

1/10 LUXURY ELECTRIC TOURING CAR

XTRAY X4



INSTRUCTION MANUAL
FOR X4'24 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, **YOU MUST** read through all of the operating instructions and instruction manual and fully understand them to get the maximum enjoyment and prevent unnecessary damage.

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

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, **DO NOT continue any further**. 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.

XRAY Europe

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XRAY USA

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Irving, TX 75062
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Fax: (214) 744-2401
E-mail: xray@rcamerica.com

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

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.

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

IMPORTANT NOTES - GENERAL

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

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

IMPORTANT NOTES - ELECTRICAL

- Insulate any exposed electrical wiring (using heat shrink tubing or electrical tape) to prevent dangerous short circuits. Take maximum care in wiring, connecting and insulating cables. Make sure cables are always connected securely. Check connectors for if they become loose. And if so, reconnect them securely. Never use 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 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 addictions 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.

TOOLS REQUIRED



Combination Pliers
(HUDY #189020)



Side Cutters
(HUDY #189010)



Pocket Hobby Knife (HUDY #188981)



Special Tool for turnbuckles, nuts (HUDY #181090)



Turnbuckle Wrench 4mm (HUDY #181040)



Turnbuckle Wrench 3mm (HUDY #181030)



HUDY Tweezers Straight (HUDY #188970)



HUDY Tweezers Curved (HUDY #188971)



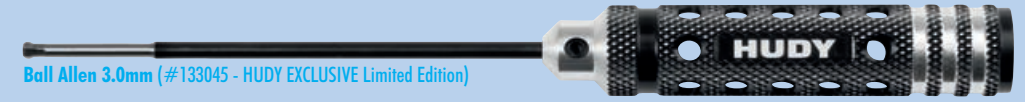
Allen 1.5mm (#111545 - HUDY EXCLUSIVE Limited Edition)



Allen 2.0mm (#112045 - HUDY EXCLUSIVE Limited Edition)



Allen 3.0mm (#113045 - HUDY EXCLUSIVE Limited Edition)



Ball Allen 3.0mm (#133045 - HUDY EXCLUSIVE Limited Edition)



Socket 5.5mm (#175535 - HUDY EXCLUSIVE Limited Edition)



Socket 7.0mm (#177035 - HUDY EXCLUSIVE Limited Edition)



Reamer (#107602 - HUDY EXCLUSIVE Limited Edition)



Scissors (HUDY #188990)

Professional Multi Tool
(HUDY #183011)

INCLUDED

* Kit includes smaller but sufficient amount of oil and grease to build the car.

350cSt (#106335)
HUDY Premium Silicone Oils



5.000cSt (#106450)
HUDY Premium Silicone Oils



(HUDY #106210)
Premium Graphite Grease



EQUIPMENT REQUIRED

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

BUILD TIPS & NOTES



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

OPTION	TYPE	OPTION
#30XXX	TYPE1	OPTION 1
#30XXX	TYPE2	OPTION 2
#30XXX	TYPE	INCLUDED
#30XXX	TYPE3	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:

304911

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

301018

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

304902

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

301020

STYLE D - indicates parts that are optional.

CHASSIS PREPARATION



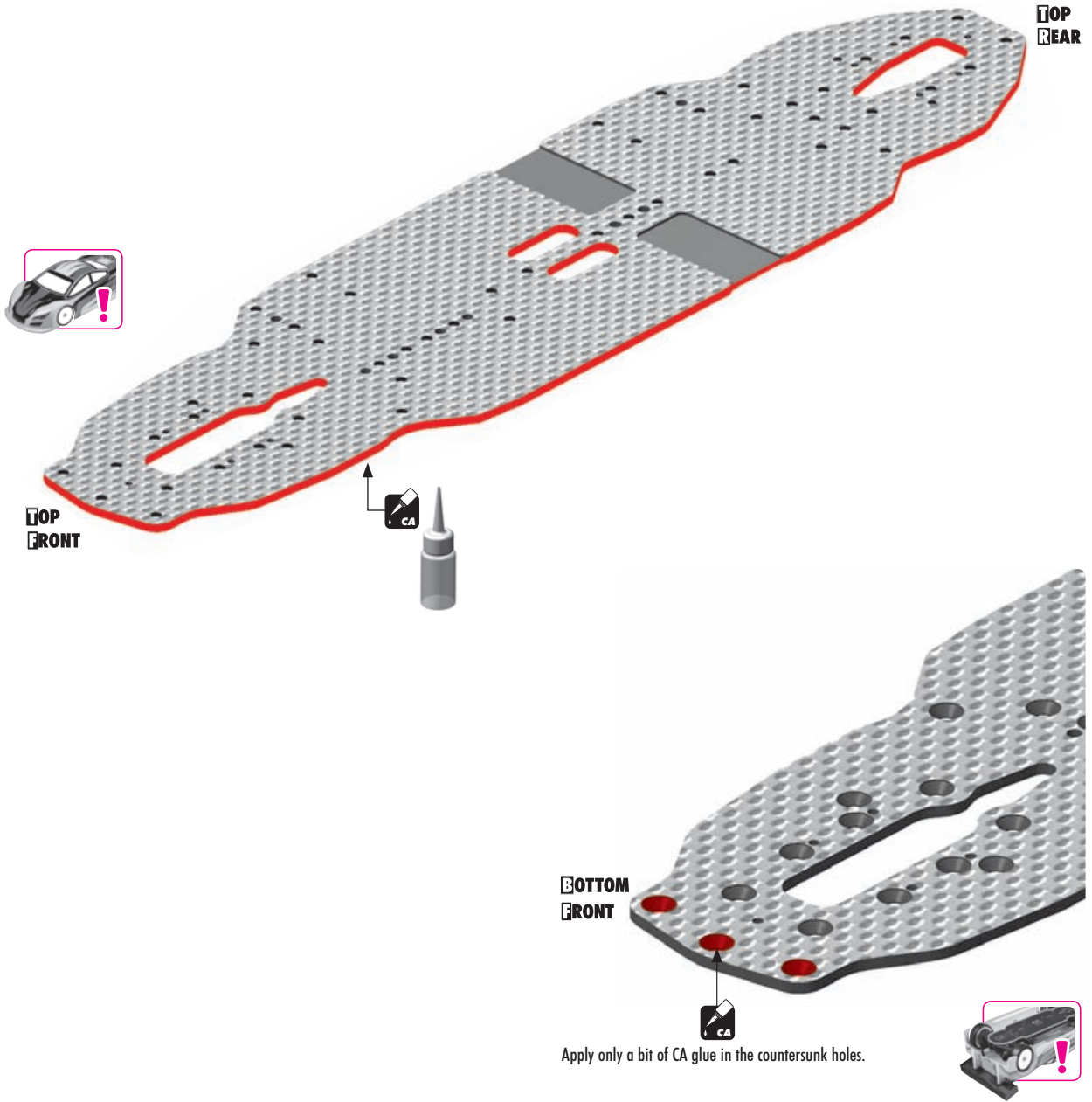
VIDEO TECH TIP



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



#304970
ALU GEAR DIFF OUTDRIVE ADAPTER (2)



#304971
HUDY SPRING STEEL™ OUTDRIVES (2)



Requires #305370 drive shafts and #305241 or #305242 drive shaft replacement caps 3.5mm.



#304972
ALU GEAR DIFF CVD BB DRIVESHAFT ADAPTER - SWISS 7075 T6 (2)

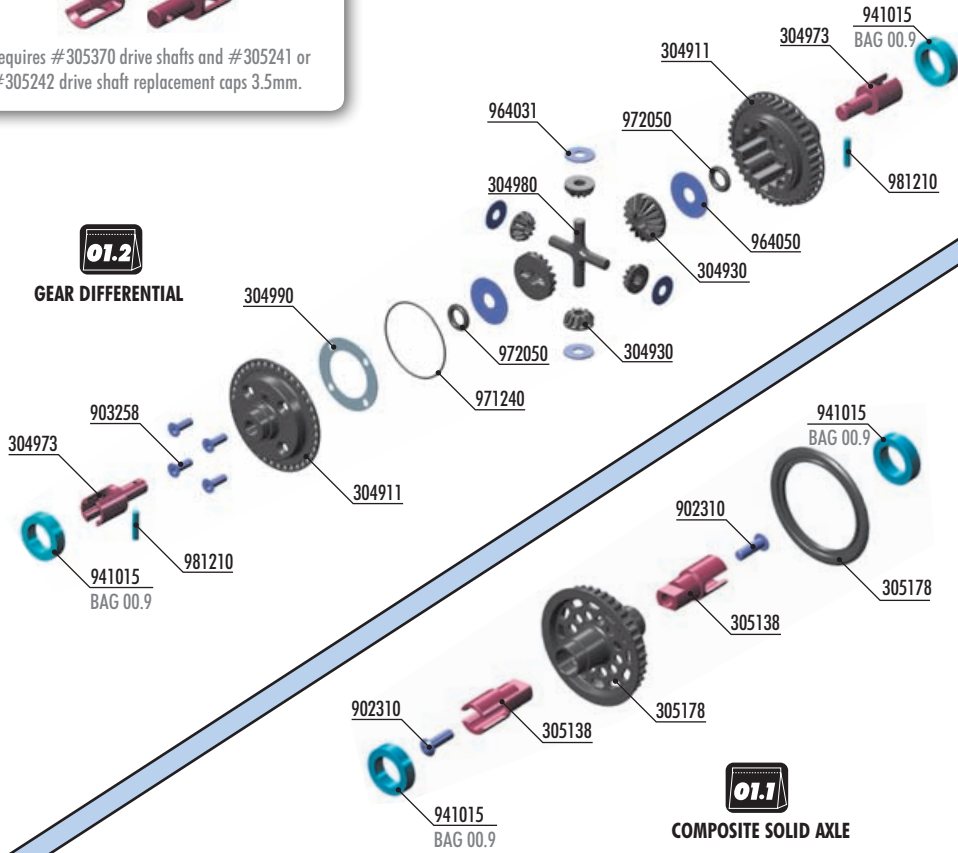


#304932
GRAPHITE GEAR DIFF BEVEL & SATELLITE GEARS (2+4)



01.2

GEAR DIFFERENTIAL



01.1

COMPOSITE SOLID AXLE



#305136
ALU SOLID DRIVESHAFT ADAPTERS (2)



#305137
STEEL LIGHTWEIGHT SOLID AXLE DRIVESHAFT ADAPTERS HUDY SPRING STEEL™ (2)



Requires #305260 drive shafts and #305241 or #305242 drive shaft replacement caps 3.5mm.

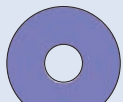
BAG

01.1

01.2

- 304902 X4 BB GEAR DIFFERENTIAL - SET
- 304911 X4 COMPOSITE GEAR DIFF CASE WITH 38T PULLEY & COVER
- 304930 COMPOSITE GEAR DIFF BEVEL & SATELLITE GEARS (2+4)
- 304973 STEEL GEAR DIFF BB DRIVESHAFT ADAPTER - HUDY SPRING STEEL™ (2)
- 304980 COMPOSITE GEAR DIFF CROSS PIN
- 304990 DIFF GASKET (4)
- 305138 SOLID AXLE ECS BB DRIVESHAFT ADAPTER - HUDY SPRING STEEL™ (2)
- 305178 X4 COMPOSITE SOLID AXLE 38T

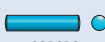
- 902310 HEX SCREW SH M3x10 (10)
- 903258 HEX SCREW SFH M2.5x8 (10)
- 941015 BALL-BEARING 10x15x4 RUBBER SEALED - OIL (2)
- 964031 WASHER S 3.5x10x0.2 (10)
- 964050 WASHER S 5x15x0.3 (10)
- 971240 SILICONE O-RING 24x0.7 (10)
- 972050 SILICONE O-RING 5x2 (10)
- 981210 PIN 2x10 (10)



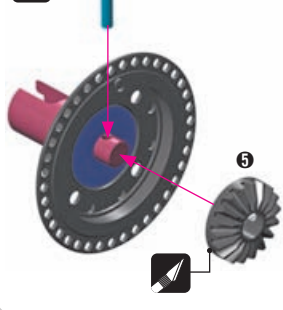
1x 964050
S 5x15x0.3



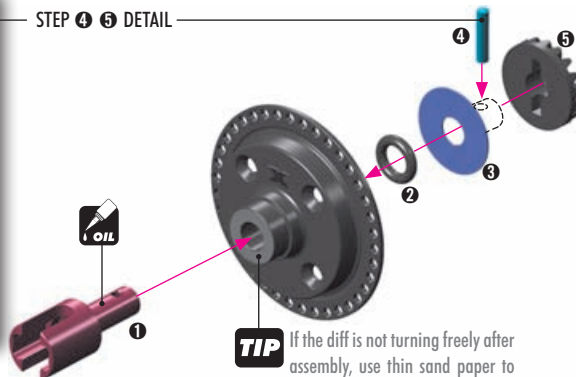
1x 972050
O 5x2



1x 981210
P 2x10



STEP 4 5 DETAIL



TIP

If the diff is not turning freely after assembly, use thin sand paper to lightly polish the surface.



#304932
GRAPHITE GEAR DIFF BEVEL & SATELLITE GEARS (2+4)



1. GEAR DIFFERENTIAL & FRONT SOLID AXLE

1x 964050
S 5x15x0.3

1x 972050
O 5x2

1x 981210
P 2x10

NOTE ORIENTATION

STEP 4 DETAIL
Use tweezers to insert pin.

If the diff is not turning freely after assembly, use thin sand paper to lightly polish the surface.

TIP

CUTAWAY VIEW

4x 964031
S 3.5x10x0.2

#304932
OPTION GRAPHITE GEAR DIFF BEVEL & SATELLITE GEARS (2+4)

If the cross does not enter into the diff freely, use fine sand paper to lightly polish the ends of the cross.

INITIAL SETTING
5.000cSt

TIP
Fill differential up to the top of the diff pin. DO NOT fill the diff to the top of the housing.

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

12.10 g

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

13.60 g

12.10g + 1.5g = 13.60g

1 Put the diff (without oil) on the scale and check the weight (approximately 12.10g).

2 Slowly pour oil into the diff and watch the weight. Add 1.5g of oil into the diff. The approximate weight of the diff including oil is 13.60g.

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

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.

TIP TIPS FOR FRONT DIFFERENTIAL

To increase off-power steering and mid-corner steering, the gear diff can also be used in front.

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.

#104002
OPTION HUDY AIR VAC – VACUUM PUMP

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

IMPORTANT!


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

VIDEO TECH TIP

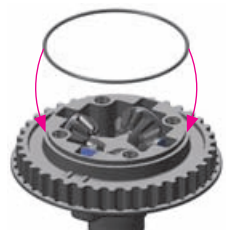
REAR DIFFERENTIAL



1. GEAR DIFFERENTIAL & FRONT SOLID AXLE




1x 971240
O 24x0.7



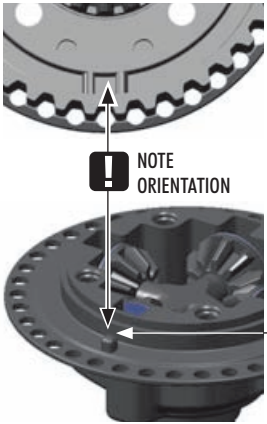
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After disassembling the gear diff, the large O-ring may have an increased size and may be more difficult to re-install. We recommend either inserting the old O-ring carefully in the diff cover, or installing a new O-ring if the old one cannot be made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

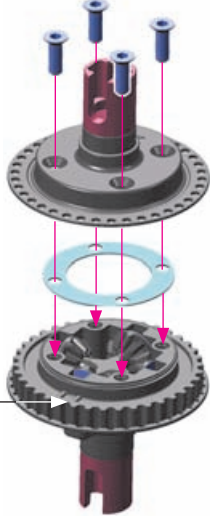



4x 903258
SFH M2.5x8

BOTTOM



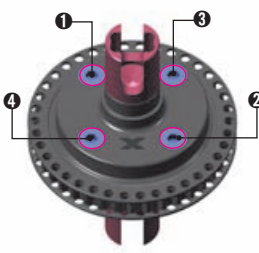
! NOTE ORIENTATION






!

Tighten the screws equally but **DO NOT** tighten them completely.

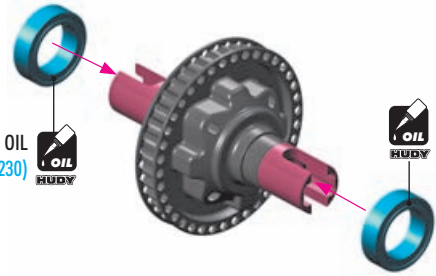


!

Finish tightening in this order.




2x 941015
BB 10x15x4



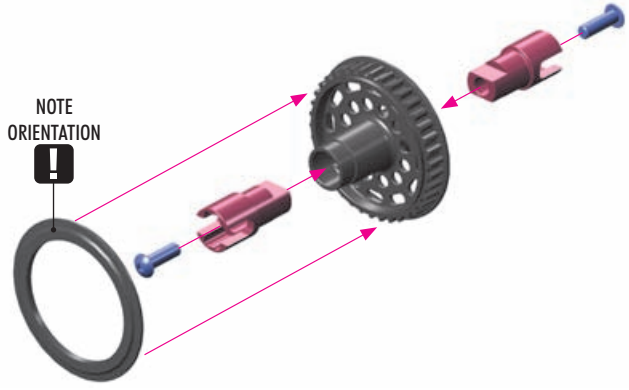
BEARING OIL
(HUDY #106230)

OIL
HUDY

1. FRONT SOLID AXLE



2x 902310
SH M3x10



! NOTE ORIENTATION



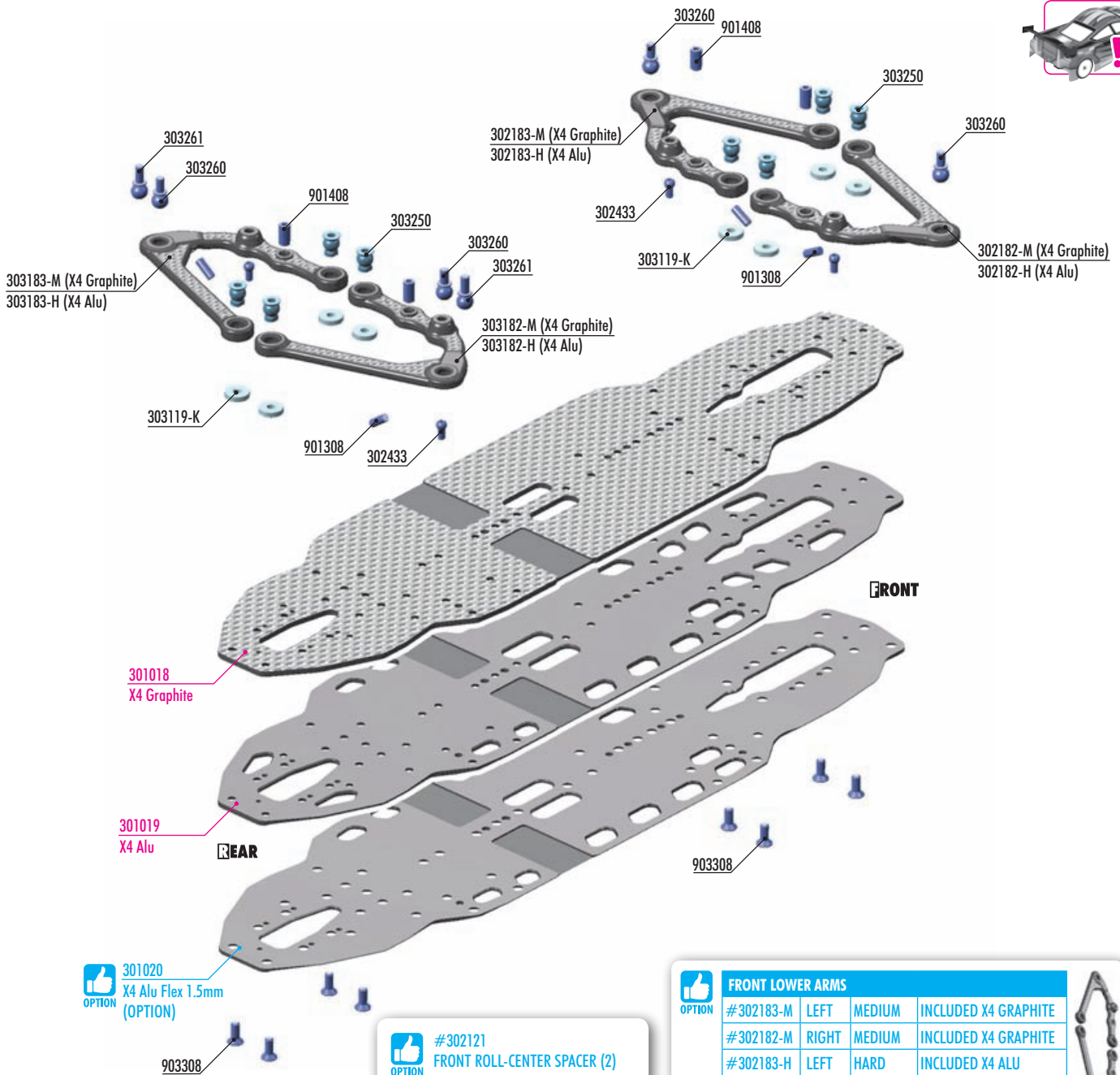
2x 941015
BB 10x15x4



BEARING OIL
(HUDY #106230)

OIL
HUDY

2. FRONT & REAR SUSPENSION



OPTION 301020
X4 Alu Flex 1.5mm
(OPTION)

903308

OPTION #302121
FRONT ROLL-CENTER SPACER (2)

OPTION #302122
REAR ROLL-CENTER SPACER (2)

FRONT LOWER ARMS				
#302183-M	LEFT	MEDIUM	INCLUDED X4 GRAPHITE	
#302182-M	RIGHT	MEDIUM	INCLUDED X4 GRAPHITE	
#302183-H	LEFT	HARD	INCLUDED X4 ALU	
#302182-H	RIGHT	HARD	INCLUDED X4 ALU	

REAR LOWER ARMS				
#303183-M	LEFT	MEDIUM	INCLUDED X4 GRAPHITE	
#303182-M	RIGHT	MEDIUM	INCLUDED X4 GRAPHITE	
#303183-H	LEFT	HARD	INCLUDED X4 ALU	
#303182-H	RIGHT	HARD	INCLUDED X4 ALU	

BAG

02

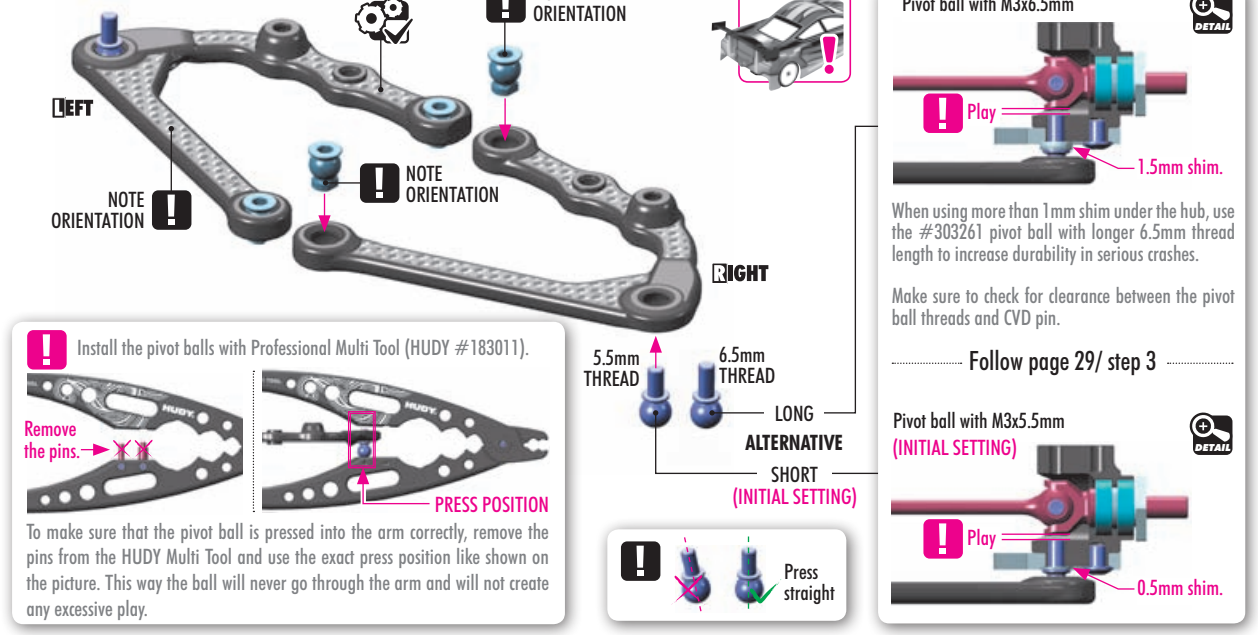
- 302182-M X4 CFF™ FRONT LOWER ARM - INNER SHOCK POSITION - MEDIUM - RIGHT
- 302182-H X4 CFF™ FRONT LOWER ARM - INNER SHOCK POSITION - HARD - RIGHT
- 302183-M X4 CFF™ FRONT LOWER ARM - INNER SHOCK POSITION - MEDIUM - LEFT
- 302183-H X4 CFF™ FRONT LOWER ARM - INNER SHOCK POSITION - HARD - LEFT
- 302433 ANTI-ROLL BAR STEEL BALL END 3.8mm WITH 4mm THREAD (2)
- 303119-K ALU SHIM 3x9x2.0mm - BLACK (10)
- 303182-M X4 CFF™ REAR LOWER ARM - INNER SHOCK POSITION - MEDIUM - RIGHT
- 303182-H X4 CFF™ REAR LOWER ARM - INNER SHOCK POSITION - HARD - RIGHT
- 303183-M X4 CFF™ REAR LOWER ARM - INNER SHOCK POSITION - MEDIUM - LEFT
- 303183-H X4 CFF™ REAR LOWER ARM - INNER SHOCK POSITION - HARD - LEFT
- 303250 X4 LOWER ARM BALL UNIVERSAL 6.0mm WITH HEX - HUDY SPRING STEEL™ (2)
- 303260 X4 PIVOT BALL 6.0mm WITH M3x5.5mm THREAD - HUDY SPRING STEEL™ (2)

- 303261 X4 PIVOT BALL 6.0mm WITH M3x6.5mm THREAD - HUDY SPRING STEEL™ (2)
- 901308 HEX SCREW SB M3x8 (10)
- 901408 HEX SCREW SB M4x8 (10)
- 903308 HEX SCREW SFH M3x8 (10)

- 301018 X4 GRAPHITE CHASSIS 2.2mm
- 301019 X4 ALU FLEX CHASSIS 2.0mm - SWISS 7075 T6

2. FRONT & REAR SUSPENSION

REAR SUSPENSION ARMS



LEFT **RIGHT**

NOTE ORIENTATION

NOTE ORIENTATION

NOTE ORIENTATION

NOTE ORIENTATION

NOTE ORIENTATION

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

Remove the pins. →

PRESS POSITION

To make sure that the pivot ball is pressed into the arm correctly, remove the pins from the HUDY Multi Tool and use the exact press position like shown on the picture. This way the ball will never go through the arm and will not create any excessive play.

5.5mm THREAD

6.5mm THREAD

LONG ALTERNATIVE SHORT (INITIAL SETTING)

! Press straight

! Play

1.5mm shim.

When using more than 1mm shim under the hub, use the #303261 pivot ball with longer 6.5mm thread length to increase durability in serious crashes.

Make sure to check for clearance between the pivot ball threads and CVD pin.

Follow page 29/ step 3

Pivot ball with M3x5.5mm (INITIAL SETTING)

! Play

0.5mm shim.

- 2x 901308 SB M3x8
- 2x 901408 SB M4x8

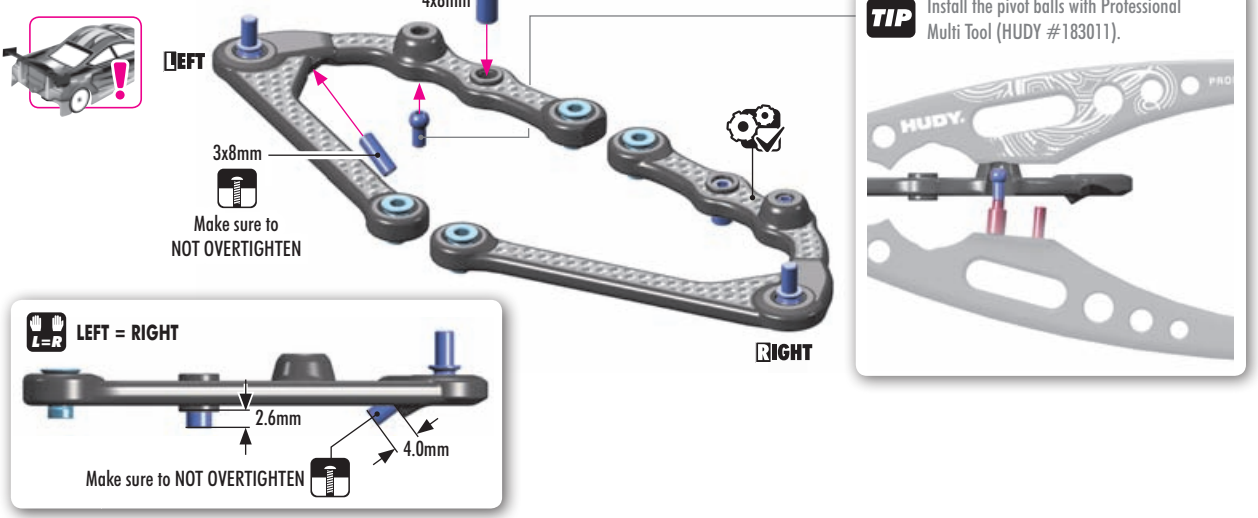


VIDEO TECH TIP



LOWER ARMS

REAR SUSPENSION ARMS



LEFT **RIGHT**

4x8mm

3x8mm

Make sure to NOT OVERTIGHTEN

L=R LEFT = RIGHT

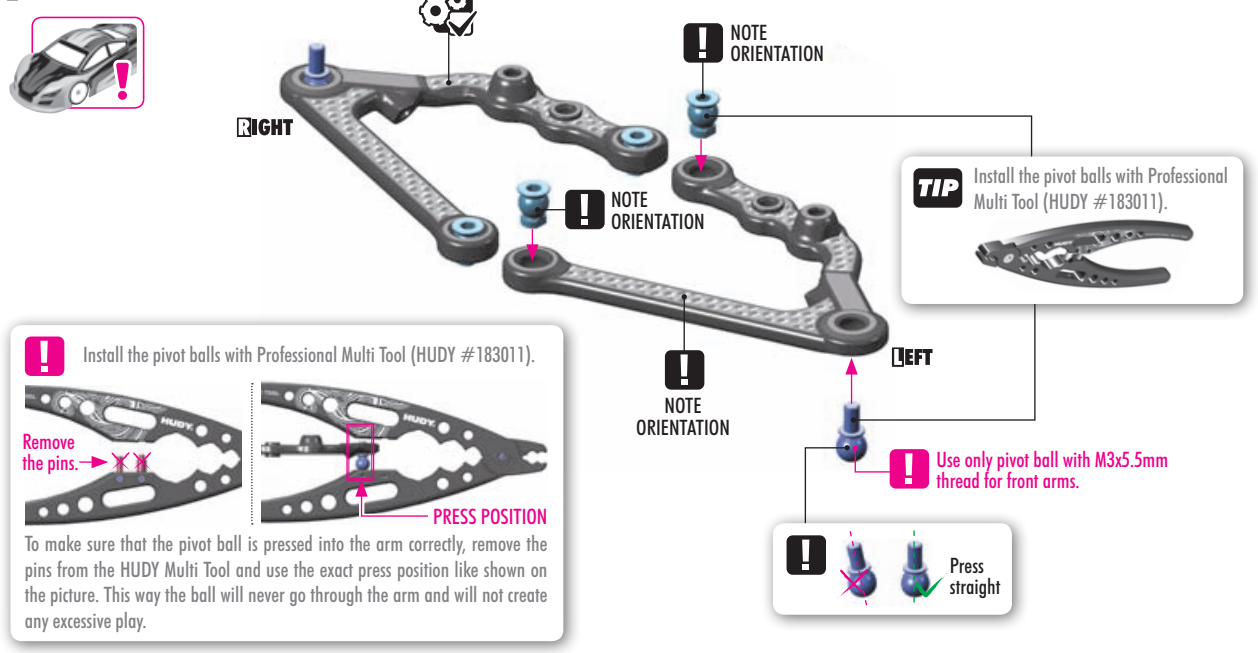
2.6mm

4.0mm

Make sure to NOT OVERTIGHTEN

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

FRONT SUSPENSION ARMS



RIGHT **LEFT**

NOTE ORIENTATION

NOTE ORIENTATION

NOTE ORIENTATION

NOTE ORIENTATION

NOTE ORIENTATION

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

Remove the pins. →

PRESS POSITION

To make sure that the pivot ball is pressed into the arm correctly, remove the pins from the HUDY Multi Tool and use the exact press position like shown on the picture. This way the ball will never go through the arm and will not create any excessive play.

