

INSTRUCTION MANUAL

& REFERENCE GUIDE

INTRODUCTION

Serpent created this racing car for the competitive electric 1/12th scale pan car class as the S120-L, which like all our previous cars, has been designed to win straight from the box. Featuring a number of truly innovative features such as a nicely shaped aluminium rear pod, floating horizontal damper, shaped side-links, easy adjustment and top quality materials throughout, the S120-L 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.

INSTRUCTIONS

Serpent's long tradition of excellence extends to their 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 racecar that will soon be able to unleash its full potential at the racetrack.

SETUP

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

EXPLODED VIEWS AND PARTS LIST

The exploded views and parts lists for the Serpent S120-L 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.**

SAFETY

Included with your Serpent S120-L kit is a document entitled "Read This First" that covers safety precautions for the assembly and use of this product. We strongly recommend that you thoroughly read and understand that document, and follow all the precautions.

SERPENT.COM

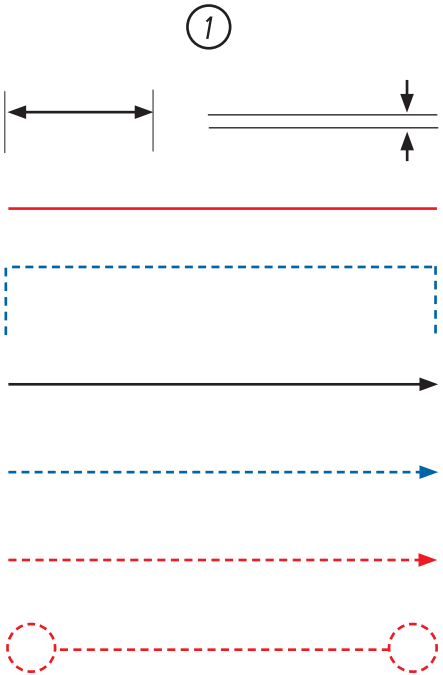
The printed instruction manual included with your Serpent S120-L kit is very complete, though due to continuous product development, more up-to-date information may be provided at our **Serpent.com** website.

All information about the Serpent S120-L is accessible from the Serpent S120-L product page found on Serpent.com and can be accessed by simply typing **serpent.com/410003** into your web browsers address bar. From the Serpent S120-L product page you will find the very latest information about your Serpent S120-L: reports by team drivers and other experts, tips and tricks, setups, image gallery and downloadable files including the latest version of the instruction manual will be made available as downloadable PDF files.

CONTENTS

ASSEMBLY INSTRUCTIONS	6
REFERENCE GUIDE	30
PARTS LIST	35

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



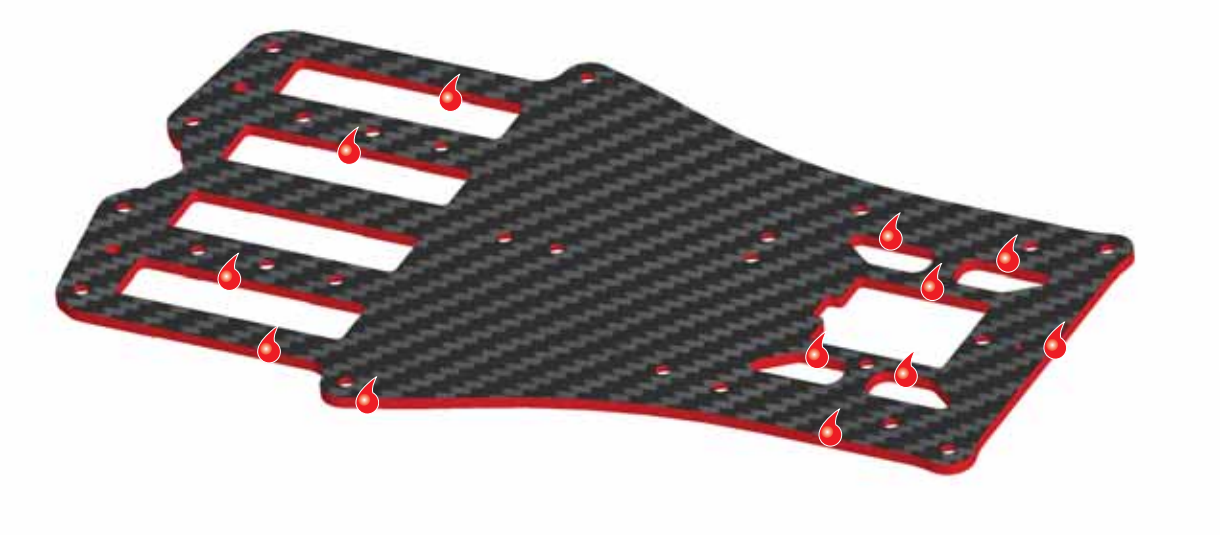
Apply transmission grease (Grey), threadlock* (Blue), CA glue* (Red)
or differential grease (Orange). (*Items not included.)

ASSEMBLY INSTRUCTIONS

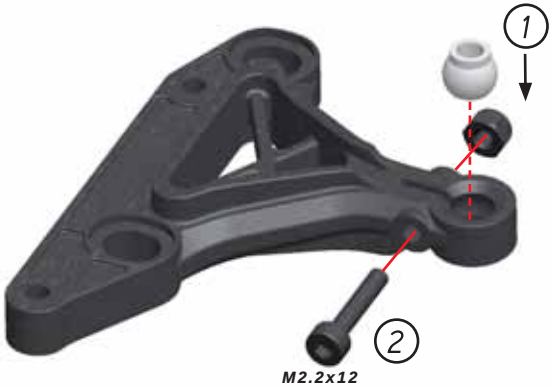


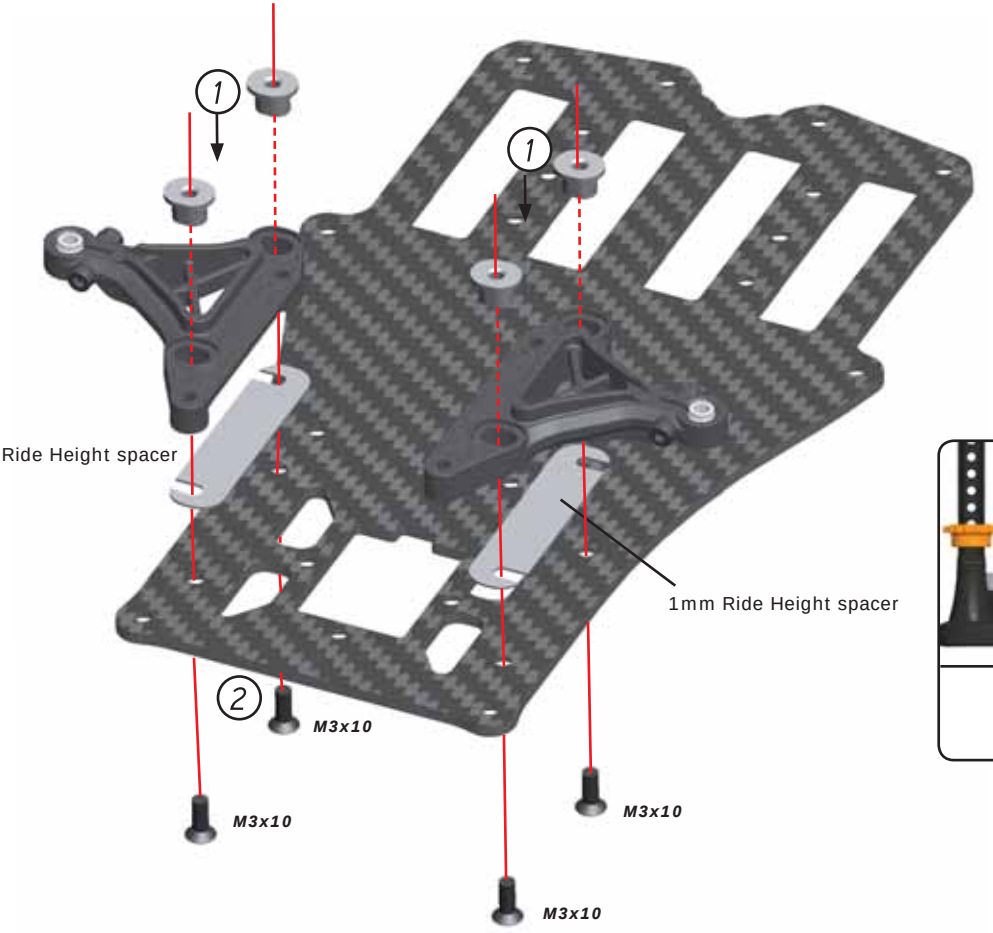
CA Glue

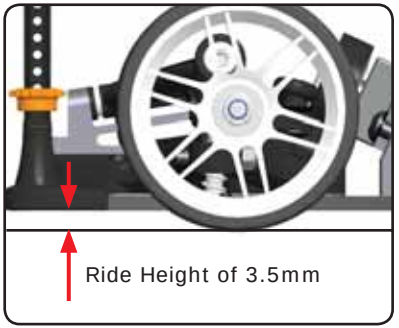
To prevent the risk of the carbon fibre splitting in the event of a crash you should apply CA Glue around the chassis' edge and battery slots as shown in red below.

