

INSTRUCTION MANUAL
& REFERENCE GUIDE



INTRODUCTION

Serpent developed the S120 LTR model car for demanding racers in the highly competitive electric 1/12th scale pan car market, which like all our previous cars, has been designed to win straight from the box.

Featuring a number of very effective features such as a fully adjustable front end, machined aluminium rear pod, side-links combined with ball-link tube-system to control chassis roll and grip, top-mounted shock-absorber, quick and easy tweak adjustment and top quality materials throughout, the S120-LTR should see you in the winners circle in no time. In fact everything associated with this car is of the highest quality, from the packaging and supplied manuals, right through to the product and race support.

For latest information about S120-LTR check on:
www.serpent.com/410006

Enjoy racing !

Team Serpent

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.

INSTRUCTIONS, HOW TO USE

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.

SETUP

In certain assembly steps you need to make basic adjustments, which will give you a good initial setup for your Serpent S120-LTR. Fine-tuning the initial setup is an essential part of building a high-performance racecar like your S120-LTR.

EXPLODED VIEWS AND PARTS LIST

The exploded views and parts lists for the Serpent S120-LTR 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. The parts lists indicate the part number and name of each part for easy reference when ordering.

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!

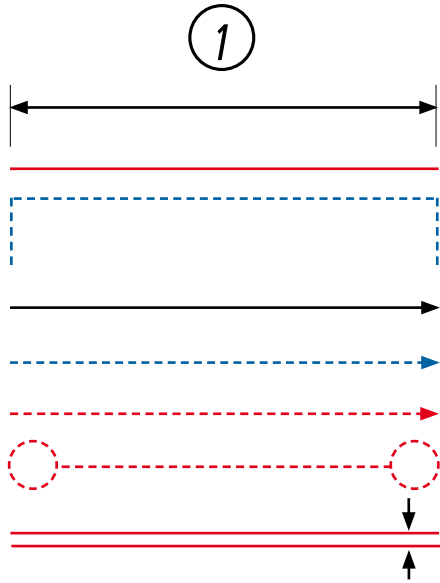
- This is a highly technical hobby product, intended to be used in a safe racing environment. This car is capable of speeds in excess of 80 km/h or 50mph. Please follow these guidelines when building and operating this model.
- Parental guidance is required when the builder/user of this car is under 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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USING THE MANUAL

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



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

Length after assembly

Assembly path of one item into another

Group of items (within lines) should be assembled first

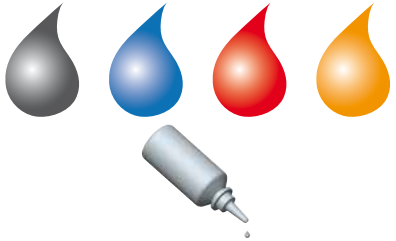
Direction the item should be moved

Glue one item to another

Press/Insert one item into another

Connect one item to another

Gap between two items



Apply transmission grease (Grey), threadlock* (Blue), CA glue* (Red) or silicone grease (Orange). (*Items not included.)

Apply silicone oil,

ASSEMBLY INSTRUCTIONS

 CA Glue

STEP
1

To prevent the risk of the carbon fibre splitting in the event of a crash you should apply CA Glue around the chassis' edge and the power pod plate external and internal edge as shown in red below.

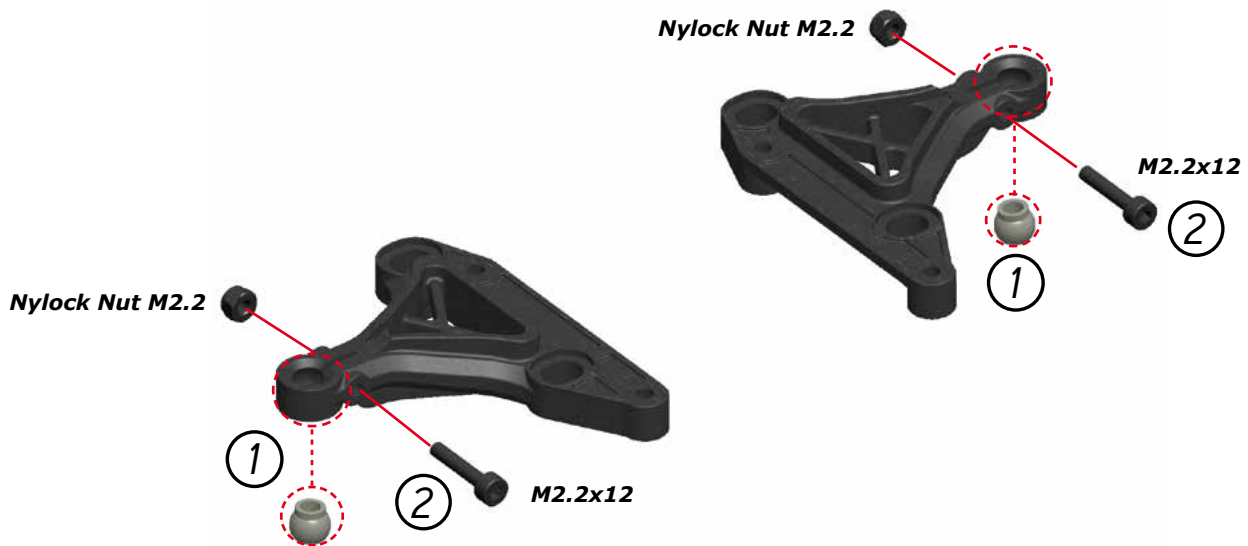
KIT



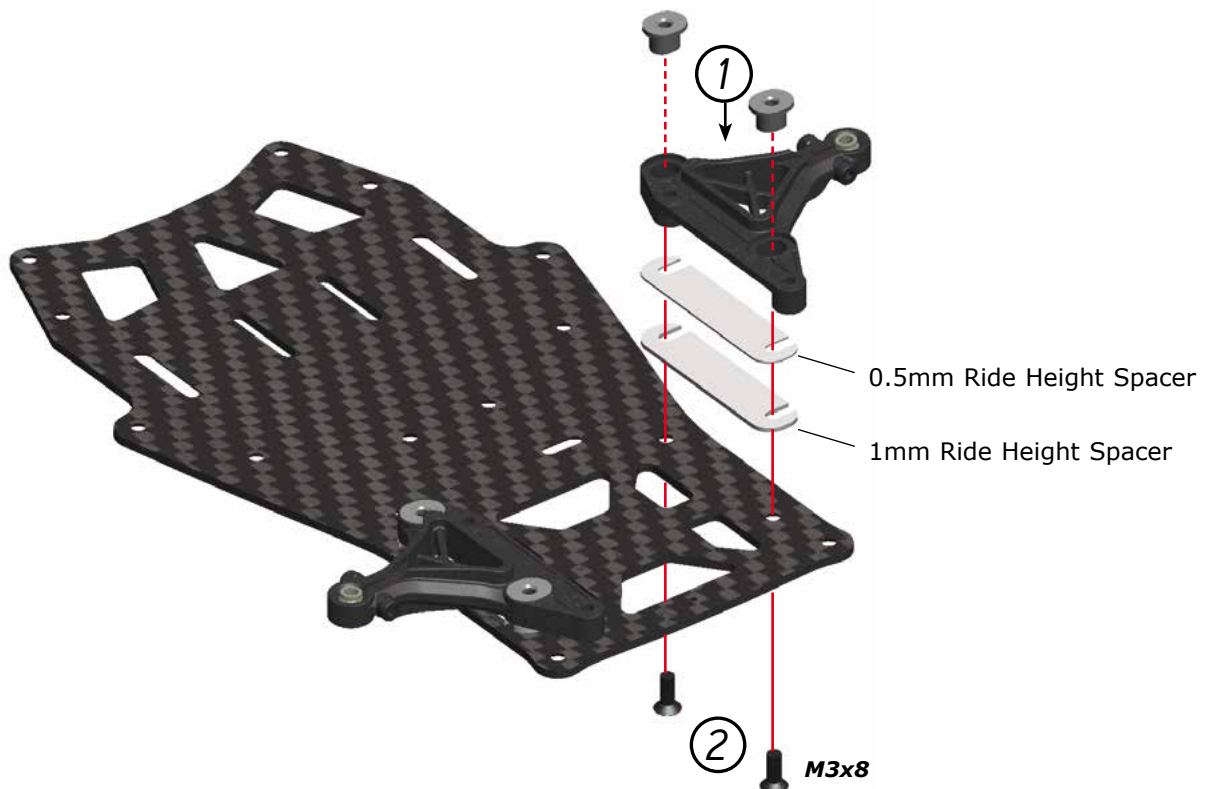
FRONT ASSEMBLY

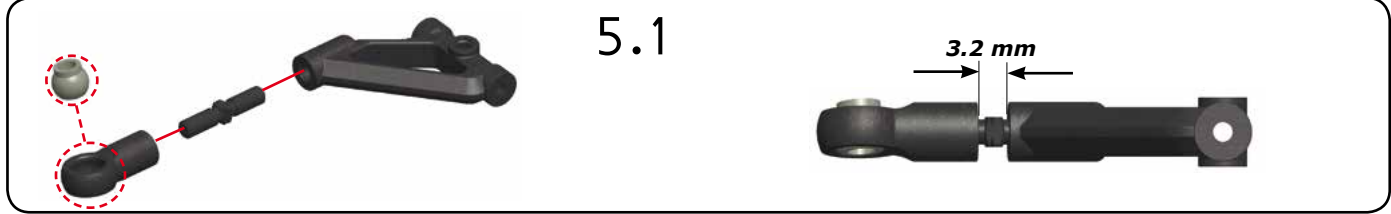
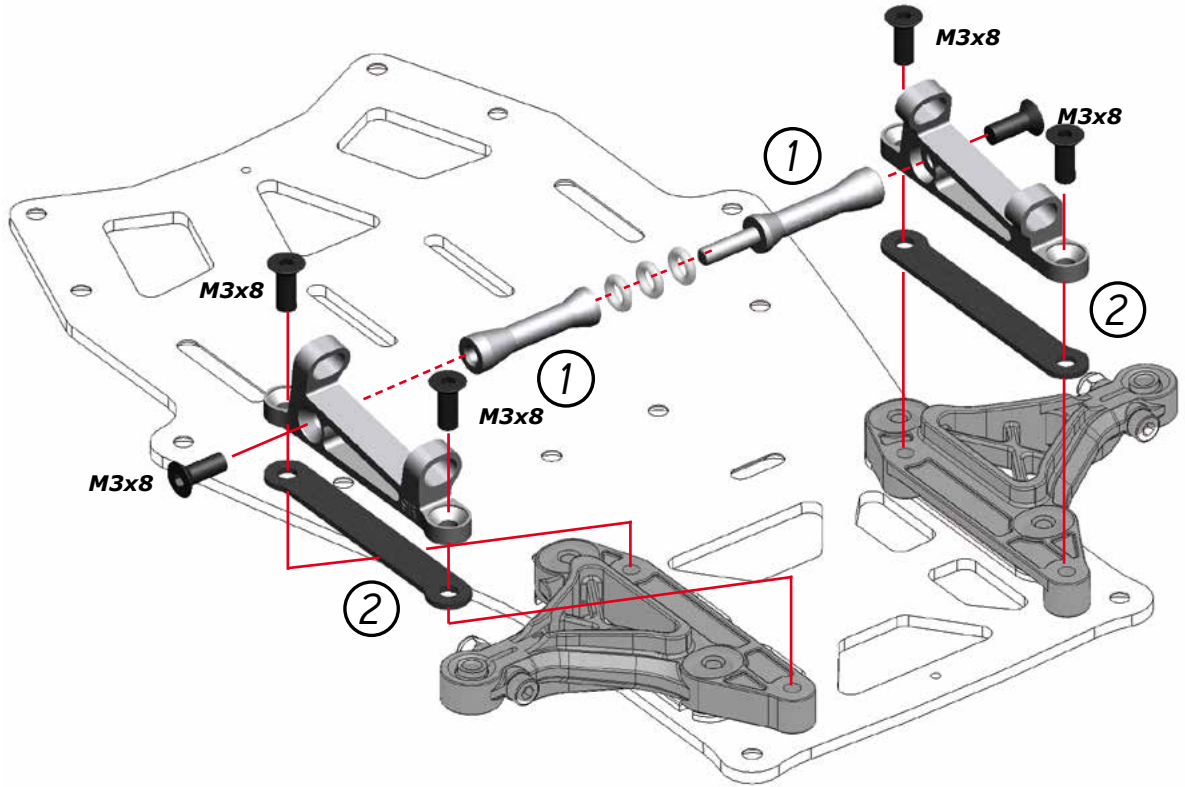
STEP
2

Bag
1

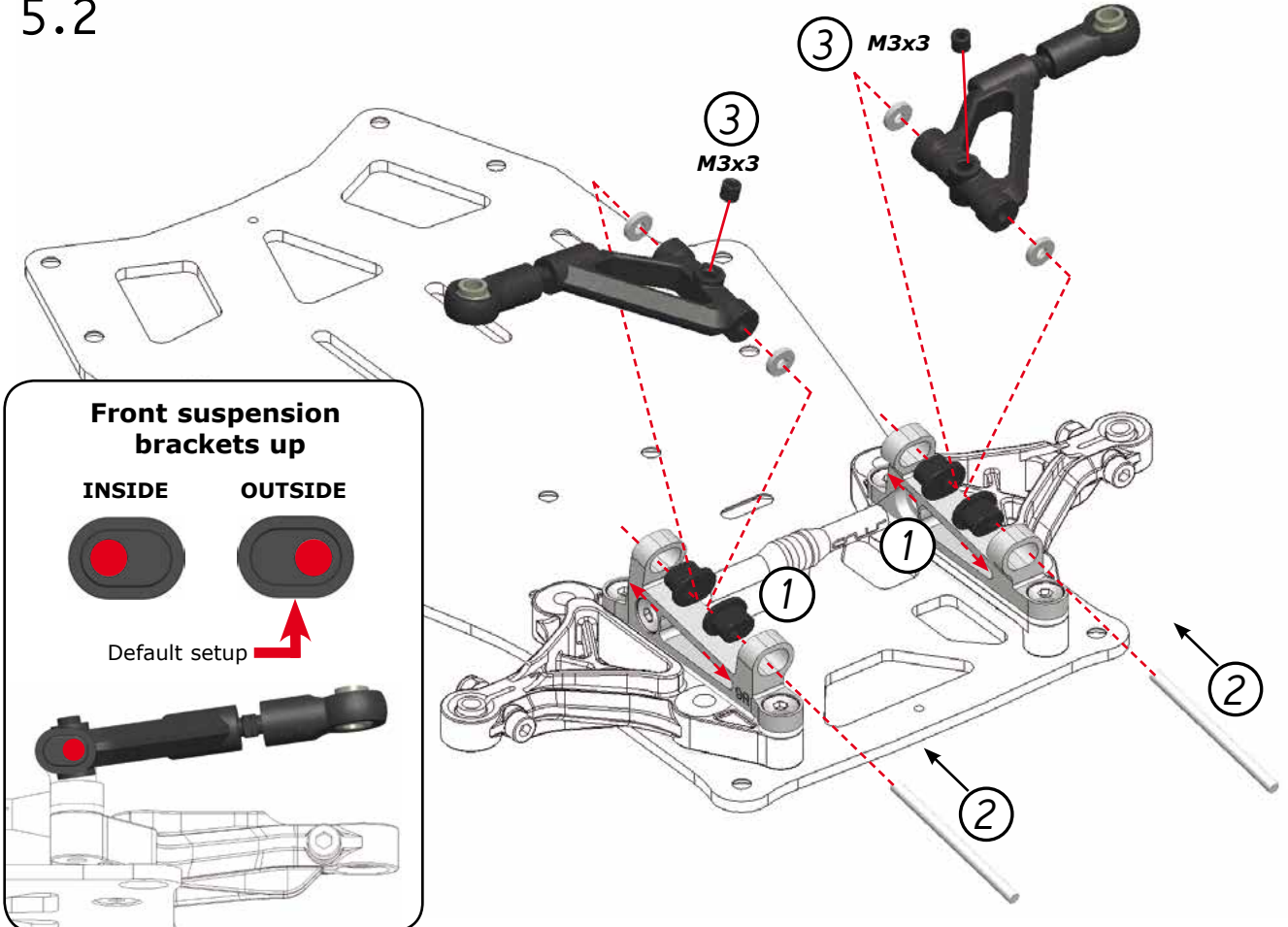


STEP
3





5.2



6.1

3x5x2
3x5x4
Nylock Nut M3
M3x12

Note orientation of the king pin insert.

