

F190

1/8 SCALE FORMULA 1

INSTRUCTION
MANUAL



EP ELECTRIC
POWERED

SERPENT

INTRODUCTION

The Serpent F190 is a 1/8 scale Formula 1 car that can be used for fun and racing, easy to use and assemble. The Serpent F190 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 to make a great scale Formula 1 car.

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 F190. Fine-tuning the initial setup is an essential part of building a high-performance racecar like your Serpent F190.

EXPLODED VIEWS AND PARTS LIST

The exploded views and parts lists for the Serpent F190 are presented in the Reference Guide section in the back of this manual. The exploded views show all the F190 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.

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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.

STEP 1 DIFF BAG

1.1

M3x4

2 2.5x13

3

GR

1

8x16x5

Note the correct pin location.

1.2

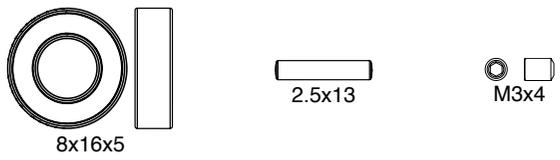
GR

8x16x5

SO Use silicone oil to hold seal in position.

2.5x13

Note the correct pin location.



STEP 2

2.1 Add just enough oil to cover the large gear before assembling the small satellite gears and cross pins.

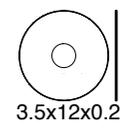
Use the silicone oil supplied in the kit. For the correct cst value please check the default setupsheet.

SO

2.2

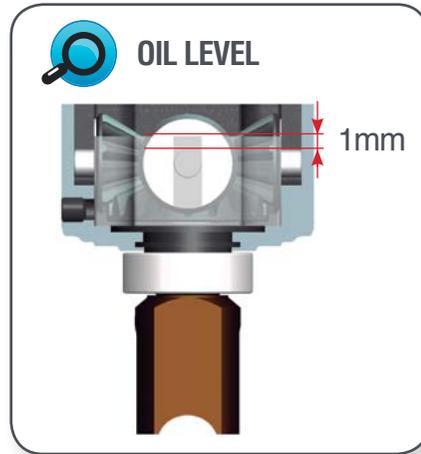
3.5x12x0.2

Note the correct pin location.



STEP 3

! 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.



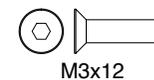
AMOUNT OF OIL IN THE DIFFS

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

Differential weight should be 45.7-45.8 grams.

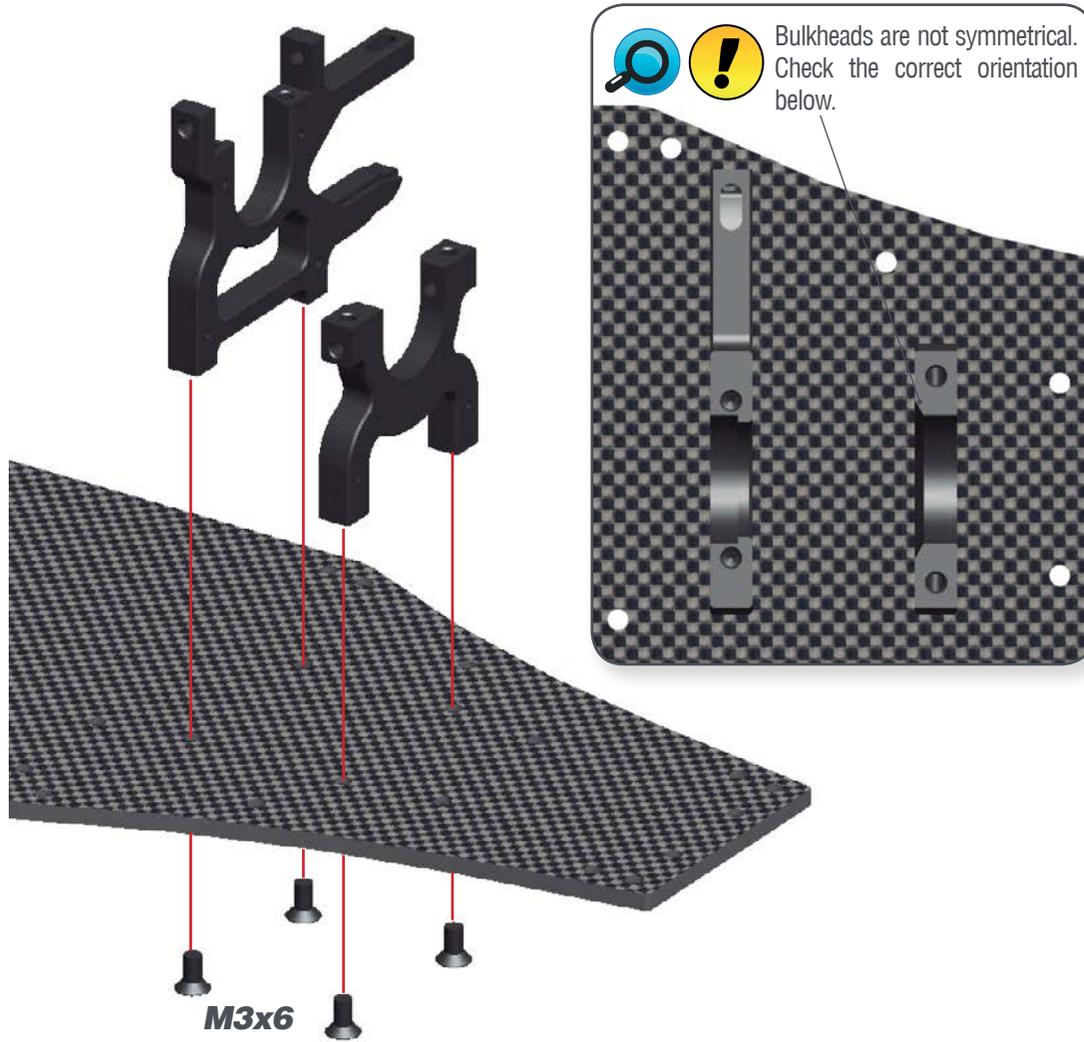


STEP 4

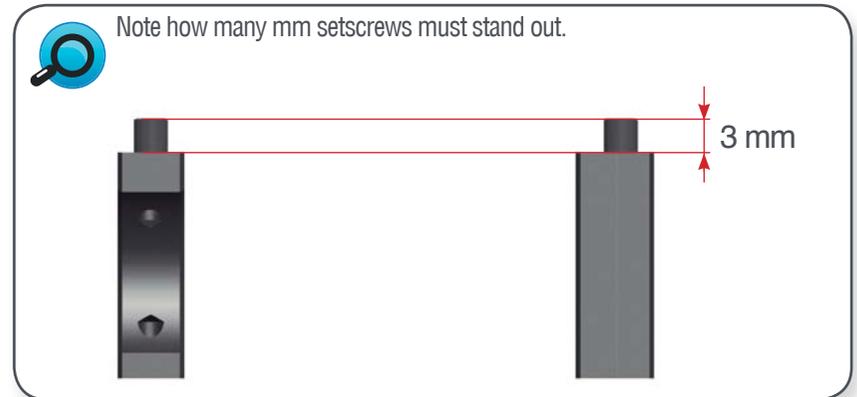


STEP 5

BAG 1

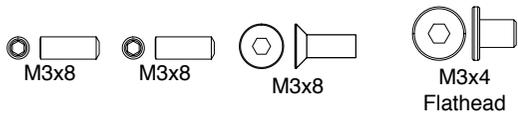
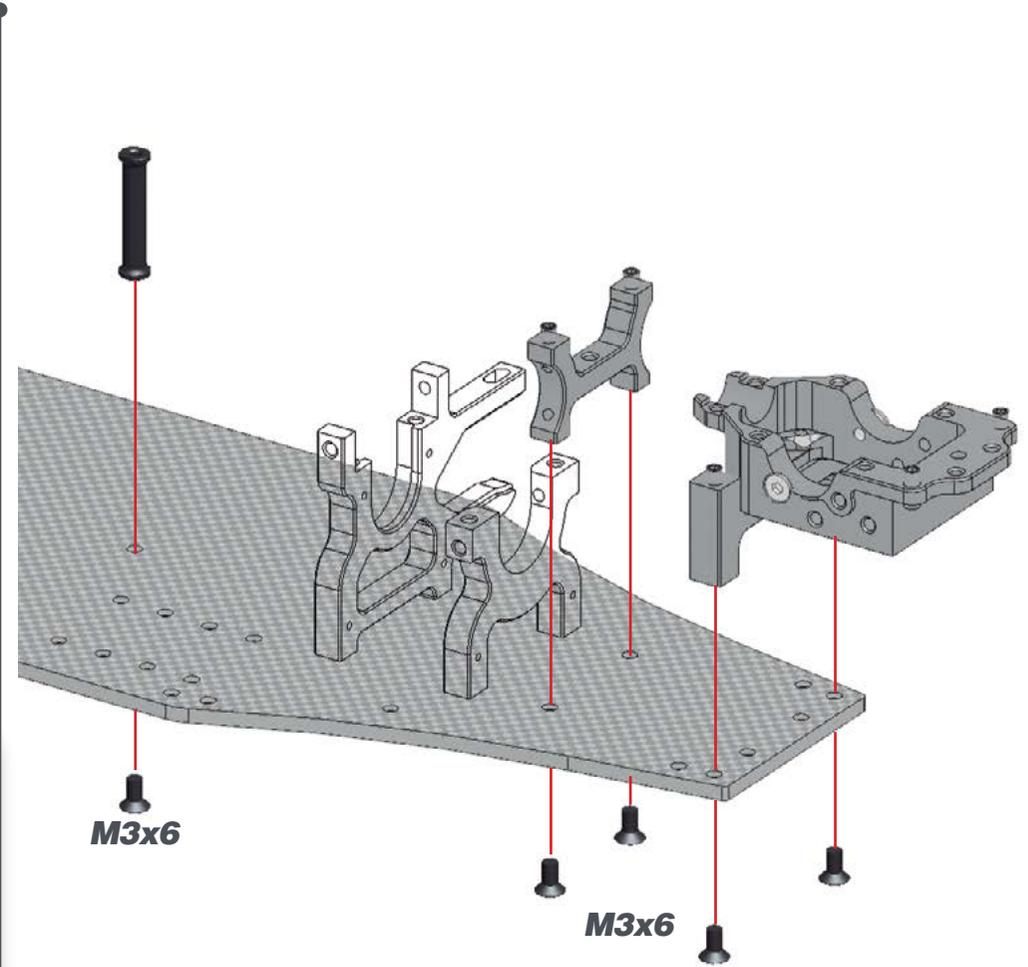
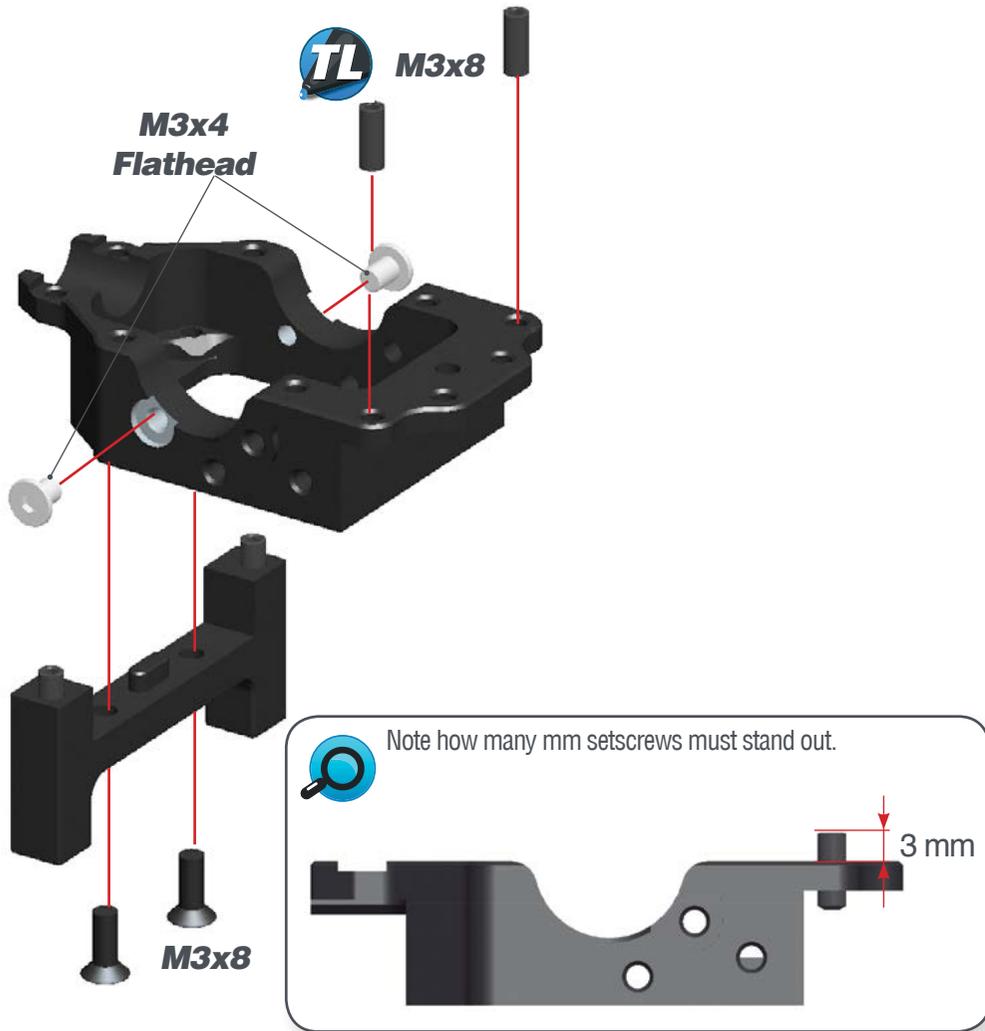


STEP 6



STEP 7

STEP 8

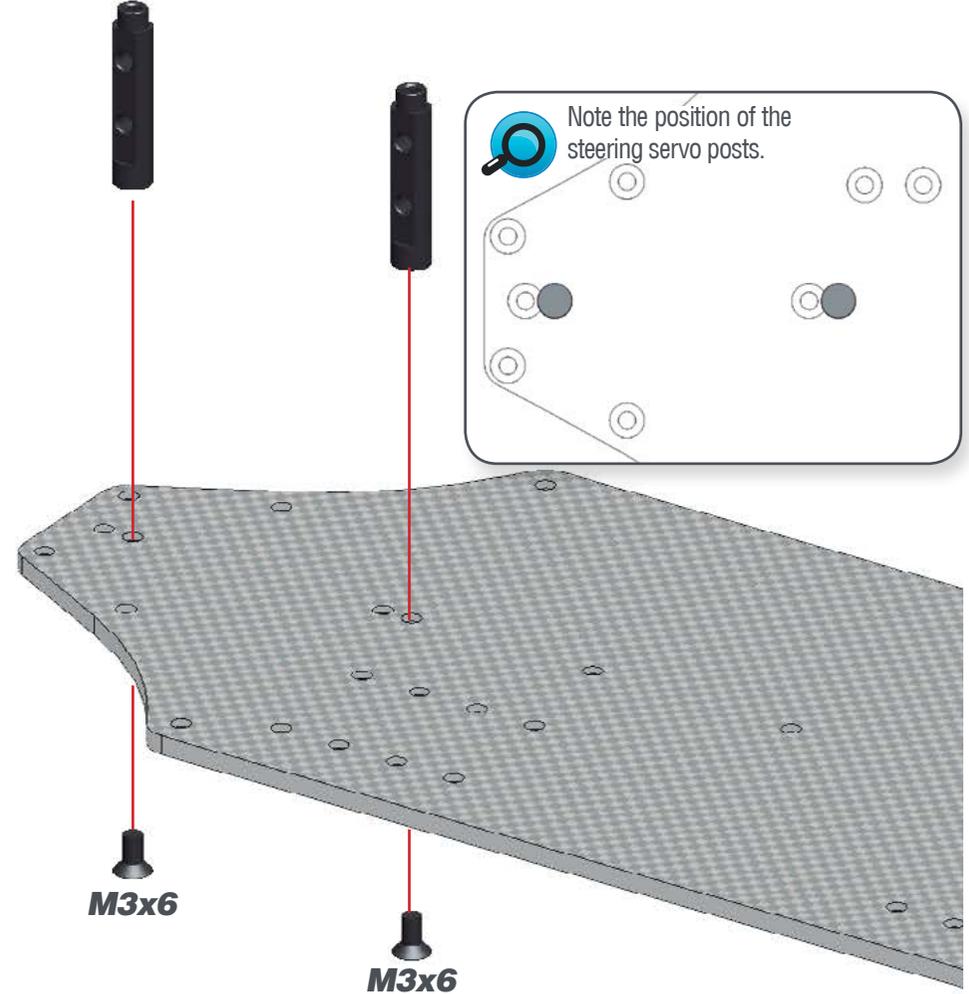
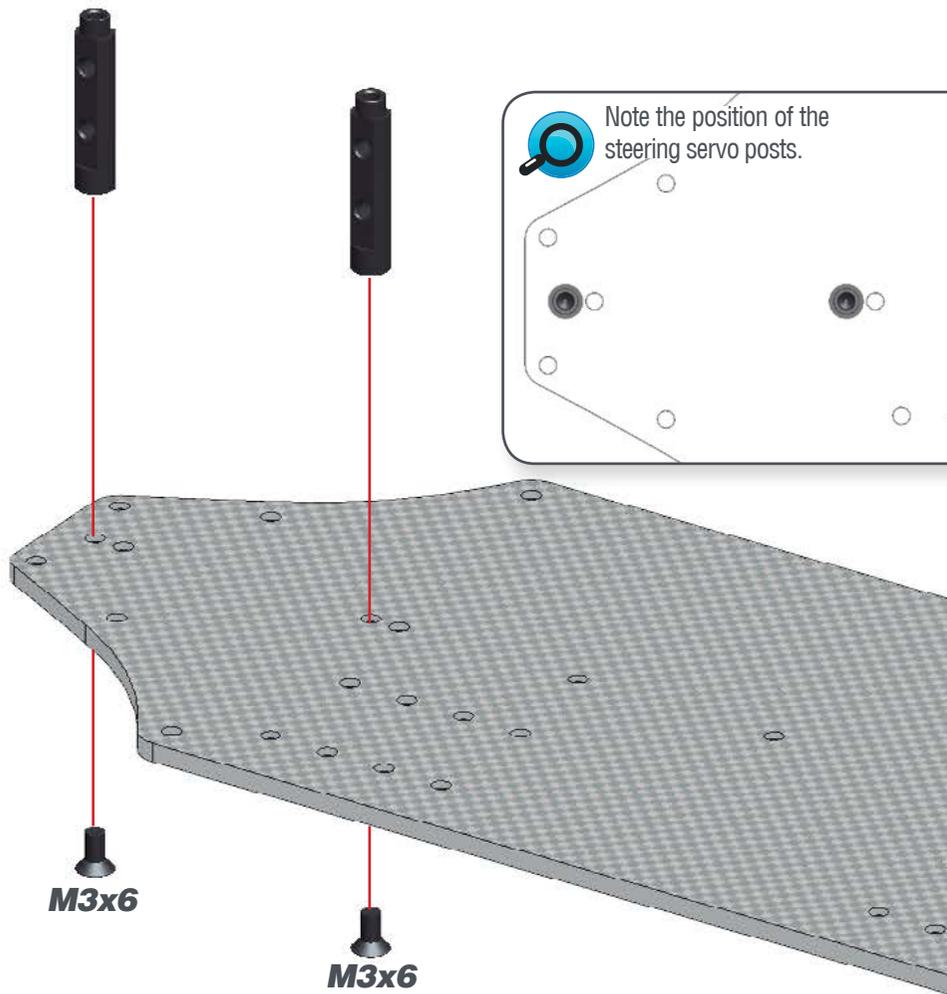


STEP 9



F190 can be configured with two different layouts of the steering servo and batteries. The manual shows how to assemble each configuration.

LOW PROFILE SERVO & STANDARD 4S BATTERY *DEFAULT* • **STANDARD SERVO & SHORTY 2S BATTERIES** *OPTIONAL*

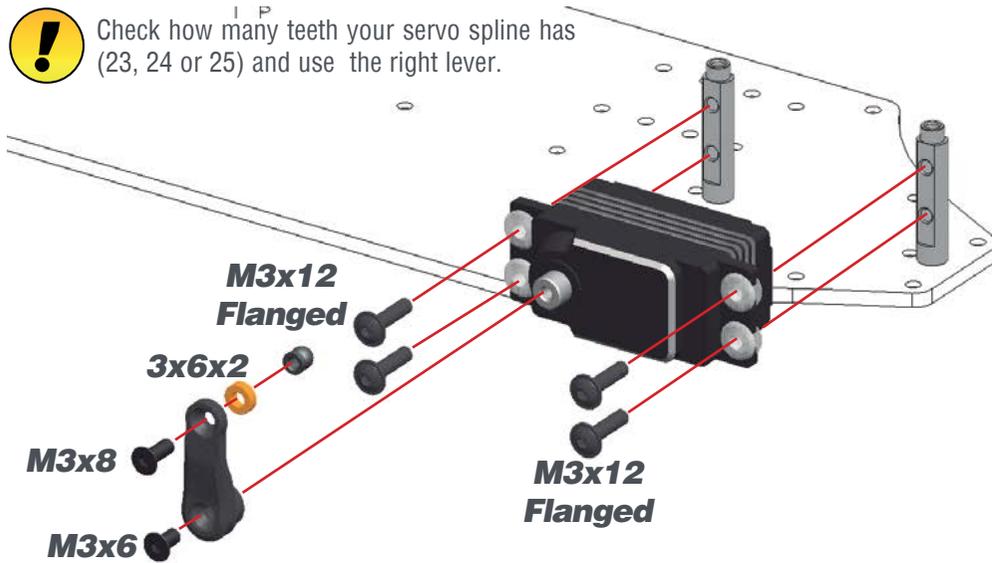


STEP 10

LOW PROFILE SERVO & STANDARD 4S BATTERY

DEFAULT

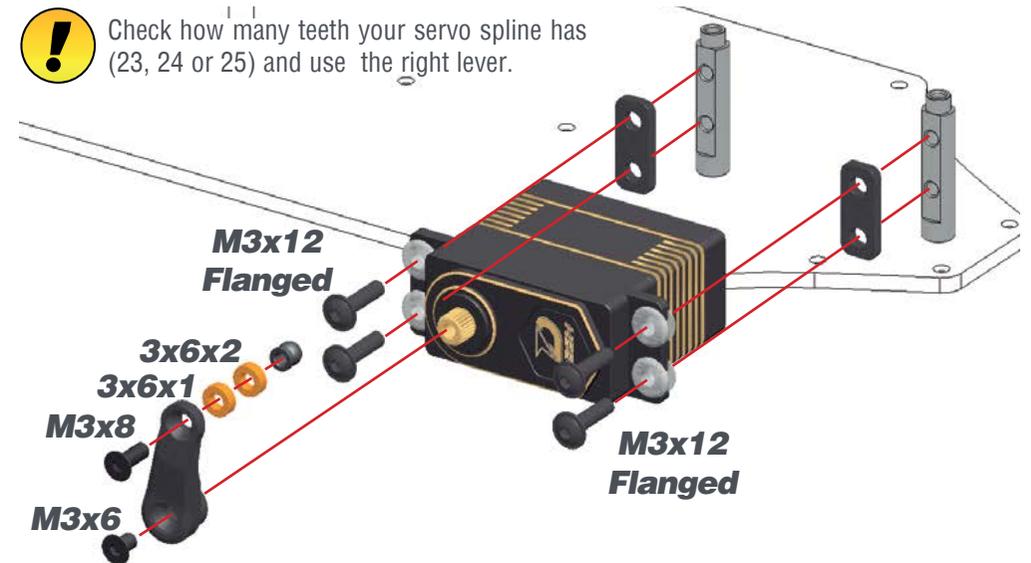
! Check how many teeth your servo spline has (23, 24 or 25) and use the right lever.



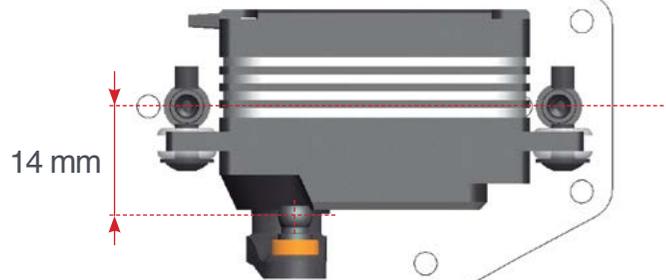
STANDARD SERVO & SHORTY 2S BATTERIES

OPTIONAL

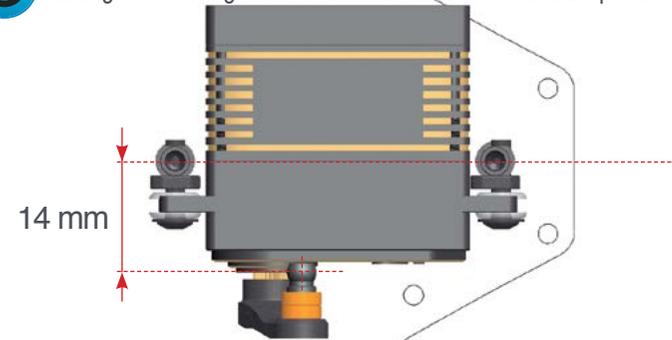
! Check how many teeth your servo spline has (23, 24 or 25) and use the right lever.



! Note assembly of the steering servo. A distance of 14mm should be achieved adding or removing shims between the servo lever and the pivot ball.

