

1/12 LUXURY PAN CAR

XRAY X12



INSTRUCTION MANUAL
FOR X12'25 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.

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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.

TOOLS REQUIRED



NOT INCLUDED



Alexander Hagberg
(Factory Driver)

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



SAMPLE OF OPTIONAL PARTS

#37XXXX	TYPE1	OPTION 1
#37XXXX	TYPE2	OPTION 2
#37XXXX	TYPE	INCLUDED

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:

- 371213 **STYLE A** - indicates parts that are included in the bag marked for the section.
- 371122 **STYLE B** - indicates parts that are included in the box.
- 378102 **STYLE C** - indicates parts that are already assembled from previous steps.
- 373589 **STYLE D** - indicates parts that are optional.

INCLUDED

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

450cSt (#106345)
HUDY Premium Silicone Oils



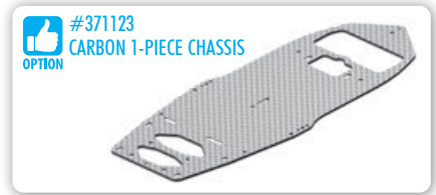
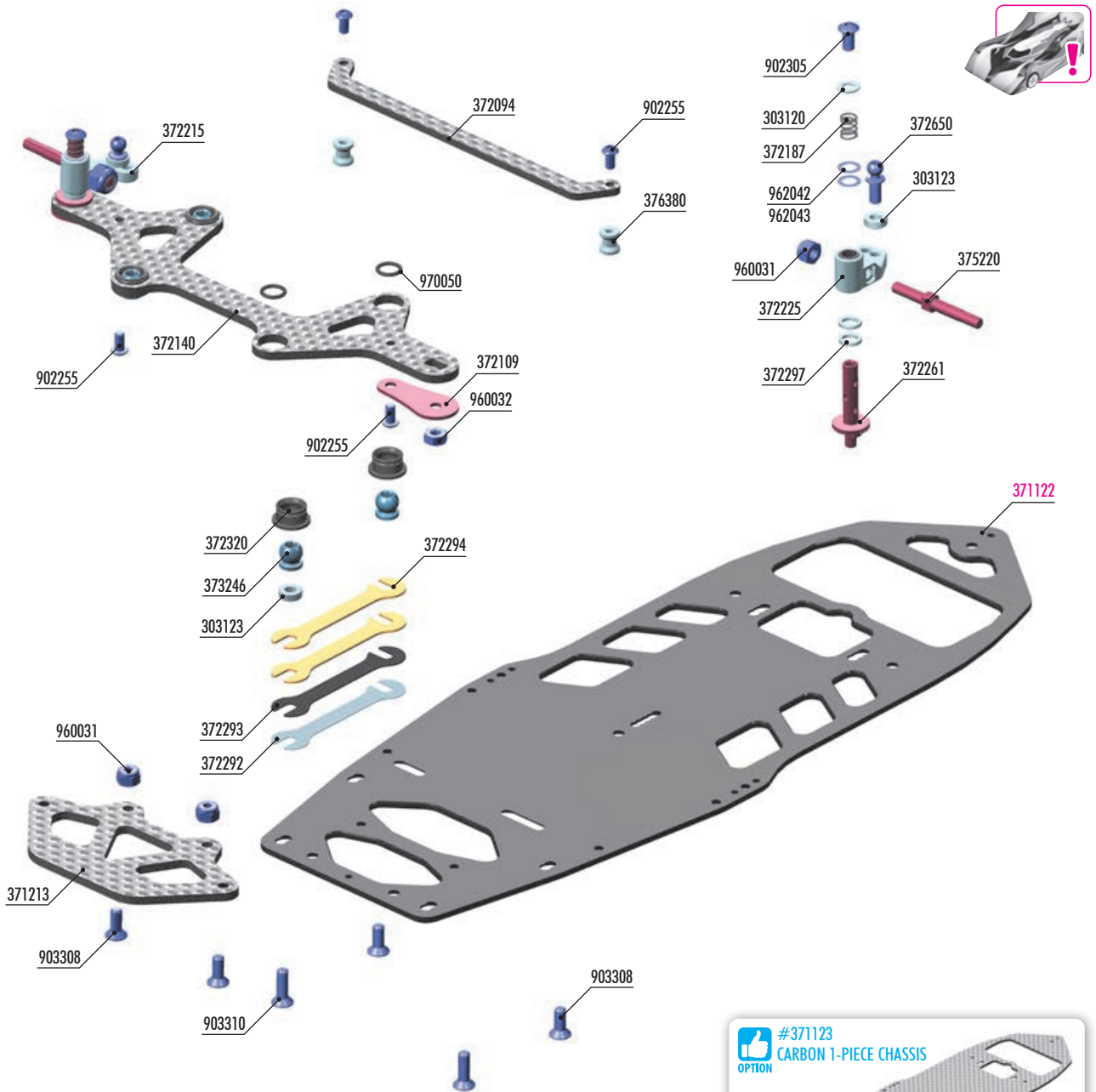
10.000cSt (#106510)
HUDY Premium Silicone Oils



ALSO REQUIRED

<p>Transmitter</p>	<p>Receiver</p>	<p>Speed Controller</p>	<p>Steering Servo</p>
<p>Electric Motor & Pinion Gear with Setscrew</p>	<p>LiPo Battery</p>	<p>Battery Charger</p>	<p> Bearing Oil (HUDY #106230)</p>
<p>Tires</p>	<p>1/12 Bodyshell</p>	<p>Lexan™ Paint</p>	<p> Double-sided Tape (HUDY #107875)</p>

1. FRONT SUSPENSION



FRONT COIL SPRINGS				
OPTION	#372190	C=1.1	BLACK	OPTION
	#372186	C=1.5-1.7	GOLD	OPTION
	#372187	C=1.8-2.0	SILVER	INCLUDED
	#372188	C=2.1-2.3	BLACK	OPTION



CAMBER - KINGPIN AXLES				
OPTION	#372260	0.5°	4 DOTS	OPTION
	#372261	1°	3 DOTS	INCLUDED
	#372262	1.5°	1 DOT	OPTION

BAG

01

BUILD VIDEO

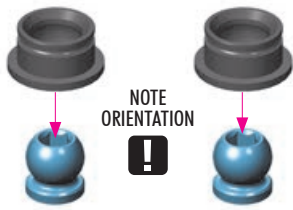
FRONT SUSPENSION

303120	SET OF ALU SHIM (0.5mm, 1.5mm, 2.5mm)	373246	ALU BALL END 6.0mm WITH HEX - SWISS 7075 T6 (2)
303123	ALU SHIM 3x6x2.0mm (10)	375220	FRONT WHEEL AXLE (2)
371213	CARBON BUMPER LOWER HOLDER FOR 1-PIECE CHASSIS	376380	ALU MOUNT 6.0mm WITH 2.5mm THREAD - BLACK (2)
372094	CARBON FRONT BRACE FOR NARROW SUSPENSION ARM PLATE		
372109	STEEL LOWER SUSPENSION ARM BRACE (2)	902255	HEX SCREW SH M2.5x5 (10)
372140	CARBON LOWER SUSPEN. ARM PLATE FOR 1-PIECE CHASSIS	902305	HEX SCREW SH M3x5 (10)
372187	FRONT COIL SPRING FOR 4mm PIN C=1.8-2.0 - SILVER (2)	903308	HEX SCREW SFH M3x8 (10)
372215	ALU STEERING BLOCK WITH TEFLON SLEEVE - RIGHT	903310	HEX SCREW SFH M3x10 (10)
372225	ALU STEERING BLOCK WITH TEFLON SLEEVE - LEFT	960031	ALU NUT M3 (10)
372261	KINGPIN 4mm WITH HOLES - 1.0° - 3 DOTS - NICKEL COATED (2)	960032	NUT M3 (10)
372292	STEEL SHIM 0.2mm - SILVER (2)	962042	WASHER S 4x6x0.1 (10)
372293	STEEL SHIM 0.4mm - BLACK (2)	962043	WASHER S 4x6x0.2 (10)
372294	STEEL SHIM 0.6mm - GOLD (2)	970050	O-RING 5x1 (10)
372297	ALU SHIM 4x6x1.0mm (10)		
372320	COMPOSITE ARM BUSHING (4)	371122	X12 ALU 1-PIECE CHASSIS 2.0MM - SWISS 7075 T6
372650	BALL END 4.2mm WITH 6mm THREAD (2)		

1. FRONT SUSPENSION



4x 970050
0 5x1



NOTE ORIENTATION !

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

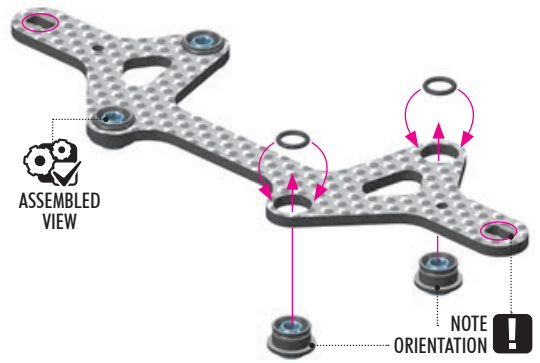


2x L=R

CUTAWAY VIEW



ASSEMBLED VIEW



NOTE ORIENTATION !



2x 303123
SHIM 3x6x2

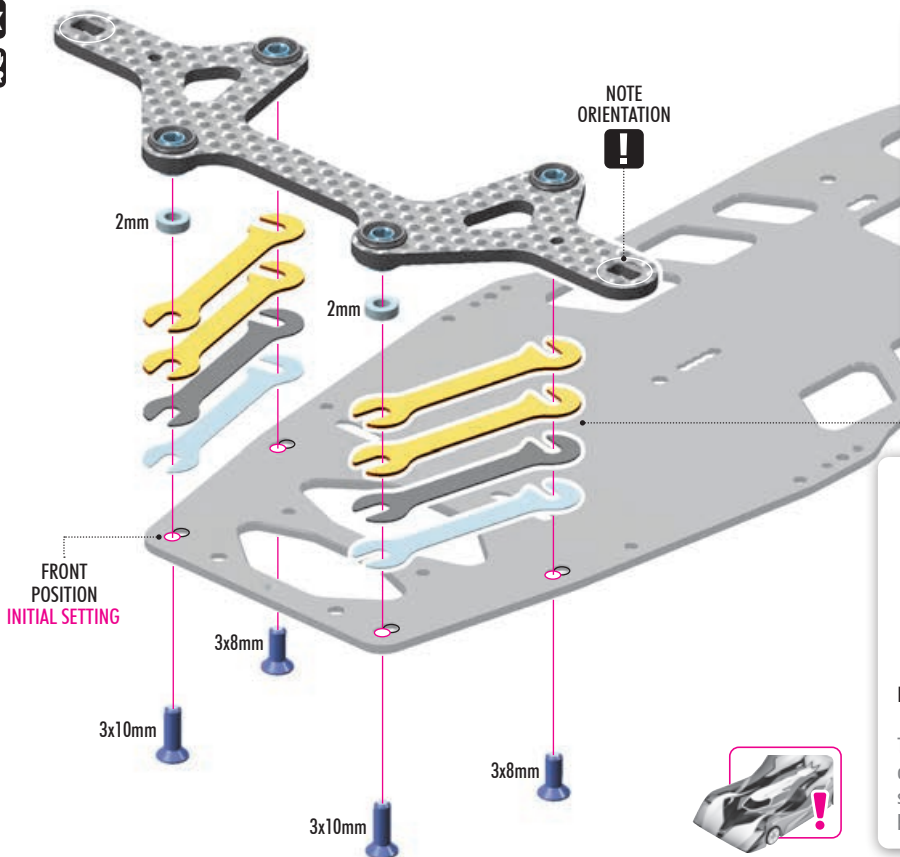


2x 903308
SFH M3x8

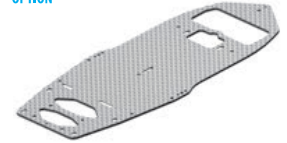


2x 903310
SFH M3x10

2x L=R

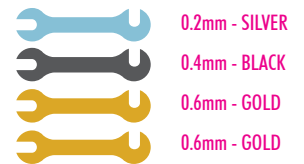


#371123
CARBON 1-PIECE CHASSIS
OPTION



The optional carbon chassis is recommended for low- to medium traction outdoor asphalt tracks, and for very low traction carpet tracks.

INITIAL SETTING



RIDE HEIGHT AND CASTER ADJUSTMENT

The number of washers and shims used affects the ride height and caster of the car, so determine the proper amount of shimming based on the tire diameter and desired caster.

CASTER ADJUSTMENT SETTING

Caster is adjusted by the shims placed under front ball.

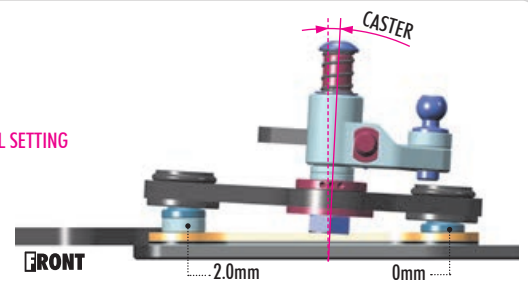
Please see the table on right to understand how to set the caster.

- **MORE CASTER** increases front traction, especially on-power. More likely to traction roll.
- **LESS CASTER** reduces front traction, especially on-power. Less likely to traction roll.

SHIM DIFFERENCE	CASTER
1mm	1.5°
2mm	3°
3mm	4.5°
4mm	6°
5mm	7.5°

INITIAL SETTING

2.0mm FRONT shim - 0mm REAR shim = 2.0mm shim difference = 3° Caster



VIDEO TECH TIP



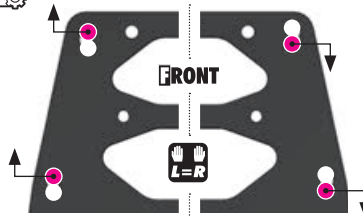
CASTER ADJUSTMENT

FRONT POSITION ALTERNATIVE LONG WHEELBASE

INITIAL SETTING

LONG wheelbase is recommended for larger tracks with long sweepers. Makes the car more stable and easier to drive.

FRONT WHEELBASE ADJUSTMENT



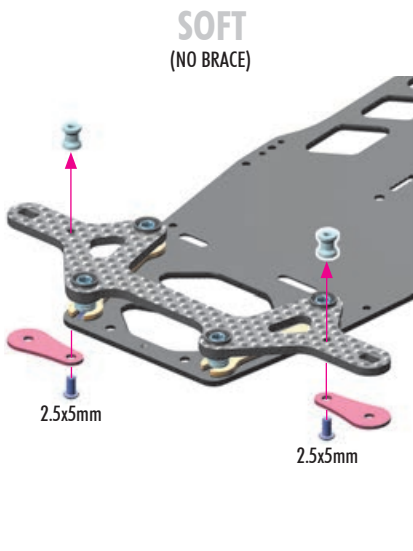
REAR POSITION ALTERNATIVE SHORT WHEELBASE

SHORT wheelbase allows the car to rotate better in corners to maintain cornering speed. Recommended for tight, technical tracks or tracks with several 180° hairpin corners.

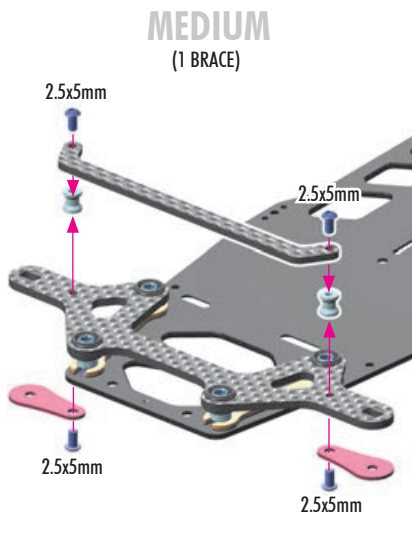
1. FRONT SUSPENSION



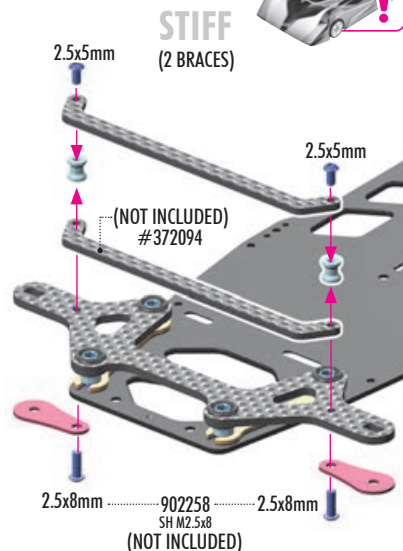
FRONT SUSPENSION FLEX SETTING



SOFT
Makes the car initially less responsive, but will provide more mechanical traction. Recommended for low-traction carpet conditions, and asphalt tracks.



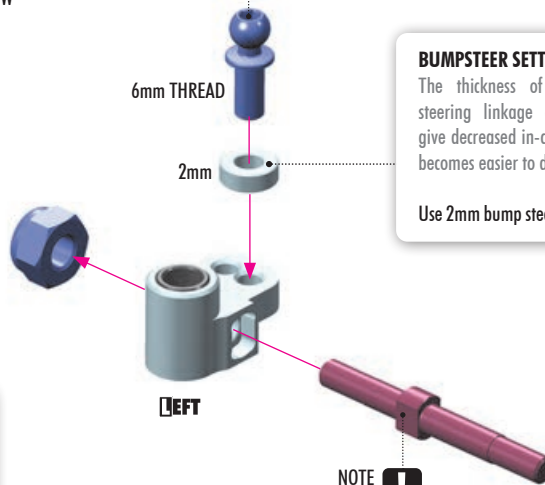
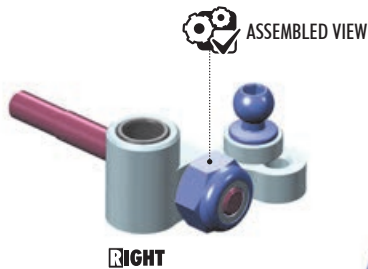
MEDIUM
INITIAL SETTING
Brace mounted to the carbon arm with posts provides a balance between initial response and mechanical traction. Recommended for most track conditions.



STIFF
Both braces mounted to the carbon arm give maximum responsiveness but decrease mechanical traction. Recommended for high-traction track conditions. (such as US black carpet).



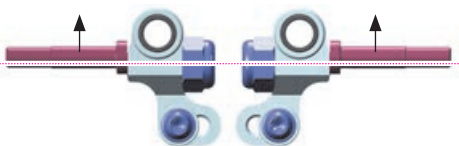
The steering link mounting position on the steering block has a direct effect on the Ackermann. Please see the ACKERMANN SETTING PAGE: 27.



BUMPSTEER SETTING

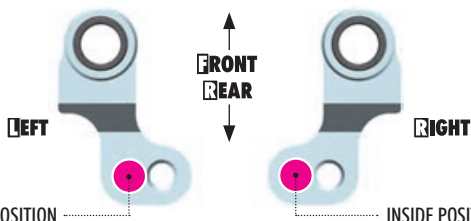
The thickness of shims changes the steering linkage angle. Thicker shims give decreased in-corner steering, but car becomes easier to drive.

Use 2mm bump steer as **INITIAL SETTING**.



Less front axle trail frees up the car and reduces front traction, improving cornering speed for all classes. It is particularly useful for spec classes on high traction black carpet.

STEERING BLOCKS



OUTSIDE POSITION
INITIAL SETTING

The outer hole provides less Ackermann effect, making the car more aggressive. Front traction is increased.

