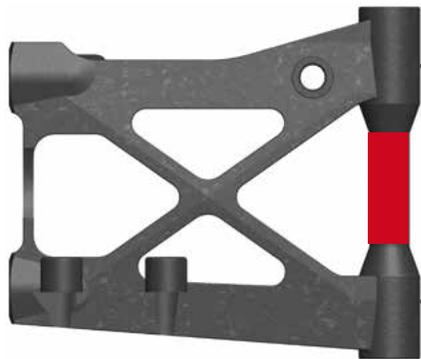
STEP 14 BAG 4

14.1



L=R

Before to assemble the rear lower arms, carefully remove the red area and smoothen the cut surface.



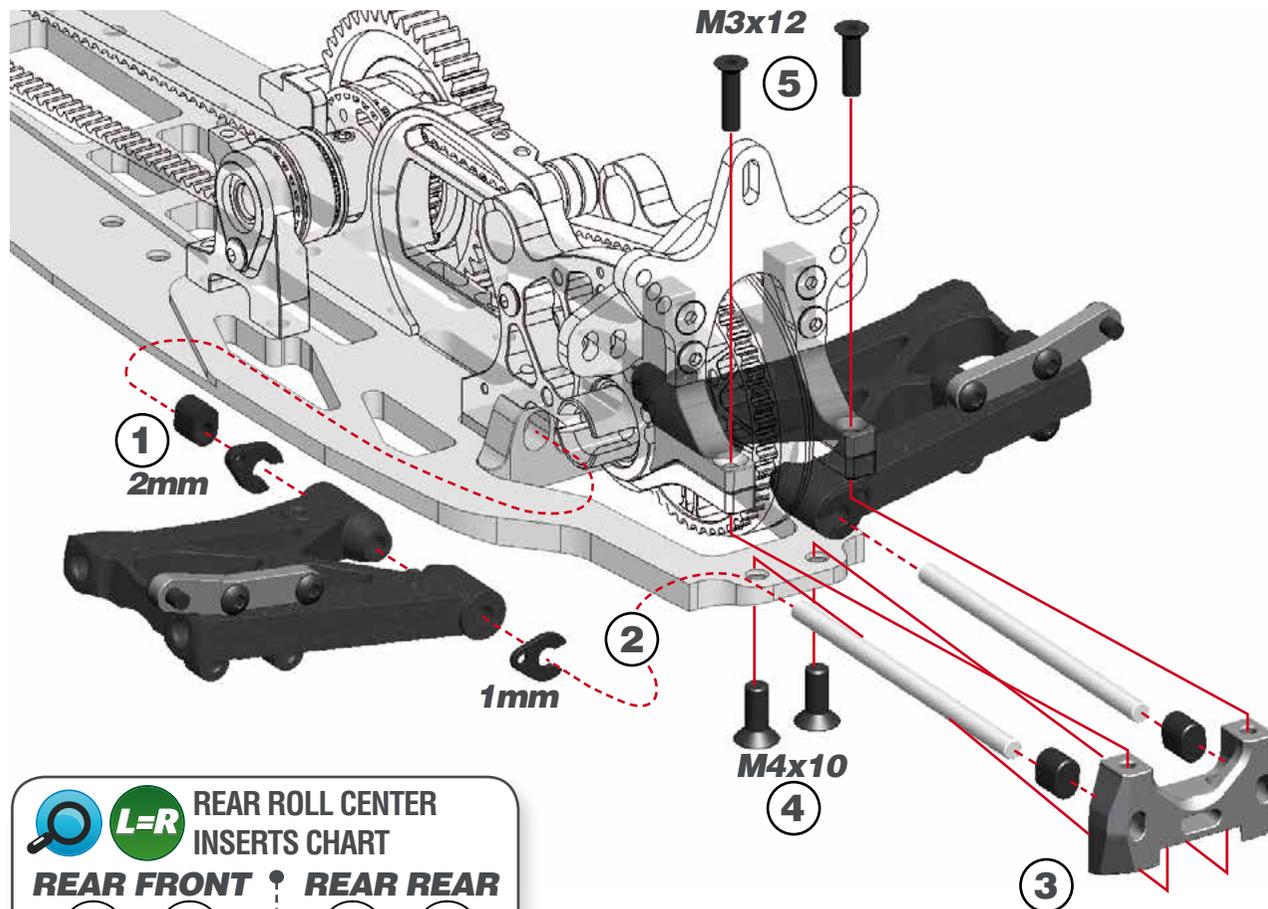
Before to assemble the rear lower arms, carefully sand the side part indicated in the left picture to remove any burr.

14.2

L=R



STEP 15



REAR ROLL CENTER INSERTS CHART

L=R

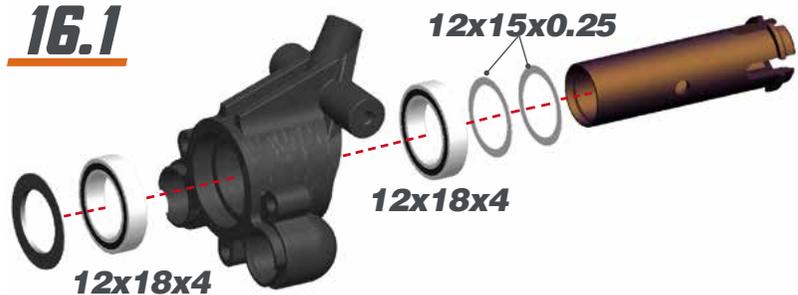
REAR FRONT		REAR REAR	



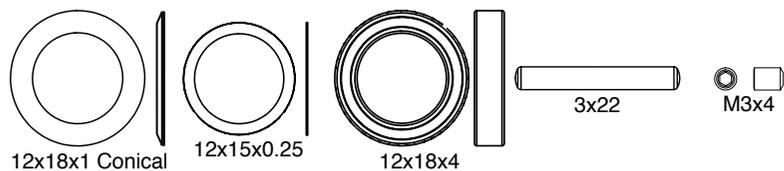
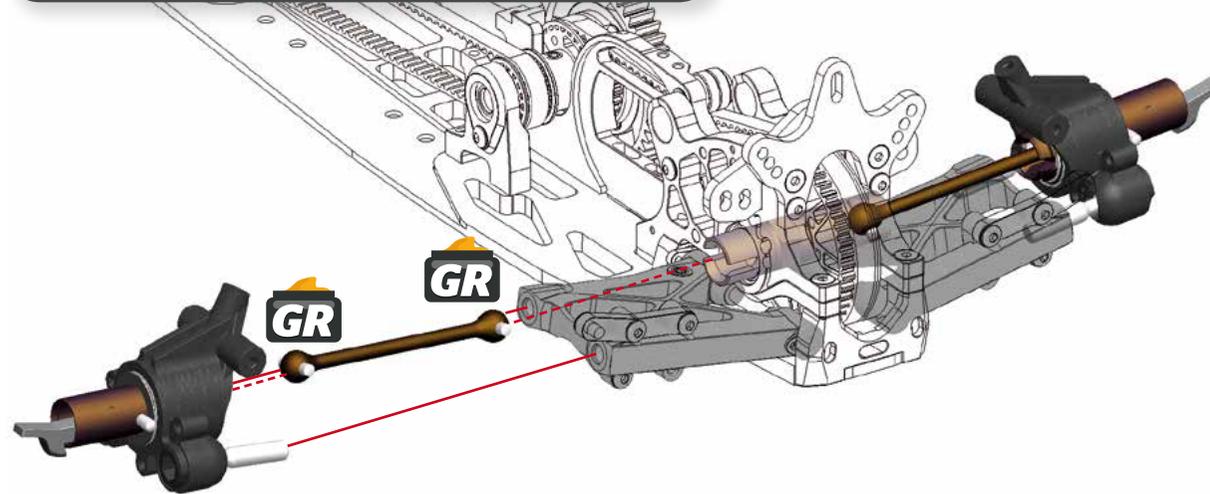
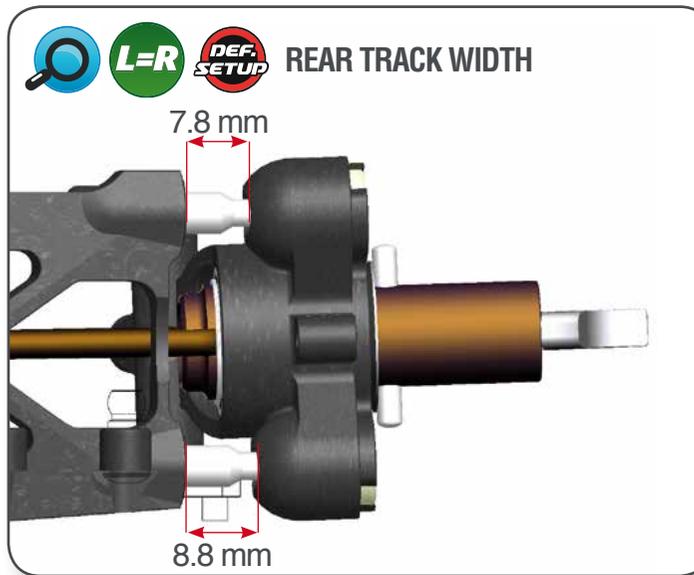
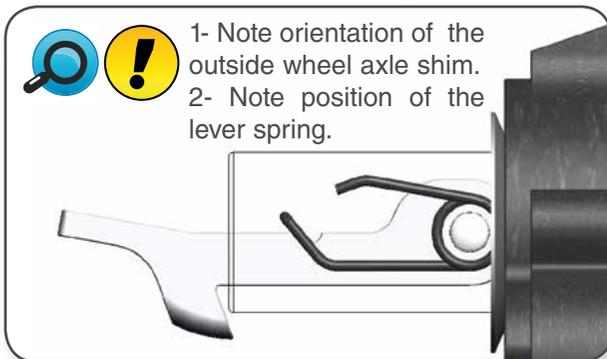
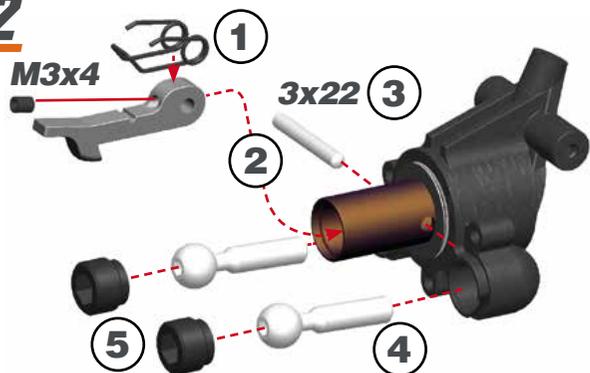
STEP 16

STEP 17

16.1



16.2

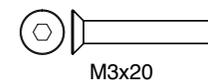
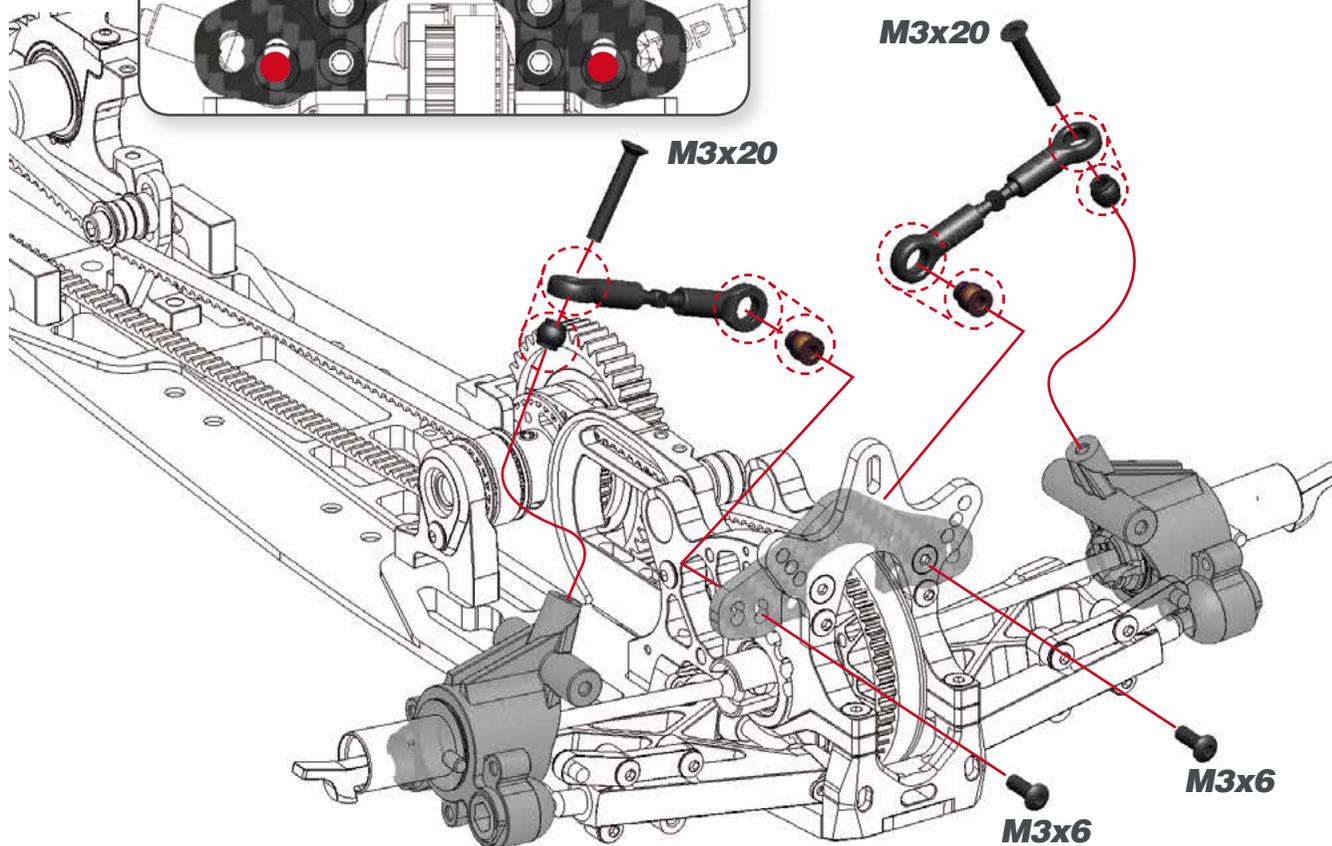
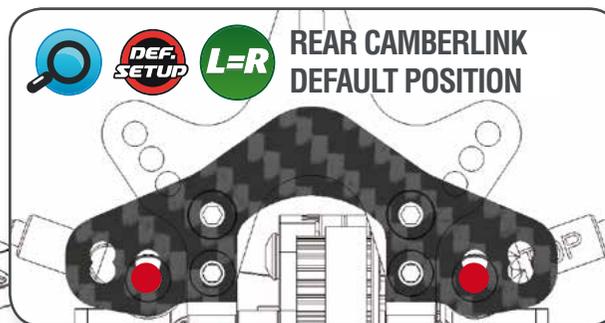


