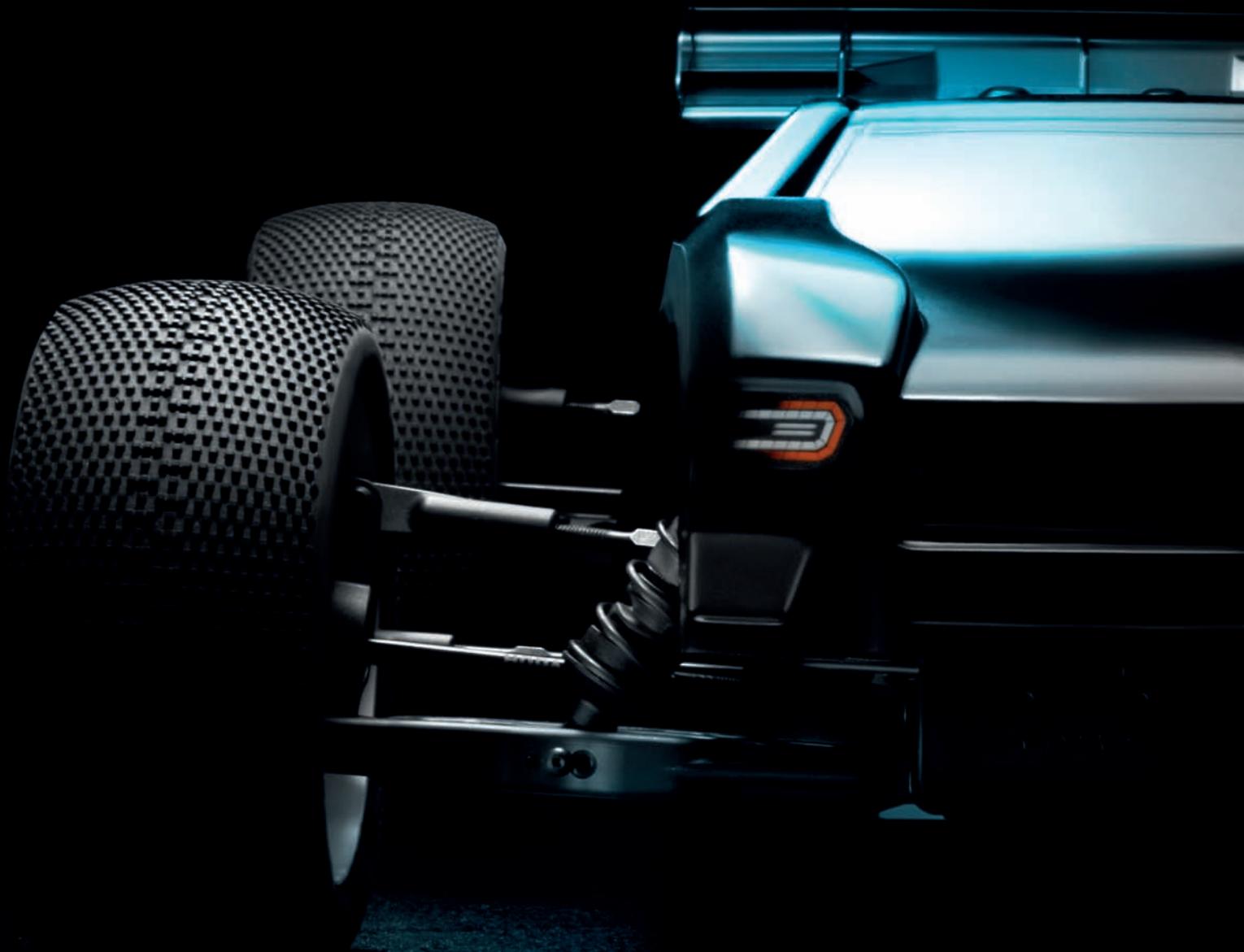


1/8 LUXURY NITRO TRUGGY

XRAY XT8



INSTRUCTION MANUAL

XRAY XT8'22 & XRAY XT8E'22

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

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

damage. Read carefully and fully understand the instructions before beginning assembly.

Make sure you review this entire manual, download and use set-up book from the web, and examine all details carefully. If for some reason you decide this is not what you wanted or expected, do not continue any further. Your hobby dealer can not accept your kit for return or exchange after it has been partially or fully assembled.

Contents of the box may differ from pictures. In line with our policy of continuous product development, the exact specifications of the kit may vary without prior notice.

XRAY Europe

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91101 Trenčín
Slovakia, EUROPE
Phone: +421-32-7401100
Fax: +421-32-7401109
Email: info@teamxray.com

XRAY USA

RC America, 2030 Century Center Blvd #15 Irving,
TX 75062
USA
Phone: (800) 519-7221 * (214) 744-2400
Fax: (214) 744-2401
Email: xray@rcamerica.com

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

SAFETY PRECAUTIONS

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

Wash thoroughly after using. DO NOT use product while eating, drinking or using tobacco products. May cause chronic effects to gastrointestinal tract, CNS, kidneys, and blood. MAY CAUSE BIRTH DEFECTS.

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

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

Using any third party parts on this model will void warranty immediately.

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



IMPORTANT NOTES – GENERAL

- This product is not suitable for children under 16 years of age without the direct supervision of a responsible and knowledgeable adult.
- Carefully read all manufacturers warnings and cautions for any parts used in the construction and use of your model.
- Assemble this kit only in places away from the reach of very small children.
- First-time builders and users should seek advice from people who have building experience in order to assemble the model correctly and to allow the model to reach its performance potential.
- Exercise care when using tools and sharp instruments.
- Take care when building, as some parts may have sharp edges.
- Keep small parts out of reach of small children. Children must not be allowed to put any parts in their mouth, or pull vinyl bag over their head.
- Read and follow instructions supplied with paints and/or cement, if used (not included in kit).
- Immediately after using your model, do NOT touch equipment on the model such as the motor and speed controller, because they generate high temperatures. You may seriously burn yourself seriously touching them.
- Follow the operating instructions for the radio equipment at all times.
- Do not put fingers or any objects inside rotating and moving parts, as this may cause damage or serious injury as your finger, hair, clothes, etc. may get caught.
- Be sure that your operating frequency is clear before turning on or running your model, and never share the same frequency with somebody else at the same time. Ensure that others are aware of the operating frequency you are using and when you are using it.
- Use a transmitter designed for ground use with RC cars. Make sure that no one else is using the same frequency as yours in your operating area. Using the same frequency at the same time, whether it is driving, flying or sailing, can cause loss of control of the RC model, resulting in a serious accident.
- Always turn on your transmitter before you turn on the receiver in the car. Always turn off the receiver before turning your transmitter off.



IMPORTANT NOTES – NITRO ENGINES

- Always test the brakes and the throttle before starting your engine to avoid losing control of the model.
- Make sure the air filter is clean and oiled.
- Never run your engine without an air filter. Your engine can be seriously damaged if dirt and debris get inside the engine.
- For proper engine break-in, please refer to the manual that came with the engine.

- 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.

- Do not run near open flames or smoke while running your model or while handling fuel.
- Some parts will be hot after operation. Do not touch the exhaust or the engine until they have cooled. These parts may reach 275°F during operation!



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



IMPORTANT NOTES – NITRO FUEL

- Handle fuel only outdoors. Never handle nitro fuel indoors, or mix nitro fuel in a place where ventilation is bad.
- Only use nitro fuel for R/C models. Do not use gasoline or kerosene in R/C models as it may cause a fire or explosion, and ruin your engine.
- Nitro fuel is highly inflammable, explosive, and poisonous. Never use fuel indoors or in places with open fires and sources of heat.
- Always keep the fuel container cap tightly shut.
- Always read the warning label on the fuel container for safety information.
- Nitro-powered model engines emit poisonous vapors and gasses. These vapors irritate eyes and can be highly dangerous to your health. We recommend wearing rubber or vinyl gloves to avoid direct contact with nitro fuel.
- Nitro fuel for RC model cars is made of the combination of the methyl alcohol, castor or synthetic oil,

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.

nitro methane etc. The flammability and volatility of these elements is very high, so be very careful during handling and storage of nitro fuel.

- Keep nitro fuel away from open flame, sources of heat, direct sunlight, high temperatures, or near batteries.
- Store fuel in a cool, dry, dark, well-ventilated place, away from heating devices, open flames, direct sunlight, or batteries. Keep nitro fuel away from children.
- Do not leave the fuel in the carburetor or fuel tank when the model is not in use. There is danger that the fuel may leak out.
- Wipe up any spilled fuel with a cloth
- Be aware of spilled or leaking fuel. Fuel leaks can cause fires or explosions.
- Do not dispose of fuel or empty fuel containers in a fire. There is danger of explosion.

R/C & BUILDING TIPS

- Make sure all fasteners are properly tightened. Check them periodically.
- Make sure that chassis screws do not protrude from the chassis.
- For the best performance, it is very important that great care is taken to ensure the free movement of all parts.
- Clean all ball-bearings so they move very easily and freely.
- Tap or pre-thread the plastic parts when threading screws.
- Self-tapping screws cut threads into the parts when being tightened. Do not use excessive force when tightening the self-tapping screws because you may strip out the thread in the plastic. We recommended you stop tightening a screw when you feel some resistance.
- Ask your local hobby shop for any advice.

Please support your local hobby shop. We at XRAY Model Racing Cars support all local hobby dealers. Therefore we ask you, if at all possible, to purchase XRAY products at your hobby dealer and give them your support like we do. If you have difficulty finding XRAY products, please check out www.teamxray.com to get advice, or contact us via email at info@teamxray.com, or contact the XRAY distributor in your country.

WARRANTY

XRAY guarantees this model kit to be free from defects in both material and workmanship within 30 days of purchase. The total monetary value under warranty will in no case exceed the cost of the original kit purchased. This warranty does not cover any components damaged by use or modification or as a result of wear. Part or parts missing from this kit must be reported within 30 days of purchase. No part or parts will be sent under warranty without proof of purchase. Should you find a defective or missing part, contact the local distributor. Service and customer support will be provided through local hobby store where you have purchased the kit, therefore make sure to purchase any XRAY products at your local hobby store. This model racing car is considered to be a high-performance racing vehicle. As such this vehicle will be used in an extreme range of conditions and situations, all which may cause premature wear or failure of any component. XRAY has no control over usage of vehicles once they leave the dealer, therefore XRAY can only offer warranty against all manufacturer's defects in materials, workmanship, and assembly at point of sale and before use. No warranties are expressed or implied that cover damage caused by what is considered normal use, or cover or imply how long any model cars' components or electronic components will last before requiring replacement.

Due to the high performance level of this model car you will need to periodically maintain and replace consumable components. Any and all warranty coverage will not cover replacement of any part or component damaged by neglect, abuse, or improper or unreasonable use. This includes but is not limited to damage from crashing, chemical and/or water damage, excessive moisture, improper or no maintenance,

or user modifications which compromise the integrity of components. Warranty will not cover components that are considered consumable on RC vehicles. XRAY does not pay nor refund shipping on any component sent to XRAY or its distributors for warranty. XRAY reserves the right to make the final determination of the warranty status of any component or part.

Limitations of Liability

XRAY makes no other warranties expressed or implied. XRAY shall not be liable for any loss, injury or damages, whether direct, indirect, special, incidental, or consequential, arising from the use, misuse, or abuse of this product and/or any product or accessory required to operate this product. In no case shall XRAY's liability exceed the monetary value of this product.

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

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

All rights reserved.

QUALITY CERTIFICATE

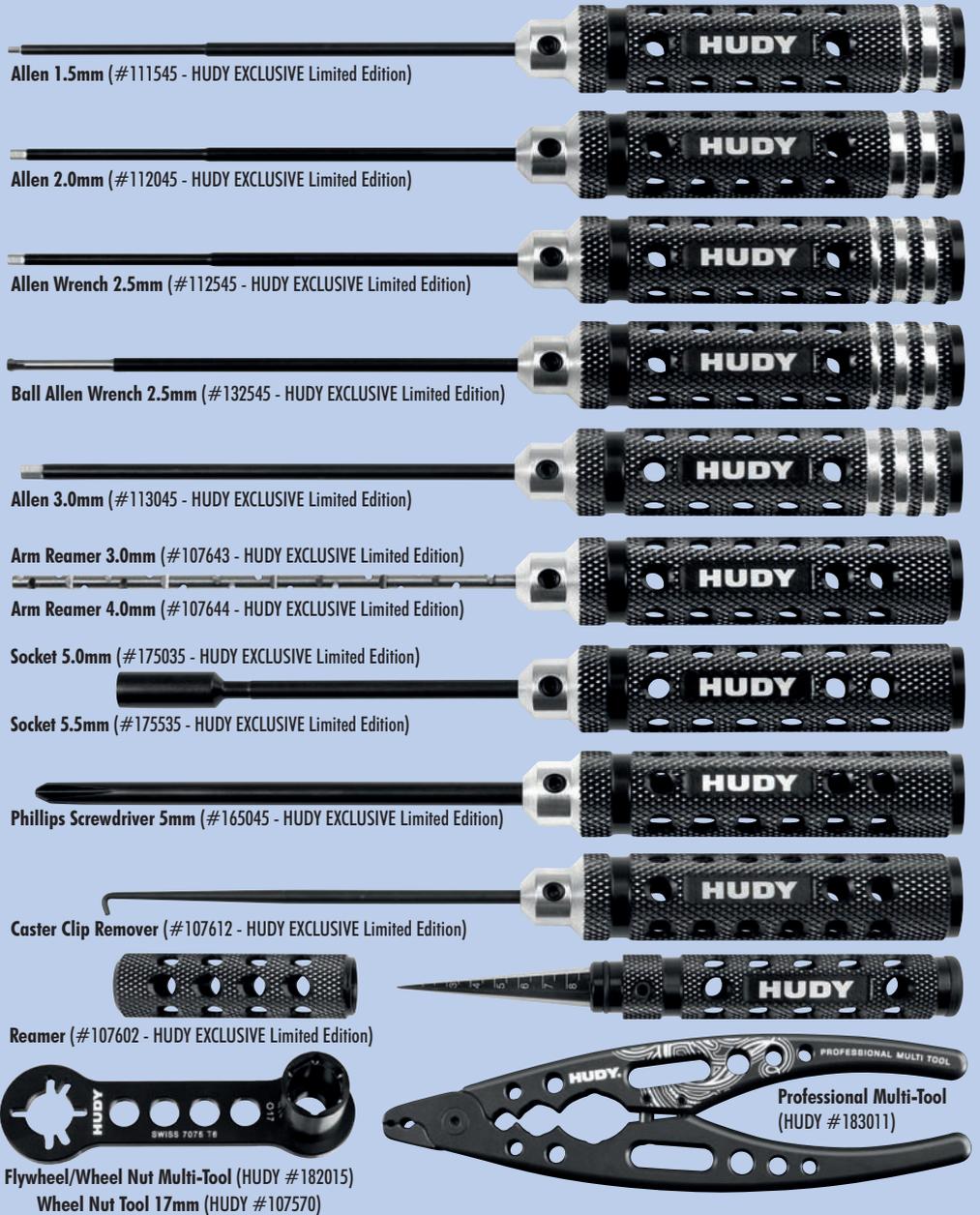
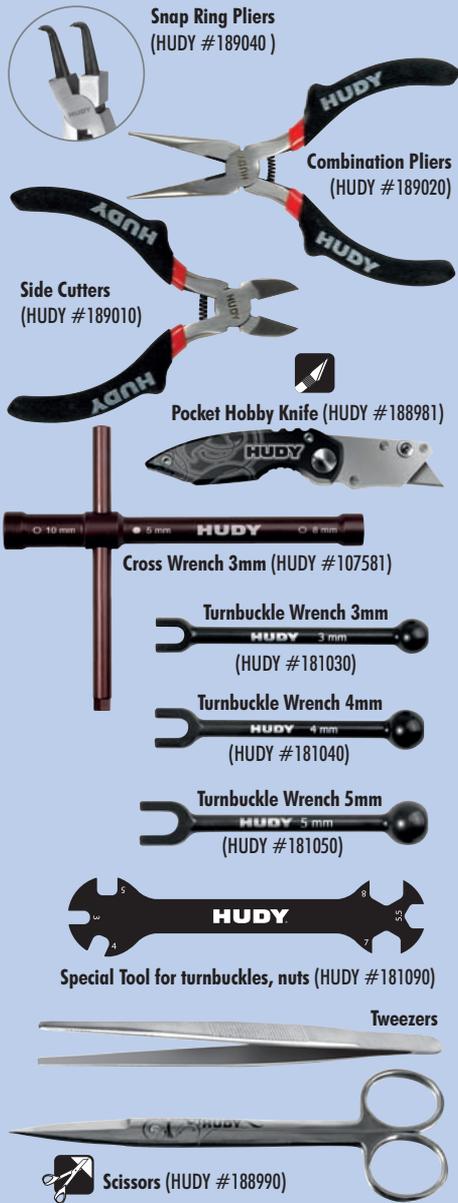
XRAY MODEL RACING CARS uses only the highest quality materials, the best compounds for molded parts and the most sophisticated manufacturing processes of TQM (Total Quality Management). We guarantee that all parts of a newly-purchased kit are manufactured with the highest regard to quality. However, due to the many factors inherent in model racecar competition, we cannot guarantee any parts once you start racing the car. Products which have been worn out, abused, neglected or improperly operated will not be covered under warranty. We wish you enjoyment of this high-quality and high-performance RC car and wish you best success on the track!

Please note that raw materials such as aluminum, steel, brass, fibreglass, or carbon fibre may have small scratches on the surface which is a standard characteristic of any raw material. Scratches on the surface of any materials are NOT considered to be material defects.

Products may potentially have small amounts of corrosion on them. This may be caused by variances in weather during different times of the year, humidity in the shop or during shipping, and other contributing factors. Even though we have taken all precautions and protection methods to prevent corrosion, these small amounts of corrosion (if present) are unavoidable and considered to be acceptable.

In line with our policy of continuous product development, the exact specifications of the kit may vary. In the unlikely event of any problems with your new kit, you should contact the model shop where you purchased it, quoting the part number. We do reserve all rights to change any specification without prior notice. All rights reserved.

TOOLS REQUIRED



EQUIPMENT REQUIRED

■ Electric ■ Nitro

<p>Transmitter & Receiver</p>	<p>Engine .21ci (3.5cc) FX #650105 K303 FX #650304 K502</p>	<p>Electric Motor & Pinion Gear</p>	<p>Manifold & Exhaust (FX #659506) (FX #659558)</p>	<p>Starter Box & Battery Pack (HUDY #104500)</p>	<p>Glow Plug Igniter</p>
<p>Steering and Throttle Servos</p>	<p>Speed Controller</p>	<p>LiPo Battery Pack</p>	<p>Double-sided Tape (HUDY #107875)</p>	<p>Lexan™ Paint</p>	<p>BODY</p>
<p>Battery Charger</p>	<p>Receiver Pack</p>	<p>Threadlock & CA Glue</p>	<p>Bearing Oil (HUDY #106230)</p>	<p>Wheels & Tires</p>	<p>Fuel + Fuel Bottle (HUDY #104200)</p>

EQUIPMENT INCLUDED

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

■ Electric ■ Nitro



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.

TECH TIPS

TIP FRONT & REAR DIFF GEAR MESH ADJUSTMENT

If there is too much or too little diff side play, this may create non-optimal gear mesh between the diff gear and the pinion drive gear. This is easily resolved by inserting 1 or 2 of the included thin shims behind a diff outdrive ball-bearing, depending on how much play there is.

THE LOCATION OF THE SHIM(S) DEPENDS ON WHETHER YOU ARE TRYING TO CLOSE OR OPEN THE GAP:

TO CLOSE A WIDE GAP

CLOSE A WIDE GAP

To CLOSE a wide gap: add 1 or 2 shims against diff spur gear

insert shim(s) here

WASHER #962131 S 13 x 16 x 0.1 mm (10)
#962130 S 13 x 16 x 0.2 mm (10)

TO OPEN A NARROW GAP

OPEN A NARROW GAP

To OPEN a narrow gap: add 1 or 2 shims on the other side of the diff, away from spur gear

insert shim(s) here

WASHER #962131 S 13x16x0.1mm (10)
#962130 S 13x16x0.2mm (10)

CHECK GEAR MESH AND DIFF PLAY ONLY AFTER THE ENTIRE GEARBOX IS MOUNTED TOGETHER WITH THE SUSPENSION HOLDERS ON THE CHASSIS. ALL PARTS ARE DESIGNED TO HAVE CERTAIN PLAY AND IT IS ALL DESIGNED BY PURPOSE.

TIP DRIVE SHAFT PIN SERVICING

To enjoy the longest possible lifespan of the drive shafts and diff outdrives, it is extremely important to properly service the drive shaft pins. Inspect the pins after every 3 hours of runtime. If the pins show any wear, replace them with new pins.

1 Do not use drive shafts when the pins are worn.

2 Press out the worn pins.

3 Press in new pins and regularly inspect for wear.

For easy drive pin replacements use #106000 HUDY Drive Pin Replacement Tool.

To replace the worn pins use only premium HUDY drive pins #106050.