! Use only pivot ball with M3x5.5mm thread for front arms.

! Press straight

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

2. FRONT & REAR SUSPENSION

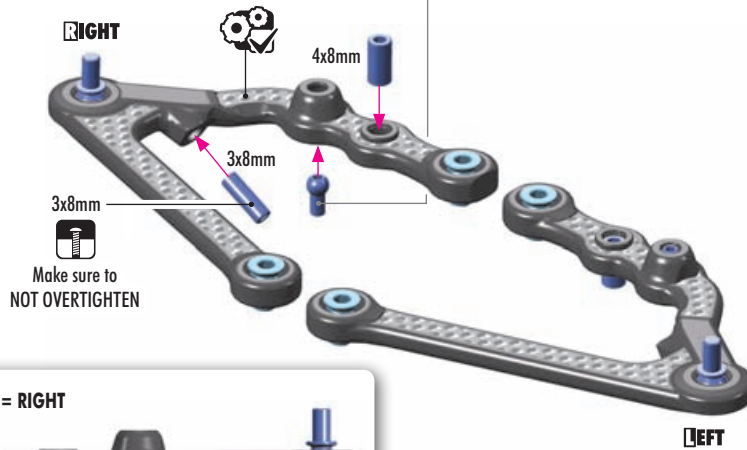


2x 901308
SB M3x8

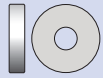
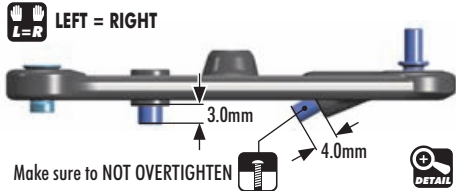
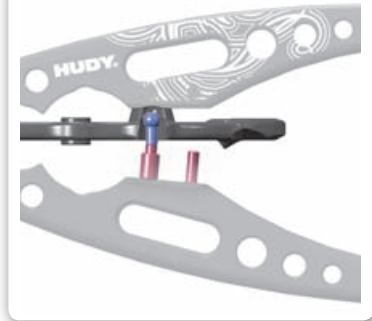


2x 901408
SB M4x8

FRONT SUSPENSION ARMS



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



8x 303119-K
SHIM 3x9x2



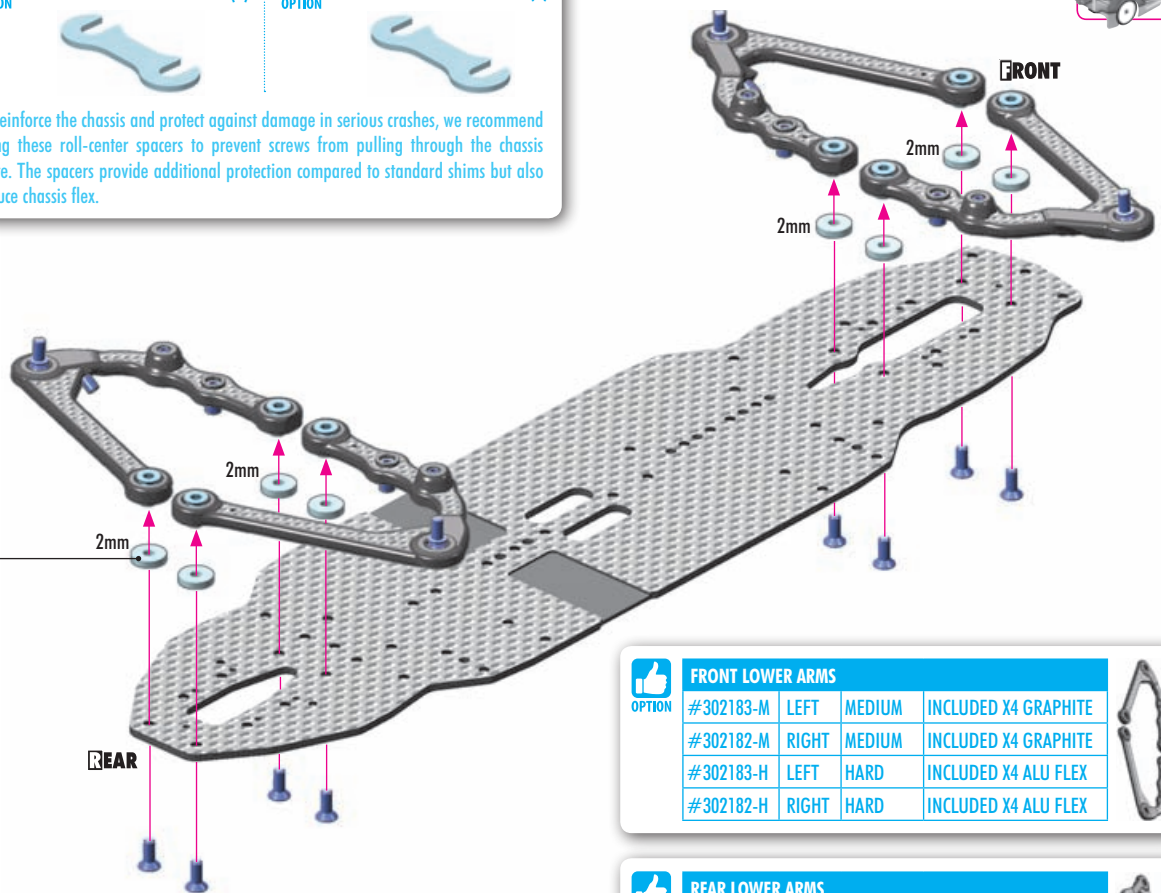
8x 903308
SFH M3x8

#302121 FRONT ROLL-CENTER SPACER (2) **OPTION**

#302122 REAR ROLL-CENTER SPACER (2) **OPTION**



To reinforce the chassis and protect against damage in serious crashes, we recommend using these roll-center spacers to prevent screws from pulling through the chassis plate. The spacers provide additional protection compared to standard shims but also reduce chassis flex.



OPTION	FRONT LOWER ARMS			
#302183-M	LEFT	MEDIUM	INCLUDED X4 GRAPHITE	
#302182-M	RIGHT	MEDIUM	INCLUDED X4 GRAPHITE	
#302183-H	LEFT	HARD	INCLUDED X4 ALU FLEX	
#302182-H	RIGHT	HARD	INCLUDED X4 ALU FLEX	

OPTION	REAR LOWER ARMS			
#303183-M	LEFT	MEDIUM	INCLUDED X4 GRAPHITE	
#303182-M	RIGHT	MEDIUM	INCLUDED X4 GRAPHITE	
#303183-H	LEFT	HARD	INCLUDED X4 ALU FLEX	
#303182-H	RIGHT	HARD	INCLUDED X4 ALU FLEX	

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.



VIDEO TECH TIP



ROLL-CENTER



CHASSIS ALTERNATIVES

3. CENTRAL TRANSMISSION

ALU CASTER BUSHINGS

OPTION	ALU CASTER BUSHINGS		
#302310	FRONT 3° / REAR 5.5°	1 Dot	OPTION
#302311	FRONT 4° / REAR 4.5°	2 Dots	INCLUDED
#302312	FRONT 5° / REAR 3.5°	3 Dots	INCLUDED

#305436
HIGH-PERFORMANCE DRIVE BELT LOW-FRICTION 3x351mm

#303768
ALU CHASSIS T-BRACE - 7075 T6

#303767
BRASS CHASSIS T-BRACE - 10g

SPUR GEARS 48P

#305772	72T / 48P	OPTION
#305776	76T / 48P	OPTION
#305778	78T / 48P	OPTION
#305779	79T / 48P	OPTION
#305781	81T / 48P	OPTION
#305784	84T / 48P	OPTION
#305784-0	84T / 48P	OPTION

OFFSET SPUR GEARS 64P

#305860	90T / 64P	OPTION
#305862	92T / 64P	OPTION
#305866	96T / 64P	OPTION
#305866-0	96T / 64P	OPTION
#305869	99T / 64P	OPTION
#305870	100T / 64P	OPTION
#305870-0	100T / 64P	OPTION
#305874	104T / 64P	OPTION
#305876	106T / 64P	OPTION
#305878	108T / 64P	OPTION
#305880	110T / 64P	INCLUDED
#305880-0	110T / 64P	OPTION
#305882	112T / 64P	OPTION
#305884	114T / 64P	OPTION

#309852
X4 BRASS WEIGHTS NICKEL COATED FOR MOTOR MOUNT 4g + 4g + 8g

#302064-K
ALU ADJ. BALL-BEARING HUB +1MM (2)

#302063-K
ALU ADJUSTMENT BALL-BEARING HUB (2)

BAG
03

- 296510-K ALU COUNTERSUNK SHIM - BLACK (10)
- 301576 X4 ALU UPPER CLAMP - INNER SHOCK POSITION - SWISS 7075 T6 (L+R)
- 301972 X4 ALU SHOCK HOLDER FRONT FIXED - SWISS 7075 T6 (2)
- 302062 COMPOSITE ADJUSTMENT BALL-BEARING HUB (4)
- 302311 X4 ALU CASTER BUSHING FRONT 4° / REAR 1.5° - 2 DOTS (4)
- 302312 X4 ALU CASTER BUSHING FRONT 5° / REAR 2.5°/3.5° - 3 DOTS (4)
- 302776 X4 ALU LOWER ADJUSTMENT BULKHEAD - FRONT RIGHT
- 302777 X4 ALU LOWER ADJUSTMENT BULKHEAD - FRONT LEFT
- 302778 X4 ALU LOWER ADJUSTMENT BULKHEAD - REAR RIGHT
- 302779 X4 ALU LOWER ADJUSTMENT BULKHEAD - REAR LEFT
- 302972 X4 ALU SHOCK HOLDER REAR FIXED - SWISS 7075 T6 (2)
- 302973 X4 ALU SHOCK HOLDER REAR ACTIVE - SWISS 7075 T6 (2)
- 303075 STEEL NUT (2)
- 303122-K ALU SHIM 3x6x1.0mm - BLACK (10)
- 303127-K ALU SHIM 3x6x4.0mm - BLACK (10)
- 303139-K ALU SHIM 3x6x7.0mm - BLACK (10)
- 303142-K ALU SHIM 3x5x0.5mm - BLACK (10)
- 303755 X4 ALU MOTOR MOUNT WITH 3mm CENTERING PINS
- 305435 HIGH-PERFORMANCE DRIVE BELT 3x351mm
- 305524 X4 ALU SOLID LAYSHAFT & BEARINGS
- 305579 X4 COMPOSITE PULLEY FOR LAYSHAFT 20T
- 305880 OFFSET SPUR GEAR 110T / 64
- 362647 BALL END 4.9mm WITH THREAD 3mm (2)
- 901302 HEX SCREW SB M3x2.5 (10)
- 901313 HEX SCREW SB M3x12 (10)
- 902303 HEX SCREW SH M3x4 SMALL HEAD - STAINLESS (10)
- 902305 HEX SCREW SH M3x5 (10)
- 902308 HEX SCREW SH M3x8 (10)
- 902310 HEX SCREW SH M3x10 (10)
- 903305 HEX SCREW SFH M3x5 (10)
- 903318 HEX SCREW SFH M3x18 (10)
- 930308 BALL-BEARING 3x8x4 STEEL SEALED - OIL (2)
- 930407 BALL-BEARING 4x7x2.5 STEEL SEALED - OIL (2)
- 962042 WASHER S 4x6x0.1 (10)
- 970050 O-RING 5x1 (10)
- 981208 PIN 2x8 (10)
- 304902 X4 BB GEAR DIFFERENTIAL - SET
- 305178 X4 COMPOSITE SOLID AXLE 38T

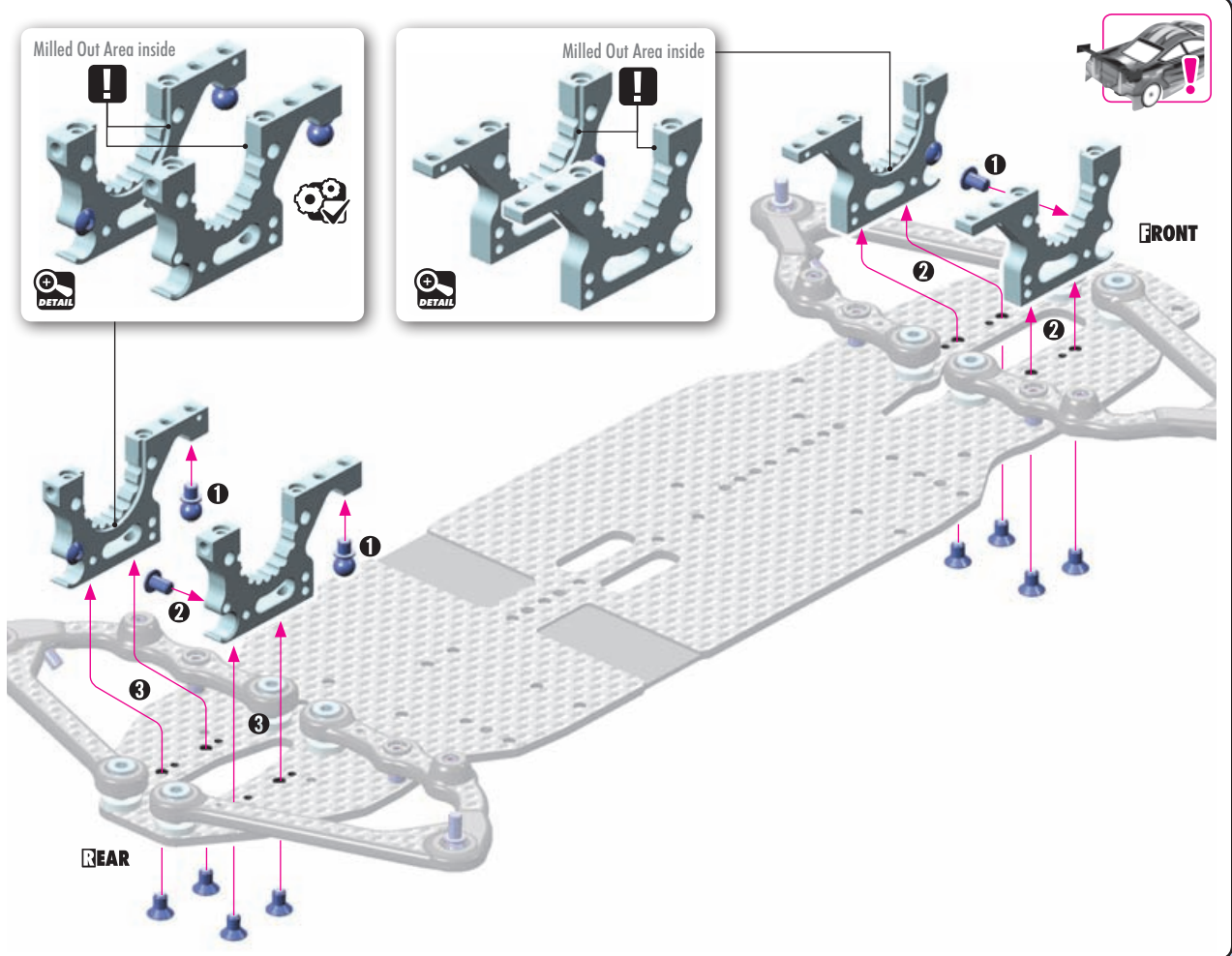
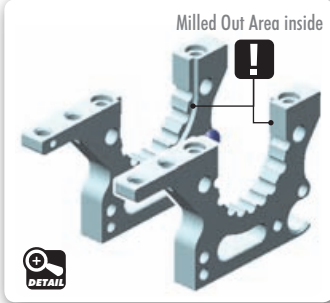
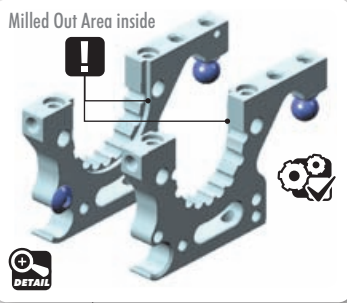
3. CENTRAL TRANSMISSION



4x 902305 SH M3x5



8x 903305 SFH M3x5



VIDEO TECH TIP

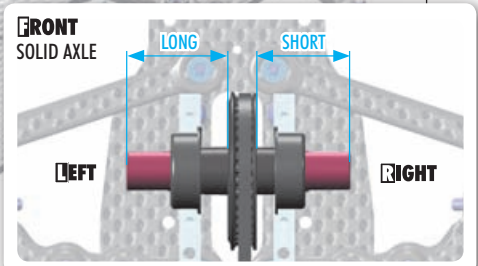
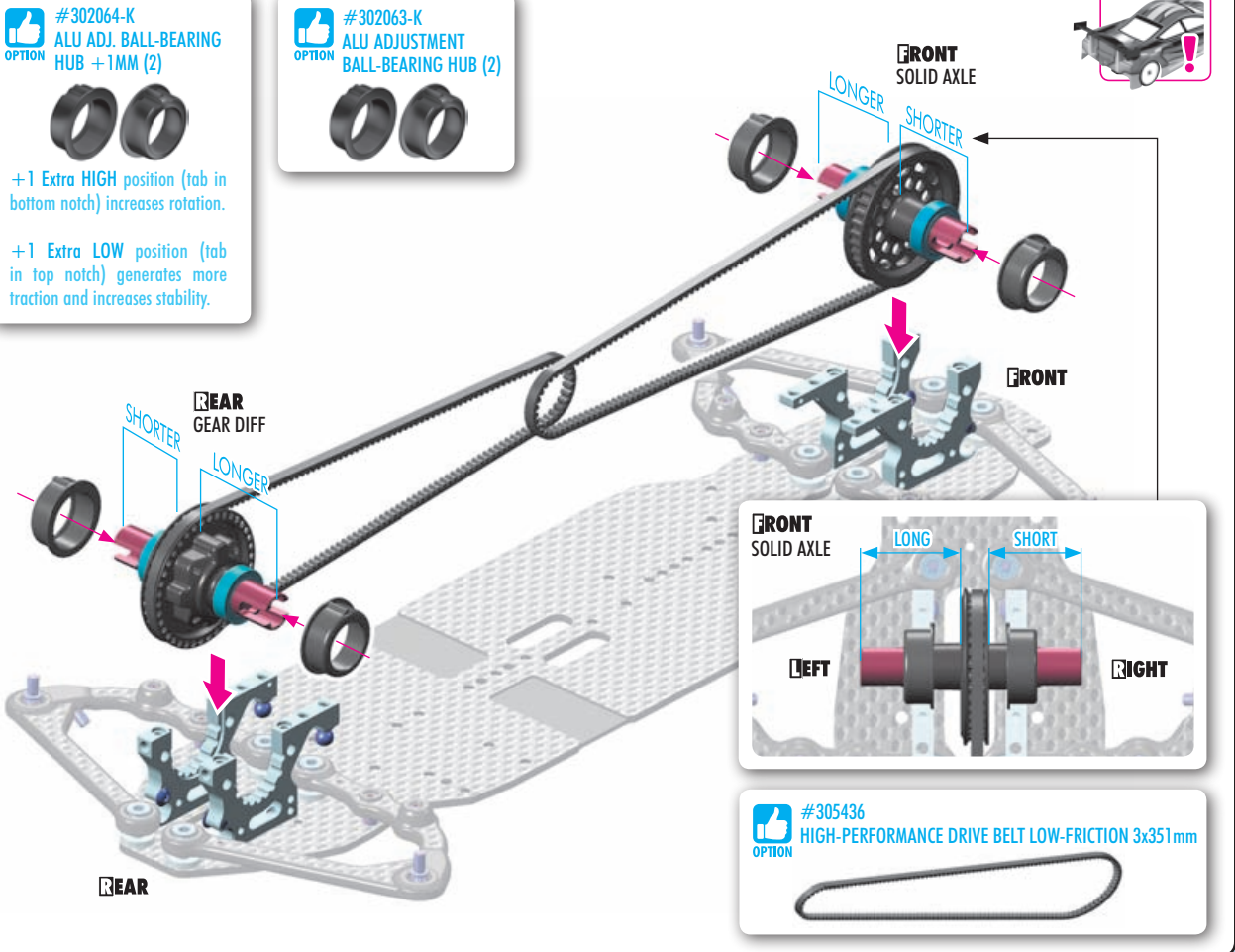


BUILDING THE BULKHEADS



+1 Extra HIGH position (tab in bottom notch) increases rotation.

+1 Extra LOW position (tab in top notch) generates more traction and increases stability.



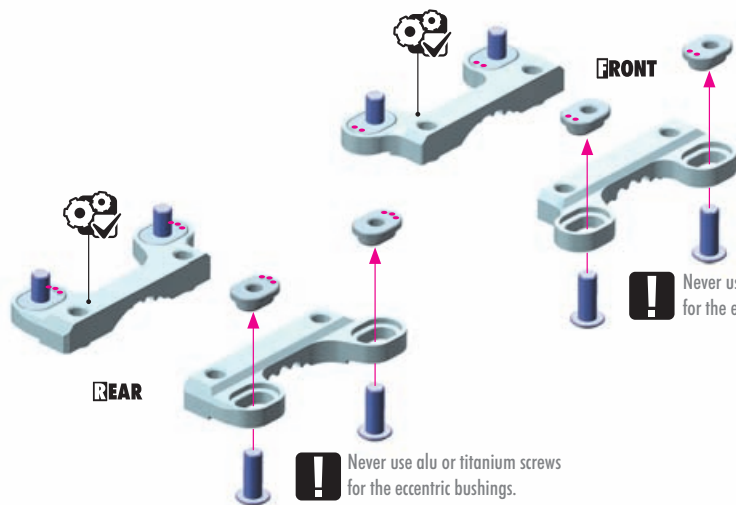
3. CENTRAL TRANSMISSION



VIDEO TECH TIP

CASTER

! NOTE ORIENTATION FOR ALL PARTS



! **IMPORTANT**
All 4 bushings at one end of the car must be installed in the same orientation.

! Never use alu or titanium screws for the eccentric bushings.

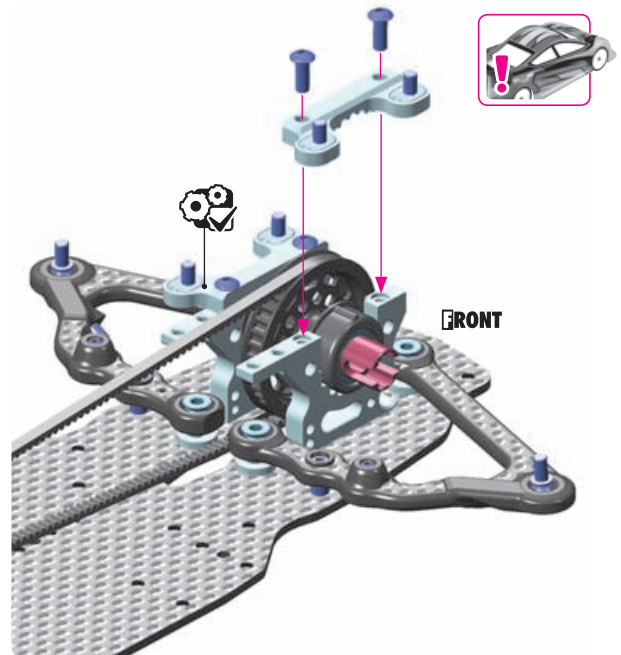
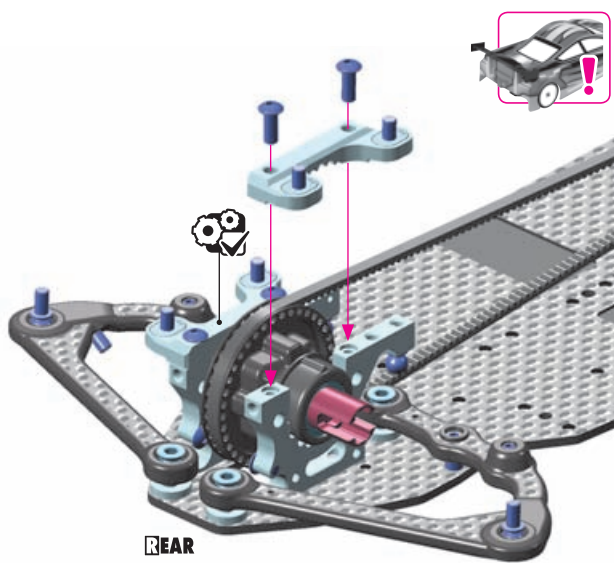
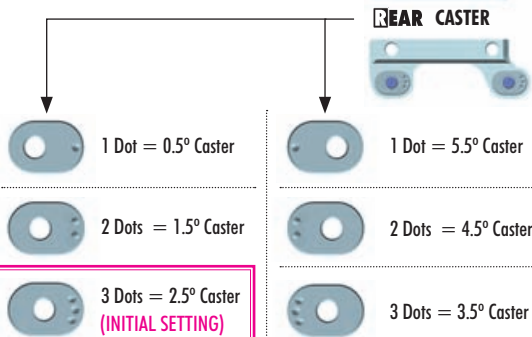
OPTION	ALU CASTER BUSHINGS		
#302310	FRONT 3° / REAR 5.5°	1 Dot	OPTION
#302311	FRONT 4° / REAR 4.5°	2 Dots	INCLUDED
#302312	FRONT 5° / REAR 3.5°	3 Dots	INCLUDED

! CASTER ADJUSTMENT

For most conditions, start with 4.0° front caster. Increasing front caster will increase steering (mainly on-power) but may also become more difficult to drive and more likely to traction roll.

The standard starting point for rear caster is 2.5°. More rear caster will increase initial steering but make the car more nervous to drive. It can increase rear traction in lower grip conditions. Less rear caster helps to increase cornering speed and rotation.

IMPORTANT
All 4 bushings at one end of the car must be installed in the same orientation.

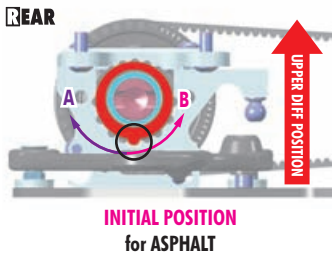


3. CENTRAL TRANSMISSION

REAR BELT TENSION ADJUSTMENT & DIFFERENTIAL POSITION

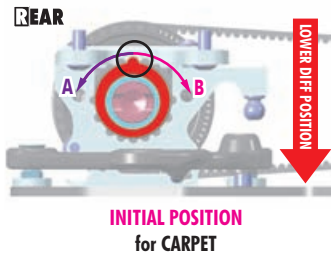
Rear diff **UPPER** position - tab in bottom notch - provides **more on-power steering**, but makes the rear less stable.

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.



TO LOOSEN REAR BELT:

Rotate both rear nylon hubs in arrow direction **A**

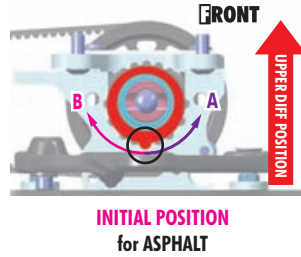
TO TIGHTEN REAR BELT:

Rotate both rear nylon hubs in arrow direction **B**

FRONT BELT TENSION ADJUSTMENT & DIFFERENTIAL POSITION

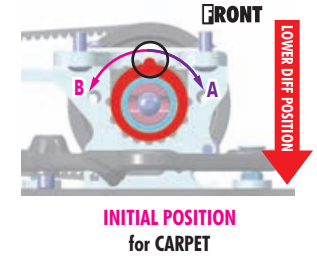
Front solid axle **UPPER** position - tab in bottom notch - provides **more steering**, but less forward traction.

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.



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**



VIDEO TECH TIP



DIFF HEIGHT



BELT TENSION ADJUSTMENT



3x 902303 SH M3x4



2x 930407 BB 4x7x2.5

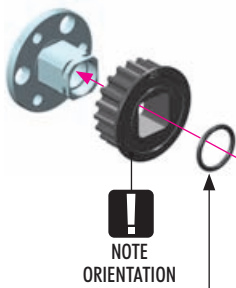


1x 970050 O 5x1



1x 966081 CH-CLIP 8

1



NOTE ORIENTATION

#966081 CH-CLIP 8 (10) INCLUDED IN THE LAST AID BAG

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.

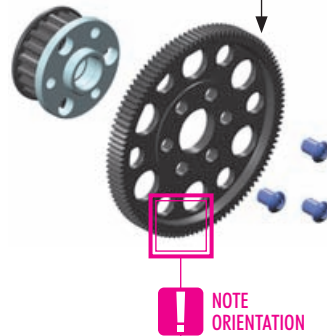


OPTION

Snap Ring Pliers (HUDY #189040)

2

ALTERNATIVE 64P OFFSET SPUR GEAR (INITIAL SETTING)



NOTE ORIENTATION

DETAIL

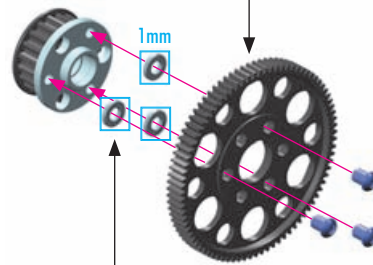
CUTAWAY VIEW



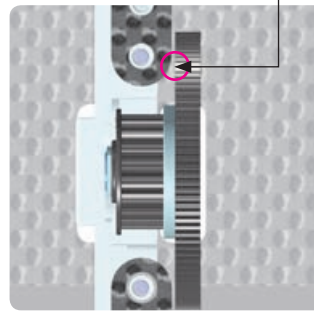
OFFSET NOTE ORIENTATION

2

ALTERNATIVE 48P SPUR GEAR



When using XRAY 48P spur gears or aftermarket spur gears without an offset, use the 3x5x1mm shims (#303141 NOT included) between the gear and layshaft to create the necessary clearance from the top deck.