STEP 18

18.1



18.2



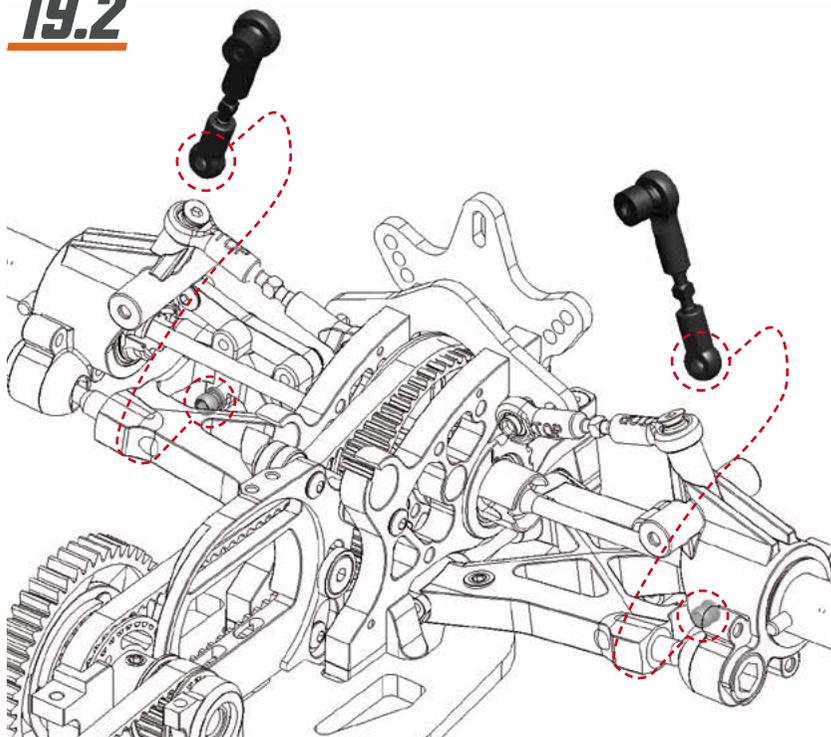
STEP 19

19.1



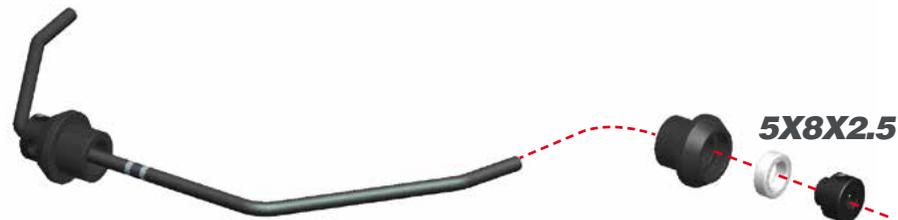
L=R ANTIROLL BAR ROD LENGTH
8.5mm

19.2



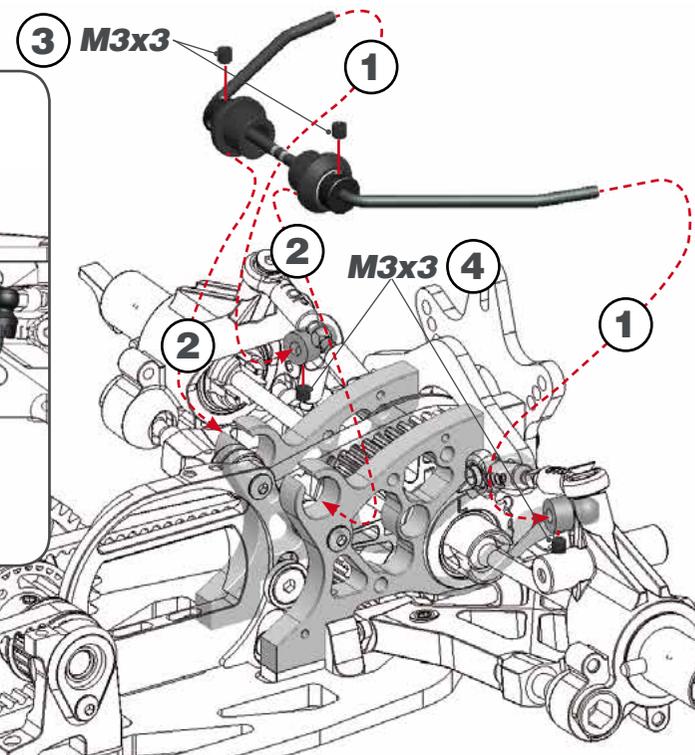
STEP 20

20.1

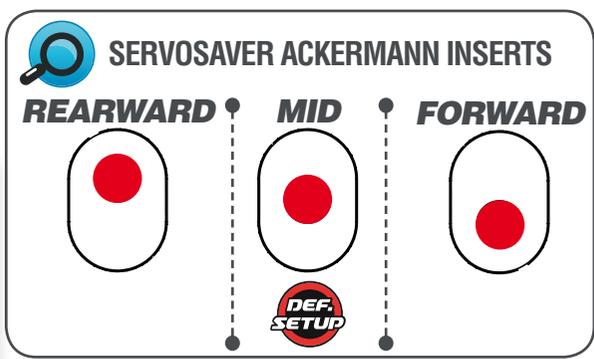
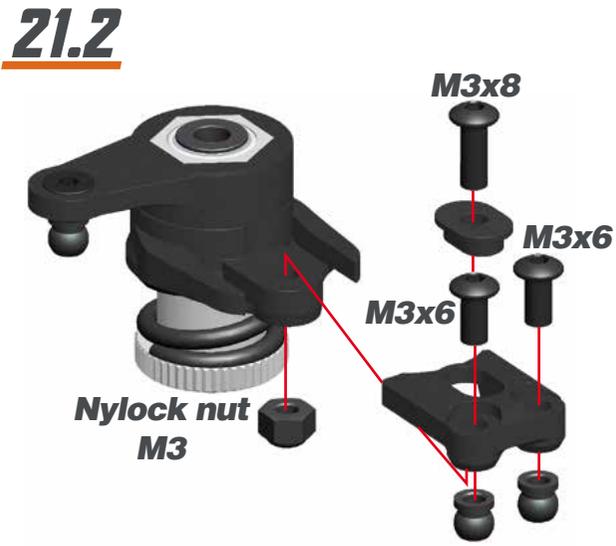
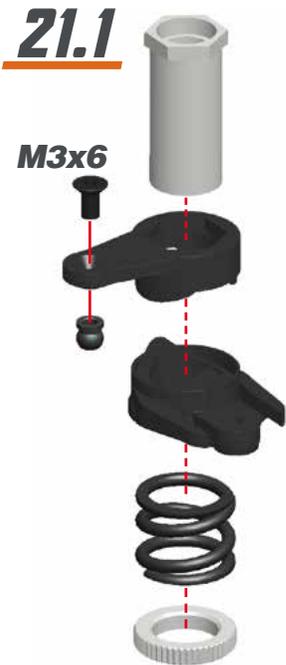


20.2

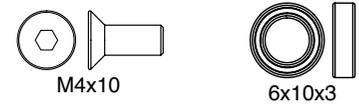
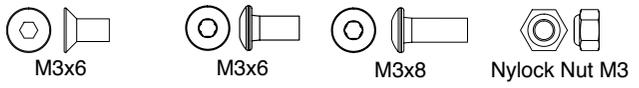
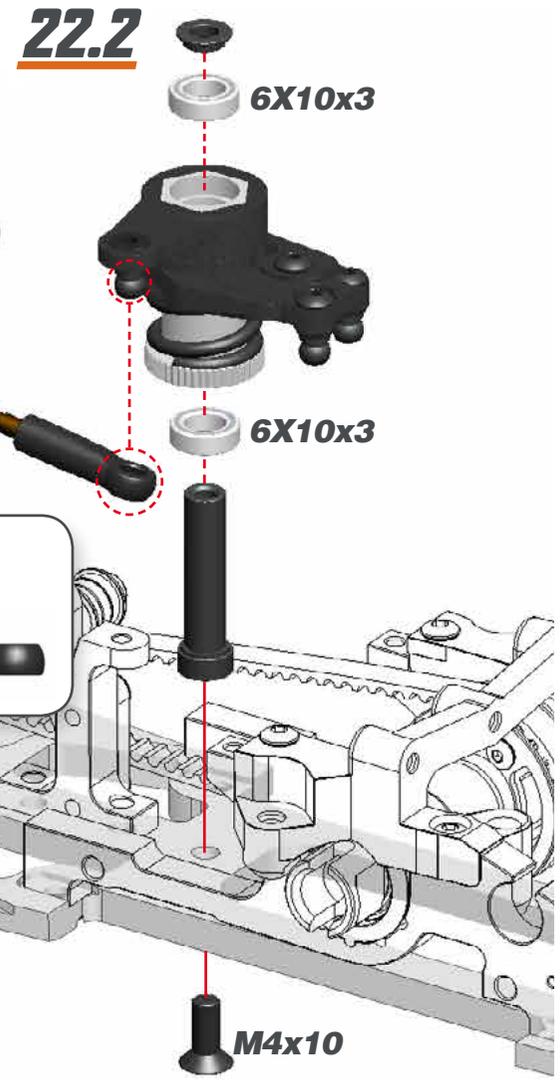
REAR ANTIROLL BAR ASSEMBLY



STEP 21 BAG 5



STEP 22



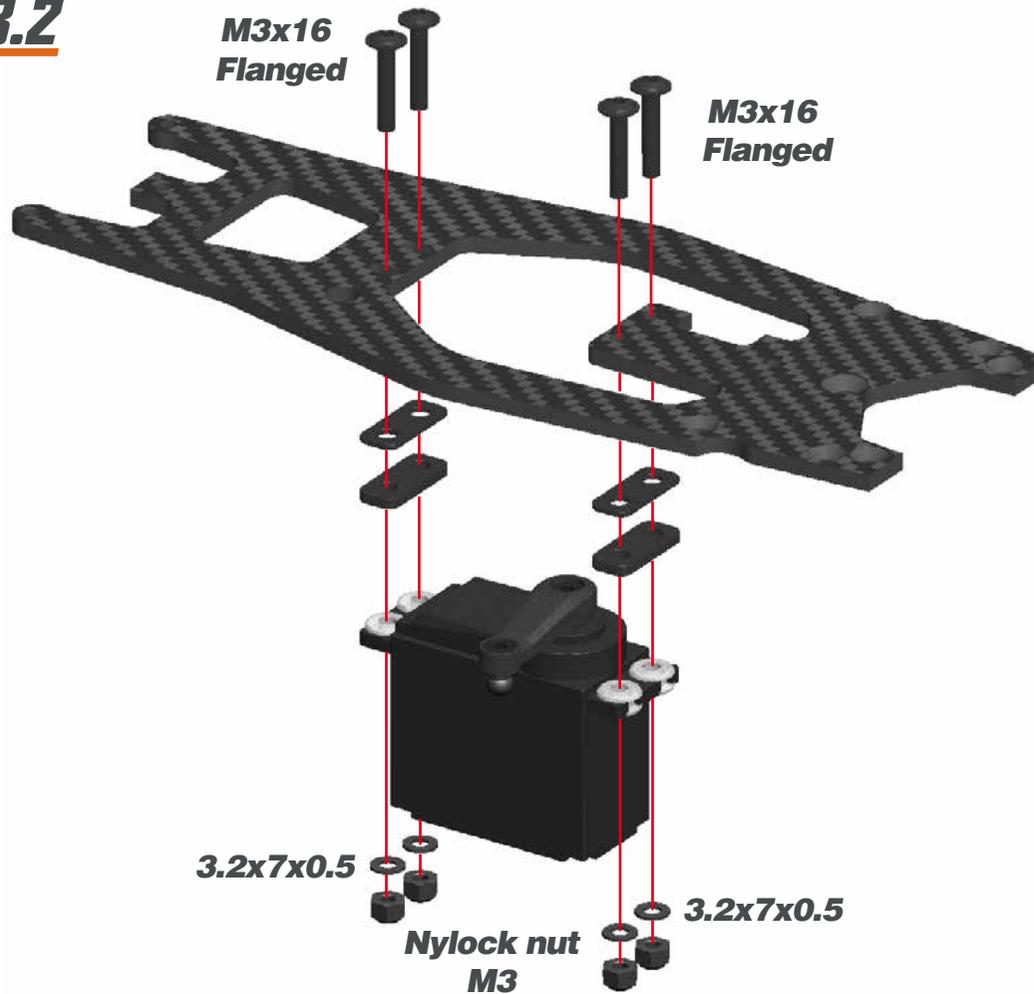
STEP 23

23.1

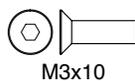
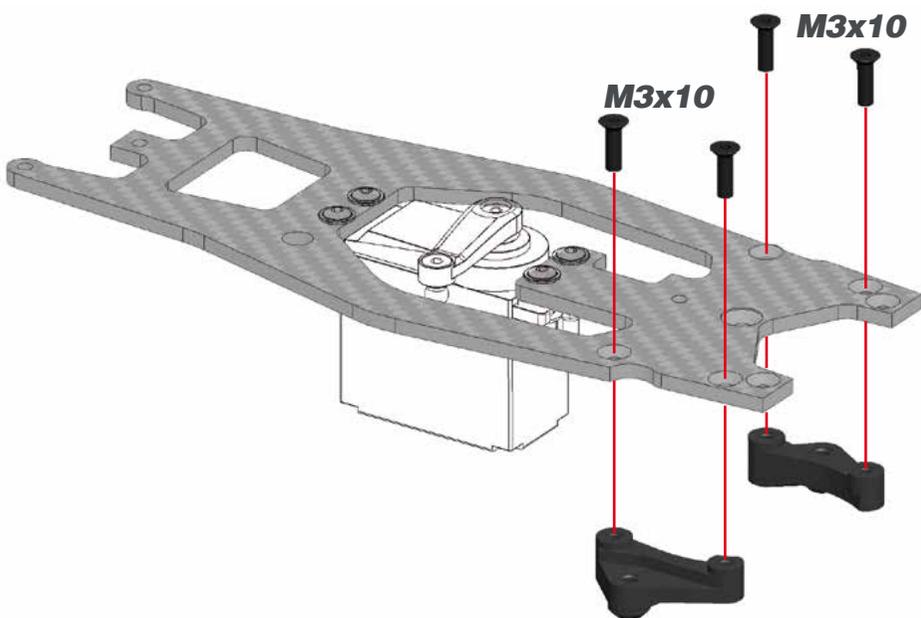
! Check how many teeth your servo spline has (23, 24 or 25) and use the right lever.