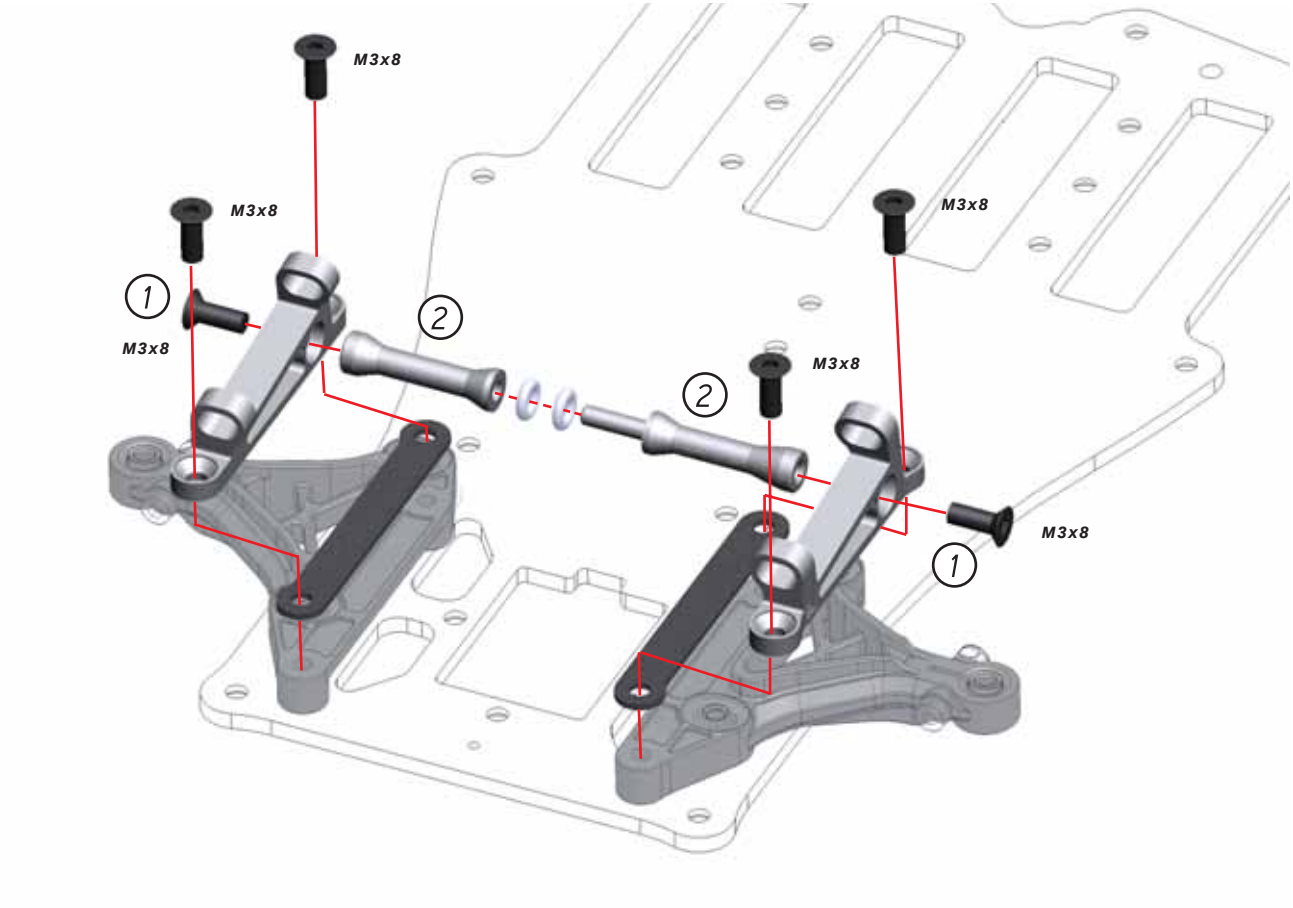


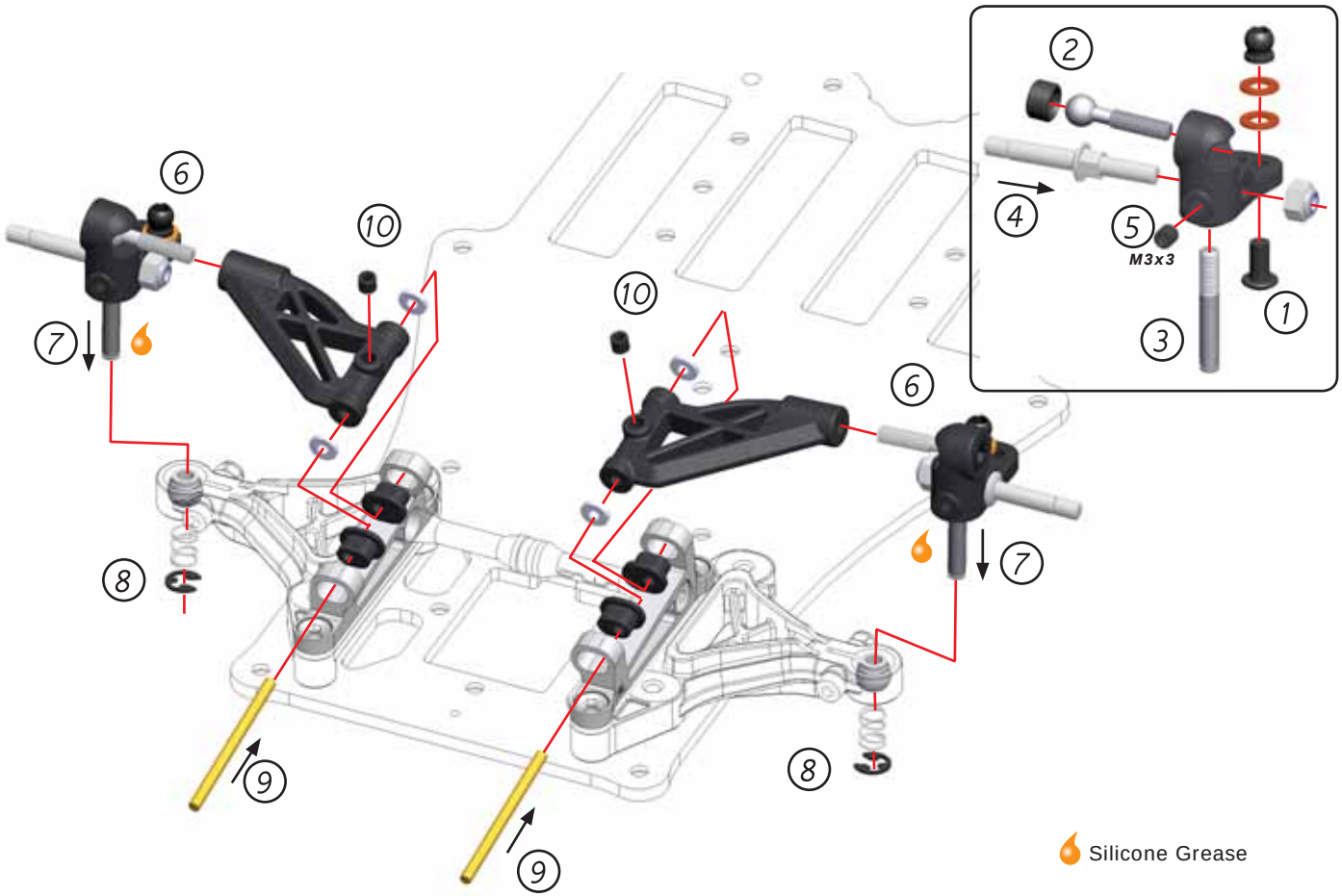

1
2
M2.2x12

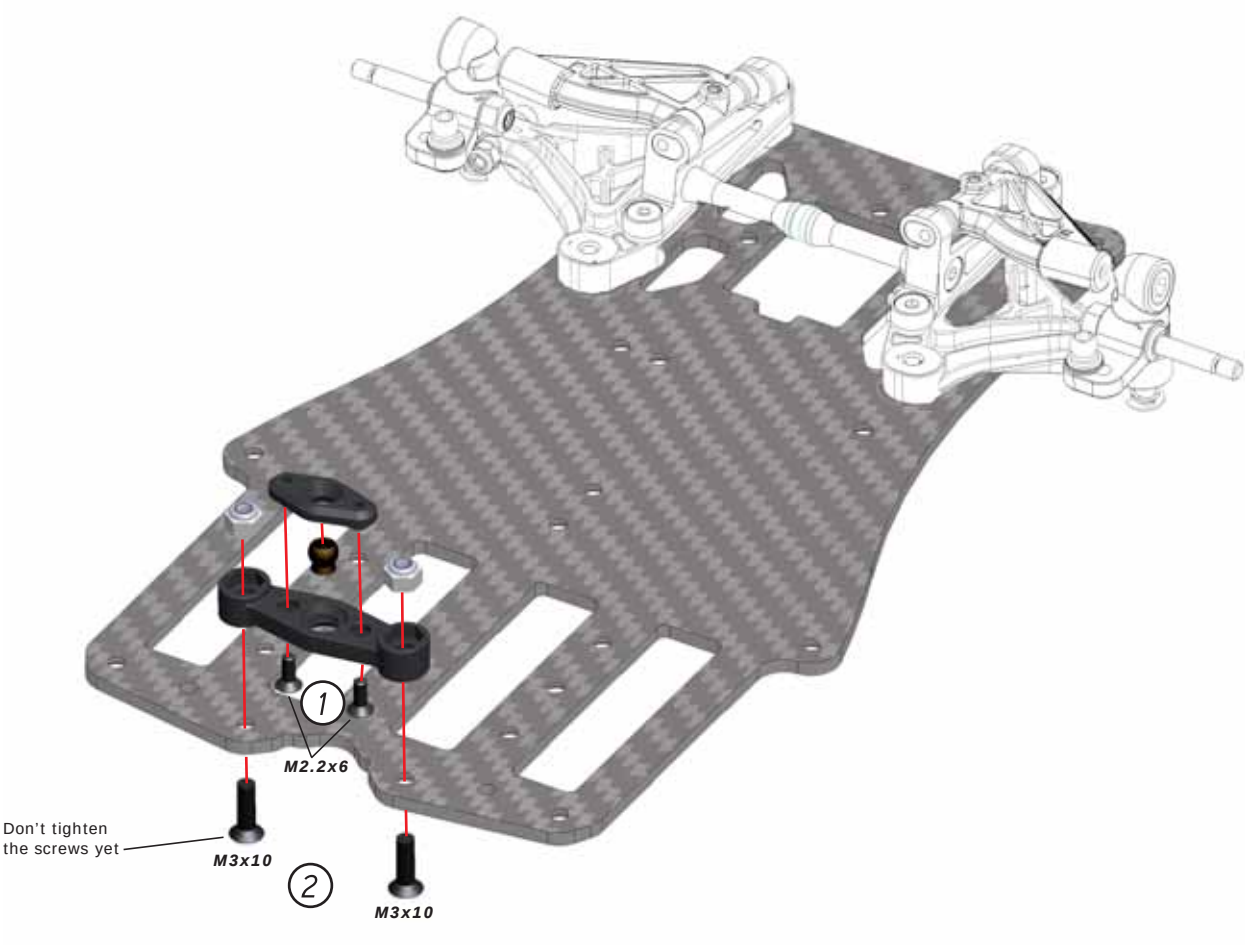

1
2
M2.2x12

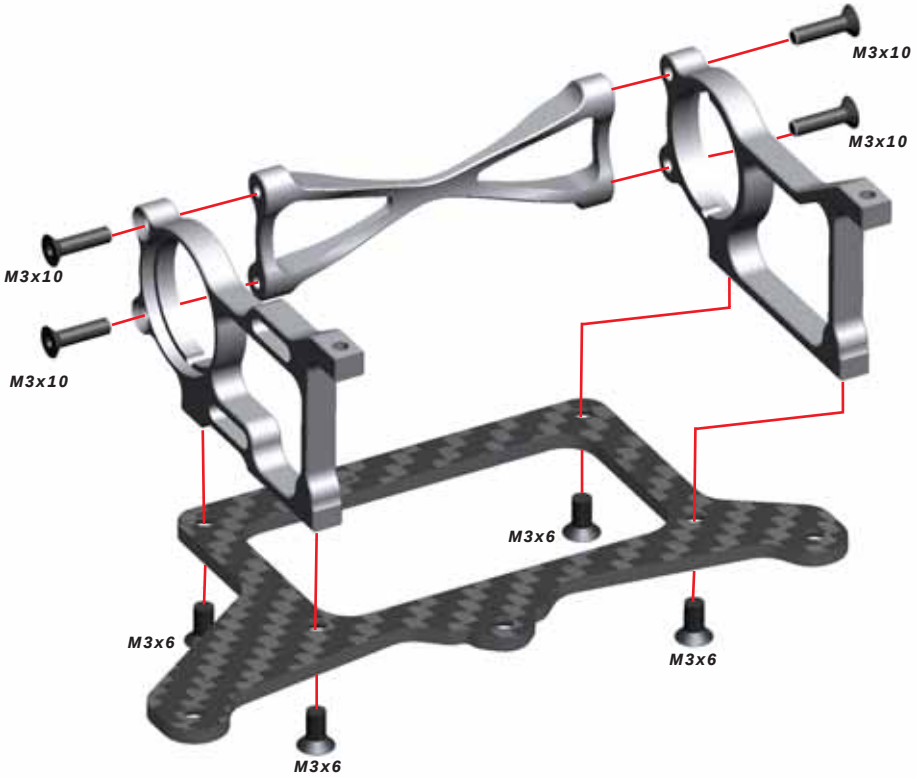

1
1
1mm Ride Height spacer
1mm Ride Height spacer
2
M3x10
M3x10
M3x10
M3x10

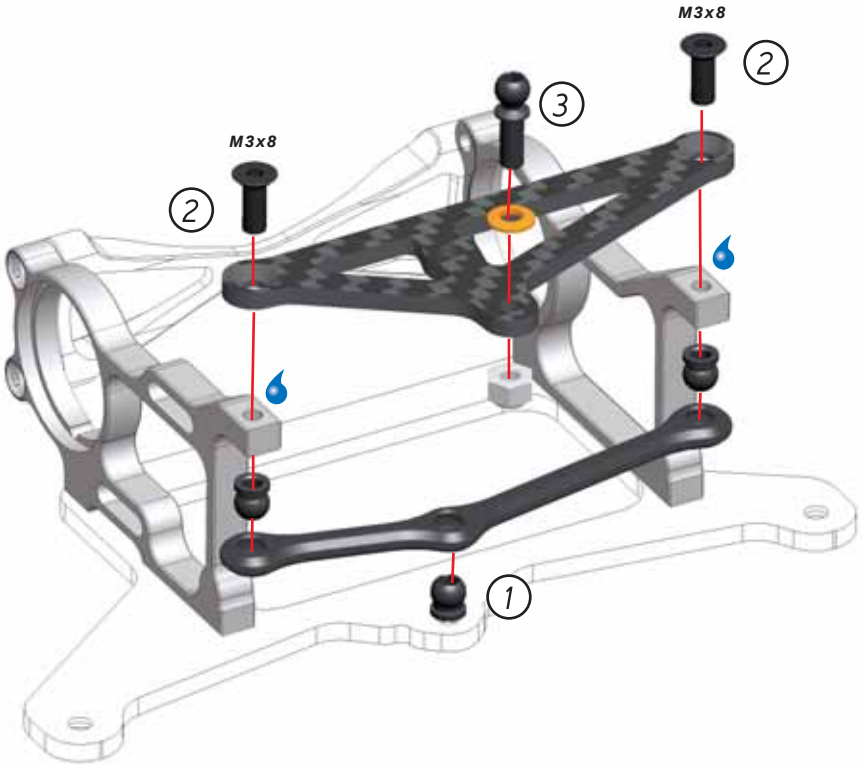

Ride Height of 3.5mm


M3x8
M3x8
M3x8
1
M3x8
2
2
M3x8
M3x8
1

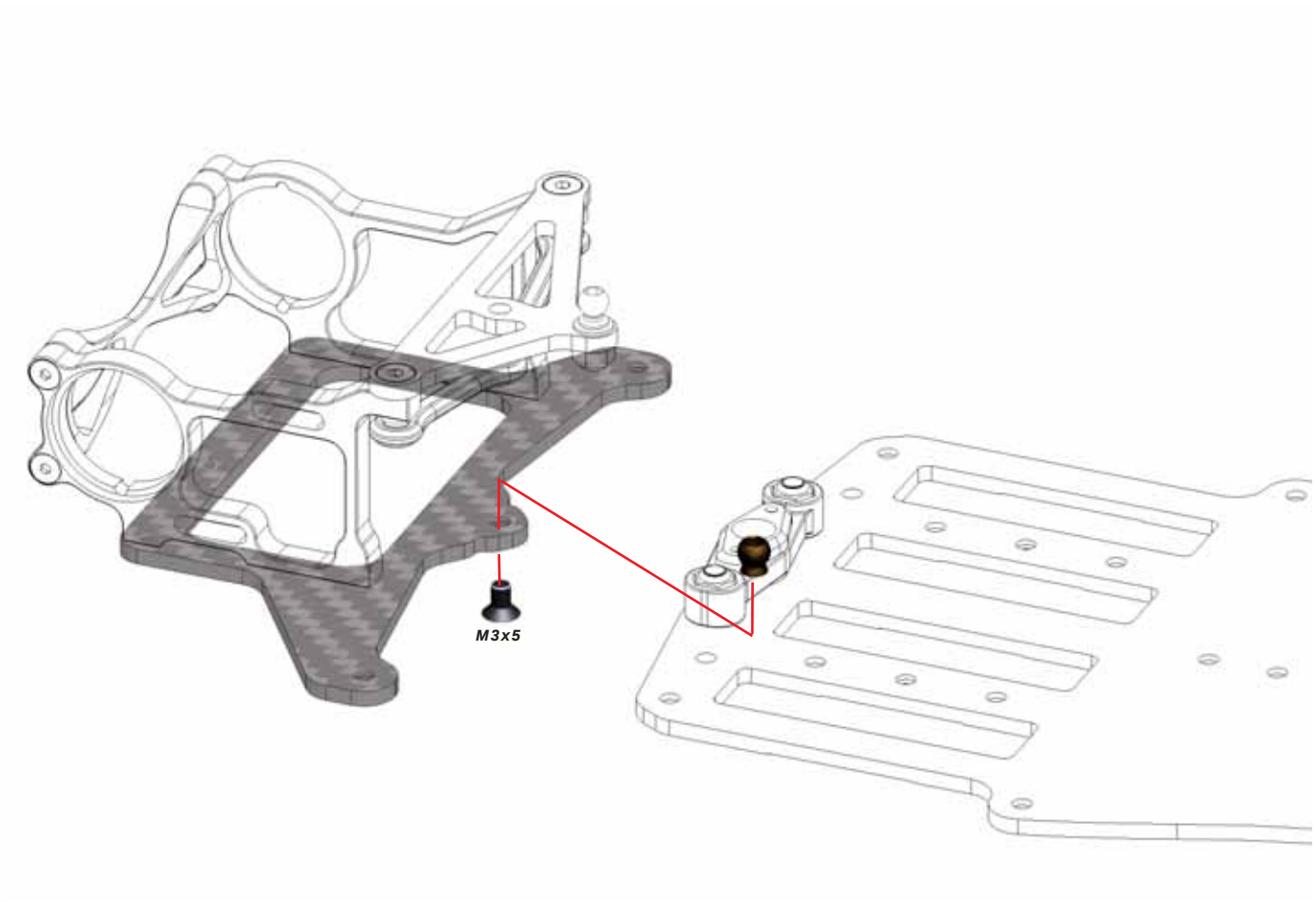

2
4
5
M3x3
1
3
6
10
7
8
9
10
6
7
8
9
Silicone Grease

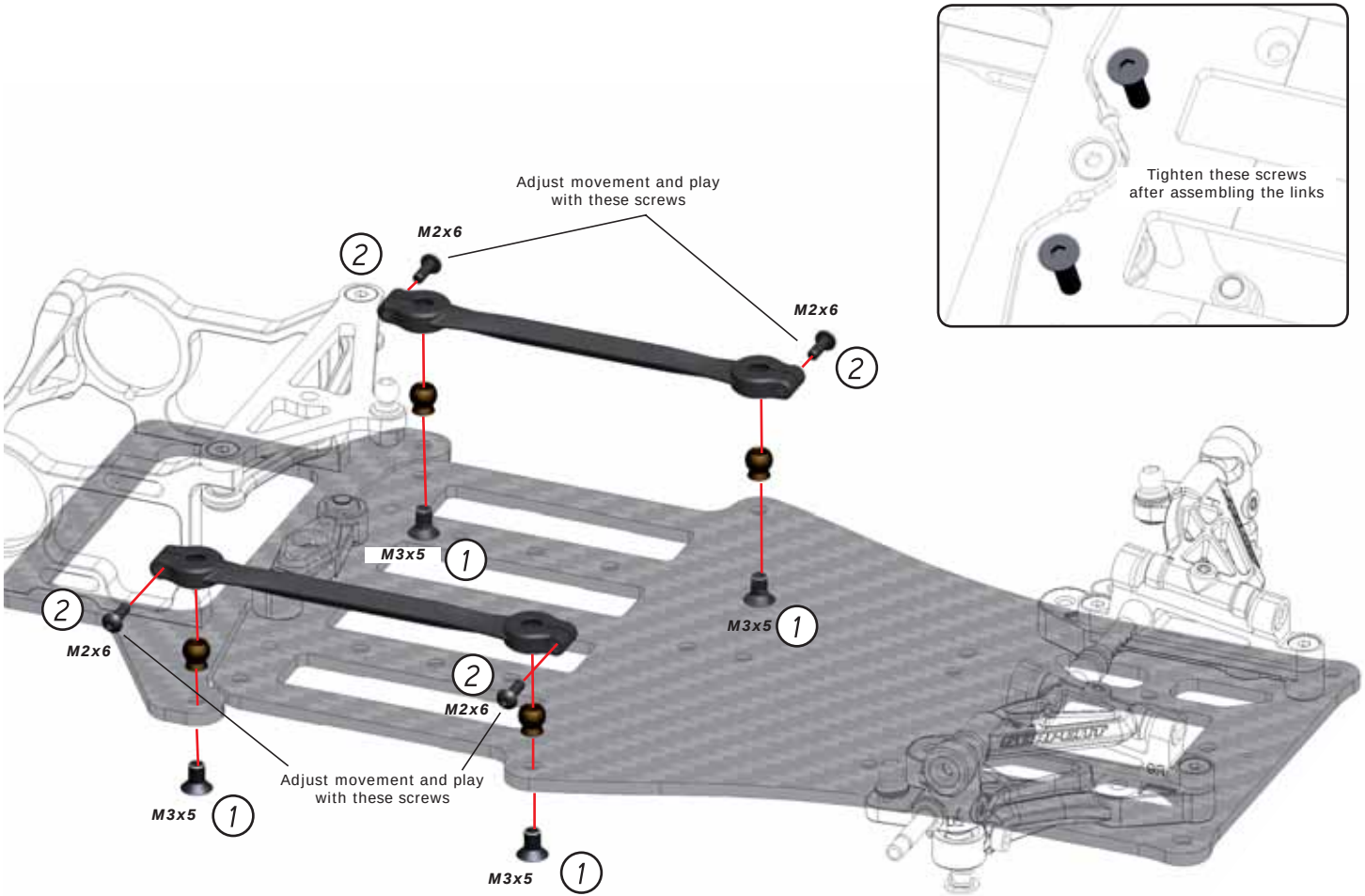

1
M2.2x6
Don't tighten
the screws yet
