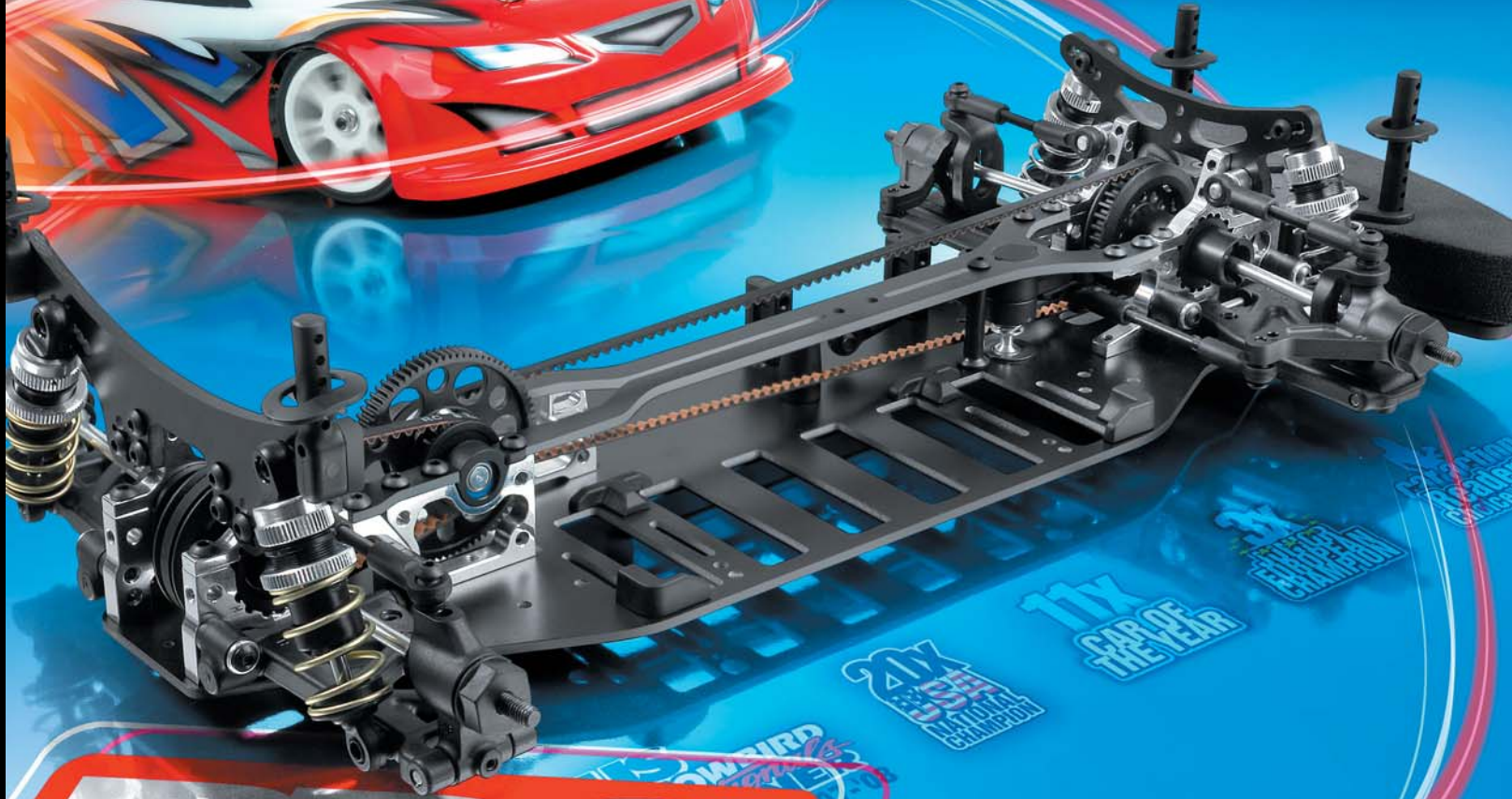


# XRAY T2R

1/10 PREMIUM TOURING CAR



INSTRUCTION  
MANUAL  
T2R



## BEFORE YOU START

The T2R PRO is a high-competition, high-quality, 1/10-scale touring car intended for persons aged 16 years and older with previous experience building and operating RC model racing cars. This is not a toy; it is a precision racing model. This model racing car is not intended for use by beginners, inexperienced customers, or by children without direct supervision of a responsible, knowledgeable adult. If you do not fulfill these requirements, please return the kit in unused and unassembled form back to the shop where you have purchased it.

Before building and operating your T2R PRO, YOU MUST read through all of the operating instructions and instruction manual and fully understand them to get

## CUSTOMER SUPPORT

We have made every effort to make these instructions as easy to understand as possible. However, if you have any difficulties, problems, or questions, please do not hesitate to contact the XRAY support team at [info@teamxray.com](mailto:info@teamxray.com). Also, please visit our Web site at [www.teamxray.com](http://www.teamxray.com) to find the latest updates, set-up information, option parts, and many other goodies. We pride ourselves on taking excellent care of our customers.

You can join thousands of XRAY fans and enthusiasts in our online community at: [www.teamxray.com](http://www.teamxray.com)

the maximum enjoyment and prevent unnecessary damage. Read carefully and fully understand the instructions before beginning assembly.

Make sure you review this entire manual, the included set-up book, and examine all details carefully. If for some reason you decide The T2R PRO is not what you wanted or expected, do not continue any further. Your hobby dealer cannot accept your T2R PRO kit for return or exchange after it has been partially or fully assembled.

Contents of the box may differ from pictures. In line with our policy of continuous product development, the exact specifications of the kit may vary without prior notice.

### XRAY Europe

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Phone: 421-32-7401100  
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### XRAY USA

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Dallas, Texas 75207  
USA  
Phone: (800) 519-7221 \* (214) 744-2400  
Fax: (214) 744-2401  
Email: [xray@rcamerica.com](mailto:xray@rcamerica.com)

**Failure to follow these instructions will be considered as abuse and/or neglect.**

## SAFETY PRECAUTIONS

Contains:

LEAD (CAS 7439-92-1) ANTIMONY (CAS 7440-36-0)

WARNING: This product contains a chemical known to the state of California to cause cancer and birth defects or other reproductive harm.

CAUTION: CANCER HAZARD

Contains lead, a listed carcinogen. Lead is harmful if ingested. Wash thoroughly after using. DO NOT use product while eating, drinking or using tobacco products. May cause chronic effects to gastrointestinal tract, CNS, kidneys, and blood. MAY CAUSE BIRTH DEFECTS.

When building, using and/or operating this model always wear protective glasses and gloves.

Take appropriate safety precautions prior to operating this model. You are responsible for this model's assembly and safe operation! Please read the instruction manual before building and operating this model and follow all safety precautions. Always keep the instruction manual at hand for quick reference, even after completing the assembly. Use only genuine and original authentic XRAY parts for maximum performance. Using any third party parts on this model will void guaranty immediately.

Improper operation may cause personal and/or property damage. XRAY and its distributors have no control over damage resulting from shipping, improper construction, or improper usage. XRAY assumes and accepts no responsibility for personal and/or property damages resulting from the use of improper building materials, equipment and operations. By purchasing any item produced by XRAY, the buyer expressly warrants that he/she is in compliance with all applicable federal, state and local laws and regulation regarding the purchase, ownership and use of the item. The buyer expressly agrees to indemnify and hold harmless XRAY for all claims resulting directly or indirectly from the purchase, ownership or use of the product. By the act of assembling or operating this product, the user accepts all resulting liability. If the buyer is not prepared to accept this liability, then he/she should return this kit in new, unassembled, and unused condition to the place of purchase.

## IMPORTANT NOTES - GENERAL

- This product is not suitable for children under 16 years of age without the direct supervision of a responsible and knowledgeable adult.
- Carefully read all manufacturers warnings and cautions for any parts used in the construction and use of your model.
- Assemble this kit only in places away from the reach of very small children.
- First-time builders and users should seek advice from people who have building experience in order to assemble the model correctly and to allow the model to reach its performance potential.
- Exercise care when using tools and sharp instruments.
- Take care when building, as some parts may have sharp edges.
- Keep small parts out of reach of small children. Children must not be allowed to put any parts in their mouth, or pull vinyl bag over their head.
- Read and follow instructions supplied with paints and/or cement, if used (not included in kit).
- Immediately after using your model, do NOT touch equipment on the model such as the motor and speed controller, because they generate high temperatures. You may seriously burn yourself seriously touching them.
- Follow the operating instructions for the radio equipment at all times.
- Do not put fingers or any objects inside rotating and moving parts, as this may cause damage or serious injury as your finger, hair, clothes, etc. may get caught.
- Be sure that your operating frequency is clear before turning on or running your model, and never share the same frequency with somebody else at the same time. Ensure that others are aware of the operating frequency you are using and when you are using it.
- Use a transmitter designed for ground use with RC cars. Make sure that no one else is using the same frequency as yours in your operating area. Using the same frequency at the same time, whether it is driving, flying or sailing, can cause loss of control of the RC model, resulting in a serious accident.
- Always turn on your transmitter before you turn on the receiver in the car. Always turn off the receiver before turning your transmitter off.
- Keep the wheels of the model off the ground when checking the operation of the radio equipment.
- Disconnect the battery pack before storing your model.
- When learning to operate your model, go to an area that has no obstacles that can damage your model if your model suffers a collision.
- Remove any sand, mud, dirt, grass or water before putting your model away.
- If the model behaves strangely, immediately stop the model, check and clear the problem.
- To prevent any serious personal injury and/or damage to property, be responsible when operating all remote controlled models.
- The model car is not intended for use on public places and roads or areas where its operation can conflict with or disrupt pedestrian or vehicular traffic.
- Because the model car is controlled by radio, it is subject to radio interference from many sources that are beyond your control. Since radio interference can cause momentary loss of control, always allow a safety margin in all directions around the model in order to prevent collisions.
- Do not use your model:
  - Near real cars, animals, or people that are unaware that an RC car is being driven.
  - In places where children and people gather
  - In residential districts and parks
  - In limited indoor spaces
  - In wet conditions
  - In the street
  - In areas where loud noises can disturb others, such as hospitals and residential areas.
  - At night or anytime your line of sight to the model may be obstructed or impaired in any way.

To prevent any serious personal injury and/or damage to property, please be responsible when operating all remote controlled models.

**XRAY**



## **IMPORTANT NOTES - ELECTRICAL**

- Insulate any exposed electrical wiring (using heat shrink tubing or electrical tape) to prevent dangerous short circuits. Take maximum care in wiring, connecting and insulating cables. Make sure cables are always connected securely. Check connectors for if they become loose. And if so, reconnect them securely. Never use R/C models with damaged wires. A damaged wire is extremely dangerous, and can cause short-circuits resulting in fire. Please have wires repaired at your local hobby shop.
- Low battery power will result in loss of control. Loss of control can occur due to a weak battery in either the transmitter or the receiver. Weak running battery may also result in an out of control car if your car's receiver power is supplied by the running battery. Stop operation immediately if the car starts to slow down.
- When not using RC model, always disconnect and remove battery.
- Do not disassemble battery or cut battery cables. If the running battery short-circuits, approximately 300W of electricity can be discharged, leading to fire or burns. Never disassemble battery or cut battery cables.
- Use a recommended charger for the receiver and transmitter batteries and follow the instructions correctly. Over-charging, incorrect charging, or using inferior chargers can cause the batteries to become dangerously hot.

Recharge battery when necessary. Continual recharging may damage battery and, in the worst case, could build up heat leading to fire. If battery becomes extremely hot during recharging, please ask your local hobby shop for check and/or repair and/or replacement.

- Regularly check the charger for potential hazards such as damage to the cable, plug, casing or other defects. Ensure that any damage is rectified before using the charger again. Modifying the charger may cause short-circuit or overcharging leading to a serious accident. Therefore do not modify the charger.
- Always unplug charger when recharging is finished.
- Do not recharge battery while battery is still warm. After use, battery retains heat. Wait until it cools down before charging.
- Do not allow any metal part to short circuit the receiver batteries or other electrical/electronic device on the model.
- Immediately stop running if your RC model gets wet as may cause short circuit.
- Please dispose of batteries responsibly. Never put batteries into fire.

## **R/C & BUILDING TIPS**

- Make sure all fasteners are properly tightened. Check them periodically.
- Make sure that chassis screws do not protrude from the chassis.
- For the best performance, it is very important that great care is taken to ensure the free movement of all parts.
- Clean all ball-bearings so they move very easily and freely.
- Tap or pre-thread the plastic parts when threading screws.
- Self-tapping screws cut threads into the parts when being tightened. Do not use excessive force when tightening the self-tapping screws because you may strip out the thread in the plastic. We recommended you stop tightening a screw when you feel some resistance.
- Ask your local hobby shop for any advice.

Please support your local hobby shop. We at XRAY Model Racing Cars support all local hobby dealers. Therefore we ask you, if at all possible, to purchase XRAY products at your hobby dealer and give them your support like we do. If you have difficulty finding XRAY products, please check out [www.teamxray.com](http://www.teamxray.com) to get advice, or contact us via email at [info@teamxray.com](mailto:info@teamxray.com), or contact the XRAY distributor in your country.

## **WARRANTY**

XRAY guarantees this model kit to be free from defects in both material and workmanship within 30 days of purchase. The total monetary value under warranty will in no case exceed the cost of the original kit purchased. This warranty does not cover any components damaged by use or modification or as a result of wear. Part or parts missing from this kit must be reported within 30 days of purchase. No part or parts will be sent under warranty without proof of purchase. Should you find a defective or missing part, contact the local distributor. Service and customer support will be provided through local hobby store where you have purchased the kit, therefore make sure to purchase any XRAY products at your local hobby store. This model racing car is considered to be a high-performance racing vehicle. As such this vehicle will be used in an extreme range of conditions and situations, all which may cause premature wear or failure of any component. XRAY has no control over usage of vehicles once they leave the dealer, therefore XRAY can only offer warranty against all manufacturer's defects in materials, workmanship, and assembly at point of sale and before use. No warranties are expressed or implied that cover damage caused by what is considered normal use, or cover or imply how long any model cars' components or electronic components will last before requiring replacement.

Due to the high performance level of this model car you will need to periodically maintain and replace consumable components. Any and all warranty coverage will not cover replacement of any part or component damaged by neglect, abuse, or improper or unreasonable use. This includes but is not limited to

damage from crashing, chemical and/or water damage, excessive moisture, improper or no maintenance, or user modifications which compromise the integrity of components. Warranty will not cover components that are considered consumable on RC vehicles. XRAY does not pay nor refund shipping on any component sent to XRAY or its distributors for warranty. XRAY reserves the right to make the final determination of the warranty status of any component or part.

### **Limitations of Liability**

XRAY makes no other warranties expressed or implied. XRAY shall not be liable for any loss, injury or damages, whether direct, indirect, special, incidental, or consequential, arising from the use, misuse, or abuse of this product and/or any product or accessory required to operate this product. In no case shall XRAY's liability exceed the monetary value of this product.

**Take adequate safety precautions prior to operating this model. You are responsible for this model's assembly and safe operation.**

**Disregard of the any of the above cautions may lead to accidents, personal injury, or property damage. XRAY MODEL RACING CARS assumes no responsibility for any injury, damage, or misuse of this product during assembly or operation, nor any additions that may arise from the use of this product.**

**All rights reserved.**

## **QUALITY CERTIFICATE**

XRAY MODEL RACING CARS uses only the highest quality materials, the best compounds for molded parts and the most sophisticated manufacturing processes of TQM (Total Quality Management). We guarantee that all parts of a newly-purchased kit are manufactured with the highest regard to quality. However, due to the many factors inherent in model racecar competition, we cannot guarantee

any parts once you start racing the car. Products which have been worn out, abused, neglected or improperly operated will not be covered under warranty. We wish you enjoyment of this high-quality and high-performance RC car and wish you best success on the track!

**In line with our policy of continuous product development, the exact specifications of the kit may vary. In the unlikely event of any problems with your new kit, you should contact the model shop where you purchased it, quoting the part number.**

**We do reserve all rights to change any specification without prior notice. All rights reserved.**

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SYMBOLS USED

Part bags used

Assemble in the specified order

Assemble left and right sides the same way

Pay attention here

Assemble as many times as specified (here twice)

Apply thread lock

Apply CA glue

Apply oil

Apply grease

Use pliers

Ensure smooth non-binding movement

Tighten screw gently

CORRECT

WRONG

Follow Set-Up Book

TOOLS REQUIRED

HUDY TOOLS: Allen: 1.5mm, 2.0mm, 3.0mm  
Socket: 7.0mm

Pliers

Scissors

Side Cutters

Hobby Knife

Reamer  
(HUDY #107600)

EQUIPMENT INCLUDED

XRAY Premium Silicone Oil 350cSt (#359235)

Diff. Grease (HUDY #106211)

EQUIPMENT REQUIRED

Transmitter

Receiver

Steering Servo

Electric Motor & Pinion Gear and Setscrew

Bearing Oil (HUDY #106230)

Speed Controller

190mm Bodysheet & Lexan Paint

5-cell or 6-cell Battery Pack (Inline)

Battery Charger

Graphite Grease (HUDY #106210)

Fibre Tape (HUDY #107870)

Wheels & Tires & Inserts

## 0. KIT (FACTORY PRE-ASSEMBLED)

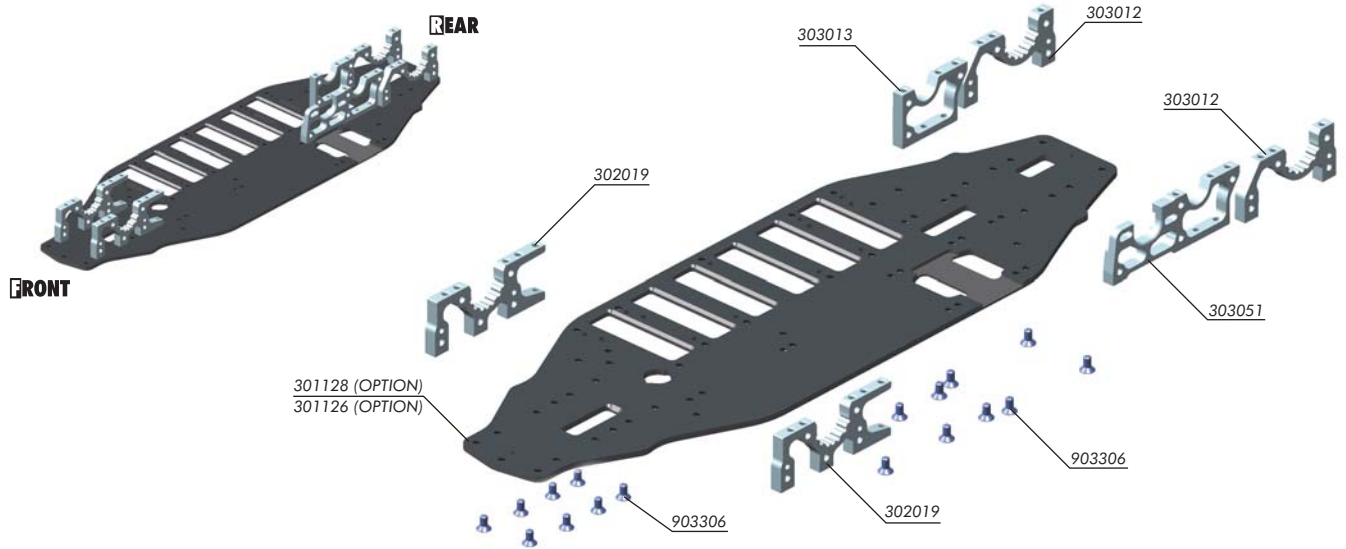
At the beginning of each section is an exploded view of the parts to be assembled. There is also a list of all the parts and part numbers that are related to the assembly of that section.

The part descriptions are color-coded to make it easier for you to identify the source of a part. Here are what the different colors mean:

**STYLE A** - indicates parts that are included in the bag marked for the section.

**STYLE B** - indicates parts that were set aside in Section 0.

**STYLE C** - indicates parts that are already assembled from previous steps.

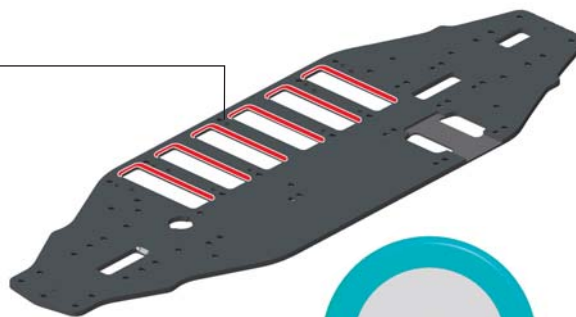
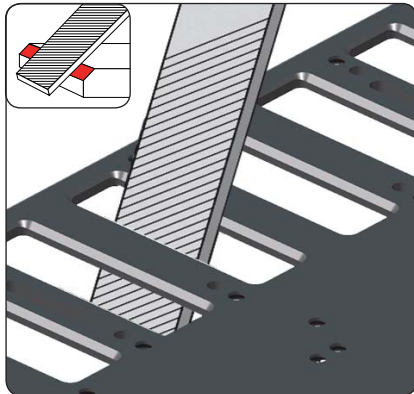


**KIT**

30 1126 CHASSIS 3.5MM GRAPHITE - 6-CELL - FOAM-SPEC (OPTION)  
 30 1128 CHASSIS 2.5MM GRAPHITE - 6-CELL - RUBBER-SPEC (OPTION)  
 30 2019 ALU FRONT LOWER SUSP. ADJUST. BULKHEAD  
 30 3012 ALU REAR LOWER SUSP. ADJUST. BULKHEAD

30 3013 RIGHT ALU LAYSHAFT BULKHEAD  
 30 3051 MOTOR MOUNT BULKHEAD  
 90 3306 HEX SCREW SFH M3x6 (10)

The XRAY T2R PRO comes partially pre-assembled. Before starting assembly, disassemble the chassis parts, noting the position and orientation of the parts, particularly the bulkheads. Keep the parts, including the screw hardware, close at hand. In the assembly steps that follow, each section begins with a parts list. Parts indicated with **STYLE B** are from the previously disassembled chassis parts in section 0.