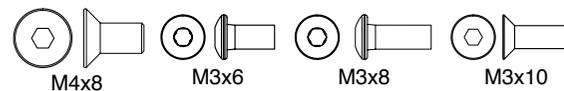
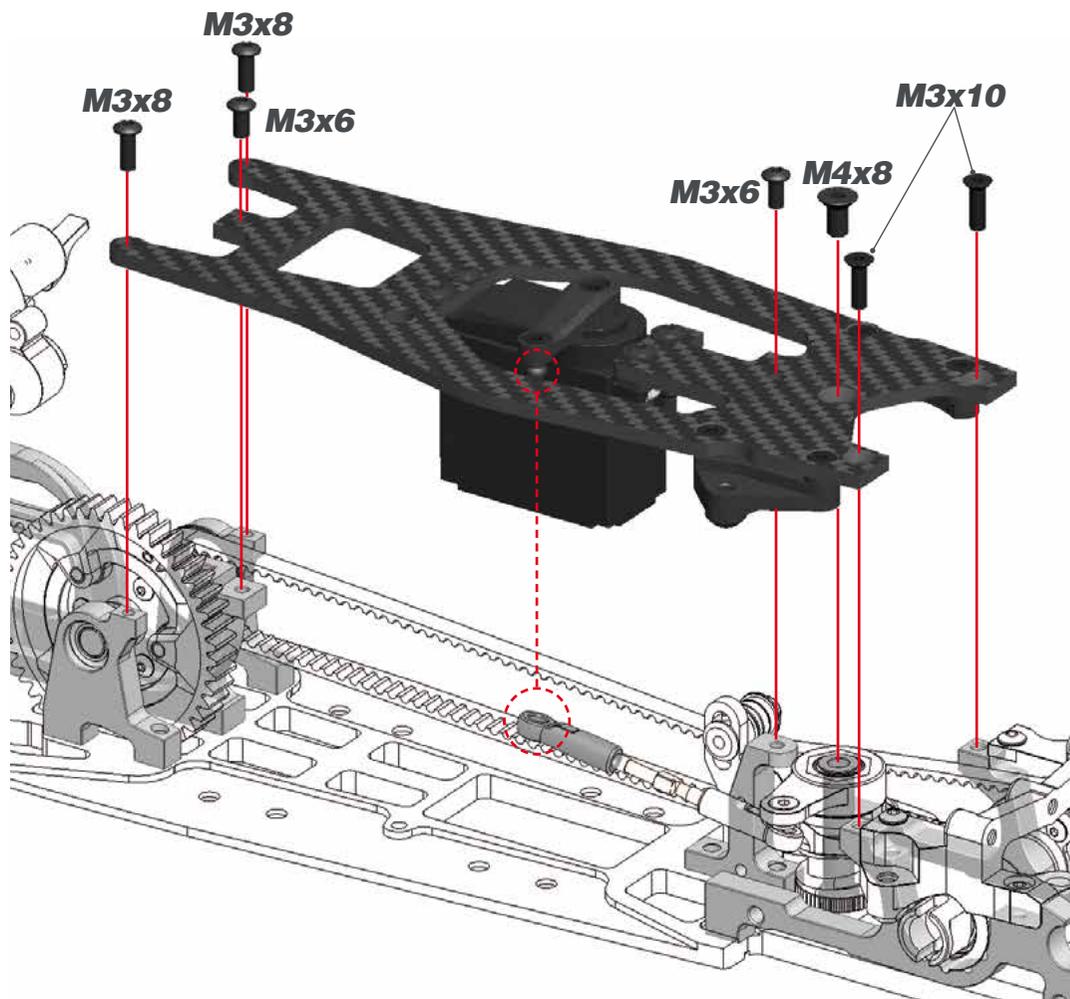
23.2



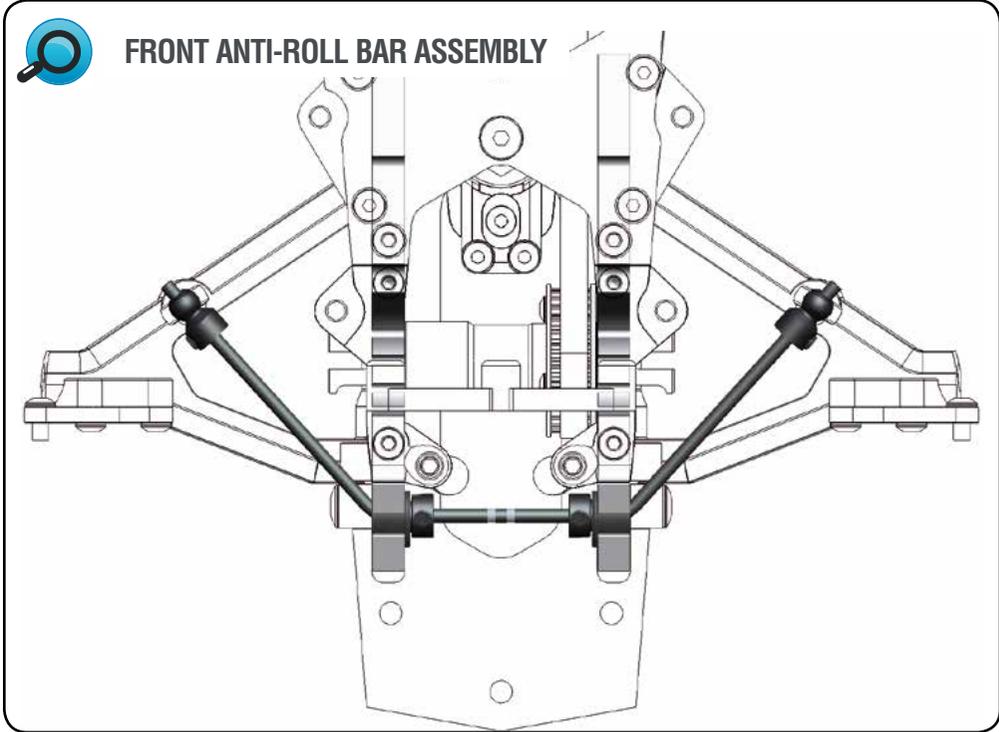
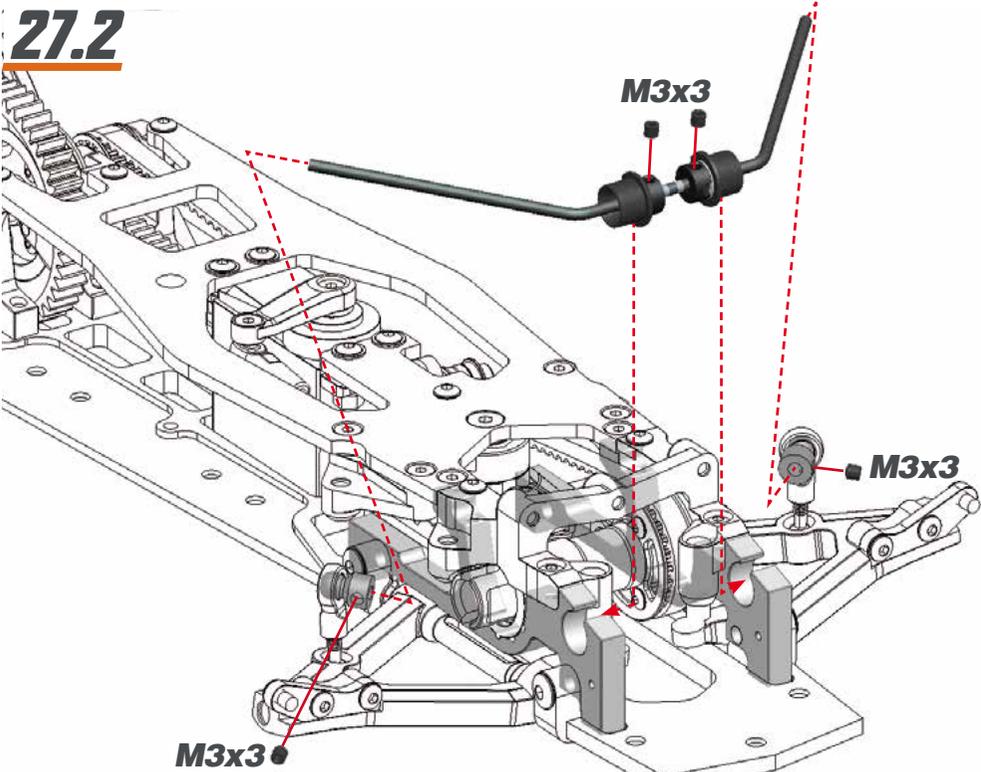
STEP 24



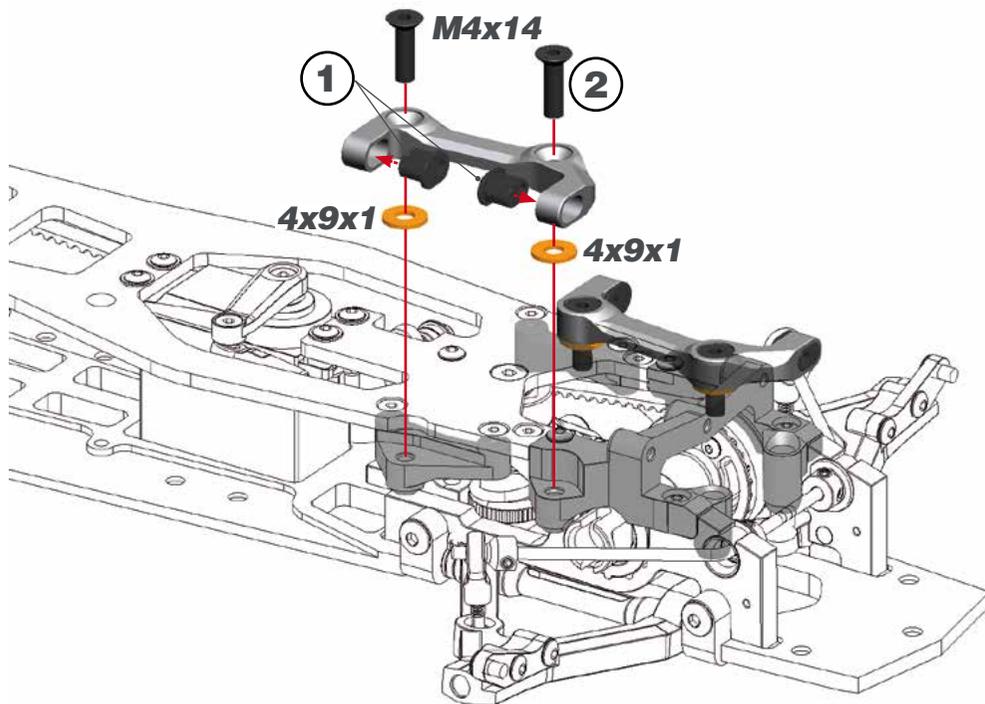
STEP 25



STEP 27

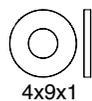
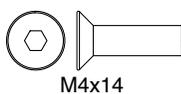


STEP 28 **BAG 6**

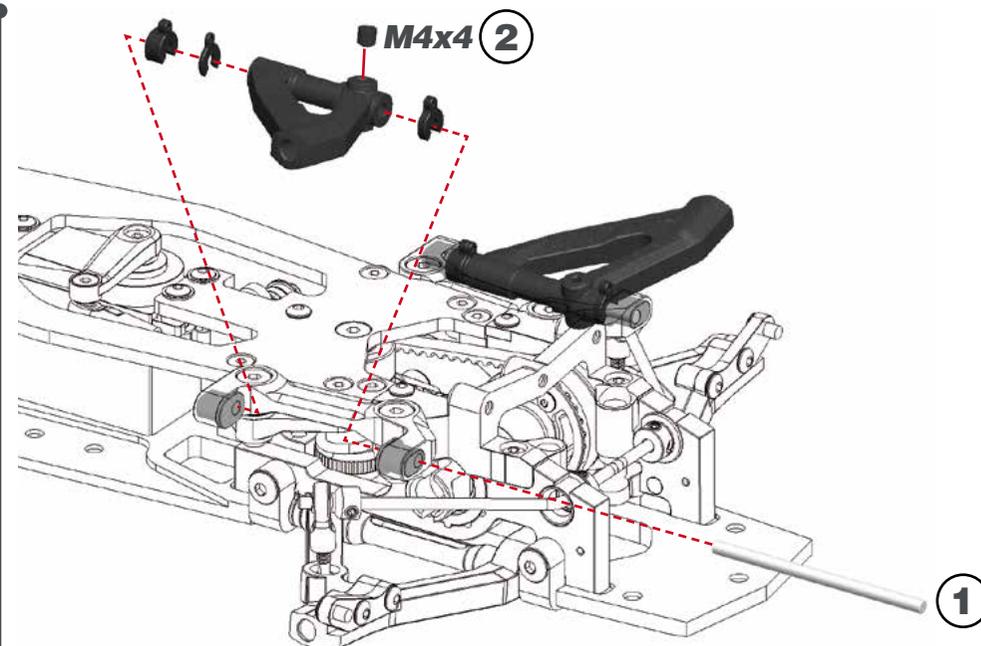


L=R FRONT SUSPENSION INSERTS CHART

INSIDE		MID		OUTSIDE	
RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT
DEF. SETUP					



STEP 29



L=R FRONT CASTER DEFAULT SPACERS

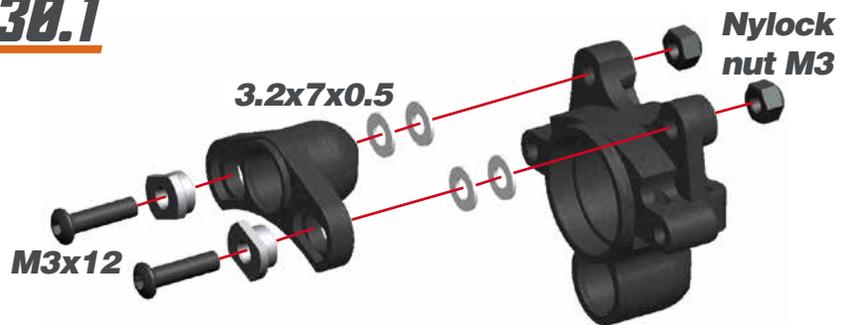
DEF. SETUP

4mm 1mm 2mm

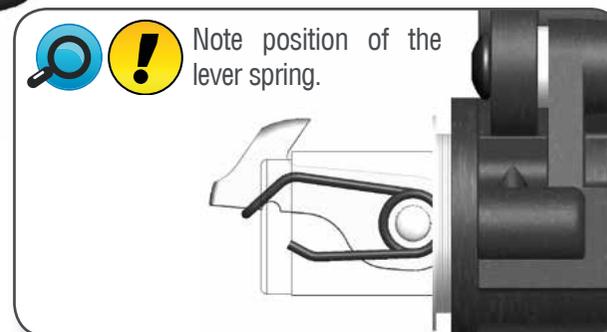
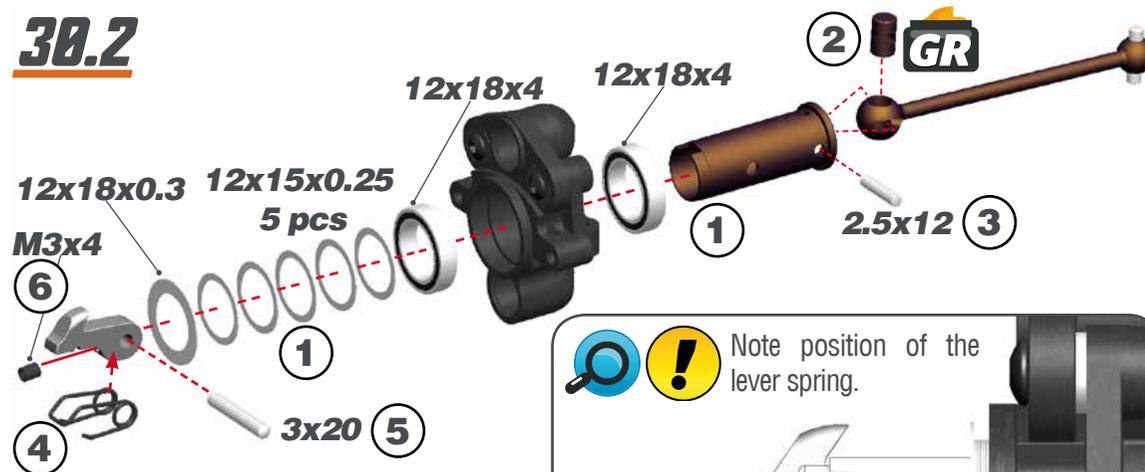


