



# **Project** **4X** **PRO**

1/10 scale electric touring car

**Instruction Manual**

**SERPENT**

## INTRODUCTION

Thank you very much for selecting this Serpent rc car and thus become a member of the ever growing worldwide Serpent racing family. Serpent started in 1980 and has been growing its product-line and fan-base ever since.

The Serpent Project 4X PRO is a state of the art 1/10 scale 4wd touringcar which will give you the true Serpent racing experience. The assembly manual will guide you through all the steps to complete the car, so you can hit the track with a good base-set-up soonest. The Serpent design department succeeded to create a superbly performing car combined with eas of assembly and maintenance. The high quality standards of all parts and hardware will make racing your Serpent car a very rewarding activity!

Through our team, website and social media we will keep you up-to-date on all developments of the Serpent cars. We hope to meet you on the track and through our various media! Enjoy the drive!

Team Serpent  
Multiple World Champions

## INSTRUCTIONS

Serpent's long tradition of excellence extends to the instruction manuals, and this instruction manual is no exception. The easy-to-follow layout is richly illustrated with 3D-rendered full-color images to make your building experience quick and easy. Following the instructions will result in a well-built, high-performance race-car that will soon be able to unleash its full potential at the racetrack. The kit includes bags, with 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.

## PLASTIC PARTS

The Serpent moulded parts are very durable and hard. When assembling longer screws in new composite parts, make sure to use new hex bits in your (power) tools. Pre-threading also helps to avoid screw damage.

## SETUP

In certain assembly steps you need to make basic adjustments, which will give you a good initial setup for your Serpent Project 4X PRO. Fine-tuning the initial setup is an essential part of building a high-performance racecar like your Serpent Project 4X PRO.

## EXPLODED VIEWS AND PARTS LIST

The exploded views and parts lists for the Serpent Project 4X PRO 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 and hotlink to the Serpent website. Partnumbers in orange indicates that this part is an optional. Optionals part names and numbers are showed below.

## CUSTOMER SERVICE

Serpent has made a strong effort to make this manual as complete and clear as possible. Additional info may be published in our website: [www.serpent.com](http://www.serpent.com) or you may ask your dealer or the Serpent distributor for advice, or email Serpent direct: [info@serpent.com](mailto: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 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.

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## LINES DESCRIPTION

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



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



Length after assembly



Assembly path of one item into another



Group of items (within lines) should be assembled first



Direction the item should be moved



Glue one item to another



Press/Insert one item into another



Connect one item to another



Gap between two items

## ICONS DESCRIPTION

Each step contains a variety of symbols described below.



Read and check very well.



Apply a small amount of cyano glue. Wear protection for eyes and hands.



Detail view to explain assembly or order of parts better.



Default set-up: This symbol indicates the default setup.



Grease: apply a small amount of grease to the parts shown.



Silicone grease: apply a small amount of grease to the parts shown.



Left and right parts should be assembled in the same way.



Thread lock: apply a small amount on the parts shown. Before apply the threadlock, make sure to degrease the parts very well, as otherwise the threadlock will not work.



Silicone oil: use the indicated silicone oil for the shocks and differentials.



Parts or items not included in the kit.

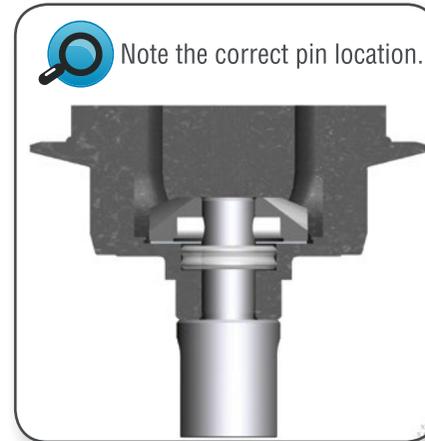
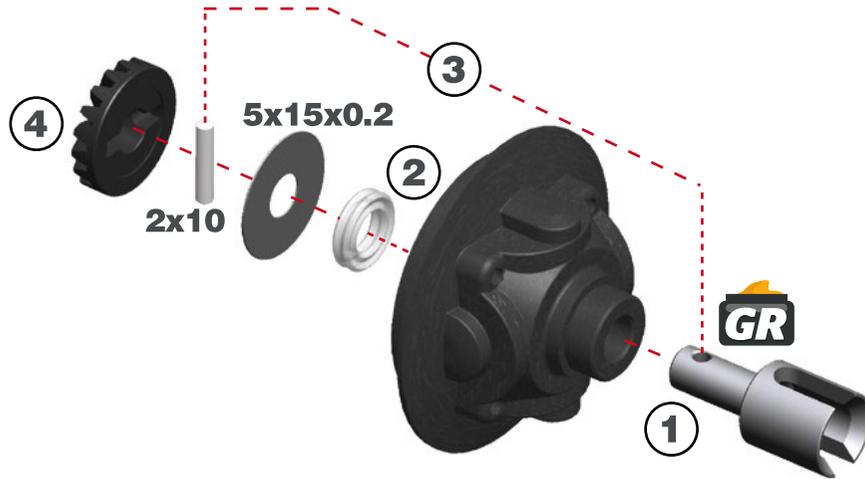


Optional part, not standard in the kit.

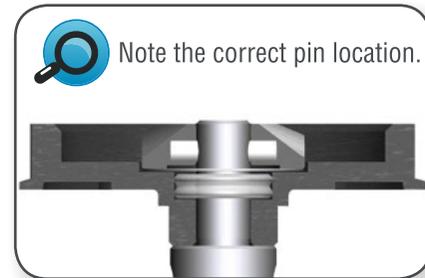
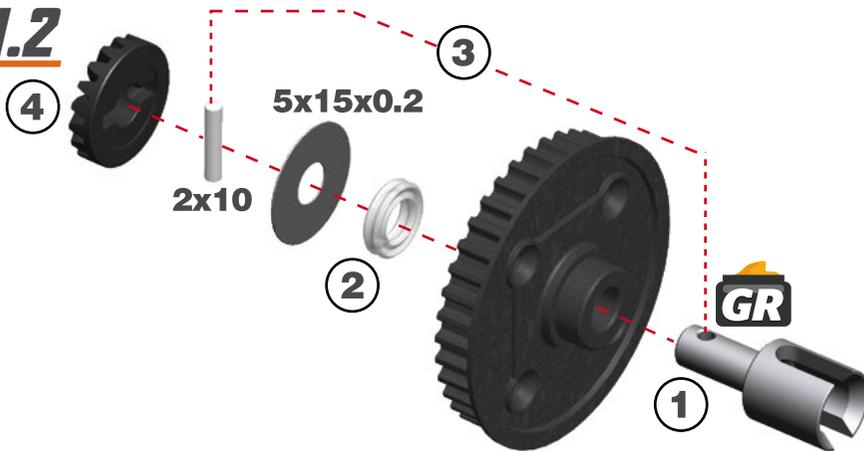
## STEP 1

### DIFF BAG

#### 1.1



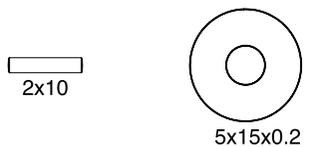
#### 1.2



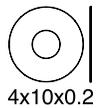
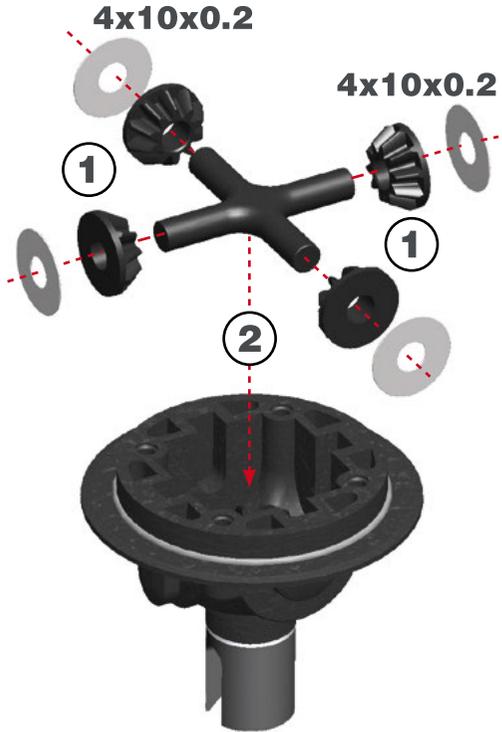
## STEP 2

1- Fit the o ring before filling the diff with silicone oil.

2- Add just enough oil to cover the large gear before assembling the small satellite gears and cross pins. Use the silicone oil supplied in the kit. For the correct cst value please check the default setupsheet.



**STEP 3**



**STEP 4**



Fill the differential with silicone oil 1 mm above the crosspin, do not overfill. Use the silicone oil supplied in the kit. For the correct cst value please check the default setupsheet.

50



**AMOUNT OF OIL IN THE DIFFS**

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

Differential weight = 11.4 gram

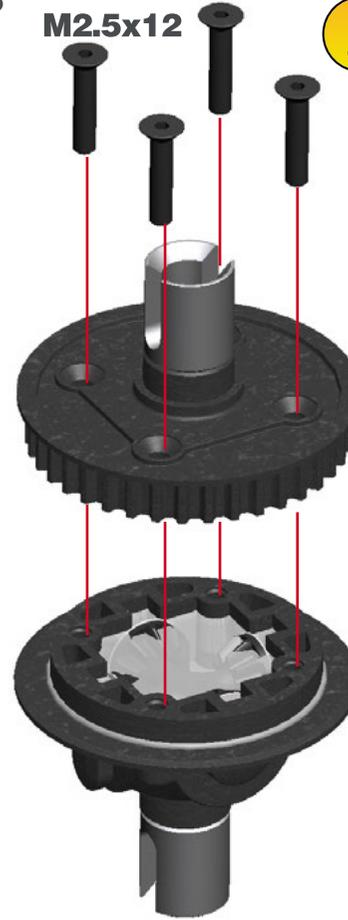


**STEP 5**

M2.5x12



Do not overtighten the screws. There is always a gap between both sides of the diff housing.



**COMPLETE DIFF ASSEMBLY**



## STEP 6

BAG 1

## STEP 7

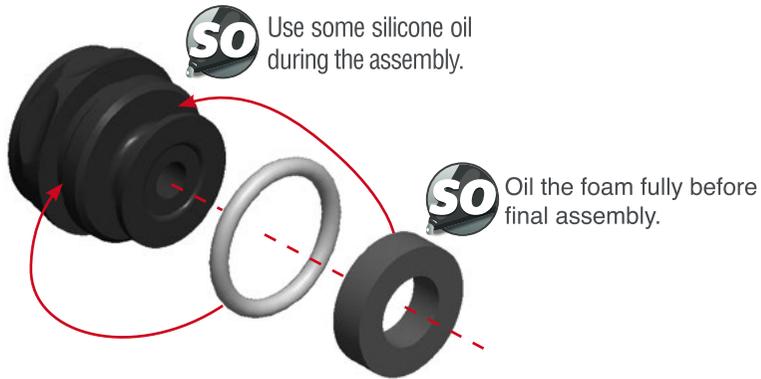
## STEP 8



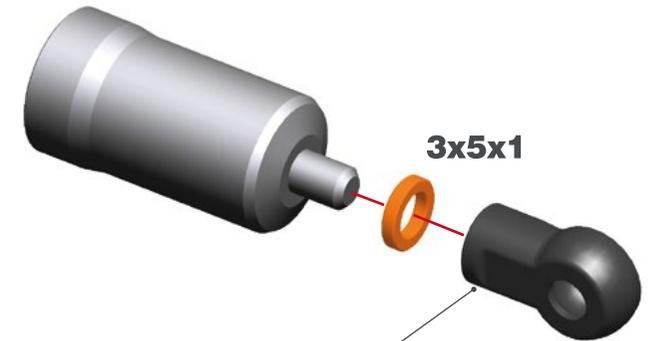
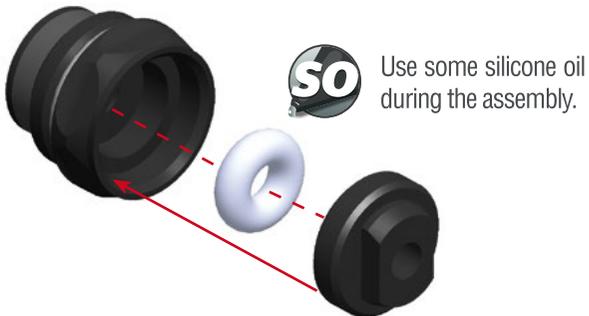
Follow step 6 to 11 twice to assemble 2 shocks, 1 for the front and 1 for the rear.

Check the default set-up sheet to find the right values for piston, spring and silicone oil. Be aware that front and rear shock-settings may differ.

### 6.1



### 6.2



Mount the shim and balljoint, then tighten. This way the small bleeder hole in the threaded shaft is closed.

R2

3x5x1

## STEP 9

1- Fill up with silicone oil fully using the silicone oil supplied in the kit. For the correct cst value please check the default setupsheet.

2- Wait all air bubbles have escaped.

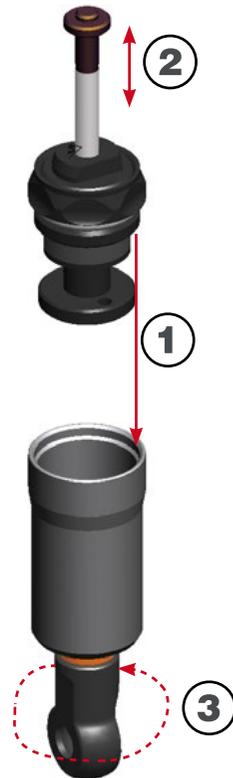


## STEP 10

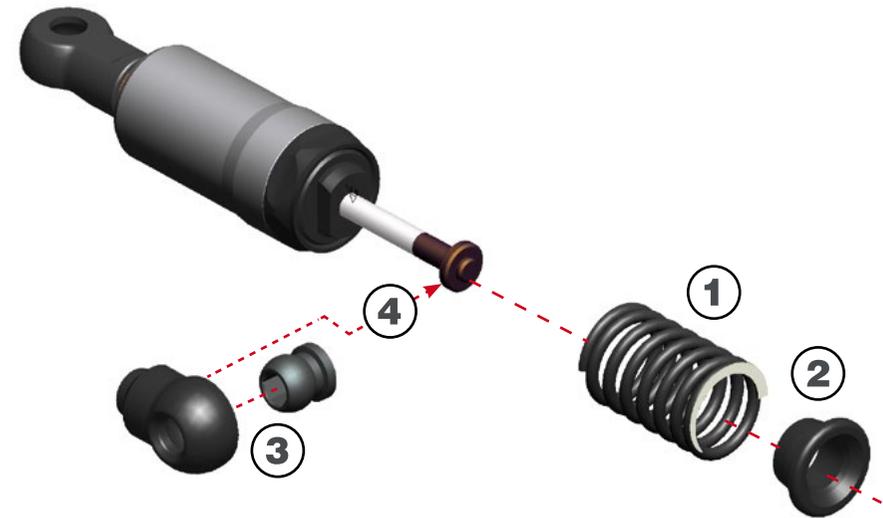
1- Loosen the balljoint anti clockwise, in order to open the small bleeder hole in the threaded shaft and push the piston into the housing and screw the cap assembly gently onto the shock housing clockwise, do NOT overtighten.

2- Bleeding: Turn the shock upside down and push the shockrod slowly fully inside, so the excess oil can escape through the small bleeder hole in the threaded shaft. Wipe away the excess oil. Keep to let excessive oil come out

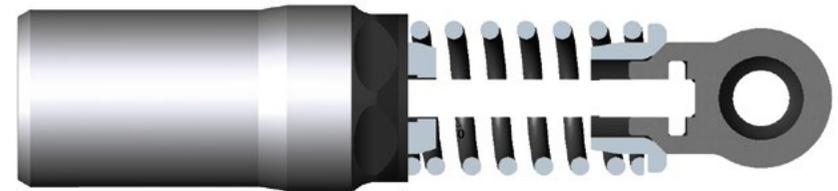
3- With shockrod fully in, close the shock and balljoint fully.



## STEP 11



Note the correct position of the shock spring support and ball joint.

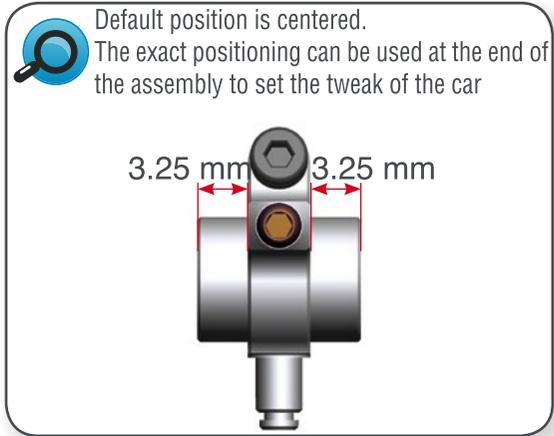
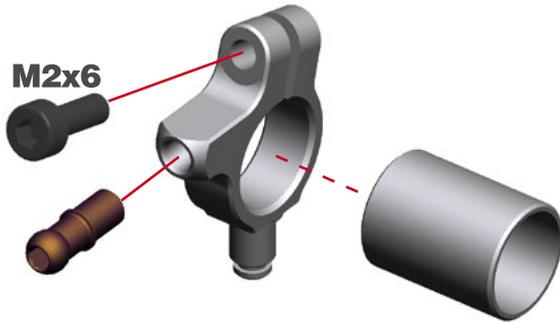


# ROLL DAMPER ASSEMBLY

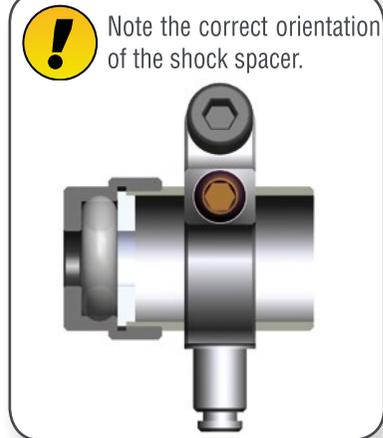
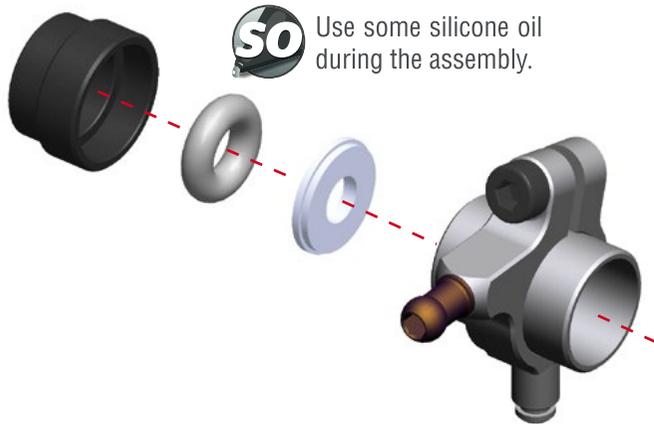
## STEP 12 BAG 2

**!** Follow step 12 to 16 twice to assemble 2 roll dampers, 1 for the front and 1 for the rear.  
Check the default set-up sheet to find the right values for piston, spring and silicone oil. Be aware that front and rear roll damper-settings may differ.

**12.1** **!** Do not overtighten the M2x6 screw.



**12.2** **SO** Use some silicone oil during the assembly.

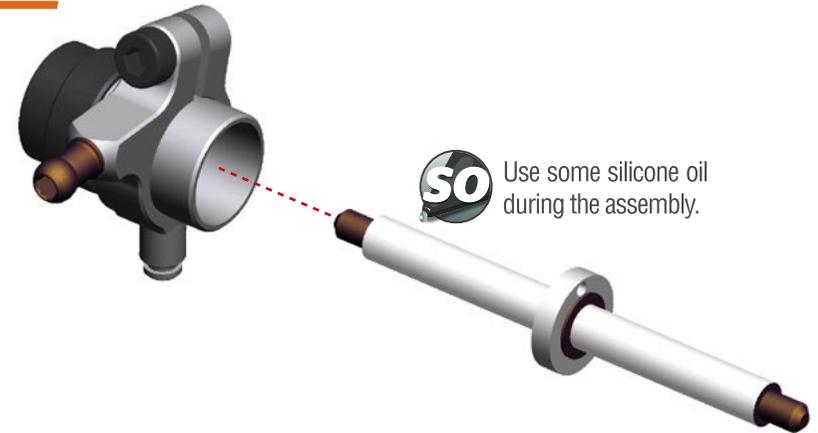


## STEP 13

**13.1** **!** Notice that the piston is not symmetrical. The side with the chamfer should be assembled oriented to the shock shaft.



**13.2** **SO** Use some silicone oil during the assembly.



M2x6

**STEP 14**

1- Fill up with silicone oil fully using the silicone oil supplied in the kit. For the correct cst value please check the default setupsheet.

2- Extend the shockrod fully.

3- Move the shockrod slowly up and down to let all air bubbles escape.



**STEP 15**



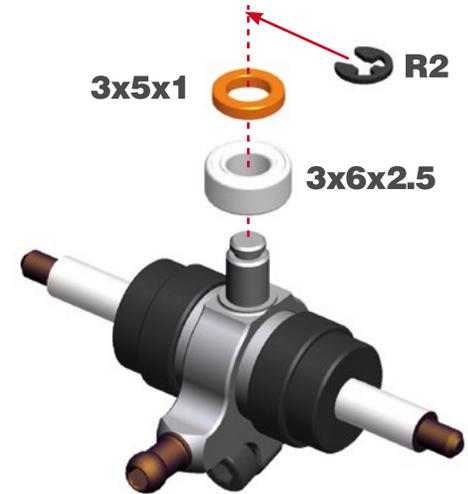
**SO** Use some silicone oil during the assembly.



Note the correct orientation of the shock spacers.



**STEP 16**



3x5x1

**R2**

3x6x2.5



**COMPLETE ROLL DAMPER ASSEMBLY**

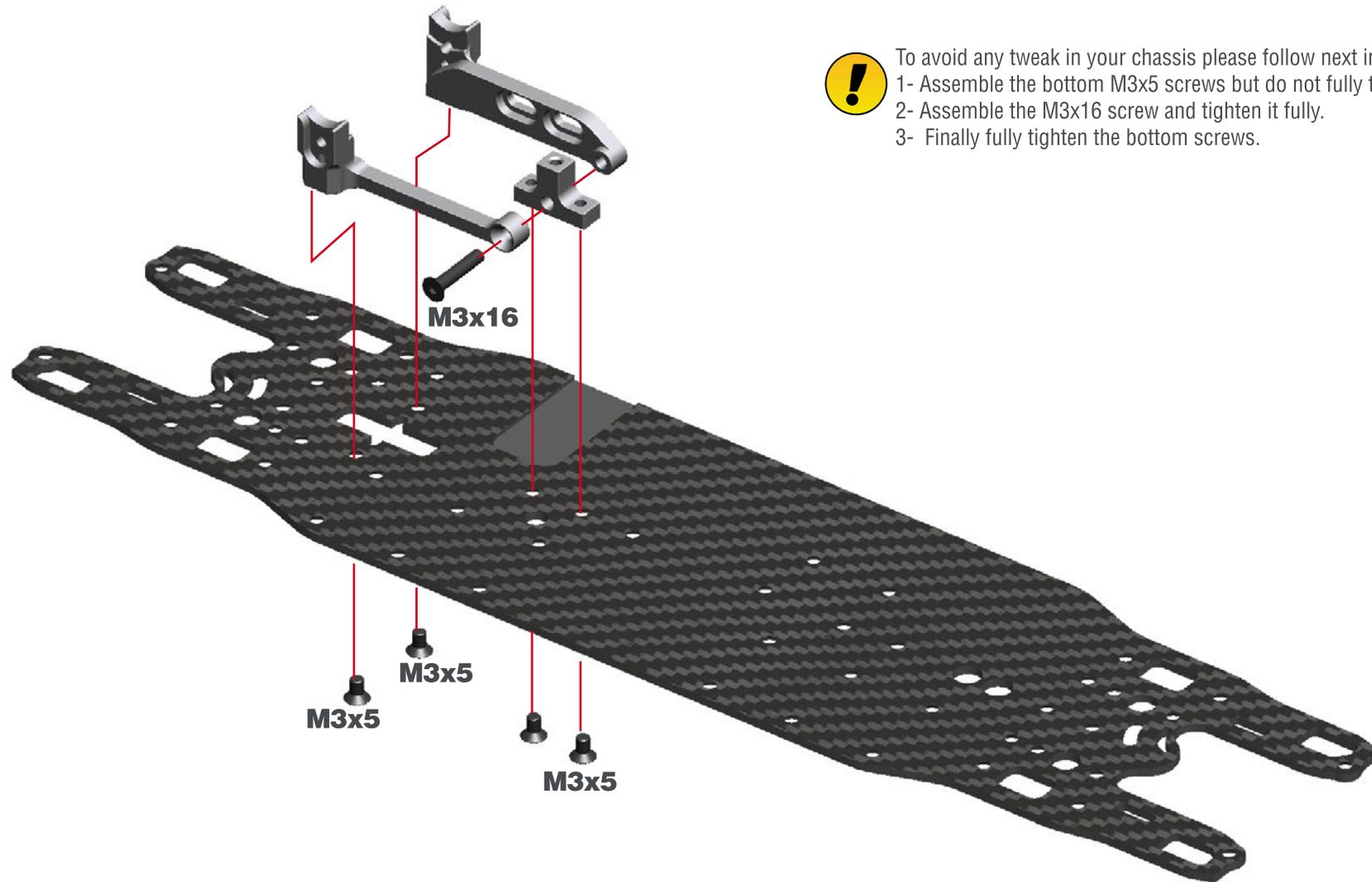


 3x5x1

 3x6x2.5

 R2

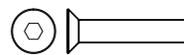
## STEP 17 BAG 3



To avoid any tweak in your chassis please follow next instructions:  
1- Assemble the bottom M3x5 screws but do not fully tighten.  
2- Assemble the M3x16 screw and tighten it fully.  
3- Finally fully tighten the bottom screws.