1. FRONT TRANSMISSION TX8

MANUAL STEPS ONLY FOR XT8

1. GEAR DIFFERENTIAL TX8E

MANUAL STEPS ONLY FOR XT8E

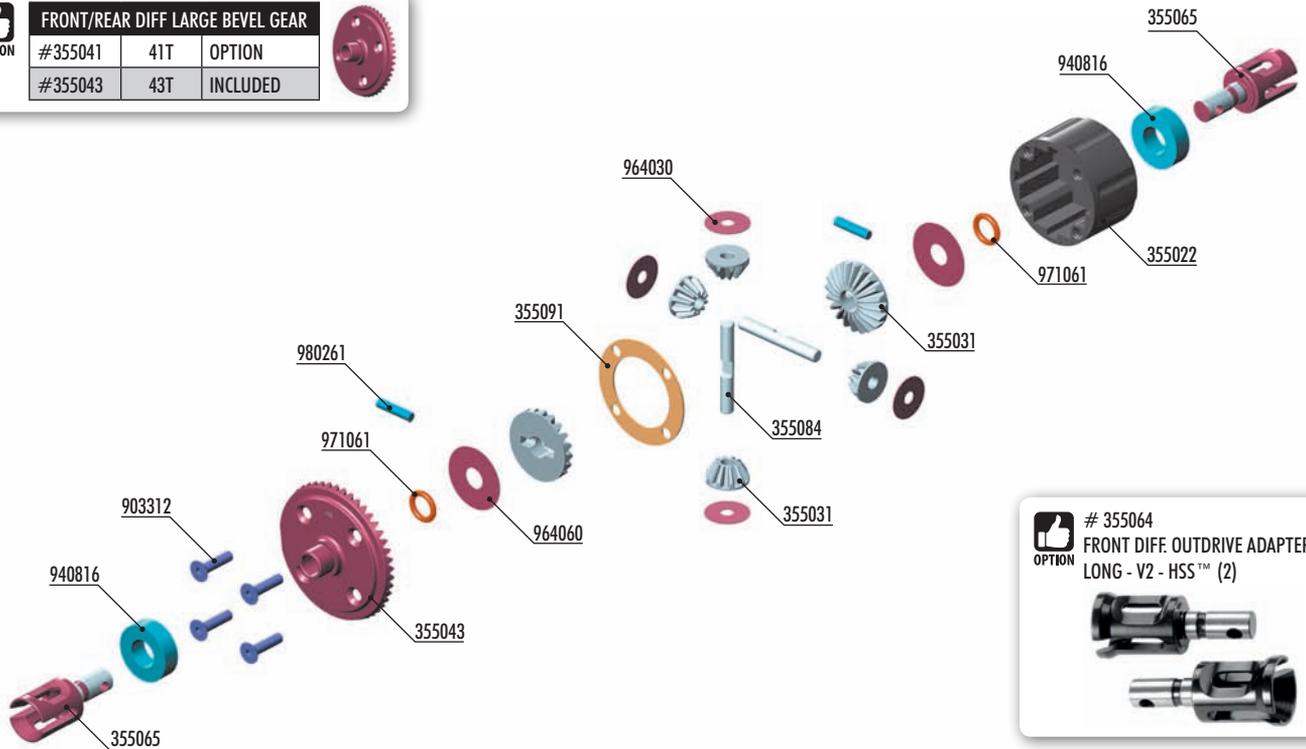
3. REAR DRIVETRAIN TX8E TX8

MANUAL DUAL STEPS FOR XT8E AND XT8



FRONT/REAR DIFF LARGE BEVEL GEAR

#355041	41T	OPTION
#355043	43T	INCLUDED



355064
OPTION FRONT DIFF. OUTDRIVE ADAPTER LONG - V2 - HSS™ (2)

355022-G
OPTION DIFFERENTIAL CASE - V2 - GRAPHITE

355086
OPTION HEAT-RESISTANT F/R ALU DIFF PINS + INSERTS (SET)

BAG



- 355022 DIFFERENTIAL CASE - V2
- 355031 STEEL DIFF BEVEL & SATELLITE GEARS - V2 (2+4)
- 355043 FRONT/REAR DIFF LARGE BEVEL GEAR 43T - HUDY STEEL
- 355065 REAR DIFF OUTDRIVE ADAPTER - V2 - HUDY SPRING STEEL™ (2)
- 355084 F/R DIFF PIN (2)
- 355091 F/R DIFF GASKET (4)

- 903312 HEX SCREW SFH M3x12 (10)
- 940816 BALL-BEARING 8x16x5 RUBBER SEALED - GREASE (2)
- 964030 WASHER S 3.5x12x0.2 (10)
- 964060 WASHER S 6x18x0.2 (10)
- 971061 SILICONE O-RING 6x1.55 (10)
- 980261 PIN 2.5x11.5 (10)



940816
BB 8x16x5



964060
S 6x18x0.2



971061
O 6x1.55

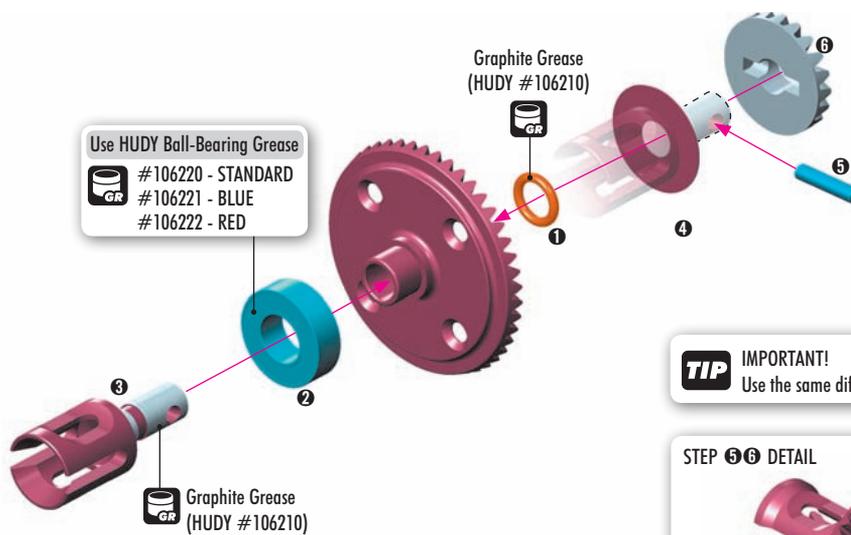


980261
P 2.5x11.5

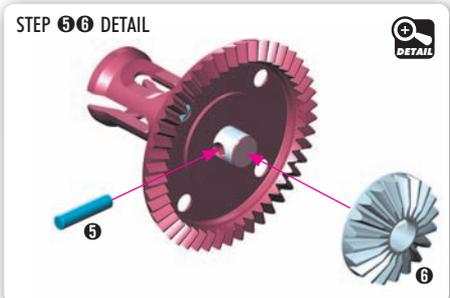
2x F=R

Use HUDY Ball-Bearing Grease

- #106220 - STANDARD
- #106221 - BLUE
- #106222 - RED



TIP IMPORTANT!
Use the same diff outdrives on both ends of a diff.



FRONT/REAR DIFF LARGE BEVEL GEAR

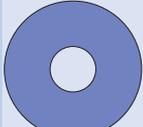
#355041	41T	OPTION
#355043	43T	INCLUDED



SET-UP BOOK
DIFFERENTIAL GEARS



940816
BB 8x16x5



964060
S 6x18x0.2

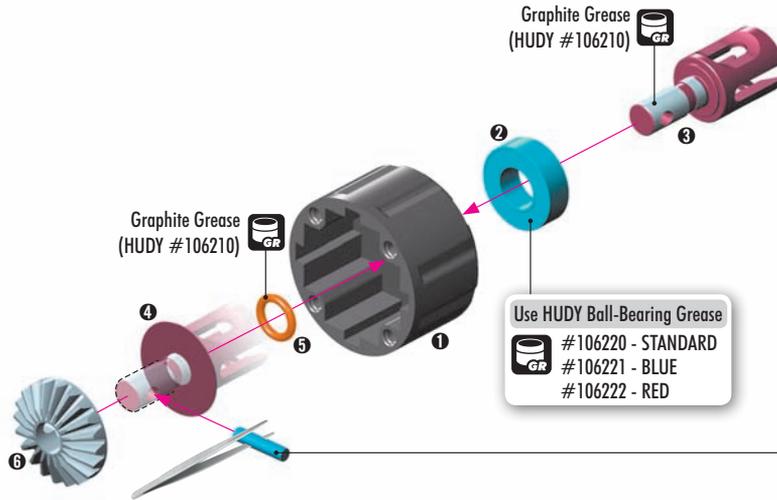


971061
O 6x1.55



980261
P 2.5x11.5

2x F=R



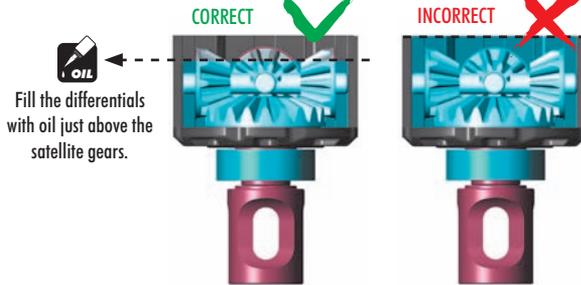
903312
SFH M3x12



964030
S 3.5x12x0.2

VERY IMPORTANT!

Use the following silicone oils included in the kit for initial settings:
FRONT diff: 10.000cSt / REAR diff: 5.000cSt



To ensure you have the same amount of oil from rebuild to rebuild, do the following:

#107865 HUDY Ultimate Digital Pocket Scale 300g ± 0.01g



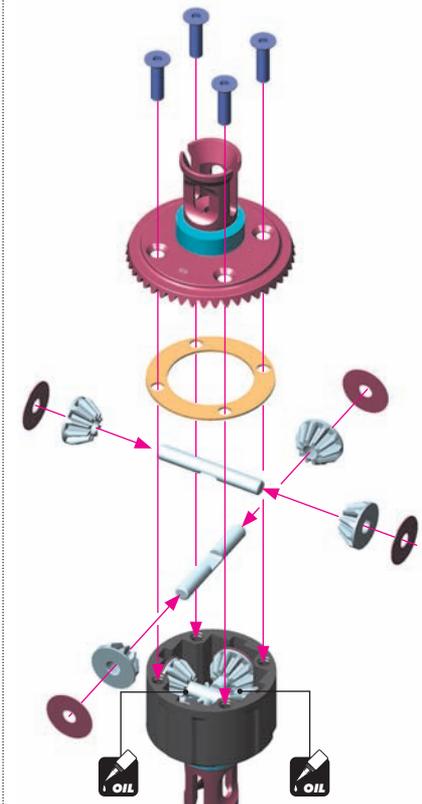
1. Put the diff (without oil) on the scale and check the weight:

- REAR DIFF approx. 39.30g
- FRONT DIFF approx. 40.10g

2. Slowly pour oil into the diff and watch the weight.

Add 2.70g of oil into the diff. The approximate weight of the diff+oil is REAR DIFF approx. 42.00g and FRONT DIFF approx. 42.80g.

REAR DIFF	39.30g	+	2.70g	=	42.00g
FRONT DIFF	40.10g	+	2.70g	=	42.80g



Front diff:
Silicone oil 10.000cSt
Fill just above the satellite gears.

Rear diff:
Silicone oil 5.000cSt
Fill just above the satellite gears.

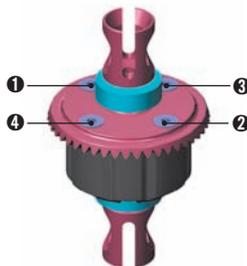
SET-UP BOOK

DIFFERENTIAL OIL

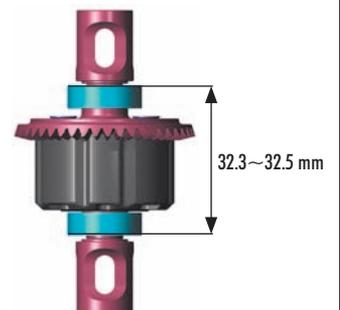
Tighten the screws equally.



Finish tightening in this order.



After assembly the differentials should have a length of 32.3~32.5 mm measured from the ends of the installed ball-bearings. If differentials are longer, retighten the 4 screws holding the crown gears.



1. CENTER DIFFERENTIAL

XT8E XT8

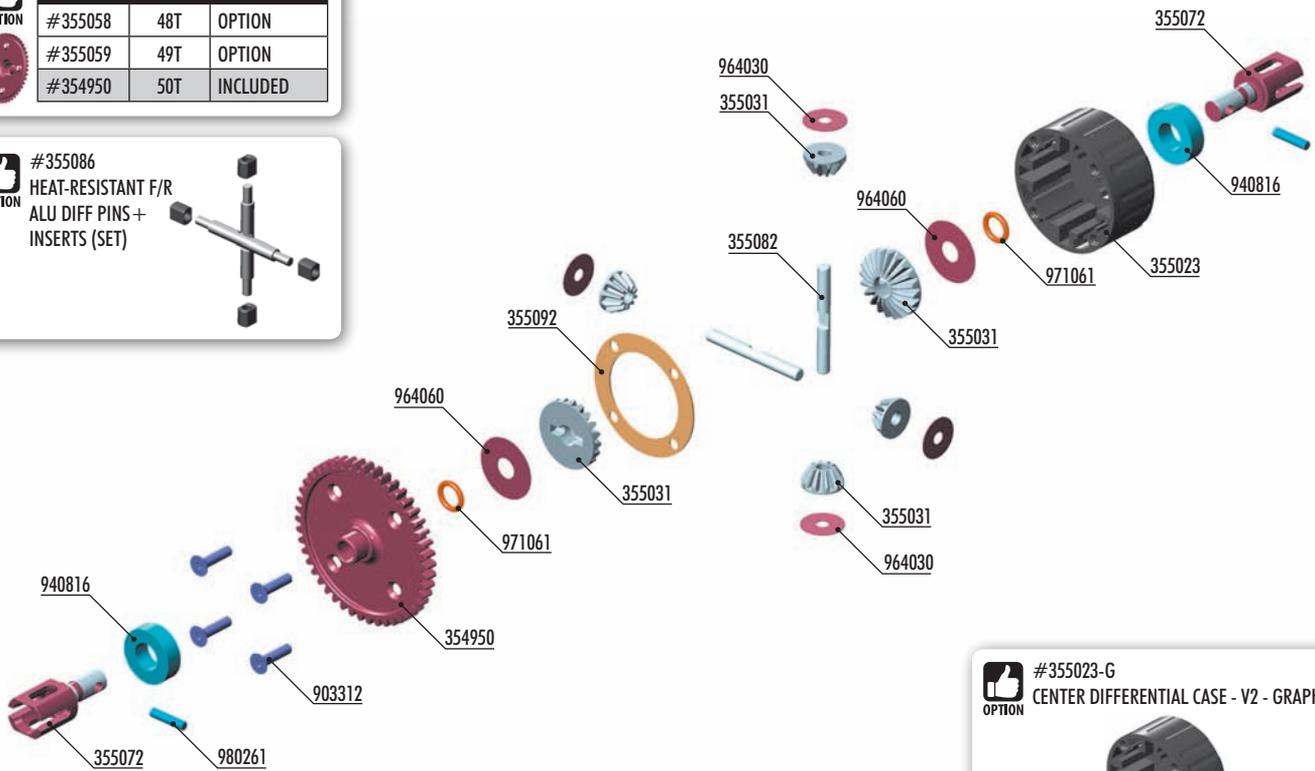
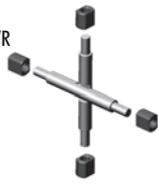


CENTER DIFF SPUR GEAR - LARGE

#355058	48T	OPTION
#355059	49T	OPTION
#354950	50T	INCLUDED



#355086
HEAT-RESISTANT F/R
ALU DIFF PINS +
INSERTS (SET)



#355023-G
CENTER DIFFERENTIAL CASE - V2 - GRAPHITE



BAG



- 354950 CENTER DIFF SPUR GEAR 50T - LARGE
- 355023 CENTER DIFFERENTIAL CASE - V2
- 355031 STEEL DIFF BEVEL & SATELLITE GEARS - V2 (2+4)
- 355072 LARGE CENTER DIFF OUTDRIVE ADAPTER - HUDY STEEL (2)
- 355082 CENTER DIFF PIN (2)
- 355092 CENTER DIFF GASKET (2)

- 903312 HEX SCREW SFH M3x12 (10)
- 940816 BALL-BEARING 8x16x5 RUBBER SEALED - GREASE (2)
- 964030 WASHER S 3.5x12x0.2 (10)
- 964060 WASHER S 6x18x0.2 (10)
- 971061 SILICONE O-RING 6x1.55 (10)
- 980261 PIN 2.5x11.5 (10)



940816
BB 8x16x5



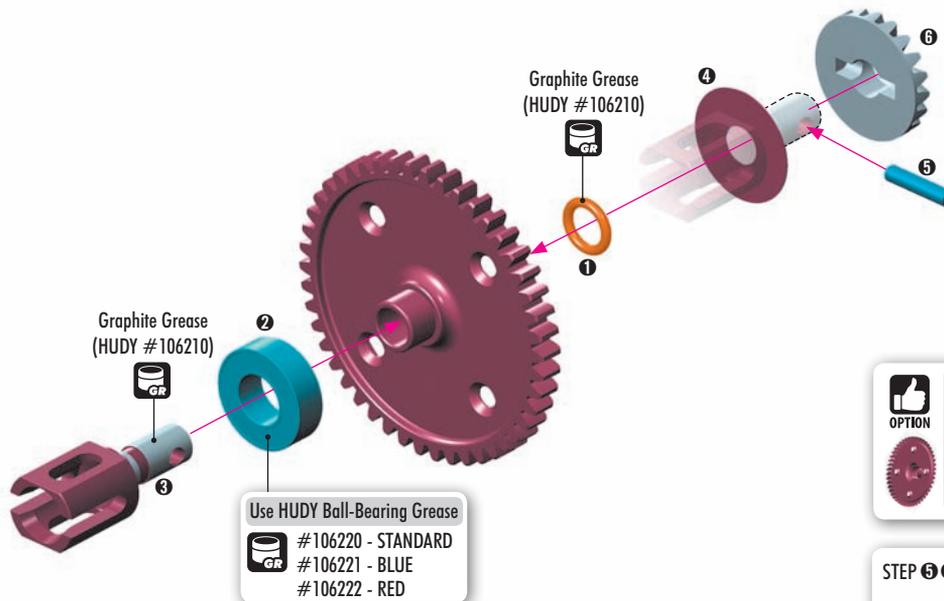
964060
S 6x18x0.2



971061
O 6x1.55



980261
P 2.5x11.5



Graphite Grease
(HUDY #106210)

Graphite Grease
(HUDY #106210)

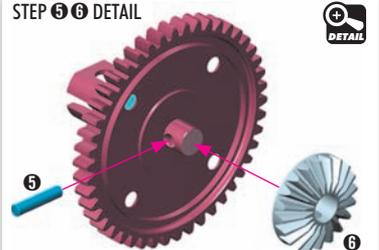
Use HUDY Ball-Bearing Grease
106220 - STANDARD
106221 - BLUE
106222 - RED



CENTER DIFF SPUR GEAR - LARGE

#355058	48T	OPTION
#355059	49T	OPTION
#354950	50T	INCLUDED

STEP 5 6 DETAIL

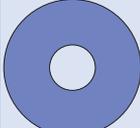


SET-UP BOOK

DIFFERENTIAL GEARS



940816
BB 8x16x5



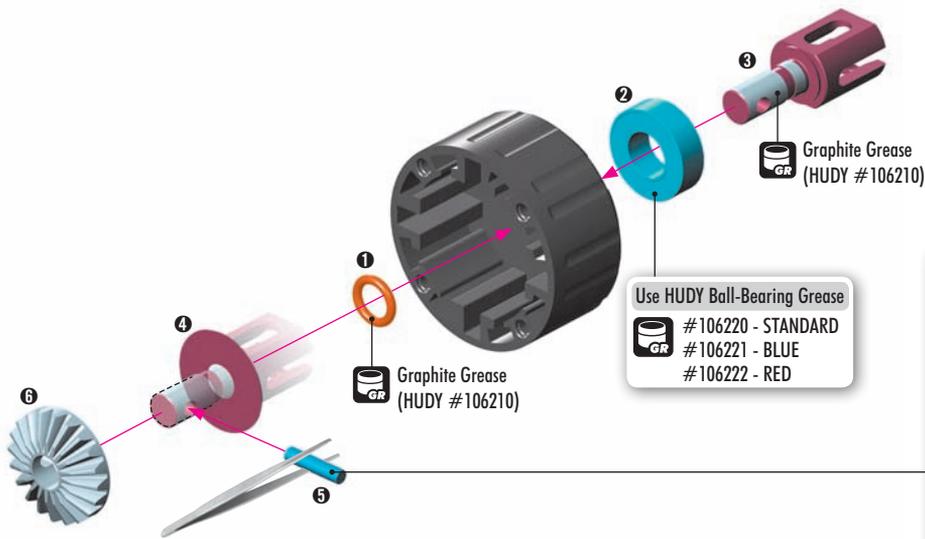
964060
S 6x18x0.2



971061
O 6x1.55



980261
P 2.5x11.5



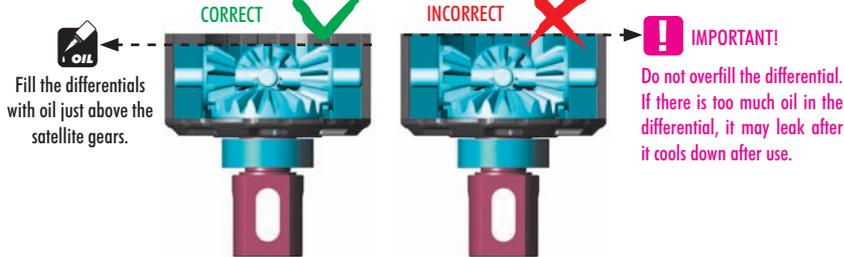
903312
SFH M3x12



964030
S 3.5x12x0.2

VERY IMPORTANT!

