

SPYDER SDX4

INSTRUCTION
MANUAL



 Serpent

EP

1/10 scale 4wd Buggy

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 Spyder SDX4 is a state of the art 1/10 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 eas 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 bagnumbers, 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 lateron 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 Spyder SDX4. Fine-tuning the initial setup is an essential part of building a high-performance racecar like your Serpent Spyder SDX4.

EXPLODED VIEWS AND PARTS LIST

The exploded views and parts lists for the Serpent Spyder SDX4z 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. Partnumbers 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 cloves.
- 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



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.

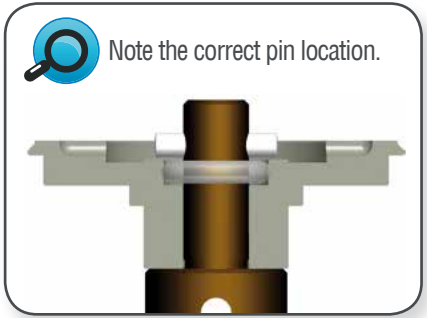
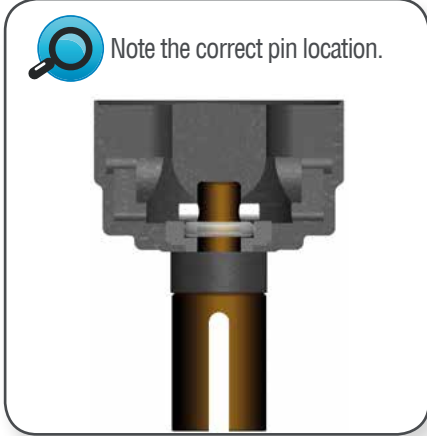
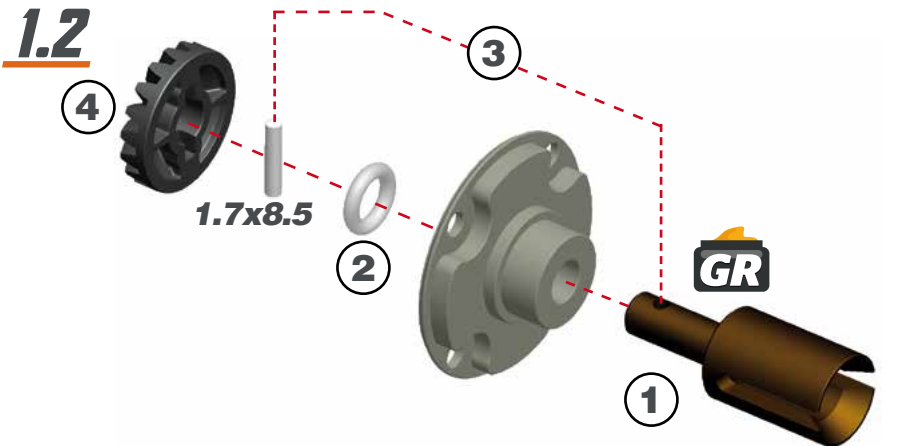
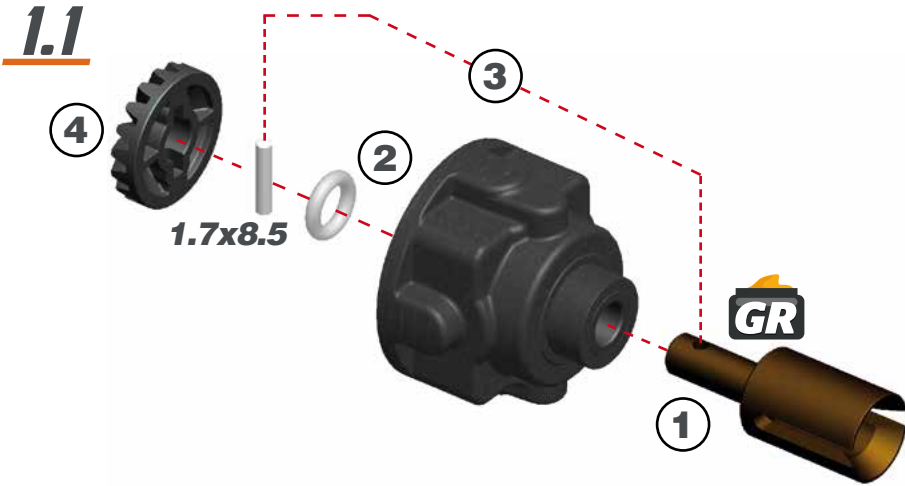


Optional part, not standard in the kit.

FRONT AND REAR DIFF ASSEMBLY

STEP 1 DIFF BAG

! Follow step 1 to 5 twice to assemble 2 diffs, 1 for the front and 1 for the rear.
Check the default set-up sheet to find the right values for the silicone oil. Be aware that front and rear diff-settings may differ.



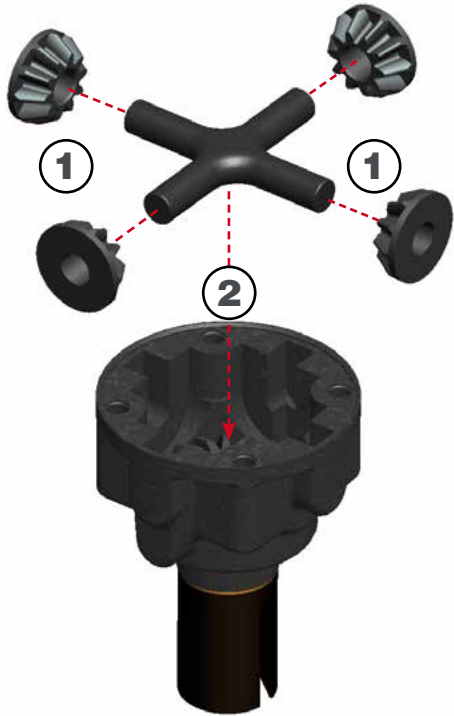
STEP 2

Add just enough oil to cover the large gear before assembling the small satellite gears and cross pins. Use the silicone oil supplied in the kit. For the correct cst value please check the default setupsheet.



1.75x8.5

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.

50



AMOUNT OF OIL IN THE DIFFS

Use a digital scale to measure the exact amount of oil in the diff.

Differential weight = 19.5 grams

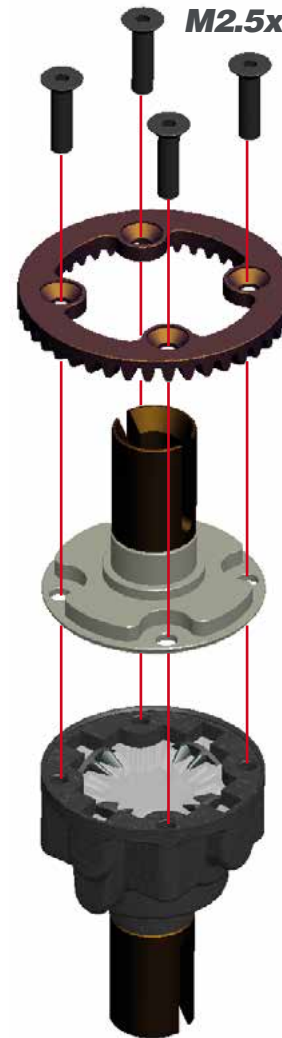


STEP 5

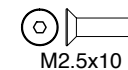


Do not overtighten the screws. There is always a gap between both sides of the diff housing.

M2.5x10



COMPLETE DIFF ASSEMBLY



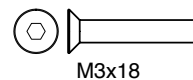
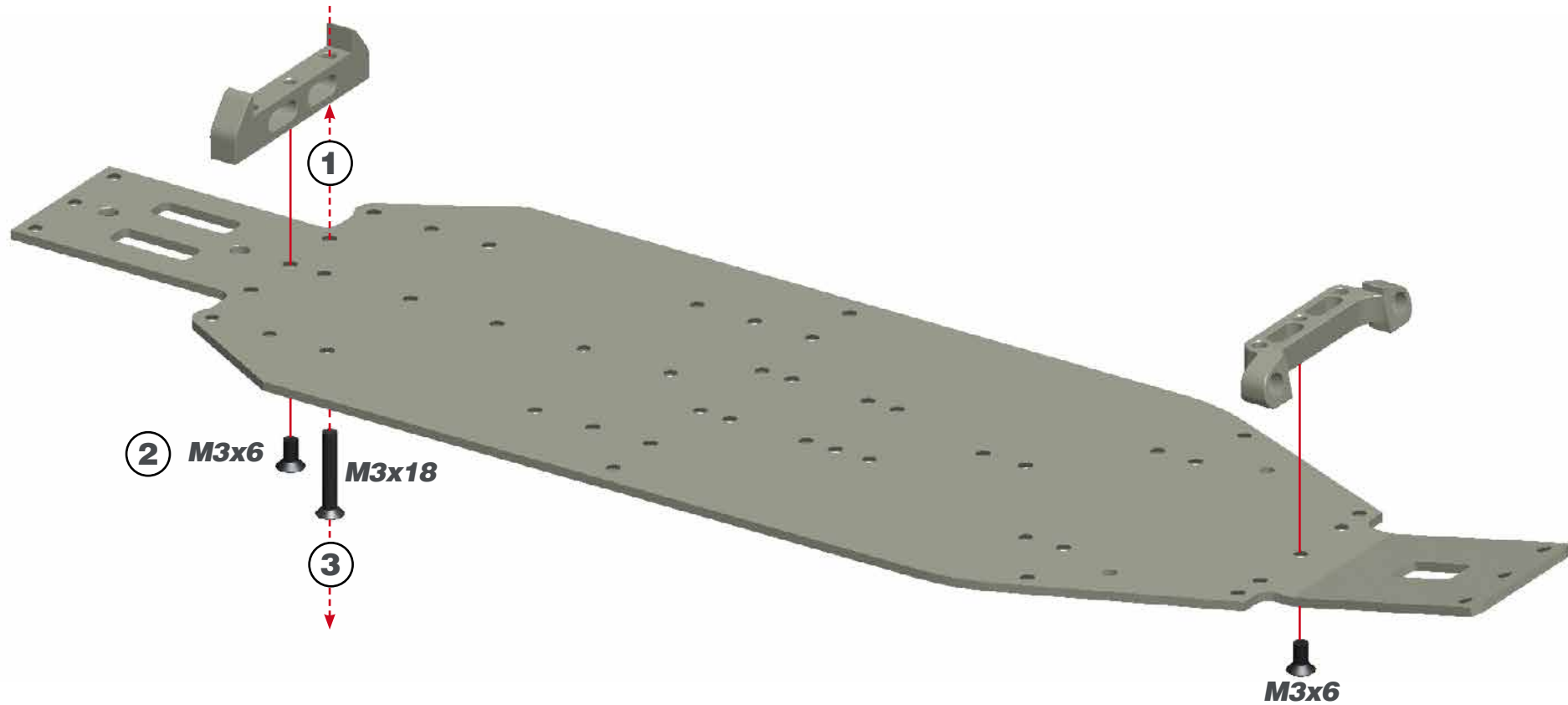
M2.5x10

STEP 6 BAG 1

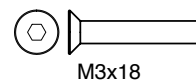
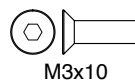
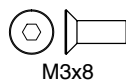
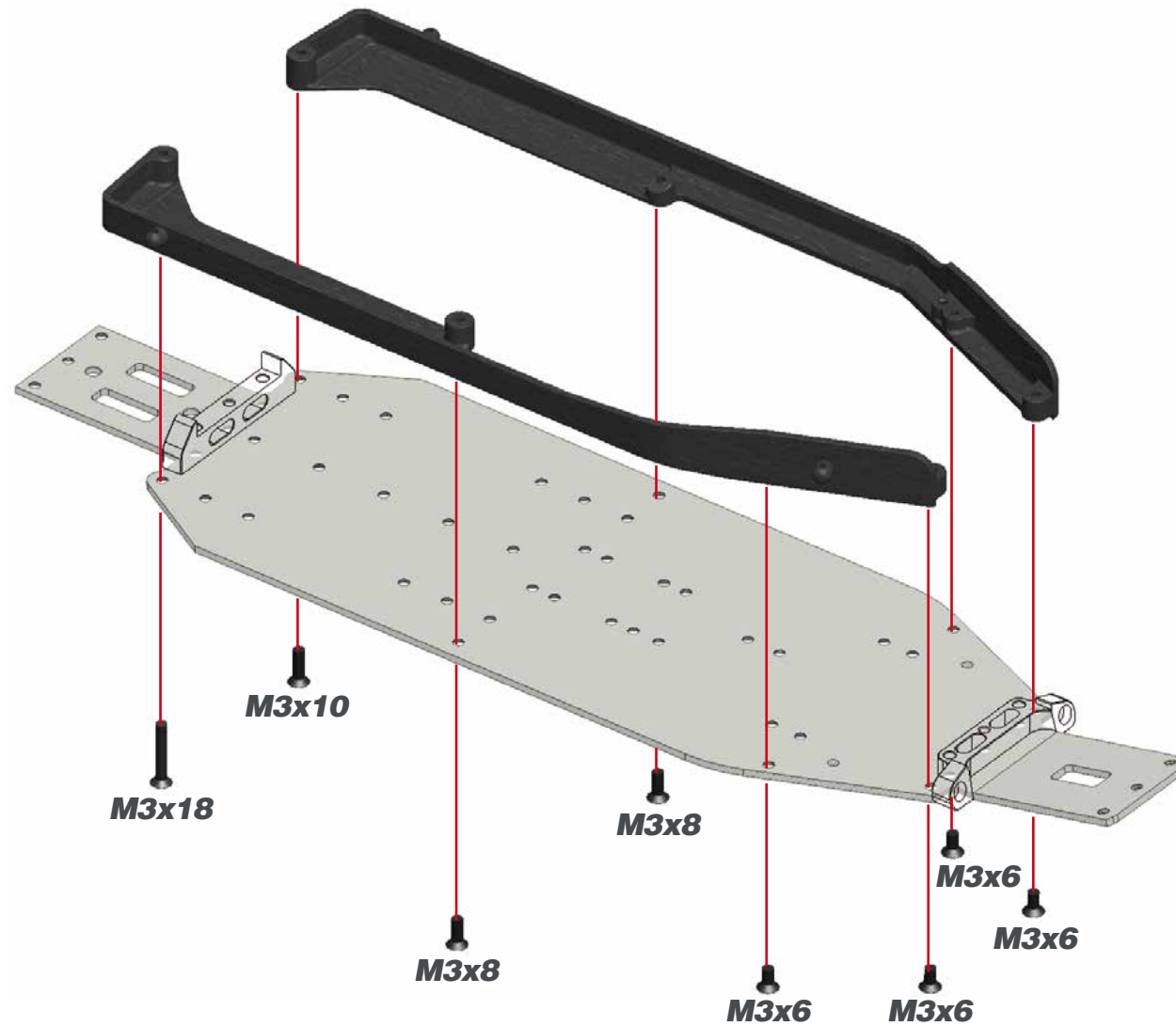


For the correct assembly of the rear suspension bracket follow the next instructions:

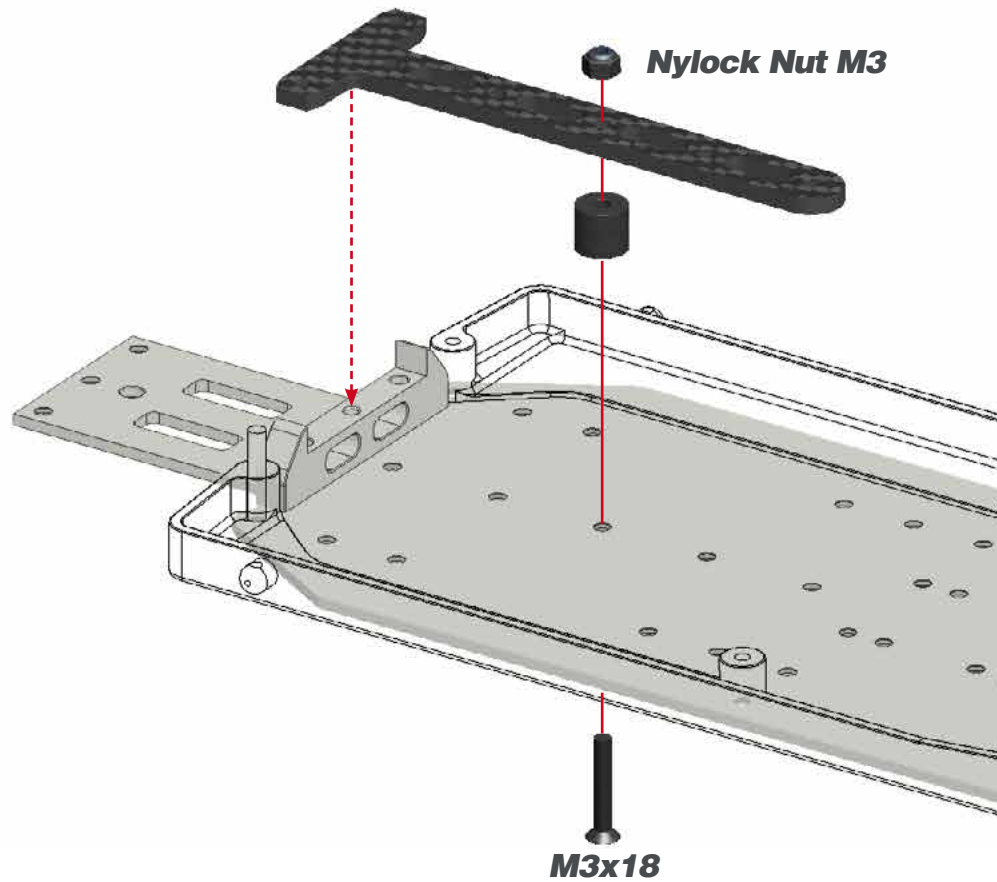
- 1- Assemble M3x18 screws to align the suspension bracket.
- 2- Fix the camber bracket with the M3x6 screw.
- 3- Remove M3x18 screw and proceed with step 7.



STEP 7

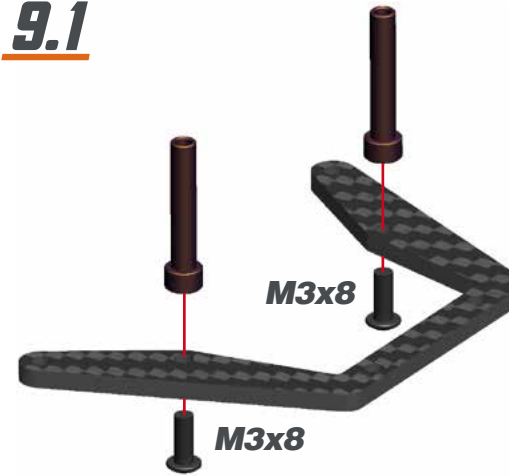


STEP 8

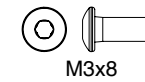
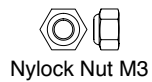
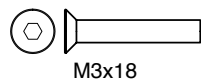
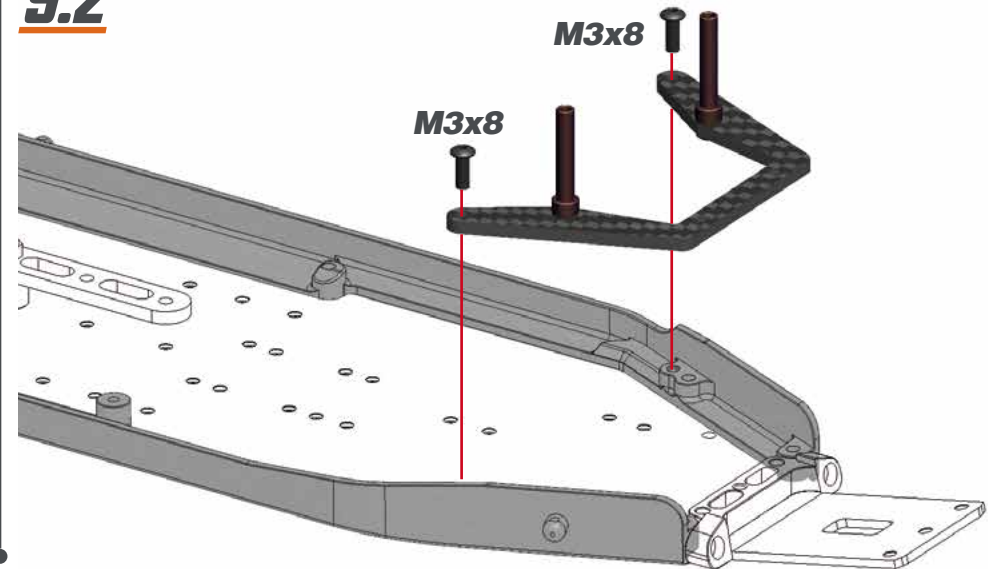


STEP 9

9.1



9.2



STEP 10



The pivotballs are used to ensure the complete free movement of the wishbones with the minimum play. For assembling them correctly follow the next recommendations:

- 1- The M3 shims must be assembled always in the front side of the wishbones.
- 2- The front pivotballs should be fully tightened.
- 3- Fully tighten the rear pivot balls. In step 16-B adjust the correct wishbone play after assembling the rear blukheads.



REAR WISHBONES POSITION

The wishbones are not symmetrical. The location of the shock mounting position on the front and rear differ, so you have 4 positions in total. The default configuration is shown below.

LEFT

RIGHT

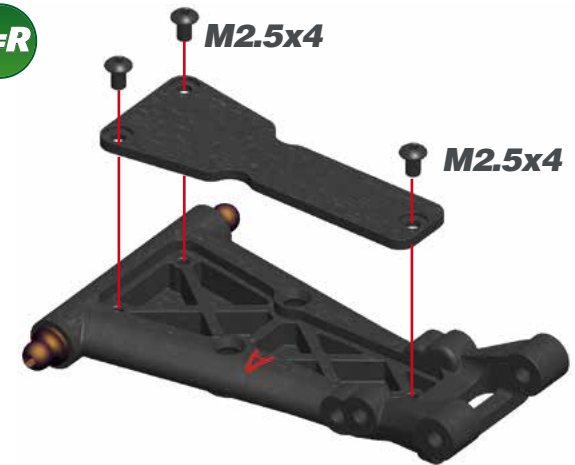
LEFT

RIGHT



STEP 11

11.1



11.2



REAR ANTIROLL BAR ROD LENGTH

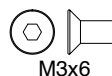
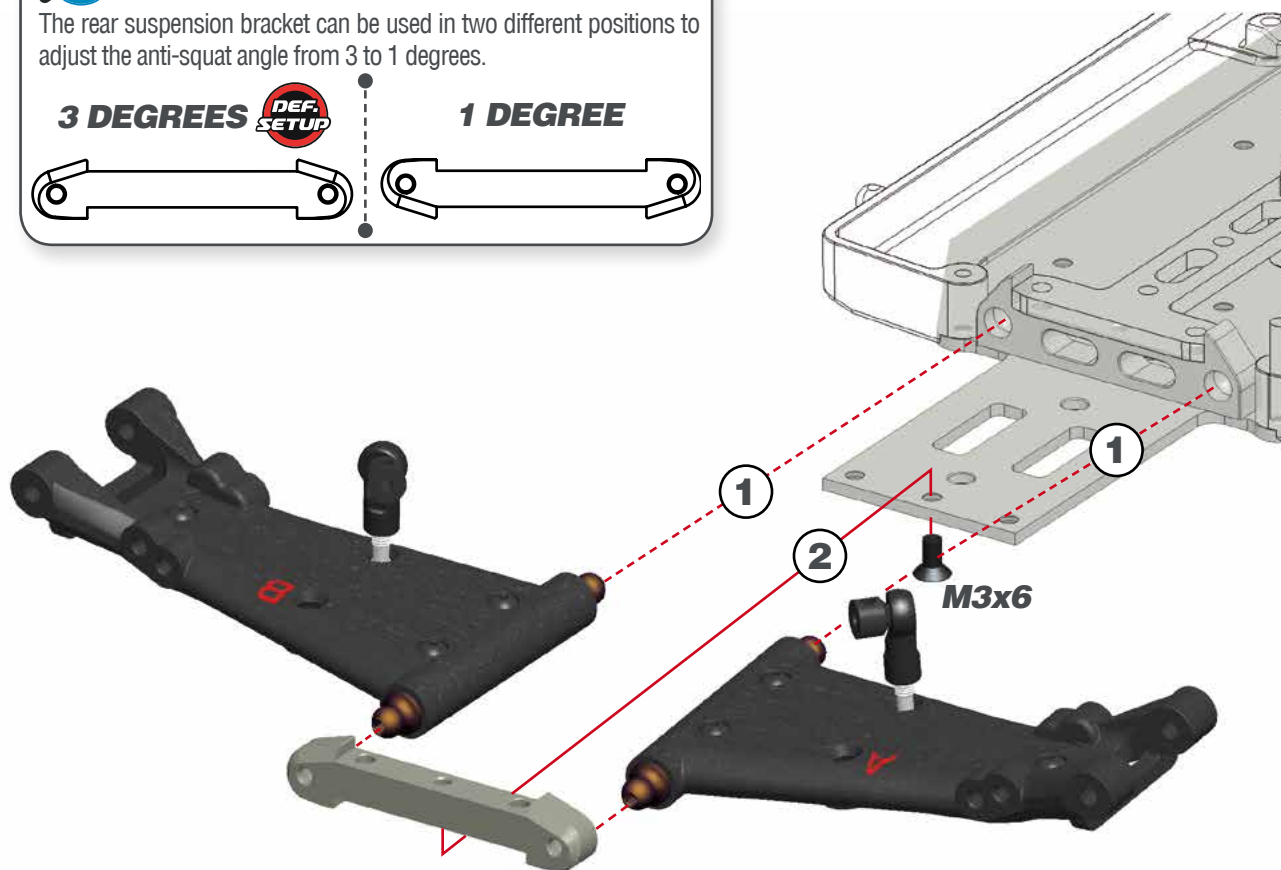
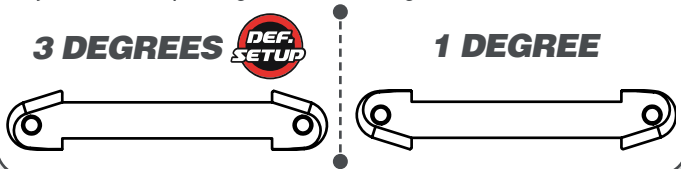
4 mm



STEP 12

REAR ANTI-SQUAT

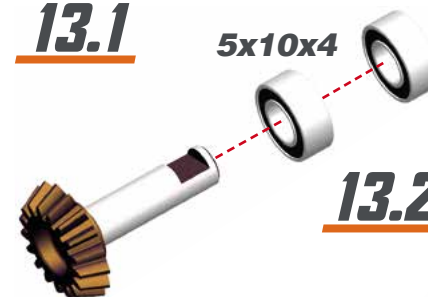
The rear suspension bracket can be used in two different positions to adjust the anti-squat angle from 3 to 1 degrees.



