

INSTRUCTION MANUAL

& REFERENCE GUIDE

INTRODUCTION

Serpent developed the S120 Link-Tube model car 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, RCCX type top-mounted shock-absorber, quick and easy tweak adjustment and top quality materials throughout, the S120–LT 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-LT check on:
www.serpent.com/410004

Enjoy racing !

Team Serpent

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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.

Customer service

Serpent has made a strong effort to make this manual as complete andclear 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.

Instructions, how to use

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.

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.

Set-Up

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

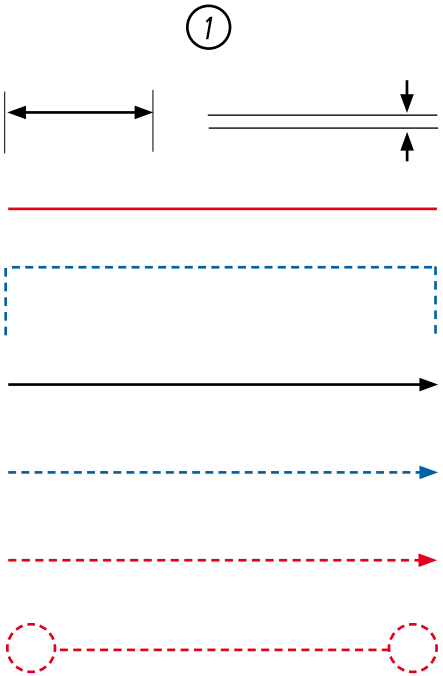
Exploded views and partslist

The exploded views and parts lists 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.

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.

USING THE MANUAL



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

Length after assembly / Gap between two items

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

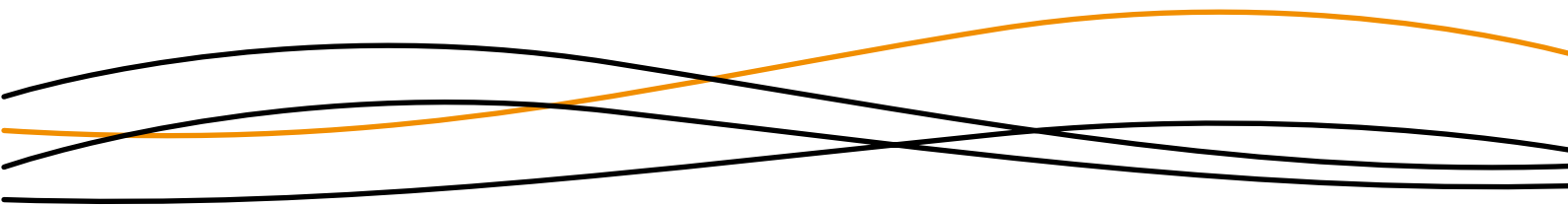
Press/Insert one item into another

Connect one item to another



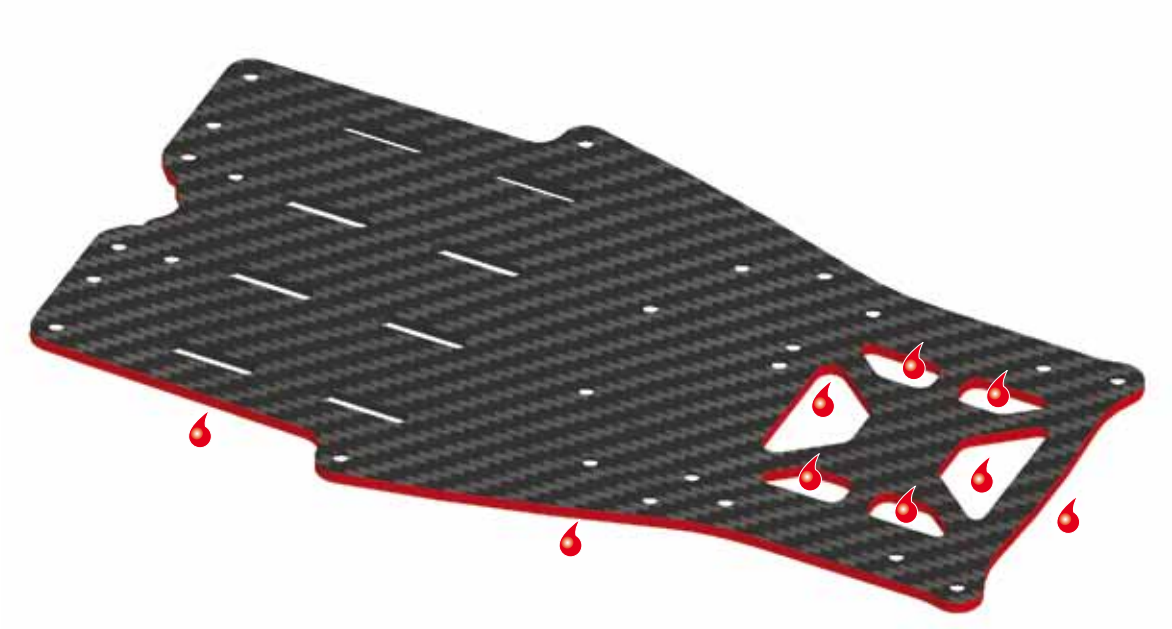
Apply transmission grease (Grey), threadlock* (Blue), CA glue* (Red)
or differential grease (Orange). (*Items not included.)

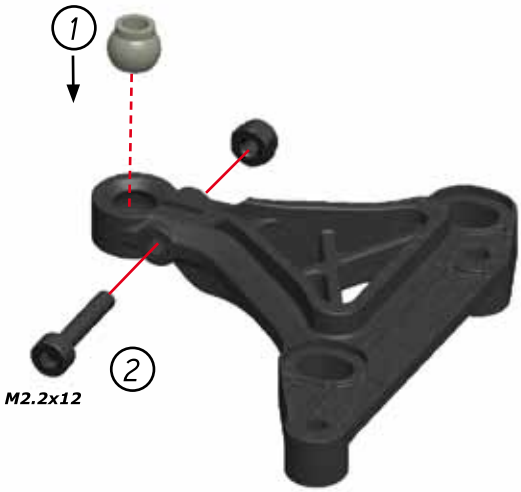
ASSEMBLY INSTRUCTIONS

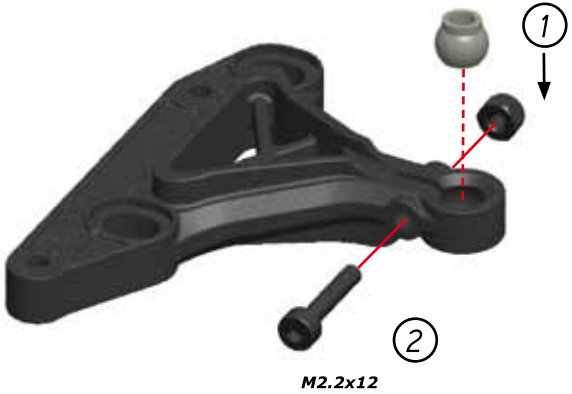


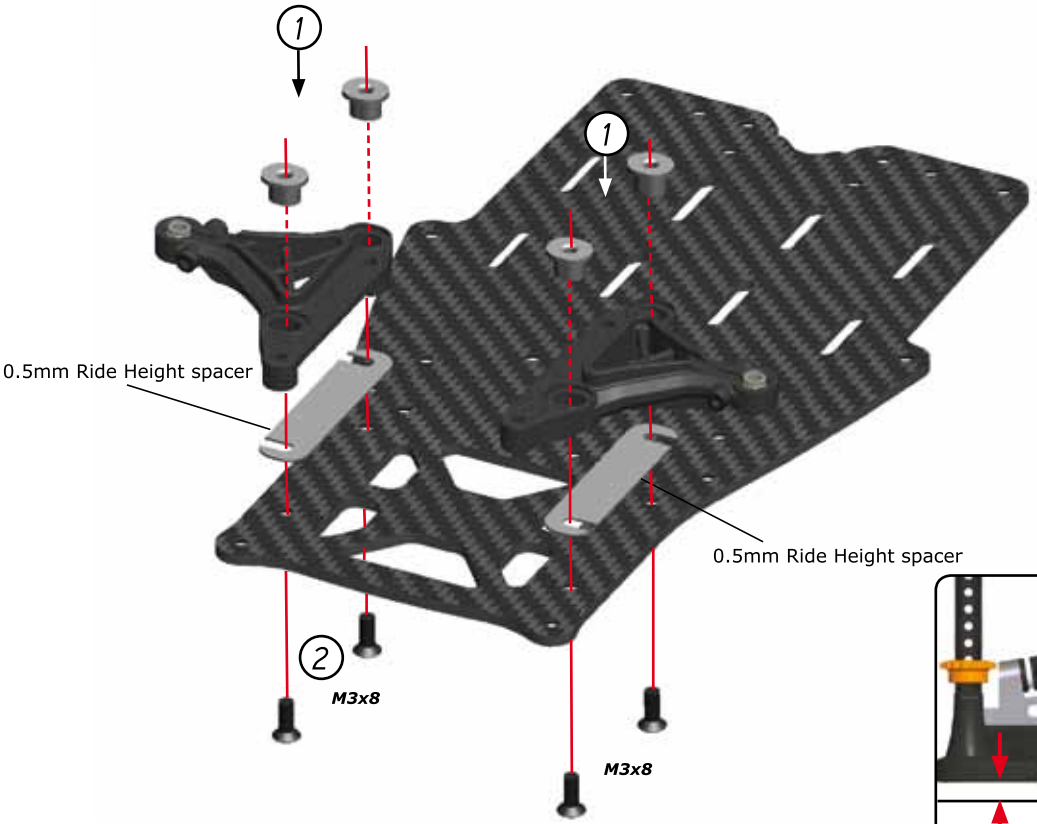
CA Glue

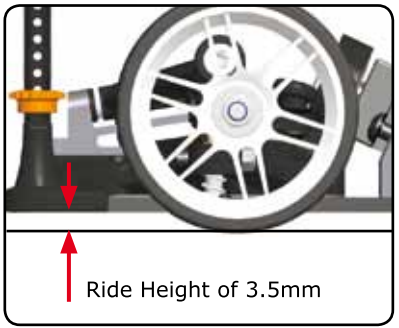
To prevent the risk of the carbon fibre splitting in the event of a crash you should apply CA Glue around the chassis' edge and battery slots as shown in red below.

