1/10 ELECTRIC GT PANCAR

XRAY X10

INSTRUCTION MANUAL

FOR X10'26 & XP10 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.
Carefully read 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.

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**

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

SAFETY PRECAUTIONS

Contains:
LEAD (CAS 7439-92-1) ANTIMONY (CAS 7440-36-0)
WARNING: This product contains a chemical known to the state of California to cause cancer and birth defects or other reproductive harm.
CAUTION: CANCER HAZARD
Contains lead, a listed carcinogen. Lead is harmful if ingested. Wash thoroughly after using. DO NOT use product while eating, drinking or using tobacco products. May cause chronic effects to gastrointestinal tract, CNS, kidneys, and blood. MAY CAUSE BIRTH DEFECTS.

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

Take appropriate safety precautions prior to operating this model. You are responsible for this model's assembly and safe operation! Please read the instruction manual before building and operating this model and follow all safety precautions. Always keep the instruction manual at hand for quick reference, even after completing the assembly. Use only genuine and original authentic XRAY parts for maximum performance. Using any third party parts on this model will void guaranty immediately.

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

IMPORTANT NOTES – GENERAL

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

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

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 excess the monetary value of this product.

Take adequate safety precautions prior to operating this model. You are responsible for this model's assembly and safe operation.

Disregard of the any of the above cautions may lead to accidents, personal injury, or property damage. XRAY MODEL RACING CARS assumes no responsibility for any injury, damage, or misuse of this product during assembly or operation, nor any addictions that may arise from the use of this product.

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.

TOOLS REQUIRED

Side Cutters (HUDY #189010)

Pocket Hobby Knife (HUDY #188981)

Special Tool for Turnbuckles, Nuts (HUDY #181090)

Turnbuckle Wrench 3mm (HUDY #181030)

Turnbuckle Wrench 4mm (HUDY #181040)

HUDY Tweezers Straight (HUDY #188970)

HUDY Tweezers Curved (HUDY #188971)

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

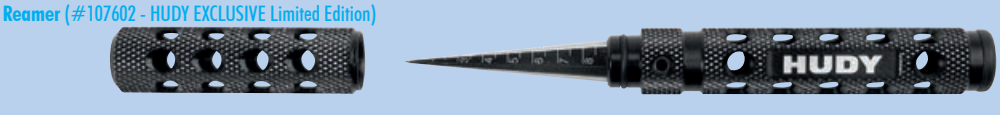
Allen 2.0mm (#112045 - HUDY EXCLUSIVE Limited Edition)

Allen 2.5mm (#112545 - HUDY EXCLUSIVE Limited Edition)

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

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

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



Reamer (#107602 - HUDY EXCLUSIVE Limited Edition)

Blade Hobby Knife with Alu Handle (HUDY #188980)

Scissors (HUDY #188990)

Professional Multi-Tool (HUDY #183011)

INCLUDED

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

700cSt (#106370) HUDY Premium Silicone Oils

OIL

10.000cSt (#106510) HUDY Premium Silicone Oils

OIL

Differential Grease (HUDY #106211)

ALSO REQUIRED

Transmitter

Receiver

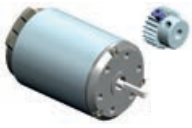
Speed Controller

Steering Servo

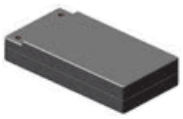
Bearing Oil (HUDY #106230)

OIL

Electric Motor & Pinion Gear with Setscrew



LiPo Battery



Battery Charger

Tires

Threadlock

THREAD LOCK

1/10 GT Bodyshell

X10

1/10 XP10 Bodyshell

XP10

Lexan™ Paint

Double-sided Tape (HUDY #107875)

CA glue

CA GLUE

BUILD TIPS & NOTES

VIDEO TECH TIP

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.

The Tech Tips videos that you can scan in this instruction manual and watch are for X12. Therefore, it is important to use these videos for X10 as information and as an extra aid to understand the correct settings, but you must not take it completely into detail.

OPTION

SAMPLE OF OPTIONAL PARTS		
#37XXXX	TYPE1	OPTION 1
#37XXXX	TYPE2	OPTION 2
#37XXXX	TYPE	INCLUDED
#37XXXX	TYPE3	OPTION 3

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

COLOR INDICATIONS

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

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

375220

371025

378102

375002

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

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

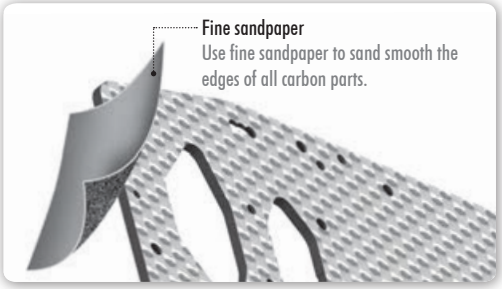
STYLE C - indicates parts that are already assembled from previous steps.

STYLE D - indicates parts that are optional.

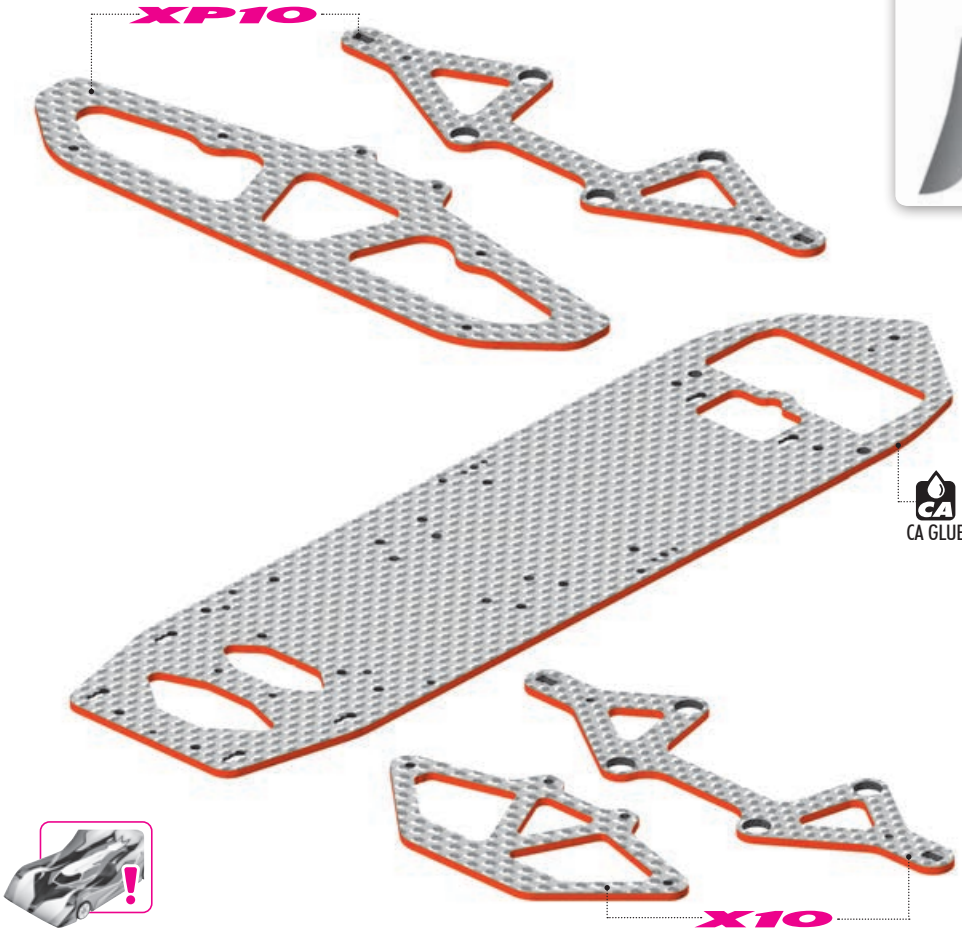
CARBON PARTS PREPARATION

TIP

PREPARE ALL CARBON PARTS
To protect and seal edges of carbon parts, sand edges smooth and then apply CA glue.



Fine sandpaper
Use fine sandpaper to sand smooth the edges of all carbon parts.



CA

Apply CA glue to all adges of the carbon parts.

CA GLUE

XRAY uses the highest quality USA-made carbon fiber sheets available on the market. The carbon fiber sheets are pressed, and this production technique may result in slight variations in each sheet's thickness and flatness. The carbon manufacturer cannot and does not guarantee perfect uniformity as it is impossible to ensure each plate's perfect flatness with such thin material thicknesses.

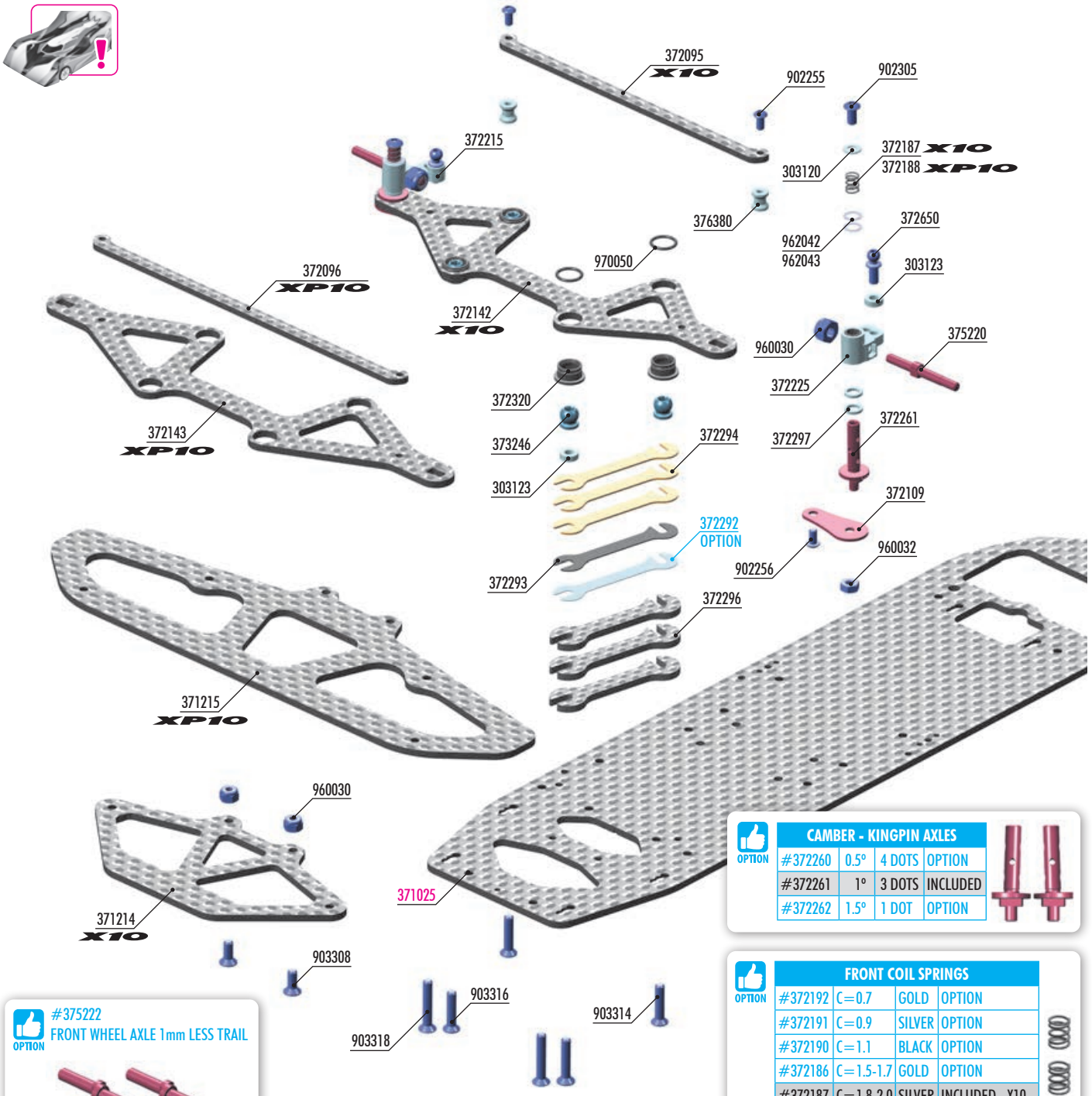
These tolerances for thickness and flatness are taken into consideration when designing our XRAY cars and parts. Minor irregularities in the carbon fiber parts will not affect the performance of XRAY vehicles once assembled with the other components. While an individual carbon fiber part itself may not lay perfectly flat, rest assured that the assembled vehicle will still perform as designed and intended.

TIP

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

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

1. FRONT SUSPENSION



OPTION

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

OPTION

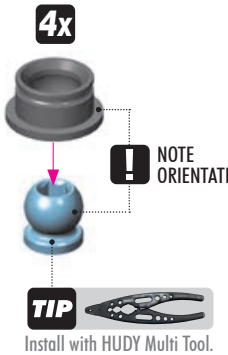
FRONT COIL SPRINGS			
#372192	C=0.7	GOLD	OPTION
#372191	C=0.9	SILVER	OPTION
#372190	C=1.1	BLACK	OPTION
#372186	C=1.5-1.7	GOLD	OPTION
#372187	C=1.8-2.0	SILVER	INCLUDED - X10
#372188	C=2.1-2.3	BLACK	INCLUDED - XP10

BAG 01

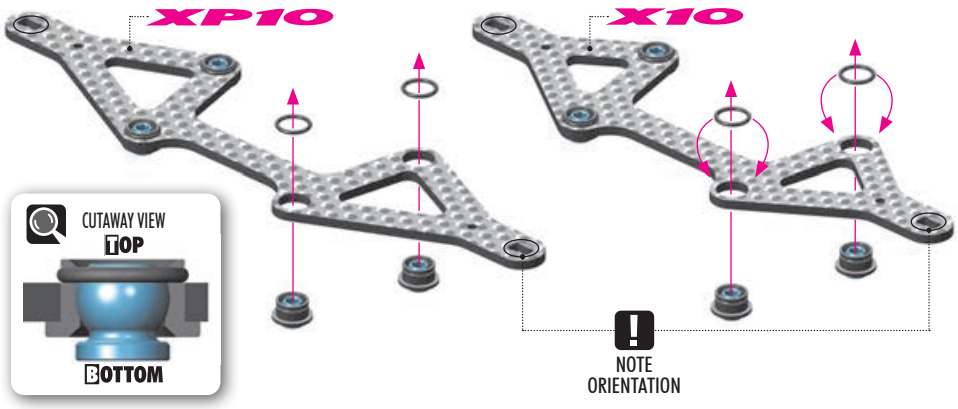
303120	SET OF ALU SHIM (0.5mm, 1.5mm, 2.5mm)
303123	ALU SHIM 3x6x2.0mm (10)
371214	X10 CARBON BUMPER LOWER HOLDER FOR 1-PIECE CHASSIS
371215	XP10 CARBON BUMPER LOWER HOLDER FOR 1-PIECE CHASSIS
372095	X10 CARBON FRONT BRACE FOR 1-PIECE CHASSIS
372096	XP10 CARBON FRONT BRACE FOR 1-PIECE CHASSIS
372109	STEEL LOWER SUSPENSION ARM BRACE (2)
372142	X10 CARBON LOWER SUSPEN. ARM PLATE FOR 1-PIECE CHASSIS
372143	XP10 CARBON LOWER SUSPEN. ARM PLATE FOR 1-PIECE CHASSIS
372187	FRONT COIL SPRING FOR 4mm PIN C=1.8-2.0 - SILVER (2)
372188	FRONT COIL SPRING FOR 4mm PIN C=2.1-2.3 - BLACK (2)
372215	ALU STEERING BLOCK WITH TEFLON SLEEVE - RIGHT
372225	ALU STEERING BLOCK WITH TEFLON SLEEVE - LEFT
372261	KINGPIN 4mm WITH HOLES - 1.0° - 3 DOTS - NICKEL COATED (2)
372292	STEEL SHIM 0.2mm - SILVER (2) OPTION
372293	STEEL SHIM 0.4mm - BLACK (2)
372294	STEEL SHIM 0.6mm - GOLD (2)
372296	CARBON RIDE HEIGHT SHIM 2.5mm (2)
372297	ALU SHIM 4x6x1.0mm (10)
372320	COMPOSITE ARM BUSHING (4)
372650	BALL END 4.2mm WITH 6MM THREAD (2)
373246	ALU BALL END 6.0mm WITH HEX - SWISS 7075 T6 (2)
375220	FRONT WHEEL AXLE (2)
376380	ALU MOUNT 6.0mm WITH M2.5 THREAD - BLACK (2)
902255	HEX SCREW SH M2.5x5 (10)
902256	HEX SCREW SH M2.5x6 (10)
902305	HEX SCREW SH M3x5 (10)
903308	HEX SCREW SFH M3x8 (10)
903314	HEX SCREW SFH M3x14 (10)
903316	HEX SCREW SFH M3x16 (10)
903318	HEX SCREW SFH M3x18 (10)
960030	NUT M3 (10)
960032	NUT M3 - BLACK (10)
962042	WASHER S 4x6x0.1 (10)
962043	WASHER S 4x6x0.2 (10)
970050	O-RING 5x1 (10)
371025	CARBON 1-PIECE CHASSIS 2.5mm

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

4x 970050
O 5x1



Install with HUDY Multi Tool.

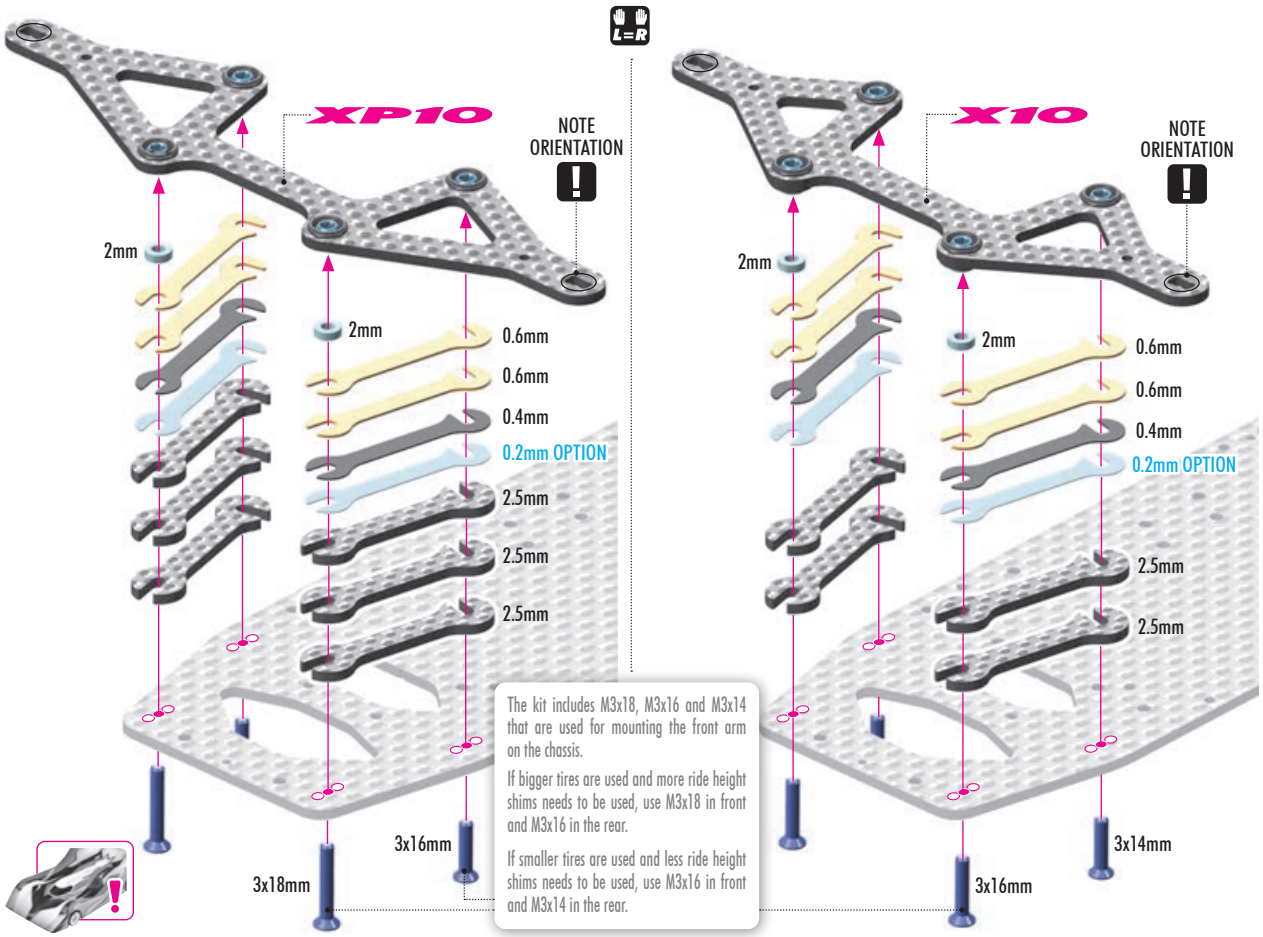


2x 303123
SHIM 3x6x2

2x 903314
SFH M3x14

2x 903316
SFH M3x16

2x 903318
SFH M3x18



The kit includes M3x18, M3x16 and M3x14 that are used for mounting the front arm on the chassis.