STEP 13 BAG 2

13.1

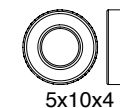
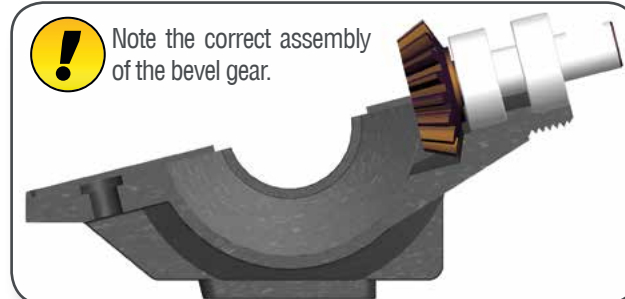
5x10x4



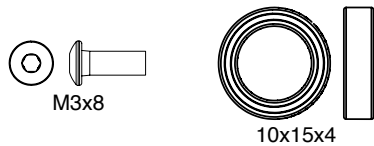
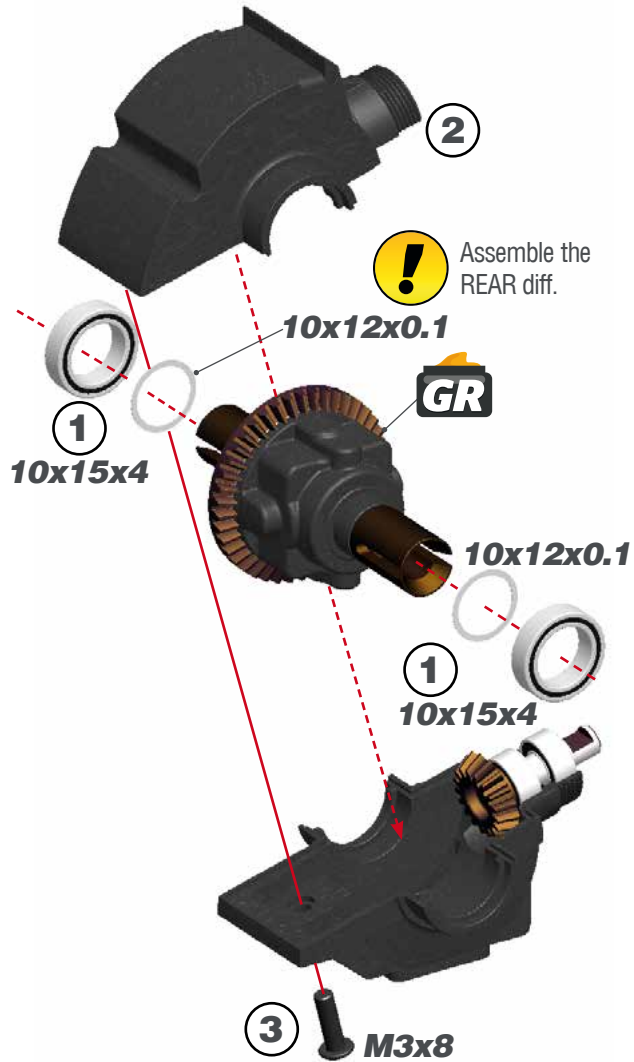
13.2



Note the correct assembly of the bevel gear.



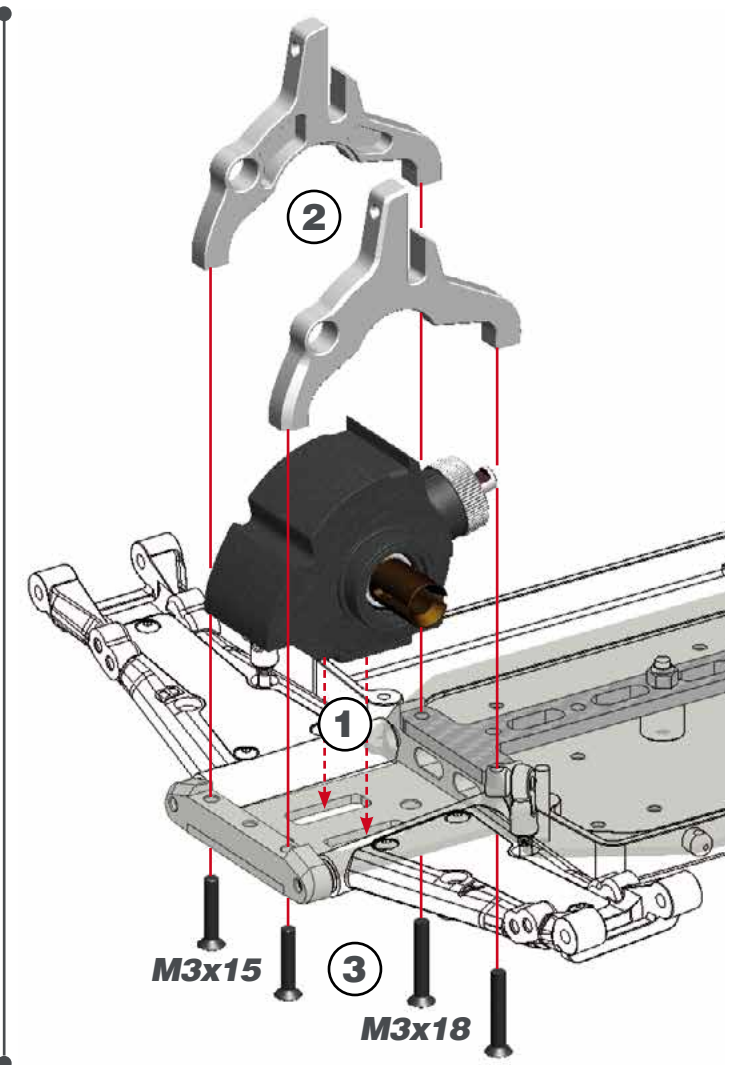
STEP 14



STEP 15



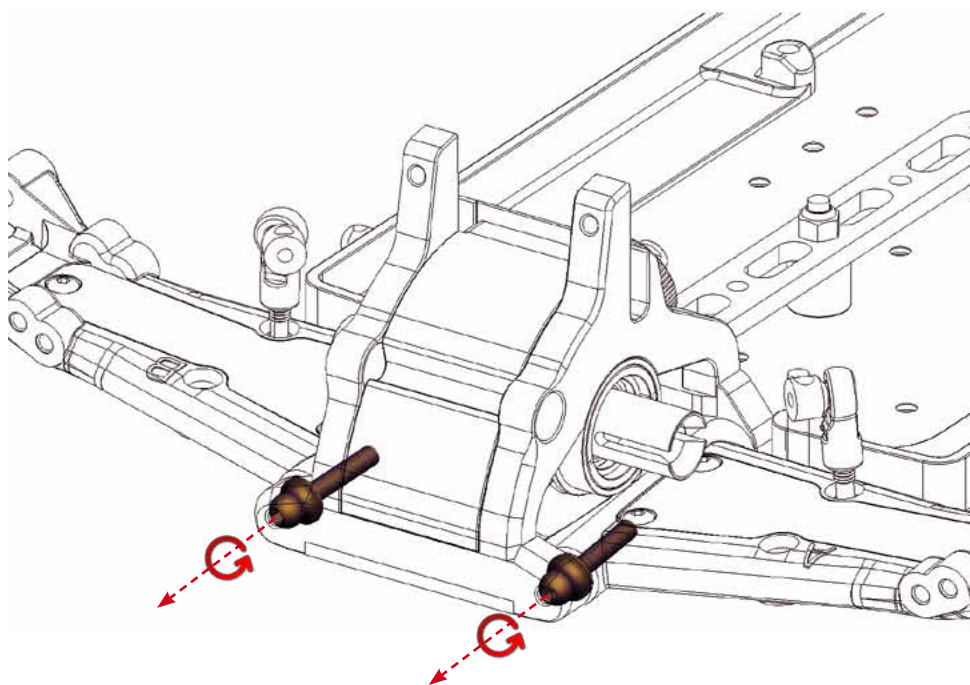
STEP 16-A



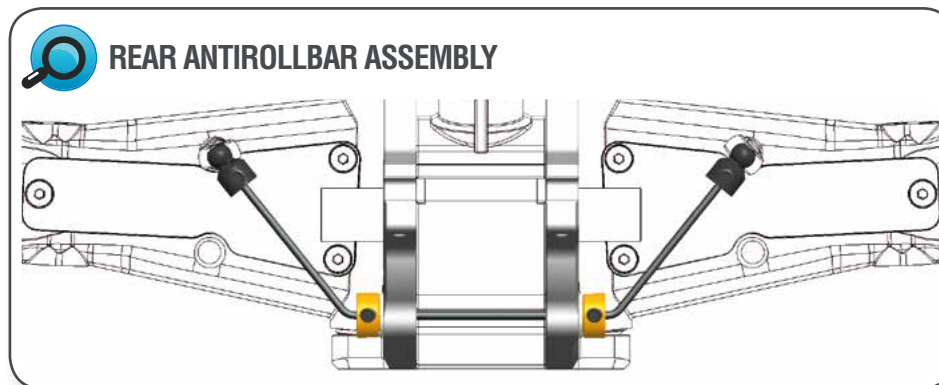
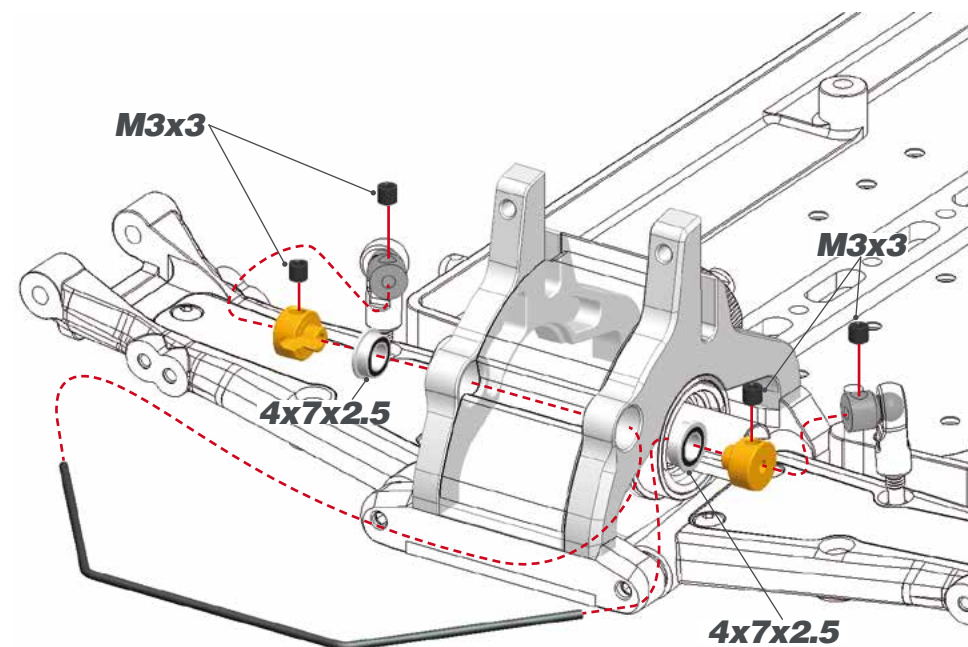
STEP 16-B

! After assembling the bulkheads in the step 16 it is needed to adjust rear wishbones pivotballs to ensure the complete free movement of the wishbones with the minimum play. For assembling them correctly follow the next recommendations:

- 1- Unscrew the rear pivotballs to adjust the wishbone play to the minimum.
- 2- Check that the wishbones still have the desired free movement. If not, tighten the pivotballs a bit



STEP 17

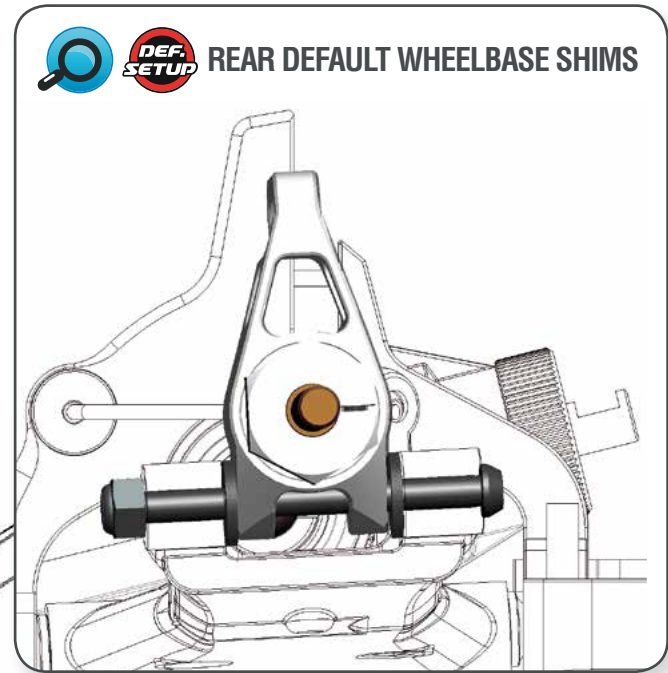
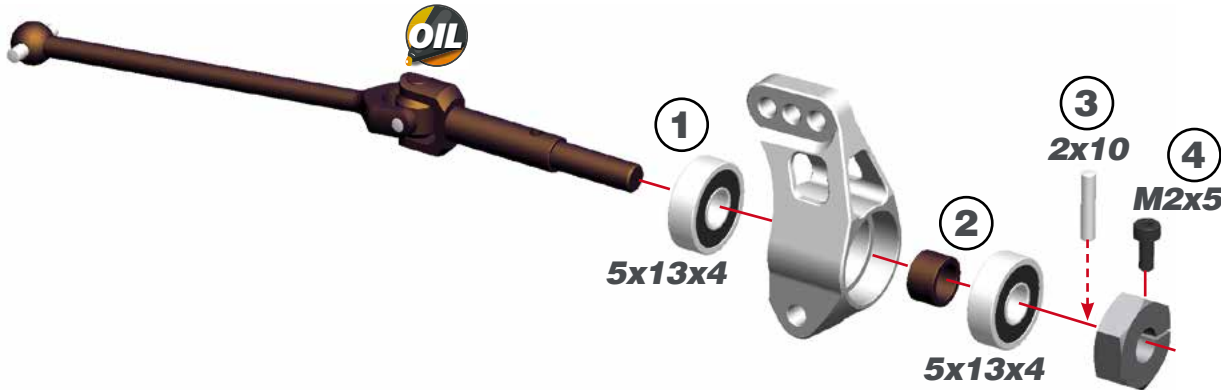


M3x3

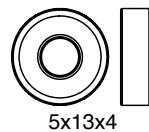
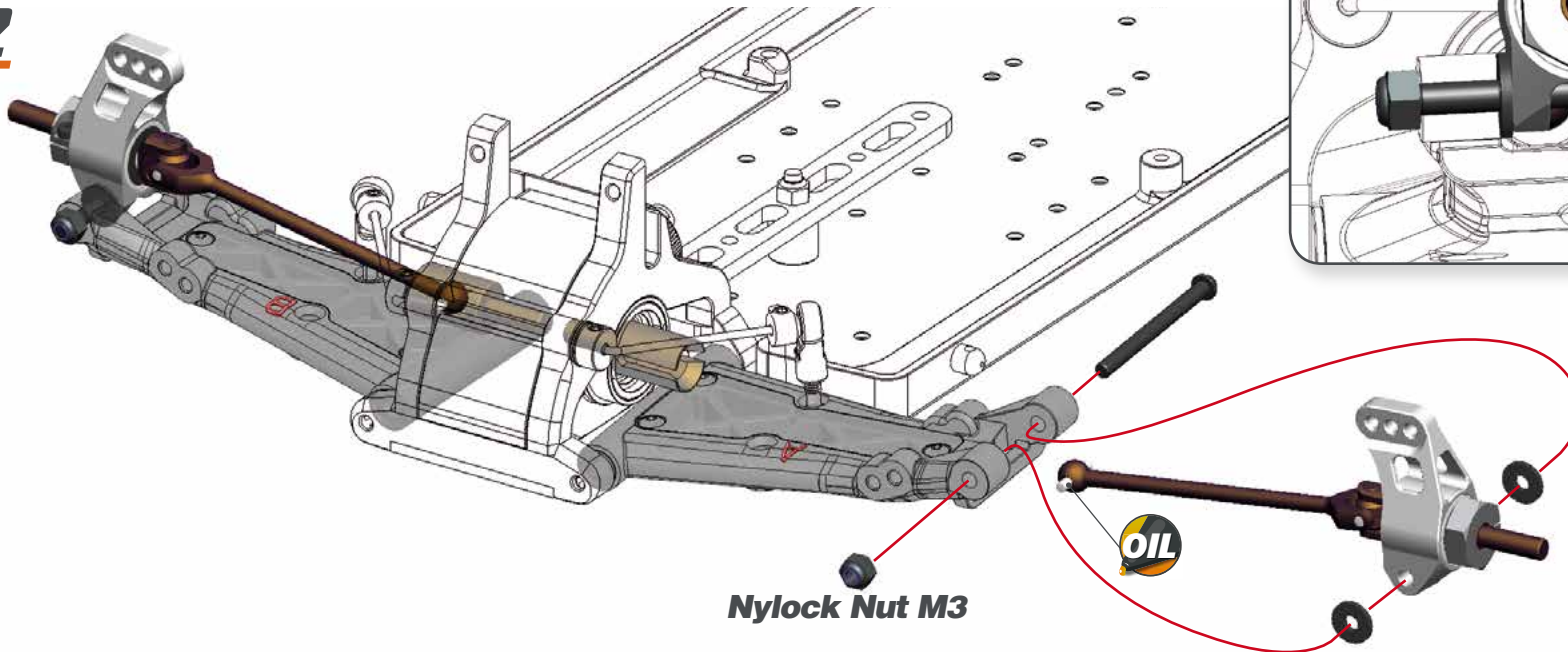
4X7X2.5 Flanged

STEP 18 BAG 3

18.1

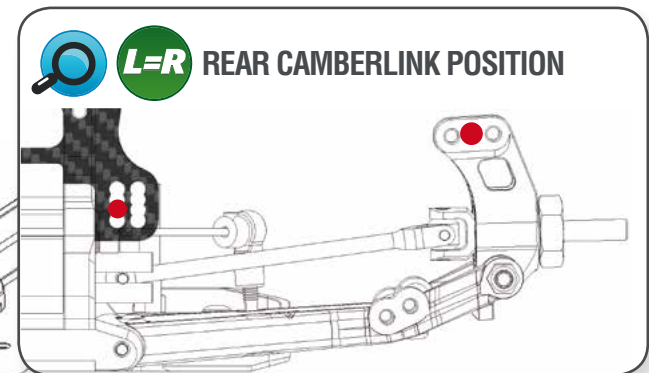
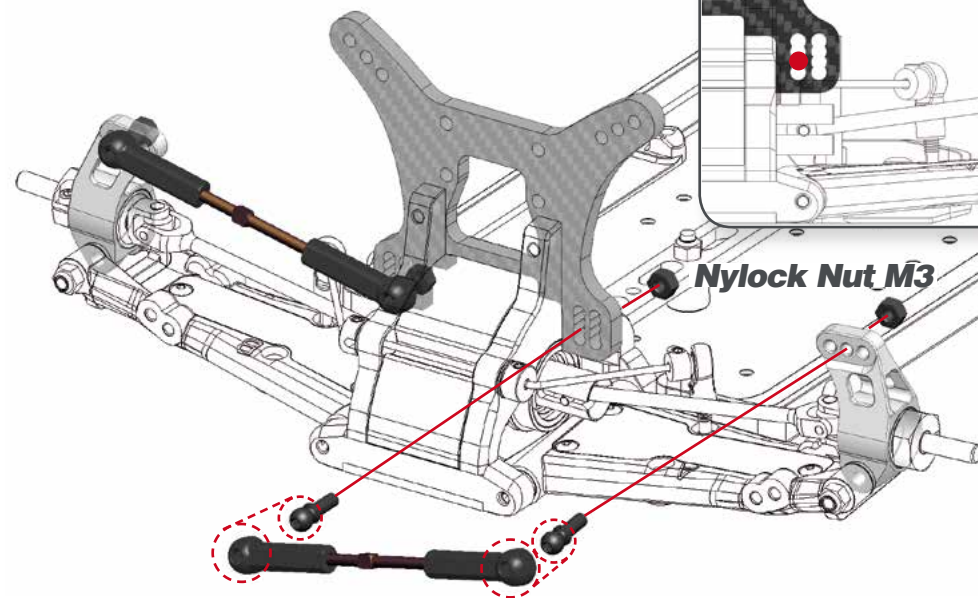
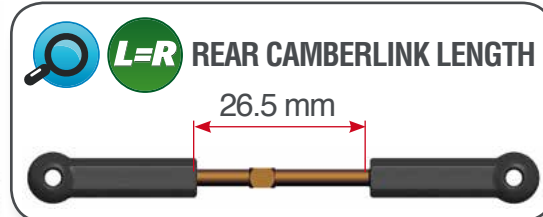
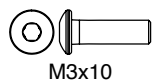
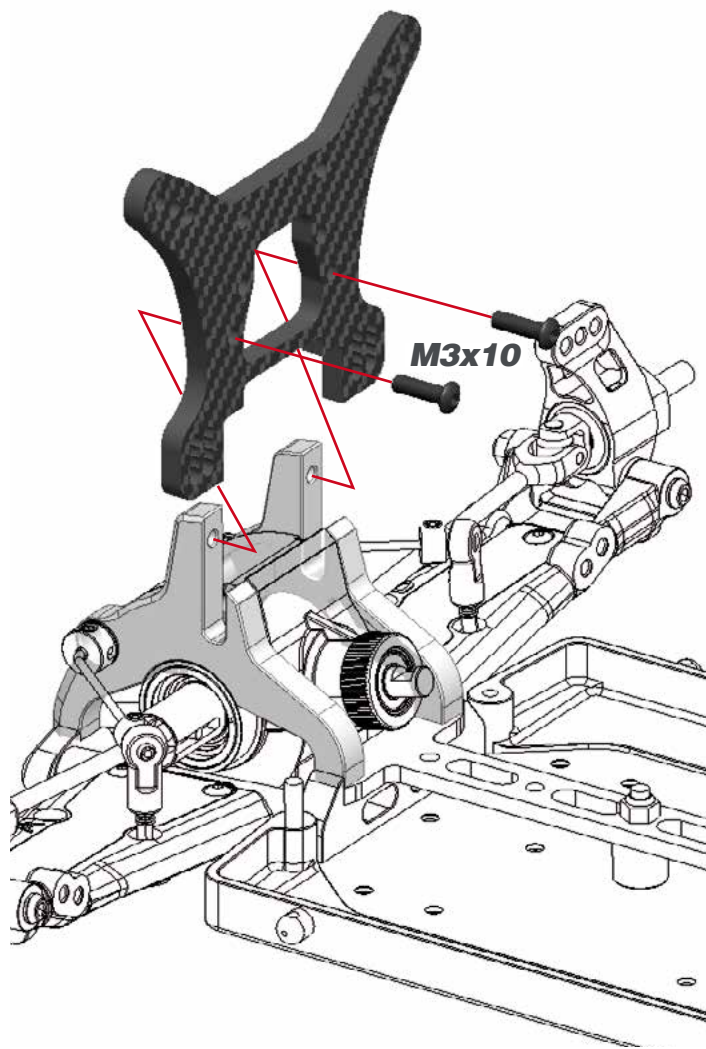


