



# XRAY XB20C

1/10 LUXURY ELECTRIC OFF-ROAD CAR 2WD

## CARPET EDITION



MADE IN EUROPE

# INSTRUCTION MANUAL

# INTRODUCTION

The XRAY XB2 is a modern, high-competition premium luxury racing 1/10 electric 2WD off-road buggy that is the epitome of high-performance and fine distinctive design. Your XB2 offers highest performance, responsive handling, and traditionally exceptional XRAY quality, engineering, and design. The superb craftsmanship and attention to detail are clearly evident everywhere on the XRAY XB2.

XB2 was designed around a no compromise platform; the attention to detail creates a low maintenance, extra long life electric buggy. The ultra-low center of gravity (CG) and optimized weight balance makes set-up, driving, and maintenance easy and quick.

## 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)

**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

The XRAY XB2 was created by blending highest-quality materials and excellent design. On high-speed flat tracks or bumpy tracks, whether driving for fun or racing to win, the XB2 delivers outstanding performance, speed, and precision handling.

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.

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Email: [xray@rcamerica.com](mailto:xray@rcamerica.com)

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.

## **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!

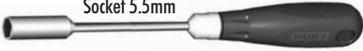
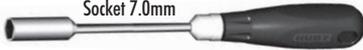
**In line with our policy of continuous product development, the exact specifications of the kit may vary. In the unlikely event of any problems with your new kit, you should contact the model shop where you purchased it, quoting the part number.**

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

## 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 threadlock 	Apply CA glue 	Apply oil 
Scale 	Apply grease 	Optional parts 	Ensure smooth non-binding movement 	Tighten screw gently 	Completed assembly 	Detail 	Apply cleaner 

## TOOLS REQUIRED

Scissors (HUDY #188990) 	Special Tool for turnbuckles, nuts (HUDY #181090) 	Turnbuckle Wrench 3mm (HUDY #181030) 	Pocket Hobby Knife (HUDY #188981) 	Side Cutters (HUDY #189010) 	Combination Pliers (HUDY #189020) 	RC Shock-Plier Uni Tool (HUDY #183011) 
Tweezer 	HUDY TOOLS: Allen 1.5mm  Socket 5.5mm 			Arm Reamer 3.0mm 		
	Allen 2.0mm  Socket 7.0mm 			Reamer (HUDY #107600) or (HUDY #107601) 		

## ITEMS INCLUDED

HUDY Premium Silicone Oils Oil 400cSt (#106340) 	HUDY Premium Silicone Oils Oil 450cSt (#106345) 	HUDY Premium Silicone Oils Oil 3000cSt (#106430) 	Graphite Grease (HUDY #106210) 
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## EQUIPMENT REQUIRED

Transmitter 	Receiver 	Steering Servo 	Electric Motor & Pinion Gear with Setscrew 	Bearing Oil (HUDY #106230) 	CA glue 
Speed Controller 	LiPo Battery 	Lexan™ Paint 	Battery Charger 	Double-sided Tape (HUDY #107875) 	Tires & Inserts 

## NOT INCLUDED

### Set-up Book

To ensure that you always have access to the most up-to-date version of the Set-up Book you can download the HUDY Set-up Book from their web site at [www.hudy.net] By offering this online version instead of including a hardcopy printed version in kits, you will always be assured of having the most current updated version.



XRAY offers wide range of optional tuning parts which are listed in tables like these. Please refer to the exploded view of each main section to verify which part is included in the kit while all other parts are available only as an optional part and must be purchased separately.



#### SAMPLE OF OPTIONAL PARTS

#32XXXX	TYPE	OPTION 1
#32XXXX	TYPE	OPTION 2
#32XXXX	TYPE	INCLUDED
#32XXXX	TYPE	OPTION 3

## COLOR INDICATIONS

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:

365884

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

321100

**STYLE B** - indicates parts that are included in the box.

324900

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

## XB2 TECH TIPS

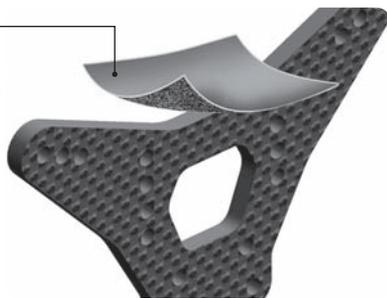
### TIP GRAPHITE PARTS PROTECTION

#### Protect all XB2 Graphite Parts:

- Front shock tower
- Rear shock tower

Fine sandpaper

Use fine sandpaper to sand smooth the edges of all graphite parts.

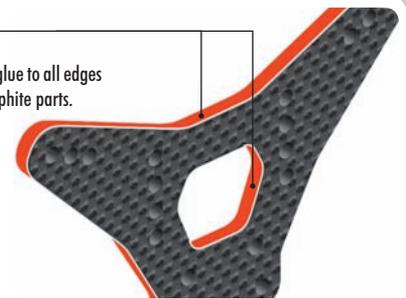


### ! SHOCK TOWER PROTECTION

Please follow the Instruction Manual and seal the edges of the shock towers with CA to reinforce them and help prevent delamination.



Apply CA glue to all edges of the graphite parts.



# 1. REAR DIFFERENTIAL



## BEVEL & SATELLITE GEARS + PINS

#304932 + #304980	COMPOSITE	INCLUDED
#335030 + #335080	STEEL	OPTION



## GEAR DIFF CASE

#324910	HARD	INCLUDED
#324910-G	GRAPHITE	OPTION

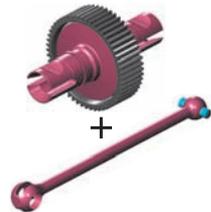


## GEAR DIFF. PULLEY

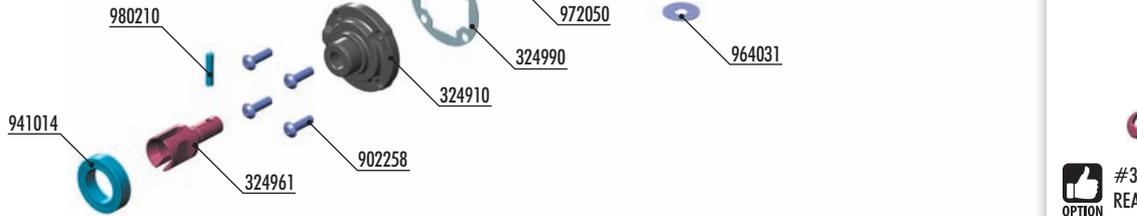
#324953	HARD	INCLUDED
#324953-G	GRAPHITE	OPTION



#325002  
BALL ADJUSTABLE DIFFERENTIAL SET  
HUDY SPRING STEEL™



#325324  
REAR DRIVE SHAFT 75mm (2.5mm PIN)  
HUDY SPRING STEEL™



BAG



- 30 4932 GRAPHITE GEAR DIFF BEVEL & SATELLITE GEARS (2+4)
- 30 4980 COMPOSITE GEAR DIFF CROSS PIN
- 32 4901 GEAR DIFFERENTIAL FOR 2.5MM PIN - SET
- 32 4910 COMPOSITE GEAR DIFFERENTIAL CASE
- 32 4953 COMPOSITE GEAR DIFFERENTIAL CASE WITH PULLEY 53T
- 32 4961 GEAR DIFF OUTDRIVE ADAPTER - HUDY SPRING STEEL™ (2)
- 32 4990 DIFF GASKET (4)

- 90 2258 HEX SCREW SH M2.5x8 (10)
- 94 1014 BALL-BEARING 10x15x4 RUBBER SEALED - GREASE (2)
- 96 4031 WASHER S 3.5x10x0.2 (10)
- 96 4050 WASHER S 5x15x0.3 (10)
- 97 2050 SILICONE O-RING 5x2 (10)
- 98 0210 PIN 2x10 (10)



964050  
S 5x15x0.3

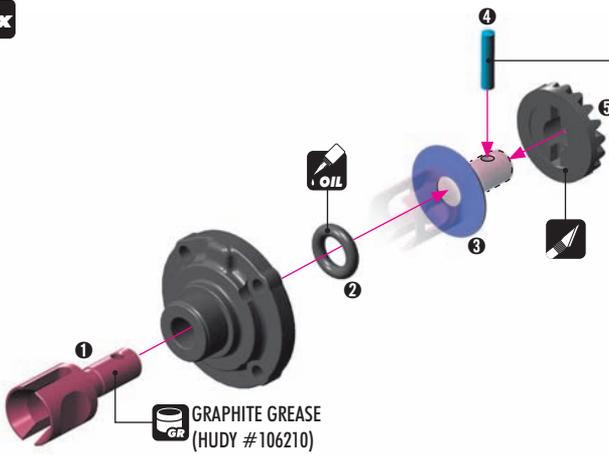


972050  
O 5x2

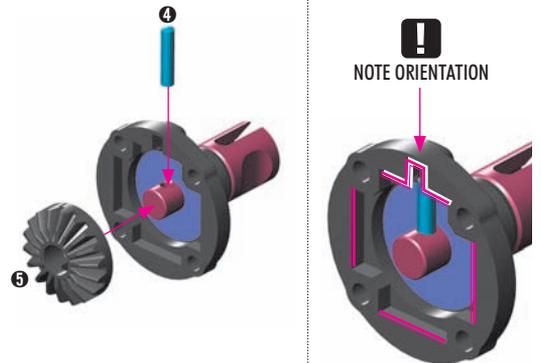


980210  
P 2x10

2x



STEP 4 5



964050  
S 5x15x0.3



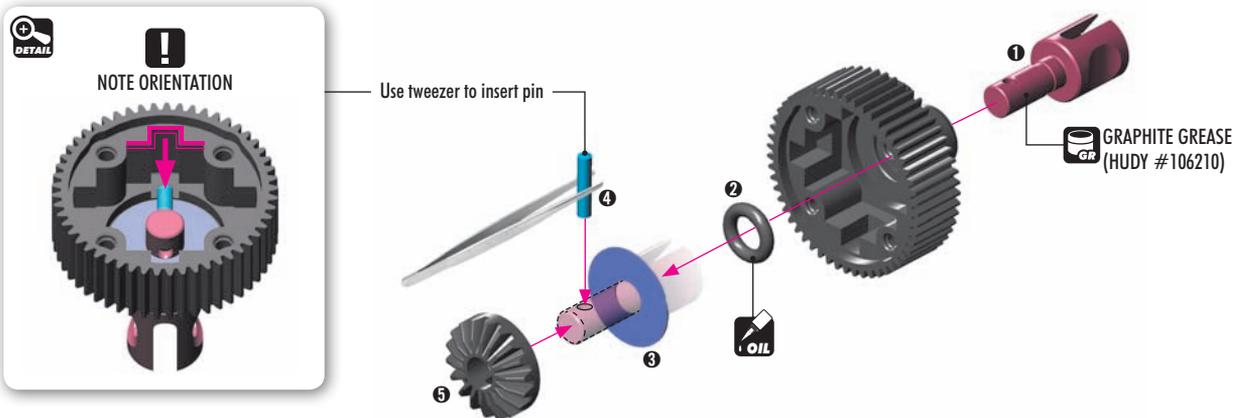
972050  
O 5x2



980210  
P 2x10



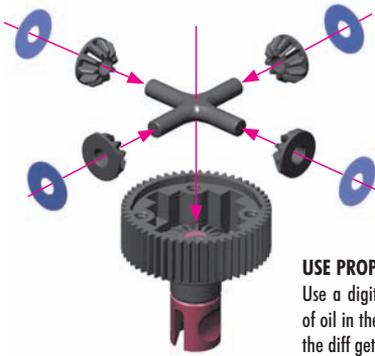
NOTE ORIENTATION



# 1. REAR DIFFERENTIAL



964031  
S 3.5x10x0.2



### USE PROPER AMOUNT OF OIL IN THE DIFFS

Use a digital scale to measure the exact amount of oil in the diff. Remember that during operation the diff gets hotter and the heat may allow the oil to expand. If there is too much oil inside it may interfere with the diff operation and damage the internal gears.



### Rear diff

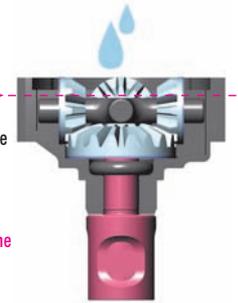
Silicone oil 3 000cSt  
Fill just above the diff pin.



Fill differential up to the top of the diff pin.



DO NOT fill the diff to the top of the housing.



TO ENSURE YOU HAVE THE SAME AMOUNT OF OIL FROM REBUILD TO REBUILD, DO THE FOLLOWING:



1 Put the diff (without oil) on the scale and check the weight (approximately 11.62g)

$$11.62g + 0.95g = 12.57g$$

#107865  
HUDY Ultimate Digital Pocket Scale 300g ± 0.01g



2 Slowly pour oil into the diff and watch the weight. Add 0.95g of oil into the diff. The approximate weight of the diff including oil is 12.57g.

### TIP TIPS FOR REAR DIFFERENTIAL

LOW-MEDIUM TRACTION 3 000cSt (HUDY #106430)  
MEDIUM-HIGH TRACTION 5 000cSt (HUDY #106450)

NOTE: Softer oil increases rear traction, harder oil increases on-power steering.



### HUDY ULTIMATE SILICONE OILS

OPTION	Oil Part #	Oil Viscosity	Quantity	Status
	#106410	1000 cSt	50ml	OPTION
	#106420	2000 cSt	50ml	OPTION
	#106430	3000 cSt	50ml	INCLUDED
	#106440	4000 cSt	50ml	OPTION
	#106450	5000 cSt	50ml	OPTION
	#106460	6000 cSt	50ml	OPTION
	#106470	7000 cSt	50ml	OPTION

### SET-UP BOOK

DIFFERENTIAL OIL



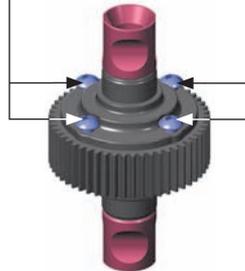
902258  
SH M2.5x8



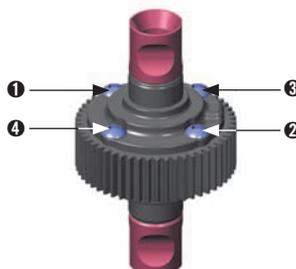
941014  
BB 10x15x4



Tighten the screws equally but do NOT tighten them completely.



Finish tightening in this order.



Use HUDY Ball-Bearing Grease

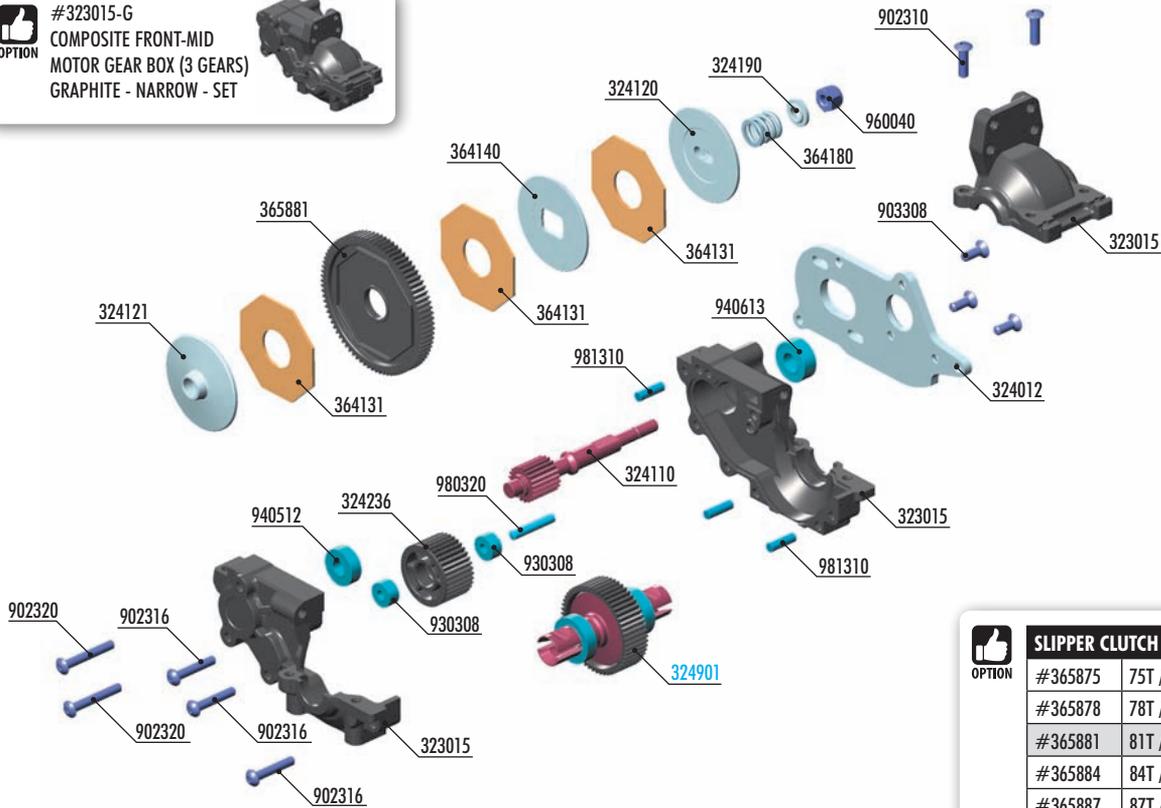
#106220 - STANDARD  
#106221 - BLUE  
#106222 - RED



## 2. REAR TRANSMISSION



#323015-G  
COMPOSITE FRONT-MID  
MOTOR GEAR BOX (3 GEARS)  
GRAPHITE - NARROW - SET



### SLIPPER CLUTCH SPUR GEARS

Part Number	Specification	Availability
#365875	75T / 48	OPTION
#365878	78T / 48	OPTION
#365881	81T / 48	INCLUDED
#365884	84T / 48	OPTION
#365887	87T / 48	OPTION



### BAG

02

- 32 3015 COMPOSITE FRONT-MID MOTOR GEAR BOX (3 GEARS) - NARROW - SET
- 32 4012 ALU FRONT-MID MOTOR (3 GEARS) PLATE - SWISS 7075 T6 (3MM)
- 32 4110 ALU TOP SHAFT 20T - SWISS 7075 T6 - HARD COATED
- 32 4120 ALU 3-PAD SLIPPER CLUTCH PLATE - SWISS 7075 T6
- 32 4121 ALU 3-PAD SLIPPER CLUTCH PLATE WITH ADAPTER
- 32 4190 ALU 3-PAD SLIPPER CLUTCH SHIM
- 32 4236 COMPOSITE GEAR 36T - GRAPHITE
- 36 4131 SLIPPER CLUTCH PAD "SLS" - V2 (2)
- 36 4140 ALU 3-PAD SLIPPER CLUTCH PLATE DISC - 7075 T6
- 36 4180 SLIPPER CLUTCH SPRING C=30 - BLACK
- 36 5881 COMPOSITE 3-PAD SLIPPER CLUTCH SPUR GEAR 81T / 48

- 90 2310 HEX SCREW SH M3x10 (10)
- 90 2316 HEX SCREW SH M3x16 (10)
- 90 2320 HEX SCREW SH M3x20 (10)
- 90 3308 HEX SCREW SFH M3x8 (10)
- 93 0308 BALL-BEARING 3x8x4 STEEL SEALED - OIL (2)
- 94 0512 BALL-BEARING 5x12x4 RUBBER SEALED - OIL (2)
- 94 0613 BALL-BEARING 6x13x5 RUBBER SEALED - OIL (2)
- 96 0040 NUT M4 (10)
- 98 0320 PIN 3x20 (10)
- 98 1310 PIN 3x10 (10)

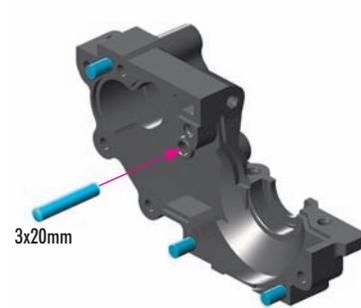
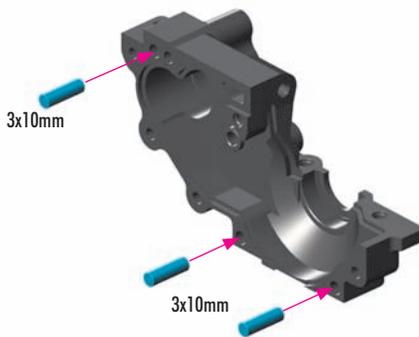
32 4901 GEAR DIFFERENTIAL FOR 2.5MM PIN - SET



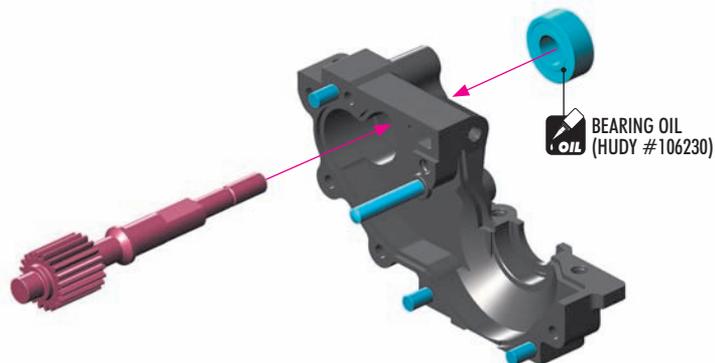
981310  
P 3x10



980320  
P 3x20



940613  
BB 6x13x5



BEARING OIL  
(HUDY #106230)

