1/10 LUXURY ELECTRIC TOURING CAR



# INSTRUCTION MANUAL FOR X4'22 EDITION

#### **BEFORE YOU START**

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

Before building and operating your XRAY, <u>YOU MUST</u> read through all of the operating instructions and instruction manual and fully understand them to get the maximum enjoyment and prevent unnecessary damage.

Read carefully and fully understand the instructions before beginning assembly.

Make sure you review this entire manual, download and use set-up book from the web, and examine all details carefully. If for some reason you decide this is not what you wanted or expected, <u>do not continue any further</u>. Your hobby dealer can not accept your kit for return or exchange after it has been partially or fully assembled.

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

#### **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 <a href="info@teamxray.com">info@teamxray.com</a>. Also, please visit our Web site at <a href="www.teamxray.com">www.teamxray.com</a> 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.feamxray.com

#### XRAY Europe

K Vystavisku 6992 91101 Trenčín Slovakia, EUROPE Phone: 421-32-7401100 Fax: 421-32-7401109

E-mail: info@teamxray.com

#### XRAY USA

RC America, 2030 Century Center Blvd #15 Irving, TX 75062 USA

Phone: (214) 744-2400 Fax: (214) 744-2401 E-mail: xray@rcamerica.com

### FAILURE TO FOLLOW THESE INSTRUCTIONS WILL BE CONSIDERED AS ABUSE AND/OR NEGLECT.

#### SAFETY PRECAUTIONS

Contains:

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

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

**CAUTION: CANCER HAZARD** 

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

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

Take appropriate safety precautions prior to operating this model. You are responsible for this model's assembly and safe operation! Please read the instruction manual before building and operating this model and follow all safety precautions. Always keep the instruction manual at hand for quick

reference, even after completing the assembly. Use only genuine and original authentic XRAY parts for maximum performance. Using any third party parts on this model will void guaranty immediately.

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



#### 🔼 IMPORTANT NOTES - GENERAL

- This product is not suitable for children under 16 years of age without the direct supervision of a responsible and knowledgeable adult.
- Carefully read all manufacturers warnings and cautions for any parts used in the construction and use of your model.
- Assemble this kit only in places away from the reach of very small children.
- First-time builders and users should seek advice from people who have building experience in order to assemble the model correctly and to allow the model to reach its performance potential.
- Exercise care when using tools and sharp instruments.
- Take care when building, as some parts may have sharp edges.
- Keep small parts out of reach of small children. Children must not be allowed to put any parts in their mouth, or pull vinyl bag over their head.
- Read and follow instructions supplied with paints and/or cement, if used (not included in kit).
- Immediately after using your model, do NOT touch equipment on the model such as the motor and speed controller, because they generate high temperatures. You may seriously burn yourself seriously touching them.
- Follow the operating instructions for the radio equipment at all times.
- Do not put fingers or any objects inside rotating and moving parts, as this
  may cause damage or serious injury as your finger, hair, clothes, etc. may
  get caught.
- Be sure that your operating frequency is clear before turning on or running your model, and never share the same frequency with somebody else at the same time. Ensure that others are aware of the operating frequency you are using and when you are using it.
- Use a transmitter designed for ground use with RC cars. Make sure that no
  one else is using the same frequency as yours in your operating area. Using
  the same frequency at the same time, whether it is driving, flying or sailing,
  can cause loss of control of the RC model, resulting in a serious accident.
- Always turn on your transmitter before you turn on the receiver in the car.
   Always turn off the receiver before turning your transmitter off.
- Keep the wheels of the model off the ground when checking the operation of the radio equipment.

- Disconnect the battery pack before storing your model.
- When learning to operate your model, go to an area that has no obstacles that can damage your model if your model suffers a collision.
- Remove any sand, mud, dirt, grass or water before putting your model away.
- If the model behaves strangely, immediately stop the model, check and clear the problem.
- To prevent any serious personal injury and/or damage to property, be responsible when operating all remote controlled models.
- The model car is not intended for use on public places and roads or areas where its operation can conflict with or disrupt pedestrian or vehicular traffic.
- Because the model car is controlled by radio, it is subject to radio interference from many sources that are beyond your control. Since radio interference can cause momentary loss of control, always allow a safety margin in all directions around the model in order to prevent collisions.
- Do not use your model:
- Near real cars, animals, or people that are unaware that an RC car is being driven.
- In places where children and people gather
- In residential districts and parks
- In limited indoor spaces
- In wet conditions
- In the street
- In areas where loud noises can disturb others, such as hospitals and residential areas.
- At night or anytime your line of sight to the model may be obstructed or impaired in any way.

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



### A

#### 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 RC 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 shortcircuit 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 excess 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 addictions that may arise from the use of this product.

All rights reserved.

#### **OUALITY 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

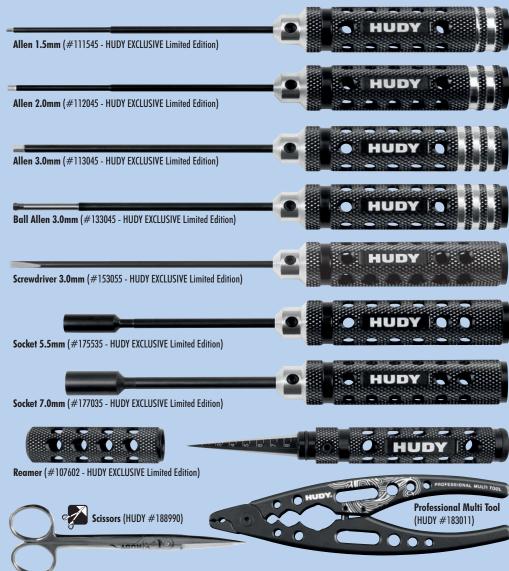
cannot guarantee any parts once you start racing the car. Products which have been worn out, abused, neglected or improperly operated will not be covered under warranty.

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.





### INCLUDED



### **EQUIPMENT REQUIRED**

Transmitter	Receiver	Speed Controller	Steering Servo
		Order Control	863
Electric Motor	Pinion Gear	LiPo Battery	Battery Charger
	with Setscrew		6.00
Lexan™ Paint	Wheels & Tires & Inserts (HUDY #803053 C3-28) (HUDY #803062 A1-36)	190mm Bodyshell	Double-sided Tape (HUDY #107875)
	(1001 1/30002 A1/30)		A AGT
Fibre Tape	Bearing Oil	Threadlock	CA glue
(HUDY #107870)	(HUDY #106230)		





Alexander Hagberg (Factory Driver)

When a QR CODE is found in the instruction manual, scan the code to be directed to an online video that explains that feature or adjustment in more detail. Make sure to watch all of the instructional videos to get the most performance out of your car.



SAMPLE OF OPTIONAL PARTS			
#30XXXX	TYPE1	OPTION 1	
#30XXXX	TYPE1	OPTION 2	
#30XXXX	TYPE1	INCLUDED	
#30XXXX	TYPE1	OPTION 3	

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

### **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:

305134

304901

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

301011 STYLE B -

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

• •

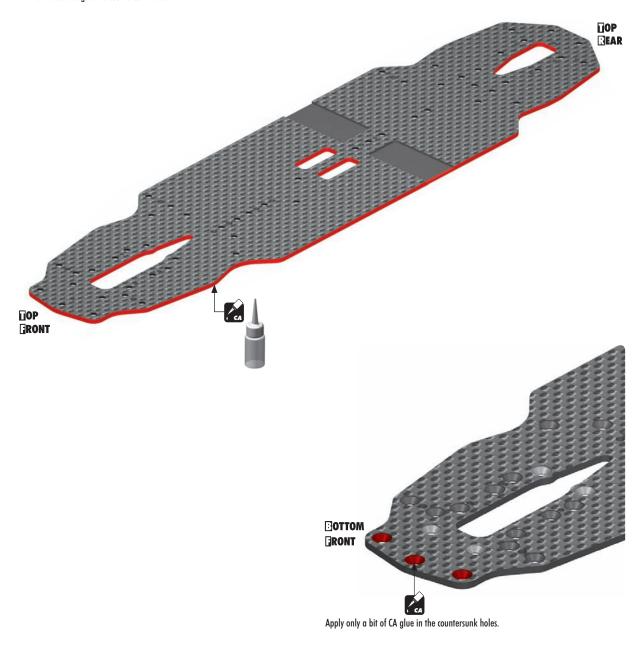
**STYLE C** - indicates parts that are already assembled from previous steps.

### CHASSIS PREPARATION

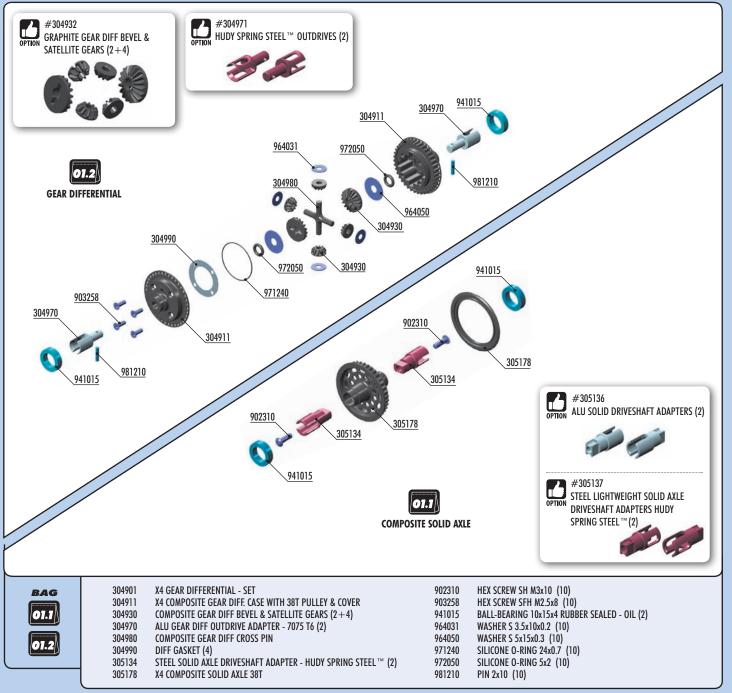


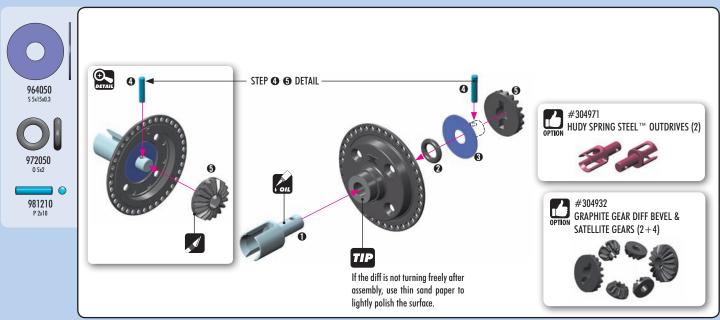
To protect and seal edges of graphite parts, sand edges smooth and then apply CA glue.

Do this for: chassis edges and countersunk holes.

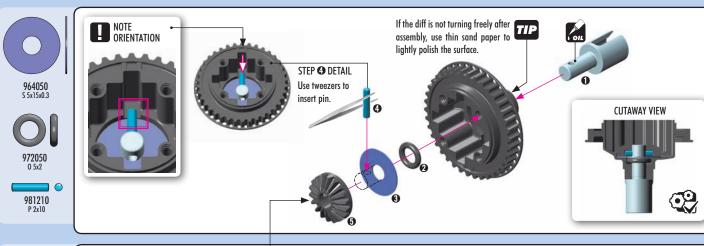


### 1. GEAR DIFFERENTIAL & FRONT SOLID AXLE





### 1. GEAR DIFFERENTIAL & FRONT SOLID AXLE







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



TIP	TIPS FOR D	IFFERENTIALS	TIP
LOW TRACTION 1.000cSt (HUDY #106410) 2.000cSt (HUDY #106420)	MEDIUM TRACTION 2.000c5t (HUDY #106420) 3.000c5t (HUDY #106430) 4.000c5t (HUDY #106440)	HIGH TRACTION 5.000cSt (HUDY #106450) 6.000cSt (HUDY #106460) 7.000cSt (HUDY #106470)	VERY-HIGH TRACTION 10.000c5t (HUDY #106510) 11.000c5t (HUDY #106492) 12.000c5t (HUDY #106512)
	5.000cSt (HUDY #106450)	8.000cSt (HUDY #106480) 9.000cSt (HUDY #106490) 10.000cSt (HUDY #106510)	15.000cSt (HUDY #106515) 20.000cSt (HUDY #106520)



# VIDEO TECH TIP REAR DIFFERENTIAL

#### NOTE

LIGHTER oil increases rear traction, HEAVIER oil increases on-power steering and stability. It is important not to use lighter oils in high-traction conditions as this would not increase traction, but would make the car loose as the car would become too twitchy.

However, if the oil is too light, it could generate the same effect like the car has no traction. Therefore it is very important to choose the correct oil very carefully. We recommend using lighter oil first, then try heavier oil to better understand the effect on the car's behavior at the track. Choose the oil accordingly.



#104002

HUDY AIR VAC — VACUUM PUMP



To make sure that all the air is removed from the diff oil, we recommend using the HUDY Air Vac.

#### TIP TIPS FOR FRONT DIFFERENTIAL

To increase off-power steering and mid-corner steering, the gear diff can also be used in front. NOTE: If you use the gear diff in the front, we recommend using optional #304971 HUDY Spring Steel™ outdrives because the stress on the outdrives in the front is much higher than in the rear.

#### **USE THESE OILS FOR FRONT DIFFERENTIAL**

500.000cSt (HUDY #106650) 1 000.000cSt (HUDY #106692) 2 000.000cSt (HUDY #106694)

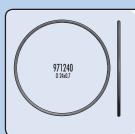
To make the front differential thicker, you can use cleaning gum instead of oil.



#### IMPORTANT!

Using cleaning gum instead of oil in the gear differential can lead to gear breakage because the gears are working under dry conditions.