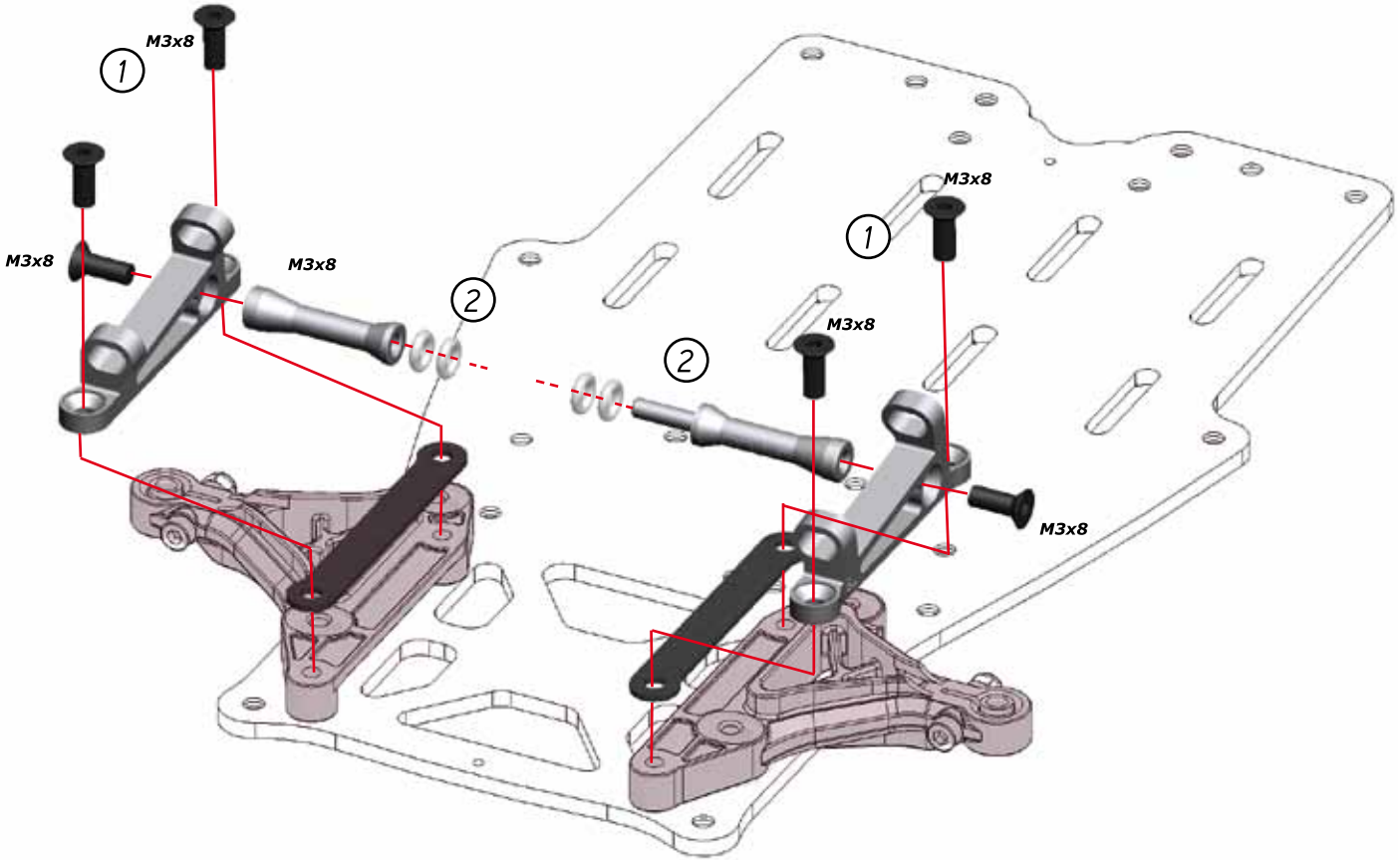


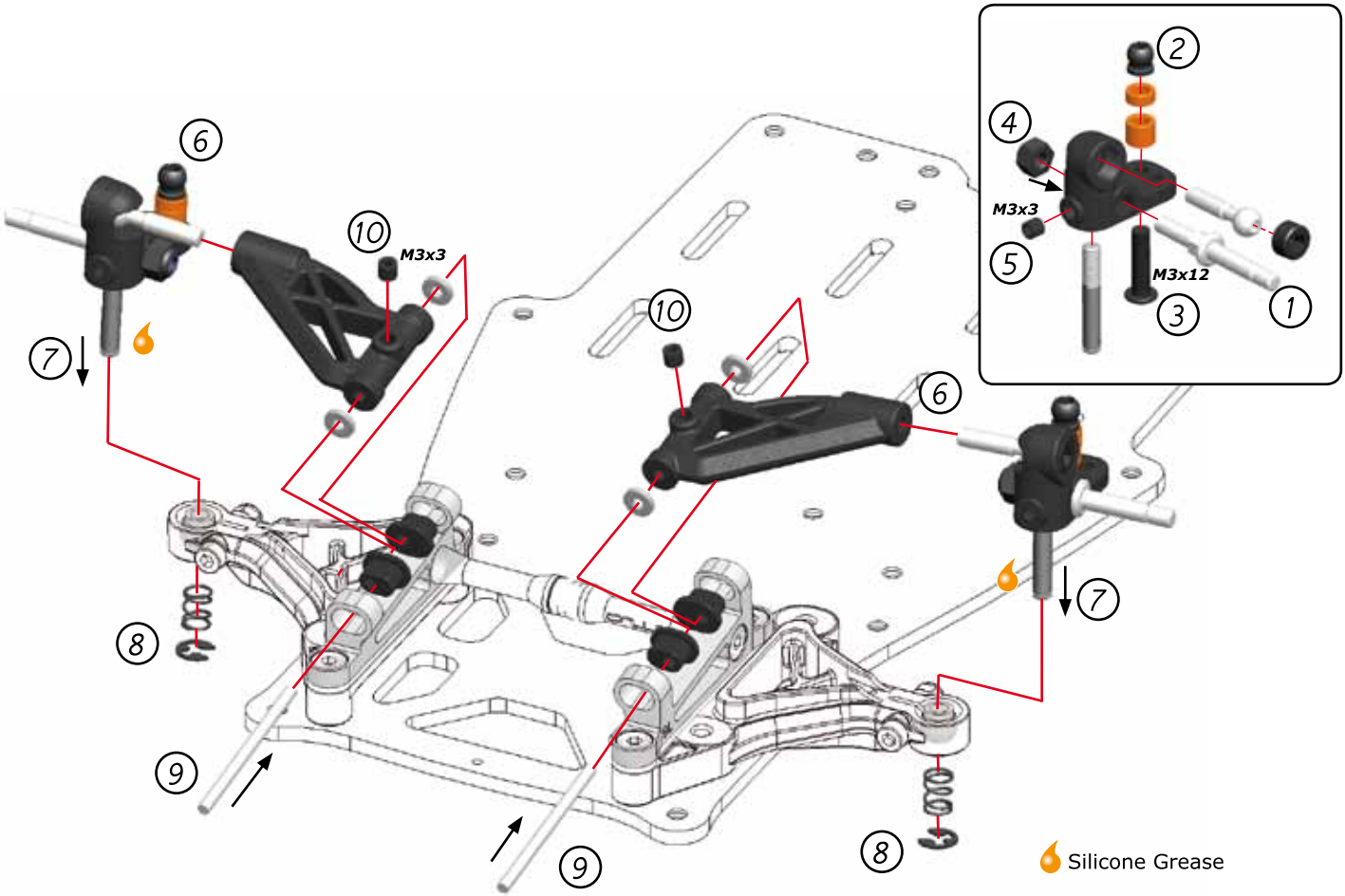

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2
M2.2x12

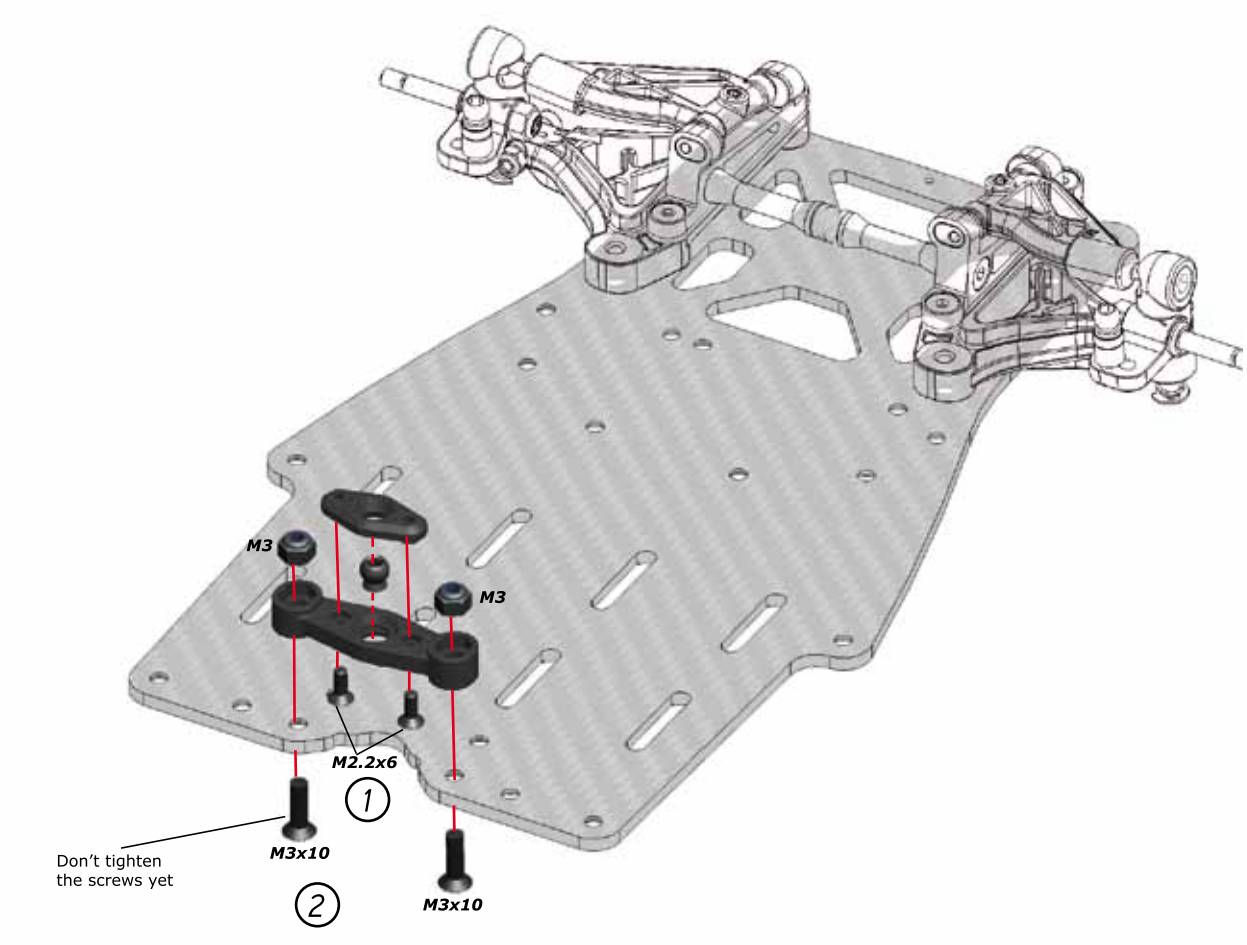

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2
M2.2x12

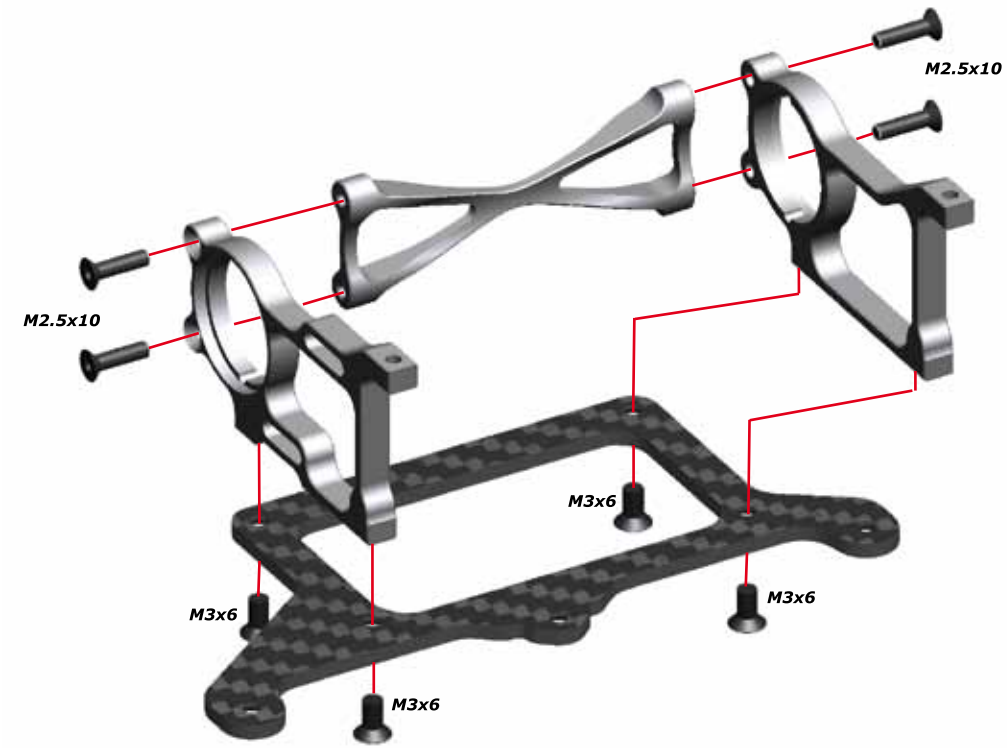

1
1
0.5mm Ride Height spacer
0.5mm Ride Height spacer
2
M3x8
M3x8

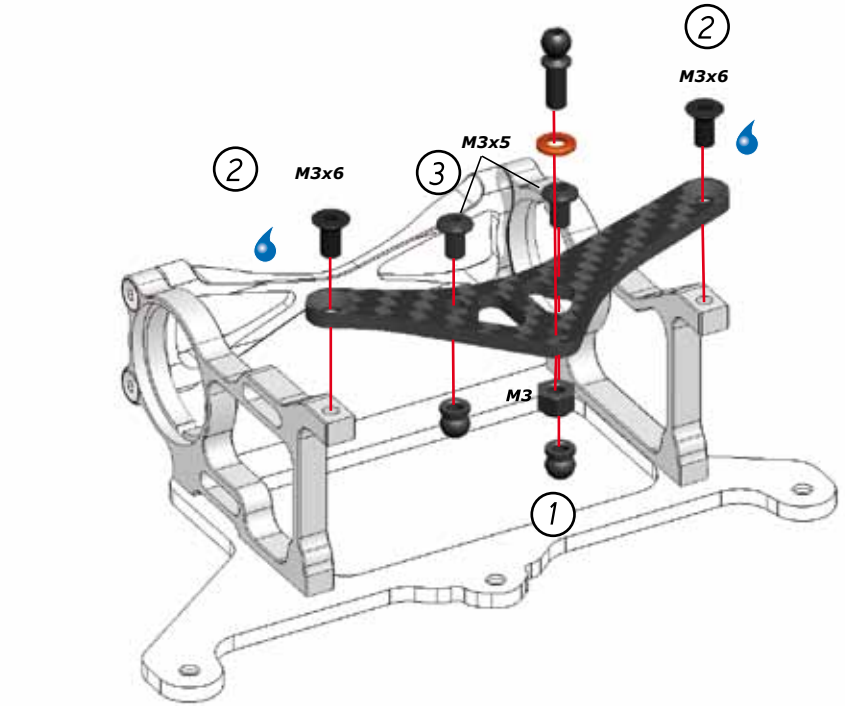

Ride Height of 3.5mm

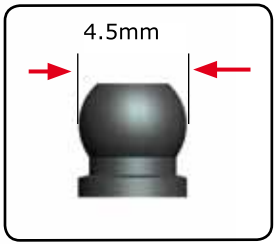

M3x8
1
M3x8
M3x8
2
M3x8
1
M3x8
2
M3x8


6
10
M3x3
7
8
9
10
6
7
8
9
2
4
M3x3
5
M3x12
3
1
Silicone Grease

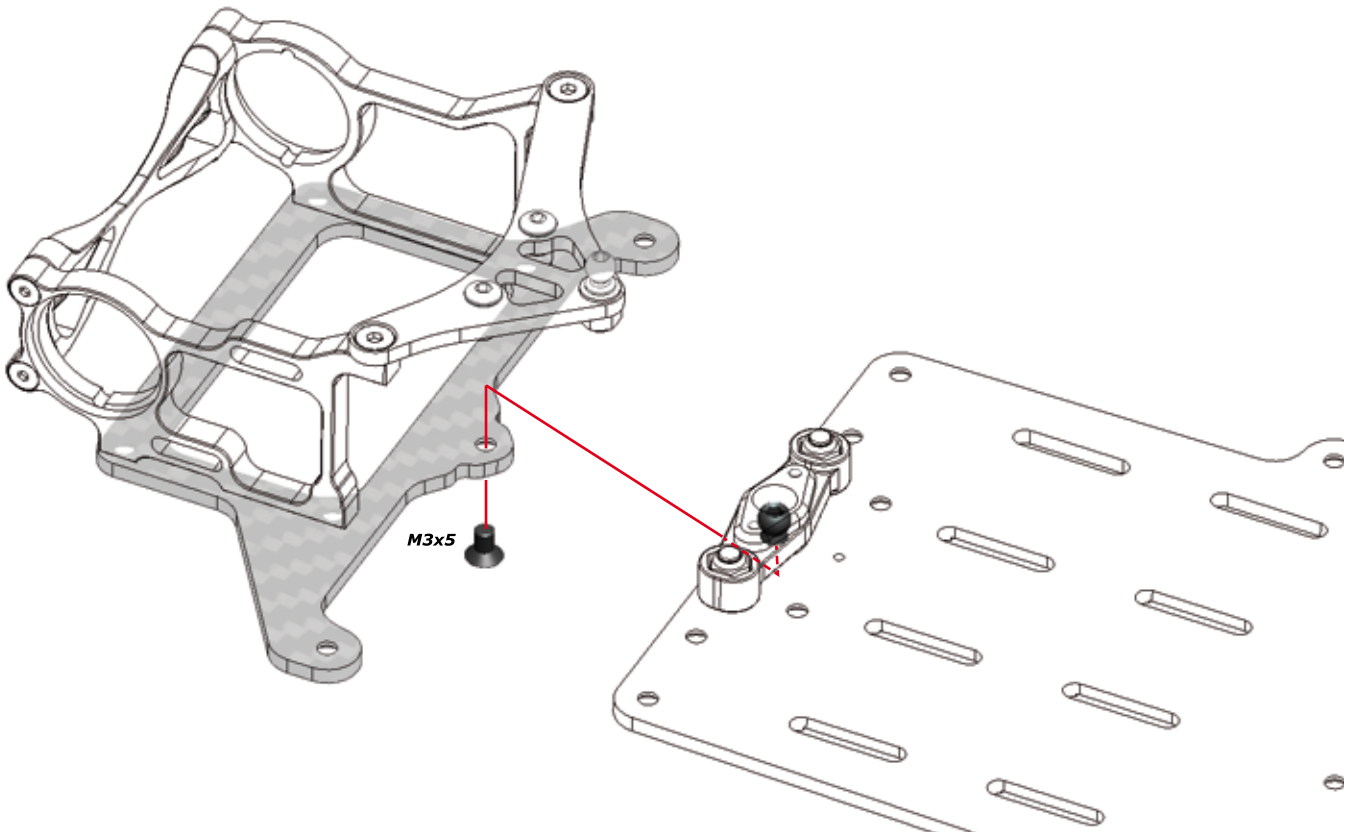

M3
M3
M2.2x6
1
Don’t tighten
the screws yet
M3x10
2
M3x10

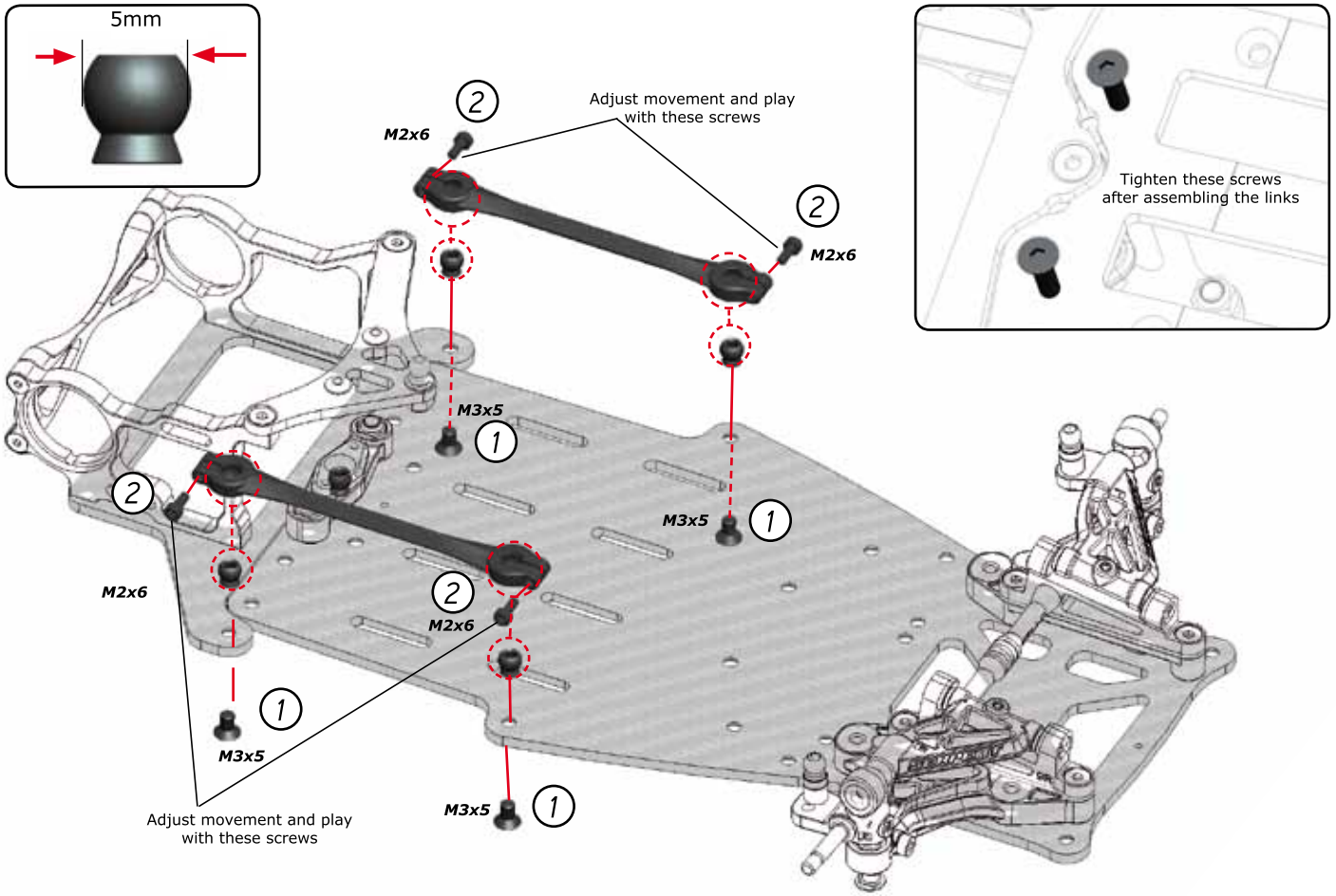

M2.5x10
M2.5x10
M3x6
M3x6
M3x6
M3x6

