

XRAY B4

1/10 LUXURY ELECTRIC OFF-ROAD CAR 4WD

19

INSTRUCTION MANUAL



MADE IN EUROPE

REEDY
International Offroad
Race of Champions
CHAMPION

3X EOS
EURO OFFROAD SERIES
CHAMPION
SEASON

11X EOS
EURO OFFROAD SERIES
WINNER
ROUND

33K
NATIONAL
CHAMPIONS

**EUROPEAN
CHAMPION
JUNIOR**

**WORLD
CHAMPION
JUNIOR**

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

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 warranty 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 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.

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 Výstavišku 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

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.

- 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 to get advice, or contact us via email at 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

<p>Part bags used</p>	<p>Assemble in the specified order</p>	<p>Assemble left and right sides the same way</p>	<p>Pay attention here</p>	<p>Assemble as many times as specified (here twice)</p>	<p>Apply threadlock</p>	<p>Apply CA glue</p>	<p>Apply oil</p>
<p>Scale</p>	<p>Apply grease</p>	<p>Optional parts</p>	<p>Ensure smooth non-binding movement</p>	<p>Tighten screw gently</p>	<p>Completed assembly</p>	<p>Detail</p>	<p>Apply cleaner</p>

TOOLS REQUIRED

<p>Scissors (HUDY #188990)</p>	<p>Special Tool for turnbuckles, nuts (HUDY #181090)</p>	<p>Turnbuckle Wrench 3mm (HUDY #181030)</p>	<p>Pocket Hobby Knife (HUDY #188981)</p>	<p>Side Cutters (HUDY #189010)</p>	<p>Combination Pliers (HUDY #189020)</p>	<p>RC Shock-Plier Uni Tool (HUDY #183011)</p>									
<p>Tweezer</p>	<p>HUDY TOOLS:</p> <table border="0"> <tr> <td>Allen 1.5mm</td> <td></td> <td>Socket 5.5mm</td> <td></td> <td>Arm Reamer 3.0mm</td> <td></td> </tr> <tr> <td>Allen 2.0mm</td> <td></td> <td>Socket 7.0mm</td> <td></td> <td>Reamer (HUDY #107600) or (HUDY #107601)</td> <td></td> </tr> </table>			Allen 1.5mm		Socket 5.5mm		Arm Reamer 3.0mm		Allen 2.0mm		Socket 7.0mm		Reamer (HUDY #107600) or (HUDY #107601)	
Allen 1.5mm		Socket 5.5mm		Arm Reamer 3.0mm											
Allen 2.0mm		Socket 7.0mm		Reamer (HUDY #107600) or (HUDY #107601)											

ITEMS INCLUDED

<p>HUDY Premium Silicone Oils Oil 500cSt (#106350)</p>	<p>HUDY Premium Silicone Oils Oil 700cSt (#106370)</p>	<p>HUDY Premium Silicone Oils Oil 10000cSt (#106510)</p>	<p>Graphite Grease (HUDY #106210)</p>
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EQUIPMENT REQUIRED

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

NOT INCLUDED

Set-up Book

To ensure that you always have access to the most up-to-date version of the HUDY Set-up Book, you can download it from the HUDY website 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

OPTION	#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.

XB4 TECH TIPS

TIP DRIVE SHAFT PIN SERVICING

To enjoy the longest possible lifespan of the drive shafts and diff outdrives, 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.



Do not use drive shafts when the pins are worn.

Press out the worn pins.

Press in new pins and regularly inspect for wear.



For quick & easy drive pin replacements use #106000 HUDY Drive Pin Replacement Tool together with #106036 Ejector Pivot Pin & Alternating Pivot 2.5mm.



To replace the worn pins use only premium HUDY drive pins (#106051 3.0mm dia x 10mm length) (#106053 2.5mm dia x 10mm length)

TIP GRAPHITE PARTS PREPARATION

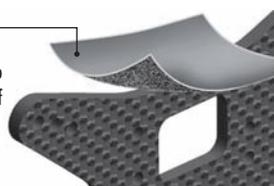
Follow this Tech Tip to prepare the graphite parts. Sand the edges with sandpaper, and then seal the edges with CA glue to reinforce them and help prevent delamination.

Prepare all XB4 Graphite Parts:

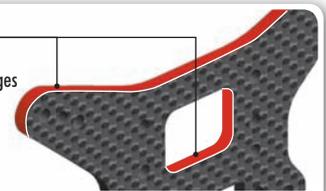
- Front shock tower
- Rear shock tower

Fine sandpaper

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



Apply CA glue to all edges of the graphite parts.

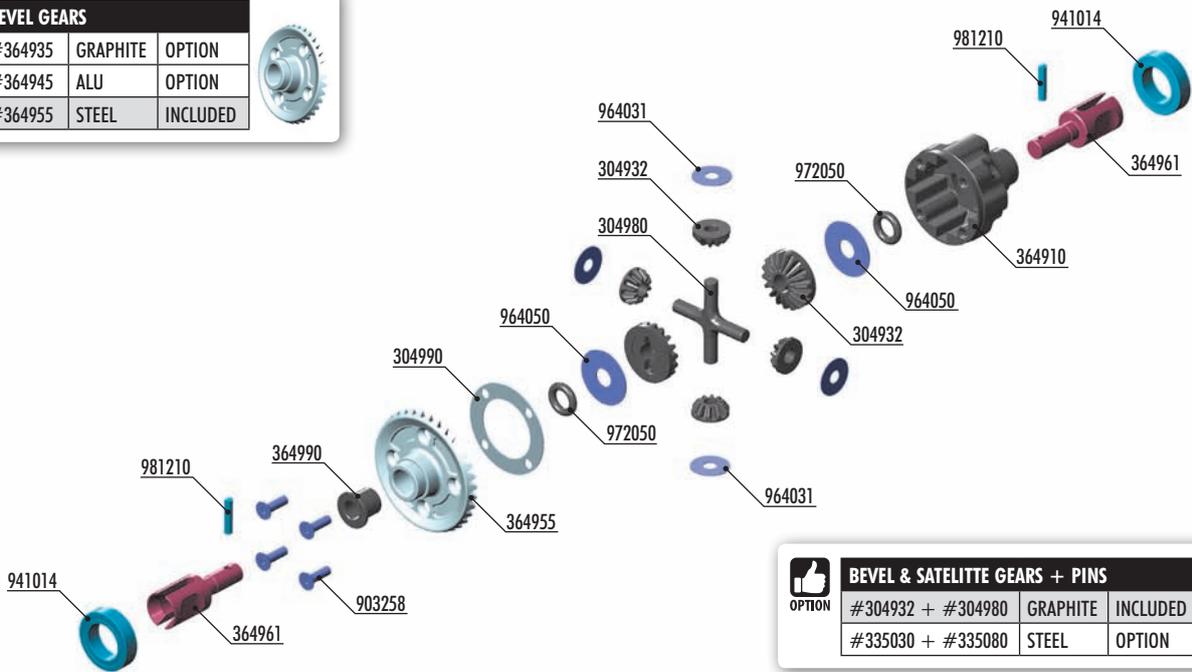


1. FRONT & REAR DIFFERENTIAL



BEVEL GEARS

OPTION	#	MATERIAL	STATUS
	#364935	GRAPHITE	OPTION
	#364945	ALU	OPTION
	#364955	STEEL	INCLUDED



BEVEL & SATELLITE GEARS + PINS

OPTION	#	MATERIAL	STATUS
	#304932 + #304980	GRAPHITE	INCLUDED
	#335030 + #335080	STEEL	OPTION



BAG



- 30 4932 GRAPHITE GEAR DIFF BEVEL & SATELLITE GEARS (2+4)
- 30 4980 COMPOSITE GEAR DIFF CROSS PIN
- 30 4990 DIFF GASKET (4)
- 36 4902 GEAR DIFFERENTIAL FOR 2.5MM PIN - SET
- 36 4910 COMPOSITE GEAR DIFFERENTIAL CASE
- 36 4955 STEEL DIFFERENTIAL BEVEL GEAR 35T
- 36 4961 GEAR DIFF OUTDRIVE ADAPTER FOR 2.5MM PIN - HUDY SPRING STEEL™ (2)

- 36 4990 COMPOSITE BEVEL GEAR BUSHING (2)
- 90 3258 HEX SCREW SFH 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 1210 PIN 2x10 (10)



964050
S 5x15x0.3

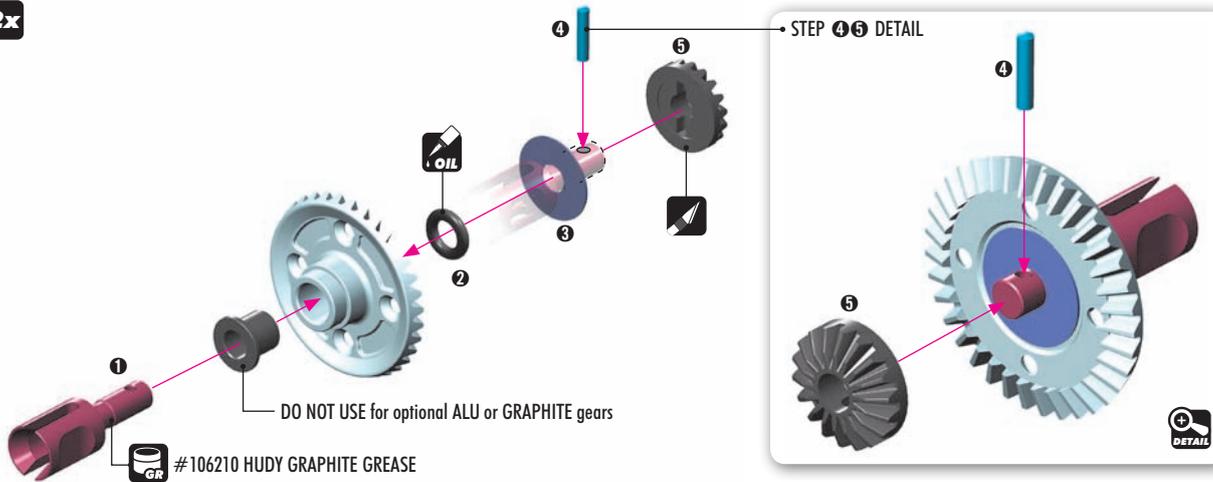


972050
O 5x2



981210
P 2x10

2x



964050
S 5x15x0.3

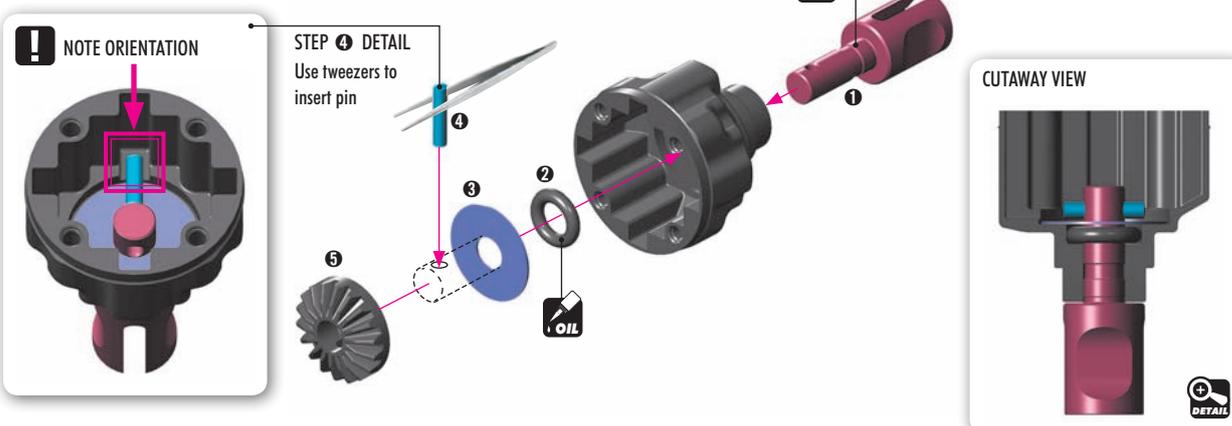


972050
O 5x2



981210
P 2x10

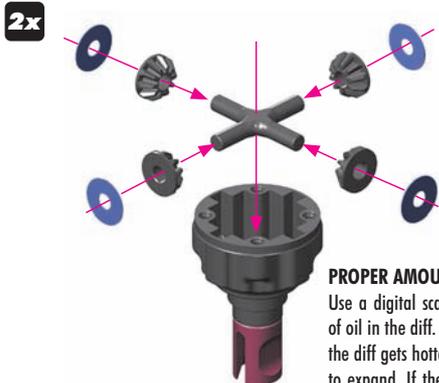
2x



1. FRONT & REAR DIFFERENTIAL



964031
S 3.5x10x0.2



2x

Front diff

Silicone oil 10 000cSt
Fill just above the cross-pins.

Rear diff

Silicone oil 10 000cSt
Fill just above the cross-pins.

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.



Fill differential up to the top of the diff cross-pins. 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)



$$9.80g + 1.10g = 10.90g$$

2 Slowly pour oil into the diff and watch the weight. Add 1.10g of oil into the diff. The approximate weight of the diff including oil is 10.90g.

TIPS FOR DIFFERENTIALS

TIP

FRONT DIFFERENTIAL

LOW TRACTION 5 000cSt (HUDY #106450)
MEDIUM-HIGH TRACTION 8 000cSt (HUDY #106480)
SUPER-HIGH TRACTION 10 000cSt (HUDY #106510)

NOTE:

Softer oil increases steering, harder oil increases stability.

REAR DIFFERENTIAL

LOW TRACTION 5 000cSt (HUDY #106450)
MEDIUM-HIGH TRACTION 8 000cSt (HUDY #106480)
SUPER-HIGH TRACTION 10 000cSt (HUDY #106510)

NOTE:

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

TIP

SET-UP BOOK

DIFFERENTIAL OIL



903258
SFH M2.5x8



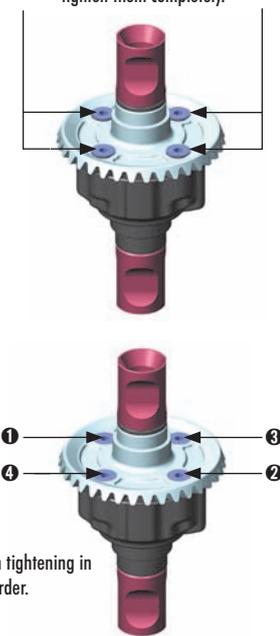
941014
BB 10x15x4

2x



2x

Tighten the screws equally but do NOT tighten them completely.

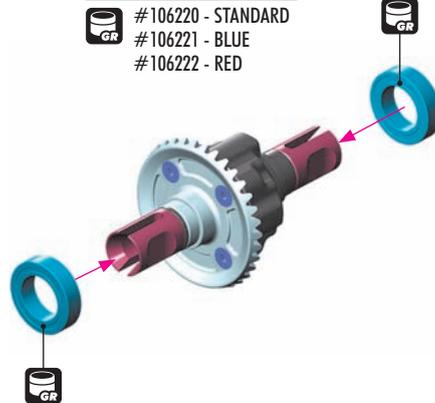


Finish tightening in this order.

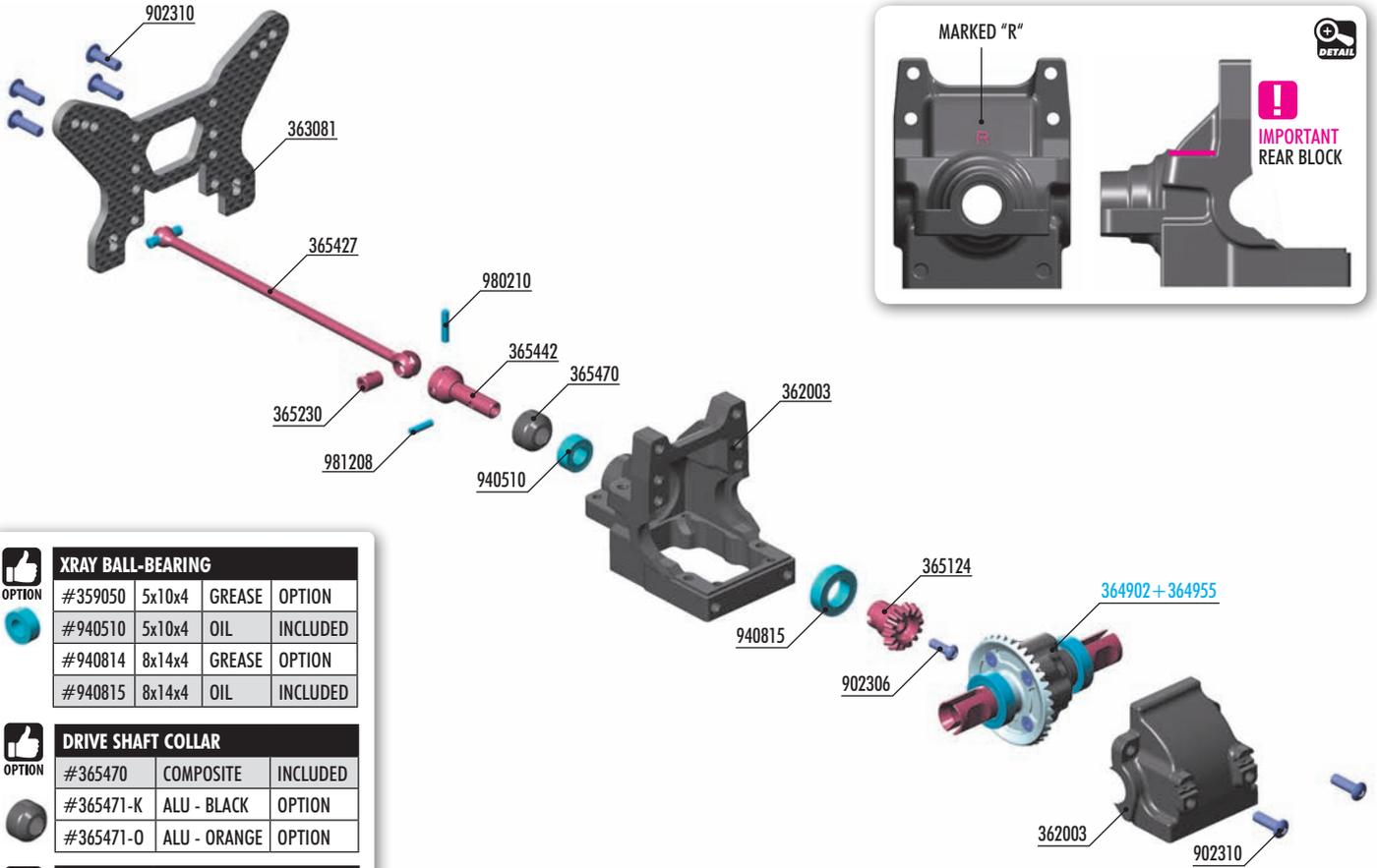
2x

Use HUDY Ball-Bearing Grease

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



2. REAR CENTRAL TRANSMISSION



XRAY BALL-BEARING			
OPTION	#359050	5x10x4	GREASE
	#940510	5x10x4	OIL
	#940814	8x14x4	GREASE
	#940815	8x14x4	OIL

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

BEVEL DRIVE GEARS		
OPTION	#365114	GRAPHITE
	#365134	STEEL

CENTRAL SHAFT UNIVERSAL JOINT		
	#365440	OPTION

BAG

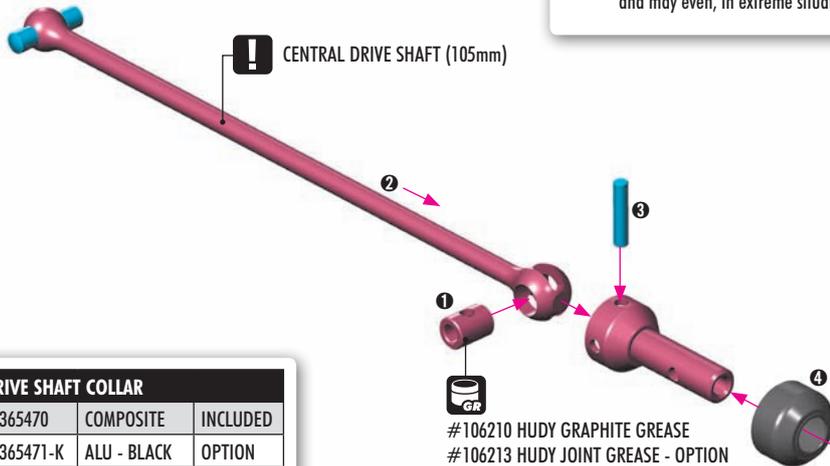
02

- 36 2003 DIFF BULKHEAD BLOCK SET REAR
- 36 3081 GRAPHITE SHOCK TOWER REAR 3.0MM
- 36 5124 STEEL BEVEL DRIVE GEAR 14T
- 36 5230 DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
- 36 5427 CENTRAL DRIVE SHAFT 105MM - HUDY SPRING STEEL™
- 36 5442 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 BALL-BEARING 5x10x4 RUBBER SEALED - OIL (2)
- 94 0815 BALL-BEARING 8x14x4 RUBBER SEALED - OIL (2)
- 98 0210 PIN 2x10 (10)
- 98 1208 PIN 2x8 (10)
- 36 4902 GEAR DIFFERENTIAL FOR 2.5MM PIN - 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			
OPTION	#365470	COMPOSITE	INCLUDED
	#365471-K	ALU - BLACK	OPTION
	#365471-O	ALU - ORANGE	OPTION

- #106210 HUDY GRAPHITE GREASE
- #106213 HUDY JOINT GREASE - OPTION

2. REAR CENTRAL TRANSMISSION

902306
SH M3x6

940510
BB 5x10x4

940815
BB 8x14x4

981208
P 2x8

Bearing with BLUE rubber covers

Bearing Oil (HUDY #106230)

5x10x4mm

8x14x4mm

GRAPHITE GREASE (HUDY #106210)

THREAD LOCK

NOTE ORIENTATION

IMPORTANT REAR BLOCK

XRAY BALL-BEARING			
#359050	5x10x4	GREASE	OPTION
#940510	5x10x4	OIL	INCLUDED
#940814	8x14x4	GREASE	OPTION
#940815	8x14x4	OIL	INCLUDED