## 2. REAR TRANSMISSION



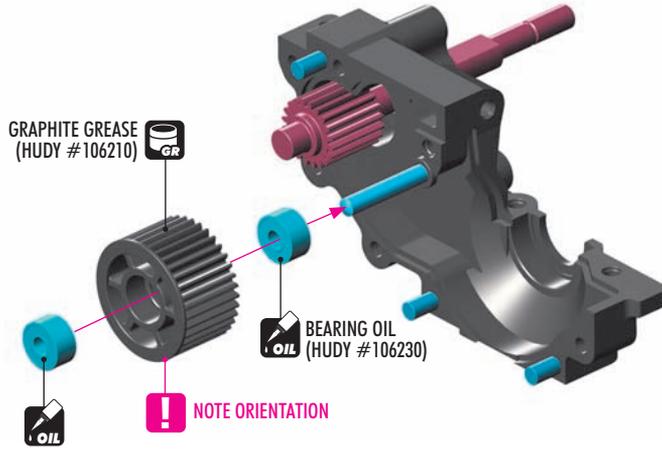
930308  
BB 3x8x4

GRAPHITE GREASE  
(HUDY #106210)



BEARING OIL  
(HUDY #106230)

NOTE ORIENTATION



902316  
SH M3x16



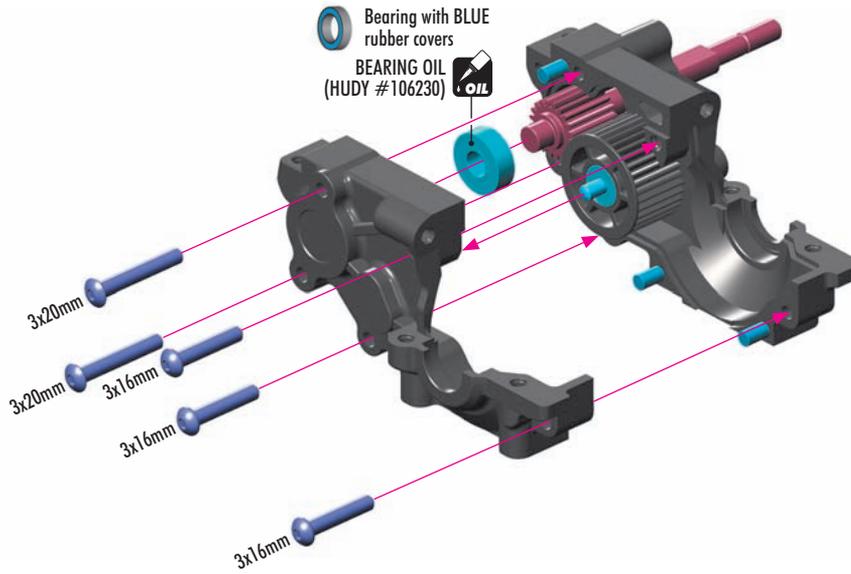
902320  
SH M3x20



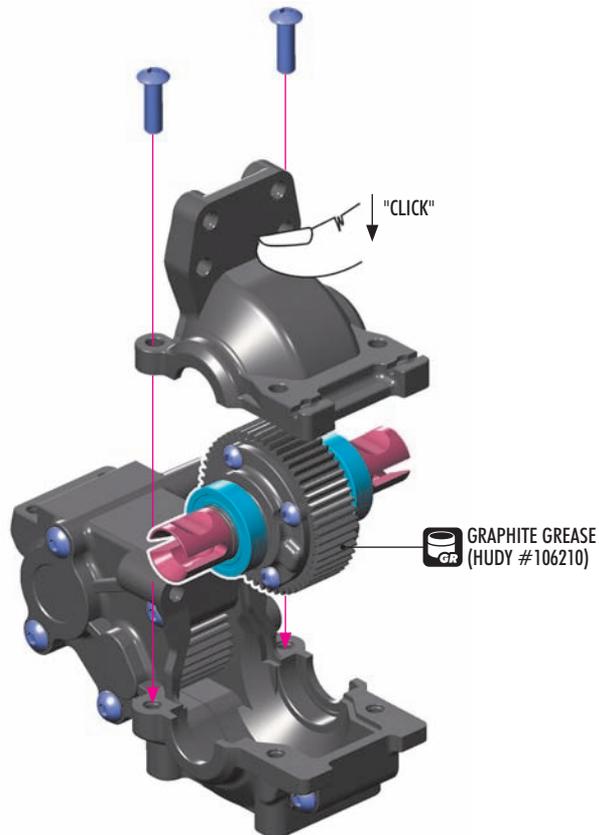
940512  
BB 5x12x4

Bearing with BLUE  
rubber covers

BEARING OIL  
(HUDY #106230)



902310  
SH M3x10

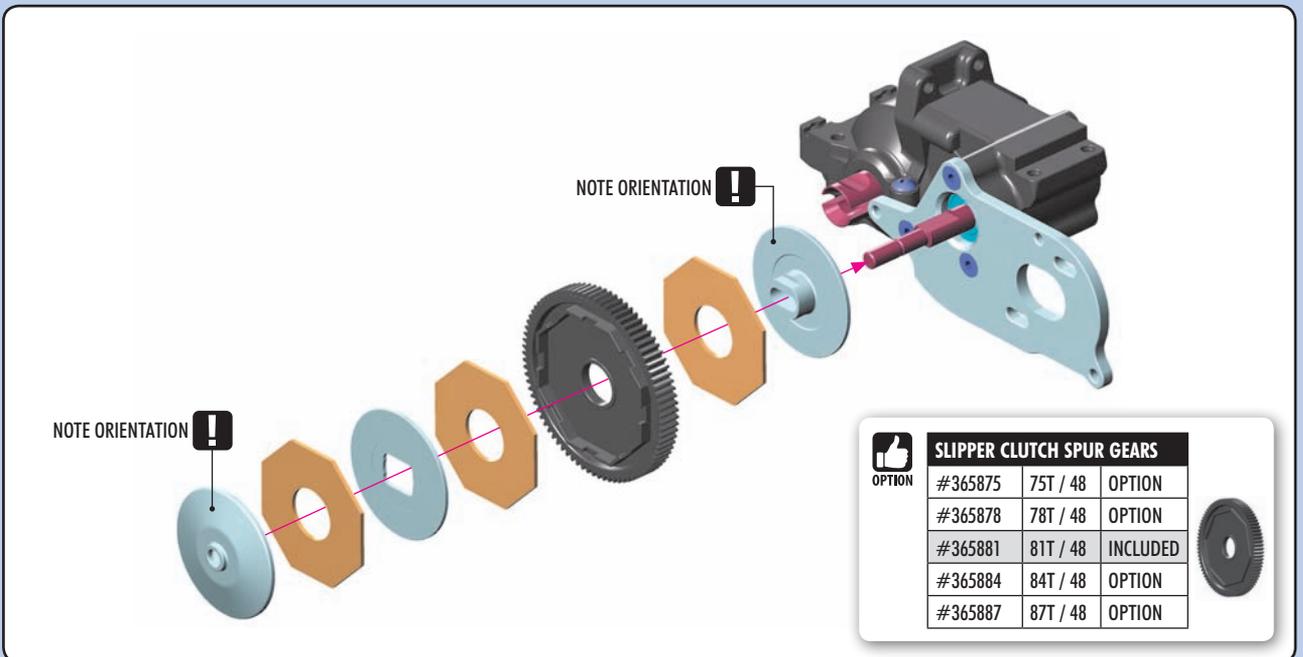
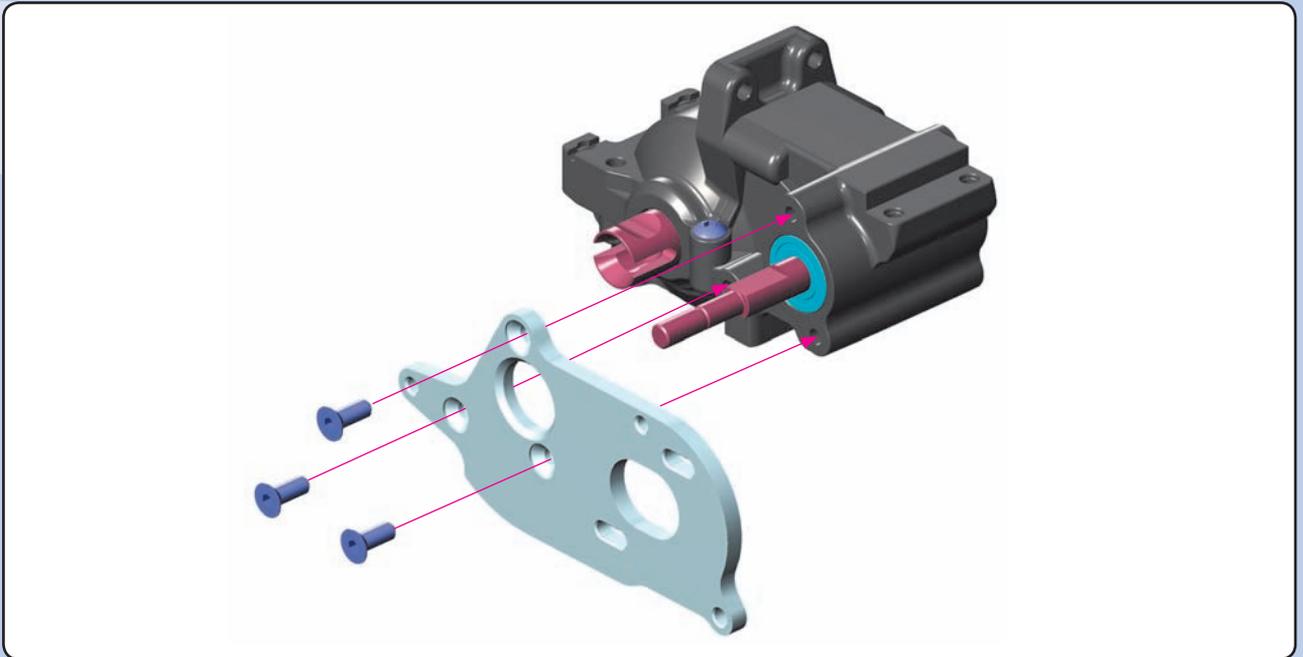


GRAPHITE GREASE  
(HUDY #106210)

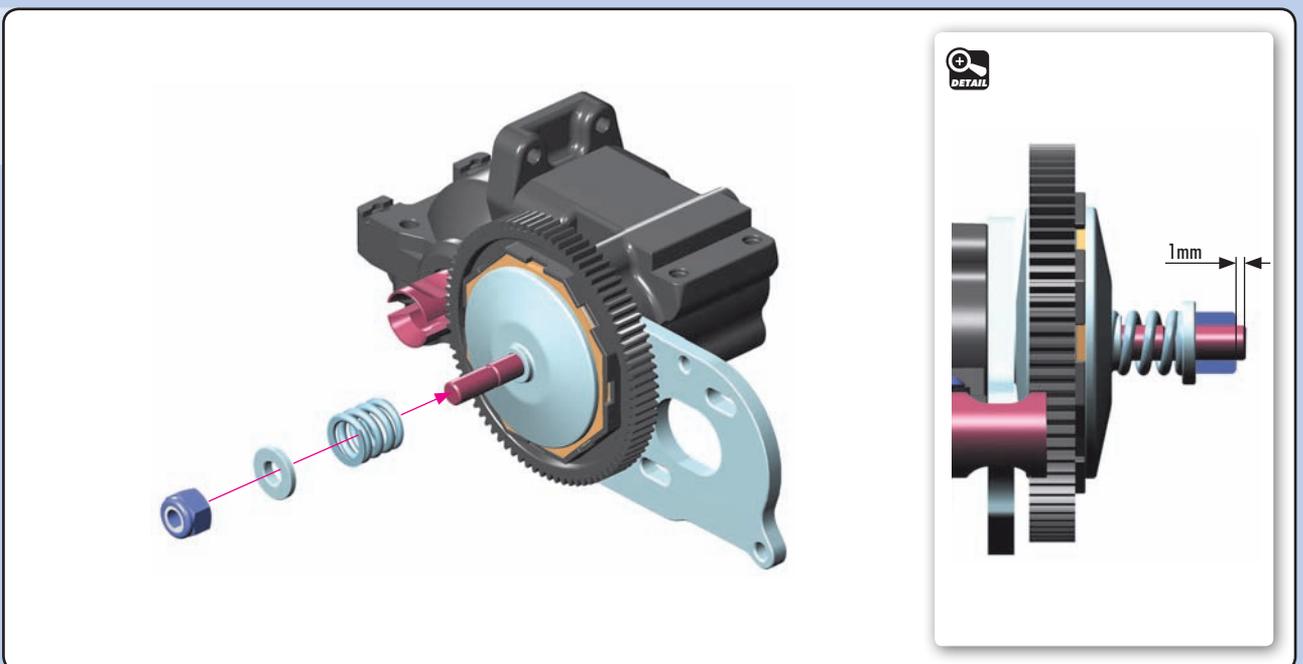
## 2. REAR TRANSMISSION



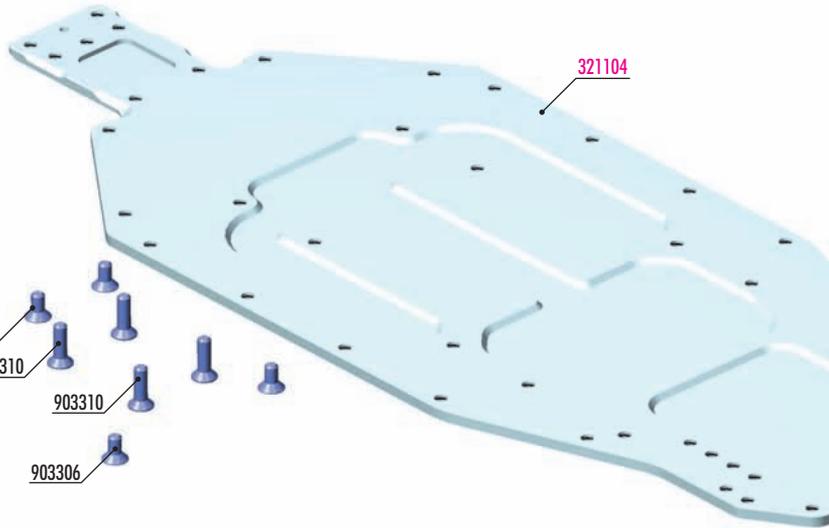
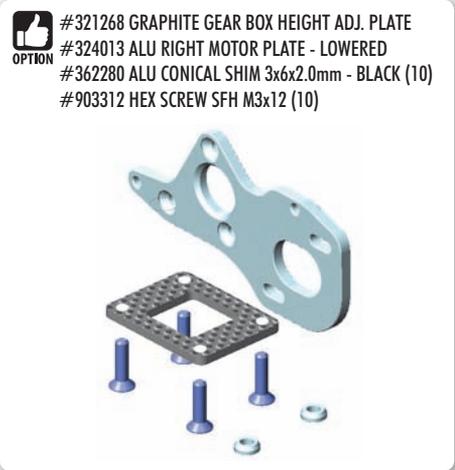
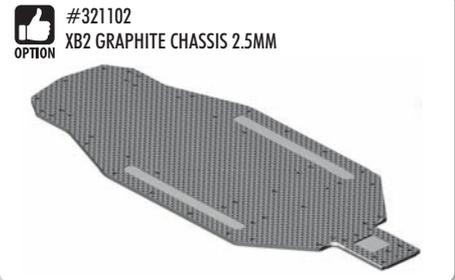
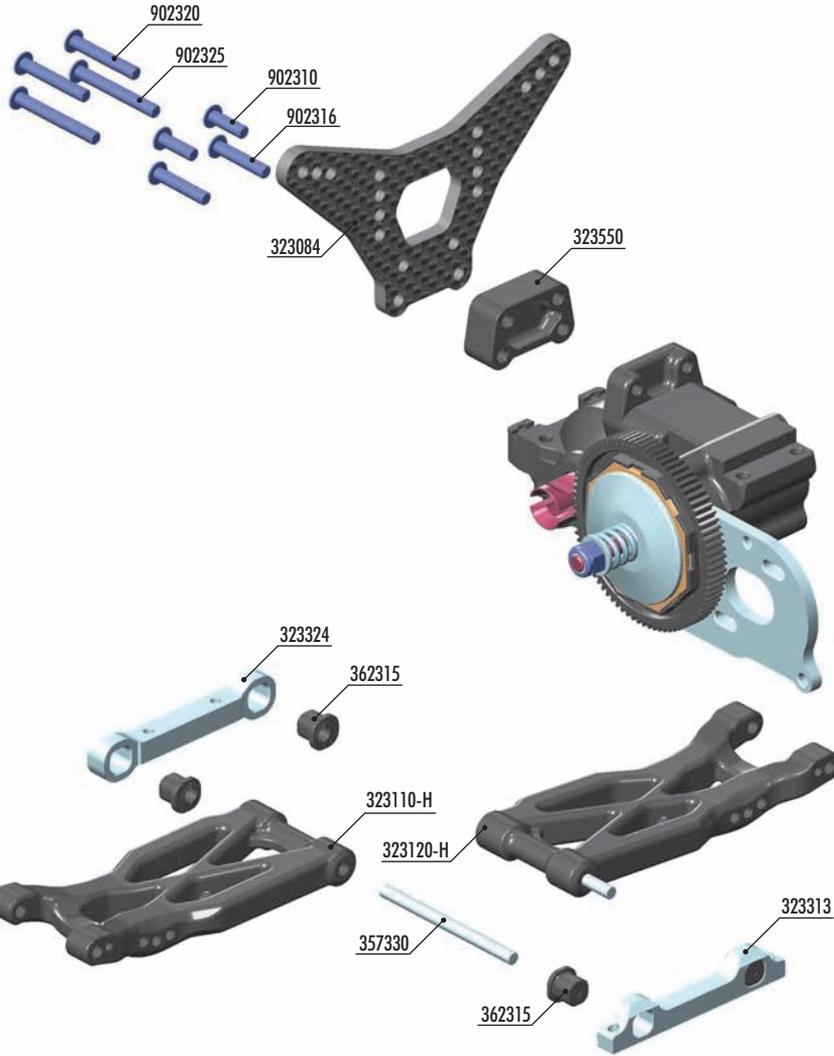
903308  
SFH M3x8



960040  
N M4



# 3. REAR SUSPENSION



**OPTION**

**NARROW REAR SUSPENSION HOLDERS**

#323312	BRASS	FRONT	OPTION
#323313	ALU	FRONT	INCLUDED
#323323	BRASS	REAR	OPTION
#323324	ALU	REAR	INCLUDED

**OPTION**

**REAR SUSPENSION ARMS**

#323110-M	RIGHT - MEDIUM	OPTION
#323120-M	LEFT - MEDIUM	OPTION
#323110-H	RIGHT - HARD	INCLUDED
#323120-H	LEFT - HARD	INCLUDED
#323110-G	RIGHT - GRAPHITE	OPTION
#323120-G	LEFT - GRAPHITE	OPTION

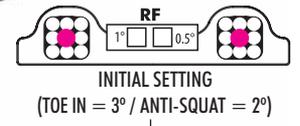
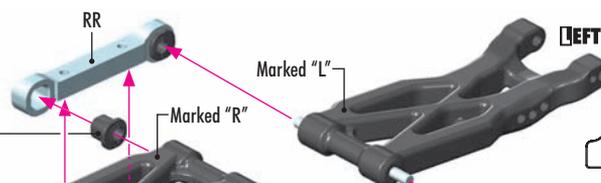
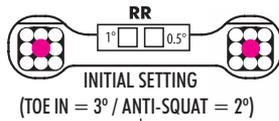
**BAG**  
**03**

- |           |  |                |  |
|-----------|--|----------------|--|
| 32 3084   | GRAPHITE SHOCK TOWER REAR 3.5MM - LOWER                      | 90 2310        | HEX SCREW SH M3x10 (10)                    |
| 32 3110-H | COMPOSITE SUSPENSION ARM REAR LOWER RIGHT - HARD             | 90 2316        | HEX SCREW SH M3x16 (10)                    |
| 32 3120-H | COMPOSITE SUSPENSION ARM REAR LOWER LEFT - HARD              | 90 2320        | HEX SCREW SH M3x20 (10)                    |
| 32 3313   | ALU REAR LOWER SUSP. HOLDER - NARROW - FRONT - 7075 T6 (5MM) | 90 2325        | HEX SCREW SH M3x25 (10)                    |
| 32 3324   | ALU REAR LOWER SUSP. HOLDER - NARROW - REAR - 7075 T6 (5MM)  | 90 3306        | HEX SCREW SFH M3x6 (10)                    |
| 32 3550   | COMPOSITE REAR SHOCK TOWER ADJUSTING SHIM                    | 90 3310        | HEX SCREW SFH M3x10 (10)                   |
| 35 7330   | REAR LOWER OUTER PIVOT PIN (2)                               |                |  |
| 36 2315   | ECCENTRIC BUSHING SET (2)                                    | <b>32 1104</b> | <b>ALU CHASSIS - SWISS 7075 T6 (2.5MM)</b> |

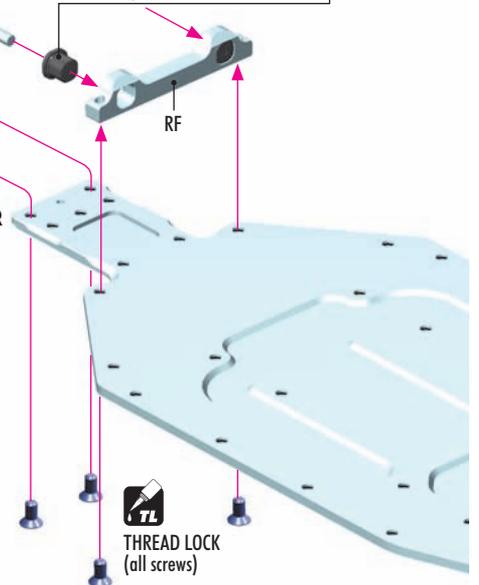
# 3. REAR SUSPENSION



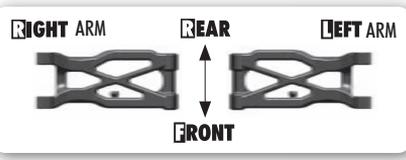
903306  
SFH M3x6



REAR



OPTION	XB2 CHASSIS			
#321102	GRAPHITE	2.5MM	OPTION	
#321103	ALU FLEX	2.0MM	OPTION	
#321104	ALU	2.5MM	INCLUDED	



**TIP**

If the suspension arm does not move freely use a HUDY Arm Reamer to size the holes of the arms

Arm Reamer 3.0mm (HUDY #107633)

**DETAIL**

Check for free movement

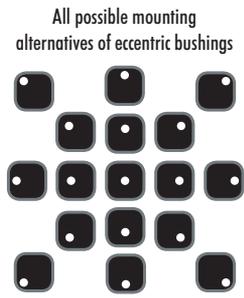
OPTION	NARROW REAR SUSPENSION HOLDERS			
#323312	BRASS	FRONT	OPTION	
#323313	ALU	FRONT	INCLUDED	
#323323	BRASS	REAR	OPTION	
#323324	ALU	REAR	INCLUDED	

OPTION	REAR SUSPENSION ARMS			
#323110-M	RIGHT	MEDIUM	OPTION	
#323120-M	LEFT	MEDIUM	OPTION	
#323110-H	RIGHT	HARD	INCLUDED	
#323120-H	LEFT	HARD	INCLUDED	
#323110-G	RIGHT	GRAPHITE	OPTION	
#323120-G	LEFT	GRAPHITE	OPTION	

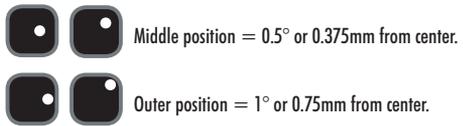
MEDIUM - For very-low & low traction  
 HARD - For medium & high traction  
 GRAPHITE - For high & very-high traction

**SET-UP BOOK**

TOE-IN  
ANTI-SQUAT  
ROLL CENTER  
TRACK-WIDTH



ECCENTRIC BUSHINGS HAVE TWO DIFFERENT OFFSETS FROM THE CENTER.