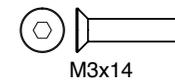
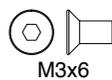
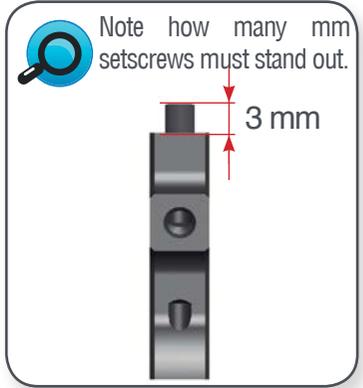
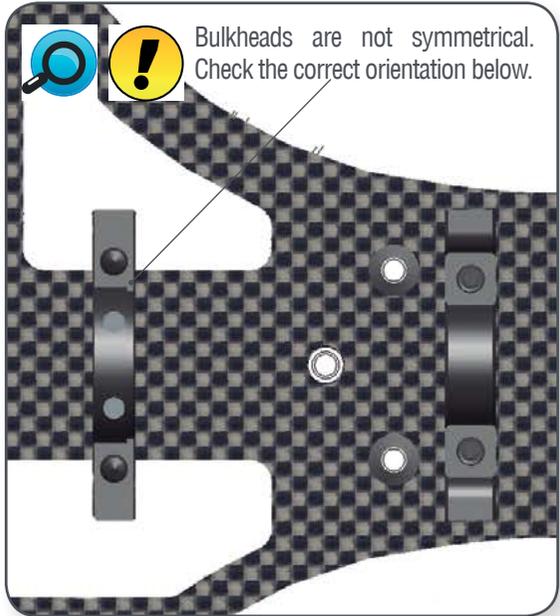
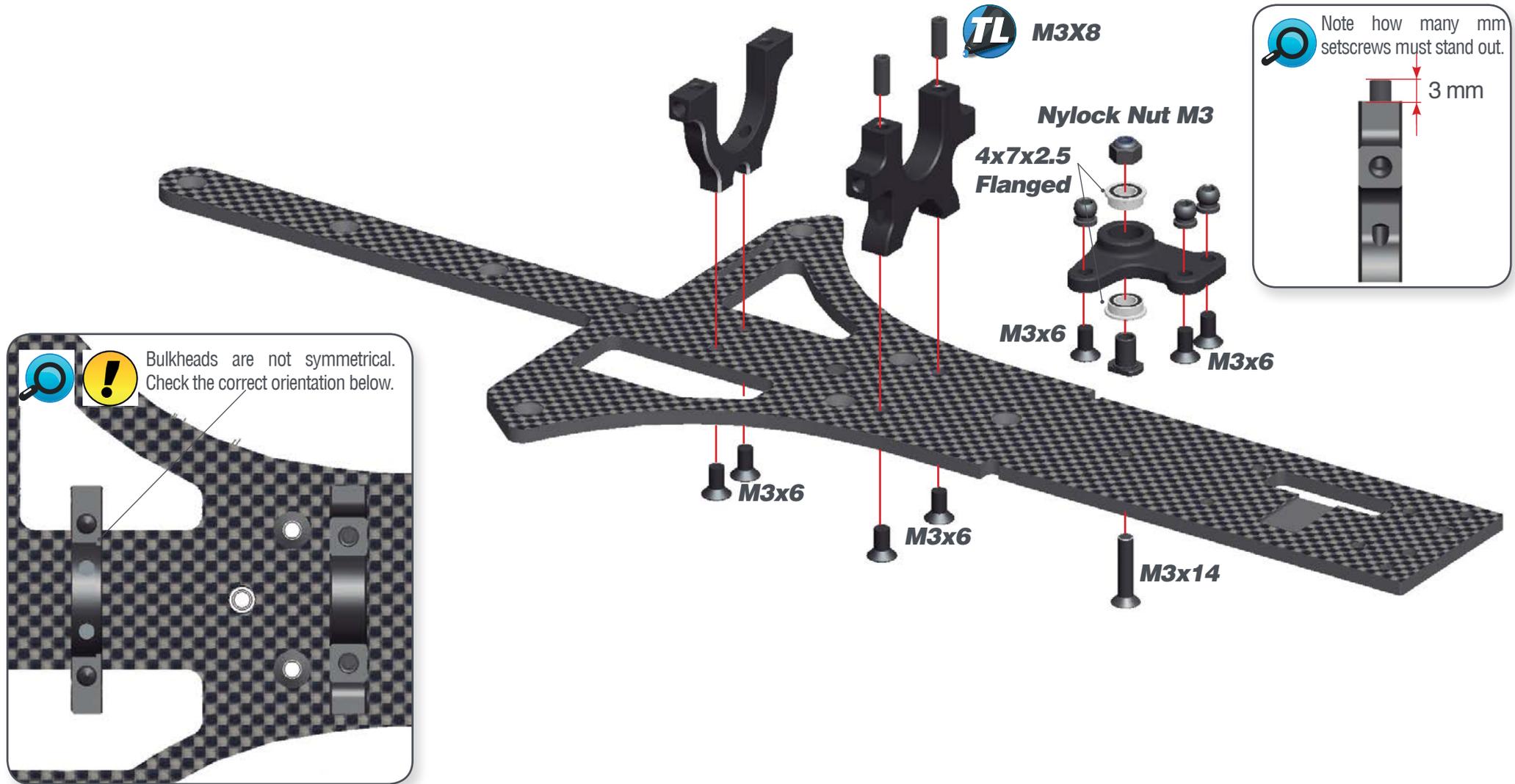


! Note assembly of the steering servo. A distance of 14mm should be achieved adding or removing shims between the servo lever and the pivot ball.

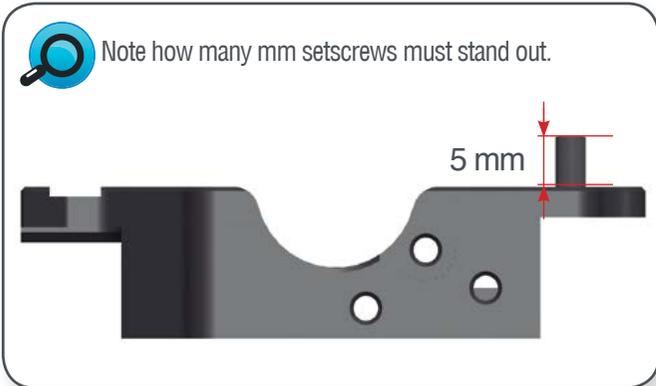
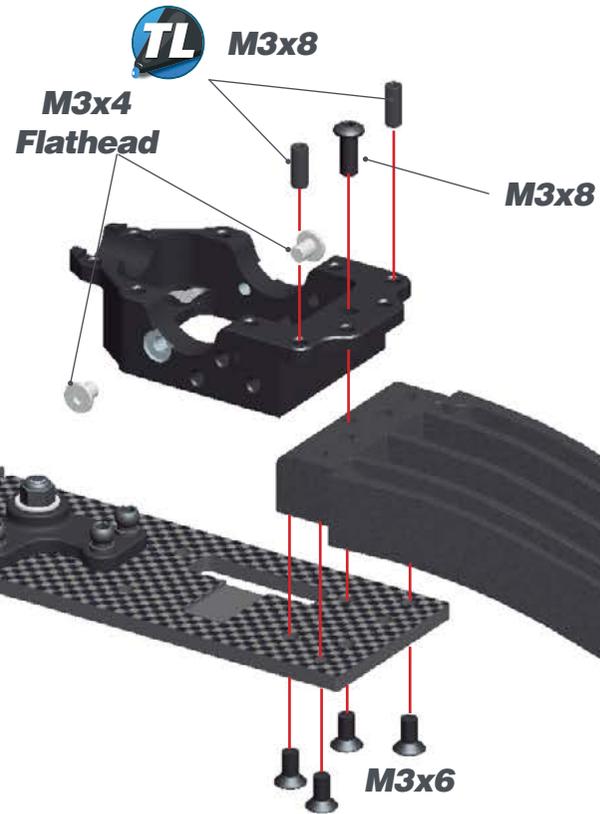


STEP 11

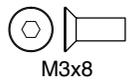
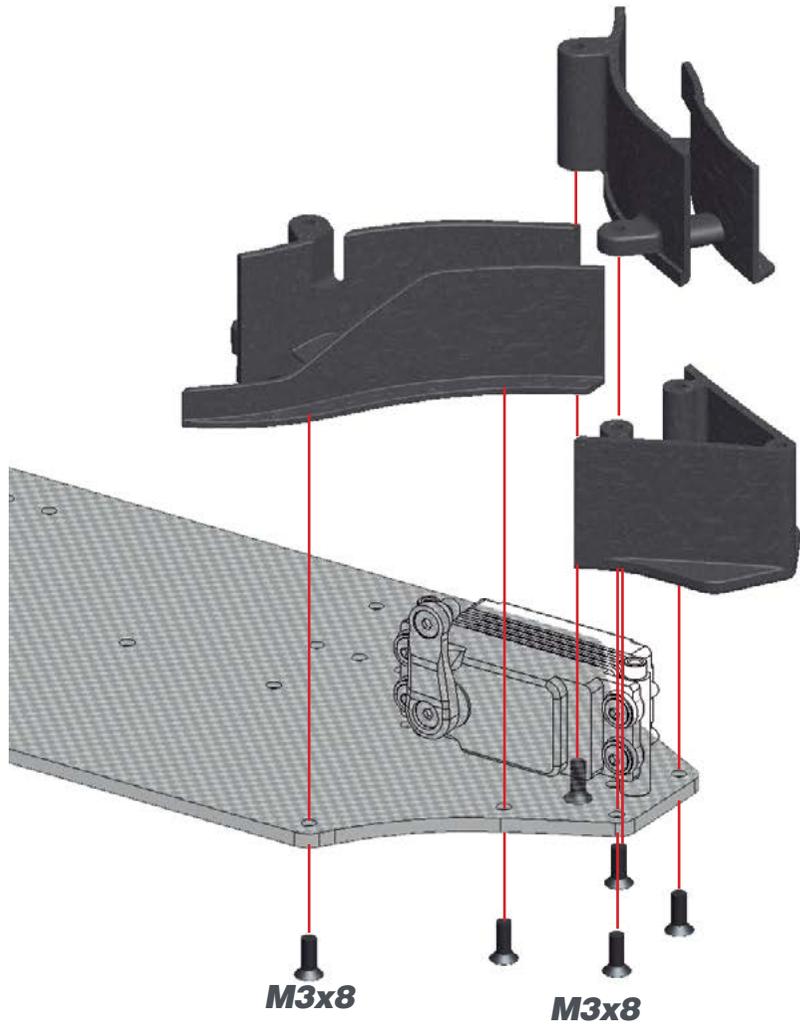
BAG 2



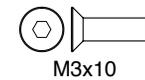
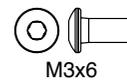
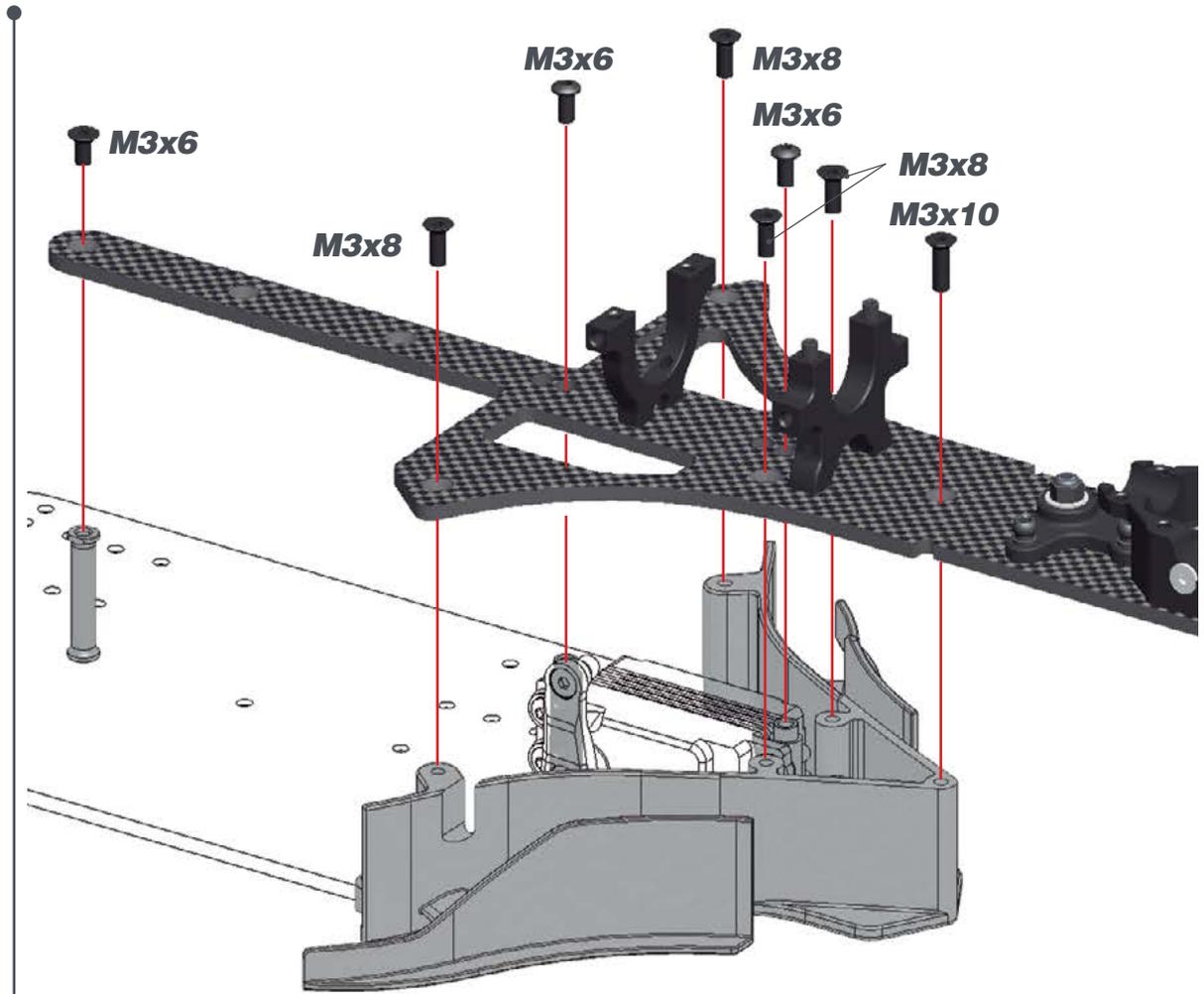
STEP 12



STEP 13



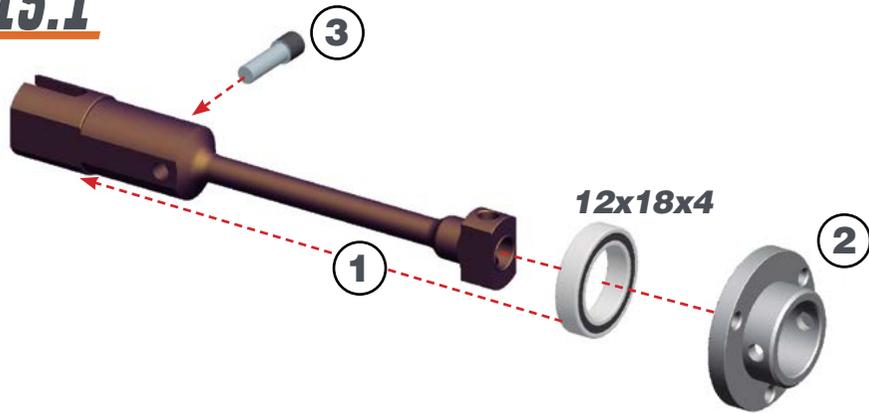
STEP 14



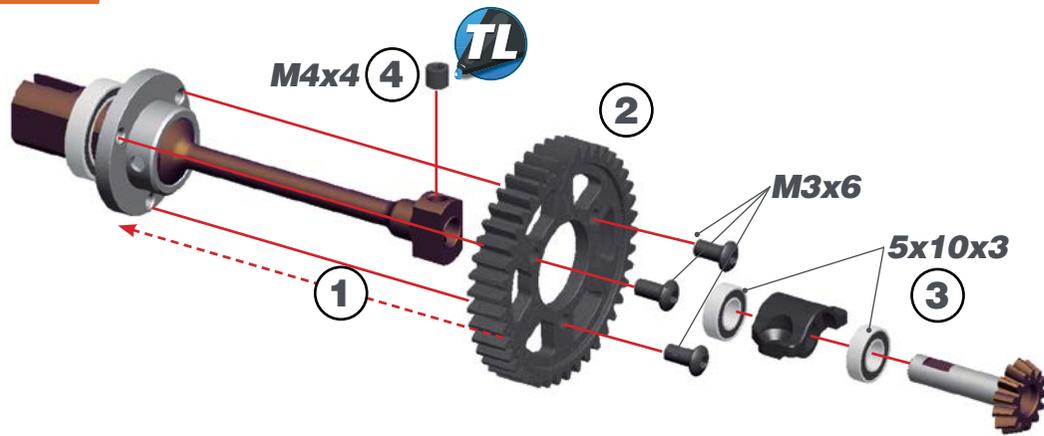
STEP 15

BAG 3

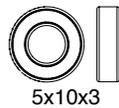
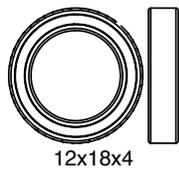
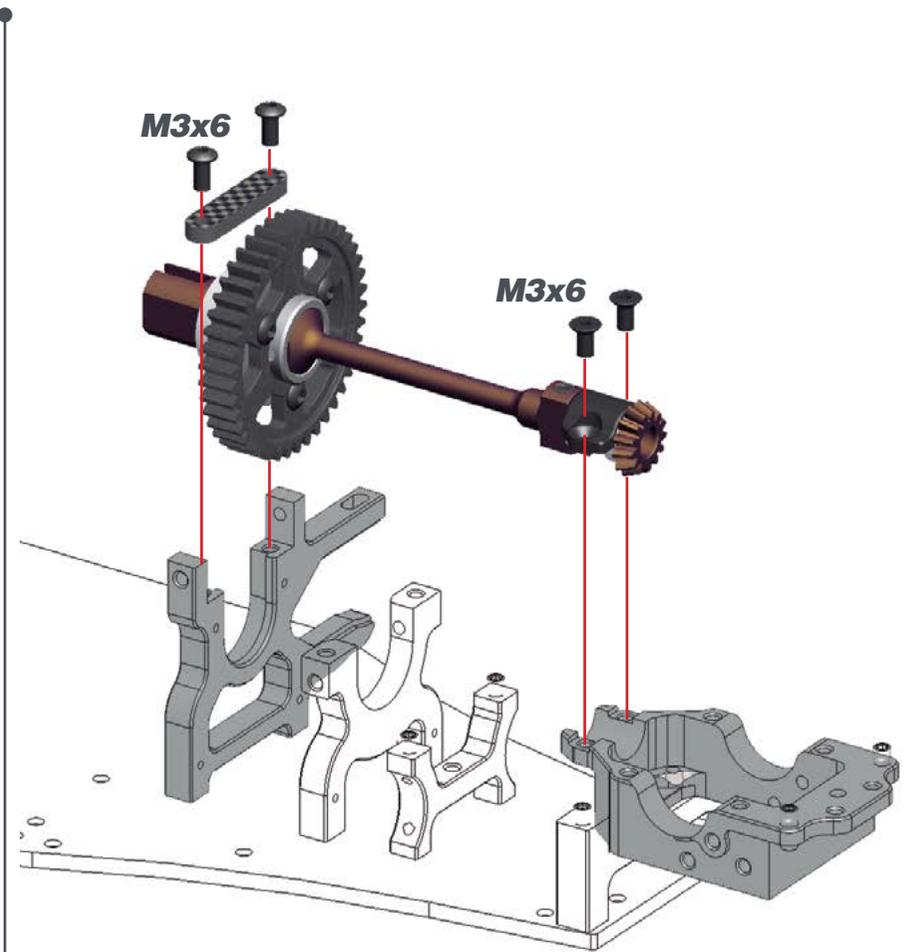
15.1



15.2

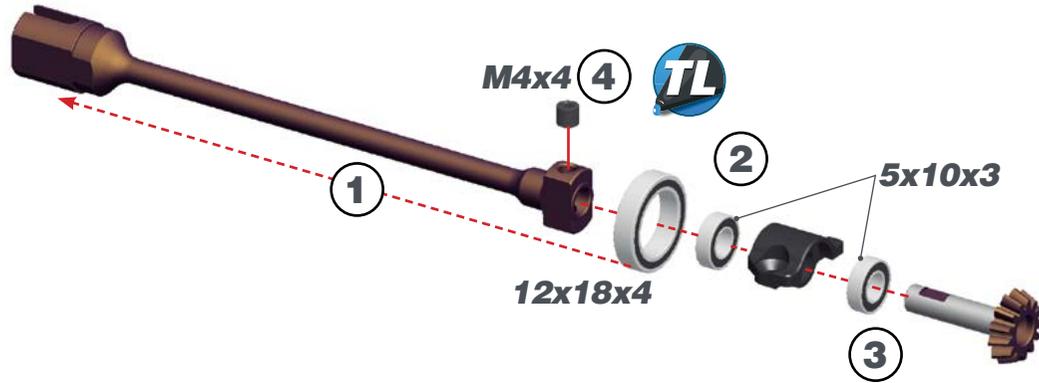


STEP 16

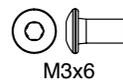
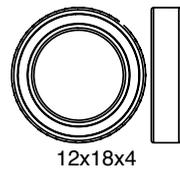
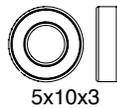
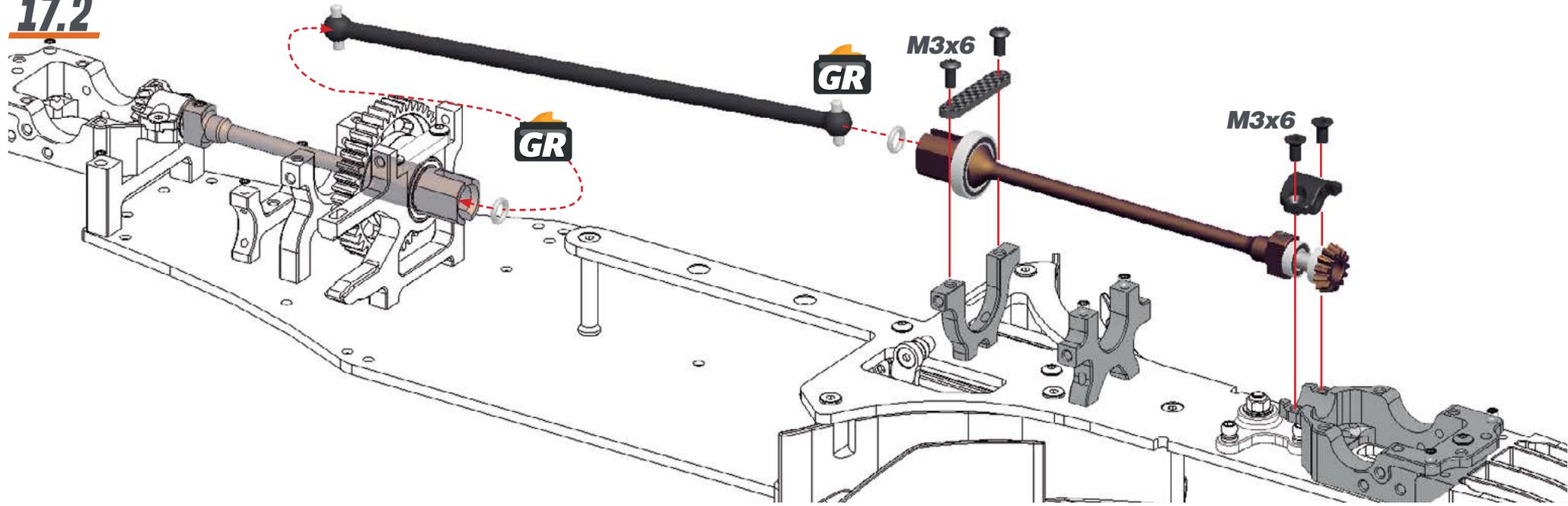


STEP 17

17.1



17.2



STEP 18

18.1

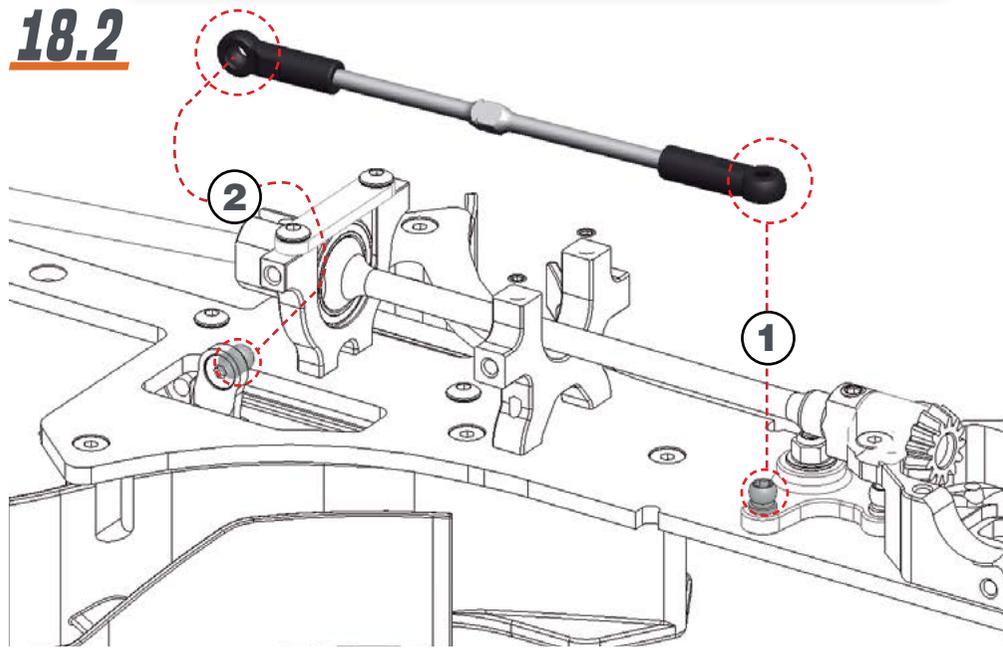


STEERING LINK LENGTH

60.4 mm



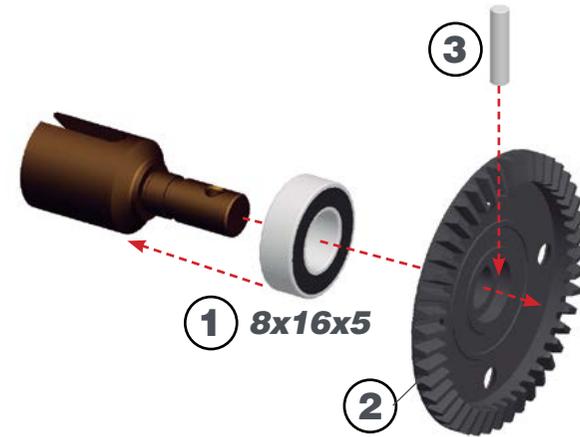
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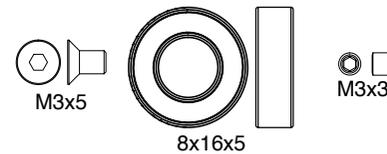
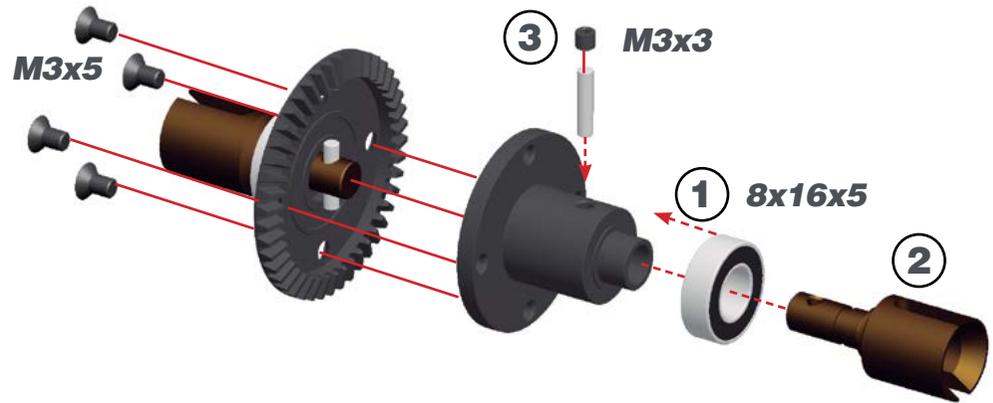
STEP 19