Default ackerman position in the steering block lever.

Steering block King pin inserts

King pin angle adjustable from 0 to 4 degrees.

0°	1°	2°	3°	4°

Default setup

6.2

R2.3
1
2
3x5x0.3
3x5x1
3x5x2
3
R2.3
4

7.1

4
M2.5x5
3
M3x5
M3x5
1
M3x3
2
M3x8
2

Note the correct ball type to use here

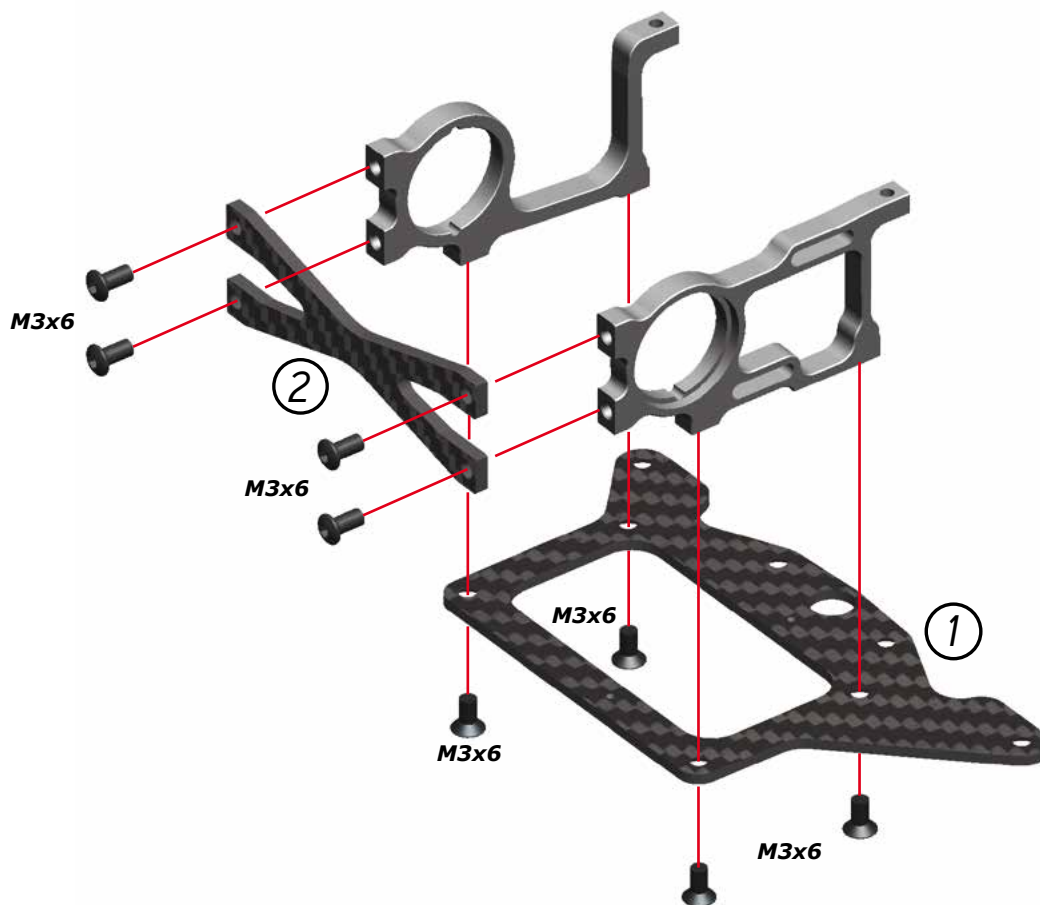
7.2

M3x6
M3x6
M3x6
M3x6

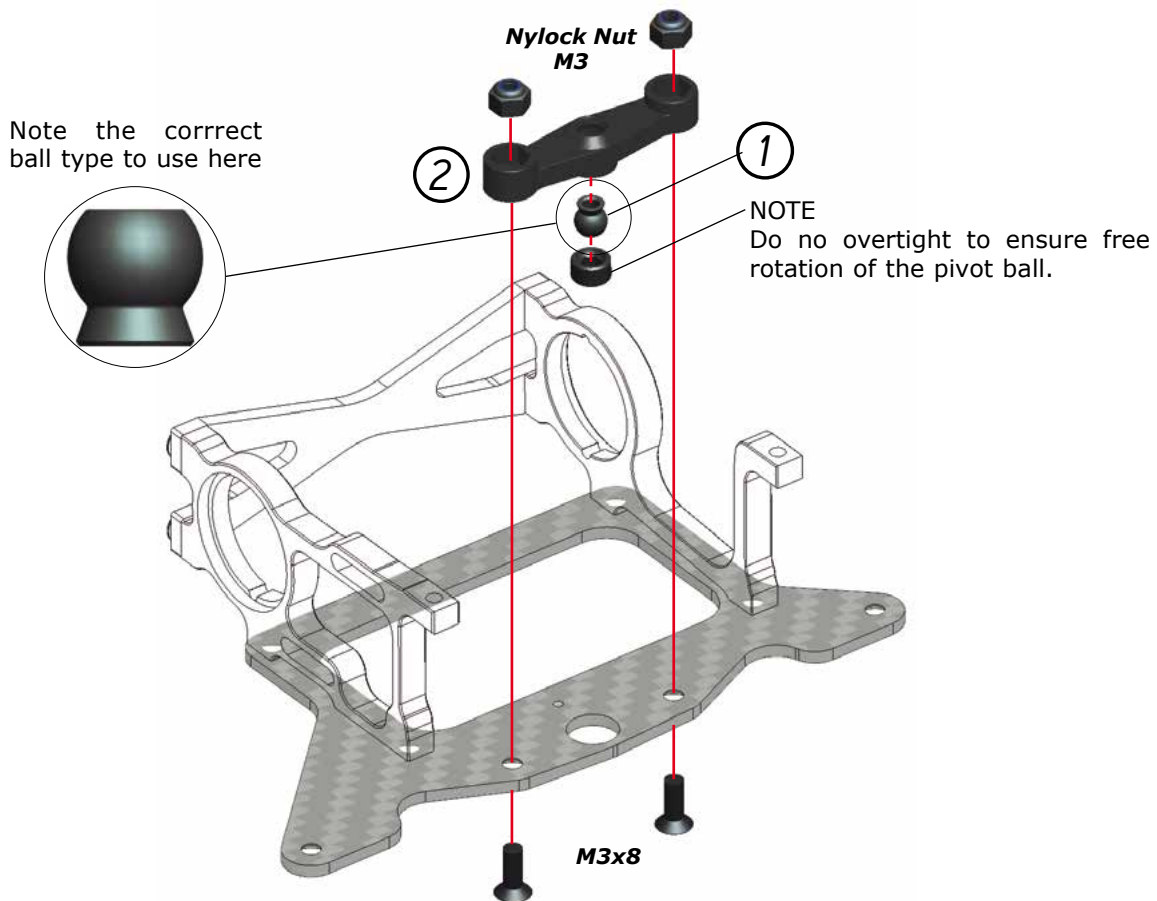
4 mm

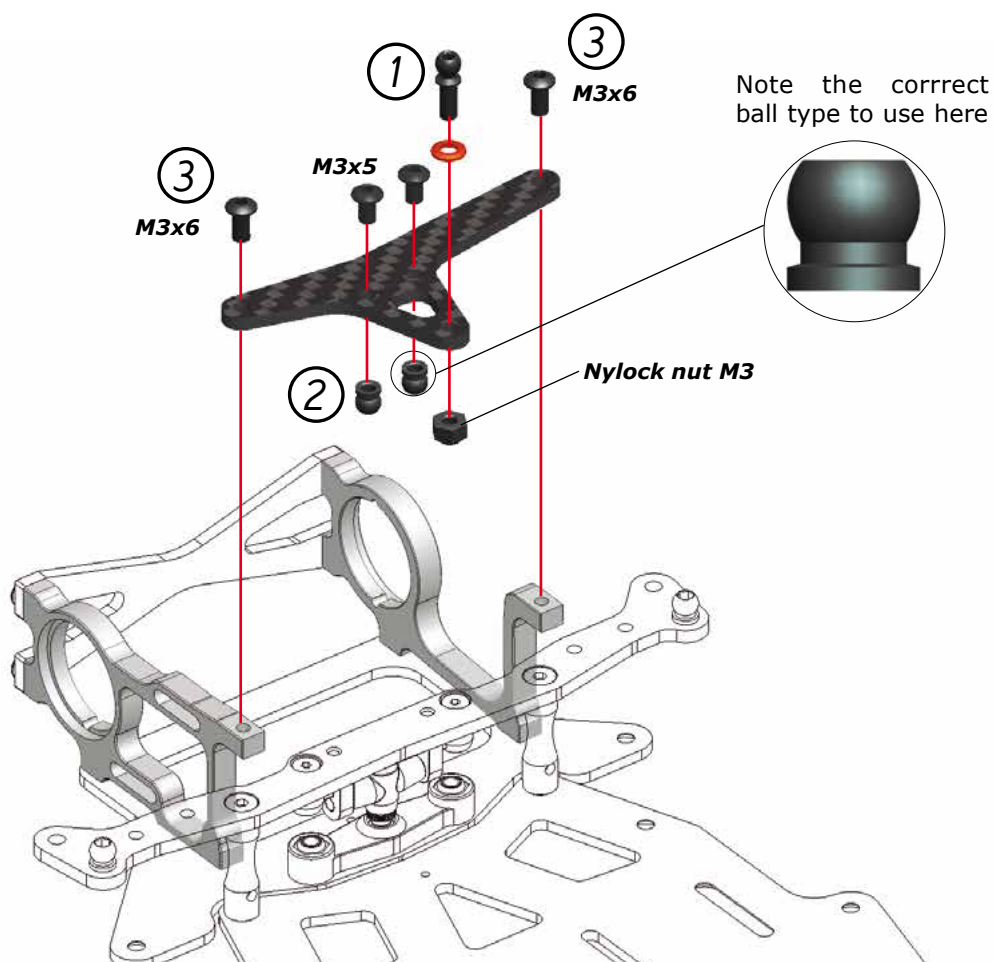
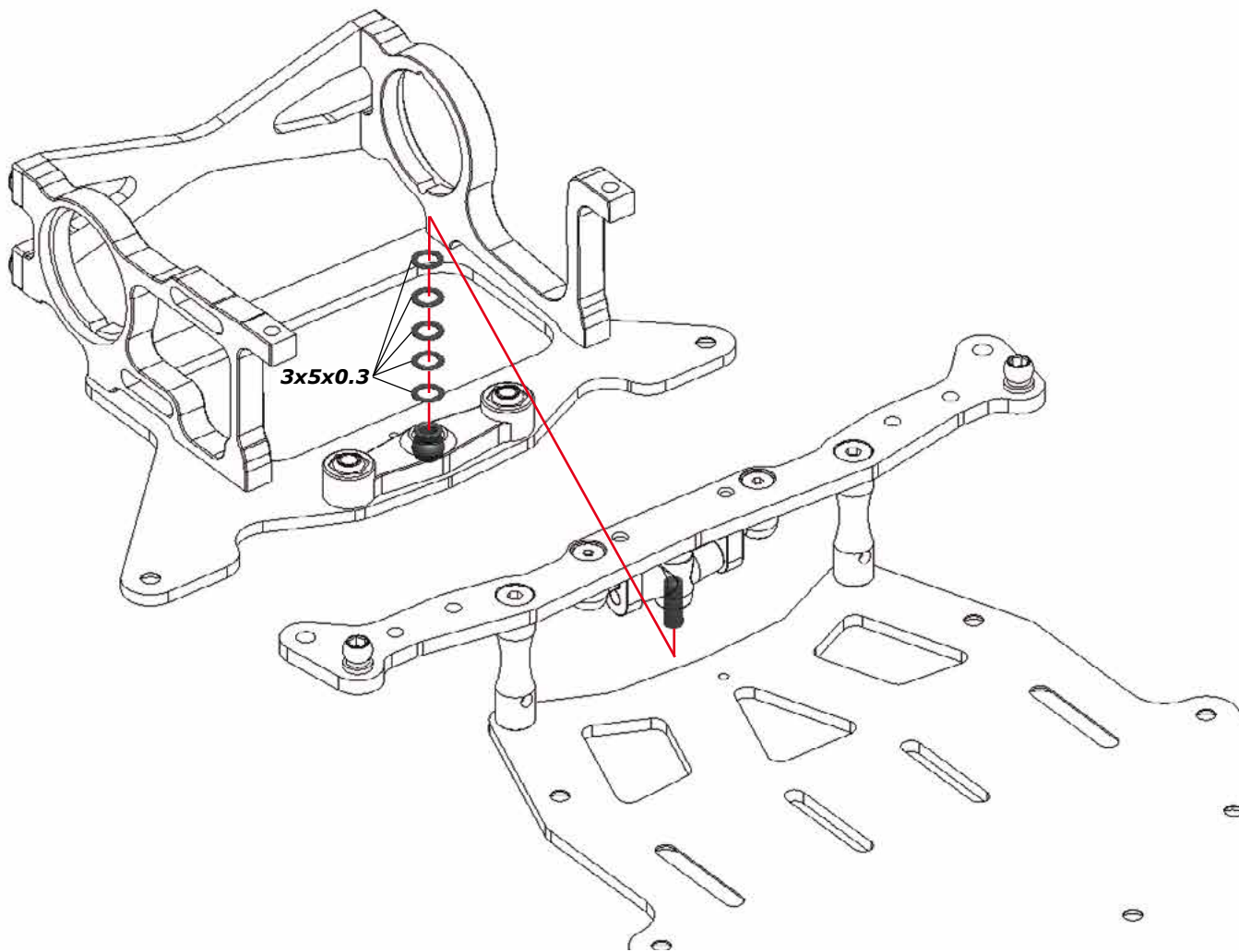
REAR ASSEMBLY

