



733



INSTRUCTION MANUAL
& REFERENCE GUIDE



The Serpent 733 is a complete new platform for the 200mm category of racing. It's the next phase of evolution of Serpent's hugely-successful 200mm chassis lineage, combining ultimate performance into a single package.

The Serpent 733 is designed to be a world champion, while still being easy to use, assemble, and set up. You are now part of the worldwide network of Serpent drivers, which gives you superior technical support and access to many benefits that only Serpent drivers can enjoy.

The Serpent 733 offers state of the art specifications and leads the way in 200mm chassis design, using all the knowledge we have from 1/8 scale racing into this design too. Continuously pushing the performance envelope, Serpent's engineers have added many new and innovative features that can help take your Serpent 733 into the winner's circle: new geometry, roll-centers and weight balance, combined with new open and very accessible design. A complete new platform.

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.

This instruction manual has been divided into sections that will logically lead you through the assembly process of your Serpent 733. Follow the assembly steps in the order presented to ensure that no problems occur during assembly. Each step indicates all the fasteners and small parts used. Bag numbers identify the kit bag(s) that contains the appropriate parts.

EXPLODED VIEWS AND PARTS LIST

The exploded views and parts lists for the Serpent 933 are included 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

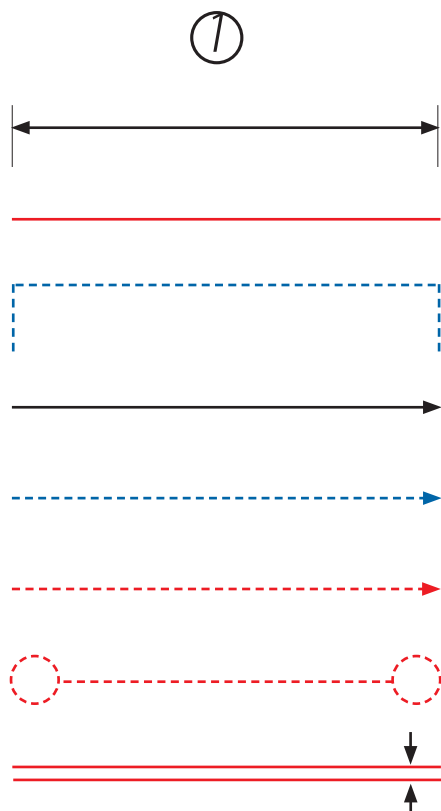
Included with your Serpent 733 kit is a document entitled 'Read This First' that covers safety precautions for the assembly and use of this product. We strongly recommend that you thoroughly read and understand that document, and follow all the precautions.

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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 graphite grease (GR), threadlock (TL), CA glue (CA) or One-way Lube (OW). (Items not included.)

SERPENT.COM

The printed instruction manual included with your Serpent 733 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 733 is accessible from the Serpent 733 product page which can be found on Serpent.com and can be accessed by simply typing **serpent.com/804000** into your web

browsers address bar.

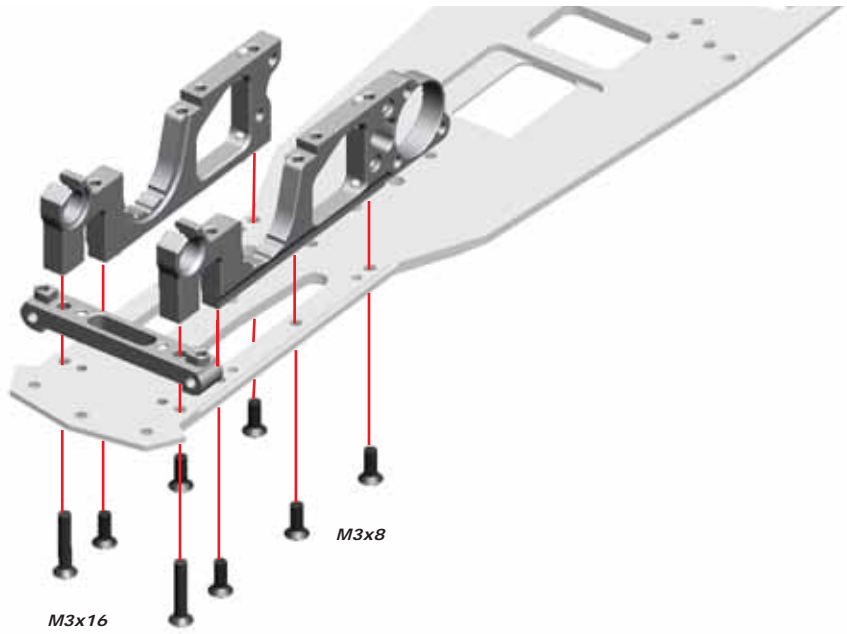
From the Serpent 733 product page you will find the very latest information about your Serpent 733: reports by team drivers and other experts, tips and tricks, setups, image gallery and downloadable files including the latest version of the instruction manual will be made available as downloadable PDF-files.

FRONT ASSEMBLY

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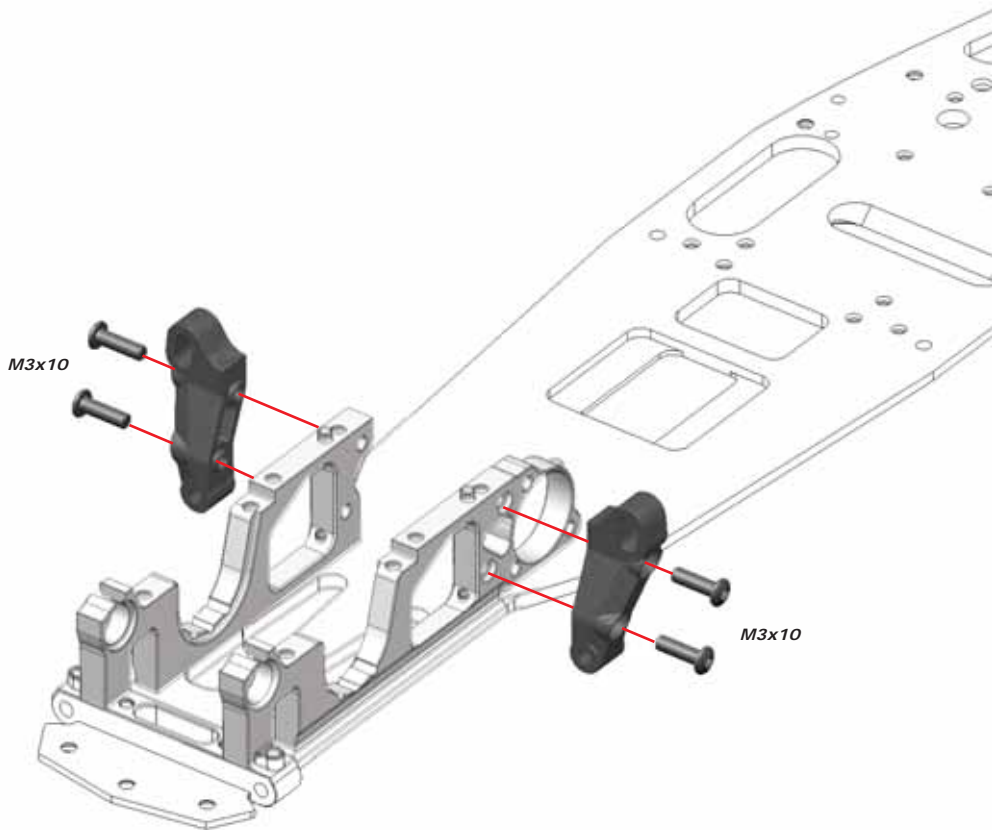
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Bag



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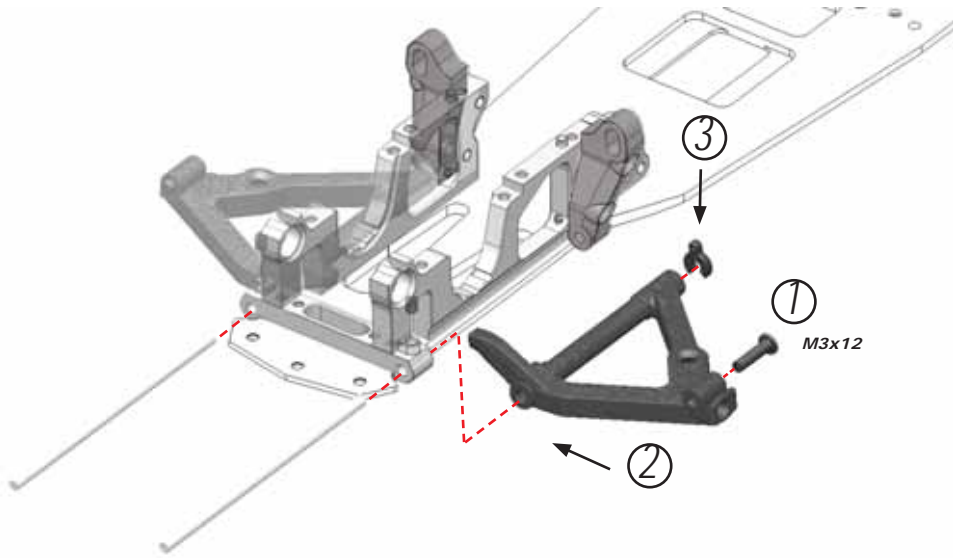
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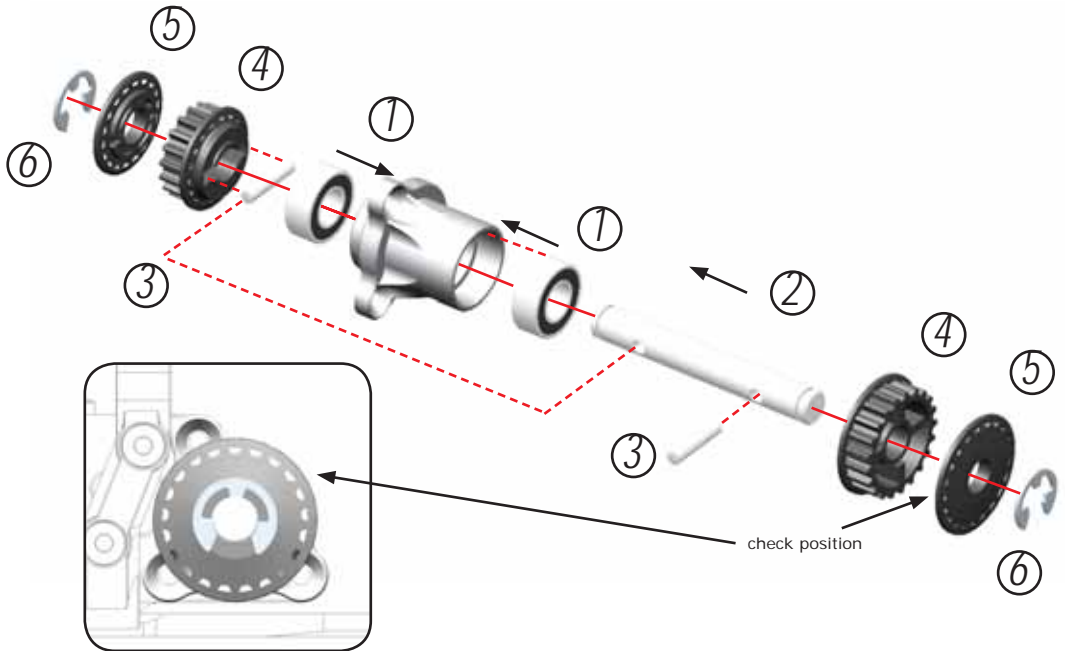
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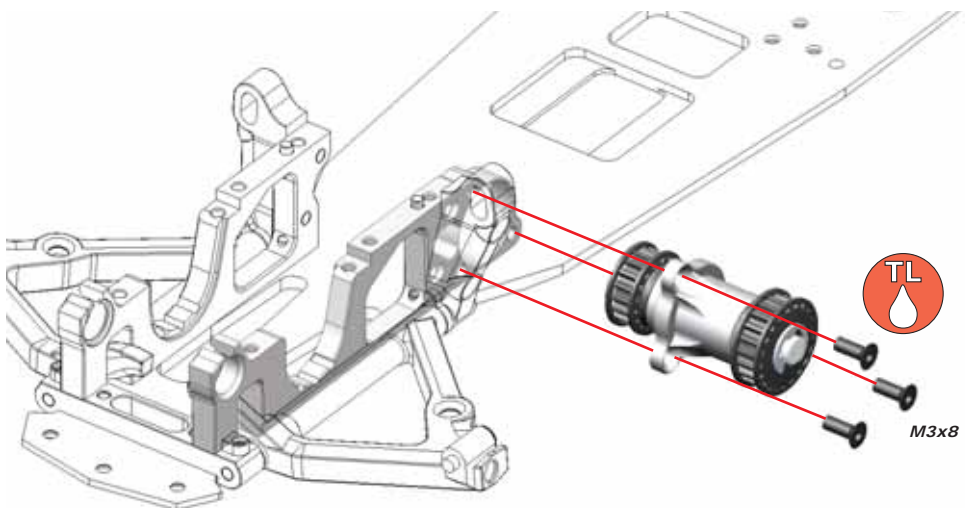
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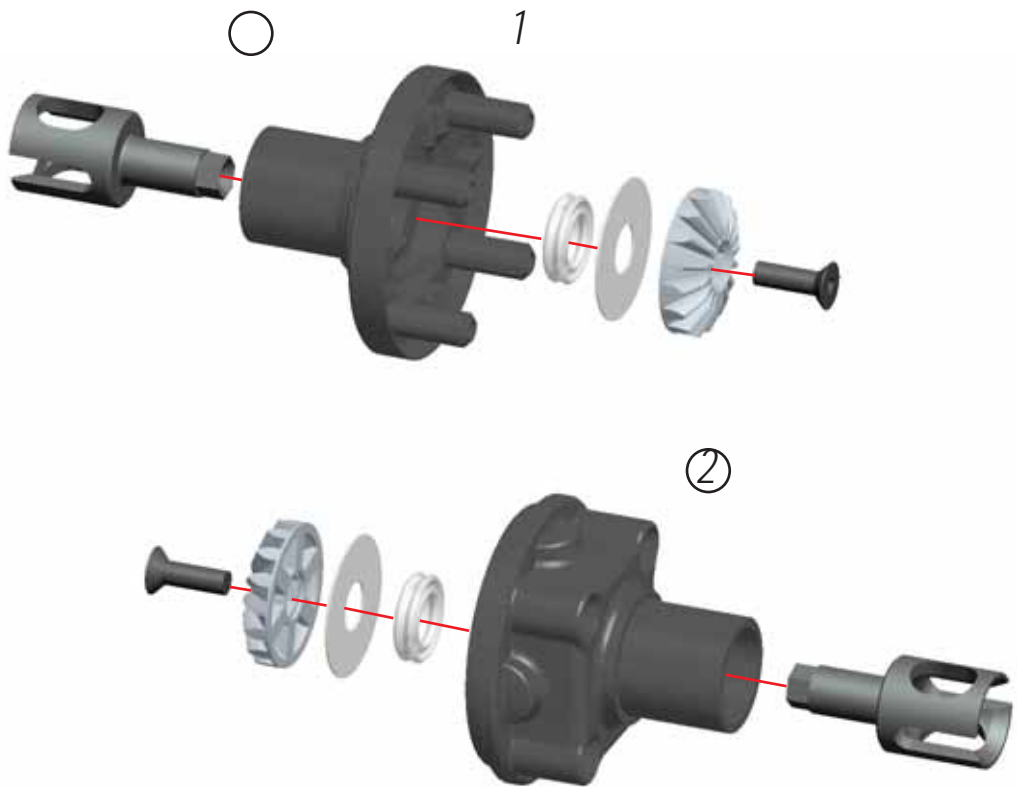


DIFFERENTIAL ASSEMBLY

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Bag



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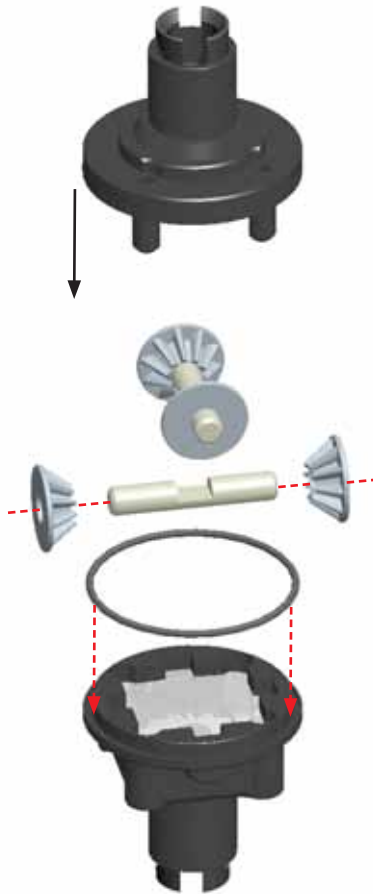
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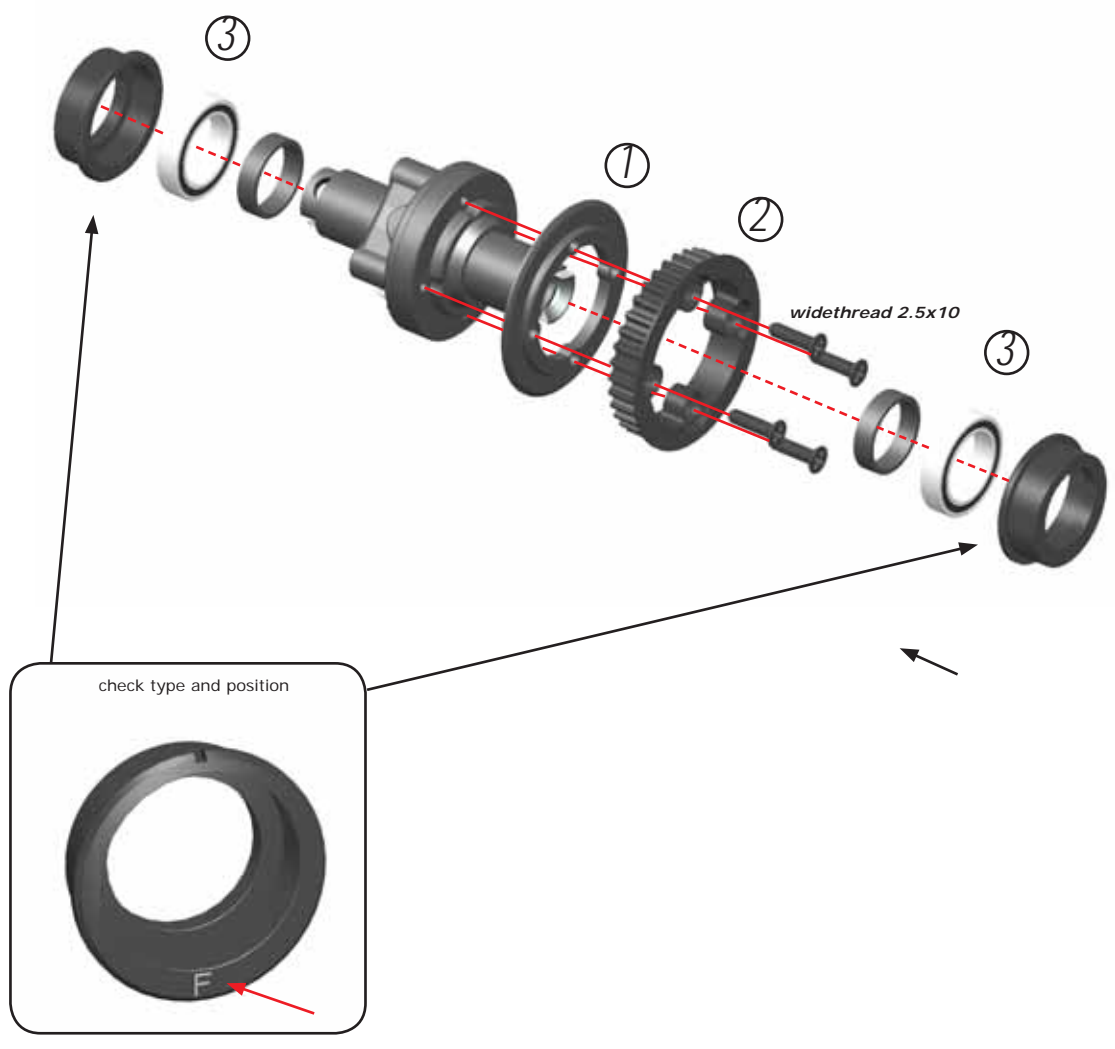
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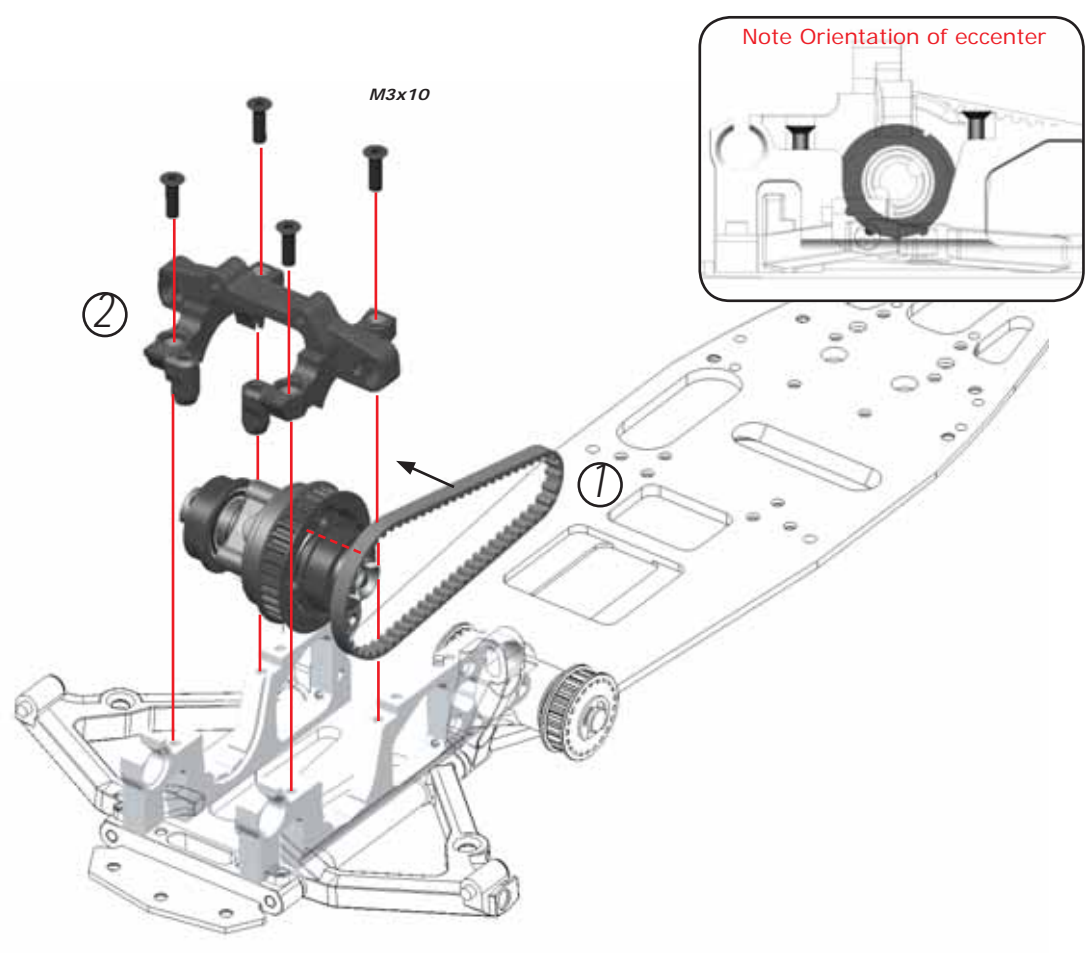


