

1/10 LUXURY OFF-ROAD CAR 4WD

XRAY XOB4

INSTRUCTION
MANUAL 2016



MADE IN
EUROPE



INTRODUCTION

The XRAY XB4 is a modern, high-competition premium luxury racing 1/10 electric 4WD off-road buggy that is the epitome of high-performance and fine distinctive design. Your XB4 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 XB4.

XB4 was designed around a no compromise platform; the attention to detail creates a low maintenance, extra long life nitro 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. Also, please visit our Web site at 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

The XRAY XB4 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 XB4 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. Also, please visit our web site at 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.

XRAY Europe

K Výstavisku 6992
91101 Trenčín
Slovakia, EUROPE
Phone: +421-32-7401100
Fax: +421-32-7401109
Email: info@teamxray.com

XRAY USA

RC America, 2030 Century Center Blvd #15
Irving, TX 75062
USA
Phone: (800) 519-7221 * (214) 744-2400
Fax: (214) 744-2401
Email: 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.

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.

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.

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

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

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.

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 to get advice, or contact us via email at info@teamxray.com, or contact the XRAY distributor in your country.

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.

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) 	Combination Pliers (HUDY #189020) 	Side Cutters (HUDY #189010) 	Hobby Knife 	Turnbuckle Wrench 3mm (HUDY #181030) 	Reamer (HUDY #107600) or (HUDY #107601)
Tweezer 	HUDY TOOLS: Allen 1.5mm Socket 5.5mm Allen 2.0mm Socket 7.0mm Arm Reamer 3.0mm					

EQUIPMENT INCLUDED

XRAY Premium Silicone Oils 	Graphite Grease (HUDY #106210)
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NOT INCLUDED

Follow 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.								
<table border="1"> <thead> <tr> <th colspan="2">SAMPLE OF OPTIONAL PARTS</th> </tr> </thead> <tbody> <tr> <td>#36XXXX</td> <td>OPTION 1</td> </tr> <tr> <td>#36XXXX</td> <td>OPTION 2</td> </tr> <tr> <td>#36XXXX</td> <td>OPTION 3</td> </tr> </tbody> </table>	SAMPLE OF OPTIONAL PARTS		#36XXXX	OPTION 1	#36XXXX	OPTION 2	#36XXXX	OPTION 3	XRAY offers wide range of optional tuning parts which are listed in a table like this. 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									
#36XXXX	OPTION 1								
#36XXXX	OPTION 2								
#36XXXX	OPTION 3								

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 	Tires & Inserts

XB4 TECH TIPS

TIP DRIVE SHAFT PIN SERVICING

To enjoy the longest possible lifespan of the drive shafts and diff outrives, it is extremely important to properly service the drive shaft pins. Inspect the pins after every 3 hours of runtime. If the pins show any wear, replace them with new pins.



1 Do not use drive shafts when the pins are worn.

2 Press out the worn pins.

3 Press in new pins and regularly inspect for wear.



For quick & easy drive pin replacements use #106000 HUDY Drive Pin Replacement Tool.



To replace the worn pins use only premium HUDY drive pins #106051.

TIP GRAPHITE PARTS PROTECTION

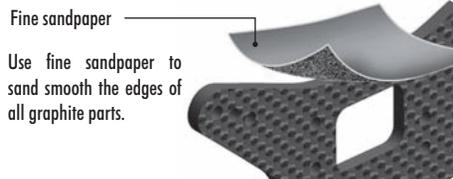
Follow this tech tip to protect the following graphite parts:

Protect all XB4 Graphite Parts:

- Front shock tower
- Rear shock tower

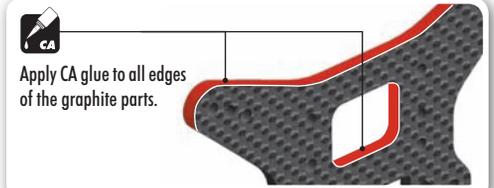
! SHOCK TOWER PROTECTION

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



Fine sandpaper

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

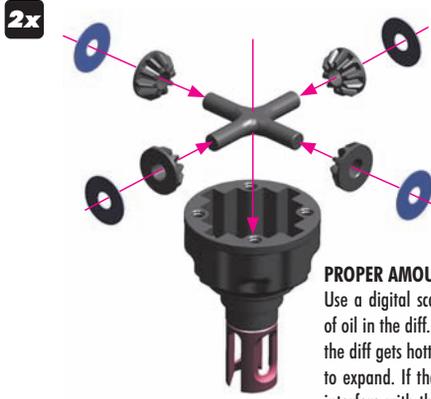


Apply CA glue to all edges of the graphite parts.

FRONT & REAR DIFFERENTIAL

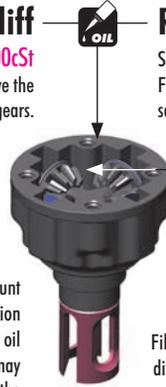


964031
S 3.5x10x0.2

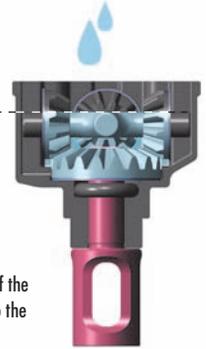


PROPER AMOUNT OF OIL IN THE DIFFS
Use a digital scale to measure the exact amount of oil in the diff. Remember that during operation the diff gets hotter and the heat may allow the oil to expand. If there is too much oil inside it may interfere with the diff operation and damage the internal gears.

Front diff
Silicone oil 8 000cSt
Fill just above the satellite gears.



Rear diff
Silicone oil 8 000cSt
Fill just above the satellite gears.



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 9.80g)

$$9.80g + 1.32g = 11.12g$$

2 Slowly pour oil into the diff and watch the weight. Add 1.32g of oil into the diff. The approximate weight of the diff including oil is 11.12g.

TIPS FOR DIFFERENTIALS

TIP	FRONT DIFFERENTIAL	REAR DIFFERENTIAL	TIP
	LOW TRACTION 5 000cSt (HUDY #106450)	LOW TRACTION 5 000cSt (HUDY #106450)	
	MEDIUM-HIGH TRACTION 8 000cSt (HUDY #106480)	MEDIUM-HIGH TRACTION 8 000cSt (HUDY #106480)	
	SUPER-HIGH TRACTION 10 000cSt (HUDY #106510)	SUPER-HIGH TRACTION 10 000cSt (HUDY #106510)	
NOTE:	Softer oil increases steering, harder oil increases stability.	NOTE:	Softer oil increases rear traction, harder oil increases on-power steering.

SET-UP BOOK

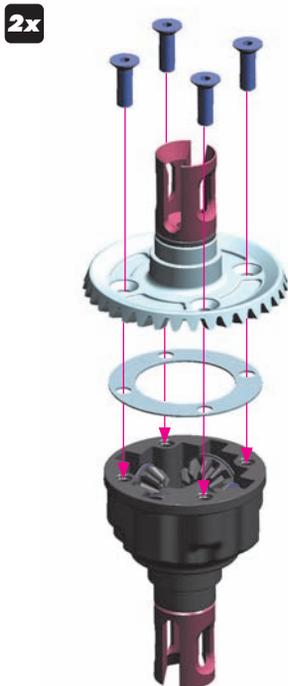
DIFFERENTIAL OIL



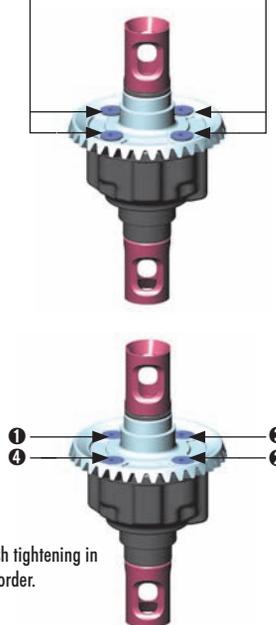
903258
SFH M2.5x8



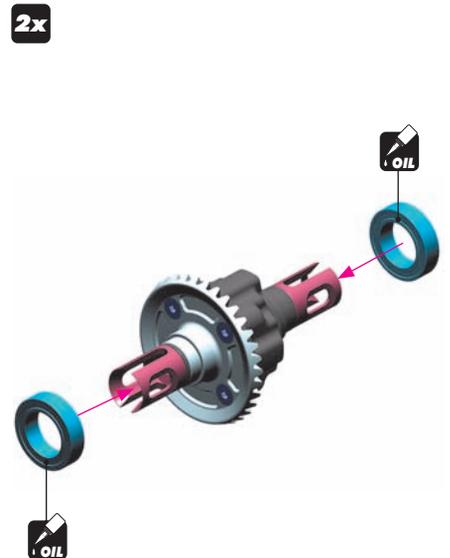
941015
BB 10x1.5x4



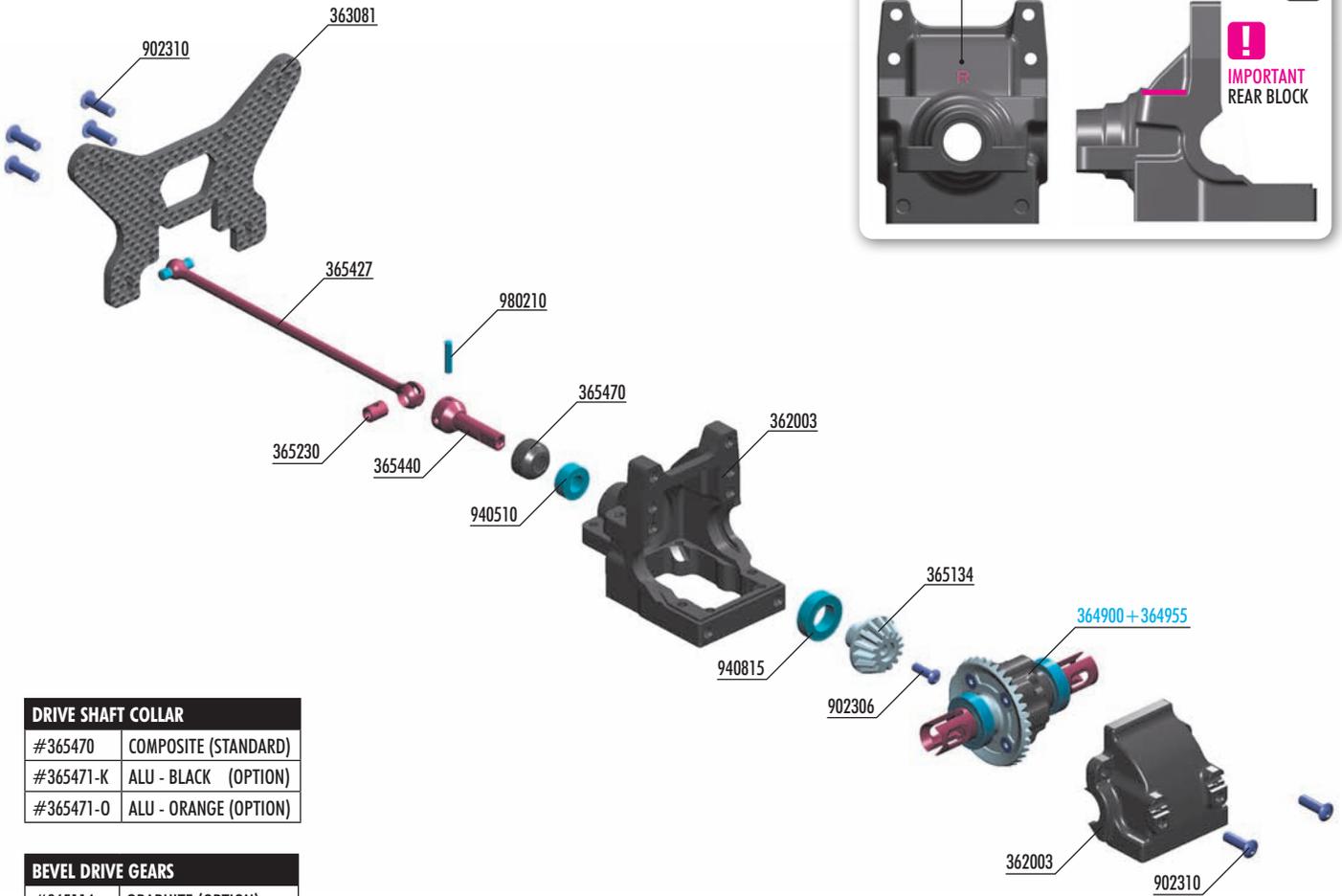
2x Tighten the screws equally but do NOT tighten them completely.



Finish tightening in this order.



2. REAR CENTRAL TRANSMISSION



DRIVE SHAFT COLLAR

#365470	COMPOSITE (STANDARD)
#365471-K	ALU - BLACK (OPTION)
#365471-O	ALU - ORANGE (OPTION)

BEVEL DRIVE GEARS

#365114	GRAPHITE (OPTION)
#365134	STEEL (STANDARD)

BAG

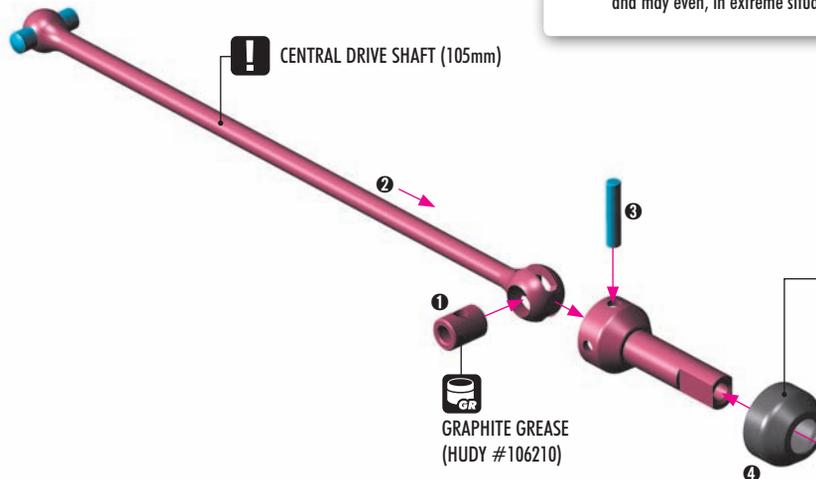
02

- 36 2003 DIFF BULKHEAD BLOCK SET REAR
- 36 3081 GRAPHITE SHOCK TOWER REAR 3.0MM
- 36 5134 STEEL BEVEL DRIVE GEAR 14T
- 36 5230 DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
- 36 5427 CENTRAL DRIVE SHAFT 105MM - HUDY SPRING STEEL™
- 36 5440 CENTRAL SHAFT UNIVERSAL JOINT
- 36 5470 COMPOSITE DRIVE SHAFT SAFETY COLLAR - V2 (3)

- 90 2306 HEX SCREW SH M3x6 (10)
- 90 2310 HEX SCREW SH M3x10 (10)
- 94 0510 HIGH-SPEED BALL-BEARING 5x10x4 RUBBER SEALED (2)
- 94 0815 HIGH-SPEED BALL-BEARING 8x14x4 RUBBER SEALED (2)
- 98 0210 PIN 2x10 (10)

- 36 4900 GEAR DIFFERENTIAL - SET
- 36 4955 STEEL DIFFERENTIAL BEVEL GEAR 35T

980210
P 2x10



! DRIVE SHAFT COVER CAPS

Lubricate the drive shaft connecting joint properly so the drive shaft turns freely. In the event that not enough grease is used, the connecting pin may lock and may even, in extreme situations, push through the drive shaft cover cap.

DRIVE SHAFT COLLAR

#365470	COMPOSITE (STANDARD)
#365471-K	ALU - BLACK (OPTION)
#365471-O	ALU - ORANGE (OPTION)

GRAPHITE GREASE
(HUDY #106210)

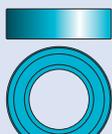
REAR CENTRAL TRANSMISSION



902306
SH M3x6



940510
BB 5x10x4



940815
BB 6x14x4

When installing the gear on the axle, make sure the flat spot of the gear sits on the flat spot of the axle.

NOTE ORIENTATION

NOTE ORIENTATION

GRAPHITE GREASE (HUDY #106210)

THREAD LOCK

IMPORTANT REAR BLOCK



902310
SH M3x10

FRONT

NOTE ORIENTATION

REAR DIFF 8 000 cSt

REAR



902310
SH M3x10

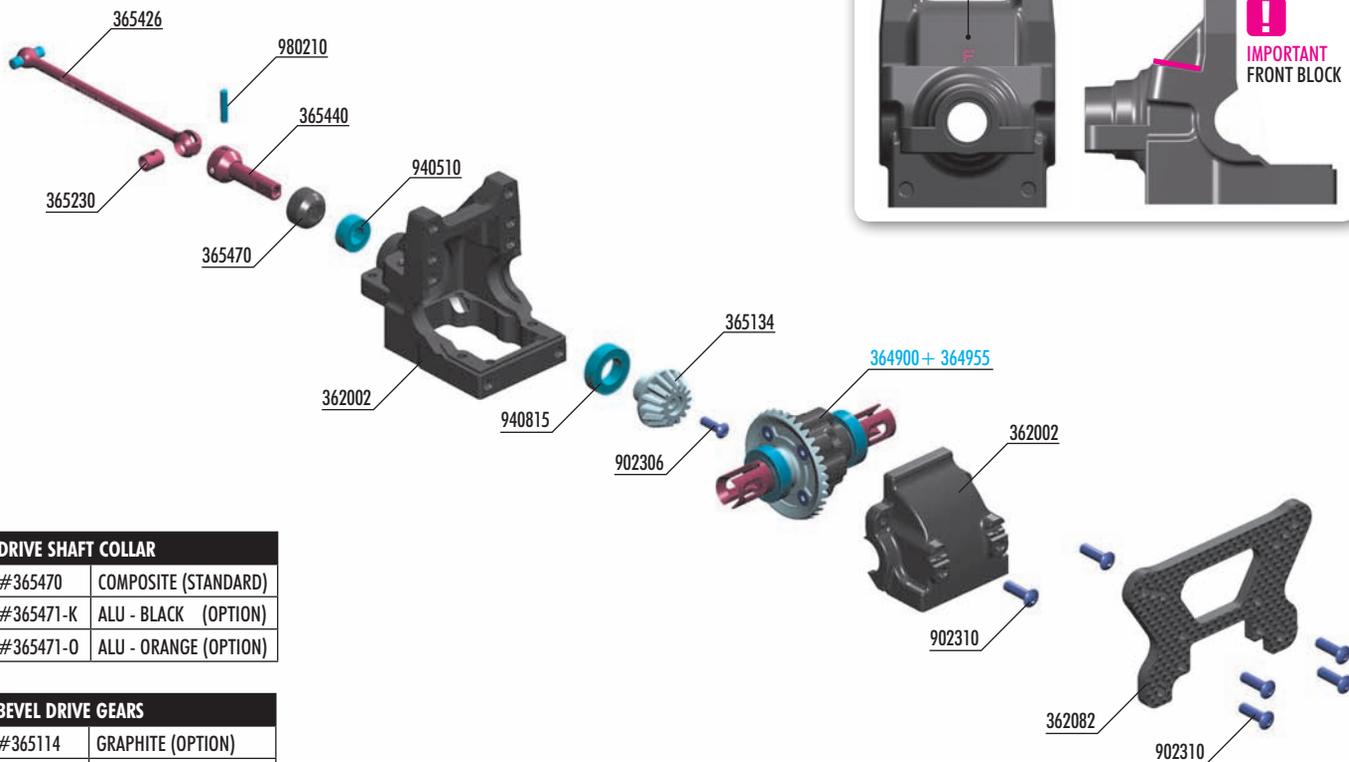
NOTE ORIENTATION

REAR

TIP

Follow the TECH TIP on page 5 to protect graphite parts

2. FRONT CENTRAL TRANSMISSION



DRIVE SHAFT COLLAR

#365470	COMPOSITE (STANDARD)
#365471-K	ALU - BLACK (OPTION)
#365471-O	ALU - ORANGE (OPTION)

BEVEL DRIVE GEARS

#365114	GRAPHITE (OPTION)
#365134	STEEL (STANDARD)

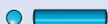
BAG



- 36 2002 DIFF BULKHEAD BLOCK SET FRONT
- 36 2082 GRAPHITE SHOCK TOWER FRONT 3.5MM
- 36 5134 STEEL BEVEL DRIVE GEAR 14T
- 36 5230 DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
- 36 5426 CENTRAL DRIVE SHAFT 72MM - HUDY SPRING STEEL™
- 36 5440 CENTRAL SHAFT UNIVERSAL JOINT
- 36 5470 COMPOSITE DRIVE SHAFT SAFETY COLLAR - V2 (3)

- 90 2306 HEX SCREW SH M3x6 (10)
- 90 2310 HEX SCREW SH M3x10 (10)
- 94 0510 HIGH-SPEED BALL-BEARING 5x10x4 RUBBER SEALED (2)
- 94 0815 HIGH-SPEED BALL-BEARING 8x14x4 RUBBER SEALED (2)
- 98 0210 PIN 2x10 (10)

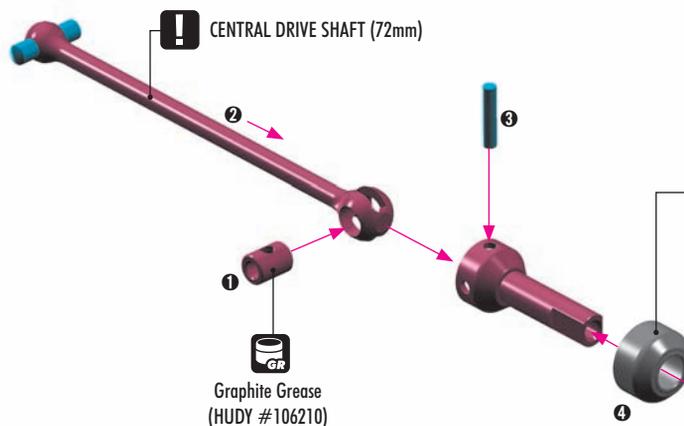
- 36 4900 GEAR DIFFERENTIAL - SET
- 36 4955 STEEL DIFFERENTIAL BEVEL GEAR 35T



980210
P 2x10

! DRIVE SHAFT COVER CAPS

Lubricate the drive shaft connecting joint properly so the drive shaft turns freely. In the event that not enough grease is used, the connecting pin may lock and may even, in extreme situations, push through the drive shaft cover cap.