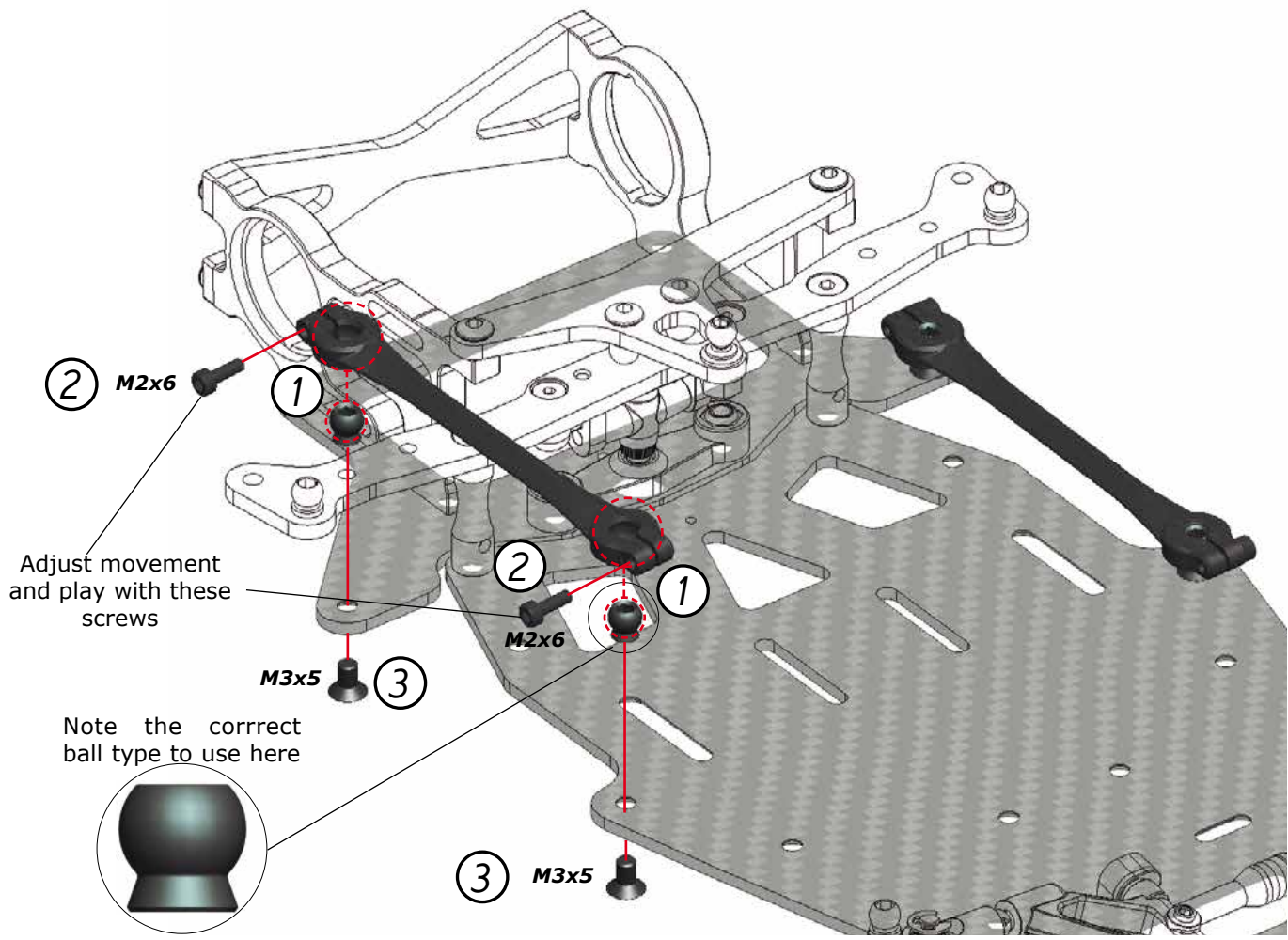
STEP
8



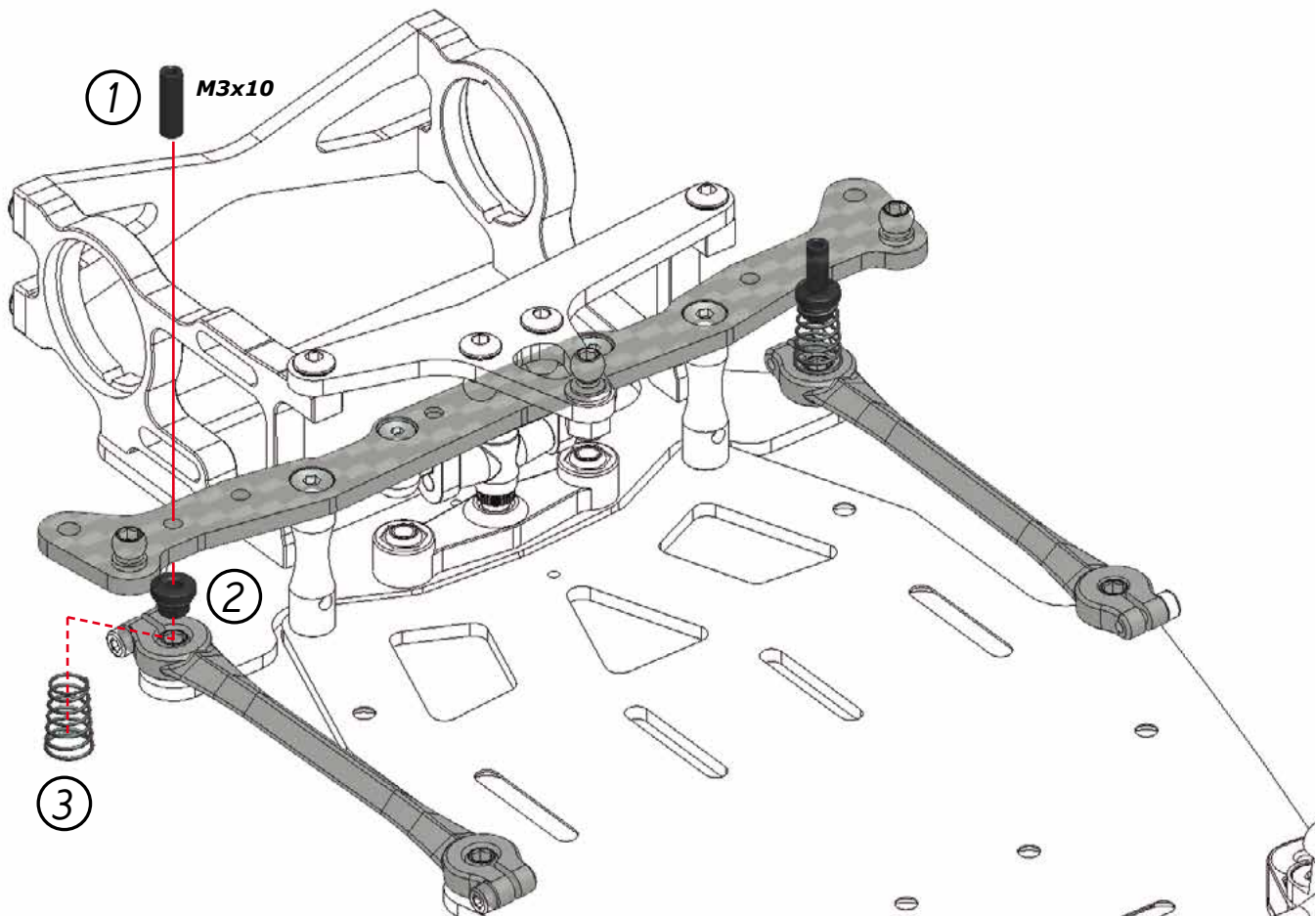
STEP
9





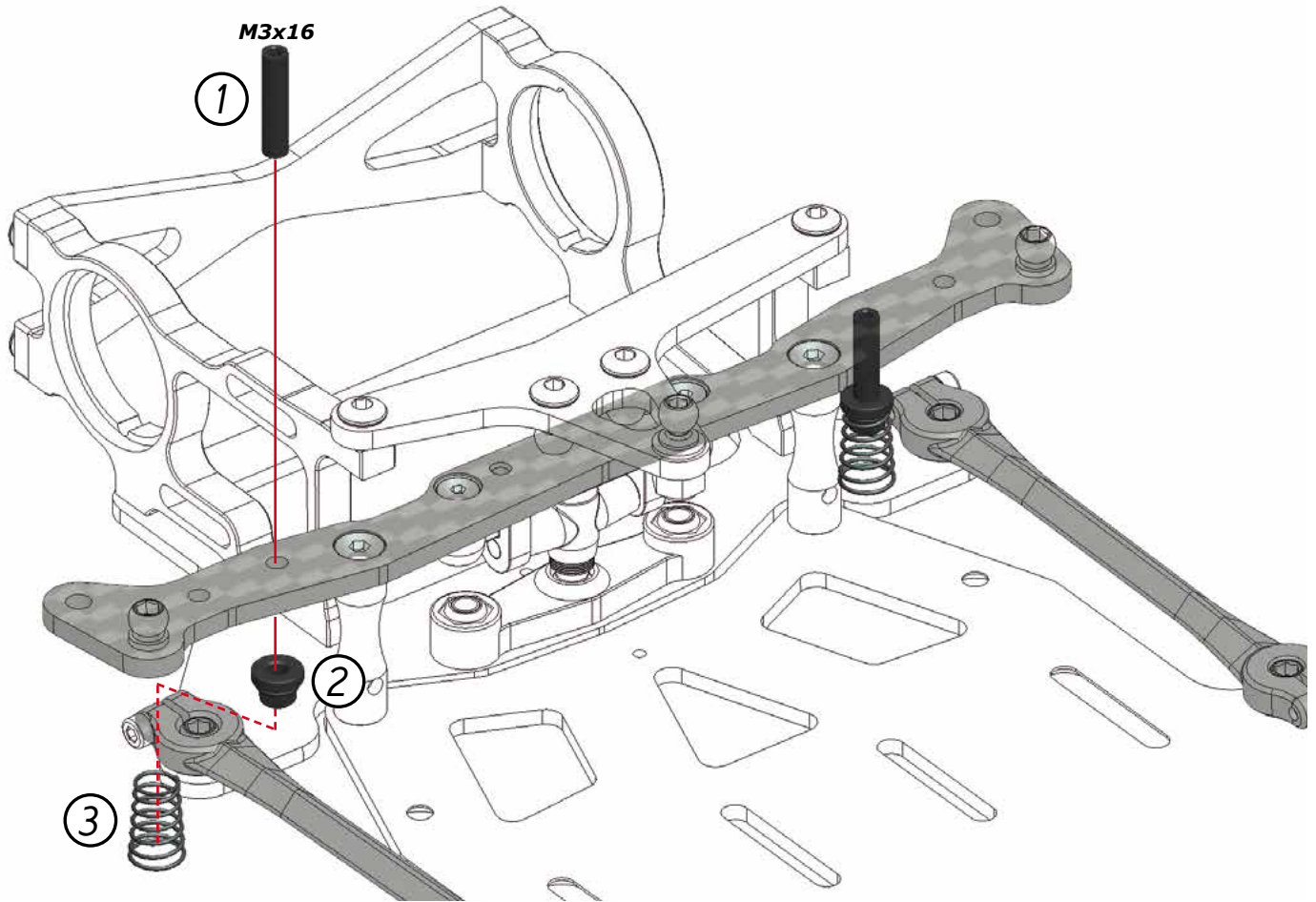


A) OUTSIDE SIDE SPRING CONFIGURATION (DEFAULT)