INSIDE POSITION

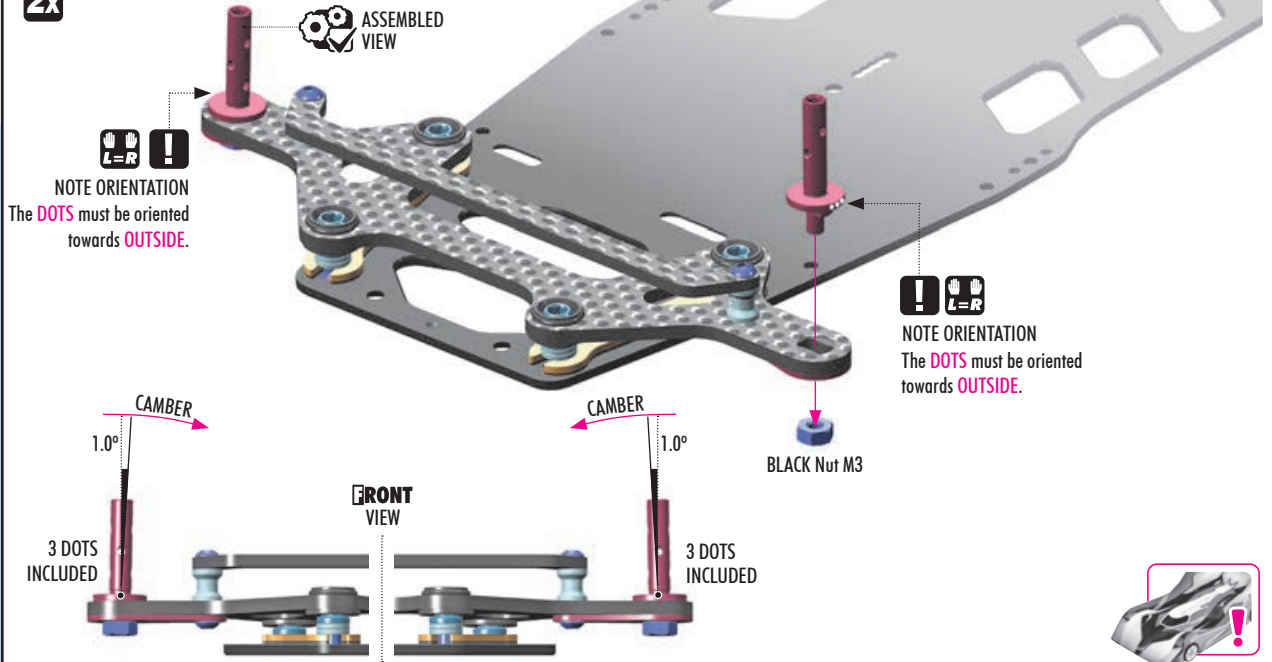
The inner hole provides more Ackermann effect, making the car less aggressive and easier to drive. Front traction is decreased.

1. FRONT SUSPENSION



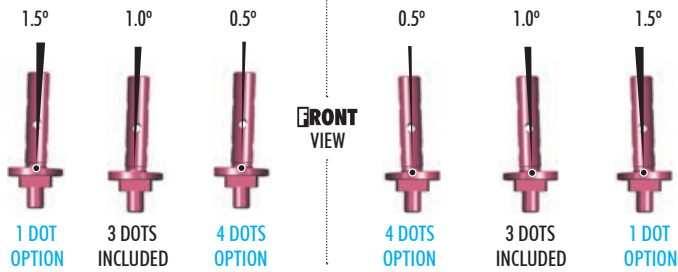
2x 960032
N M3

2x



CAMBER ADJUSTMENT

Optional kingpins are available to adjust camber if needed.



INCREASING THE CAMBER ANGLE

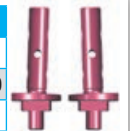
Will increase the car steering, however, will make the car more difficult to drive.

DECREASING THE CAMBER ANGLE

Will decrease the steering which will make the car easier to drive and also helps to prevent traction rolling.



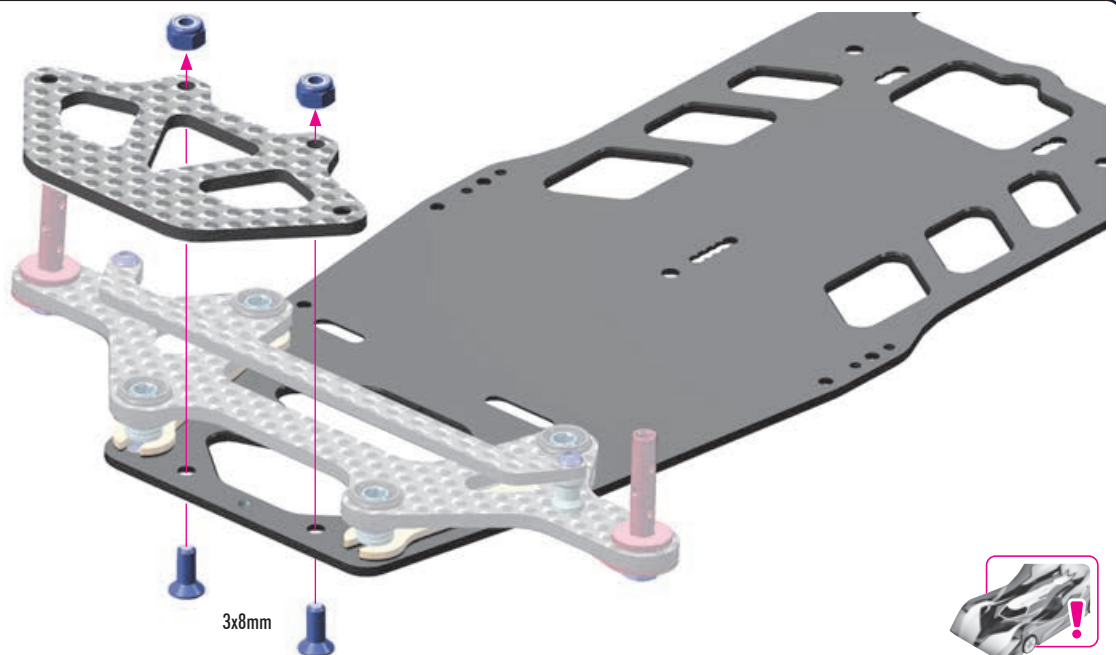
CAMBER - KINGPIN AXLES			
#372260	0.5°	4 DOTS	OPTION
#372261	1°	3 DOTS	INCLUDED
#372262	1.5°	1 DOT	OPTION



2x 903308
SFH M3x8



2x 960031
ALU N M3



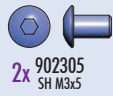
1. FRONT SUSPENSION



2x 303120
SHIM 3x6x0.5



4x 372297
SHIM 4x6x1



2x 902305
SH M3x5



2x 962042
S 4x6x0.1



2x 962043
S 4x6x0.2



TIP

Alexander Hagberg
(Factory driver)

RIDE HEIGHT AND DROOP ADJUSTMENT SHIMS:

The ride height is adjusted with the supplied long shims that can be fitted under the arms (silver/black/gold). I recommend using as low of a ride height as you possibly can, unless you race on a bumpy or rough surface, then the car can benefit from having a slightly higher ride height, to increase stability, and improve the handling over bumps.

The front axle height can be adjusted with shims under the steering block. You can't change the roll center on the front end of the X12, simply because there is no upper arm. Adding shims under the steering block (raising the steering block) will raise the front axle height, and at the same time, decrease bump steer. Removing shims will lower the steering block, and increase bump steer. For more information about Ackermann & Bumpsteer, see PAGE 27 (servo mounting).

I recommend using the kit shimming for the front steering block - this will be a good basic setting for most conditions.



FRONT DROOP ADJUSTMENT

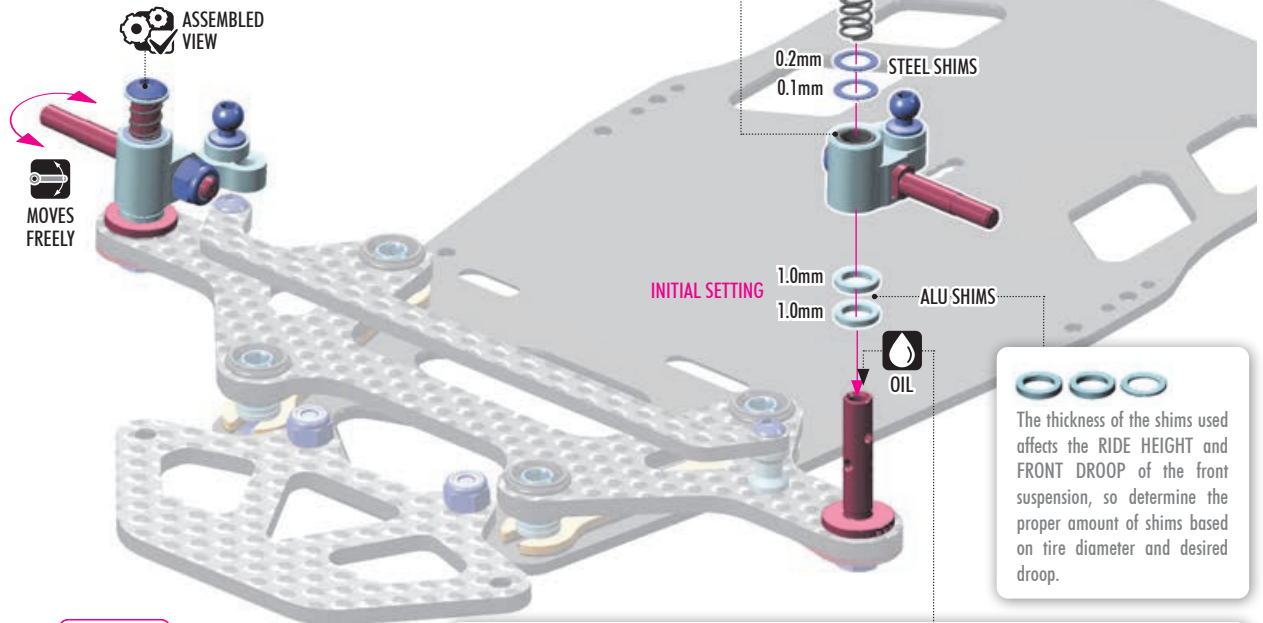
Front droop is adjusted by the preload of the front spring. More shims between the steering block and the spring will increase preload - and decrease droop. Removing shims will have the opposite effect.

INITIAL SETTING

- Above steering block (0.3mm)
- Below steering block (2.0mm)

MORE DROOP will make the car initially less responsive, but it will give the car more front traction, especially in the middle of the corner. The car will be less precise and more difficult to drive, because of 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 such as US black carpet, especially when traction rolling is an issue and particularly when a rear solid axle is used.



VIDEO TECH TIP



FRONT KINGPIN OIL



VIDEO TECH TIP



FRONT DROOP & RIDE HEIGHT



The kingpins with hole maintain consistent dampening from the continuous oil film between the kingpin and steering block. Fill the kingpin from the top before installing the steering block and retaining screw.

Recommended to check and re-fill the kingpin fluid once per race day, or every 5 runs, whichever comes first.

LOW traction & bumpy track	OIL
7K ~ 10K cSt	
HIGH traction & smooth track	OIL
15K ~ 30K cSt	

use HUDY Silicone Oil
10K cSt
(INCLUDED)



OPTION	FRONT COIL SPRINGS	OPTION
#372190	C=1.1 BLACK	OPTION
#372186	C=1.5-1.7 GOLD	OPTION
#372187	C=1.8-2.0 SILVER	INCLUDED
#372188	C=2.1-2.3 BLACK	OPTION

SOFTER SPRINGS

Make the car easier to drive over bumps and increase steering as they make the car roll more, especially in the middle of a corner.

HARDER SPRINGS

Make the car more responsive and increase initial steering. Recommended for high-traction and flat tracks.



FRONT DAMPING SETTING

The Front Damping Setting is adjusted using different viscosity of oils.

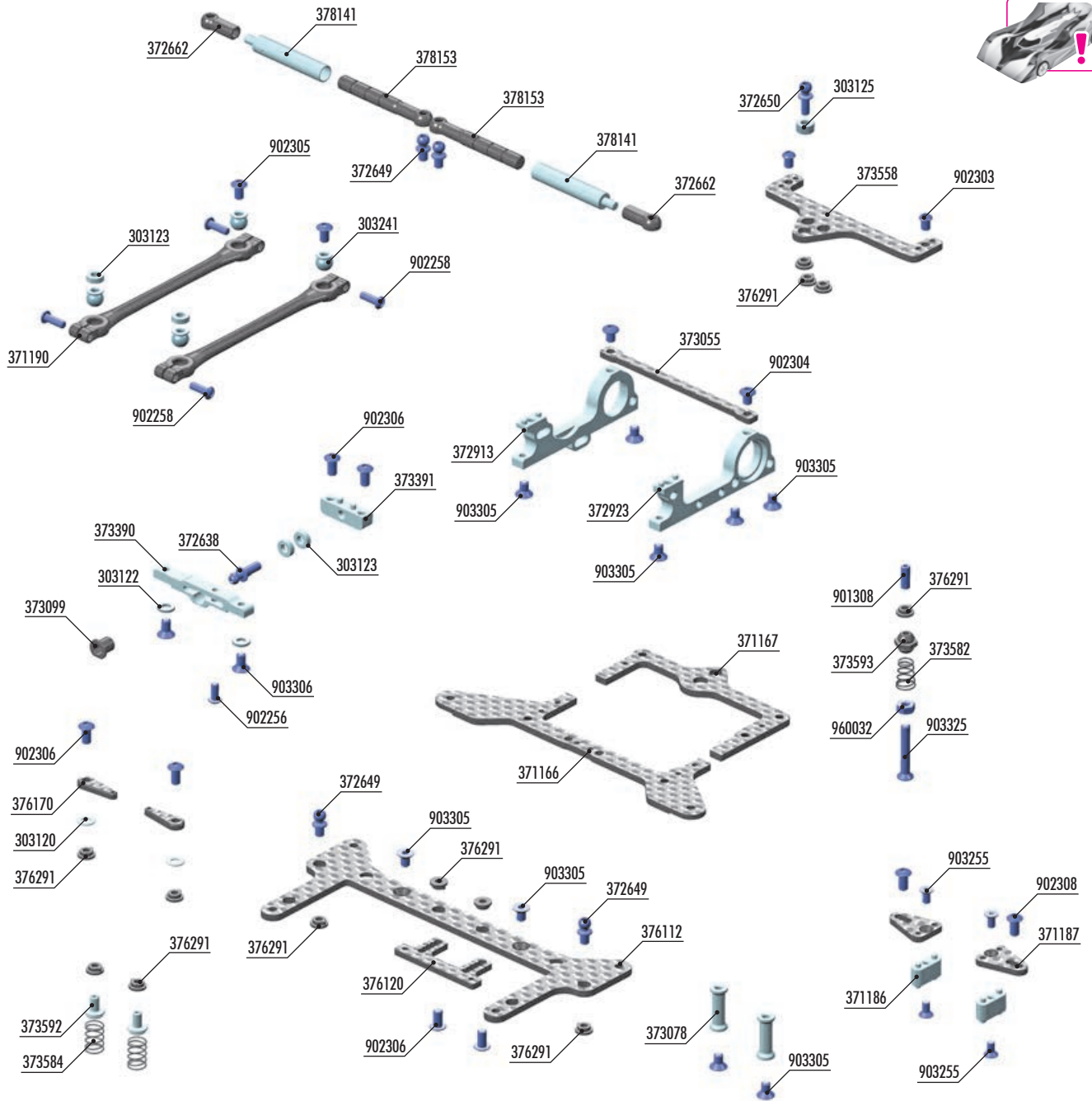
THINNER OIL

Makes the car more responsive but also more difficult to drive. Thinner oil increases cornering speed. Recommended for low-traction tracks.

THICKER OIL

Makes the car less responsive but easier to drive. Thicker oil also increases stability, but decreases cornering speed. Recommended for high-traction tracks.

2. REAR SUSPENSION



BAG

02

BUILD VIDEO

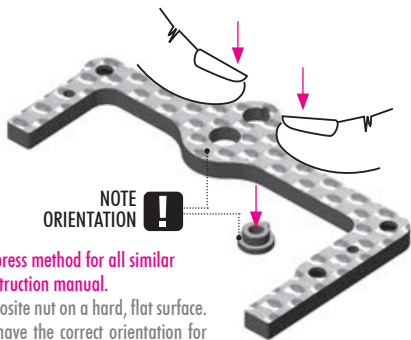


REAR SUSPENSION

303120	SET OF ALU SHIM (0.5mm, 1.5mm, 2.5mm)	373584	SIDE SPRING C=0.6 - SILVER (2)
303122	ALU SHIM 3x6x1.0mm (10)	373592	STEEL SIDE SPRING RETAINER (2)
303123	ALU SHIM 3x6x2.0mm (10)	373593	COMPOSITE TAPERED/STRAIGHT SPRING HOLDER (2)
303125	ALU SHIM 3x6x3.0mm (10)	376112	CARBON REAR BRACE FOR 1-PIECE CHASSIS
303241	BALL UNIVERSAL 5.8mm HEX (4)	376120	CARBON BATTERY BACKSTOP WITH 5 POSITIONS
371166	CARBON REAR POD LOWER PLATE FOR 1-PIECE CHASSIS - FRONT	376170	CARBON BATTERY CLAMP 2.2mm (2)
371167	CARBON REAR POD LOWER PLATE FOR 1-PIECE CHASSIS - REAR	376291	COMPOSITE M3 SNAP LOCK BUSHING (8)
371186	ALU HOLDER WITH 2 PINS FOR SIDE LINK CARBON PLATE - BLACK	378141	ALU SIDE TUBE (2)
371187	CARBON PLATE FOR 2 PINS FOR SIDE LINK (2)	378153	COMPOSITE SIDE TUBE SHAFT (2)
371190	COMPOSITE POD LINK (2)	901308	HEX SCREW SB M3x8 (10)
372638	HARD STEEL BALL END 3.7mm WITH 8mm THREAD - NICKEL COATED (2)	902256	HEX SCREW SH M2.5x6 (10)
372649	BALL END 4.2mm WITH 4mm THREAD (2)	902258	HEX SCREW SH M2.5x8 (10)
372650	BALL END 4.2mm WITH 6mm THREAD (2)	902303	HEX SCREW SH M3x4 SMALL HEAD - STAINLESS (10)
372662	COMPOSITE BALL JOINT 4.2mm (4)	902304	HEX SCREW SH M3x4 - STAINLESS (10)
372913	ALU REAR BULKHEAD FOR 1-PIECE CHASSIS - MOTOR - RIGHT	902305	HEX SCREW SH M3x5 (10)
372923	ALU REAR BULKHEAD FOR 1-PIECE CHASSIS - LEFT	902306	HEX SCREW SH M3x6 (10)
373055	ARBON REAR BULKHEAD BRACE FOR 1-PIECE CHASSIS	902308	HEX SCREW SH M3x8 (10)
373078	ALU REAR BRACE MOUNT 15.5mm - BLACK (2)	903255	HEX SCREW SFH M2.5x5 (10)
373099	COMPOSITE PIVOT BRACE BUSHING FOR 3.7mm BALL END	903305	HEX SCREW SFH M3x5 (10)
373390	ALU CHASSIS PIVOT HOLDER FOR 1-PIECE CHASSIS - SWISS 7075 T6	903306	HEX SCREW SFH M3x6 (10)
373391	ALU POD PLATE PIVOT HOLDER FOR 1-PIECE CHASSIS - SWISS 7075 T6	903325	HEX SCREW SFH M3x25 (10)
373558	CARBON REAR POD UPPER PLATE FOR 1-PIECE CHASSIS	960032	NUT M3 (10)
373582	TAPERED SPRING C=1.5-1.6 - SILVER (2)		

2. REAR SUSPENSION

NOTE

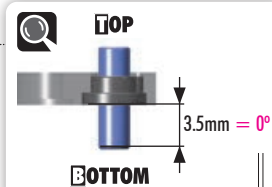
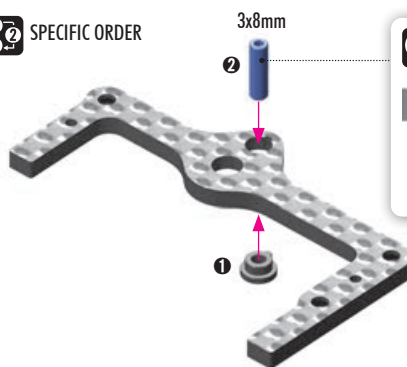


NOTE ORIENTATION

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.



SPECIFIC ORDER



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.



