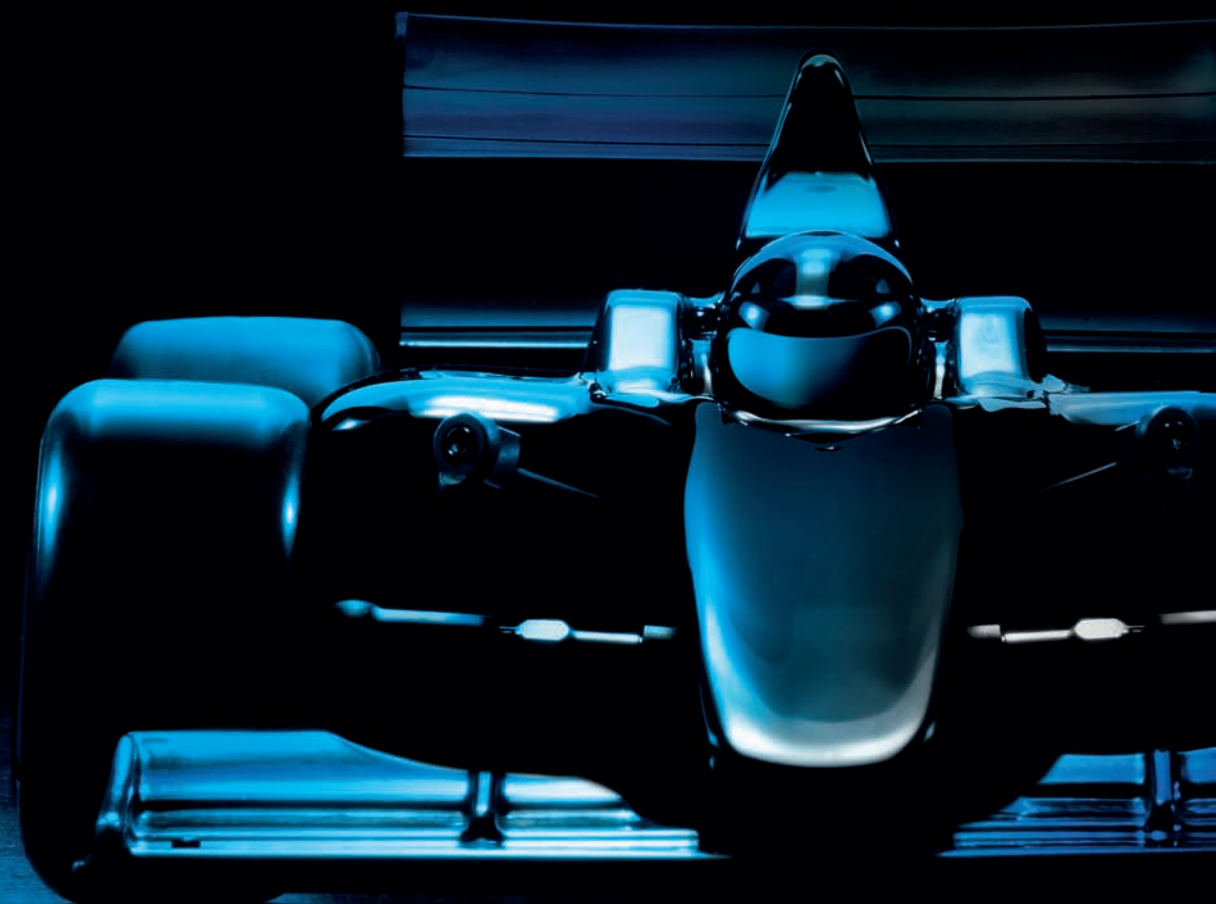


1/10 LUXURY ELECTRIC FORMULA

XRAY X1



INSTRUCTION MANUAL
FOR X1'20 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 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.

XRAY

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.

SYMBOLS USED

<p>Part bags used</p>	<p>Assemble in the specified order</p>	<p>Assemble left and right sides the same way</p>	<p>Pay attention here</p>	<p>Assemble as many times as specified (here twice)</p>	<p>Cut off remaining material</p>	<p>Apply CA glue</p>	<p>Detail view</p>
<p>Apply oil</p>	<p>Apply grease</p>	<p>Use pliers</p>	<p>Ensure smooth non-binding movement</p>	<p>Tighten screw gently</p>	<p>CORRECT Overtightened</p> <p>WRONG The threads are stripped.</p>	<p>Assembly view</p>	

TOOLS REQUIRED

HUDY TOOLS:

Allen: 1.5mm Allen: 2.0mm Allen: 2.5mm Allen: 3.0mm Phillips: 3.0mm Socket: 7.0mm

Reamer (HUDY #107600) or (HUDY #107601)

<p>Scissors (HUDY #188990)</p>	<p>Combination Pliers (HUDY #189020)</p>	<p>Side Cutters (HUDY #189010)</p>	<p>Pocket Hobby Knife (HUDY #188981)</p>	<p>Turnbuckle Wrench 4mm (HUDY #181040)</p>	<p>Professional Multi Tool (HUDY #183011)</p>
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EQUIPMENT INCLUDED

<p>HUDY Premium Silicone Oils Oil 600cSt (#106360) Oil 10.000cSt (#106510)</p>	<p>Diff Grease (HUDY #106211)</p>
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NOT INCLUDED

<p>SAMPLE OF OPTIONAL PARTS</p> <table border="1"> <tr> <td>#37XXX</td> <td>OPTION 1</td> </tr> <tr> <td>#37XXX</td> <td>OPTION 2</td> </tr> <tr> <td>#37XXX</td> <td>OPTION 3</td> </tr> </table>	#37XXX	OPTION 1	#37XXX	OPTION 2	#37XXX	OPTION 3	<p>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 optional parts and must be purchased separately.</p>
#37XXX	OPTION 1						
#37XXX	OPTION 2						
#37XXX	OPTION 3						

EQUIPMENT REQUIRED

<p>Transmitter</p>	<p>Receiver</p>	<p>Steering Servo</p>	<p>Electric Motor</p>	<p>Pinion Gear and set-screw</p>	<p>Bearing Oil (HUDY #106230)</p>
<p>Speed Controller</p>	<p>LiPo Battery</p>	<p>Lexan™ Paint</p>	<p>Battery Charger</p>	<p>Fibre Tape (HUDY #107870) Double-sided Tape (HUDY #107875)</p>	<p>Wheels & Tires & Inserts (HUDY #803070 & #803080)</p>

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:

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

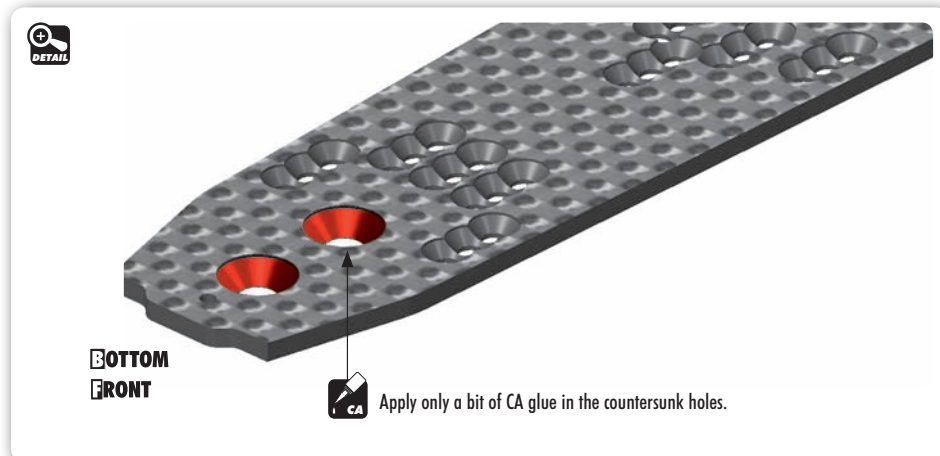
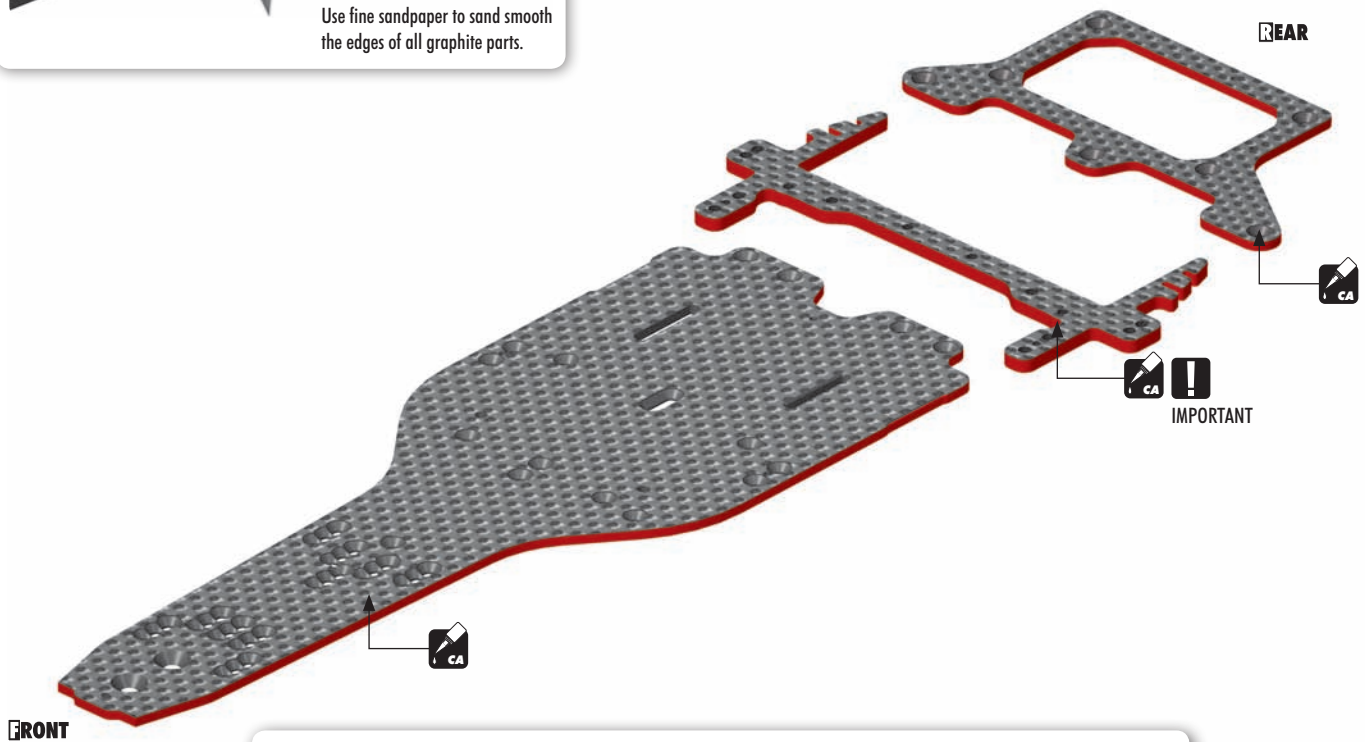
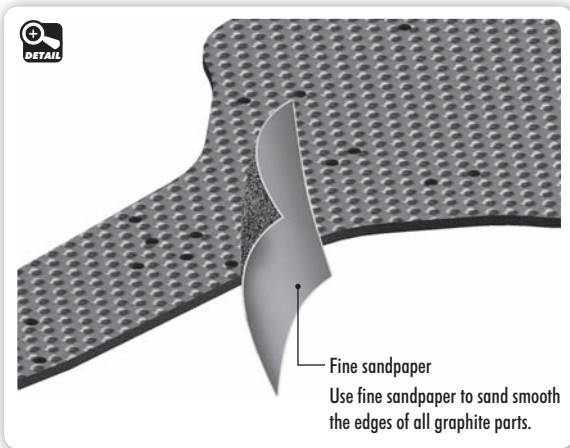
STYLE B - indicates parts that are included in the box.

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

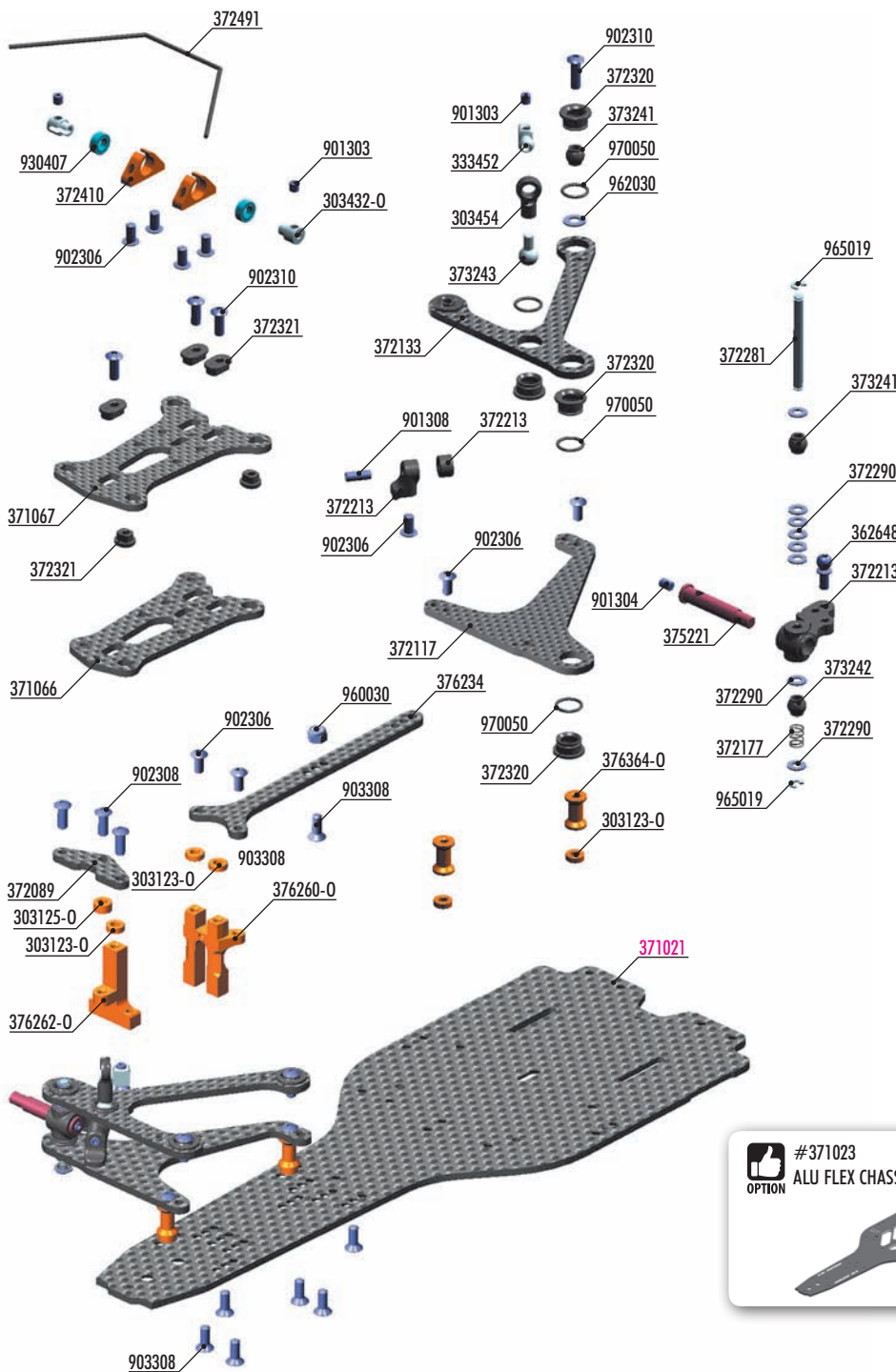
CHASSIS PREPARATION

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

Make it: this for chassis edges and countersunk holes.



1. FRONT SUSPENSION



FRONT COIL SPRINGS		
#372176	C=1.5 GOLD	OPTION
#372177	C=2.0 SILVER	INCLUDED
#372178	C=2.5 BLACK	OPTION
#372179	C=3.0 GREY	OPTION
#372180	C=3.5 GOLD	OPTION
#372181	C=4.0 SILVER	OPTION
#372182	C=5.0 BLACK	OPTION
#372183	C=5.5 GREY	OPTION

ANTI-ROLL BARS		
#372491	1.1mm	INCLUDED
#372492	1.2mm	OPTION
#372493	1.3mm	OPTION
#372494	1.4mm	OPTION

ALU CASTER BUSHINGS		
#372327	6°, 9° (3)	OPTION
#372328	3°, 12° (3)	OPTION

ALU CAMBER BUSHINGS		
#372325	1.5°, 2.0° (2)	OPTION
#372326	1.0°, 2.5° (2)	OPTION

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

#372115	X1 GRAPHITE LOWER SUSPENSION ARM 2.5mm	
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#371023	ALU FLEX CHASSIS - 2.0mm
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#371022	GRAPHITE CHASSIS - HARD - 2.5mm
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BAG


01

- 303123-0 ALU SHIM 3x6x2.0mm - ORANGE (10)
- 303125-0 ALU SHIM 3x6x3.0mm - ORANGE (10)
- 303432-0 ALU ANTI-ROLL BAR BUSHING - ORANGE (2)
- 303454 BALL JOINT 4.9mm - OPEN (4)
- 333452 ALU ANTI-ROLL BAR PIVOT BALL 4.9mm (2)
- 362648 BALL END 4.9mm WITH THREAD 4mm (2)
- 371066 X1'20 GRAPHITE ARM MOUNT PLATE - NARROW TRACK-WIDTH - 2.5mm
- 371067 X1'20 GRAPHITE ARM MOUNT PLATE - WIDE TRACK-WIDTH - 2.5mm
- 372089 X1'20 GRAPHITE FRONT ARM BRACE 2.5mm
- 372117 GRAPHITE LOWER SUSPENSION ARM 2.5mm
- 372133 GRAPHITE UPPER SUSPENSION ARM 2.5mm
- 372177 FRONT COIL SPRING 3.6x6x0.5mm; C=3.5 - GOLD (2)
- 372213 COMPOSITE STEERING BLOCK & BACKSTOPS
- 372281 KING PIN (2)
- 372290 ALU SHIM 3.2x4.8x0.5 (4)
- 372320 COMPOSITE ARM BUSHING (4)
- 372321 COMPOSITE CASTER & CAMBER BUSHING (2+2+2+2)
- 372410 ALU BALL-BEARING ANTI-ROLL BAR HOLDER - ORANGE
- 372491 ANTI-ROLL BAR - FRONT 1.1mm
- 373241 COMPOSITE PIVOTBALL UNIVERSAL 6.0mm (2)
- 373242 COMPOSITE PIVOTBALL UNIVERSAL 6.0mm - SHORT (2)

- 373243 BALL END 6.0mm WITH THREAD 4mm (2)
- 375221 FRONT WHEEL AXLE - HUDY SPRING STEEL™ (2)
- 376234 X1'20 GRAPHITE TOP DECK 2.5mm
- 376260-0 ALU SERVO MOUNT - ORANGE
- 376262-0 X1'20 ALU FRONT STAND - ORANGE
- 376364-0 ALU MOUNT 10.8mm - ORANGE (2)
- 901303 HEX SCREW SB M3x3mm (10)
- 901304 HEX SCREW SB M3x4mm (10)
- 901308 HEX SCREW SB M3x8mm (10)
- 902306 HEX SCREW SH M3x6mm (10)
- 902308 HEX SCREW SH M3x8mm (10)
- 902310 HEX SCREW SH M3x10mm (10)
- 903308 HEX SCREW SFH M3x8mm (10)
- 930407 BALL-BEARING 4x7x2.5 STEEL SEALED - OIL (2)
- 960030 NUT M3 (10)
- 962030 WASHER S 3x6x0.3mm (10)
- 965019 E-CLIP 1.9 (10)
- 970050 O-RING 5x1mm (10)


371021 X1'20 GRAPHITE CHASSIS 2.5mm

1. FRONT SUSPENSION

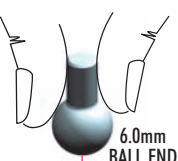


970050
0 5x1

UPPER ARMS

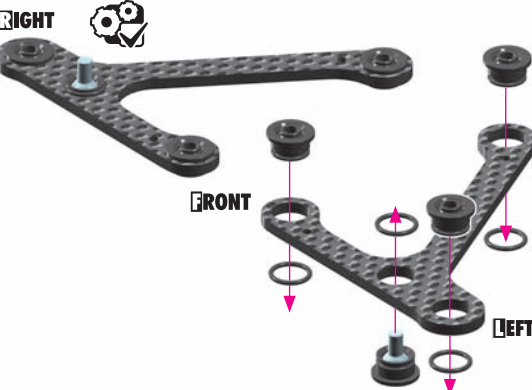


6x
COMPOSITE BALL



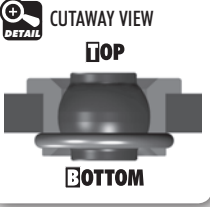
2x
6.0mm
BALL END

RIGHT




FRONT **LEFT**

CUTAWAY VIEW




TOP
BOTTOM

UPPER ARMS



970050
0 5x1

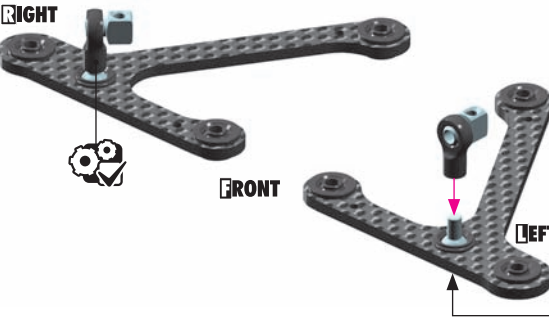
UPPER ARMS



2x

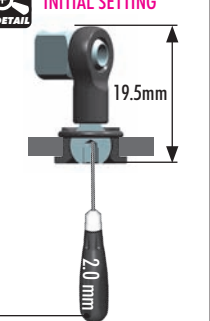
TIP
Professional Multi Tool
(HUDY #183011)

RIGHT



FRONT **LEFT**

INITIAL SETTING



19.5mm
2.0 mm



970050
0 5x1


LOWER ARMS



2x
SHORT COMPOSITE BALL

NOTE ORIENTATION

RIGHT



FRONT **LEFT**

#372115
X1 GRAPHITE LOWER
SUSPENSION ARM 2.5mm

OPTION

To improve steering in low-traction conditions with standard front F1 tires.




Remove excess material



CUTAWAY VIEW

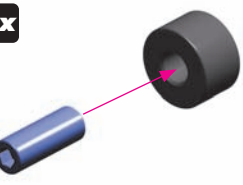


TOP
BOTTOM

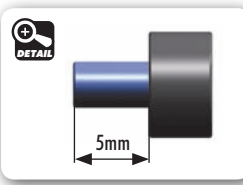


901308
SB M3x8

2x

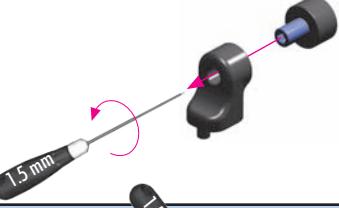


DETAIL




5mm

2x

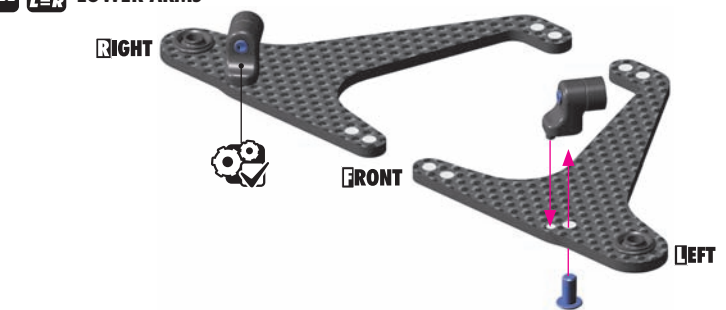


1.5 mm




902306
SH M3x6

LOWER ARMS



RIGHT **FRONT** **LEFT**

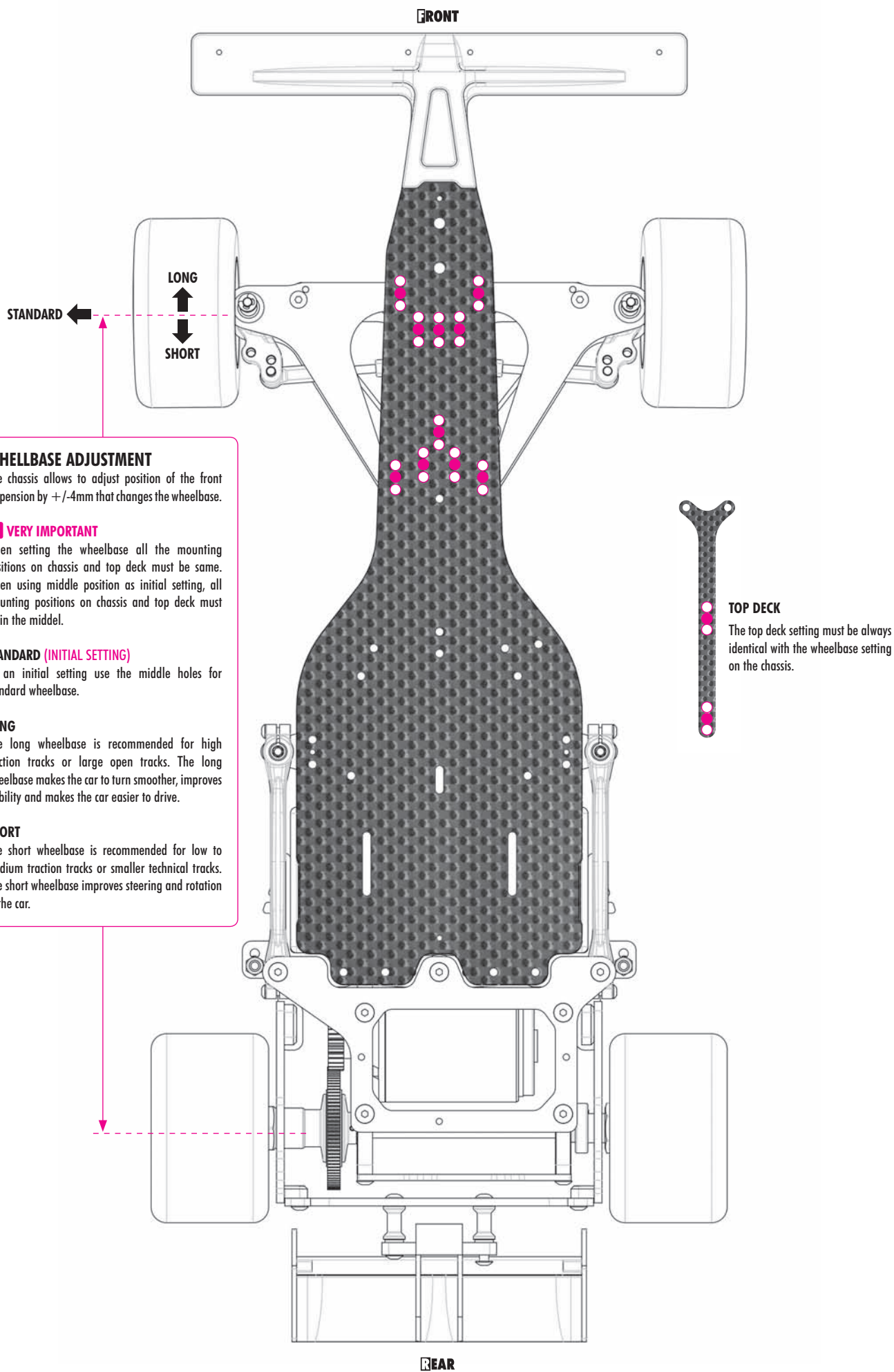
DETAIL



STEERING ANGLE
BACKSTOP

The adjustable backstops are used to limit the steering angle. Adjust the backstop with the set-screw to achieve the maximum steering angle needed. Adjust the steering angle on both L & R sides to the same amount.