902310
SH M3x10

FRONT

NOTE ORIENTATION

REAR DIFF 10 000 cSt

REAR

902310
SH M3x10

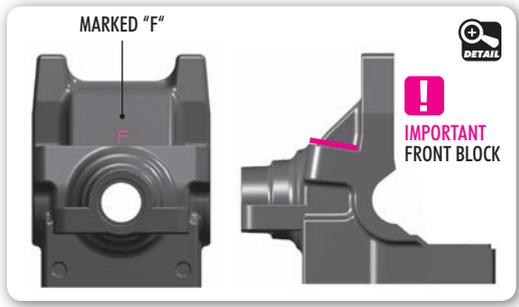
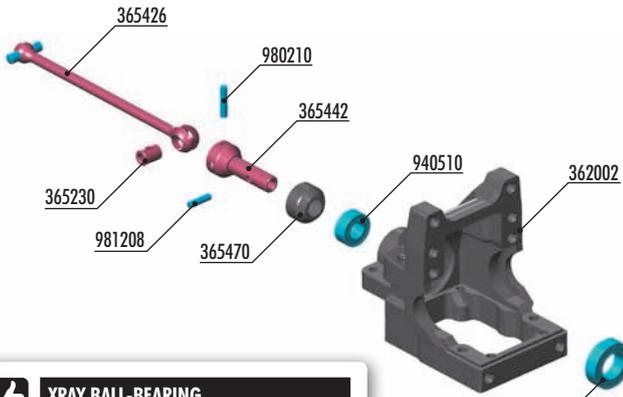
NOTE ORIENTATION

REAR

Follow the TECH TIP on page 5 to prepare graphite parts

TIP

2. FRONT CENTRAL TRANSMISSION

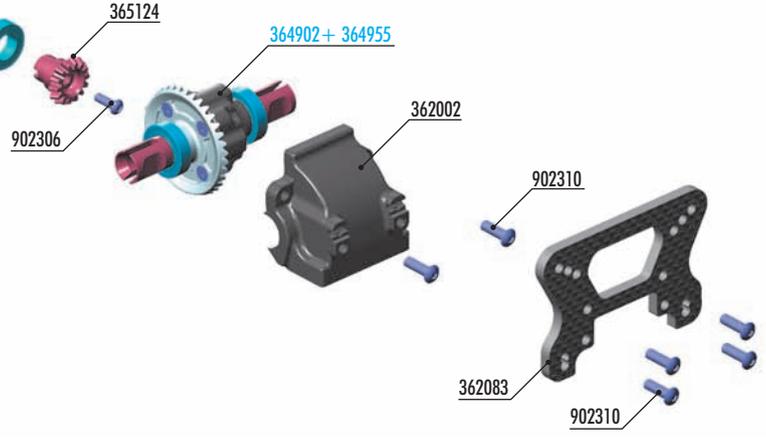


XRAY BALL-BEARING				
OPTION	#359050	5x10x4	GREASE	OPTION
	#940510	5x10x4	OIL	INCLUDED
	#940814	8x14x4	GREASE	OPTION
	#940815	8x14x4	OIL	INCLUDED

DRIVE SHAFT COLLAR			
OPTION	#365470	COMPOSITE	INCLUDED
	#365471-K	ALU - BLACK	OPTION
	#365471-O	ALU - ORANGE	OPTION

BEVEL DRIVE GEARS		
OPTION	#365114	GRAPHITE
	#365134	STEEL

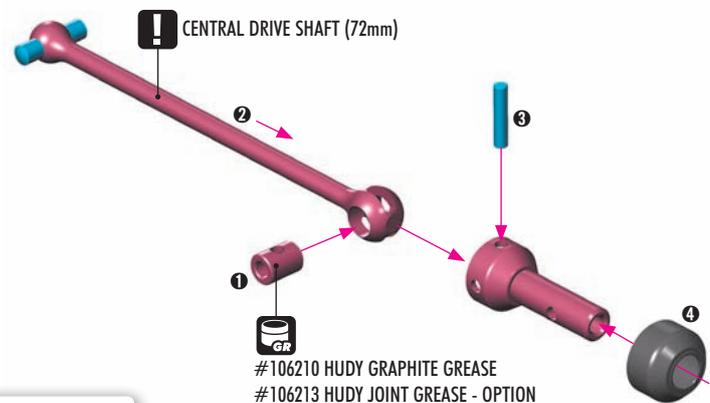
CENTRAL SHAFT UNIVERSAL JOINT		
	#365440	OPTION



- | | | | |
|---------|---|---------|---|
| 36 2002 | DIFF BULKHEAD BLOCK SET FRONT | 90 2310 | HEX SCREW SH M3x10 (10) |
| 36 2083 | GRAPHITE SHOCK TOWER FRONT 3.5MM | 94 0510 | BALL-BEARING 5x10x4 RUBBER SEALED - OIL (2) |
| 36 5124 | STEEL BEVEL DRIVE GEAR 14T | 94 0815 | BALL-BEARING 8x14x4 RUBBER SEALED - OIL (2) |
| 36 5230 | DRIVE SHAFT COUPLING - HUDY SPRING STEEL™ | 98 0210 | PIN 2x10 (10) |
| 36 5426 | CENTRAL DRIVE SHAFT 72MM - HUDY SPRING STEEL™ | 98 1208 | PIN 2x8 (10) |
| 36 5442 | CENTRAL SHAFT UNIVERSAL JOINT | | |
| 36 5470 | COMPOSITE DRIVE SHAFT SAFETY COLLAR - V2 (3) | 36 4902 | GEAR DIFFERENTIAL FOR 2.5MM PIN - SET |
| | | 36 4955 | STEEL DIFFERENTIAL BEVEL GEAR 35T |
| 90 2306 | HEX SCREW SH M3x6 (10) | | |



! 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			
OPTION	#365470	COMPOSITE	INCLUDED
	#365471-K	ALU - BLACK	OPTION
	#365471-O	ALU - ORANGE	OPTION

#106210 HUDY GRAPHITE GREASE
#106213 HUDY JOINT GREASE - OPTION

2. FRONT CENTRAL TRANSMISSION

902306
SH M3x6

940510
BB 5x10x4

940815
BB 8x14x4

981208
P 2x8

Bearing with BLUE rubber covers

Bearing Oil (HUDY #106230)

5x10x4mm

8x14x4mm

Bearing Oil (HUDY #106230)

GRAPHITE GREASE (HUDY #106210)

THREAD LOCK

IMPORTANT FRONT BLOCK

XRAY BALL-BEARING			
#359050	5x10x4	GREASE	OPTION
#940510	5x10x4	OIL	INCLUDED
#940814	8x14x4	GREASE	OPTION
#940815	8x14x4	OIL	INCLUDED

902310
SH M3x10

REAR

NOTE ORIENTATION

FRONT DIFF 10 000 cSt

FRONT

902310
SH M3x10

REAR

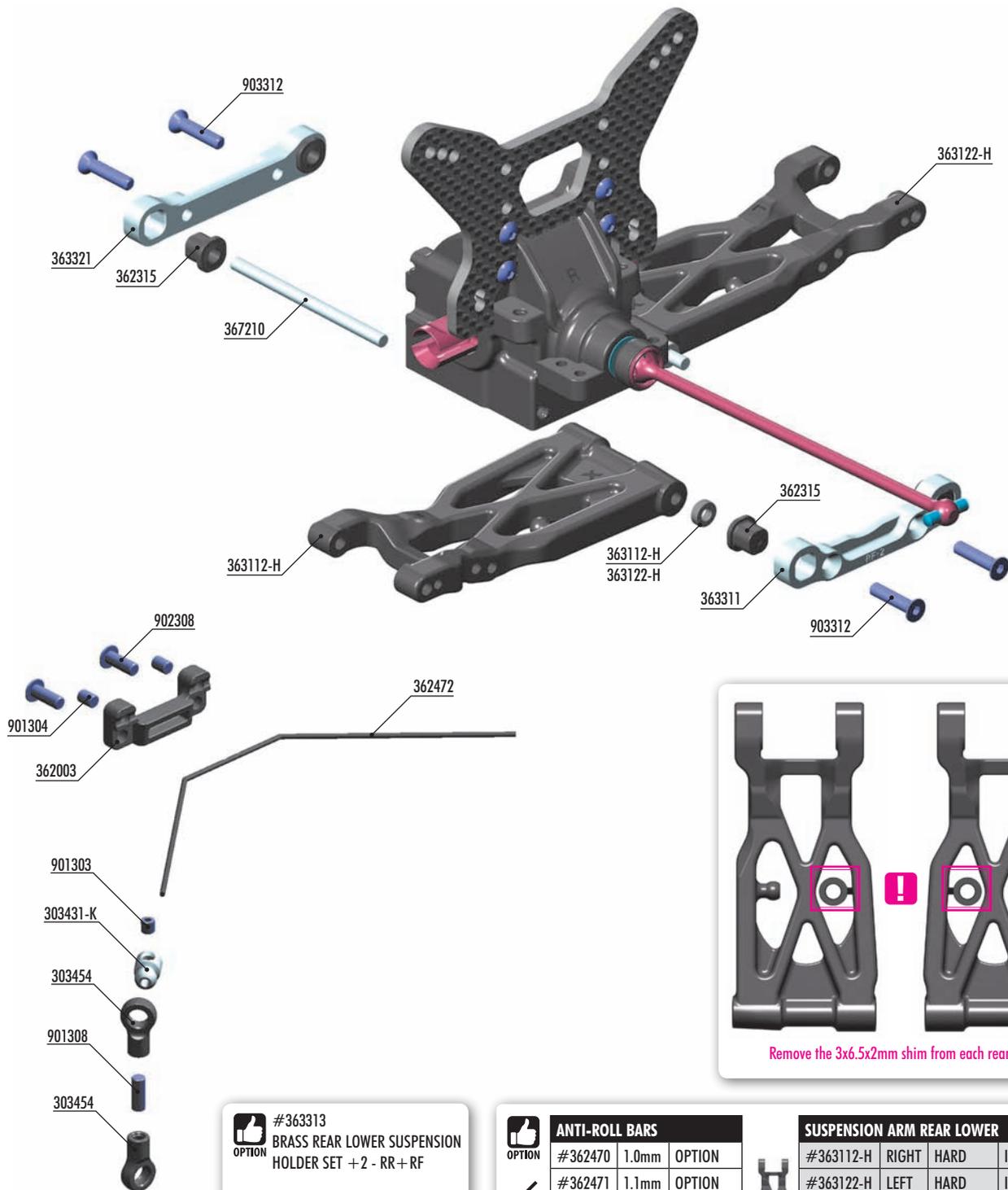
NOTE ORIENTATION

Follow the TECH TIP on page 5 to prepare graphite parts

TIP

FRONT

3. REAR SUSPENSION



#363313
OPTION BRASS REAR LOWER SUSPENSION HOLDER SET +2 - RR+RF

OPTION ANTI-ROLL BARS

#362470	1.0mm	OPTION
#362471	1.1mm	OPTION
#362472	1.2mm	INCLUDED
#362473	1.3mm	OPTION
#362474	1.4mm	OPTION
#362476	1.6mm	OPTION
#362478	1.8mm	OPTION
#362480	2.0mm	OPTION

SUSPENSION ARM REAR LOWER

#363112-H	RIGHT	HARD	INCLUDED
#363122-H	LEFT	HARD	INCLUDED
#363112-G	RIGHT	GRAPHITE	OPTION
#363122-G	LEFT	GRAPHITE	OPTION

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 2472 ANTI-ROLL BAR 1.2 MM
- 36 3112-H COMPOSITE SUSPENSION ARM REAR LOWER RIGHT - HARD
- 36 3122-H COMPOSITE SUSPENSION ARM REAR LOWER LEFT - HARD
- 36 3311 ALU REAR LOWER SUSP. HOLDER +2 - FRONT - 7075 T6 (5MM)
- 36 3321 ALU REAR LOWER SUSP. HOLDER +2 - REAR - 7075 T6 (5MM)
- 36 7210 SUSPENSION PIVOT PIN (2)

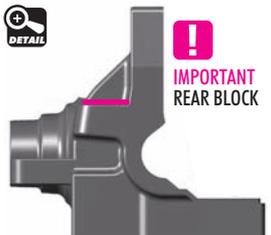
- 90 1303 HEX SCREW SB M3x3 (10)
- 90 1304 HEX SCREW SB M3x4 (10)
- 90 1308 HEX SCREW SB M3x8 (10)
- 90 2308 HEX SCREW SH M3x8 (10)
- 90 3312 HEX SCREW SFH M3x12 (10)

3. REAR SUSPENSION

10
From Rear Arm
SHIM 3x6.5x2



903312
SFH M3x12



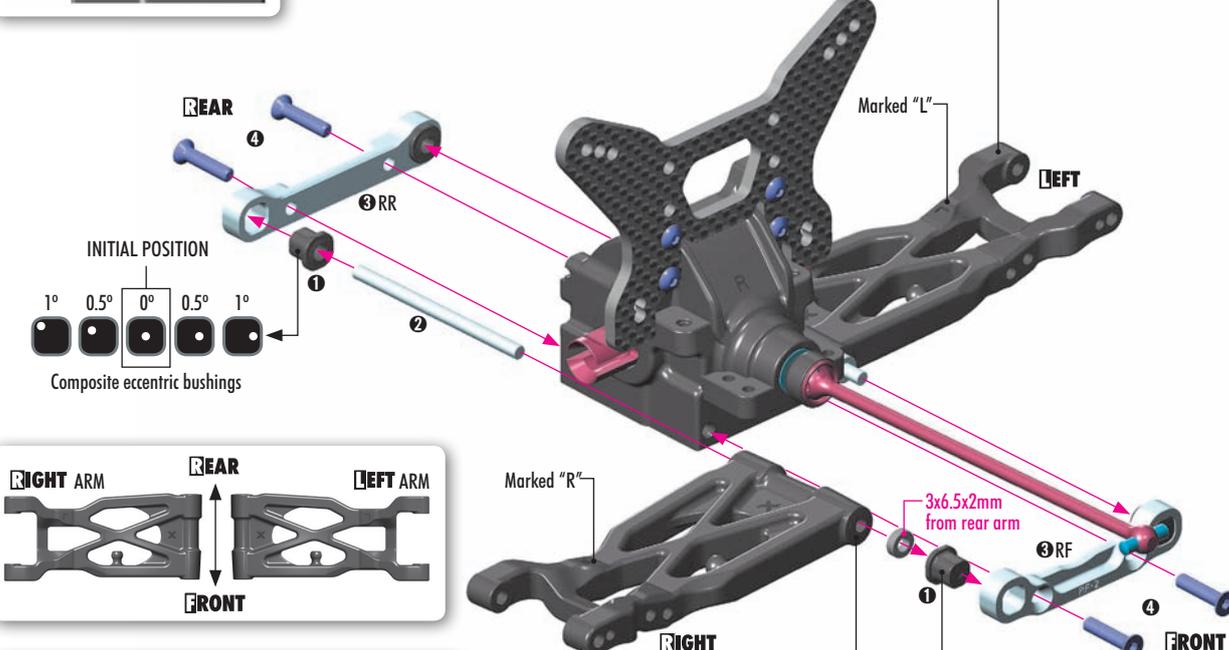
IMPORTANT
REAR BLOCK

SUSPENSION ARM REAR LOWER

Part #	Side	Material	Status
#363112-H	RIGHT	HARD	INCLUDED
#363122-H	LEFT	HARD	INCLUDED
#363112-G	RIGHT	GRAPHITE	OPTION
#363122-G	LEFT	GRAPHITE	OPTION



Check for free movement



INITIAL POSITION

Composite eccentric bushings

1° 0.5° 0° 0.5° 1°

Marked "L"

Marked "R"

3x6.5x2mm from rear arm

INITIAL POSITION

1° 0.5° 0° 0.5° 1°

Composite eccentric bushings

All possible mounting alternatives of eccentric bushings

TIP

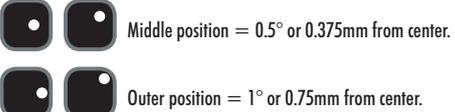
If the suspension arm does not move freely use a HUDY Arm Reamer to size the holes of the arms

Arm Reamer 3.0mm (HUDY #107633)

SET-UP BOOK

TOE-IN
ANTI-SQUAT
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 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	0	2°
0	0	0	3°
0	0	0	1°
0	0	0	3°
0	0	0	2°
0	0	0	4°
0	0	0	1°
0	0	0	2°
0	0	0	0°

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

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

TOE-IN			(°)
RR	RF		
0	0	0	3°
0	0	0	4°
0	0	0	2°
0	0	0	2°
0	0	0	3°
0	0	0	1°
0	0	0	4°
0	0	0	5°
0	0	0	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°

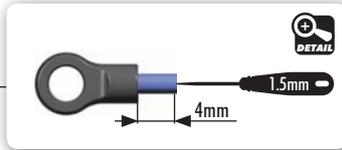
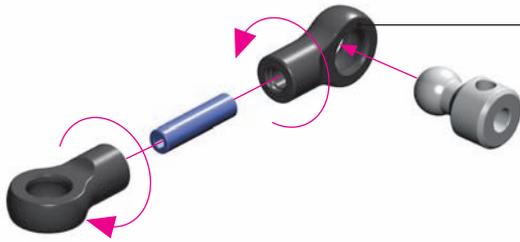
0(RR) - 1 (RF) = 3°  = 3°

3. REAR SUSPENSION



901308
SB M3x8

2x
L=R



901303
SB M3x3



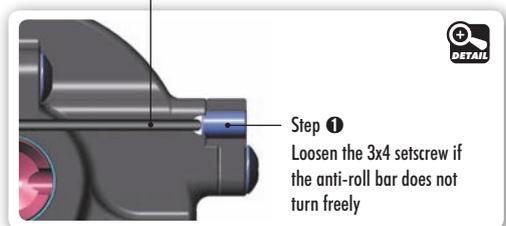
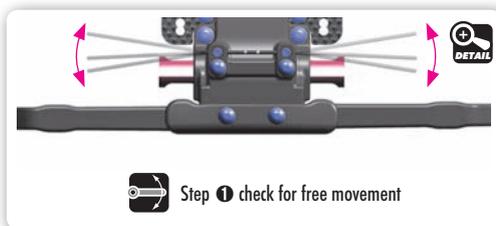
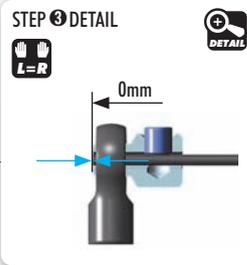
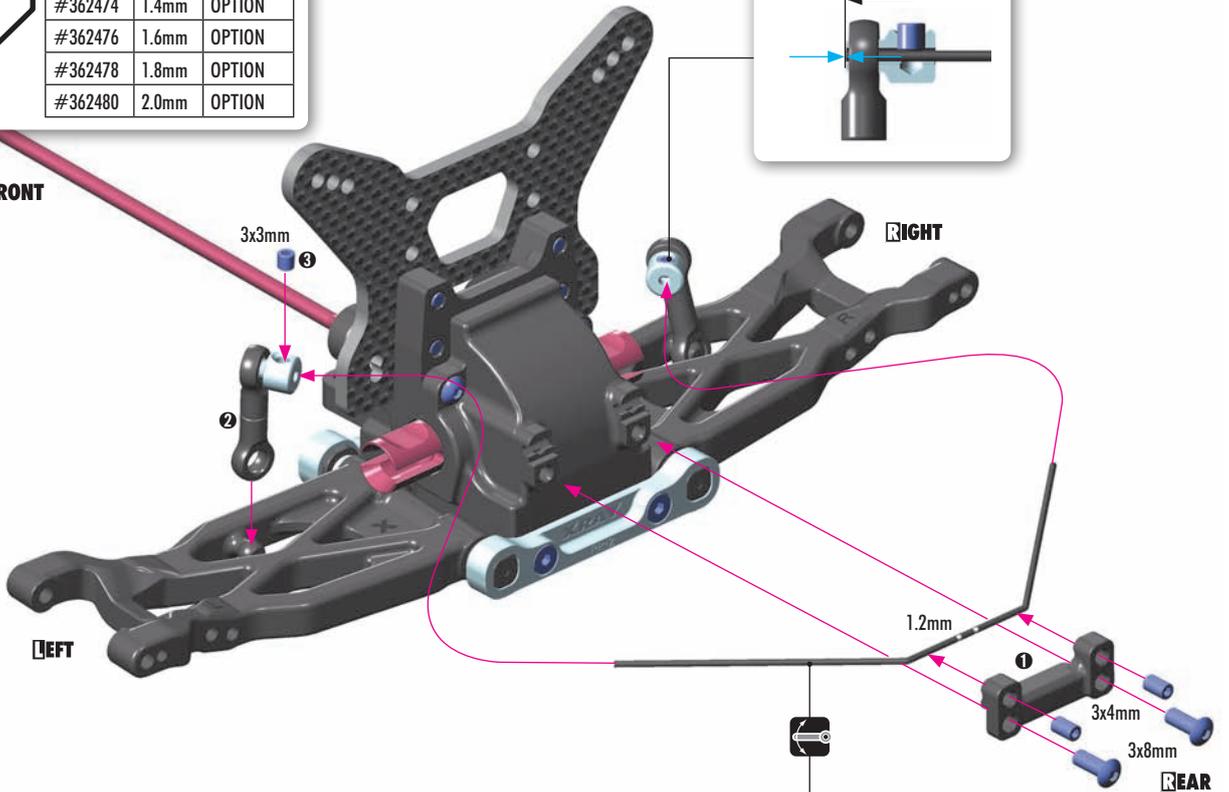
901304
SB M3x4



902308
SH M3x8

OPTION	ANTI-ROLL BARS		
#362470	1.0mm	OPTION	
#362471	1.1mm	OPTION	
#362472	1.2mm	INCLUDED	
#362473	1.3mm	OPTION	
#362474	1.4mm	OPTION	
#362476	1.6mm	OPTION	
#362478	1.8mm	OPTION	
#362480	2.0mm	OPTION	