STEP 30

30.1

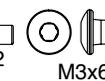
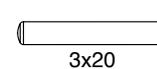
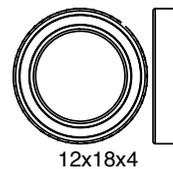
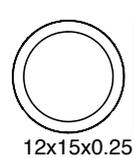
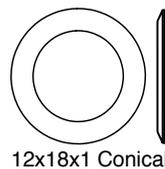
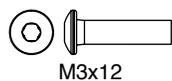
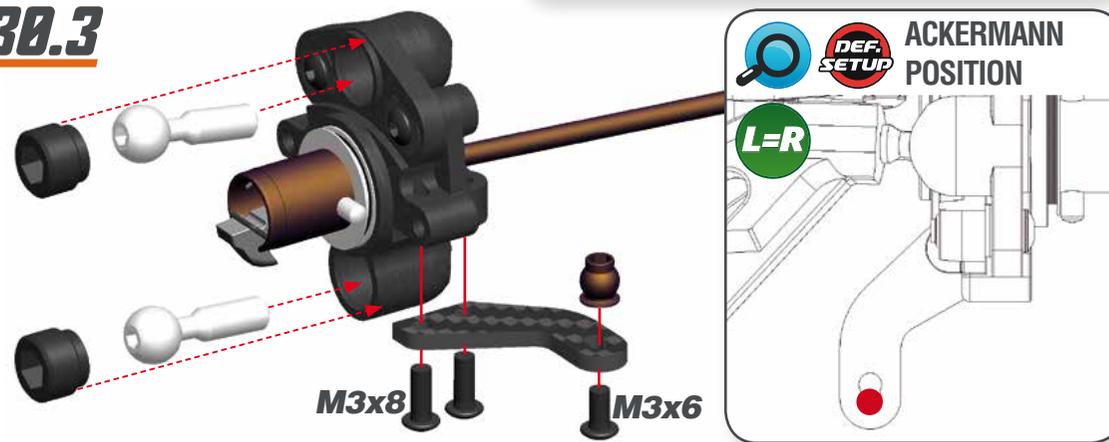


30.2

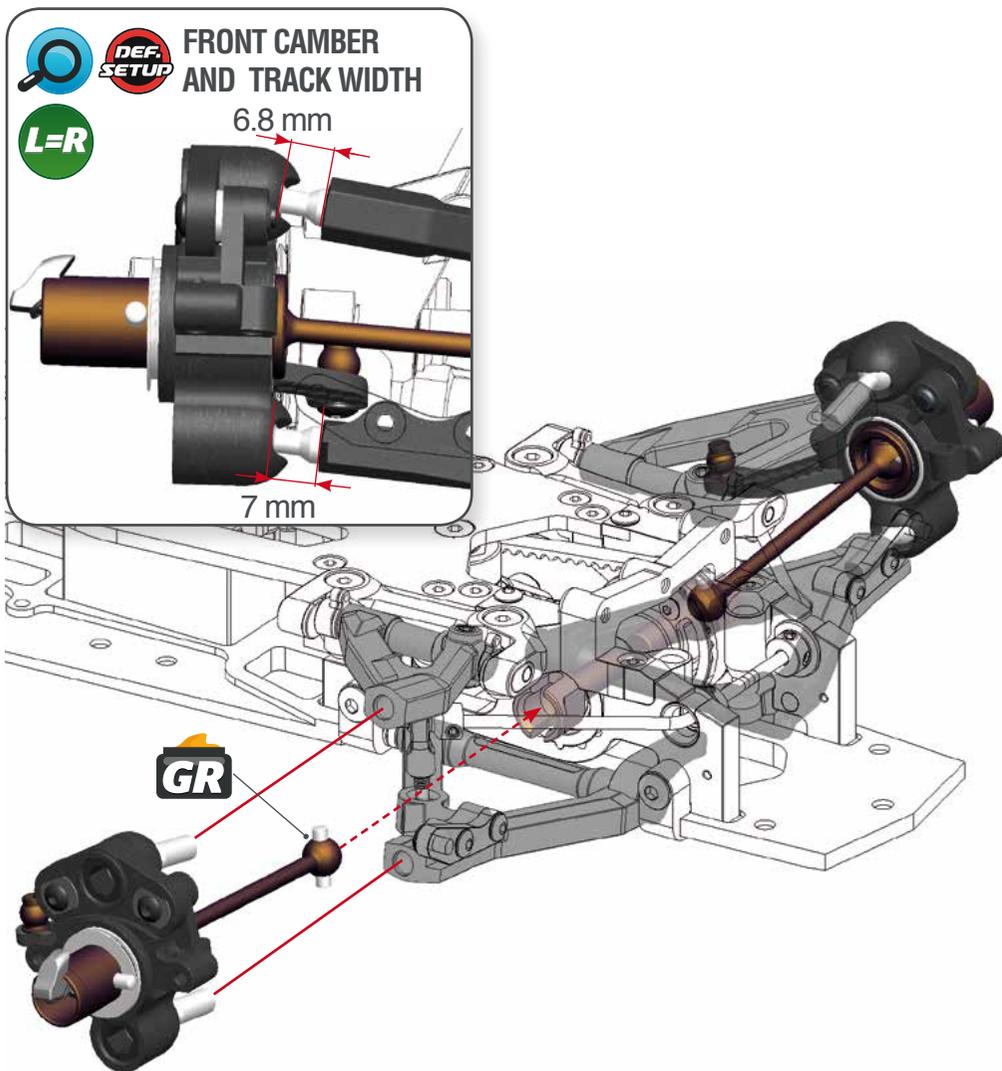


STEERING BLOCK INSERTS CHART			
	LEADING	NEUTRAL <small>DEF. SETUP</small>	TRAILING
RIGHT			
LEFT			

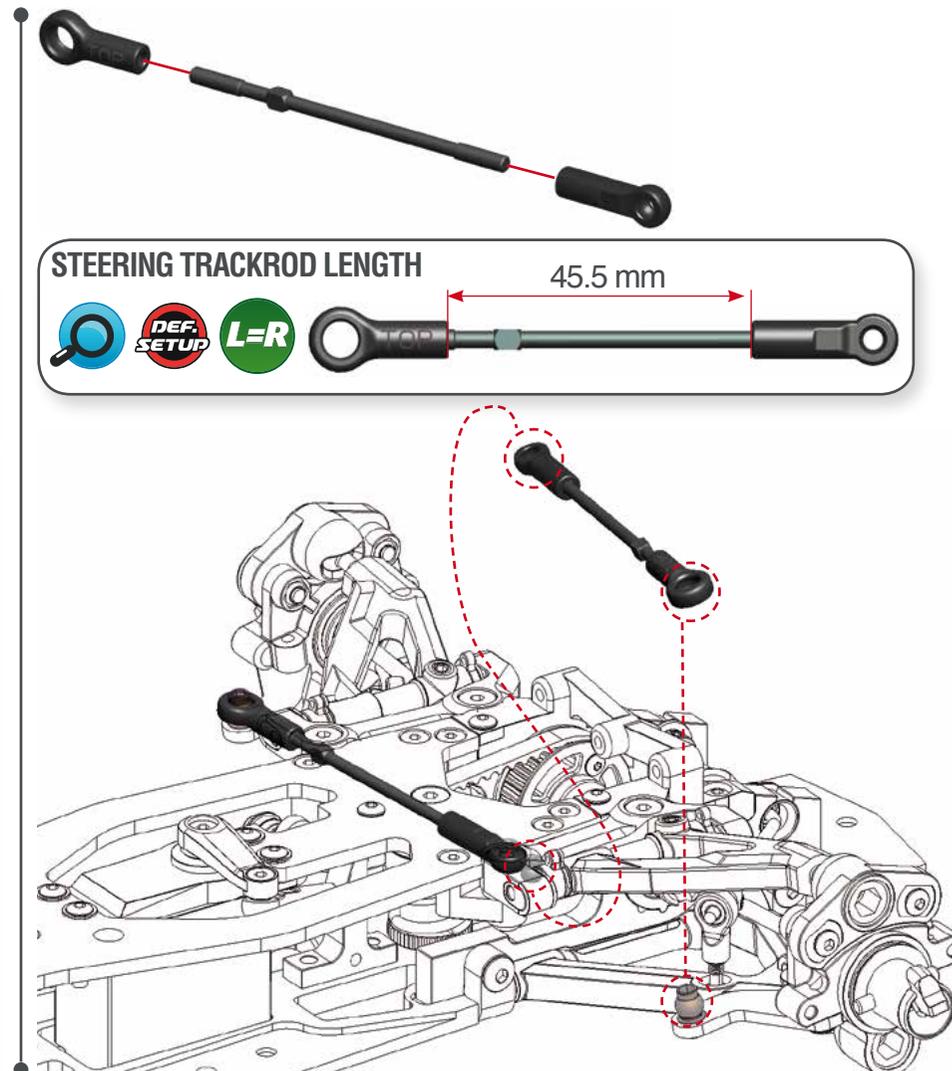
30.3



STEP 31

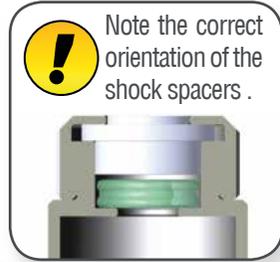


STEP 32



STEP 33 SHOCK BAG

33.1



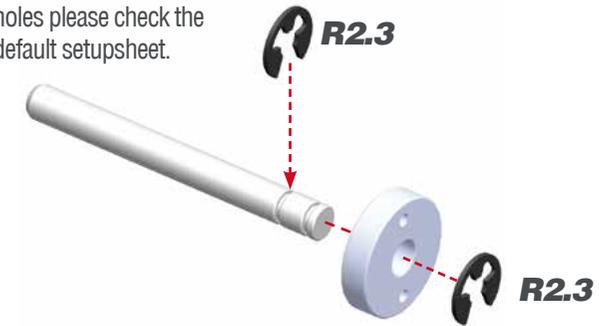
33.2



STEP 34

34.1

For the correct piston holes please check the default setupsheet.



34.2

FRONT



REAR



STEP 35

35.1

Push the shock top and the membrane into the shock cap.



35.2

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.

4- Close top only 3/4.



35.3

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

2- Close completely the shock cap.



SHOCKS LENGTH:
Measure the shock length fully extended.

FRONT

14 mm

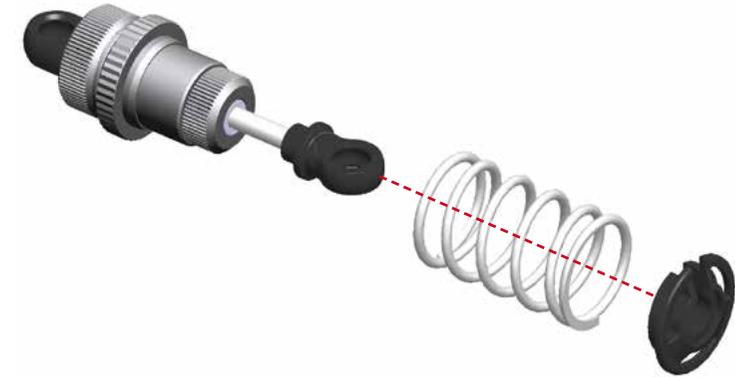
REAR

14.5 mm

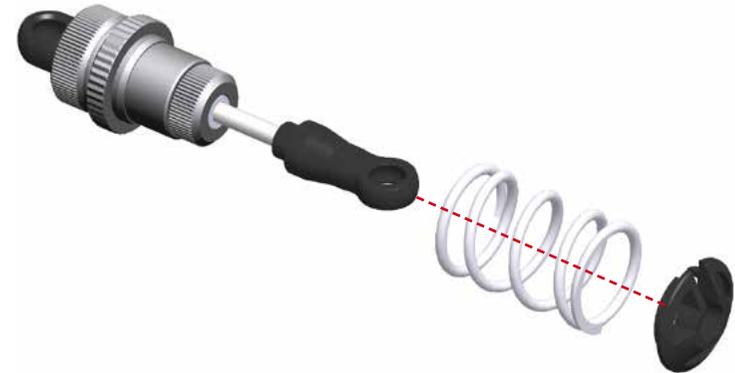
STEP 36

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

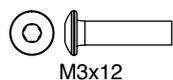
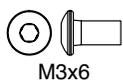
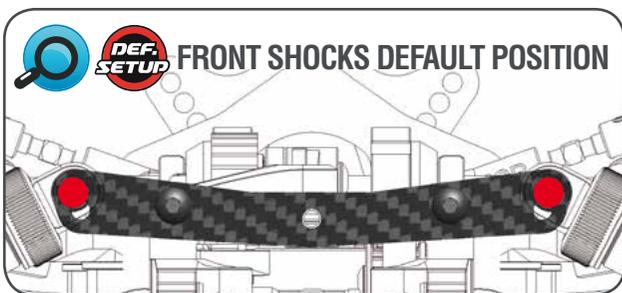
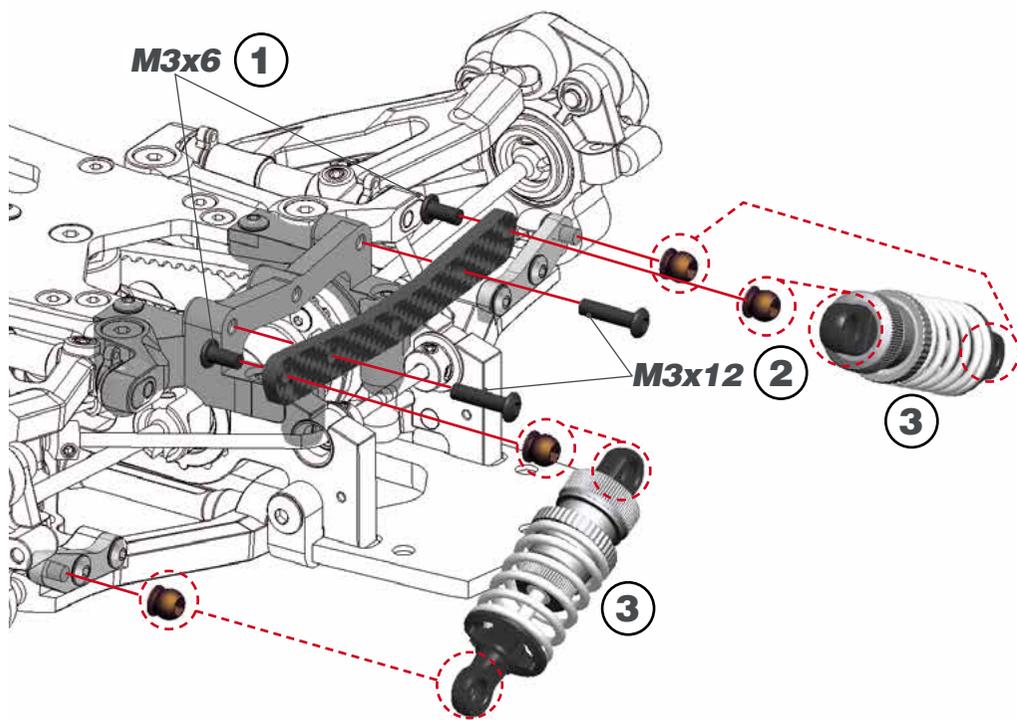
FRONT