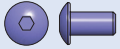
1. FRONT SUSPENSION



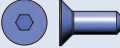
1. FRONT SUSPENSION



303123-0
SHIM 3x6x2



902306
SH M3x6



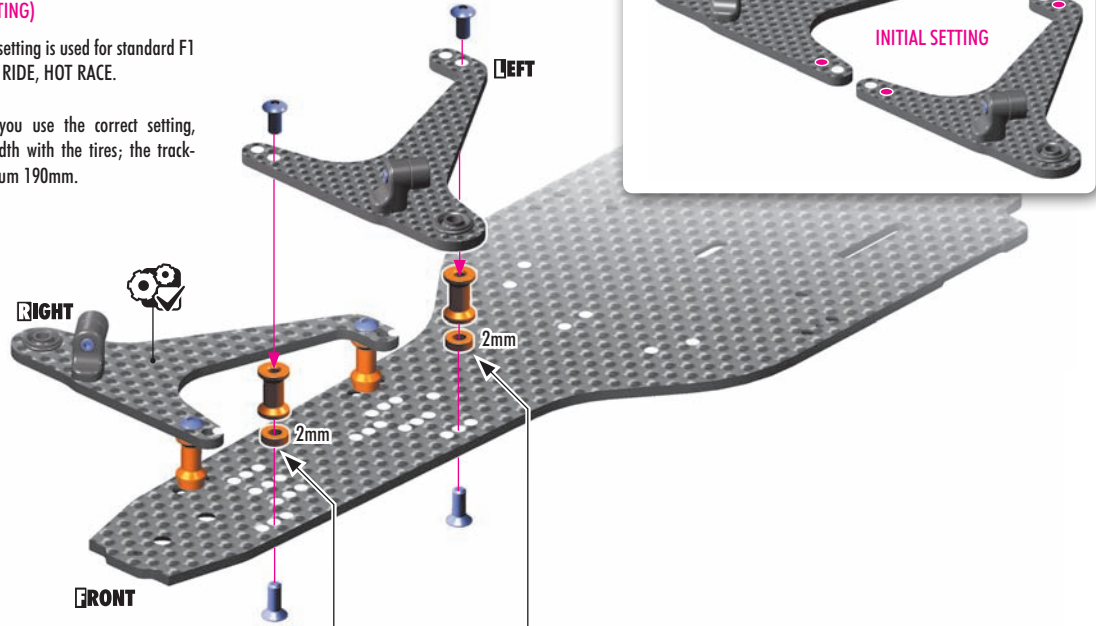
903308
SFH M3x8

2x ALTERNATIVE 1

STANDARD TRACK-WIDTH (INITIAL SETTING)

Standard track-width setting is used for standard F1 front tires such HUDY, RIDE, HOT RACE.

To make sure that you use the correct setting, measure the track-width with the tires; the track-width must be maximum 190mm.



! These shims adjust the roll-center of the front bottom arm as well as the front ride height. The thickness of the shim depends on the tire diameter. For initial setting, use the 3x6x2mm shim.
IMPORTANT!
Use the same shim thickness under all 4 posts.



#371023
ALU FLEX CHASSIS - 2.0mm

Makes the car easier to drive and more stable in high-traction conditions or with tires that generate oversteering problems.

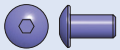


#371022
GRAPHITE CHASSIS - HARD - 2.5mm

The 2.5mm chassis made from harder graphite material was developed for very-high traction conditions, or when using tires that offer a lot of steering which makes the car more difficult to drive. This chassis makes the car more stable and easier to drive, and eliminates oversteering.



303123-0
SHIM 3x6x2



902306
SH M3x6



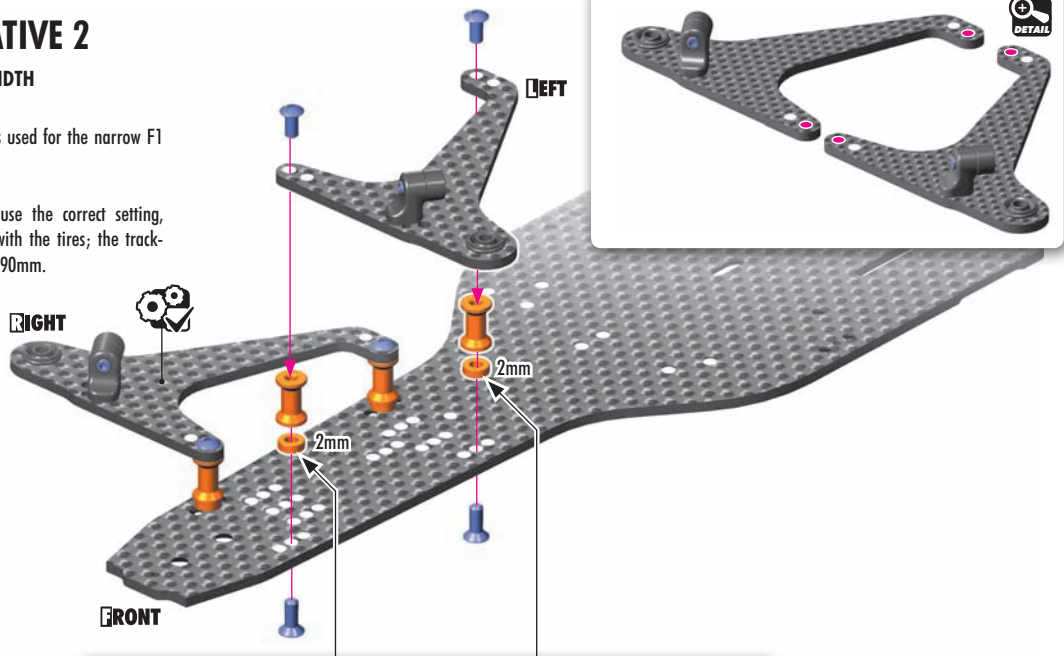
903308
SFH M3x8

2x ALTERNATIVE 2

WIDE TRACK-WIDTH

Wide track-width setting is used for the narrow F1 front tires such as Volante.

To make sure that you use the correct setting, measure the track-width with the tires; the track-width must be maximum 190mm.

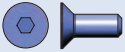


! These shims adjust the roll-center of the front bottom arm as well as the front ride height. The thickness of the shim depends on the tire diameter. For initial setting, use the 3x6x2mm shim.
IMPORTANT!
Use the same shim thickness under all 4 posts.

1. FRONT SUSPENSION



902306
SH M3x6



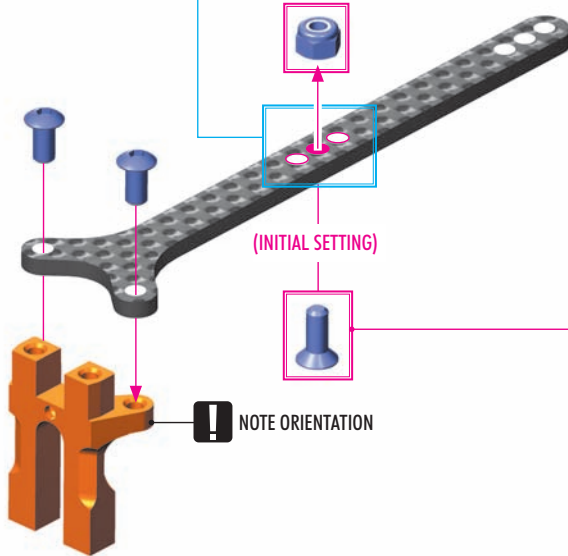
903308
SFH M3x8



960030
N M3

! The top deck mounting position must always be identical as the WHEELBASE mounting position on chassis.

For **INITIAL SETTING** use the middle position.



OPTION

ALU NUTS M3

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

! ALTERNATIVE 1 LONG SHOCK (FORWARD MOUNT POSITION)

For the LONG shock alternative, mount the shock holder on the top deck.



! ALTERNATIVE 2 SHORT SHOCK (REARWARD MOUNT POSITION)

For the SHORT shock alternative, without the adaptor, mount the shock holder on the graphite plate for mounts (page 18/ step 2)

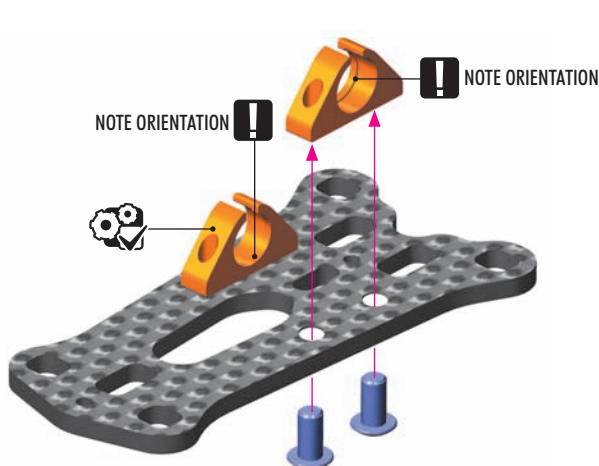


902306
SH M3x6

ALTERNATIVE 1

STANDARD TRACK-WIDTH
(INITIAL SETTING)

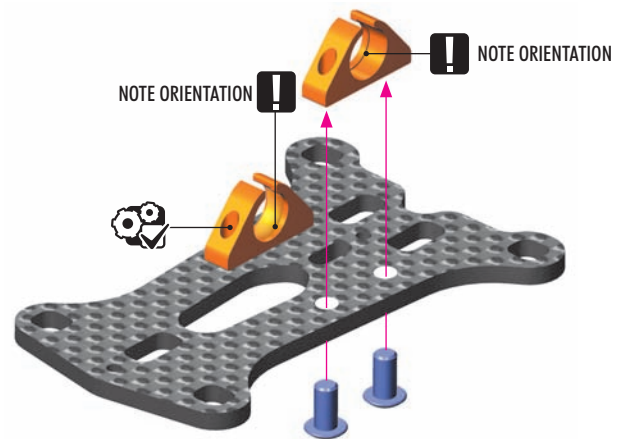
! IMPORTANT!
Use this standard track-width arm mount plate only with combination with standard track-width setting of the graphite lower suspension arm.



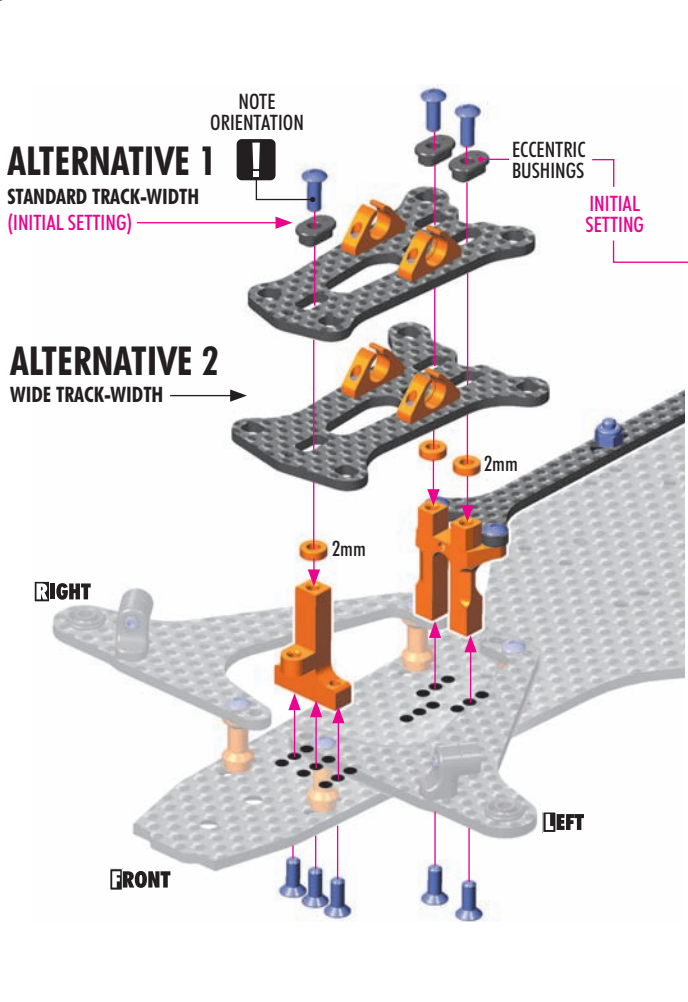
ALTERNATIVE 2

WIDE TRACK-WIDTH

! IMPORTANT!
Use this wide track-width arm mount plate only with combination with wide track-width setting of the graphite lower suspension arm.

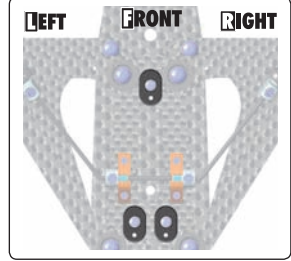


1. FRONT SUSPENSION



! All three bushings **MUST** have same orientation. These bushings adjust the front **CASTER**:

- = 3° CASTER
- = 6° CASTER
- = 9° CASTER
- = 12° CASTER

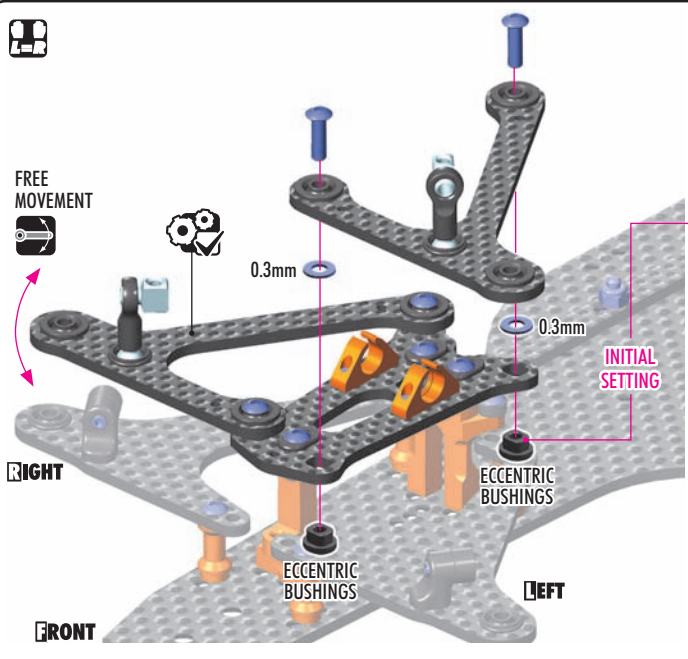
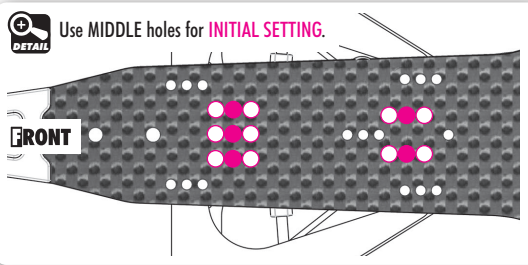


These eccentric bushings adjust the front **CASTER**.

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

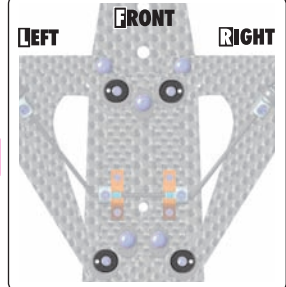
LESS caster angle = more reactive steering. Use on technical tracks where a lot of steering response is needed.

OPTION	ALU CASTER BUSHINGS			
#372327	CASTER 6°, 9° (3)	ALU	OPTION	
#372328	CASTER 3°, 12° (3)	ALU	OPTION	



! All four bushings **MUST** have same orientation. These bushings adjust the front **CAMBER**:

- = 1.0° CAMBER
- = 1.5° CAMBER
- = 2.0° CAMBER
- = 2.5° CAMBER

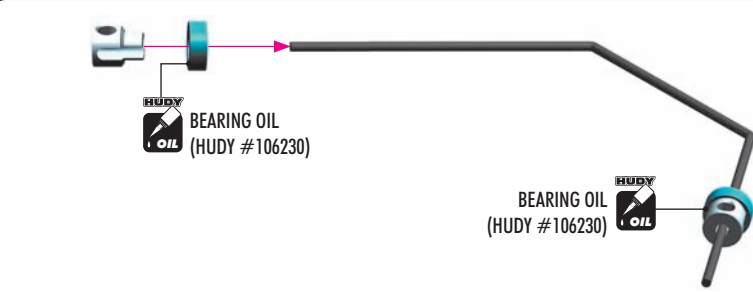
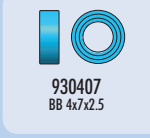


These eccentric bushings adjust the front **CAMBER**.

The more camber angle, the more steering there is. However, it makes the car more sensitive and more difficult to drive.

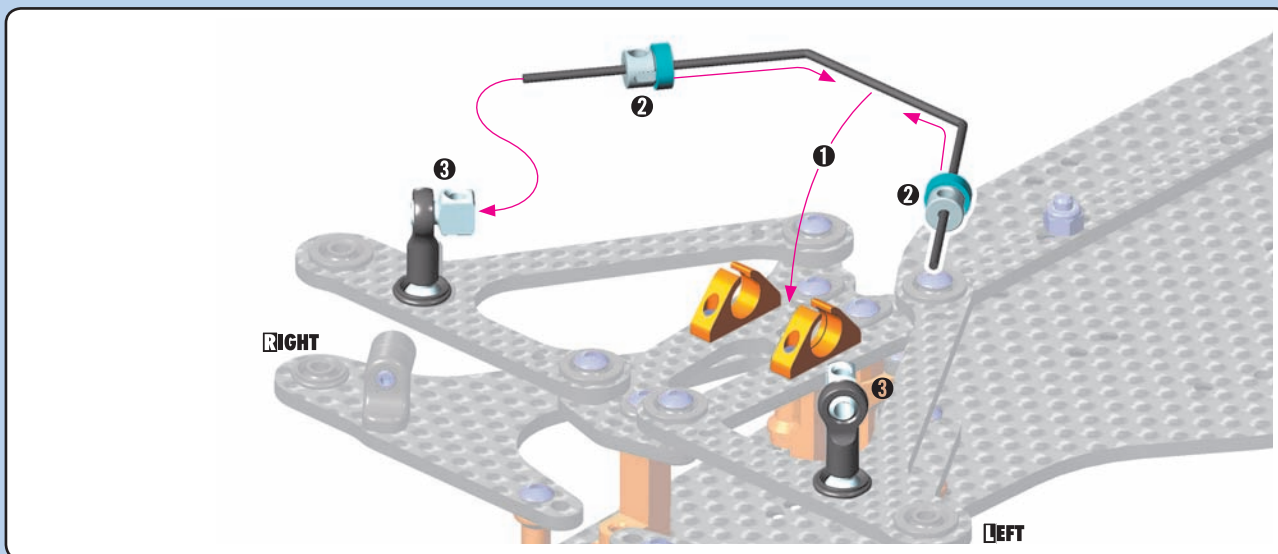
Use **LESS** camber angle for carpet and other high-traction tracks. Use **MORE** camber on asphalt and low-traction tracks.

OPTION	ALU CAMBER BUSHINGS			
#372325	CAMBER 1.5°, 2.0° (2)	ALU	OPTION	
#372326	CAMBER 1.0°, 2.5° (2)	ALU	OPTION	

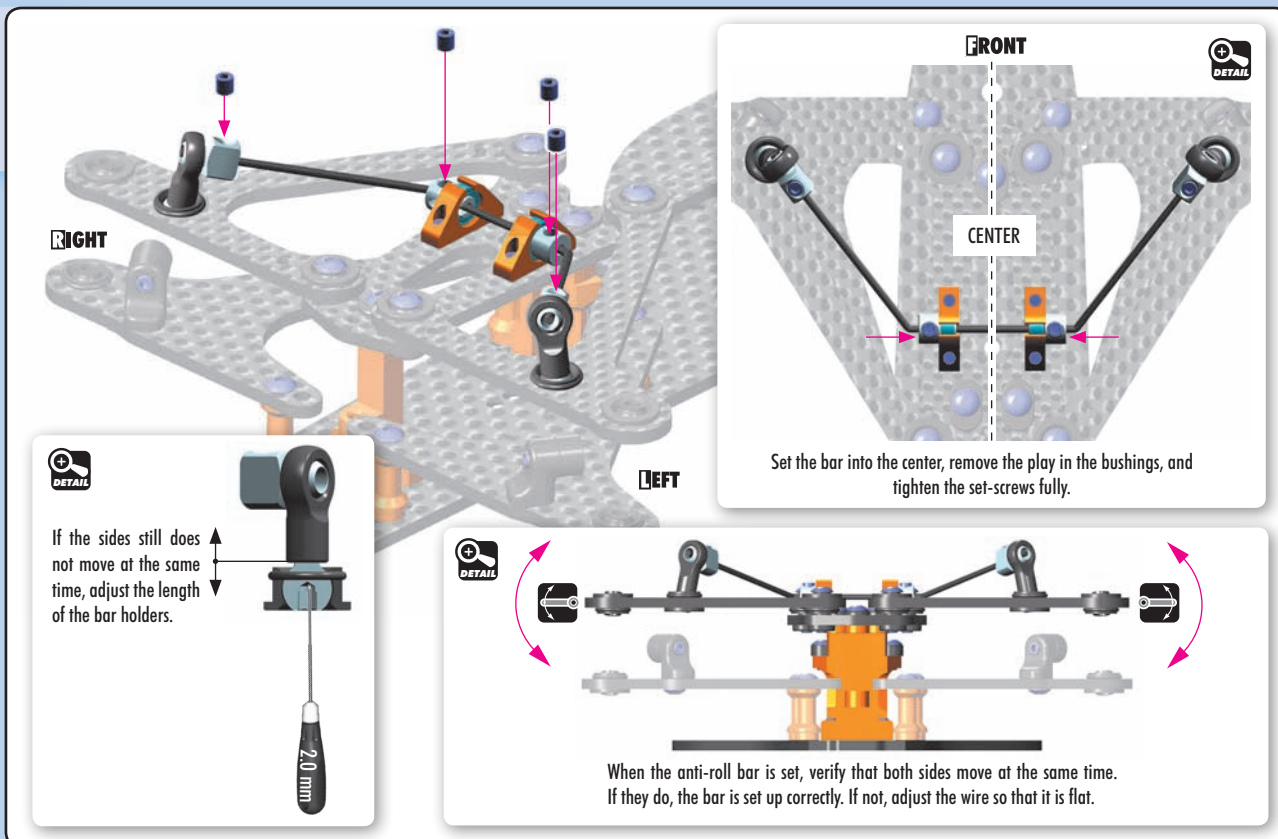


OPTION	ANTI-ROLL BARS		
#372491	1.1mm	INCLUDED	
#372492	1.2mm	OPTION	
#372493	1.3mm	OPTION	
#372494	1.4mm	OPTION	

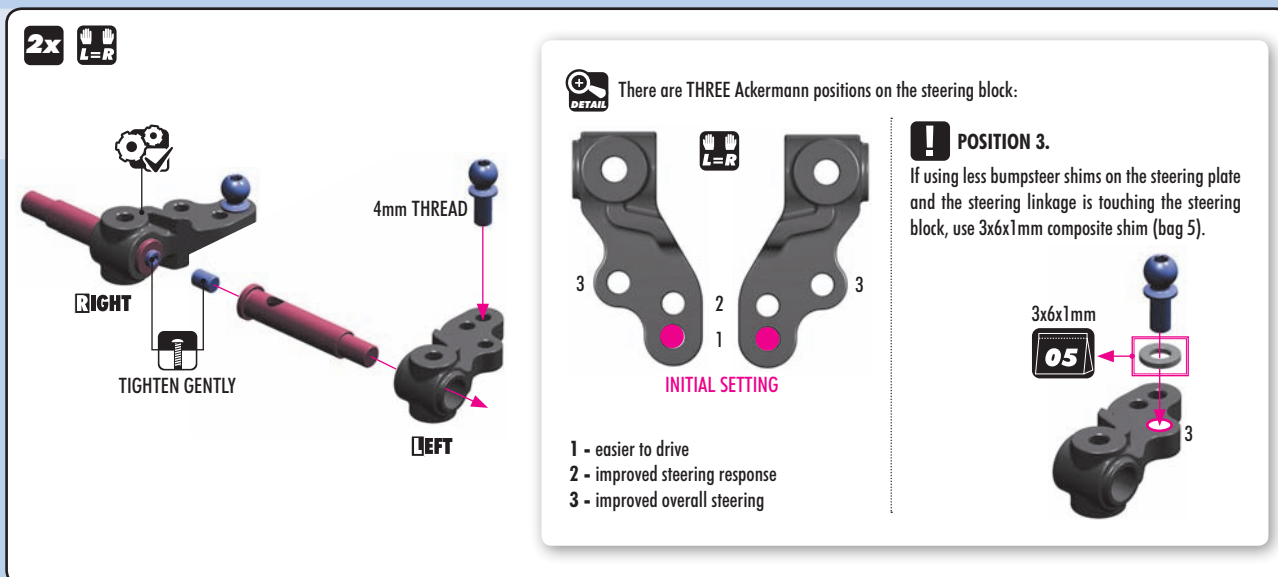
1. FRONT SUSPENSION



901303
SB M3x3



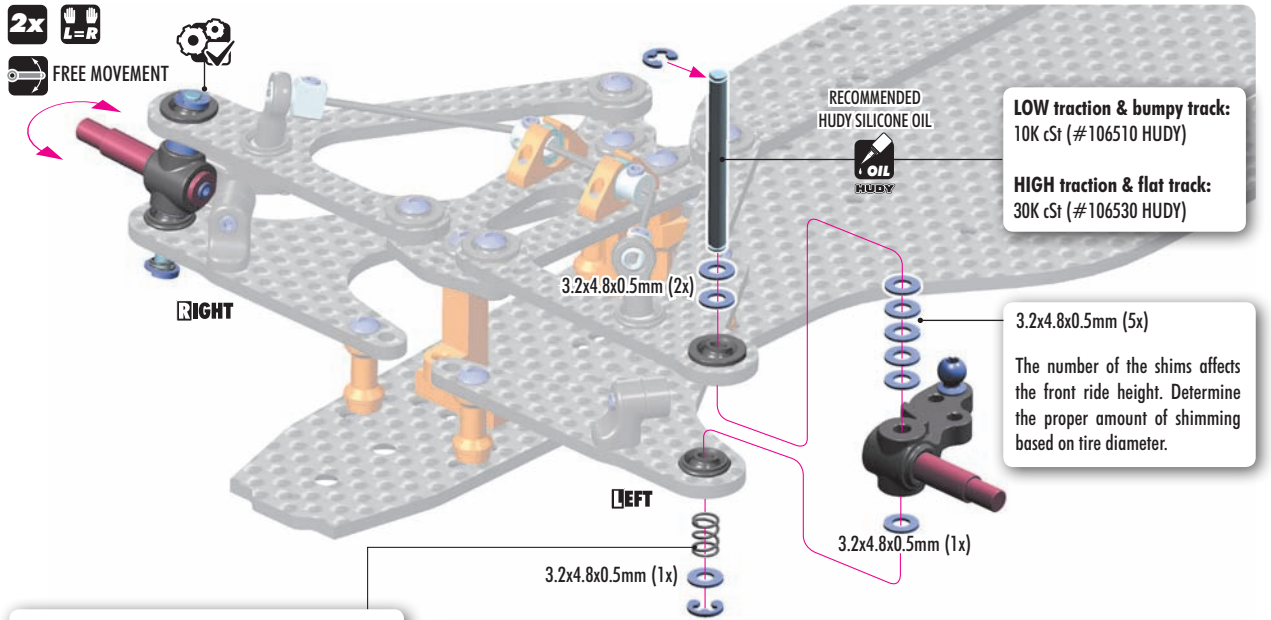
901304
SB M3x4



1. FRONT SUSPENSION

965019
C 1.9

372290
SHIM 3.2x4.8x0.5

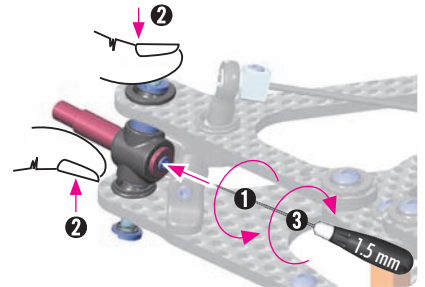


OPTION	FRONT COIL SPRINGS	
#372176	C=1.5 GOLD	OPTION
#372177	C=2.0 SILVER	INCLUDED
#372178	C=2.5 BLACK	OPTION
#372179	C=3.0 GREY	OPTION
#372180	C=3.5 GOLD	OPTION
#372181	C=4.0 SILVER	OPTION
#372182	C=5.0 BLACK	OPTION
#372183	C=5.5 GREY	OPTION

2x L=R

After assembling the steering block, do the following:

1. Loosen the set-screw slightly.
2. Use your thumb to press down on the top of the kingpin, while using your other fingers to pull up the steering block.
3. Tighten the set-screw.