The XRAY rear alu lower suspension holders provide great range of adjustment for the rear suspension. Using different combinations of eccentric bushings, fine adjustment of rear anti-squat, rear toe-in, rear roll center, and rear track-width can be obtained. For more information about the influence of rear anti-squat, rear toe-in, rear roll center and rear track width on car handling, please refer to HUDY Set-up Book (#209100).

ANTI-SQUAT		
RR	RF	(°)
0	0	= 2°
0	0	= 3°
0	0	= 1°
0	0	= 3°
0	0	= 2°
0	0	= 4°
0	0	= 1°
0	0	= 2°
0	0	= 0°

ROLL CENTER		
RR	RF	(mm)
0	0	= +0.75mm
0	0	= 0mm
0	0	= -0.75mm

TRACK-WIDTH		
RR	RF	(mm)
0	0	= +1.5mm
0	0	= 0mm
0	0	= -1.5mm

TOE-IN		
RR	RF	(°)
0	0	= 4°
0	0	= 5°
0	0	= 3°
0	0	= 3°
0	0	= 4°
0	0	= 2°
0	0	= 5°
0	0	= 6°
0	0	= 4°

The track-width is directly influenced by the size of the wheels and tires used.

The tables describe the amounts of adjustment using the center and outside positions of the eccentric bushings. The middle position eccentric bushings allow for finer adjustment increments.

Example:

0(RR) - 0 (RF) = 2°

0(RR) - 0.5 (RF) = 2.5°

0(RR) - 1 (RF) = 3°

### 3. REAR SUSPENSION

#### ALTERNATIVE 1

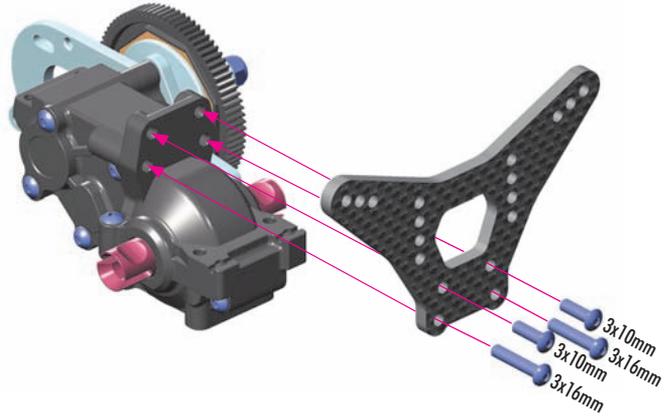
SHOCKS MOUNTED IN FRONT OF REAR SHOCK TOWER  
(INITIAL SETTING)



902310  
SH M3x10



902316  
SH M3x16



#### ALTERNATIVE 2

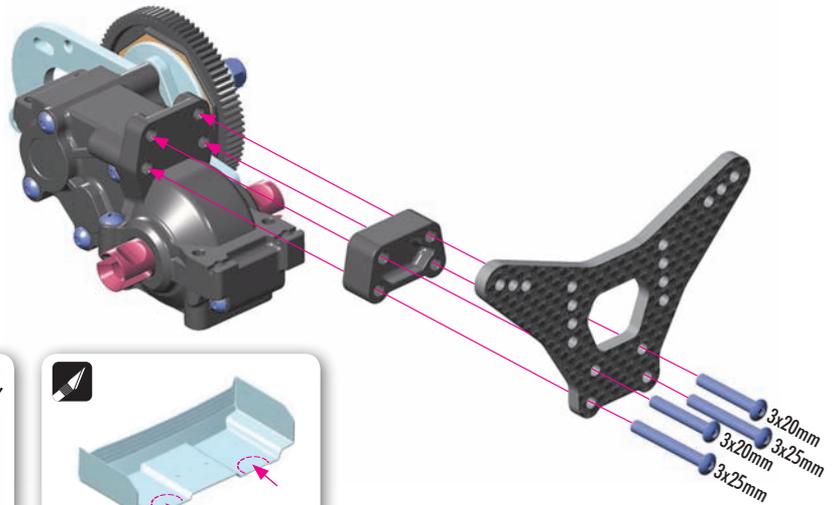
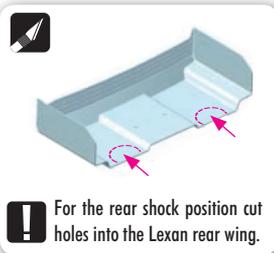
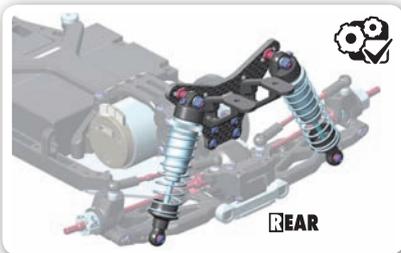
SHOCKS MOUNTED BEHIND REAR SHOCK TOWER  
**DO NOT USE FOR BASIC SET-UP**



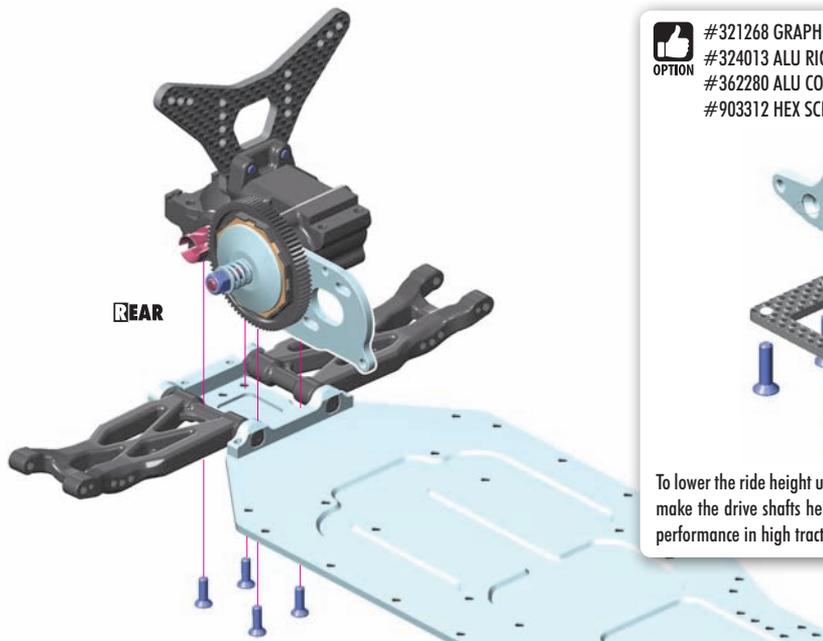
902320  
SH M3x20



902325  
SH M3x25



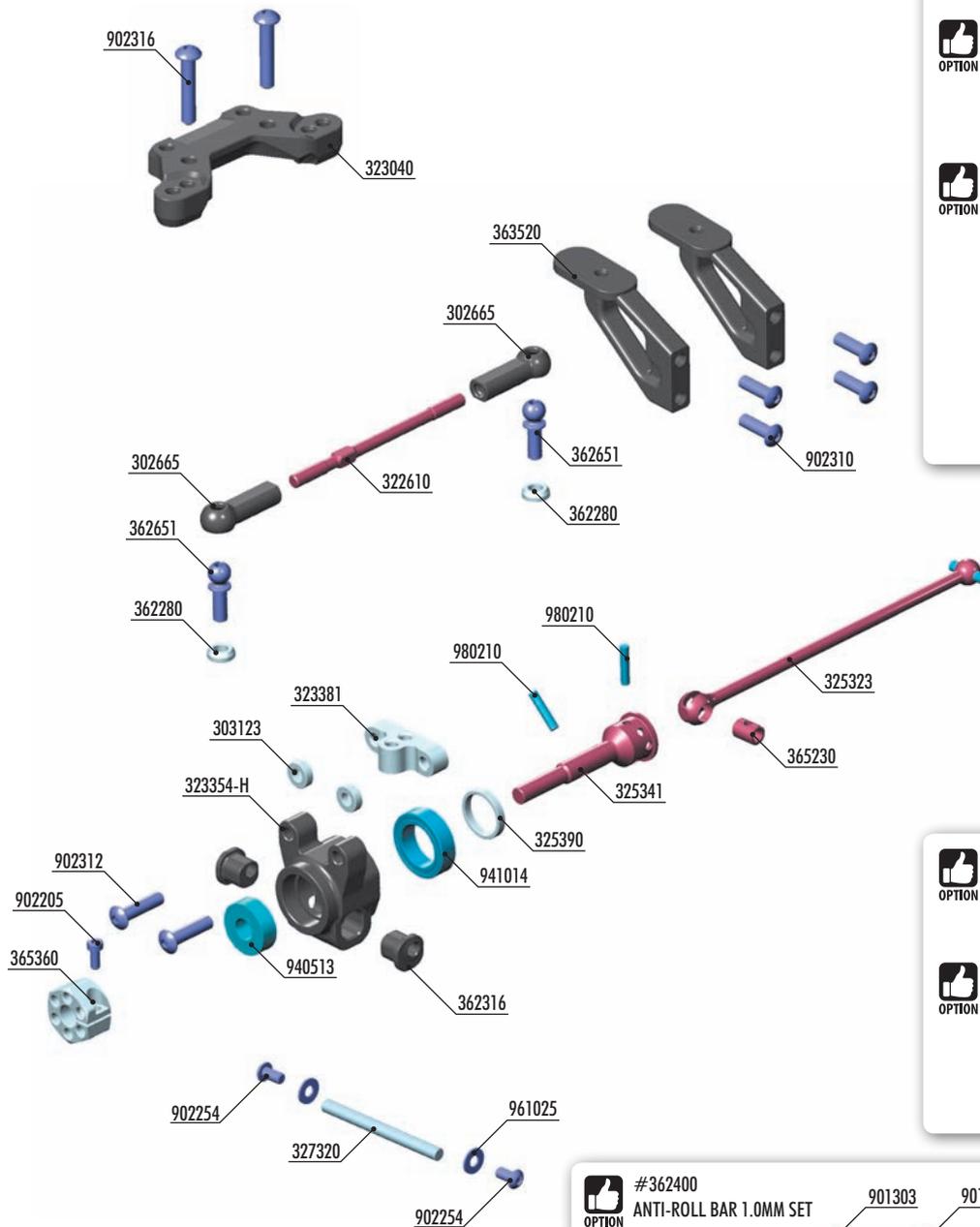
903310  
SFH M3x10



- OPTION**
- #321268 GRAPHITE GEAR BOX HEIGHT ADJ. PLATE
  - #324013 ALU RIGHT MOTOR PLATE - LOWERED
  - #362280 ALU CONICAL SHIM 3x6x2.0mm - BLACK (10)
  - #903312 HEX SCREW SFH M3x12 (10)

To lower the ride height use the graphite gear box plate that will make the drive shafts height more linear that will increase the performance in high traction conditions.

# 3. REAR DRIVETRAIN



**OPTION** #323382  
ALU REAR HUB PLATE FOR MULTI ADJ. UPRIGHT - 1-HOLE - SWISS 7075 T6

**OPTION**

REAR UPRIGHTS		
#323354-H	HARD	INCLUDED
#323354-G	GRAPHITE	OPTION
#323355	ALU	OPTION

**OPTION**

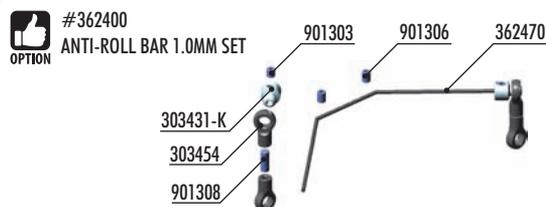
WHEEL HUBS 12MM		
#365360	+ 4.5mm - 6 slots	INCLUDED
#365359	+ 3.75mm - 5 slots	OPTION
#365358	+ 3.0mm - 4 slots	OPTION
#365357	+ 2.25mm - 3 slots	OPTION
#365356	+ 1.5mm - 2 slots	OPTION
#365355	+ 0.75mm - 1 slot	OPTION
#365353	0mm - 0 slots	OPTION
#365354	-0.75mm - Lightw.	OPTION

**OPTION**

REAR ROLL CENTER HOLDER		
#323040	COMPOSITE	INCLUDED
#323041	ALU	OPTION

**OPTION**

XRAY BALL-BEARING			
#940512	5x12x4	OIL	OPTION
#941015	10x15x4	OIL	OPTION
#940513	5x12x4	GREASE	INCLUDED
#941014	10x15x4	GREASE	INCLUDED



**OPTION** #362400  
ANTI-ROLL BAR 1.0MM SET

**OPTION**

ANTI-ROLL BARS	
#362470	1.0mm
#362471	1.1mm
#362472	1.2mm

**BAG**

**03**

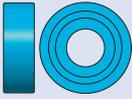
- 30 2665 COMPOSITE BALL JOINT 4.9MM - CLOSED WITH HOLE (4)
- 30 3123 ALU SHIM 3x6x2.0MM (10)
- 30 6219 COMPOSITE SET OF SERVO SHIMS (4)
- 32 2610 ADJUSTABLE TURNBUCKLE 55MM M3 L/R - HUDY SPRING STEEL™ (2)
- 32 3040 COMPOSITE REAR ROLL CENTER HOLDER - CARPET EDITION
- 32 3354-H COMPOSITE UPRIGHT REAR - HARD
- 32 3381 ALU REAR HUB PLATE - SWISS 7075 T6
- 32 5323 REAR DRIVE SHAFT 71MM - HUDY SPRING STEEL™
- 32 5341 REAR DRIVE AXLE LB - HUDY SPRING STEEL™
- 32 5390 ALU SHIM 10x12x2MM (2)
- 32 7320 REAR ARM PIVOT PIN (2)
- 36 2280 ALU CONICAL SHIM 3x6x2.0MM (10)
- 36 2316 ECCENTRIC BUSHING SET - OPEN (2)
- 36 2651 BALL END 4.9MM WITH THREAD 8MM (2)
- 36 3520 REAR WING POST - V2 (2)
- 36 5230 DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
- 36 5360 ALU WHEEL HUB 12MM - OFFSET "+ 4.5MM" (2)

- 90 2205 HEX SCREW SH M2x5 (10)
- 90 2254 HEX SCREW SH M2.5x4 (10)
- 90 2310 HEX SCREW SH M3x10 (10)
- 90 2312 HEX SCREW SH M3x12 (10)
- 90 2316 HEX SCREW SH M3x16 (10)
- 94 0513 BALL-BEARING 5x12x4 RUBBER SEALED - GREASE (2)
- 94 1014 BALL-BEARING 10x15x4 RUBBER SEALED - GREASE (2)
- 96 1025 WASHER S 2.5 (10)
- 98 0210 PIN 2x9.8 (10)

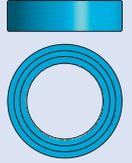
# 3. REAR DRIVETRAIN



902205  
SH M2x5



940513  
BB 5x12x4



941014  
BB 10x15x4

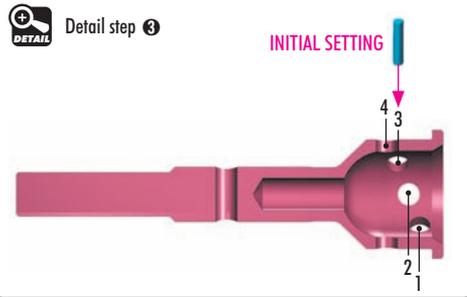
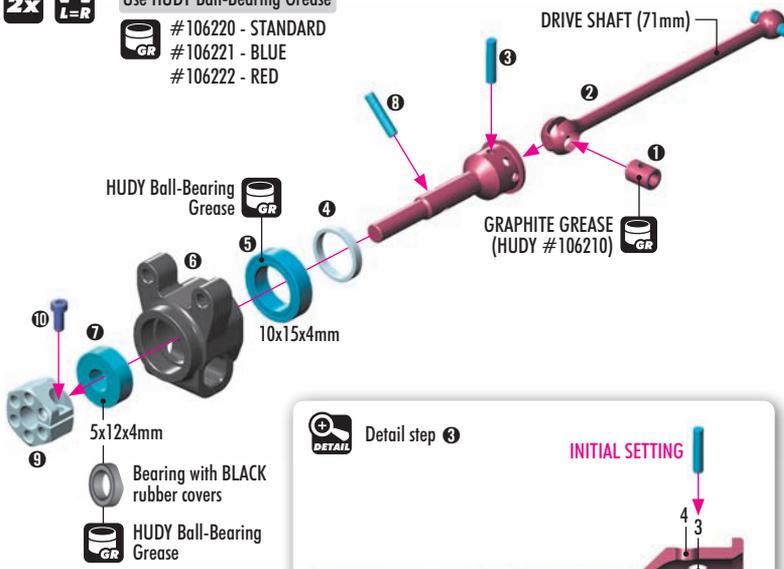


980210  
P 2x10

2x

Use HUDY Ball-Bearing Grease

- #106220 - STANDARD
- #106221 - BLUE
- #106222 - RED



## WHEEL HUBS 12MM

Part #	Offset	Slots	Status
#365360	+4.5mm	- 6 slots	INCLUDED
#365359	+3.75mm	- 5 slots	OPTION
#365358	+3.0mm	- 4 slots	OPTION
#365357	+2.25mm	- 3 slots	OPTION
#365356	+1.5mm	- 2 slots	OPTION
#365355	+0.75mm	- 1 slot	OPTION
#365353	0mm	- 0 slots	OPTION
#365354	-0.75mm	- Lightw.	OPTION

## OPTIONAL HEX HUB EFFECTS

Different offset hex hubs are used to increase or decrease the track-width.