If bigger tires are used and more ride height shims needs to be used, use M3x18 in front and M3x16 in the rear.

If smaller tires are used and less ride height shims needs to be used, use M3x16 in front and M3x14 in the rear.

RIDE HEIGHT & 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 tire diameter and desired caster angle.

INITIAL SETTING

1x 0.4mm - BLACK

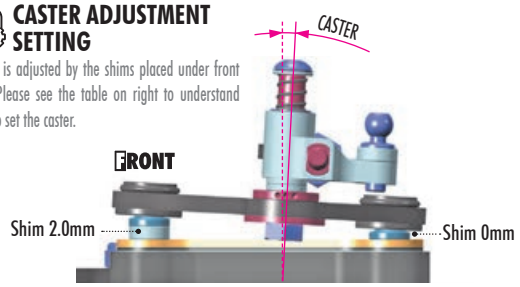
2x 0.6mm - GOLD

2x 2.5mm - CARBON
X10

3x 2.5mm - CARBON
XP10

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.



EXTRA SHIM UNDER FRONT BALL	
SHIM DIFFERENCE	CASTER
1mm	1.5°
2mm	3°
3mm	4.5°
4mm	6°
5mm	7.5°

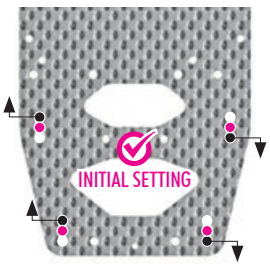
INITIAL SETTING — INITIAL SETTING

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

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

ALTERNATIVE REAR POSITION
SHORT WHEELBASE

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



ALTERNATIVE FRONT POSITION
LONG WHEELBASE

Longer wheelbase is recommended for bigger tracks with longer sweepers. Makes the car more stable and easier to drive.

VIDEO TECH TIP

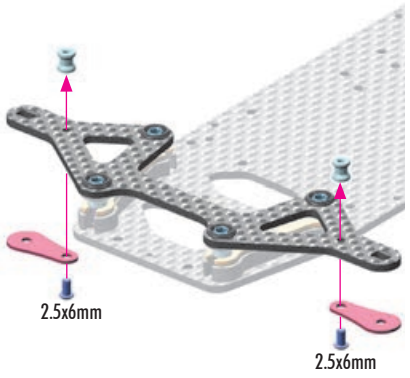
CASTER ADJUSTMENT

2x 902255
SH M2.5x5

2x 902256
SH M2.5x6

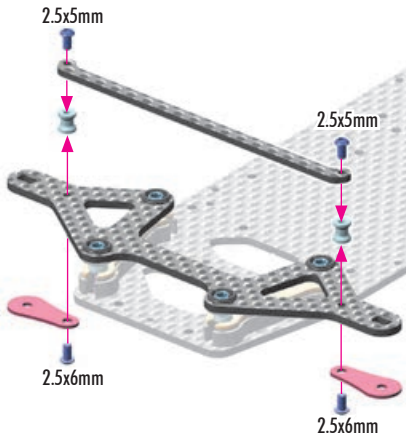
FRONT SUSPENSION FLEX SETTING

SOFT NO BRACE



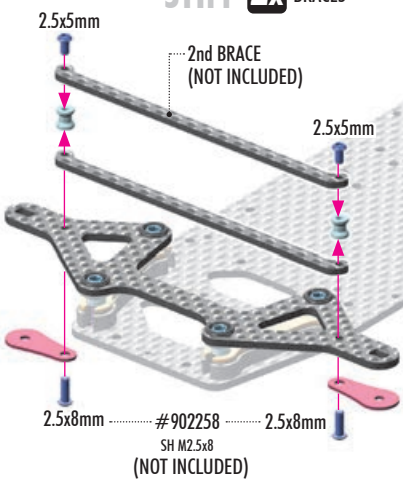
SOFT - (NO BRACE)
Makes the car initially less responsive, but will provide more mechanical traction. Recommended for low-traction carpet conditions and asphalt tracks.

MEDIUM 1x BRACE



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 2x BRACES



STIFF
Both braces mounted to the carbon arm give maximum responsiveness but decrease mechanical traction. Recommended for high-traction track conditions.
The second Brace is NOT INCLUDED.

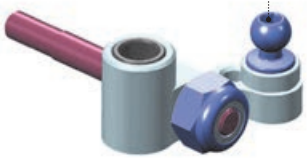
2x 303123
SHIM 3x6x2

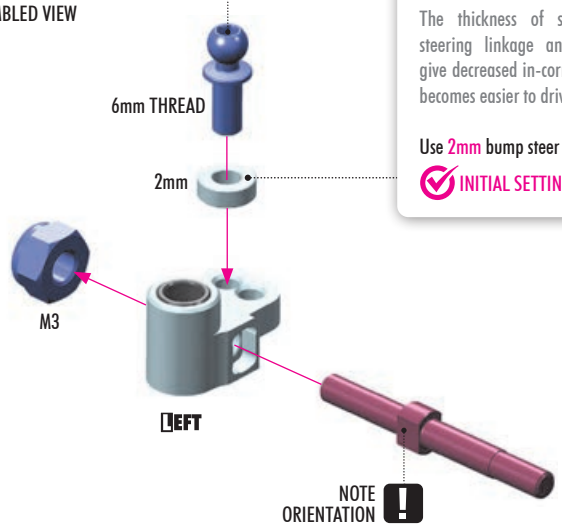
2x 960030
N M3

2x L=R

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

ASSEMBLED VIEW



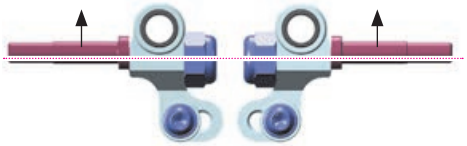


BUMPSTEER SETTING

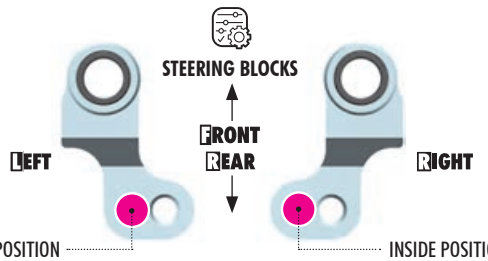
The thickness of shims changes the steering linkage angle. Thicker shims give decreased in-corner steering, but car becomes easier to drive.

Use 2mm bump steer as
INITIAL SETTING

OPTION #375222
FRONT WHEEL AXLE 1mm LESS TRAIL



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.



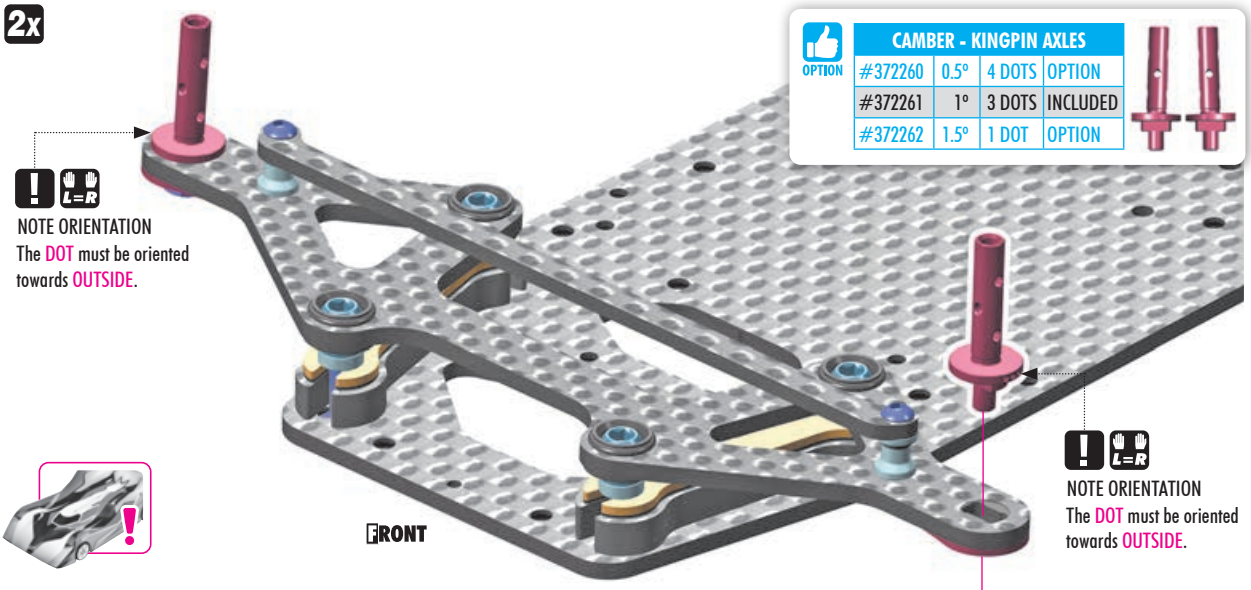
OUTSIDE POSITION

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

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

2x 960032
N M3

2x



NOTE ORIENTATION
The DOT must be oriented towards OUTSIDE.

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

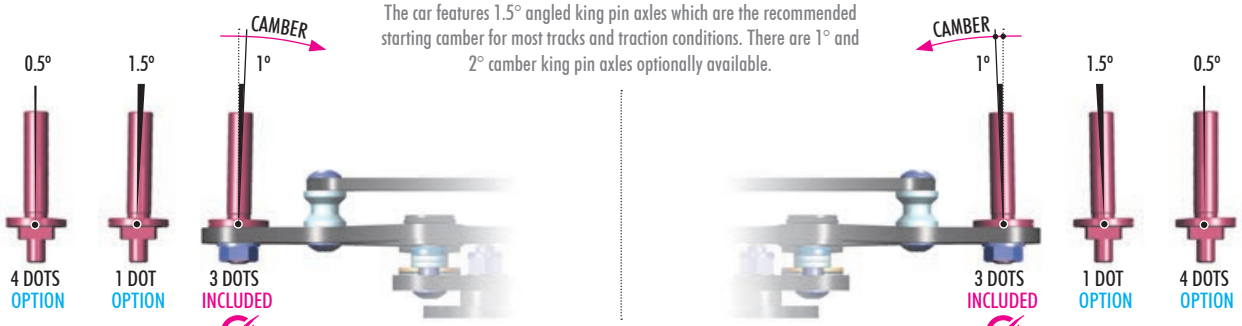
NOTE ORIENTATION
The DOT must be oriented towards OUTSIDE.

FRONT

BLACK Nut M3

CAMBER ADJUSTMENT

The car features 1.5° angled king pin axles which are the recommended starting camber for most tracks and traction conditions. There are 1° and 2° camber king pin axles optionally available.

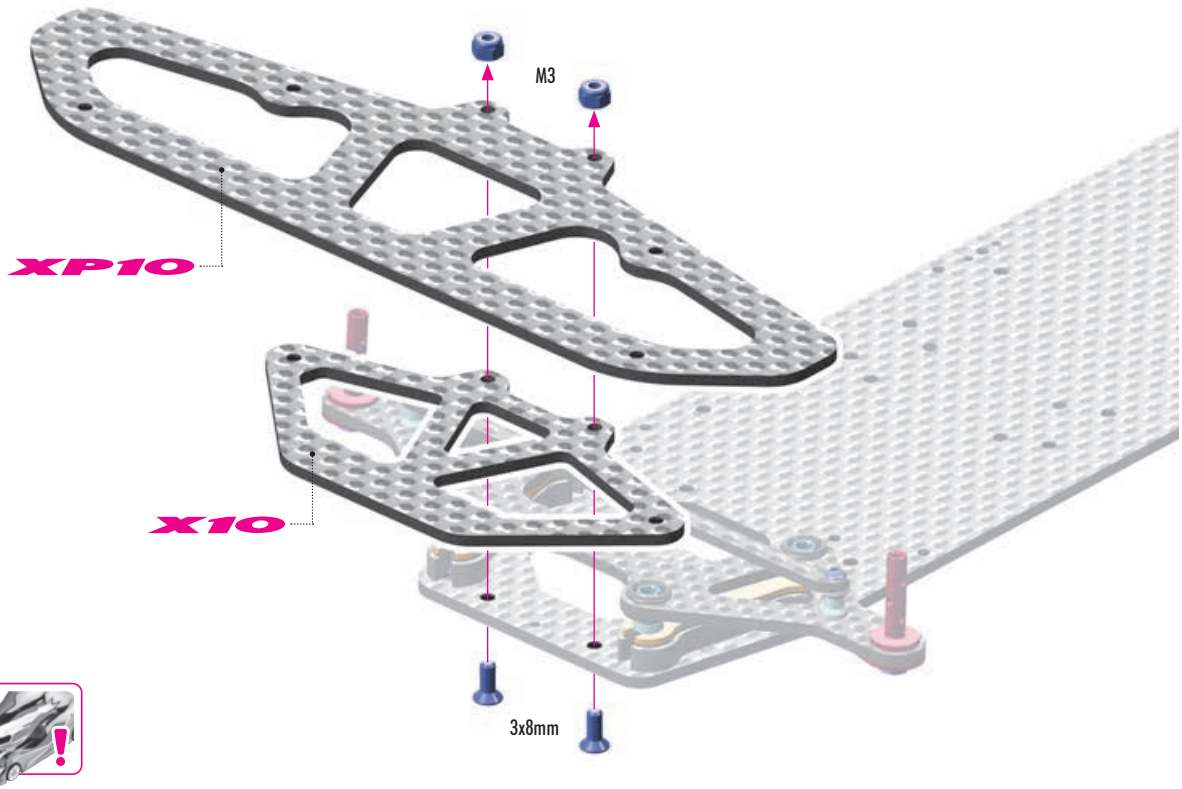


INCREASING THE CAMBER ANGLE
will increase the car steering, however, will make the car more difficult to drive.

DECREASING THE CAMBER ANGLE
will decrease the steering which will make the car easier to drive and also helps to prevent traction rolling.

2x 960030
N M3

2x 903308
SFH M3x8



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:
Ride height is adjusted with the supplied long shims (silver, black, gold) that can be placed under the arms. I recommend using the lowest possible ride height, unless the track surface is very bumpy or rough. In that case, the car can benefit from having a slightly higher ride height which will help to increase stability and improve handling over bumps.

The front axle height can be adjusted with shims under the steering block. You cannot change the roll center at the front of the because X10'26 & XP10'26 there is no upper arm. Adding shims under the steering block – which raises the steering block – will raise the front axle height, and at the same time will decrease bump steer. Removing shims will lower the steering block and increase bump steer.

I recommend using the kit shimming for the front steering block as a good basic setting for most conditions.

FRONT DROOP ADJUSTMENT

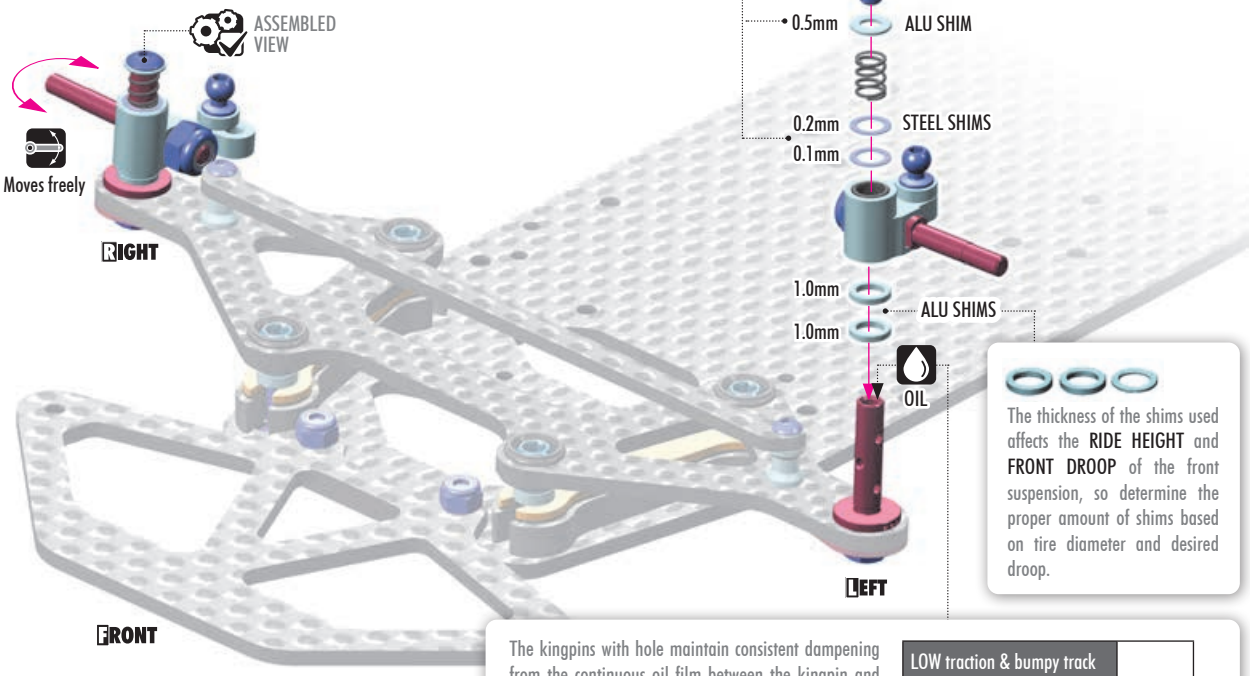
Front droop is adjusted by the preload of the front spring. More shims between the steering block and the spring will increase preload - and decrease droop. Removing shims will have the opposite effect.

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.



The thickness of the shims used affects the RIDE HEIGHT and FRONT DROOP of the front suspension, so determine the proper amount of shims based on tire diameter and desired droop.

