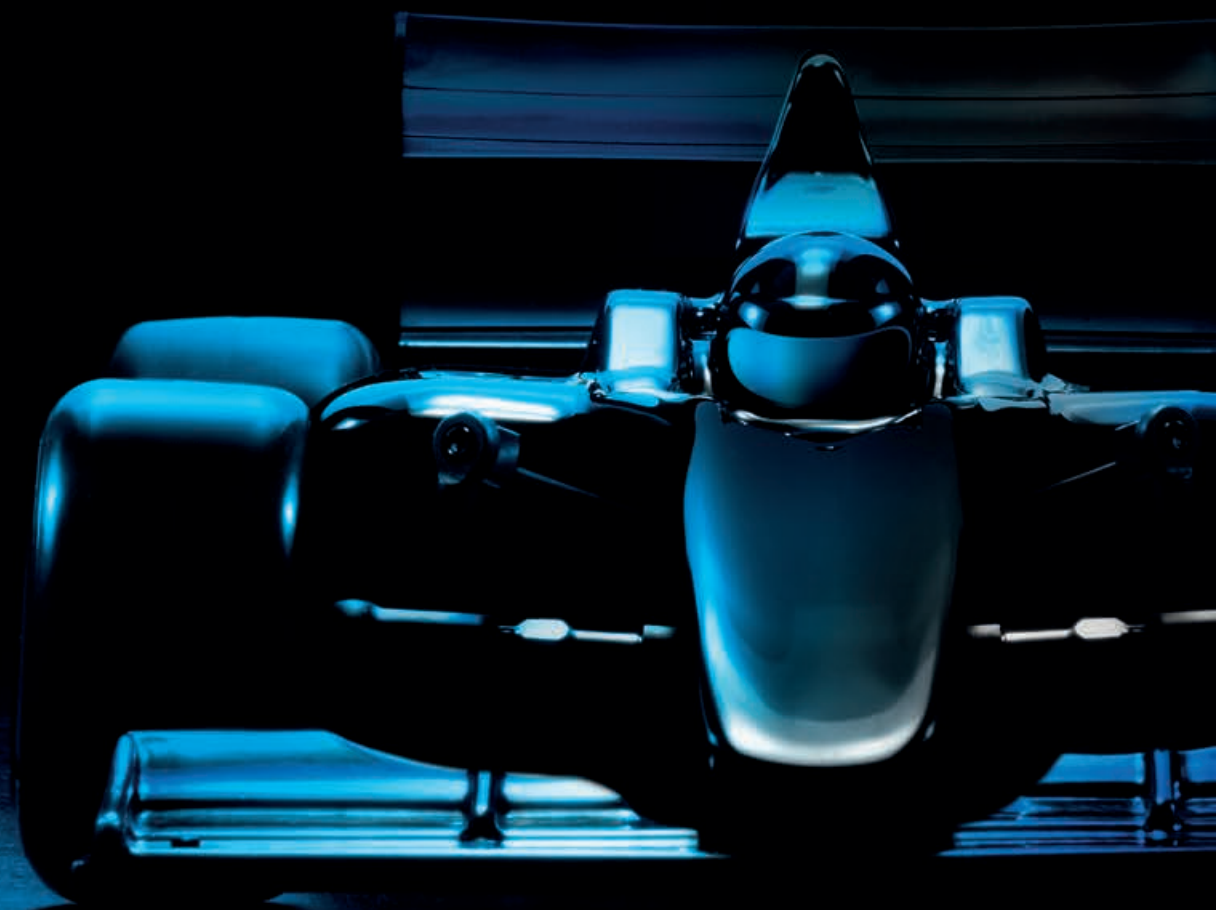


1/10 ELECTRIC FORMULA

XRAY X1



INSTRUCTION MANUAL
FOR X1'27 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

K Vystavisku 6992
91101 Trenčín
Slovakia, EUROPE
Phone: 421-32-7401100
Fax: 421-32-7401109
E-mail: info@teamxray.com

XRAY USA

RC America, 2030 Century Center Blvd #15 Irving,
TX 75062
USA
Phone: (214) 744-2400
Fax: (214) 744-2401
E-mail: xray@rcamerica.com

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

SAFETY PRECAUTIONS

Contains:

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

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

CAUTION: CANCER HAZARD

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

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

Take appropriate safety precautions prior to operating this model. You are responsible for this model's assembly and safe operation! Please read the instruction manual before building and operating this model and follow all safety precautions. Always keep the instruction manual at hand for quick reference, even after completing the assembly. Use only genuine and original

authentic XRAY parts for maximum performance. Using any third party parts on this model will void 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



INCLUDED

HUDY Premium Silicone Oils

Carbon Edition



Alu Edition



ALSO REQUIRED

Transmitter	Receiver	Speed Controller	Steering Servo
Electric Motor & Pinion Gear with Setscrew (#305968 ~ #294160)	LiPo Battery	Battery Charger	Wheels & Tires & Inserts (HUDY #803073 & #803083)
Bearing Oil (HUDY #106230)	Body (#379701 or #379702)	Lexan™ Paint	Double-sided Tape (HUDY #107875)

OPTIONAL



SAMPLE OF OPTIONAL PARTS		
#37XXXX	TYPE1	OPTION 1
#37XXXX	TYPE1	OPTION 2
#37XXXX	TYPE1	INCLUDED
#37XXXX	TYPE1	OPTION 3

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

COLOR INDICATIONS

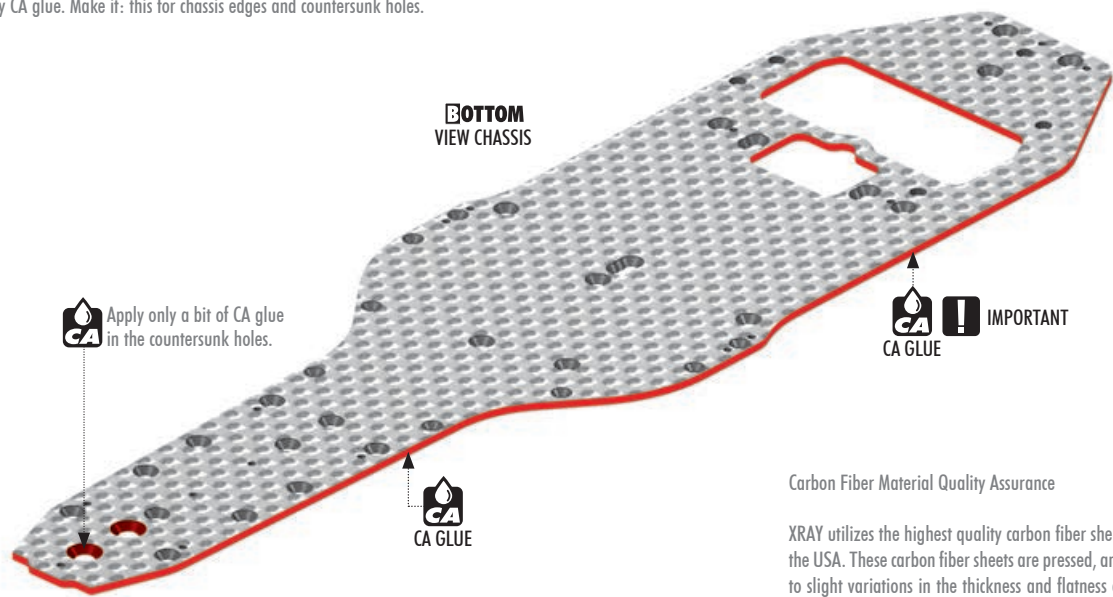
At the beginning of each section is an exploded view of the parts to be assembled. There is also a list of all the parts and part numbers that are related to the assembly of that section.

The part descriptions are color-coded to make it easier for you to identify the source of a part. Here are what the different colors mean:

- 372213 **STYLE A** - indicates parts that are included in the bag marked for the section.
- 371201 **STYLE B** - indicates parts that are included in the box.
- 374901 **STYLE C** - indicates parts that are already assembled from previous steps.
- 379701 **STYLE D** - indicates parts that are optional.

CARBON PARTS PROTECTION

To protect and seal edges of carbon parts, sand edges smooth and then apply CA glue. Make it: this for chassis edges and countersunk holes.



Carbon Fiber Material Quality Assurance

XRAY utilizes the highest quality carbon fiber sheets available on the market, made in the USA. These carbon fiber sheets are pressed, and this production technique may lead to slight variations in the thickness and flatness of each sheet. It is important to note that the carbon manufacturer cannot guarantee perfect uniformity, given the challenges associated with achieving flawless flatness in such thin materials.

When designing our XRAY cars and components, we account for these tolerances regarding thickness and flatness. Minor irregularities in the carbon fiber parts will not compromise the performance of XRAY vehicles once they are assembled with other components. While an individual carbon fiber part may not lay perfectly flat, you can be assured that the assembled vehicle will function as designed and intended.

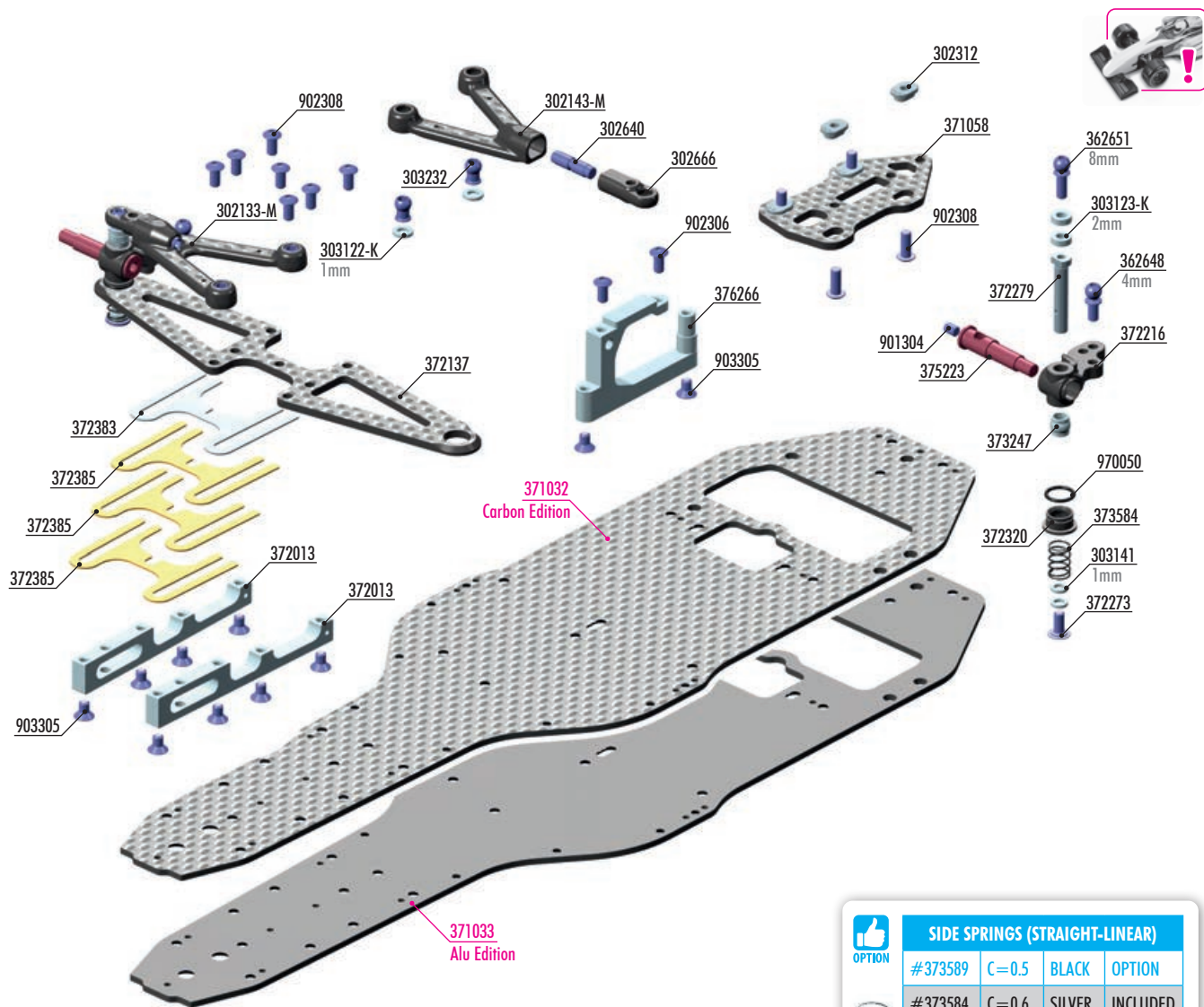
Additionally, the carbon fiber sheets may exhibit minor irregularities such as small dots, cavities, or scratches, which can occur during the manufacturing process. These characteristics are standard for this type of material and do not detract from the overall quality and performance of XRAY products.



All ball-bearings are factory pre-oiled. Regularly service, clean and lubricate all ball-bearings with **HUDY Bearing Oil (#106230)**. Replace any bearings that develop a "gritty" feeling to prevent inefficiency and avoid rear axle bearing blowouts.

Make sure to use only original XRAY ball-bearings, which all have specific tolerances, axial and radial play, and are all individually selected. Using 3rd party ball-bearings may result in failures and damage to other parts.

1. FRONT SUSPENSION



#302133-S CFF™ Carbon-Fiber Fusion Upper Arm - Soft - FR/RL
#302143-S CFF™ Carbon-Fiber Fusion Upper Arm - Soft - FL/RR



#302640-T ADJUSTABLE CAMBER SCREW 14mm M4 L/R - TITANIUM (2)



#990101 HUDY Titanium Pivot Ball D=4.9 / S=5 / 3mm Hex (2)



SIDE SPRINGS (STRAIGHT-LINEAR)			
#373589	C=0.5	BLACK	OPTION
#373584	C=0.6	SILVER	INCLUDED
#373585	C=0.9	GOLD	OPTION
#373586	C=1.2	BLACK	OPTION
#373587	C=1.5	SILVER	OPTION
#373588	C=1.8	GOLD	OPTION

ALU CASTER BUSHINGS		
#302310	1 Dot	OPTION
#302311	2 Dots	OPTION
#302312	3 Dots	INCLUDED

BAG

01

302133-M CFF™ CARBON-FIBER FUSION UPPER ARM - MEDIUM - FR/RL
 302143-M CFF™ CARBON-FIBER FUSION UPPER ARM - MEDIUM - FL/RR
 302312 ALU CASTER BUSHING - 3 DOTS (4)
 302640 ADJUSTABLE CAMBER SCREW 14mm M4 L/R - HUDY SPRING STEEL™ (2)
 302666 COMPOSITE BALL JOINT 4.9mm F+R - OPEN (2+2)
 303122-K ALU SHIM 3x6x1.0mm - BLACK (10)
 303123-K ALU SHIM 3x6x2.0mm - BLACK (10)
 303141 ALU SHIM 3x5x1.0mm (10)
 303232 UPPER ARM BALL UNIVERSAL 4.9mm - HUDY SPRING STEEL™ (2)
 362648 BALL END 4.9mm WITH THREAD 4mm (2)
 362651 BALL END 4.9mm WITH THREAD 8mm (2)
 371058 CARBON ARM MOUNT PLATE
 372013 ALU 3S SUSPENSION FRONT BULKHEAD - SWISS 7075 T6
 372137 CARBON LOWER SUSPENSION ARM
 372216 COMPOSITE STEERING BLOCK
 372273 STEEL FRONT DROOP SCREW (2)
 372279 STEEL KING PIN (2)
 372320 COMPOSITE ARM BUSHING (4)

372383 RIDE HEIGHT ADJUSTMENT SHIM 0.3mm - SILVER (2)
 372385 RIDE HEIGHT ADJUSTMENT SHIM 0.5mm - BROWN (2)
 373247 ALU BALL UNIVERSAL 6.0mm - SWISS 7075 T6 (2)
 373584 SIDE SPRING C=0.6 - SILVER (2)
 375223 FRONT WHEEL AXLE - HUDY SPRING STEEL™ (2)
 376266 ALU FRONT TOP DECK MOUNT - SWISS 7075 T6

901304 HEX SCREW SB M3x4 (10)
 902306 HEX SCREW SH M3x6 (10)
 902308 HEX SCREW SH M3x8 (10)
 903305 HEX SCREW SFH M3x5 (10)
 970050 O-RING 5x1 (10)

Carbon Edition
 371032 X1 CARBON CHASSIS

Alu Edition
 371033 X1 ALU CHASSIS - SWISS 7075 T6

Numbers in parentheses () refer to quantities when purchased separately.

XRAY

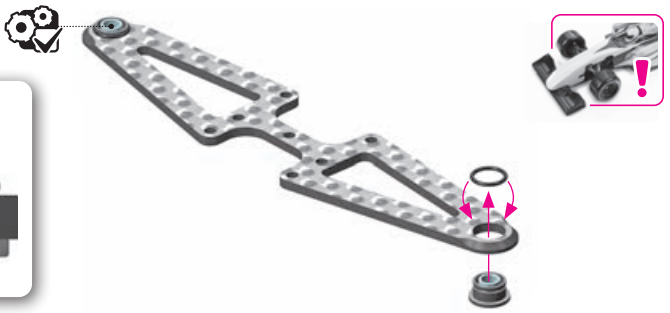
1. FRONT SUSPENSION

2x 970050
0 5x1

2x LOWER ARM



ASSEMBLED VIEW



CUTAWAY VIEW



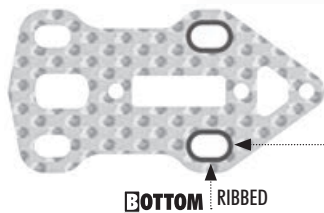
4x 902308
SH M3x8

NOTE ORIENTATION FOR ALL PARTS

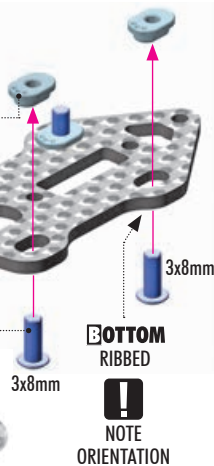
IMPORTANT

All 4 bushings **MUST** have same orientation.

Never use alu or titanium screws for the eccentric bushings.



BOTTOM RIBBED



BOTTOM RIBBED
NOTE ORIENTATION



ALU CASTER BUSHINGS

OPTION	#	DOTS	STATUS
	#302310	1 Dot	OPTION
	#302311	2 Dots	OPTION
	#302312	3 Dots	INCLUDED

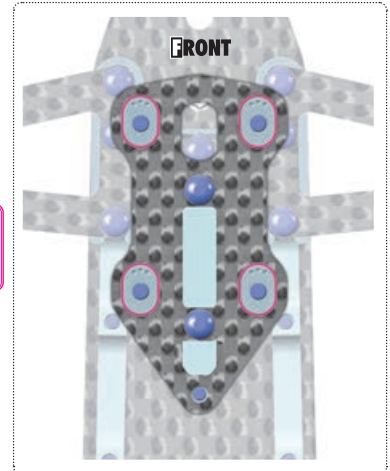


FRONT

- 3° CASTER
- 4.5° CASTER
- 6° CASTER
- 7.5° CASTER** **INITIAL SETTING**
- 9° CASTER
- 10.5° CASTER

REAR

NOTE ORIENTATION FOR ALL PARTS
All four bushings **MUST** have same orientation. These bushings adjust the front **CASTER**:



THESE ECCENTRIC BUSHINGS ADJUST THE FRONT **CASTER**.

MORE caster angle = better cornering speed, increased traction rolling. Use on large, open tracks where cornering speed is needed.

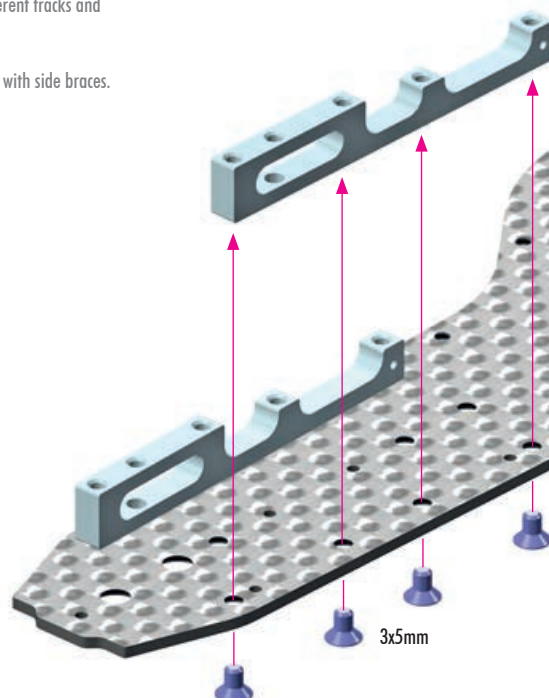
LESS caster angle = more reactive steering. Use on technical tracks where a lot of steering response is needed.



8x 903305
SFH M3x5

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

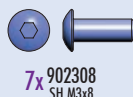
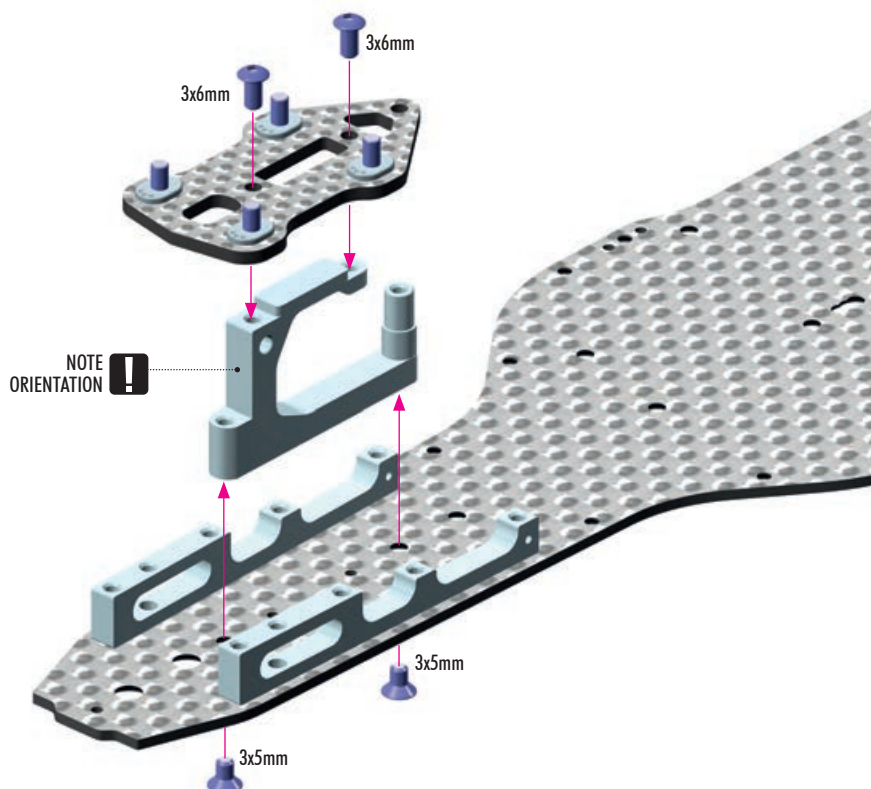
The chassis flex is adjusted together with side braces. Please see page 35 step 1.



3x5mm



1. FRONT SUSPENSION



RIDE HEIGHT ADJUSTMENT

The number of washers used, affects the ride height of the car in front, so determine the proper amount of shimming based on the tire diameter.

MORE SHIMS used, raises the arm and decreases the ride height.

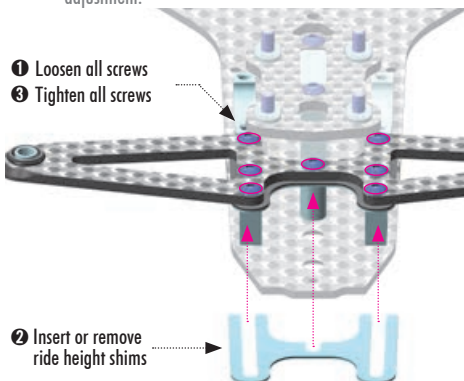
LESS SHIMS used, lowers the arm and increases the ride height.

Note that the front droop also affects the ride height. When changing the front droop setting, adjust and reset the ride height accordingly.

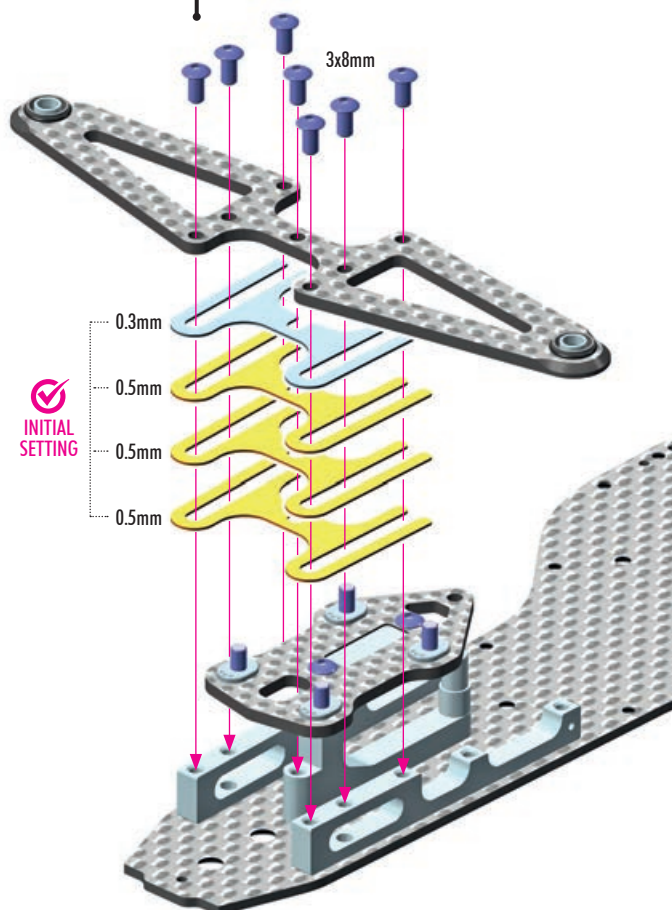
TIP For easier shim assembly, we recommend mounting all shims onto the bulkheads and tightening them with the arm. This will straighten the shims and allow them to adapt to the shape. After the first assembly, the shims can be inserted or removed more easily.