Use the following silicone oil included in the kit for initial setting:
Center diff: 15.000cSt



To ensure you have the same amount of oil from rebuild to rebuild, do the following:

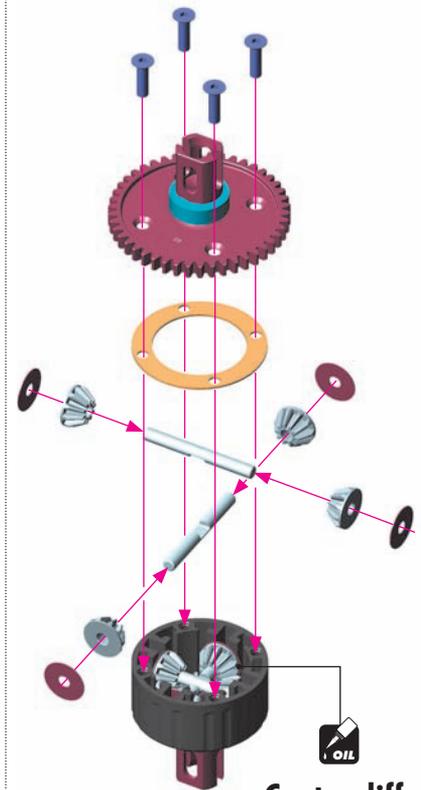
#107865 HUDY Ultimate Digital Pocket Scale 300g ± 0.01g



1. Put the diff (without oil) on the scale and check the weight (approximately 42.97g).

2. Slowly pour oil into the diff and watch the weight. Add 5.33g of oil into the diff. The approximate weight of the diff + oil is 48.30g.

$$\text{CENTER DIFF } 42.97\text{g} + 5.33\text{g} = 48.30\text{g}$$



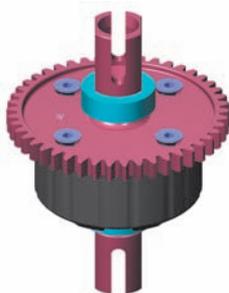
Center diff:

Silicone oil 15.000cSt

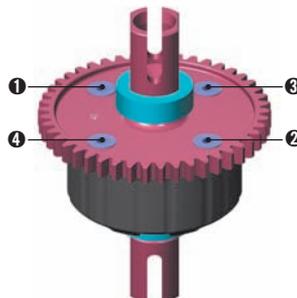
Fill to just above the satellite gears.

SET-UP BOOK
DIFFERENTIAL OIL

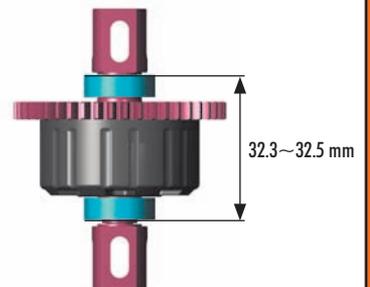
Tighten the screws equally.

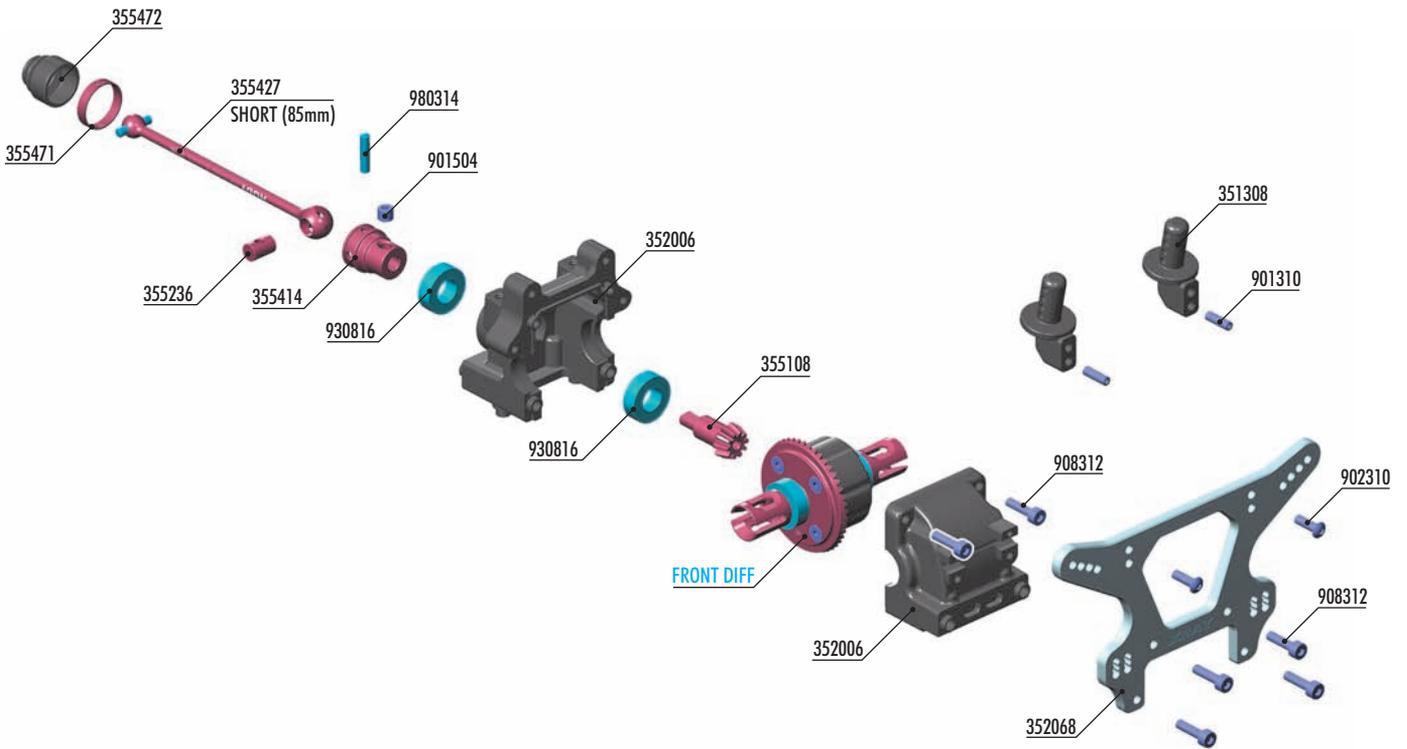


Finish tightening in this order.



After assembly the differential should have a length of 32.3~32.5 mm measured from the ends of the installed ball-bearings. If differential is longer, retighten the 4 screws holding the spur gear.





BAG

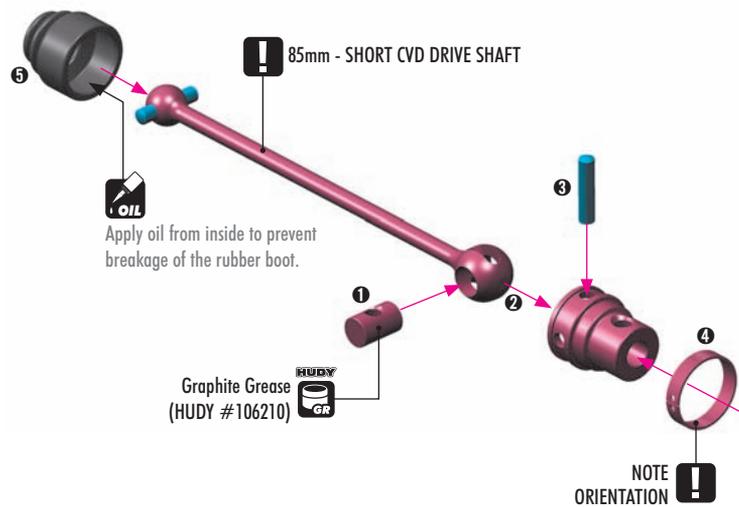
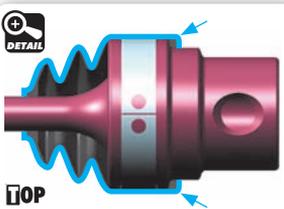
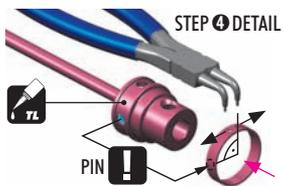
02

351308	BODY POSTS - V2	355472	DRIVE SHAFT BOOT (2)
352006	DIFF BULKHEAD BLOCK SET FRONT/REAR	901310	HEX SCREW SB M3x10 (10)
352068	ALLU FRONT SHOCK TOWER - CNC MACHINED 7075 T6 (4MM)	901504	HEX SCREW SB M5x4 (10)
355108	BEVEL DRIVE GEAR 10T	902310	HEX SCREW SH M3x10 (10)
355236	CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™	908312	HEX SCREW SOCKET HEAD CAP M3x12 (10)
355414	CENTRAL CVD SHAFT UNIVERSAL JOINT - HUDY SPRING STEEL™	930816	BALL-BEARING 8x16x5 STEEL SEALED - GREASE (2)
355427	FRONT CENTRAL CVD DRIVE SHAFT - HUDY SPRING STEEL™	980314	PIN 3x14 (10)
355471	DRIVE SHAFT LOCKING RING (2)		



980314
P 3x14

The ring can be assembled by hand, but for easy disassembly we recommend using snap ring pliers (HUDY #189040).



BEFORE inserting the clip on the central CVD shaft joint, apply a small amount of threadlock on the area where the clip goes.

AFTER inserting the clip on the central CVD shaft joint, turn the clip so that the slot is 90° from the pin. This will prevent the pin from opening the clip.

901504
SB M5x4

930816
BB 8x16x5

TIP
Follow the TECH TIP on page 5 for drive shaft pin servicing.

STEP 6 DETAIL
Push joint against gear to remove gap. Tighten setscrew onto gear flat spot.

Bearing with STEEL covers.

Bearing with STEEL covers.

OPTION	XRAY BALL-BEARINGS	GREASE	STEEL	INCLUDED
#930816	8x16x5	GREASE	STEEL	INCLUDED
#930817	8x16x5	OIL	STEEL	OPTION

Use HUDY Ball-Bearing Grease

- #106220 - STANDARD
- #106221 - BLUE
- #106222 - RED

908312
SCH M3x12

FRONT
NOTE DIFF ORIENTATION

FRONT DIFF
10.000:1

Graphite Grease (HUDY #106210)

Cut on both front and rear bulkhead blocks.

NOTE DIFF ORIENTATION

FRONT

During assembly, there is no need to check gear mesh or diff play. In particular, do not check gear mesh and diff play when the differential is installed only in the gear box without the suspension holders and without being mounted to the chassis. All parts have specifically designed play, and only when the car is fully assembled will it have the proper amount of play where necessary. Only once you build the entire car, then you can check for free movement of all rotational parts and drivetrain as well as a free non-binding operation of suspension parts.

901310
SB M3x10

902310
SH M3x10

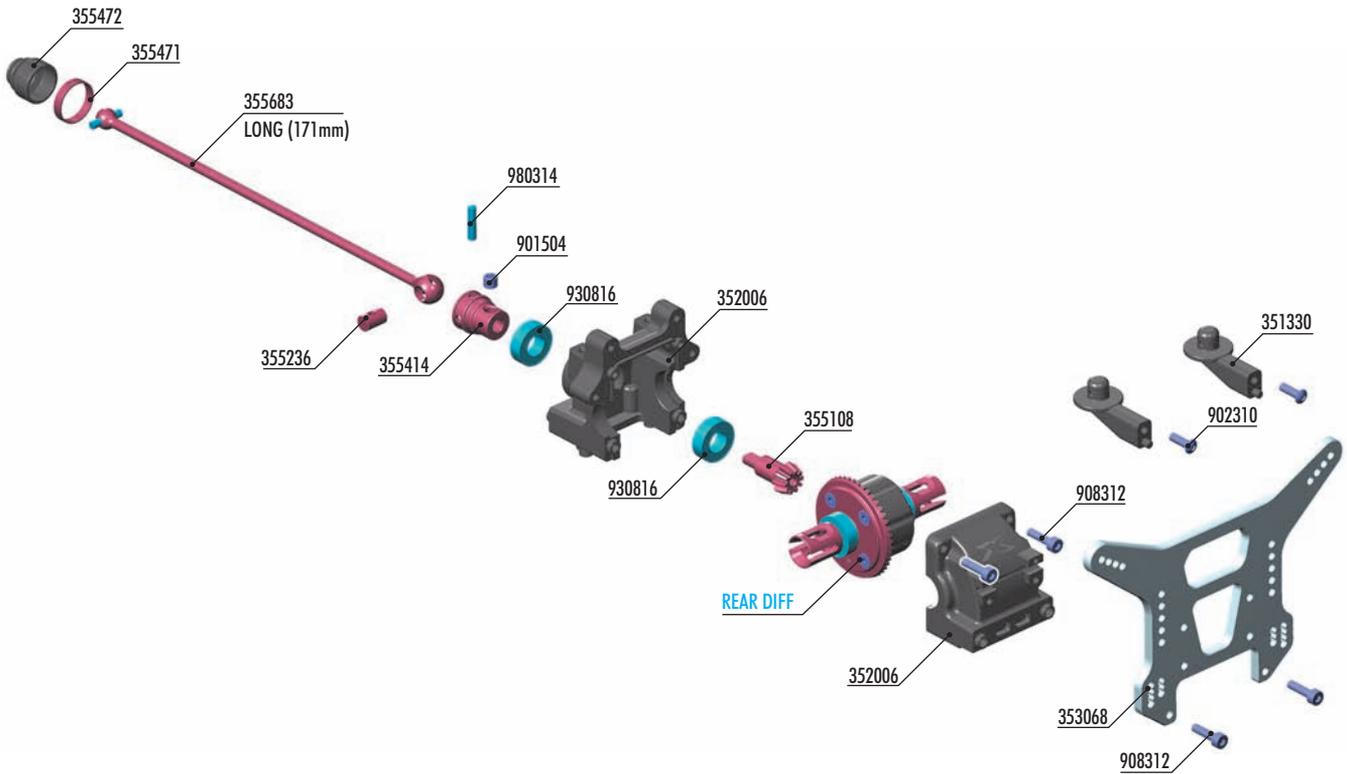
908312
SCH M3x12

2x

3.5mm

NOTE ORIENTATION

FRONT



BAG

02

351330	COMPOSITE REAR BODY POST - LONG	355472	DRIVE SHAFT BOOT (2)
352006	DIFF BULKHEAD BLOCK SET FRONT/REAR	901504	HEX SCREW SB M5x4 (10)
353068	ALU REAR SHOCK TOWER - CNC MACHINED 7075 T6 (4MM)	902310	HEX SCREW SH M3x10 (10)
355108	BEVEL DRIVE GEAR 10T	908312	HEX SCREW SOCKET HEAD CAP M3x12 (10)
355236	CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™	930816	BALL-BEARING 8x16x5 STEEL SEALED - GREASE (2)
355414	CENTRAL CVD SHAFT UNIVERSAL JOINT - HUDY SPRING STEEL™	980314	PIN 3x14 (10)
355683	CVD CENTRAL DRIVE SHAFT REAR - HUDY SPRING STEEL™		
355471	DRIVE SHAFT LOCKING RING (2)		



980314
P 3x14

The ring can be assembled by hand, but for easy disassembly we recommend using snap ring pliers (HUDY #189040).

STEP 4 DETAIL

TL

PIN

DETAIL

TOP

5

171mm - LONG CVD DRIVE SHAFT

OIL

Apply oil from inside to prevent breakage of the rubber boot.

1

2

3

4

Graphite Grease (HUDY #106210)

GR

NOTE ORIENTATION

BEFORE inserting the clip on the central CVD shaft joint, apply a small amount of threadlock on the area where the clip goes.

AFTER inserting the clip on the central CVD shaft joint, turn the clip so that the slot is 90° from the pin. This will prevent the pin from opening the clip.

2. REAR TRANSMISSION

XT8

901504
SB M5x4



930816
BB 8x16x5



XRAY BALL-BEARINGS

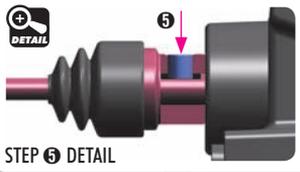
OPTION	#	Size	GREASE	STEEL	INCLUDED
	#930816	8x16x5	GREASE	STEEL	INCLUDED
	#930817	8x16x5	OIL	STEEL	OPTION

Use HUDY Ball-Bearing Grease

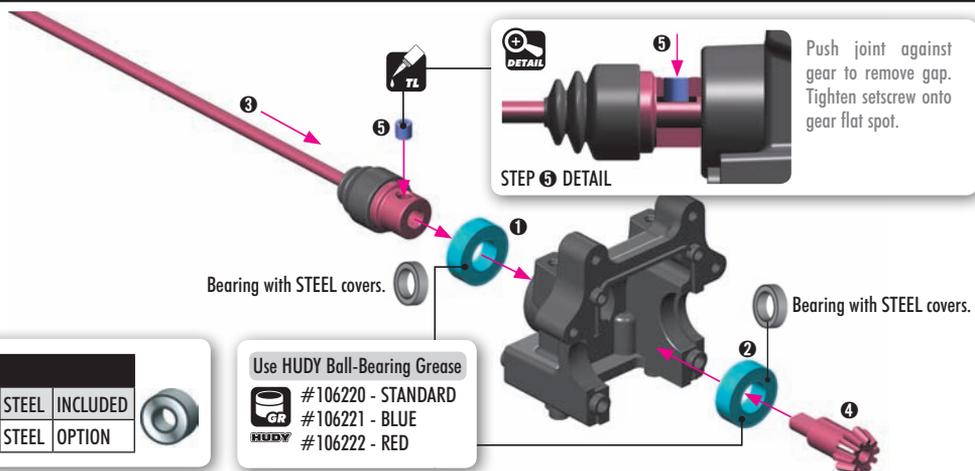
- #106220 - STANDARD
- #106221 - BLUE
- #106222 - RED

Push joint against gear to remove gap. Tighten setscrew onto gear flat spot.

STEP 6 DETAIL



Bearing with STEEL covers.



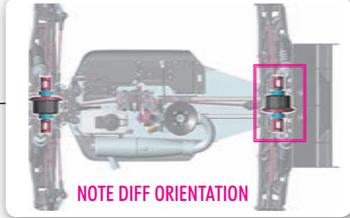
Bearing with STEEL covers.

908312
SCH M3x12



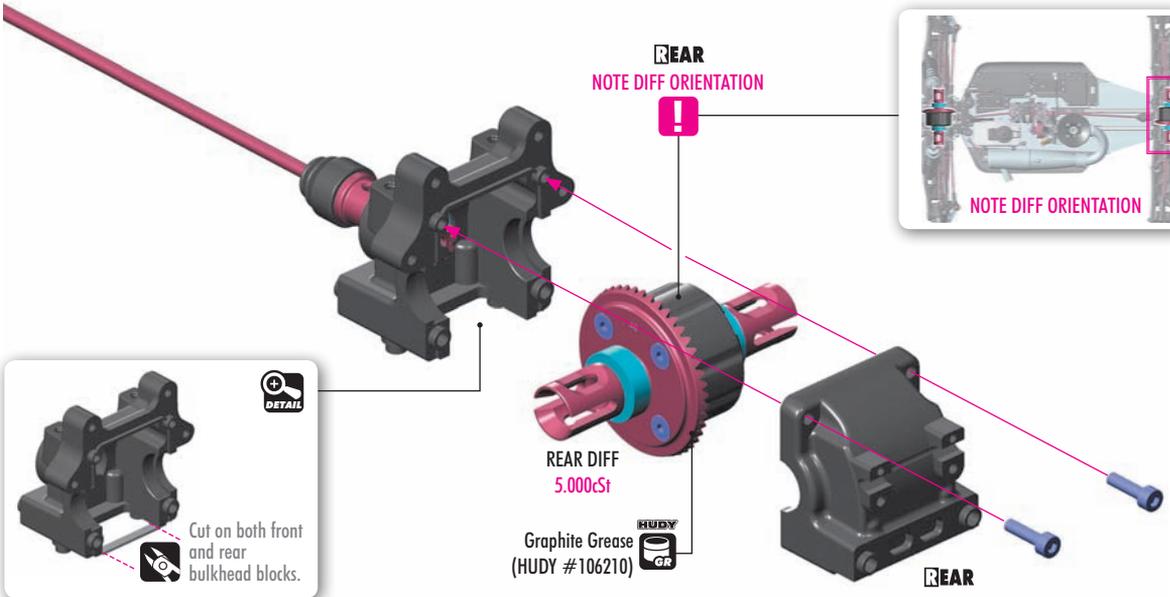
REAR

NOTE DIFF ORIENTATION

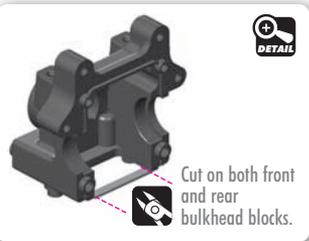


REAR DIFF 5.000cSt

Graphite Grease (HUDY #106210)



Cut on both front and rear bulkhead blocks.



! During assembly, there is no need to check gear mesh or diff play. In particular, do not check gear mesh and diff play when the differential is installed only in the gear box without the suspension holders and without being mounted to the chassis. All parts have specifically designed play, and only when the car is fully assembled will it have the proper amount of play where necessary. Only once you build the entire car, then you can check for free movement of all rotational parts and drivetrain as well as a free non-binding operation of suspension parts.