### 1. GEAR DIFFERENTIAL & FRONT SOLID AXLE

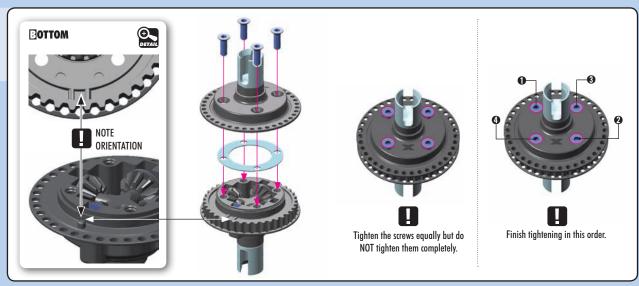




П

After disassembling the gear diff, the large O-ring may have an increased size and may be more difficult to re-install. We recommend either inserting the old O-ring carefully in the diff cover, or installing a new O-ring if the old one cannot be made to fit properly.



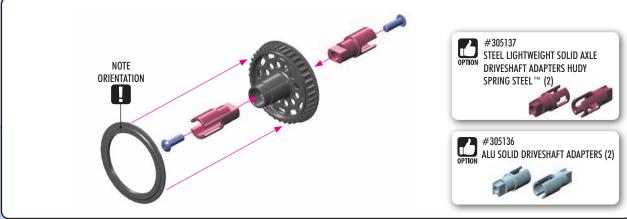




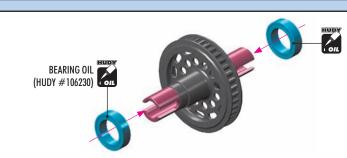


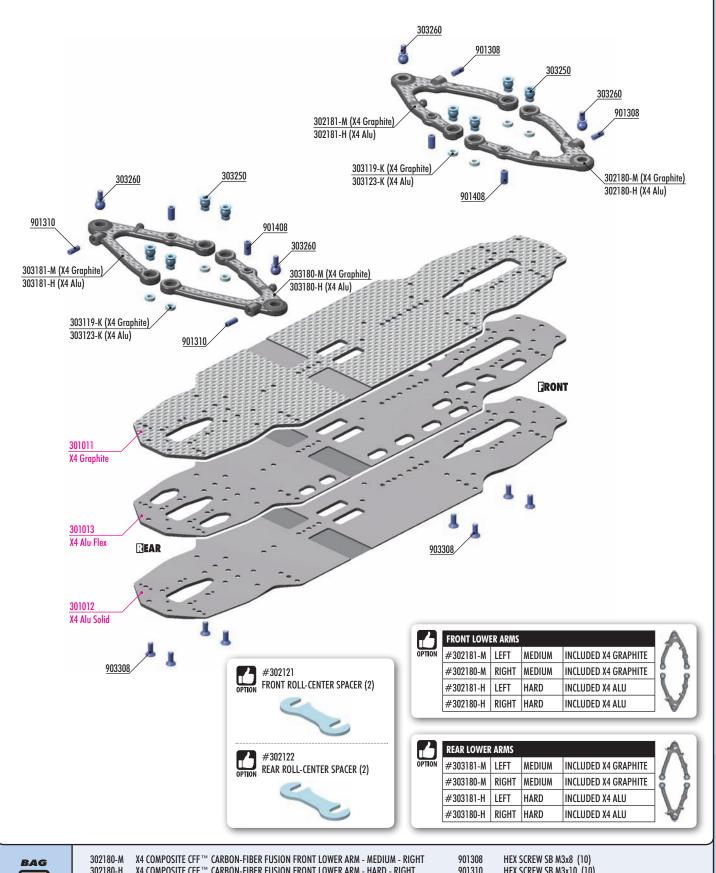
### 1. FRONT SOLID AXLE













X4 COMPOSITE CFF™ CARBON-FIBER FUSION FRONT LOWER ARM - HARD - RIGHT X4 COMPOSITE CFF™ CARBON-FIBER FUSION FRONT LOWER ARM - MEDIUM - LEFT 302180-H 302181-M X4 COMPOSITE CFF™ CARBON-FIBER FUSION FRONT LOWER ARM - HARD - LEFT 302181-H ALU SHIM 3x9x2.0MM - BLACK (10) ALU SHIM 3x6x2.0MM - BLACK (10) 303119-K 303123-K X4 COMPOSITE CFF™ CARBON-FIBER FUSION REAR LOWER ARM - MEDIUM - RIGHT X4 COMPOSITE CFF™ CARBON-FIBER FUSION REAR LOWER ARM - HARD - RIGHT X4 COMPOSITE CFF™ CARBON-FIBER FUSION REAR LOWER ARM - MEDIUM - LEFT 303180-M 303180-H 303181-M

X4 COMPOSITE CFF™ CARBON-FIBER FUSION REAR LOWER ARM - HARD - LEFT

X4 LOWER ARM BALL UNIVERSAL 6.0MM WITH HEX - HUDY SPRING STEEL ™ (2) X4 PIVOT BALL 6.0MM WITH M3x5.5MM THREAD - HUDY SPRING STEEL ™ (2)

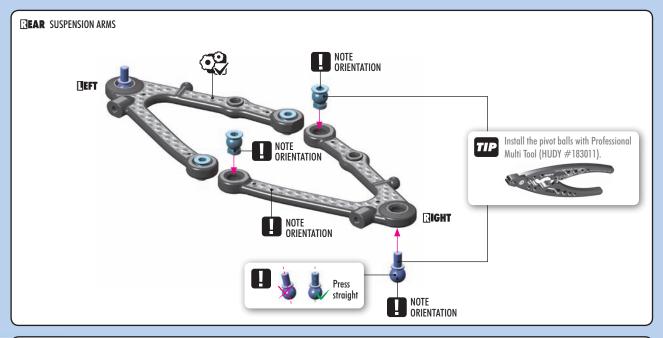
HEX SCREW SB M3x10 (10) HEX SCREW SB M4x8 (10) 901310 901408 HEX SCREW SFH M3x8 (10) 903308 301011

**X4 GRAPHITE CHASSIS 2.2MM** 301012

X4 ALU SOLID CHASSIS 2.0MM - SWISS 7075 T6 301013 X4 ALU FLEX CHASSIS 2.0MM - SWISS 7075 T6

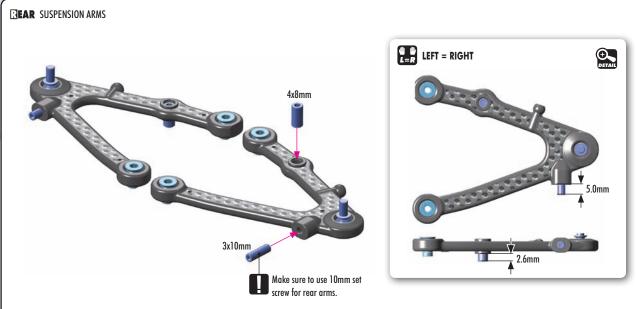
303181-H

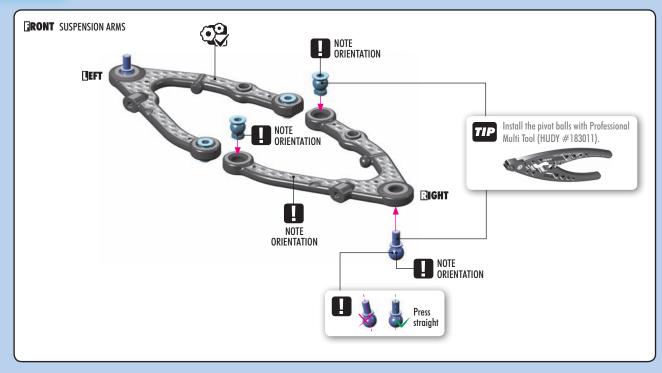
303250 303260



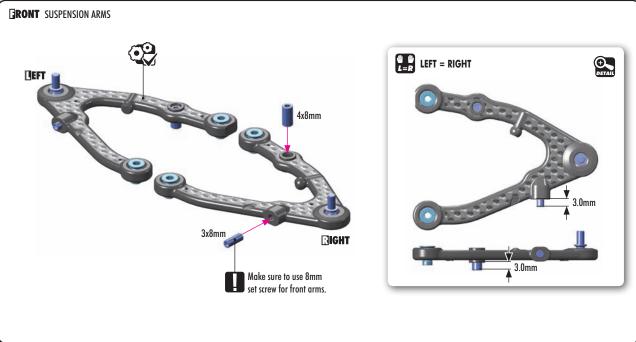


LOWER ARMS



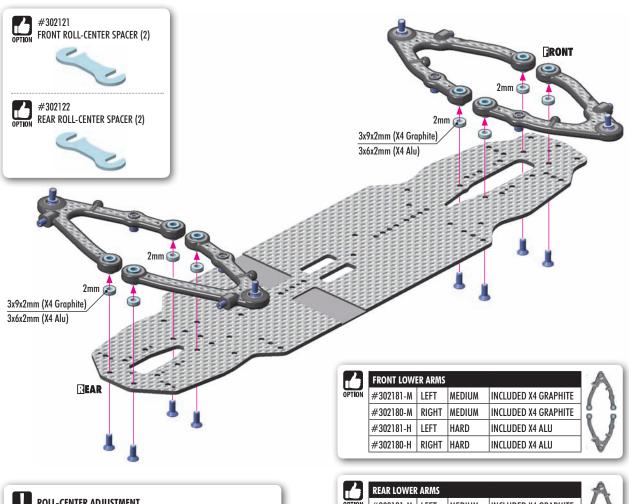








**CHASSIS ALTERNATIVES** 





#### **ROLL-CENTER ADJUSTMENT**

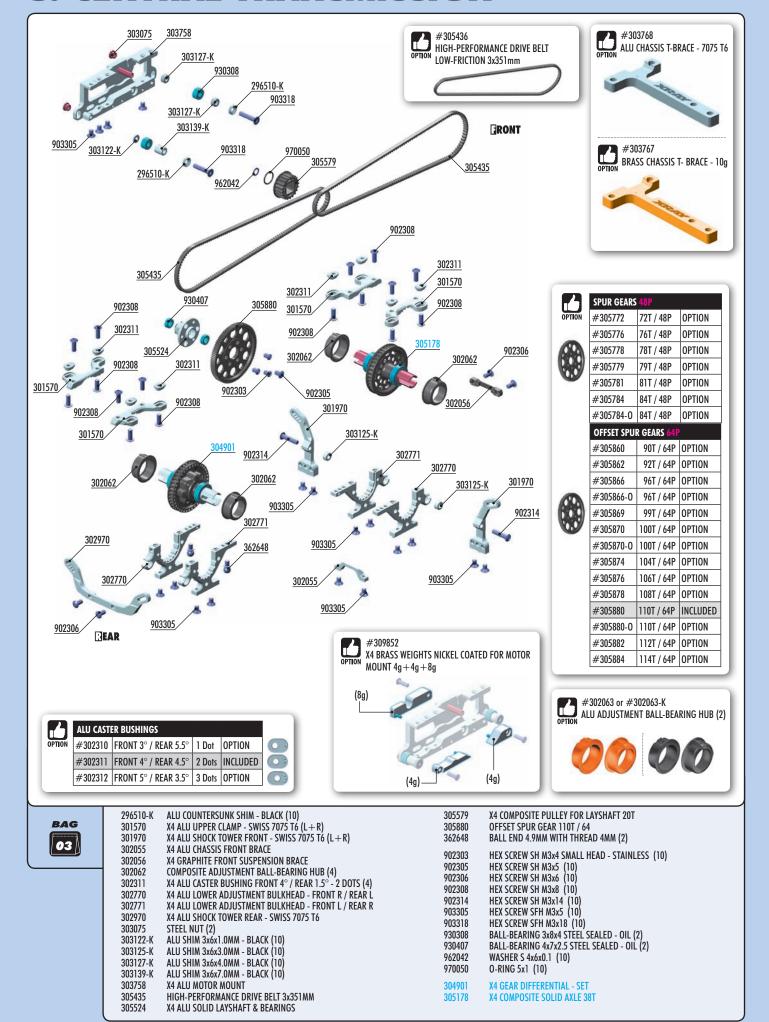
RAISING THE LOWER ARMS will raise the car's roll center. Raising the lower arms both front and rear will free up the car, and will make it initially more responsive. Side bite will be decreased. A higher roll center is typically recommended for asphalt racing.

LOWERING THE LOWER ARMS will lower the car's roll center. Lowering both the front and rear arms will lock in the car more, and will make it initially less responsive. Side bite will be increased. A lower roll center is typically recommended for carpet racing.



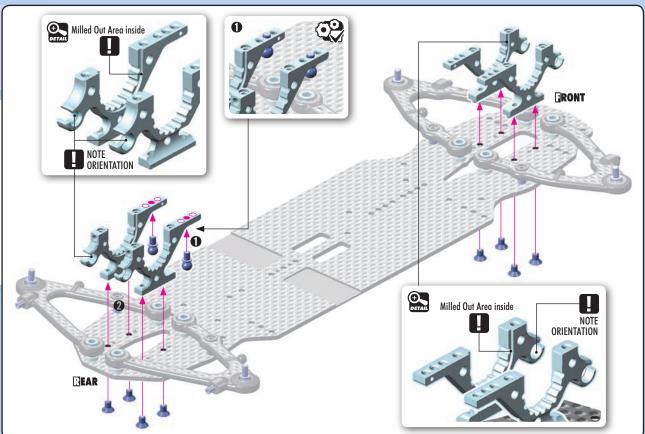
We recommend the MEDIUM hardness of the lower suspension arms for asphalt. These arms are more flexible than the H (hard) arms.

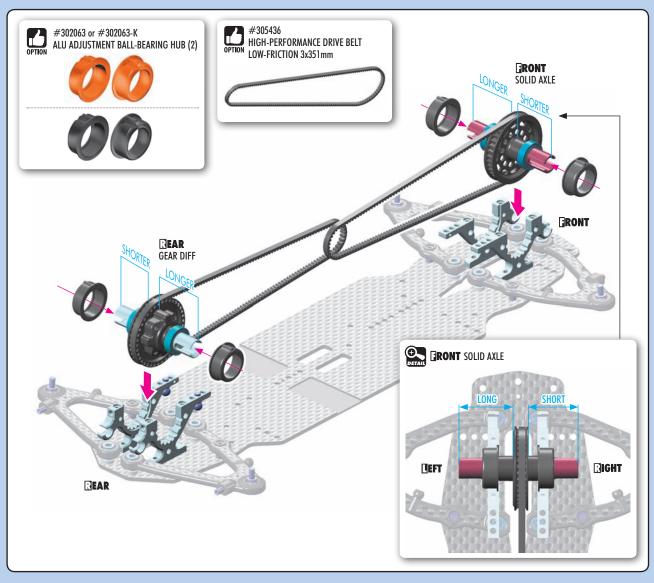
For carpet racing and even some high-grip asphalt conditions, we recommend the HARD suspension arms.