DRIVE SHAFT COLLAR

#365470	COMPOSITE (STANDARD)
#365471-K	ALU - BLACK (OPTION)
#365471-O	ALU - ORANGE (OPTION)

FRONT CENTRAL TRANSMISSION



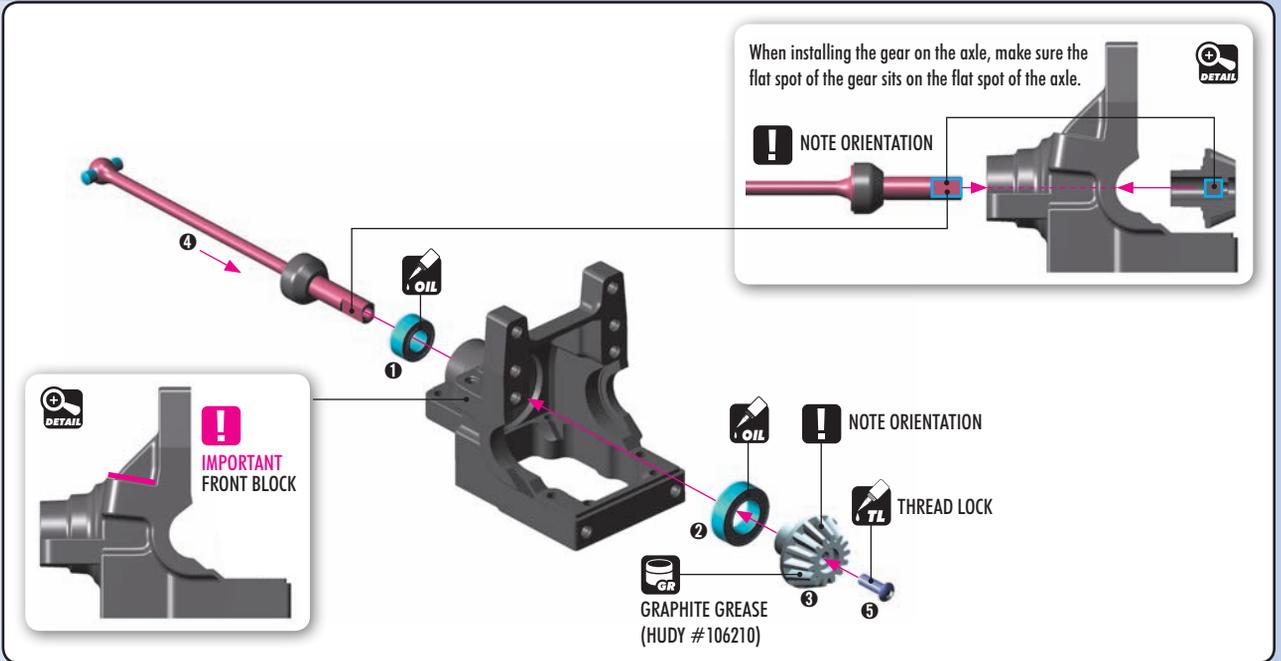
902306
SH M3x6



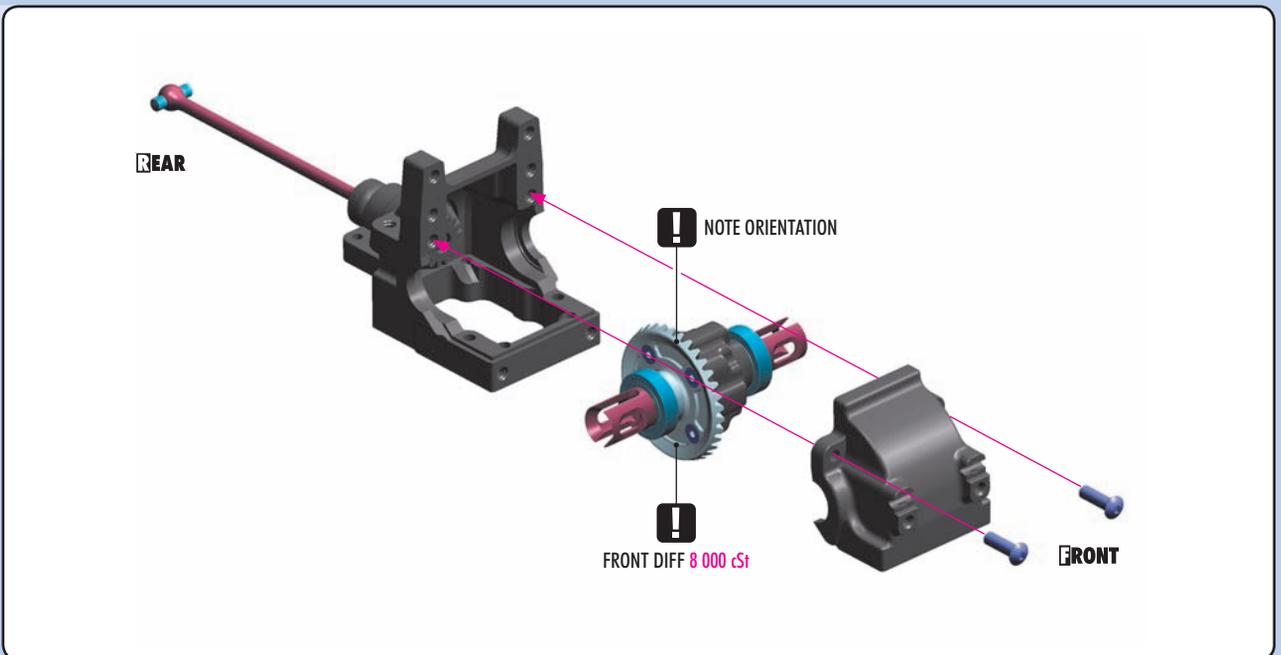
940510
BB 5x10x4



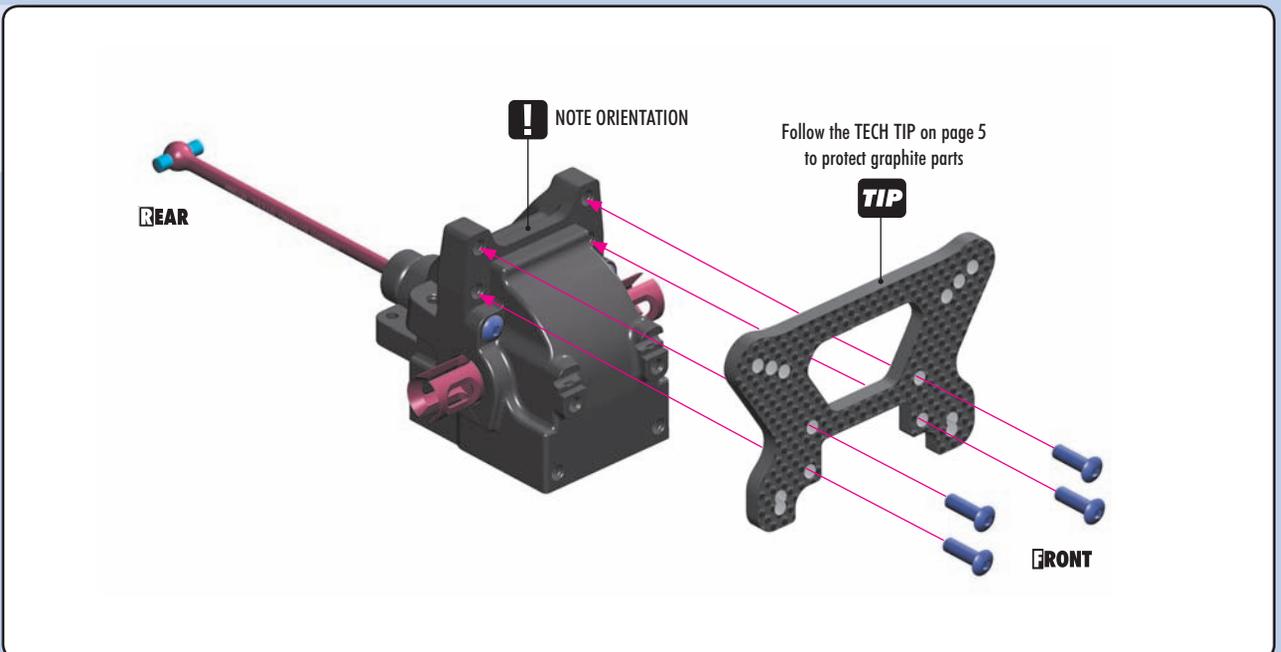
940815
BB 8x14x4



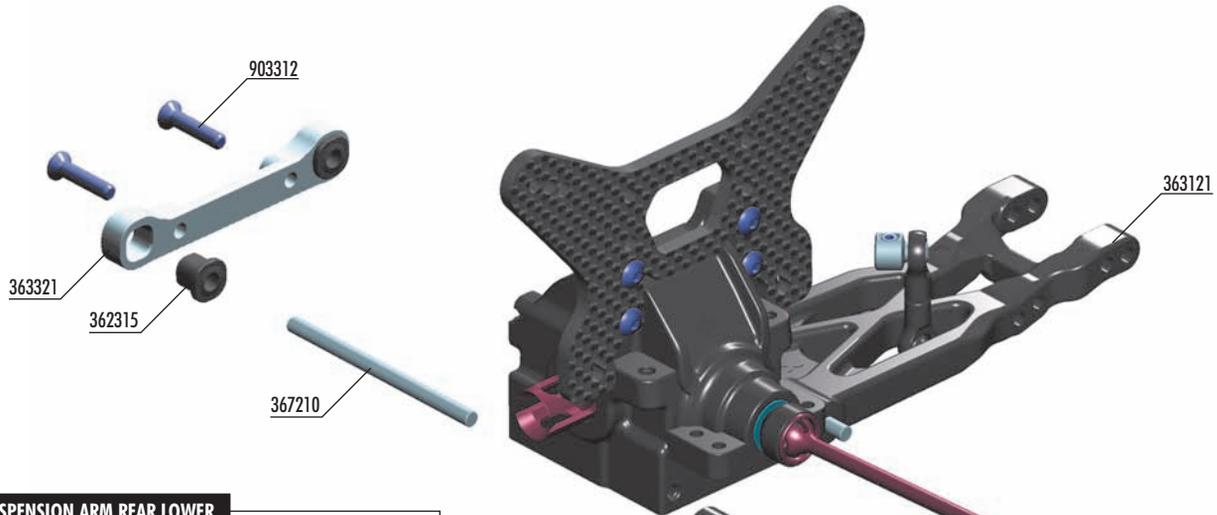
902310
SH M3x10



902310
SH M3x10

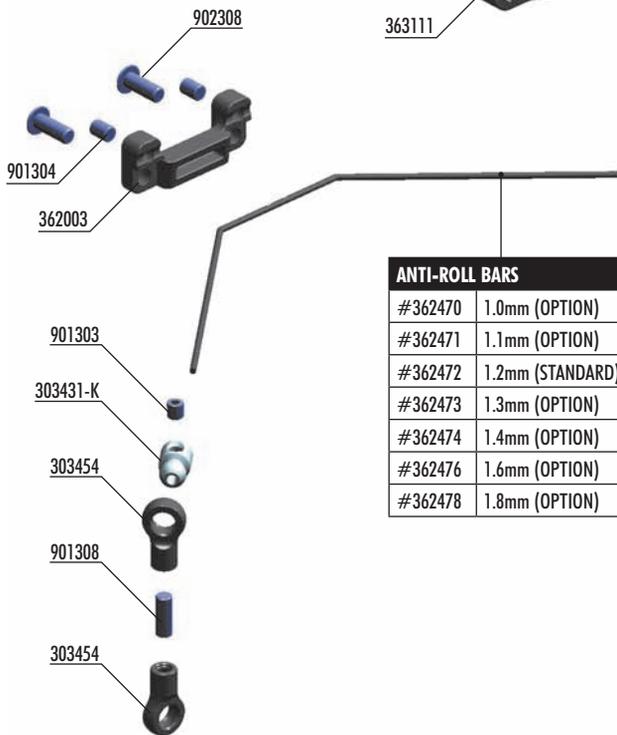


3. REAR SUSPENSION



SUSPENSION ARM REAR LOWER

#363111	RIGHT - STANDARD
#363121	LEFT - STANDARD
#363111-G	RIGHT - GRAPHITE
#363121-G	LEFT - GRAPHITE



ANTI-ROLL BARS

#362470	1.0mm (OPTION)
#362471	1.1mm (OPTION)
#362472	1.2mm (STANDARD)
#362473	1.3mm (OPTION)
#362474	1.4mm (OPTION)
#362476	1.6mm (OPTION)
#362478	1.8mm (OPTION)



Remove the 3x6.5x2mm shim from each rear arm.

BAG

03

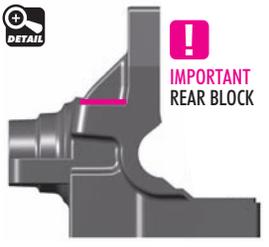
- 30 3431-K ALU 4.9MM BALL END - BLACK (2)
- 30 3454 BALL JOINT 4.9MM - OPEN (4)
- 36 2003 DIFF BULKHEAD BLOCK SET REAR
- 36 2315 ECCENTRIC BUSHING SET (2)
- 36 2470 ANTI-ROLL BAR 1.0 MM (OPTION)
- 36 2471 ANTI-ROLL BAR 1.1 MM (OPTION)
- 36 2472 ANTI-ROLL BAR 1.2 MM
- 36 2473 ANTI-ROLL BAR 1.3 MM (OPTION)
- 36 2474 ANTI-ROLL BAR 1.4 MM (OPTION)
- 36 2476 ANTI-ROLL BAR 1.6 MM (OPTION)
- 36 2478 ANTI-ROLL BAR 1.8 MM (OPTION)
- 36 3111 COMPOSITE SUSPENSION ARM REAR LOWER RIGHT - V2

- 36 3121 COMPOSITE SUSPENSION ARM REAR LOWER LEFT - V2
- 36 3311 ALU REAR LOWER SUSP. HOLDER +2 - FRONT - 7075 T6 (5MM)
- 36 3313 BRASS REAR LOWER SUSPENSION HOLDER SET +2 - RR+RF (OPTION)
- 36 3321 ALU REAR LOWER SUSP. HOLDER +2 - REAR - 7075 T6 (5MM)
- 36 7210 SUSPENSION PIVOT PIN (2)
- 90 1303 HEX SCREW SB M3x3 (10)
- 90 1304 HEX SCREW SB M3x4 (10)
- 90 1308 HEX SCREW SB M3x8 (10)
- 90 2308 HEX SCREW SH M3x8 (10)
- 90 3312 HEX SCREW SFH M3x12 (10)

IO
From Rear Arm
SHIM 3x6.5x2



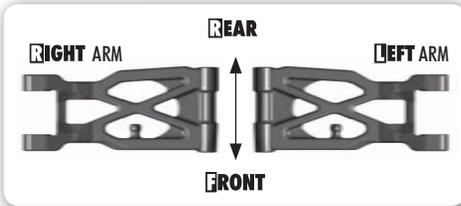
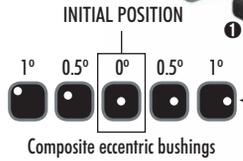
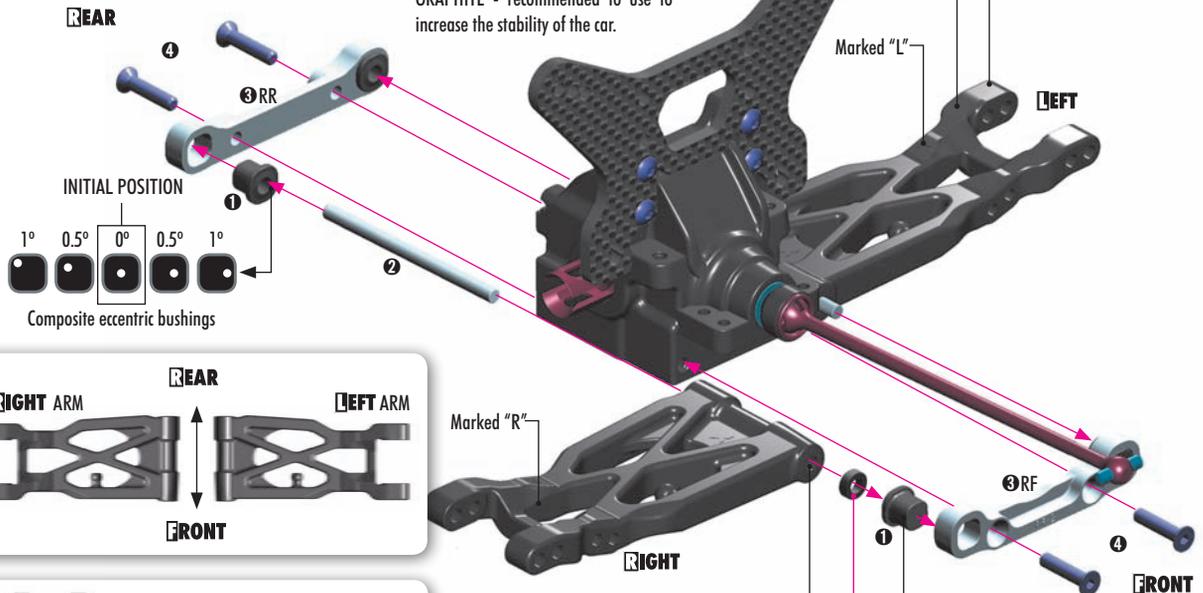
903312
SFH M3x12



SUSPENSION ARM REAR LOWER

#363111	RIGHT - STANDARD
#363121	LEFT - STANDARD
#363111-G	RIGHT - GRAPHITE
#363121-G	LEFT - GRAPHITE

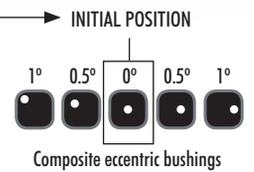
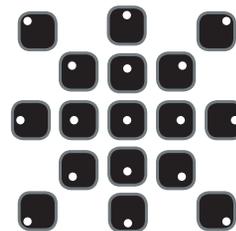
GRAPHITE - recommended to use to increase the stability of the car.



TIP

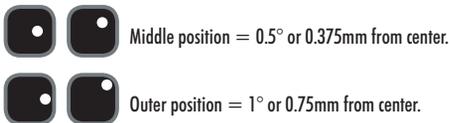
If the suspension arm does not move freely use a HUDY Arm Reamer to size the holes of the arms

Arm Reamer 3.0mm (HUDY #107633)



All possible mounting alternatives of eccentric bushings

ECCENTRIC BUSHINGS HAVE TWO DIFFERENT OFFSETS FROM THE CENTER.



SET-UP BOOK
TOE-IN
ANTI-SQUAT
ROLL CENTER
TRACK-WIDTH

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	
		= 2°
		= 3°
		= 1°
		= 3°
		= 2°
		= 4°
		= 1°
		= 2°
		= 0°

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

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

TOE-IN		(°)
RR	RF	
		= 3°
		= 4°
		= 2°
		= 3°
		= 2°
		= 1°
		= 4°
		= 5°
		= 3°

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.

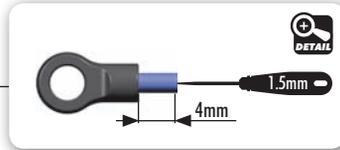
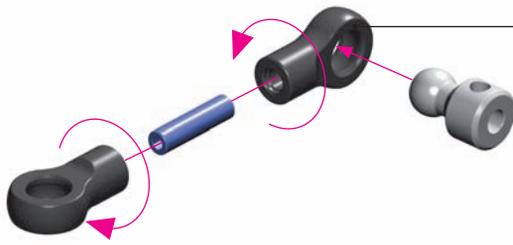
Example:

0(RR) - 0 (RF) = 2°		= 2°
0(RR) - 0.5 (RF) = 2.5°		= 2.5°
0(RR) - 1 (RF) = 3°		= 3°

REAR SUSPENSION

901308
SB M3x8

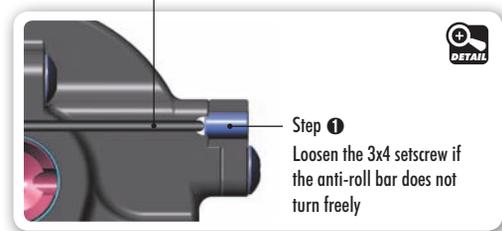
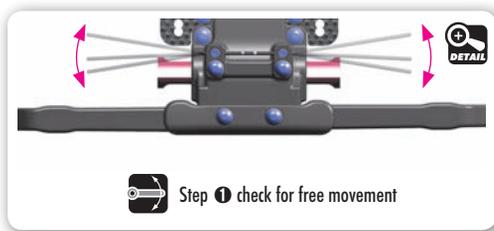
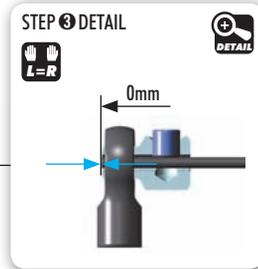
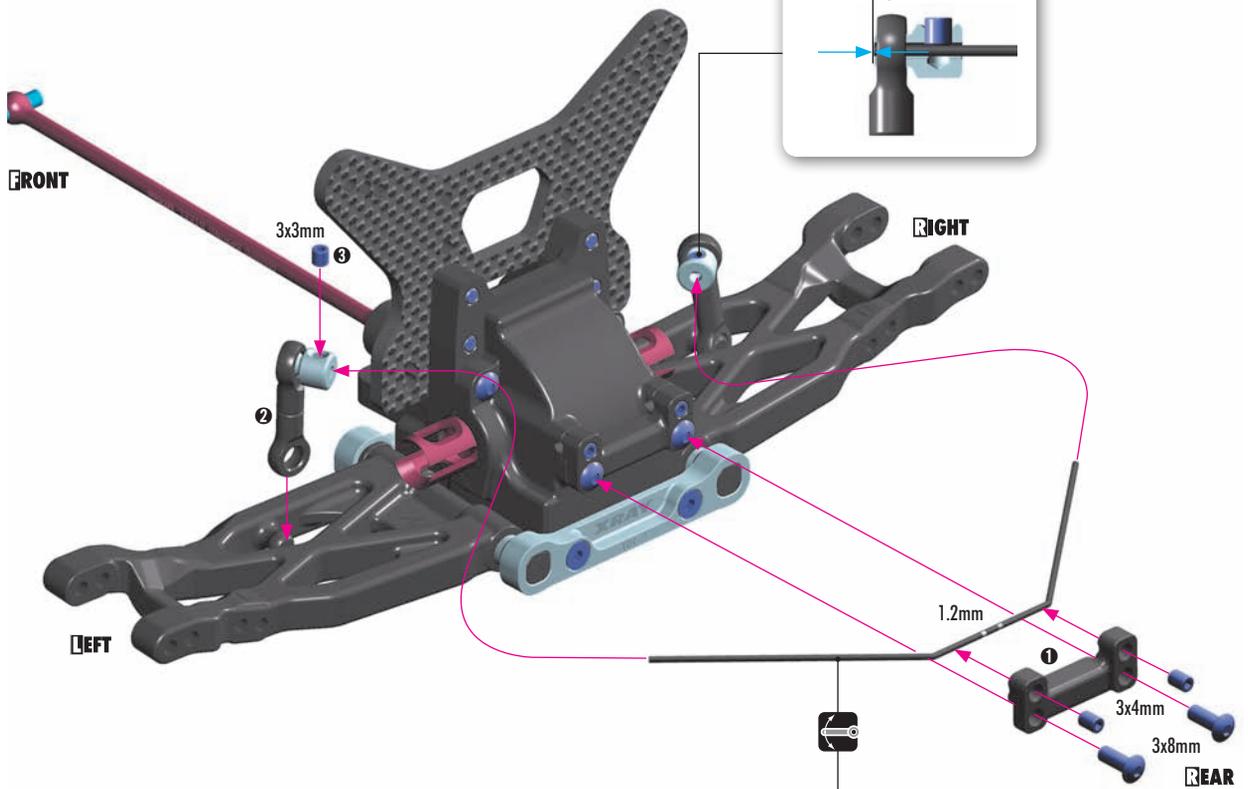
2x
L=R



901303
SB M3x3

901304
SB M3x4

902308
SH M3x8



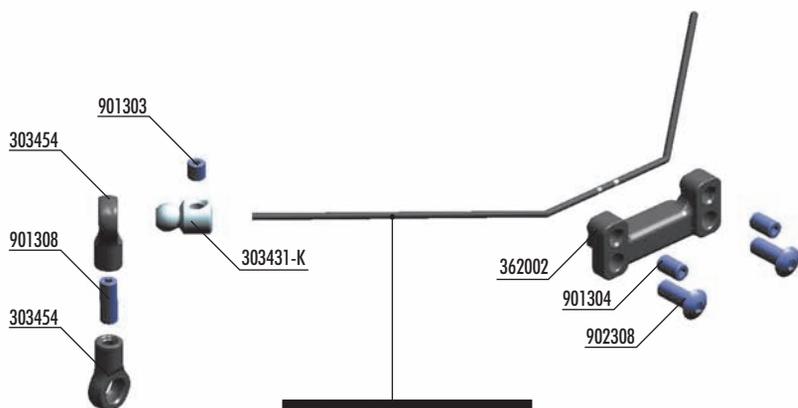
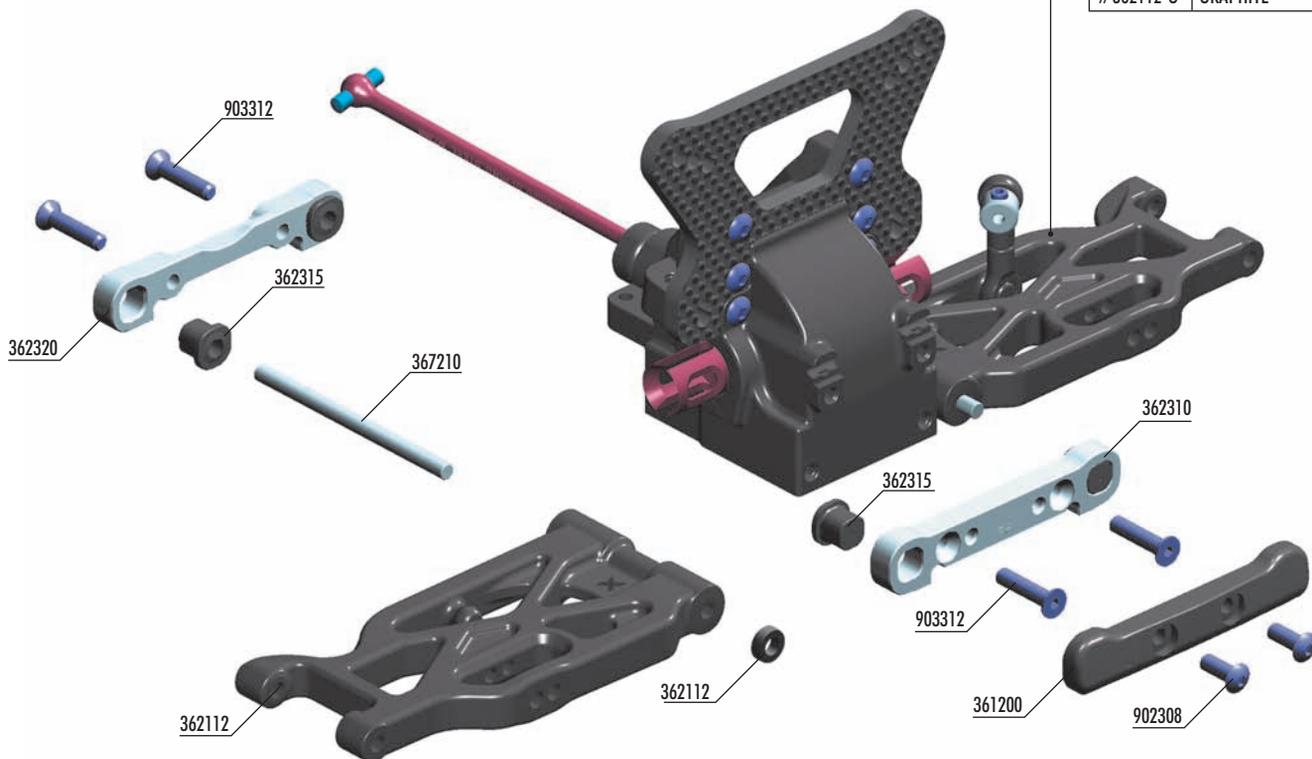
SET-UP BOOK

ANTI-ROLL BAR

3. FRONT SUSPENSION

SUSPENSION ARM FRONT LOWER

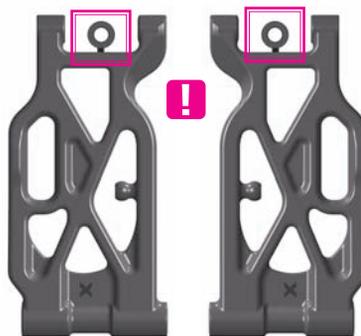
#362112	STANDARD
#362112-G	GRAPHITE



ANTI-ROLL BARS

#362470	1.0mm (OPTION)
#362471	1.1mm (OPTION)
#362472	1.2mm (OPTION)
#362473	1.3mm (STANDARD)
#362474	1.4mm (OPTION)
#362476	1.6mm (OPTION)
#362478	1.8mm (OPTION)

Remove the 3x6.5x2mm shim from each front arm.