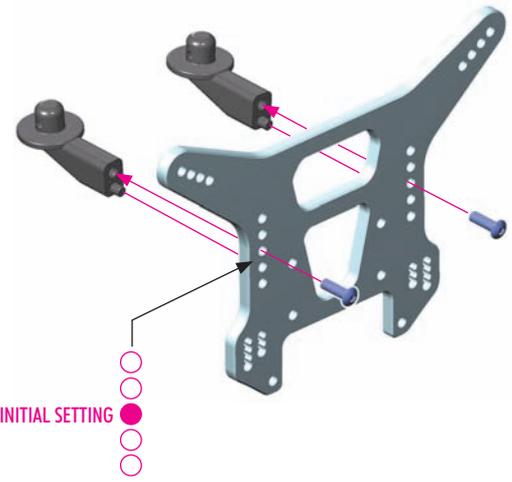
902310
SH M3x10



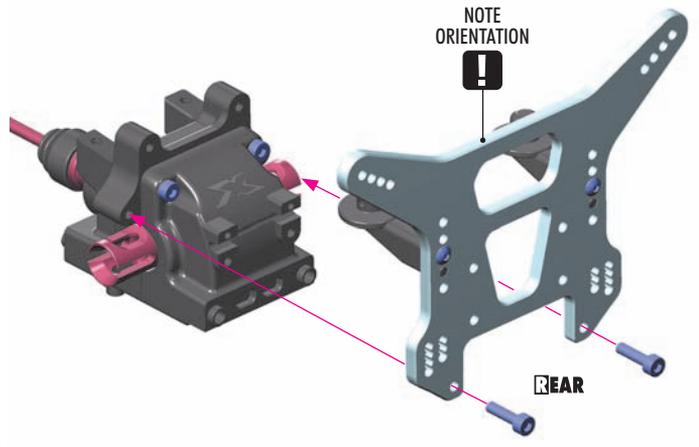
908312
SCH M3x12



INITIAL SETTING



NOTE ORIENTATION



901504
SB M5x4

930816
BB 8x16x5

Bearing with STEEL covers.

Use HUDY Ball-Bearing Grease
 #106220 - STANDARD
 #106221 - BLUE
 #106222 - RED

STEP 5 DETAIL

Push joint against gear to remove gap. Tighten setscrew onto gear flat spot.

OPTION

XRAY BALL-BEARINGS				
#930816	8x16x5	GREASE	STEEL	INCLUDED
#930817	8x16x5	OIL	STEEL	OPTION

908312
SCH M3x12

Diff orientation for the **SADDLE PACK ALTERNATIVE (INITIAL SETTING)**

FRONT NOTE DIFF ORIENTATION

FRONT DIFF 10.000cSt

Graphite Grease (HUDY #106210)

Cut on both front and rear bulkhead blocks.

SADDLE PACK LAYOUT

NOTE DIFF ORIENTATION

FRONT

NOTE DIFF ORIENTATION

Diff orientation for the **BRICK ALTERNATIVE**

FRONT NOTE DIFF ORIENTATION

FRONT DIFF 10.000cSt

Graphite Grease (HUDY #106210)

Cut on both front and rear bulkhead blocks.

BRICK LAYOUT

NOTE DIFF ORIENTATION

FRONT

! During assembly, there is no need to check gear mesh or diff play. In particular, do not check gear mesh and diff play when the differential is installed only in the gear box without the suspension holders and without being mounted to the chassis. All parts have specifically designed play, and only when the car is fully assembled will it have the proper amount of play where necessary. Only once you build the entire car, then you can check for free movement of all rotational parts and drivetrain as well as a free non-binding operation of suspension parts.

901310
SB M3x10

902310
SH M3x10

908312
SCH M3x12

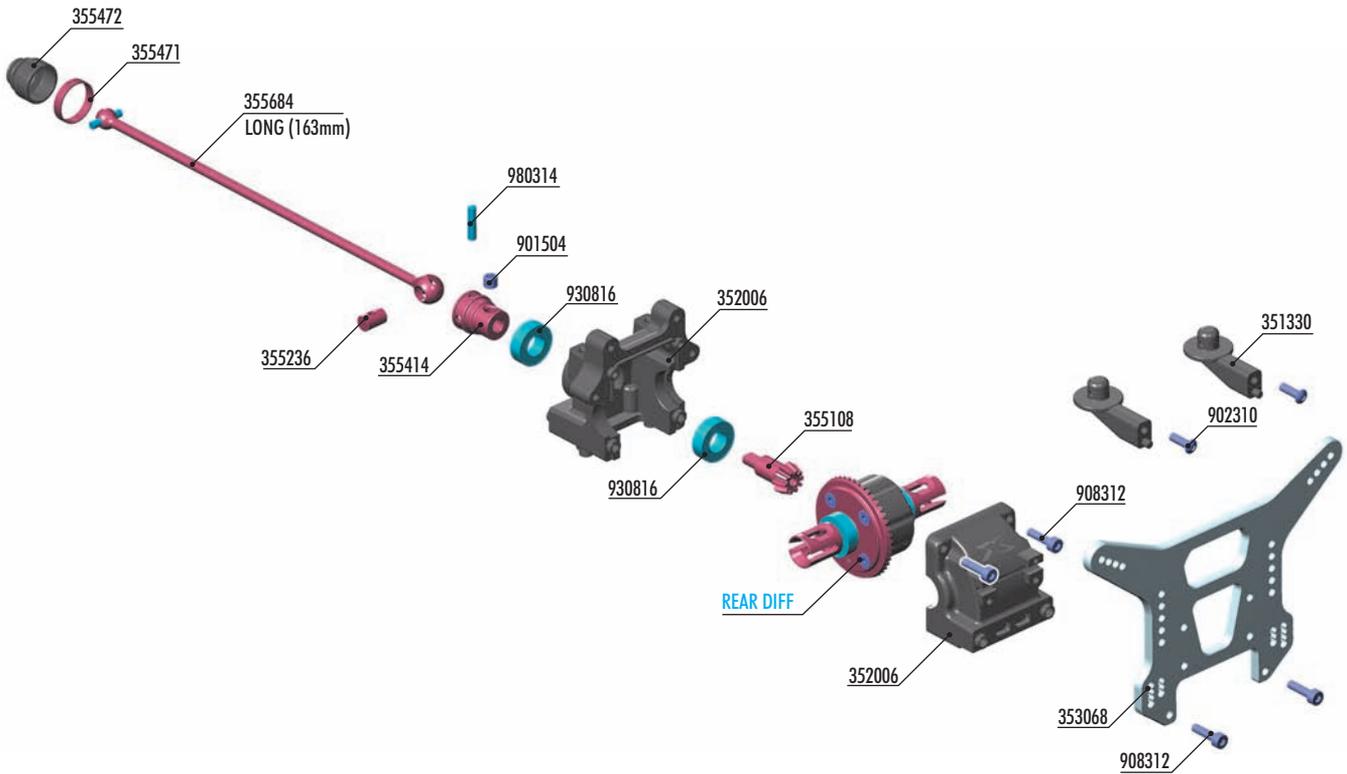
NOTE ORIENTATION

FRONT

NOTE ORIENTATION

2x

3.5mm



BAG

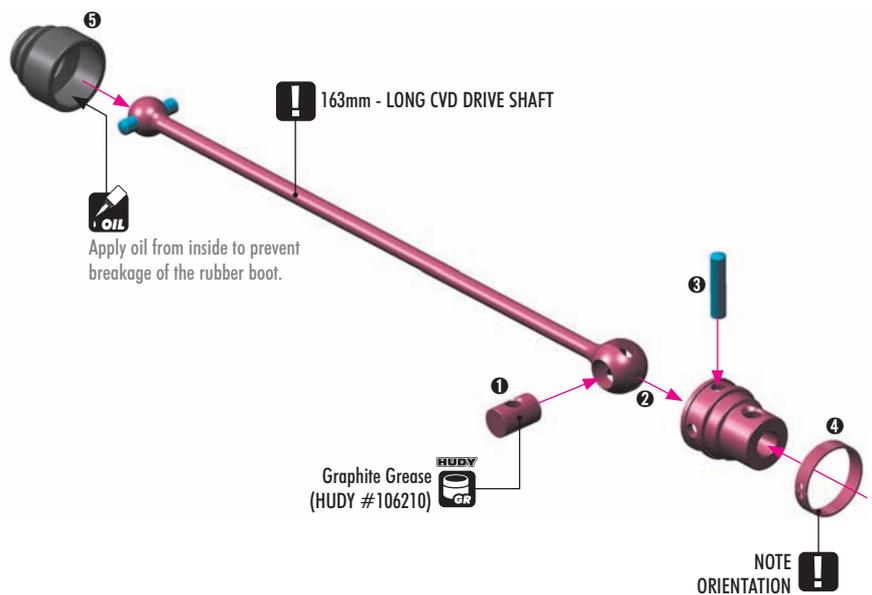
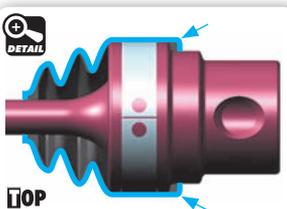
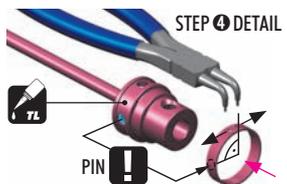
02

351330	COMPOSITE REAR BODY POST - LONG	355472	DRIVE SHAFT BOOT (2)
352006	DIFF BULKHEAD BLOCK SET FRONT/REAR	901504	HEX SCREW SB M5x4 (10)
353068	ALU REAR SHOCK TOWER - CNC MACHINED 7075 T6 (4MM)	902310	HEX SCREW SH M3x10 (10)
355108	BEVEL DRIVE GEAR 10T	908312	HEX SCREW SOCKET HEAD CAP M3x12 (10)
355236	CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™	930816	BALL-BEARING 8x16x5 STEEL SEALED - GREASE (2)
355414	CENTRAL CVD SHAFT UNIVERSAL JOINT - HUDY SPRING STEEL™	980314	PIN 3x14 (10)
355684	CVD CENTRAL DRIVE SHAFT REAR - HUDY SPRING STEEL™		
355471	DRIVE SHAFT LOCKING RING (2)		



980314
P 3x14

The ring can be assembled by hand, but for easy disassembly we recommend using snap ring pliers (HUDY #189040).



BEFORE inserting the clip on the central CVD shaft joint, apply a small amount of threadlock on the area where the clip goes.

AFTER inserting the clip on the central CVD shaft joint, turn the clip so that the slot is 90° from the pin. This will prevent the pin from opening the clip.

Bearing with STEEL covers.

Use HUDY Ball-Bearing Grease

- #106220 - STANDARD
- #106221 - BLUE
- #106222 - RED

STEP 5 DETAIL

Push joint against gear to remove gap. Tighten setscrew onto gear flat spot.

XRAY BALL-BEARINGS

OPTION	Part #	Size	Grease	Material	Status
	#930816	8x16x5	GREASE	STEEL	INCLUDED
	#930817	8x16x5	OIL	STEEL	OPTION

Diff orientation for the SADDLE PACK ALTERNATIVE (INITIAL SETTING)

REAR
NOTE DIFF ORIENTATION

REAR DIFF
5.000cSt

Graphite Grease (HUDY #106210)

SADDLE PACK LAYOUT

NOTE DIFF ORIENTATION

REAR DIFF
5.000cSt

Graphite Grease (HUDY #106210)

BRICK LAYOUT

NOTE DIFF ORIENTATION

! During assembly, there is no need to check gear mesh or diff play. In particular, do not check gear mesh and diff play when the differential is installed only in the gear box without the suspension holders and without being mounted to the chassis. All parts have specifically designed play, and only when the car is fully assembled will it have the proper amount of play where necessary. Only once you build the entire car, then you can check for free movement of all rotational parts and drivetrain as well as a free non-binding operation of suspension parts.

Diff orientation for the BRICK ALTERNATIVE

REAR
NOTE DIFF ORIENTATION

REAR DIFF
5.000cSt

Graphite Grease (HUDY #106210)

BRICK LAYOUT

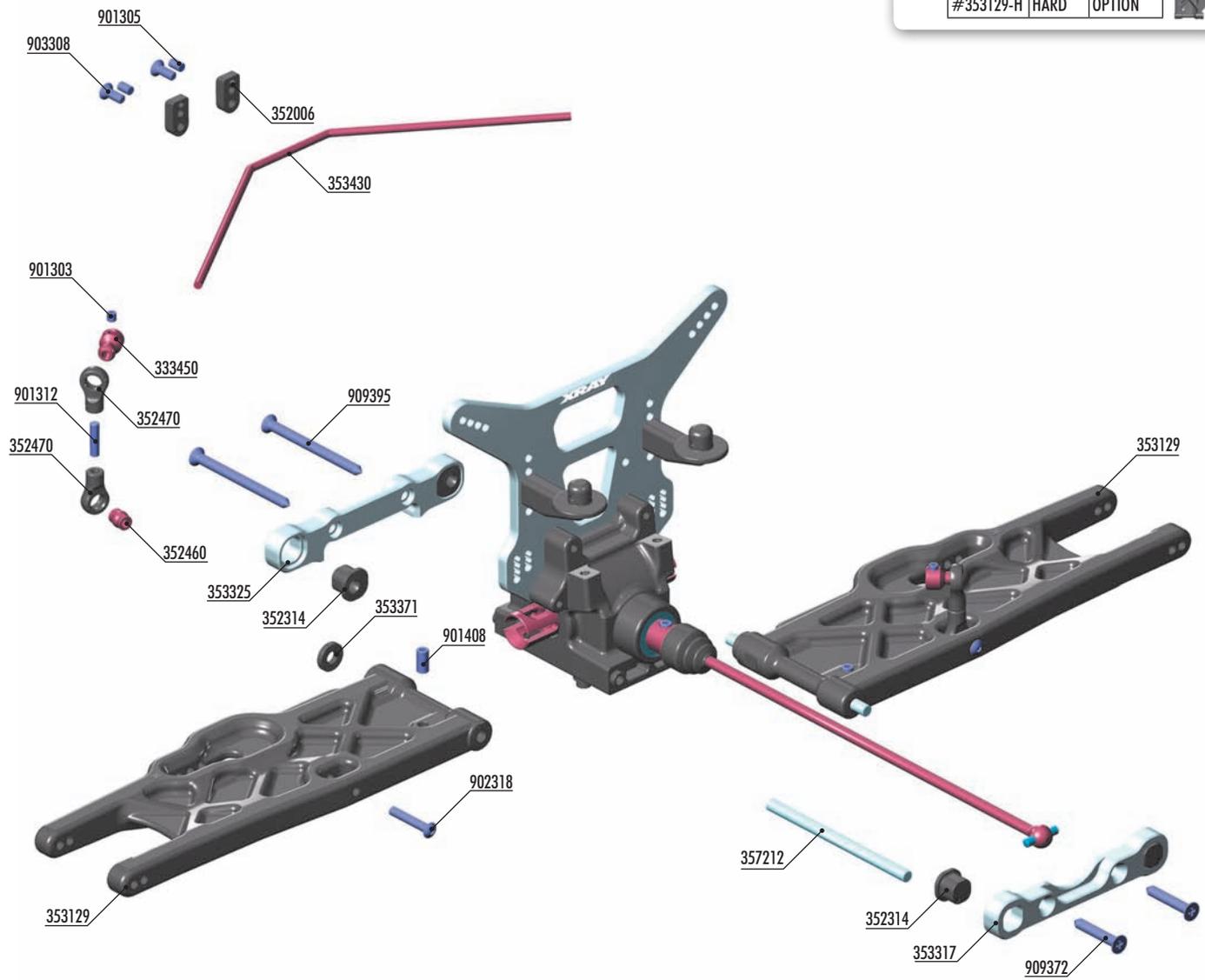
NOTE DIFF ORIENTATION

! NOTE ORIENTATION

3. REAR SUSPENSION

XT8E XT8

REAR SUSPENSION ARMS			
OPTION	#353129	MEDIUM	INCLUDED
	#353129-H	HARD	OPTION



#902407
 HEX SCREW SH M4x7 WITH HEX FROM BOTTOM (4)

#333451
 ALU ANTI-ROLL BAR PIVOT BALL 5.8 MM
 - SWISS 7075 T6 - HARDCOATED (2)

REAR ANTI-ROLL BARS			
OPTION	#353418	ø1.8mm	OPTION
	#353420	ø2.0mm	OPTION
	#353422	ø2.2mm	OPTION
	#353424	ø2.4mm	OPTION
	#353425	ø2.5mm	OPTION
	#353426	ø2.6mm	OPTION
	#353428	ø2.8mm	OPTION
	#353430	ø3.0mm	INCLUDED
	#353432	ø3.2mm	OPTION



- | | | | |
|--------|---|--------|-------------------------------|
| 333450 | ANTI-ROLL BAR BALL JOINT 5.8 MM (2) | 901303 | HEX SCREW SB M3x3 (10) |
| 352006 | DIFF BULKHEAD BLOCK SET FRONT/REAR | 901305 | HEX SCREW SB M3x5 (10) |
| 352314 | COMPOSITE ECCENTRIC BUSHINGS - V2 (2) | 901312 | HEX SCREW SB M3x12 (10) |
| 352460 | PIVOT BALL 5.8 (10) | 901408 | HEX SCREW SB M4x8 (10) |
| 352470 | BALL JOINT 5.8 (8) | 902318 | HEX SCREW SH M3x18 (10) |
| 353129 | COMPOSITE REAR LOWER SUSPENSION ARM | 903308 | HEX SCREW SFH M3x8 (10)) |
| 353317 | ALU REAR LOWER SUSP. HOLDER - FRONT - SQUARE ADJ. ROLL CENTER | 909372 | SCREW PHILLIPS SS 3.5x22 (10) |
| 353325 | ALU REAR LOWER SUSP. HOLDER - REAR - SQUARE ADJ. ROLL CENTER | 909395 | SCREW PHILLIPS SS 3.5x45 (10) |
| 353371 | SET OF COMPOSITE LOWER ARM SHIMS | | |
| 353430 | REAR ANTI-ROLL BAR 3.0MM | | |
| 357212 | LOWER INNER PIVOT PIN F+R (2) | | |



353371
SHIM 4x10x2



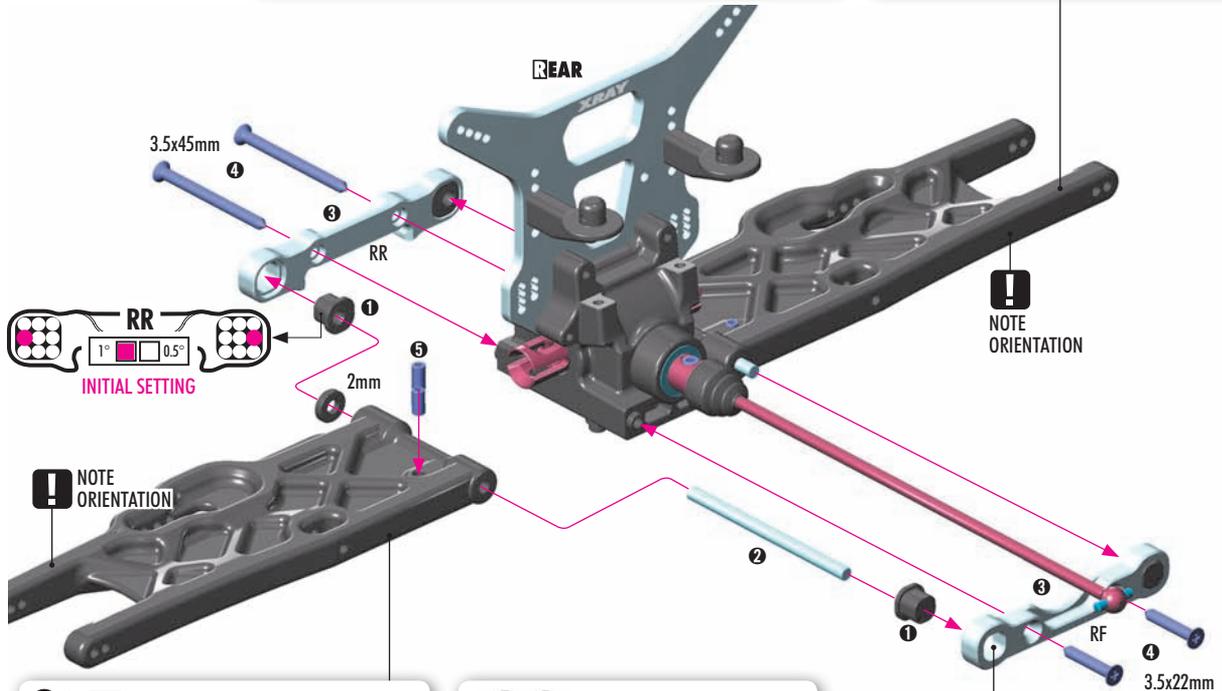
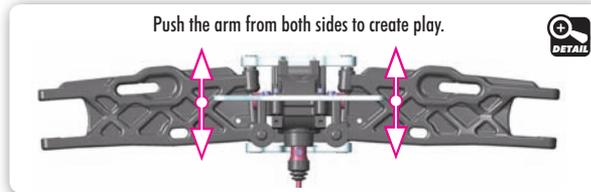
901408
SB M4x8



909372
SS 3.5x22



909395
SS 3.5x45



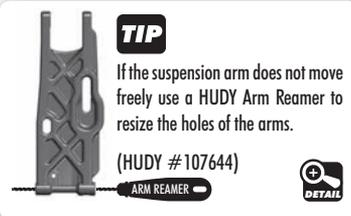
NOTE ORIENTATION

NOTE ORIENTATION



#902407
OPTION

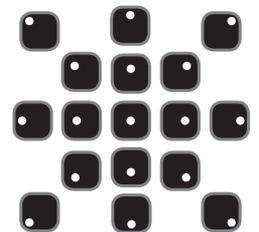
Downstop screw for fine tuning.



REAR SUSPENSION ARMS			
#353129	MEDIUM	INCLUDED	
#353129-H	HARD	OPTION	



All possible mounting alternatives of eccentric bushings.