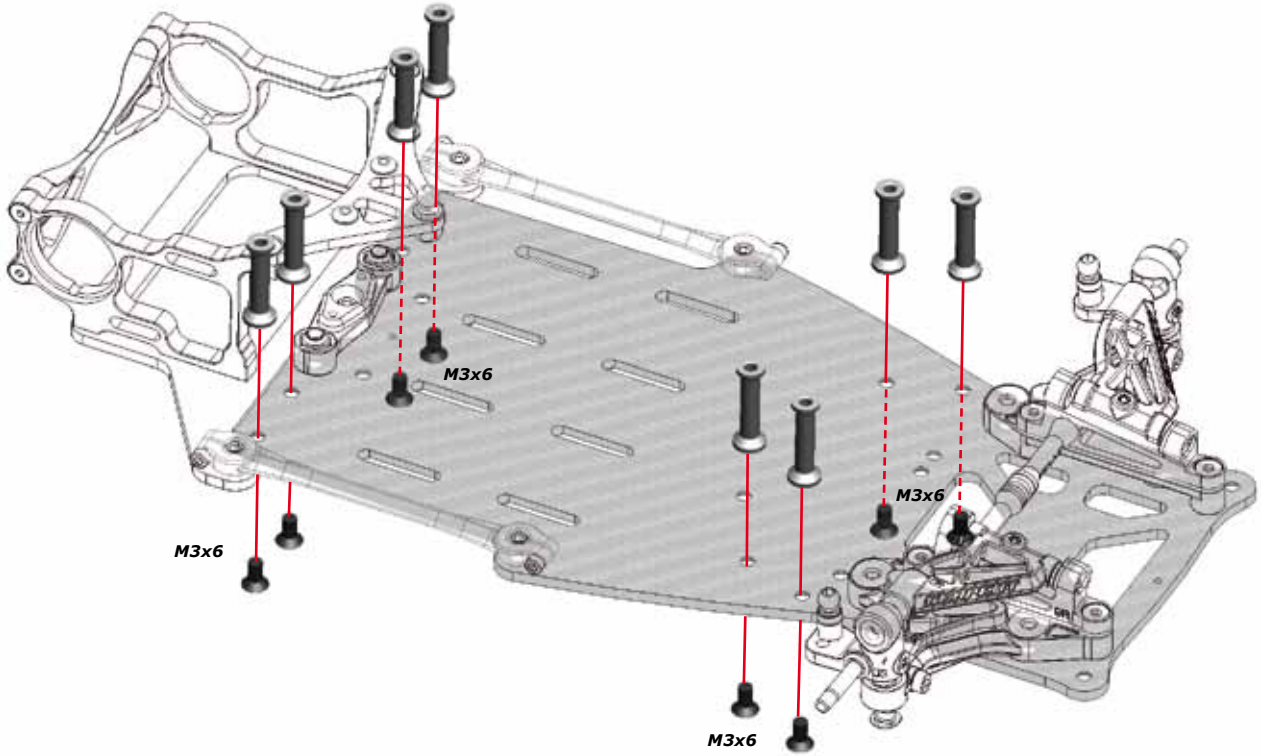


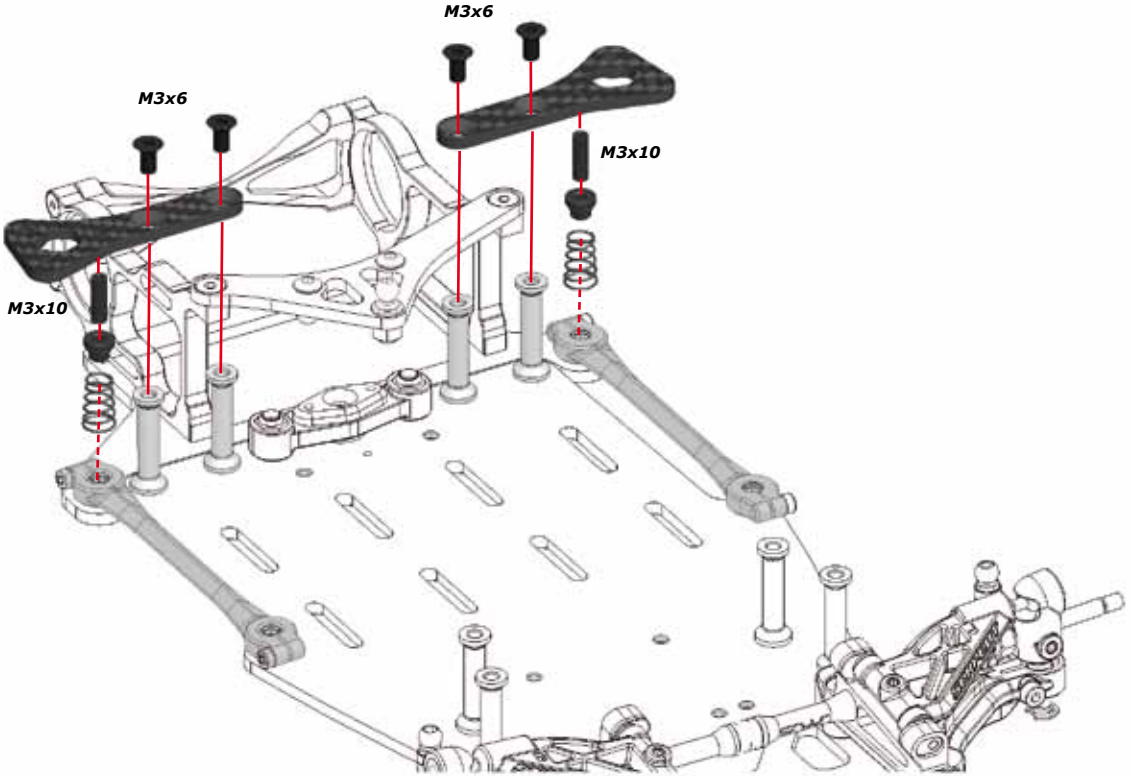


Thread lock


M3x5


5mm
2
M2x6
Adjust movement and play
with these screws
2
M2x6
Tighten these screws
after assembling the links
M3x5
1
2
M3x5
1
M2x6
2
M2x6
1
M3x5
M3x5
1
Adjust movement and play
with these screws


M3x6
M3x6
M3x6
M3x6


M3x6
M3x6
M3x10
M3x10

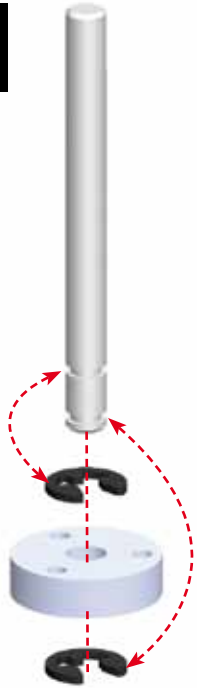
A

13



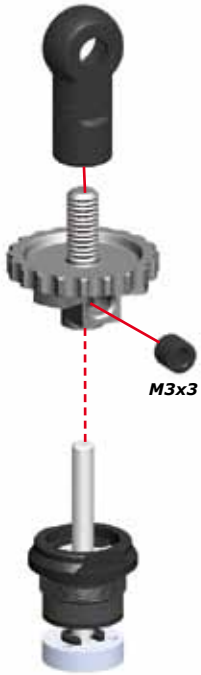
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14



A

15



A

16



A

17



Filling:
'fill the shock body with the supplied shock absorber oil'.
Bleeding:
'let the oil settle and allow the air to escape'



A

18

'close the shock slowly.
Important:
do not cross thread! Oil will overflow through the built-in bleed channel.