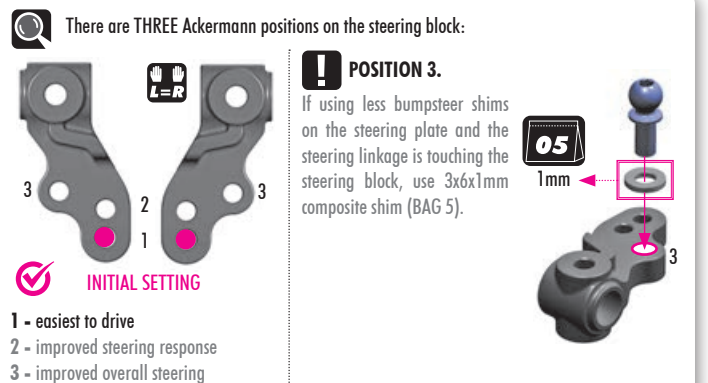
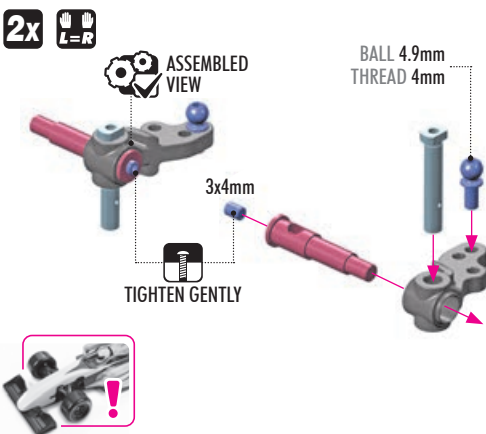
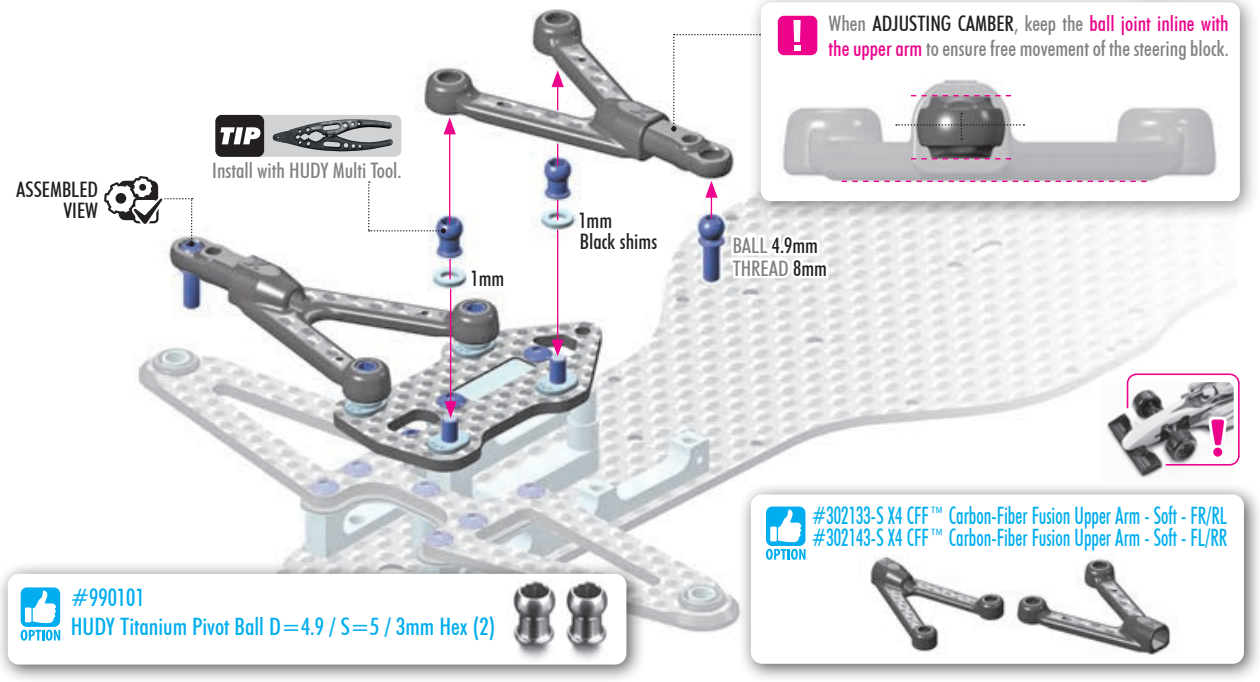
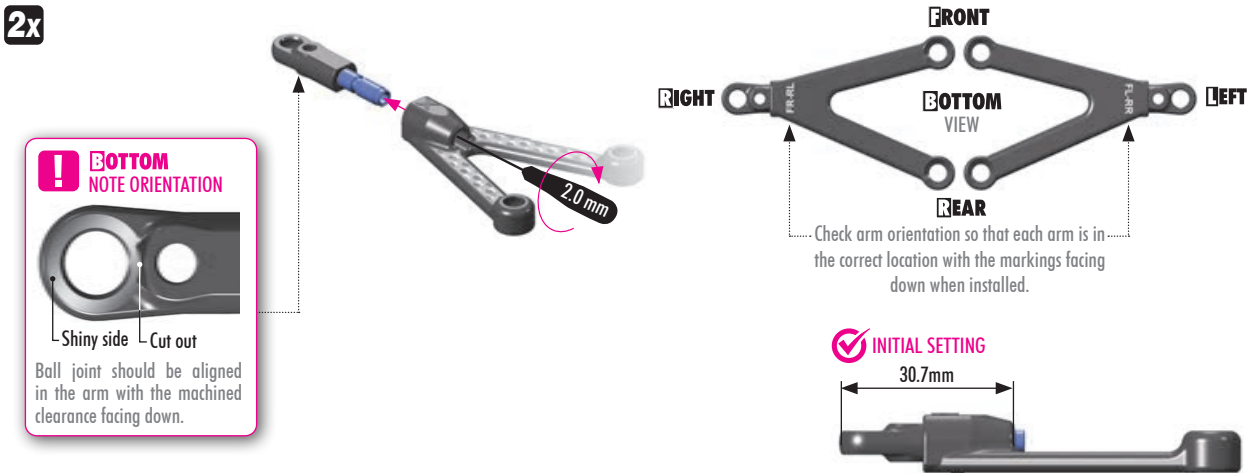
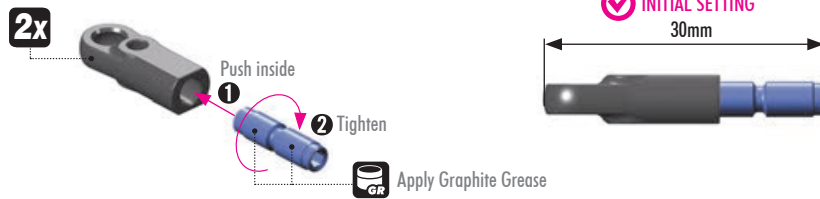
TIP The easiest way to adjust the ride height is to remove the front wing, untighten the screws which hold the arms, and then add or remove the ride height shim for the desired ride height adjustment.



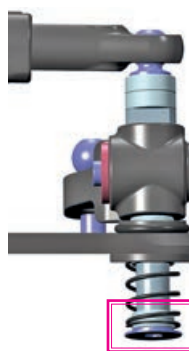
TIP Use a 2mm BALL allen wrench (HUDY #132045) to tighten or loosen these screws.



1. FRONT SUSPENSION



1. FRONT SUSPENSION



FRONT DROOP ADJUSTMENT

Front droop is adjusted by the preload of the front spring. Adding more shims between the kingpin axle and the spring retaining screw will increase front droop. Removing shims will have the opposite effect.

Each 1mm shim will increase the front droop by 1mm.

NO shim = 0mm front droop

1mm shim = 1mm front droop

2mm shim = 2mm front droop

✓ INITIAL SETTING

MORE DROOP will make the car initially less responsive, but it will give the car more front traction, improving steering in the middle of the corner. The car will be less precise and more difficult to drive due to increased roll. More droop is best suited for low- to medium-traction carpet or asphalt tracks.

LESS DROOP will decrease roll but the car will change direction faster. Less droop is best suited for high-traction surfaces.

❗ When adding more shims to increase front droop, always check that there is sufficient clearance between the retaining screw and the wheel.



FREE MOVEMENT



CAMBER GAIN ADJUSTMENT

The number of the shims affect the front camber gain.

MORE SHIMS used = **MORE CAMBER** gain

LESS SHIMS used = **LESS CAMBER** gain

More camber gain improves steering and front traction but makes the car more difficult to drive and reduces cornering speed in long sweepers.

More camber gain is suggested for low traction or technical tracks.

Less camber gain is suggested for higher traction or open tracks with long sweepers.



Silver shims

1mm

1mm

Oil

2mm

2mm

Oil

Oil

The thickness of the shims used affects the **FRONT DROOP** of the front suspension, so determine the appropriate shim thickness based on the desired droop.

Please note that changes in **FRONT DROOP** directly affect **FRONT RIDE HEIGHT**. Therefore, first set the desired droop, then check and adjust the front suspension ride height by adding or removing ride height shims.

The kingpin with holes maintain consistent damping through the continuous oil film between the kingpin and steering block.

Fill the kingpin hole before installing the spring, droop shims, and retaining screw.

It is recommended to check and refill the kingpin fluid once per race day or every 5 runs, whichever comes first.



FRONT DAMPING SETTING

The **FRONT DAMPING SETTING** is adjusted by using oils with different viscosities.

THINNER OIL

Makes the car more responsive but also more difficult to drive. Recommended for low-traction or small tight tracks.

THICKER OIL

Makes the car less responsive but easier to drive. Thicker oil also increases stability. Recommended for high-traction or open tracks.

LOW traction & bumpy track

10K ~ 15K cSt

HIGH traction & smooth track

15K ~ 30K cSt

10K Carbon Edition



OIL

15K Alu Edition

use HUDY Silicone Oil (INCLUDED)



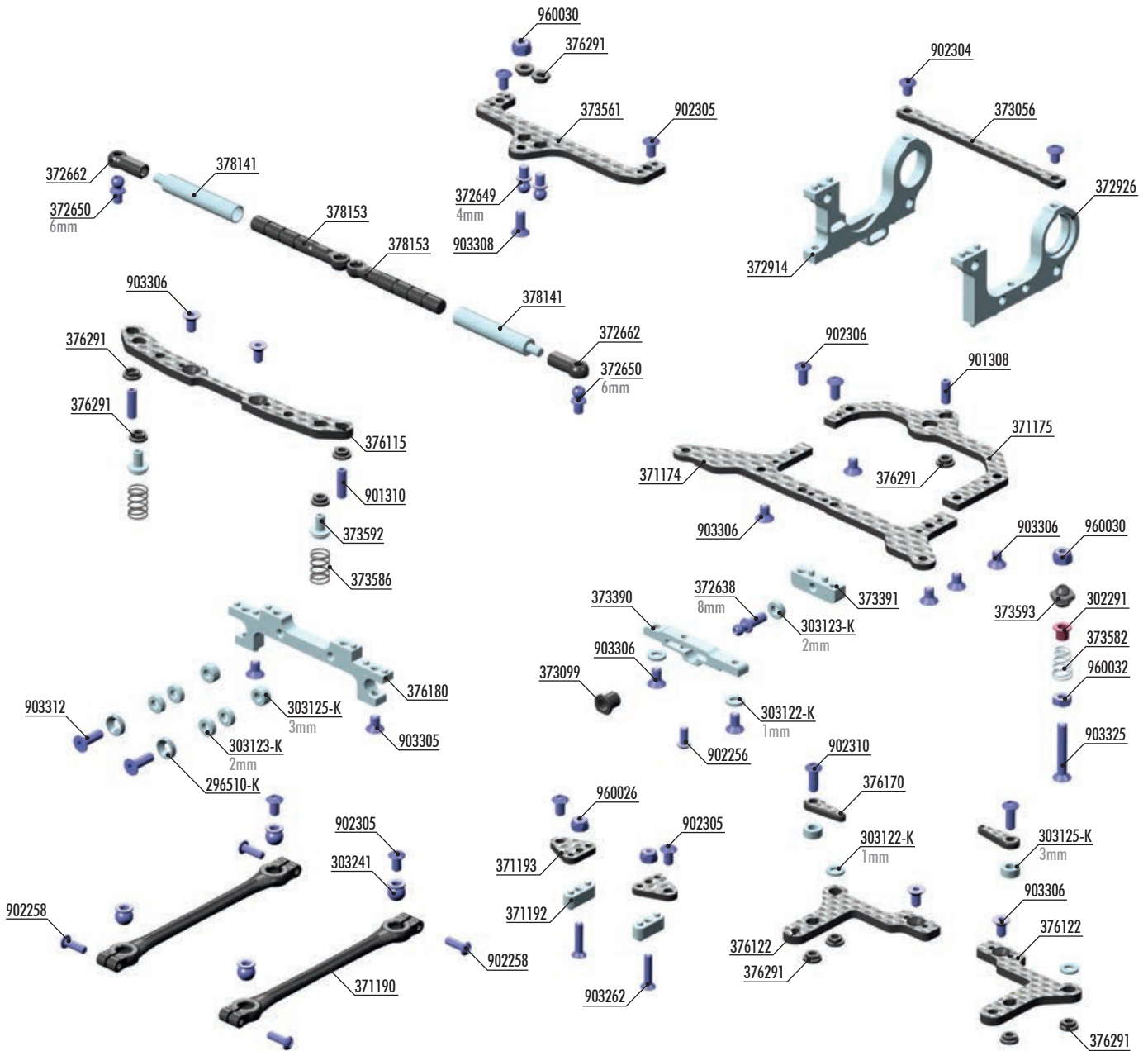
SIDE SPRINGS (STRAIGHT-LINEAR)

#373589	C=0.5	BLACK	OPTION
#373584	C=0.6	SILVER	INCLUDED
#373585	C=0.9	GOLD	OPTION
#373586	C=1.2	BLACK	OPTION
#373587	C=1.5	SILVER	OPTION
#373588	C=1.8	GOLD	OPTION



BOTTOM VIEW

2. REAR SUSPENSION



02

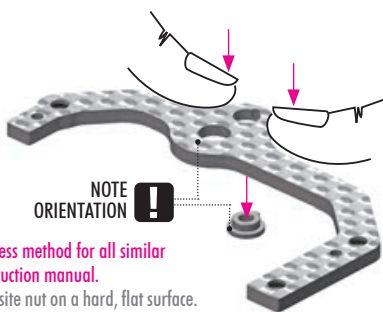
- 296510-K ALU COUNTERSUNK SHIM - BLACK (10)
302291 STEEL STEERING BUSHING (2+2)
303122-K ALU SHIM 3x6x1.0mm - BLACK (10)
303123-K ALU SHIM 3x6x2.0mm - BLACK (10)
303125-K ALU SHIM 3x6x3.0mm - BLACK (10)
303241 PIVOT BALL UNIVERSAL 5.8mm WITH HEX (4)
371174 CARBON REAR POD LOWER PLATE FOR 1-PIECE CHASSIS - FRONT
371175 CARBON REAR POD LOWER PLATE FOR 1-PIECE CHASSIS - REAR
371190 COMPOSITE POD LINK (2)
371192 ALU HOLDER WITH 2 PINS FOR SIDE LINK CARBON PLATE - BLACK
371193 CARBON PLATE FOR 2 PINS FOR SIDE LINK (2)
372638 HARD STEEL BALL END 3.7mm WITH 8mm THREAD - NICKEL COATED (2)
372649 BALL END 4.2mm WITH 4mm THREAD (2)
372650 BALL END 4.2mm WITH 6mm THREAD (2)
372662 COMPOSITE BALL-JOINT 4.2mm (4)
372914 ALU REAR BULKHEAD FOR 1-PIECE CHASSIS - MOTOR - RIGHT
372926 ALU REAR BULKHEAD FOR 1-PIECE CHASSIS - LEFT
373056 CARBON REAR BULKHEAD BRACE FOR 1-PIECE CHASSIS
373099 COMPOSITE PIVOT BRACE BUSHING FOR 3.7MM BALL END
373390 ALU CHASSIS PIVOT HOLDER FOR 1-PIECE CHASSIS - SWISS 7075 T6
373391 ALU POD PLATE PIVOT HOLDER FOR 1-PIECE CHASSIS - SWISS 7075 T6
373561 CARBON REAR POD UPPER PLATE FOR 1-PIECE CHASSIS
373582 TAPERED SPRING C= 1.5-1.6 - SILVER (2)
373586 SIDE SPRING C= 1.2 - BLACK (2)
373592 STEEL SIDE SPRING RETAINER (2)
373593 COMPOSITE TAPERED/STRAIGHT SPRING HOLDER (2)

- | | |
|--------|--|
| 376115 | CARBON REAR BRACE FOR SIDE SPRINGS & UPSTOP |
| 376122 | CARBON SIDE LINKS PLATE SPLITED (1 + 1) |
| 376170 | CARBON BATTERY CLAMP (2) |
| 376180 | ALU CENTER MULTI-FUNCTIONAL BULKHEAD - SWISS 7075 T6 |
| 376291 | COMPOSITE M3 SNAP LOCK BUSHING (8) |
| 378141 | SIDE LINKAGE TUBE (2) |
| 378153 | COMPOSITE LINKAGE SHAFT (2) |
| 901308 | HEX SCREW SB M3x8 (10) |
| 901310 | HEX SCREW SB M3x10 (10) |
| 902256 | HEX SCREW SH M2.5x6 (10) |
| 902258 | HEX SCREW SH M2.5x8 (10) |
| 902304 | HEX SCREW SH M3x4 (10) |
| 902305 | HEX SCREW SH M3x5 (10) |
| 902306 | HEX SCREW SH M3x6 (10) |
| 902310 | HEX SCREW SH M3x10 (10) |
| 903262 | HEX SCREW SFH M2.5x12 (10) |
| 903305 | HEX SCREW SFH M3x5 (10) |
| 903306 | HEX SCREW SFH M3x6 (10) |
| 903308 | HEX SCREW SFH M3x8 (10) |
| 903312 | HEX SCREW SFH M3x12 (10) |
| 903325 | HEX SCREW SFH M3x25 (10) |
| 960026 | NUT M2.5 -SHORT (10) |
| 960030 | NUT M3 (10) |
| 960032 | NUT M3 - BLACK (10) |

Numbers in parentheses () refer to quantities when purchased separately.

2. REAR SUSPENSION

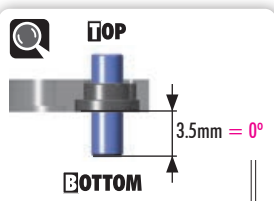
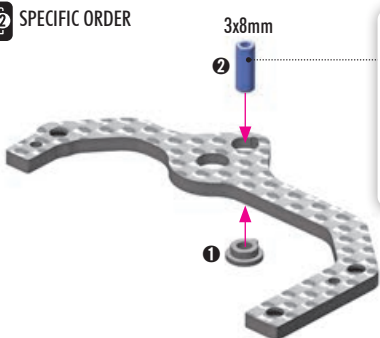
NOTE



Use the same press method for all similar parts in the instruction manual. Place the composite nut on a hard, flat surface. Make sure to have the correct orientation for both parts. Press the carbon fiber part straight down onto the nut until seated.

1x 901308 SB M3x8

SPECIFIC ORDER



VIDEO TECH TIP



POD ANGLE ADJUSTMENT

POD ANGLE SETTING

The rear pod angle is adjusted using the set screw at the rear of the chassis. A 3.5mm gap between the chassis plate and rear pod means the rear pod is sitting flat. Increasing this gap increases the pod angle, creating a pro-squat effect. Pro-squat decreases on-power steering and increases rear traction. Reducing the gap below 3.5mm introduces an anti-squat effect, increasing on-power steering while decreasing rear traction.

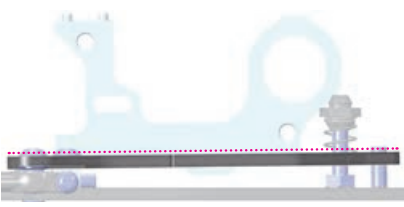


POD Anti-squat

Anti-squat increases on-power steering and decreases rear traction.



POD Straight INITIAL SETTING

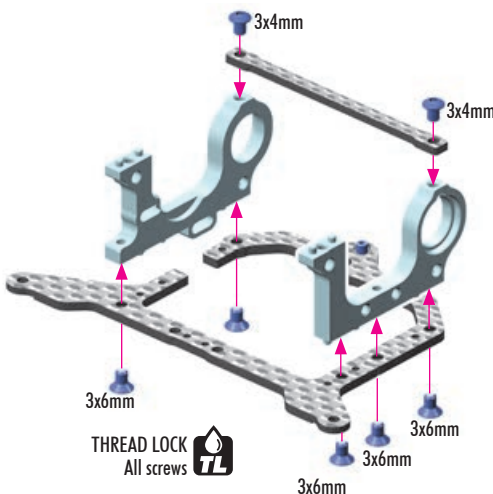


POD Pro-squat

Pro-squat decreases on-power steering and increases rear traction.

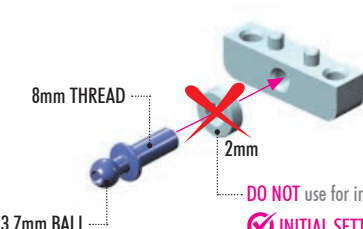
2x 902304 SH M3x4

5x 903306 SFH M3x6



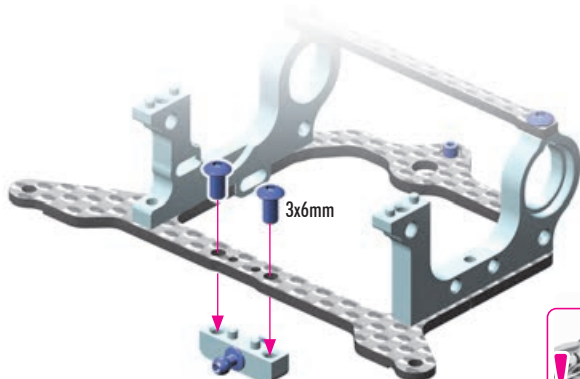
0x 303123-K SHIM 3x6x2

2x 902306 SH M3x6



DO NOT use for initial setting. INITIAL SETTING (0mm shim)

The amount of shims has a direct effect on the pivot mounting position. Please see: PAGE 15



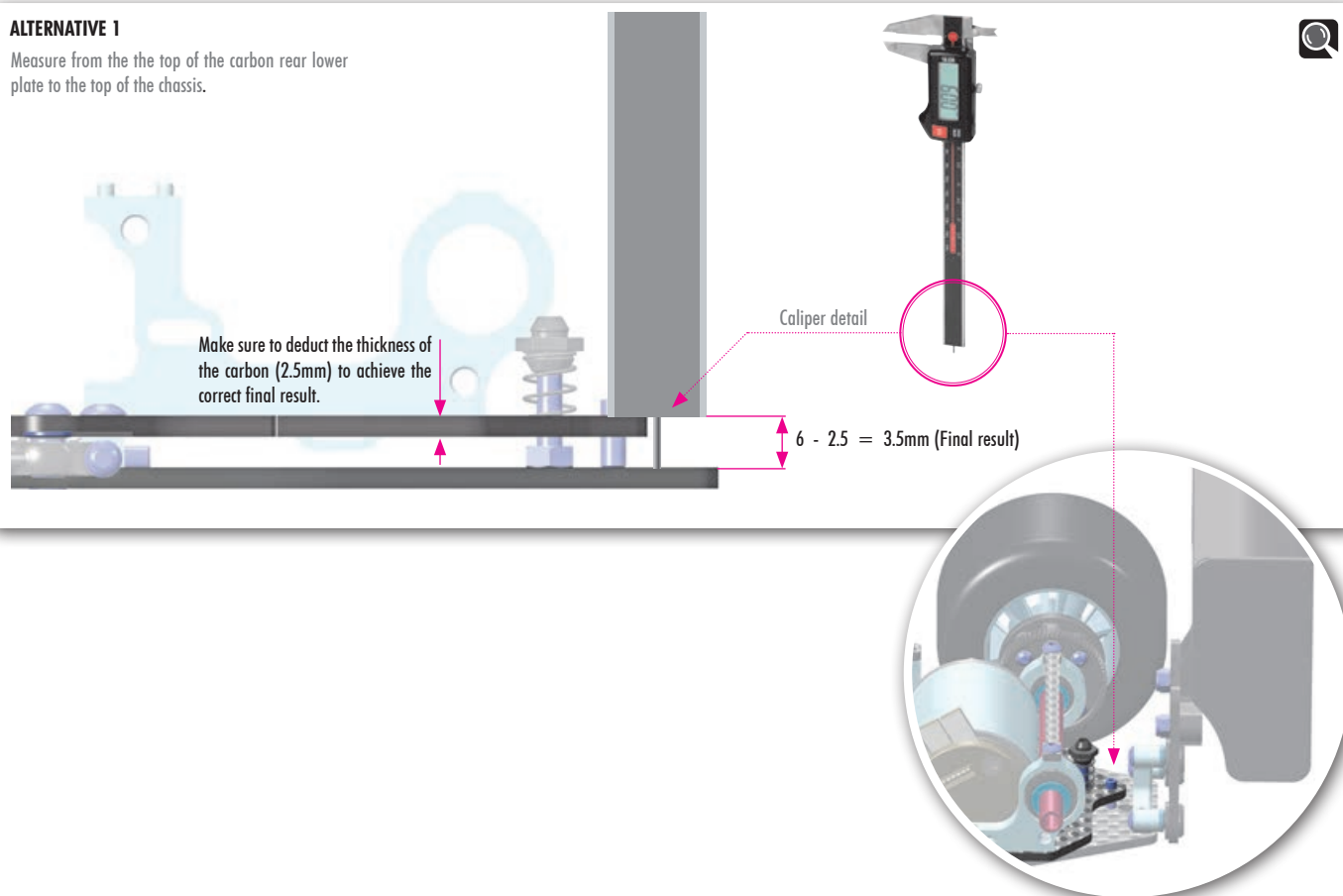
2. REAR SUSPENSION



THERE ARE 2 EASIEST WAY HOW TO MEASURE THE POD ANGLE.

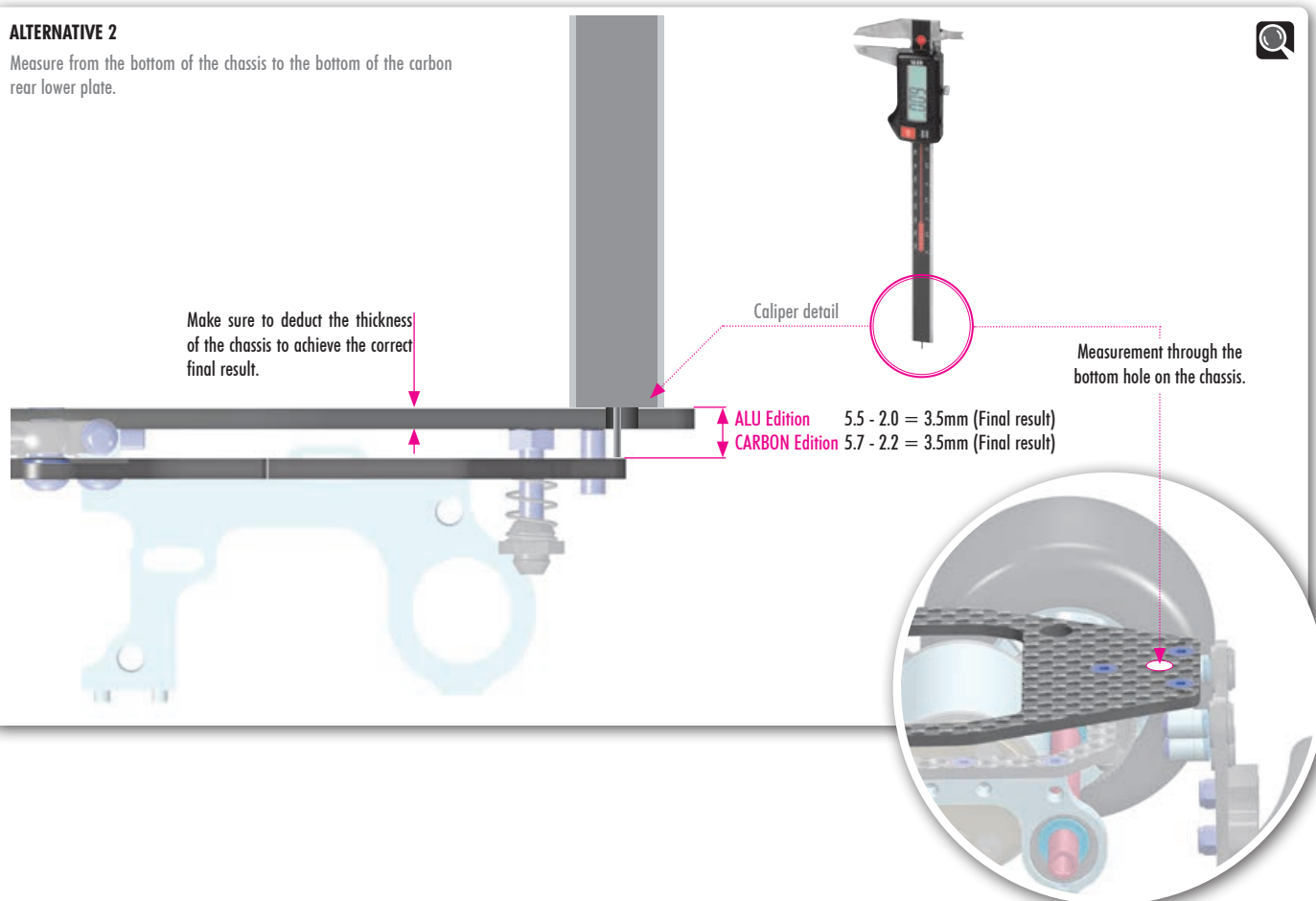
ALTERNATIVE 1

Measure from the the top of the carbon rear lower plate to the top of the chassis.

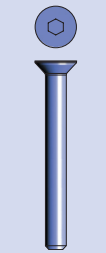


ALTERNATIVE 2

Measure from the bottom of the chassis to the bottom of the carbon rear lower plate.