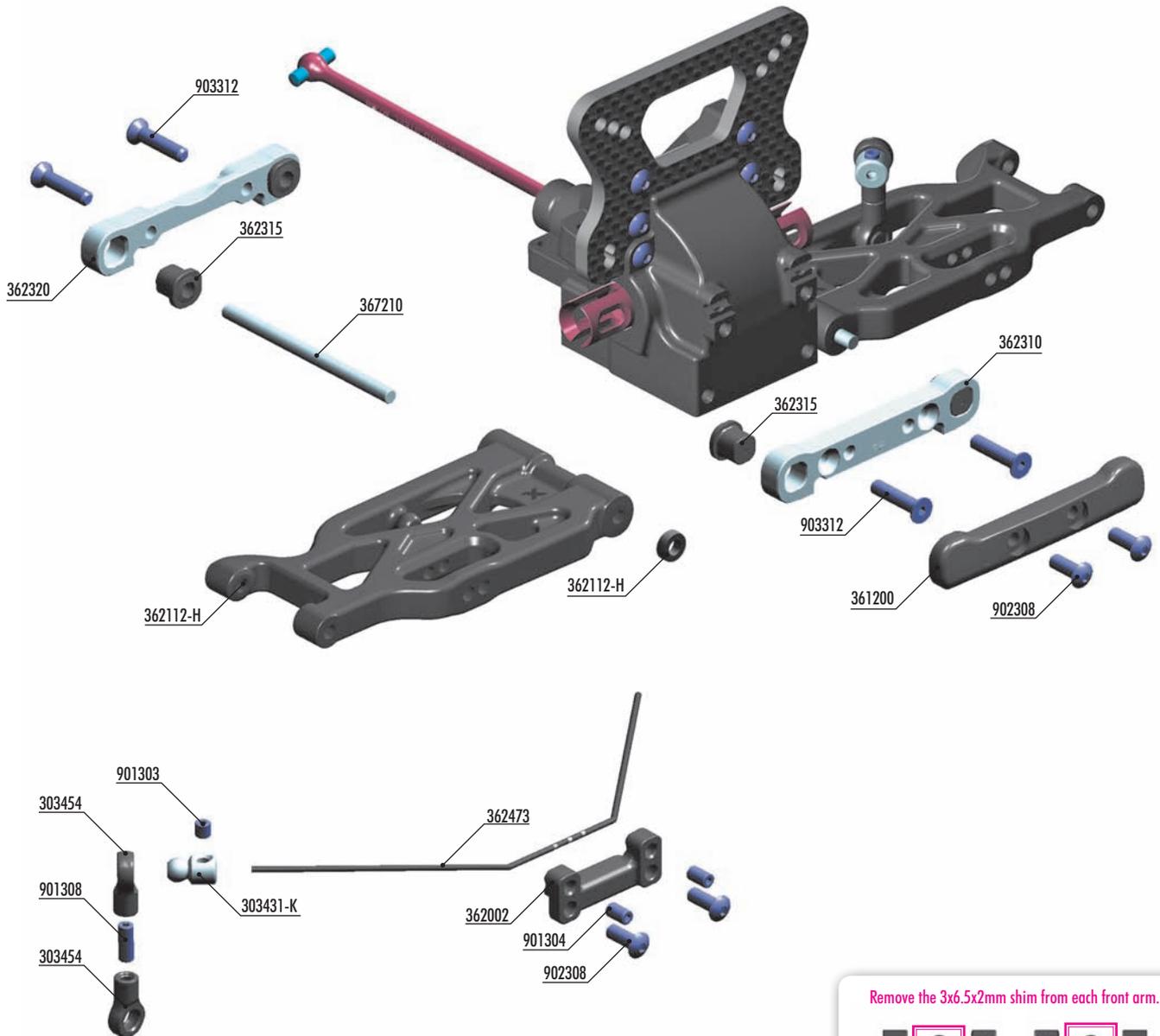
FRONT



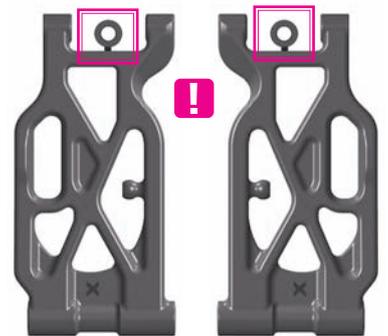
SET-UP
BOOK

ANTI-ROLL BAR

3. FRONT SUSPENSION



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



ANTI-ROLL BARS		
#362470	1.0mm	OPTION
#362471	1.1mm	OPTION
#362472	1.2mm	OPTION
#362473	1.3mm	INCLUDED
#362474	1.4mm	OPTION
#362476	1.6mm	OPTION
#362478	1.8mm	OPTION
#362480	2.0mm	OPTION

SUSPENSION ARM FRONT LOWER			
#362112	MEDIUM	OPTION	
#362112-H	HARD	INCLUDED	
#362112-G	GRAPHITE	OPTION	

BAG

03

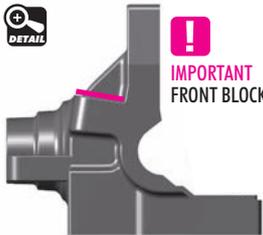
30 3431-K	ALU 4.9MM BALL END - BLACK (2)	90 1303	HEX SCREW SB M3x3 (10)
30 3454	BALL JOINT 4.9MM - OPEN (4)	90 1304	HEX SCREW SB M3x4 (10)
36 1200	COMPOSITE BUMPER - V2	90 1308	HEX SCREW SB M3x8 (10)
36 2002	DIFF BULKHEAD BLOCK SET FRONT - V2	90 2308	HEX SCREW SH M3x8 (10)
36 2112-H	COMPOSITE SUSPENSION ARM FRONT LOWER - HARD	90 3312	HEX SCREW SFH M3x12 (10)
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 2473	ANTI-ROLL BAR 1.3 MM		
36 7210	SUSPENSION PIVOT PIN (2)		

3. FRONT SUSPENSION

10
From Front Arm
SHIM 3x6.5x2



903312
SFH M3x12



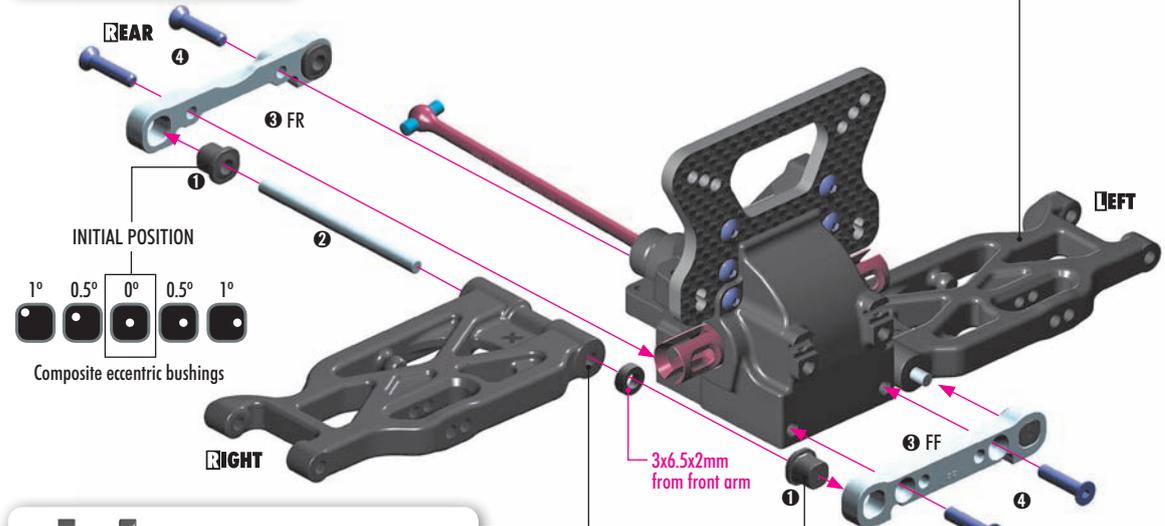
IMPORTANT FRONT BLOCK

SUSPENSION ARM FRONT LOWER

#	TYPE	STATUS
#362112	MEDIUM	OPTION
#362112-H	HARD	INCLUDED
#362112-G	GRAPHITE	OPTION



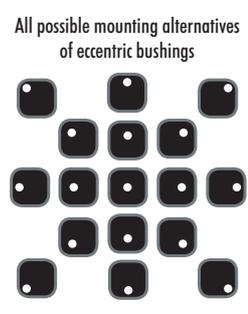
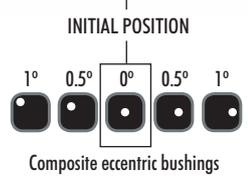
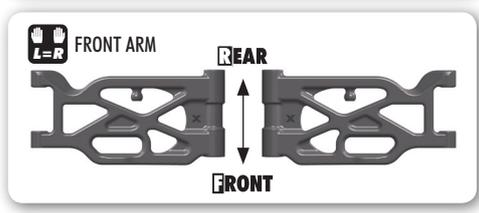
Check for free movement



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)

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

FF	FR	(mm)
		+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°

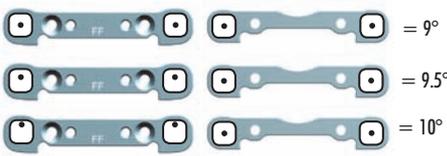
0.5(FF) - 0(FR) = 9.5°

1(FF) - 0(FR) = 10°

TRACK-WIDTH

FF	FR	(mm)
		+1.5mm
		0mm
		-1.5mm

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



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.

3. FRONT SUSPENSION

901308
SB M3x8

2x **L=R**

902308
SH M3x8

901303
SB M3x3

901304
SB M3x4

902308
SH M3x8

STEP 1 DETAIL

L=R

0mm

ANTI-ROLL BARS		
#362470	1.0mm	OPTION
#362471	1.1mm	OPTION
#362472	1.2mm	OPTION
#362473	1.3mm	INCLUDED
#362474	1.4mm	OPTION
#362476	1.6mm	OPTION
#362478	1.8mm	OPTION
#362480	2.0mm	OPTION

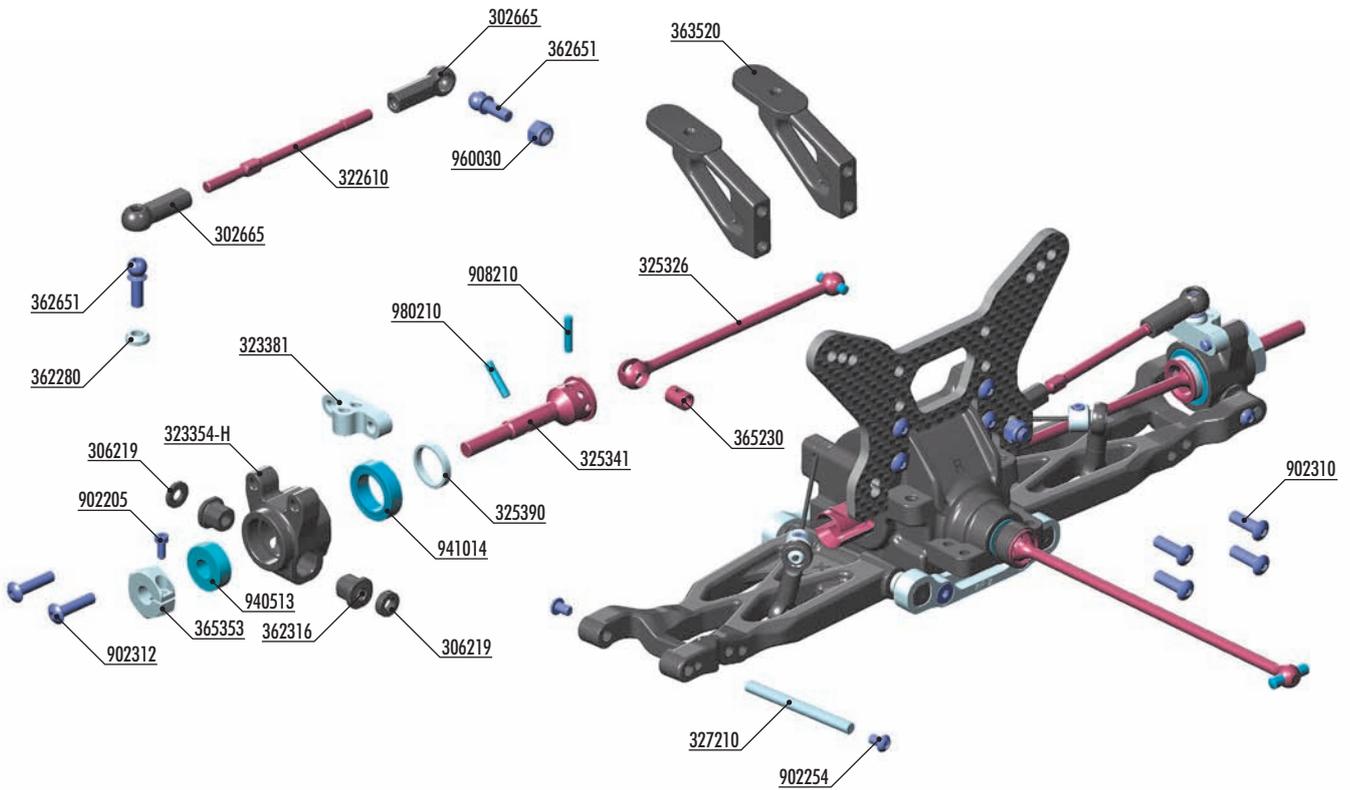
SET-UP BOOK

ANTI-ROLL BAR

Step 1 check for free movement

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

4. REAR TRANSMISSION



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

XRAY BALL-BEARING

#940512	5x12x4	OIL	OPTION
#941015	10x15x4	OIL	OPTION
#940513	5x12x4	GREASE	INCLUDED
#941014	10x15x4	GREASE	INCLUDED

REAR UPRIGHTS

#323354-H	COMPOSITE - H	INCLUDED
#323354-G	COMPOSITE - G	OPTION
#323355	ALU	OPTION

ALU CONICAL SHIM

#362280	SILVER	INCLUDED
#362280-K	BLACK	OPTION
#362280-O	ORANGE	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

WHEEL 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	INCLUDED
#365356	+1.5mm - 2 slots	OPTION
#365355	+0.75mm - 1 slot	OPTION
#365353	0mm - 0 slots	OPTION
#365354	-0.75mm - Lightw.	OPTION

WHEEL HUBS 14MM

#365352	+0.75mm	OPTION
#365350	0mm	OPTION
#365351	-0.75mm	OPTION



- 30 2665 COMPOSITE BALL JOINT 4.9MM - CLOSED WITH HOLE (4)
- 30 6219 CCOMPOSITE SET OF SERVO SHIMS (4)
- 32 2610 ADJ. TURNBUCKLE M3 L/R 55 MM - SPRING STEEL (2)
- 32 3354-H COMPOSITE UPRIGHT REAR - HARD
- 32 3381 ALU REAR HUB PLATE FOR MULTI ADJ. UPRIGHT - 7075 T6
- 32 5326 REAR DRIVE SHAFT 73MM WITH 2.5MM PIN - SPRING STEEL™
- 32 5341 REAR DRIVE AXLE LB - HUDY SPRING STEEL™
- 32 5390 ALU SHIM 10x12x2MM (2)
- 32 7210 FRONT SUSPENSION PIVOT PIN (2)
- 36 2280 ALU CONICAL SHIM 3x6x2.0MM (10)
- 36 2316 OPEN ECCENTRIC BUSHING SET (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 5353 ALU WHEEL HUB 12MM (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)
- 94 0513 BALL-BEARING 5x12x4 RUBBER SEALED - GREASE (2)
- 94 1014 BALL-BEARING 10x15x4 RUBBER SEALED - GREASE (2)
- 96 0030 NUT M3 (10)
- 98 0210 PIN 2x10 (10)

4. REAR TRANSMISSION

2x

980210
P 2x10

DRIVE SHAFT (73mm)

LONG AXLE

#106210 HUDY GRAPHITE GREASE
#106213 HUDY JOINT GREASE - OPTION

DETAIL Detail step 3

INITIAL SETTING

Drive shaft positions
← 4 | 3 | 2 | 1 →

2x

940513
BB 5x12x4

941014
BB 10x15x4

980210
P 2x10

902205
SH M2x5

Use HUDY Ball-Bearing Grease

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

10x15x4mm

5x12x4mm

Bearing with BLACK rubber covers

WHEEL 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	INCLUDED
#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 **MORE OFFSET**
Rear - more traction Rear - less traction
Front - more steering Front - less steering

OPTION **XRAY BALL-BEARING**

#940512	5x12x4	OIL	OPTION
#941015	10x15x4	OIL	OPTION
#940513	5x12x4	GREASE	INCLUDED
#941014	10x15x4	GREASE	INCLUDED

OPTION **REAR UPRIGHTS**

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

2x

902312
SH M3x12

NOTE ORIENTATION
INITIAL SETTING

ALTERNATIVE ORIENTATION

INITIAL SETTING

INITIAL SETTING

INITIAL SETTING

WARNING
DO NOT USE POSITIONS

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

4. REAR TRANSMISSION

IO

306219
SHIM 3x6x1

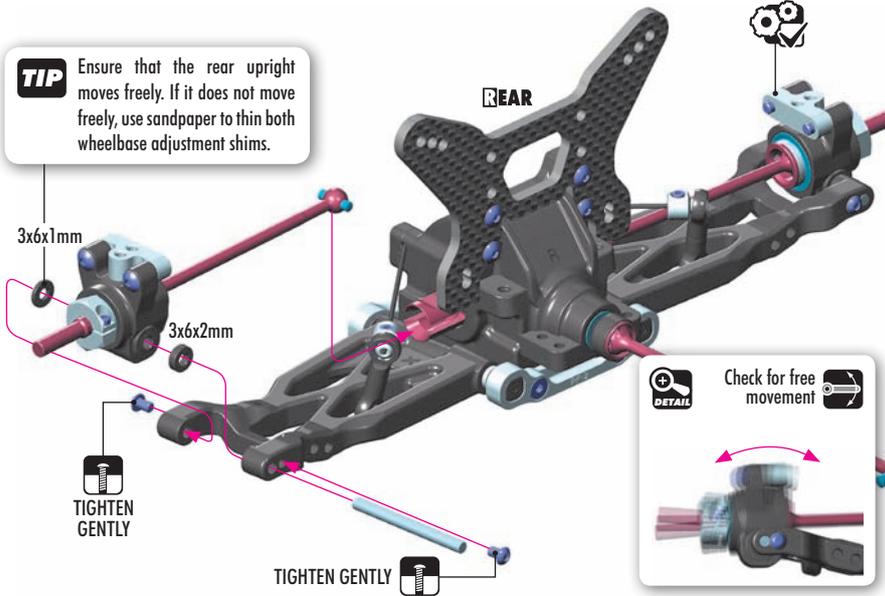
IO

306219
SHIM 3x6x2



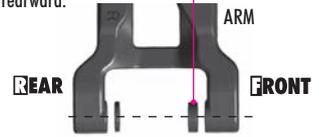
902254
SH M2.5x4

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



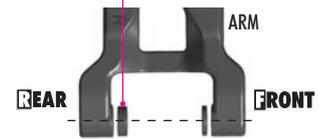
LONGER WHEELBASE (INITIAL SETTING)

Adjustment Shim IN FRONT OF HUB moves hub rearward.



SHORTER WHEELBASE

Adjustment Shim BEHIND HUB moves hub forward.



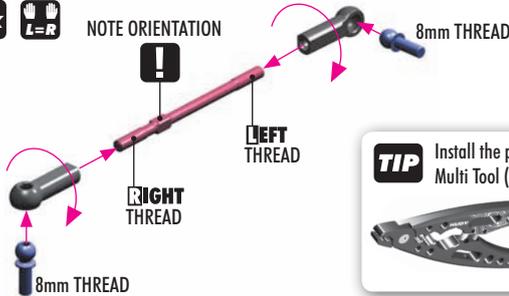
SET-UP BOOK

WHEELBASE

2x



NOTE ORIENTATION



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



SET-UP BOOK

CAMBER



960030
N M3

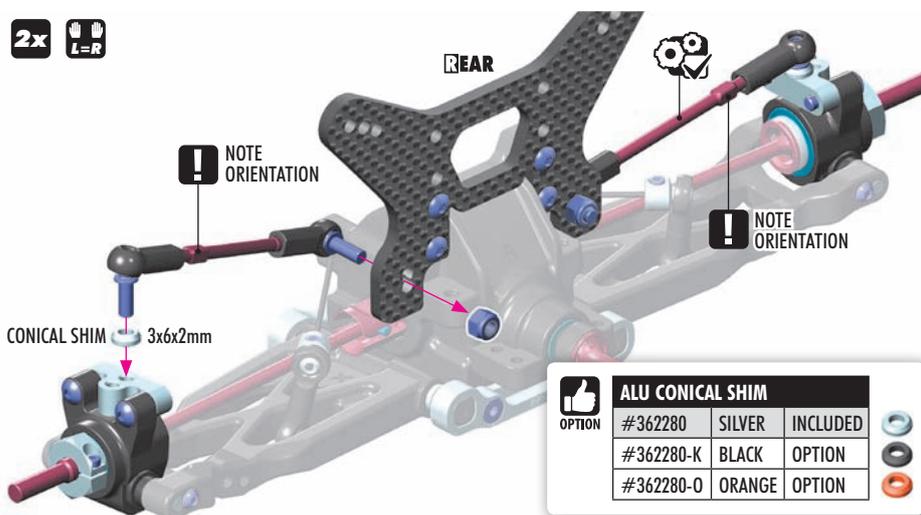


362280
CON. SHIM 3x6x2

2x



NOTE ORIENTATION



NOTE ORIENTATION



INITIAL SETTING



INITIAL SETTING



SET-UP BOOK

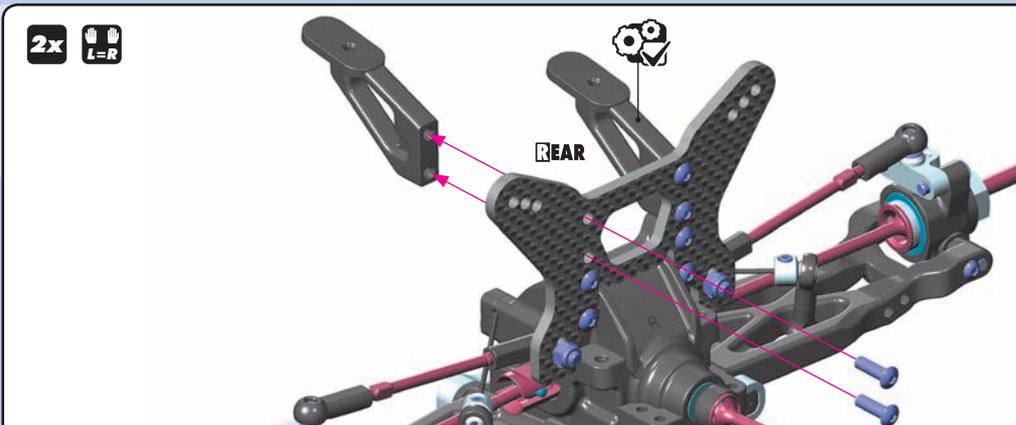
ROLL CENTER

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



902310
SH M3x10

2x



4. FRONT TRANSMISSION



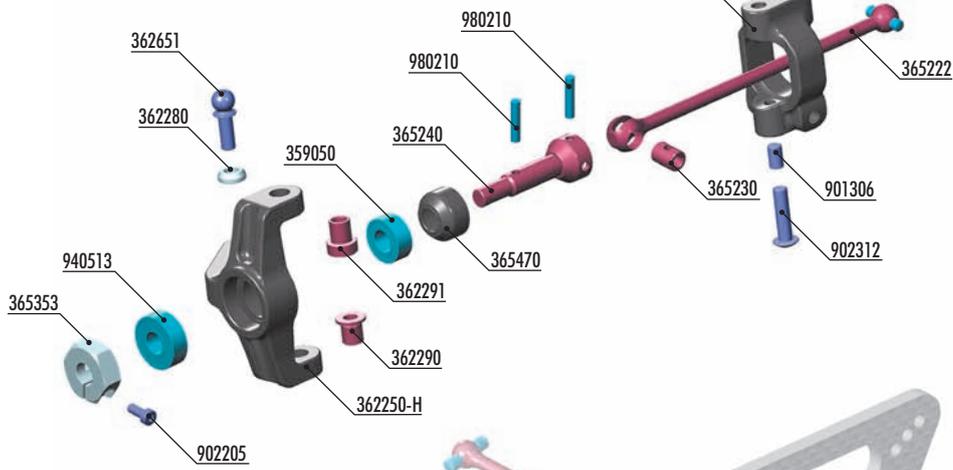
WHEEL HUBS 12MM			
#365360	+4.5mm	OPTION	
#365359	+3.75mm	OPTION	
#365358	+3.00mm	OPTION	
#365357	+2.25mm	OPTION	
#365356	+1.5mm	OPTION	
#365355	+0.75mm	OPTION	
#365353	0mm	INCLUDED	
#365354	-0.75mm	OPTION	