VIDEO TECH TIP



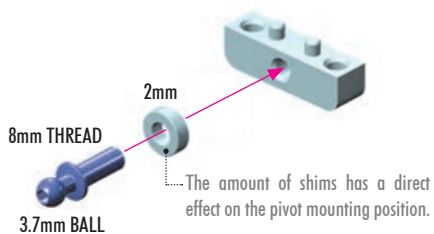
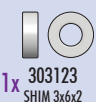
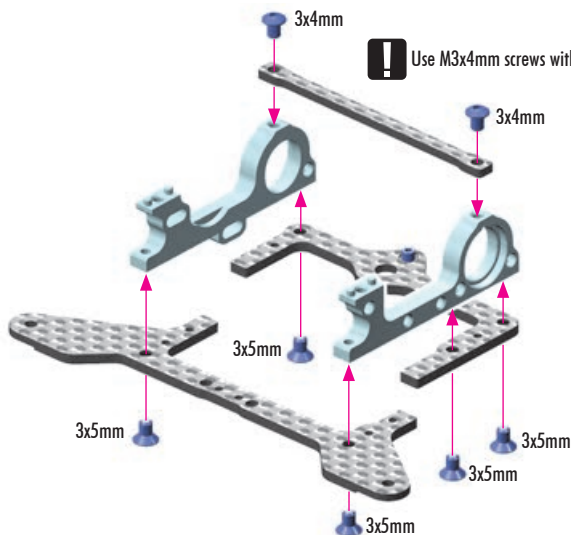
POD ANGLE ADJUSTMENT



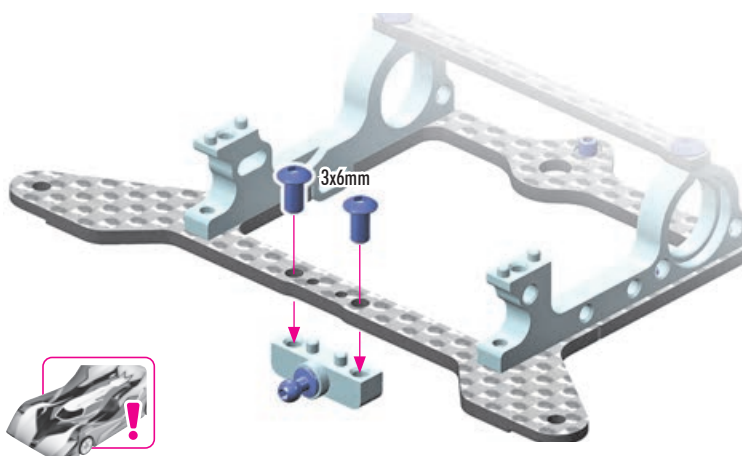
VIDEO TECH TIP



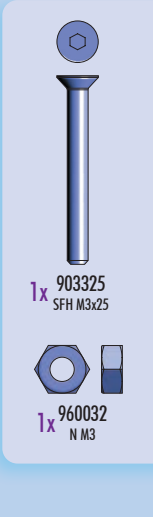
REAR POD & PIVOT BUILD



Please see: PAGE 13
INITIAL SETTING
MIDDLE pivot mounting (2mm shim)

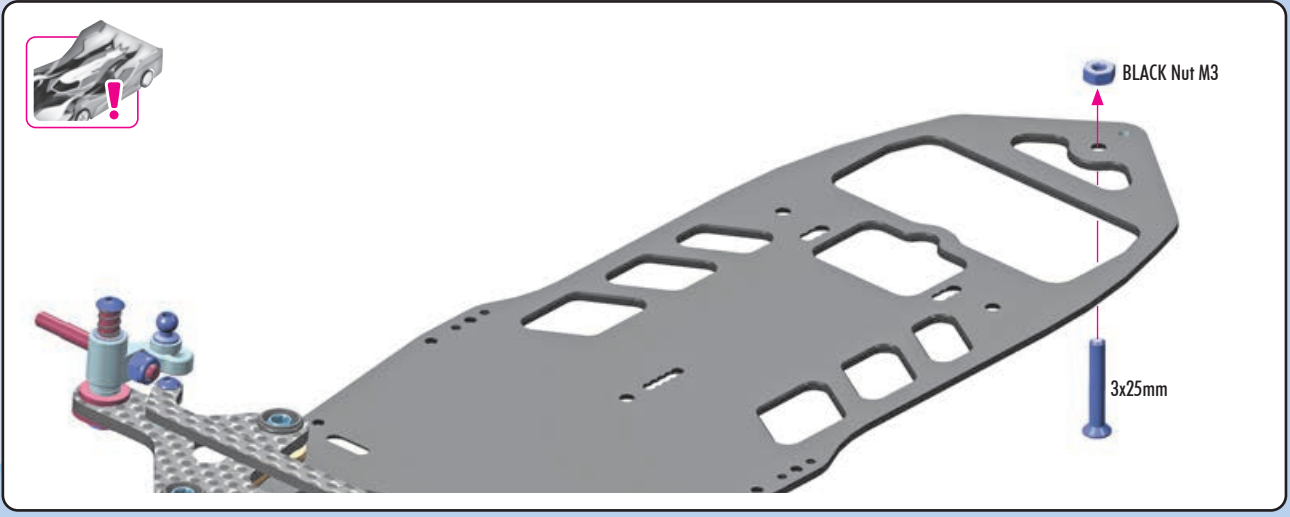


2. REAR SUSPENSION



1x 903325
SFH M3x25

1x 960032
N M3



BLACK Nut M3

3x25mm



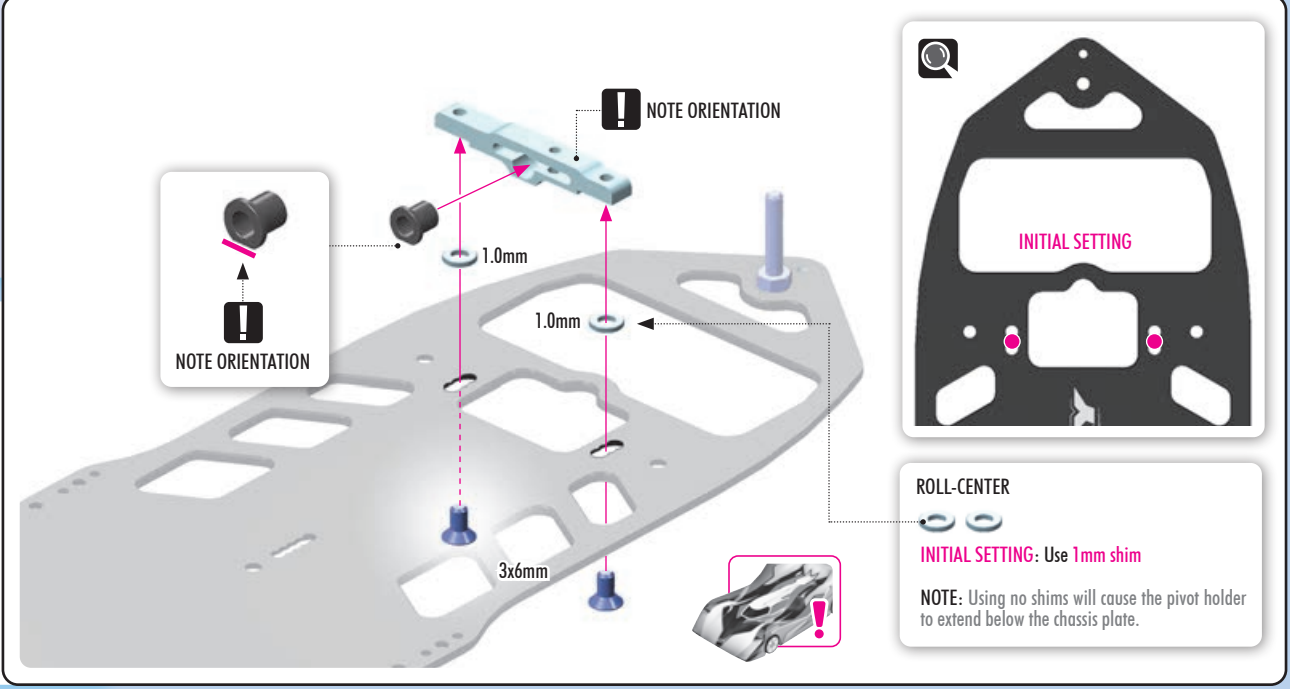
2x 303122
SHIM 3x6x1

2x 903306
SFH M3x6



VIDEO TECH TIP

REAR POD & PIVOT BUILD



NOTE ORIENTATION

NOTE ORIENTATION

1.0mm

1.0mm

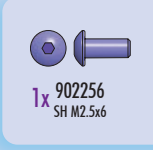
3x6mm

INITIAL SETTING

ROLL-CENTER

INITIAL SETTING: Use 1mm shim

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

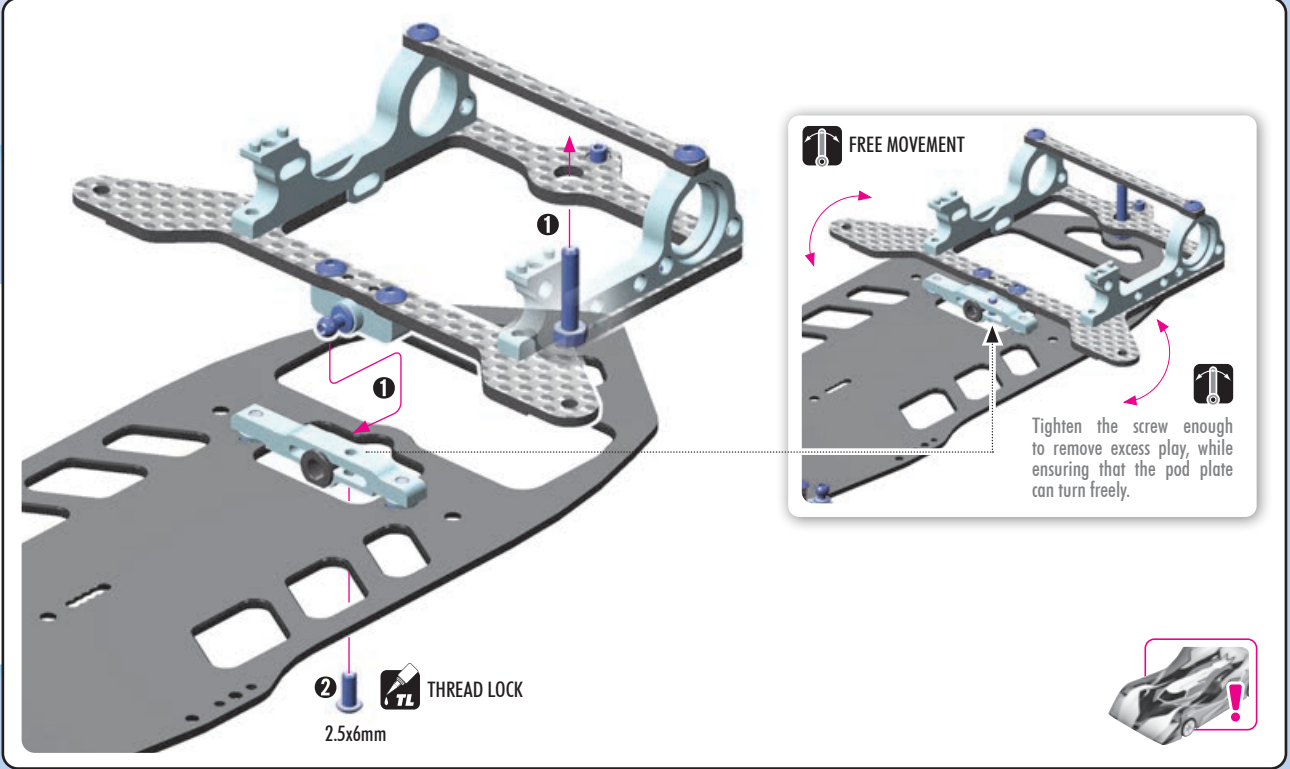


1x 902256
SH M2.5x6



VIDEO TECH TIP

REAR POD & PIVOT BUILD



FREE MOVEMENT

1

2

2.5x6mm

THREAD LOCK

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

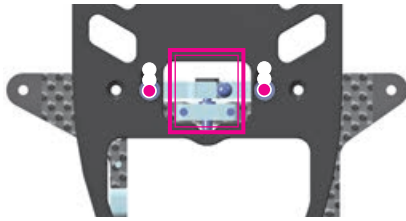
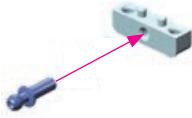
2. REAR SUSPENSION



PIVOT MOUNTING ALTERNATIVE

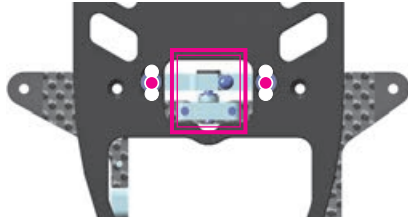
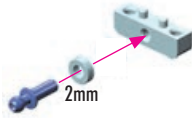
REARWARD:

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.



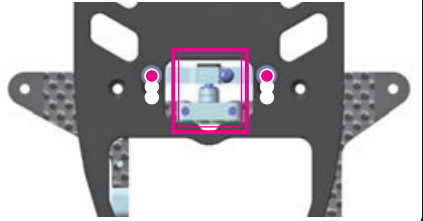
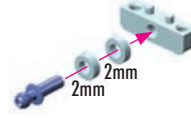
MIDDLE: INITIAL SETTING

Pivot mounted in middle chassis holes with a 2mm ball stud shim. Balanced front and rear traction; well suited for most conditions.



FORWARD:

Pivot mounted in forward chassis holes with 4mm ball stud shims. Creates the most forgiving handling that allows more aggressive driving without fear of losing rear traction.



1x 303123
SHIM 3x6x2

TIP #303122 & 303123 shims are NOT INCLUDED in the kit.

303122 SHIM 3x6x1
303123 SHIM 3x6x2



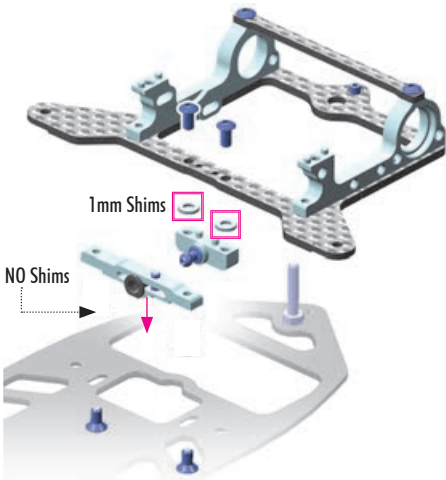
ROLL CENTER ADJUSTMENT

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



IMPORTANT

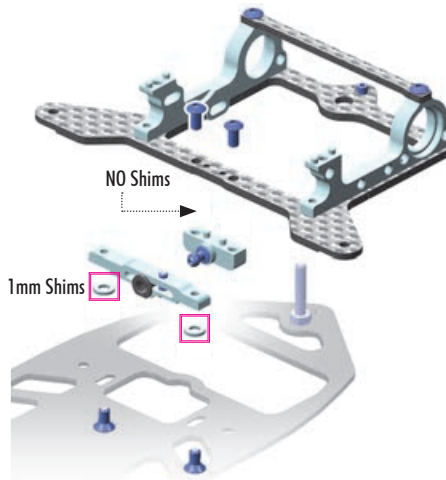
When changing the shims under the chassis pivot holder, the opposite adjustment of the same thickness must be made above the rear pivot holder to keep the pod in the same position.



LOWER ROLL CENTER

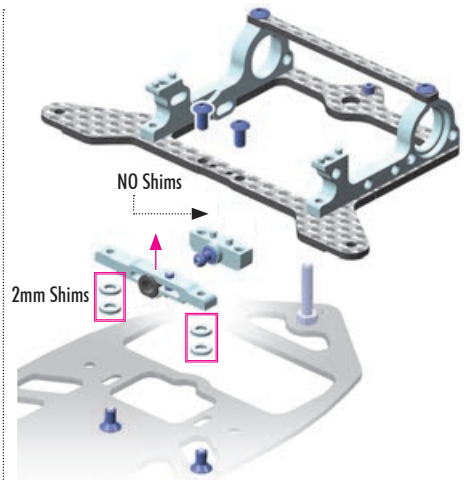
No shim under alu chassis pivot holder. Creates more traction and increases chassis roll.

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.

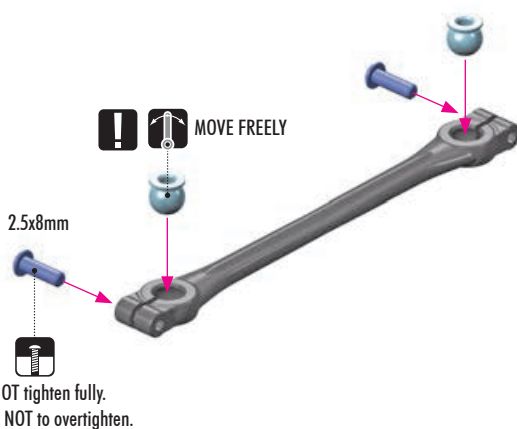


HIGHER ROLL CENTER

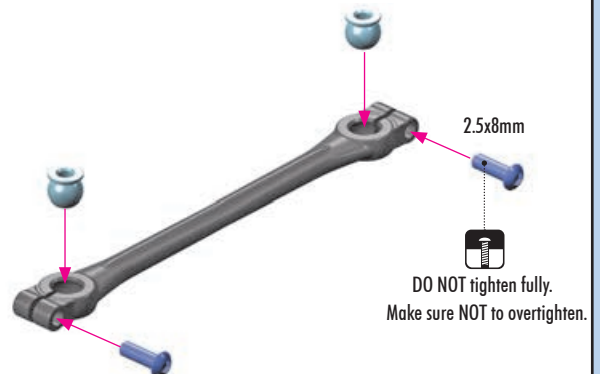
Adding shims below the chassis pivot holder increases rotation both on- and off-power.

4x 902258
SH M2.5x8

2x L=R



DO NOT tighten fully.
Make sure NOT to overtighten.



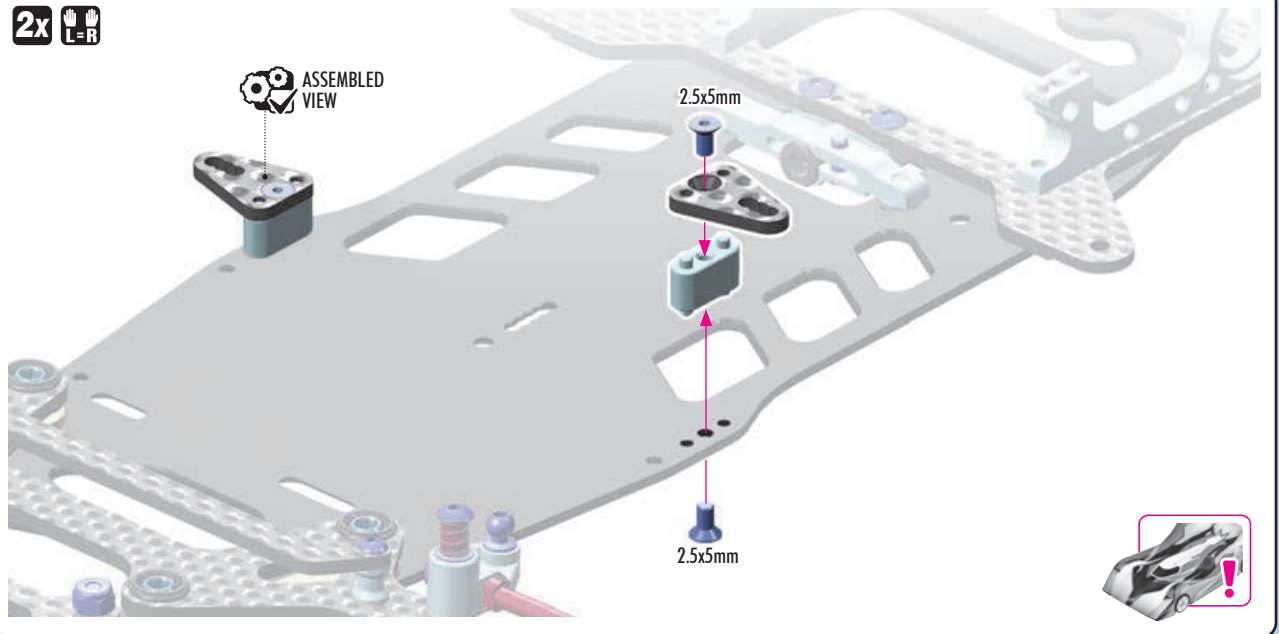
DO NOT tighten fully.
Make sure NOT to overtighten.