SOLID AXLE BAG

19.1



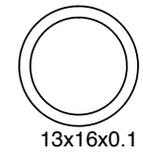
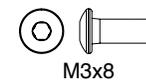
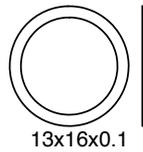
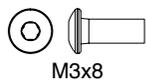
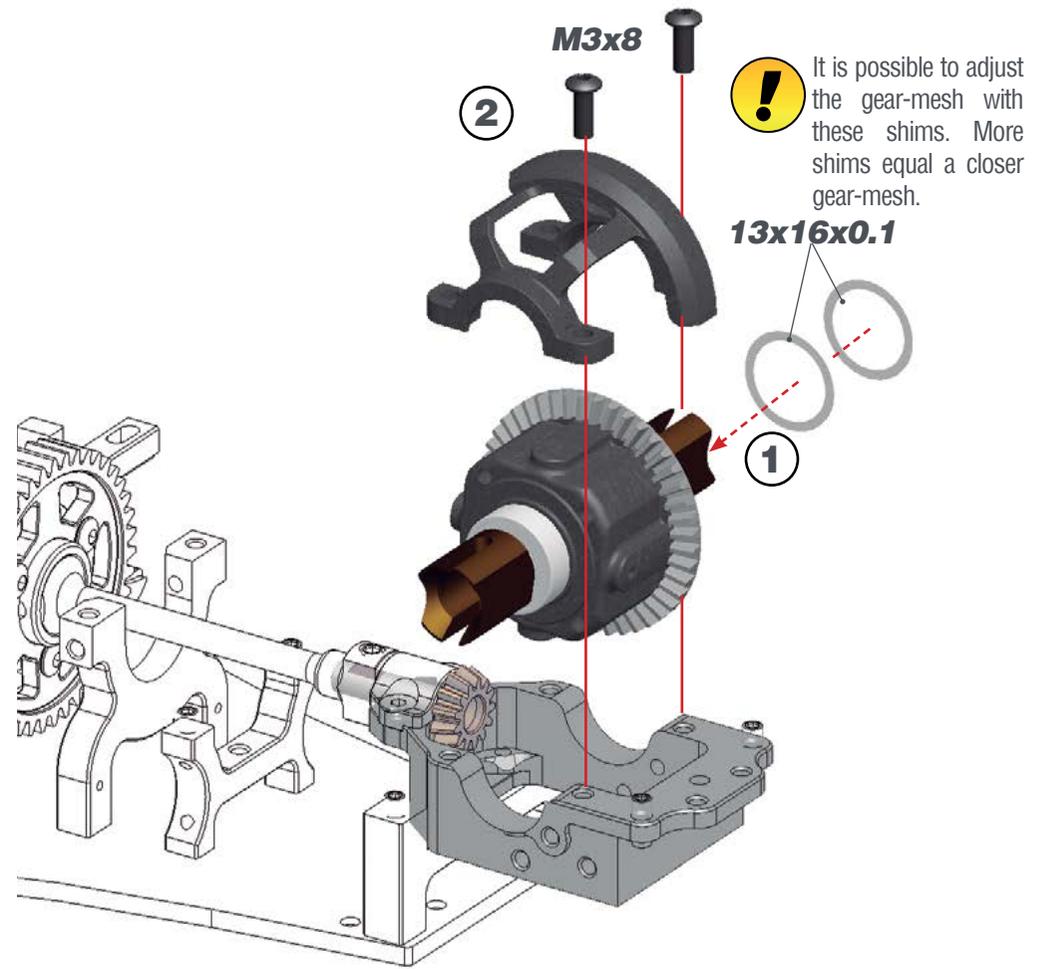
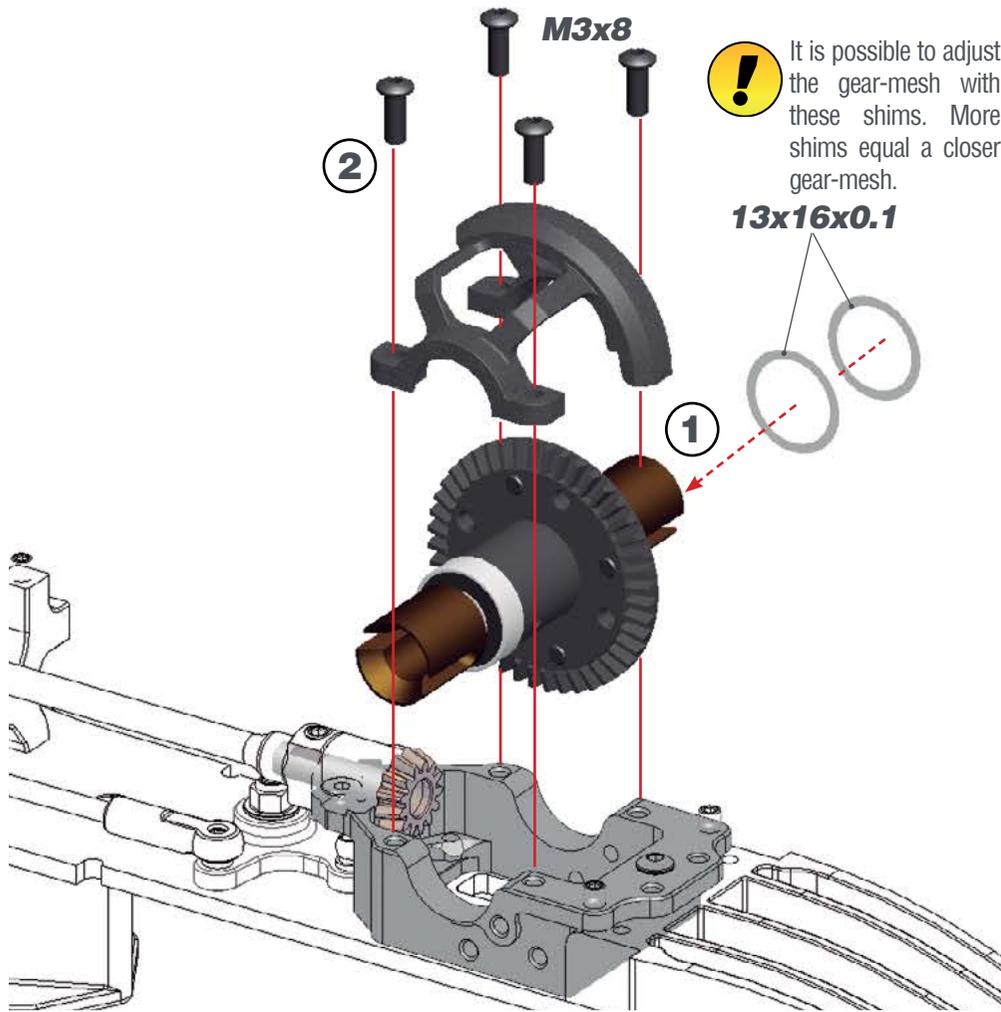
19.2



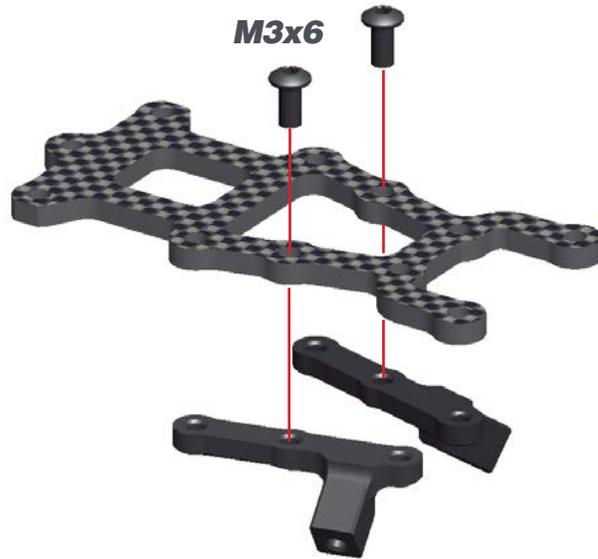
STEP 20

BAG 4

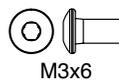
STEP 21



STEP 22

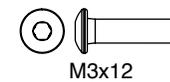
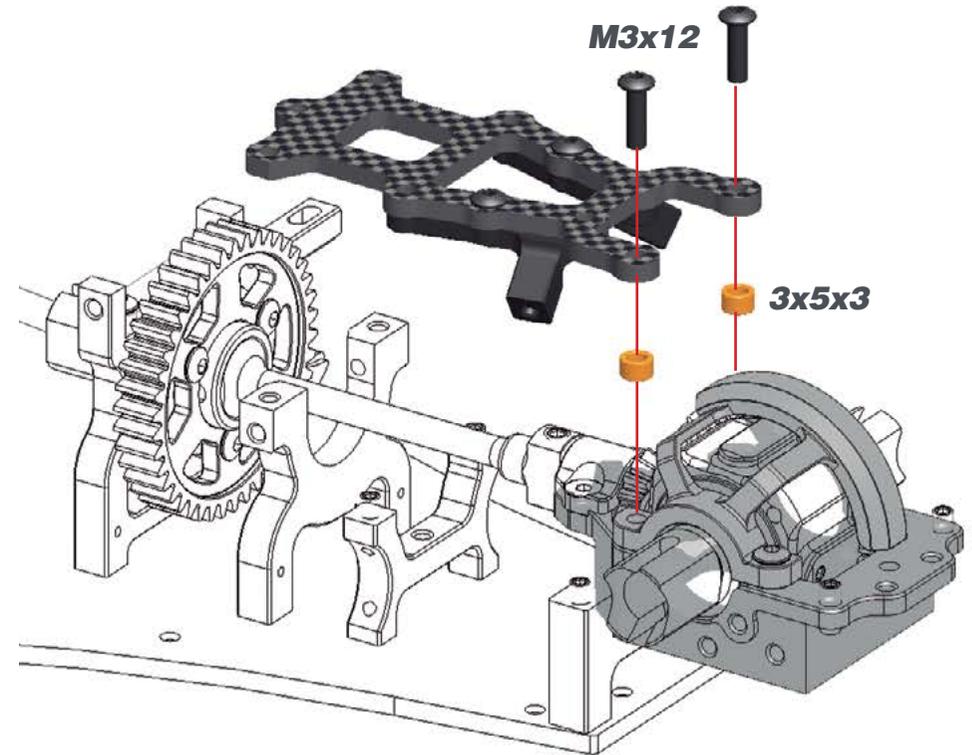


Note correct position of the suspension brackets.



M3x6

STEP 23

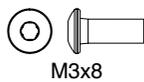
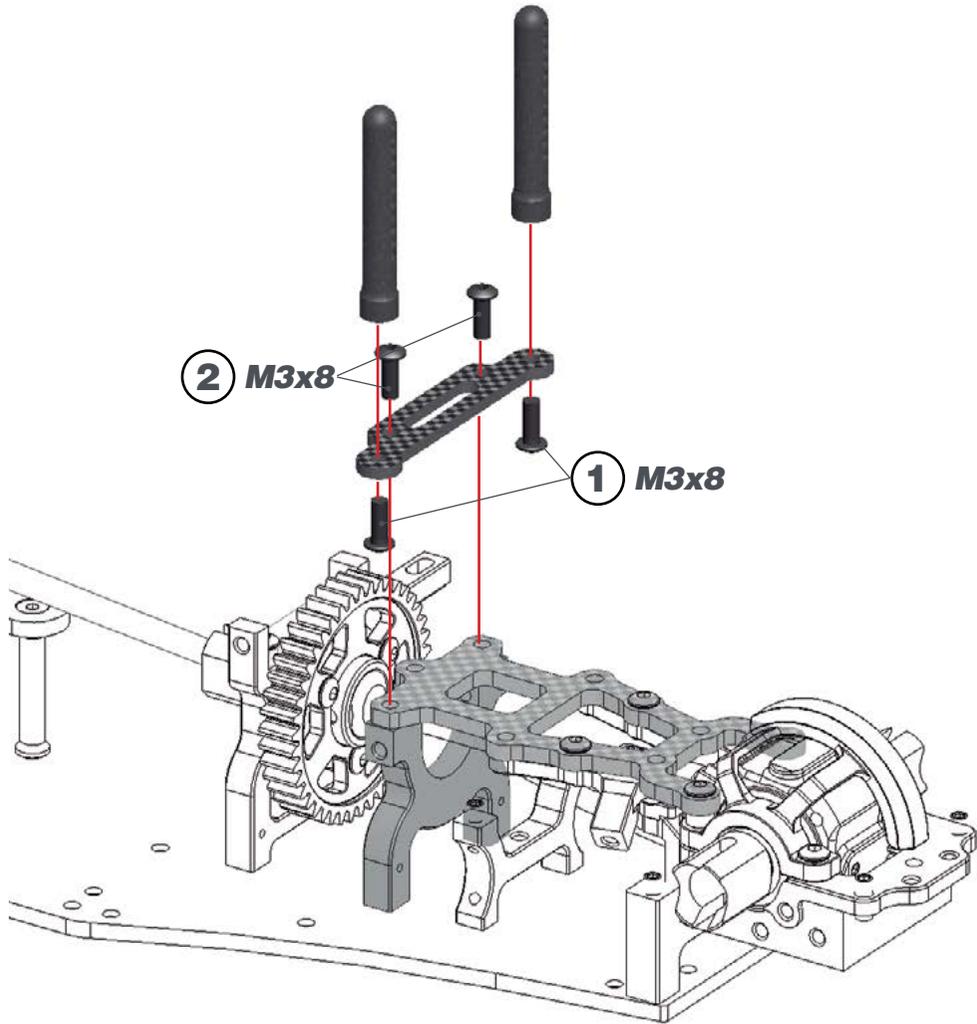


M3x12

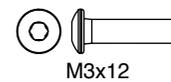
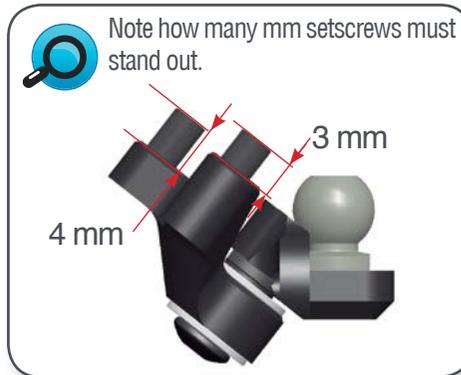
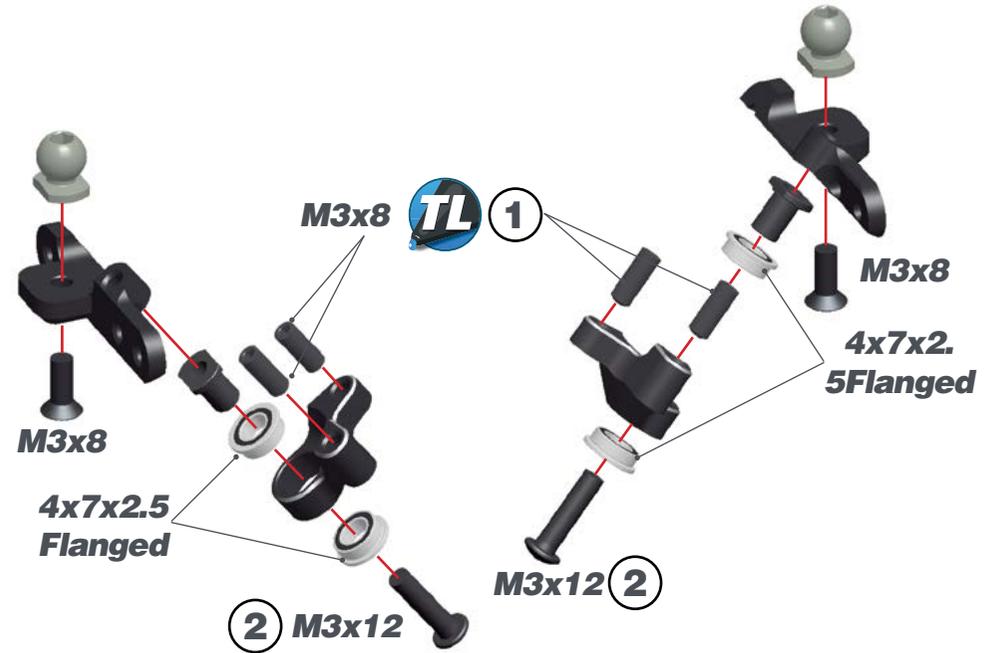


3x5x3

STEP 24

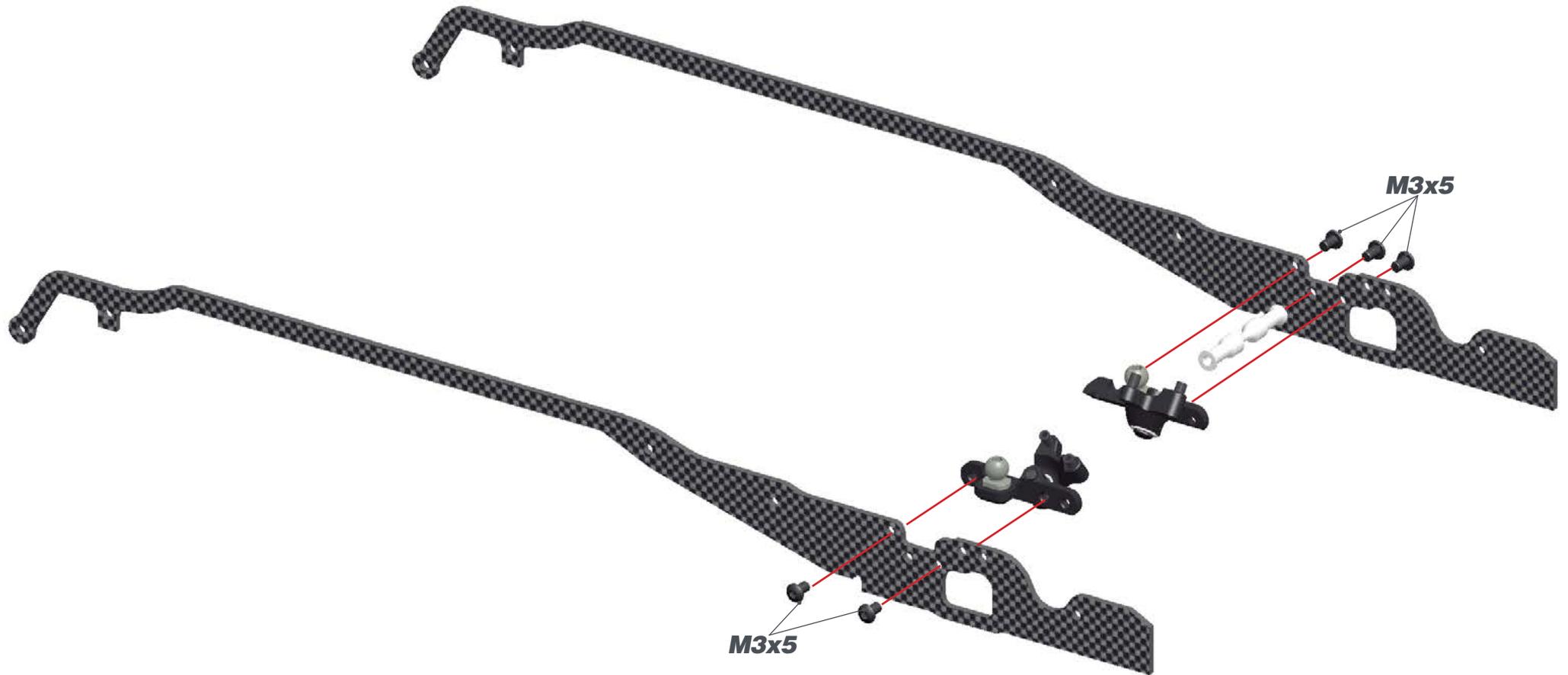


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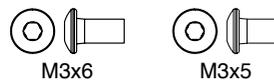
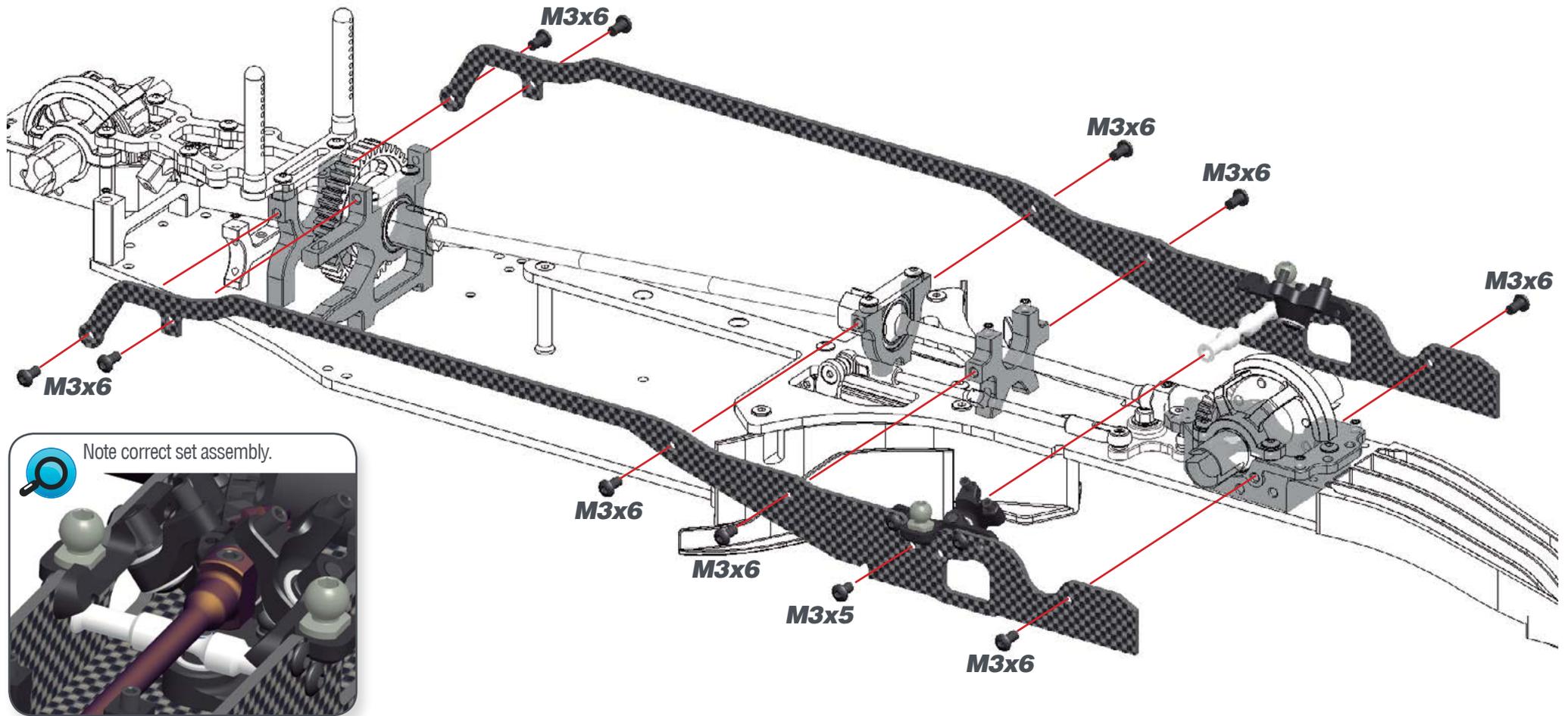


STEP 26

BAG 5

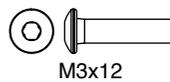
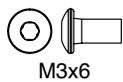
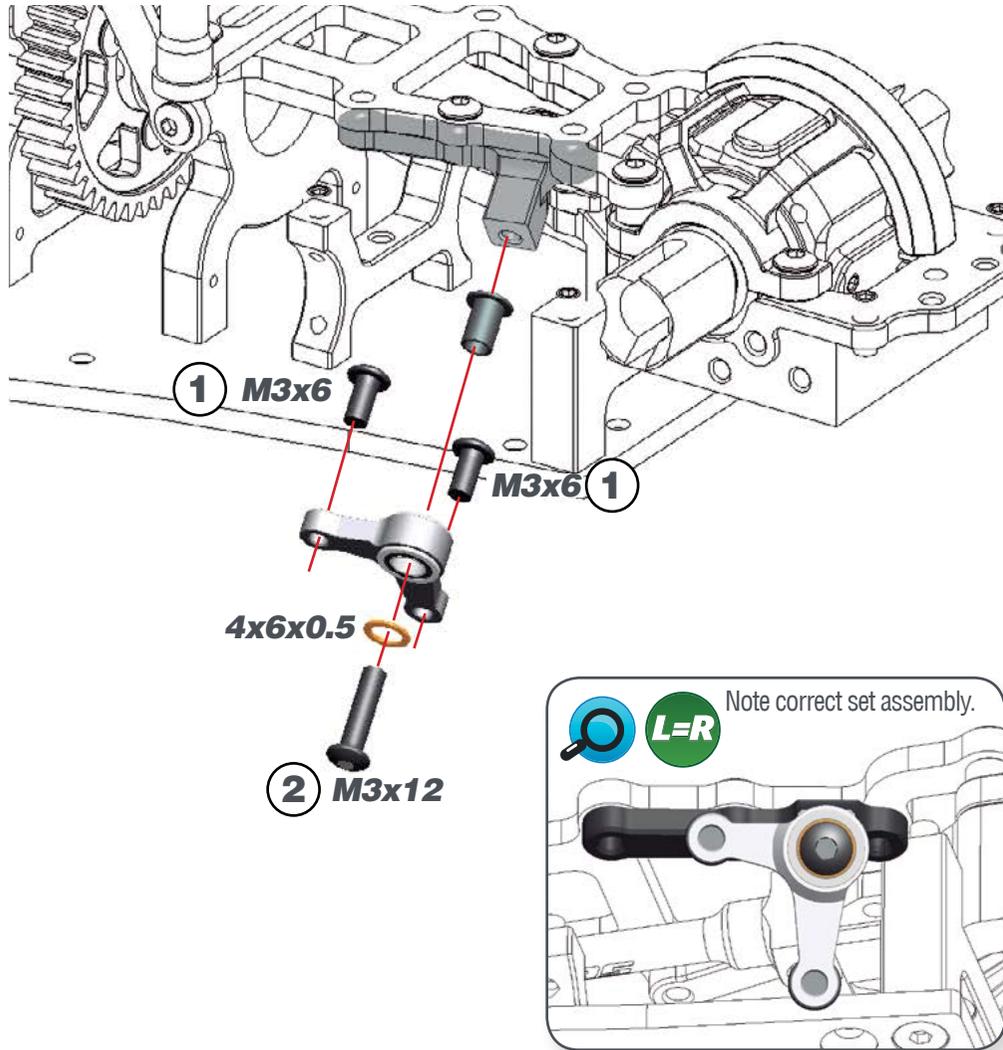