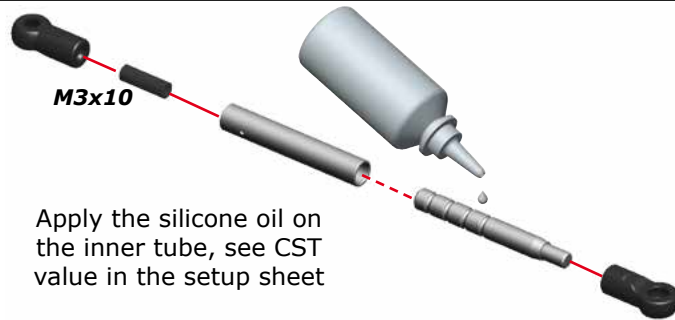
B) INSIDE SIDE SPRING CONFIGURATION

STEP
13B

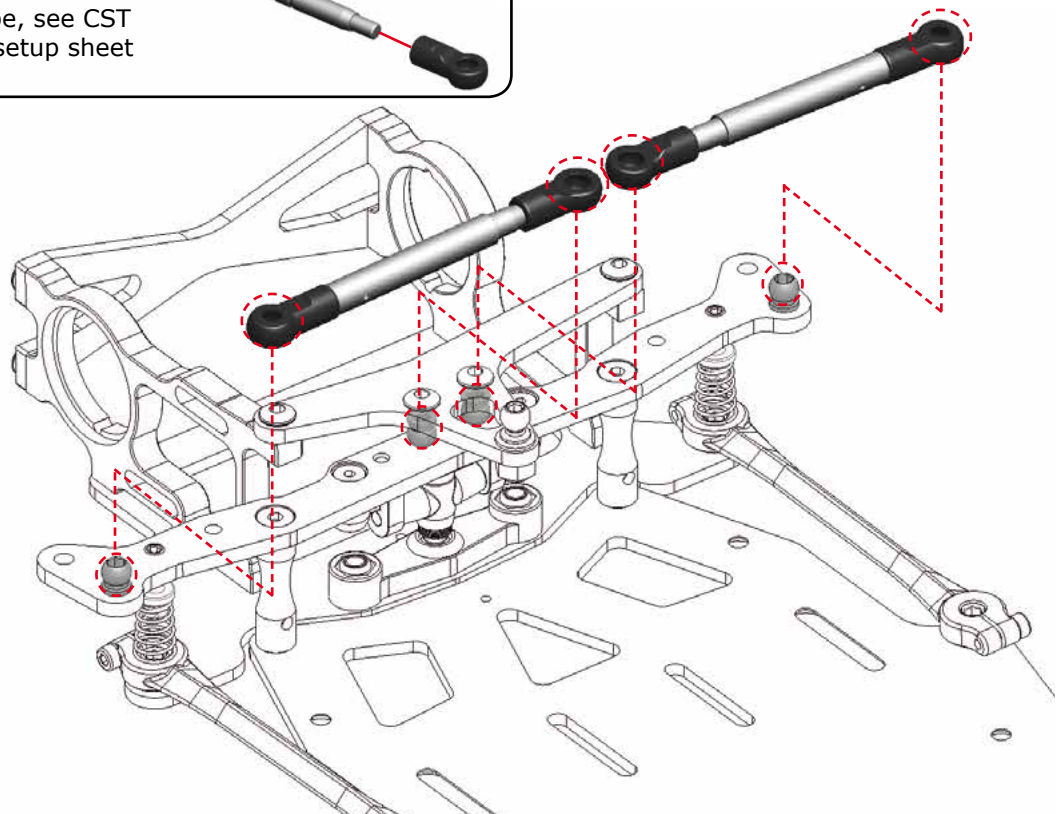


STEP
14

14.1



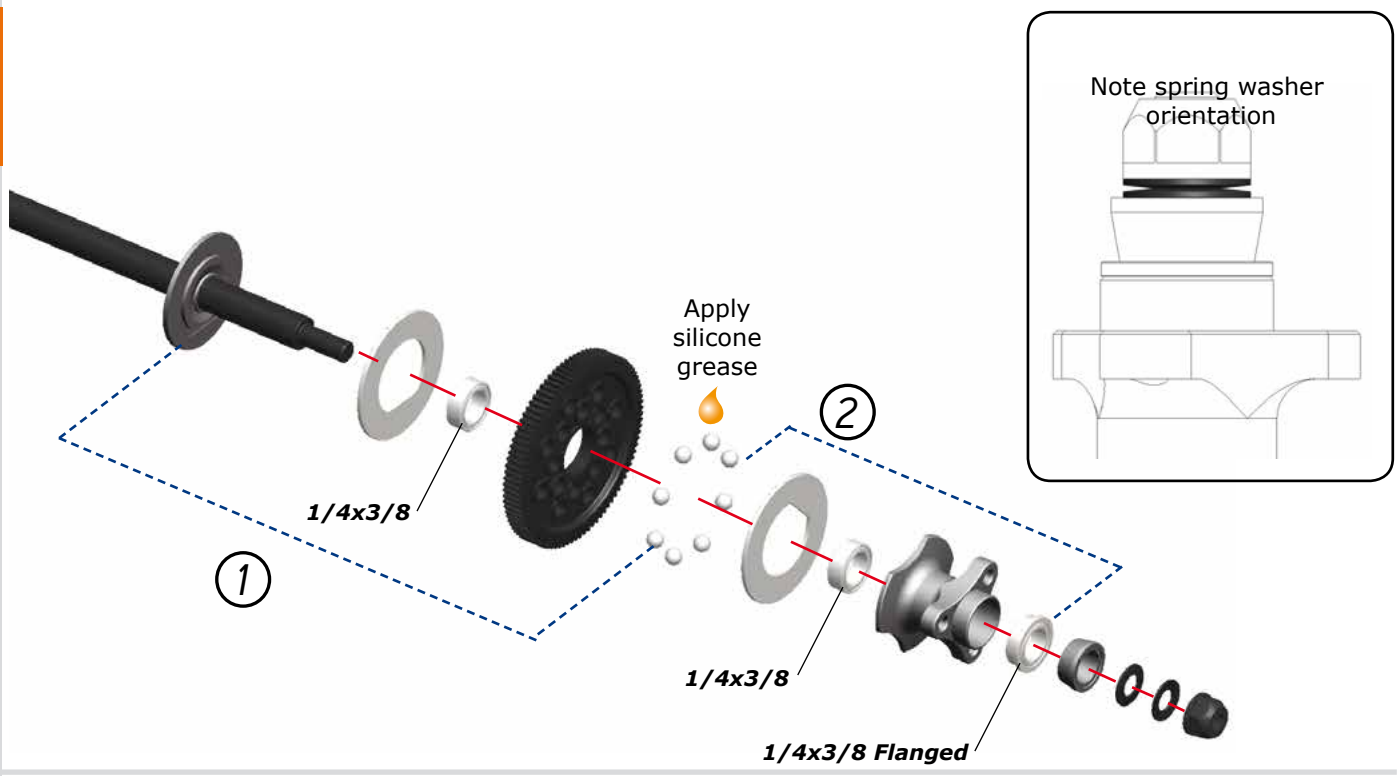
14.2



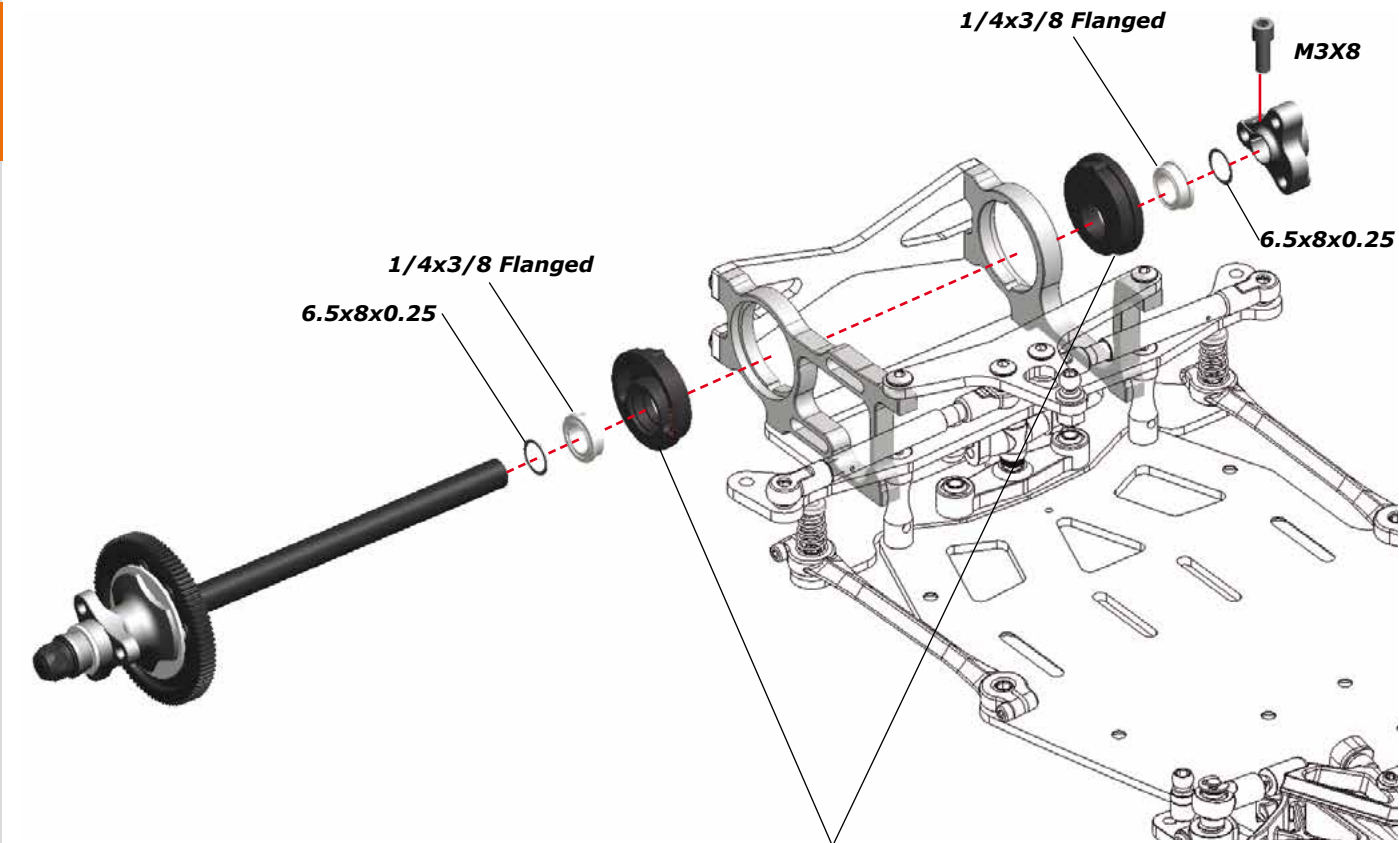
BALL DIFF ASSEMBLY

STEP
15

Bag
5

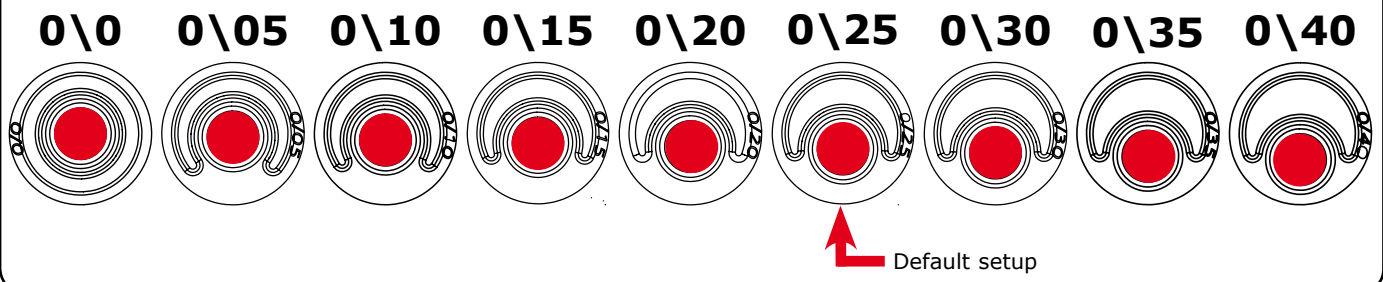


STEP
16

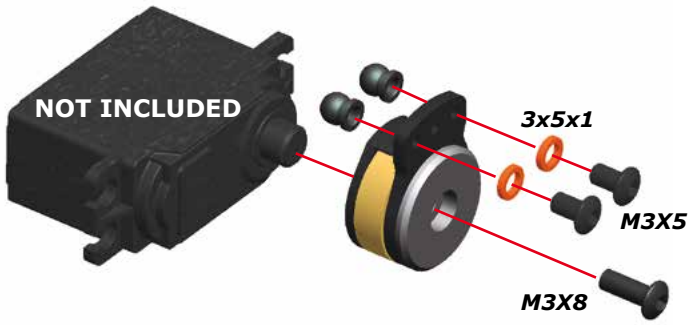


Rear ride height inserts

The rear ride height is adjustable in steps of 0.5mm increments using different rear axle bearing adapters. The ride height decreases if the axle is placed higher.

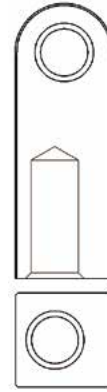


17.1 Check how many teeth your servo spline has (23, 24 or 25) and use the right inserts.

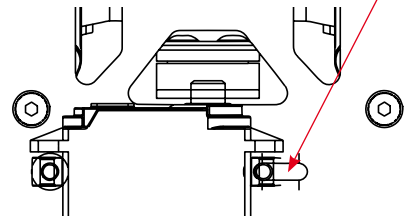


NOTE:

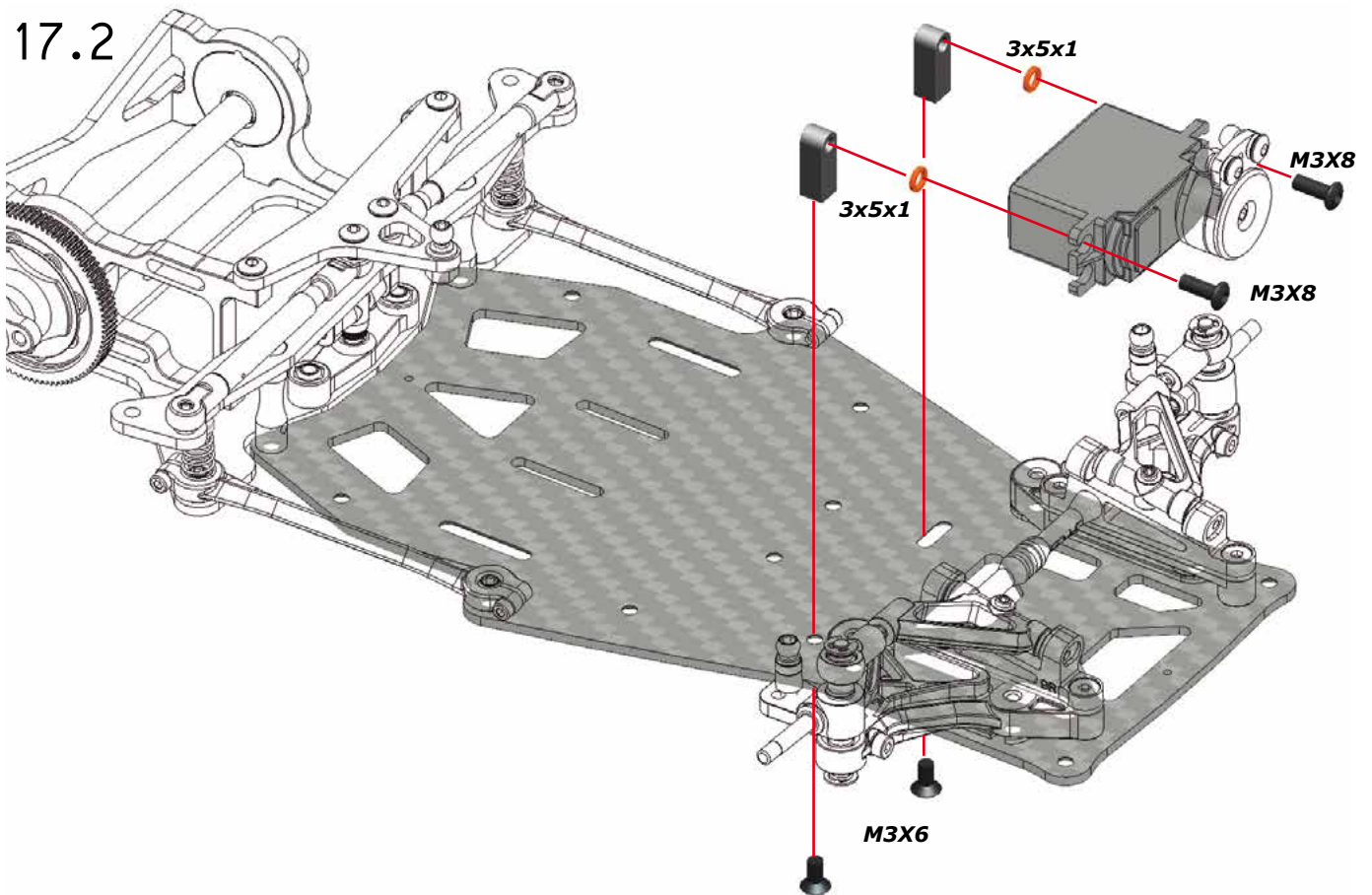
1) Servo mounts are excentric for ensuring that steering servo could be assembled perfectly centered.