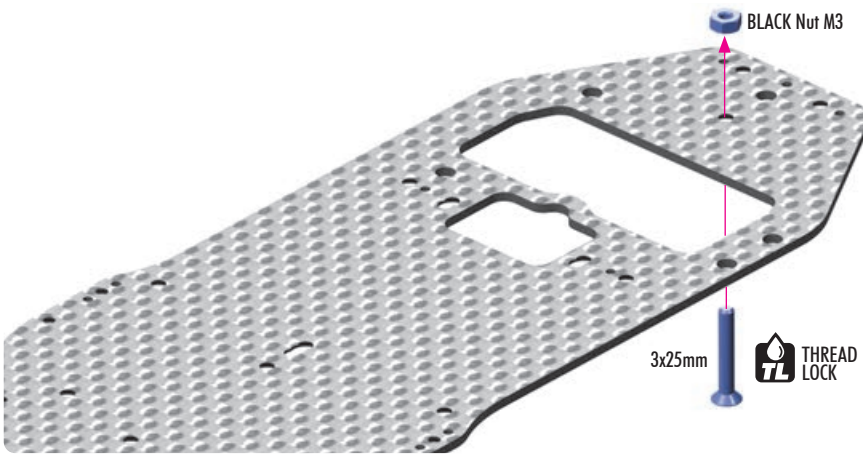


2. REAR SUSPENSION



1x 903325
SFH M3x25

1x 960032
N M3



BLACK Nut M3

3x25mm

THREAD LOCK





2x 303122-K
SHIM 3x6x1

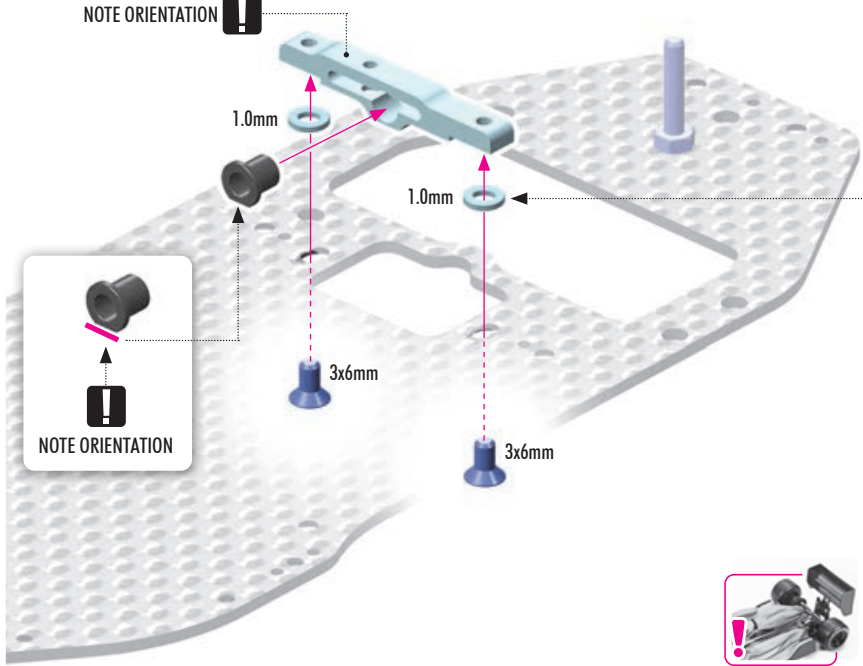
2x 903306
SFH M3x6



VIDEO TECH TIP



REAR POD & PIVOT BUILD



NOTE ORIENTATION

1.0mm

3x6mm

NOTE ORIENTATION

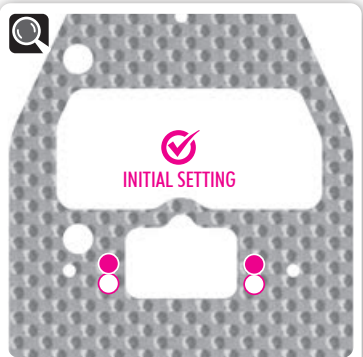
ROLL-CENTER

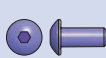
Use 1mm shim

INITIAL SETTING

NOTE: Using NO shims will cause the pivot holder to extend below the chassis plate.







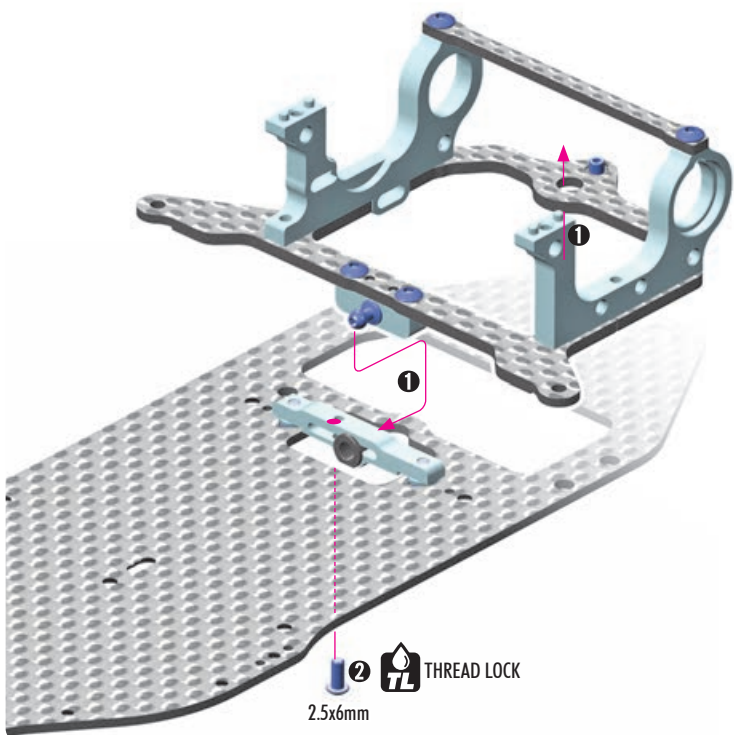
1x 902256
SH M2.5x6



VIDEO TECH TIP



REAR POD & PIVOT BUILD



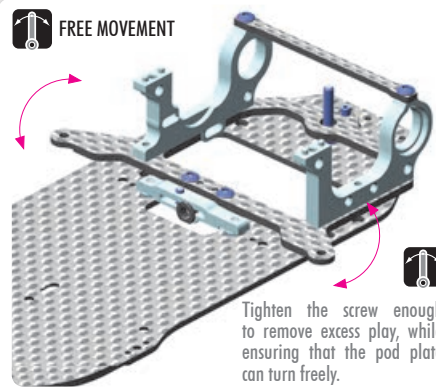
1

2

2.5x6mm

THREAD LOCK

FREE MOVEMENT



Tighten the screw enough to remove excess play, while ensuring that the pod plate can turn freely.



2. REAR SUSPENSION



1x 303123-K
SHIM 3x6x2

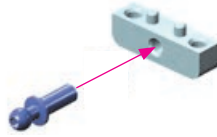


PIVOT MOUNTING ALTERNATIVE

REARWARD:

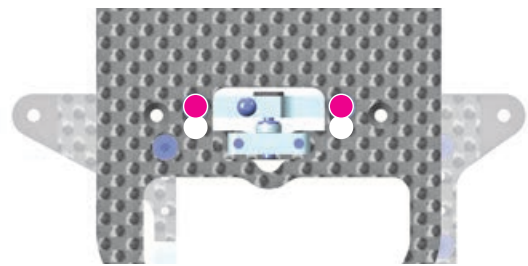
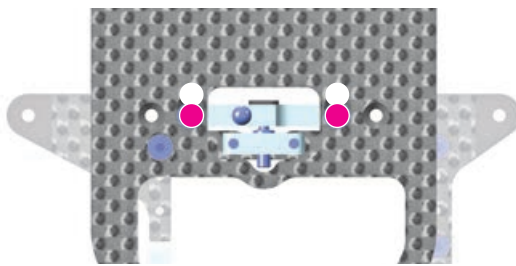
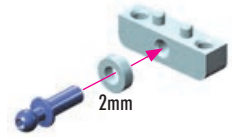
INITIAL SETTING

Pivot mounted in rear chassis holes with no ball stud shims. Improved rotation from shorter rear pod geometry. Provides most initial steering and rotation; best suited for high traction carpet tracks.



FORWARD:

Pivot mounted in forward chassis holes with 2mm ball stud shims. Creates the most forgiving handling that allows more aggressive driving without fear of losing rear traction.



TIP 303123-K shims are NOT INCLUDED in the kit.



303122-K SHIM 3x6x1
303123-K SHIM 3x6x2

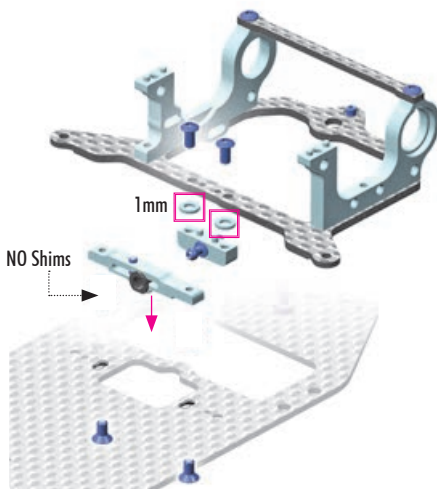


ROLL CENTER ADJUSTMENT

The roll center can be adjusted by adding or removing shims from beneath the aluminum pivot mounts.



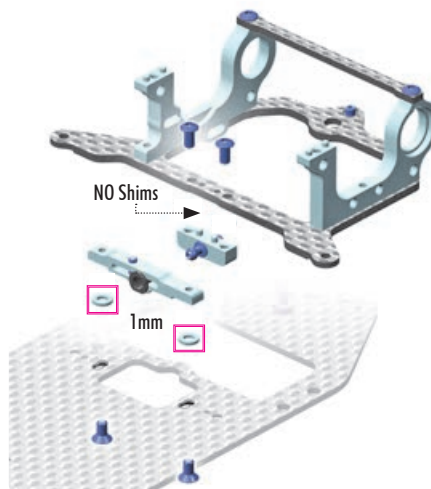
IMPORTANT
When changing the shims under the chassis pivot holder, the opposite adjustment of the same thickness must be made above the rear pivot holder to keep the pod in the same position.



LOWER ROLL CENTER

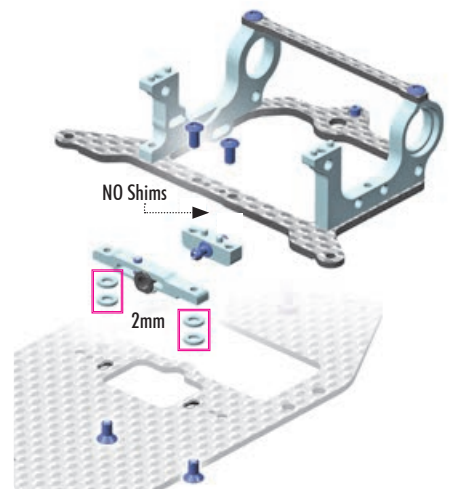
NO shims under alu chassis pivot holder. Creates more traction and increases chassis roll.

Note: The pivot holder will extend below chassis plate in this position.



STANDARD ROLL CENTER INITIAL SETTING

The standard roll center is the best starting point for most conditions as it gives the most neutral handling. The chassis pivot holder sits in line with the lower chassis plate.



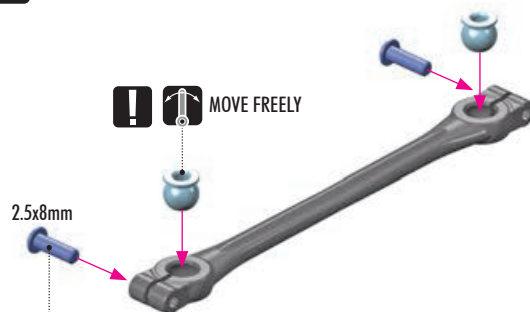
HIGHER ROLL CENTER

Adding shims below the chassis pivot holder increases rotation both on- and off-power.

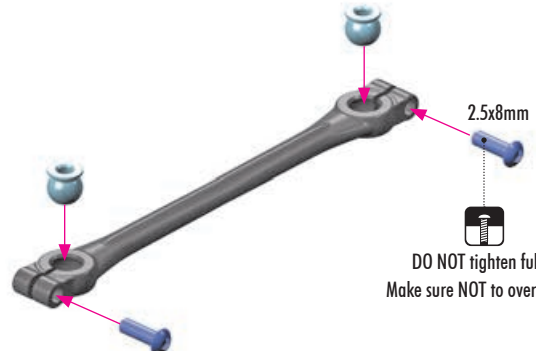


4x 902258
SH M2.5x8

2x L=R



DO NOT tighten fully. Make sure **NOT** to overtighten.



DO NOT tighten fully. Make sure **NOT** to overtighten.

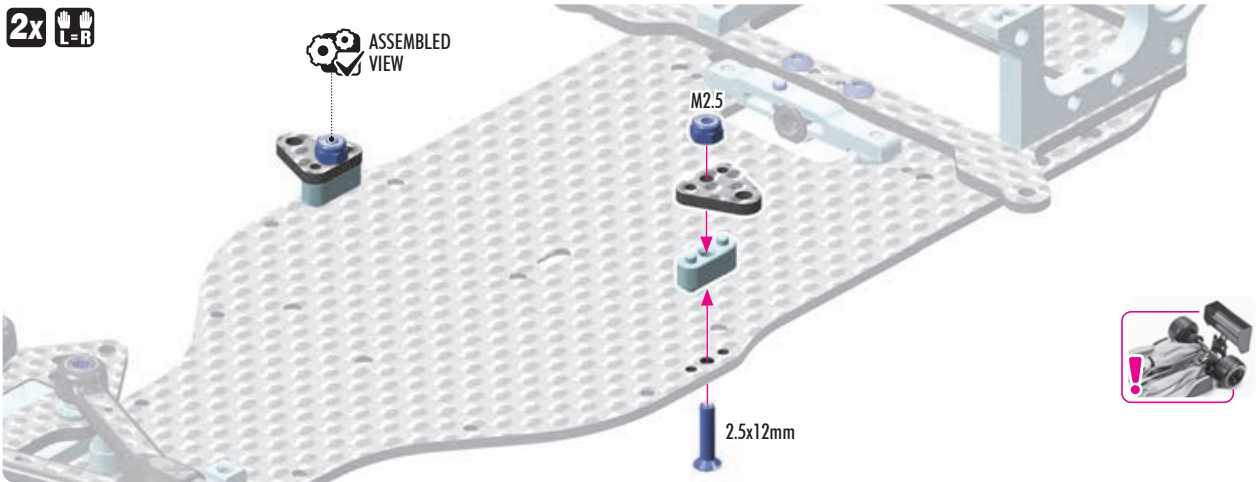
2. REAR SUSPENSION



2x 903262 SFH M2.5x12



2x 960026 N M2.5



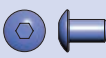
2x L-R

ASSEMBLED VIEW

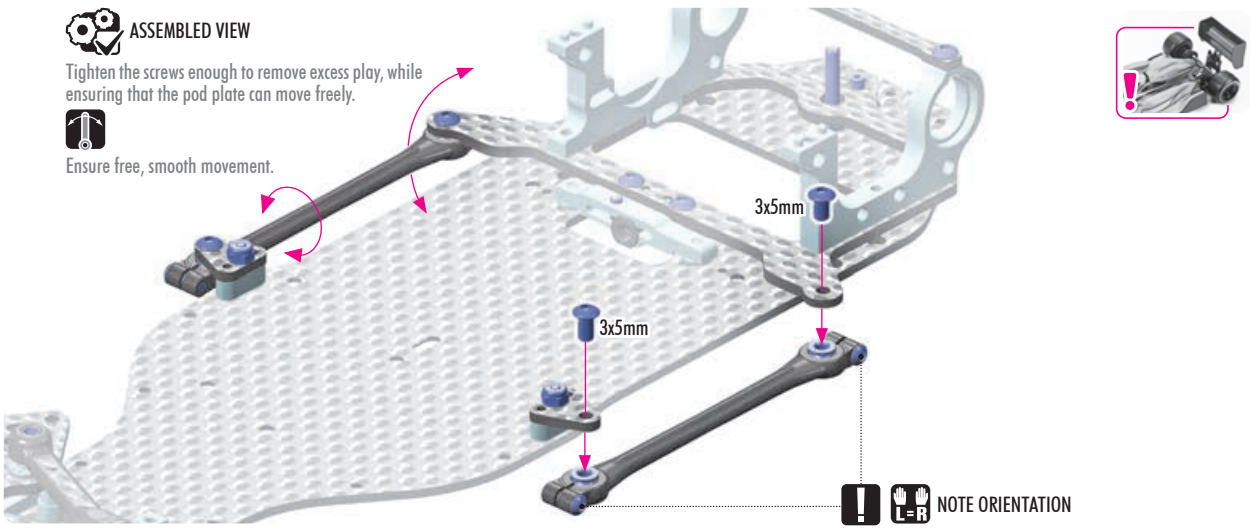
M2.5

2.5x12mm





4x 902305 SH M3x5



ASSEMBLED VIEW

Tighten the screws enough to remove excess play, while ensuring that the pod plate can move freely.

Ensure free, smooth movement.

3x5mm

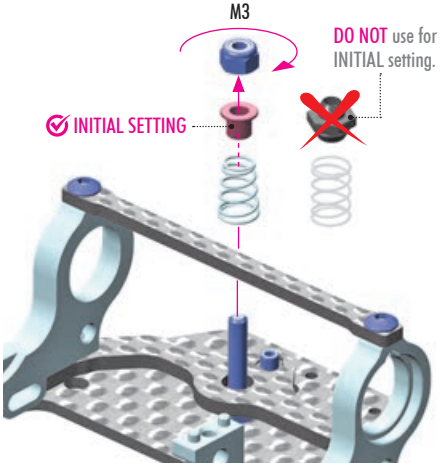
3x5mm

NOTE ORIENTATION





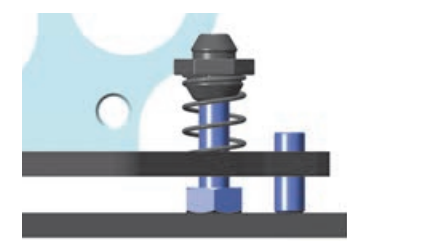
1x 960030 N M3



M3

DO NOT use for INITIAL setting.

INITIAL SETTING



POD DROOP ADJUSTMENT

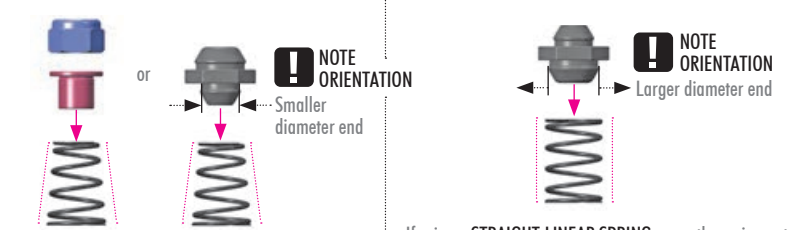
REAR RIDE HEIGHT & DROOP SETTING

The rear ride height and rear droop settings are directly related to each other, making it important to use the correct rear axle eccentric holder when adjusting the rear bump spring preload to set the pod droop value.

STIFFER rear bump spring - will be more reactive and will improve on-power steering.
SOFTER rear bump spring - will be less reactive and will reduce on-power steering.

CONICAL-PROGRESSIVE rear bump spring - provides more aggressive handling than a straight-linear rear bump spring. Using a conical-progressive bump spring is usually the faster and most responsive setup.

STRAIGHT-LINEAR rear bump spring - provides more neutral handling to make the car easier to drive.



NOTE ORIENTATION

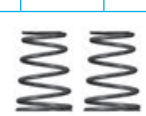
Smaller diameter end

NOTE ORIENTATION

Larger diameter end

If using a **CONICAL-PROGRESSIVE SPRING**, you can choose to use either the bushing with nut or the composite spring holder with the smaller-diameter end.

TAPERED (CONICAL-PROGRESSIVE)			
#373582	C=1.5-1.6	SILVER	INCLUDED
#373583	C=1.7-1.8	GOLD	OPTION



If using a **STRAIGHT-LINEAR SPRING**, press the spring onto the larger-diameter end of the spring retainer.

SIDE SPRINGS (STRAIGHT-LINEAR)			
#373589	C=0.5	BLACK	OPTION
#373584	C=0.6	SILVER	OPTION
#373585	C=0.9	GOLD	OPTION
#373586	C=1.2	BLACK	OPTION
#373587	C=1.5	SILVER	OPTION
#373588	C=1.8	GOLD	OPTION



TIGHTENING the rear bump spring increases ride height and reduces droop.

LOOSENING the rear bump spring decreases ride height and increases droop.



VIDEO TECH TIP



POD DROOP ADJUSTMENT

2. REAR SUSPENSION



2x 903306
SFH M3x6



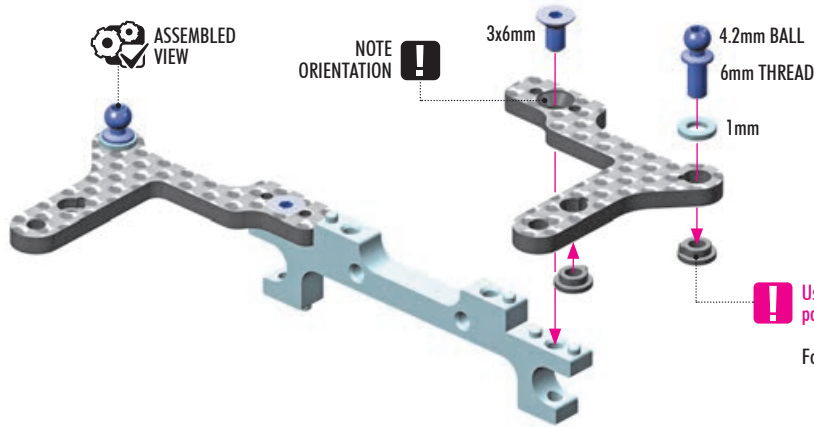
2x 303122-K
SHIM 3x6x1

2x



ASSEMBLED
VIEW

NOTE
ORIENTATION



Use the same pressing method for all parts in the instruction manual.

Follow PAGE 12 / Step 1



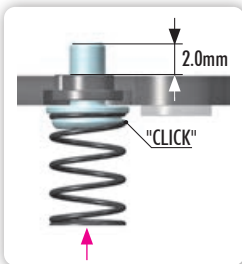
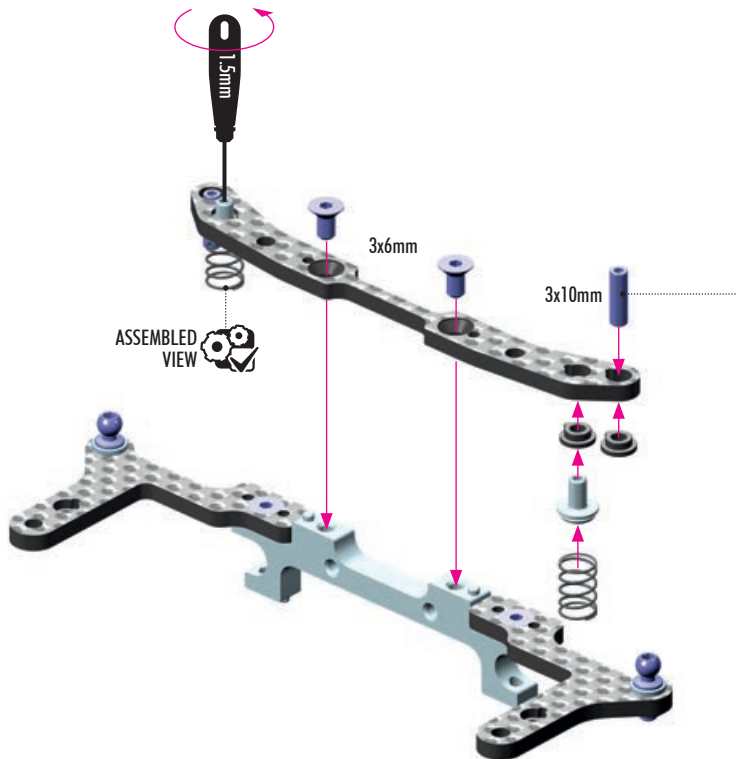
2x 903306
SFH M3x6



2x 901310
SB M3x10



ASSEMBLED
VIEW



OPTION

SIDE SPRINGS

#	C	COLOR	STATUS
#373589	C=0.5	BLACK	OPTION
#373584	C=0.6	SILVER	OPTION
#373585	C=0.9	GOLD	OPTION
#373586	C=1.2	BLACK	INCLUDED
#373587	C=1.5	SILVER	OPTION
#373588	C=1.8	GOLD	OPTION



REAR POD UPSTOP SETTING

This set screw is used to adjust the upstop of the POD.

The upstop limits how far the POD can travel.

MORE UPSTOP: Tighter set screw = less POD travel

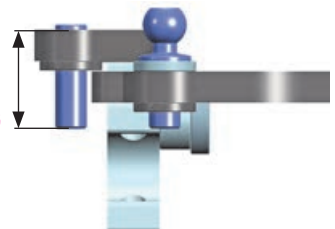
MORE UPSTOP is recommended for foam tires, high-traction conditions, or large, open tracks, as the reduced POD travel improves stability and cornering speed and makes the car easier to drive. However, more upstop reduces off-power steering and can lead to understeer in 180° corners or tight sections of the track.

LESS UPSTOP: Looser set screw = more POD travel

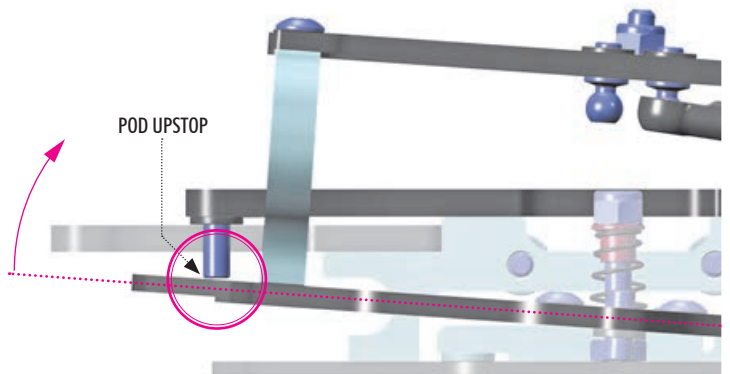
LESS UPSTOP is recommended for rubber tires, low-traction conditions, or small, tight tracks where a lot of rotation is needed.

For **HIGH TRACTION** tracks or **FOAM** tires - 10mm
For **LOW TRACTION** tracks or **RUBBER** tires - 0mm

INITIAL SETTING



POD UPSTOP



2. REAR SUSPENSION

303123-K 303125-K
SHIM 3x6x2 SHIM 3x6x3
0x 4x

902310
SFH M3x10
2x

903312
SFH M3x12
2x

2x

L=R

INITIAL SETTING 3mm

DO NOT use for initial setting.

3x10mm

3mm

3mm

2mm

2mm

3x12mm

For BATTERY BACKSTOP POSITION, see PAGE 38 step 1.

For BATTERY BACKSTOP ADJUSTMENT, see PAGE 38 step 2.

903305
SFH M3x5
2x

VIDEO TECH TIP

BATTERY MOUNTING SYSTEM

3x5mm

902305
SFH M3x5
2x

903308
SFH M3x8
1x

960030
N M3
1x

Use the same pressing method for all parts in the instruction manual.

Follow PAGE 12 / Step 1

NOTE ORIENTATION

SHORT

LONG

M3

3x8mm

4mm THREAD

4.2mm BALL

3x5mm

3x5mm

2. REAR SUSPENSION

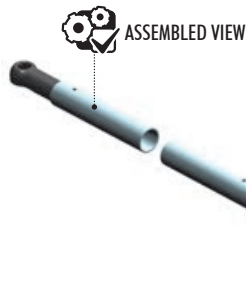


VIDEO TECH TIP

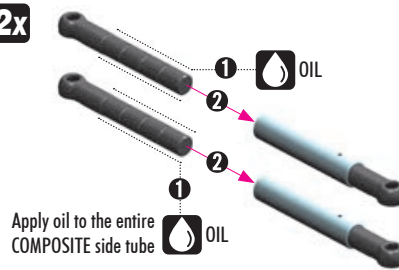


SIDE TUBES

2x



2x



Apply oil to the entire COMPOSITE side tube



Apply oil to the entire composite side tube before installing in the aluminum tube. After assembly, check for smooth operation. It is very important to check and re-oil the tubes at least once per race day. Oil thickness can be adjusted depending on the track conditions.