STEP 27

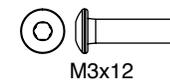
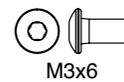
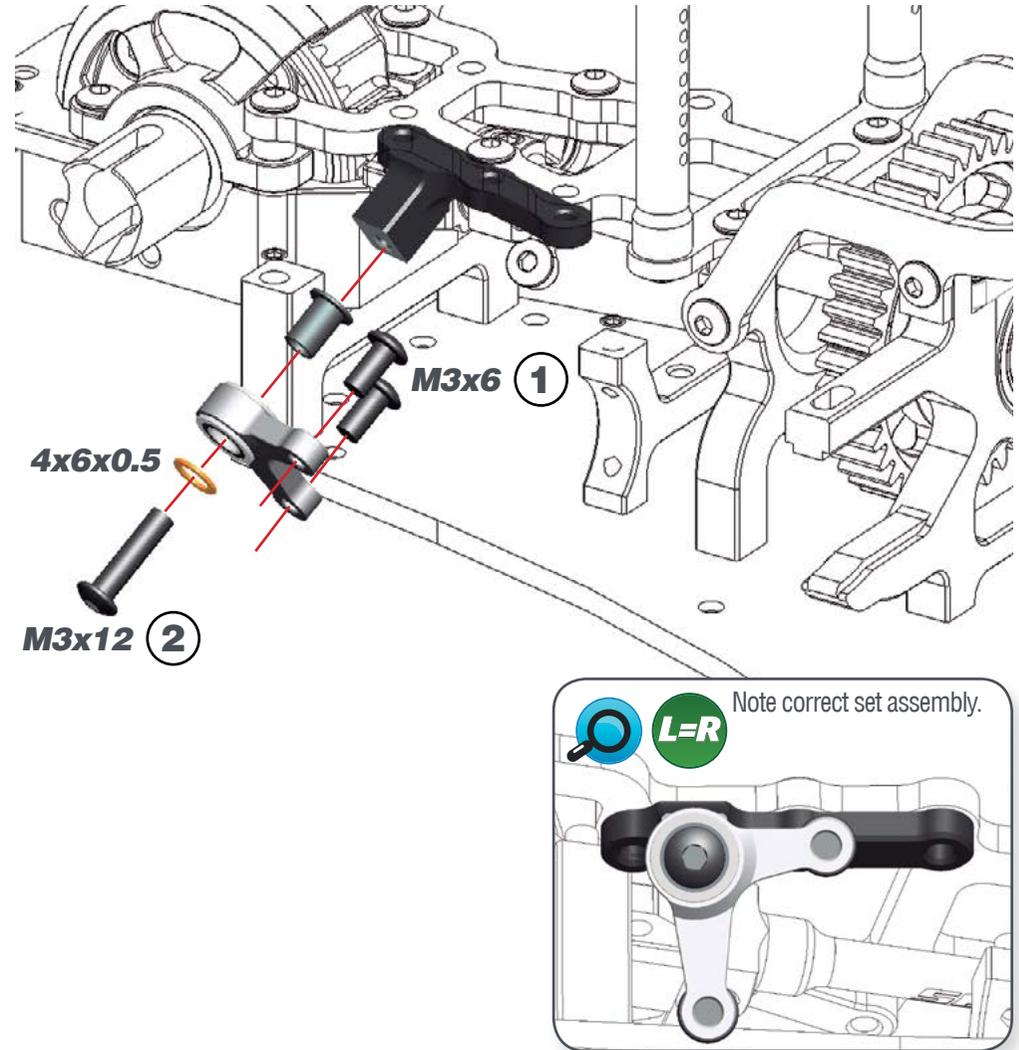


STEP 28

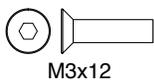
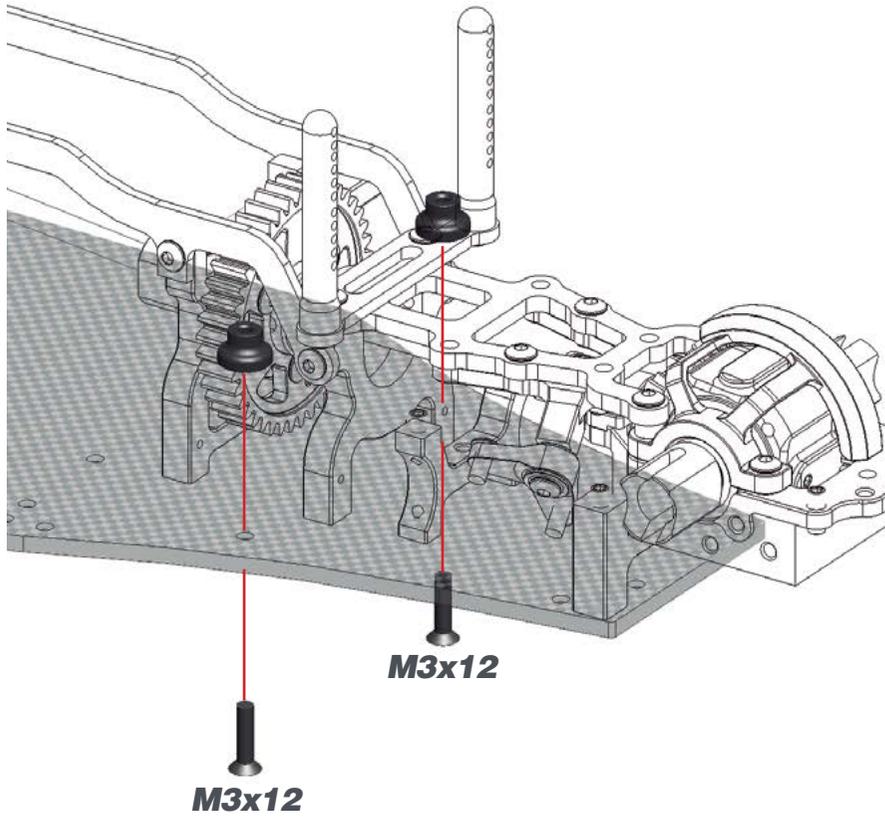
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STEP 29

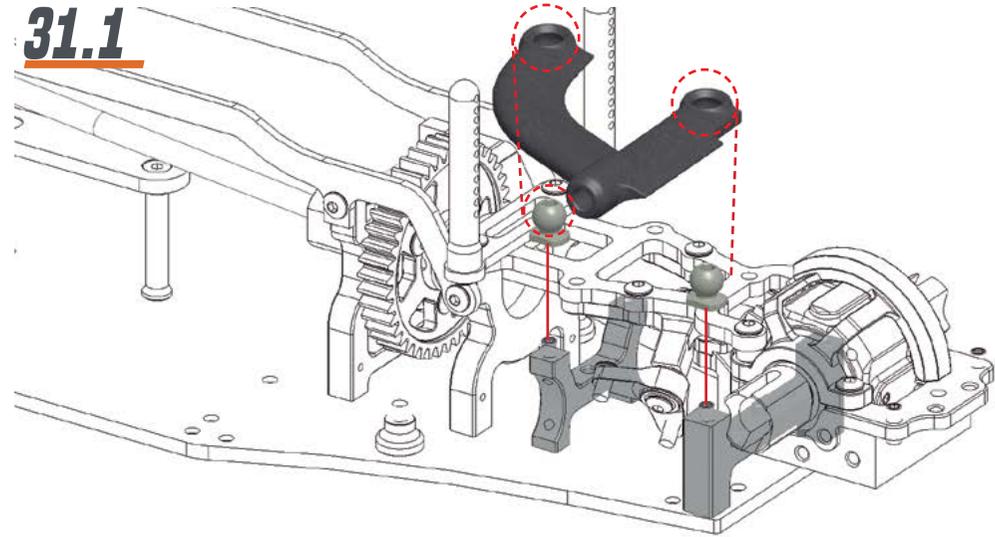


STEP 30

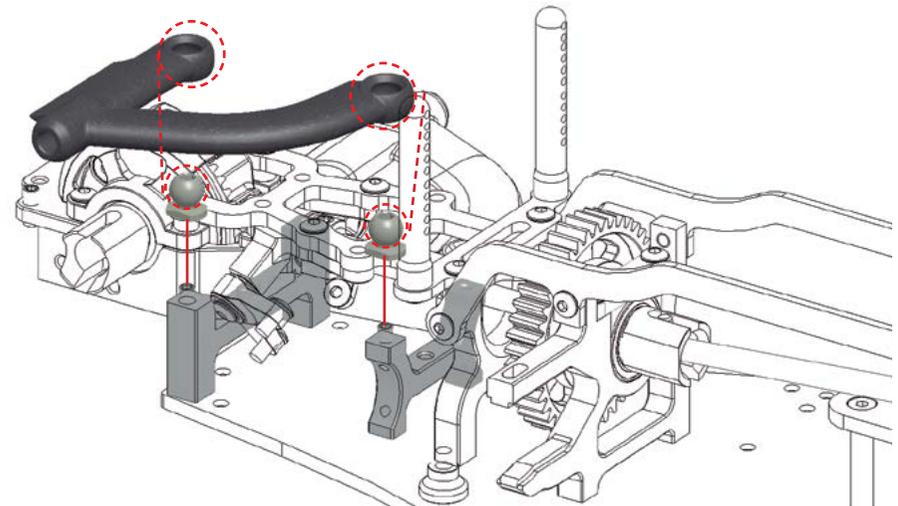


STEP 31

31.1

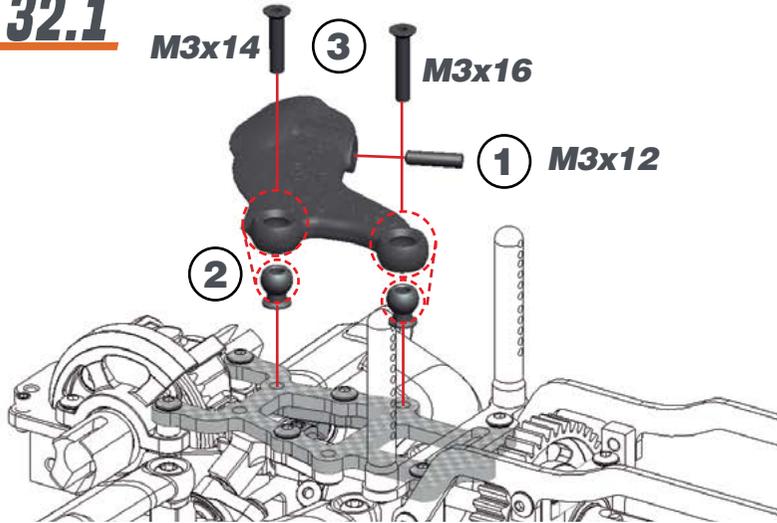


31.2

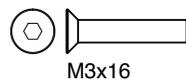
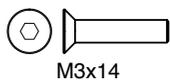
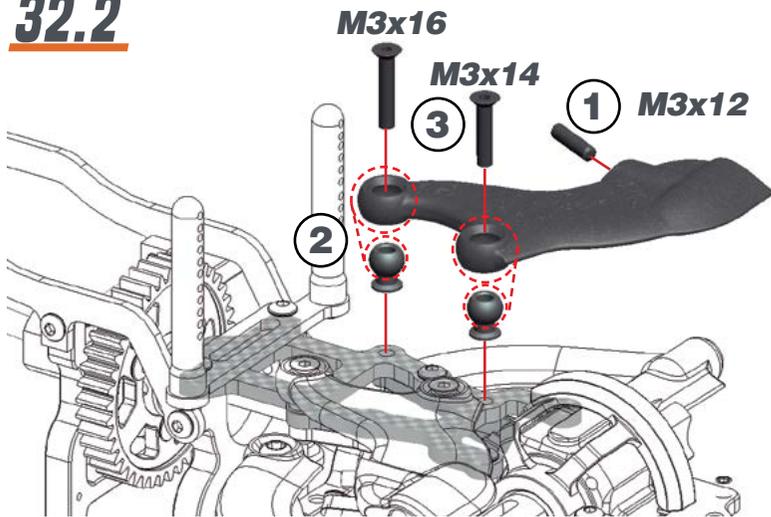


STEP 32

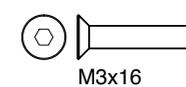
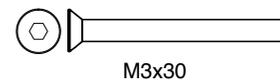
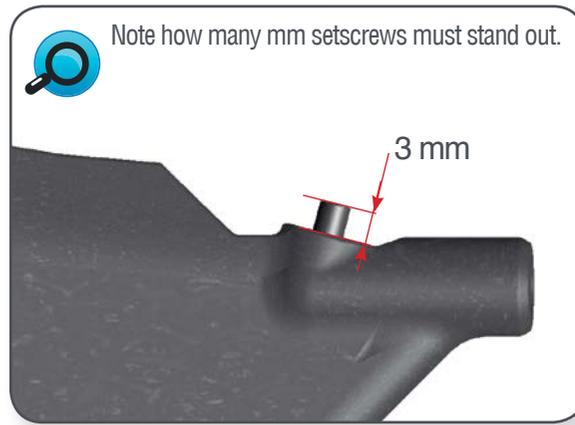
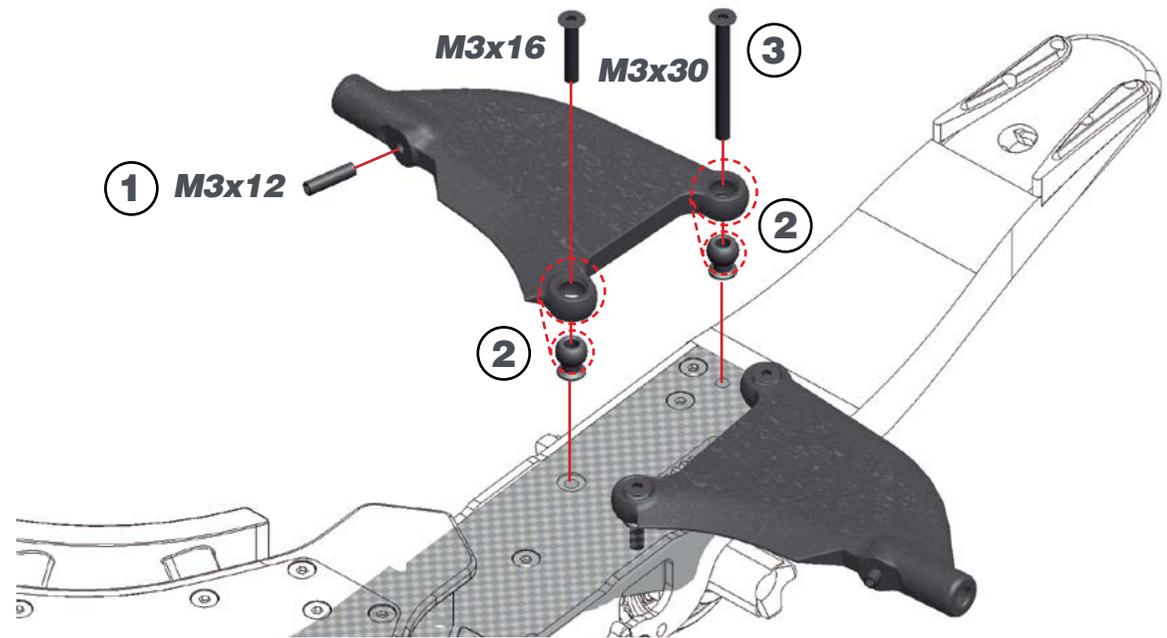
32.1



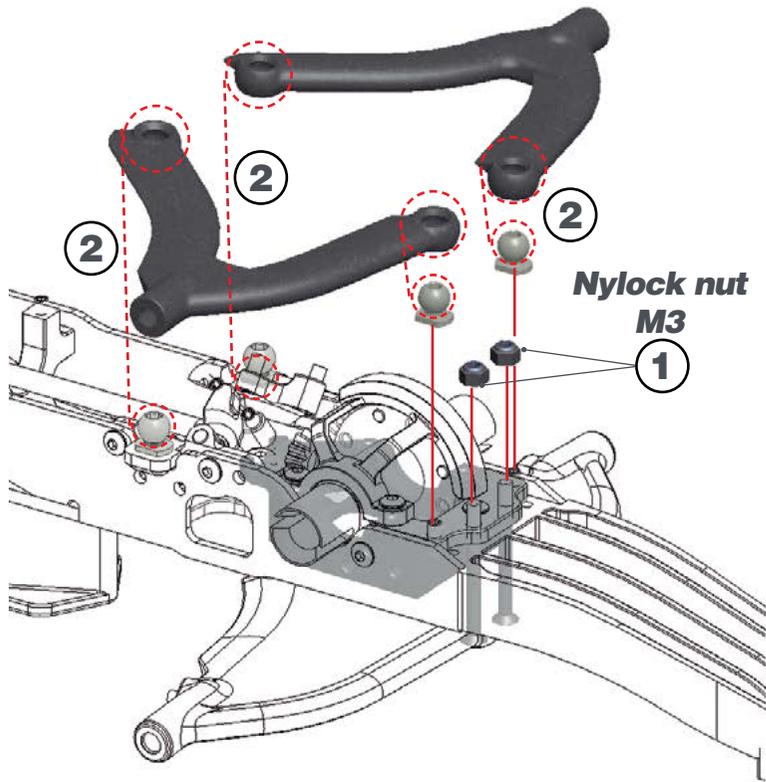
32.2



STEP 33

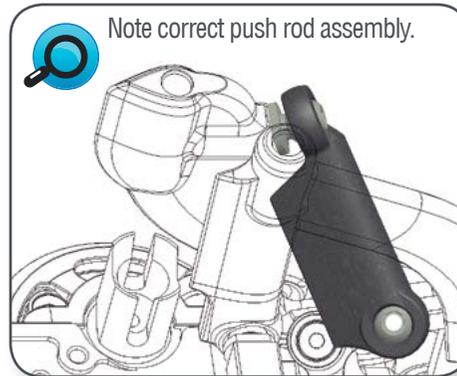
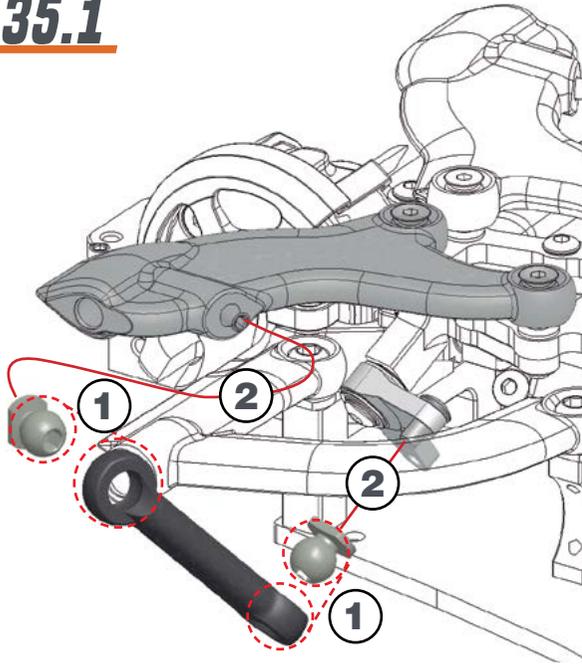


STEP 34

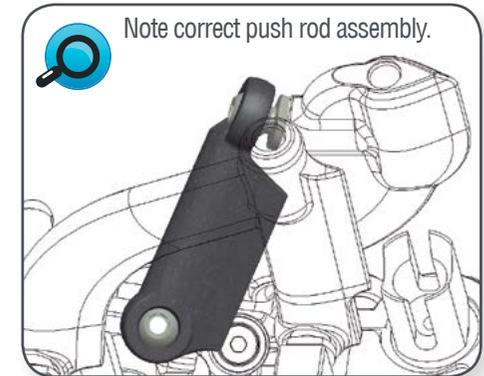
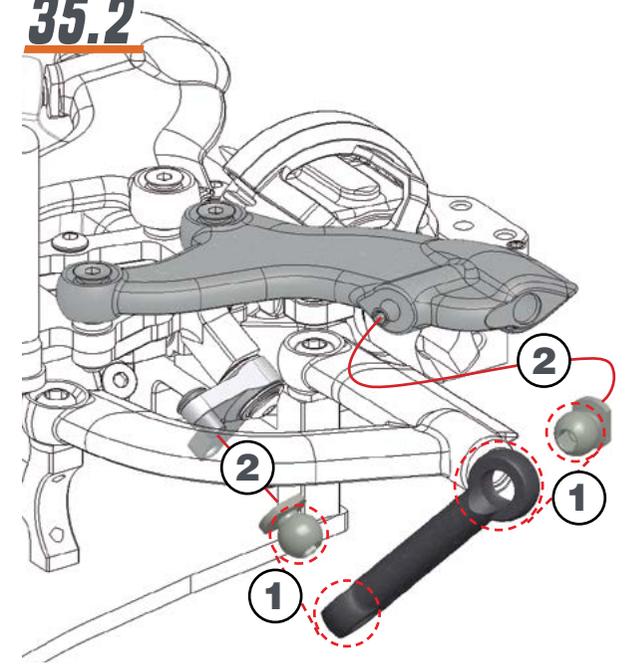


STEP 35

35.1

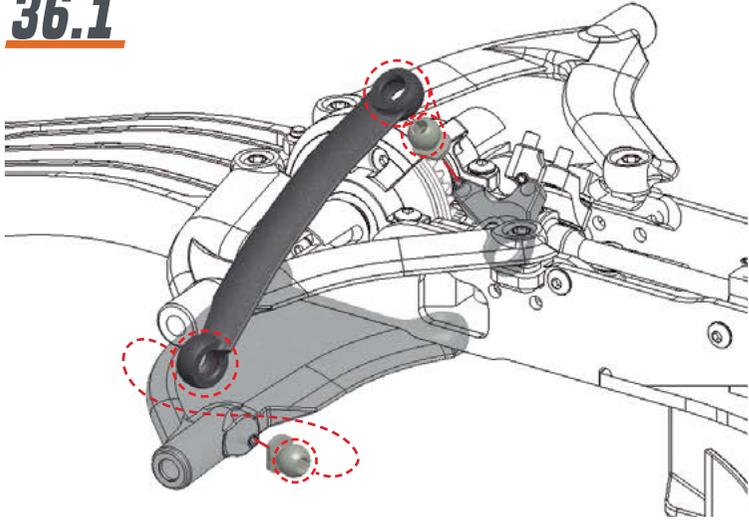


35.2

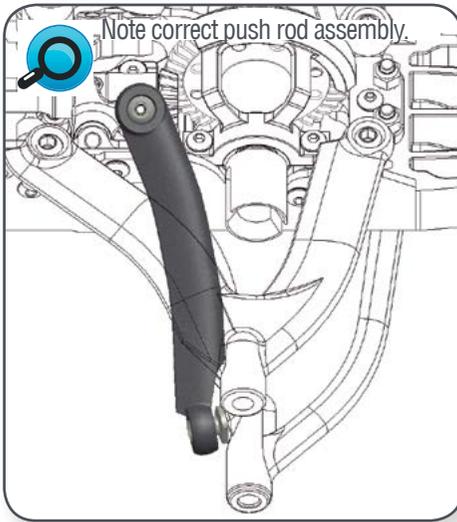
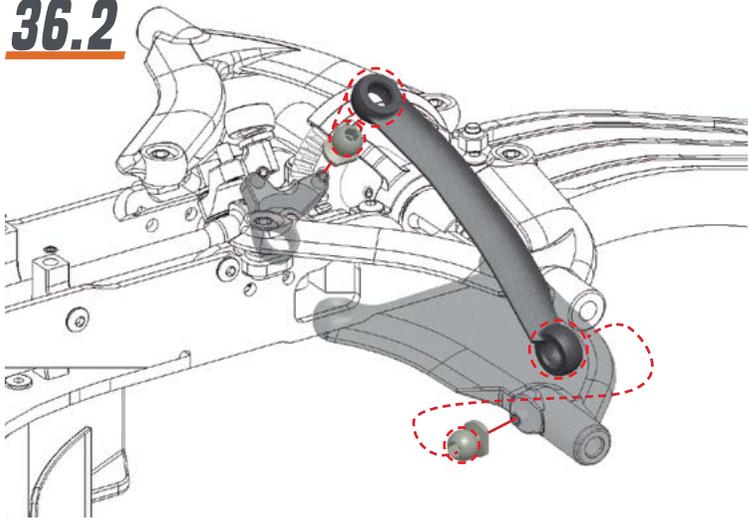