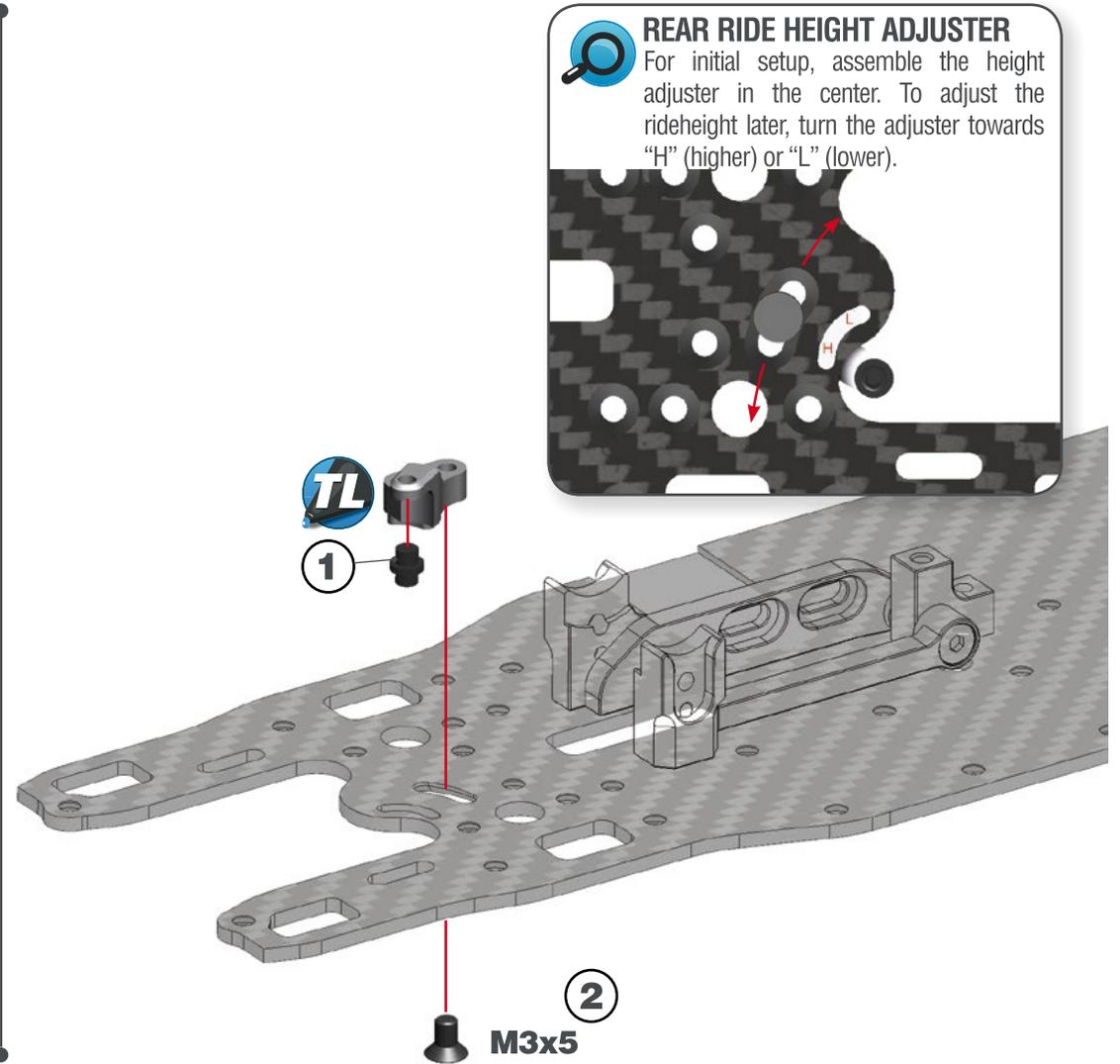
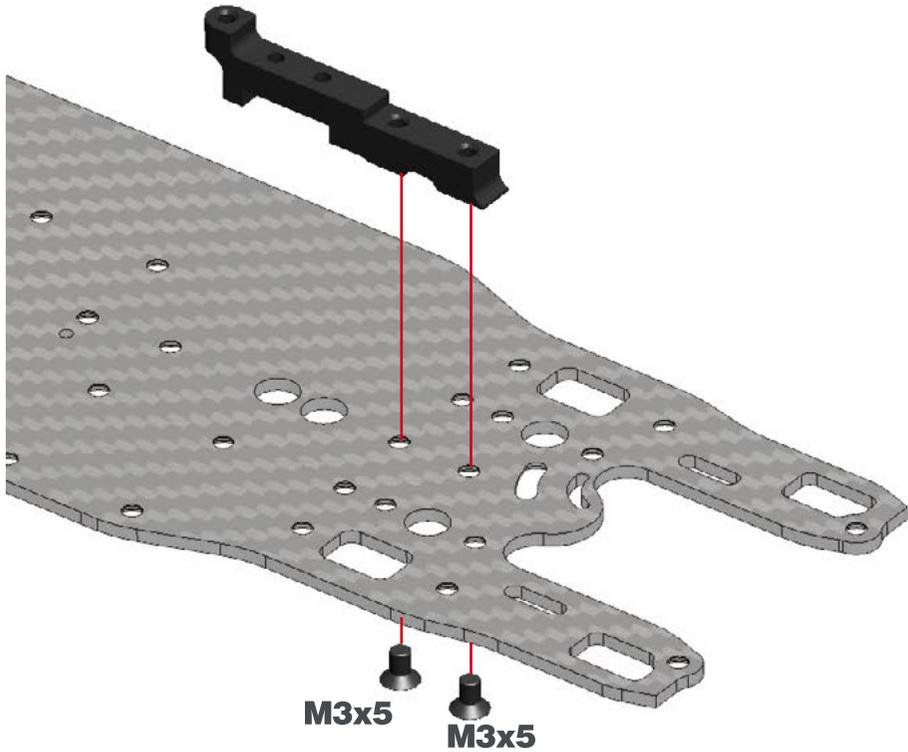
M3x5



M3x16

**STEP 18**

**STEP 19**



**REAR RIDE HEIGHT ADJUSTER**  
For initial setup, assemble the height adjuster in the center. To adjust the rideheight later, turn the adjuster towards "H" (higher) or "L" (lower).



**STEP 20** **BAG 4**

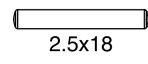
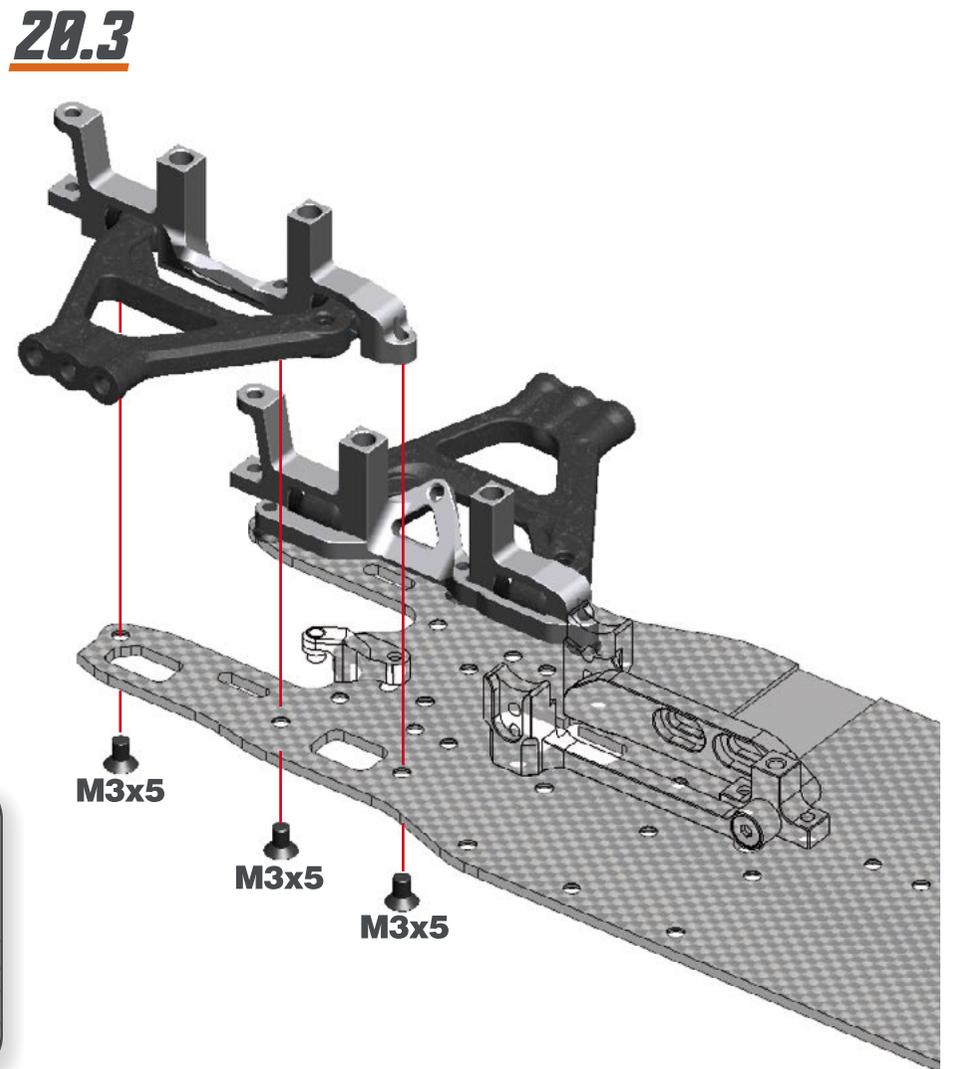


**L=R** REAR ROLL CENTER  
INSERTS CHART

MID LOW	MID HIGH	HIGH

**DEF. SETUP**

**DEF. SETUP** REAR DEFAULT  
WHEELBASE SHIMS



**STEP 21**

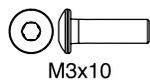
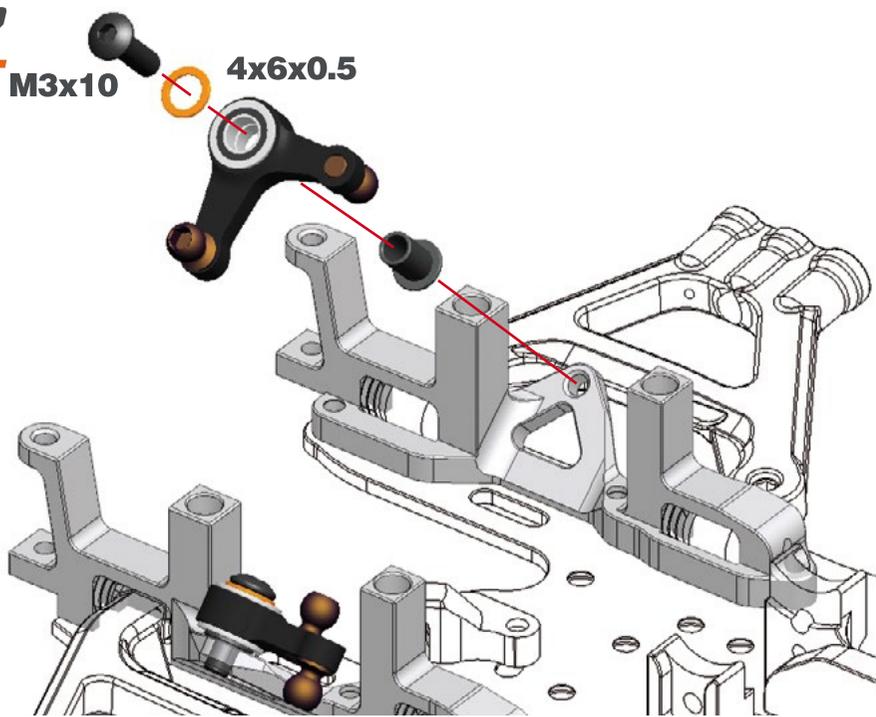
**BAG 5**

**21.1**



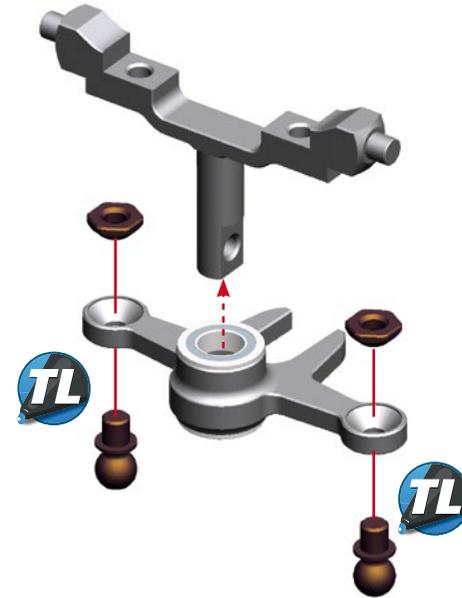
Note the right orientation of the rocker-legs.

**21.2**

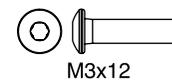
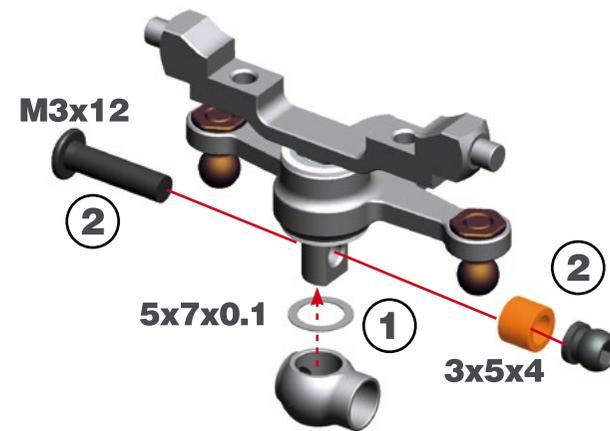


**STEP 22**

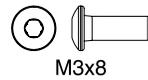
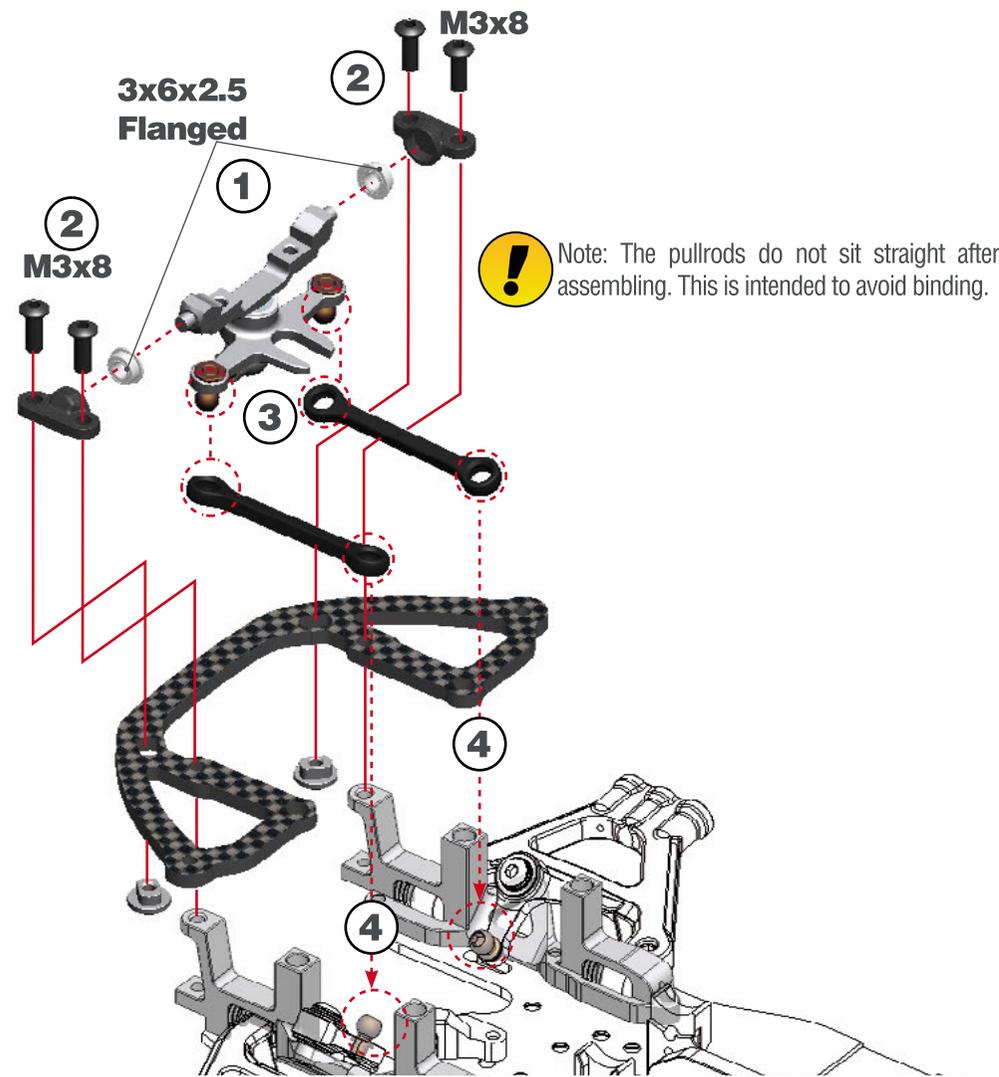
**22.1**



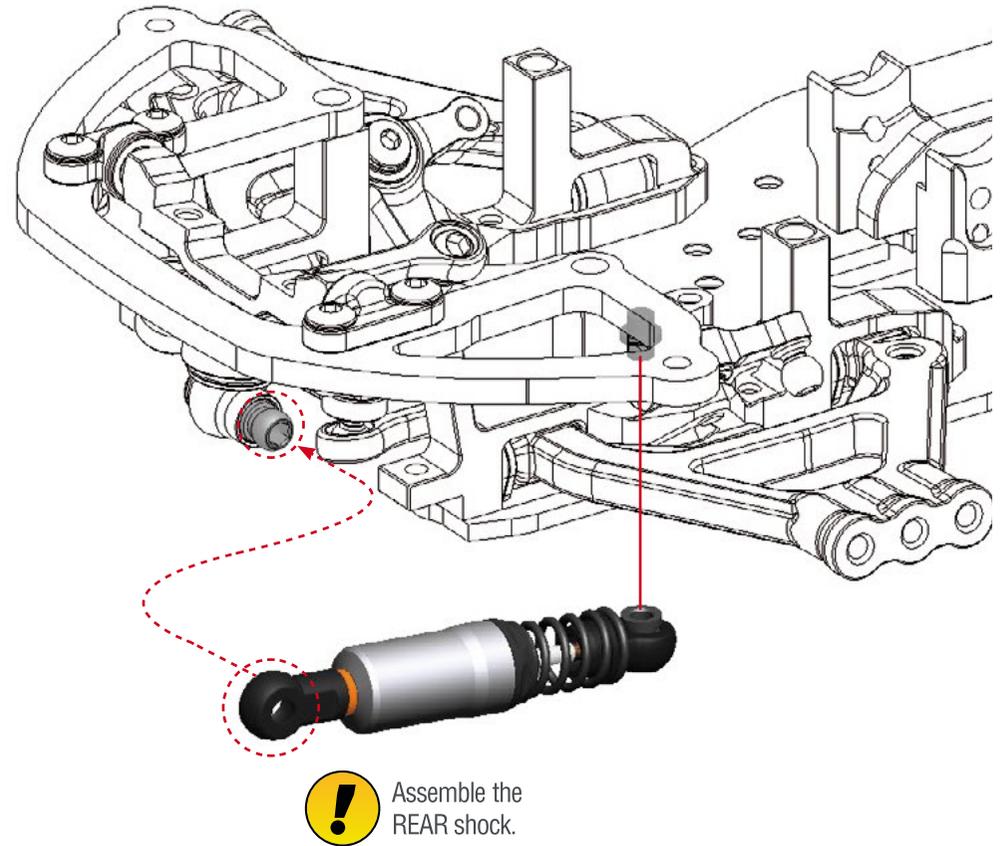
**22.2**



**STEP 23**



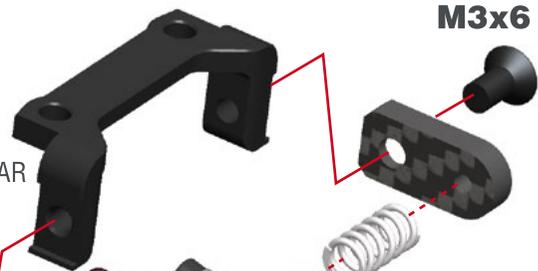
**STEP 24**



## STEP 25

### 25.1

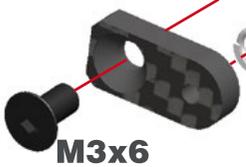
**!** Assemble the REAR rolldamper.



M3x6

**!** For the correct spring colour please check the default setupsheet.

### 25.2



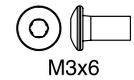
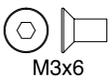
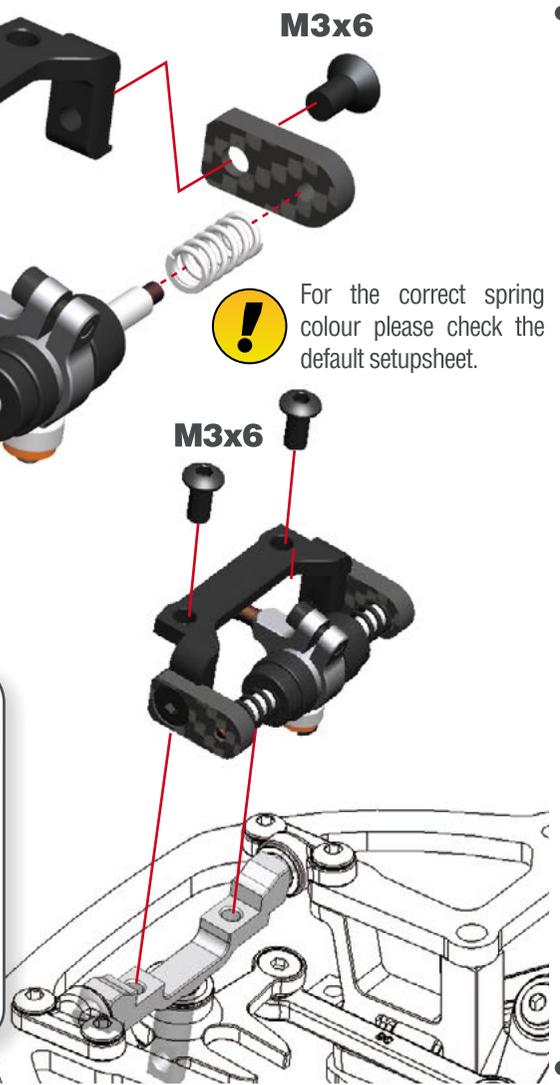
M3x6

**ROLL DAMPER HOLDERS LENGTH**  
 Use the long holder ( 8mm)

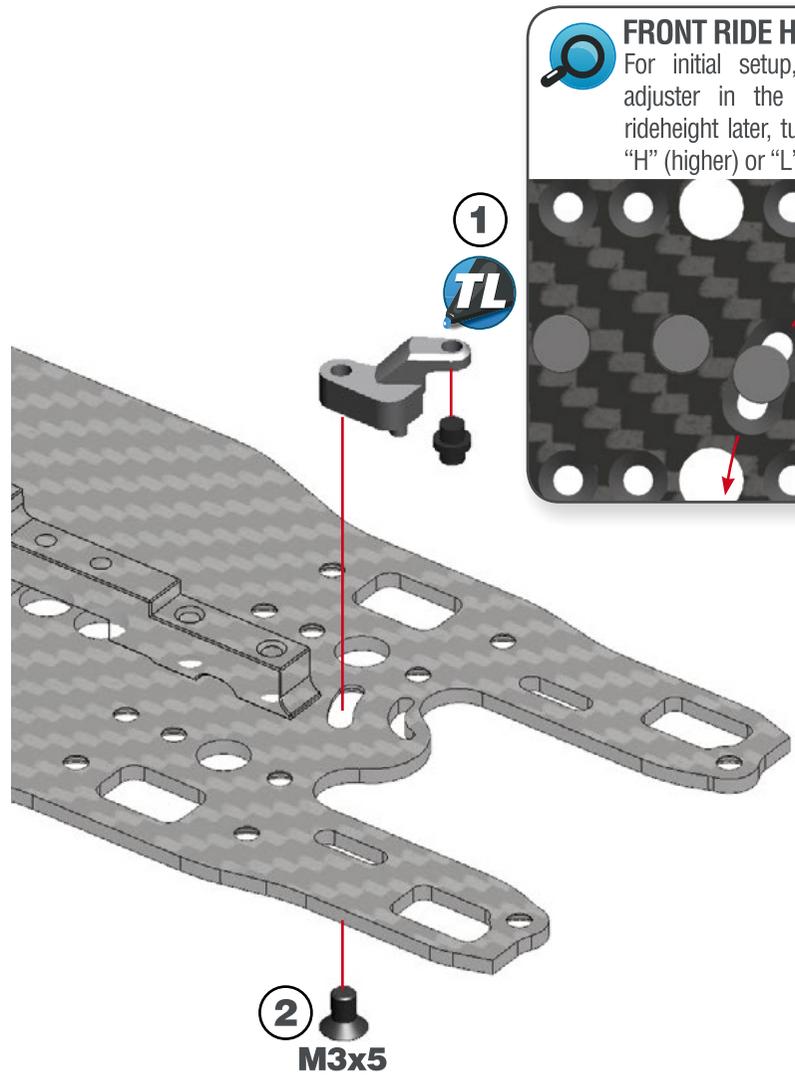
**L=R**

**LONG**

**SHORT**



## STEP 26 BAG 6



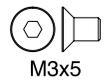
**FRONT RIDE HEIGHT ADJUSTER**

For initial setup, assemble the height adjuster in the center. To adjust the rideheight later, turn the adjuster towards "H" (higher) or "L" (lower).