ECCENTRIC BUSHINGS HAVE TWO DIFFERENT OFFSETS FROM THE CENTER.

Middle position = 0.5 mm or 0.5° from center Outer position = 1 mm or 1° from center

SET-UP BOOK
TOE-IN
ANTI-SQUAT
ROLL CENTER
DOWNSTOP
WHEELBASE
TRACK-WIDTH

The XRAY rear alu lower suspension holders provide even greater range of adjustment for the rear suspension. Using different combinations of eccentric bushings, fine adjustment of rear anti-squat, rear toe-in, rear roll center, and rear track-width can be obtained. For more information about the influence of rear anti-squat, rear toe-in, rear roll center and rear track-width on car handling, please refer to HUDY Off-Road Set-up Book (#209099).

ANTI-SQUAT		
RR	RF	(°)
[Diagram]	[Diagram]	= 3°
[Diagram]	[Diagram]	= 4°
[Diagram]	[Diagram]	= 2°
[Diagram]	[Diagram]	= 4°
[Diagram]	[Diagram]	= 3°
[Diagram]	[Diagram]	= 5°
[Diagram]	[Diagram]	= 2°
[Diagram]	[Diagram]	= 3°
[Diagram]	[Diagram]	= 1°

ROLL CENTER		
RR	RF	(mm)
[Diagram]	[Diagram]	= 0mm
[Diagram]	[Diagram]	= 1mm
[Diagram]	[Diagram]	= -1mm

TRACK-WIDTH		
RR	RF	(mm)
[Diagram]	[Diagram]	= 0
[Diagram]	[Diagram]	= -2
[Diagram]	[Diagram]	= +2

TOE-IN		
RR	RF	(°)
[Diagram]	[Diagram]	= 3°
[Diagram]	[Diagram]	= 4°
[Diagram]	[Diagram]	= 2°
[Diagram]	[Diagram]	= 2°
[Diagram]	[Diagram]	= 3°
[Diagram]	[Diagram]	= 1°
[Diagram]	[Diagram]	= 4°
[Diagram]	[Diagram]	= 5°
[Diagram]	[Diagram]	= 3°

The tables describe the amounts of rear anti-squat, rear toe-in, rear track-width change depending on the combinations of eccentric bushings used with 0 and 1mm, 1° offset. The 0.5mm, 0.5° represents the half change.

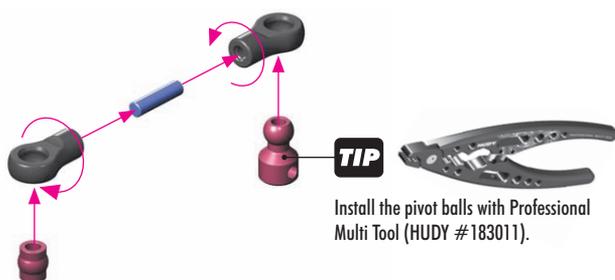
Anti-Squat Example:

0(RR) - 0 (RF) = 3°	[Diagram]	= 3°
0(RR) - 0.5 (RF) = 3.5°	[Diagram]	= 3.5°
0(RR) - 1 (RF) = 4°	[Diagram]	= 4°



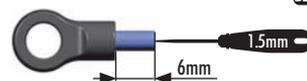
901312
SB M3x12

2x
L=R



TIP

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



DETAIL



901303
SB M3x3



901305
SB M3x5

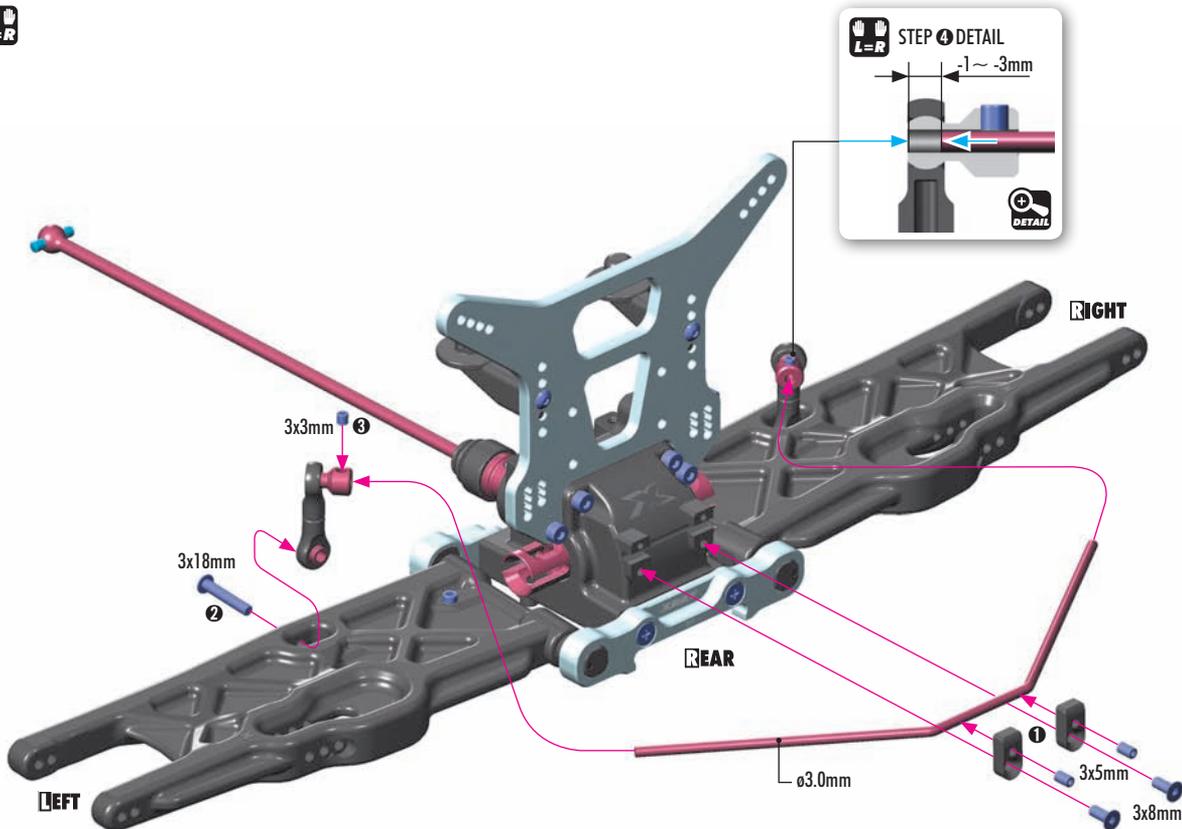


902318
SH M3x18



903308
SFH M3x8

L=R



STEP 4 DETAIL
L=R

-1 ~ -3mm

DETAIL

SET-UP BOOK

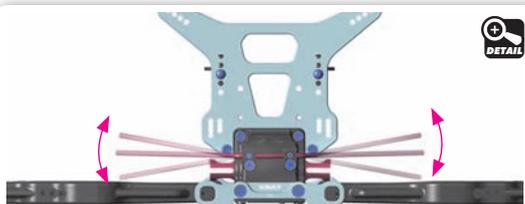
ANTI-ROLL BAR



OPTION

REAR ANTI-ROLL BARS

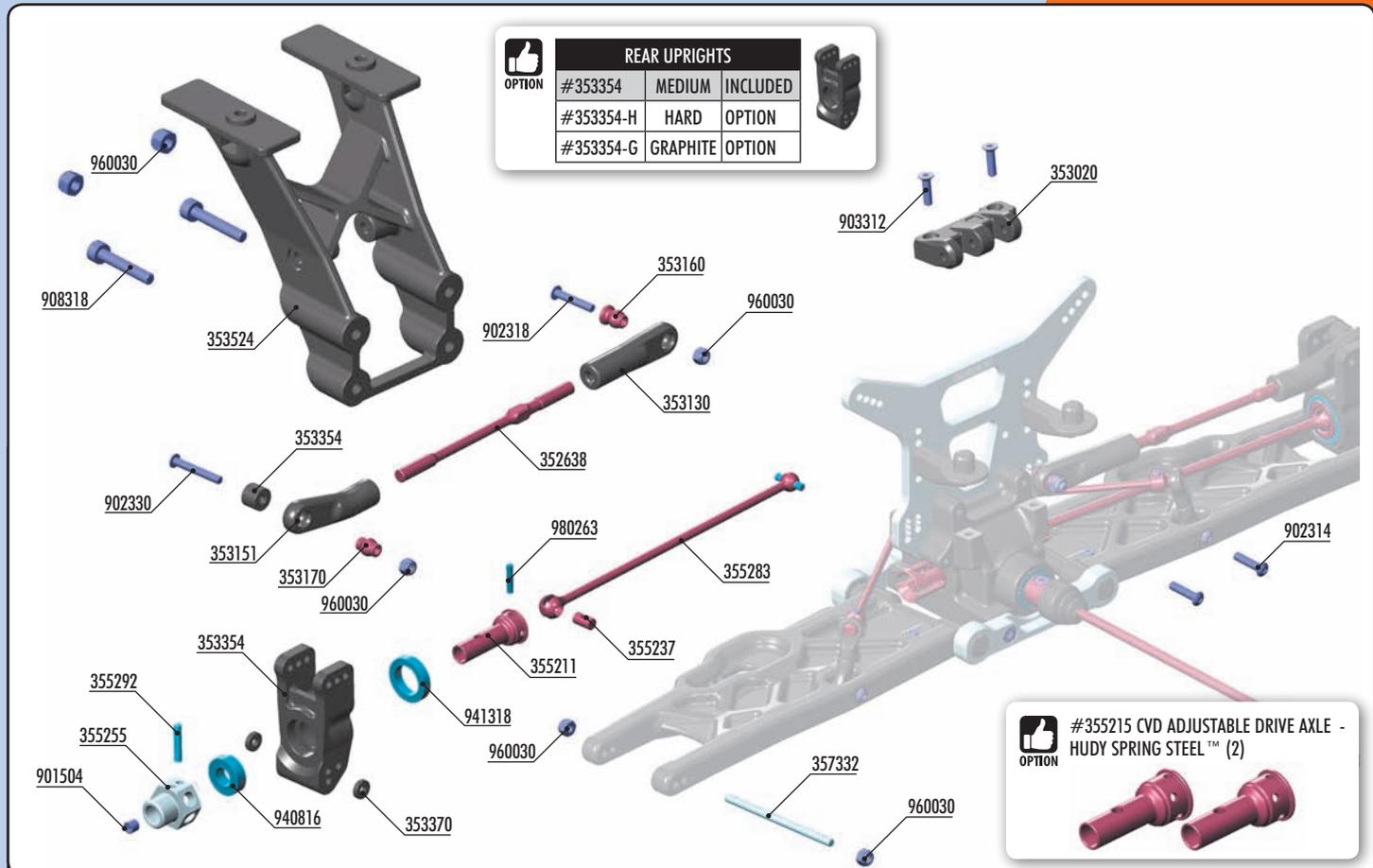
#353418	ø1.8mm	OPTION
#353420	ø2.0mm	OPTION
#353422	ø2.2mm	OPTION
#353424	ø2.4mm	OPTION
#353425	ø2.5mm	OPTION
#353426	ø2.6mm	OPTION
#353428	ø2.8mm	OPTION
#353430	ø3.0mm	INCLUDED
#353432	ø3.2mm	OPTION



Step 1 check for free movement.



Step 1 Loosen the 3x5 setscrew if the anti-roll bar does not turn freely.



OPTION	#	DESCRIPTION	STATUS
	#353354	MEDIUM	INCLUDED
	#353354-H	HARD	OPTION
	#353354-G	GRAPHITE	OPTION

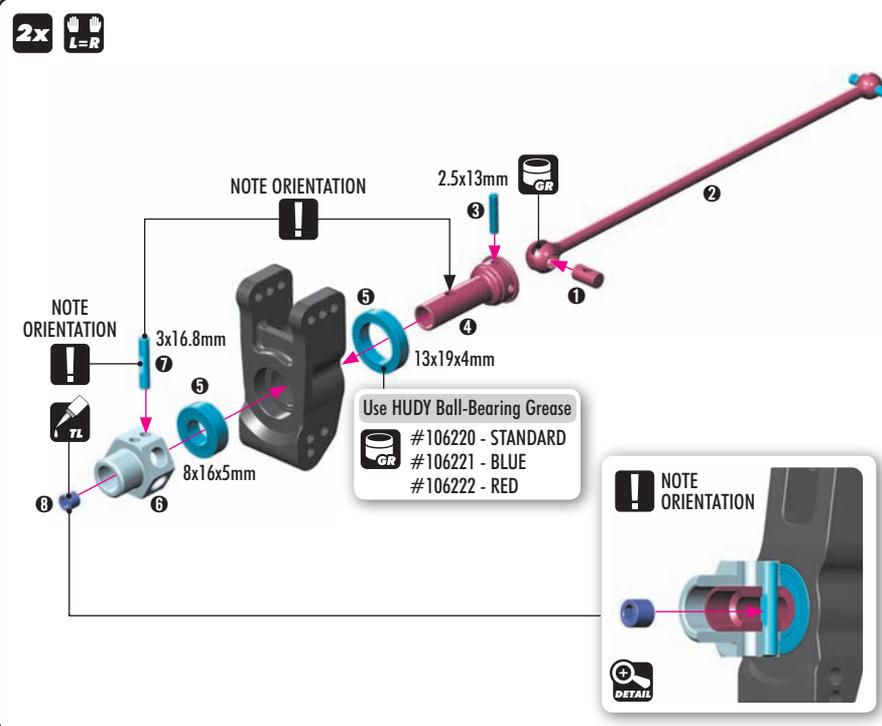
OPTION #355215 CVD ADJUSTABLE DRIVE AXLE - HUDY SPRING STEEL™ (2)

BAG

04

- 352638 ADJ. TURNBUCKLE M5 L/R 91 MM - HUDY SPRING STEEL™ (2)
- 353020 COMPOSITE REAR BRACE HOLDER
- 353130 REAR UPPER INNER CAMBER LINK BALL JOINT (2)
- 353151 RELIEF REAR UPPER OUTER CAMBER LINK BALL JOINT (2)
- 353160 MOUNTING BALL 6.8 (4)
- 353170 PIVOT BALL 6.8 (4)
- 353370 SET OF COMPOSITE REAR HUB CARRIER SHIMS
- 353354 COMPOSITE REAR UPRIGHT LB
- 353524 COMPOSITE REAR WING HOLDER
- 355211 CVD DRIVE AXLE - HUDY SPRING STEEL™
- 355237 CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
- 355255 ALU WHEEL AXLE OFFSET "+5MM" - HARDCOATED (2)
- 355283 CVD DRIVE SHAFT 138MM - HUDY SPRING STEEL™

- 355292 PIN WITH FLAT SPOT 3x16.8 (2)
- 357332 REAR LOWER OUTER PIVOT PIN (2)
- 901504 HEX SCREW SB M5x4 (10)
- 902314 HEX SCREW SH M3x14 (10)
- 902318 HEX SCREW SH M3x18 (10)
- 902330 HEX SCREW SH M3x30 (10)
- 903312 HEX SCREW SFH M3x12 (10)
- 908318 HEX SCREW SOCKET HEAD CAP M3x18 (10)
- 940816 BALL-BEARING 8x16x5 RUBBER SEALED - GREASE (2)
- 941318 BALL-BEARING 13x19x4 RUBBER SEALED - GREASE (2)
- 960030 NUT M3 (10)
- 980263 PIN 2.5x13 (10)



OPTION

OPTION	#	DESCRIPTION	STATUS
	#355251	0mm	OPTION
	#355251	+1mm	OPTION
	#355252	+2mm	OPTION
	#355255	+5mm	INCLUDED

OPTION #355215 CVD ADJUSTABLE DRIVE AXLE - HUDY SPRING STEEL™ (2)

TIP To tighten the setscrew you can also use the HUDY 17mm Wheel Nut Tool #107570.

10

353370
SHIM 3x9x2



960030
N M3

2x
L=R

TIP Ensure that the rear upright moves freely. If it does not move freely, use sandpaper to thin both wheelbase adjustment shims.

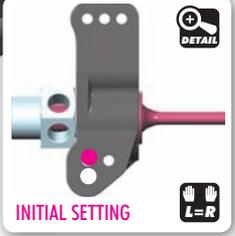
Shims for wheelbase adjustment

2mm
2mm

Do not overtighten the self-locking nut. Overtightening may result in suspension binding.

TIP ARM REAMER

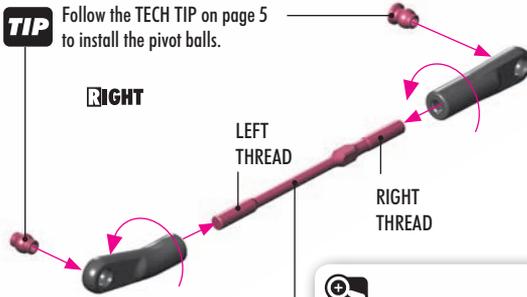
If the rear upright does not move freely, use a HUDY Arm Reamer to resize the hole (HUDY #107643).



2x
L=R

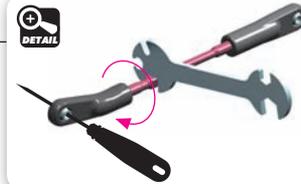
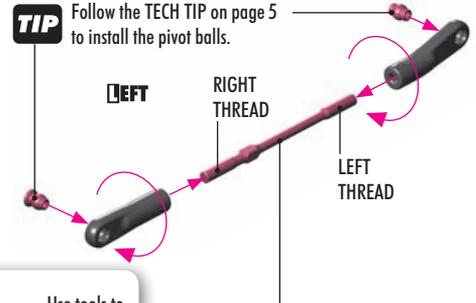
TIP Follow the TECH TIP on page 5 to install the pivot balls.

RIGHT



TIP Follow the TECH TIP on page 5 to install the pivot balls.