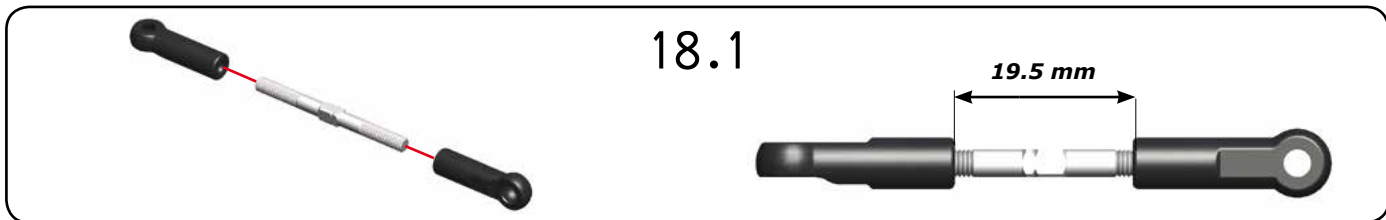


2) Use chassis slot to center the steering servo

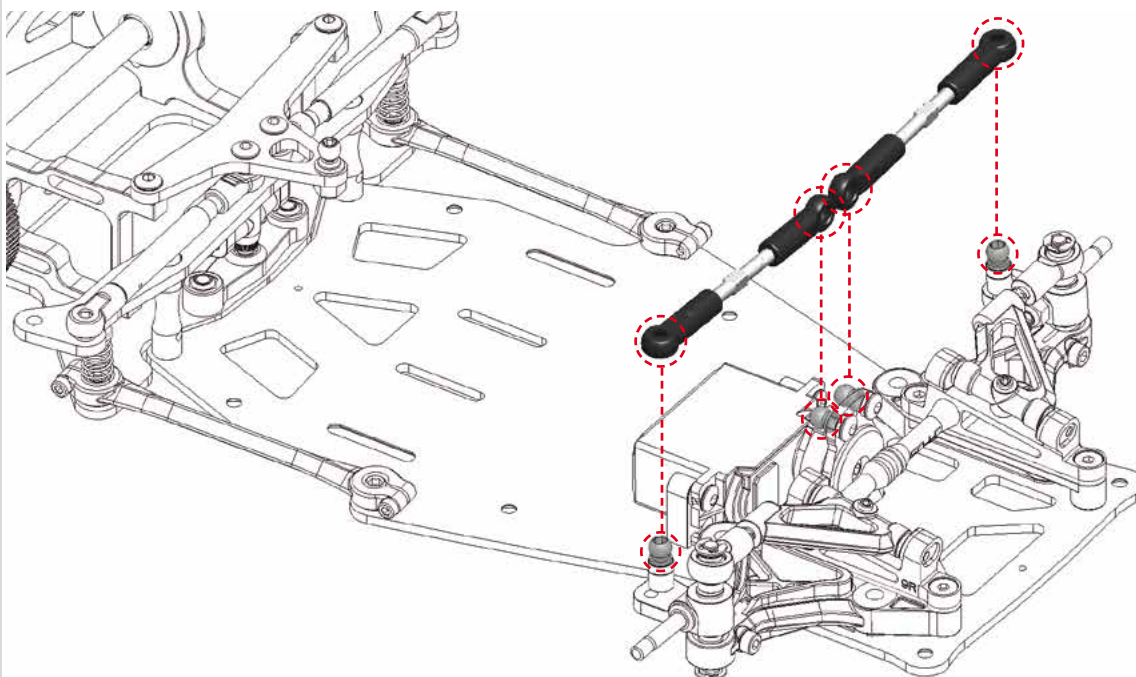


17.2



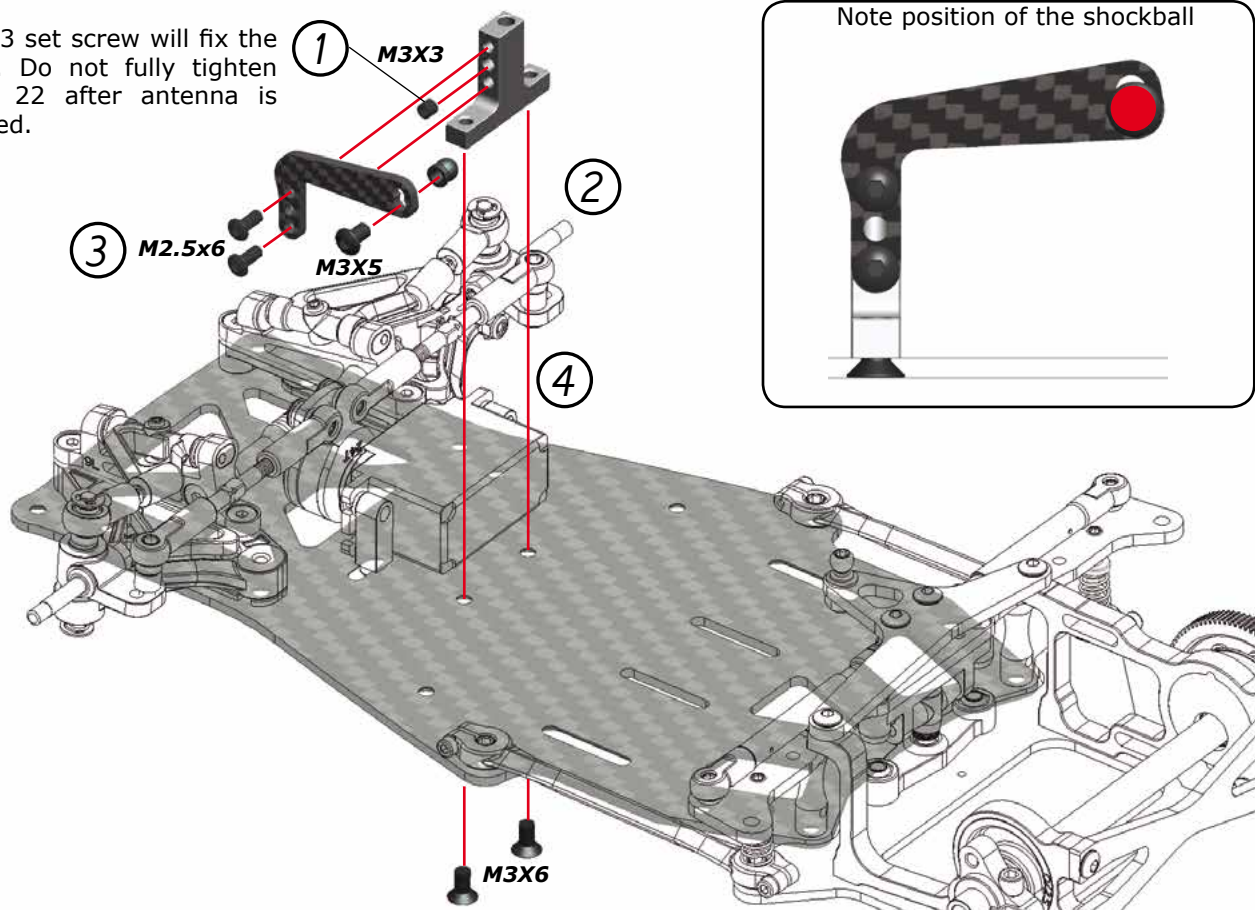


18.2



NOTE

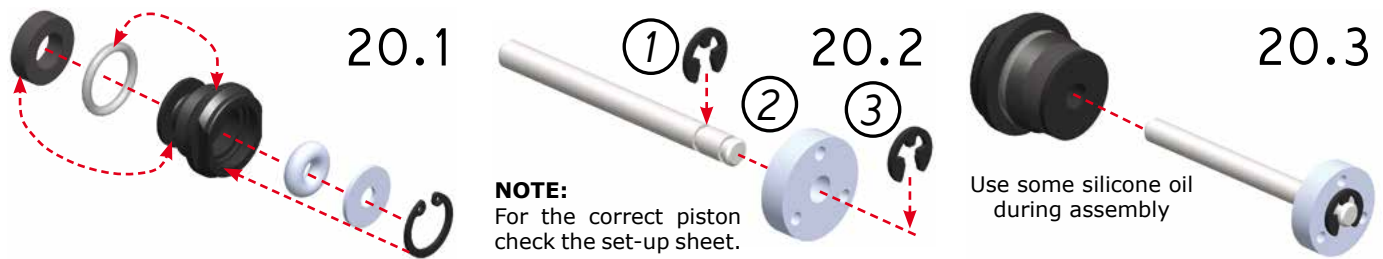
The M3x3 set screw will fix the antenna. Do not fully tighten till step 22 after antenna is assembled.



SHOCK ASSEMBLY

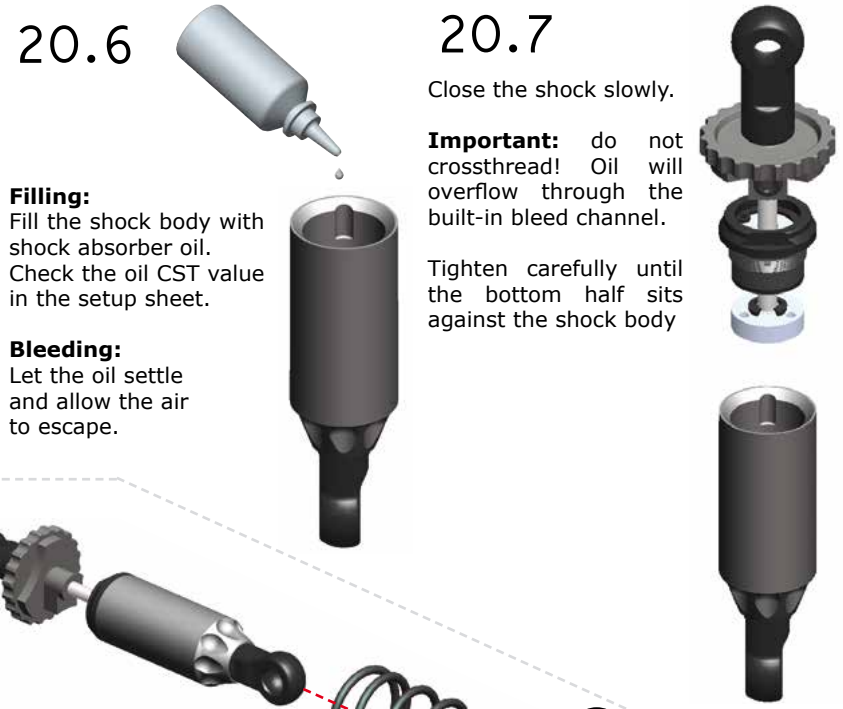
STEP
20

Bag
7



NOTE:
For the correct piston check the set-up sheet.

Use some silicone oil during assembly



Filling:
Fill the shock body with shock absorber oil. Check the oil CST value in the setup sheet.

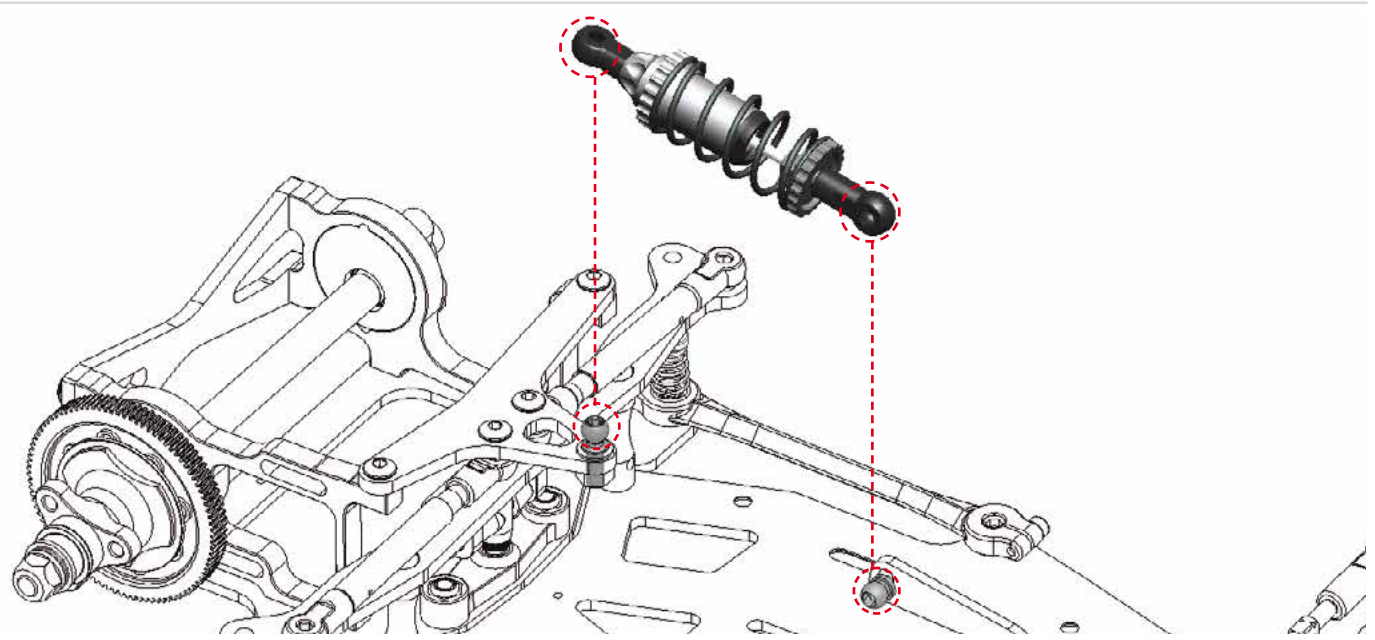
Bleeding:
Let the oil settle and allow the air to escape.

Close the shock slowly.

Important: do not crossthread! Oil will overflow through the built-in bleed channel.