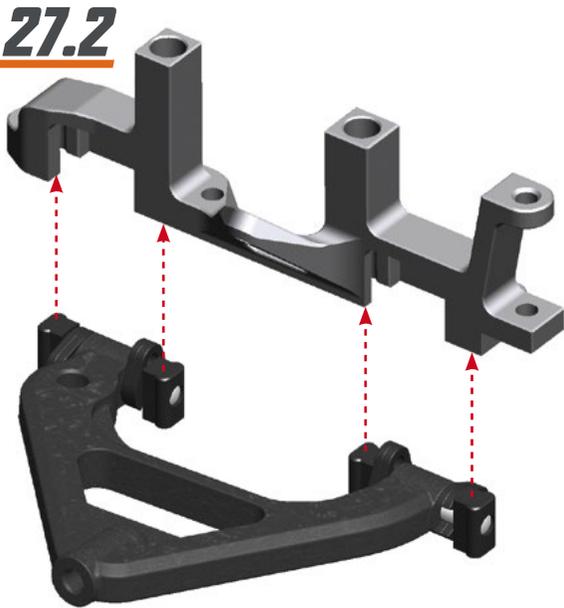
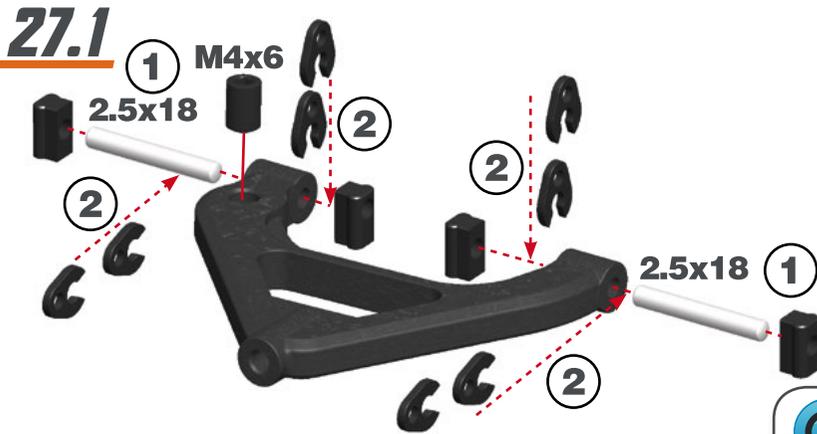
**1 TL**

**H L**

**2**  
M3x5



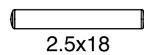
**STEP 27**



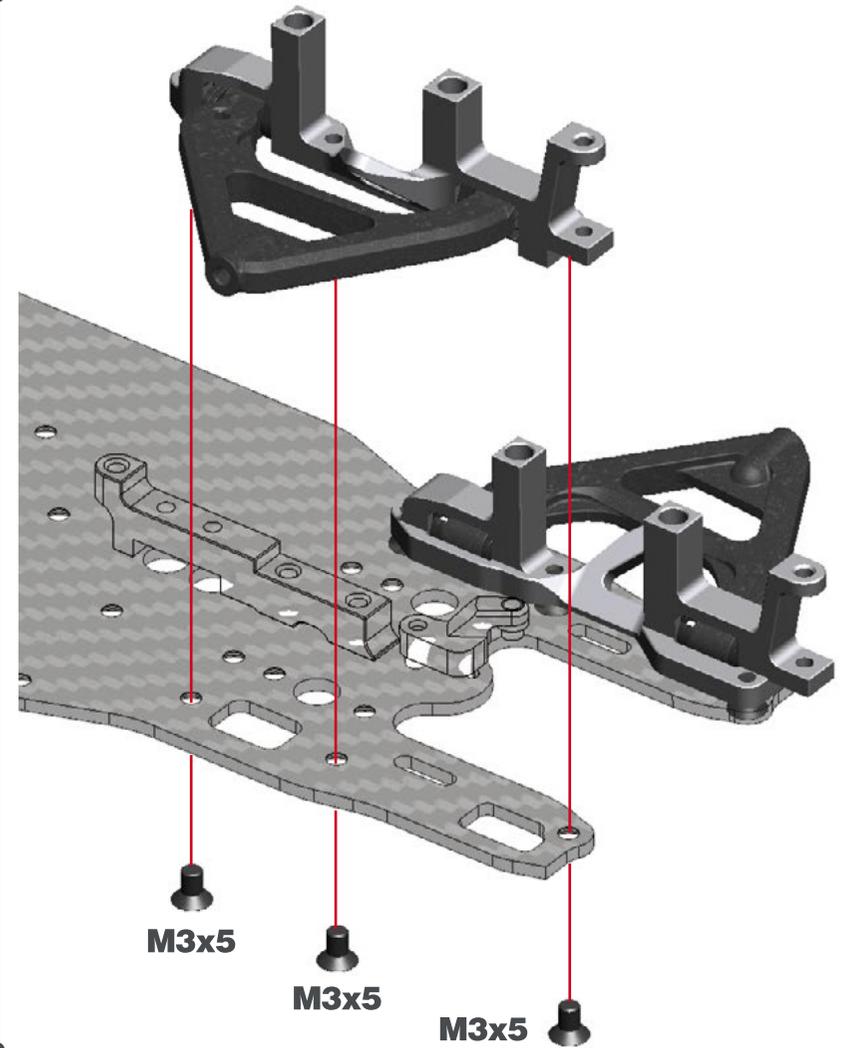
**L=R FRONT ROLL CENTER INSERTS**

<b>MID</b>	<b>MID</b>	<b>HIGH</b>
<b>LOW</b>	<b>HIGH</b>	<b>HIGH</b>

**FRONT DEFAULT WHEELBASE SHIMS**

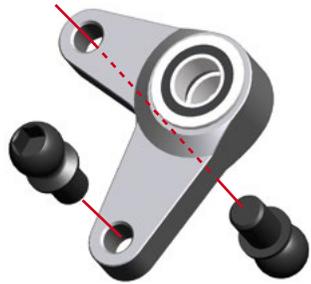


**STEP 28**



**STEP 29** **BAG 7**

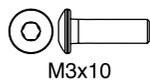
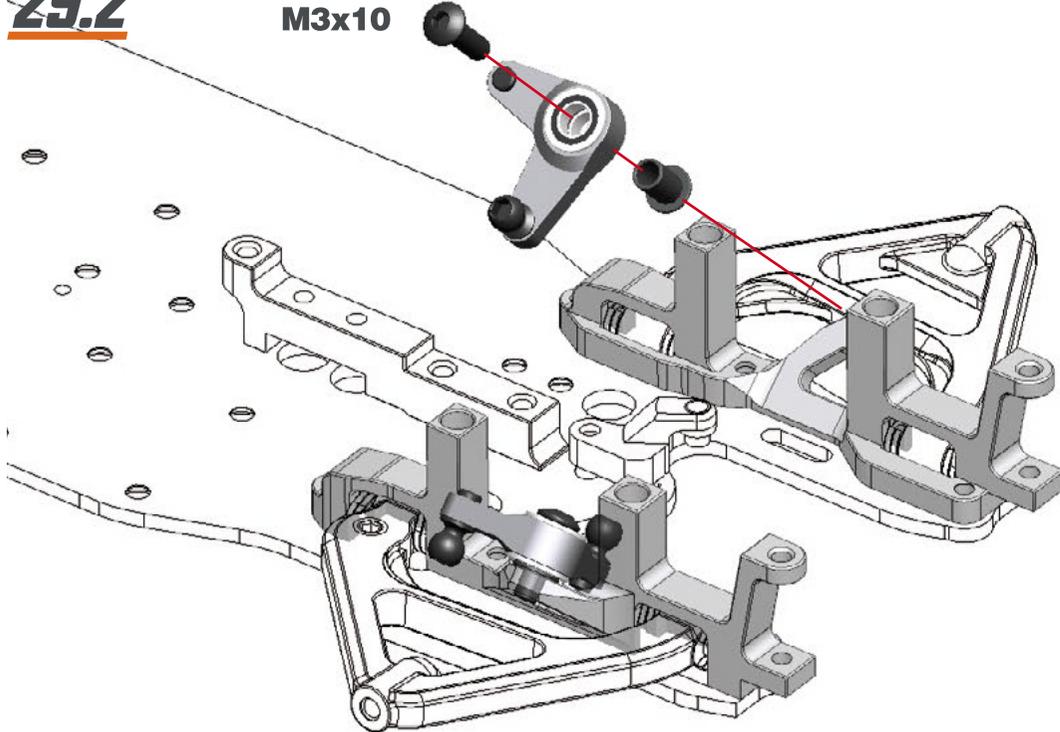
**29.1**



**!** Note the right orientation of the rocker-legs.

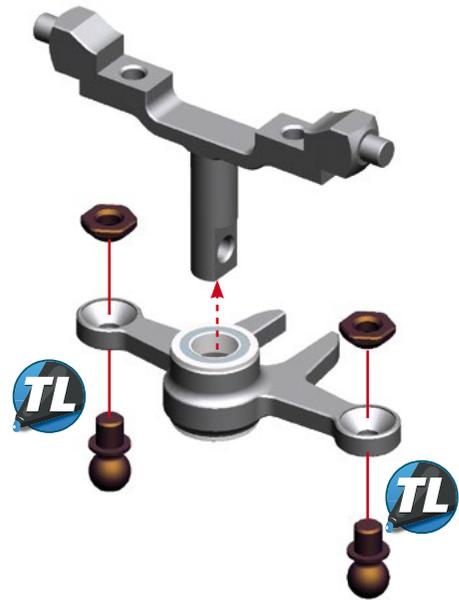
**29.2**

M3x10



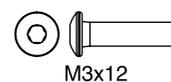
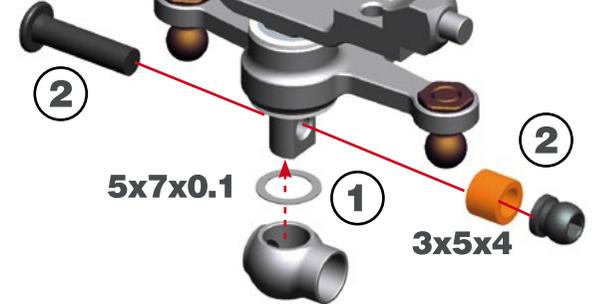
**STEP 30**

**30.1**



**30.2**

M3x12



**STEP 31**

**STEP 32**



Note: The pullrods do not sit straight after assembling. This is intended to avoid binding.

**1** 3x6x2.5 Flanged

**2** M3x8

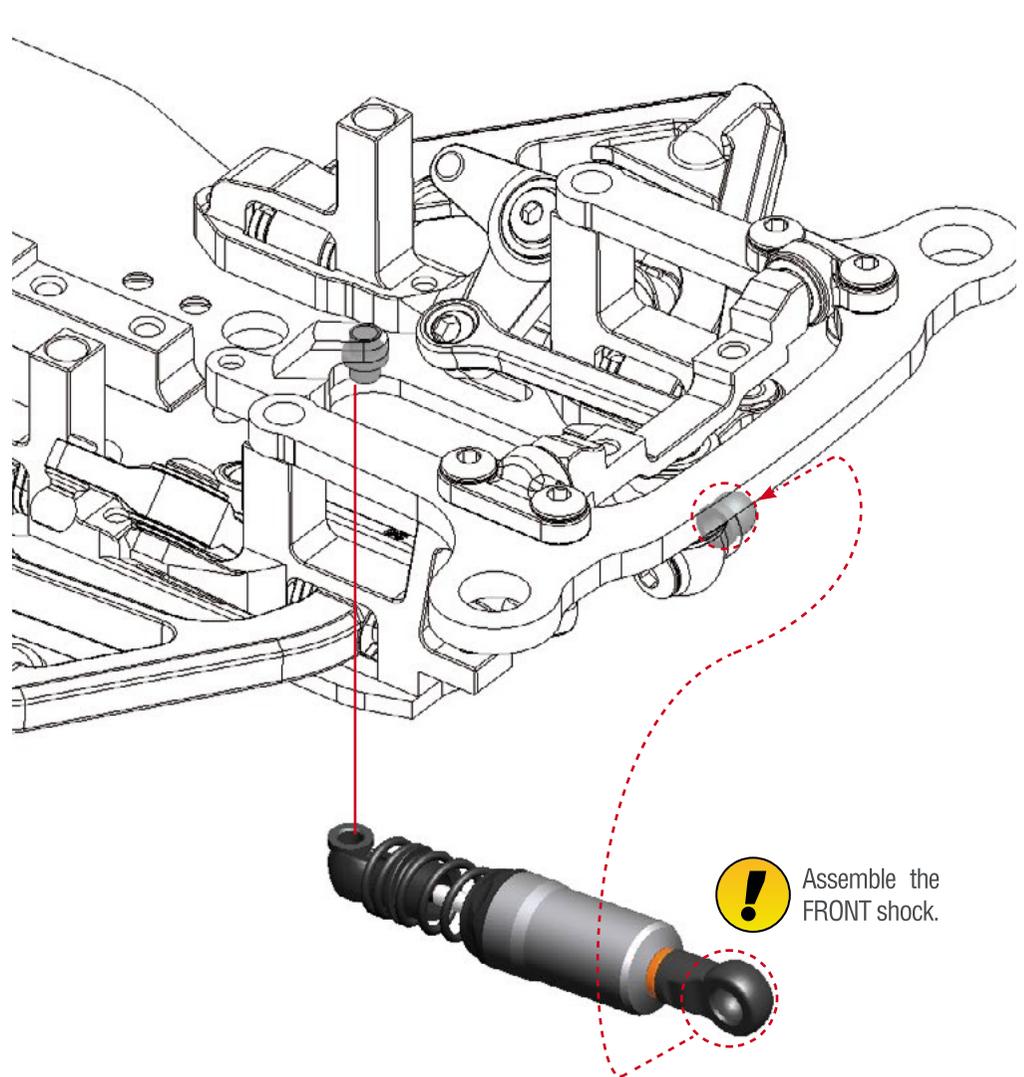
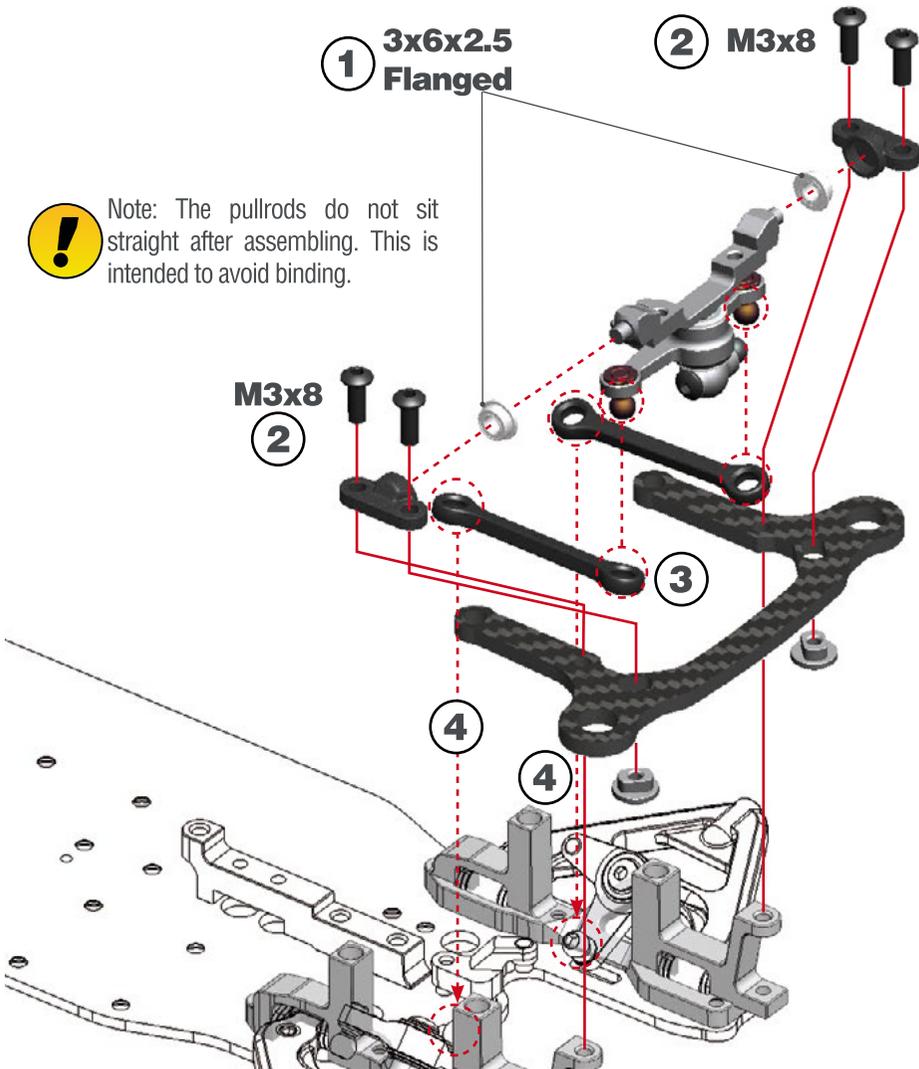
M3x8

**2**

**3**

**4**

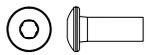
**4**



Assemble the FRONT shock.



3x6x2.5 Flanged



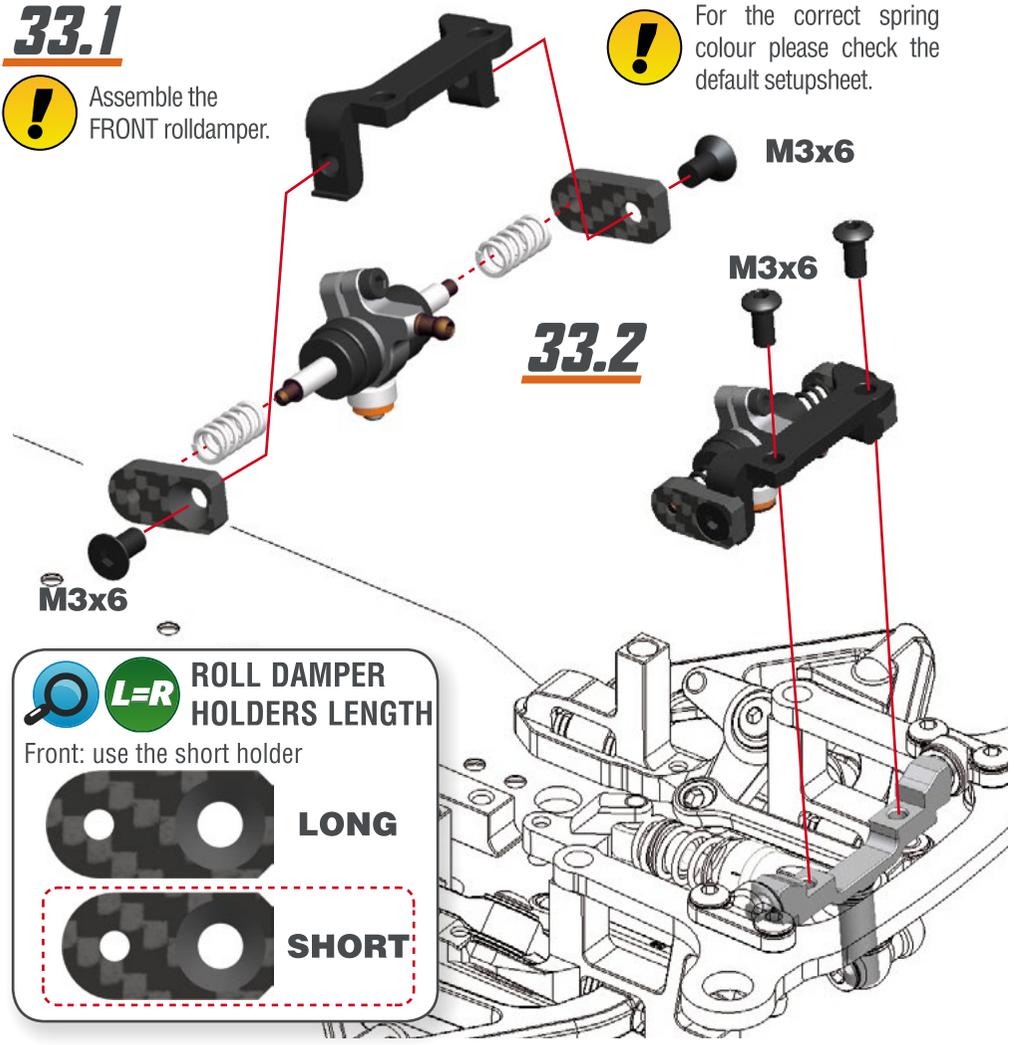
M3x8

**STEP 33**

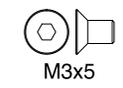
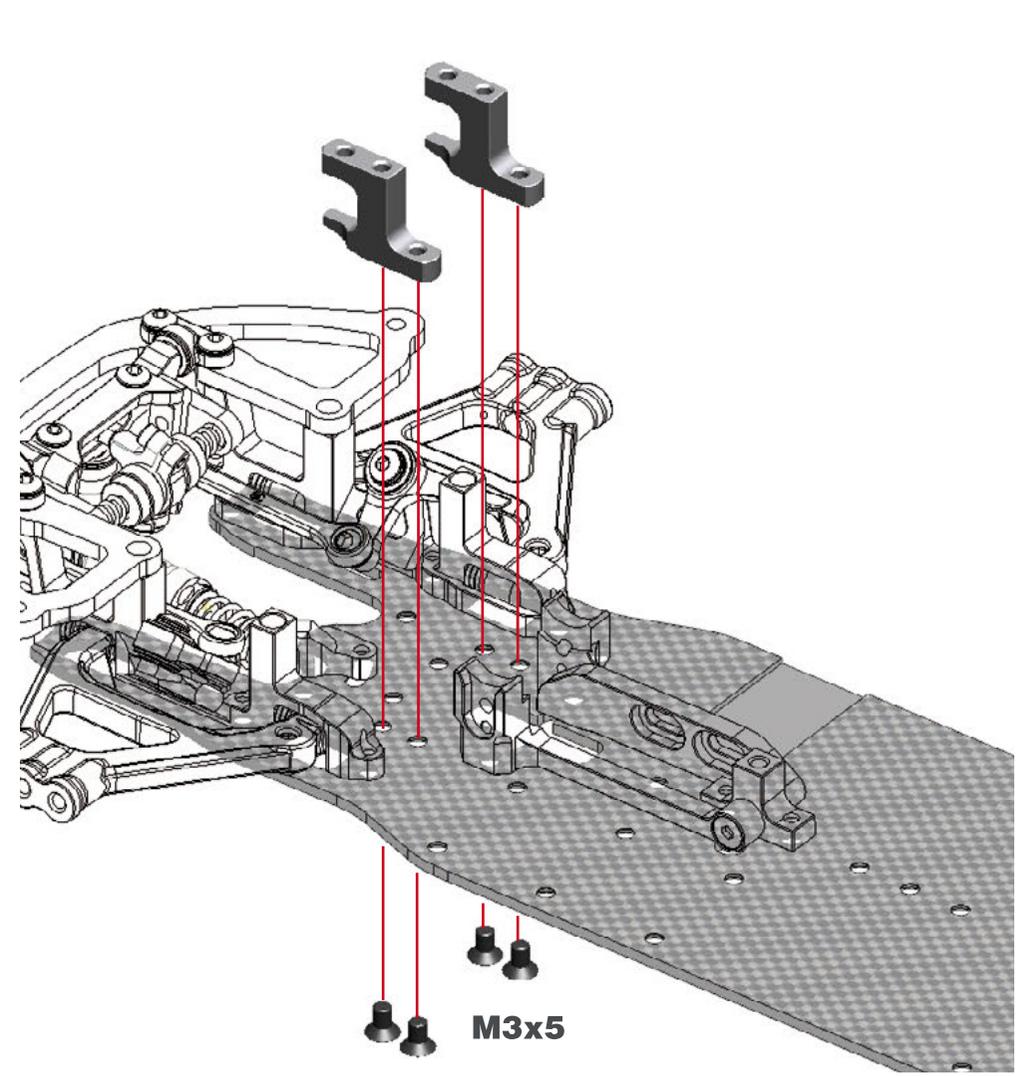
**33.1**

**!** Assemble the FRONT rolldamper.

**!** For the correct spring colour please check the default setupsheet.

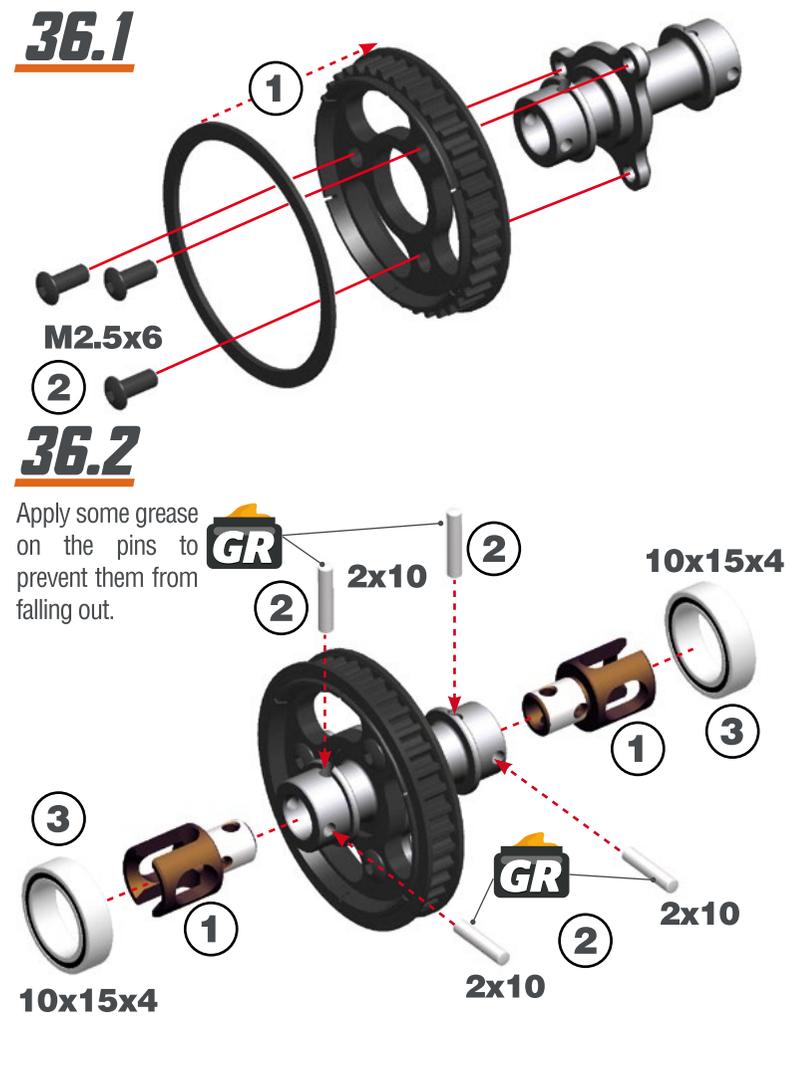
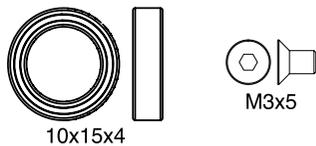
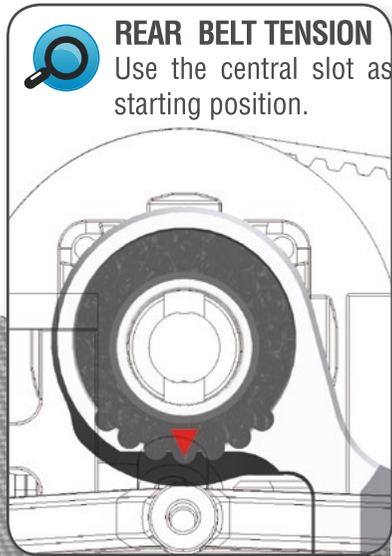
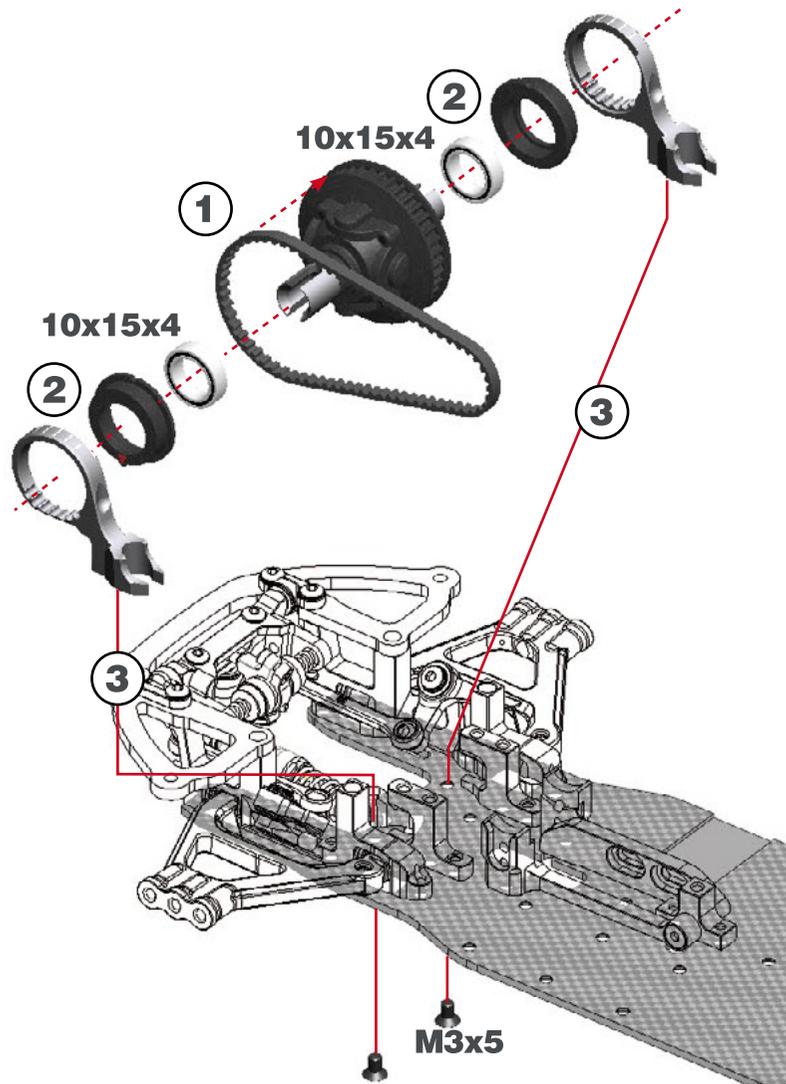