LEFT



SET-UP BOOK

CAMBER

2x
L=R



902318
SH M3x18

902330
SH M3x30



960030
N M3

NOTE ORIENTATION

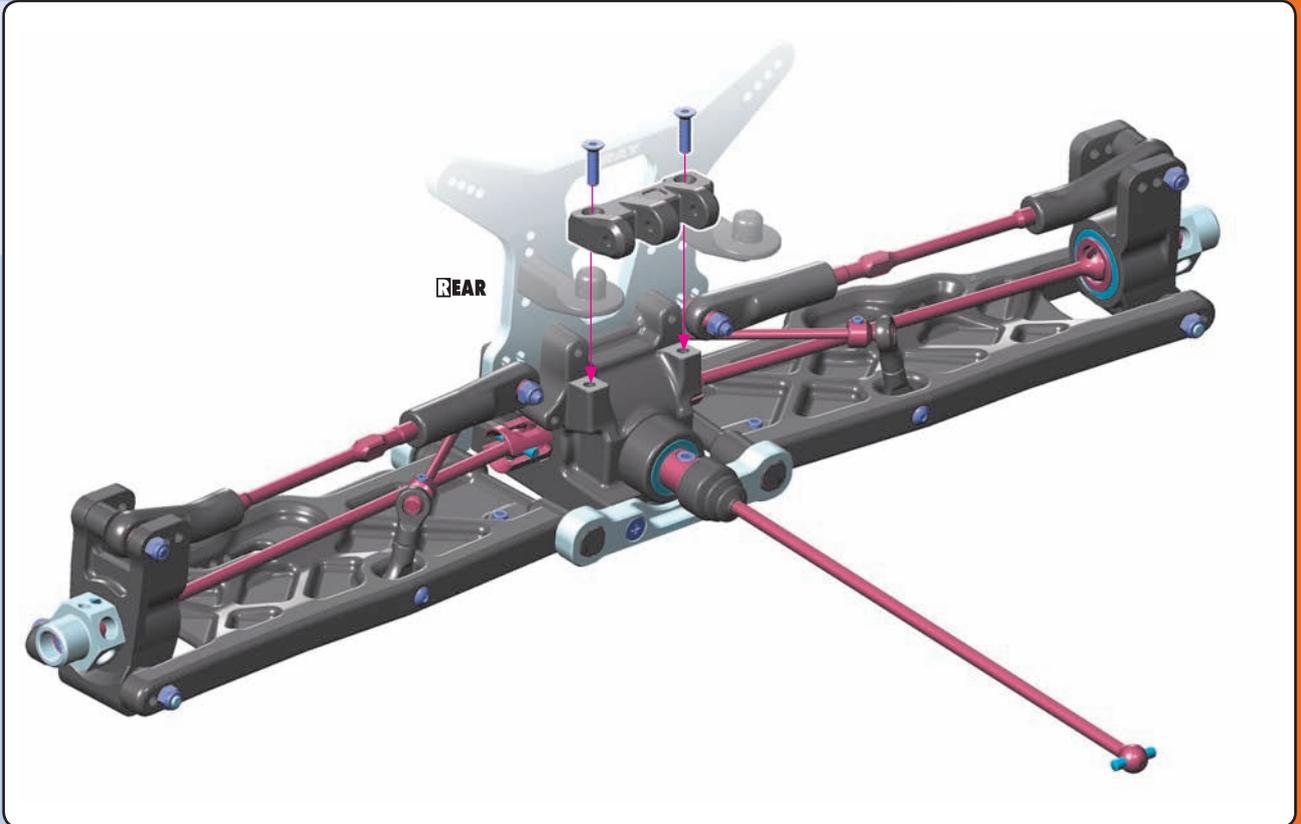
3x18mm

3x30mm





903312
SFH M3x12



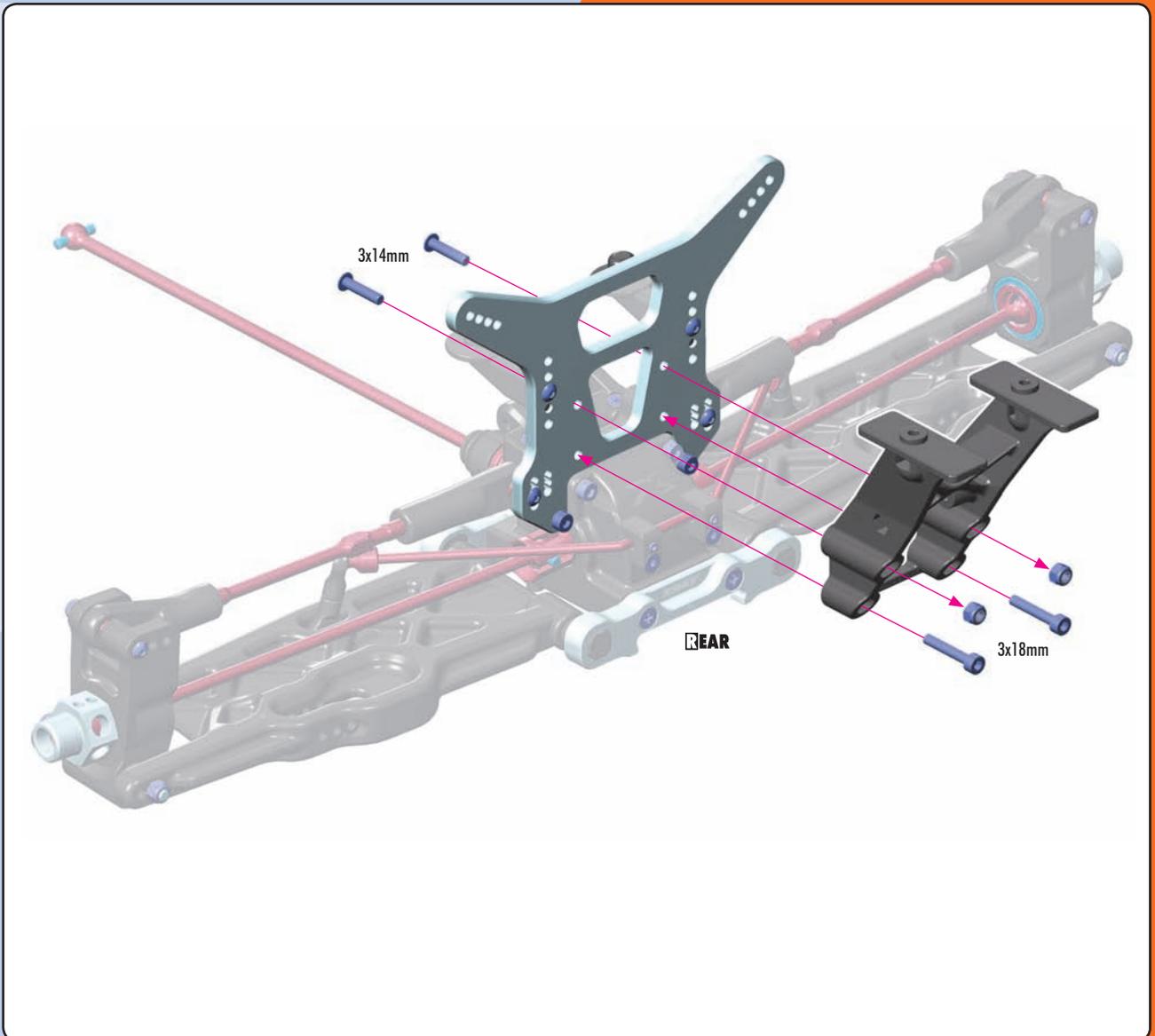
902314
SH M3x14

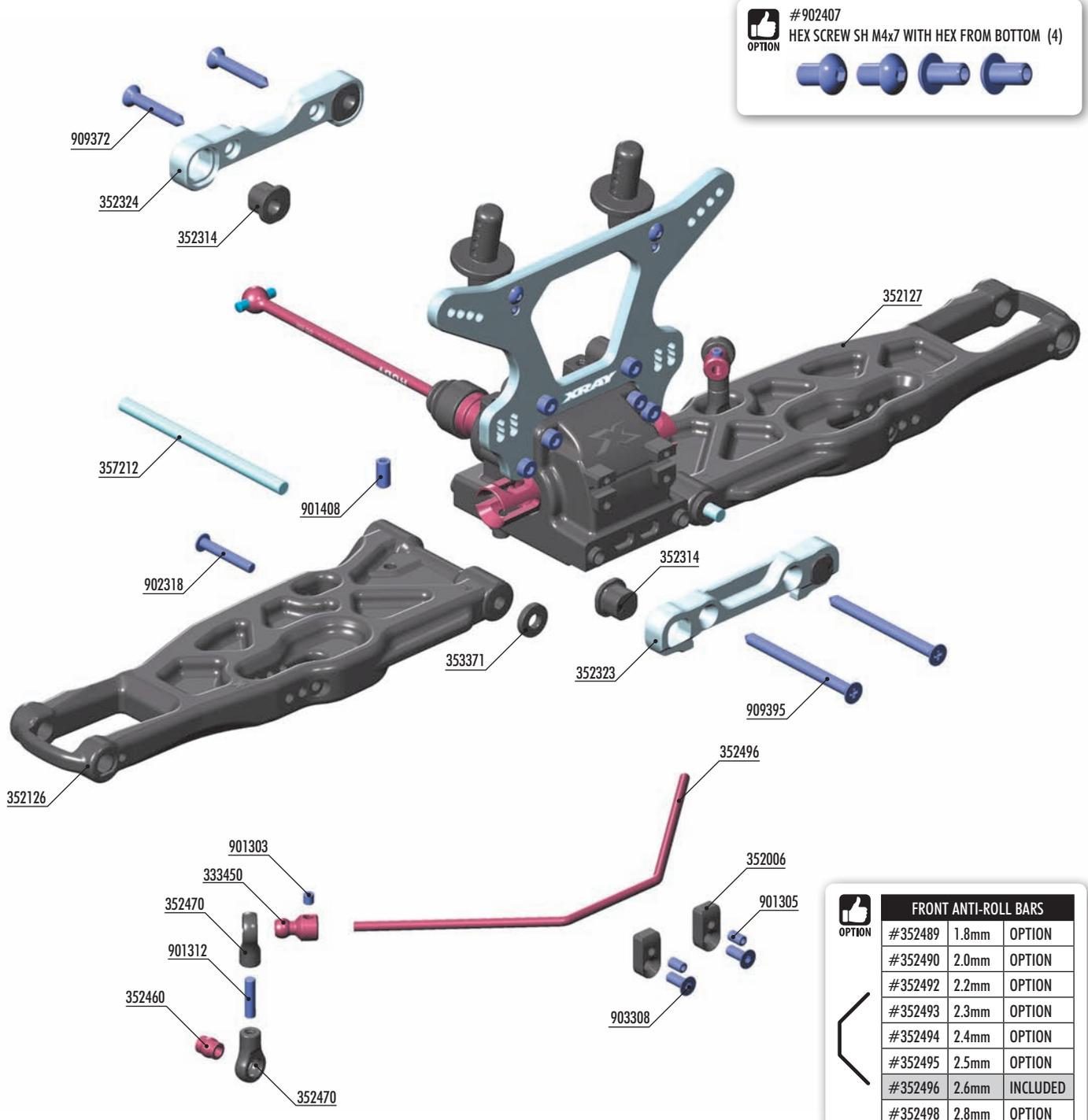


908318
SCH M3x18



960030
N M3





#902407
 HEX SCREW SH M4x7 WITH HEX FROM BOTTOM (4)
 OPTION

FRONT ANTI-ROLL BARS

#352489	1.8mm	OPTION
#352490	2.0mm	OPTION
#352492	2.2mm	OPTION
#352493	2.3mm	OPTION
#352494	2.4mm	OPTION
#352495	2.5mm	OPTION
#352496	2.6mm	INCLUDED
#352498	2.8mm	OPTION

FRONT SUSPENSION ARMS

#353126	RIGHT	MEDIUM	INCLUDED
#352126-H	RIGHT	HARD	OPTION
#353127	LEFT	MEDIUM	INCLUDED
#353127-H	LEFT	HARD	OPTION

#333451
 ALU ANTI-ROLL BAR PIVOT BALL 5.8 MM - SWISS 7075 T6 - HARDCOATED (2)
 OPTION

BAG
05

- | | | | |
|--------|---|--------|-------------------------------|
| 333450 | ANTI-ROLL BAR BALL JOINT 5.8 MM (2) | 357212 | LOWER INNER PIVOT PIN F+R (2) |
| 352006 | DIFF BULKHEAD BLOCK SET FRONT/REAR | 901303 | HEX SCREW SB M3x3 (10) |
| 352126 | COMPOSITE FRONT LOWER SUSPENSION ARM RIGHT | 901305 | HEX SCREW SB M3x5 (10) |
| 352127 | COMPOSITE FRONT LOWER SUSPENSION ARM LEFT | 901312 | HEX SCREW SB M3x12 (10) |
| 352323 | ALU FRONT LOWER SUSP. HOLDER - FRONT - SQUARE ADJ. ROLL CENTER - V2 | 901408 | HEX SCREW SB M4x8 (10) |
| 352324 | ALU FRONT LOWER SUSP. HOLDER - REAR - SQUARE ADJ. ROLL CENTER - V2 | 902318 | HEX SCREW SH M3x18 (10) |
| 352314 | COMPOSITE SQUARE ADJ. ROLL CENTER BUSHINGS - V2 (2) | 903308 | HEX SCREW SFH M3x8 (10) |
| 352460 | PIVOT BALL 5.8 (10) | 909372 | SCREW PHILLIPS SS 3.5x22 (10) |
| 352470 | BALL JOINT 5.8 (8) | 909395 | SCREW PHILLIPS SS 3.5x45 (10) |
| 352496 | FRONT ANTI-ROLL BAR 2.6MM | | |
| 353371 | SET OF COMPOSITE LOWER ARM SHIMS | | |



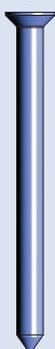
353371
SHIM 4x10x2



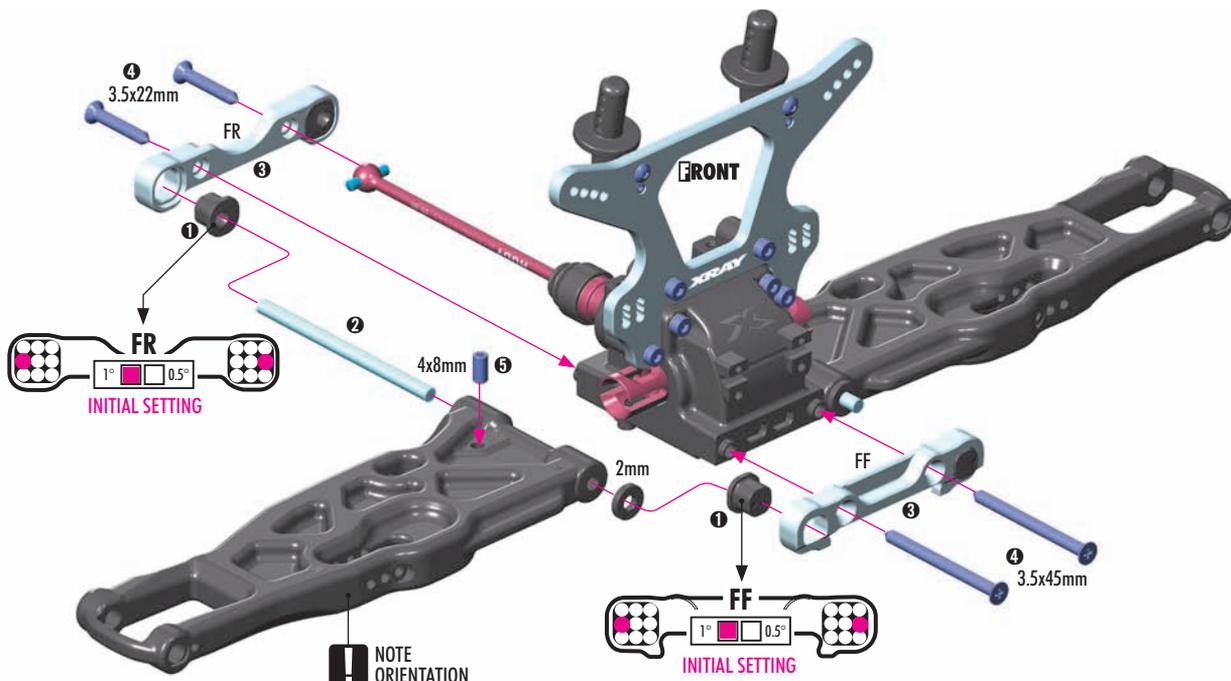
901408
SB M4x8



909372
SS 3.5x22



909395
SS 3.5x45



TOP DOWNSTOP SETTING

DETAIL **L=R**

1.3mm

#902407

OPTION

Downstop screw for fine tuning.

TIP

If the suspension arms do not move freely, use a HUDY Arm Reamer to resize the holes (HUDY #107644).

ARM REAMER

FRONT SUSPENSION ARMS

OPTION	Part #	Side	Stiffness	Status
	#353126	RIGHT	MEDIUM	INCLUDED
	#352126-H	RIGHT	HARD	OPTION
	#353127	LEFT	MEDIUM	INCLUDED
	#353127-H	LEFT	HARD	OPTION

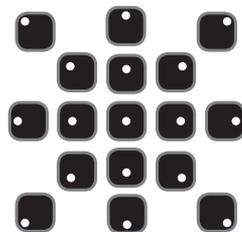
DETAIL

Check for free movement.

DETAIL

Push the arm from both sides to create play.

All possible mounting alternatives of eccentric bushings.



SET-UP BOOK

KICK UP
ROLL CENTER DOWNSTOP
WHEELBASE
TRACK-WIDTH

Eccentric bushings have two different offsets from the center.

- Middle position = 0.5 mm or 0.5° from center
- Outer position = 1 mm or 1° from center

The XRAY alu front lower suspension holders provide even greater range of adjustment for the front suspension. Using different combinations of eccentric bushings, fine adjustment of front kick-up, roll center, and front track-width can be obtained. For more information about the influence of kick-up, front track-width, and roll centers on car handling, please refer to HUDY Off-Road Set-up Book (#209099).

TRACK-WIDTH

FF	FR	(mm)
[Diagram]	[Diagram]	=0
[Diagram]	[Diagram]	=-2
[Diagram]	[Diagram]	=+2

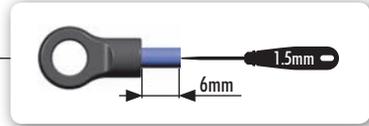
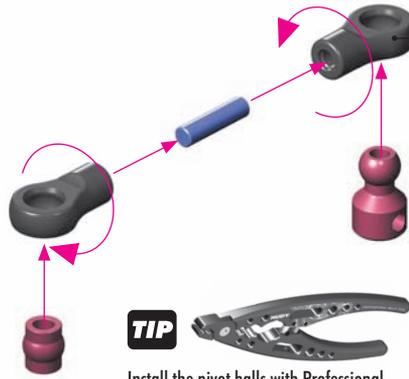
ROLL CENTER

FF	FR	(mm)
[Diagram]	[Diagram]	=1
[Diagram]	[Diagram]	=0
[Diagram]	[Diagram]	=-1

The tables below describe the amounts of kick-up, front track-width change depending on the combinations of eccentric bushings used with 0 and 1mm, 1° offset. The 0.5mm, 0.5° represents the half change.



2x L=R



TIP

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



901303 SB M3x3



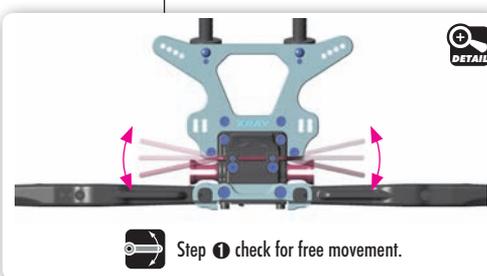
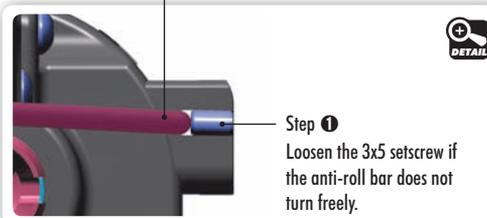
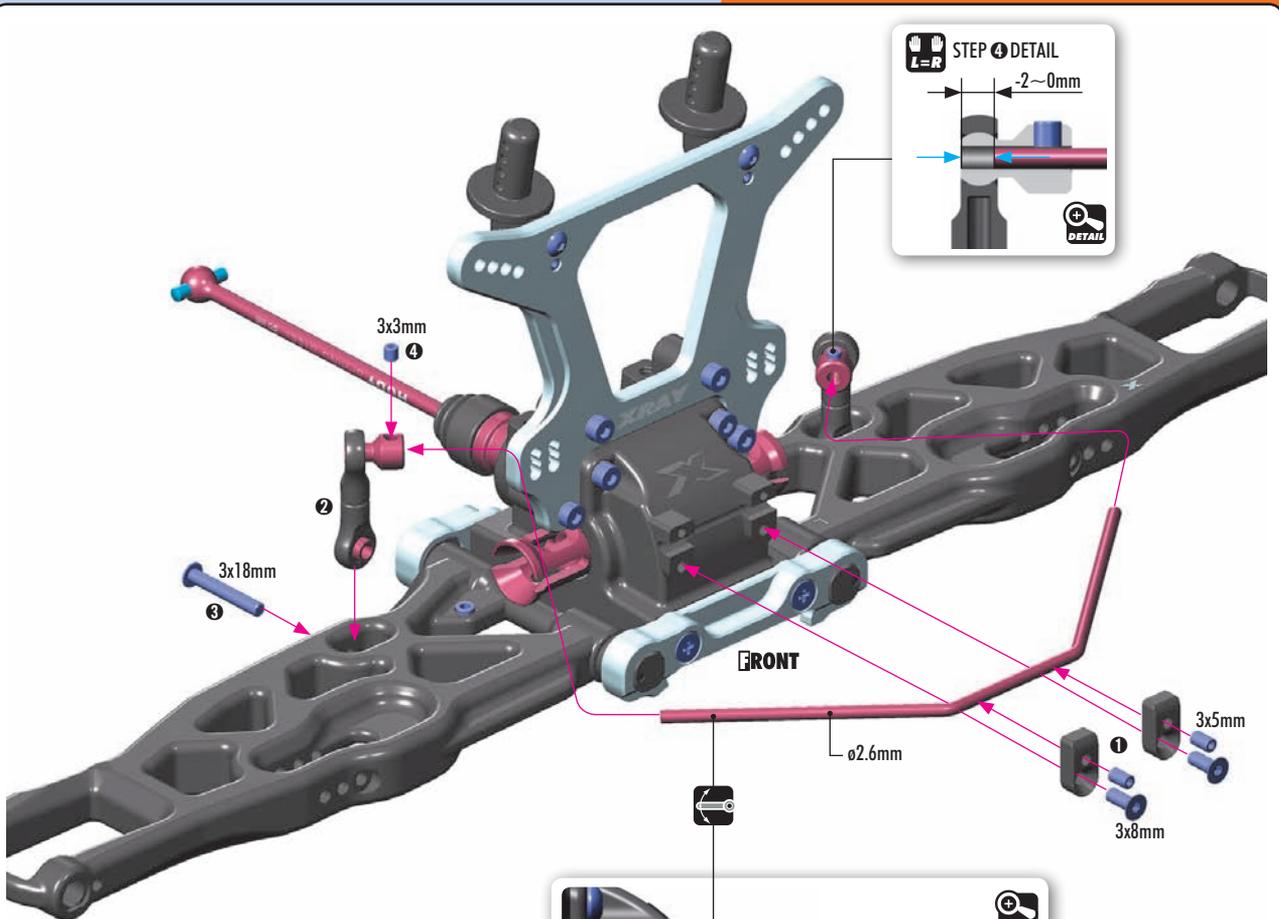
901305 SB M3x5