3

BEARING OIL (HUDY #106230)



OPTION

OFFSET SPUR GEARS 64P

#305860	90T	OPTION
#305862	92T	OPTION
#305866	96T	OPTION
#305866-0	96T	OPTION
#305869	99T	OPTION
#305870	100T	OPTION
#305870-0	100T	OPTION
#305874	104T	OPTION
#305876	106T	OPTION
#305878	108T	OPTION
#305880	110T	INCLUDED
#305880-0	110T	OPTION
#305882	112T	OPTION
#305884	114T	OPTION

OPTION

SPUR GEARS 48P

#305772	72T	OPTION
#305776	76T	OPTION
#305778	78T	OPTION
#305779	79T	OPTION
#305781	81T	OPTION
#305784	84T	OPTION
#305784-0	84T	OPTION

3. CENTRAL TRANSMISSION

- 1x 303122-K SHIM 3x6x1
- 2x 303127-K SHIM 3x6x4
- 1x 303139-K SHIM 3x6x7
- 2x 903318 SFH M3x18
- 2x 930308 BB 3x6x4

NOTE ORIENTATION [!]

BEARING OIL (HUDY #106230)

4mm

4mm

1mm

BEARING OIL (HUDY #106230)

7mm

This shim serves as the battery backstop. To move the battery further away from the center of the chassis, add additional shims.

This shim serves as the battery backstop. To move the battery further away from the center of the chassis, add additional shims.

#309852
X4 BRASS WEIGHTS NICKEL COATED FOR MOTOR MOUNT 4g + 4g + 8g
OPTION

X4 BRASS WEIGHT FRONT LEFT FOR MOTOR MOUNT 8g **OPTION**

X4 BRASS WEIGHT FRONT RIGHT FOR MOTOR MOUNT 4g **OPTION**

X4 BRASS WEIGHT REAR RIGHT FOR MOTOR MOUNT 4g **OPTION**

! MOTOR MOUNT WEIGHT ADJUSTMENT
These optional brass pieces place the extra weight close to the X4 center to minimize the effects on the front-to-rear weight bias.

- 1x 902305 SH M3x5
- 1x 962042 S 4x6x0.1

VIDEO TECH TIP

BELT TENSION ADJUSTMENT

FRONT

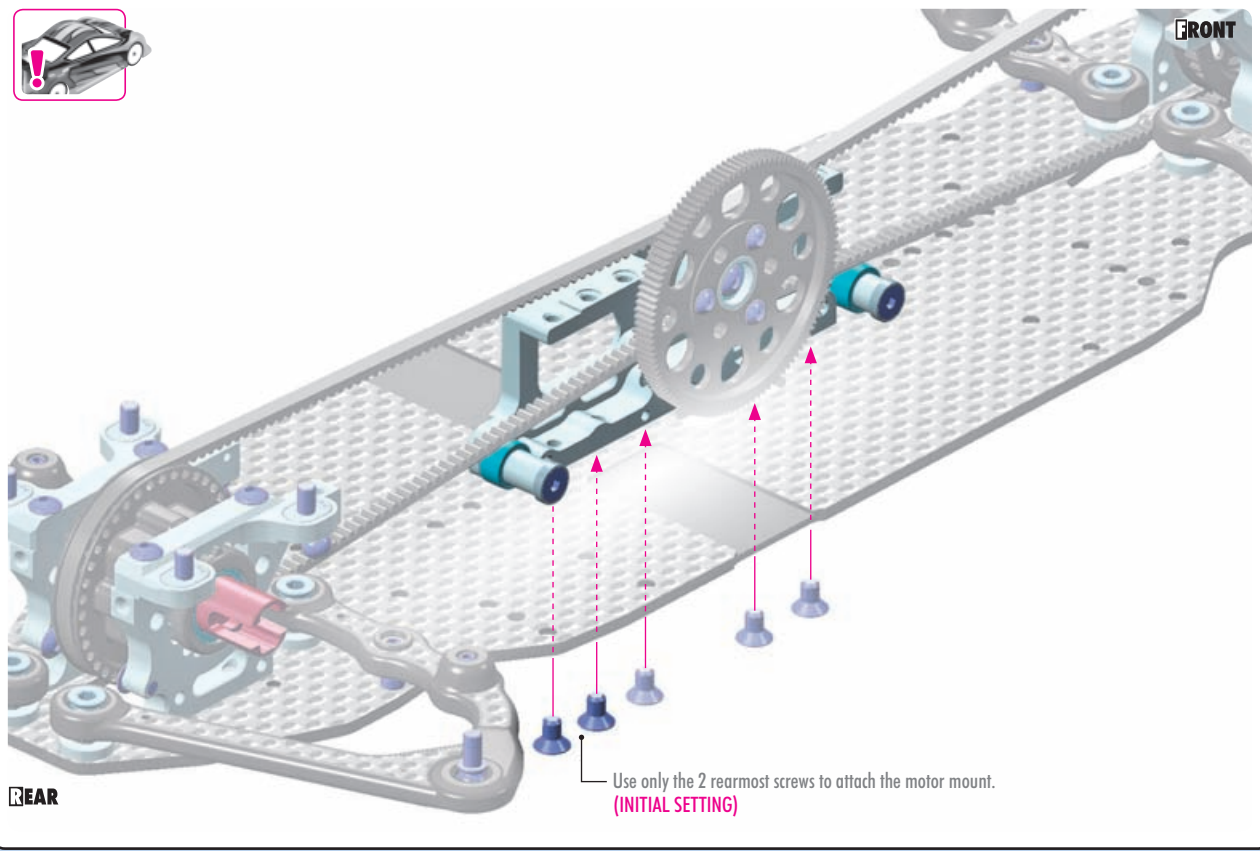
0.1mm

REAR

! NOTE ORIENTATION

3. CENTRAL TRANSMISSION

5x 903305 SFH M3x5



Use only the 2 rearmost screws to attach the motor mount. (INITIAL SETTING)

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.



VIDEO TECH TIP

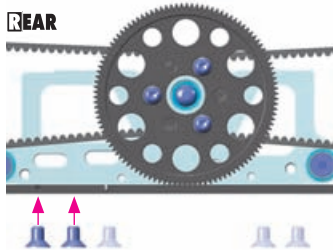


MOTOR MOUNT FLEX

SOFT (INITIAL SETTING)

LOW & MEDIUM traction conditions.

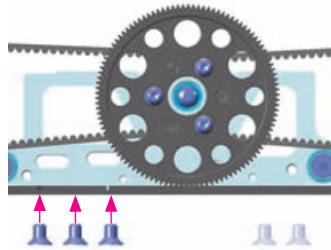
Use only the 2 rearmost screws to attach the motor mount (as shown). DO NOT install the 3 screws immediately in front of & behind the spur gear. This allows the chassis to flex more in the central area, and will improve traction (especially on-power). Rear grip will be improved through the entire corner, but initial reaction will decrease. This setting is recommended for low- to medium traction conditions, both on carpet and asphalt.



MEDIUM

MEDIUM traction conditions.

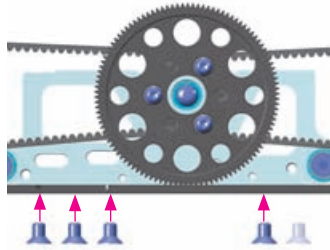
Use only the 3 rearmost screws to attach the motor mount (as shown); DO NOT install the 2 screws in front of the spur gear. This gives a good compromise between stability and initial response. The car will have more rear grip than the full stiff setting, but will not be as stable as the soft setting.



STIFF

HIGH-TRACTION carpet conditions.

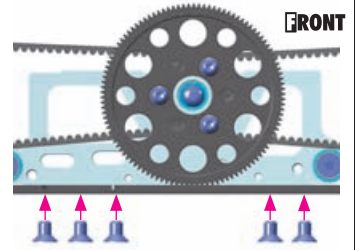
Use the 3 rearmost screws and one in front of the spur gear to attach the motor mount (as shown); DO NOT install the very front screw. Will give great steering response, but with reduced mechanical traction. The car will have more cornering speed, but will be more difficult to drive. Mainly recommended for high-traction carpet conditions.



EXTRA STIFF

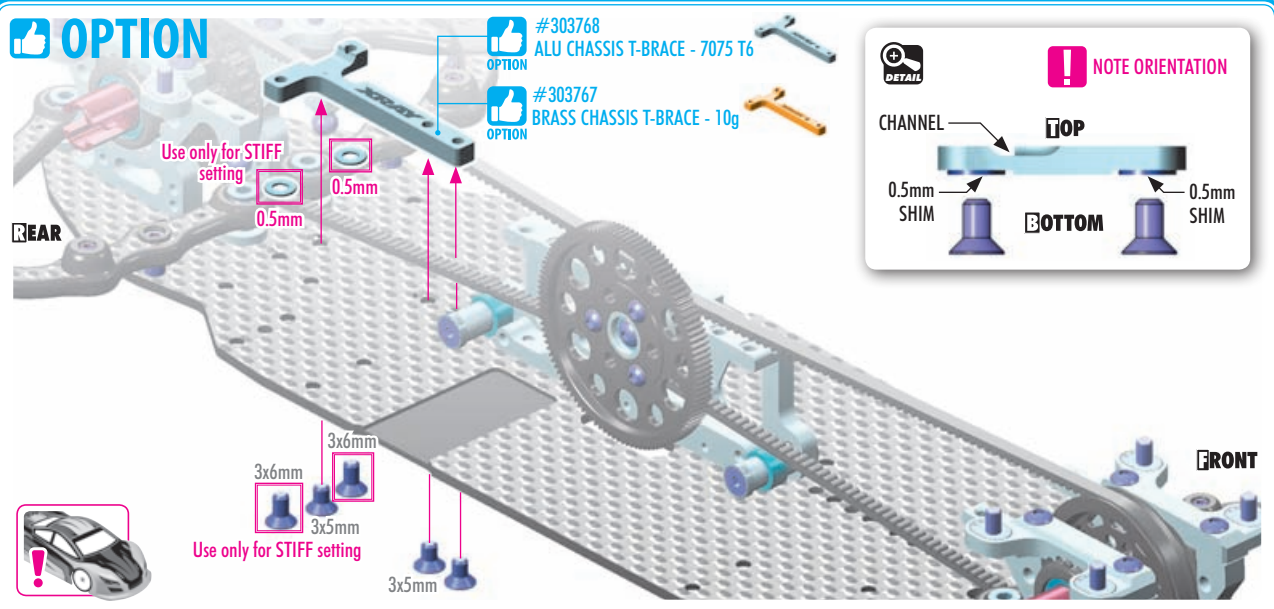
HIGH-TRACTION US BLACK carpet conditions.

Using all screws to attach the motor mount (as shown) will give the best feeling for US black carpet. This setting provides the best stability and traction for these specific conditions.



3. CENTRAL TRANSMISSION

- 2x 303121-K SHIM 3x6x0.5
- 3x 903305 SFH M3x5
- 2x 903306 SFH M3x6



CHASSIS FLEX ADJUSTMENT

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

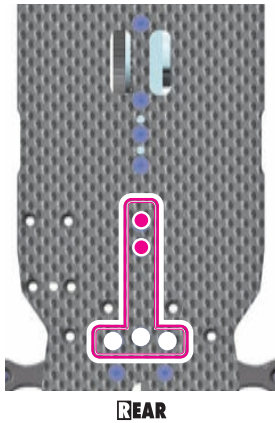
SOFT - NO BRACE

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.



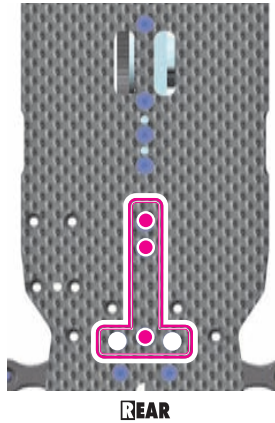
SOFT - MEDIUM

Install the brace using only the 2 forward bottom centerline screws (as shown). 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 corners.



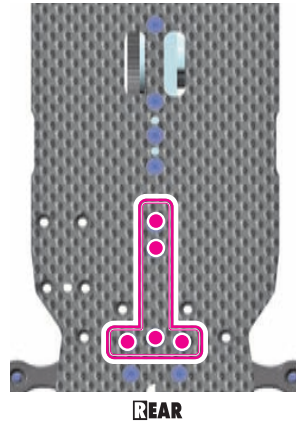
MEDIUM

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.

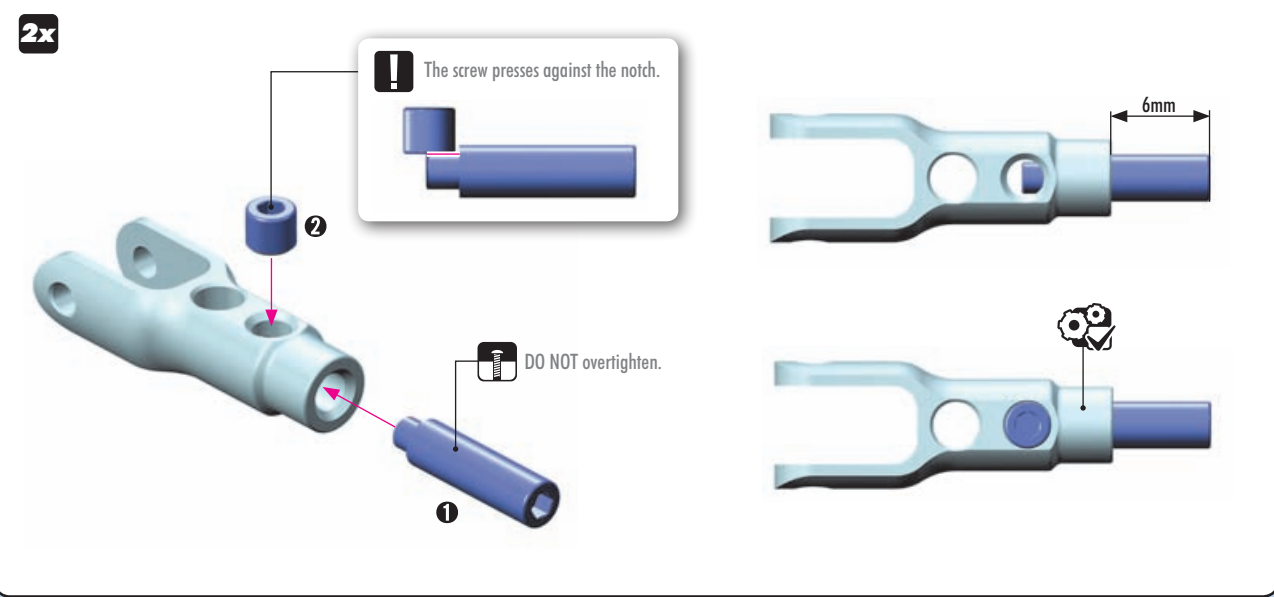


STIFF

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.



- 2x 901302 SB M3x2.5
- 2x 901313 SB M3x12

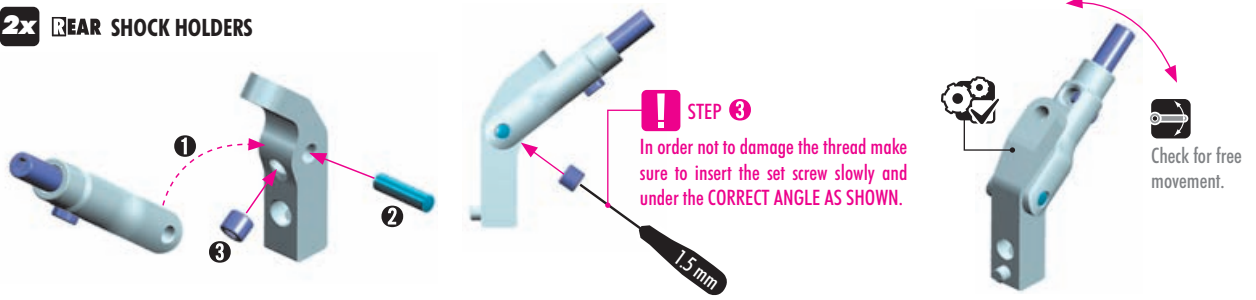


3. CENTRAL TRANSMISSION

2x 901302
SB M3x2.5

2x 981208
P 2x8

2x REAR SHOCK HOLDERS

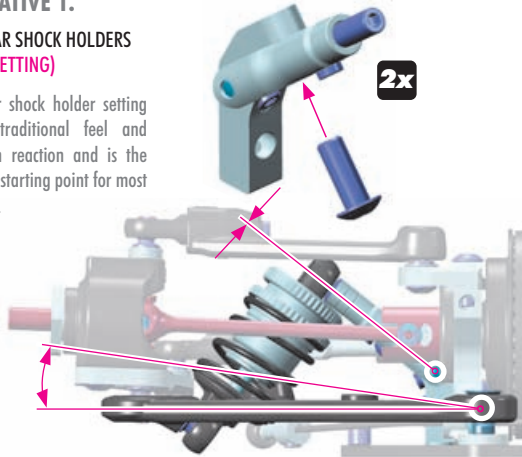


2x 902308
SH M3x8

ALTERNATIVE 1.

FIXED REAR SHOCK HOLDERS (INITIAL SETTING)

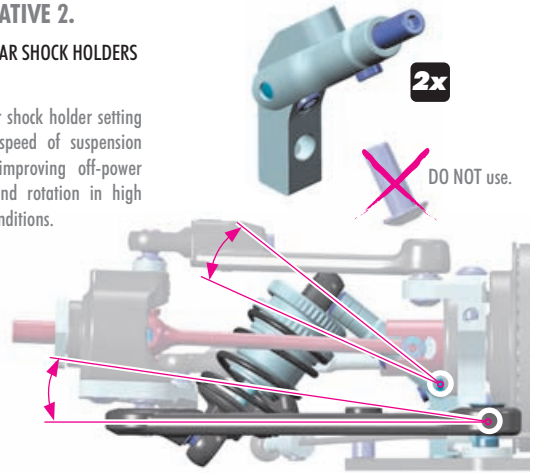
Fixed rear shock holder setting provides traditional feel and suspension reaction and is the suggested starting point for most conditions.



ALTERNATIVE 2.

ACTIVE REAR SHOCK HOLDERS

Active rear shock holder setting increases speed of suspension reaction, improving off-power steering and rotation in high traction conditions.



2x 303142-K
SHIM 3x5x0.5

2x 902310
SH M3x10

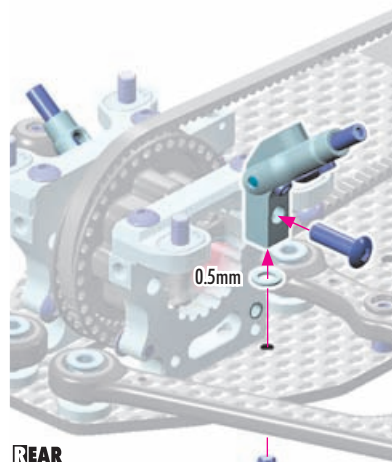
2x 903305
SFH M3x5

REAR SHOCK HOLDERS FLEX ADJUSTMENT

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

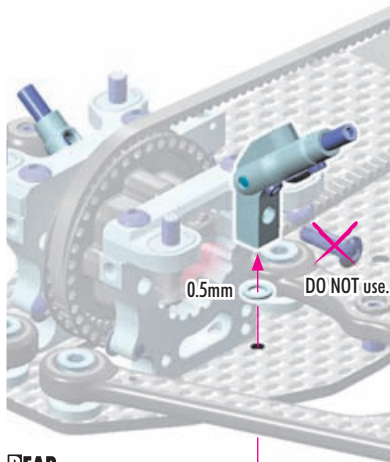
FLEX ALTERNATIVE 1. (INITIAL SETTING)

Attach the shock holder to both the chassis and bulkhead for free yet predictable handling for the easiest control. Recommended as a starting point for all traction levels.



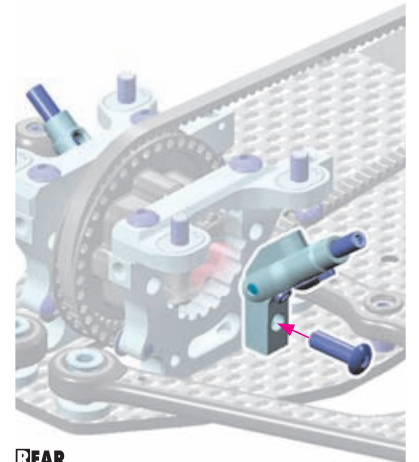
FLEX ALTERNATIVE 2.

Attach the shock holder to only the chassis for maximum mechanical traction. Recommended for low to medium traction tracks.



FLEX ALTERNATIVE 3.

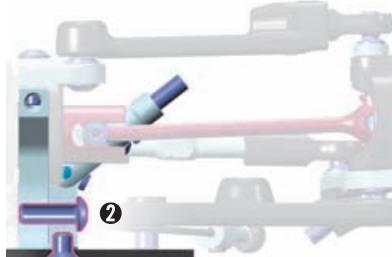
Attach the shock holder to only the bulkhead for more aggressive reaction, but reduced mechanical traction may be more difficult to drive. Recommended for medium to high traction conditions.



REAR

REAR

REAR



1

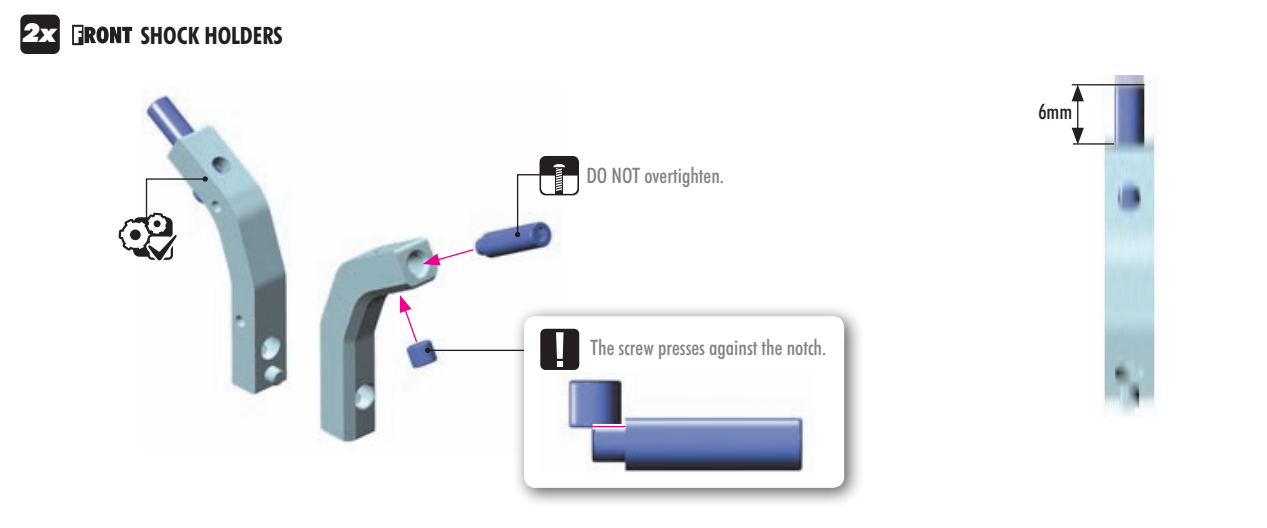
» All screws **TIGHTEN GENTLY**
» Fully **TIGHTEN** in this order



3. CENTRAL TRANSMISSION

-  **2x** 901302
SB M3x2.5
-  **2x** 901313
SB M3x12

2x FRONT SHOCK HOLDERS



DO NOT overtighten.


The screw presses against the notch.

6mm

-  **2x** 303142-K
SHIM 3x5x0.5
-  **2x** 902310
SH M3x10
-  **2x** 903305
SFH M3x5

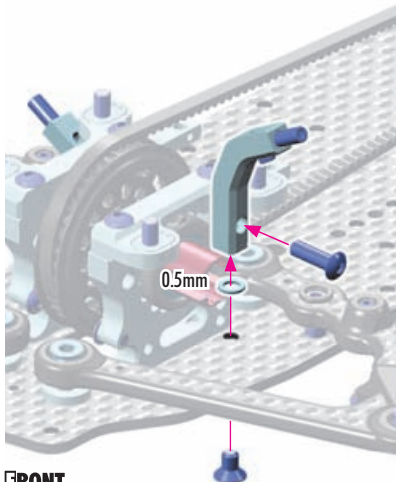
FRONT SHOCK HOLDERS FLEX ADJUSTMENT

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



FLEX ALTERNATIVE 1. (INITIAL SETTING)

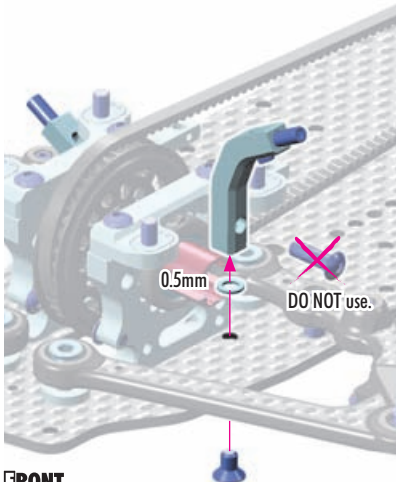
Attach the shock holder to both the chassis and bulkhead for free yet predictable handling for the easiest control. Recommended as a starting point for all grip levels.



FRONT

FLEX ALTERNATIVE 2.

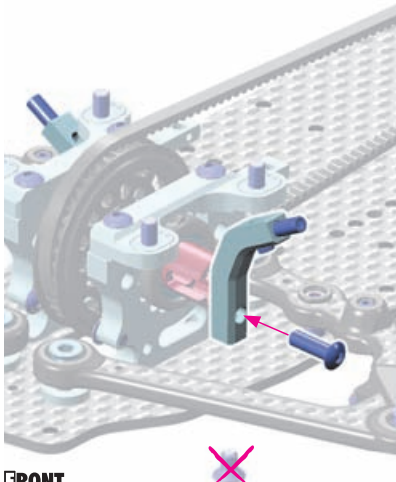
Attach the shock holder to only the chassis for maximum mechanical traction. Recommended for low to medium grip tracks.



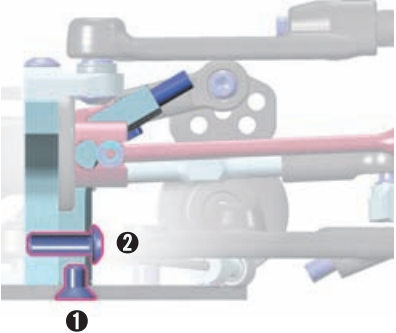
FRONT

FLEX ALTERNATIVE 3.

Attach the shock holder to only the bulkhead for more aggressive reaction, but reduced mechanical grip may be more difficult to drive. Recommended for medium to high traction conditions.




FRONT



1

2

» All screws **TIGHTEN GENTLY** 

» Fully **TIGHTEN** in this order

4. STEERING

(All X4 top decks fit also into X4'24 car)



#301072 X4 GRAPHITE UPPER DECK - SPLIT FRONT - 2.0mm
#301073 X4 GRAPHITE UPPER DECK - SPLIT REAR - 2.0mm



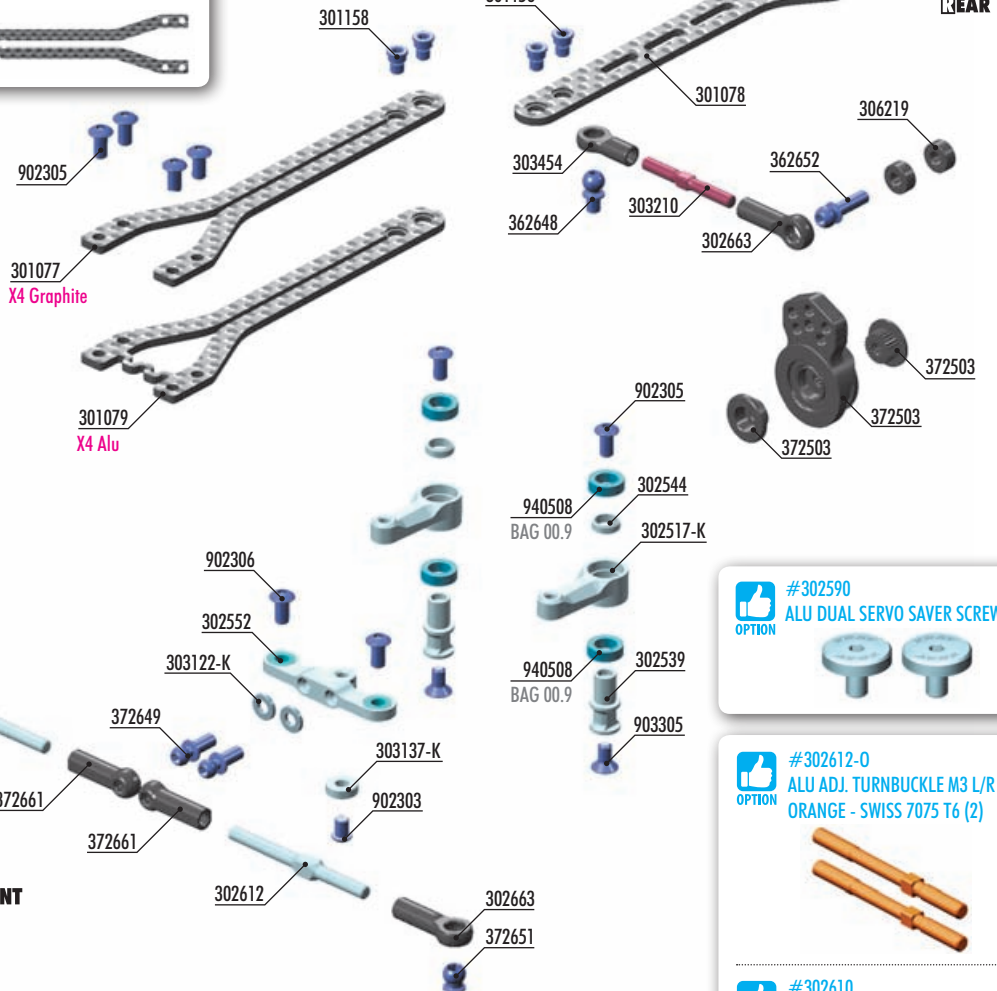
#301079-L X4 GRAPHITE UPPER DECK - SPLIT FRONT - 1.6mm
#301078-L X4 GRAPHITE UPPER DECK - SPLIT REAR - 1.6mm



#301071 X4 GRAPHITE UPPER DECK 1.6mm
#301070 X4 GRAPHITE UPPER DECK 2.0mm



#302553
ALU STEERING PLATE 7.5mm FOR DUAL SERVO SAVER



#302590
ALU DUAL SERVO SAVER SCREW M3x7 (2)



#302612-0
ALU ADJ. TURNBUCKLE M3 L/R 39mm
ORANGE - SWISS 7075 T6 (2)



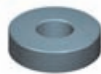
#302610
ADJ. TURNBUCKLE L/R 39mm
HUDY SPRING STEEL™ (2)



#302571
X4 GRAPHITE STEERING PLATE SET



#303138-K or 303138-O
ALU SHIM 3x7x2.0mm (10)



#302664
COMPOSITE BALL JOINT 4.9mm
UNIDIRECTIONAL - OPEN (4)



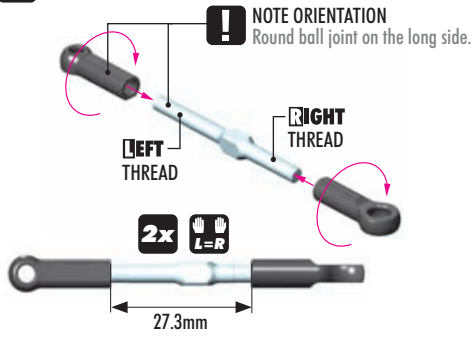
BAG

04

301077	X4 GRAPHITE UPPER DECK - SPLIT FRONT OPEN - 2.0mm	306219	COMPOSITE SET OF SERVO SHIMS (4)
301078	X4 GRAPHITE UPPER DECK - SPLIT REAR - 2.0mm	362648	BALL END 4.9mm WITH THREAD 4mm (2)
301079	X4 GRAPHITE UPPER DECK - SPLIT FRONT WAVE - 2.0mm	362652	BALL END 4.9mm WITH THREAD 10mm (2)
301158	TOP DECK HEX SCREW M3x5.5 - HUDY SPRING STEEL™ (2)	372503	COMPOSITE SERVO SAVER - X-STIFF - SET - V2
302517-K	X4 ALU DUAL STEERING ARM - BLACK + BALL-BEARINGS (2)	372649	BALL END 4.2mm WITH 4mm THREAD (2)
302539	X4 ALU STEERING POST FOR DUAL SERVO SAVER (2)	372651	PIVOT BALL UNIVERSAL 4.9mm - HUDY SPRING STEEL™ (2)
302544	ALU SHIM FOR RADIAL PLAY ADJUSTMENT OF STEERING ARM (2)	372661	COMPOSITE STEERING BALL-JOINT OPEN 4.2mm (4)
302552	ALU STEERING PLATE 8.0mm FOR DUAL SERVO SAVER	902303	HEX SCREW SH M3x4 SMALL HEAD - STAINLESS (10)
302612	ALU ADJ. TURNBUCKLE M3 L/R 39mm - SWISS 7075 T6 (2)	902305	HEX SCREW SH M3x5 (10)
302663	COMPOSITE BALL JOINT 5mm - OPEN - V2 (8)	902306	HEX SCREW SH M3x6 (10)
303122-K	ALU SHIM 3x6x1.0mm - BLACK (10)	903305	HEX SCREW SFH M3x5 (10)
303137-K	ALU SHIM 3x7.5x2.0mm - BLACK (10)	940508	BALL-BEARING 5x8x2.5 RUBBER-SEALED - OILED (2)
303210	REAR TURNBUCKLE L/R 26mm - HUDY SPRING STEEL (2)		
303454	BALL JOINT 4.9mm - OPEN (4)		

4. STEERING

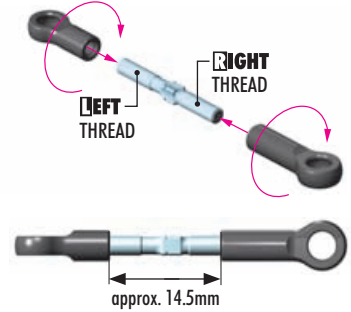
2x STEERING LINKS



- #302612-0
ALU ADJ. TURNBUCKLE M3 L/R
39mm ORANGE - SWISS 7075 T6 (2)
- #302610
ADJ. TURNBUCKLE L/R 39mm
HUDY SPRING STEEL (2)

SERVO LINK

Adjust servo link to fit your servo.