**STEP 34** **BAG 8**



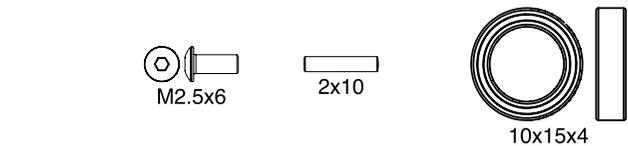
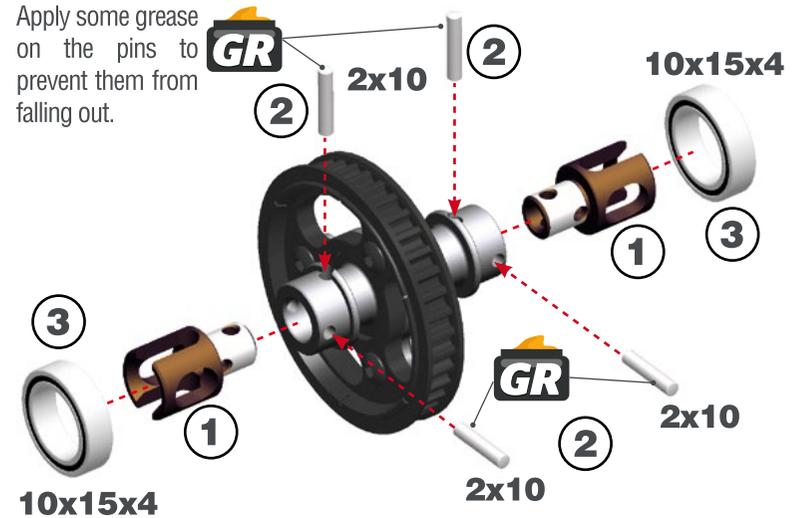
## STEP 35

## STEP 36

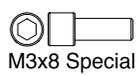
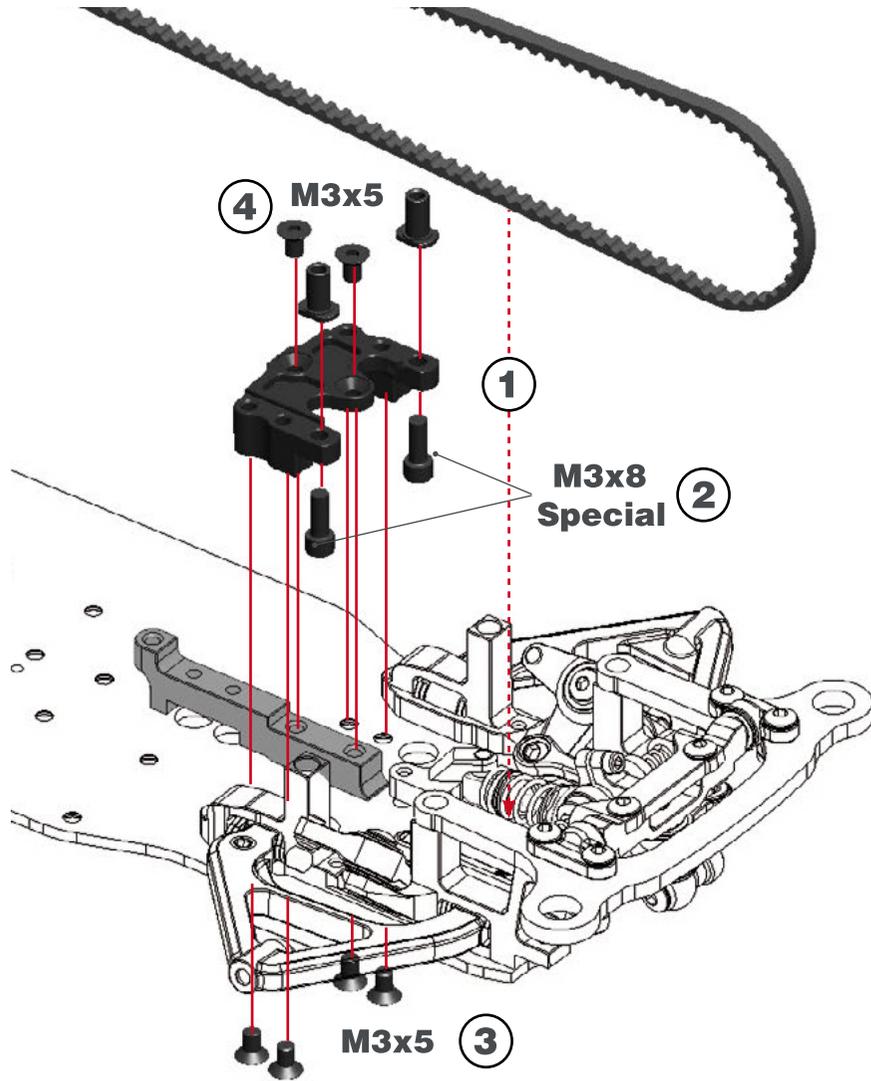


**36.1**  
M2.5x6  
**36.2**

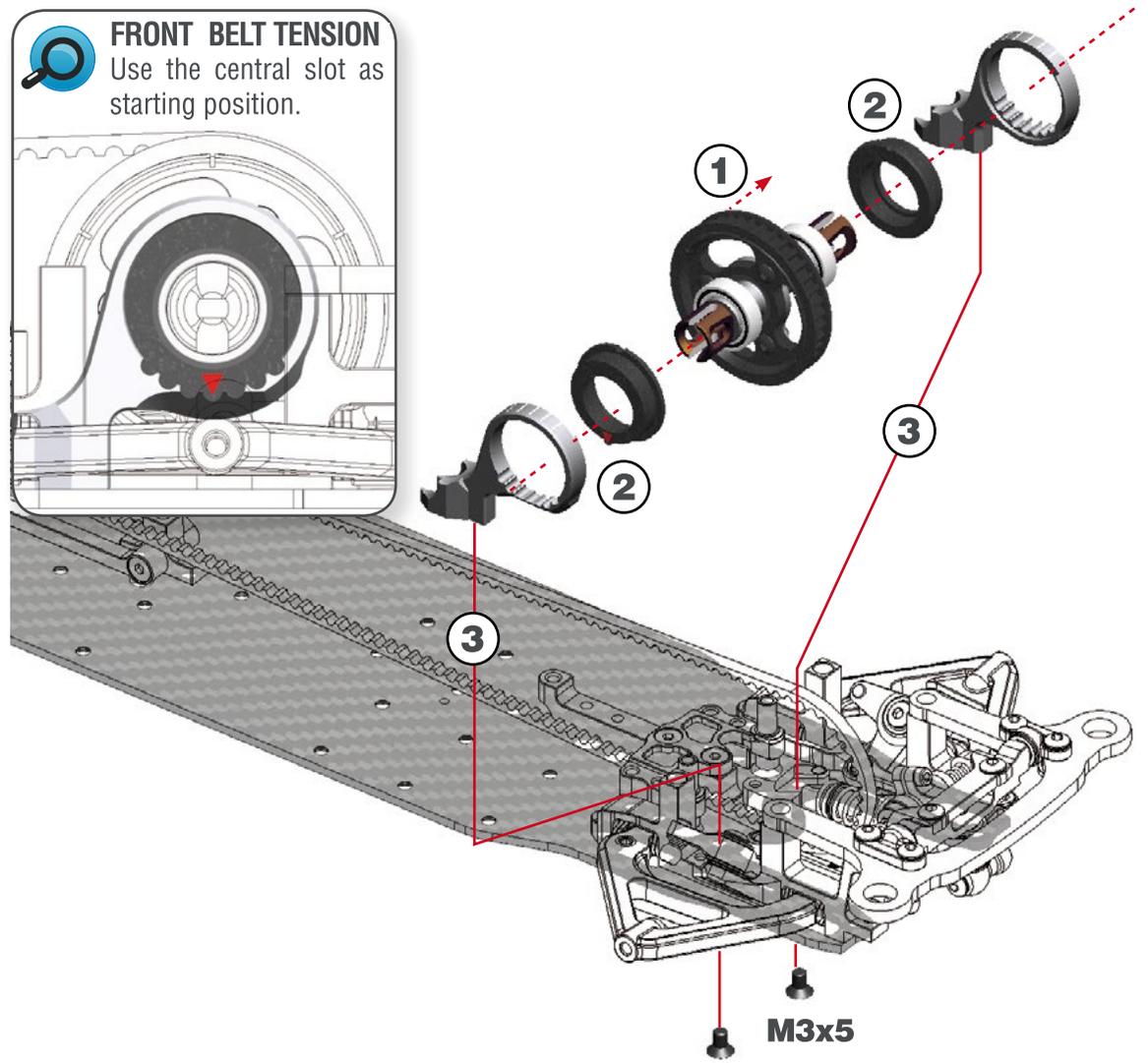
Apply some grease on the pins to prevent them from falling out.



**STEP 37**



**STEP 38**



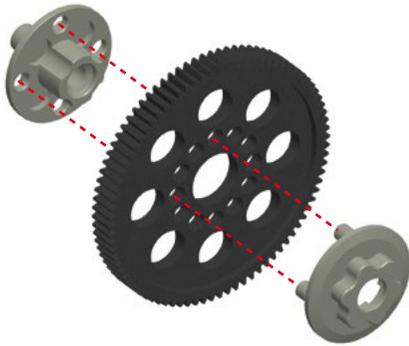
**FRONT BELT TENSION**  
Use the central slot as starting position.



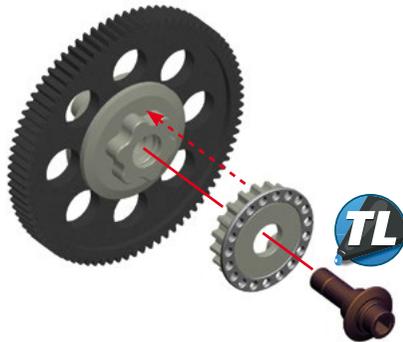
**STEP 39**

**STEP 40**

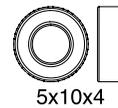
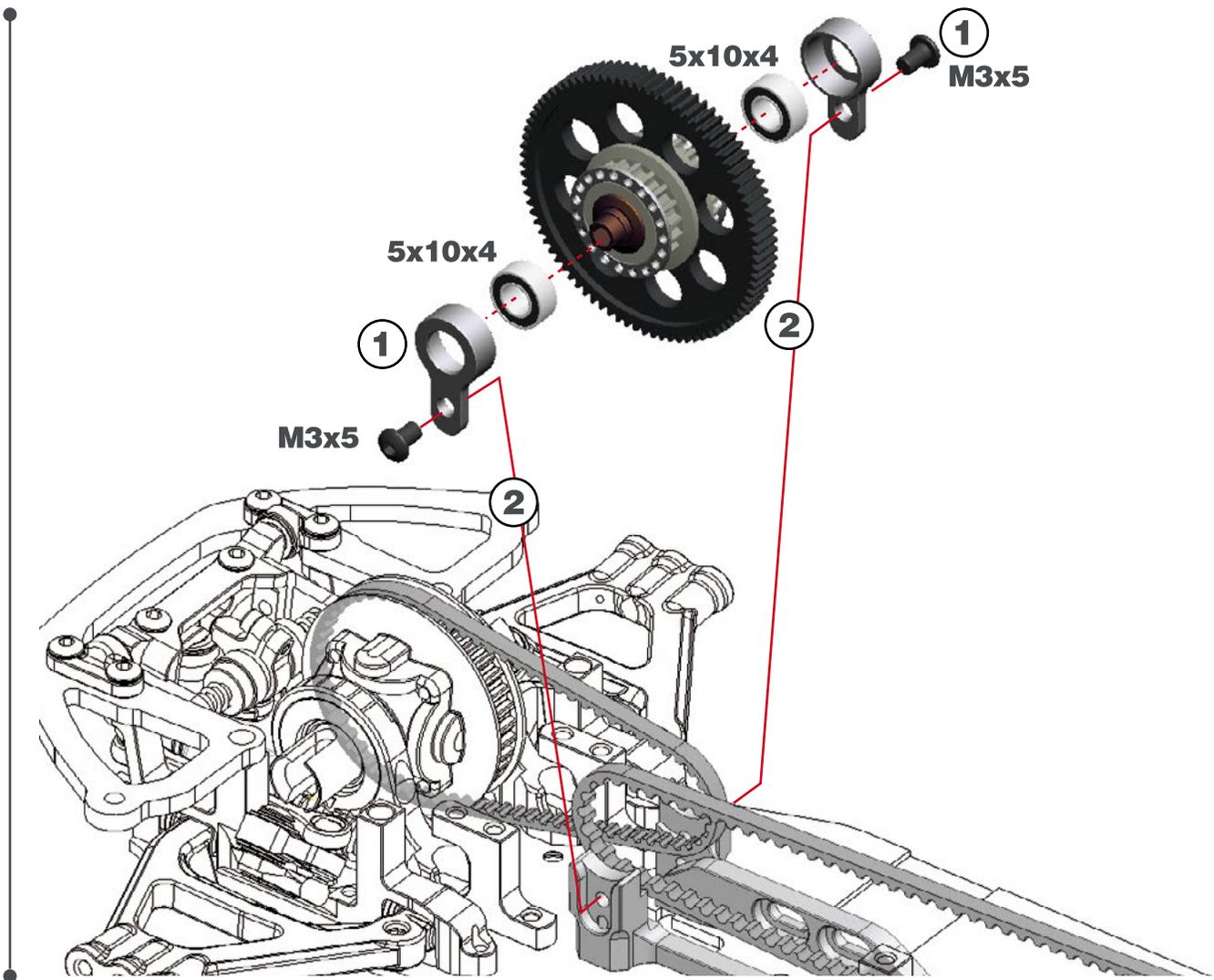
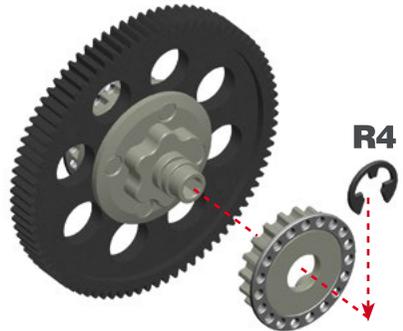
**39.1**



**39.2**

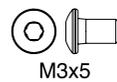
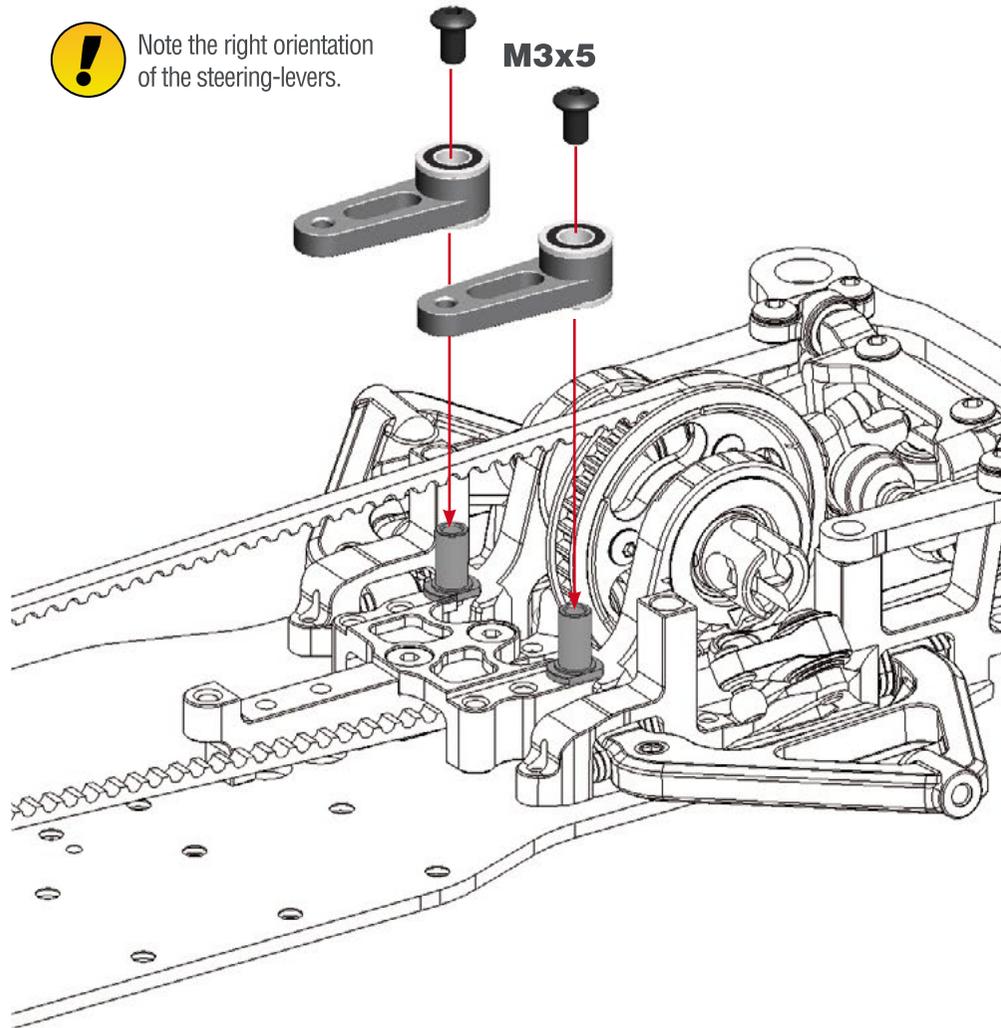


**39.3**

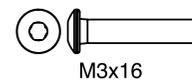
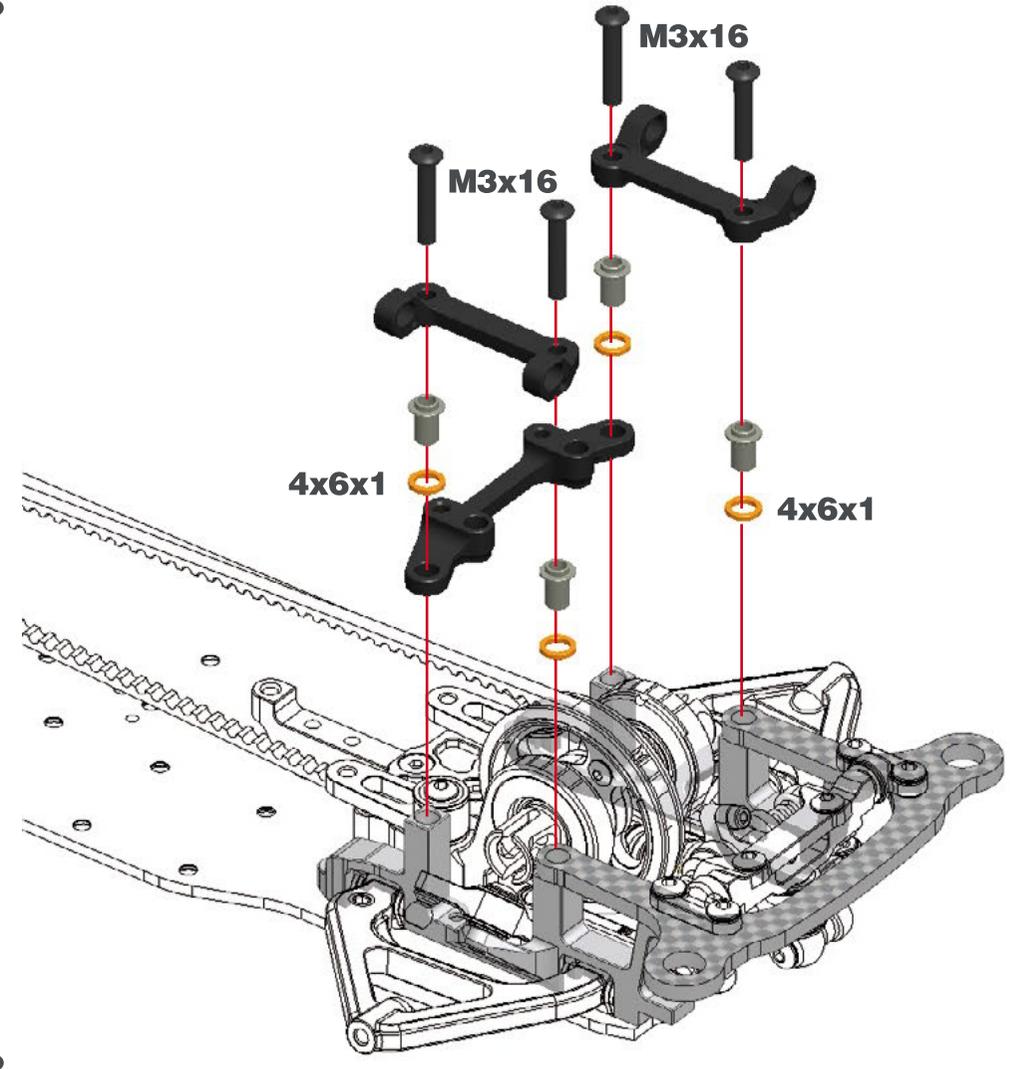


## STEP 41 BAG 9

**!** Note the right orientation of the steering-levers.

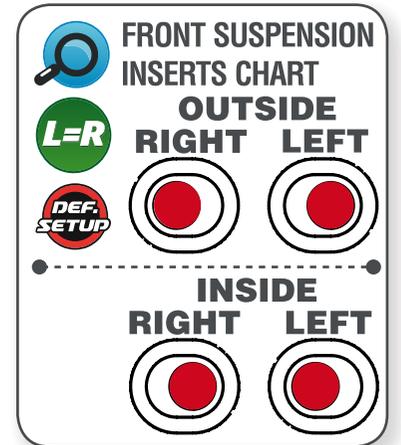
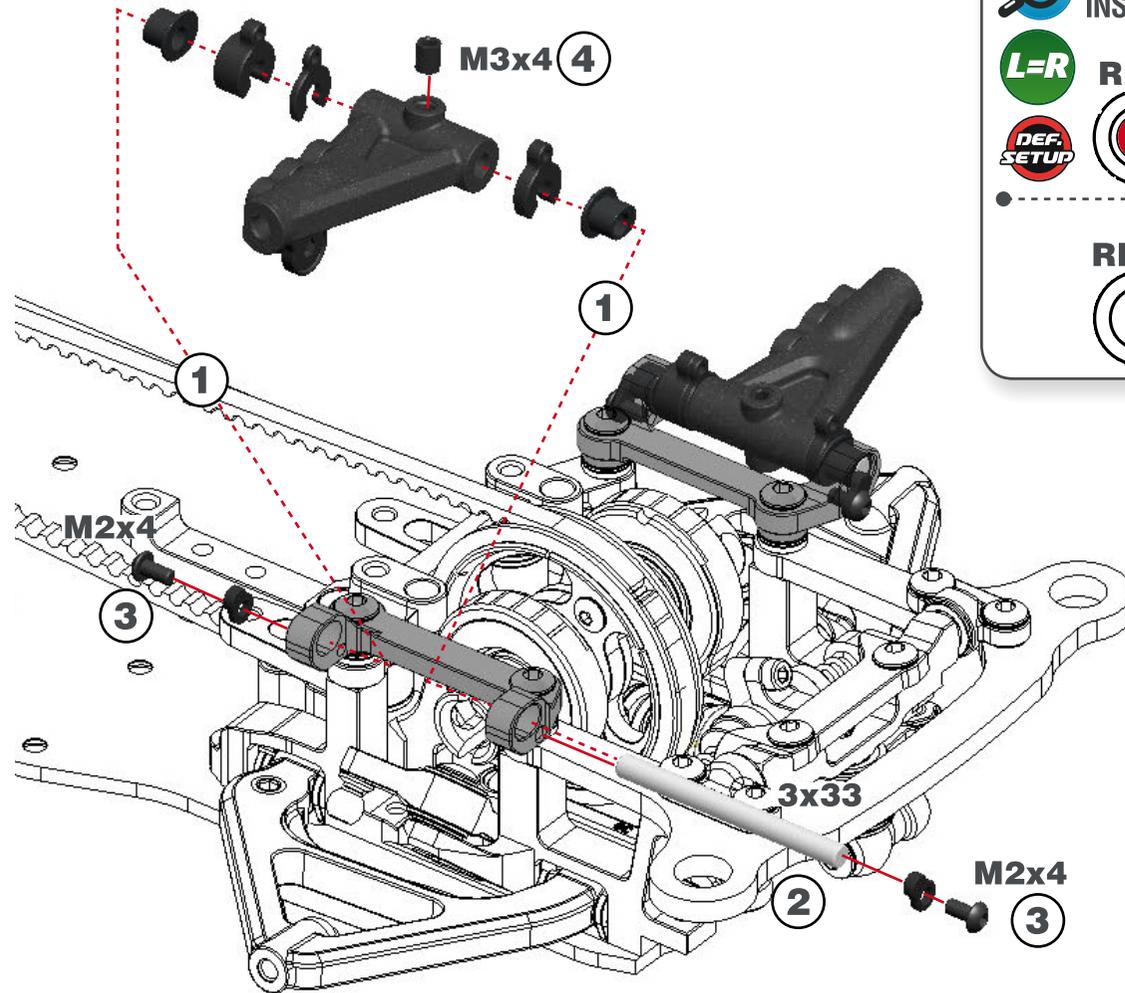
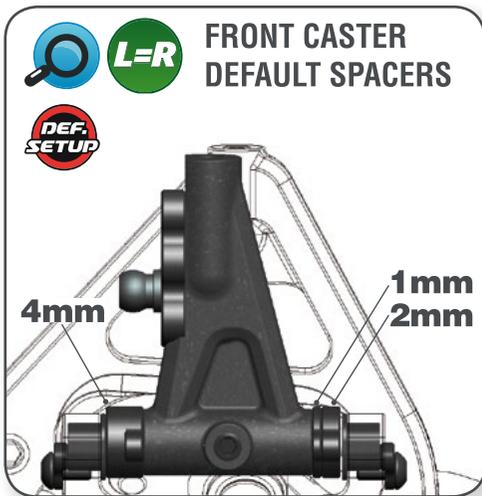
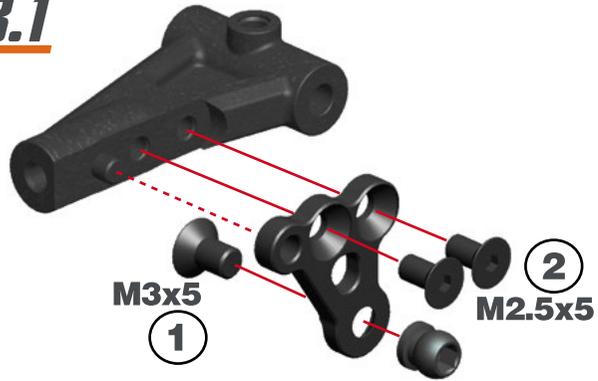


## STEP 42



**STEP 43** **BAG 18**

**43.1**



# STEP 44

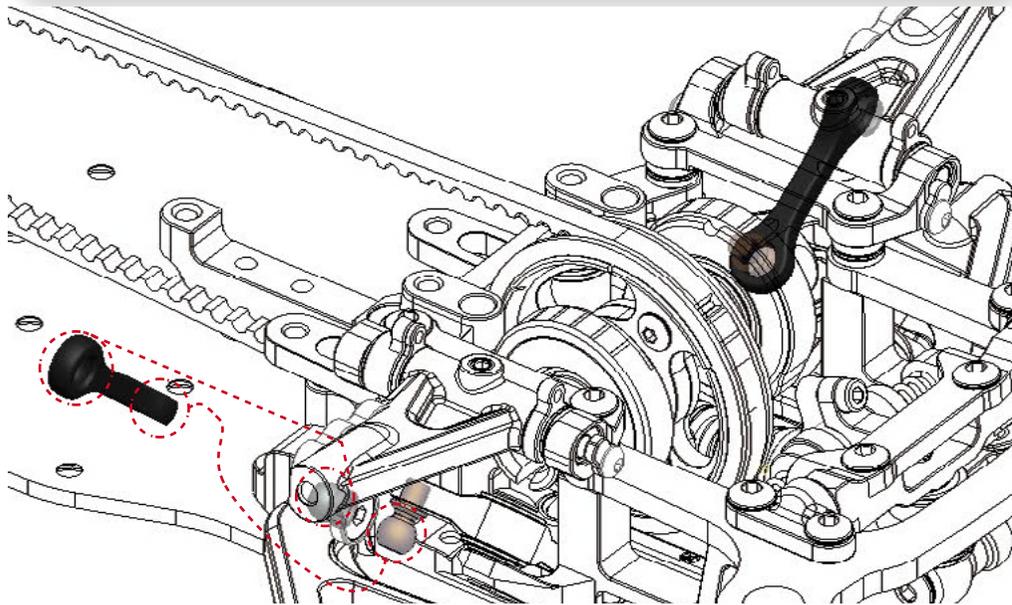


**PULLROD LENGTH (mm)**



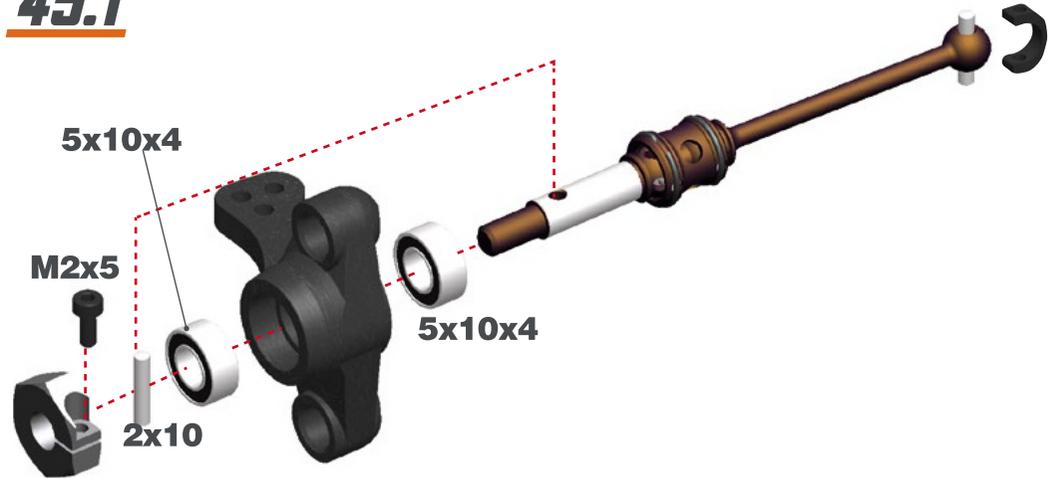
Included are 5 lengths of composite pullrods. If ride height can not be adjusted enough using the excentric holder for the heavedamper, use different pullrod length. For more ride height, use shorter pullrod.