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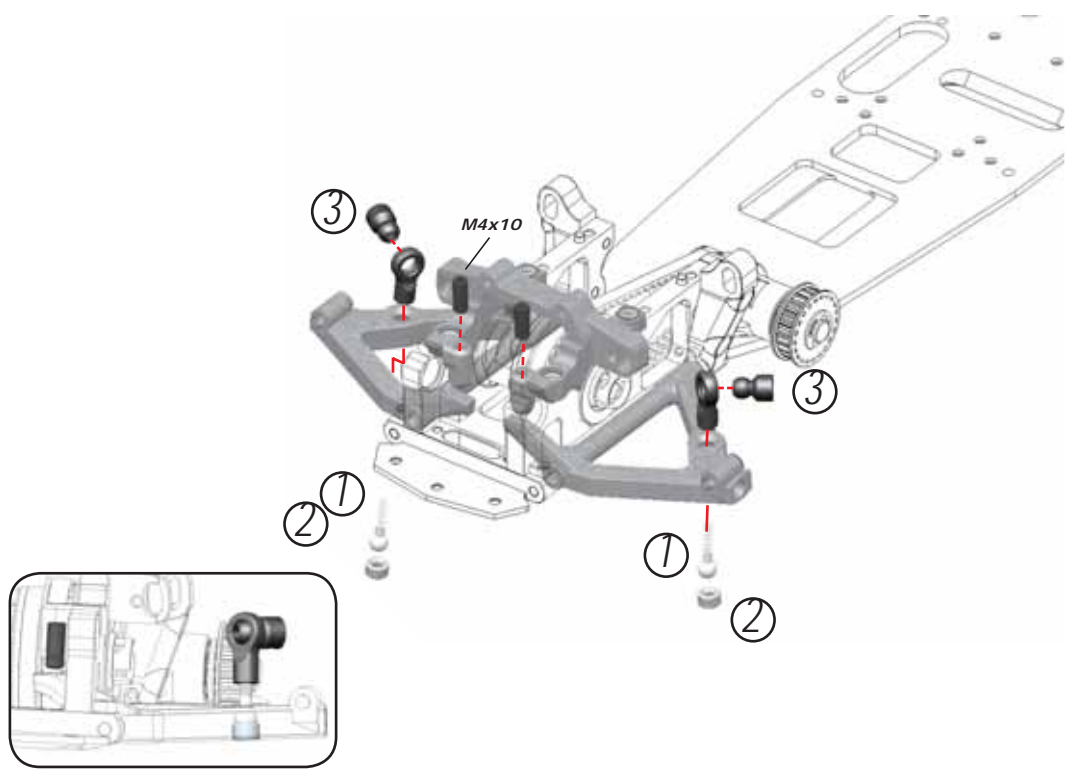




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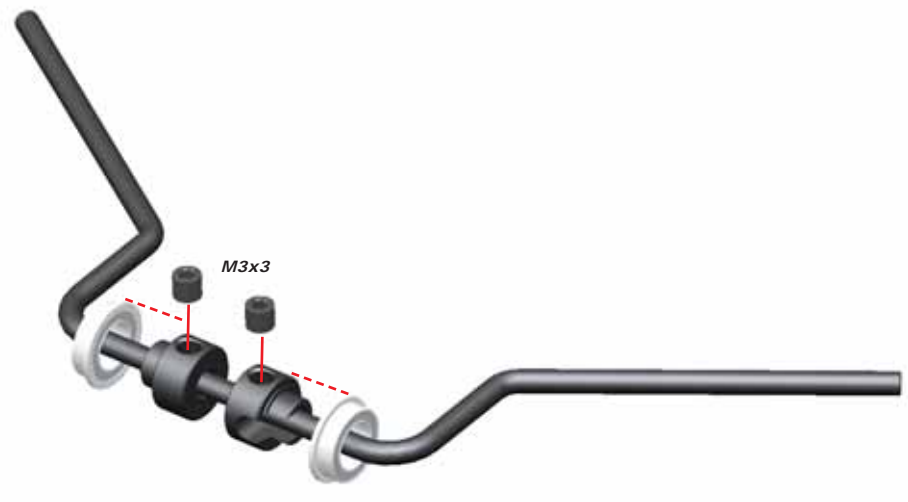
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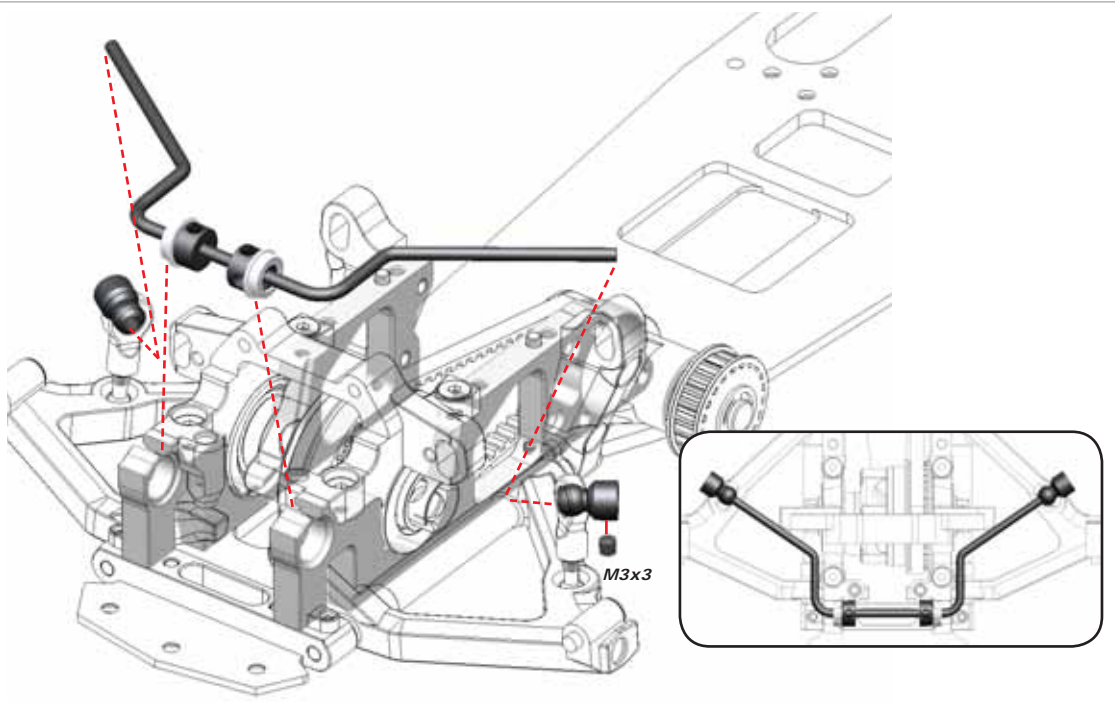
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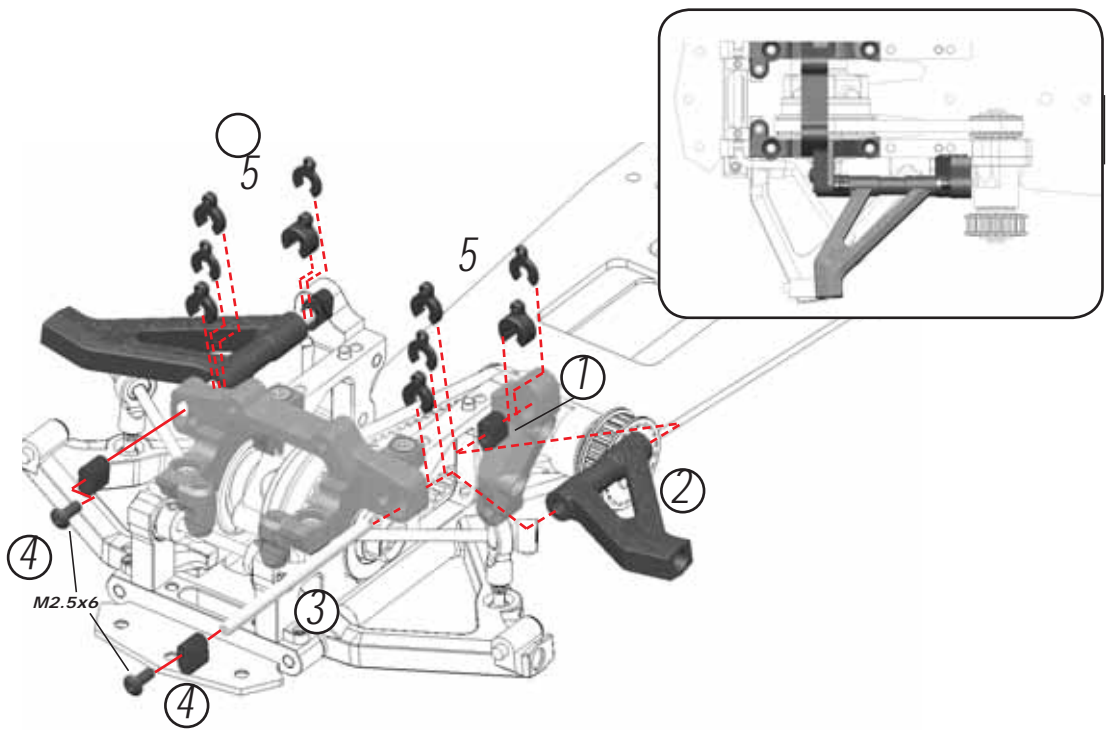
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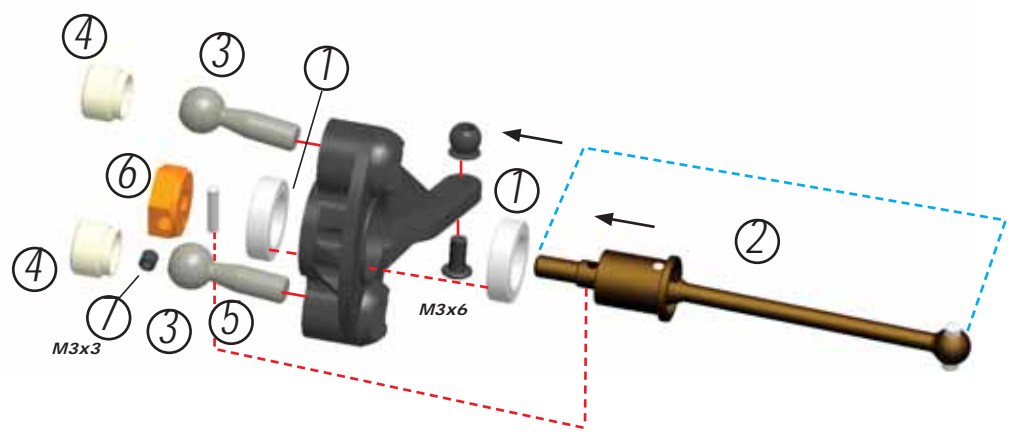
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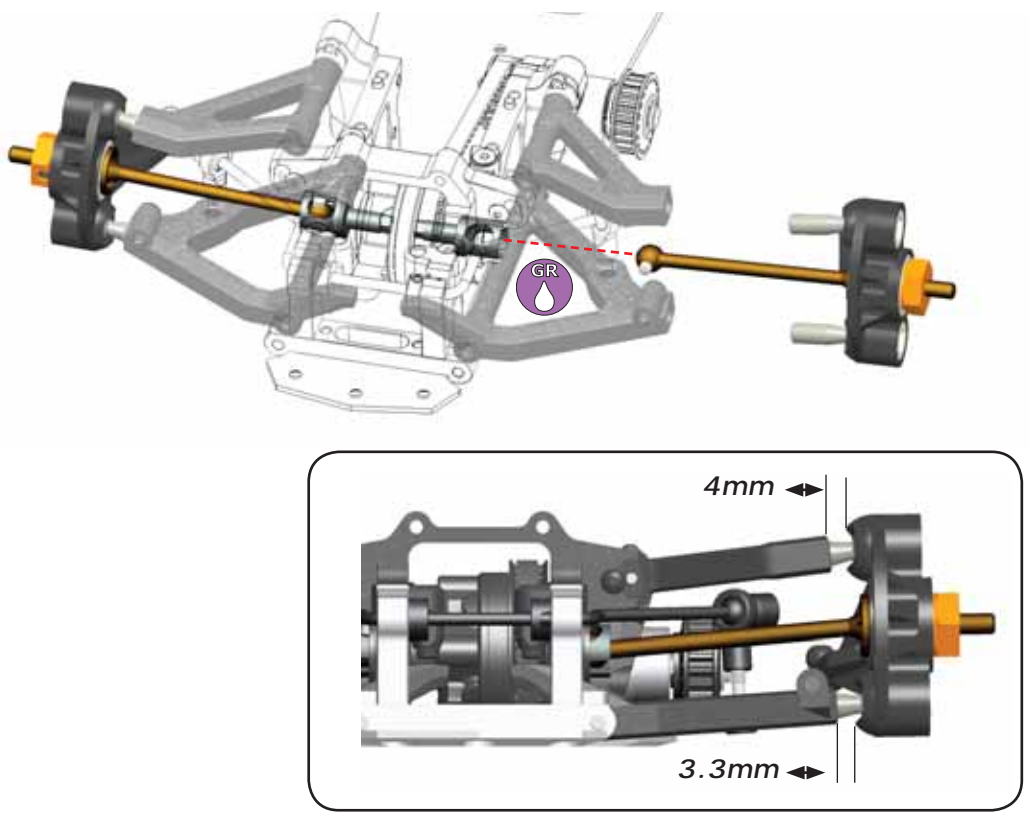
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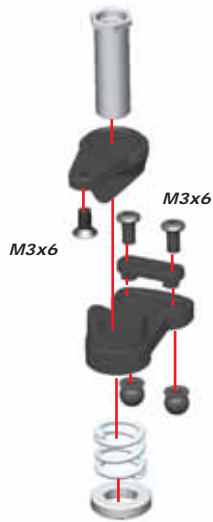
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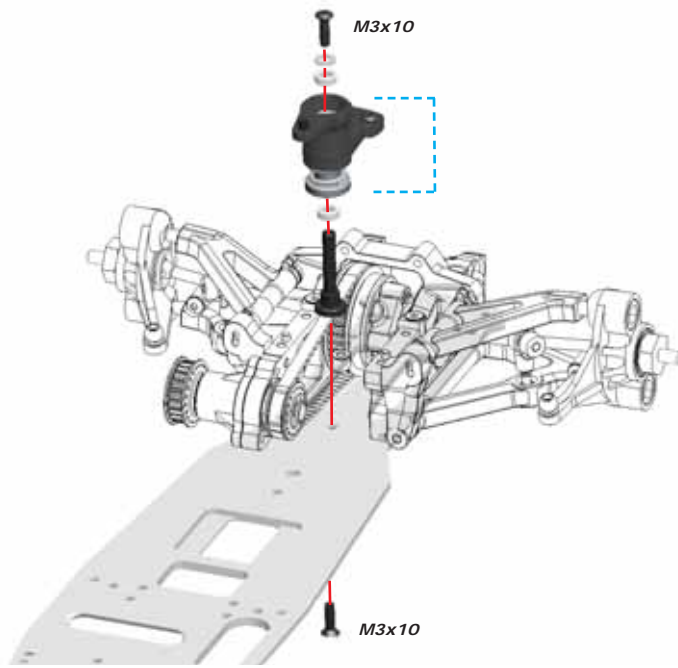
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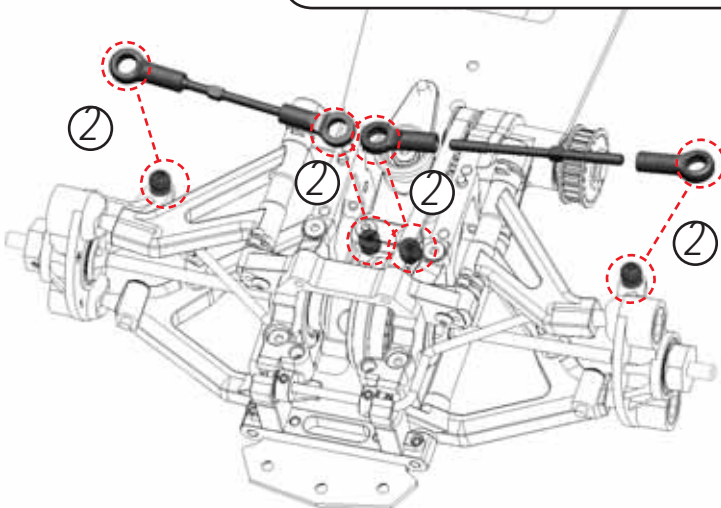
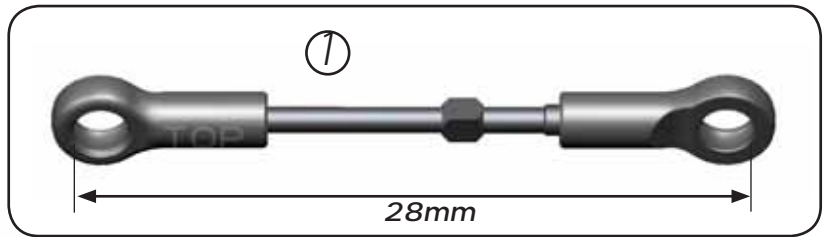
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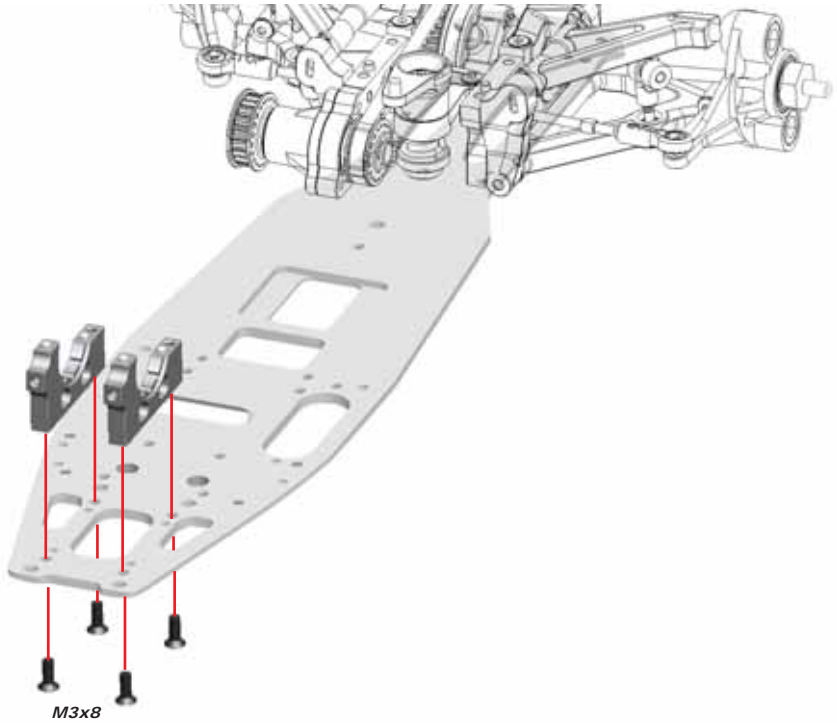
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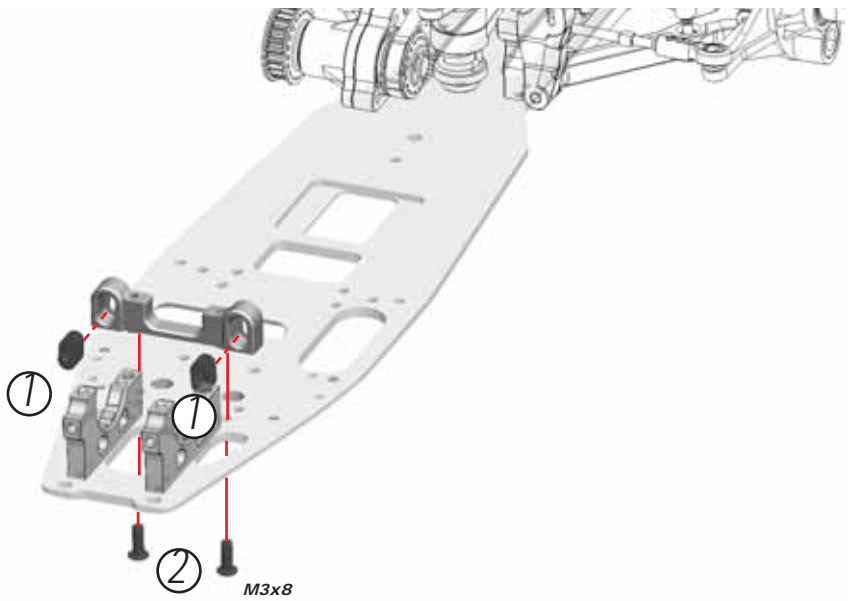
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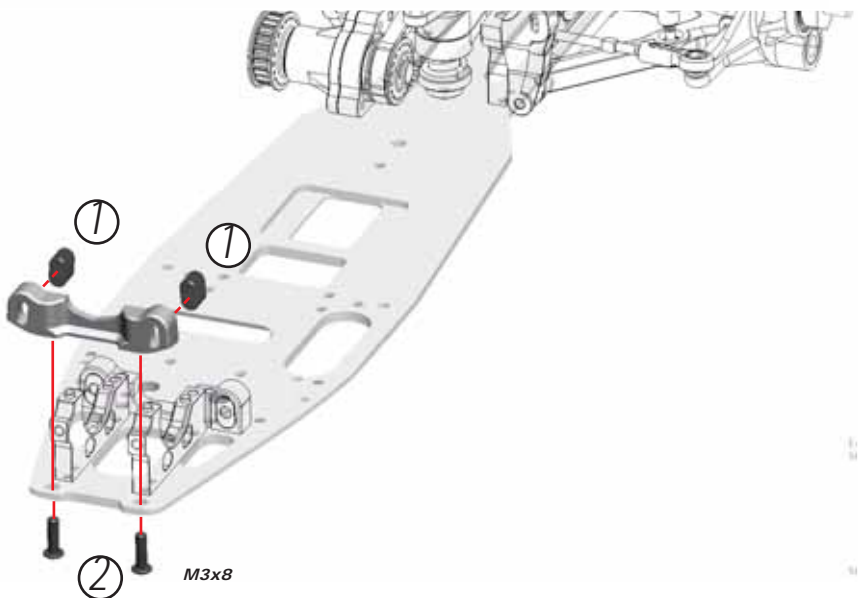
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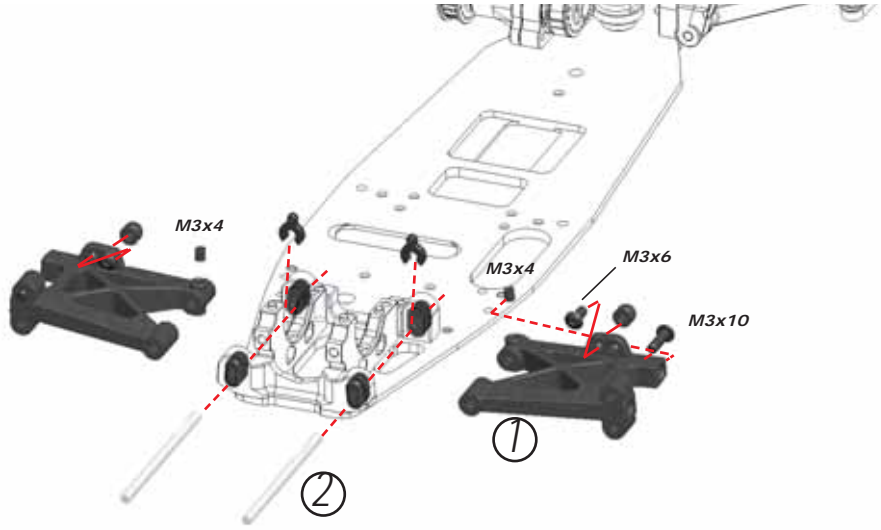