M3x10
2
M3x10


M3x10
M3x10
M3x10
M3x10
M3x6
M3x6
M3x6
M3x6

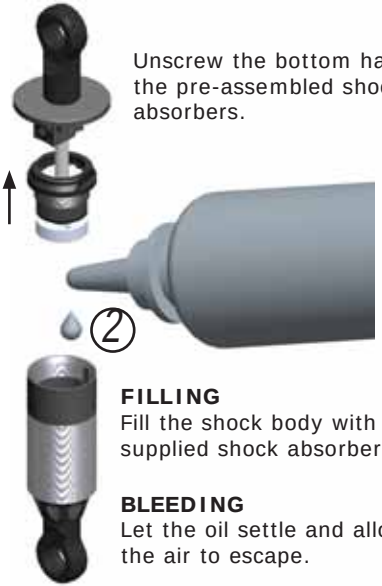


Thread lock


M3x5


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

SHOCK ASSEMBLY



Unscrew the bottom half of the pre-assembled shock absorbers.

FILLING
Fill the shock body with the supplied shock absorber oil.

BLEEDING
Let the oil settle and allow the air to escape.

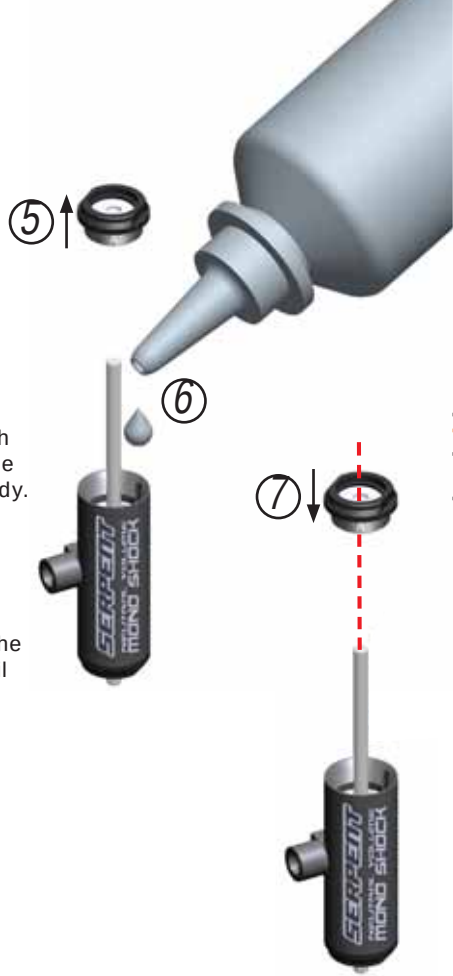


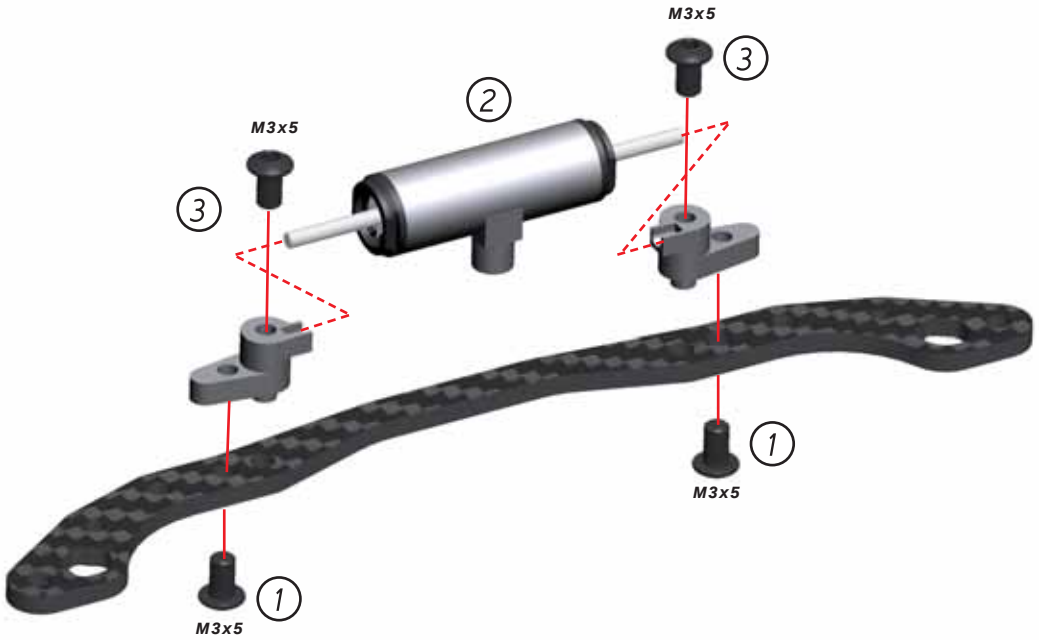
Massage some shock oil into the shock sponge before re-assembling the shock absorber.