18.2

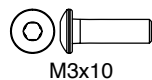
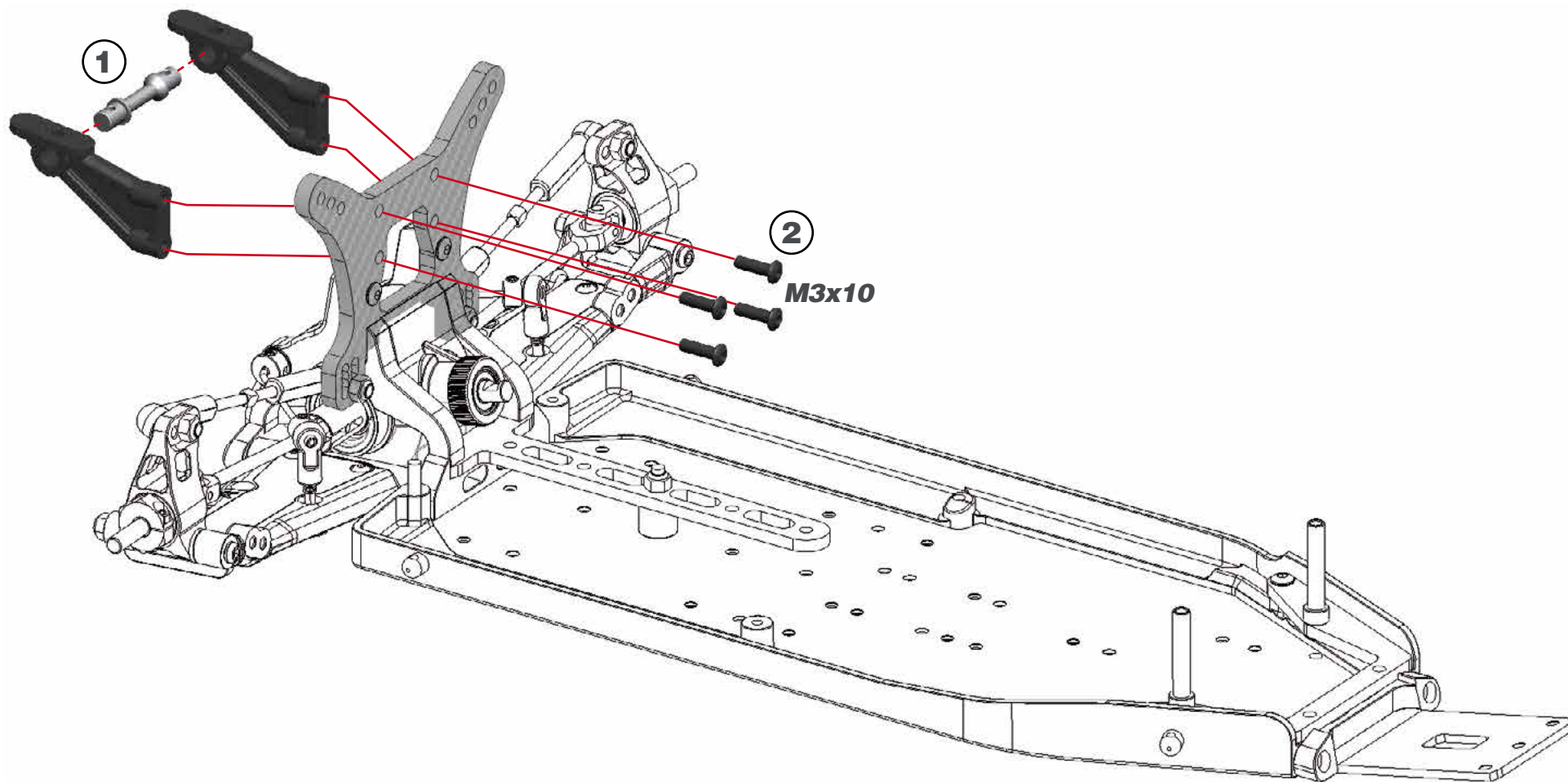


STEP 19

STEP 20



STEP 21



M3x10

STEP 22 BAG 4

22.1 L=R



The pivotballs are used to ensure the complete free movement of the wishbones with the minimum play. For assembling them correctly follow the next recommendations:

- 1- The rear pivotballs should be fully tightened.
- 2- Fully tighten the front pivotballs till step 27-B where you adjust the correct play.

22.2 L=R



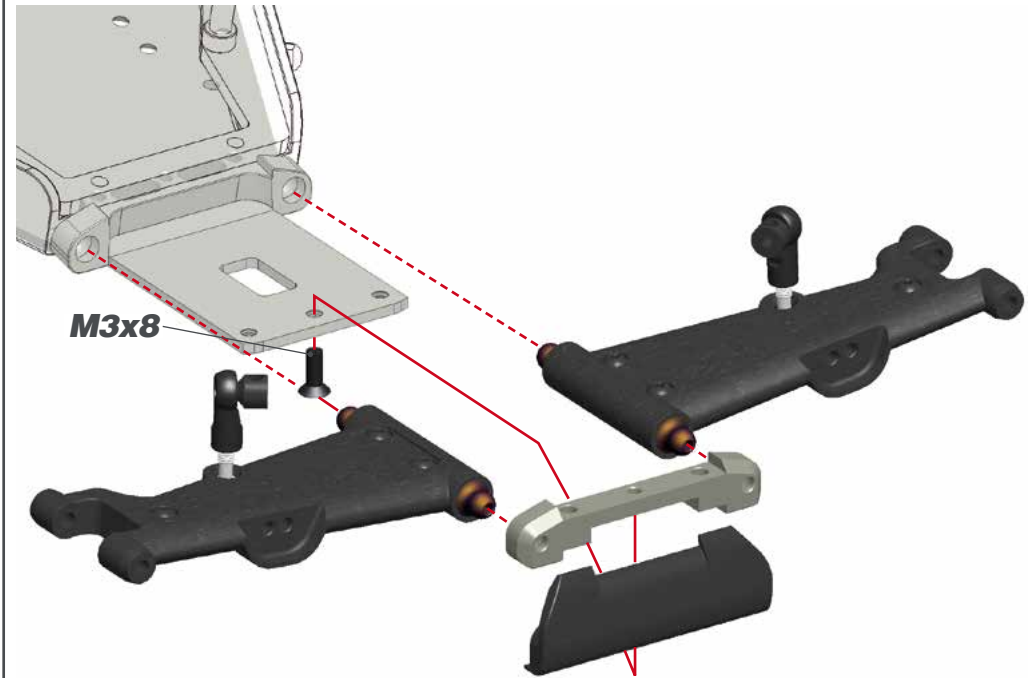
FRONT ANTIROLL BAR ROD LENGTH

DEF. SETUP **L=R**

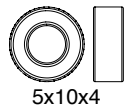
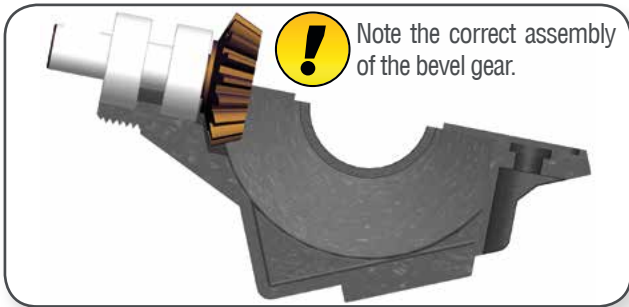
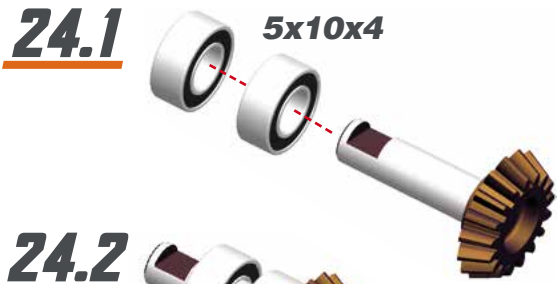
5 mm



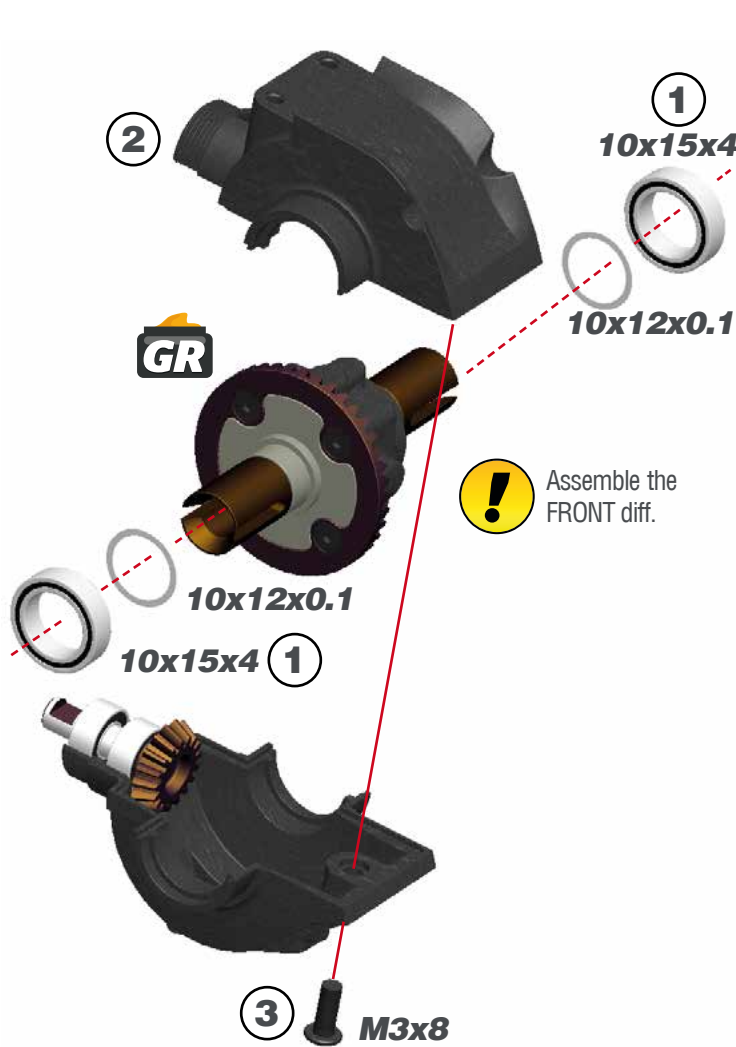
STEP 23



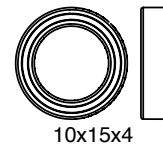
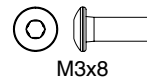
STEP 24 BAG 5



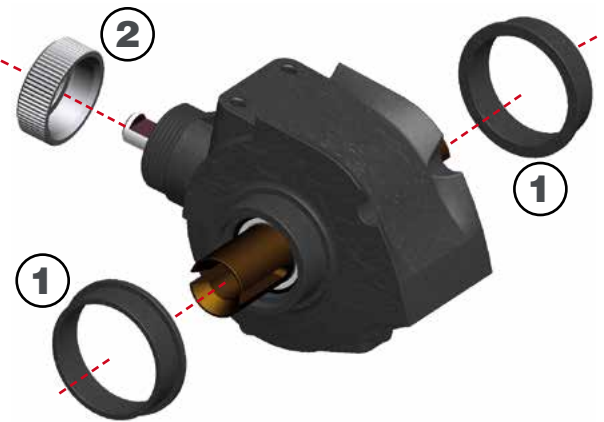
STEP 25



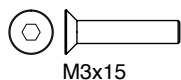
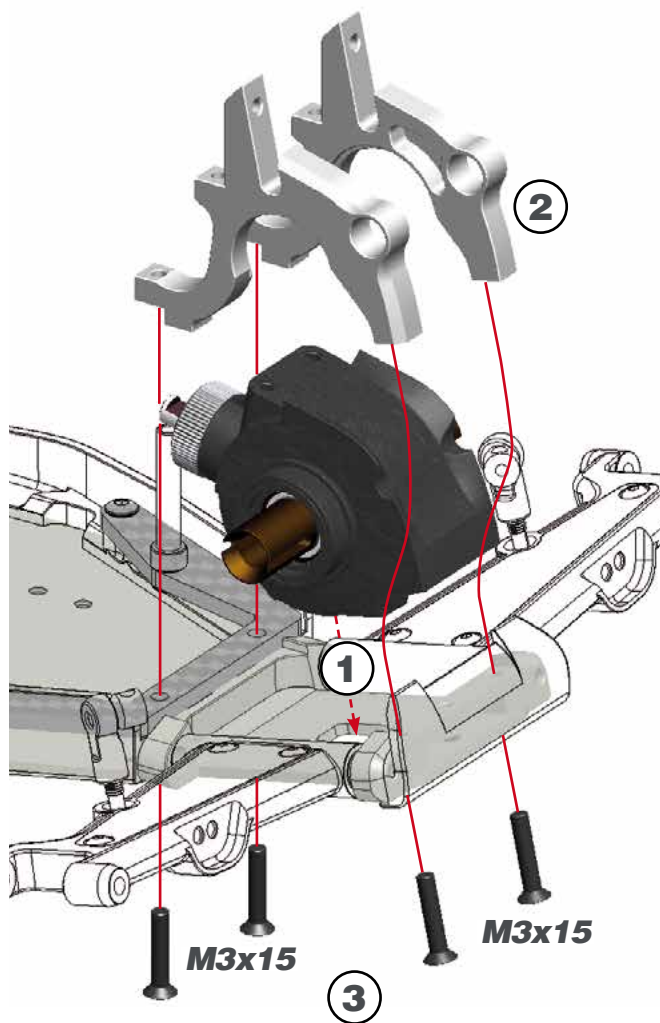
! Assemble the FRONT diff.



STEP 26



STEP 27-A

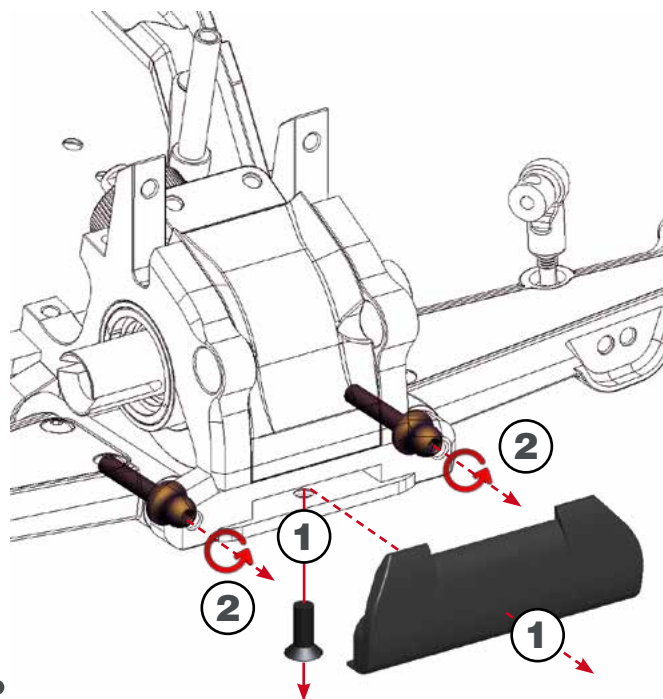


STEP 27-B

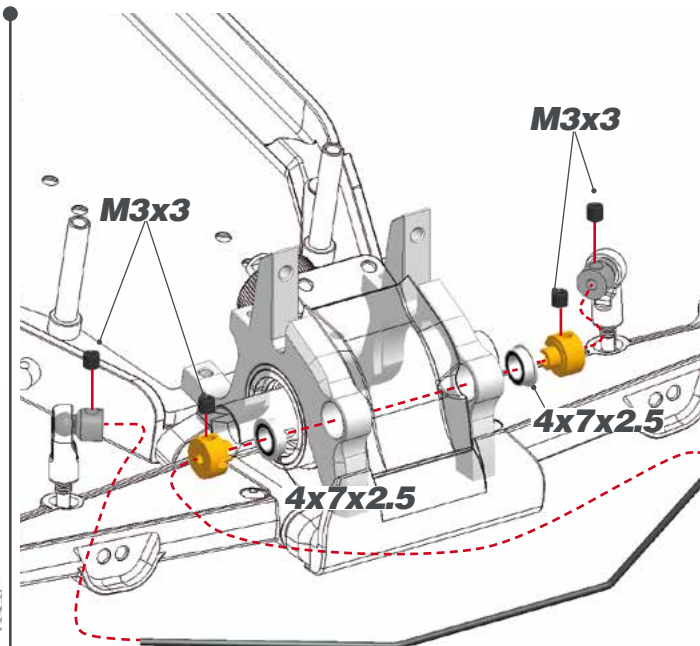


After assembling the front bulkheads in the step 27-A it is needed to adjust front wishbones pivotballs to ensure the complete free movement of the wishbones with the minimum play. For assembling them correctly follow the next recommendations:

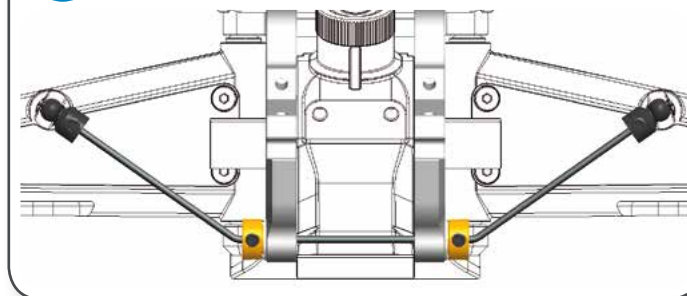
- 1- Disassemble the front bumper
- 2- Unscrew the front pivotballs to adjust the wishbone play to the minimum.
- 3- Check that the wishbones still have the desired free movement. If not, tighten the pivotballs a bit.
- 4- Assemble again the front bumper.



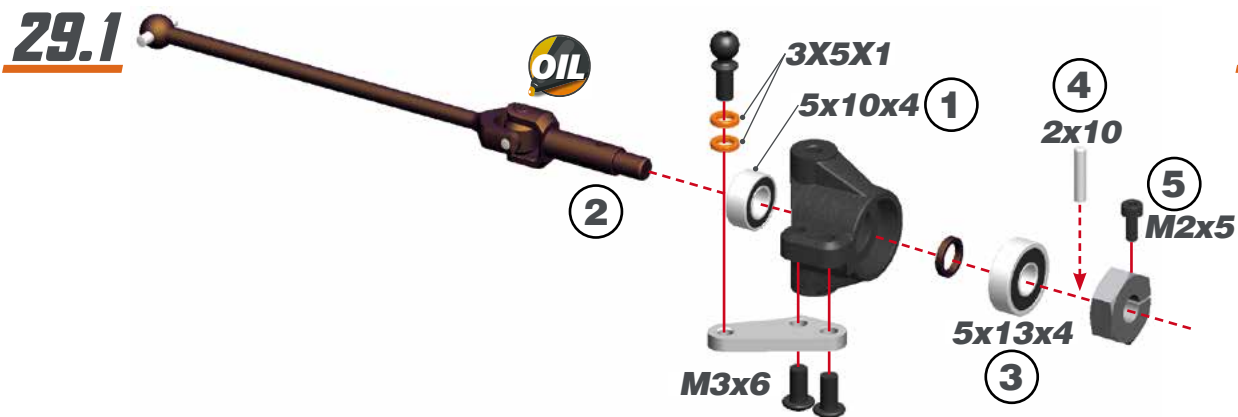
STEP 28



FRONT ANTIROLLBAR ASSEMBLY

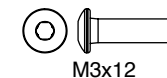
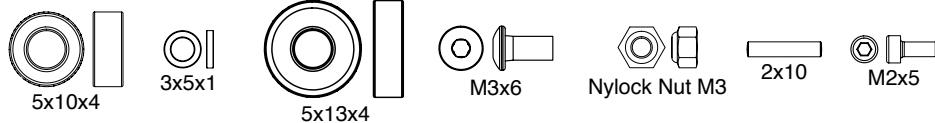
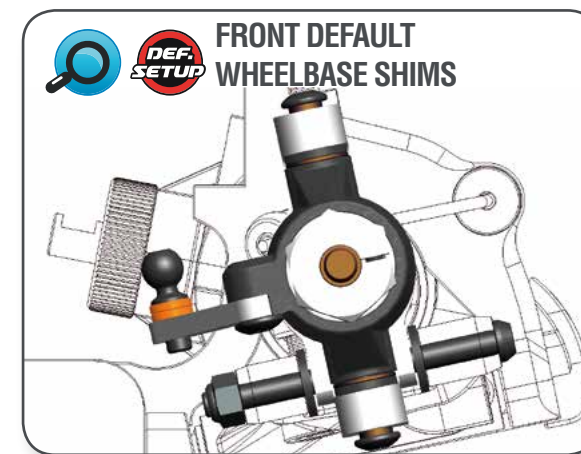
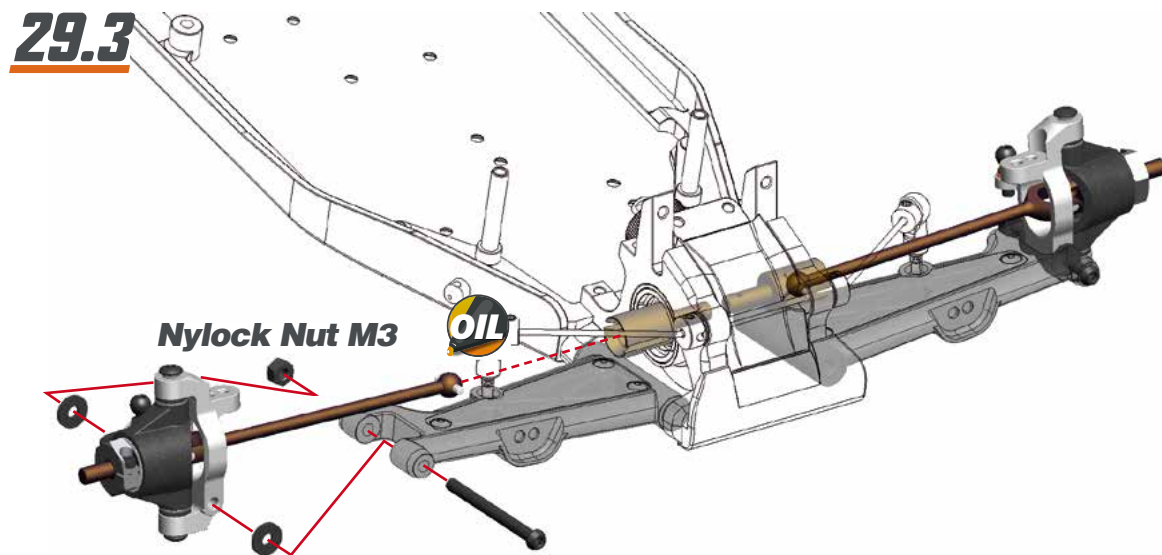
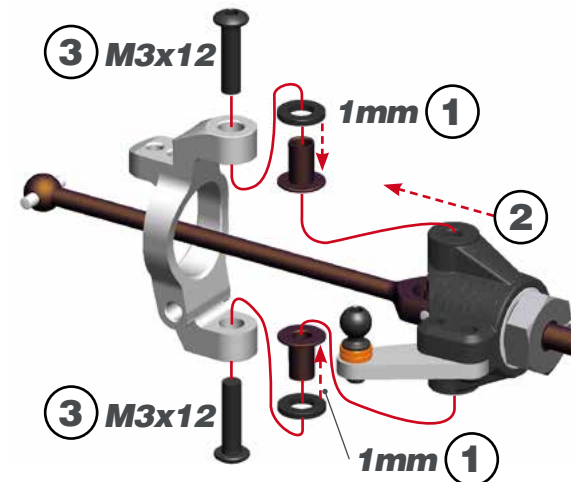


STEP 29 **BAG 6**

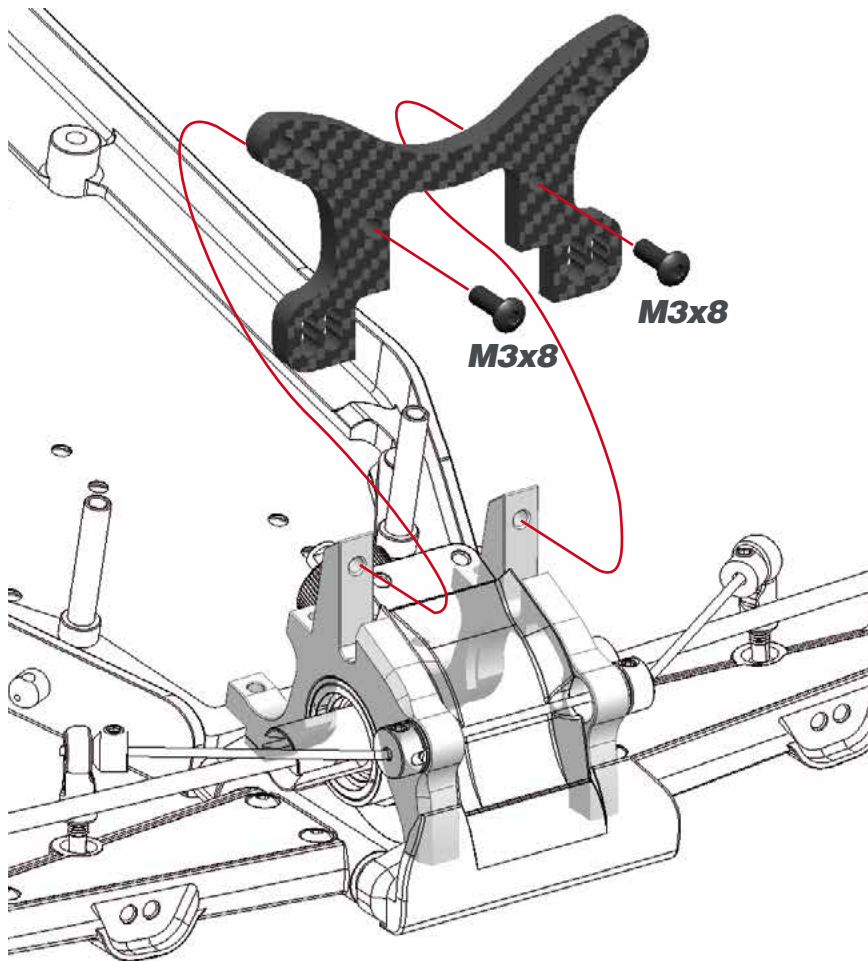


29.2 **!**

- 1- Place the caster shims in the bushings
- 2- Place the bushings and shims onto the casterblock.
- 3- Slide the steering block assembly onto the casterblock and fix with the M3x12 screws.