Tighten carefully until the bottom half sits against the shock body

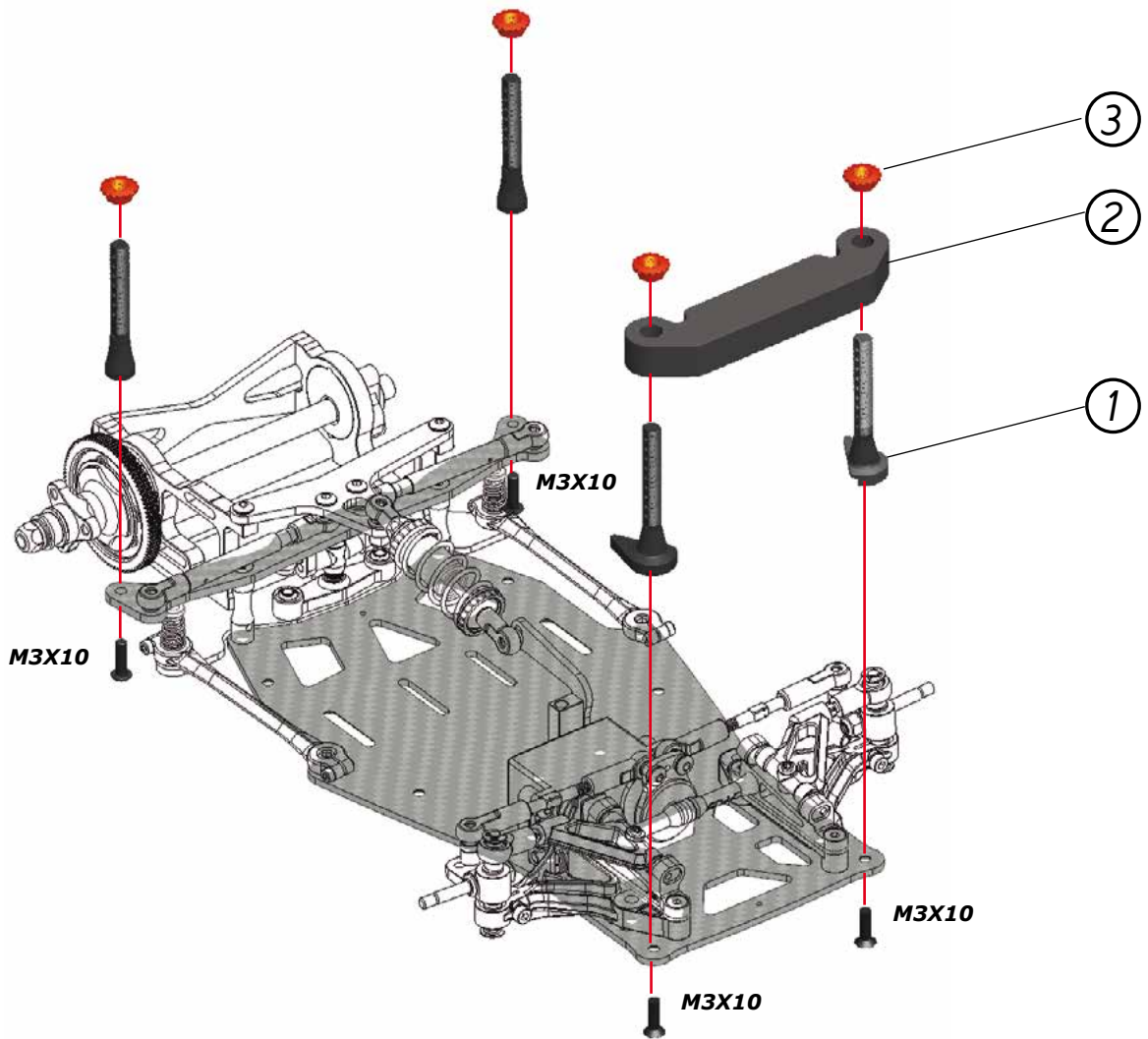
STEP
21



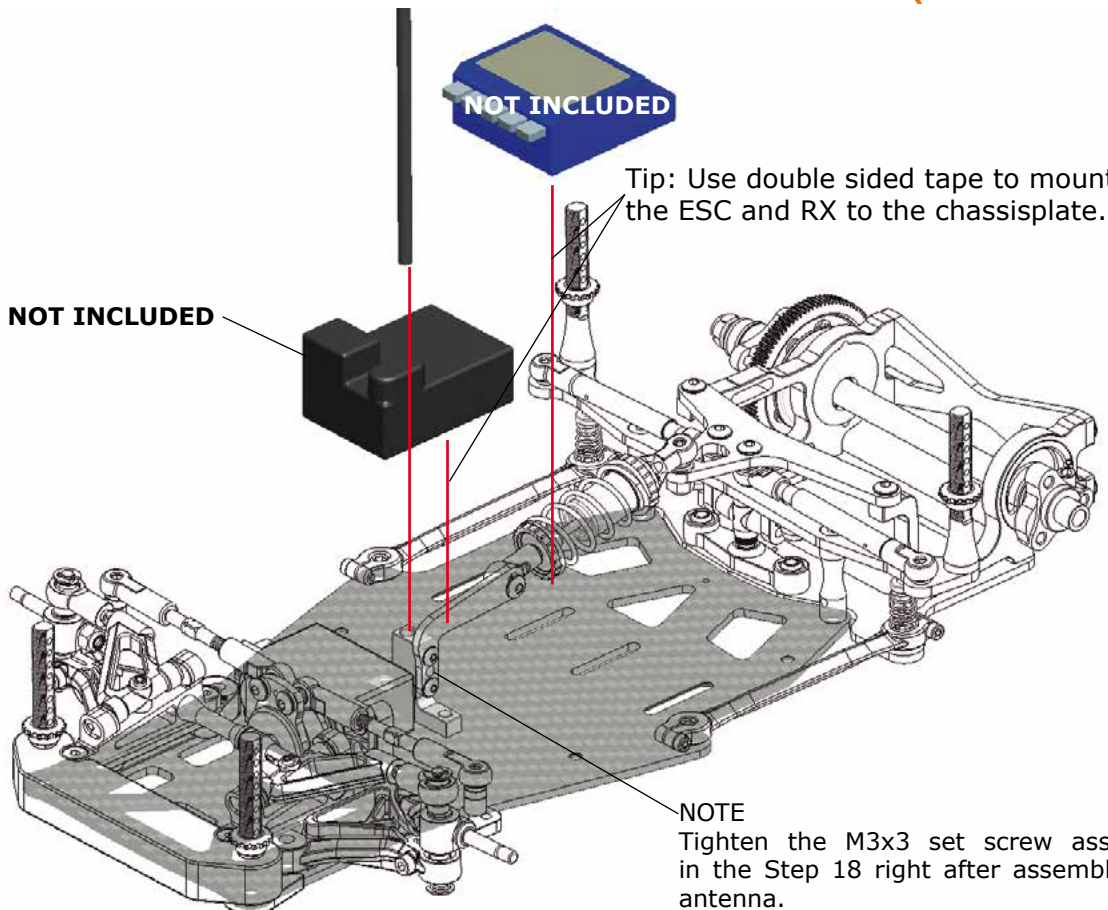
Serpent

Page
14



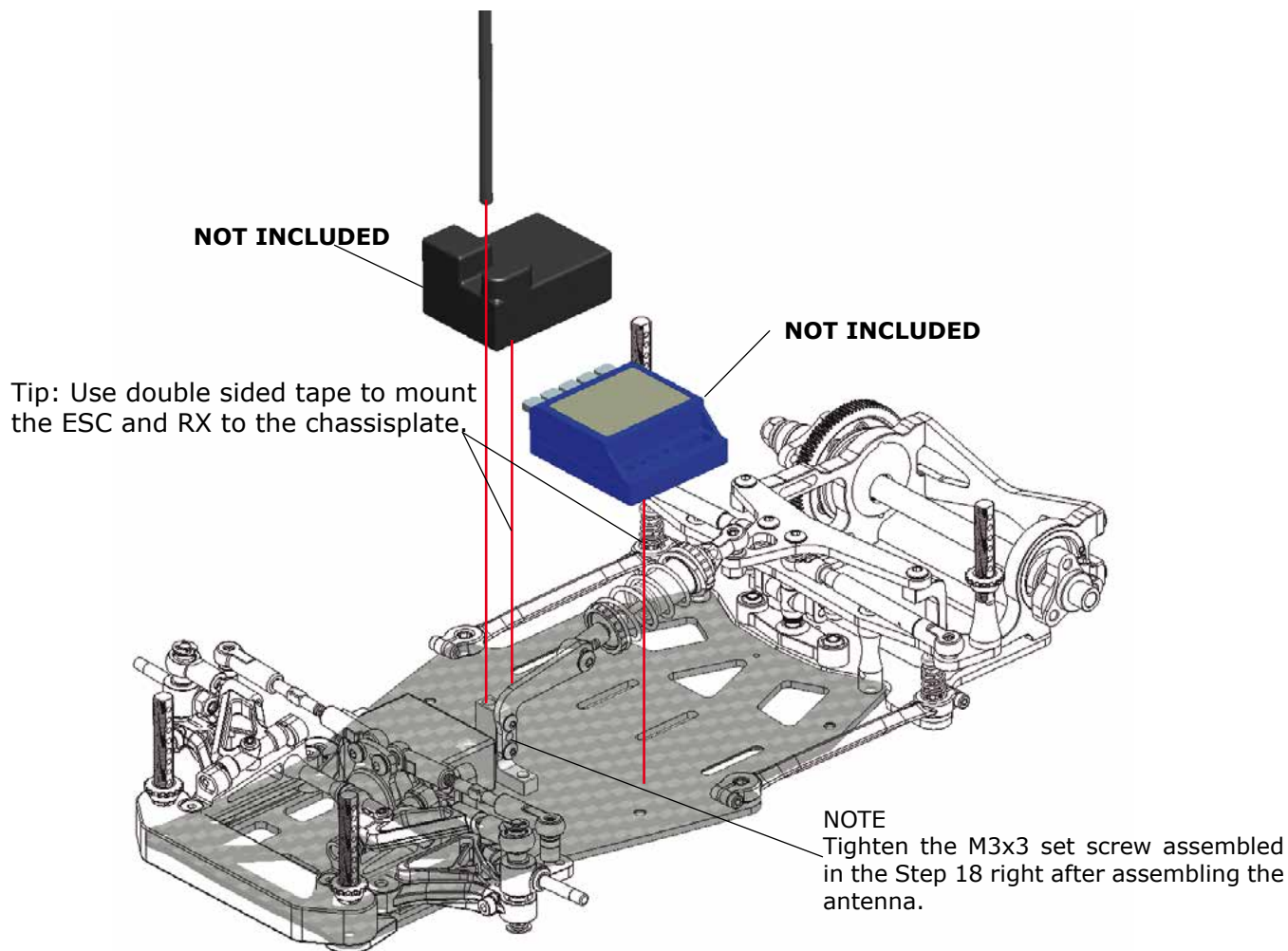


A) LONGITUDINAL BATTERY CONFIGURATION (DEFAULT)



B) TRANSVERSAL BATTERY CONFIGURATION

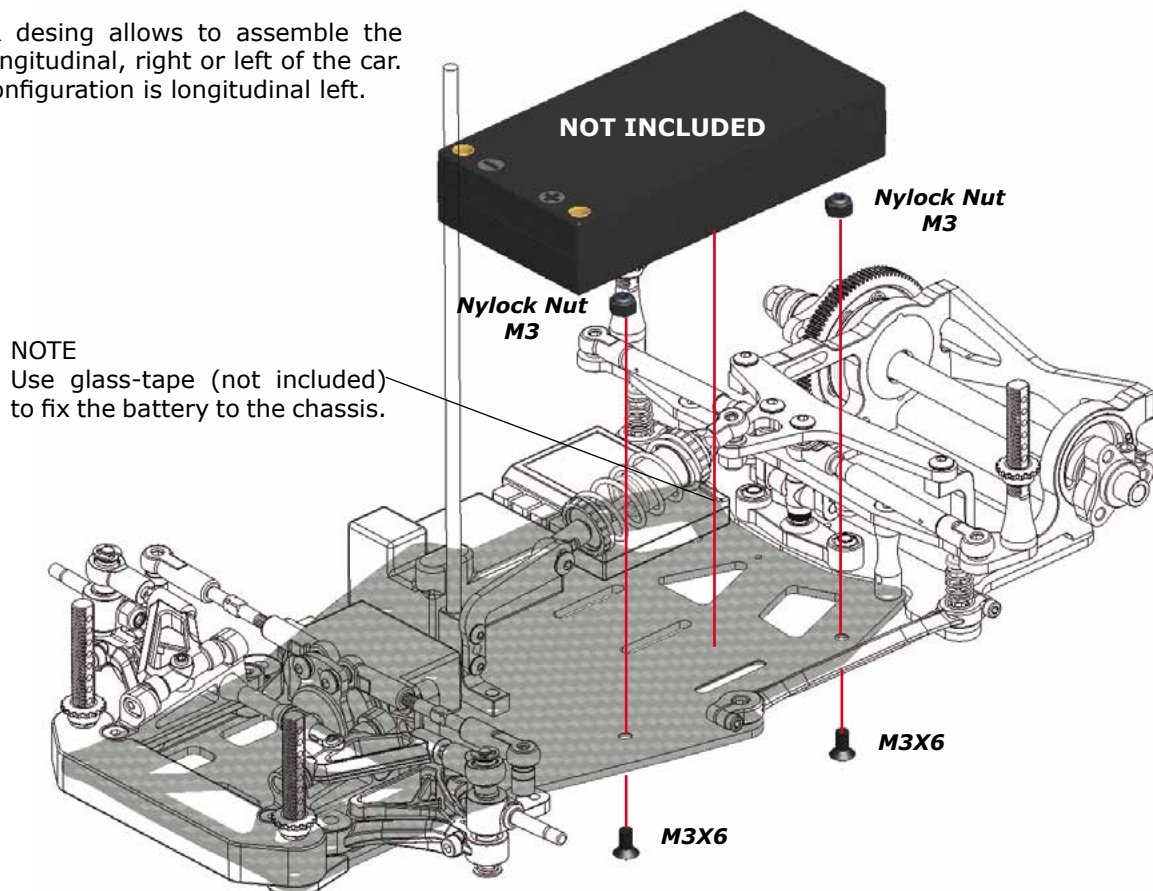
STEP
23B



A) LONGITUDINAL BATTERY CONFIGURATION (DEFAULT)

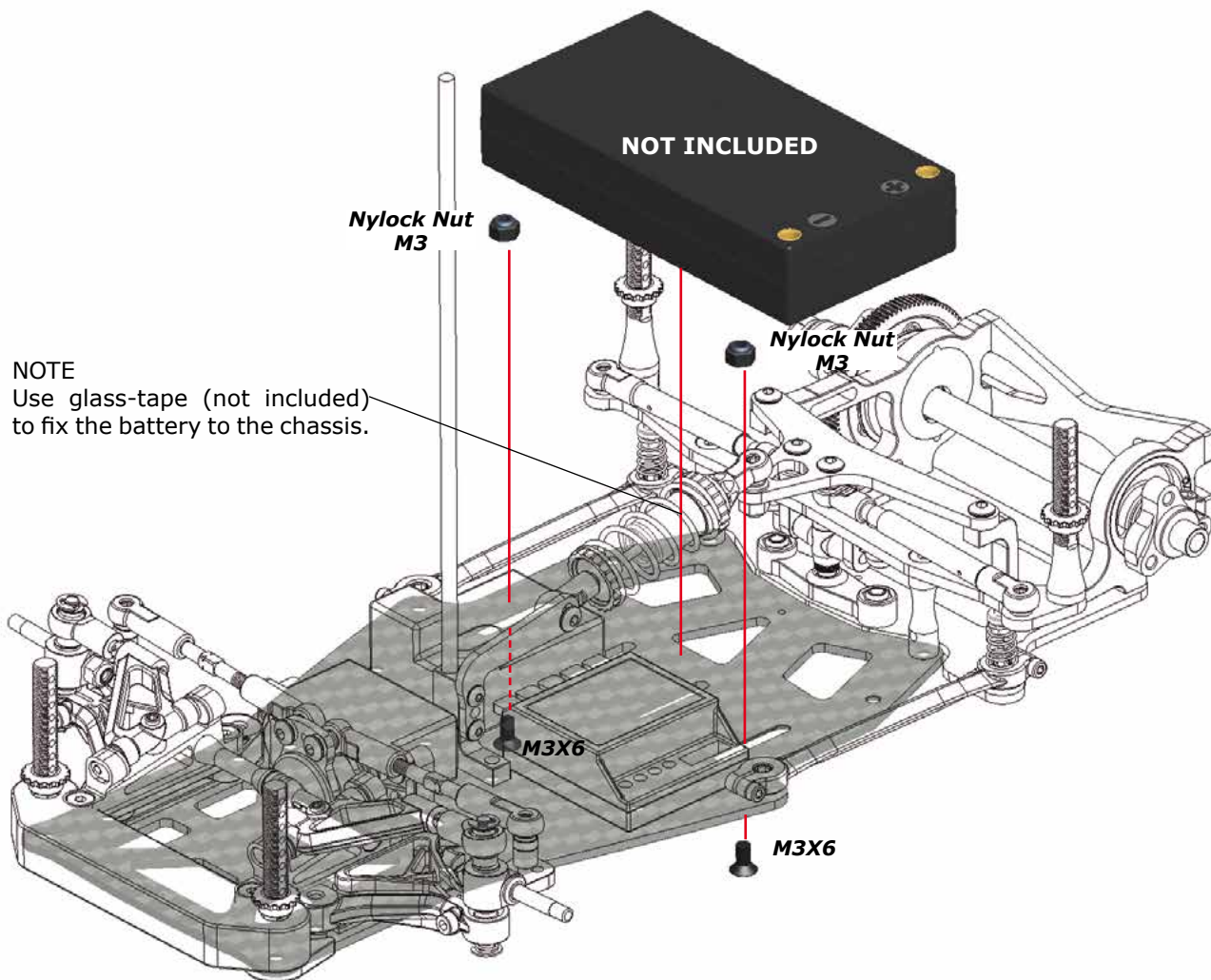
STEP
24A

NOTE
S120 LTR desing allows to assemble the battery longitudinal, right or left of the car. Default configuration is longitudinal left.