For HIGH traction

use HARDER oils

For LOW traction or ASPHALT

use SOFTER oils



HUDY OILS 50ml

#106450	5.000cSt
#106460	6.000cSt
#106470	7.000cSt
#106480	8.000cSt
#106490	9.000cSt
INCLUDED #106510	10.000cSt
#106492	11.000cSt
#106512	12.000cSt
INCLUDED #106515	15.000cSt
#106520	20.000cSt
#106530	30.000cSt

CARBON EDITION

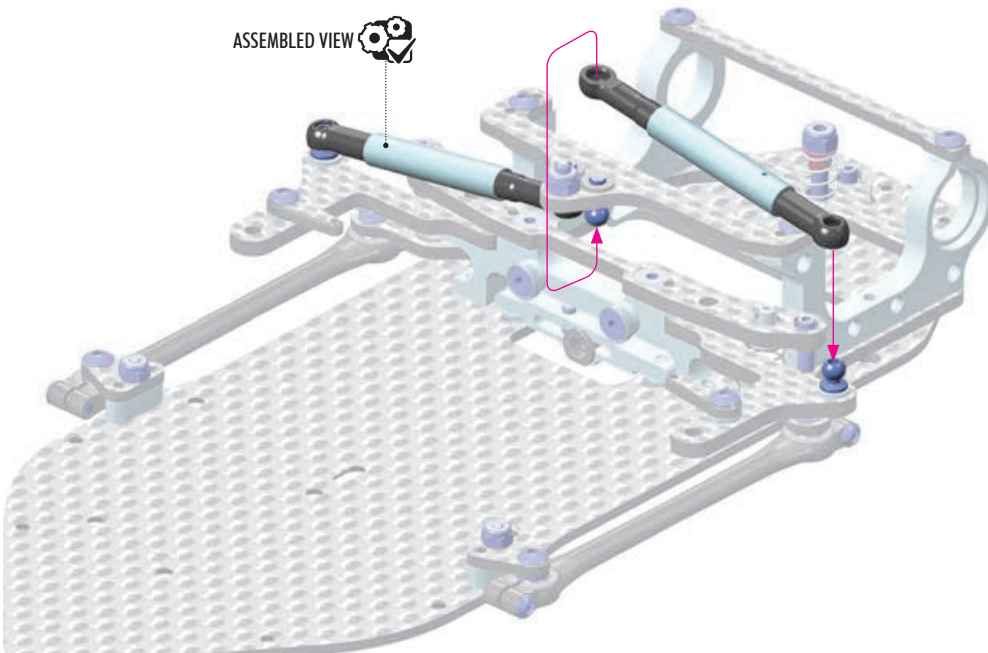
ALU EDITION

HARDER OIL - improves stability and makes the car more round and easier to drive.

SOFTER OIL - improves steering.



ASSEMBLED VIEW



SIDE TUBE ANGLE

Shims of different thickness installed under ball studs are used for different side tube angle adjustment.

The angle of the side tubes has a minor effect on the car's performance.

HIGHER ANGLE:

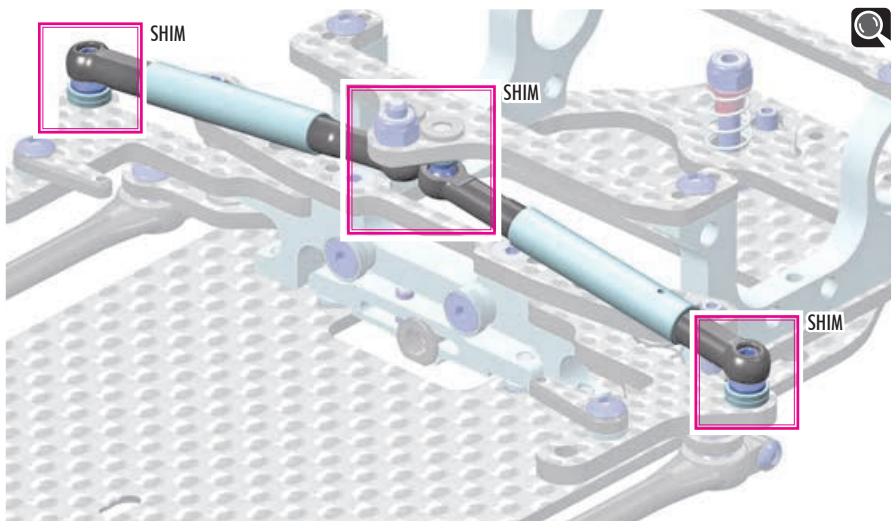
Stiffer feeling, less roll.

More progressive damping action.

LOWER ANGLE (FLATTER):

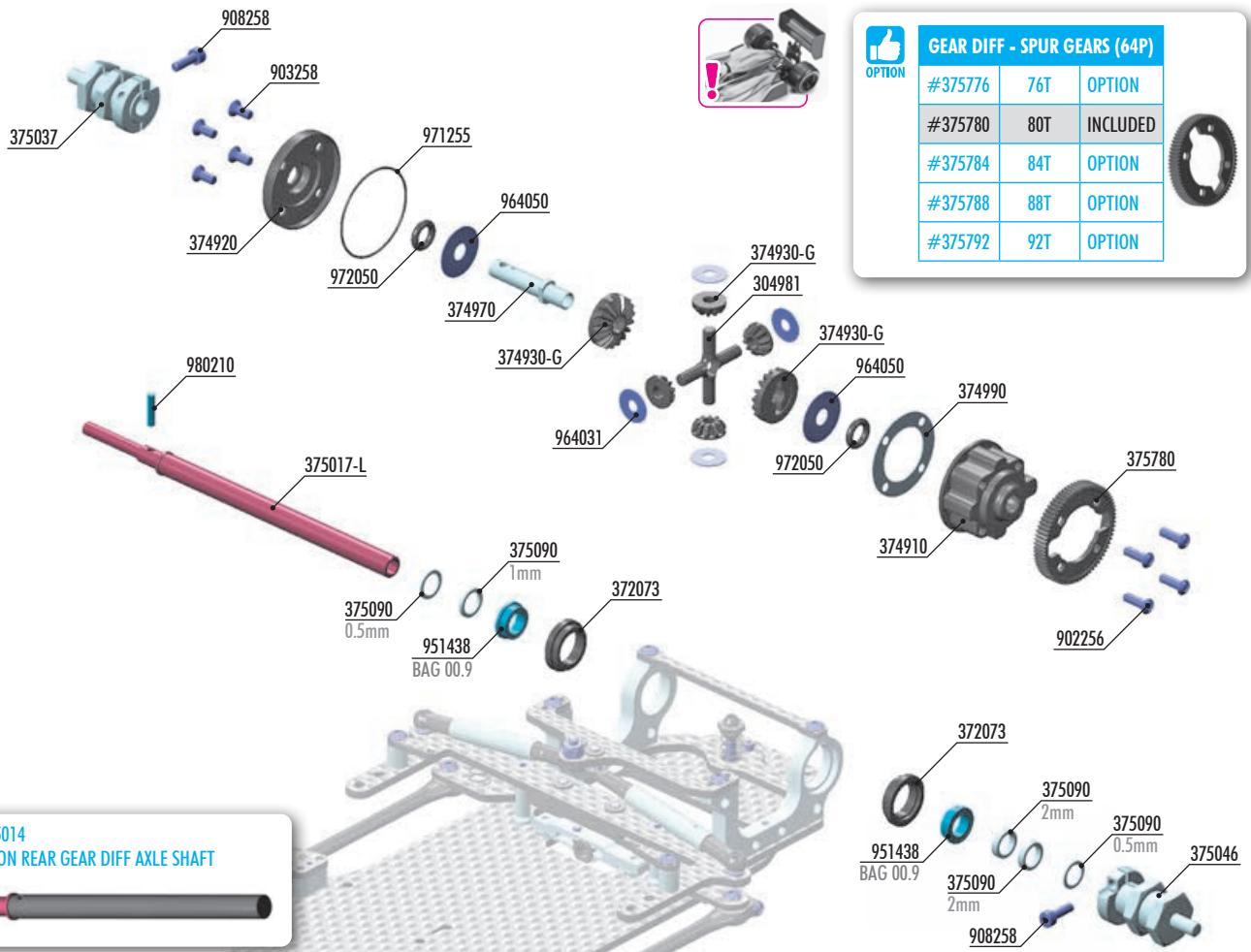
Softer feeling, more roll.

More linear damping action.



3. GEAR DIFFERENTIAL

Carbon Edition



GEAR DIFF - SPUR GEARS (64P)

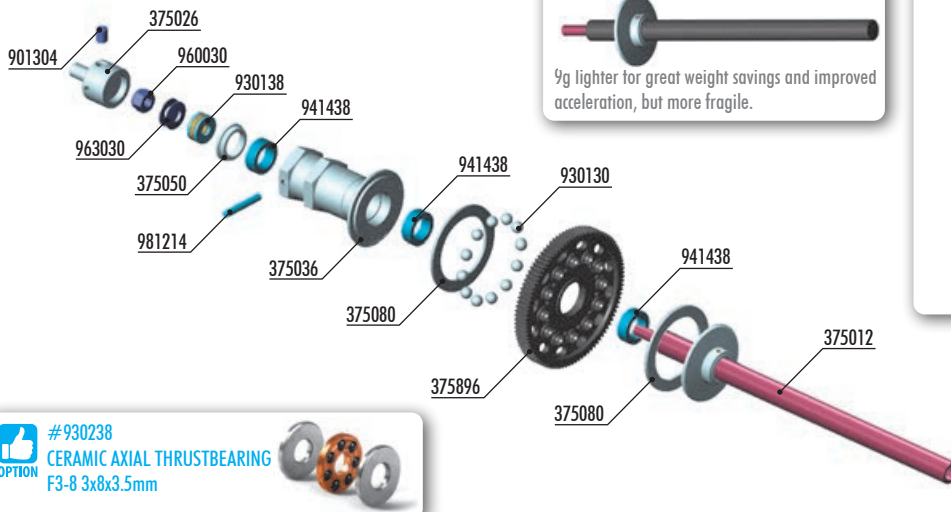
#	TOOTH	OPTION
#375776	76T	OPTION
#375780	80T	INCLUDED
#375784	84T	OPTION
#375788	88T	OPTION
#375792	92T	OPTION



#375014 CARBON REAR GEAR DIFF AXLE SHAFT



BALL DIFFERENTIAL



BALL DIFF - SPUR GEARS

#	TOOTH	OPTION
#375872	72T / 64P	OPTION
#375875	75T / 64P	OPTION
#375876	76T / 64P	OPTION
#375878	78T / 64P	OPTION
#375880	80T / 64P	OPTION
#375884	84T / 64P	OPTION
#375888	88T / 64P	OPTION
#375892	92T / 64P	OPTION
#375896	96T / 64P	OPTION



#930238 CERAMIC AXIAL THRUSTBEARING F3-8 3x8x3.5mm



#930230 CERAMIC BALL 3.175mm (12)



BAG

03

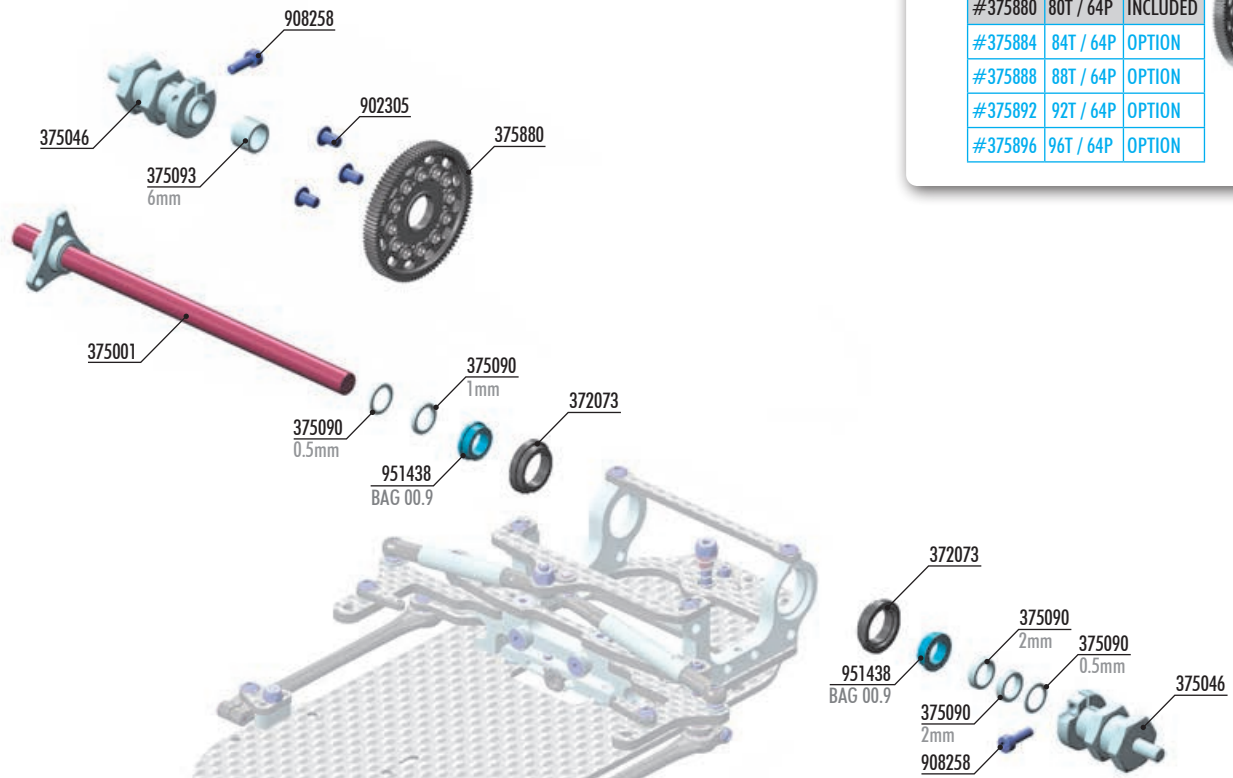
304981	COMPOSITE GEAR DIFF CROSS PIN WITH HOLE	375780	COMPOSITE GEAR DIFF SPUR GEAR - 80T / 64P
372073	COMPOSITE ECCENTRIC RIDE HEIGHT ADJUSTER SET (2)	902256	HEX SCREW SH M2.5x6 (10)
374901	XRAY GEAR DIFFERENTIAL 1/10 FORMULA - SET	903258	HEX SCREW SFH M2.5x8 (10)
374910	COMPOSITE GEAR DIFFERENTIAL CASE - GRAPHITE	908258	HEX SCREW SOCKET HEAD CAP M2.5x8 (10)
374920	COMPOSITE GEAR DIFFERENTIAL COVER - GRAPHITE	964031	WASHER S 3.5x10x0.2 (10)
374930-G	COMPOSITE GEAR DIFF BEVEL & SATELLITE GEARS (2+4) - G	964050	WASHER S 5x15x0.3 (10)
374970	ALU GEAR DIFF SHAFT - SWISS 7075 T6	951438	BALL-BEARING 1/4" x 3/8" x 1/8" FLANGED - STEEL SEALED - OIL (2)
374990	DIFF GASKET (4)	971255	SILICONE O-RING 25.5x0.7 (10)
375017-L	X1/X10 REAR GEAR DIFF AXLE SHAFT - LIGHTWEIGHT	972050	SILICONE O-RING 5x2 (10)
375037	ALU GEAR DIFF REAR WHEEL HUB - SWISS 7075 T6	980210	PIN 2x9.8 (10)
375046	ALU REAR WHEEL HUB - LEFT		
375090	SET OF ALU SHIMS 6.37x8.4mm (0.5mm, 1.0mm, 2.0mm)		

Numbers in parentheses () refer to quantities when purchased separately.

XRAY

3. SOLID AXLE

Alu Edition

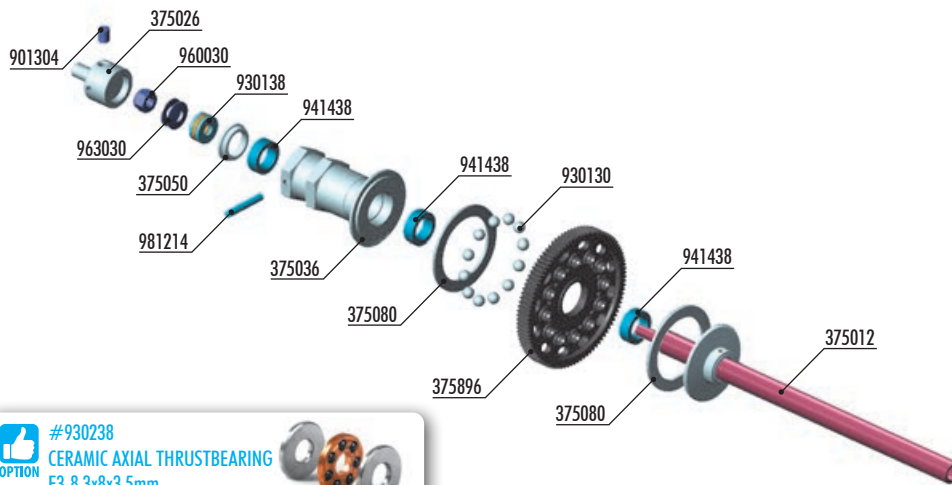


SPUR GEARS

#375872	72T / 64P	OPTION
#375875	75T / 64P	OPTION
#375876	76T / 64P	OPTION
#375878	78T / 64P	OPTION
#375880	80T / 64P	INCLUDED
#375884	84T / 64P	OPTION
#375888	88T / 64P	OPTION
#375892	92T / 64P	OPTION
#375896	96T / 64P	OPTION



BALL DIFFERENTIAL



#930238
CERAMIC AXIAL THRUSTBEARING
F3-8 3x8x3.5mm



#375010
CARBON REAR AXLE SHAFT



9g lighter for great weight savings and improved acceleration, but more fragile.



#930230
CERAMIC BALL 3.175mm (12)

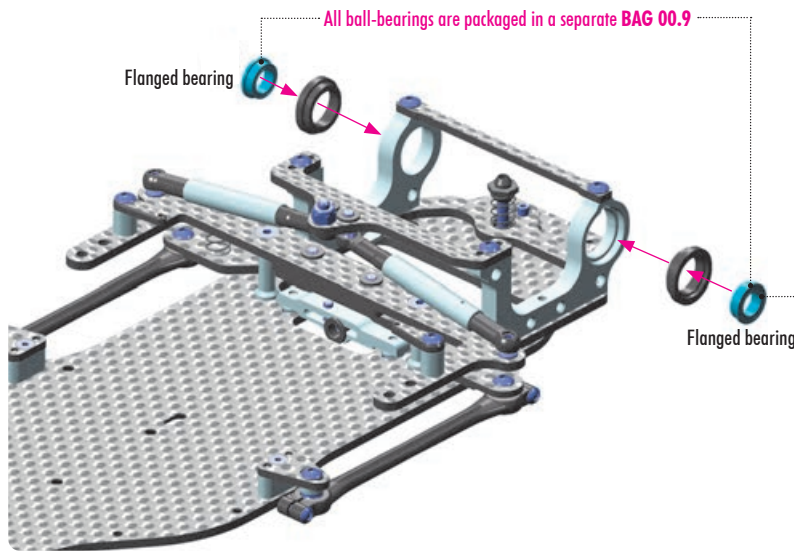


BAG

03

- 372073 COMPOSITE ECCENTRIC RIDE HEIGHT ADJUSTER SET (2)
- 375001 XRAY SOLID AXLE 1/10 FORMULA - SET
- 375046 ALU REAR WHEEL HUB
- 375090 SET OF ALU SHIMS 6.37x8.4mm (0.5mm, 1.0mm, 2.0mm)
- 375093 ALU SHIM 6.37x8.4x6.0mm (2)
- 375880 COMPOSITE SPUR GEAR - 80T / 64P
- 902305 HEX SCREW SH M3x5 (10)
- 908258 HEX SCREW SOCKET HEAD CAP M2.5x8 (10)
- 951438 BALL-BEARING 1/4" x 3/8" x 1/8" FLANGED - STEEL SEALED - OIL (2)

3. GEAR DIFFERENTIAL & SOLID AXLE

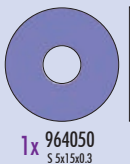
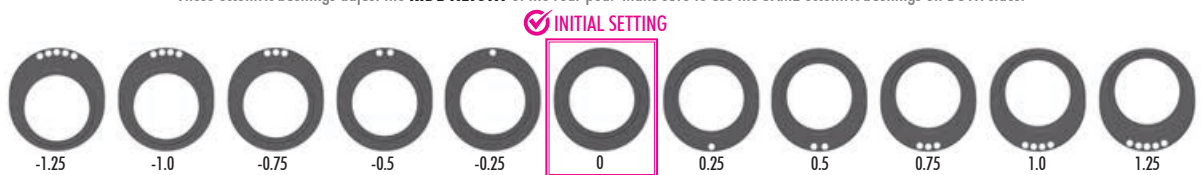


All ball-bearings are factory pre-oiled. Regularly service, clean and lubricate all ball-bearings with HUDY Bearing Oil (#106230).

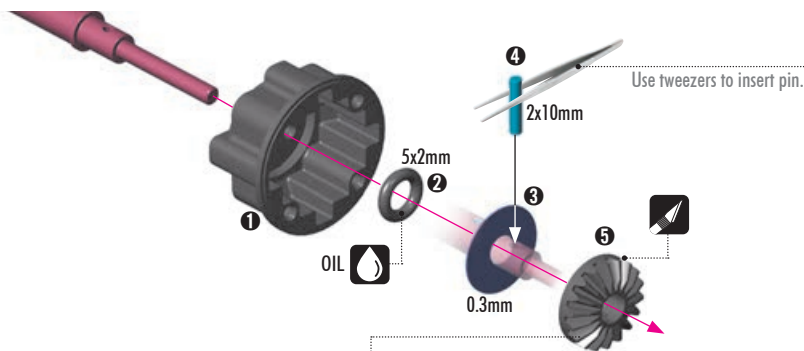
Replace the bearings as soon as they get a "gritty" feeling to prevent inefficiency and rear axle bearing blowouts.

Make sure to use only original XRAY ball-bearings which all have specific tolerances, axial and radial play and are all individually selected. Using any 3rd party ball-bearings may result into failures and break of the car.

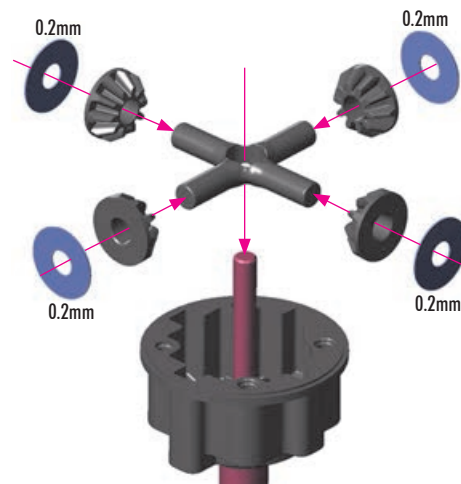
These eccentric bushings adjust the **RIDE HEIGHT** of the rear pod. Make sure to use the **SAME** eccentric bushings on **BOTH** sides.



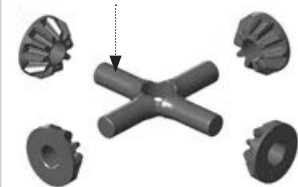
Carbon Edition - Gear Differential



Carbon Edition - Gear Differential

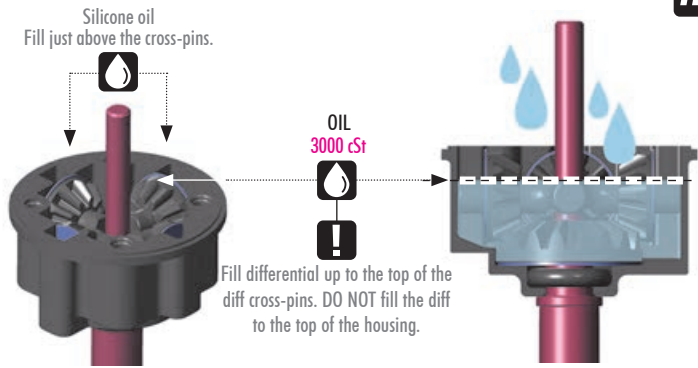


The cross pins should fit into the differential case smoothly. If not, use a hobby knife to carefully remove any excess material and recheck.



3. GEAR DIFFERENTIAL

Carbon Edition - Gear Differential



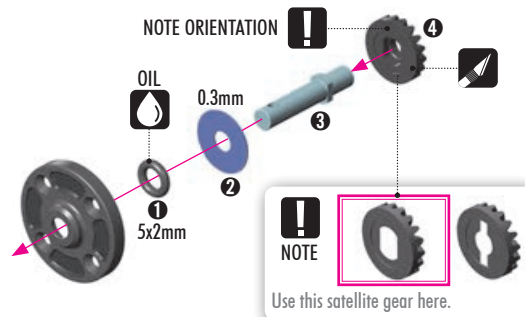
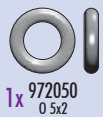
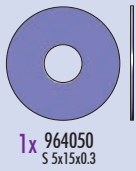
TIP

HUDY Premium Silicone Oil - GRIP LEVEL OF TRACK

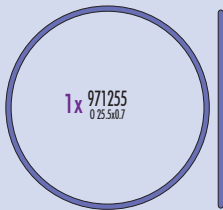
LOW		MEDIUM-HIGH		SUPER-HIGH	
500 cSt	#106350	750 cSt	#106375	8000 cSt	#106480
525 cSt	#106352	800 cSt	#106380	10000 cSt	#106510
550 cSt	#106355	900 cSt	#106390	11000 cSt	#106492
575 cSt	#106357	1000 cSt	#106410	12000 cSt	#106512
600 cSt	#106360	2000 cSt	#106420		
625 cSt	#106362	3000 cSt	#106430		
650 cSt	#106365	4000 cSt	#106440		
675 cSt	#106367	5000 cSt	#106450		
700 cSt	#106370	6000 cSt	#106460		
		7000 cSt	#106470		

NOTE: Softer oil increases steering and traction, harder oil increases stability and cornering speed of the car.

Carbon Edition - Gear Differential

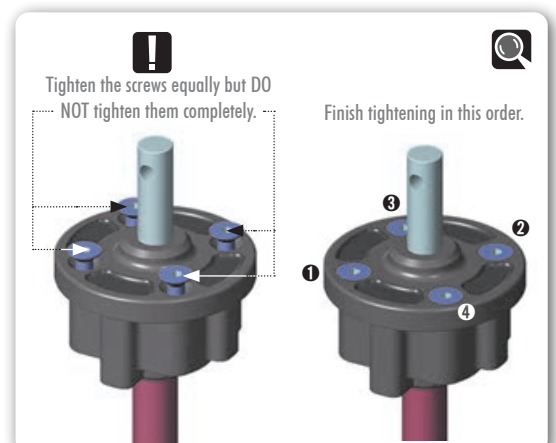
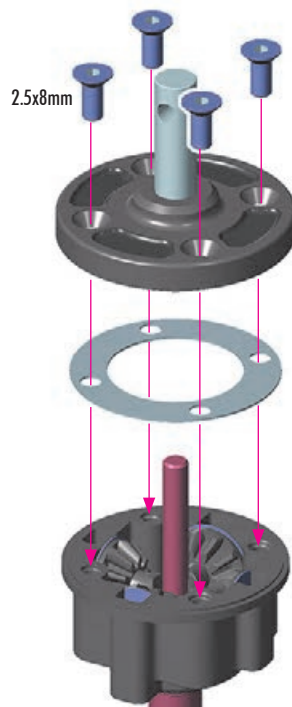


Carbon Edition - Gear Differential



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 replacing the old O-ring with a new O-ring if the old one cannot be made to fit properly.