VIDEO TECH TIP

FRONT KINGPIN OIL

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	
15K ~ 30K cSt	

use HUDY Silicone Oil
10K cSt
(INCLUDED)

OPTION

FRONT COIL SPRINGS			
#372192	C=0.7	GOLD	OPTION
#372191	C=0.9	SILVER	OPTION
#372190	C=1.1	BLACK	OPTION
#372186	C=1.5-1.7	GOLD	OPTION
#372187	C=1.8-2.0	SILVER	INCLUDED - X10
#372188	C=2.1-2.3	BLACK	INCLUDED - XP10

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

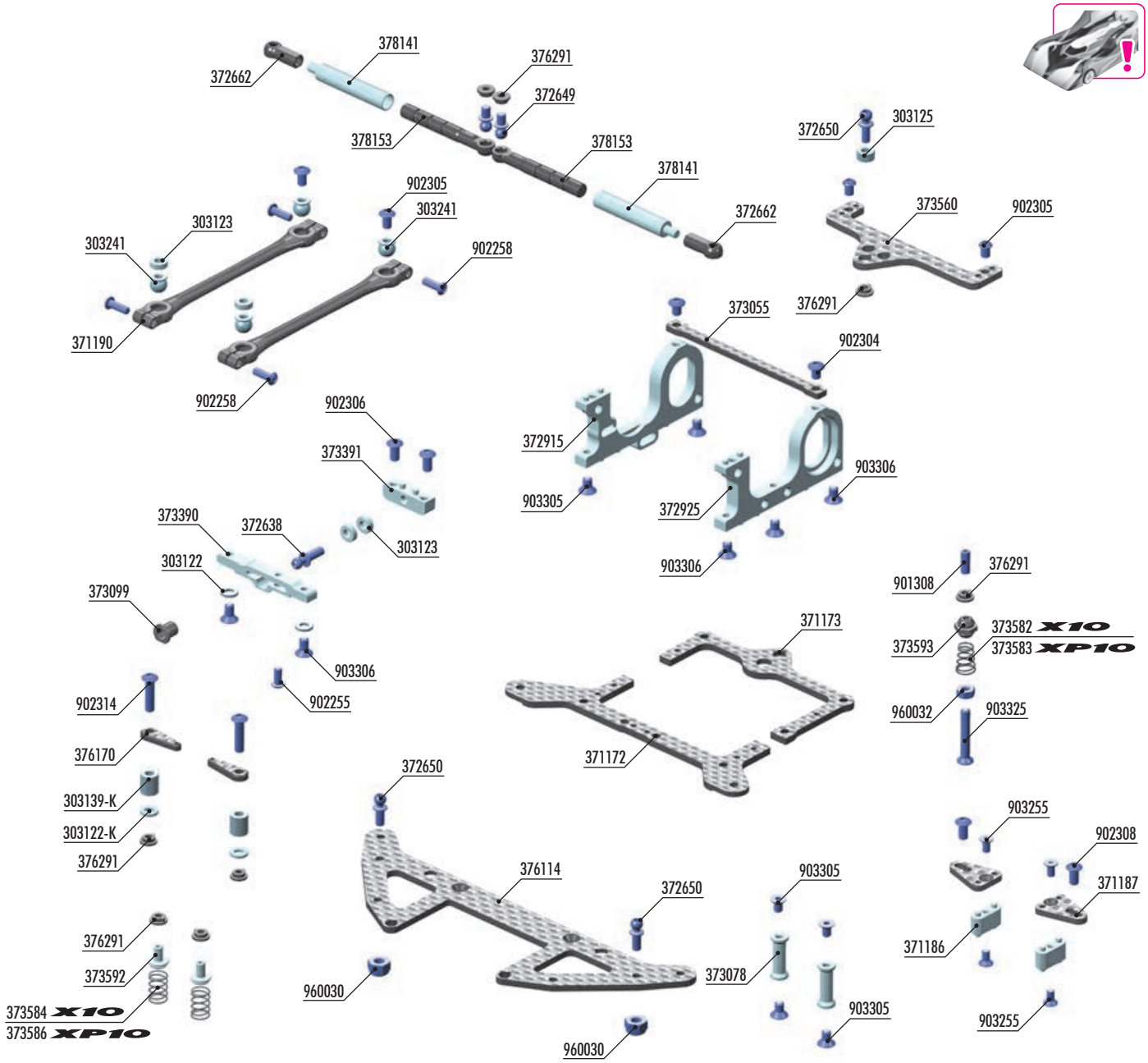
The Front Damping Setting is adjusted using different viscosity of oils.

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.

VIDEO TECH TIP

FRONT DROOP & RIDE HEIGHT



BAG 02

303122	ALU SHIM 3x6x1.0mm (10)
303122-K	ALU SHIM 3x6x1.0mm - (10)
303123	ALU SHIM 3x6x2.0mm (10)
303125	ALU SHIM 3x6x3.0mm (10)
303139-K	ALU SHIM 3x6x7.0MM - BLACK (10)
303241	BALL UNIVERSAL 5.8mm HEX (4)
371172	CARBON REAR POD LOWER PLATE FOR 1-PIECE CHASSIS - FRONT
371173	CARBON REAR POD LOWER PLATE FOR 1-PIECE CHASSIS - REAR
371186	ALU HOLDER WITH 2 PINS FOR SIDE LINK CARBON PLATE - BLACK
371187	CARBON PLATE FOR 2 PINS FOR SIDE LINK (2)
371190	COMPOSITE POD LINK (2)
372638	HARD STEEL BALL END 3.7mm WITH 8mm THREAD - NICKEL COATED (2)
372649	BALL END 4.2mm WITH 4mm THREAD (2)
372650	BALL END 4.2mm WITH 6mm THREAD (2)
372662	COMPOSITE BALL JOINT 4.2mm (4)
372915	ALU REAR BULKHEAD FOR 1-PIECE CHASSIS - MOTOR - RIGHT
372925	ALU REAR BULKHEAD FOR 1-PIECE CHASSIS - LEFT
373055	ARBON REAR BULKHEAD BRACE FOR 1-PIECE CHASSIS
373078	ALU REAR BRACE MOUNT 15.5mm - BLACK (2)
373099	COMPOSITE PIVOT BRACE BUSHING FOR 3.7mm BALL END
373390	ALU CHASSIS PIVOT HOLDER FOR 1-PIECE CHASSIS - SWISS 7075 T6
373391	ALU POD PLATE PIVOT HOLDER FOR 1-PIECE CHASSIS - SWISS 7075 T6
373560	CARBON REAR POD UPPER PLATE FOR 1-PIECE CHASSIS
373582	TAPERED SPRING C=1.5-1.6 - SILVER (2)
373583	TAPERED SPRING C=1.7-1.8 - GOLD (2)
373584	SIDE SPRING C=0.6 - SILVER (2)
373586	SIDE SPRING C=1.2 - BLACK (2)
373592	STEEL SIDE SPRING RETAINER (2)
373593	COMPOSITE TAPERED/STRAIGHT SPRING HOLDER (2)
376114	CARBON REAR BRACE FOR 1-PIECE CHASSIS
376170	CARBON BATTERY CLAMP 2.2mm (2)
376291	COMPOSITE M3 SNAP LOCK BUSHING (8)
378141	ALU SIDE TUBE (2)
378153	COMPOSITE SIDE TUBE SHAFT (2)

901308	HEX SCREW SB M3x8 (10)
902255	HEX SCREW SH M2.5x5 (10)
902258	HEX SCREW SH M2.5x8 (10)
902304	HEX SCREW SH M3x4 - STAINLESS (10)
902305	HEX SCREW SH M3x5 (10)
902306	HEX SCREW SH M3x6 (10)
902308	HEX SCREW SH M3x8 (10)
902314	HEX SCREW SH M3x14 (10)
903255	HEX SCREW SFH M2.5x5 (10)
903305	HEX SCREW SFH M3x5 (10)
903306	HEX SCREW SFH M3x6 (10)
903325	HEX SCREW SFH M3x25 (10)
960030	NUT M3 (10)
960032	NUT M3 - BLACK (10)

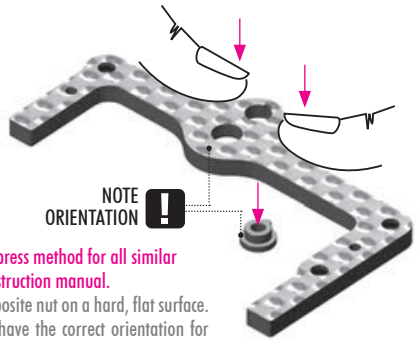
BUILD VIDEO

REAR SUSPENSION

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

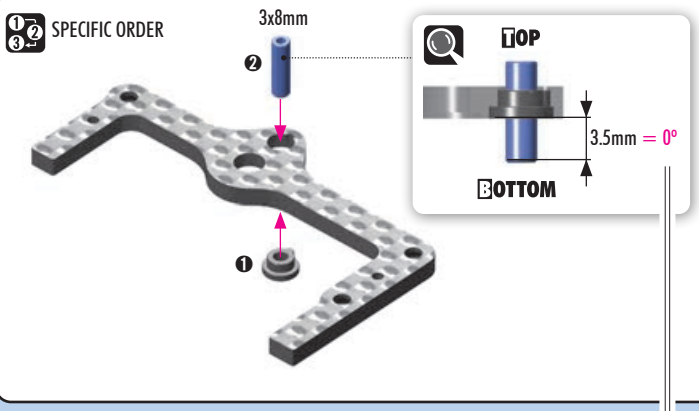
2. REAR SUSPENSION

NOTE



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

1x 901308 SB M3x8



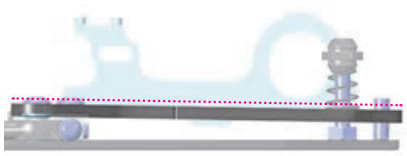
VIDEO TECH TIP

POD ANGLE ADJUSTMENT

POD ANGLE SETTING

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

Reducing the gap below 3.5mm introduces an anti-squat effect, increasing on-power steering while decreasing rear traction.



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

POD Straight
INITIAL SETTING

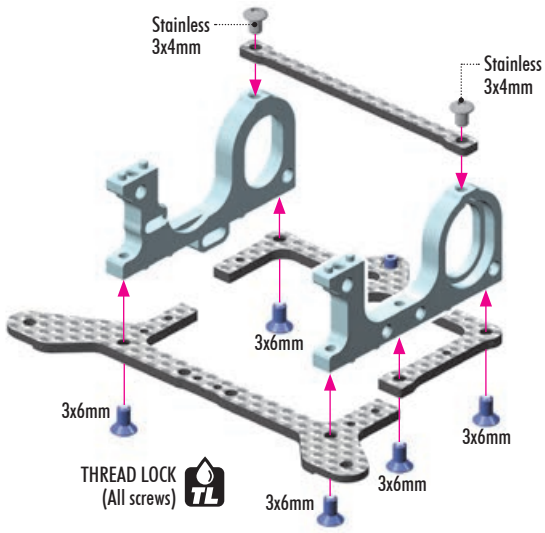
POD Pro-squat
Pro-squat decreases on-power steering and increases rear traction.

2x 902304 SH M3x4

5x 903306 SFH M3x6

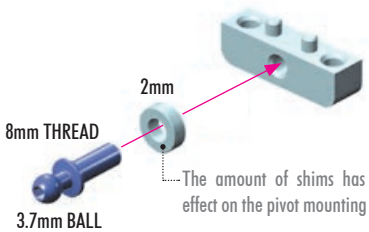
VIDEO TECH TIP

REAR POD & PIVOT BUILD



1x 303123 SHIM 3x6x2

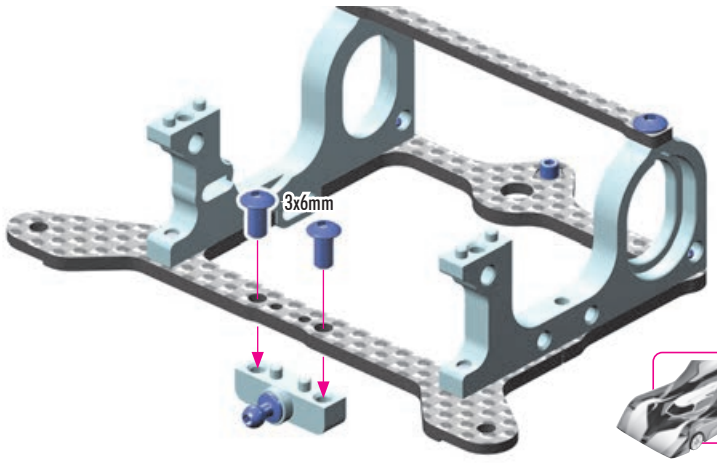
2x 902306 SH M3x6

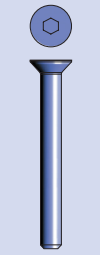


The amount of shims has a direct effect on the pivot mounting position.

Please see: PAGE 14

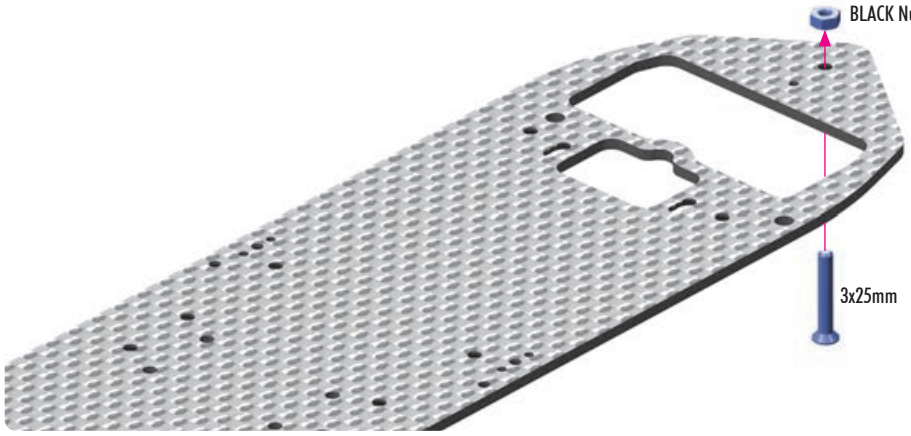
INITIAL SETTING
MIDDLE pivot mounting (2mm shim)





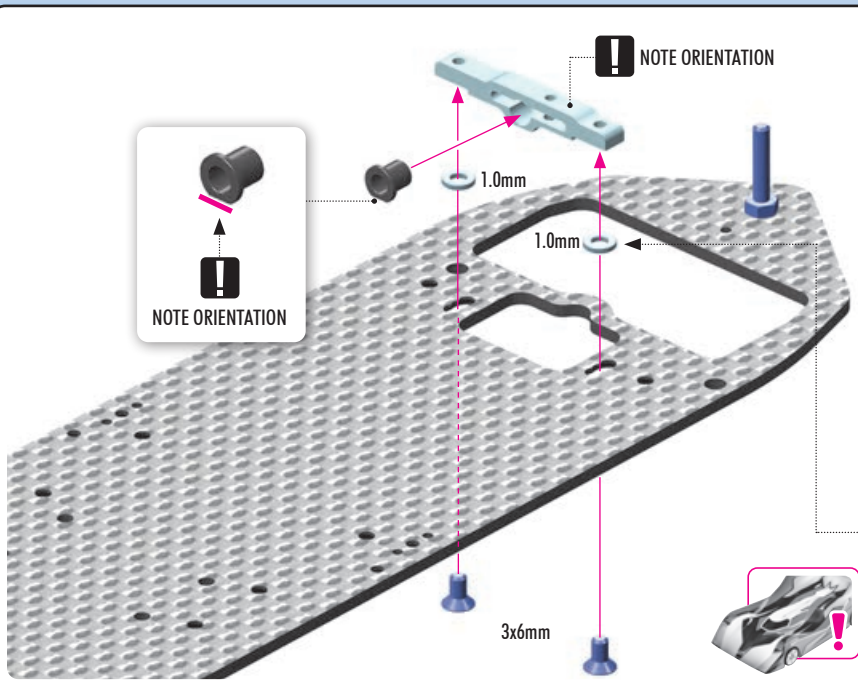
1x 903325
SFH M3x25

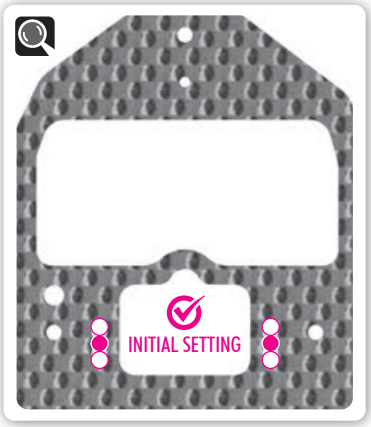
1x 960032
N M3



2x 303122
SHIM 3x6x1

2x 903306
SFH M3x6





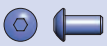
ROLL-CENTER

INITIAL SETTING: Use 1mm shim

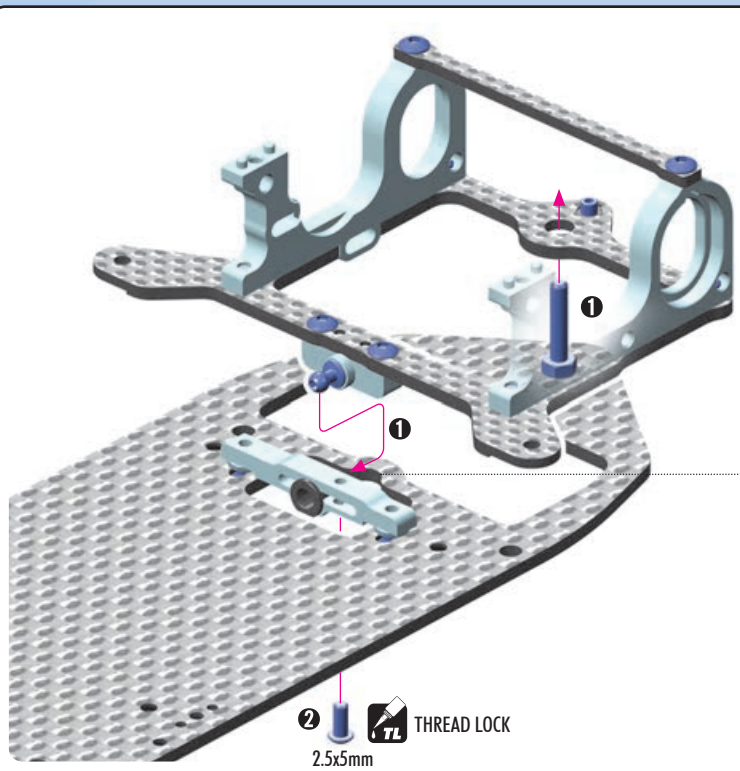
NOTE: Using no shims will cause the pivot holder to extend below the chassis plate.

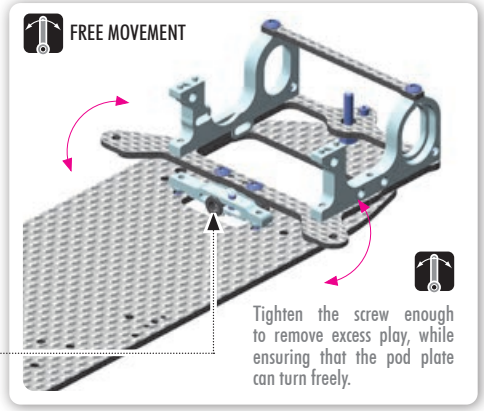
VIDEO TECH TIP

REAR POD & PIVOT BUILD



1x 902255
SH M2.5x5





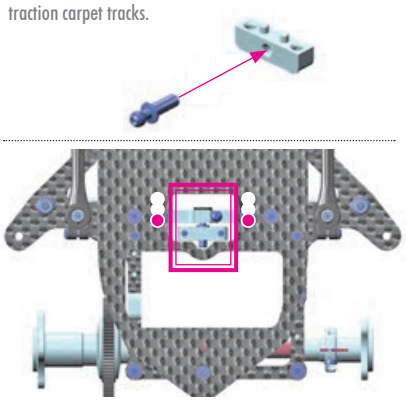
VIDEO TECH TIP

REAR POD & PIVOT BUILD

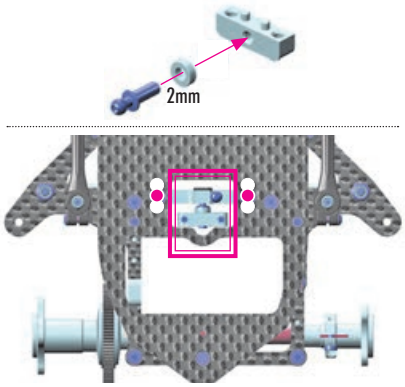
1x 303123 SHIM 3x6x2

PIVOT MOUNTING ALTERNATIVE

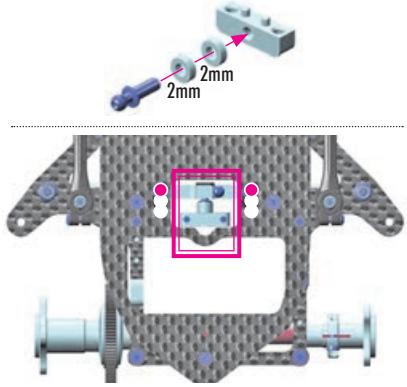
REARWARD:
Pivot mounted in rear chassis holes with no ball stud shims. Improved rotation from shorter rear pod geometry. Provides most initial steering and rotation; best suited for high traction carpet tracks.



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.



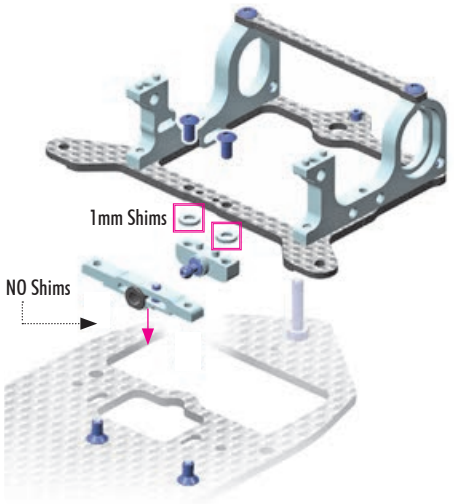
TIP #303122 & 303123 shims are NOT INCLUDED in the kit.