### LESS OFFSET

Rear - more traction  
Front - more steering

### MORE OFFSET

Rear - less traction  
Front - less steering



## XRAY BALL-BEARING

Part #	Size	Lubricant	Status
#940512	5x12x4	OIL	OPTION
#941015	10x15x4	OIL	OPTION
#940513	5x12x4	GREASE	INCLUDED
#941014	10x15x4	GREASE	INCLUDED

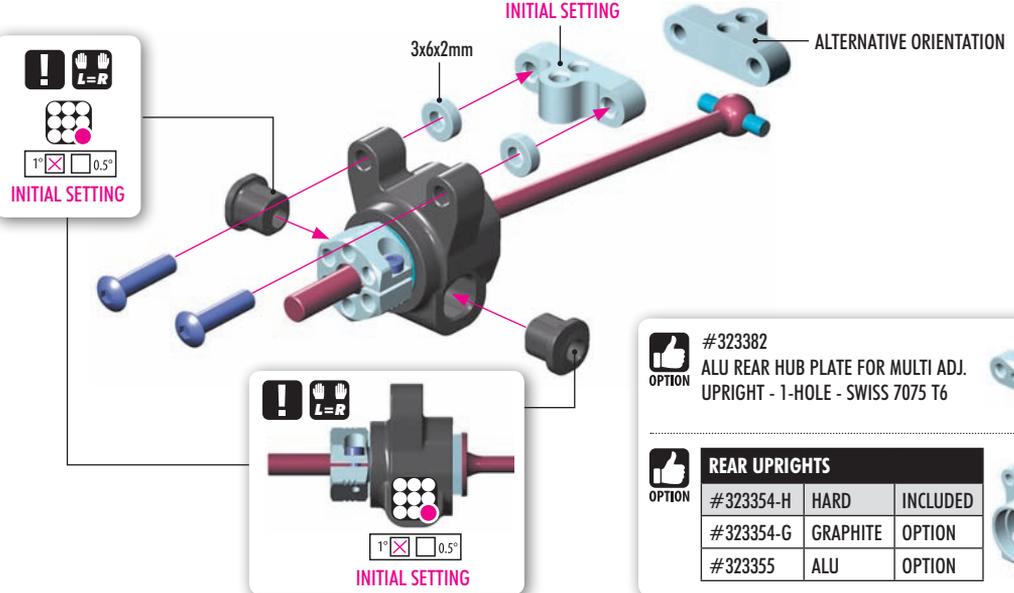


303123  
SHIM 3x6x2



902312  
SH M3x12

2x



#323382  
ALU REAR HUB PLATE FOR MULTI ADJ.  
UPRIGHT - 1-HOLE - SWISS 7075 T6

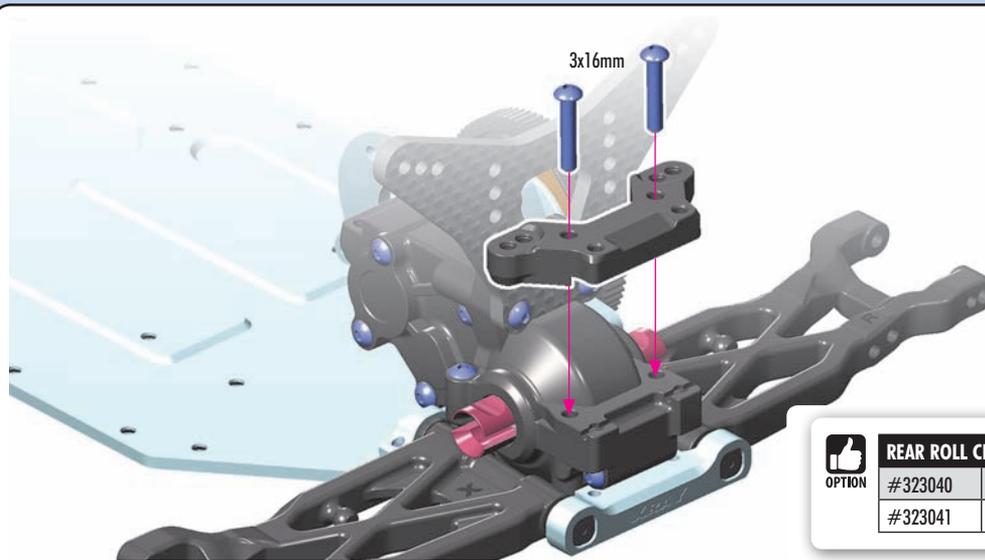


## REAR UPRIGHTS

Part #	Material	Status
#323354-H	HARD	INCLUDED
#323354-G	GRAPHITE	OPTION
#323355	ALU	OPTION



902316  
SH M3x16



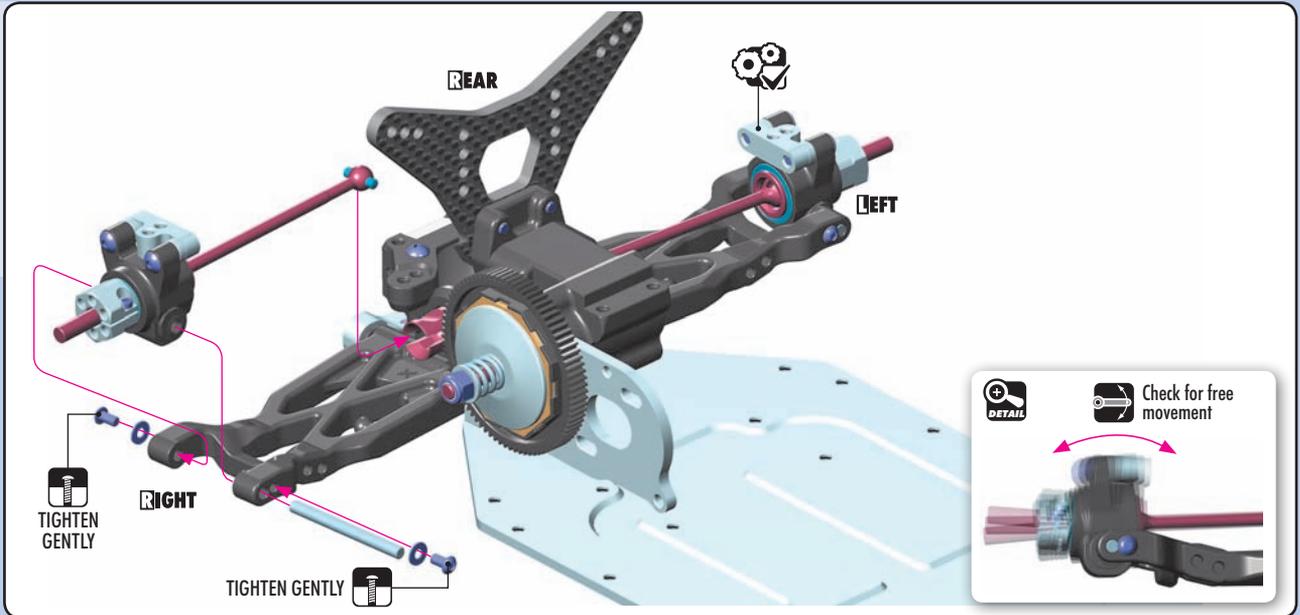
## REAR ROLL CENTER HOLDER

Part #	Material	Status
#323040	COMPOSITE	INCLUDED
#323041	ALU	OPTION

# 3. REAR DRIVETRAIN

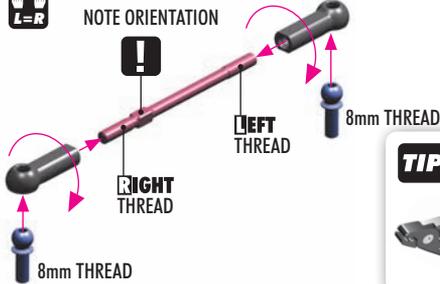
902254  
SH M2.5x4

961025  
S2.5



2x  
L=R

NOTE ORIENTATION

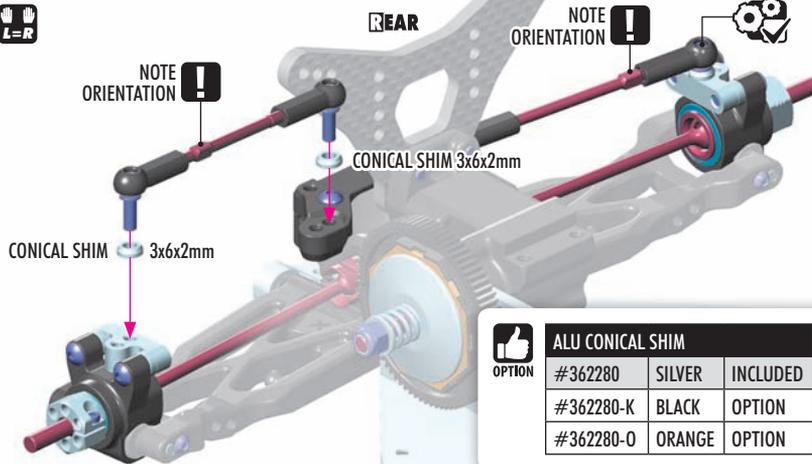


**TIP** Install the pivot balls with Professional Multi Tool (HUDY #183011)



362280  
CON. SHIM 3x6x2

2x  
L=R

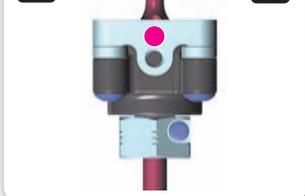


OPTION	ALU CONICAL SHIM		
#362280	SILVER	INCLUDED	
#362280-K	BLACK	OPTION	
#362280-O	ORANGE	OPTION	

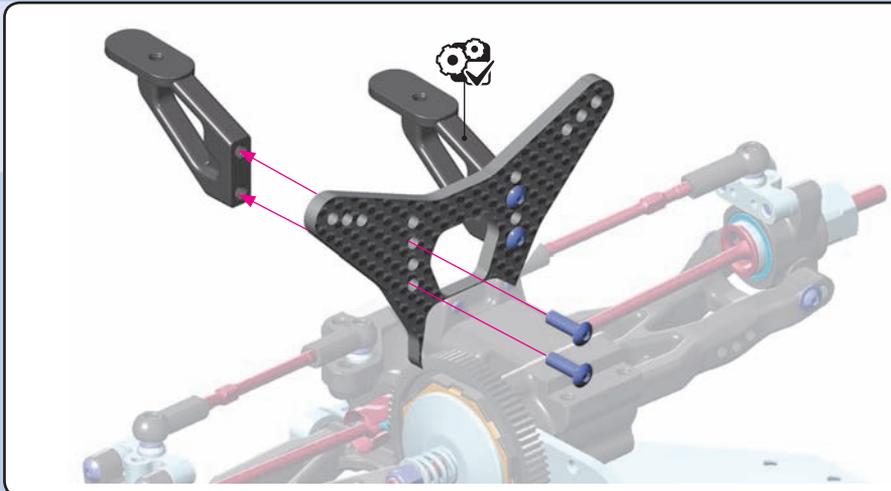
INITIAL SETTING  
L=R



INITIAL SETTING  
L=R

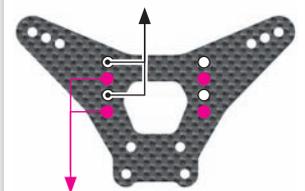


902310  
SH M3x10



UPPER WING POSITION

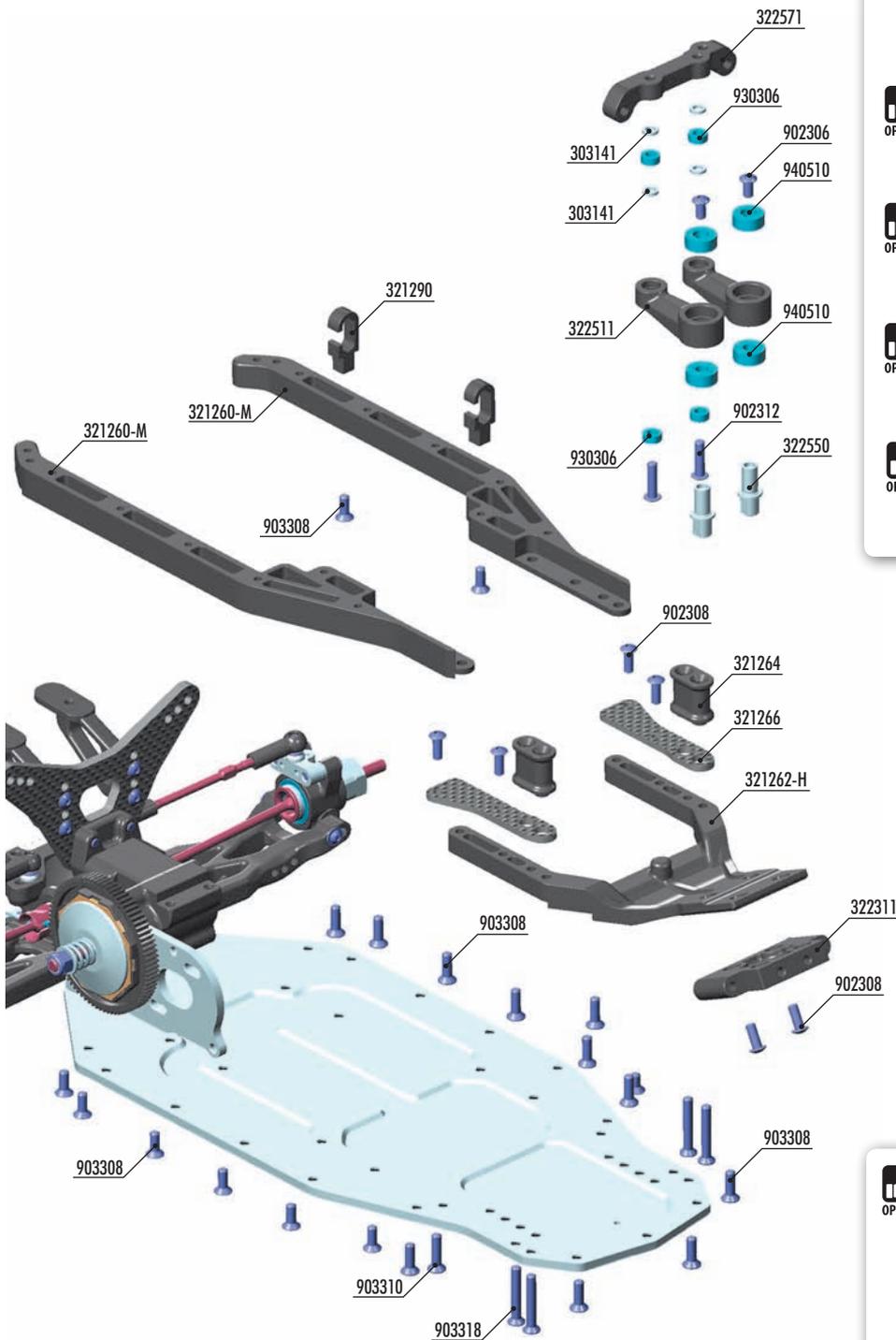
Higher position gives more roll, generates more traction.



LOWER WING POSITION  
(INITIAL SETTING)

Lower position recommended for use on medium- to high-traction tracks.

# 4. FRONT ASSEMBLY



OPTION	GRAPHITE SIDE GUARD BRACE		
#321266	SOFT	INCLUDED	
#321263	MEDIUM	OPTION	
#321267	STIFF	OPTION	

OPTION	STEERING PLATE		
#322572	ALU	OPTION	
#322571	COMPOSITE	INCLUDED	

OPTION	STEERING ARMS		
#322510	ALU	OPTION	
#322511	COMPOSITE	INCLUDED	

OPTION	FRONT LOWER CHASSIS BRACE		
#321262-M	MEDIUM	OPTION	
#321262-H	HARD	INCLUDED	

OPTION	SIDE CHASSIS GUARDS		
#321260-M	MEDIUM	INCLUDED	
#321260-H	HARD	OPTION	

OPTION	FRONT LOWER ARM MOUNT		
#322310	ALU 26°	OPTION	
#322311	COMPOSITE 26°	INCLUDED	
#322312	BRASS 26°	OPTION	
#322313	ALU 23°/29°	OPTION	
#321211	SUSP. HOLDER BRACE 23°/29°	OPTION	
#322314	BRASS 23°/29°	OPTION	
#321211	SUSP. HOLDER BRACE 23°/29°	OPTION	

**BAG**

**04**

- 30 3141 ALU SHIM 3x5x1.0MM (10)
- 32 1260-M COMPOSITE CHASSIS SIDE GUARDS L + R - MEDIUM
- 32 1262-H COMPOSITE CHASSIS FRONT GUARD - HARD
- 32 1264 COMPOSITE FRONT CHASSIS SIDE BRACE - SHORT (2)
- 32 1266 GRAPHITE CHASSIS SIDE GUARD BRACE - SOFT
- 32 1290 COMPOSITE WIRE HOLDER (2)
- 32 2311 COMPOSITE FRONT LOWER SUSPENSION HOLDER
- 32 2571 COMPOSITE STEERING PLATE
- 32 2510 ALU STEERING ARM (2) (OPTION)
- 32 2511 COMPOSITE STEERING ARM (2)

- 32 2550 ALU SERVO SAVER PIVOT SHAFT (2)
- 90 2306 HEX SCREW SH M3x6 (10)
- 90 2308 HEX SCREW SH M3x8 (10)
- 90 2312 HEX SCREW SH M3x12 (10)
- 90 3308 HEX SCREW SFH M3x8 (10)
- 90 3310 HEX SCREW SFH M3x10 (10)
- 90 3318 HEX SCREW SFH M3x18 (10)
- 93 0306 BALL-BEARING 3x6x2.5 STEEL SEALED - OIL (2)
- 94 0510 BALL-BEARING 5x10x4 RUBBER SEALED - OIL (2)

# 4. FRONT ASSEMBLY



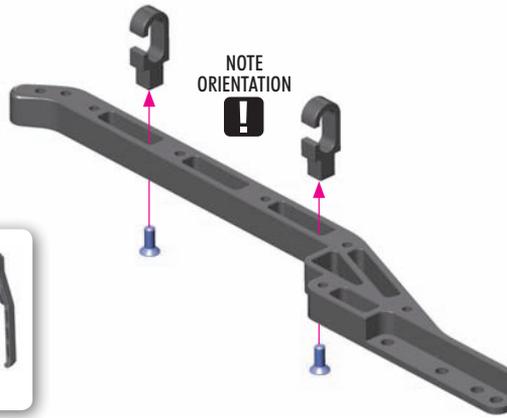
903308  
SFH M3x8



### SIDE CHASSIS GUARDS

OPTION	Part #	Material	Status
	#321260-M	MEDIUM	INCLUDED
	#321260-H	HARD	OPTION

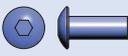
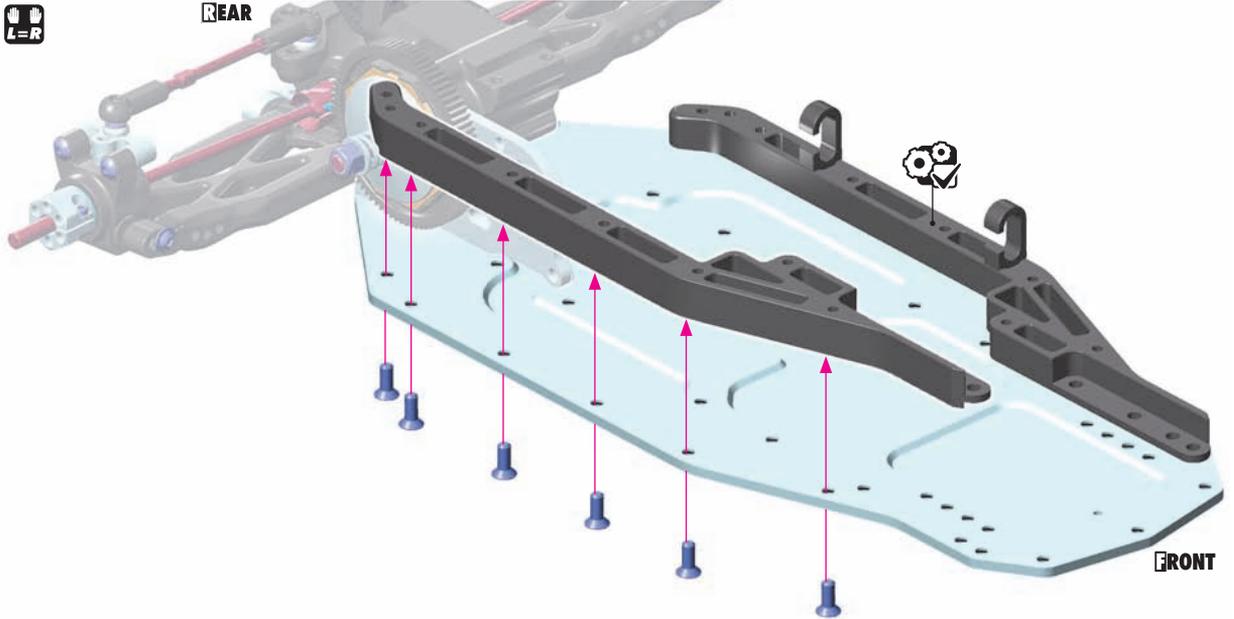
MEDIUM - For low & medium traction  
HARD - For high traction



903308  
SFH M3x8



REAR



902308  
SH M3x8



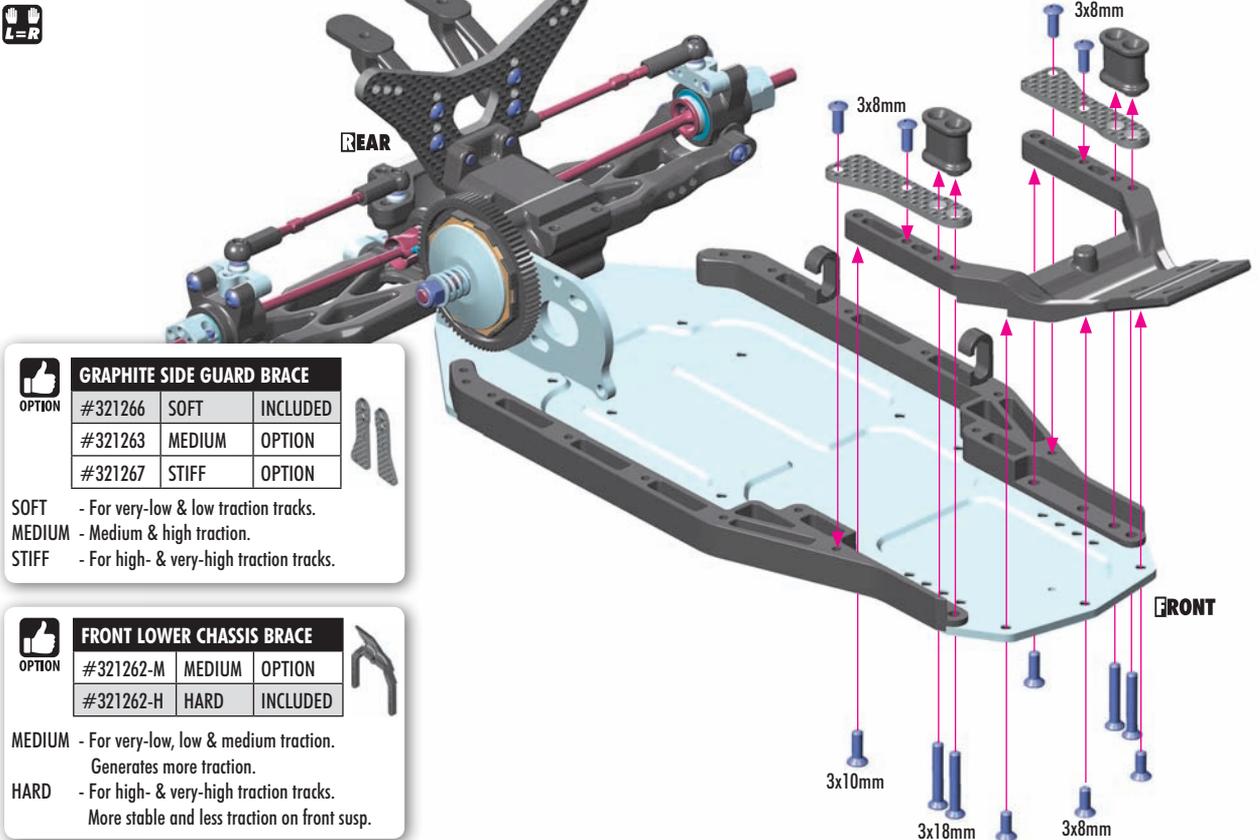
903308  
SFH M3x8



903310  
SFH M3x10



REAR



### GRAPHITE SIDE GUARD BRACE

OPTION	Part #	Material	Status
	#321266	SOFT	INCLUDED
	#321263	MEDIUM	OPTION
	#321267	STIFF	OPTION

SOFT - For very-low & low traction tracks.  
MEDIUM - Medium & high traction.  
STIFF - For high- & very-high traction tracks.