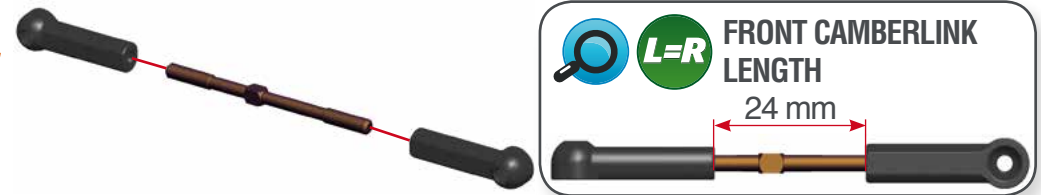


STEP 30

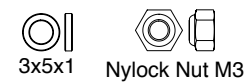
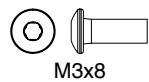
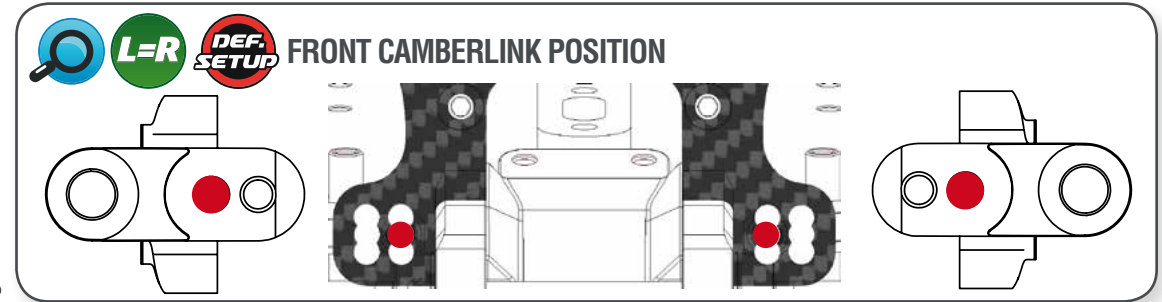
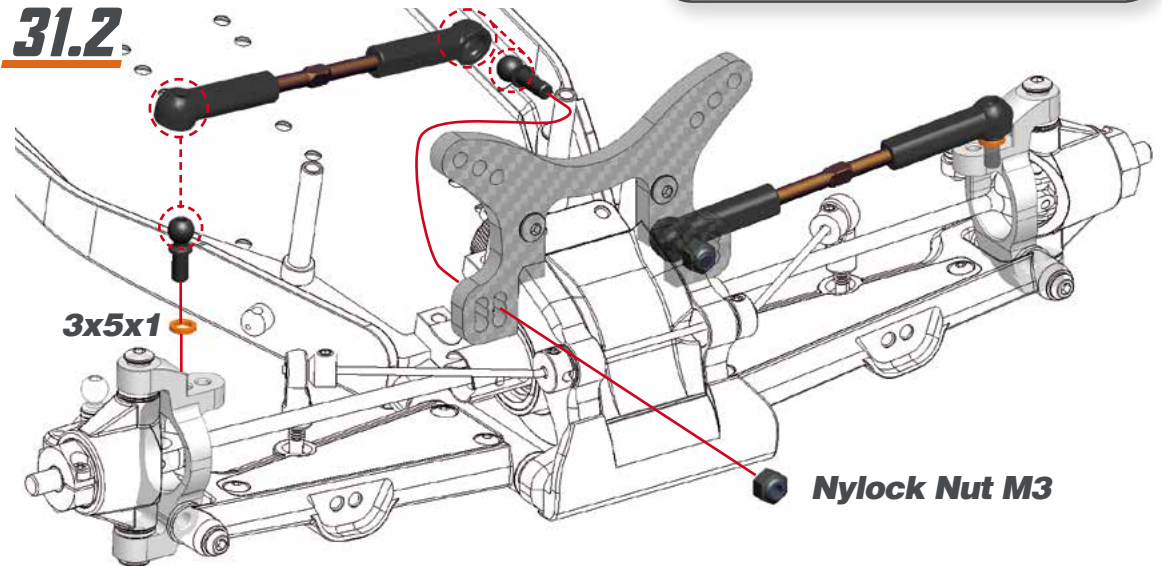


STEP 31

31.1



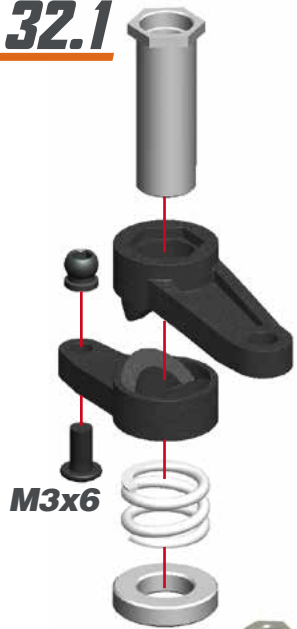
31.2



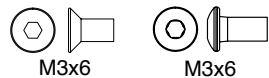
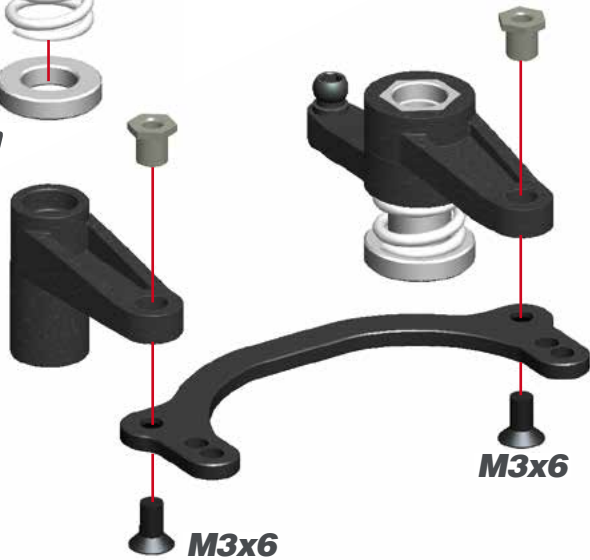
STEP 32

BAG 7

32.1



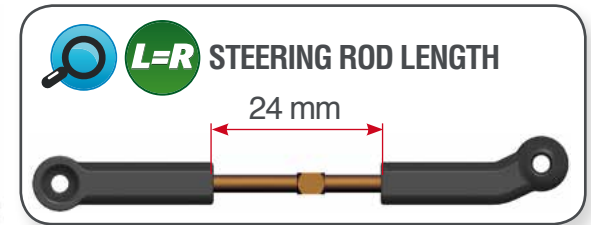
32.2



M3x6

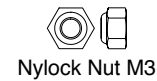
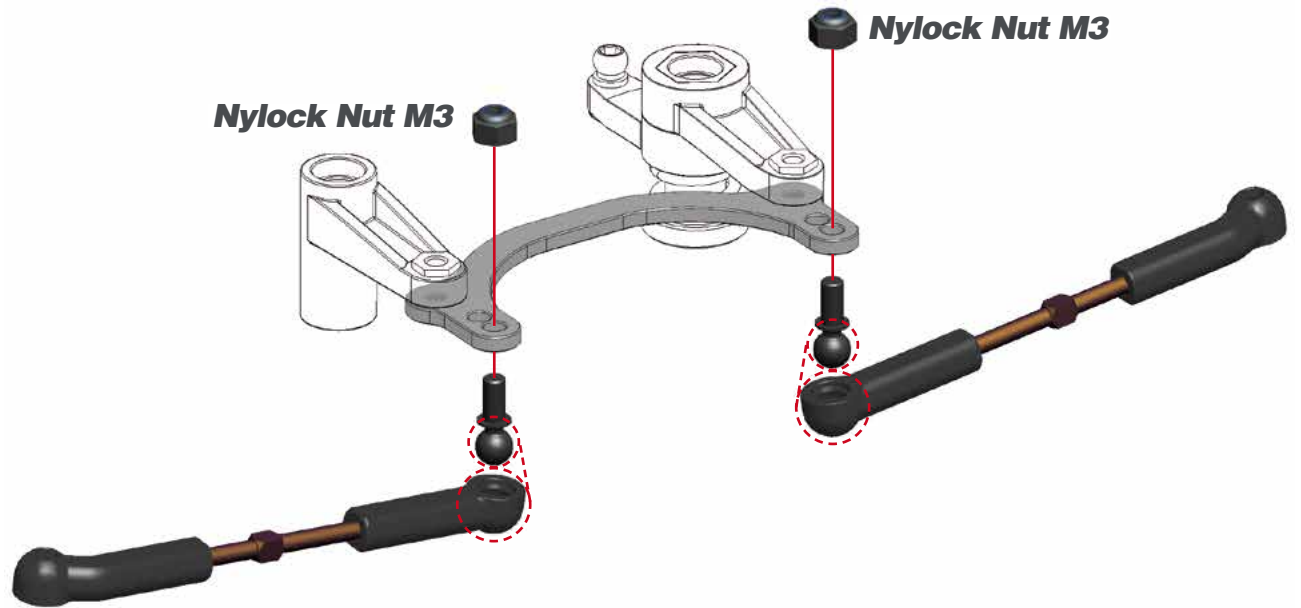
M3x6

STEP 33



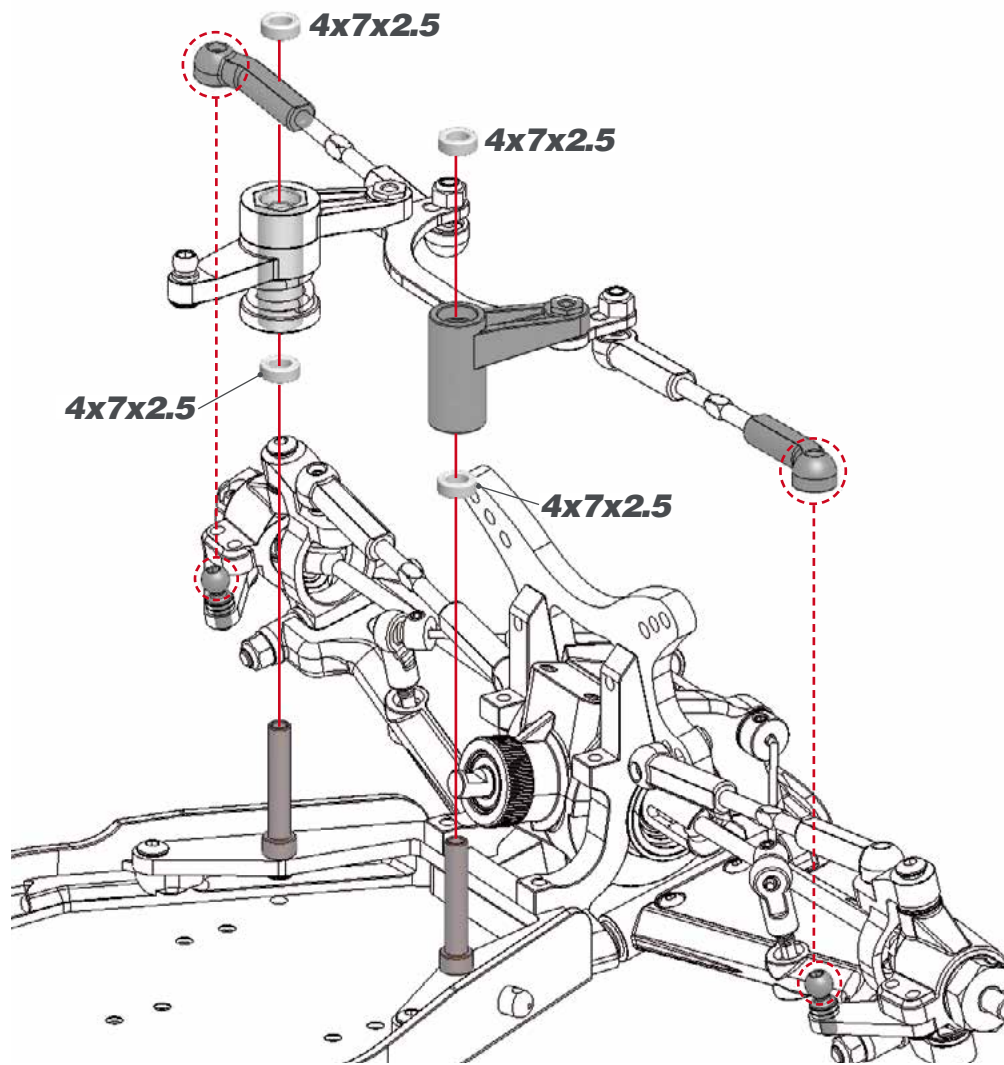
Nylock Nut M3

Nylock Nut M3

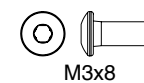
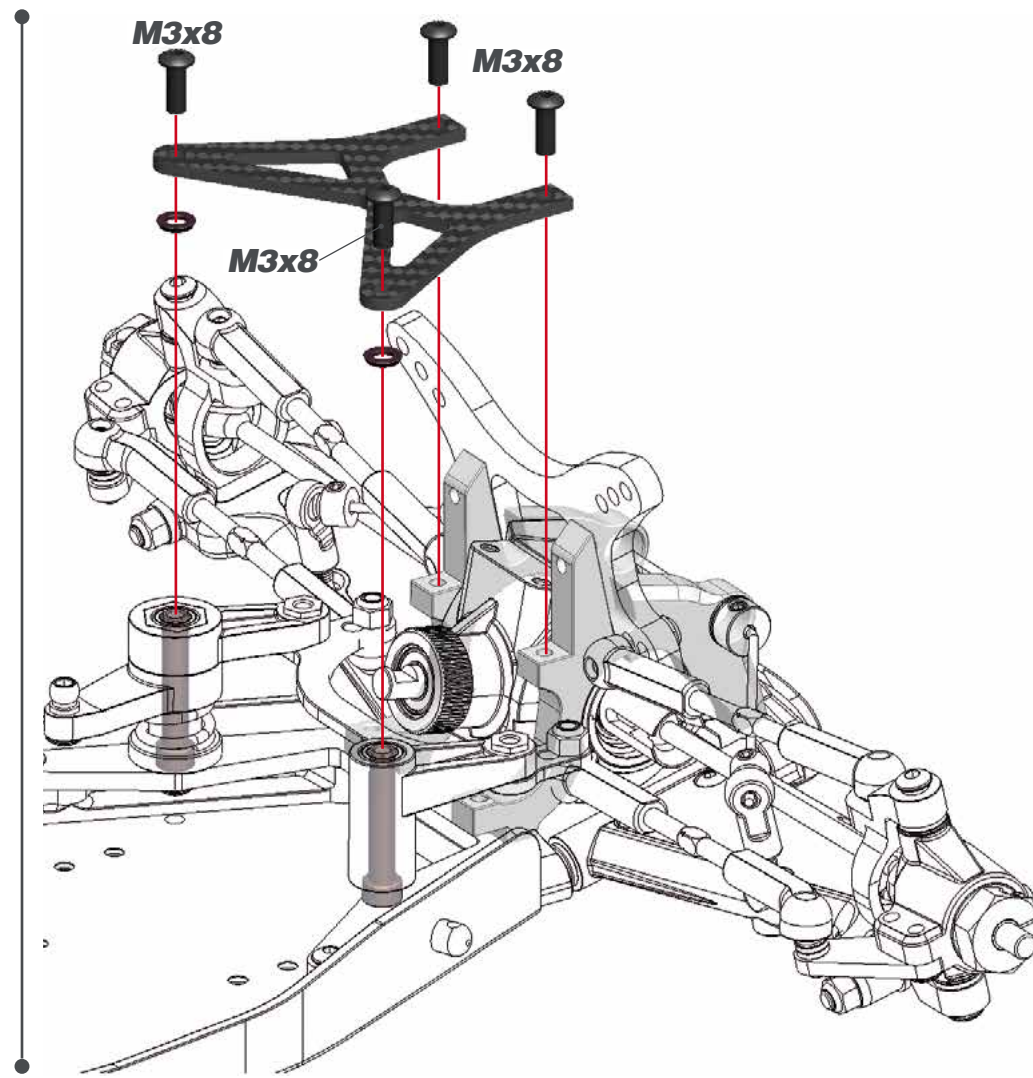


Nylock Nut M3

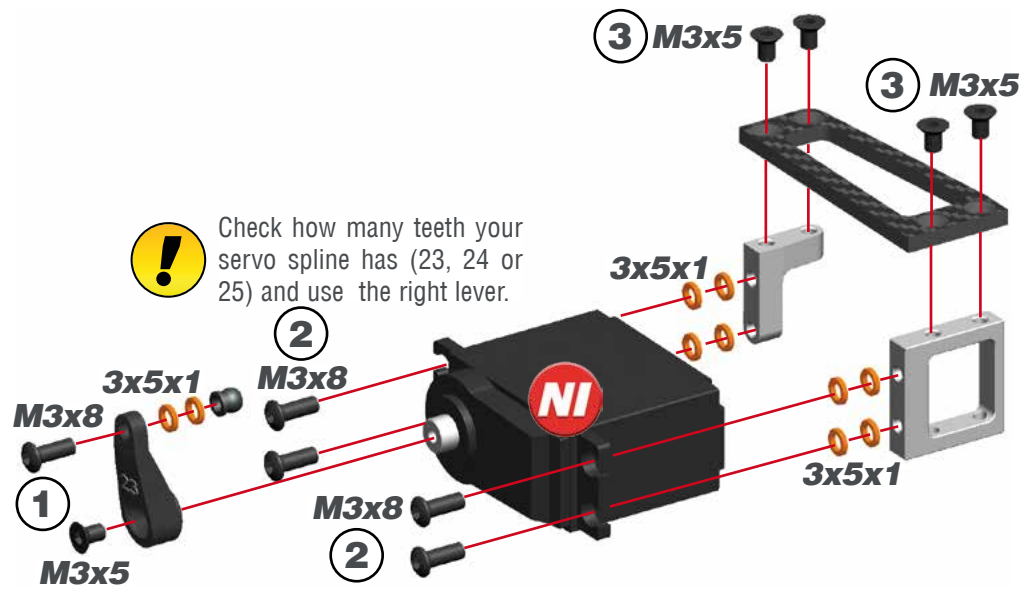
STEP 34



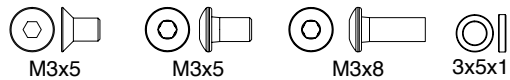
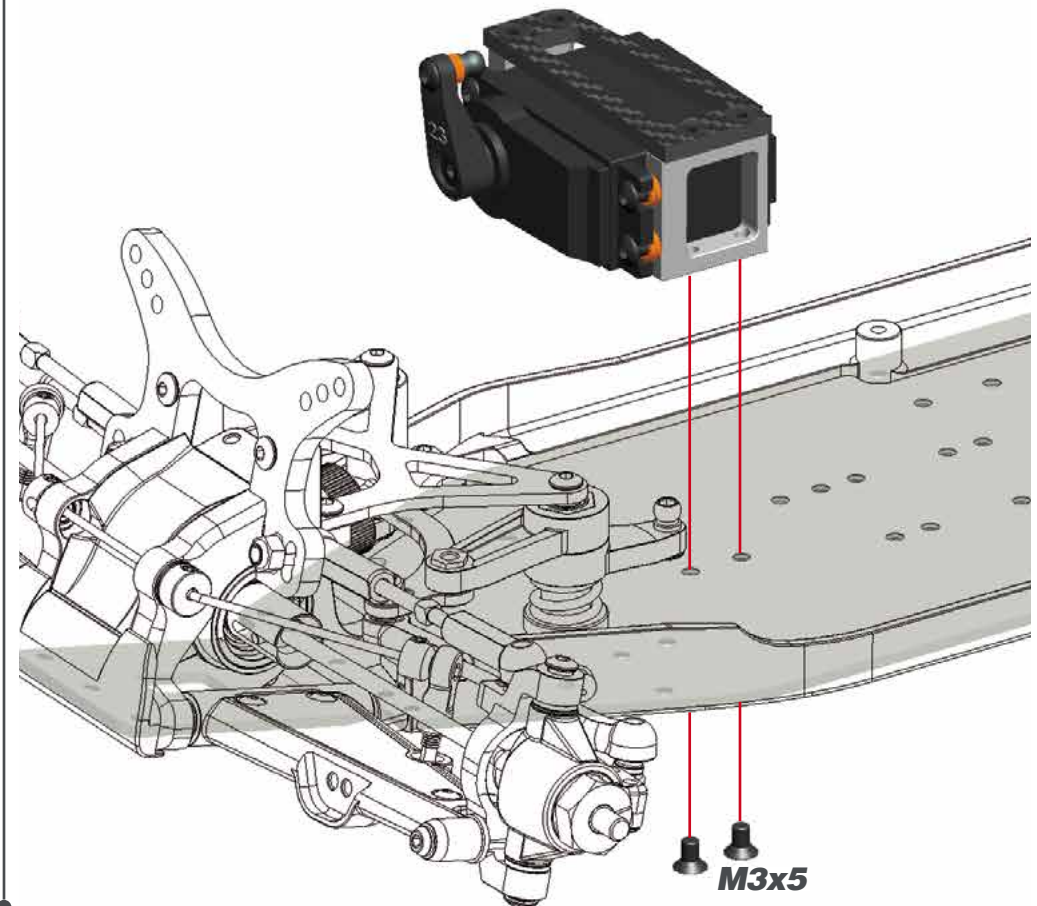
STEP 35



STEP 36

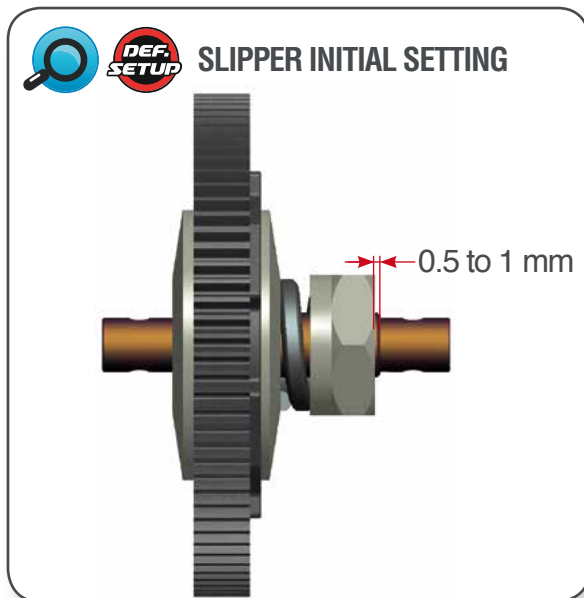
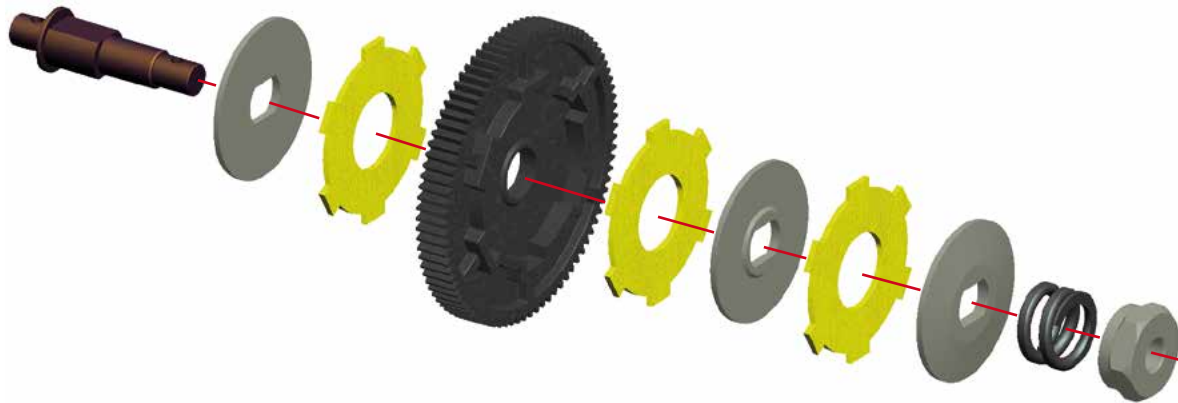