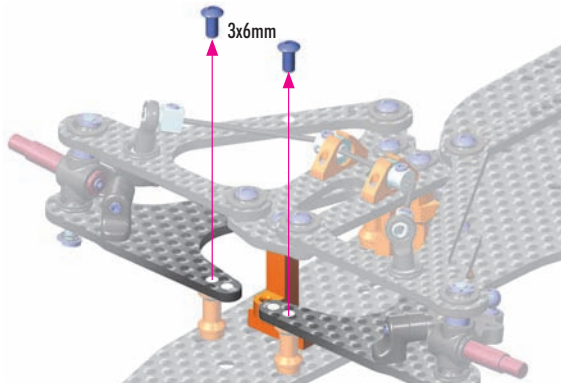
902308
SH M3x8

303125-0
SHIM 3x6x3

Aluminum front top deck mount allows to connect graphite arm mount plate with lower suspension arms to increase steering response.

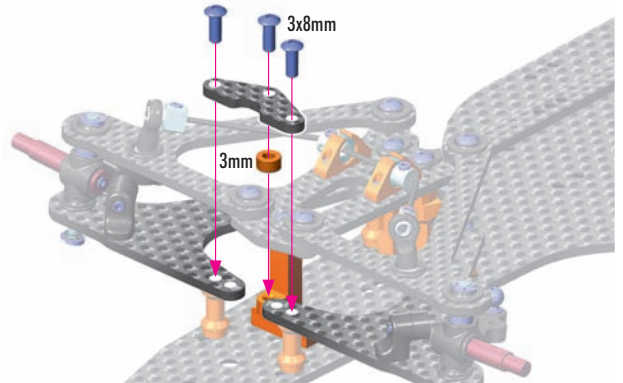
STEP 1:

To install the graphite brace remove the 3x6mm screws.



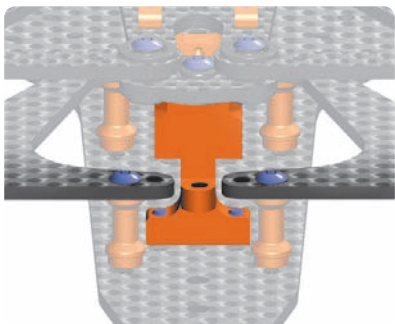
STEP 2:

Install the graphite brace using 3x8mm screws. For stiff setting install also the 3mm shim.



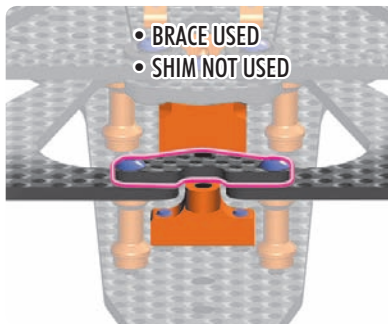
SOFT - WITHOUT THE BRACE (INITIAL SETTING)

The car has less initial steering and is recommended for high traction tracks where the car needs to be easy to drive and less responsive. Recommended for high and very-high traction carpet tracks.



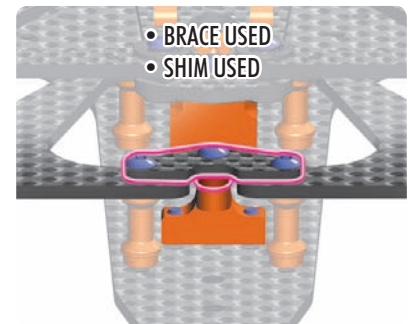
MEDIUM - WITH BRACE

Improves in-corner steering but still keeps the car easy to drive. Recommended for medium-high traction carpet tracks and high traction asphalt tracks.

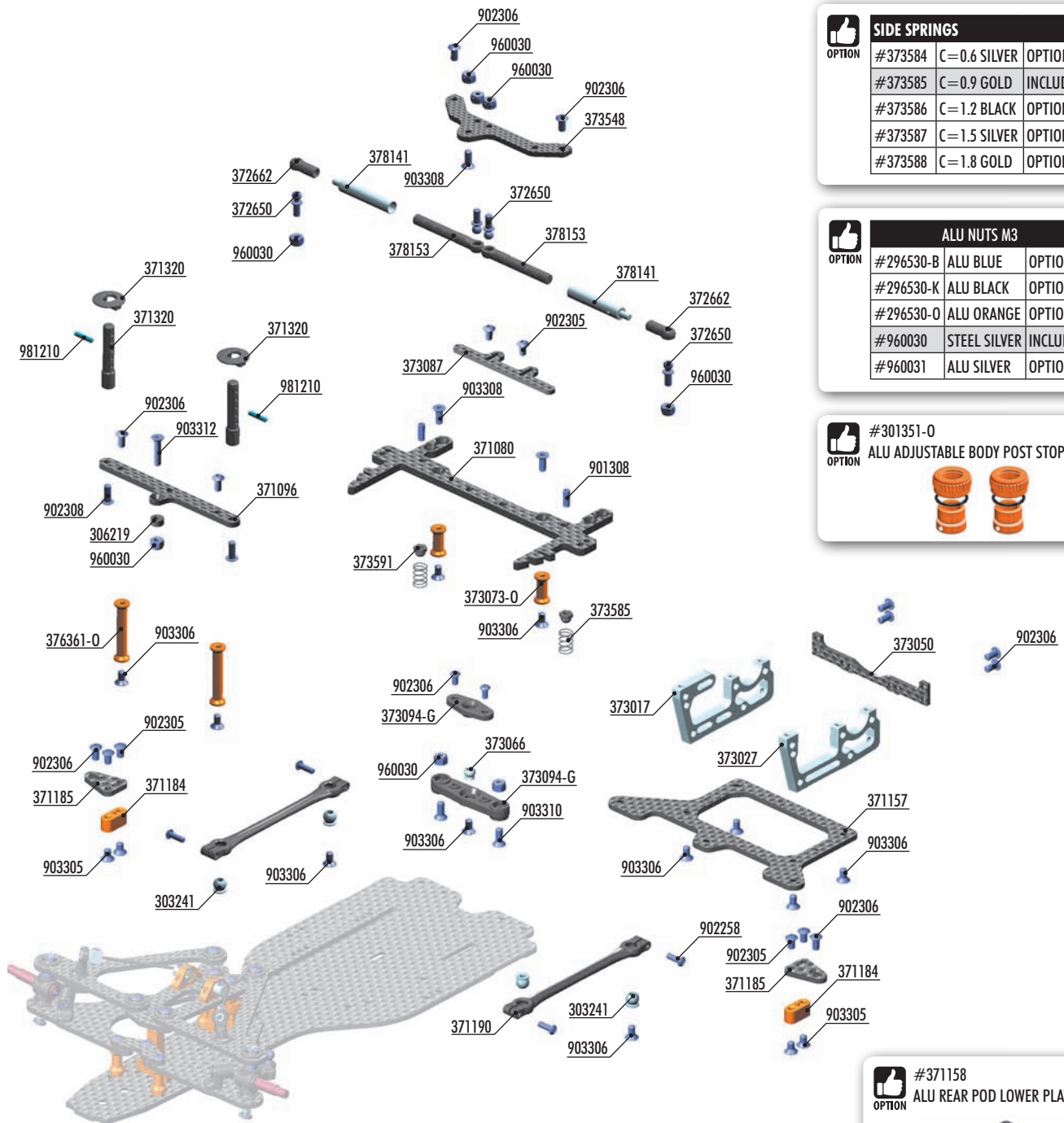


STIFF - WITH BRACE AND CONNECTED TO ALU FRONT STAND

Provides maximum steering response. Recommended for low-medium traction carpet tracks and for all different traction conditions on asphalt tracks.




2. REAR SUSPENSION




OPTION

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



OPTION

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



OPTION

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



OPTION

#371158
ALU REAR POD LOWER PLATE 2.0mm

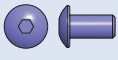


BAG

02

- | | | | |
|----------|--|----------|-------------------------------------|
| 303241 | PIVOT BALL UNIVERSAL 5.8 WITH HEX (4) | 373548 | GRAPHITE REAR POD UPPER PLATE 2.5mm |
| 306219 | COMPOSITE SET OF SERVO SHIMS (4) | 373585 | SIDE SPRING C=0.9 - GOLD (2) |
| 371080 | X1'20 GRAPHITE REAR BRACE 3.5mm | 373591 | COMPOSITE SIDE SPRING HOLDER (2) |
| 371096 | GRAPHITE PLATE FOR MOUNTS 2.5mm | 376361-0 | ALU MOUNT 26.5mm - ORANGE (2) |
| 371157 | X1'20 GRAPHITE REAR POD LOWER PLATE 2.5mm | 378141 | SIDE LINKAGE TUBE (2) |
| 371184 | ALU POD LINK GRAPHITE PLATE HOLDER | 378153 | COMPOSITE LINKAGE SHAFT (2) |
| 371185 | X1'20 GRAPHITE POD LINK PLATE 2.5MM (2) | | |
| 371190 | COMPOSITE POD LINK (2) | 901308 | HEX SCREW SB M3x8 (10) |
| 371320 | COMPOSITE BODY POST (2) | 902258 | HEX SCREW SH M2.5x8 (10) |
| 372650 | BALL-END 4.2mm - THREADED - HUDY SPRING STEEL™ (2) | 902305 | HEX SCREW SH M3x5 (10) |
| 372662 | COMPOSITE BALL-JOINT 4.2 mm (4) | 902306 | HEX SCREW SH M3x6 (10) |
| 373017 | X1'20 ALU REAR BULKHEAD - MOTOR (RIGHT) | 902308 | HEX SCREW SH M3x8 (10) |
| 373027 | X1'20 ALU REAR BULKHEAD - LEFT | 903305 | HEX SCREW SFH M3x5 (10) |
| 373050 | X1'20 GRAPHITE REAR BULKHEAD BRACE 2.0mm | 903306 | HEX SCREW SFH M3x6 (10) |
| 373066 | ALU PIVOT BALL | 903308 | HEX SCREW SFH M3x8 (10) |
| 373073-0 | ALU REAR BRACE MOUNT 13mm - ORANGE (2) | 903310 | HEX SCREW SFH M3x10 (10) |
| 373087 | GRAPHITE BATTERY BACKSTOP 2.0mm | 903312 | HEX SCREW SFH M3x12 (10) |
| 373094-G | LOWER & UPPER PIVOT BRACE - LOW ROLL-CENTER - GRAHPITE | 960030 | NUT M3 (10) |
| | | 981210 | PIN 2x10 (10) |

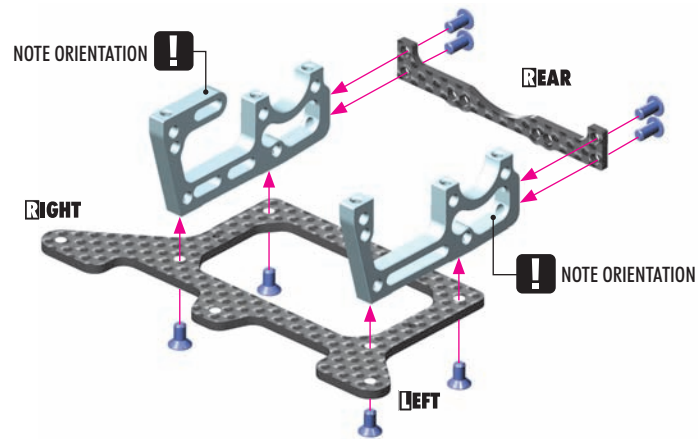
2. REAR SUSPENSION



902306
SH M3x6

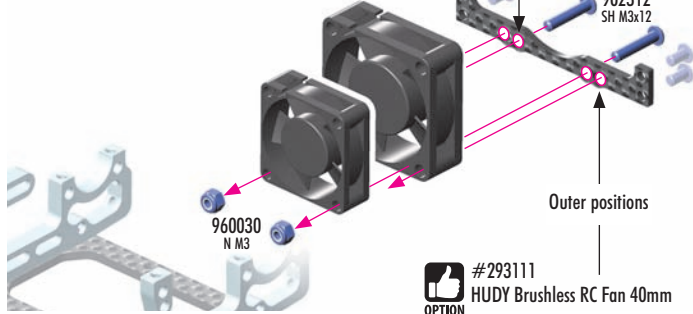


903306
SFH M3x6



#293110

HUDY BRUSHLESS RC FAN 30mm — Inner positions



#293111

HUDY Brushless RC Fan 40mm

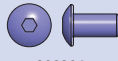


#371158

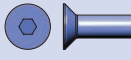
ALU REAR POD LOWER PLATE 2.0mm

OPTION

Is heavier weight, makes the car more stable and easier to drive.



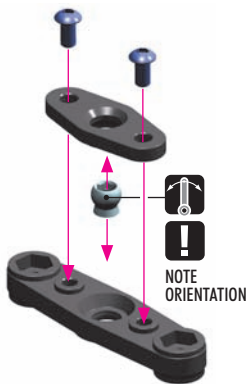
902306
SH M3x6



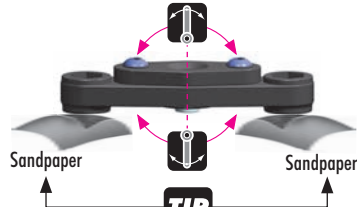
903310
SFH M3x10



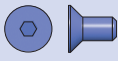
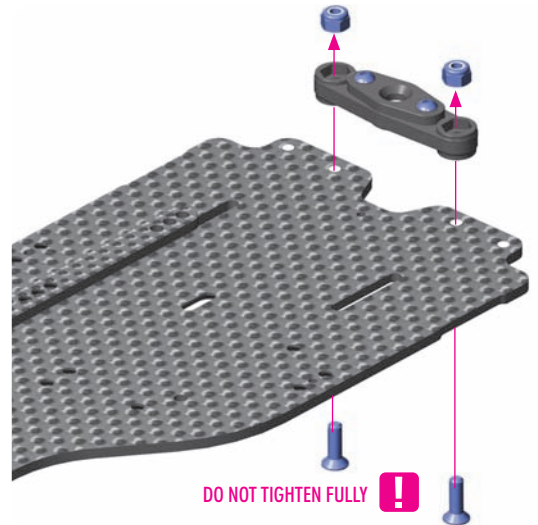
960030
N M3



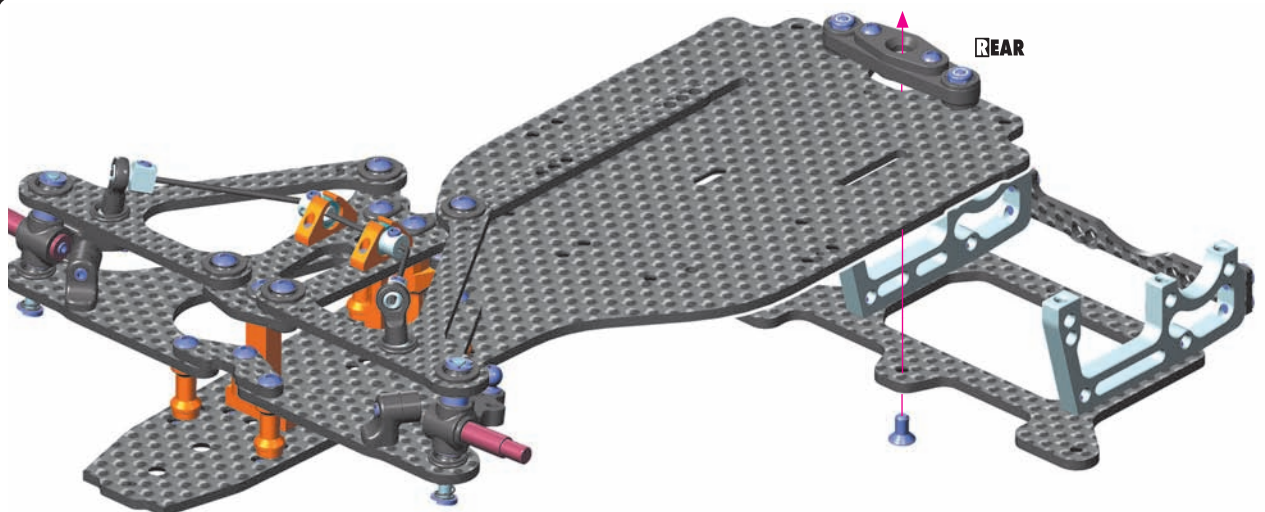
Ensure free, smooth movement without excessive freeplay.



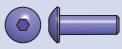
Gently scuff the bottom of the composite lower pivot brace on sandpaper to make the surface slightly rough. This will help the lower pivot brace to grip the chassis surface better.



903306
SFH M3x6



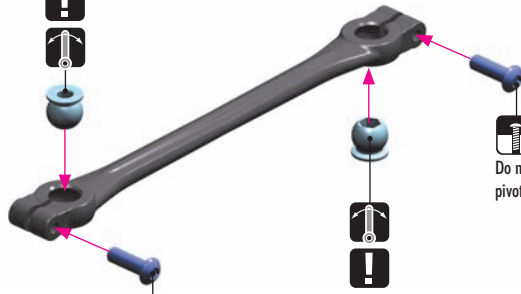
2. REAR SUSPENSION



902258
SH M2.5x8

2x

NOTE
ORIENTATION



Do not tighten fully,
pivotballs must turn freely.

NOTE
ORIENTATION



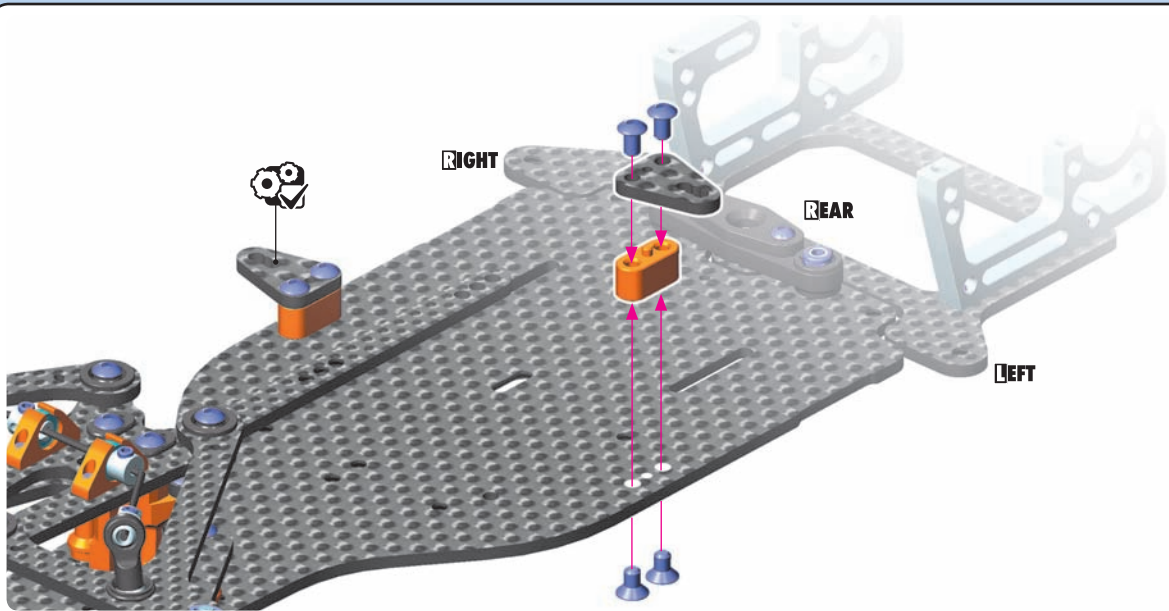
Do not tighten fully,
pivotballs must turn freely.



902305
SH M3x5



903305
SFH M3x5

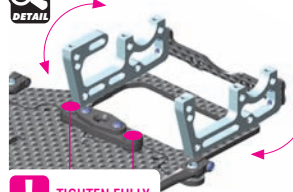
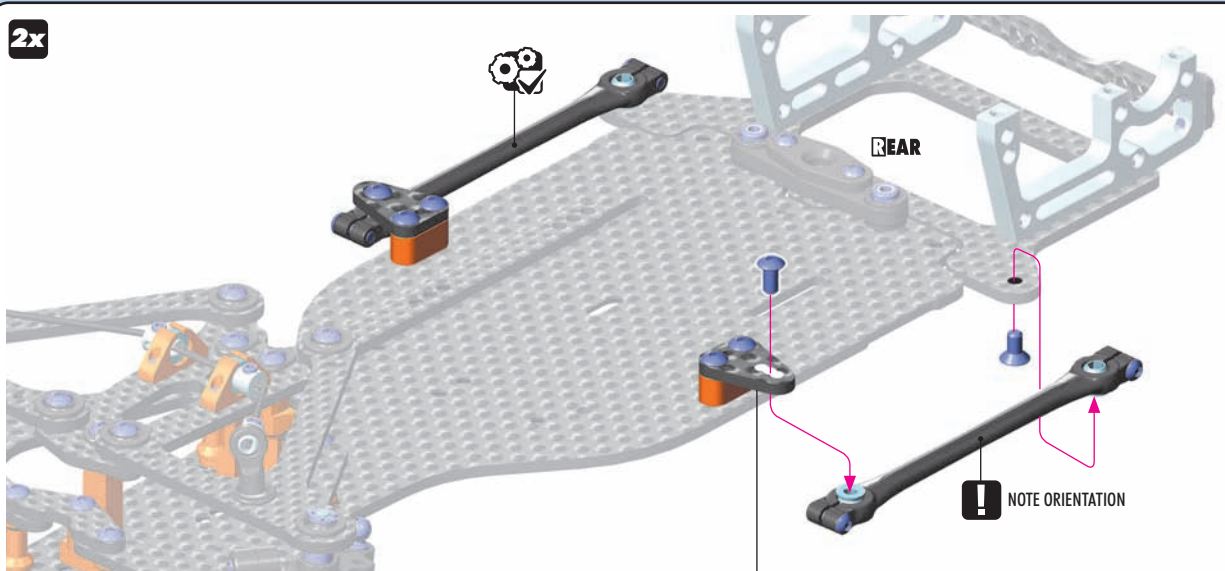


902306
SH M3x6



903306
SFH M3x6

2x



TIGHTEN FULLY



Ensure free, smooth movement. If the pod plate does not move freely, loosen the nuts of composite pivot brace and tighten again.



POD LINKAGE POSITION
(INITIAL SETTING)

L=R

• OUTER POSITION

Angled link.
Reduces steering, increases stability.

• CENTER POSITION

(INITIAL SETTING)
Straight link - easier to drive.

• INNER POSITION

Angled link.
Increases in-corner steering.