BAG

03

- 30 3431-K ALU 4.9MM BALL END - BLACK (2)
- 30 3454 BALL JOINT 4.9MM - OPEN (4)
- 36 1200 COMPOSITE BUMPER - V2
- 36 2002 DIFF BULKHEAD BLOCK SET FRONT - V2
- 36 2112 COMPOSITE SUSPENSION ARM FRONT LOWER
- 36 2310 ALU FRONT LOWER SUSP. HOLDER - FRONT - 7075 T6 (5MM)
- 36 2315 ECCENTRIC BUSHING SET (2)
- 36 2320 ALU FRONT LOWER SUSP. HOLDER - REAR - 7075 T6 (5MM)
- 36 2470 ANTI-ROLL BAR 1.0 MM (OPTION)
- 36 2471 ANTI-ROLL BAR 1.1 MM (OPTION)
- 36 2472 ANTI-ROLL BAR 1.2 MM (OPTION)

- 36 2473 ANTI-ROLL BAR 1.3 MM
- 36 2474 ANTI-ROLL BAR 1.4 MM (OPTION)
- 36 2476 ANTI-ROLL BAR 1.6 MM (OPTION)
- 36 2478 ANTI-ROLL BAR 1.8 MM (OPTION)
- 36 7210 SUSPENSION PIVOT PIN (2)

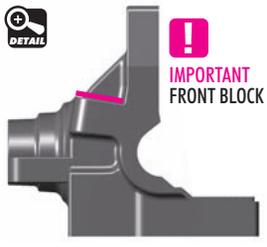
- 90 1303 HEX SCREW SB M3x3 (10)
- 90 1304 HEX SCREW SB M3x4 (10)
- 90 1308 HEX SCREW SB M3x8 (10)
- 90 2308 HEX SCREW SH M3x8 (10)
- 90 3312 HEX SCREW SFH M3x12 (10)

FRONT SUSPENSION

IO
From Front Arm
SHIM 3x6.5x2



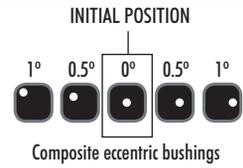
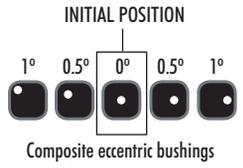
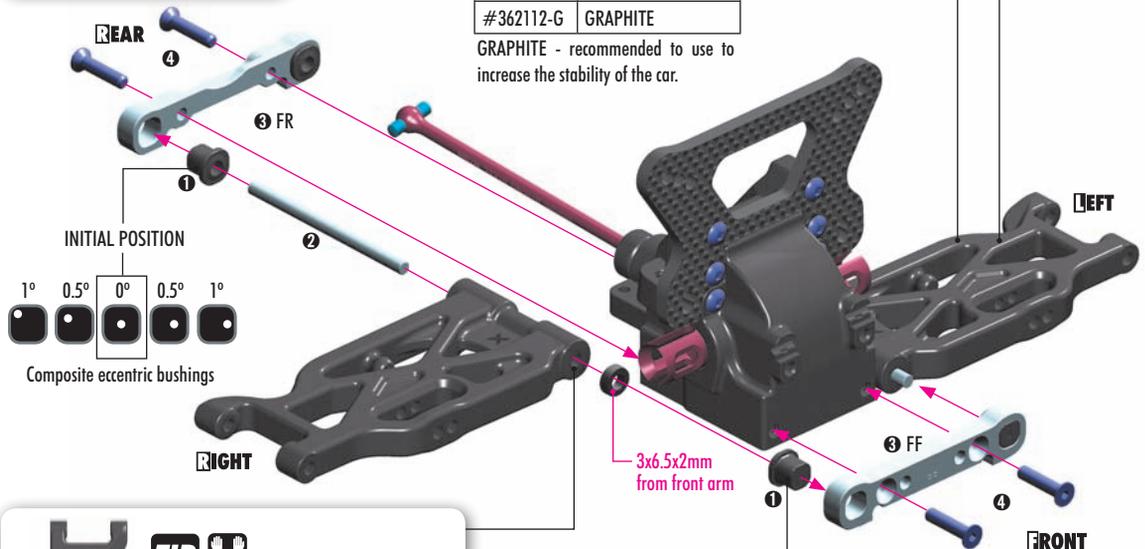
903312
SFH MGx12



SUSPENSION ARM FRONT LOWER

#362112	STANDARD
#362112-G	GRAPHITE

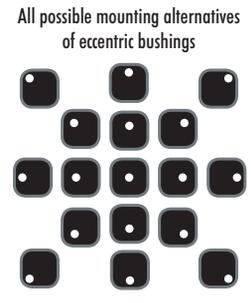
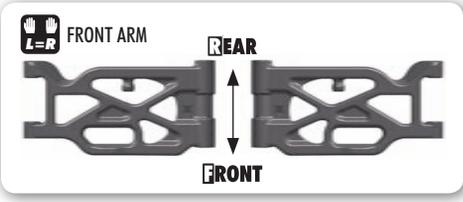
GRAPHITE - recommended to use to increase the stability of the car.



TIP **L=R**

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)



SET-UP BOOK
KICK UP
ROLL CENTER
TRACK-WIDTH

ECCENTRIC BUSHINGS HAVE TWO DIFFERENT OFFSETS FROM THE CENTER.

Middle position = 0.5° or 0.375mm from center.

Outer position = 1° or 0.75mm from center.

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

KICK-UP			(°)
FF	FR		
			= 9°
			= 8°
			= 10°
			= 8°
			= 7°
			= 9°
			= 10°
			= 9°
			= 11°

ROLL-CENTER			(mm)
FF	FR		
			= +0.75mm
			= 0mm
			= -0.75mm

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(FF) - 0(FR) = 9°

0.5(FF) - 0(FR) = 9.5°

1(FF) - 0(FR) = 10°

TRACK-WIDTH			(mm)
FF	FR		
			= +1.5mm
			= 0mm
			= -1.5mm

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

= 9°

= 9.5°

= 10°

TOTAL CASTER = C-HUB CASTER + KICK UP

C-HUB CASTER	KICK-UP				
	7°	8°	9°	10°	11°
6°	13°	14°	15°	16°	17°
9°	16°	17°	18°	19°	20°

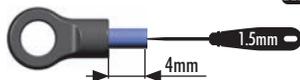
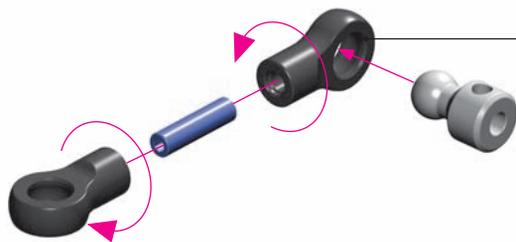
Caster is the angle between the steering pivot axis and the vertical plane. Caster is affected not only by the C-Hub caster, but also by the front kick-up angle relative to the flat chassis bottom. The table indicates how kick up angle effects total caster.

The XB4's stock caster blocks are 9°, but 6° blocks are available as an option.

FRONT SUSPENSION

901308
SB M3x8

2x L=R



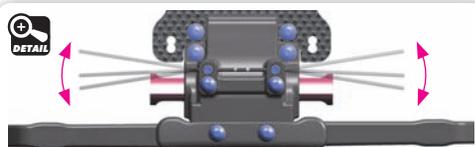
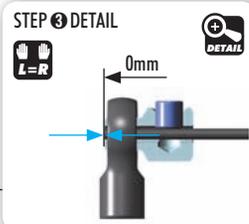
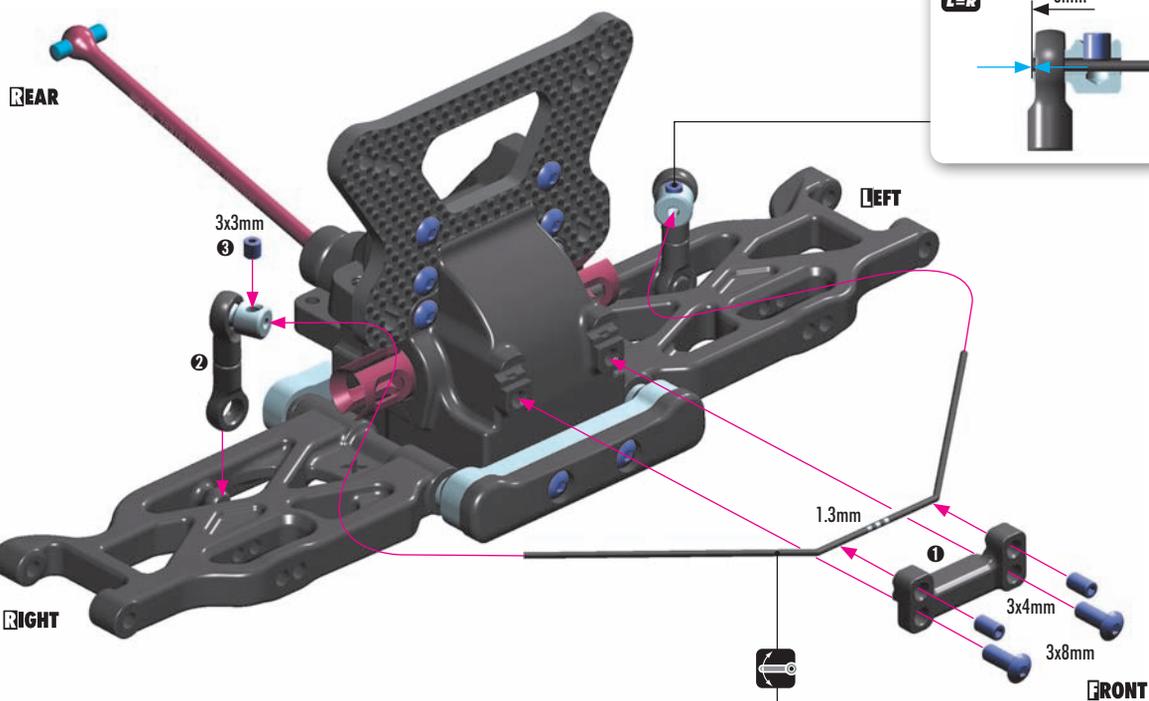
902308
SH M3x8



901303
SB M3x3

901304
SB M3x4

902308
SH M3x8



Step 1 check for free movement



Step 1
Loosen the 3x4 setscrew if
the anti-roll bar does not
turn freely

SET-UP
BOOK

ANTI-ROLL BAR

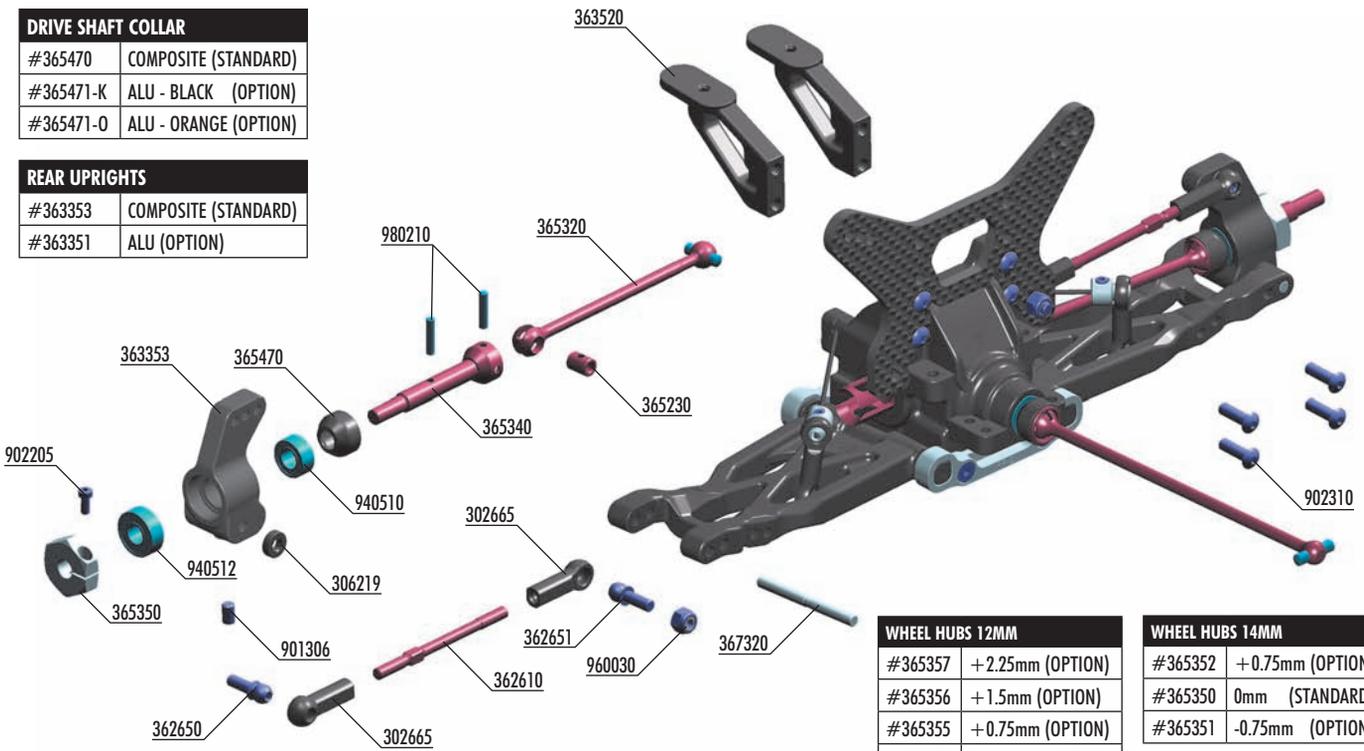
4. REAR TRANSMISSION

DRIVE SHAFT COLLAR

#365470	COMPOSITE (STANDARD)
#365471-K	ALU - BLACK (OPTION)
#365471-O	ALU - ORANGE (OPTION)

REAR UPRIGHTS

#363353	COMPOSITE (STANDARD)
#363351	ALU (OPTION)



WHEEL HUBS 12MM	
#365357	+2.25mm (OPTION)
#365356	+1.5mm (OPTION)
#365355	+0.75mm (OPTION)
#365353	0mm (OPTION)
#365354	-0.75mm (OPTION)

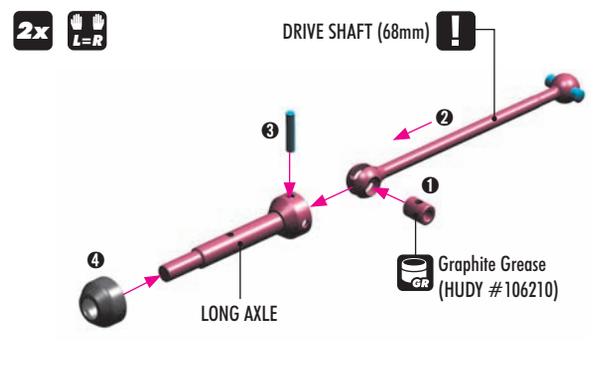
WHEEL HUBS 14MM	
#365352	+0.75mm (OPTION)
#365350	0mm (STANDARD)
#365351	-0.75mm (OPTION)

BAG



- 30 2665 COMPOSITE BALL JOINT 4.9MM - CLOSED WITH HOLE (4)
- 30 6219 COMPOSITE SET OF SERVO SHIMS (4)
- 36 2610 ADJ. TURNBUCKLE M3 L/R 50 MM - SPRING STEEL (2)
- 36 2650 BALL END 4.9MM WITH THREAD 6MM (2)
- 36 2651 BALL END 4.9MM WITH THREAD 8MM (2)
- 36 3353 COMPOSITE UPRIGHT REAR
- 36 3520 REAR WING POST - V2 (2)
- 36 5230 DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
- 36 5320 REAR DRIVE SHAFT 68MM - HUDY SPRING STEEL™
- 36 5340 REAR DRIVE AXLE - HUDY SPRING STEEL™
- 36 5350 ALU WHEEL HUB 14MM (2)
- 36 5351 ALU WHEEL HUB 14MM - OFFSET "-0.75MM" (2) (OPTION)

- 36 5352 ALU WHEEL HUB 14MM - OFFSET "+0.75MM" (2) (OPTION)
- 36 5470 COMPOSITE DRIVE SHAFT SAFETY COLLAR (3)
- 36 7320 REAR ARM PIVOT PIN (2)
- 90 1306 HEX SCREW SB M3x6 (10)
- 90 2205 HEX SCREW SH M2x5 (10)
- 90 2310 HEX SCREW SH M3x10 (10)
- 94 0510 HIGH-SPEED BALL-BEARING 5x10x4 RUBBER SEALED (2)
- 94 0512 HIGH-SPEED BALL-BEARING 5x12x4 RUBBER SEALED (2)
- 96 0030 NUT M3 (10)
- 98 0210 PIN 2x10 (10)



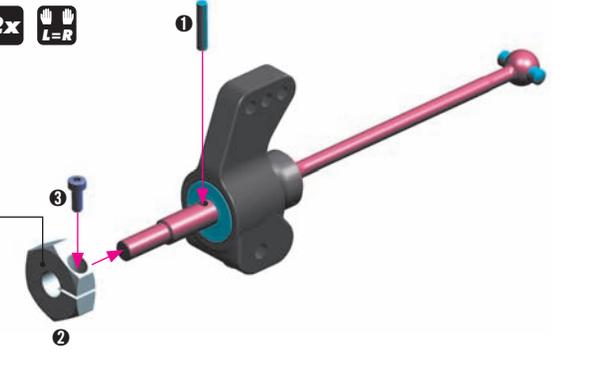
OPTIONAL HEX HUB EFFECTS
Different off-set hex hubs are used to increase or decrease the track-width.

WHEEL HUBS 14MM	
#365352	+0.75mm (OPTION)
#365350	0mm (STANDARD)
#365351	-0.75mm (OPTION)

WHEEL HUBS 12MM	
#365357	+2.25mm (OPTION)
#365356	+1.5mm (OPTION)
#365355	+0.75mm (OPTION)
#365353	0mm (OPTION)
#365354	-0.75mm (OPTION)

LESS OFF-SET
Rear - more traction
Front - more steering

MORE OFF-SET
Rear - less traction
Front - less steering

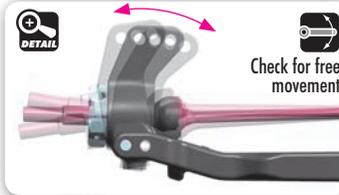


REAR TRANSMISSION

901306
SB M3x6

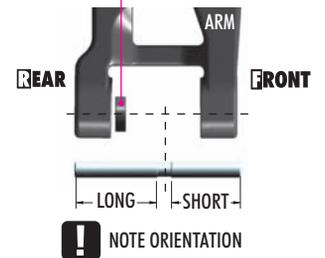
IO
306219
SHIM 3x6x2

TIP Ensure that the rear upright moves freely. If it does not move freely, use sandpaper to thin both wheelbase adjustment shims.



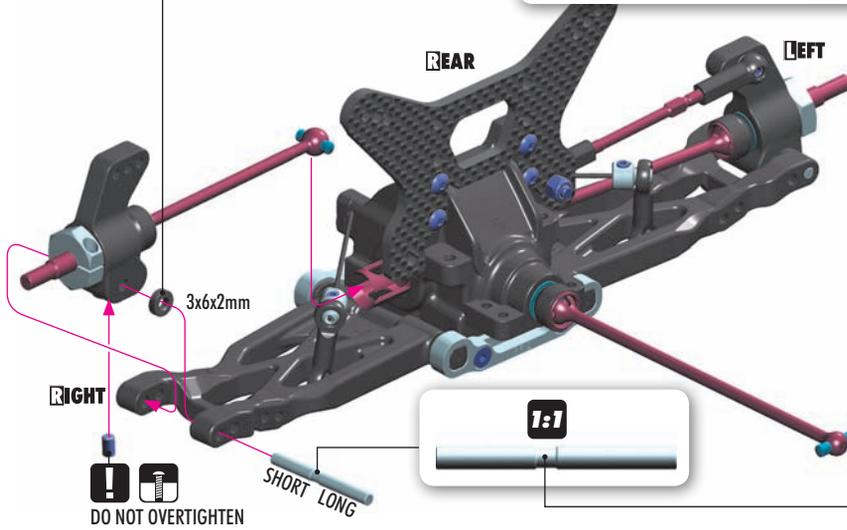
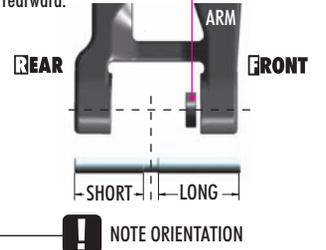
SHORTER WHEELBASE

Alternative Shim **BEHIND HUB** moves hub forward.



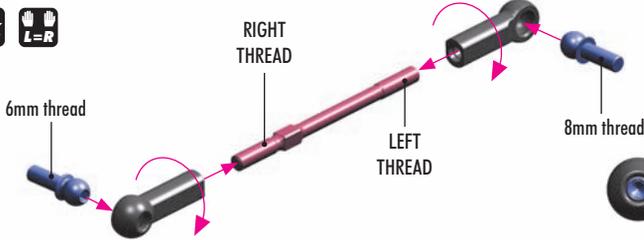
LONGER WHEELBASE (INITIAL POSITION)

Alternative Shim **IN FRONT OF HUB** moves hub rearward.