1x 303137-K
SHIM 3x7.5x2



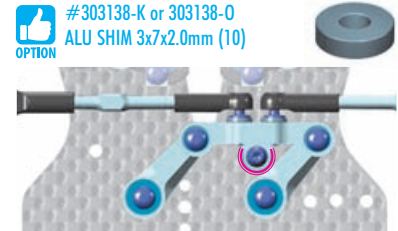
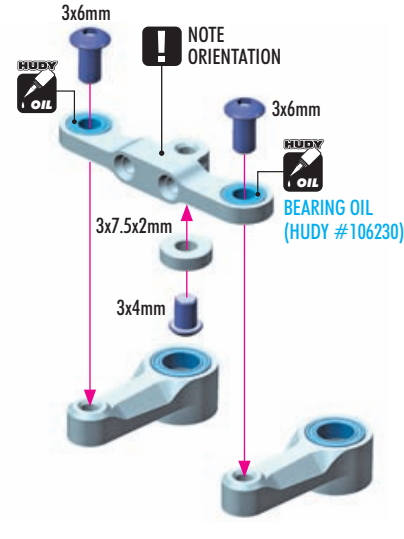
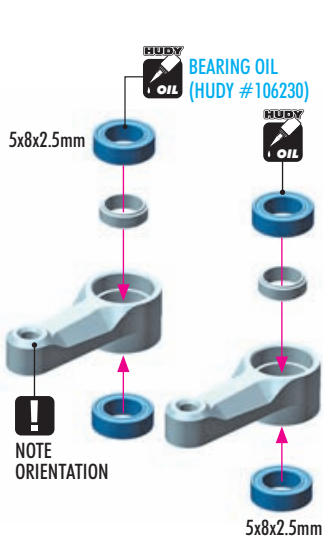
1x 902303
SH M3x4



2x 902306
SH M3x6



4x 940508
BB 5x8x2.5



For VTA class:

Never use more than 25° steering lock otherwise the tire will touch the arm. We recommend to use 25° steering lock for asphalt. For high traction carpet conditions, we recommend to use steering lock between 21° to 23° to avoid traction rolling and to improve cornering speed.



VTA CLASS

The steering lock is adjusted by changing the diameter of the shim attached to the steering plate. The kit includes a 7.5mm OD shim, limiting physical steering lock to approx. 26°.

An optional 7mm shim is available to achieve 28° of steering lock.

Running NO shim will allow up to 29° of steering lock. More steering lock will increase steering, especially in tight corners, but it will also reduce cornering speed and make the car more difficult to drive.

IMPORTANT! When using NO shim, make sure the steering plates are not touching the front shocks which can tweak the car.

VIDEO TECH TIP



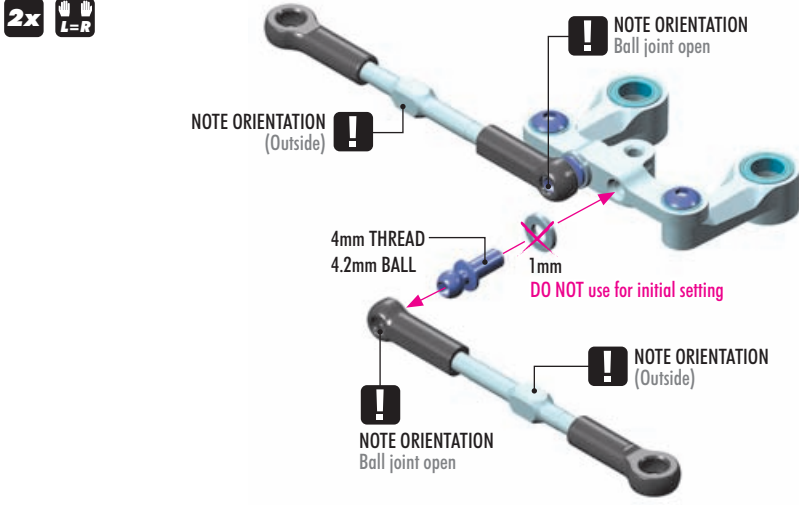
STEERING SYSTEM

#302553 ALU STEERING PLATE 7.5mm FOR DUAL SERVO SAVER

Optional 7.5mm steering plate improves steering from mid corner to exit but reduces initial response. Recommended for high traction carpet or high-speed asphalt tracks.



2x 303122-K
SHIM 3x6x1



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

IO
2x 306219
5MM 3x6x2

SERVO SAVER

1 **2** **3** **4**

10mm THREAD
4.9mm BALL

2mm

4mm THREAD
4.9mm BALL

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

! Use the adapter that matches the steering servo.
F = 25T H = 24T K = 23T

! INITIAL SETTING

! #302664
OPTION COMPOSITE BALL JOINT 4.9mm UNIDIRECTIONAL - OPEN (4)



VIDEO TECH TIP



STEERING SYSTEM



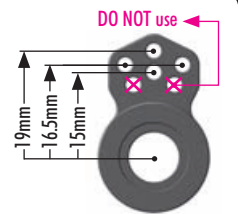
SERVO HORN HEIGHT

The servo horn length has a significant impact on the reaction to steering input. The length can help tune the car for different conditions and driving styles. The length measurement is from center of the servo spline output to the center of the steering link mounting point.

The included XRAY servo saver offers 4 different length choices. The top hole is 19mm, the second row is 16.5mm, the third row is 15mm. The shortest row is not used for X4 cars.

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

The optional HUDY direct servo horns have several useful variations of offsets and lengths for X4 cars.



OPTION HUDY ALU SERVO HORNS - OFFSET

#293491	23T	KO, Sanwa
#293492	24T	Hitec
#293493	25T	Futaba



OPTION HUDY CLAMP ALU SERVO HORNS - OFFSET

#293401	23T	KO, Sanwa
#293402	24T	Hitec
#293403	25T	Futaba



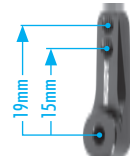
OPTION HUDY CLAMP ALU SERVO HORNS - OFFSET

#293411	23T	KO, Sanwa
#293412	24T	Hitec
#293413	25T	Futaba



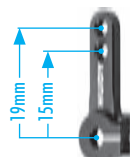
OPTION HUDY HUDY ALU SERVO HORNS

#293497	23T	KO, Sanwa
#293498	24T	Hitec
#293499	25T	Futaba



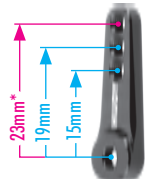
OPTION HUDY HUDY CLAMP ALU SERVO HORNS

#293404	23T	KO, Sanwa
#293405	24T	Hitec
#293406	25T	Futaba



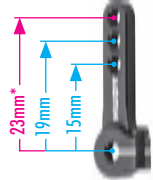
OPTION HUDY HUDY ALU SERVO HORNS

#293501	23T	KO, Sanwa
#293502	24T	Hitec
#293503	25T	Futaba



OPTION HUDY HUDY CLAMP ALU SERVO HORNS

#293407	23T	KO, Sanwa
#293408	24T	Hitec
#293409	25T	Futaba

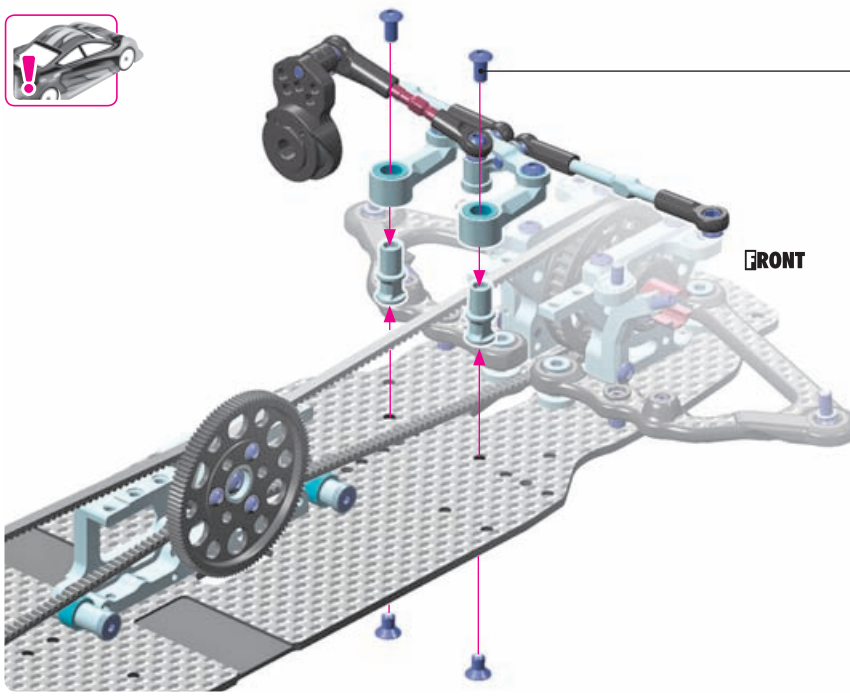


LONGER SERVO HORN LENGTH: Less servo rotation needed to reach the full steering lock, resulting in more responsive and immediate reaction to driver input. A servo horn that is too long can make the car feel nervous to drive. Most XRAY drivers prefer the 19mm length (top row on kit servo saver or 2nd hole on optional 2-hole alum horn).

SHORTER SERVO HORN LENGTH: More servo rotation needed to reach full steering lock; providing improved control and consistency from the more precise feel and may help avoid traction rolling in high grip conditions. A shorter horn length requires an increased radio EPA to maintain the desired steering travel. Using a horn length that is too short can make the car feel lazy.

! **IMPORTANT!** Using an aluminum servo horn DOES NOT provide any servo protection, increasing the risk of servo damage from crashes.

4. STEERING



#302590
OPTION **ALU DUAL SERVO SAVER SCREW M3x7 (2)**



The optional screw removes excessive radial play from the steering.

#302571
OPTION **X4 GRAPHITE STEERING PLATE SET**

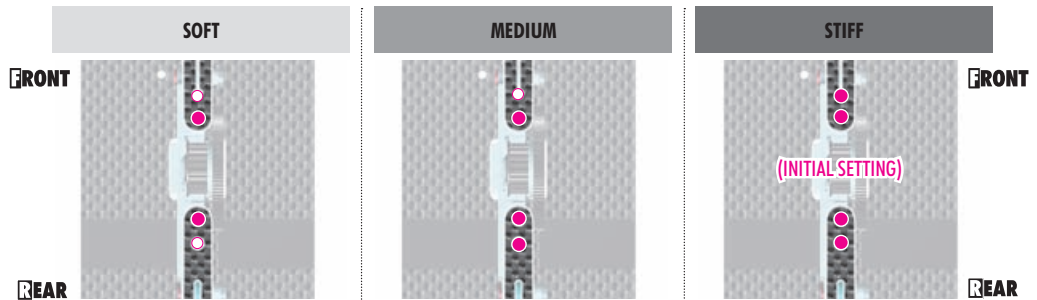


The optional graphite bridge stiffens the steering assembly and improves initial steering response. This option is mainly recommended for medium - to high-grip carpet racing.



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.



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

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

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



VIDEO TECH TIP



TOP DECK FLEX

X4'24 Alu Flex

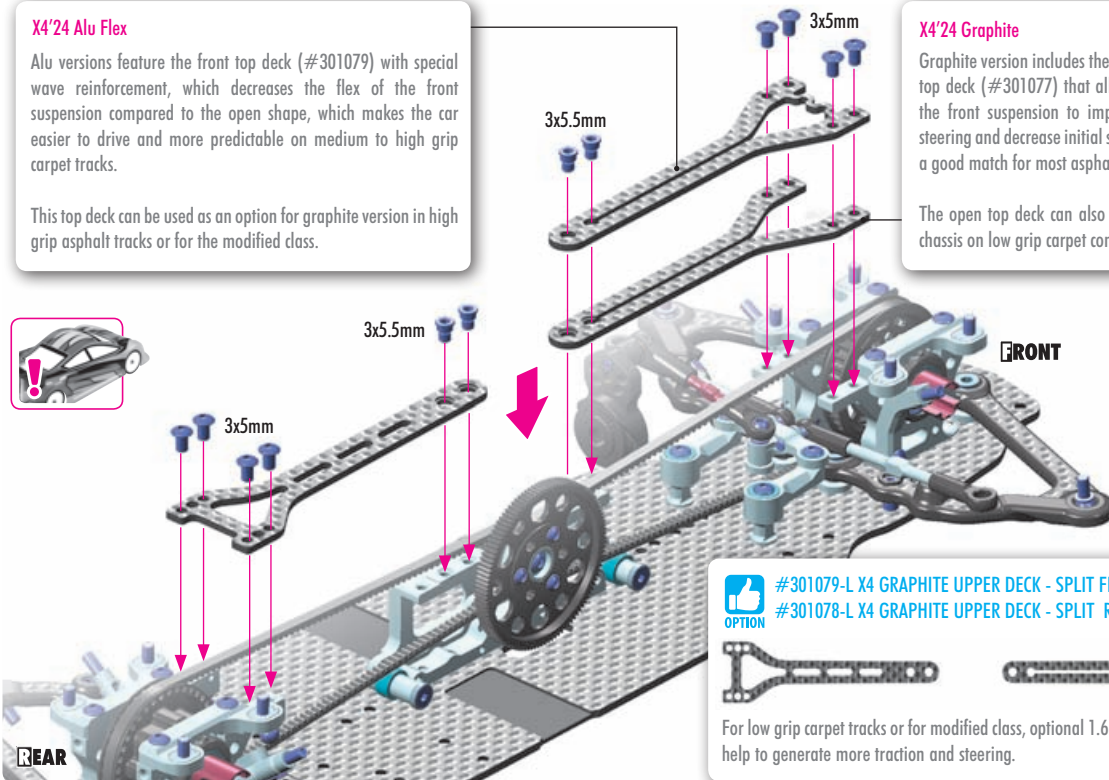
Alu versions feature the front top deck (#301079) with special wave reinforcement, which decreases the flex of the front suspension compared to the open shape, which makes the car easier to drive and more predictable on medium to high grip carpet tracks.

This top deck can be used as an option for graphite version in high grip asphalt tracks or for the modified class.

X4'24 Graphite

Graphite version includes the open shape front top deck (#301077) that allows more flex in the front suspension to improve mid corner steering and decrease initial steering response, a good match for most asphalt tracks.

The open top deck can also be used with alu chassis on low grip carpet conditions.

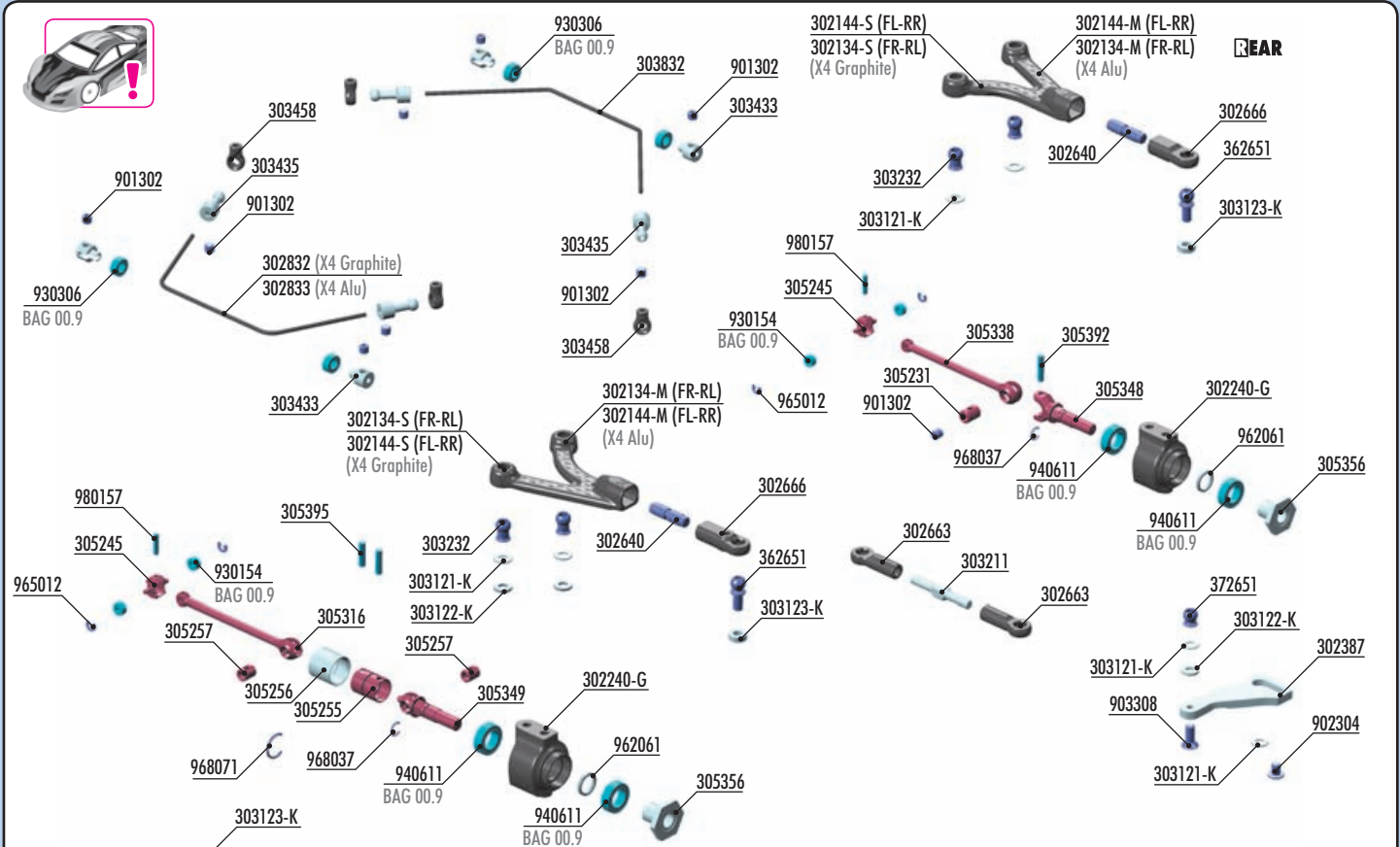


#301079-L X4 GRAPHITE UPPER DECK - SPLIT FRONT - 1.6mm
#301078-L X4 GRAPHITE UPPER DECK - SPLIT REAR - 1.6mm



For low grip carpet tracks or for modified class, optional 1.6mm top decks will help to generate more traction and steering.

5. FRONT & REAR SUSPENSION



FRONT

REAR

UPPER ARMS CFF™				
#302144-M	MEDIUM	FL-RR	INCLUDED	X4 Alu
#302134-M	MEDIUM	FR-RL	INCLUDED	X4 Alu
#302144-S	SOFT	FL-RR	INCLUDED	X4 Graphite
#302134-S	SOFT	FR-RL	INCLUDED	X4 Graphite



FRONT ANTI-ROLL BARS		
#302831	1.1mm	OPTION
#302832	1.2mm	INCLUDED X4 Graphite
#302833	1.3mm	INCLUDED X4 Alu

REAR ANTI-ROLL BARS		
#303831	1.1mm	OPTION
#303832	1.2mm	INCLUDED
#303833	1.3mm	OPTION

STEERING BLOCKS			
#302240-M	MEDIUM	OPTION	
#302240-H	HARD	OPTION	
#302240-G	GRAPHITE	INCLUDED	
#302241	ALU	OPTION	

#305407	CVD BB DRIVE SHAFT 52mm - SET	
#305408	CVD BB DRIVE SHAFT 54mm - SET	
#305307	ECS BB DRIVE SHAFT 59mm - SET	
#303211-0	ALU TURNBUCKLE L/R 30mm ORANGE	
#305359	ALU WHEEL HUB +0.5mm	
#305354	ALU WHEEL HUB -0.5mm	

BAG

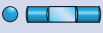
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- | | | | |
|----------|--------------------------------------------------------------------|--------|-----------------------------------------------------------------|
| 302134-S | X4 CFF™ UPPER ARM - INNER SHOCK POSITION - SOFT - FR/RL | 305257 | ECS BB SC DRIVE SHAFT COUPLING - HUDY SPRING STEEL™ |
| 302134-M | X4 CFF™ UPPER ARM - INNER SHOCK POSITION - MEDIUM - FR/RL | 305306 | X4 ECS BB DRIVE SHAFT 58mm - HUDY SPRING STEEL™ - SET |
| 302144-S | X4 CFF™ UPPER ARM - INNER SHOCK POSITION - SOFT - FL/RR | 305316 | X4 ECS BB DRIVE SHAFT 58mm - HUDY SPRING STEEL™ (2) |
| 302144-M | X4 CFF™ UPPER ARM - INNER SHOCK POSITION - MEDIUM - FL/RR | 305335 | X4 ECS BB SC DRIVE SHAFT 58mm - HUDY SPRING STEEL™ - COMPL. SET |
| 302240-G | X4 COMPOSITE STEERING BLOCK - GRAPHITE | 305338 | X4 CVD BB DRIVE SHAFT 54mm - HUDY SPRING STEEL™ (2) |
| 302386 | X4 ALU FRONT STEERING PLATE - INNER SHOCK POSITION - 7075 T6 (L+R) | 305348 | X4 CVD DRIVE AXLE - SPRING CLIP - HUDY SPRING STEEL™ |
| 302387 | X4 ALU REAR ARS PLATE - INNER SHOCK POSITION - SWISS 7075 T6 (L+R) | 305349 | X4 ECS DRIVE AXLE - SPRING CLIP - HUDY SPRING STEEL™ |
| 302640 | ADJUSTABLE CAMBER SCREW 14mm M4 L/R - HUDY SPRING STEEL™ (2) | 305356 | X4 ALU WHEEL HUB - SPRING CLIP - SWISS 7075 T6 (2) |
| 302663 | COMPOSITE BALL JOINT 4.9mm - OPEN - V2 (8) | 305392 | DRIVE SHAFT PIN 2 x 10 WITH FLAT SPOT (2) |
| 302666 | COMPOSITE BALL JOINT 4.9mm F+R - OPEN (2+2) | 305395 | ECS BB SC DRIVE SHAFT PIN 2 x 8.4 (2) |
| 302832 | X4 ANTI-ROLL BAR UAM - UNDER ARM MOUNT - FRONT 1.2mm | 305408 | X4 CVD BB DRIVE SHAFT 54mm - HUDY SPRING STEEL™ - SET |
| 302833 | X4 ANTI-ROLL BAR UAM - UNDER ARM MOUNT - FRONT 1.3mm | 362651 | BALL END 4.9mm WITH THREAD 8mm (2) |
| 303121-K | ALU SHIM 3x6x1.5mm - BLACK (10) | 372651 | PIVOT BALL UNIVERSAL 4.9mm - HUDY SPRING STEEL™ (2) |
| 303122-K | ALU SHIM 3x6x1.0mm - BLACK (10) | 901302 | HEX SCREW SB M3x2.5 (10) |
| 303123-K | ALU SHIM 3x6x2.0mm - BLACK (10) | 902304 | HEX SCREW SH M3x4 - STAINLESS (10) |
| 303211 | ALU ADJUSTABLE TURNBUCKLE L/R 30mm - SWISS 7075 T6 (2) | 903308 | HEX SCREW SFH M3x8 (10) |
| 303232 | X4 UPPER ARM BALL UNIVERSAL 4.9mm - HUDY SPRING STEEL™ (2) | 930154 | BALL-BEARING 1.5x4x2 STEEL SEALED - OIL (4) |
| 303433 | ALU ANTI-ROLL BAR BUSHING ø1.7mm - 6mm (2) | 930306 | BALL-BEARING 3x6x2.5 STEEL-SEALED - OILED (2) |
| 303435 | ALU ANTI-ROLL BAR BALL END 3.9mm - SWISS 7075 T6 (2) | 940611 | BALL-BEARING 6x10x3 RUBBER SEALED - OIL (2) |
| 303458 | COMPOSITE ANTI-ROLL BAR BALL JOINT 3.9mm (4) | 962061 | WASHER S 6x7.5x1.0 (10) |
| 303832 | X4 ANTI-ROLL BAR UAM - UNDER ARM MOUNT - REAR 1.2mm | 965012 | E-CLIP 1.2 (10) |
| 305231 | DRIVE SHAFT COUPLING - HUDY SPRING STEEL™ | 968037 | C-CLIP 3.7 (10) |
| 305245 | ECS BB DRIVE SHAFT ADAPTER - HUDY SPRING STEEL™ (2) | 968071 | C-CLIP 7.1 (10) |
| 305255 | ECS BB SC DRIVE SHAFT CASE - HUDY SPRING STEEL™ | 980157 | PIN 1.5x7.3 (10) |
| 305256 | ECS BB SC ALU DRIVE SHAFT SLEEVE - SWISS 7075 T6 | | |

5. FRONT & REAR SUSPENSION



2x 901302
SB M3x2.5



2x 305392
P 2x10



4x 305395
P 2x8.4

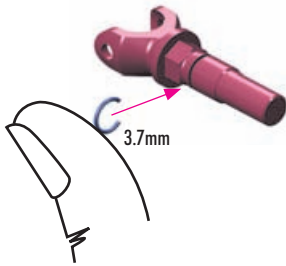


4x 968037
C 3.7



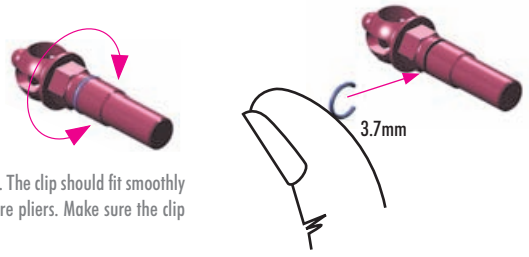
2x 968071
C 7.1

2x REAR TRANSMISSION - CVD DRIVE SHAFT



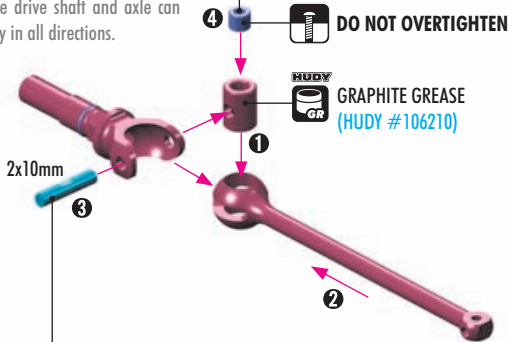
Insert the clip into the groove on the axle. The clip should fit smoothly without extra force and should not require pliers. Make sure the clip will rotate after installation.

2x FRONT TRANSMISSION - ECS DRIVE SHAFT



THREAD LOCK

Apply a small amount of thread lock and confirm it does not leak onto other driveshaft parts. After assembly, wait until the thread lock dries and check if the drive shaft and axle can move freely in all directions.

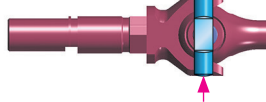


! DETAIL STEP 3 4



Set-screw against the flat spot.

Make sure the pin is centered in the driveshaft after assembly.