303122 SHIM 3x6x1 303123 SHIM 3x6x2

ROLL CENTER ADJUSTMENT

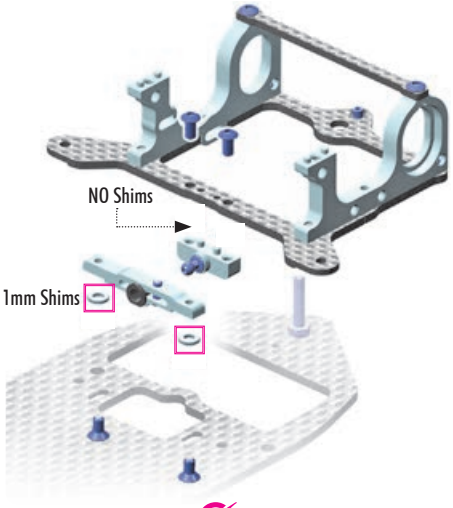
The roll center can be adjusted by adding or removing shims from beneath the aluminum pivot mounts.

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.



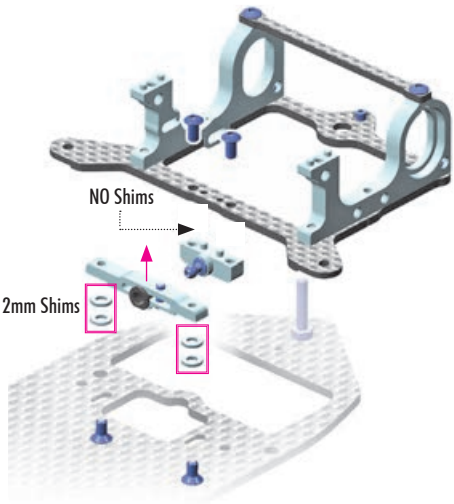
LOWER ROLL CENTER

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.

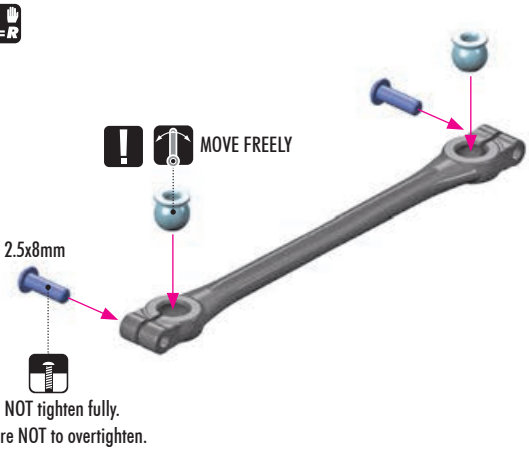


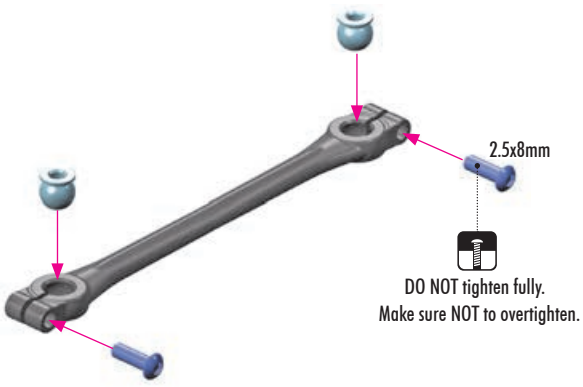
HIGHER ROLL CENTER

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

4x 902258 SH M2.5x8

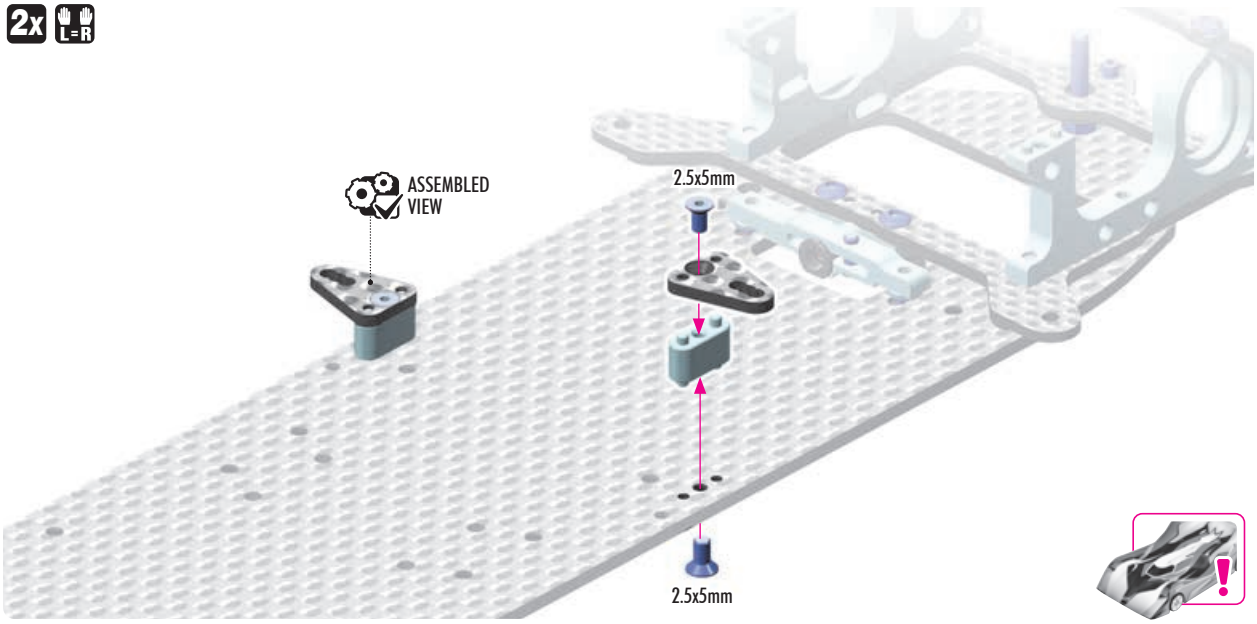
2x L=R





4x 903255 SFH M2.5x5

2x L=R



2x 303123 SHIM 3x6x2

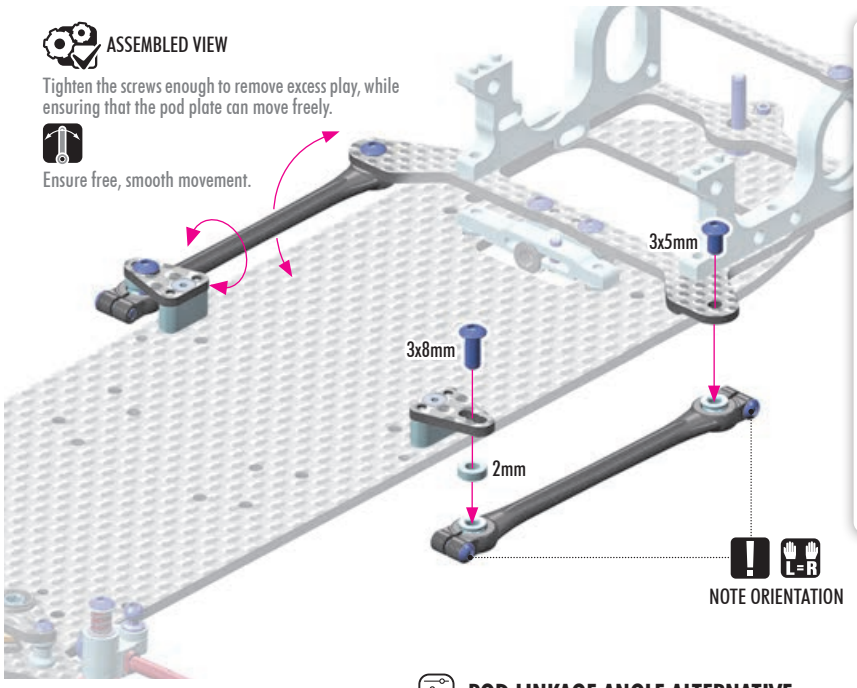
2x 902305 SH M3x5

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

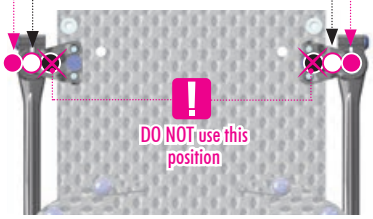
OUTER POSITION

INITIAL SETTING

LESS ANGLED side links make the car easier to drive.

MIDDLE POSITION

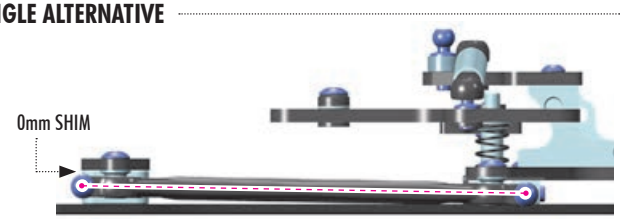
MORE ANGLED side links increased in-corner steering.



POD LINKAGE ANGLE ALTERNATIVE

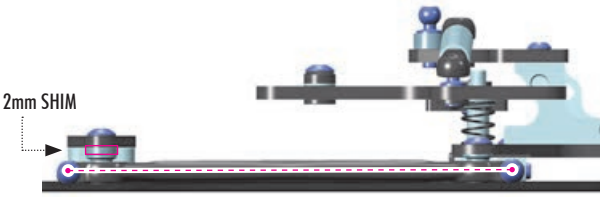
LESS SHIMS

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.



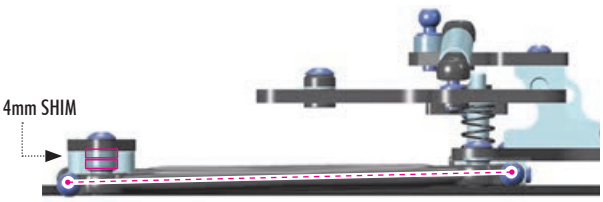
STRAIGHT 2.0mm SHIMS INITIAL SETTING

Straight link alignment makes the car easier to drive.



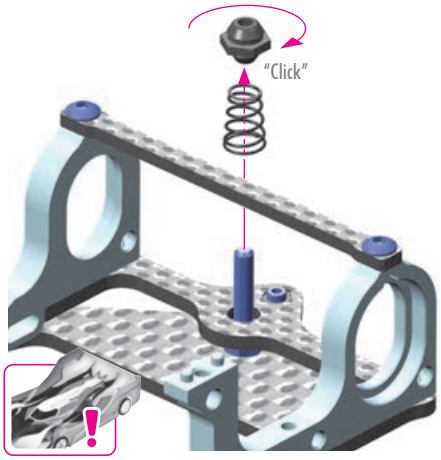
MORE SHIMS

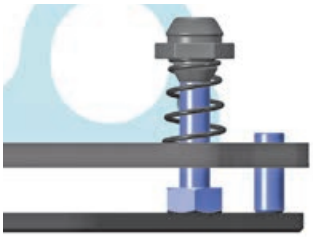
Raising the side links' **REAR** pivot point (adding shims) reduces in-corner steering. This orientation is typically NOT used or recommended.



VIDEO TECH TIP

POD DROOP ADJUSTMENT





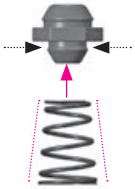
- TIGHTENING the rear bump spring increases ride height and reduces droop.
- LOOSENING the rear bump spring decreases ride height and increases droop.

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 be 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.

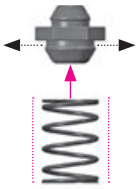


When using a CONICAL-PROGRESSIVE SPRING, press the spring onto the smaller diameter end of the spring retainer.

OPTION

TAPERED (CONICAL-PROGRESSIVE)			
#373582	C=1.5-1.6	SILVER	INCLUDED X10
#373583	C=1.7-1.8	GOLD	INCLUDED XP10

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



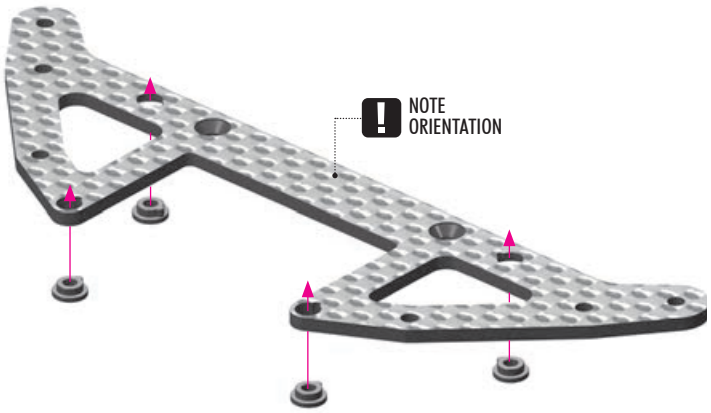
When using a STRAIGHT-LINEAR SPRING, press the spring onto the larger diameter end of the spring retainer.

OPTION

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 12 / Step 1



2x 303122-K SHIM 3x6x1

1x 303139-K SHIM 3x6x7

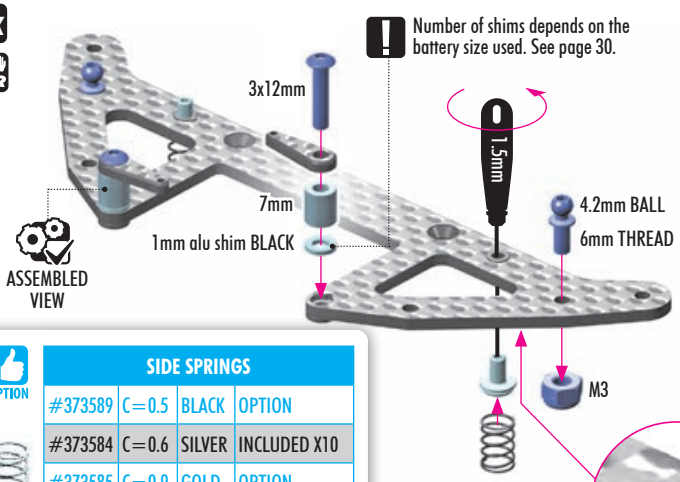
2x 902312 SH M3x12

2x 960030 N M3

2x

L=R

Number of shims depends on the battery size used. See page 30.



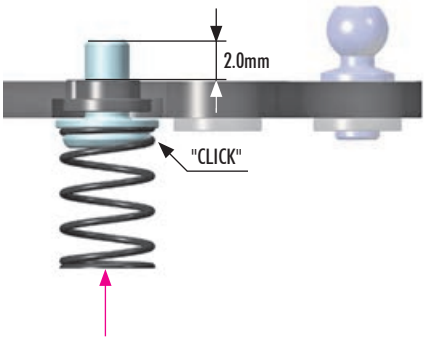
ASSEMBLED VIEW

OPTION

SIDE SPRINGS			
#373589	C=0.5	BLACK	OPTION
#373584	C=0.6	SILVER	INCLUDED X10
#373585	C=0.9	GOLD	OPTION
#373586	C=1.2	BLACK	INCLUDED XP10
#373587	C=1.5	SILVER	OPTION
#373588	C=1.8	GOLD	OPTION

NOTE ORIENTATION
Leading edge of hole is beveled.