2. REAR SUSPENSION

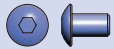


2x 903255
SFH M2.5x5

2x L-R



2x 303123
SHIM 3x6x2



2x 902305
SH M3x5



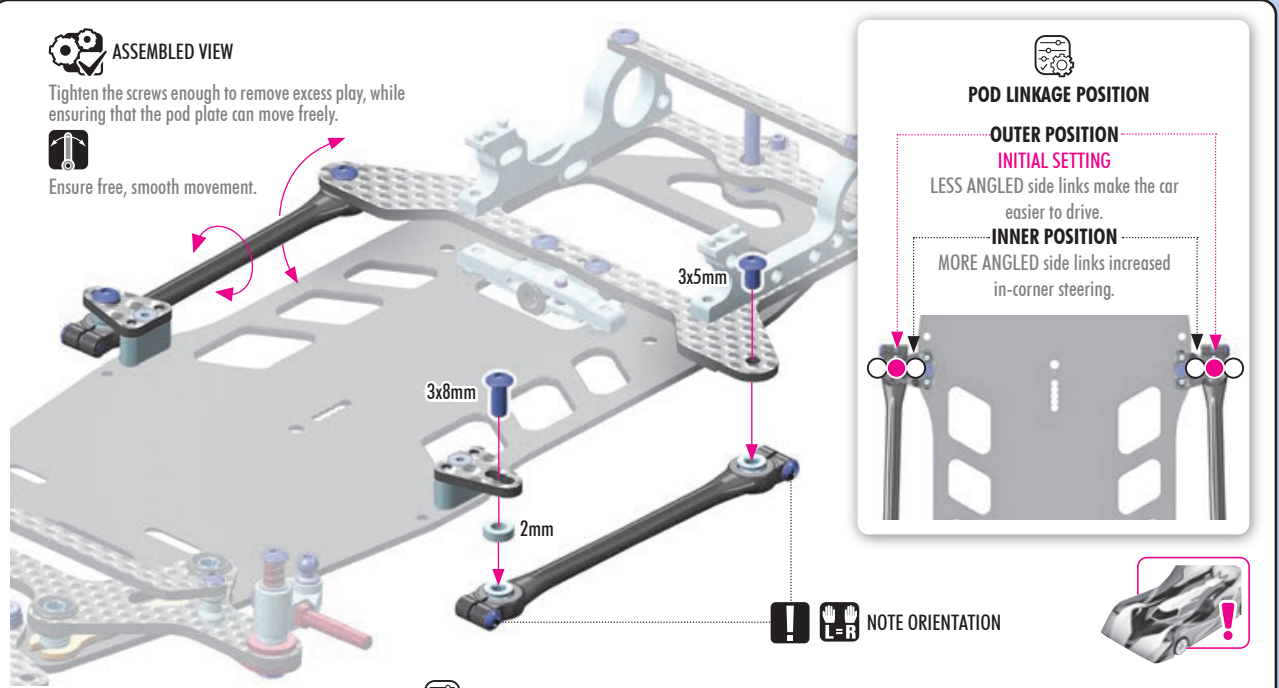
2x 902308
SH M3x8

ASSEMBLED VIEW

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



Ensure free, smooth movement.



POD LINKAGE POSITION

OUTER POSITION

INITIAL SETTING

LESS ANGLED side links make the car easier to drive.

INNER POSITION

MORE ANGLED side links increased in-corner steering.



POD LINKAGE ANGLE ALTERNATIVE

LESS SHIMS

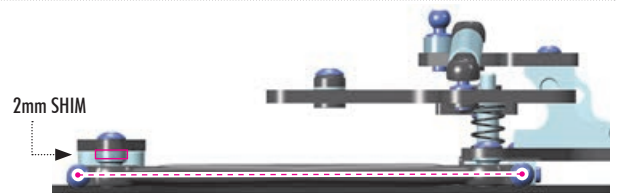
Raising the side links' FRONT pivot point (reducing shims) will further increase in-corner steering, but may be more difficult to drive since the rear inner wheel will lift up more during cornering. 0.5-2.0mm shims may be added for fine tuning.



STRAIGHT 2.0mm SHIMS

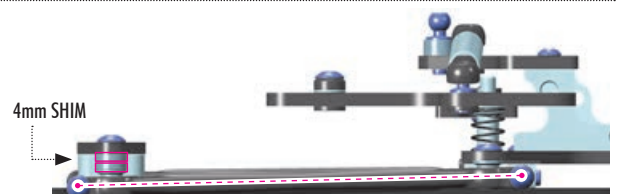
INITIAL SETTING

Straight link alignment makes the car easier to drive.



MORE SHIMS

Raising the side links' REAR pivot point (adding shims) reduces in-corner steering. This orientation is typically NOT used or recommended.



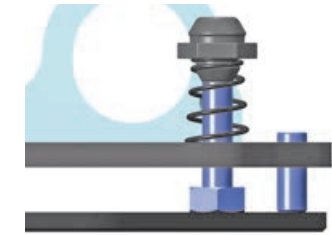
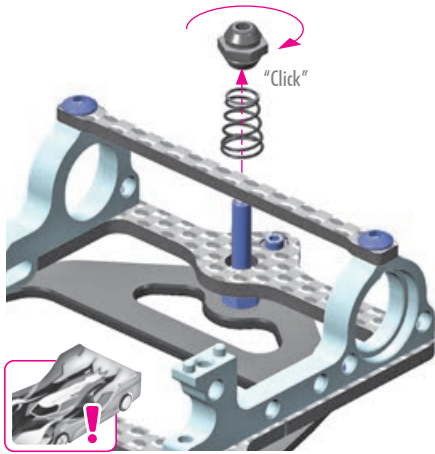
2. REAR SUSPENSION



VIDEO TECH TIP



POD DROOP
ADJUSTMENT



- **TIGHTENING** the rear bump spring increases ride height and reduces droop.
- **LOOSENING** the rear bump spring decreases ride height and increases droop.

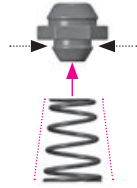


REAR RIDE HEIGHT & DROOP SETTING

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.



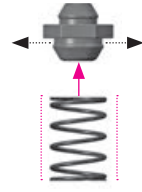
When using a **CONICAL-PROGRESSIVE SPRING**, press the spring onto the smaller diameter end of the spring retainer.



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



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



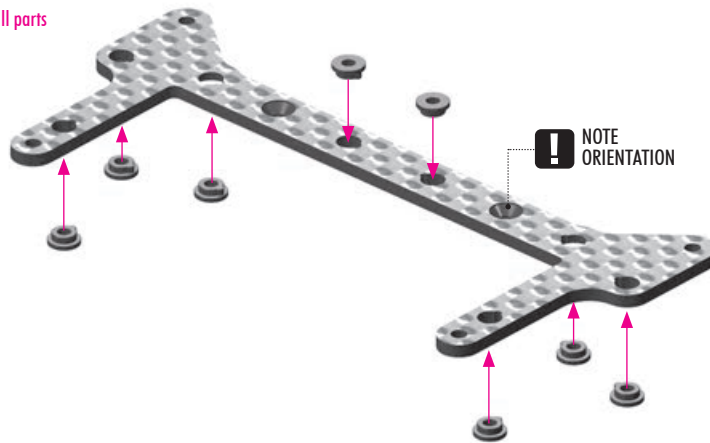
When using a **STRAIGHT-LINEAR SPRING**, press the spring onto the larger diameter end of the spring retainer.



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

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

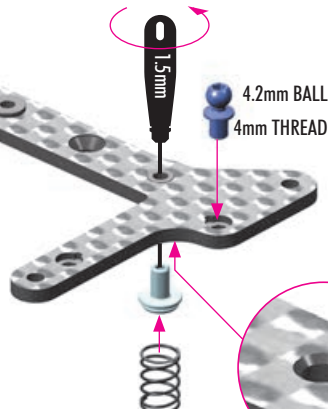
Follow PAGE 11 / Step 1



2x **L=R**

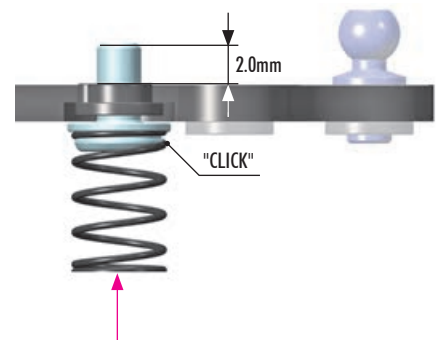


SIDE SPRINGS			
#373589	C=0.5	BLACK	OPTION
#373584	C=0.6	SILVER	INCLUDED
#373585	C=0.9	GOLD	OPTION
#373586	C=1.2	BLACK	OPTION
#373587	C=1.5	SILVER	OPTION
#373588	C=1.8	GOLD	OPTION



NOTE ORIENTATION
Leading edge of hole is beveled.

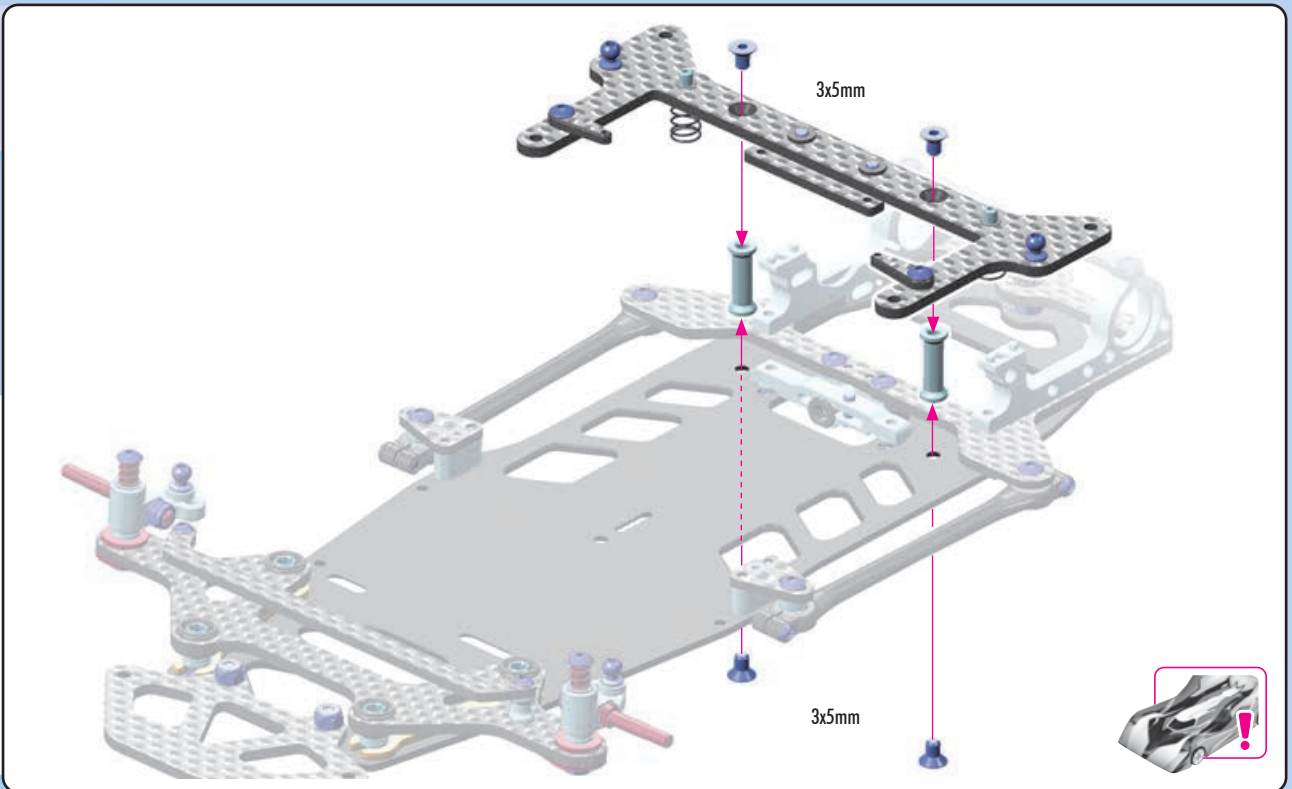
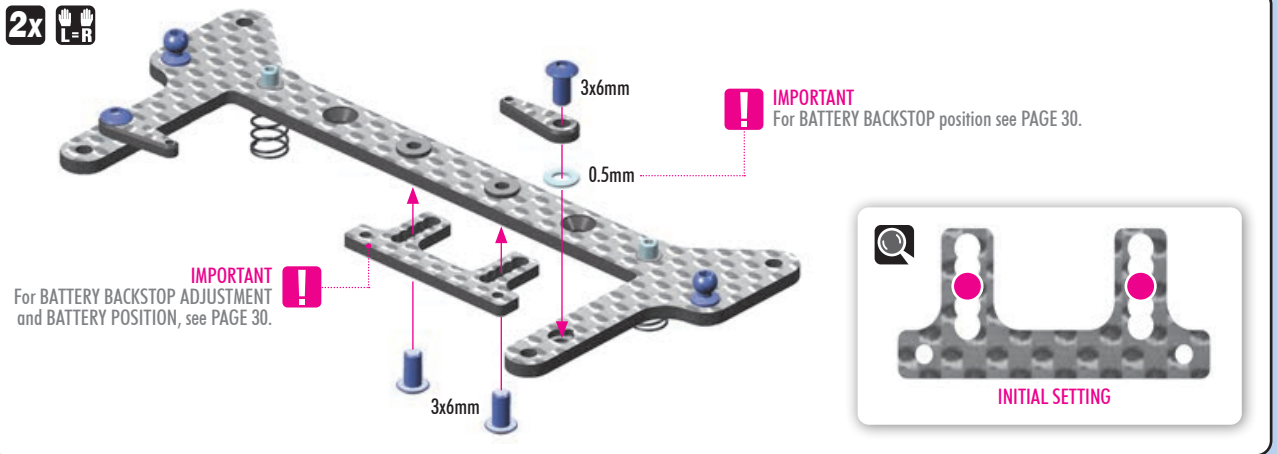
BOTTOM VIEW



2. REAR SUSPENSION



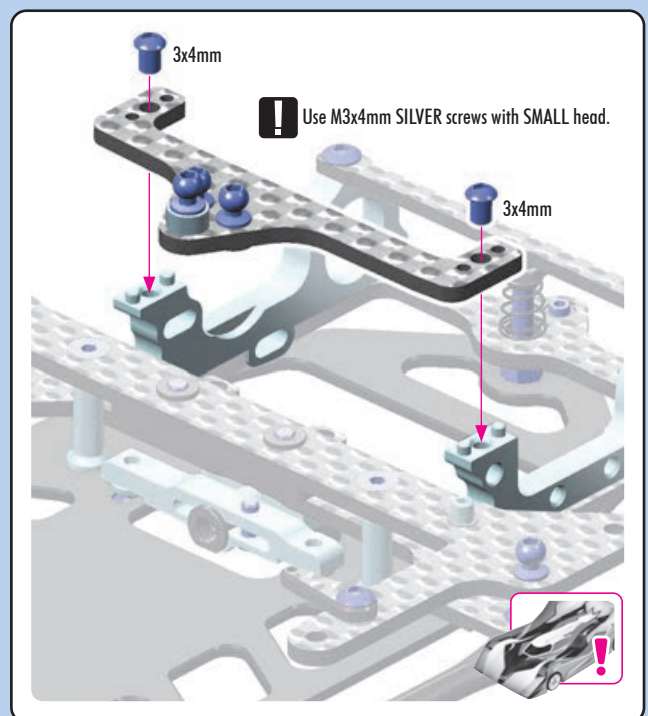
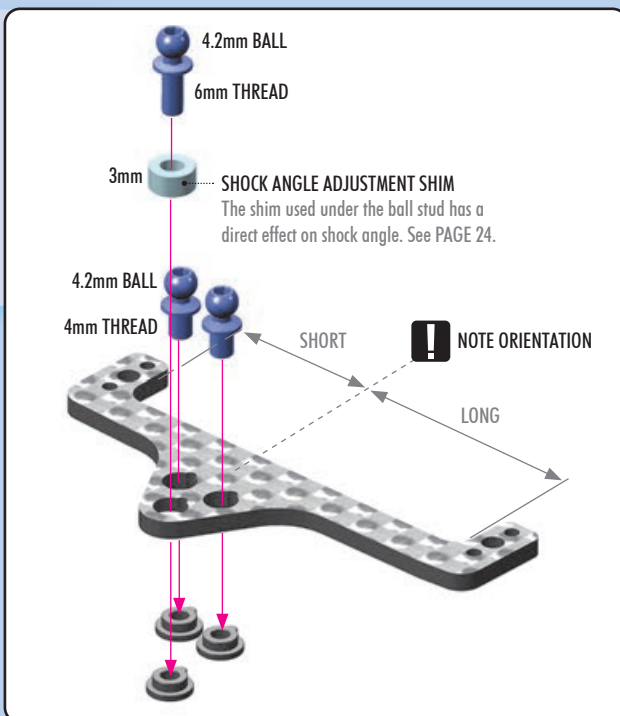
2x L=R



VIDEO TECH TIP



BATTERY MOUNTING SYSTEM



2. REAR SUSPENSION

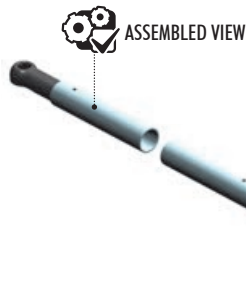


VIDEO TECH TIP



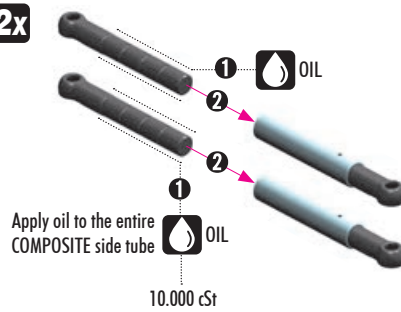
SIDE TUBES

2x



ASSEMBLED VIEW

2x



Apply oil to the entire COMPOSITE side tube

10.000 cSt



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

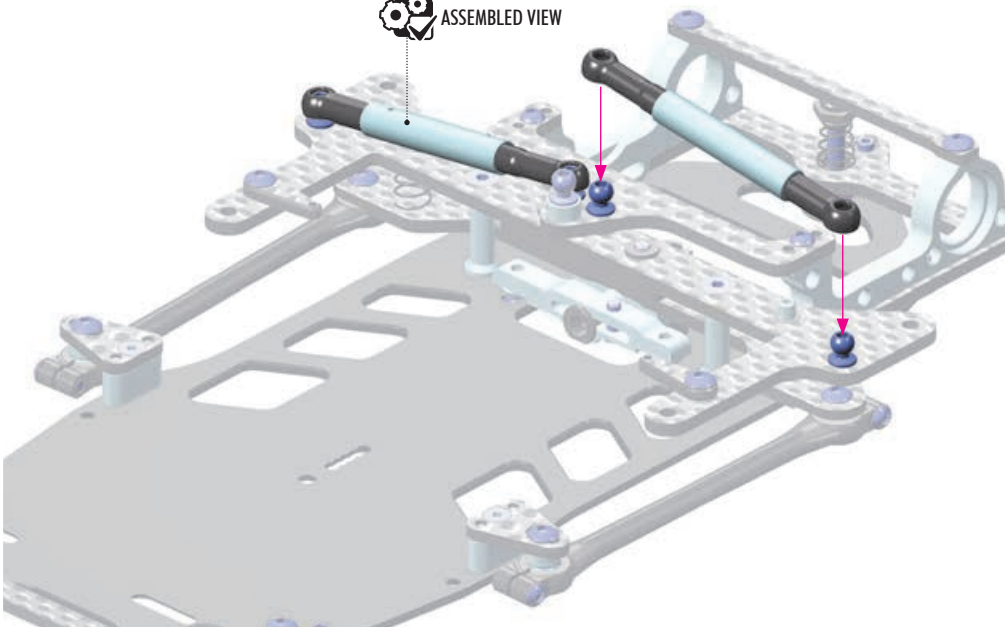


HUDY OILS 50ml

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

L=R

ASSEMBLED VIEW



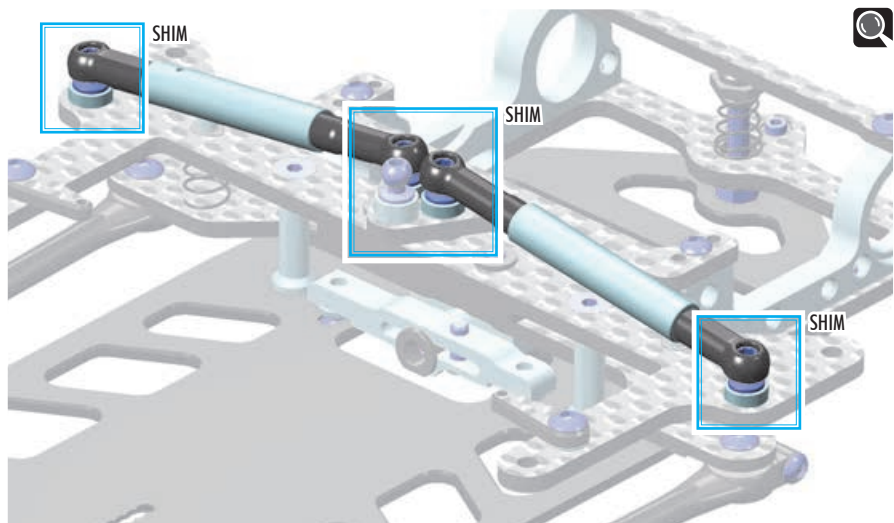
SIDE TUBE ANGLE

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.