STEP 36

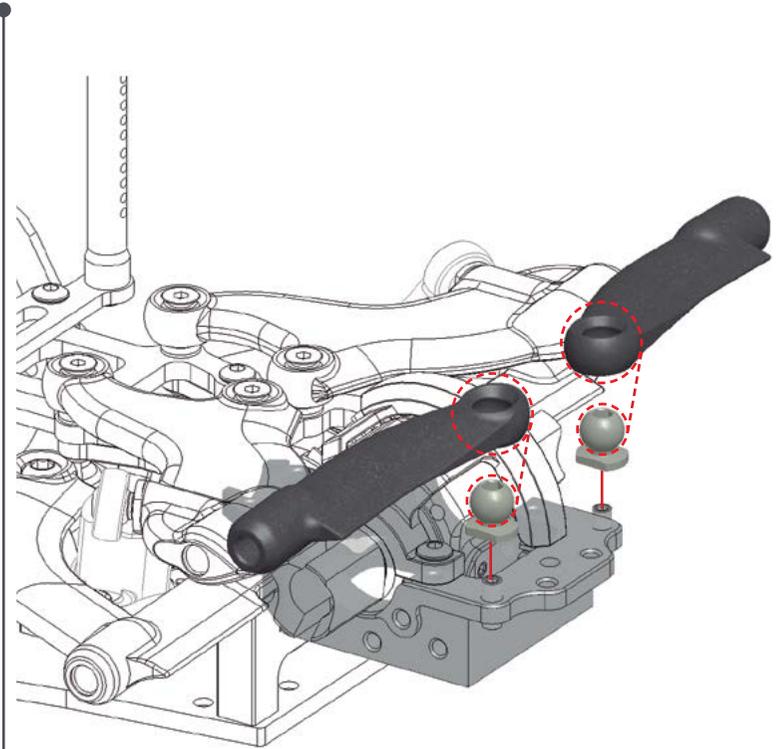
36.1



36.2

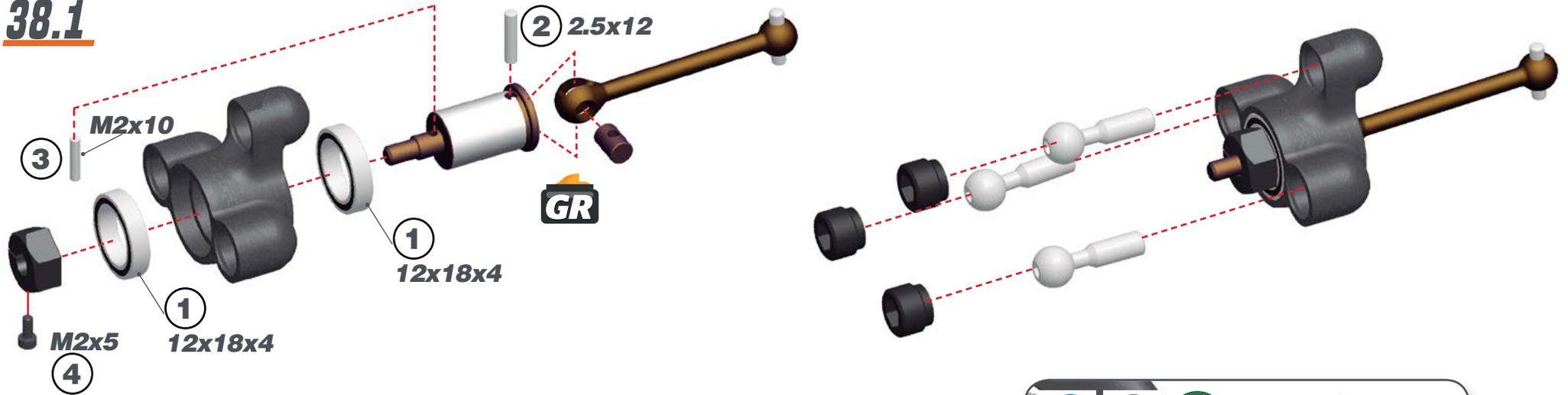


STEP 37

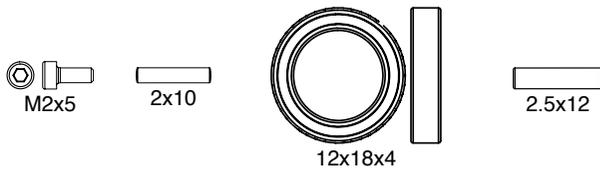
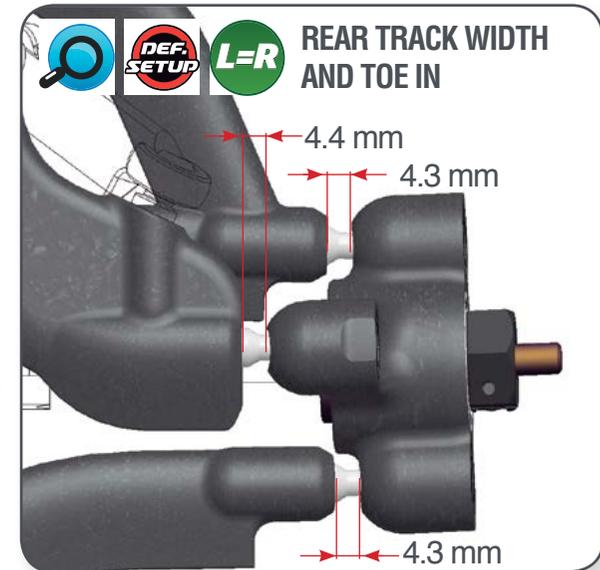
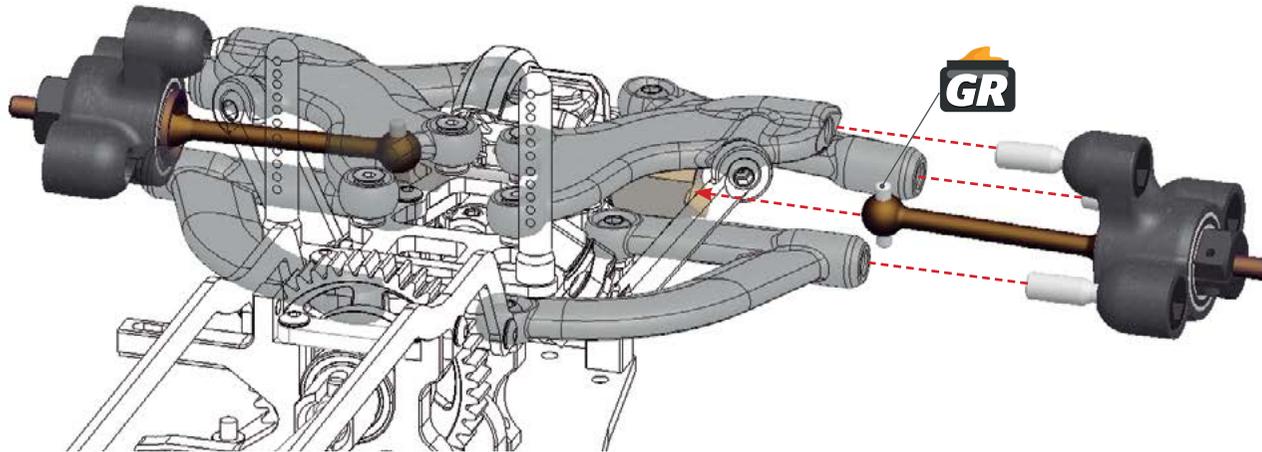


STEP 38 BAG 7

38.1

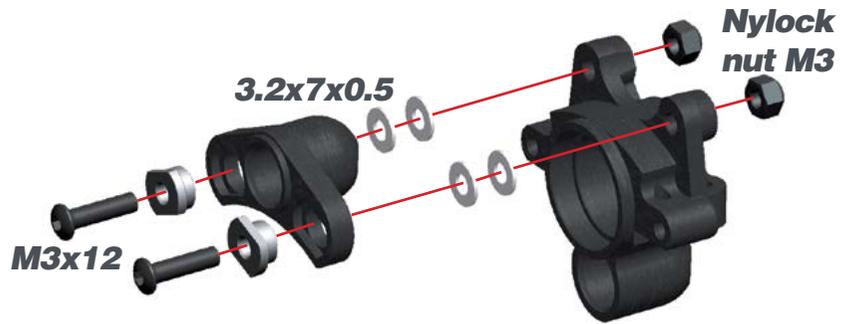


38.2



STEP 39

BAG 8

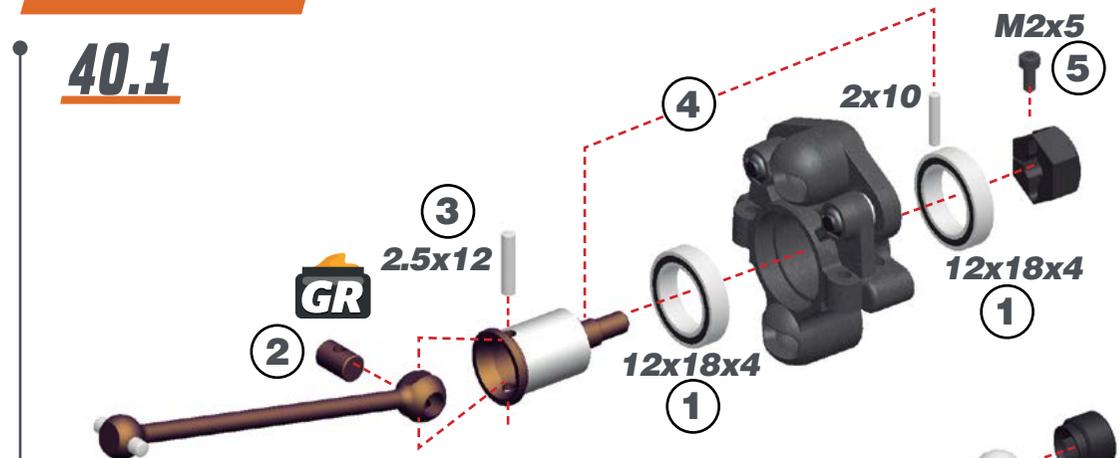


STEERING BLOCK INSERTS CHART

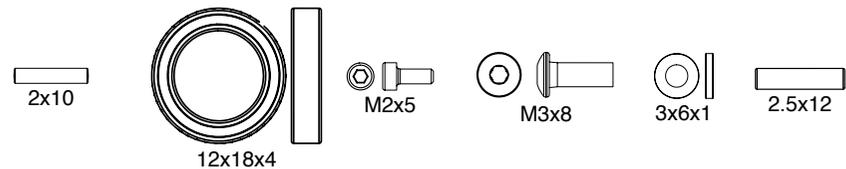
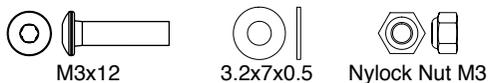
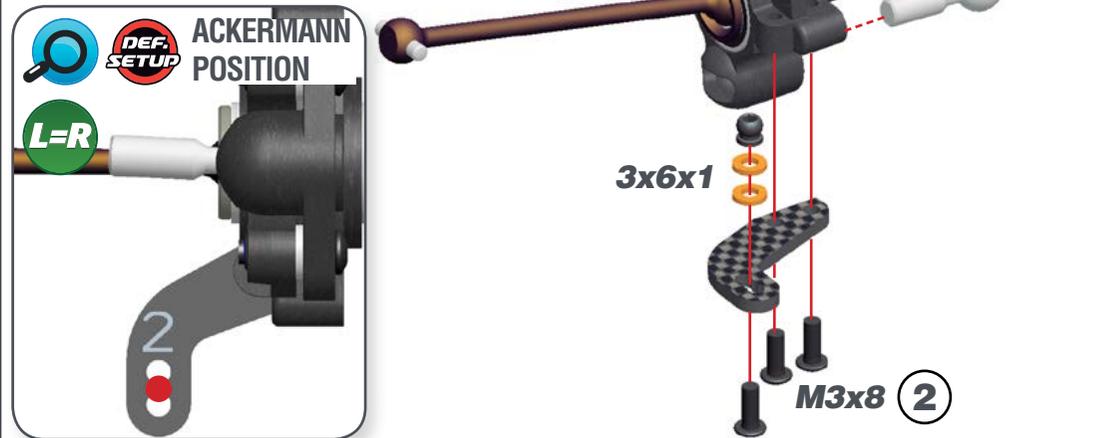
	LEADING	NEUTRAL <small>DEF. SETUP</small>	TRAILING
RIGHT			
LEFT			

STEP 40

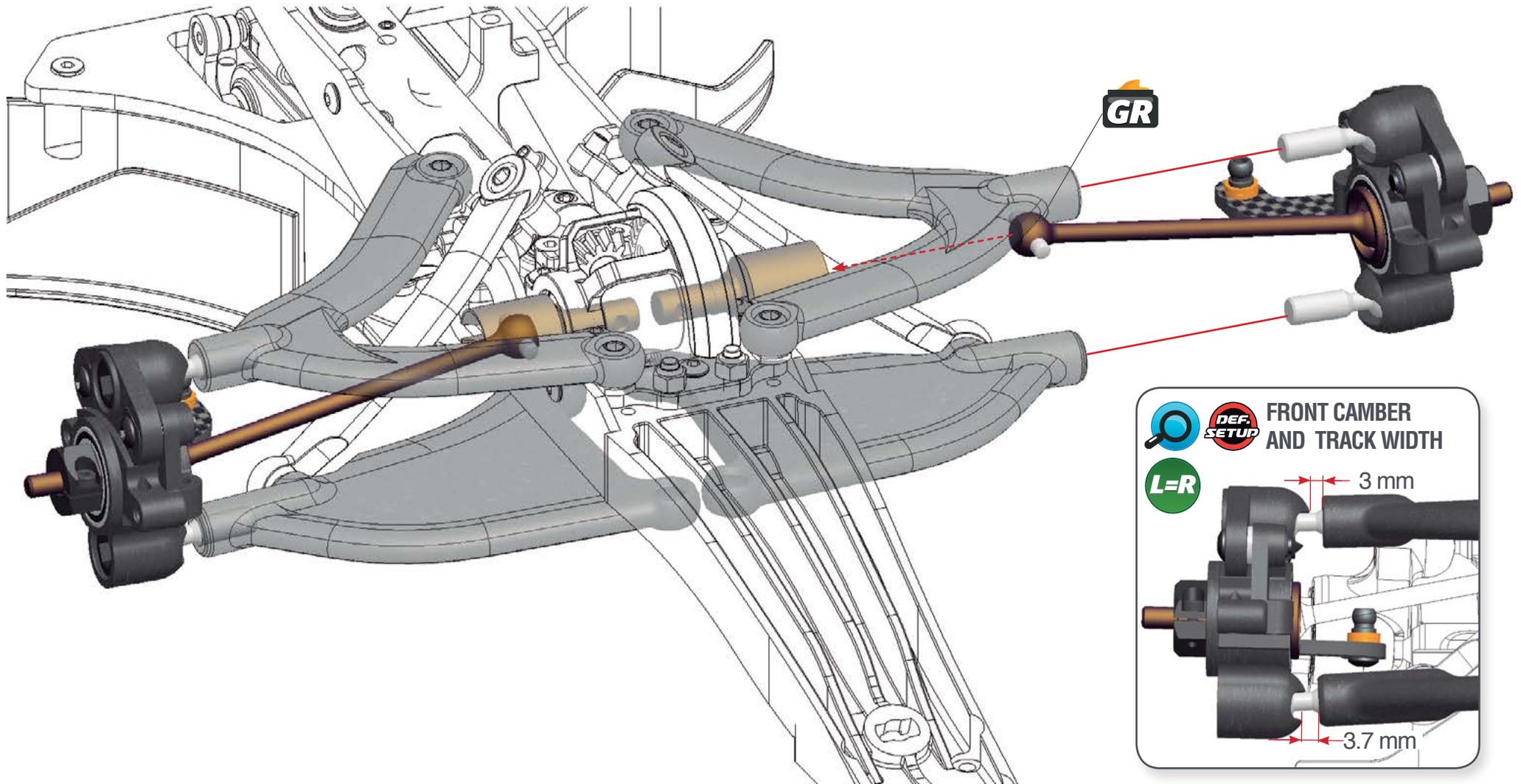
40.1



40.2



STEP 41



STEP 42

42.1

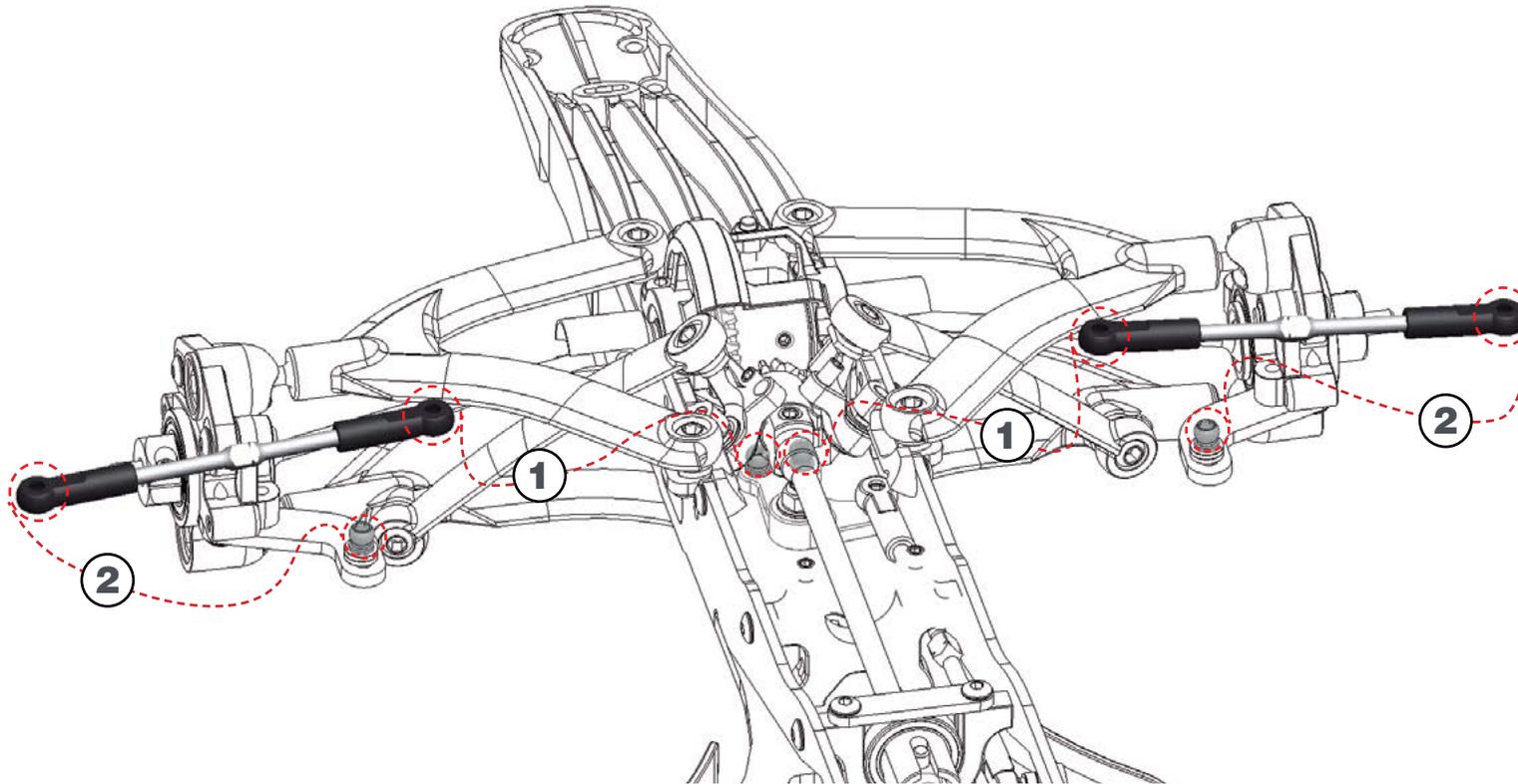


STEERING TRACKROD LENGTH

37.3 mm



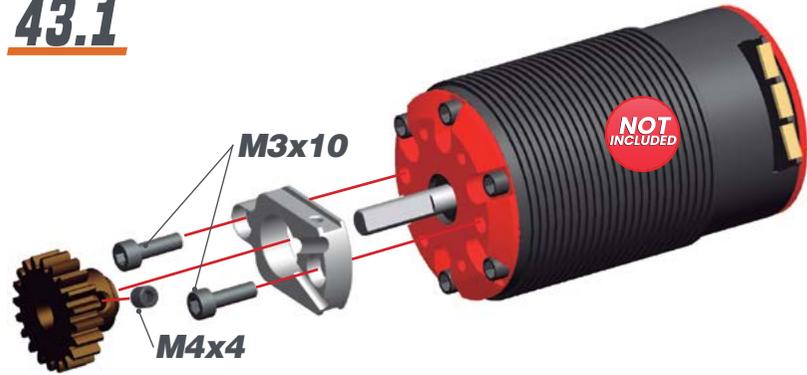
42.2



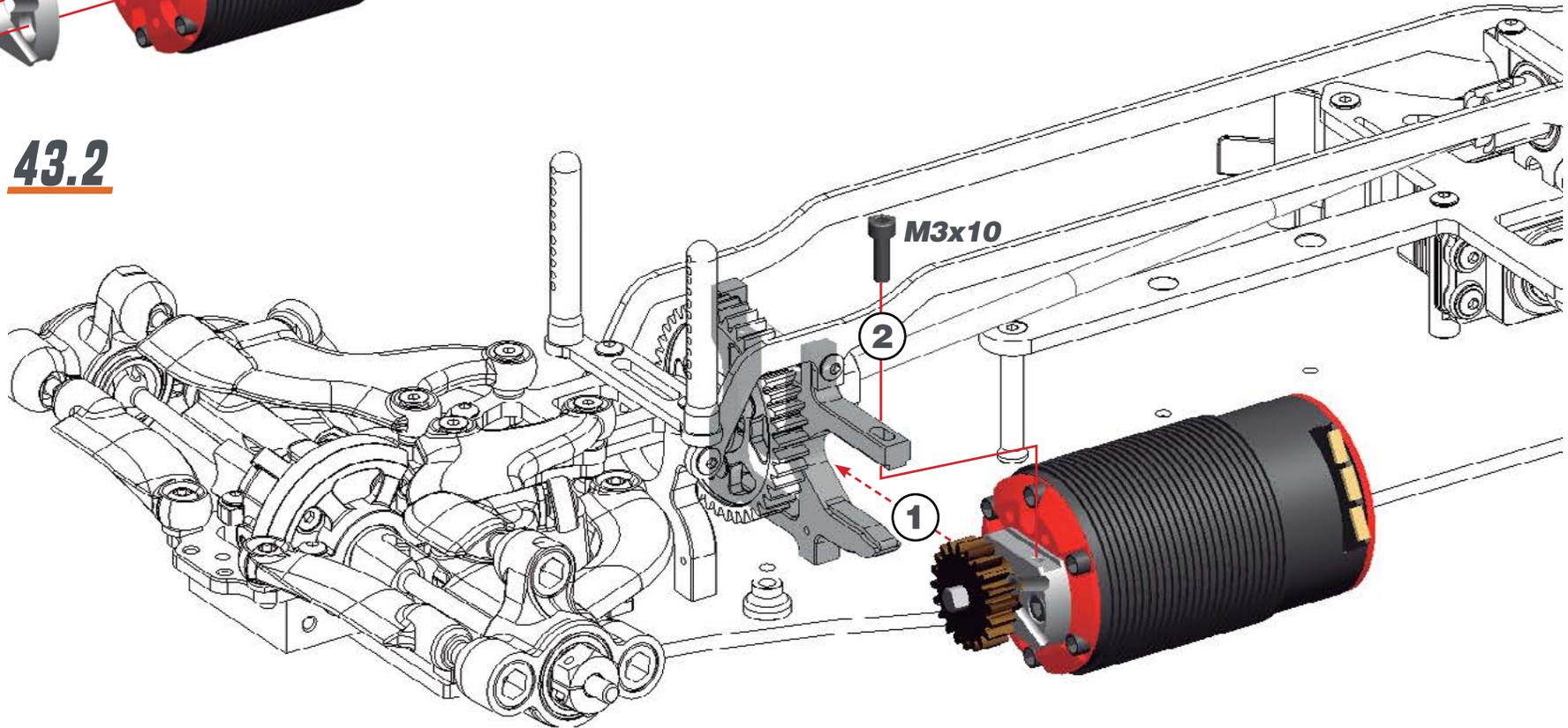
STEP 43

BAG 9

43.1



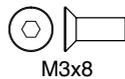
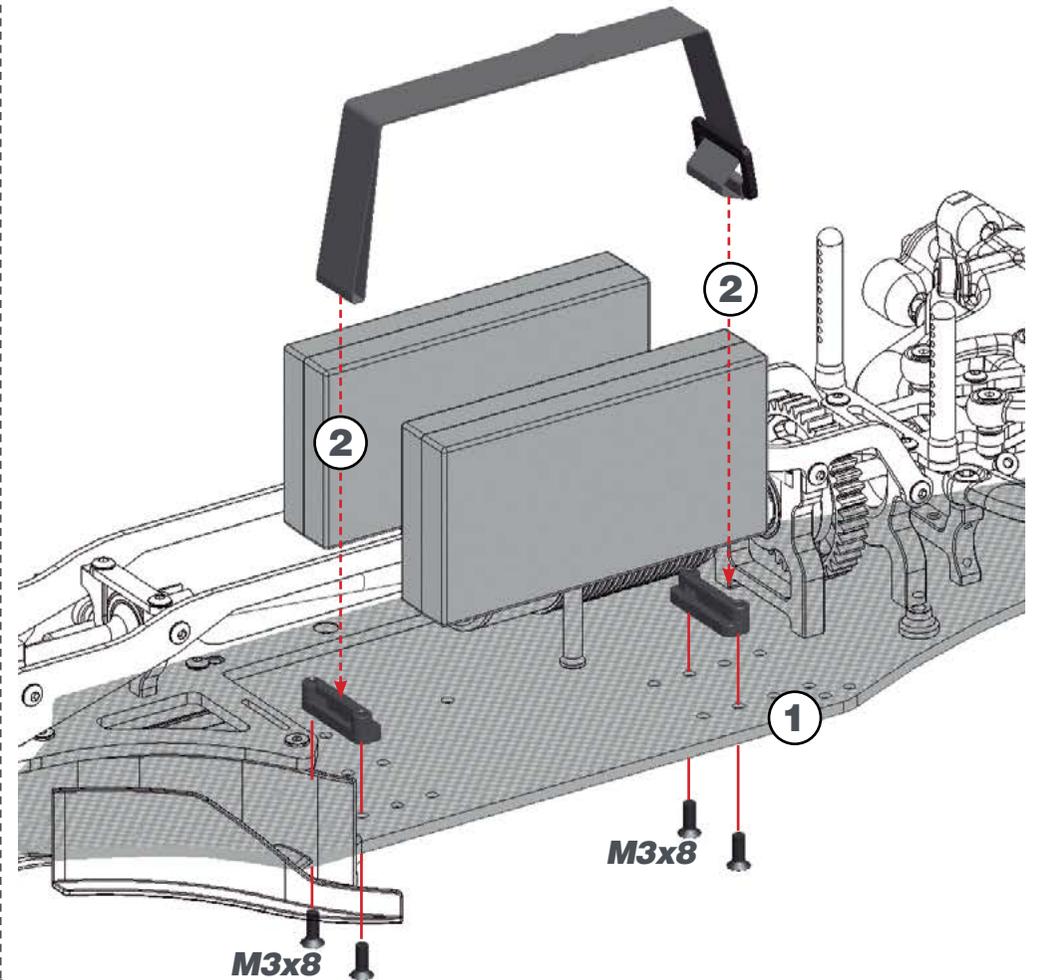
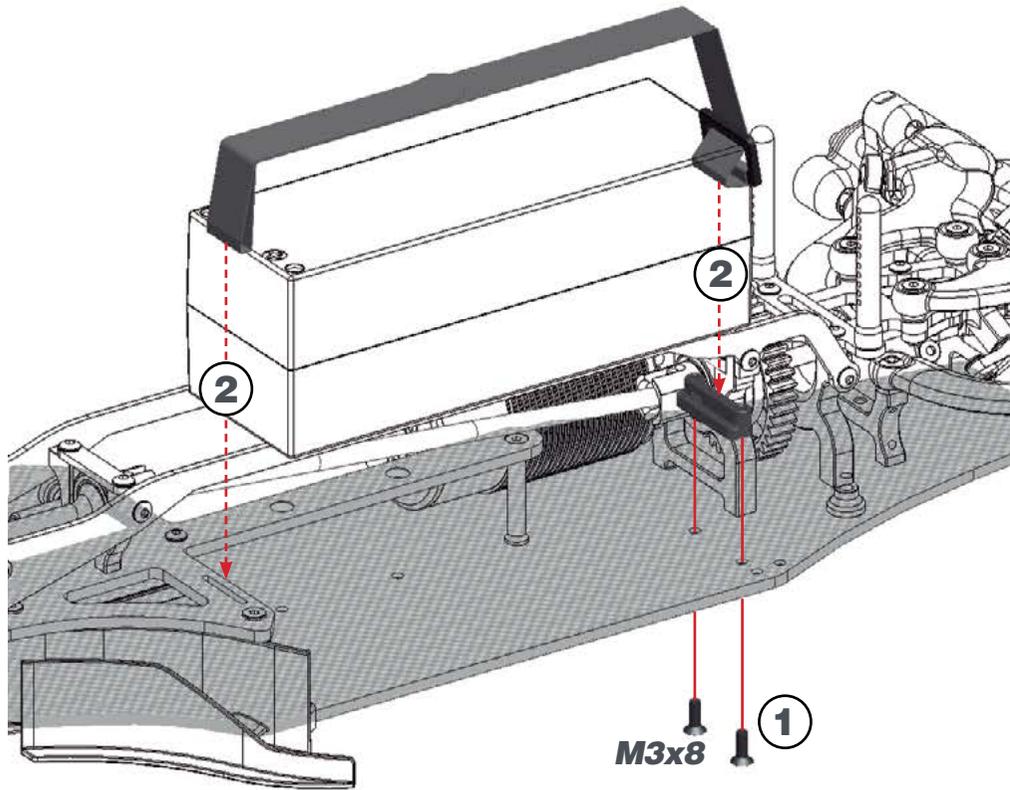
43.2