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



C-HUBS			
#362210	RIGHT 9° - M	OPTION	
#362210-H	RIGHT 9° - H	INCLUDED	
#362211	RIGHT 6°	OPTION	
#362234	ALU RIGHT 12°	OPTION	
#362220	LEFT 9° - M	OPTION	
#362220-H	LEFT 9° - H	INCLUDED	
#362221	LEFT 6°	OPTION	
#362244	ALU LEFT 12°	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	



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



STEERING BLOCK			
#362250	MEDIUM	OPTION	
#362250-H	HARD	INCLUDED	
#362250-G	GRAPHITE	OPTION	



XRAY BALL-BEARING			
#940510	5x10x4	OIL	OPTION
#940512	5x12x4	OIL	OPTION
#359050	5x10x4	GREASE	INCLUDED
#940513	5x12x4	GREASE	INCLUDED



DRIVE SHAFT COLLAR			
#365470	COMPOSITE	INCLUDED	
#365471-K	ALU - BLACK	OPTION	
#365471-O	ALU - ORANGE	OPTION	



#365201
ECS FRONT DRIVE SHAFT 81MM (2.5mm PIN)
- HUDY SPRING STEEL™

BAG

04

- 30 2665 COMPOSITE BALL JOINT 4.9MM - CLOSED WITH HOLE (4)
- 36 2210-H COMPOSITE C-HUB 9° DEG. RIGHT - HARD
- 36 2220-H COMPOSITE C-HUB 9° DEG. LEFT - HARD
- 36 2250-H COMPOSITE STEERING BLOCK - HARD
- 36 2280 ALU CONICAL SHIM 3x6x2.0MM (10)
- 36 2290 STEEL STEERING BUSHING - SHORT (2)
- 36 2291 STEEL STEERING BUSHING - LONG (2)
- 36 2610 ADJ. TURNBUCKLE M3 L/R 50 MM - SPRING STEEL (2)
- 36 2651 BALL END 4.9MM WITH THREAD 8MM (2)
- 36 2652 BALL END 4.9MM WITH THREAD 10MM (2)
- 36 5222 FRONT DRIVE SHAFT 81MM WITH 2.5MM PIN - HUDY SPRING STEEL™
- 36 5230 DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
- 36 5240 FRONT DRIVE AXLE - HUDY SPRING STEEL™

- 36 5353 ALU WHEEL HUB 12MM (2)
- 36 5470 COMPOSITE DRIVE SHAFT SAFETY COLLAR (3)
- 36 7220 FRONT ARM PIVOT PIN (2)
- 35 9050 BALL-BEARING 5x10x4 STEEL SEALED - GREASE (2)
- 90 1306 HEX SCREW SB M3x6 (10)
- 90 2205 HEX SCREW SH M2x5 (10)
- 90 2312 HEX SCREW SH M3x12 (10)
- 90 2314 HEX SCREW SH M3x14 (10)
- 94 0513 BALL-BEARING 5x12x4 RUBBER SEALED - GREASE (2)
- 96 0030 NUT M3 (10)
- 98 0210 PIN 2x10 (10)

4. FRONT TRANSMISSION

980210
P 2x10

2x **L=R**

DRIVE SHAFT (81mm) **!**

SHORT AXLE

#106210 HUDY GRAPHITE GREASE
#106213 HUDY JOINT GREASE - OPTION

#365201
ECS FRONT DRIVE SHAFT 81MM (2.5mm PIN)
- HUDY SPRING STEEL™

OPTION

359050
BB 5x10x4

940513
BB 5x12x4

Use HUDY Ball-Bearing Grease

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

5x10x4mm
5x12x4mm
Bearing with STEEL covers

OPTION

XRAY BALL-BEARING			
#940510	5x10x4	OIL	OPTION
#940512	5x12x4	OIL	OPTION
#359050	5x10x4	GREASE	INCLUDED
#940513	5x12x4	GREASE	INCLUDED

902205
SH M2x5

980210
P 2x10

1

2

3

OPTION

WHEEL HUBS 12MM		
#365360	+4.5mm	OPTION
#365359	+3.75mm	OPTION
#365358	+3.00mm	OPTION
#365357	+2.25mm	OPTION
#365356	+1.5mm	OPTION
#365355	+0.75mm	OPTION
#365353	0mm	INCLUDED
#365354	-0.75mm	OPTION

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

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

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

362280
CON. SHIM 3x6x2

902312
SH M3x12

902314
SH M3x14

2x **L=R**

! IMPORTANT
Be sure to use the shorter screw with shorter bushing and longer screw with longer bushing.

Longer screw **1** Longer

Shorter screw **1** Shorter

Steel steering bushings allow roll-center adjustment.

! 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.

INITIAL POSITION

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

4. FRONT TRANSMISSION



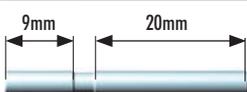
901306
SB M3x6

2x

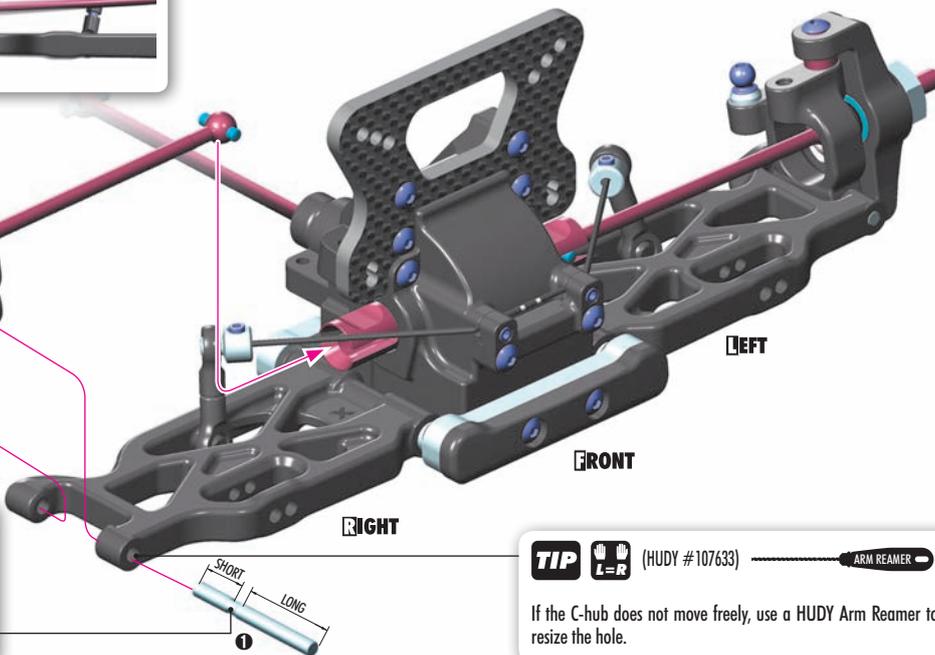
L=R



DO NOT OVERTIGHTEN



7:1 NOTE ORIENTATION



TIP

L=R

(HUDY #107633)



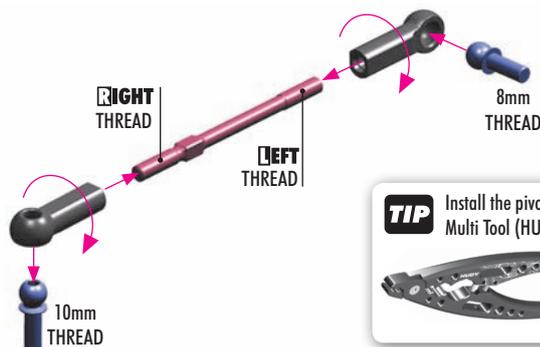
If the C-hub does not move freely, use a HUDY Arm Reamer to resize the hole.

SET-UP BOOK

CAMBER

2x

L=R



TIP

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



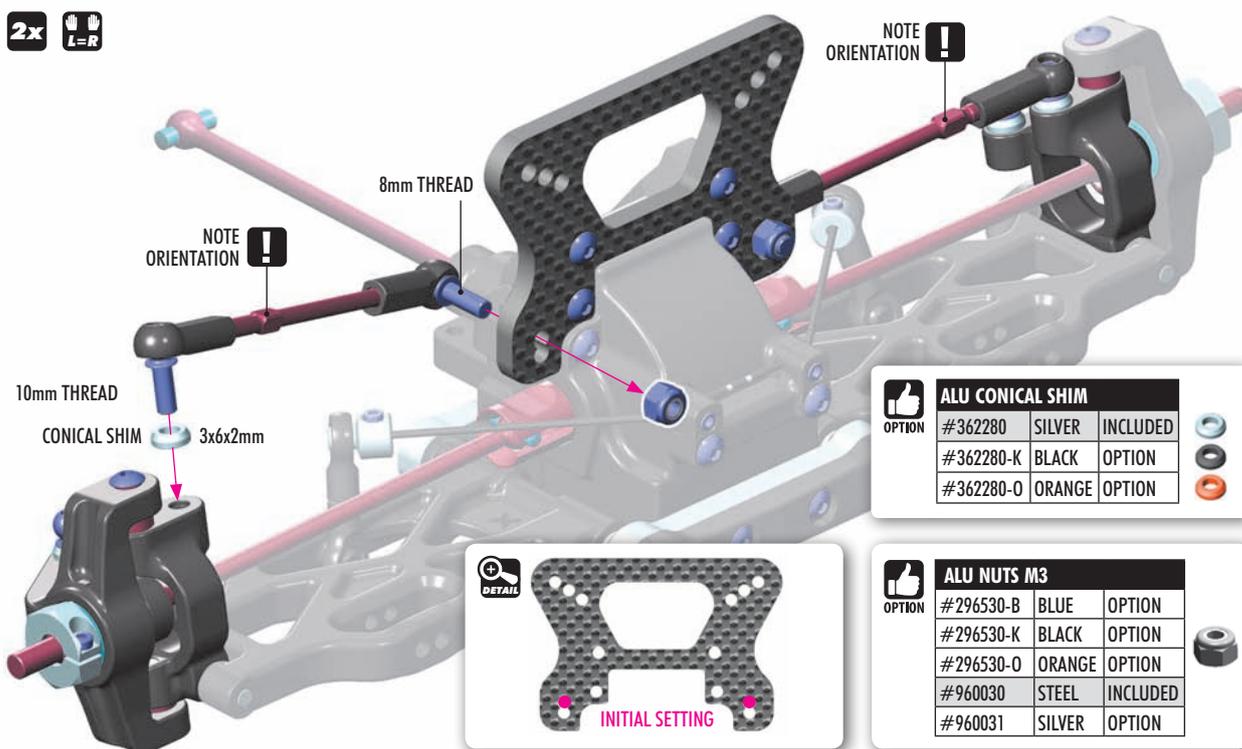
362280
CON. SHIM 3x6x2



960030
N M3

2x

L=R



OPTION

ALU CONICAL SHIM

#362280	SILVER	INCLUDED	
#362280-K	BLACK	OPTION	
#362280-O	ORANGE	OPTION	

OPTION

ALU NUTS M3

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

DETAIL



SET-UP BOOK

ROLL CENTER

4. FRONT & REAR ASSEMBLY



903308
SFH M3x8



903310
SFH M3x10



903314
SFH M3x14



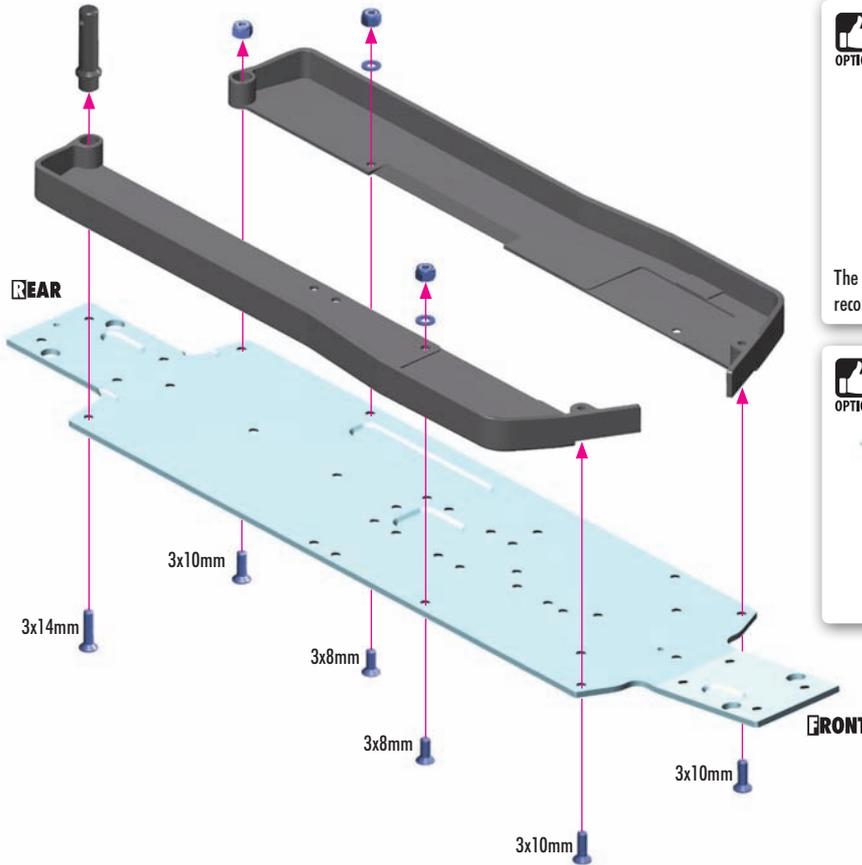
960030
N M3



961032
S 3.2

SET-UP BOOK

CHASSIS FLEX



#361269-M
COMPOSITE CHASSIS SIDE GUARDS L+R (MEDIUM)



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



#361106
ALU CHASSIS - SWISS 7075 T6 (2.5MM)



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



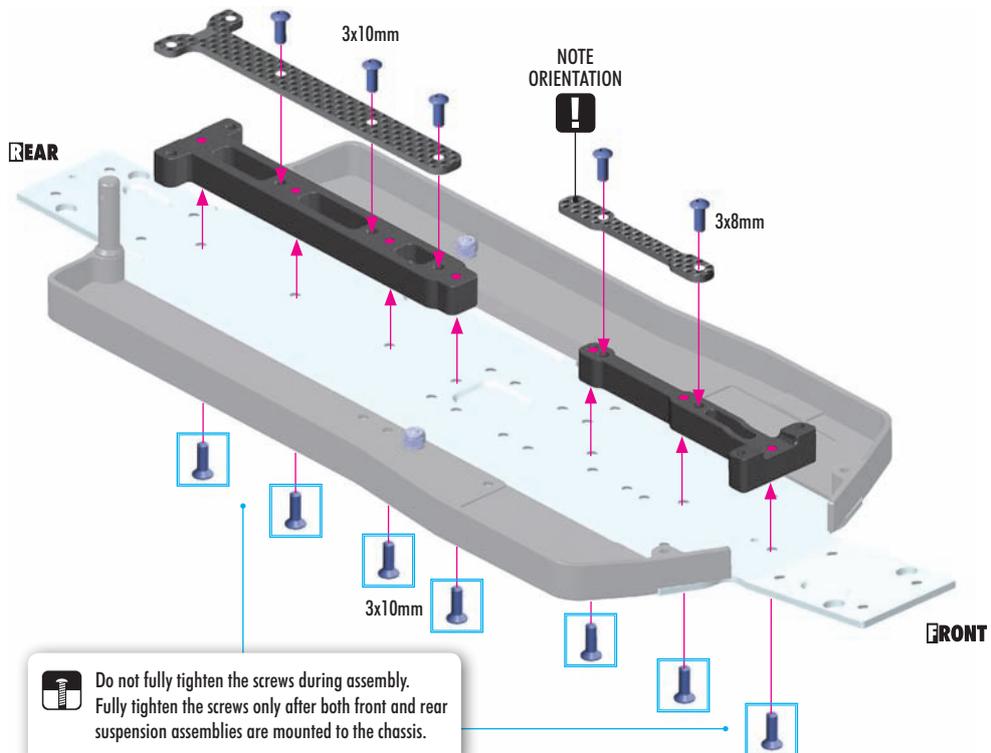
902308
SH M3x8



902310
SH M3x10



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.



#361179
BRASS CHASSIS BRACE REAR (40g)



#361295
COMPOSITE CHASSIS BRACE REAR - MEDIUM

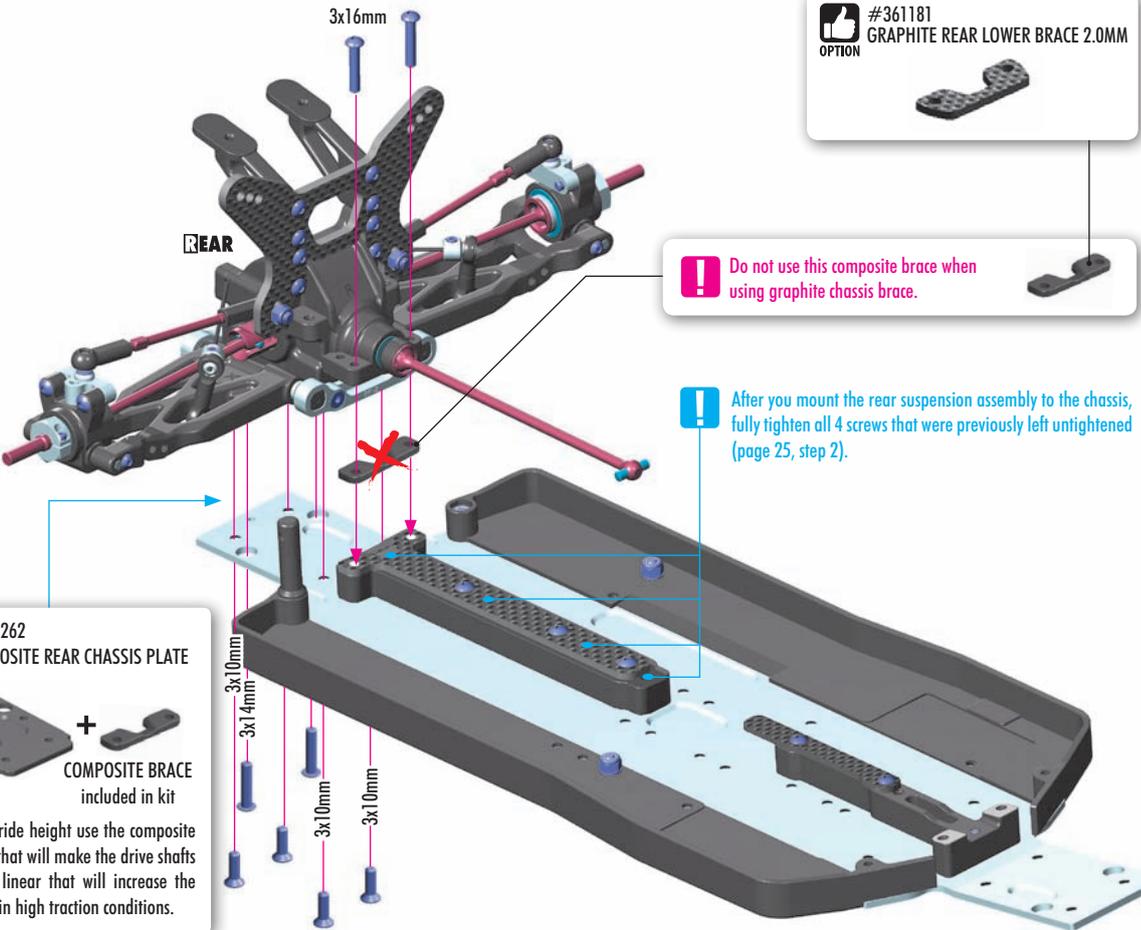


#361294
COMPOSITE CHASSIS BRACE FRONT - MEDIUM



4. FRONT & REAR ASSEMBLY

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



REAR

3x16mm

#361181 GRAPHITE REAR LOWER BRACE 2.0MM
OPTION

! Do not use this composite brace when using graphite chassis brace.

! After you mount the rear suspension assembly to the chassis, fully tighten all 4 screws that were previously left untightened (page 25, step 2).