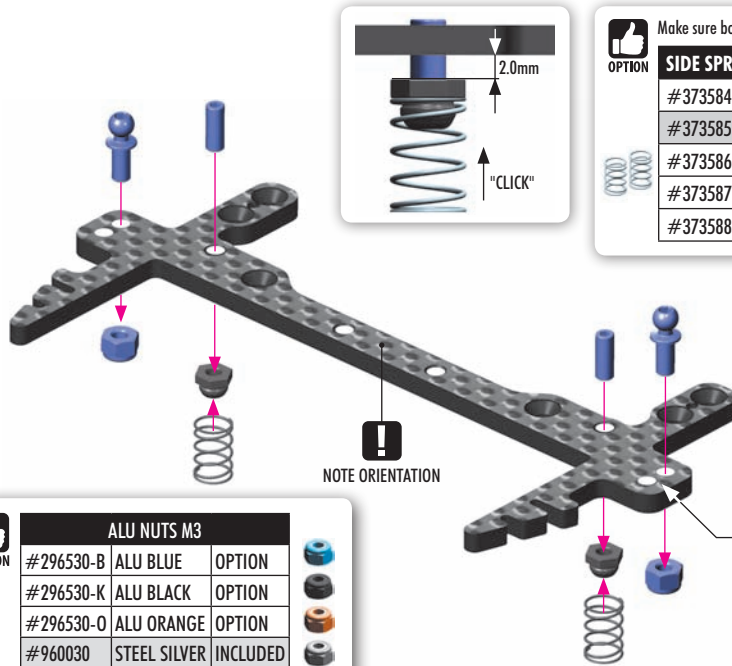
2. REAR SUSPENSION



901308
SB M3x8



960030
N M3



Make sure both side springs are tightened equally, to avoid unwanted tweak.

SIDE SPRINGS

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

SOFTER SPRINGS:

Makes the car easier to drive on low-traction tracks but more difficult to drive on high-traction tracks.

HARDER SPRINGS:

Improves steering response, but also increases traction rolling.



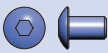
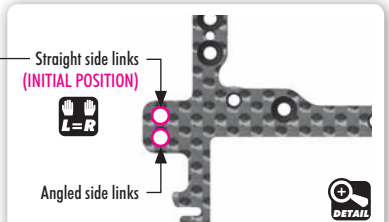
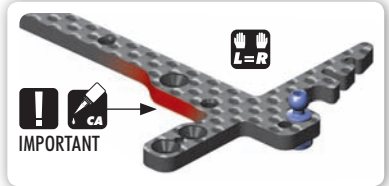
OPTION

ALU NUTS M3

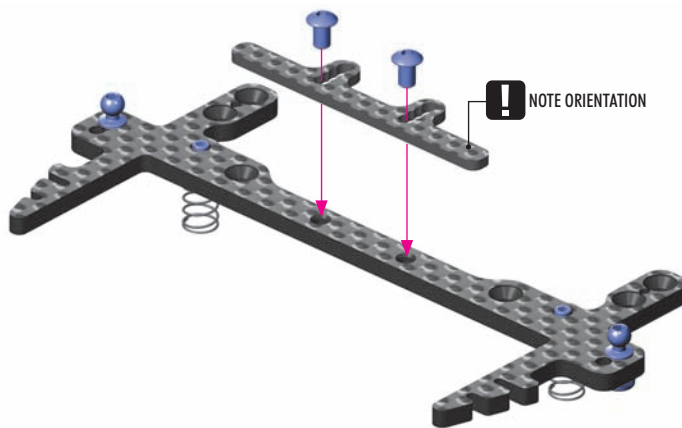
#296530-B	ALU BLUE	OPTION
#296530-K	ALU BLACK	OPTION
#296530-O	ALU ORANGE	OPTION
#960030	STEEL SILVER	INCLUDED
#960031	ALU SILVER	OPTION



NOTE ORIENTATION



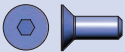
902305
SH M3x5



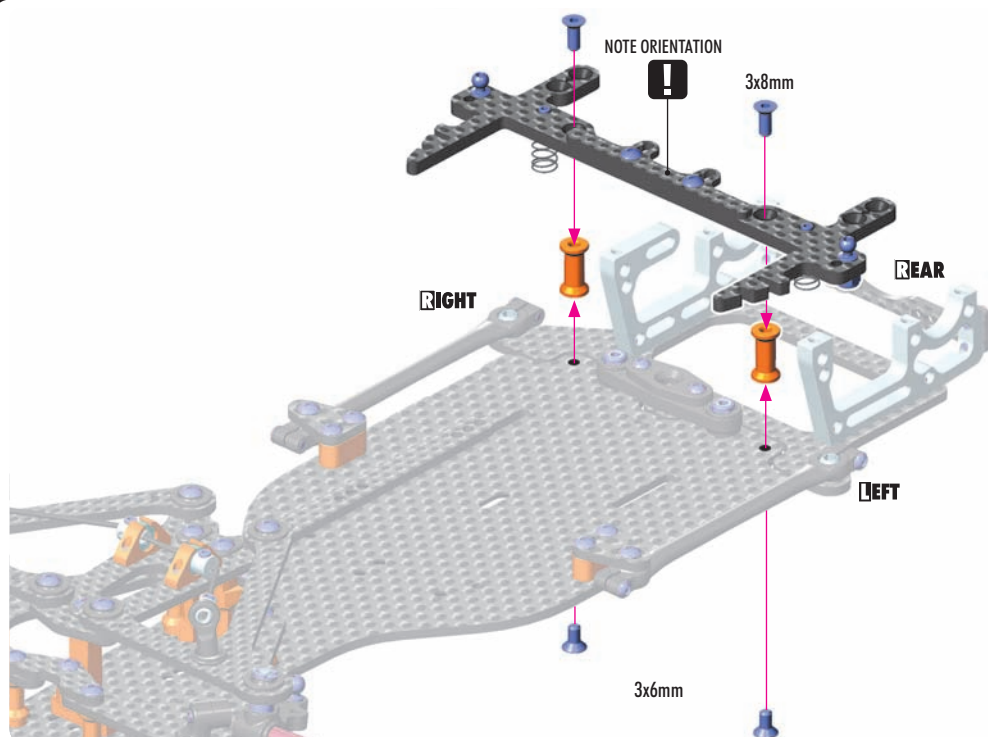
For battery backstop adjustment check page 37 / step 1.



903306
SFH M3x6



903308
SFH M3x8



2. REAR SUSPENSION



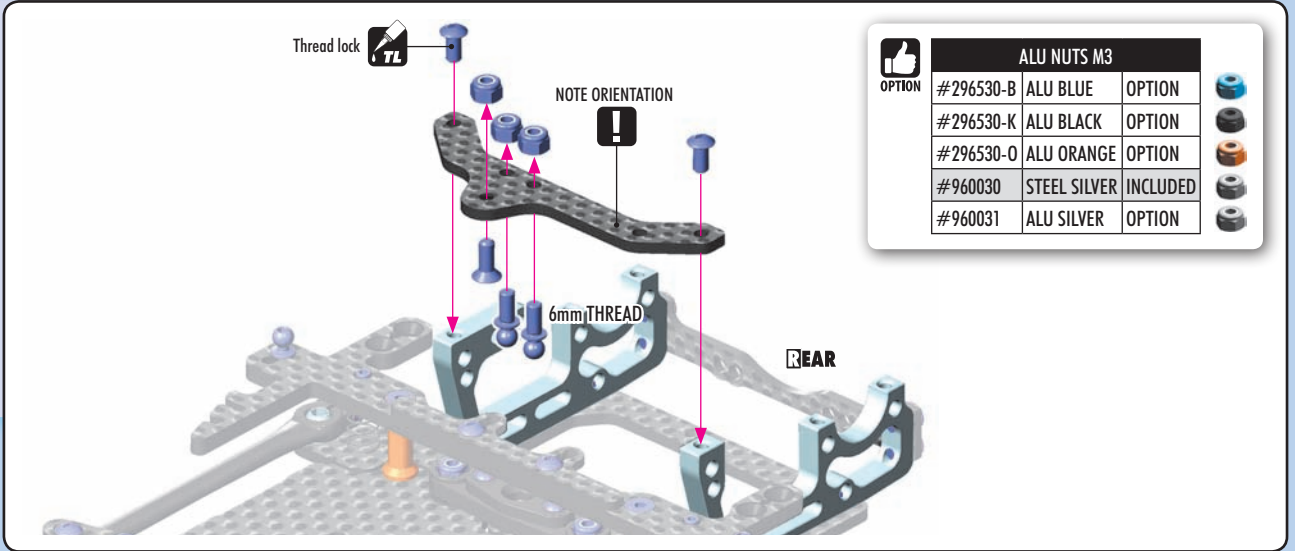
902306
SH M3x6



903308
SFH M3x8



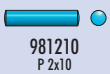
960030
N M3



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



902308
SH M3x8



981210
P 2x10



903308
SFH M3x8



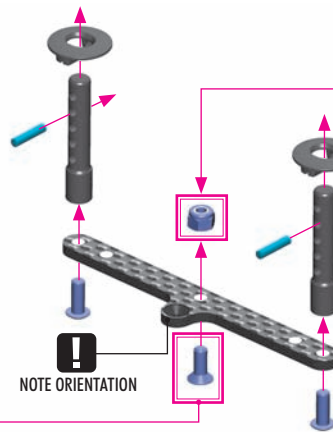
960030
N M3

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

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



BAG
From **01**



ALTERNATIVE 2
SHORT SHOCK
(REARWARD MOUNT POSITION)

For the SHORT shock alternative, without the adaptor, mount the shock holder on the graphite plate for body mounts.



306219
SHIM 3x6x3



902306
SH M3x6



903306
SFH M3x6



903312
SFH M3x12

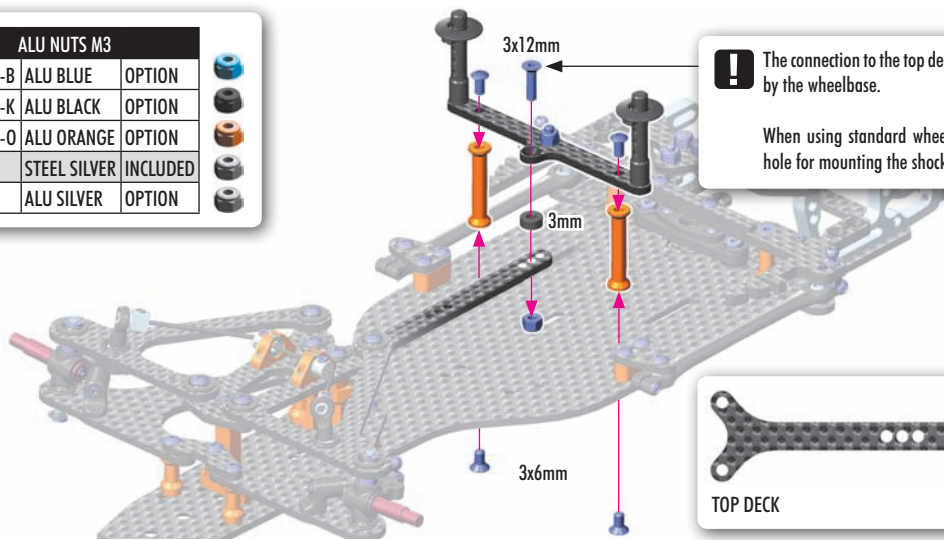


903312
SFH M3x12



960030
N M3

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



! The connection to the top deck is directly influenced by the wheelbase.

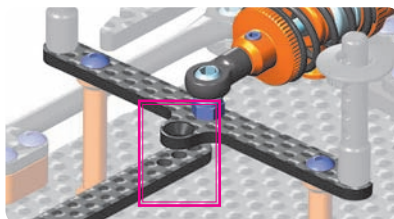
When using standard wheelbase, use the middle hole for mounting the shock mount.



SOFT IN-LINE FLEX™

The Soft In-Line Flex™ setting without the top deck allows both in-line & side flex for increased mid corner steering.

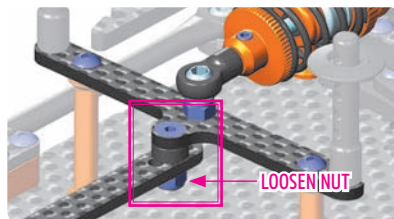
(Recommended for low traction tracks.)



MEDIUM IN-LINE FLEX™

The Medium In-Line Flex™ setting with a loosened nut generates a mid-range amount of in-line flex for a slightly decreased steering response but improved mid-corner steering and a better on-off power feeling.

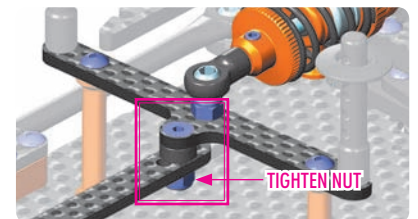
(Recommended for medium traction tracks.)



STIFF IN-LINE FLEX™

The Stiff In-Line Flex™ setting with a tightened nut eliminates the in-line flex of the chassis and increases steering response; making the car more precise and forgiving.

(Recommended for high traction tracks.)



2. REAR SUSPENSION

2x

2x

Add oil in each slot of the COMPOSITE side shock tubes.

NOTE:
Add oil only in the slots, not on the whole tube.
After assembling the side tubes, check for smooth operation.
It is very important to re-oil the side tubes, at least once per race day.
You may use different oil thicknesses depending on track conditions.

TIP

For HIGH grip	use SOFTER oils	
For LOW grip or ASPHALT	use HARDER oils	

OPTION

HUDY OILS		
#106510	10.000cSt	INCLUDED
#106515	15.000cSt	OPTION
#106520	20.000cSt	OPTION
#106530	30.000cSt	OPTION
#106540	40.000cSt	OPTION
#106550	50.000cSt	OPTION

TIP The angle of the side tubes has a fine effect on car performance. The angle is adjusted with shims between the pivot ball and the rear brace and/or upper plate. The **HIGHER** the angle, the stiffer it feels and the less it rolls. The **LESS** (flatter) the angle, the softer it feels and the more it rolls.

OPTION

OPTIONAL SIDE SHOCK

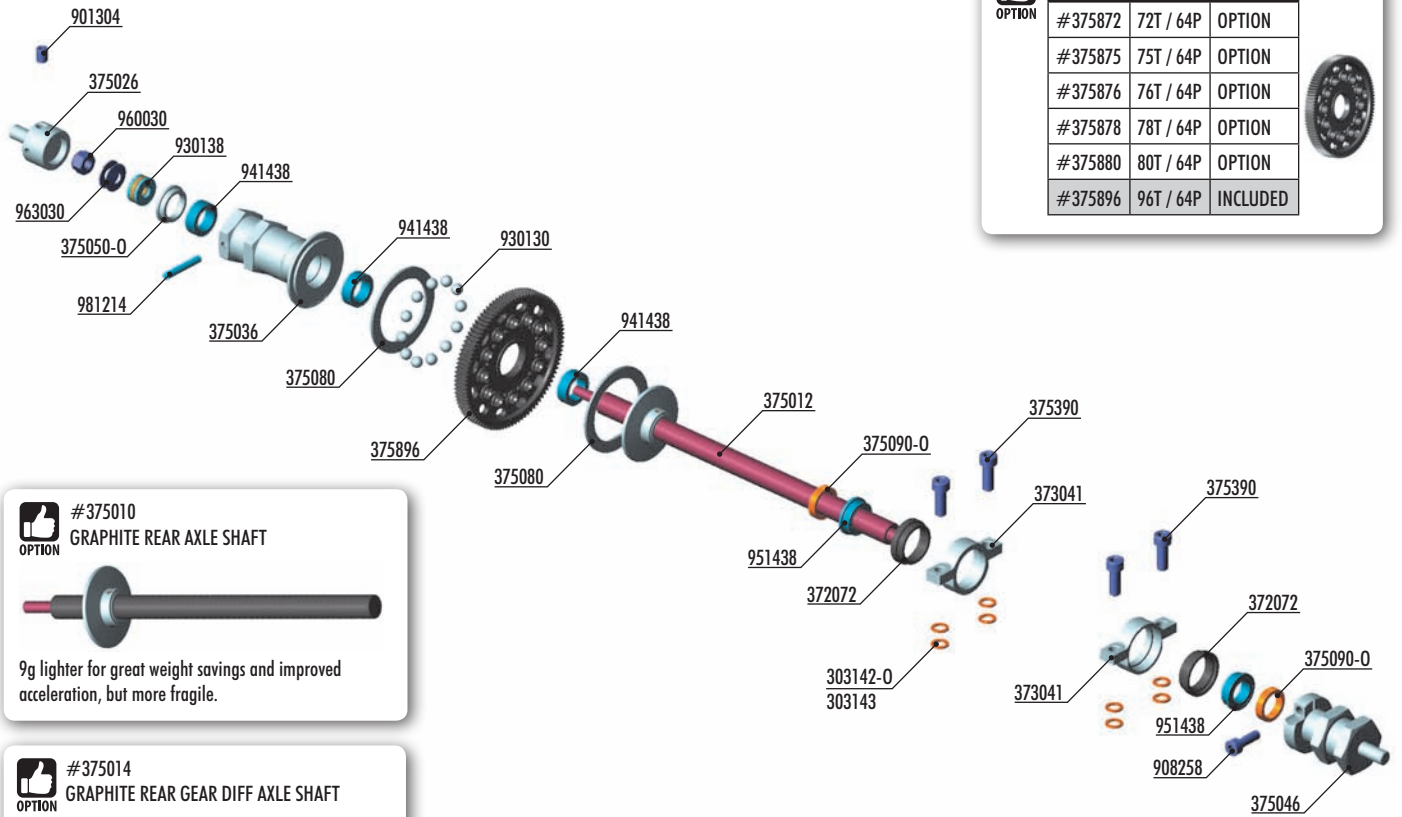
#378100 - Optional side shock can be used to improve traction in low- and medium-traction conditions. The optional side shock REPLACES the 2 side tubes.

SIDE SHOCK - OPTIONAL PARTS (NOT INCLUDED)	
#378100	Side Shock Absorber - SET
#362650	Ball End 4.9mm with Thread 6mm (2)
#303122-0	Alu Shim 3x6x1mm - Orange (10)
#303123-0	Alu Shim 3x6x2mm - Orange (10)
#372651	Ball Universal 4.9mm - HUDY Spring Steel™ (2)
#902308	Hex Screw SH M3x8 (10)

NOTE

REMOVE Graphite Battery Backstop

3. BALL DIFFERENTIAL



BALL DIFF - SPUR GEARS			
OPTION	#375872	72T / 64P	OPTION
	#375875	75T / 64P	OPTION
	#375876	76T / 64P	OPTION
	#375878	78T / 64P	OPTION
	#375880	80T / 64P	OPTION
	#375896	96T / 64P	INCLUDED



OPTION #375010
GRAPHITE REAR AXLE SHAFT

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

OPTION #375014
GRAPHITE REAR GEAR DIFF AXLE SHAFT

OPTION #375001
XRAY SOLID AXLE 1/10 FORMULA - SET

OPTION

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

OPTION #374901 XRAY GEAR DIFFERENTIAL 1/10 FORMULA - SET

Included in set #374901

OPTION

GEAR DIFF - SPUR GEARS		
#375776	76T / 64P	OPTION
#375780	80T / 64P	OPTION
#375784	84T / 64P	OPTION
#375788	88T / 64P	OPTION
#375792	92T / 64P	OPTION

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

OPTION #930230
CERAMIC BALL 3.175mm (12)

OPTION #373042
ALU UPPER ECCENTRIC CLAMP

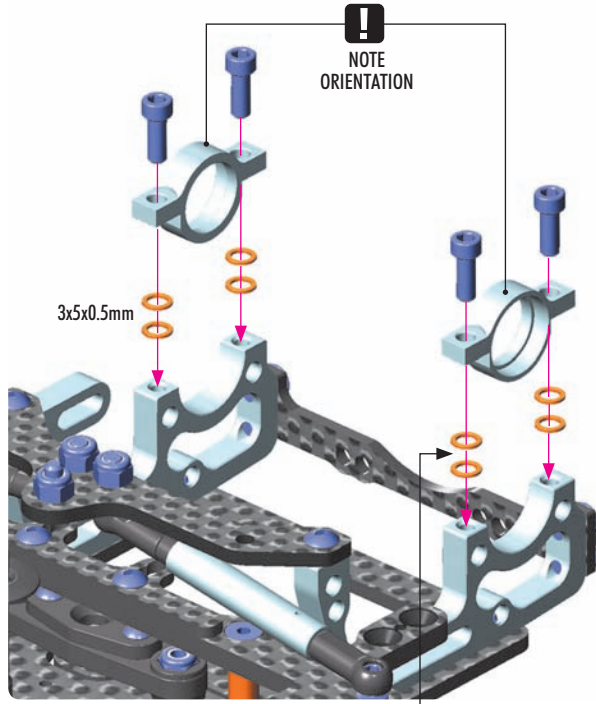


303142-0	ALU SHIM 3x5x0.5mm - ORANGE (10)
303143	ALU SHIM 3x5x0.25mm (10)
372072	COMPOSITE BALL-BEARING HUB (2)
373041	ALU UPPER CLAMP FOR BALL-BEARING
375012	STEEL REAR AXLE SHAFT - HUDY SPRING STEEL™
375026	X1 ALU REAR DRIVE AXLE - RIGHT
375036	X1 ALU REAR WHEEL HUB - RIGHT
375046	X1 ALU REAR WHEEL HUB - LEFT
375050-0	ALU DIFF HUB - ORANGE
375080	D-LOCK DIFF PLATE (2)
375090-0	SET OF ALU SHIMS 6.37x8.4mm (0.5mm, 1.0mm, 2.0mm) - ORANGE
375896	COMPOSITE SPUR GEAR - 96T / 64P

375390	ALU 7075 HEX SCREW M3x8 (6)
901304	HEX SCREW SB M3x4 (10)
908258	HEX SCREW SOCKET HEAD CAP M2.5x8 (10)
930130	CARBIDE BALL 3.175mm (12)
930138	CARBIDE BALL-BEARING AXIAL F3-8 3x8x3.5 - V2
941438	BALL-BEARING 1/4"x3/8"x1/8" RUBBER SEALED - OIL (2)
951438	BALL-BEARING 1/4" x 3/8" x 1/8" FLANGED - STEEL SEALED - OIL (2)
960030	NUT M3 (10)
963030	CONE WASHER ST 3x8x0.5 (10)
981214	PIN 2x14 (10)

3. BALL DIFFERENTIAL

-  303142-0
SHIM 3x5x0.5
-  303143
SHIM 3x5x0.25
-  375390
ALU SCH M3x8



The thickness of these shims affects rear ride height, so determine the proper amount of shimming based on tire diameter.

IMPORTANT: Always use the same thickness of shims on both left & right sides.

For **INITIAL SETTING**, use (2x) 3x5x0.5mm on both left & right sides.
Optionally included: (4x) 3x5x0.25mm shims for fine tuning.

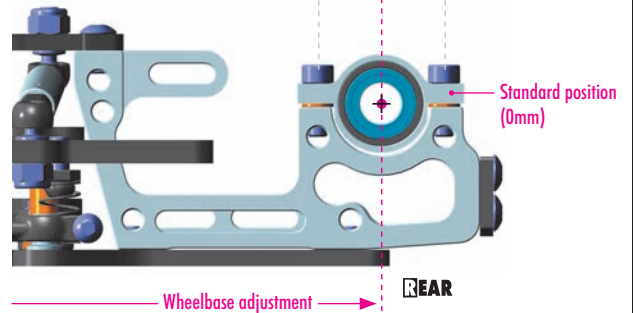
 #373042
ALU UPPER ECCENTRIC CLAMP



A **SHORTER** car rotates harder in slow corners and has improved forward traction.



A **LONGER** car is more free in high-speed corners and will feel more linear, especially during fast direction changes.



-  375090-0
6.4x8.4x0.5
-  375090-0
6.4x8.4x1.0
-  375090-0
6.4x8.4x2.0
-  908258
SCH M2.5x8
-  951438
BB 1/4"x3/8"x1/8"

 #375001
XRAY SOLID AXLE 1/10 FORMULA - SET

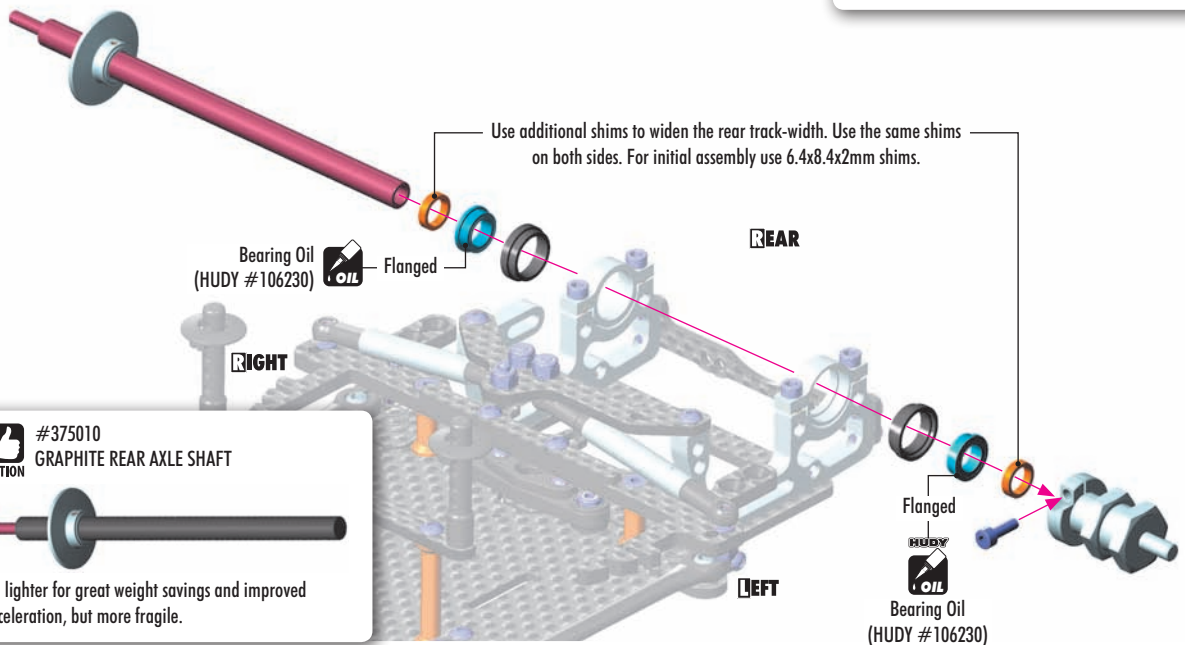
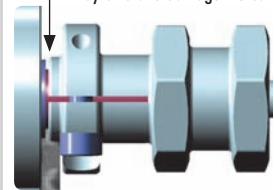


 #374901
XRAY GEAR DIFFERENTIAL 1/10 FORMULA - SET



 **IMPORTANT**

The axle must have a **VERY** small amount of side play. If there is no side play, the axle may bind and damage the ball-bearings.