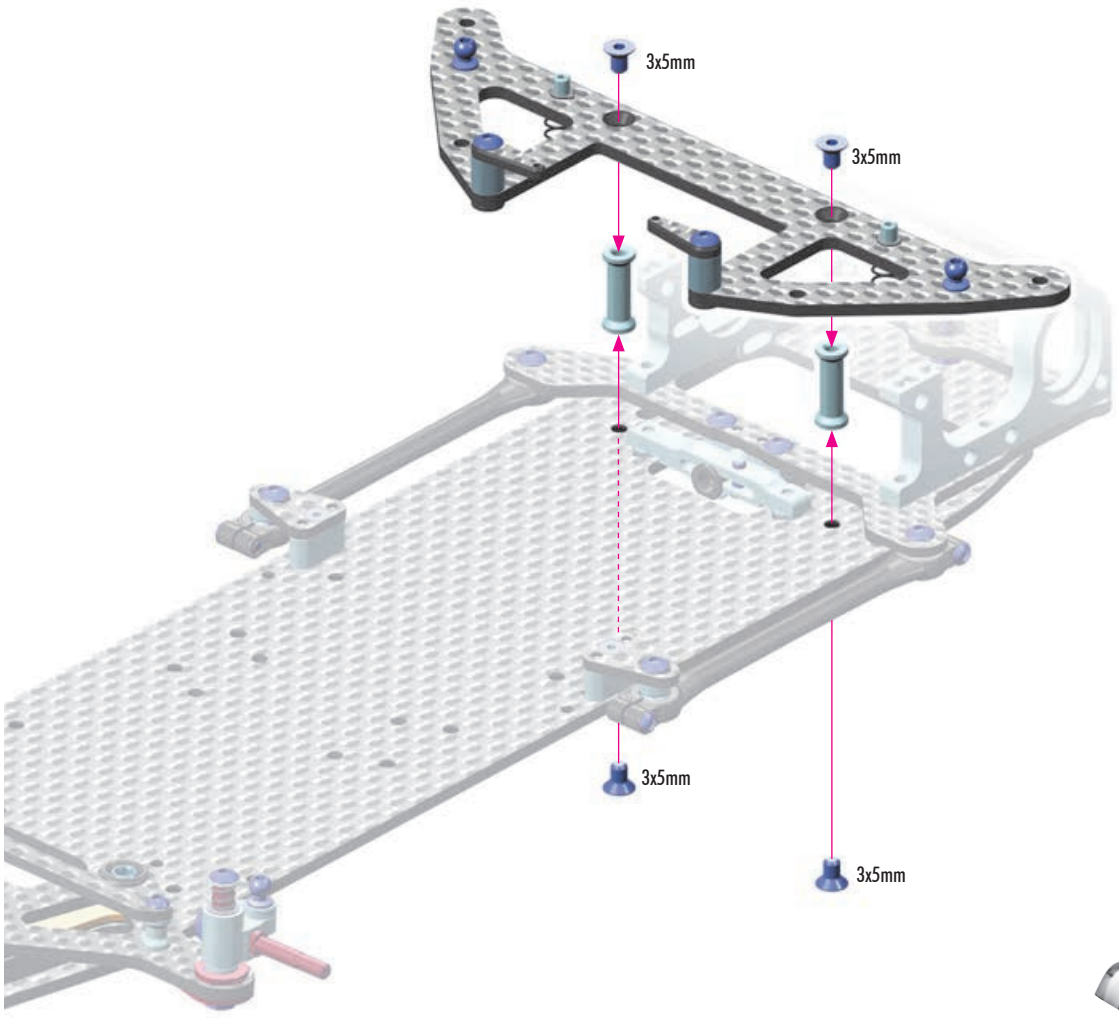
BOTTOM VIEW



4x 903305
SFH M3x5

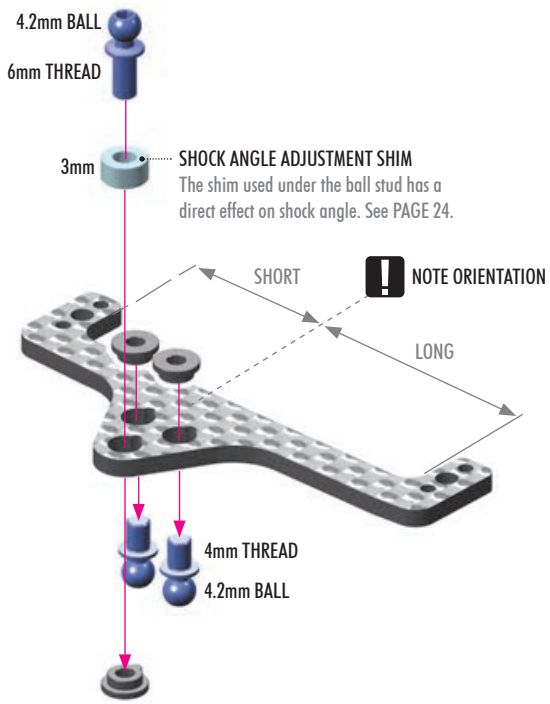
VIDEO TECH TIP

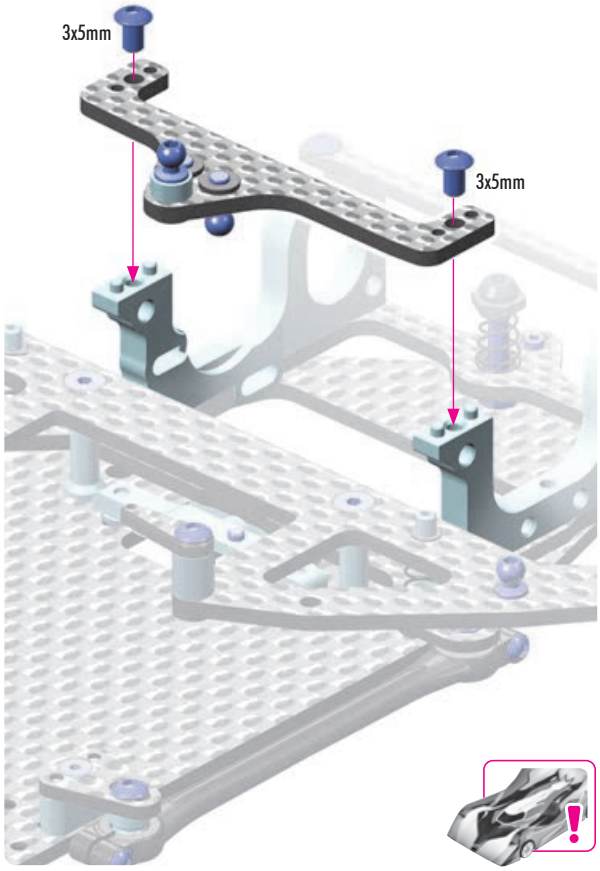
BATTERY MOUNTING SYSTEM



1x 303125
SHIM 3x6x3

2x 902305
SH M3x5

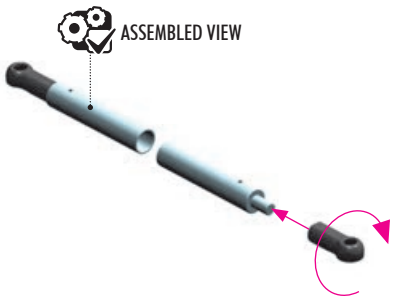




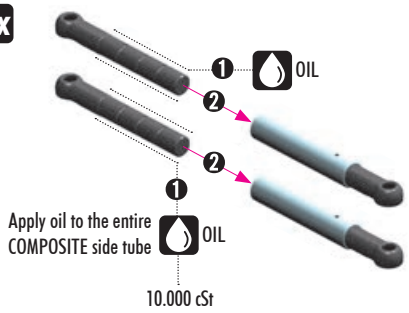
VIDEO TECH TIP

SIDE TUBES

2x



2x



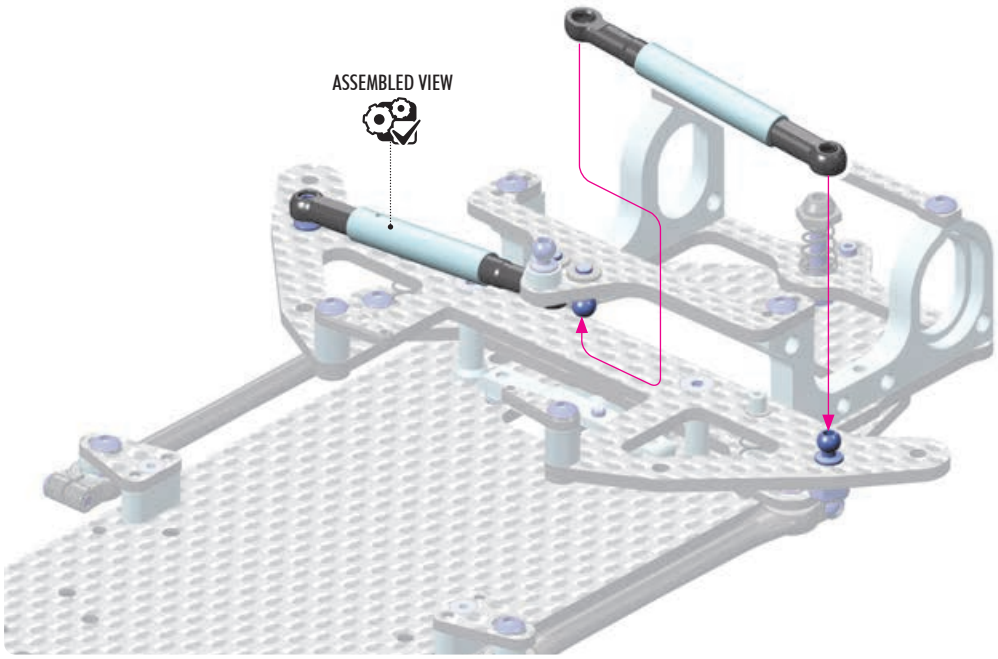
Apply oil to the entire composite side tube before installing in the aluminum tube. After assembly, check for smooth operation. It is very important to check and re-oil the tubes at least once per race day. Oil thickness can be adjusted depending on the track conditions.

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

OPTION

HUDY OILS 50ml		
#106450	5.000cSt	OPTION
#106460	6.000cSt	OPTION
#106470	7.000cSt	OPTION
#106480	8.000cSt	OPTION
#106490	9.000cSt	OPTION
#106510	10.000cSt	INCLUDED
#106492	11.000cSt	OPTION
#106512	12.000cSt	OPTION
#106515	15.000cSt	OPTION
#106517	17.000cSt	OPTION
#106520	20.000cSt	OPTION
#106530	30.000cSt	OPTION

L=R



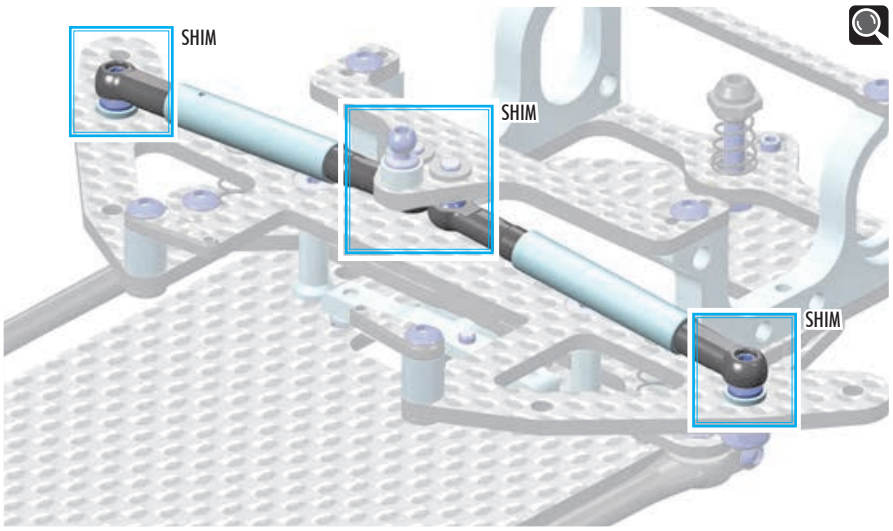
SIDE TUBE ANGLE

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.



OPTION

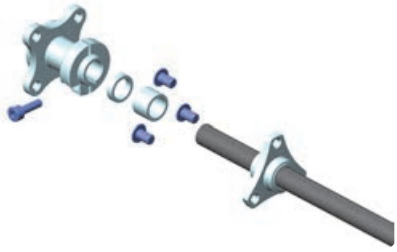
BALL DIFF - SPUR GEARS		
#375872	72T / 64P	OPTION
#375875	75T / 64P	OPTION
#375876	76T / 64P	OPTION
#375878	78T / 64P	OPTION
#375880	80T / 64P	OPTION
#375884	84T / 64P	OPTION
#375888	88T / 64P	OPTION
#375892	92T / 64P	INCLUDED
#375896	96T / 64P	OPTION

OPTION #374902
XRAY GEAR DIFFERENTIAL
1/10 PAN CAR - SET

OPTION

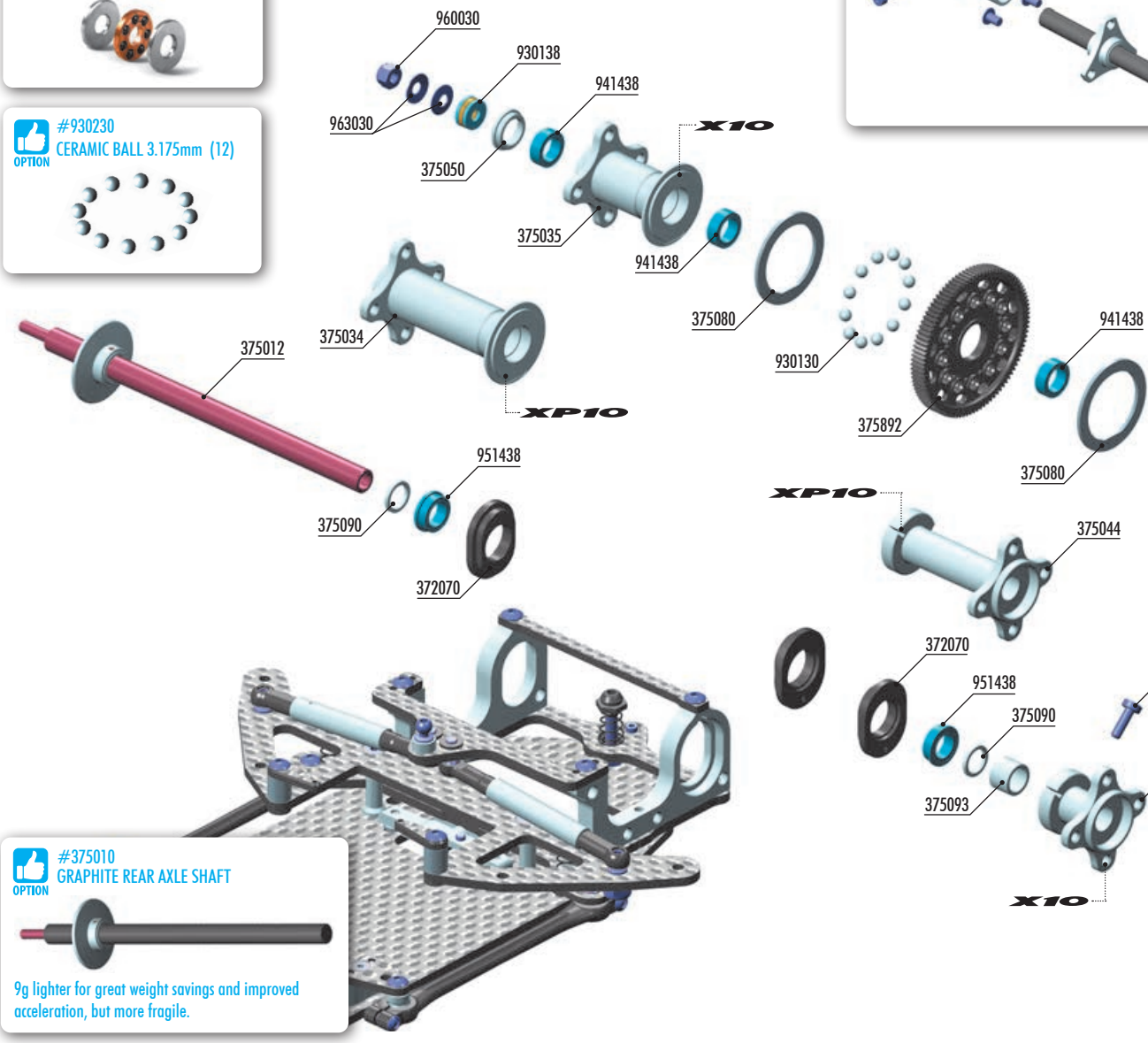
GEAR DIFF - SPUR GEARS		
#375776	76T / 64P	OPTION
#375780	80T / 64P	OPTION
#375784	84T / 64P	OPTION
#375788	88T / 64P	OPTION
#375792	92T / 64P	OPTION

OPTION #375002
XRAY SOLID AXLE 1/10 PAN CAR-SET



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

OPTION #930230
CERAMIC BALL 3.175mm (12)



OPTION #375010
GRAPHITE REAR AXLE SHAFT

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

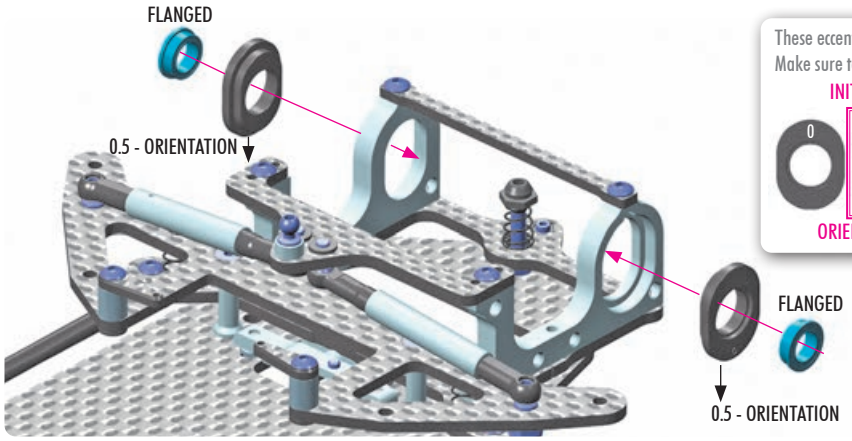
BAG 03

372070	COMPOSITE RIDE HEIGHT ADJUSTER SET - V2 (2)
375012	STEEL REAR AXLE SHAFT - HUDY SPRING STEEL™
375034	XP10 ALU REAR WHEEL HUB - RIGHT
375035	X10 ALU REAR WHEEL HUB - RIGHT
375044	XP10 ALU REAR WHEEL HUB - LEFT
375045	X10 ALU REAR WHEEL HUB - LEFT
375050	ALU DIFF HUB
375080	D-LOCK DIFF PLATE (2)
375090	SET OF ALU SHIMS (0.5mm, 1.0mm, 2.0mm)
375093	ALU SHIM 6.37x8.4x6.0mm (2)
375892	COMPOSITE SPUR GEAR - 92T / 64P
908258	HEX SCREW SOCKET HEAD CAP M2.5x8 (10)
930130	CARBIDE BALL 3.175mm (12)
930138	CARBIDE BALL-BEARING AXIAL F3-8 3x8x3.5
941438	HIGH-SPEED BALL-BEARING 1/4"x3/8"x1/8" RUBBER-SEALED (2)
951438	BALL-BEARING 1/4" x 3/8" x 1/8" FLANGED (2)
960030	NUT M3 (10)
963030	CONE WASHER ST 3x8x0.5 (10)

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

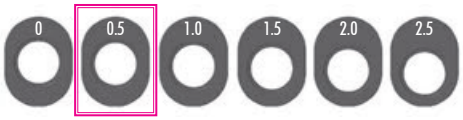
3. BALL DIFFERENTIAL

2x 951438
BB 1/4"x3/8"x1/8"



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

INITIAL SETTING



ORIENTATION LOWER

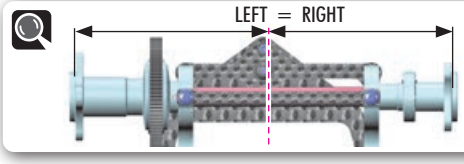
2x 375090-0
SHIM 6.4x8.4x1

1x 375093
SHIM 6.4x8.4x6

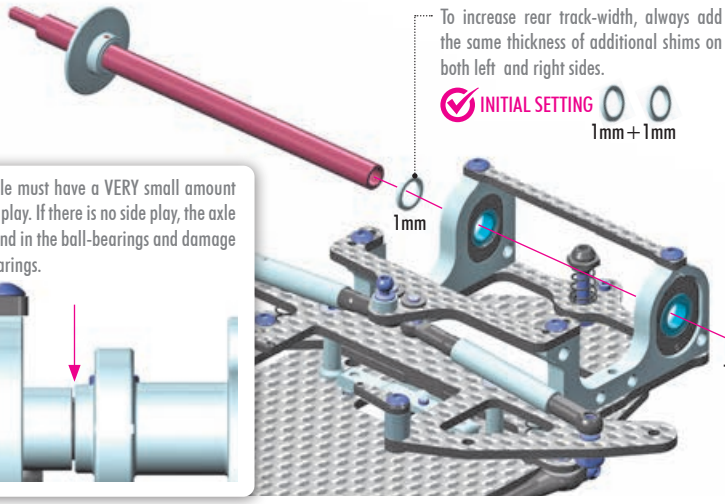
1x 908258
SCH M2.5x8

VIDEO TECH TIP

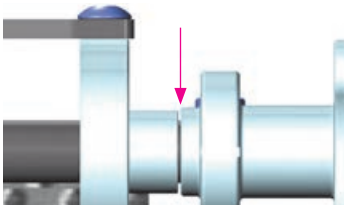
HOW TO BUILD THE BALL DIFF



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.



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



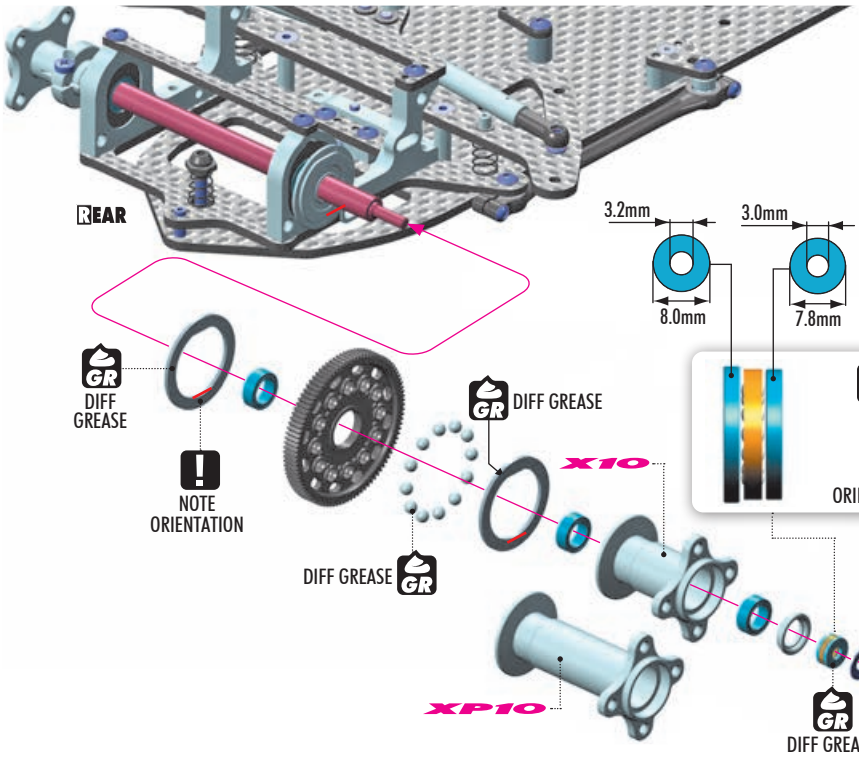
12x 930130
B 3.1

1x 930138
BA 3x8

3x 941438
BB 1/4"x3/8"x1/8"

1x 960030
N M3

2x 963030
ST 3x8

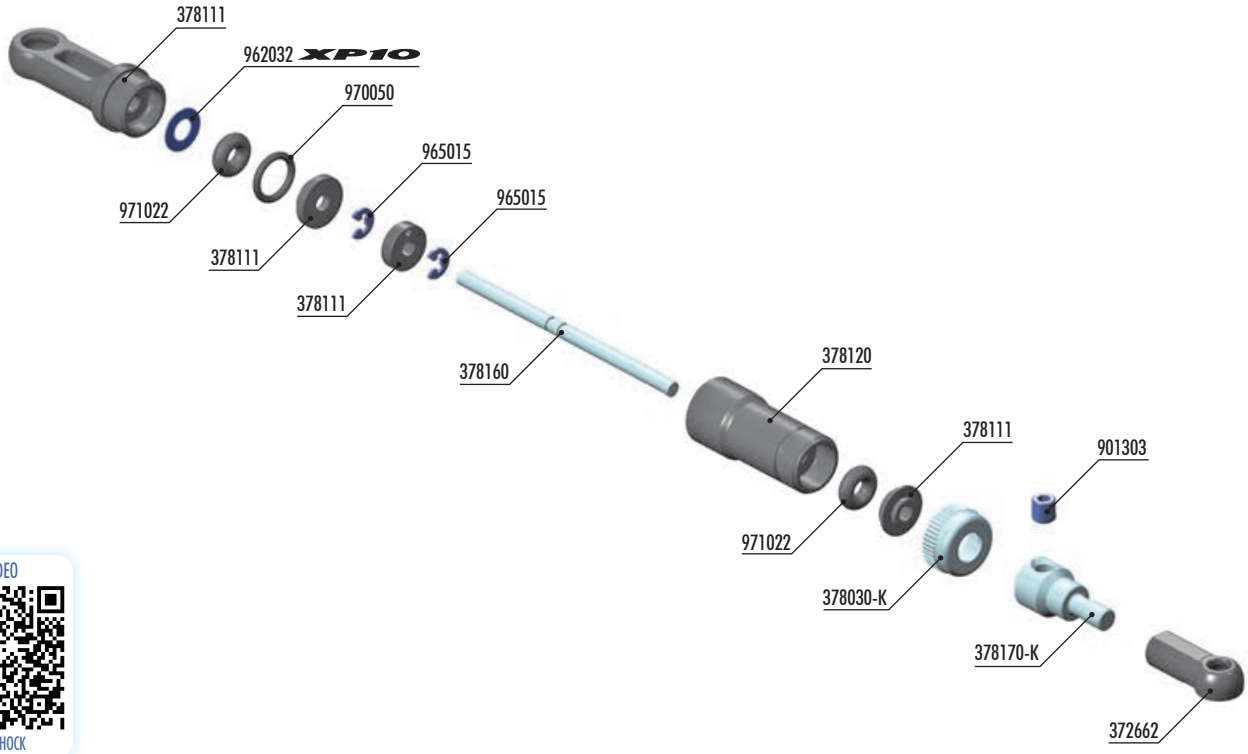


OPTION

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

IMPORTANT

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.