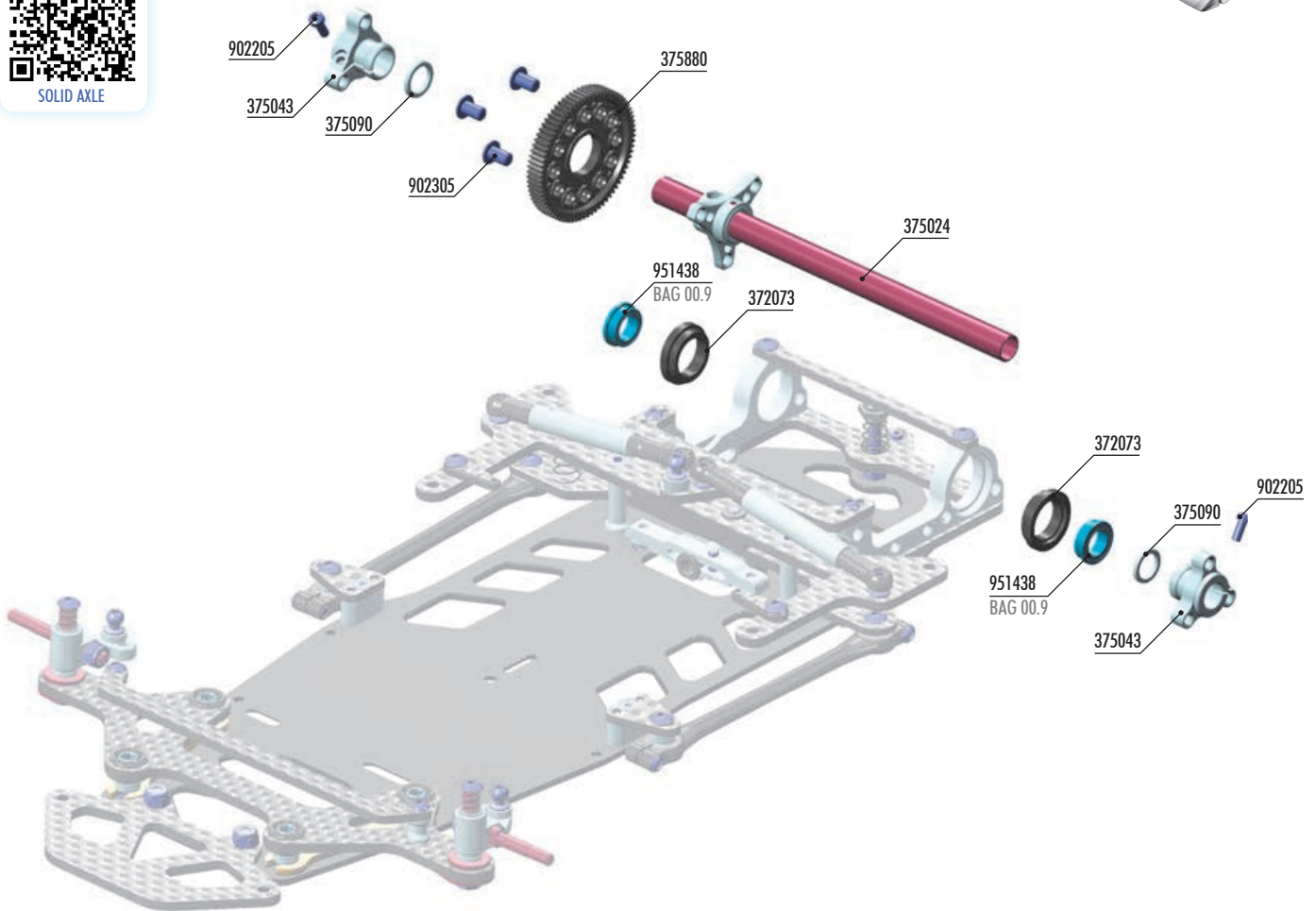
3. SOLID AXLE



BUILD VIDEO



SOLID AXLE



SPUR GEARS 64P

#375864	64T	OPTION
#375868	68T	OPTION
#375872	72T	OPTION
#375875	75T	OPTION
#375876	76T	OPTION
#375878	78T	OPTION
#375880	80T	INCLUDED
#375884	84T	OPTION
#375888	88T	OPTION
#375892	92T	OPTION



#375009
X12 BALL DIFFERENTIAL - SET



VIDEO TECH TIP



BALL DIFFERENTIAL



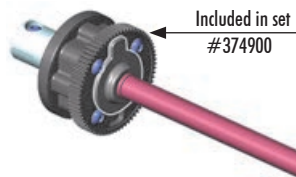
#930238
CERAMIC BALL-BEARING AXIAL F3-8 3x8x3.5



#930230
XRAY CERAMIC BALL 3.175MM (12)



#374900
XRAY GEAR DIFFERENTIAL
1/12 PAN CAR - SET



Included in set
#374900



GEAR DIFF - SPUR GEARS

#375776	76T / 64P	OPTION
#375780	80T / 64P	OPTION
#375784	84T / 64P	OPTION
#375788	88T / 64P	OPTION
#375792	92T / 64P	OPTION



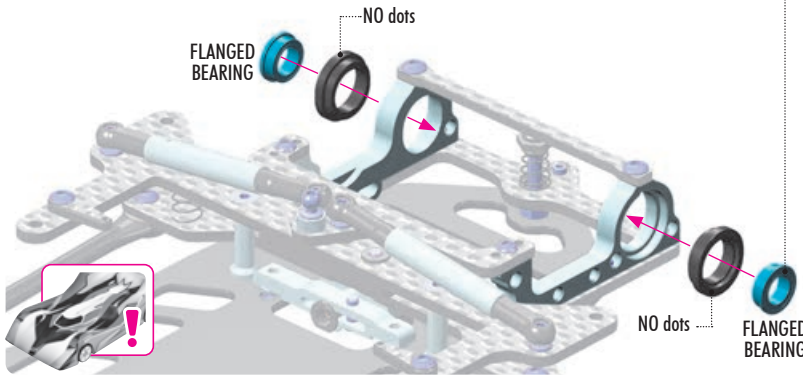
372073 COMPOSITE ECCENTRIC RIDE HEIGHT ADJUSTER SET (2)
 375024 REAR SOLID AXLE SHAFT FOR 1-PIECE CHASSIS - LW - HUDY SPRING STEEL™
 375043 ALU REAR ONE-PIECE WHEEL HUB - M2 SCREW - NARROW
 375090 SET OF ALU SHIMS (0.5mm, 1.0mm, 2.0mm)
 375880 COMPOSITE SPUR GEAR - 80T / 64P

902205 HEX SCREW SH M2x5 (10)
 902305 HEX SCREW SH M3x5 (10)
 951438 BALL-BEARING 1/4" x 3/8" x 1/8" FLANGED - STEEL SEALED - OIL (2)

3. SOLID AXLE



2x L=R



Bearing Oil
(HUDY #106230)
OPTION

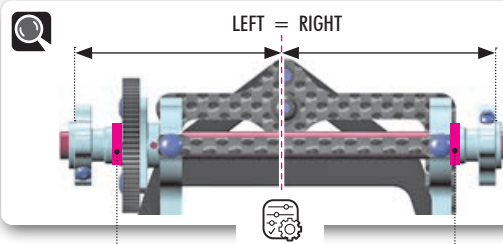
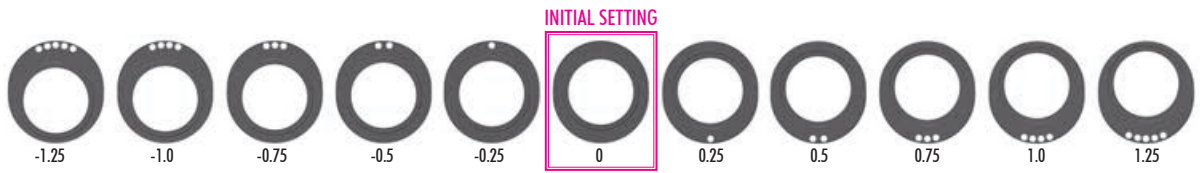
All ball-bearings are factory pre-oiled. Regularly service, clean and lubricate all ball-bearings with HUDY Bearing Oil (#106230).

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.



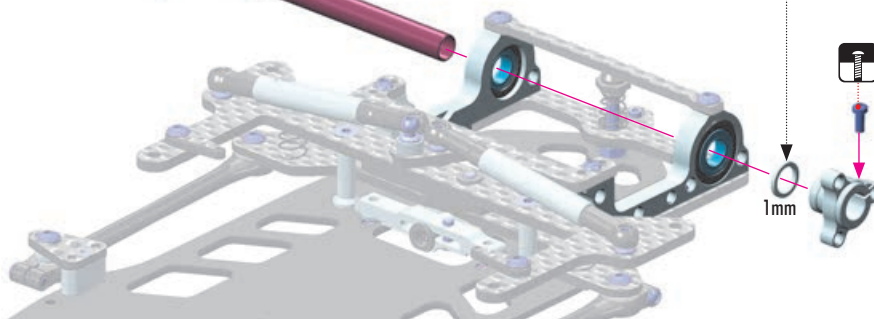
These eccentric bushings adjust the **RIDE HEIGHT** of the rear pod. Make sure to use the **SAME** eccentric bushings on **BOTH** sides.



To set track-width, use the hole in the POD lower plate as the centre point; this hole should always be centred between the two rear wheels once overall track-width is set. To set the track-width more easily, set the car on a ruler or use a digital vernier caliper.

Rear track-width is directly affected by wheel offsets, which can vary depending on tire brand.

To increase track width, add more shims on both sides of the rear axle. There are extra 0.5mm and 1.0mm included in the kit for wider track width adjustment.



IMPORTANT!
DO NOT overtighten this screw.

BUILD VIDEO

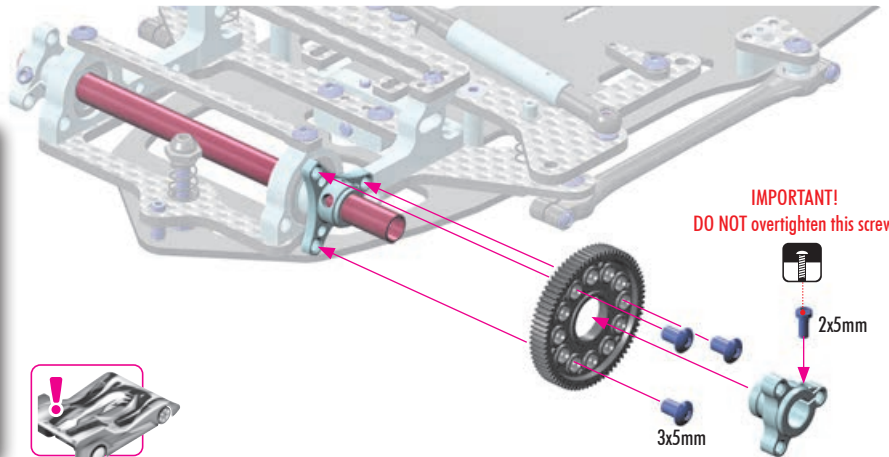


SOLID AXLE

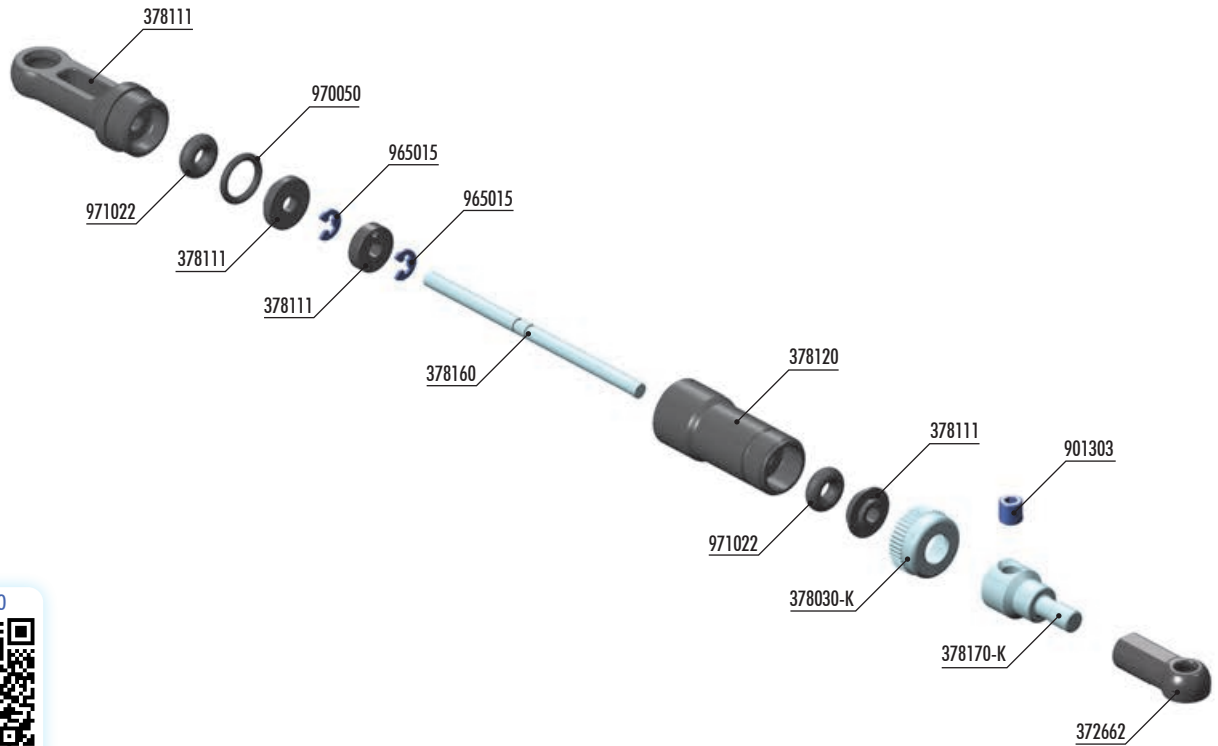


SPUR GEARS 64P
OPTION

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



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	INCLUDED	#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	OPTION	
#106340	400cSt	OPTION	#106362	625cSt	OPTION	#106420	2000cSt	OPTION	



#104002
HUDY AIR VAC
VACUUM PUMP



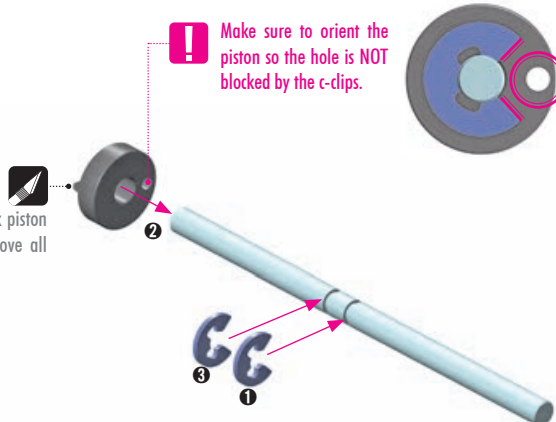
- 372662 COMPOSITE BALL JOINT 4.2mm (4)
- 378030-K ALU SHOCK BODY CAP - LOWER - BLACK
- 378102 X12 CENTER DAMPENER SET
- 378111 COMPOSITE CENTER DAMPENER PARTS
- 378120 ALU SHOCK BODY
- 378160 STEEL SHOCK SHAFT
- 378170-K ALU SHOCK BALL JOINT SCREW - BLACK

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

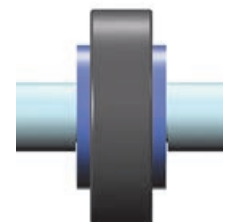
2x 965015
C1.5

SPECIFIC ORDER

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



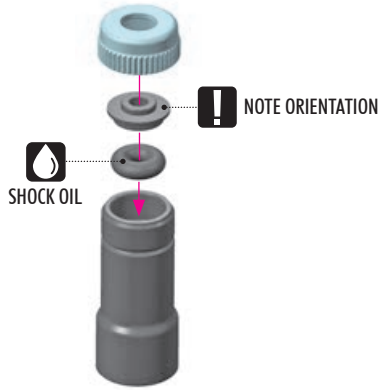
ASSEMBLED VIEW



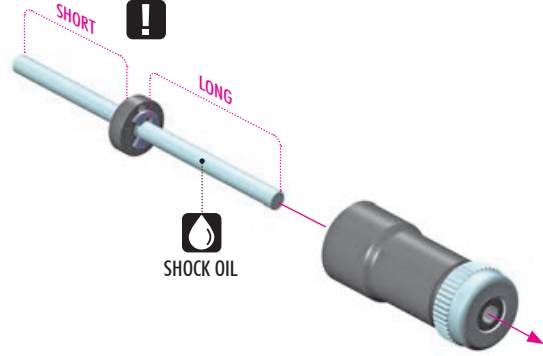
4. SHOCK ABSORBER



1x 971022
0 2x2



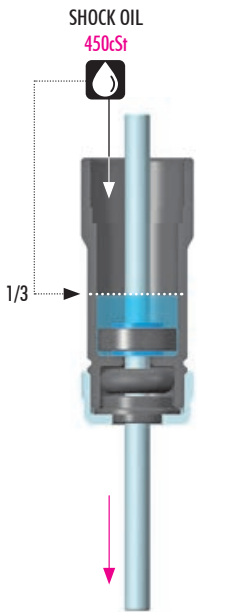
NOTE ORIENTATION



1x 970050 0 5x1
1x 971022 0 2x2

DEFAULT SHOCK SETTING FOR SHOCK ABSORBER

Follow the steps below to set the shock.



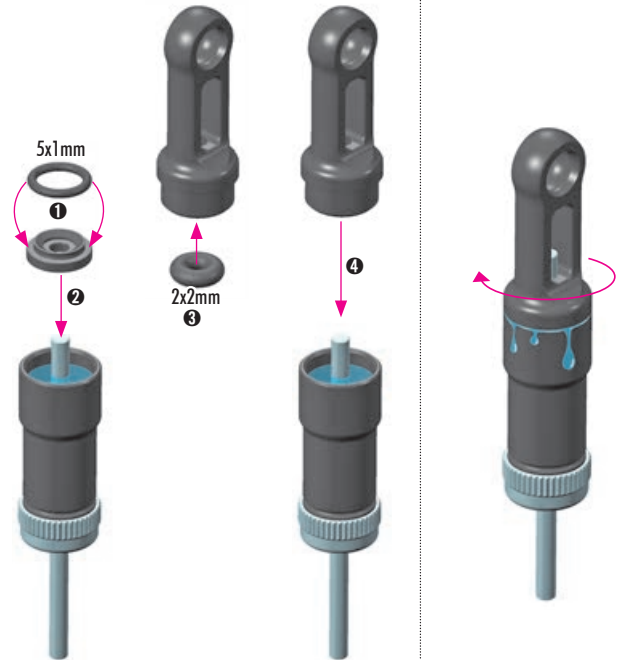
Extend the shock shaft completely. Fill the shock body with the shock oil but only 1/3.



- 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.