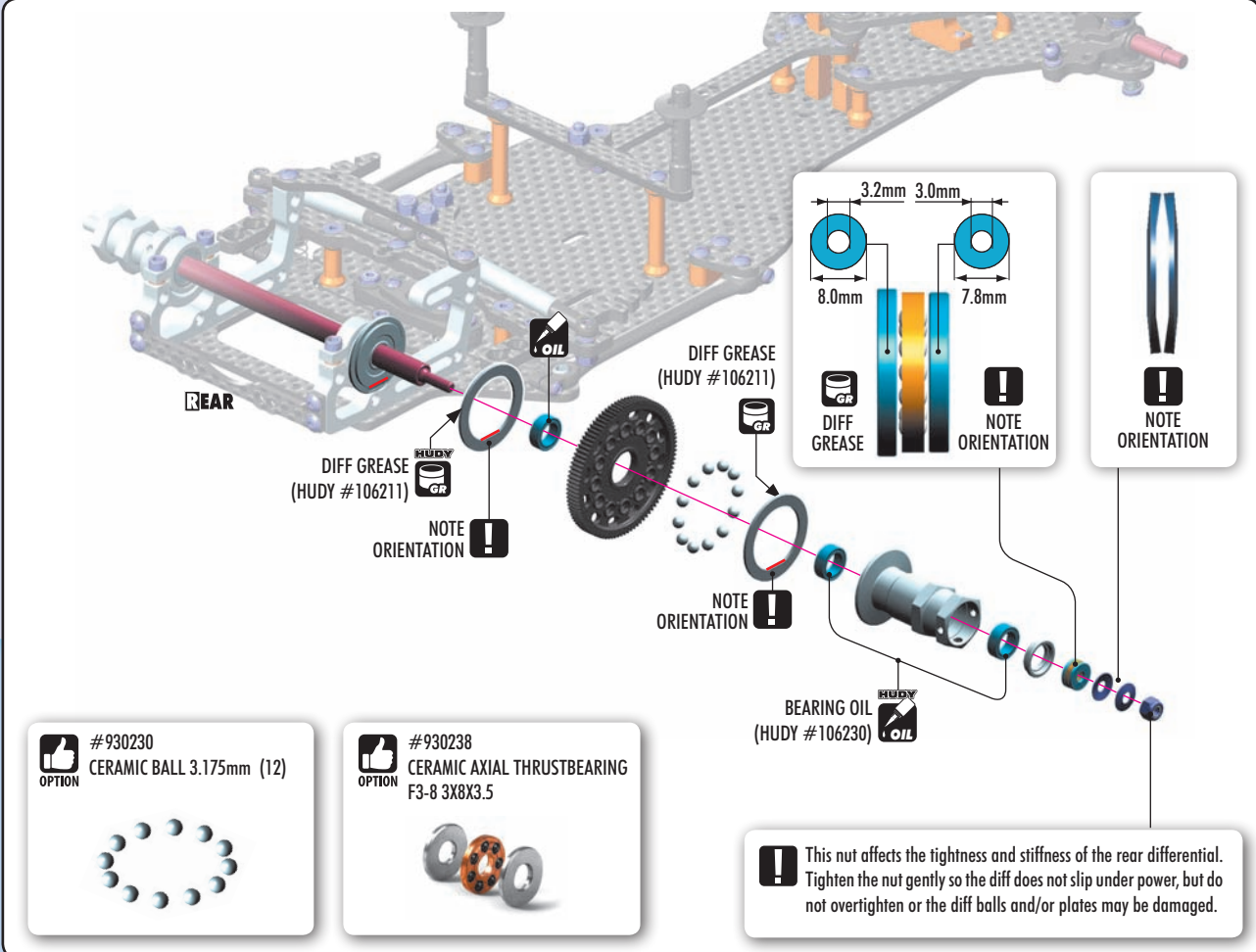
 #375010
GRAPHITE REAR AXLE SHAFT



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

3. BALL DIFFERENTIAL

-  930130
B 3.1
-  930138
BA 3x8
-  941438
BB 1/4"x3/8"x1/8"
-  960030
N M3
-  963030
ST 3x8



REAR

DIFF GREASE (HUDY #106211)

NOTE ORIENTATION !

DIFF GREASE (HUDY #106211)

NOTE ORIENTATION !

BEARING OIL (HUDY #106230)

NOTE ORIENTATION !

NOTE ORIENTATION !

NOTE ORIENTATION !

3.2mm 3.0mm


8.0mm 7.8mm

DIFF GREASE


BEARING OIL


! This nut affects the tightness and stiffness of the rear differential. Tighten the nut gently so the diff does not slip under power, but do not overtighten or the diff balls and/or plates may be damaged.

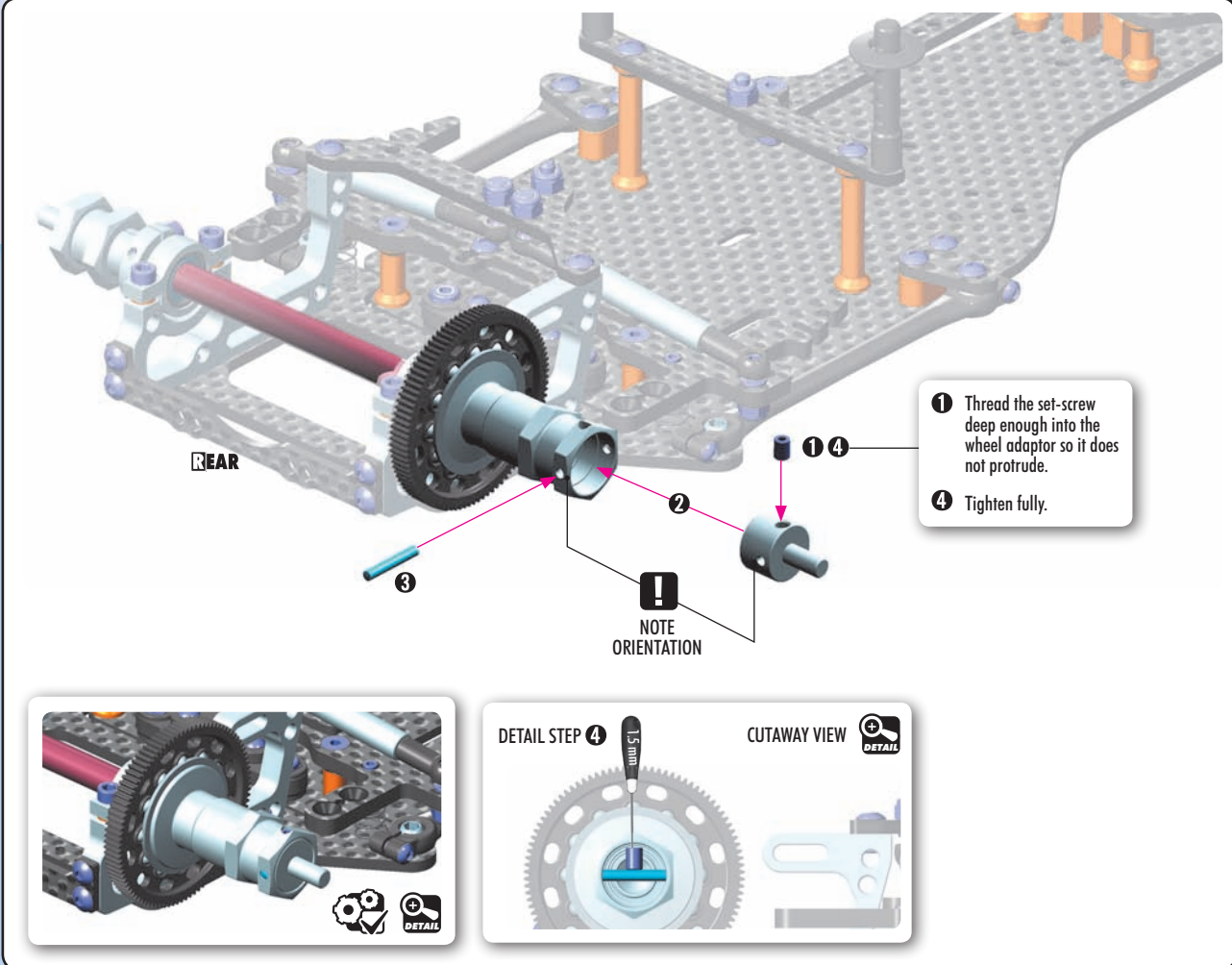
OPTION #930230
CERAMIC BALL 3.175mm (12)



OPTION #930238
CERAMIC AXIAL THRUSTBEARING F3-8 3X8X3.5



-  901304
SB M3x4
-  981214
P 2x14

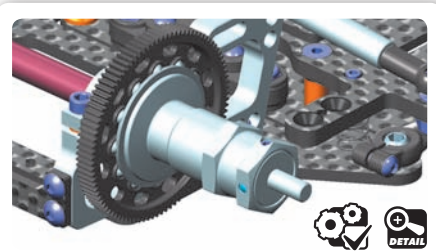


REAR

NOTE ORIENTATION !

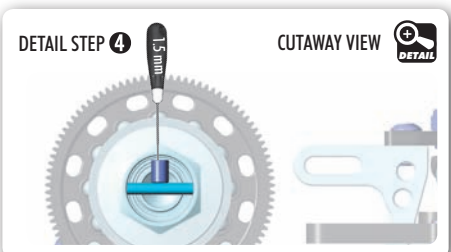
- 1 Thread the set-screw deep enough into the wheel adaptor so it does not protrude.
- 2
- 3
- 4 Tighten fully.

DETAIL



DETAIL STEP 4 1.5mm

CUTAWAY VIEW



4. CENTER SHOCK

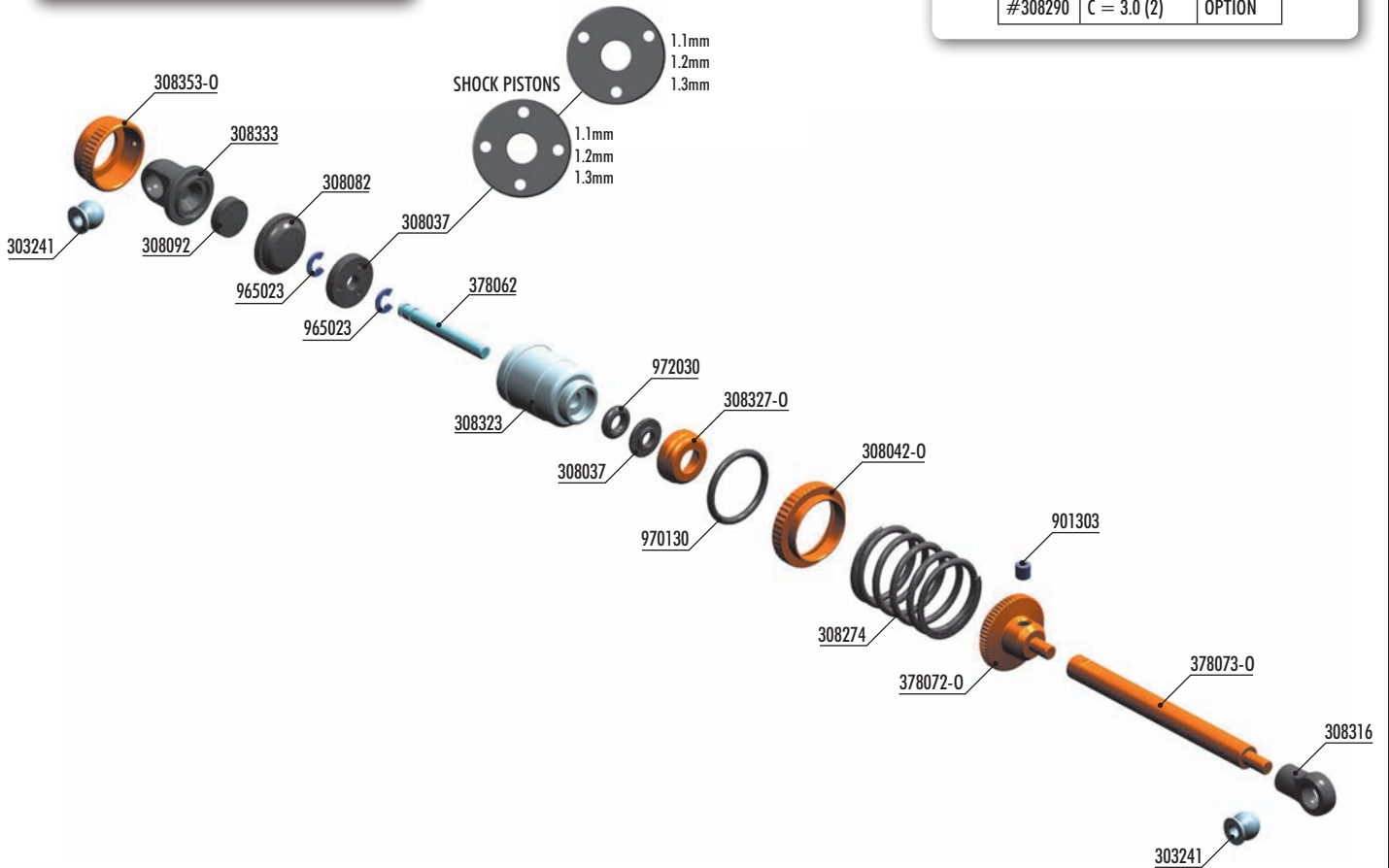


#104002
HUDY AIR VAC – VACUUM PUMP - ON-ROAD



XRAY SPRINGS

#308263	C = 2.3-2.6 (2)	OPTION
#308264	C = 2.5-2.8 (2)	OPTION
#308274	C = 2.3 (2)	INCLUDED
#308275	C = 2.5 (2)	OPTION
#308286	C = 2.6 (2)	OPTION
#308276	C = 2.7 (2)	OPTION
#308288	C = 2.8 (2)	OPTION
#308277	C = 2.9 (2)	OPTION
#308290	C = 3.0 (2)	OPTION



#308039
ALU PROGRESSIVE SHOCK SYSTEM - SET (2)

Progressive shock system for improved traction and steering characteristics. Shock insert has 3 triangle cuts and is used with piston WITHOUT holes. The hardness of the shock is influenced not by the holes in the piston, but rather by the insert.



BAG

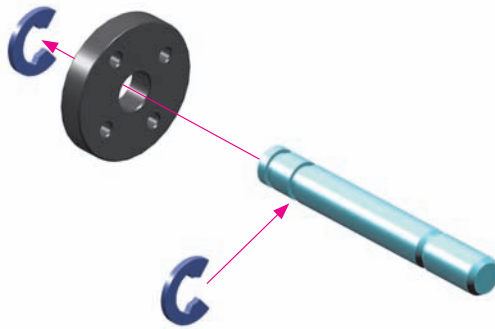
04

303241	BALL UNIVERSAL 5.8mm HEX (4)	378062	X1 SHOCK SHAFT
308037	COMPOSITE PISTONS 4-HOLE 1.0-1.2mm, 3-HOLE 1.0-1.2mm	378072-0	X1 ALU SHOCK SPRING COLLAR - ORANGE
308042-0	ALU SHOCK ADJUSTABLE NUT - ORANGE (2)	378073-0	X1 '18 ALU SHOCK ADAPTER - ORANGE
308082	SHOCK ABSORBER MEMBRANE (4)		
308092	SHOCK FOAM INSERTS (4)	901303	HEX SCREW SB M3x3 (10)
308316	SHOCK BALL JOINT - OPEN (4)	965023	E-CLIP 2.3 (10)
308323	ALU XRAY SHOCK BODY (2)	970130	O-RING 13 x 1.5 (10)
308327-0	ALU CAP FOR XRAY SHOCK BODY - ORANGE	972030	SILICONE O-RING 3 x 2 (10)
308333	COMPOSITE SHOCK PARTS FOR ALU SHOCKS		
308353-0	ALU SHOCK CAP-NUT WITH VENT HOLE - ORANGE (2)		
308274	XRAY SPRING-SET C=2.3		

4. CENTER SHOCK

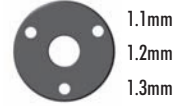


965023
C 2.3

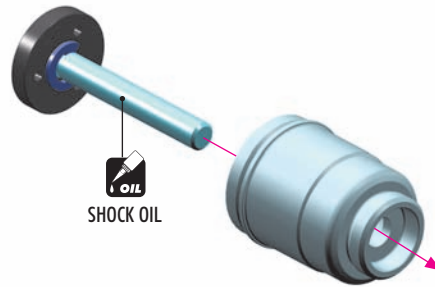


SHOCK PISTON ADJUSTMENT

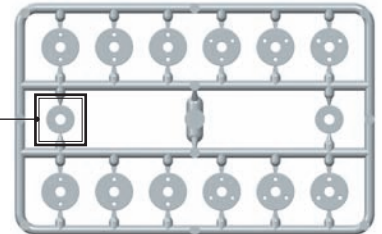
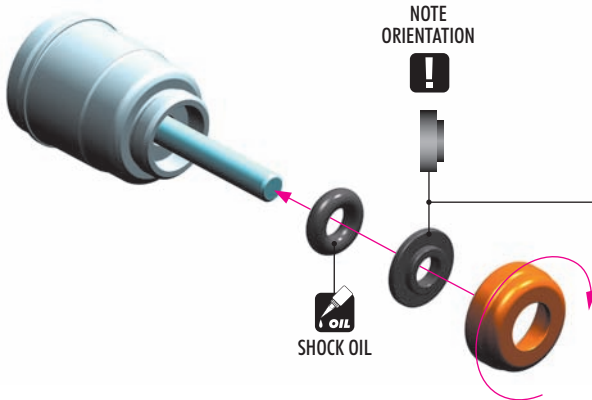
3 HOLES



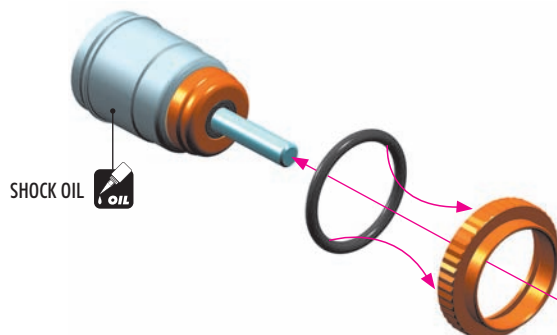
4 HOLES



972030
0 3x2



970130
0 13x1.5



CUTAWAY VIEW



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

4. CENTER SHOCK

SHOCK FILLING



HUDY SHOCK OILS	
#106310	100cSt
#106315	150cSt
#106320	200cSt
#106325	250cSt
#106330	300cSt
#106335	350cSt
#106340	400cSt
#106345	450cSt
#106350	500cSt
#106355	550cSt
#106360	600cSt
#106365	650cSt
#106370	700cSt
#106375	750cSt
#106380	800cSt
#106390	900cSt
#106410	1.000cSt
#106420	2.000cSt

INITIAL SETTING

- 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.

SOFTER OIL

Recommended for bumpy and low-traction tracks, generates more traction.

HARDER OIL

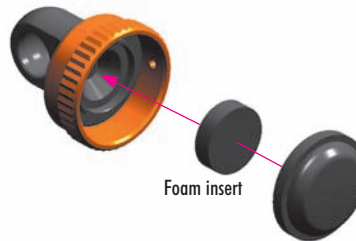
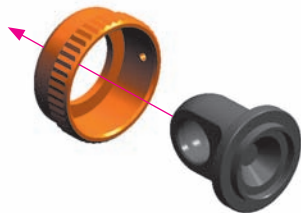
Recommend for flat and high-traction tracks, improves steering response.



#104002
HUDY AIR VAC – VACUUM PUMP

TIP

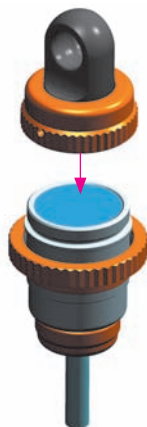
To make sure that all the air is removed from the shock oil, we recommend using the HUDY Air Vac.



CUTAWAY VIEW



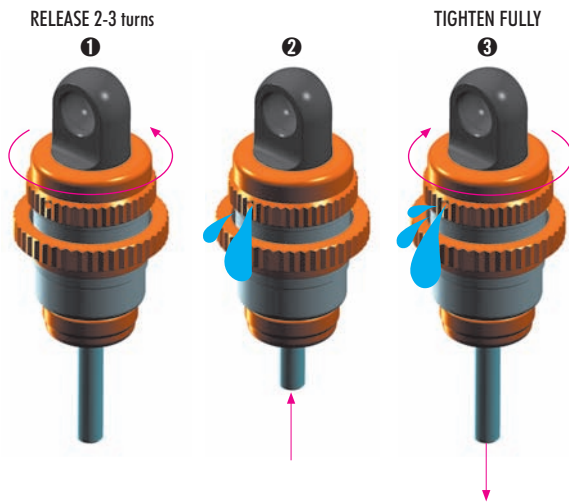
After you insert the membrane, ensure that it is fully seated inside the alu cap.



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

4. CENTER SHOCK

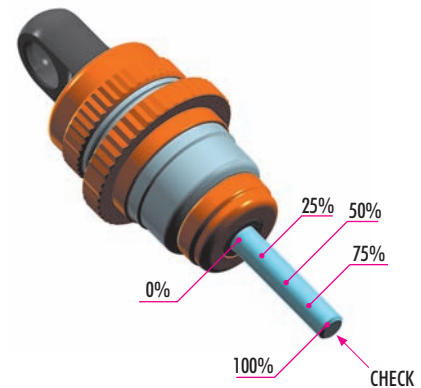
REBOUND ADJUSTMENT



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

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

REBOUND CHECK



REBOUND CHECK:

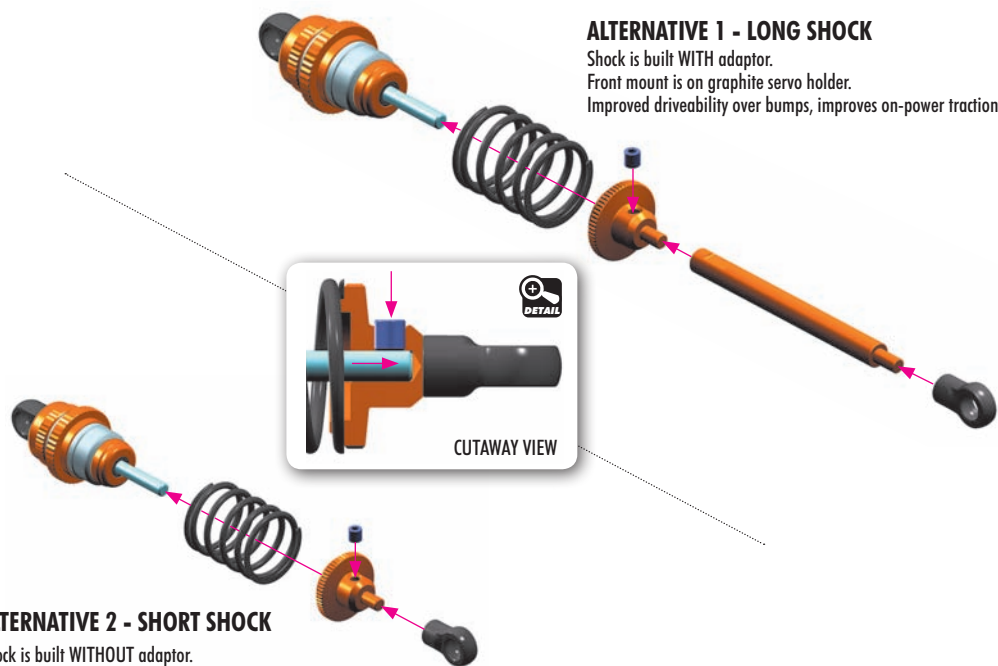
It is very important to push the shock shaft into the shock body slowly otherwise air can come into the shock body which would create bubbles.

- 100% rebound - do not do step 2 and 3
- 75% rebound - repeat steps 1 to 3 until the shock shaft will push out 75% of its length
- 50% rebound - repeat steps 1 to 3 until the shock shaft will push out 50% of its length
- 25% rebound - repeat steps 1 to 3 until the shock shaft will push out 25% of its length
- 0% rebound - repeat steps 1 to 3 until the shock shaft will push out 0% of its length

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

901303
SB M3x3

! An innovative new feature is to change the center shock length (and front mounting position). By using longer or shorter shock, the damping and steering can be changed.



ALTERNATIVE 1 - LONG SHOCK

Shock is built WITH adaptor.
Front mount is on graphite servo holder.
Improved driveability over bumps, improves on-power traction.

ALTERNATIVE 2 - SHORT SHOCK

Shock is built WITHOUT adaptor.
Front mount is on graphite plate for mounts.
Improved steering response, quicker direction changes.