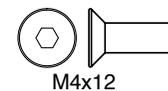
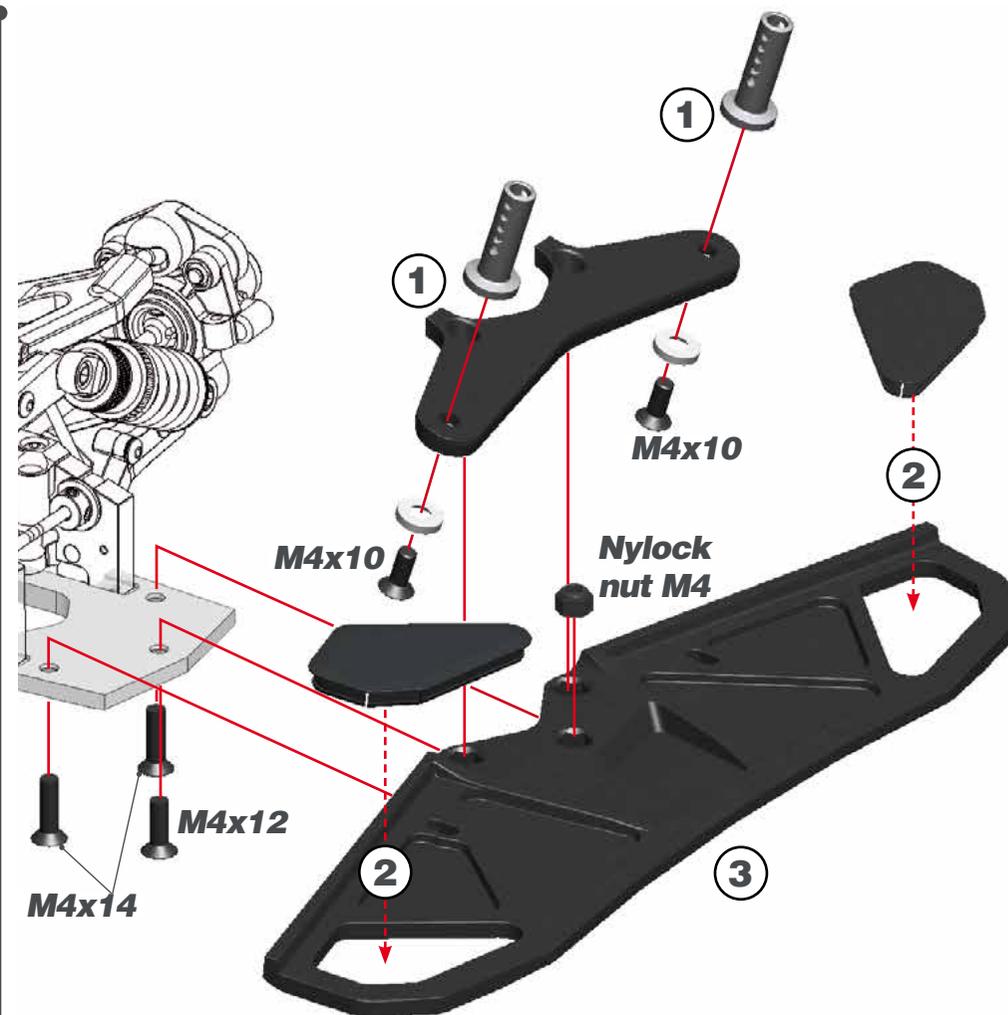
REAR



STEP 37 **BAG 7**

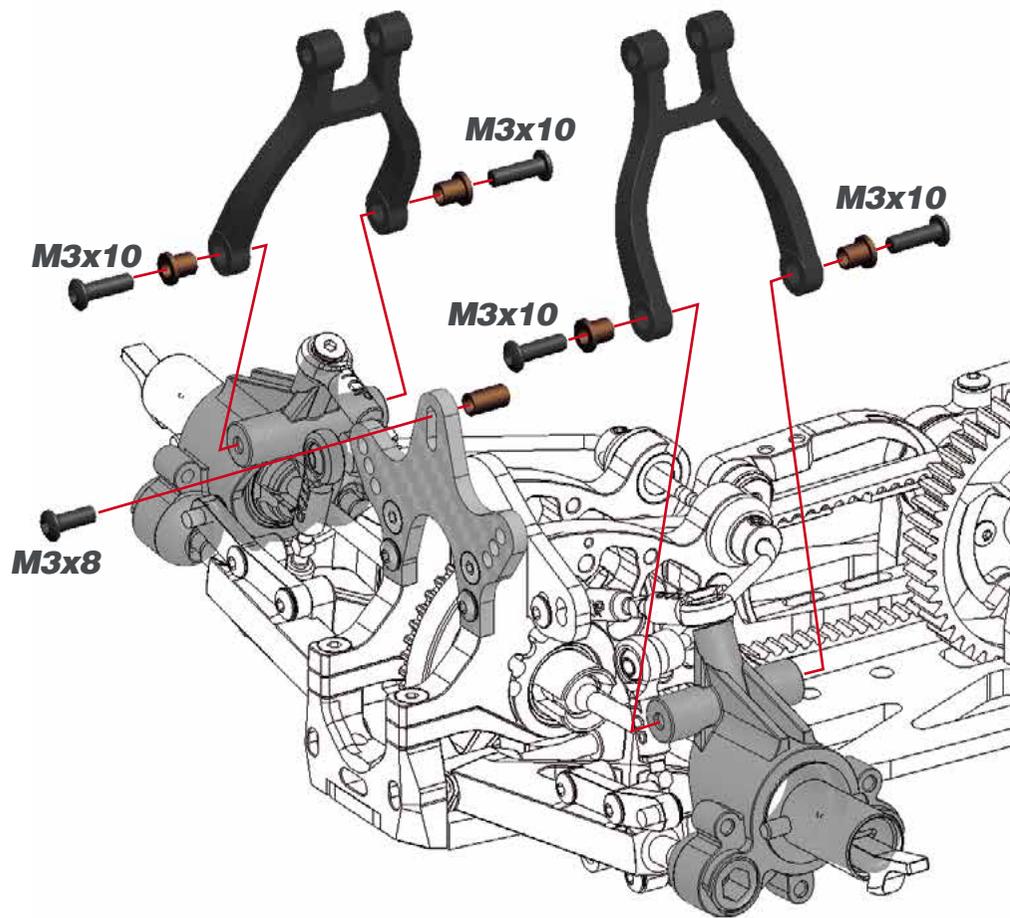


STEP 38



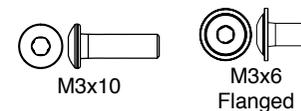
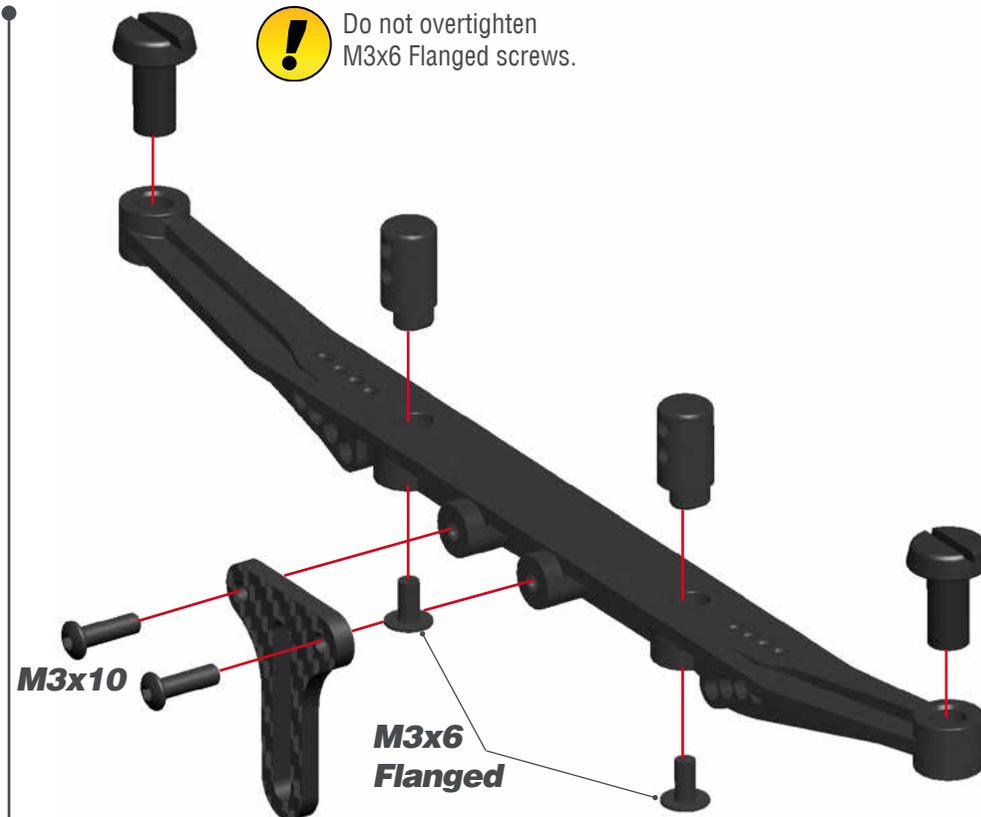
STEP 39

! Do not tighten too much M3x10 screws to keep a free rotation.

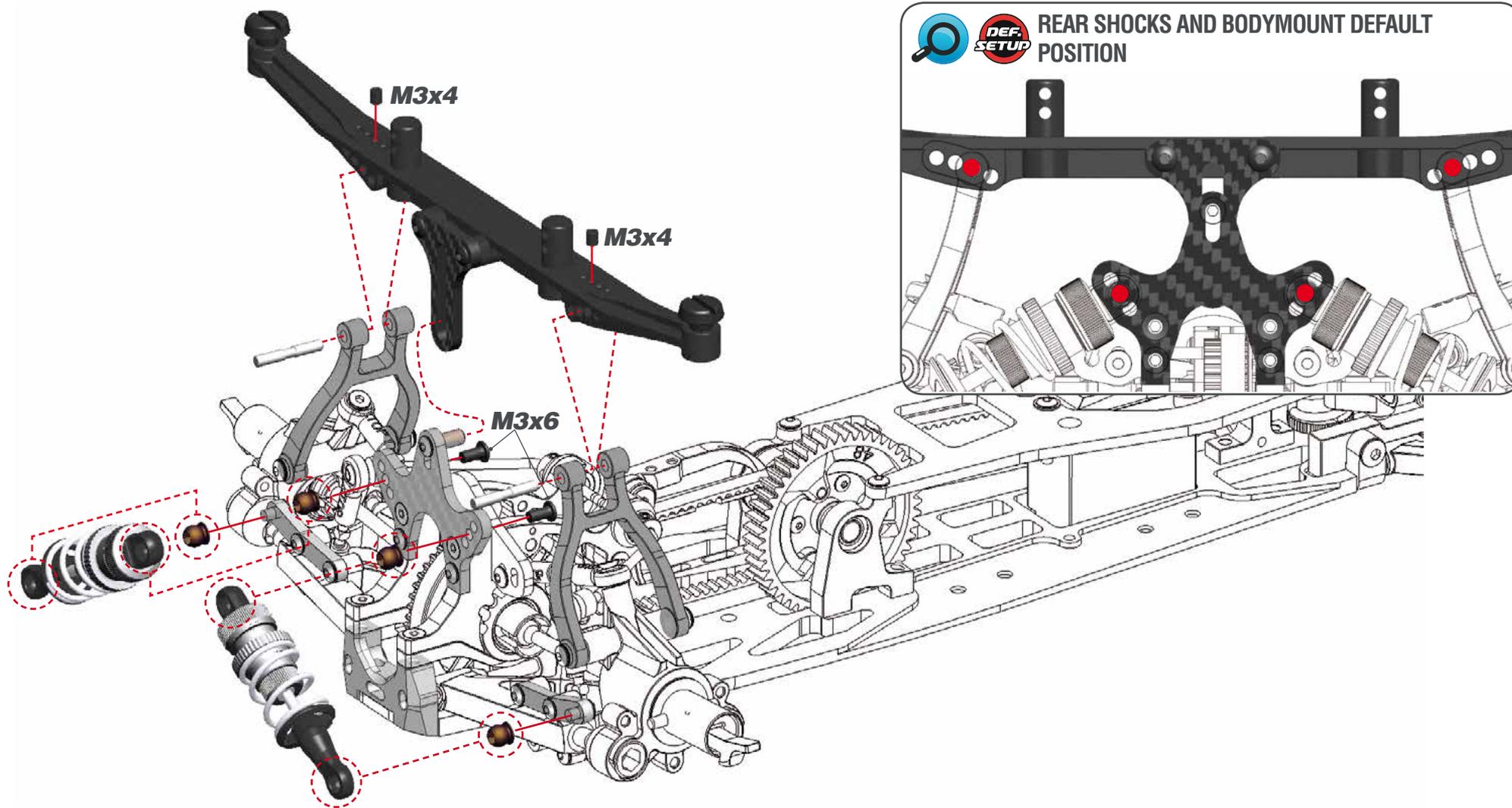


STEP 40

! Do not overtighten M3x6 Flanged screws.