STEP 37



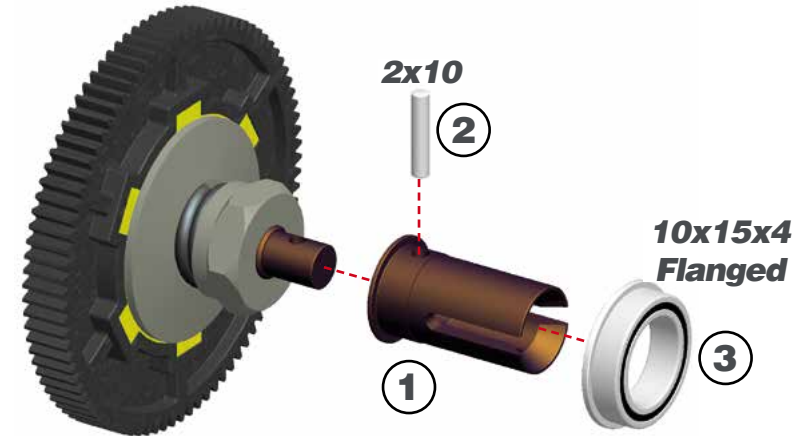
STEP 38

BAG 8

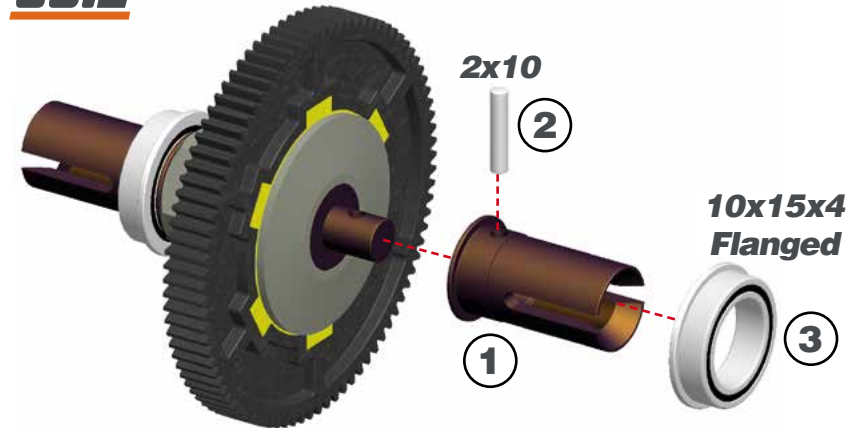


STEP 39

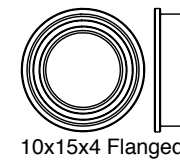
39.1



39.2



2x10



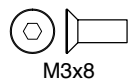
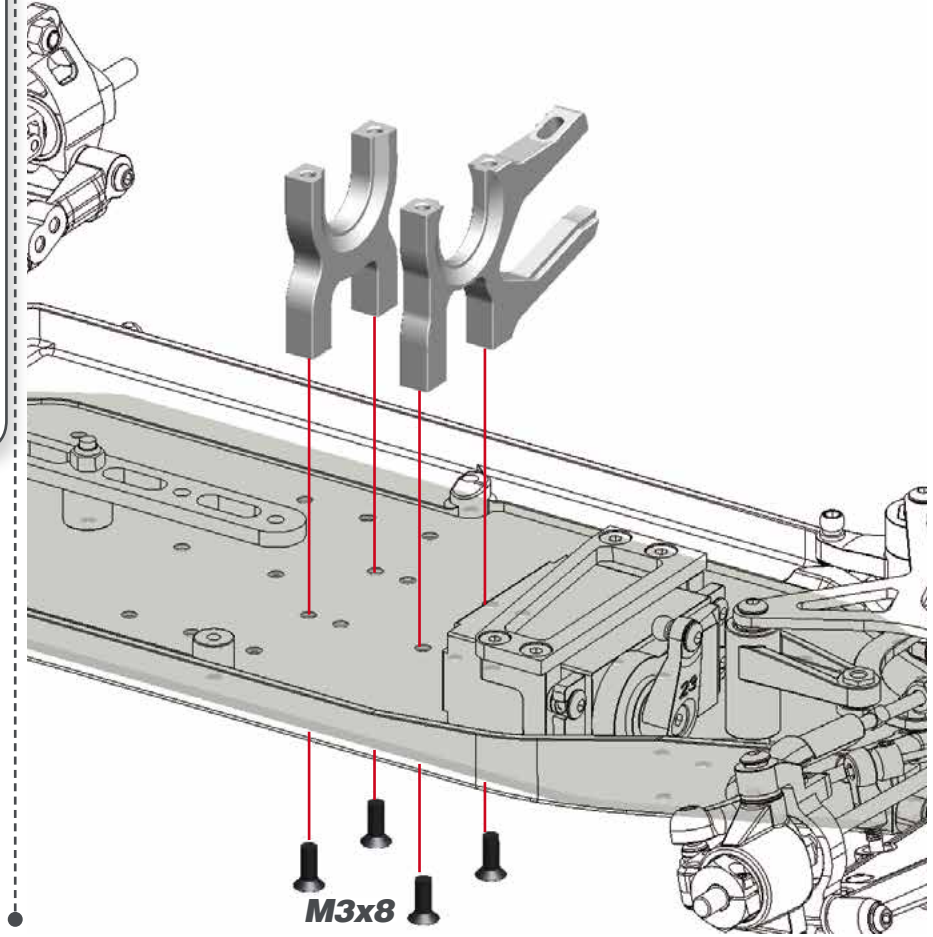
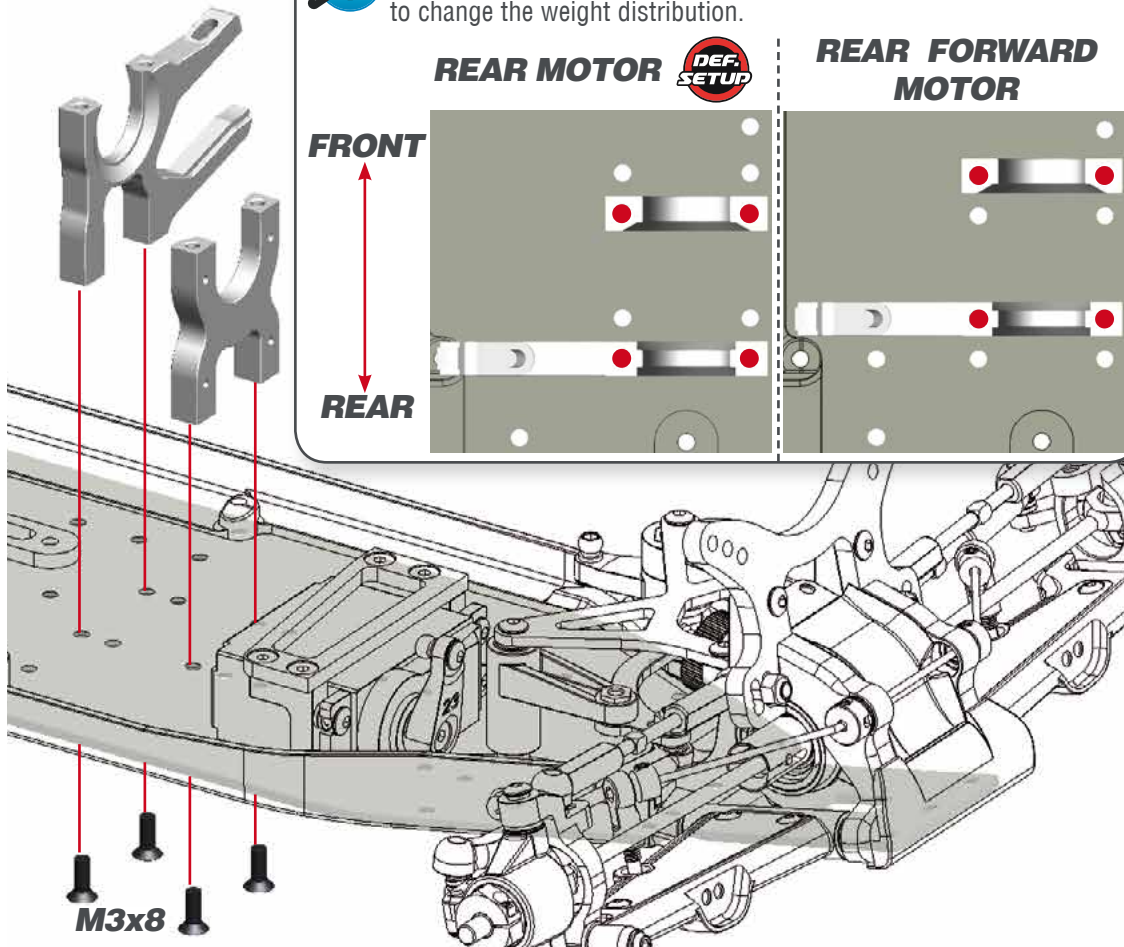
STEP 40

REAR MOTOR CONFIGURATION **DEFAULT**




FRONT MOTOR CONFIGURATION **OPTIONAL**


MOTORMOUNT AND BULKHEAD POSITION
The motormount and bulkhead can be used in two different positions to change the weight distribution.


	REAR MOTOR DEF. SETUP	REAR FORWARD MOTOR
FRONT		
REAR		




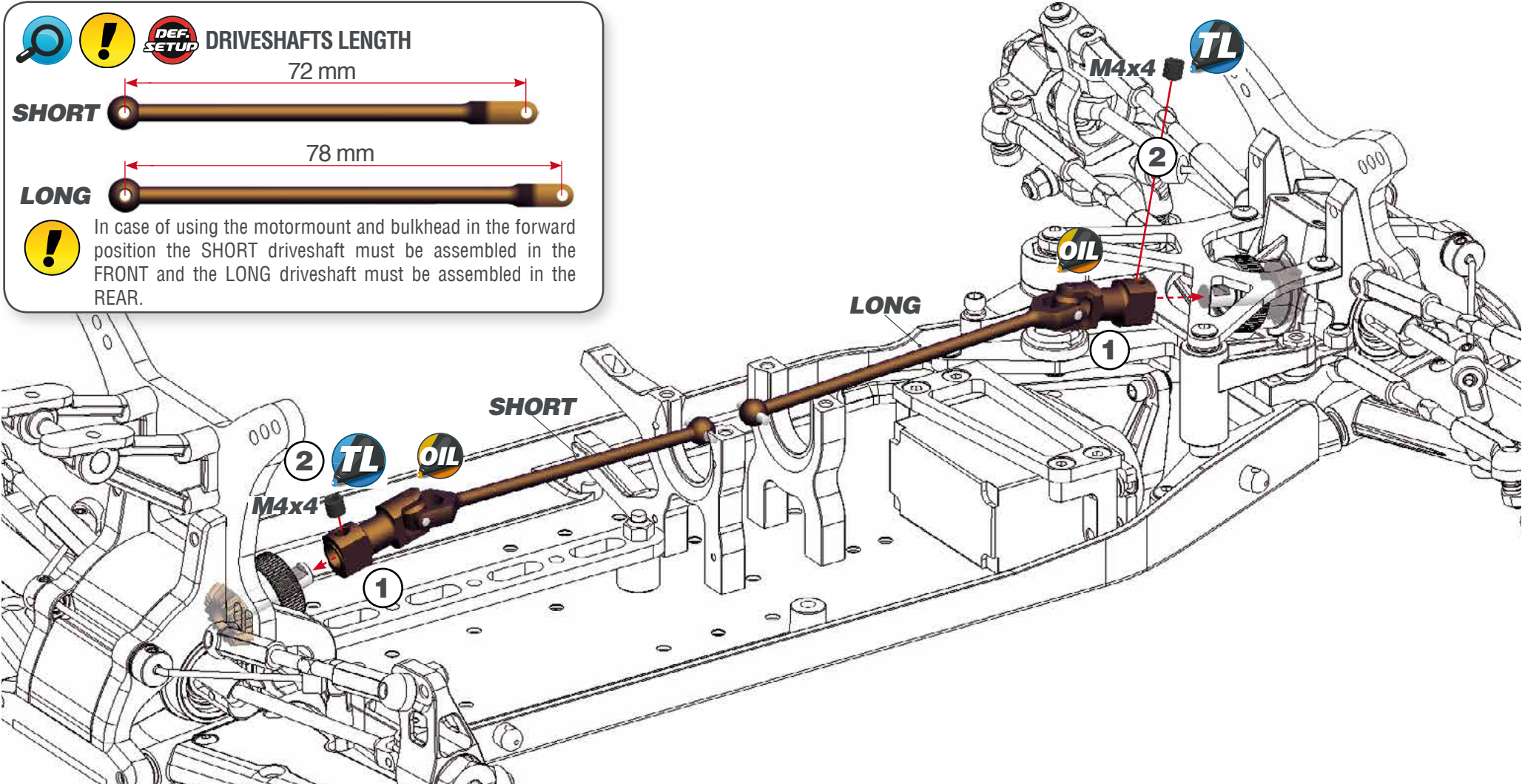
STEP 41

   **DRIVESHAFTS LENGTH**

SHORT  72 mm

LONG  78 mm

 In case of using the motormount and bulkhead in the forward position the **SHORT** driveshaft must be assembled in the **FRONT** and the **LONG** driveshaft must be assembled in the **REAR**.



 
M4x4

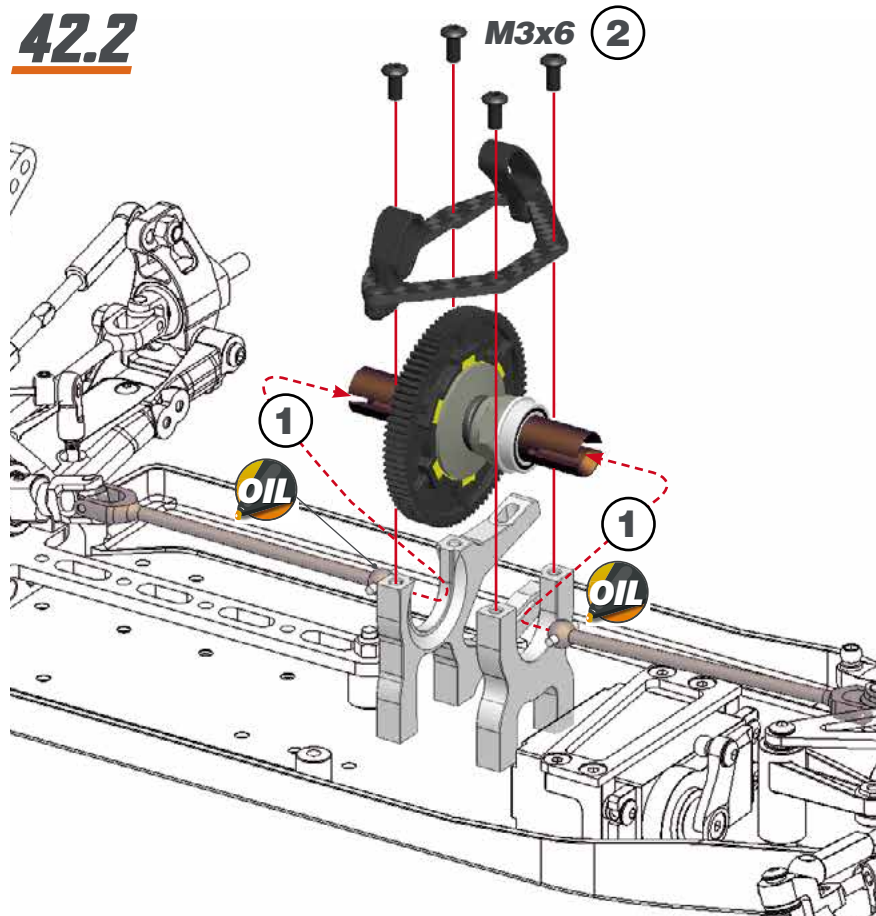
STEP 42

42.1

REAR MOTOR CONFIGURATION **DEFAULT**

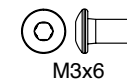
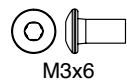
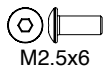
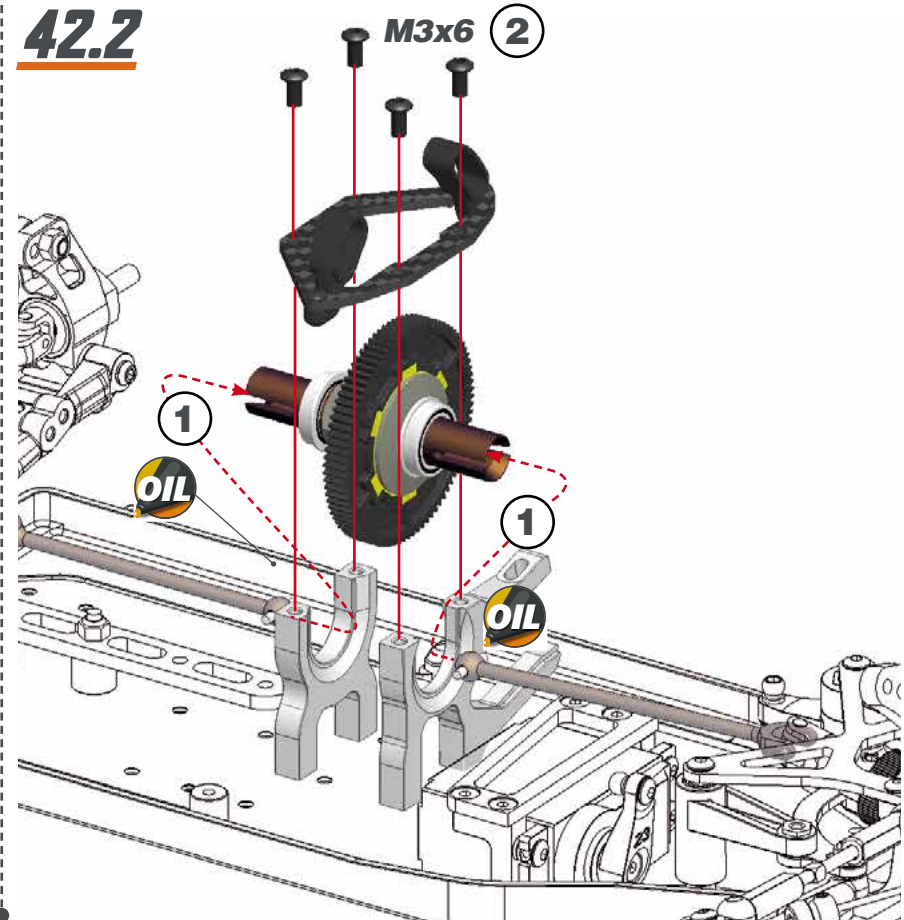


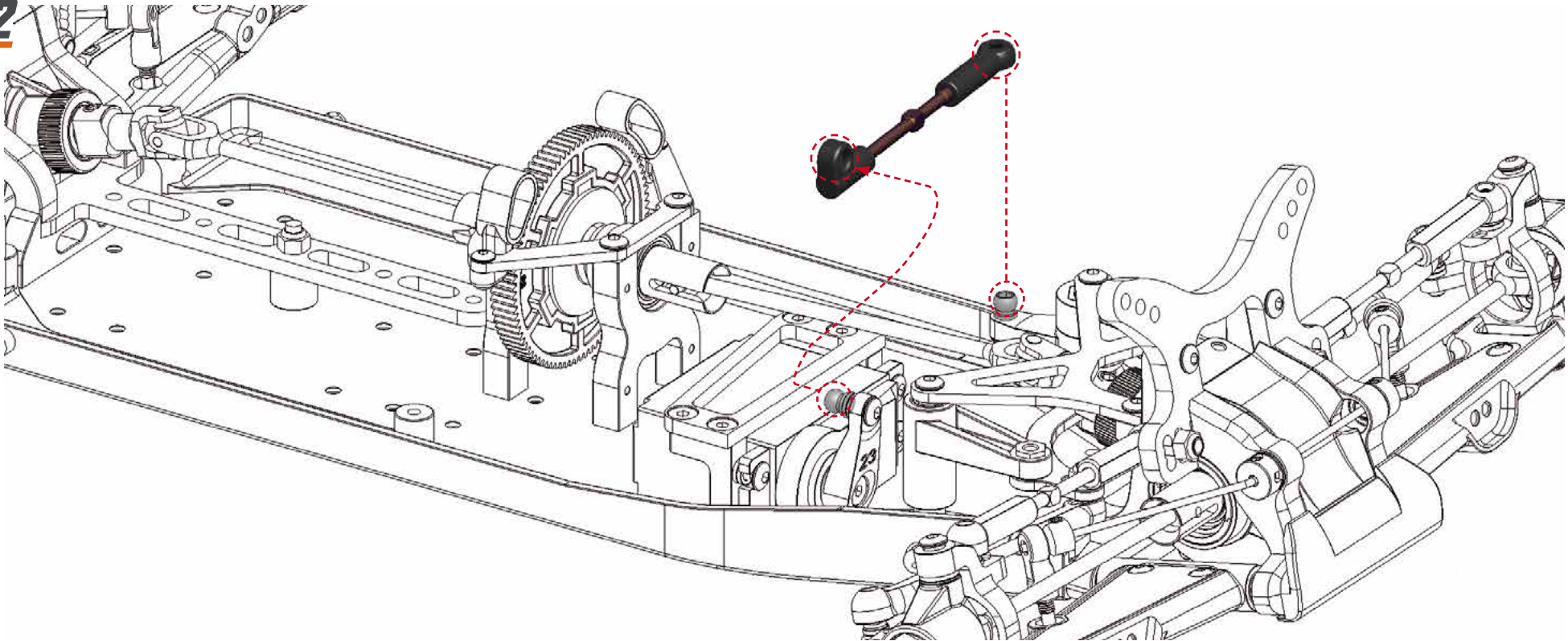
42.2



FRONT MOTOR CONFIGURATION **OPTIONAL**

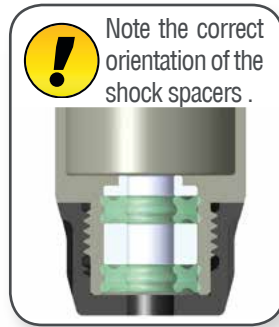
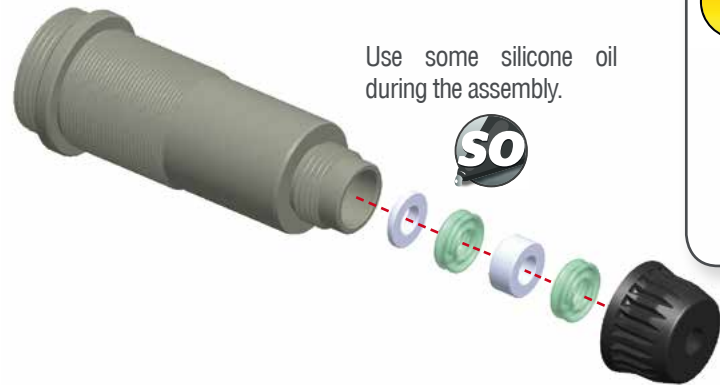
42.2



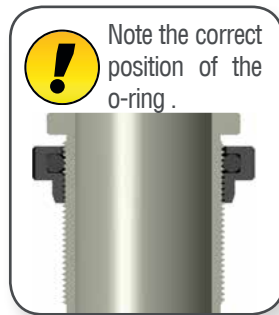
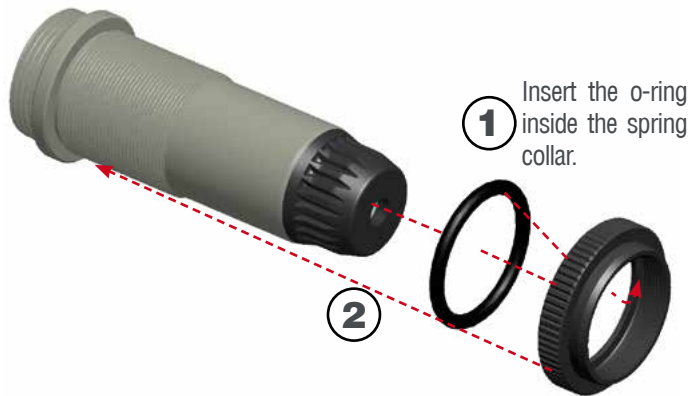
STEP 43**43.1****43.2**

STEP 44 BAG 9 FR SHOCKS / BAG 10 RR SHOCKS | STEP 45

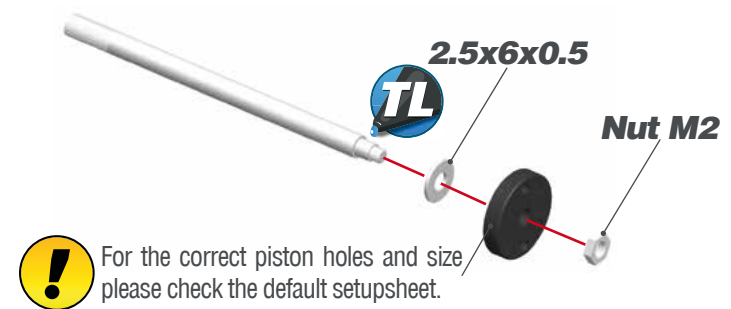
44.1



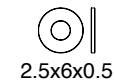
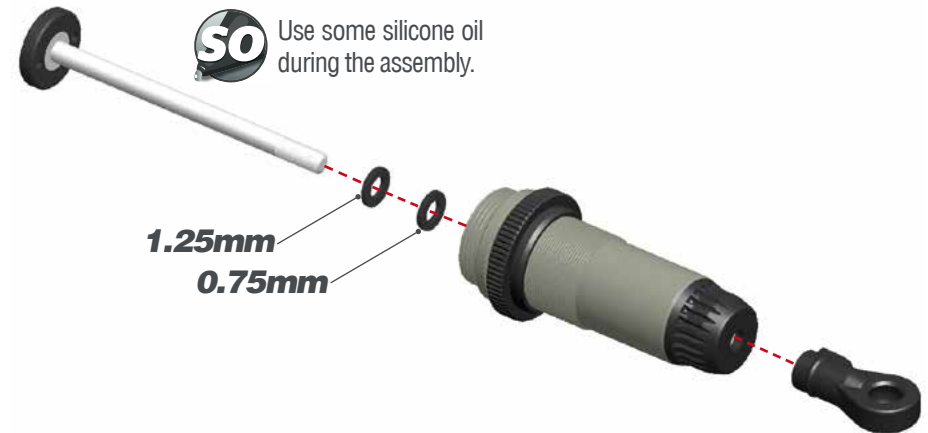
44.2



45.1



45.2



STEP 46

46.1

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- Apply the gasket and cap and close fully.