Make sure to use same length Left and Right side.



# STEP 45

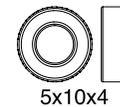
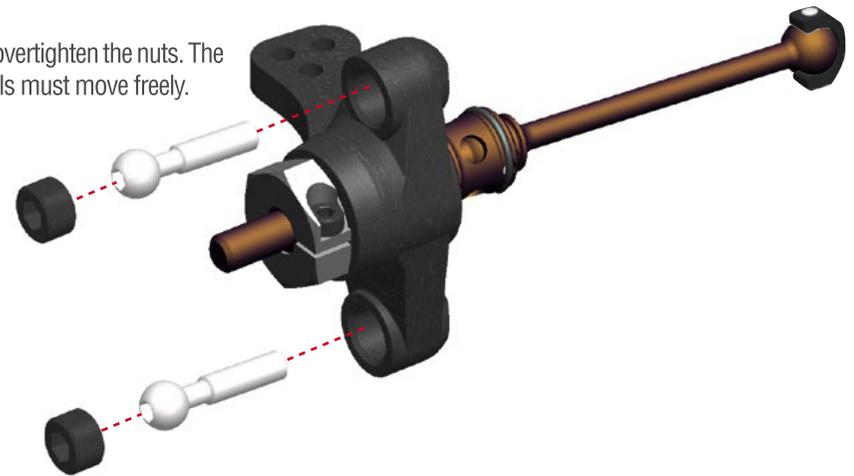
## 45.1



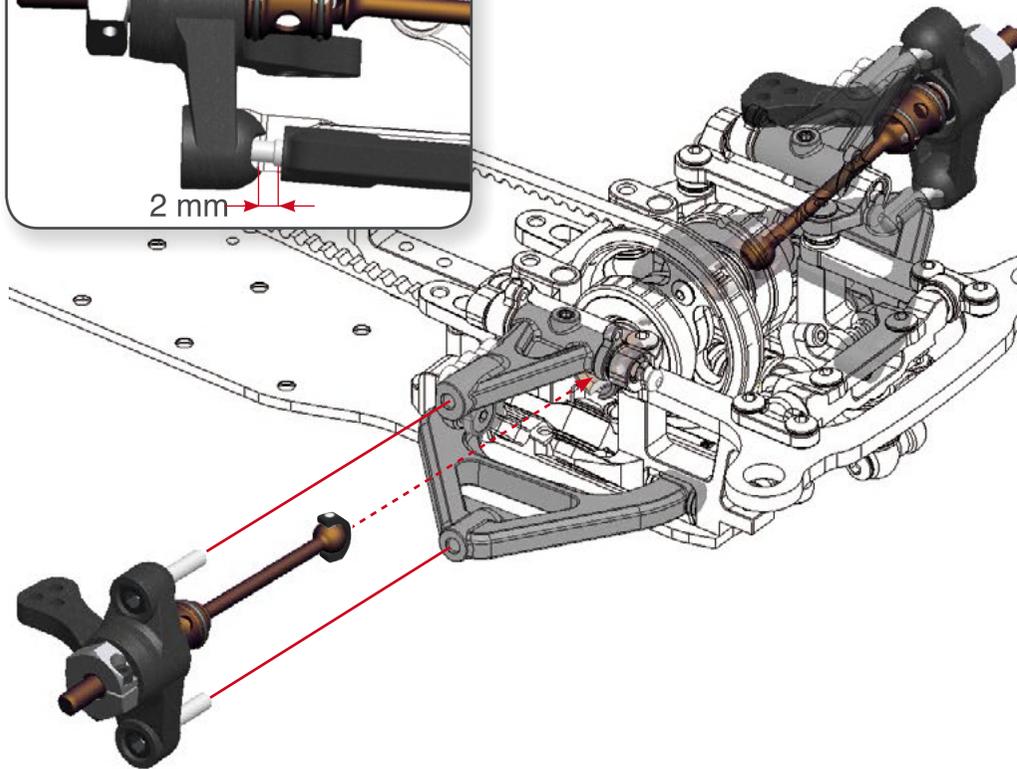
## 45.2



Do not overtighten the nuts. The pivotballs must move freely.

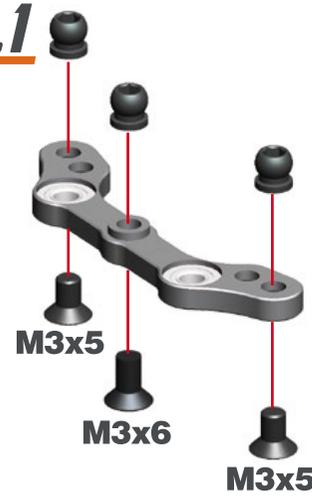


**STEP 46**

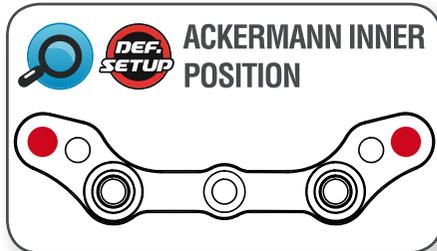
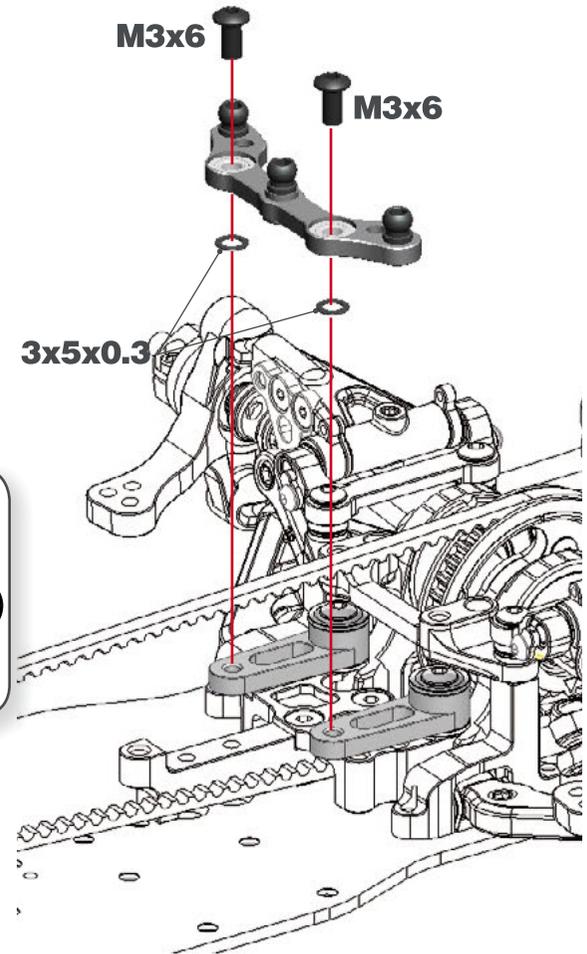


**STEP 47** **BAG 11**

**47.1**

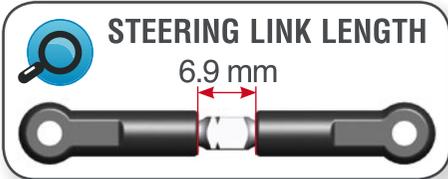
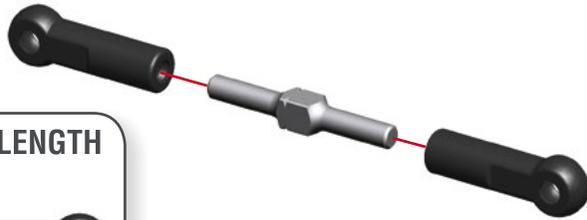


**47.2**

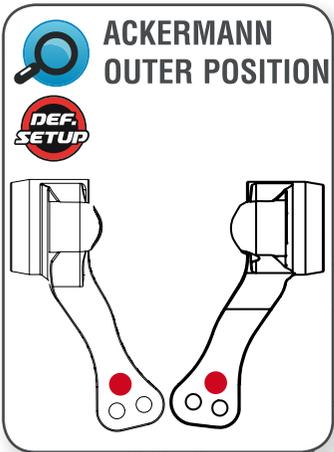
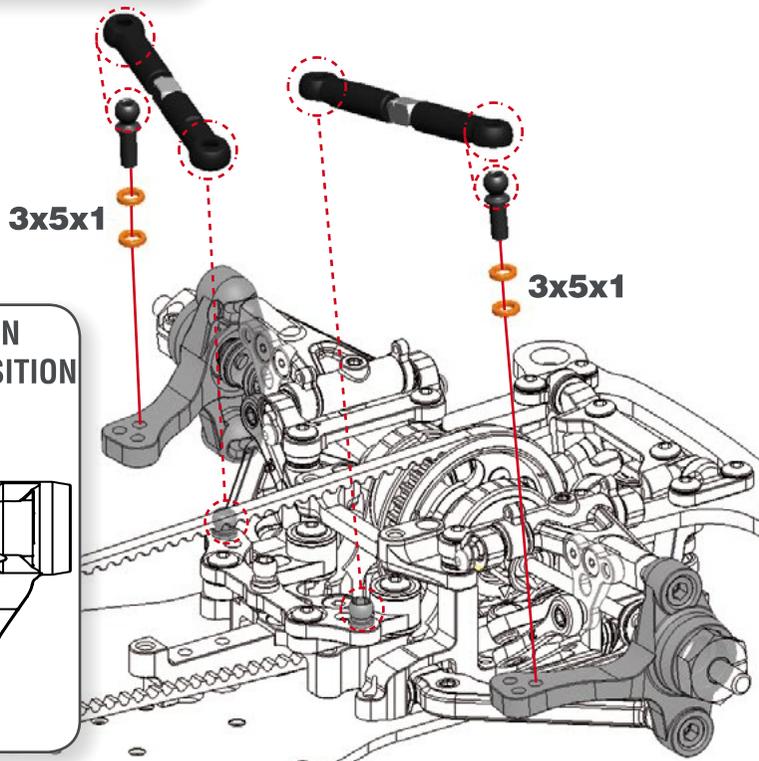


**STEP 48**

**48.1**

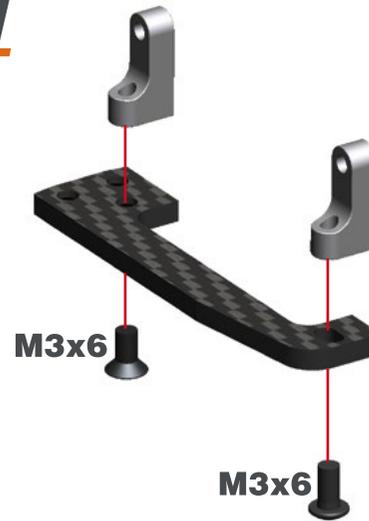


**48.2**

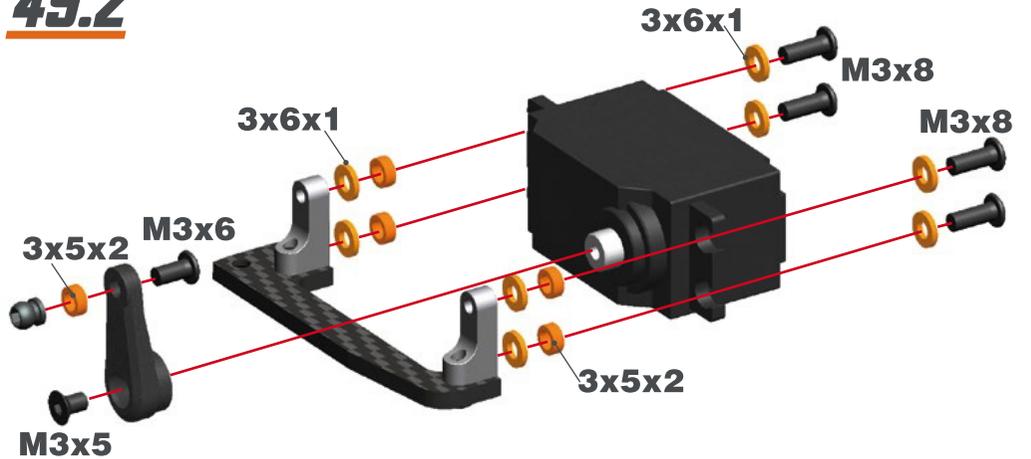


**STEP 49**

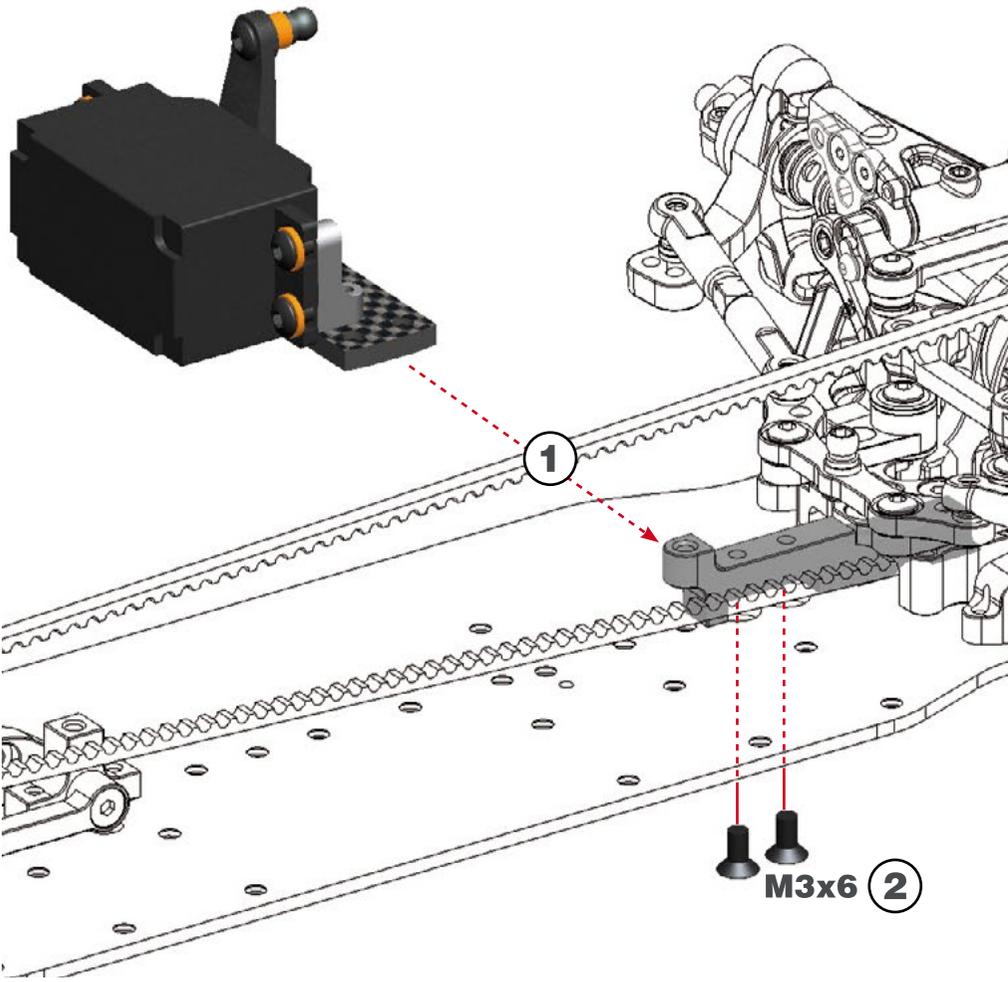
**49.1**



**49.2**

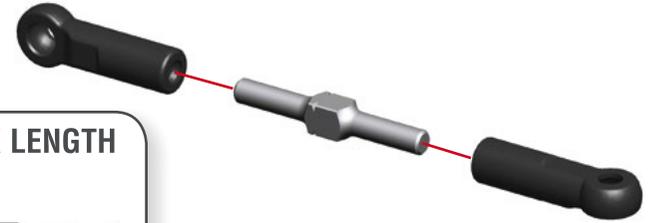
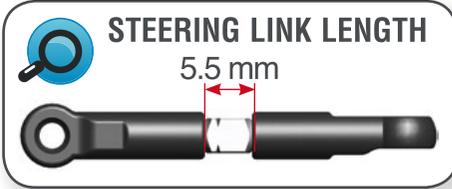


**STEP 50**

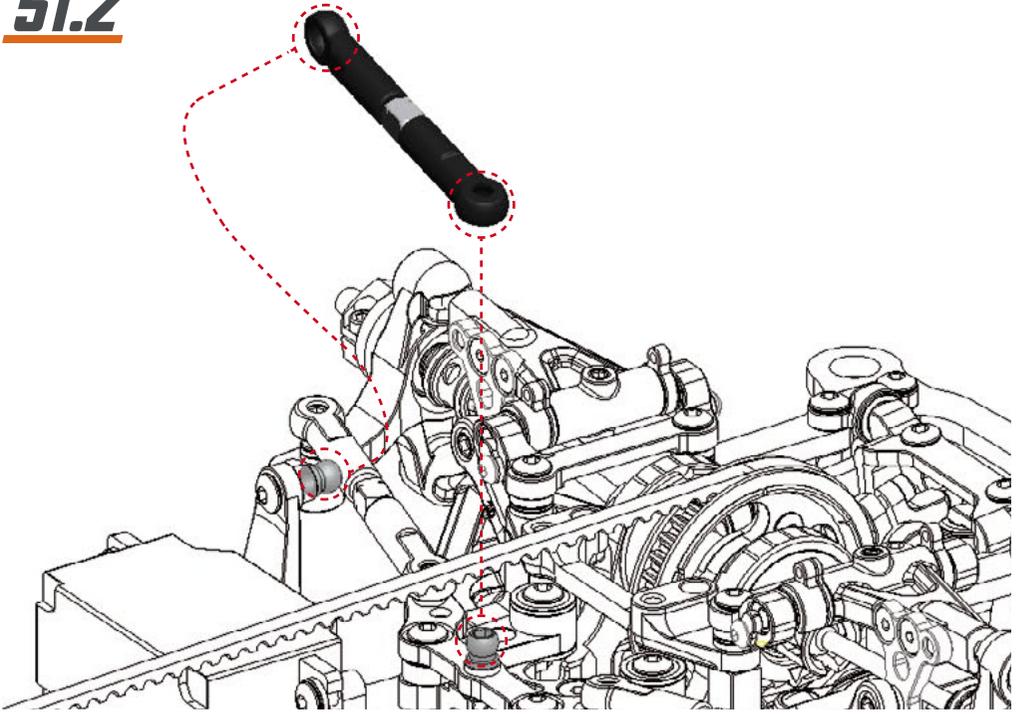


**STEP 51**

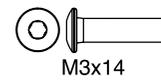
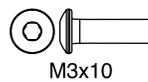
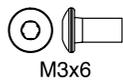
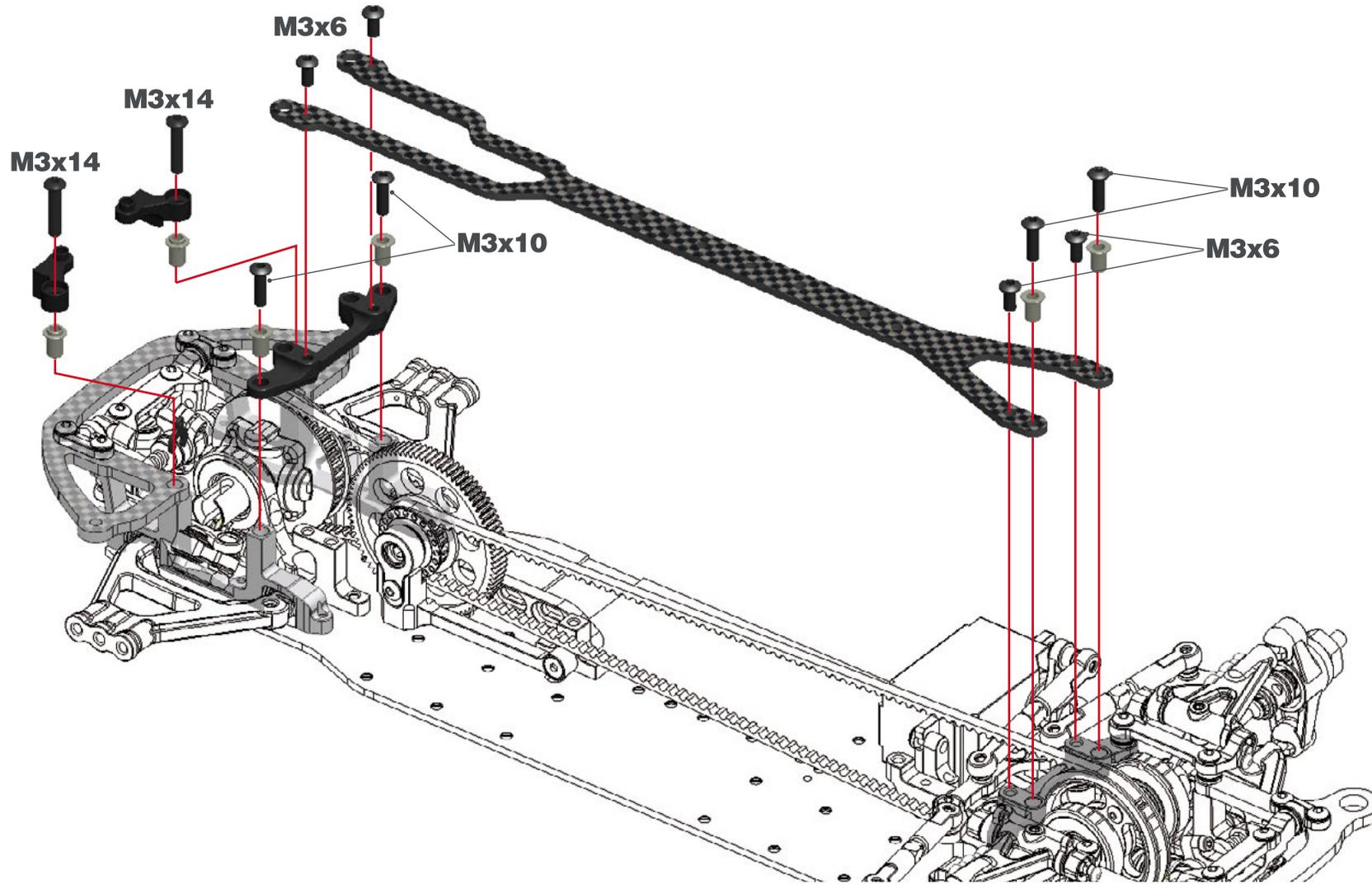
**51.1**



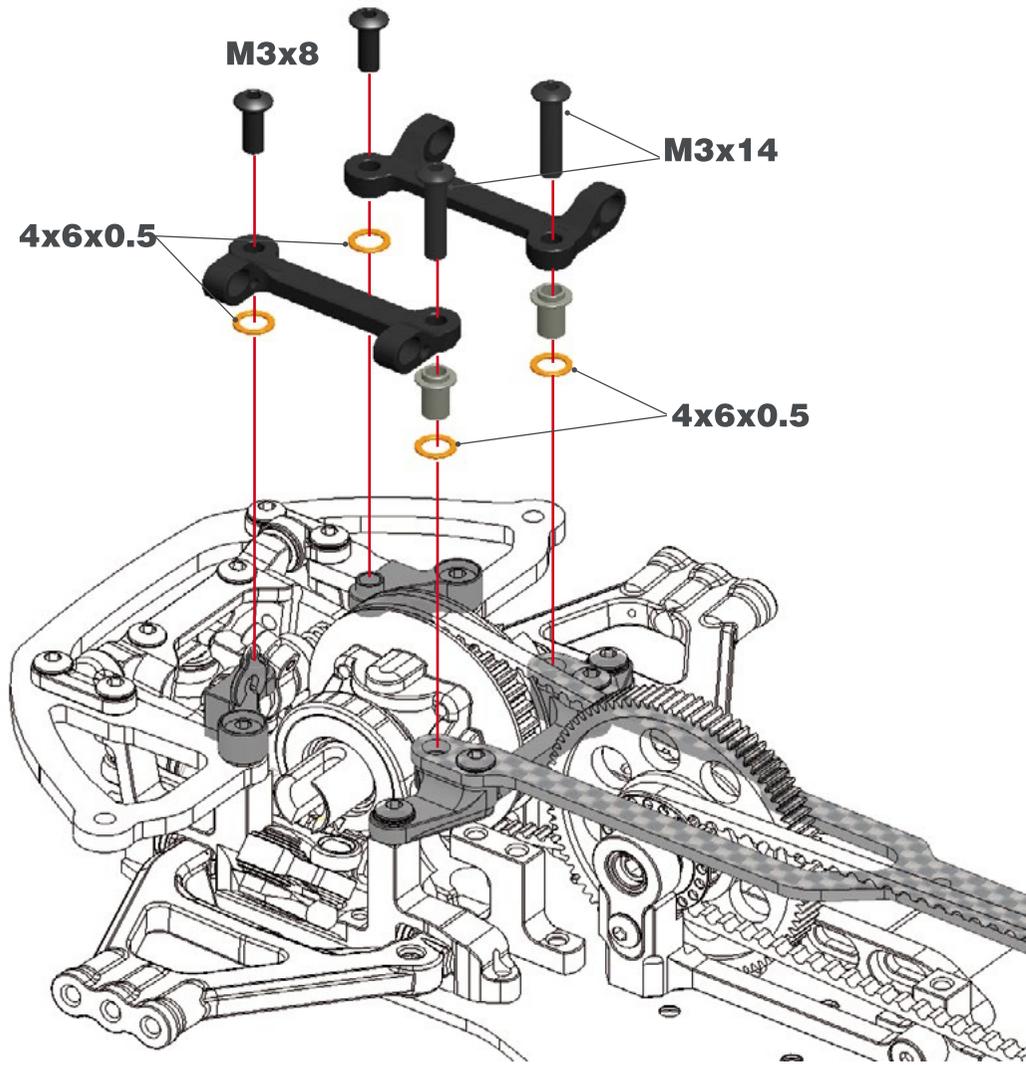
**51.2**



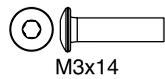
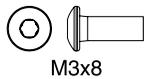
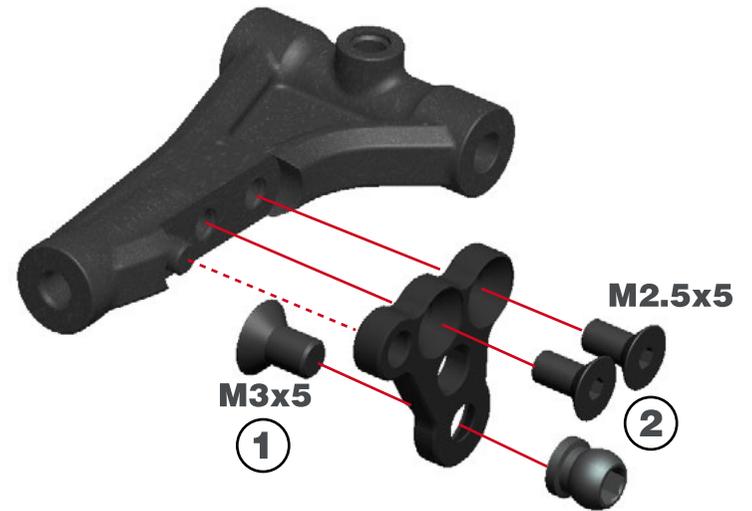
## STEP 52 BAG 12