4. CENTER SHOCK

NOTE ORIENTATION
(Shiny finish side) 

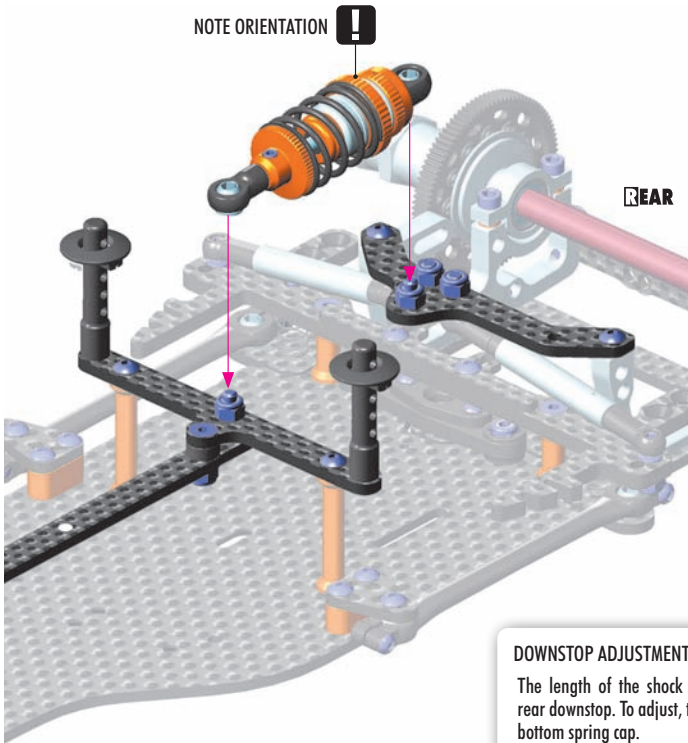
TIP Install the balls with Professional Multi Tool (HUDY #183011)



NOTE ORIENTATION
(Shiny finish side) 

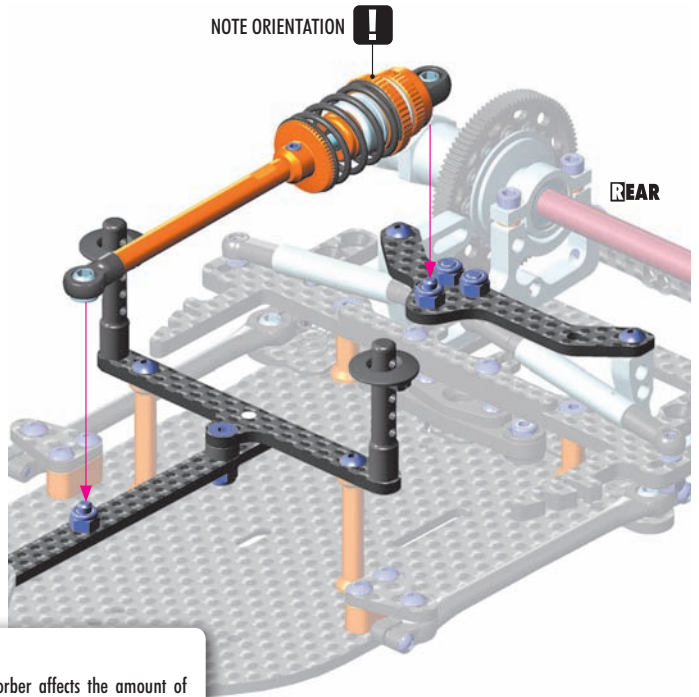
ALTERNATIVE 1 - SHORT SHOCK

NOTE ORIENTATION 



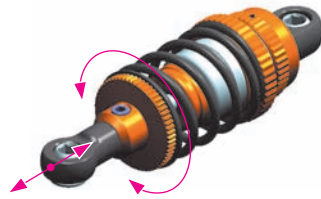
ALTERNATIVE 2 - LONG SHOCK

NOTE ORIENTATION 



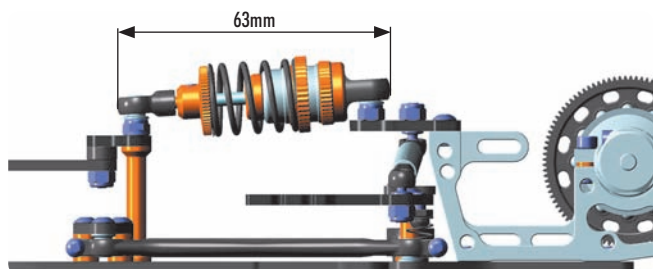
DOWNSTOP ADJUSTMENT

The length of the shock absorber affects the amount of rear downstop. To adjust, thread the ball-joint on or off the bottom spring cap.



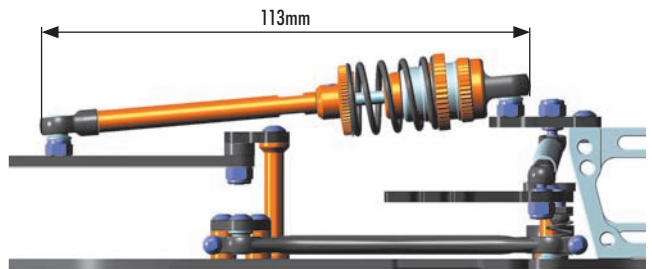
 DETAIL



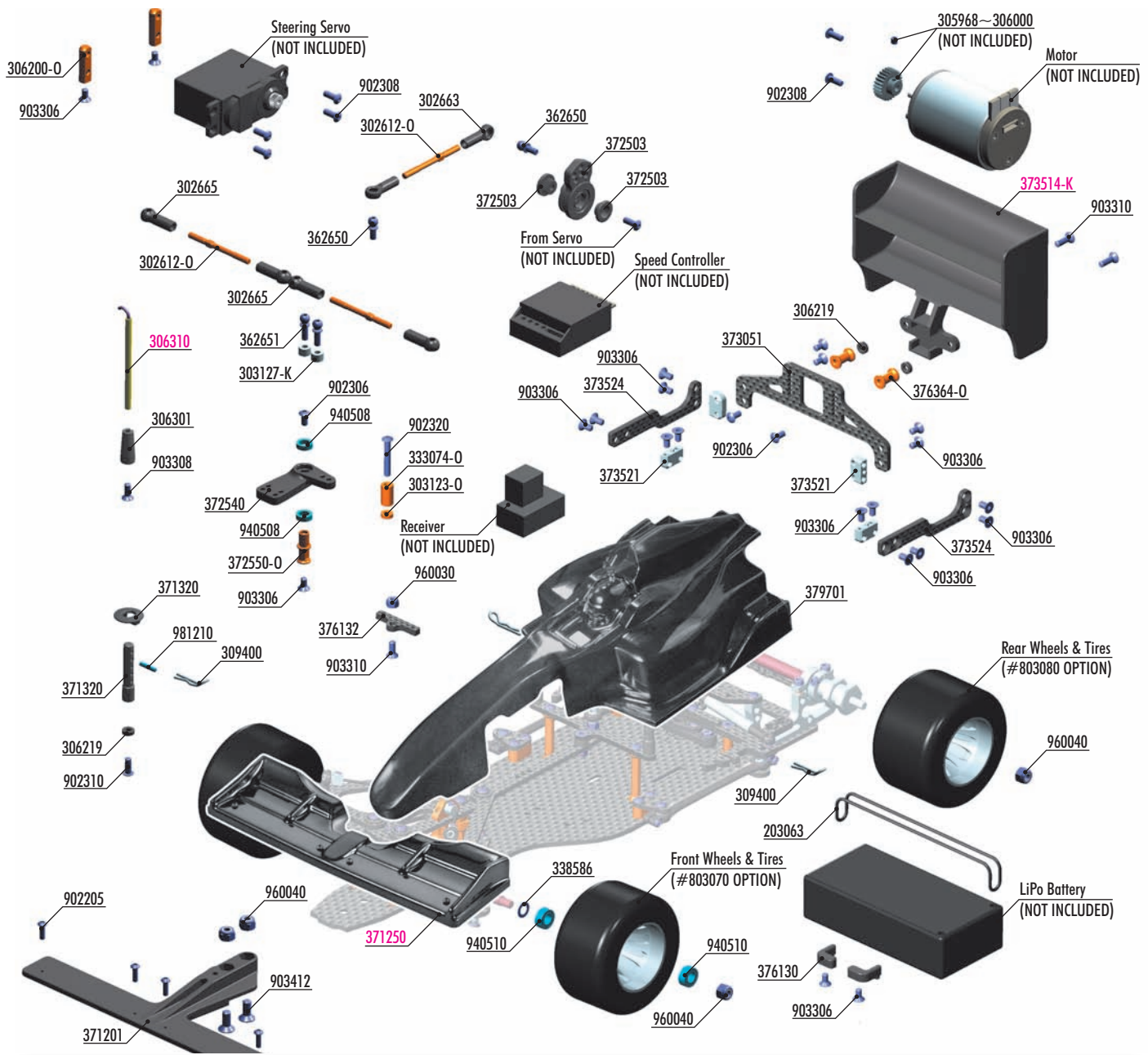


 DETAIL





5. FINAL ASSEMBLY



- | | | | |
|----------------|---|-----------|--|
| #305968~306000 | PINION GEAR HARDCOATED 18~50T/64P | #373512-K | X1 COMPOSITE ADJUSTABLE REAR WING - BLACK |
| #372541 | ALU ADJUSTABLE SERVO SAVER SET | #373513-K | X1 COMPOSITE ADJUSTABLE REAR WING - BLACK - ETS APPROVED |
| #371202 | X1 COMPOSITE ADJUSTABLE FRONT AERO WING - ETS APPROVED | #373514 | X1 COMPOSITE REAR WING - LIGHTWEIGHT & WIDE - WHITE |
| #371203-K | X1 COMPOSITE ADJUSTABLE FRONT WING - BLACK - ETS APPROVED | #379702 | XRAY X1 1/10 FORMULA BODY - WORLD CHAMPION EDITION |
| #371203 | X1 COMPOSITE ADJUSTABLE FRONT WING - WHITE - ETS APPROVED | #803070 | HUDY 1/10 FORMULA RUBBER TIRE - FRONT (2) |
| #371290 | X1 ALU BODY POST PLATE | #803080 | HUDY 1/10 FORMULA RUBBER TIRE - REAR (2) |

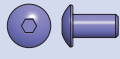


- | | | | |
|----------|---|----------|---|
| 302612-0 | ALU ADJ. TURNBUCKLE M3 L/R 39 mm - ORANGE - SWISS 7075 T6 (2) | 376364-0 | ALU MOUNT 10.8mm - ORANGE (2) |
| 302663 | COMPOSITE BALL JOINT 4.9mm - OPEN - V2 (8) | 203063 | O-RING FOR 1/8 ON-ROAD SET-UP WHEEL (4) |
| 302665 | COMPOSITE BALL JOINT 4.9mm - CLOSED WITH HOLE (4) | 902205 | HEX SCREW SH M2x5 (10) |
| 303123-0 | ALU SHIM 3x6x2.0mm - ORANGE (2) | 902306 | HEX SCREW SH M3x6 (10) |
| 303127-K | ALU SHIM 3x6x4.0mm - BLACK (10) | 902308 | HEX SCREW SH M3x8 (10) |
| 306200-0 | ALU SERVO MOUNT - ORANGE (2) | 902310 | HEX SCREW SH M3x10 (10) |
| 306219 | COMPOSITE SET OF SERVO SHIMS (4) | 902320 | HEX SCREW SH M3x20 (10) |
| 306301 | ANTENNA MOUNT - THIN | 903306 | HEX SCREW SFH M3x6 (10) |
| 309400 | BODY CLIP (8) | 903308 | HEX SCREW SFH M3x8 (10) |
| 333074-0 | ALU MOUNT 3x6x10.5mm - ORANGE (2) | 903310 | HEX SCREW SFH M3x10 (10) |
| 338586 | SHIM 5x7x0.5 (10) | 903412 | HEX SCREW SFH M4x12 (10) |
| 362650 | BALL END 4.9mm WITH THREAD 6mm (2) | 940508 | BALL-BEARING 5x8x2.5 RUBBER SEALED - OIL (2) |
| 362651 | BALL END 4.9mm WITH THREAD 8mm (2) | 940510 | BALL-BEARING 5x10x4 RUBBER SEALED - OIL (2) |
| 371201 | COMPOSITE FRONT BUMPER | 960030 | NUT M3 (10) |
| 371320 | COMPOSITE BODY POST (2) | 960040 | NUT M4 (10) |
| 372503 | COMPOSITE SERVO SAVER - X-STIFF - SET - V2 | 981210 | PIN 2x10 (10) |
| 372540 | COMPOSITE STEERING ARM | 306310 | ANTENNA (2) |
| 372550-0 | ALU STEERING PIVOT SHAFT | 371250 | X1 LEXAN FRONT SPOILER (2) |
| 373051 | X1'20 GRAPHITE REAR WING MOUNT 2.5mm | 373514-K | X1 COMPOSITE REAR WING - LIGHTWEIGHT & WIDE - BLACK |
| 373521 | X1'20 ALU POST FOR INDEPENDENT WING GRAPHITE PLATES | 379701 | XRAY X1 1/10 FORMULA BODY |
| 373524 | X1'20 GRAPHITE REAR WING HOLDER PLATE 2.5MM (L+R) | | |
| 376130 | COMPOSITE LiPo BATTERY BACKSTOP (2) | | |
| 376132 | GRAPHITE BATTERY BACKSTOP 3.0MM - MIDDLE | | |

5. FINAL ASSEMBLY



303127-K
SHIM 3x6x4



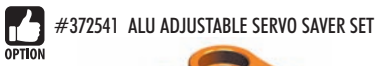
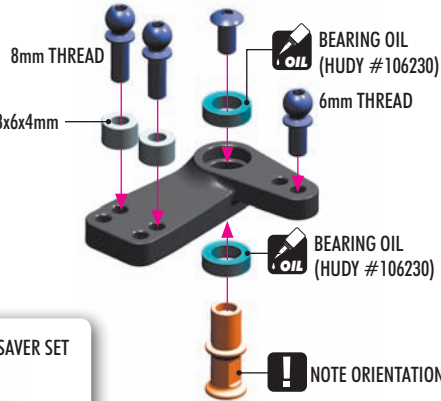
902306
SH M3x6



940508
BB 5x8x2.5

These shims adjust the bumpsteer.

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



The steering arm has two positions for servo linkage mounting.



Always use this position



There are two Ackermann positions on the steering arm.

INNER position: More Ackermann, makes the car easier to drive, improves cornering speed (INITIAL SETTING).

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

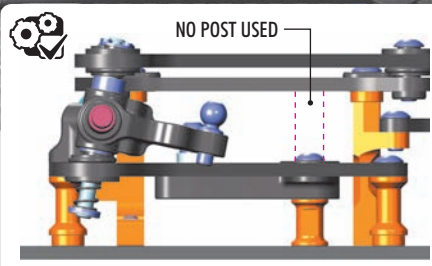
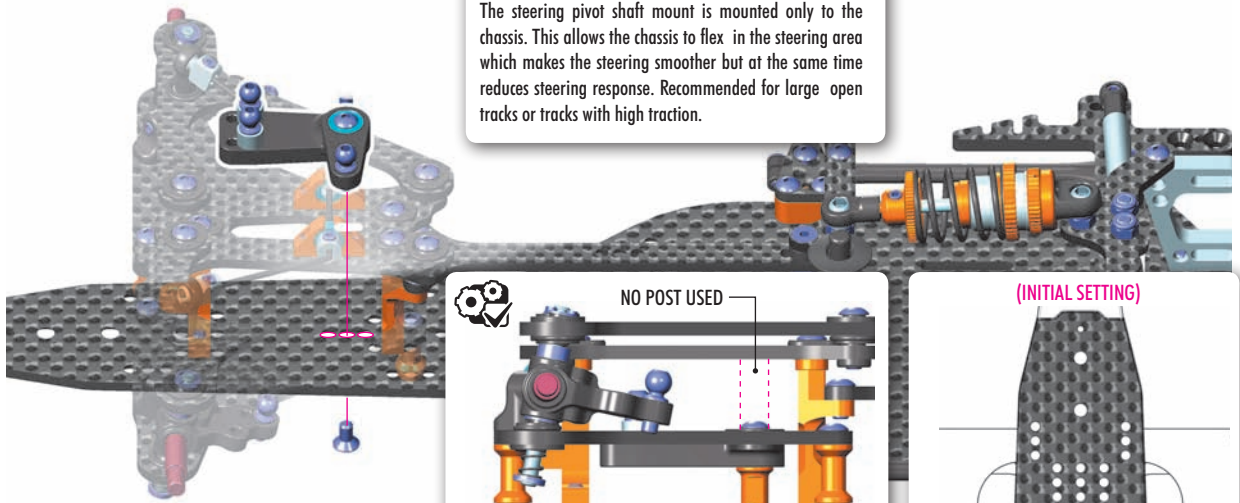


903306
SFH M3x6

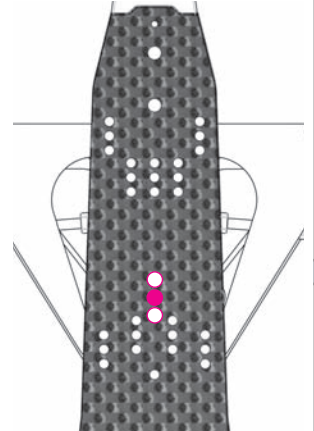
STEERING PIVOT SHAFT MOUNTING ALTERNATIVE 1

Without the post (INITIAL SETTING).

The steering pivot shaft mount is mounted only to the chassis. This allows the chassis to flex in the steering area which makes the steering smoother but at the same time reduces steering response. Recommended for large open tracks or tracks with high traction.



(INITIAL SETTING)



The position of the steering pivot shafts into the chassis depends on the front wheelbase used.

When using standard wheelbase, use the middle hole for mounting steering pivot shaft.



303123-0
SHIM 3x6x2



333074-0
SHIM 3x6x10.5

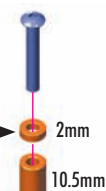


902320
SH M3x20



903306
SFH M3x6

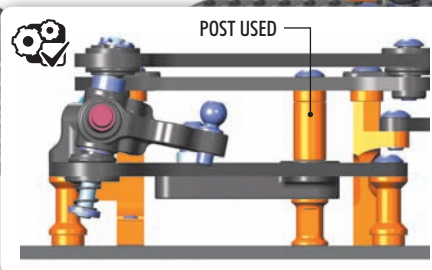
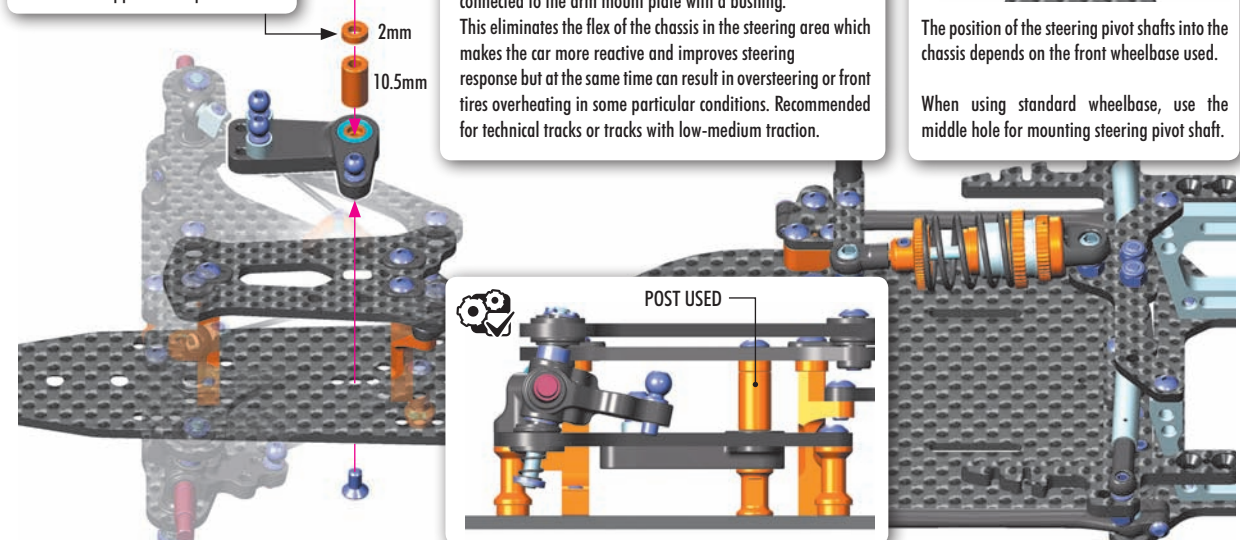
This shim is directly connected to the roll center shims which are placed under upper mount plate. Therefore use the same amount of the shims on the post like is under upper mount plate.



STEERING PIVOT SHAFT MOUNTING ALTERNATIVE 2

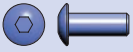
With the post connected to the arm mount plate.

The steering pivot shaft mount is mounted to the chassis and connected to the arm mount plate with a bushing. This eliminates the flex of the chassis in the steering area which makes the car more reactive and improves steering response but at the same time can result in oversteering or front tires overheating in some particular conditions. Recommended for technical tracks or tracks with low-medium traction.

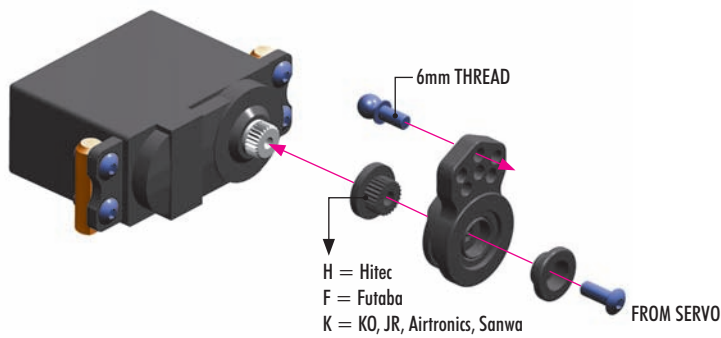
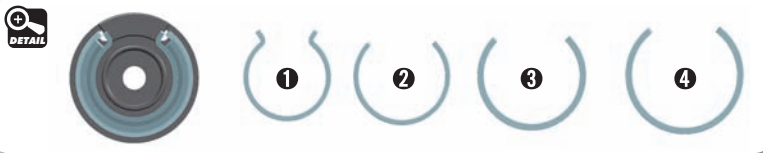
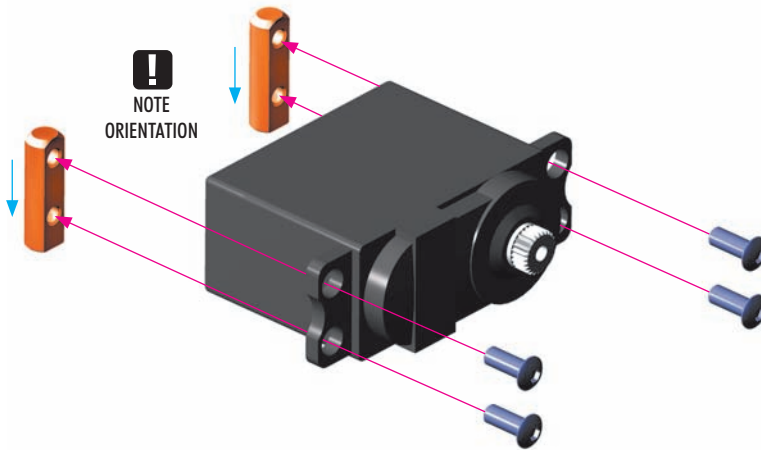


POST USED

5. FINAL ASSEMBLY



902308
SH M3x8



INITIAL SETTING



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

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

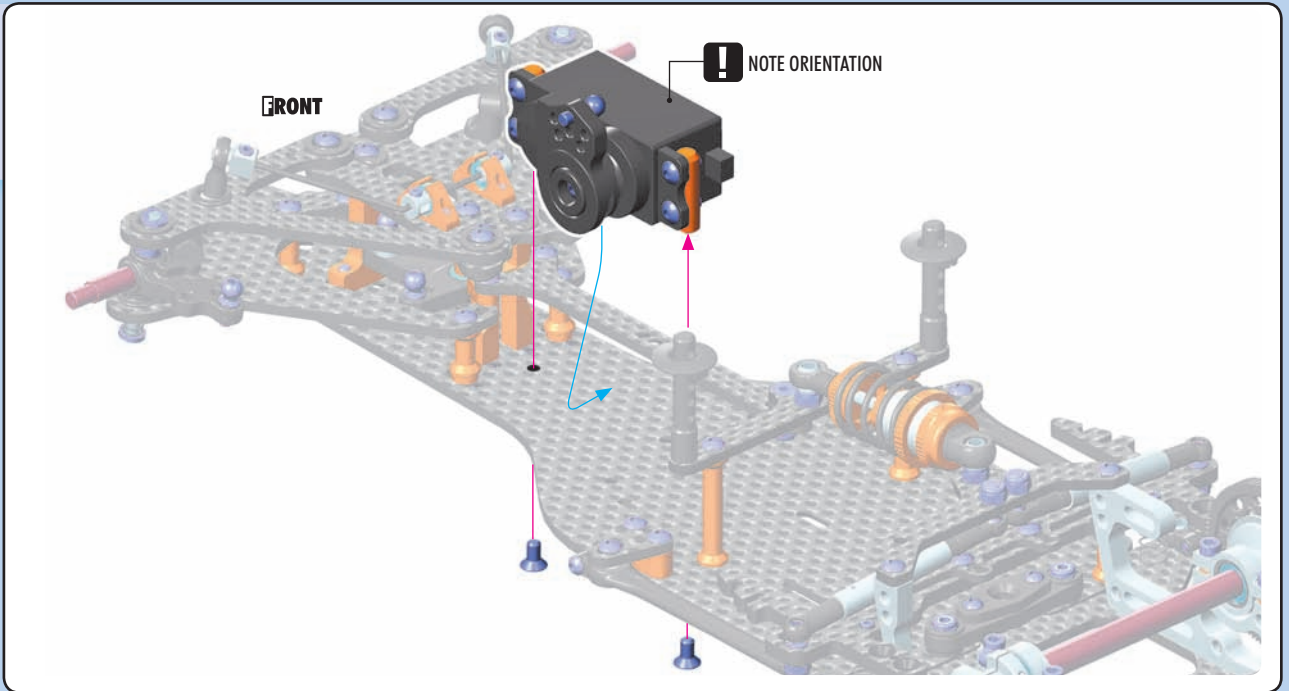
HUDY ALU SERVO HORNS	
#293501	KO, Sanwa - 23T
#293502	Hitec - 24T
#293503	Futaba - 25T
HUDY CLAMP ALU SERVO HORNS	
#293407	KO, Sanwa - 23T
#293408	Hitec - 24T
#293409	Futaba - 25T