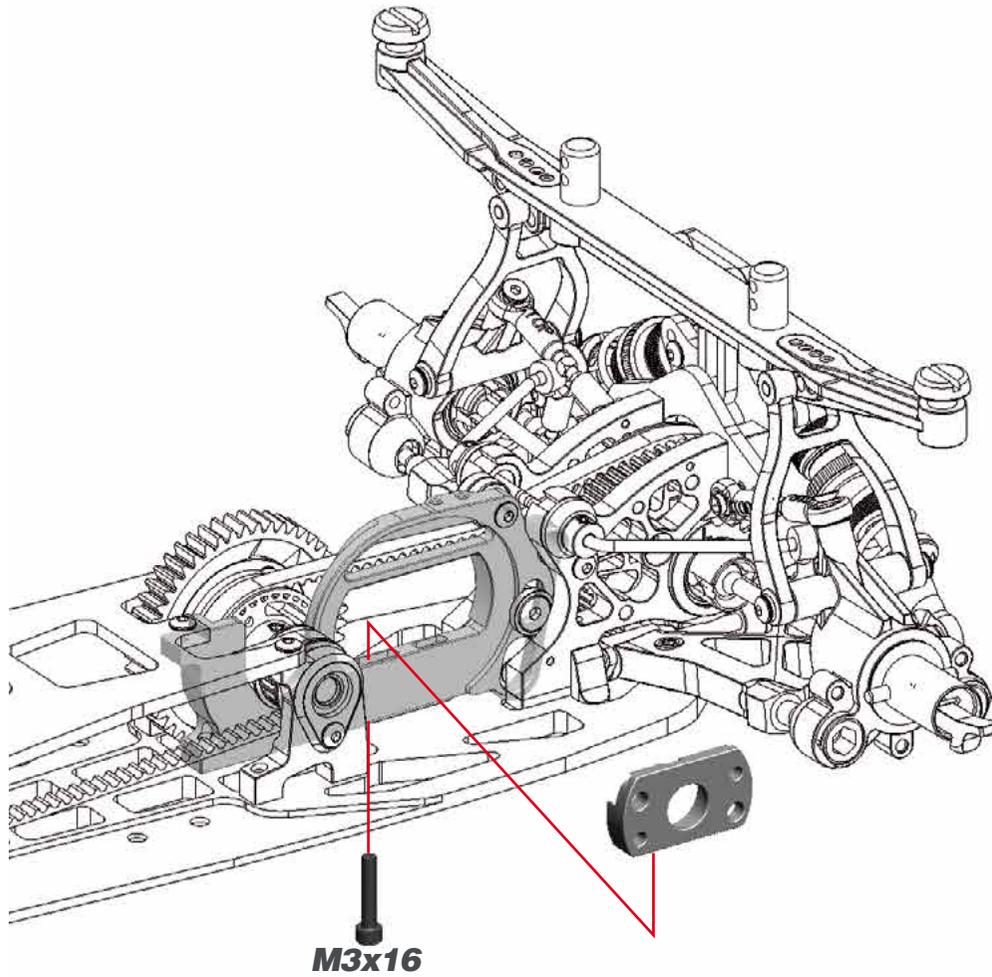
STEP 41



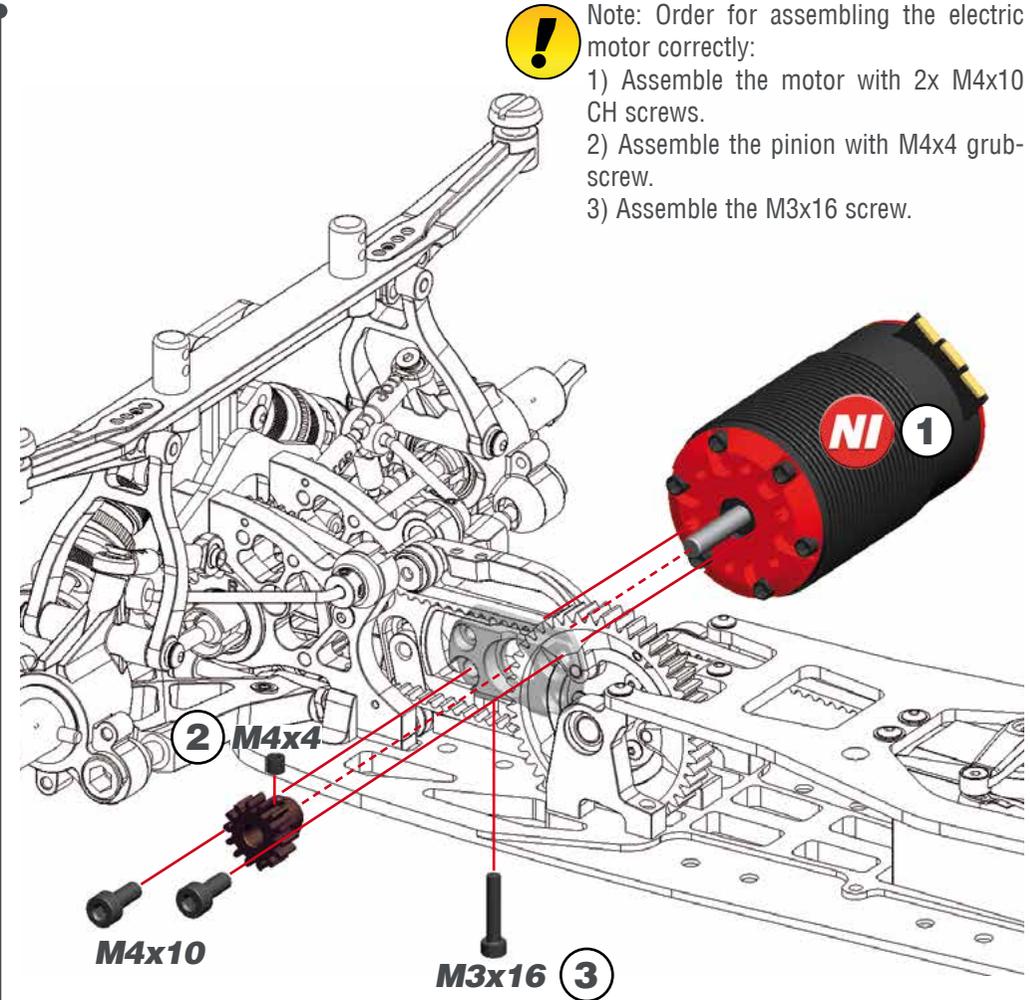
 
M3x4

 
M3x6

STEP 42 BAG 8



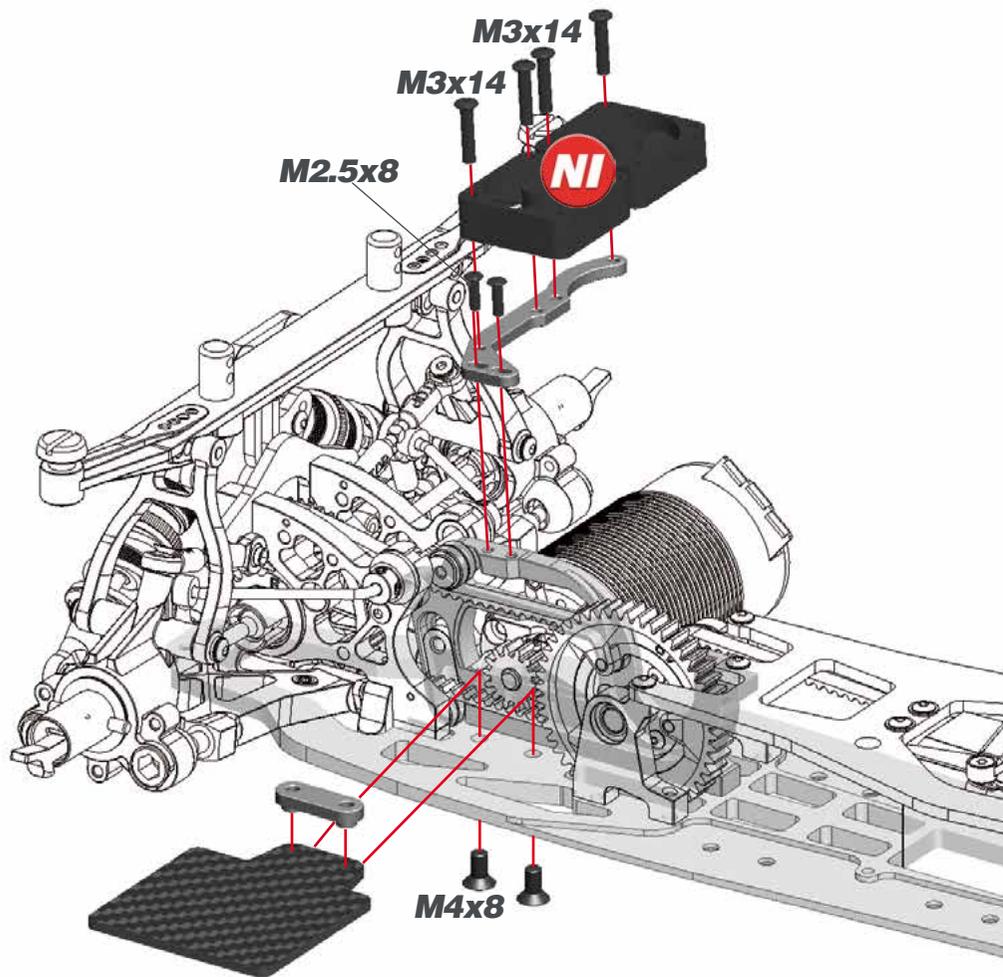
STEP 43

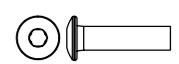


Note: Order for assembling the electric motor correctly:

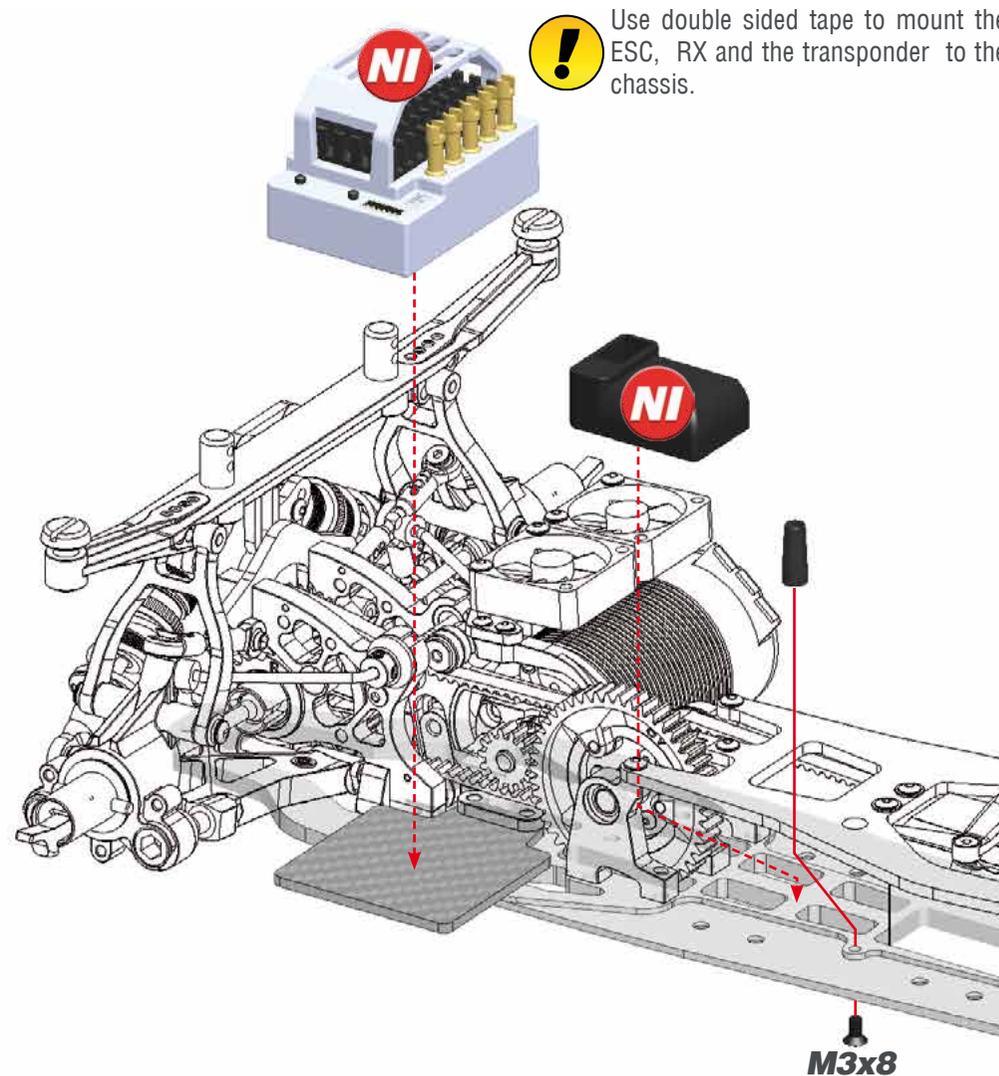
- 1) Assemble the motor with 2x M4x10 CH screws.
- 2) Assemble the pinion with M4x4 grub-screw.
- 3) Assemble the M3x16 screw.

STEP 44



-  M4x8
-  M2.5x8
-  M3x14

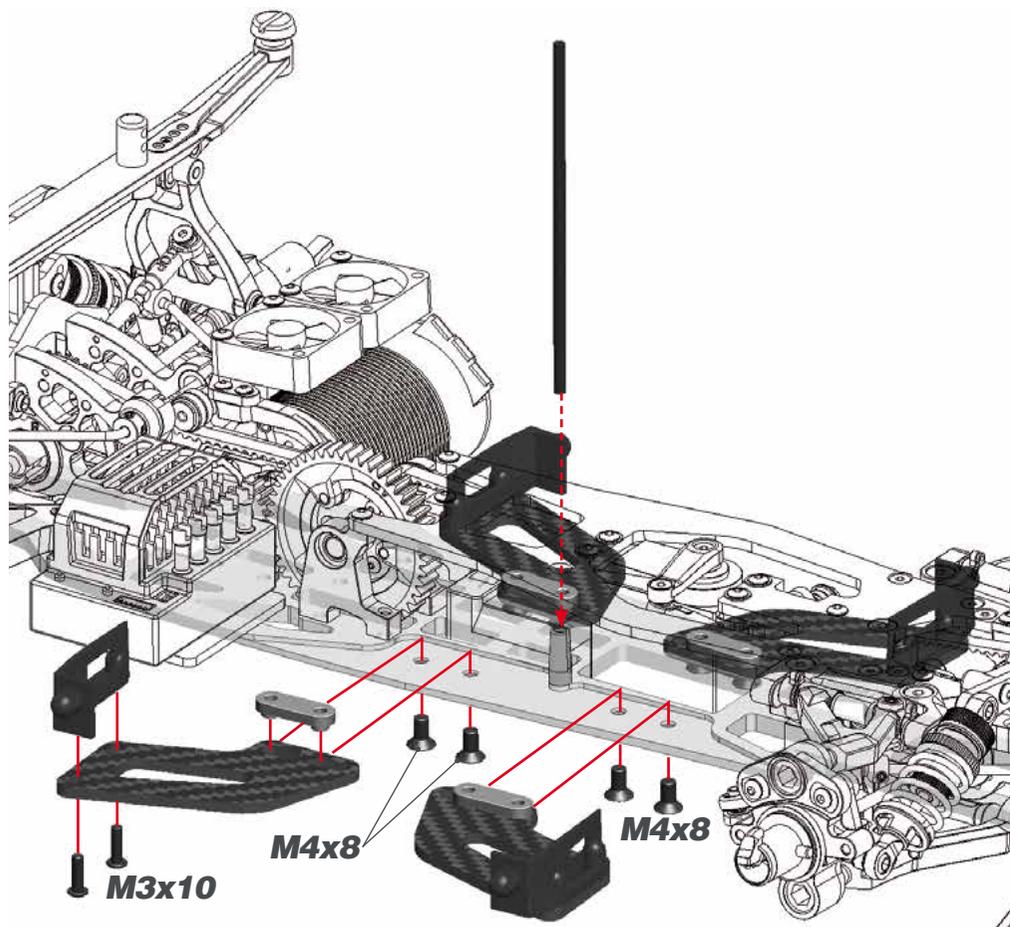
STEP 45



Use double sided tape to mount the ESC, RX and the transponder to the chassis.