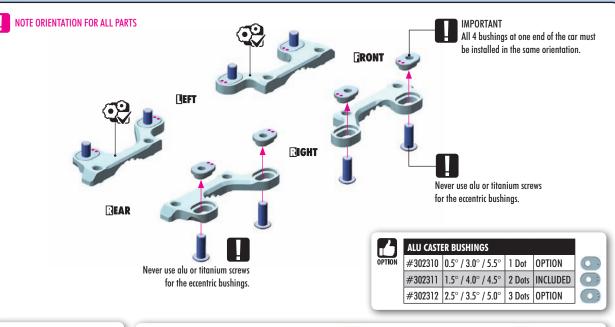








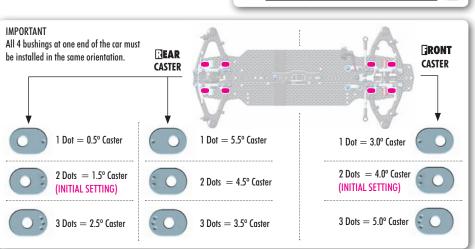




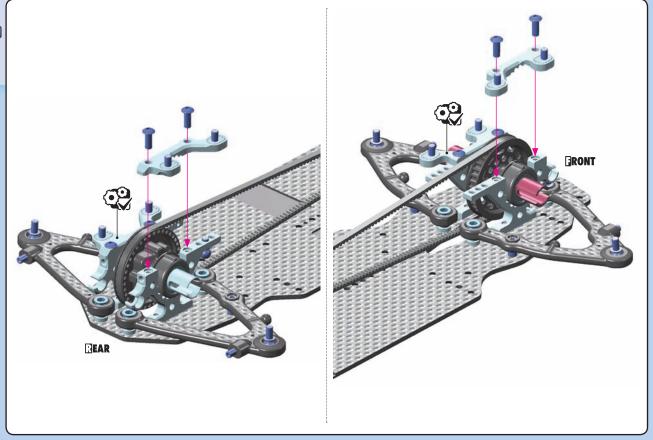
### CASTER ADJUSTMENT

For most conditions, start with front caster set at  $4.0^\circ$ . Increasing front caster will increase steering (mainly on-power), but it will also make the car more difficult to drive and more likely to traction roll.

A good starting point for the rear caster is 1.5°. More rear caster will increase initial steering making the car more nervous to drive, but it can help increase cornering speeds on technical or higher grip tracks.



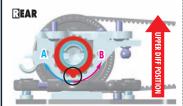




### REAR BELT TENSION ADJUSTMENT & DIFFERENTIAL POSITION

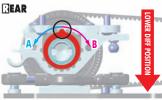
Rear diff UPPER position - tab in bottom notch provides more on-power steering, but makes the rear less stable.

Recommended for medium-high traction tracks.



Rear diff LOWER position - tab in top notch provides more rear traction (mainly on-power), makes the car more stable in chicanes, but can cause a push on corner exit.

Recommended for low-medium traction tracks.

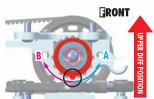


**INITIAL POSITION for CARPET/ASPHALT** Place tab in this UPPER NOTCH

### RONT BELT TENSION ADJUSTMENT & DIFFERENTIAL POSITION

Front solid axle UPPER position - tab in bottom notch - provides more steering, but less forward traction.

Recommended for medium-high traction tracks and technical tracks.



Front solid axle LOWER position - tab in top notch - provides more forward traction, but makes the car push on-power.

Recommended for low-traction tracks.



**INITIAL POSITION for CARPET/ASPHALT** Place tab in this UPPER NOTCH

#### TO LOOSEN REAR BELT:

Rotate both rear nylon hubs in arrow direction A

#### TO TIGHTEN REAR BELT:

Rotate both rear nylon hubs in arrow direction B



**DIFF HEIGHT VIDEO TECH TIP** 



BELT TENSION ADJUSTMENT

#### TO LOOSEN FRONT BELT:

Rotate both front nylon hubs in arrow direction A

#### TO TIGHTEN FRONT BELT:

Rotate both front nylon hubs in arrow direction B









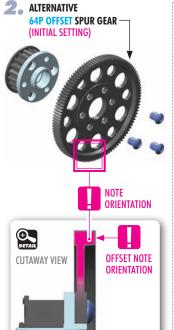


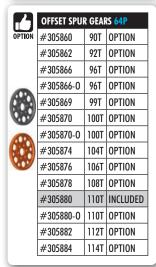


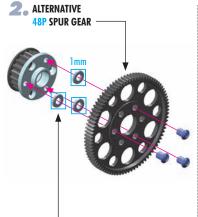


Another alternative to secure the pulley on the layshaft is to use the CH-clip which is included in the "Last Aid" Bag. To mount the clip on the layshaft, you have to use special Snap Ring Pliers.

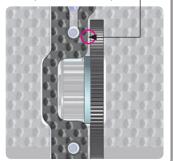








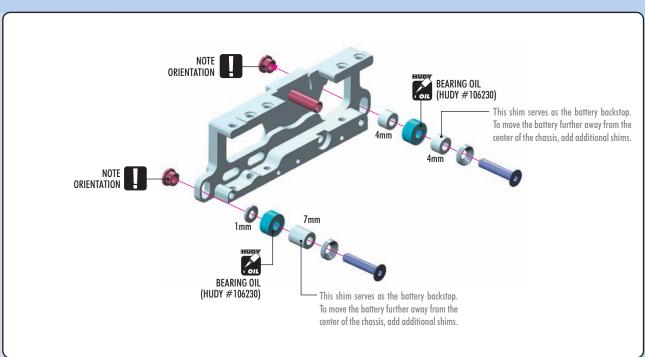


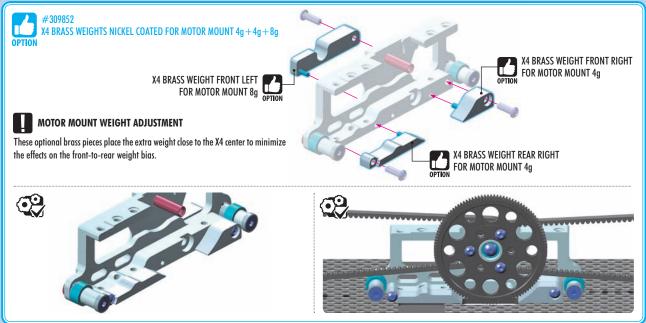




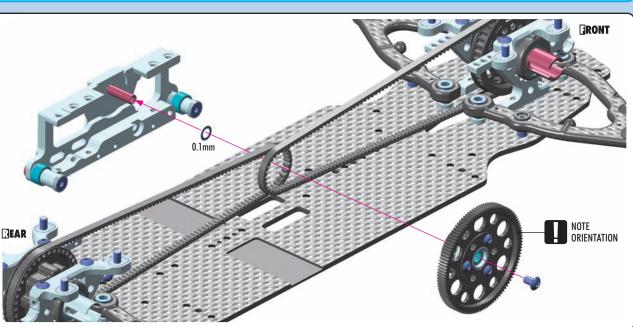




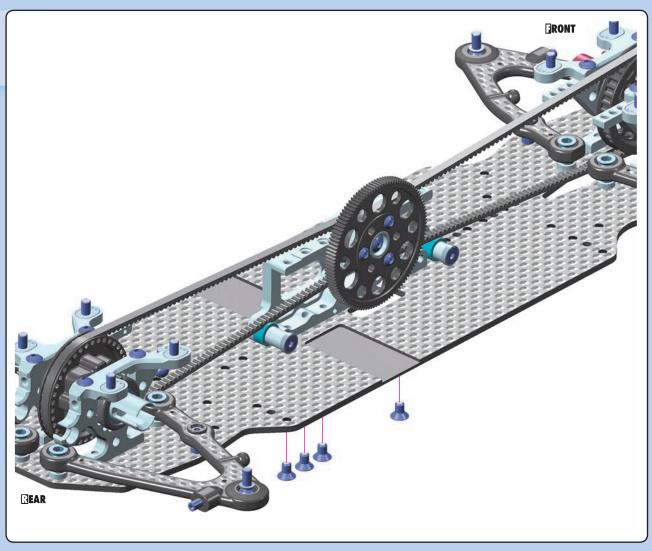












#### MOTOR MOUNT FLEX ADJUSTMENT

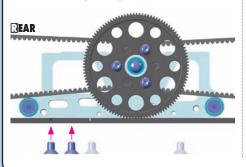
The motor mount is part of the chassis flex adjustment. Adding or removing screws from the mount will create different flex settings for different tracks and traction levels.

NOTE: When removing screws from the motor mount, the spur gear becomes more susceptible to breakage in crashes.



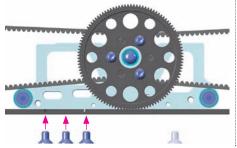
### **SOFT** (INITIAL SETTING)

Use only the 2 rearmost screws to attach the motor mount (as shown). Do not install the 2 screws immediately in front of & behind the spur gear. This allows the chassis to flex more in the central area, and will improve traction (especially on-power). Rear grip will be improved through the entire corner, but initial reaction will decrease. This setting is recommended for low- to medium-traction conditions, both on carpet and asphalt.



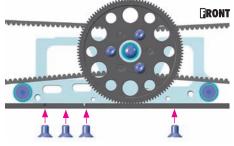
#### **MEDIUM**

Use only the 3 rearmost screws to attach the motor mount (as shown); do not install the very front screw. This gives a good compromise between stability and initial response. The car will have more rear grip than the full stiff setting, but will not be as stable as the soft setting.

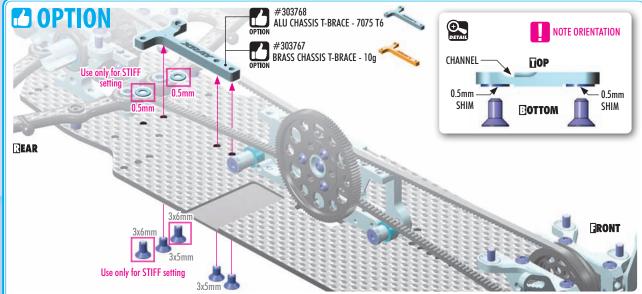


#### **STIFF**

Using all screws to attach the motor mount (as shown) will give the best steering response, but with the least mechanical traction. The car will have more cornering speed, but will be more difficult to drive. Mainly recommended for high-traction carpet conditions.







#### **CHASSIS FLEX ADJUSTMENT**

The brace provides chassis flex adjustment possibilities depending on which screws are connected.



#### **SOFT - NO BRACE**

When the brace is not installed, the car will have the most steering and rotation. However, the car will be more difficult to drive as it is less stable. Recommended for medium-high traction conditions and for small, technical tracks with many hairpin corners.



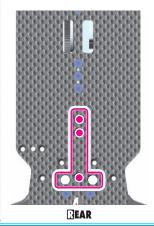
#### **SOFT - MEDIUM**

Install the brace using only the 2 forward bottom centerline screws (as shown). (as shown). This gives improved on-power stability but still offers great off-power steering and rotation. Recommended for medium-high traction conditions and for small, technical tracks with many hairpin



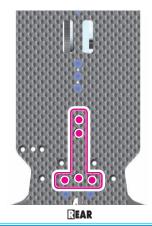
#### **MEDIUM**

Install the brace using all 3 bottom centerline screws (as shown). This gives improved on-power stability and traction, but makes the car push more off-power. Recommended for low- or high-traction conditions where stability and traction is needed.

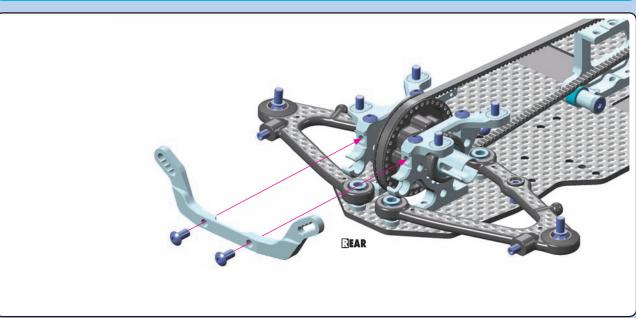


### **STIFF**

In addition to installing all 3 bottom centerline screws, also install the 2 rear side screws but with 0.5mm shims between the brace and the chassis. This setting gives maximum stability.