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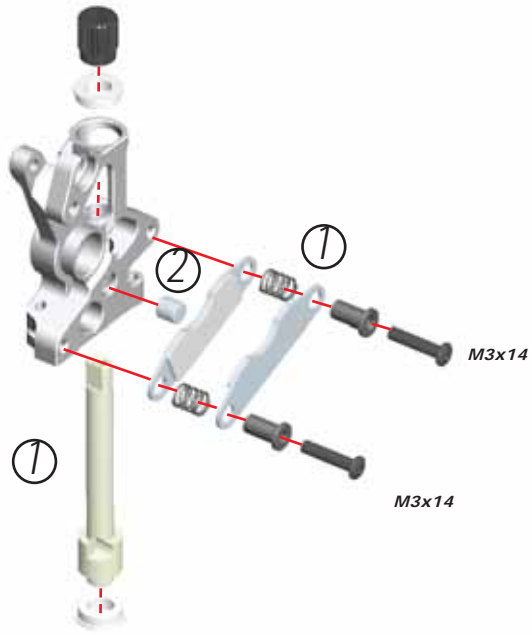
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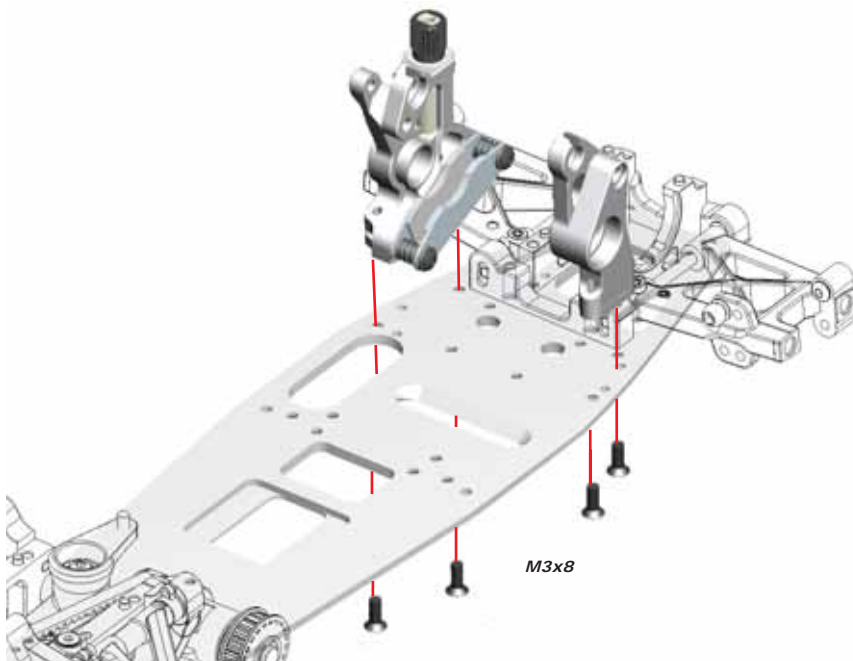
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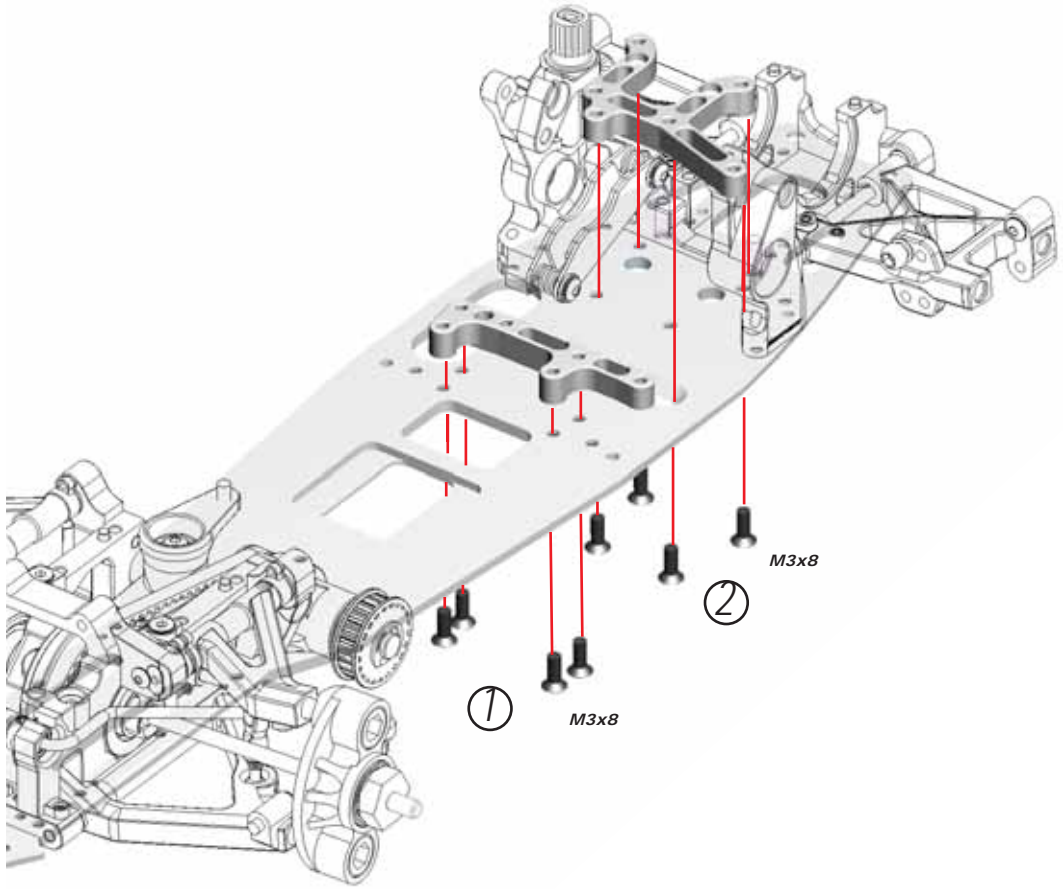
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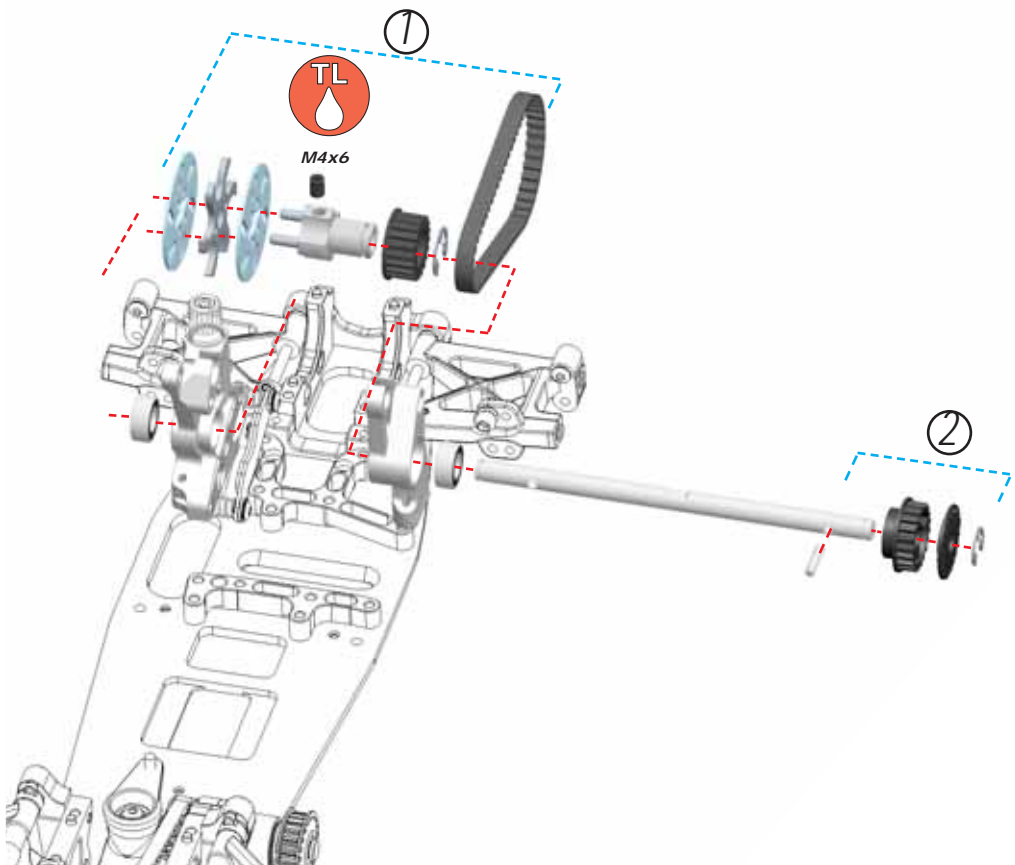
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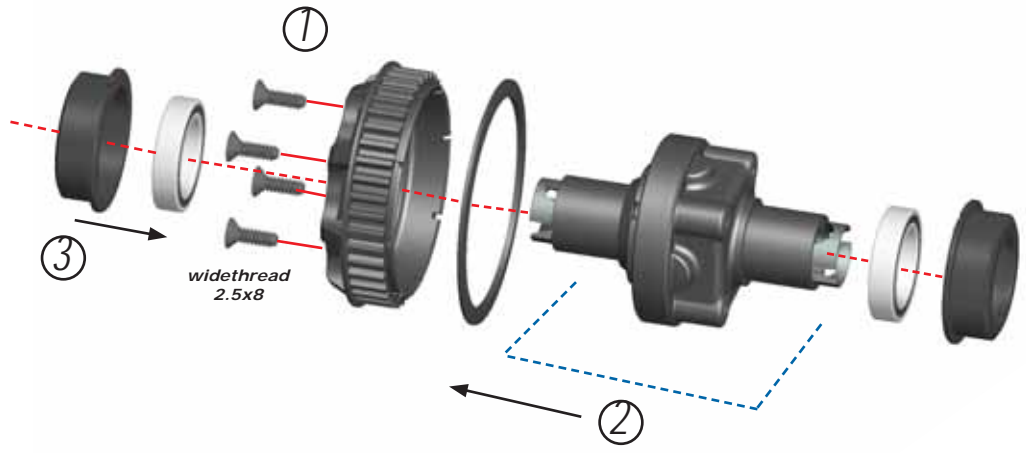




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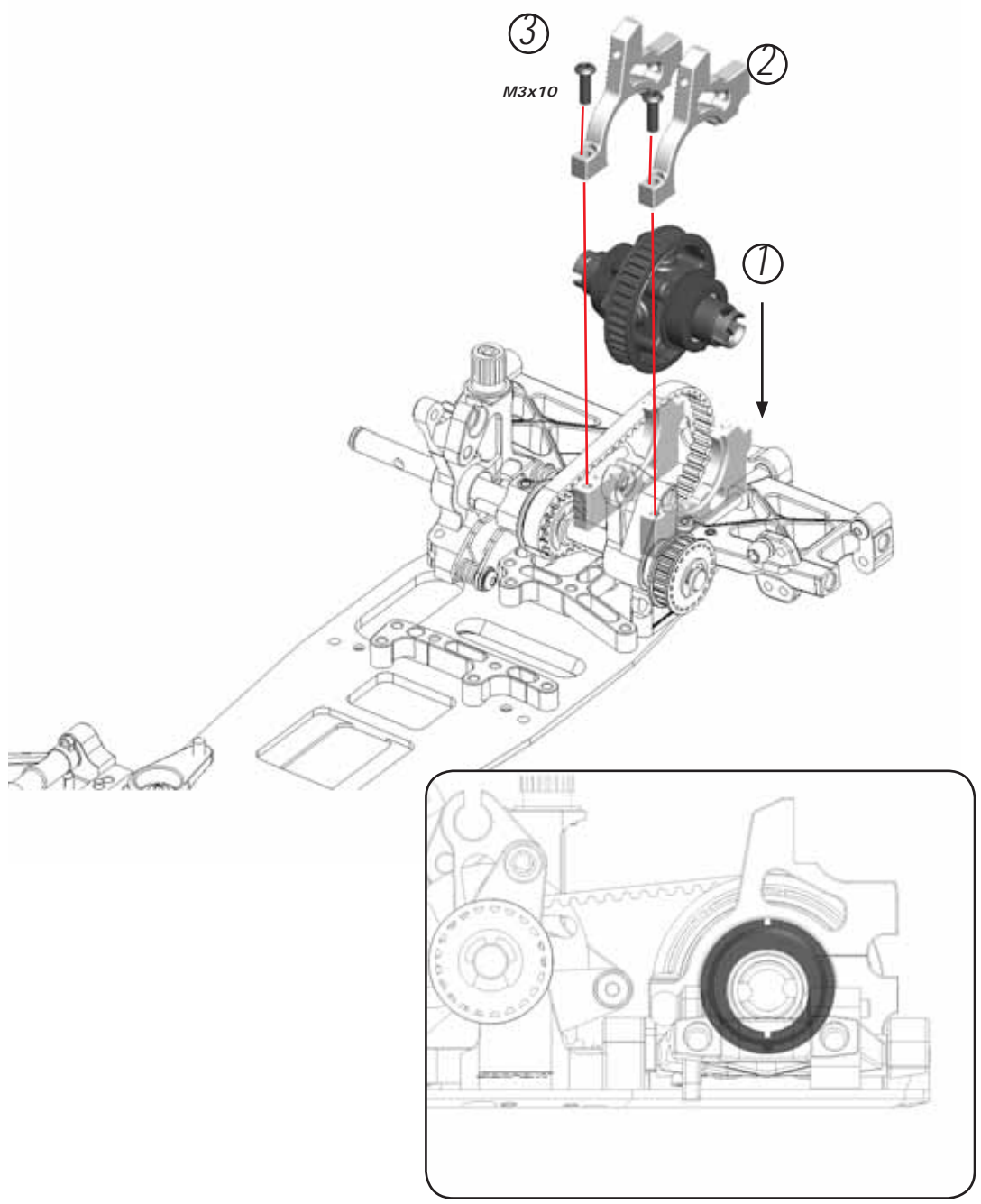
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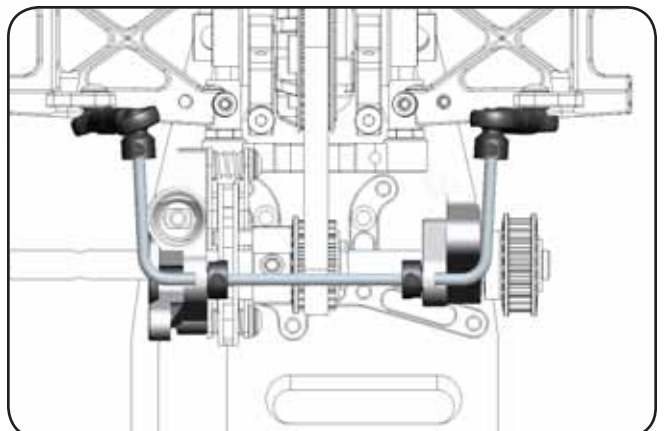
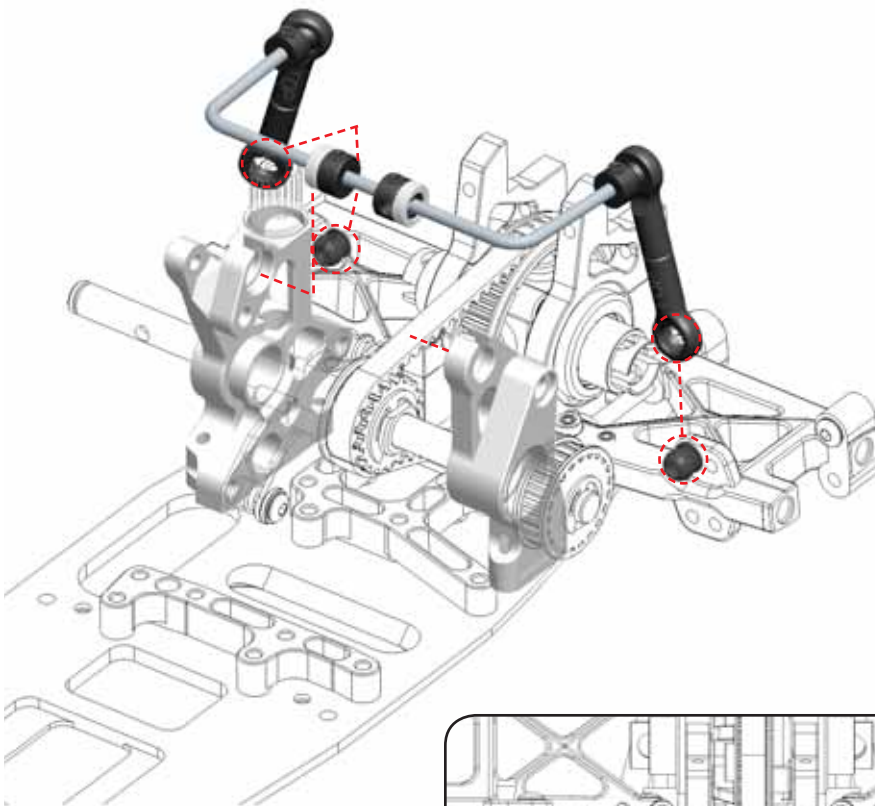
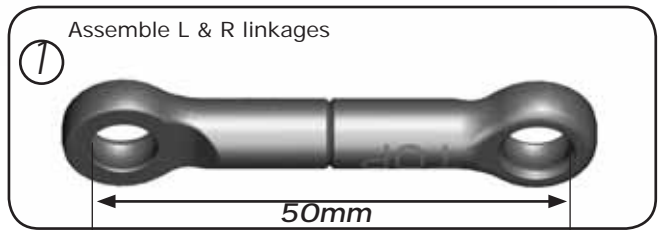
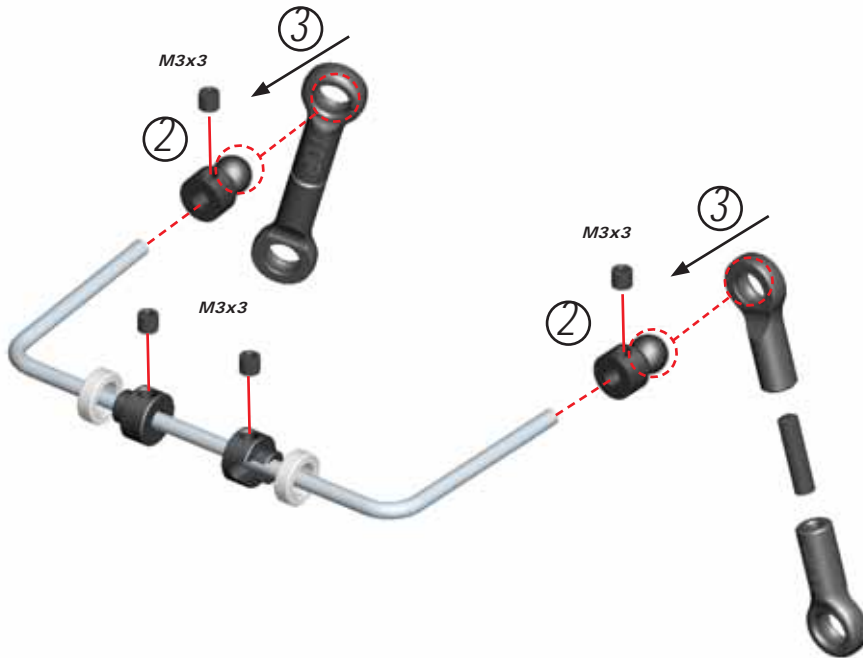
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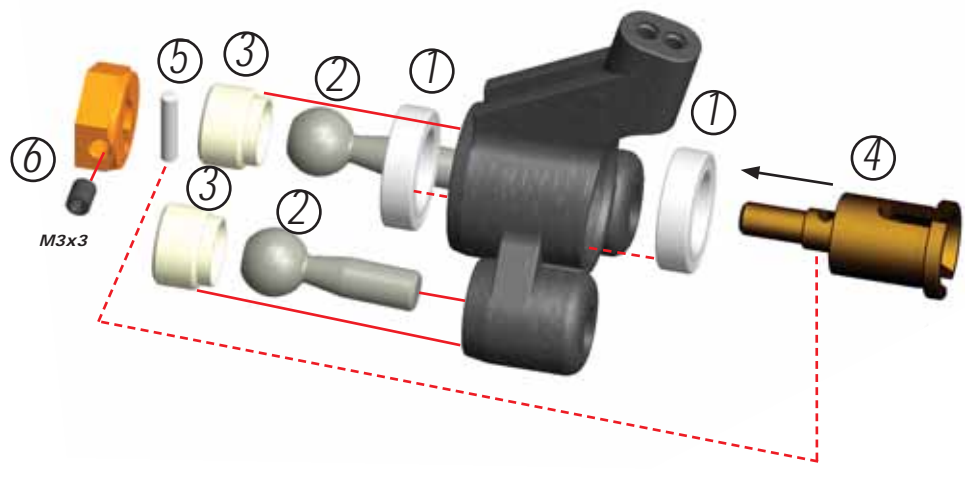






