

XRAY T4

1/10 LUXURY
ELECTRIC TOURING CAR



DESIGNED IN
EUROPE

**INSTRUCTION
MANUAL**

XRAY

BEFORE YOU START

The T4 is a high-competition, high-quality, 1/10-scale touring 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 T4, 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. Read carefully and fully understand the instructions before beginning assembly.

Make sure you review this entire manual, the included set-up book, and examine all details carefully. If for some reason you decide The T4 is not what you wanted or expected, do not continue any further. Your hobby dealer cannot accept your T4 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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XRAY USA

RCAmerica, 2970 Blystone Lane, Suite 109
Dallas, Texas 75220
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Phone: (800) 519-7221 * (214) 744-2400
Fax: (214) 744-2401
E-mail: xray@rcamerica.com

Failure to follow these instructions will be considered as abuse and/or neglect.

SAFETY PRECAUTIONS

Contains:

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

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

CAUTION: CANCER HAZARD

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

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

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

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.

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

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

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.

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.

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 additions that may arise from the use of this product.

All rights reserved.

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.

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SYMBOLS USED

Part bags used

Assemble in the specified order

Assemble left and right sides the same way

Pay attention here

Assemble as many times as specified (here twice)

Apply thread lock

Apply CA glue

Apply oil

Apply grease

Use pliers

Ensure smooth non-binding movement

Tighten screw gently

CORRECT

Overtightened

WRONG

The threads are stripped.

Follow Set-Up Book

TOOLS REQUIRED

HUDY TOOLS: Allen: 1.5mm, 2.0mm, 3.0mm
Socket: 5.5mm, 7.0mm

Combination Pliers (HUDY #189020)

Side Cutters (HUDY #189010)

Hobby Knife

Scissors (HUDY #188990)

Turnbuckle Wrench 4mm (HUDY #181040)

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

EQUIPMENT INCLUDED

XRAY Premium Silicone Oil 350cSt (#359235)
Oil 700cSt (#359270)

Graphite Grease (HUDY #106210)

NOT INCLUDED

To ensure that you always have access to the most up-to-date version of the XRAY Set-up Book, XRAY will now be offering only the digital online version at our Web site at www.teamxray.com. By offering this online version instead of including a hardcopy printed version in kits, you will always be assured of having the most current updated version.

SAMPLE OF OPTIONAL PARTS

#30XXXX	OPTION 1
#30XXXX	OPTION 2
#30XXXX	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.

EQUIPMENT REQUIRED

Transmitter

Receiver

Steering Servo

Electric Motor & Pinion Gear and Setscrew

Bearing Oil (HUDY #106230)

Speed Controller

190mm Bodysell

LiPo Battery

Lexan Paint™

Battery Charger

Fibre Tape (HUDY #107870)
Double-sided Tape

Wheels & Tires & Inserts

COLOR INDICATIONS

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

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

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

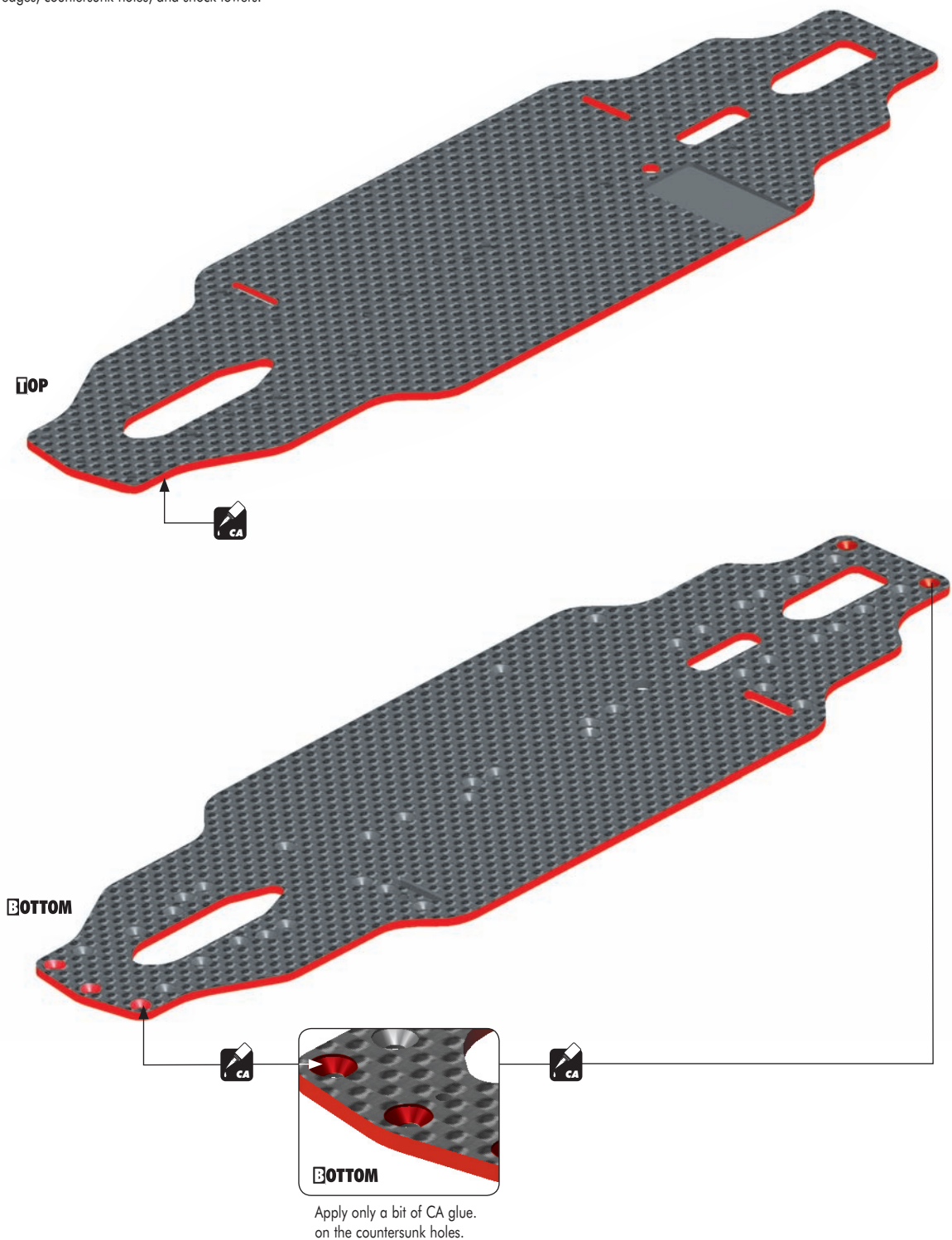
STYLE B - indicates parts that are included in the box.

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

CHASSIS PREPARATION

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

Do this for: chassis edges, countersunk holes, and shock towers.



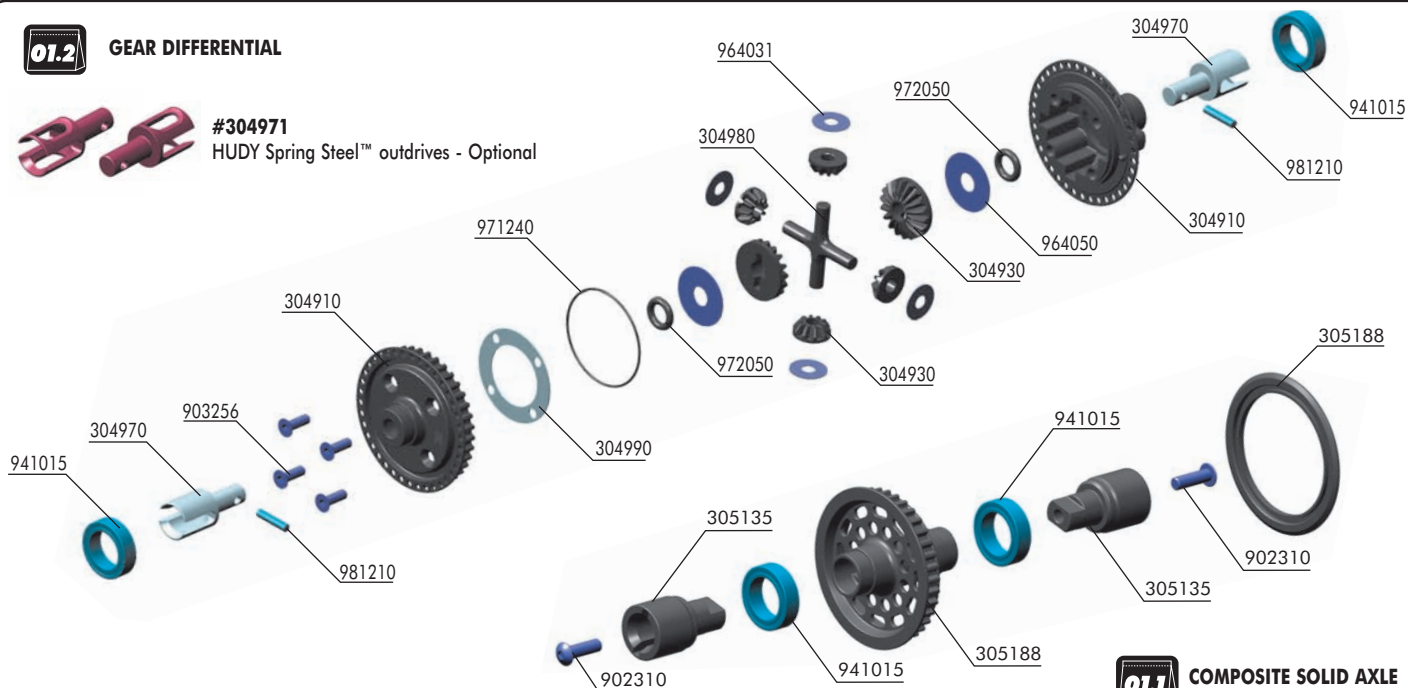
1. GEAR DIFFERENTIAL & FRONT SOLID AXLE

01.2

GEAR DIFFERENTIAL



#304971
HUDY Spring Steel™ outdrives - Optional



#305136
ALU SOLID DRIVESHAFT ADAPTERS - Optional



#305137
STEEL SOLID AXLE DRIVESHAFT ADAPTERS - Optional

01.1

COMPOSITE SOLID AXLE

BAG

01.1

01.2

30 4900 XRAY GEAR DIFFERENTIAL - SET
30 4910 COMPOSITE GEAR DIFF CASE & COVER
30 4930 COMPOSITE GEAR DIFF BEVEL & SATELLITE GEARS (2+4)
30 4970 ALU GEAR DIFF OUTDRIVE ADAPTER - 7075 T6 (2)
30 4980 COMPOSITE GEAR DIFF CROSS PIN
30 4990 DIFF GASKET (4)
30 5105 XRAY MULTI-DIFF T3/T4 LiPo (OPTION)
30 5135 COMPOSITE SOLID AXLE DRIVESHAFT ADAPTERS (2)
30 5188 COMPOSITE SOLID AXLE 38T - SET

90 2310 HEX SCREW SH M3x10 (10)
90 3256 HEX SCREW SFH M2.5x6 (10)
94 1015 HIGH-SPEED BALL-BEARING 10x15x4 RUBBER SEALED (2)
96 4031 WASHER S 3.5x10x0.2 (10)
96 4050 WASHER S 5x15x0.3 (10)
97 1240 SILICONE O-RING 24x0.7 (10)
97 2050 SILICONE O-RING 5x2 (10)
98 1210 PIN 2x10 (10)



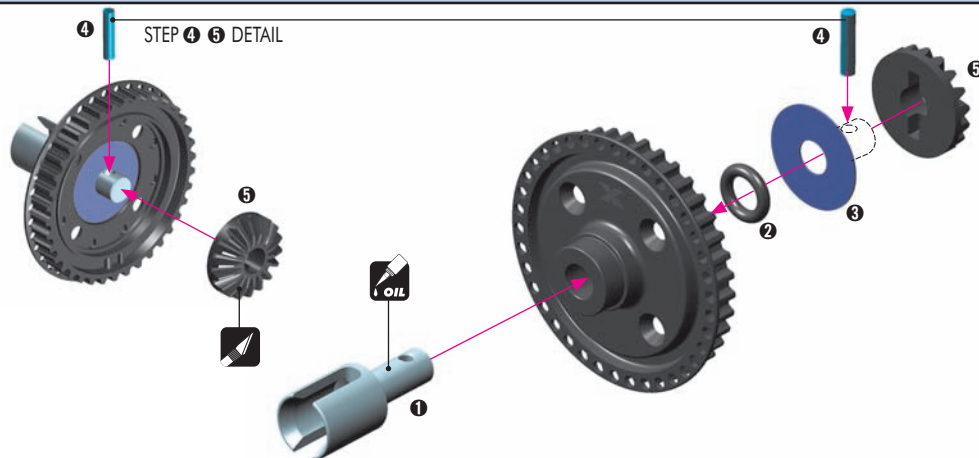
964050
S 5x15x0.3



972050
O 5x2



981210
P 2x10



964050
S 5x15x0.3

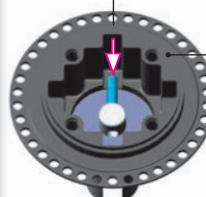
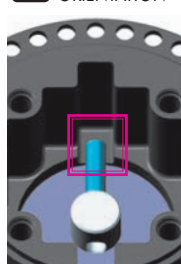


972050
O 5x2



981210
P 2x10

NOTE ORIENTATION



STEP 4 DETAIL

Use tweezers to insert pin.

4

5

3

2

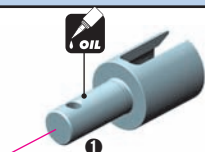
1

5

3

2

1

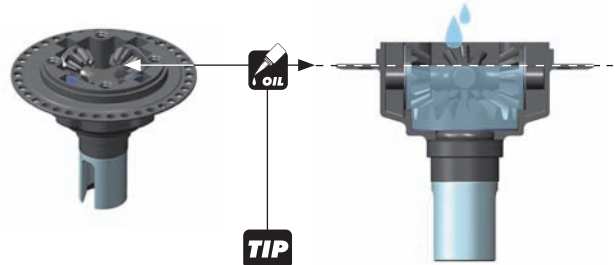
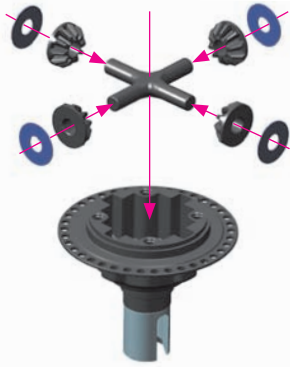


CUTAWAY VIEW



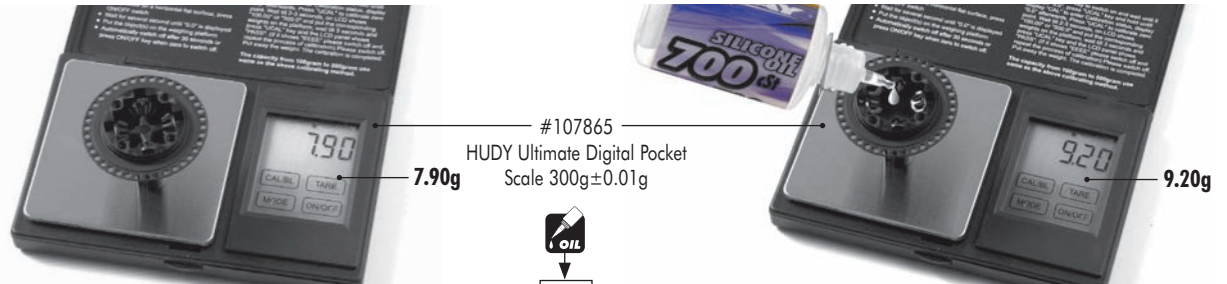
1. GEAR DIFFERENTIAL & FRONT SOLID AXLE

964031
S 3.5x10x0.2



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

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



❶ Put the diff (without oil) on the scale and check the weight (approximately 7.90g)

$$7.9g + 1.3g = 9.2g$$

❷ Slowly pour oil into the diff and watch the weight. Add 1.3g of oil into the diff. The approximate weight of the diff including oil is 9.20g.

TIP

TIPS FOR DIFFERENTIALS

TIP

LOW-TRACTION

600cst (HUDY #106360)
700cst (HUDY #106370)
800cst (HUDY #106380)

NOTE: softer oil increases rear traction, harder oil increases on-power steering.

HIGH-TRACTION

900cst (HUDY #106390)
1000cst (HUDY #106410)
2000cst (HUDY #106420)

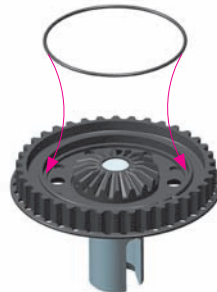
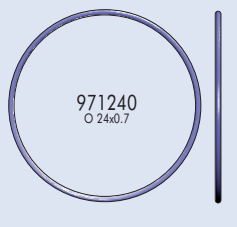
TIPS FOR FRONT DIFFERENTIAL

To increase on-power steering and cornering speed, the gear diff can also be used in the front. Note: If you use the gear diff in the front, we recommend using optional #304971 HUDY Spring Steel™ outrives because the stress on the outrives in the front is much higher than in the rear.

USE THESE OILS FOR FRONT DIFFERENTIAL

1,000,000 cst (HUDY #106692)
500,000 cst (HUDY #106650)

To make the front differential tighter, you can use cleaning gum instead of oil. IMPORTANT! Using cleaning gum instead of oil in the gear differential can lead to gear breakage because the gears are working under dry conditions.



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

903256
SFH M2.5x6

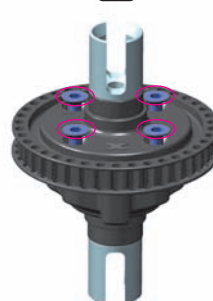
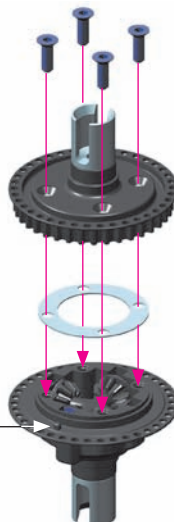
BOTTOM DETAIL



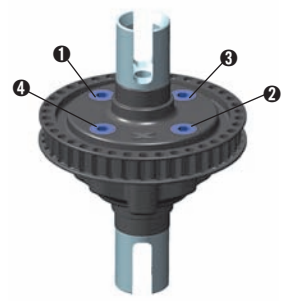
NOTE ORIENTATION



DETAIL

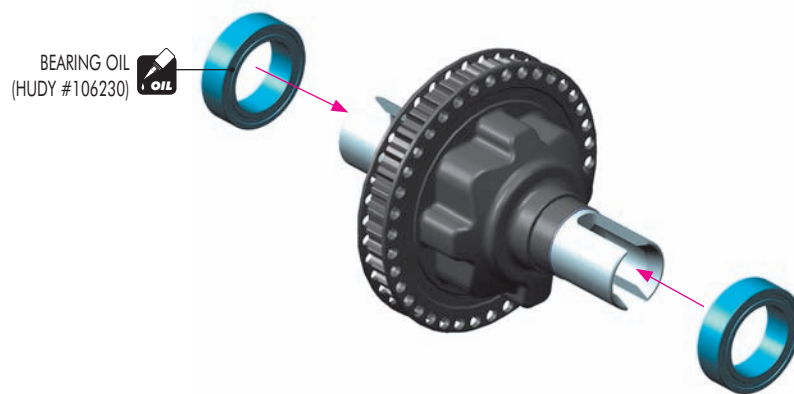


Tighten the screws equally but do NOT tighten them completely.