### FRONT LOWER CHASSIS BRACE

OPTION	Part #	Material	Status
	#321262-M	MEDIUM	OPTION
	#321262-H	HARD	INCLUDED

MEDIUM - For very-low, low & medium traction.  
Generates more traction.  
HARD - For high- & very-high traction tracks.  
More stable and less traction on front susp.

# 4. FRONT ASSEMBLY

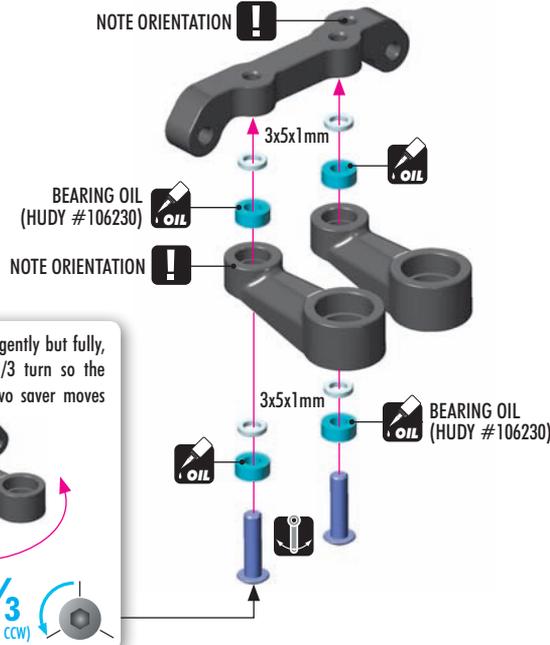
303141  
SHIM 3x5x1

902312  
SH M3x12

930306  
BB 3x6x2.5

**!** Tighten the screws gently but fully, and then loosen 1/3 turn so the composite dual servo saver moves freely.

- 1 tighten fully
- 2 loosen 1/3 ccw
- 3 check moves freely (120° CCW)



**!**  
OPTION

STEERING PLATE		
#322572	ALU	OPTION
#322571	COMPOSITE	INCLUDED

COMPOSITE - Easy to drive, more forgiving, less steering  
ALU - More aggressive, more steering, more precise steering

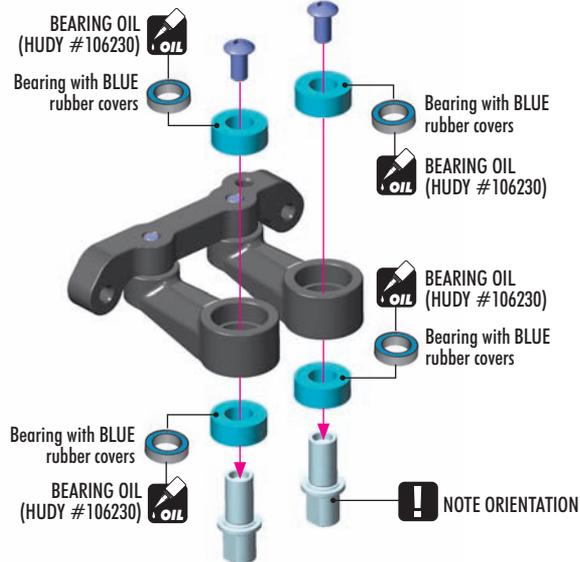
**!**  
OPTION

STEERING ARMS		
#322510	ALU	OPTION
#322511	COMPOSITE	INCLUDED

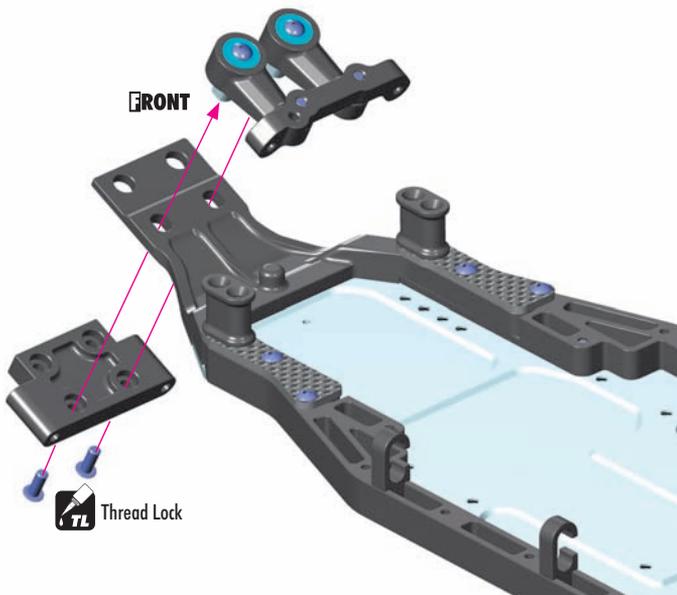
COMPOSITE - Easy to drive, more forgiving  
ALU - More aggressive, more steering, more precise steering

902306  
SH M3x6

940510  
BB 5x10x4



902308  
SH M3x8



**!**  
OPTION

FRONT LOWER ARM MOUNT		
#322310	ALU 26°	OPTION
#322311	COMPOSITE 26°	INCLUDED
#322312	BRASS 26°	OPTION
#322313	ALU 23°/29°	OPTION
#321211	SUSP. HOLDER BRACE 23°/29°	OPTION
#322314	BRASS 23°/29°	OPTION
#321211	SUSP. HOLDER BRACE 23°/29°	OPTION



COMPOSITE - Generates more traction in front  
ALU - Makes car more stable  
BRASS - Adds more weight in front, less weight transfer

# 5. FRONT SUSPENSION



## XRAY BALL-BEARING

#940510	5x10x4	OIL	OPTION
#359050	5x10x4	GREASE	INCLUDED



## STEERING BLOCK

#322250-M	MEDIUM	OPTION
#322250-H	HARD	INCLUDED
#322250-G	GRAPHITE	OPTION



## SUSPENSION ARM

#322110-M	MEDIUM	OPTION
#322110-H	HARD	INCLUDED
#322110-G	GRAPHITE	OPTION



## FRONT ROLL CENTER HOLDER

#322040-M	MEDIUM	OPTION
#322040-H	HARD	INCLUDED
#322041	ALU	OPTION



## STEERING BLOCK EXTENSION

#322290	2-SLOTS	OPTION
#322291	1-SLOT	INCLUDED
#322292	0-SLOTS	OPTION



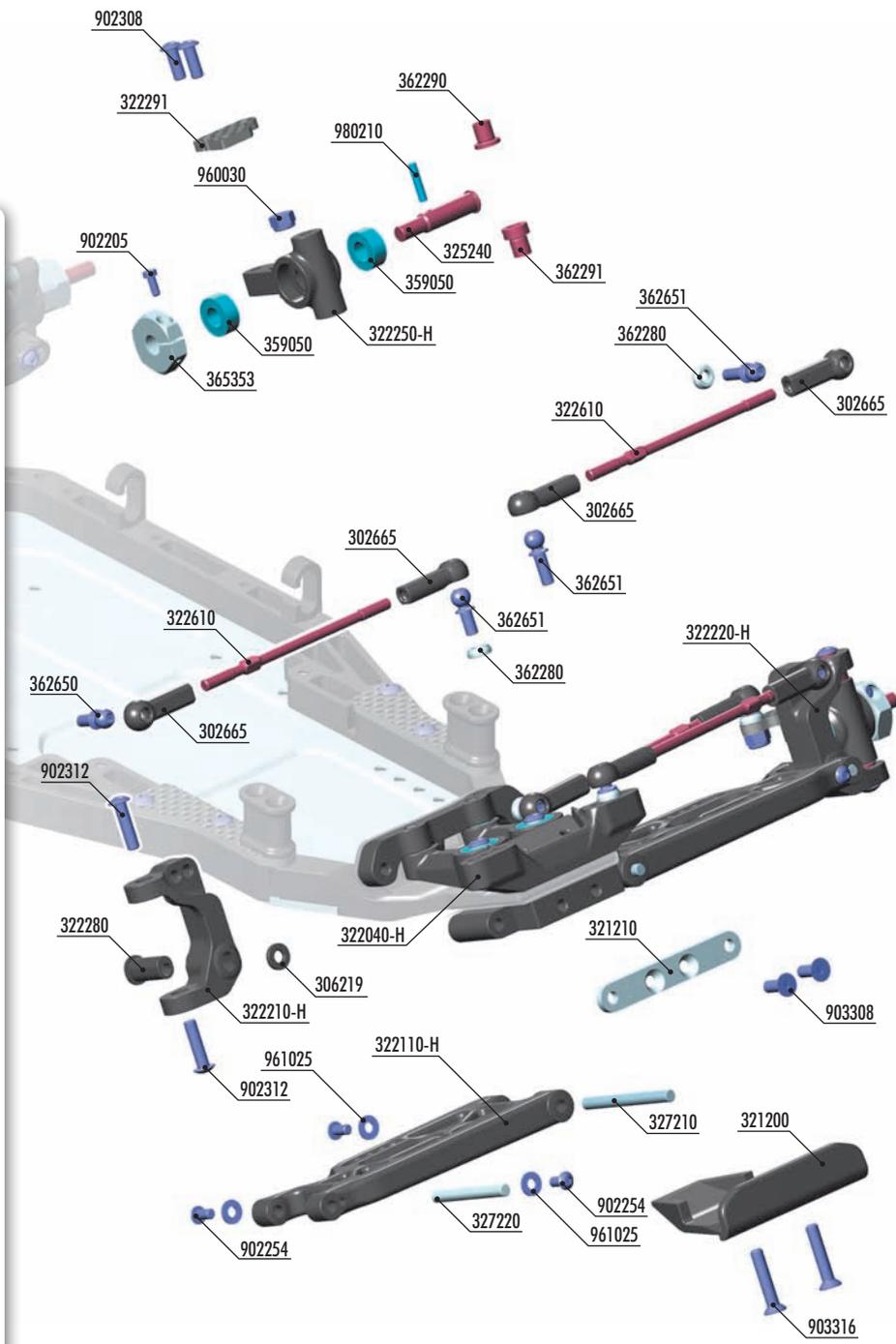
## C-HUB

#322210-M	RIGHT	MEDIUM	OPTION
#322210-H	RIGHT	HARD	INCLUDED
#322210-G	RIGHT	GRAPHITE	OPTION
#322220-M	LEFT	MEDIUM	OPTION
#322220-H	LEFT	HARD	INCLUDED
#322220-G	LEFT	GRAPHITE	OPTION



## WHEEL HEX HUBS 12MM

#365360	+4.5mm	6 slots	OPTION
#365359	+3.75mm	5 slots	OPTION
#365358	+3.0mm	4 slots	OPTION
#365357	+2.25mm	3 slots	OPTION
#365356	+1.5mm	2 slots	OPTION
#365355	+0.75mm	1 slot	OPTION
#365353	0mm	0 slots	INCLUDED
#365354	-0.75mm	Lightw.	OPTION



BAG

05

- 30 2665 COMPOSITE BALL JOINT 4.9MM - CLOSED WITH HOLE (4)
- 30 6219 COMPOSITE SET OF SERVO SHIMS (4)
- 32 1200 COMPOSITE FRONT BUMPER
- 32 1210 ALU SUSPENSION HOLDER BRACE - SWISS 7075 T6 (3MM)
- 32 2040-H COMPOSITE FRONT ROLL CENTER HOLDER - HARD
- 32 2110-H COMPOSITE SUSPENSION ARM FRONT LOWER - HARD
- 32 2210-H COMPOSITE C-HUB 0° DEG. RIGHT - HARD
- 32 2220-H COMPOSITE C-HUB 0° DEG. LEFT - HARD
- 32 2250-H COMPOSITE STEERING BLOCK - HARD
- 32 2280 COMPOSITE CASTER ECCENTRIC BUSHING (2+2+2)
- 32 2291 GRAPHITE EXTENSION FOR STEERING BLOCK - 1 SLOT (2)
- 32 2610 ADJUSTABLE TURNBUCKLE 55MM M3 L/R - HUDY SPRING STEEL™ (2)
- 32 5240 FRONT DRIVE AXLE - HUDY SPRING STEEL™
- 32 7210 FRONT SUSPENSION PIVOT PIN (2)
- 32 7220 FRONT ARM PIVOT PIN (2)
- 36 2280 ALU CONICAL SHIM 3x6x2.0MM (10)

- 36 2290 STEEL STEERING BUSHING - SHORT (2)
- 36 2291 STEEL STEERING BUSHING - LONG (2)
- 36 2650 BALL END 4.9MM WITH THREAD 6MM (2)
- 36 2651 BALL END 4.9MM WITH THREAD 8MM (2)
- 36 5353 ALU WHEEL HUB 12MM (2)
- 35 9050 BALL-BEARING 5x10x4 STEEL SEALED - GREASE (2)
- 90 2205 HEX SCREW SH M2x5 (10)
- 90 2254 HEX SCREW SH M2.5x4 (10)
- 90 2308 HEX SCREW SH M3x8 (10)
- 90 2312 HEX SCREW SH M3x12 (10)
- 90 3308 HEX SCREW SFH M3x8 (10)
- 90 3316 HEX SCREW SFH M3x16 (10)
- 96 0030 NUT M3 (10)
- 96 1025 WASHER S 2.5 (10)
- 98 0210 PIN 2x9.8 (10)

# 5. FRONT SUSPENSION

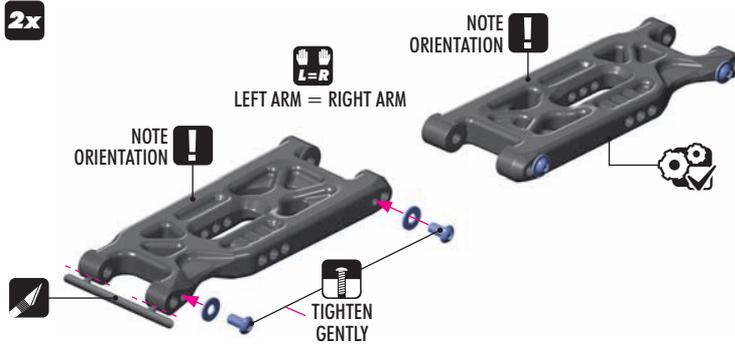


902254  
SH M2.5x4



961025  
S 2.5

2x



OPTION

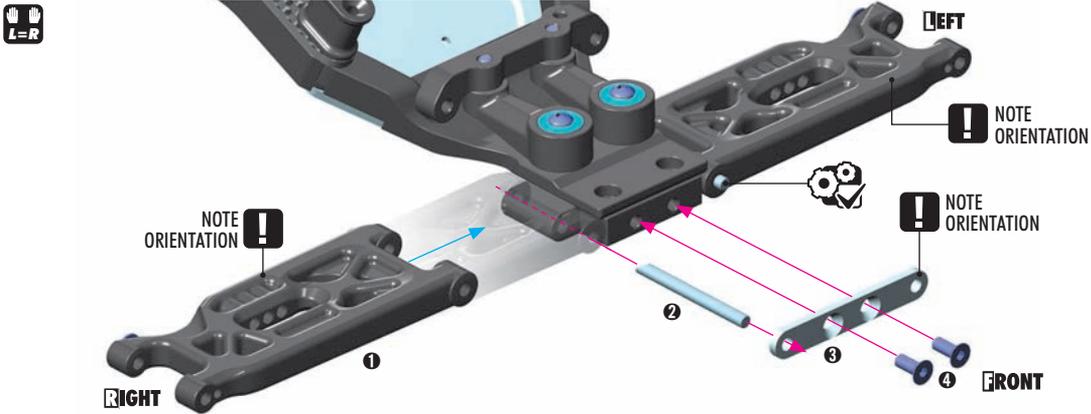
SUSPENSION ARM		
#322110-M	MEDIUM	OPTION
#322110-H	HARD	INCLUDED
#322110-G	GRAPHITE	OPTION



MEDIUM - For very-low & low traction  
HARD - For medium & high traction  
GRAPHITE - For high & very-high traction



903308  
SFH M3x8



OPTION

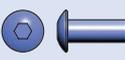
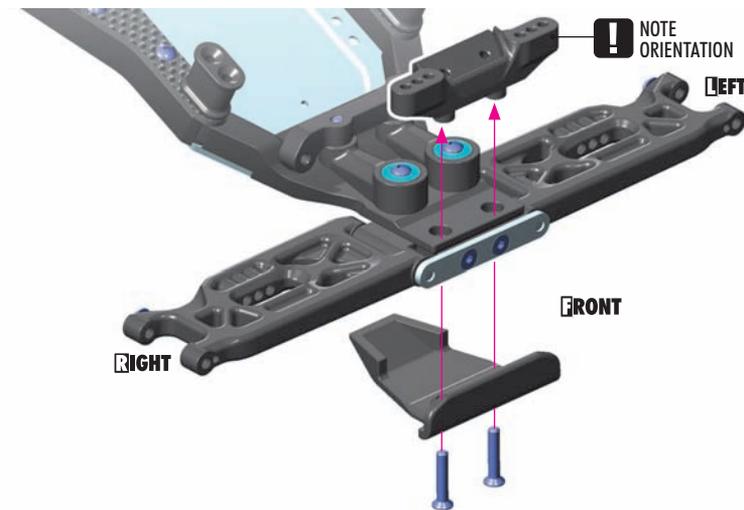
FRONT ROLL CENTER HOLDER		
#322040-M	MEDIUM	OPTION
#322040-H	HARD	INCLUDED
#322041	ALU	OPTION



MEDIUM - Generates more traction, absorbs bumps better  
HARD - More precise, absorbs less bumps than medium but still more than alu, more reactive than medium composite but less than alu  
ALU - More precise, increased strength



903316  
SFH M3x16

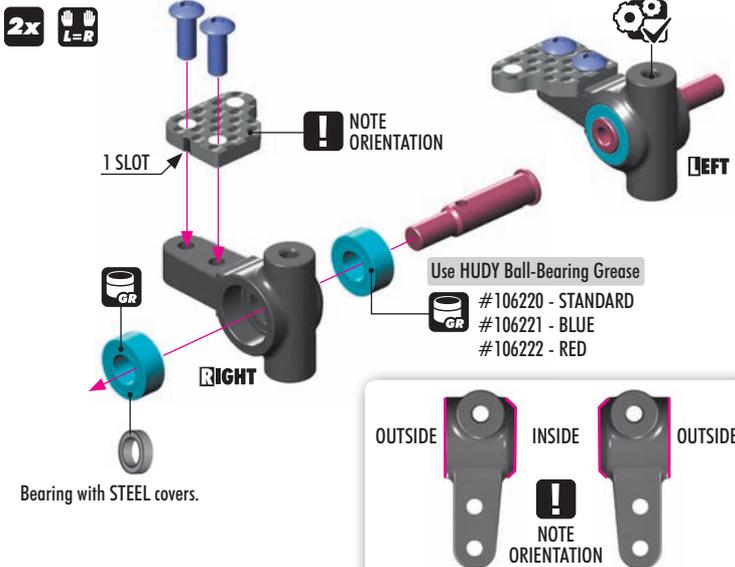


902308  
SH M3x8



359050  
BB 5x10x4

2x



OPTION

STEERING BLOCK EXTENSION		
#322290	2-SLOTS	OPTION
#322291	1-SLOT	INCLUDED
#322292	0-SLOTS	OPTION



2 SLOTS - Turns outside wheels less, easier to drive, less aggressive  
1 SLOT - Between 2 and 0  
0 SLOTS - Most aggressive steering, recommended for very technical small tracks



OPTION

STEERING BLOCK		
#322250-M	MEDIUM	OPTION
#322250-H	HARD	INCLUDED
#322250-G	GRAPHITE	OPTION



MEDIUM - Less corner speed, more agressive  
HARD - Little more corner speed, more forgiving  
GRAPHITE - More corner speed, more precise

# 5. FRONT SUSPENSION

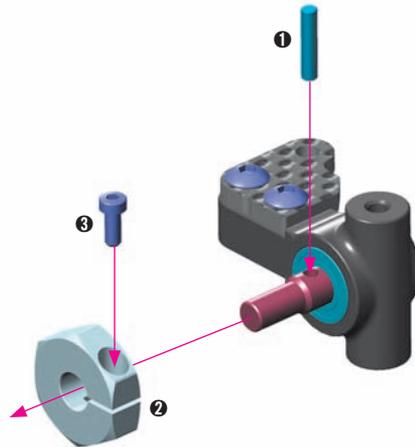


902205  
SH M2x5



981210  
P 2x10

2x L=R



### WHEEL HEX HUBS 12MM

OPTION	Part #	Offset	Slots	Weight	Effect
	#365360	+4.5mm	6 slots		OPTION
	#365359	+3.75mm	5 slots		OPTION
	#365358	+3.0mm	4 slots		OPTION
	#365357	+2.25mm	3 slots		OPTION
	#365356	+1.5mm	2 slots		OPTION
	#365355	+0.75mm	1 slot		OPTION
	#365353	0mm	0 slots		INCLUDED
	#365354	-0.75mm	Lightw.		OPTION



### OPTIONAL HEX HUB EFFECTS

Different offset hex hubs are used to increase or decrease the track-width.