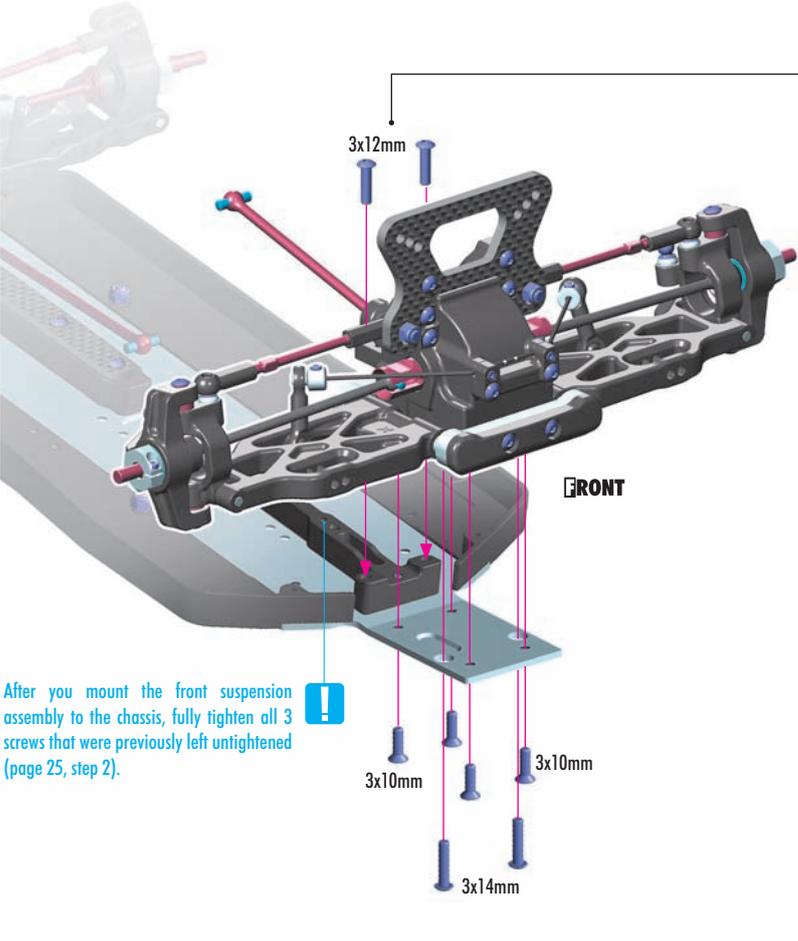
#361262 COMPOSITE REAR CHASSIS PLATE
OPTION

+
COMPOSITE BRACE
included in kit

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

3x10mm
3x14mm
3x10mm
3x10mm

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



FRONT

3x12mm

TOP

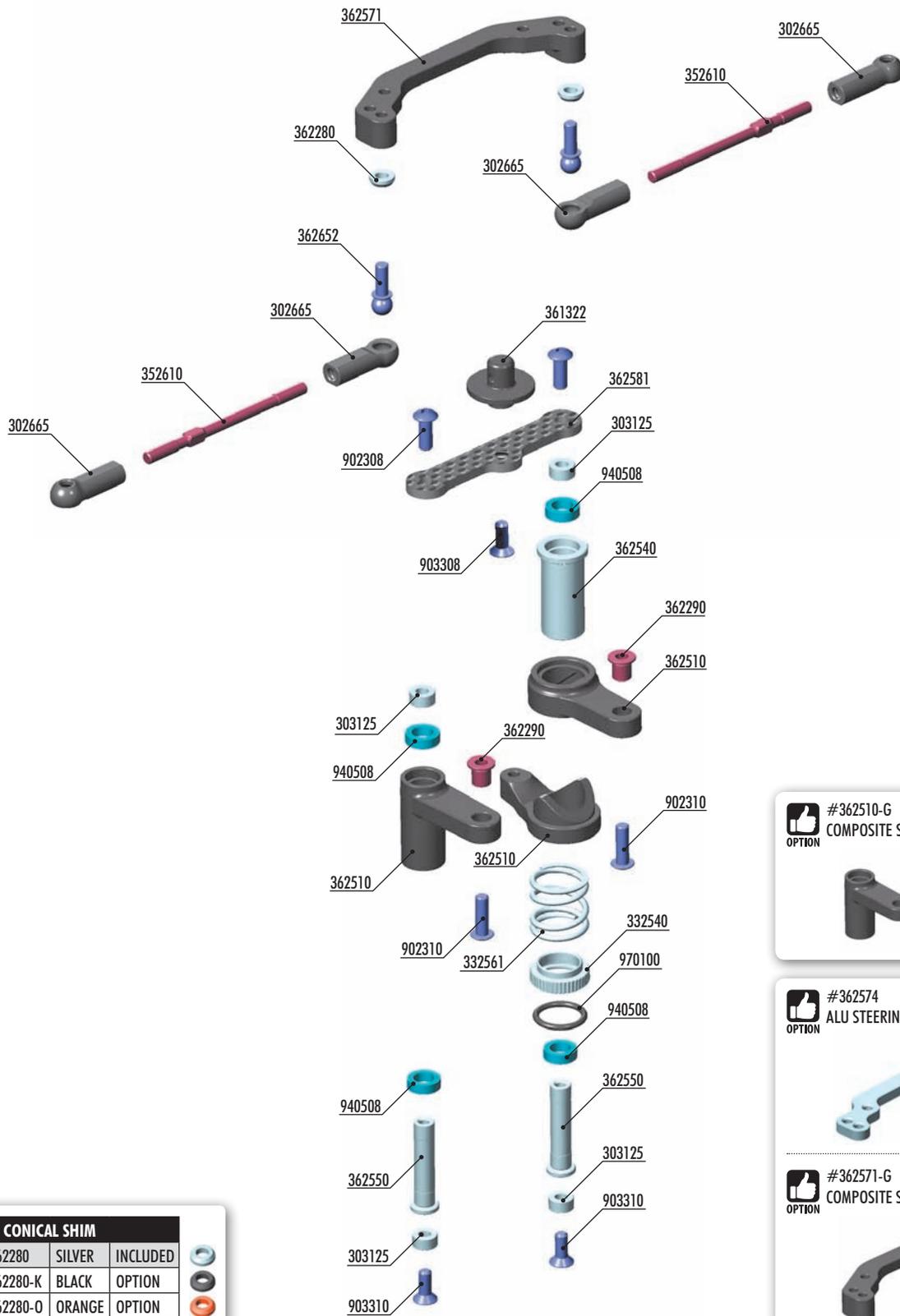
FRONT

! After you mount the front suspension assembly to the chassis, fully tighten all 3 screws that were previously left untightened (page 25, step 2).

3x10mm
3x14mm
3x10mm

DETAIL

5. STEERING



ALU CONICAL SHIM			
#362280	SILVER	INCLUDED	
#362280-K	BLACK	OPTION	
#362280-O	ORANGE	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 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 2581 STEERING BRACE 2.0MM GRAPHITE
- 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 BALL-BEARING 5x8x2.5 RUBBER SEALED - OIL (2)
- 97 0100 O-RING 10 x 1.5 (10)

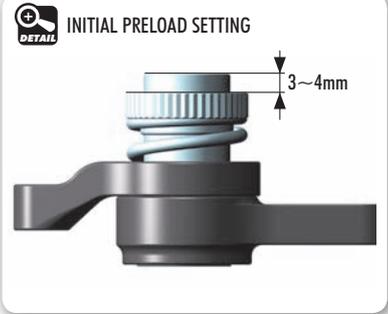
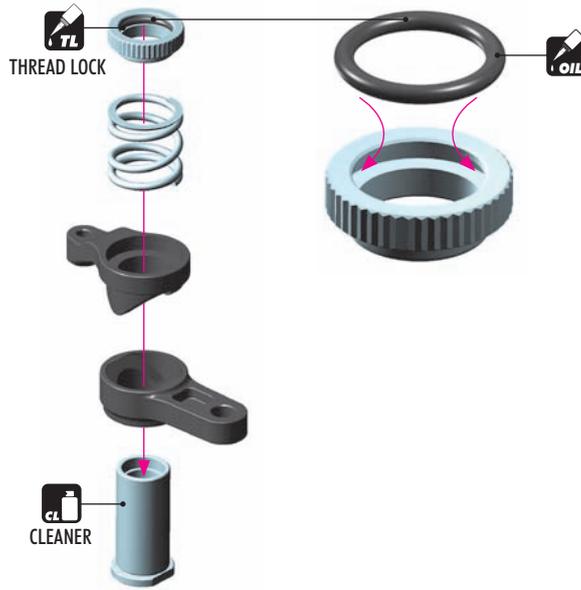
5. STEERING



970100
O 10x1.5

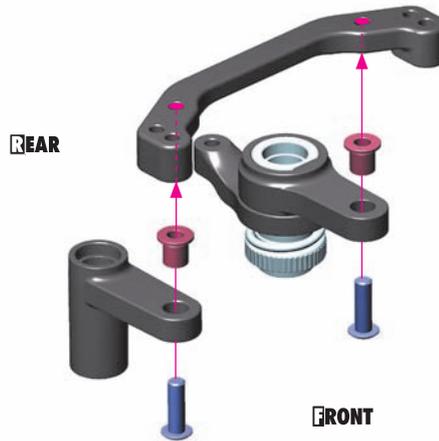
SET-UP BOOK

SERVO SAVER



902310
SH M3x10

NOTE ORIENTATION



STEERING PLATE

OPTION	Part #	Material	Included
	#362571	HARD	INCLUDED
	#362571-G	GRAPHITE	OPTION
	#362574	ALU	OPTION



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



902308
SH M3x8



303125
SHIM 3x6x3

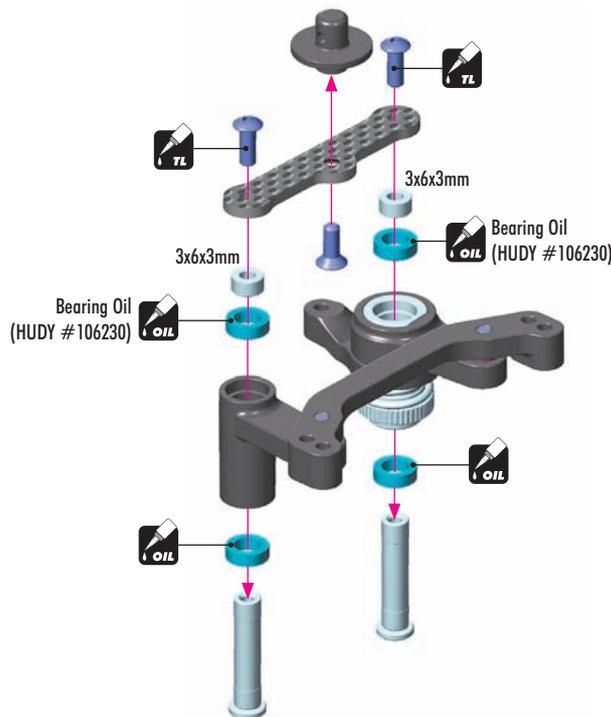


903308
SFH M3x8



940508
BB 5x8x2.5

NOTE ORIENTATION



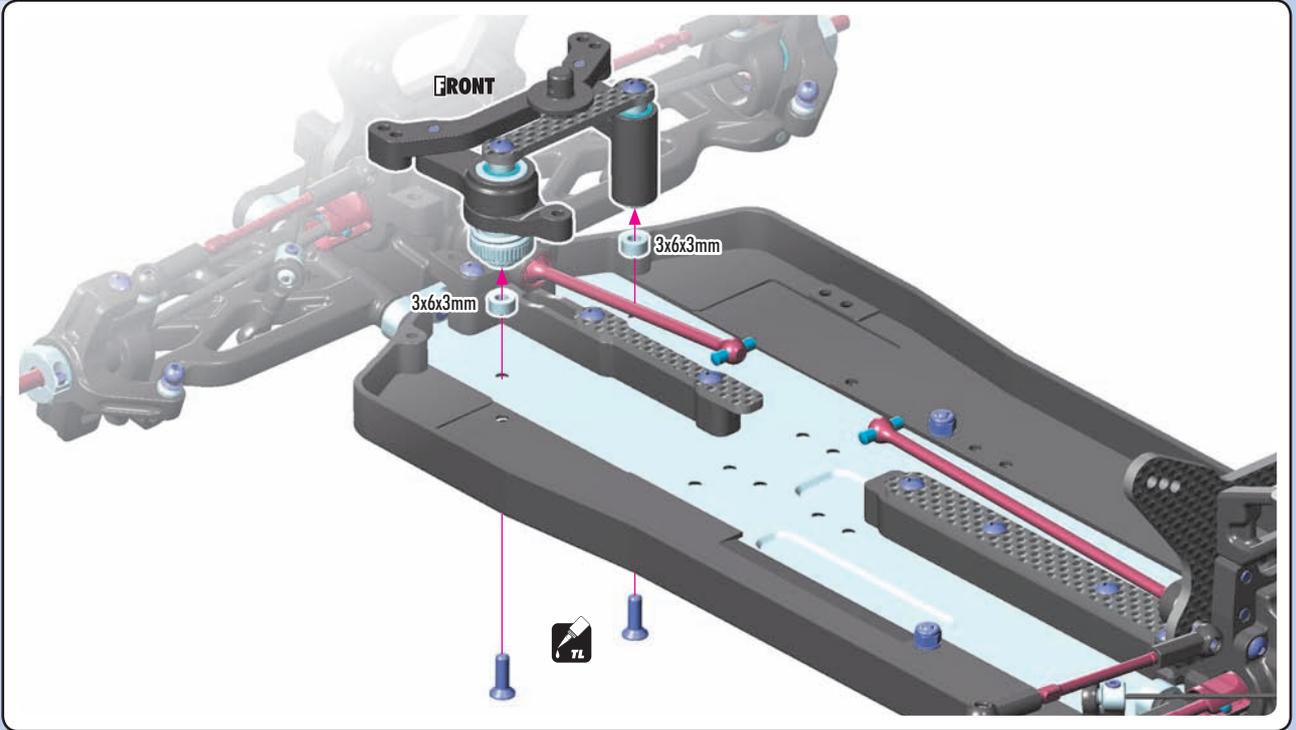
5. STEERING



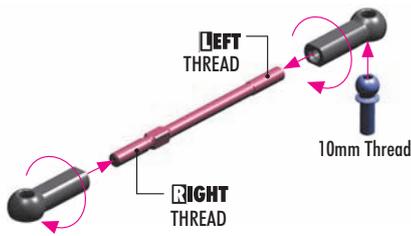
303125
SHIM 3x6x3



903310
SFH M3x10



2x L=R

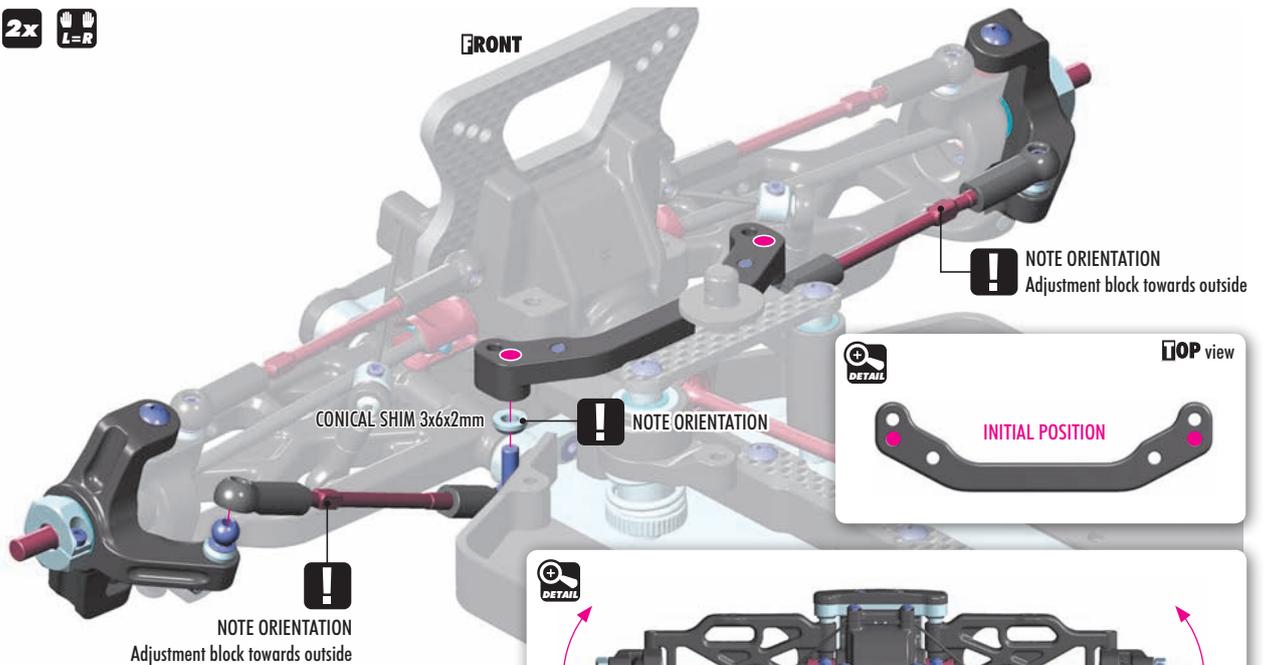


TIP Install the pivot balls with Professional Multi Tool (HUDY #183011)



362280
CON. SHIM 3x6x2

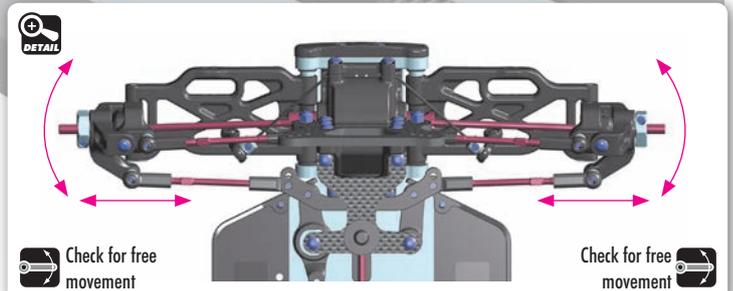
2x L=R



NOTE ORIENTATION
Adjustment block towards outside

CONICAL SHIM 3x6x2mm **NOTE ORIENTATION**

NOTE ORIENTATION
Adjustment block towards outside



Check for free movement

Check for free movement

SET-UP BOOK
ACKERMANN
BUMP STEER
TOE-IN

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

6. SLIPPER CLUTCH ASSEMBLY

#364901
OPTION
GEAR CENTER DIFFERENTIAL - SET

#364024
OPTION
ALU CENTRAL BULKHEAD

SLIPPER CLUTCH SPUR GEARS

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

- | | | |
|------------------------------------|---|--|
| <p>BAG</p> <p>06</p> | <p>36 1175 GRAPHITE CENTER UPPER DECK 2.0MM - V2</p> <p>36 1187 GRAPHITE REAR UPPER BRACE 2.0MM</p> <p>36 1320 BODY MOUNT, BATTERY MOUNT - V2 & WING SHIM (2)</p> <p>36 4013 ALU MOTOR BULKHEAD - LOWER</p> <p>36 4023 COMPOSITE CENTRAL BULKHEAD - LOWER</p> <p>36 4112 3-PAD SLIPPER CLUTCH SHAFT - HUDY SPRING STEEL™</p> <p>36 4120 ALU SLIPPER CLUTCH PLATE - 7075 T6 BLACK HARD COATED</p> <p>36 4121 ALU 3-PAD SLIPPER CLUTCH PLATE WITH ADAPTER - 7075 T6 HARD COATED</p> <p>36 4131 SLIPPER CLUTCH PAD "SLS" (2)</p> <p>36 4140 ALU 3-PAD SLIPPER CLUTCH PLATE DISC - 7075 T6 HARD COATED</p> <p>36 4171 SLIPPER CLUTCH OUTDRIVE ADAPTER - HUDY SPRING STEEL™</p> <p>36 4180 SLIPPER CLUTCH SPRING C=30 - BLACK</p> <p>36 4190 ALU SLIPPER CLUTCH NUT - V2</p> | <p>36 5881 COMPOSITE SLIPPER CLUTCH SPUR GEAR 81T / 48 - GRAPHITE</p> <p>90 1304 HEX SCREW SB M3x4 (10)</p> <p>90 2305 HEX SCREW SH M3x5 (10)</p> <p>90 2308 HEX SCREW SH M3x8 (10)</p> <p>90 2318 HEX SCREW SH M3x18 (10)</p> <p>90 3308 HEX SCREW SFH M3x8 (10)</p> <p>94 1015 BALL-BEARING 10x15x4 RUBBER SEALED - OIL (2)</p> <p>98 0212 PIN 2x11.6 (10)</p> <p>98 1208 PIN 2x8 (10)</p> |
|------------------------------------|---|--|

980212
P 2x11.6

901304
SB M3x4

DETAILS

CUTAWAY VIEW

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.

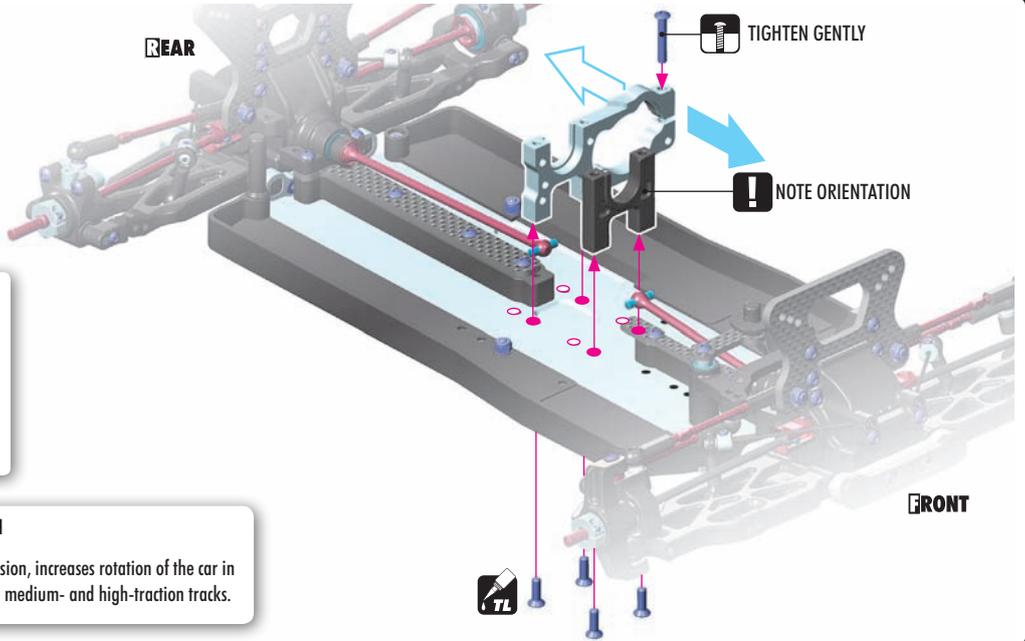
INITIAL INSTALLATION POSITION SHOWN
Detailed information on slipper adjustment can be found on page 32.