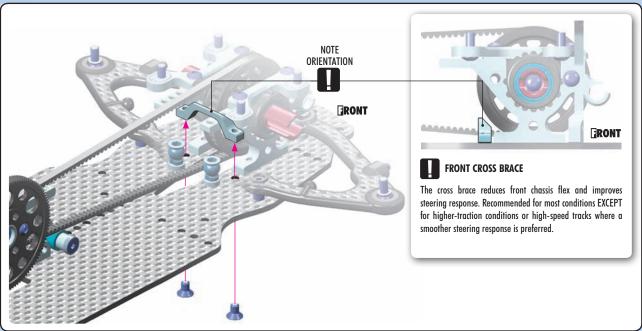




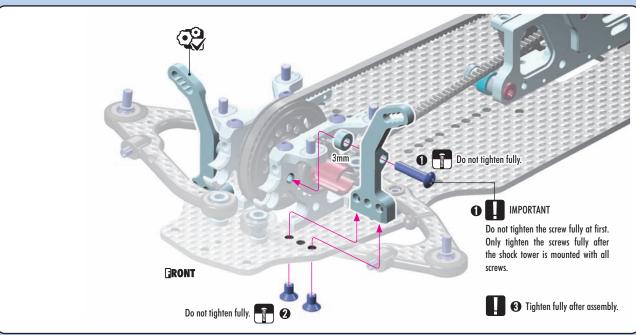




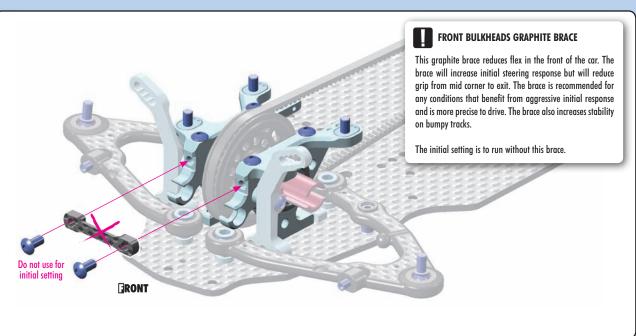
**CHASSIS & TOP DECKS** 



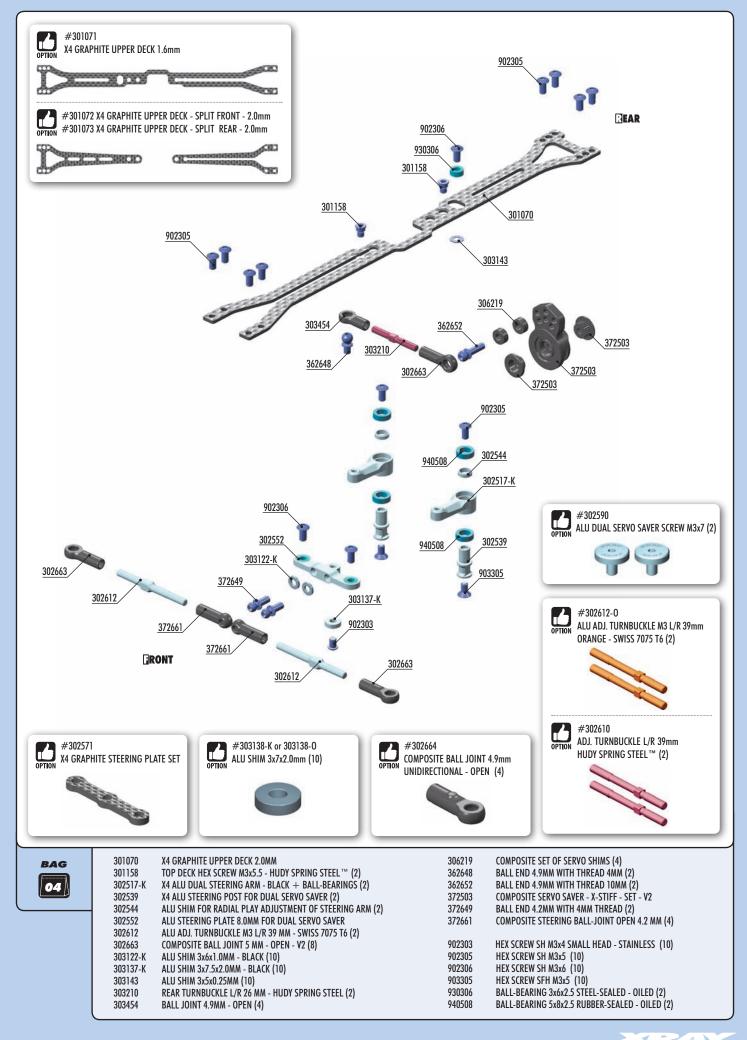


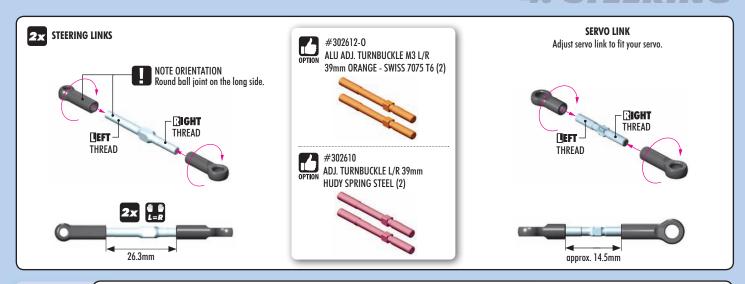




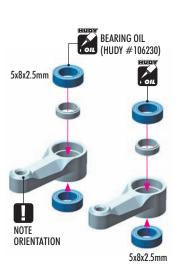


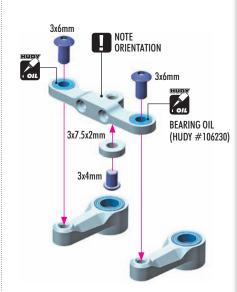
### 4. STEERING

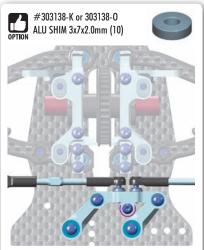












The steering lock is adjusted by the size of the shim which attaches to the bottom of the steering.

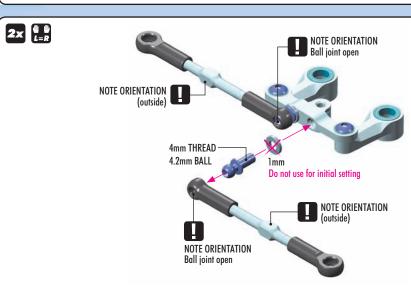
The kit includes a 7.5mm OD shim, which limits the physical steering lock to approx. 26 degrees.

An optional 7mm shim is offered, to be able to achieve 28 degrees of steering lock.

Running no shim will allow up to 30 degrees of steering lock. More steering lock will increase steering, especially in tight corners, but it will also reduce cornering speeds, and will make the car more difficult to drive.



303122-K

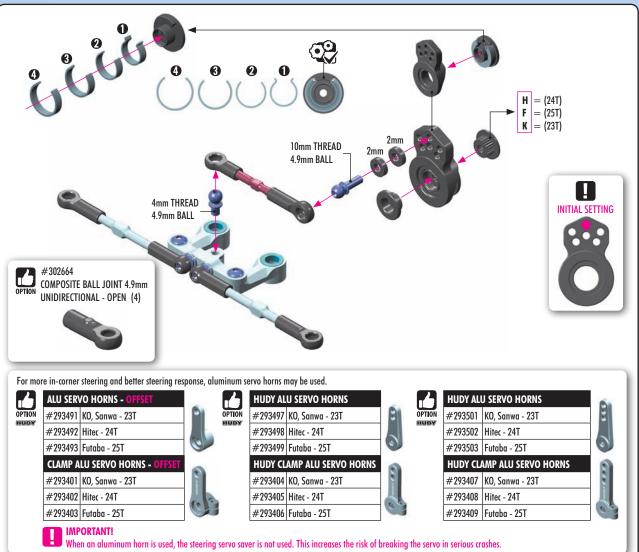


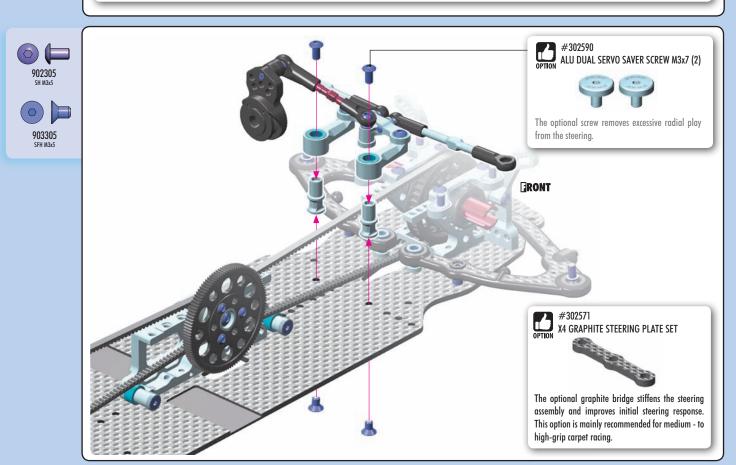


### 4. STEERING











SOFT

No bushing or bearing is used. This allows

maximum flex and provides maximum

steering. However, the car is less stable

on-power.





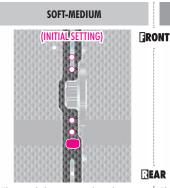




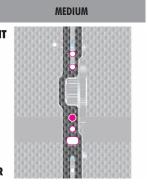


#### **TOP DECK FLEX SETTINGS**

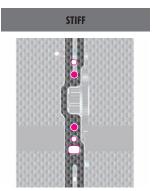
The new feature of the top deck is the flex setting adjustment. There are three different flex setting alternatives.



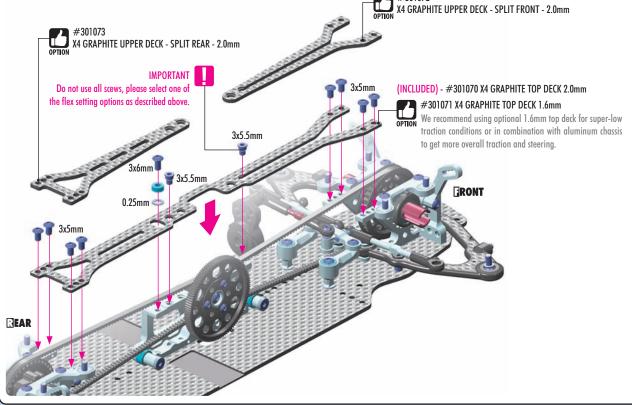
The top deck is connected to the motor mount via ball bearing. This setting eliminates a bit of steering but improves stability.



The top deck is connected to the motor mount via special 3x5.5mm screw in the rear, behind the layshaft. This setting eliminates a bit of steering but improves stability.



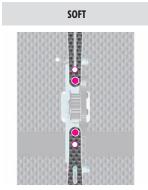
The top deck is connected to the motor mount via special screws M3x5.5mm behind and in front of layshaft. This setting provides maximum stability.



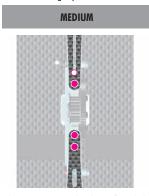


### **TOP DECK (SPLIT) FLEX SETTINGS**

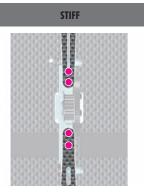
The new feature of the split top deck is the flex setting adjustment. There are three different flex setting alternatives.



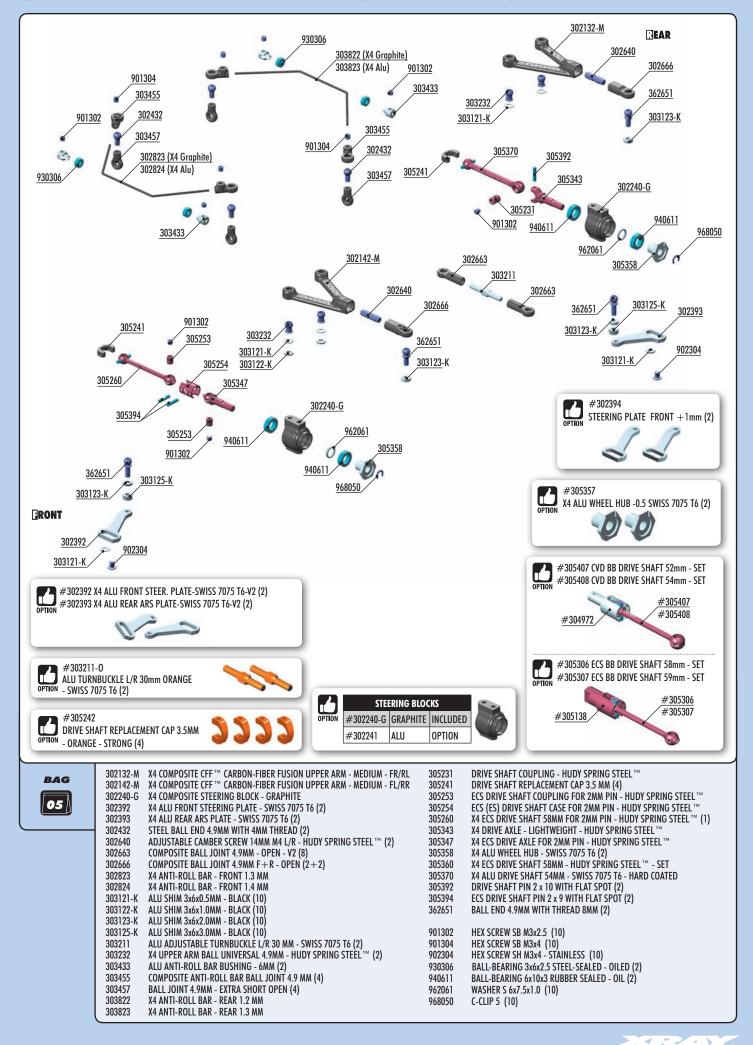
This allows maximum flex and provides maximum steering. However, the car is less stable on-power.



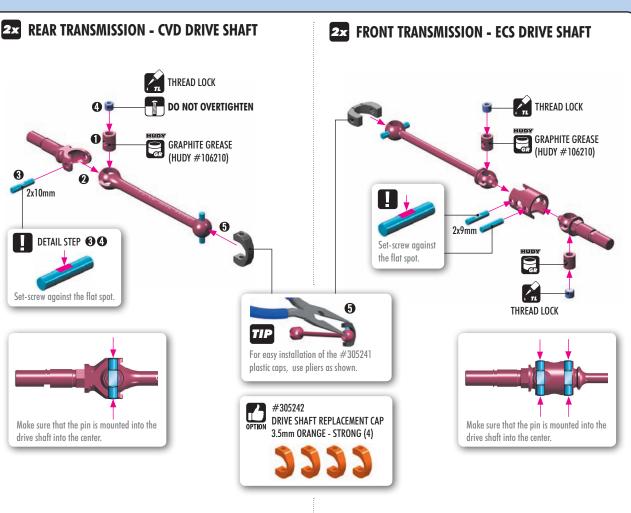
This setting gives reduced rear flex which increases stability. Rotation is decreased.



This setting gives reduced flex both in front and rear. Mid-corner steering is decreased, rotation is decreased. This setting provides maximum stability.