#### LESS OFFSET

Rear - more traction  
Front - more steering

#### MORE OFFSET

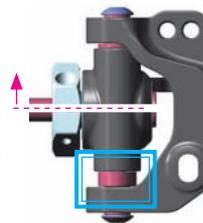
Rear - less traction  
Front - less steering



902312  
SH M3x12

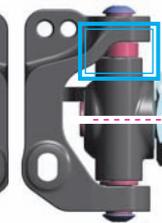
2x L=R

(INITIAL SETTING)  
**HIGHER ROLL CENTER**  
TOP = SHORTER bushing  
BOTTOM = LONGER bushing  
Recommended for smooth tracks to gain more steering.

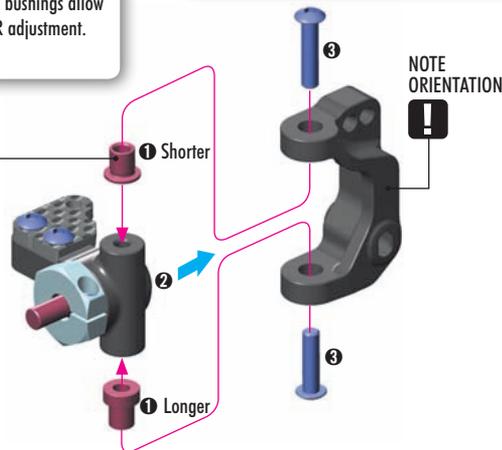


### LOWER ROLL CENTER

TOP = LONGER bushing  
BOTTOM = SHORTER bushing  
Recommended for rough tracks to improve stability.



Steel steering bushings allow ROLL CENTER adjustment.



### C-HUB

OPTION	Part #	Side	Material	Effect
	#322210-M	RIGHT	MEDIUM	OPTION
	#322210-H	RIGHT	HARD	INCLUDED
	#322210-G	RIGHT	GRAPHITE	OPTION
	#322220-M	LEFT	MEDIUM	OPTION
	#322220-H	LEFT	HARD	INCLUDED
	#322220-G	LEFT	GRAPHITE	OPTION



MEDIUM - For low traction. More steering on low grip.  
HARD - For medium traction. More steering, more free in corners.  
GRAPHITE - For high traction. More precise steering, less stopping in corners.



306219  
SHIM 3x6x1



902254  
SH M2.5x4

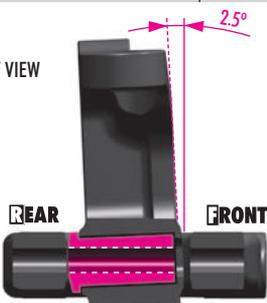


961025  
S2.5

2x L=R

NOTE ORIENTATION

DETAIL CUTAWAY VIEW



### CASTER ECCENTRIC BUSHINGS



LESS CASTER = increased off-power steering  
MORE CASTER = decreased off-power steering

# 5. FRONT SUSPENSION

### ROLL CENTER LINKS

**2x**

NOTE ORIENTATION

6mm THREAD

RIGHT THREAD

LEFT THREAD

8mm THREAD

**TIP** Install the pivot balls with Professional Multi Tool (HUDY #183011)

39.8mm

**2x**

362280  
CON. SHIM 3x6x2

### ROLL CENTER LINKS

**2x**

NOTE ORIENTATION

8mm THREAD

CONICAL SHIM 3x6x2mm

6mm THREAD

RIGHT

FRONT

LEFT

**INITIAL SETTING**

**INITIAL SETTING**

OPTION	ALU CONICAL SHIM		
#362280	SILVER	INCLUDED	
#362280-K	BLACK	OPTION	
#362280-O	ORANGE	OPTION	

### STEERING LINKS

**2x**

NOTE ORIENTATION

8mm THREAD

RIGHT THREAD

LEFT THREAD

8mm THREAD

**TIP** Install the pivot balls with Professional Multi Tool (HUDY #183011)

38.5mm

**2x**

362280  
CON. SHIM 3x6x2

960030  
NUT M3

### STEERING LINKS

**2x**

NOTE ORIENTATION

FRONT

RIGHT

LEFT

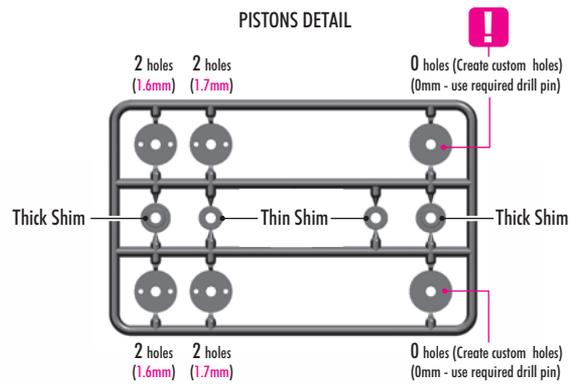
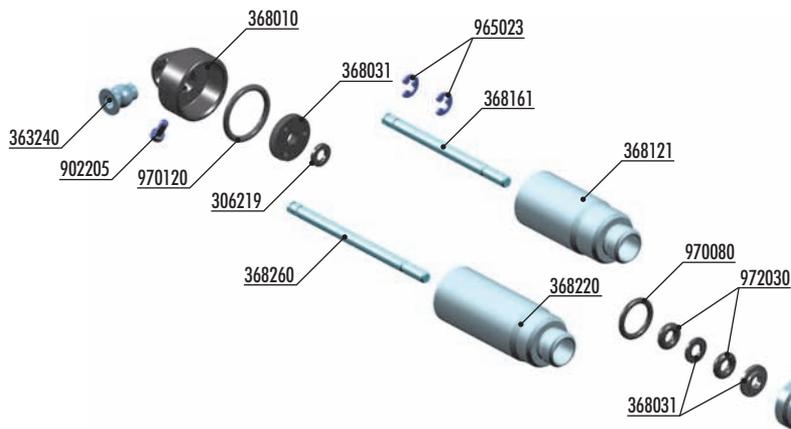
NOTE ORIENTATION

CONICAL SHIM 3x6x2mm

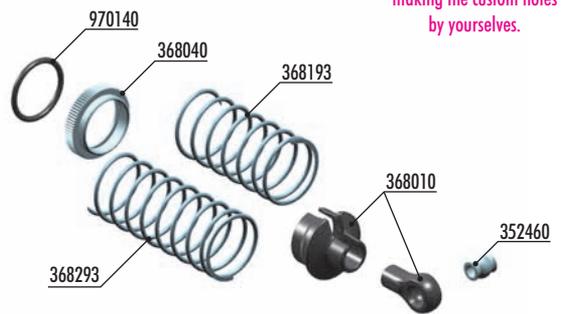
OPTION	ALU CONICAL SHIM		
#362280	SILVER	INCLUDED	
#362280-K	BLACK	OPTION	
#362280-O	ORANGE	OPTION	

OPTION	ALU NUTS M3		
#296530-B	ALU BLUE	OPTION	
#296530-K	ALU BLACK	OPTION	
#296530-O	ALU ORANGE	OPTION	
#960030	STEEL SILVER	INCLUDED	
#960031	ALU SILVER	OPTION	

# 6. SHOCK ABSORBERS



**!**  
These pistons can NOT be used in shocks without making the custom holes by yourselves.



FRONT SPRINGS				
#368191	LINEAR	42mm	1 DOTS	OPTION
#368192	LINEAR	42mm	2 DOTS	OPTION
#368193	LINEAR	42mm	3 DOTS	INCLUDED
#368194	LINEAR	42mm	4 DOTS	OPTION
#368195	LINEAR	42mm	5 DOTS	OPTION



REAR SPRINGS				
#368291	LINEAR	57mm	1 DOTS	OPTION
#368292	LINEAR	57mm	2 DOTS	OPTION
#368293	LINEAR	57mm	3 DOTS	INCLUDED
#368294	LINEAR	57mm	4 DOTS	OPTION
#368295	LINEAR	57mm	5 DOTS	OPTION



FRONT SPRINGS				
#368174	PROGRESS.	45mm	2 STRIPES	OPTION
#368174	PROGRESS.	40mm	3 DOTS	OPTION
#368182	LINEAR	45mm	1 STRIPE & 3 DOTS	OPTION
#368183	LINEAR	45mm	1 DOT	OPTION
#368184	LINEAR	45mm	2 DOTS	OPTION
#368185	LINEAR	45mm	3 DOTS	OPTION
#368186	LINEAR	45mm	4 DOTS	OPTION



REAR SPRINGS				
#368273	PROGRESS.	60mm	2 STRIPES	OPTION
#368275	PROGRESS.	55mm	2 DOTS	OPTION
#368283	LINEAR	63mm	1 STRIPE & 3 DOTS	OPTION
#368284	LINEAR	60mm	1 DOT	OPTION
#368285	LINEAR	60mm	2 DOTS	OPTION
#368286	LINEAR	60mm	3 DOTS	OPTION
#368287	LINEAR	60mm	4 DOTS	OPTION



#368051  
ALU SHOCK CAP-NUT WITH VENT HOLE (2)



#368021  
ALU SHOCK SPRING RETAINING COLLAR (4)



#104004  
HUDY AIR VAC - VACUUM PUMP  
- 1/10 OFF-ROAD



BAG

06

- 30 6219 COMPOSITE SET OF SERVO SHIMS (4)
- 35 2460 PIVOT BALL 5.8 - V3 (10)
- 36 3240 BALL UNIVERSAL 5.8MM WITH BACKSTOP (2)
- 36 8010 COMPOSITE SHOCK PARTS
- 36 8031 SHOCK PISTONS - COMPLETE SET - DERLIN - V2
- 36 8040 ALU SHOCK ADJUSTABLE NUT (2)
- 36 8121 ALU FRONT SHOCK BODY - HARD COATED (2)
- 36 8140 ALU LOWER SHOCK BODY CAP (2)
- 36 8161 FRONT HARDENED SHOCK SHAFT (2)
- 36 8193 FRONT SPRING-SET LINEAR - 3 DOTS (2)
- 36 8200 REAR SHOCK ABSORBERS COMPLETE SET (2)
- 36 8220 ALU REAR SHOCK BODY - HARD COATED (2)
- 36 8260 REAR HARDENED SHOCK SHAFT (2)
- 36 8293 REAR SPRING-SET LINEAR - 3 DOTS (2)

- 90 2205 HEX SCREW SH M2x5 (10)
- 96 5023 E-CLIP 2.3 (10)
- 97 0080 O-RING 8x1 (10)
- 97 0120 O-RING 12 x 1.0 (10)
- 97 0140 O-RING 14 x 1.5 (10)
- 97 2030 SILICONE O-RING 3x2 (10)

# 6. SHOCK ABSORBERS

965023  
C 2.3

970080  
O 8x1

972030  
O 3x2

**SET-UP BOOK**

SHOCK DAMPING  
SHOCK PISTONS

2 holes (1.6mm) **2x FRONT**

FRONT - SHORT SHOCK ROD

INITIAL PISTON SETTING

2 holes (1.7mm) **2x REAR**

REAR - LONG SHOCK ROD

**4x**

THICK Shim

O-ring

THIN Shim

O-ring

There are two different thickness shims, use them as shown. Use the same procedure when building both front and rear shocks.

**#306219 DOWNSTOP SHIMS**

THICKER shim used, GREATER downstop is achieved.

1mm 2mm 3mm

**! IMPORTANT**  
Always use same shim thickness on right and left side to achieve same downstop.

3x6x1mm **2x FRONT SHOCKS**

SHORT SHOCK ROD

SHORT SHOCK BODY

3x6x1mm **2x REAR SHOCKS**

LONG SHOCK ROD

LONG SHOCK BODY

**! EXTREMELY IMPORTANT**

**INCORRECT**

**CORRECT**

Do not push the shock rod straight through the lower shock body assembly; O-ring damage may result.

Twist the shock rod through the lower shock body assembly.

970140  
O 14x1.5

**4x**

**DETAIL**

970120  
O 12x1

**4x**

**306219 SHIM 3x6x2**

**306219 SHIM 3x6x3**

**4x**

UPSTOP SHIM

**FRONT** 3x6x2mm

**REAR** 3x6x3mm

1~1.5mm

Install the pivot balls with Professional Multi Tool (HUDY #183011)

# 6. SHOCK ABSORBERS



## DEFAULT SHOCK REBOUND SETTING 0% REBOUND

Follow the steps below to set the shock rebound to the default setting of 0%.

- 2x** FRONT (SHORT)  
Oil 450cSt
- 2x** REAR (LONG)  
Oil 400cSt



**1** Extend the shock shaft completely. Fill the shock body with the shock oil. For the FRONT shocks (short) use 450cSt oil. For the REAR shocks (long) use 400cSt oil.



**2** Move the shock shaft up and down a few times to release the air bubbles trapped beneath the piston.



**3** Orient the filled shock vertically for several minutes with the shock shaft fully extended. The remaining air bubbles will release.



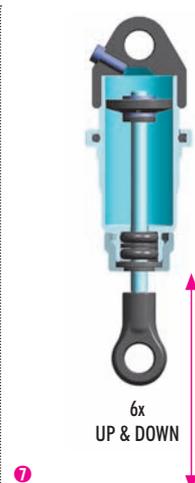
**4** Gently place the shock cap onto the filled shock body and start to tighten the cup. Tighten the cap fully.



**5** Gently push the shock shaft completely into the shock body. Excess oil will flow through the hole in the shock cap.



**6** Keep the shock shaft pushed in the shock body and insert the screw into the shock cap. Tighten gently.



**7** 6x push the shaft up and down.



**8** Untighten the screw.



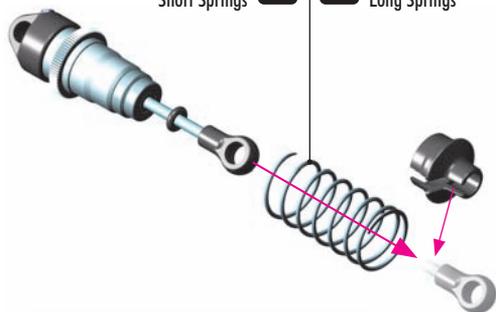
**9** Gently push the shock shaft completely into the shock body. Excess oil will flow through the hole in the shock cap.



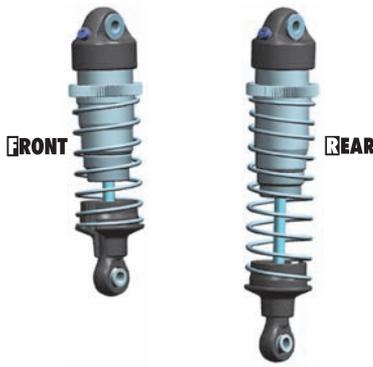
**10** Tighten the screw. The rebound will be at approx. 0%

**SET-UP BOOK**  
SHOCK OIL

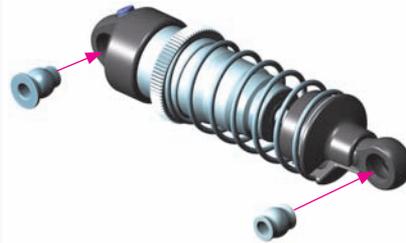
- 2x** SHORT FRONT SHOCKS  
Short Springs
- 2x** LONG REAR SHOCKS  
Long Springs



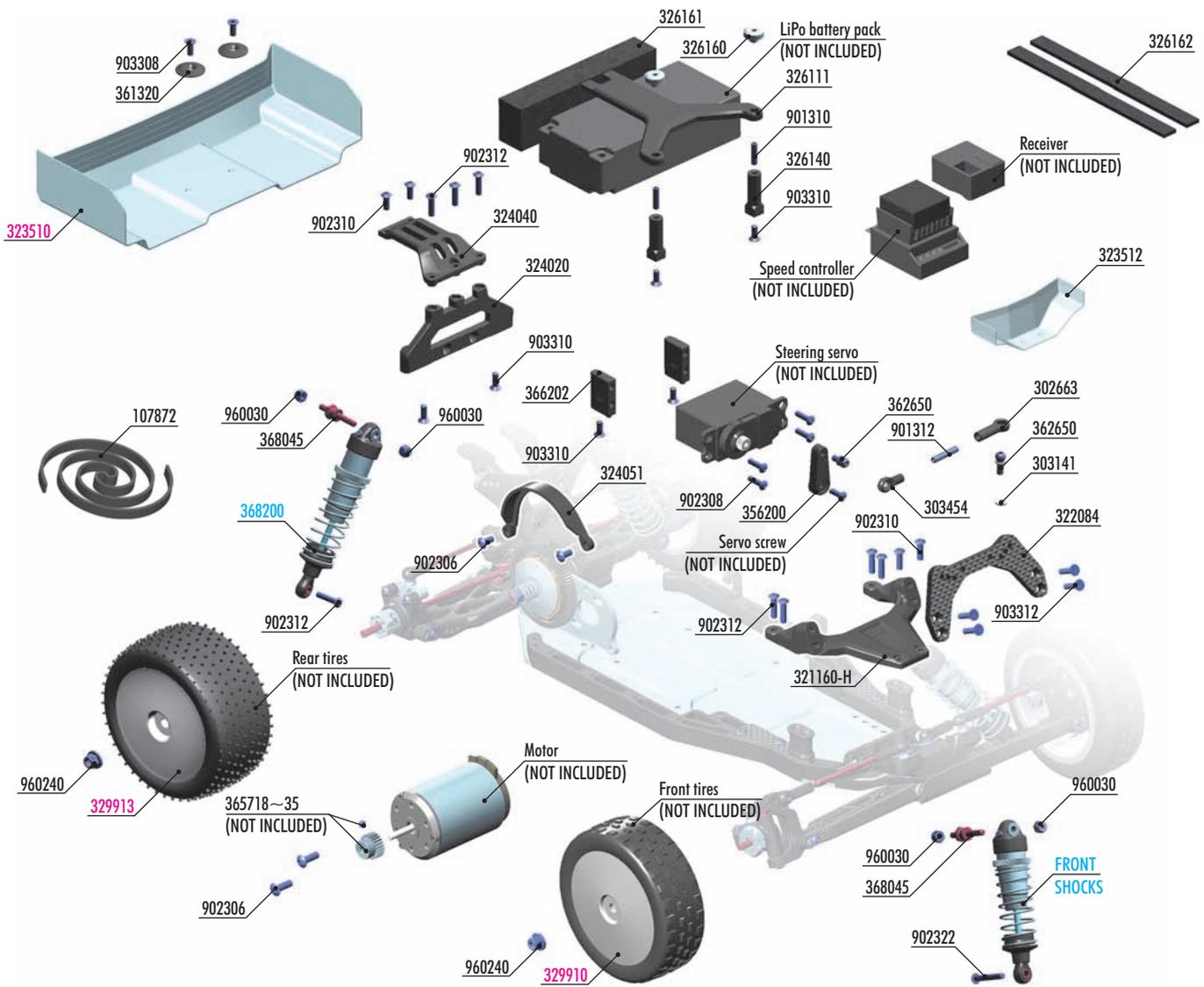
**! IMPORTANT**  
Both FRONT SHOCKS must be the same overall length.  
Both REAR SHOCKS must be the same overall length.