SET-UP BOOK
WHEELBASE

2x
L=R

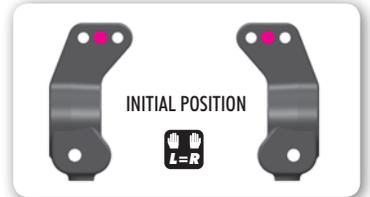
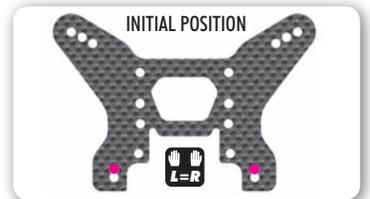
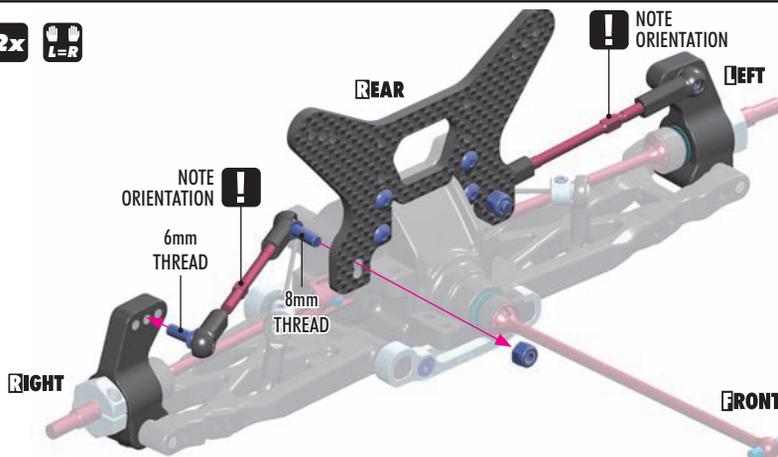


2x
L=R

SET-UP BOOK
CAMBER

960030
N M3

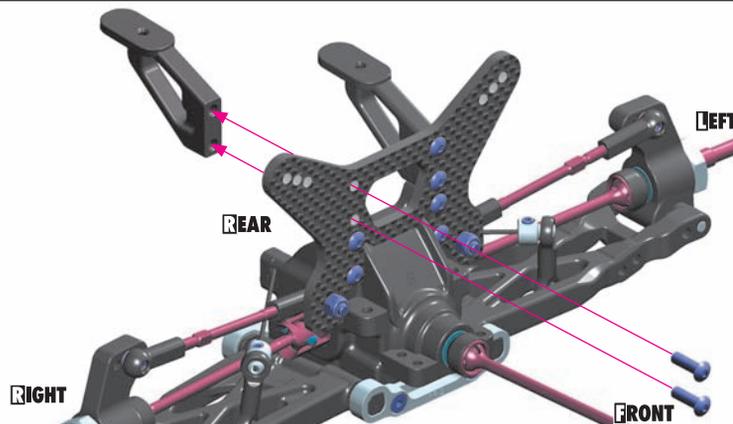
2x
L=R



SET-UP BOOK
ROLL CENTER

902310
SH M3x10

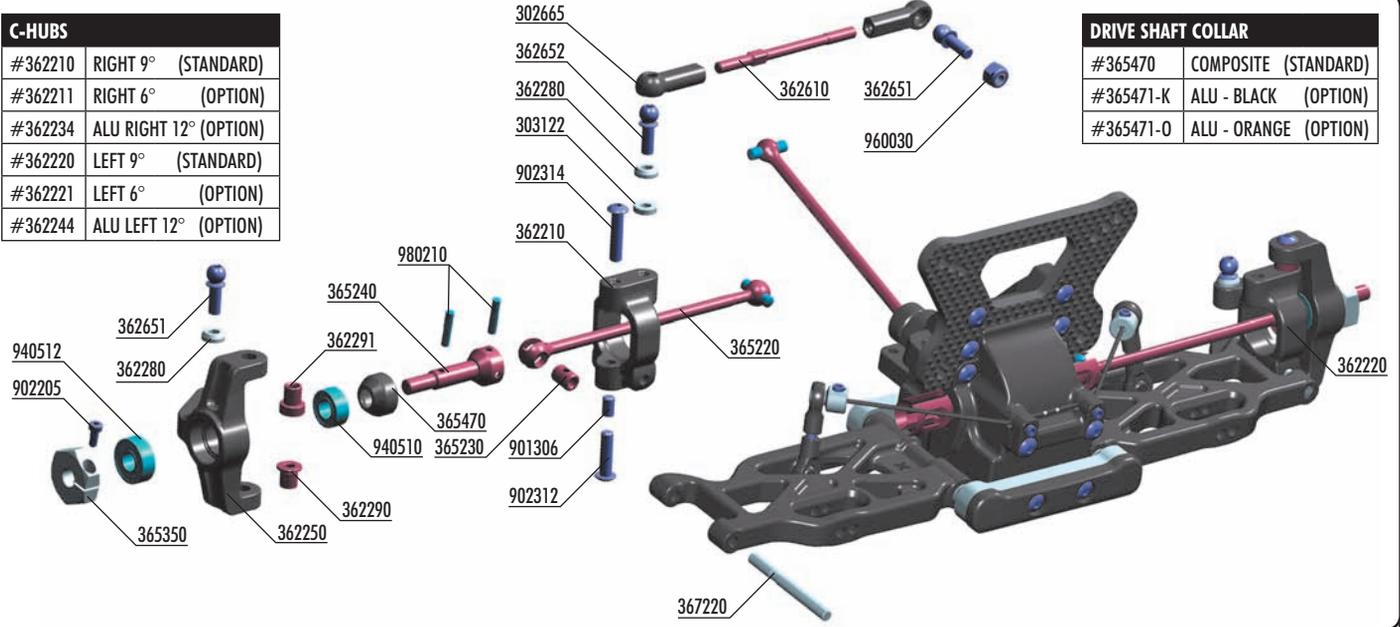
2x
L=R



4. FRONT TRANSMISSION

C-HUBS	
#362210	RIGHT 9° (STANDARD)
#362211	RIGHT 6° (OPTION)
#362234	ALU RIGHT 12° (OPTION)
#362220	LEFT 9° (STANDARD)
#362221	LEFT 6° (OPTION)
#362244	ALU LEFT 12° (OPTION)

DRIVE SHAFT COLLAR	
#365470	COMPOSITE (STANDARD)
#365471-K	ALU - BLACK (OPTION)
#365471-O	ALU - ORANGE (OPTION)



- | | | | |
|---------|---|---------|--|
| 30 2665 | COMPOSITE BALL JOINT 4.9MM - CLOSED WITH HOLE (4) | 36 5240 | FRONT DRIVE AXLE - HUDY SPRING STEEL™ |
| 30 3122 | ALU SHIM 3x6x1.0MM (10) | 36 5350 | ALU WHEEL HUB 14MM (2) |
| 36 2210 | COMPOSITE C-HUB 9° DEG. RIGHT | 36 5351 | ALU WHEEL HUB 14MM - OFFSET "-0.75MM" (2) (OPTION) |
| 36 2211 | COMPOSITE C-HUB 6° DEG. RIGHT (OPTION) | 36 5352 | ALU WHEEL HUB 14MM - OFFSET "+0.75MM" (2) (OPTION) |
| 36 2220 | COMPOSITE C-HUB 9° DEG. LEFT | 36 5470 | COMPOSITE DRIVE SHAFT SAFETY COLLAR (3) |
| 36 2221 | COMPOSITE C-HUB 6° DEG. LEFT (OPTION) | 36 7220 | FRONT ARM PIVOT PIN (2) |
| 36 2250 | COMPOSITE STEERING BLOCK | 90 1306 | HEX SCREW SB M3x6 (10) |
| 36 2280 | ALU CONICAL SHIM 3x6x2.0MM (10) | 90 2205 | HEX SCREW SH M2x5 (10) |
| 36 2290 | STEEL STEERING BUSHING - SHORT (2) | 90 2312 | HEX SCREW SH M3x12 (10) |
| 36 2291 | STEEL STEERING BUSHING - LONG (2) | 90 2314 | HEX SCREW SH M3x14 (10) |
| 36 2610 | ADJ. TURNBUCKLE M3 L/R 50 MM - SPRING STEEL (2) | 90 2314 | HEX SCREW SH M3x14 (10) |
| 36 2651 | BALL END 4.9MM WITH THREAD 8MM (2) | 94 0510 | HIGH-SPEED BALL-BEARING 5x10x4 RUBBER SEALED (2) |
| 36 2652 | BALL END 4.9MM WITH THREAD 10MM (2) | 94 0512 | HIGH-SPEED BALL-BEARING 5x12x4 RUBBER SEALED (2) |
| 36 5220 | FRONT DRIVE SHAFT 81MM - HUDY SPRING STEEL™ | 96 0030 | NUT M3 (10) |
| 36 5230 | DRIVE SHAFT COUPLING - HUDY SPRING STEEL™ | 98 0210 | PIN 2x10 (10) |

- 980210 P 2x10
- 940510 BB 5x10x4
- 940512 BB 5x12x4
- 902205 SH M2x5
- 362280 CON. SHIM 3x6x2
- 902312 SH M3x12
- 902314 SH M3x14

2x **DRIVE SHAFT (81mm)**

1. SHORT AXLE

2. GRAPHITE GREASE (HUDY #106210)

3. BEARING OIL (HUDY #106230)

4. 5x10x4mm

1

Effects of option hex hubs - see page 18/step 2.

2x **IMPORTANT**

When inserting the bushings, make sure that bushings are inserted equally on both right and left hub to give the same roll center position.

Longer screw **1** Longer

Shorter **1** Shorter screw **3**

Steel steering bushings allow roll-center adjustment.

LOWER ROLL CENTER

TOP = LONGER bushing & 3x14 screw
BOTTOM = SHORTER bushing & 3x12 screw

Recommended for rough tracks to improve stability.

HIGHER ROLL CENTER

TOP = SHORTER bushing & 3x12 screw
BOTTOM = LONGER bushing & 3x14 screw

Recommended for smooth tracks to gain more steering.

8mm THREAD

NOTE ORIENTATION

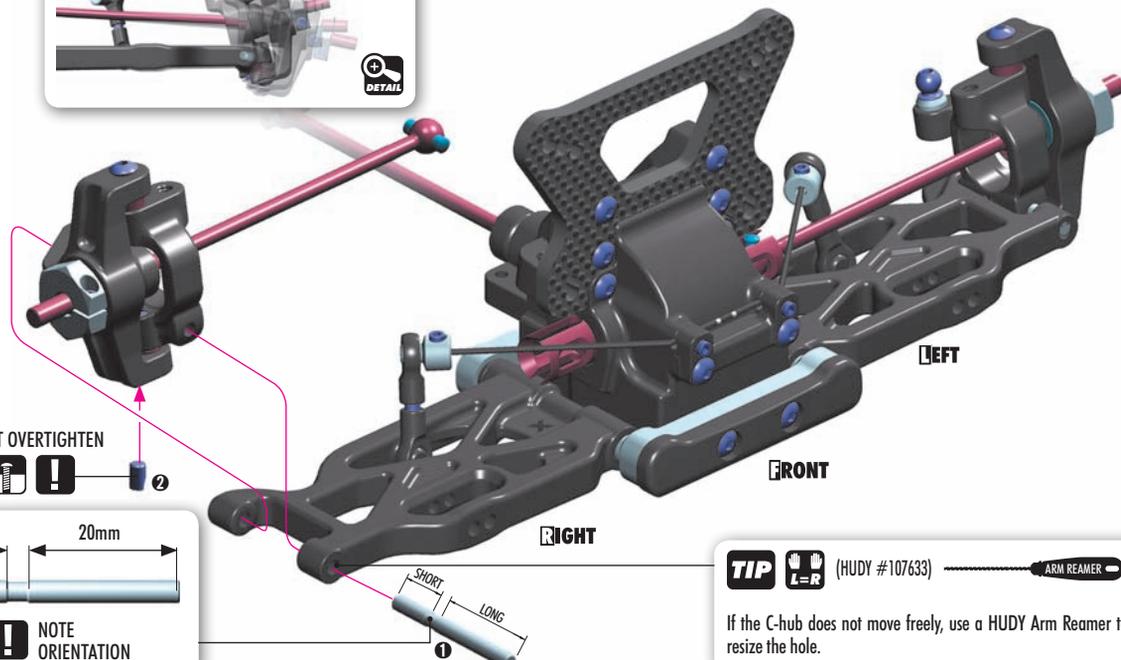
CONICAL SHIM 3x6x2mm

SET-UP BOOK
CASTER ROLL-CENTER

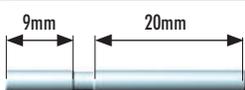


901306
SB M3x6

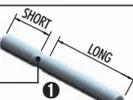
2x L=R



DO NOT OVERTIGHTEN



1:1 NOTE ORIENTATION



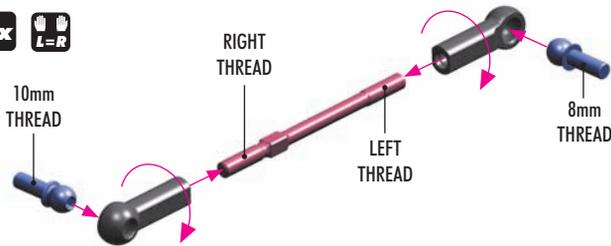
TIP (HUDY #107633) ARM REAMER

If the C-hub does not move freely, use a HUDY Arm Reamer to resize the hole.

SET-UP BOOK

CAMBER

2x L=R



2x L=R



303122
SHIM 3x6x1

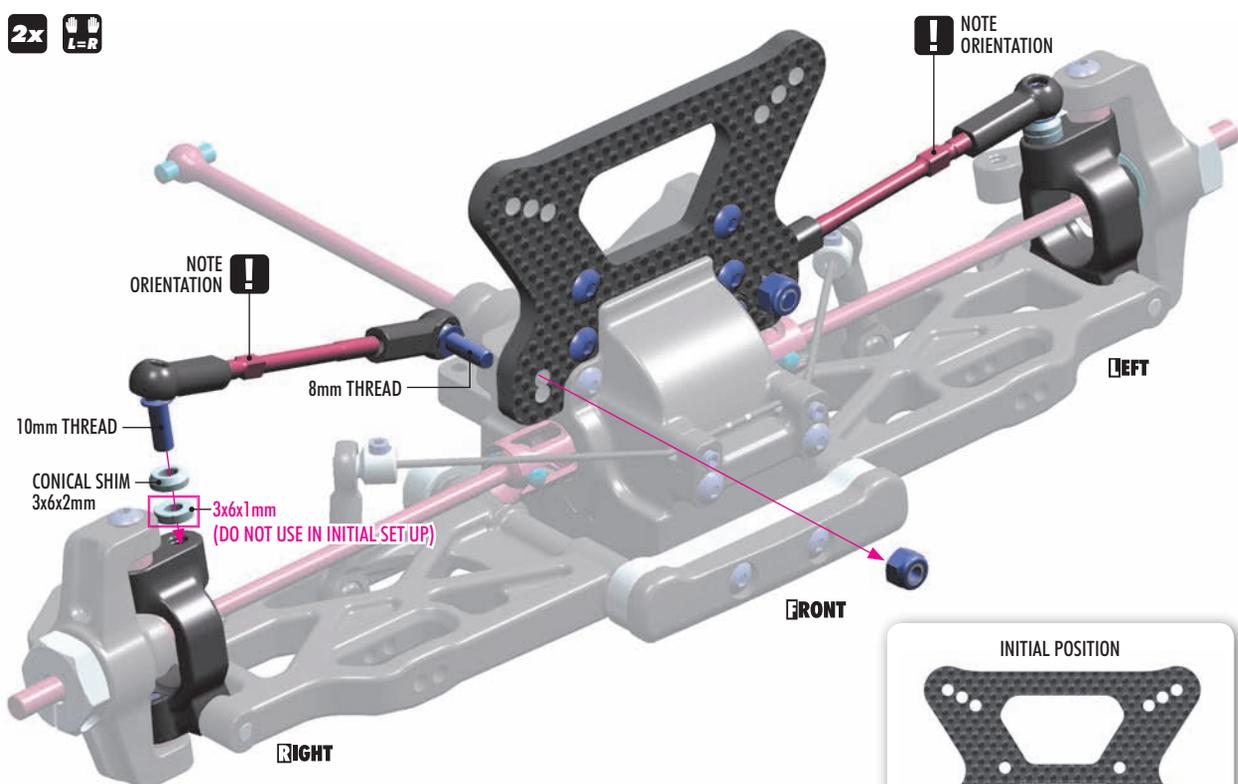


362280
CON. SHIM 3x6x2



960030
N M3

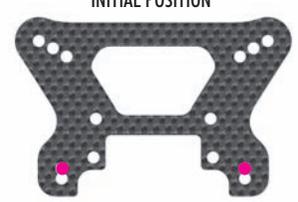
2x L=R



NOTE ORIENTATION

NOTE ORIENTATION

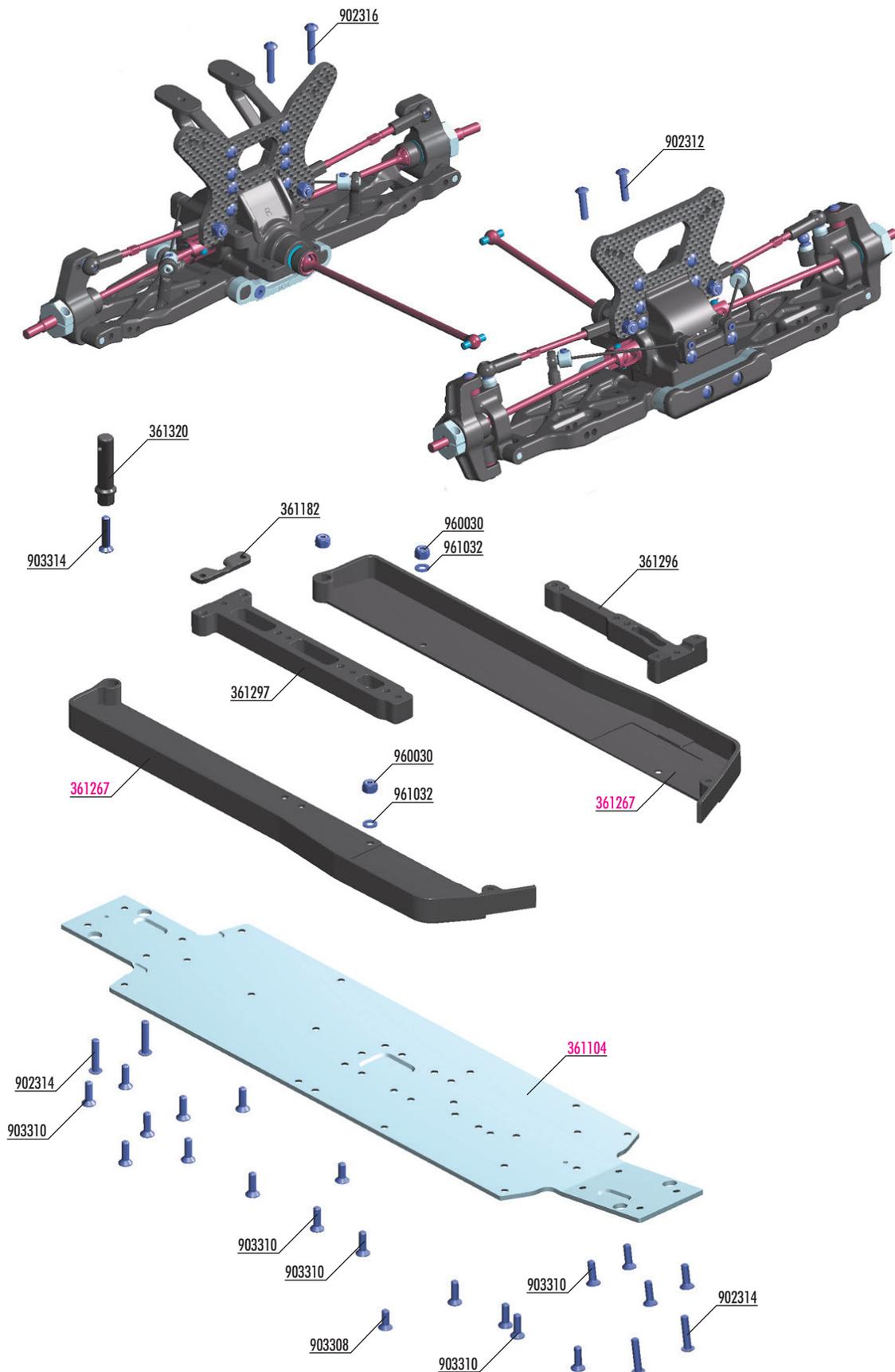
INITIAL POSITION



SET-UP BOOK

ROLL CENTER

4. FRONT & REAR ASSEMBLY



BAG

04

36 1182 COMPOSITE REAR LOWER BRACE
 36 1296 COMPOSITE CHASSIS BRACE FRONT - HARD
 36 1297 COMPOSITE CHASSIS BRACE REAR - HARD
 36 1320 BODY MOUNT, BATTERY MOUNT - V2 & WING SHIM (2)

90 2312 HEX SCREW SH M3x12 (10)
 90 2314 HEX SCREW SH M3x14 (10)
 90 2316 HEX SCREW SH M3x16 (10)

90 3308 HEX SCREW SFH M3x8 (10)
 90 3310 HEX SCREW SFH M3x10 (10)
 90 3314 HEX SCREW SFH M3x14 (10)
 96 0030 NUT M3 (10)
 96 1032 WASHER S 3.2 (10)

36 1104 ALU CHASSIS - SWISS 7075 T6 (2MM)
 36 1267 COMPOSITE CHASSIS SIDE GUARDS L+R - HARD

FRONT & REAR ASSEMBLY



903308
SFH M3x8



903310
SFH M3x10



903314
SFH M3x14



960030
N M3



961032
S3.2

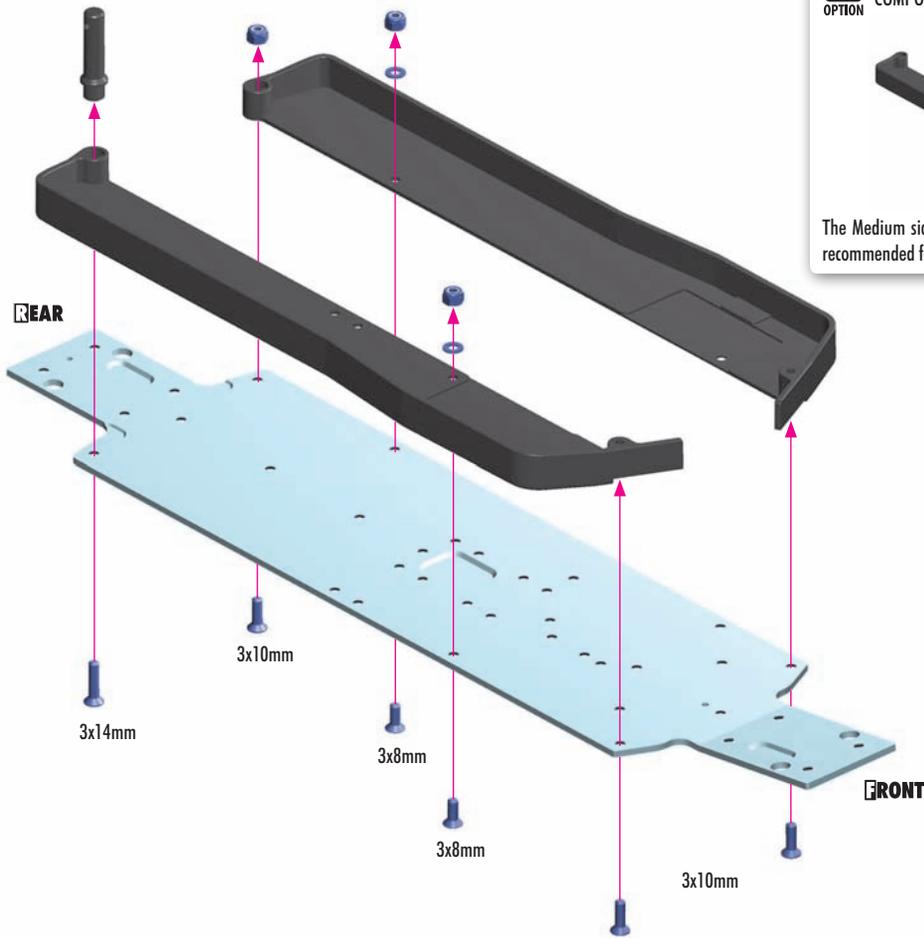


#361265

COMPOSITE CHASSIS SIDE GUARDS L+R (MEDIUM)



The Medium side guards increase chassis flex and are recommended for low-traction tracks.