46.2

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

2- With shockrod fully in, mount the o-ring and screw.

M2.3x4



SHOCKS LENGTH: Measure the shock length fully extended.

FRONT

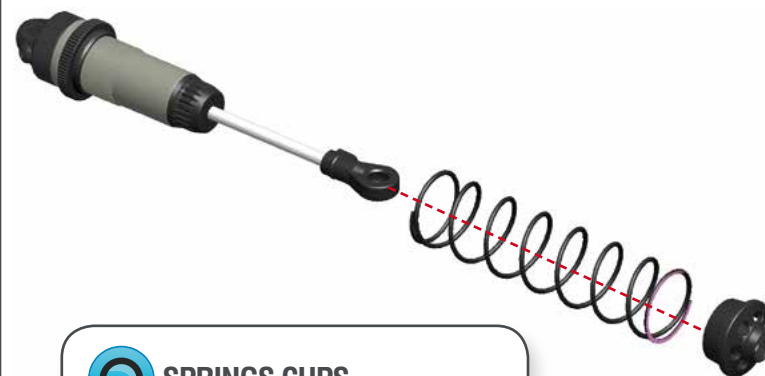
20.5 mm

REAR

27.5 mm

STEP 47

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



SPRINGS CUPS

FRONT HIGH

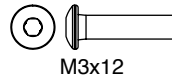
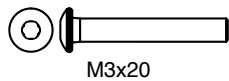
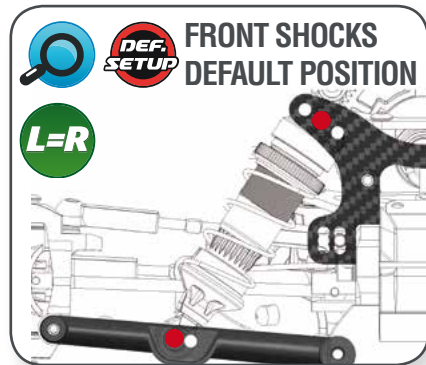
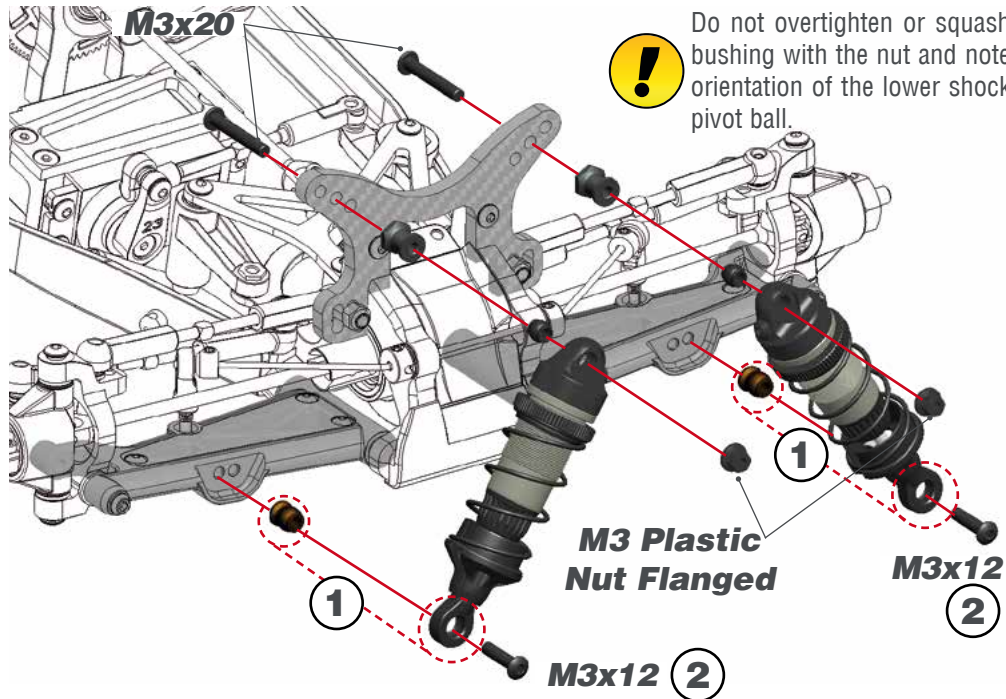
20.5 mm

REAR LOW

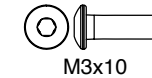
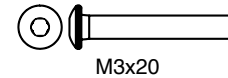
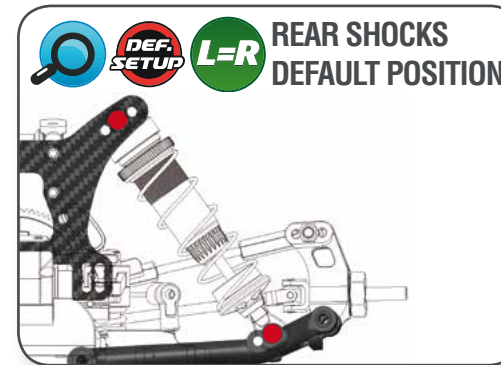
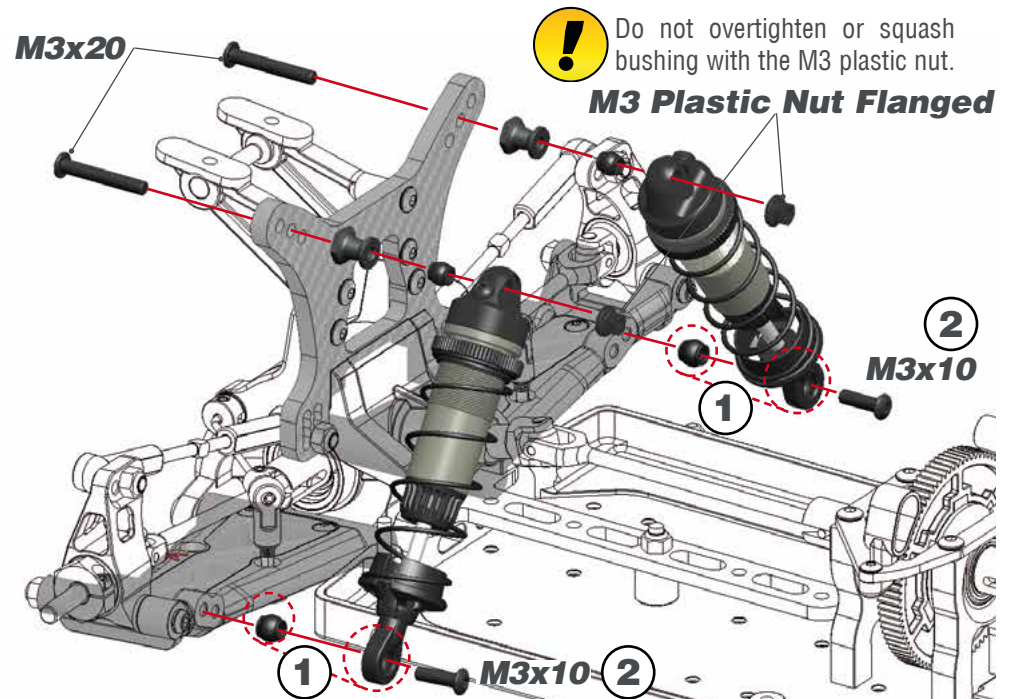
27.5 mm

STEP 48

BAG 11



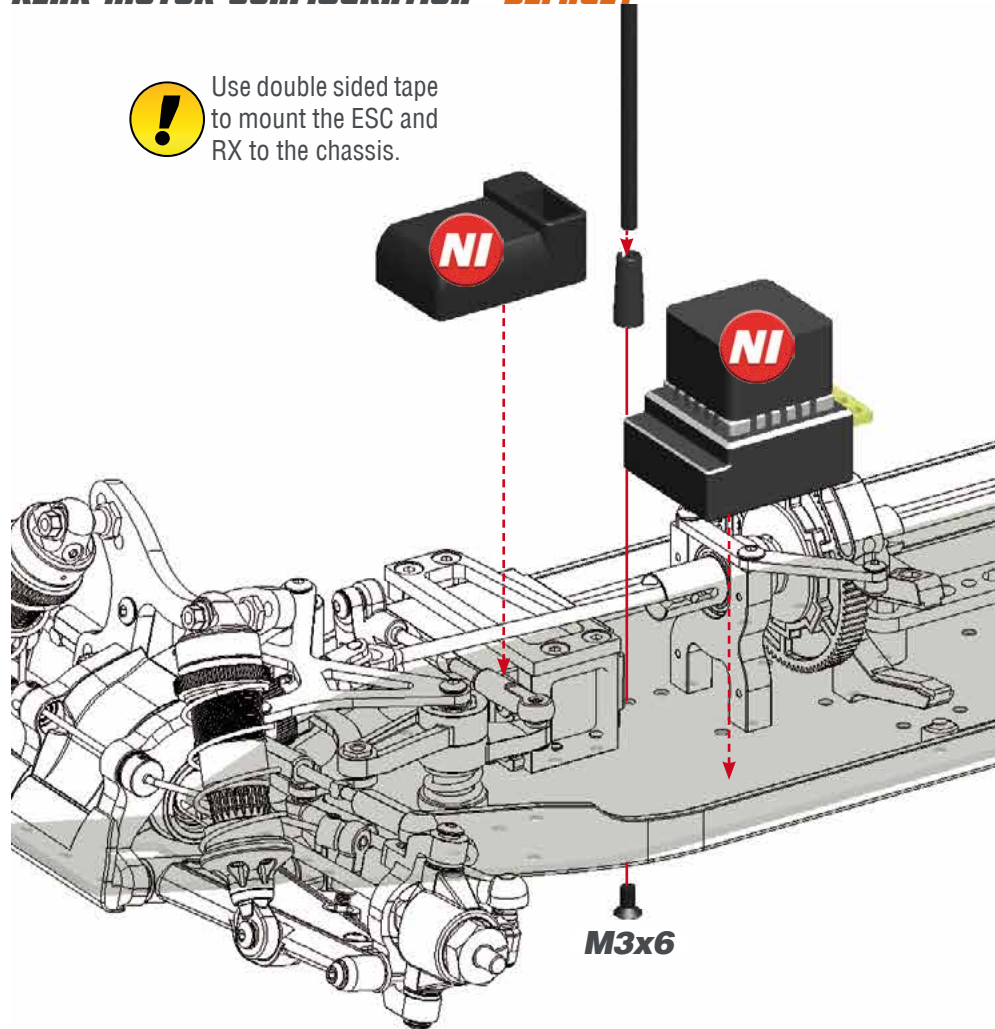
STEP 49



STEP 50

REAR MOTOR CONFIGURATION **DEFAULT**

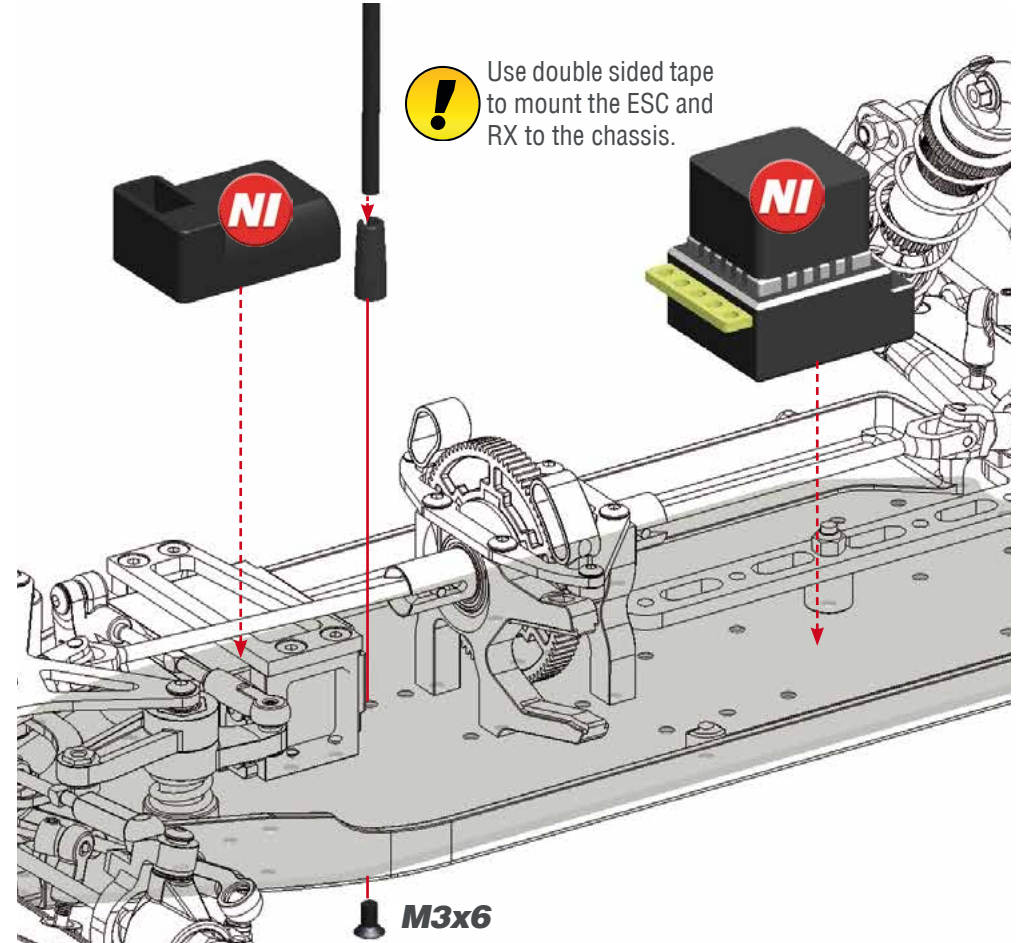
! Use double sided tape to mount the ESC and RX to the chassis.



FRONT MOTOR CONFIGURATION **OPTIONAL**

! To avoid the car to run backwards when using this configuration, there are 2 options:
 1) Change the speedo setting to "REV" (= reverse), if your speedo allows this.
 2) If not take out both differentials and turn them 180 degrees.

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

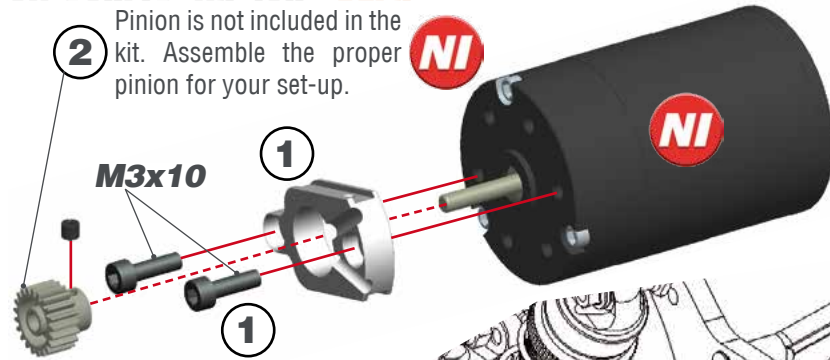


STEP 51

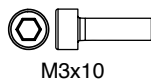
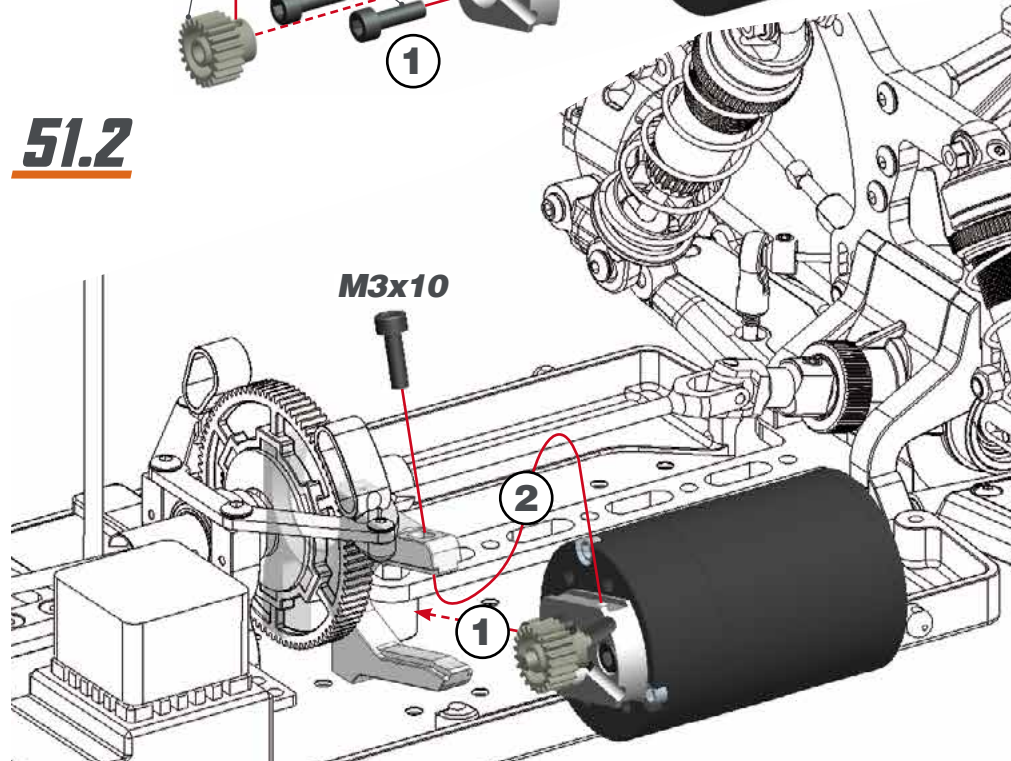
REAR MOTOR CONFIGURATION *DEFAULT*

51.1

② Pinion is not included in the kit. Assemble the proper pinion for your set-up. **NI**



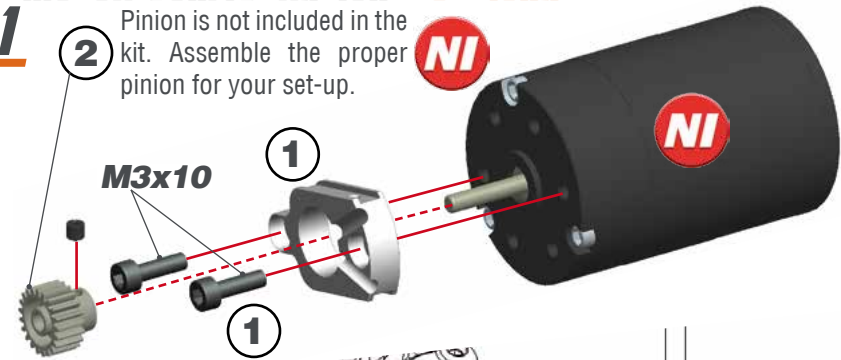
51.2



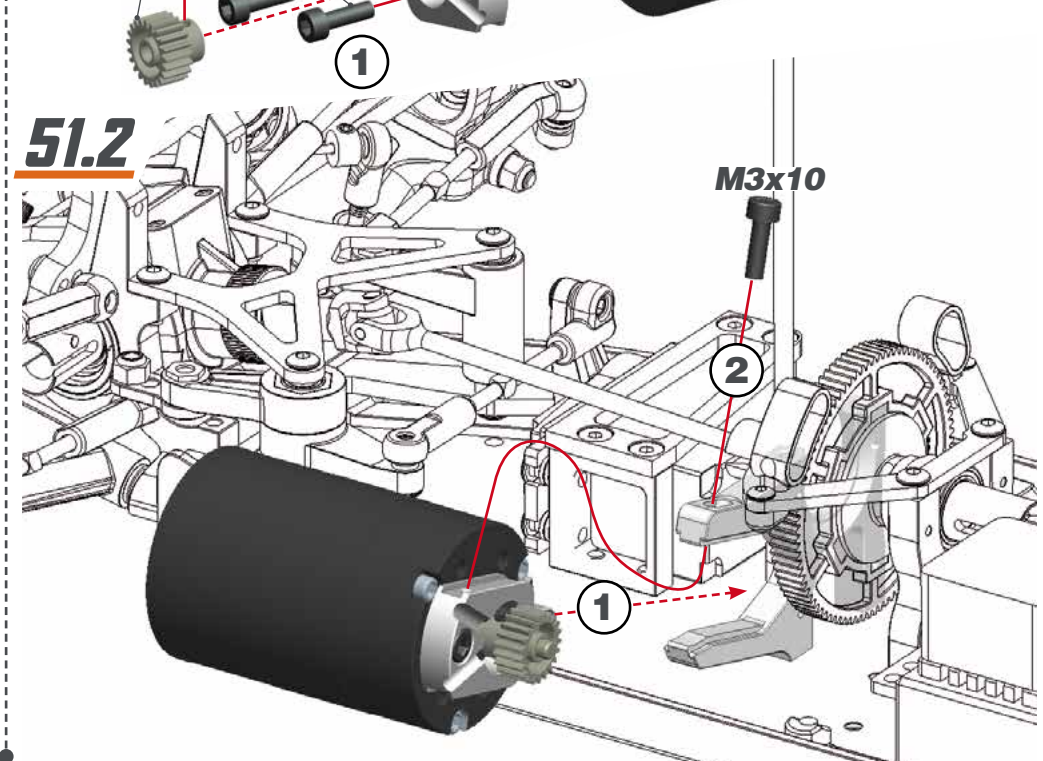
FRONT MOTOR CONFIGURATION *OPTIONAL*

51.1

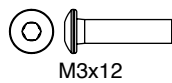
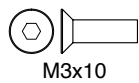
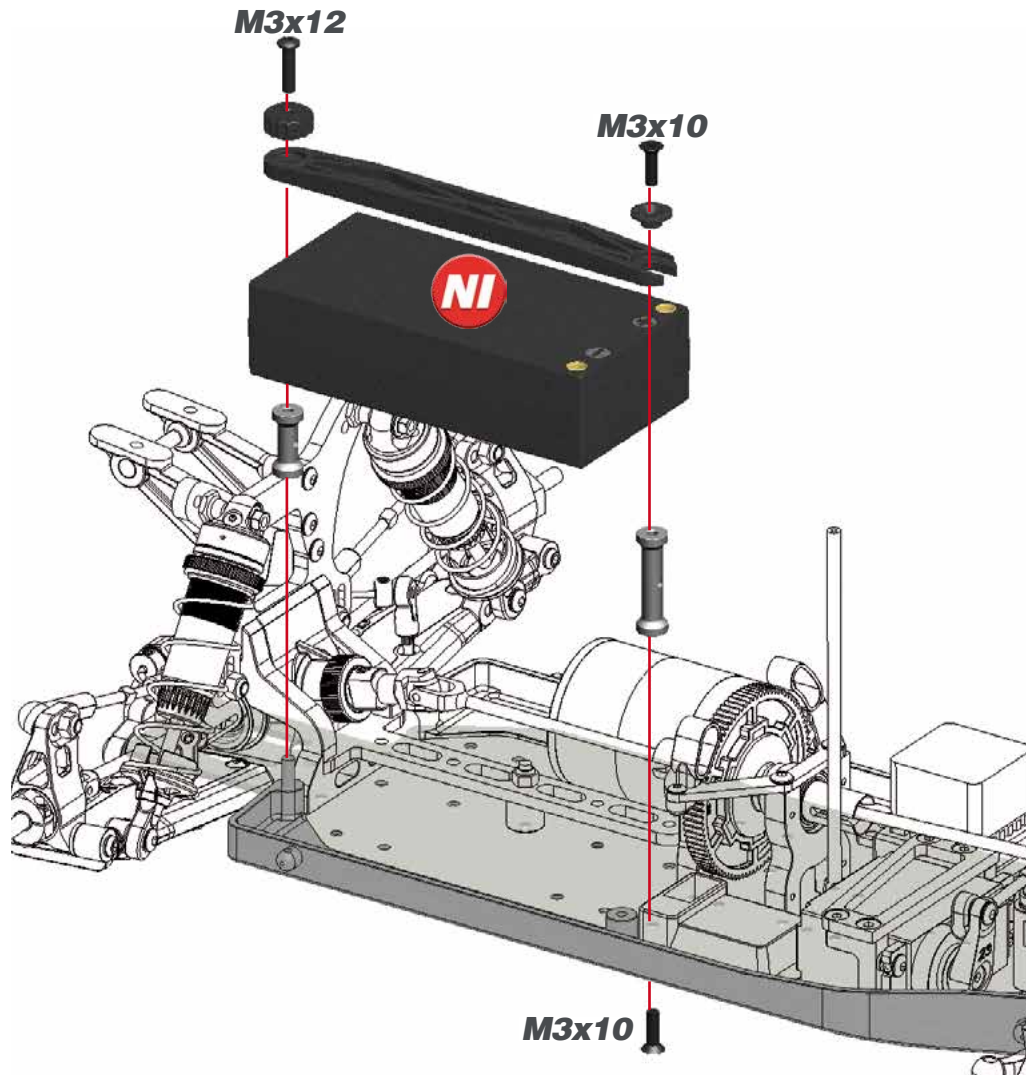
② Pinion is not included in the kit. Assemble the proper pinion for your set-up. **NI**