BUILD VIDEO

CENTER SHOCK

OPTION

HUDY SILICONE OILS - 50ml								
#106310	100cSt	OPTION	#106342	425cSt	OPTION	#106365	650cSt	OPTION
#106315	150cSt	OPTION	#106345	450cSt	OPTION	#106367	675cSt	OPTION
#106320	200cSt	OPTION	#106347	475cSt	OPTION	#106370	700cSt	INCLUDED
#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

OPTION #104002 HUDY AIR VAC VACUUM PUMP

BAG 04

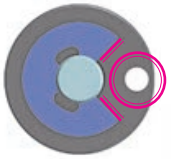
372662	COMPOSITE BALL JOINT 4.2mm (4)
378030-K	ALU SHOCK BODY CAP - LOWER - BLACK
378102	CENTER DAMPENER SET
378111	COMPOSITE CENTER DAMPENER PARTS
378120	ALU SHOCK BODY
378160	STEEL SHOCK SHAFT
378170-K	ALU SHOCK BALL JOINT SCREW - BLACK
901303	HEX SCREW SB M3x3 (10)
962032	WASHER S 3x6x0.2 (10)
965015	E-CLIP 1.5 (10)
970050	O-RING 5x1 (10)
971022	SILICONE O-RING 2x2 (10)

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

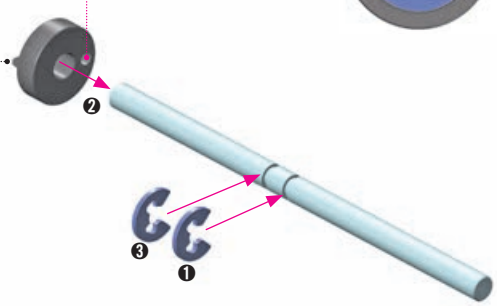
2x 965015 C1.5

SPECIFIC ORDER

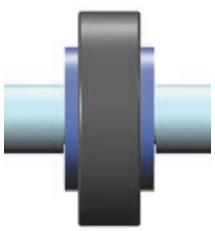
Make sure to orient the piston so the hole is NOT blocked by the c-clips.



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

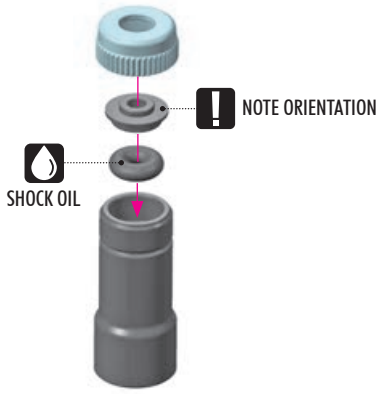


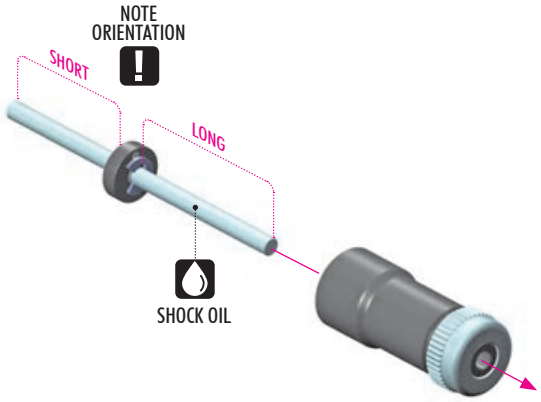
ASSEMBLED VIEW



4. SHOCK ABSORBER

1x 971022 O 2x2

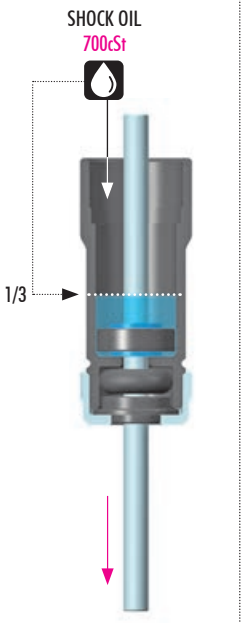




1x 970050 O 5x1
1x 971022 O 2x2
1x 962032 S 3x6x0.2

DEFAULT SHOCK SETTING FOR SHOCK ABSORBER

Follow the steps below to set the shock.



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

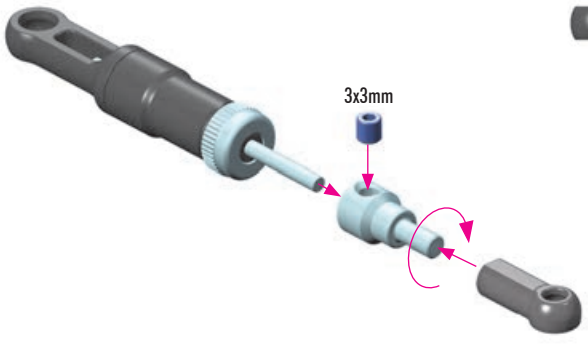
❶ Slowly move the shock shaft up so the shock oil will flow under the shock piston.
❷ Extend the shock shaft.

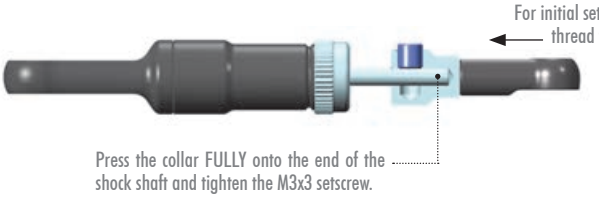
Extend the shock shaft completly to release the air trapped beneath the shock piston. Fill the shock shaft body with the shock oil but NOT fully approx. 3mm from the top of the shock body.

❶ Install the 5x1 o-ring onto shock shim.
❷ Place the shock shim with the o-ring into the shock body.
❸ Install the 2x2 o-ring into the shock cap.
❹ Install the shock cap.

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

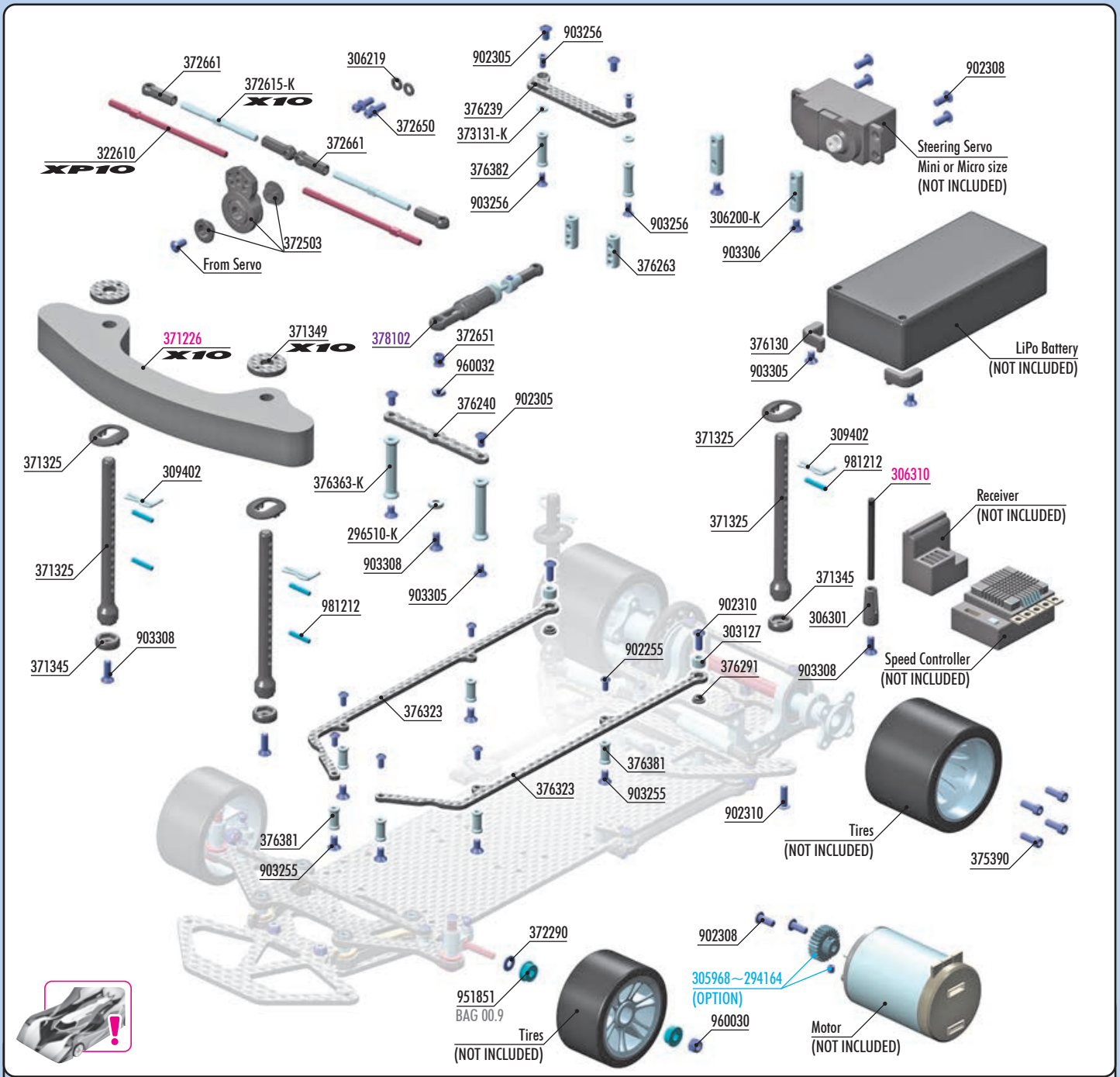
1x 901303 SB M3x3





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

BUILD VIDEO
CENTER SHOCK



BAG 05

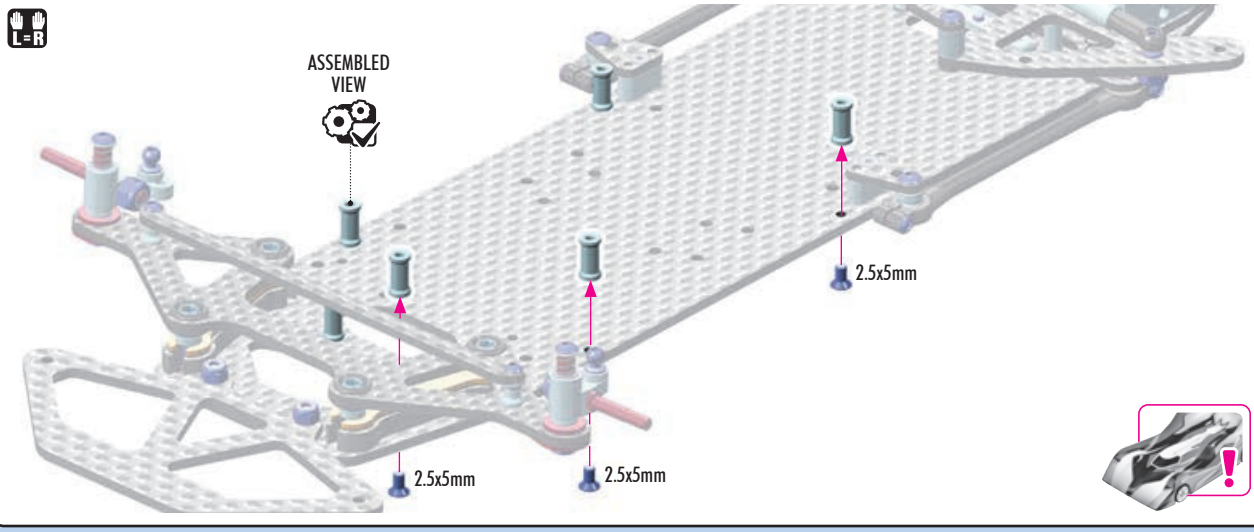
305968~294164	PINION GEAR HARDCOATED 18~64T/64P (OPTION)
296510-K	ALU COUNTERSUNK SHIM - BLACK (10)
303127	ALU SHIM 3x6x4.0mm (10)
306200-K	ALU SERVO MOUNT - BLACK (2)
306219	COMPOSITE SET OF SERVO SHIMS (4)
306301	ANTENNA MOUNT - THIN
309402	BODY CLIP FOR 6mm BODY POST (4)
322610	ADJ. TURNBUCKLE 55mm M3 L/R - HUDY SPRING STEEL™ (2)
371325	COMPOSITE BODY POST (2)
371345	COMPOSITE SHIM FOR BODY POST (2)
371349	CARBON SHIM FOR 6mm BODY POST 2.5mm (2)
372290	ALU SHIM 3.2x4.8x0.5 (4)
372503	COMPOSITE SERVO SAVER - STIFF - SET
372615-K	ALU ADJ. TURNBUCKLE M3x51mm - SWISS 7075 T6 - BLACK (2)
372650	BALL END 4.2mm WITH 6mm THREAD (2)
372651	HARD STEEL PIVOT BALL 4.9mm - NICKEL COATED (2)
372661	COMPOSITE STEERING BALL-JOINT 4.2mm OPEN (4)
373131-K	ALU SHIM 2.5x5x1.0mm - BLACK (10)
376130	COMPOSITE LiPo BATTERY BACKSTOP (2)
376239	CARBON SERVO HOLDER FOR 1-PIECE CHASSIS
376240	CARBON CENTER DAMPENER HOLDER FOR 1-PIECE CHASSIS
376291	COMPOSITE M3 SNAP LOCK BUSHING (8)
376263	ALU SERVO MOUNT - BLACK (2)
376323	CARBON SIDE BRACE FOR 1-PIECE CHASSIS (2)
376363-K	ALU MOUNT 28.5mm - BLACK (2)
376381	ALU MOUNT 10.0mm WITH M2.5 THREAD - BLACK (2)
376382	ALU MOUNT 15.5mm WITH M2.5 THREAD - BLACK (2)
375390	ALU HEX SCREW M3x8 FOR REAR WHEELS (6)
902255	HEX SCREW SH M2.5x5 (10)
902305	HEX SCREW SH M3x5 (10)
902308	HEX SCREW SH M3x8 (10)
902310	HEX SCREW SH M3x10 (10)
903255	HEX SCREW SFH M2.5x5 (10)
903256	HEX SCREW SFH M2.5x6 (10)
903305	HEX SCREW SFH M3x5 (10)
903306	HEX SCREW SFH M3x6 (10)
903308	HEX SCREW SFH M3x8 (10)
951851	BALL-BEARING 1/8" x 5/16" x 9/64" FLANGED - STEEL SEALED - OIL (2)
960030	NUT M3 (10)
960032	NUT M3 - BLACK (10)
981212	PIN 2x12 (10)
378102	X12 CENTER DAMPENER SET
306310	ANTENNA (2)
371226	X10 FOAM BUMPER FOR 1-PIECE CHASSIS

BUILD VIDEO
FINAL ASSEMBLY

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

5. FINAL ASSEMBLY

6x 903255 SFH M2.5x5

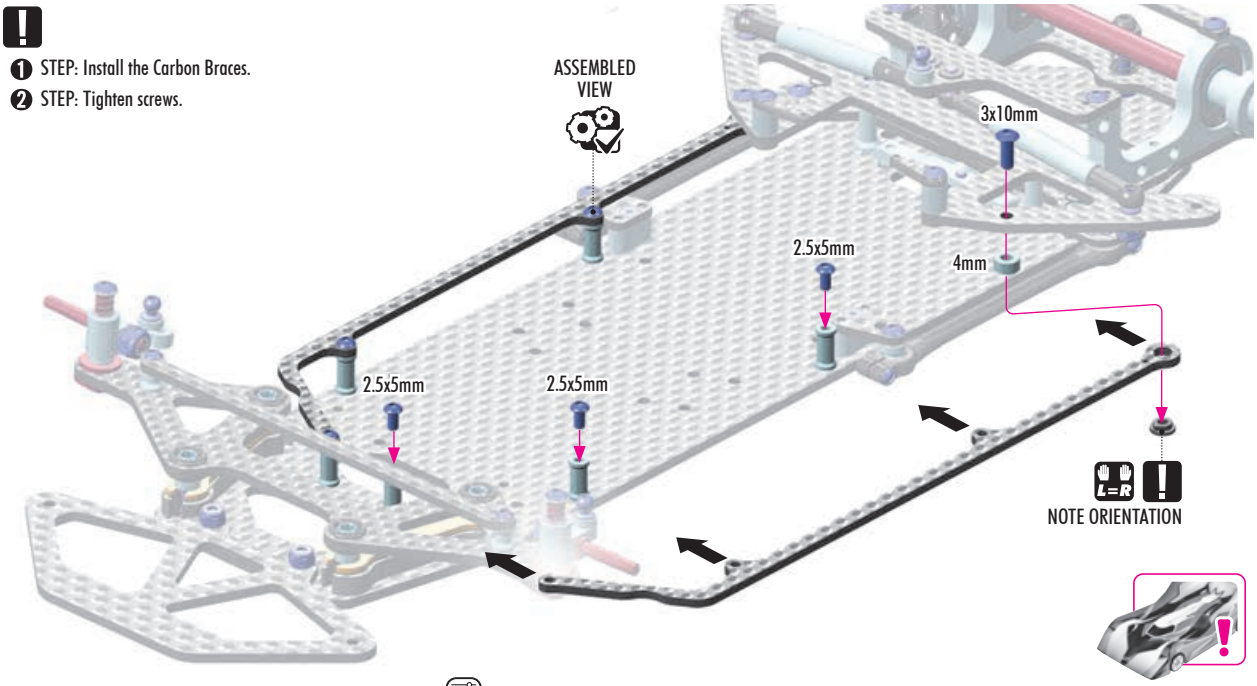


2x 303127 SHIM 3x6x4

4x 902255 SH M2.5x5

2x 902310 SH M3x10

1. STEP: Install the Carbon Braces.
2. STEP: Tighten screws.



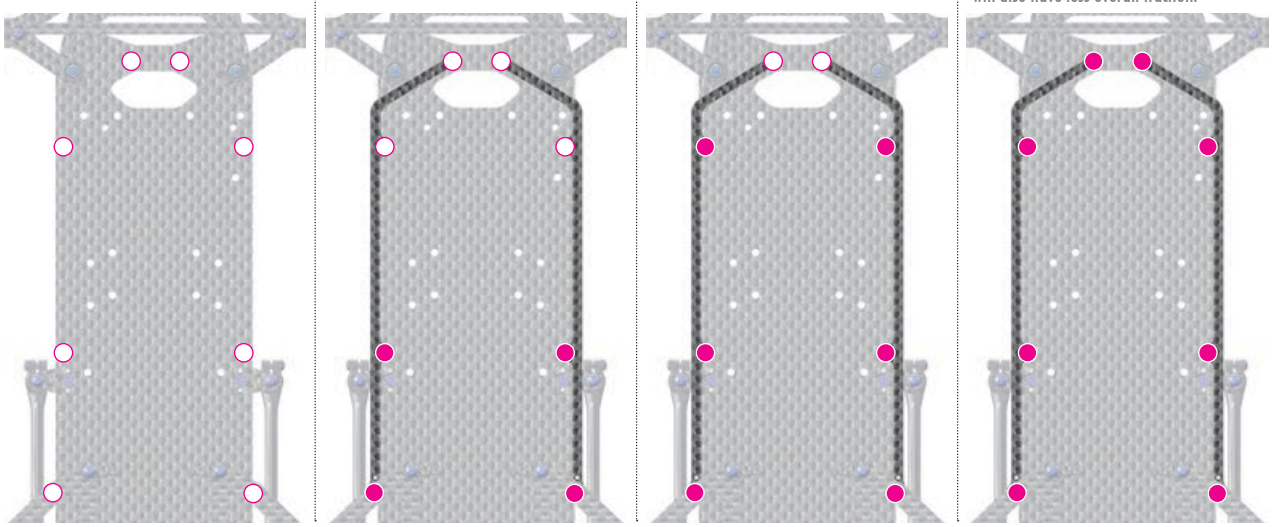
CHASSIS FLEX ADJUSTMENT

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
Braces installed, attached at middle-front, middle, and rear. A good compromise between mechanical traction, and steering response. A good option for higher traction conditions.