Lightly file edges of battery slots to remove sharp edges. Please note that the optional US Foam-Spec 3.5mm Extra-Thick Chassis requires the battery slots to be filed more than the standard 2.5mm thick chassis.

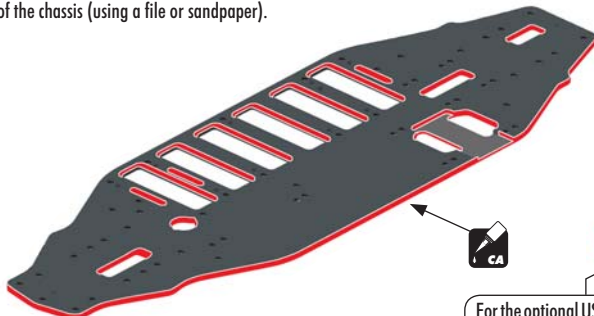
Do not file battery slots too much, or batteries may protrude below the chassis bottom.



To protect and seal edges of graphite parts, sand edges smooth and then apply CA glue.

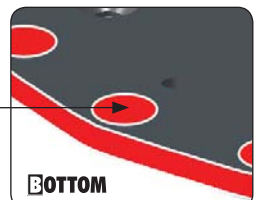
Do this for: chassis edges; filed battery slots, countersunk holes for front bumper screws.

For the optional US extra-thick chassis, we recommend rounding the bottom forward edge of the chassis (using a file or sandpaper).



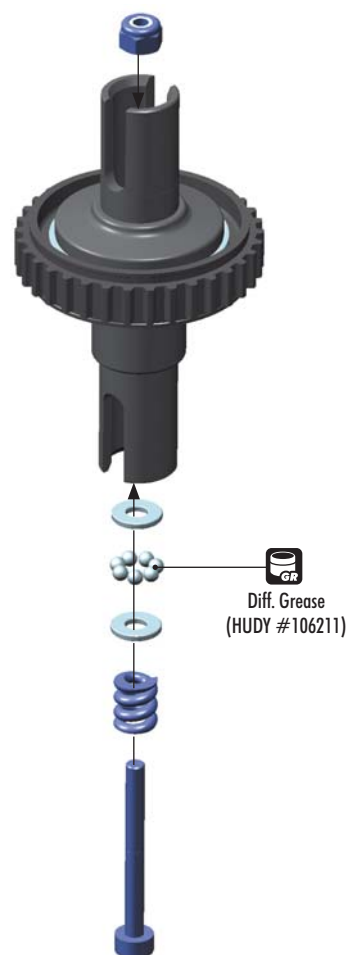
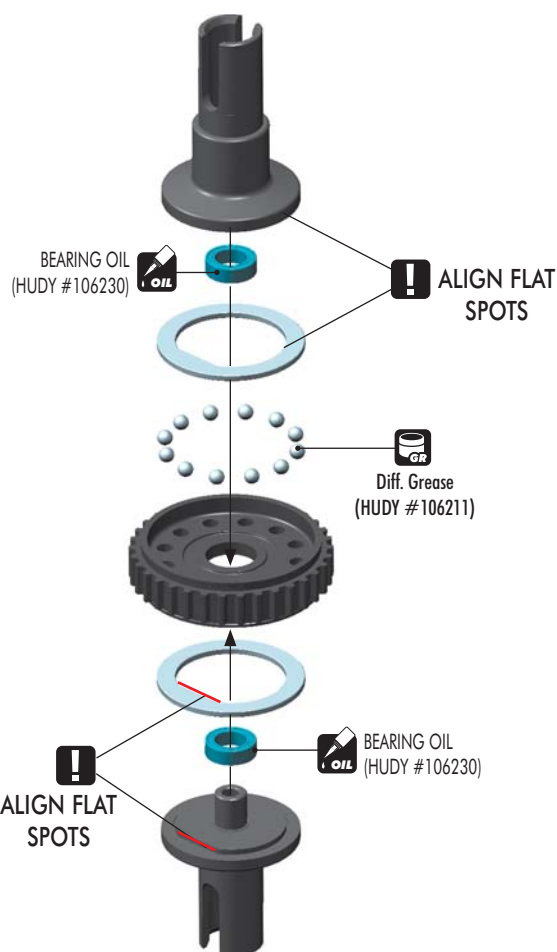
For the optional US extra-thick chassis, we recommend rounding the bottom forward edge of the chassis (using a file or sandpaper).

Apply only a bit of CA glue on the countersunk holes



[illegible]

30 5003	ALU BALL DIFFERENTIAL 34T+38T PULLEY - SET (OPTION)	30 5188	COMPOSITE SOLID AXLE 38T - SET (OPTION)
30 5006	T2R PRO COMPOSITE BALL DIFFERENTIAL (2)		
30 5018	T2R PRO COMPOSITE DIFF OUTPUT SHAFTS (2)	90 2310	HEX SCREW SH M3x10 (10)
30 5052	COMPOSITE DIFF PULLEY 34T WITH COVERS	90 8275	HEX SCREW SOCKET HEAD CAP M2.5x25 (10)
30 5083	D-LOCK DIFF WASHER - D 17 x 23 x 1 (2)	93 0120	CARBIDE BALL 2.4 MM (12)
30 5104	XRAY MULTI-DIFF™ (OPTION)	93 0128	CARBIDE BALL-BEARING AXIAL 2.8x6.5x0.8
30 5135	COMPOSITE SOLID AXLE DRIVESHAFT ADAPTERS (2)	93 0508	BALL-BEARING MR8SZ 5x8x2.5 (2)
30 5136	ALU SOLID AXLE DRIVESHAFT ADAPTERS (2) (OPTION)	94 1015	HIGH-SPEED BALL-BEARING 10x15x4 RUBBER SEALED (2)
30 5184	COMPOSITE SOLID AXLE 34T - SET	96 0025	UNT M2.5 (10)



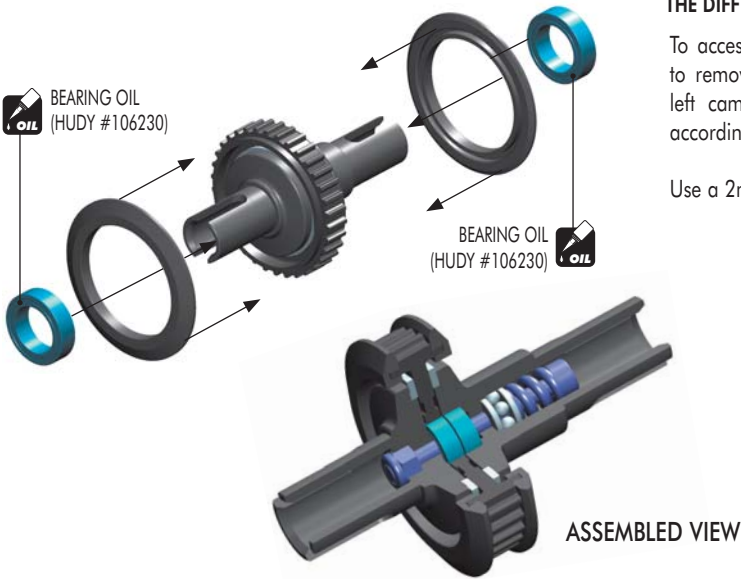


COMPOSITE BALL DIFF. & FRONT SOLID AXLE



941015  
BB 10x15x4

**IMPORTANT:** When you build the differential, do not tighten it fully initially; the differential needs to be broken in properly. When you build the diff tighten it very gently. When you put the diff in the car and complete the assembly, run the car for a few minutes, tighten the diff a little bit, and then recheck the diff. Repeat this process several times until you have the diff tightened to the point you want it. Final adjustments should ALWAYS be made with the diff in the car and on the track.



**DO NOT TIGHTEN THE DIFF COMPLETELY  
THE DIFF MUST BE BROKEN IN PROPERLY!**

To access the diff when it is installed in the car, you need to remove the front right camber linkage and/or the rear left camber linkage to detach the front/rear suspension accordingly.

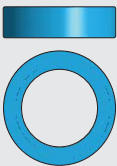
Use a 2mm hex wrench to adjust the diff.



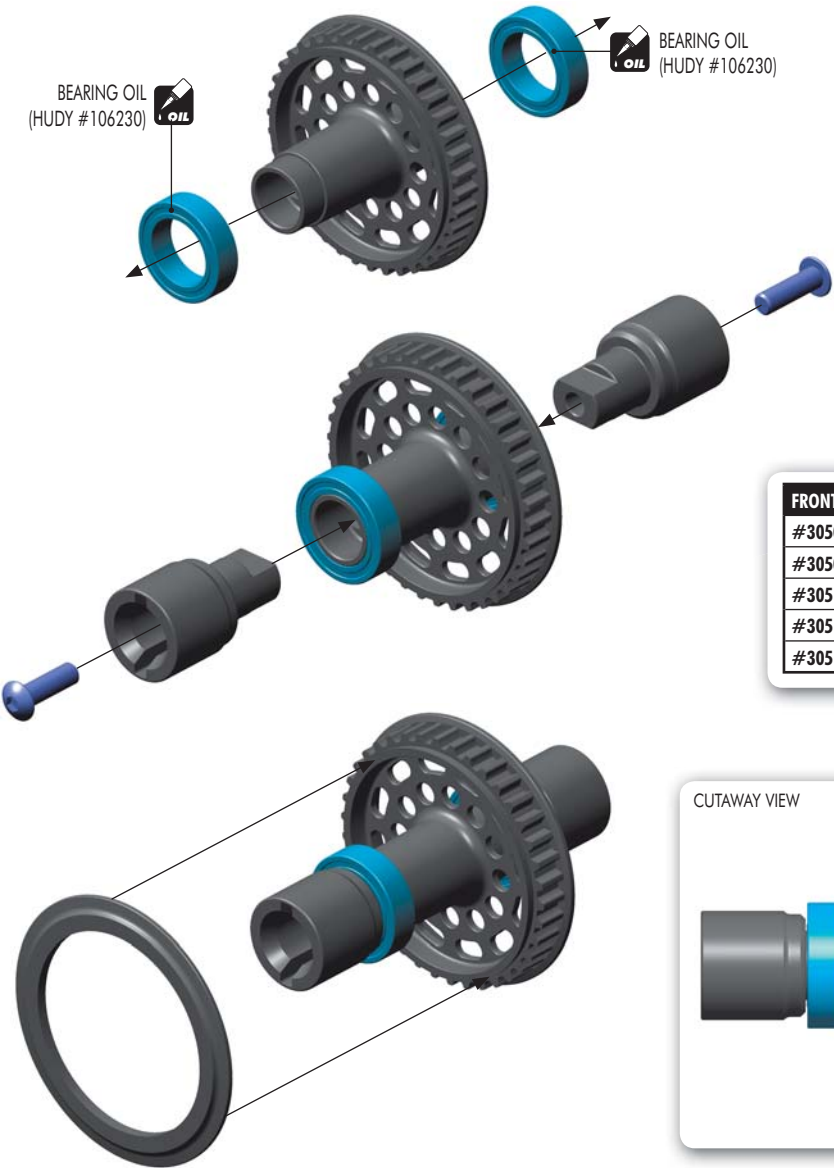
COMPOSITE FRONT SOLID AXLE



902310  
SH M3x10



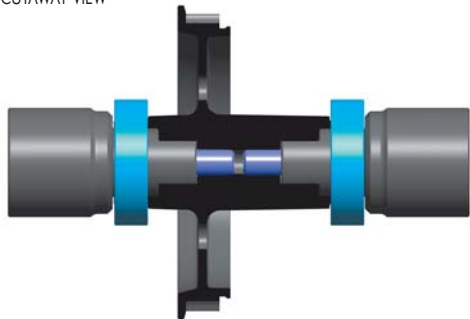
941015  
BB 10x15x4



FRONT & REAR AXLES

#305003	ALU DIFF 34T + 38T PULLEY
#305006	COMPOSITE DIFF 34T PULLEY
#305104	XRAY ALU MULTI-DIFF
#305184	COMPOSITE SOLID AXLE 34T PULLEY
#305188	COMPOSITE SOLID AXLE 38T PULLEY

CUTAWAY VIEW



FRONT & REAR AXLES

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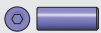
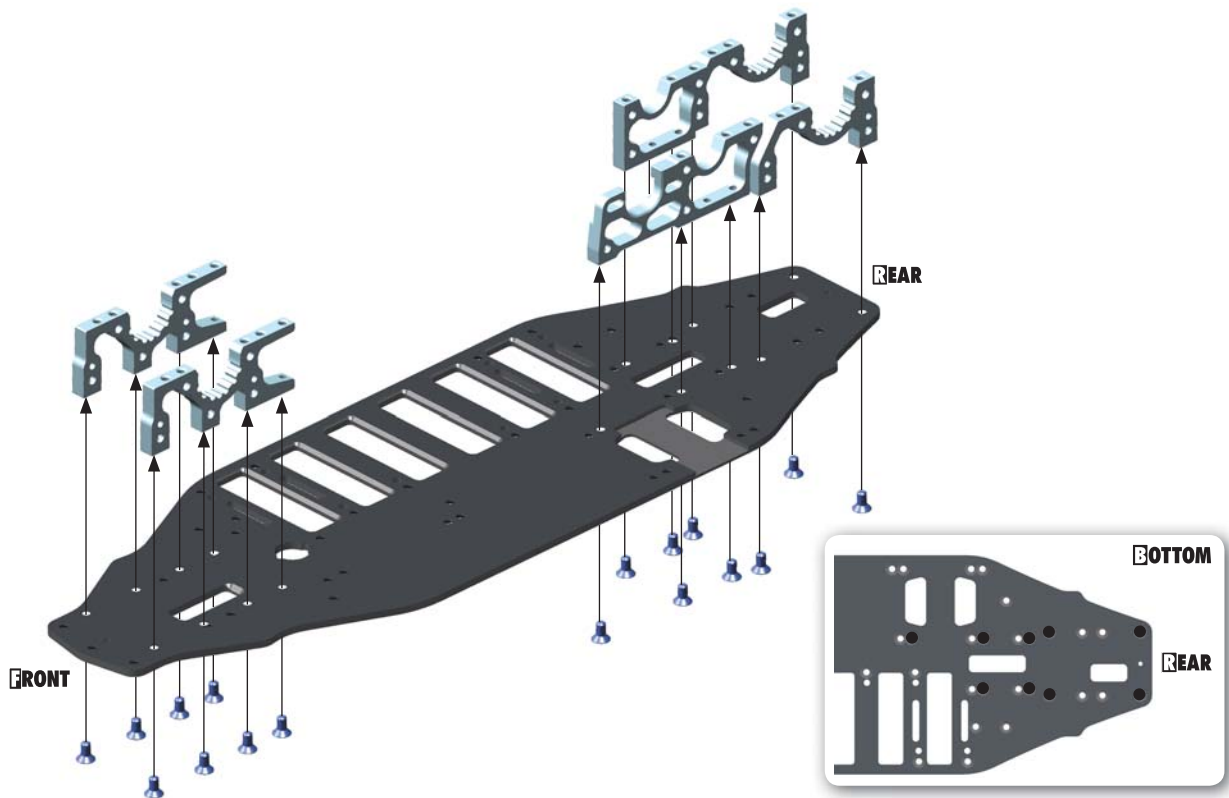
**XRAY**



## 2. FRONT & REAR SUSPENSION



903306  
SFH M3x6

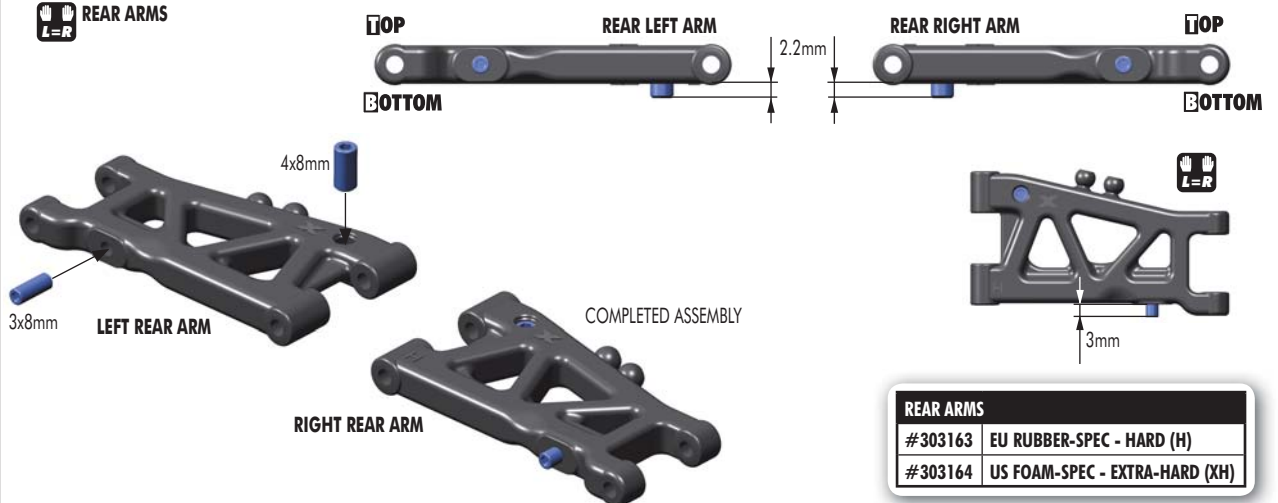


901308  
SB M3x8



901408  
SB M4x8

### REAR ARMS



REAR DOWNSTOP  
ADJUSTMENT

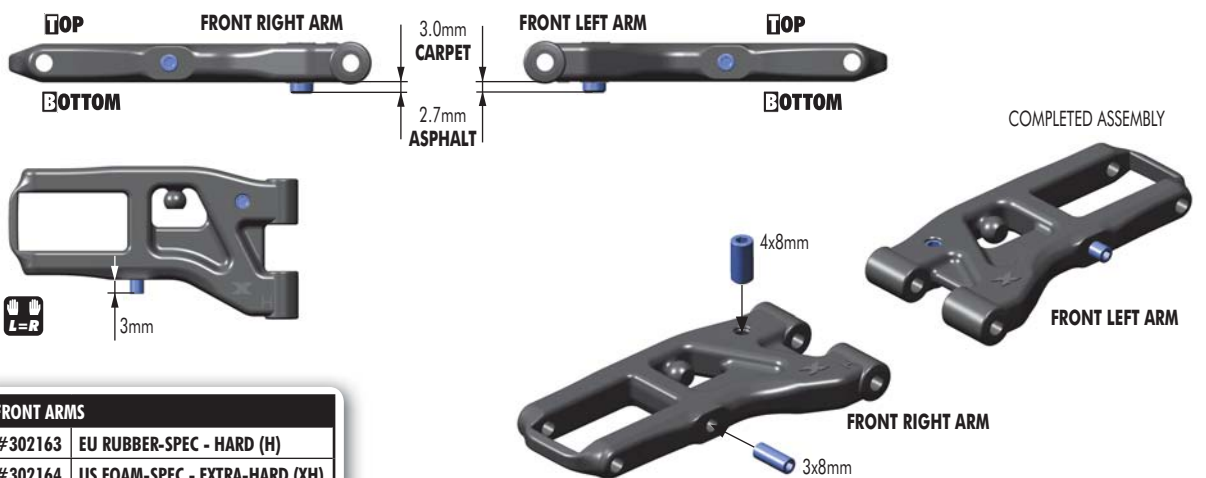


901308  
SB M3x8



901408  
SB M4x8

### FRONT ARMS



FRONT DOWNSTOP  
ADJUSTMENT

## 2. FRONT & REAR SUSPENSION

**IO**  
303129  
SHIM 3x6x1

**IO**  
303129  
SHIM 3x6x2

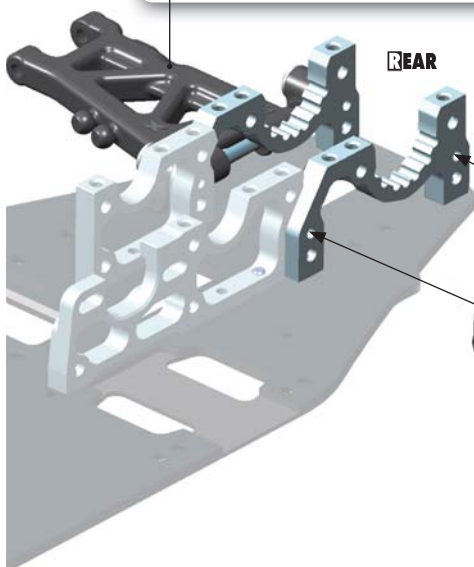
**IO**  
309319  
SHIM 3x7x2

**902314**  
SH M3x14

**902316**  
SH M3x16



It is extremely important that the arms move freely on the pivot pins. If they do not, use the #107633 HUDY Arm Reamer to slightly resize the holes in the arms.



**REAR**

THIN COMPOSITE SHIM  
3x7x2mm

DETAIL

3x16mm

THIN COMPOSITE SHIM  
3x6x1mm

THICK COMPOSITE SHIM  
3x6x2mm

**REAR LEFT ARM**

3x14mm



Use these suspension holders for initial assembly



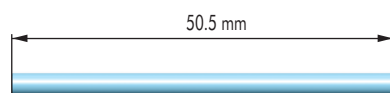
Roll Center Position:  
**-0.75mm**

Roll Center Position:  
**0mm**

Roll Center Position:  
**+0.75mm**



TOE-IN ADJUSTMENT  
TRACK WIDTH ADJUSTMENT  
WHEELBASE ADJUSTMENT  
ROLL CENTER ADJUSTMENT  
SQUAT ADJUSTMENT



**2x 1:1**

**IO**  
303129  
SHIM 3x6x1

**IO**  
309319  
SHIM 3x7x1

**902316**  
SH M3x16



**0mm ASPHALT**

**+0.75mm CARPET**

THIN COMPOSITE SHIM  
3x7x1mm

3x16mm

THIN COMPOSITE SHIM  
3x6x1mm

THIN COMPOSITE SHIM  
3x6x1mm

**FRONT LEFT ARM**

**FRONT**



It is extremely important that the arms move freely on the pivot pins. If they do not, use the #107633 HUDY Arm Reamer to slightly resize the holes in the arms.