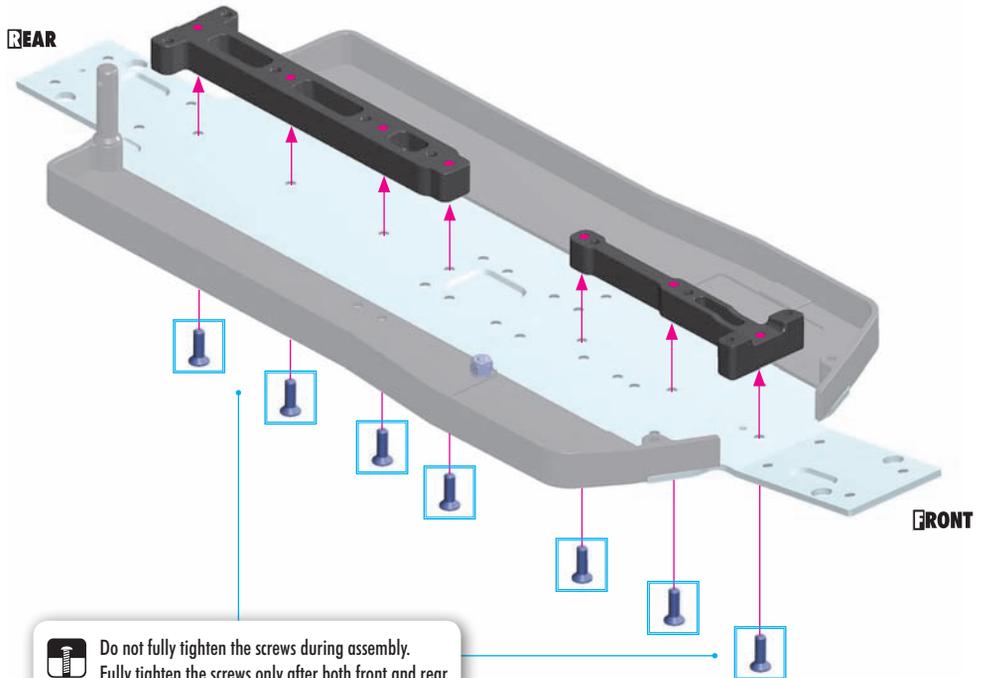


SET-UP BOOK

CHASSIS FLEX SETTING

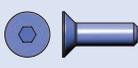


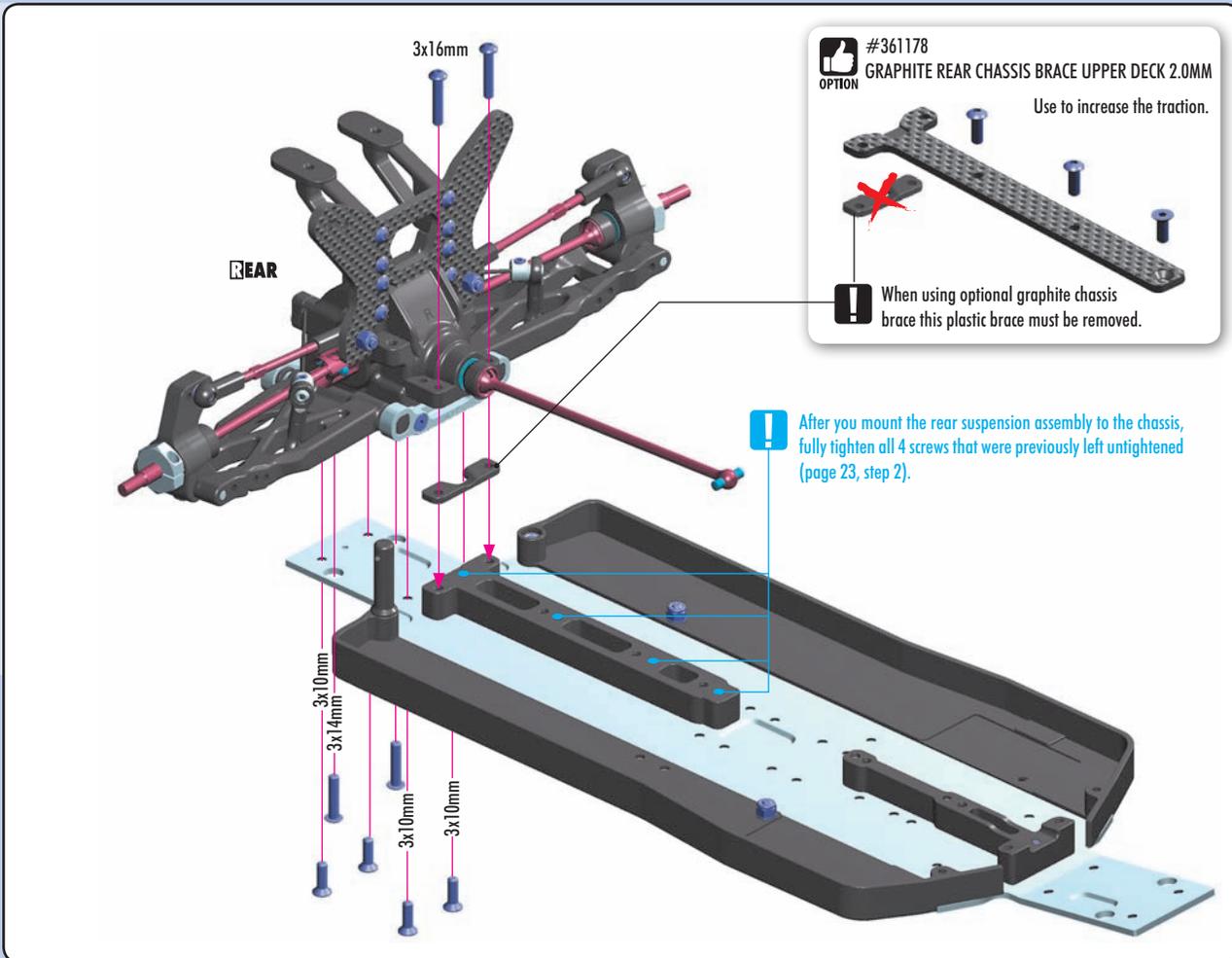
903310
SFH M3x10



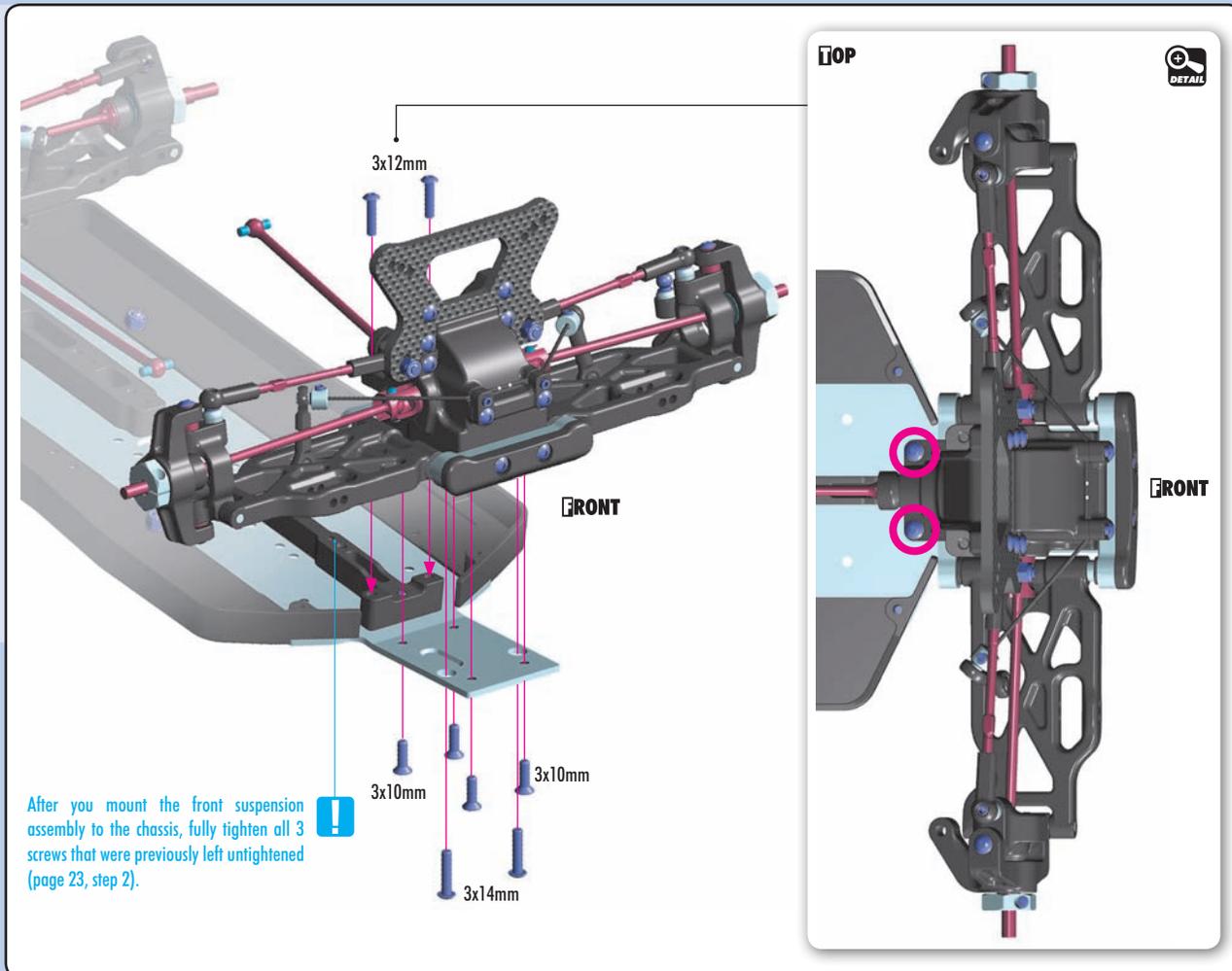
Do not fully tighten the screws during assembly.
Fully tighten the screws only after both front and rear suspension assemblies are mounted to the chassis.

4. FRONT & REAR ASSEMBLY

-  902314
SH M3x14
-  902316
SH M3x16
-  903310
SFH M3x10



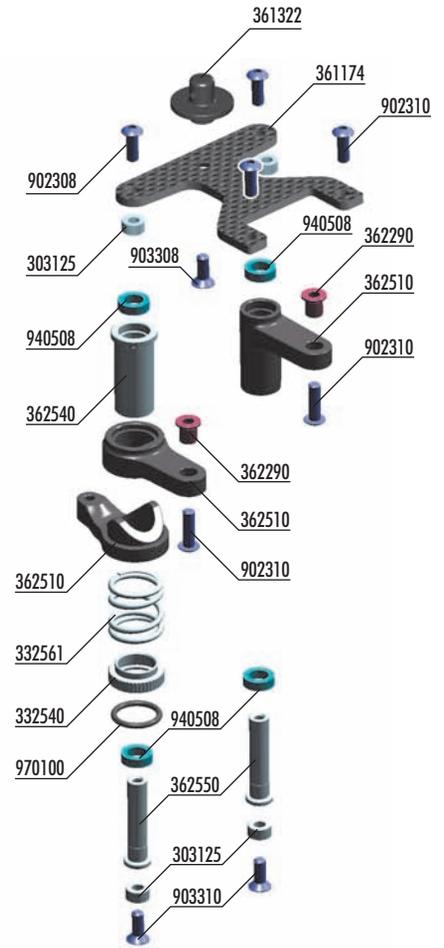
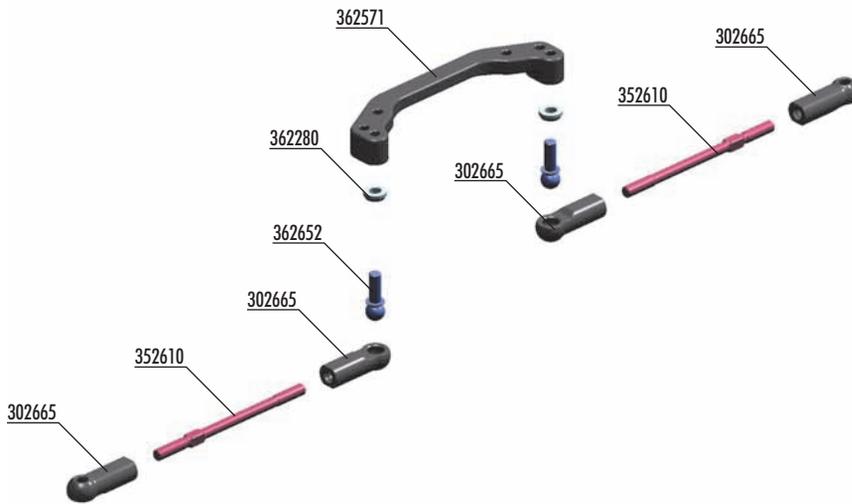
-  902312
SH M3x12
-  902314
SH M3x14
-  903310
SFH M3x10



5. STEERING

STEERING PLATE

#362571	COMPOSITE (STANDARD)
#362573	ALU (OPTION)



BAG

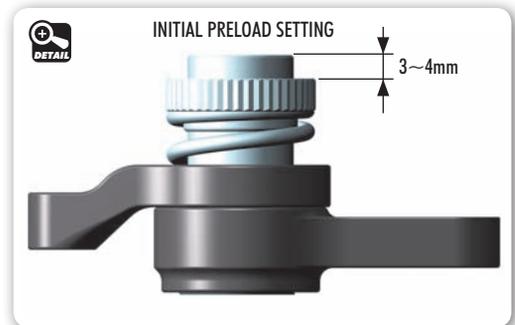
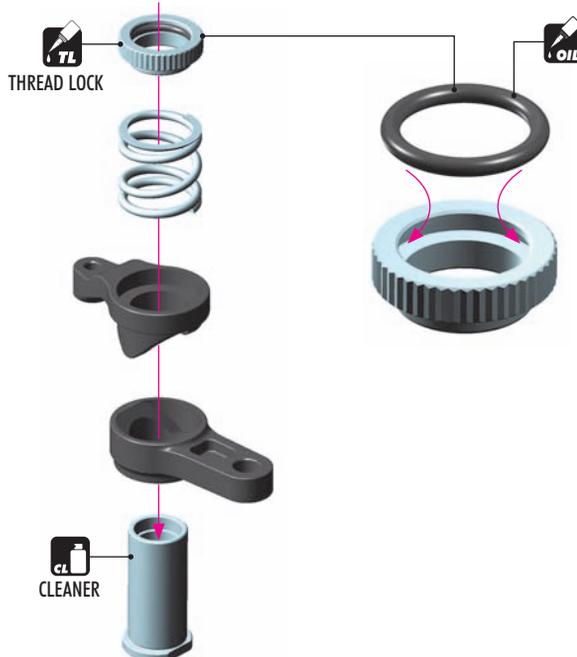
05

- 30 2665 COMPOSITE BALL JOINT 4.9MM - CLOSED WITH HOLE (4)
- 30 3125 ALU SHIM 3x6x3.0MM (10)
- 33 2540 ALU SERVO SAVER ADJUSTABLE NUT
- 33 2561 SERVO SAVER SPRING C=14
- 35 2610 ADJ. TURNBUCKLE M3 L/R 45MM - SPRING STEEL (2)
- 36 1174 GRAPHITE FRONT UPPER STEERING DECK 2.0MM
- 36 1322 BODY MOUNT - EXTRA-SHORT
- 36 2280 ALU CONICAL SHIM 3x6x2.0MM (10)
- 36 2290 STEEL STEERING BUSHING - SHORT (2)
- 36 2510 COMPOSITE SERVO SAVER
- 36 2540 ALU SERVO SAVER MAIN SHAFT

- 36 2550 SERVO SAVER PIVOT SHAFT (2)
- 36 2571 COMPOSITE STEERING PLATE
- 36 2580 STEERING BRACE 2.0MM GRAPHITE (OPTION)
- 36 2652 BALL END 4.9MM WITH THREAD 10MM (2)
- 90 2308 HEX SCREW SH M3x8 (10)
- 90 2310 HEX SCREW SH M3x10 (10)
- 90 3308 HEX SCREW SFH M3x8 (10)
- 90 3310 HEX SCREW SFH M3x10 (10)
- 94 0508 HIGH-SPEED BALL-BEARING 5x8x2.5 RUBBER SEALED (2)
- 97 0100 O-RING 10 x 1.5 (10)



970100
O 10x1.5

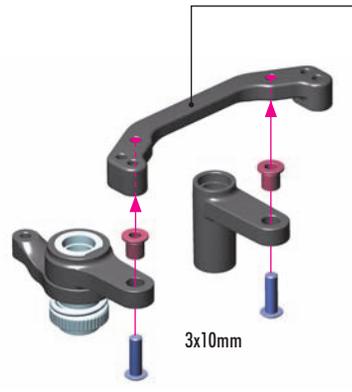


SET-UP BOOK

SERVO SAVER

STEERING

-  303125 SHIM 3x6x3
-  902308 SH M3x8
-  902310 SH M3x10
-  903308 SFH M3x8
-  940508 BB 5x8x2.5

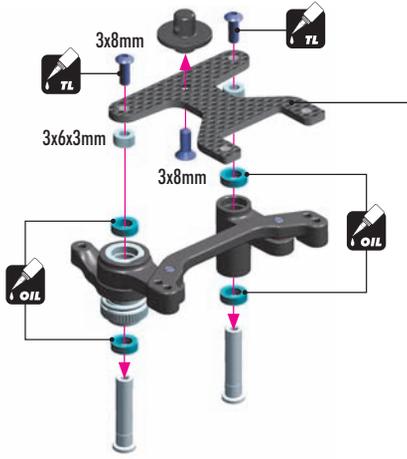


3x10mm

 #362573
ALU STEERING PLATE 4-HOLE
OPTION



Increases steering precision and predictability and is recommended for use in high-traction conditions. Includes extra Ackermann positions for very precise steering adjustment.



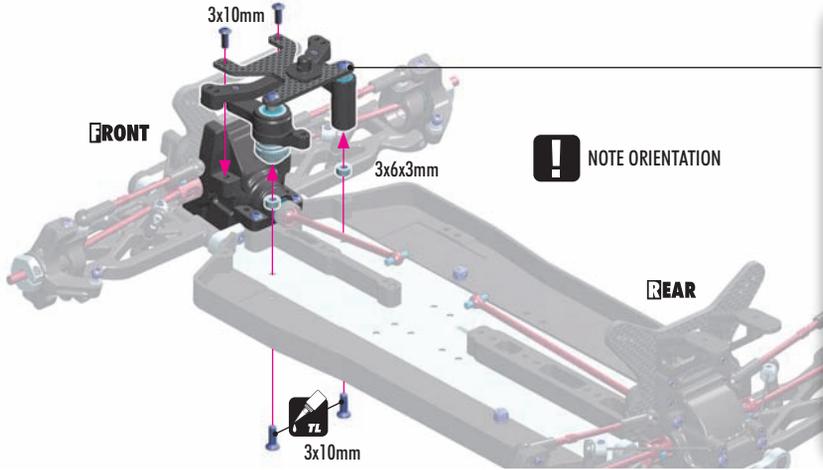
3x8mm

3x6x3mm

3x8mm

OIL

-  303125 SHIM 3x6x3
-  902310 SH M3x10
-  903310 SFH M3x10



FRONT

3x10mm

3x6x3mm

REAR

TL

3x10mm

NOTE ORIENTATION

 #362580
STEERING BRACE 2.0MM GRAPHITE
OPTION

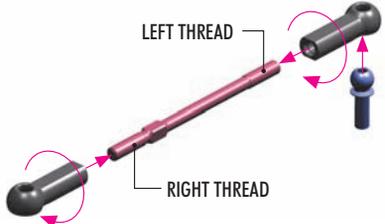


Using this brace you can not use front body post and therefore you have to use:
#107872 VELCRO TAPE WITH DOUBLE SIDED TAPE

 #362581
STEERING BRACE 2.0MM GRAPHITE
OPTION



2x 



LEFT THREAD

RIGHT THREAD



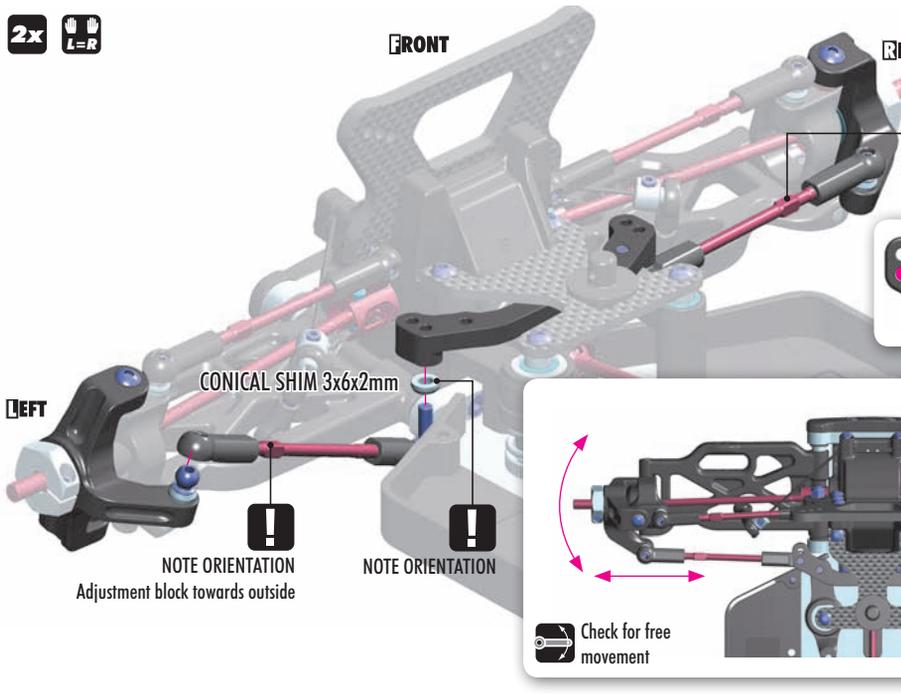
31.5mm

RIGHT THREAD

LEFT THREAD

-  362280 CON. SHIM 3x6x2

2x 



FRONT

RIGHT

LEFT

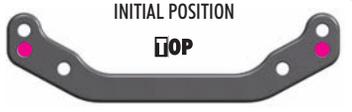
CONICAL SHIM 3x6x2mm

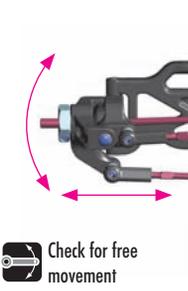
NOTE ORIENTATION
Adjustment block towards outside

NOTE ORIENTATION

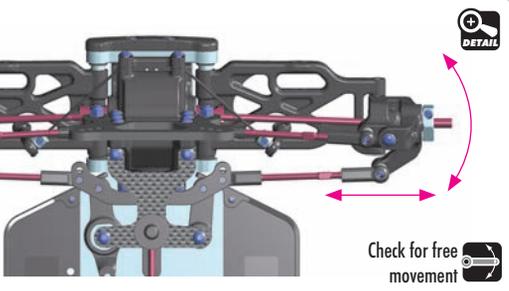
NOTE ORIENTATION
Adjustment block towards outside

INITIAL POSITION
TOP





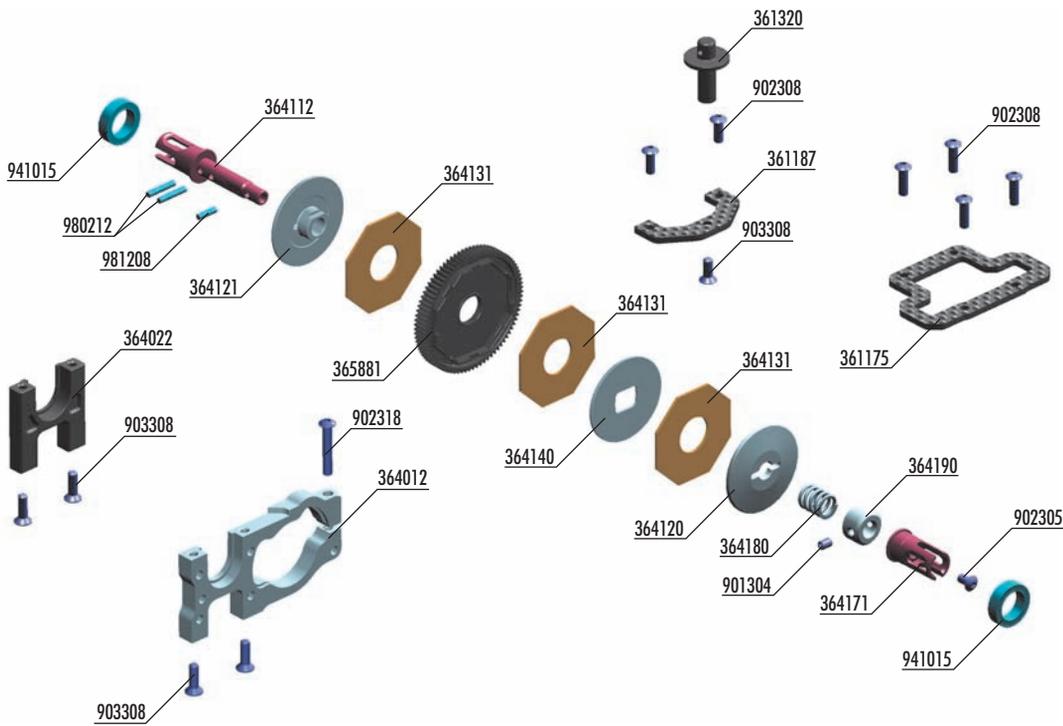
Check for free movement



Check for free movement

SET-UP BOOK
ACKERMANN
BUMP STEER
TOE-IN

6. SLIPPER CLUTCH ASSEMBLY



SLIPPER CLUTCH SPUR GEARS		
#365875	75T / 48	(OPTION)
#365878	78T / 48	(OPTION)
#365881	81T / 48	(STANDARD)
#365884	84T / 48	(OPTION)

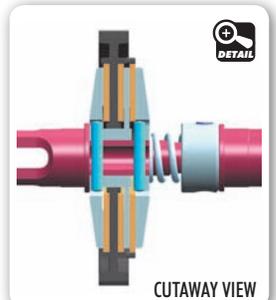
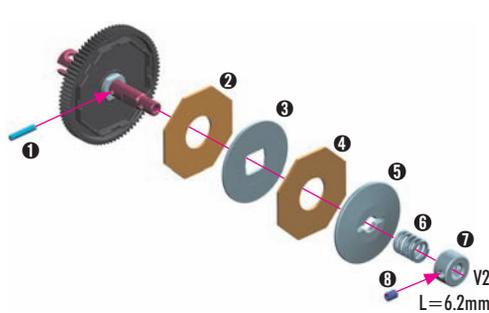
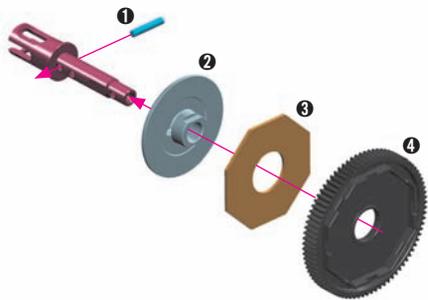
BAG

06

- 36 1175 GRAPHITE CENTER UPPER DECK 2.0MM
- 36 1187 GRAPHITE REAR UPPER BRACE 2.0MM
- 36 1320 BODY MOUNT, BATTERY MOUNT - V2 & WING SHIM (2)
- 36 4012 ALU MOTOR BULKHEAD
- 36 4022 COMPOSITE CENTRAL BULKHEAD
- 36 4112 3-PAD SLIPPER CLUTCH SHAFT - HUDY SPRING STEEL™
- 36 4120 ALU SLIPPER CLUTCH PLATE - 7075 T6 BLACK HARD COATED
- 36 4121 ALU 3-PAD SLIPPER CLUTCH PLATE WITH ADAPTER - 7075 T6 HARD COATED
- 36 4131 SLIPPER CLUTCH PAD "SLS" (2)
- 36 4140 ALU 3-PAD SLIPPER CLUTCH PLATE DISC - 7075 T6 HARD COATED
- 36 4171 SLIPPER CLUTCH OUTDRIVE ADAPTER - HUDY SPRING STEEL™
- 36 4180 SLIPPER CLUTCH SPRING C=30 - BLACK
- 36 4190 ALU SLIPPER CLUTCH NUT - V2

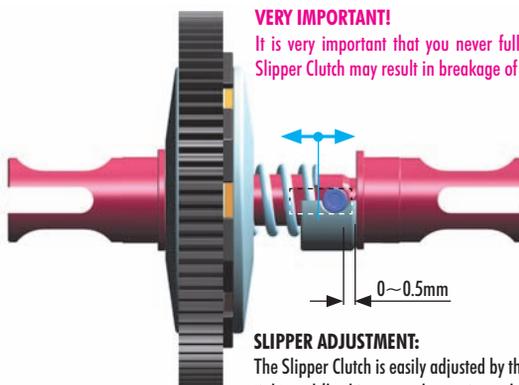
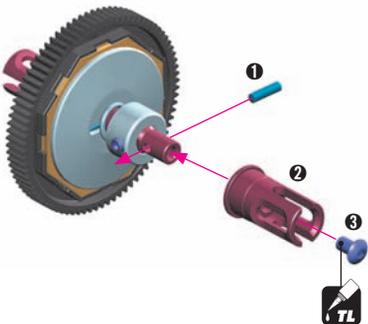
- 36 5881 COMPOSITE SLIPPER CLUTCH SPUR GEAR 81T / 48 - GRAPHITE
- 90 1304 HEX SCREW SB M3x4 (10)
- 90 2305 HEX SCREW SH M3x5 (10)
- 90 2308 HEX SCREW SH M3x8 (10)
- 90 2318 HEX SCREW SH M3x18 (10)
- 90 3308 HEX SCREW SFH M3x8 (10)
- 94 1015 HIGH-SPEED BALL-BEARING 10x15x4 RUBBER SEALED (2)
- 98 0212 PIN 2x11.6 (10)
- 98 1208 PIN 2x8 (10)

- 980212 P 2x11.6
- 901304 SB M3x4



- 902305 SH M3x5
- 981208 P 2x8

NOTE ORIENTATION



VERY IMPORTANT!
It is very important that you never fully tighten the Slipper Clutch. Overtightening the Slipper Clutch may result in breakage of the diff crown gear and pinion gear.