STIFF INITIAL SETTING
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

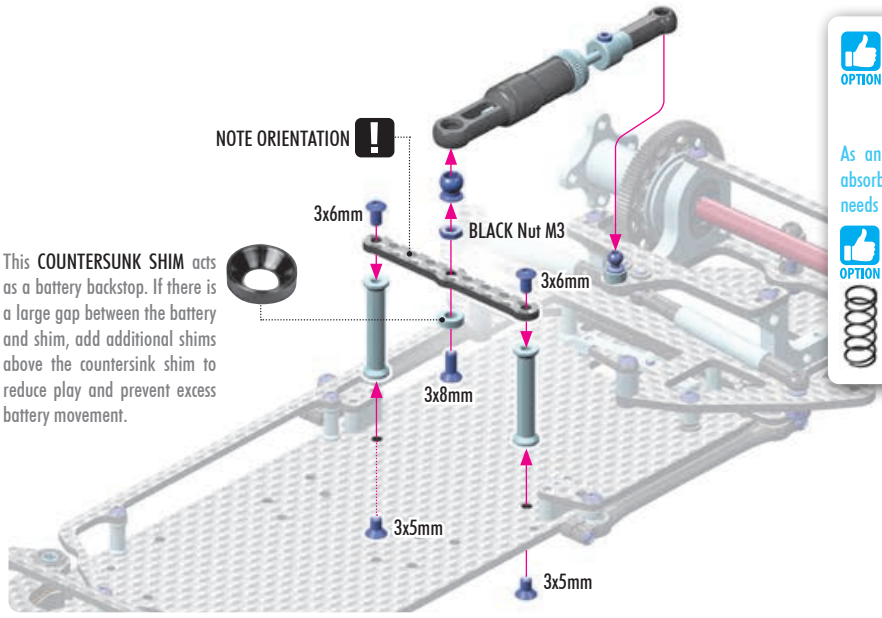
CARBON SIDE BRACES

2x 902306 SH M3x6

2x 903305 SFH M3x5

1x 903308 SFH M3x8

1x 960032 N M3



This **COUNTERSUNK SHIM** acts as a battery backstop. If there is a large gap between the battery and shim, add additional shims above the countersink shim to reduce play and prevent excess battery movement.

OPTION #378003 SHOCK ABSORBER SET

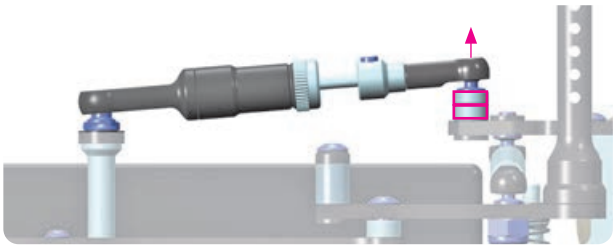
As an option, you may also use the #378003 shock absorber with spring. In this case, the rear bump spring needs to be removed.

OPTION

SHOCK SPRINGS			
#378093	C=1.8	GOLD	OPTION
#378094	C=2.1	BLACK	OPTION
#378097	C=2.8	BLACK 3 DOTS	OPTION
#378098	C=3.1	BLACK 4 DOTS	OPTION

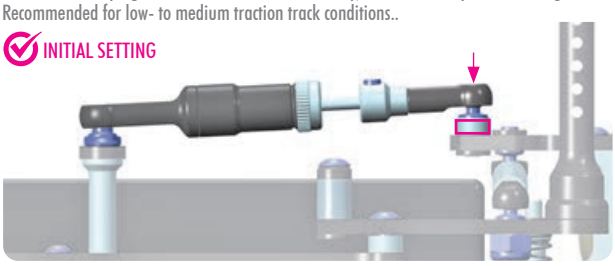
SHOCK ANGLE & POSITION

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.

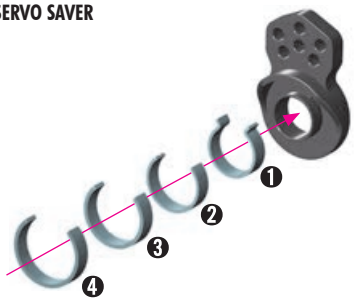


LESS SHOCK ANGLE
More shim in front, less shim in rear.
Makes the damping more linear. Increases stability, decreases on-power steering. Recommended for low- to medium traction track conditions..

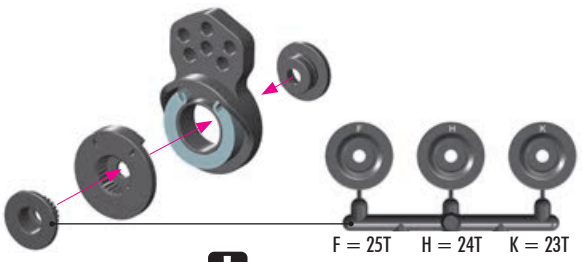
INITIAL SETTING



SERVO SAVER



ASSEMBLED VIEW



Use the adapter that matches the steering servo.

ACKERMANN SETTING

Use shims to set the required Ackermann setting.

DO NOT use for INITIAL SETTING

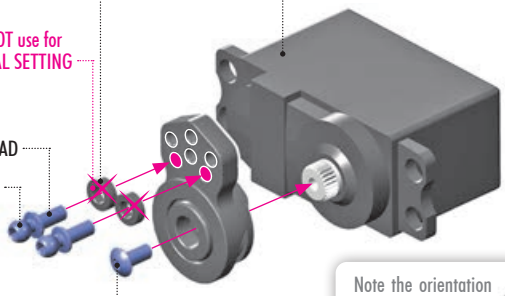
6mm THREAD

4.2mm Ball

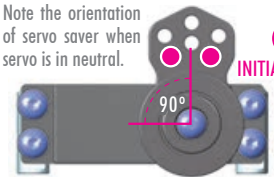
Servo Screw (NOT INCLUDED)

SERVO ALTERNATIVE (NOT INCLUDED)

- STANDARD size servo
- MID SIZE servo
- MICRO size servo



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



INITIAL SETTING

OPTION #293351 HUDY ALU ADJ. SERVO SAVER

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.

OPTION #293350 HUDY ALU FIXED SERVO SAVER

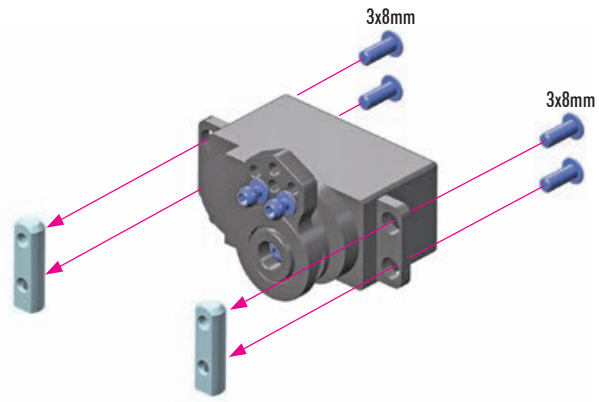
This aluminium servo saver eliminates the flex of the standard composite servo savers that is used, which improves rigidity and thus, the steering response of your car.

4x 902308 SH M3x8

2x 902305 SH M3x5

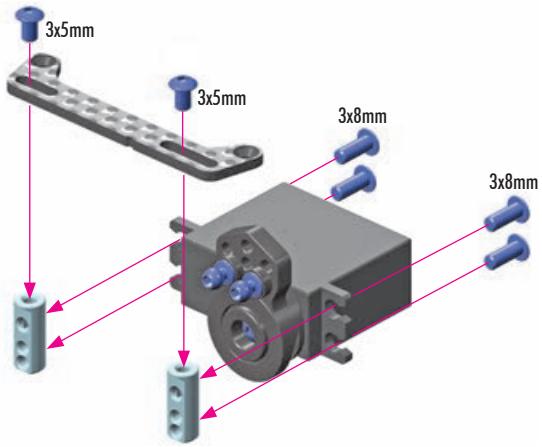
ALTERNATIVE 1 - STANDARD size servo

FIXED SERVO MOUNT



ALTERNATIVE 2 - MID SIZE or MICRO servo

FLOATING SERVO MOUNT

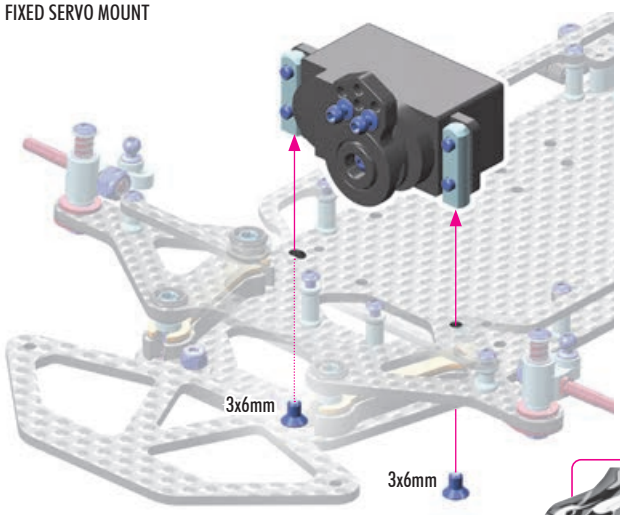


2x 903306 SFH M3x6

2x 903256 SFH M2.5x6

ALTERNATIVE 1 - STANDARD size servo

FIXED SERVO MOUNT



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

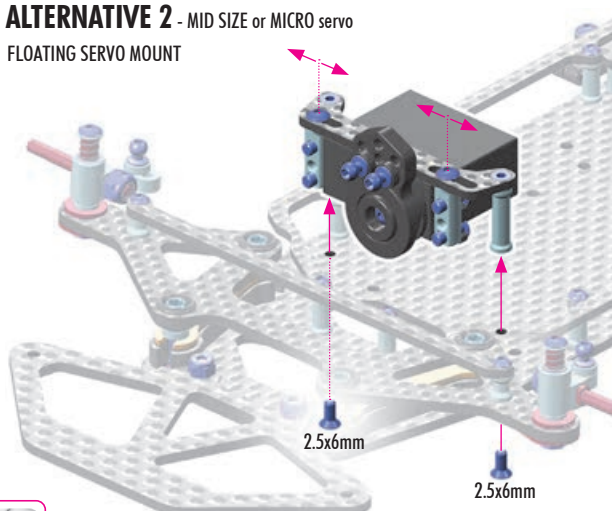
TIP

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

BOTTOM VIEW

ALTERNATIVE 2 - MID SIZE or MICRO servo

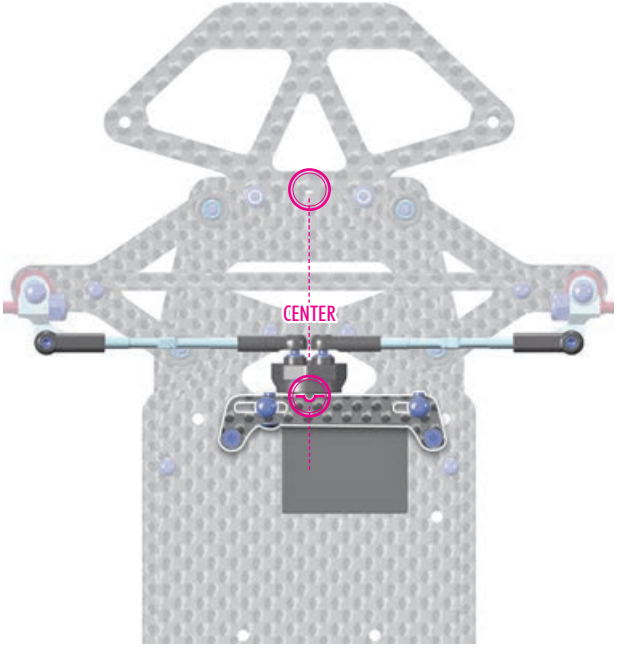
FLOATING SERVO MOUNT



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

TIP

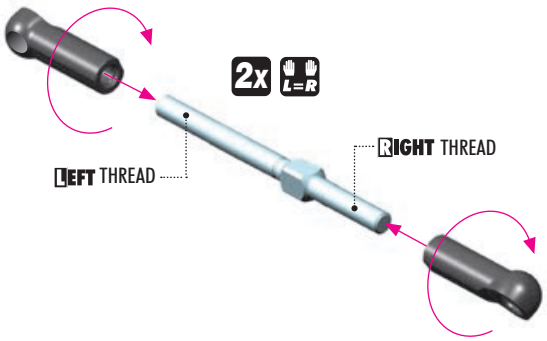
To better see the chassis centerline, there is a small mark on the chassis and on the carbon servo holder.



TOP VIEW

STEERING LINKS

X10



STEERING LINKS FOR **INNER HOLES** ON STEERING BLOCKS

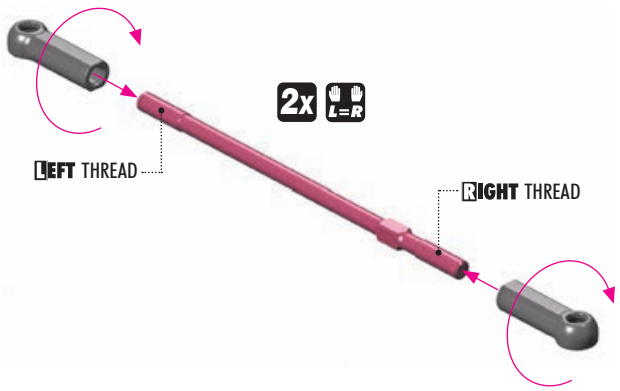
INITIAL SETTING

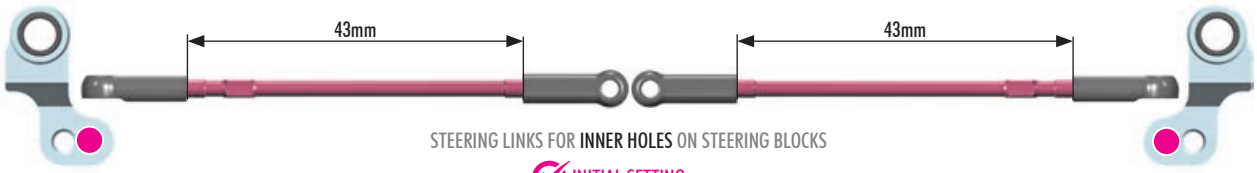
STEERING BLOCK — LEFT ..... RIGHT — STEERING BLOCK

STEERING LINKS FOR **OUTSIDE HOLES** ON STEERING BLOCKS

STEERING LINKS

XP10





STEERING LINKS FOR **INNER HOLES** ON STEERING BLOCKS

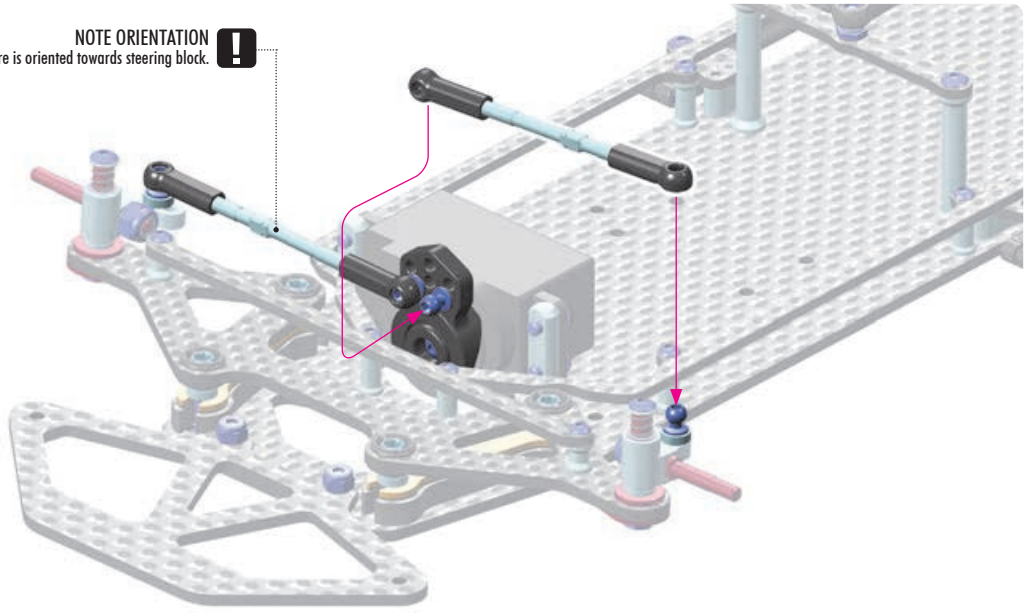
INITIAL SETTING

STEERING BLOCK — LEFT ..... RIGHT — STEERING BLOCK

STEERING LINKS FOR **OUTSIDE HOLES** ON STEERING BLOCKS

2x L=R

NOTE ORIENTATION
The square is oriented towards steering block.