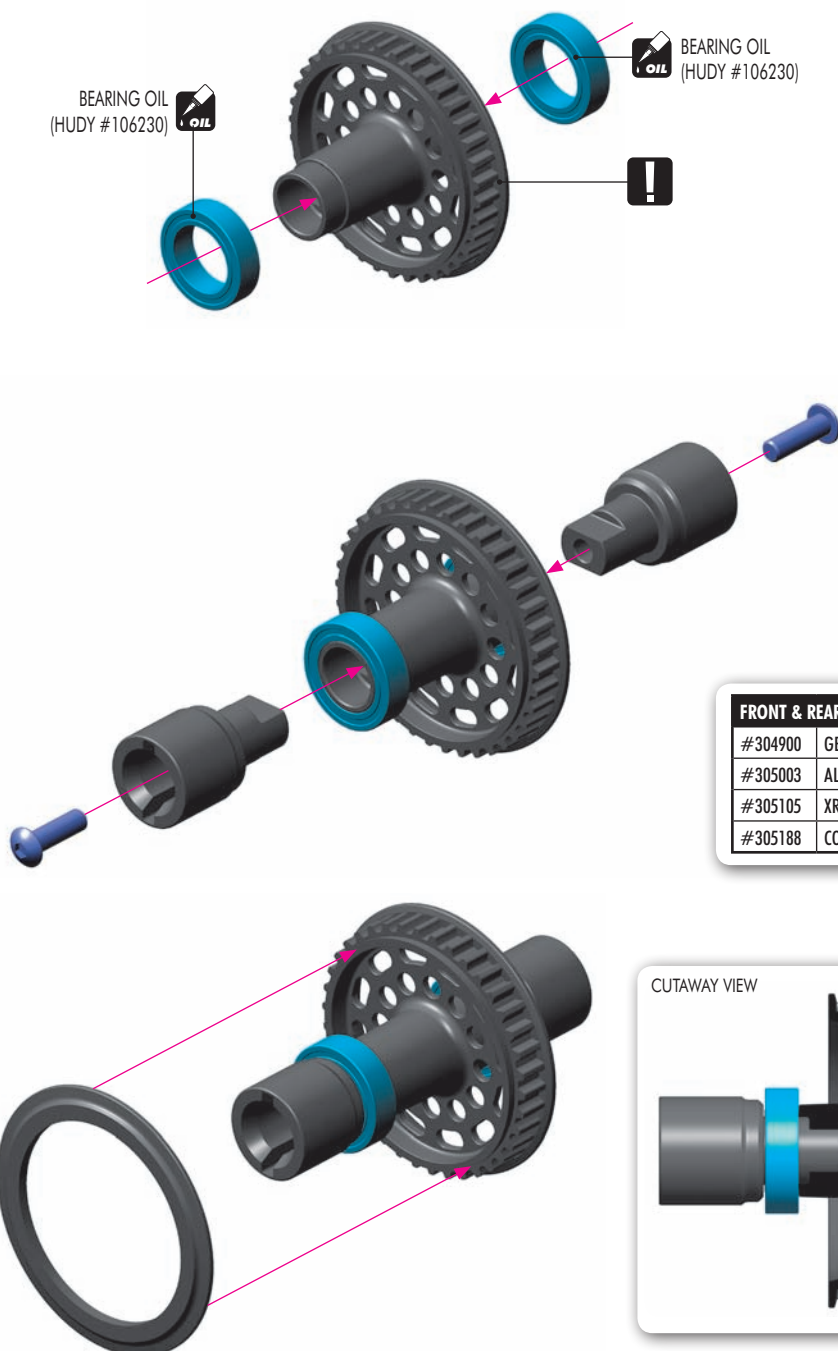


Finish tightening in this order.

1. GEAR DIFFERENTIAL & FRONT SOLID AXLE



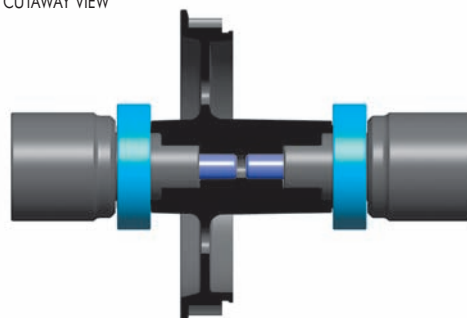
COMPOSITE FRONT SOLID AXLE



FRONT & REAR AXLES

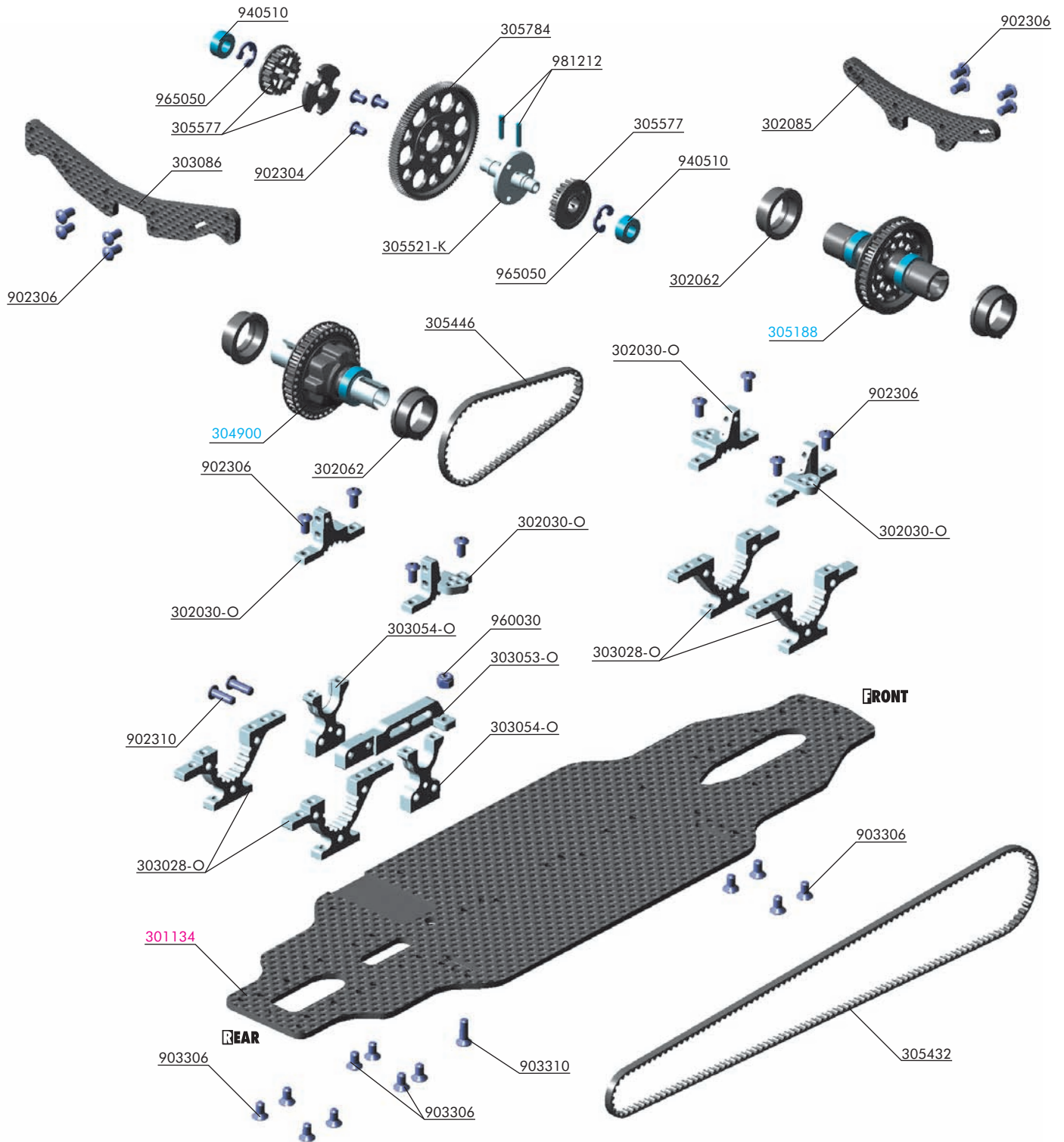
#304900	GEAR DIFFERENTIAL
#305003	ALU DIFF 34T + 38T PULLEY
#305105	XRAY ALU MULTI-DIFF™
#305188	COMPOSITE SOLID AXLE 38T PULLEY

CUTAWAY VIEW



FRONT & REAR AXLES

2. CENTRAL TRANSMISSION



BAG

02


30 2030-O T4 ALU UPPER CLAMP WITH ADJ. ROLL-CENTER (L+R) - ORANGE
 30 2062 T4 COMPOSITE ADJUSTMENT BALL-BEARING HUB (4)
 30 2085 T4 SHOCK TOWER FRONT 3.0MM GRAPHITE
 30 3028-O T4 ALU FRONT/REAR LOWER ADJUSTMENT BULKHEAD - ORANGE
 30 3053-O T4 ALU MOTOR MOUNT - ORANGE
 30 3054-O T4 ALU LAYSHAFT BULKHEAD L/R - ORANGE
 30 3086 T4 SHOCK TOWER REAR 3.0MM GRAPHITE
 30 5432 HIGH-PERFORMANCE KEVLAR DRIVE BELT FRONT 3 x 513 MM
 30 5446 HIGH-PERFORMANCE KEVLAR DRIVE BELT REAR 3 x 189 MM
 30 5521-K ALU SOLID LAYSHAFT - BLACK
 30 5577 COMPOSITE FIXED PULLEY 20T (2)
 30 5778 OFFSET SPUR GEAR 78T / 48 (OPTION)
 30 5781 OFFSET SPUR GEAR 81T / 48 (OPTION)
 30 5784 SPUR GEAR 84T / 48
 30 5862 OFFSET SPUR GEAR 92T / 64 (OPTION)
 30 5866 OFFSET SPUR GEAR 96T / 64 (OPTION)
 30 5870 OFFSET SPUR GEAR 100T / 64 (OPTION)
 30 5874 OFFSET SPUR GEAR 104T / 64 (OPTION)
 30 5876 OFFSET SPUR GEAR 106T / 64 (OPTION)
 30 5878 OFFSET SPUR GEAR 108T / 64 (OPTION)
 30 5880 OFFSET SPUR GEAR 110T / 64 (OPTION)
 30 5882 OFFSET SPUR GEAR 112T / 64 (OPTION)
 30 5884 OFFSET SPUR GEAR 114T / 64 (OPTION)

90 2304 HEX SCREW SH M3x4 - STAINLESS (10)
 90 2306 HEX SCREW SH M3x6 (10)
 90 2310 HEX SCREW SH M3x10 (10)
 90 3306 HEX SCREW SFH M3x6 (10)
 90 3310 HEX SCREW SFH M3x10 (10)
 94 0510 HIGH-SPEED BALL-BEARING 5x10x4 RUBBER SEALED (2)
 96 0030 NUT M3 (10)
 96 5050 E-CLIP 5 (10)
 98 1212 PIN 2x12 (10)


30 4900 XRAY GEAR DIFFERENTIAL - SET
 30 5188 COMPOSITE SOLID AXLE 38T - SET

30 1134 T4 CHASSIS 2.2MM GRAPHITE

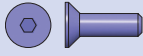
2. CENTRAL TRANSMISSION




902310
SH M3x10



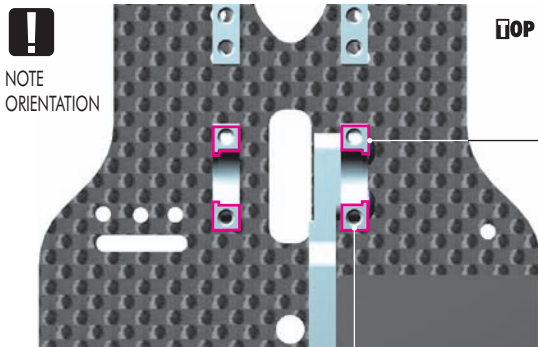
903306
SFH M3x6



903310
SFH M3x10

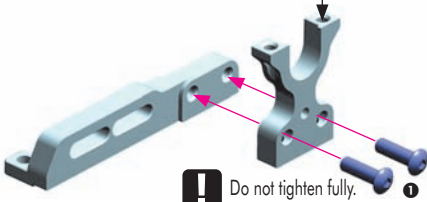


960030
N M3x10



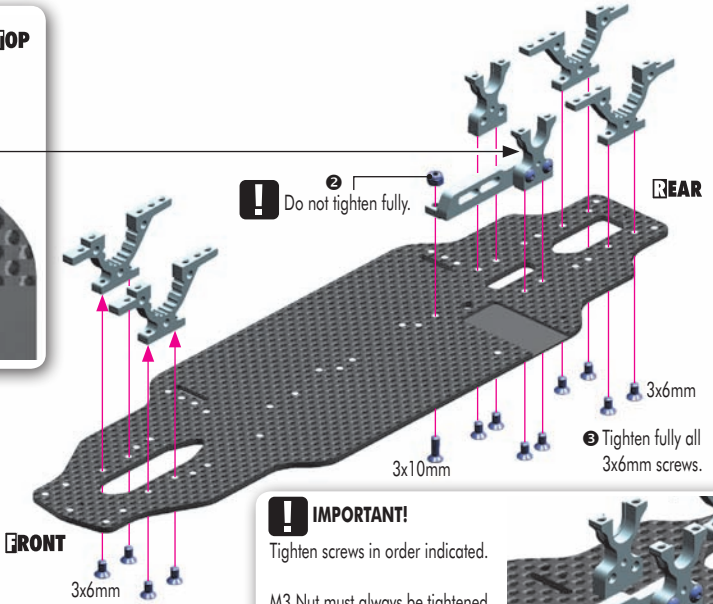
TOP

NOTE ORIENTATION



FRONT

Do not tighten fully.



REAR

Do not tighten fully.

3x10mm


3x6mm

Tighten fully all 3x6mm screws.


IMPORTANT!

Tighten screws in order indicated.

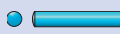
M3 Nut must always be tightened fully. When tightening the nut, use either pliers or 5.5mm socket tool.



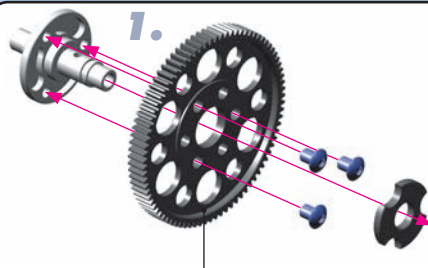
902304
SH M3x4



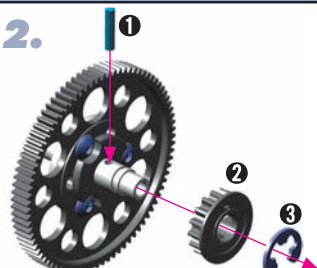
965050
CS



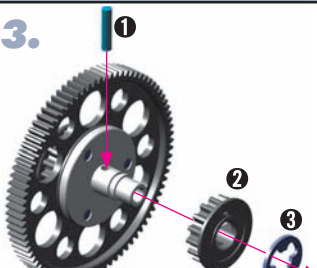
981212
P 2x12




1.



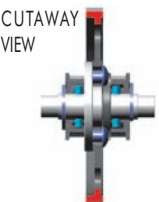
2.



3.




NOTE ORIENTATION
Only when using XRAY
OFFSET spur gears.



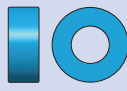
CUTAWAY
VIEW

SPUR GEARS 48P	
#305778	OFFSET SPUR GEAR 78T / 48P
#305781	OFFSET SPUR GEAR 81T / 48P
#305784	SPUR GEAR 84T / 48P

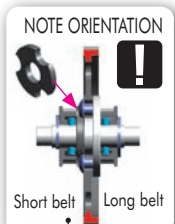
SPUR GEARS 64P	
#305862	OFFSET SPUR GEAR 92T / 64P
#305866	OFFSET SPUR GEAR 96T / 64P
#305870	OFFSET SPUR GEAR 100T / 64P
#305874	OFFSET SPUR GEAR 104T / 64P
#305876	OFFSET SPUR GEAR 106T / 64P
#305878	OFFSET SPUR GEAR 108T / 64P
#305880	OFFSET SPUR GEAR 110T / 64P
#305882	OFFSET SPUR GEAR 112T / 64P
#305884	OFFSET SPUR GEAR 114T / 64P



GEARING ADJUSTMENT

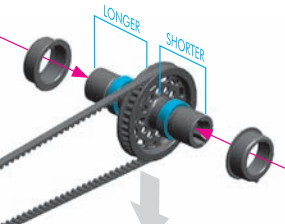


940510
BB 5x10x4

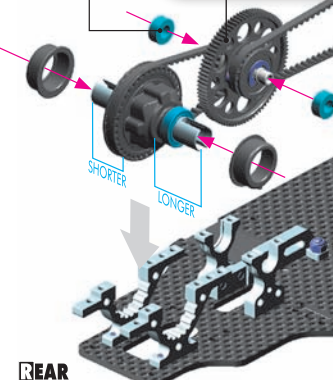


NOTE ORIENTATION

Short belt Long belt

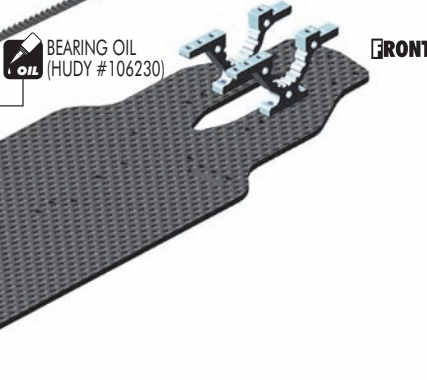


LONGER SHORTER



BEARING OIL (HUDY #106230)

SHORTER LONGER



BEARING OIL (HUDY #106230)

FRONT

REAR

2. CENTRAL TRANSMISSION

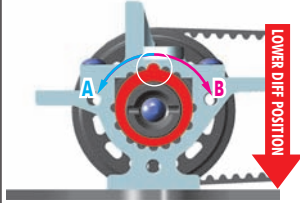
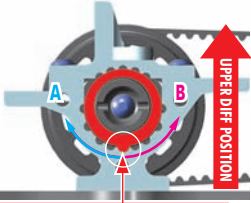


FRONT BELT TENSION ADJUSTMENT

Front diff upper position provides more steering but provides less front traction. Recommended for medium - high grip tracks and technical tracks.

Front diff low position provides more front traction but makes the car more push on power. Recommended for low traction track.

FRONT



INITIAL POSITION

PLACE TAB IN THIS BOTTOM NOTCH

TO LOOSEN FRONT BELT: Rotate both front nylon hubs in arrow direction **A**

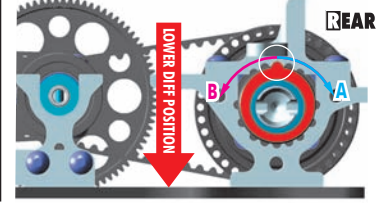
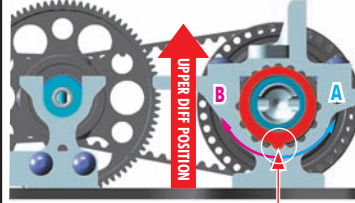
TO TIGHTEN FRONT BELT: Rotate both front nylon hubs in arrow direction **B**



REAR BELT TENSION ADJUSTMENT

Rear diff upper position provides more on-power steering but makes the rear slightly more loose. Recommended for medium - high traction tracks.

Rear diff lower position provides more rear traction, mainly on power traction and makes the car more stable in the chicanes, but makes the car push more on power. Recommended for low - medium traction.



INITIAL POSITION

PLACE TAB IN THIS BOTTOM NOTCH

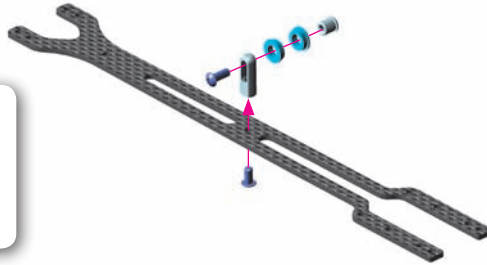
TO LOOSEN REAR BELT: Rotate both rear nylon hubs in arrow direction **A**

TO TIGHTEN REAR BELT: Rotate both rear nylon hubs in arrow direction **B**

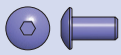
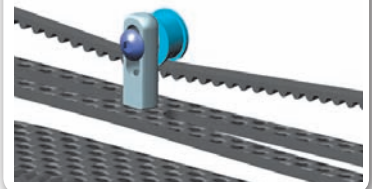


OPTIONAL:

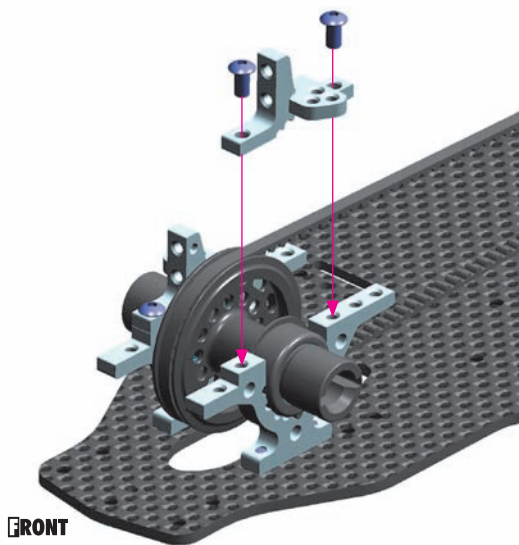
#303071 Belt Tensioner may be used when the front belt becomes worn and loose. Belt tensioner is NOT included in the kit and must be purchased separately.