**FRONT RIGHT ARM**

THIN COMPOSITE SHIM  
3x7x1mm

3x16mm

Use these suspension holders for  
**ASPHALT** initial assembly

Use these suspension holders for  
**CARPET** initial assembly



Roll Center Position:  
**-0.75mm**

Roll Center Position:  
**0mm**

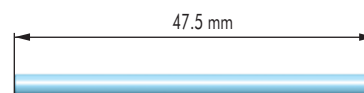
Roll Center Position:  
**+0.75mm**



**+0.75mm CARPET**



**0mm ASPHALT**

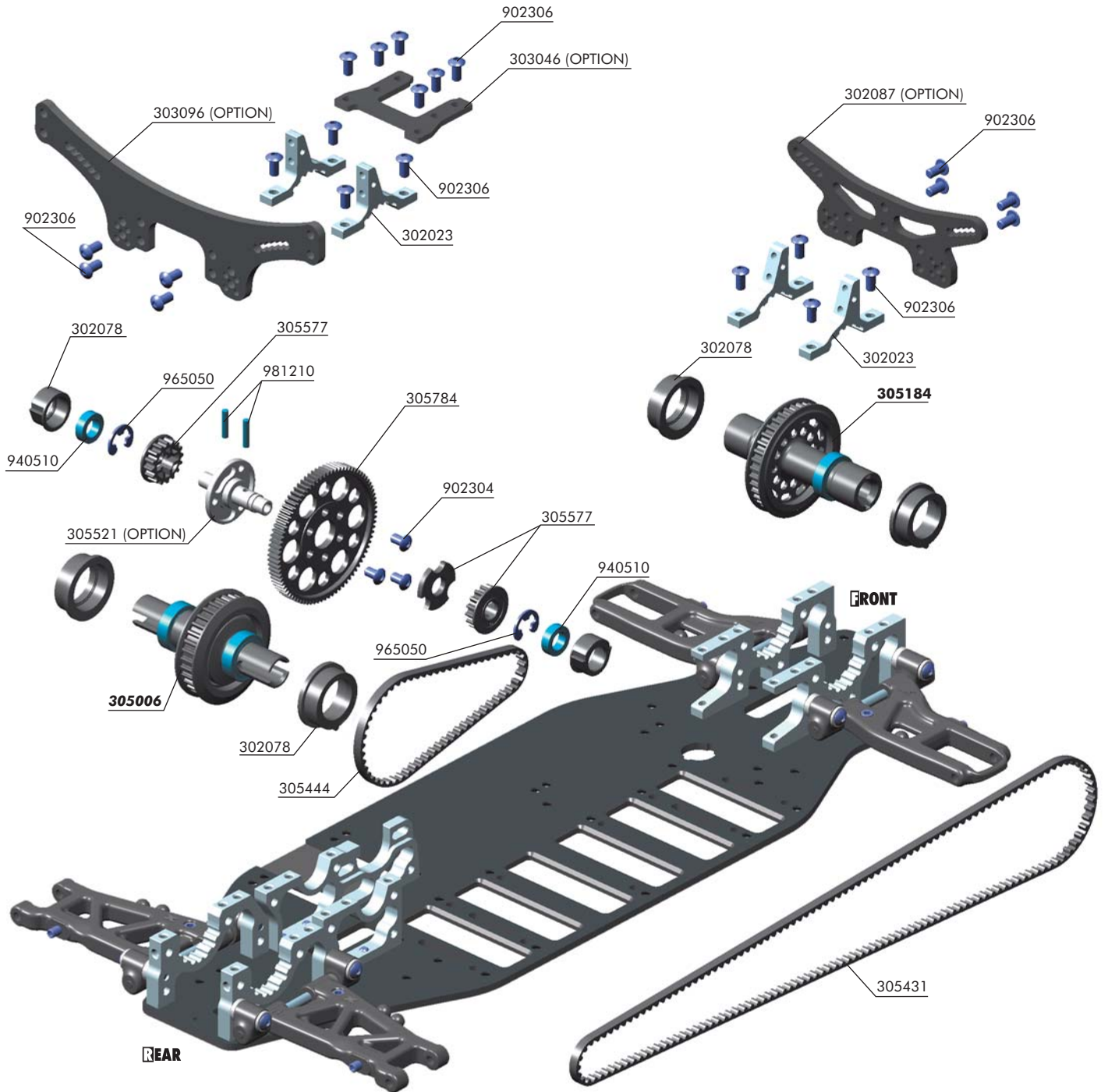


**2x L=R**



TRACK WIDTH ADJUSTMENT  
WHEELBASE ADJUSTMENT  
ROLL CENTER ADJUSTMENT  
DIVE ADJUSTMENT

### 3. CENTRAL TRANSMISSION



**BAG**

**03**

30 2023	ALU UPPER BULKHEAD
30 2078	SET OF COMPOSITE HUBS FOR BULKHEADS (4+2)
30 2087	SHOCK TOWER FRONT 3.0MM GRAPHITE (OPTION)
30 3046	RUBBER-SPEC REAR UPPER DECK GRAPHITE (OPTION)
30 3047	FOAM-SPEC REAR UPPER DECK GRAPHITE (OPTION)
30 3096	SHOCK TOWER REAR 3.0MM GRAPHITE (OPTION)
30 5431	HIGH-PERFORMANCE KEVLAR DRIVE BELT FRONT 3 x 507 MM
30 5443	HIGH-PERFORMANCE KEVLAR DRIVE BELT REAR 3 x 186 MM (OPTION)
30 5444	HIGH-PERFORMANCE KEVLAR DRIVE BELT REAR 3 x 183 MM
30 5521	ALU SOLID LAYSHAFT (OPTION)
30 5576	FIXED PULLEY 16T (2) (OPTION)
30 5577	FIXED PULLEY 20T (2)
30 5778	OFFSET SPUR GEAR 78T / 48 (OPTION)
30 5781	OFFSET SPUR GEAR 81T / 48 (OPTION)
30 5784	SPUR GEAR 84T / 48
30 5787	SPUR GEAR 87T / 48 (OPTION)
30 5790	SPUR GEAR 90T / 48 (OPTION)
30 5874	OFFSET SPUR GEAR 104T / 64 (OPTION)


30 5876	OFFSET SPUR GEAR 106T / 64 (OPTION)
30 5878	OFFSET SPUR GEAR 108T / 64 (OPTION)
30 5880	OFFSET SPUR GEAR 110T / 64 (OPTION)
30 5882	OFFSET SPUR GEAR 112T / 64 (OPTION)
30 5884	OFFSET SPUR GEAR 114T / 64 (OPTION)
30 5886	OFFSET SPUR GEAR 116T / 64 (OPTION)
30 5888	OFFSET SPUR GEAR 118T / 64 (OPTION)

90 2304	HEX SCREW SH M3x4 - STAINLESS (10)
90 2306	HEX SCREW SH M3x6 (10)
94 0510	HIGH-SPEED BALL-BEARING 5x10x4 RUBBER SEALED (2)
96 5050	E-CLIP 5 (10)
98 1210	PIN 2x10 (10)


**30 5006 T2R PRO COMPOSITE BALL DIFFERENTIAL 34T PULLEY - SET**  
**30 5184 COMPOSITE SOLID AXLE 34T - SET**




3. CENTRAL TRANSMISSION



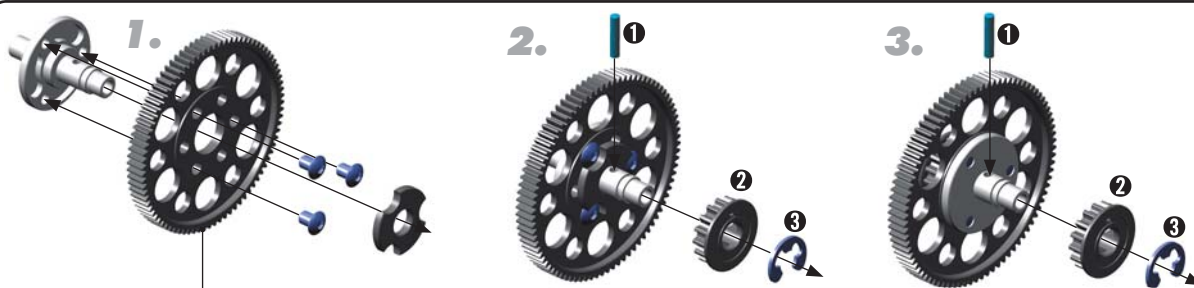
902304  
SH M3x4




965050  
CS




981210  
P 2x10



1. 2. 3.




**NOTE ORIENTATION**  
Only when using XRAY  
OFFSET spur gears



CUTAWAY  
VIEW

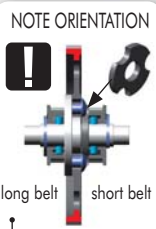
SPUR GEARS	
#305778	OFFSET SPUR GEAR 78T / 48P
#305781	OFFSET SPUR GEAR 81T / 48P
#305784	SPUR GEAR 84T / 48P
#305787	SPUR GEAR 87T / 48P
#305790	SPUR GEAR 90T / 48P
#305874	OFFSET SPUR GEAR 104T / 64P
#305876	OFFSET SPUR GEAR 106T / 64P
#305878	OFFSET SPUR GEAR 108T / 64P
#305880	OFFSET SPUR GEAR 110T / 64P
#305882	OFFSET SPUR GEAR 112T / 64P
#305884	OFFSET SPUR GEAR 114T / 64P
#305886	OFFSET SPUR GEAR 116T / 64P
#305888	OFFSET SPUR GEAR 118T / 64P



940510  
BB 5x10x4


**! IMPORTANT**  
Insert composite bushings perfectly straight in bulkheads so the bearings spin freely. If the bearings do not spin freely, reinstall the composite bushings properly.

**NOTE ORIENTATION**




long belt short belt

BEARING OIL (HUDY #106230)



BEARING OIL (HUDY #106230)



SHORTER LONGER

LONGER SHORTER

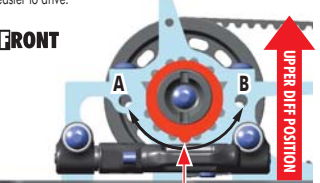
FRONT

REAR

**FRONT BELT TENSION ADJUSTMENT**

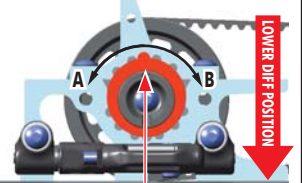
Upper diff position is recommended for tight and technical carpet tracks. The upper diff position improves handling in chicanes as it provides more traction, increased steering and makes the car easier to drive.

Lower diff position is recommended for large open asphalt tracks with long sweepers.



FRONT

UPPER DIFF POSITION



LOWER DIFF POSITION

**INITIAL POSITION EU RUBBER-SPEC**  
PLACE TAB IN THIS NOTCH

**INITIAL POSITION US FOAM-SPEC**  
PLACE TAB IN THIS NOTCH

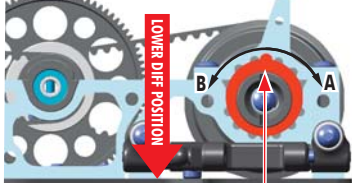
**TO LOOSEN FRONT BELT:** Rotate both front nylon hubs in arrow direction (A)

**TO TIGHTEN FRONT BELT:** Rotate both front nylon hubs in arrow direction (B)

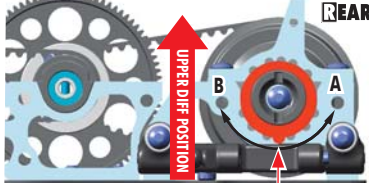
**REAR BELT TENSION ADJUSTMENT**

Lower diff position is recommended for large open asphalt tracks with long sweepers.

Upper diff position is recommended for tight and technical carpet tracks. The upper diff position improves handling in chicanes as it provides more traction, increased steering and makes the car easier to drive.



LOWER DIFF POSITION



UPPER DIFF POSITION

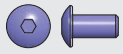
**INITIAL POSITION US FOAM-SPEC**  
PLACE TAB IN THIS NOTCH

**INITIAL POSITION EU RUBBER-SPEC**  
PLACE TAB IN THIS NOTCH

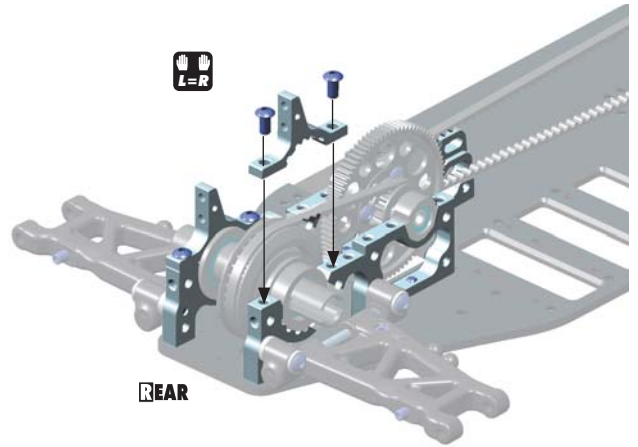
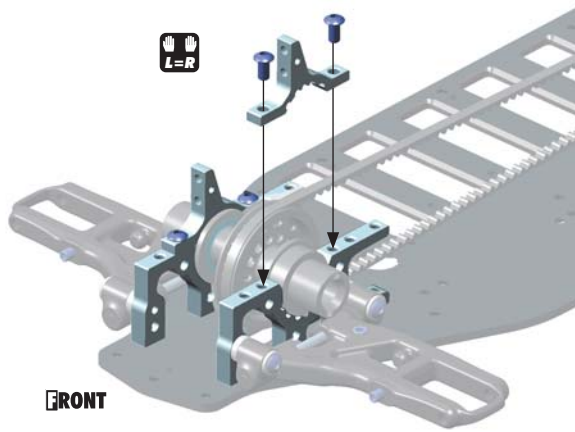
**TO LOOSEN REAR BELT:** Rotate both rear nylon hubs in arrow direction (A)

**TO TIGHTEN REAR BELT:** Rotate both rear nylon hubs in arrow direction (B)

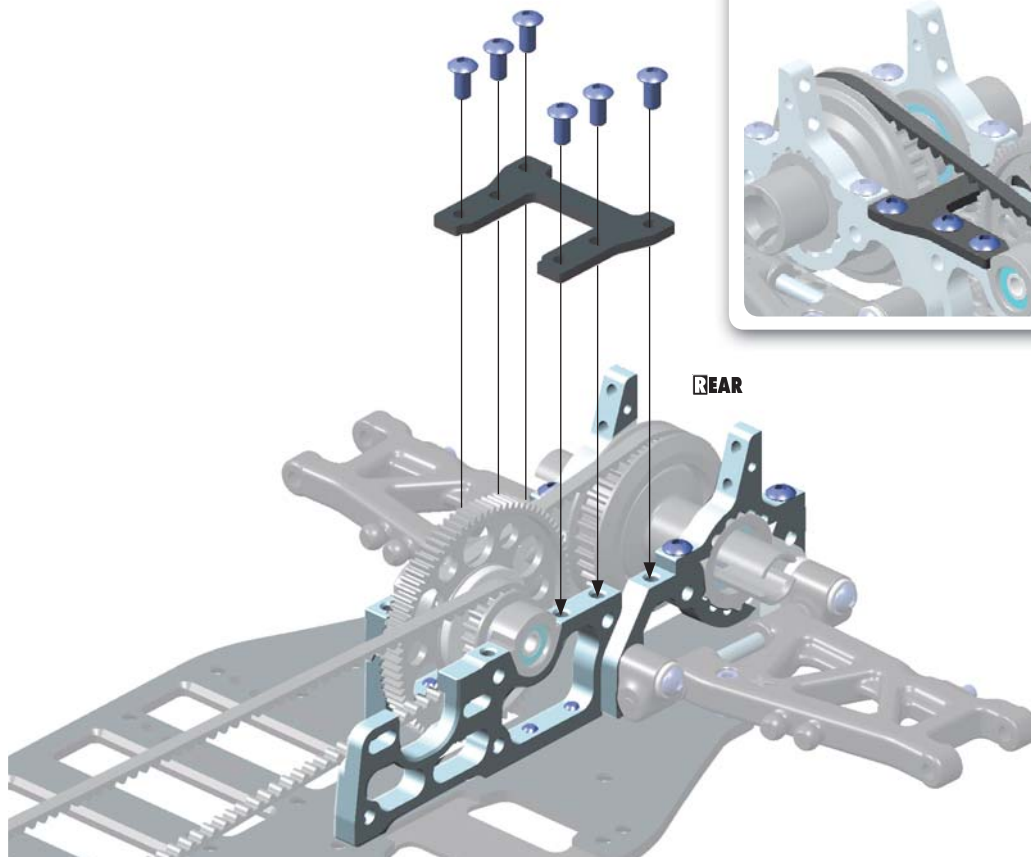
### 3. CENTRAL TRANSMISSION



902306  
SH M3x6

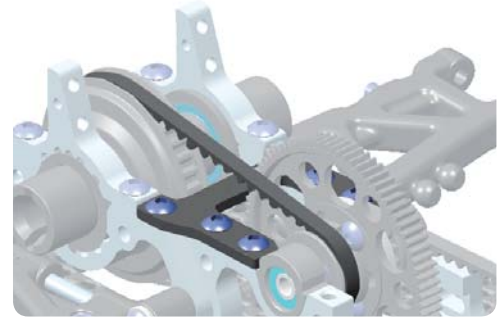


902306  
SH M3x6

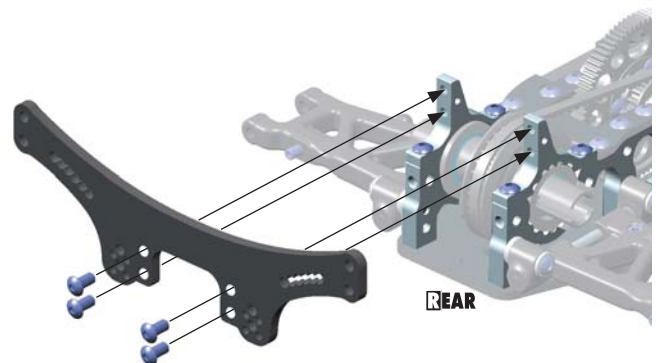
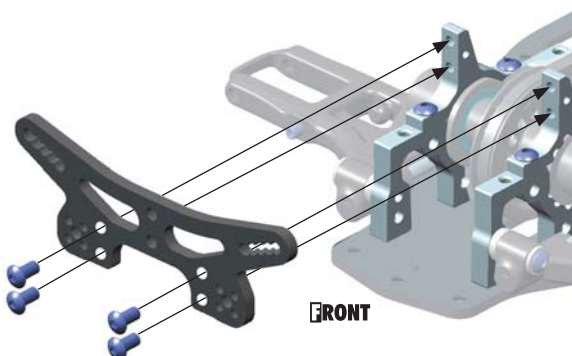


#### ! IMPORTANT

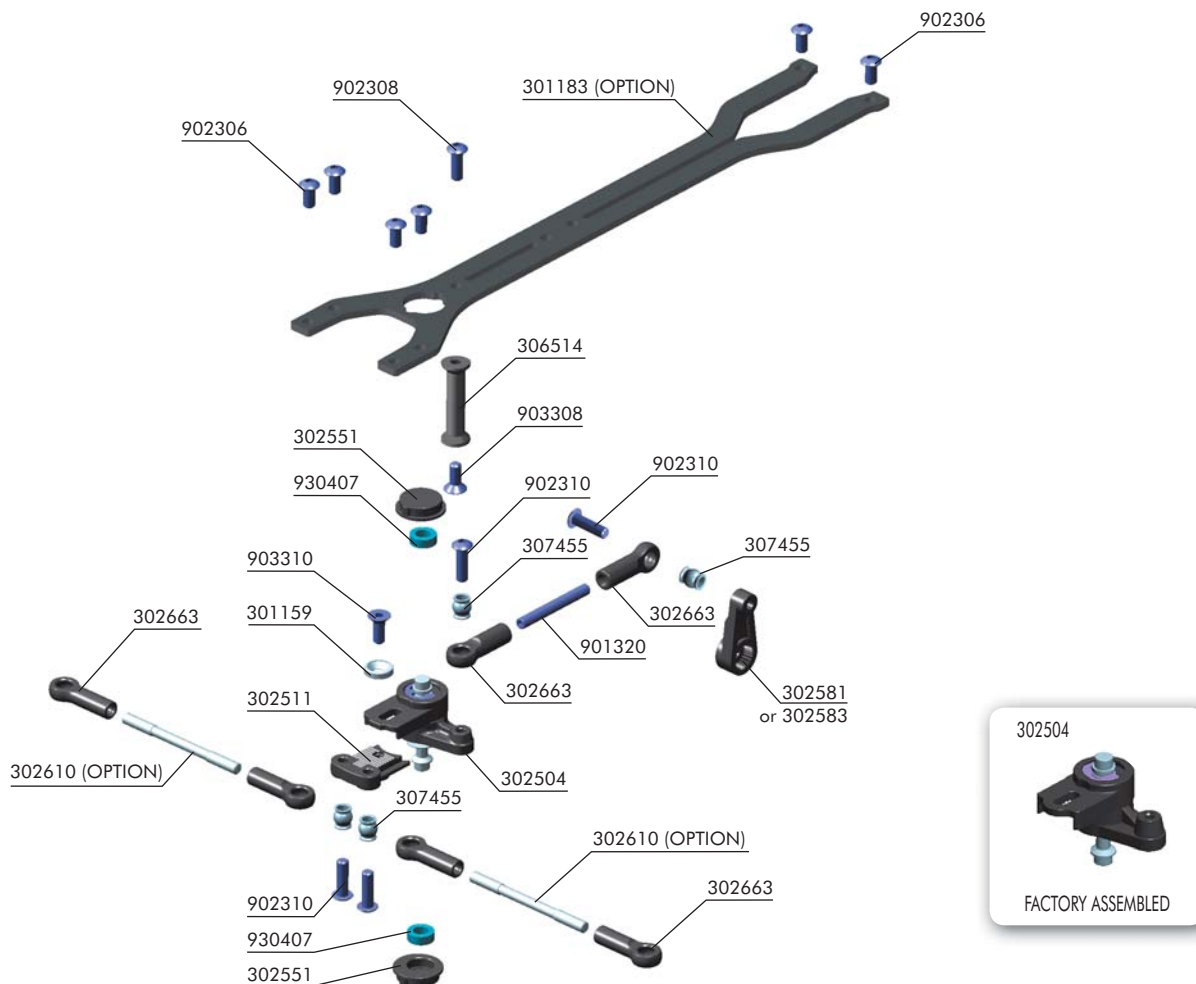
Position the rear upper deck inside of the rear drive belt