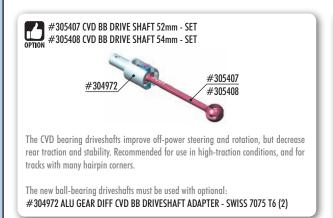






Longer driveshafts 59mm Front/54mm Rear make the car easier to drive by creating more traction and better stability, felt mostly in chicanes. However, the car will also understeer more than when using the shorter 58mm Front / 52mm Rear driveshafts that create more steering and make the car more aggressive. Both left and right should ALWAYS be the same length at each end of the car (FL = FR; RR = RL).

59mm Front / 54mm Rear shafts are recommended for carpet tracks and large asphalt tracks.
58mm Front / 52mm Rear shafts are recommended for low-traction or tight asphalt tracks.



INCLUDED

OPTION

OPTION

REAR CVD DRIVE SHAFTS

52mm - BB CVD

54mm - BB CVD

#305370 54mm - CVD

#305407

#305408



#305138 SOLID AXLE ECS BB DRIVESHAFT ADAPTER - HUDY SPRING STEEL™ (2)

FRONT ECS DRIVE SHAFTS

58mm - ECS

58mm - BB ECS

59mm - BB ECS

INCLUDED

OPTION

OPTION

#305360

#305306

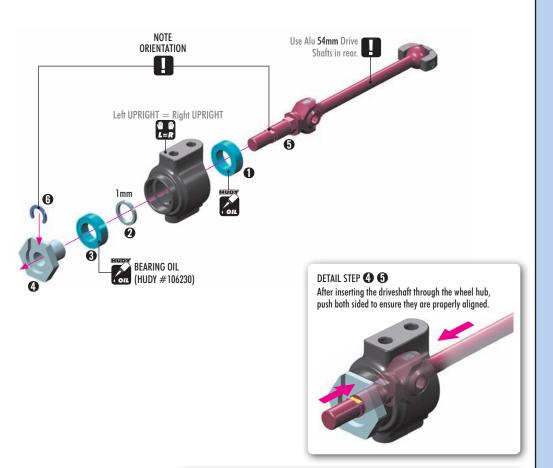
#305307





**UPRIGHTS** 

## **2x** REAR TRANSMISSION



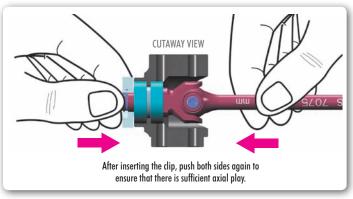


shims can be quickly added or removed.



73	STEERING BLOCKS			0
OPTION	#302240-G	GRAPHITE	INCLUDED	100
	#302241	ALU	OPTION	1





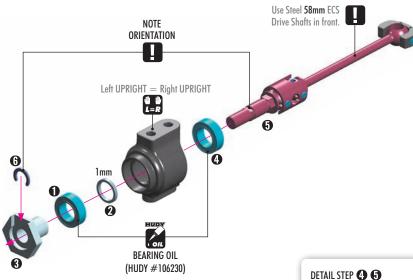








# FRONT TRANSMISSION



After inserting the driveshaft through the wheel hub, push both sided to ensure they are properly aligned.







INSTALL the C-CLIP with Combination pliers Tool (HUDY #189020).

Before installing the C-clip, make sure that the slot on the axle is in the line with the cut out on the hex.





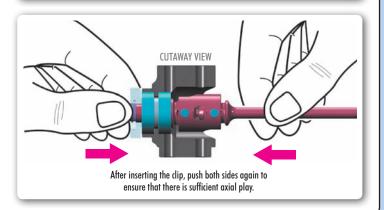




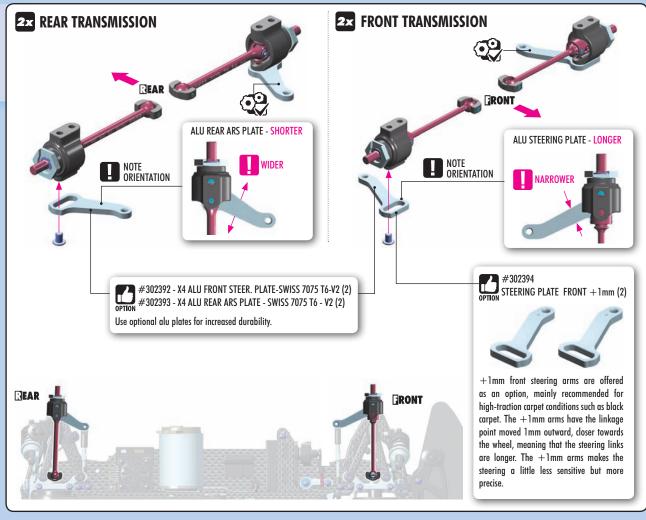
To adjust the width of the car, optional wheel shims can be quickly added or removed.

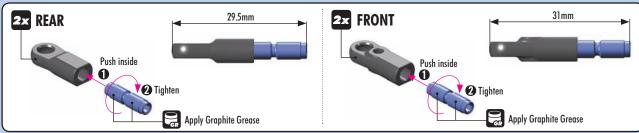


	STEERING BLOCKS			0
OPTION	#302240-G	GRAPHITE	INCLUDED	100
	#302241	ALU	OPTION	1

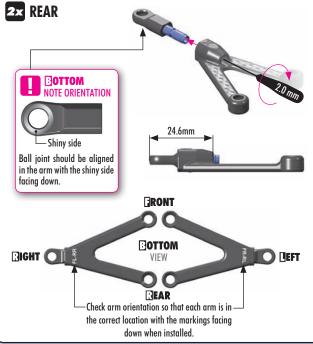


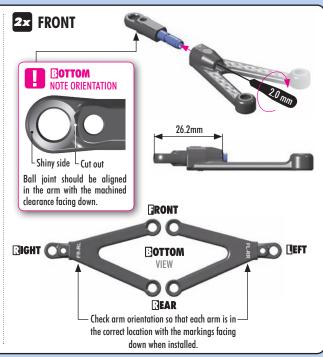






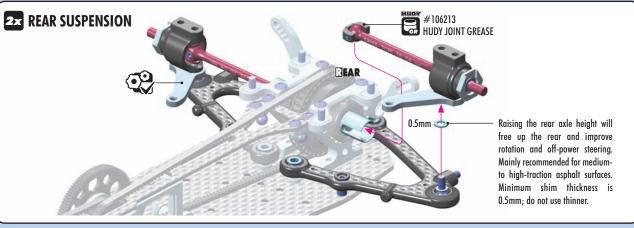




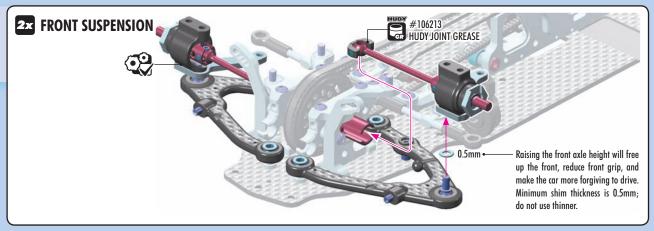








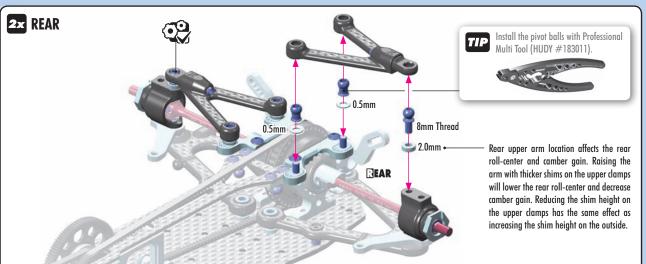










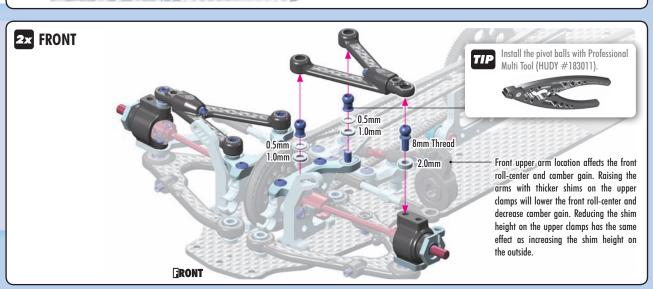


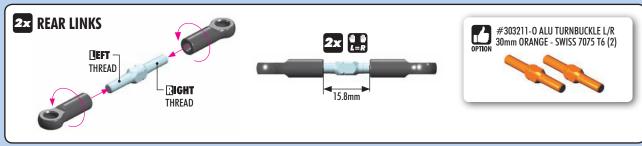




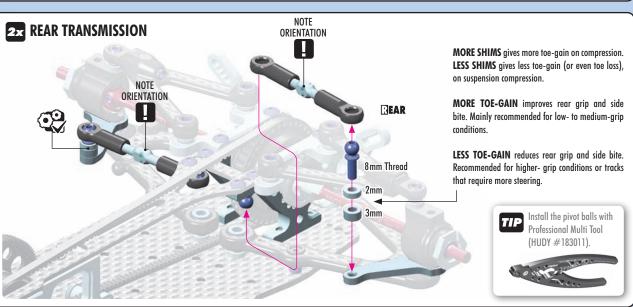
303122-K SHIM 3x6x1

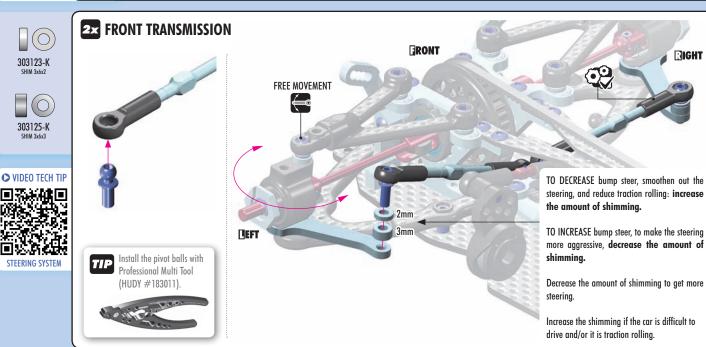




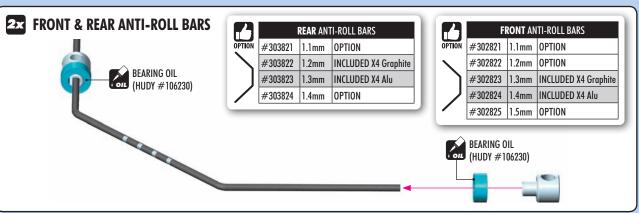




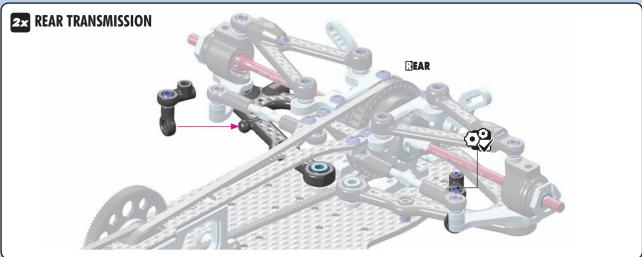








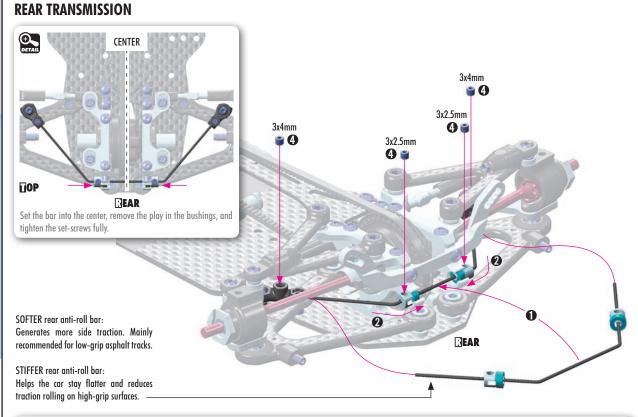
















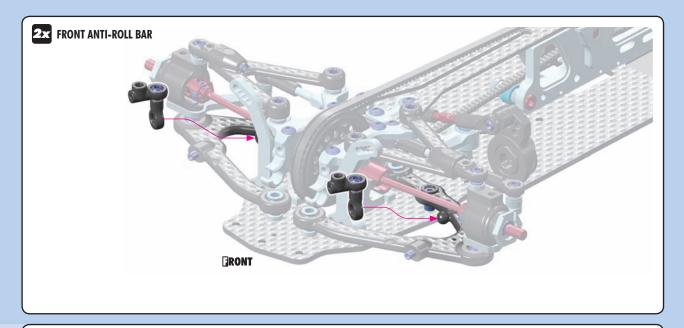




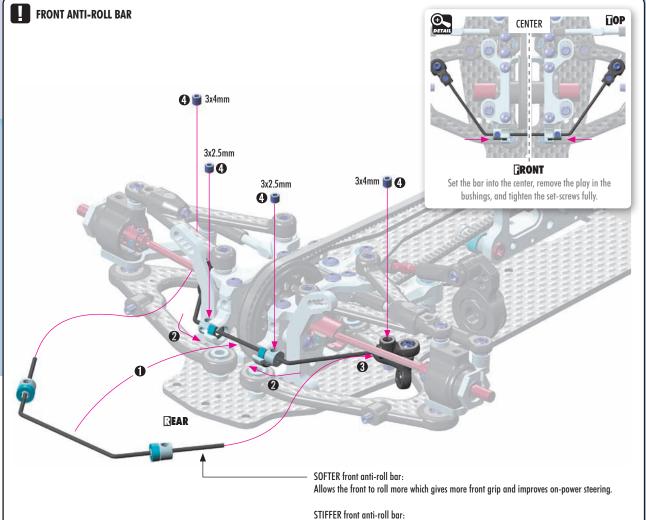
When the bars are set, verify that both sides move at the same time. If they do, the bars are set up correctly. If not, make sure that both downstops are the same and that the bar wire is flat.



If both sides still do not move at the same time, adjust the length of the bar holders.

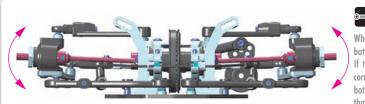








Makes the car initially more responsive, and helps the car stay flatter on fast direction changes. Reduces steering from mid-corner to corner exit. Mainly recommended for high-grip carpet.