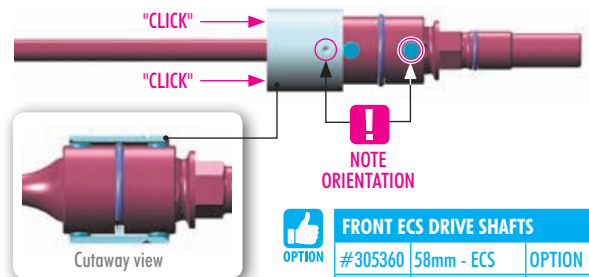
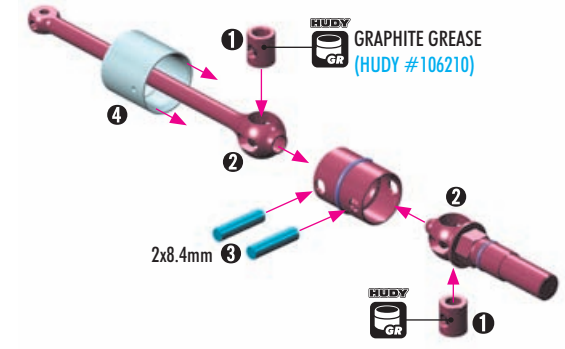


REAR CVD DRIVE SHAFTS

OPTION	Part #	Length	Status
	#305370	54mm - CVD	OPTION
	#305407	52mm - BB CVD	OPTION
	#305408	54mm - BB CVD	INCLUDED

- #305307 - Longer 59mm front drive shafts provide more stability but reduce steering. Recommended for high grip carpet.
- #305407 - Shorter 52mm rear drive shafts improve rotation and off power steering but decreases rear traction. Recommended for small technical tracks and high grip conditions.
- #305370 - 54mm rear drive shafts using 305241 replacement caps generate more rear traction. Recommended for very low traction conditions. Requires 304970/304971 driveshaft adapters.
- #305360 - 58mm front drive shafts must be used with 305241 replacement caps.

2x



FRONT ECS DRIVE SHAFTS

OPTION	Part #	Length	Status
	#305360	58mm - ECS	OPTION
	#305306	58mm - BB ECS	INCLUDED
	#305307	59mm - BB ECS	OPTION



VIDEO TECH TIP



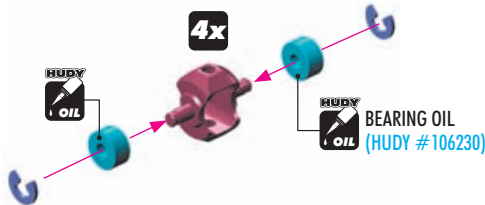
DRIVE SHAFTS



8x 930154
BB 1.5x4x2

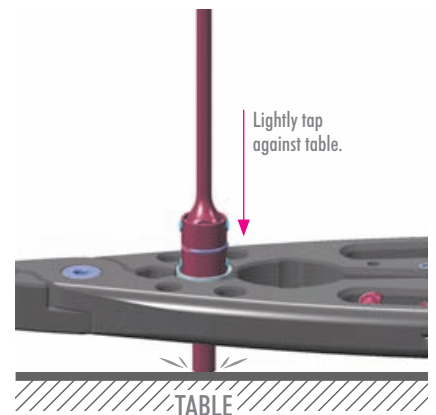


8x 965012
E 1.2

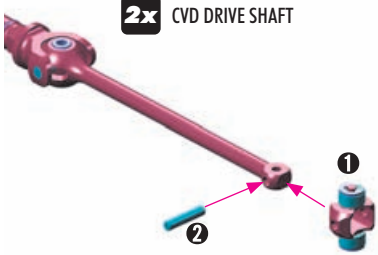


DISASSEMBLY OF ECS DRIVE SHAFT

To disassemble the alu drive shaft sleeve from the drive shaft, hold the sleeve firmly with a HUDY Multi-Tool, and lightly push the drive shaft down against a flat surface.



2x CVD DRIVE SHAFT

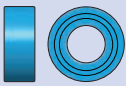


2x ECS DRIVE SHAFT



4x 980157
P 1.5x7.3

5. FRONT & REAR SUSPENSION



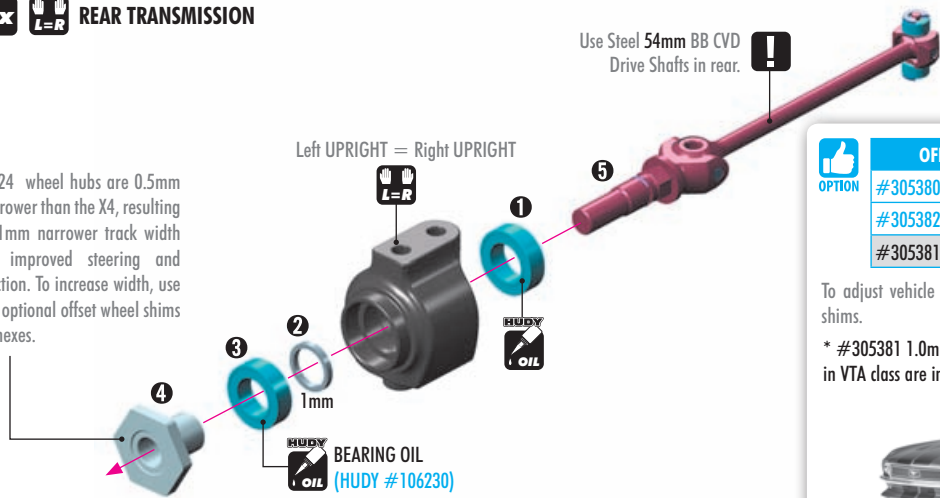
4x 940611
BB 6x10x3



2x 962061
S 6x7.5x1

2x REAR TRANSMISSION

X4'24 wheel hubs are 0.5mm narrower than the X4, resulting in 1mm narrower track width for improved steering and traction. To increase width, use the optional offset wheel shims or hexes.



OPTION	OFFSET WHEEL SHIMS	
#305380	0.75mm	OPTION
#305382	0.5mm	OPTION
#305381	1.0mm	INCLUDED*

To adjust vehicle width, add or remove optional wheel shims.

* #305381 1.0mm shims for use in VTA class are included in **BAG 07**

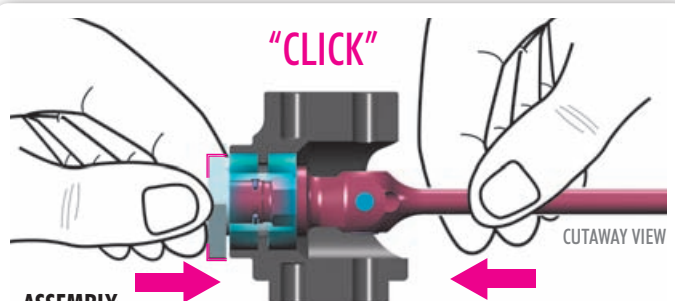


OPTION	STEERING BLOCKS		
#302240-M	MEDIUM	OPTION	
#302240-H	HARD	OPTION	
#302240-G	GRAPHITE	INCLUDED	
#302241	ALU	OPTION	

MEDIUM hubs generate maximum side traction. Recommended for low traction asphalt conditions in the modified class.

HARD hubs are recommended for low to medium traction conditions to help generate more grip.

ALU hubs are recommended for high traction surfaces to improve rotation and free up the car, but they will decrease traction. Alu hubs also improve durability in serious crashes.



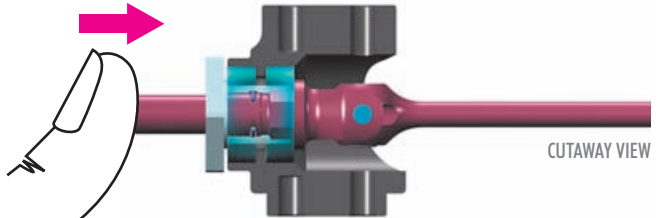
ASSEMBLY:

When installing the wheel hub on the drive axle, make sure the inside groove in the hub seats over the clip on the axle.

To confirm proper installation there should be a 'click' noise when the clip engages the inner groove in the wheel hub. There should be slight axial play once fully seated.

DISSASSEMBLY:

To remove the wheel hub from the axle, push the end of the axle back through the wheel hub to separate the wheel hub from the inner clip.



#305359
OPTION ALU WHEEL HUB +0.5mm

The wider wheel hubs free up the car and improve cornering speed in high traction conditions.

#305354
OPTION ALU WHEEL HUB -0.5mm

For very low traction conditions, the narrower wheel hubs can generate more traction and steering but will make the car nervous and decrease cornering speed.



VIDEO TECH TIP

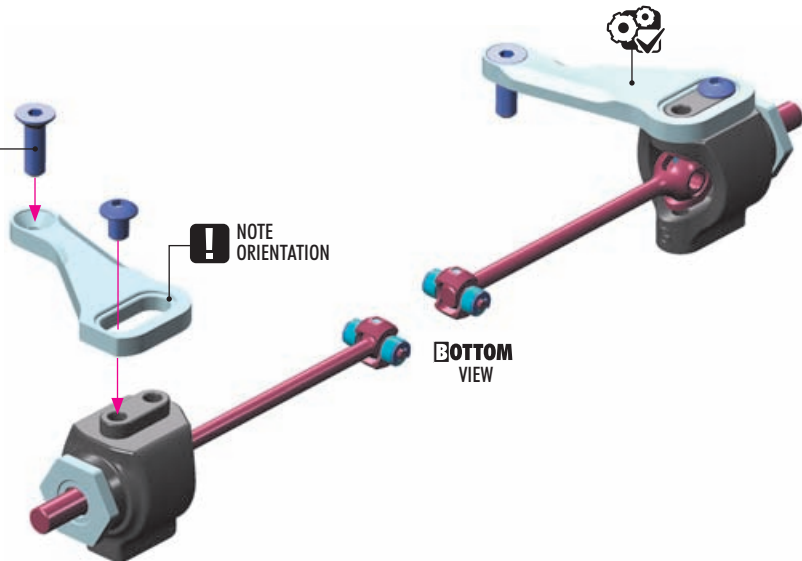


FRONT & REAR UPRIGHTS

2x REAR TRANSMISSION

DO NOT OVERTIGHTEN

The thread in the rear ARS plate is very short; therefore, make sure to tighten the screw gently.

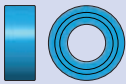


2x 902304
SFH M3x4



2x 903308
SFH M3x8

5. FRONT & REAR SUSPENSION

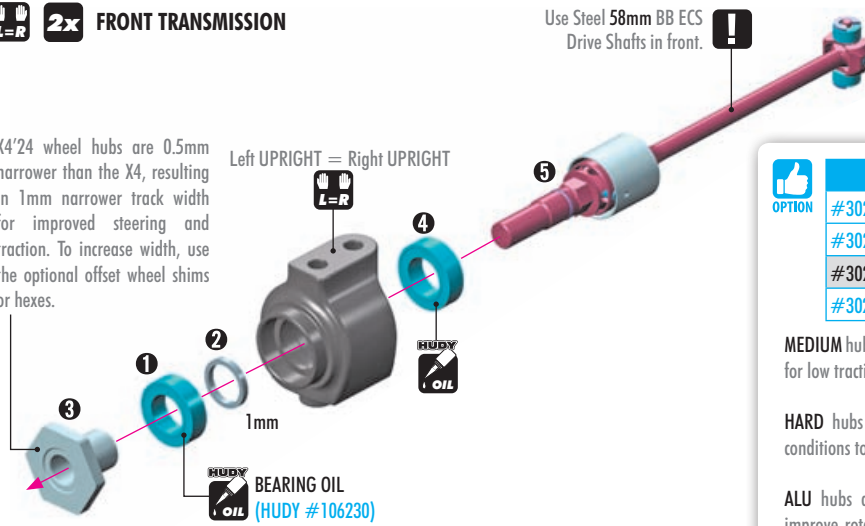


4x 940611
BB 6x10x3

2x 962061
5 6x7.5x1

2x FRONT TRANSMISSION

X4'24 wheel hubs are 0.5mm narrower than the X4, resulting in 1mm narrower track width for improved steering and traction. To increase width, use the optional offset wheel shims or hexes.



Use Steel 58mm BB ECS Drive Shafts in front.



STEERING BLOCKS		
#302240-M	MEDIUM	OPTION
#302240-H	HARD	OPTION
#302240-G	GRAPHITE	INCLUDED
#302241	ALU	OPTION



MEDIUM hubs generate maximum side traction. Recommended for low traction asphalt conditions in the modified class.

HARD hubs are recommended for low to medium traction conditions to help generate more grip.

ALU hubs are recommended for high traction surfaces to improve rotation and free up the car, but they will decrease traction. Alu hubs also improve durability in serious crashes.



OFFSET WHEEL SHIMS		
#305380	0.75mm	OPTION
#305382	0.5mm	OPTION
#305381	1.0mm	INCLUDED*



To adjust vehicle width, add or remove optional wheel shims.

* #305381 1.0mm shims for use in VTA class are included in BAG 07



#305359
ALU WHEEL HUB +0.5mm



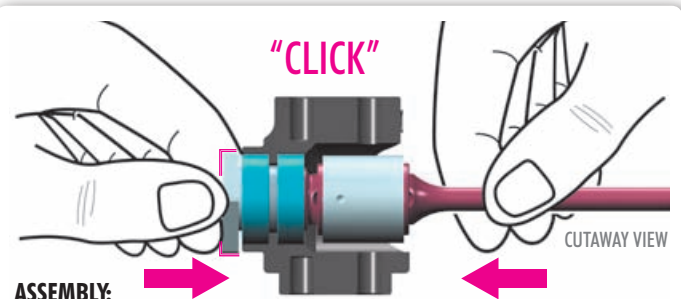
The wider wheel hubs free up the car and improve cornering speed in high traction conditions.



#305354
ALU WHEEL HUB -0.5mm



For very low traction conditions, the narrower wheel hubs can generate more traction and steering but will make the car nervous and decrease cornering speed.



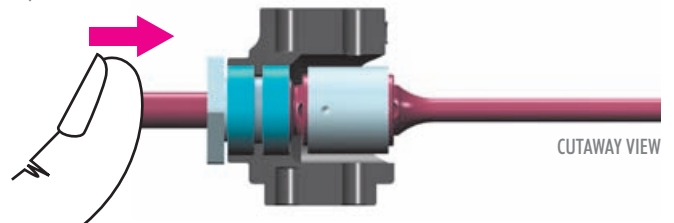
ASSEMBLY:

When installing the wheel hub on the drive axle, make sure the inside groove in the hub seats the clip on the axle.

To confirm proper installation there should be a 'click' noise when the clip engages the inner groove in the wheel hub. There should be slight axial play once fully seated.

DISSASSEMBLY:

To remove the wheel hub from the axle, push the end of the axle back through the wheel hub to separate the wheel hub from the inner clip.

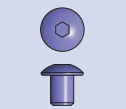


2x FRONT TRANSMISSION

DO NOT OVERTIGHTEN
The threads in the front steering plate are very short; take caution to tighten the screw gently.

NOTE ORIENTATION

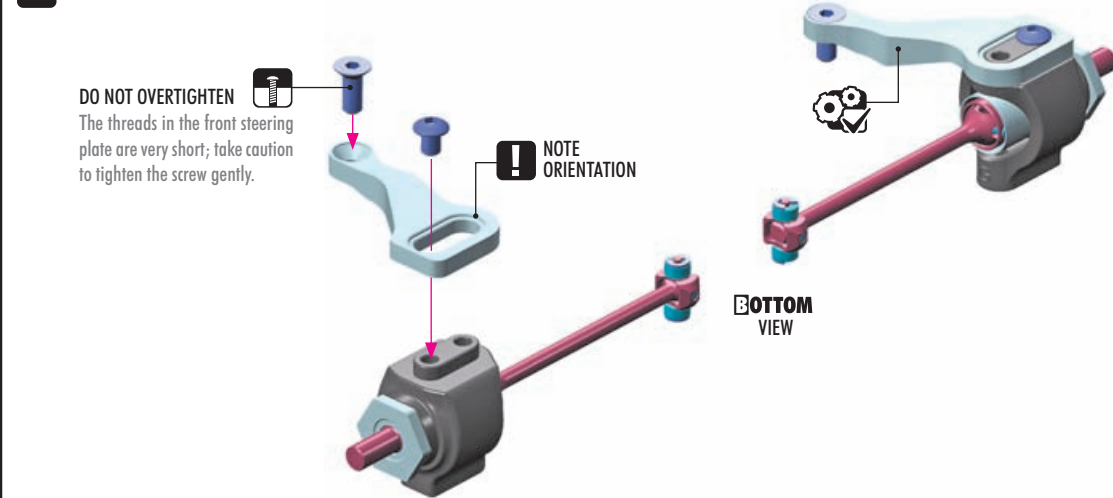
BOTTOM VIEW



2x 902304
SH M3x4



2x 903308
SFH M3x8



5. FRONT & REAR SUSPENSION

2x REAR

2x FRONT

VIDEO TECH TIP

CAMBER & UPPER ARMS

2x REAR

FRONT

RIGHT **LEFT**

BOTTOM VIEW

REAR

Check arm orientation so that each arm is in the correct location with the markings facing down when installed.

2x FRONT

FRONT

RIGHT **LEFT**

BOTTOM VIEW

REAR

Check arm orientation so that each arm is in the correct location with the markings facing down when installed.

303121-K SHIM 3x6x0.5

VIDEO TECH TIP

ROLL-CENTER

2x REAR SUSPENSION

REAR

0.5mm (INITIAL SETTING)

Raising the rear axle height will improve rotation and off-power steering. Recommended for medium to high traction asphalt surfaces. Minimum shim thickness is 0.5mm; DO NOT use thinner.

6.5mm

Pivot ball with M3x6.5mm

1.5mm shim.

When using more than 1mm shim under the hub, use the #303261 pivot ball with longer 6.5mm thread length to increase durability in serious crashes.

Make sure to check for clearance between the pivot ball threads and CVD pin.

ALTERNATIVE

(INITIAL SETTING) 5.5mm

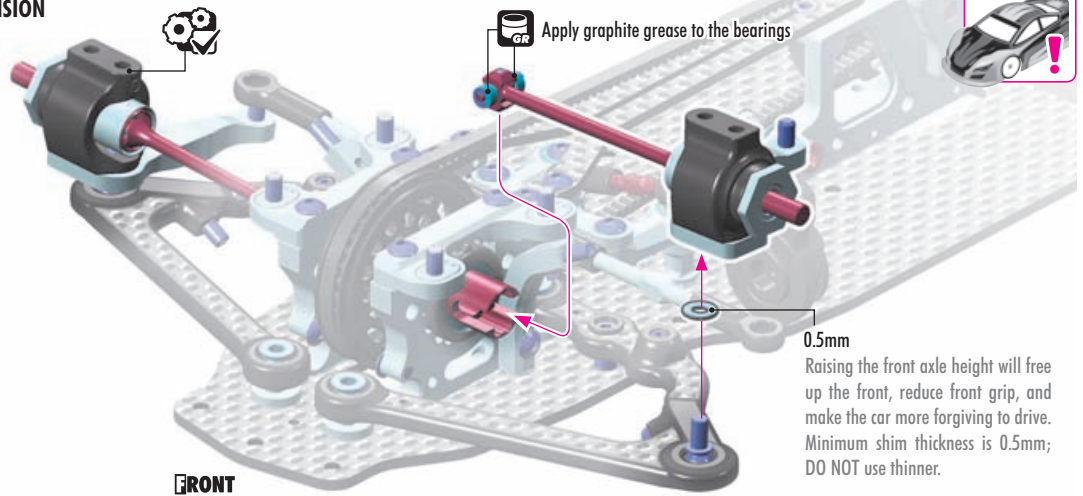
Pivot ball with M3x5.5mm

0.5mm shim.

5. FRONT & REAR SUSPENSION

2x 303121-K
SHIM 3x6x0.5

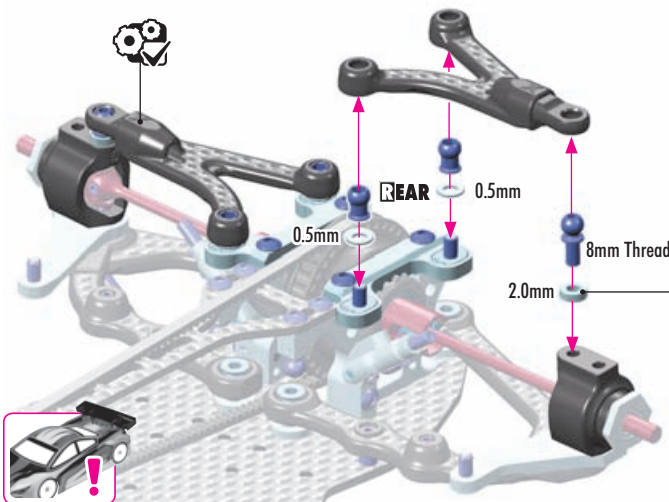
2x FRONT SUSPENSION



4x 303121-K
SHIM 3x6x0.5

2x 303123-K
SHIM 3x6x2

2x REAR SUSPENSION



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



OPTION

UPPER ARMS CFF™

#302144-M	MEDIUM	FL-RR	INCLUDED X4 Alu
#302134-M	MEDIUM	FR-RL	INCLUDED X4 Alu
#302144-S	SOFT	FL-RR	INCLUDED X4 Graphite
#302134-S	SOFT	FR-RL	INCLUDED X4 Graphite



Soft upper arms generate more traction and steering in low grip conditions and improve side traction. Soft arms are more fragile in severe crashes.

Rear upper arm location affects the rear roll-center and camber gain. Raising the arm with thicker shims on the upper clamps will lower the rear roll-center and decrease camber gain. Reducing the shim height on the upper clamps has the same effect as increasing the shim height on the outside.

VIDEO TECH TIP



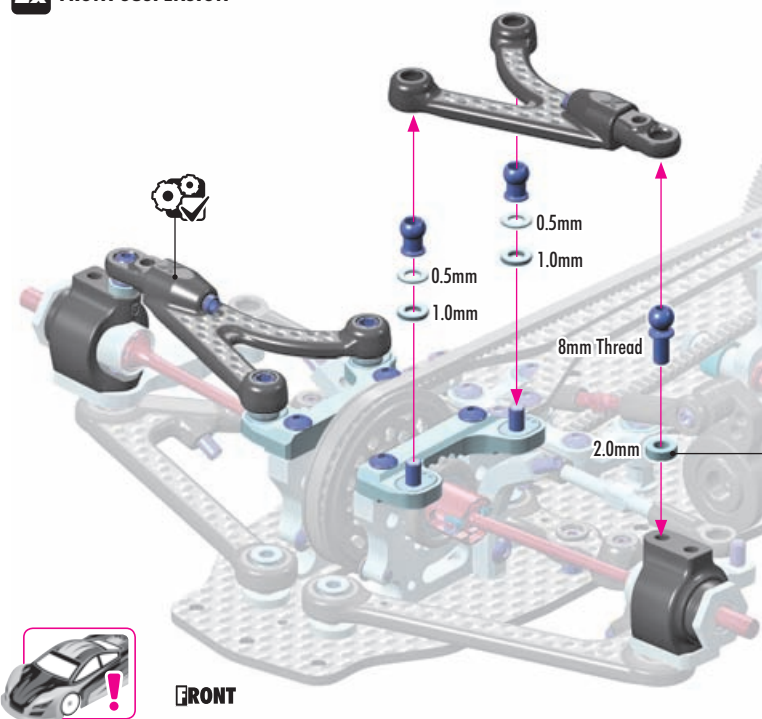
ROLL-CENTER

4x 303121-K
SHIM 3x6x0.5

4x 303122-K
SHIM 3x6x1

2x 303123-K
SHIM 3x6x2

2x FRONT SUSPENSION



OPTION

UPPER ARMS CFF™

#302144-M	MEDIUM	FL-RR	INCLUDED X4 Alu
#302134-M	MEDIUM	FR-RL	INCLUDED X4 Alu
#302144-S	SOFT	FL-RR	INCLUDED X4 Graphite
#302134-S	SOFT	FR-RL	INCLUDED X4 Graphite



Soft upper arms generate more traction and steering in low grip conditions and improve side traction. Soft arms are more fragile in severe crashes.

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



Front upper arm location affects the front roll-center and camber gain. Raising the arms with thicker shims on the upper clamps will lower the front roll-center and decrease camber gain. Reducing the shim height on the upper clamps has the same effect as increasing the shim height on the outside.

5. FRONT & REAR SUSPENSION

2x REAR LINKS

LEFT THREAD RIGHT THREAD

16.8mm

#303211-0 ALU TURNBUCKLE L/R 30mm ORANGE - SWISS 7075 T6 (2)

OPTION

303121-K
SHIM 3x6x0.5
2x

303122-K
SHIM 3x6x1
2x

VIDEO TECH TIP

REAR TOE-GAIN

2x REAR TRANSMISSION

NOTE ORIENTATION

NOTE ORIENTATION

REAR

0.5mm

1.0mm

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

MORE SHIMS gives more toe-gain on compression.

LESS SHIMS gives less toe-gain (or even toe loss), on suspension compression.

MORE TOE-GAIN improves rear grip and side bite. Mainly recommended for low- to medium-grip conditions.

LESS TOE-GAIN reduces rear grip and side bite. Recommended for higher- grip conditions or tracks that require more steering.

The new X4'24 bulkheads lower the inner ARS link mounting point by 3.5mm compared to the X4 and X4'23. To duplicate previous ARS characteristics, use 3.5mm less shims on the hub's ARS mounting point.

X4'24 : 1.5mm Hub Shim = X4'23 5mm Hub Shim

303123-K
SHIM 3x6x2
2x

VIDEO TECH TIP

STEERING SYSTEM

2x FRONT TRANSMISSION

FRONT

FREE MOVEMENT

2mm

TO DECREASE bump steer, smoothen out the steering, and reduce traction rolling: **increase the amount of shimming.**

TO INCREASE bump steer, to make the steering more aggressive, **decrease the amount of shimming.**

Decrease the amount of shimming to get more steering.

Increase the shimming if the car is difficult to drive and/or it is traction rolling.

930306
BB 3x6x2.5
4x

VIDEO TECH TIP

ANTI-ROLL BARS

2x FRONT & REAR ANTI-ROLL BARS

FRONT ANTI-ROLL BARS		
OPTION	#302831 1.1mm	OPTION
	#302832 1.2mm	INCLUDED X4 Graphite
	#302833 1.3mm	INCLUDED X4 Alu

REAR ANTI-ROLL BARS		
OPTION	#303831 1.1mm	OPTION
	#303832 1.2mm	INCLUDED
	#303833 1.3mm	OPTION

BEARING OIL (HUDY #106230)

Anti-roll bars SHAPE

FRONT

REAR

5. FRONT & REAR SUSPENSION

4x

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

REAR ANTI-ROLL BAR

BOTTOM VIEW

REAR

2x 901302 SB M3x2.5

REAR ANTI-ROLL BAR

TOP VIEW

CENTER

Set the bar into the **CENTER**, remove the play in the bushings, and tighten the set-screws fully.

2x 901302 SB M3x2.5

REAR ANTI-ROLL BARS

#303831	1.1mm	OPTION
#303832	1.2mm	INCLUDED
#303833	1.3mm	OPTION

SOFTER rear anti-roll bar:
Generates more side traction. Mainly recommended for low-grip asphalt tracks.

STIFFER rear anti-roll bar:
Helps the car stay flatter and reduces traction rolling on high-grip surfaces.

BOTTOM VIEW

1.5 mm

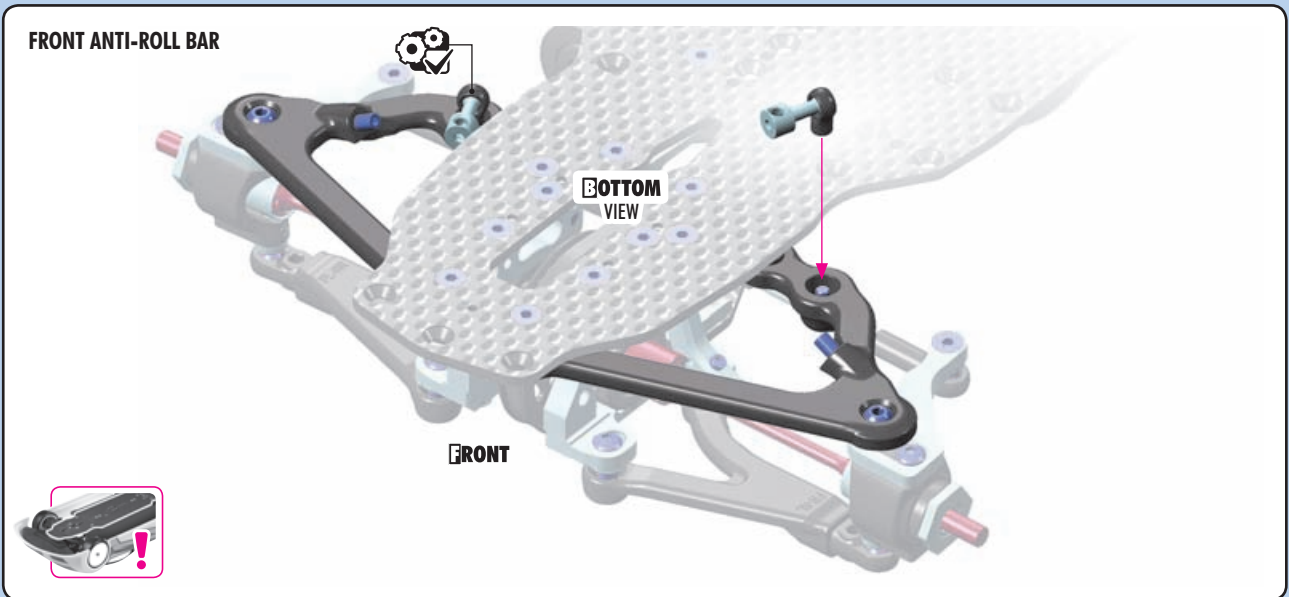
VIDEO TECH TIP

ANTI-ROLL BARS

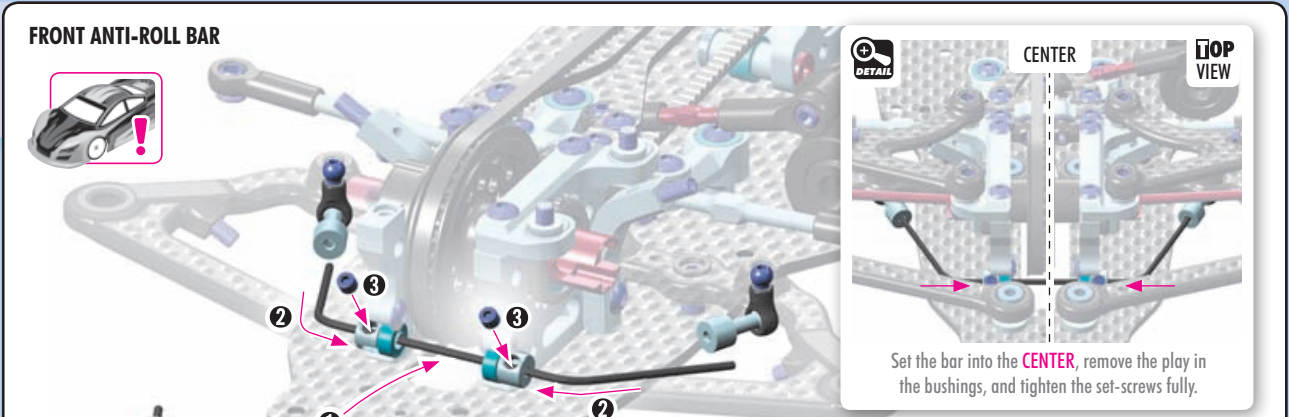
When the bars are set, verify that both sides move at the same time. If they do, the bars are set up correctly. If not, make sure that both downstops are the same and that the bar wire is flat.

If both sides still **DO NOT** move at the same time, adjust the length of the bar holders.