902306  
SH M3x6



## 4. STEERING

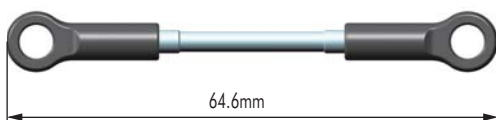


### BAG

04

30 1159	ALU COUNTERSUNK SHIM (4)	30 2663	BALL JOINT 5 MM - OPEN (8)
30 1183	RUBBER-SPEC UPPER DECK GRAPHITE (OPTION)	30 6513	ALU LOW TOP DECK MOUNT (2) (OPTION)
30 1184	FOAM-SPEC UPPER DECK GRAPHITE (OPTION)	30 6514	COMPOSITE LOW TOP DECK MOUNT (2)
30 2504	XRAY QUICK-SAVER™ - ADJUSTABLE SERVO SAVER SET	30 7455	PIVOT BALL 5.0 MM DOUBLE BEVEL SHOULDERS (10)
30 2511	XRAY QUICK-SAVER™ - COMPOSITE SERVO SAVER PARTS	90 1320	HEX SCREW SB M3x20 (10)
30 2551	SERVO SAVER PLASTIC COVER - ECCENTRIC (2)	90 2306	HEX SCREW SH M3x6 (10)
30 2581	COMPOSITE SERVO HORN - KO, JR, AIRTRONICS	90 2308	HEX SCREW SH M3x8 (10)
30 2583	COMPOSITE SERVO HORN - FUTABA, ROBE	90 2310	HEX SCREW SH M3x10 (10)
30 2610	ADJ. TURNBUCKLE M3 L/R 40 MM - HUDY SPRING STEEL (2) (OPTION)	90 3308	HEX SCREW SFH M3x8 (10)
30 2630	ADJ. TURNBUCKLE L/R 20 MM - HUDY SPRING STEEL (2) (OPTION)	90 3310	HEX SCREW SFH M3x10 (10)
30 2652	BALL END 5 MM WITH THREAD (2) (OPTION)	93 0407	BALL-BEARING MR74ZZ 4x7x2.5 (2)

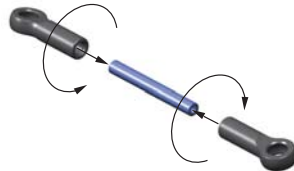
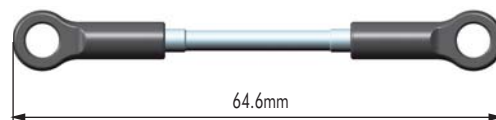
901320  
SB M3x20



LEFT

1:1

RIGHT



SET-UP BOOK

FRONT TOE-IN ADJUSTMENT



903310  
SFH M3x10

SET-UP BOOK

ACKERMANN ADJUSTMENT



INITIAL POSITION #2



There are 5 different Ackermann settings possible with the Quick-Saver™

For initial Ackermann setting, use Step 2 (2nd shortest length).

Step 1 gives the most Ackermann and makes the car understeer more into and out of corners. It offers good corner speed and creates very good traction mainly in chicanes, because the car is more stable.

We recommend using Step 1 on low-traction carpet tracks with a lot of chicanes.



Step 5 gives the least Ackermann and creates a lot of steering into and out of corners. However, the car is more difficult to drive in chicanes because there is less traction and stability.

We recommend using Step 5 on high-traction asphalt tracks.



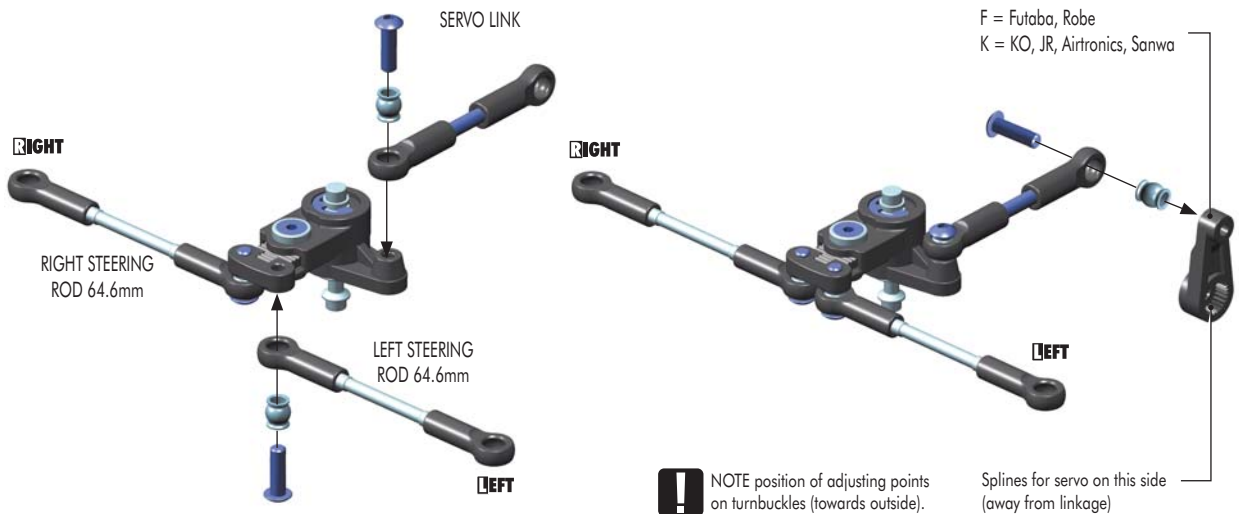
## 4. STEERING



307455  
PB 5mm



902310  
SH M3x10



902306  
SH M3x6



902308  
SH M3x8



903308  
SFH M3x8



930407  
BB 4x7x2.5

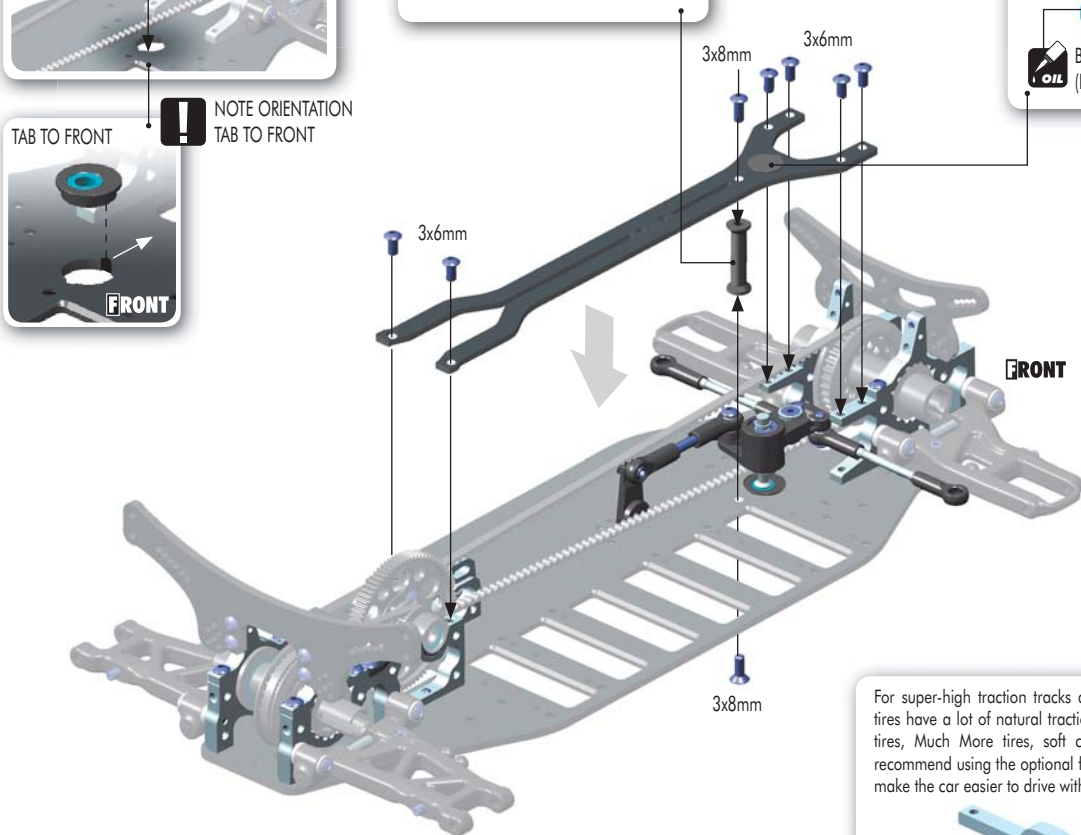
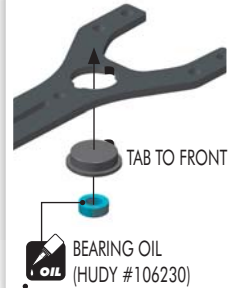


Install this stand on carpet; the stand will decrease front traction so that the front tires do not overheat too quickly thus preventing the car from stopping quickly in corners.

The stand is not necessary on low-traction or technical asphalt tracks because the car will understeer more.



DETAIL

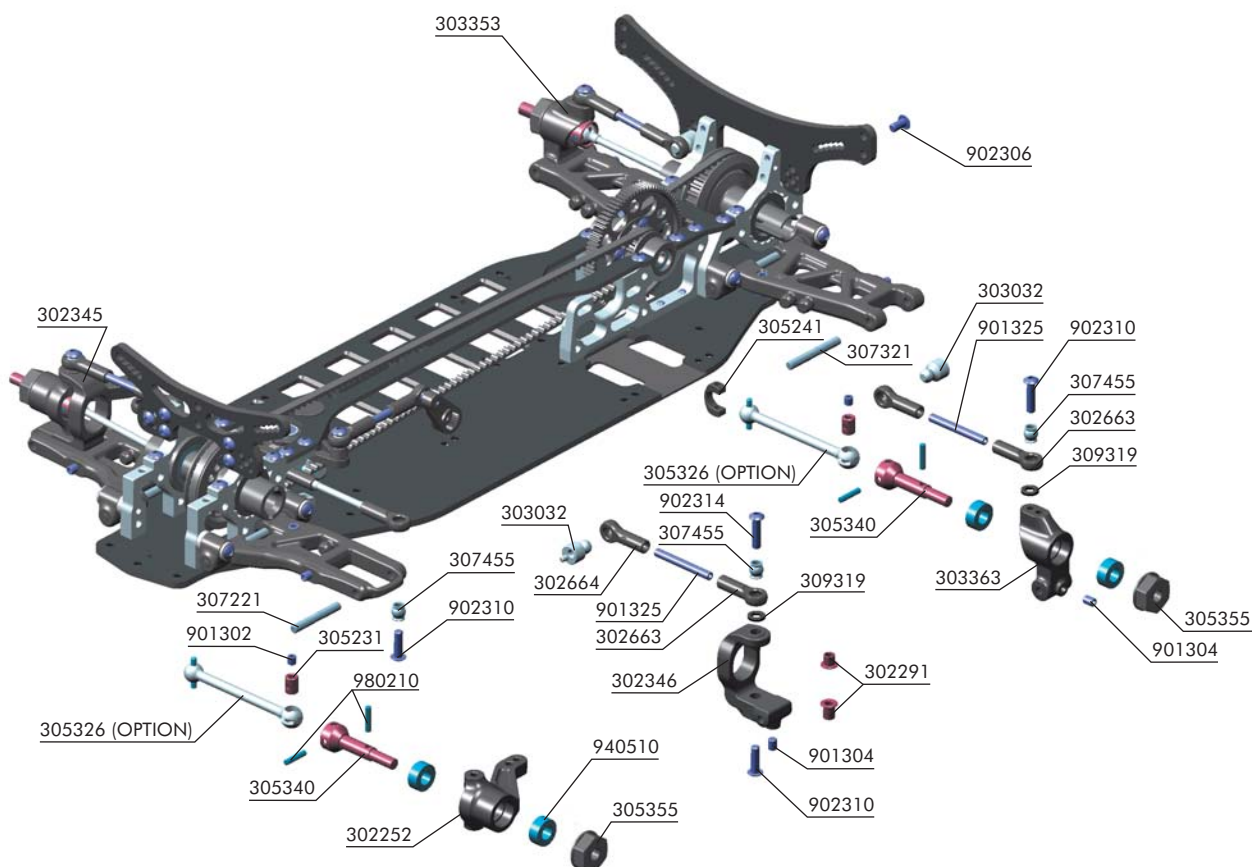


For super-high traction tracks and races where the tires have a lot of natural traction (for example: LRP tires, Much More tires, soft compound tires), we recommend using the optional front brace which will make the car easier to drive with smoother steering.



SET-UP BOOK  
ACKERMANN ADJUSTMENT  
STEERING THROW SYMMETRY  
CHASSIS FLEX SETTING  
TOP DECK FLEX SETTING

## 5. FRONT & REAR TRANSMISSION



**BAG**

**05**

- 30 2252 COMPOSITE STEERING BLOCK - MEDIUM - RUBBER-SPEC
- 30 2253 COMPOSITE STEERING BLOCK - HARD - FOAM-SPEC (OPTION)
- 30 2291 STEEL STEERING BUSHING (2+2)
- 30 2345 COMPOSITE C-HUB FRONT BLOCK, RIGHT - 4° DEG.
- 30 2346 COMPOSITE C-HUB FRONT BLOCK, LEFT - 4° DEG.
- 30 2363 C-HUB RIGHT - 4° DEG. - MEDIUM - RUBBER-SPEC (OPTION)
- 30 2364 C-HUB LEFT - 4° DEG. - MEDIUM - RUBBER-SPEC (OPTION)
- 30 2373 C-HUB RIGHT - 4° DEG. - HARD - FOAM-SPEC (OPTION)
- 30 2374 C-HUB LEFT - 4° DEG. - HARD - FOAM-SPEC (OPTION)
- 30 2663 BALL JOINT 5 MM - OPEN (8)
- 30 2664 BALL JOINT 5 MM UNIDIRECTIONAL - OPEN (4)
- 30 3032 ALU QUICK ROLL-CENTER HOLDER™ 4.9MM (2)
- 30 3122 ALU SHIM 3x6x1.0MM (10) (OPTION)
- 30 3123 ALU SHIM 3x6x2.0MM (10) (OPTION)
- 30 3210 TURNBUCKLE L/R 25 MM - HUDY SPRING STEEL (2) (OPTION)
- 30 3352 UPRIGHT 0° OUTBOARD TOE-IN - MEDIUM - RUBBER-SPEC (OPTION)
- 30 3353 UPRIGHT 1° OUTBOARD TOE-IN - RIGHT - HARD - FOAM-SPEC
- 30 3363 UPRIGHT 1° OUTBOARD TOE-IN - LEFT - HARD - FOAM-SPEC
- 30 5231 DRIVE SHAFT COUPLING - HUDY SPRING STEEL
- 30 5241 DRIVE SHAFT REPLACEMENT PLASTIC CAP 3.5 MM (4)
- 30 5323 DRIVE SHAFT 50MM - HUDY SPRING STEEL (OPTION)
- 30 5324 DRIVE SHAFT 52MM - HUDY SPRING STEEL (OPTION)
- 30 5326 ALU DRIVE SHAFT SWISS 7075 T6 - HARD COATED - 52MM (OPTION)

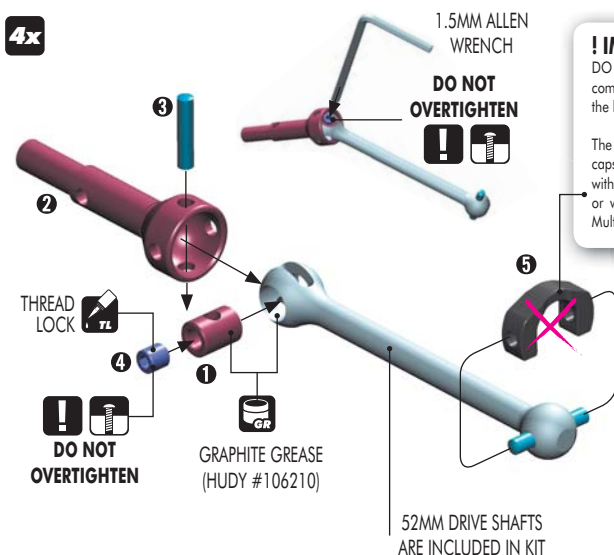
- 30 5328 ALU DRIVE SHAFT SWISS 7075 T6 - HARD COATED - 50MM (OPTION)
- 30 5325 EQUALIZED CORNERING SPEED (ECS) DRIVE SHAFT 50MM (OPTION)
- 30 5327 EQUALIZED CORNERING SPEED (ECS) DRIVE SHAFT 52MM (OPTION)
- 30 5340 DRIVE AXLE - HUDY SPRING STEEL
- 30 5341 DRIVE AXLE - LIGHTWEIGHT - HUDY SPRING STEEL (OPTION)
- 30 5350 ALU WHEEL HUB (2) (OPTION)
- 30 5351 ALU WHEEL HUB - OFFSET "-0.75MM" (2) (OPTION)
- 30 5352 ALU WHEEL HUB - OFFSET "+0.75MM" (2) (OPTION)
- 30 5353 ALU WHEEL HUB - OFFSET "+1.5MM" (2) (OPTION)
- 30 5355 COMPOSITE WHEEL HUB (2)
- 30 7221 FRONT ARM PIVOT PIN (2)
- 30 7321 REAR ARM PIVOT PIN (2)
- 30 7455 PIVOT BALL 5.0 MM DOUBLE BEVEL SHOULDERS (10)
- 90 1302 HEX SCREW SB M3x2.5 (10)
- 90 1304 HEX SCREW SB M3x4 (10)
- 90 1325 HEX SCREW SB M3x25 (10)
- 90 2306 HEX SCREW SH M3x6 (10)
- 90 2310 HEX SCREW SH M3x10 (10)
- 90 2314 HEX SCREW SH M3x14 (10)
- 94 0510 HIGH-SPEED BALL-BEARING 5x10x4 RUBBER SEALED (2)
- 98 0210 PIN 2x10 (10)



901302  
SB M3x2.5



980210  
P 2x10



### ! IMPORTANT

DO NOT use the plastic caps with composite solid axle included in the kits.

The new #305241 3.5mm plastic caps are for use ONLY in REAR with T2R PRO COMPOSITE ball diff or with ALU ball diffs or the XRAY Multi-Diff™.

### DRIVE SHAFTS

#305323	US FOAM-SPEC - 50MM - STEEL
#305324	EU RUBBER-SPEC - 52MM - STEEL
#305325	ECS US FOAM-SPEC - 50MM - STEEL
#305326	EU RUBBER-SPEC - 52MM - ALU
#305327	ECS EU RUBBER-SPEC - 52MM - STEEL
#305328	US FOAM-SPEC - 50MM - ALU

Drive shafts may be combined. For example, you may use the longer 52mm shafts with the optional US Foam-Spec chassis, and the shorter 50mm shafts with the EU Rubber-Spec chassis. However, we recommend using the drive shafts that are included in the kit since the drive shaft lengths have been carefully chosen to optimize speed and ease of driving.

Longer drive shafts (52mm) make the car easier to drive because they give more traction and better stability, mainly in chicanes. However, car will understeer more than with shorter (50mm) shafts which give a lot of steering and impart aggression to the car. You may also combine different lengths of shafts in front and rear (for example, using long shafts in the rear and short shafts in the front) depending on track conditions.

Both left & right shafts should ALWAYS be the same length at one end of the car (front or rear).