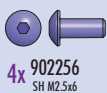
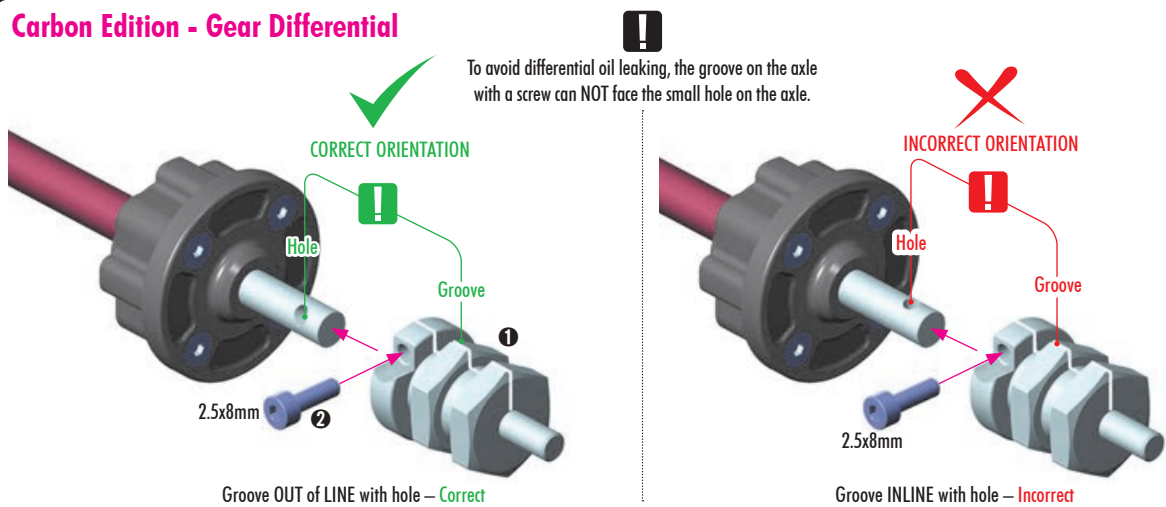
Carbon Edition - Gear Differential



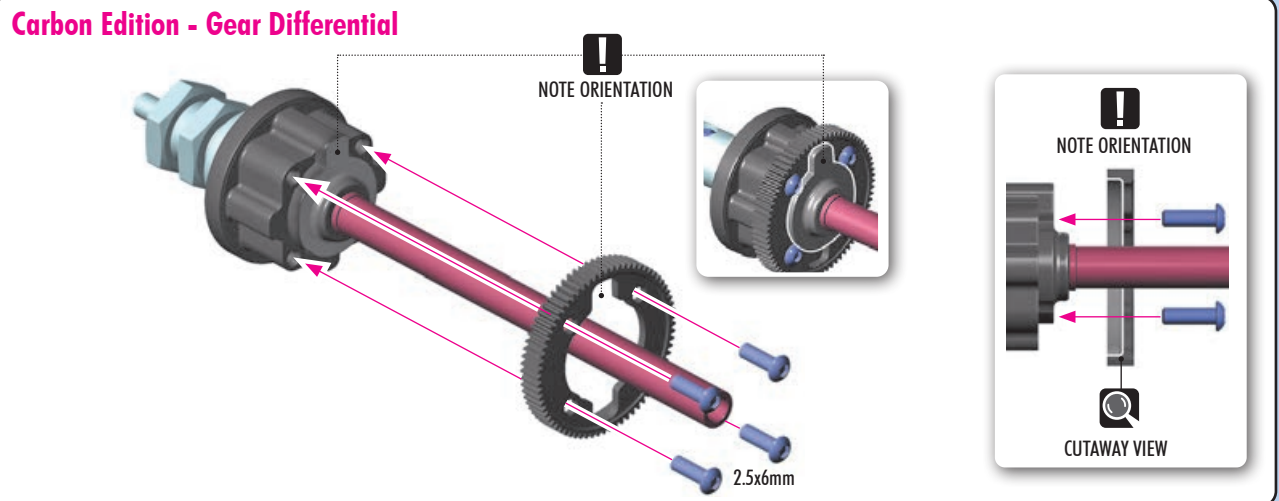
3. GEAR DIFFERENTIAL



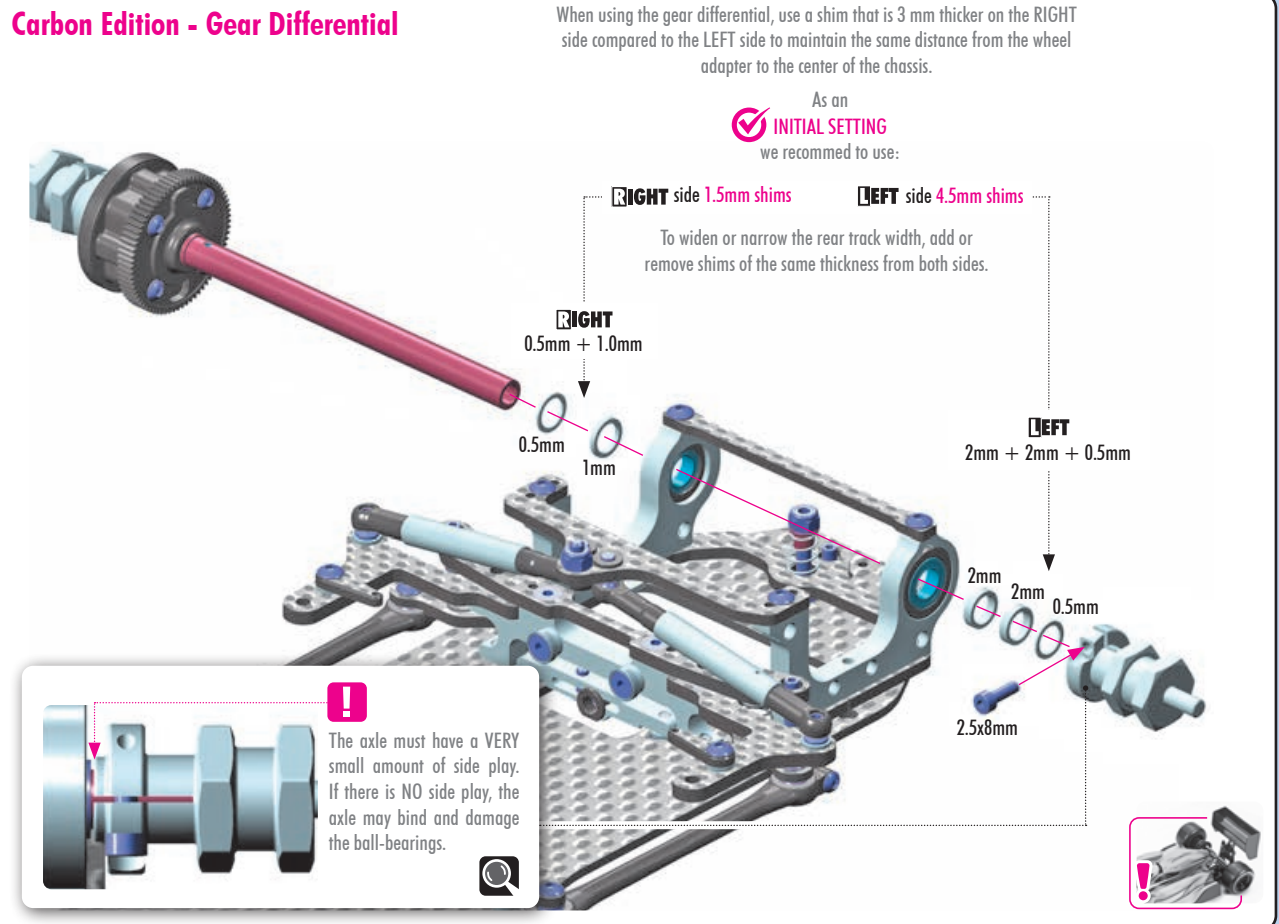
Carbon Edition - Gear Differential



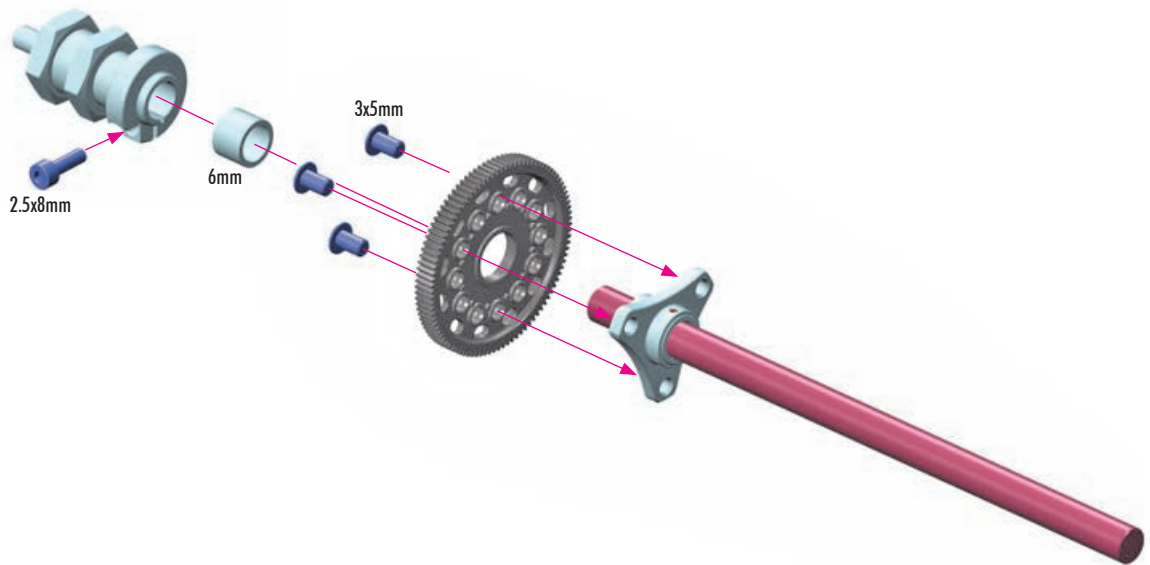
Carbon Edition - Gear Differential



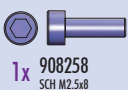
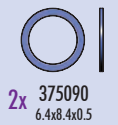
Carbon Edition - Gear Differential



Alu Edition - Solid Axle



Alu Edition - Solid Axle



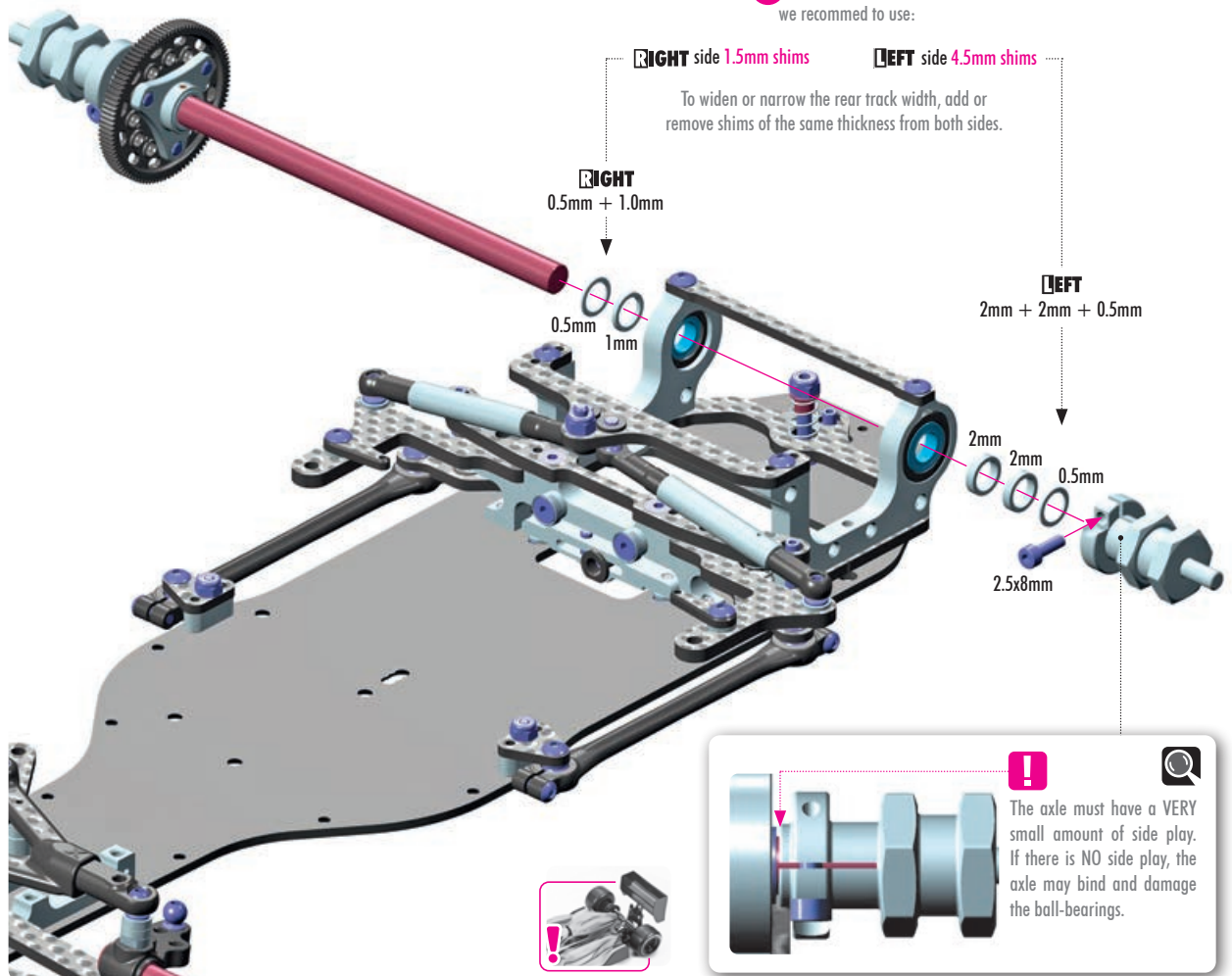
When using a solid axle, use a shim that is 3 mm thicker on the **LEFT** side compared to the **RIGHT** side to maintain the same distance from the wheel adapter to the center of the chassis.

As an
INITIAL SETTING
we recommend to use:

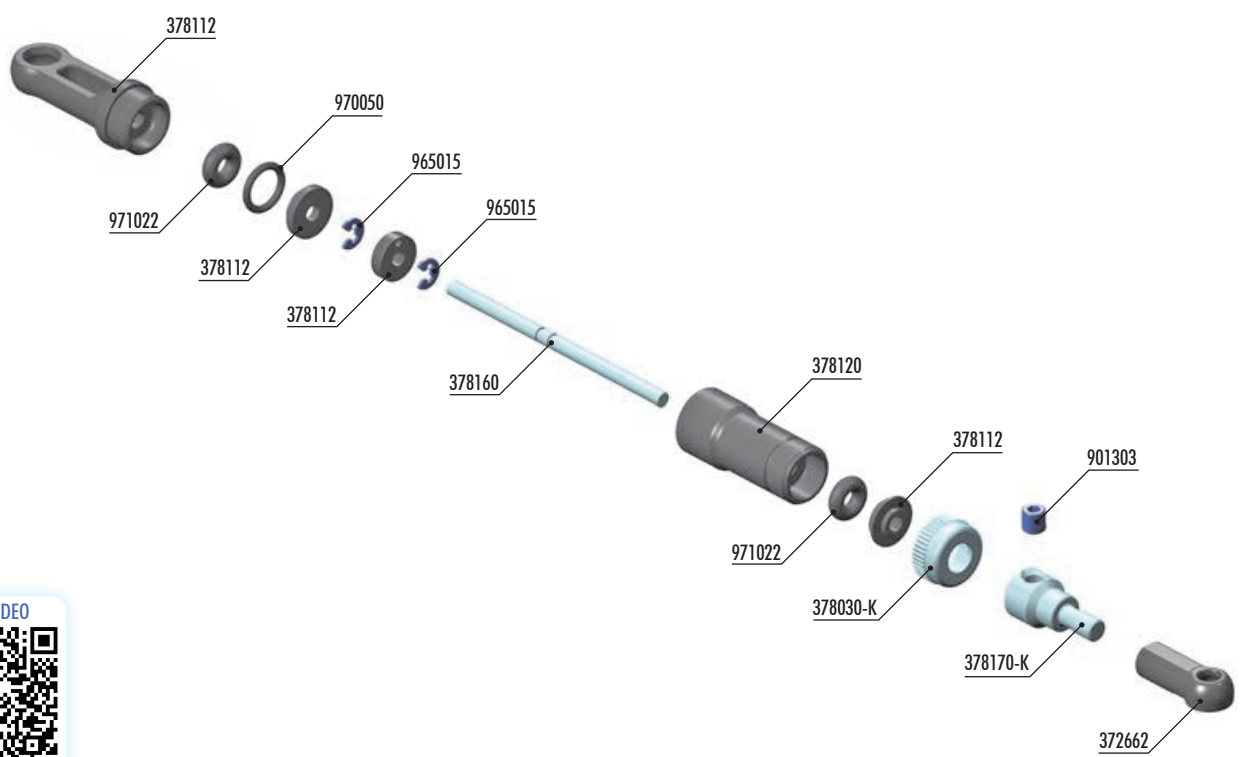
RIGHT side 1.5mm shims

LEFT side 4.5mm shims

To widen or narrow the rear track width, add or remove shims of the same thickness from both sides.



4. SHOCK ABSORBER



BUILD VIDEO

CENTER SHOCK



HUDY SILICONE OILS - 50ml									
#106310	100cSt	OPTION	#106342	425cSt	OPTION	#106365	650cSt	OPTION	
#106315	150cSt	OPTION	#106345	450cSt	OPTION	#106367	675cSt	OPTION	
#106320	200cSt	OPTION	#106347	475cSt	OPTION	#106370	700cSt	OPTION	
#106325	250cSt	OPTION	#106350	500cSt	OPTION	#106375	750cSt	OPTION	
#106330	300cSt	OPTION	#106355	550cSt	OPTION	#106380	800cSt	OPTION	
#106335	350cSt	OPTION	#106357	575cSt	OPTION	#106390	900cSt	OPTION	
#106337	375cSt	OPTION	#106360	600cSt	OPTION	#106410	1000cSt	INCLUDED	
#106340	400cSt	OPTION	#106362	625cSt	OPTION	#106420	2000cSt	OPTION	



#104002
HUDY AIR VAC
VACUUM PUMP



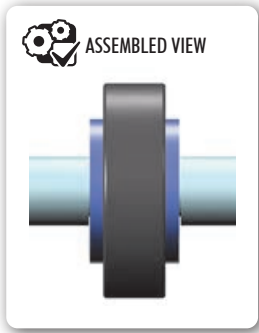
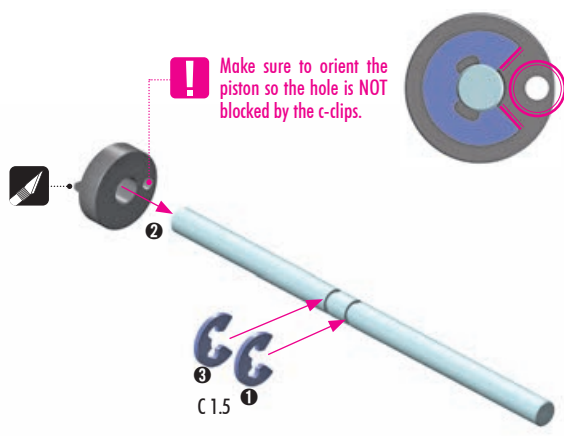
- 372662 COMPOSITE BALL JOINT 4.2mm (4)
- 378030-K ALU SHOCK BODY CAP - LOWER - BLACK
- 378102 CENTER DAMPENER SET
- 378112 COMPOSITE CENTER DAMPENER PARTS
- 378120 ALU SHOCK BODY - V2
- 378160 STEEL SHOCK SHAFT
- 378170-K ALU SHOCK BALL JOINT SCREW - BLACK

- 901303 HEX SCREW SB M3x3 (10)
- 965015 E-CLIP 1.5 (10)
- 970050 O-RING 5x1 (10)
- 971022 SILICONE O-RING 2x2 (10)



SPECIFIC ORDER

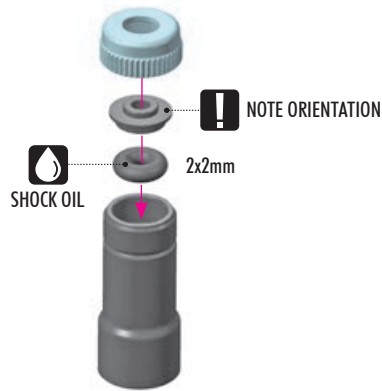
Carefully remove the shock piston from the frame, and remove all excess plastic flash.



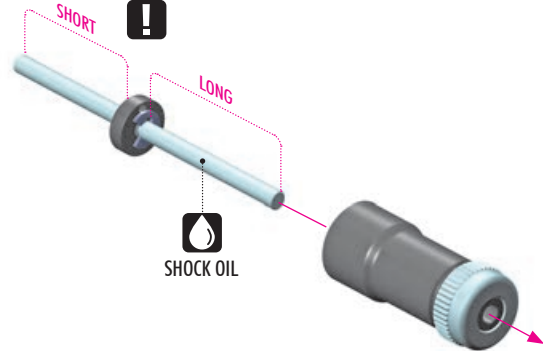
4. SHOCK ABSORBER



1x 971022
0 2x2



NOTE
ORIENTATION
!

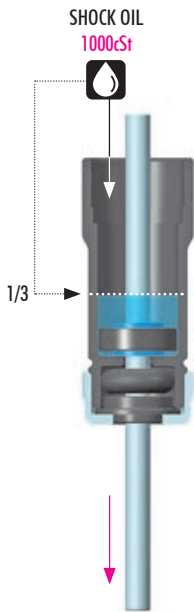


1x 970050
0 5x1

1x 971022
0 2x2

DEFAULT SHOCK SETTING FOR SHOCK ABSORBER

Follow the steps below to set the shock.



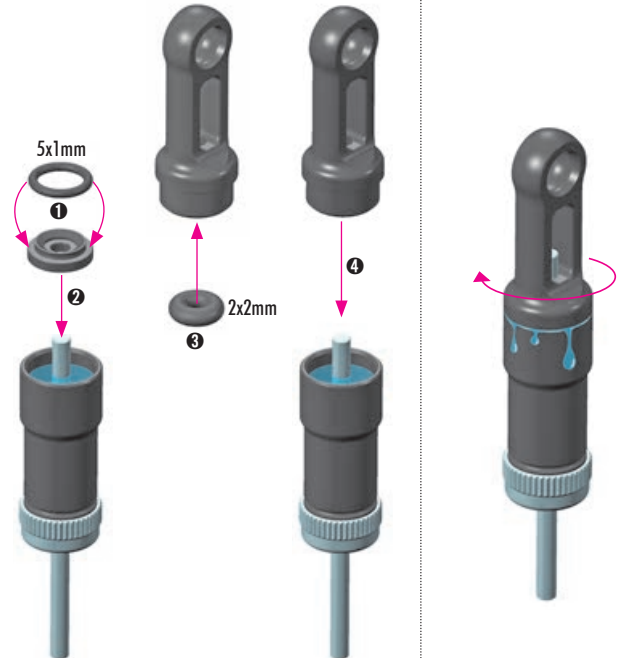
Extend the shock shaft completely. Fill the shock body with the shock oil but only 1/3.



- 1 Slowly move the shock shaft up so the shock oil will flow under the shock piston.
- 2 Extend the shock shaft.



Extend the shock shaft completely to release the air trapped beneath the shock piston. Fill the shock shaft body with the shock oil but NOT fully approx. 3mm from the top of the shock body.

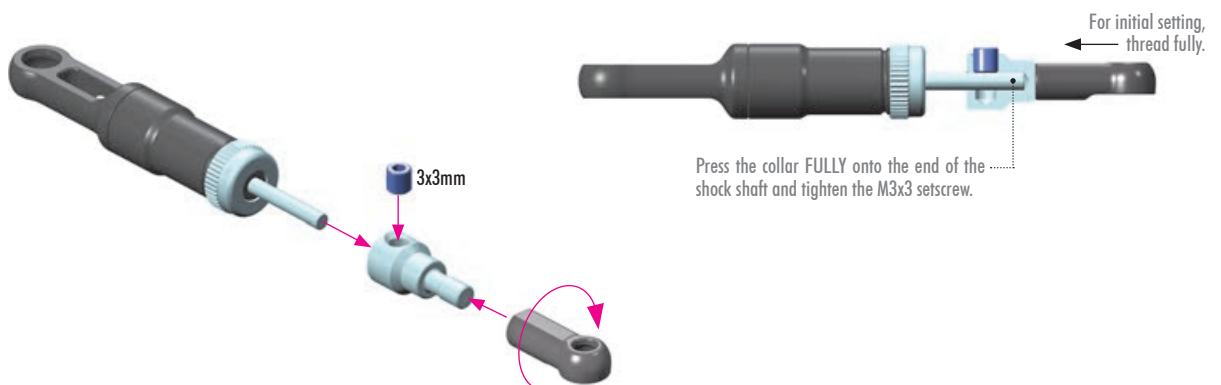


- 1 Install the 5x1 o-ring onto shock shim.
- 2 Place the shock shim with the o-ring into the shock body.
- 3 Install the shim 0.2mm & 2x2 o-ring into the shock cap.
- 4 Install the shock cap.

Screw fully the shock cap in the filled shock body. Excess oil will spill from the shock. Tighten completely.



1x 901303
SB M3x3



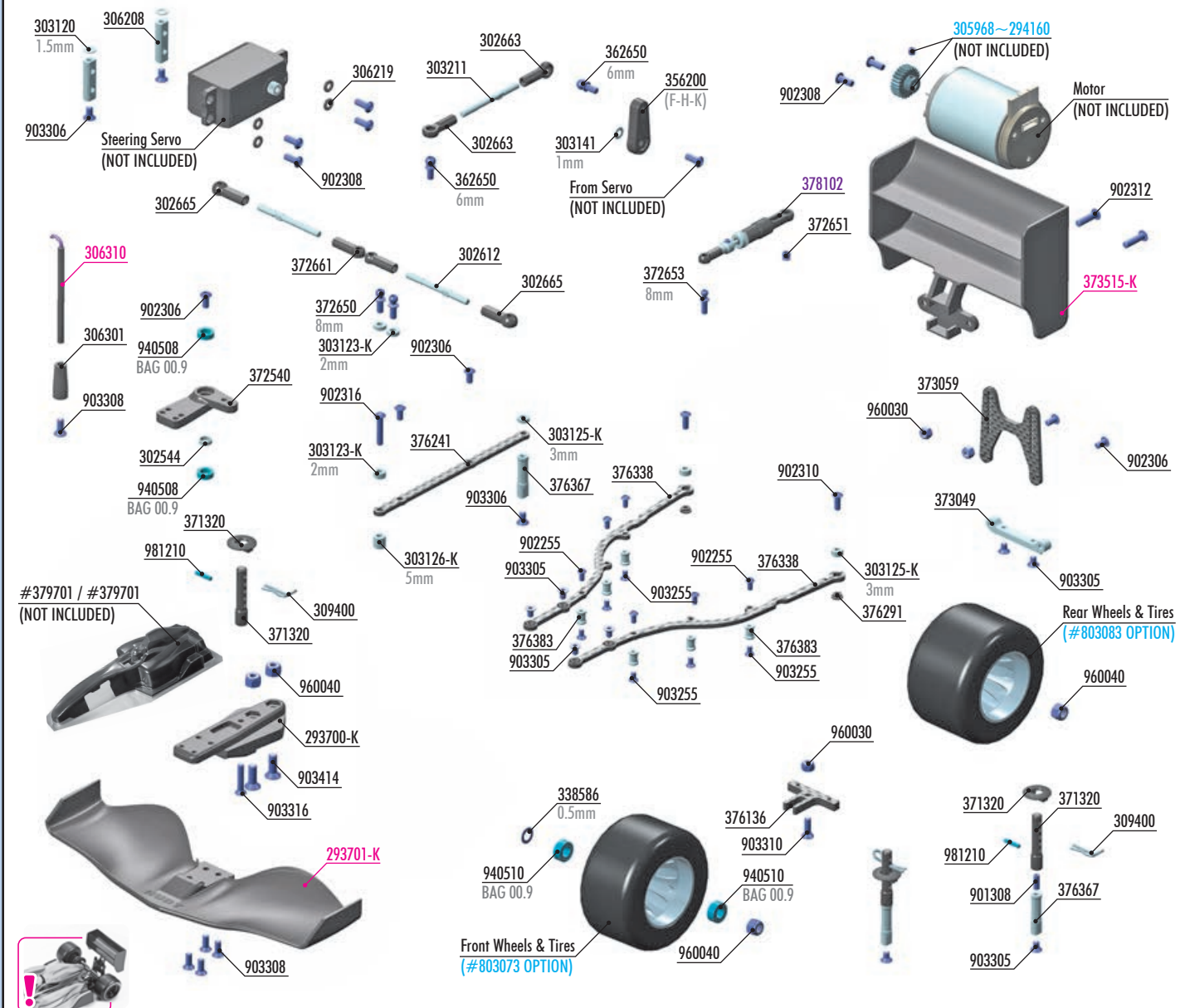
Press the collar FULLY onto the end of the shock shaft and tighten the M3x3 setscrew.