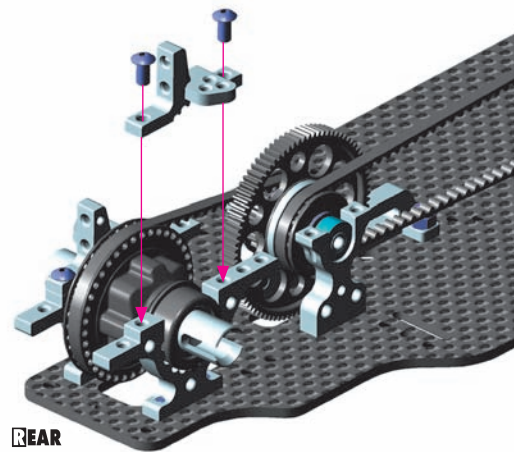
DETAIL



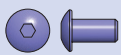
902306
SH M3x6



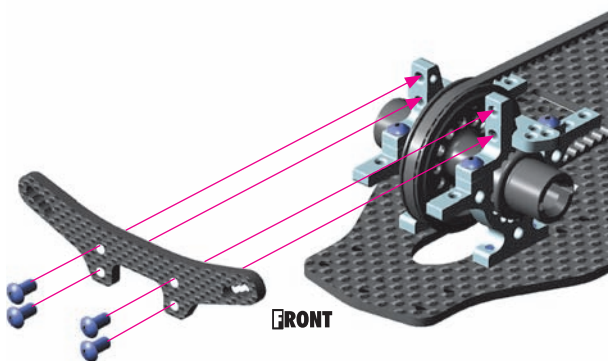
FRONT



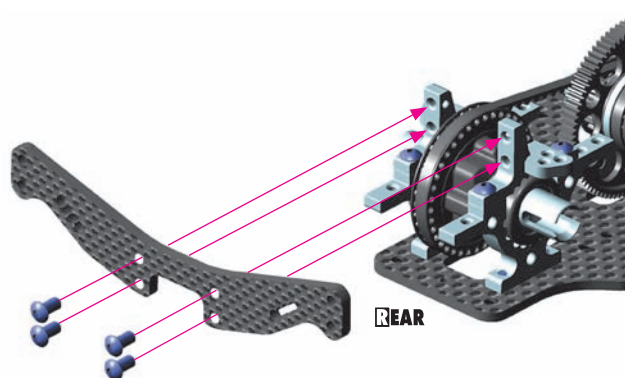
REAR



902306
SH M3x6

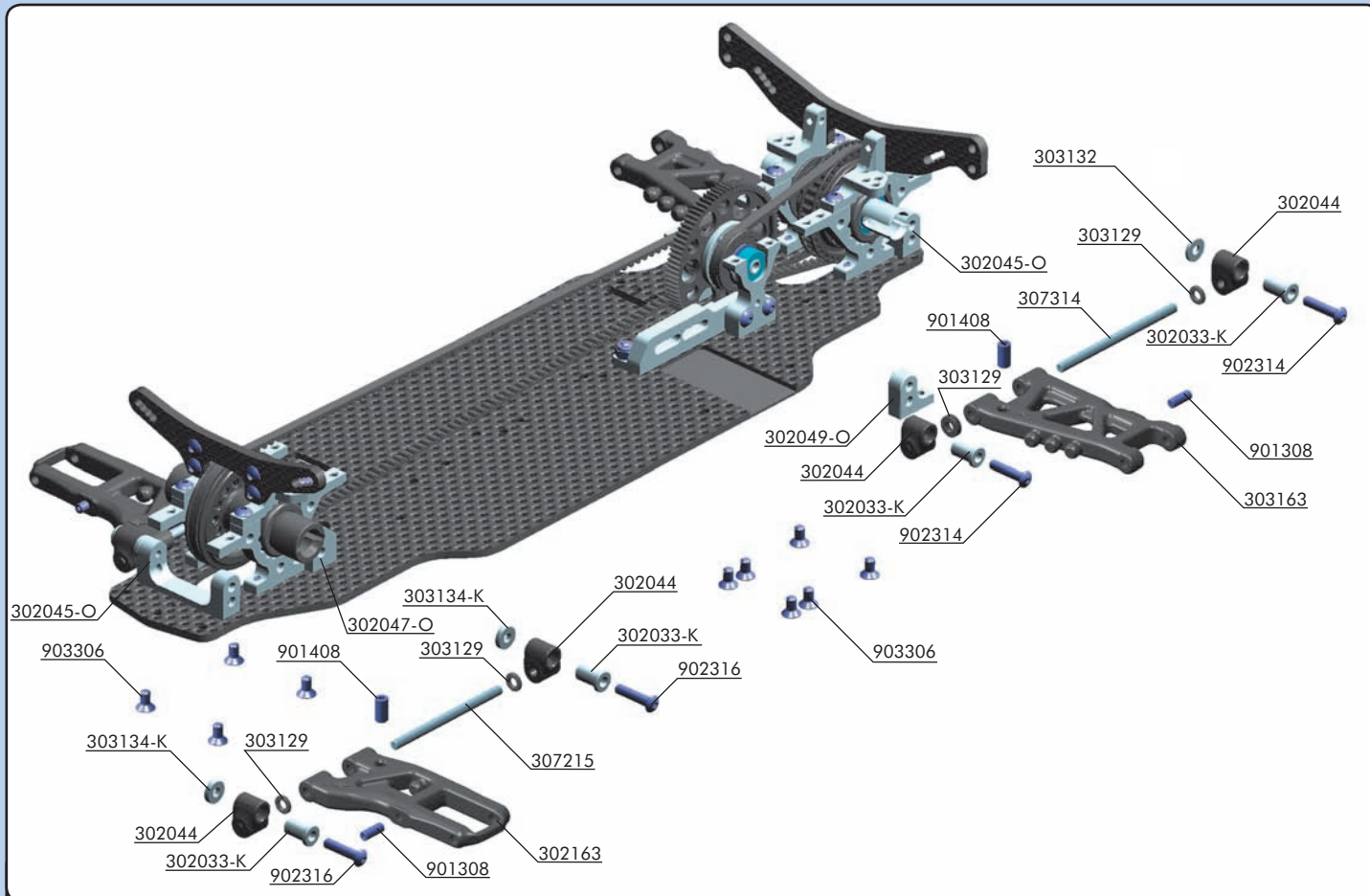


FRONT



REAR

3. FRONT & REAR SUSPENSION



BAG

03

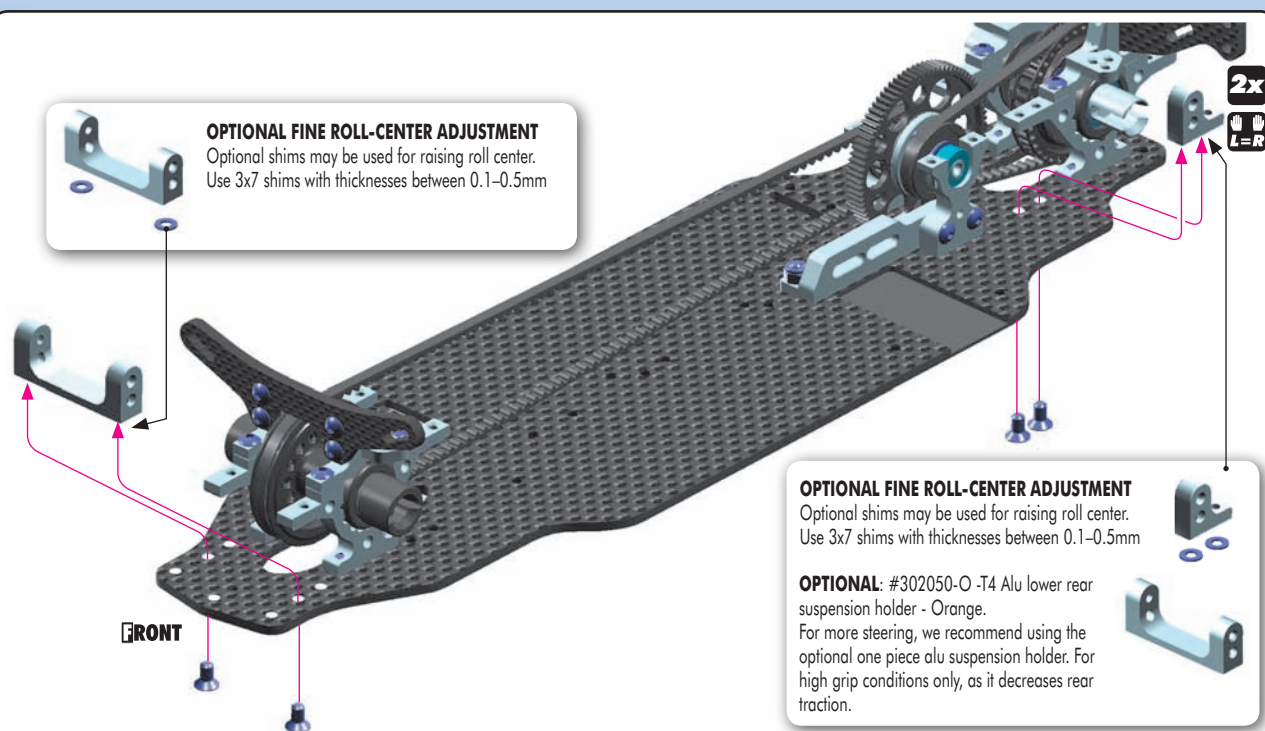
- 30 2033-K ALU NUT FOR SUSPENSION HOLDER - BLACK (2)
- 30 2044 LOWER SUSPENSION HOLDERS (2+2+2)
- 30 2045-O T3 ALU LOWER SUSPENSION BLOCK - ORANGE
- 30 2047-O T3 ALU LOWER FRONT SUSPENSION 1-PIECE HOLDER - ORANGE - V2
- 30 2049-O T4 ALU LOWER SUSPENSION HOLDER - ORANGE
- 30 2163 FRONT SUSPENSION ARM - HARD - 1-HOLE (OPTION)
- 30 2164 FRONT SUSPENSION ARM - EXTRA-HARD - 1-HOLE (OPTION)
- 30 2165 FRONT SUSPENSION ARM - HARD - 2-HOLE (OPTION)
- 30 2166 FRONT SUSPENSION ARM - EXTRA-HARD - 2-HOLE (OPTION)
- 30 2167 FRONT SUSPENSION ARM - GRAPHITE - 1-HOLE (OPTION)
- 30 3129 COMPOSITE SET OF WHEELBASE SHIMS (3x1MM; 1x2MM) (2)
- 30 3132 STEEL SHIM FOR LOWER SUSP. HOLDER 3x7.5x0.75 (10)
- 30 3134-K ALU SHIM FOR LOWER SUSP. HOLDER 3x7.5x1.5 - BLACK (10)
- 30 3163 REAR SUSPENSION ARM - HARD - 1-HOLE - V2

- 30 3164 REAR SUSPENSION ARM - EXTRA-HARD - 1-HOLE - V2 (OPTION)
- 30 3165 REAR SUSPENSION ARM - HARD - 2-HOLE (OPTION)
- 30 3166 REAR SUSPENSION ARM - EXTRA-HARD - 2-HOLE (OPTION)
- 30 3167 REAR SUSPENSION ARM - GRAPHITE - 1-HOLE (OPTION)
- 30 7215 T2 FRONT SUSPENSION PIVOT PIN (2)
- 30 7314 T2'008 REAR SUSPENSION PIVOT PIN (2)

- 90 1308 HEX SCREW SB M3x8 (10)
- 90 1408 HEX SCREW SB M4x8 (10)
- 90 2314 HEX SCREW SH M3x14 (10)
- 90 2316 HEX SCREW SH M3x16 (10)
- 90 3306 HEX SCREW SFH M3x6 (10)



903306
SFH M3x6



FRONT

OPTIONAL FINE ROLL-CENTER ADJUSTMENT
Optional shims may be used for raising roll center.
Use 3x7 shims with thicknesses between 0.1-0.5mm

OPTIONAL: #302050-O -T4 Alu lower rear suspension holder - Orange.
For more steering, we recommend using the optional one piece alu suspension holder. For high grip conditions only, as it decreases rear traction.

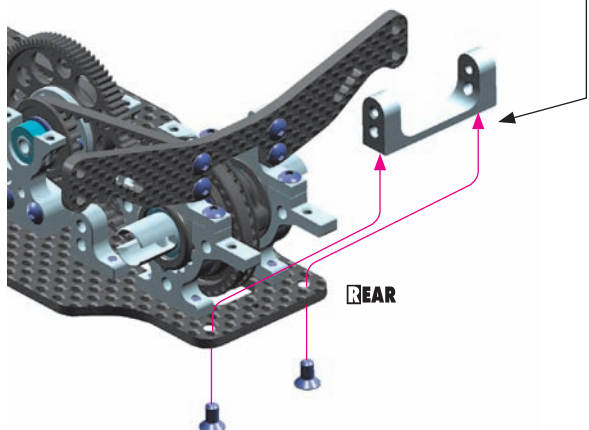
3. FRONT & REAR SUSPENSION



903306
SFH M3x6

OPTIONAL FINE ROLL-CENTER ADJUSTMENT

Optional shims may be used for raising roll center.
Use 3x7 shims with thicknesses between 0.1–0.5mm



REAR

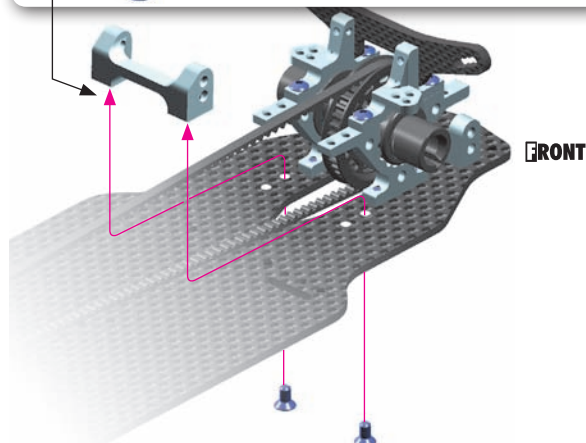


OPTIONAL:

#302049-O - T4 Alu lower suspension holder - Orange.
For more steering on asphalt, we recommend using the optional alu separate suspension holders.

OPTIONAL FINE ROLL-CENTER ADJUSTMENT

Optional shims may be used for raising roll center. Use 3x7 shims with thicknesses between 0.1–0.5mm



FRONT



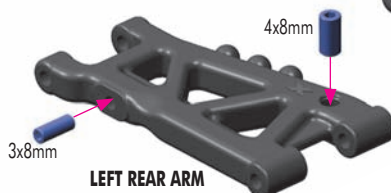
901308
SB M3x8



901408
SB M4x8

REAR ARMS

L=R



LEFT REAR ARM



REAR LEFT ARM

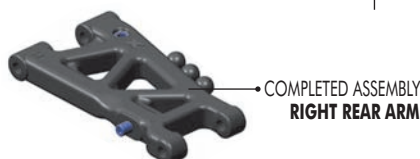
2.0mm



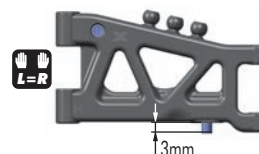
REAR RIGHT ARM

TOP

BOTTOM



COMPLETED ASSEMBLY
RIGHT REAR ARM

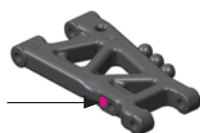


L=R

3mm

OPTIONAL 2-HOLE REAR ARMS

Inner position - more rear traction
Outer position - more stable
Use the inner position for initial setting.



HARD ARM
EXTRA HARD ARM
GRAPHITE ARM

REAR ARMS 2-HOLE

#303165	HARD (H)
#303166	EXTRA-HARD (XH)

REAR ARMS 1-HOLE

#303163	HARD (H)
#303164	EXTRA-HARD (XH)
#303167	GRAPHITE (G)

- more rear traction (recommended for low and medium-traction)
- more steering (recommended for high-traction)
- more traction and more stable but more fragile (recommended for all kind of conditions)



REAR DOWNSTOP
ADJUSTMENT
REAR ANTI-ROLL BAR



901308
SB M3x8



901408
SB M4x8

FRONT ARMS

L=R



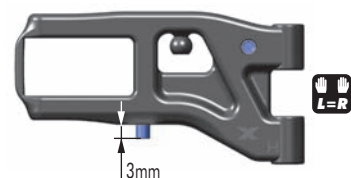
FRONT RIGHT ARM

2.2mm



FRONT LEFT ARM

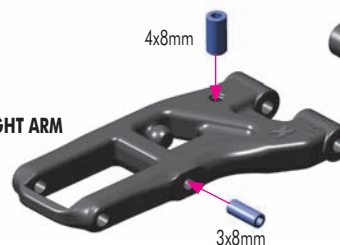
COMPLETED ASSEMBLY



L=R

3mm

FRONT RIGHT ARM



4x8mm

3x8mm

FRONT LEFT ARM

FRONT ARMS 1-HOLE

#302163	HARD (H)
#302164	EXTRA-HARD (XH)
#302167	GRAPHITE (G)

FRONT ARMS 2-HOLE

#302165	HARD (H)
#302166	EXTRA-HARD (XH)



OPTIONAL 2-HOLE FRONT ARMS

Inner position - more steering
Outer position - more stable
Use the outer position for initial setting.

HARD ARM - more steering (recommended for low and medium-traction)
EXTRA HARD ARM - more stable, easier to drive (recommended for high-traction)
GRAPHITE ARM - more traction and more stable but more fragile (recommended for all kind of conditions)



FRONT DOWNSTOP
ADJUSTMENT
FRONT ANTI-ROLL BAR

3. FRONT & REAR SUSPENSION

IO

303129
SHIM 3x6x1

IO

303129
SHIM 3x6x2

IO

303132
SHIM 3x7.5x0.75



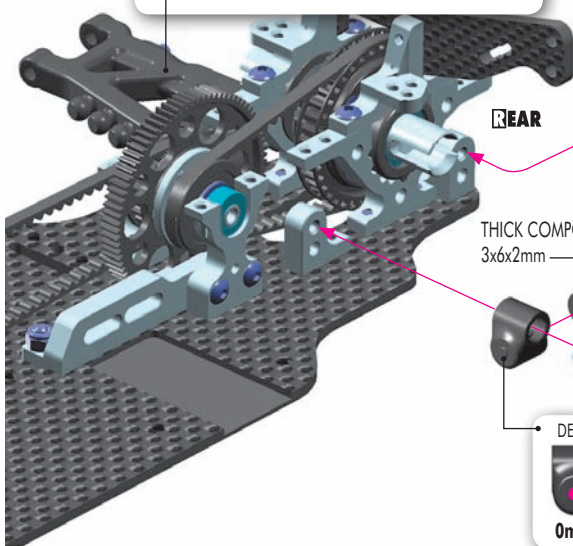
902314
SH M3x14



TOE-IN ADJUSTMENT
TRACK-WIDTH ADJUSTMENT
WHEELBASE ADJUSTMENT
ROLL CENTER ADJUSTMENT
SQUAT ADJUSTMENT



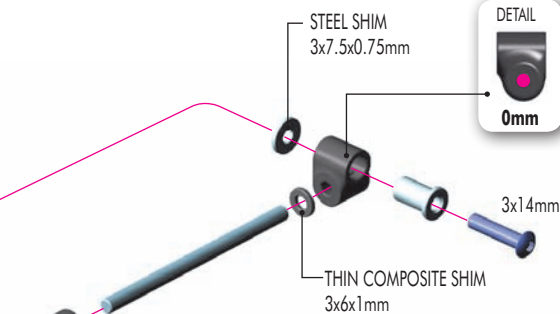
It is extremely important that the arms move freely on the pivot pins. If they do not, use the #107633 HUDY Arm Reamer to slightly resize the holes in the arms.