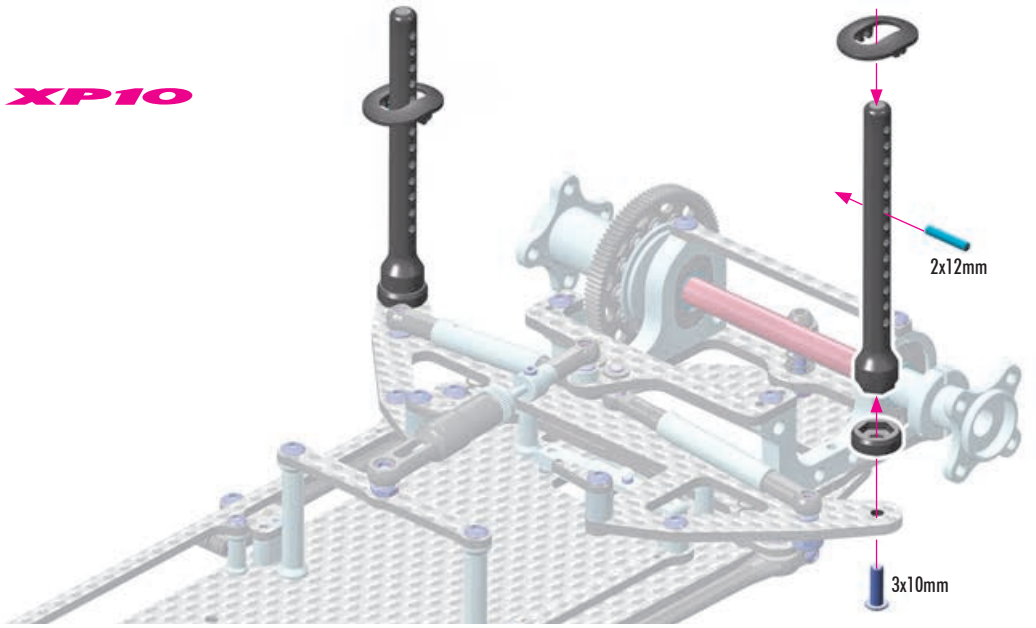
2x 902310
SH M3x10

2x 981212
P 2x12

2x L=R

REAR BODY POST

X10 & XP10

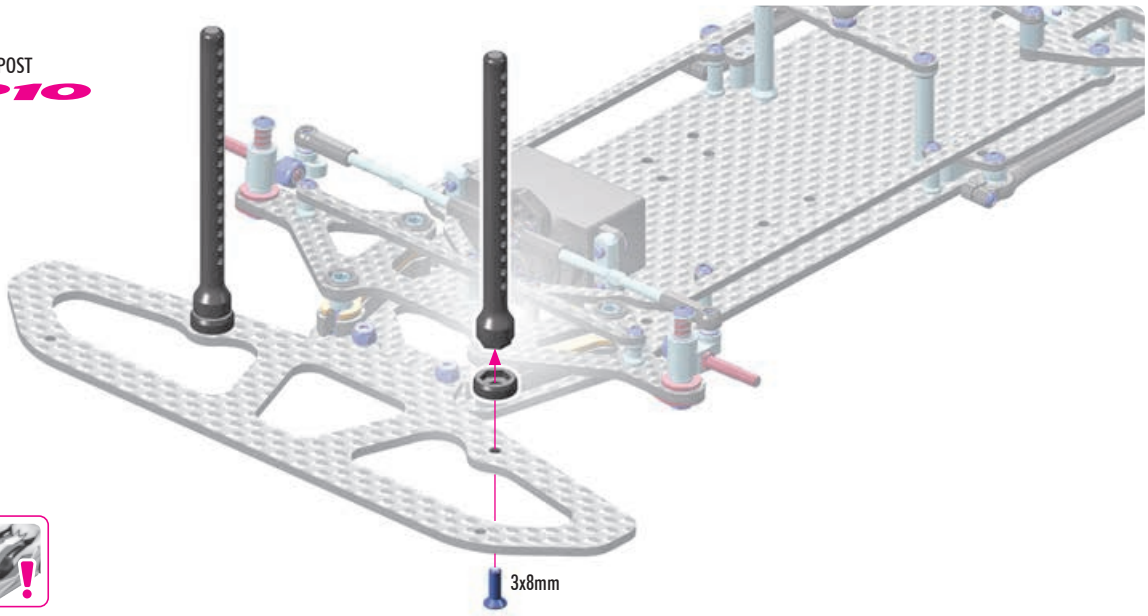


2x 903308
SFH M3x8

2x L=R

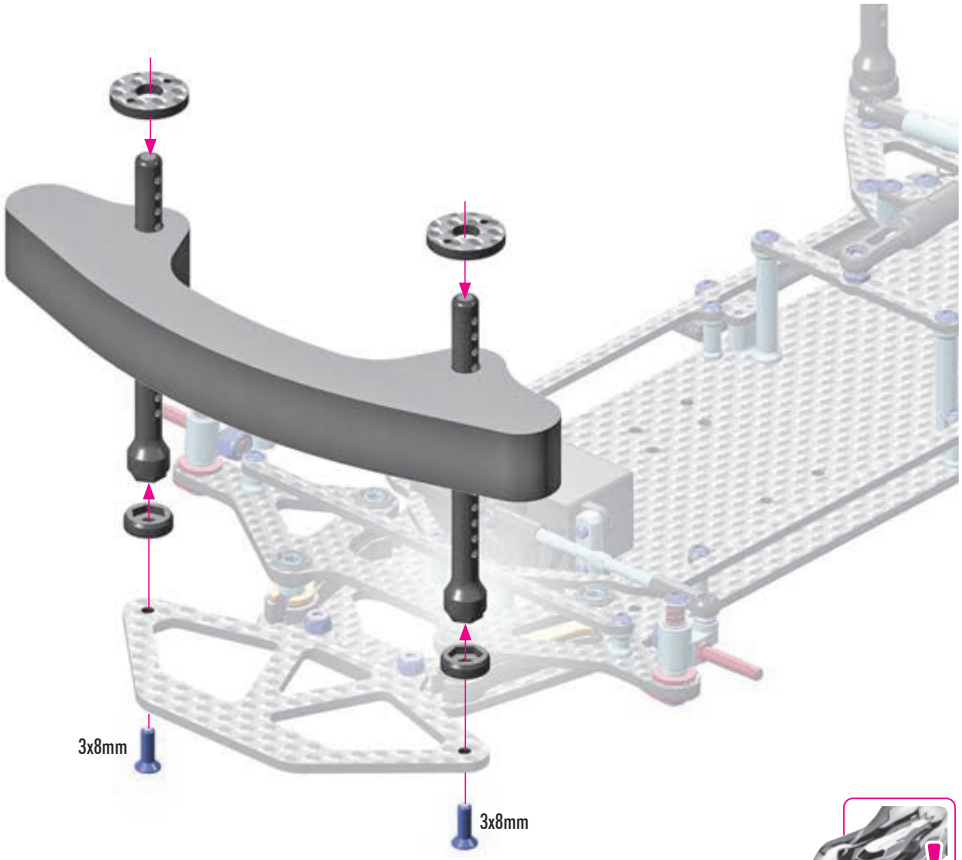
FRONT BODY POST

XP10



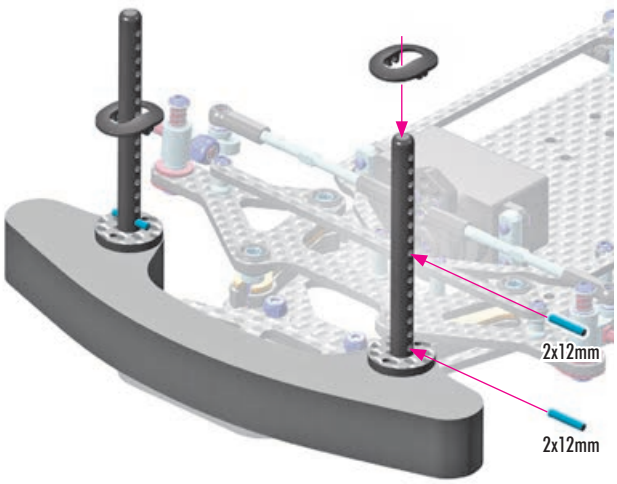
2x 903308
SFH M3x8

2x L=R
FRONT BODY POST
X10

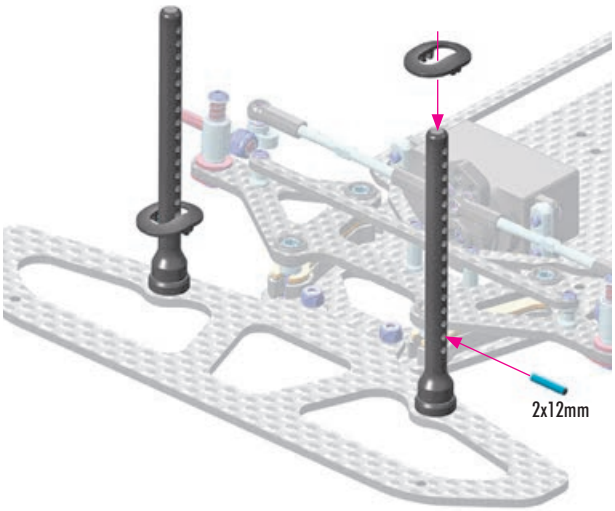


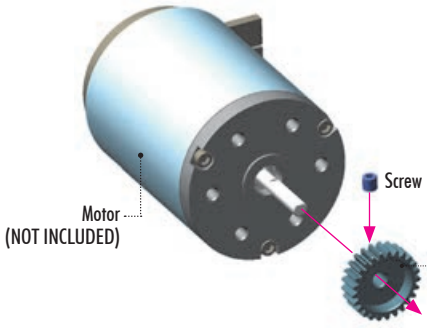
4x 981212
P 2x12

2x L=R
X10



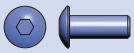
2x L=R
XP10



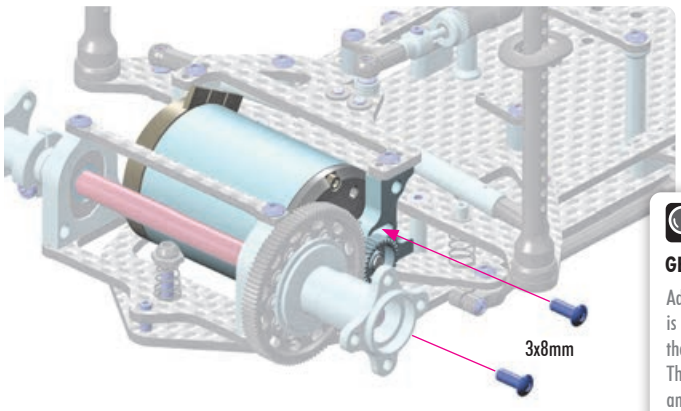


OPTION

ALU PINION GEARS		
#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
#294128	28T / 64P	OPTION
#305979	29T / 64P	OPTION
#294130	30T / 64P	OPTION
#294131	31T / 64P	OPTION
#305982	32T / 64P	OPTION
#294133	33T / 64P	OPTION
#305984	34T / 64P	OPTION
#305985	35T / 64P	OPTION
#294136	36T / 64P	OPTION
#294137	37T / 64P	OPTION
#294138	38T / 64P	OPTION
#294139	39T / 64P	OPTION
#294140	40T / 64P	OPTION
#294141	41T / 64P	OPTION
#294142	42T / 64P	OPTION
#294143	43T / 64P	OPTION
#294144	44T / 64P	OPTION
#294145	45T / 64P	OPTION
#305996	46T / 64P	OPTION
#294147	47T / 64P	OPTION
#294148	48T / 64P	OPTION
#294149	49T / 64P	OPTION
#294150	50T / 64P	OPTION
#294152	52T / 64P	OPTION
#294154	54T / 64P	OPTION
#294156	56T / 64P	OPTION
#294158	58T / 64P	OPTION
#294160	60T / 64P	OPTION

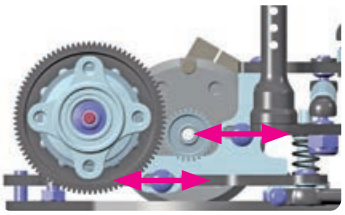


2x 902308 SH M3x8



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 free play.

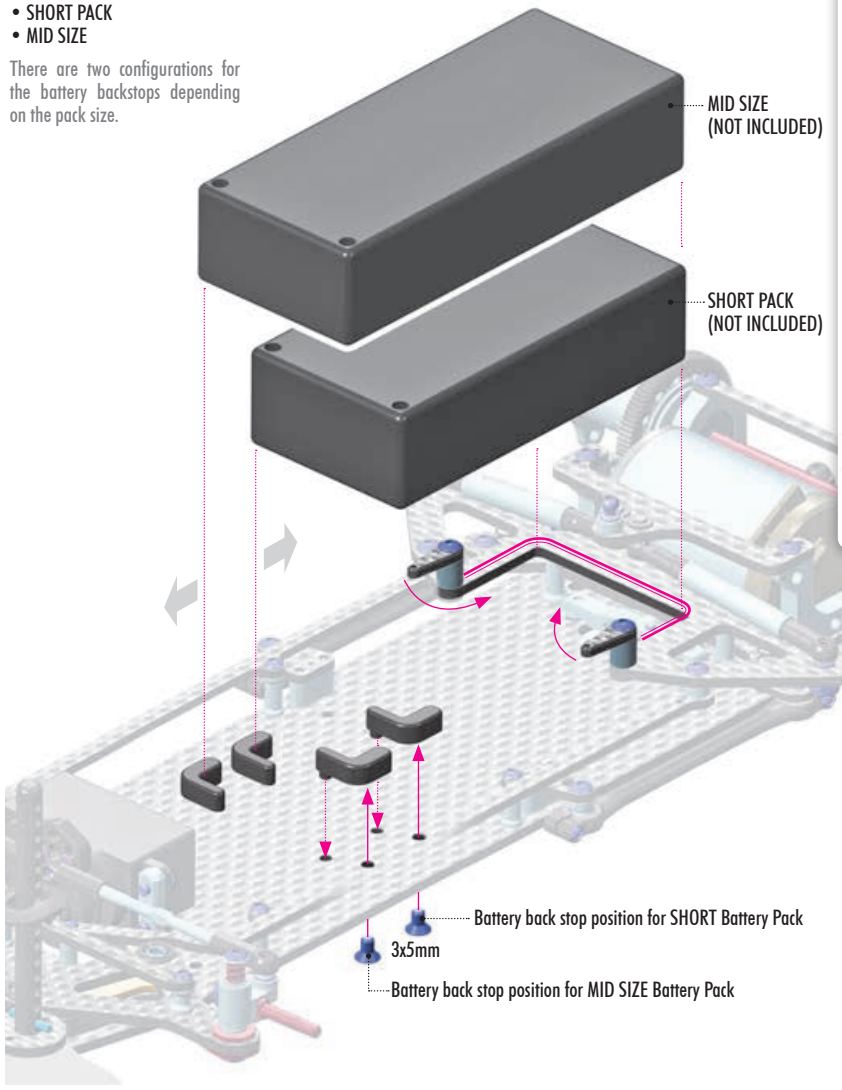


2x 903305 SFH M3x5

ALTERNATIVE BATTERY TYPE:

- SHORT PACK
- MID SIZE

There are two configurations for the battery backstops depending on the pack size.

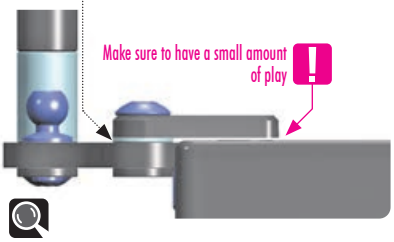


BATTERY BACKSTOP

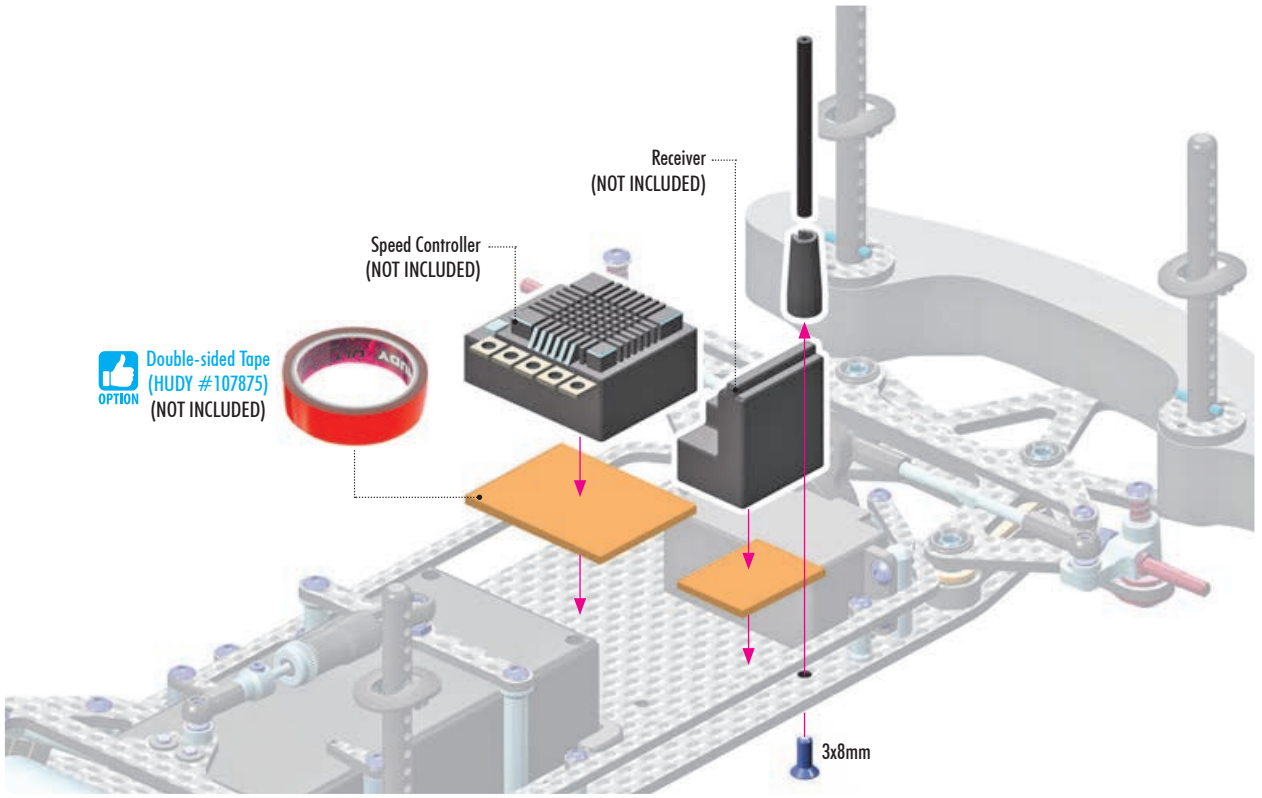
The adjustable battery backstop system secures the battery in the car in a tweak-free, non-fixed manner to help improve traction and makes it more stable and easier to drive.

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.



1x 903308
SFH M3x8

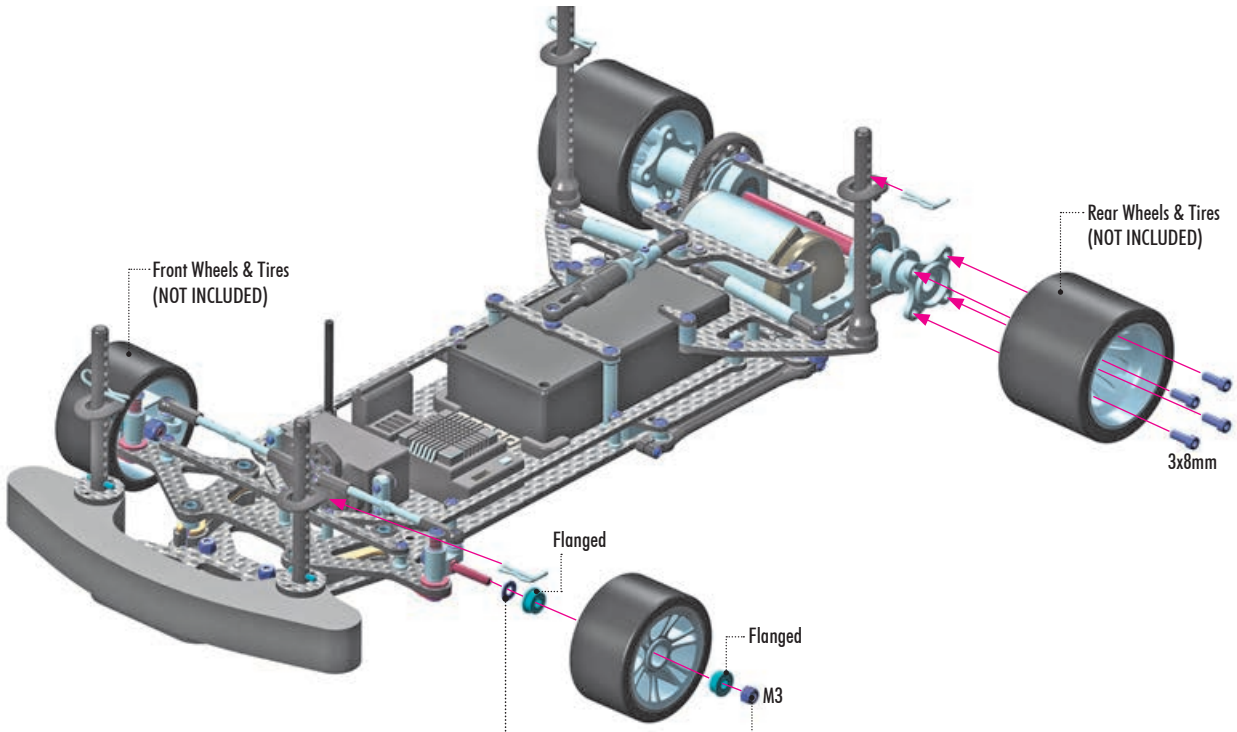


2x 372290
SHIM 3.2x4.8x0.5

8x 375390
ALU SCH M3x8

4x 951851
BB 1/8"x5/16"x9/64"

2x 960030
N M3



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.

Gently tighten the wheel nuts so the wheel turns freely, but without excessive axial play.

www.teamxray.com

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MADE IN EUROPE SLOVAKIA

/TeamXray /TeamXray /TeamXray /XrayRacing /+TeamXrayRC