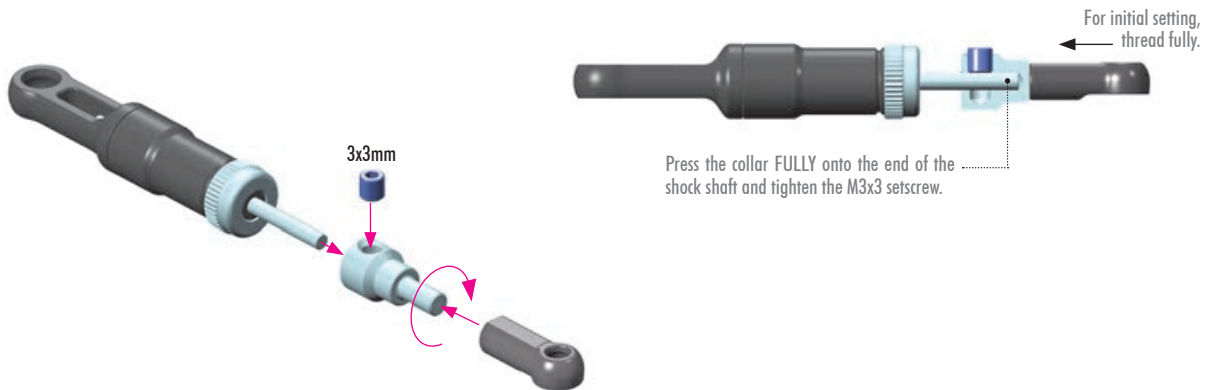


- 1 Install the 5x1 o-ring onto shock shim.
- 2 Place the shock shim with the o-ring into the shock body.
- 3 Install the 2x2 o-ring into the shock cap.
- 4 Install the shock cap.

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



1x 901303
SB M3x3



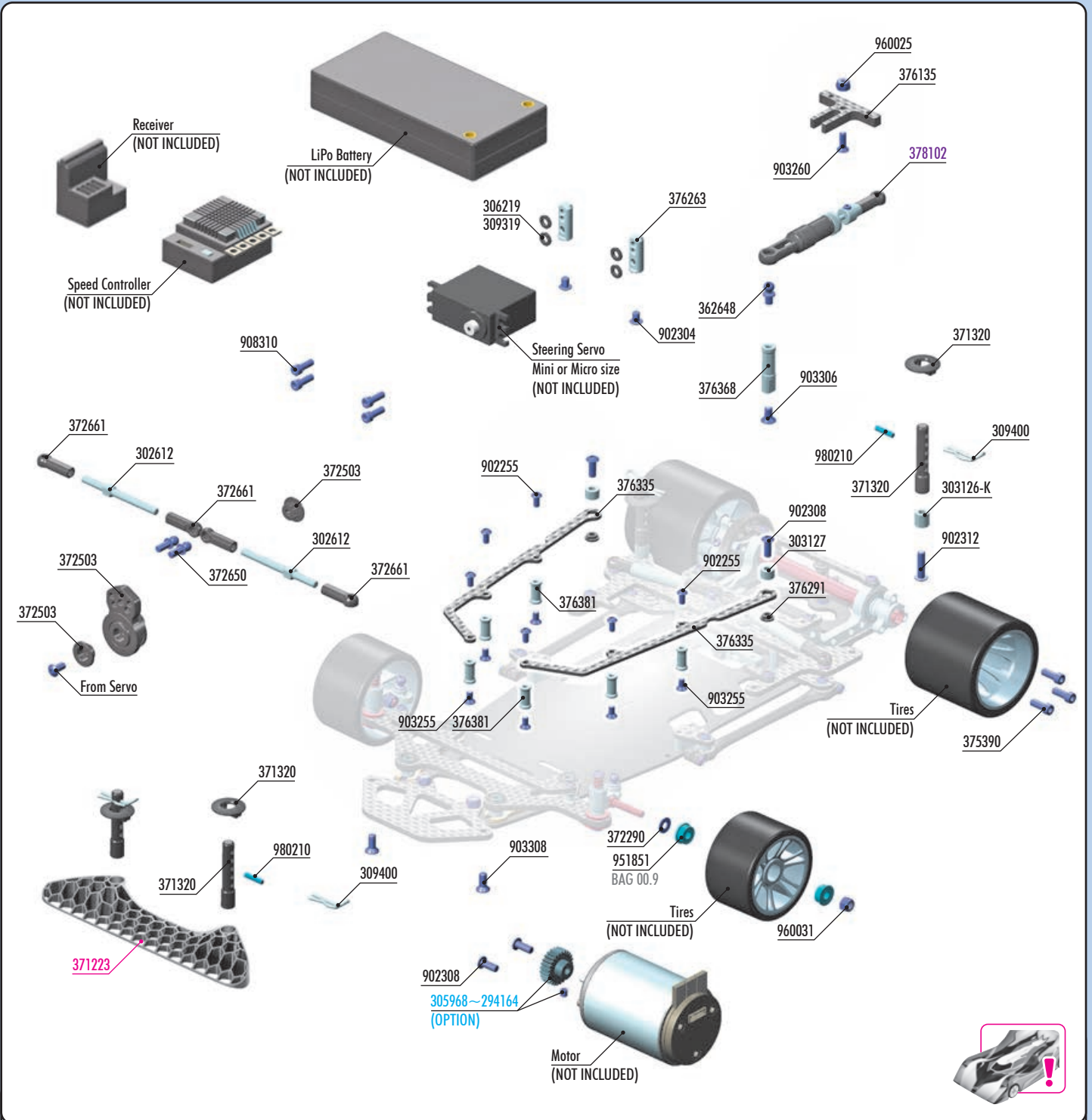
Press the collar FULLY onto the end of the shock shaft and tighten the M3x3 setscrew.

BUILD VIDEO



CENTER SHOCK

5. FINAL ASSEMBLY



BAG

04

▶ BUILD VIDEO



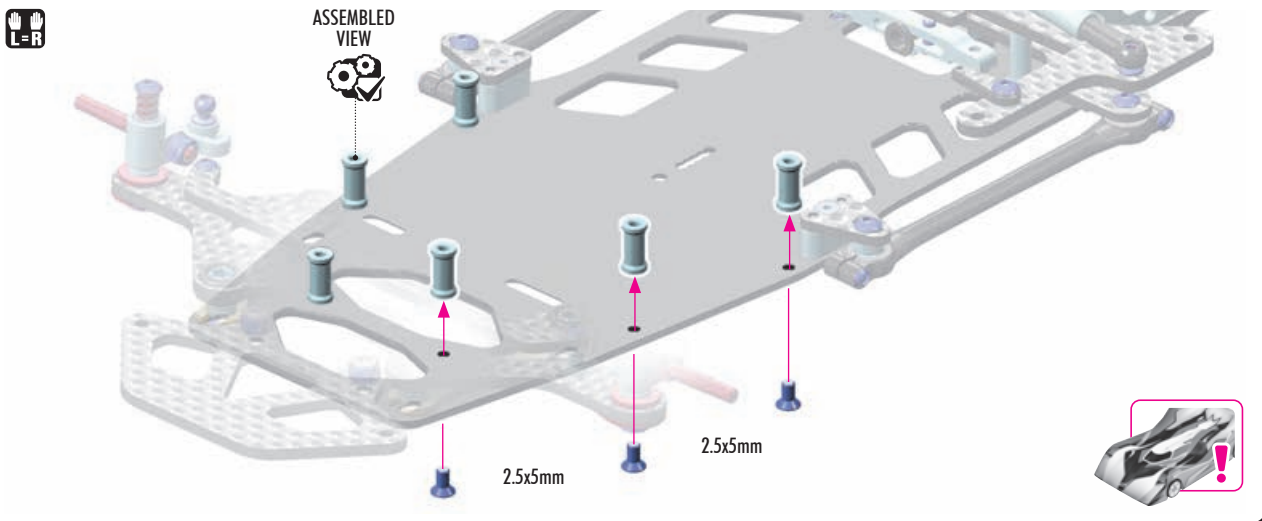
FINAL ASSEMBLY

- 305968~294164 PINION GEAR HARDCOATED 18~64T/64P (OPTION)
- 302612 ALU ADJ. TURNBUCKLE M3 L/R 39mm - SWISS 7075 T6 (2)
- 303126-K ALU SHIM 3x6x5.0mm - BLACK (10)
- 303127 ALU SHIM 3x6x4.0mm (10)
- 306219 COMPOSITE SET OF SERVO SHIMS (4)
- 309319 COMPOSITE SET OF SHIMS (4)
- 309400 BODY CLIP FOR 5mm BODY POST (8)
- 362648 BALL END 4.9mm WITH 4mm THREAD (2)
- 371320 COMPOSITE BODY POST (2)
- 372290 ALU SHIM 3.2x4.8x0.5 (4)
- 372503 COMPOSITE SERVO SAVER - STIFF - SET
- 372650 BALL END 4.2mm WITH 6mm THREAD (2)
- 372661 COMPOSITE STEERING BALL-JOINT 4.2mm OPEN (4)
- 375390 ALU HEX SCREW M3x8 FOR REAR WHEELS (6)
- 376135 CARBON MIDDLE BATTERY BACKSTOP
- 376263 ALU SERVO MOUNT - BLACK (2)
- 376291 COMPOSITE M3 SNAP LOCK BUSHING (8)
- 376335 CARBON SIDE BRACE FOR 1-PIECE CHASSIS 1.6mm (2)
- 376368 ALU MOUNT 20mm - BLACK
- 376381 ALU MOUNT 10.0mm WITH M2.5 THREAD - BLACK (2)

- 902255 HEX SCREW SH M2.5x5 (10)
- 902304 HEX SCREW SH M3x4 (10)
- 902308 HEX SCREW SH M3x8 (10)
- 902312 HEX SCREW SH M3x12 (10)
- 903255 HEX SCREW SFH M2.5x5 (10)
- 903260 HEX SCREW SFH M2.5x10 (10)
- 903306 HEX SCREW SFH M3x6 (10)
- 903308 HEX SCREW SFH M3x8 (10)
- 908310 HEX SCREW SOCKET HEAD CAP M3x10 (10)
- 951851 BALL-BEARING 1/8" x 5/16" x 9/64" FLANGED - STEEL SEALED - OIL (2)
- 960025 NUT M2.5 (10)
- 960031 ALU NUT M3 (10)
- 980210 PIN 2x10 (10)
- 378102 X12 CENTER DAMPENER SET
- 371223 X12 RUBBER BUMPER 3D

5. FINAL ASSEMBLY

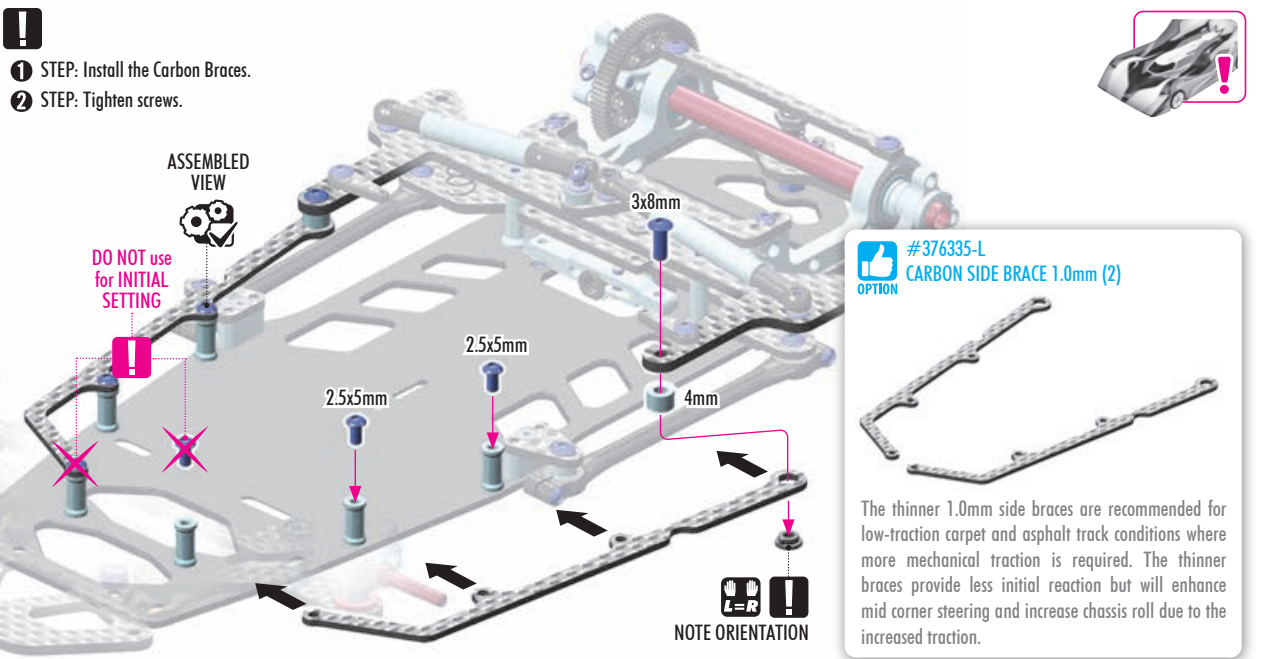
6x 903255 SFH M2.5x5



2x 303127 SHIM 3x6x4

4x 902255 SH M2.5x5

2x 902308 SH M3x8



#376335-L CARBON SIDE BRACE 1.0mm (2)
OPTION

The thinner 1.0mm side braces are recommended for low-traction carpet and asphalt track conditions where more mechanical traction is required. The thinner braces provide less initial reaction but will enhance mid corner steering and increase chassis roll due to the increased traction.

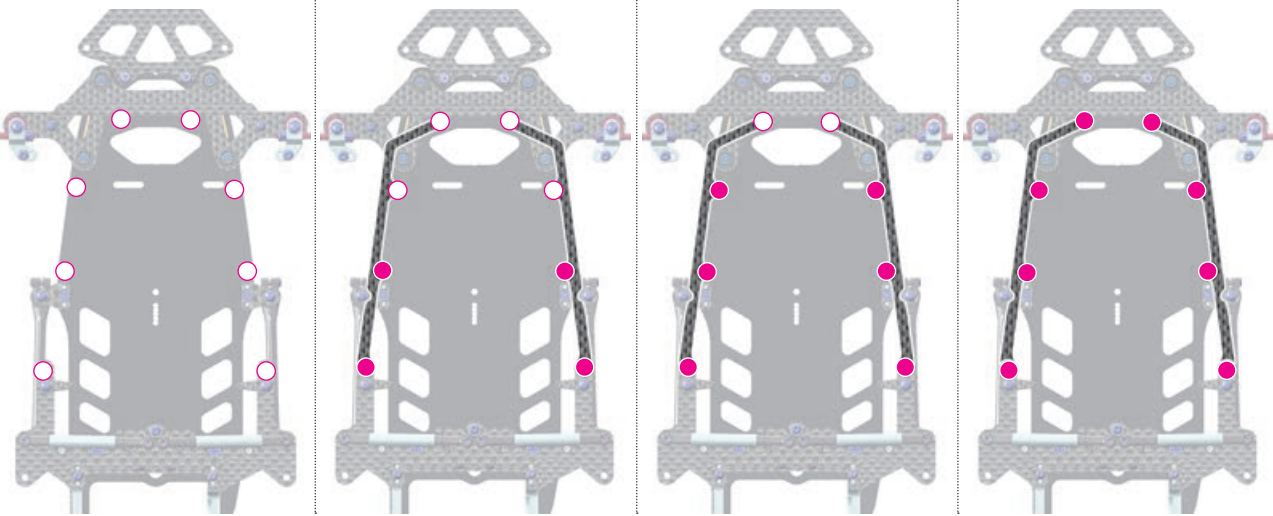
CHASSIS FLEX ADJUSTMENT

SOFT
Generates more mechanical traction. Recommended for low- to medium-traction carpet as well as asphalt. (NO BRACES)

MEDIUM
Braces installed, attached at middle & rear only. This setting is a good compromise between mechanical traction and steering response. Ideal for most track conditions..

MEDIUM STIFF INITIAL SETTING
Braces installed, attached at middle-front, middle, and rear. A good compromise between mechanical traction, and steering conditions.

STIFF
Braces installed, attached at front, middle-front, middle and rear. This is the stiffest, most stable setting. Recommended for high-traction carpet tracks (such as US black carpet). The car will have less roll but will also have less overall traction.



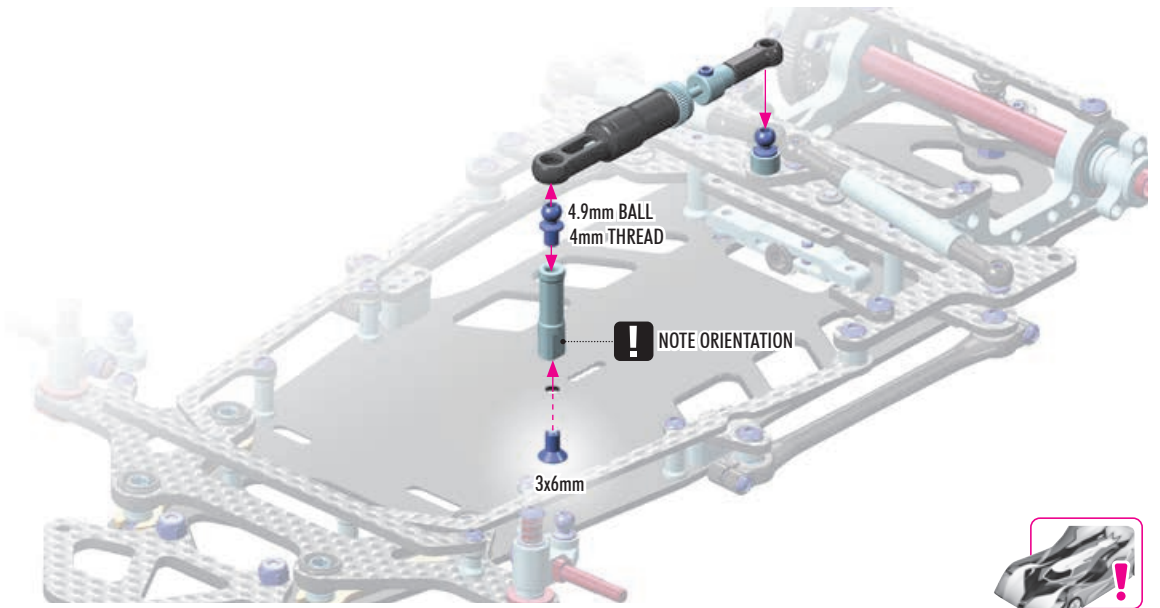
VIDEO TECH TIP

CARBON SIDE BRACES

5. FINAL ASSEMBLY



1x 903306
SFH M3x6

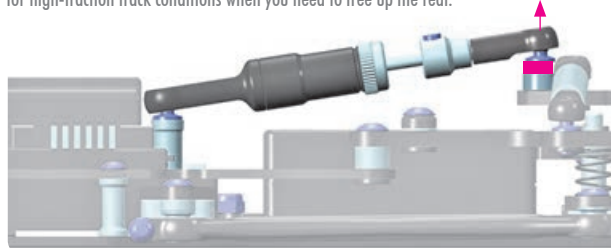


SHOCK ANGLE & POSITION

MORE SHOCK ANGLE

More shim in rear.

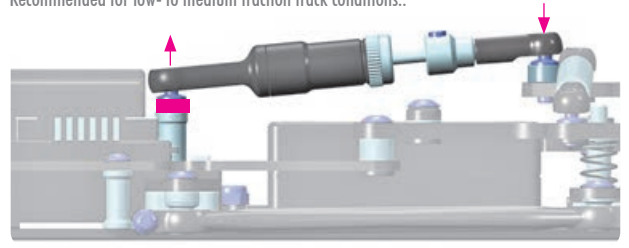
Makes the damping more progressive and increases on-power steering. Recommended for high-traction track conditions when you need to free up the rear.



LESS SHOCK ANGLE

More shim in front, less shim in rear.

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



306219 SHIM 3x6x1
306219 SHIM 3x6x2



306219 SHIM 3x6x3



4x 908310
SCH M3x10



309319 SHIM 3x5x1
309319 SHIM 3x5x2

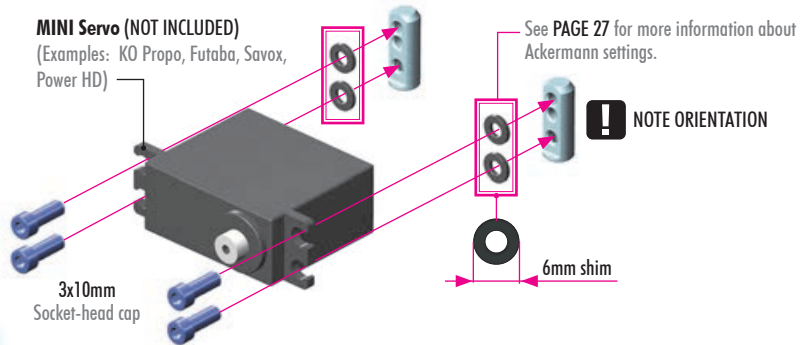


309319 SHIM 3x5x3



4x 908310
SCH M3x10

INITIAL SETTING
for
MINI servo

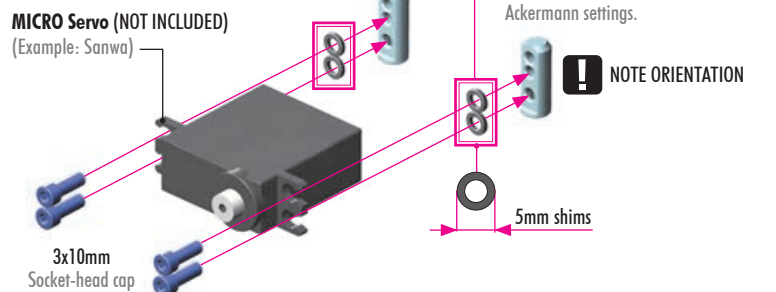


MINI SERVO
POSITIONS



STEERING SYSTEM

INITIAL SETTING
for
MICRO servo



MICRO SERVO
POSITIONS



5. FINAL ASSEMBLY

ASSEMBLED VIEW

F = 25T H = 24T K = 23T

! Use the adapter that matches the steering servo.