REAR

THICK COMPOSITE SHIM
3x6x2mm

DETAIL
0mm

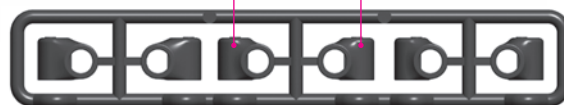


DETAIL

0mm

REAR LEFT ARM

Use these suspension holders for initial assembly



Roll Center Position:
-0.75mm

(more traction, more on-power push)

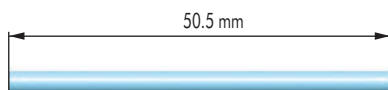


Roll Center Position:
0mm

(Increased cornering speed, less traction)



Roll Center Position:
+0.75mm



2x

1:1

L=R

IO

303129
SHIM 3x6x1

IO

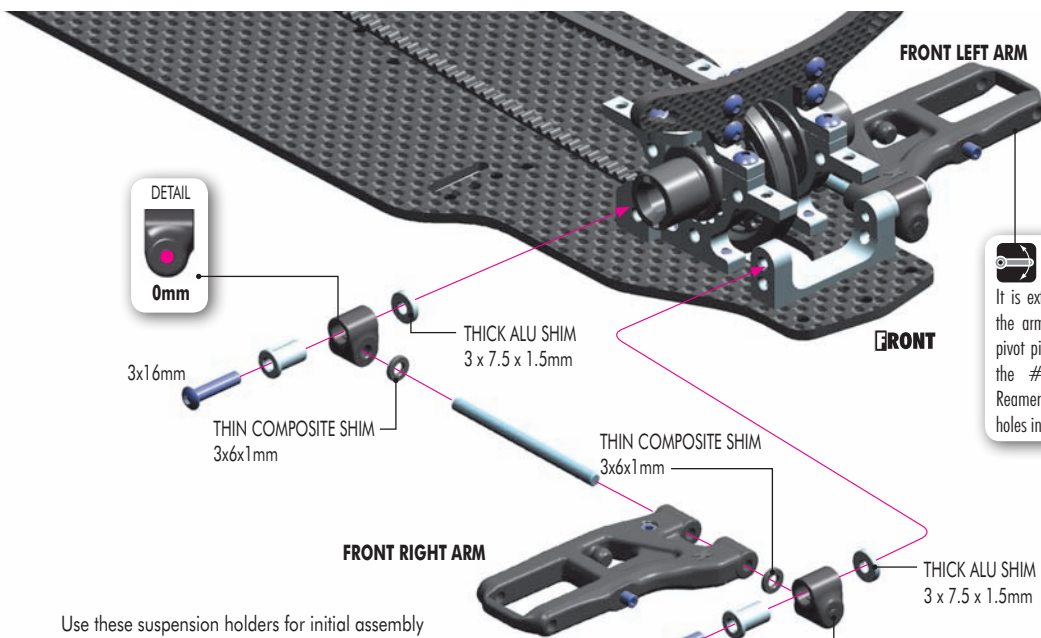
303134-K
SHIM 3x7.5x1.5



902316
SH M3x16



TOE-IN ADJUSTMENT
TRACK-WIDTH ADJUSTMENT
WHEELBASE ADJUSTMENT
ROLL CENTER ADJUSTMENT
SQUAT ADJUSTMENT



FRONT LEFT ARM

FRONT

DETAIL

0mm

3x16mm

THIN COMPOSITE SHIM
3x6x1mm

THICK ALU SHIM
3 x 7.5 x 1.5mm

THIN COMPOSITE SHIM
3x6x1mm

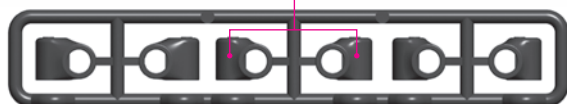
FRONT RIGHT ARM

THICK ALU SHIM
3 x 7.5 x 1.5mm

DETAIL

0mm

Use these suspension holders for initial assembly



Roll Center Position:
-0.75mm

(more in-corner steering,
can cause tire overheating)



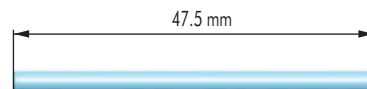
Roll Center Position:
0mm

(less in-corner steering, easier to drive)



Roll Center Position:
+0.75mm

3x16mm

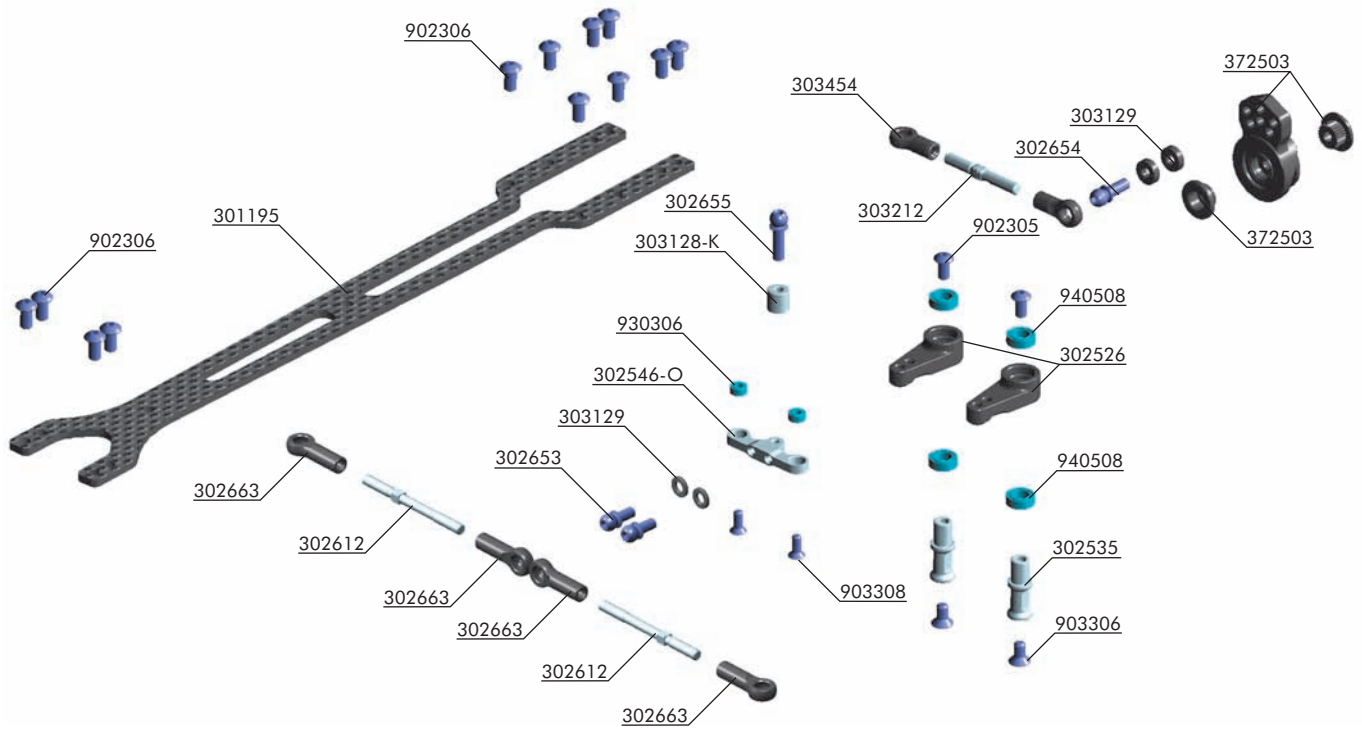


2x

1:1

L=R

4. STEERING



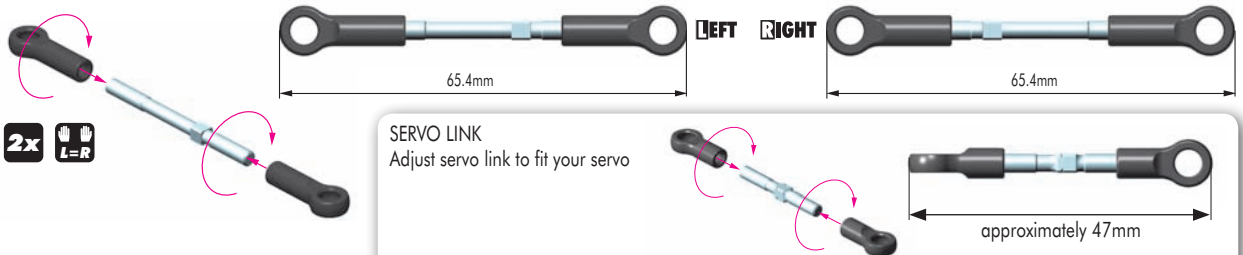
BAG

04

30 1195 T4 UPPER DECK 2.0MM GRAPHITE
30 2525 ALU DUAL SERVO SAVER ARM + BALL-BEARINGS (2) (OPTION)
30 2526 COMPOSITE DUAL SERVO SAVER ARM
30 2535 ALU STEERING POST FOR DUAL SERVO SAVER (2)
30 2546-O T4 ALU STEERING PLATE 8MM FOR DUAL SERVO SAVER - ORANGE
30 2612 ALU ADJ. TURNBUCKLE M3 L/R 39 MM - SWISS 7075 T6 (2)
30 2653 BALL END 4.9MM WITH THREAD 6MM (2)
30 2654 BALL END 4.9MM WITH THREAD 8MM (2)
30 2655 BALL END 4.9MM WITH THREAD 10MM (2)
30 2663 COMPOSITE BALL JOINT 5 MM - OPEN - V2 (8)
30 3128-K ALU SHIM 3x6x6.0MM - BLACK (10)

30 3129 COMPOSITE SET OF SHIMS (3x1MM; 1x2MM) (2)
30 3212 ALU ADJ. TURNBUCKLE L/R 26 MM - SWISS 7075 T6 (2)
30 3454 BALL JOINT 4.9MM - OPEN (4)
37 2503 COMPOSITE SERVO SAVER - X-STIFF - SET - V2

90 2305 HEX SCREW SH M3x5 (10)
90 2306 HEX SCREW SH M3x6 (10)
90 3306 HEX SCREW SFH M3x6 (10)
90 3308 HEX SCREW SFH M3x8 (10)
93 0306 BALL-BEARING 3x6x2.5 (2)
94 0508 HIGH-SPEED BALL-BEARING 5x8x2.5 RUBBER SEALED (2)



SET-UP BOOK
FRONT TOE-IN ADJUSTMENT

IO

303129
SHIM 3x6x1



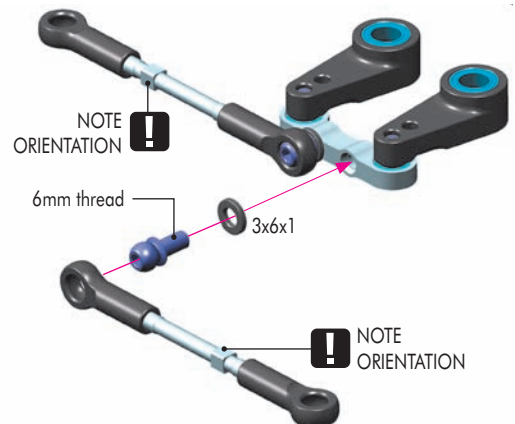
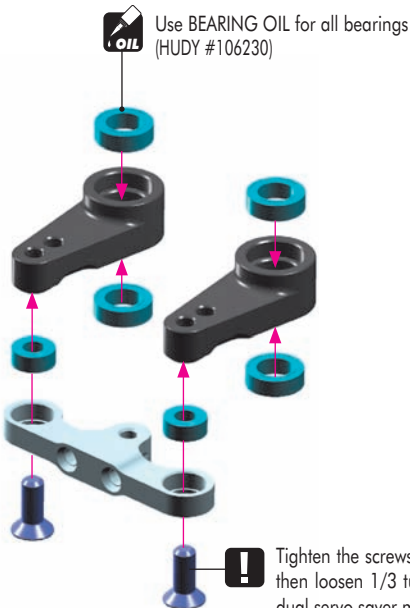
903308
SFH M3x8

IO

930306
BB 3x6

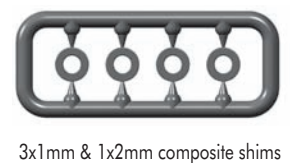
IO

940508
BB 5x8



TIP

To change Ackermann angle, use 2 identical shims (of same thickness) between the alu steering plate and ball end.



4. STEERING

IO

303129

SHIM 3x6x2

303128-K

SHIM 3x6x6

10 mm thread

8 mm thread

3x6x2

3x6x2

3x6x6

INITIAL SETTING

H = Hitec
F = Futaba, Robe
K = KO, JR, Airtronics, Sanwa

1

2

3

4

1

2

3

4

1

2

3

4

902305

SH M3x5

903306

SFH M3x6

FRONT

REAR

902306

SH M3x6

FRONT

REAR

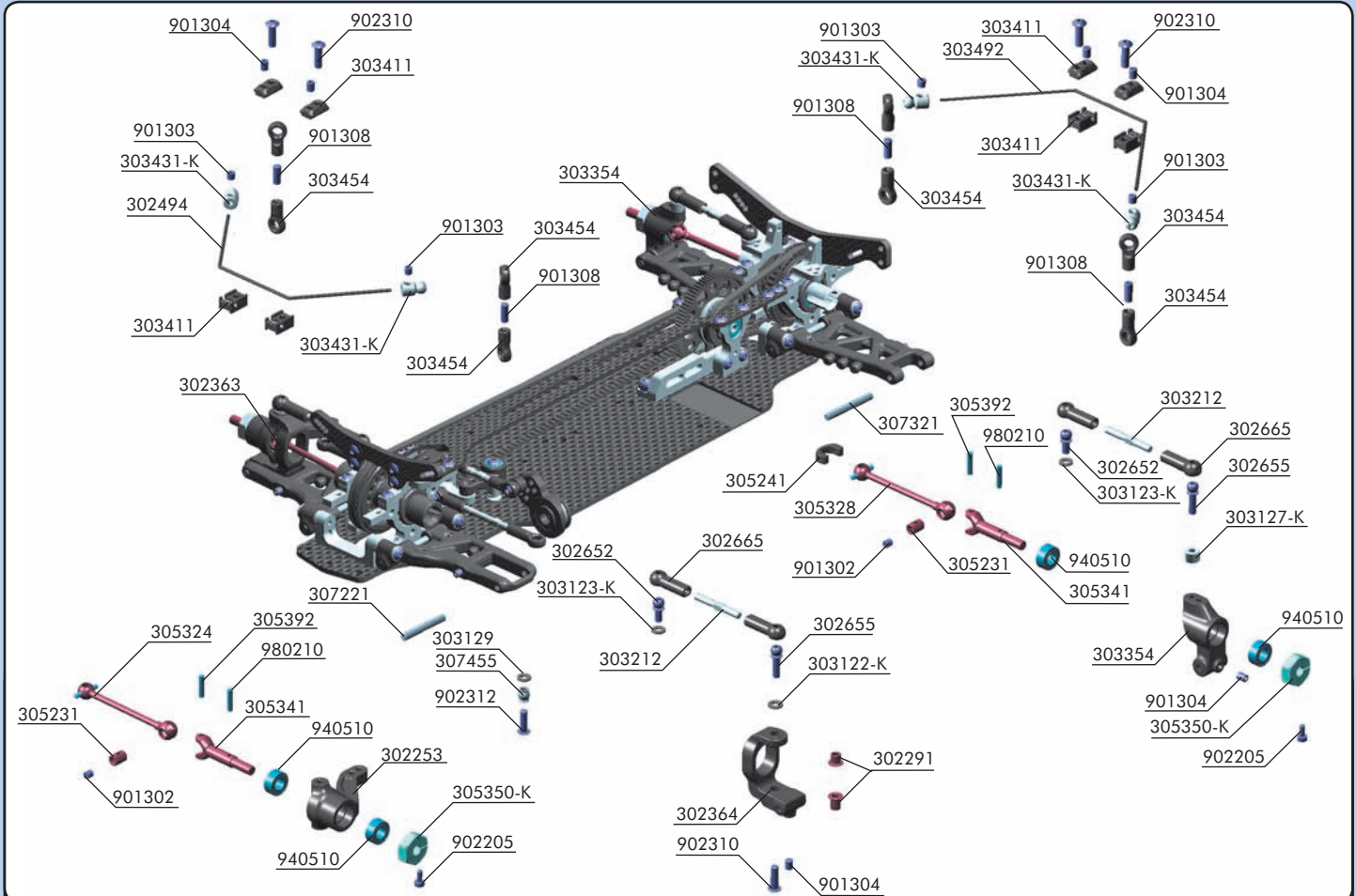
SET-UP BOOK

ACKERMANN ADJUSTMENT
STEERING THROW SYMMETRY
CHASSIS FLEX SETTING
TOP DECK FLEX SETTING

XRAY

16

5. FRONT & REAR TRANSMISSION



BAG

05

- | | | | |
|-----------|--|-----------|--|
| 30 2252 | COMPOSITE STEERING BLOCK - MEDIUM - V2 (OPTION) | 30 5231 | DRIVE SHAFT COUPLING - HUDY SPRING STEEL™ |
| 30 2253 | COMPOSITE STEERING BLOCK - HARD | 30 5241 | DRIVE SHAFT REPLACEMENT PLASTIC CAP 3.5 MM (4) |
| 30 2291 | STEEL STEERING BUSHING (2+2) | 30 5323 | DRIVE SHAFT 50MM - HUDY SPRING STEEL™ (OPTION) |
| 30 2363 | COMPOSITE C-HUB RIGHT - 4° DEG. - MEDIUM | 30 5324 | DRIVE SHAFT 52MM - HUDY SPRING STEEL™ |
| 30 2364 | COMPOSITE C-HUB LEFT - 4° DEG. - MEDIUM | 30 5325 | EQUALIZED CORNERING SPEED (ECS) DRIVE SHAFT 50MM (OPTION) |
| 30 2373 | COMPOSITE C-HUB RIGHT - 4° DEG. - HARD (OPTION) | 30 5326 | ALU DRIVE SHAFT SWISS 7075 T6 - HARDCOATED - 52MM (OPTION) |
| 30 2374 | COMPOSITE C-HUB LEFT - 4° DEG. - HARD (OPTION) | 30 5327 | EQUALIZED CORNERING SPEED (ECS) DRIVE SHAFT 52MM (OPTION) |
| 30 2494 | T4 ANTI-ROLL BAR FRONT 1.4 MM | 30 5328 | ALU DRIVE SHAFT SWISS 7075 T6 - HARDCOATED - 50MM |
| 30 2652 | BALL END 4.9MM WITH THREAD 4MM (2) | 30 5341 | DRIVE AXLE - LIGHTWEIGHT - HUDY SPRING STEEL™ |
| 30 2655 | BALL END 4.9MM WITH THREAD 10MM (2) | 30 5350-K | ALU WHEEL HUB - BLACK (2) |
| 30 2665 | COMPOSITE BALL JOINT 4.9MM - CLOSED WITH HOLE (4) | 30 5392 | DRIVE SHAFT PIN 2 x 10 WITH FLAT SPOT (2) |
| 30 3122-K | ALU SHIM 3x6x1.0MM - BLACK (10) | 30 7221 | FRONT ARM PIVOT PIN (2) |
| 30 3123-K | ALU SHIM 3x6x2.0MM - BLACK (10) | 30 7321 | REAR ARM PIVOT PIN (2) |
| 30 3127-K | ALU SHIM 3x6x4.0MM - BLACK (10) | 30 7455 | PIVOT BALL 4.9 MM DOUBLE BEVEL SHOULDERS (10) |
| 30 3129 | COMPOSITE SET OF SHIMS (3x1MM; 1x2MM) (2) | | |
| 30 3210 | TURNBUCKLE M3 L/R 26 MM - SPRING STEEL™ (2) (OPTION) | 90 1302 | HEX SCREW SB M3x2.5 (10) |
| 30 3212 | ALU ADJ. TURNBUCKLE M3 L/R 26 MM - SWISS 7075 T6 (2) | 90 1303 | HEX SCREW SB M3x3 (10) |
| 30 3354 | COMPOSITE UPRIGHT 0° OUTBOARD TOE-IN - HARD | 90 1304 | HEX SCREW SB M3x4 (10) |
| 30 3353 | UPRIGHT 1° OUTBOARD TOE-IN - RIGHT - HARD (OPTION) | 90 1308 | HEX SCREW SB M3x8 (10) |
| 30 3363 | UPRIGHT 1° OUTBOARD TOE-IN - LEFT - HARD (OPTION) | 90 2205 | HEX SCREW SH M2x5 (10) |
| 30 3411 | COMPOSITE ANTI-ROLL BAR HOLDERS - V2 | 90 2310 | HEX SCREW SH M3x10 (10) |
| 30 3431-K | ALU 5 MM BALL END - BLACK (2) | 90 2312 | HEX SCREW SH M3x12 (10) |
| 30 3454 | BALL JOINT 5 MM - OPEN (4) | 94 0510 | HIGH-SPEED BALL-BEARING 5x10x4 RUBBER SEALED (2) |
| 30 3492 | T4 ANTI-ROLL BAR REAR 1.2 MM | 98 0210 | PIN 2x10 (10) |



901302
SB M3x2.5



305392
P 2x10

4x

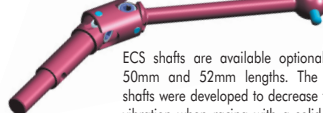
5

TIP



For easy and comfortable installation of the #305241 plastic caps use pliers as shown.