BUILD VIDEO



CENTER SHOCK

5. FINAL ASSEMBLY

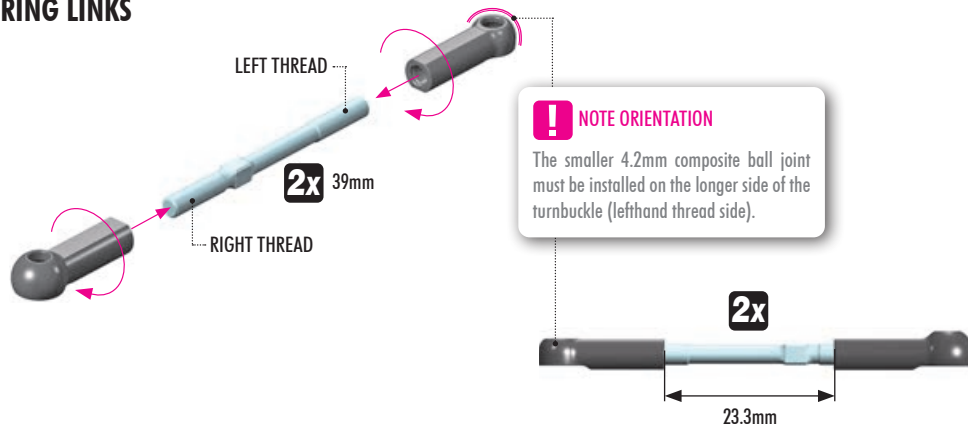


293700-K	HUDY 1/10 FORMULA FRONT NOSE - BLACK	338586	SHIM 5x7x0.5 (10)
302544	ALU SHIM FOR RADIAL PLAY ADJUSTMENT OF STEERING ARM (2)	901308	HEX SCREW SB M3x8 (10)
302612	ALU ADJ. TURNBUCKLE M3 L/R 39mm - SWISS 7075 T6 (2)	902255	HEX SCREW SH M2.5x5 (10)
302663	COMPOSITE BALL JOINT 4.9mm - OPEN - V2 (8)	902306	HEX SCREW SH M3x6 (10)
302665	COMPOSITE BALL JOINT 4.9mm - CLOSED WITH HOLE (4)	902308	HEX SCREW SH M3x8 (10)
303120	SET OF ALU SHIM (0.5MM, 1.5MM, 2.5MM)	902310	HEX SCREW SH M3x10 (10)
303123-K	ALU SHIM 3x6x2.0mm - BLACK (10)	902312	HEX SCREW SH M3x12 (10)
303125-K	ALU SHIM 3x6x3.0mm (10)	902316	HEX SCREW SH M3x16 (10)
303126-K	ALU SHIM 3x6x5.0mm (10)	903255	HEX SCREW SFH M2.5x5 (10)
303141	ALU SHIM 3x5x1.0mm (10)	903305	HEX SCREW SFH M3x5 (10)
303211	ALU ADJUSTABLE TURNBUCKLE M3 L/R 30MM - SWISS 7075 T6 (2)	903306	HEX SCREW SFH M3x6 (10)
306208	ALU SERVO MOUNT 21MM - BOTH SIDES THREADED	903308	HEX SCREW SFH M3x8 (10)
306219	COMPOSITE SET OF SERVO SHIMS (4)	903310	HEX SCREW SFH M3x10 (10)
306301	ANTENNA MOUNT - THIN	903316	HEX SCREW SFH M3x16 (10)
309400	BODY CLIP (8)	903414	HEX SCREW SFH M4x14 (10)
356200	BRAKE/THROTTLE ARMS & STEERING SERVO ARMS - SET	940508	BALL-BEARING 5x8x2.5 RUBBER SEALED - OIL (2)
362650	BALL END 4.9mm WITH THREAD 6mm (2)	940510	BALL-BEARING 5x10x4 RUBBER SEALED - OIL (2)
371290-K	ALU BODY POST PLATE - BLACK	960030	NUT M3 (10)
371320	COMPOSITE BODY POST (2)	960040	NUT M4 (10)
372540	COMPOSITE STEERING ARM	981210	PIN 2x10 (10)
372650	BALL END 4.2MM WITH 6MM THREAD (2)		
372651	PIVOT BALL UNIVERSAL 4.9mm - HUDY SPRING STEEL™ (2)		
372653	BALL END 4.2MM WITH 8mm THREAD (2)		
372661	COMPOSITE STEERING BALL JOINT OPEN 4.2 MM (4)		
373049	ALU REAR WING HOLDER		
373059	CARBON REAR WING MOUNT		
376136	CARBON BATTERY BACKSTOP - MIDDLE		
376241	CARBON TOP DECK - LONG		
376291	COMPOSITE M3 SNAP LOCK BUSHING (8)		
376338	CARBON SIDE BRACE FOR 1-PIECE CHASSIS (2)		
376367	ALU MOUNT 22.5mm - BLACK		
376383	ALU MOUNT 7.0MM WITH M2.5 THREAD - BLACK (2)		
		293701-K	HUDY 1/10 FORMULA FRONT WING - BLACK
		306310	ANTENNA (2)
		373515-K	X1 COMPOSITE REAR WING - HIGH-DOWNFORCE - BLACK
		378102	CENTER DAMPENER FOR 1-PIECE CHASSIS - SET
		305968~294160	ALU PINION GEAR - HARD COATED 18~64T/64P (OPTION)
		803073	HUDY 1/10 FORMULA FOAM TIRE - FRONT (2) (OPTION)
		803083	HUDY 1/10 FORMULA FOAM TIRE - REAR (2) (OPTION)

Numbers in parentheses () refer to quantities when purchased separately.

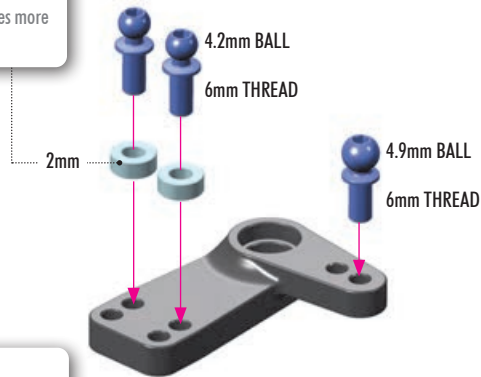
5. FINAL ASSEMBLY

2x STEERING LINKS



These shims adjust the bumpsteer.

When thicker shims are used here, in-corner steering increases, but the car becomes more difficult to drive.



#372541-K
ALU ADJUSTABLE SERVO SAVER SET
OPTION



The steering arm has two positions for servo linkage mounting.

Always use this position

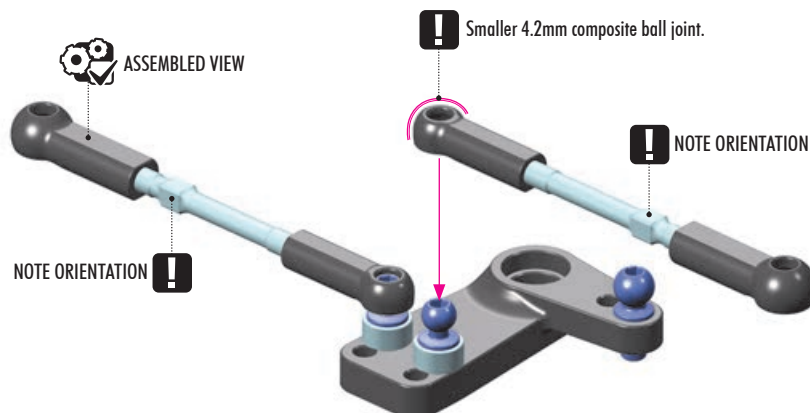


There are two Ackermann positions on the steering arm.

REARWARD position: More Ackermann, makes the car easier to drive, improves cornering speed **INITIAL SETTING.**

FORWARD position: Less Ackermann, makes the car more responsive, improves in-corner steering.

2x L=R



5. FINAL ASSEMBLY



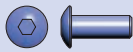
306219
SHIM 3x6x1



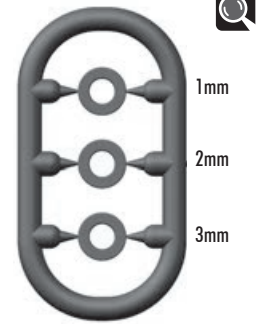
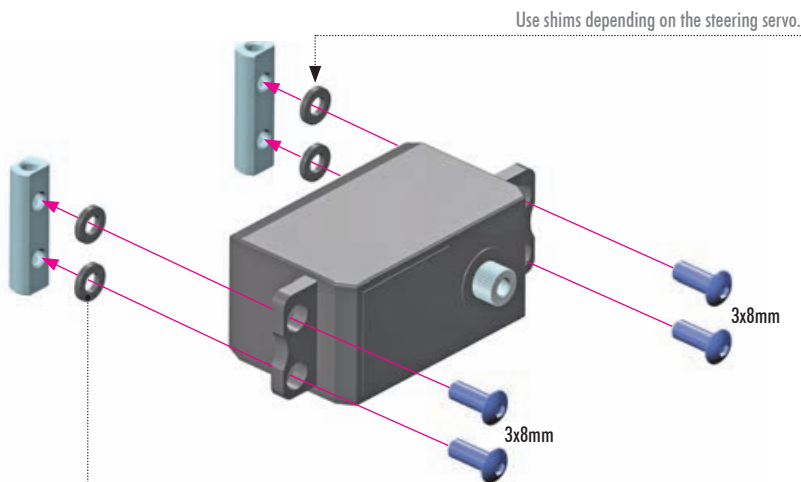
306219
SHIM 3x6x2



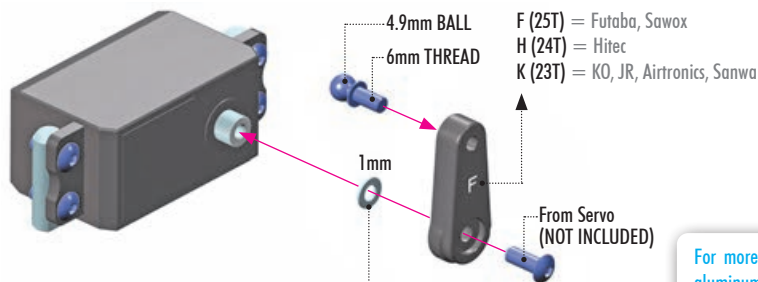
306219
SHIM 3x6x3



4x 902308
SH M3x8

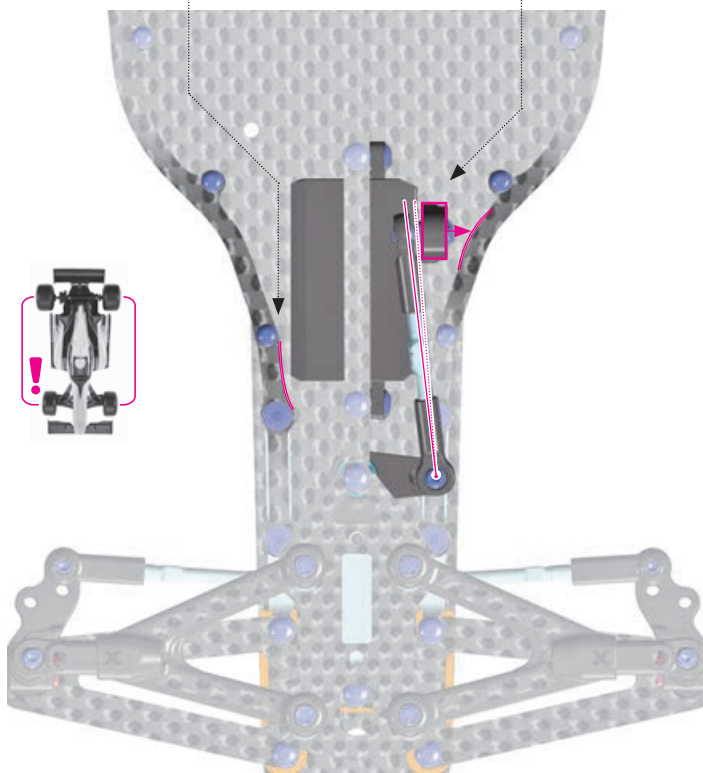


1x 303141
SHIM 3x5x1



SERVO SHIM SERVO HORN SHIM

As the servos sizes differ, use shims to move the servo out in case the servo link is too angled. Use included shims to avoid touching of the servo with side braces.



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

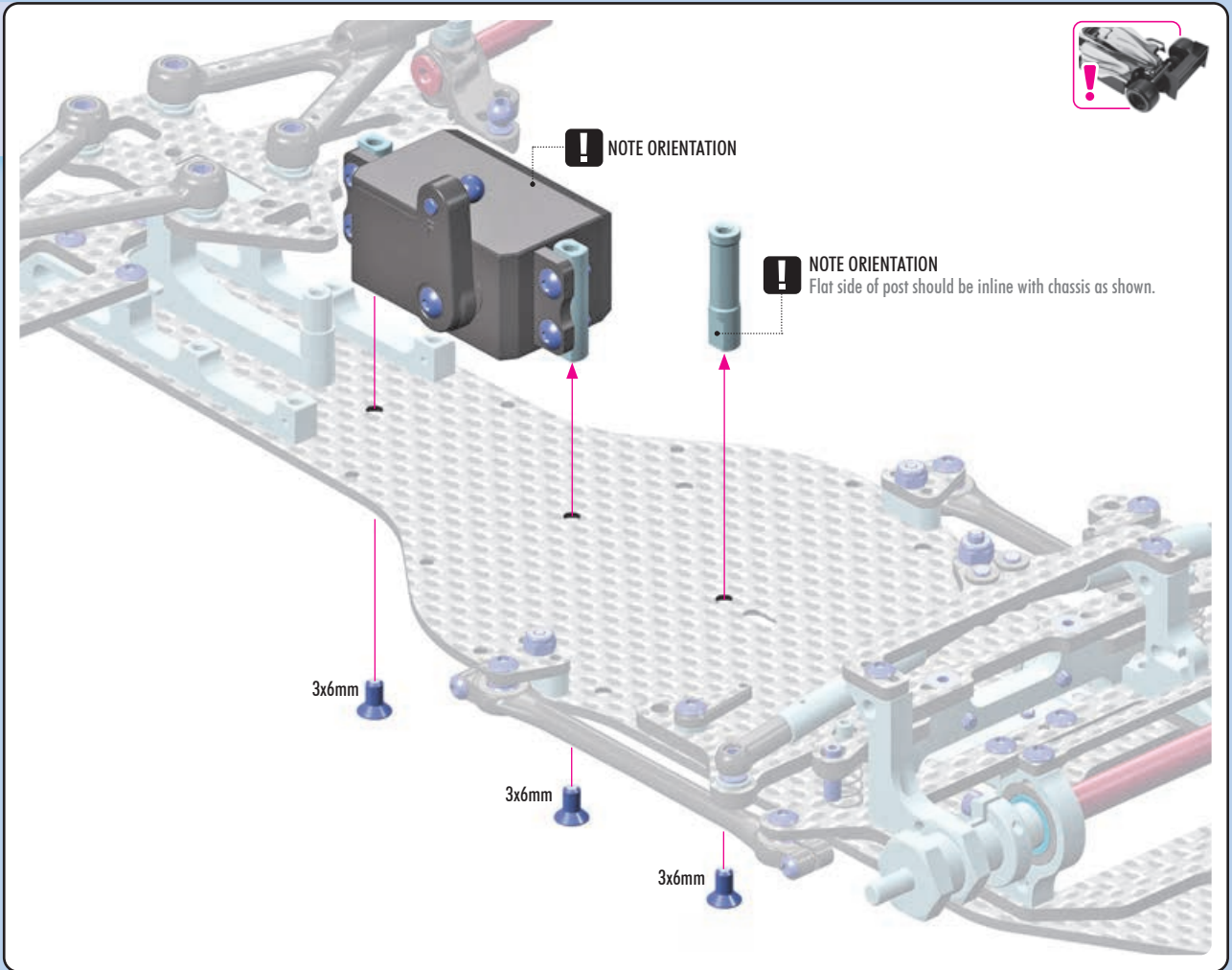
	HUDY ADJ. CLAMP SERVO HORNS	
	#293414 KO, Sanwa - 23T	
	#293416 Futaba, Savox - 25T	
	ALU SERVO HORNS - OFFSET	
	#293491 KO, Sanwa - 23T	
	#293492 Hitec - 24T	
	#293493 Futaba - 25T	
	CLAMP ALU SERVO HORNS - OFFSET	
	#293401 KO, Sanwa - 23T	
	#293402 Hitec - 24T	
	#293403 Futaba - 25T	
	HUDY ALU SERVO HORNS	
	#293497 KO, Sanwa - 23T	
	#293498 Hitec - 24T	
	#293499 Futaba - 25T	
	HUDY CLAMP ALU SERVO HORNS	
	#293404 KO, Sanwa - 23T	
	#293405 Hitec - 24T	
	#293406 Futaba - 25T	
	HUDY ALU SERVO HORNS	
	#293501 KO, Sanwa - 23T	
	#293502 Hitec - 24T	
	#293503 Futaba - 25T	
	HUDY CLAMP ALU SERVO HORNS	
	#293407 KO, Sanwa - 23T	
	#293408 Hitec - 24T	
	#293409 Futaba - 25T	

IMPORTANT!
When an aluminum horn is used, the steering servo saver is NOT used. This increases the risk of breaking the servo in serious crashes.

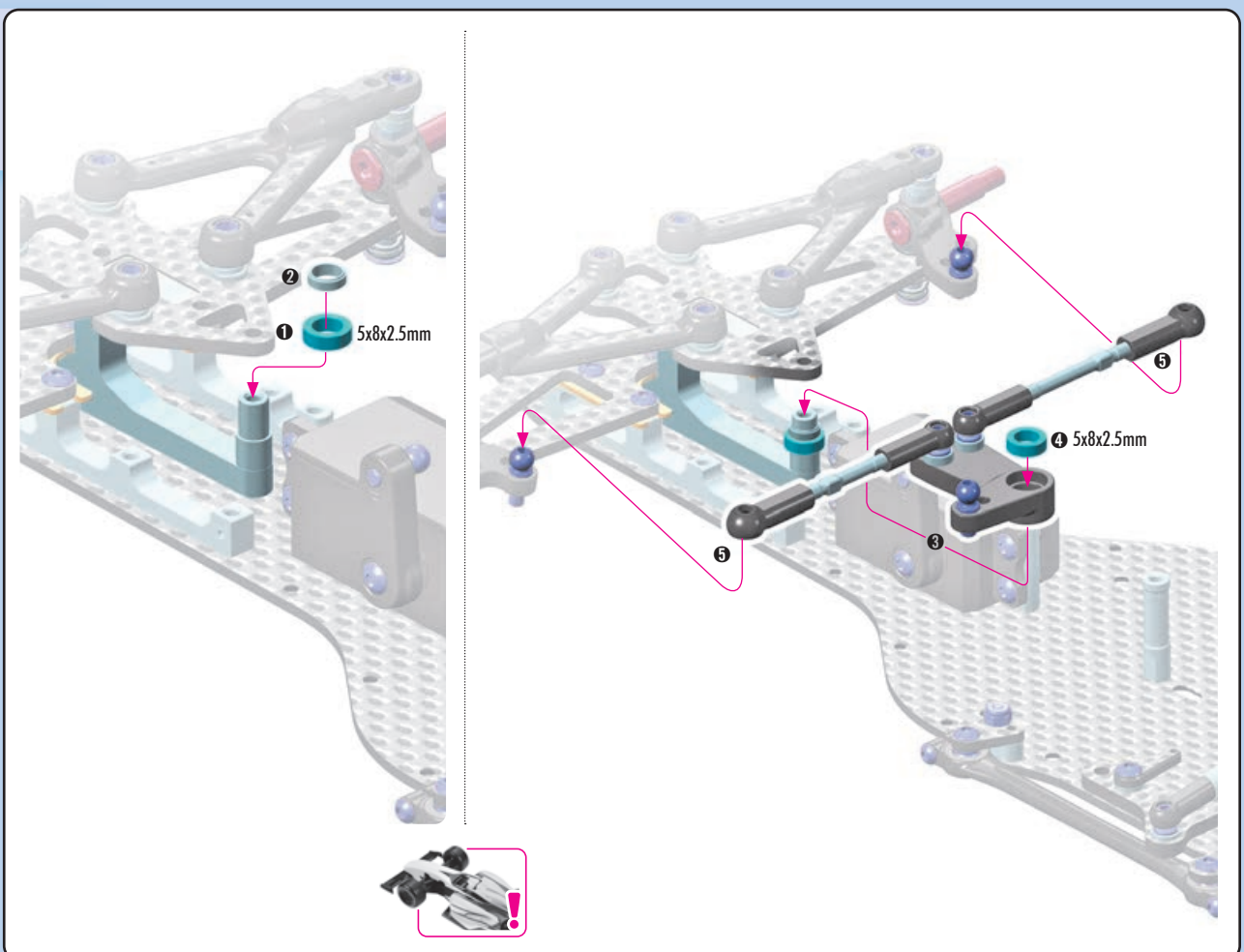
5. FINAL ASSEMBLY



3x 903306
SFH M3x6



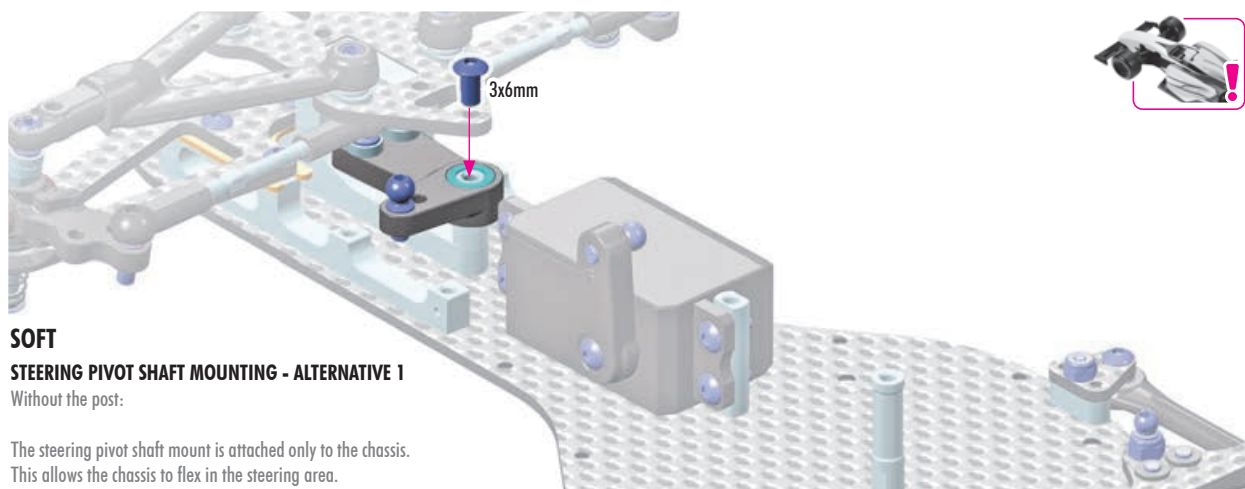
2x 940508
BB 5x8x2.5



5. FINAL ASSEMBLY



1x 902306
SH M3x6



SOFT

STEERING PIVOT SHAFT MOUNTING - ALTERNATIVE 1

Without the post:

The steering pivot shaft mount is attached only to the chassis. This allows the chassis to flex in the steering area.



1x 303123-K
SHIM 3x6x2



1x 303126-K
SHIM 3x6x5



1x 902316
SH M3x16

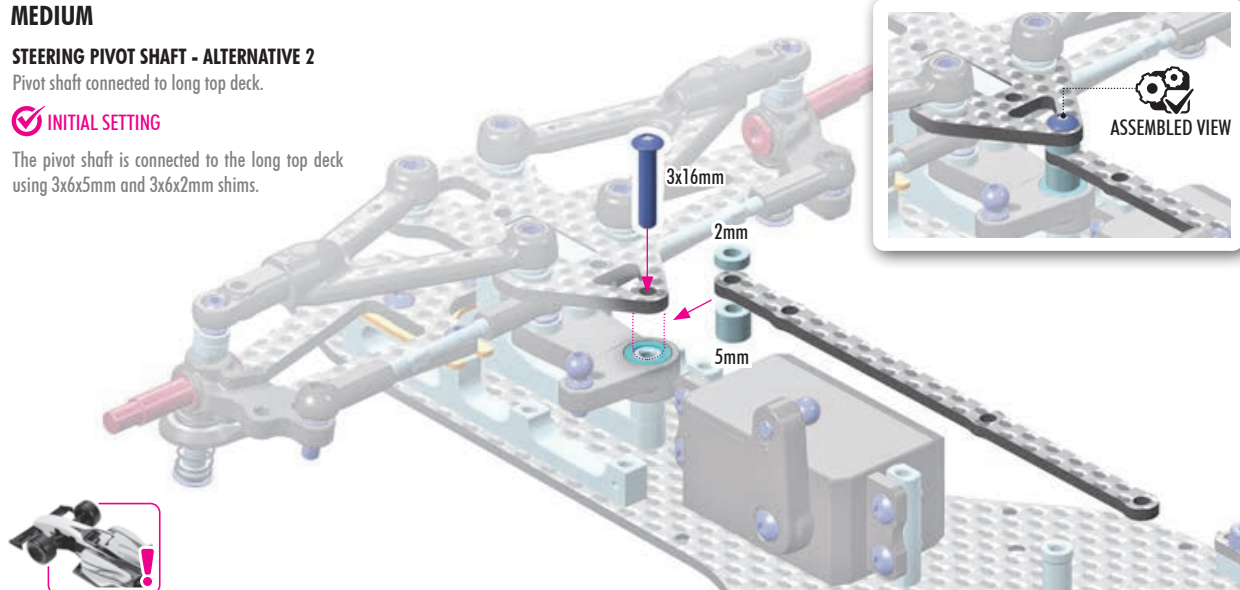
MEDIUM

STEERING PIVOT SHAFT - ALTERNATIVE 2

Pivot shaft connected to long top deck.

✓ INITIAL SETTING

The pivot shaft is connected to the long top deck using 3x6x5mm and 3x6x2mm shims.



STIFF

STEERING PIVOT SHAFT - ALTERNATIVE 3

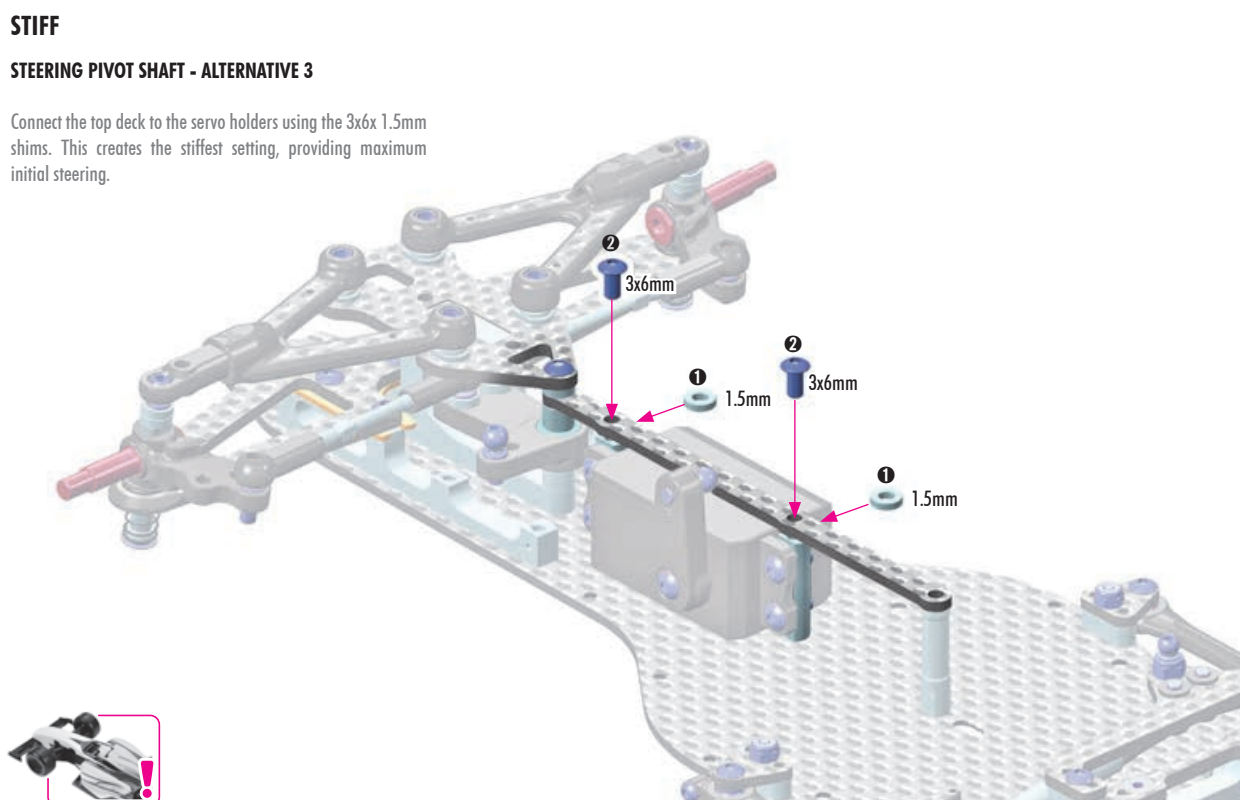
Connect the top deck to the servo holders using the 3x6x 1.5mm shims. This creates the stiffest setting, providing maximum initial steering.