## 5. FRONT & REAR TRANSMISSION



940510  
BB 5x10x4

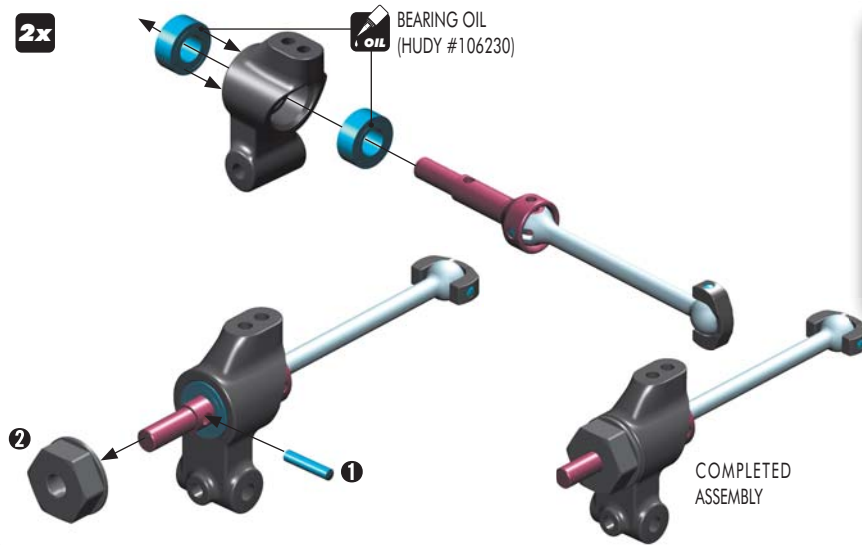


980210  
P 2x10



REAR TOE-IN ADJUSTMENT

2x



### UPRIGHTS

#303351	1° - RIGHT - MEDIUM - RUBBER-SPEC
#303352	0° - R/L - MEDIUM - RUBBER-SPEC
#303353	1° - RIGHT - HARD - FOAM-SPEC
#303354	0° - R/L - HARD - FOAM-SPEC
#303361	1° - LEFT - MEDIUM - RUBBER-SPEC
#303363	1° - LEFT - HARD - FOAM-SPEC
#303358	ALU 1° - R/L
#303359	ALU 2° - R/L



940510  
BB 5x10x4



980210  
P 2x10

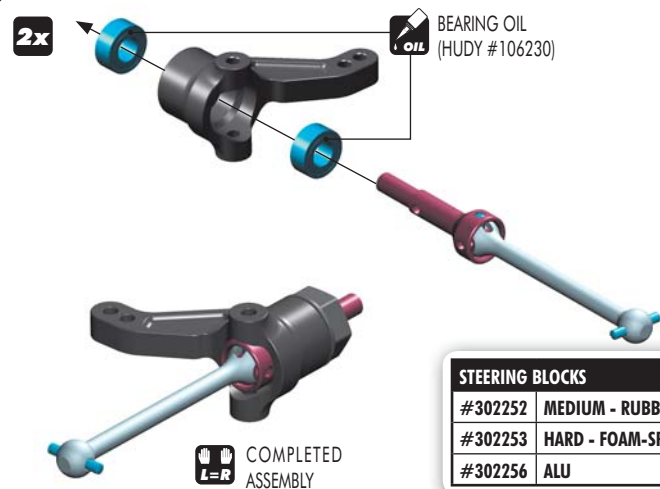


902310  
SH M3x10



CASTER ADJUSTMENT

2x

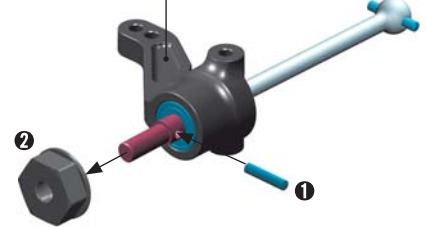


### STEERING BLOCKS

#302252	MEDIUM - RUBBER-SPEC
#302253	HARD - FOAM-SPEC
#302256	ALU



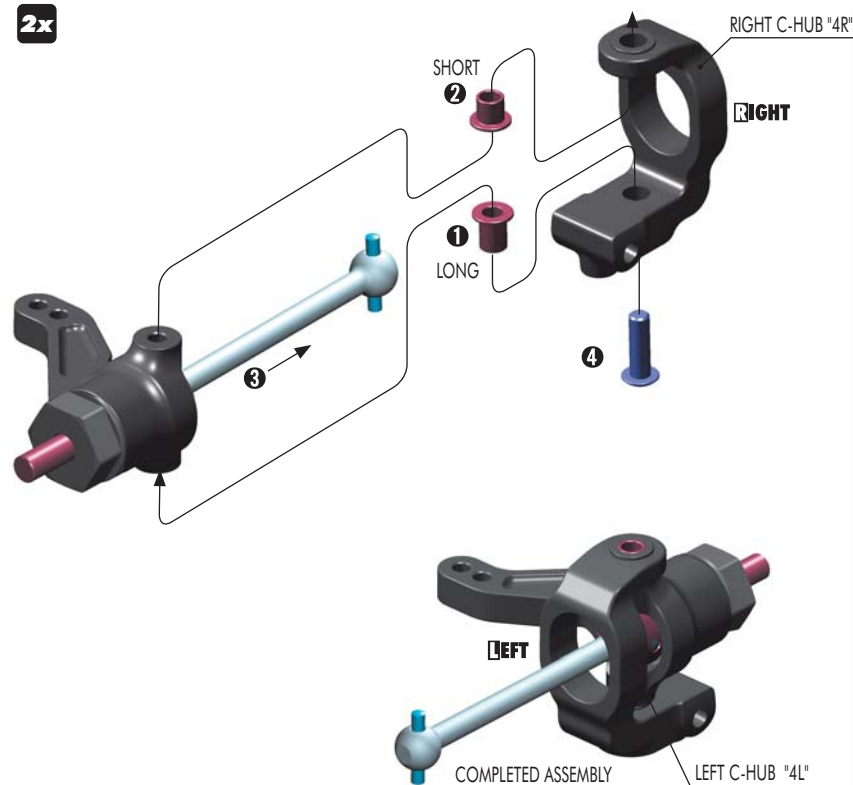
LEFT STEERING BLOCK = RIGHT STEERING BLOCK



### WHEEL HUBS

#305350	ALU - OFFSET 0 MM
#305351	ALU - OFFSET -0.75 MM
#305352	ALU - OFFSET +0.75 MM
#305353	ALU - OFFSET +1.5 MM

2x



### C-HUBS

#302334	ALU 0° - R+L
#302335	ALU 2° - RIGHT
#302336	ALU 2° - LEFT
#302337	ALU 4° - RIGHT
#302338	ALU 4° - LEFT
#302339	ALU 6° - RIGHT
#302340	ALU 6° - LEFT
#302343	COMPOSITE 2° - RIGHT
#302344	COMPOSITE 2° - LEFT
#302345	COMPOSITE 4° - RIGHT
#302346	COMPOSITE 4° - LEFT
#302347	COMPOSITE 6° - RIGHT
#302348	COMPOSITE 6° - LEFT
#302361	2° - RIGHT - MEDIUM - RUBBER-SPEC
#302362	2° - LEFT - MEDIUM - RUBBER-SPEC
#302363	4° - RIGHT - MEDIUM - RUBBER-SPEC
#302364	4° - LEFT - MEDIUM - RUBBER-SPEC
#302365	6° - RIGHT - MEDIUM - RUBBER-SPEC
#302366	6° - LEFT - MEDIUM - RUBBER-SPEC
#302371	2° - RIGHT - HARD - FOAM-SPEC
#302372	2° - LEFT - HARD - FOAM-SPEC
#302373	4° - RIGHT - HARD - FOAM-SPEC
#302374	4° - LEFT - HARD - FOAM-SPEC
#302375	6° - RIGHT - HARD - FOAM-SPEC
#302376	6° - LEFT - HARD - FOAM-SPEC



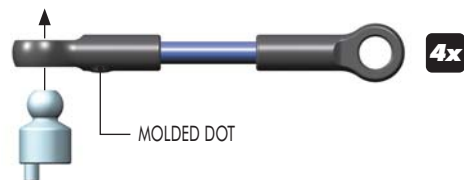
## 5. FRONT & REAR TRANSMISSION

901325  
SB M3x25



**4x** SPECIAL UNIDIRECTIONAL BALL-JOINT WITH MOLDED DOT

FACTORY PREASSEMBLED



MOLDED DOT

**4x**

**L=R** FRONT RIGHT = FRONT LEFT

REAR RIGHT = REAR LEFT **L=R**

**FRONT**

53 mm

**REAR**

52.3 mm

**1:1**

**SET-UP BOOK**

CAMBER ADJUSTMENT

**10**

309319  
SHIM 3x5x1



307455  
PB 5mm



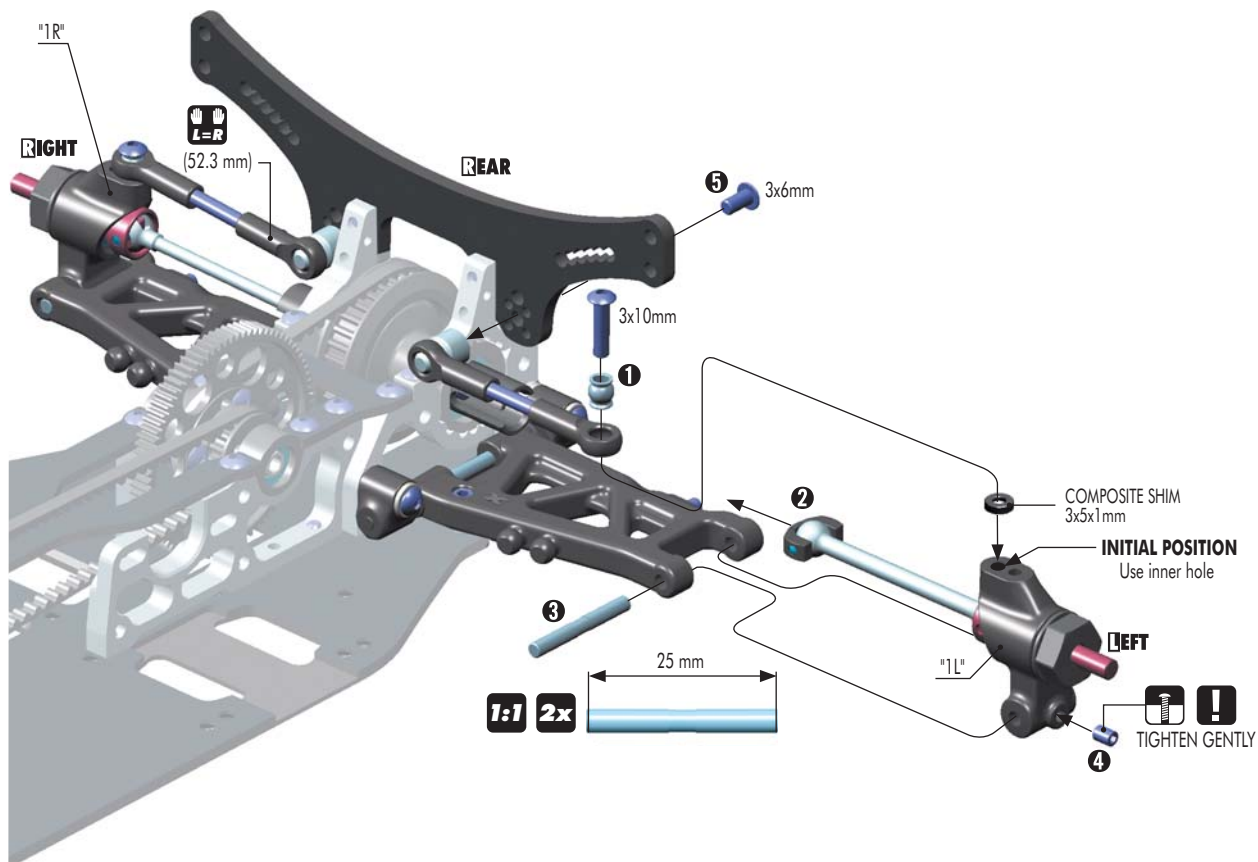
901304  
SB M3x4



902306  
SH M3x6



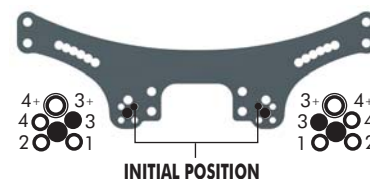
902310  
SH M3x10



DETAIL STEP **1**

After you tighten the screw into the upright, pull the linkage upward so the ball joint "snaps" onto the pivot ball. The whole assembly should move freely.

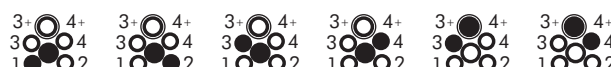
"CLICK"



**INITIAL POSITION**

Quick Roll Center™ tabs in upper inner holes

Quick Roll Center positions guideline  
for use in the **T2'008 SET-UP SHEET**.



**SET-UP BOOK**

ROLL-CENTER ADJUSTMENT

# 5. FRONT & REAR TRANSMISSION

10

309319  
SHIM 3x5x1



307455  
PB 5mm



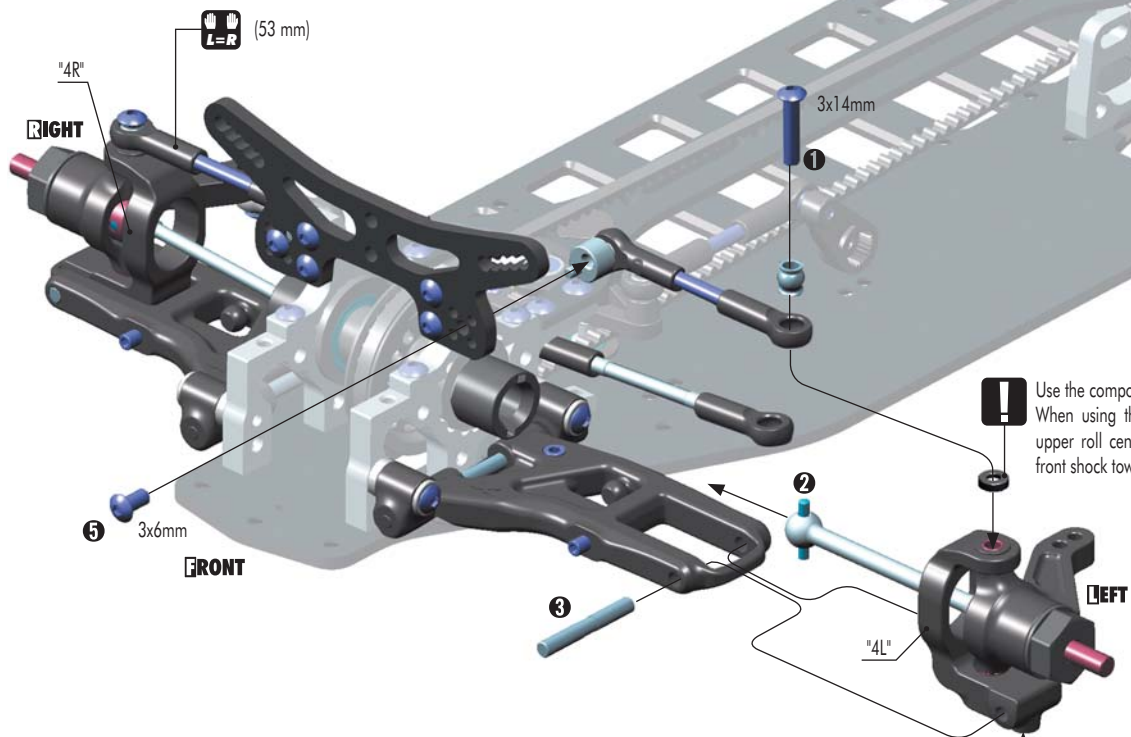
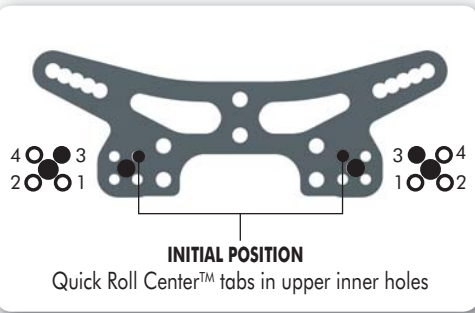
901304  
SB M3x4



902306  
SH M3x6

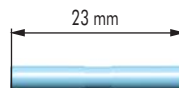
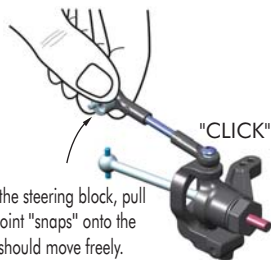


902314  
SH M3x14



## DETAIL STEP 1

After you tighten the screw into the steering block, pull the linkage upward so the ball joint "snaps" onto the pivot ball. The whole assembly should move freely.



1:1 2x



ROLL CENTER ADJUSTMENT



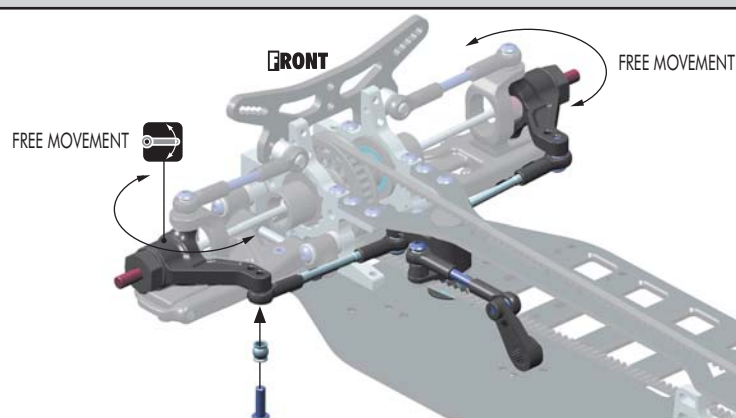
307455  
PB 3mm



902310  
SH M3x10



ACKERMANN ADJUSTMENT



## INITIAL POSITION



6. SHOCK ABSORBERS

308352  
308331  
303241  
308090  
308080  
308331  
970121  
308040  
308382 (GOLD) (REAR)  
308383 (SILVER) (FRONT)  
971031  
970050  
308331  
308316  
303241

308035  
965019  
1-4 HOLES  
308035 ADJUSTABLE  
308035 NON-ADJUSTABLE  
2 HOLES  
3 HOLES  
4 HOLES  
961032  
965023  
308362

ADJUSTABLE PISTONS  
NON-ADJUSTABLE PISTONS

XRAY SPRINGS	
#308373	C = 2.2 (2)
#308374	C = 2.4 (2)
#308375	C = 2.6 (2)
#308376	C = 2.8 (2)
#308377	C = 3.0 (2)
#308378	C = 3.2 (2)
#308379	C = 3.4 (2)

XRAY SPRINGS	
#308390	SPRING SET (24)
#308393	(14 LB) YELLOW - SUPER-SOFT (4)
#308394	(17.5 LB) WHITE - SOFT (4)
#308395	(22.5 LB) BLUE - SOFT-MEDIUM (4)
#308396	(28 LB) VIOLET - MEDIUM (4)
#308397	(33 LB) PURPLE - MEDIUM-HARD (4)
#308398	(38 LB) RED - HARD (4)
#308380	ADDITIONAL SPRING SET (20)
#308384	(15 LB) BLUE-GREEN (4)
#308385	(20 LB) LIGHT-BLUE (4)
#308386	(25 LB) DARK-BLUE (4)
#308387	(30 LB) LIGHT-PURPLE (4)
#308388	(35 LB) LIGHT-RED (4)

#308382	(14 LB) GOLD (4)
#308383	(17.5 LB) SILVER (4)



- 30 3241

BALL UNIVERSAL 5.8 MM HEX (4)
- 30 8035

COMPOSITE PISTONS ADJUSTABLE + NON-ADJUST. (SET 2+6)
- 30 8040

SHOCK ADJ. NUT ALU + O-RING (4+4)
- 30 8080

SHOCK ABSORBER MEMBRANES (4)
- 30 8090

SHOCK FOAM INSERTS (4)
- 30 8302

XRAY SHOCK ABSORBER-SET 4-STEP - SHORT (2)
- 30 8306

XRAY ALU SHOCK ABSORBER-SET (2) (OPTION)
- 30 8316

SHOCK BALL JOINT - OPEN (4)
- 30 8331

COMPOSITE FRAME SHOCK PARTS 4-STEP - SHORT
- 30 8352

ALU SHOCK CAP-NUT WITH VENT HOLE (2)
- 30 8362

HARDENED SHOCK SHAFT - SHORT (2)
- 30 8380

ADDITIONAL XRAY ULTIMATE RACING SPRINGS (20) (OPTION)
- 30 8390

XRAY SELECTED ULTIMATE RACING SPRINGS (24) (OPTION)
- 30 8382

XRAY PROGRESSIVE SPRING-SET D=1.4 (14 LB) GOLD (4)
- 30 8383

XRAY PROGRESSIVE SPRING-SET D=1.5 (17.5 LB) SILVER (4)
- 96 1032

WASHER S 3.2 (10)
- 96 5019

E-CLIP 1.9 (10)
- 96 5023

E-CLIP 2.3 (10)
- 97 0050

O-RING 5x1 (10)
- 97 0121

O-RING 12.1x1.6 (10)
- 97 1031

SILICONE O-RING 3.1x1.6 (10)

ADJUSTABLE PISTONS

4x



SHOCK OIL

Carefully remove the shock pistons from the frame, and remove all excess plastic flash



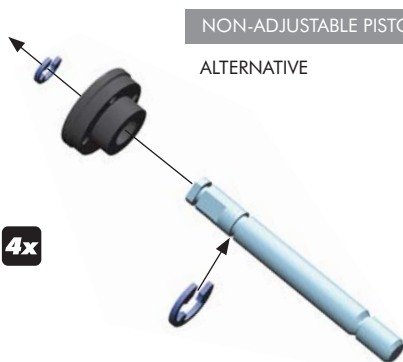
ADJUSTABLE PISTONS  
INITIAL ASSEMBLY

4x



NON-ADJUSTABLE PISTONS  
ALTERNATIVE

4x

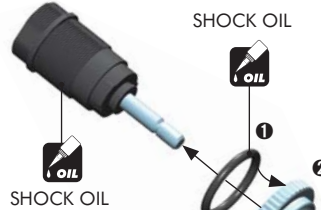




## 6. SHOCK ABSORBERS



4x



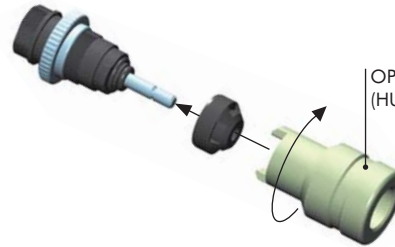
CUTAWAY VIEW



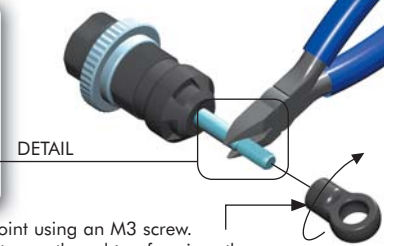
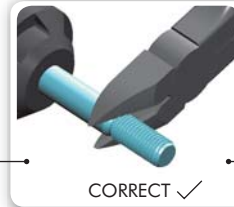
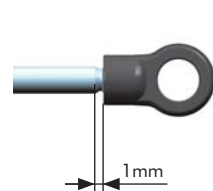
Be careful not to cross-thread the collar on the shock body.



4x



4x



USE ONLY separate ball-joints (part #308316).