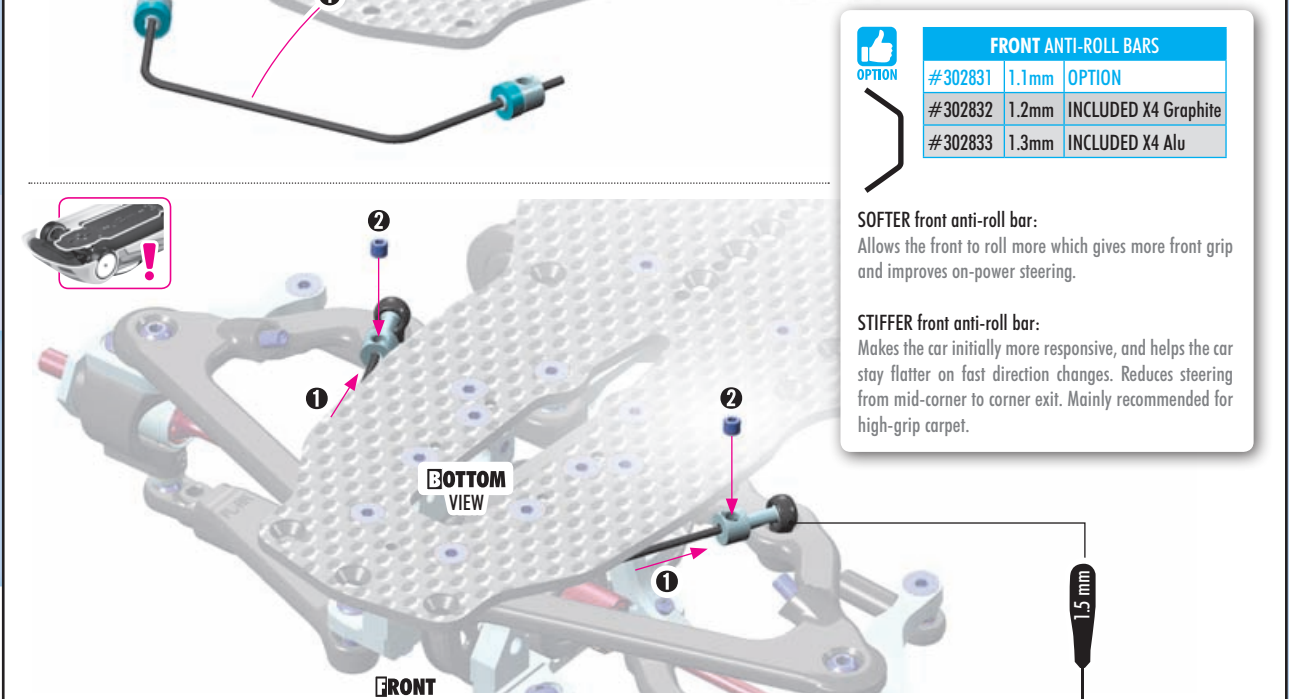
5. FRONT & REAR SUSPENSION



2x 901302
SB M3x2.5



2x 901302
SB M3x2.5



FRONT ANTI-ROLL BARS

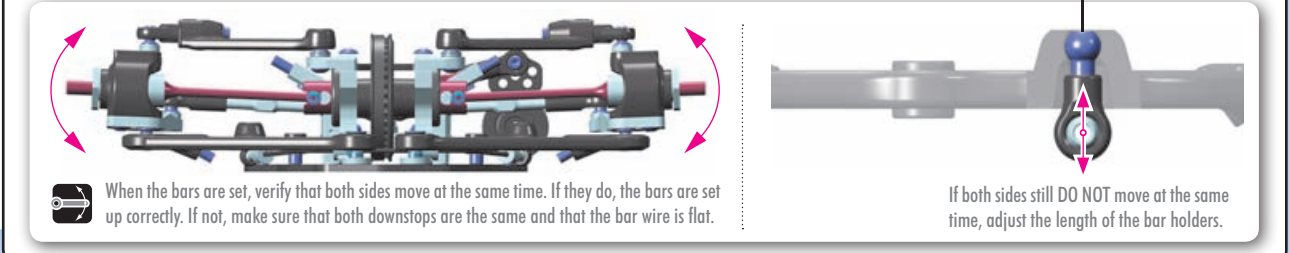
Part #	Length	Material
#302831	1.1mm	OPTION
#302832	1.2mm	INCLUDED X4 Graphite
#302833	1.3mm	INCLUDED X4 Alu

SOFTER front anti-roll bar:
Allows the front to roll more which gives more front grip and improves on-power steering.

STIFFER front anti-roll bar:
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.

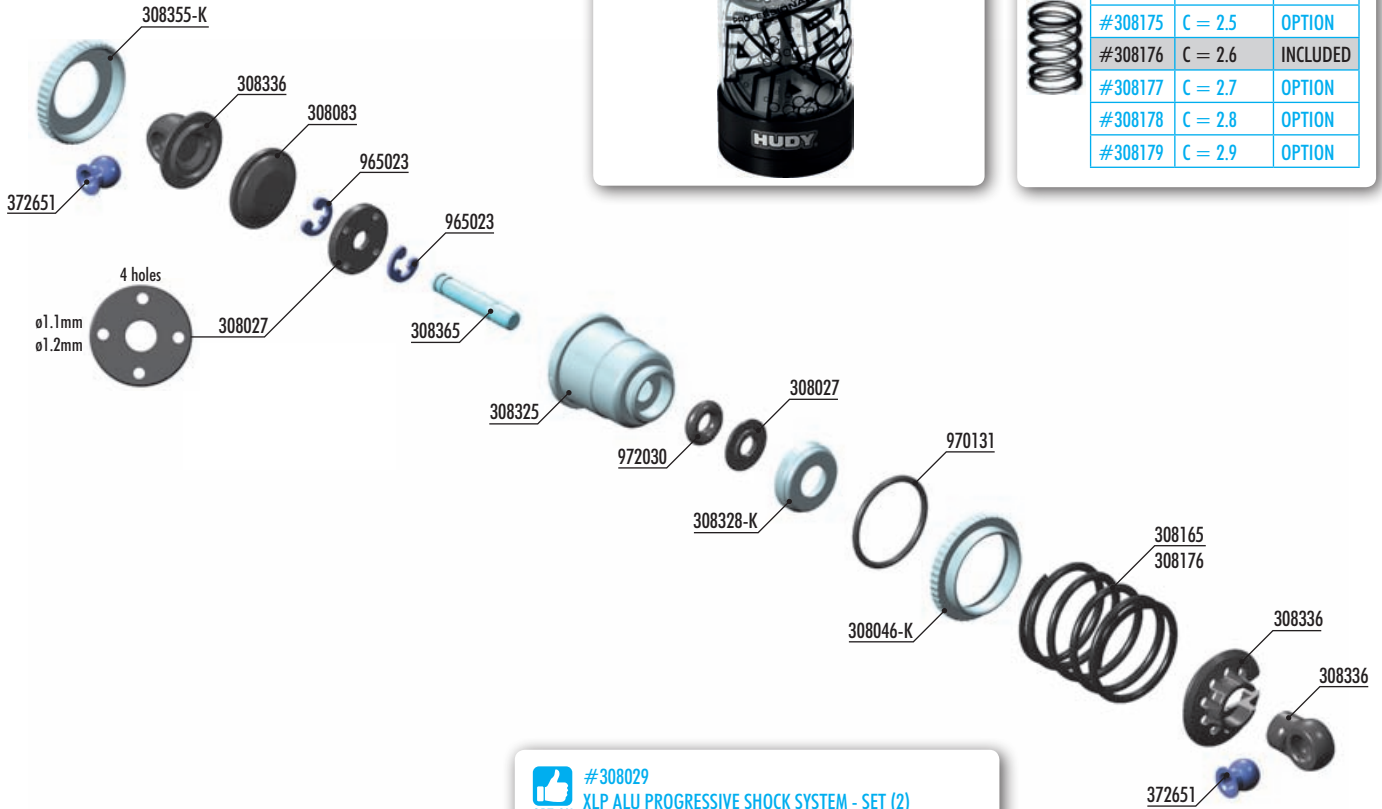
VIDEO TECH TIP

ANTI-ROLL BARS



6. SHOCK ABSORBERS

4x



#104002
HUDY AIR VAC – VACUUM PUMP - ON-ROAD

XRAY SPRINGS

Part #	C	Status
#308164	C = 2.4-2.7	OPTION
#308165	C = 2.5-2.8	INCLUDED
#308166	C = 2.6-2.9	OPTION
#308175	C = 2.5	OPTION
#308176	C = 2.6	INCLUDED
#308177	C = 2.7	OPTION
#308178	C = 2.8	OPTION
#308179	C = 2.9	OPTION

#308033-K
ALU XLP SHOCK SPRING RETAINING COLLAR - BLACK (4)

#308029
XLP ALU PROGRESSIVE SHOCK SYSTEM - SET (2)

The progressive shock inserts improve steering characteristics. The XLP PSS set fits the stock XLP shock bodies included in the kit. Must be used with: #308026 - XLP Progressive Pistons.

#308026
XLP COMPOSITE 2-HOLE ø0.8mm PROGRESSIVE PISTON (4)

VIDEO TECH TIP SHOCKS & SPRINGS

BAG
06

- | | | | |
|----------|---------------------------------------------|--------|------------------------------------------------------|
| 308027 | XLP COMPOSITE 4-HOLE 1.1-1.2MM PISTON (2+2) | 308365 | XLP HARDENED SHOCK SHAFT (2) |
| 308046-K | XLP ALU SHOCK ADJUSTABLE NUT - BLACK (2) | 372651 | PIVOT BALL UNIVERSAL 4.9 MM - HUDY SPRING STEEL™ (2) |
| 308083 | XLP SHOCK ABSORBER MEMBRANE (4) | | |
| 308092 | SHOCK FOAM INSERTS (4) (OPTION) | 965023 | E-CLIP 2.3 (10) |
| 308309-K | XLP ALU SHOCK ABSORBER-SET - BLACK (2) | 970131 | O-RING 13 x 1.0 (10) |
| 308325 | XLP ALU SHOCK BODY (2) | 972030 | SILICONE O-RING 3 x 2 (10) |
| 308328-K | XLP ALU CAP FOR SHOCK BODY - BLACK (2) | | |
| 308336 | XLP COMPOSITE SHOCK PARTS WITH 2 HOLES | 308165 | XLP SPRING-SET PROGRESSIVE C=2.5-2.8 (2) |
| 308355-K | XLP ALU SHOCK CAP-NUT - BLACK (2) | 308176 | XLP SPRING-SET C=2.6 (2) |

8x **965023**
 E 2.3

4x 4 holes (INITIAL SETTING)

NOTE ORIENTATION

ø1.1mm (INITIAL SETTING)
 ø1.2mm

ø0.8mm **#308026**
XLP COMPOSITE 2-HOLE ø0.8mm PROGRESSIVE PISTON (4)

These pistons must be used with optional: **#308029 XLP PROGRESSIVE SHOCK INSERTS**

6. SHOCK ABSORBERS

8x 972030
0 3x2

4x

SHOCK OIL

SHOCK OIL

NOTE ORIENTATION

4x 970131
0 13x1.0

4x

SHOCK OIL

SHOCK OIL

CUTAWAY VIEW

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

4x

INCORRECT ✗

CORRECT ✓

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

4x The necessary shock length depends on the downstop setting. When using minimum downstop, increase the shock length.

8~8.5mm INITIAL SETTING

VIDEO TECH TIP

HUDY AIR-VAC SHOCK BUILD

OIL 350cSt

SHOCK FILLING

4x

- 1 Fully extend the piston rod so the piston is at the bottom of the shock body.
- 2 Hold the shock upright and slightly overfill the shock body with shock oil.
- 3 Let the oil settle and allow air bubbles to rise to the top. Slowly move the piston up and down to allow oil into all cavities within the shock body.
- 4 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.
- 5 Add shock oil as necessary.

SHOCK OILS (50ml)

#106325	250cSt	OPTION	#106352	525cSt	OPTION
#106326	250cSt	OPTION	#106353	550cSt	OPTION
#106330	300cSt	OPTION	#106357	575cSt	OPTION
#106335	350cSt	INCLUDED	#106360	600cSt	OPTION
#106337	375cSt	OPTION	#106362	625cSt	OPTION
#106340	400cSt	OPTION	#106365	650cSt	OPTION
#106342	425cSt	OPTION	#106367	675cSt	OPTION
#106345	450cSt	OPTION	#106370	700cSt	OPTION
#106347	475cSt	OPTION	#106375	750cSt	OPTION
#106350	500cSt	OPTION	#106380	800cSt	OPTION

TIP **HUDY** #104002
OPTION **HUDY AIR VAC – VACUUM PUMP**

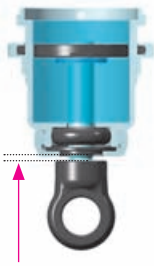
To make sure that all the air is removed from the shock oil, we recommend using the HUDY Air Vac.

4x

6. SHOCK ABSORBERS

1 REBOUND ADJUSTMENT

4x

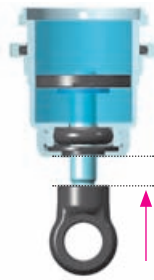


For most conditions, 0-25% rebound is recommended. This is the most forgiving and best to absorb bumps. Cornering speed is generally the best with this setting.

0~25% Rebound
(INITIAL SETTING)



IMPORTANT
When building the shocks with brand new membranes, some rebound may occur. After a few runs, or letting the shock settle for 24 hours, the membrane will break-in and zero rebound will be possible.



50% Rebound



100% Rebound

For certain low grip conditions, adding additional rebound may improve initial reaction and side bite. Direction change will be faster and may feel like the car is creating more traction. Note that higher rebound settings will make the car less stable over bumps and may increase the tendency to traction roll.

4x

2 Insert shock membrane.

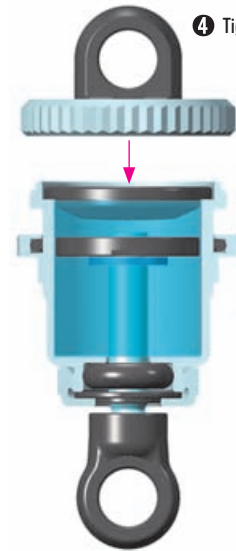


3 Gently push shock membrane to remove excess oil.

But DO NOT push the membrane too hard otherwise it can fall inside the shock body or air can get inside.



4 Tighten shock cap.



VIDEO TECH TIP

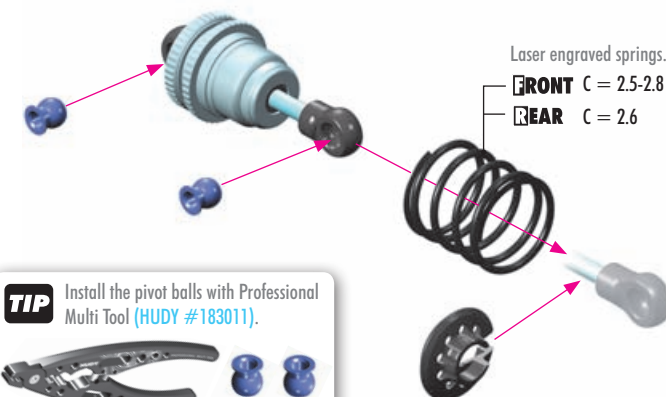


SHOCKS & SPRINGS

4x 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.



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



#308033-K

ALU XLP SHOCK SPRING RETAINING COLLAR - BLACK (4)

OPTION



ASSEMBLY VIEW



7. FRONT & REAR ASSEMBLY

#301351-0
ALU ADJUSTABLE BODY POST STOP (2)
OPTION

#301233
AERO BUMPER
OPTION

#301351-K
ALU ADJUSTABLE BODY POST STOP (2)
OPTION

#301336
REAR BODY MOUNT SET
OPTION

#301336	0mm	INCLUDED
#301337	+1mm	OPTION
#301338	+2mm	OPTION

#301322
FRONT BODY MOUNT SET
OPTION

#301322	0mm	INCLUDED
#301323	+1mm	OPTION
#301324	+2mm	OPTION

#301326
FRONT ECC. BODY MOUNT SET
OPTION

#301326	0mm	OPTION
#301327	+1mm	OPTION
#301328	+2mm	OPTION

#301210
GRAPHITE UPPER HOLDER FOR BUMPER 2.5mm
OPTION

#301232
FOAM BUMPER FOR ADJ. BODY MOUNTS - HARD
OPTION

#301322-H
HARD COMPOSITE HORIZONTAL REAR BODY MOUNT POST - SET
OPTION

BAG 07	301204	COMPOSITE BUMPER	902310	HEX SCREW SH M3x10 (10)
	301205	X4 COMPOSITE LONGER BUMPER UPPER HOLDER BRACE	902312	HEX SCREW SH M3x12 (10)
	301219	COMPOSITE UPPER HOLDER FOR BUMPER	903308	HEX SCREW SFH M3x8 (10)
	301322	FRONT BODY MOUNT SET	903310	HEX SCREW SFH M3x10 (10)
	301325	COMPOSITE BRACE FOR BUMPER - LOW (2)	960030	NUT M3 (10)
	301336	REAR BODY MOUNT SET	981212	PIN 2x12 (10)
	301383	X4 GRAPHITE BODY POST & BODY POST HOLDER - 1pc - 4.0mm	301231	FOAM BUMPER - LIGHT & STRONG
	303140-K	ALU SHIM 3x5x2.0mm - BLACK (10)	308309-K	XLP ALU SHOCK ABSORBER-SET - BLACK (2)
	902308	HEX SCREW SH M3x8 (10)		

4x 902310
SH M3x10

VIDEO TECH TIP

REAR BODY POST MOUNTING

2x **REAR VERTICAL BODY MOUNTING**
(INITIAL SETTING)

NOTE ORIENTATION

REAR BODY MOUNT SET
OPTION

#301336	0mm	INCLUDED
#301337	+1mm	OPTION
#301338	+2mm	OPTION

REAR HORIZONTAL BODY MOUNTING
OPTION

The graphite body post holder has 6 POSITIONS, spaced 1.1mm between each, for precise and easy adjustment.

FRONT BODY MOUNT SET
OPTION

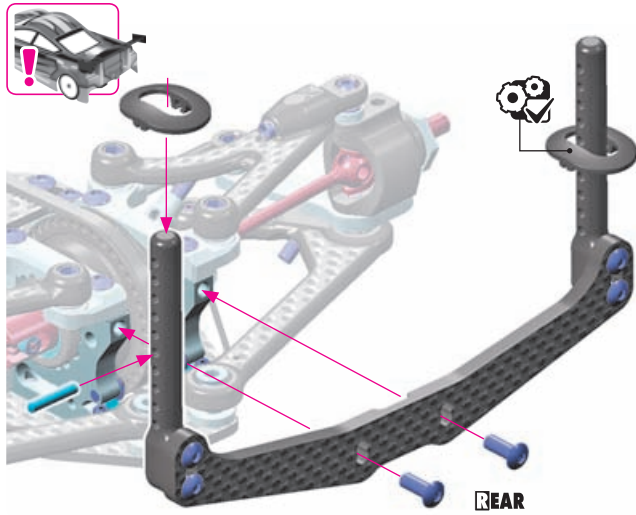
#301322	0mm	OPTION
#301323	+1mm	OPTION
#301324	+2mm	OPTION

#301322-H
HARD COMPOSITE HORIZONTAL REAR BODY MOUNT POST - SET
OPTION

Optional HARD posts eliminates the flex of the horizontal mounting. Use these posts only for horizontal body mounting.

Optional horizontal rear body mounting has shown benefits on medium to high grip conditions, especially on technical tracks, by improving directional changes, steering response and rotation. Note that rear grip is also reduced, so may be useful in Stock or Super Stock spec class racing.

7. FRONT & REAR ASSEMBLY



#301351-0
ALU ADJUSTABLE BODY POST STOP (2)

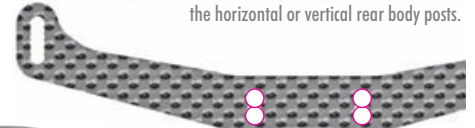


#301351-K
ALU ADJUSTABLE BODY POST STOP (2)

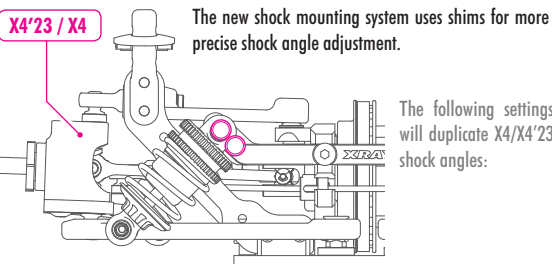


Very handy, easily externally adjustable body post made from Swiss 7075 T6 aluminum. Allows for adjustment of body height by 3mm without needing to change the position on the body post.

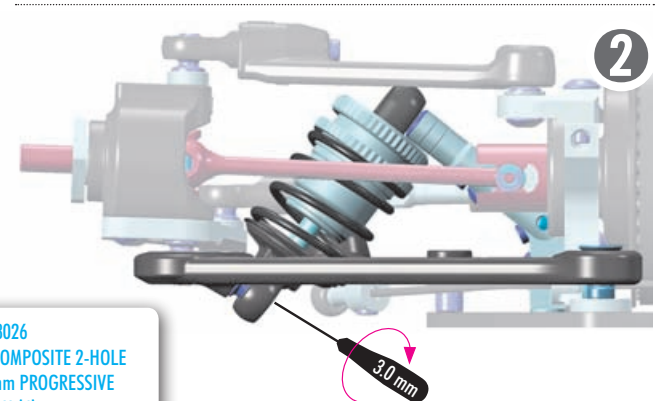
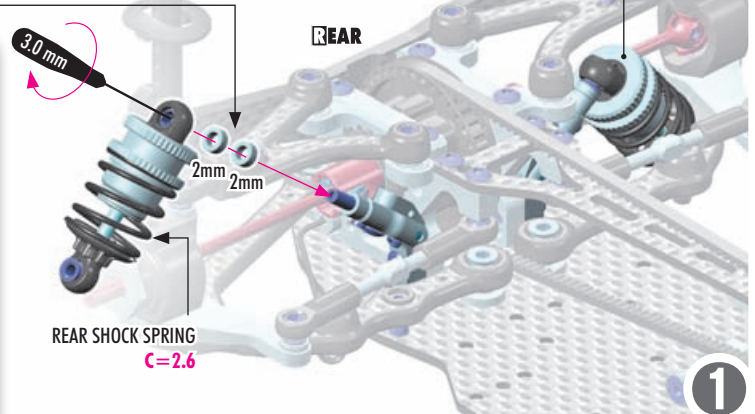
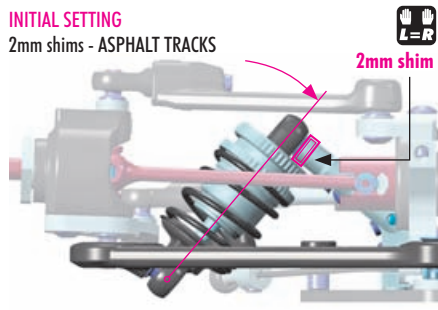
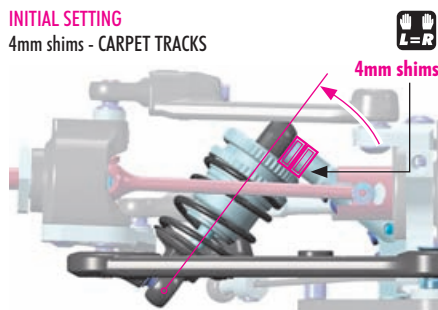
The second mounting position on the body post holder will shift the post locations in between the standard 1.1mm body post spacing, creating very precise adjustment of the horizontal or vertical rear body posts.



Using the lower position on the body post holder will raise the posts to the heights required for VTA bodies



Upper shock mounting position on shock tower on X4'23 = 4mm shim on X4'24
Lower shock mounting position on shock tower on X4'23 = 2mm shim on X4'24



VIDEO TECH TIP



SHOCK SHIMMING TUTORIAL

#308029
XLP ALU PROGRESSIVE SHOCK SYSTEM - SET (2)

The progressive shock inserts improve steering characteristics. The XLP PSS set fits the stock XLP shock bodies included in the kit. Must be used with #308026 - XLP Progressive Pistons.



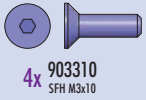
#308026
XLP COMPOSITE 2-HOLE ø0.8mm PROGRESSIVE PISTON (4)



7. FRONT & REAR ASSEMBLY



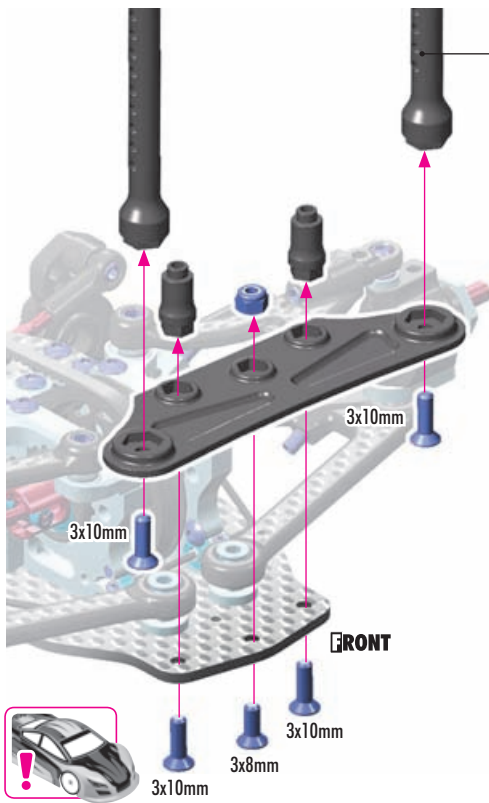
1x 903308
SFH M3x8



4x 903310
SFH M3x10



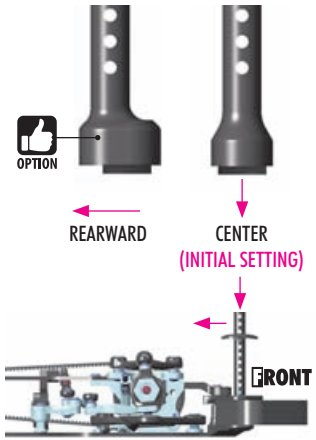
1x 960030
N M3



FRONT 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 be moved.

- 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.



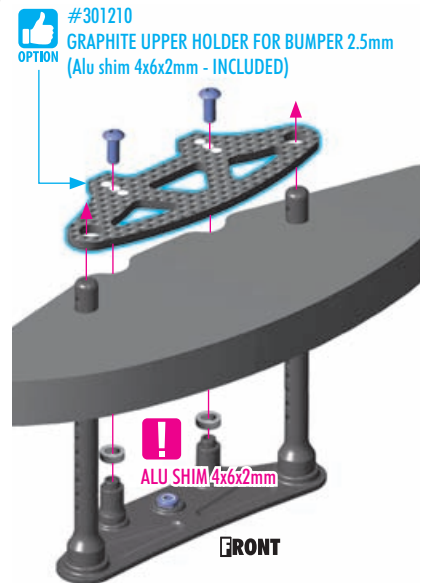
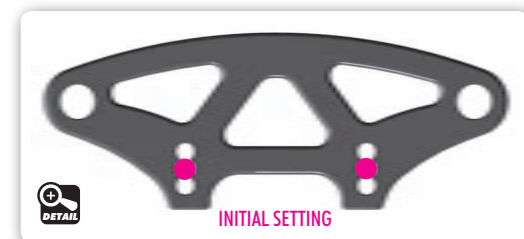
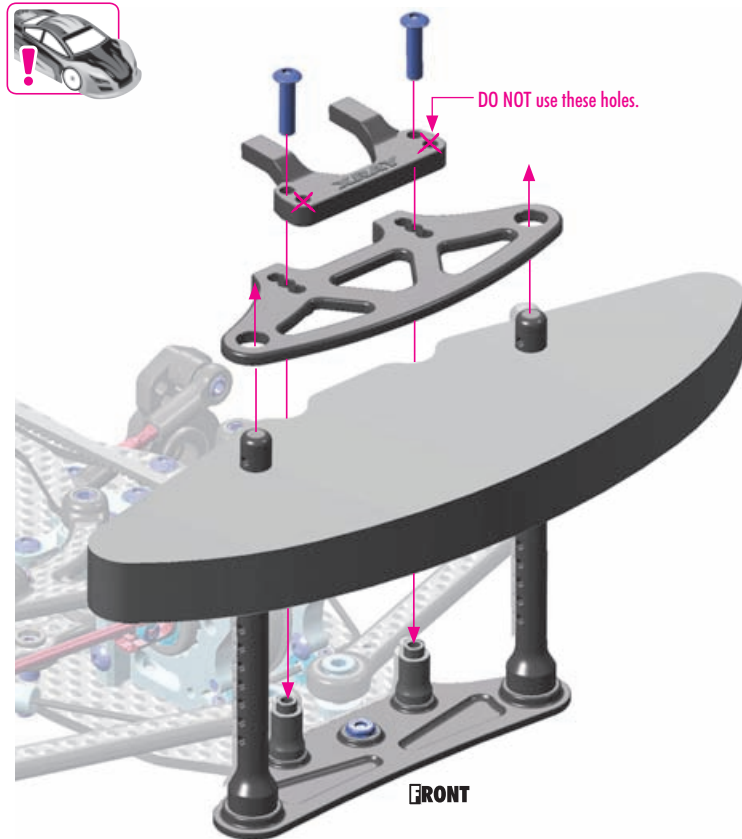
It is important to use the same body setting (rearward and center) on both front and rear body posts at the same time.

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

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



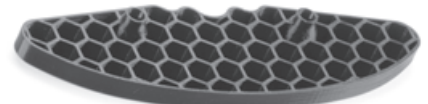
2x 902312
SH M3x12



#301232
OPTIONAL FOAM BUMPER FOR ADJ. BODY MOUNTS - HARD



#301233
OPTIONAL AERO BUMPER



The optional aero bumper's aerodynamically efficient design allows airflow through small passages to increase front grip. The aero bumper is slightly heavier than the kit foam bumper and thus, may require adjustment of front to rear weight bias as well as ride height.