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

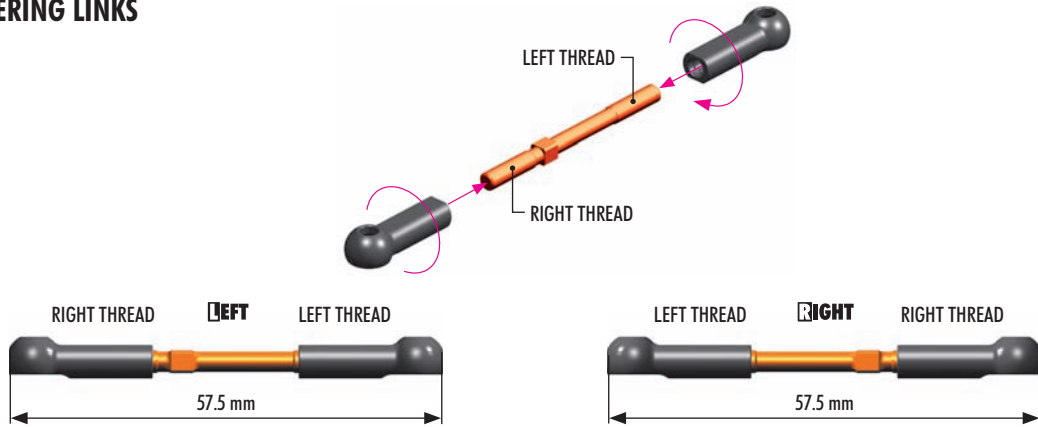
5. FINAL ASSEMBLY



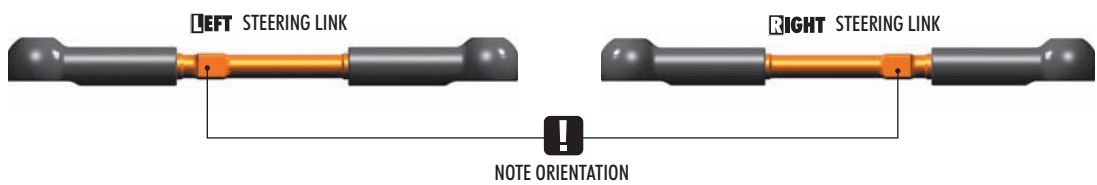
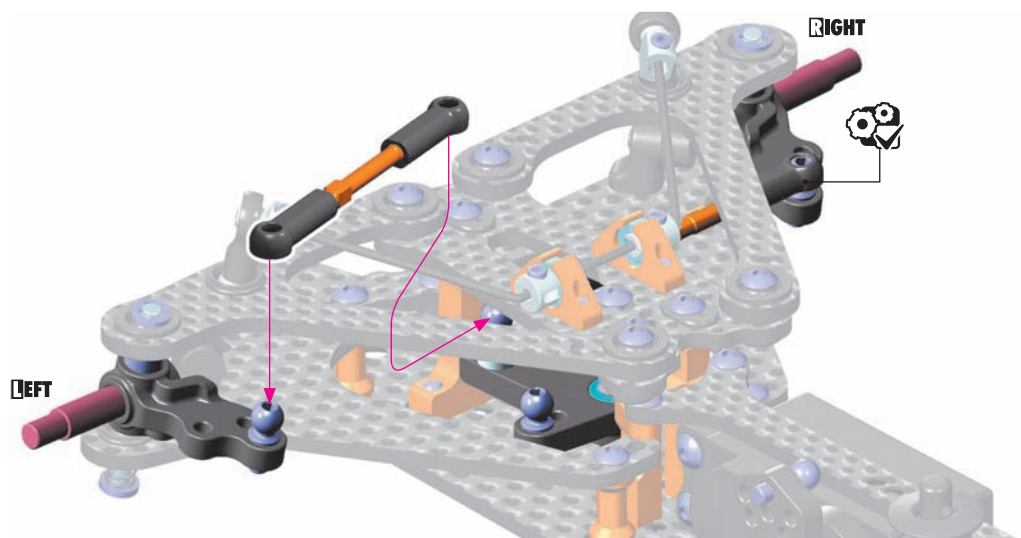
903306
SFH M3x6



2x STEERING LINKS

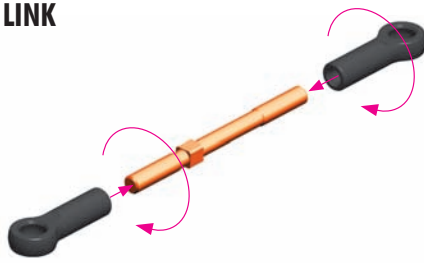


2x



5. FINAL ASSEMBLY

SERVO LINK



NOTE ORIENTATION

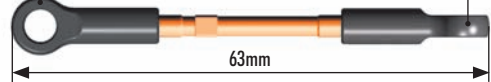


RIGHT THREAD

1:1

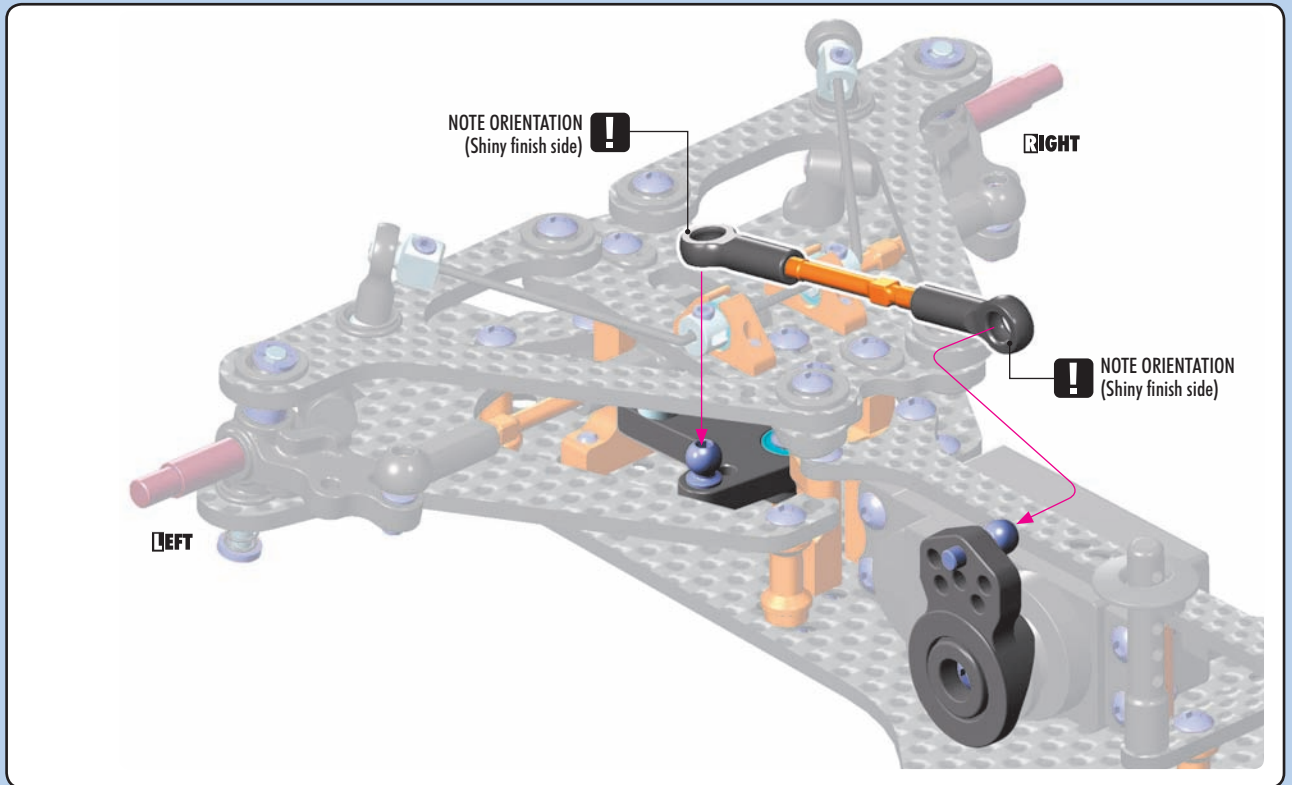
LEFT THREAD

NOTE ORIENTATION

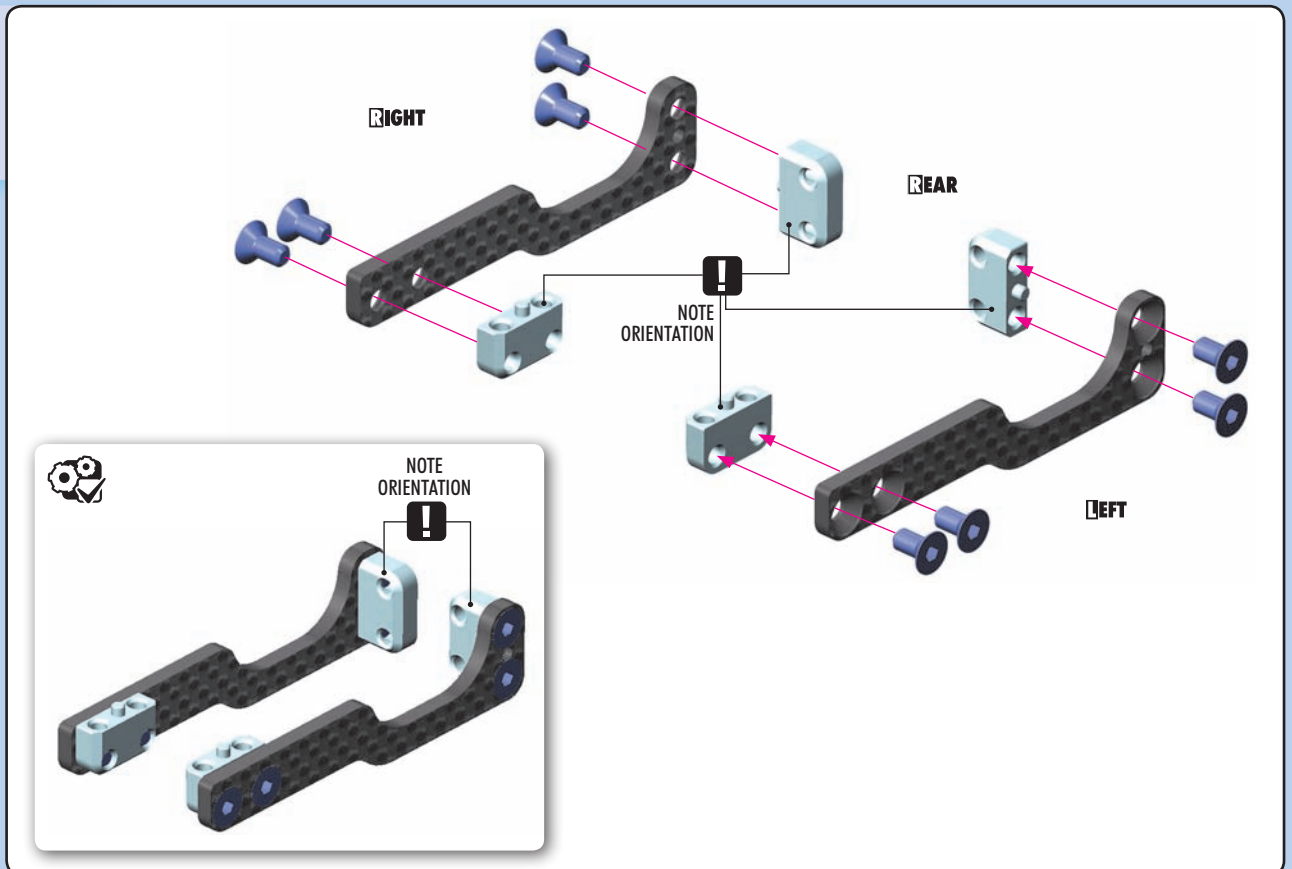


The length of the link depends on the wheelbase setting. The 63mm length is recommended for middle wheelbase setting.

(INITIAL SETTING)



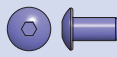
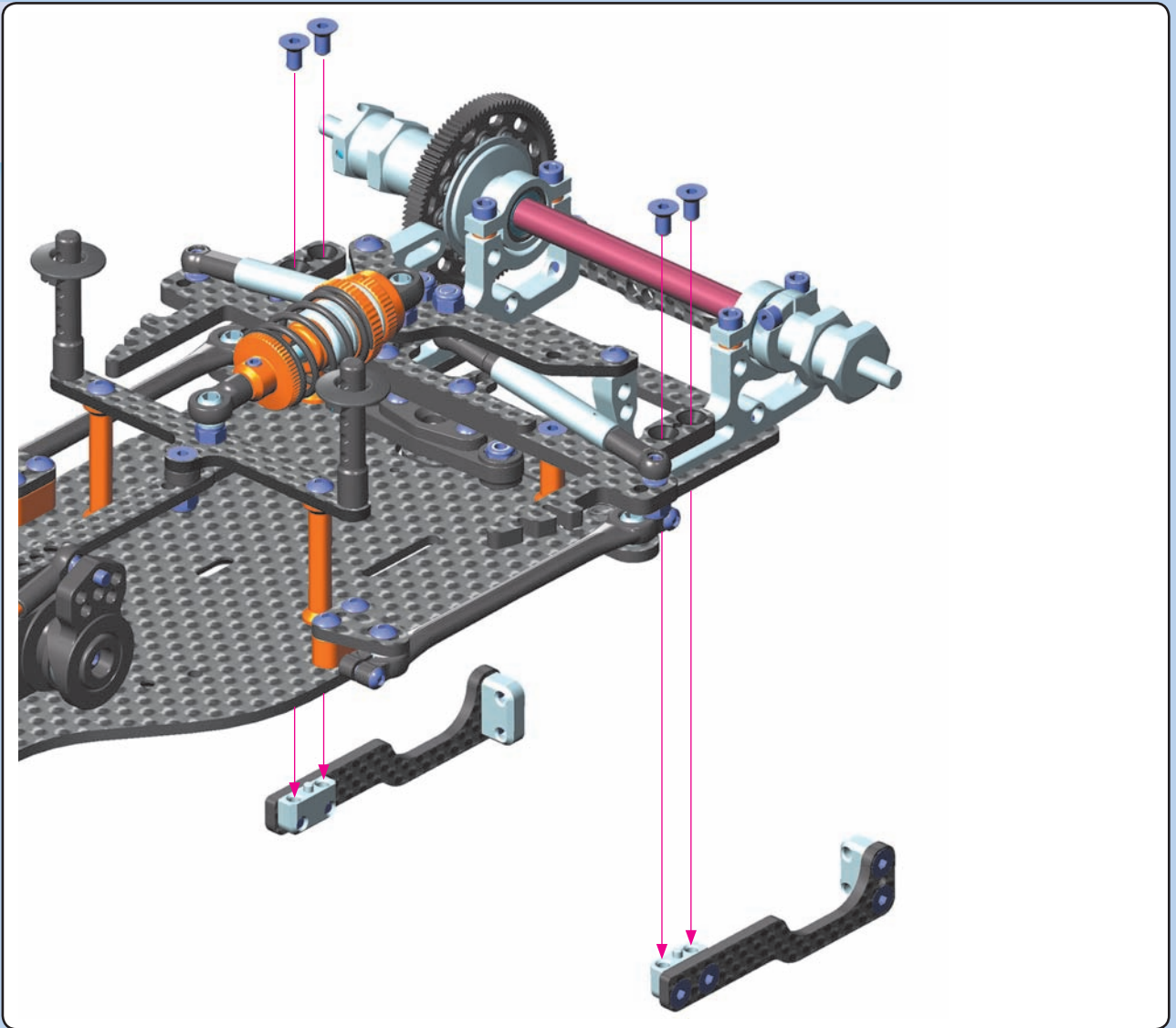
903306
SFH M3x6



5. FINAL ASSEMBLY



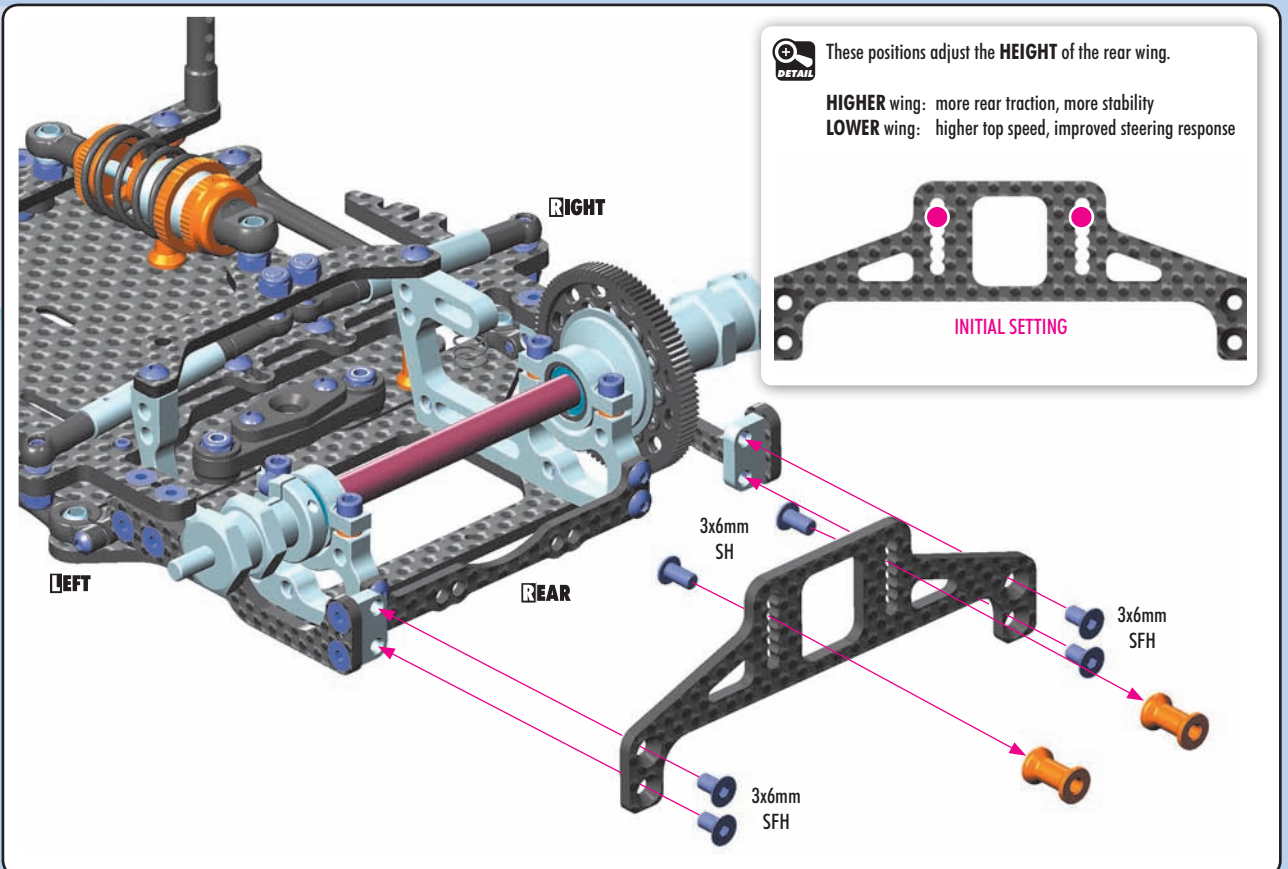
903306
SFH M3x6



902306
SH M3x6



903306
SFH M3x6



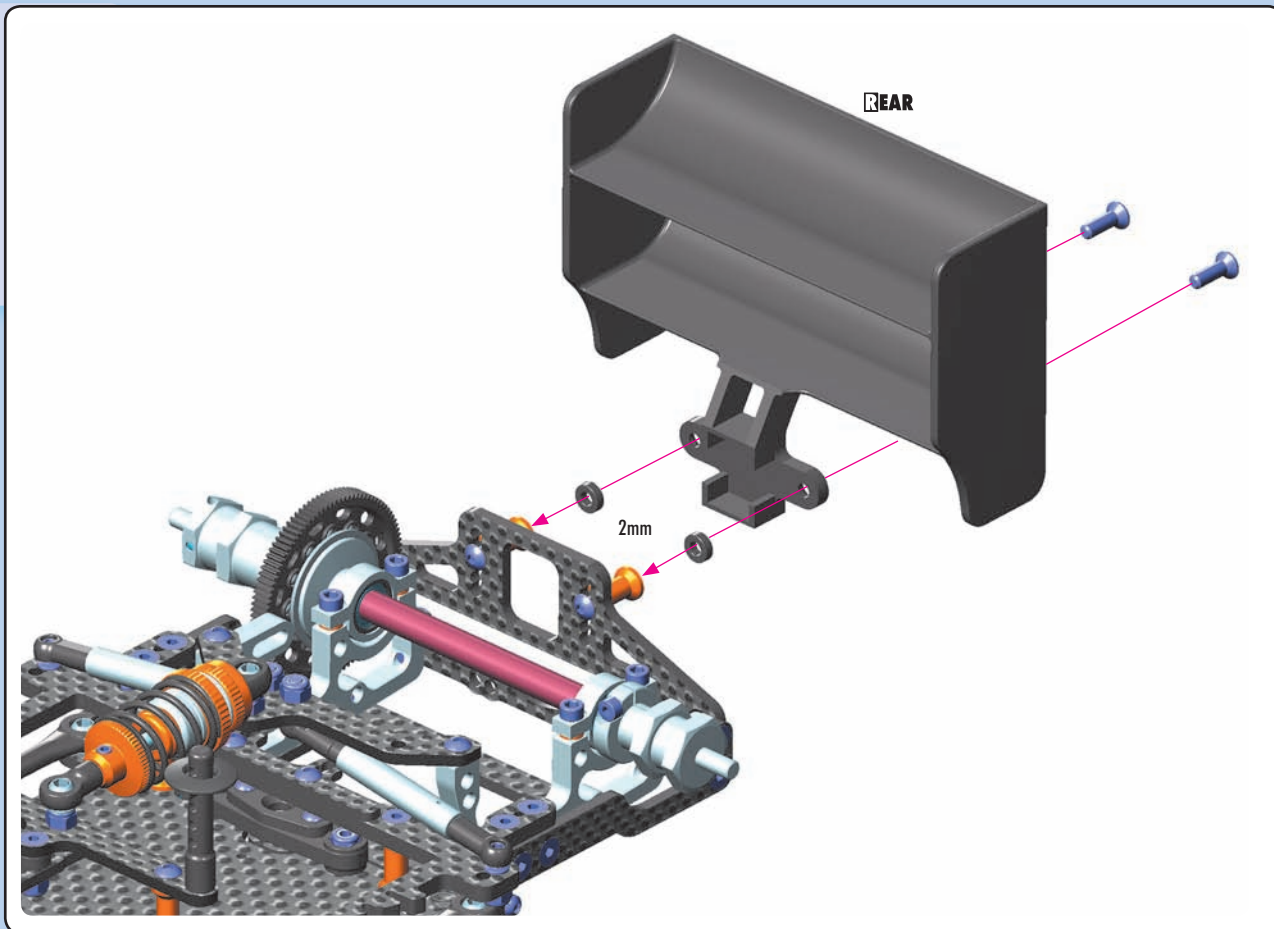
5. FINAL ASSEMBLY



903310
SFH M3x10

IO

306219
SHIM 3x6x2



906206
SFP 2.2x6



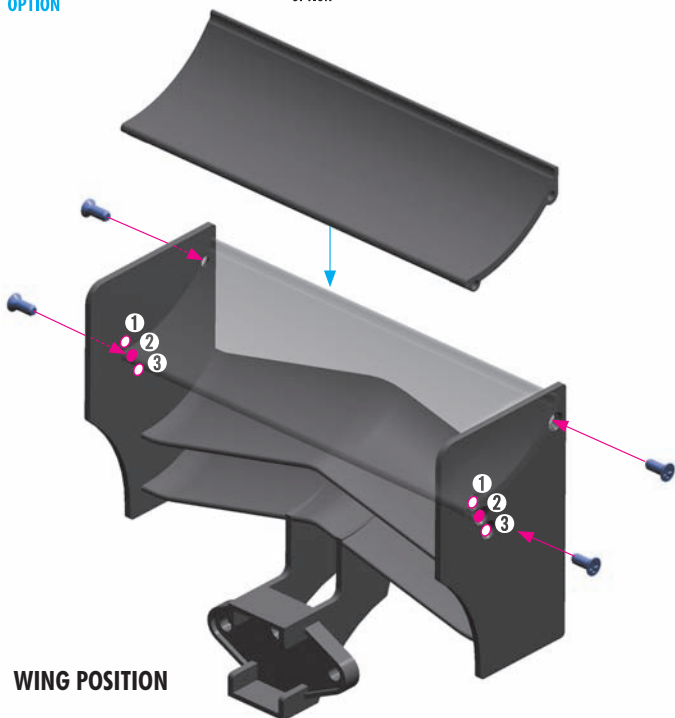
OPTIONAL WING



#373512-K
COMPOSITE ADJUSTABLE REAR WING - BLACK



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



WING POSITION

- 1 LOW DOWNFORCE:**
Generates more steering but makes the car less stable and more difficult to drive. Recommended for large tracks with long sweepers.
- 2 MIDDLE:**
Compromise between high and low downforce (INITIAL SETTING).
- 3 HIGH DOWNFORCE:**
Higher stability, easier to drive with less initial steering.