HINT: Pre-thread the ball joint using an M3 screw.  
WARNING! Be careful not to pre-thread too far, since the ball joint may split or the plastic threads may strip out

4x

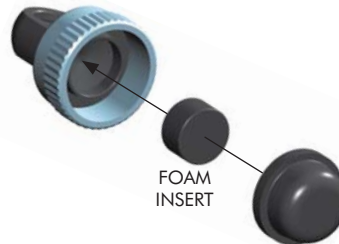
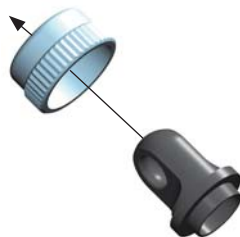


SHOCK FILLING

- 1 Fully extend the piston rod so the piston is at the bottom of the shock body.
- 2 Hold the shock upright and slightly overfill the shock body with shock oil.
- 3 Let the oil settle and allow air bubbles to rise to the top. Slowly move the piston up and down until no more air bubbles appear. Add shock oil as necessary.
- 4 Pull the piston rod most of the way out of the shock body. Let the shock rest for 5 minutes to allow the air bubbles to escape.



4x



CUTAWAY VIEW



After you insert the membrane ensure that it sits properly all around the alu cup.

4x



When installing the shock cap assembly on the shock body, some oil will leak out... this is normal.

Fully tighten the cap and clean off any excess oil.

After the shock is assembled, the shock rod will push itself out of the shock body fairly quickly.

Follow the next procedure to adjust the rebound.

SHOCK OILS		#359245	450cSt
#359210	100cSt (XRAY 20W)	#359250	500cSt
#359215	150cSt	#359260	600cSt (XRAY 35W)
#359220	200cSt (XRAY 25W)	#359270	700cSt
#359225	250cSt	#359280	800cSt
#359230	300cSt	#359290	900cSt
#359235	350cSt (XRAY 30W)	#359301	1000cSt (XRAY 40W)
#359240	400cSt	#359302	2000cSt (XRAY 50W)



## 6. SHOCK ABSORBERS

### REBOUND ADJUSTMENT

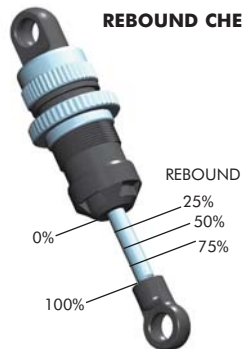


After the shock is assembled you have to set the Shock Rebound.

1. Release the shock composite lower cap.
2. VERY SLOWLY do the following: Fully pull out the shock rod, push it back in fully, and then fully pull it out once more. Repeat this procedure the following number of times to achieve the desired Shock Rebound setting:  
10 times - approximately 75% rebound (high rebound - suggested for very low traction track)  
15 times - approximately 50% rebound (medium rebound - suggested for standard track)  
20 times - approximately 25% rebound (low rebound - suggested for very high traction track)

During the Rebound Adjustment procedure shock oil will leak out of the shock body through the O-ring on the shock rod... this is normal. During the Rebound Adjustment procedure DO NOT open the upper shock cap.

### REBOUND CHECK



3. After you have set the Rebound Adjustment, re-install the shock lower composite cap.

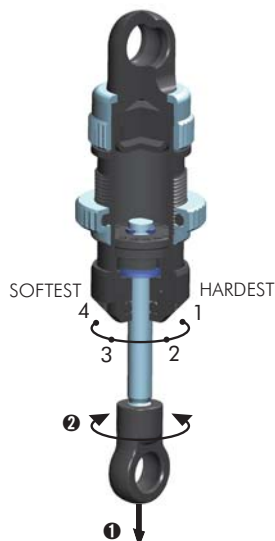
4. Check the Shock Rebound setting by pushing the shock rod fully into the shock body, releasing it, and observing how far the shock rod extends by itself:

- \* 25% out of the shock body (low rebound)
- \* 50% out of the shock body (medium rebound)
- \* 75% out of the shock body (high rebound).

If the shock rod rebounds too much, return to Step 1 and repeat the procedure.

If the shock rod does not rebound enough, you will have to refill the shock with shock oil, and then repeat the bleeding and Shock Rebound procedures.

Cutaway view of assembled shock absorber



CHECK NEXT  
TECH TIP

#### Shock length adjustment:

It is VERY important that all shocks are equal length. Fully extend the shock absorber and measure the end-to-end length; we recommend using digital calipers to give an accurate measurement. If a shock absorber is shorter or longer than others, adjust the shock length by tightening or loosening the ball joint on the shock rod.

#### Damping adjustment:

If you built the adjustable shocks, fully extend the shock rod and turn it slightly to lock the piston in the shock body.

Turning the shock rod fully CCW aligns 4 holes in the pistons (softest damping). Turning the shock rod fully CW aligns 1 hole in the pistons (hardest damping). The shocks have four settings, each of which can be felt by a slight "click".

Set all four shocks initially to position 3 (3 holes open): turn fully CCW, then turn CW by 1 click.

**2x**  
FRONT SHOCKS  
(Silver)

**2x**  
REAR SHOCKS  
(Gold)

**SET-UP BOOK**

SHOCK DAMPING  
ADJUSTMENT

SPRING RATE SELECTION

## TECH TIP

Follow this tech tip to properly install pivot balls into the top pivot and bottom ball joint.

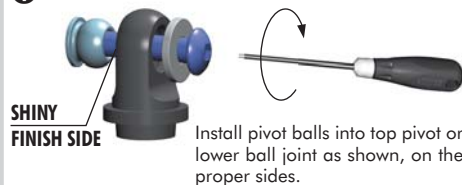
- Parts Needed:
- M3 x 16 SH screw
  - M3 shim

Note that the composite parts have two sides, noticeable around the pivot ball hole: one side has a shiny finish, the other side has a regular finish.

**SHINY  
FINISH SIDE**



**1**



**SHINY  
FINISH SIDE**

Install pivot balls into top pivot or lower ball joint as shown, on the proper sides.

Note that the lower pivot ball has an extra shoulder.

**2**



**SHINY  
FINISH SIDE**

**3**



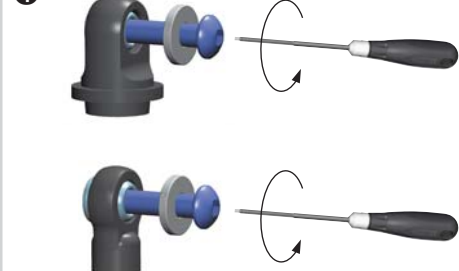
Ensure pivot balls move freely

**4**



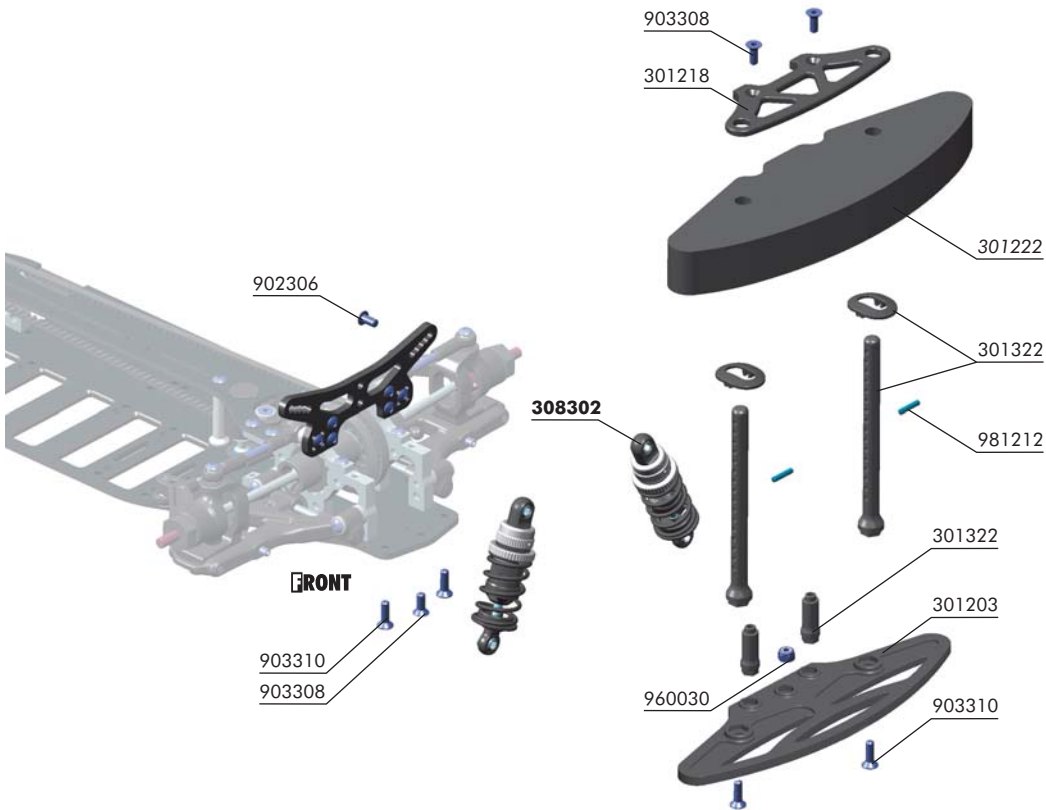
Tighten screw until pivot ball snaps into place

**5**



Remove screw and shim

7. FRONT & REAR ASSEMBLY



BAG

07

- 30 1202 COMPOSITE BUMPER (OPTION)  
30 1203 IMPACT ABSORBING FRONT BUMPER  
30 1218 COMPOSITE UPPER HOLDER FOR BUMPER  
30 1322 FRONT BODY MOUNT SET 6MM  
90 2306 HEX SCREW SH M3x6 (10)  
90 3308 HEX SCREW SFH M3x8 (10)

- 90 3310 HEX SCREW SFH M3x10 (10)  
96 0030 NUT M3 (10)  
98 1212 PIN 2x12 (10)  
30 1222 FOAM BUMPER  
30 8302 XRAY SHOCK ABSORBER-SET 4-STEP - SHORT (2)



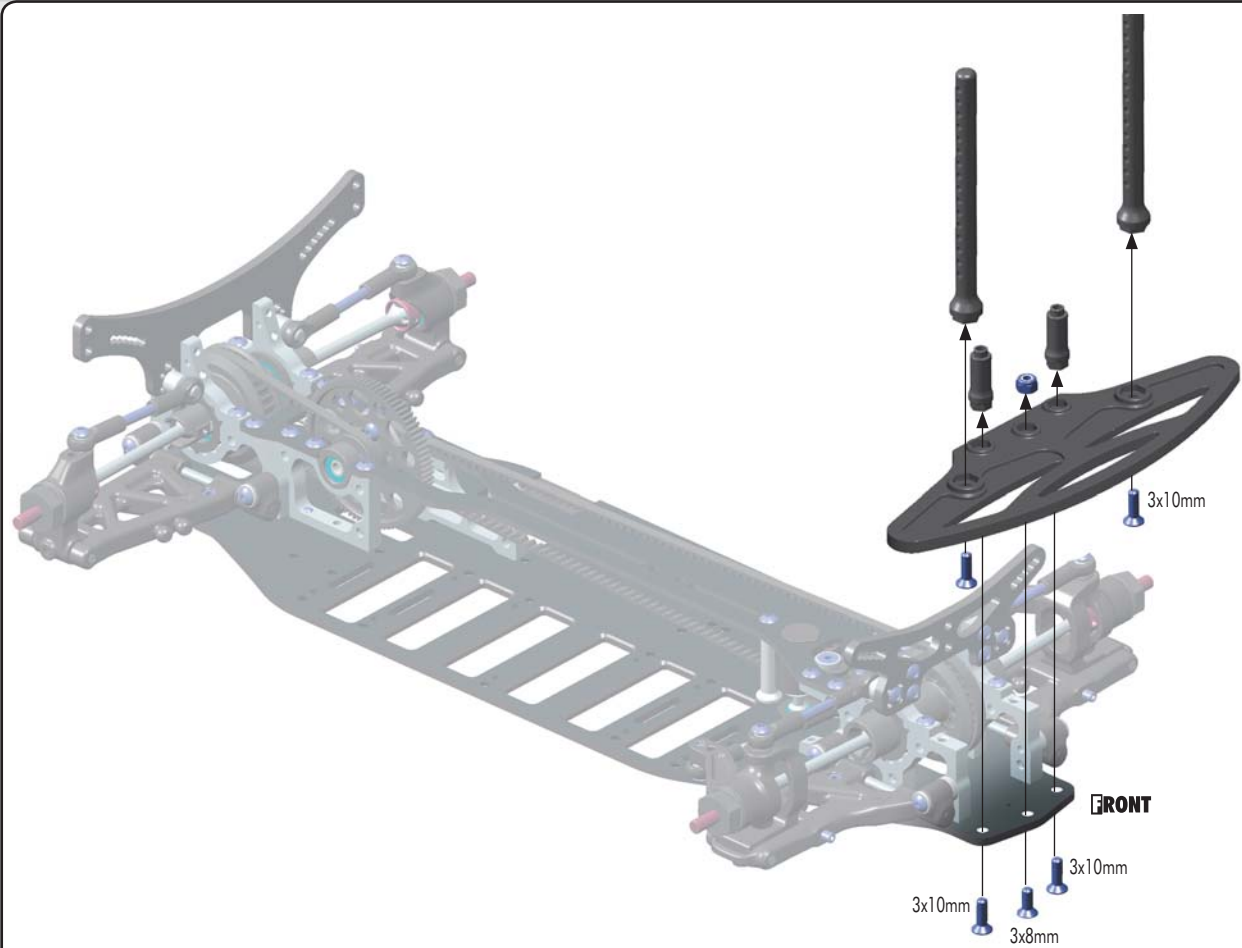
903308  
SFH M3x8



903310  
SFH M3x10



960030  
N M3x10

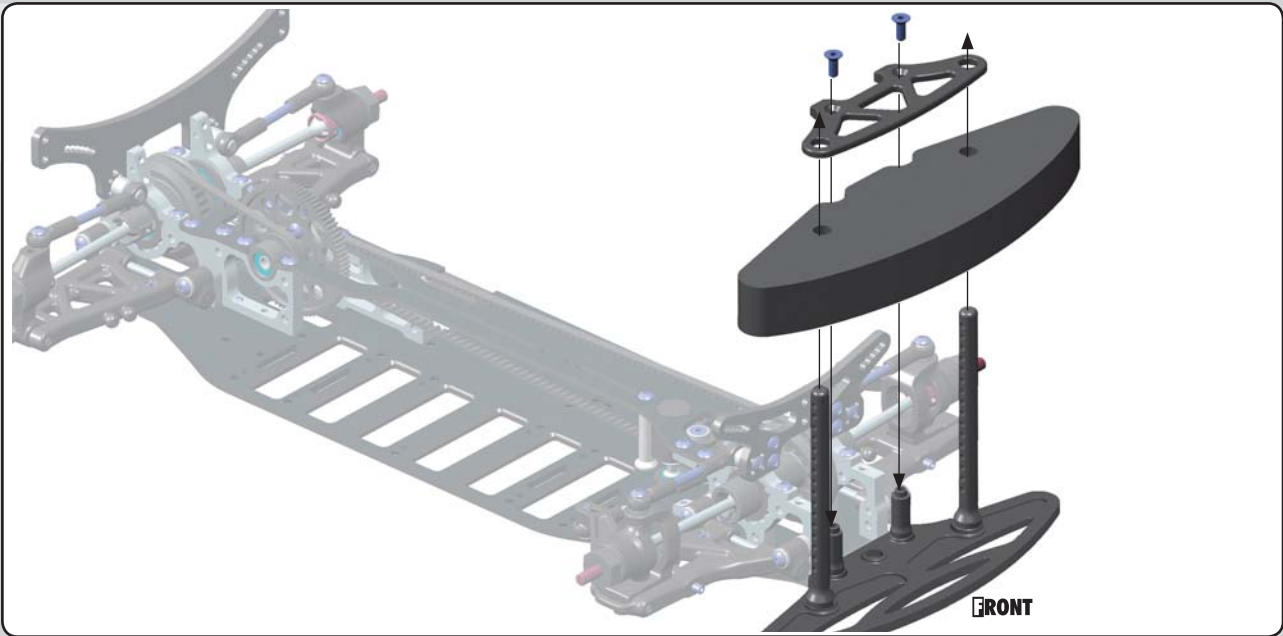


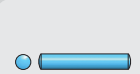


# 7. FRONT & REAR ASSEMBLY

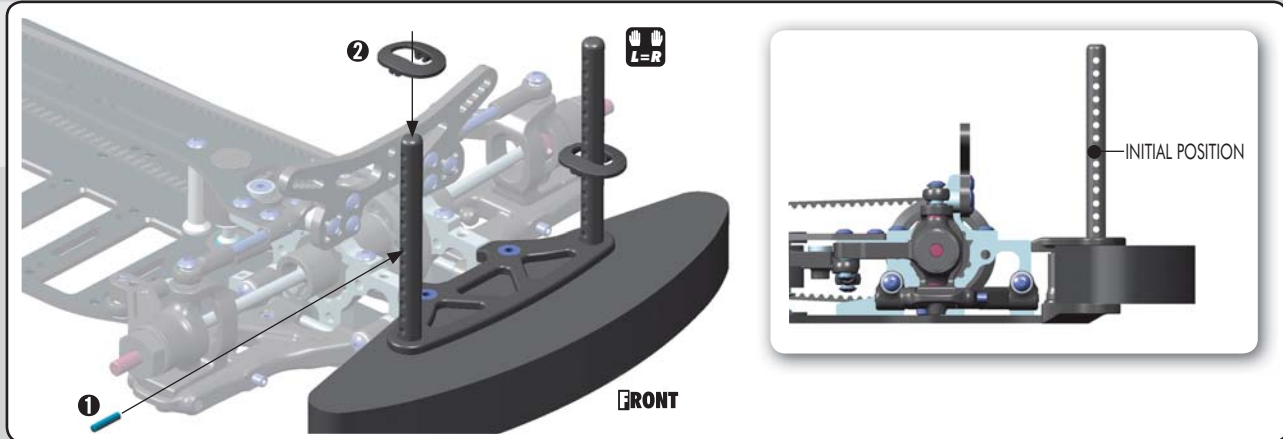


903308  
SFH M3x8



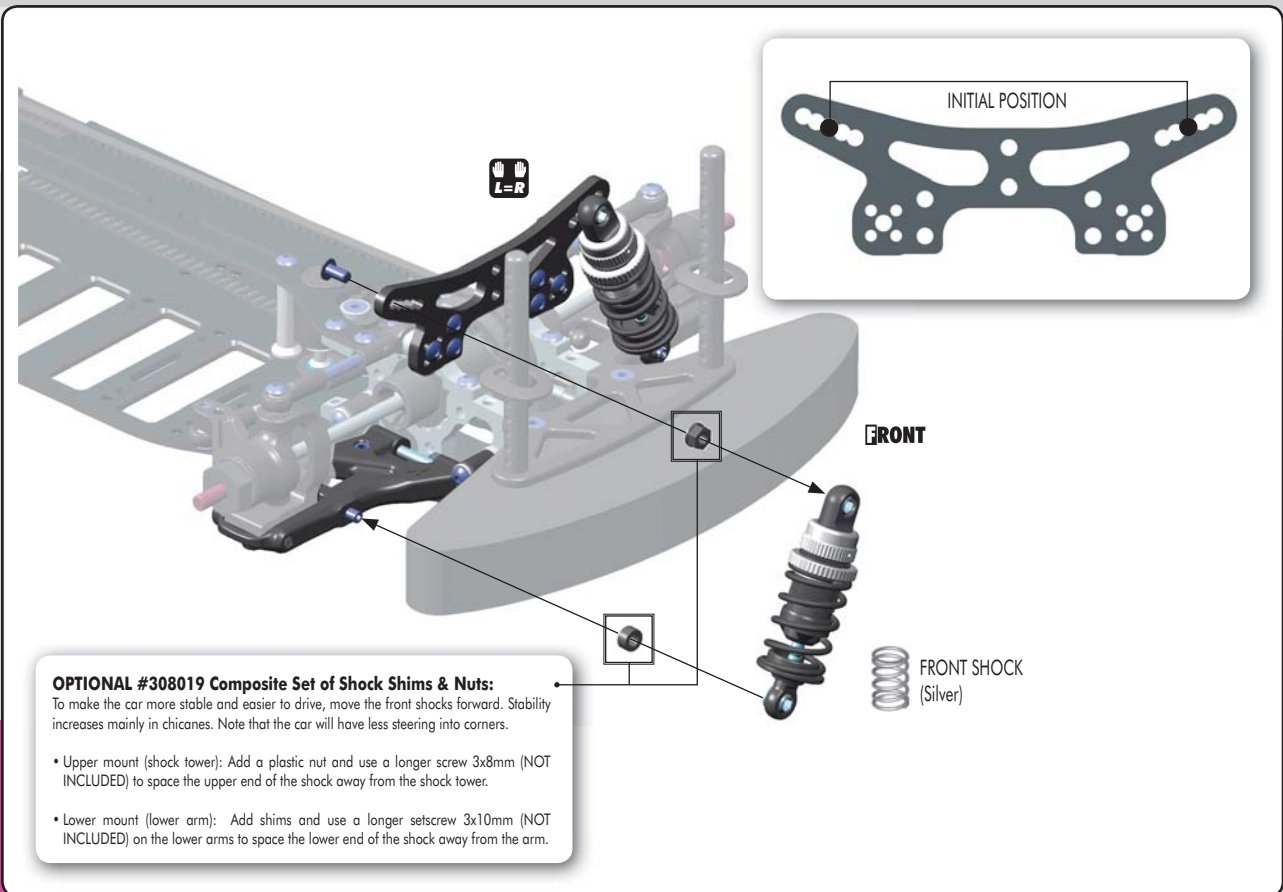


981212  
P 2x12





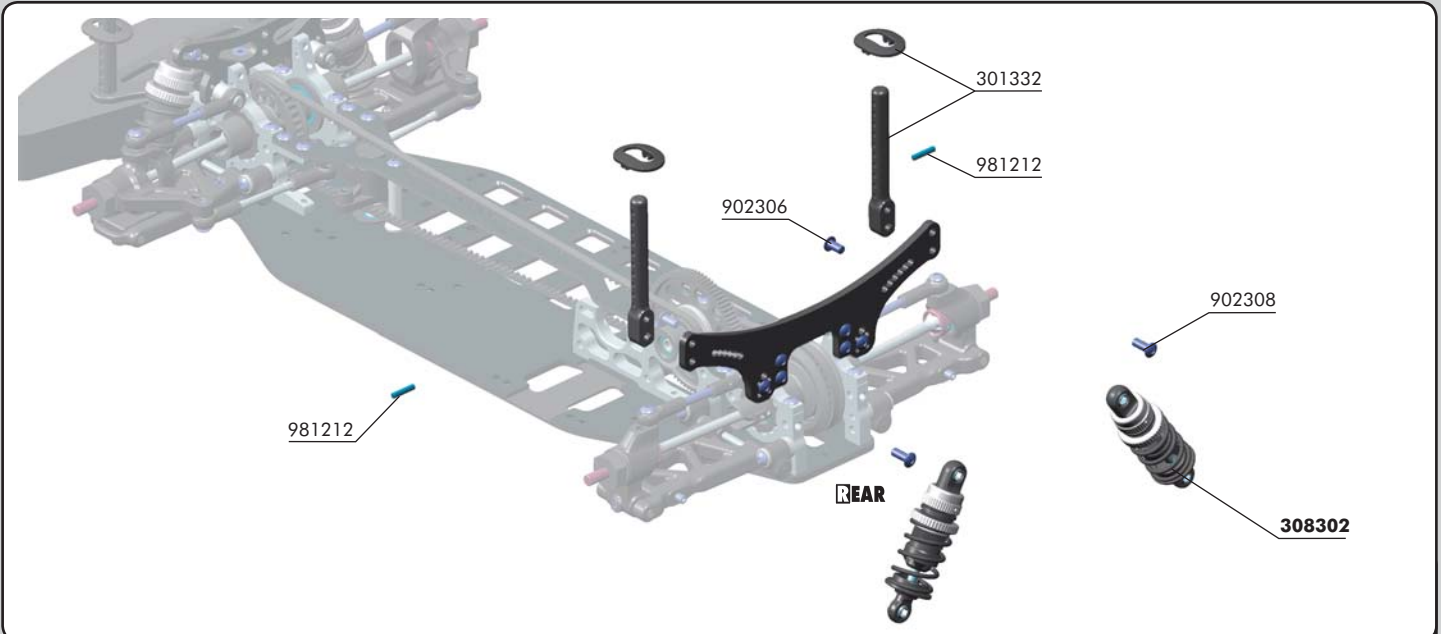
902306  
SH M3x6





SHOCK POSITION ADJUSTMENT  
RIDE HEIGHT ADJUSTMENT  
DROOP ADJUSTMENT

## 7. FRONT & REAR ASSEMBLY



**BAG**

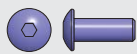
**07**

30 1332 REAR BODY MOUNT SET 6MM

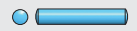
90 2306 HEX SCREW SH M3x6 (10)  
90 2308 HEX SCREW SH M3x8 (10)