7. FRONT & REAR ASSEMBLY

4x 981212
P 2x12

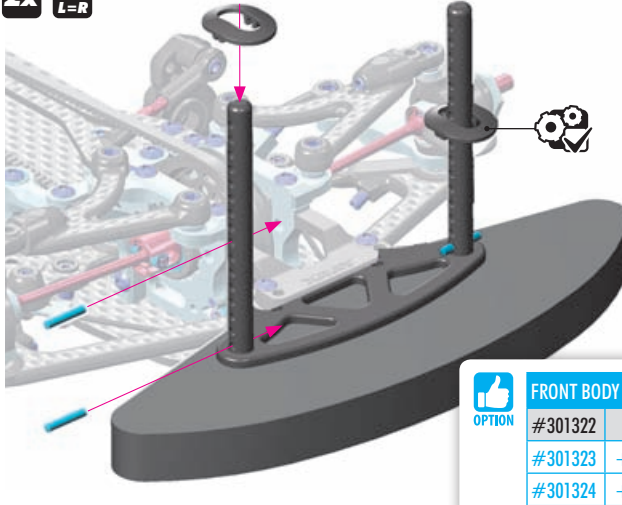


VIDEO TECH TIP



FRONT BODY UPSTOP SYSTEM

2x L=R



#301351-0
ALU ADJUSTABLE BODY POST STOP (2)
OPTION




#301351-K
ALU ADJUSTABLE BODY POST STOP (2)
OPTION



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 BODY MOUNT SET

#301322	0mm	INCLUDED
#301323	+1mm	OPTION
#301324	+2mm	OPTION



FRONT ECC. BODY MOUNT SET

#301326	0mm	OPTION
#301327	+1mm	OPTION
#301328	+2mm	OPTION



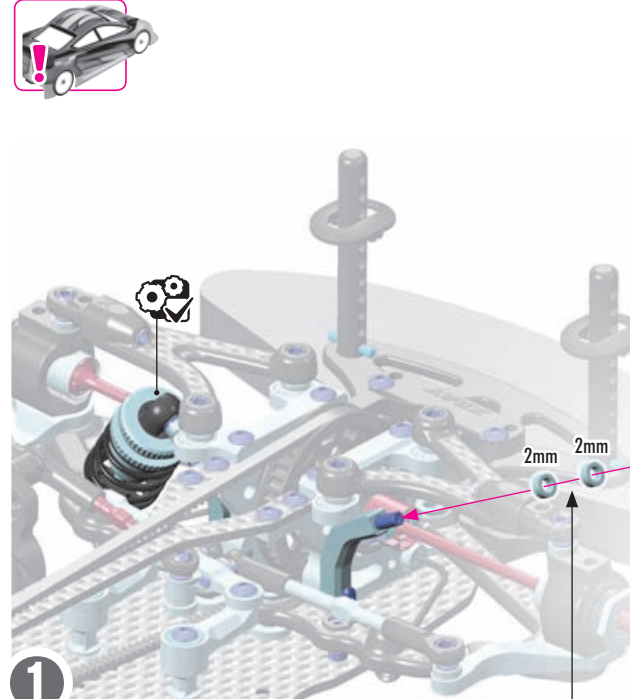
4x 303140-K
SHIM 3x5x2



VIDEO TECH TIP



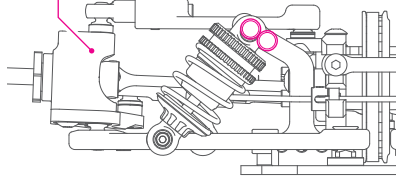
SHOCKS & SPRINGS



1

X4'23 / X4

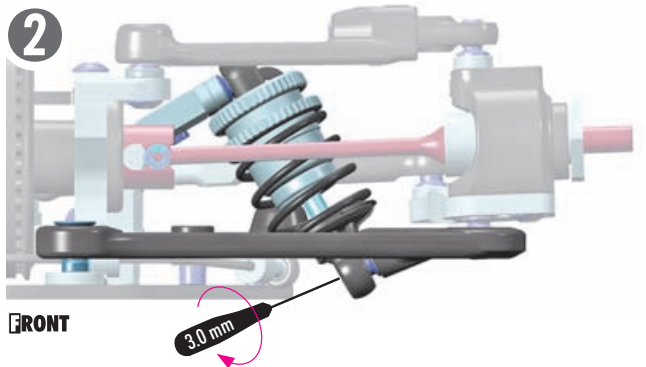
The new shock mounting system uses shims for more precise shock angle adjustment.



The following settings will duplicate X4/X4'23 shock angles:

Upper shock mounting position on shock tower on X4'23 = 4mm shim on X4'24
Lower shock mounting position on shock tower on X4'23 = 2mm shim on X4'24

2



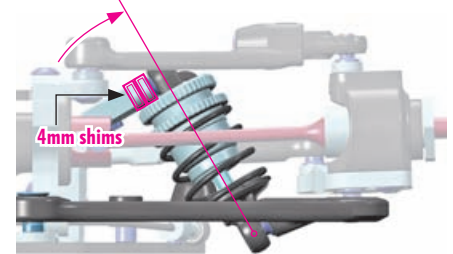
FRONT SHOCK SPRING
C=2.5-2.8

3.0 mm

FRONT

INITIAL SETTING

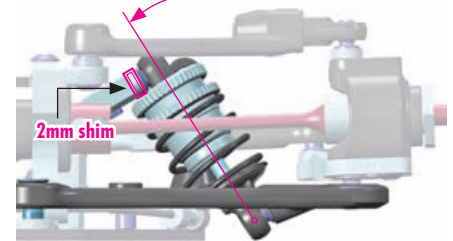
4mm shims - CARPET TRACKS



4mm shims

INITIAL SETTING

2mm shim - ASPHALT TRACKS



2mm shim

#308029
XLP ALU PROGRESSIVE SHOCK SYSTEM - SET (2)
OPTION

The progressive shock inserts improve steering characteristics. The XLP PSS set fits the stock XLP shock bodies included in the kit. Must be used with #308026 - XLP Progressive Pistons.



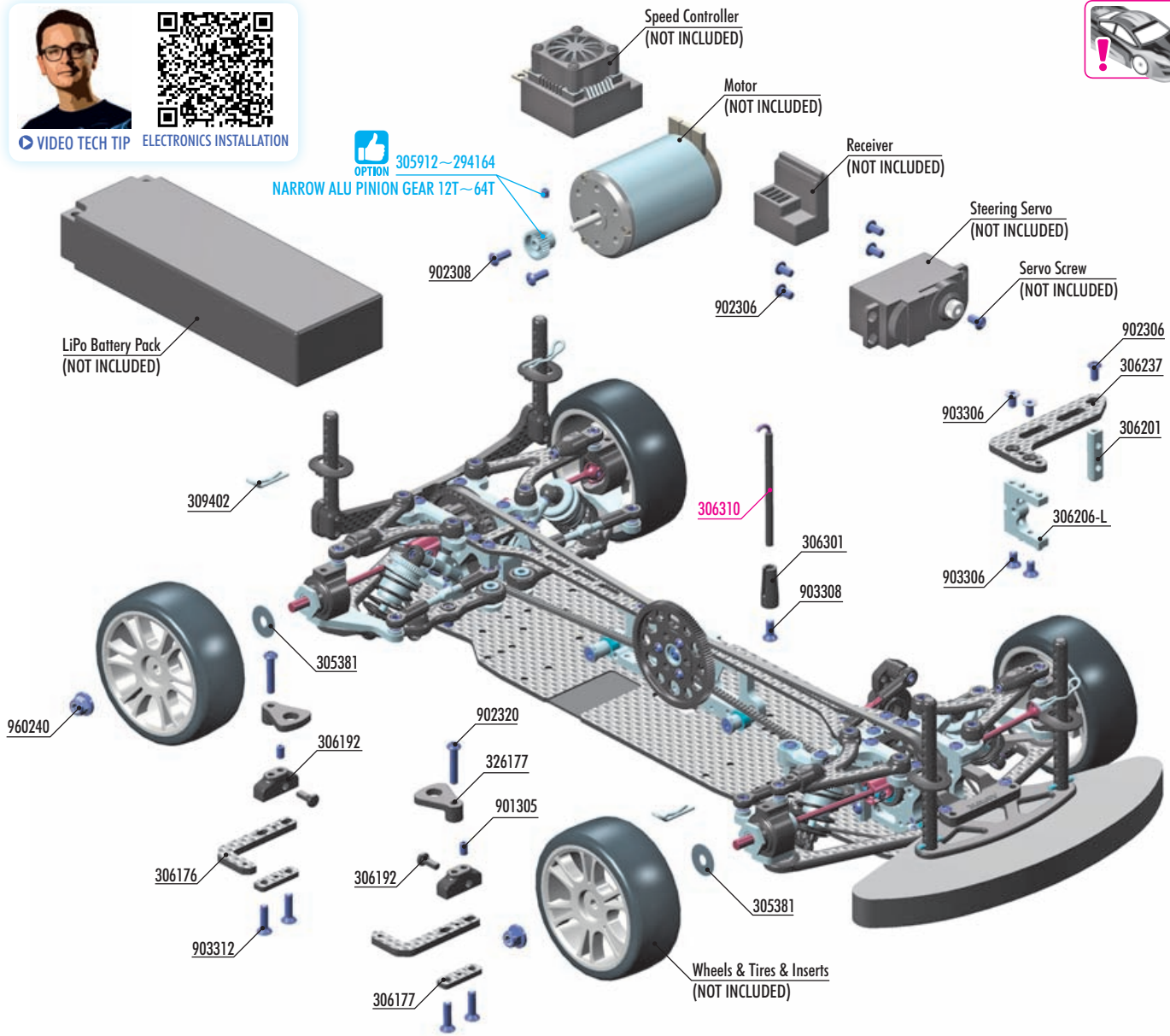
#308026
XLP COMPOSITE 2-HOLE ø0.8mm PROGRESSIVE PISTON (4)
OPTION



7. FINAL ASSEMBLY



VIDEO TECH TIP ELECTRONICS INSTALLATION



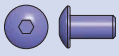
<p>HUDY ALU RC FAN 30mm & 40mm (on page 43)</p>	<p>#306410 ALU FAN MOUNT</p>	<p>#107870 HUDY FIBRE-REINFORCED TAPE</p>	<table border="1"> <thead> <tr> <th colspan="4">ALU REAR WING SHIM</th> </tr> </thead> <tbody> <tr> <td>#353561</td> <td>SILVER</td> <td>XRAY</td> <td>OPTION</td> </tr> <tr> <td>#293561</td> <td>SILVER</td> <td>HUDY</td> <td>OPTION</td> </tr> <tr> <td>#293561-0</td> <td>ORANGE</td> <td>HUDY</td> <td>OPTION</td> </tr> </tbody> </table>	ALU REAR WING SHIM				#353561	SILVER	XRAY	OPTION	#293561	SILVER	HUDY	OPTION	#293561-0	ORANGE	HUDY	OPTION
ALU REAR WING SHIM																			
#353561	SILVER	XRAY	OPTION																
#293561	SILVER	HUDY	OPTION																
#293561-0	ORANGE	HUDY	OPTION																

<p>TUNGSTEN & STAINLESS STEEL WEIGHTS (on page 43 and 46)</p>	<p>#306551 XRAY PURE TUNGSTEN CHASSIS WEIGHT 12g</p>	<p>#306165 GRAPHITE BATTERY STRAP</p>	<p>#309861 SHORT LIPO BALANCING CHASSIS WEIGHT 40g (2)</p>
--------------------------------------------------------------------------	-------------------------------------------------------------	----------------------------------------------	-------------------------------------------------------------------

BAG
07

- | | | | |
|----------|------------------------------------------------------|--------|----------------------------------|
| 305381 | ALU WHEEL SHIM OFFSET 1.0mm (2) | 901305 | HEX SCREW SB M3x5 (10) |
| 306176 | GRAPHITE BATTERY ADJ. WIDTH PLATE (2) | 902306 | HEX SCREW SH M3x6 (10) |
| 306177 | GRAPHITE BATTERY PLATE SHIM (2) | 902308 | HEX SCREW SH M3x8 (10) |
| 306192 | COMPOSITE ADJUSTABLE BATTERY HOLDER & BACKSTOP (2+2) | 902320 | HEX SCREW SH M3x20 (10) |
| 306201 | ALU SERVO MOUNT - LONG | 903306 | HEX SCREW SFH M3x6 (10) |
| 306206-L | X4 ALU SERVO MOUNT - BLACK - V2 | 903308 | HEX SCREW SFH M3x8 (10) |
| 306237 | X4 GRAPHITE FLOATING SERVO HOLDER 3.0mm | 903312 | HEX SCREW SFH M3x12 (10) |
| 306301 | ANTENNA MOUNT - THIN | 960240 | NUT M4 WITH SERRATED FLANGE (10) |
| 309402 | BODY CLIP FOR 6mm BODY POST (4) | | |
| 326177 | COMPOSITE BATTERY CLAMP (2) | | |
| | | 306310 | ANTENNA (2) |

7. FINAL ASSEMBLY



5x 902306
SFH M3x6



2x 903306
SFH M3x6

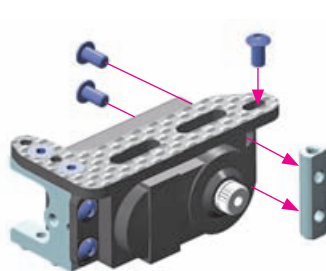
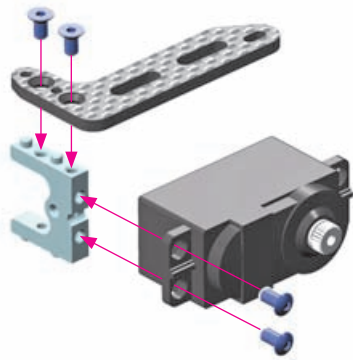


VIDEO TECH TIP

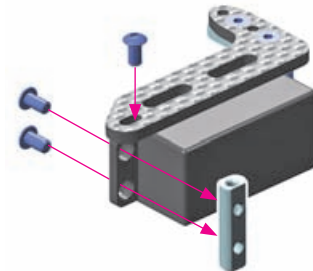
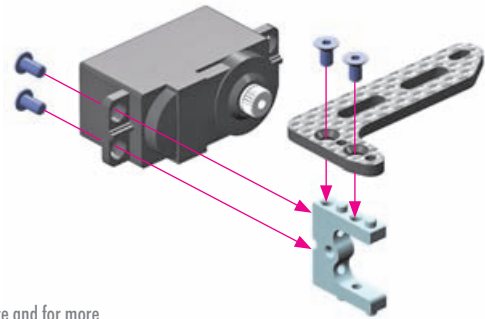


STEERING SYSTEM

ALTERNATIVE 1 FLOATING REARWARD MOUNT SERVO HOLDER (INITIAL SETTING)



ALTERNATIVE 2 FLOATING FORWARD MOUNT SERVO HOLDER



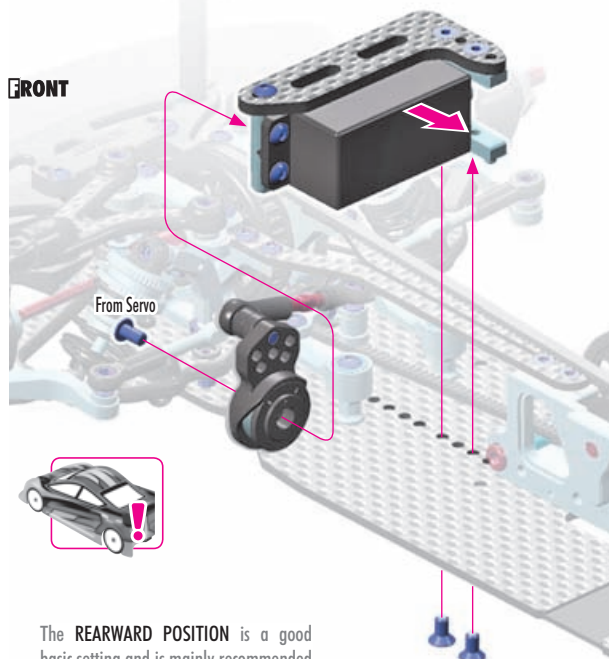
TIP

For improved weight balance and for more space for electronics, we recommend using a narrow, light servo.



2x 903306
SFH M3x6

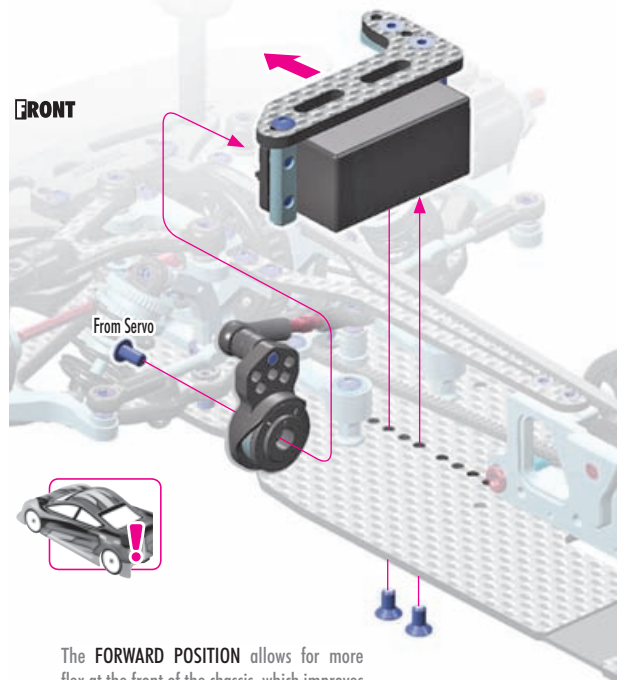
ALTERNATIVE 1 FLOATING REARWARD MOUNT SERVO HOLDER (INITIAL SETTING)



The REARWARD POSITION is a good basic setting and is mainly recommended for high-grip carpet racing.

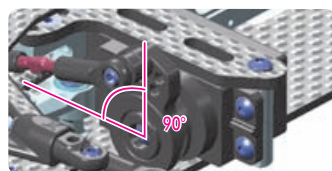
FRONT
REAR

ALTERNATIVE 2 FLOATING FORWARD MOUNT SERVO HOLDER



The FORWARD POSITION allows for more flex at the front of the chassis, which improves front grip. This is particularly useful on low- to medium-grip carpet as well as asphalt.

FRONT
REAR



Attach servo arm to servo output shaft using screw from servo. Servo saver must be perpendicular to chassis when servo is in neutral.



7. FINAL ASSEMBLY



Feed the receiver wire into the antenna tube.

Receiver (NOT INCLUDED)



NOTE: If the antenna tube does not hold the antenna properly, apply a small drop of the CA glue to the outside end of the antenna tube while inserting it into the holder. Make sure not to apply glue to the inside of the antenna tube, or the antenna wire will get permanently stuck.

Speed Controller (NOT INCLUDED)

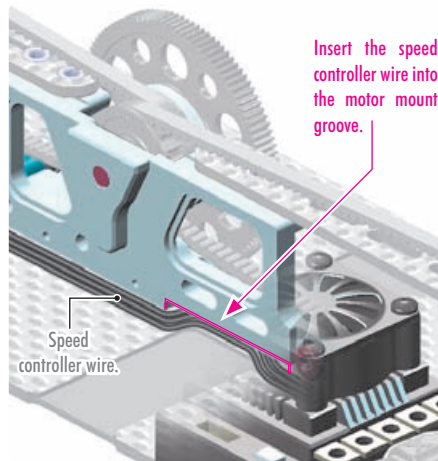


OPTION Double-sided Tape HUDY #107875 (NOT INCLUDED)



IMPORTANT!

When installing the motor, ensure the speed controller wire can move freely to avoid chassis tweak and potential damage to the speed controller wire.



OPTION #293086 HUDY PURE TUNGSTEN WEIGHT THIN 15g - (24.5x24.5mm)



OPTION #293087 HUDY PURE TUNGSTEN WEIGHT THIN 20g - (31x26mm)



For perfect left-to-right balance, we recommend using HUDY pure tungsten weights under your electronics.



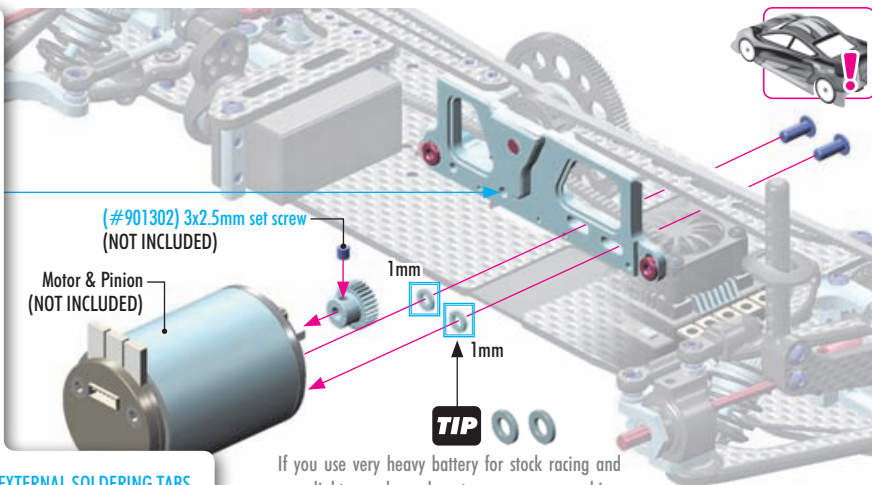
OPTION #293101 HUDY ALU RC FAN 30mm SIDE MOUNT 2 HOLE



OPTION #306410 ALU FAN MOUNT



OPTION #293110 HUDY BRUSHLESS RC FAN 30mm WITH EXTERNAL SOLDERING TABS
 #293111 HUDY BRUSHLESS RC FAN 40mm WITH EXTERNAL SOLDERING TABS
 #293112 HUDY BRUSHLESS RC FAN 30mm WITH INTERNAL SOLDERING TABS
 #293113 HUDY BRUSHLESS RC FAN 40mm WITH INTERNAL SOLDERING TABS

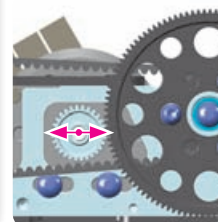


If you use very heavy battery for stock racing and very light speedo and motor, you can use shims between motor and motor mount to move the weight more outside on the motor side which can help to have same weight balance left and right. You can use shims #303122 (3x6x1mm) NOT INCLUDED in kit.

PINION MESHES

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.



ALU PINION GEARS (48P)

- #305912 12T / 48P
- #305913 13T / 48P
- #305914 14T / 48P
- #305915 15T / 48P
- #305916 16T / 48P
- #294017 17T / 48P
- #305918 18T / 48P
- #294019 19T / 48P
- #294020 20T / 48P
- #294021 21T / 48P
- #294022 22T / 48P
- #294023 23T / 48P
- #294024 24T / 48P
- #305925 25T / 48P
- #305926 26T / 48P
- #305927 27T / 48P
- #305928 28T / 48P
- #305929 29T / 48P
- #294030 30T / 48P
- #305931 31T / 48P
- #305932 32T / 48P
- #294033 33T / 48P
- #305934 34T / 48P
- #294035 35T / 48P

ALU PINION GEARS (64P)

- #305968 18T / 64P
- #305969 19T / 64P
- #305970 20T / 64P
- #305971 21T / 64P
- #305972 22T / 64P
- #305973 23T / 64P
- #305974 24T / 64P
- #305975 25T / 64P
- #294126 26T / 64P
- #294127 27T / 64P
- #294128 28T / 64P
- #294129 29T / 64P
- #294130 30T / 64P
- #294131 31T / 64P
- #294132 32T / 64P
- #294133 33T / 64P
- #305984 34T / 64P
- #305985 35T / 64P
- #294136 36T / 64P
- #294137 37T / 64P
- #294138 38T / 64P
- #294139 39T / 64P
- #294140 40T / 64P
- #294141 41T / 64P
- #294142 42T / 64P
- #294143 43T / 64P
- #294144 44T / 64P
- #294145 45T / 64P
- #294146 46T / 64P
- #294147 47T / 64P
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- #294152 52T / 64P
- #294153 53T / 64P
- #294154 54T / 64P
- #294155 55T / 64P
- #294156 56T / 64P
- #294157 57T / 64P
- #294158 58T / 64P
- #294159 59T / 64P
- #294160 60T / 64P
- #294162 62T / 64P
- #294164 64T / 64P

7. FINAL ASSEMBLY



US SPEC CLASS FINAL DRIVE RATIO - GEARING CHART

Spur : Pinion = 1.9 = FDR

		SPUR GEARS 64P															
		80T	82T	84T	86T	88T	90T	92T	94T	96T	99T	100T	102T	104T	106T	108T	110T
PINION GEARS 64P	#305970 20T														10.07	10.26	10.45
	#305971 21T														9.59	9.77	9.95
	#305972 22T													8.98	9.15	9.33	9.50
	#305973 23T													8.59	8.76	8.92	9.09
	#305974 24T												8.08	8.23	8.39	8.55	8.71
	#305975 25T												7.75	7.90	8.06	8.21	8.36
	#294126 26T											7.31	7.45	7.60	7.75	7.89	8.04
	#294127 27T											7.04	7.18	7.32	7.46	7.60	7.74
	#294128 28T										6.72	6.79	6.92	7.06	7.19	7.33	7.46
	#294129 29T										6.49	6.55	6.68	6.81	6.94	7.08	7.21
	#294130 30T									6.08	6.27	6.33	6.46	6.59	6.71	6.84	6.97
	#294131 31T									5.88	6.07	6.13	6.25	6.37	6.50	6.62	6.74
	#294132 32T								5.58	5.70	5.88	5.94	6.06	6.18	6.29	6.41	6.53
	#294133 33T								5.41	5.53	5.70	5.76	5.87	5.99	6.10	6.22	6.33
	#305984 34T						5.14	5.25	5.36	5.53	5.59	5.70	5.81	5.92	6.04	6.15	
	#305985 35T						4.99	5.10	5.21	5.37	5.43	5.54	5.65	5.75	5.86	5.97	
	#294136 36T					4.75	4.86	4.96	5.07	5.23	5.28	5.38	5.49	5.59	5.70	5.81	
	#294137 37T					4.62	4.72	4.83	4.93	5.08	5.14	5.24	5.34	5.44	5.55	5.65	
	#294138 38T					4.40	4.50	4.60	4.70	4.80	4.95	5.00	5.10	5.20	5.30	5.40	
	#294139 39T					4.29	4.38	4.48	4.58	4.68	4.82	4.87	4.97	5.07	5.16	5.26	
	#294140 40T				4.09	4.18	4.28	4.37	4.47	4.56	4.70	4.75	4.85	4.94	5.04		
	#294141 41T				3.99	4.08	4.17	4.26	4.36	4.45	4.59	4.63	4.73	4.82	4.91		
	#294142 42T			3.80	3.89	3.98	4.07	4.16	4.25	4.34	4.48	4.52	4.61	4.70			
	#294143 43T			3.71	3.80	3.89	3.98	4.07	4.15	4.24	4.37	4.42	4.51	4.60			
	#294144 44T		3.54	3.63	3.71	3.80	3.89	3.97	4.06	4.15	4.28	4.32	4.40				
	#294145 45T		3.46	3.55	3.63	3.72	3.80	3.88	3.97	4.05	4.18	4.22	4.31				
#294146 46T	3.30	3.39	3.47	3.55	3.63	3.72	3.80	3.88	3.97	4.09	4.13						
#294147 47T	3.23	3.31	3.40	3.48	3.56	3.64	3.72	3.80	3.88	4.00	4.04						
#294148 48T	3.17	3.25	3.33	3.40	3.48	3.56	3.64	3.72	3.80	3.92							
#294149 49T	3.10	3.18	3.26	3.33	3.41	3.49	3.57	3.64	3.72	3.84							
#294150 50T	3.04	3.12	3.19	3.27	3.34	3.42	3.50	3.57	3.65								
#294151 51T	2.98	3.05	3.13	3.20	3.28	3.35	3.43	3.50	3.58								
#294152 52T	2.92	3.00	3.07	3.14	3.22	3.29	3.36	3.43									
#294153 53T	2.87	2.94	3.01	3.08	3.15	3.23	3.30	3.37									
#294154 54T	2.81	2.89	2.96	3.03	3.10	3.17	3.24										
#294155 55T	2.76	2.83	2.90	2.97	3.04	3.11	3.18										
#294156 56T	2.71	2.78	2.85	2.92	2.99	3.05											

CLASS

- 21.5T TC
- 21.5T / 25.5T OVERLAP
- 25.5T VTA
- US-GT / VTA OVERLAP
- US-GT
- NOT USABLE

OPTIONAL WEIGHTS

OPTION

#309852
X4 BRASS WEIGHTS NICKEL COATED FOR MOTOR MOUNT 4g + 4g + 8g

OPTION

(8g)

(4g)

(4g)

#306551
XRAY PURE TUNGSTEN CHASSIS WEIGHT 12g

OPTION

WEIGHT BALANCE

2x 901305
SB M3x5

2x 902320
SH M3x20

VIDEO TECH TIP

BATTERY MOUNTING SYSTEM

NOTE ORIENTATION

To ensure correct functioning of the battery holder, DO NOT overtighten the screw; the holder must be able to move.