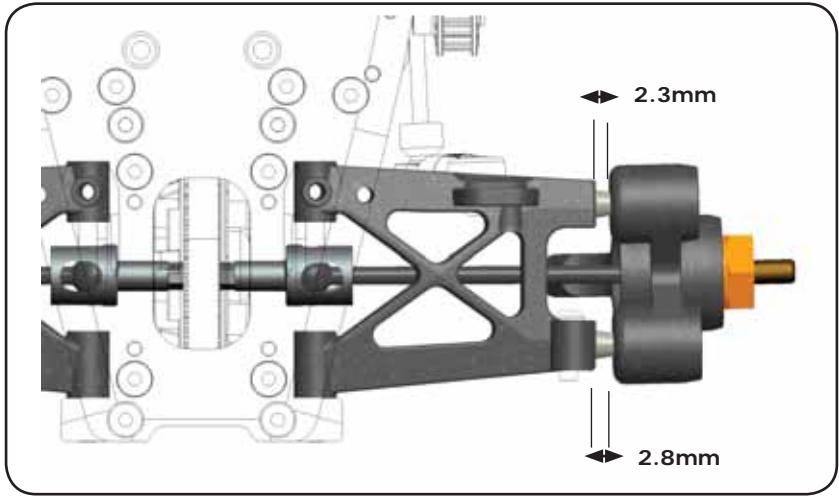
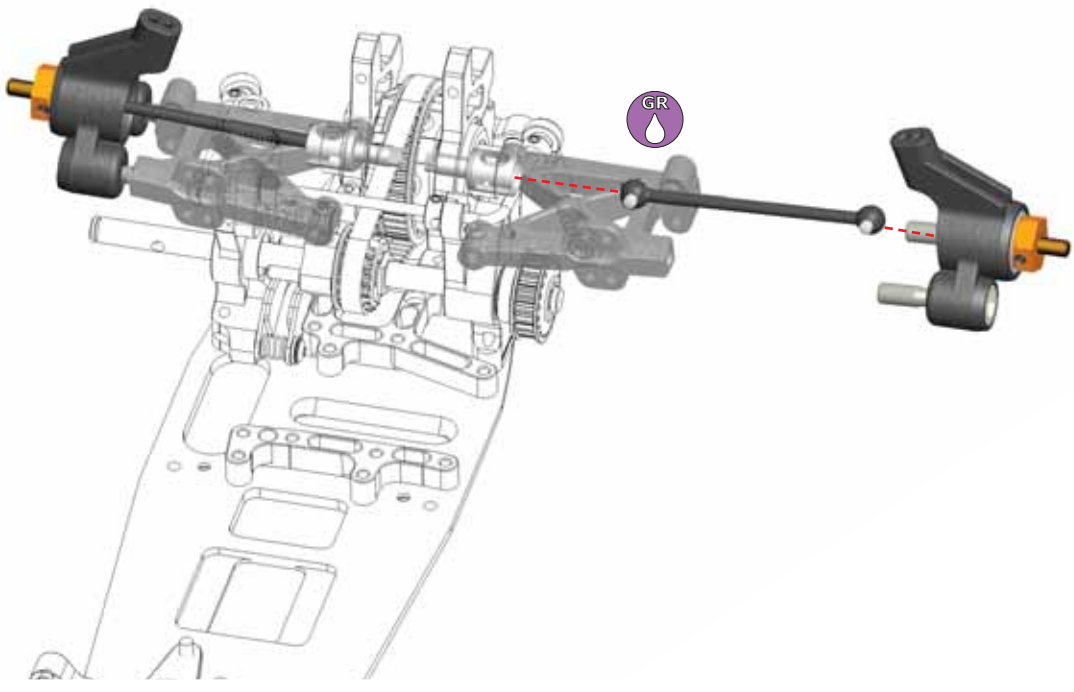
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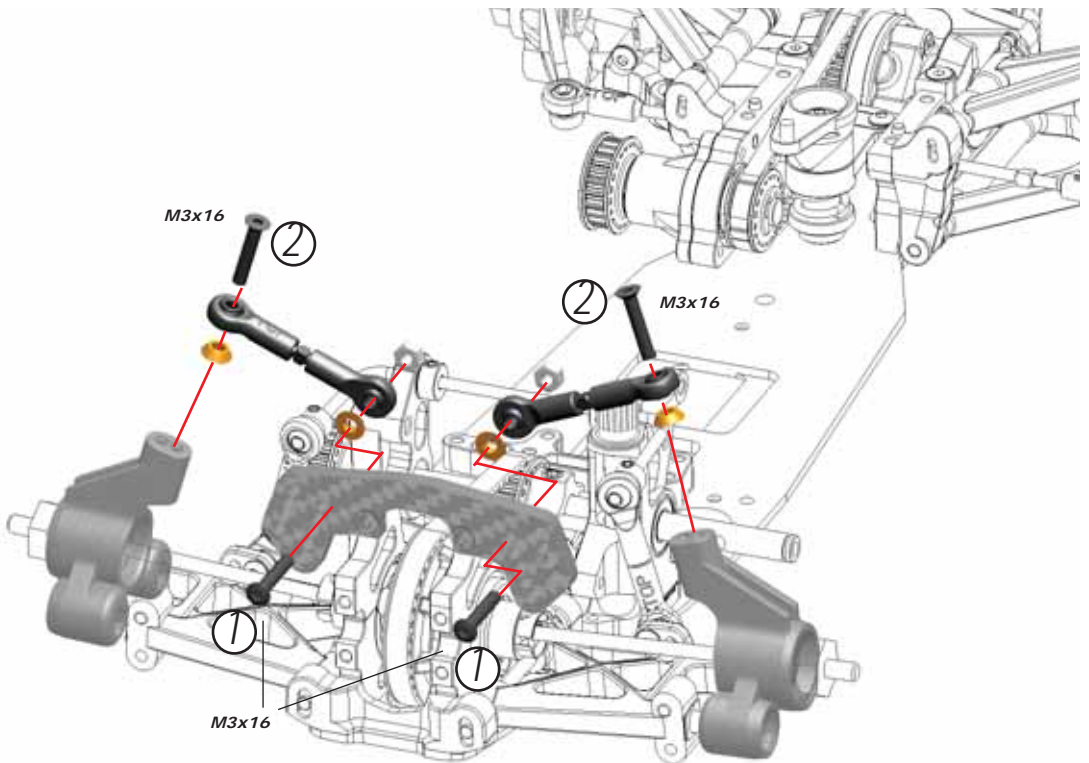
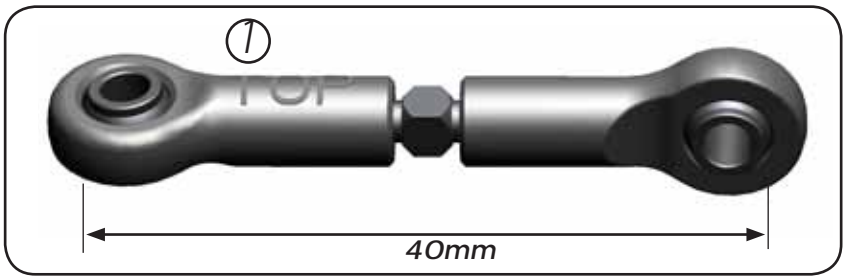
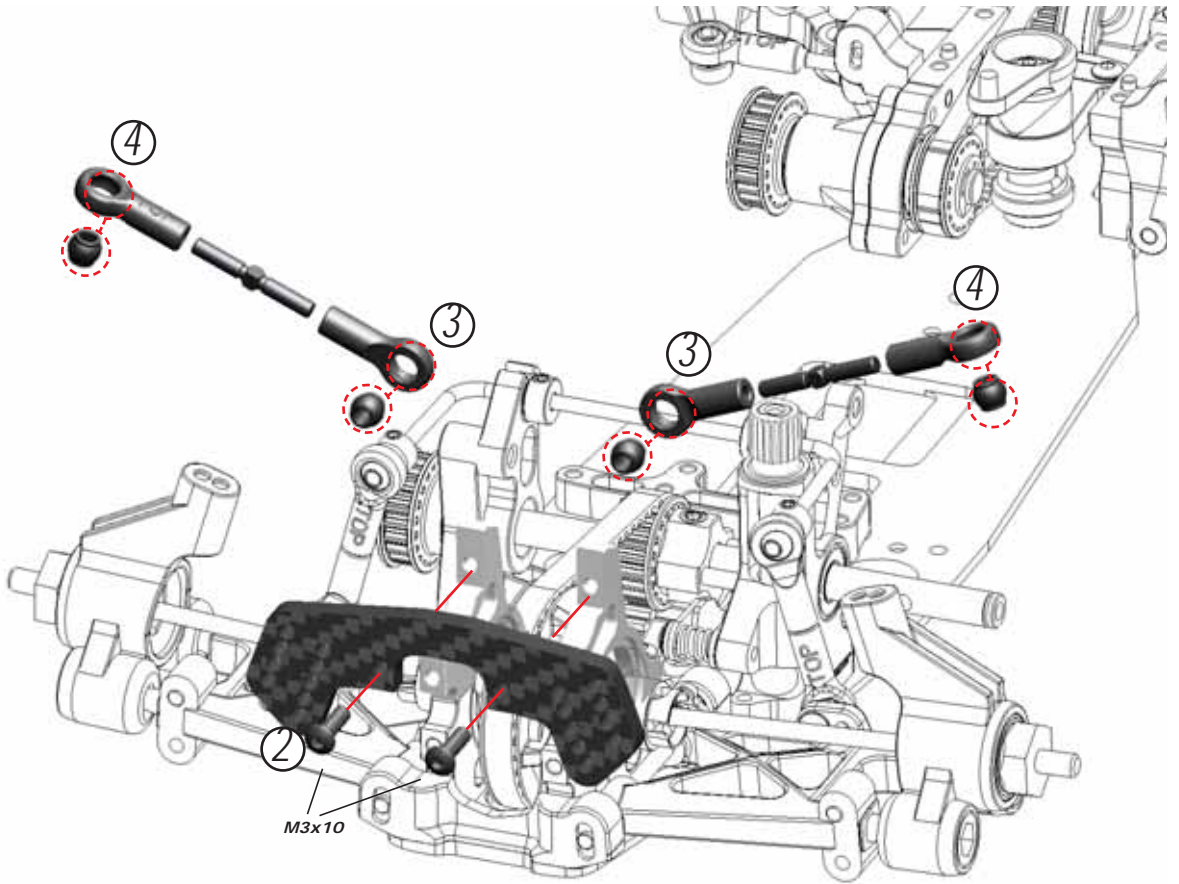
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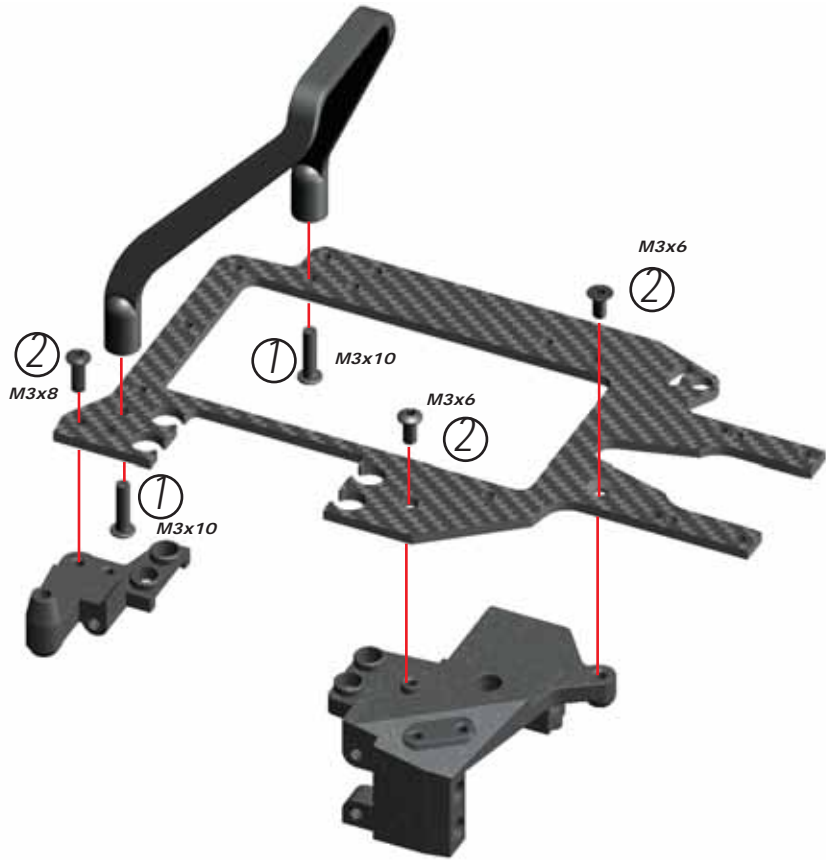


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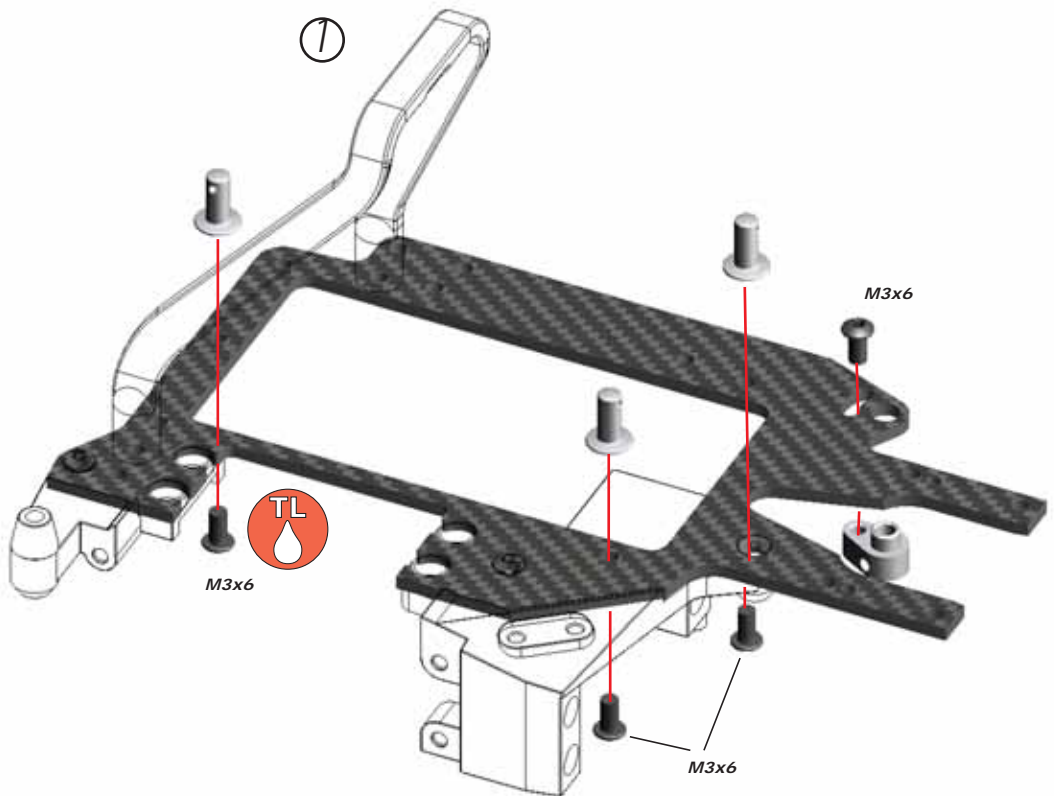
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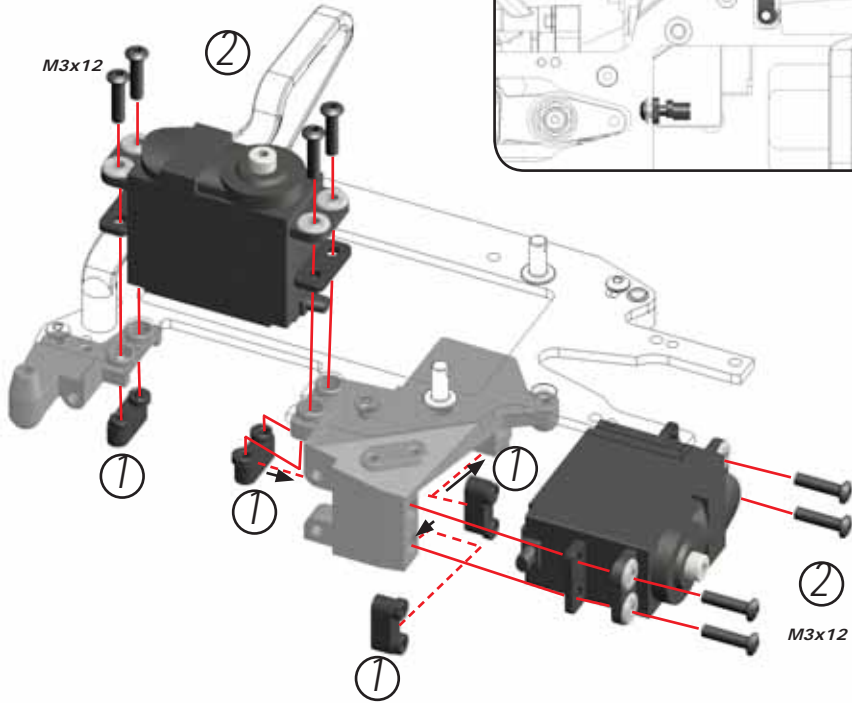
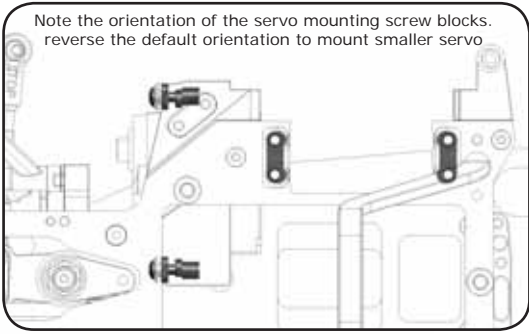


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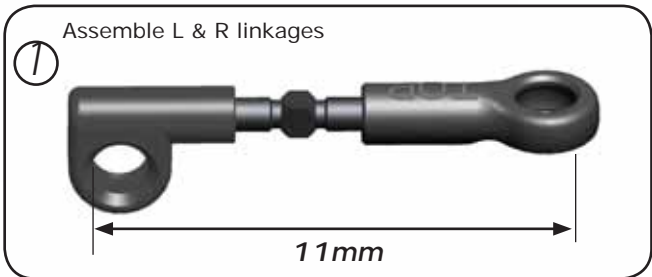
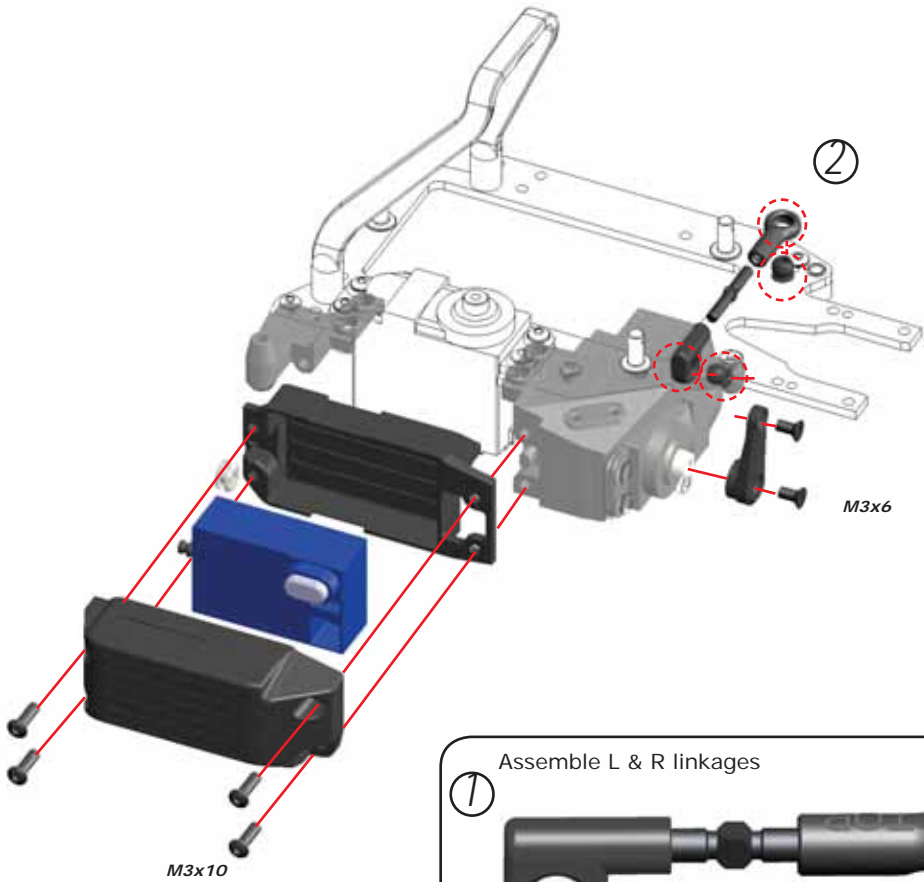