902318 SH M3x18

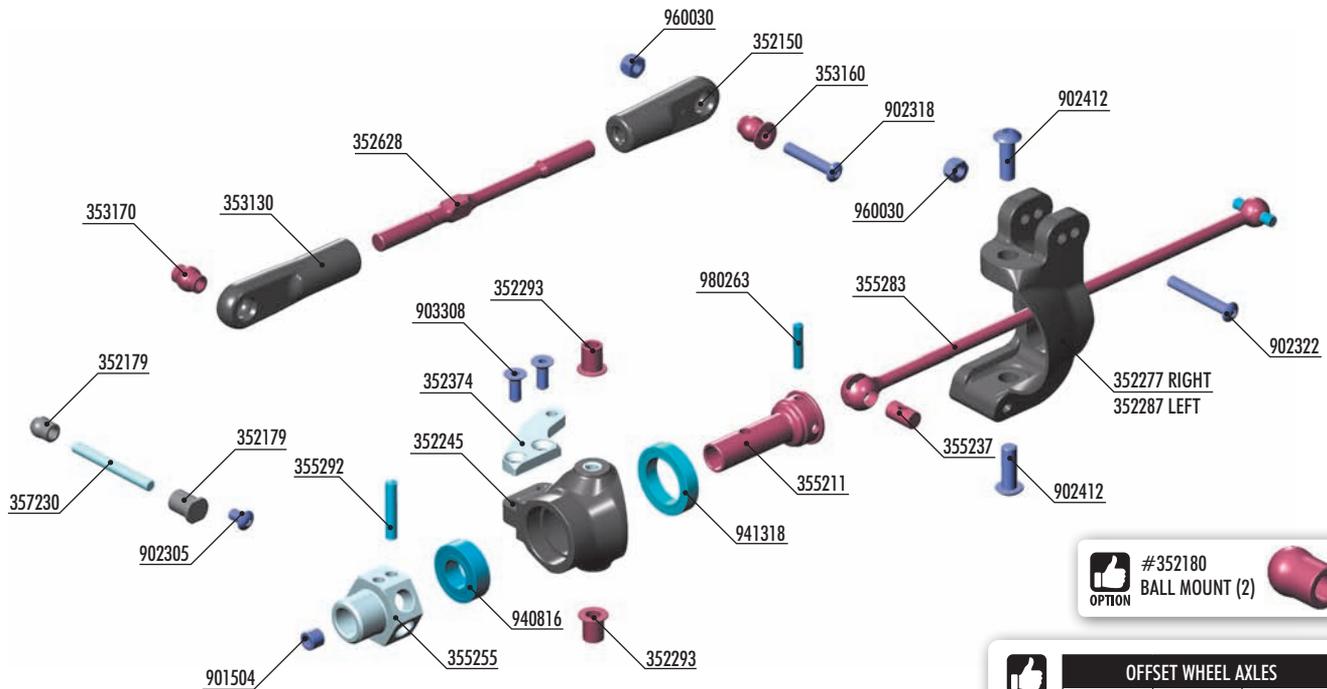


903308 SFH M3x8



OPTION	FRONT ANTI-ROLL BARS		
#352487	1.6mm	OPTION	
#352489	1.8mm	OPTION	
#352490	2.0mm	OPTION	
#352492	2.2mm	OPTION	
#352493	2.3mm	OPTION	
#352494	2.4mm	OPTION	
#352495	2.5mm	OPTION	
#352496	2.6mm	INCLUDED	
#352498	2.8mm	OPTION	

SET-UP BOOK
ANTI-ROLL BAR



#352180
BALL MOUNT (2)
 OPTION

OPTION **OFFSET WHEEL AXLES**

#355251	0mm	OPTION
#355251	+1mm	OPTION
#355252	+2mm	OPTION
#355255	+5mm	INCLUDED

OPTION **ECCENTRIC BUSHINGS**

#352170	0° - STEEL		OPTION
#352174	1° - STEEL		OPTION
#352175	2° - STEEL		OPTION
#352179	0° - COMP.		INCLUDED

#350906
XRAY XT8 ALU FRONT SUSPENSION CONVERSION SET - V2
 OPTION

OPTION **STEERING BLOCK**

#352245	COMPOSITE	INCLUDED
#352254	ALU*	OPTION

OPTION **CASTER BLOCKS**

#352273	18° RIGHT	ALU*	OPTION
#352277	16° RIGHT	COMP.	INCLUDED
#352283	18° LEFT	ALU*	OPTION
#352287	16° LEFT	COMP.	INCLUDED

*To use alu C-hub and alu steering blocks you need to use also these additional parts:
 *#352655 - Ball Stud 6.8mm with Backstop L=6mm - M4 (2)
 *#352292 - Steel Steering Block Pivot Pin (2)
 *#352294 - Composite Bushing for Alu Caster Block (2)

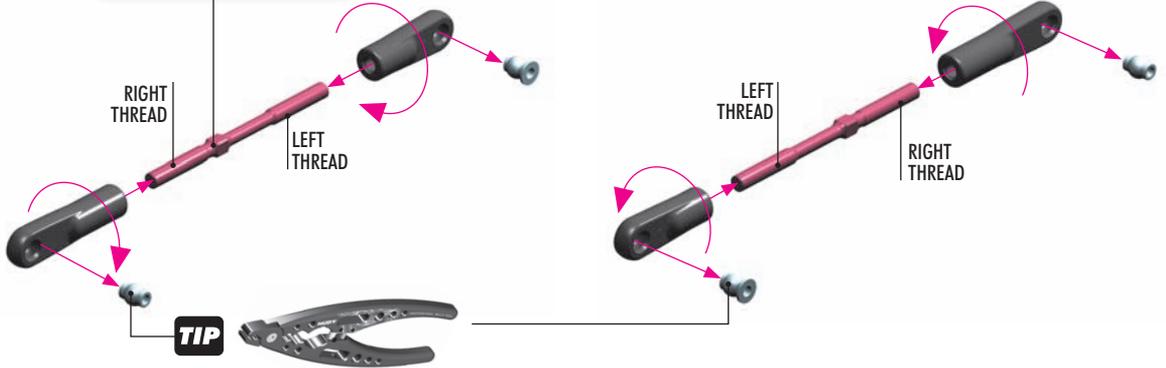


- 352150 FRONT UPPER ARM BALL JOINT (2)
- 352179 COMPOSITE BUSHING & BALL MOUNT SET (2+2)
- 352245 C-HUB STEERING BLOCK LB WITH ALU INSERTS
- 352277 COMPOSITE C-HUB 16° RIGHT
- 352287 COMPOSITE C-HUB 16° LEFT
- 352374 ALU STEERING PLATE - SWISS 7075 T6 (L+R)
- 352293 STEEL C-HUB BUSHING (2)
- 352628 ADJ. TURNBUCKLE M5 L/R 75 MM - SPRING STEEL (2)
- 353130 REAR UPPER INNER CAMBER LINK BALL JOINT (2)
- 353160 MOUNTING BALL 6.8 (4)
- 353170 PIVOT BALL 6.8 (4)
- 355211 CVD DRIVE AXLE - HUDY SPRING STEEL™
- 355237 CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
- 355255 ALU WHEEL AXLE OFFSET "+5MM" - HARDCOATED (2) - LIGHTWEIGHT

- 355283 CVD DRIVE SHAFT 138MM - HUDY SPRING STEEL™
- 355292 PIN WITH FLAT SPOT 3x16.8 (2)
- 357230 FRONT LOWER OUTER PIVOT PIN (2)
- 901504 HEX SCREW SB M5x4 (10)
- 902305 HEX SCREW SH M3x5 (10)
- 902318 HEX SCREW SH M3x18 (10)
- 902322 HEX SCREW SH M3x22 (10)
- 902412 HEX SCREW SH M4x12 (10)
- 903308 HEX SCREW SFH M3x8 (10)
- 940816 BALL-BEARING 8x16x5 RUBBER SEALED - GREASE (2)
- 941318 BALL-BEARING 13x19x4 RUBBER SEALED - GREASE (2)
- 960030 NUT M3 (10)
- 980263 PIN 2.5x13 (10)



Use tools to tighten as shown.



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



SET-UP BOOK

CAMBER

2x L=R



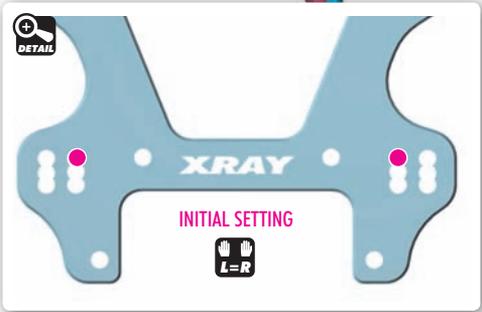
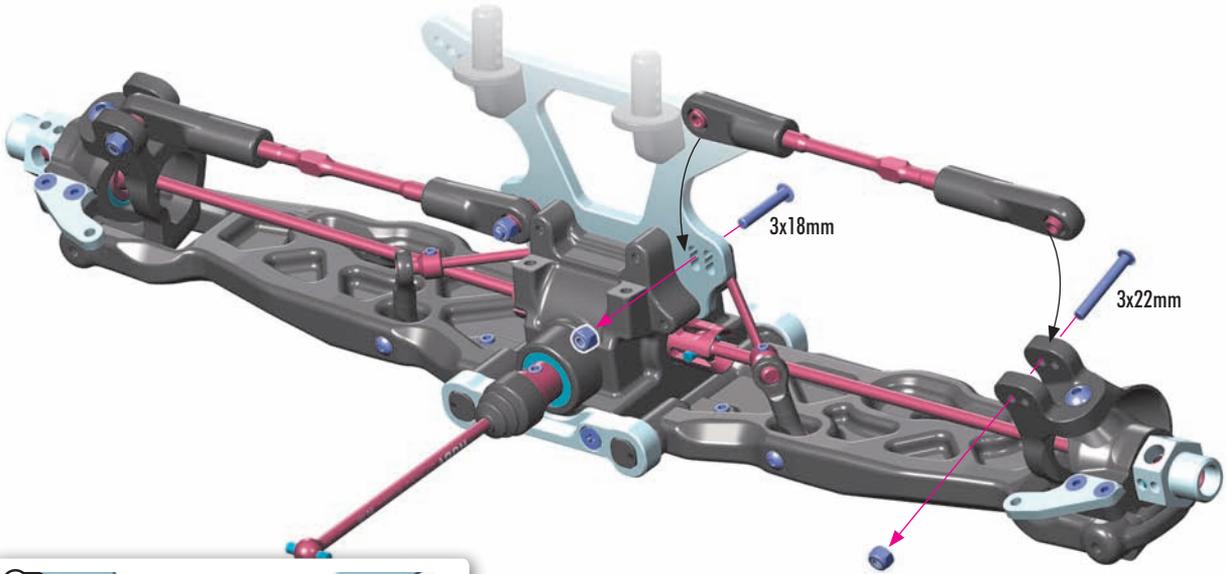
902318
SH M3x18



902322
SH M3x22



960030
N M3

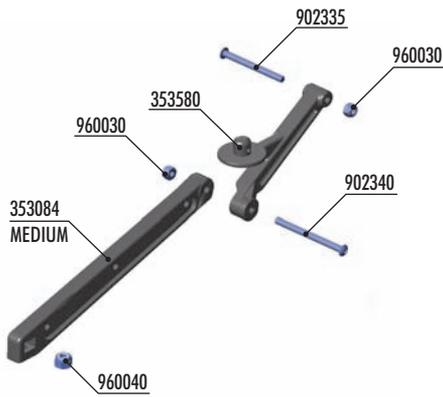


SET-UP BOOK

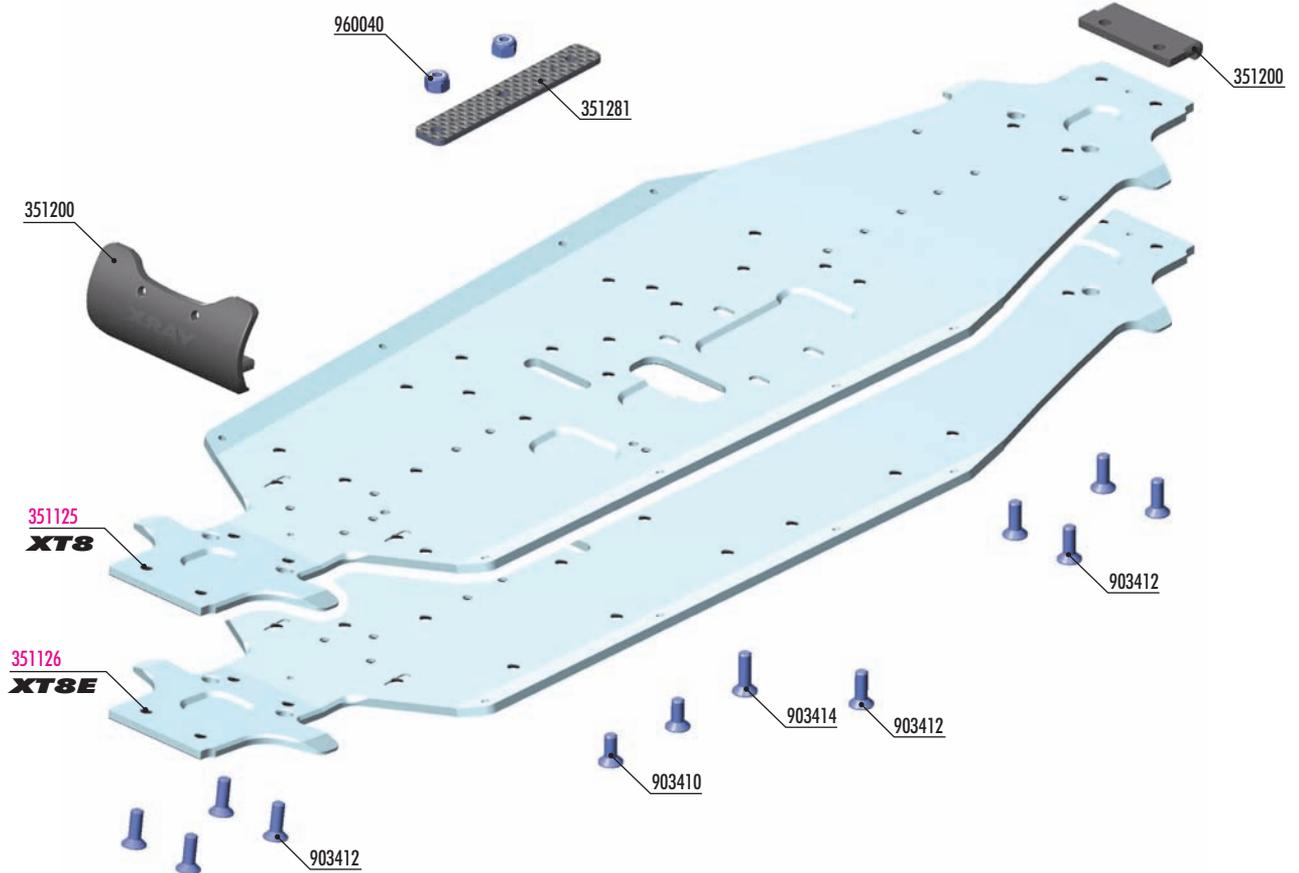
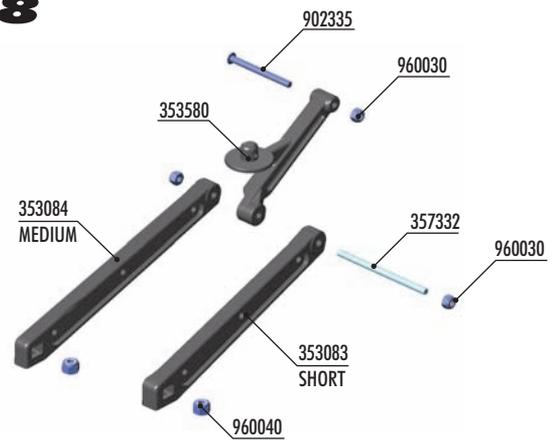
ROLL CENTER

6. FRONT & REAR ASSEMBLY **XT8E** **XT8**

XT8E



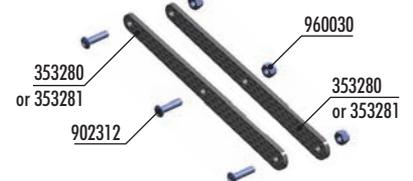
XT8



#351282
XT8 GRAPHITE CHASSIS STIFFENER - LONG



#353280 (MEDIUM) *for XT8 & XT8E
#353281 (SHORT) *just for XT8
GRAPHITE BRACE FOR REAR COMPOSITE BRACE - SET



BAG

06

- 351200 FRONT & REAR BUMPER - V2
- 351281 GRAPHITE CHASSIS STIFFENER
- 353083 COMPOSITE REAR BRACE - SHORT
- 353084 COMPOSITE REAR BRACE - MEDIUM
- 353580 COMPOSITE WING HOLDER BRACE WITH REAR BODY POST
- 357332 REAR LOWER OUTER PIVOT PIN (2)
- 902335 HEX SCREW SH M3x35 (10)
- 902340 HEX SCREW SH M3x40 (10)

- 903410 HEX SCREW SFH M4x10 (10)
- 903412 HEX SCREW SFH M4x12 (10)
- 903414 HEX SCREW SFH M4x14 (10)
- 960030 NUT M3 (10)
- 960040 NUT M4 (10)

- 351125 XT8'22 ALU CHASSIS - HARDCOATED SWISS 7075 T6 (3MM)
- 351126 XT8E'22 ALU CHASSIS - HARDCOATED SWISS 7075 T6 (3MM)



903410 SFH M4x10



903412 SFH M4x12



960040 N M4

NOTE ORIENTATION

FRONT **REAR**

NOTE ORIENTATION

XT8

XT8E

4x12mm

4x10mm

! CHECK GEAR MESH OR DIFF PLAY

During assembly, there is no need to check gear mesh or diff play. In particular, do not check gear mesh and diff play when the differential is installed only in the gear box without the suspension holders and without being mounted to the chassis. All parts have specifically designed play, and only when the car is fully assembled will it have the proper amount of play where necessary. Only once you build the entire car, then you can check for free movement of all rotational parts and drivetrain as well as a free non-binding operation of suspension parts.