-  M3x8

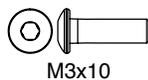
STEP 46



M4x8

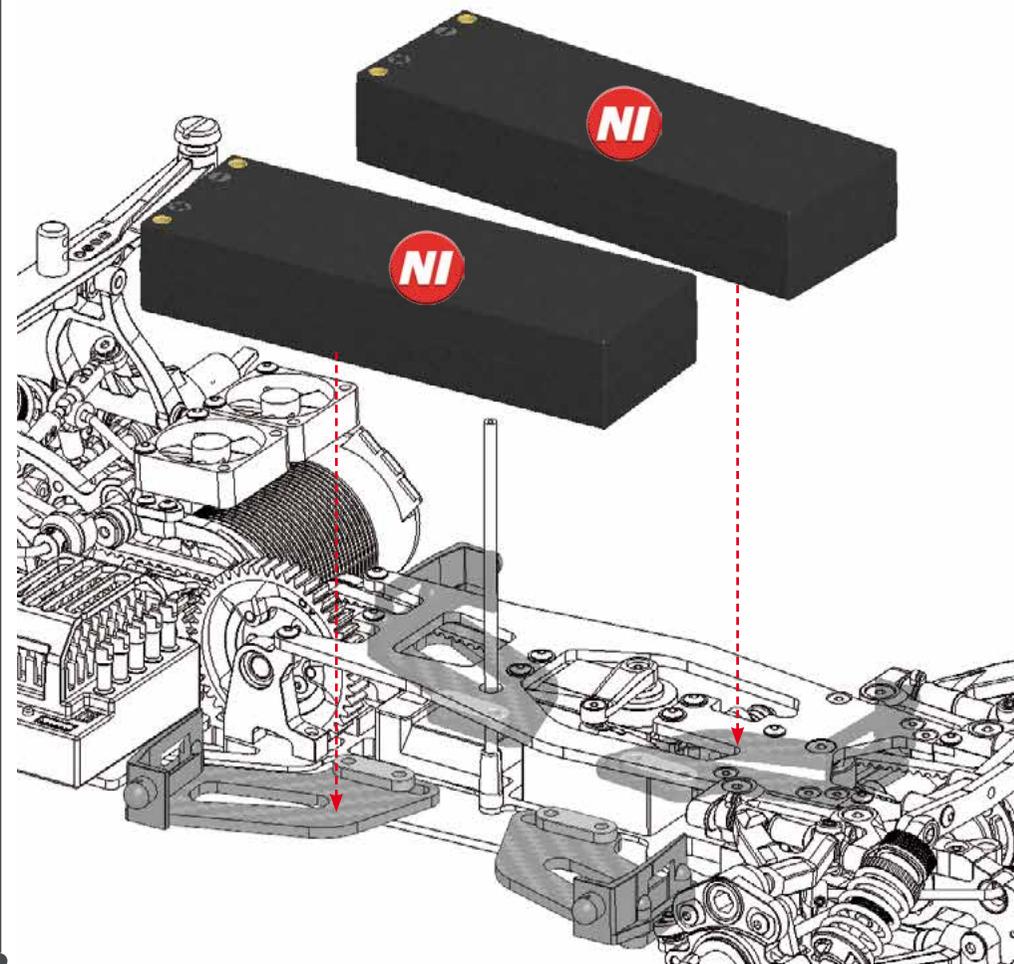
M4x8

M3x10

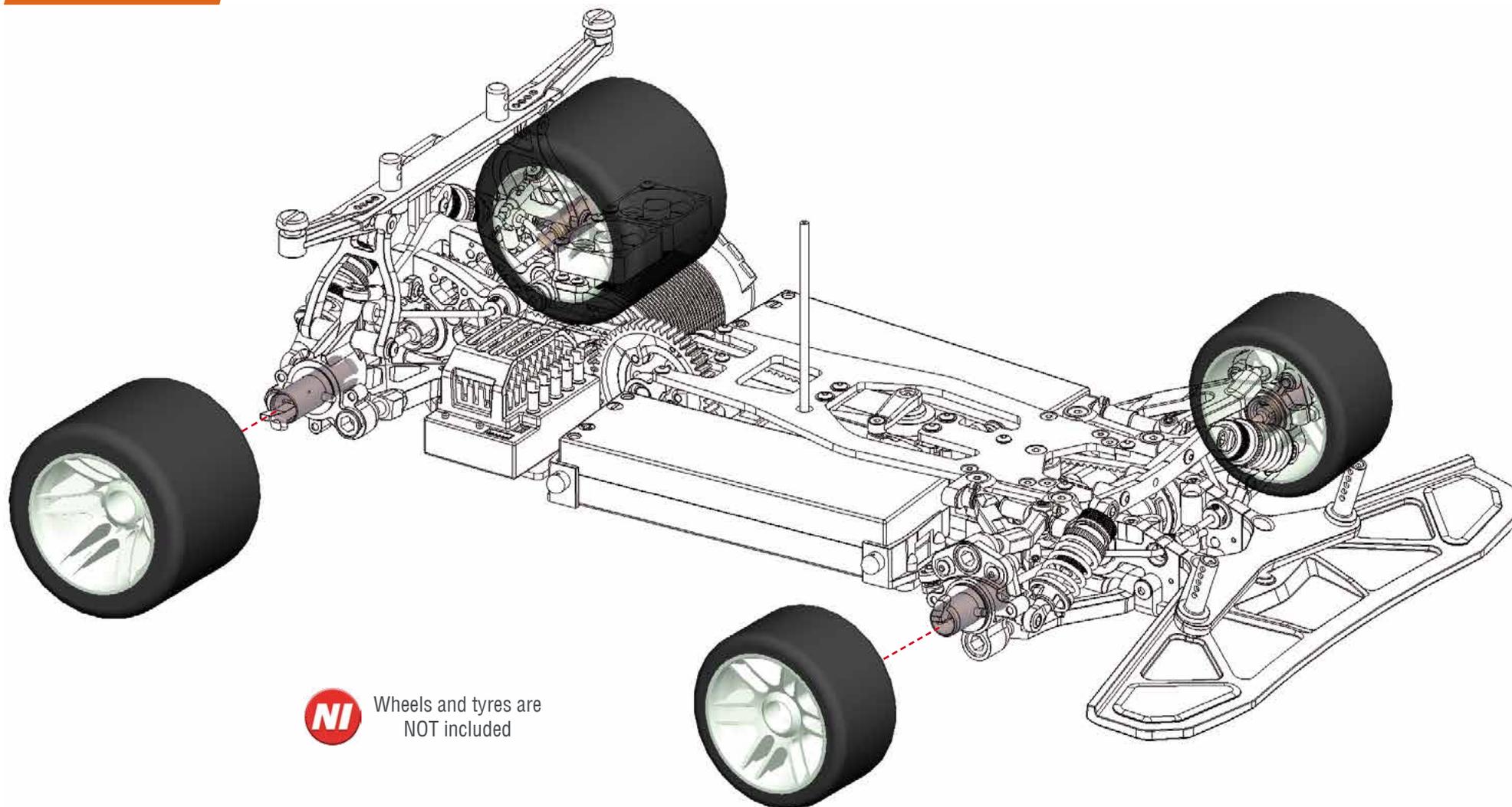


STEP 47

! Tip: we suggest to use glasstape to fasten the batteries in the side-holders provided or suitable velcro straps.

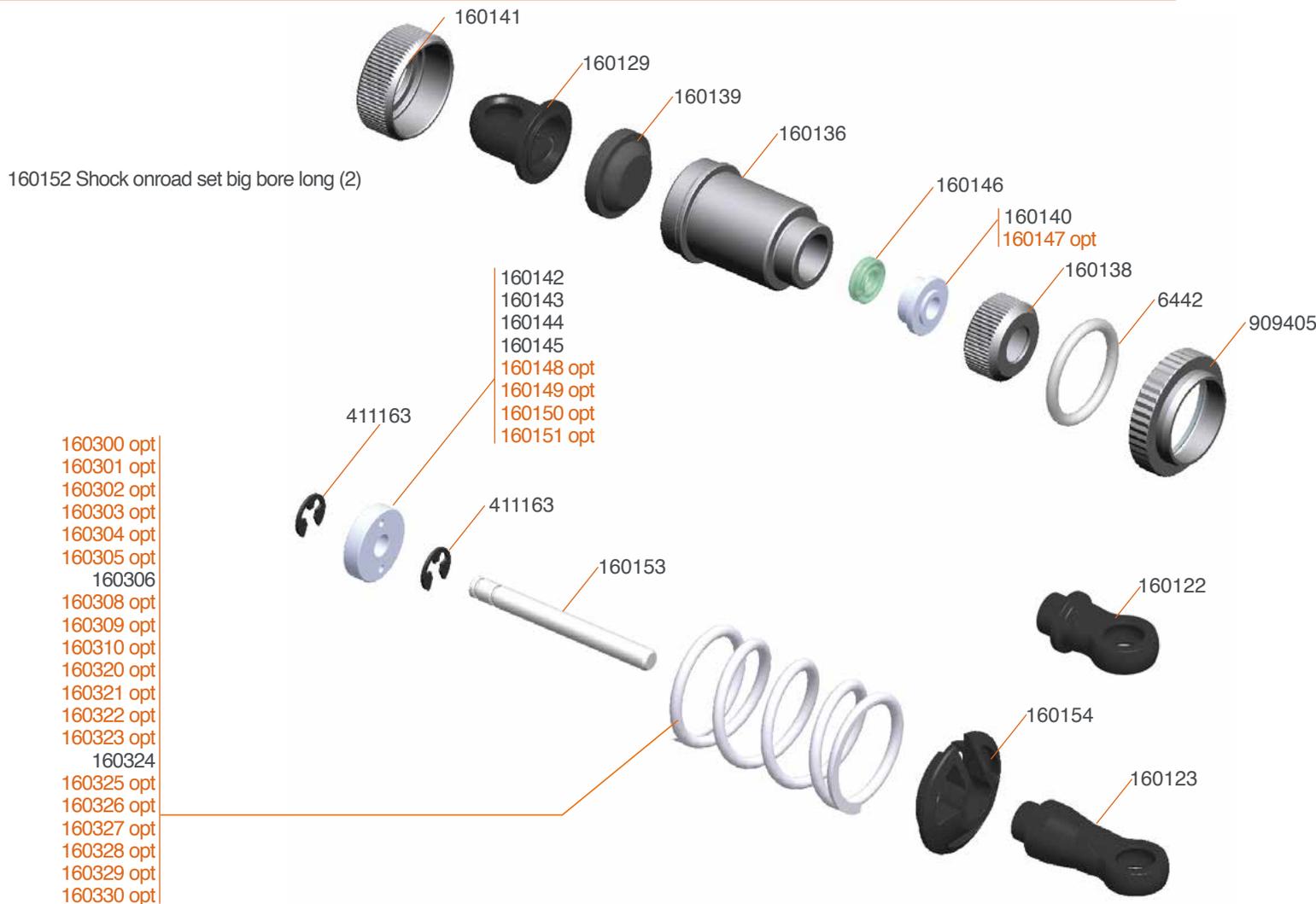


STEP 48



INDEX

SHOCKS EXPLODED VIEW	34
TRANSMISSION EXPLODED VIEW	35
REAR EXPLODED VIEW	36
STEERING EXPLODED VIEW	37
FRONT EXPLODED VIEW	38
FINAL I EXPLODED VIEW	39
FINAL II EXPLODED VIEW	40
TEAM SERPENT NETWORK	41



- 160300 opt
- 160301 opt
- 160302 opt
- 160303 opt
- 160304 opt
- 160305 opt
- 160306
- 160308 opt
- 160309 opt
- 160310 opt
- 160320 opt
- 160321 opt
- 160322 opt
- 160323 opt
- 160324
- 160325 opt
- 160326 opt
- 160327 opt
- 160328 opt
- 160329 opt
- 160330 opt

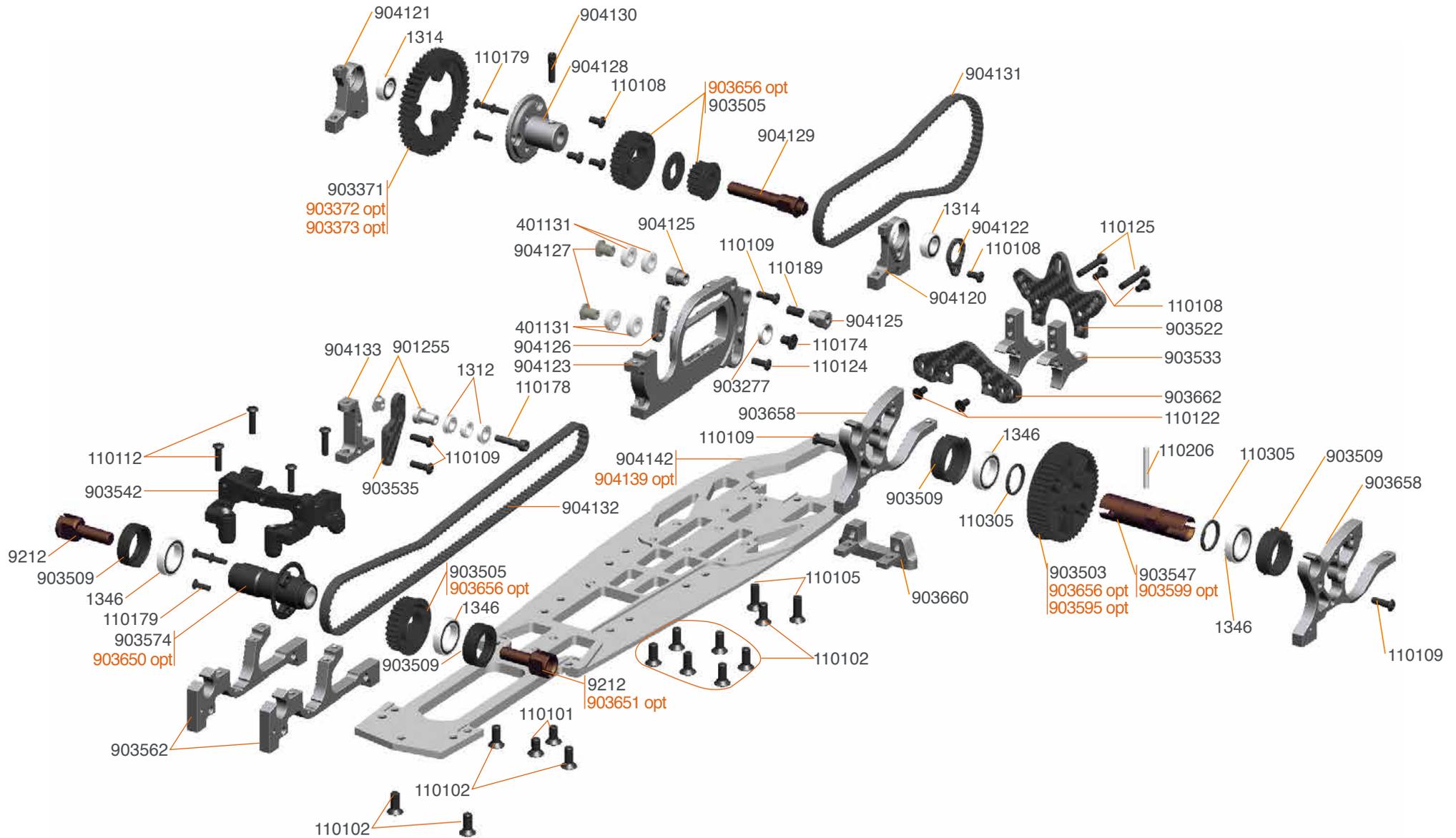
- 160148 Shock onroad big bore piston 1 hole LF (2)
- 160149 Shock onroad big bore piston 2 hole LF (2)
- 160150 Shock onroad big bore piston 3 hole LF (2)
- 160151 Shock onroad big bore piston 4 hole LF (2)
- 160147 Shock onroad big bore bushing LF (4)
- 160300 Spring white L23 (2.3/13) (2)
- 160301 Spring yellow L23 (2.8/16) (2)
- 160302 Spring orange L23 (3.4/19.5) (2)
- 160303 Spring red L23 (4.1/23.5) (2)

- 160304 Spring pink L23 (4.0/28) (2)
- 160305 Spring blue L23 (5.8/33) (2)
- 160307 Spring green L23 (8/45.5) (2)
- 160308 Spring grey L23 (9/51.5) (2)
- 160309 Spring black L23 (10/57) (2)
- 160310 Spring-set short (5x2)
- 160320 Spring white L27 (2.3/13) (2)
- 160321 Spring yellow L27 (2.8/16) (2)
- 160322 Spring orange L27 (3.4/19.5) (2)

- 160323 Spring red L27 (4.1/23.5) (2)
- 160325 Spring blue L27 (5.8/33) (2)
- 160326 Spring purple L27 (6.8/39) (2)
- 160327 Spring green L27 (8/45.5) (2)
- 160328 Spring grey L27 (9/51.5) (2)
- 160329 Spring black L27 (10/57) (2)
- 160330 Spring-set L27 (5x2)