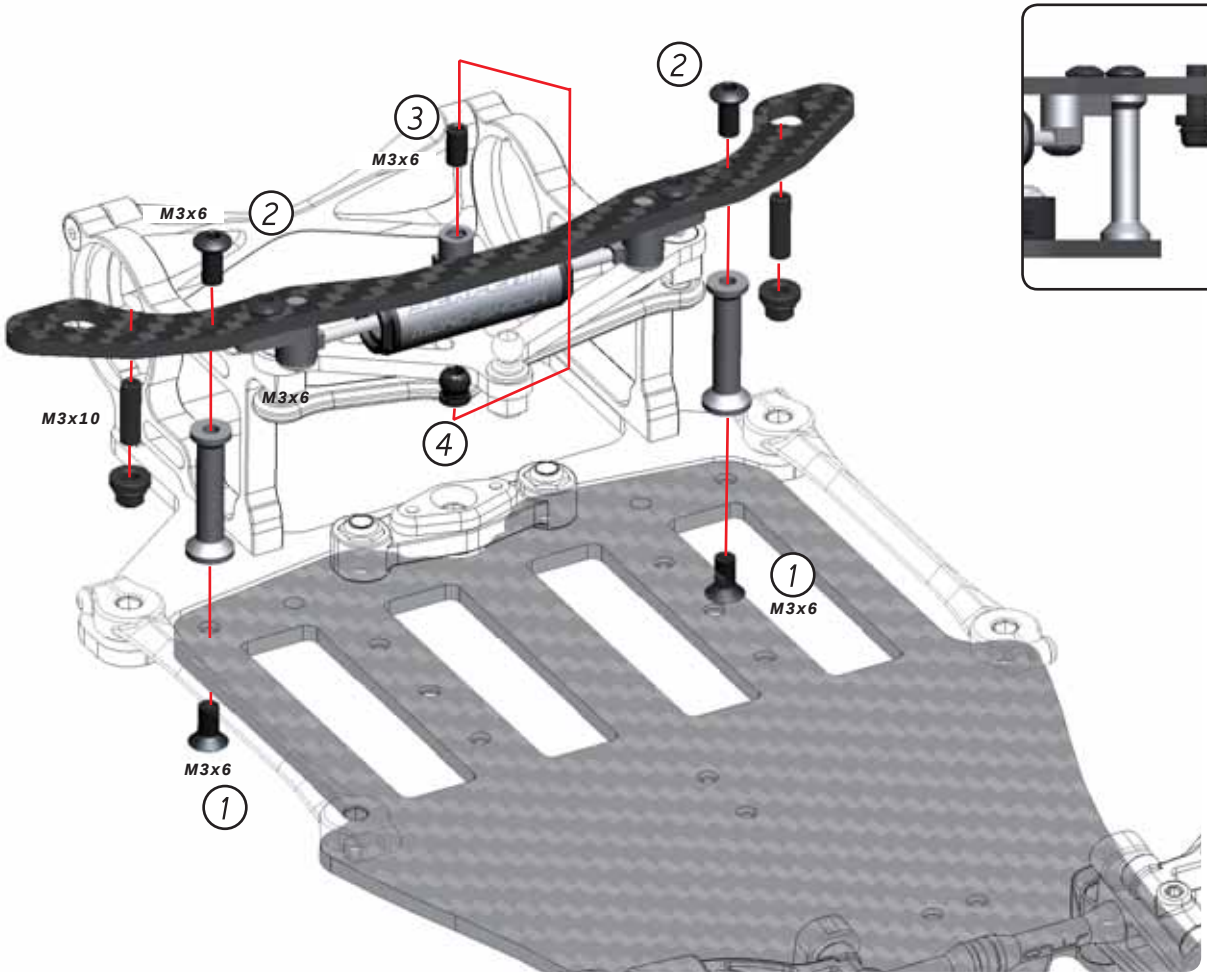
FOR BOTH SHOCKS
With the shock body filled with oil, slowly screw the end of the shock back onto the shock body.

IMPORTANT!
Do not cross thread!

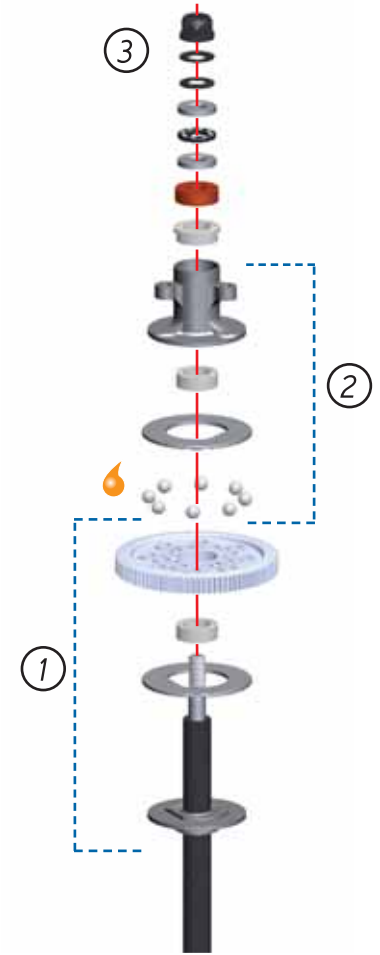
Oil will overflow through the built-in bleed channel in the threads. Tighten carefully until the bottom half seats against the shock body.