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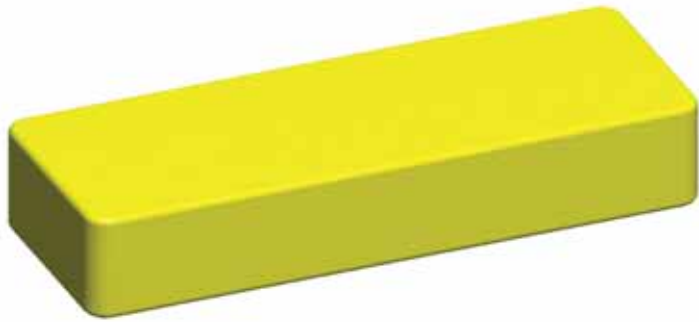
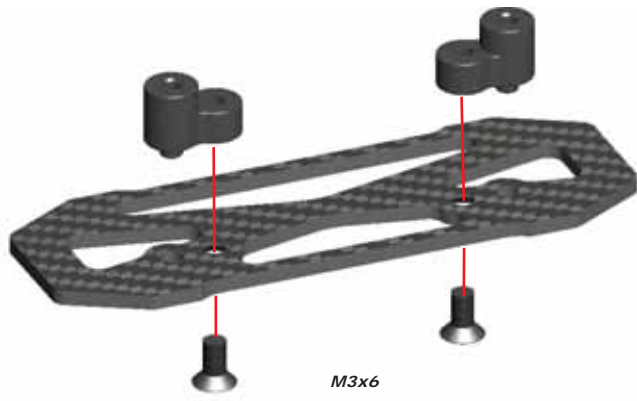
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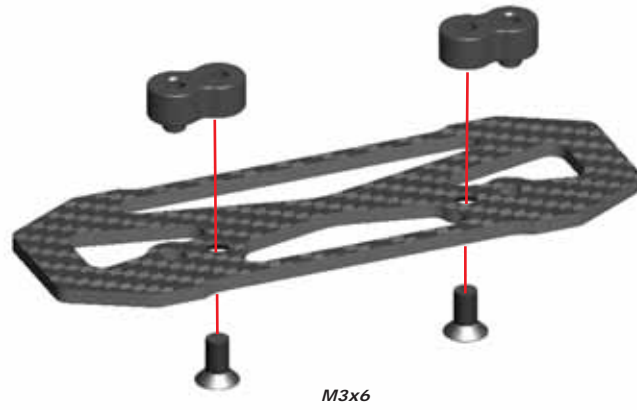
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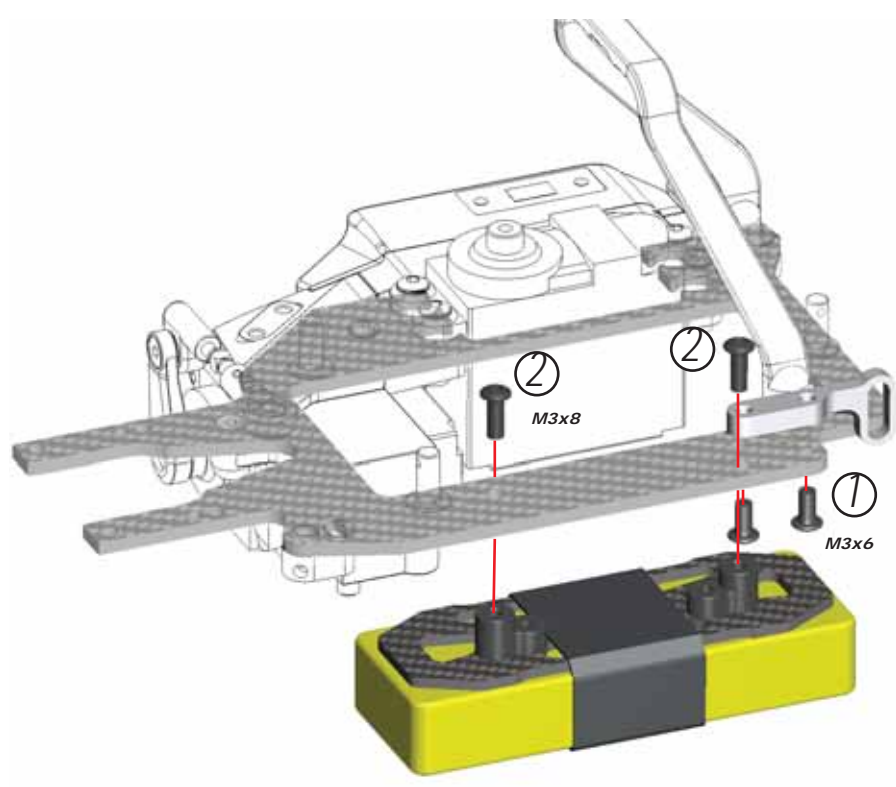
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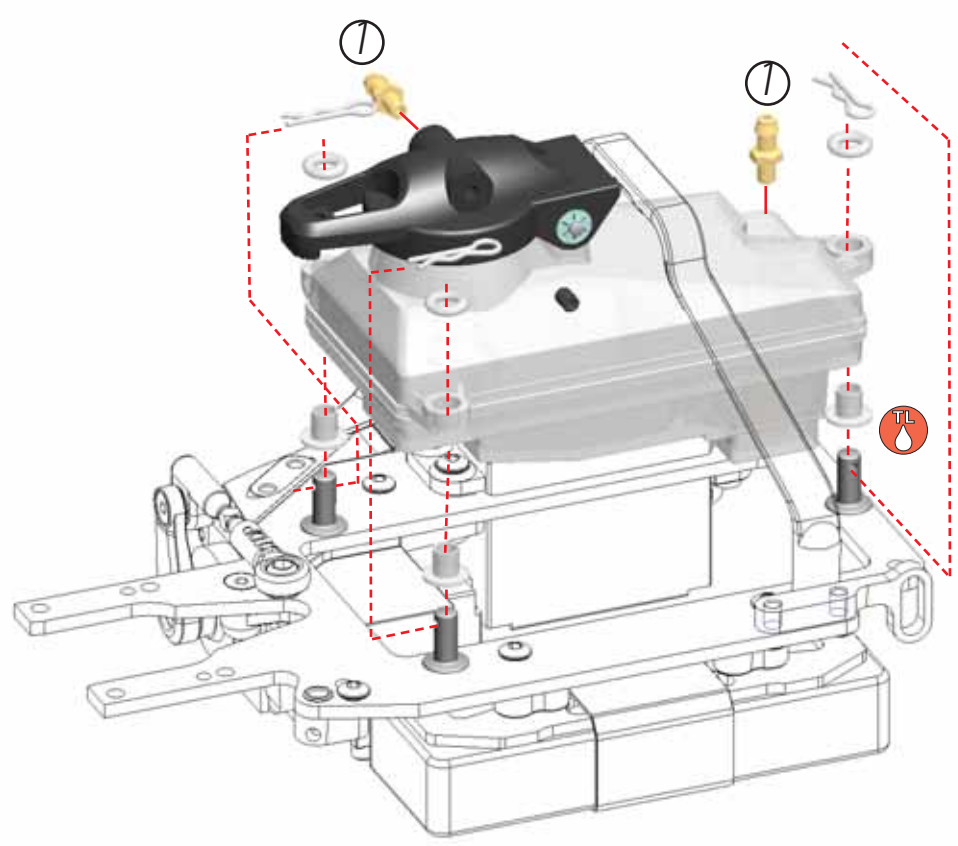
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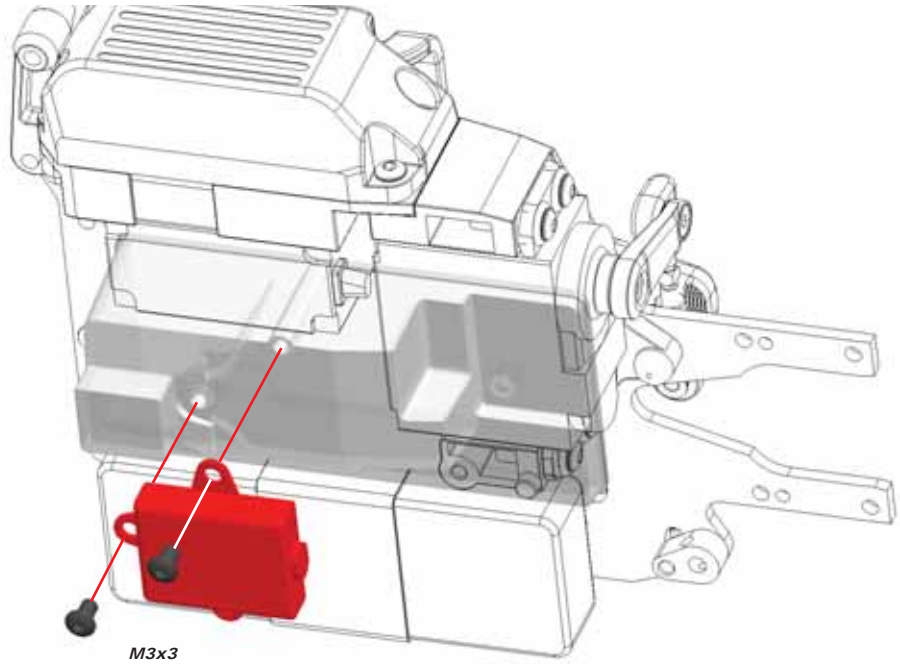


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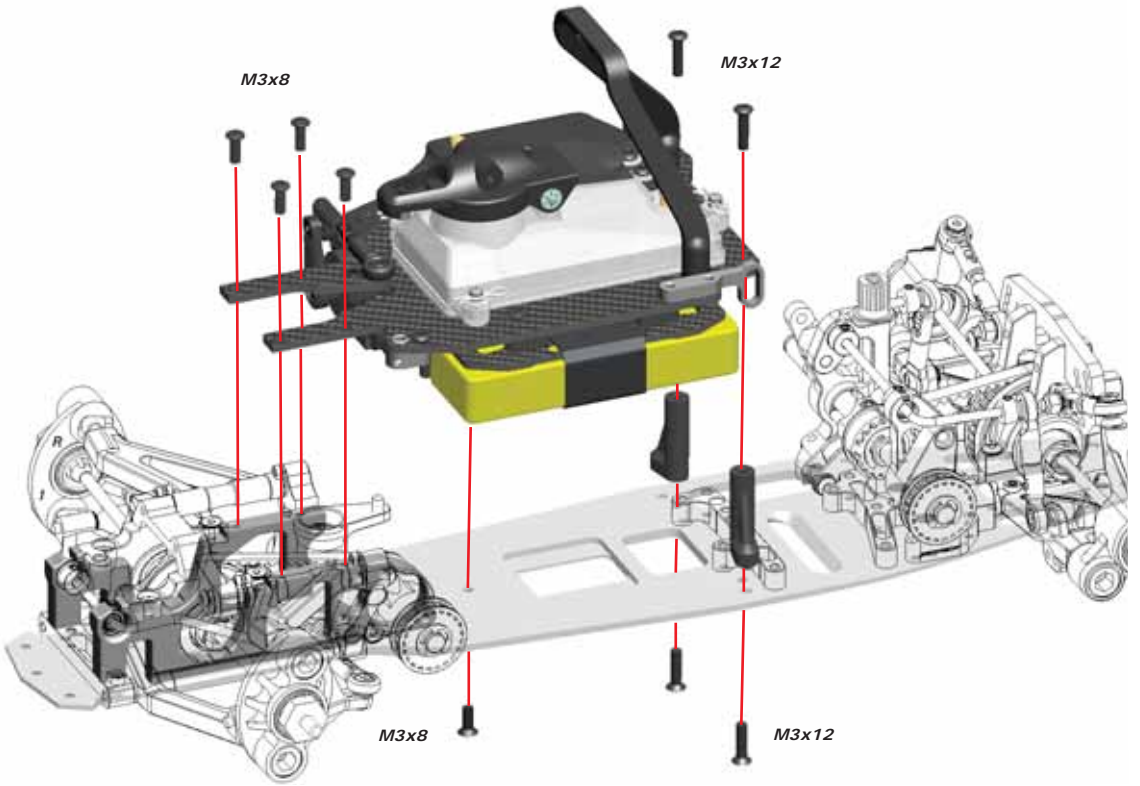
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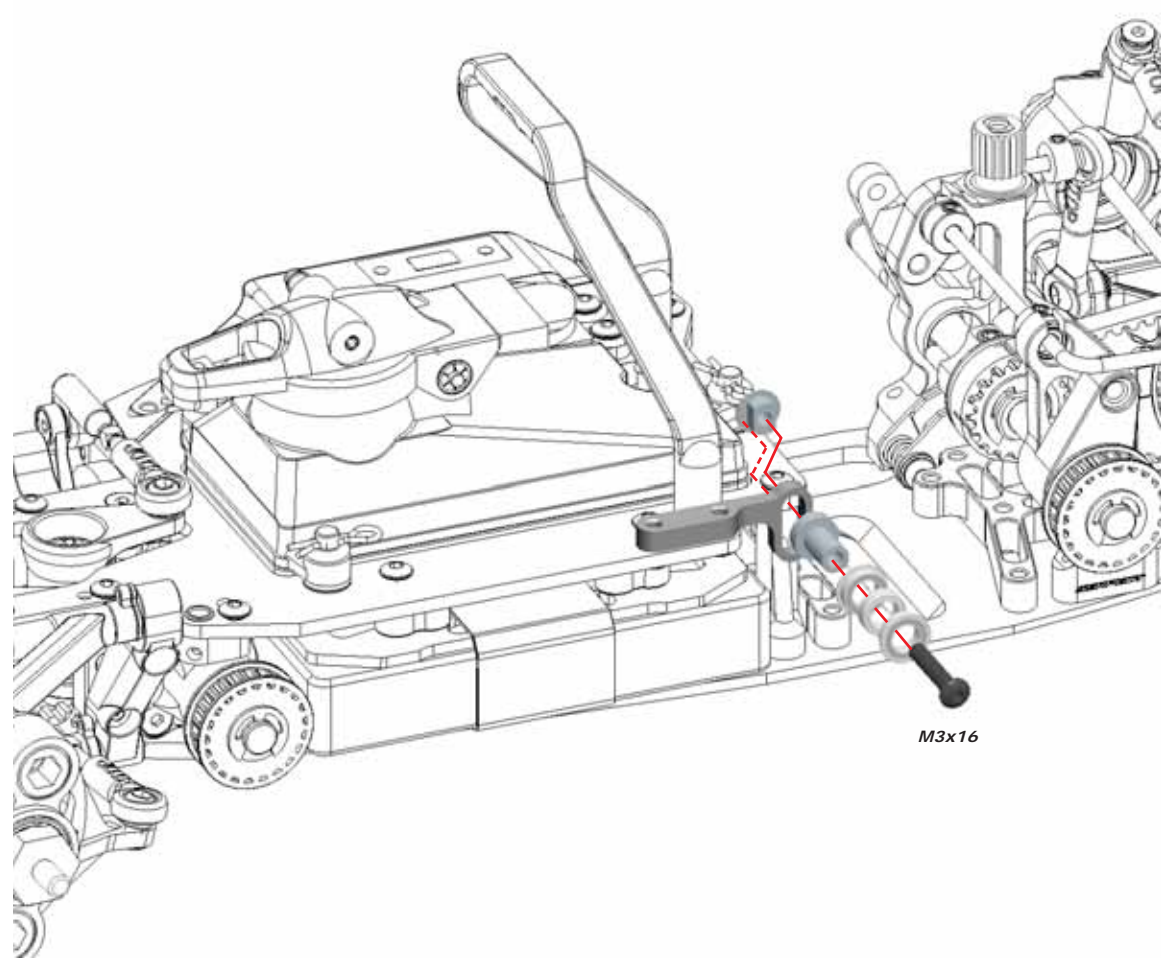
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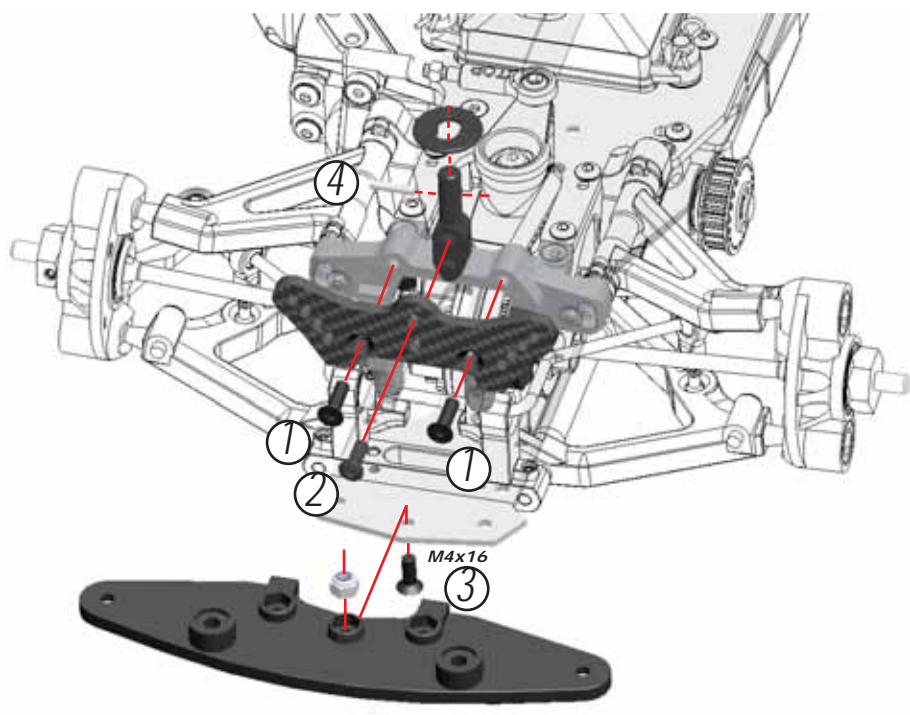
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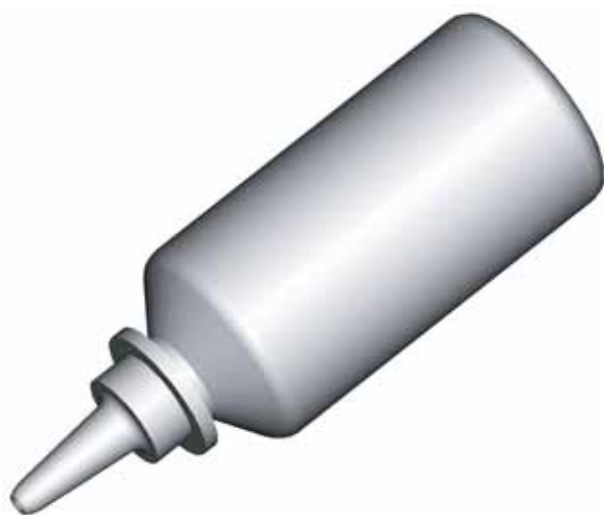
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Bag





① Unscrew the bottom half of the pre-assembled shock absorbers.



② **FILLING**
Fill the shock body with the supplied shock absorber oil.



BLEEDING
Let the oil settle and allow the air to escape. Slowly move the piston up and down to release any trapped air bubbles. Repeat as necessary until no bubbles appear.



With the shock body filled with oil, slowly screw the bottom half of the pre-assembled shock back onto the shock body.
IMPORTANT! Do not cross thread!



Oil will overflow through the built-in bleed channel in the threads.