4.2mm Ball
6mm THREAD

Servo Screw (NOT INCLUDED)

Note the orientation of servo saver when servo is in neutral.

INITIAL SETTING
90°

#293350 HUDY ALU FIXED SERVO SAVER
OPTION

#293351 HUDY ALU ADJ. SERVO SAVER
OPTION

This aluminium servo saver eliminates the flex of the standard composite servo savers that is used, which improves rigidity and thus, the steering response of your car.

The unique solution of eccentric inserts allows for 3 different Ackermann positions to be used, to fine tune the handling of your car by quick changes with little effort.

2x 902304 SH M3x4

Make sure to center the servo saver along the chassis centerline.

CENTER

TOP VIEW

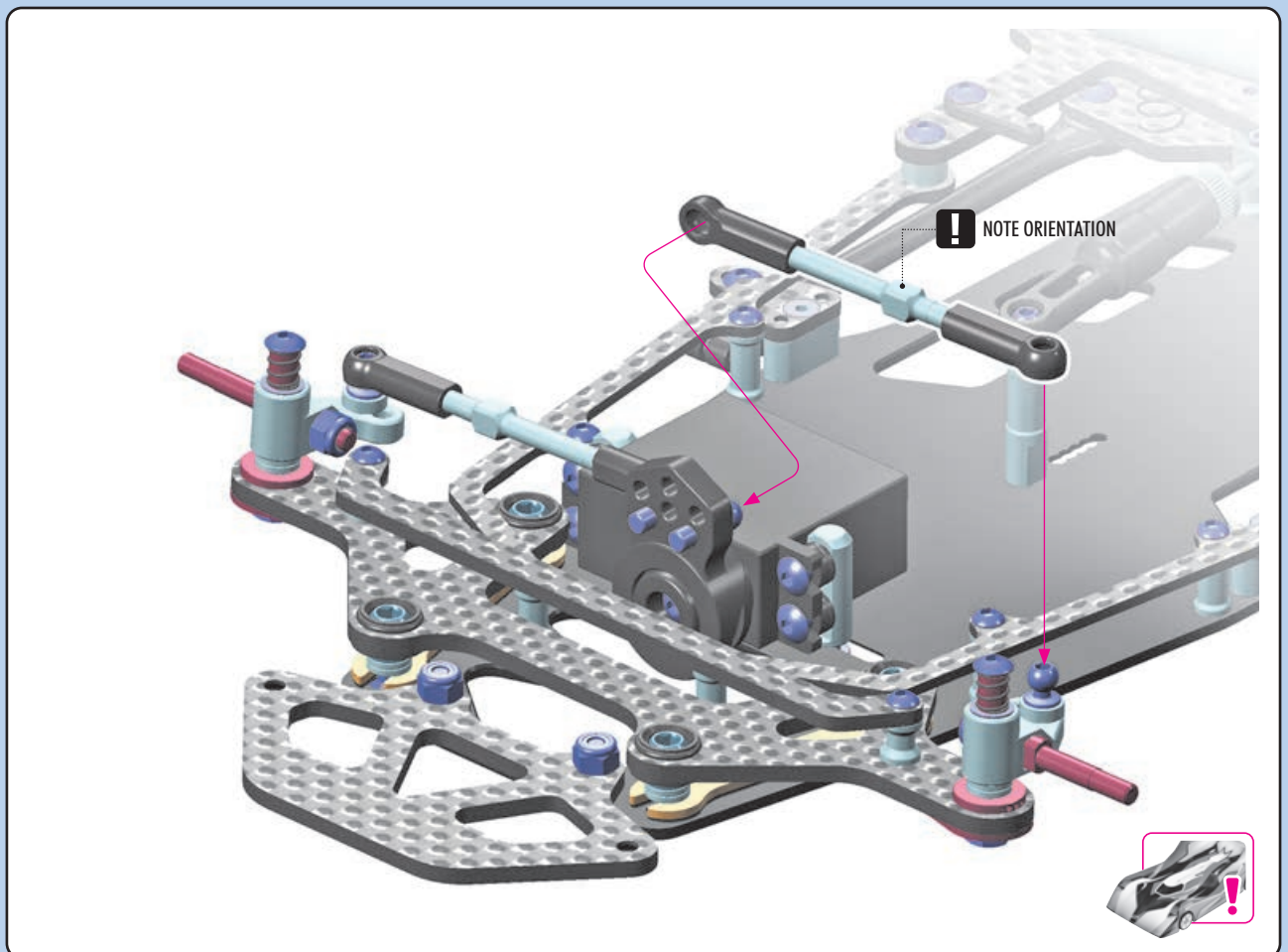
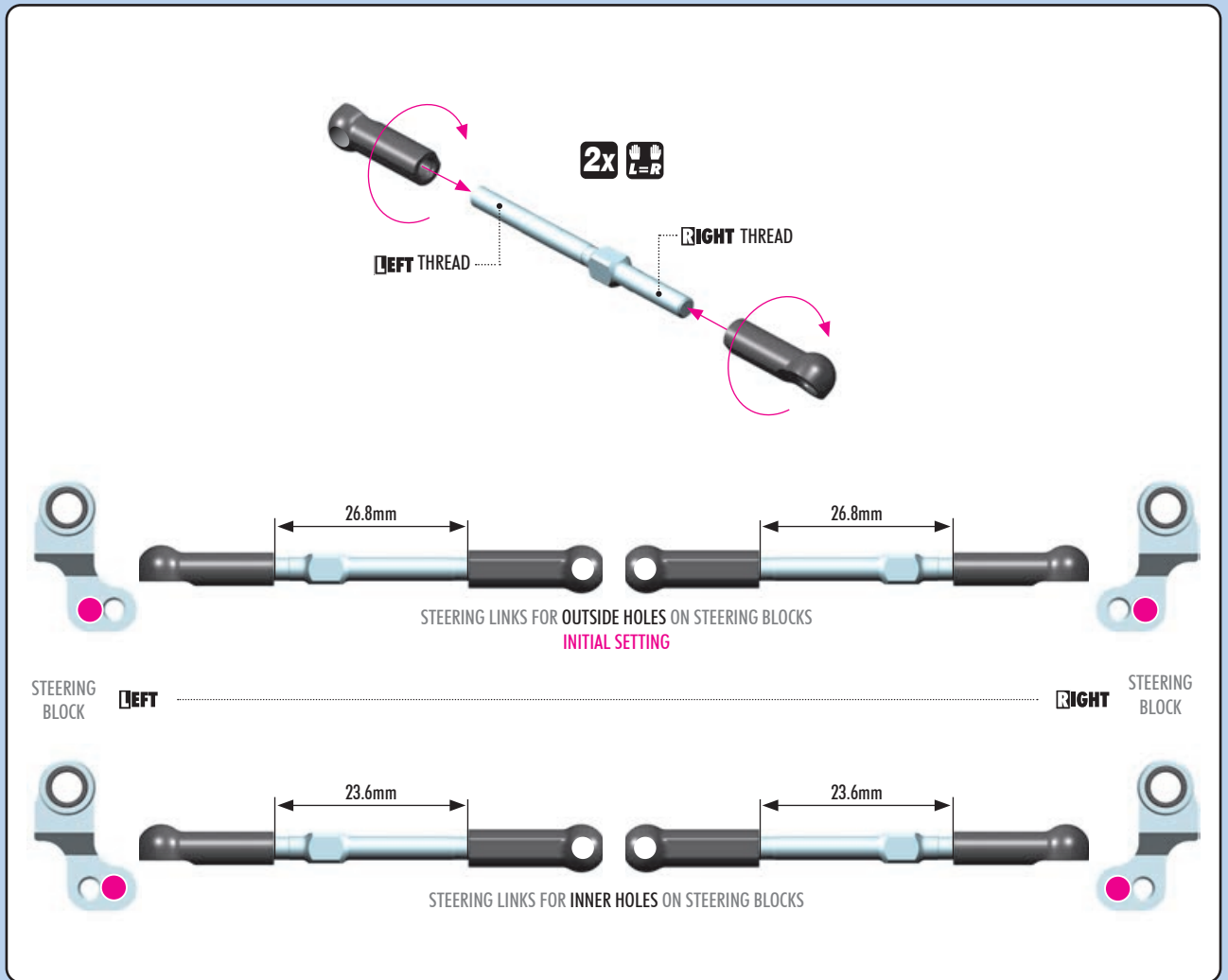
TIP To better see the chassis centerline, there is a small mark on the chassis.

CENTER

BOTTOM VIEW

3x4mm

5. FINAL ASSEMBLY





VIDEO TECH TIP



STEERING SYSTEM

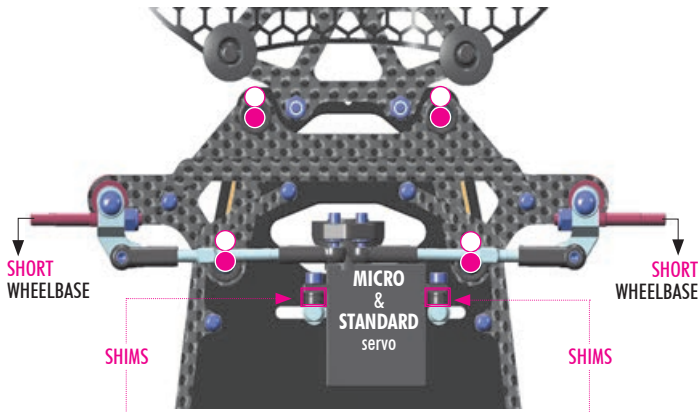


ACKERMANN SETTING

Ackermann is directly affected by wheelbase length and linkage position on the steering blocks. The configurations below are based on the use of a standard servo.

ALTERNATIVE for MICRO AND STANDARD SERVO

Wheelbase: SHORT
 Servo mounting: AHEAD of posts
 Servo saver: ball studs BEHIND

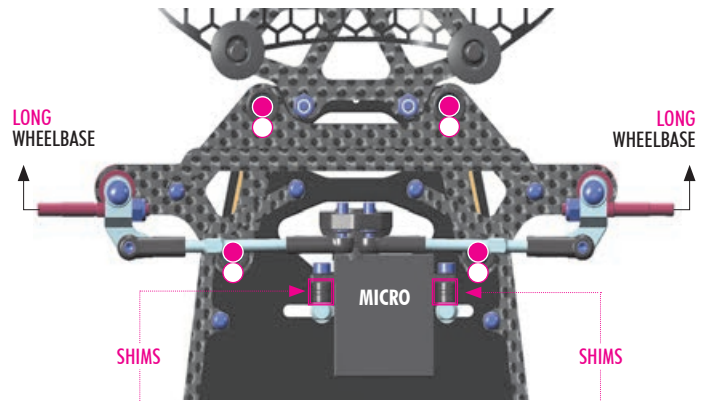


Use shims between servo and posts.

MICRO servos: SANWA SXR - 3mm / SAVOX SW - 1mm
 STANDARD servos: NO shims

ALTERNATIVE for MICRO SERVO

Wheelbase: LONG
 Servo mounting: AHEAD of posts
 Servo saver: ball studs BEHIND

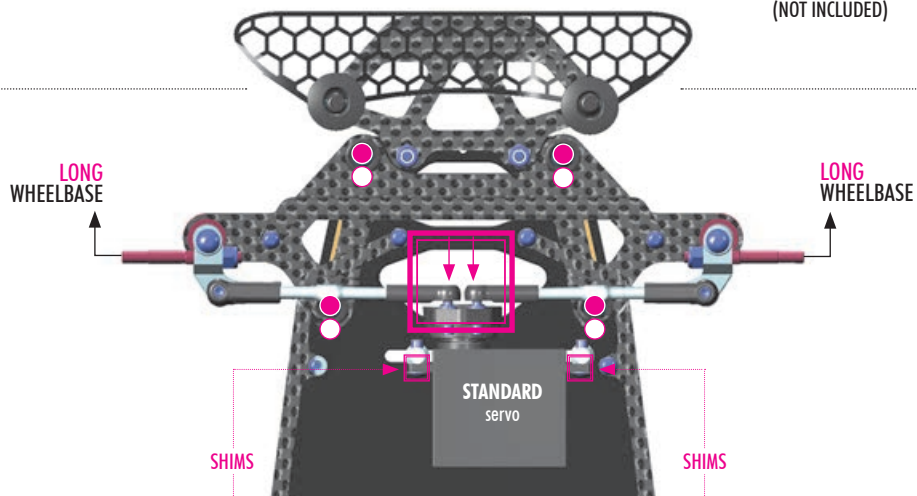
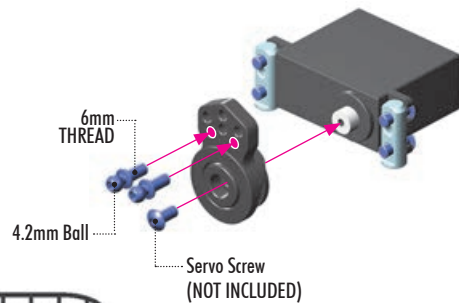
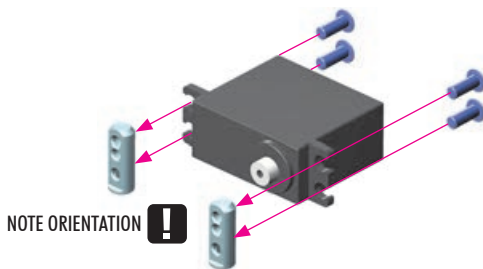


Use shims between servo and posts.

MICRO servos: SANWA SXR - 5mm / SAVOX SW - 4mm

ALTERNATIVE for STANDARD SERVO

Wheelbase: LONG
 Servo mounting: BEHIND posts
 Servo saver: ball studs IN FRONT



Mount the 6mm ball studs on the forward side of the servo saver.

STANDARD servos: KO Propo - No shim
 Futaba - 2mm shim
 Savox SH - 2mm shim

5. FINAL ASSEMBLY



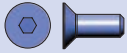
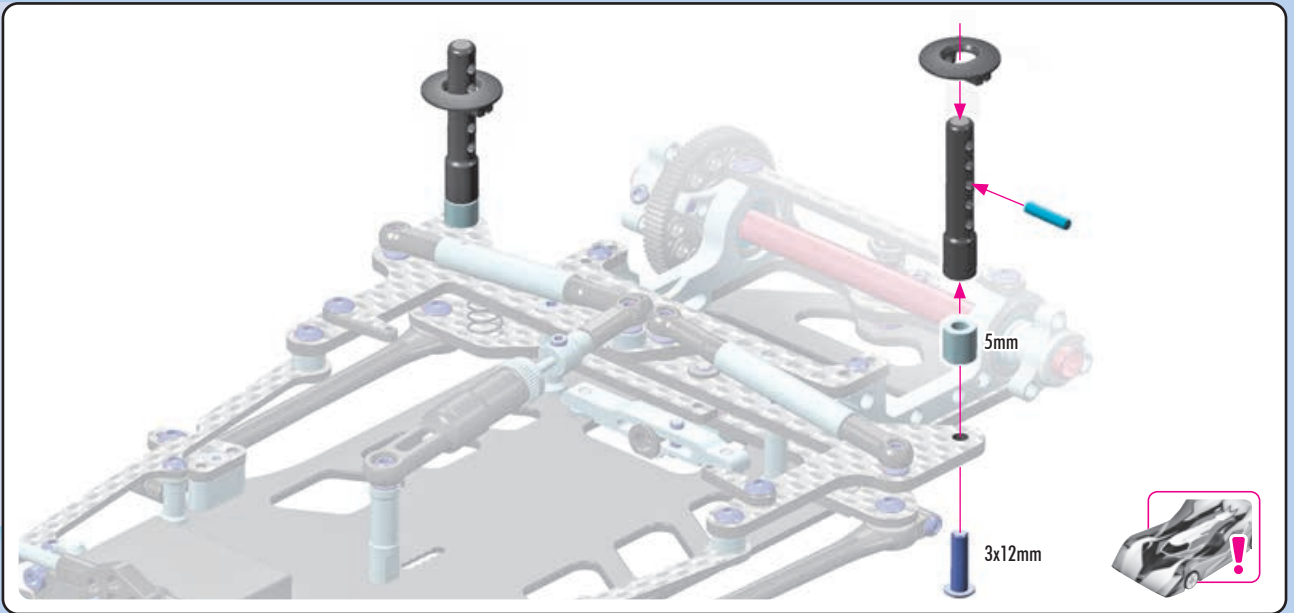
2x 303126-K
SHIM 3x6x5



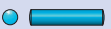
2x 902312
SH M3x12



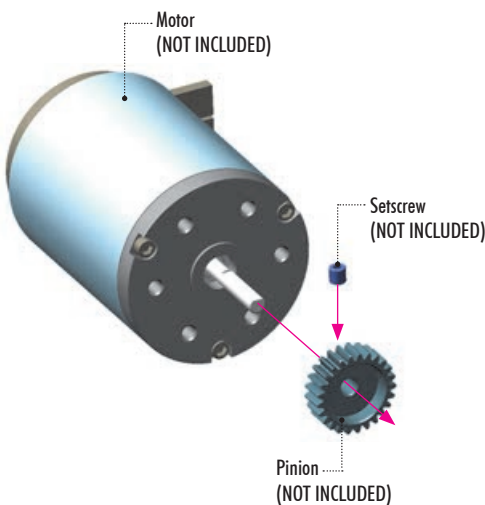
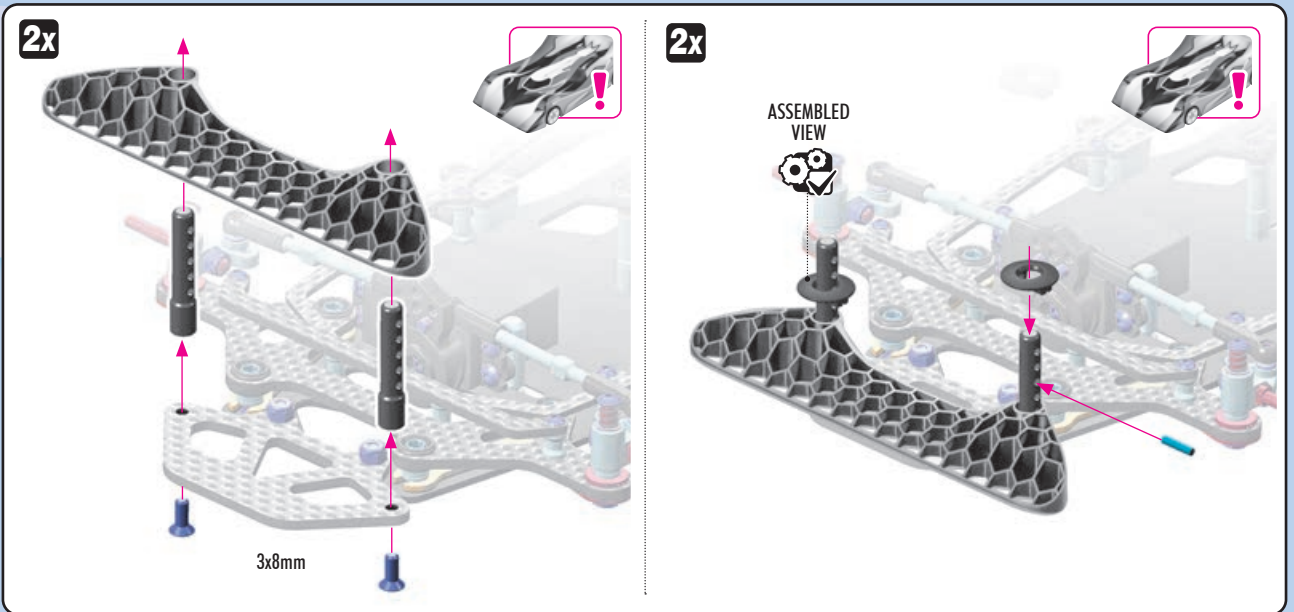
2x 980210
P 2x10