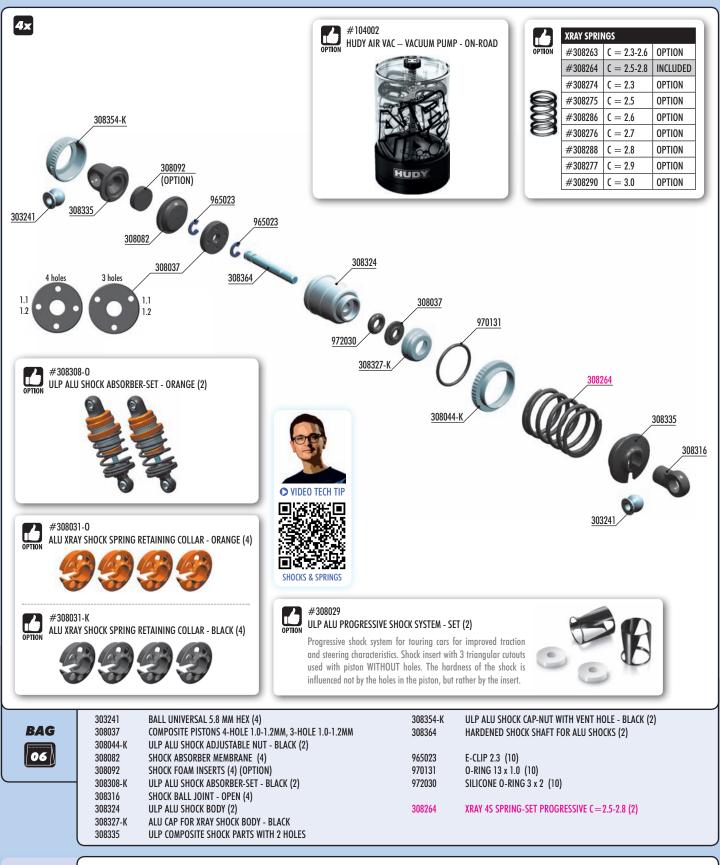
both sides move at the same time.

If they do, the bars are set up correctly. If not, make sure that both downstops are the same and that the bar wire is flat.



If both sides still do not move at the same time, adjust the length of the bar holders.

### 6. SHOCK ABSORBERS



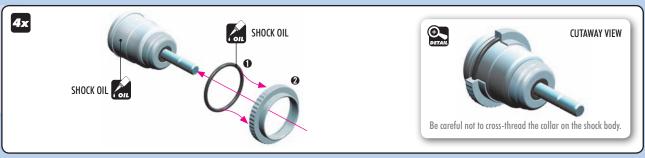


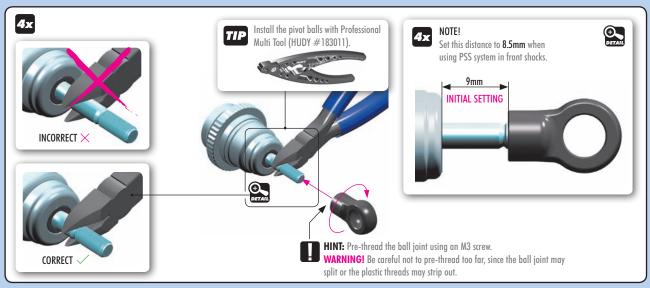
### 6. SHOCK ABSORBERS













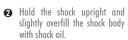


BUILD

#### OIL 400cSt SHOCK FILLING

4x Coll

• Fully extend the piston rod so the piston is at the bottom of the shock body.



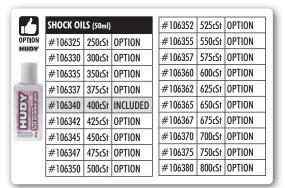
Let the oil settle and allow air bubbles to rise to the top. Slowly move the piston up and down to allow oil into all cavities within the shock body.

Extend the piston rod most of the way out of the shock body. Let the shock rest for 5 minutes to allow the air bubbles to escape.

• Add shock oil as necessary.

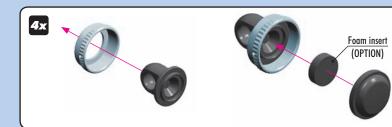


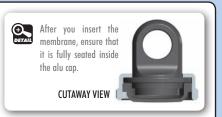
#104002 Hudy air vac — Vacuum Pump



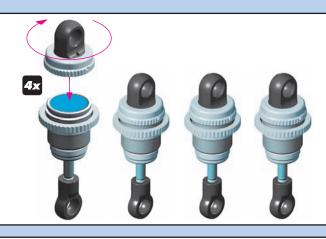


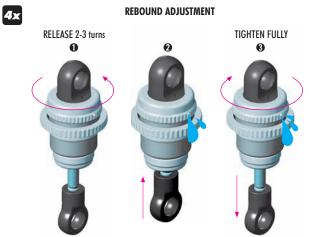
To make sure that all the air is removed from the shock oil, we recommend using the HUDY Air Vac.





- When installing the shock cap assembly on the shock body, some oil will leak out... this is normal.
- 2 Tighten the cap and clean off any excess oil.
- After the shock is assembled, the shock rod will push itself out of the shock body fairly quickly.
- 4 Follow the next procedure to adjust the rebound.



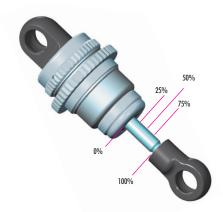


#### AFTER THE SHOCK IS ASSEMBLED YOU HAVE TO SET THE SHOCK REBOUND:

- Release the shock cap by 2-3 turns.
- Push the shock shaft fully up. For the first time the extra oil will release through the hole in the alu cap-nut.
- Tighten the shock cup. When tightening the shock cap, extra oil will again release through the hole in the alu cap - nut. When tightening, the shock shaft will push out from the shock body.



#### **REBOUND CHECK**



#### **REBOUND CHECK:**

It is very important to push the shock shaft into the shock body slowly otherwise air can come into the shock body which would create bubles.

100% rebound - do not do step 2 and 3

bleeding and rebound adjustment procedure.

 $75\% \qquad \text{rebound - repeat steps 1 to 3} \quad \text{until the shock shaft will push out } 75\% \text{ of its length}$ 

50% rebound - repeat steps 1 to 3 until the shock shaft will push out 50% of its length

25% rebound - repeat steps 1 to 3 until the shock shaft will push out 25% of its length rebound - repeat steps 1 to 3 until the shock shaft will push out 0% of its length

If the shock shaft does not rebound enough, you will have to refill the shock with shock oil, and then repeat the

SHOCK LENGTH ADJUSTMENT:

It is VERY IMPORTANT that all shocks are equal length.

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

#308031-0

ALU XRAY SHOCK SPRING RETAINING COLLAR - ORANGE (4)

#308031-K

ARIU XRAY SHOCK SPRING RETAINING COLLAR - BLACK (4)

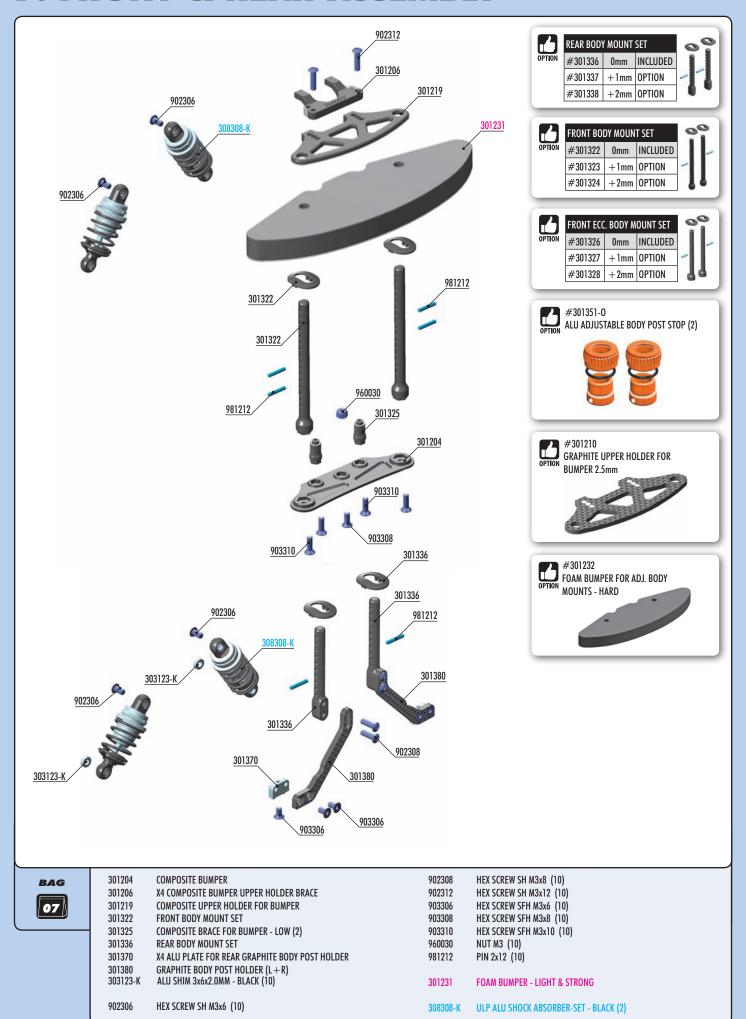
ASSEMBLY VIEW

ASSEMBLY VIEW

ASSEMBLY VIEW

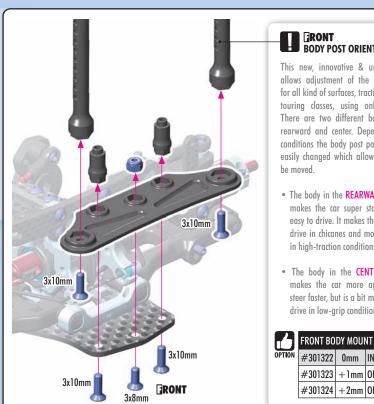


### 7. FRONT & REAR ASSEMBLY



### 7. FRONT & REAR ASSEMBLY



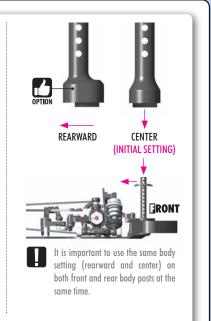


# RONT BODY POST ORIENTATION

This new, innovative & unique feature allows adjustment of the body position for all kind of surfaces, traction conditions, touring classes, using only one body. There are two different body positions; rearward and center. Depending on the conditions the body post positions can be easily changed which allows the body to

- The body in the REARWARD POSITION makes the car super stable and very easy to drive. It makes the car easier to drive in chicanes and more predictable in high-traction conditions.
- The body in the CENTER POSITION makes the car more aggressive and steer faster, but is a bit more difficult to drive in low-grip conditions.

41	FRONT BODY MOUNT SET				
ION	#301322	0mm	INCLUDED		
	#301323	+1mm	OPTION		
	#301324	+2mm	OPTION		



FRONT ECC. BODY MOUNT SET

0mm

#301328 + 2mm | OPTION

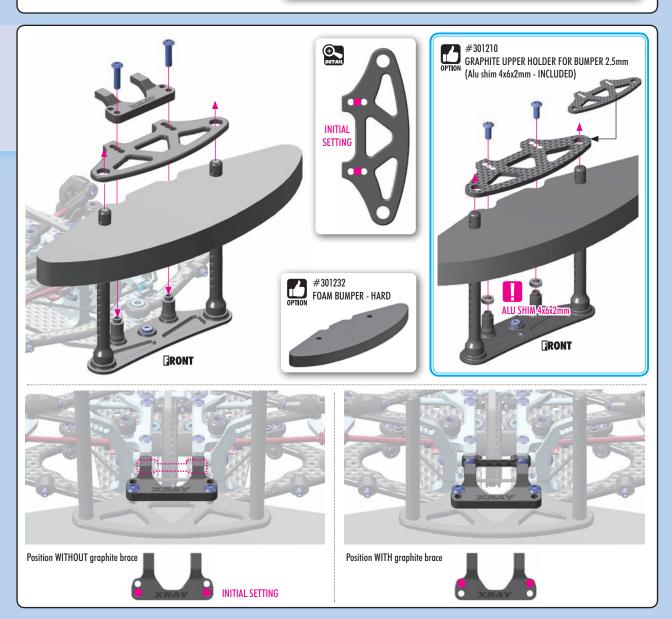
OPTION

+1mm OPTION

#301326

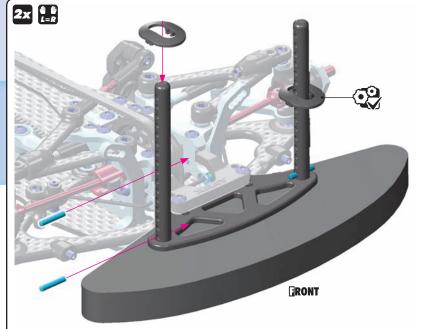
#301327

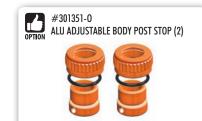




# 7. FRONT & REAR ASSEMBLY

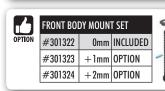






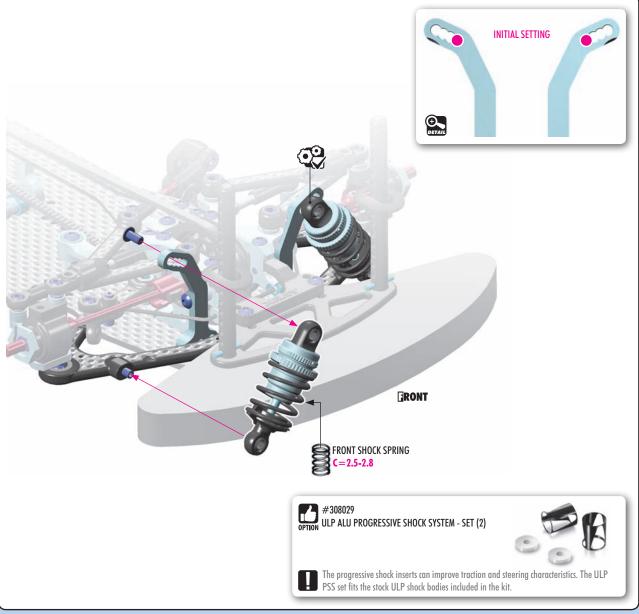
Very handy, easily externally adjustable body post made from Swiss 7075 T6 aluminum. Allows for adjustment of body height by 3mm without needing to change the position on the body post.