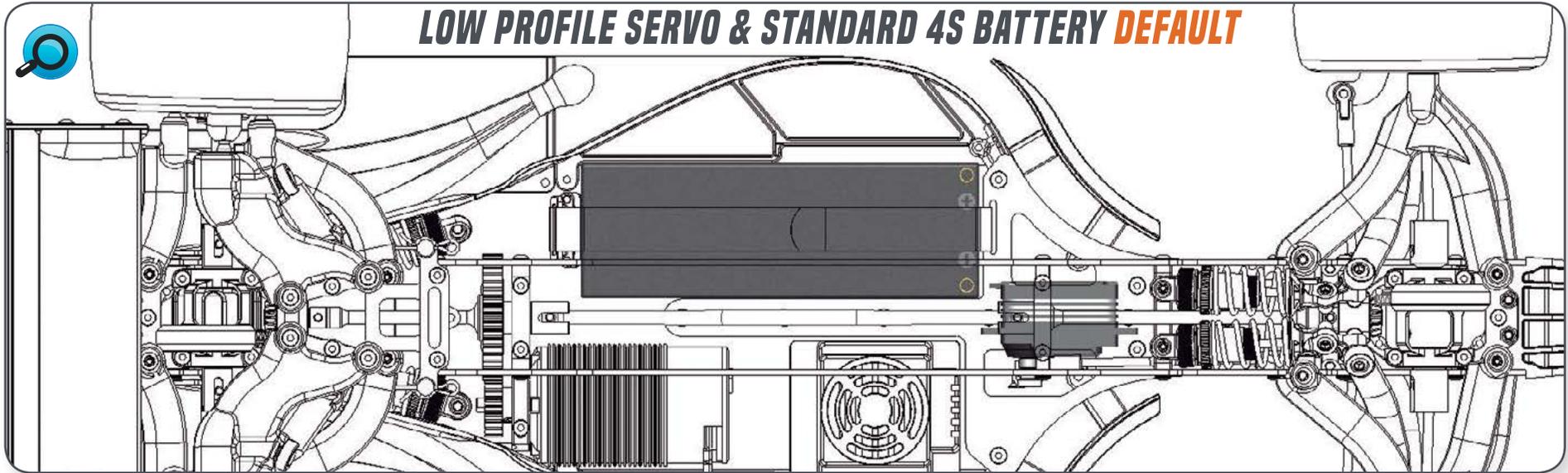
STEP 44

LOW PROFILE SERVO & STANDARD 4S BATTERY *DEFAULT*

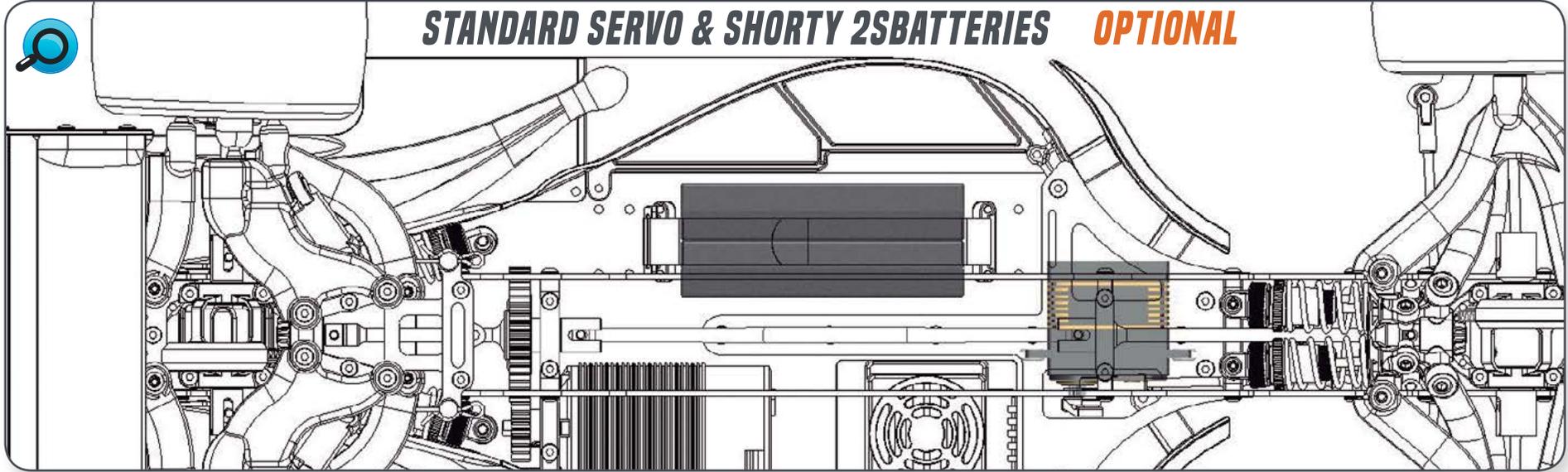
STANDARD SERVO & SHORTY 2SBATTERIES *OPTIONAL*



LOW PROFILE SERVO & STANDARD 4S BATTERY *DEFAULT*



STANDARD SERVO & SHORTY 2SBATTERIES *OPTIONAL*

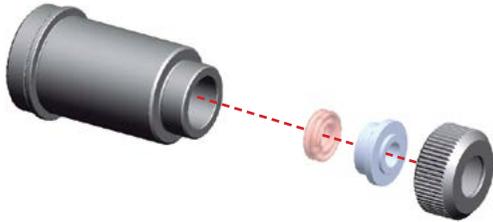


STEP 45

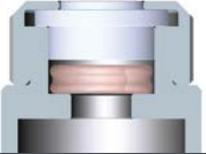
BAG 10

45.1

Use some silicone oil during the assembly.

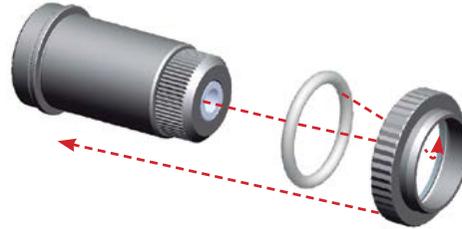


Note the correct orientation of the shock spacers.



45.2

Insert the o-ring inside the spring collar.



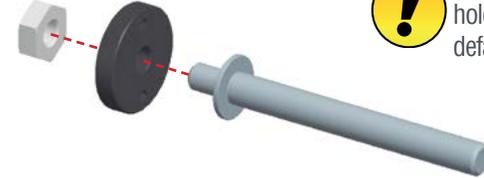
Note the correct position of the o-ring.



STEP 46

46.1

Nut M2.5



For the correct piston holes please check the default setupsheet.

46.2



Use some silicone oil during the assembly.



Nut M2.5

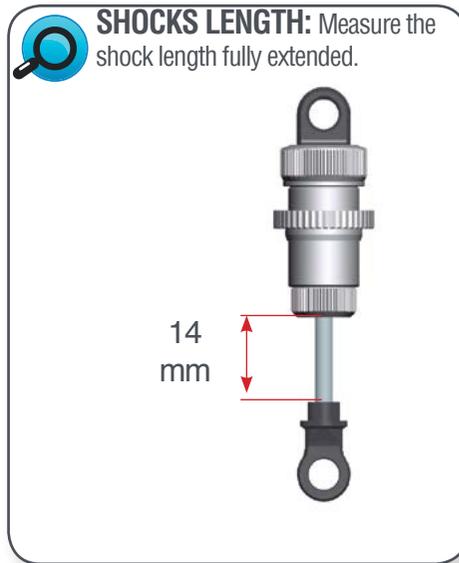
STEP 47

47.1

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) **with the shockrod fully extended**. Move the shockrod slowly up and down to let ALL air bubbles escape.

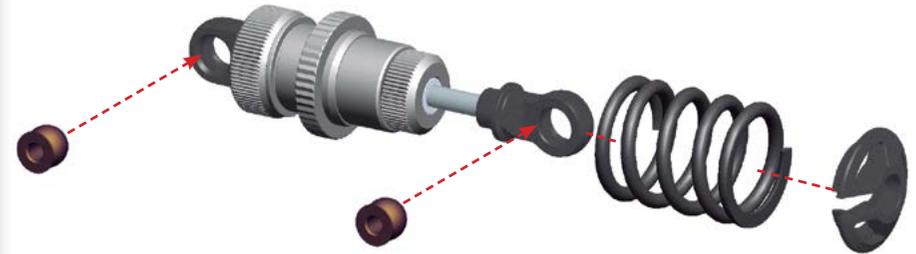
2- Push the membrane into the oil. Use a flat tool to push onto the center part of the membrane allowing the excessive oil to escape.

3- Put the top onto the membrane and close slowly with the nut.