0~0.5mm

6. SLIPPER CLUTCH ASSEMBLY

ALTERNATIVE 1

FORWARD WEIGHT POSITION
(INITIAL SETTING)



902318
SH M3x18



903308
SFH M3x8



#364024
ALU CENTRAL BULKHEAD

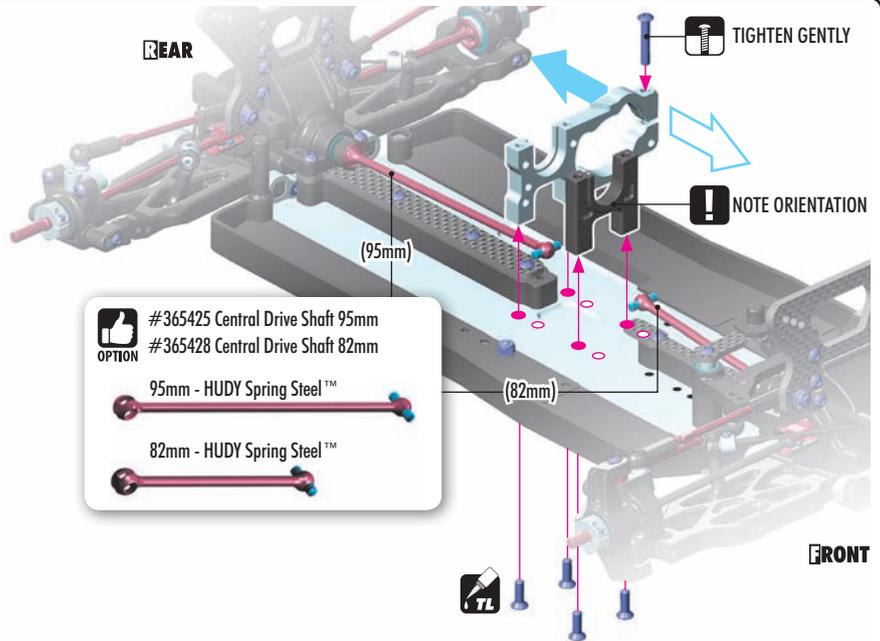


FORWARD WEIGHT POSITION

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

ALTERNATIVE 2

REARWARD WEIGHT POSITION
(OPTION)



902318
SH M3x18



903308
SFH M3x8



#364024
ALU CENTRAL BULKHEAD



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



95mm - HUDY Spring Steel™

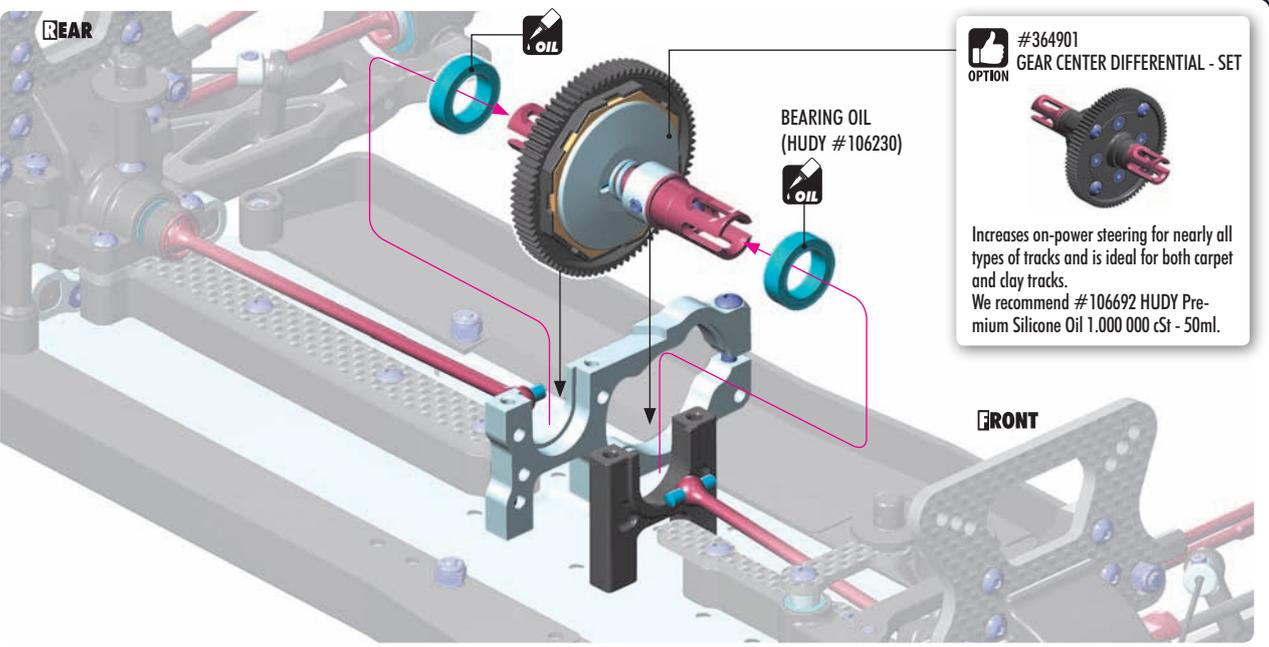
82mm - HUDY Spring Steel™

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



#364901
GEAR CENTER DIFFERENTIAL - SET



Increases on-power steering for nearly all types of tracks and is ideal for both carpet and clay tracks. We recommend #106692 HUDY Premium Silicone Oil 1.000 000 cSt - 50ml.

6. SLIPPER CLUTCH ASSEMBLY

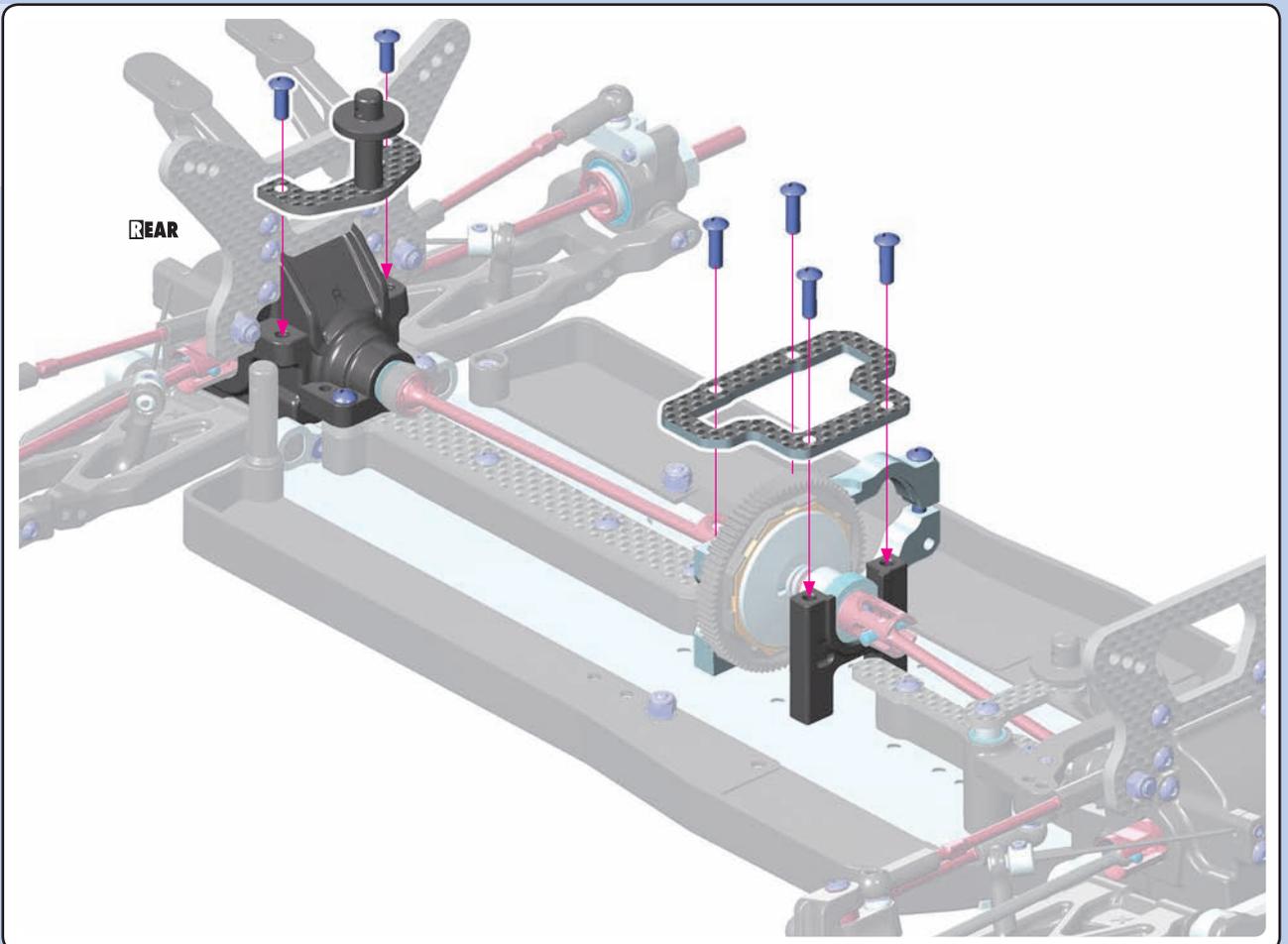
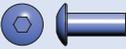
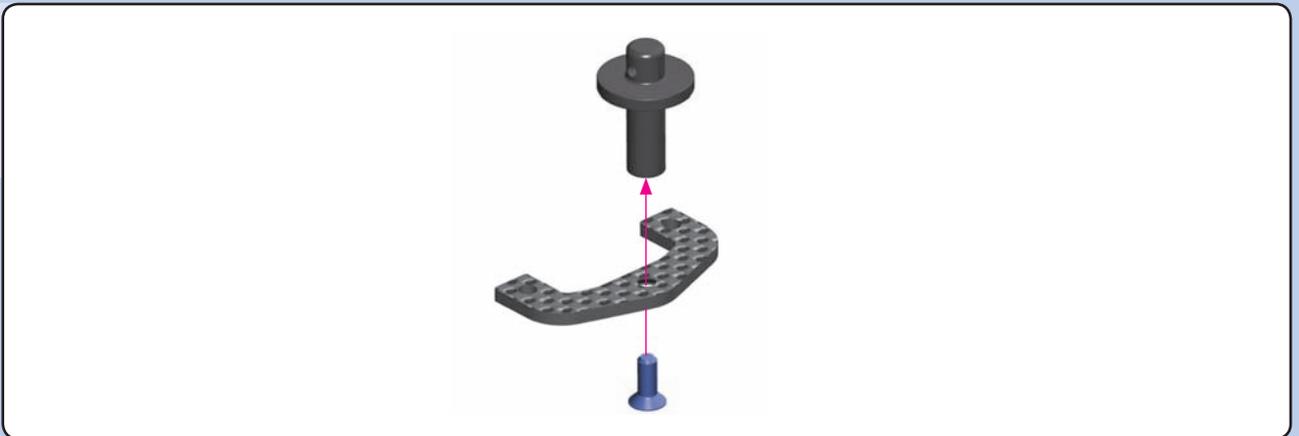
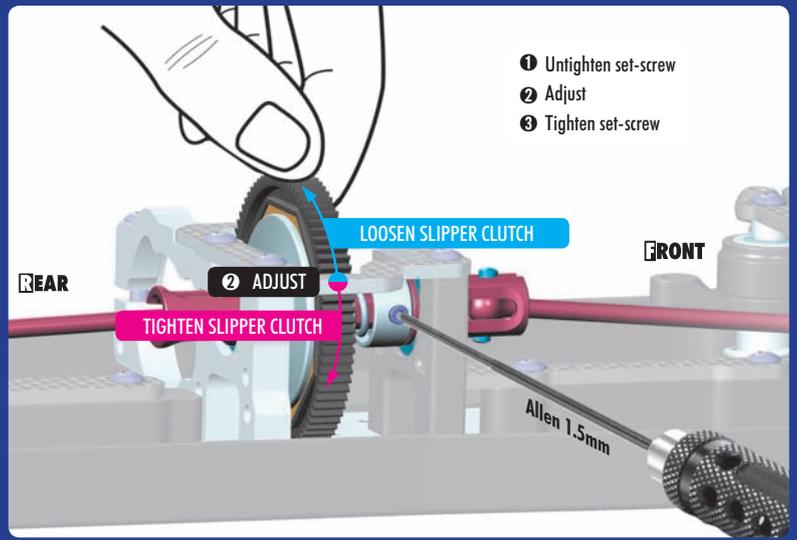
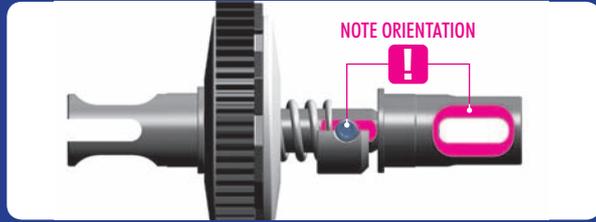
SLIPPER CLUTCH ADJUSTMENT

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.

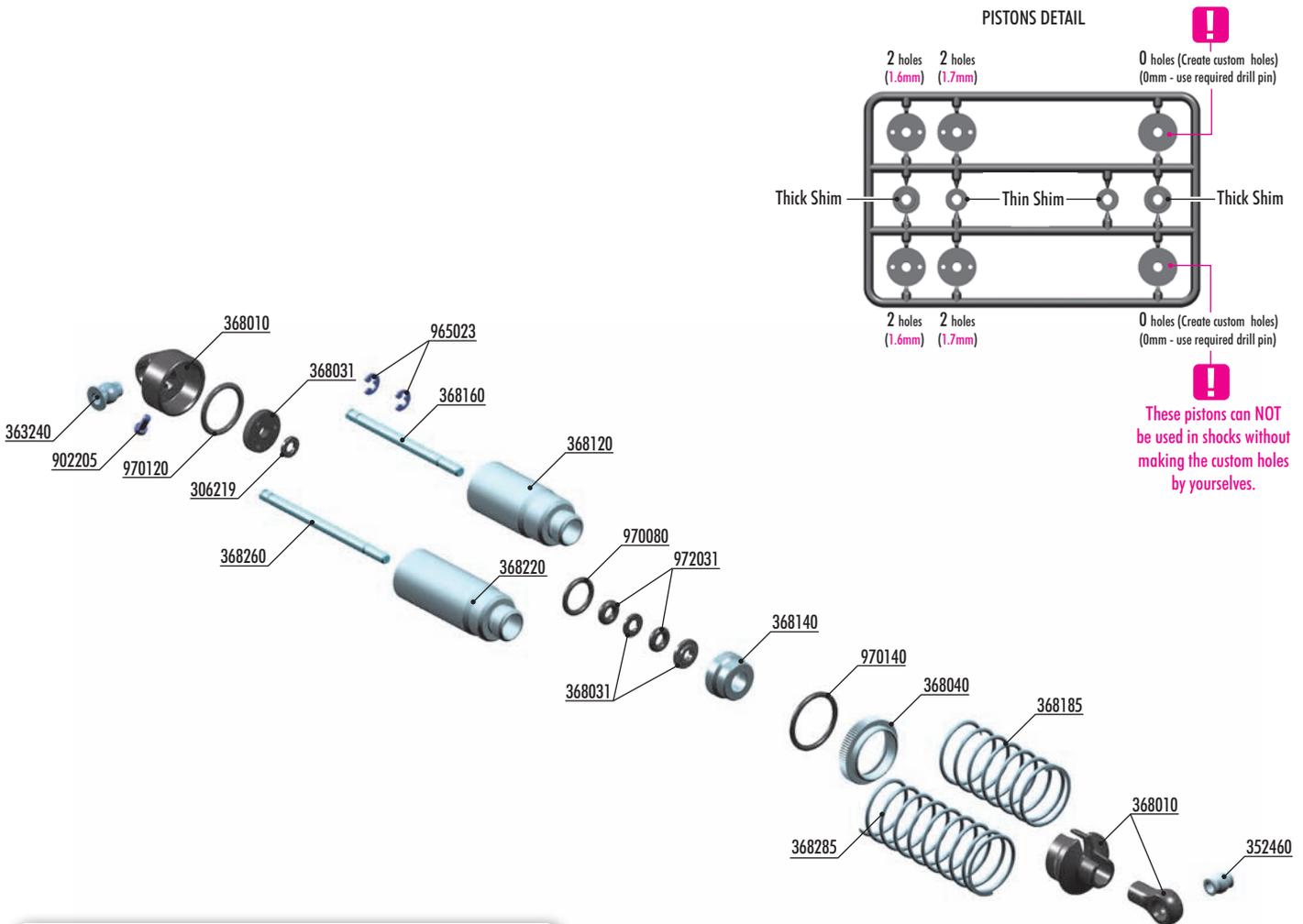
To LOOSEN: Rotate the spur gear in the counterclockwise (CCW) direction.
To TIGHTEN: Rotate the spur gear in the clockwise (CW) direction.

IMPORTANT

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



7. SHOCK ABSORBERS



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



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



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



- 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 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 8185 FRONT SPRING-SET - 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 8285 REAR SPRING-SET - 2 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 2031 SILICONE O-RING 3x2.1 (10)

7. SHOCK ABSORBERS

965023
C 2.3

970080
O 8x1

972031
O 3x2.1

SET-UP BOOK

SHOCK DAMPING
SHOCK PISTONS

FRONT - SHORT SHOCK ROD
2 holes (1.6mm) **2x FRONT**

REAR - LONG SHOCK ROD
2 holes (1.7mm) **2x REAR**

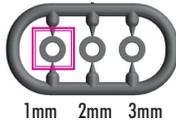
INITIAL PISTON SETTING

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
OPTION
DOWNSTOP SHIMS

THICKER shim used, GREATER downstop is achieved.



! 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
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.

970140
O 14x1.5

4x

DETAIL

970120
O 12x1

4x

306219
SHIM 3x6x2

306219
SHIM 3x6x3

4x

UPSTOP SHIM
FRONT 3x6x2mm
REAR 3x6x3mm

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

DETAIL
1~1.5mm

7. 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 700cSt
- 2x** REAR (LONG)
Oil 500cSt



1 Extend the shock shaft completely. Fill the shock body with the shock oil. For the FRONT shocks (short) use 700cSt oil. For the REAR shocks (long) use 500cSt 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.



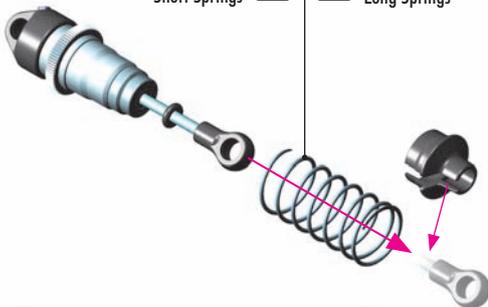
9 Gently push the shock shaft completely into the shock body. Excess oil will flow through the hole in the shock cap.



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

SET-UP BOOK
SHOCK OIL

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

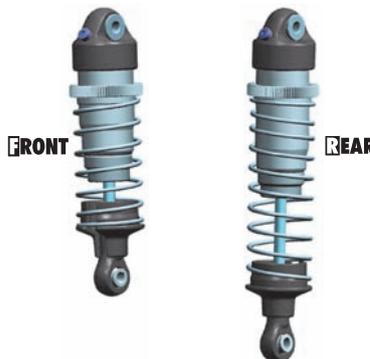


#368021
ALU SHOCK SPRING RETAINING COLLAR (4)

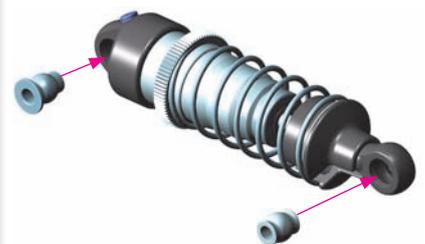


! IMPORTANT

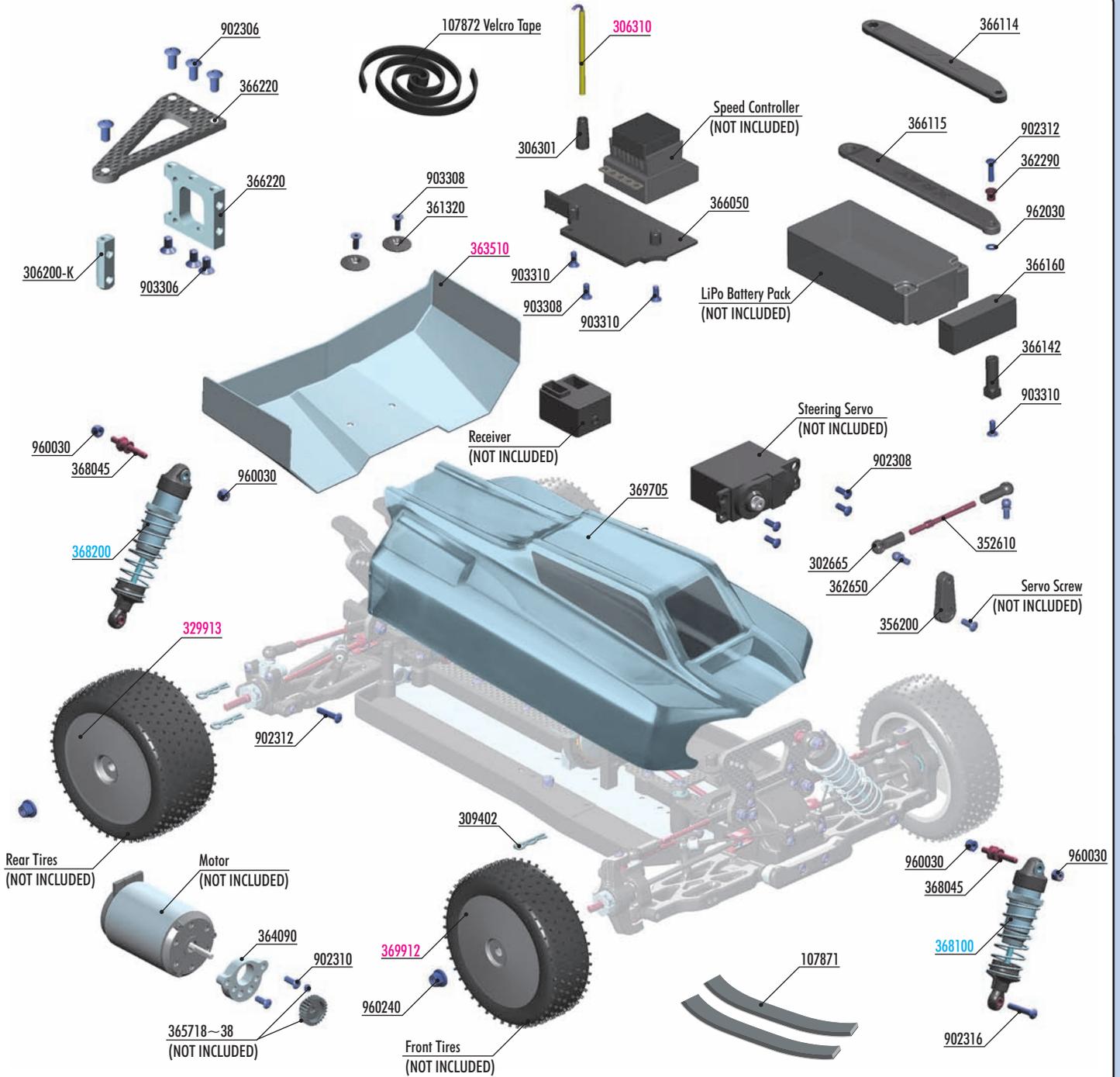
Both FRONT SHOCKS must be the same overall length.
Both REAR SHOCKS must be the same overall length.