Front shock
68mm

Rear shock
73mm

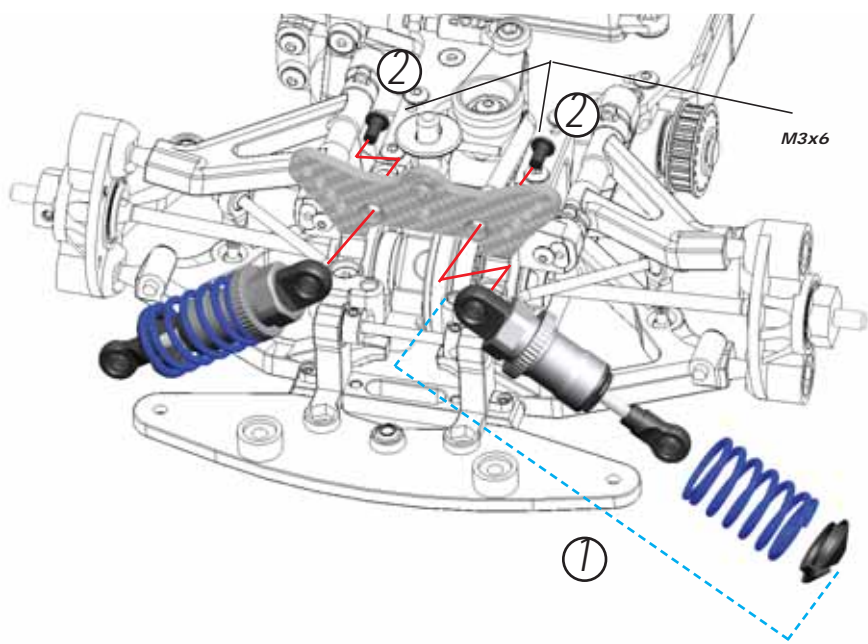




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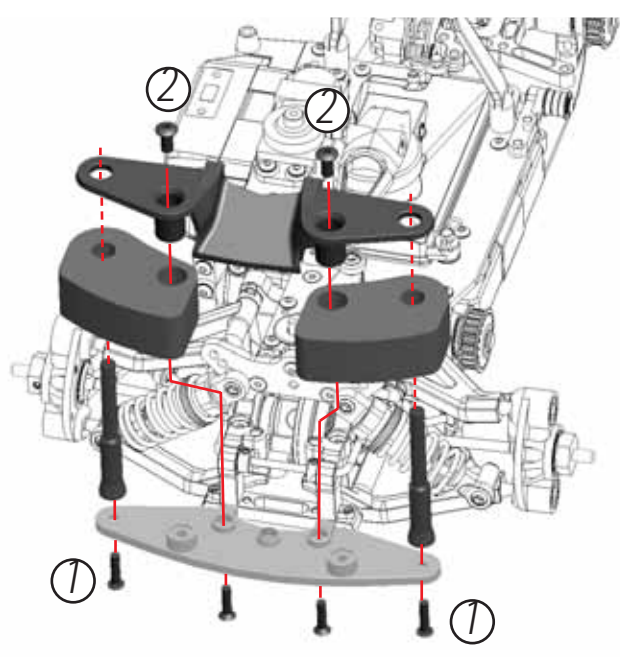
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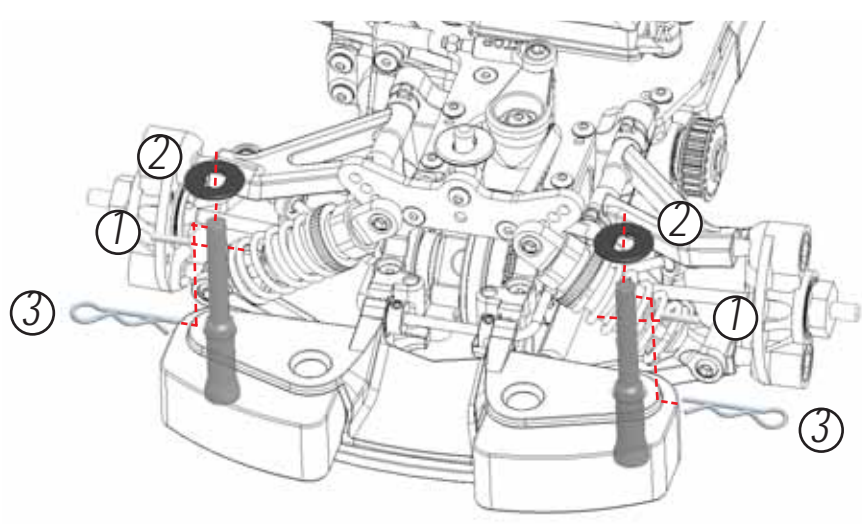
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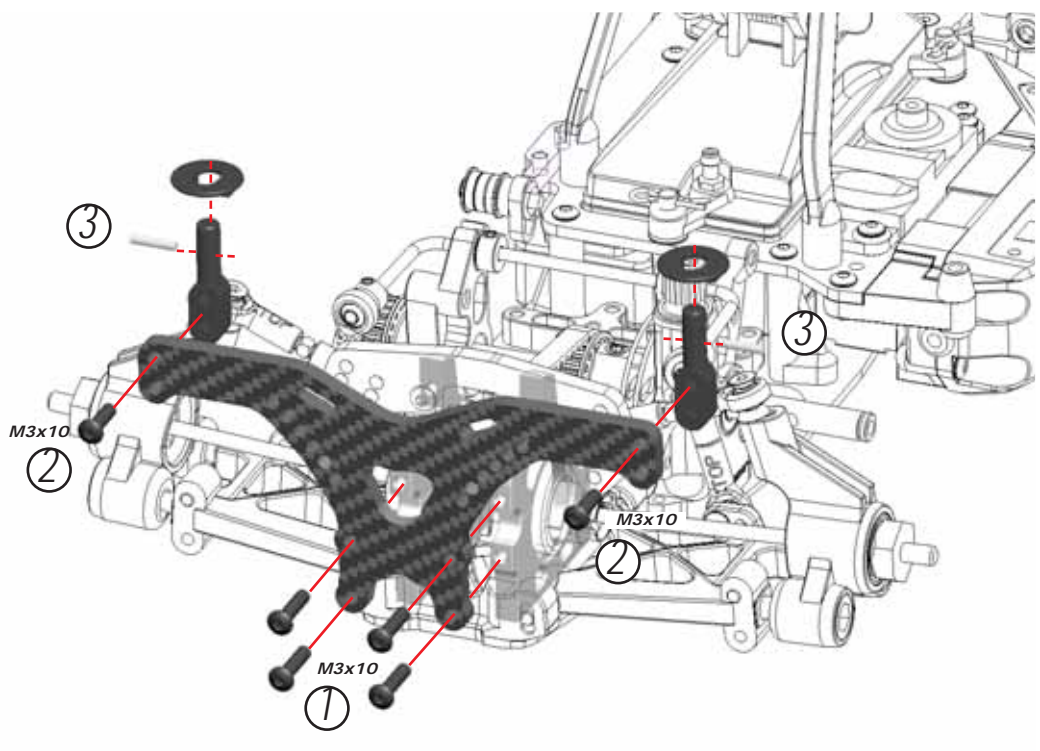
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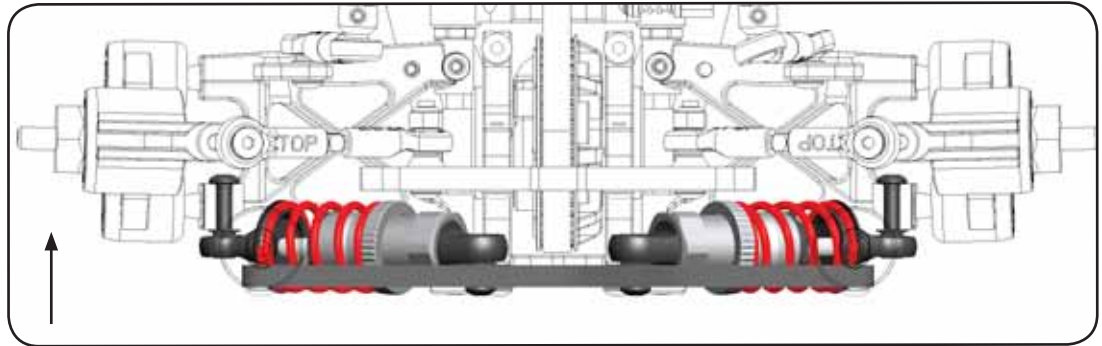
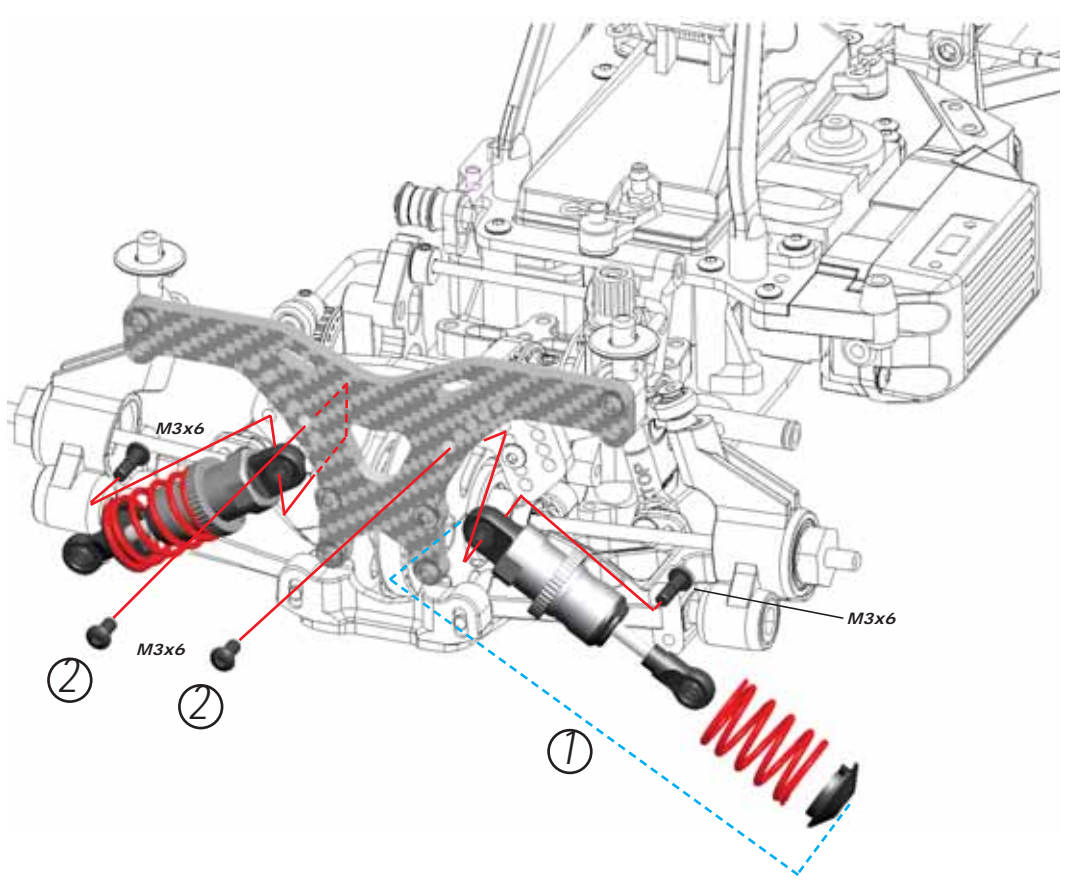
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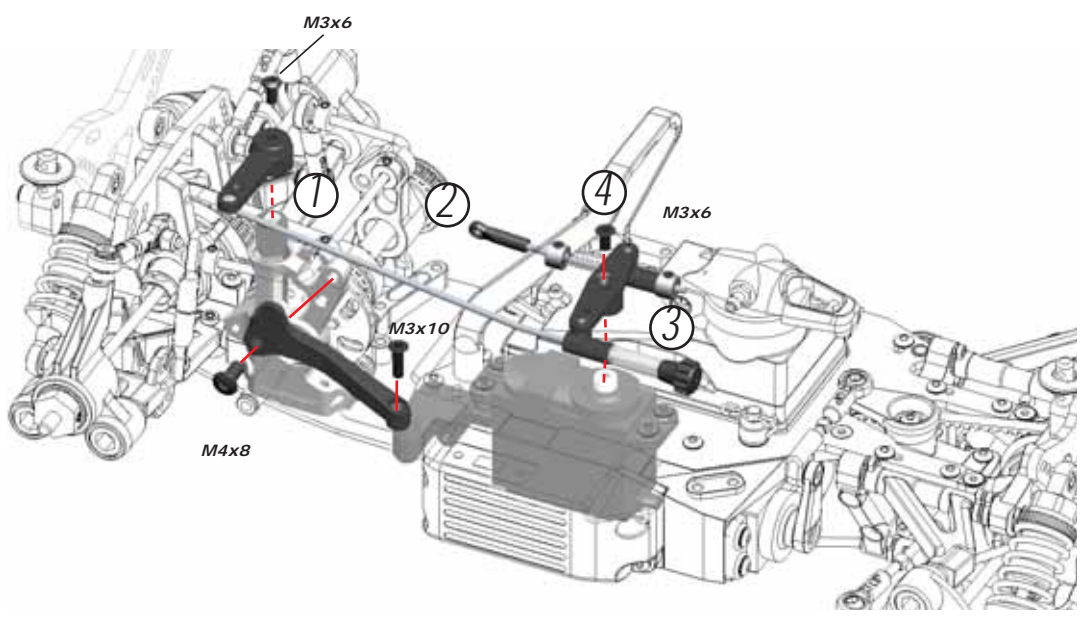
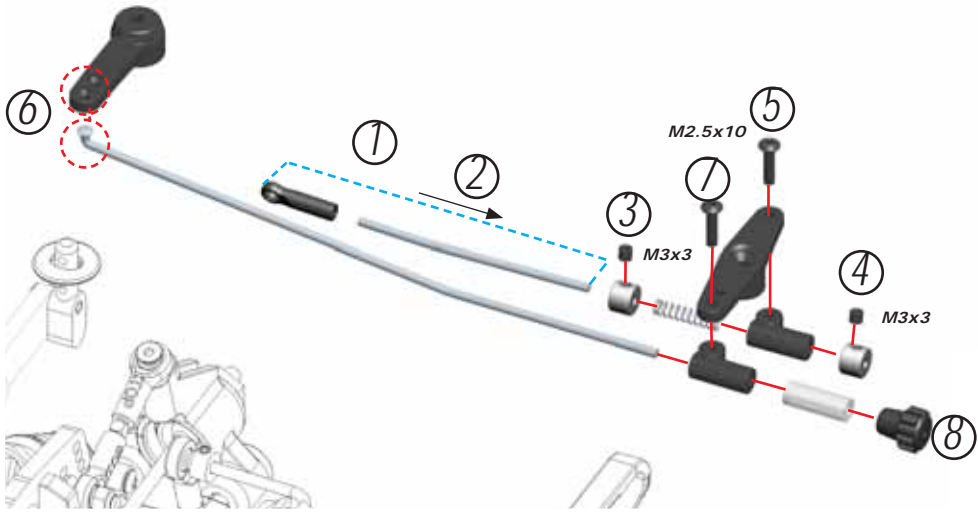
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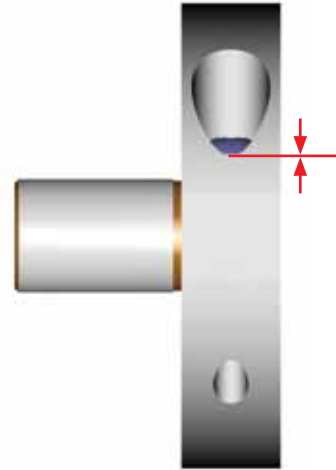
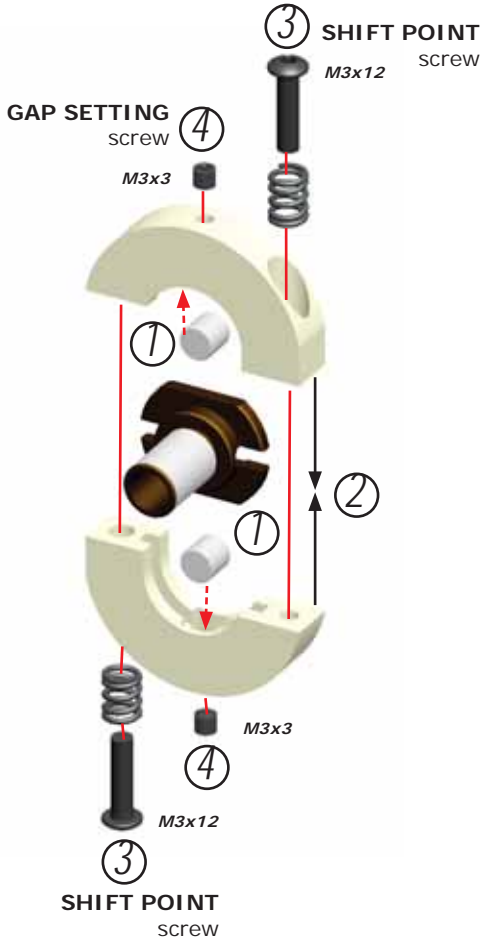


GEARBOX ASSEMBLY

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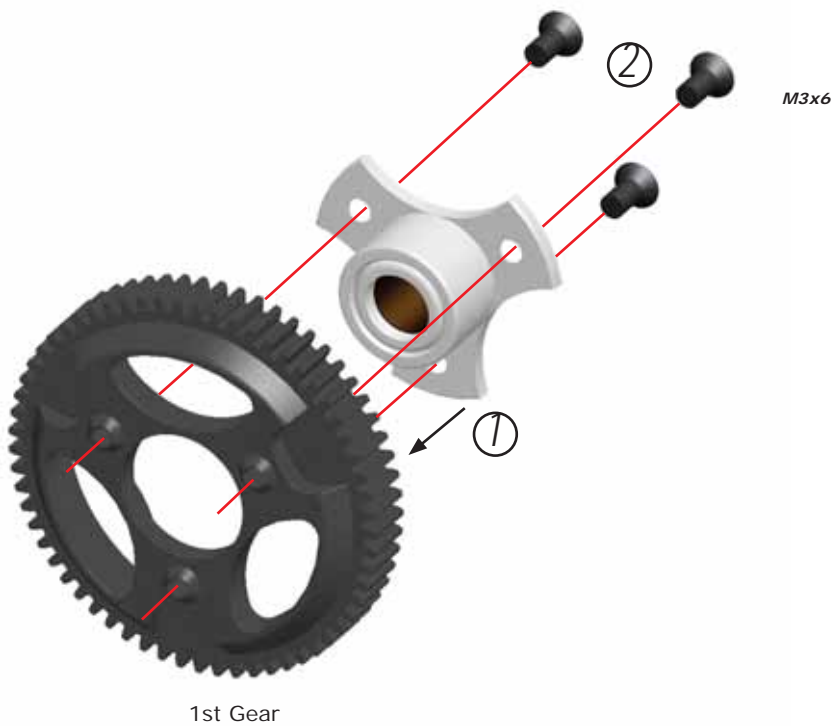
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Start with screw head flush with bottom edge of hole. Both screws must be set equally.

D

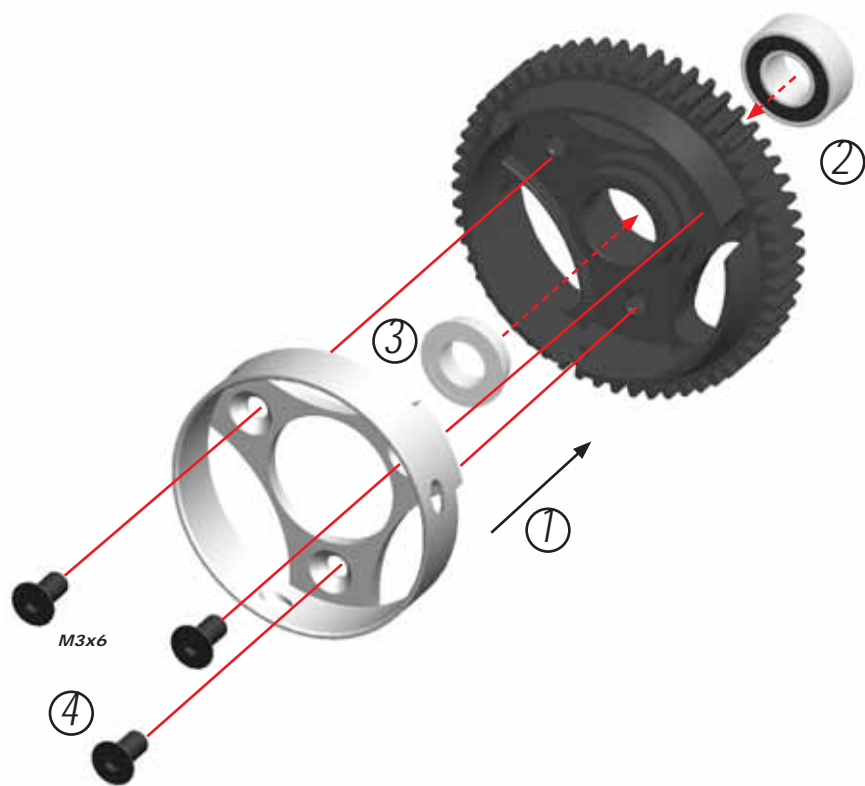
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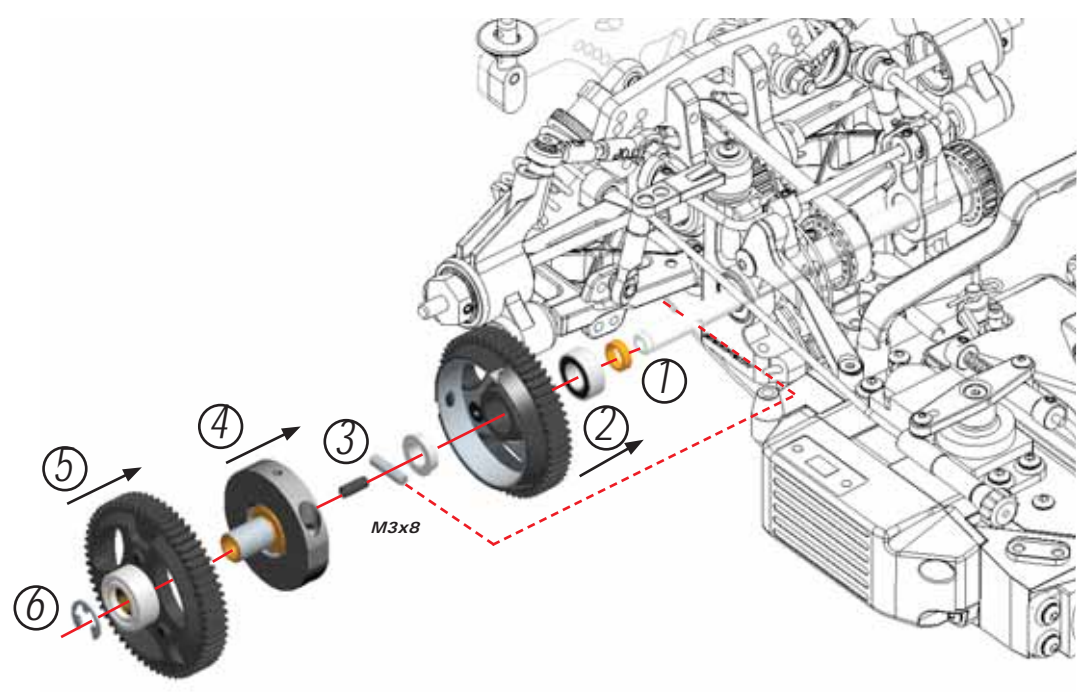
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D
3



D
4



ADJUSTING THE 2-SPEED SHOE GAP

Loosed the two gap-setting set screws to allow the shoes to rest on the drive adaptor.

Install the 2-speed shoes in the 2nd gear drum, but do NOT install the 1st gear.

There should be equal but minimal spacing between the 2-speed shoes and the 2nd gear drum. Tighten BOTH gap setting set screws until the shoes touch the inside surface of the aluminum 2nd gear drum, then loosen BOTH set screws by 1/2 turn each. The 2nd gear should spin freely.

Install the first gear.



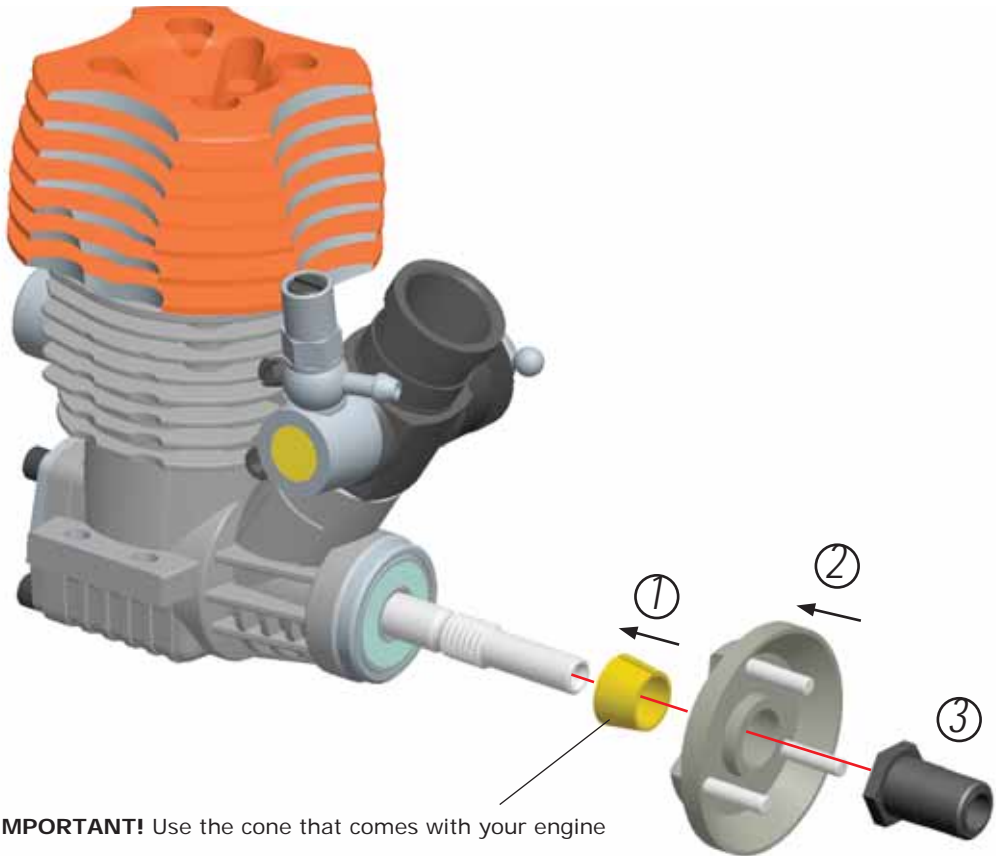


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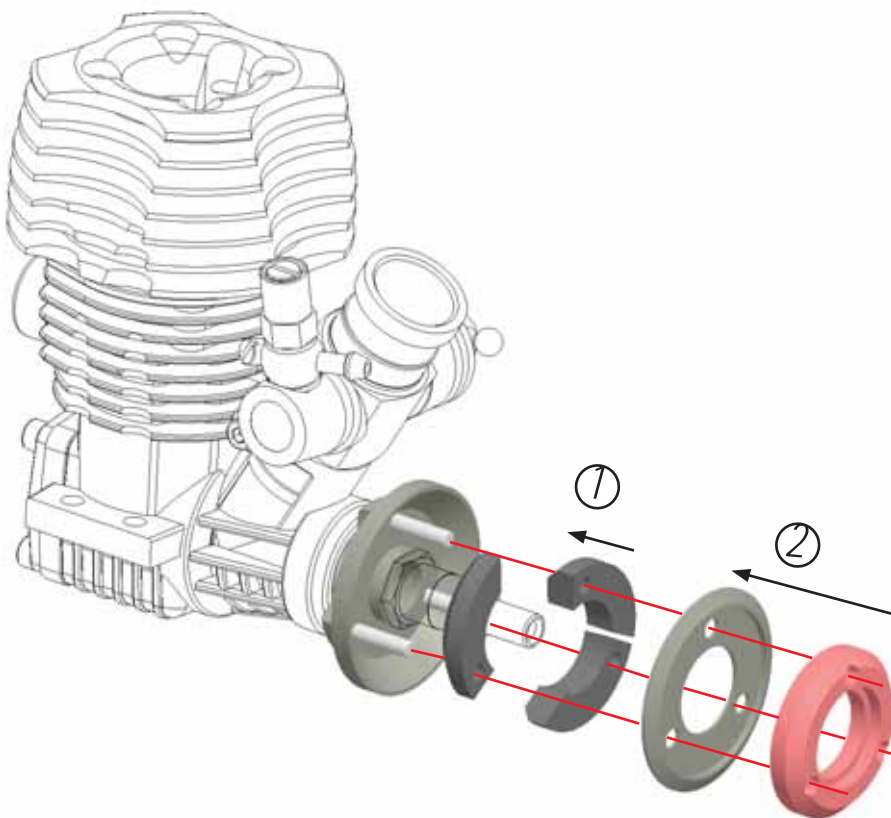
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CENTAX ASSEMBLY