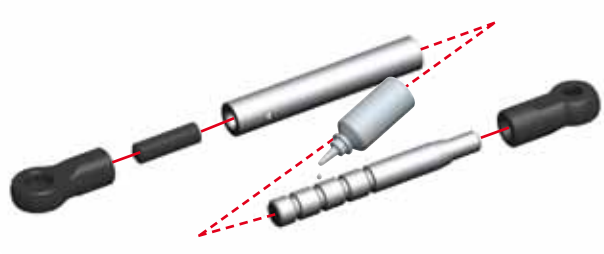
Tighten carefully until the bottom half sits against the shock body'



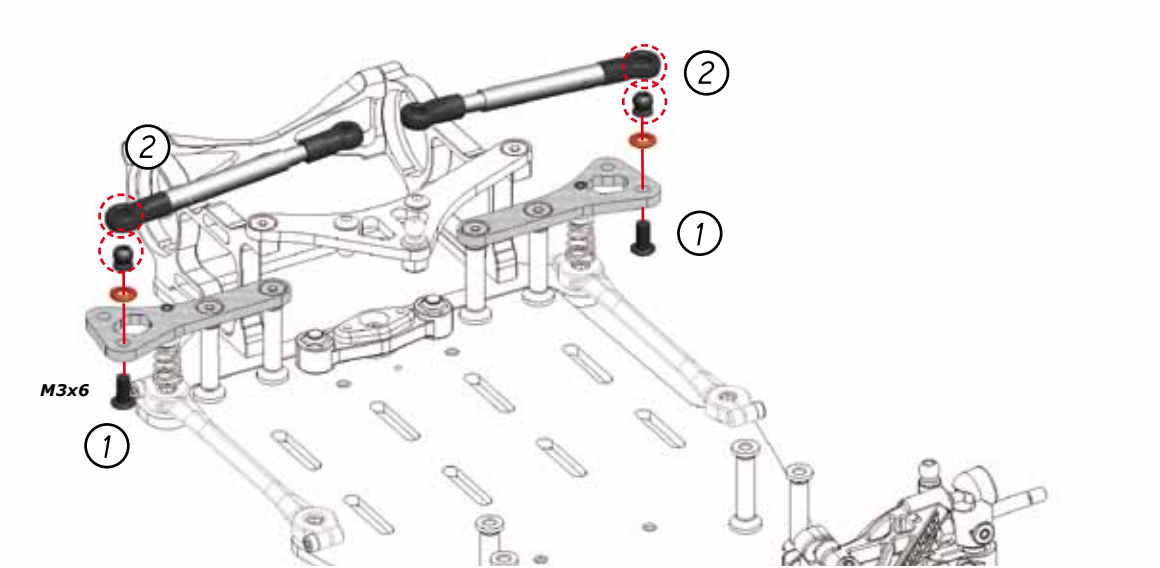
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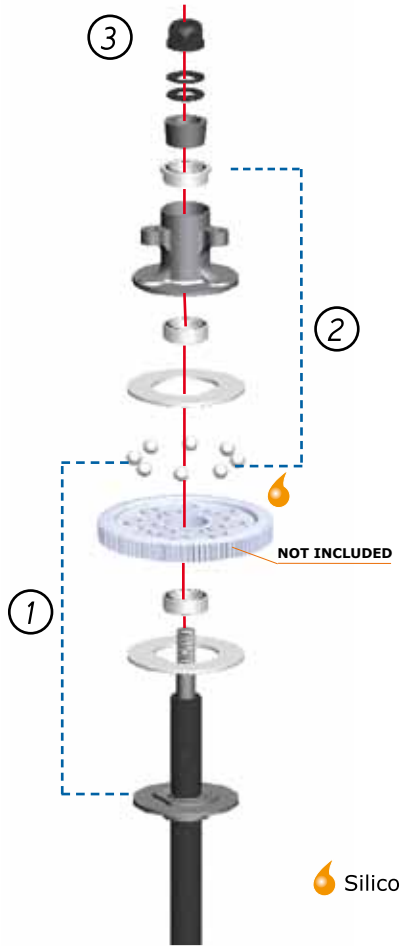
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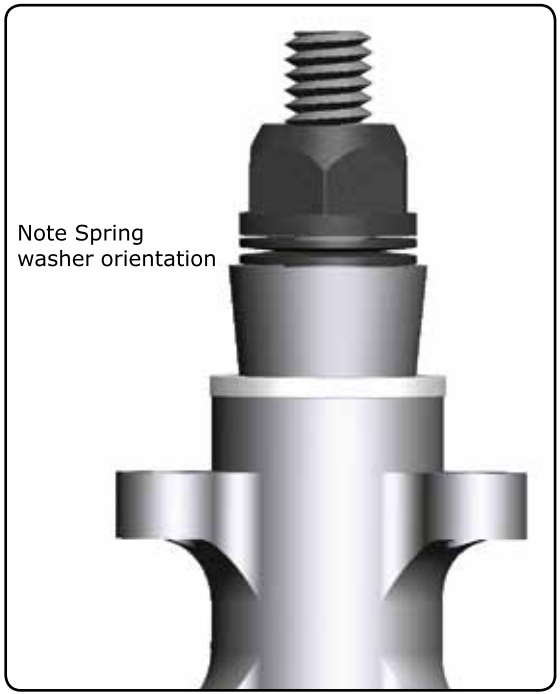




use heavy siliconoil (15000 cst)

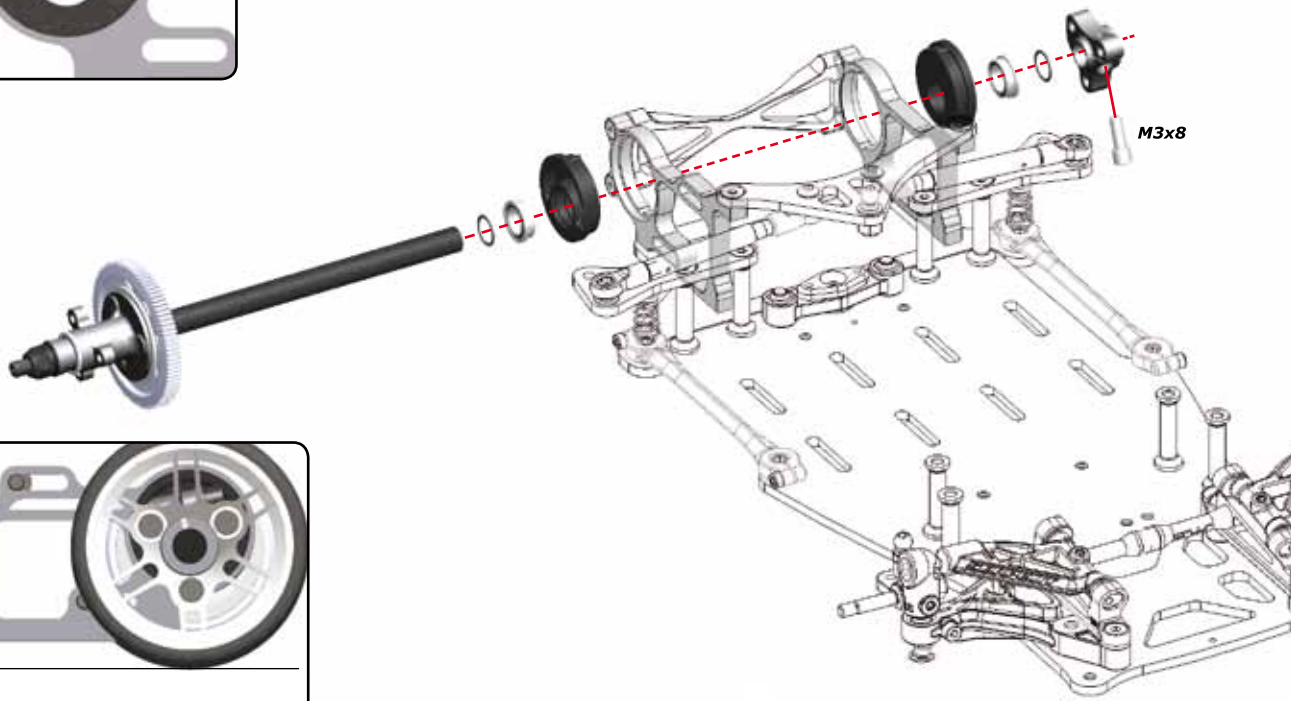


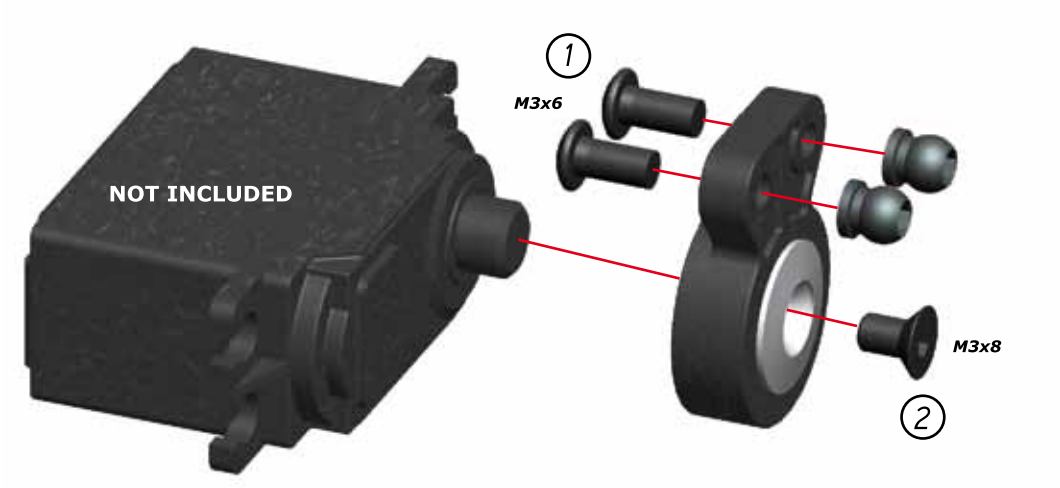

3
2
1
NOT INCLUDED
Silicone Grease


Note Spring
washer orientation

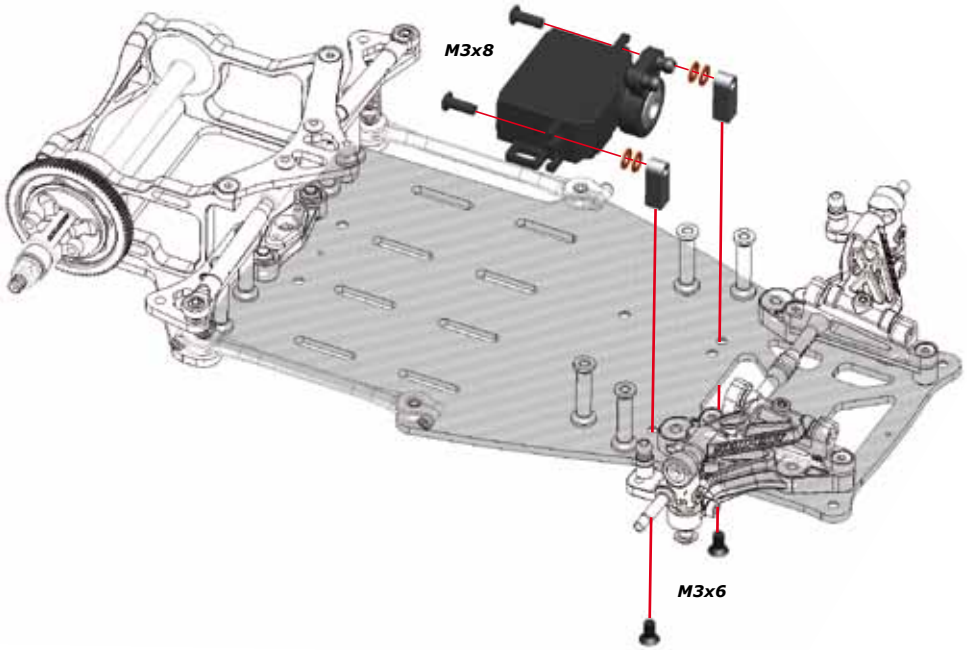
Note Insert orientation



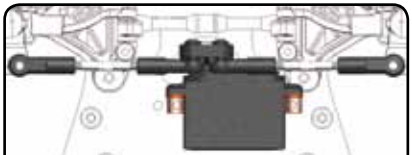




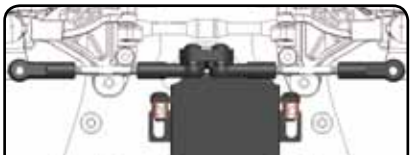
Use the following servo saver insert with these brands of servos.
23 - Sanwa / KO / JR
24 - Hitec
25 - Futaba