ECS DRIVE SHAFTS - OPTIONAL



ECS shafts are available optionally in both 50mm and 52mm lengths. The ECS drive shafts were developed to decrease front wheel vibration when racing with a solid front axle, thus providing a much smoother and quieter ride and increased steering.

DRIVE SHAFTS

#305323	50MM - STEEL
#305324	52MM - STEEL
#305325	50MM - ECS
#305326	52MM - ALU
#305327	52MM - ECS
#305328	50MM - ALU

THREAD LOCK

2

3

4

5

DO NOT OVERTIGHTEN

GRAPHITE GREASE
(HUDY #106210)

DETAIL STEP 3 4

IMPORTANT!

DO NOT use the plastic caps with composite solid axle included in the kits.

3.5mm plastic caps are for use ONLY with GEAR diffs, ALU ball diffs, or the XRAY Multi-Diff™.

ONLY FOR REAR

Longer drive shafts (52mm) make the car easier to drive because they give more traction and better stability, mainly in chicanes. However, the car will understeer more than with shorter (50mm) shafts which give a lot of steering and impart aggression to the car.

Both left & right shafts should ALWAYS be the same length at one end of the car (front or rear).

52mm shafts are recommended for carpet and large asphalt tracks. 50mm shafts are recommended for small-medium tight asphalt tracks.

5. FRONT & REAR TRANSMISSION

902205
SH M2x5

940510
BB 5x10x4

980210
P 2x10

SET-UP BOOK

REAR TOE-IN ADJUSTMENT

2x **!** 0° OUTBOARD TOE-IN UPRIGHTS

L=R LEFT UPRIGHT = RIGHT UPRIGHT

OIL BEARING OIL (HUDY #106230)

Use alu 50mm Drive Shaft in rear **!**

COMPLETED ASSEMBLY

UPRIGHTS	
#303351	1° - R - MEDIUM - 2-HOLE
#303352	0° - R/L - MEDIUM - 2-HOLE
#303353	1° - R - HARD - 2-HOLE
#303354	0° - R/L - HARD - 2-HOLE
#303361	1° - L - MEDIUM - 2-HOLE
#303362	0° - R/L - MEDIUM - 1-HOLE
#303363	1° - L - HARD - 2-HOLE
#303364	0° - R/L - HARD - 1-HOLE
#303358	ALU 1° - R/L - 4-HOLE
#303359	ALU 2° - R/L - 4-HOLE

902205
SH M2x5

940510
BB 5x10x4

980210
P 2x10

SET-UP BOOK

REAR TOE-IN ADJUSTMENT

2x **L=R** LEFT STEERING BLOCK = RIGHT STEERING BLOCK

OIL BEARING OIL (HUDY #106230)

Use Steel 52mm Drive Shafts in front **!**

COMPLETED ASSEMBLY

STEERING BLOCKS	
#302252	MEDIUM
#302253	HARD
#302256	ALU

WHEEL HUBS	
#305350	ALU - OFFSET 0 MM
#305351	ALU - OFFSET -0.75 MM
#305352	ALU - OFFSET +0.75 MM
#305353	ALU - OFFSET +1.5 MM

902310
SH M3x10

SET-UP BOOK

CASTER ADJUSTMENT

2x

SHORT **2**

LONG **1**

RIGHT C-HUB "4R"

RIGHT

LEFT

COMPLETED ASSEMBLY

LEFT C-HUB "4L"

C-HUBS	
#302334	ALU 0° - R + L
#302335	ALU 2° - RIGHT
#302336	ALU 2° - LEFT
#302337	ALU 4° - RIGHT
#302338	ALU 4° - LEFT
#302339	ALU 6° - RIGHT
#302340	ALU 6° - LEFT
#302361	2° - RIGHT - MEDIUM
#302362	2° - LEFT - MEDIUM
#302363	4° - RIGHT - MEDIUM
#302364	4° - LEFT - MEDIUM
#302365	6° - RIGHT - MEDIUM
#302366	6° - LEFT - MEDIUM
#302371	2° - RIGHT - HARD
#302372	2° - LEFT - HARD
#302373	4° - RIGHT - HARD
#302374	4° - LEFT - HARD
#302375	6° - RIGHT - HARD
#302376	6° - LEFT - HARD

SET-UP BOOK

CAMBER ADJUSTMENT

4x

FRONT

1:1 **2x** **L=R**

FRONT RIGHT = FRONT LEFT

54.5 mm

REAR

1:1 **2x** **L=R**

REAR RIGHT = REAR LEFT

52.8 mm

5. FRONT & REAR TRANSMISSION



303123-K
SHIM 3x6x2



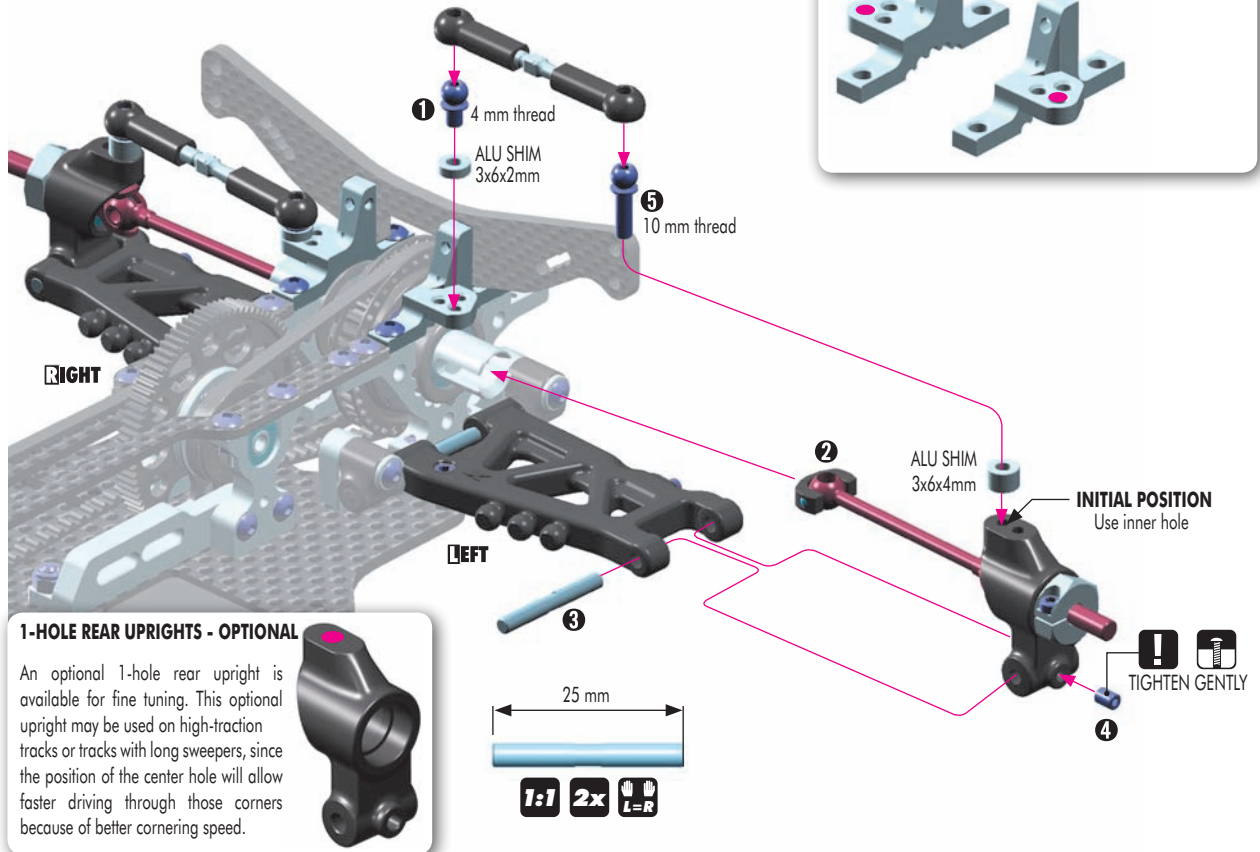
303127-K
SHIM 3x6x4



901304
SB M3x4



LEFT UPRIGHT = RIGHT UPRIGHT



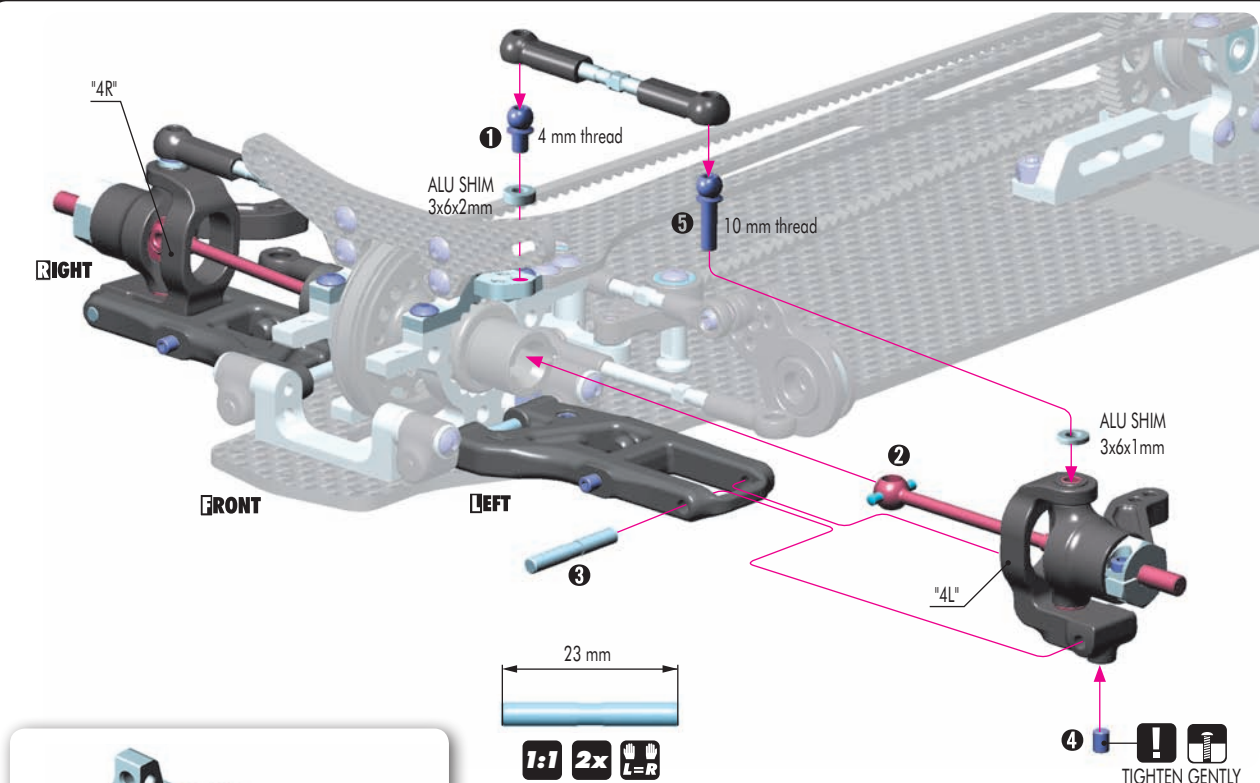
303122-K
SHIM 3x6x1



303123-K
SHIM 3x6x2



901304
SB M3x4



ROLL-CENTER ADJUSTMENT

5. FRONT & REAR TRANSMISSION

10

303129
SHIM 3x6x1



307455
PB 5mm



902312
SH M3x12



ACKERMANN ADJUSTMENT

RECOMMENDED BUMPSTEER SETTINGS:

Carpet - 1mm thick shim
Asphalt - 4mm thick shims (longer screw must be used)

The number of shims changes the angles of the steering linkage. When no shims are used, the car is easy to drive into the corner. As the number of shims is increased, in-corner steering increases but the car becomes more difficult to drive.

FREE MOVEMENT

FRONT

FREE MOVEMENT

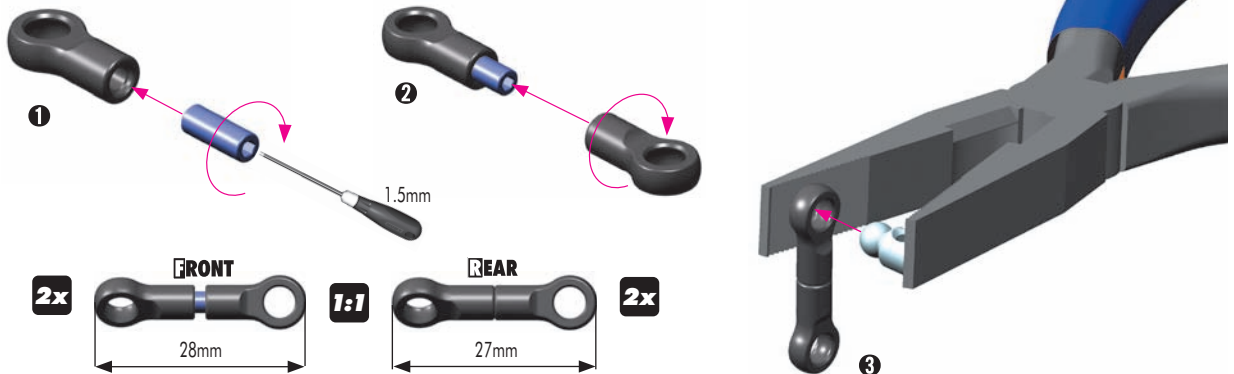
INITIAL POSITION



SHIM
3x6x1mm



901308
SB M3x8



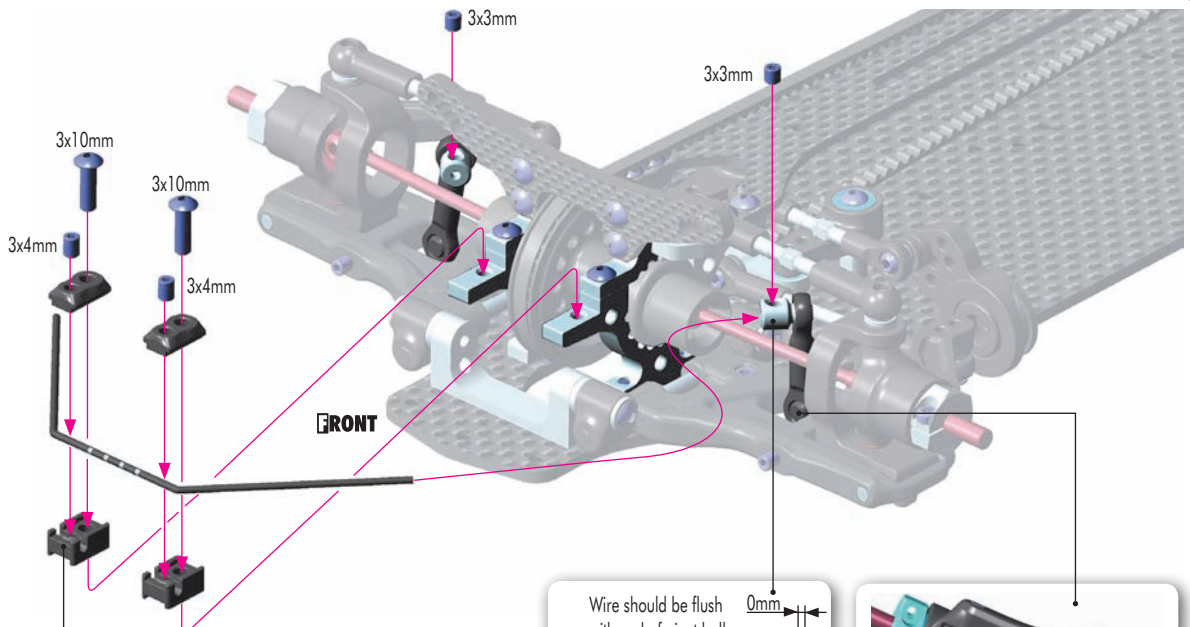
901303
SB M3x3



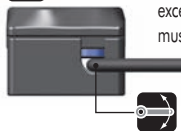
901304
SB M3x4



902310
SH M3x10



IMPORTANT! Only tighten enough to remove excessive free play; anti-roll bar must move freely.



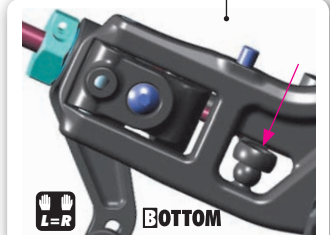
ASSEMBLY VIEW

Wire should be flush with end of pivot ball.

0mm



L=R

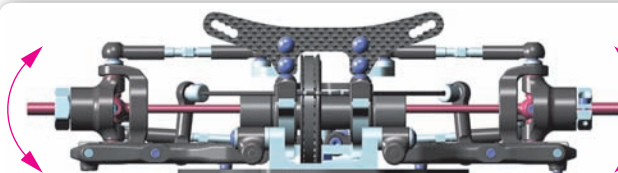


L=R

BOTTOM



ANTI-ROLL BARS
ADJUSTMENT



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

5. FRONT & REAR TRANSMISSION



901303
SB M3x3

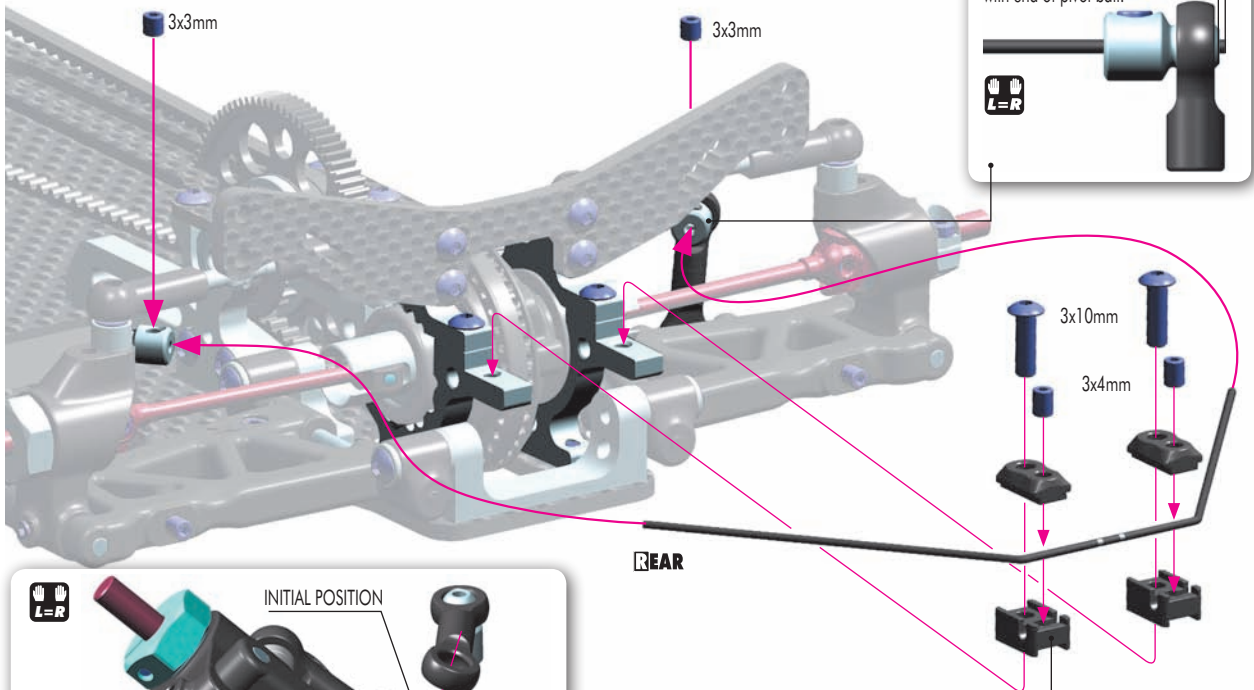


901304
SB M3x4

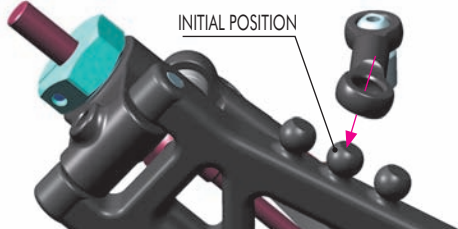


902310
SH M3x10

REAR ANTI-ROLL BAR



INITIAL POSITION



Initial position = **MIDDLE** ball

Use the **INNER** ball on low-traction tracks (mainly low-traction carpet tracks). The car will have more traction & more steering, but will be more difficult to drive because the car will roll more.