SLIPPER ADJUSTMENT:
The Slipper Clutch is easily adjusted by the set-screw in the bushing. The more the spring is tightened (bushing moved more inwards), the more the Slipper Clutch is tightened.

INITIAL INSTALLATION POSITION SHOWN
Detailed information on slipper adjustment can be found at the bottom of page 29.

SLIPPER CLUTCH ASSEMBLY



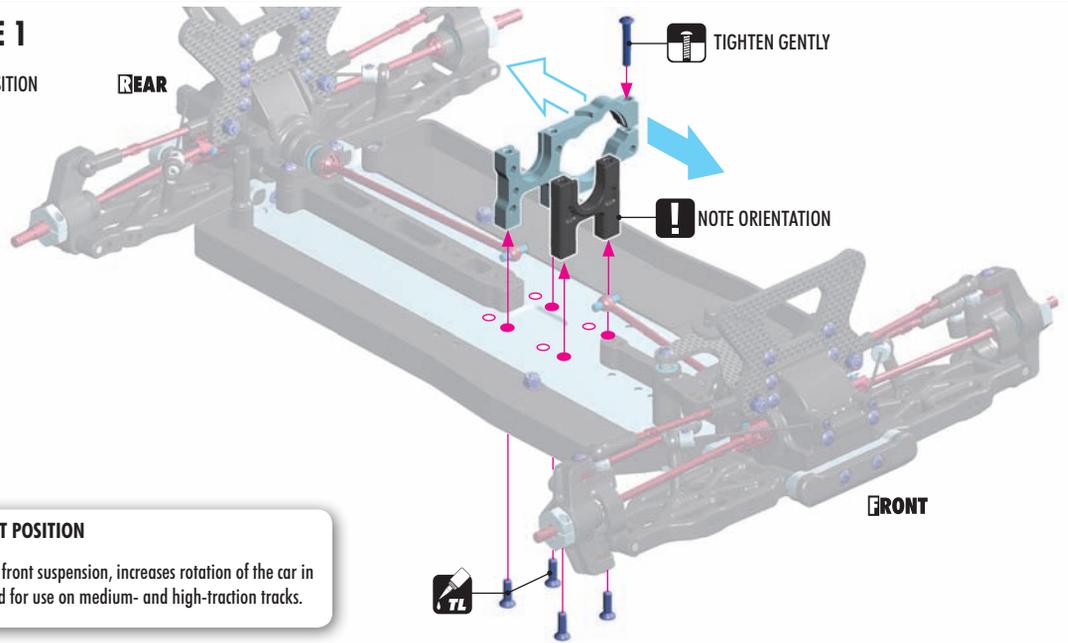
903308
SFH M3x8



902318
SH M3x18

ALTERNATIVE 1

FORWARD WEIGHT POSITION
(INITIAL SETTING)



FORWARD WEIGHT POSITION

More traction on the front suspension, increases rotation of the car in corner, recommended for use on medium- and high-traction tracks.



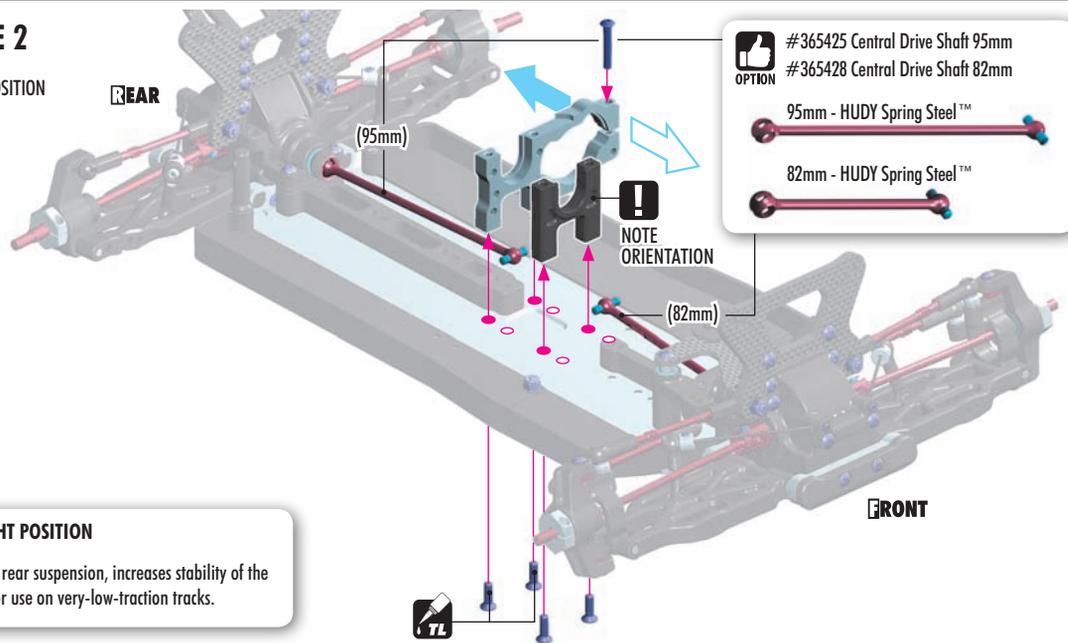
903308
SFH M3x8



902318
SH M3x18

ALTERNATIVE 2

REARWARD WEIGHT POSITION
(OPTION)



OPTION
#365425 Central Drive Shaft 95mm
#365428 Central Drive Shaft 82mm



95mm - HUDY Spring Steel™

82mm - HUDY Spring Steel™

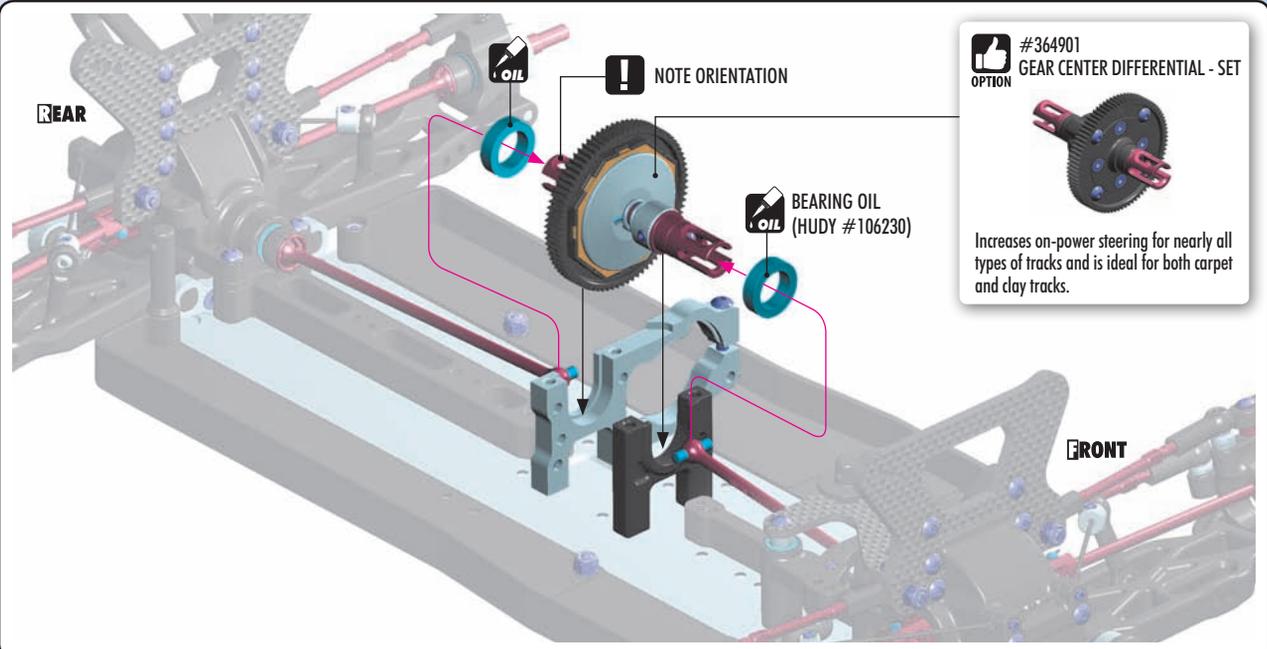


REARWARD WEIGHT POSITION

More traction on the rear suspension, increases stability of the car, recommended for use on very-low-traction tracks.



941015
BB 10x15x4



OPTION
#364901 GEAR CENTER DIFFERENTIAL - SET



Increases on-power steering for nearly all types of tracks and is ideal for both carpet and clay tracks.

SLIPPER CLUTCH ASSEMBLY

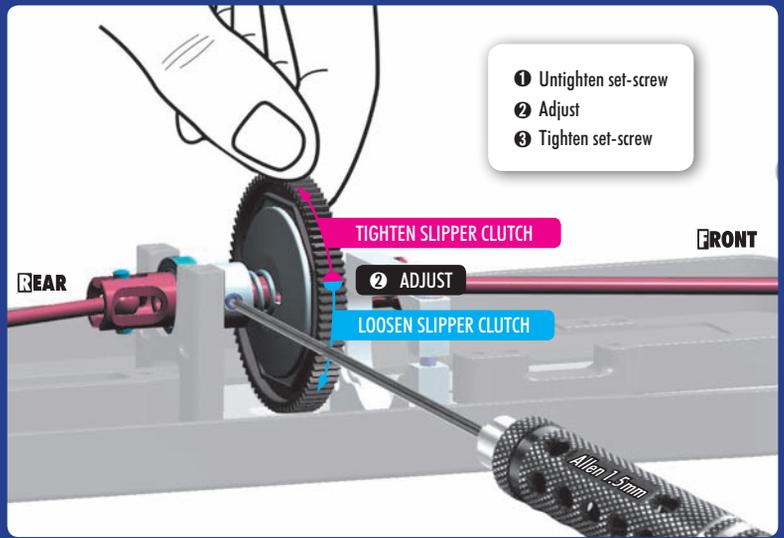
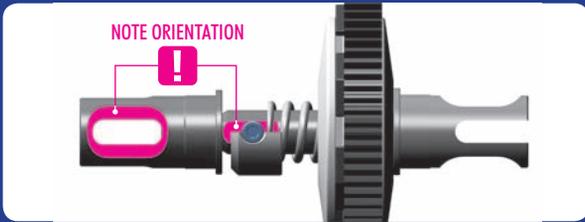
SLIPPER CLUTCH ADJUSTMENT

The Slipper Clutch can be adjusted by loosening the set-screw and then, while keeping the tool inside of the set-screw, rotating the spur gear by hand as indicated in the drawing.

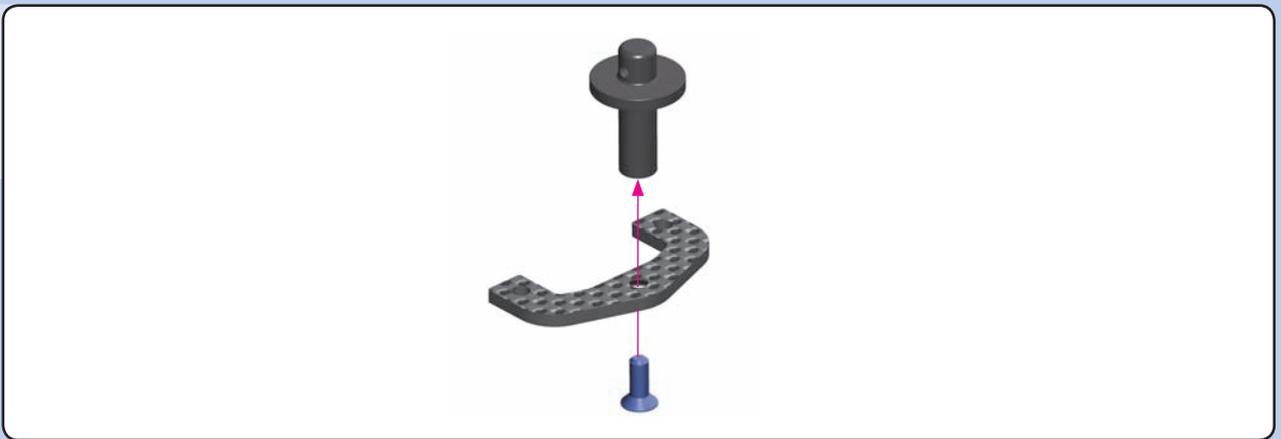
To **TIGHTEN**: Rotate the spur gear in the counterclockwise (CCW) direction.
To **LOOSEN**: Rotate the spur gear in the clockwise (CW) direction.

IMPORTANT

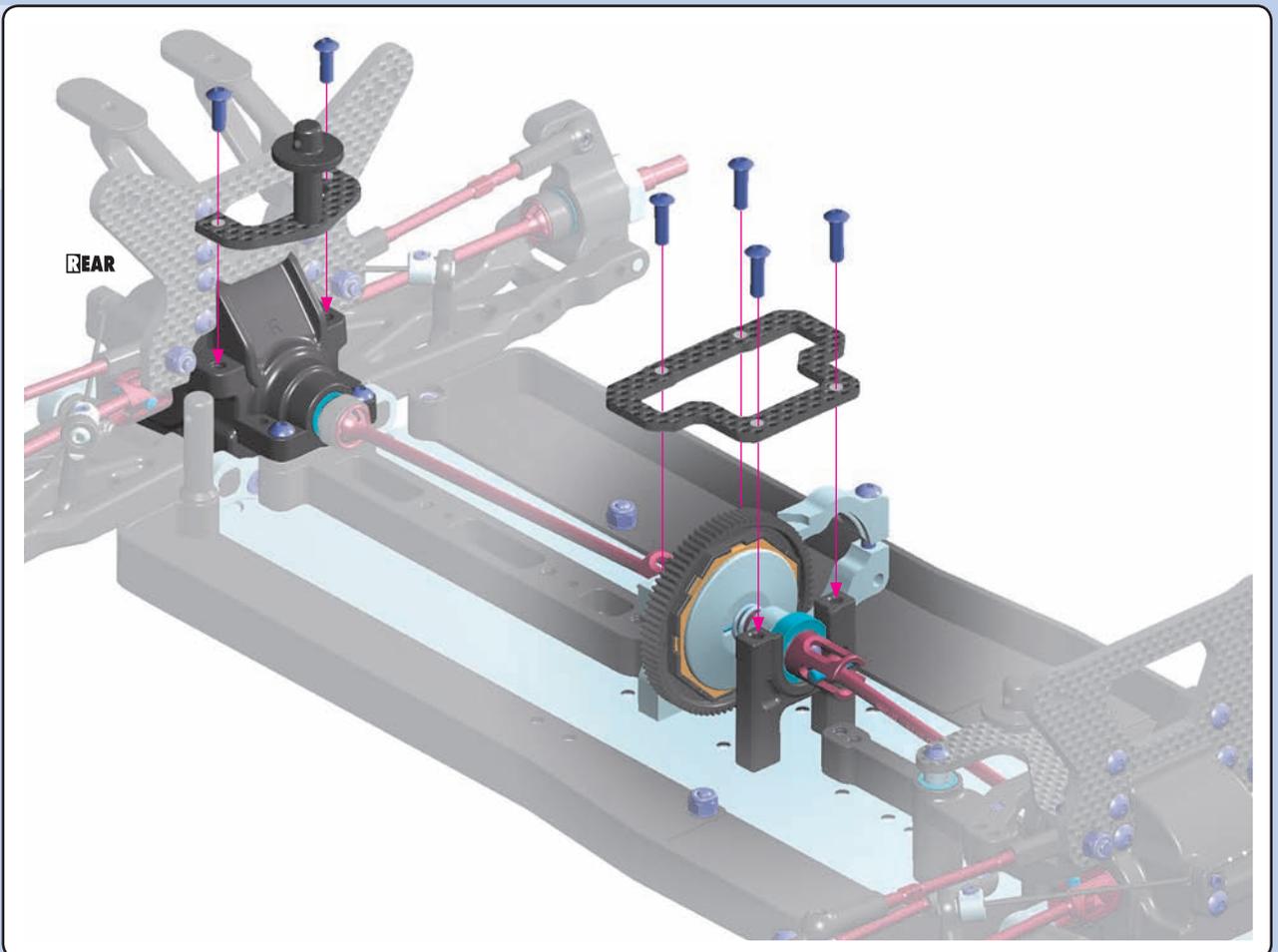
When tightening the set-screw again, ensure that the set screw sits only on the flat spot of the shaft.



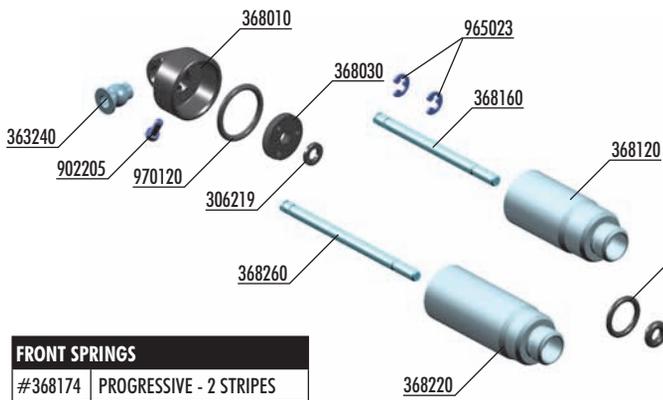
903308
SFH M3x8



902308
SH M3x8

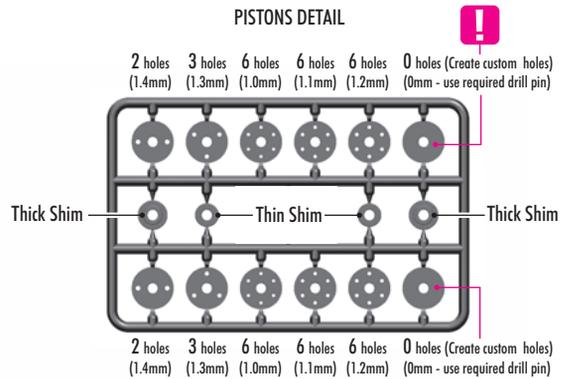


7. SHOCK ABSORBERS

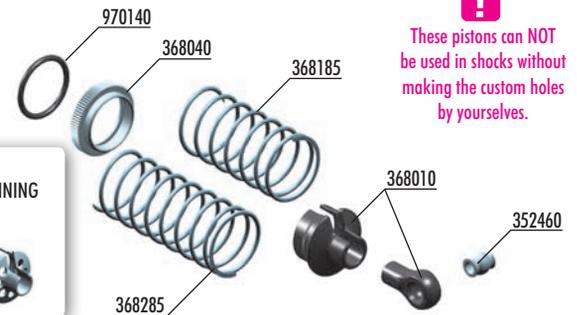


FRONT SPRINGS	
#368174	PROGRESSIVE - 2 STRIPES
#368184	LINEAR - 2 DOTS
#368185	LINEAR - 3 DOTS - STANDARD
#368186	LINEAR - 4 DOTS

REAR SPRINGS	
#368273	PROGRESSIVE - 2 STRIPES
#368284	LINEAR - 1 DOT
#368285	LINEAR - 2 DOTS - STANDARD
#368286	LINEAR - 3 DOTS



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



BAG

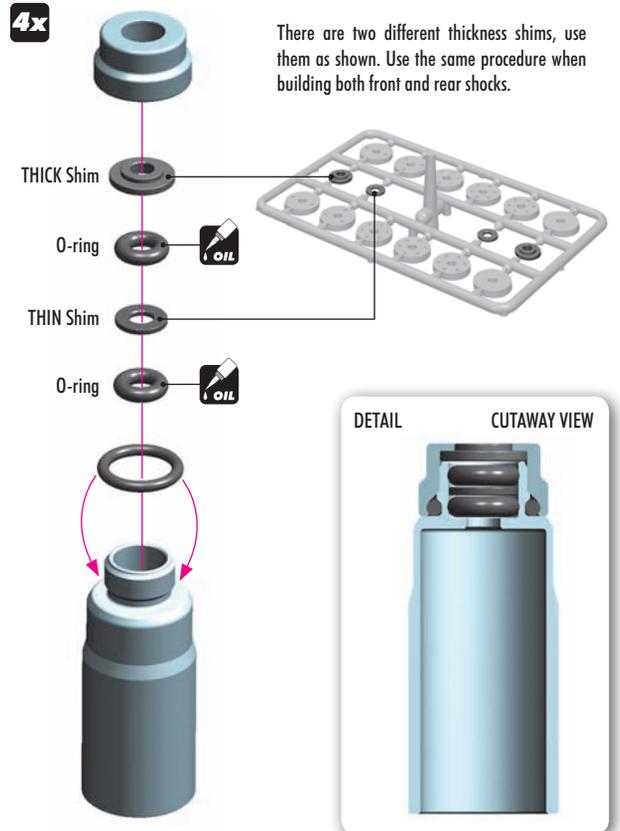
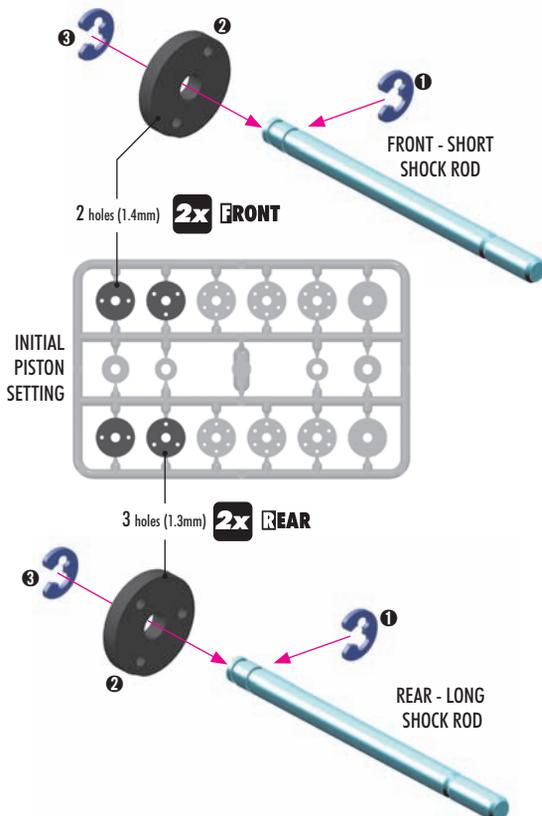
07

- 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 8030 SHOCK PISTONS - COMPLETE SET - DERLIN
- 36 8040 ALU SHOCK ADJUSTABLE NUT (2)
- 36 8100 FRONT SHOCK ABSORBERS COMPLETE SET (2)
- 36 8120 ALU FRONT SHOCK BODY - HARD COATED (2)
- 36 8140 ALU LOWER SHOCK BODY CAP (2)
- 36 8160 FRONT HARDENED SHOCK SHAFT (2)
- 36 8174 FRONT SPRING-SET PROGRESSIVE - 2 STRIPES (2) (OPTION)
- 36 8184 FRONT SPRING-SET LINEAR - 2 DOTS (2) (OPTION)
- 36 8185 FRONT SPRING-SET LINEAR - 3 DOTS (2)
- 36 8186 FRONT SPRING-SET - 4 DOTS (2) (OPTION)

- 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 8273 REAR SPRING-SET PROGRESSIVE - 2 STRIPES (2) (OPTION)
- 36 8284 REAR SPRING-SET LINEAR - 1 DOT (2) (OPTION)
- 36 8285 REAR SPRING-SET LINEAR - 2 DOTS (2)
- 36 8286 REAR SPRING-SET LINEAR - 3 DOTS (2) (OPTION)

- 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)

- 965023 C2.3
- 972030 O 3x2
- 970080 O 8x1



SET-UP BOOK
SHOCK DAMPING
SHOCK PISTONS

10
306219
SHIM 3x6x1

Downstop shim. THICKER shim used, GREATER downstop is achieved.