2x 903308
SFH M3x8



2x 980210
P 2x10

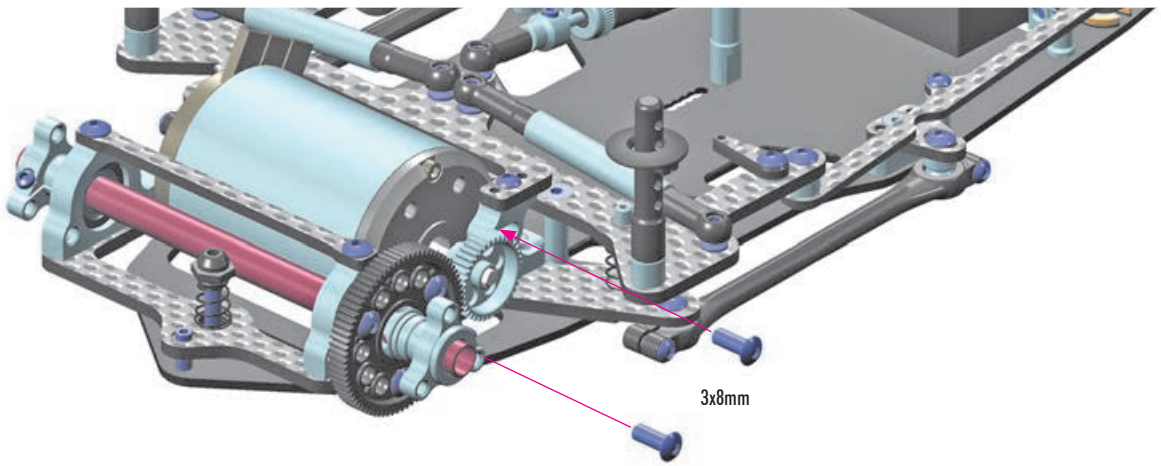


ALU PINION GEARS 64P

#305968	18T	OPTION	#294137	37T	OPTION	#294156	56T	OPTION
#305969	19T	OPTION	#294138	38T	OPTION	#294157	57T	OPTION
#305970	20T	OPTION	#294139	39T	OPTION	#294158	58T	OPTION
#305971	21T	OPTION	#294140	40T	OPTION	#294159	59T	OPTION
#305972	22T	OPTION	#294141	41T	OPTION	#294160	60T	OPTION
#305973	23T	OPTION	#294142	42T	OPTION	#294162	62T	OPTION
#305974	24T	OPTION	#294143	43T	OPTION	#294164	64T	OPTION
#305975	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	#294151	51T	OPTION			
#294133	33T	OPTION	#294152	52T	OPTION			
#305984	34T	OPTION	#294153	53T	OPTION			
#305985	35T	OPTION	#294154	54T	OPTION			
#294136	36T	OPTION	#294155	55T	OPTION			

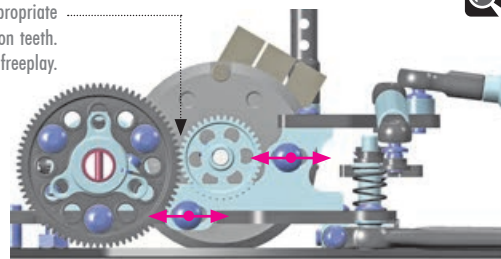
5. FINAL ASSEMBLY

2x 902308
SH M3x8



GEAR MESH

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.



VIDEO TECH TIP

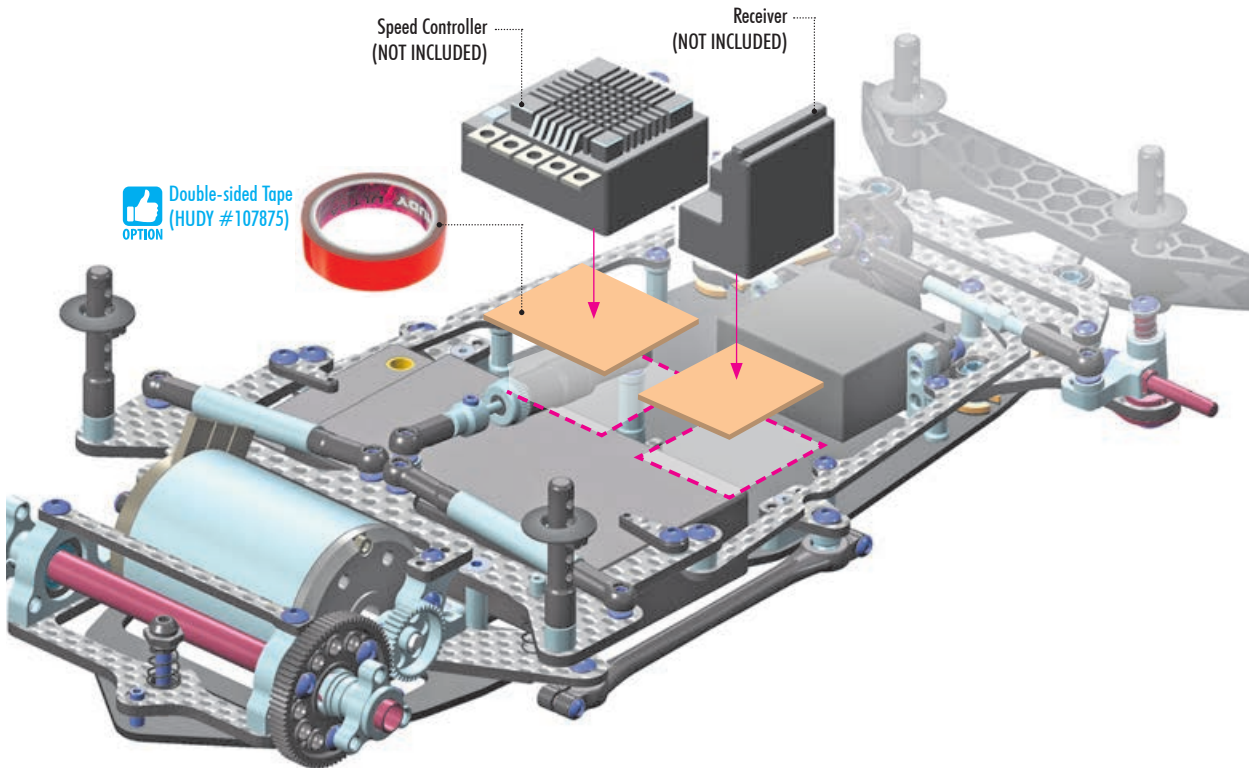


ELECTRONICS
INSTALLATION

Double-sided Tape
(HUDY #107875)
OPTION

Speed Controller
(NOT INCLUDED)

Receiver
(NOT INCLUDED)



5. FINAL ASSEMBLY



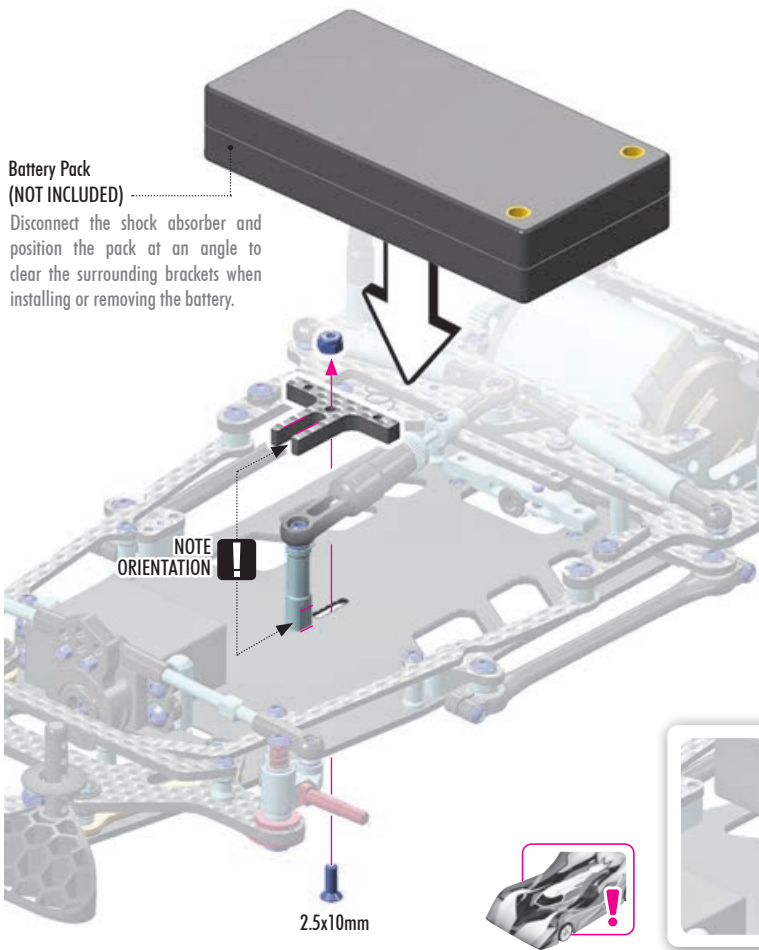
1x 903260
SFH M2.5x10



1x 960025
ALU N M2.5

Battery Pack (NOT INCLUDED)

Disconnect the shock absorber and position the pack at an angle to clear the surrounding brackets when installing or removing the battery.

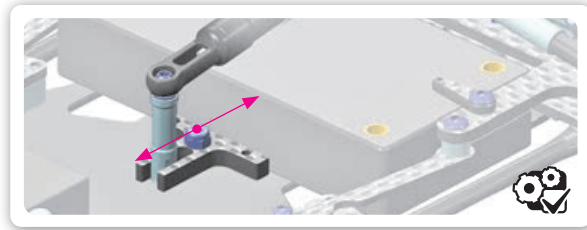
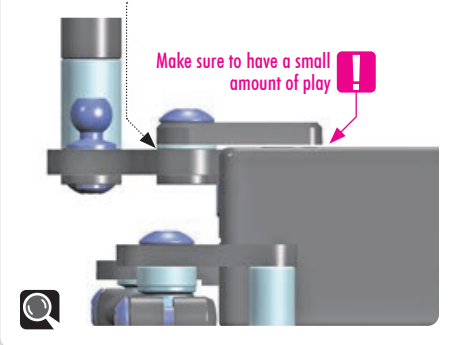


BATTERY BACKSTOP

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

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

Adjust the shim thickness to match battery pack height. If there is no play between the backstop and pack, use a thicker shim. If it is too loose, use a thinner shim to reduce the gap.



BATTERY MOUNTING POSITIONS

There are 5 battery positions. The further forward the battery is positioned in the car, the easier it will be to drive but less responsive. The further rearward the battery is located, the more aggressive it will feel with more steering.

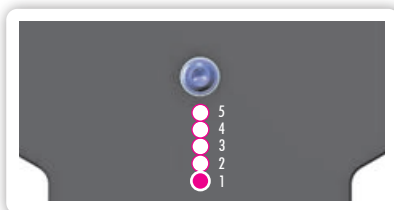


VIDEO TECH TIP

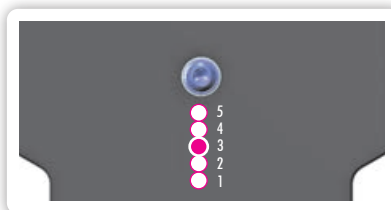


BATTERY MOUNTING SYSTEM

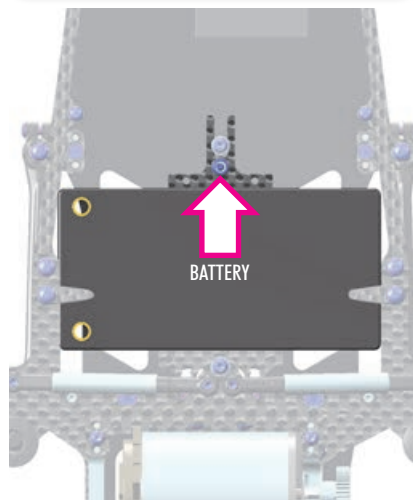
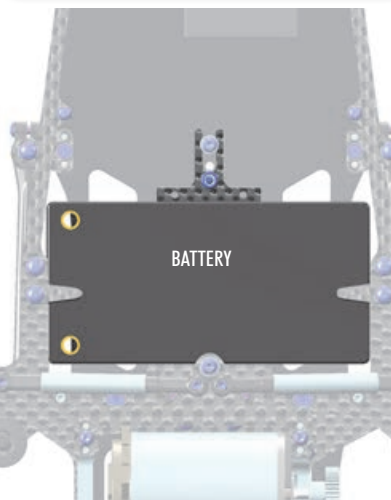
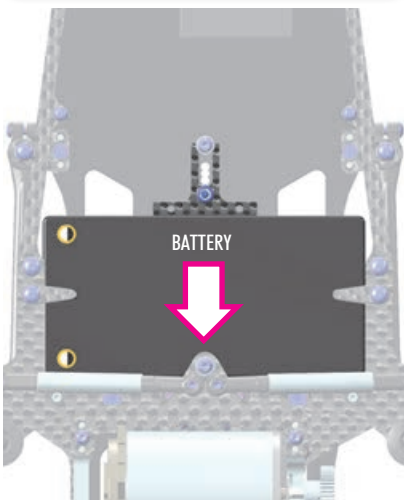
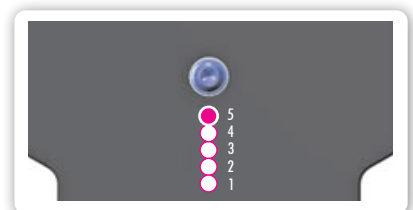
Position 1
Battery maximum REARWARD.
Most aggressive setting.



INITIAL SETTING
Position 3
Battery in MIDDLE
Best for initial setting.



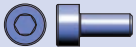
Position 5
Battery maximum FORWARD
Easiest to drive.



5. FINAL ASSEMBLY



2x 372290 SHIM 3.2x4.8x0.5



6x 375390 ALU SCH M3x8



2x 951851 BB 1/8"x5/16"x9/64"



2x 960031 ALU N M3



VIDEO TECH TIP



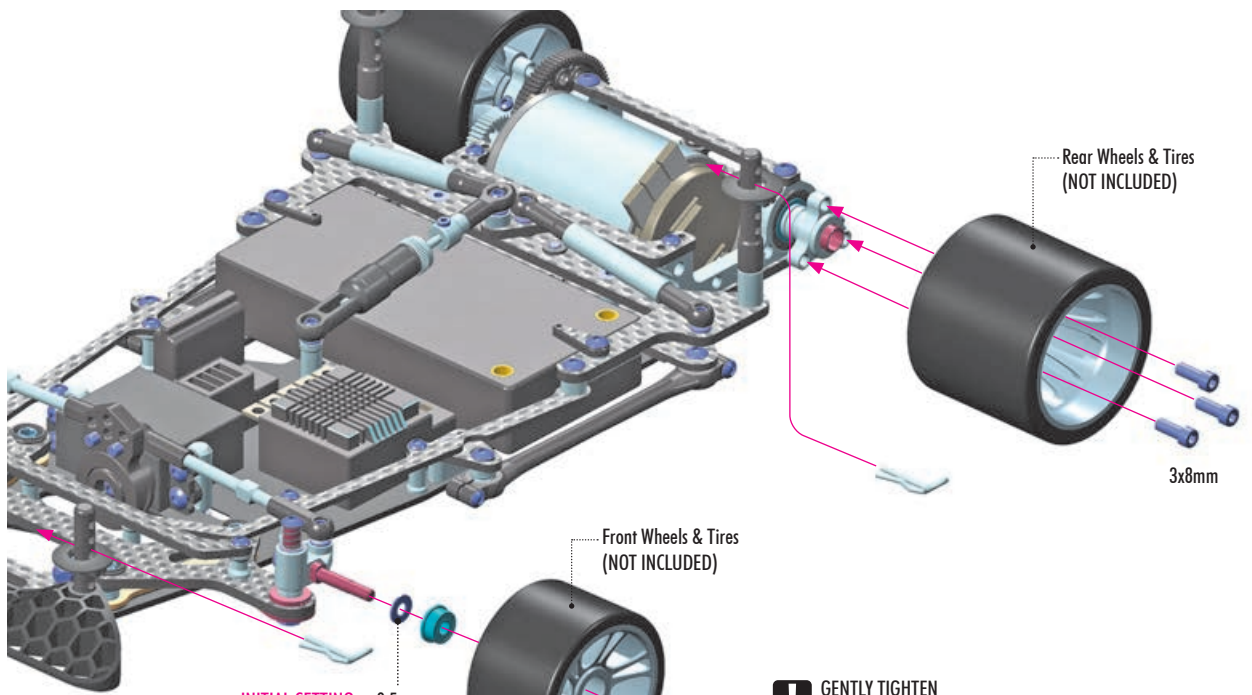
FRONT DROOP & RIDE HEIGHT



TWEAK & SIDE SPRINGS SETTING



BODYSHELL MOUNTING



INITIAL SETTING 0.5mm

! GENTLY TIGHTEN the wheel nuts so the wheel turns freely, but without excessive axial play.



FRONT TRACK-WIDTH

The shim behind the wheel bearing affects the front track-width.

WIDER TRACK-WIDTH

Easier to drive, less steering, less responsive.

NARROWER TRACK-WIDTH

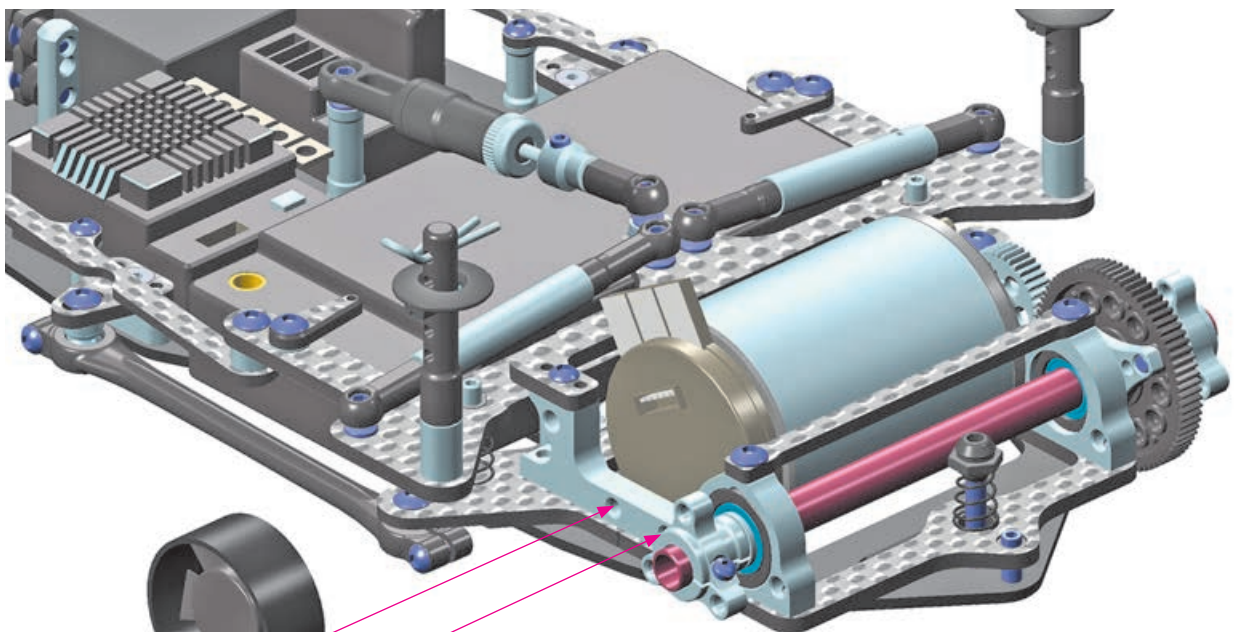
More steering, more responsive, but more difficult to drive.



OPTION

ALU NUTS M3

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



3x8mm (NOT INCLUDED)



#293120 HUDY Alu RC Fan 24mm - Side Mount 2 Hole

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