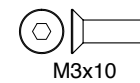
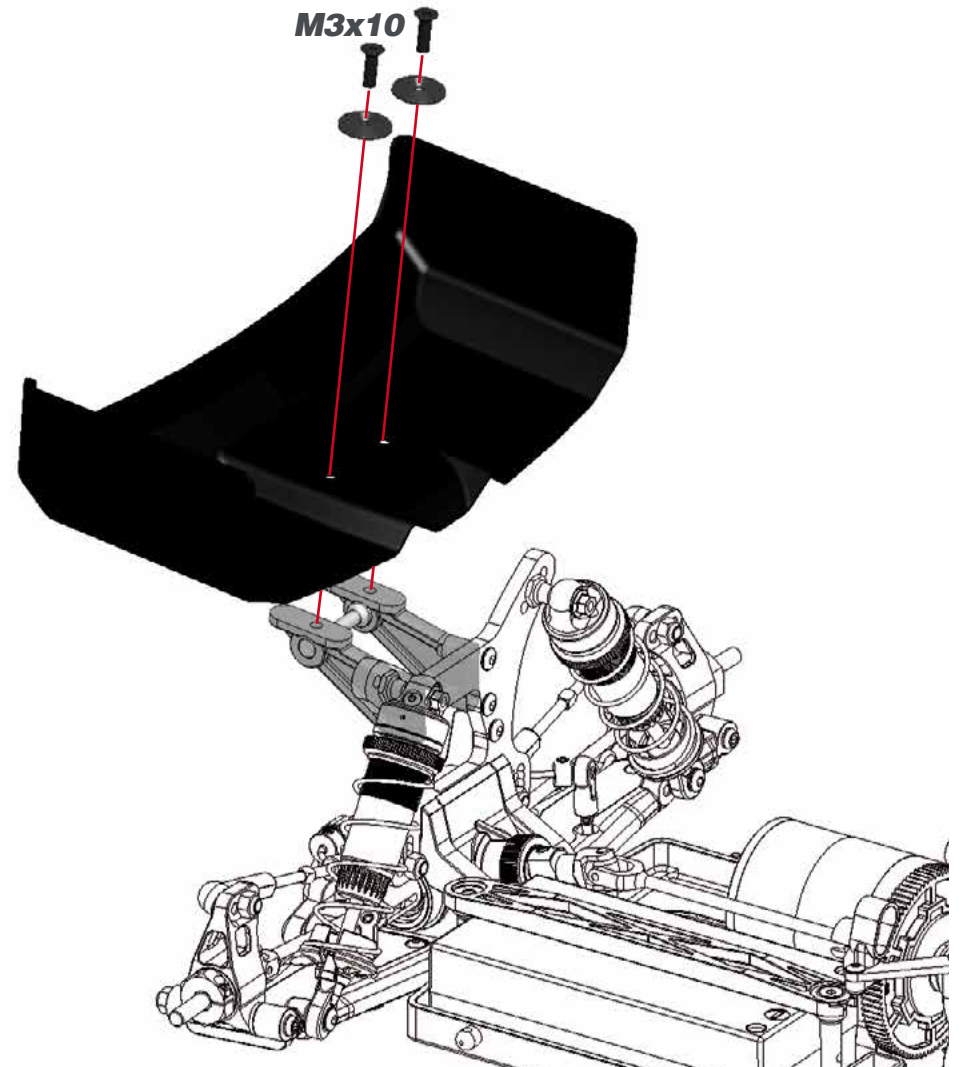
51.2



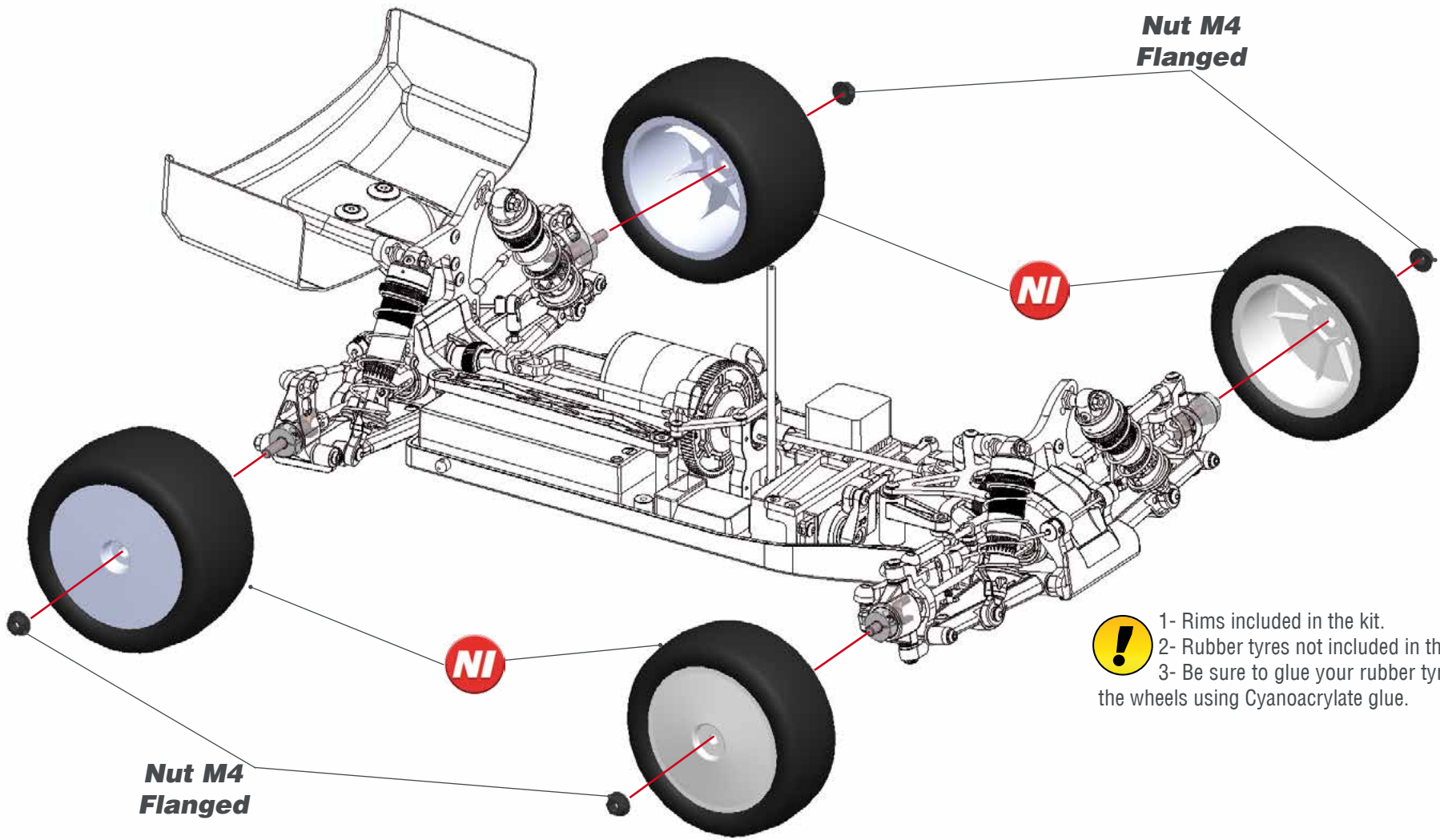
STEP 52



STEP 53



STEP 54



- 1- Rims included in the kit.
- 2- Rubber tyres not included in the kit.
- 3- Be sure to glue your rubber tyres to the wheels using Cyanoacrylate glue.

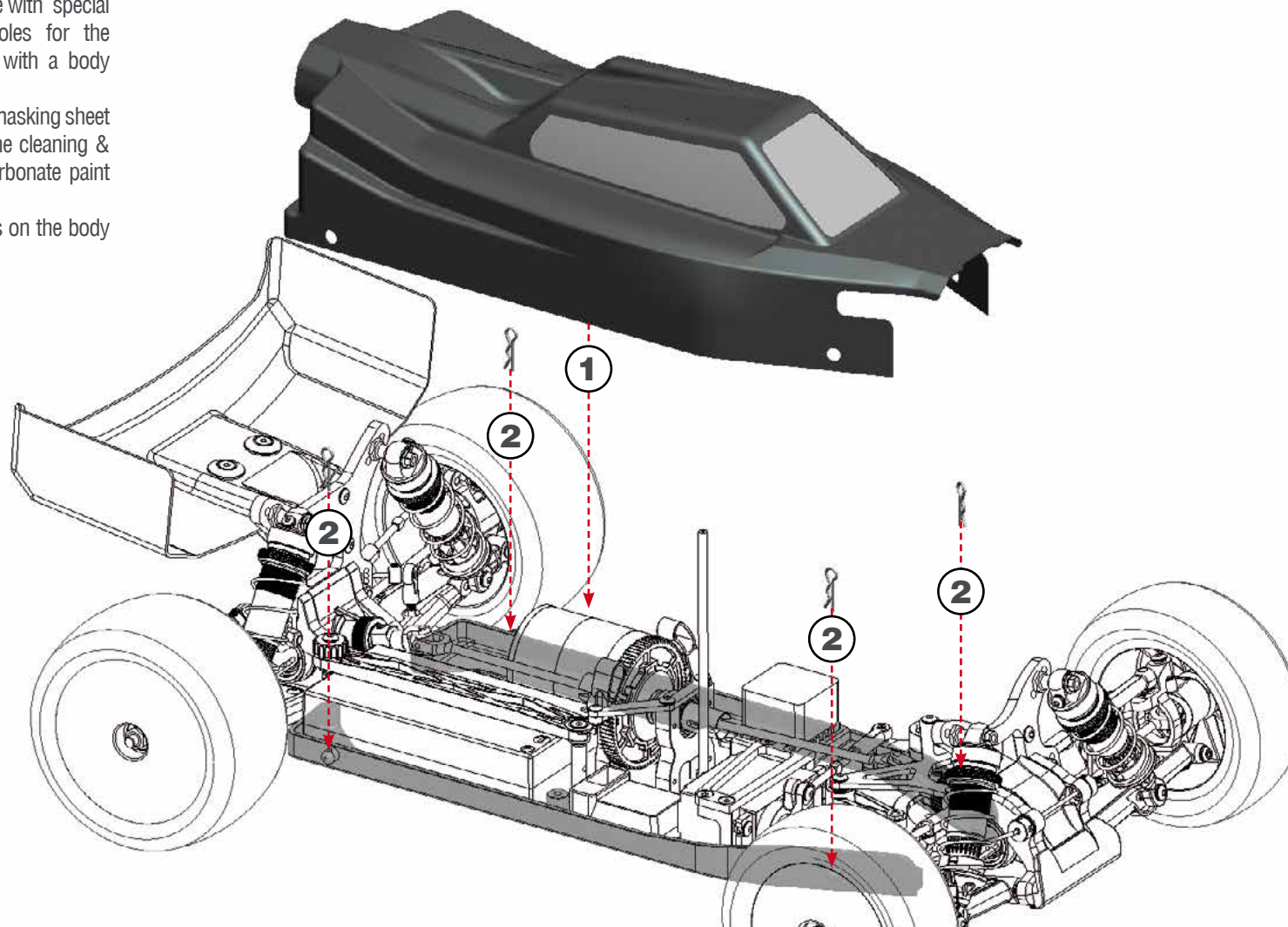


STEP 55

! 1- Cut the body along the cutting line with special scissors (not included). Make holes for the bodypost and antenna as needed with a body reamer (not included).

2- Before painting the body, apply the precut masking sheet elements to the inside of the body. Follow the cleaning & painting instructions supplied by the polycarbonate paint supplier you choose.

3- Apply the Serpent and Spyder logo-decals on the body and wing.



Clip small

INDEX

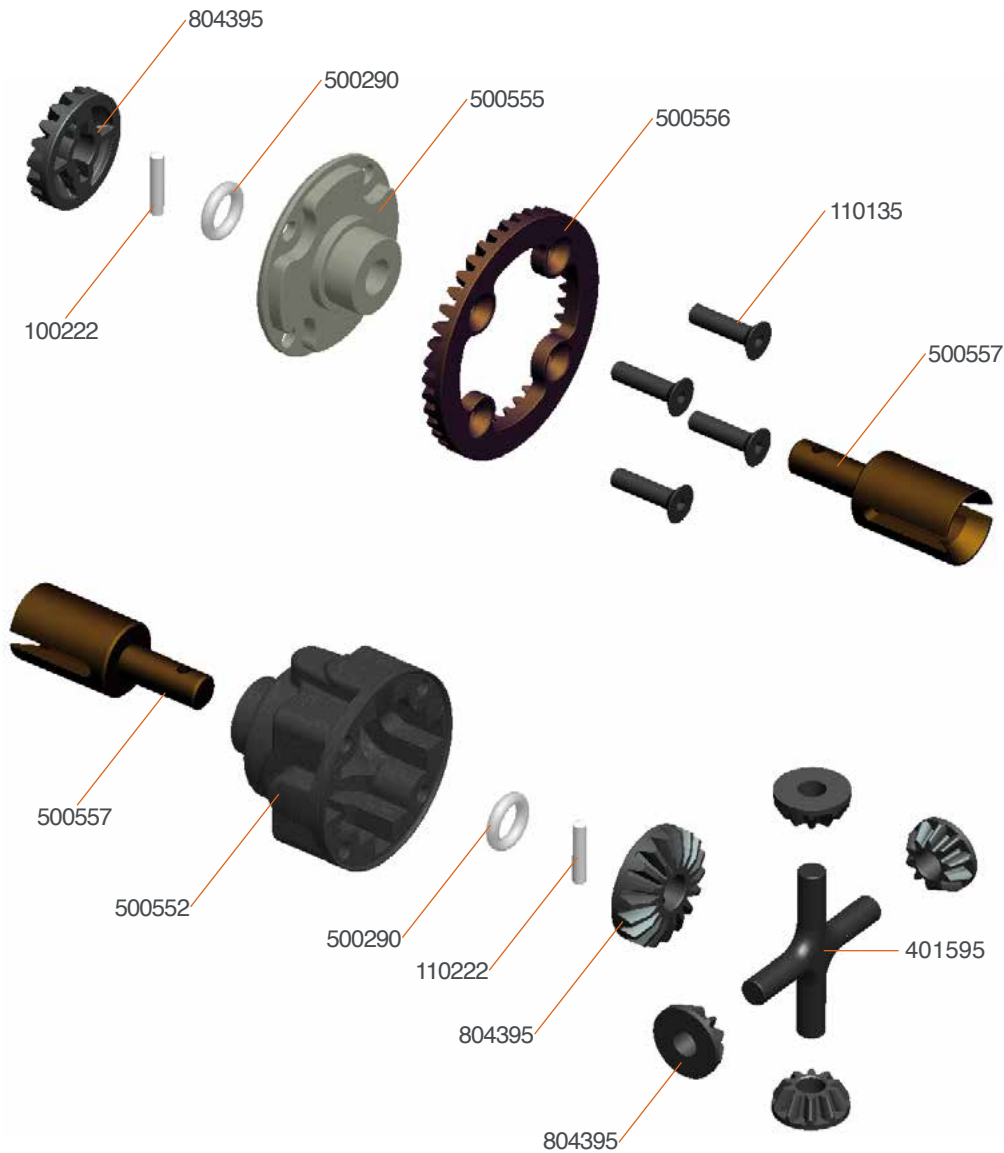
GEAR DIFFS EXPLODED VIEW	37
SLIPPER EXPLODED VIEW	38
FRONT AND REAR GEARBOXES EXPLODED VIEW	39
CENTRAL EXPLODED VIEW	40
TRANSMISSION EXPLODED VIEW	41
REAR EXPLODED VIEW	42
FRONT EXPLODED VIEW	43
STEERING EXPLODED VIEW	44
FINAL EXPLODED VIEW	45
TEAM SERPENT NETWORK	46

GEARDIFF AND SLIPPER EXPLODED VIEW



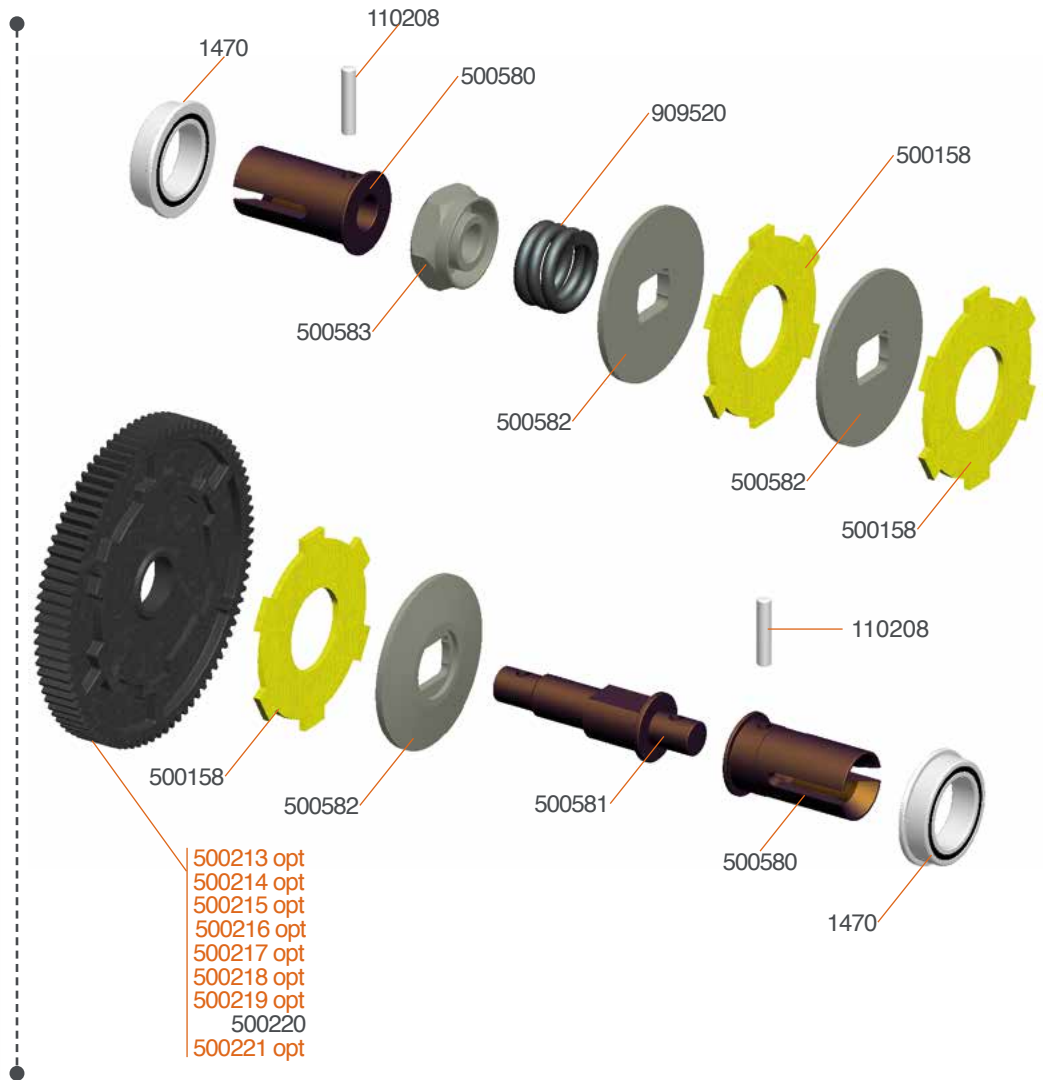
GEARDIFF

500608 SDX4 Geardiff set fr/r



SLIPPER

500579 SDX4 Slipper set



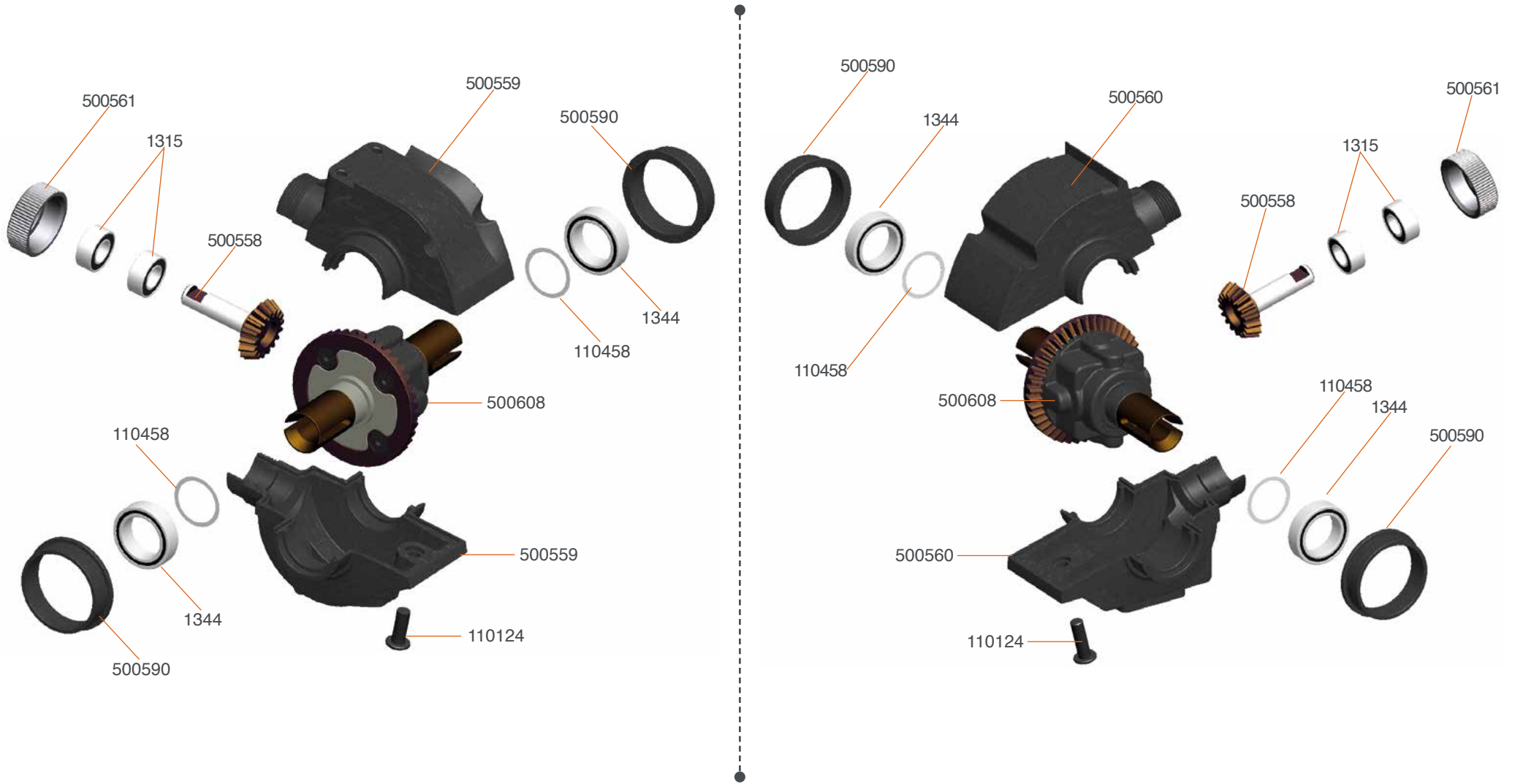
- 500213 Spur gear 70T SRX2
- 500214 Spur gear 72T SRX2
- 500215 Spur gear 76T SRX2
- 500216 Spur gear 78T SRX2