- 2x** FRONT SHOCKS (SHORT)
- 2x** REAR SHOCKS (LONG)



# 7. FINAL ASSEMBLY



**OPTION**

XRAY LEXAN REAR WING			
#323510	1.0mm		INCLUDED
#323511	1.5mm		OPTION
#323513	1.0mm	RANK	OPTION
#363510	1.0mm		OPTION
#363511	1.5mm		OPTION
#363512	2.0mm		OPTION

#323515 Lexan Rear Wing Center Fin  
(\*just for #323513)

**OPTION**

XRAY LEXAN BODY			
#329700	0.75mm		OPTION
#329701	0.50mm		OPTION
#369706	0.50mm	ALPHA	OPTION
#329707	0.75mm	BETA	INCLUDED
#329708	0.50mm	BETA	OPTION

**OPTION**

BATTERY STRAP		
#326110	GRAPHITE	OPTION
#326111	COMPOSITE	INCLUDED

**OPTION**

FRONT UPPER DECK		
#321160-M	MEDIUM	OPTION
#321160-H	HARD	INCLUDED

**OPTION**

REAR WING SHIM		
#293561	SILVER	OPTION
#293561-0	ORANGE	OPTION

**BAG**

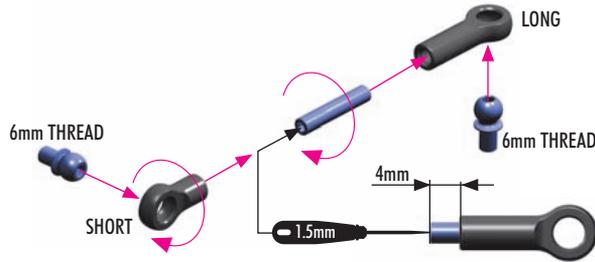
**07**

- 10 7872 VELCRO TAPE WITH DOUBLE SIDED TAPE 8x500MM
- 30 2663 COMPOSITE BALL JOINT 4.9MM - OPEN - V2 (8)
- 30 3141 ALU SHIM 3x5x1.0MM (10)
- 30 3454 BALL JOINT 4.9MM - OPEN (4)
- 32 1160-H COMPOSITE FRONT UPPER DECK - HARD
- 32 2084 GRAPHITE SHOCK TOWER FRONT 4.0MM - LOWER
- 32 4020 COMPOSITE MOUNT FOR UPPER BRACE - CARPET EDITION
- 32 4040 COMPOSITE MOTOR UPPER BRACE - CARPET EDITION
- 32 4051 COMPOSITE GEAR COVER - FRONT MOTOR POSITION
- 32 6111 COMPOSITE BATTERY STRAP - CARPET EDITION
- 32 6140 COMPOSITE BATTERY HOLDER STAND (2)
- 32 6160 ALU BATTERY HOLDER NUT (2)
- 32 6161 FOAM SPACER FOR BATTERY
- 32 6162 SELF-ADHESIVE RUBBER 1.5x6.5x155MM (2)
- 35 6200 BRAKE/THROTTLE ARMS & STEERING SERVO ARMS - SET
- 36 1320 BODY MOUNT, BATTERY MOUNT - V2 & WING SHIM (2)
- 36 2650 BALL END 4.9MM WITH THREAD 6MM (2)
- 36 5718~35 ALU PINION GEAR HARD COATED 18~35T/48 (OPTION)
- 36 6202 COMPOSITE SERVO MOUNT - HIGHER
- 36 8045 STEEL SCREW SHOCK PIVOT BALL WITH HEX (2)

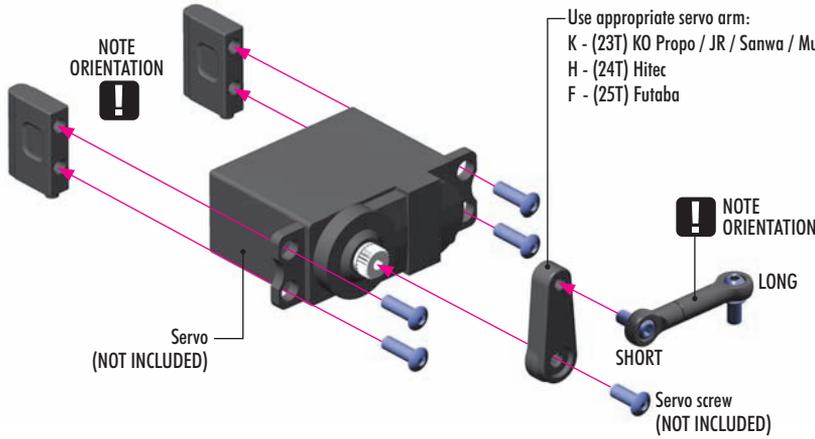
- 90 1310 HEX SCREW SB M3x10 (10)
- 90 1312 HEX SCREW SB M3x12 (10)
- 90 2306 HEX SCREW SH M3x6 (10)
- 90 2308 HEX SCREW SH M3x8 (10)
- 90 2310 HEX SCREW SH M3x10 (10)
- 90 2312 HEX SCREW SH M3x12 (10)
- 90 2322 HEX SCREW SH M3x22 (10)
- 90 3308 HEX SCREW SFH M3x8 (10)
- 90 3310 HEX SCREW SFH M3x10 (10)
- 90 3312 HEX SCREW SFH M3x12 (10)
- 96 0030 NUT M3 (10)
- 96 0240 NUT M4 WITH SERRATED FLANGE (10)

- 36 8200 FRONT SHOCKS
- 32 3510 REAR SHOCK ABSORBERS COMPLETE SET (2)
- 32 3512 LEXAN REAR WING (2)
- 32 9707 LEXAN FRONT WING 0.75MM
- 32 9910 XRAY XB2 BODY
- 32 9913 2WD FRONT WHEEL AERODISK WITH 12MM HEX - WHITE (2)
- 2WD/4WD REAR WHEEL AERODISK 12MM HEX - WHITE (2)

# 7. FINAL ASSEMBLY



**TIP** Install the pivot balls with Professional Multi Tool (HUDY #183011)



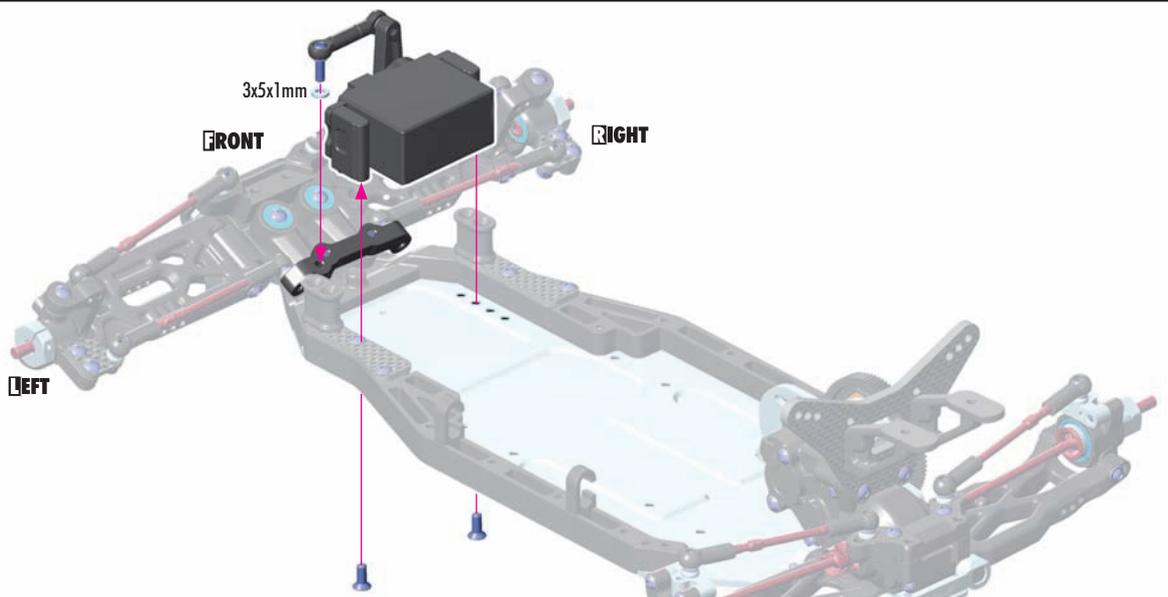
**HUDY ALU SERVO HORNS**

OPTION	Part #	Size
	#293497	23T
	#293498	24T
	#293499	25T

**HUDY CLAMP ALU SERVO HORNS**

OPTION	Part #	Size
	#293404	23T
	#293405	24T
	#293406	25T

For more in-corner steering and better steering response, aluminum servo horns may be used.

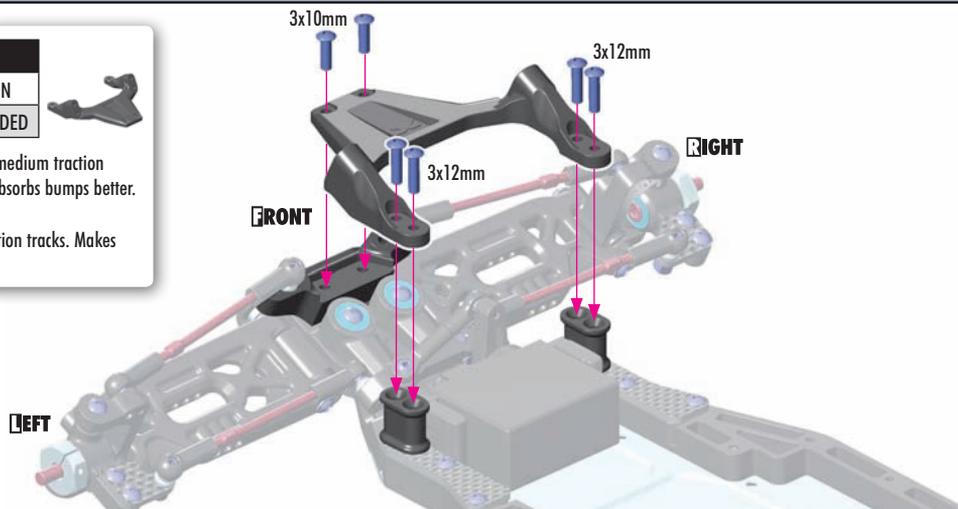


**FRONT UPPER DECK**

OPTION	Part #	Material	Status
	#321160-M	MEDIUM	OPTION
	#321160-H	HARD	INCLUDED

**MEDIUM** - For very-low, low and medium traction tracks. Generates more traction, absorbs bumps better.

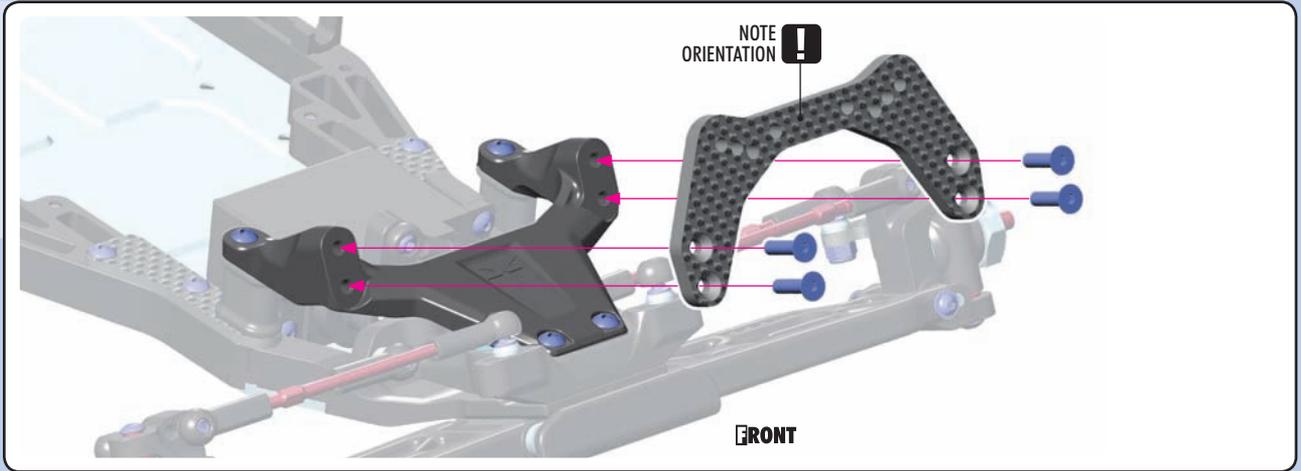
**HARD** - For high & very-high traction tracks. Makes the car more precise.



# 7. FINAL ASSEMBLY



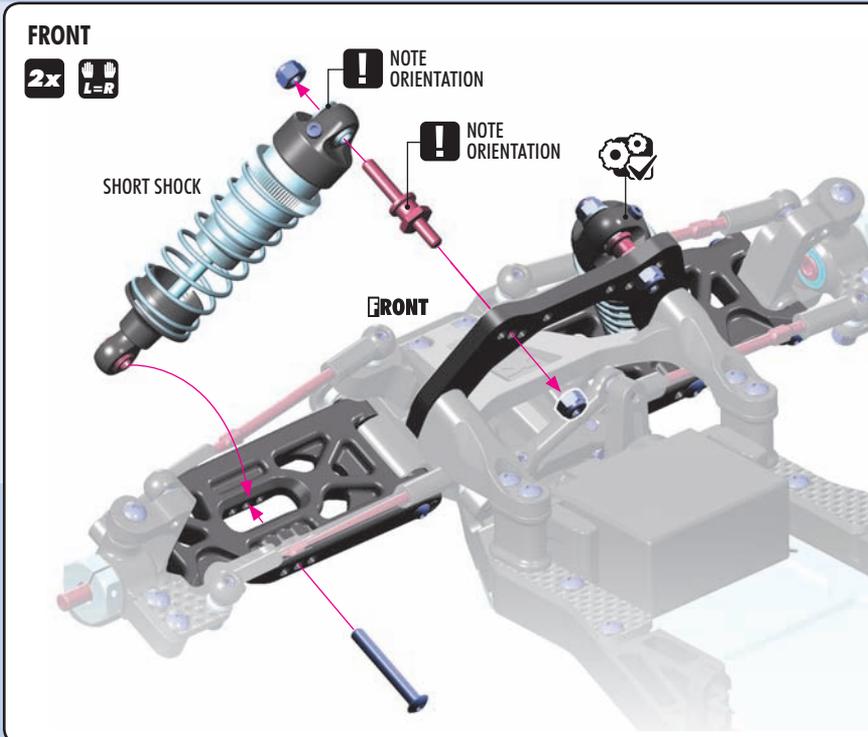
903312  
SFH M3x12



902322  
SH M3x22



960030  
NUT M3



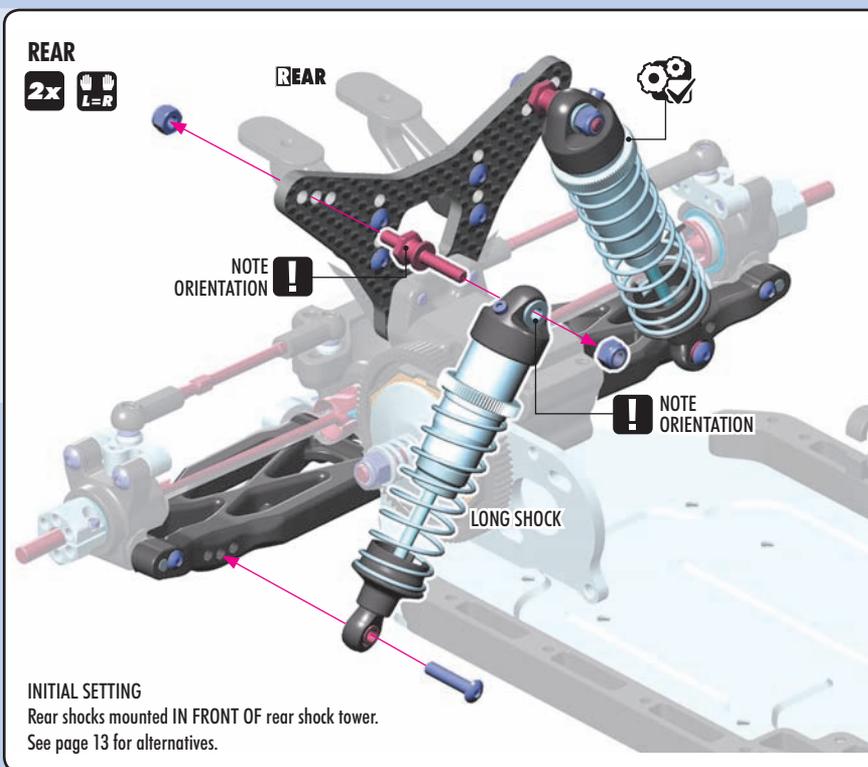
ALU NUTS M3		
#296530-B	ALU BLUE	OPTION
#296530-K	ALU BLACK	OPTION
#296530-O	ALU ORANGE	OPTION
#960030	STEEL SILVER	INCLUDED
#960031	ALU SILVER	OPTION



902312  
SH M3x12



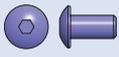
960030  
NUT M3



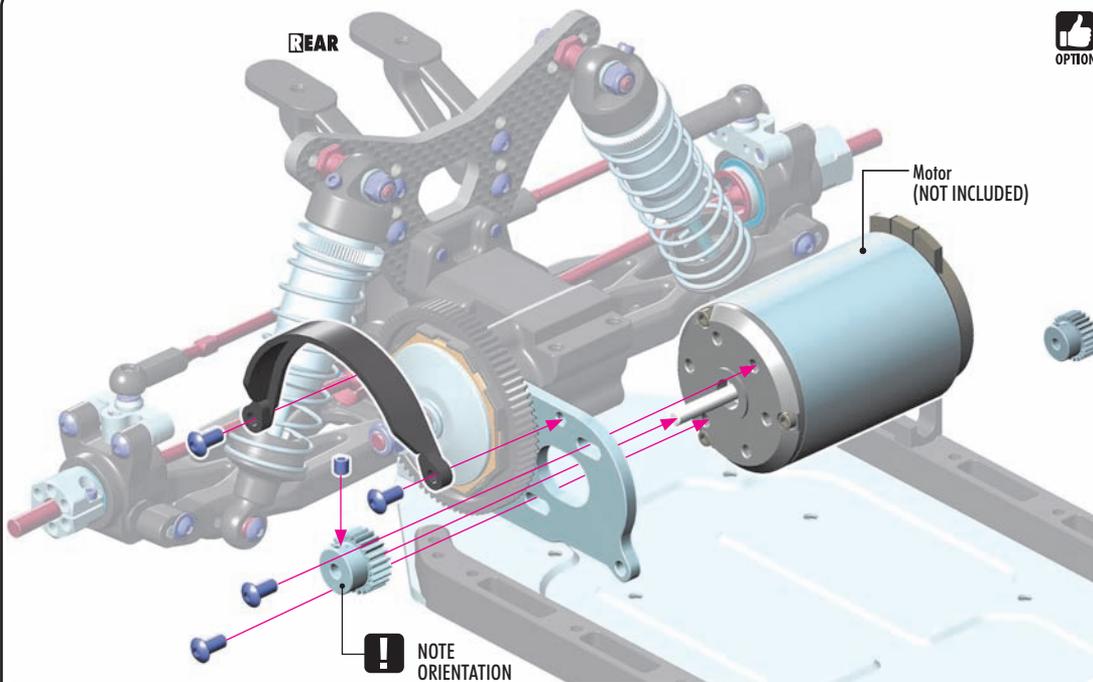
ALU NUTS M3		
#296530-B	ALU BLUE	OPTION
#296530-K	ALU BLACK	OPTION
#296530-O	ALU ORANGE	OPTION
#960030	STEEL SILVER	INCLUDED
#960031	ALU SILVER	OPTION

**INITIAL SETTING**  
Rear shocks mounted IN FRONT OF rear shock tower.  
See page 13 for alternatives.

# 7. FINAL ASSEMBLY



902306  
SH M3x6



## XRAY PINIONS (48P)

#365718	18T
#365719	19T
#365720	20T
#365721	21T
#365722	22T
#365723	23T
#365724	24T
#365725	25T
#365726	26T
#365727	27T
#365728	28T
#365729	29T
#365730	30T
#365731	31T
#365732	32T
#365733	33T
#365734	34T
#365735	35T
#365736	36T
#365737	37T
#365738	38T

**NOTE**  
ORIENTATION  
Pinion & Set screw  
(NOT INCLUDED)



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 the spur gear.