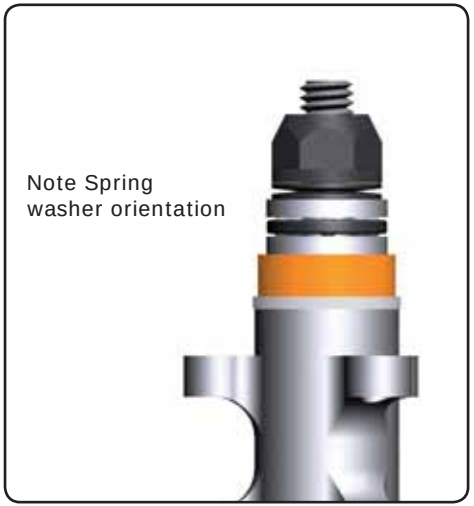



M3x5
3
2
M3x5
3
1
M3x5
1
M3x5

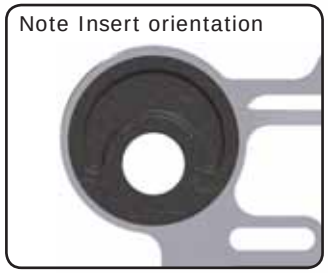

3
M3x6
2
M3x6
2
M3x10
M3x6
4
1
M3x6
M3x6
1

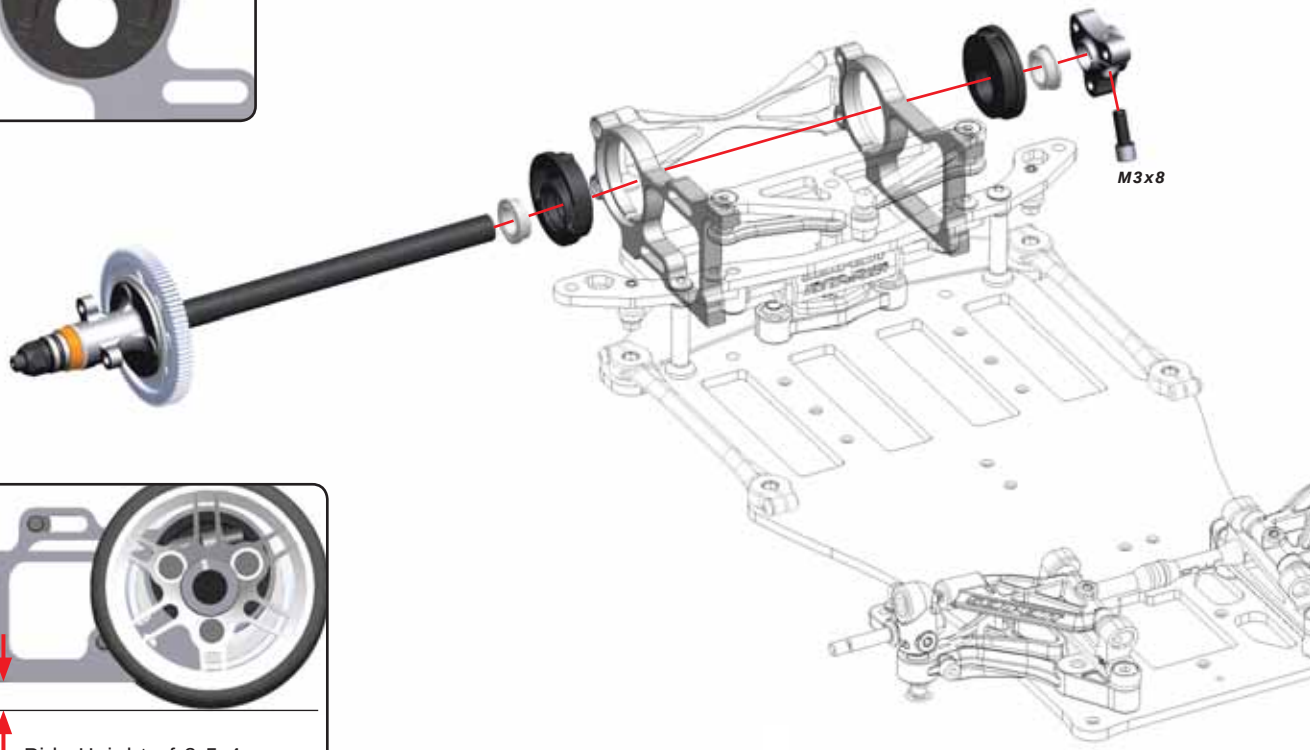
3mm





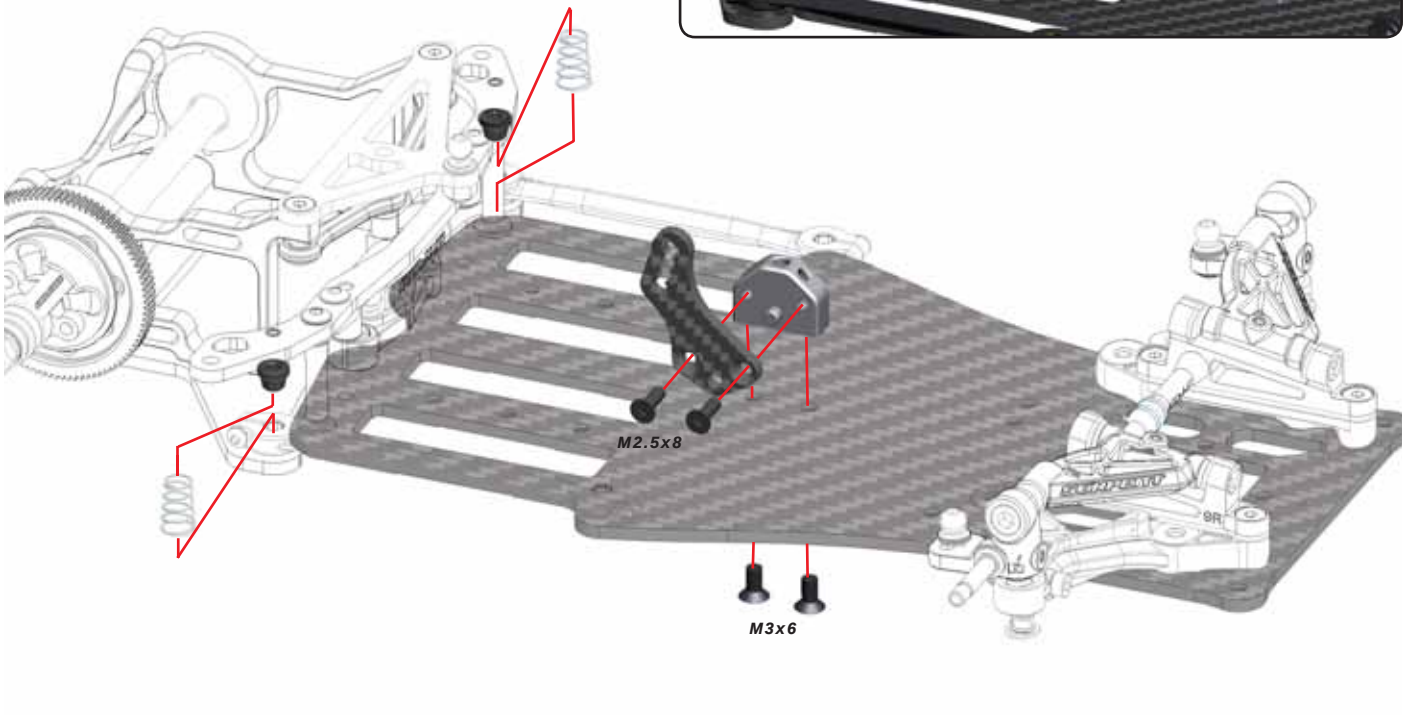
Silicone Grease

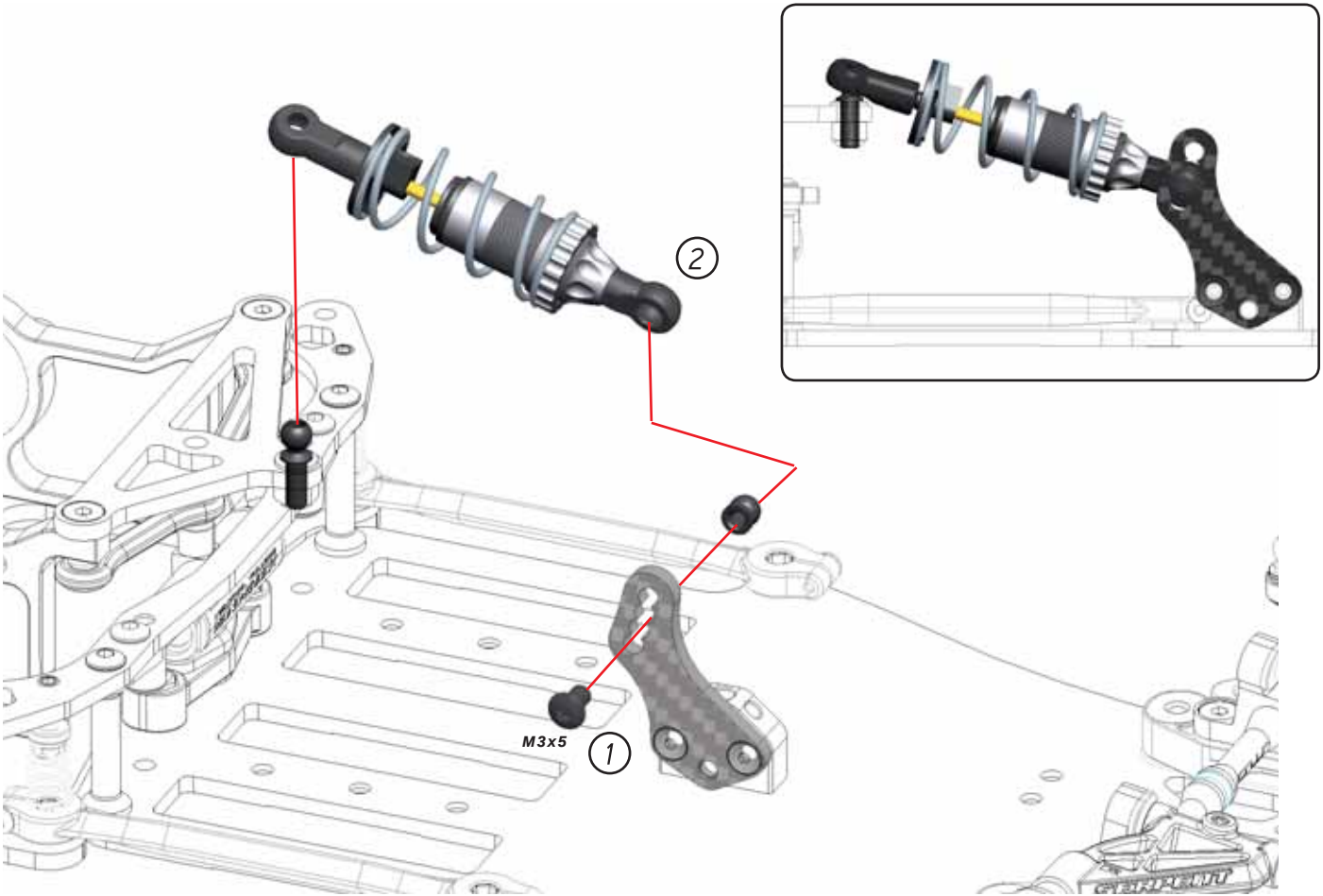

Note Insert orientation

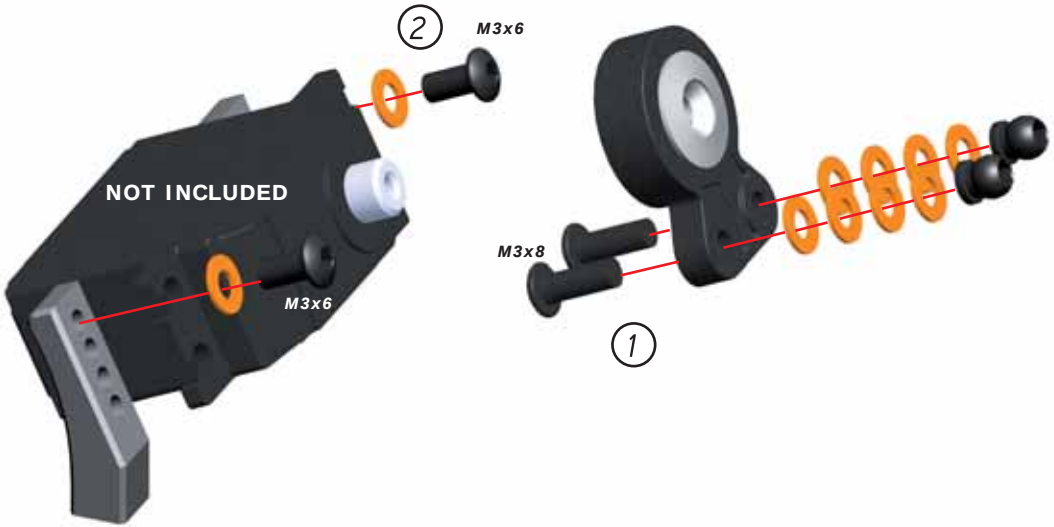

M3x8

Ride Height of 3.5-4mm

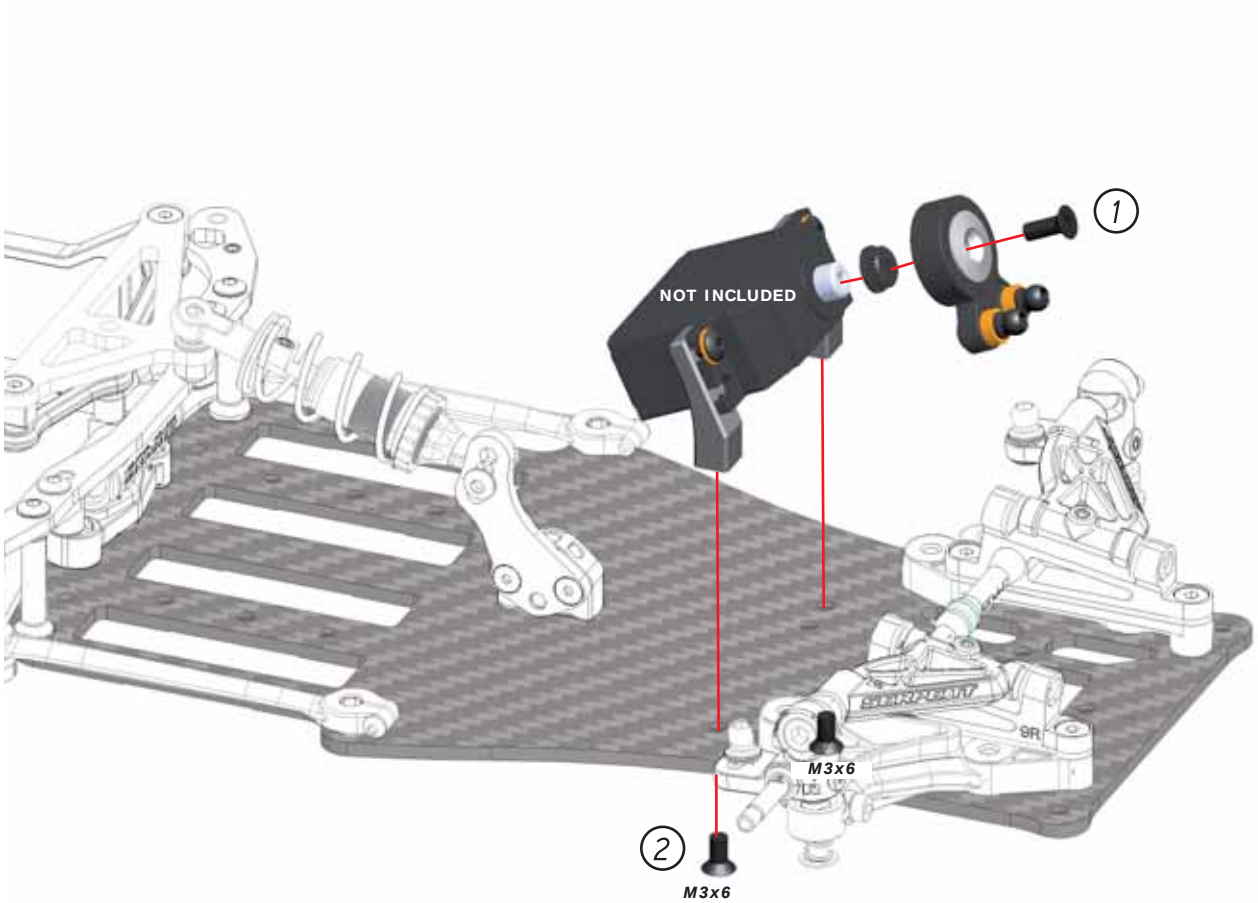