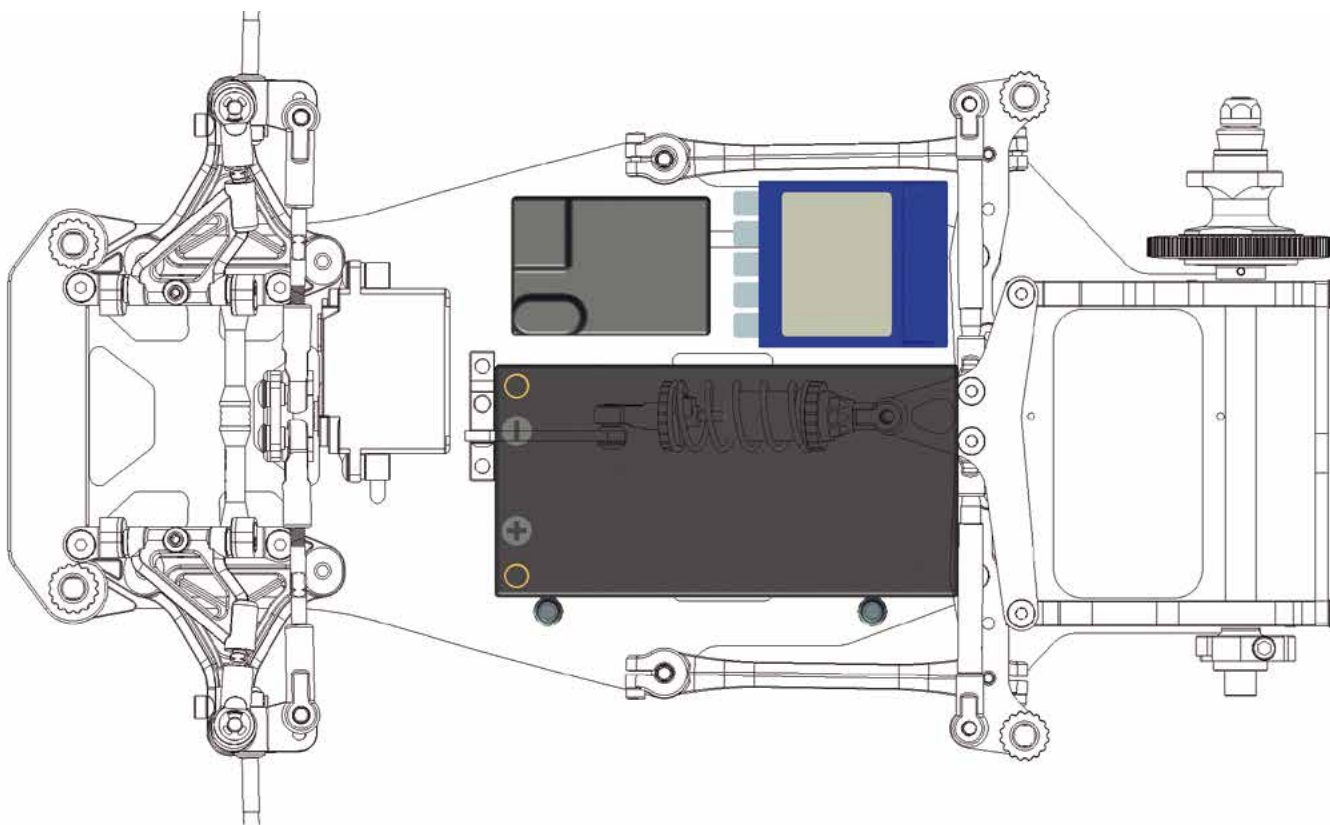


B) TRANSVERSAL BATTERY CONFIGURATION

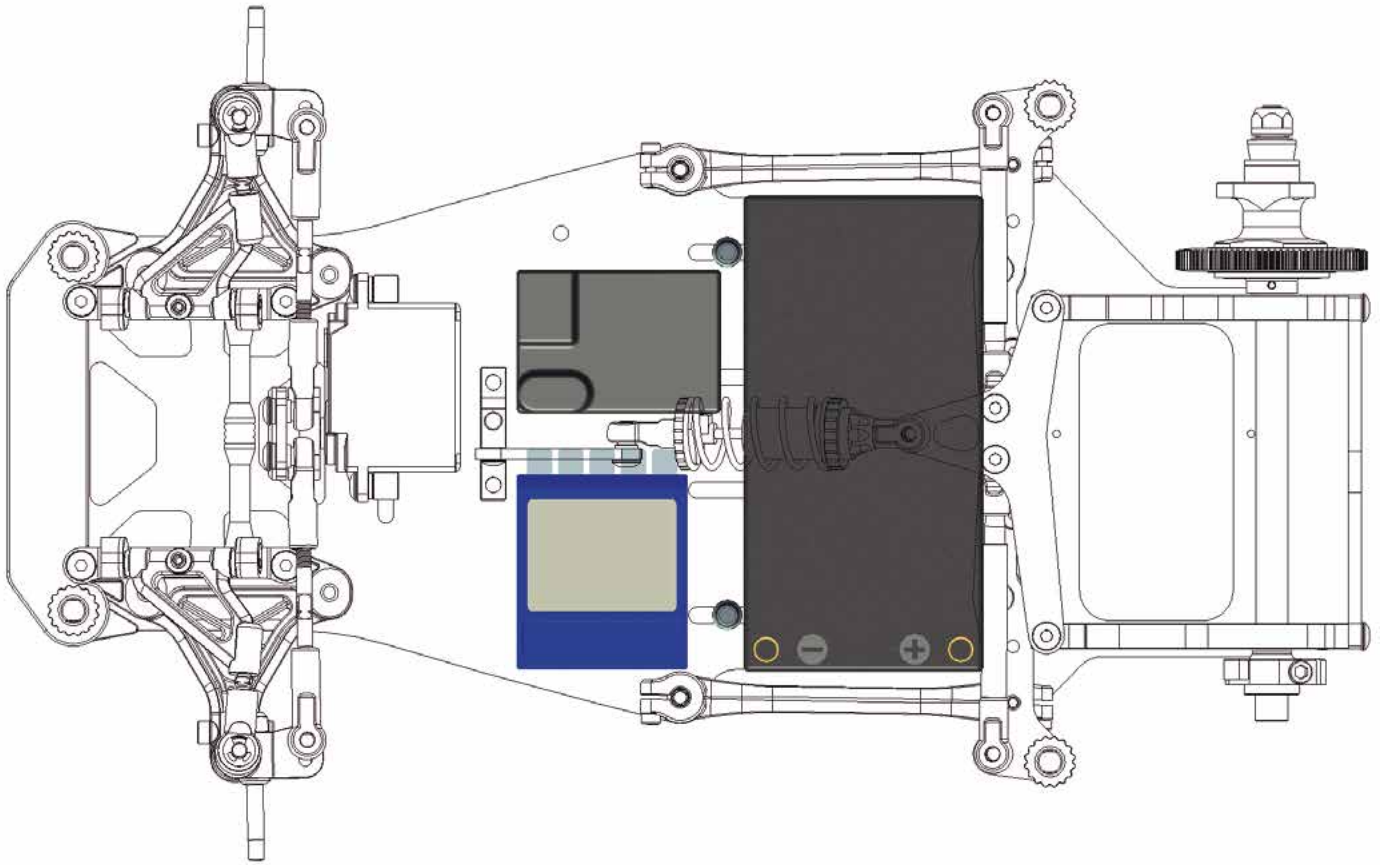
STEP
24B



Detail view longitudinal battery configuration (default)



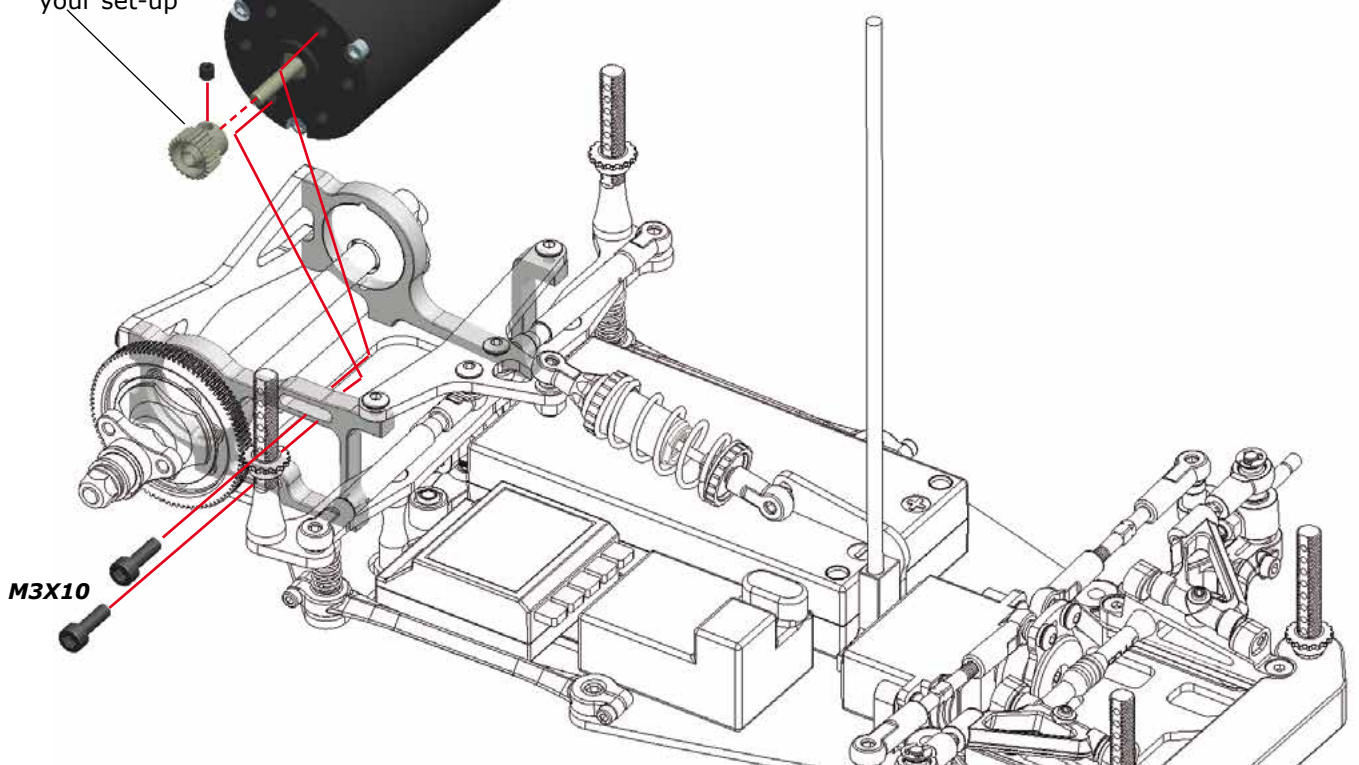
Detail view transversal battery configuration

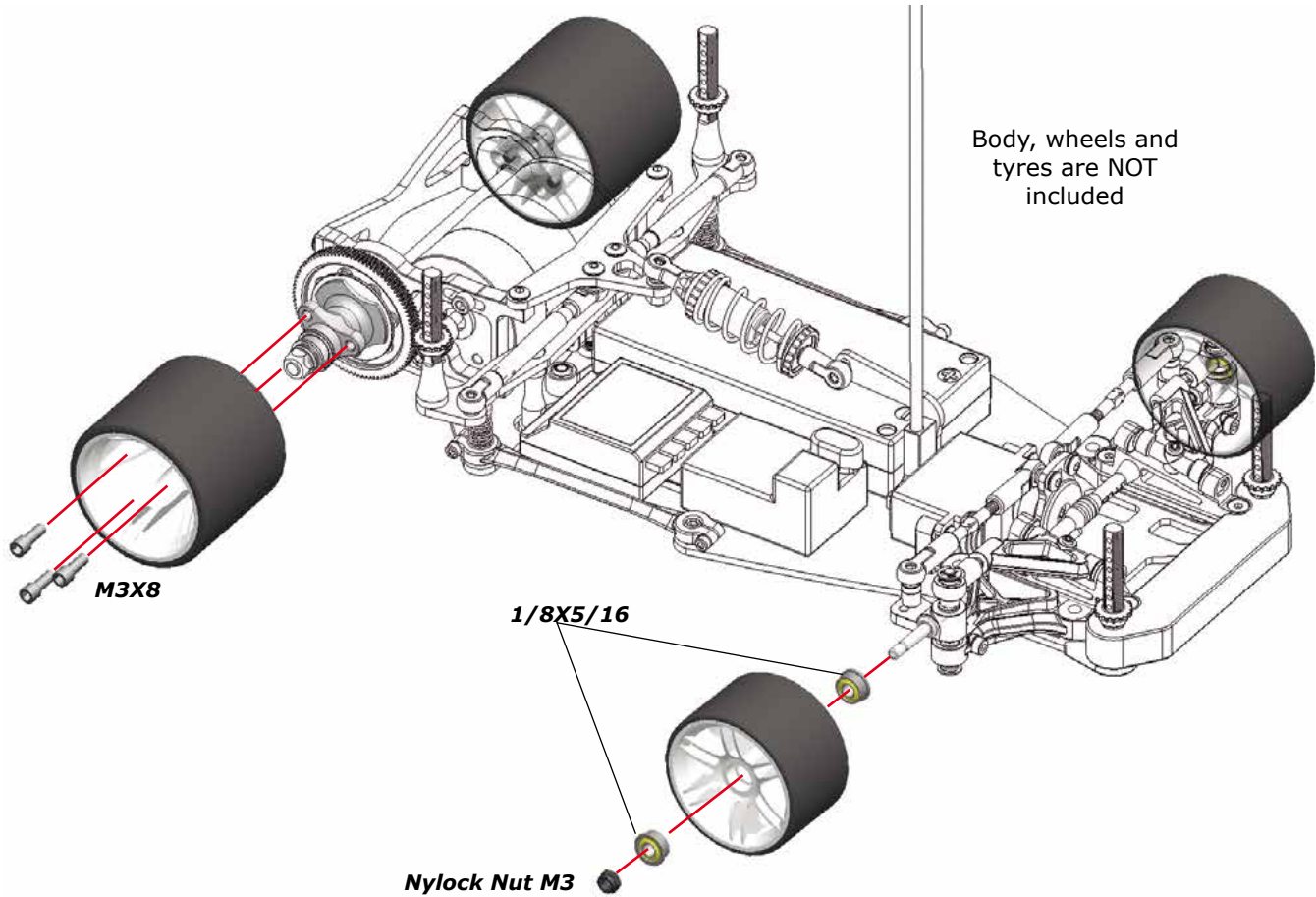


FINAL ASSEMBLY

STEP
25

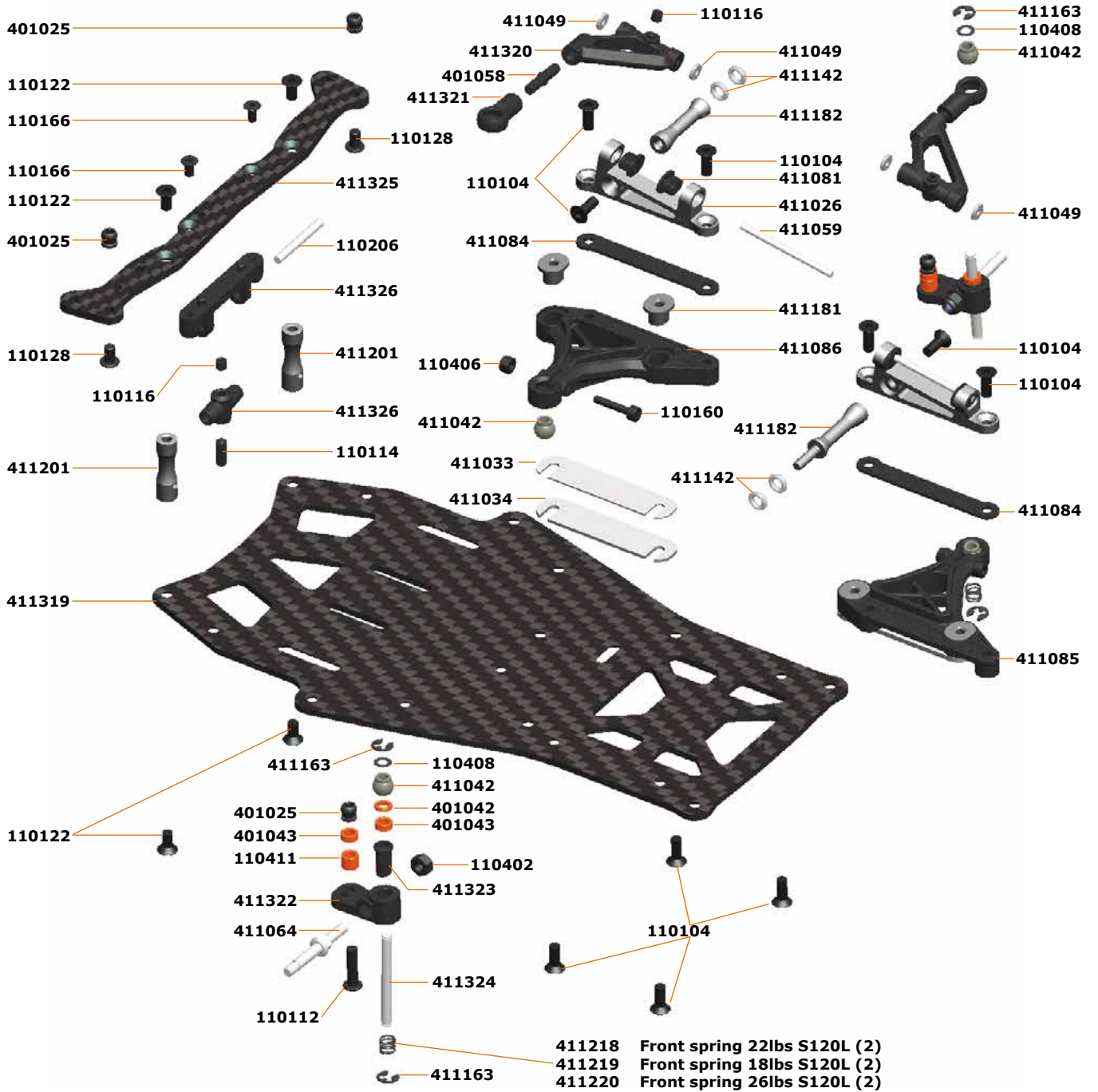
Pinion is **NOT INCLUDED** in the kit. Assemble the proper pinion for your set-up