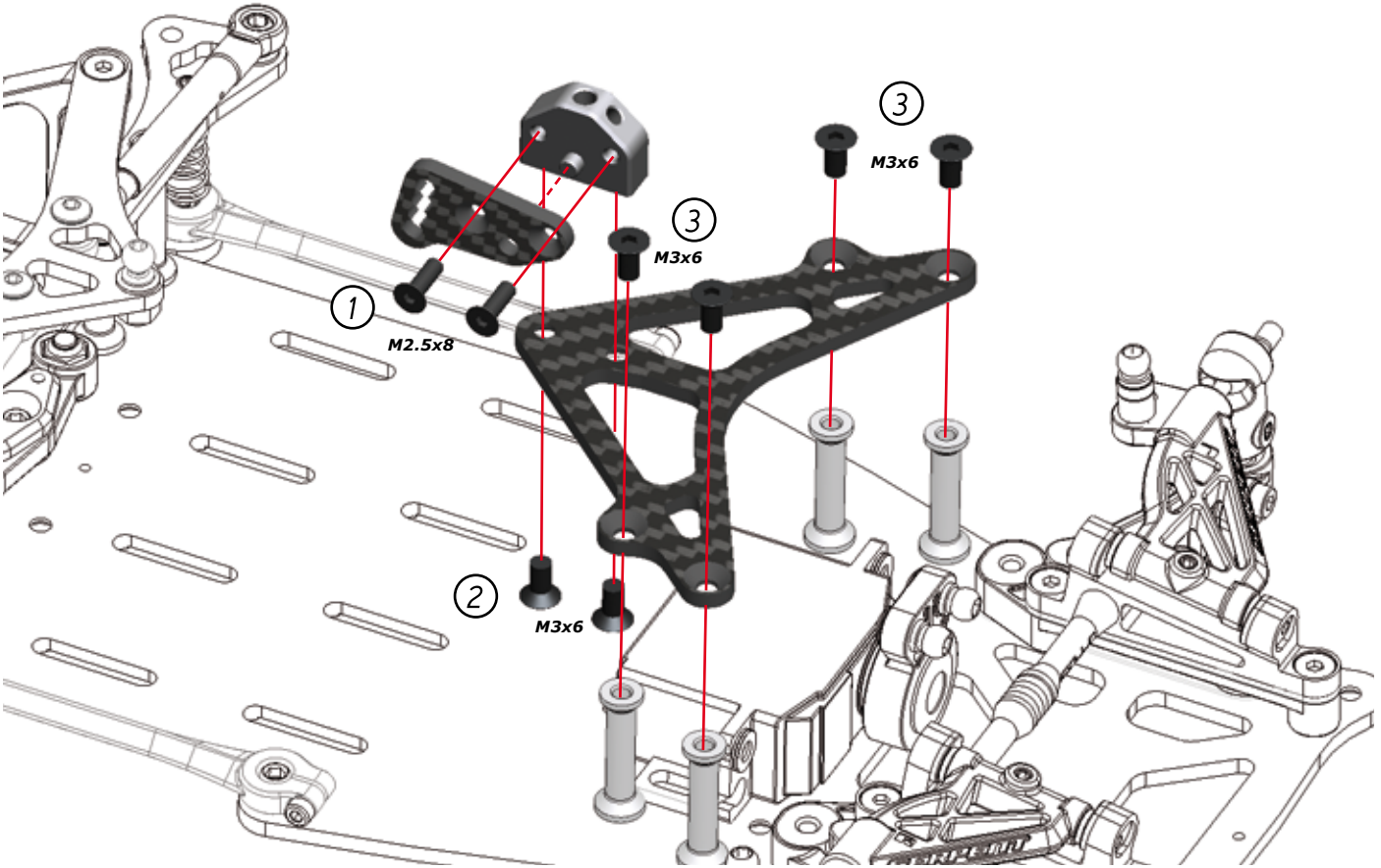


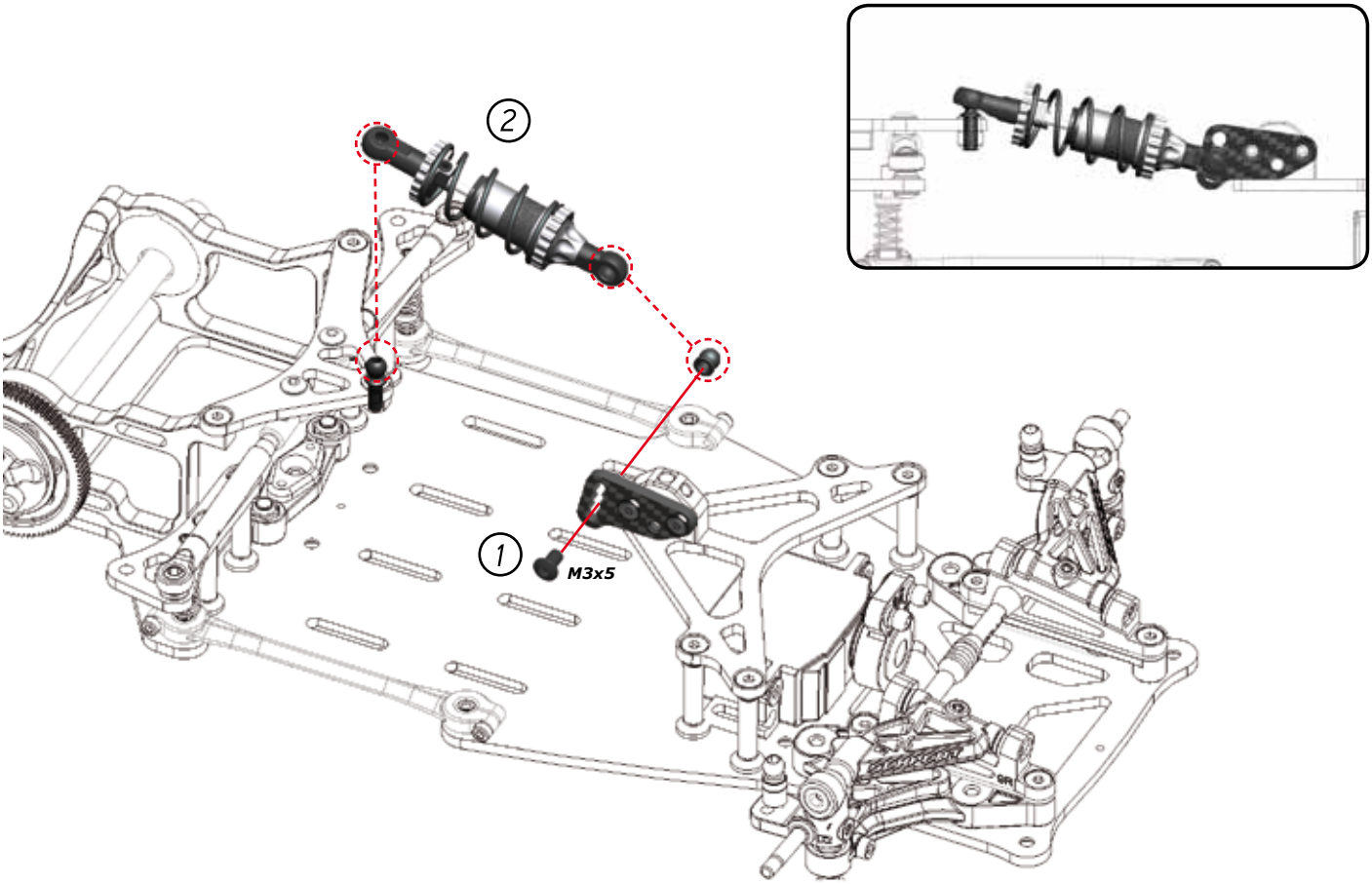

rearward mounting position JR servo, note position of servomounts

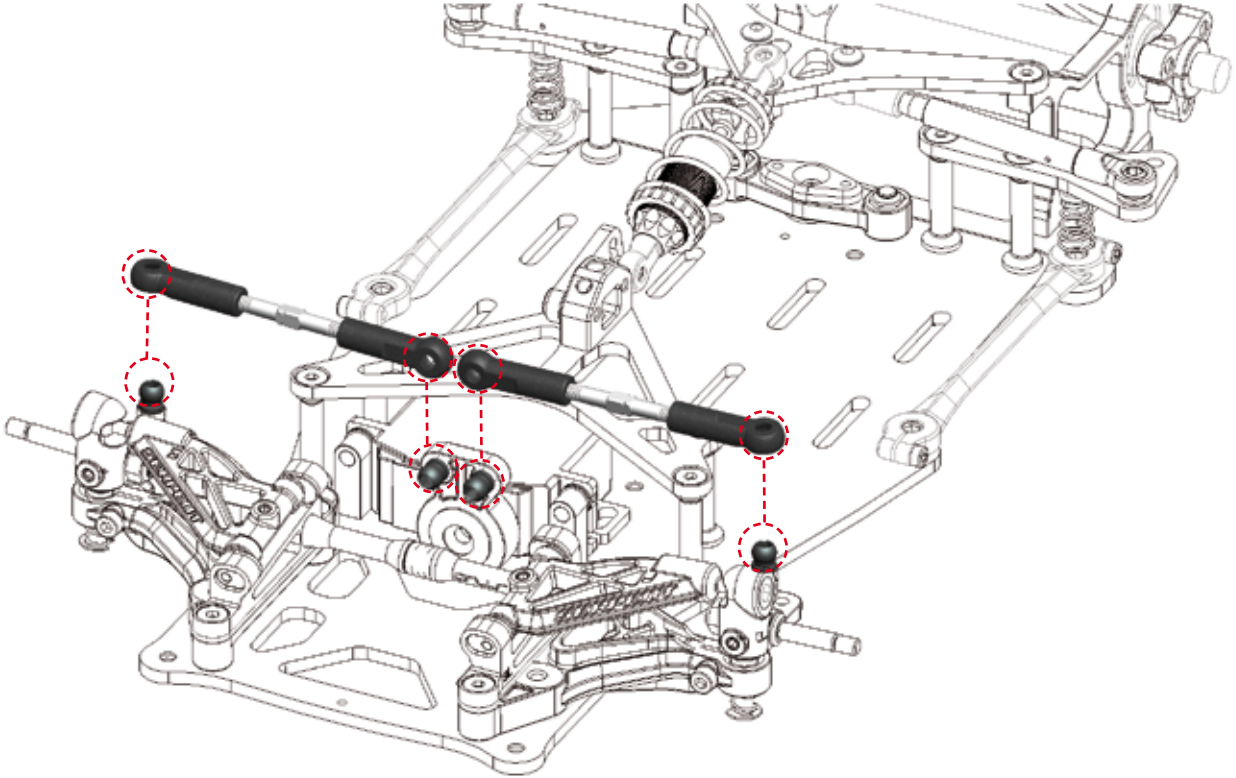

forward mounting position JR servo, note position of servomountsmounts

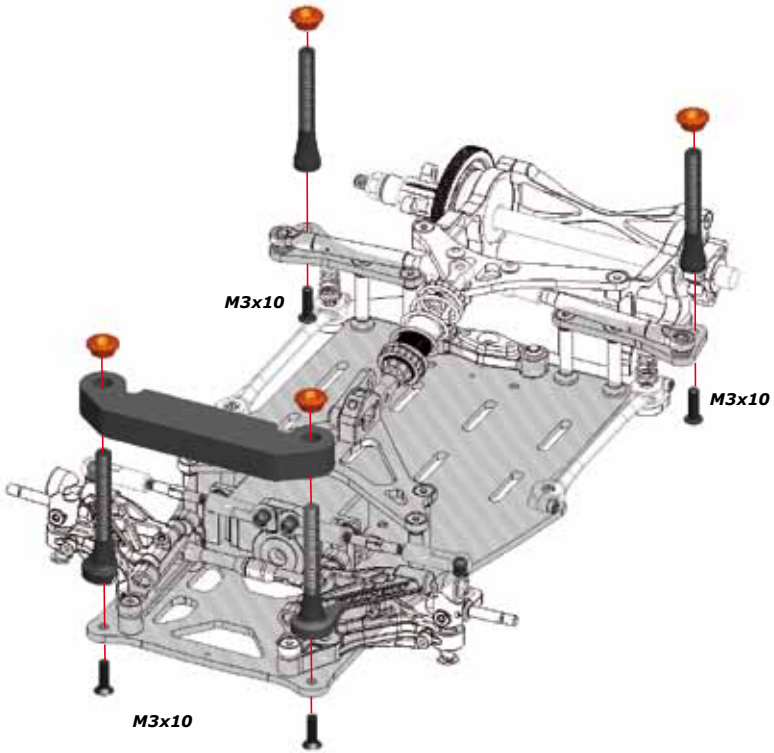

rearward mounting position Futaba mini servo, note position of servomounts

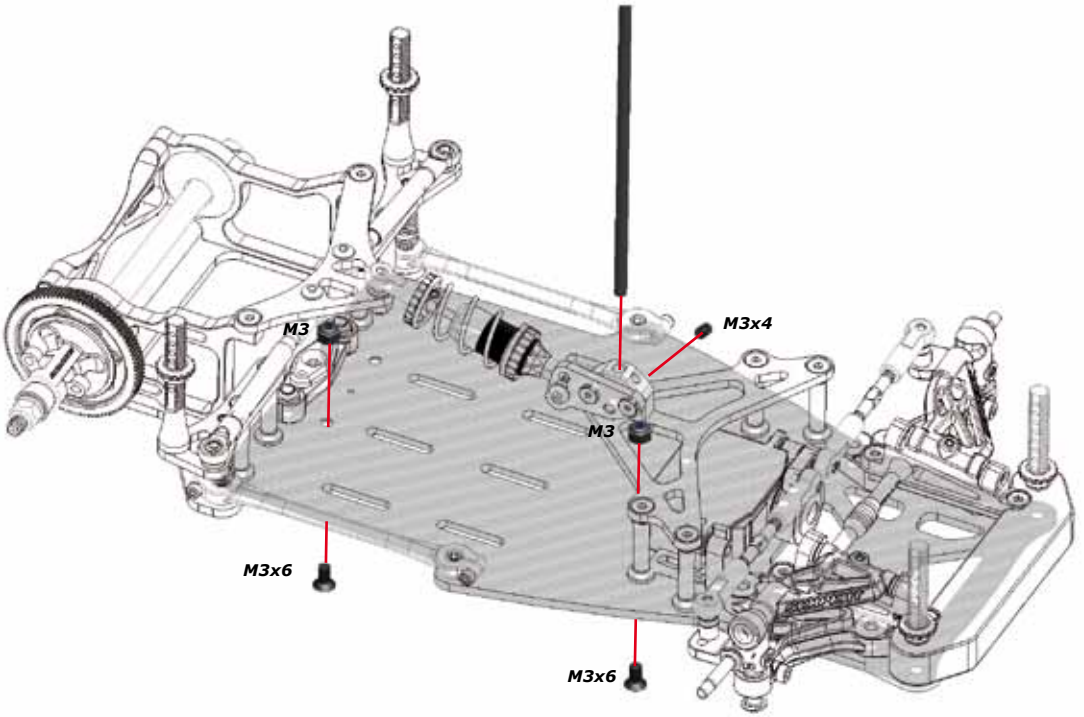