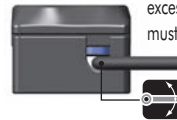
Use the **MIDDLE** ball on low- to medium-traction tracks (asphalt, carpet). The car will have a little less rear traction and the car will roll a little less which will make it easier to drive with more cornering speed.

Use the **OUTER** ball on high-traction tracks (mainly high-traction asphalt tracks). The car will roll even less which will allow the use of more throttle in the corners, however the car will have less traction.



IMPORTANT!

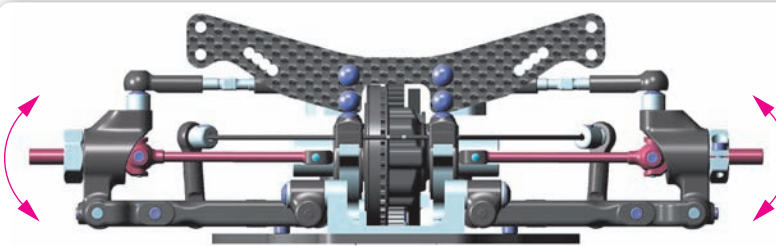
Only tighten enough to remove excessive free play; anti-roll bar must move freely.



ASSEMBLY VIEW



ANTI-ROLL BARS
ADJUSTMENT



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

FRONT

FRONT ANTI-ROLL BARS

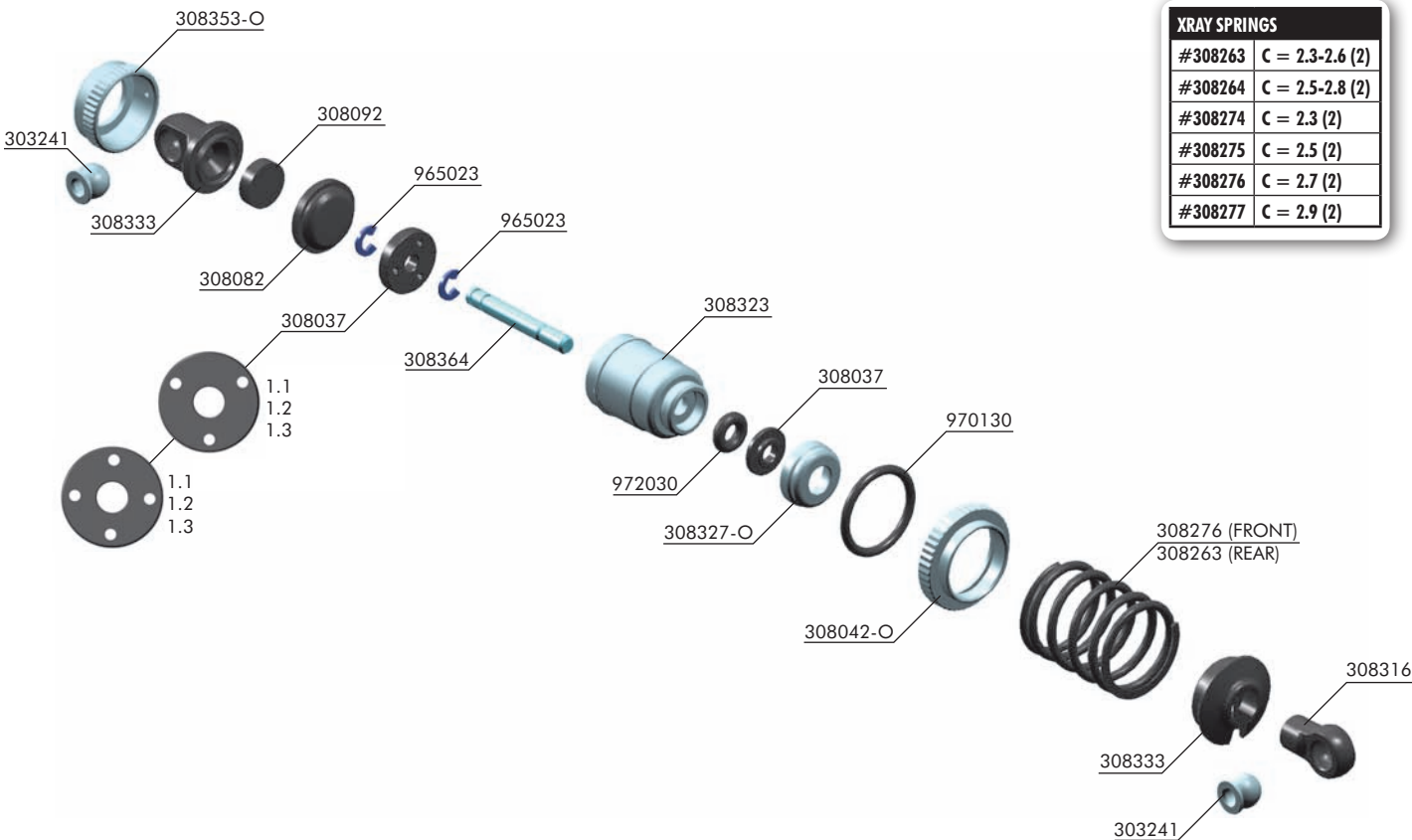
#302492	FRONT 1.2 MM
#302493	FRONT 1.3 MM
#302494	FRONT 1.4 MM
#302495	FRONT 1.5 MM
#302496	FRONT 1.6 MM

REAR

REAR ANTI-ROLL BARS

#303490	REAR 1.0 MM
#303491	REAR 1.1 MM
#303492	REAR 1.2 MM
#303493	REAR 1.3 MM
#303494	REAR 1.4 MM
#303495	REAR 1.5 MM
#303496	REAR 1.6 MM

6. SHOCK ABSORBERS



XRAY SPRINGS	
#308263	C = 2.3-2.6 (2)
#308264	C = 2.5-2.8 (2)
#308274	C = 2.3 (2)
#308275	C = 2.5 (2)
#308276	C = 2.7 (2)
#308277	C = 2.9 (2)

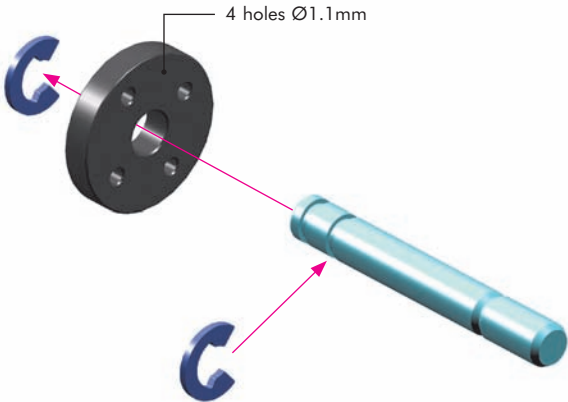
BAG

06

- | | | | |
|-----------|--|---------|----------------------------|
| 30 3241 | BALL UNIVERSAL 5.8 MM HEX (4) | 30 8263 | XRAY SPRING-SET C=2.3-2.6 |
| 30 8037 | COMPOSITE PISTONS 4-HOLE 1.0-1.2MM, 3-HOLE 1.0-1.2MM | 30 8276 | XRAY SPRING-SET C=2.7 |
| 30 8042-O | T4 ALU SHOCK ADJUSTABLE NUT - ORANGE (2) | | |
| 30 8082 | T4 SHOCK ABSORBER MEMBRANE (4) | 96 5023 | E-CLIP 2.3 (10) |
| 30 8092 | T4 SHOCK FOAM INSERTS (4) | 97 0130 | O-RING 13 x 1.5 (10) |
| 30 8307-O | XRAY T4 ALU SHOCK ABSORBER-SET - ORANGE (2) | 97 2030 | SILICONE O-RING 3 x 2 (10) |
| 30 8316 | SHOCK BALL JOINT - OPEN (4) | | |
| 30 8323 | T4 ALU XRAY SHOCK BODY (2) | | |
| 30 8327-O | ALU CAP FOR XRAY SHOCK BODY - ORANGE | | |
| 30 8333 | T4 COMPOSITE SHOCK PARTS FOR ALU SHOCKS | | |
| 30 8353-O | T4 ALU SHOCK CAP-NUT WITH VENT HOLE - ORANGE (2) | | |
| 30 8364 | T4 HARDENED SHOCK SHAFT FOR ALU SHOCKS (2) | | |

965023
C 2.3

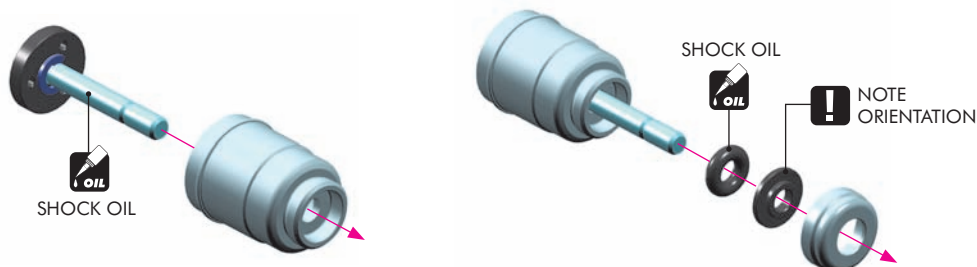
4x



6. SHOCK ABSORBERS

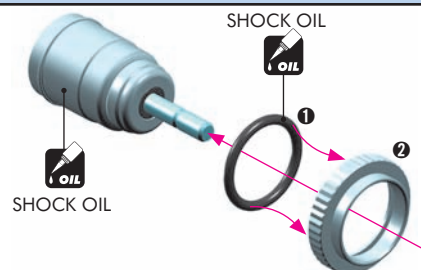
972030
O 3x2

4x

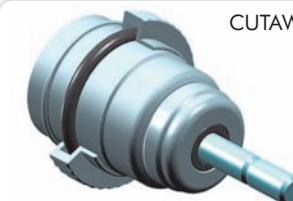


970130
O 13x1.5

4x

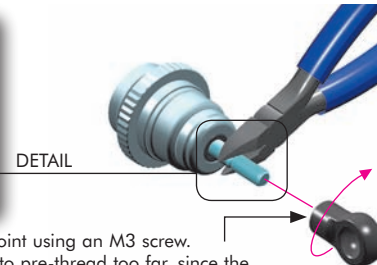
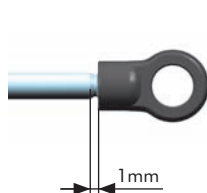


CUTAWAY VIEW



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

4x



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

4x

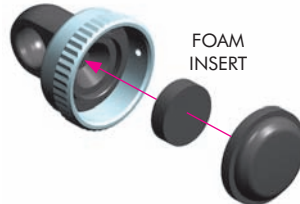
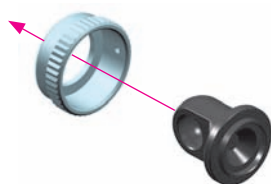


SHOCK FILLING

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



4x



CUTAWAY VIEW



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

4x



When installing the shock cap assembly on the shock body, some oil will leak out... this is normal.

Tighten the cap and clean off any excess oil.

After the shock is assembled, the shock rod will push itself out of the shock body fairly quickly.

Follow the next procedure to adjust the rebound.

SHOCK OILS

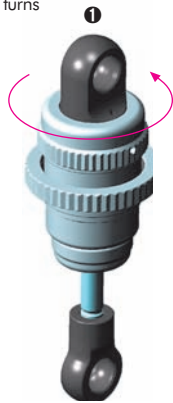
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#106315	150cSt	#106350	500cSt
#106320	200cSt	#106355	550cSt
#106325	250cSt	#106360	600cSt
#106330	300cSt	#106370	700cSt
#106335	350cSt	#106380	800cSt
#106340	400cSt	#106390	900cSt
		#106410	1000cSt
		#106420	2000cSt

SET-UP BOOK
SHOCK DAMPING
EFFECTS OF SHOCK DAMPING

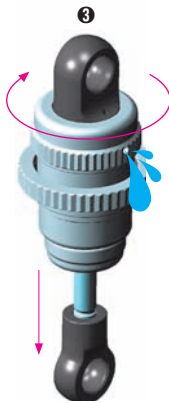
6. SHOCK ABSORBERS

REBOUND ADJUSTMENT

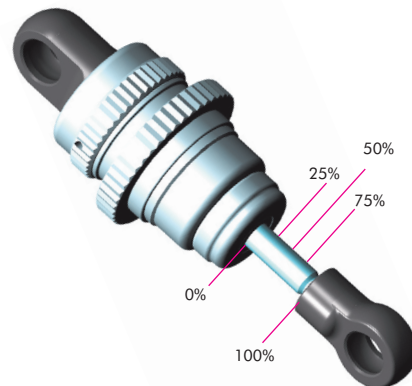
RELEASE
2-3 turns



TIGHTEN
FULLY



REBOUND CHECK



After the shock is assembled you have to set the shock rebound.

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

Rebound Check

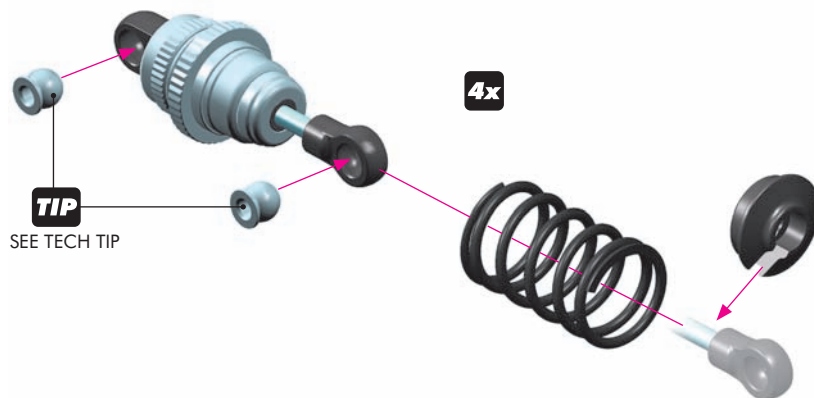
It is very important to push the shock shaft into the shock body slowly otherwise air can come into the shock body which would create bubbles.

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

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

SHOCK LENGTH ADJUSTMENT:

It is VERY important that all shocks are equal length. Fully extend the shock absorber and measure the end-to-end length; we recommend using digital calipers to give an accurate measurement. If a shock absorber is shorter or longer than others, adjust the shock length by tightening or loosening the ball joint on the shock rod.



TIP
SEE TECH TIP

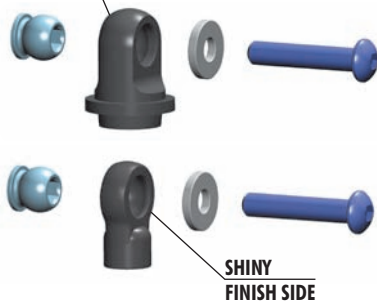
TECH TIP

Follow this tech tip to properly install pivot balls into the top pivot and bottom ball joint.

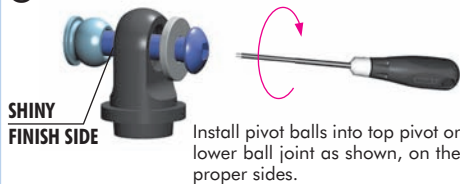
Parts Needed:
 • M3 x 16 SH screw
 • M3 shim

Note that the composite parts have two sides, noticeable around the pivot ball hole: one side has a shiny finish, the other side has a regular finish.

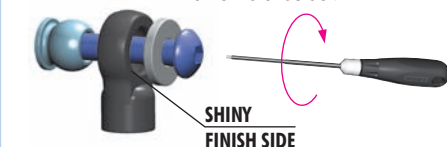
**SHINY
FINISH SIDE**



❶



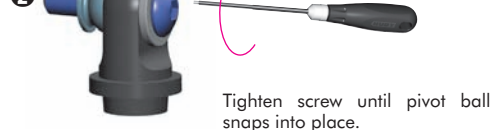
Note that the lower pivot ball has an extra shoulder.