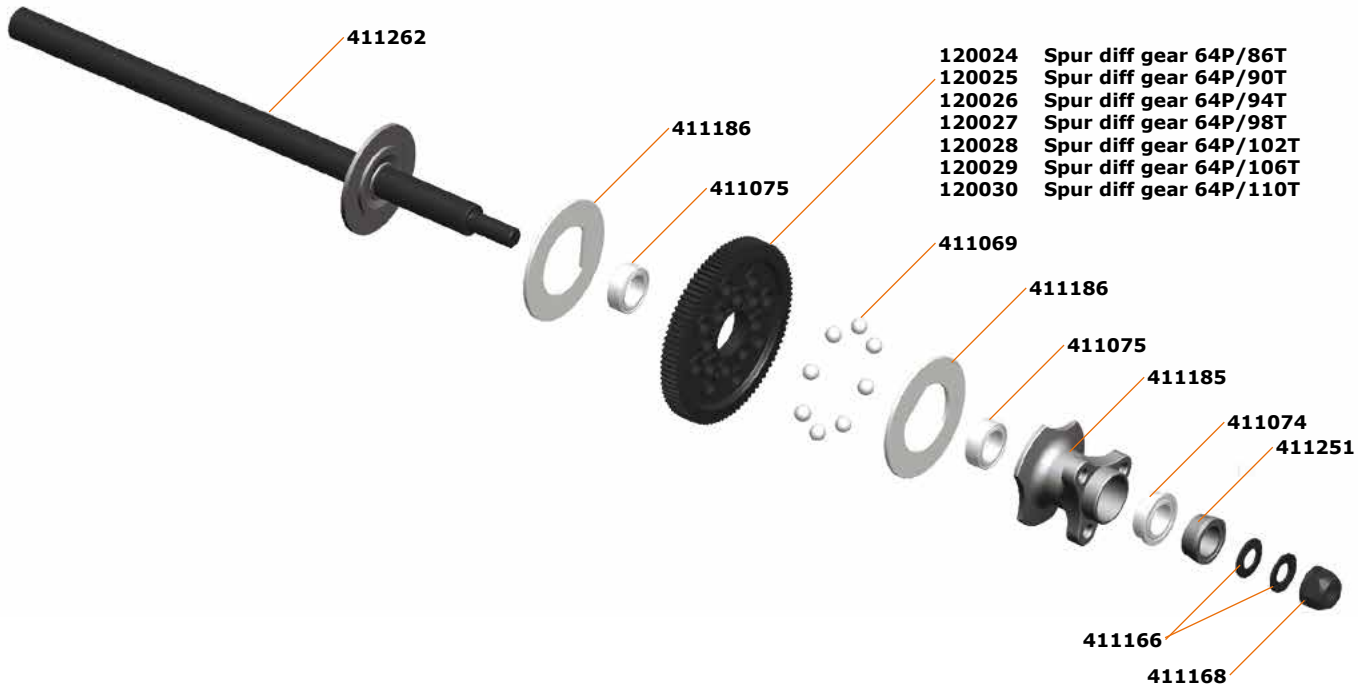
REFERENCE GUIDE

FRONT ASSEMBLY



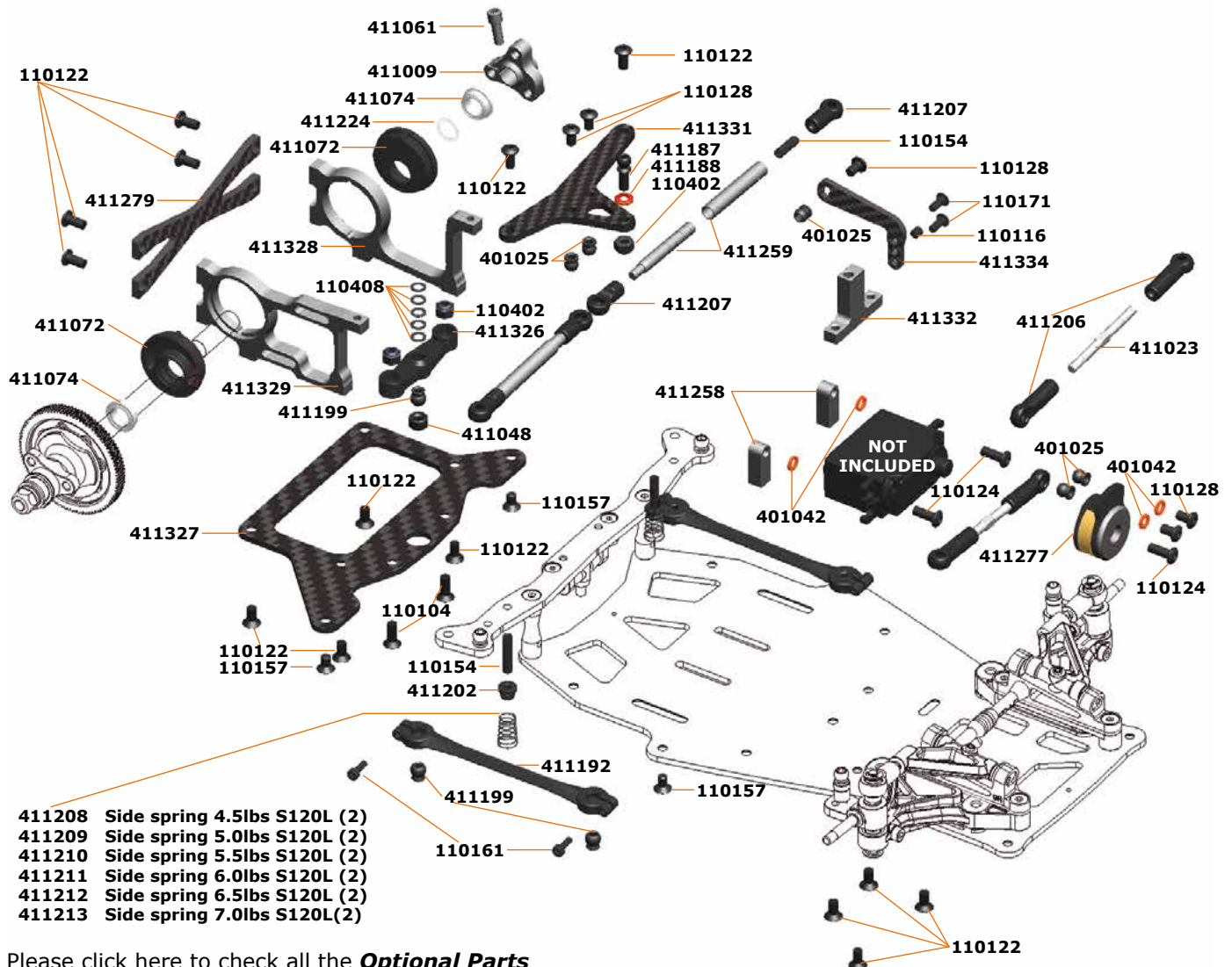
Please click here to check all the **Optional Parts**

BALL DIFF ASSEMBLY



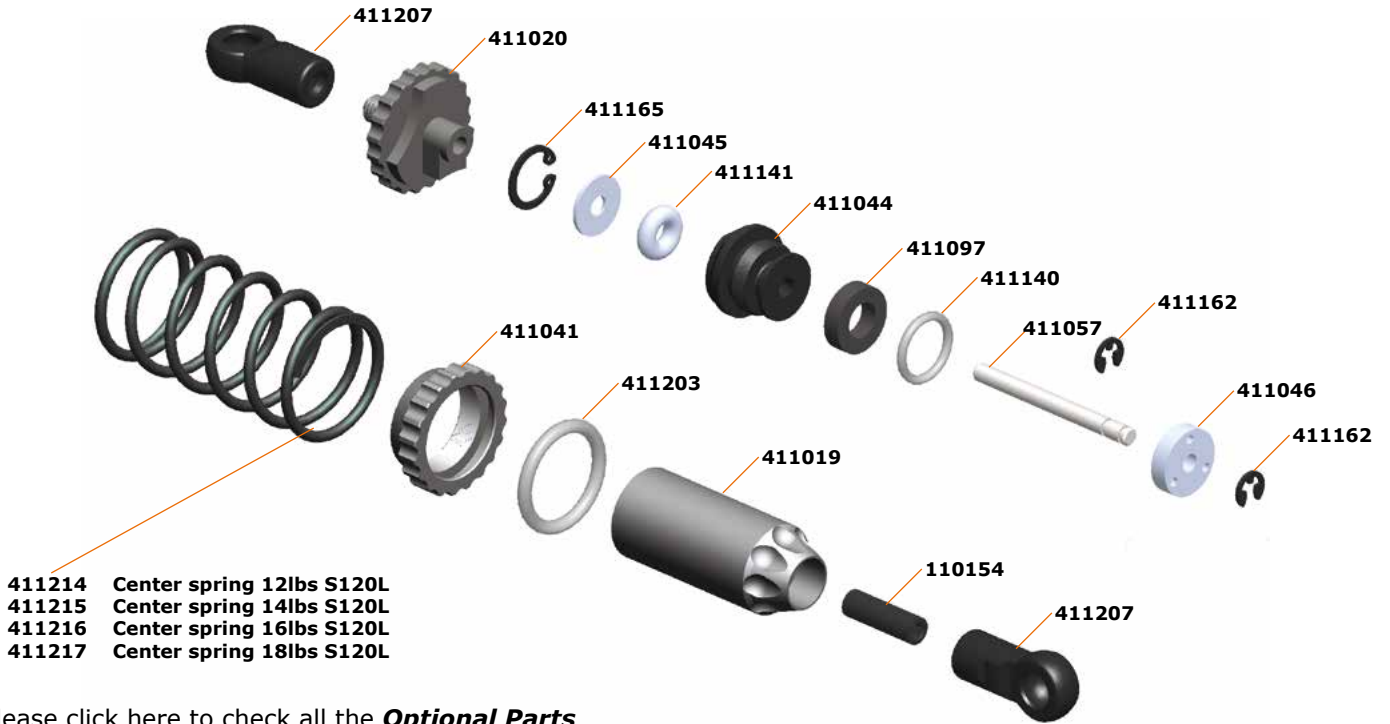
Please click here to check all the **Optional Parts**

REAR ASSEMBLY



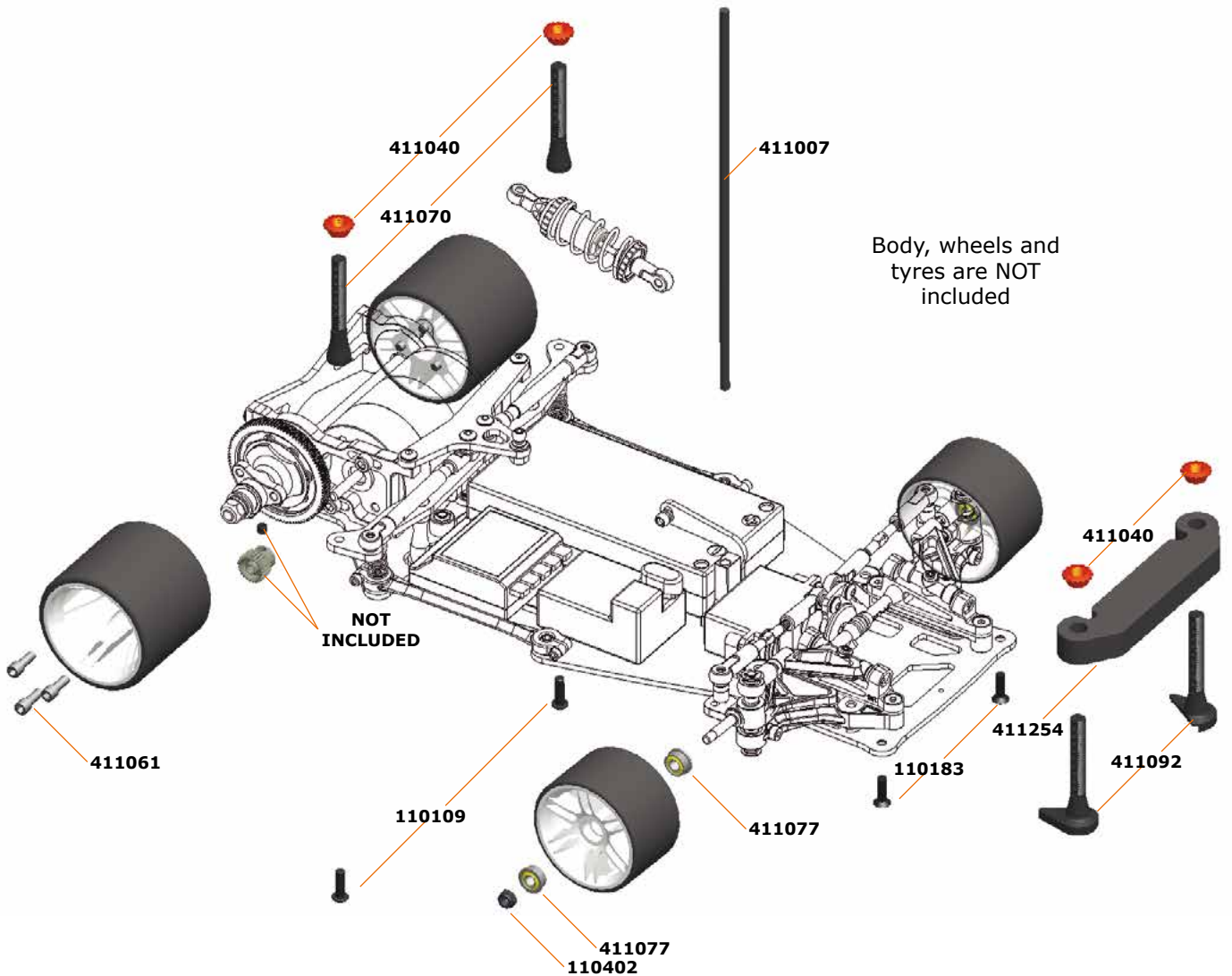
Please click here to check all the **Optional Parts**

SHOCK ABSORBER ASSEMBLY



Please click here to check all the **Optional Parts**

FINAL ASSEMBLY



Please click here to check all the **Optional Parts**

TEAM SERPENT NETWORK

S120 LTR SPARE PARTS



S120 LTR OPTIONAL PARTS



SERPENT TOOLS



SERPENT MERCHANDISING



WEBSITE AND BLOG



SOCIAL MEDIA



S120
LTR



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S120 LTR version 1