**STEP 53**



**STEP 54**



# STEP 55

**REAR WISHBONE**  
DEFAULT SPACERS

**L=R**

**DEF. SETUP**

2mm  
1mm  
4mm

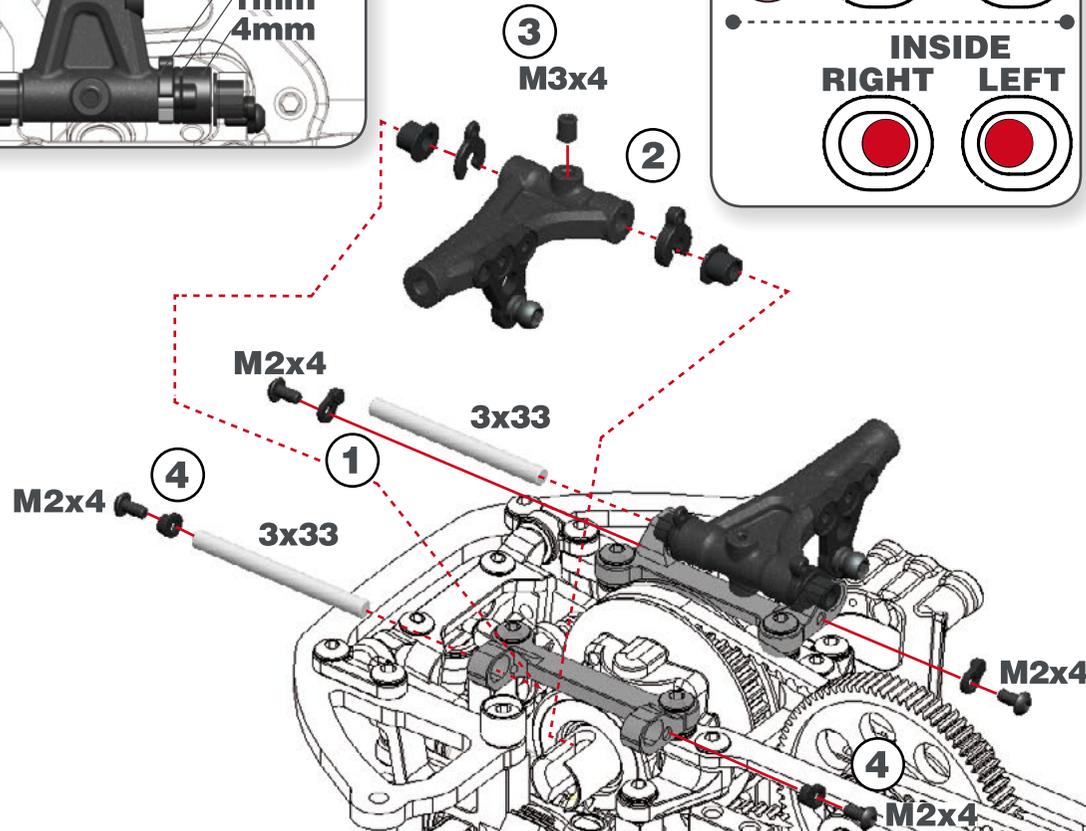
**REAR SUSPENSION**  
INSERTS CHART

**L=R**

**DEF. SETUP**

**OUTSIDE**  
RIGHT LEFT

**INSIDE**  
RIGHT LEFT



# STEP 56

**PULLROD**  
LENGTH (mm)

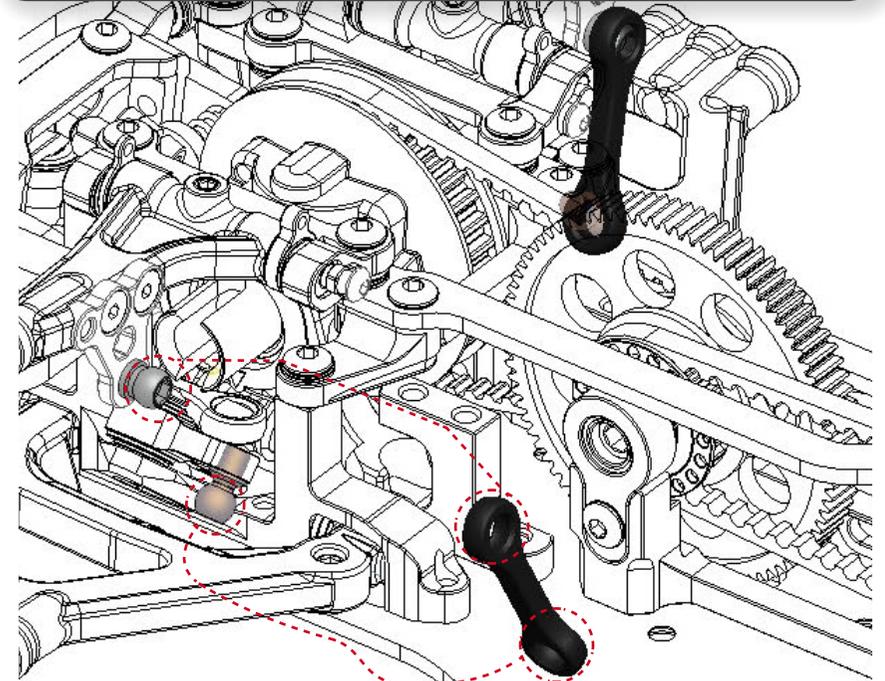
**L=R**

**DEF. SETUP**

21 20.5 20 19.5 19

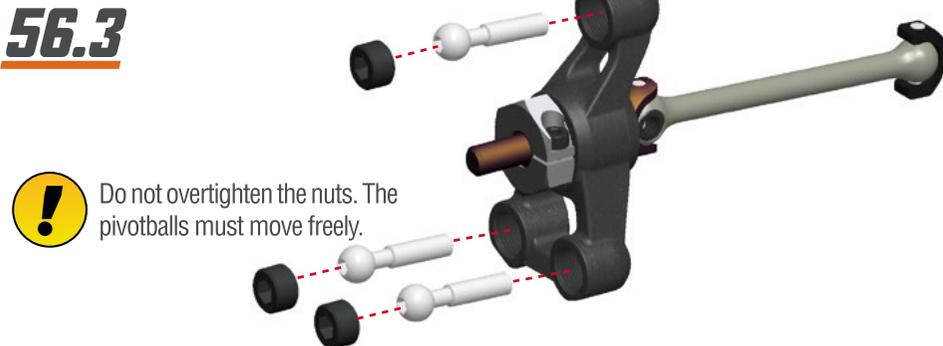
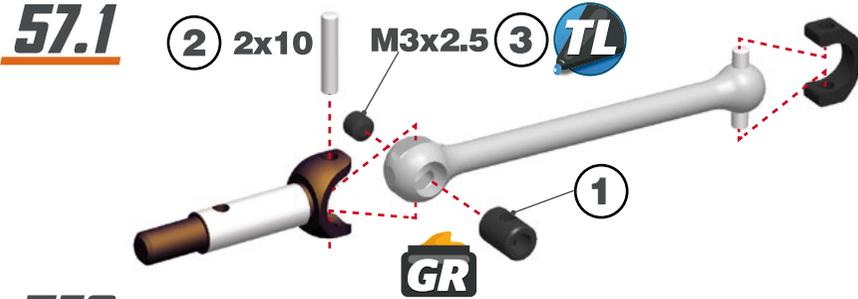
Included are 5 lengths of composite pullrods. If ride height can not be adjusted enough using the eccentric holder for the heavedamper, use different pullrod length. For more ride height, use shorter pullrod.

Make sure to use same length Left and Right side.

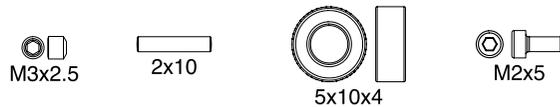


**STEP 57** **BAG 13**

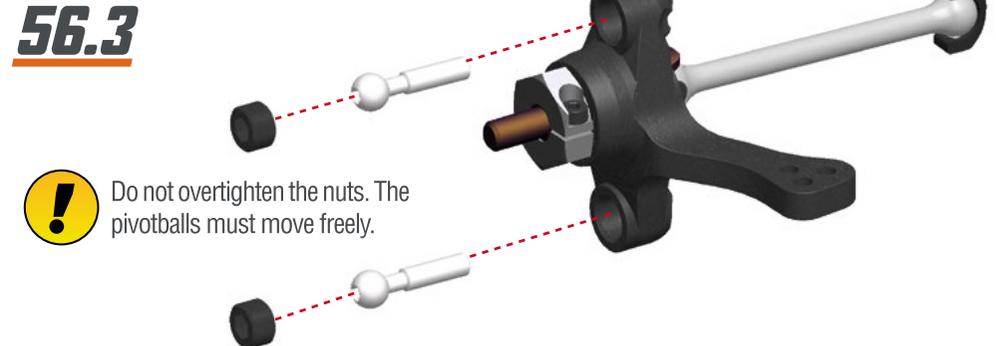
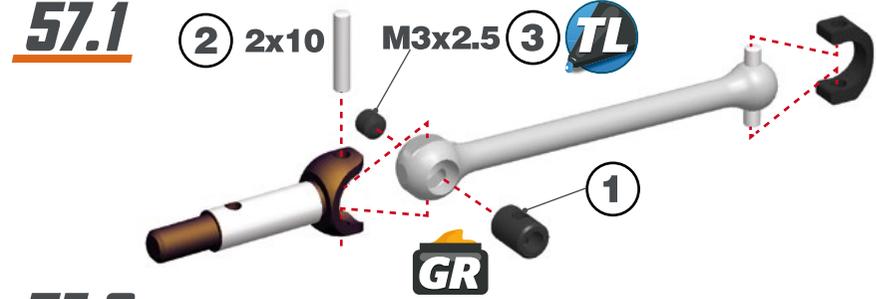
**NO RRS (CONSTANT RR TOE IN) DEFAULT**



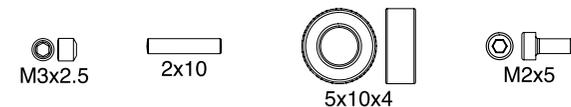
**!** Do not overtighten the nuts. The pivotballs must move freely.



**RRS (ACTIVE RR TOE IN) OPTIONAL**

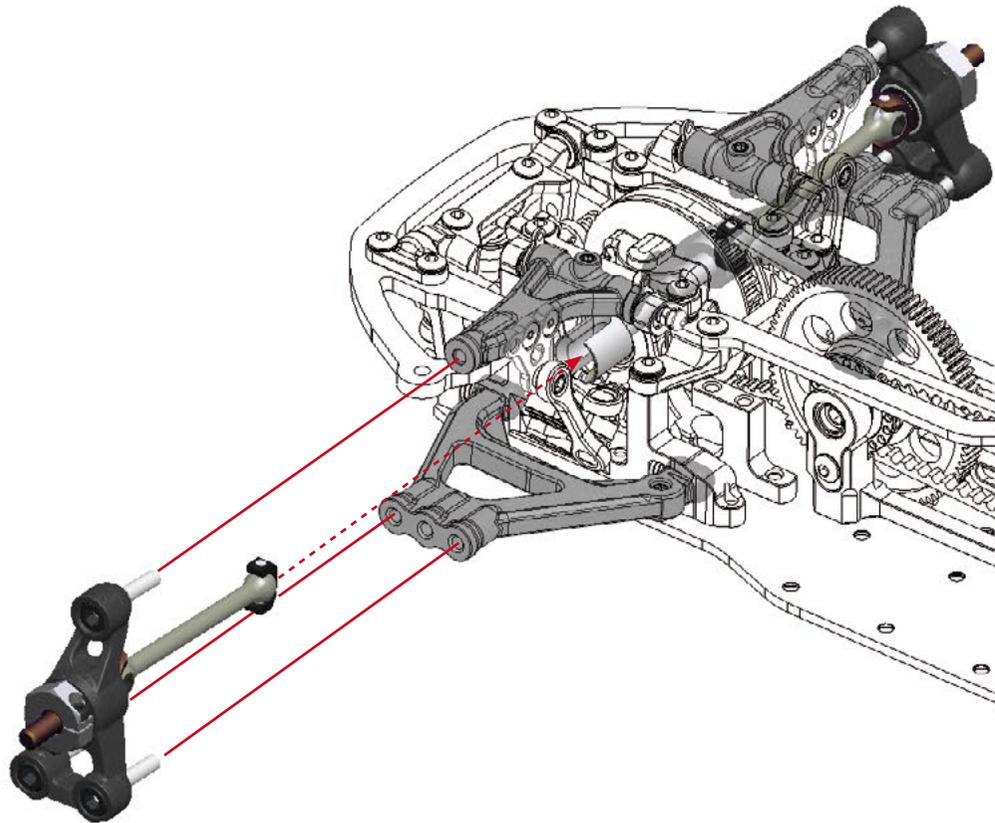


**!** Do not overtighten the nuts. The pivotballs must move freely.

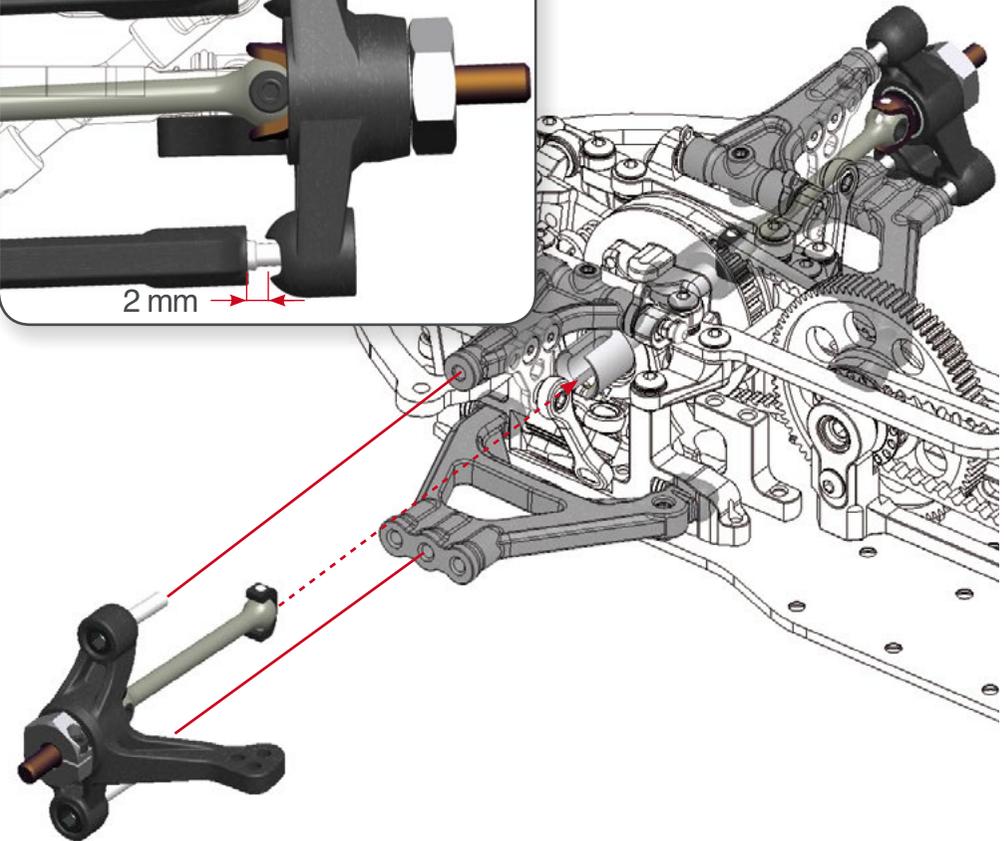
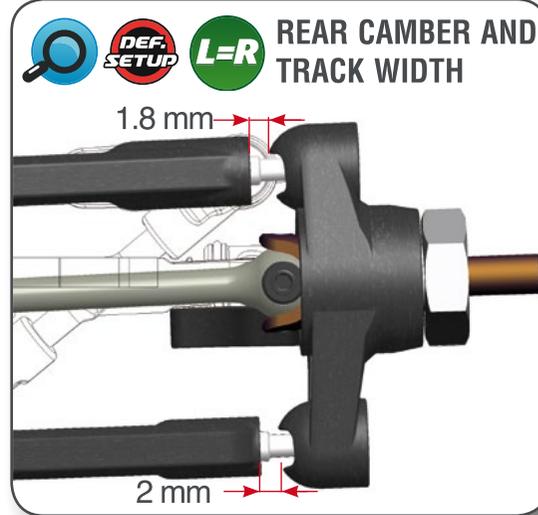


**STEP 58**

**NO RRS (CONSTANT RR TOE IN) DEFAULT**



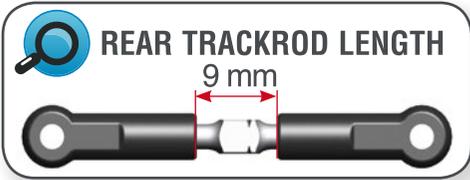
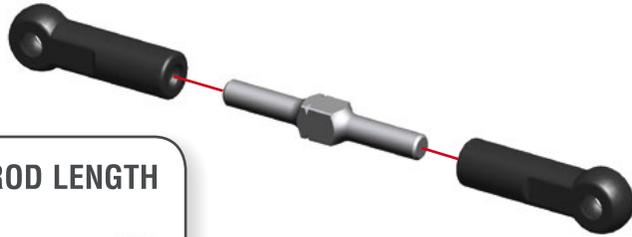
**RRS (ACTIVE RR TOE IN) OPTIONAL**



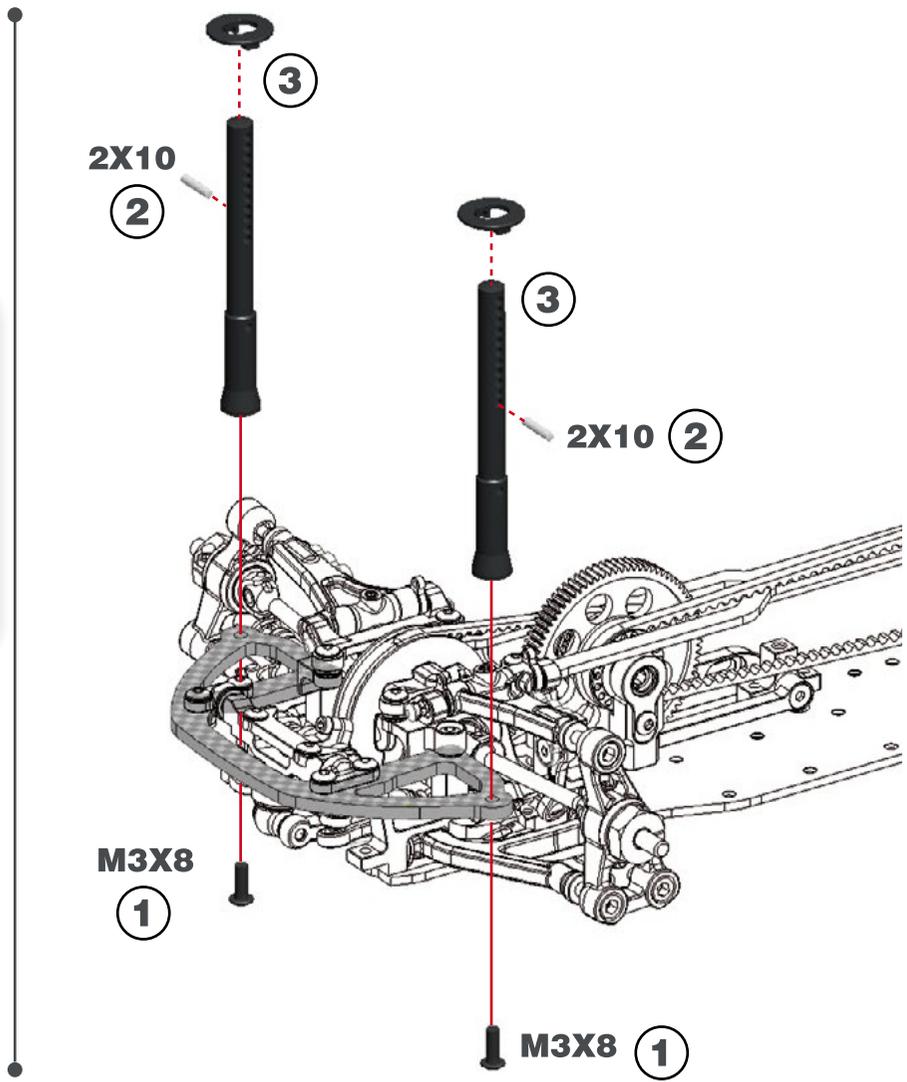
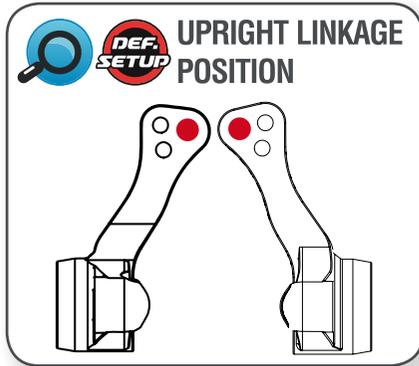
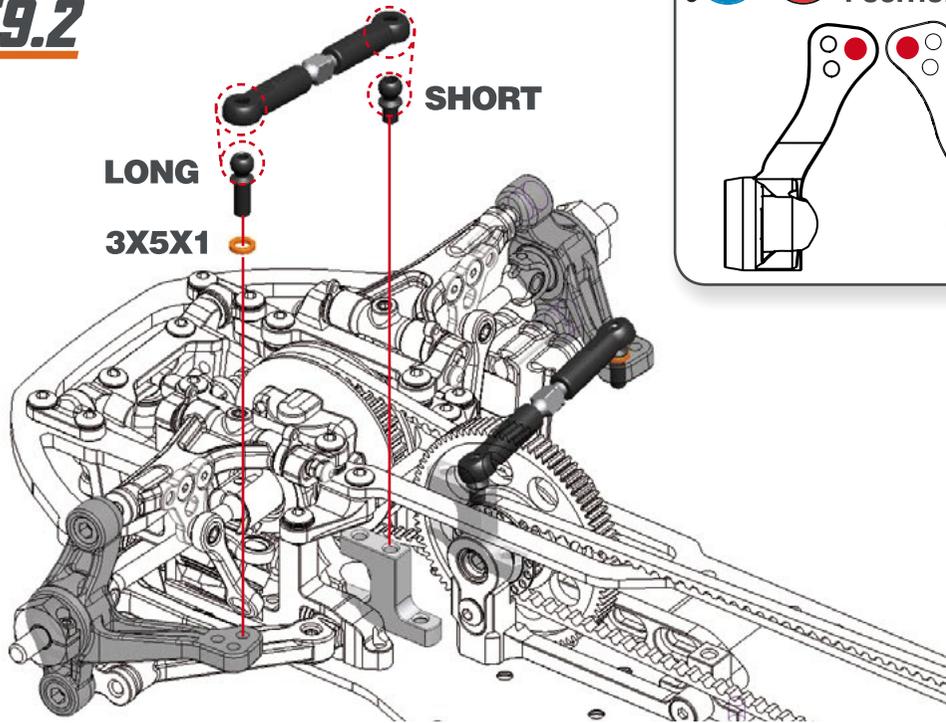
## STEP 59 RRS (ACTIVE RR TOE IN) OPTIONAL