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



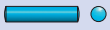
5. FINAL ASSEMBLY

IO

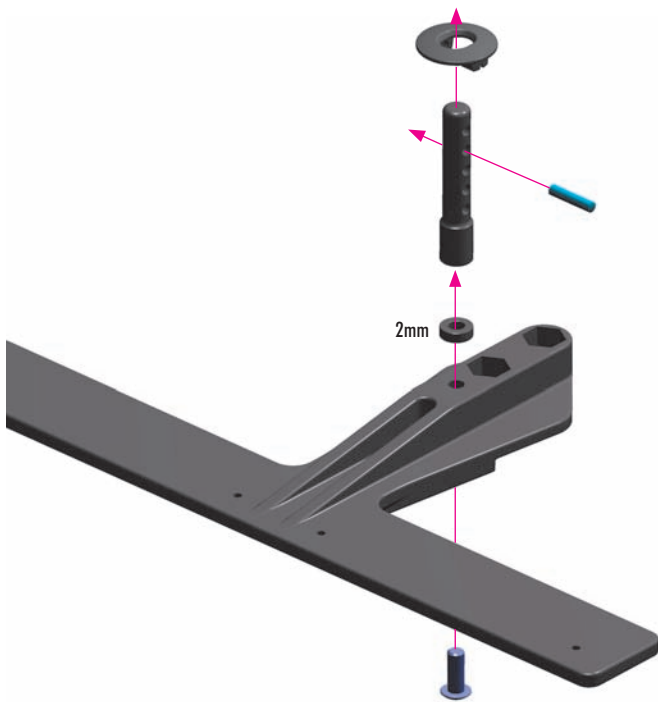
306219
SHIM 3x6x2



902310
SH M3x10



981210
P 2x10



#371203 & 371203-K
X1 COMPOSITE ADJUSTABLE FRONT WING
(BLACK or WHITE) - ETS APPROVED



#371202
X1 COMPOSITE ADJUSTABLE FRONT AERO WING - ETS APPROVED



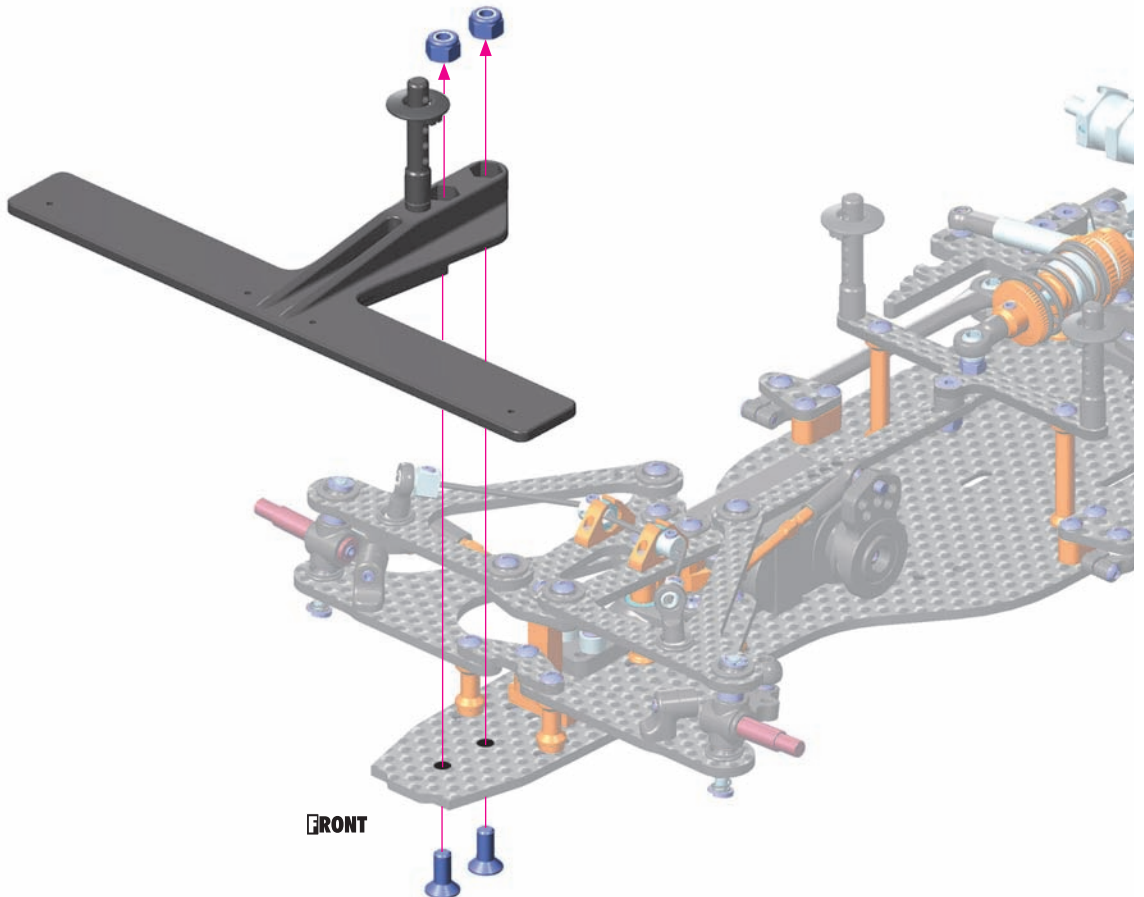
#371290
X1 ALU BODY POST PLATE



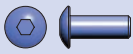
903412
SFH M4x12



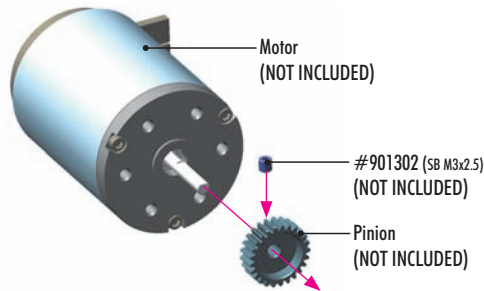
960040
N M4



5. FINAL ASSEMBLY



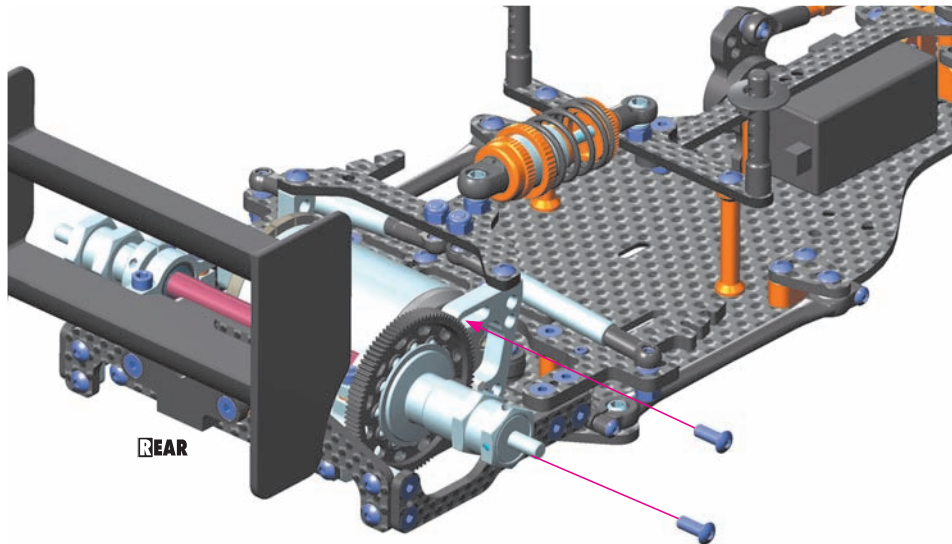
902308
SH M3x8



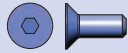
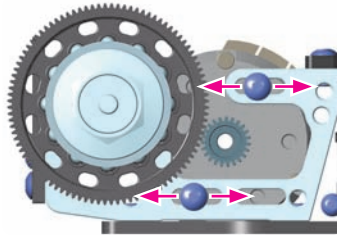
OPTION

PINIUM GEARS ALU HARDCOATED

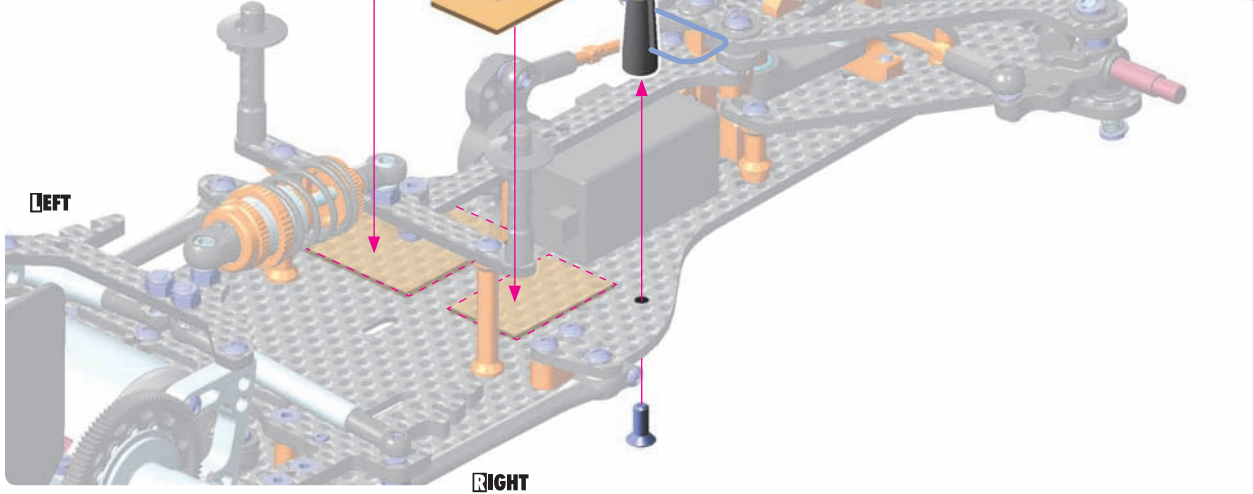
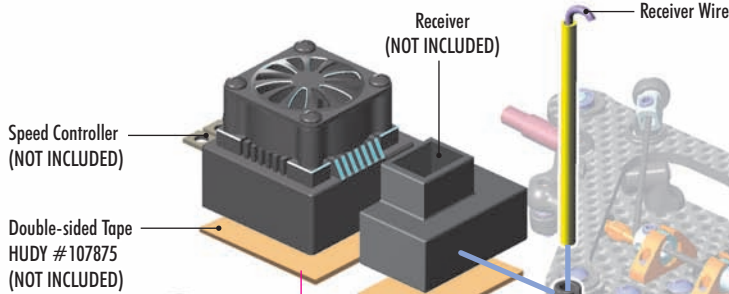
#305968	18T / 64P	OPTION
#305969	19T / 64P	OPTION
#305970	20T / 64P	OPTION
#305971	21T / 64P	OPTION
#305972	22T / 64P	OPTION
#305973	23T / 64P	OPTION
#305974	24T / 64P	OPTION
#305975	25T / 64P	OPTION
#305976	26T / 64P	OPTION
#305977	27T / 64P	OPTION
#305978	28T / 64P	OPTION
#305979	29T / 64P	OPTION
#305980	30T / 64P	OPTION
#305981	31T / 64P	OPTION
#305982	32T / 64P	OPTION
#305983	33T / 64P	OPTION
#305984	34T / 64P	OPTION
#305985	35T / 64P	OPTION
#305986	36T / 64P	OPTION
#305987	37T / 64P	OPTION
#305988	38T / 64P	OPTION
#305990	40T / 64P	OPTION
#305991	41T / 64P	OPTION
#305992	42T / 64P	OPTION
#305994	44T / 64P	OPTION
#305996	46T / 64P	OPTION
#305997	47T / 64P	OPTION
#305998	48T / 64P	OPTION
#306000	50T / 64P	OPTION

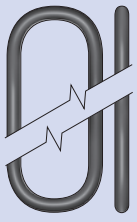


Adjust the gear mesh so there is appropriate space between the spur gear and pinion teeth. There should be a very small amount of freeplay.



903308
SFH M3x8





203063
Ø 63x1.8



903310
SFH M3x10



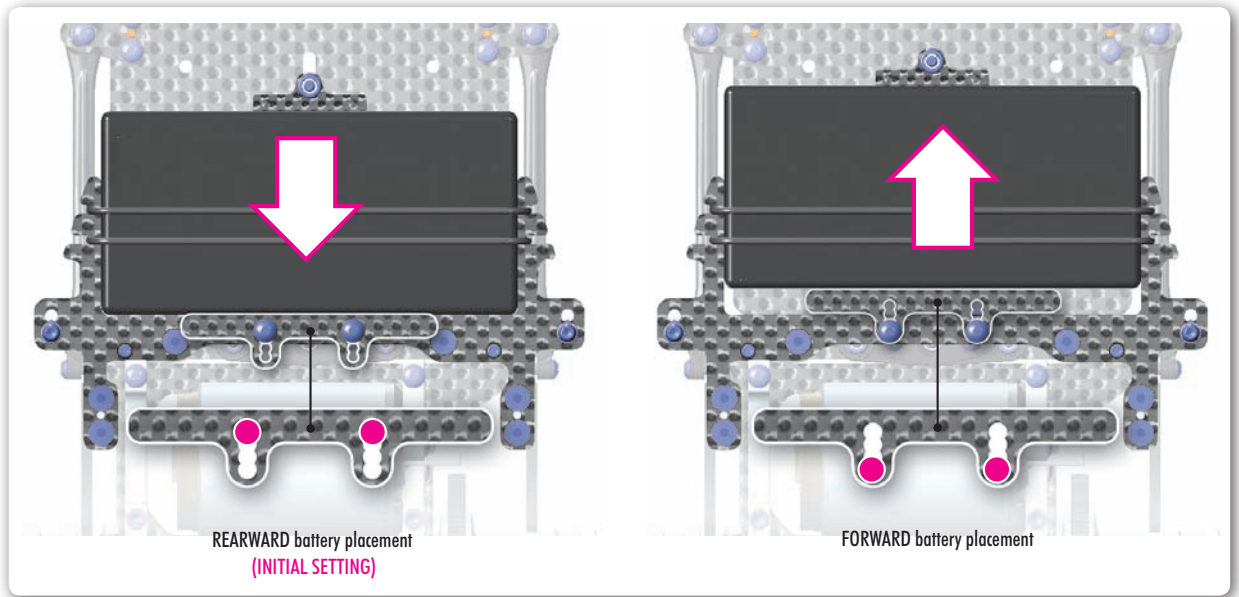
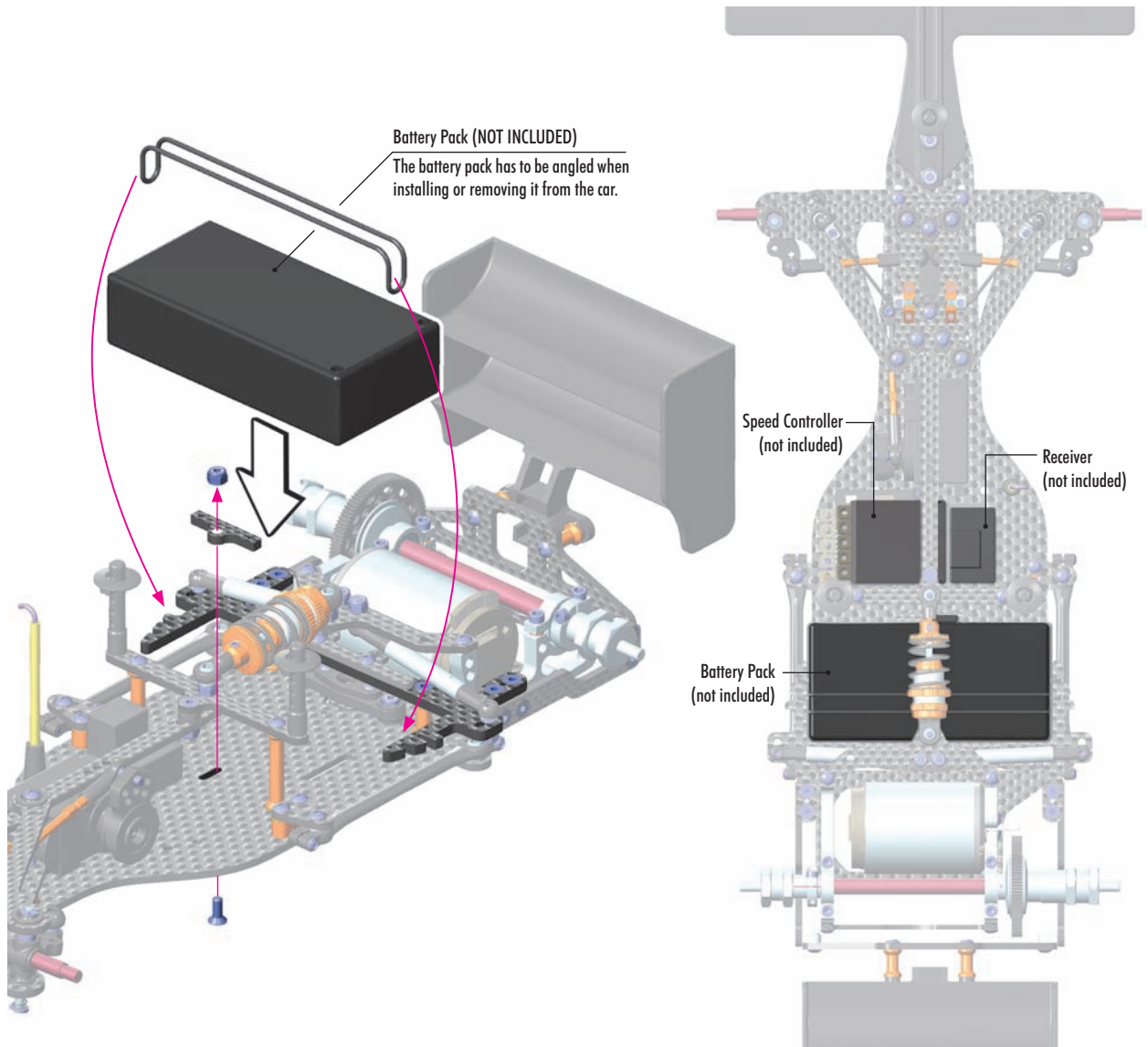
960030
N M3

LiPo BATTERY CONFIGURATION 1

CROSS-CHASSIS ALIGNMENT

INITIAL ASSEMBLY

Easier to drive, decreases traction rolling. Recommended for high-traction carpet tracks.



5. FINAL ASSEMBLY

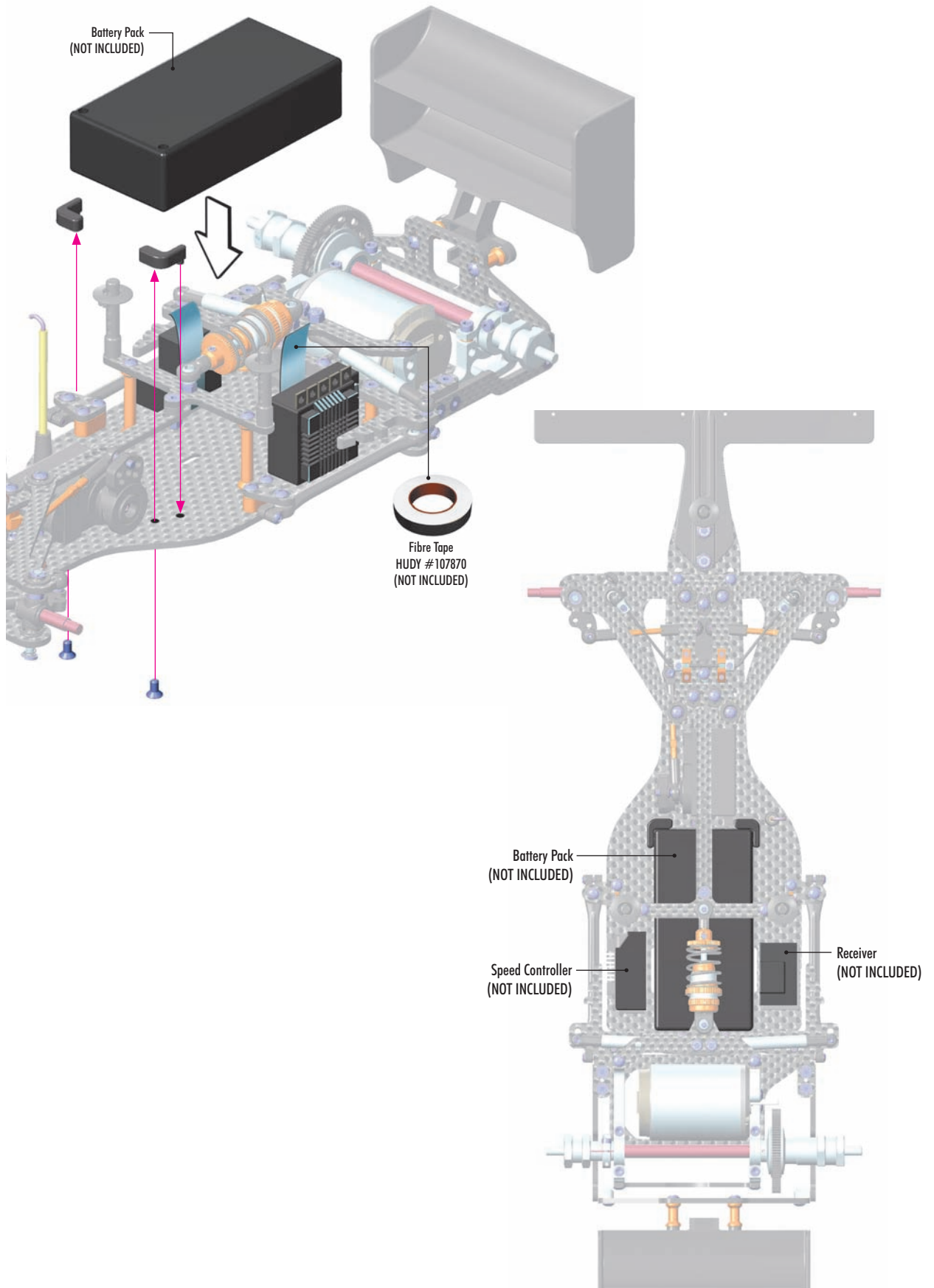


903306
SFH M3x6

LiPo BATTERY CONFIGURATION 2

INLINE BATTERY ALIGNMENT

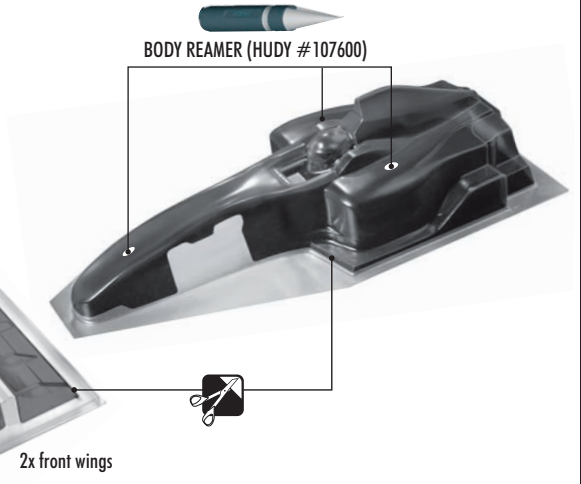
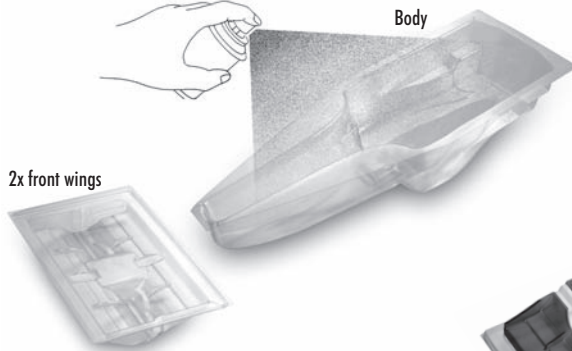
Improves the roll of the car and gives improved steering. Recommended for asphalt and low-medium traction carpet tracks.



5. FINAL ASSEMBLY

- 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.

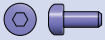
- 4 Apply paint masks as appropriate.
- 5 Paint the body using paints formulated for polycarbonate bodies.
- 6 When the paint is dry, remove the masking.
- 7 Carefully cut out the body using appropriate scissors or cutting tools.
- 8 When you have finished cutting, peel off the external protective films.



BODY		
OPTION	#379701 XRAY	INCLUDED
	#379702 WORLD CHAMPION EDITION	OPTION



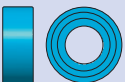
338586
SHIM 5x7x0.5



902205
SH M2x5



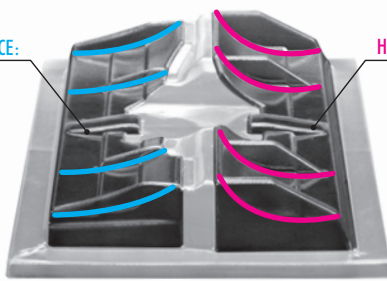
960040
N M4



940510
BB 5x10x4

FRONT WING

LOW DOWNFORCE:
Less steering

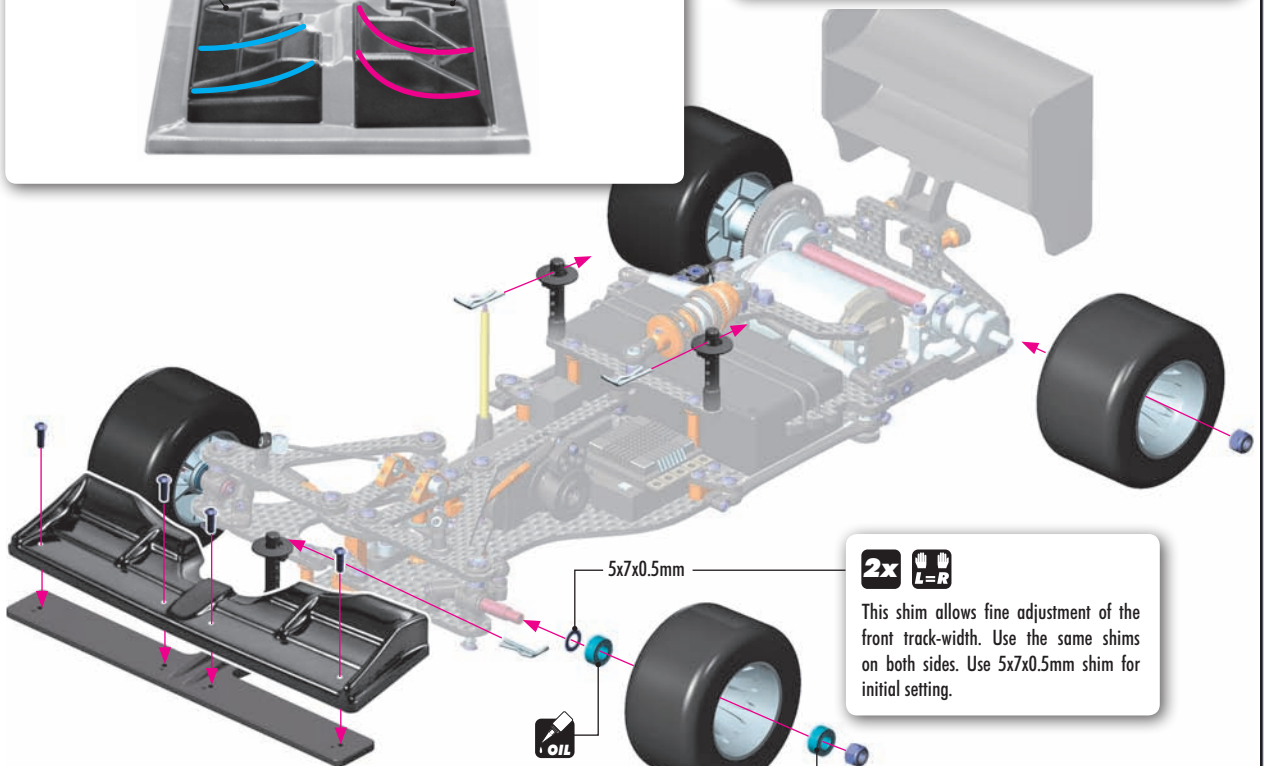


HIGH DOWNFORCE:
More steering



TRACK-WIDTH ADJUSTMENT SHIMS

OPTION	#338584	5x7x0.2mm	OPTION
	#338585	5x7x0.3mm	OPTION
	#338586	5x7x0.5mm	INCLUDED



2x
L=R

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

BEARING OIL (HUDY #106230)

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



#803070 HUDY 1/10 FORMULA RUBBER TIRE - FRONT (2)
#803080 HUDY 1/10 FORMULA RUBBER TIRE - REAR (2)



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/XrayRacing



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