2x 303120
SHIM 3x6x1.5

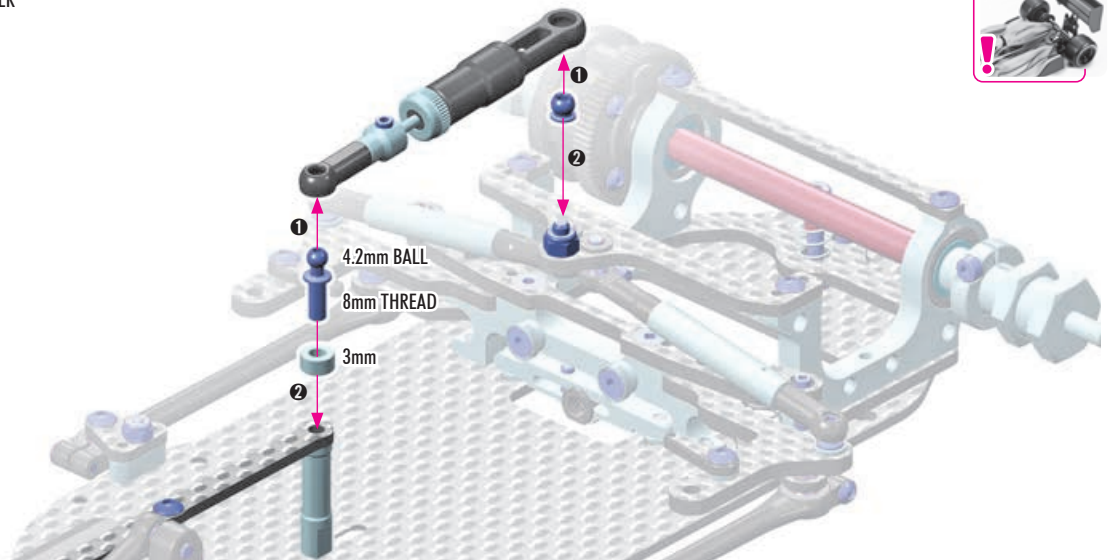


2x 902306
SH M3x6





SPECIFIC ORDER

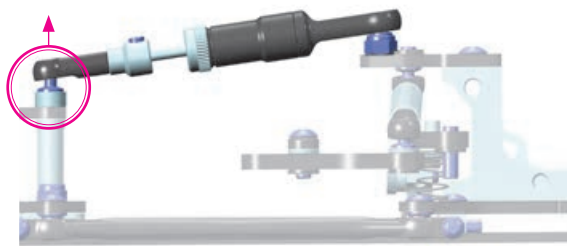


SHOCK ANGLE & POSITION

SHOCK ANGLE

More shim in front.

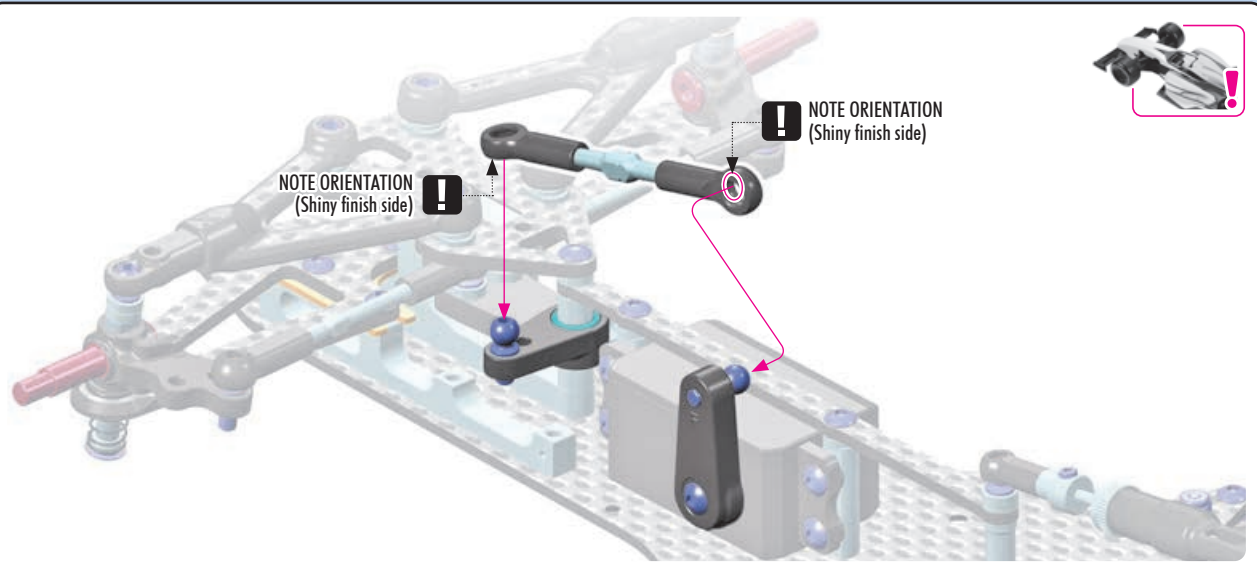
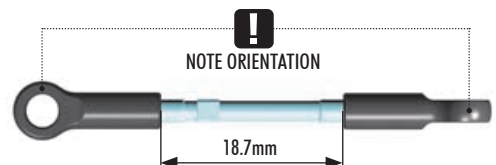
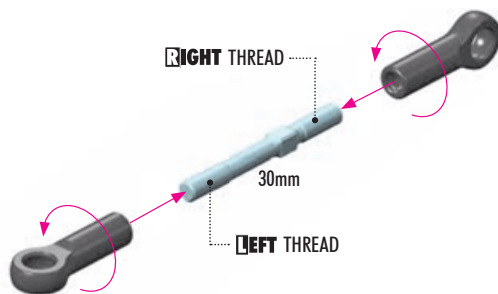
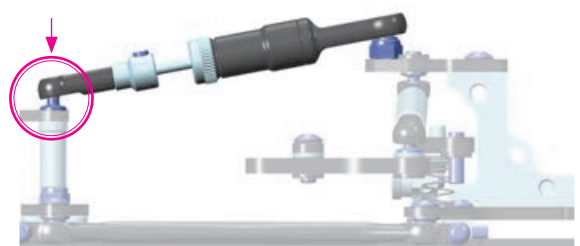
Makes the damping more linear. Increases stability, decreases on-power steering. Recommended for low- to medium traction track conditions.



MORE SHOCK ANGLE

Less shim in front.

Makes the damping more progressive and increases on-power steering. Recommended for high-traction track conditions when you need to free up the rear.



5. FINAL ASSEMBLY

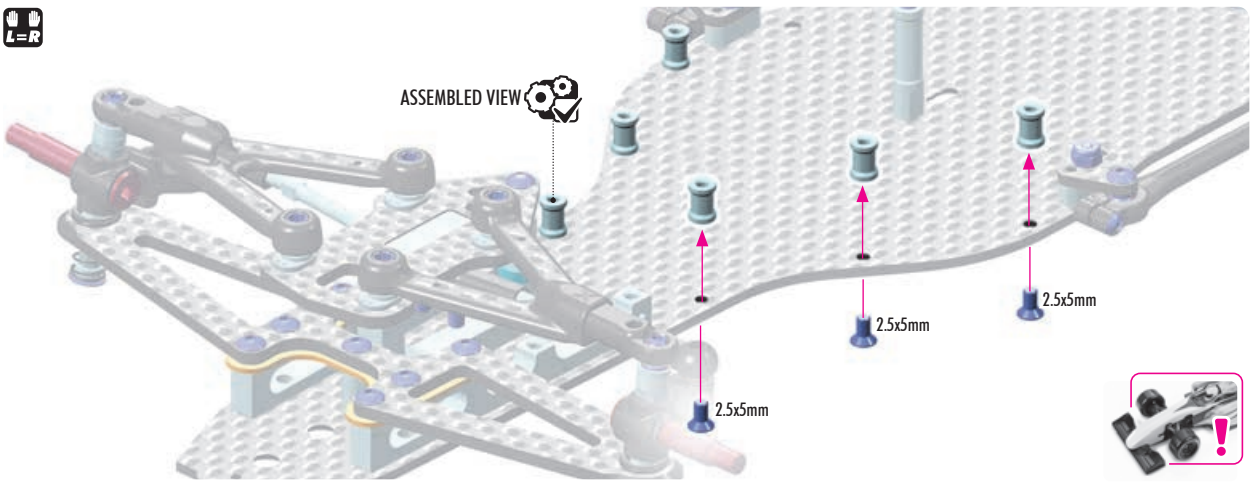


6x 903255
SFH M2.5x5



L=R

ASSEMBLED VIEW



2.5x5mm

2.5x5mm

2.5x5mm



2x 303125-K
SHIM 3x6x3



6x 902255
SFH M2.5x5



2x 902310
SFH M3x10



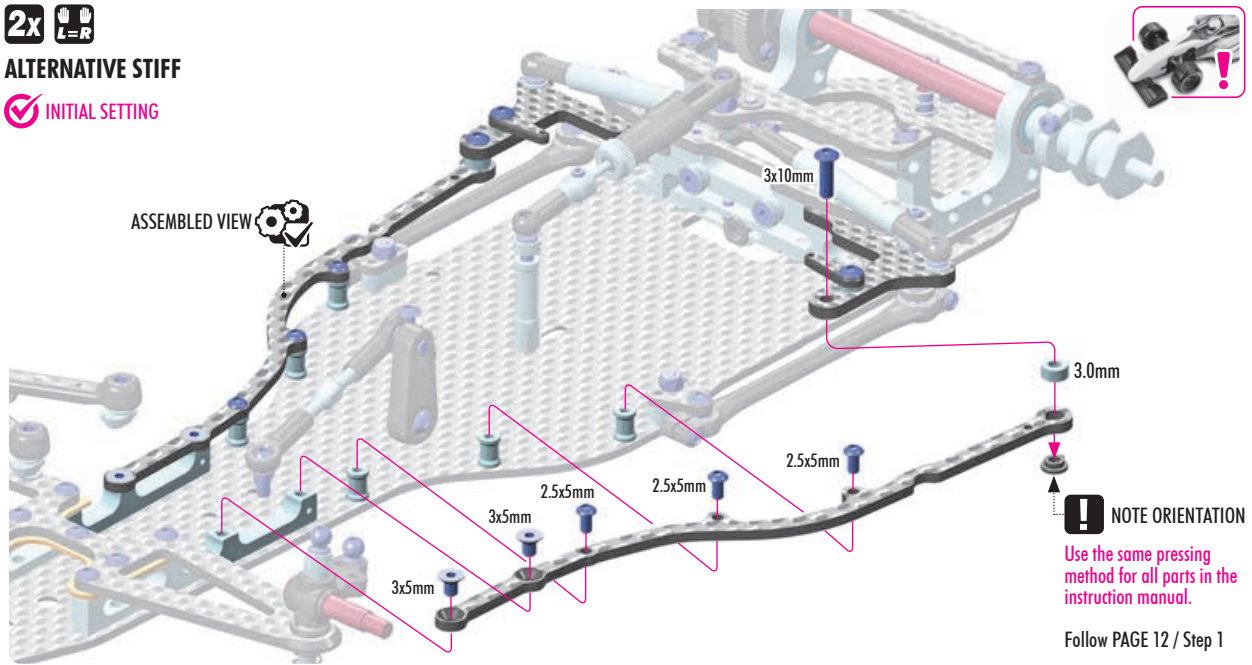
4x 903305
SFH M3x5

2x L=R

ALTERNATIVE STIFF

INITIAL SETTING

ASSEMBLED VIEW



3x10mm

3.0mm

2.5x5mm

2.5x5mm

3x5mm

3x5mm

NOTE ORIENTATION

Use the same pressing method for all parts in the instruction manual.

Follow PAGE 12 / Step 1

CHASSIS FLEX ADJUSTMENT

SOFT (NO BRACES)

Generates more mechanical grip. Recommended for low-traction conditions, especially with rubber tires.

MEDIUM

Braces installed and attached only in the middle. This setting provides a good compromise between mechanical grip and steering response. Ideal for low- to medium-traction conditions.

STIFF

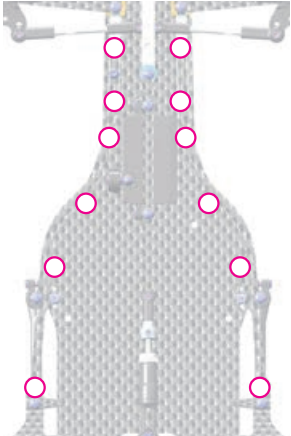
Side braces installed and attached using the front, front-middle, and middle screws. This setting provides additional stiffness and increased stability. Recommended for high- to medium-traction carpet conditions.

EXTRA STIFF

Side braces installed and attached using the front, front-middle, middle, and rear screws. This setting provides maximum chassis stiffness and stability. Recommended for high-traction conditions or whenever additional car stability is needed.

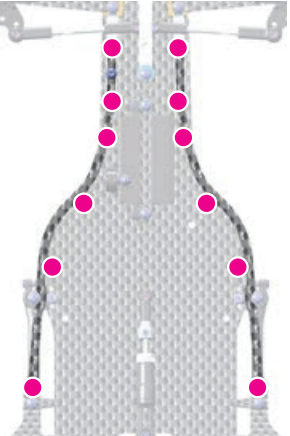
INITIAL SETTING

Rubber tires



INITIAL SETTING

Foam tires

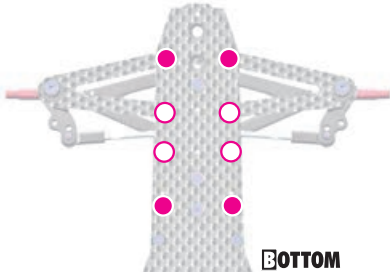




CHASSIS – BULKHEAD FLEX ADJUSTMENT

SOFT

Use this setting when the car is initially too aggressive. It will generate more understeer, making the car easier to drive.

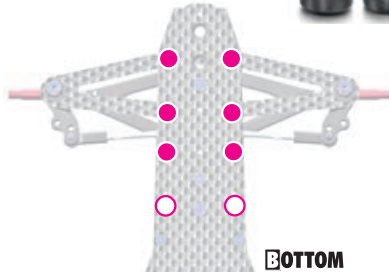


BOTTOM

MEDIUM

Removing only the last screws from the bulkheads will increase in-corner steering. However, this can lead to oversteer in high-traction conditions or when using foam tires. Therefore, this setting is recommended only for lower-traction conditions or when using rubber tires and more initial steering is needed.

✓ **INITIAL SETTING**
Rubber tires

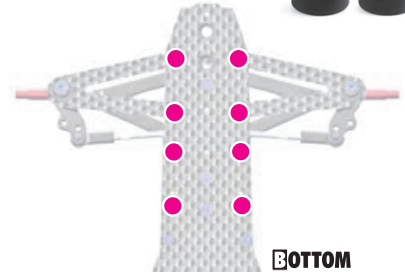


BOTTOM

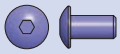
STIFF

The maximum stiffness setting provides a great compromise between stability and steering.

✓ **INITIAL SETTING**
Foam tires



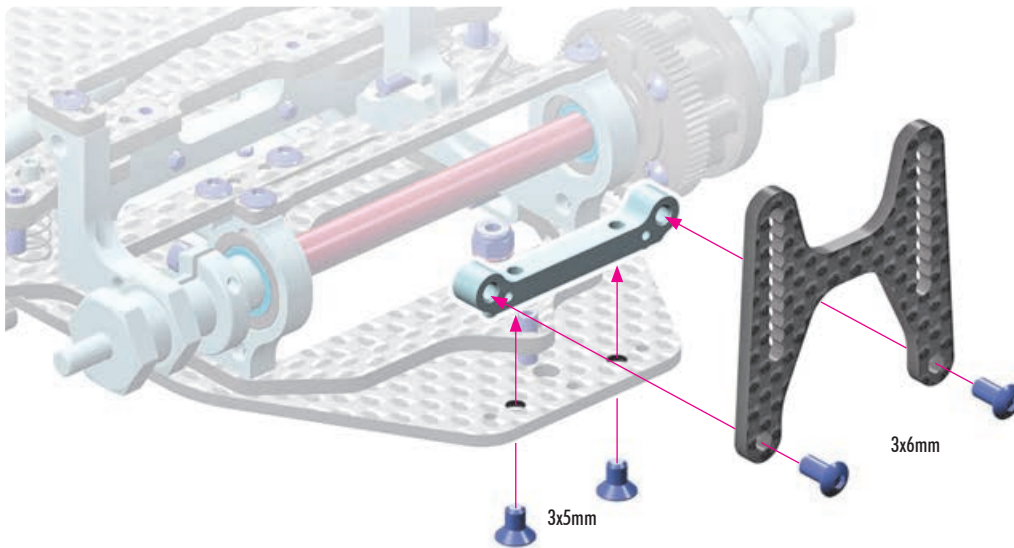
BOTTOM



2x 902306
SH M3x6



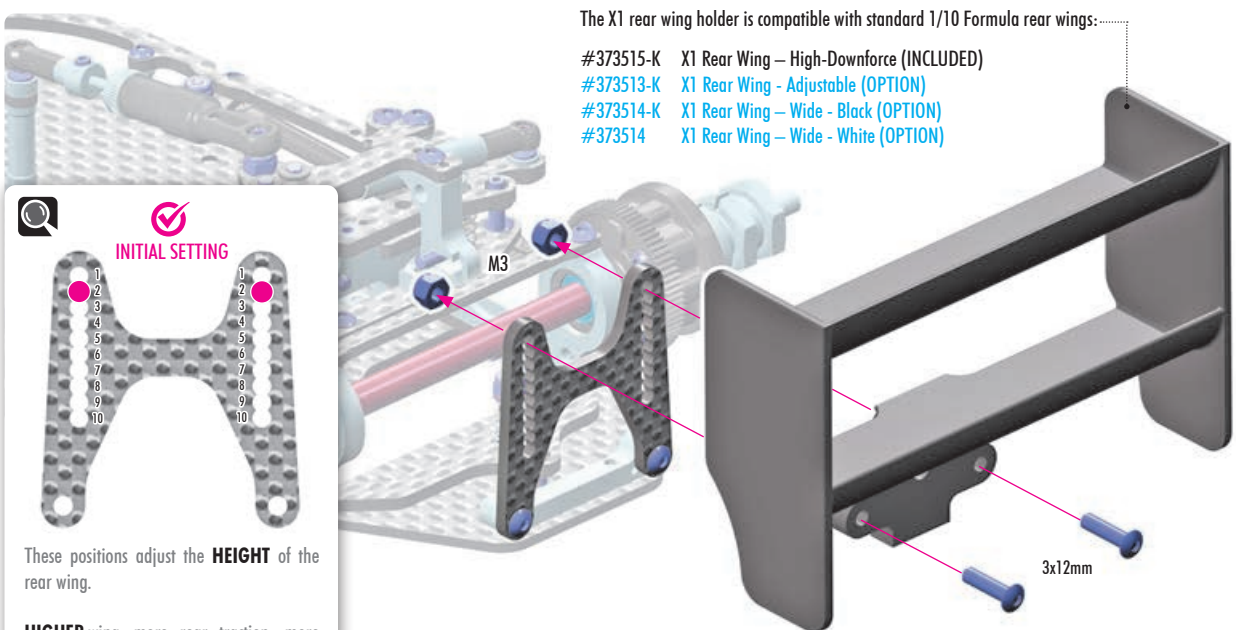
2x 903305
SFH M3x5



2x 902312
SH M3x12



2x 960030
N M3

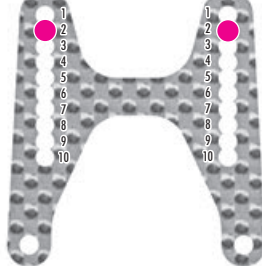


The X1 rear wing holder is compatible with standard 1/10 Formula rear wings:.....

- #373515-K X1 Rear Wing – High-Downforce (INCLUDED)
- #373513-K X1 Rear Wing – Adjustable (OPTION)
- #373514-K X1 Rear Wing – Wide - Black (OPTION)
- #373514 X1 Rear Wing – Wide - White (OPTION)



✓ **INITIAL SETTING**



These positions adjust the **HEIGHT** of the rear wing.

HIGHER wing: more rear traction, more stability

LOWER wing: higher top speed, improved steering response



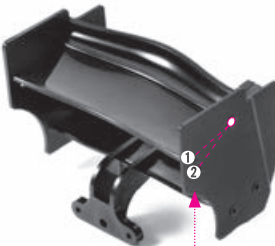
5. FINAL ASSEMBLY



#373513-K
X1 COMPOSITE ADJUSTABLE REAR WING - BLACK - ETS APPROVED



8x 906206
SFP 2.2x6



WING POSITION

1 LOW DOWNFORCE:
Low downforce setting is recommended on tracks where top speed is more important over rear stability on-power/in high speed corners.

2 HIGH DOWNFORCE:
High downforce setting recommended for most tracks.



#373514
X1 COMPOSITE REAR WING - LIGHTWEIGHT & WIDE - WHITE





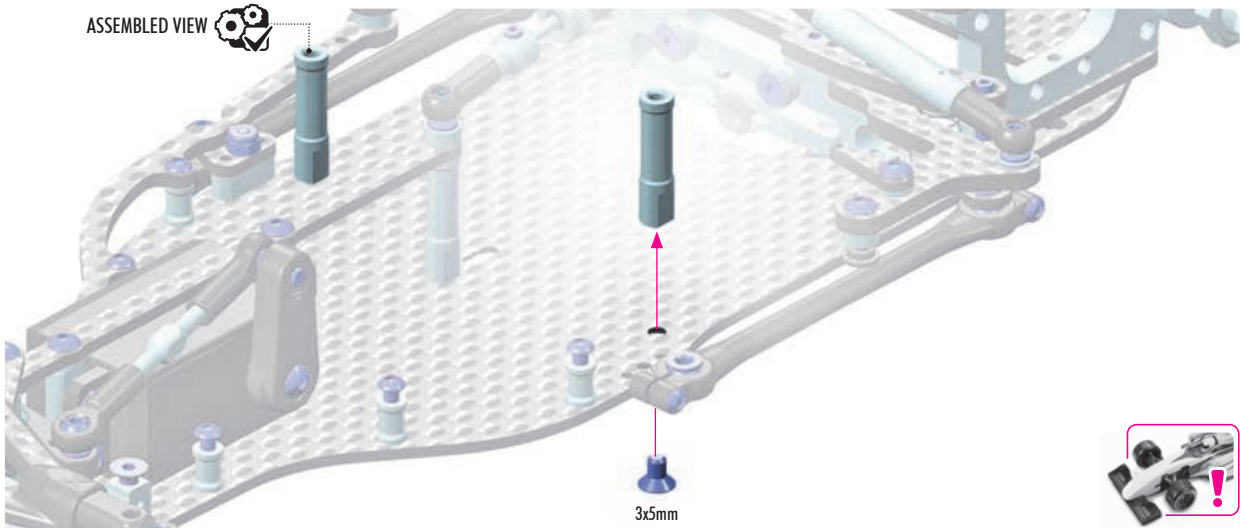
#373514-K
X1 COMPOSITE REAR WING - LIGHTWEIGHT & WIDE - WHITE





2x 903305
SFH M3x5

ASSEMBLED VIEW 

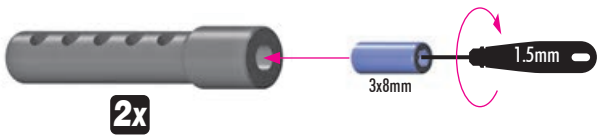


3x5mm





2x 901308
SB M3x8



2x 3x8mm 1.5mm



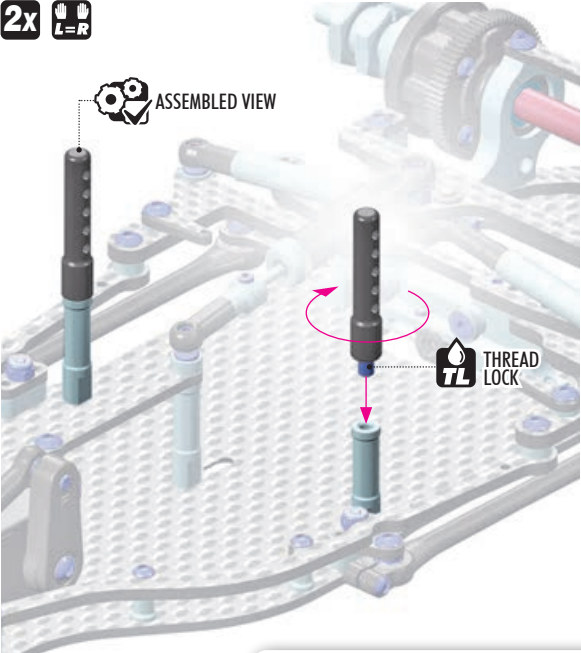
4mm



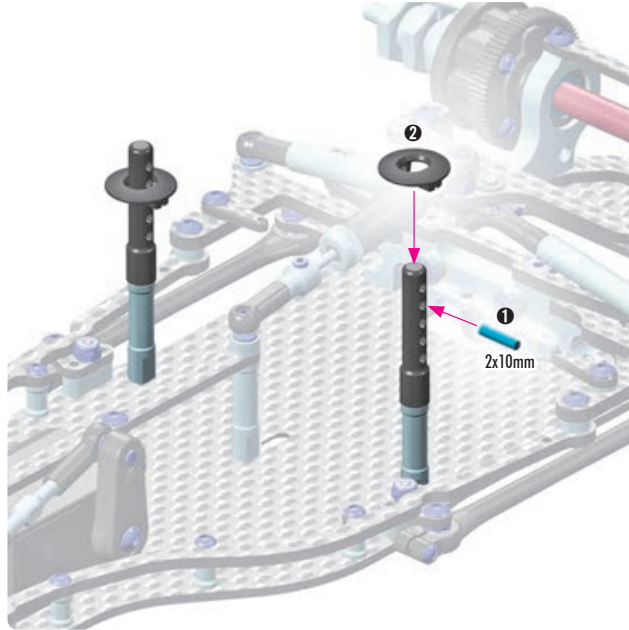
2x 981210
P 2x10

2x 

ASSEMBLED VIEW 



THREAD LOCK



2 2x10mm



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





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





5. FINAL ASSEMBLY

#901302 (SB M3x2.5)
(NOT INCLUDED)

Pinion
(NOT INCLUDED)

Motor
(NOT INCLUDED)

ALU PINION GEARS HARDCOATED - 64P

#305968	18T	OPTION	#294137	37T	OPTION
#305969	19T	OPTION	#294138	38T	OPTION
#294120	20T	OPTION	#294139	39T	OPTION
#305971	21T	OPTION	#294140	40T	OPTION
#305972	22T	OPTION	#294141	41T	OPTION
#294123	23T	OPTION	#294142	42T	OPTION
#294124	24T	OPTION	#294143	43T	OPTION
#294125	25T	OPTION	#294144	44T	OPTION
#294126	26T	OPTION	#294145	45T	OPTION
#294127	27T	OPTION	#294146	46T	OPTION
#294128	28T	OPTION	#294147	47T	OPTION
#294129	29T	OPTION	#294148	48T	OPTION
#294130	30T	OPTION	#294149	49T	OPTION
#294131	31T	OPTION	#294150	50T	OPTION
#294132	32T	OPTION	#294152	52T	OPTION
#294133	33T	OPTION	#294154	54T	OPTION
#294134	34T	OPTION	#294156	56T	OPTION
#294135	35T	OPTION	#294158	58T	OPTION
#294136	36T	OPTION	#294160	60T	OPTION

3x8mm

Adjust the gear mesh so there is appropriate space between the spur gear and pinion teeth. There should be a very small amount of freeplay.