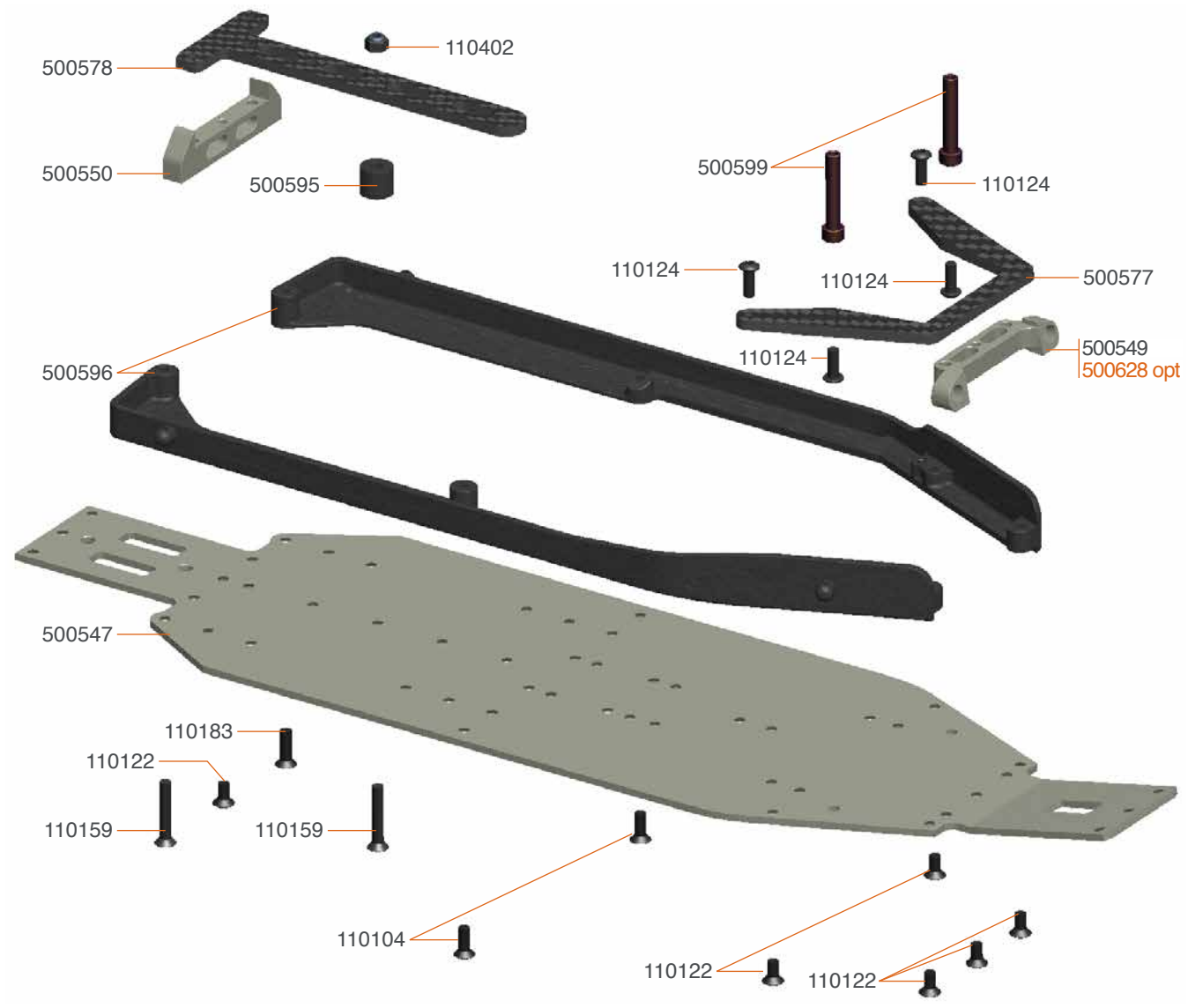
- 500217 Spur gear 80T SRX2
- 500218 Spur gear 82T SRX2
- 500219 Spur gear 84T SRX2
- 500221 Spur gear 88T SRX2

500609 SDX4 Geardiff set center



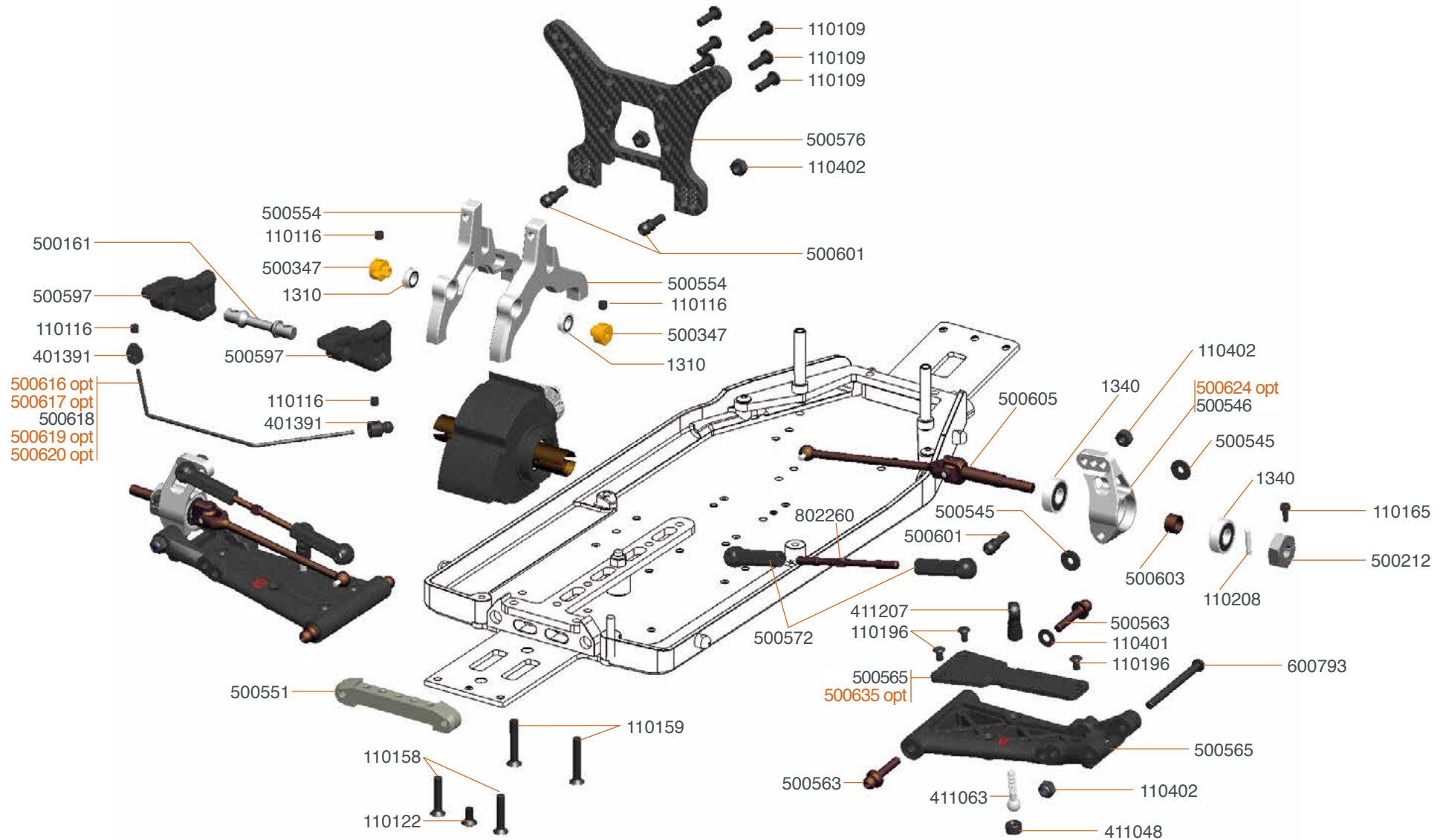
FRONT AND REAR GEARBOXES EXPLODED VIEWS





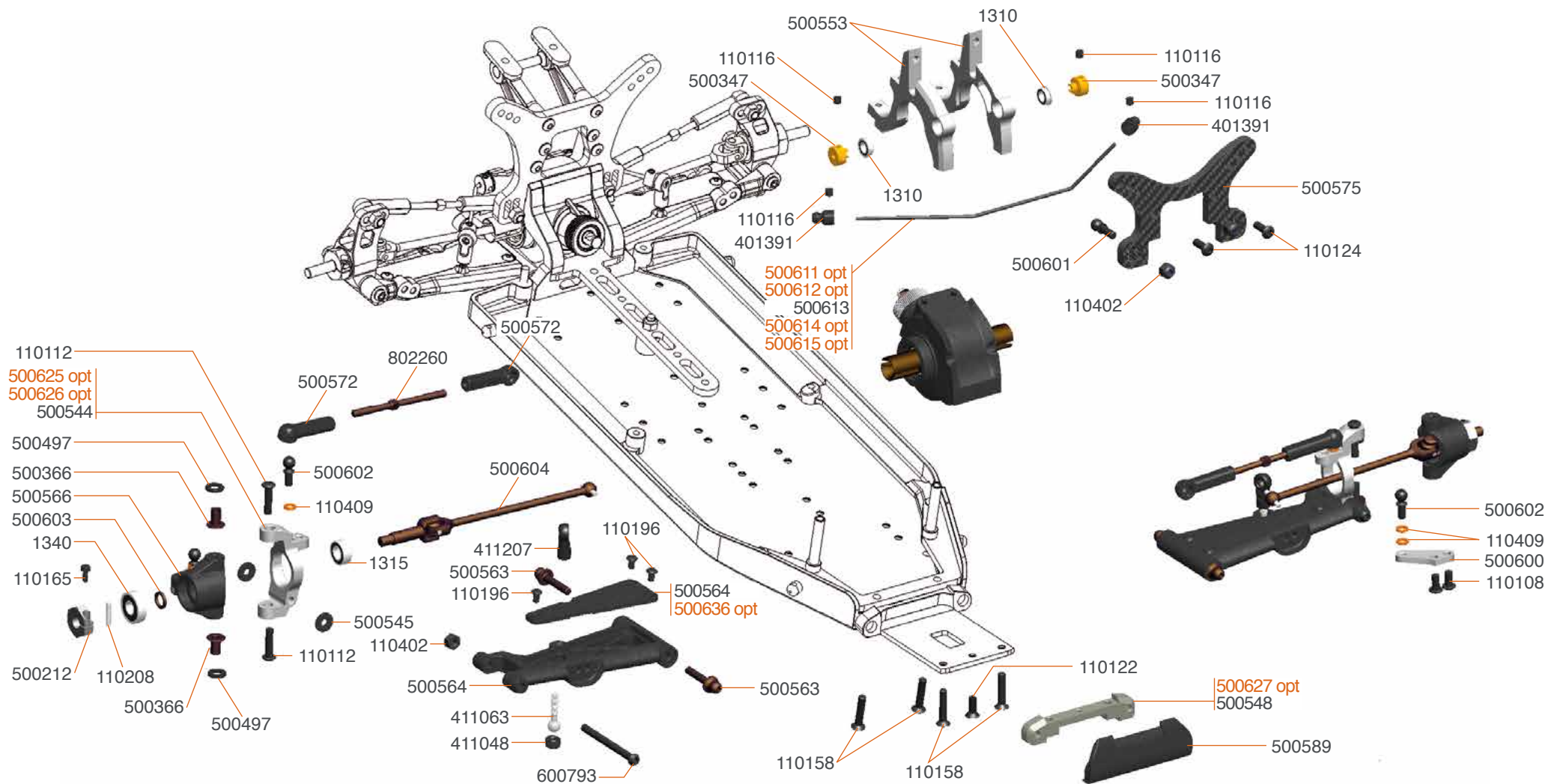
500628 Suspension bracket FR-RR plus 2 SDX





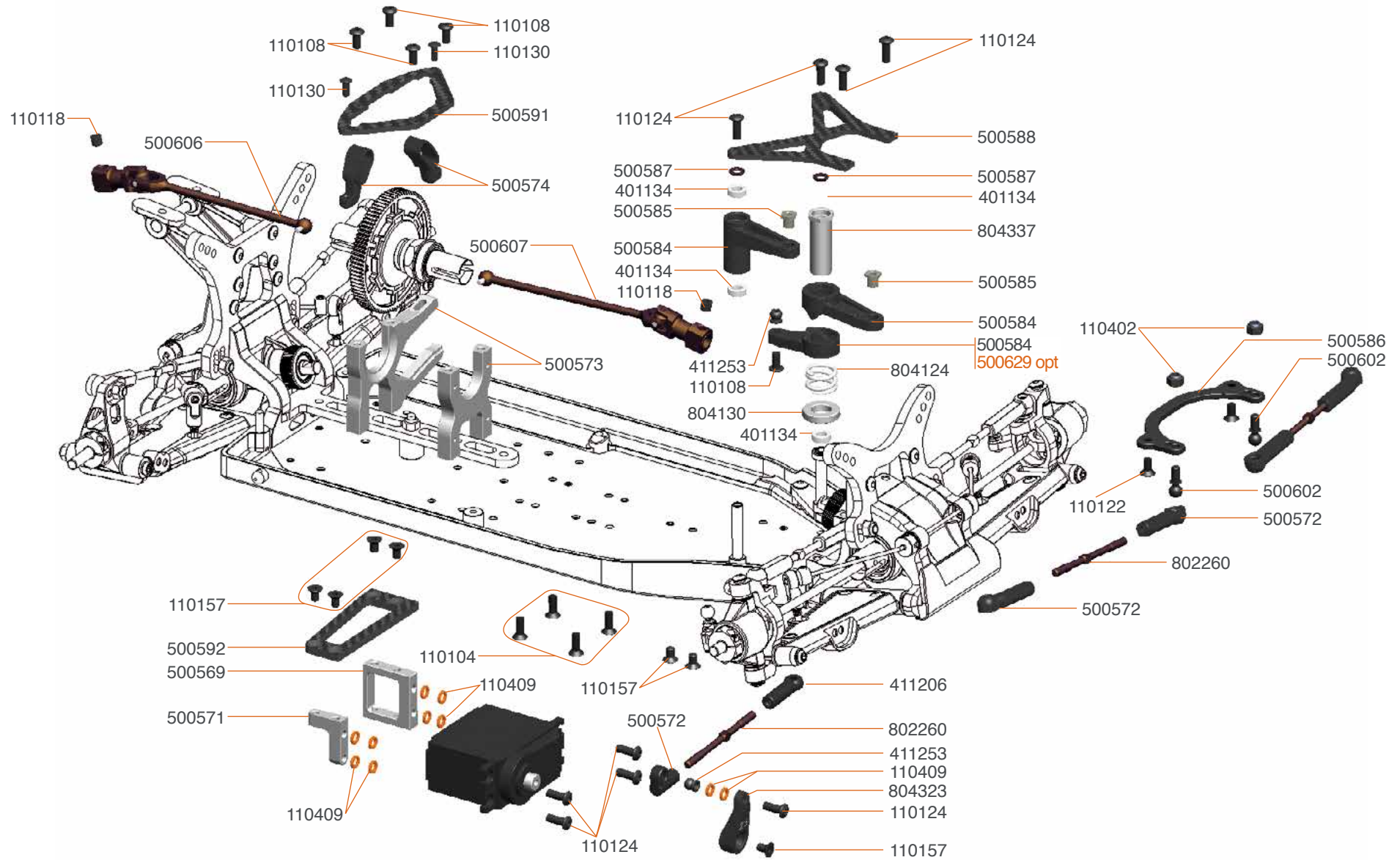
500616 Antirollbar RR 1.0mm SDX
 500617 Antirollbar RR 1.2mm SDX
 500618 Antirollbar RR 1.6mm SDX
 500619 Antirollbar RR 1.8mm SDX

500624 Upright +/-1deg L+R SDX
 500635 Wishbone insert carbon RR Upper (2) SDX

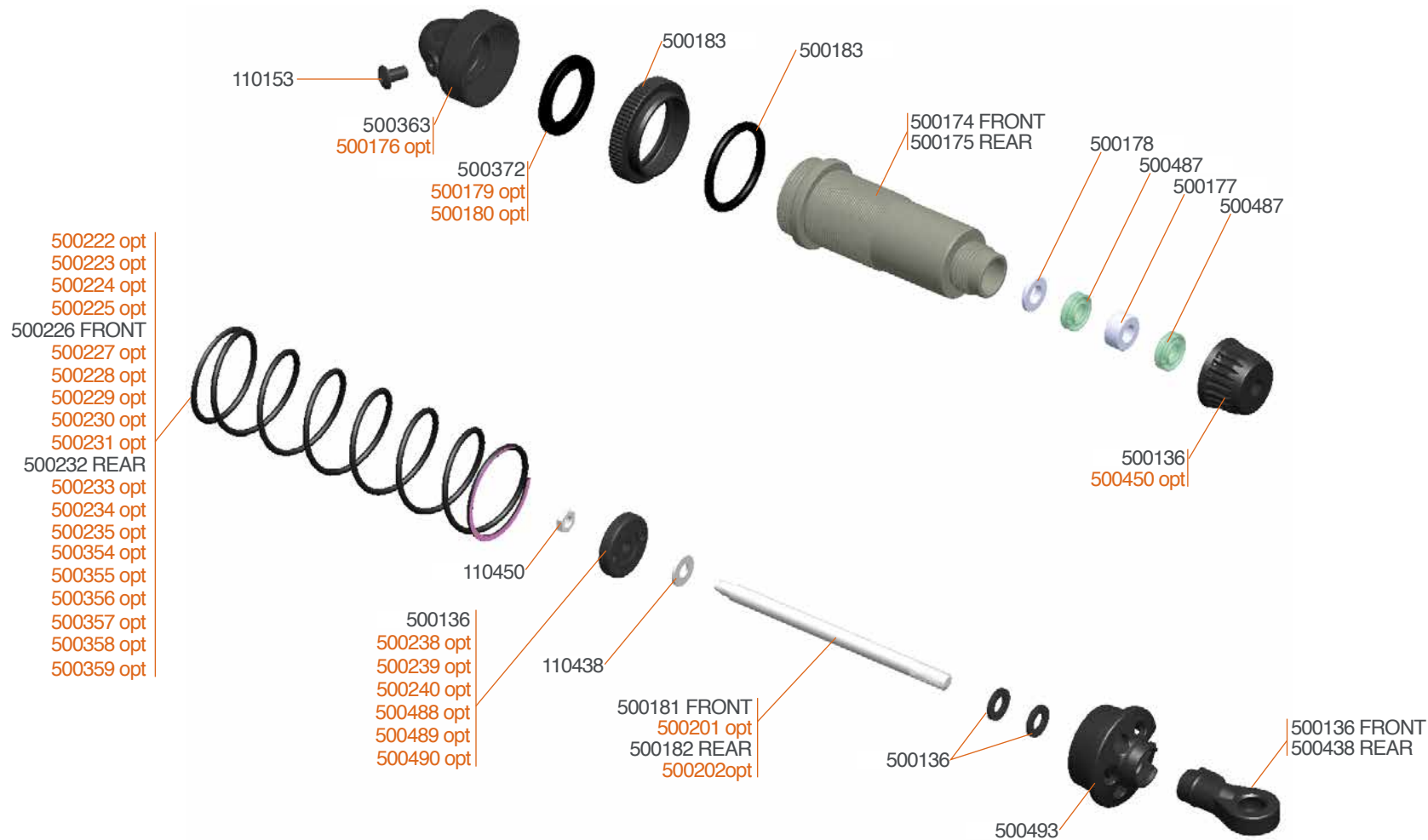


500611 Antirrollbar FR 1.0mm SDX
 500612 Antirrollbar FR 1.2mm SDX
 500614 Antirrollbar FR 1.6mm SDX
 500615 Antirrollbar FR 1.8mm SDX

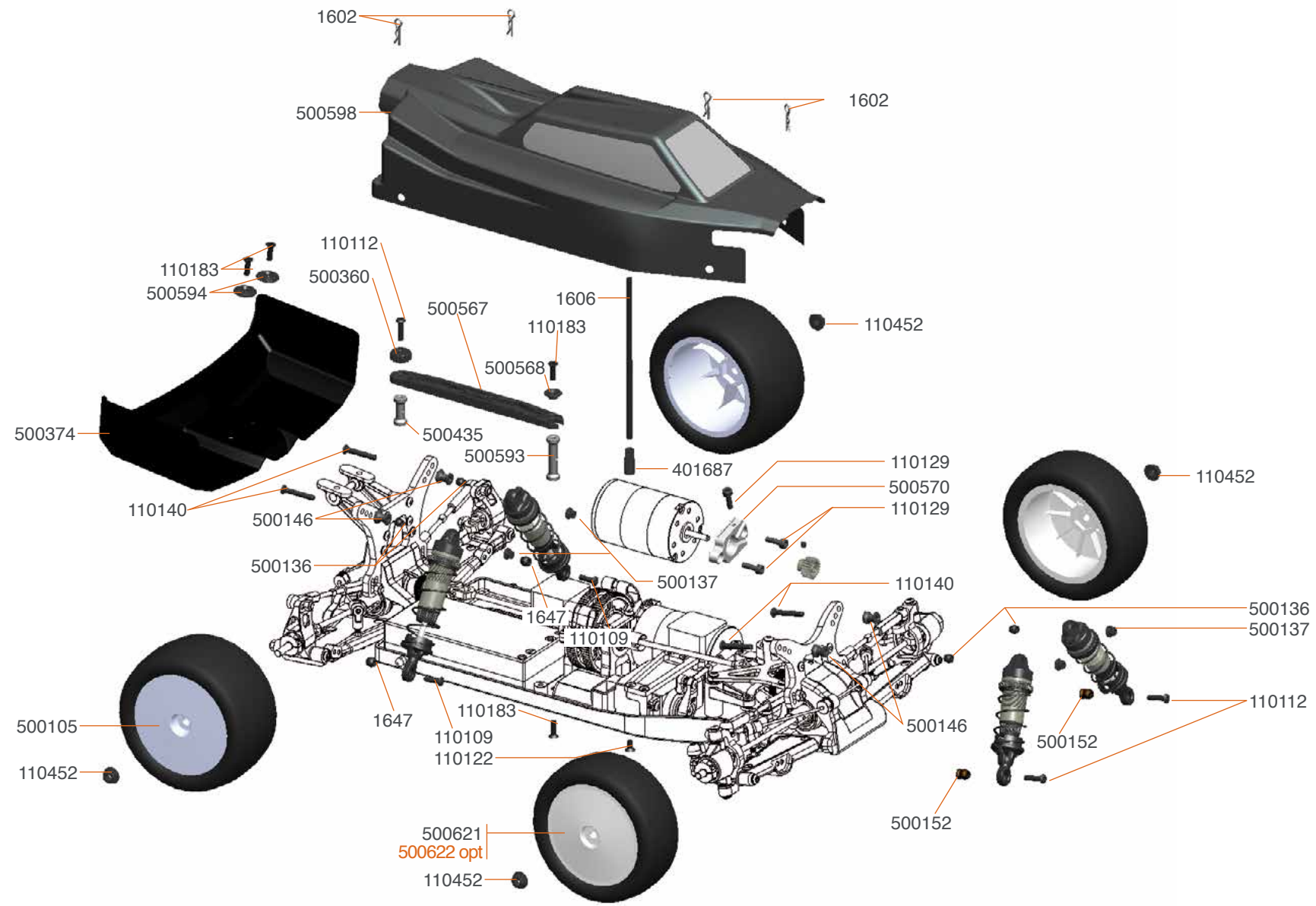
500625 C-hub 0deg (2) alu SDX
 500626 C-hub 2deg L+R alu SDX
 500627 Suspension bracket FR-FR plus 2 SDX
 500636 Wishbone insert carbon FR Upper (2) SDX



500629 Servosaver top alu SDX



- | | | |
|--|--|---|
| 500450 Shock bottom cap alu (4) SRX | 500179 Shock top gasket (4) SRX2 | 500232 Shock spring pink 2,2lbs rr (2) SRX3 |
| 500238 Shock piston conical 2 holes (4) SRX2 | 500222 Shock spring silver 2,5lbs fr (2) SRX2 | 500233 Shock spring blue 2,3lbs rr (2) SRX2 |
| 500239 Shock piston conical 3 holes (4) SRX2 | 500223 Shock spring black 2,65 fr (2) SRX2 | 500234 Shock spring purple 2,4lbs rr (2) SRX2 |
| 500240 Shock piston conical 4 holes (4) SRX2 | 500224 Shock spring orange 2,87lbs fr (2) SRX2 | 500235 Shock spring green 2,5lbs rr (2) SRX2 |
| 500488 Shock piston square machined 2-hole 1.3 (4) | 500225 Shock spring red 3,0lbs fr (2) SRX2 | 500354 Shock spring orange 1.8lbs rr astro (2) SRX2 |
| 500489 Shock piston square machined 3-hole 1.2 (4) | 500226 Shock spring pink 3,15lbs fr (2) SRX2 | 500355 Shock spring red 1.9lbs rr astro (2) SRX2 |
| 500490 Shock piston square machined 4-hole 1.1 (4) | 500227 Shock spring blue 3,4lbs fr (2) SRX2 | 500356 Shock spring pink 2.0lbs rr astro (2) SRX2 |
| 500201 Shock shaft fr TiN coated (2) SRX2 | 500228 Shock spring purple 3,5lbs fr (2) SRX2 | 500357 Shock spring blue 2.1lbs rr astro (2) SRX2 |
| 500202 Shock shaft rr TiN coated (2) SRX2 | 500229 Shock spring green 3,7lbs fr (2) SRX2 | 500358 Shock spring purple 2.2lbs rr astro (2) SRX2 |
| 500180 Shock membrane (4) SRX2 | 500230 Shock spring orange 2,0lbs rr (2) SRX2 | 500359 Shock spring green 2.3lbs rr astro (2) SRX2 |
| 550176 Shock top (2) SRX2 | 500231 Shock spring red 2,1lbs rr (2) SRX2 | |

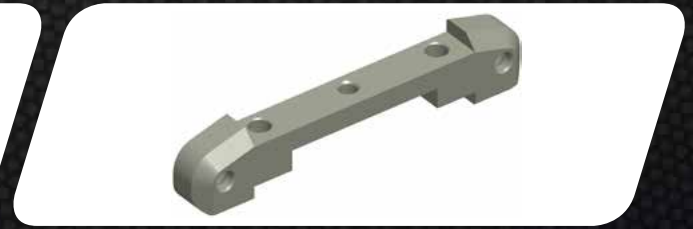


500630 Battery strap saddle carbon (2) SDX

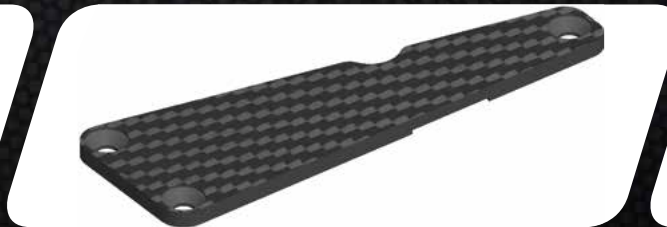


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