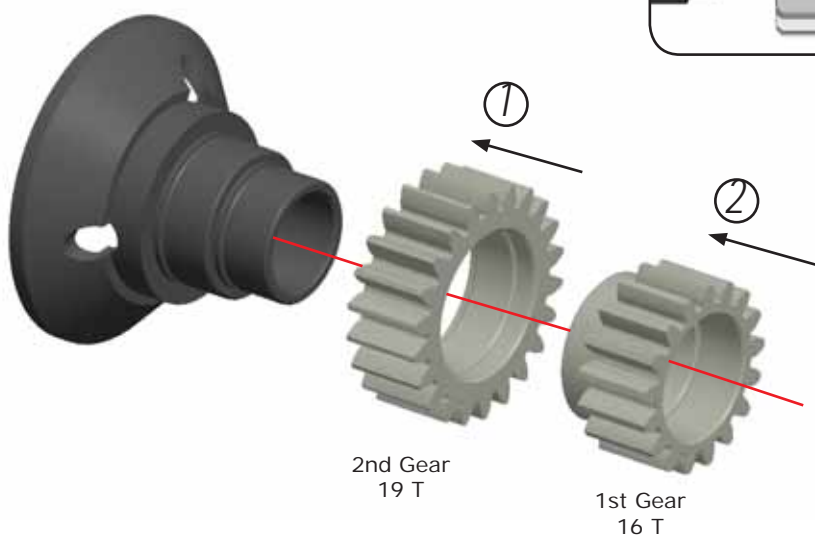
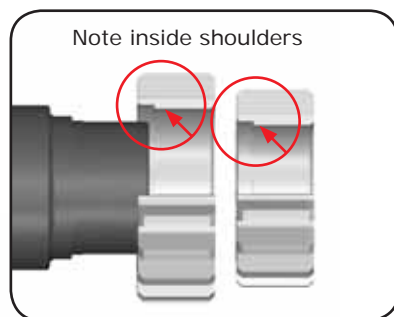
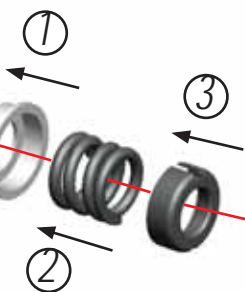
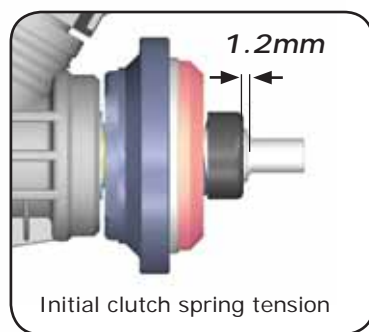
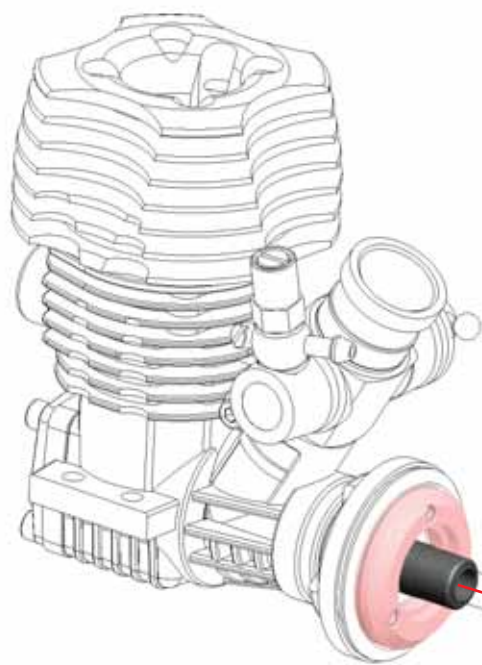
E

2



Page
31





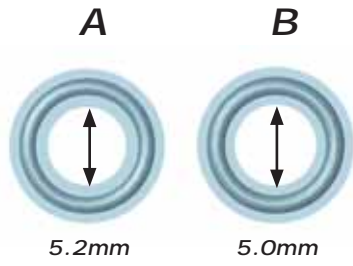
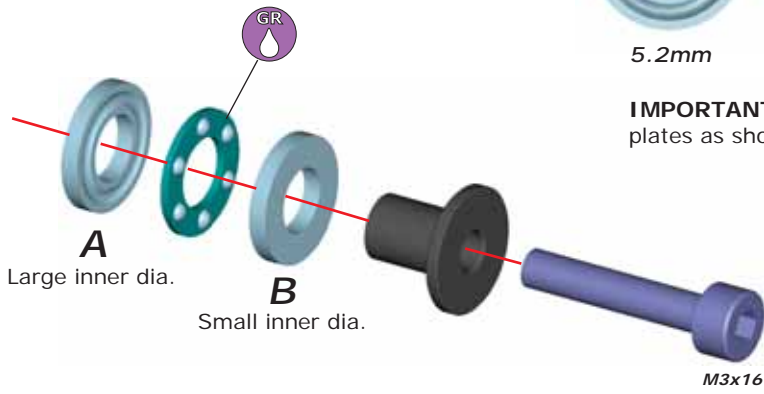
2nd Gear
19 T

1st Gear
16 T



E

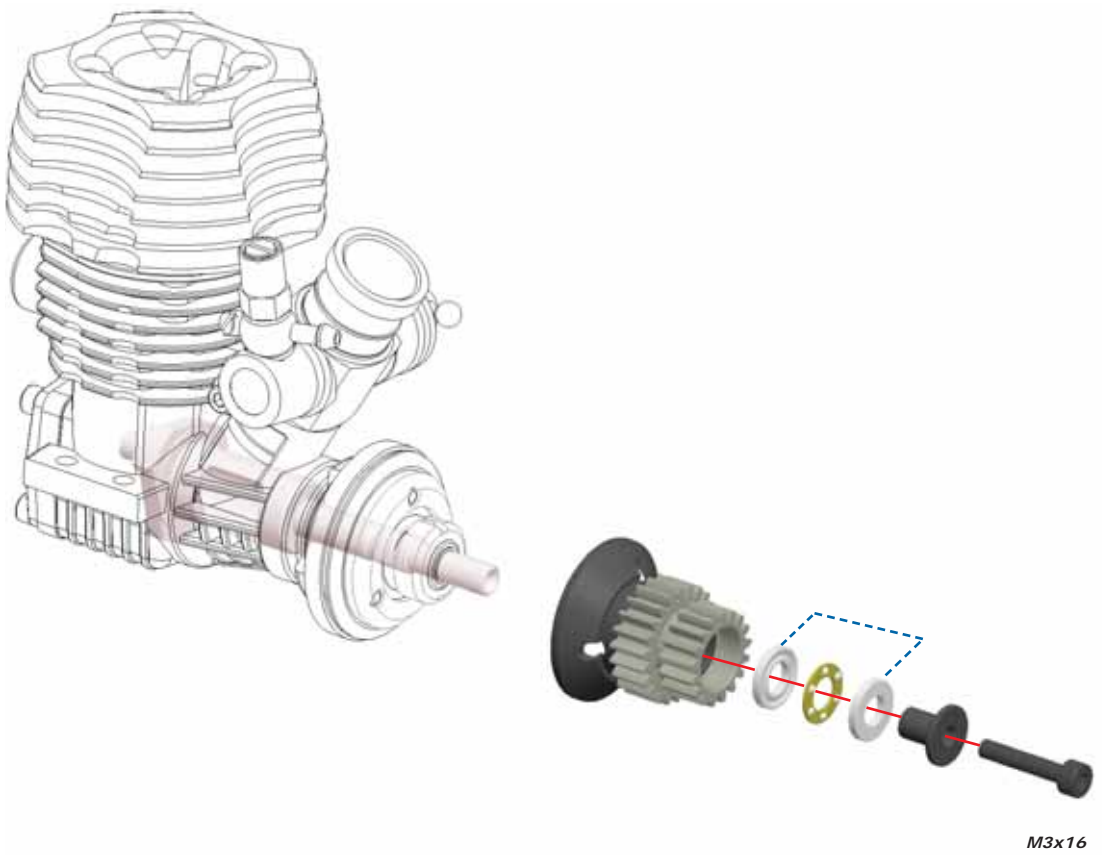
5



IMPORTANT! Install thrust bearing plates as shown

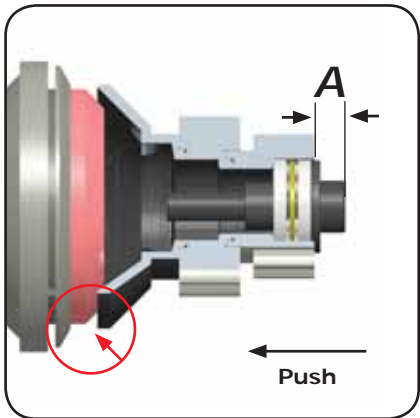
E

6

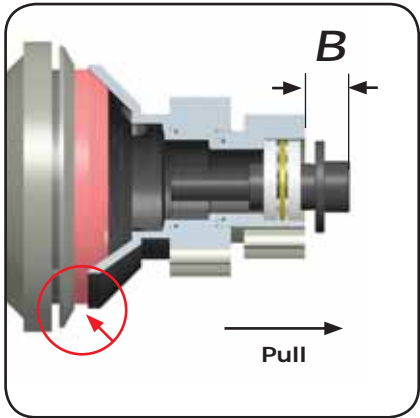




ADJUSTING THE CLUTCH GAP



1 Install only the clutchbell and the thrustbearing assembly on the engine crankshaft. Push the clutchbell onto the clutch shoe, and then measure the distance A as indicated.



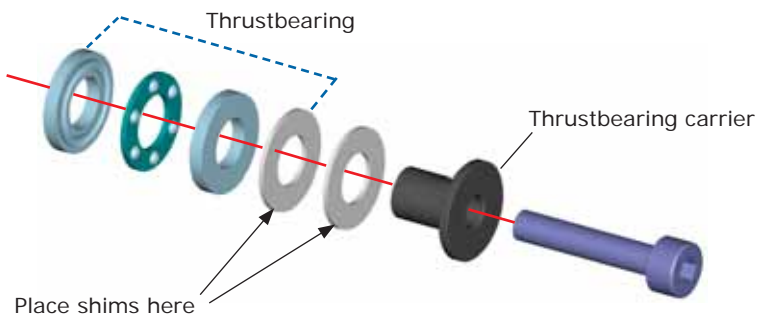
2 Pull the clutchbell away from the clutch shoe, and then measure the distance B as indicated.

3 The clutch gap is A – B; the correct gap is 0.7mm. If the clutch gap is greater than 0.7mm, you can easily calculate the thickness of shims required to set the correct gap:

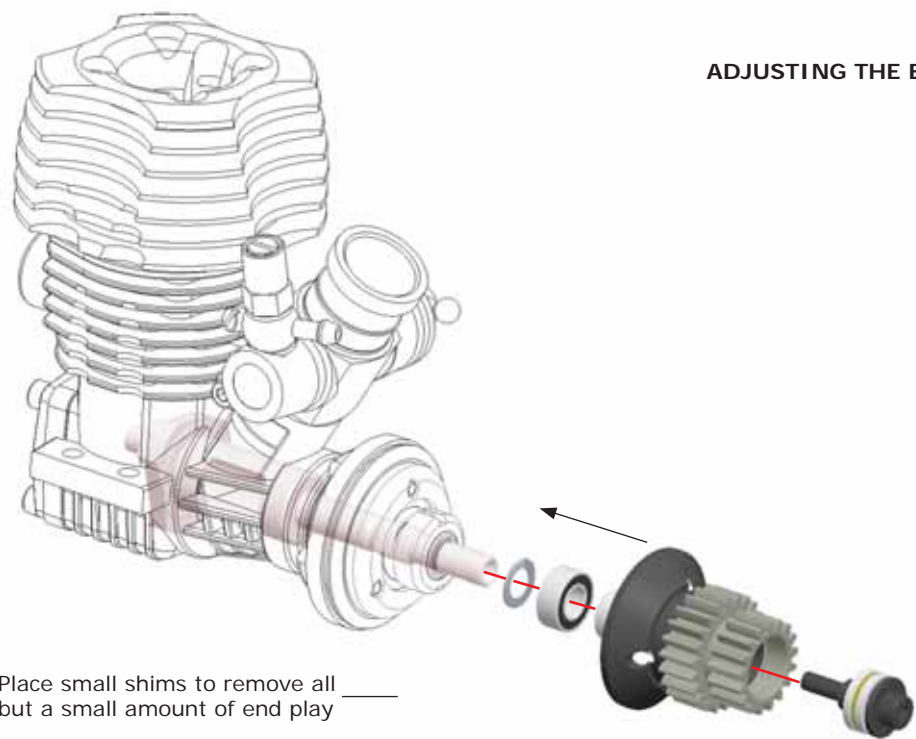
$$\text{Thickness of shims required (in mm)} = A - B - 0.7$$

For example, using the values A=1.3mm, B=0.3mm
Shim thickness = 1.3 – 0.3 – 0.7 = 0.3mm

4 Place shims between the outer thrustbearing plate and the rim of the thrustbearing carrier as shown.



ADJUSTING THE END PLAY



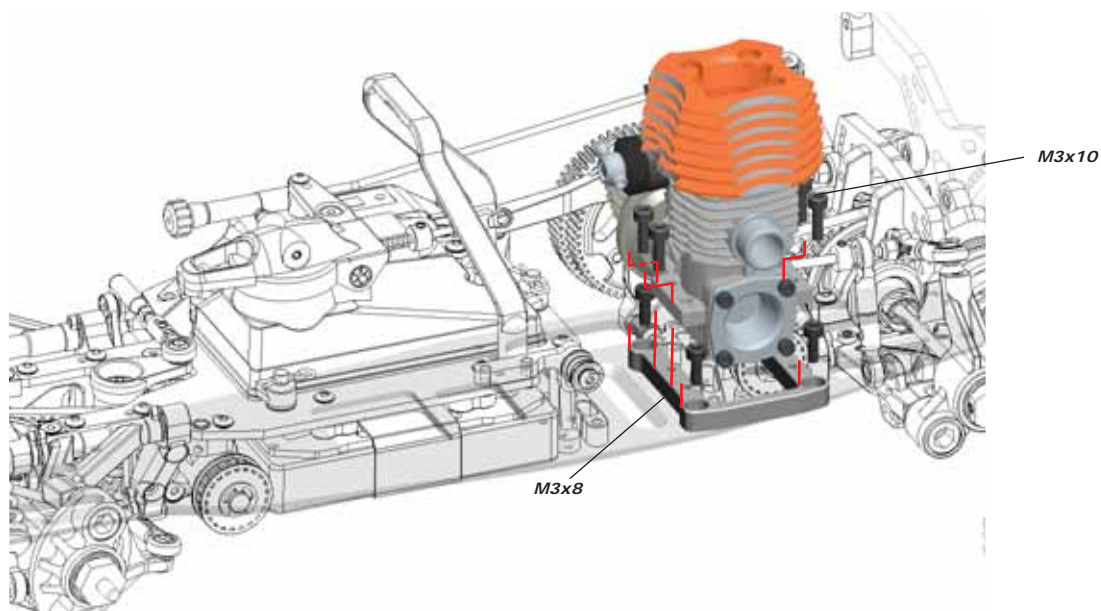
Place small shims to remove all but a small amount of end play

FINAL ASSEMBLY

F

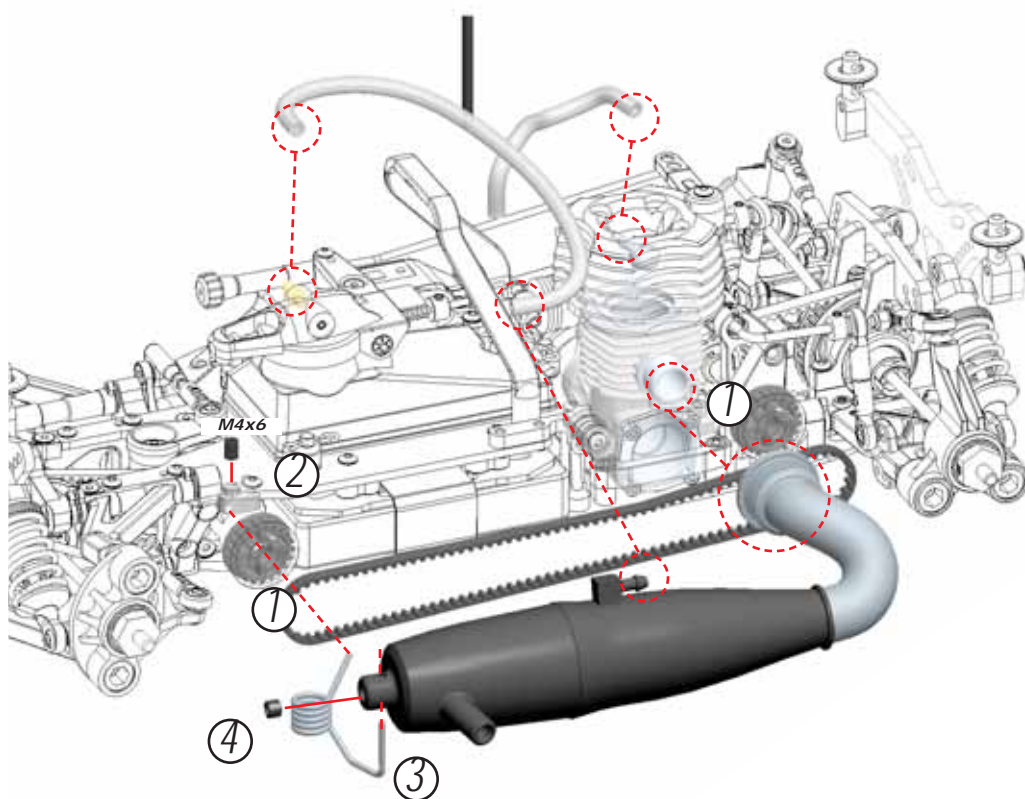
1

Bag
15



F

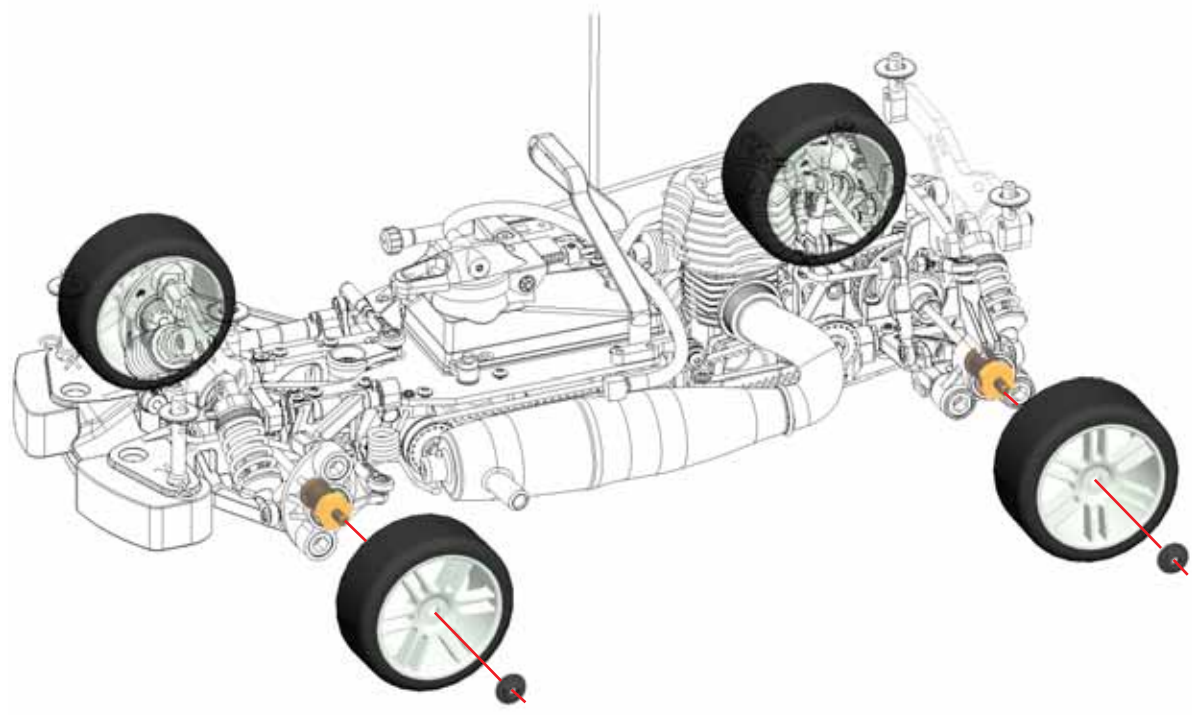
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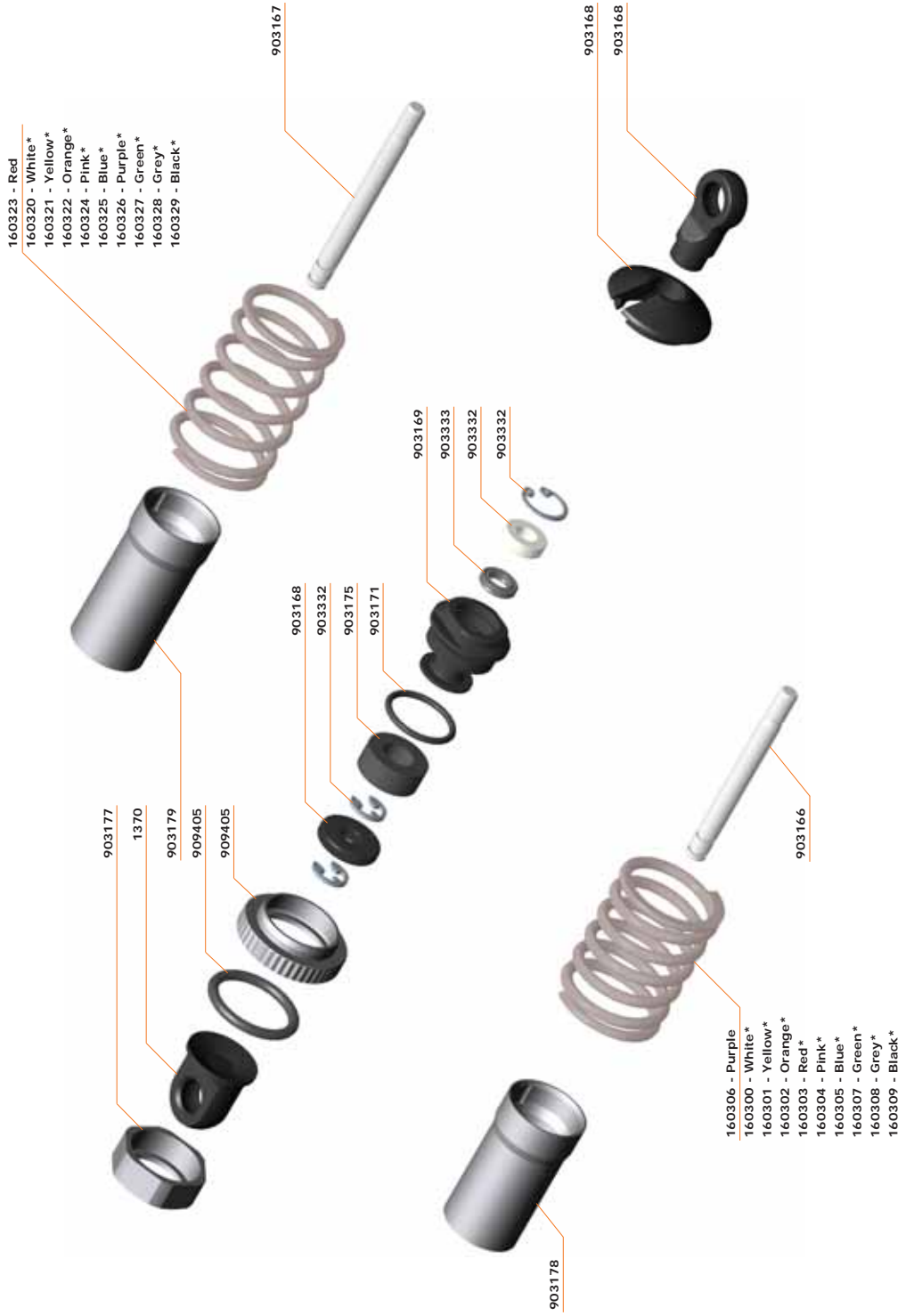