Speed Controller
(NOT INCLUDED)

Receiver
(NOT INCLUDED)

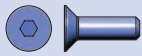
Receiver Wire

3x8mm

Double-sided Tape
HUDY #107875
(NOT INCLUDED)

OPTION

5. FINAL ASSEMBLY



1x 903310
SFH M3x10

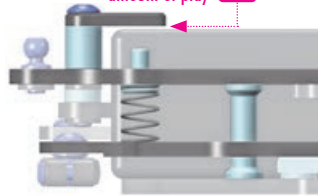


1x 960030
N M3

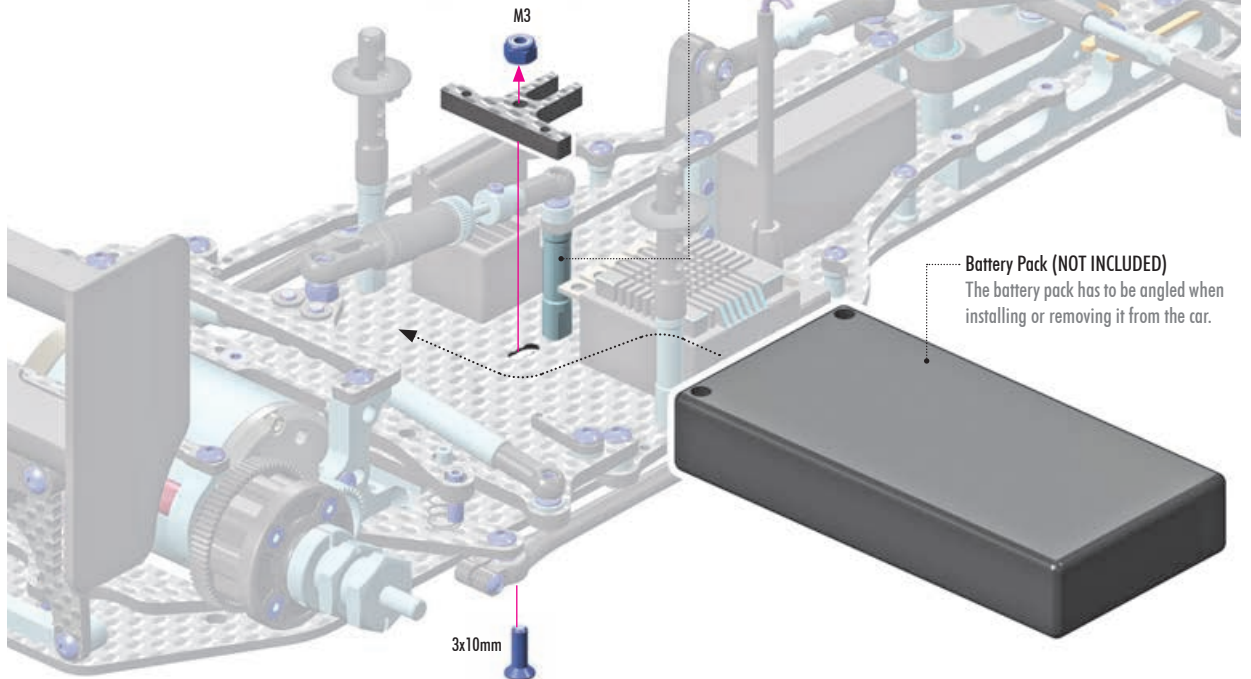
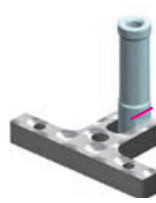


The play must be adjusted using appropriate shims as there are different battery packs in the market with different heights.

Make sure to have a small amount of play



NOTE
ORIENTATION



BATTERY MOUNTING POSITIONS

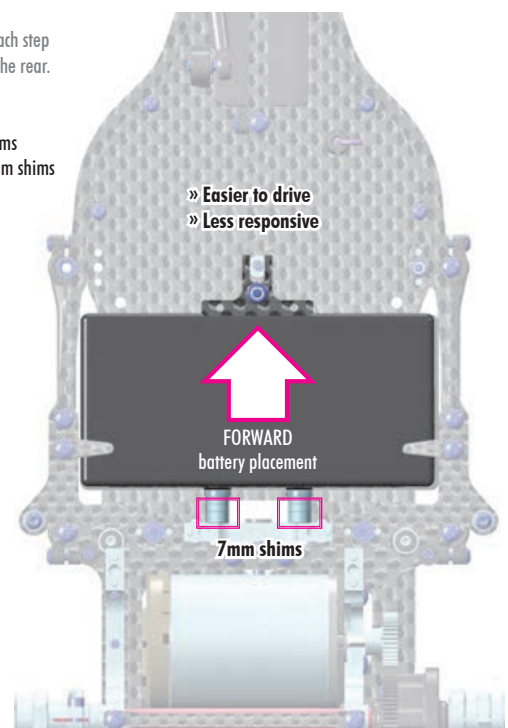
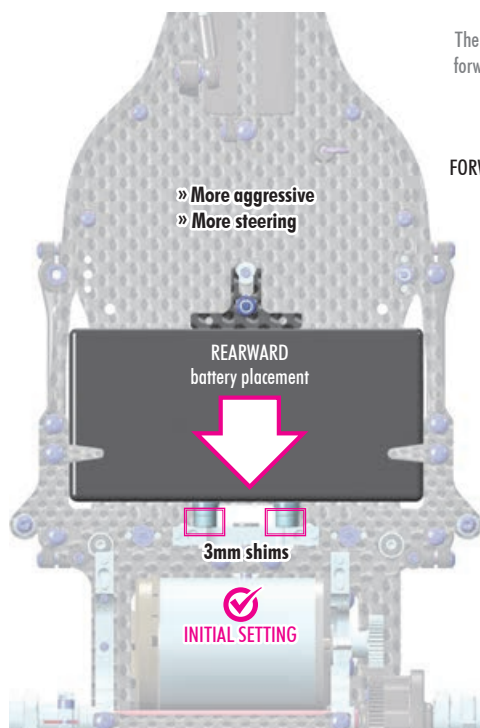
The X1 has 3 battery mounting positions.

The **MORE REARWARD** the battery is positioned, the more aggressive the car will be and the more steering it will have.

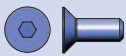
The **MORE FORWARD** the battery is positioned, the easier the car will be to drive, but the less responsive it will be.

There are two additional forward positions. Each step forward requires an additional 2mm shim at the rear.

REARWARD POSITION = 3mm shim
MIDDLE POSITION = 3mm + 2mm shims
FORWARD POSITION = 3mm + 2mm + 2mm shims



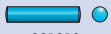
5. FINAL ASSEMBLY



4x 903308
SFH M3x8



1x 903316
SFH M3x16



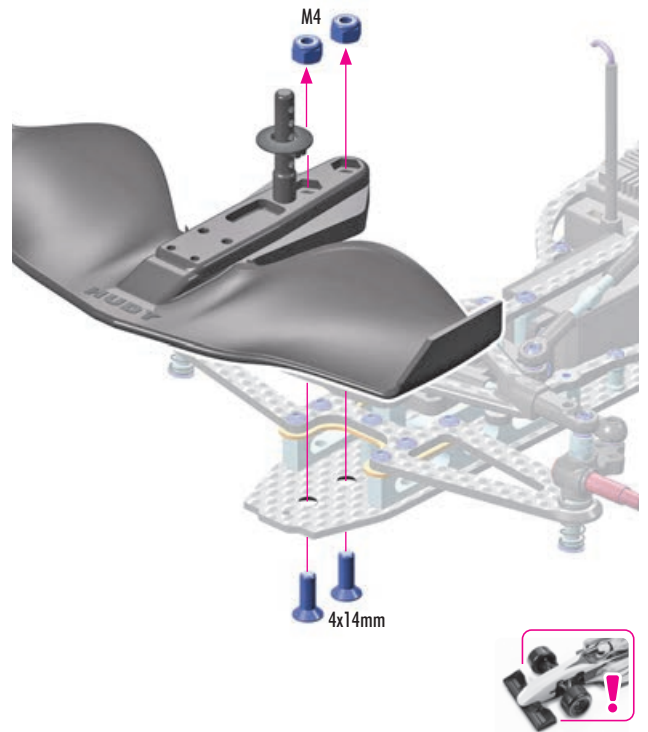
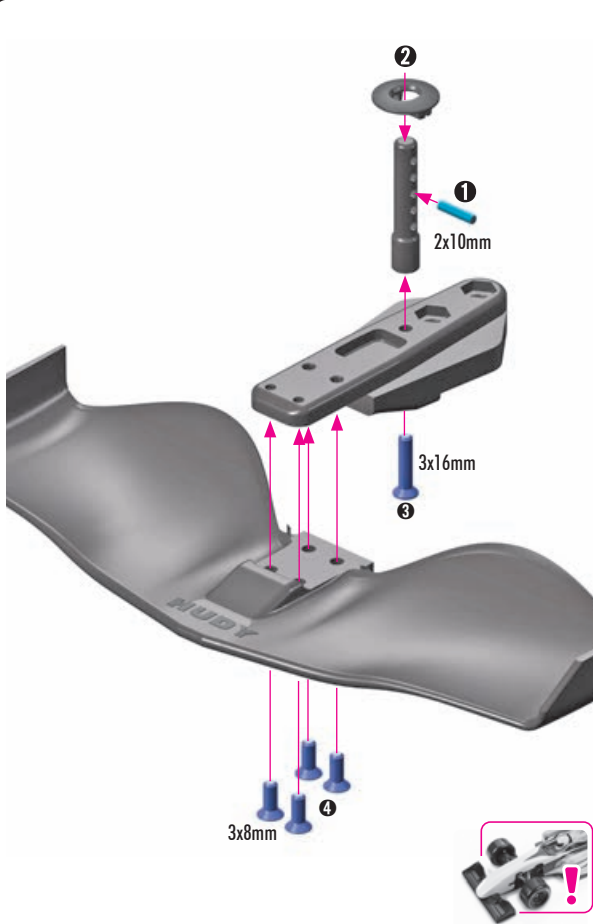
1x 981210
P 2x10



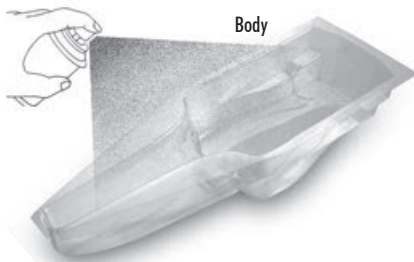
2x 903414
SFH M4x14



2x 960040
N M4



- 1 Before cutting and making holes on the body, put the unpainted body on the chassis to confirm the mounting position and location for holes and cutouts. Before cutting and making holes on the front wing, put the unpainted wing on the front bumper to confirm the mounting position and location for holes and cutouts.
- 2 Before painting, wash the inside of the body with mild detergent, and then rinse and dry thoroughly.
- 3 Mask the helmet shield if you wish.



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

#106281
HUDY Body Fix 28g/1oz
OPTION

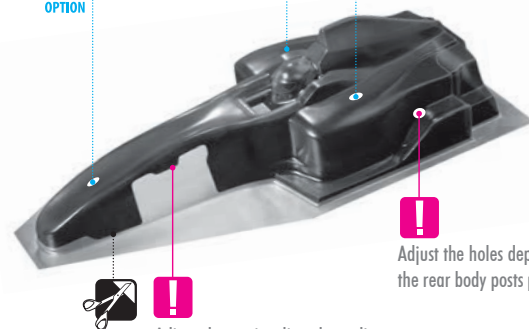


- Famous Body Fix glue with updated formula
- 50% less glue necessary to apply
- Repairs broken areas
- Fixes damaged/broken bodies
- Strengthens and reinforces weak areas on body
- Fulfills latest EU eco & health safety regulations
- Requires 24 hours to dry

! IMPORTANT

Most popular formula bodies will clear the chassis side braces. If a body does not have adequate clearance in the front nose area, installation may require body modification or removal of the side braces.

OPTION
BODY REAMER (HUDY #107602)



Adjust the cutting line depending on the front upper arm position.

Adjust the holes depending on the rear body posts position.

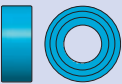
OPTION

BODY		
#379701	XRAY	OPTION
#379702	WORLD CHAMPION EDITION	OPTION

5. FINAL ASSEMBLY



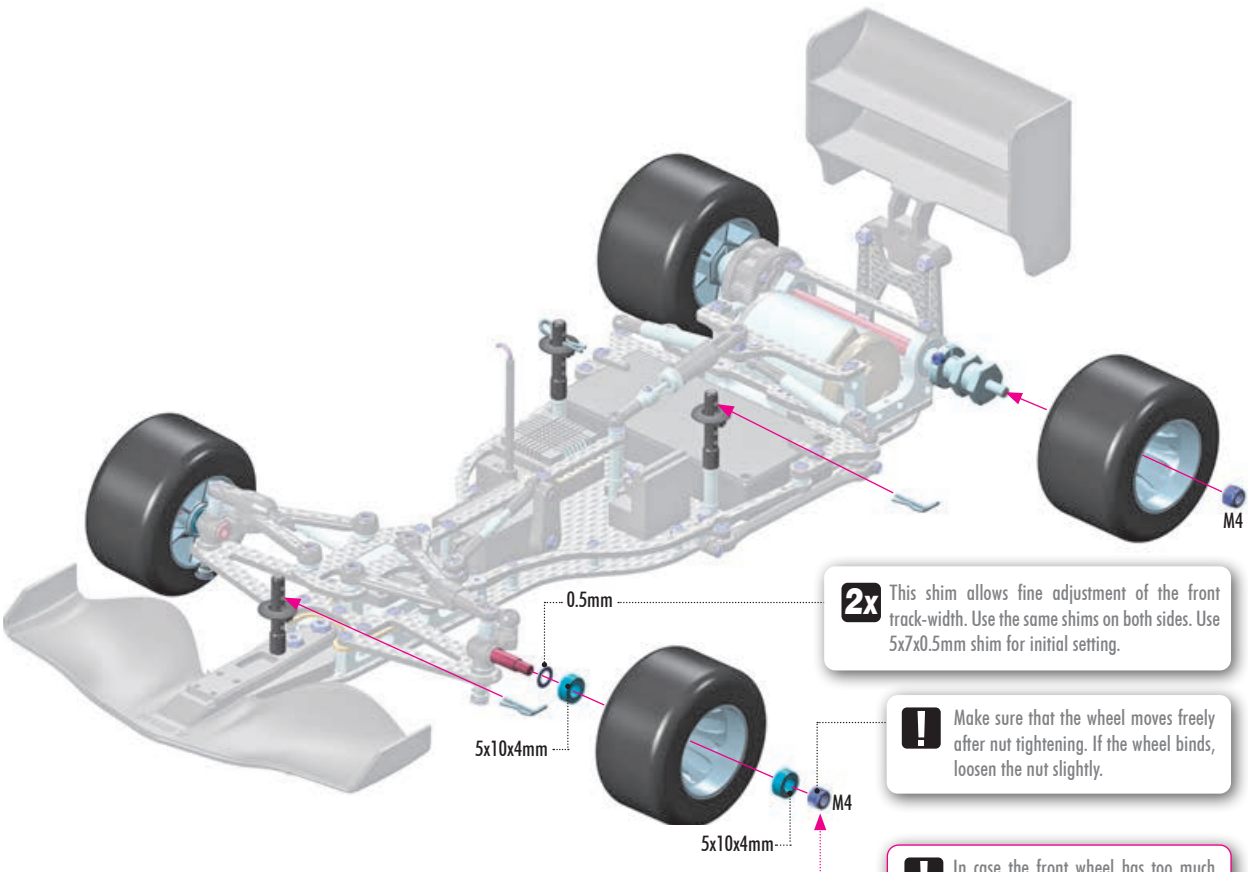
2x 338586
SHIM 5x7x0.5



4x 940510
BB 5x10x4



4x 960040
N M4



2x This shim allows fine adjustment of the front track-width. Use the same shims on both sides. Use 5x7x0.5mm shim for initial setting.

! Make sure that the wheel moves freely after nut tightening. If the wheel binds, loosen the nut slightly.

! In case the front wheel has too much axial play, you can reverse the nut, allowing for more precise adjustment of the wheel's axial play.





OPTION

TRACK-WIDTH ADJUSTMENT SHIMS			
#338584	5x7x0.2mm	OPTION	
#338585	5x7x0.3mm	OPTION	
#338586	5x7x0.5mm	INCLUDED	



OPTION

#803073 HUDY 1/10 FORMULA FOAM TIRE - FRONT 50 SHORE (2)
#803083 HUDY 1/10 FORMULA FOAM TIRES - REAR 35 SHORE (2)



#803072 HUDY 1/10 FORMULA RUBBER TIRE - FRONT - V2 (2)
#803073 HUDY 1/10 FORMULA RUBBER TIRE - REAR - V2 (2)





OPTION

#371204
X1 Composite
Adjustable Front Wing
White - Flat Design





OPTION

#371204-K
X1 Composite
Adjustable Front Wing
Black - Flat Design





OPTION

#371203
X1 Composite
Adjustable Front Wing
White - ETS Approved





OPTION

#371203-K
X1 Composite
Adjustable Front Wing
Black - ETS Approved



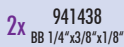


OPTION

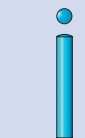
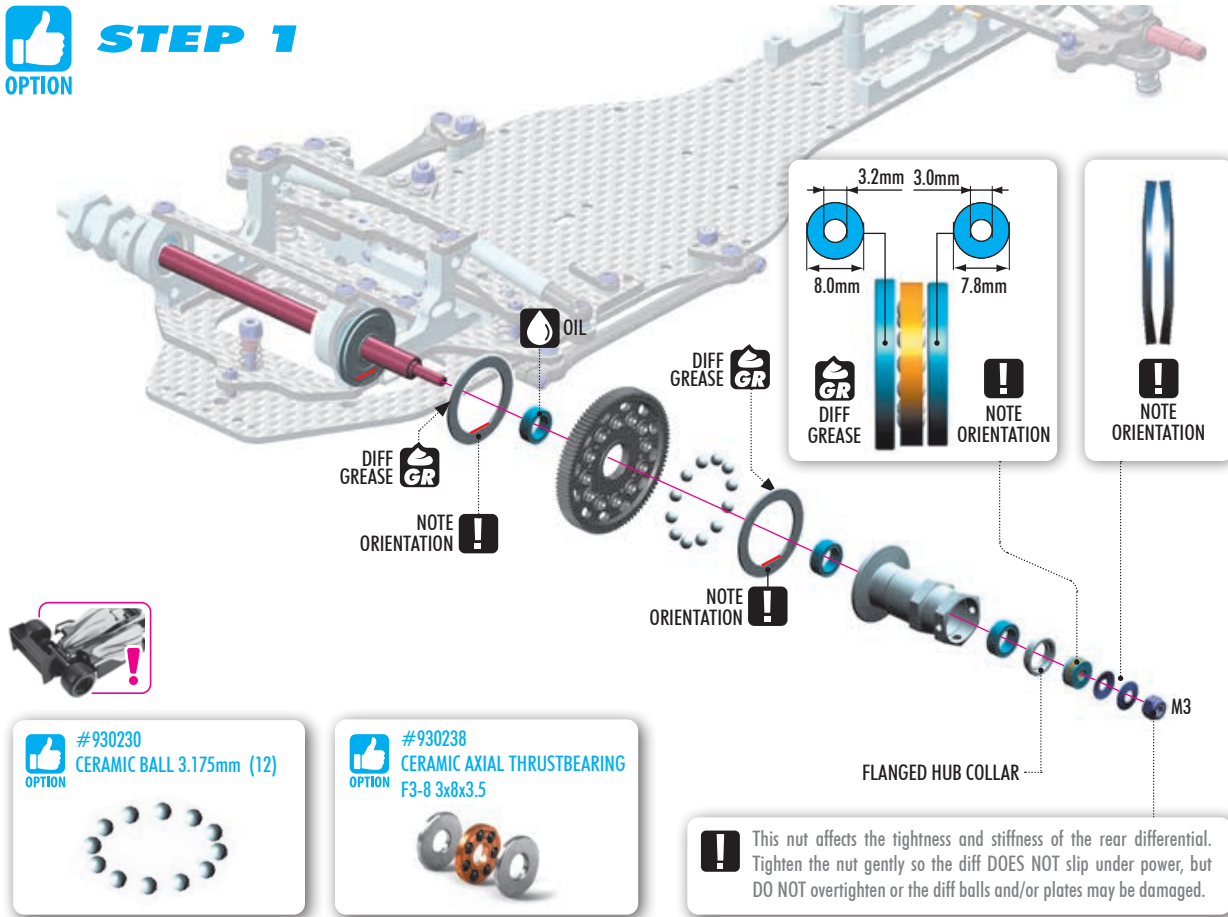
#371202
X1 Composite Front
Wing Black - ETS
Approved



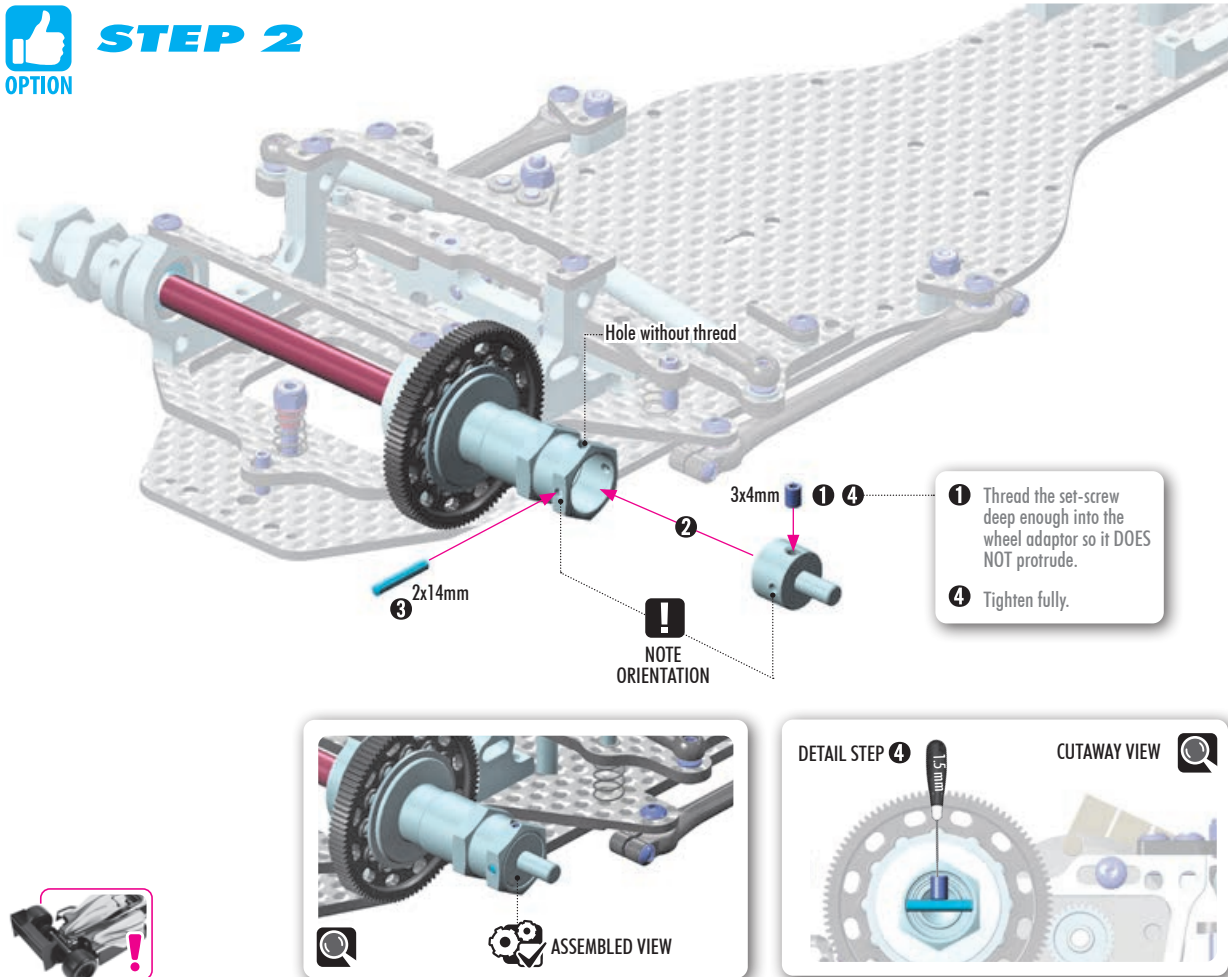
BALL DIFFERENTIAL (NOT INCLUDED)



STEP 1



STEP 2



XRAY TUNING PARTS

(NOT INCLUDED)



Alu Caster Eccentric Bushings (4)

- Alu caster bushings in 3 different alternatives
- Quick and easy set-up changes in front
- Premium Swiss 7075 T6 aluminum



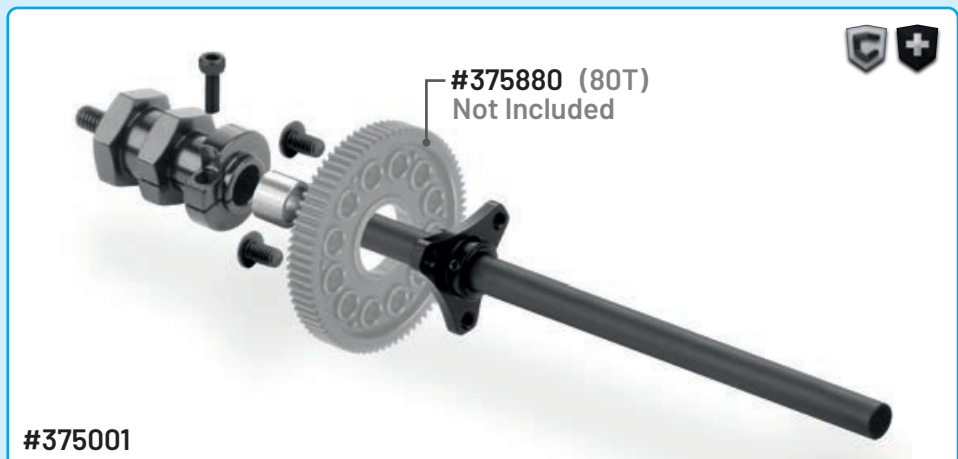
Gear Differential 1/10 Formula - Set

- XRAY's own unique design
- Revolutionary
- More stable handling
- Easier to drive
- Increases on-power steering
- Direct replacement for ball diff
- Fits all standard cars
- Super-smooth
- Ultra-efficient
- Complete set



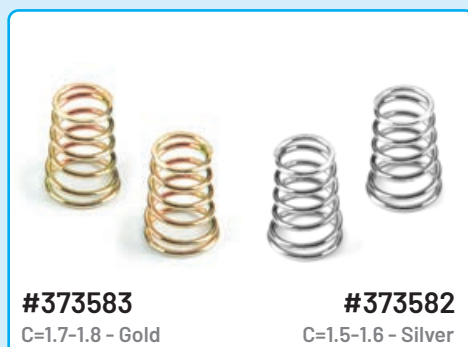
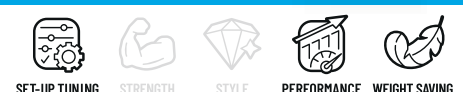
X1 Alu Adjustable Steering Arm Set - Black

- Alu Adjustable Steering Arm Set for X1
- Easy Ackermann adjustments in 5 steps
- Improves steering response
- Ultra-strong & reliable
- Premium Swiss 7075 T6 aluminum



Solid Axle 1/10 Formula - Set

- Improves acceleration
- Improves steering in high traction conditions
- Lightweight
- Perfectly balanced
- Vibration-free
- Graphite axle
- Aluminum wheel hub
- Clamp system



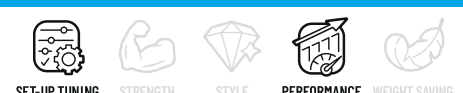
Tapered spring

- Perfectly matched spring rates & lengths
- Tweak-free pod mounting
- Medium or Hard hardness



X1 Ball Differential Set

- Complete X1 ball differential set
- Direct replacement for gear differential
- Improves traction in low grip conditions
- Improves stability
- Easier to drive



XRAY TUNING PARTS
(NOT INCLUDED)



Composite Gear Diff Spur Gear

- Precision-molded composite spur gears
- Popular sizes available

OTHER VARIANTS:

Gear Diff Spur Gear	
Part number	Type
#375776	76T
#375780	80T
#375784	84T
#375788	88T
#375792	92T



Side Springs

- Straight side springs
- Complete range
- Selected pairs
- Smoother compression
- Consistency
- 3 color alternatives

OTHER VARIANTS:

Side Spring		
Part number	Type	Color
#373589	C=0.5	Black
#373584	C=0.6	Silver
#373585	C=0.9	Gold
#373586	C=1.2	Black
#373587	C=1.5	Silver
#373588	C=1.8	Gold



Composite Spur Gears

- Precision-molded composite spur gears
- 64-pitch
- Popular sizes available

OTHER VARIANTS:

Gear Diff Spur Gear	
Part number	Type
#375872	72T
#375875	75T
#375876	76T
#375878	78T
#375880	80T
#375884	84T
#375888	88T
#375892	92T
#375896	96T



SET-UP TUNING



STRENGTH



STYLE



PERFORMANCE



WEIGHT SAVING



SET-UP TUNING



STRENGTH



STYLE



PERFORMANCE



WEIGHT SAVING



SET-UP TUNING



STRENGTH



STYLE



PERFORMANCE



WEIGHT SAVING



#371204-K
Black

#371204
White

X1 Composite Adjustable Front Wing - Flat Design

- Multi-adjustable downforce front wing
- Flat design
- ETS approved
- 2 colors available: white & black



SET-UP TUNING



STRENGTH



STYLE



PERFORMANCE



WEIGHT SAVING



#371202

X1 Composite Front Wing - Black

- Adjustable downforce
- ETS approved
- Slower direction change - easier in chicanes



SET-UP TUNING



STRENGTH



STYLE



PERFORMANCE



WEIGHT SAVING



#371203-K
Black

#371203
White

X1 Composite Adjustable Front Wing

- Multi-adjustable downforce front wing
- ETS approved
- 2 colors available: white & black



SET-UP TUNING



STRENGTH



STYLE



PERFORMANCE



WEIGHT SAVING

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