## STEP 60 BAG 14

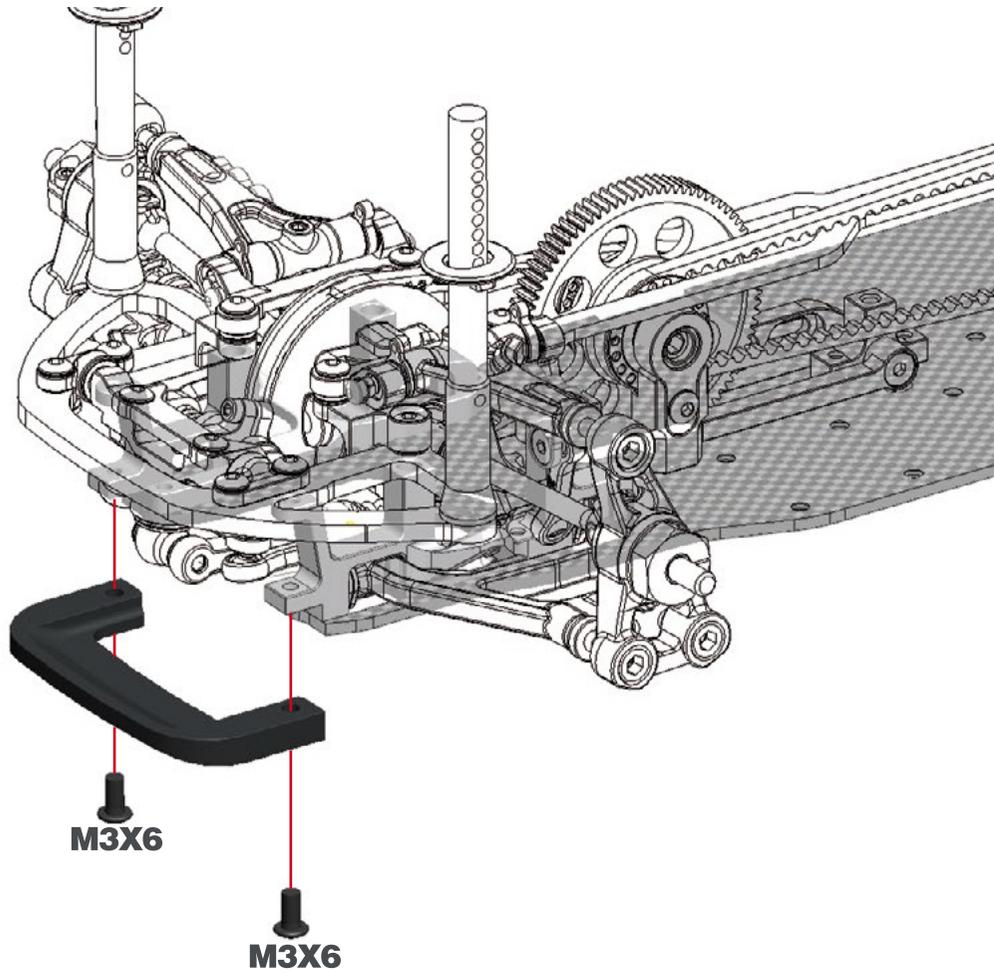
**59.1**



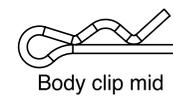
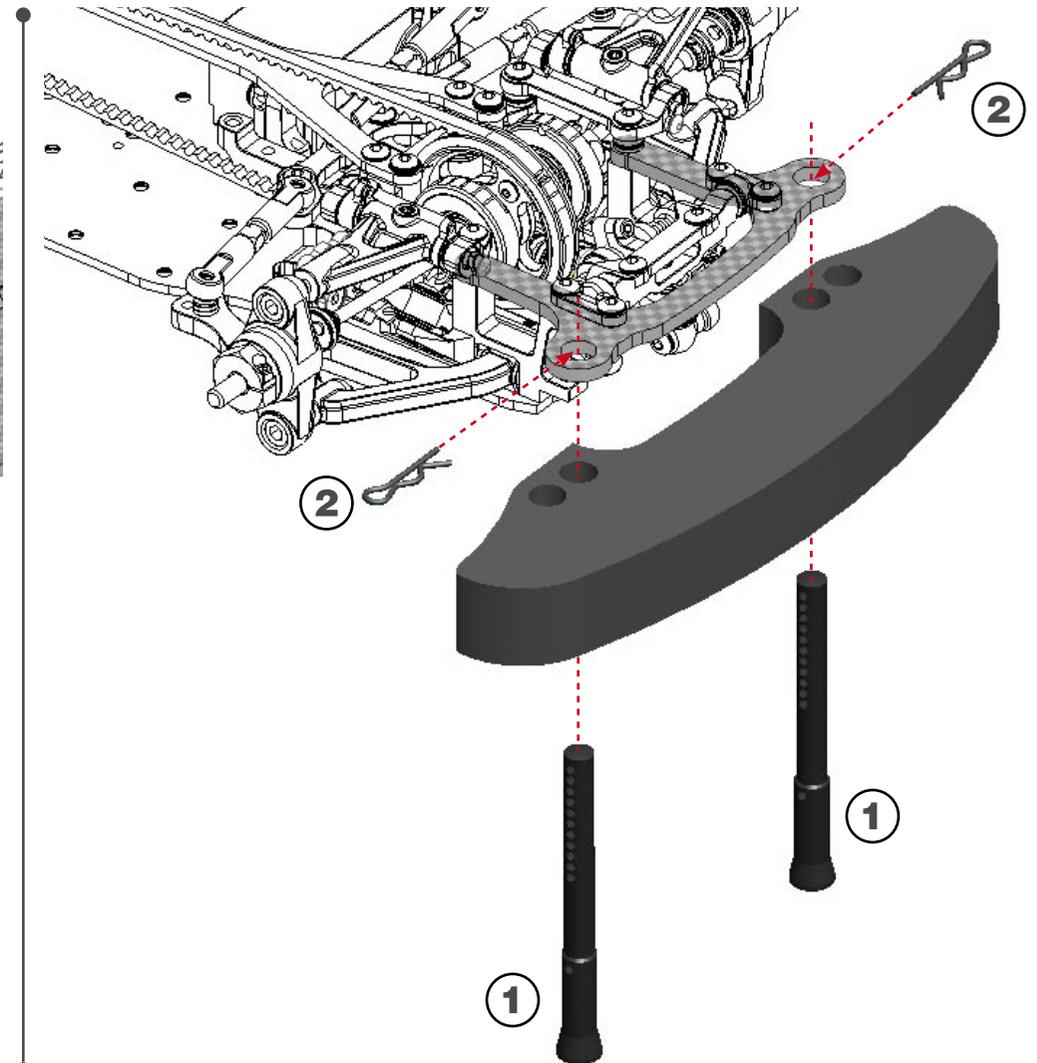
**59.2**



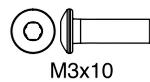
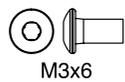
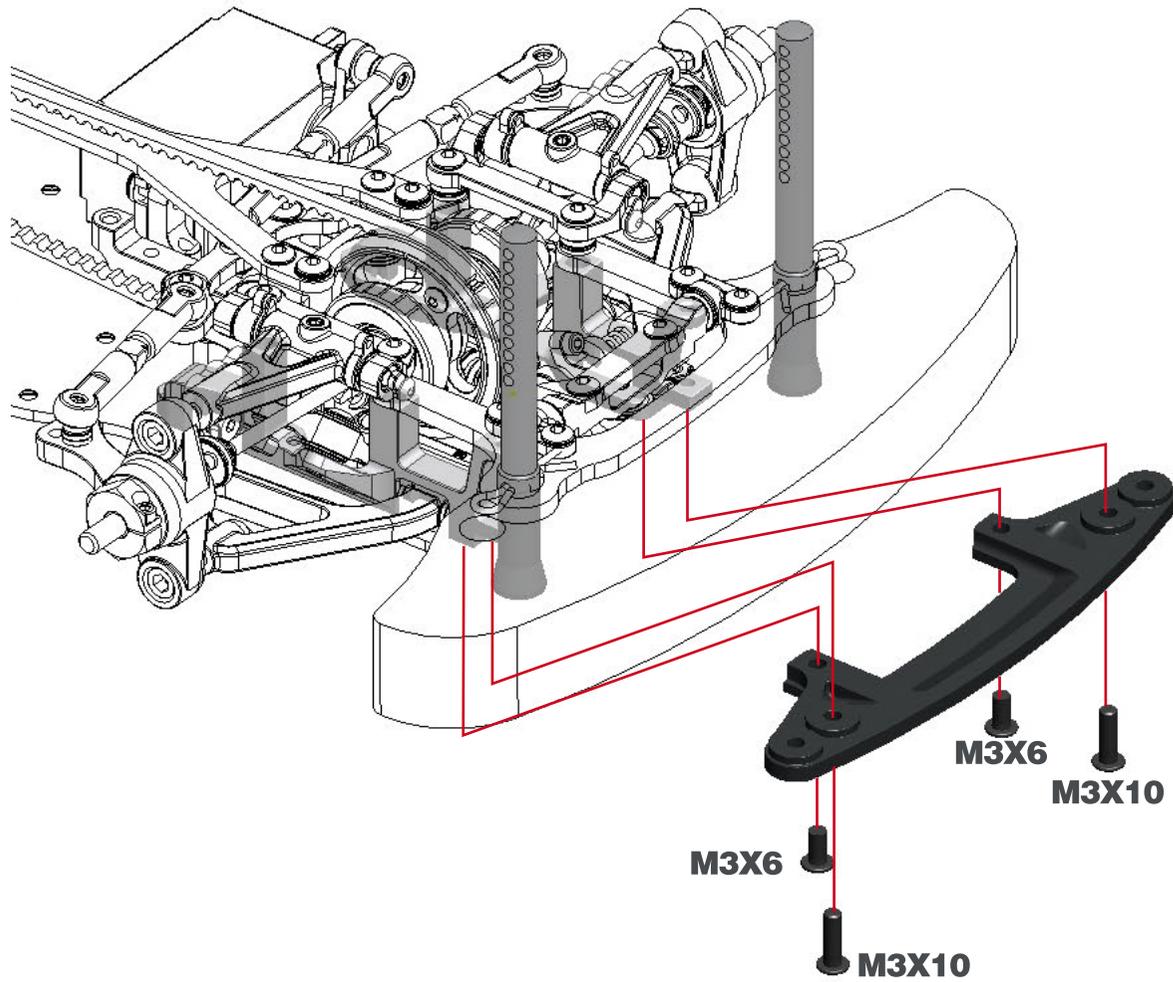
**STEP 61**



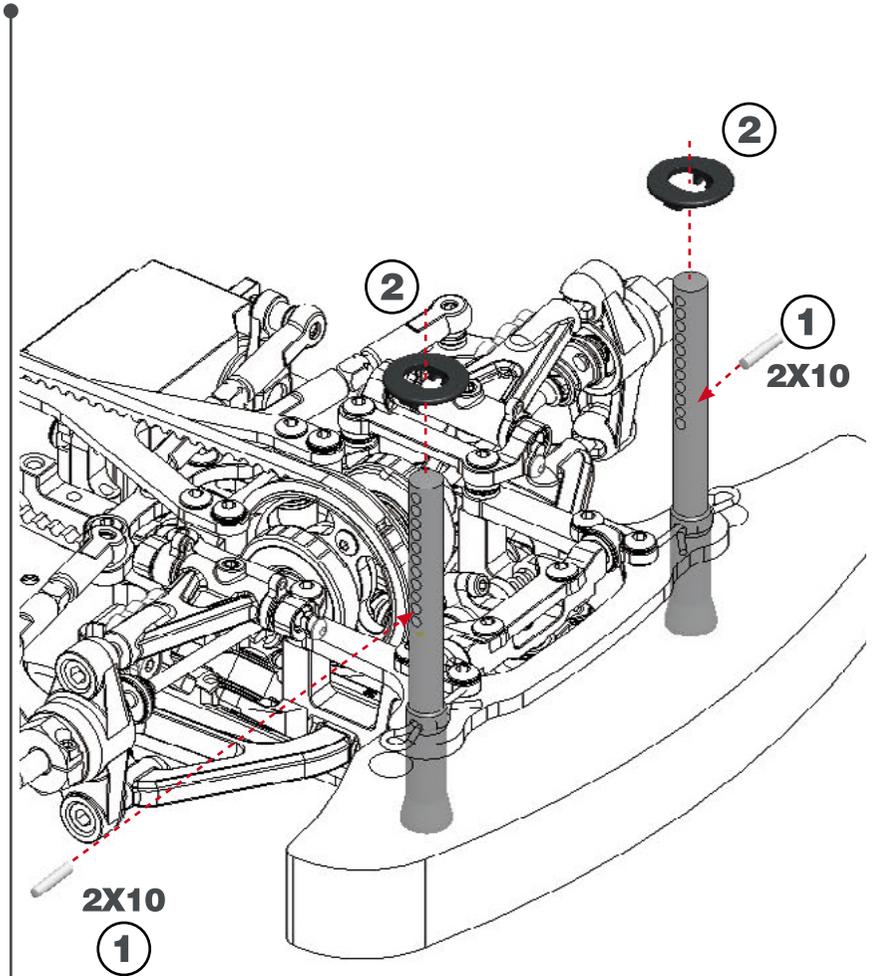
**STEP 62**

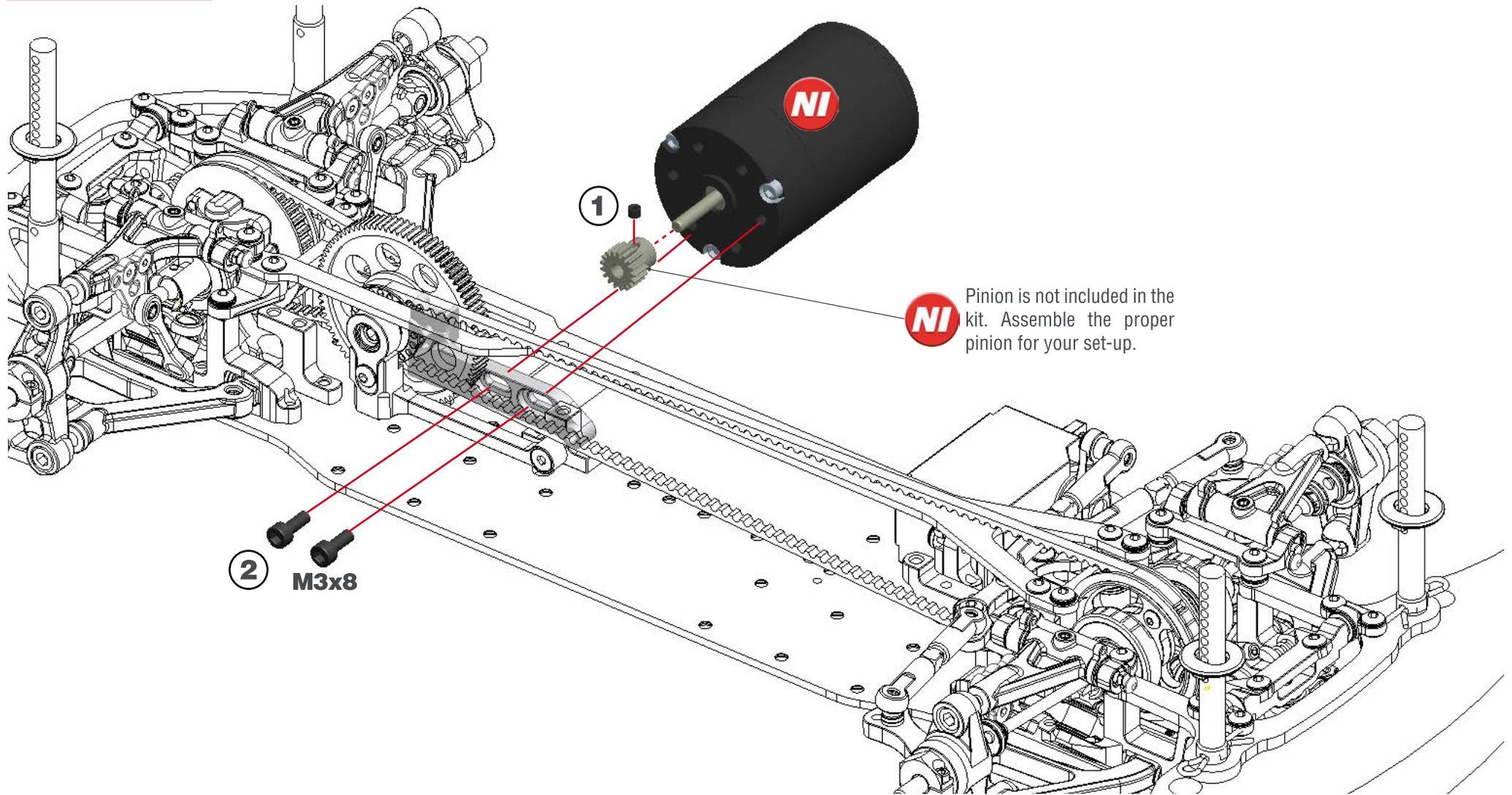


**STEP 63**



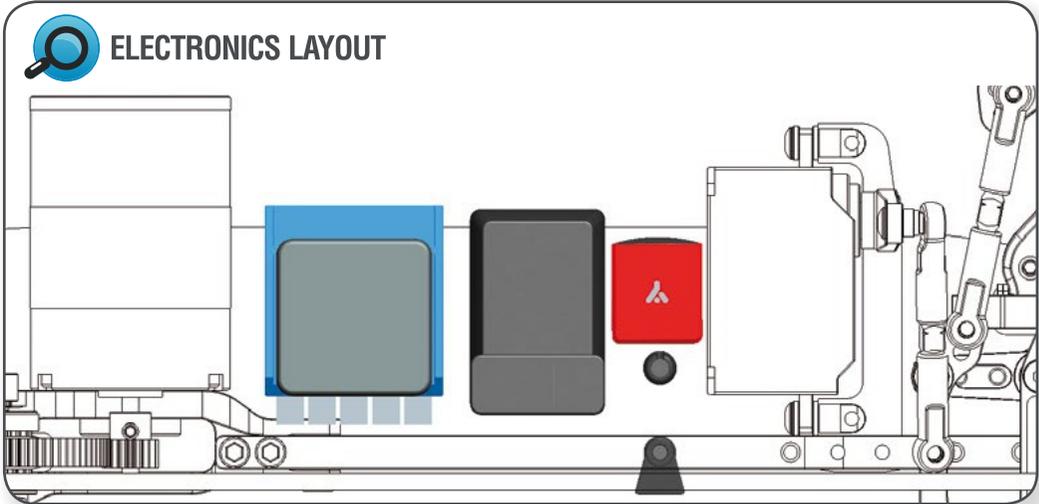
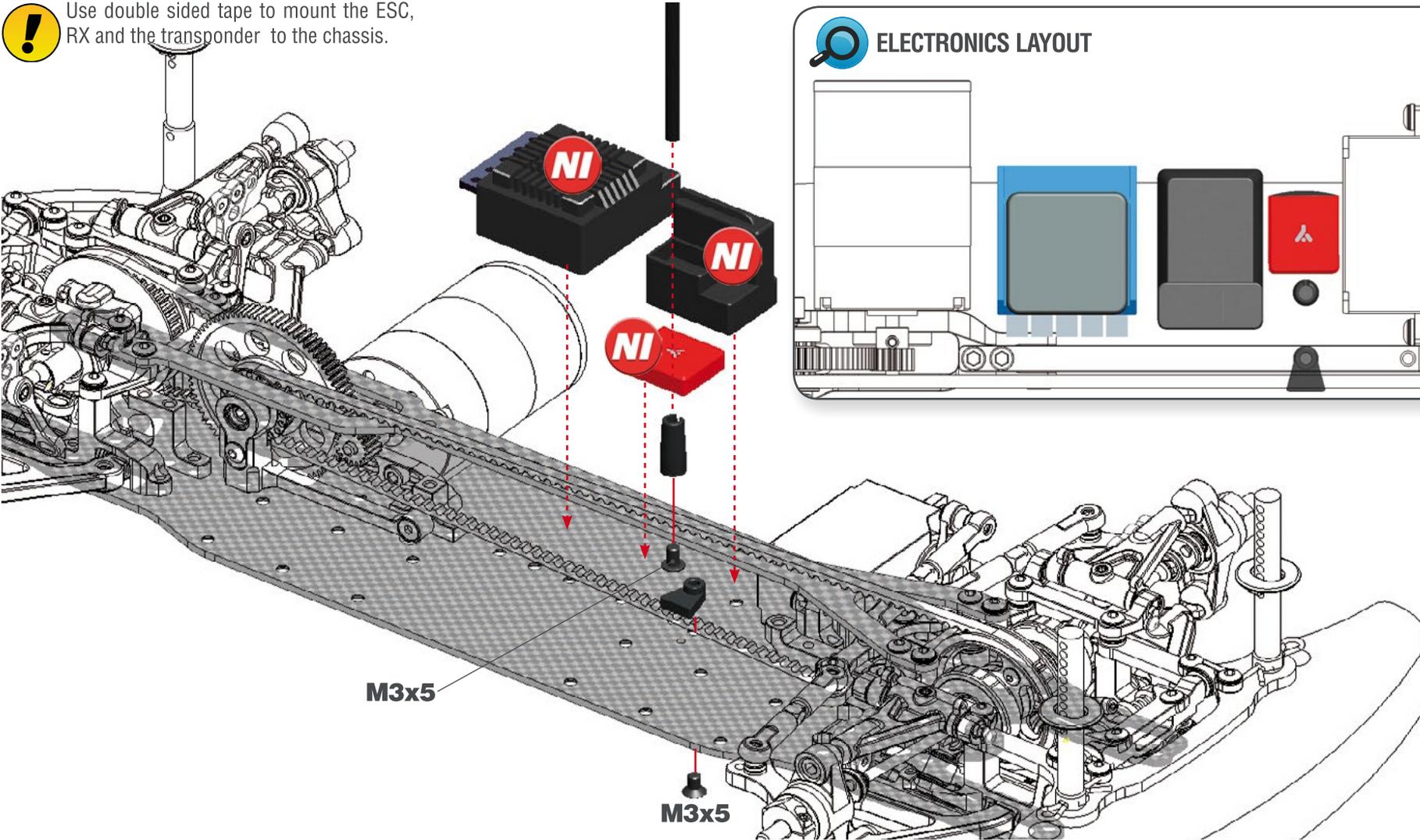
**STEP 64**



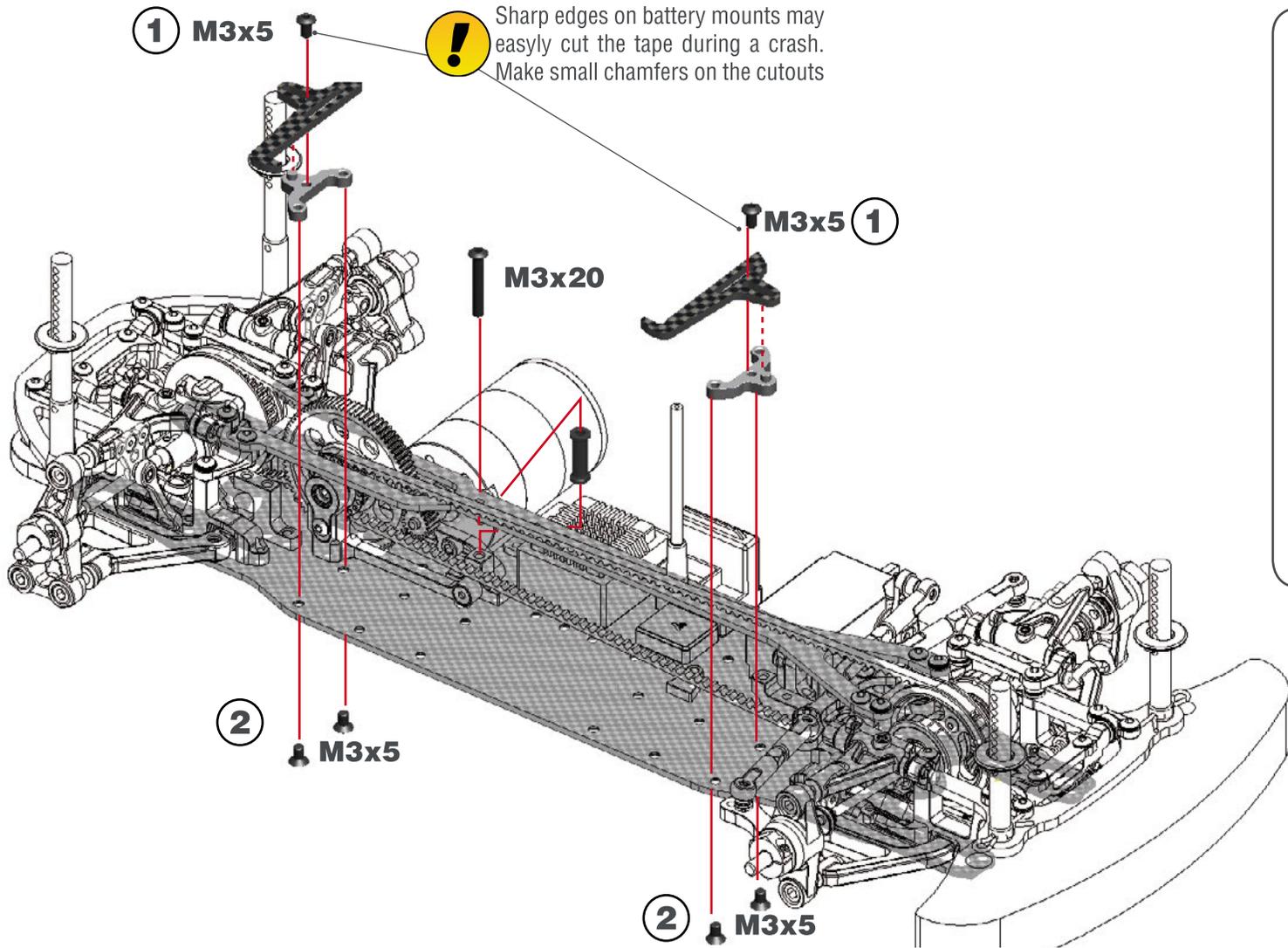
**STEP 65** **BAG 15**

# STEP 66

**!** Use double sided tape to mount the ESC, RX and the transponder to the chassis.



**STEP 67**

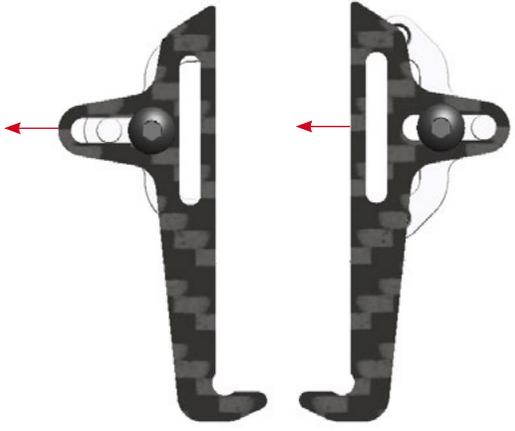
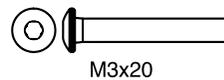
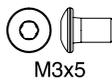


**BATTERY MOUNT POSITION**

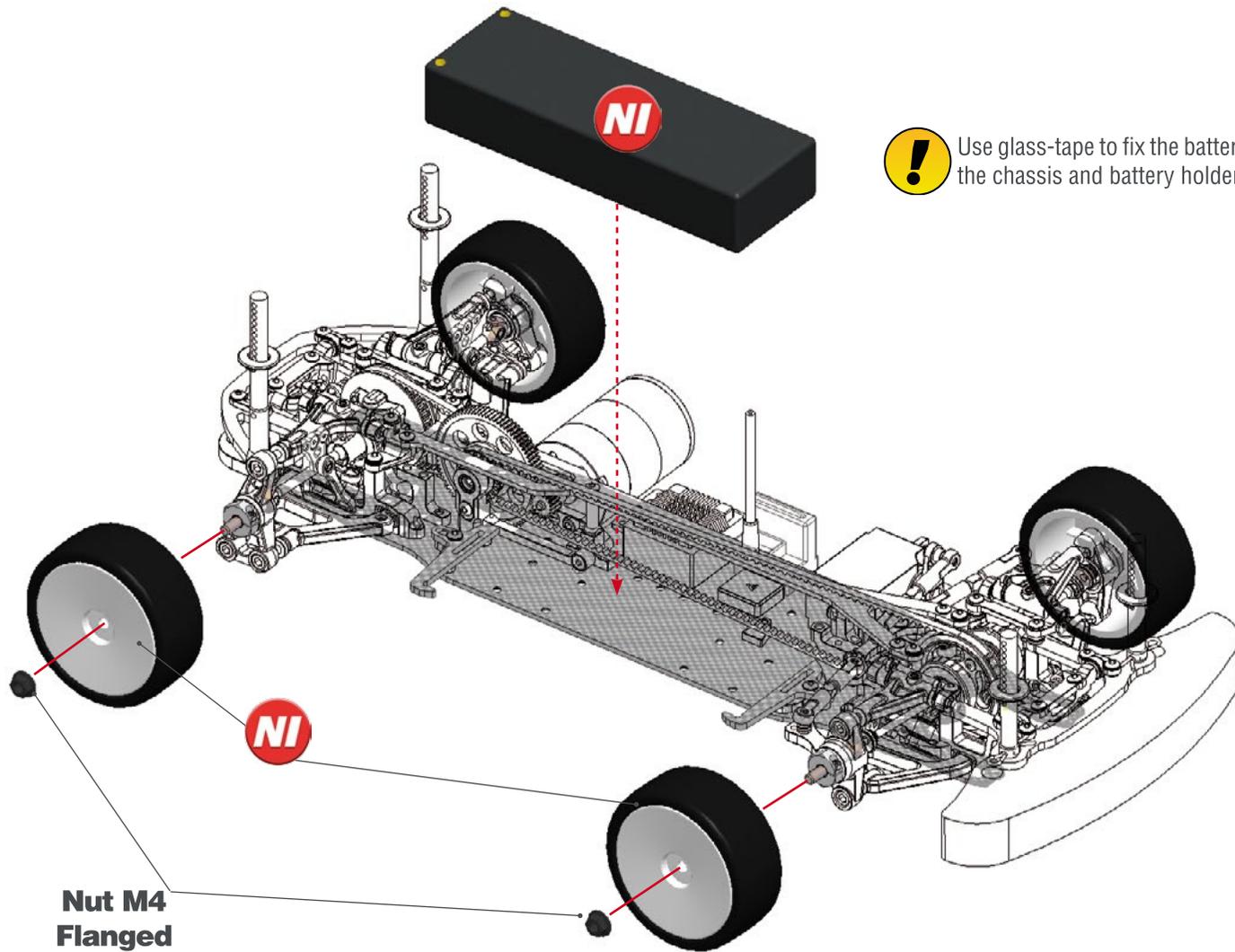
 **DEF. SETUP**

The battery mount can be moved forward or rearward 3mm. Use the battery in the rearward position as default.