forward mounting position Futaba mini servo, note position of servomounts

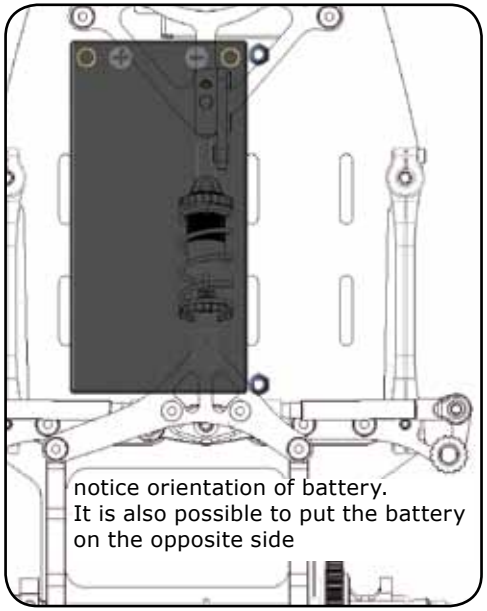

3
M3x6
3
M3x6
1
M2.5x8
2
M3x6


2
1
M3x5

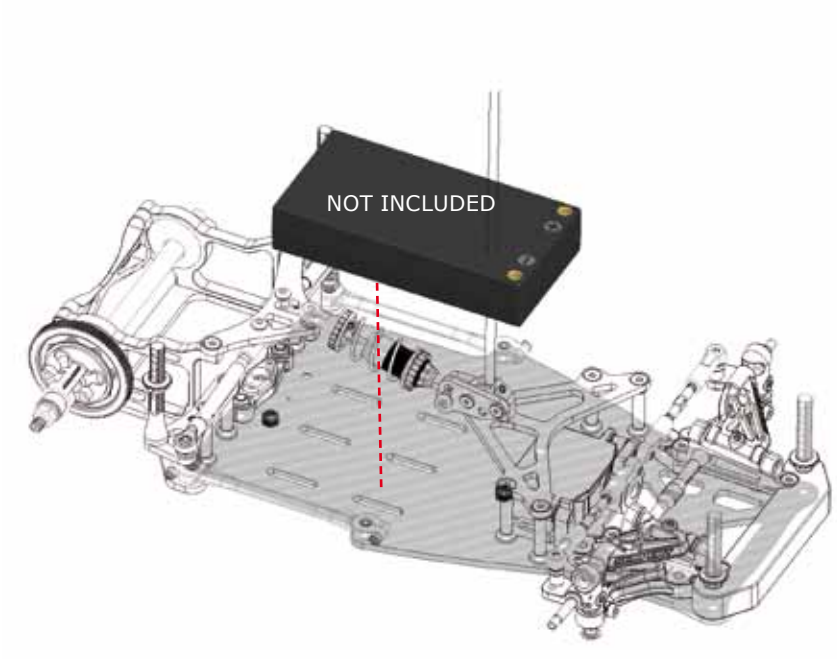


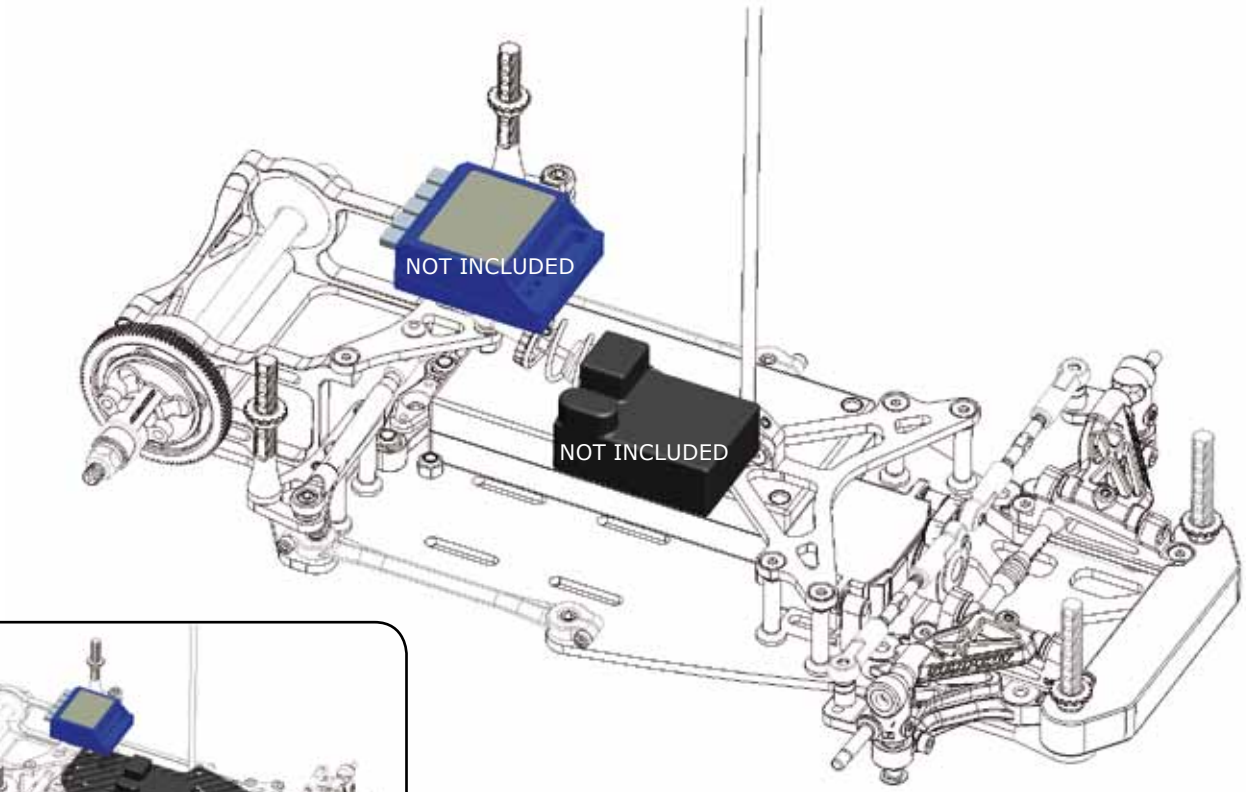

M3x10
M3x10
M3x10

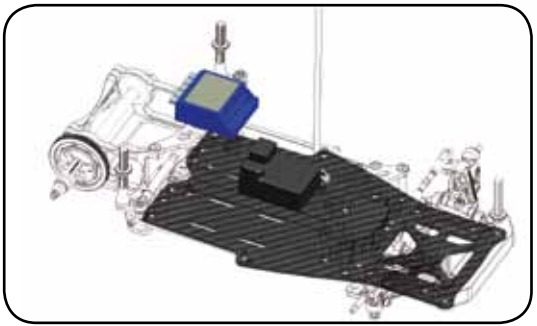

M3
M3x4
M3
M3x6
M3x6



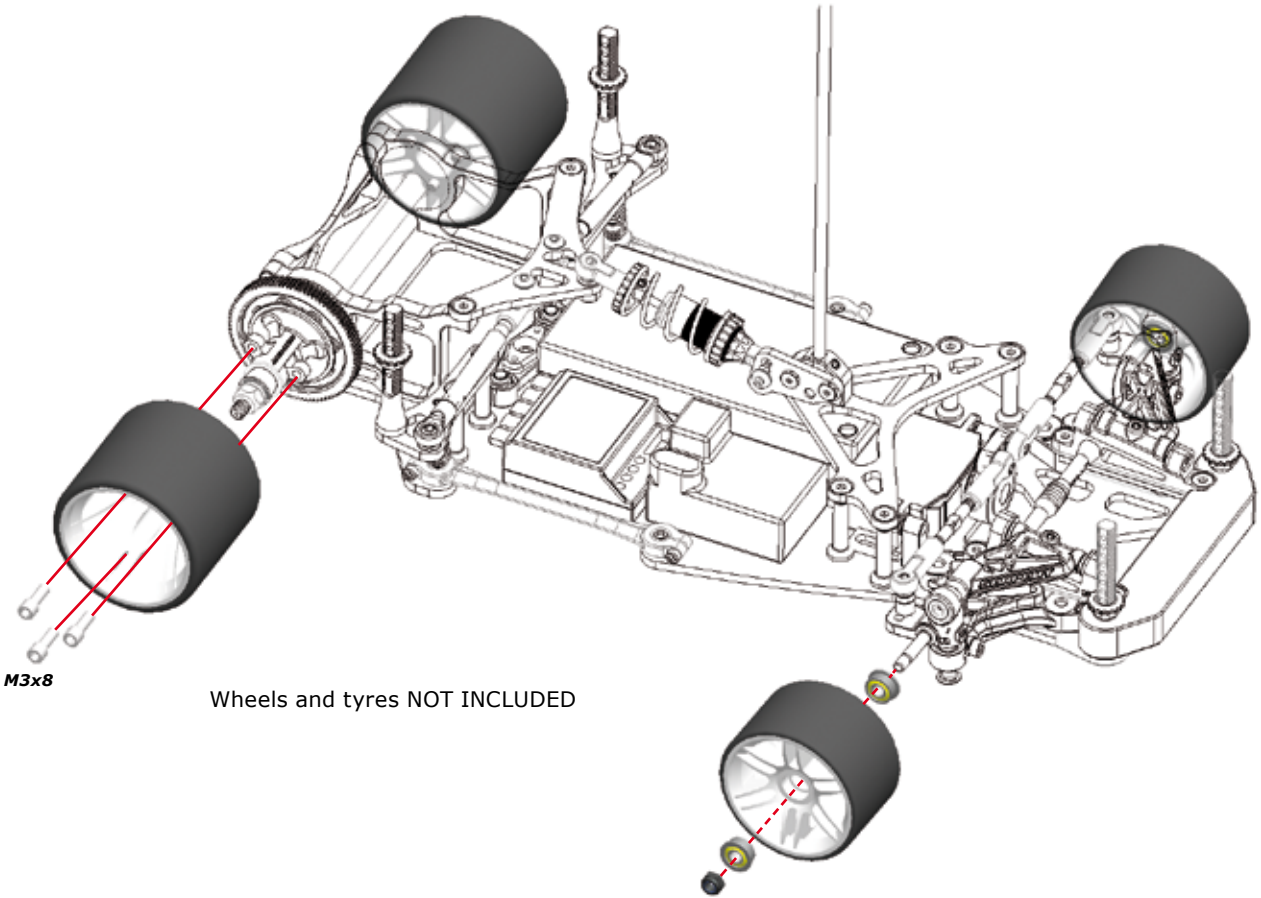
notice orientation of battery.
It is also possible to put the battery on the opposite side