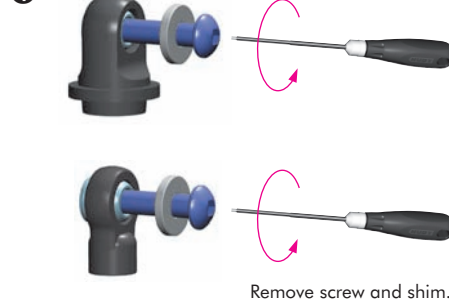
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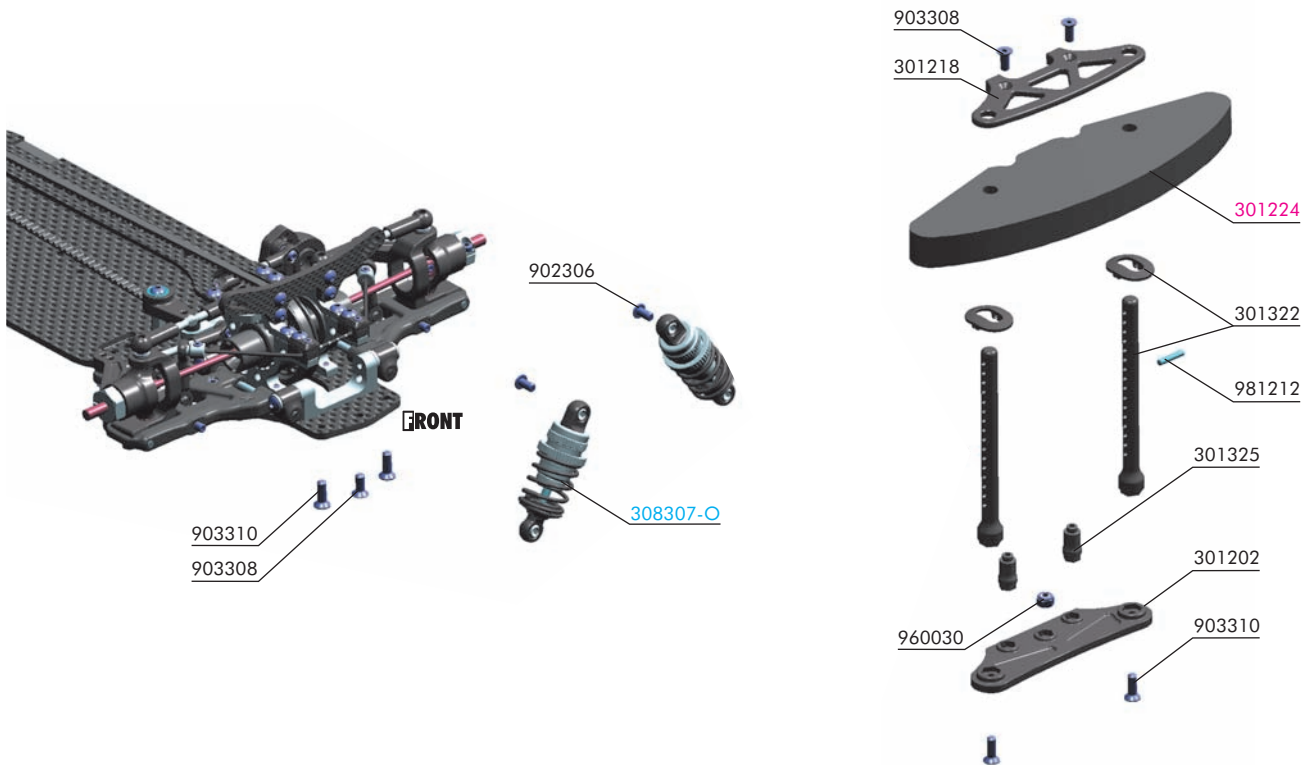
❷



❹



7. FRONT & REAR ASSEMBLY



BAG

07

30 1202 COMPOSITE BUMPER
30 1218 COMPOSITE UPPER HOLDER FOR BUMPER
30 1322 FRONT BODY MOUNT SET
30 1325 T4 COMPOSITE BRACE FOR BUMPER - LOW (2)

90 2306 HEX SCREW SH M3x6 (10)
90 3308 HEX SCREW SFH M3x8 (10)

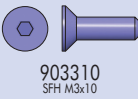
90 3310 HEX SCREW SFH M3x10 (10)
96 0030 NUT M3 (10)
98 1212 PIN 2x12 (10)

30 1224 T4 FOAM BUMPER

30 8307-O XRAY T4 ALU SHOCK ABSORBER-SET - ORANGE (2)



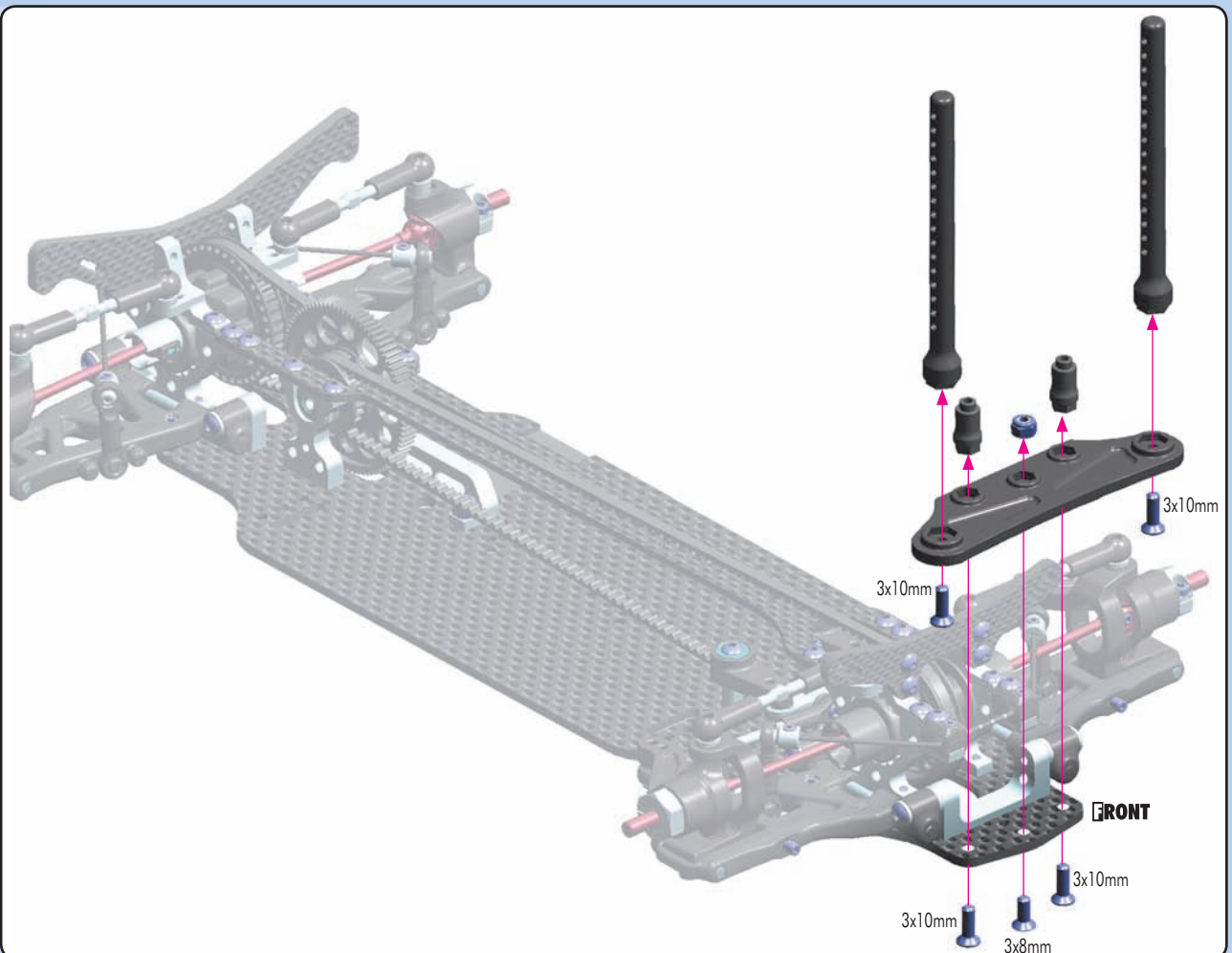
90 3308
SFH M3x8



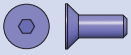
90 3310
SFH M3x10



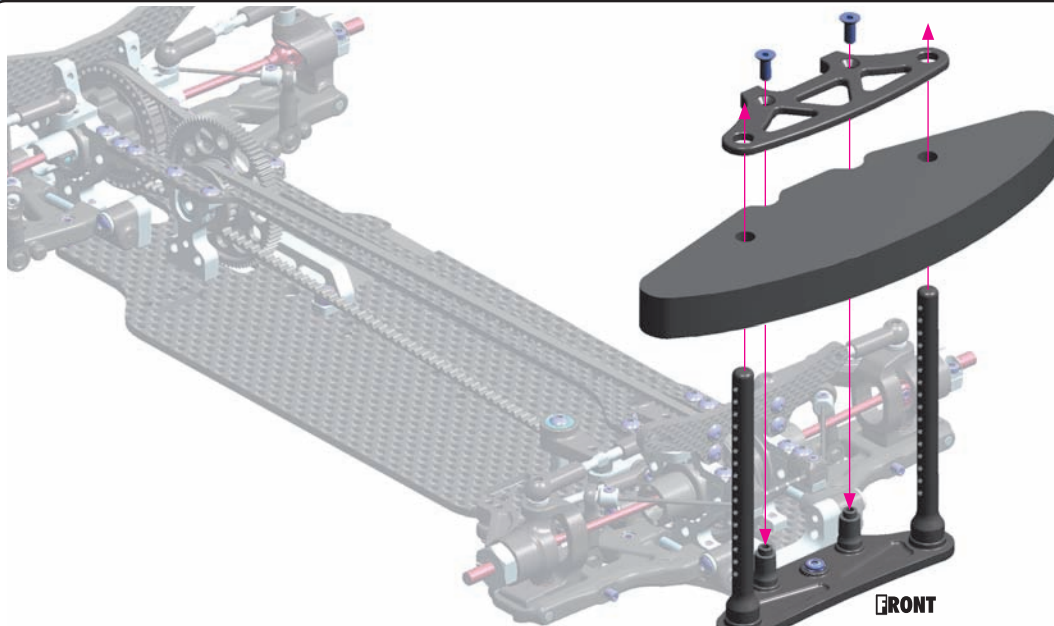
96 0030
N M3x10



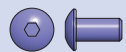
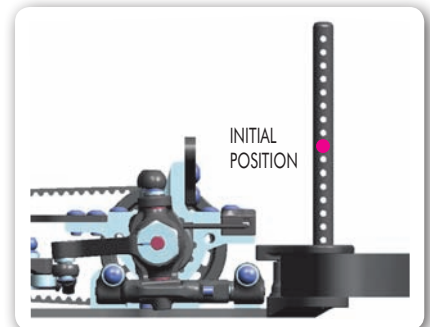
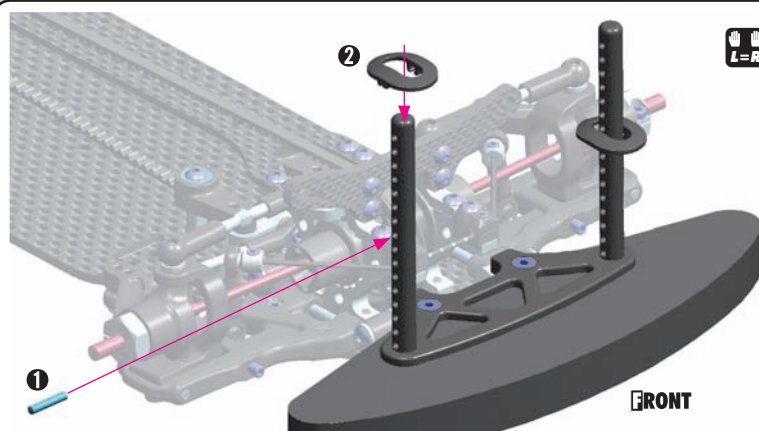
7. FRONT & REAR ASSEMBLY



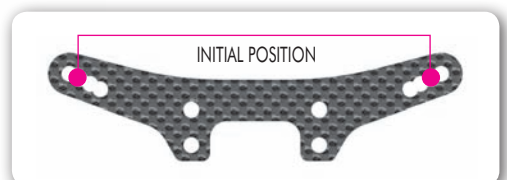
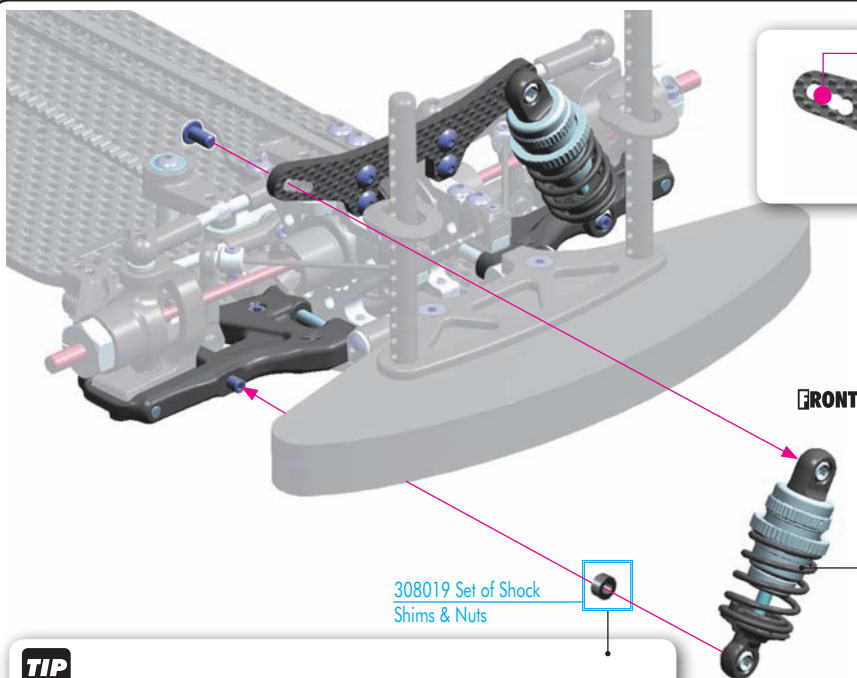
903308
SFH M3x8



981212
P 2x12

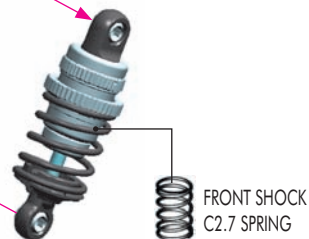


902306
SH M3x6



308019 Set of Shock
Shims & Nuts

FRONT



TIP

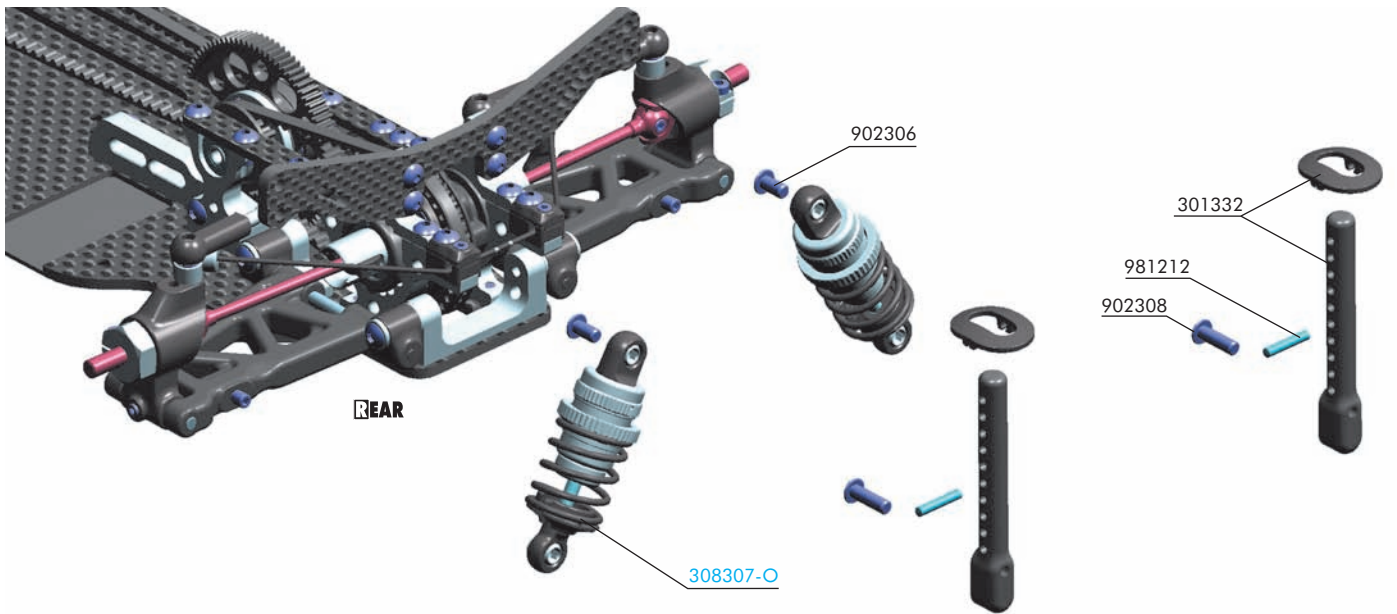
To make the car more stable and easier to drive, move the front shocks forward. Stability increases mainly in chicanes. Note that the car will have less steering into corners.

- Upper mount (shock tower): Add a plastic nut and use a longer screw 3x8mm (NOT INCLUDED) to move the upper end of the shock away from the shock tower.
- Lower mount (lower arm): Add shims and use a longer setscrew 3x10mm (NOT INCLUDED) on the lower arms to move the lower end of the shock away from the arm.



SHOCK POSITION ADJUSTMENT
RIDE HEIGHT ADJUSTMENT
DROOP ADJUSTMENT

7. FRONT & REAR ASSEMBLY



BAG

07

30 1332 REAR BODY MOUNT SET
90 2306 HEX SCREW SH M3x6 (10)
90 2308 HEX SCREW SH M3x8 (10)

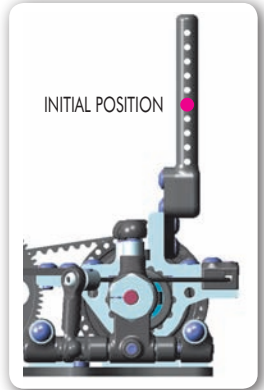
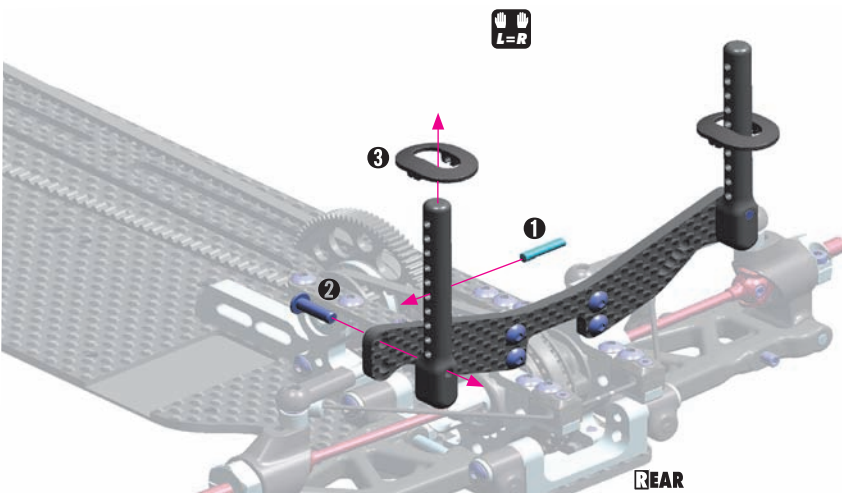
98 1212 PIN 2x12 (10)
30 8307-O XRAY T4 ALU SHOCK ABSORBER-SET - ORANGE (2)



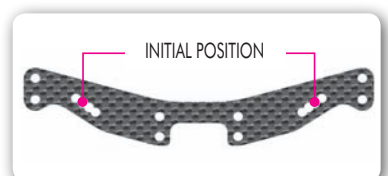
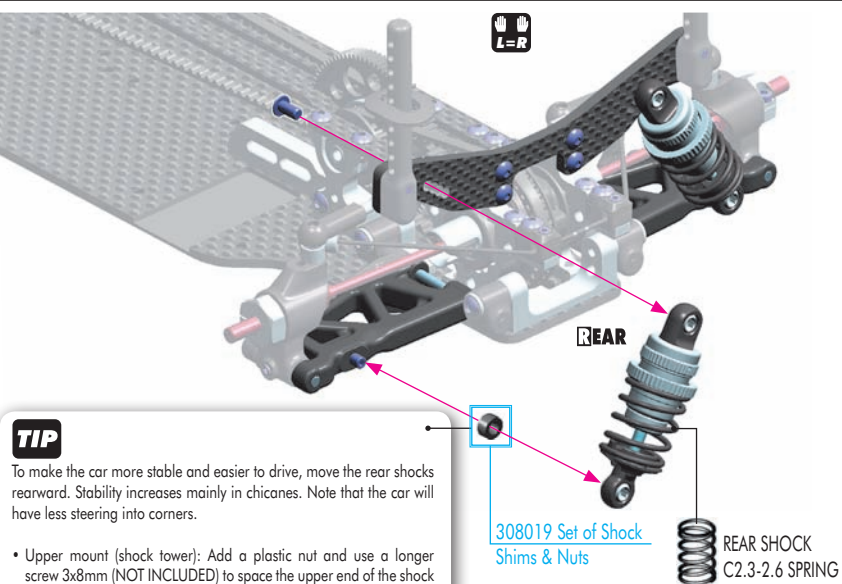
902308
SH M3x8



981212
P 2x12



902306
SH M3x6



TIP

To make the car more stable and easier to drive, move the rear shocks rearward. Stability increases mainly in chicanes. Note that the car will have less steering into corners.

- Upper mount (shock tower): Add a plastic nut and use a longer screw 3x8mm (NOT INCLUDED) to space the upper end of the shock away from the shock tower.

- Lower mount (lower arm): Add shims and use a longer setscrew 3x10mm (NOT INCLUDED) on the lower arms to space the lower end of the shock away from the arm.

308019 Set of Shock Shims & Nuts

REAR SHOCK C2.3-2.6 SPRING



SHOCK POSITION ADJUSTMENT
RIDE HEIGHT ADJUSTMENT
DROOP ADJUSTMENT

Exploded view diagram of a LEGO Technic car chassis. The diagram shows the main chassis assembly with various components labeled with part numbers and some parts marked as 'NOT INCLUDED'.