**REAR**      **FRONT**

**STEP 58**



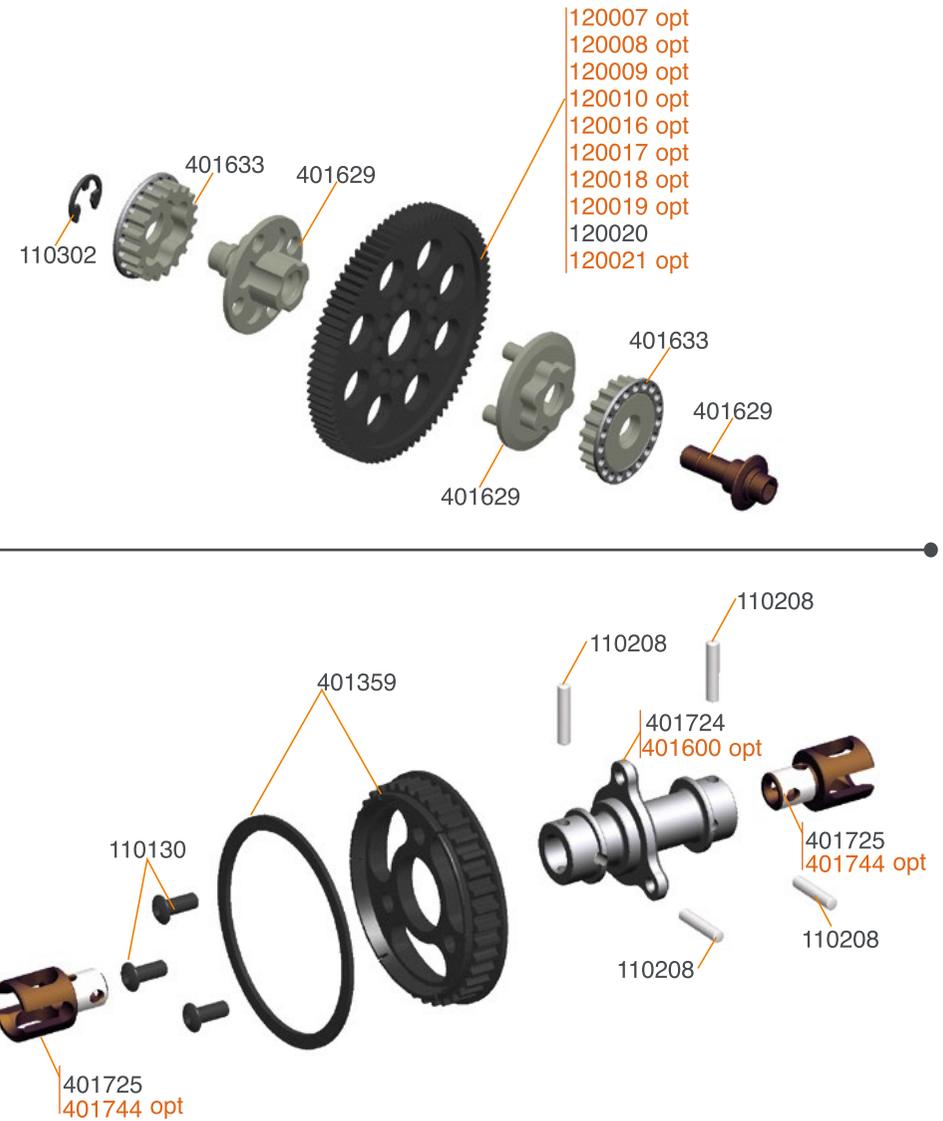
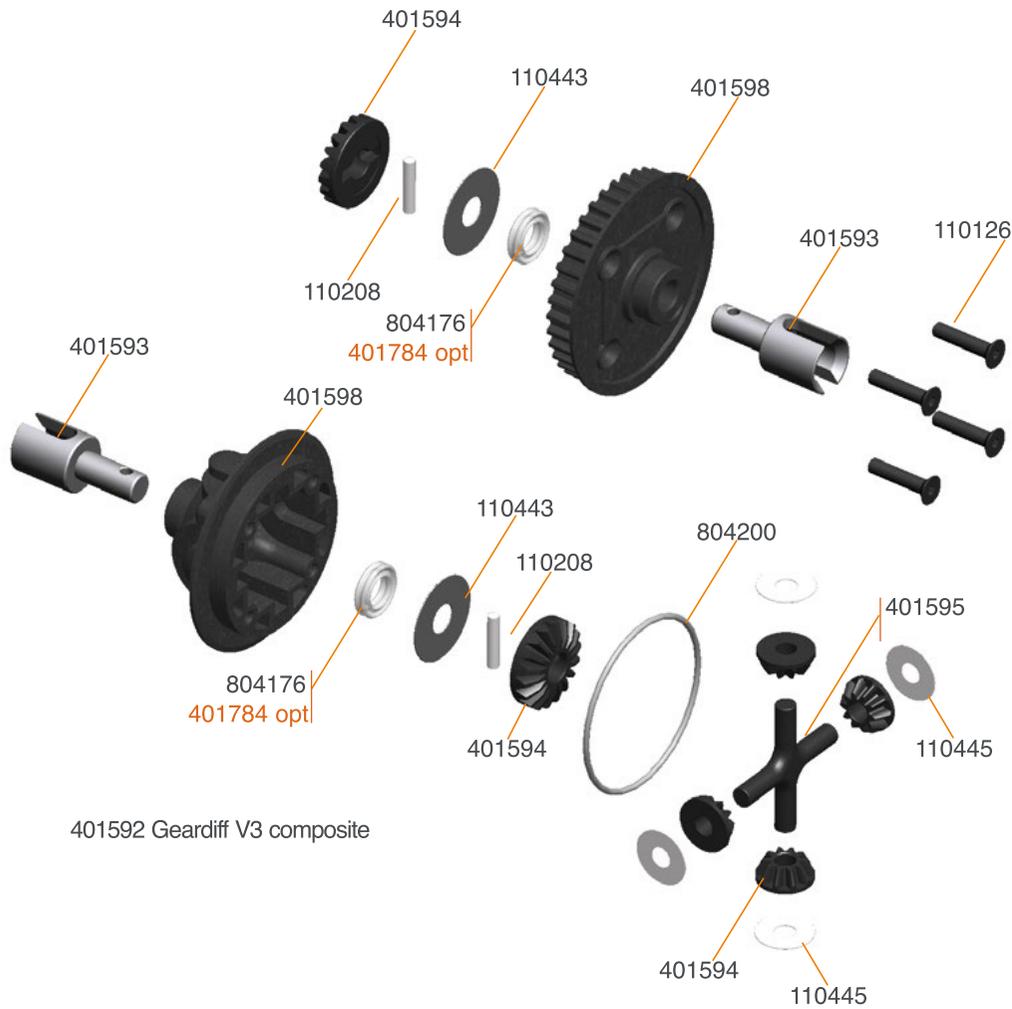
**Nut M4  
Flanged**



Nut M4  
Flanged

## INDEX

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<b><i>FRONT I EXPLODED VIEW</i></b>	<b>45</b>
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- 401409 Blade (16)
- 401592 Geardiff V3 composite
- 401600 Solid axle alu S411 mono for blades
- 401725 Drive adaptor solid axle (2)

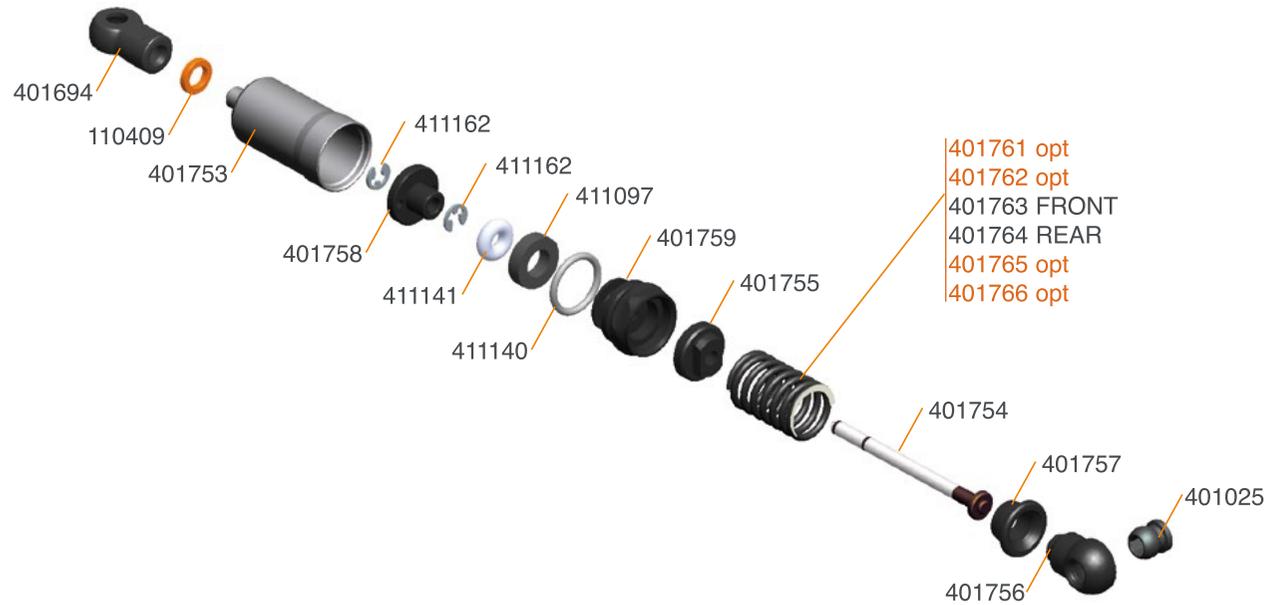
- 401784 Seal 5x9x2 diff (2)
- 120007 Spur-gear Super-True 64P / 100T
- 120008 Spur-gear Super-True 64P / 104T
- 120009 Spur-gear Super-True 64P / 108T

- 120016 Spur-gear Super-True 48P / 72T
- 120017 Spur-gear Super-True 48P / 75T
- 120018 Spur-gear Super-True 48P / 78T
- 120019 Spur-gear Super-True 48P / 81T

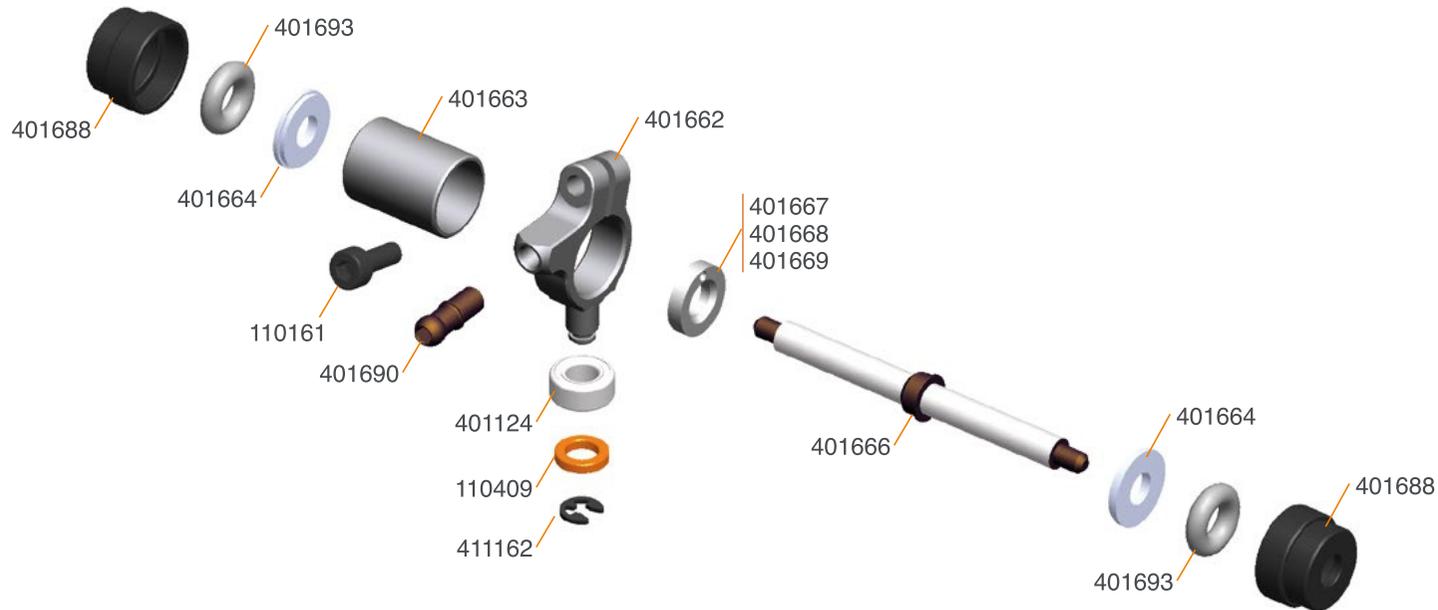
- 120021 Spur-gear Super-True 48P / 87T

# SHOCK AND ROLL DAMPER EXPLODED VIEW

401760 Shock set 4X EVO



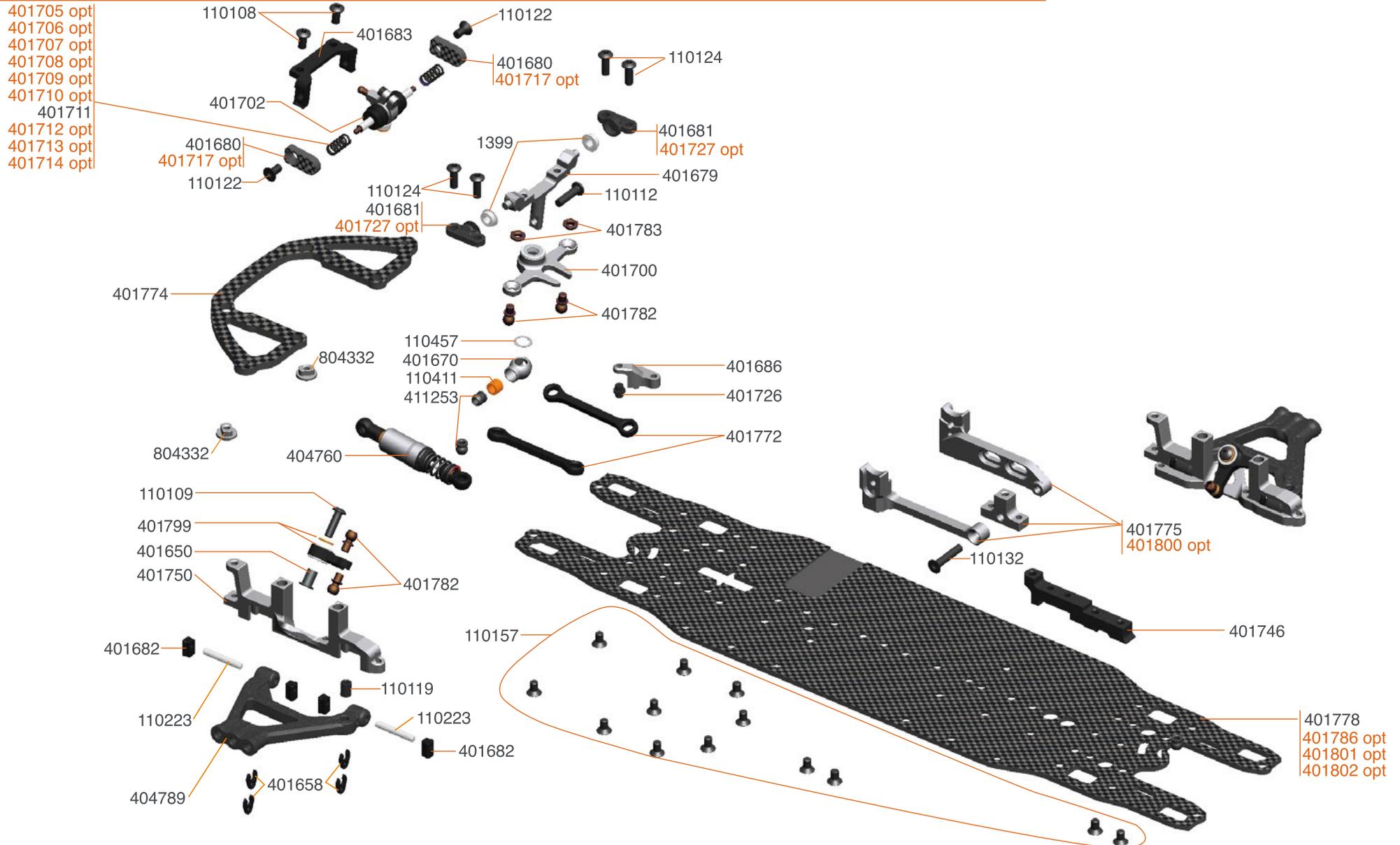
401702 Roll damper 4-X



401761 Shock spring white C=4.6 4X EVO (2)  
 401763 Shock spring orange C=5.6 4X EVO (2)  
 401764 Shock spring pink C=6.3 4X EVO (2)

401766 Shock spring blue C=7.8 4X EVO (2)

# REAR / EXPLODED VIEW



- 401701 Roll damper set 4-X
- 401705 Spring white C4.4 4-X (2)
- 401706 Spring yellow C4.9 4-X (2)
- 401707 Spring orange C5.5 4-X (2)
- 401708 Spring red C6.3 4-X (2)
- 401709 Spring pink C6.9 4-X (2)

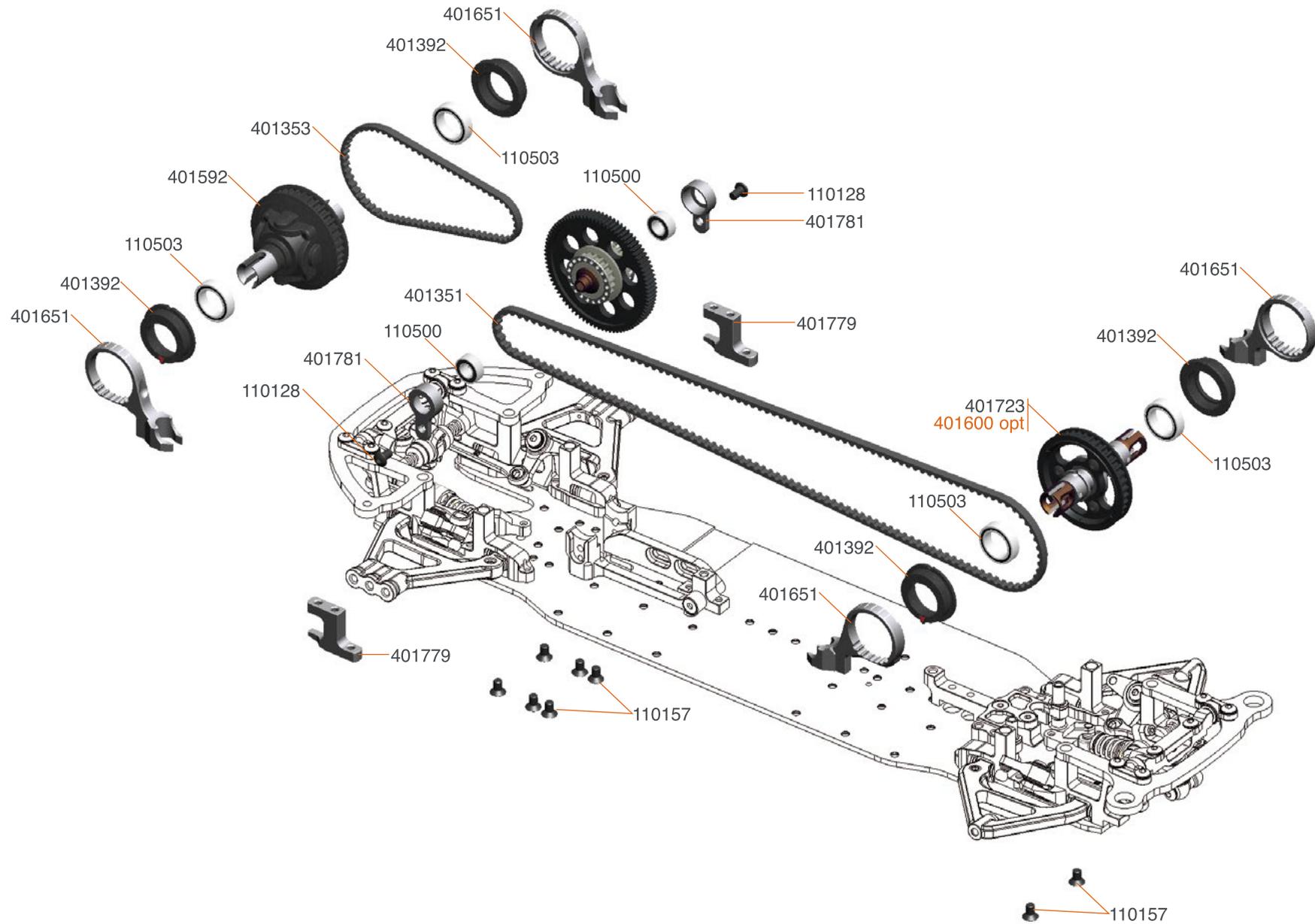
- 401710 Spring blue C7.6 4-X (2)
- 401712 Spring green C9.5 4-X (2)
- 401713 Spring grey C10.9 4-X (2)
- 401714 Spring black C12 4-X (2)
- 401717 Roll damper support -7mm carbon 4-X (2)
- 401727 Bearing holder central rocker alu 4-X (2)

- 401786 Chassis alu 2mm 4X EVO
- 401800 Motormount set 4X PROz
- 401801 Chassis arrowspace magnesium stiff 4X
- 401802 Chassis arrowspace magnesium flex 4X





# TRANSMISSION EXPLODED VIEW

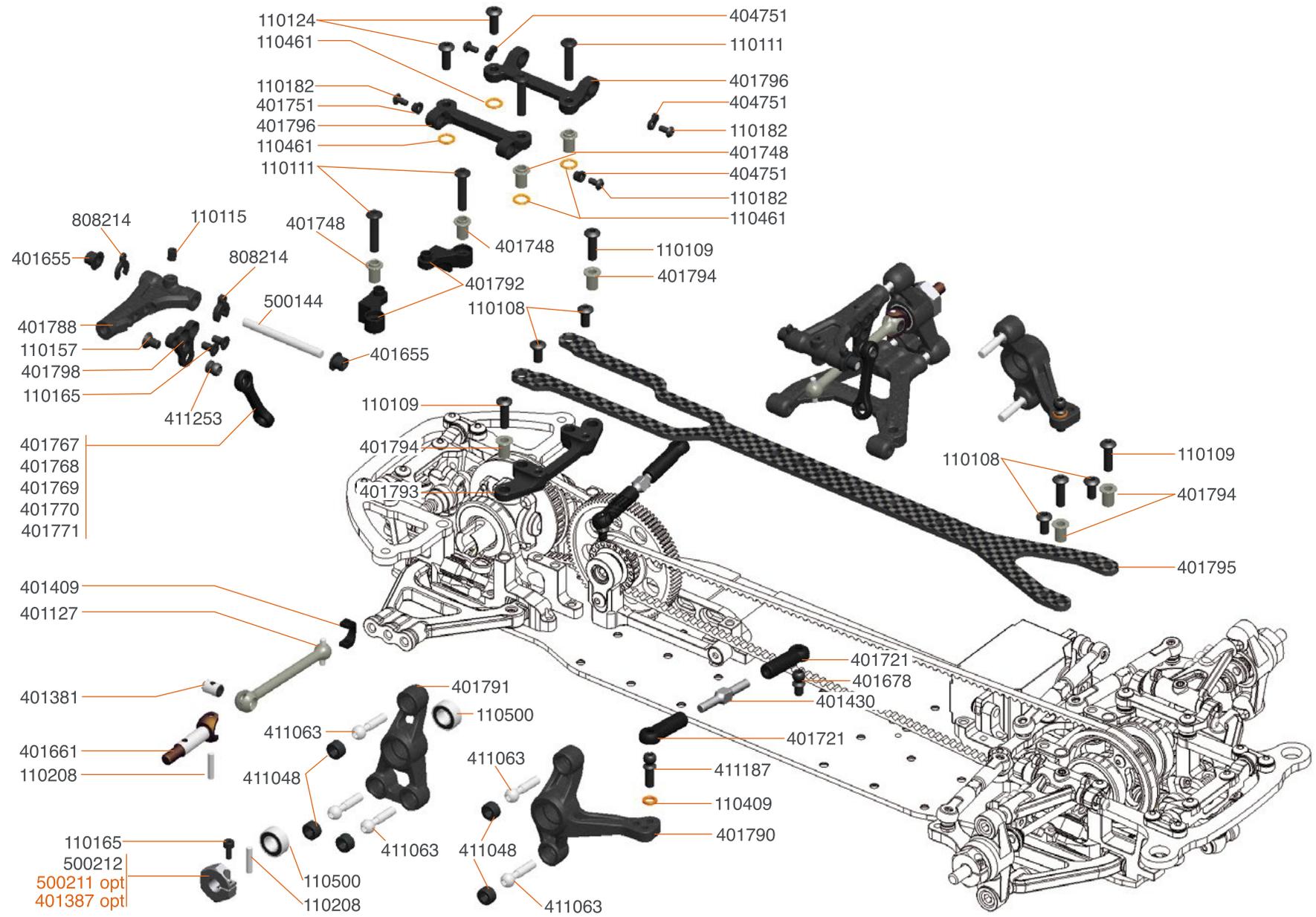


401600 Solid axle alu S411 mono for blades  
401780 RRS holder low alu





# REAR II EXPLODED VIEW



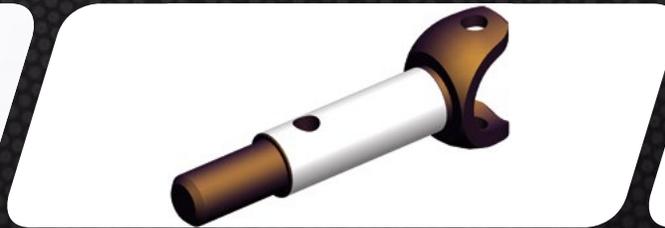
401387 Wheelhexagon 1mm offset (2)  
500211 Wheelhexagon +0.75mm offset (2)



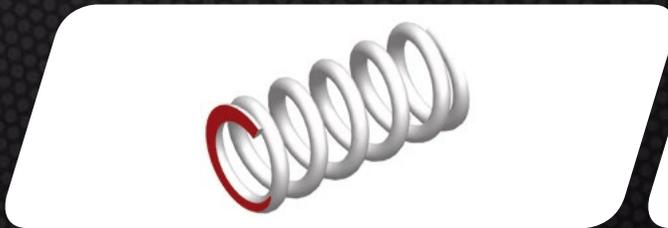


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# Project 4X PRO

1/10 scale electric touring car



98231-1 Manual 4X PRO

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