	FRONT ECC. BODY MOUNT SET		
OPTION	#301326	0mm	OPTION
	#301327	+1mm	OPTION
	#301328	+2mm	OPTION











### 7. FRONT & REAR ASSEMBLY

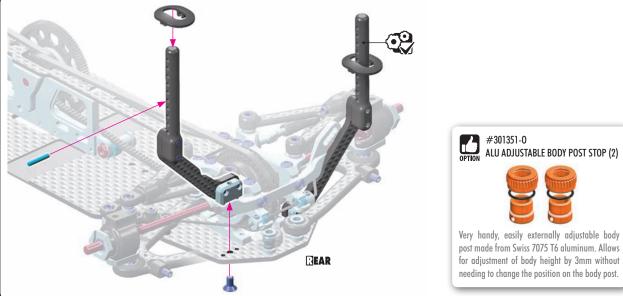


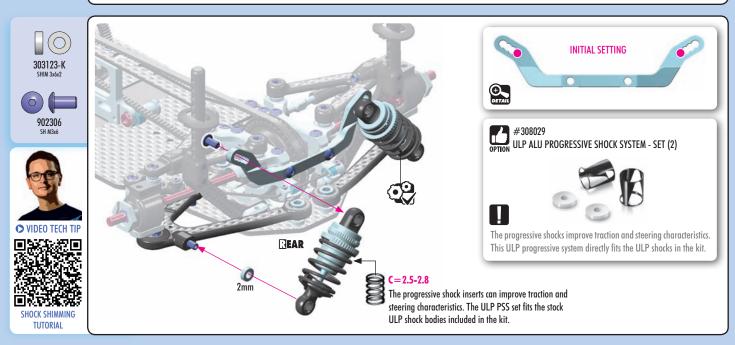


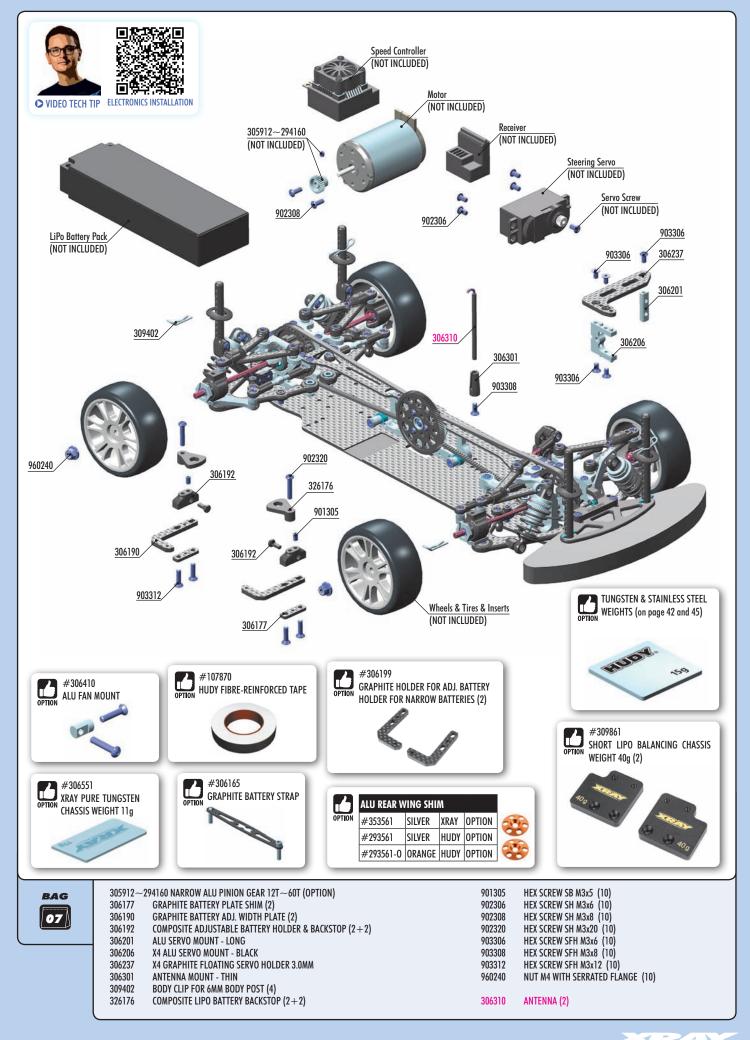
(INITIAL SETTING)



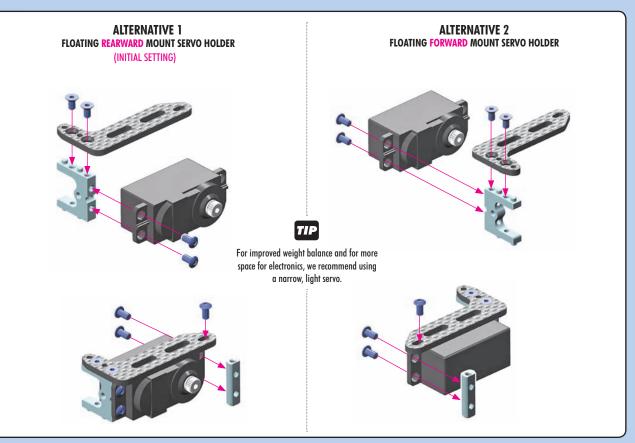




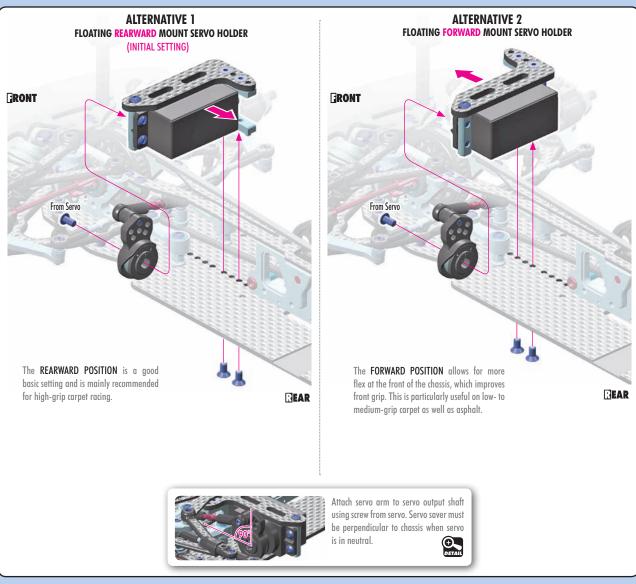




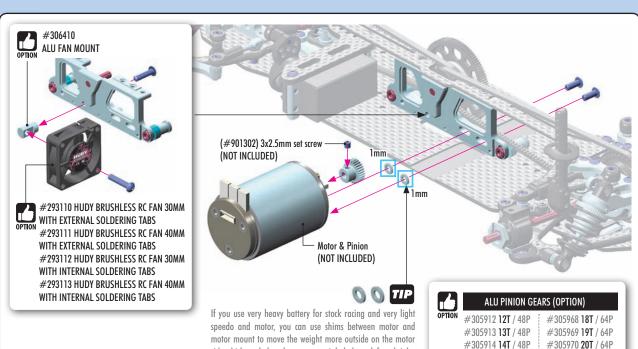








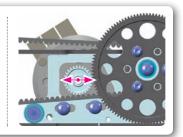






Adjust the motor so the pinion meshes with the spur gear properly. Make sure the gear mesh is not too tight.

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



side which can help to have same weight balance left and right.

You can use shims #303122 (3x6x1mm) not included in kit.

#305915 15T / 48P

#305916 16T / 48P

#305917 17T / 48P

#305918 18T / 48P

#305919 19T / 48P

#305920 20T / 48P

#294021 21T / 48P

#294022 22T / 48P

#294023 23T / 48P

#305924 24T / 48P

#305925 25T / 48P

#305926 26T / 48P

#305927 27T / 48P

#305928 28T / 48P

#305971 21T / 64P

#305972 22T / 64P

#305973 23T / 64P

#305974 24T / 64P

#305975 25T / 64P

#305976 26T / 64P

#305977 27T / 64P

#294128 28T / 64P

#294129 29T / 64P

#294130 30T / 64P

#294131 31T / 64P

#305982 32T / 64P

#294133 33T / 64P

#305984 34T / 64P

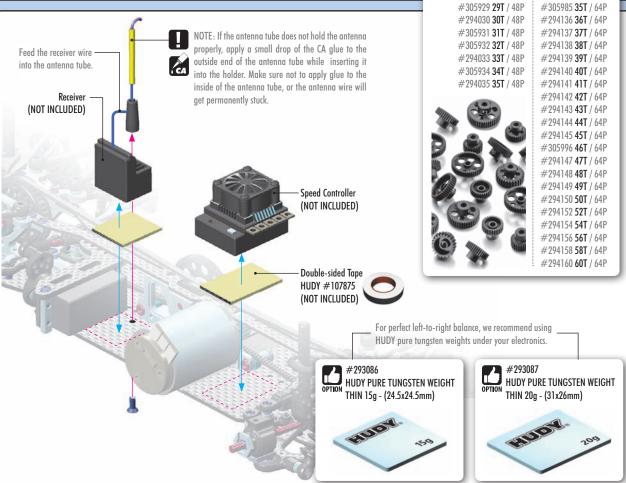


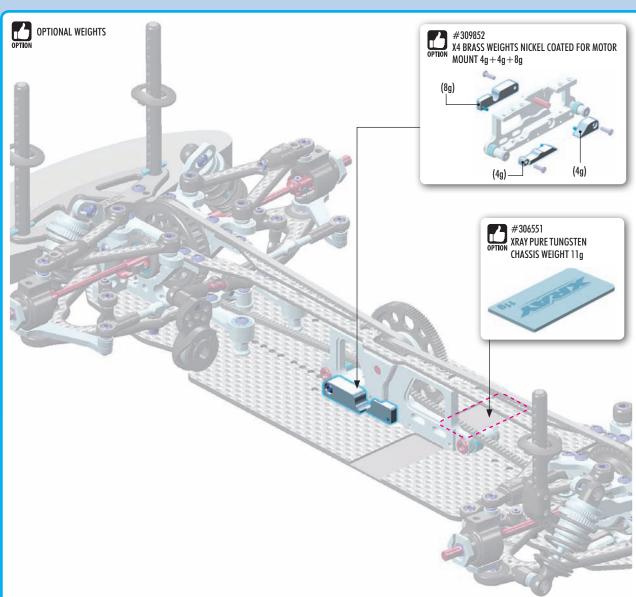


WEIGHT BALANCE

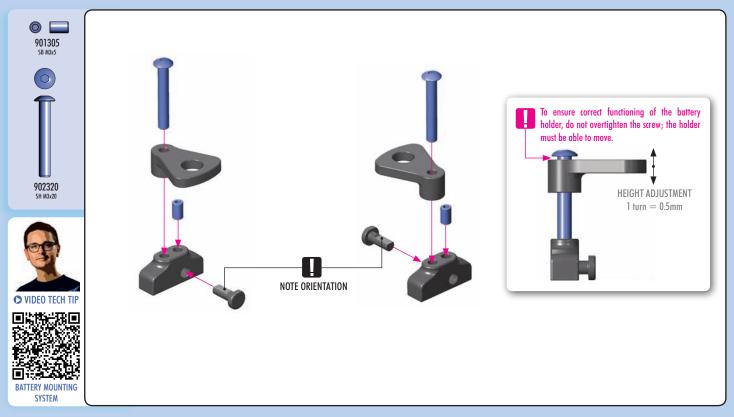


ELECTRONICS INSTALLATION



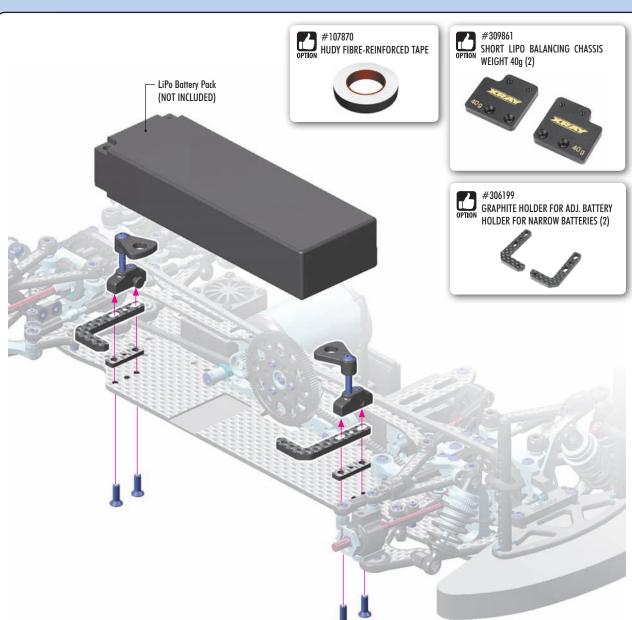














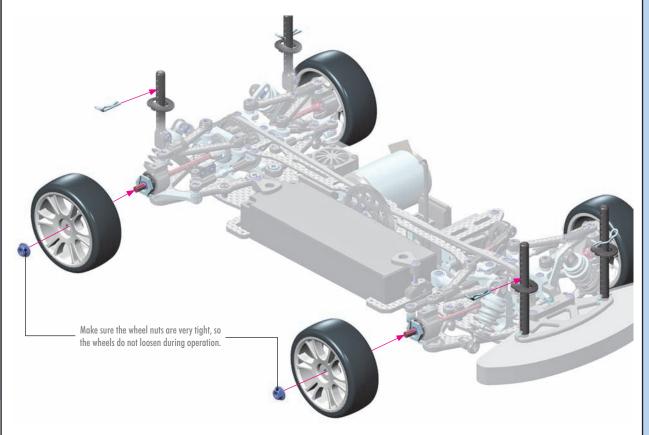
















TRACK WIDTH (OFFSET)



HEIGHT



















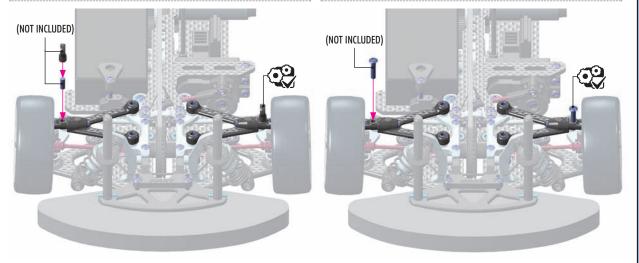
### **BODY STOP SYSTEM**

The X4 features an adjustable front body upstop system incorporated into the new upper arm to prevent the body shell from bottoming out and hitting the ground during cornering. When the system is set correctly, it allows the body to be run lower without dragging on the ground to improve aerodynamic efficiency.