98 1212 PIN 2x12 (10)

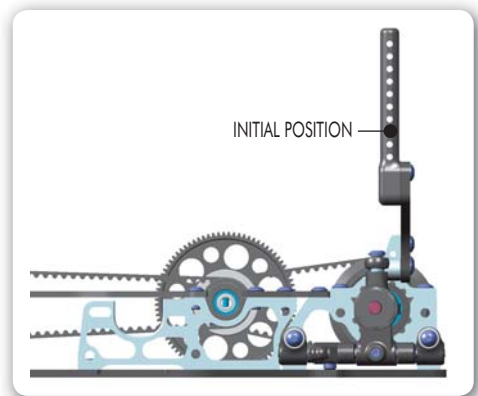
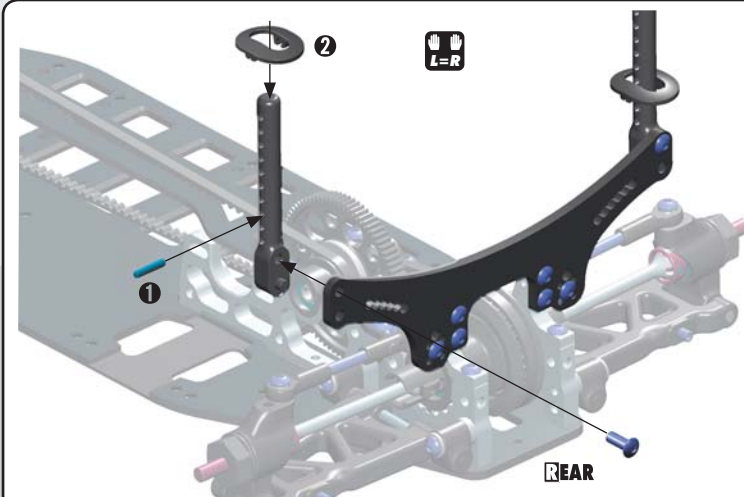
30 8302 XRAY SHOCK ABSORBER-SET 4-STEP - SHORT (2)



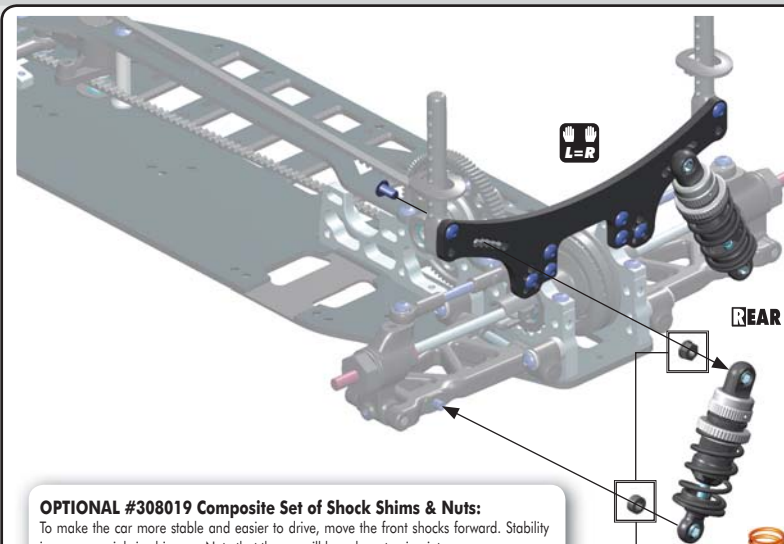
902308  
SH M3x8



981212  
P 2x12



902306  
SH M3x6



### OPTIONAL #308019 Composite Set of Shock Shims & Nuts:

To make the car more stable and easier to drive, move the front shocks forward. Stability increases mainly in chicanes. Note that the car will have less steering into corners.

- Upper mount (shock tower): Add a plastic nut and use a longer screw 3x8mm (NOT INCLUDED) to space the upper end of the shock away from the shock tower.
- Lower mount (lower arm): Add shims and use a longer setscrew 3x10mm (NOT INCLUDED) on the lower arms to space the lower end of the shock away from the arm.

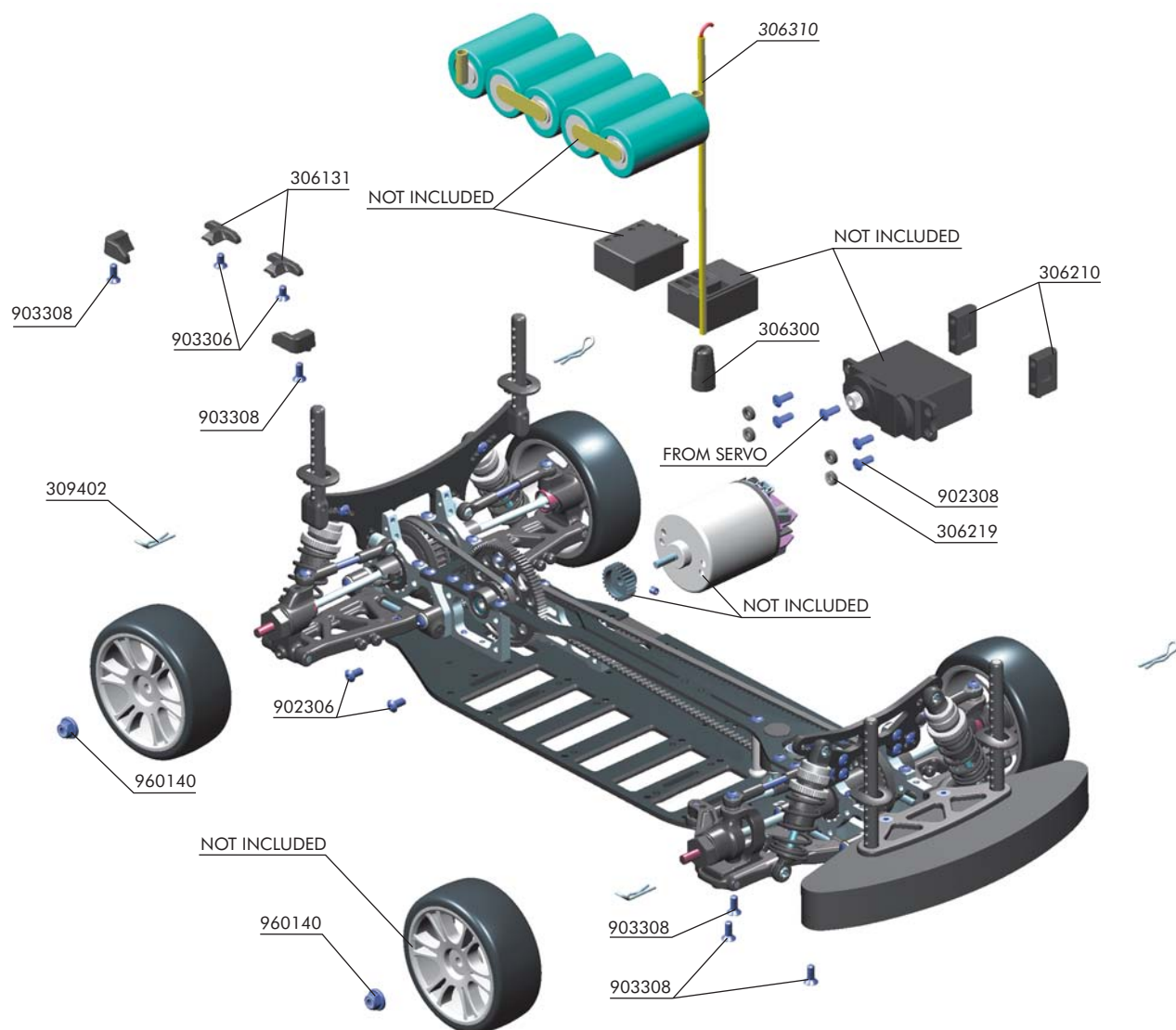


REAR SHOCK  
(Gold)



SHOCK POSITION ADJUSTMENT  
RIDE HEIGHT ADJUSTMENT  
DROOP ADJUSTMENT

## 8. FINAL ASSEMBLY

**BAG**

305912~88	NARROW PINION GEAR ALU HARD COATED (OPTION)	90 2306	HEX SCREW SH M3x6 (10)
30 6131	SET OF BATTERY BACKSTOPS - V2	90 2308	HEX SCREW SH M3x8 (10)
30 6163	6-CELL GRAPHITE BATTERY STRAP (SET) - (OPTION)	90 3306	HEX SCREW SFH M3x6 (10)
30 6200	ALU SERVO MOUNT (2) (OPTION)	90 3308	HEX SCREW SFH M3x8 (10)
30 6210	COMPOSITE SERVO MOUNT (2)	96 0140	NUT M4 WITH FLANGE (10)
30 6219	COMPOSITE SET OF SERVO SHIMS (4)		
30 6300	ANTENNA MOUNT	30 6310	ANTENNA (2)
30 9402	BODY CLIP FOR 6MM BODY POST (4)		

10

306219  
SHIM 3x6x1

10

306219  
SHIM 3x6x2

10

306219  
SHIM 3x6x3

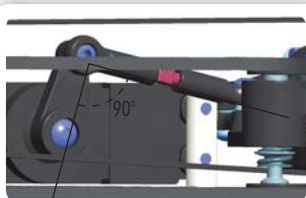


902308  
SH M3x8



903308  
SFH M3x8

For improved weight balance, we recommend using a narrow, light servo.



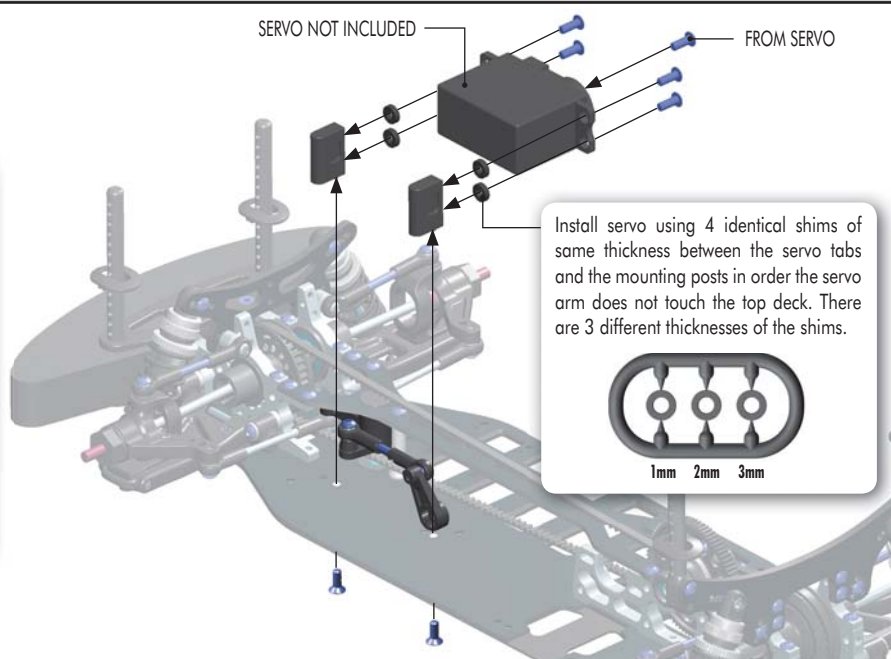
## DETAIL

Attach servo arm to servo output shaft using screw from servo.

Servo arm must be perpendicular to linkage when servo is in neutral.

SERVO NOT INCLUDED

– FROM SERVO



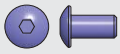
Install servo using 4 identical shims of same thickness between the servo tabs and the mounting posts in order the servo arm does not touch the top deck. There are 3 different thicknesses of the shims.



1mm 2mm 3mm



## 8. FINAL ASSEMBLY

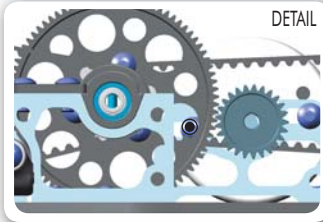


902306  
SFH M3x6

When installing the motor on the bulkhead, rotate the spur gear so the motor screw can be installed through a hole in the spur gear. See the detail image below.

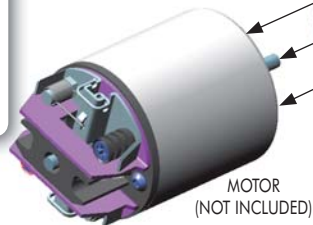
Adjust the motor so the pinion meshes with the spur gear properly. Make sure the gear mesh is not too tight.

There should be a small amount of play between the teeth of the pinion gear and spur gear.



DETAIL

Suggested to use  
3x2.5mm set screw

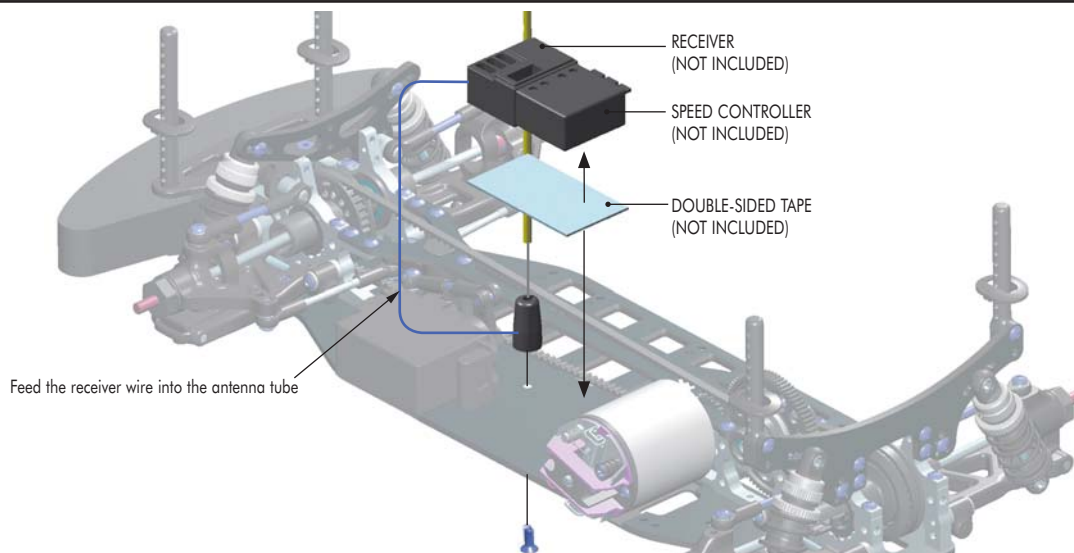


PINION  
(NOT INCLUDED)

MOTOR  
(NOT INCLUDED)



903308  
SFH M3x8



RECEIVER  
(NOT INCLUDED)

SPEED CONTROLLER  
(NOT INCLUDED)

DOUBLE-SIDED TAPE  
(NOT INCLUDED)

Feed the receiver wire into the antenna tube

## BATTERY ASSEMBLY CONFIGURATION

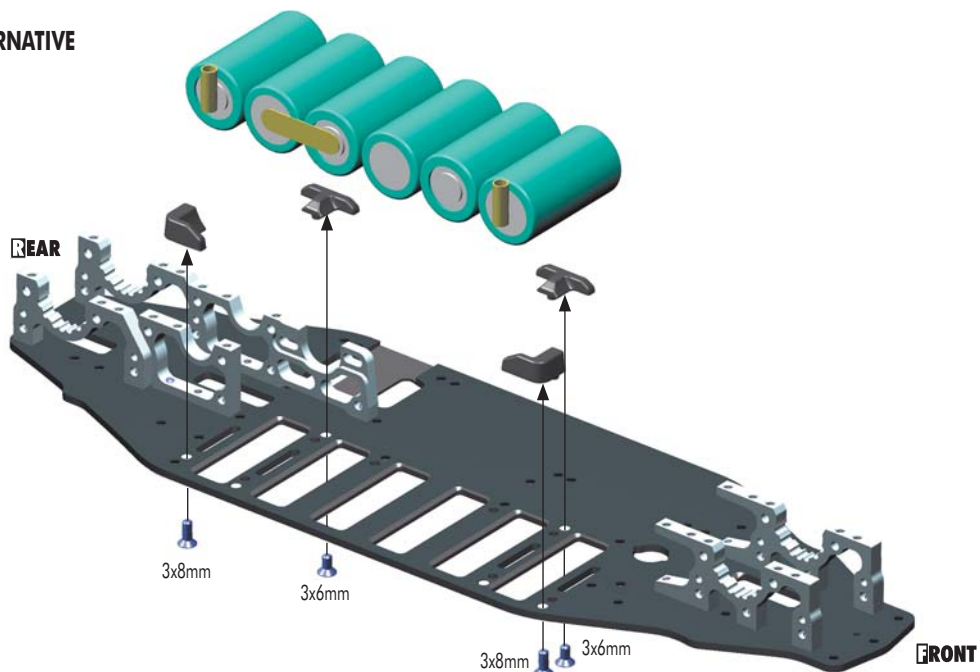


903306  
SFH M3x6



903308  
SFH M3x8

### 6-CELL ALTERNATIVE



REAR

FRONT

3x8mm

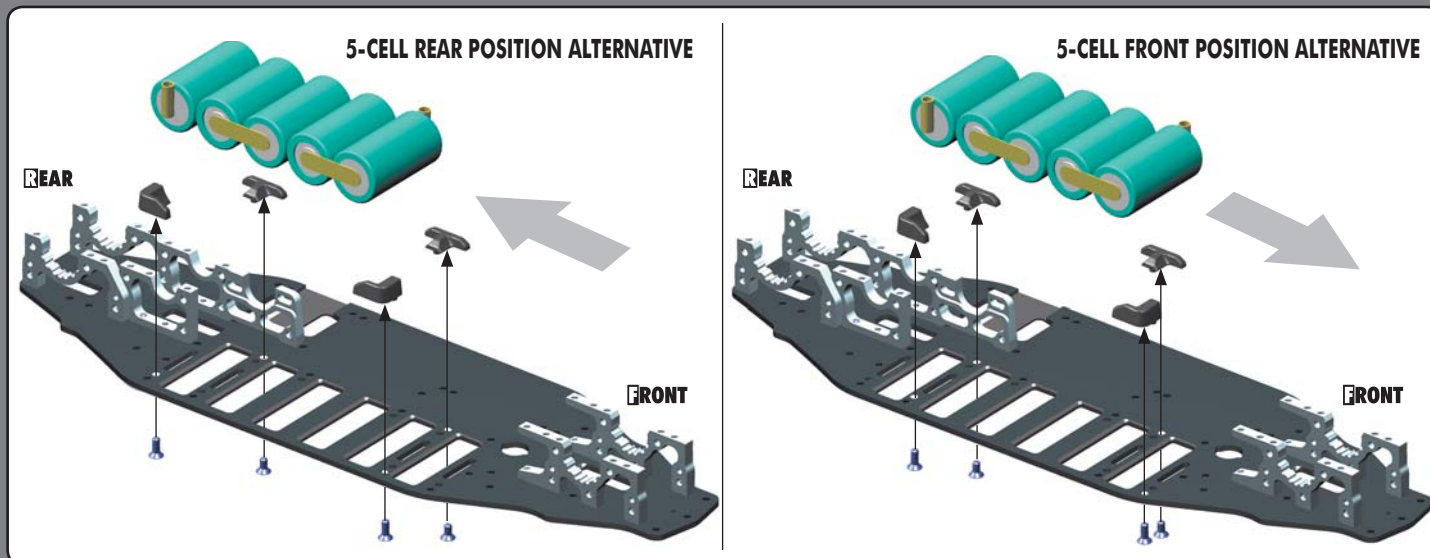
3x6mm

3x8mm

3x6mm

## 8. FINAL ASSEMBLY

### BATTERY ASSEMBLY CONFIGURATION



4x



**WARNING!**  
Follow the adhesive manufacturer's instructions for proper use and safety. Wear proper eye and hand protection.