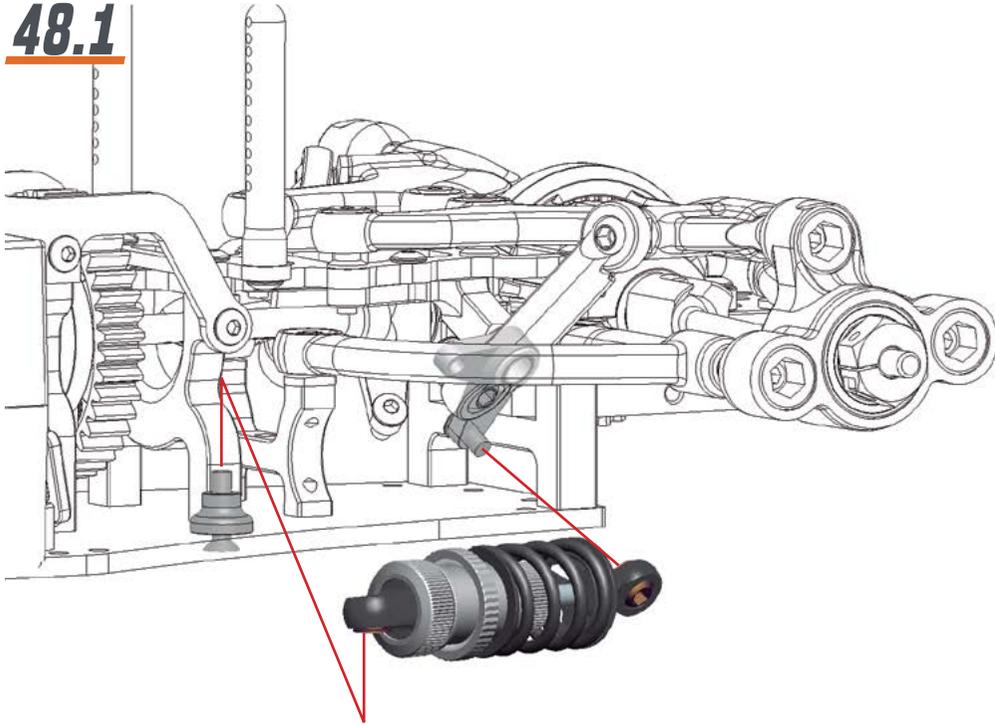
47.2

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

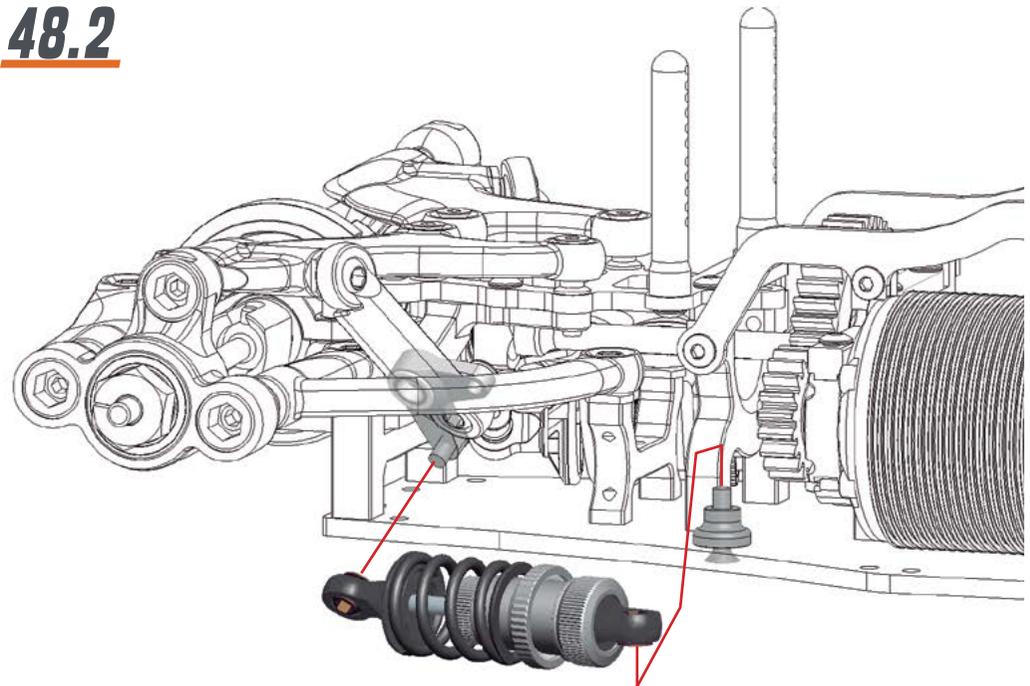


STEP 48

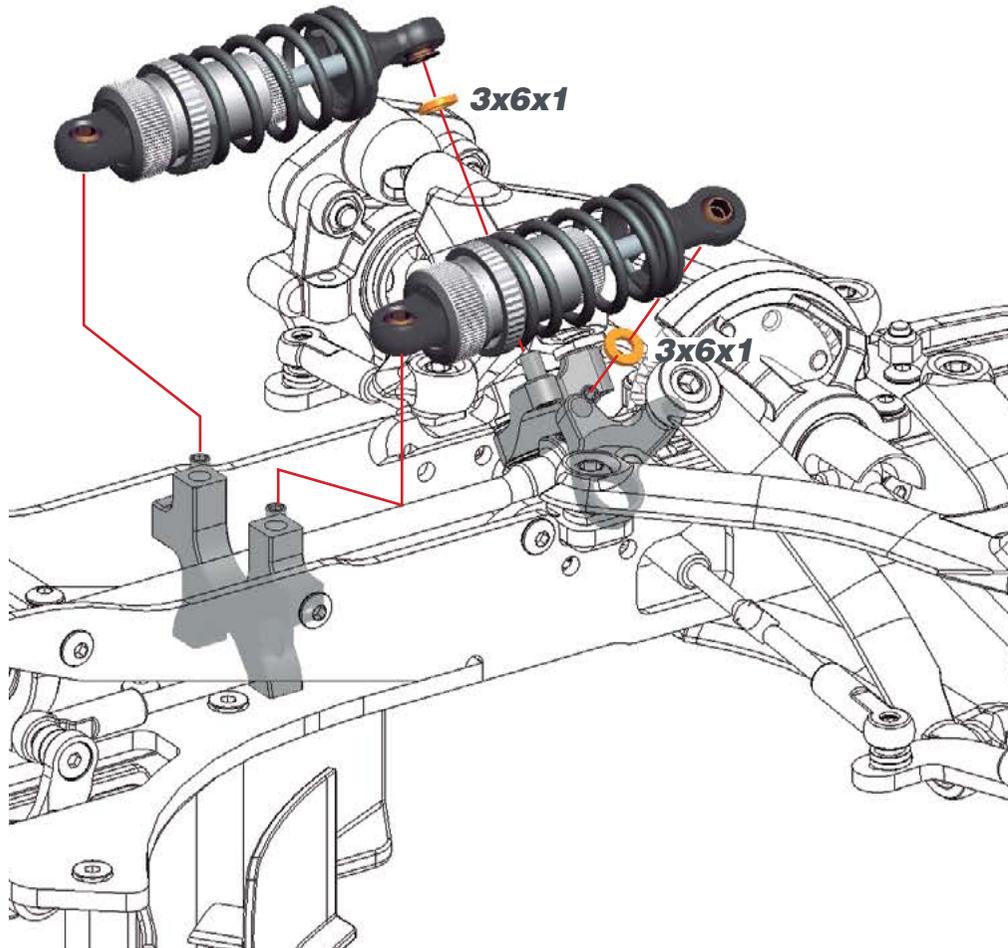
48.1



48.2

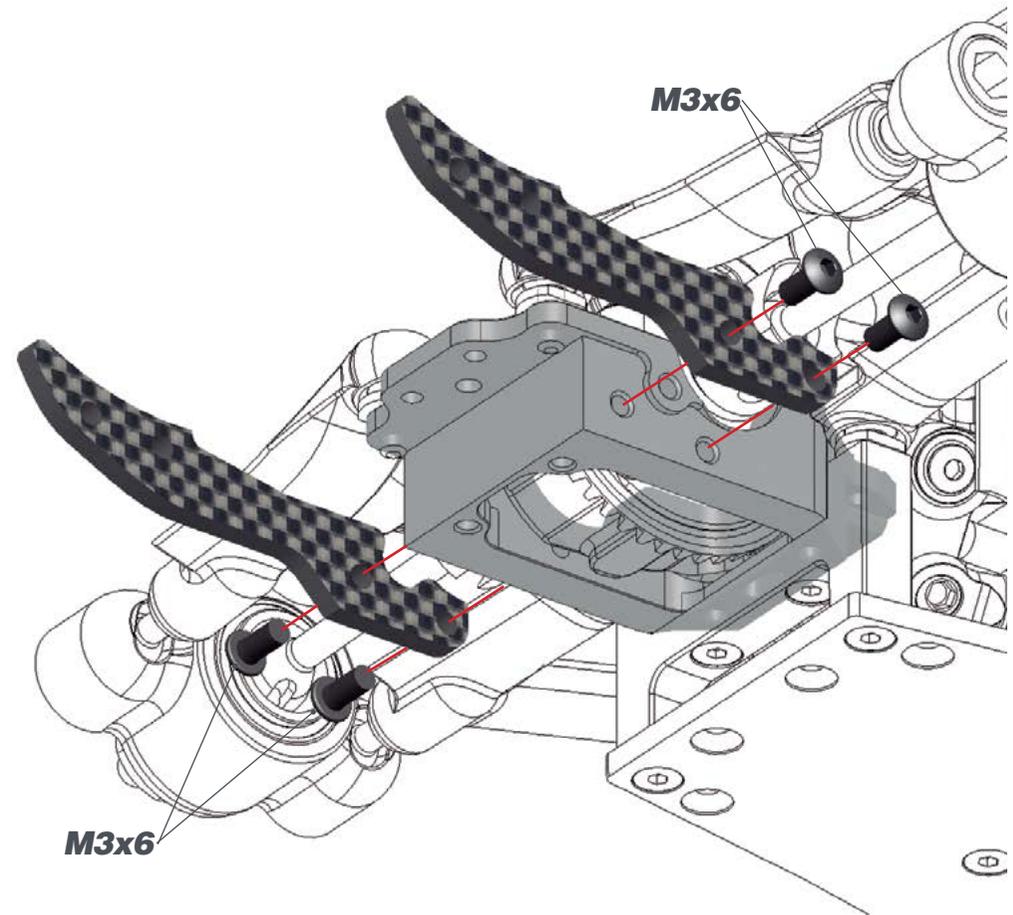


STEP 49



STEP 50

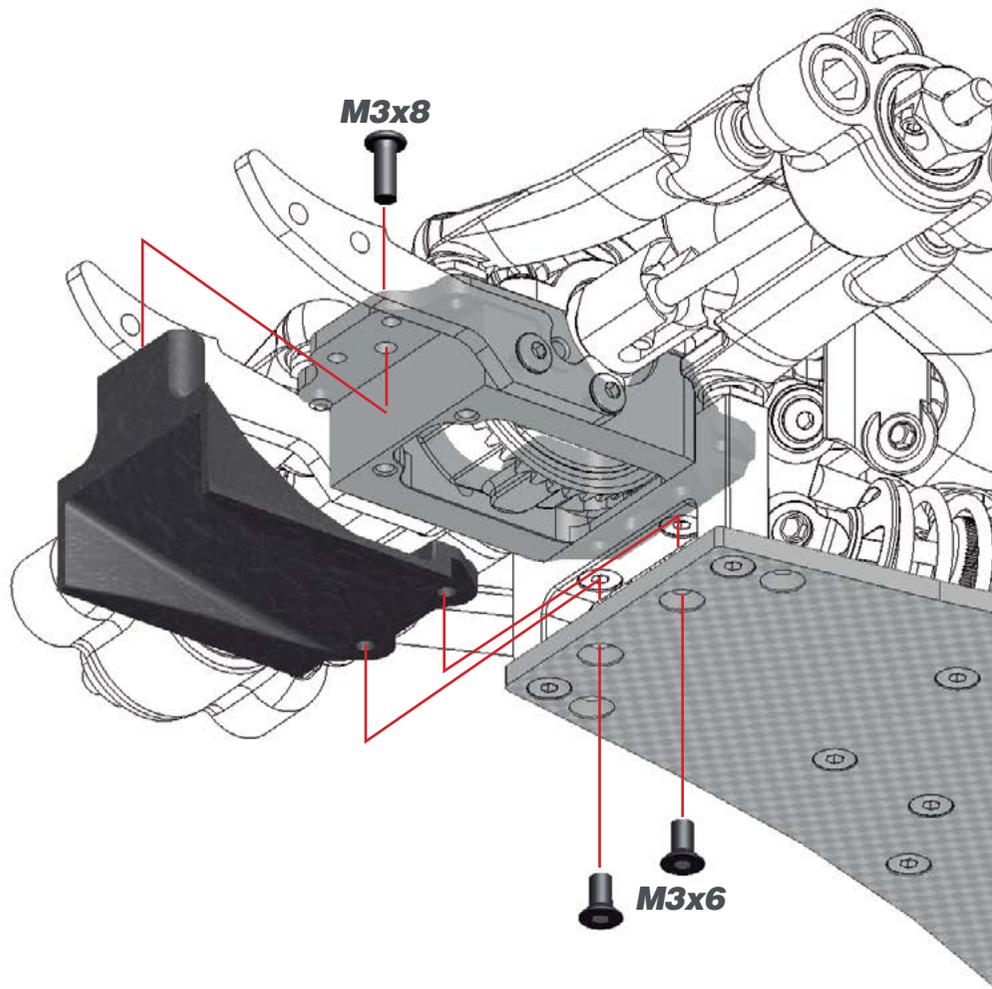
BAG 11



M3x6



STEP 51

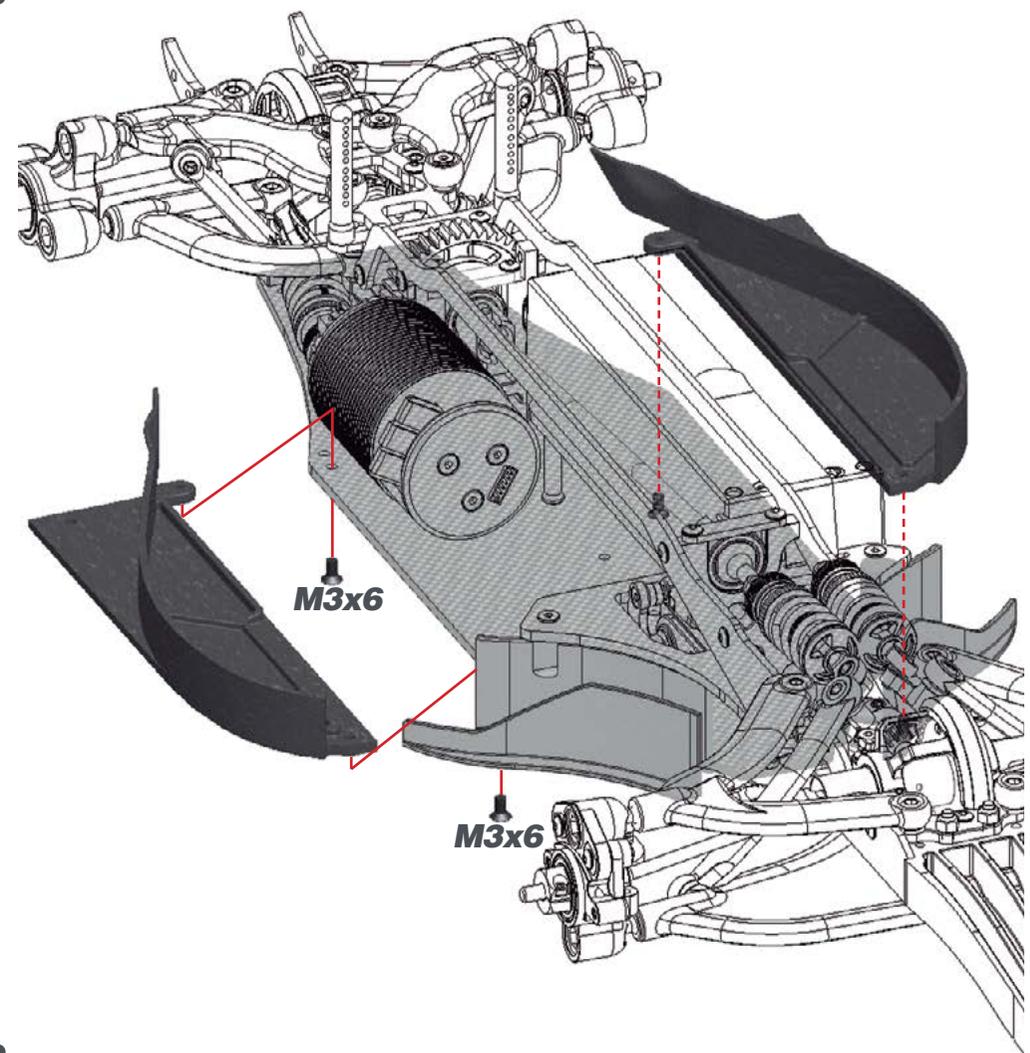


M3x6



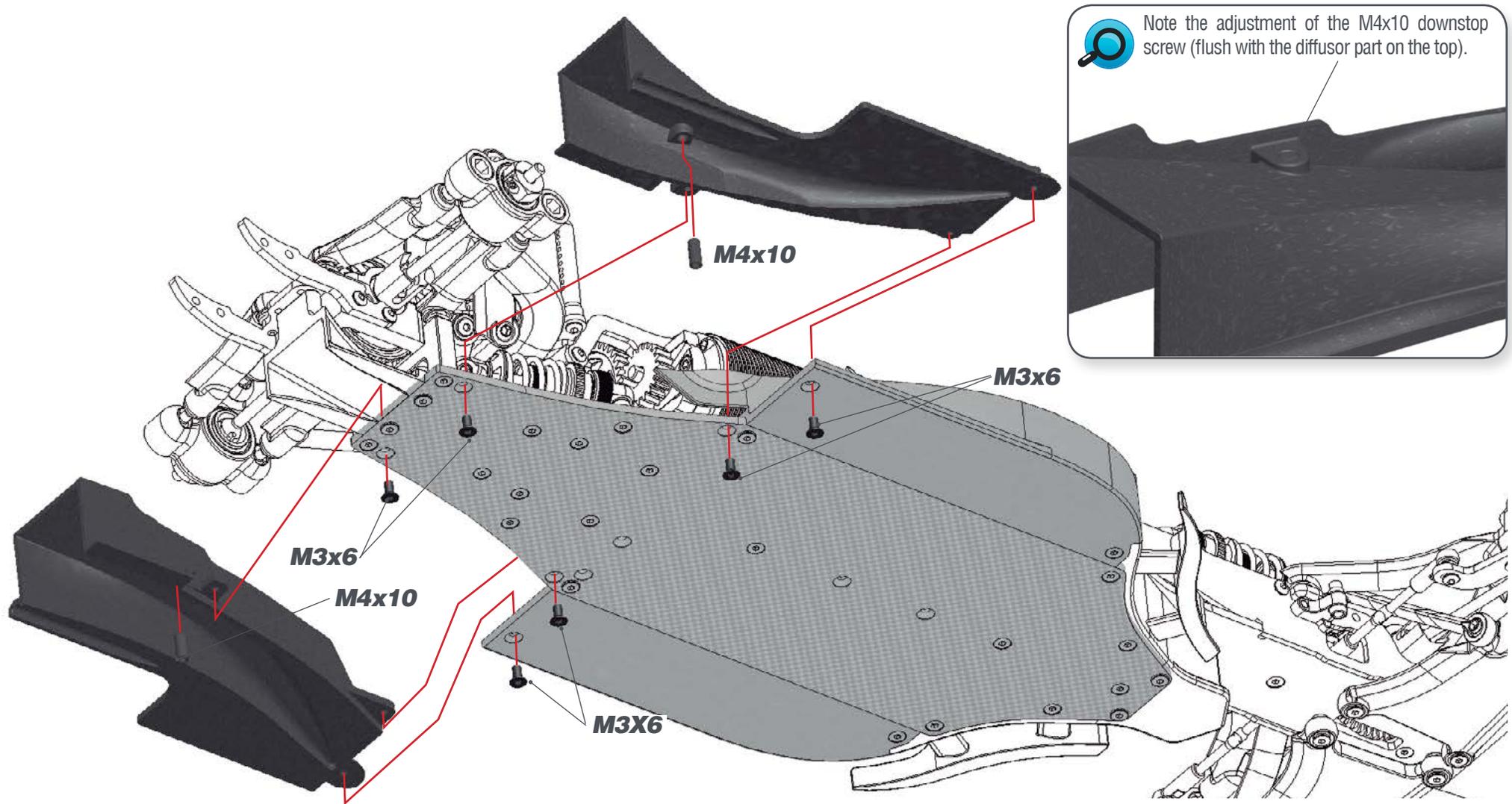
M3x8

STEP 52



M3x6

STEP 53



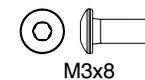
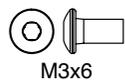
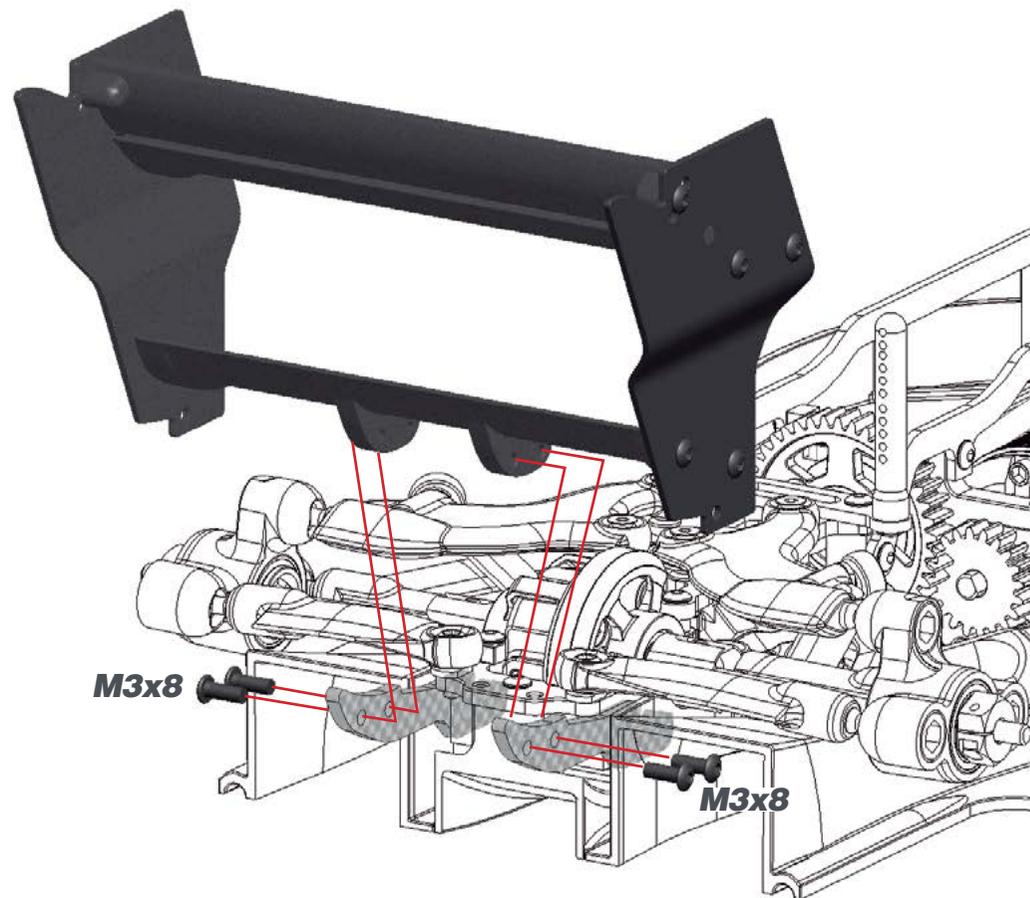
STEP 54

BAG 12

54.1

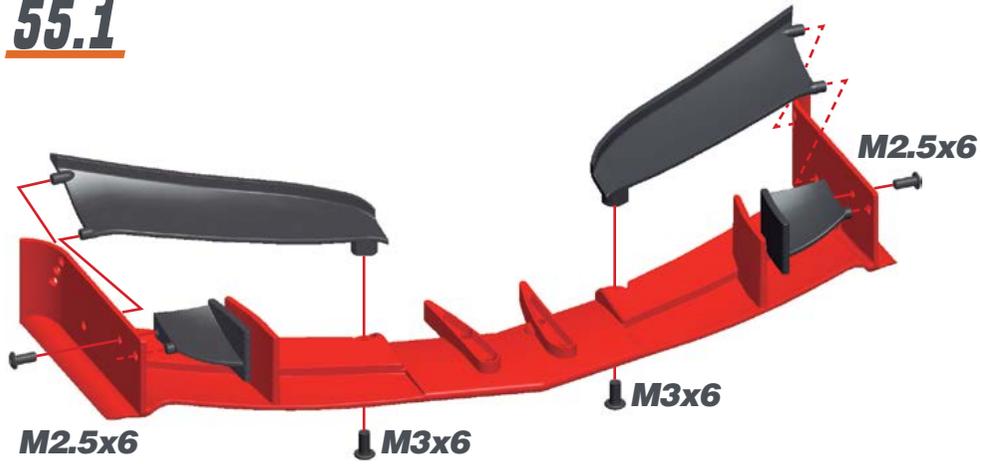


54.2

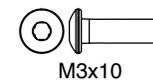
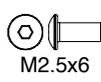
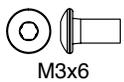
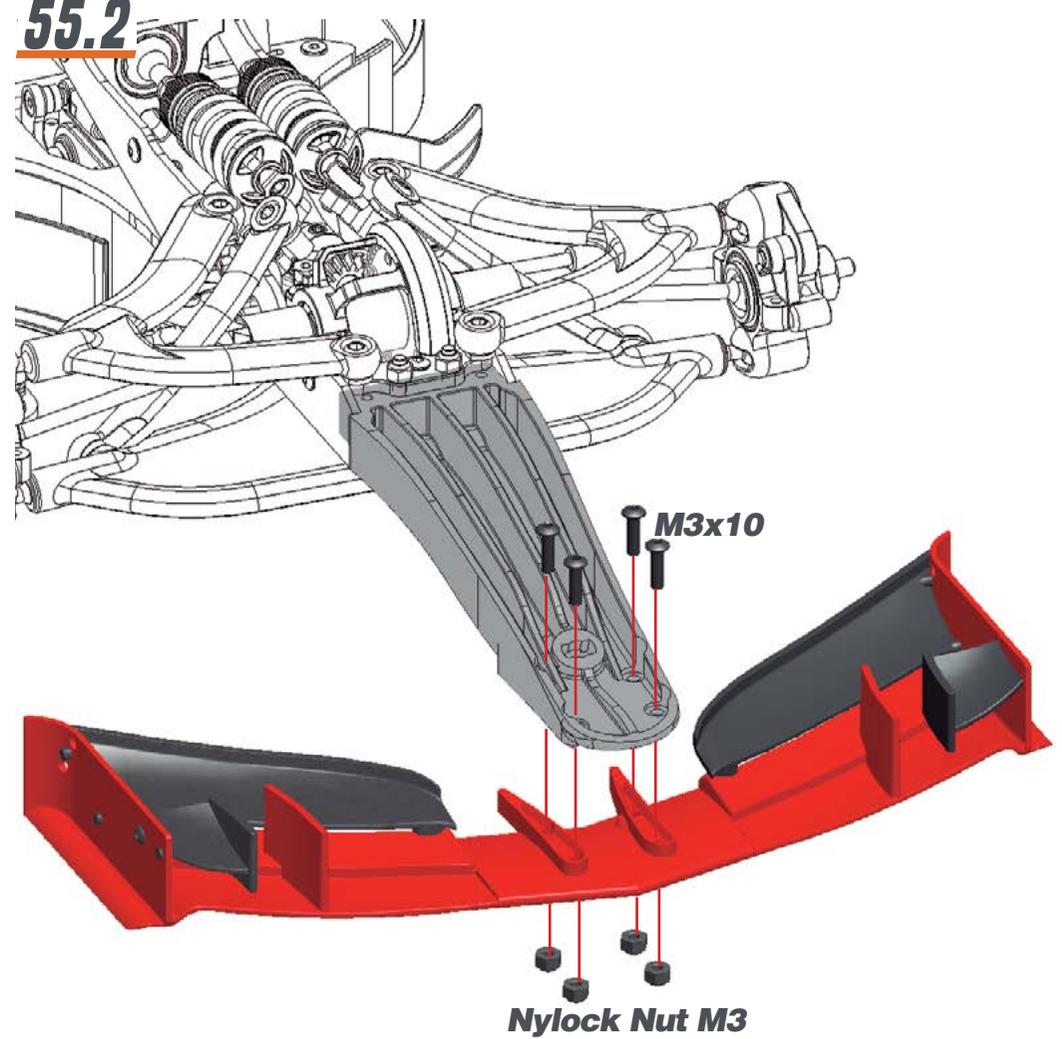