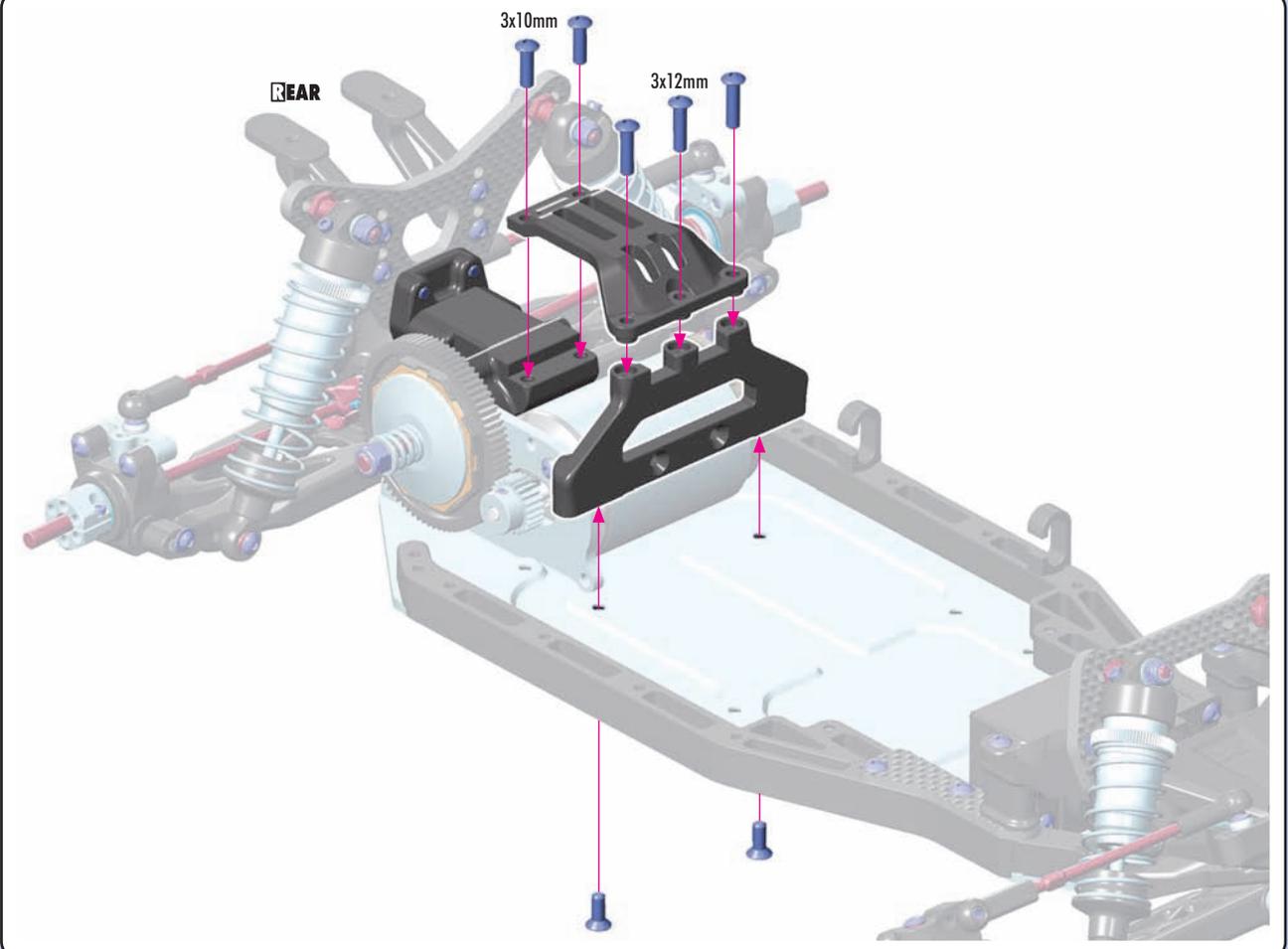
902310  
SH M3x10



902312  
SH M3x12



903310  
SFH M3x10

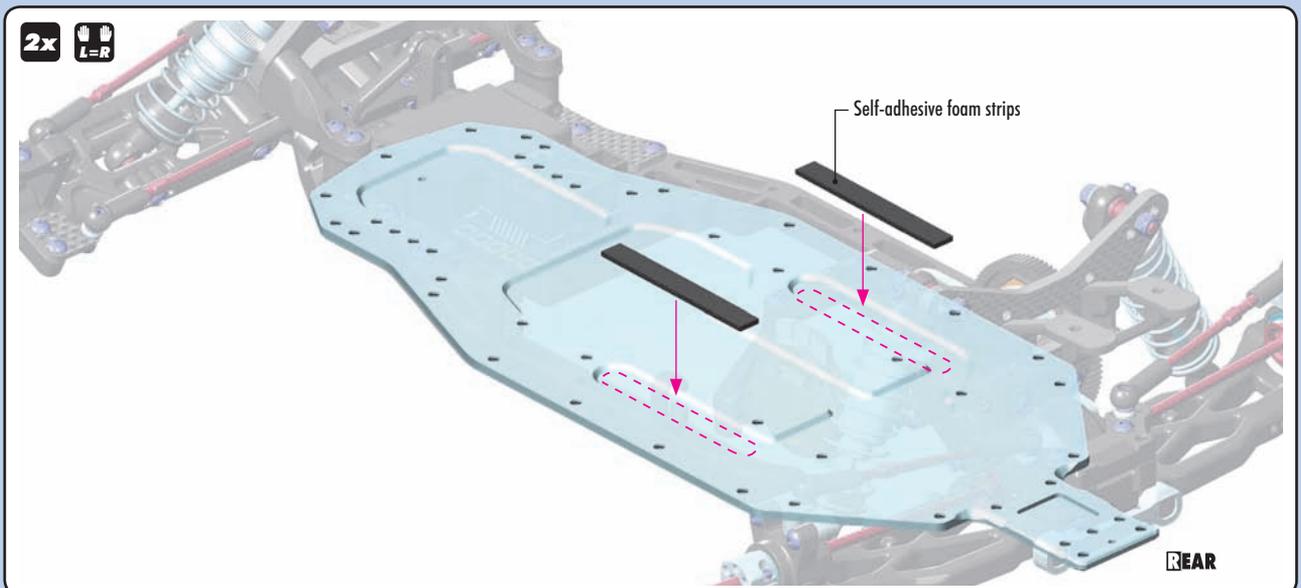
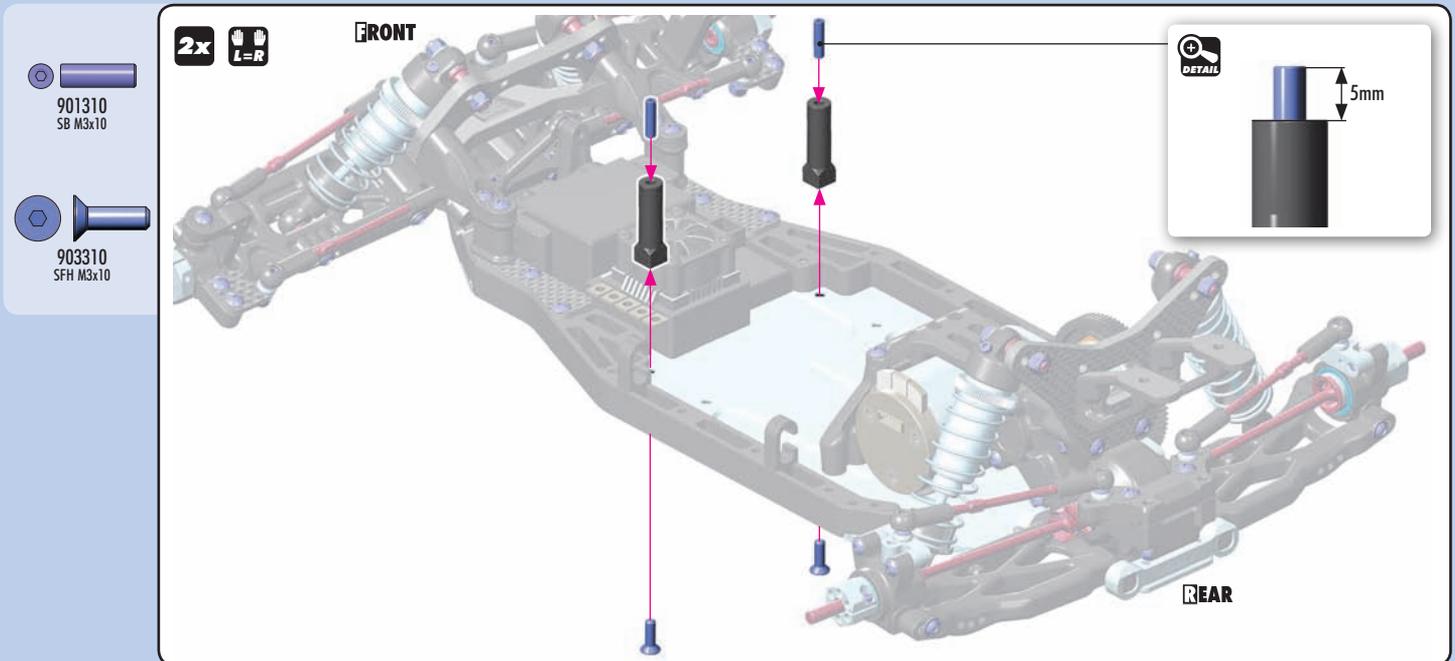
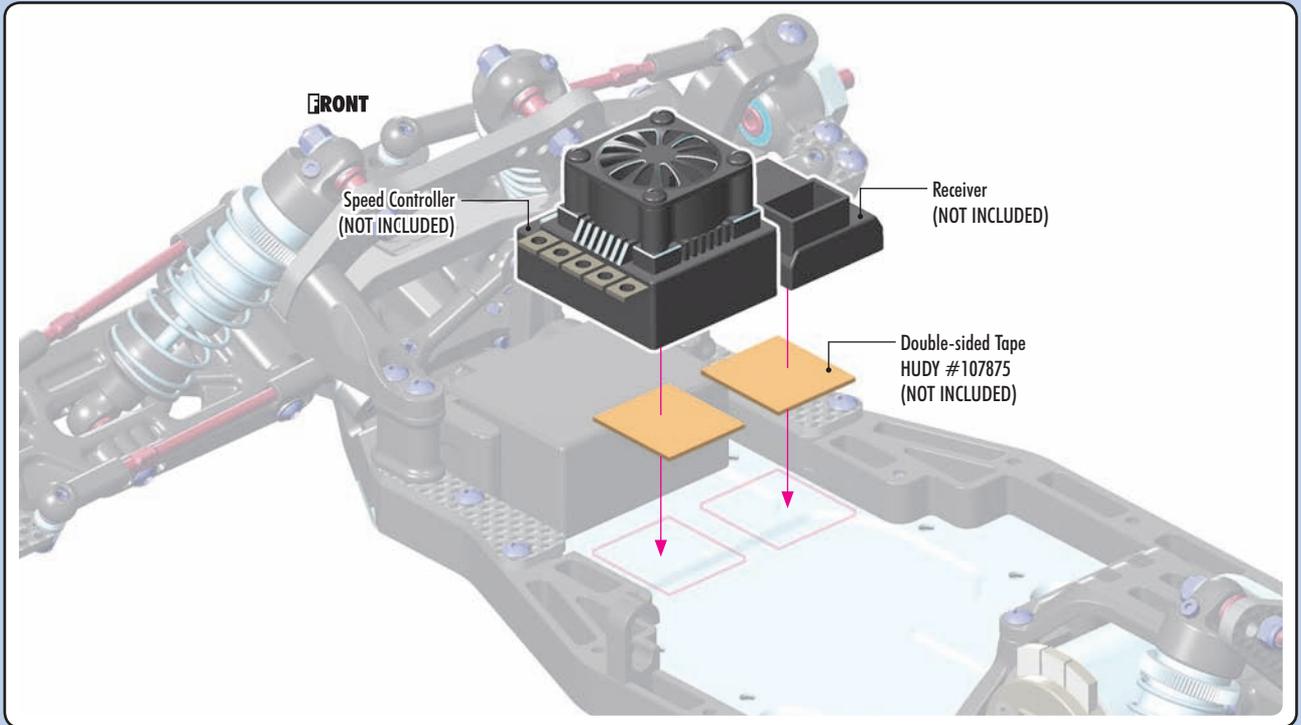


3x10mm

REAR

3x12mm

# 7. FINAL ASSEMBLY



# 7. FINAL ASSEMBLY

**BATTERY STRAP**

OPTION	#326110	GRAPHITE	OPTION
	#326111	COMPOSITE	INCLUDED

**BATTERY WEIGHT**

OPTION	#326180	50g	OPTION
	#326181	35g	OPTION

**REAR BATTERY POSITION (INITIAL SETTING):**  
Foam spacer in front of battery.  
More traction on rear suspension, less steering

**FRONT BATTERY POSITION:**  
Foam spacer behind battery.  
Less traction on rear suspension, more cornering speed

**TIP**  
The foam battery spacer can be installed either in front or behind the battery.

- Before cutting and making holes on the BODY, put the unpainted body on the chassis to confirm the mounting position and location for holes and cutouts. Before cutting and making holes on the WING, put the unpainted wing on the wing holders to confirm the mounting position and location for holes and cutouts.
- Before painting, wash the inside of the body with mild detergent, and then rinse and dry thoroughly.
- Mask all windows.
- Apply paint masks as appropriate.
- Paint the body using paints formulated for polycarbonate bodies.
- When the paint is dry, remove the masking.
- Carefully cut out the body using appropriate scissors or cutting tools.
- When you have finished cutting, peel off the external protective films.

**XRAY LEXAN BODY**

OPTION	#329700	0.75mm		OPTION
	#329701	0.50mm		OPTION
	#369706	0.50mm	ALPHA	OPTION
	#329707	0.75mm	BETA	INCLUDED
	#329708	0.50mm	BETA	OPTION

**2x** **L=R**

**VELCRO™ TAPE WITH DOUBLE-SIDED TAPE**

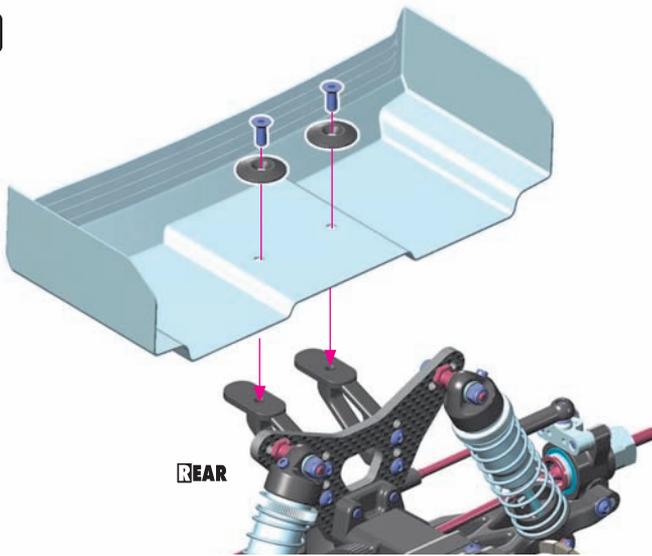
(Velcro™ tape - hook side)

(Velcro™ tape - soft side)



903308  
SFH M3x8

2x



REAR



OPTION

REAR WING SHIM			
#293561	SILVER	OPTION	
#293561-0	ORANGE	OPTION	



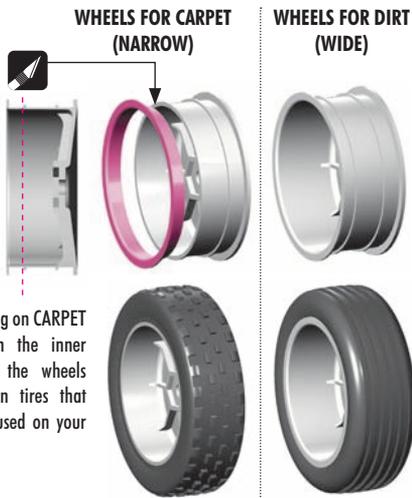
OPTION

XRAY LEXAN REAR WING			
#323510	1.0mm		INCLUDED
#323511	1.5mm		OPTION
#323513	1.0mm	RANK	OPTION
#363510	1.0mm		OPTION
#363511	1.5mm		OPTION
#363512	2.0mm		OPTION

#323515 Lexan Rear Wing Center Fin  
(\*just for #323513)

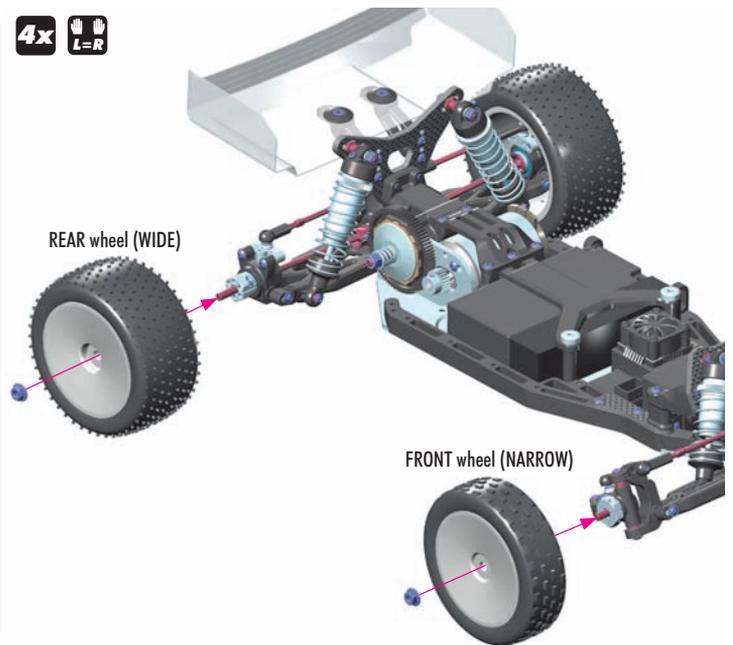


## FRONT WHEELS ADJUSTMENT



For racing on CARPET cut from the inner part of the wheels based on tires that will be used on your XB2.

4x



REAR wheel (WIDE)

FRONT wheel (NARROW)



960240  
N M4

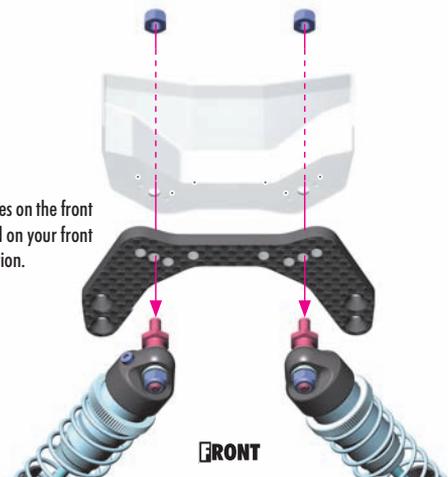


OPTION

#323512  
FRONT LEXAN® WING

### ALTERNATIVE 1 UPPER POSITION

Cut the holes on the front wing based on your front shock position.



FRONT

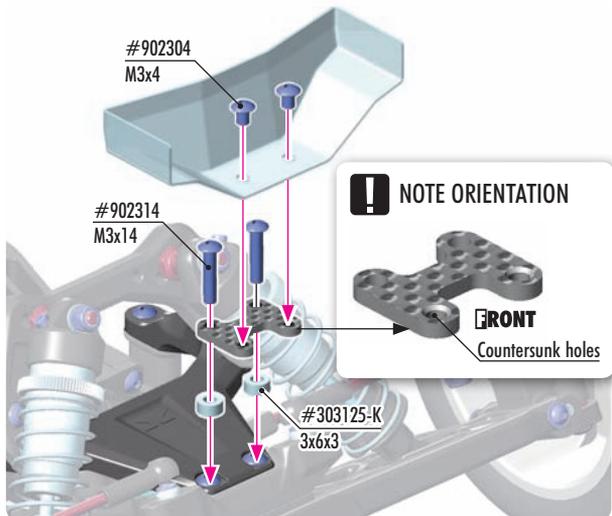
Using front wing in upper position gives more steering but also more roll.



OPTION

#321190  
XB2 GRAPHITE FRONT WING HOLDER

### ALTERNATIVE 2 LOWER POSITION



NOTE ORIENTATION

FRONT  
Countersunk holes

Cut the holes on the front wing based on your wing holder.  
Using front wing in lower position gives more steering and less roll.

## SHOCK MAINTENANCE

The most important maintenance task for keeping consistent shock performance is refilling and bleeding them correctly. If built correctly, it will not be necessary to re-build them often. Replacing warped/hard o-rings, scarred piston rods, or shaved/split/loose composite upper and lower ball joints are also important.

- For club racing, it is recommended to check the shocks for air inside before each race and only re-fill and bleed them if necessary. Before each race day, make sure you take the spring off of each shock, hold it up to your ear, and quickly compress the shock rod fully into the body while listening for any air making a "whistling" or "squishy" sound as it passes through the piston holes. If you hear any air, refill and bleed your shocks. For high-competition racing, it is recommended that the shocks be re-filled and bled before a large event.
- If building or pairing new shocks, always make sure they are the same length using a shock length measuring tool and adjust the lower ball joints as needed.
- During regular shock operation, oil naturally gets on the shock shaft and drop-by-drop slightly gets out of the shock body. Shocks should be inspected regularly after each race, and oil replaced as required.

## BEARING MAINTENANCE

Ball-bearings in an off-road car must be properly maintained for smooth operation and long lifespan.

The XB2 ball-bearings are degreased and are lubricated with HUDY Bearing Oil or HUDY Grease. The following procedures are recommended to clean all of the bearings in your off-road car. For high-competition racing, we recommended doing this every 3-4 weeks, or before a major race.

- 1 Remove the seals on both sides of the bearing (if present). If the seals bend a little and you can see a kink, carefully flatten the kink out by hand.
- 2 Spray the seals with motor cleaner and blow dry with compressed air.
- 3 Spray the bearing on both sides with motor cleaner.
- 4 Spin the bearing while it is still wet to dislodge any particles with the cleaner.
- 5 Spray the bearing on both sides again.
- 6 Blow both sides of the bearing dry with compressed air to make sure particles come out.
- 7 Hold the inner part of the bearing with my left thumb/forefinger and spin it to make sure it spins free without any abnormal vibrations or sounds.
- 8 Place one drop of bearing oil into each side of the bearing.
- 9 Replace both seals at the same time by lining them up on each side of the bearing and lightly pressing them in all the way around the bearings circumference with your thumb and forefinger. Do not press too hard or use any type of tool, such as a wrench tip, to push the blue seals in as they will push in too far, bend and cause drag.

If you spin test the bearing after you have re-oiled and sealed it, it will not spin freely for an extended period of time. The lightest of oils may allow it to spin for 1-2 seconds. This is normal and once you have mounted the bearings in the car again, the drive train will spin freely.

Make sure you use a motor cleaner that does not leave a residue after it dries as this may cause drag and wear in the bearings.

### RECOMMENDED PRODUCTS

- Use correct oil or grease to lubricate the bearings:  
 #106230 HUDY Bearing Oil  
 #106220 HUDY Bearing Grease - Standard  
 #106221 HUDY Bearing Grease - Blue  
 #106222 HUDY Bearing Grease - Red



## SUSPENSION & DRIVETRAIN MAINTENANCE

- Check suspension for free movement during building and operation, and especially after running and if you have crashed the car. If the suspension does not move freely, use the appropriate HUDY Arm Reamer to clean and resize the holes of the suspension arms.
- Regularly inspect and replace the pins that connect the wheel drive shafts with wheel axles. Use HUDY Graphite Grease to lubricate the drive shaft connecting joints and the diff gears.
- Pivot balls and ball-joints will naturally wear for some time and will generate play. If there is too much play the pivot balls and ball joints need to be replaced.
- If the car is run in wet conditions, apply WD-40® on all drivetrain parts before the run. After the run, clean and dry the parts again.



#106210 HUDY GRAPHITE GREASE



or #106213 HUDY JOINT GREASE

## HUDY SPRING STEEL™

The HUDY Spring Steel™ used in the car is the strongest and most durable steel material on the RC market. While items made from HUDY Spring Steel™ are still subject to wear, the lifespan is considerably longer than any other material. As parts made from HUDY Spring Steel™ wear, the

brown color will fade (get lighter) but it will not affect the strength of the material. The brown color is only a surface treatment and if the brown color will wear the durability of the part will be still strong.



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/XrayRacing



/XrayRacing