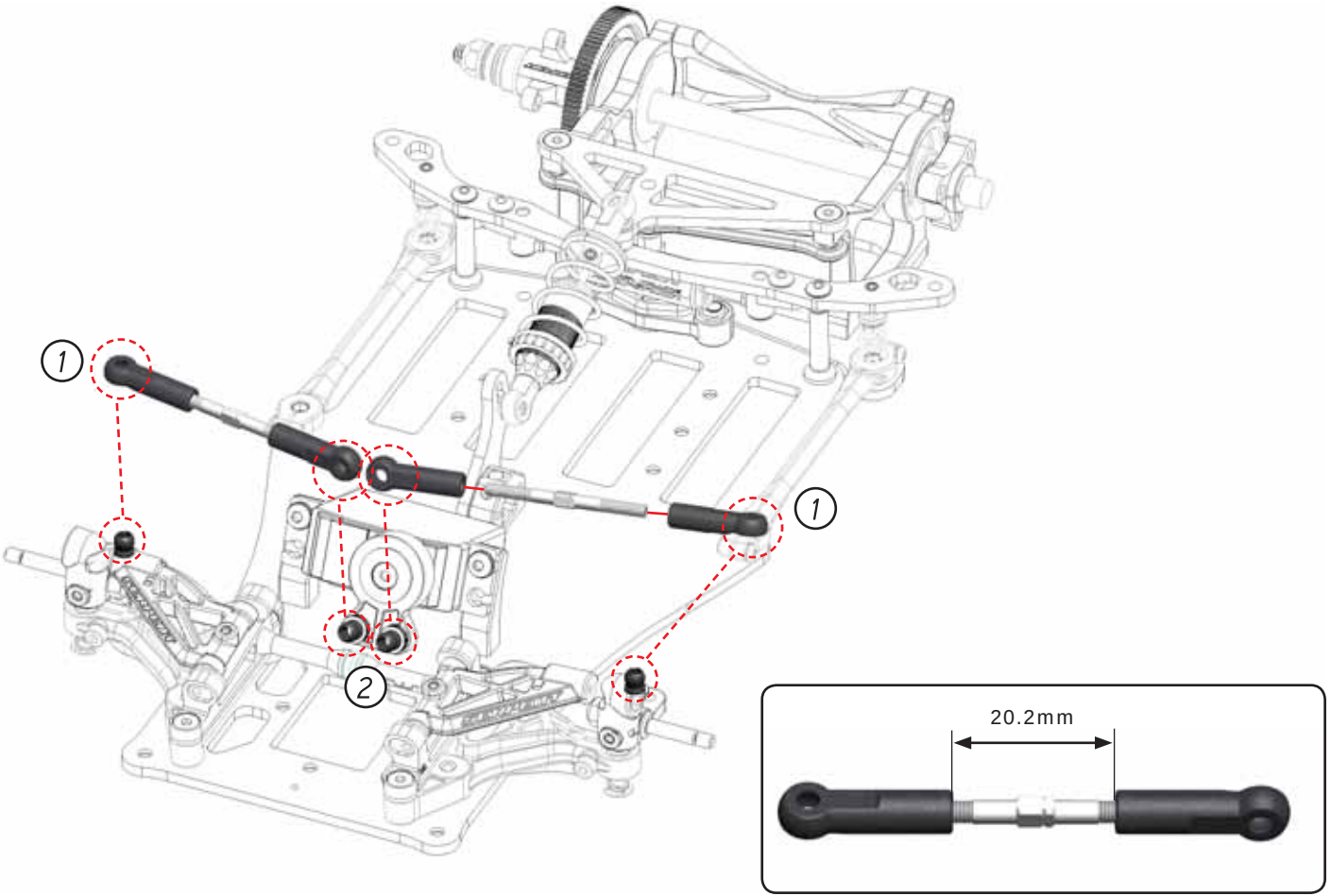

M2.5x8
M3x6

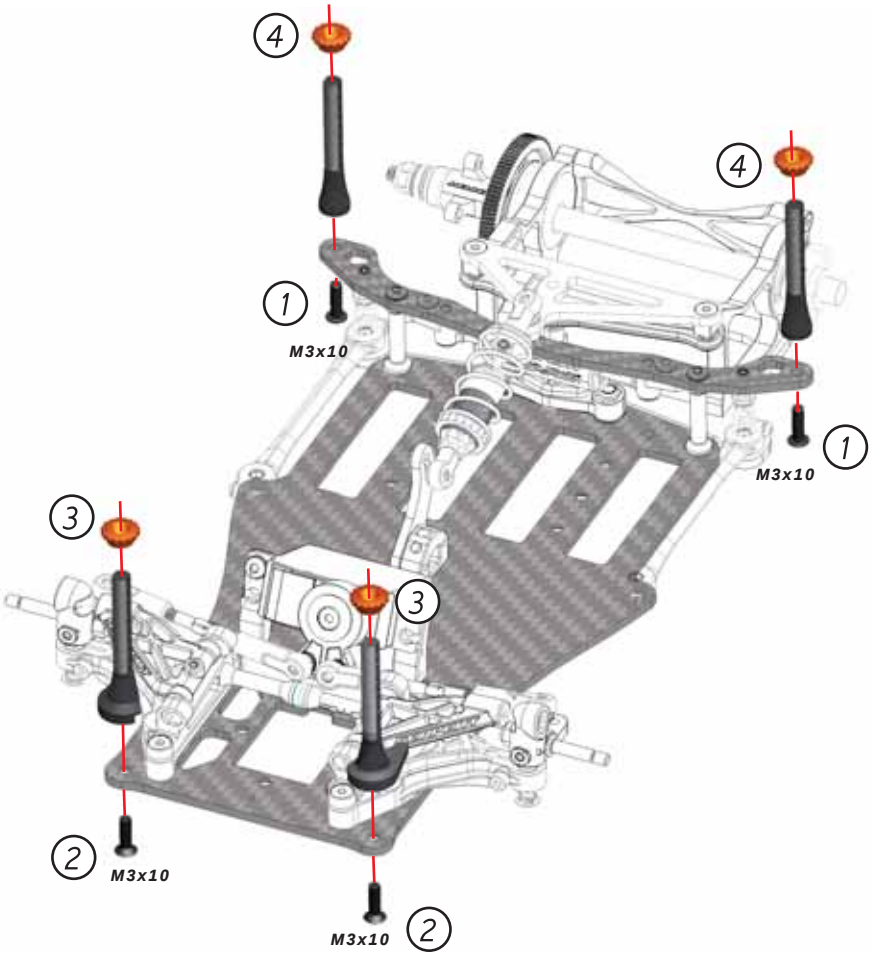

2
M3x5
1



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


NOT INCLUDED
1
M3x6
2
M3x6


1
1
2
20.2mm

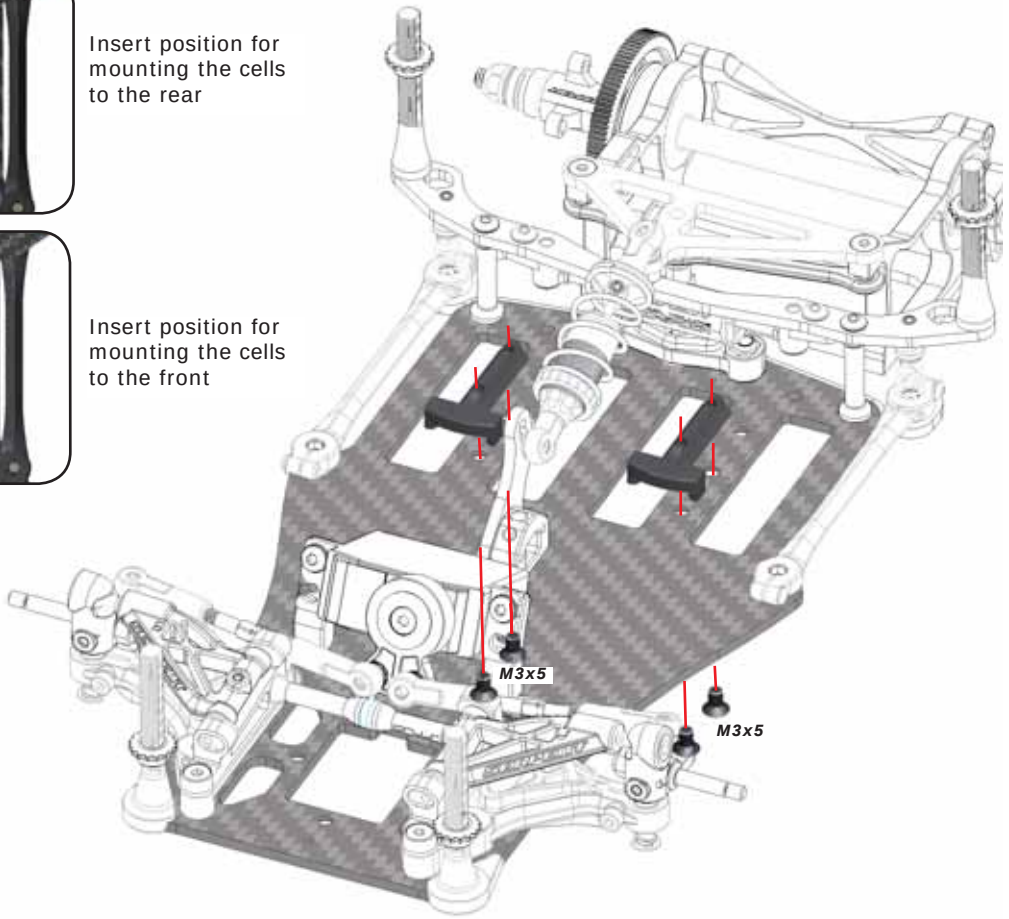

4
1
M3x10
4
1
M3x10
3
3
2
M3x10
M3x10
2

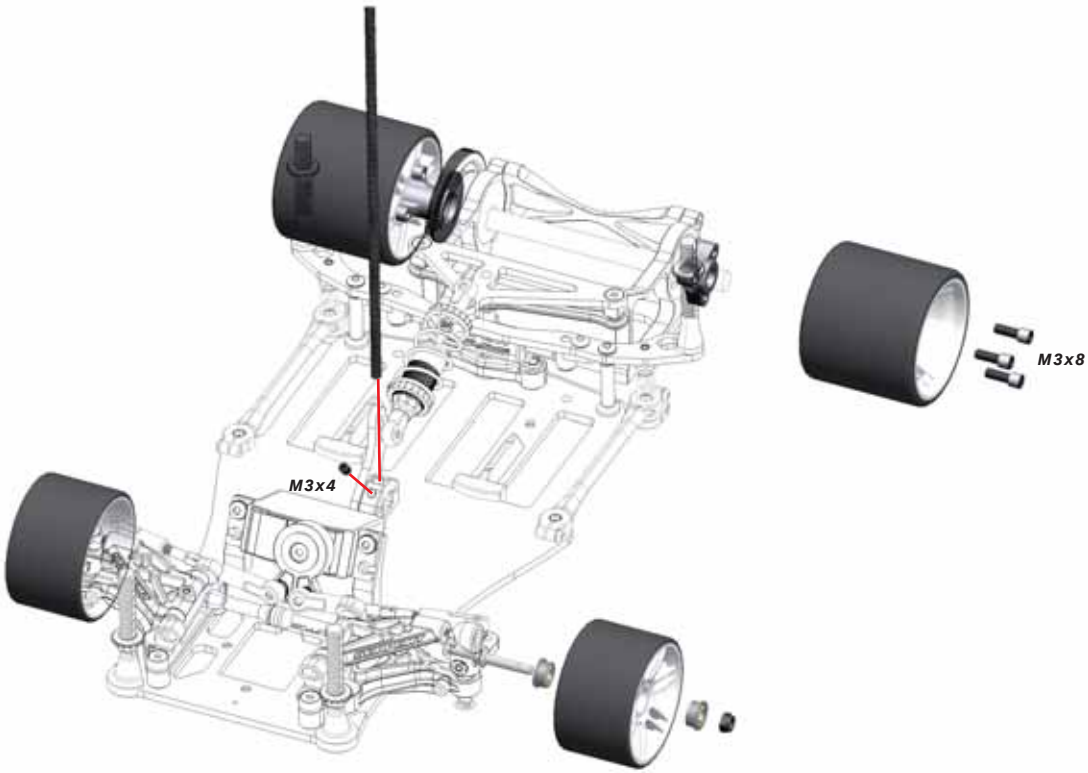


Insert position for mounting the cells to the rear



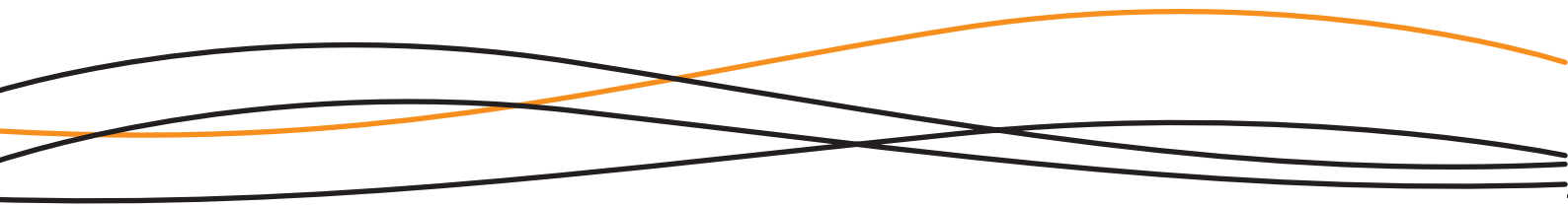
Insert position for mounting the cells to the front