F

3



SHOCK ASSEMBLY

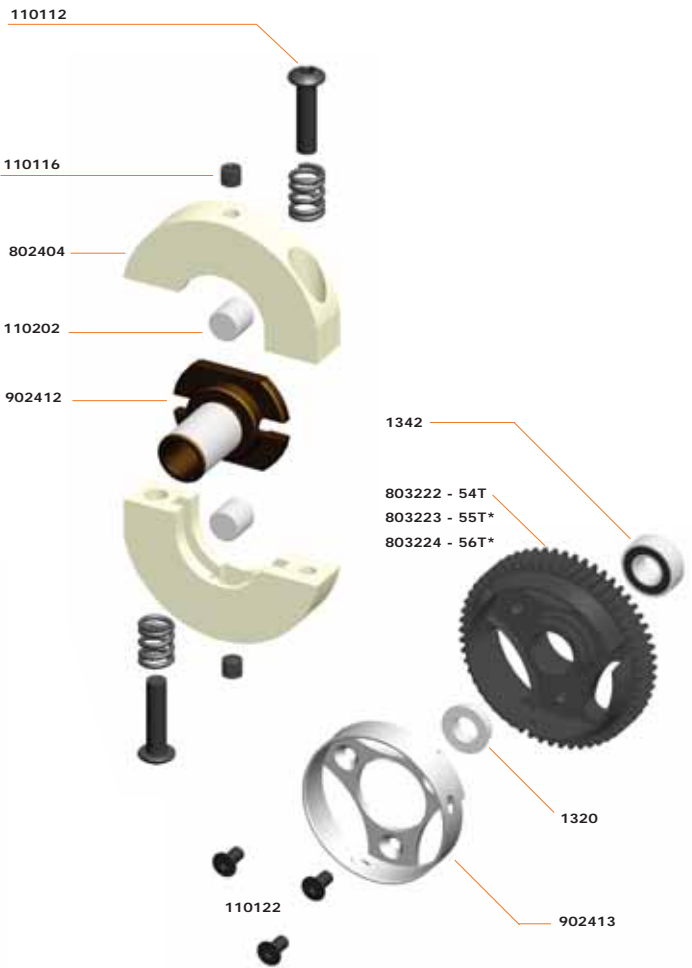


* - Optional

#903332 - Revision-set RCC shocks
 #903334 - RCC Shock-set short 2009 (2)
 #903335 - RCC Shock-set long 2009 (2)

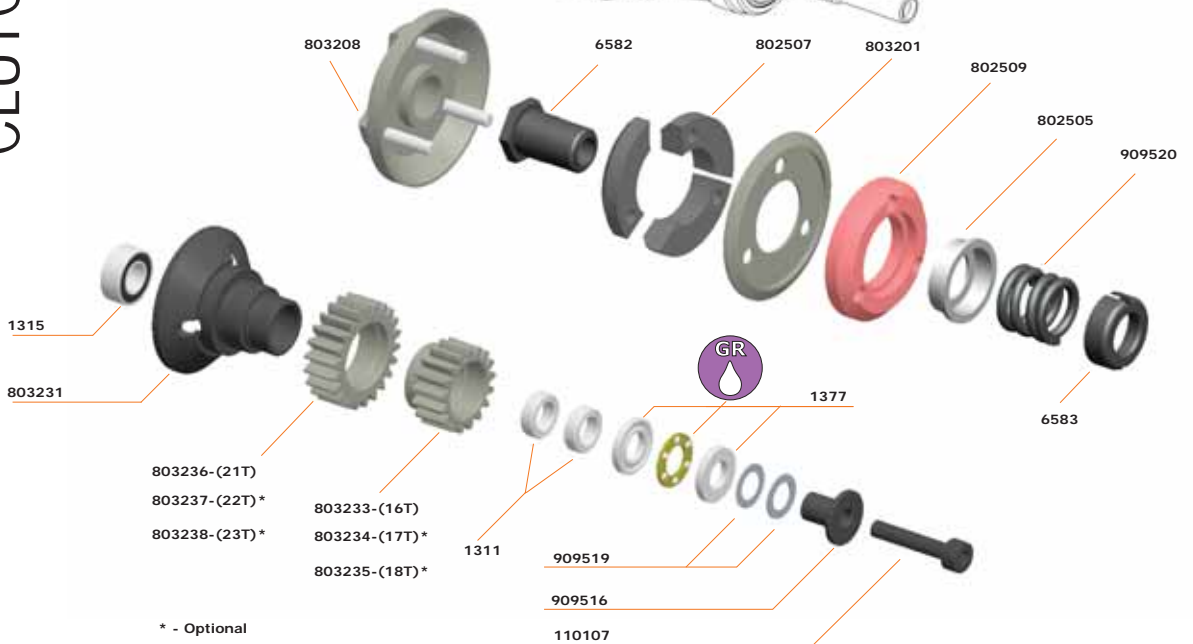
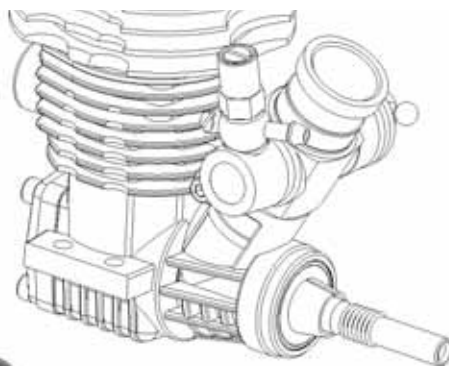
GEARBOX ASSEMBLY

#902410 - 2 Speed gearbox LC (no shaft incl.)
 #903116 - 2 Speed shaft 960



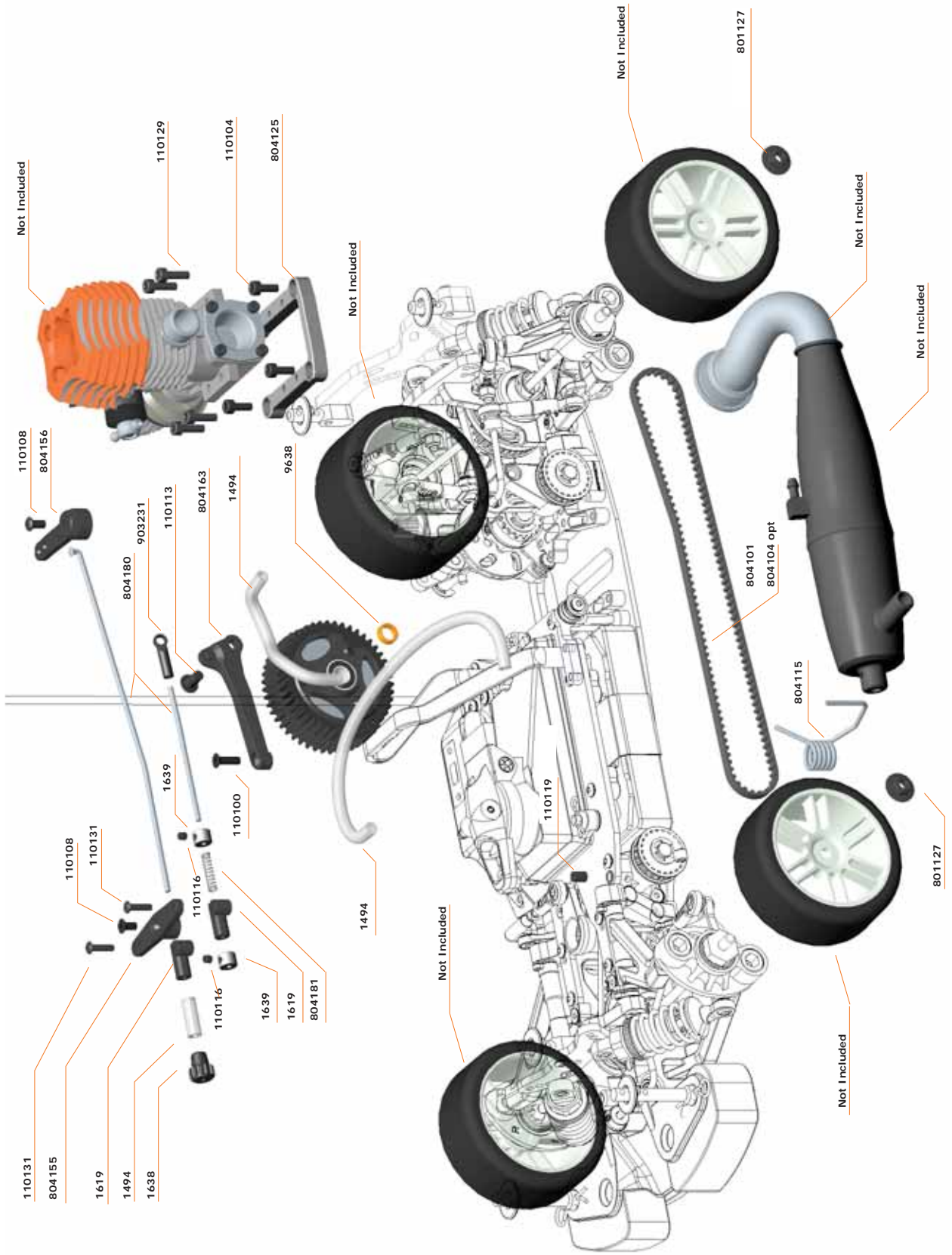
* - Optional

CLUTCH ASSEMBLY



* - Optional

FINAL ASSEMBLY



SERPENT 733 PARTS LIST

ART. DESCRIPTION

804000 Serpent 733 1/10 4WD KIT

MANUAL & DECALS 804000 SERPENT 733 1/10

MANUAL, DECALS

804183 Manual / ref guide 733
804182 Decal sheet 733 (2)

RADIO INSTALLATION / BATTERY

1070 Grommet rubber soft (4)
1639 Collar alu 2.1+setscrew (4)
804136 Battery holder
804137 Radioplate 733
804151 Receiver box
804154 Servo levers steering (3)
804155 Servo levers throttle (3)
804156 Brake lever / battery spacers
804158 Servo mount spacers
804159 Steering servo mount
804162 Radioplate support (2)
804181 Throttle spring (2)

SERVO SAVER AND STEERING

1650 Balls 6mm / imbus (4)
802260 Track-rod 47mm l+r (2)
802261 Track-rod 47mm L+R Titan (2) Optional
804120 Servo saver axle
804124 Servo saver Spring
804130 Servo saver nut
804131 Servo saver shaft
804154 Servo levers steering (3)
804157 Servo saver set nylon
902138 Rod 23mm set (2)
903231 Balljoint set 14+6+2

FUEL TANK AND PARTS

1434 Pressure nipple angled
1437 Seal shaped for fuelcap (2)
1438 Fuelcap AFL white shaped seal
1493 Nipple brass m3 (4)
1602 Body clips small (10)
804149 Tank inserts frame
804172 Tank 733 75cc
804178 Tank-support alu+rubber cover (3)
804179 Covers rubber tankmount (2)

SHOCK ABSORBERS

903166 Rod shockabsorber short (2)
903168 Frame shockabsorber nylon
903226 Rod shockabsorber short Ti-Ni (2) Optional
903232 Springwasher alu light (4) Optional
903175 Foam insert (4)
903177 Shocknut alu (2)
903178 Housing shock alu short (2)
903186 C+g-clip/washer RCC shock (12)
903332 Shock RCCX revision set
903333 X-ring RCCX shock (10)
903334 Shock-set RCCX short (2)
903336 Insert RCCX 2009 shock (2)

SHOCK SPRINGS

160300 Spring white L23 (2.3/13) (2)
160301 Spring yellow L23 (2.8/16) (2)
160302 Spring oranje L23 (3.4/19.5) (2)
160303 Spring red L23 (4.1/23.5) (2)
160304 Spring pink L23 (4.0/28) (2)
160305 Spring blauw L23 (5.8/33) (2)
160306 Spring paars L23 (6.8/39) (2)
160307 Spring groen L23 (8/45.5) (2)
160308 Spring grijs L23 (9/51.5) (2)
160309 Spring black L23 (10/57) (2)
160310 Spring-set L23 (5x2)

CHASSIS / RADIO PLATE

804135 Chassis 733 3mm
804137 Radioplate 733 carbon
804162 Radioplate support (2)

BODYMOUNTS FR and RR

1667 Body clip medium (10)
802211 Bodymount adjustable front (3)
802212 Body-mount alu (2 long+1short) Optional
802361 Bodymount adjustable rear (2)
802362 Body-mount alu short rear (2) Optional
804164 Bodyplate front
804165 Bumperplate

FRONT SECTION

1650 Balls 5.8mm /setscrews hex (4)
411048 Adjust Nut for Front Suspension
411063 Pivot Ball Upper Suspension Arm
801218 Wheeladaptor FR alu (2)
801219 Ball 8.5mm alu short (4)
802260 Track-rod 47mm l+r (2)
802261 Track-rod 47mm L+R Titan (2) Optional
802335 Arb ball 3mm (2)
803240 Cvd shaft-set complete pro (2)
803241 Cvd driveshaft pro (2)
802352 Cvd insert (2)
802354 Pin 3x9.8mm (4)
803134 Spacer arb RR 720 (2)
803198 Adj nut nylon (10)
803212 Steeringblock 1 degr. L+R
803211 Steeringblock 0 degr. L+R Optional
804100 Belt Front 40S3M195 Orange Optional
804104 Belt Front 40S3M195 Low Friction
804110 Wishbone front lw L+R
804111 Wishbone front up L+R
804115 Exhaust mount spring
804117 Pivot pin fr lw (2)
804118 Pivot pin fr up (2)
804119 Bumper 733 foam (2)
804120 Servo saver axle
804121 Shaft middle
804134 Bracket middle axle
804138 Shocktower front
804141 Antiroll bar fr 1.8mm
804142 Antiroll bar fr 2.2mm Optional
804143 Antiroll bar fr 2.5mm Optional
804144 Antiroll bar fr 2.8mm Optional
804177 Antirollbar set front (4) Optional
804145 Exhaust spring mount
804147 Diff pully front
804153 Eccenters front
804154 Servo levers steering (3)
804160 Bearing bracket upper fr
804161 Suspension bracket fr L+R
804164 Bodyplate front
804165 Bumperplate
804166 Bearingblock fr L
804167 Bearingblock fr R
804170 Suspension bracket fr
808214 Spacer-set caster
902138 Rod 23mm set (2)
903231 Balljoint set 14+6+2

MIDDLE SECTION

804101 Belt Side 40S3M378 Orange
804104 Belt Front 40S3M195 Low Friction Optional
804113 Pully middle (2)
804123 Belt tensioner
804149 Tank inserts frame
804150 Rollbar 733
804162 Radioplate support (2)
804163 Chassis stiffner
804172 Tank 733 75cc
901255 Belt tensioner set
903316 Bearingblock-2sp-r 966
903317 Bearingblock-2sp-l 966

REAR SECTION

1647 Balls 6mm (4)
1650 Balls 6mm / imbus (4)
801218 Wheeladaptor FR ipu alu (2)
802332 Driveshaft (2)
802335 Arb ball 3mm (2)
803134 Spacer arb RR 720 (2)
803135 Arb RR 2.5mm
803168 Arb RR 2.3mm Optional
804102 Belt Rear 40S3M186 Orange



804106 Belt Rear 40S3M186 Low Friction Optional
 804108 Upright 733
 804109 Wishbone rear lw L+R
 804112 Pully 2sp shaft (2)
 804114 2-speed shaft
 804116 Pivot pin rr lw (2)
 804122 Bearingblock rr up
 804128 Rearplate wide
 804129 Rearplate narrow Optional
 804132 Suspension bracket rr fr wide
 804133 Suspension bracket rr fr narrow Optional
 804139 Shocktower rear
 804140 Camberlink bracket rear
 804146 Shim conical 3x2mm (4)
 804148 Diff pully rear
 804152 Eccenters rear
 804168 Bearingblock rr
 902138 Rod 23mm set (2)
 903231 Balljoint set 14+6+2

TRANSMISSION

801215 Wheelaxle
 801218 Wheeladaptor FR alu (2)
 802332 Driveshaft (2)
 803240 Cvd shaft-set complete pro (2)
 803241 Cvd driveshaft pro (2)
 802352 Cvd insert (2)
 802354 Pin 3x9.8mm (4)
 804100 Belt Front 40S3M195 Orange
 804101 Belt Side 40S3M378 Orange
 804102 Belt Rear 40S3M186 Orange
 804104 Belt Front 40S3M195 Low Friction Optional
 804105 Belt Front 40S3M378 Low Friction Optional
 804106 Belt Rear 40S3M186 Low Friction Optional
 804112 Pully 2sp shaft (2)
 804113 Pully middle (2)
 804114 2-speed shaft
 804121 Shaft middle
 804147 Diff pully front
 804184 Front one-way axle set Optional
 804185 Front solid axle Optional
 804148 Diff pully rear
 804171 Geardiff uni 733
 804173 Geardiff revisionset
 804174 Geardiff housing
 804176 Geardiff x-ring (4)
 901255 Belt tensioner set

BRAKE SYSTEM

9612 Special ventilated brake-disk
 804156 Brake lever / battery spacers
 804169 Brakepully adaptor
 804180 Brake / throttle wires (2)
 903304 Brake plate (2)
 903316 Bearingblock-2sp-r 966
 903317 Bearingblock-2sp-l 966
 903318 Brake cam 966
 903319 Brake bushing (2)
 903324 Brake spring (2)
 903330 Brakeplate / pad set

2-SPEED GEARBOX

1320 Ballbearings 6x10 flanged (2)
 1342 Ballbearing 6x13 hs (2)
 9638 Spacer 2-speed alu
 802400 2-speed LC (light compact) set
 802403 Spring 2-speed soft (2)
 802404 2-speed clutch shoes set LC
 803222 Gear 2-speed wc (2e) 54T
 803223 Gear 2-speed wc (2e) 55T
 803224 Gear 2-speed wc (2e) 56T
 803225 Gear 2-speed wc (1e) 59T
 803226 Gear 2-speed wc (1e) 60T
 803227 Gear 2-speed wc (1e) 61T
 902411 Driveflange with onway
 902412 Adaptor 2-speed LC
 902413 Flange 2-speed LC
 902420 Rol-pin 5x5mm 2-speed LC (2)

CLUTCH SYSTEM

1311 Ballbearings 5x8x4 (2)
 1315 Ballbearings 5x10x4 (2)
 1377 Axial bearing 5x10
 1388 Thrust-bearing 5x10 ceramic Optional
 6503 Conus flywheel 7mm long (3)
 6582 Centax clutchnut

6583 Centax adj nut
 6586 Centax coilspring
 802505 Centax-3 spring cup
 802507 Centax-3 flyweights (3)
 802509 Centax-3 clutch-shoe yellow
 803205 Centax-3 clutch-shoe red Optional
 803201 Centax supportwasher alu
 803208 Centax-3 flywheel 31mm
 803230 Centax-3wc clutch-set
 803231 Centax-3wc clutchhousing
 803233 Centax-3wc gear alu 16T
 803234 Centax-3wc gear alu 17T
 803235 Centax-3wc gear alu 18T
 803236 Centax-3wc gear alu 21T
 803237 Centax-3wc gear alu 22T
 803238 Centax-3wc gear alu 23T
 909516 Centax II spacer axialbearing
 909519 Shim centax 5x08x0.1(2)x0.3(1)

ENGINE MOUNTS

804125 Engine mount top
 804126 Engine mount lw rr
 804127 Engine mount lw fr

BALL-BEARINGS

1311 Ballbearings 5x8x4 (2)
 1312 Ballbearing 5x8 mm flange
 1315 Ballbearings 5x10x4 (2)
 1320 Ballbearings 6x10 met flange (2)
 1342 Ballbearing 6x13 hs (2)
 1344 Ballbearing 10x15 hs (2)
 1346 Ballbearing 12x18 hs (2)
 1377 Axial bearing 5x10
 401134 Ballbearing 4x7 (2)

FASTENING MATERIALS

110303 E-clip 5.0 (10)
 110304 E-clip 7.0 (10)
 110402 Nut nylock M3 (10)
 110129 Screw allen cilinderhead m3x10 (10)
 110107 Screw allen cilinderhead m3x16 (10)
 110100 Screw allen countersunk m3x10 (10)
 110127 Screw allen countersunk m3x12 (10)
 110131 Screw allen countersunk m3x16 (10)
 110122 Screw allen countersunk m3x6 (10)
 110104 Screw allen countersunk M3x8 (10)
 110131 Screw allen roundhead m2,5x10 (10)
 110130 Screw allen roundhead m2,5x6 (10)
 110109 Screw allen roundhead m3x10 (10)
 110112 Screw allen roundhead m3x12 (10)
 110111 Screw allen roundhead m3x14 (10)
 110110 Screw allen roundhead m3x16 (10)
 110128 Screw allen roundhead m3x5 (10)
 110108 Screw allen roundhead m3x6 (10)
 110124 Screw allen roundhead m3x8 (10)
 110113 Screw allen roundhead m4x8 (10)
 110126 Screw philips roundhead 2.5x10 (10)
 110125 Screw philips roundhead 2.5x8 (10)
 110117 Setscrew allen m3x12 (10)
 110116 Setscrew allen m3x3 (10)
 110115 Setscrew allen m3x4 (10)
 110114 Setscrew allen m3x8 (10)
 110120 Setscrew allen m4x10 (10)
 110119 Setscrew allen m4x6 (10)
 110401 Washer 3.2x7 (10)
 110404 Washer 6x8x0,3 (10)
 801217 Wheelnut m4 flanged
 804186 Screw set 733 (196)

MERCHANDISING

1872 Rucksack Serpent (35x45cm) black
 1873 Rucksack Serpent (48x61cm) black
 1883 Banner Serpent S-logo 2x1m nylon
 190100 T-shirt Serpent black (S)
 190101 T-shirt Serpent black (M)
 190102 T-shirt Serpent black (L)
 190103 T-shirt Serpent black (XL)
 190104 T-shirt Serpent black (XXL)
 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)
 1980 Large bag Serpent
 1998 Serpent Cap black/orange







733

SERPENT
Serpent Model Racing Cars BV
Herenweg 29 IIA, 2105 MB - Heemstede
The Netherlands, Europe