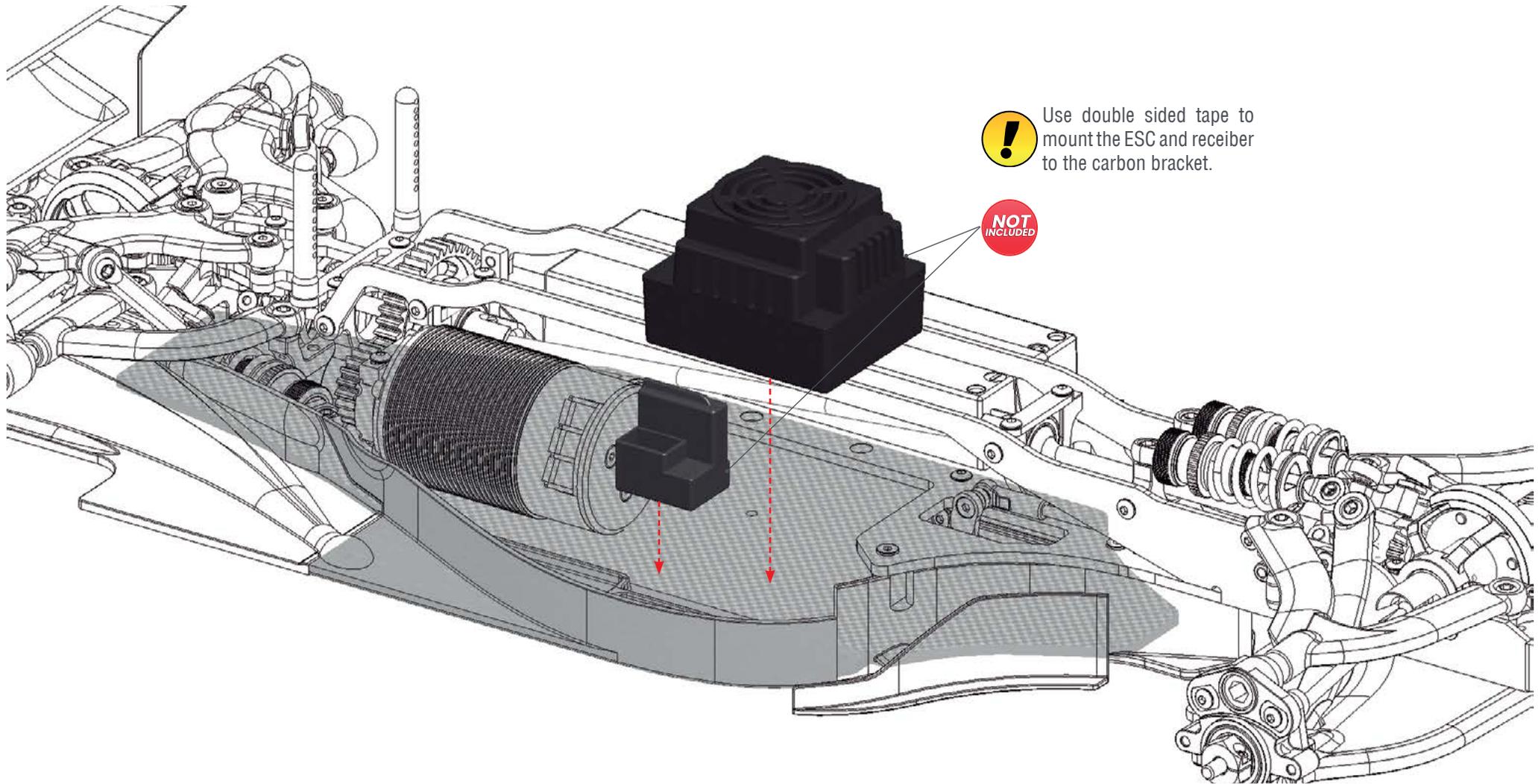
STEP 55

55.1



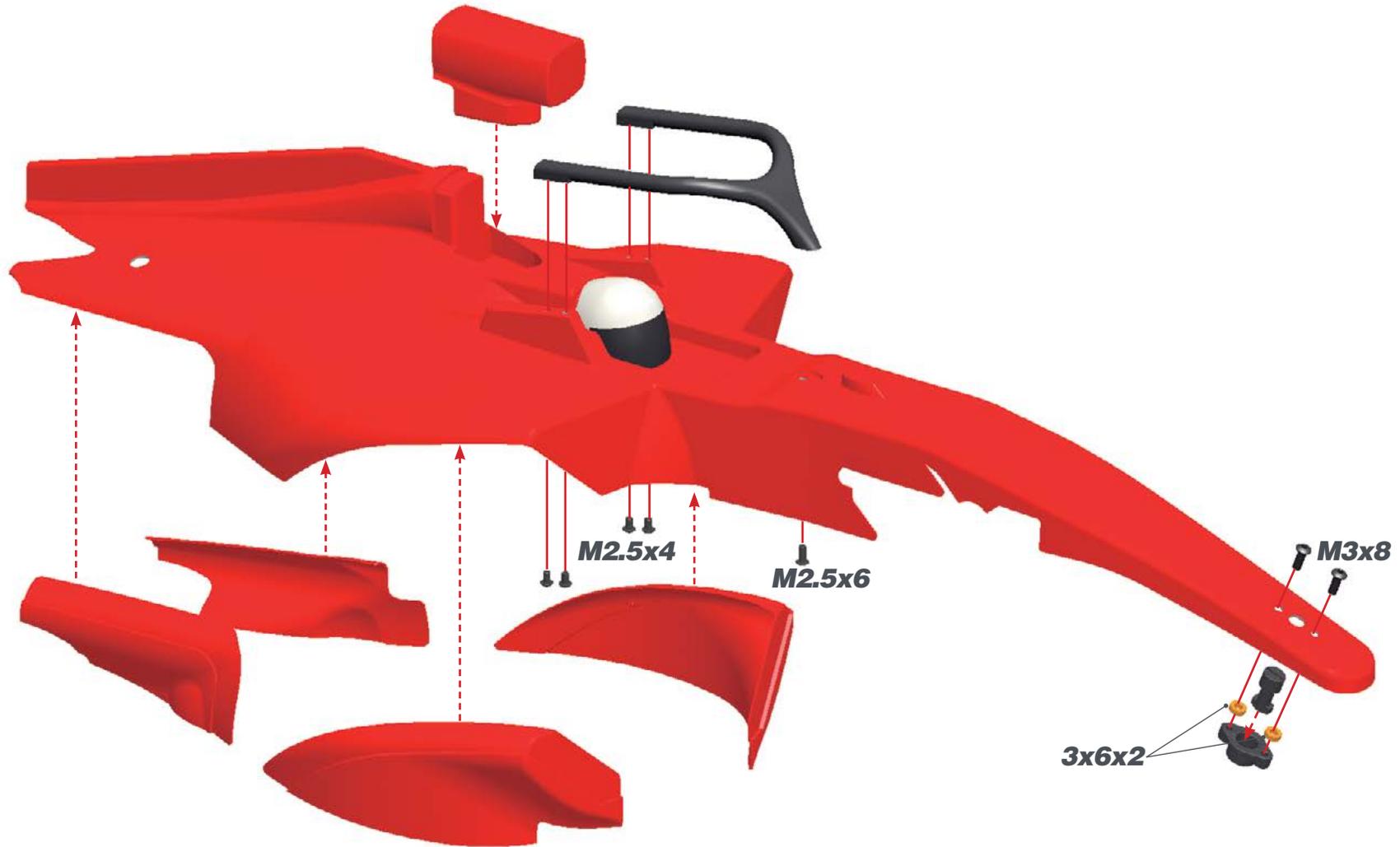
55.2



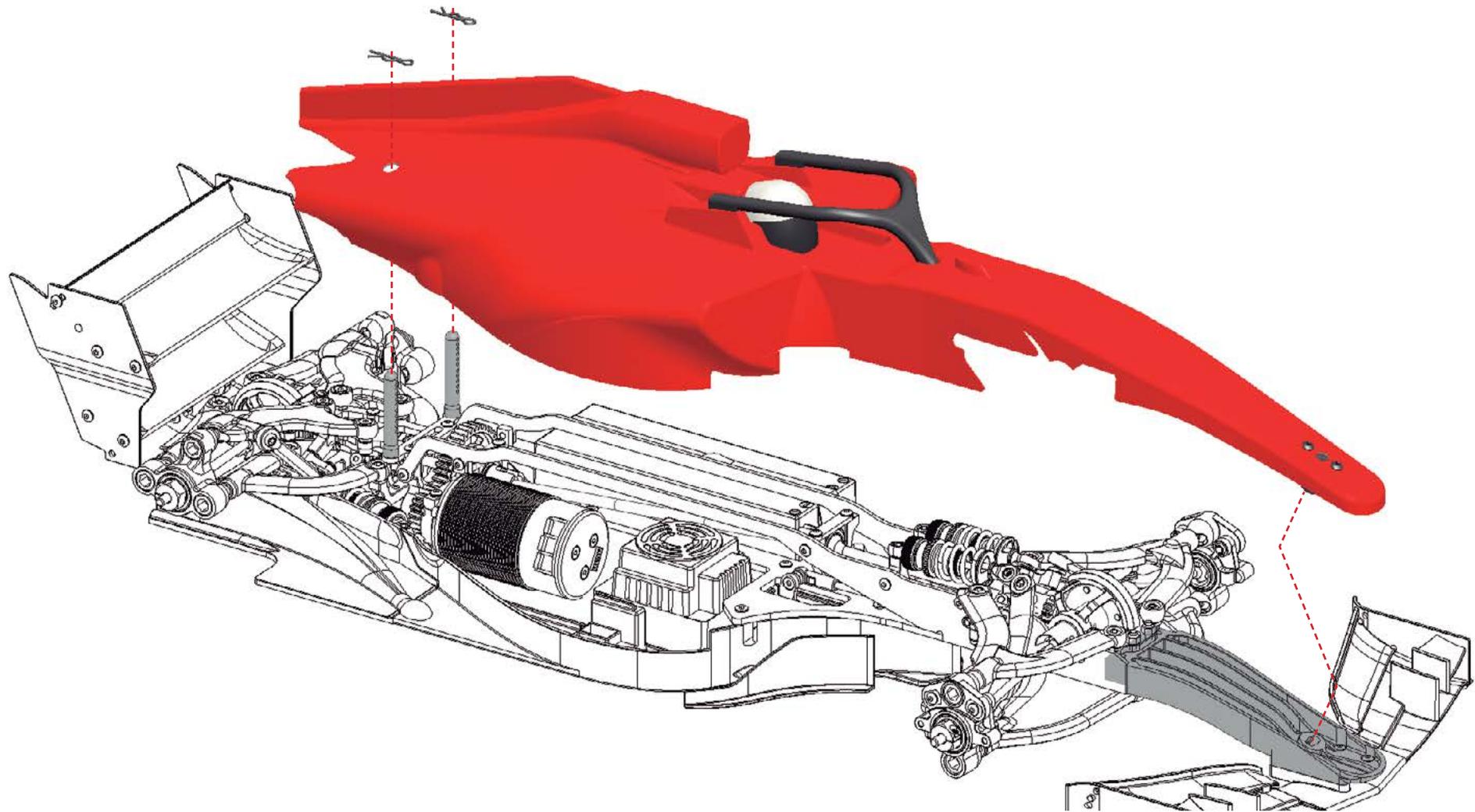
STEP 56

STEP 57

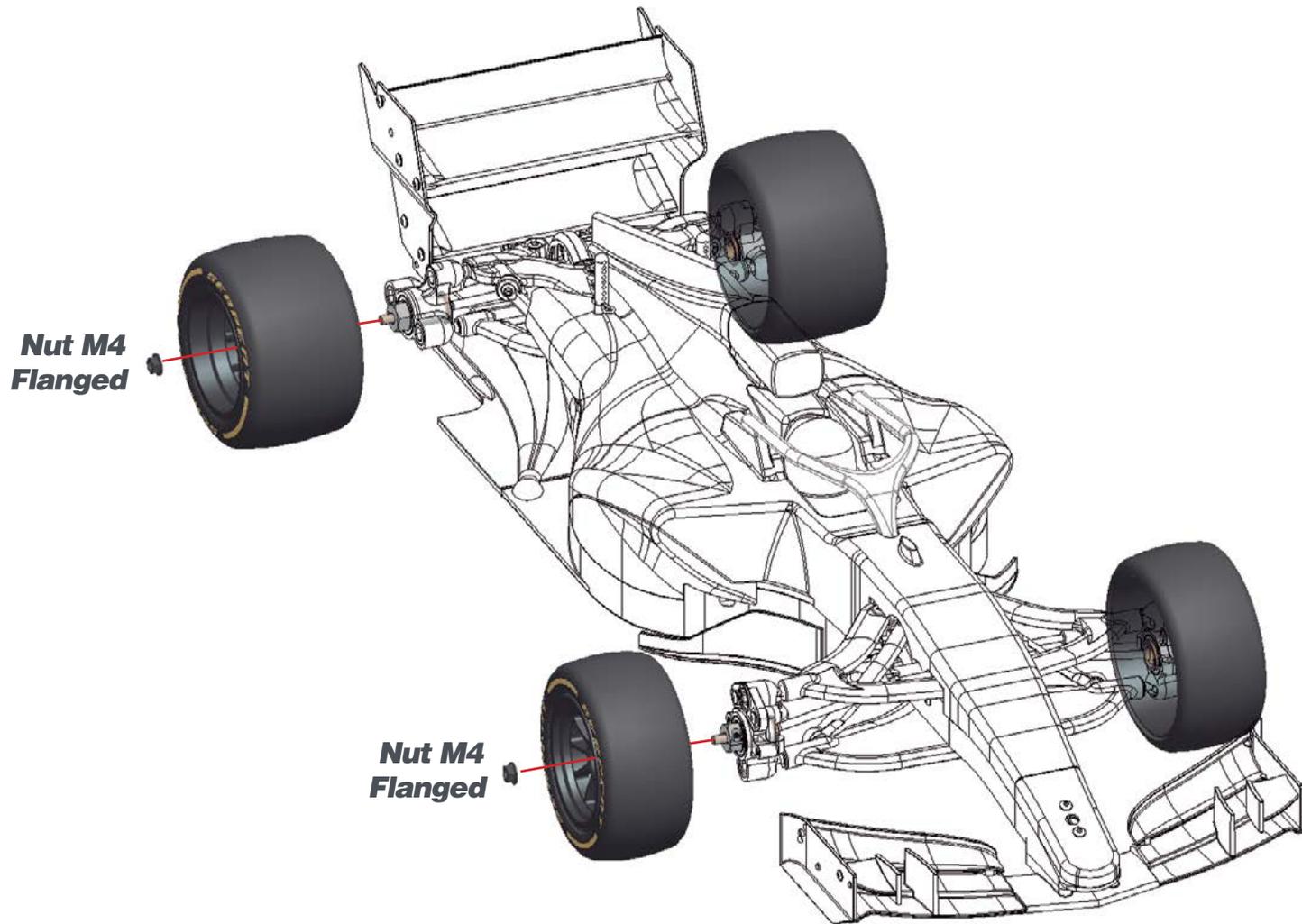
BAG 13



STEP 58



STEP 59

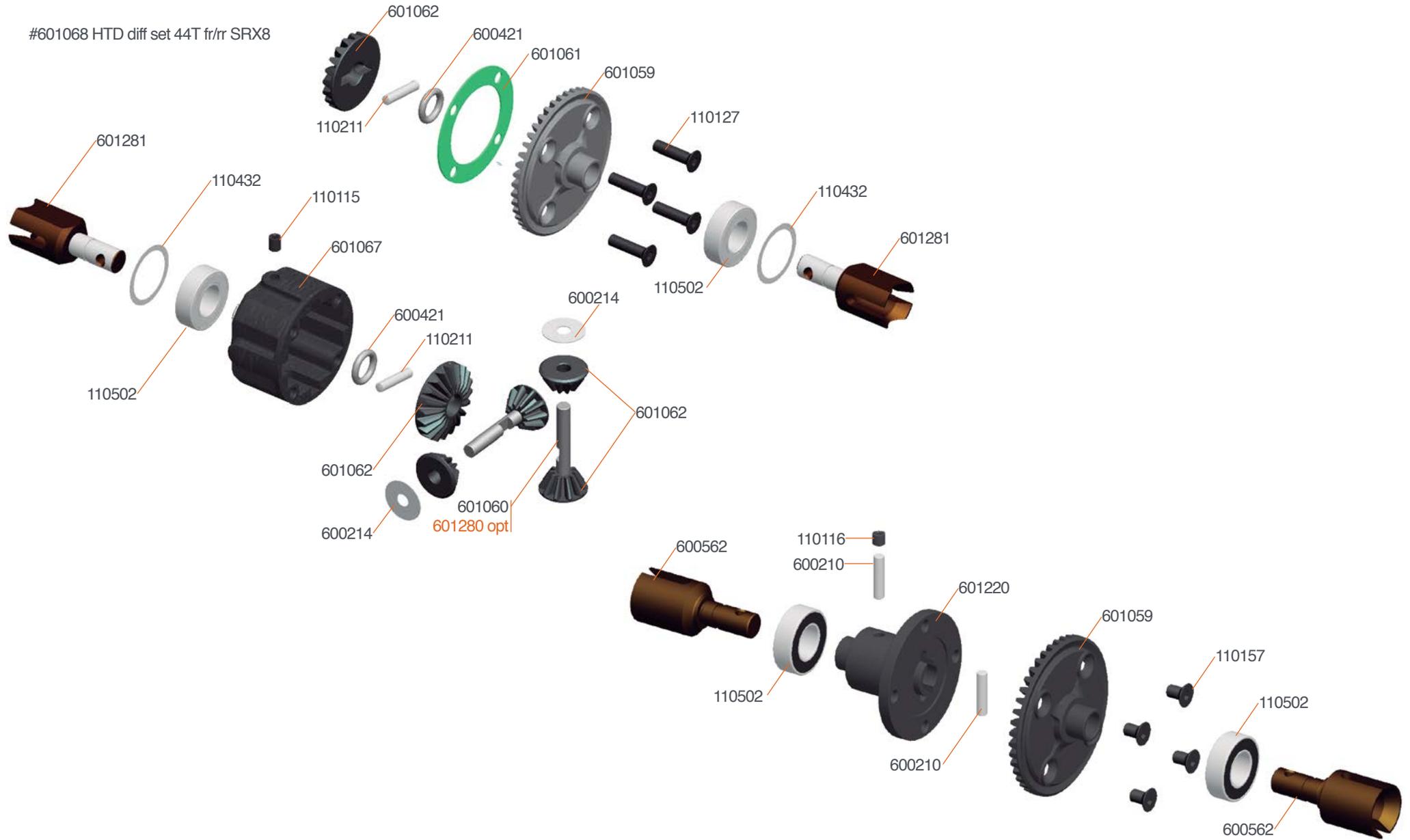


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DIFF & FR SOLID AXLE EXPLODED VIEW

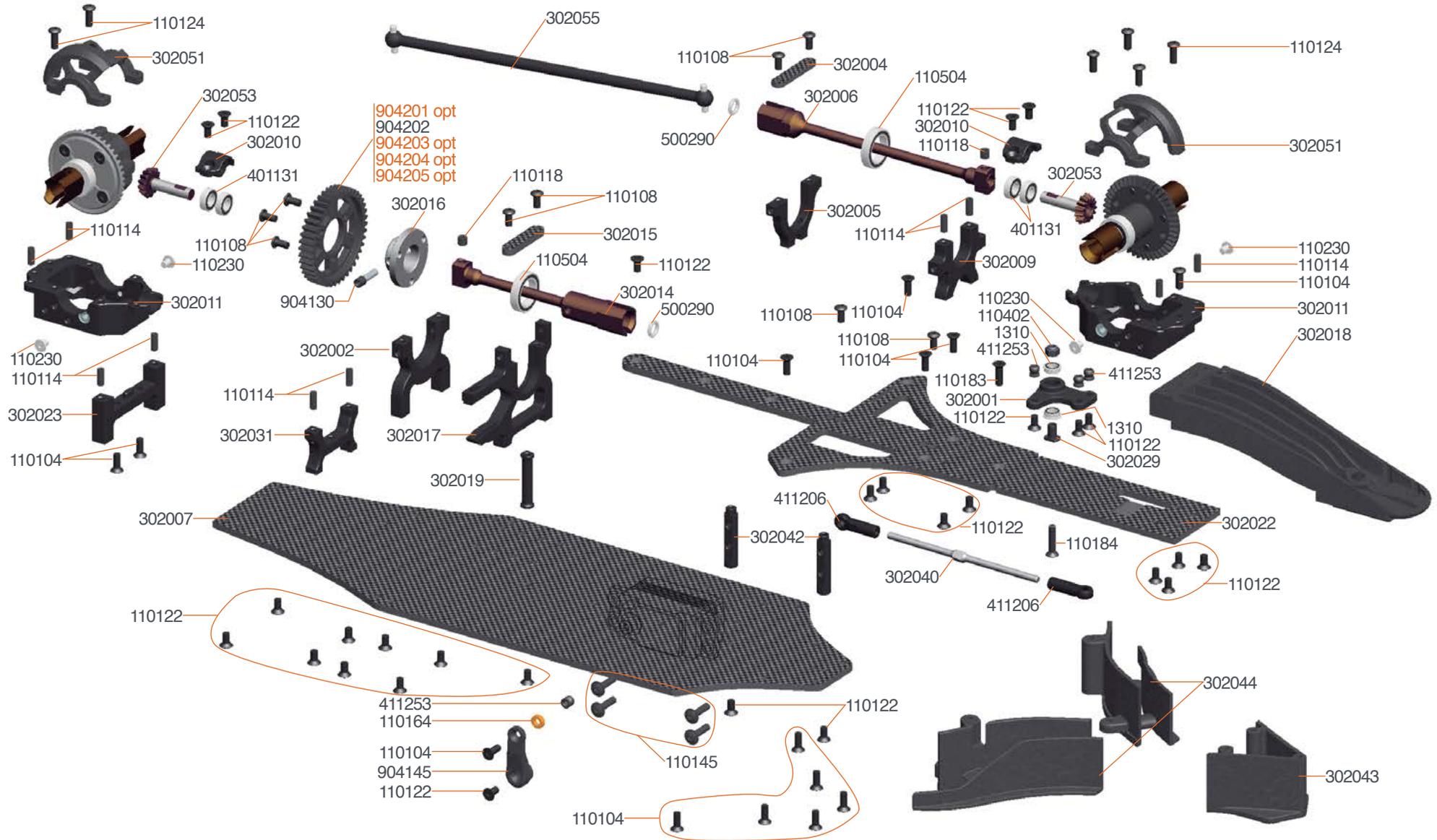
#601068 HTD diff set 44T fr/rr SRX8



601280 HTD diff X-shaft alu SRX8



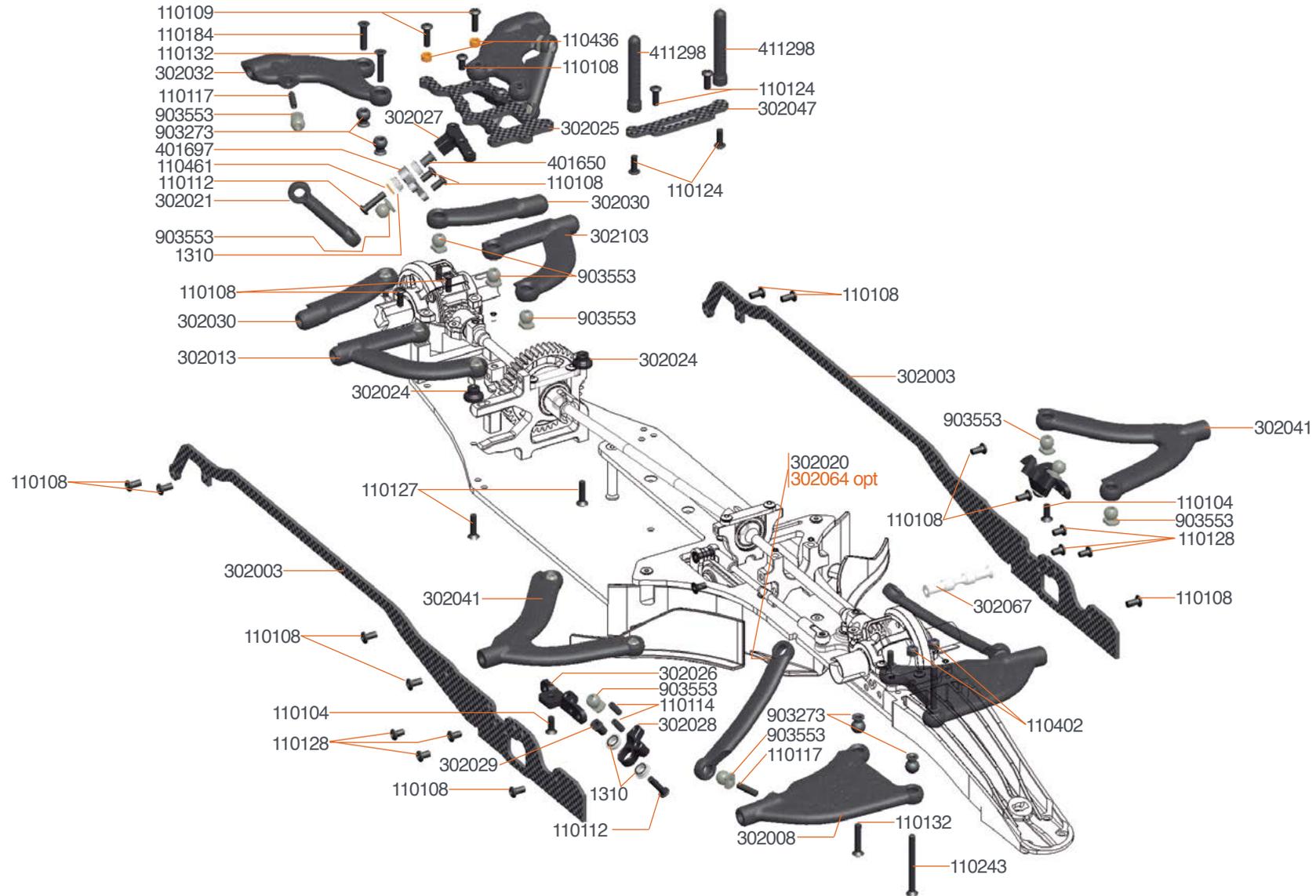
TRANSMISSION EXPLODED VIEW



904201 Spurgear composite 40T M1
904203 Spurgear composite 44T M1
904204 Spurgear composite 46T M1

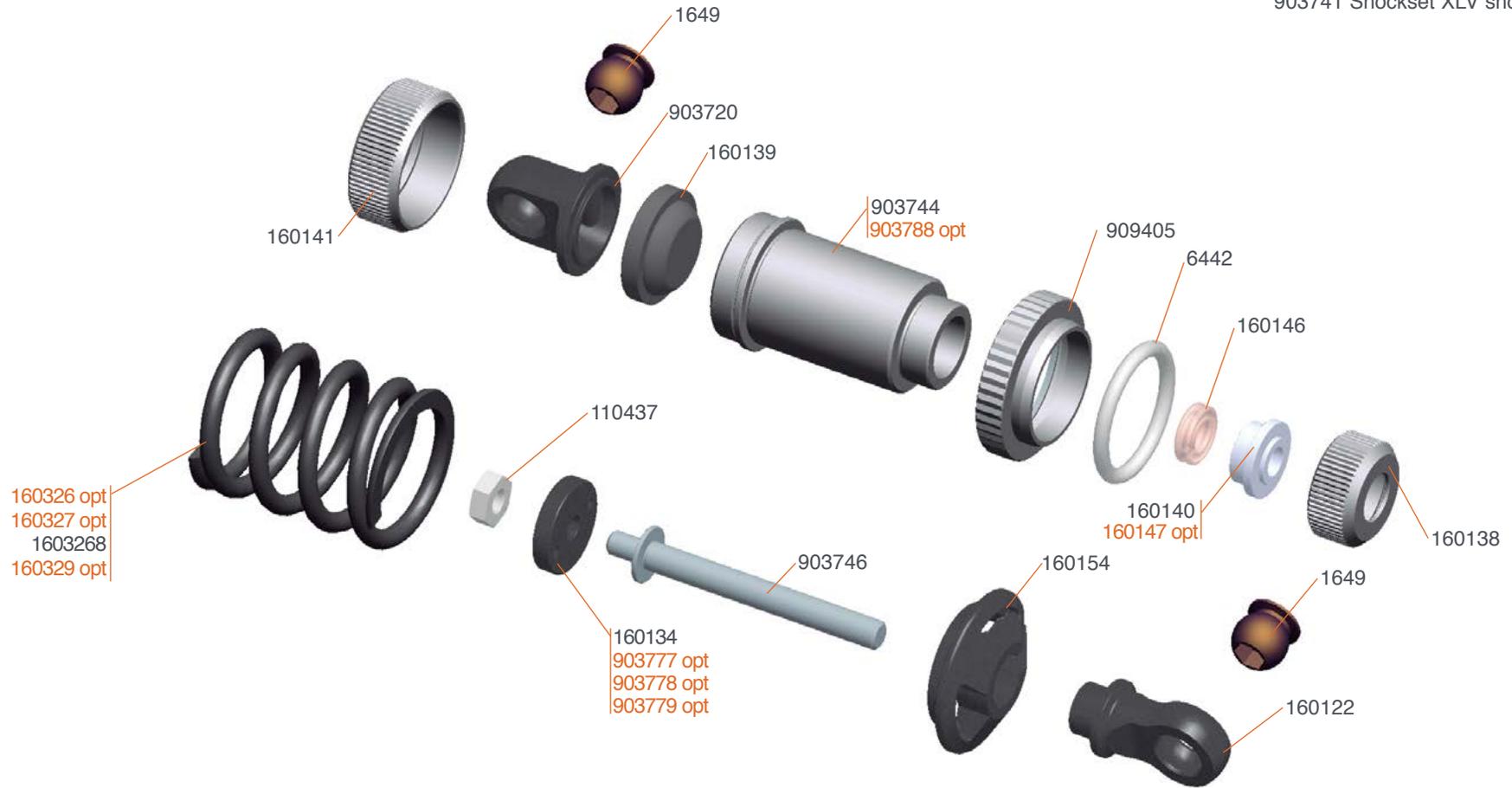
904205 Spurgear composite 45T M1

SUSPENSION 1 EXPLODED VIEW



302064 Pushrod foam fr (2) F190
302052 Downstop bracket alu (2) F190

903741 Shockset XLV short (2)

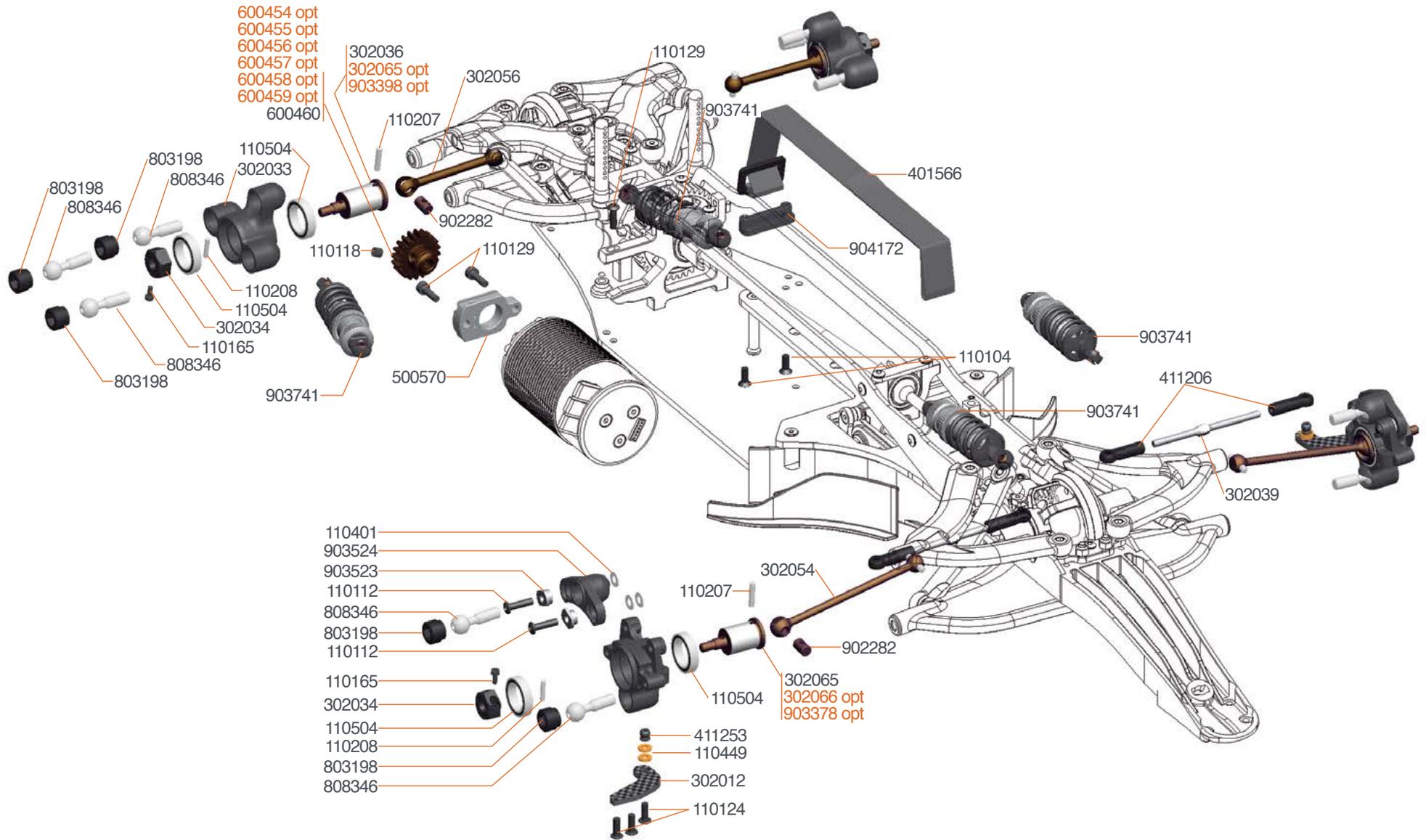


160326 Spring purple L27 (6.8/39) (2)
 160327 Spring green L27 (8/45.5) (2)
 160329 Spring black L27 (10/57) (2)

160147 Shock onroad big bore bushing LF (4)
 903777 Shock piston XLV 1 hole (4)
 903778 Shock piston XLV 2 hole (4)

903779 Shock piston XLV 3 hole (4)
 903788 Shockbody XLV short NiCoated (2)

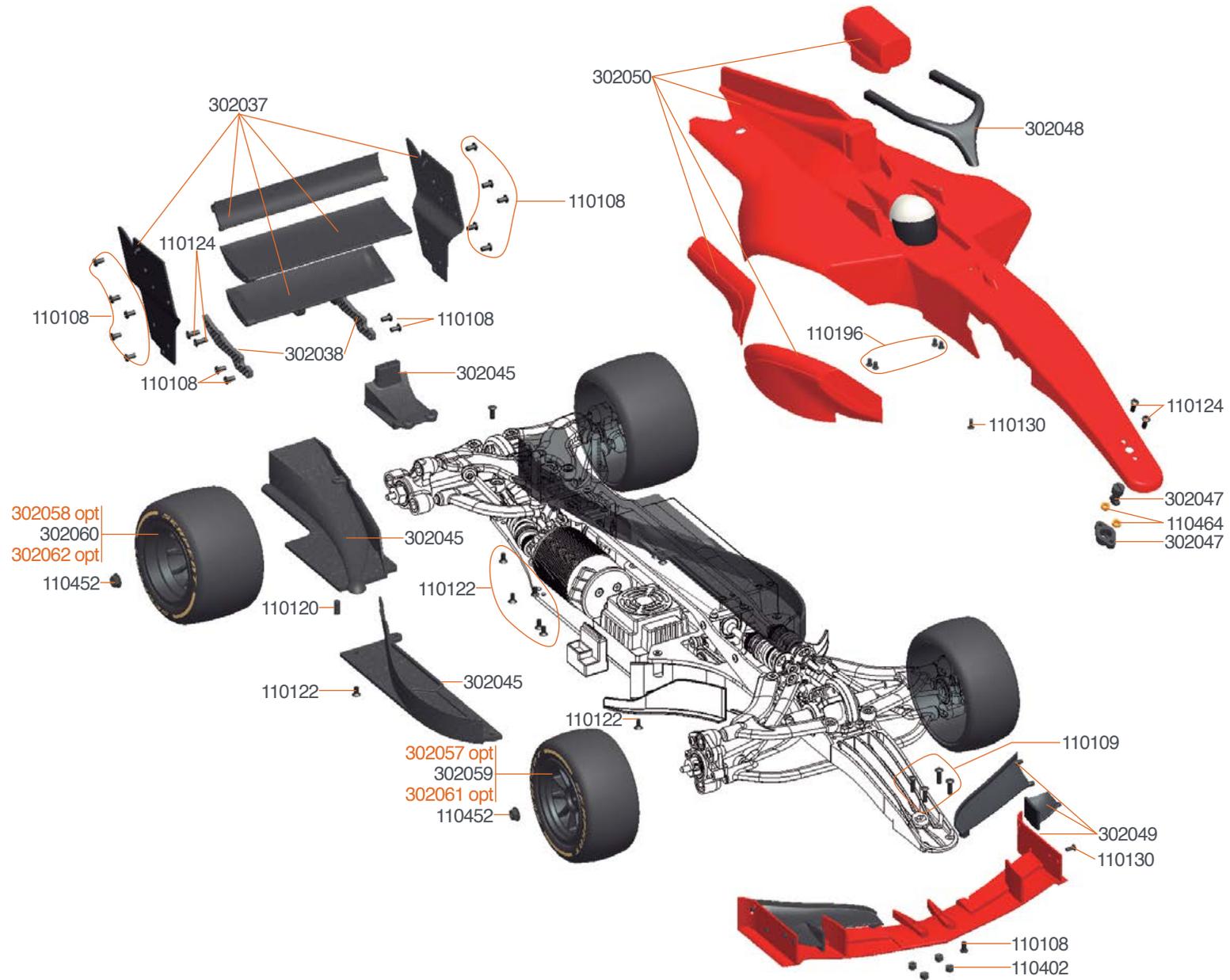
SUSPENSION 2 EXPLODED VIEW



302065 Wheelaxle alu fr (2) F190
 302066 Wheelaxle alu rr (2) F190
 903267 Lever alu/spring/pin OS2 FR (2)
 903269 Lever alu/spring/pin OS2 RR (2)

903378 Wheelaxle front OS2 alu (2)
 903398 Wheelaxle cvd RR alu (2) 600454 Pinion 14T
 600455 Pinion 15T
 600456 Pinion 16T

600457 Pinion 17T
 600458 Pinion 18T
 600459 Pinion 19T



- 302057 Wheel/tyre set fr H (2) F190
- 302058 Wheel/tyre set rr H (2) F190
- 302061 Wheel/tyre set fr S (2) F190
- 302062 Wheel/tyre set rr S (2) F190

TEAM SERPENT NETWORK

Click here for F190 SPARE PARTS



Click here for F190 OPTIONALS PARTS



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F190

1/8 SCALE FORMULA 1 



Manual F190 #56609-1

SERPENT