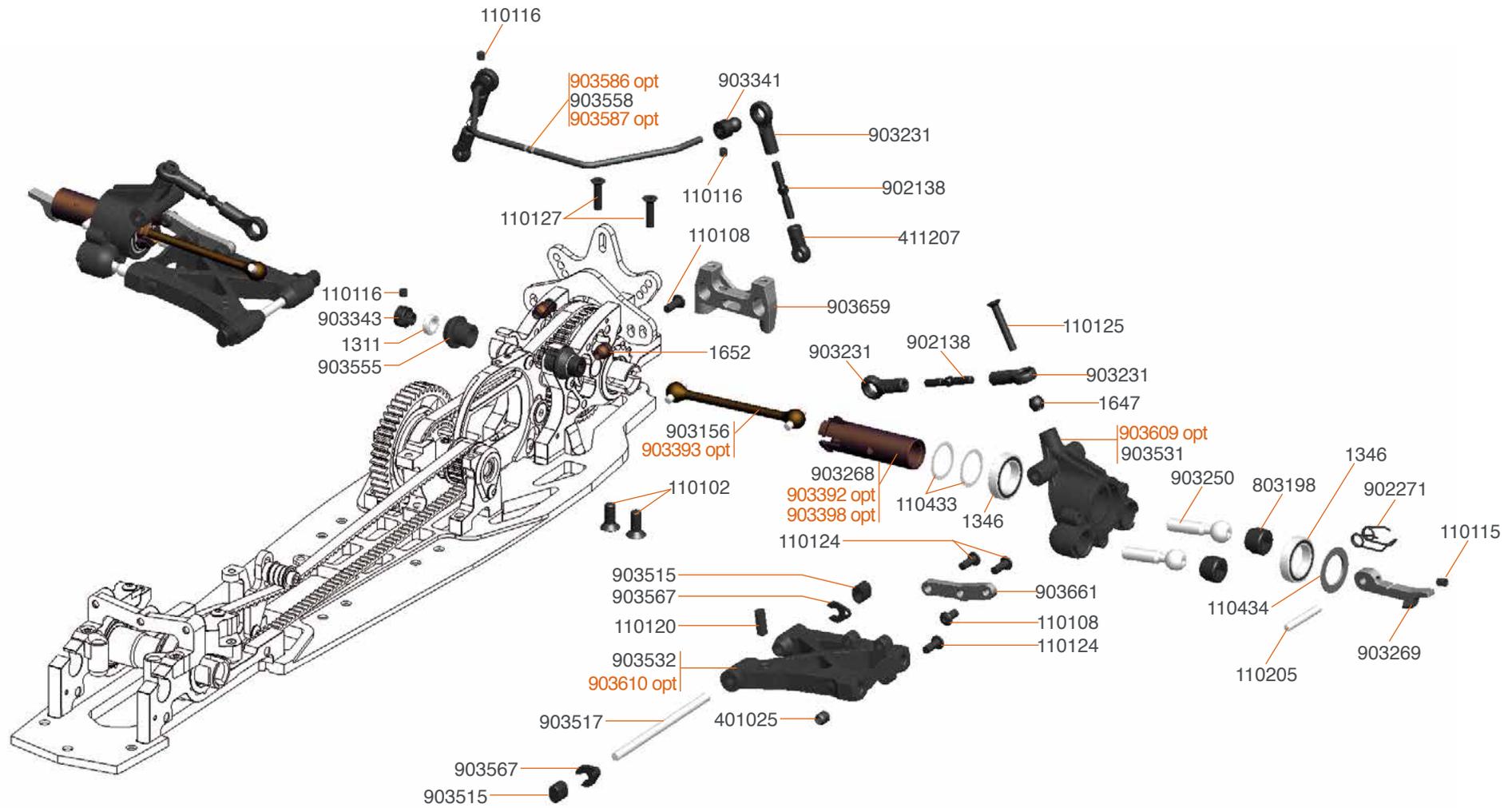


TRANSMISSION EXPLODED VIEW



- 903372 2-Speed gear 49T SL8
- 903373 2-Speed gear 50T SL8
- 903595 Pulley rear axle 48T alu
- 903599 Solid axle RR light

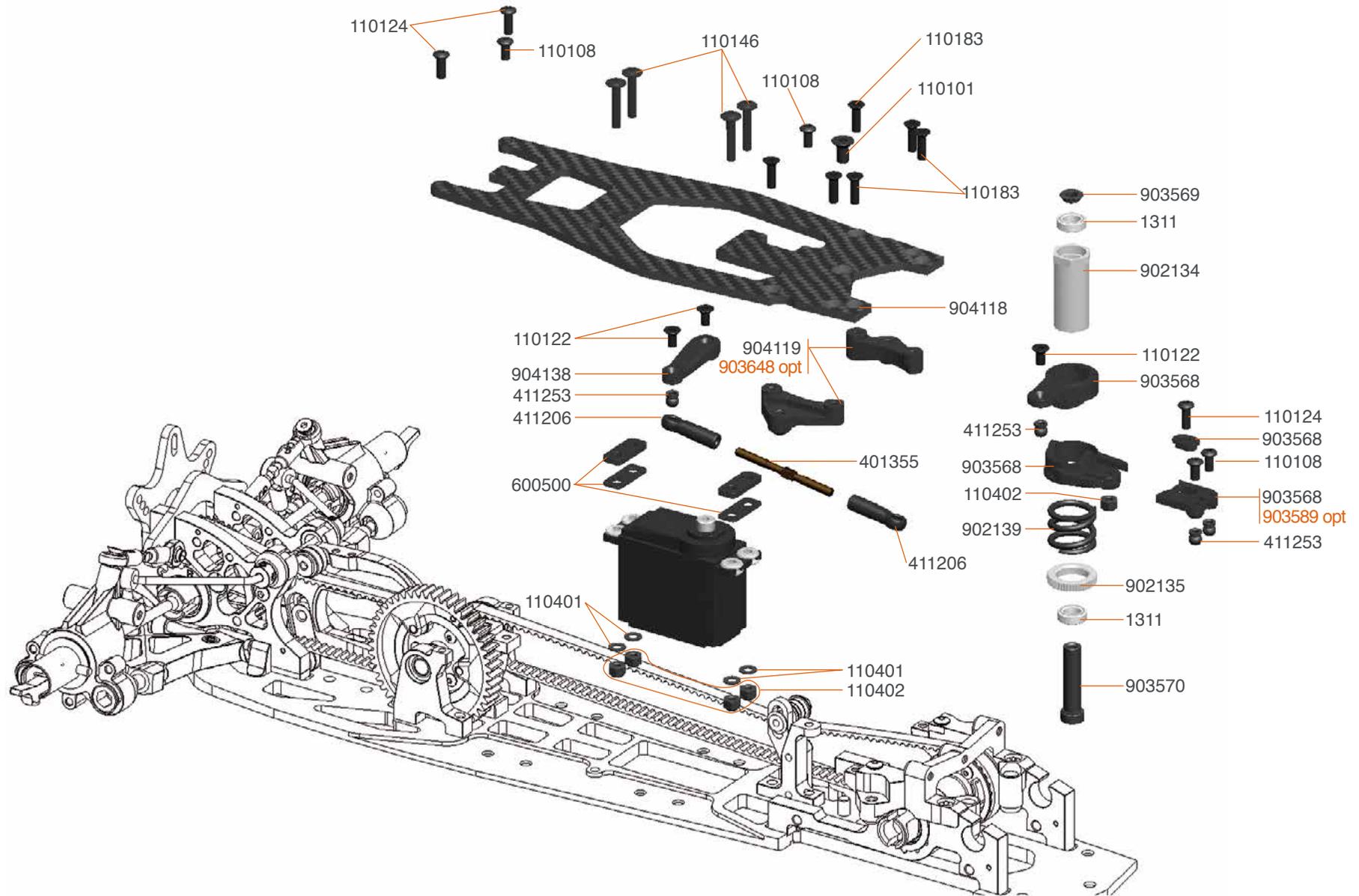
- 903650 Oneway front axle Hard anodized
- 903651 Inner driveshaft adapter light
- 903656 Pulley set low friction 977 (6)
- 904139 Chassis carbon 5mm 977E



- 903392 Wheel-axle CVD RR (2)
- 903393 Rear driveshaft cvd (2)
- 903398 Rear wheelaxle cvd alu (2)
- 903586 Antiroll bar RR soft

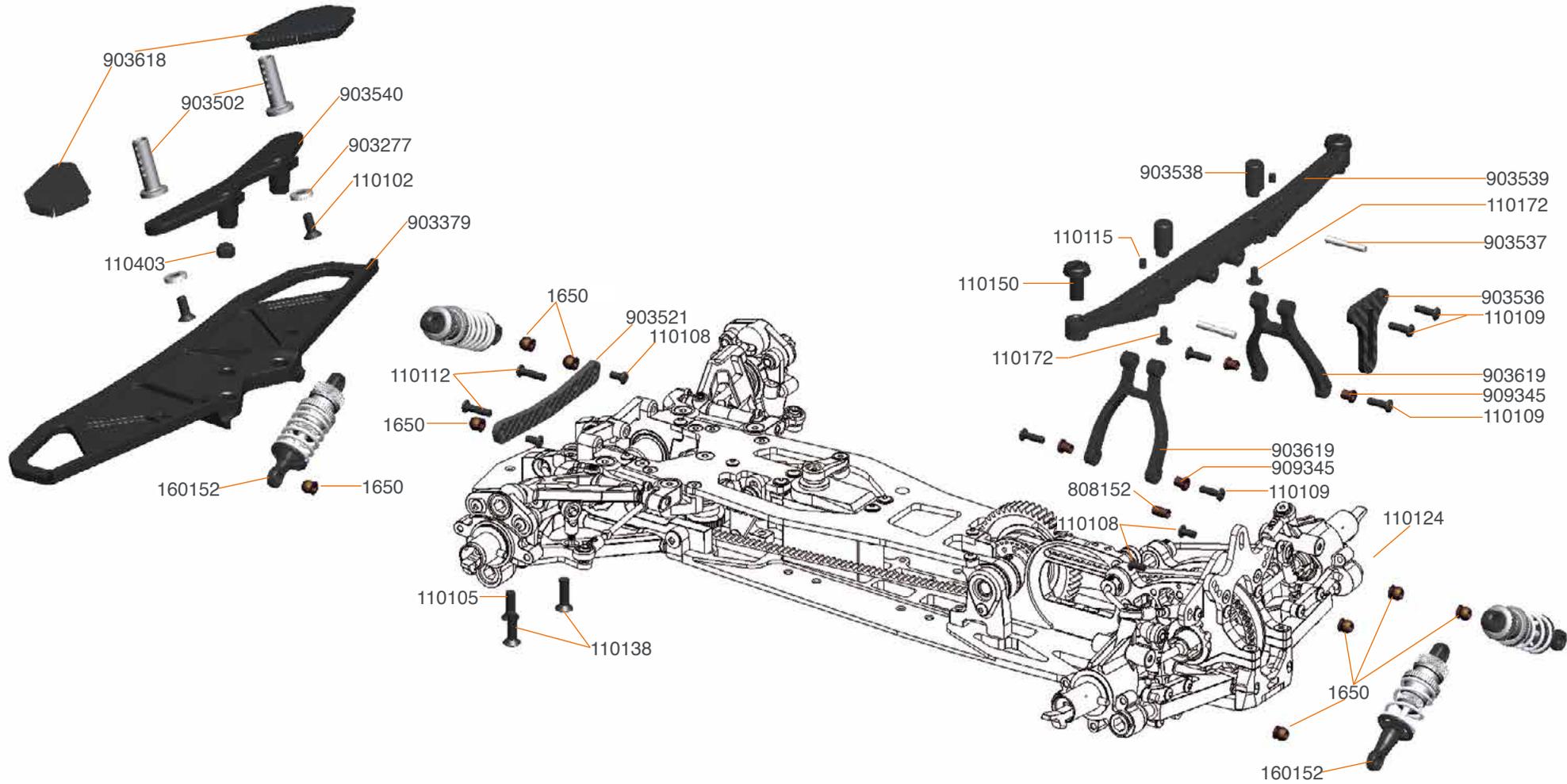
- 903587 Antiroll bar RR hard
- 903609 Upright (2) hard
- 903610 Wishbone RR lw (2) hard

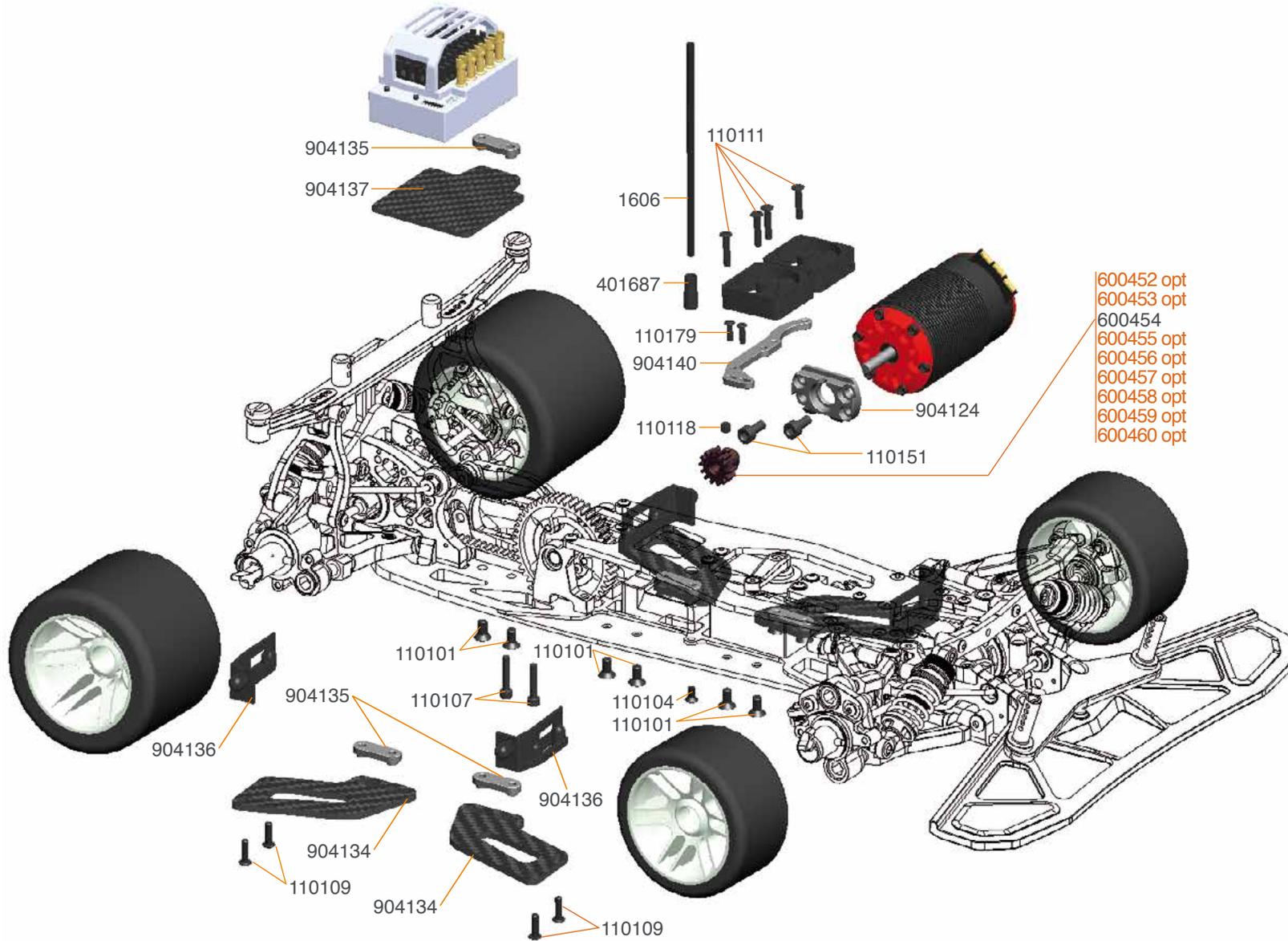




903589 Servosaver bottom alu (2)
z903648 Topdeck bracket fr L+R 977E Alu







600452 Pinion 12T steel
 600453 Pinion 13T steel
 600455 Pinion 15T steel
 600456 Pinion 16T steel

600457 Pinion 17T steel
 600458 Pinion 18T steel
 600459 Pinion 19T steel
 600460 Pinion 20T steel

TEAM SERPENT NETWORK

977e EVO 2 SPARE PARTS www.serpent.com/904003/spares/



977e EVO 2 OPTIONALS PARTS www.serpent.com/904003/Optionals/



SERPENT TOOLS www.serpent.com/product/Tools/



SERPENT MERCHANDISING www.serpent.com/product/Merchandising/



SERPENT WEBSITE AND BLOG

www.serpent.com
www.teamserpent.com
www.dragon-rc.com

SERPENT PROMO PAGES <http://promo.serpent.com>

SERPENT FACEBOOK GROUPS <http://promo.serpent.com/indexfb.htm>

SERPENT ADVANCED MANUALS <http://promo.serpent.com/sam/>

SERPENT SOCIAL MEDIA



www.facebook.com/SerpentMRC



www.youtube.com/user/SerpentMRC



www.twitter.com/SerpentMRC



www.plus.google.com/+SerpentModelcars/posts



www.weibo.com/teamserpent

977E EVO2 VIPER_e

EP

1/8 scale



 **Serpent**



Manual 977E EVO2 #57296 1