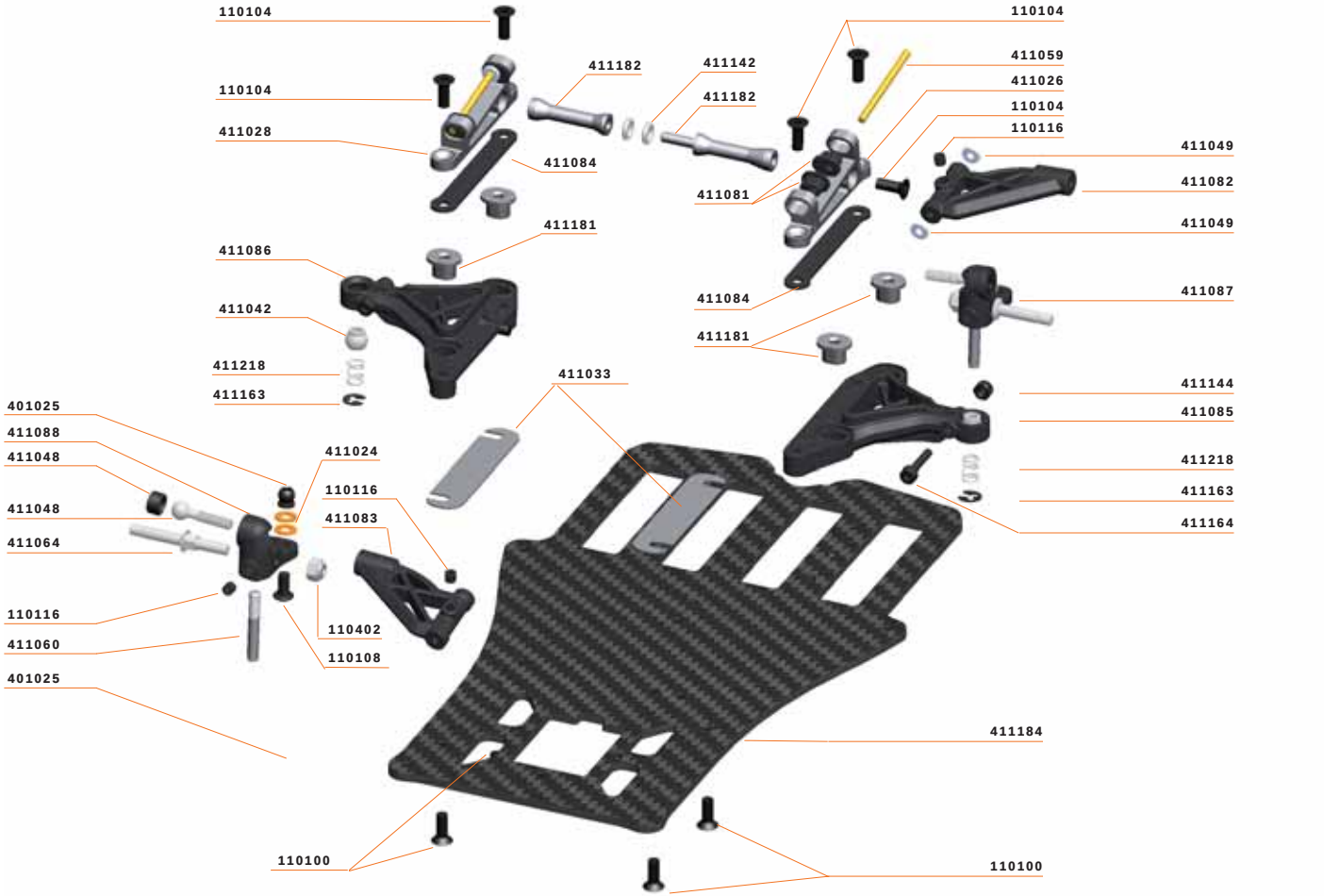


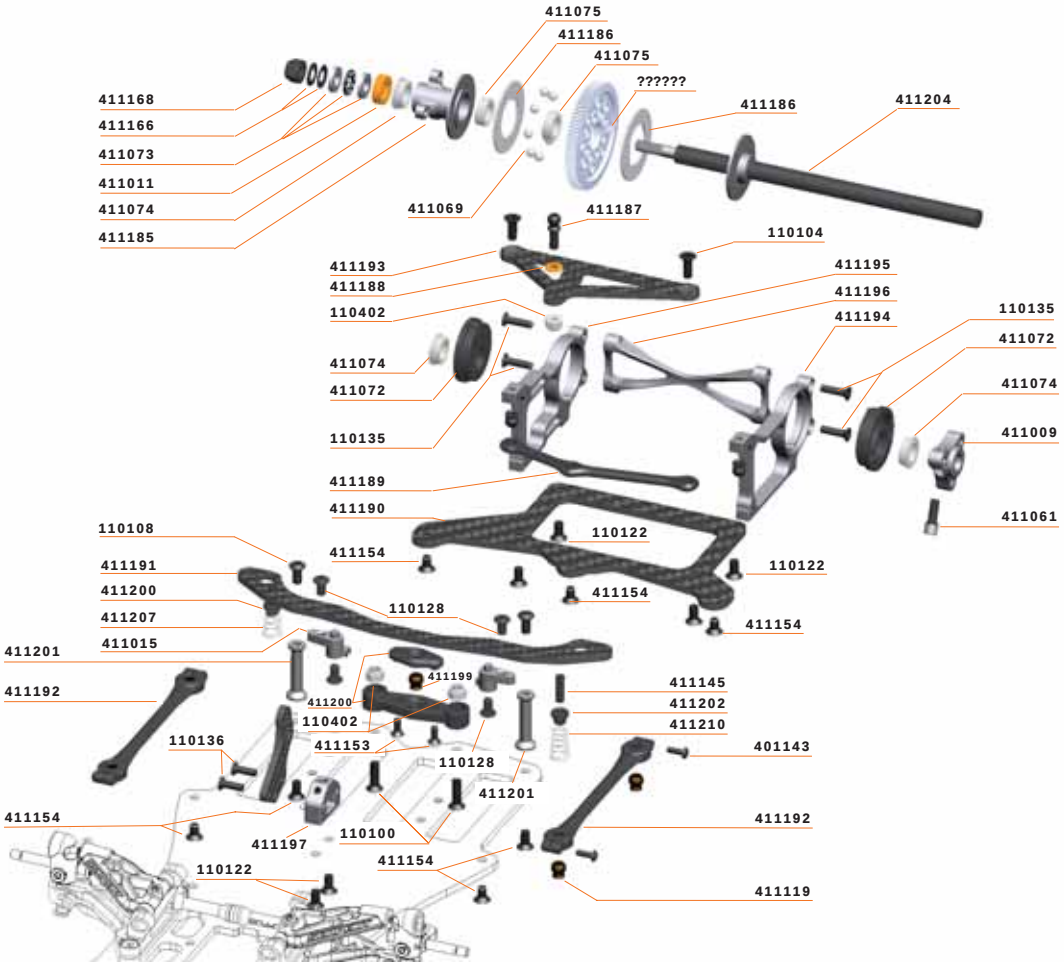

M3x8
M3x4

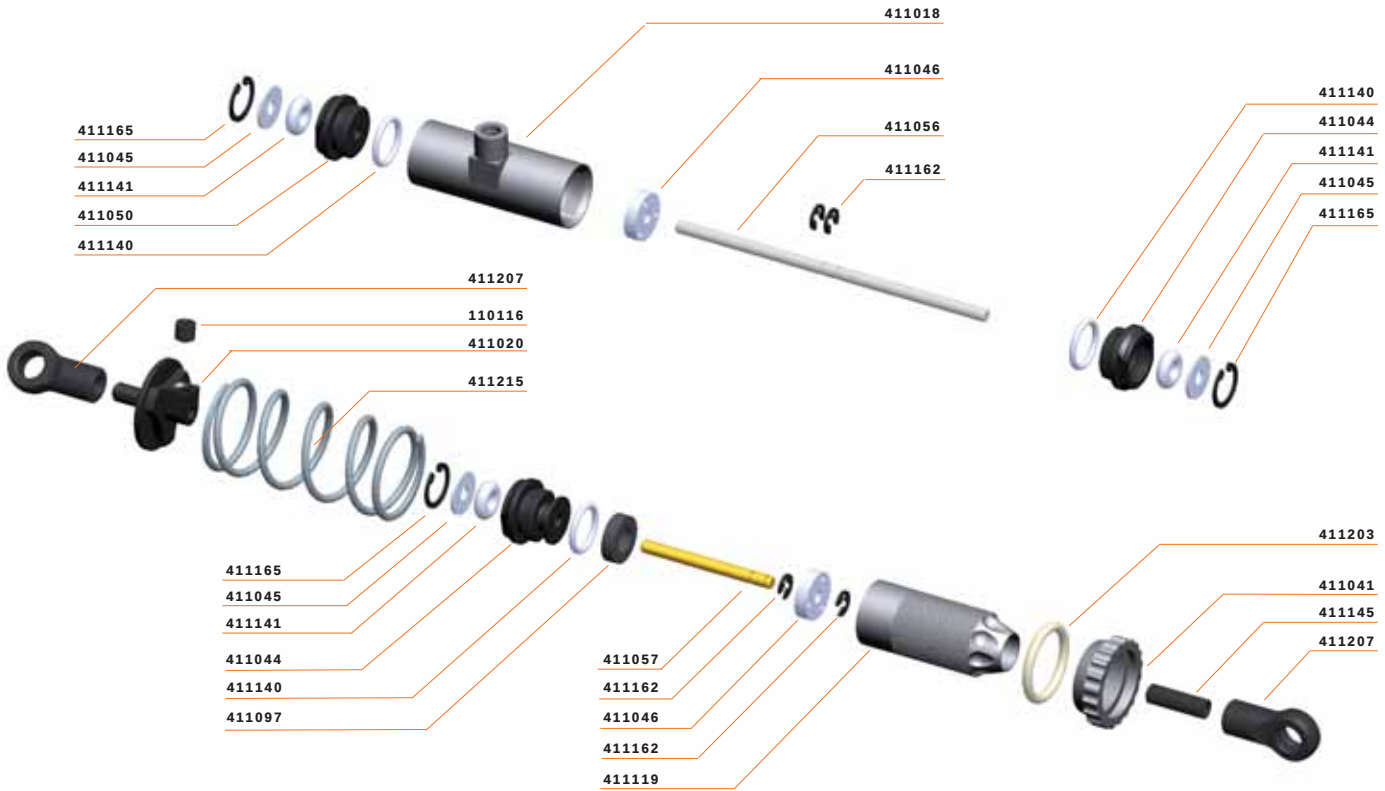


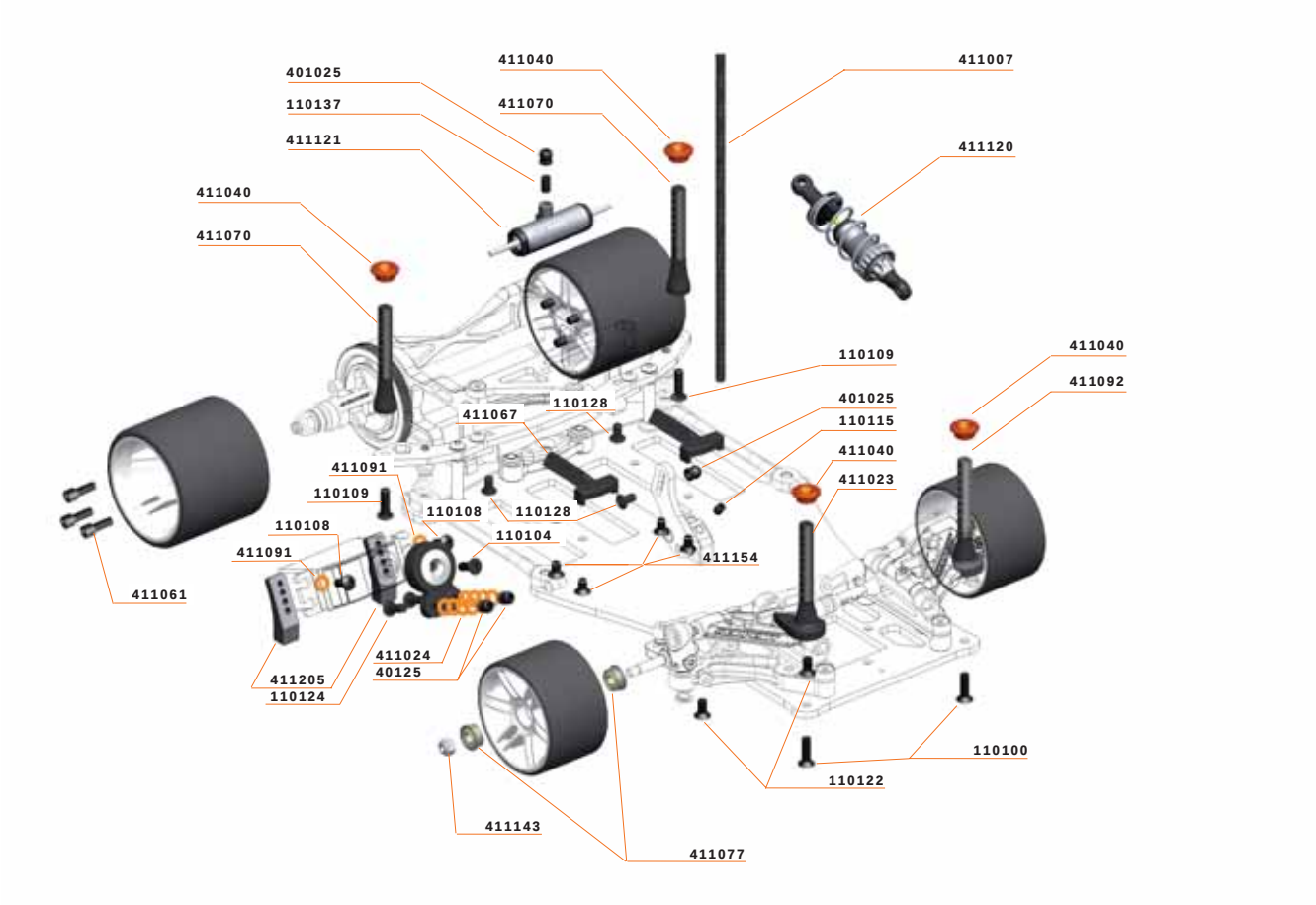
REFERENCE GUIDE




110104
110104
411028
411182
411142
411182
411084
411181
411086
411042
411218
411163
411033
401025
411088
411048
411048
411064
110116
411060
401025
411024
110116
411083
110402
110108
110100
110104
411059
411026
110104
110116
411049
411082
411049
411081
411084
411181
411087
411144
411085
411218
411163
411164
411184
110100