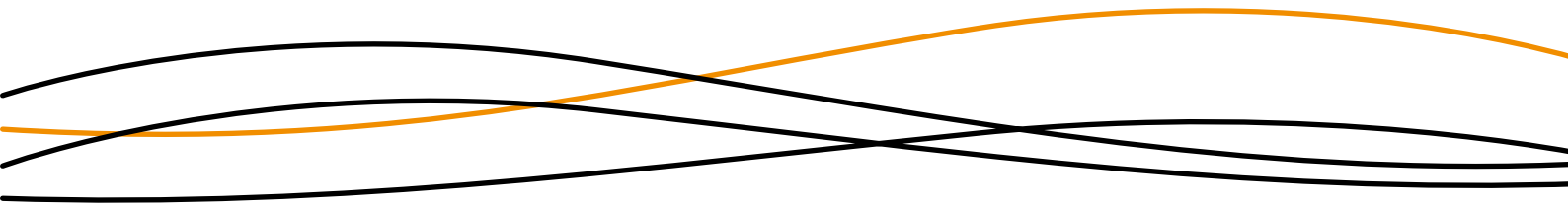
fix components with double sided tape

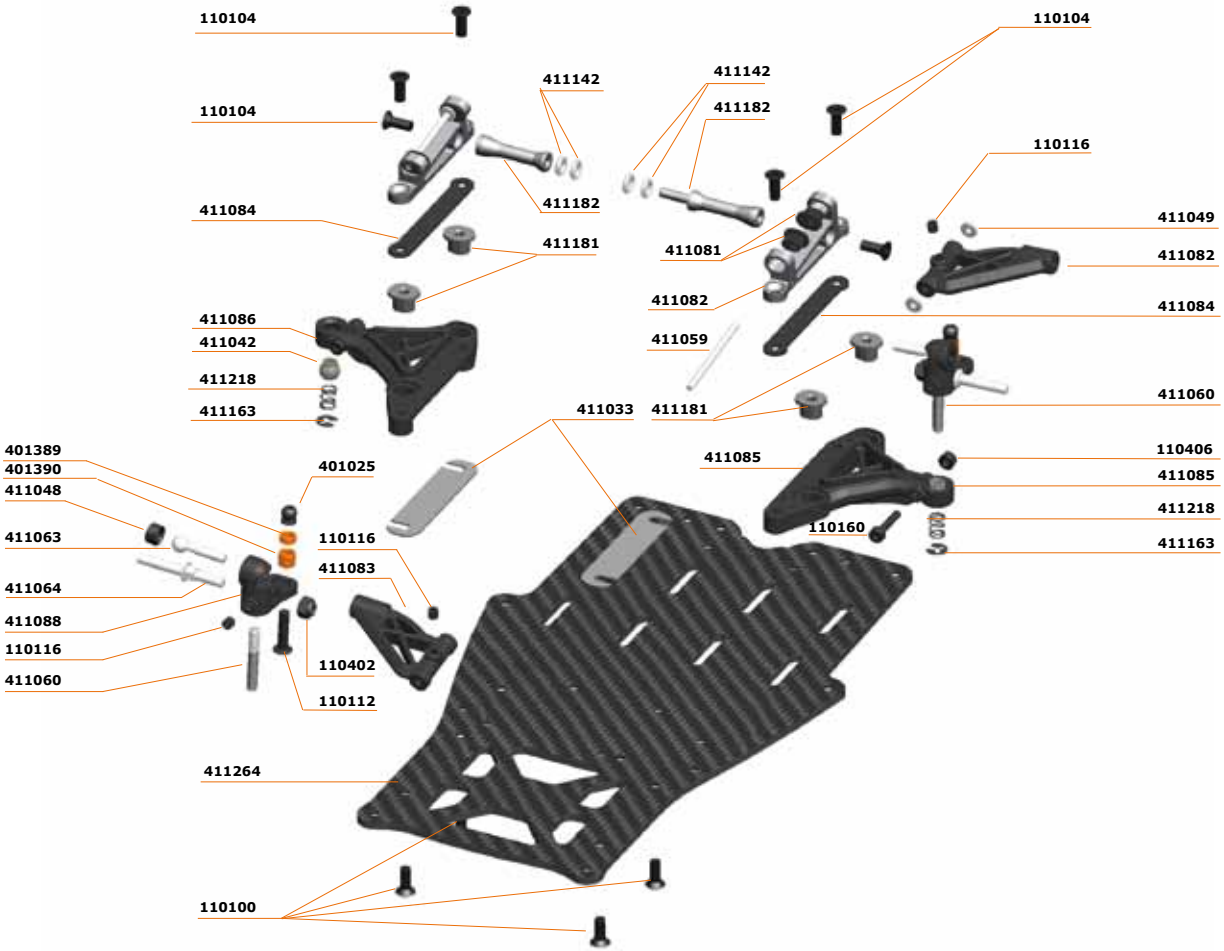


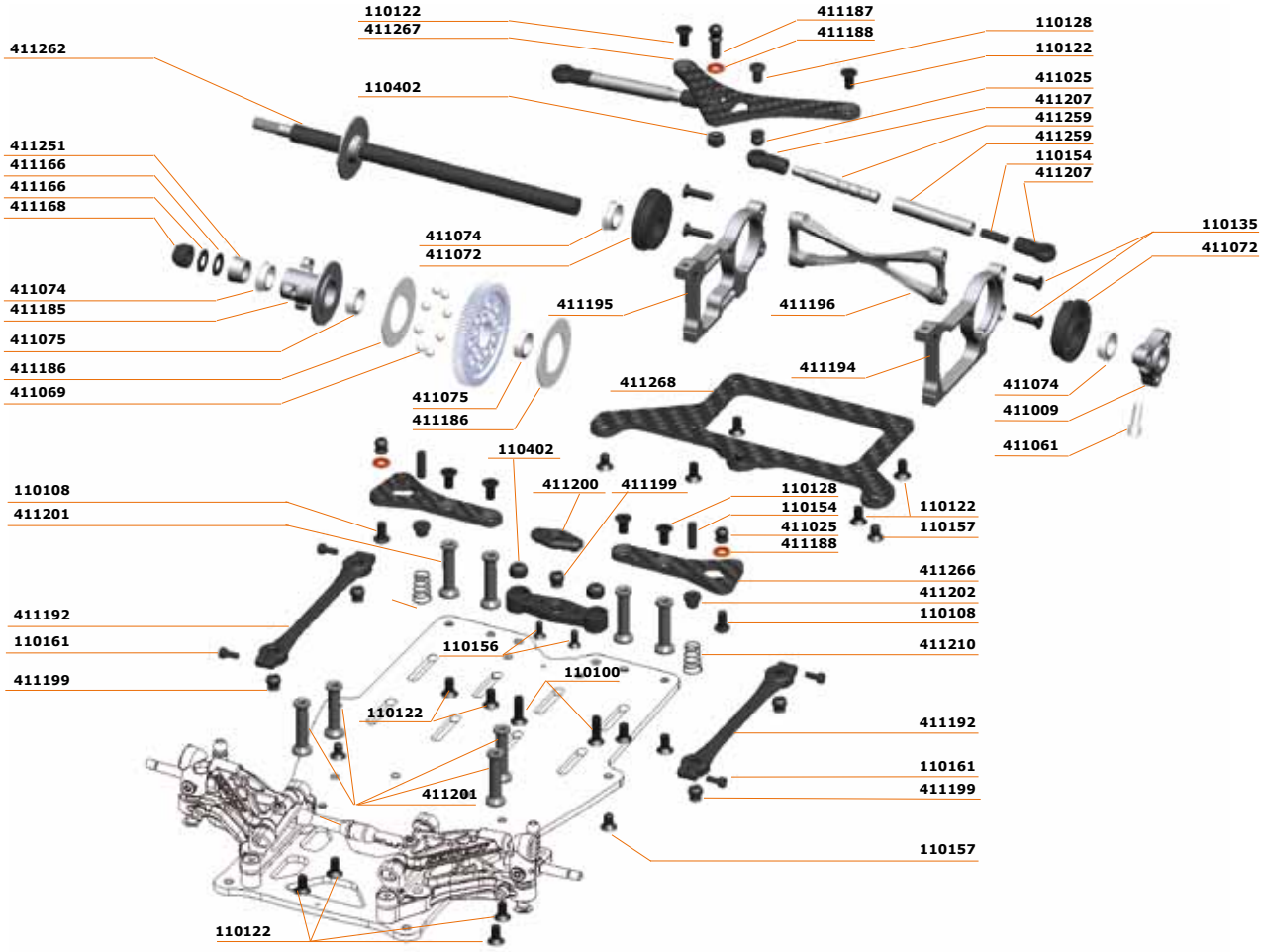
M3x8

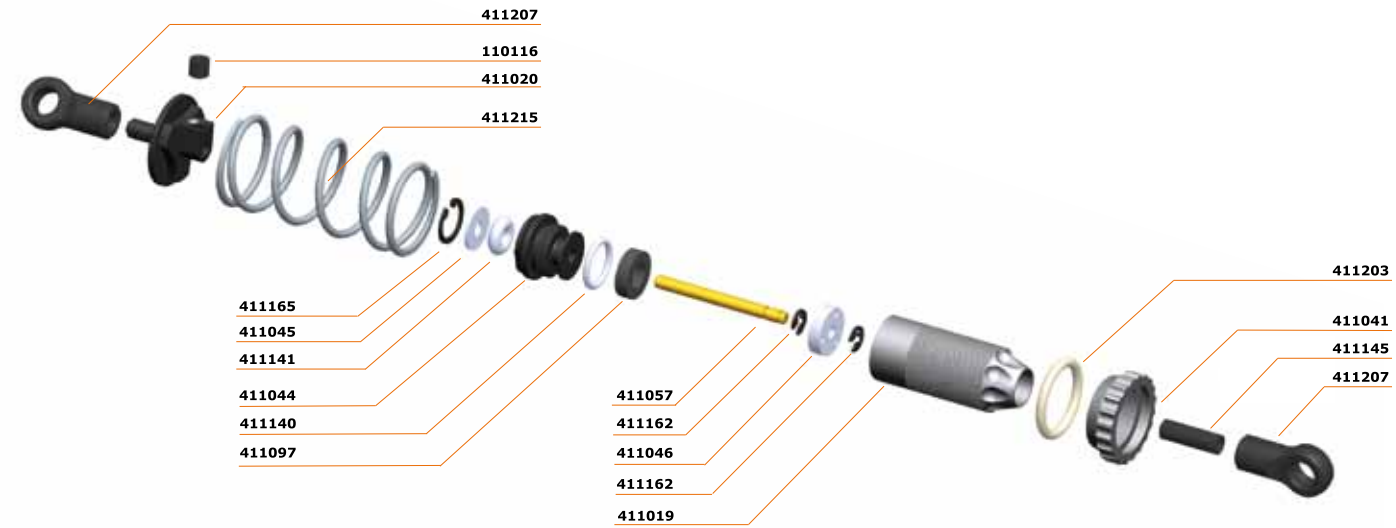
Wheels and tyres NOT INCLUDED

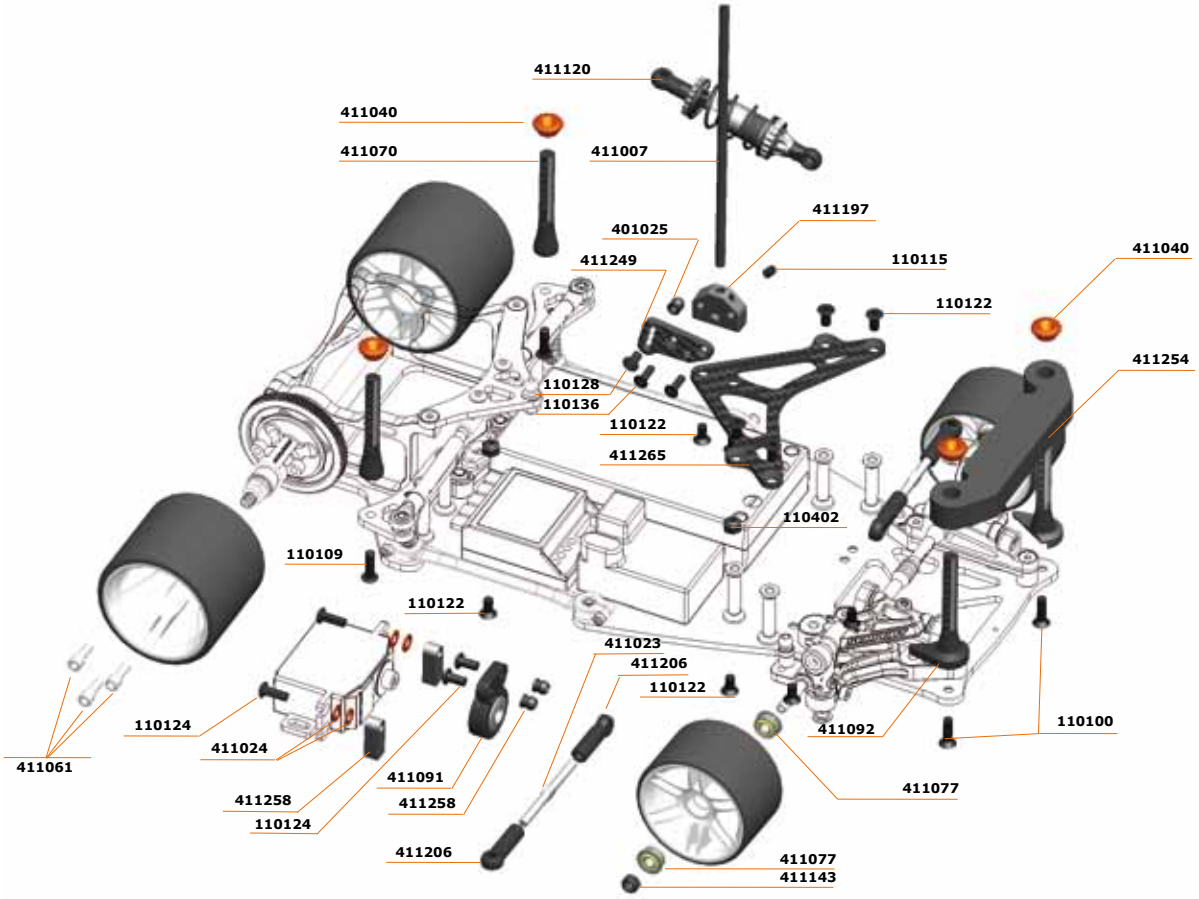
REFERENCE GUIDE




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411143

410004 **Serpent S120-LT 1/12 pancar**

FRONT SUSPENSION
401025 Pivot ball uni 4.5mm
411026 Upper Arm Mount 9L
411028 Upper Arm Mount 9R
411033 Distance Plate for Lower Arm 0.5mm
411042 Pivot Ball for Front Suspension
411048 Adjust Nut for Front Suspension
411049 Distance Shim for Upper Arms
411059 Hinge Pin
411060 Kingpin
411063 Pivot Ball for Upper Suspension Arm
411064 Stub Axle
411081 Upper Arm Adapter
411082 Upper Suspension Arm left
411083 Upper Suspension Arm right
411084 Distance Plate for Upper Arms
411085 Lower Suspension Arm left
411086 Lower Suspension Arm right
411087 Offset Steering Block left
411088 Offset Steering Block right
411122 Front nylon set
411142 O-ring 2.3 x 1.5mm (10)
411254 Bumper foam S120
Optional
411036 Upper Arm Mount 6 L+R
411037 Upper Arm Mount 3 L+R
411105 Hinge Pin Titanium
411106 Kingpin Titanium
411034 Distance Plate for Lower Arm 1.0mm
411035 Distance Plate for Lower Arm 2.0mm
411219 Front spring S120L (2)
411220 Front spring S120L (2)
411221 Front spring S120L (2)
411222 Front spring S120L (2)
411223 Transponder riser S120L (3)CENTRAL

CENTRAL ASSEMBLY
401025 Pivot ball uni 4.5mm
411024 Bumpsteer-shim 3x6x0.5 (10)
411007 Antenna
411192 Side-link S120L (2)
411197 Center shock mount alu
411199 Pivot ball S120L (5)
411200 Pod pivot support S120L
411201 Standoff alu S120L (2)
411202 Spring retainer S120L (4)
411206 Balljoint 4.5 (4)
411210 Side spring 5.5lbs S120L (2)
411091 Servo Saver
411093 Servo Saver insert 25T
411095 Servo Saver insert 23T
411096 Servo Saver insert 24T
411023 Steering Rod
411067 Battery Insert
411258 Servo mount S120L V2 (2)
411259 Tube set S120L
411264 Chassis carbon 2.5mm 120LT
411265 Topdeck carbon 120LT
411266 Cross brace L+R carbon 120LT
Optional
411208 Side spring 4.5lbs S120L (2)
411209 Side spring 5.0lbs S120L (2)
411211 Side spring 6.0lbs S120L (2)
411212 Side spring 6.5lbs S120L (2)
411213 Side spring 7.0lbs S120L (2)

REAR ASSEMBLY
411262 Rear axle S100/120 alu
411009 Left side Clamp Hub
411061 M3x8mm Socket Screw 'special-head'
411072 Bearing Adapter set (9x2)
401025 Pivot ball uni 4.5mm
411187 Pivotball with shaft (2)
411188 Pivotball shim (2)
411194 Motor pod left alu S120L
411195 Motor pod right alu S120L
411196 Motor pod backplate alu S120L
411260 Clamp hub left v2 S120
411267 Top plate 120LT
411268 Power pod plate 120LT
Optional
411250 Rear axle S100/120
411224 Rear axle shim 0,25 (10)
411251 Rear axle cone S100/120

DIFFERENTIAL
411069 Diff Balls,1/8"
411185 Diff hub S120L
411011 Trust Bearing Adapter
411166 Diff spring washer (4)
411183 Differential-set S120L
411186 Diff washer S120L (2)
411168 Diff lock nut M4 (10)
411260 Clamp hub left v2 S120
Optional
411252 Differential-set S100/120

SHOCK ABSORBERS
411019 Shock Body
411020 Shock Spring Holder
411028 Revision set (o-ring, washers, clips)
411041 Shock Spring Adjust Nut
411044 Shock Cap
411045 Shock Seal Washer
411046 Shock Piston 3-hole
411047 Shock Piston 2-hole
411057 Shock shaft
411097 Foam Insert for Shock
411120 Shock-absorber-set
411140 O-ring 6.0 x 1.0mm (10)
411141 O-ring 2.0 x 2.0mm (10)
411203 O-ring for spring adjuster (5)
411207 Balljoint 4.5 short (2)
411215 Center spring 14lbs S120L
Optional
411103 Shock shaft, Titanium-nitride
411214 Center spring 12lbs S120L
411216 Center spring 16lbs S120L
411217 Center spring 18lbs S120L

BODYMOUNT
411040 Body Adjust Nut
411070 Body Mount
411092 Body Mount front

BEARINGS
411073 Axial Ball Bearing 4.2x9x4
411074 Ball Bearing flanged 1/4x3/8x1/8 (2)
411075 Ball Bearing 1/4x3/8x1/8 (2)
411077 Ball bearing, flanged 1/8x5/16x9/64 (2)
411124 Bearing-set standard

FASTENING MATERIALS (for all Serpent cars)
110100 Screw allen countersunk m3x10 (10)
110101 Screw allen countersunk m4x8 (10)
110102 Screw allen countersunk m4x10 (10)
110103 Screw allen countersunk m4x16 (10)
110104 Screw allen countersunk M3x8 (10)
110105 Screw allen countersunk m4x12 (10)
110106 Screw allen flanged roundhead m5x12 (10)
110107 Screw allen cilinderhead m3x16 (10)
110108 Screw allen roundhead m3x6 (10)
110109 Screw allen roundhead m3x10 (10)
110110 Screw allen roundhead m3x16 (10)
110111 Screw allen roundhead m3x14 (10)
110112 Screw allen roundhead m3x12 (10)