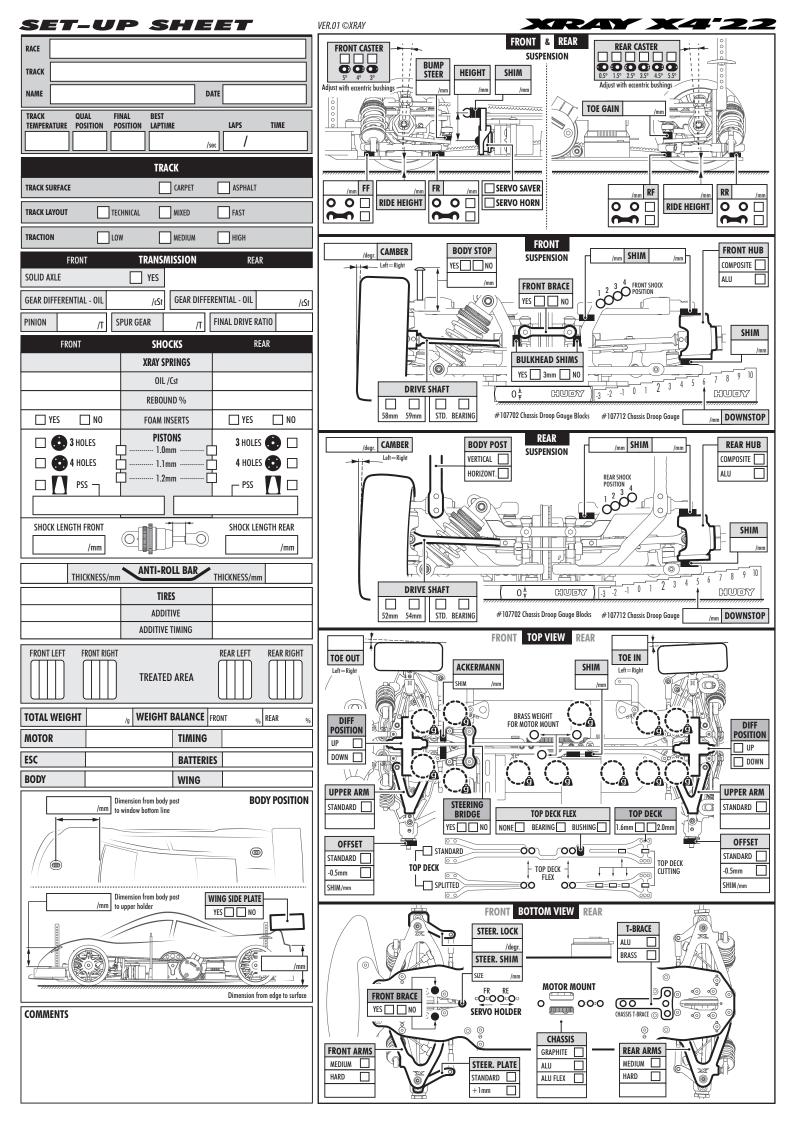


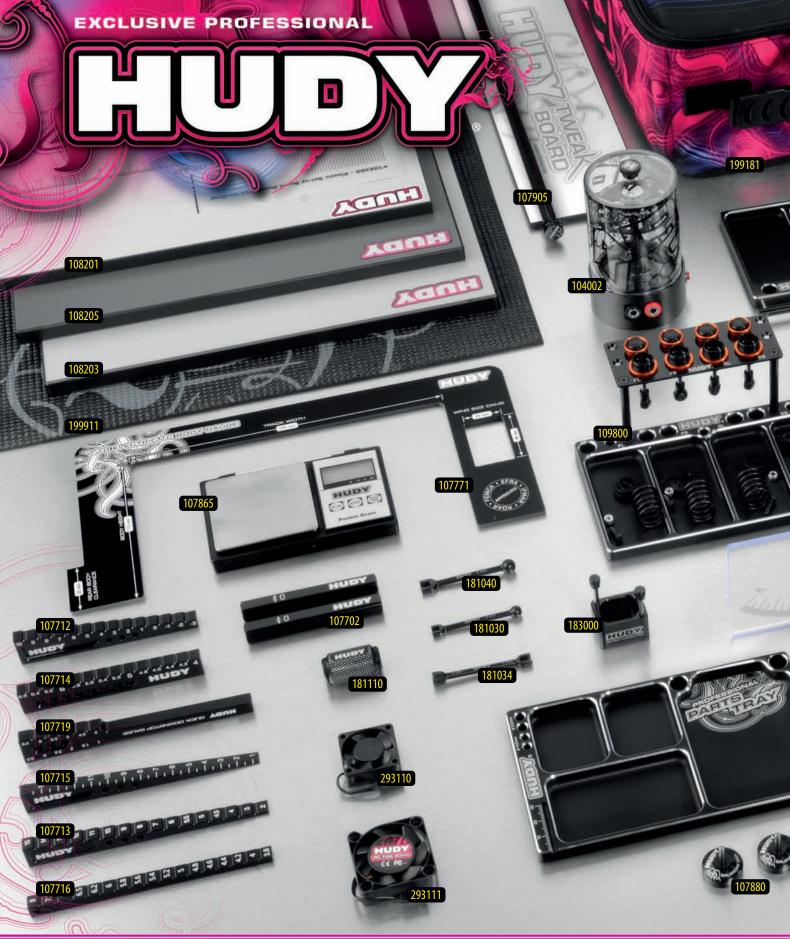












104002 HUDY AIR VAC - VACUUM PUMP - ON-ROAD 106260 HUDY TIRE ADDITIVE - TIRE GRIPPER - 50ML - V2 **HUDY BEARING CHECKING TOOL** 107090 LIMITED EDITION - REAMER FOR BODY 0-9MM + COVER - SMALL 107601 107643 LIMITED EDITION - ARM REAMER # 3.0MM CHASSIS DROOP GAUGE SUPPORT BLOCKS FOR 1/10 (2) 107702 CHASSIS DROOP GAUGE -3.0-10MM FOR 1/10 CARS (10MM) 107712

107713 CHASSIS RIDE HEIGHT GAUGE STEPPED 2.0-15.0MM ULTRA-FINE CHASSIS DROOP GAUGE 4.0-6.6MM 107714 107715 CHASSIS RIDE HEIGHT GAUGE 1.0-15.0MM (BEVELED)

QUICK DOWNSTOP GAUGE TOOL 1.0-6.5MM

107716

107719

ULTRA-FINE CHASSIS RIDE HEIGHT GAUGE 3.8-8.0MM

107720 CHASSIS RIDE HEIGHT GAUGE 30-17MM FOR 1/8 & 1/10 OFF-ROAD HUDY GRAPHITE QUICK CAMBER GAUGE 1.5°,  $2^\circ, 2.5^\circ$  for 1/10 TC HUDY BODY GAUGE 1/10 ELECTRIC TOURING CARS 107750 107771 107855 **HUDY PIT LED** HUDY PROFESSIONAL DIGITAL POCKET SCALE 300G/0.01G 107865 HUDY FIBRE-REINFORCED TAPE - BLACK 107870 **HUDY ULTRA DOUBLE-SIDED TAPE** 107875 CHASSIS BALANCING TOOL (2) HUDY QUICK-TWEAK STATION 1/10 & 1/12 ON-ROAD 107880 107904 107905 **HUDY TWEAK BOARD SET** HUDY 1/10 TOURING CAR STAND - V3 108150 108190 **HUDY ALU TRAY FOR PARTS** 

FLAT SET-UP BOARD FOR 1 108201 108203 FLAT SET-UP BOARD FOR 1 FLAT SET-UP BOARD FOR 1 108205 UNIVERSAL EXCLUSIVE SET-109305 109360 **ALU NUT FOR 1/10 TOURIN** ALU SET-UP WHEEL FOR 1/ 109370 HUDY ALU TRAY FOR ON-R 109800 HUDY ALU TRAY FOR 1/10 ( 109840 HUDY ALU TRAY FOR SET-U 109860 109880 **HUDY ALU TRAY FOR ACCES** 

LIMITED EDITION - ALLEN \

**LIMITED EDITION - ALLEN \** 

111545

112045



10 TOURING CARS 10 TOURING CARS - SILVER GREY 10 TOURING CARS - DARK GREY UP SYSTEM FOR 1/10 TOURING CARS G SET-UP SYSTEM (4) 10 RUBBER TIRES (4) OAD DIFF & SHOCKS OFF-ROAD DIFF ASSEMBLY
P SYSTEM

SORIES & PIT LED VRENCH # 1.5MM VRENCH # 2.0MM 113045 LIMITED EDITION - ALLEN WRENCH # 3.0MM

LIMITED EDITION - ALLEN WRENCH + Ball Repl. Tip # 2.0mm 132045

LIMITED EDITION - SOCKET DRIVER # 5.5MM LIMITED EDITION - SOCKET DRIVER # 7.0MM 175535 177035

181030 HUDY SPRING STEEL TURNBUCKLE WRENCH 3 MM TURNBUCKLE WRENCH 3 & 4MM - HUDY SPRING STEEL™
TURNBUCKLE WRENCH 4MM - HUDY SPRING STEEL™ 181034 181040

181110

HUDY BALL JOINT WRENCH HUDY PROFESSIONAL BULKHEAD ALIGNMENT TOOL 19MM 183000

183011 HUDY PROFESSIONAL MULTI TOOL HUDY POCKET HOBBY KNIFE 188981 **HUDY PROFESSIONAL BODY SCISSORS** 188990

199060 **HUDY ALU TOOL STAND** 

199181 HUDY CAR BAG - 1/10 ON-ROAD - TC - PAN CAR - CUSTOM NAME

199270 HUDY LIPO SAFETY BAG - CUSTOM NAME

HUDY PIT MAT ROLL 750X1200MM WITH PRINTING 199911

293110 **HUDY BRUSHLESS RC FAN 30MM** HUDY BRUSHLESS RC FAN 40MM 293111 **HUDY TIN ROUND BOX 80X30MM** 298100

For more information about tools, set-up equipment and accessories suitable for your car please visit:





107772 106210 **HUDY GRAPHITE GREASE** 181091 HUDY TURNBUCKLE WRENCH 3 & 4MM - V2 106230 HUDY BEARING OIL 803053 HUDY 1/10 TC CARPET TIRES C3-28 (4) **HUDY MAGIC CLEANING GUM** HUDY 1/10 TC TIRES A1-36 - ASPHALT (4) 106200 803062 HUDY TIRE ADDITIVE - TIRE GRIPPER RED - 50ML HUDY PREMIUM SILICONE OIL 500 CST - 50ML HUDY STAINLESS STEEL BATTERY WEIGHT 35G HUDY STAINLESS STEEL BATTERY WEIGHT FOR NARROW BATTERY PACK 35G 106261 293011 106350 293012 107861 HUDY PROFFESIONAL RACING STOPWATCH XL DISPLAY 293080 LEAD WEIGHTS 4X5G & 4X10G WITH 3M GLUE HUDY PROFFESIONAL SOLDER 3M LENGTH HUDY PURE TUNGSTEN WEIGHT 5G 106290 293081 107840 **CLEANING BRUSH LARGE - SOFT HUDY PURE TUNGSTEN WEIGHT 10G** 293082 107846 **CLEANING BRUSH SMALL - SOFT** 293083 **HUDY PURE TUNGSTEN WEIGHT 15G** 105520 WHEEL ADAPTER FOR 1/10 ON-ROAD & 1/10 OFF-ROAD - 12MM PRECISION BALANCING CHASSIS WEIGHT 10G (4) 293084



293311 GRAPHITE REAR WING SIDE PLATE 0.5MM - 1/10 ELECTRIC (2)
293403 ALU CLAMP SERVO HORN - FUTABA, SAVÖX - OFFSET 1-HOLE M3 - 25T
293493 ALU SERVO HORN - FUTABA, SAVÖX - OFFSET 1-HOLE M3 - 25T - V2
294023 HUDY ALU ULTRA-LIGHT PINION GEAR - HARD COATED - 23T / 48
294140 HUDY ALU ULTRA-LIGHT PINION GEAR - HARD COATED - 40T / 64
294156 HUDY ALU ULTRA-LIGHT PINION GEAR - HARD COATED - 56T / 64
298012 HUDY PARTS BOX - 10-COMPARTMENTS
298013 HUDY SPRINGS BOX - 10-COMPARTMENTS
298014 HUDY PARTS BOX - 8-COMPARTMENTS

298015 HUDY PARTS CASE - 290 X 195MM
298016 HUDY TINY HARDWARE BOX - 4-COMPARTMENTS
298017 HUDY TINY ONE-PIECE HARDWARE BOX - 8-COMPARTMENTS

298018 HUDY TINY HARDWARE BOX - 8-COMPARTMENTS
298019 HUDY DIFF BOX - 8-COMPARTMENTS

 199280M-H
 HUDY HARD CASE - 140X110X95MM - OIL BAG MEDIUM

 199290-H
 HUDY HARD CASE - 235X190X75MM - ACCESSORIES / ENGINE BAG

 199295-H
 HUDY HARD CASE - 280X150X85MM - ACCESSORIES BAG LARGE

 199296-H
 HUDY HARD CASE - 120X85X46MM - ACCESSORIES / STOP WATCH

For more information about tools, set-up equipment & accessories suitable for your car please visit:











































# www.feamxray.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



