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

INITIAL SETTING
1mm 2mm 3mm

2x FRONT SHOCKS
SHORT SHOCKS ROD
SHORT SHOCKS BODY
1 3x6x1mm

2x REAR SHOCKS
LONG SHOCKS ROD
LONG SHOCKS BODY
1 3x6x1mm

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

CORRECT
Twist the shock rod through the lower shock body assembly.

10
970140
O 14x1.5

4x

OIL

DETAIL

4x

970120
O 12x1

10
306219
SHIM 3x6x3

4x

3x6x3mm

INCORRECT

INCORRECT

CORRECT

Grip the shock rod at top of exposed threads with side cutting pliers. Be careful not to damage the shock rod.

1~1.5mm

DETAIL

902205
SH M2x5

DEFAULT SHOCK REBOUND SETTING 0% (LOW REBOUND)

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

- 2x FRONT (SHORT)**
Oil 600cSt
- 2x REAR (LONG)**
Oil 450cSt

1 Extend the shock shaft completely. Fill the shock body with the shock oil. For the FRONT shocks (short) use 600cSt oil. For the REAR shocks (long) use 450cSt oil.

2 Move the shock shaft up and down a few times to release the air bubbles trapped beneath the piston. **3~5x UP & DOWN**

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. **TIGHTEN FULLY**

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

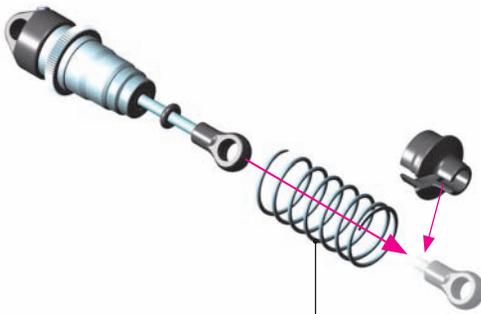
6 Keep the shock shaft pushed in the shock body and insert the screw into the shock cap. The rebound will be at approximately 0%.

SET-UP BOOK
SHOCK OIL

SHOCK ABSORBERS

2x FRONT SHOCKS (SHORT)

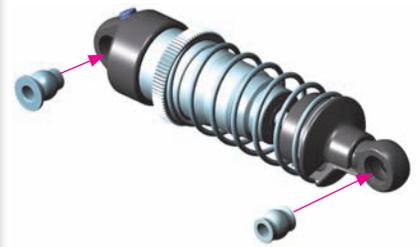
2x REAR SHOCKS (LONG)



SHORT FRONT SHOCKS Short Springs **2x** **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.



TIP ALTERNATE SHOCK REBOUND SETTING (50% AND 100%)

The default shock rebound setting is 0% (as described on page 34).
Alternatively, you may set the shock rebound setting to 50% or 100% as described below. Remove the shock springs before performing shock rebound adjustment.

SETTING THE SHOCK REBOUND TO 50% (MEDIUM REBOUND)

REMOVE SHOCK CAP AND THE SCREW FROM SHOCK CAP



1 Extend the shock shaft completely and remove the shock cap and remove screw from shock cap.



2 Fill the shock body with shock oil up to the top. Make sure to use same viscosity shock oil as is in the shock.



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

TIGHTEN FULLY



4 Gently place the shock cap assembly onto the filled shock body.



5 Push the shock shaft 50% into the shock body. Excess oil will bleed through the hole in the shock cap.



6 Keep the shock shaft pushed 50% into the shock body and insert the screw into the shock cap. The rebound will be at approximately 50%.

SETTING THE SHOCK REBOUND TO 100% (HIGH REBOUND)

REMOVE SHOCK CAP



1 Extend the shock shaft completely and remove the shock cap.



2 Fill the shock body with shock oil up to the top. Make sure to use same viscosity shock oil as is in the shock.



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

TIGHTEN FULLY

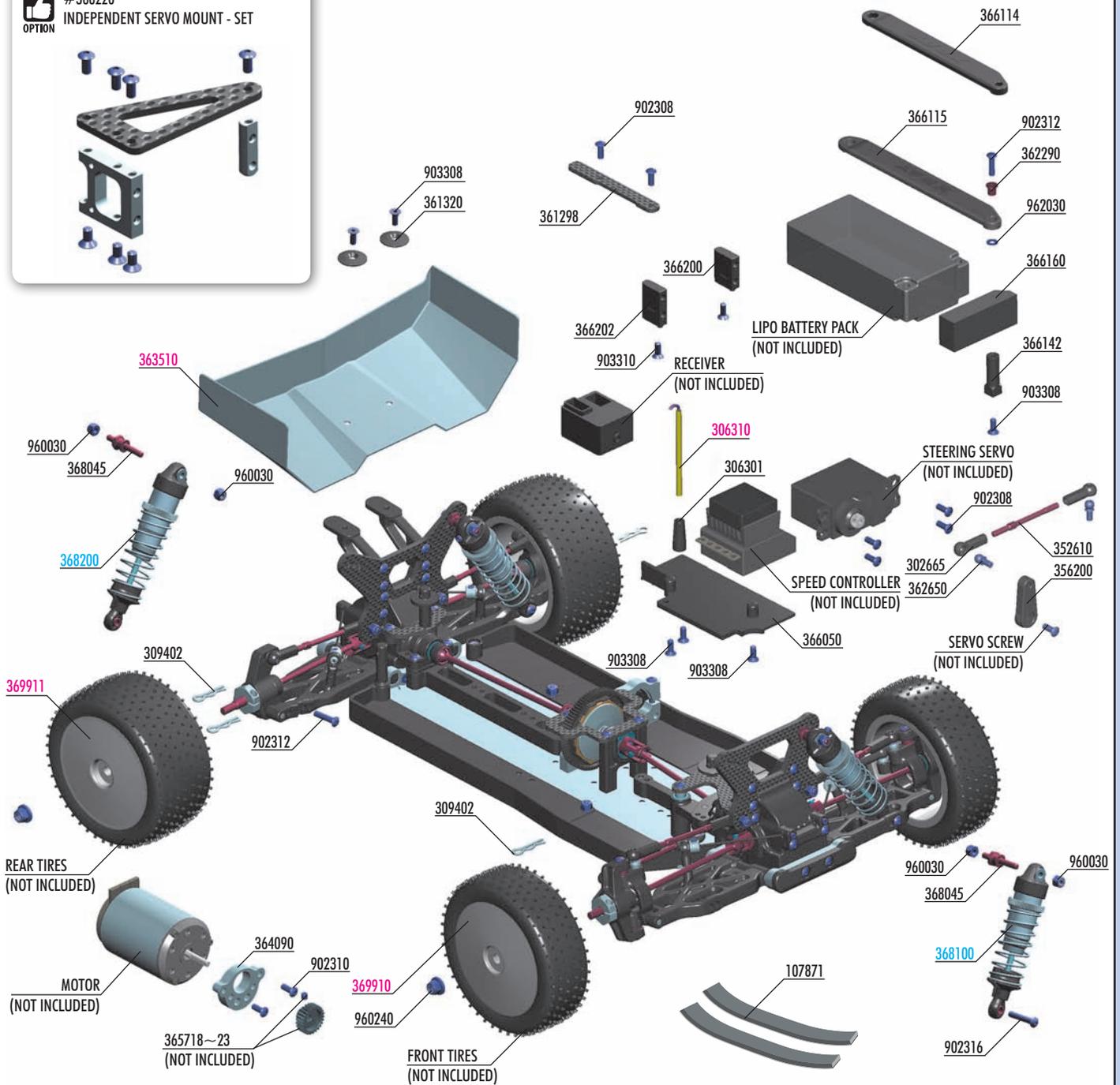


4 Gently place the shock cap assembly onto the filled shock body. Keep the shock shaft extended 100% from the shock body and tighten the shock cap completely. The rebound will be at approximately 100%.

8. FINAL ASSEMBLY



#366220
INDEPENDENT SERVO MOUNT - SET



BAG

08

- 10 7871 HUDY SELF-ADHESIVE FOAM STRIP (2)
- 30 2665 COMPOSITE BALL JOINT 4.9MM - CLOSED WITH HOLE (4)
- 30 6301 ANTENNA MOUNT - THIN
- 30 9402 BODY CLIP FOR 6MM BODY POST (4)
- 35 2610 ADJ. TURNBUCKLE M3 L/R 45 MM - SPRING STEEL™ (2)
- 35 6200 BRAKE/THROTTLE ARMS & STEERING SERVO ARMS - SET
- 36 1298 GRAPHITE CHASSIS WIRE COVER 2.0MM
- 36 1320 BODY MOUNT, BATTERY MOUNT - V2 & WING SHIM (2)
- 36 2290 STEEL STEERING BUSHING - SHORT (2)
- 36 2650 BALL END 4.9MM WITH THREAD 6MM (2)
- 36 4090 ALU ECCENTRIC MOTOR BULKHEAD INSERT
- 36 5718~23 ALU PINION GEAR HARD COATED 18~23T/48 (OPTION)
- 36 6050 COMPOSITE RADIO PLATE - V2
- 36 6114 COMPOSITE BATTERY STRAP - LONG
- 36 6115 COMPOSITE BATTERY STRAP - LONG XL
- 36 6142 COMPOSITE BATTERY HOLDER STAND (2)
- 36 6160 FOAM SPACER FOR BATTERY
- 36 6200 COMPOSITE SERVO MOUNT (2)
- 36 6202 COMPOSITE SERVO MOUNT - HIGHER

- 36 8045 STEEL SCREW SHOCK PIVOT BALL WITH HEX (2)
- 90 2308 HEX SCREW SH M3x8 (10)
- 90 2310 HEX SCREW SH M3x10 (10)
- 90 2312 HEX SCREW SH M3x12 (10)
- 90 2316 HEX SCREW SH M3x16 (10)
- 90 3308 HEX SCREW SFH M3x8 (10)
- 90 3310 HEX SCREW SFH M3x10 (10)
- 96 0030 NUT M3 (10)
- 96 2030 WASHER S 3x6x0.3 (10)
- 96 0240 NUT M4 WITH SERRATED FLANGE (10)

- 36 8100 FRONT SHOCK ABSORBERS COMPLETE SET (2)
- 36 8200 REAR SHOCK ABSORBERS COMPLETE SET (2)

- 30 6310 ANTENNA (2)
- 36 3510 LEXAN REAR WING (2)
- 36 9703 XRAY XB4 BODY - WIDE - V2
- 36 9910 FRONT WHEELS AERODISK - WHITE (2)
- 36 9911 REAR WHEELS AERODISK - WHITE (2)

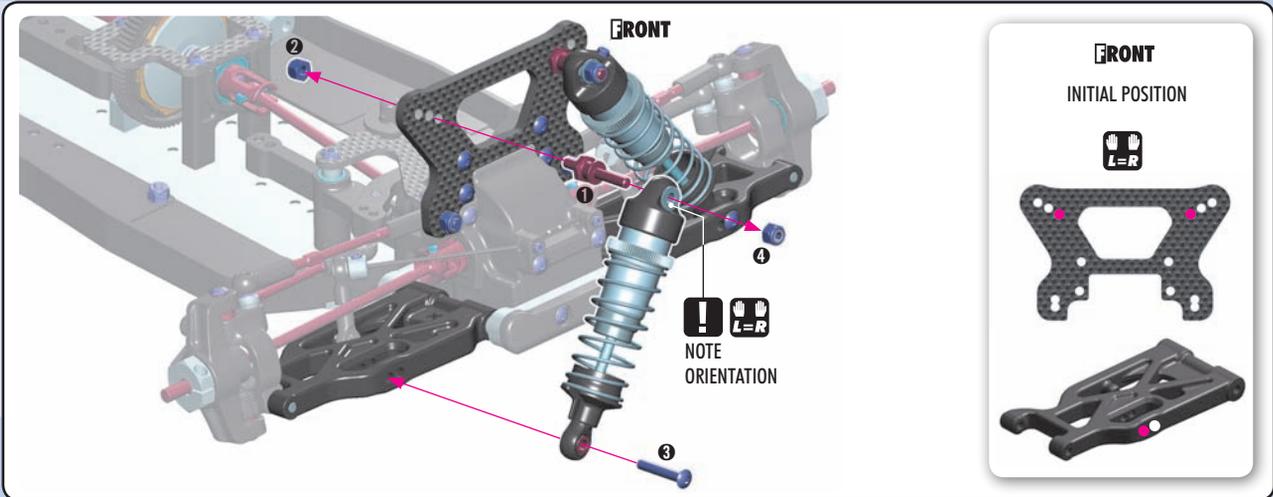
FINAL ASSEMBLY



960030
N M3



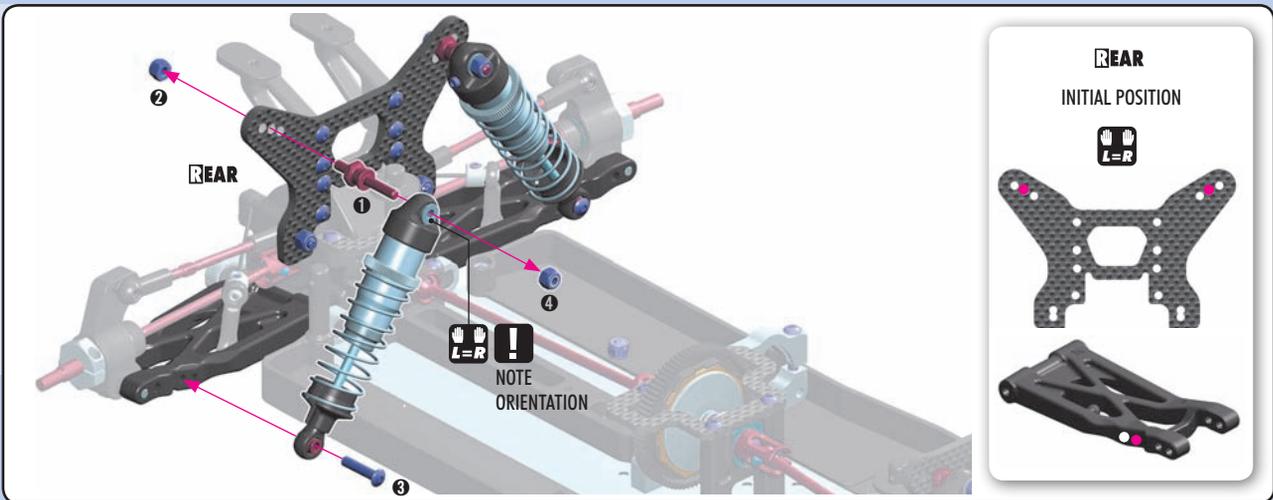
902316
SH M3x16



960030
N M3

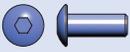
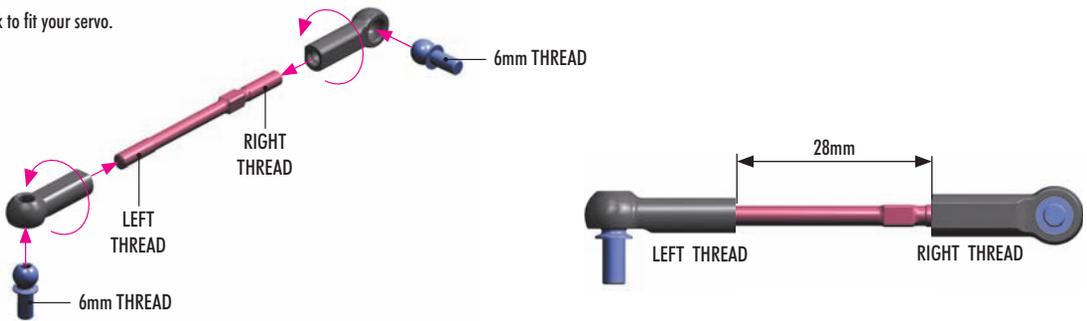


902312
SH M3x12

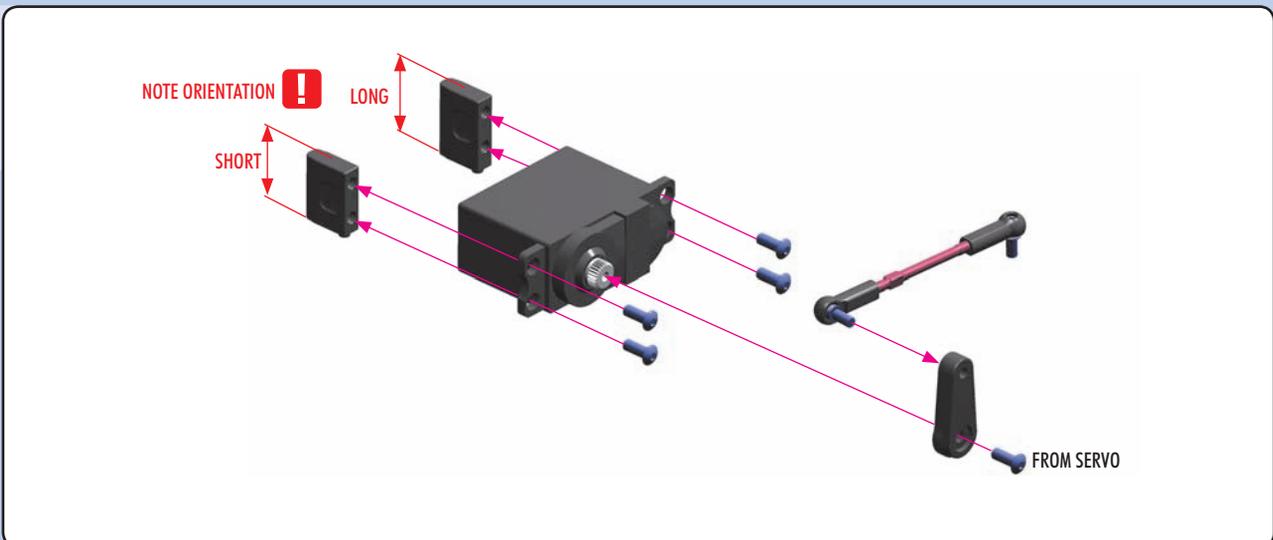


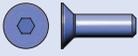
SERVO LINK

Adjust servo link to fit your servo.

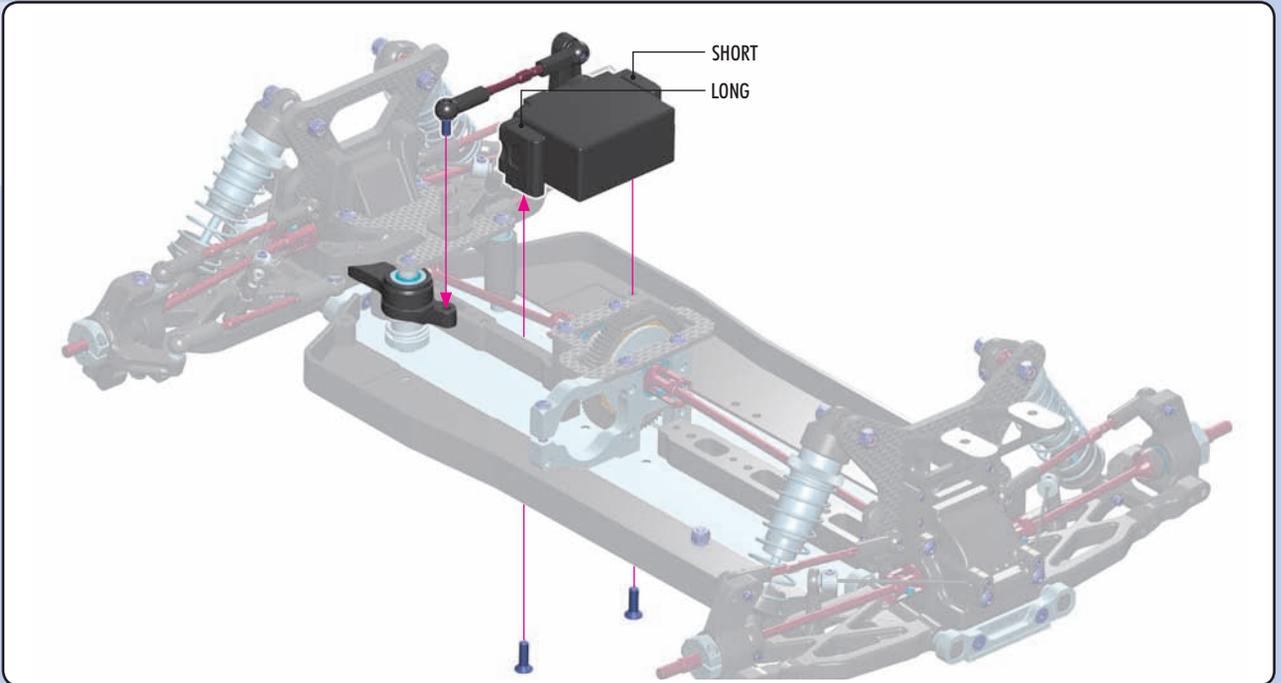


902308
SH M3x8

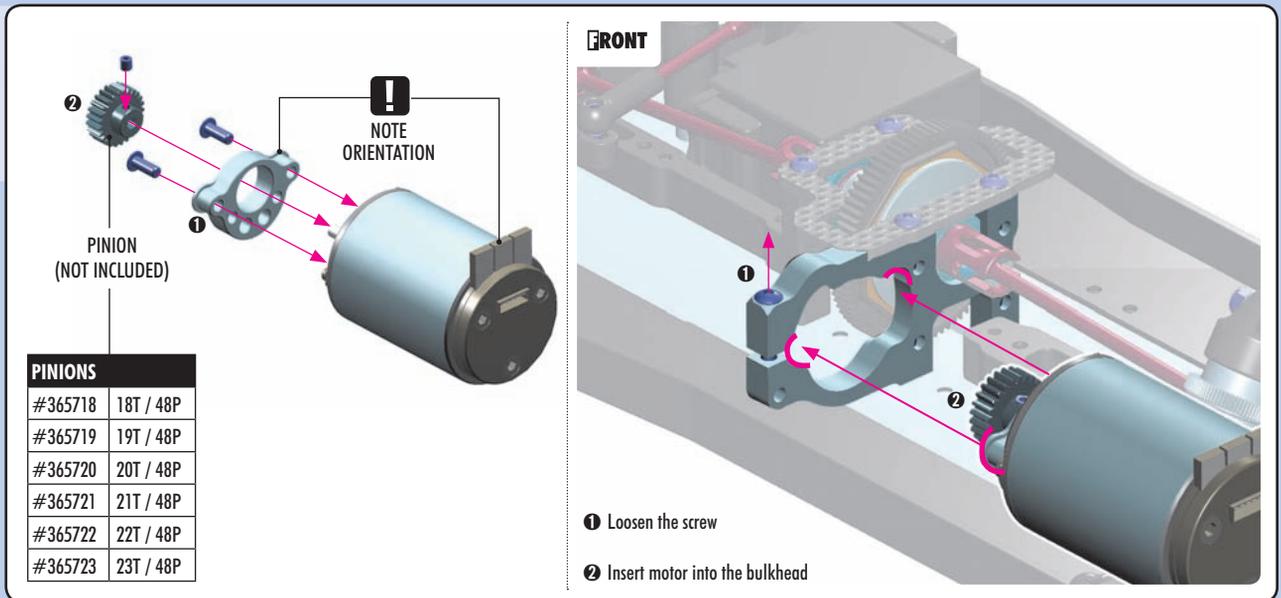




903310
SFH M3x10

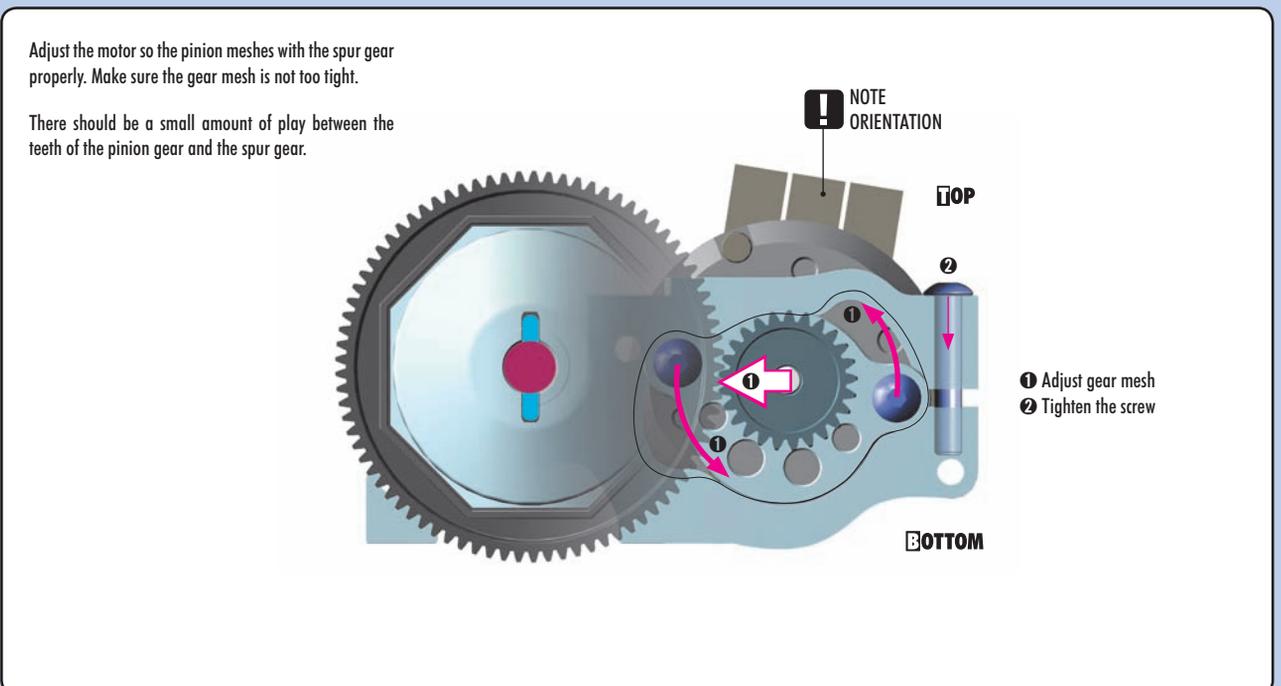


902310
SFH M3x10

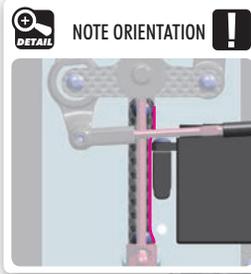


Adjust the motor so the pinion meshes with the spur gear properly. Make sure the gear mesh is not too tight.