110113 Screw allen roundhead m4x8 (10)
110114 Setscrew allen m3x8 (10)
110115 Setscrew allen m3x4 (10)
110116 Setscrew allen m3x3 (10)
110117 Setscrew allen m3x12 (10)
110118 Setscrew allen m4x4 (10)
110119 Setscrew allen m4x6 (10)
110120 Setscrew allen m4x10 (10)
110121 Setscrew allen m5x6 (10)
110122 Screw allen countersunk m3x6 (10)
110123 Screw philips roundhead 3.5x13 (10)
110124 Screw allen roundhead m3x8 (10)
110125 Screw allen countersunk m3x20 (10)
110126 Screw allen countersunk m2.5x12 (10)
110127 Screw allen countersunk m3x12 (10)
110128 Screw allen roundhead m3x5 (10)
110129 Screw allen cilinderhead m3x10 (10)
110130 Screw allen roundhead m2.5x6 (10)
110131 Screw allen roundhead m2.5x10 (10)
110132 Screw allen countersunk m3x16 (10)
110133 Screw philipshead countersunk 2.5x8 wide (10)
110134 Screw philipshead countersunk 2.5x10 wide (10)
110135 Screw allen countersunk M2.5x10 (10)
110136 Screw allen countersunk M2.5x8 (10)
110137 Setscrew allen M3x6 (10)
110138 Screw allen countersunk M4x14 (10)
110139 Screw allen countersunk M3x40 (10)
110140 Screw allen roundhead M3x20 (10)
110141 Screw allen roundhead M3x22 (10)
110142 Screw allen roundhead M3x25 (10)
110143 Screw allen roundhead M4x18 (10)
110144 Screw allen roundhead M3x18 (10)
110145 Screw allen roundhead flanged M3x12 (10)
110146 Screw allen roundhead flanged M3x16 (10)
110147 Screw ph roundhead widethread 2.5x5 (10)
110148 Setscrew allen M5x4 (10)
110149 Screw allen countersink M2x10 (10)
110150 Screw M6x12 nylon black (2)
110151 Screw allen cilinderhead M4x10 (10)
110152 Screw allen cilinderhead M3x8 (10)
110153 Screw allen roundhead M2.3x4 (10)
110154 Setscrew allen M3x10 (10)
110155 Setscrew allen M3x5 (10)
110156 Screw allen countersunk M2,2x6 (10)
110157 Screw allen countersunk M3x5 (10)
110158 Screw allen countersunk M3x15 (10)
110159 Screw allen countersunk M3x18 (10)
110160 Screw allen cilinderhead M2,2x12 (10)
110161 Screw allen cilinderhead M2x6 (10)
110162 Setscrew allen M3x2,5 (10)
110163 Setscrew allen M3x2 (10)
110164 Screw allen roundhead M3x4 (10)
110200 Pin 2.5x8 (10)
110201 Pin 3x12 (10)
110202 Pin 5x5 (10)
110203 Pin 3x14 (10)
110204 Pin 3x20 (10)
110205 Pin 3x22 (10)
110206 Pin 2.5x22 (10)
110207 Pin 2.5x12 (10)
110208 Pin nra 2x9.8 (4)
110209 Pin nra 2x18 (4)
110210 Pin 3x13 (10)
110211 Pin 2.5x13 (10)
110212 Pin 2.5x17 (10)
110213 Pin 2.5x10 (10)
110214 Pin 3x15 (10)
110215 Pin 2x12 (10)
110216 Pin 2,5x15 (10)
110300 E-clip 2.3 (10)
110301 E-clip 3.2 (10)
110302 E-clip 4.0 (10)
110303 E-clip 5.0 (10)
110304 E-clip 7.0 (10)
110305 Seger clip 12x1.0 (10)
110306 E-clip 6.0 (10)
110400 Washer 6.0x10 (10)
110401 Washer 3.2x7 (10)
110402 Nut nylock M3 (10)
110403 Nut nylock M4 (10)
110404 Washer 6x8x0.3 (10)
110405 Nut nylock M4 flanged (10)
110406 Nut nylock M2.2 (10)

TOOLS
1468 Car-stand alu Serpent orange
150001 Tool bag Serpent

MERCHANDISING
190110 Sweater hooded serpent black (s)
190111 Sweater hooded serpent black (m)
190112 Sweater hooded serpent black (l)
190113 Sweater hooded serpent black (xl)
190114 Sweater hooded serpent black (xxl)
190121 T-shirt Serpent LTS white (S)
190122 T-shirt Serpent LTS white (M)
190123 T-shirt Serpent LTS white (L)
190124 T-shirt Serpent LTS white (XL)
190125 T-shirt Serpent LTS white (XXL)
190127 T-shirt Serpent DTR orange (S)
190128 T-shirt Serpent DTR orange (M)
190129 T-shirt Serpent DTR orange (L)
190130 T-shirt Serpent DTR orange (XL)
190131 T-shirt Serpent DTR orange (XXL)
190132 T-shirt Serpent DTR black (S)
190133 T-shirt Serpent DTR black (M)
190134 T-shirt Serpent DTR black (L)
190135 T-shirt Serpent DTR black (XL)
190136 T-shirt Serpent DTR black (XXL)
190150 Dress shirt Serpent black-orange (S)
190151 Dress shirt Serpent black-orange (M)
190152 Dress shirt Serpent black-orange (L)
190153 Dress shirt Serpent black-orange (XL)
190154 Dress shirt Serpent black-orange (XXL)
190155 Dress shirt Serpent black-orange (XXXL)
190156 Polo shirt Serpent black-orange (S)
190157 Polo shirt Serpent black-orange (M)
190158 Polo shirt Serpent black-orange (L)
190159 Polo shirt Serpent black-orange (XL)
190160 Polo shirt Serpent black-orange (XXL)
190161 Polo shirt Serpent black-orange (XXXL)
1891 Serpent medium promo decal 20x12,5 (2)
1893 Serpent decal XL (30x60cm)
1998 Cap serpent black-orange
1897 Pit-towel serpent orange 120x64cm
1872 Rucksack serpent (35x45cm) black
1873 Rucksack serpent (48x61cm) black
1883 Banner Serpent S-logo 200x100 nylon

SERPENT

S110 link TUBE



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