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



8. FINAL ASSEMBLY



BAG

08

- 10 7871 HUDY SELF-ADHESIVE FOAM STRIP (2)
- 10 7872 VELCRO TAPE WITH DOUBLE SIDED TAPE 8x500MM
- 30 2665 COMPOSITE BALL JOINT 4.9MM - CLOSED WITH HOLE (4)
- 30 6200-K ALU SERVO MOUNT - BLACK (2)
- 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 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 5718~38 ALU PINION GEAR HARD COATED 18~38T/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 6220 INDEPENDENT SERVO MOUNT - SET
- 36 8045 STEEL SCREW SHOCK PIVOT BALL WITH HEX (2)

- 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 2316 HEX SCREW SH M3x16 (10)
- 90 3306 HEX SCREW SFH M3x6 (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 9705 XRAY XB4 BODY
- 36 9912 FRONT WHEEL AERODISK WITH 12MM HEX - WHITE (2)
- 32 9913 REAR WHEEL AERODISK WITH 12MM HEX - WHITE (2)

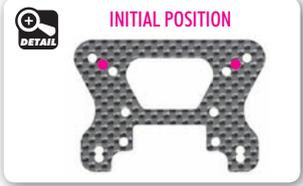
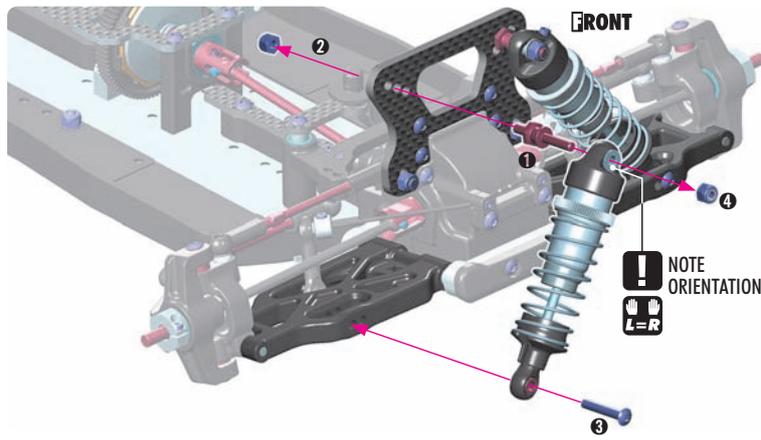
8. FINAL ASSEMBLY



960030
N M3



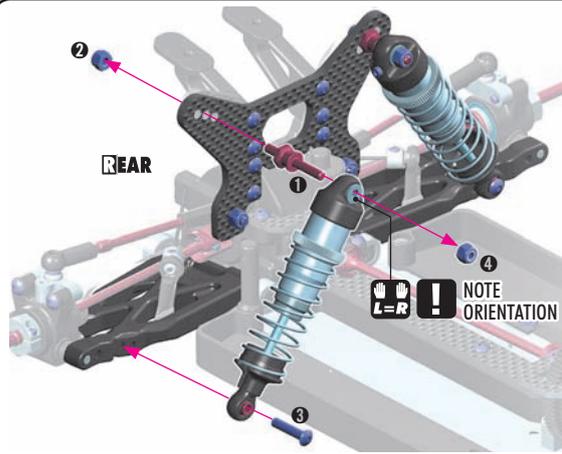
902316
SH M3x16



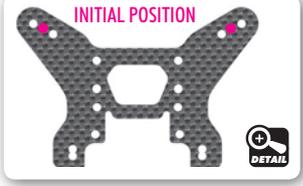
960030
N M3



902312
SH M3x12

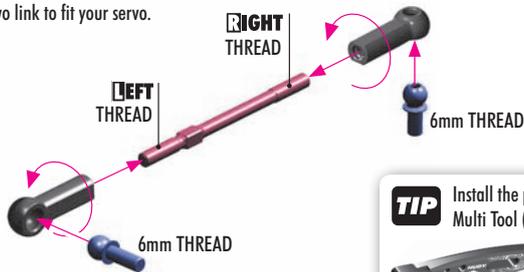


OPTION	ALU NUTS M3	OPTION
#296530-B	BLUE	OPTION
#296530-K	BLACK	OPTION
#296530-O	ORANGE	OPTION
#960030	STEEL	INCLUDED
#960031	SILVER	OPTION

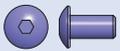


SERVO LINK

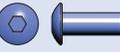
Adjust servo link to fit your servo.



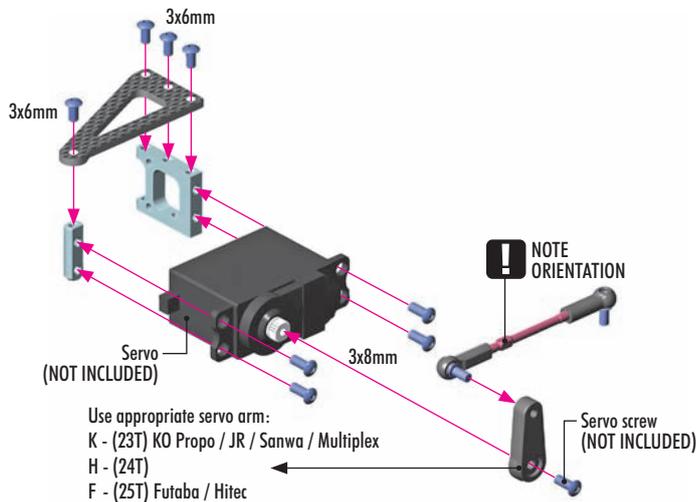
TIP Install the pivot balls with Professional Multi Tool (HUDY #183011)



902306
SH M3x6



902308
SH M3x8

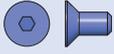


OPTION	HUDY ALU SERVO HORNS	
#293497	23T	
#293498	24T	
#293499	25T	

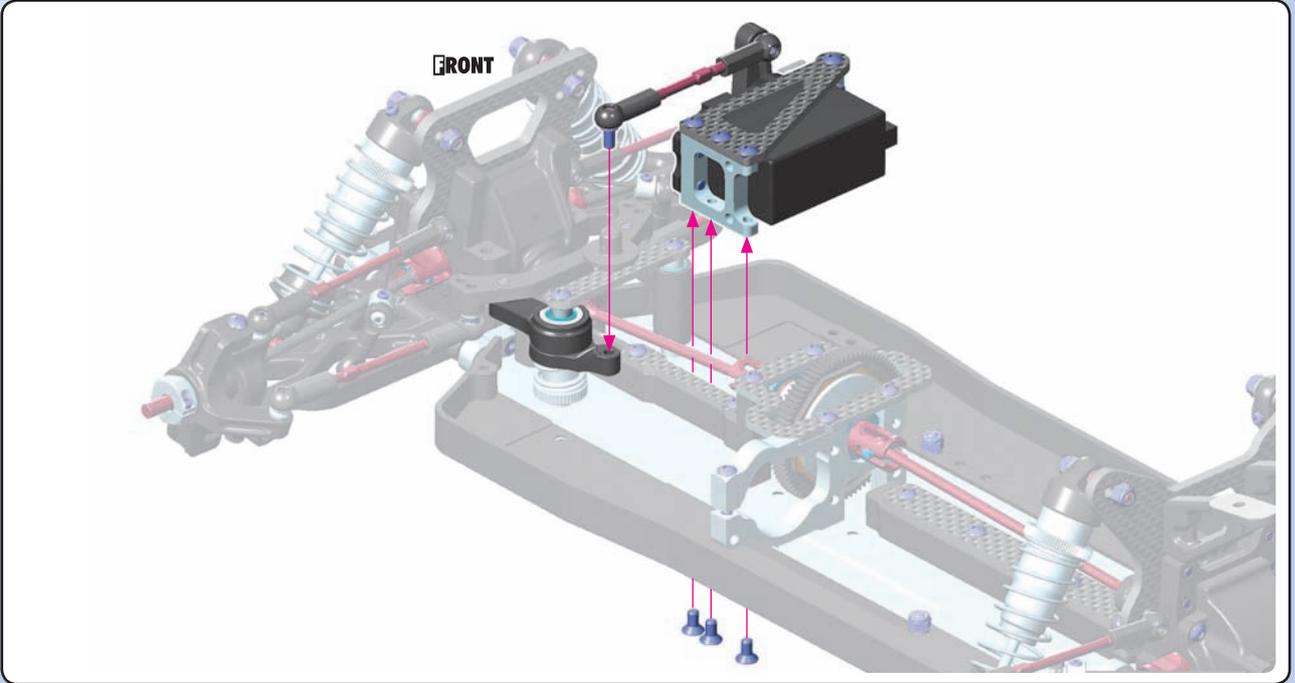
OPTION	HUDY CLAMP ALU SERVO HORNS	
#293404	23T	
#293405	24T	
#293406	25T	

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

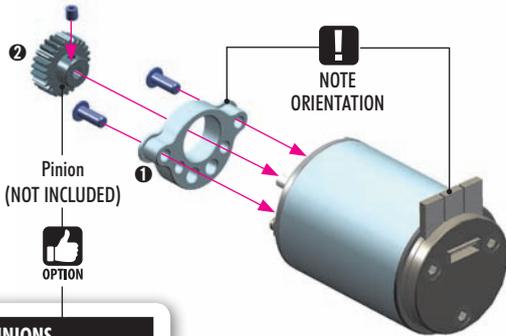
8. FINAL ASSEMBLY



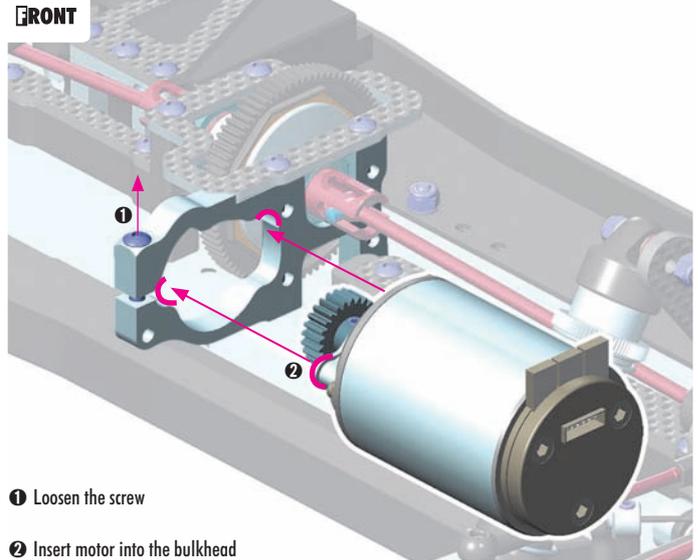
903306
SFH M3x6



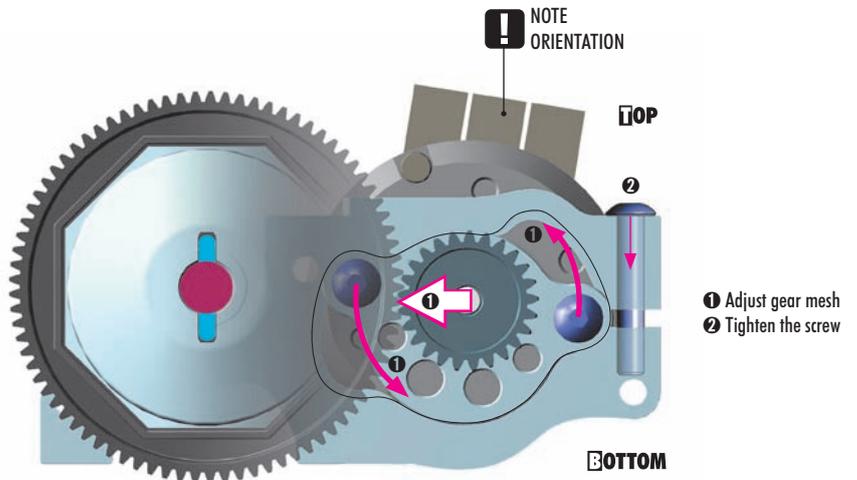
902310
SH M3x10



PINIONS	
#365718	18T / 48P
#365719	19T / 48P
#365720	20T / 48P
#365721	21T / 48P
#365722	22T / 48P
#365723	23T / 48P
#365724	24T / 48P
#365725	25T / 48P
#365726	26T / 48P
#365727	27T / 48P
#365728	28T / 48P
#365729	29T / 48P
#365730	30T / 48P
#365731	31T / 48P
#365732	32T / 48P
#365733	33T / 48P
#365734	34T / 48P
#365735	35T / 48P
#365736	36T / 48P
#365737	37T / 48P
#365738	38T / 48P



- ❶ Loosen the screw
- ❷ Insert motor into the bulkhead



- ❶ Adjust gear mesh
- ❷ Tighten the screw

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.

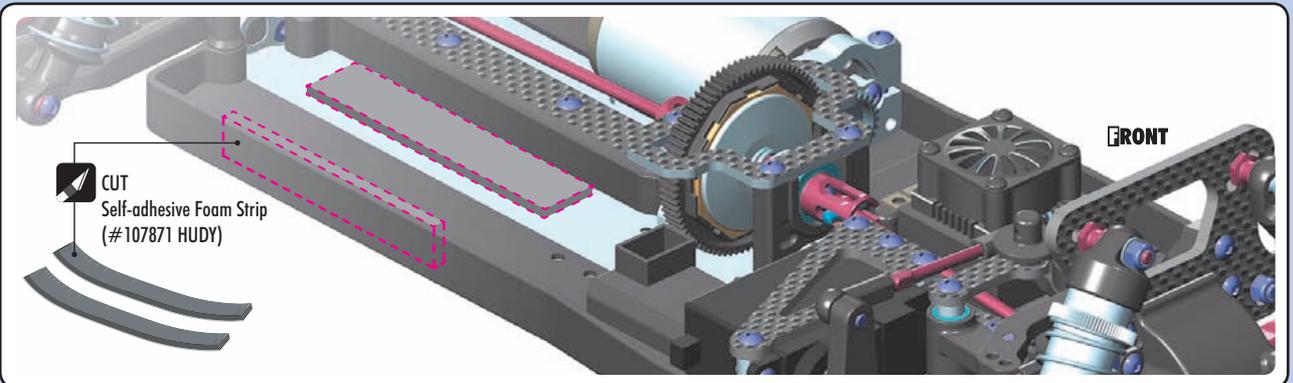
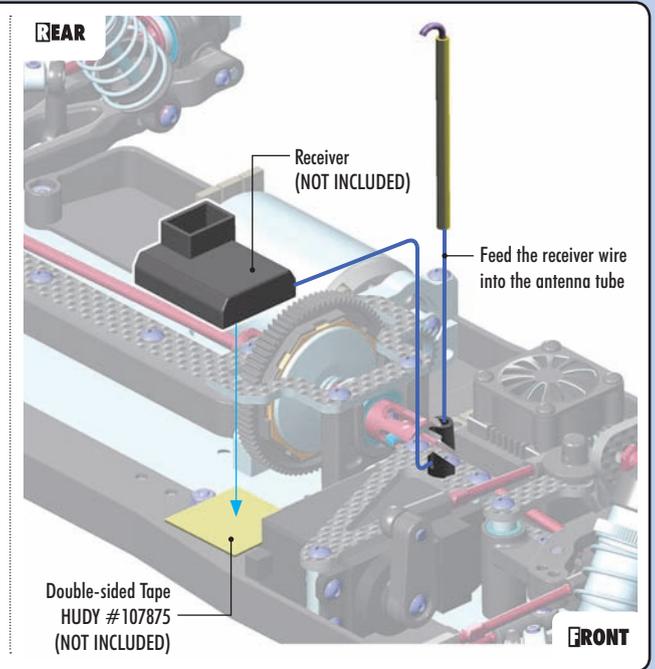
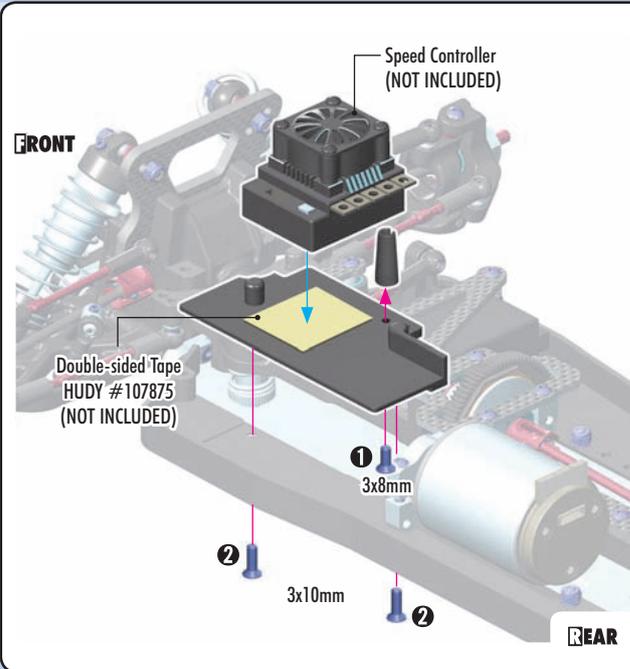
8. FINAL ASSEMBLY



903308
SFH M3x8



903310
SFH M3x10



902312
SH M3x12



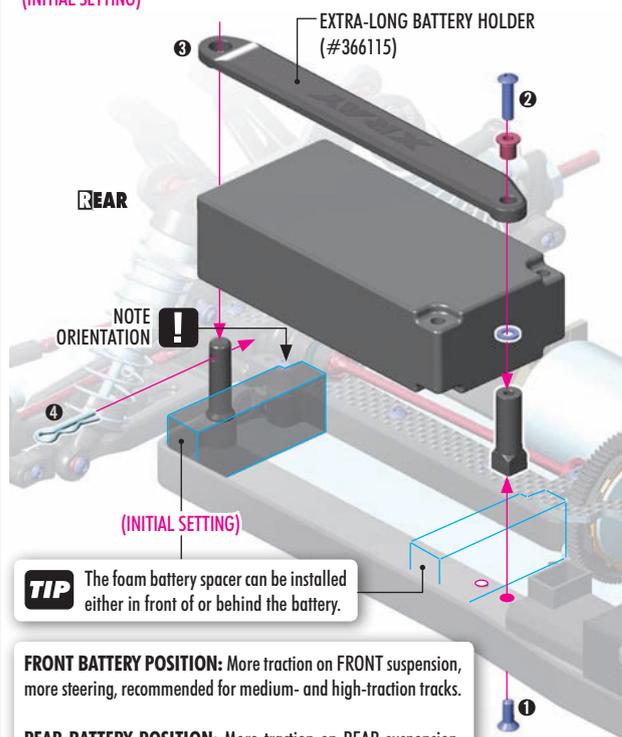
903310
SFH M3x10



962030
S 3x6x0.3

ALTERNATIVE 1

FORWARD WEIGHT BALANCE POSITION
(INITIAL SETTING)



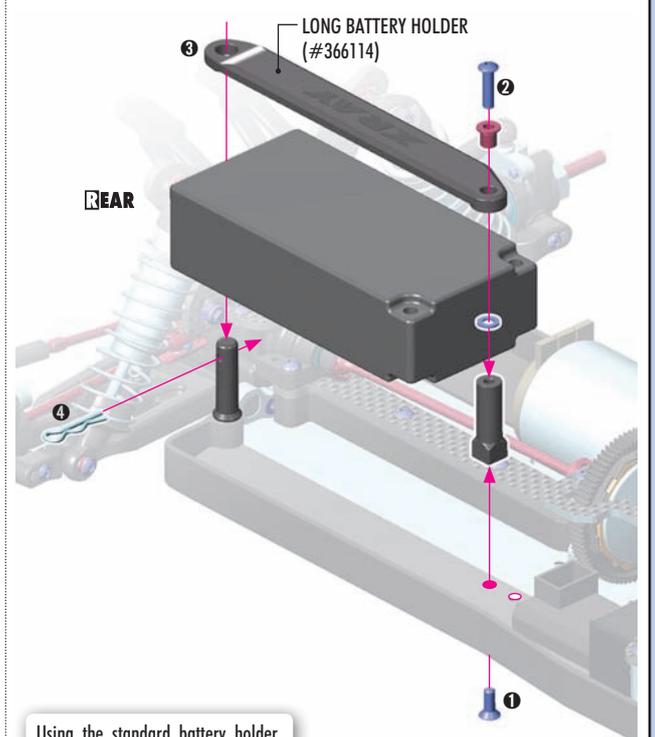
TIP The foam battery spacer can be installed either in front of or behind the battery.

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

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

ALTERNATIVE 2

REARWARD WEIGHT BALANCE POSITION



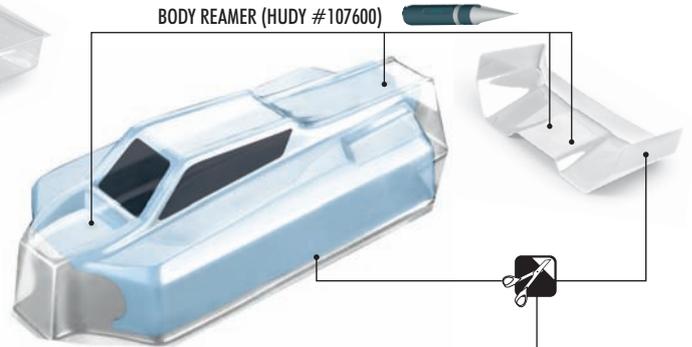
Using the standard battery holder positions the battery to the REAR.

8. FINAL ASSEMBLY

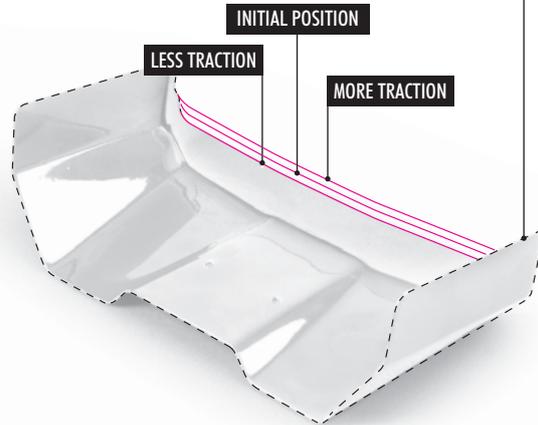
- ❶ Before cutting and making holes on the BODY, put the unpainted body on the chassis to confirm the mounting position and location for holes and cutouts. Before cutting and making holes on the WING, put the unpainted wing on the wing holders to confirm the mounting position and location for holes and cutouts.
- ❷ Before painting, wash the inside of the body with mild detergent, and then rinse and dry thoroughly.
- ❸ Mask all windows.