411075
411186
411075
??????
411186
411204
411168
411166
411073
411011
411074
411185
411069
411187
110104
411193
411188
110402
411195
411196
411194
110135
411072
411074
411009
411074
411072
110135
411189
411190
411061
110108
110122
411154
411191
411200
411207
411015
110128
411154
110122
411154
411201
411192
411199
411200
110402
411153
110136
110128
411201
411145
411202
411210
401143
411154
411197
110100
411154
110122
411192
411119


411018
411046
411056
411162
411165
411045
411141
411050
411140
411207
110116
411020
411215
411165
411045
411141
411044
411140
411097
411057
411162
411046
411162
411119
411140
411044
411141
411045
411165
411203
411041
411145
411207


401025
110137
411121
411040
411070
411040
411070
411007
411120
110109
411040
411092
401025
110115
411040
411023
411067
110128
411091
110109
110108
110128
110108
110104
411091
411154
411061
411205
110124
411024
40125
110100
110122
411143
411077

411179 **S120L Manual**
411180 **Decal sheets S120L (2)**

FRONT SUSPENSION
401025 Pivot ball-uni-4-5mm
411024 Bumpsteershim 3x6x0,5 (10)
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)
411143 Wheel Nut low M3
411181 Insert for lower A arm (4)
411182 Cross brace tube L+R S120L (3)
411206 Baljoint 4,5 (4)
411218 Front spring 22lbs S120L (2)
411219 Front spring 18lbs S120L (2)
411220 Front spring 26lbs S120L (2)

CENTRAL ASSEMBLY
401025 Pivot ball-uni-4-5mm
411007 Antenna
411015 Shock Mount L+R
411023 Steering Rod
411024 Bumpsteershim 3x6x0,5 (10)
411067 Battery Insert
411091 Servo Saver
411093 Servo Saver insert 25T
411095 Servo Saver insert 23T
411096 Servo Saver insert 24T
411184 Chassis carbon 2.5mm S120L
411191 Cross brace S120L
411192 Side-link S120L (2)
411197 Center shock mount alu
411198 Shock bracket carbon S120L
411199 Pivot ball S120L (5)
411200 Pod pivot support S120L
411201 Standoff alu S120L (2)
411202 Spring retainer S120L (4)
411205 Servo mount alu S120L (3)
411206 Baljoint 4,5 (4)
411210 Side spring 5,5lbs S120L (2)

REAR ASSEMBLY
401025 Pivot ball-uni-4-5mm
411009 Left side Clamp Hub
411061 M3x8mm Socket Screw “special-head”
411072 Bearing Adapter set (9x2)
411187 Pivotball with shaft (2)
411188 Pivotball shim (2)
411189 Shock rocker S120L
411190 Lower pod plate carbon S120L
411193 Top plate carbon S120L
411194 Motor pod left alu S120L
411195 Motor pod right alu S120L
411196 Motor pod backplate alu S120L
411204 Rear axle carbon S120L

DIFFERENTIAL
411011 Trust Bearing Adapter
411069 Diff Balls,1/8”
411166 Diff spring washer (4)
411168 Diff lock nut M4 (10)
411183 Differential-set S120L
411185 Diff hub S120L
411186 Diff washer S120L (2)

SHOCK ABSORBERS
411018 Monoshock Body
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
411050 Monoshock Cap
411056 Monoshock Shock shaft
411057 Shock shaft
411097 Foam Insert for Shock
411120 Shock-absorber-set
411121 Mono-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 Baljoint 4,5 short (2)
411215 Center spring 14lbs 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

FASTENERS
110100 screw allen countersunk m3x10 (10)
110104 screw allen countersunk M3x8 (10)
110108 screw allen roundhead m3x6 (10)
110109 screw allen roundhead m3x10 (10)
110114 setscrew allen m3x8 (10)
110116 setscrew allen m3x3 (10)

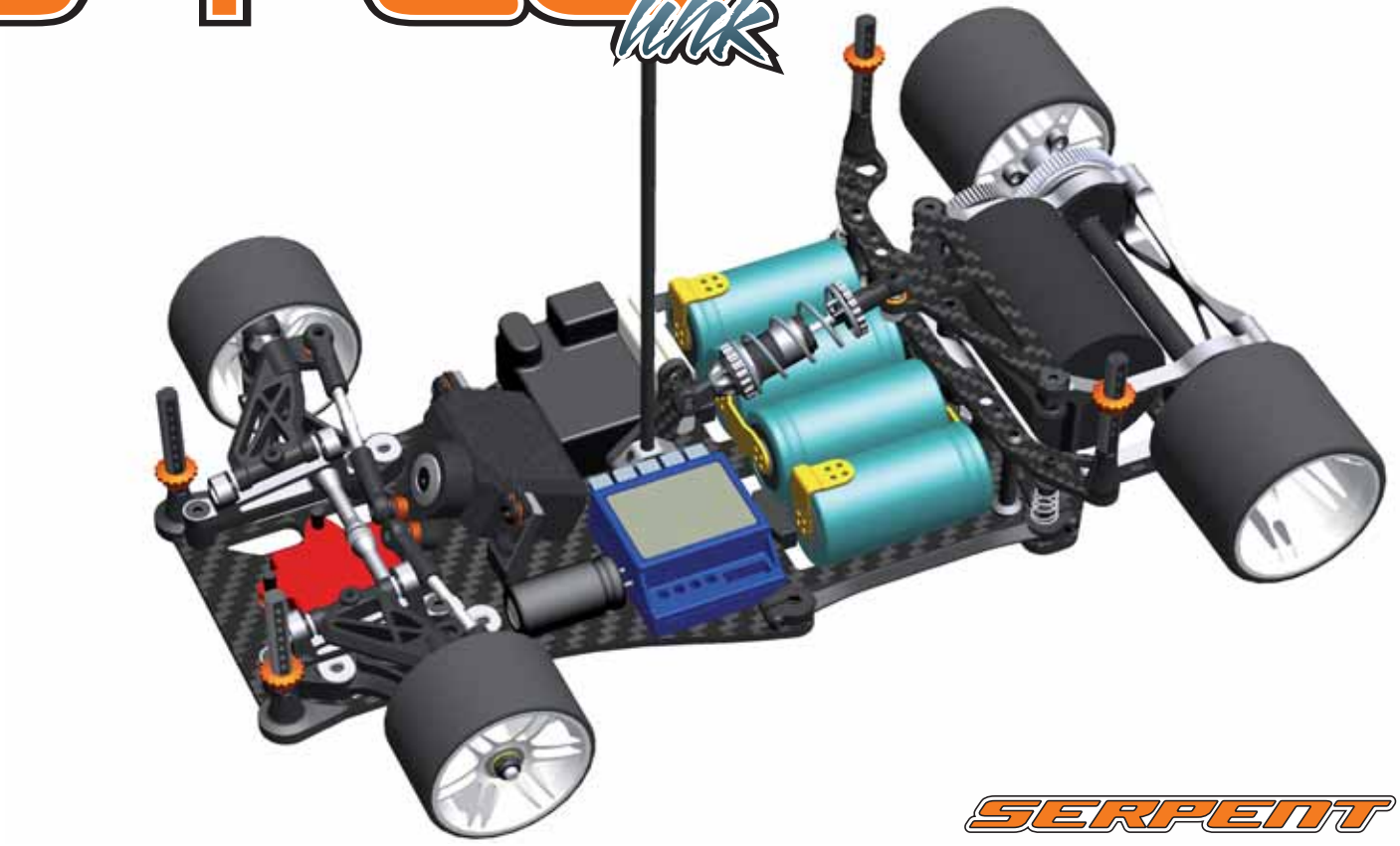
110122 screw allen countersunk m3x6 (10)
110124 screw allen roundhead m3x8 (10)
110125 screw allen countersunk m3x20 (10)
110127 screw allen countersunk m3x12 (10)
110128 screw allen roundhead m3x5 (10)
110135 Screw allen countersunk M2,5x10 (10)
110136 Screw allen countersunk M2,5x8 (10)
110137 Setscrew allen M3x6 (10)
110402 Nut nylock M3 (10)
401143 Screw allen cilinderhead M2x6 (10)
411123 Screw-set
411144 Nut nylock M2.2 (10)
411145 setscrew allen M3x10mm (10)
411147 setscrew allen M3x5mm (10)
411153 Screw allen countersunk M2.2x6mm (10)
411154 Screw allen countersunk M3x5mm (10)
411159 Screw allen countersunk M3x15mm (10)
411161 Roll Pin 1.5x10mm (10)
411162 C-clip 2mm (10)
411163 C-clip 3mm (10)
411164 Screw allen cilinderhead M2.2x12mm (10)
411165 Snapring 7mm (10)

OPTIONALS
411034 Distance Plate for Lower Arm 1.0mm
411035 Distance Plate for Lower Arm 2.0mm
411036 Upper Arm Mount 6 L+R
411037 Upper Arm Mount 3 L+R
411073 Bearing Adapter 0.5mm
411074 Bearing Adapter 1.0mm
411075 Bearing Adapter 1.5mm
411076 Bearing Adapter 2.0mm
411077 Bearing Adapter 2.5mm
411078 Bearing Adapter 3.0mm
411079 Bearing Adapter 3.5mm
411080 Bearing Adapter 4.0mm
411102 Monoshock Shock shaft, Titanium-nitride
411103 Shock shaft, Titanium-nitride
411105 Hinge Pin Titanium
411106 Kingpin Titanium
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)
411214 Center spring 12lbs S120L
411216 Center spring 16lbs S120L
411217 Center spring 18lbs S120L
411219 Front spring 18lbs S120L (2)
411220 Front spring 24lbs S120L (2)
411223 Transponder riser S120L (3)
411224 Rear axle shim 6,5x8x0,25 (10)
411225 Support Lipo pack

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

MERCHANDISING
1865 Lanyard serpent grey-silver
1868 Pit-towel serpent orange 50x70cm
1869 Pit-towel serpent orange 140x60cm
1872 Rucksack serpent (35x45cm) black
1873 Rucksack serpent (48x61cm) black
1884 Decalsheet chrome 1/10
1980 Kit-bag serpent large black-orange
1982 Pit-bag Serpent medium (3 drawers)
1983 Pit-bag Serpent large (4 drawers)
1998 Cap serpent black-orange
190100 T-shirt serpent black (s)
190101 T-shirt serpent black (m)
190102 T-shirt serpent black (l)
190103 T-shirt serpent black (x)l
190104 T-shirt serpent black (xxl)
190110 Sweater serpent black (s)
190111 Sweater serpent black (m)
190112 Sweater serpent black (l)
190113 Sweater serpent black (xl)
190114 Sweater serpent black (xxl)

SRX link



SERPENT



SERPENT

www.serpent.com
info@serpent.com

411179 - Version 1