#### US Foam-Spec Notice:

Some foam wheels may be slightly wider and may touch the front steering blocks. To avoid this, we recommend grinding the inside edge of the wheel, using a tire truer and a file. Make sure that both front tires/wheels end up being the same width, and that there are no rough edges.

Also, make sure that the front wheels and tires do not touch the steering blocks when the steering is turned, and that the wheels and tires do not touch the shocks.

SET-UP BOOK

FOAM TIRE TIPS



960140  
N M4

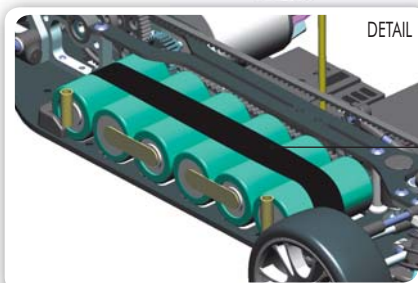


We recommend using #107870  
HUDY Fibre Reinforced Tape

or the optional battery holders:

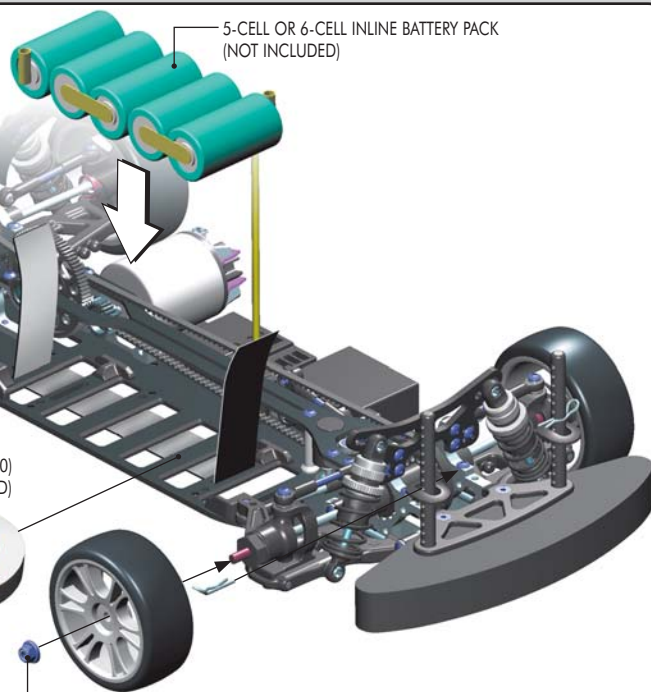


#306163 XRAY Graphite Battery Holder (for 6-cell chassis)



DETAIL

FIBRE TAPE  
(HUDY #107870)  
(NOT INCLUDED)



Make sure the wheel nuts are very tight, so the wheels do not loosen during racing.

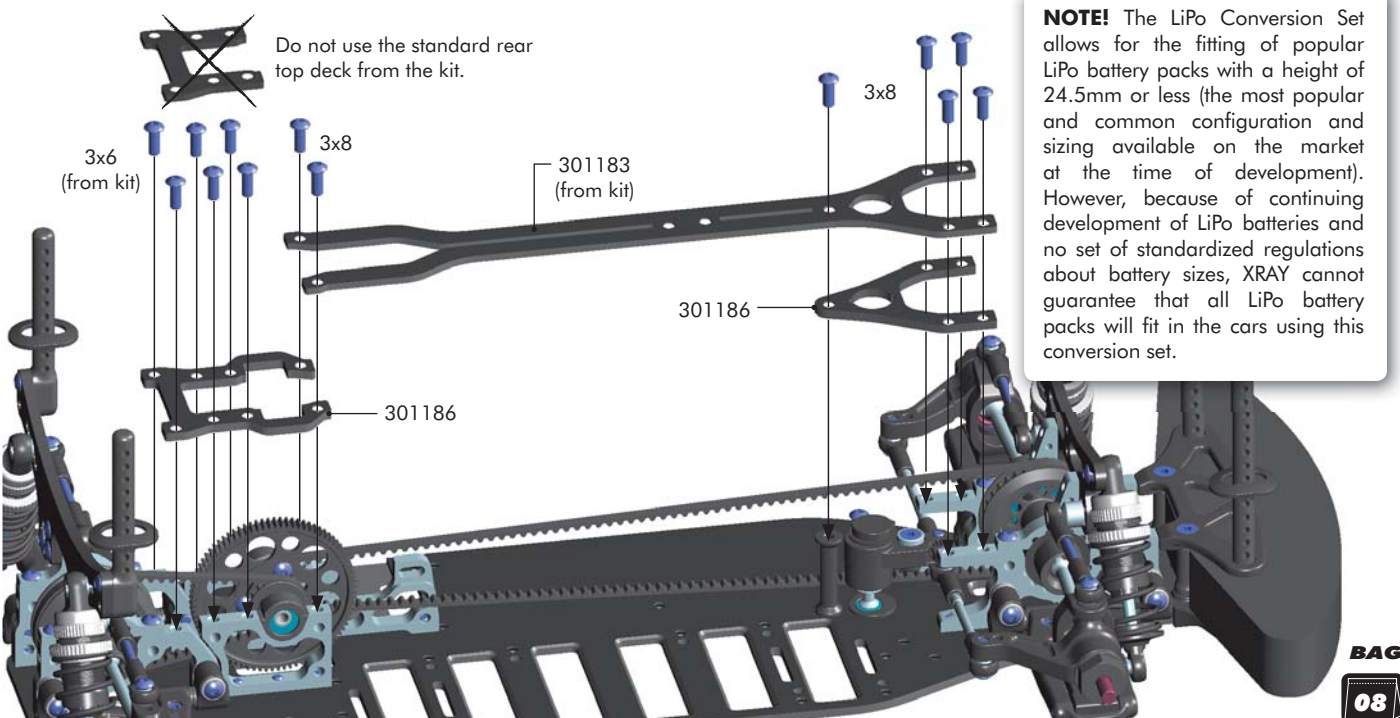
SET-UP BOOK

RIDE HEIGHT ADJUSTMENT  
DROOP ADJUSTMENT

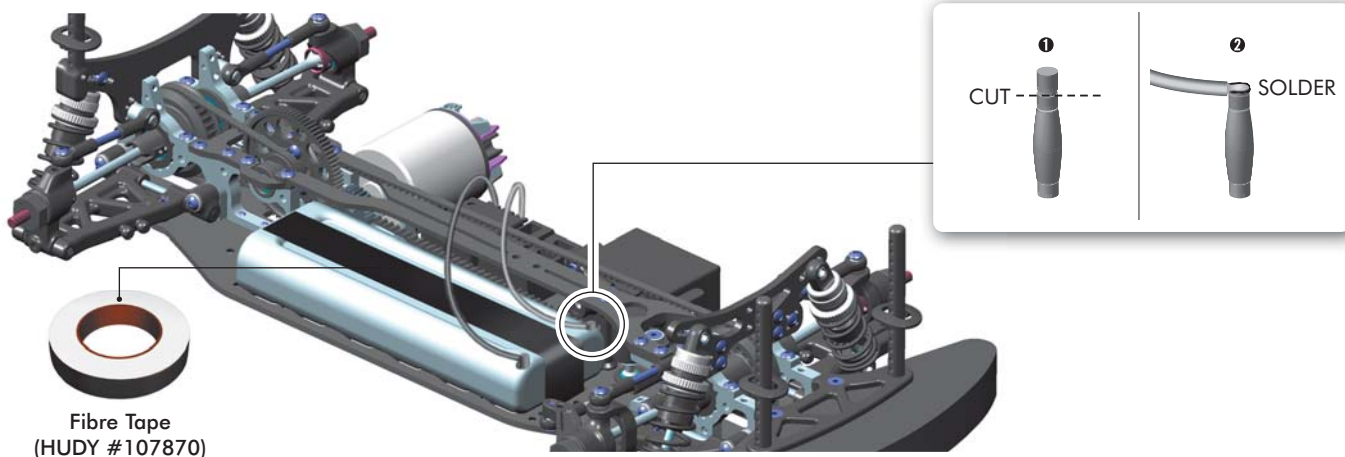


# LIPO CONVERSION SET

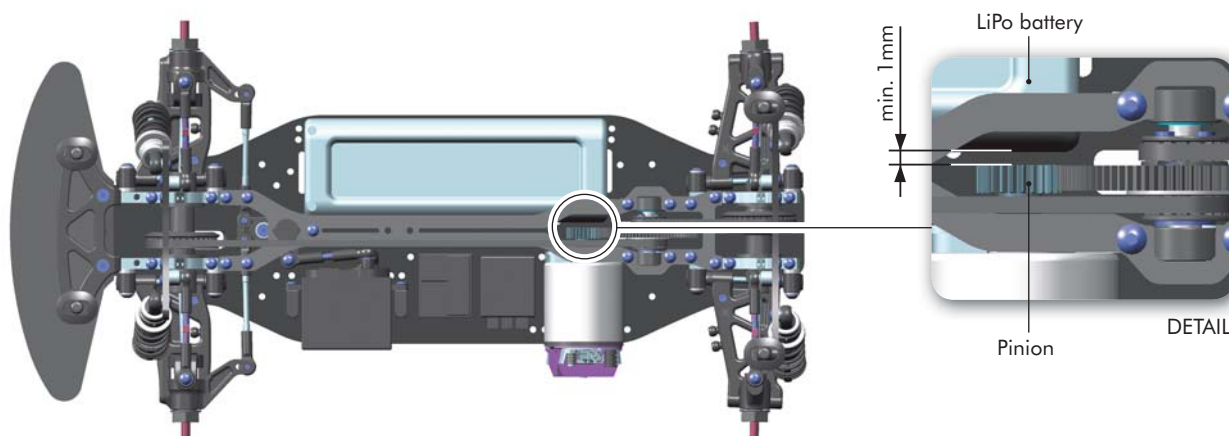
Because of enormous increase in Lipo batteries popularity, XRAY is the first car which is introducing Lipo conversion set. Thanks to the conversion, cars can be powered by the most used and popular Lipo batteries.



**LiPo Battery Fitting** Because LiPo batteries are also different in the width, it is important to correct the length of ESC wiring so that the battery connectors can easily be connected to the batteries. If the battery connectors cannot be connected because the top deck is in the way, please follow the modification shown in the pictures.



**Pinion Assembly** Because of the LiPo battery width, it is important to check that the motor pinion is not touching the battery. If the pinion touches the battery (or is close to touching it), move the pinion closer to the motor. It is sufficient to have only half of the pinion teeth contacting the spur gear teeth. This has no effect on the car's speed or performance.





The T2R PRO has 3 kinds of Multi-Flex™ settings: soft, medium, and stiff. The amount of stiffness used depends on the track surface.

## Car on Carpet

If you drive on carpet, we do not recommend using the soft Multi-Flex™ setting, while on the other end of spectrum if you drive on asphalt, we do not recommend using the stiff Multi-Flex™ setting. The reason why a soft setting should not be used on carpet is that although it may be a low-traction track, the carpet can overheat the front tires and make car very difficult to drive. As such, we recommend using a medium Multi-Flex™ setting if you drive on a low-traction carpet track. When on carpet, it is very important to use all four screws in the front part of the top deck. Although you may feel that car is more reactive using only 2 screws there, as was already mentioned above, it may lead to tire overheating. We recommend using the front central alu stand on carpet because it makes the car more stable and easier to drive. On very technical tracks with low traction, you may remove the alu central stand to get more steering, but be careful when the traction increases... you may have to use the alu central stand again.

If you decide to attend large race events with many participants, you can expect super-high traction. In these conditions, we recommend using not only the front stand but also the front optional chassis brace which makes the car easier to drive. However, the optional front brace decreases front traction and steering. The stiff setting can be used on super-high traction tracks when you want to increase the "aggression" of the car. If you want to increase steering you can do this by decreasing the rear traction; in that case, the screw under the motor holder may be used and/or you may tighten all screws in the rear bulkheads.

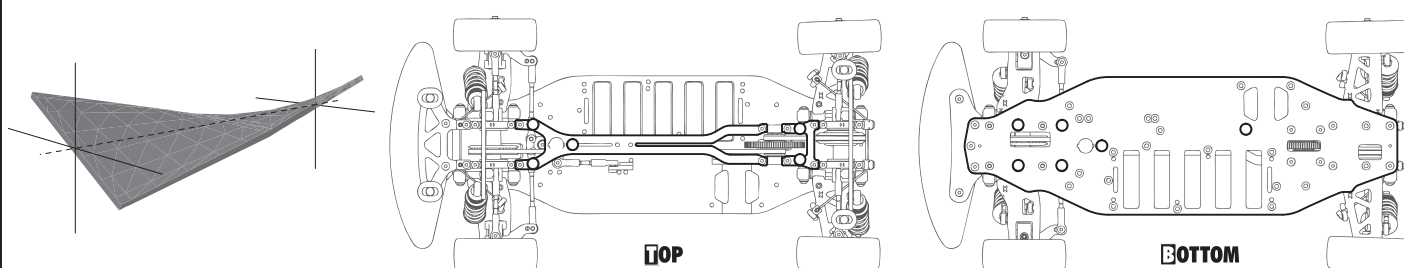
## Car on Asphalt

When running the car on asphalt, completely different settings are used compared to carpet. Typically, asphalt has low-medium traction so the soft and medium settings are generally recommended. Asphalt usually does not overheat the front tires as much as carpet does, however tire overheating on asphalt may occur when the track is super-hot and when soft inserts and/or soft tire compound are used. Normally you can use the soft setting for low-traction tracks. If the track is very technical, we recommend using the soft setting mainly for the front suspension, because the soft front suspension creates more aggression in the car. For this reason, we recommend using only 2 screws in the front part of the top deck, and no central alu stand. Screws from the front bulkheads may be removed as well. If you remove the rear screws on the front bulkheads, the car will steer better into corners.

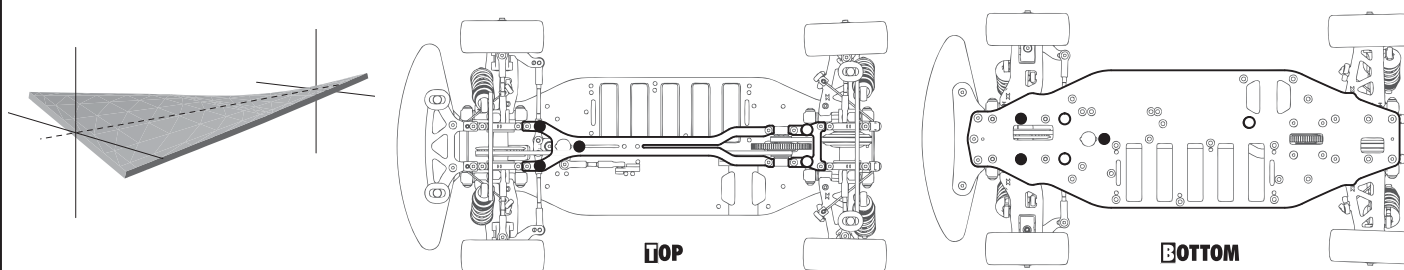
## Car Summary:

- Stiff setting: Very-high traction carpet track
- Medium setting: Technical medium traction carpet or asphalt track
- Soft setting: Technical or low-traction asphalt track

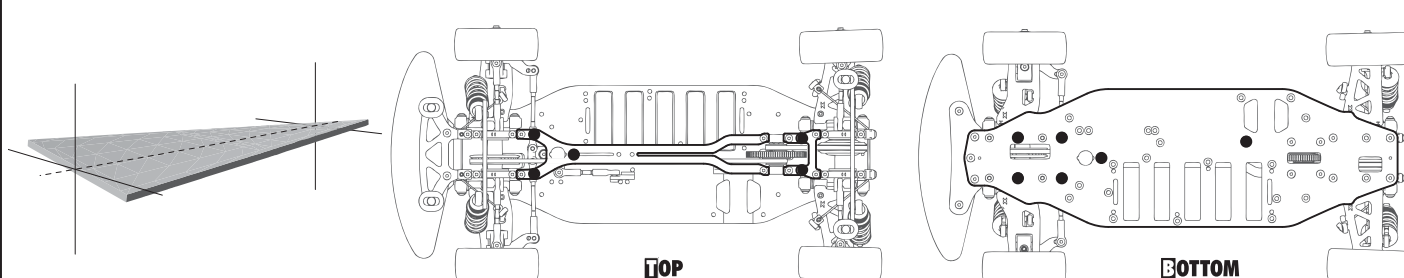
## SOFT SETTING



## MEDIUM SETTING



## STIFF SETTING



<b>RACE</b>						
<b>TRACK</b>						
NAME						
CITY / COUNTRY						
CONTACT						
<b>DATE</b>		TEMPERATURE / °F or °C	AIR TRACK			
QUALIFYING POSITION	BEST LAPTIME / sec	FINAL POSITION	RACE LENGTH / minutes			
<b>TRACK CONDITION</b>		<input type="checkbox"/> CARPET	<input type="checkbox"/> ASPHALT			
<input type="checkbox"/> TECHNICAL		<input type="checkbox"/> MIXED	<input type="checkbox"/> FAST			
<b>TRACTION</b>	<input type="checkbox"/> LOW	<input type="checkbox"/> MEDIUM	<input type="checkbox"/> HIGH			
<b>FRONT</b>		<b>REAR</b>				
<b>TRANSMISSION</b>						
FRONT PULLEY			REAR PULLEY			
		<b>DIFF.</b>				
<input type="checkbox"/> LOOSE	<input type="checkbox"/> MEDIUM	<input type="checkbox"/> TIGHT	<input type="checkbox"/> LOOSE	<input type="checkbox"/> MEDIUM	<input type="checkbox"/> TIGHT	
ONE WAY DIFFERENTIAL		<input type="checkbox"/> YES	<b>MIDDLE ONE WAY PULLEY</b>			
SOLID ONE WAY DIFF.		<input type="checkbox"/> YES				
SOLID AXLE		<input type="checkbox"/> YES				
PINION / T			SPUR GEAR / T			
FINAL DRIVE RATIO			ROLLOUT			
<b>FRONT</b>		<b>REAR</b>				
<input type="checkbox"/> ALU	<input type="checkbox"/> PLASTIC	<b>SHOCKS</b>		<input type="checkbox"/> ALU	<input type="checkbox"/> PLASTIC	
<b>XRAY SPRINGS</b>						
#308393	Super Soft	<input type="checkbox"/> YELLOW	<input type="checkbox"/> (D=1.4)	14 lb		
#308384		<input type="checkbox"/> BLUE-GREEN	<input type="checkbox"/> (D=1.5)	15 lb		
#308394	Soft	<input type="checkbox"/> WHITE	<input type="checkbox"/> (D=1.5)	17.5 lb		
#308385		<input type="checkbox"/> LIGHT-BLUE	<input type="checkbox"/> (D=1.6)	20 lb		
#308395	Soft Medium	<input type="checkbox"/> BLUE	<input type="checkbox"/> (D=1.6)	22.5 lb		
#308386		<input type="checkbox"/> DARK-BLUE	<input type="checkbox"/> (D=1.7)	25 lb		
#308396	Medium	<input type="checkbox"/> VIOLET	<input type="checkbox"/> (D=1.7)	28 lb		
#308387		<input type="checkbox"/> LIGHT-PURPLE	<input type="checkbox"/> (D=1.8)	30 lb		
#308397	Medium Hard	<input type="checkbox"/> PURPLE	<input type="checkbox"/> (D=1.8)	33 lb		
#308388		<input type="checkbox"/> LIGHT-RED	<input type="checkbox"/> (D=1.9)	35 lb		
#308398	Hard	<input type="checkbox"/> RED	<input type="checkbox"/> (D=1.9)	38 lb		
#308373		<input type="checkbox"/> C 2.2	<input type="checkbox"/>			
#308374		<input type="checkbox"/> C 2.4	<input type="checkbox"/>			
#308375		<input type="checkbox"/> C 2.6	<input type="checkbox"/>			
#308376		<input type="checkbox"/> C 2.8	<input type="checkbox"/>			
#308377		<input type="checkbox"/> C 3.0	<input type="checkbox"/>			
#308378		<input type="checkbox"/> C 3.2	<input type="checkbox"/>			
#308379		<input type="checkbox"/> C 3.4	<input type="checkbox"/>			
		OTHER SPRING				
		OIL / CST				
		LENGTH / mm				
		PRELOAD / mm				
		REBOUND %				
<input type="checkbox"/> YES	<input type="checkbox"/> NO	FOAM INSERTS		<input type="checkbox"/> YES	<input type="checkbox"/> NO	
<input type="checkbox"/> YES	<input type="checkbox"/> NO	O-RING ON SHAFT		<input type="checkbox"/> YES	<input type="checkbox"/> NO	
<input type="radio"/> OPENED		HOLES IN PISTON				
<input type="radio"/> CLOSED						
		<b>ANTI-ROLL BAR</b>				
		THICKNESS / mm		THICKNESS / mm		
		<b>TIRES</b>				
		DIAMETER / mm				
		INSERTS				
		ADDITIVE				
		TREATED AREA				
		<b>WHEELS</b>				
S <input type="checkbox"/>	M <input type="checkbox"/>	H <input type="checkbox"/>	HARDNESS	S <input type="checkbox"/>	M <input type="checkbox"/>	H <input type="checkbox"/>
<b>MOTOR</b>		ARMATURE				
		+ SPRING -				
		+ BRUSH COMP. -				
<b>ESC</b>		<b>BATTERIES</b>				
<b>BRUSHLESS</b>	PROGRAM	PUNCH	INITIAL BRAKE	AUTO BRAKE		
<b>BODY</b>		<b>WING</b>				

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