- ❹ Apply paint masks as appropriate.
- ❺ Paint the body using paints formulated for polycarbonate bodies.
- ❻ When the paint is dry, remove the masking.
- ❼ Carefully cut out the body using appropriate scissors or cutting tools.
- ❽ When you have finished cutting, peel off the external protective films.

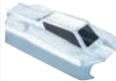


WING CUTTING LINE OPTIONS



XRAY LEXAN BODY

#369703	0.75mm		OPTION
#369704	0.50mm		OPTION
#369705	0.75mm	ALPHA	INCLUDED
#369706	0.50mm	ALPHA	OPTION



XRAY LEXAN REAR WING

#323510	1.0mm		OPTION
#323511	1.5mm		OPTION
#323513	1.0mm	RANK	OPTION
#363510	1.0mm		INCLUDED
#363511	1.5mm		OPTION
#363512	2.0mm		OPTION

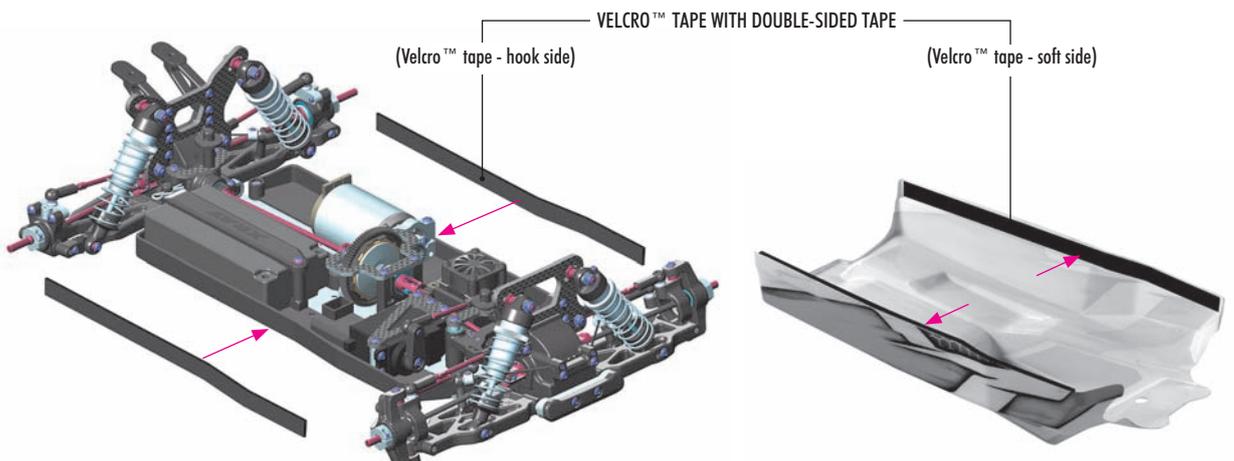


→ #323515 Lexan Rear Wing Center Fin
(*just for #323513)

2x



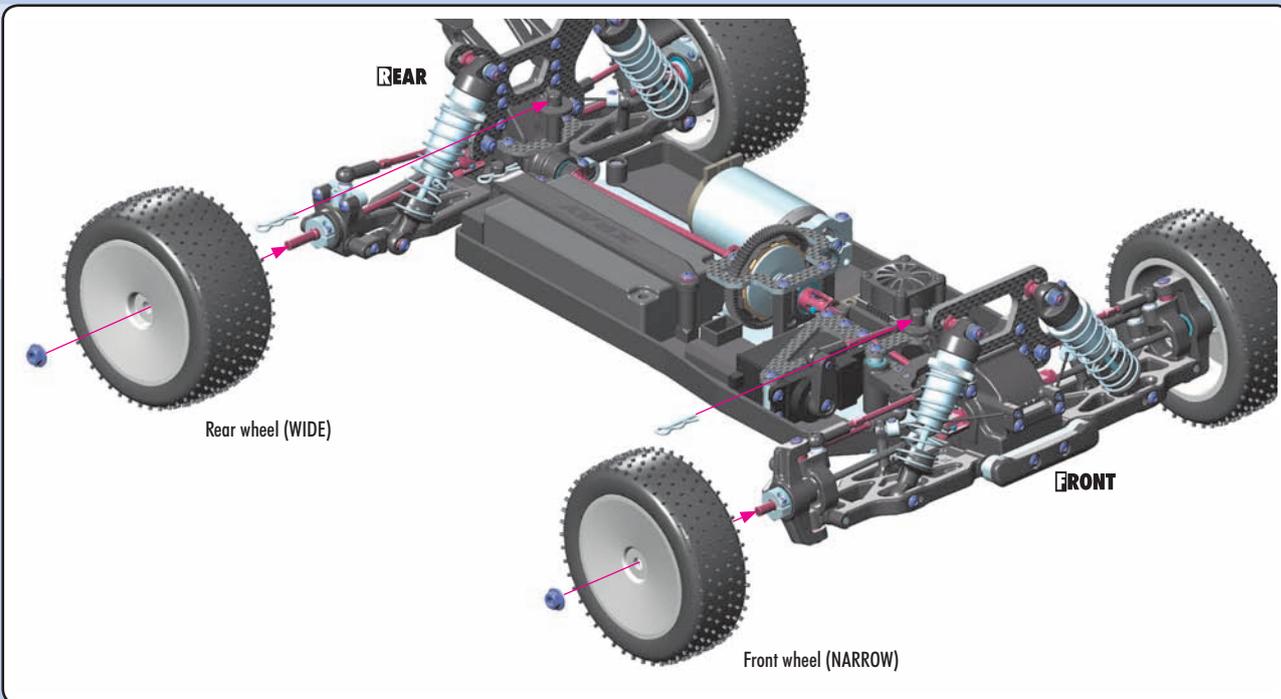
Double-sided Velcro™ tape is used to seal the body against the side guards.



8. FINAL ASSEMBLY

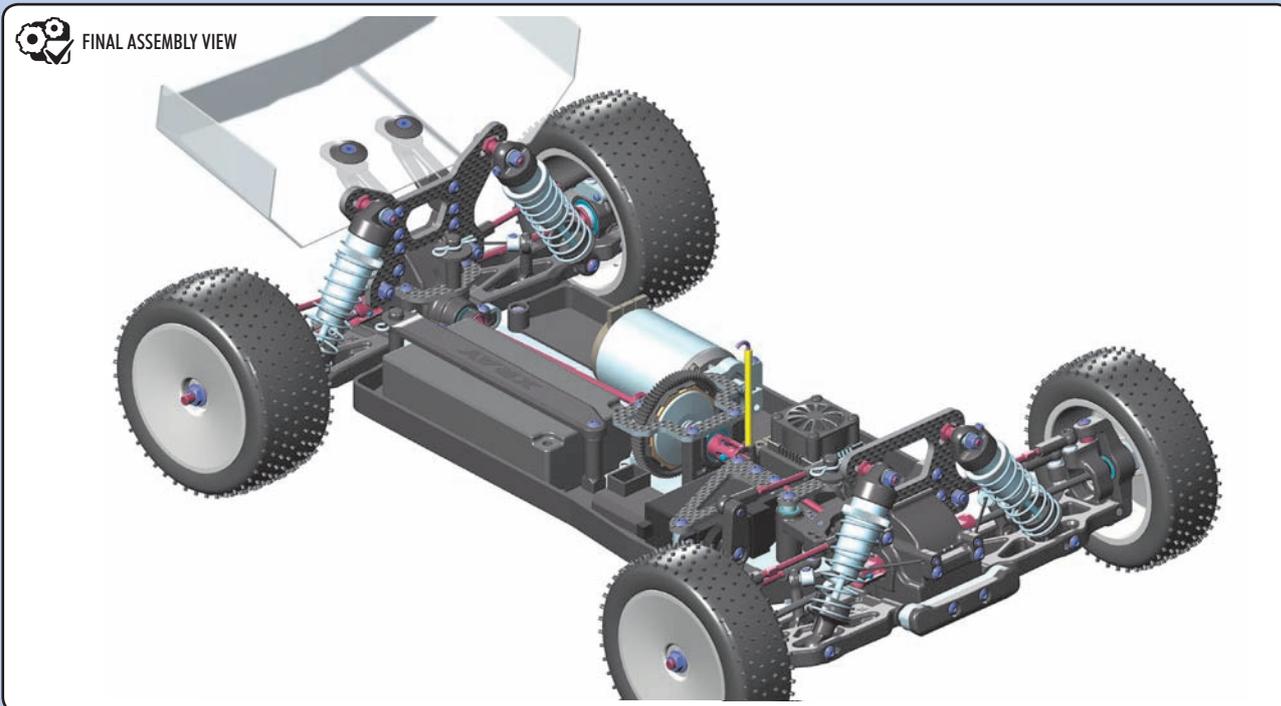
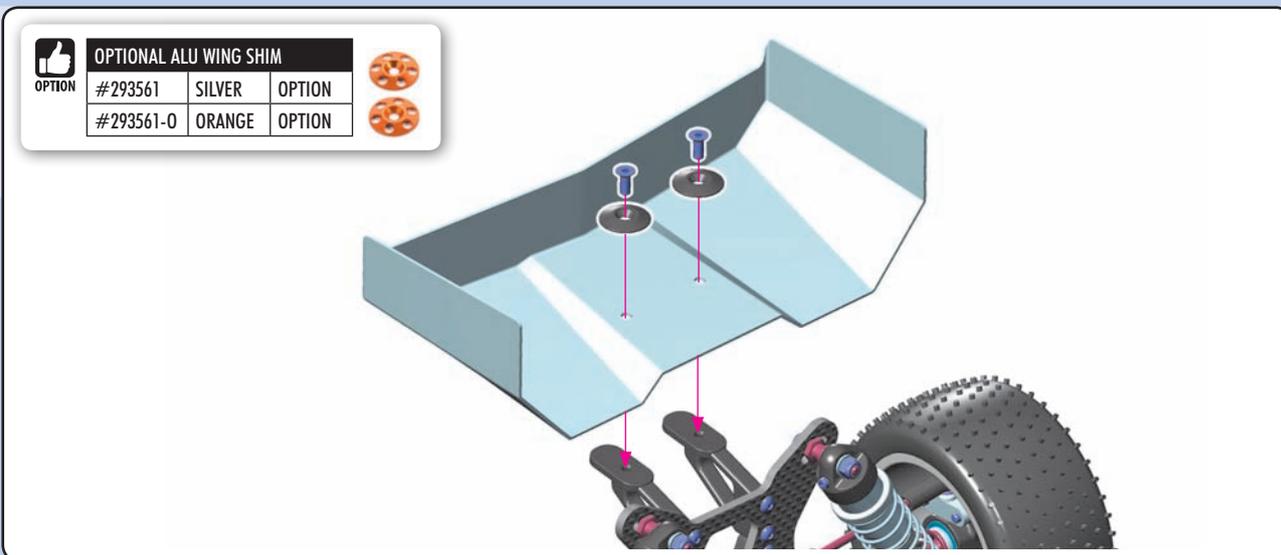


960240
N M4



903308
SFH M3x8

OPTION	OPTIONAL ALU WING SHIM		
#293561	SILVER	OPTION	
#293561-0	ORANGE	OPTION	



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 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 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.



#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.

RACE		
TRACK		
NAME		DATE

LAPS		BEST LAP TIME	sec
------	--	---------------	-----

QUALIFYING POSITION		FINAL POSITION	
---------------------	--	----------------	--

TRACK SIZE	<input type="checkbox"/> OPEN	<input type="checkbox"/> MEDIUM	<input type="checkbox"/> TIGHT
------------	-------------------------------	---------------------------------	--------------------------------

TRACK TRACTION	<input type="checkbox"/> HIGH	<input type="checkbox"/> MEDIUM	<input type="checkbox"/> LOW
----------------	-------------------------------	---------------------------------	------------------------------

TRACK SURFACE	<input type="checkbox"/> SMOOTH	<input type="checkbox"/> MEDIUM	<input type="checkbox"/> BUMPY
---------------	---------------------------------	---------------------------------	--------------------------------

TRACK TYPE	<input type="checkbox"/> HARD PACKED	<input type="checkbox"/> SOFT DIRT	<input type="checkbox"/> CLAY
	<input type="checkbox"/> CARPET	<input type="checkbox"/> BLUE GROOVE	<input type="checkbox"/> ASTRO TURF
	<input type="checkbox"/> GRASS		

TRACK CONDITION	<input type="checkbox"/> DRY	<input type="checkbox"/> DUSTY	<input type="checkbox"/> WET	<input type="checkbox"/> MUD
-----------------	------------------------------	--------------------------------	------------------------------	------------------------------

DIFFERENTIAL TYPE		
FRONT ↓	MIDDLE ↓	REAR ↓
GEAR DIFF <input type="checkbox"/>	GEAR DIFF <input type="checkbox"/>	GEAR DIFF <input type="checkbox"/>
BALL DIFF <input type="checkbox"/>	SLIPPER <input type="checkbox"/>	BALL DIFF <input type="checkbox"/>
OIL <input type="checkbox"/> cSt	OIL <input type="checkbox"/> cSt	OIL <input type="checkbox"/> cSt
SATELLITE GEARS		
COMPOSITE <input type="checkbox"/>	COMPOSITE <input type="checkbox"/>	COMPOSITE <input type="checkbox"/>
STEEL <input type="checkbox"/>	STEEL <input type="checkbox"/>	STEEL <input type="checkbox"/>
CROWN GEAR	SLIPPER	CROWN GEAR
COMPOSITE <input type="checkbox"/>	<input type="checkbox"/> mm	COMPOSITE <input type="checkbox"/>
STEEL <input type="checkbox"/>	SLIPPER ADJUSTMENT	STEEL <input type="checkbox"/>
ALU <input type="checkbox"/>		ALU <input type="checkbox"/>

COMPOSITE <input type="checkbox"/>	<input type="checkbox"/> PINION	COMPOSITE <input type="checkbox"/>
STEEL <input type="checkbox"/>		STEEL <input type="checkbox"/>

GEARING	
PINION	SPUR GEAR
<input type="checkbox"/> T	<input type="checkbox"/> T

FRONT	SHOCKS	REAR
	SPRINGS	
cSt	OIL	cSt
	REBOUND	
%		%
<input type="checkbox"/> 2 HOLES <input type="checkbox"/>	PISTONS	<input type="checkbox"/> 2 HOLES <input type="checkbox"/>
<input type="checkbox"/> 3 HOLES <input type="checkbox"/>	<input type="checkbox"/> ø1.2mm <input type="checkbox"/>	<input type="checkbox"/> 3 HOLES <input type="checkbox"/>
<input type="checkbox"/> 6 HOLES <input type="checkbox"/>	<input type="checkbox"/> ø1.3mm <input type="checkbox"/>	<input type="checkbox"/> 6 HOLES <input type="checkbox"/>
	<input type="checkbox"/> ø1.4mm <input type="checkbox"/>	
	<input type="checkbox"/> ø1.6mm <input type="checkbox"/>	
	<input type="checkbox"/> ø1.7mm <input type="checkbox"/>	
	CUSTOM PISTONS	
	<input type="checkbox"/> mm <input type="checkbox"/> mm	

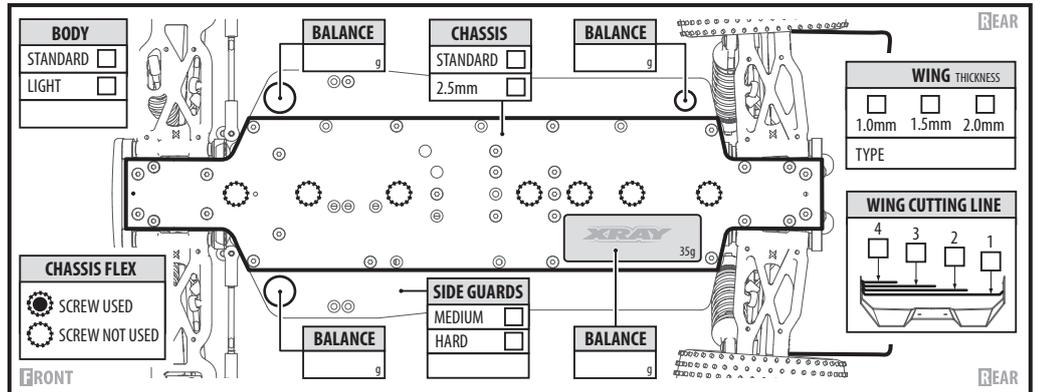
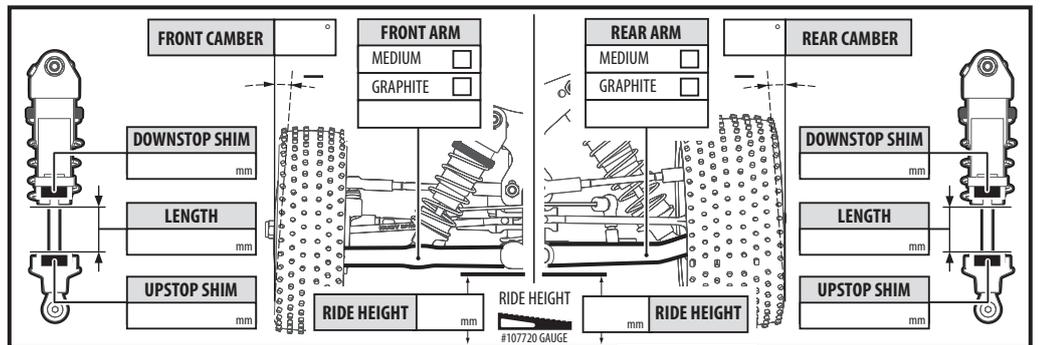
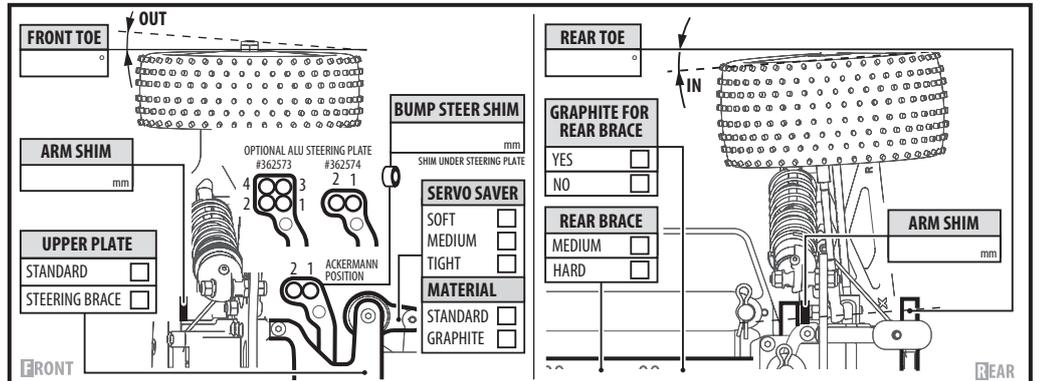
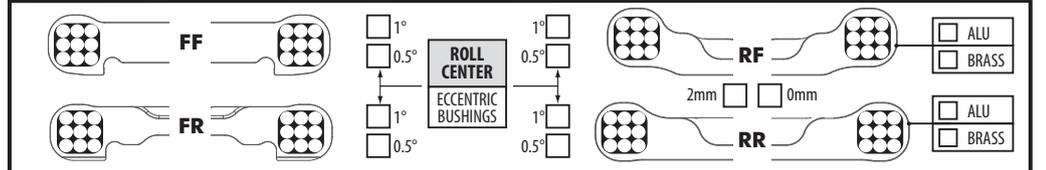
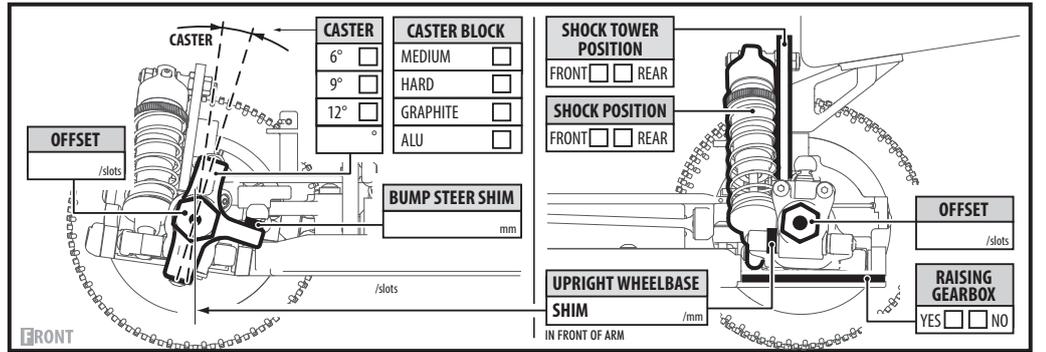
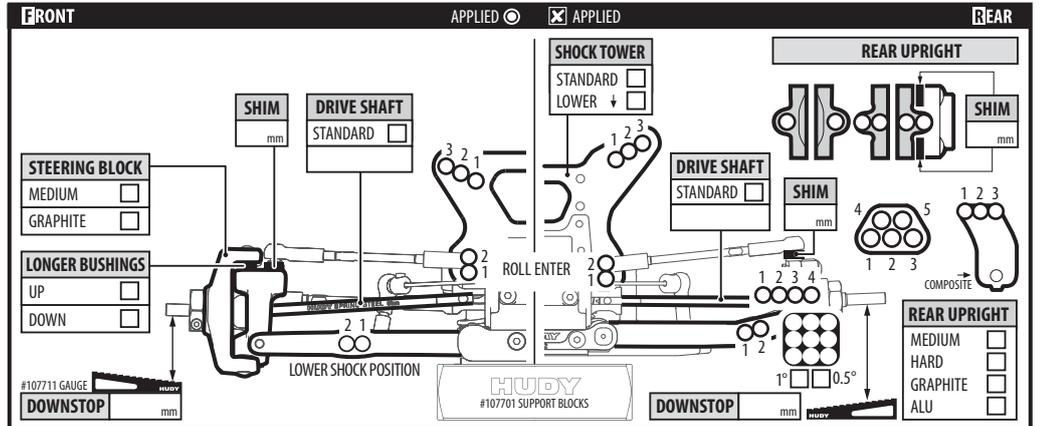
FRONT	ANTI ROLL BAR	REAR
mm	THICKNESS	mm

FRONT	TIRES	REAR
	BRAND	
	COMPOUND	
	INSERTS	
	WHEELS	

ELECTRONICS	
MOTOR	SPEEDO
MOTOR TIMING	BATTERY

ELECTRONICS LAYOUT	
MOTOR POSITION	FRONT <input type="checkbox"/> REAR <input type="checkbox"/>
BATTERY POSITION	FRONT <input type="checkbox"/> REAR <input type="checkbox"/>
BATTERY SIZE	<input type="checkbox"/> STD. SHORT <input type="checkbox"/> LOW SHORT

COMMENTS



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



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