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

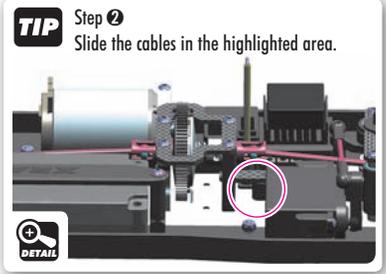


FINAL ASSEMBLY

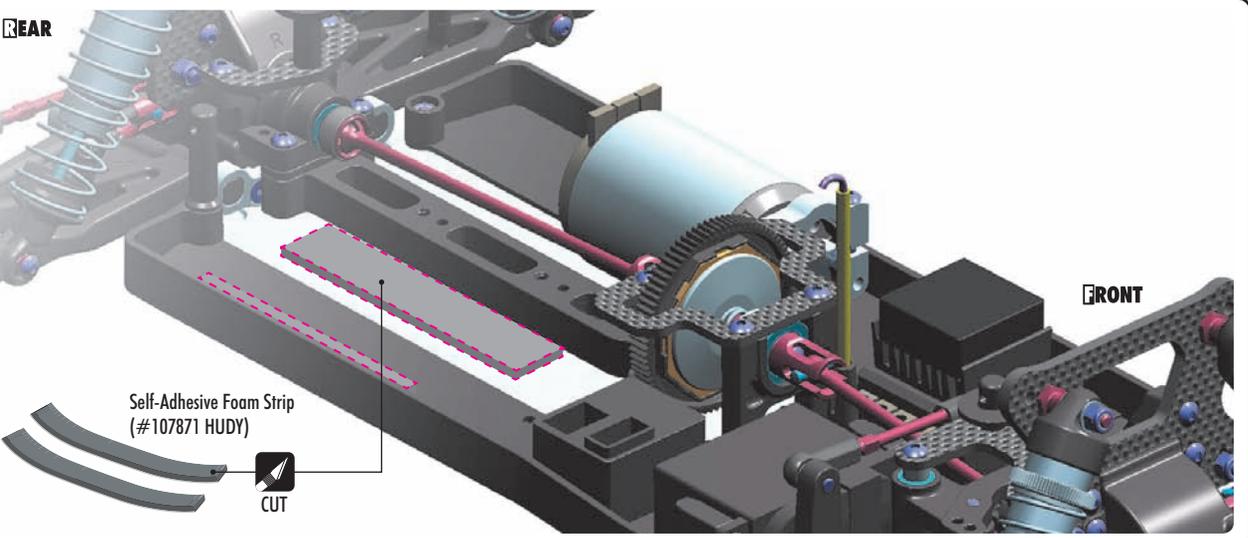
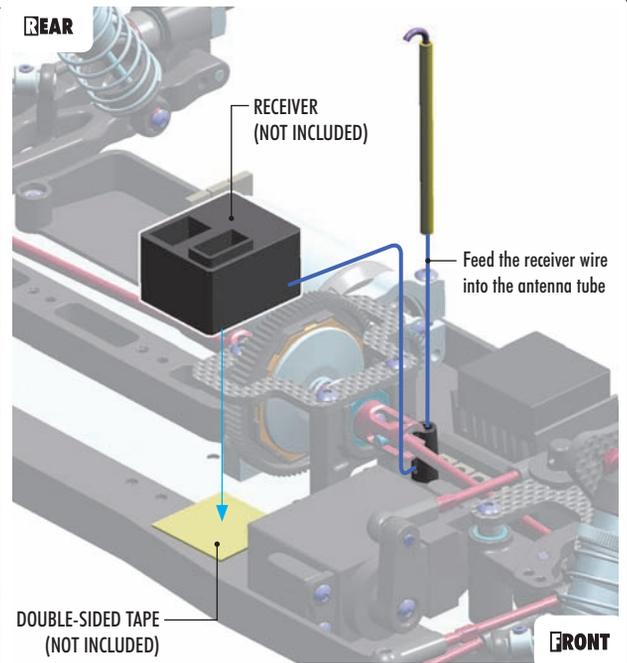
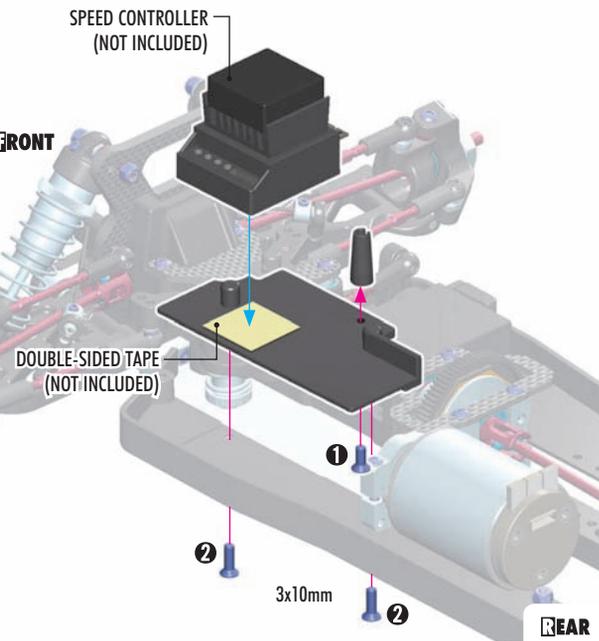
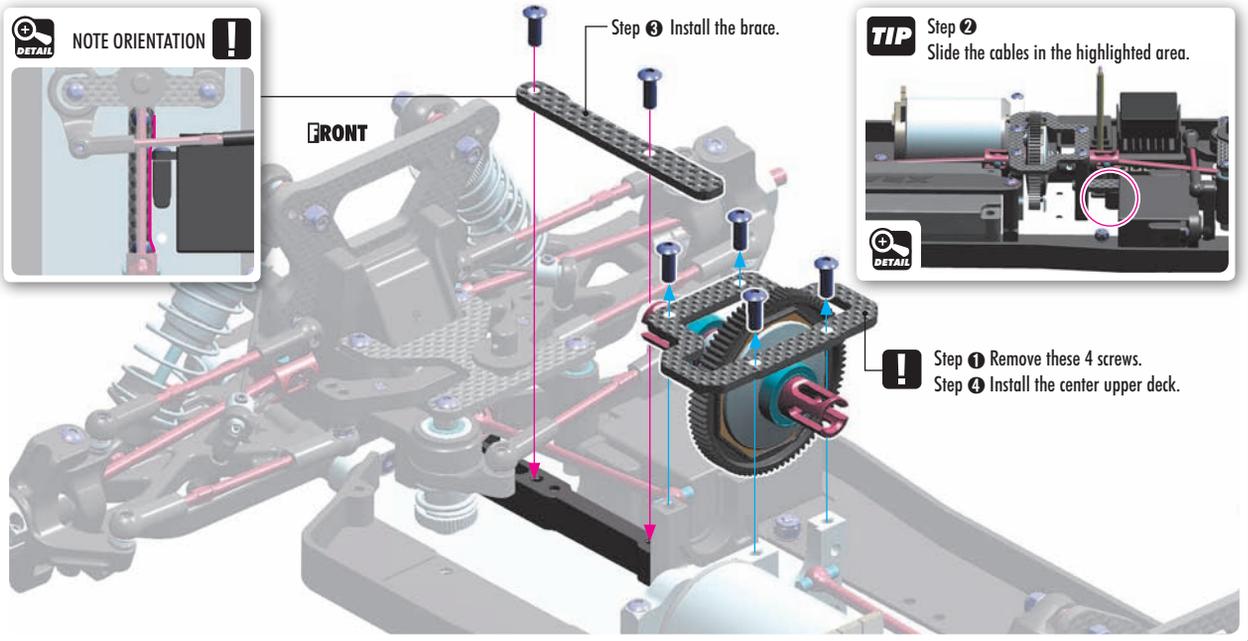


FRONT

Step 3 Install the brace.



Step 1 Remove these 4 screws.
Step 4 Install the center upper deck.





902312
SH M3x12

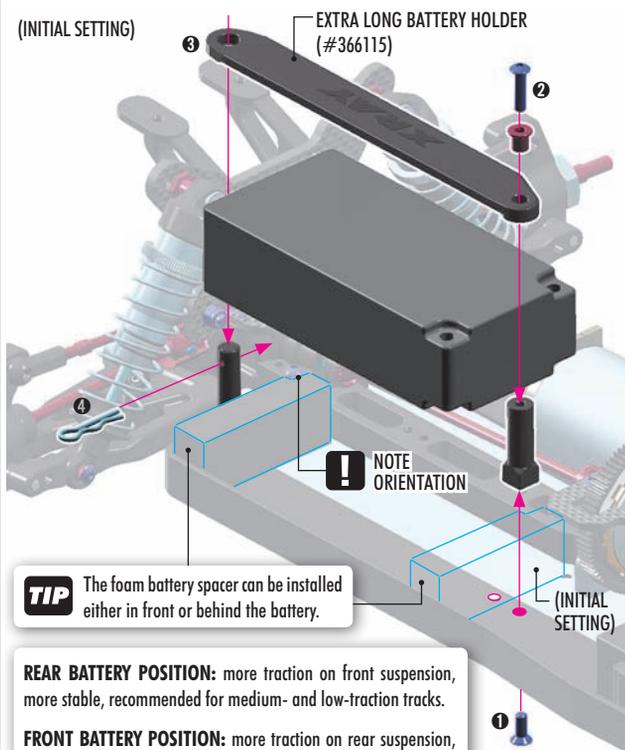


903310
SFH M3x10

ALTERNATIVE 1

FORWARD WEIGHT BALANCE POSITION

(INITIAL SETTING)



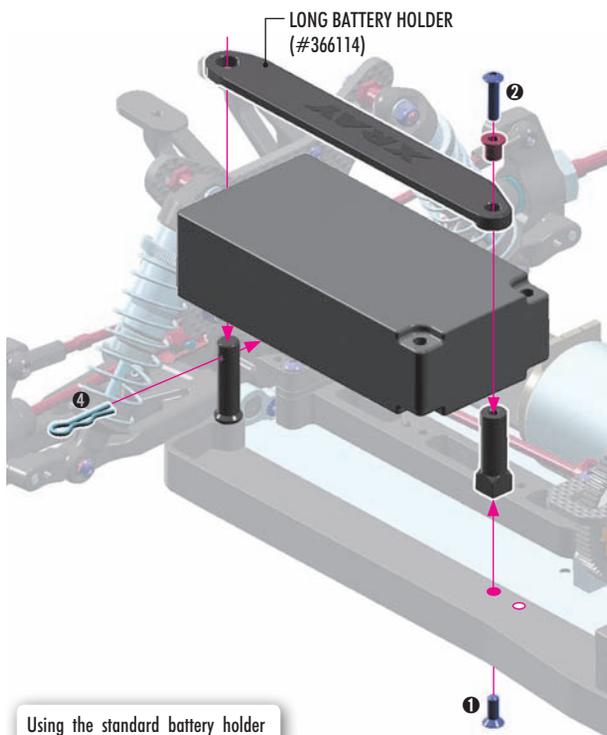
TIP The foam battery spacer can be installed either in front or behind the battery.

REAR BATTERY POSITION: more traction on front suspension, more stable, recommended for medium- and low-traction tracks.

FRONT BATTERY POSITION: more traction on rear suspension, more steering, recommended for medium- and low-traction tracks.

ALTERNATIVE 2

REARWARD WEIGHT BALANCE POSITION



Using the standard battery holder positions the battery to the rear.

- 1 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.
- 2 Before painting, wash the inside of the body with mild detergent, and then rinse and dry thoroughly.
- 3 Mask all windows.



- 4 Apply paint masks as appropriate.
- 5 Paint the body using paints formulated for polycarbonate bodies.
- 6 When the paint is dry, remove the masking.
- 7 Carefully cut out the body using appropriate scissors or cutting tools.
- 8 When you have finished cutting, peel off the external protective films.

LEXAN BODY	
#369703	STANDARD
#369704	LIGHT

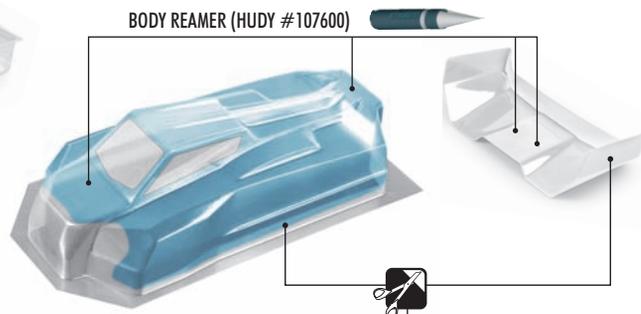
LEXAN REAR WING	
#363510	1.0mm STANDARD
#363511	1.5mm
#363512	2.0mm

#107872
VELCRO™ TAPE WITH DOUBLE-SIDED TAPE 8x500mm
OPTION



Double-sided Velcro™ tape is used to seal the body against the side guards.

BODY REAMER (HUDY #107600)

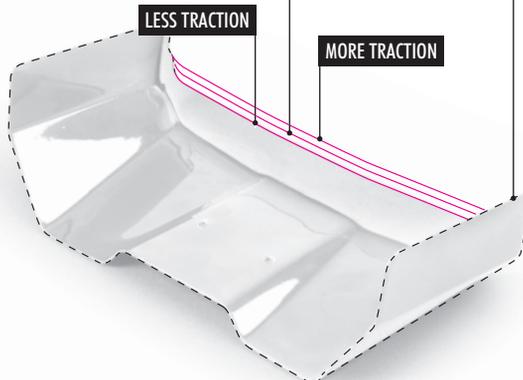


WING CUTTING LINE OPTIONS

INITIAL POSITION

LESS TRACTION

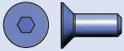
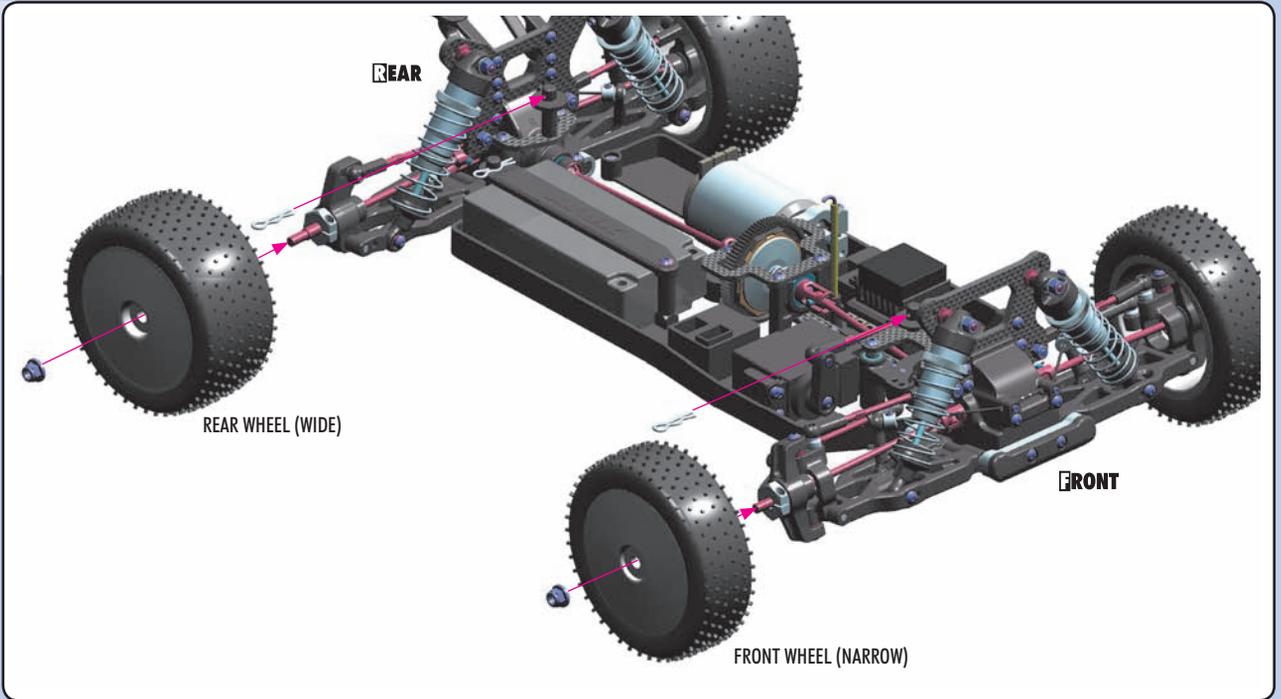
MORE TRACTION



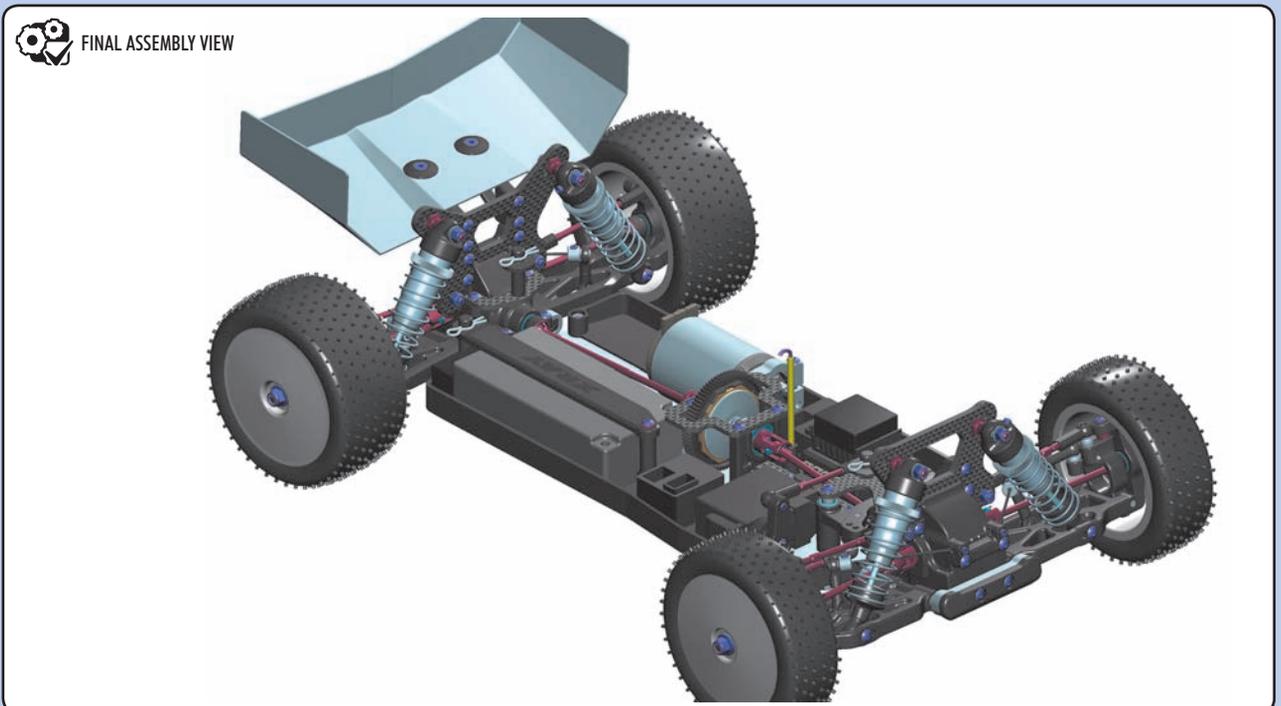
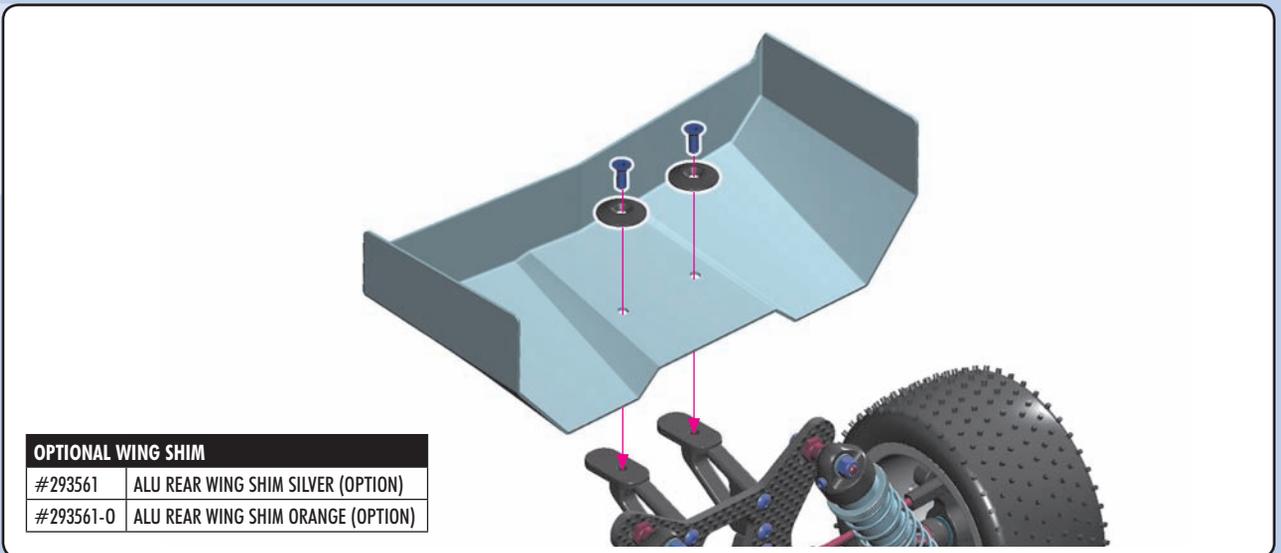
FINAL ASSEMBLY



960240
N M4



903308
SFH M3x8



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 XB4 ball-bearings are degreased and are lubricated with HUDY Bearing Oil. 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 #106230 HUDY Bearing Oil to lubricate the bearings.

HUDY #106230



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 check the drive shaft pins (both side and center) and if they show any wear must be immediately replaced by new pins. If the car is run with worn pins, excessive wear on the diff outdrives will result. The #106000 HUDY Drive Pin Replacement Tool (for 3mm Pins) is a compact, rugged multi-use tool set for replacing 3mm drive pins in drive shafts. Use the HUDY replacement drive shaft pins 3x12 (#106051).
- Regularly inspect and replace the connecting pins which connect the center drive shafts with the pinion gear, and also 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.

HUDY #106210



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.

www.teamxray.com

XRAY EUROPE

XRAY, K VÝSTAVISKU 6992, 91101 TRENCIN, SLOVAKIA, EUROPE
PHONE: +421-32-740 11 00, FAX: +421-32-740 11 09, info@teamxray.com

XRAY USA

RC AMERICA, 2030 Century Center Blvd #15, Irving, TX 75062, USA
PHONE: 214-744-2400, FAX: 214-744-2401, xray@rcamerica.com