HEIGHT ADJUSTMENT
1 turn = 0.5mm

7. FINAL ASSEMBLY



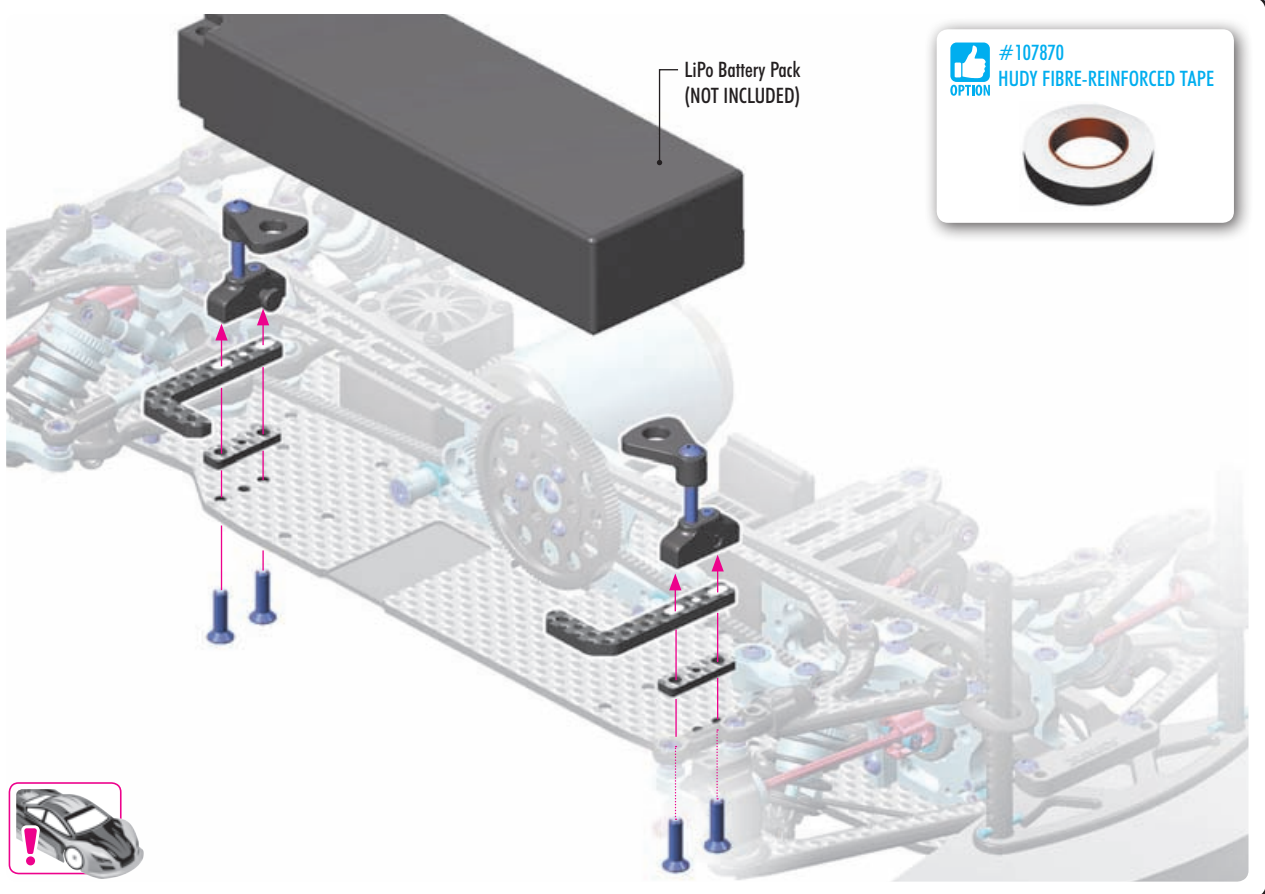
4x 903312
SFH M3x12



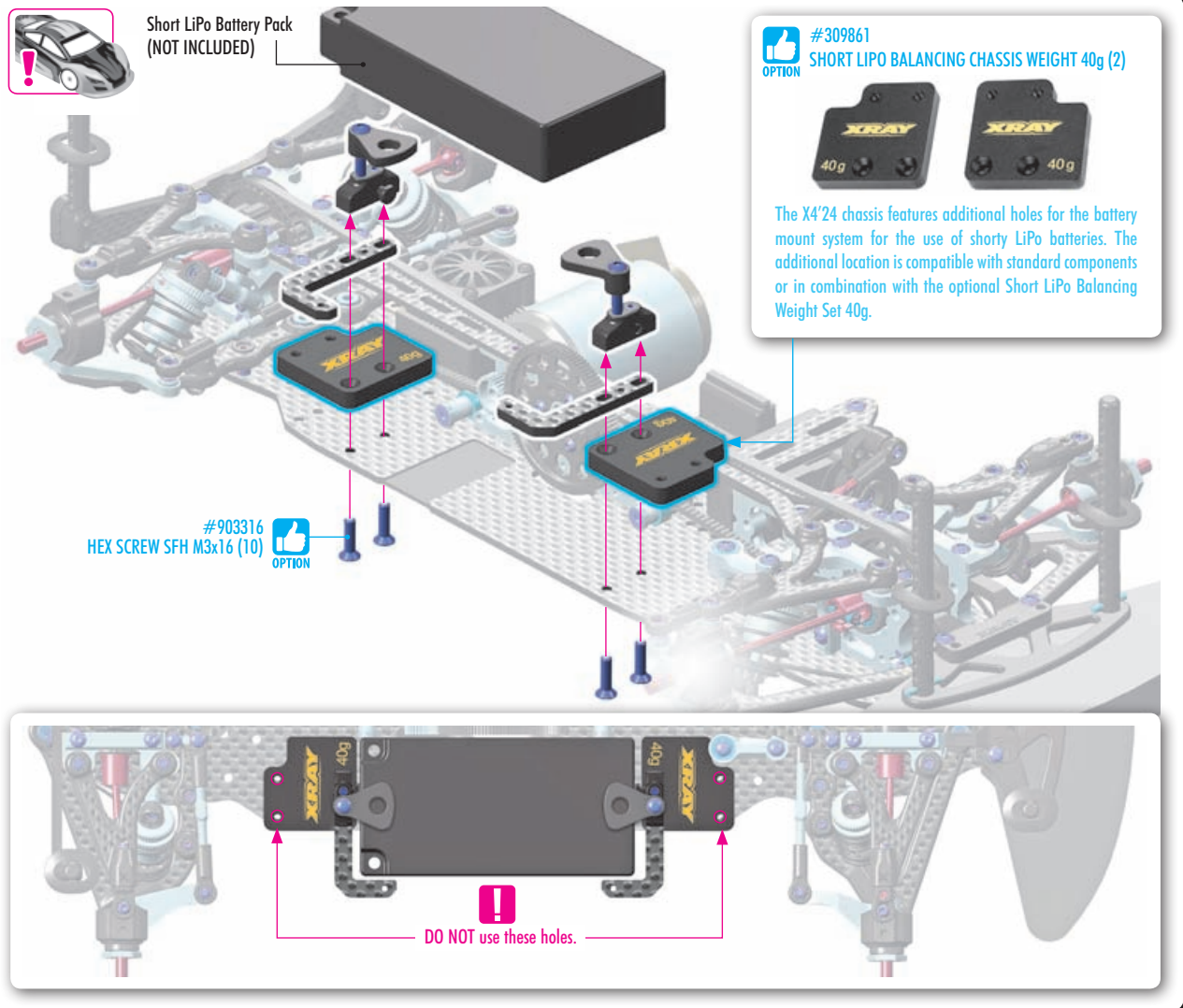
VIDEO TECH TIP



WEIGHT BALANCE



4x 903316
SFH M3x16



#309861
SHORT LIPO BALANCING CHASSIS WEIGHT 40g (2)



The X4'24 chassis features additional holes for the battery mount system for the use of shorty LiPo batteries. The additional location is compatible with standard components or in combination with the optional Short LiPo Balancing Weight Set 40g.

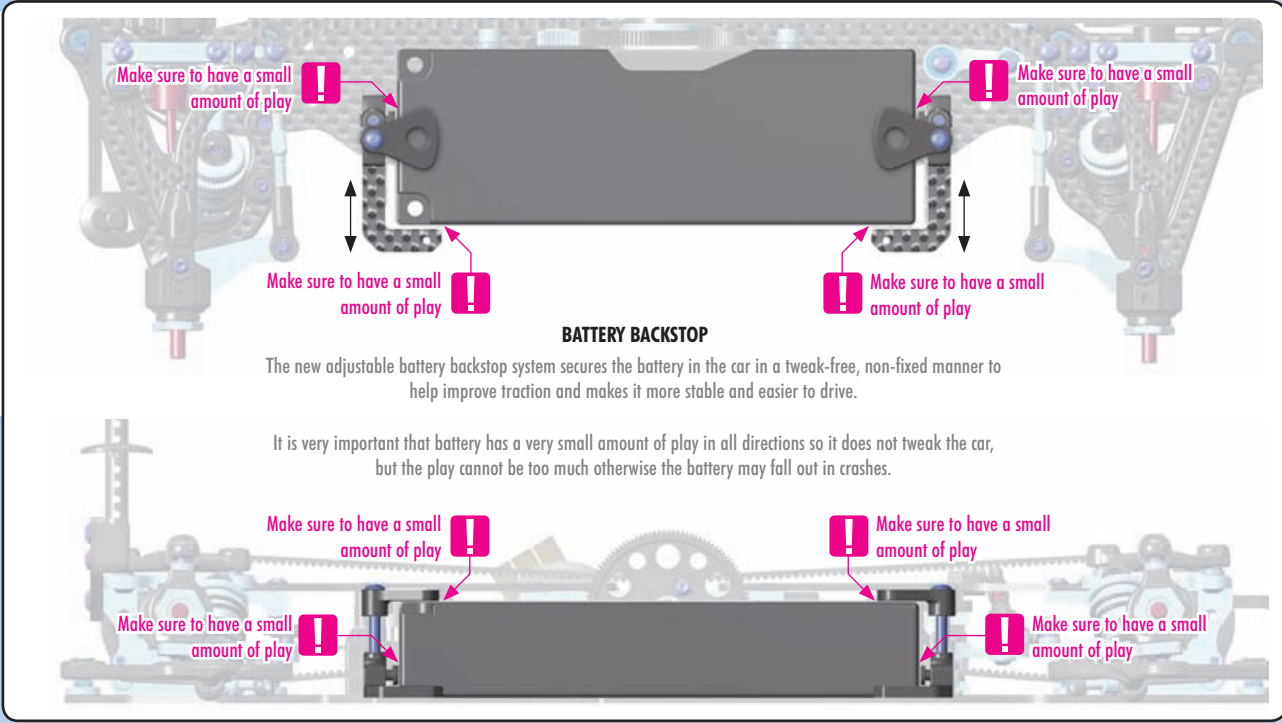
7. FINAL ASSEMBLY



VIDEO TECH TIP



BATTERY MOUNTING SYSTEM



BATTERY BACKSTOP

The new adjustable battery backstop system secures the battery in the car in a tweak-free, non-fixed manner to help improve traction and makes it more stable and easier to drive.

It is very important that battery has a very small amount of play in all directions so it does not tweak the car, but the play cannot be too much otherwise the battery may fall out in crashes.

Make sure to have a small amount of play



4x 960240 N M4



4x 305381 SHIM 4x11.8x1



VIDEO TECH TIP



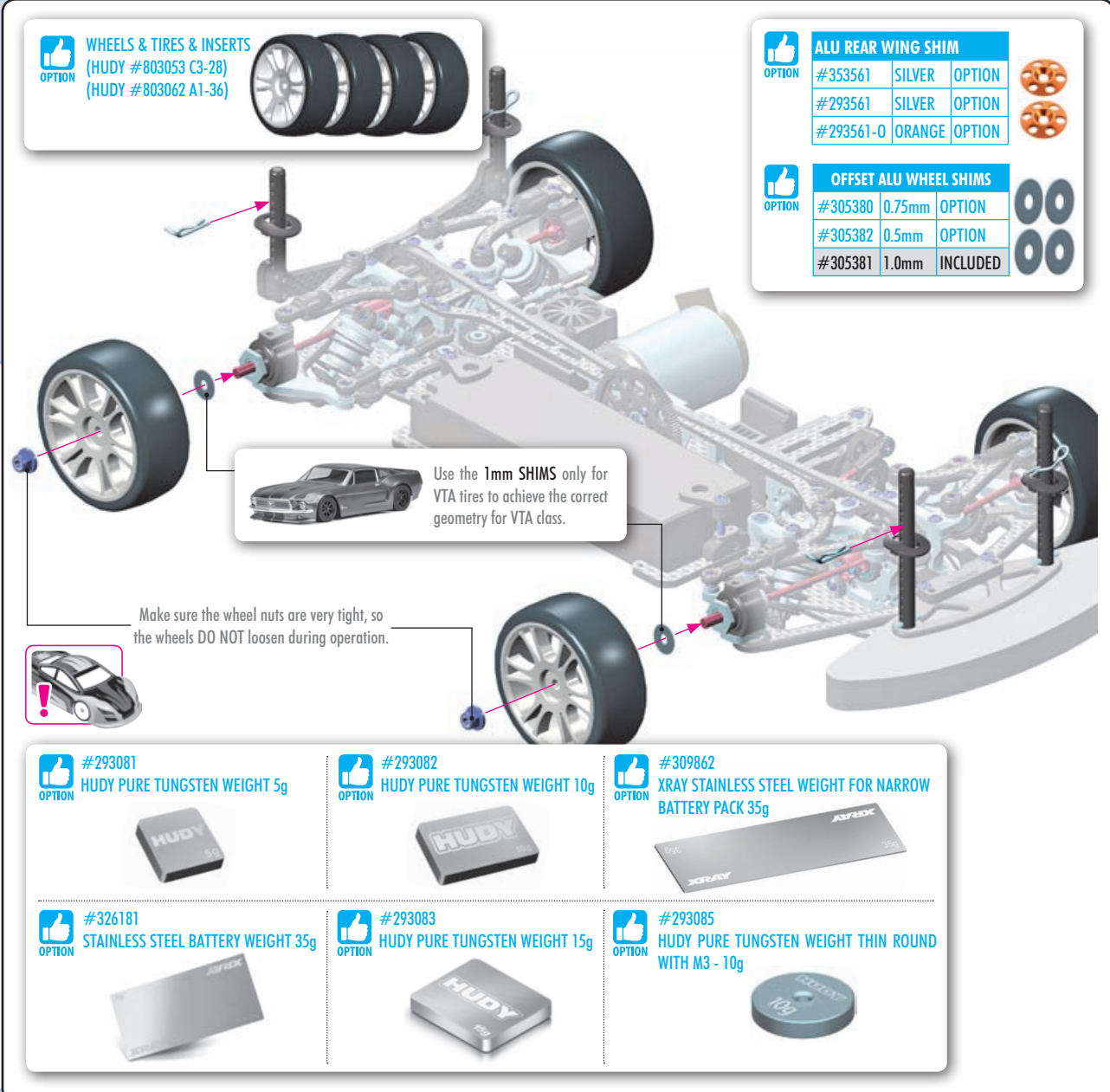
TRACK WIDTH (OFFSET)



DOWNSTOP & RIDE HEIGHT






CHASSIS TWEAK






WHEELS & TIRES & INSERTS
(HUDY #803053 C3-28)
(HUDY #803062 A1-36)

ALU REAR WING SHIM

#353561	SILVER	OPTION	
#293561	SILVER	OPTION	
#293561-0	ORANGE	OPTION	

OFFSET ALU WHEEL SHIMS

#305380	0.75mm	OPTION	
#305382	0.5mm	OPTION	
#305381	1.0mm	INCLUDED	

Use the 1mm SHIMS only for VTA tires to achieve the correct geometry for VTA class.

Make sure the wheel nuts are very tight, so the wheels DO NOT loosen during operation.

#293081 HUDY PURE TUNGSTEN WEIGHT 5g

#293082 HUDY PURE TUNGSTEN WEIGHT 10g

#309862 XRAY STAINLESS STEEL WEIGHT FOR NARROW BATTERY PACK 35g

#326181 STAINLESS STEEL BATTERY WEIGHT 35g

#293083 HUDY PURE TUNGSTEN WEIGHT 15g

#293085 HUDY PURE TUNGSTEN WEIGHT THIN ROUND WITH M3 - 10g

7. FINAL ASSEMBLY

BODY STOP SYSTEM

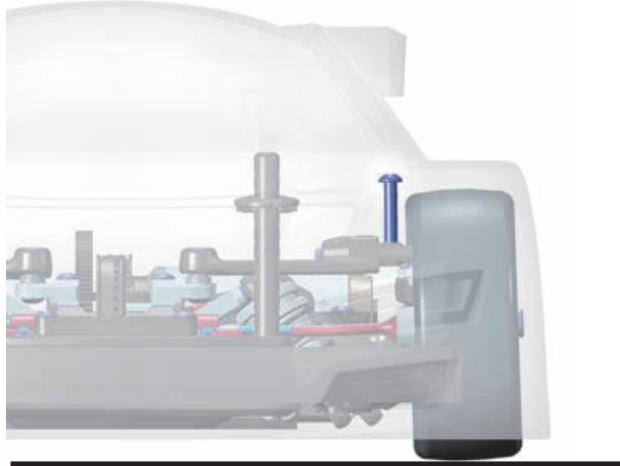
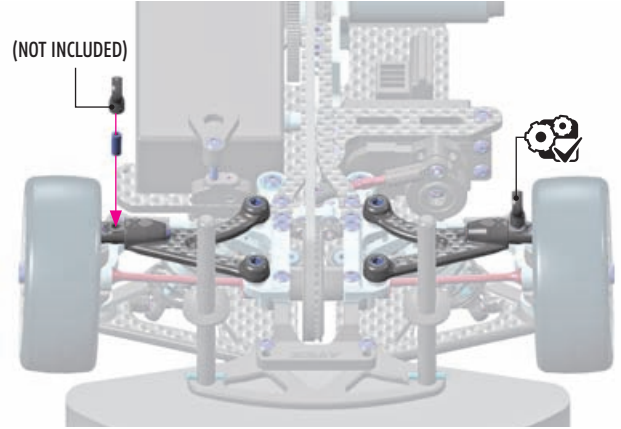
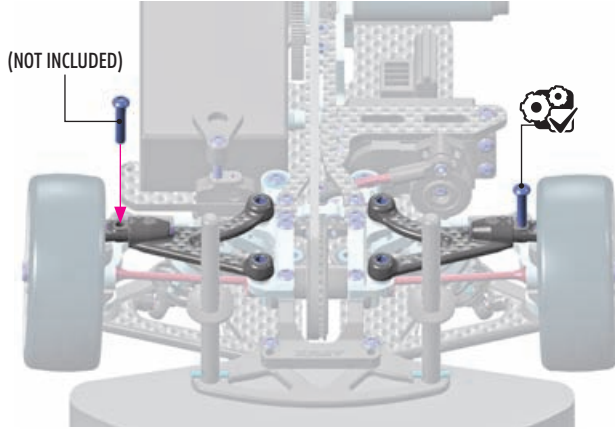
The X4 features an adjustable front body upstop system incorporated into the new upper arm to prevent the body shell from bottoming out and hitting the ground during cornering. When the system is set correctly, it allows the body to be run lower without dragging on the ground to improve aerodynamic efficiency.



BODY STOP ALTERNATIVE
with screw
(#902316 SH M3x16mm)



BODY STOP ALTERNATIVE
with screw and ball joint
(#901308 SB M3x8mm / #303457 Ball Joint)



VIDEO TECH TIP



BODY UPSTOPS



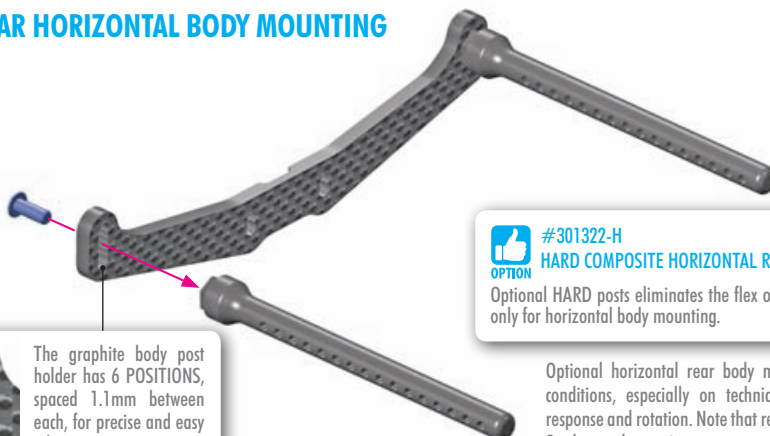
VIDEO TECH TIP



HORIZONTAL BODY MOUNTING



REAR HORIZONTAL BODY MOUNTING



The graphite body post holder has 6 POSITIONS, spaced 1.1mm between each, for precise and easy adjustment.



FRONT BODY MOUNT SET

#301322	0mm	OPTION
#301323	+1mm	OPTION
#301324	+2mm	OPTION



#301322-H HARD COMPOSITE HORIZONTAL REAR BODY MOUNT POST - SET

Optional HARD posts eliminates the flex of the horizontal mounting. Use these posts only for horizontal body mounting.



Optional horizontal rear body mounting has shown benefits on medium to high grip conditions, especially on technical tracks, by improving directional changes, steering response and rotation. Note that rear grip is also reduced, so may be useful in Stock or Super Stock spec class racing.



MISTAKES USERS MAKE



COMMON MISTAKES THAT X4 USERS MAKE

! Make sure to watch the video of Alexander Hagberg explaining about common mistakes that even experienced drivers make and how to avoid them.

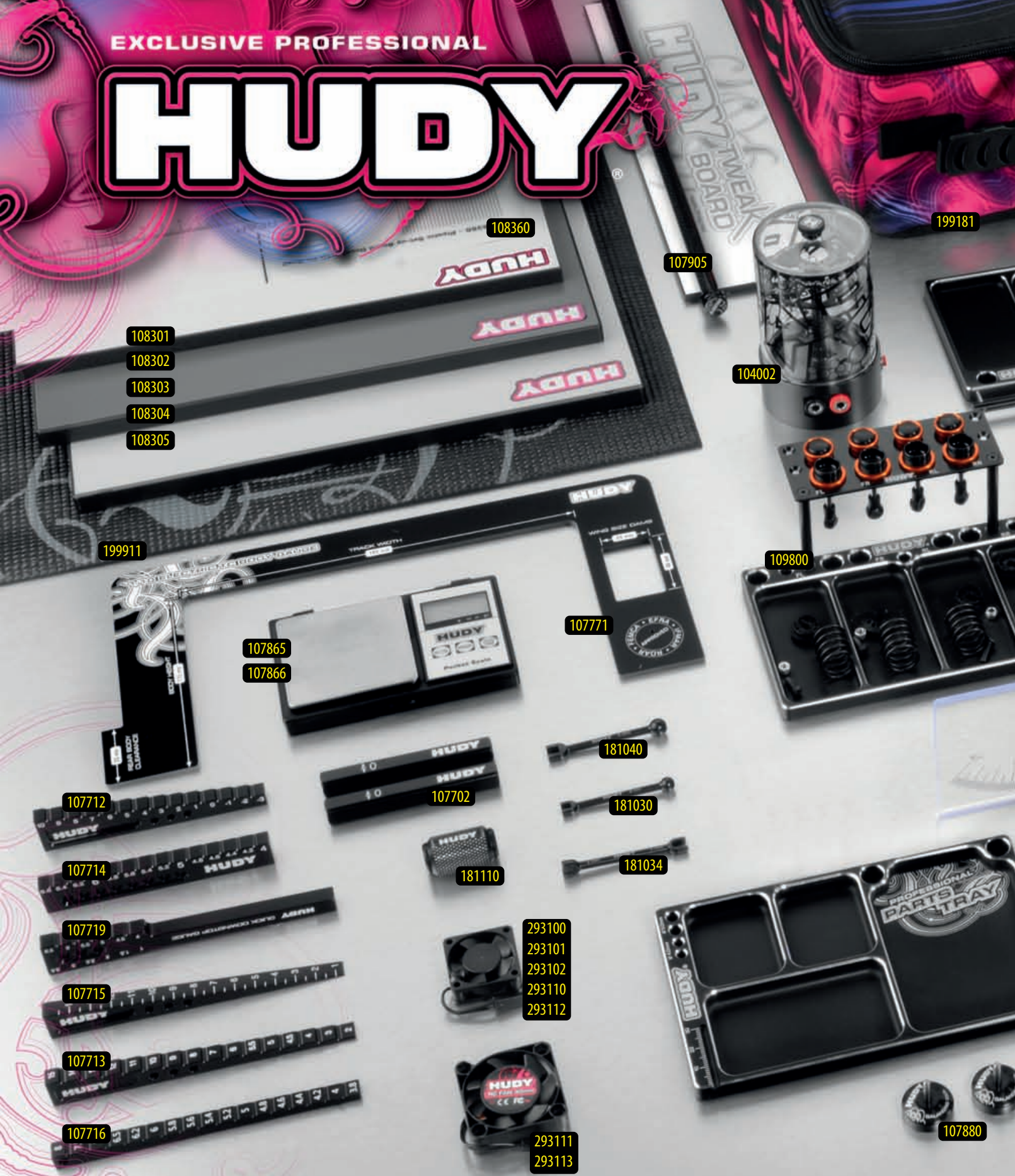


#301349 X4 HORIZONTAL BODY POST MOUNTING GAUGE



EXCLUSIVE PROFESSIONAL

HUDY



- | | | | | | |
|--------|-----------------------------------------------------------|--------|-------------------------------------------------------------|--------|--------------------------------------|
| 104002 | HUDY AIR VAC - VACUUM PUMP - ON-ROAD | 107750 | HUDY GRAPHITE QUICK CAMBER GAUGE 1.5°, 2°, 2.5° FOR 1/10 TC | 108303 | SET-UP BOARD 1/10 & 1/12 ON-ROAD |
| 106260 | HUDY TIRE ADDITIVE - TIRE GRIPPER - 50ML - V2 | 107771 | HUDY BODY GAUGE 1/10 ELECTRIC TOURING CARS | 108304 | SET-UP BOARD 1/10 & 1/12 ON-ROAD |
| 107090 | HUDY BEARING CHECKING TOOL | 107855 | HUDY PIT LED | 108305 | SET-UP BOARD 1/10 & 1/12 ON-ROAD |
| 107601 | LIMITED EDITION - REAMER FOR BODY 0-9MM + COVER - SMALL | 107865 | HUDY PROFESSIONAL DIGITAL POCKET SCALE 300G/0.01G | 108360 | PLASTIC SET-UP BOARD DECAL 28 |
| 107643 | LIMITED EDITION - ARM REAMER # 3.0MM | 107870 | HUDY FIBRE-REINFORCED TAPE - BLACK | 109301 | HUDY SET-UP STATION FOR 1/10 TOURING |
| 107702 | CHASSIS DROOP GAUGE SUPPORT BLOCKS FOR 1/10 (2) | 107875 | HUDY ULTRA DOUBLE-SIDED TAPE | 109351 | SET-UP STATION & SET-UP TOOLS |
| 107712 | CHASSIS DROOP GAUGE -3.0-10MM FOR 1/10 CARS (10MM) | 107880 | CHASSIS BALANCING TOOL (2) | 109360 | ALU NUT FOR 1/10 TOURING SET-UP |
| 107713 | CHASSIS RIDE HEIGHT GAUGE STEPPED 2.0-15.0MM | 107904 | HUDY QUICK-TWEAK STATION 1/10 & 1/12 ON-ROAD | 109370 | ALU SET-UP WHEEL FOR 1/10 RUBBER |
| 107714 | ULTRA-FINE CHASSIS DROOP GAUGE 4.0-6.6MM | 107905 | HUDY TWEAK BOARD SET | 109800 | HUDY ALU TRAY FOR ON-ROAD DRIFT |
| 107715 | CHASSIS RIDE HEIGHT GAUGE 1.0-15.0MM (BEVELED) | 108150 | HUDY 1/10 TOURING CAR STAND - V3 | 109840 | HUDY ALU TRAY FOR 1/10 OFF-ROAD |
| 107716 | ULTRA-FINE CHASSIS RIDE HEIGHT GAUGE 3.8-8.0MM | 108190 | HUDY ALU TRAY FOR PARTS | 109860 | HUDY ALU TRAY FOR SET-UP SYSTEM |
| 107719 | QUICK DOWNSTOP GAUGE TOOL 1.0-6.5MM | 108301 | SET-UP BOARD 1/10 & 1/12 ON-ROAD-LIGHTWEIGHT-GRAY | 109880 | HUDY ALU TRAY FOR ACCESSORIES |
| 107720 | CHASSIS RIDE HEIGHT GAUGE 30-17MM FOR 1/8 & 1/10 OFF-ROAD | 108302 | SET-UP BOARD 1/10 & 1/12 ON-ROAD-LIGHTWEIGHT-SILVER GREY | 111545 | LIMITED EDITION - ALLEN WRENCH |



107855 HUDA - LIGHTWEIGHT-DARK GREY
 107855 HUDA - LIGHTWEIGHT-TITAN
 107855 HUDA - LIGHTWEIGHT-BLACK
 107855 2X386MM - 1/10 TC
 107855 TOURING CARS
 107855 + CARRYING BAG 1/10 TC
 107855 UP SYSTEM (4)
 107855 RUBBER TIRES (4)
 107855 SHOCKS
 107855 HUDA DIFF ASSEMBLY
 107855 TEM
 107855 S & PIT LED
 107855 H # 1.5MM

112045 LIMITED EDITION - ALLEN WRENCH # 2.0MM
 113045 LIMITED EDITION - ALLEN WRENCH # 3.0MM
 132045 LIMITED EDITION - ALLEN WRENCH + BALL REPL. TIP # 2.0MM
 175535 LIMITED EDITION - SOCKET DRIVER # 5.5MM
 177035 LIMITED EDITION - SOCKET DRIVER # 7.0MM
 181030 HUDA SPRING STEEL TURNBUCKLE WRENCH 3 MM
 181034 TURNBUCKLE WRENCH 3 & 4MM - HUDA SPRING STEEL™
 181040 TURNBUCKLE WRENCH 4MM - HUDA SPRING STEEL™
 181110 HUDA BALL JOINT WRENCH
 183011 HUDA PROFESSIONAL MULTI TOOL
 188981 HUDA POCKET HOBBY KNIFE
 188990 HUDA PROFESSIONAL BODY SCISSORS
 199060 HUDA ALU TOOL STAND

199181 HUDA CAR BAG - 1/10 ON-ROAD - TOURING - PAN CAR
 199270 HUDA LIPO SAFETY BAG
 199911 HUDA PIT MAT ROLL 750X1200MM WITH PRINTING
 293100 HUDA ALU RC FAN 30MM - BOTTOM MOUNT 2 HOLE
 293101 HUDA ALU RC FAN 30MM - SIDE MOUNT 2 HOLE
 293102 HUDA ALU RC FAN 30MM - TOP/SIDE MOUNT 4 HOLE
 293110 HUDA BRUSHLESS RC FAN 30MM - WITH EXTERNAL SOLDERING TABS
 293111 HUDA BRUSHLESS RC FAN 40MM - WITH EXTERNAL SOLDERING TABS
 293112 HUDA BRUSHLESS RC FAN 30MM - WITH INTERNAL SOLDERING TABS
 293113 HUDA BRUSHLESS RC FAN 40MM - WITH INTERNAL SOLDERING TABS
 298100 HUDA TIN ROUND BOX 80x30MM

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

www.hudy.net



EXCLUSIVE PROFESSIONAL

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HUDY

199295-H

199290-H

106261

106200

105590

293011

293083

293082

293081

293080

293012

293084

294017~294035

294126~294164

803053

803062

107861

107840

107846

107761

106290

- 107761 HUDY ADJUSTABLE CAMBER GAUGE 80MM
- 107772 HUDY PROFESSIONAL 1/10 TC WHEEL ARCH MARKER + WHEEL ADAPTER & NUT
- 106210 HUDY GRAPHITE GREASE
- 106230 HUDY BEARING OIL
- 106200 HUDY MAGIC CLEANING GUM
- 106261 HUDY TIRE ADDITIVE - TIRE GRIPPER RED - 50ML
- 106350 HUDY PREMIUM SILICONE OIL 500 CST - 50ML
- 107861 HUDY PROFESSIONAL RACING STOPWATCH XL DISPLAY
- 106290 HUDY PROFESSIONAL SOLDER 3M LENGTH
- 107840 CLEANING BRUSH LARGE - SOFT
- 107846 CLEANING BRUSH SMALL - SOFT
- 105520 WHEEL ADAPTER FOR 1/10 ON-ROAD & 1/10 OFF-ROAD - 12MM

- 105590 HUDY WHEEL BALANCING PUTTY
- 181090 HUDY SPECIAL TOOL FOR TURNBUCKLES & NUTS
- 181091 HUDY TURNBUCKLE WRENCH 3 & 4MM - V2
- 803053 HUDY 1/10 TC CARPET TIRES C3-28 (4)
- 803062 HUDY 1/10 TC TIRES A1-36 - ASPHALT (4)
- 293011 HUDY STAINLESS STEEL BATTERY WEIGHT 35G
- 293012 HUDY STAINLESS STEEL BATTERY WEIGHT FOR NARROW BATTERY PACK 35G
- 293080 LEAD WEIGHTS 4x5G & 4x10G WITH 3M GLUE
- 293081 HUDY PURE TUNGSTEN WEIGHT 5G
- 293082 HUDY PURE TUNGSTEN WEIGHT 10G
- 293083 HUDY PURE TUNGSTEN WEIGHT 15G
- 293084 PRECISION BALANCING CHASSIS WEIGHT 10G (4)



199280M-H



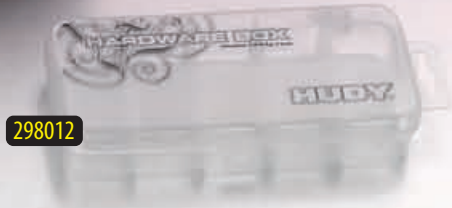
199296-H



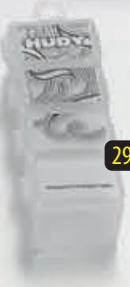
298015



105520



298012



298016



298018

298019



107772



298019



181090



106310~106694



298017



298014

293311

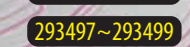
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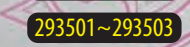
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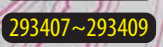
293497~293499



293404~293406



293501~293503



293407~293409



181091



106210



106230



- 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
- 294017-35 HUDY ALU ULTRA-LIGHT PINION GEAR - HARD COATED - 23T / 48
- 294126-64 HUDY ALU ULTRA-LIGHT PINION GEAR - HARD COATED - 40T / 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

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