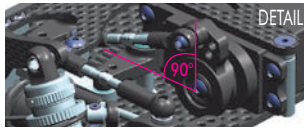
Parts and Labels:

- 309402**: A long blue Technic beam.
- NOT INCLUDED**: A blue and black motor.
- 306310**: A yellow axle.
- 902308**: A small black gear.
- NOT INCLUDED**: A blue and black motor.
- 306301**: A black Technic pin.
- 903308**: A black Technic pin.
- 903306**: A black Technic pin.
- 306230**: A black Technic pin.
- 306202**: A black Technic pin.
- 903306**: A black Technic pin.
- NOT INCLUDED**: A black Technic pin.
- 306201**: A black Technic pin.
- 306219**: A black Technic pin.
- FROM SERVO**: A black servo motor.
- 902308**: A small black gear.
- 960140**: A black wheel.
- 306184**: A black Technic pin.
- 903305**: A black Technic pin.
- 306184**: A black Technic pin.
- 903306**: A black Technic pin.
- NOT INCLUDED**: A black wheel.

7. FINAL ASSEMBLY



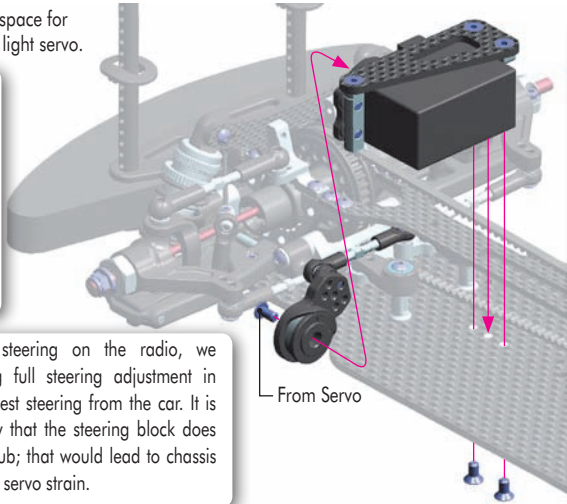
For improved weight balance and for more space for electronics, we recommend using a narrow, light servo.



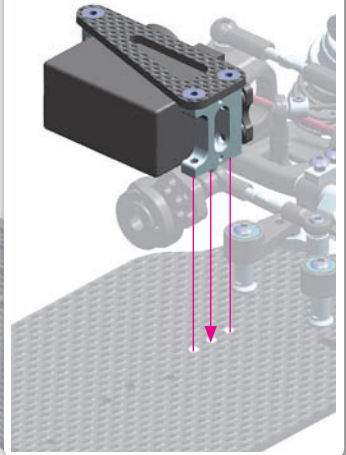
Attach servo arm to servo output shaft using screw from servo. Servo saver must be perpendicular to chassis when servo is in neutral.



IMPORTANT! When adjusting steering on the radio, we recommend using full steering adjustment in order to get the best steering from the car. It is important to verify that the steering block does not touch the C-hub; that would lead to chassis tweak due to extra servo strain.



DETAIL



Adjust the motor so the pinion meshes with the spur gear properly. Make sure the gear mesh is not too tight.

There should be a small amount of play between the teeth of the pinion gear and the spur gear.

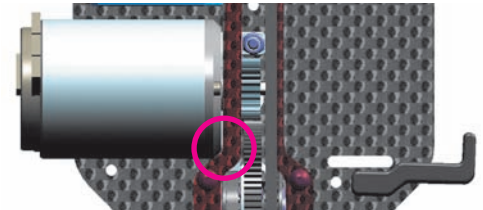


DETAIL

Recommended: 3x2.5mm set screw (#901302) (NOT INCLUDED)



Some motors do not have a chamfer on the motor housing. If your motor does not have a chamfer on the housing and you want to use a small pinion, the motor may touch the top deck. Use a moto-tool with grinding bit or file to remove material from the top-deck; this will allow the motor to be moved closer to the spur gear.

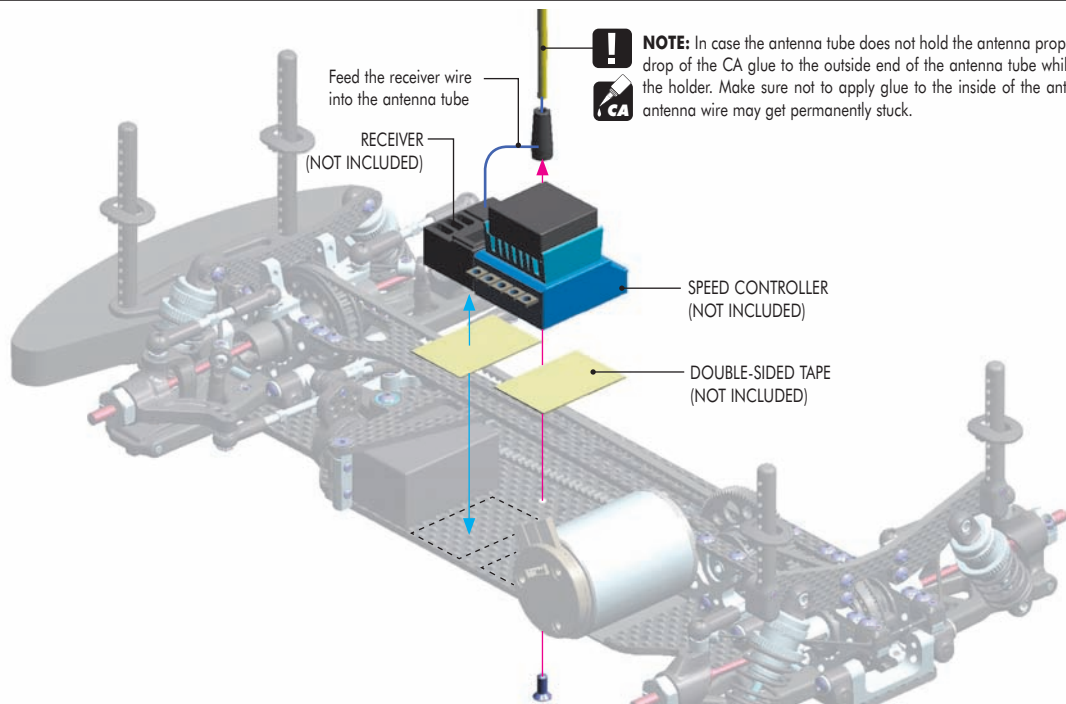


GEARING ADJUSTMENT



TIP

For tightening and loosening the pinion set screw, use the indicated chassis hole.



Feed the receiver wire into the antenna tube

RECEIVER (NOT INCLUDED)

SPEED CONTROLLER (NOT INCLUDED)

DOUBLE-SIDED TAPE (NOT INCLUDED)



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

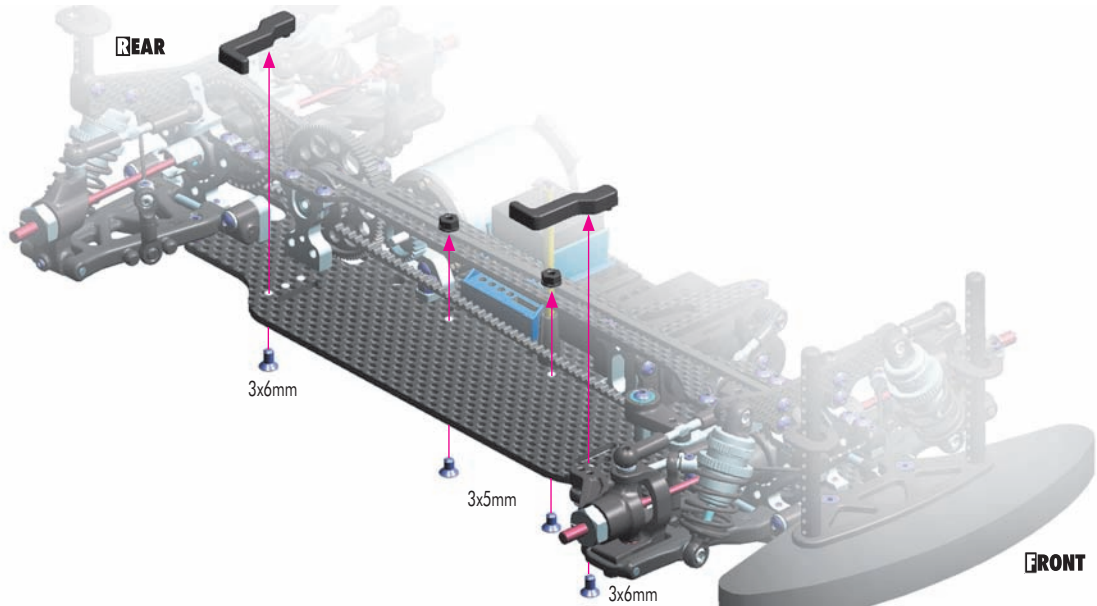
7. FINAL ASSEMBLY



903305
SFH M3x5

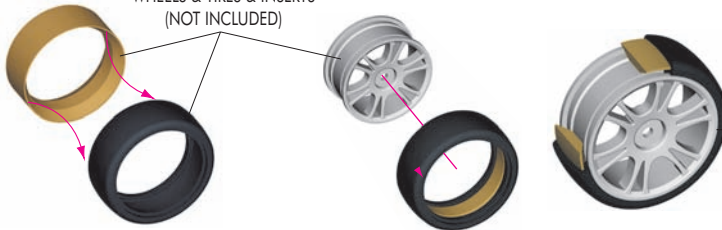


903306
SFH M3x6



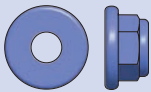
4x

WHEELS & TIRES & INSERTS
(NOT INCLUDED)

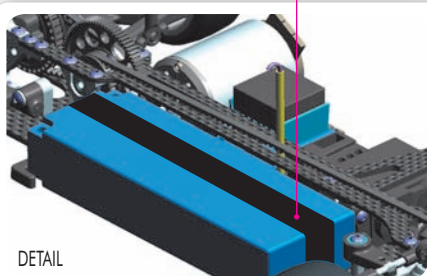
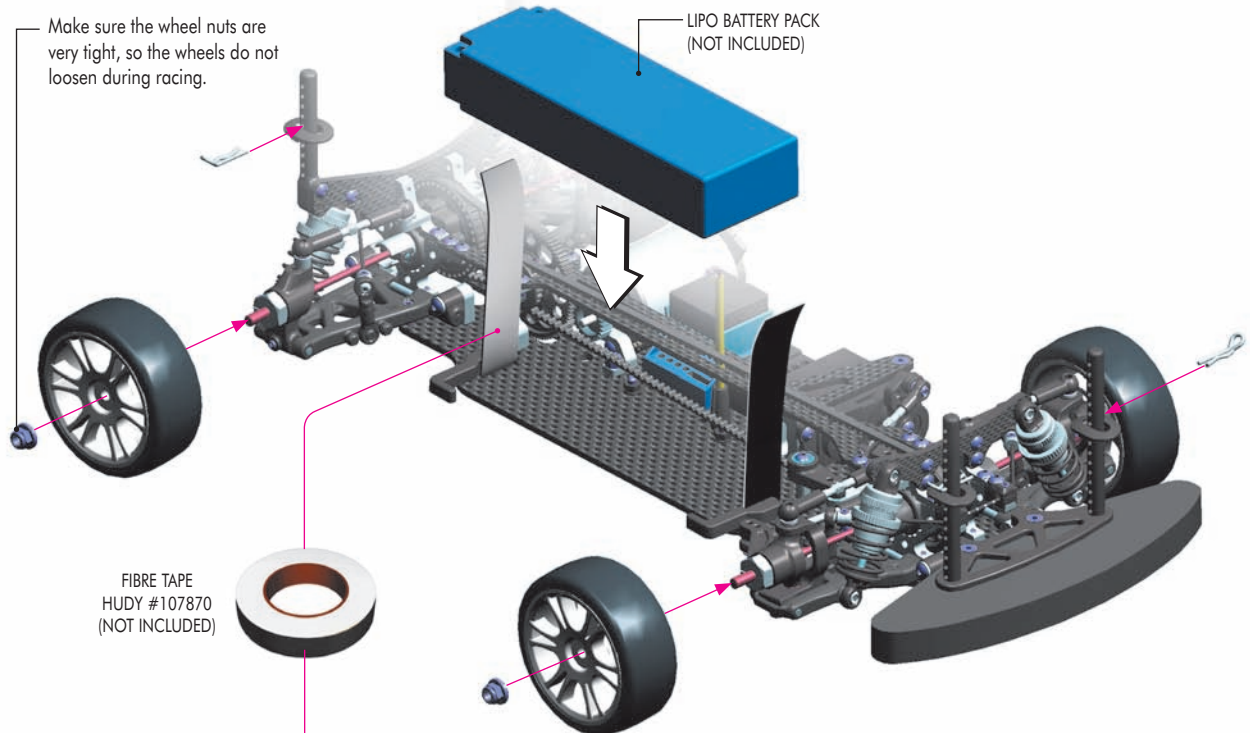


! WARNING!

Follow the adhesive manufacturer's instructions for proper use and safety. Wear proper eye and hand protection.

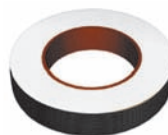


960140
N M4



DETAIL

We recommend using #107870
HUDY Fibre Reinforced Tape



OPTIONAL #306165 Graphite Battery Strap for LiPo is designed for LiPo batteries and ensures fast and comfortable mounting of the battery pack into the car. Depending on the height of LiPo batteries additional shims may have to be mounted below the stands.



SET-UP
BOOK

RIDE HEIGHT ADJUSTMENT
DROOP ADJUSTMENT

SET-UP SHEET

XRAY T4

RACE			
TRACK			
NAME			
CITY / COUNTRY			
CONTACT			

DATE		TEMPERATURE / °F or °C	AIR	TRACK
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QUALIFYING POSITION	BEST LAPTIME /sec	FINAL POSITION	RACE LENGTH /minutes
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TRACK CONDITION	<input type="checkbox"/> CARPET	<input type="checkbox"/> ASPHALT	
<input type="checkbox"/> TECHNICAL	<input type="checkbox"/> MIXED	<input type="checkbox"/> FAST	
TRACTION	<input type="checkbox"/> LOW	<input type="checkbox"/> MEDIUM	<input type="checkbox"/> HIGH

FRONT	REAR
TRANSMISSION	

SOLID AXLE <input type="checkbox"/> YES	BALL DIFFERENTIAL <input type="checkbox"/> YES
SOLID ONE WAY DIFF. <input type="checkbox"/> YES	
ONE WAY DIFFERENTIAL <input type="checkbox"/> YES	
GEAR DIFFERENTIAL <input type="checkbox"/> YES	GEAR DIFFERENTIAL <input type="checkbox"/> YES
OIL	OIL /Cst

PINION / T		SPUR GEAR / T	
FINAL DRIVE RATIO		ROLLOUT	

FRONT	REAR
XRAY SPRINGS	
OIL / CST	
LENGTH /mm	
PRELOAD /mm	
REBOUND %	

<input type="checkbox"/> YES <input type="checkbox"/> NO	FOAM INSERTS	<input type="checkbox"/> YES <input type="checkbox"/> NO
<input type="checkbox"/> YES <input type="checkbox"/> NO	O-RING ON SHAFT	<input type="checkbox"/> YES <input type="checkbox"/> NO

<input type="checkbox"/> 3 HOLES	PISTONS	<input type="checkbox"/> 3 HOLES
<input type="checkbox"/> 4 HOLES	1.0mm	<input type="checkbox"/> 4 HOLES
	1.1mm	
	1.2mm	
OTHERS		

THICKNESS/mm	ANTI-ROLL BAR	THICKNESS/mm
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TIRES
INSERTS
ADDITIVE
ADDITIVE TIMING

FRONT LEFT	FRONT RIGHT	REAR LEFT	REAR RIGHT
TREATED AREA			

WHEELS	
S <input type="checkbox"/> M <input type="checkbox"/> H <input type="checkbox"/>	HARDNESS
S <input type="checkbox"/> M <input type="checkbox"/> H <input type="checkbox"/>	

MOTOR	TIMING
ROTOR	ARMATURE
ESC	BATTERIES
BODY	WING

<input type="checkbox"/> - APPLIED	S - SOFT	M - MEDIUM	H - HARD
------------------------------------	----------	------------	----------

FRONT	CASTER	0° <input type="checkbox"/> 2° <input type="checkbox"/> 4° <input type="checkbox"/> 6° <input type="checkbox"/>	SQUAT	ROLL-CENTER	REAR
DIVE	ROLL-CENTER	SHIM /mm	+0.75 <input type="checkbox"/> 0.00 <input type="checkbox"/> -0.75 <input type="checkbox"/>	+0.75 <input type="checkbox"/> 0.00 <input type="checkbox"/> -0.75 <input type="checkbox"/>	+0.75 <input type="checkbox"/> 0.00 <input type="checkbox"/> -0.75 <input type="checkbox"/>
SHIM /mm	SHIM /mm	SHIM /mm	SHIM /mm	SHIM /mm	SHIM /mm
WHEELBASE/mm		WHEELBASE/mm		WHEELBASE/mm	
RIDE HEIGHT/mm		RIDE HEIGHT/mm		RIDE HEIGHT/mm	

C-HUB	SHIM /mm	SHIM /mm	SHIM /mm	SHIM /mm	REAR HUB
M <input type="checkbox"/>					M <input type="checkbox"/>
H <input type="checkbox"/>					H <input type="checkbox"/>
ALU <input type="checkbox"/>					ALU <input type="checkbox"/>
STEERING BLOCK	LONG 52mm <input type="checkbox"/> SHORT 50mm <input type="checkbox"/>	LONG 52mm <input type="checkbox"/> SHORT 50mm <input type="checkbox"/>	CAMBER LINK LOCATION	OPTIONAL HUB	OFFSET
M <input type="checkbox"/>					STANDARD <input type="checkbox"/>
H <input type="checkbox"/>					
ALU <input type="checkbox"/>					
OFFSET	MEASURE UNDER ARM	MEASURE UNDER ARM	MEASURE UNDER ARM	MEASURE UNDER ARM	OFFSET
STANDARD <input type="checkbox"/>					STANDARD <input type="checkbox"/>
DOWNSTOP /mm		DOWNSTOP /mm		DOWNSTOP /mm	

TOE /deg.	FINAL TOE IN	OUTBOARD TOE	INBOARD TOE
OUT <input type="checkbox"/> IN <input type="checkbox"/>	OUTBOARD + INBOARD TOE		
SHIM UNDER SHOCK	SHIM /mm	SHIM /mm	SHIM /mm
SHIM /mm			
SHIM FRONT	SHIM /mm	SHIM /mm	SHIM /mm
SHIM /mm			
ACKERMANN SHIM	SHIM /mm	SHIM /mm	SHIM /mm
SHIM /mm			
ROLL CENTER UPPER CLAMP	ROLL CENTER UPPER CLAMP	ROLL CENTER UPPER CLAMP	ROLL CENTER UPPER CLAMP

FRONT	CAMBER /deg.	REAR
UPPER SHOCK POSITION		
FRONT ARM	REAR ARM	
HARD (H) <input type="checkbox"/>	HARD (H) <input type="checkbox"/>	
EXTRA-HARD (XH) <input type="checkbox"/>	EXTRA-HARD (XH) <input type="checkbox"/>	
GRAPHITE (G) <input type="checkbox"/>	GRAPHITE (G) <input type="checkbox"/>	
OPTIONAL ARM	OPTIONAL ARM	

ECCENTER /mm	BALANCE /g	MOTOR HOLDER	BALANCE /g	ECCENTER /mm
STANDARD <input type="checkbox"/>		STANDARD <input type="checkbox"/>		STANDARD <input type="checkbox"/>
1 <input type="checkbox"/>		OPTION <input type="checkbox"/>		1 <input type="checkbox"/>
DIVE POSITION				DIVE POSITION
UP <input type="checkbox"/>				UP <input type="checkbox"/>
DOWN <input type="checkbox"/>				DOWN <input type="checkbox"/>
LOWER SUSP. BLOCK	BALANCE /g	BALANCE /g	BALANCE /g	LOWER SUSP. BLOCK
SOLID 1pcs <input type="checkbox"/>				SOLID 1pcs <input type="checkbox"/>
SINGLE 2 pcs <input type="checkbox"/>				SINGLE 2 pcs <input type="checkbox"/>

COMMENTS	
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