#293084
PRECISION BALANCING CHASSIS WEIGHT 10G (4)
OPTION

Locations for weights

XT8E **XT8**

903308 SFH M3x8



902335 SH M3x35



960030 N M3

1

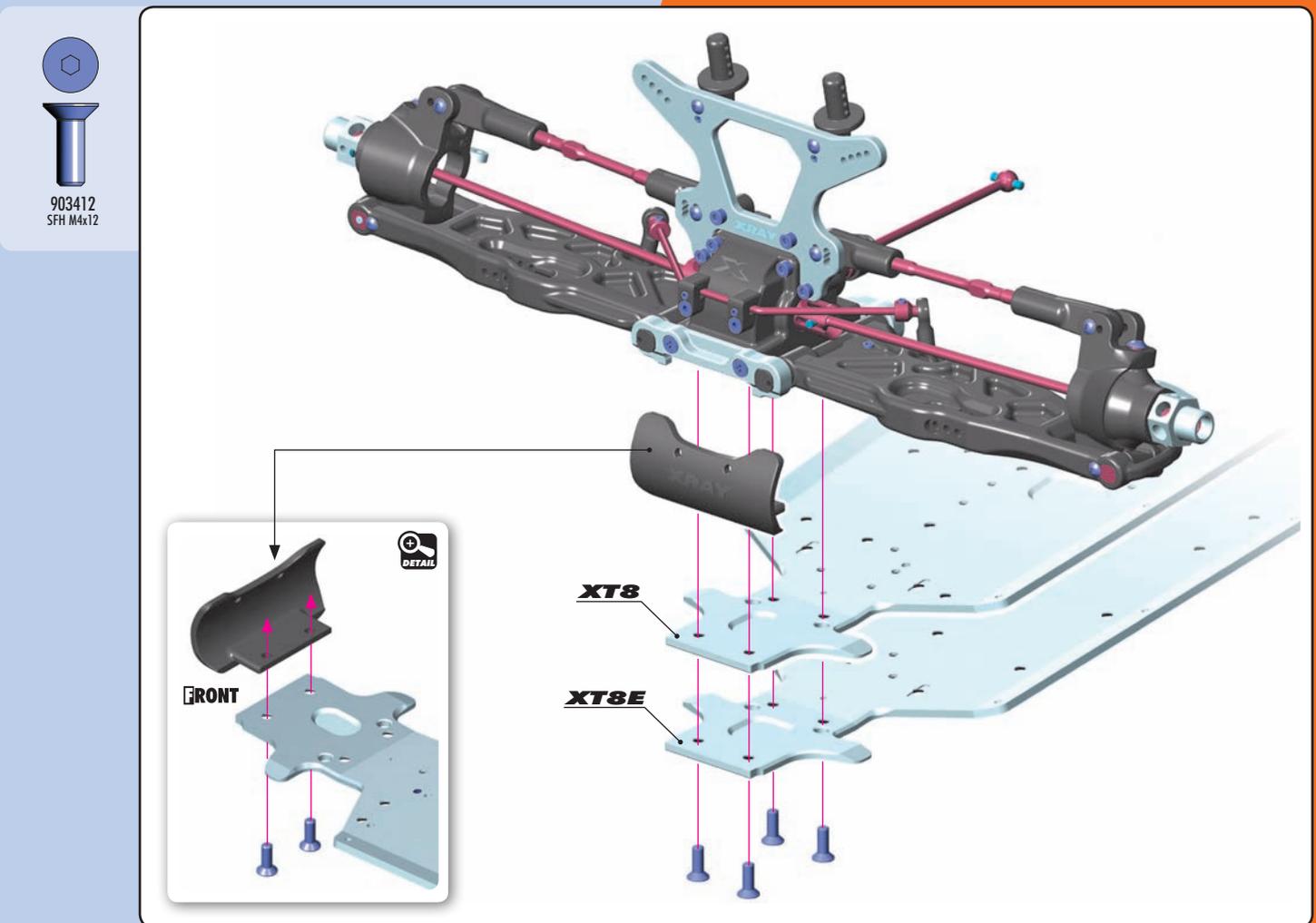
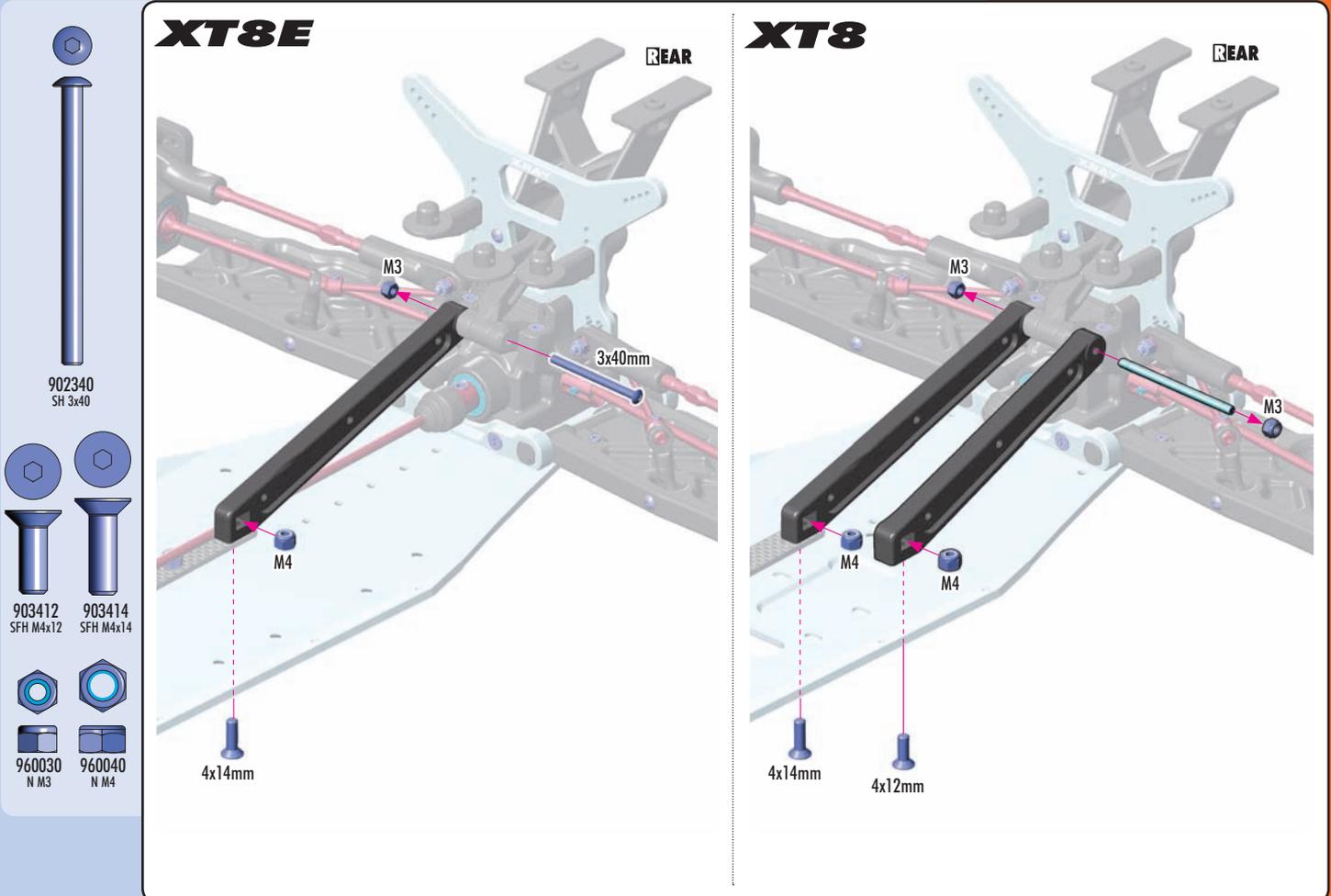
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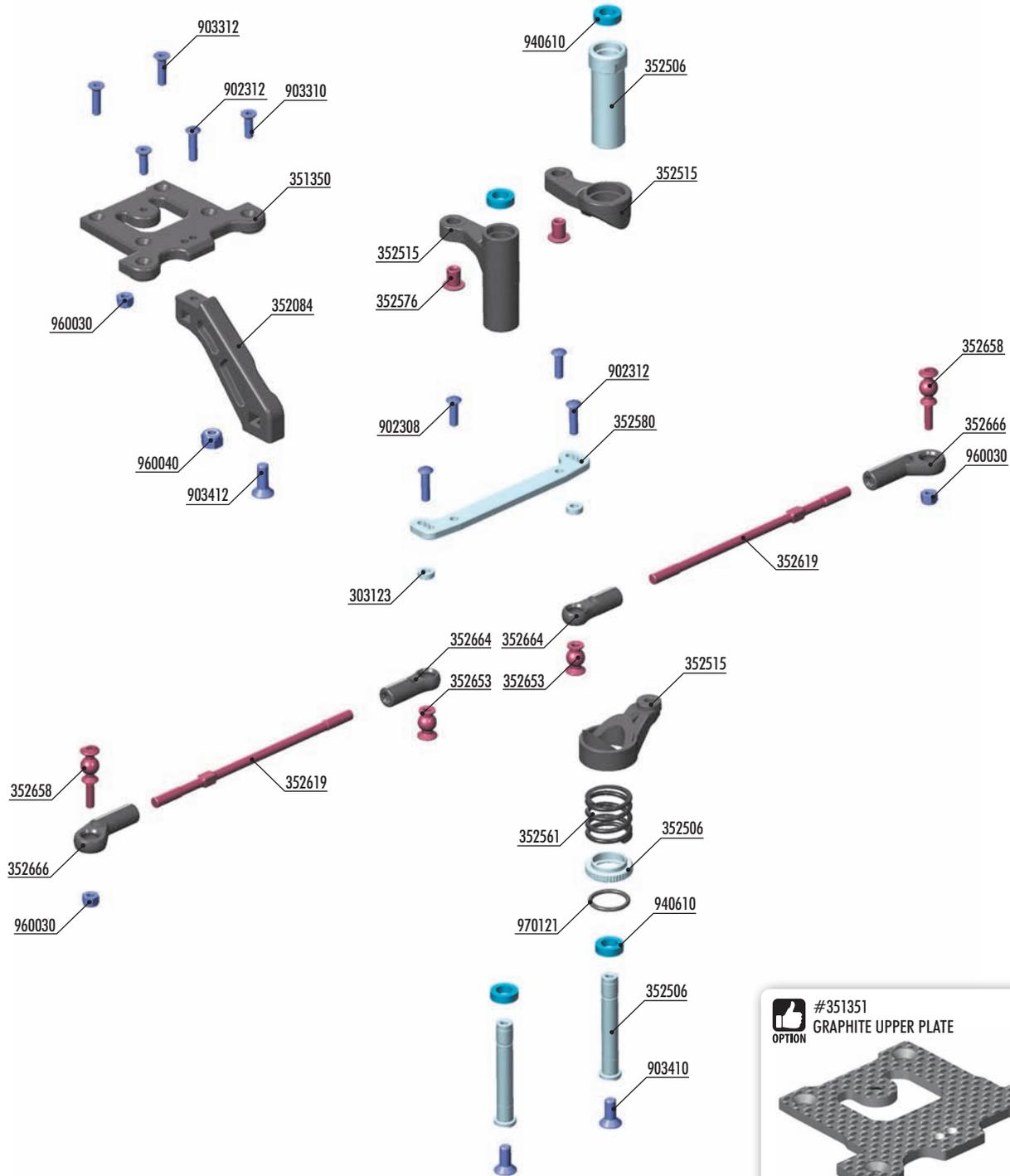
3

4

REAR

Push the top of the holder with fingers together to insert the brace with body post.





#351351
OPTION GRAPHITE UPPER PLATE

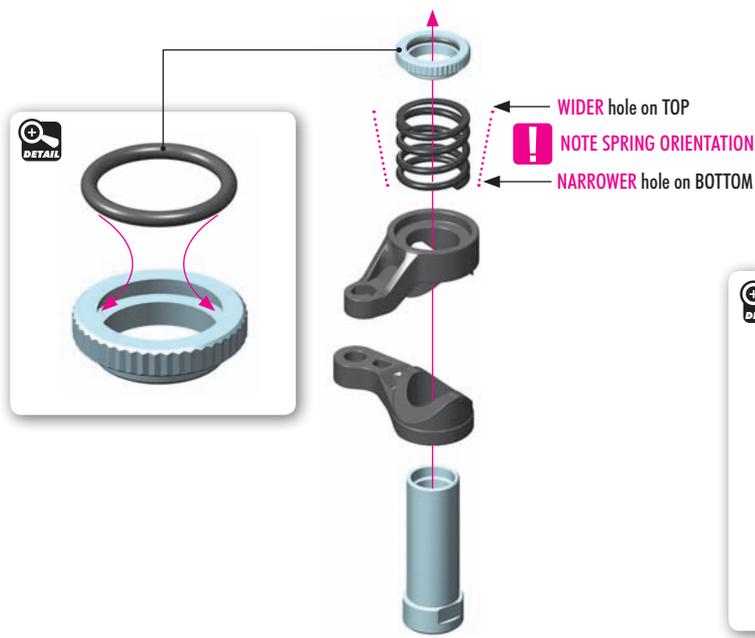
NOTE
 Must be used also 2pcs of #357256 shim 6x13x1mm.

BAG
07

303123	ALU SHIM 3x6x2.0MM (10)	352666	COMPOSITE RELIEF STEERING BALL JOINT 6.8MM (2)
351350	COMPOSITE UPPER PLATE WITH TWO BRACE POSITIONS	902308	HEX SCREW SH M3x8 (10)
352084	COMPOSITE FRONT BRACE	902312	HEX SCREW SH M3x12 (10)
352506	SERVO SAVER WITH CHASSIS LOCK & HARD SPRING - GRAPHITE - SET	903310	HEX SCREW SFH M3x10 (10)
352515	XT8 COMPOSITE SERVO SAVER - GRAPHITE	903312	HEX SCREW SFH M3x12 (10)
352561	SERVO SAVER SPRING PROGRESSIVE	903410	HEX SCREW SFH M4x10 (10)
352576	STEERING PLATE BUSHING (2)	903412	HEX SCREW SFH M4x12 (10)
352580	XT8 ALU STEERING PLATE - SWISS 7075 T6	940610	BALL-BEARING 6x10x3 RUBBER SEALED - OIL (2)
352619	ADJ. TURNBUCKLE M4 L/R 91 MM - HUDY SPRING STEEL™ (2)	960030	NUT M3 (10)
352653	BALL STUD 6.8MM WITH BACKSTOP - M3 (2)	960040	NUT M4 (10)
352658	BALL STUD 6.8MM WITH BACKSTOP L=6MM - M3x8 (2)	970121	O-RING 12.1 x 1.6 (10)
352664	COMPOSITE STEERING BALL JOINT 6.8MM - V3 (2)		



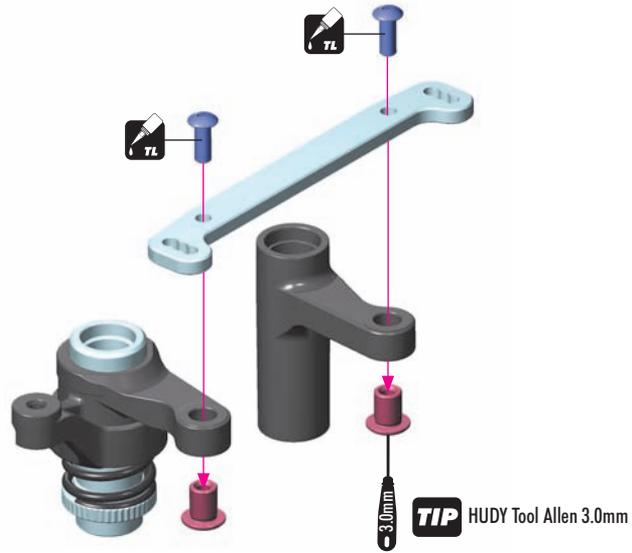
970121
O 12.1x1.6



SET-UP BOOK
SERVO SAVER

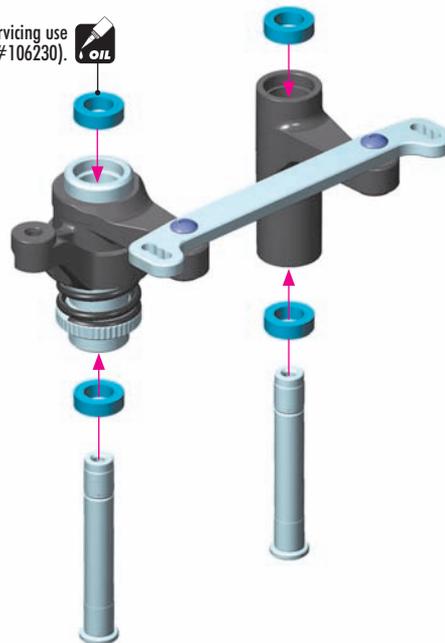


902308
SH M3x8



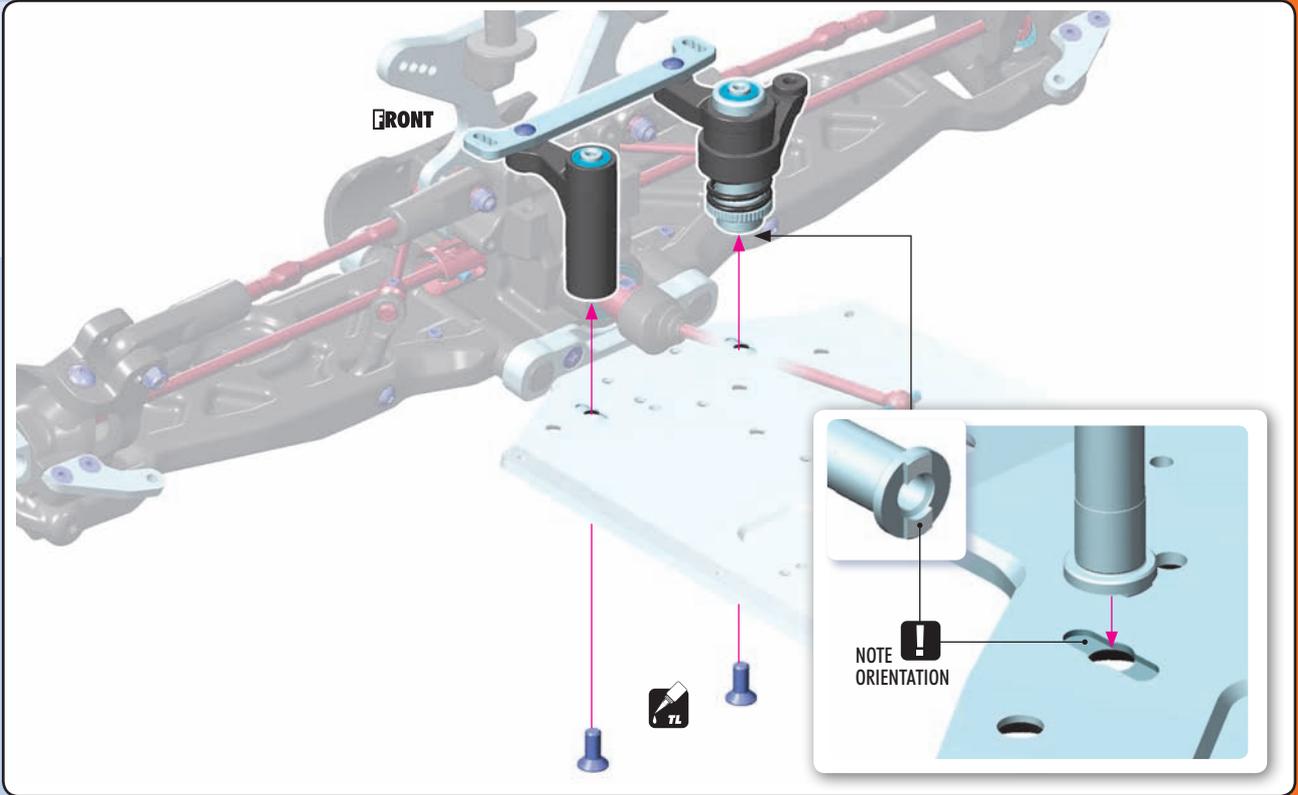
940610
BB 6x10x3

For servicing use
Bearing Oil (HUDY #106230).

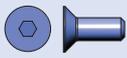




903410
SFH M4x10



902312
SH M3x12



903310
SFH M3x10



903312
SFH M3x12



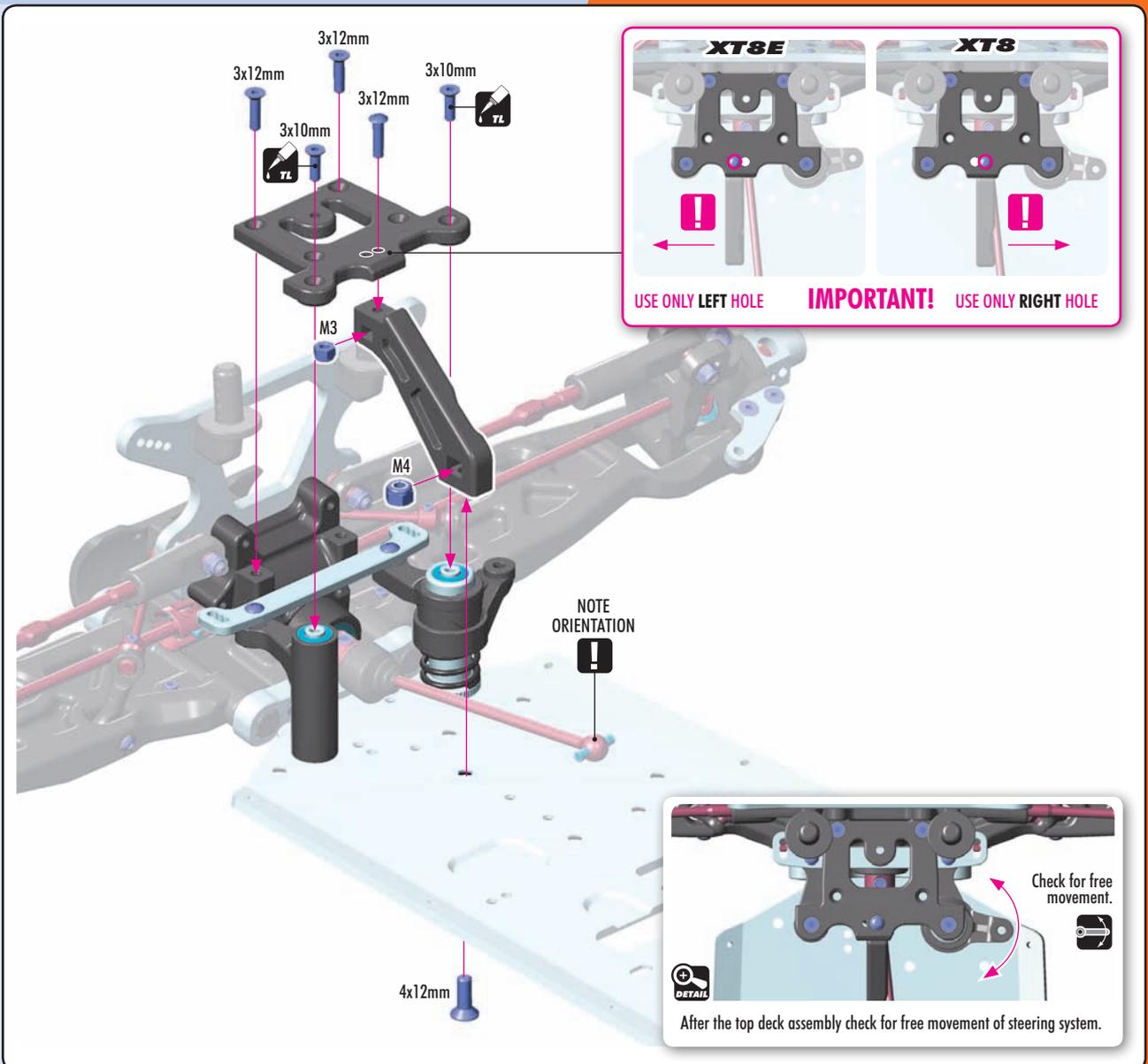
903412
SFH M4x12



960030
N M3

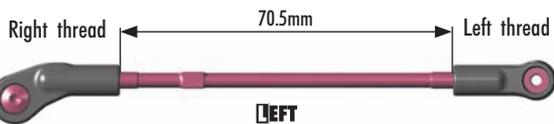
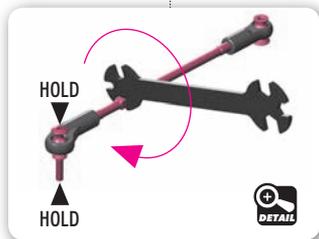


960040
N M4



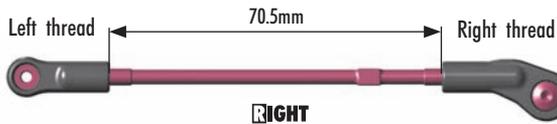
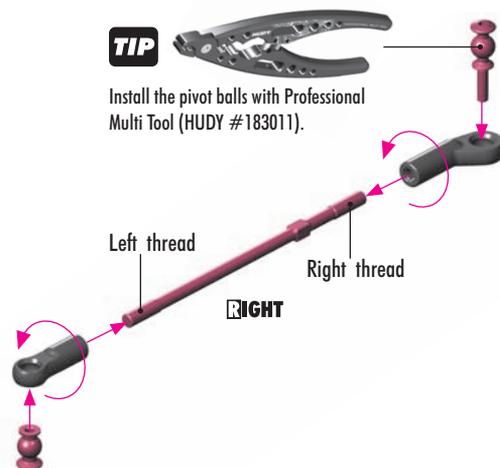
TIP

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



TIP

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



303123
SHIM 3x6x2

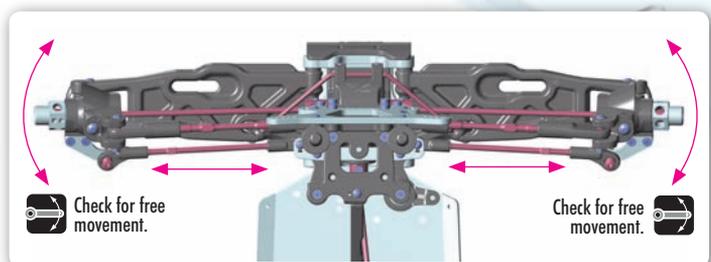
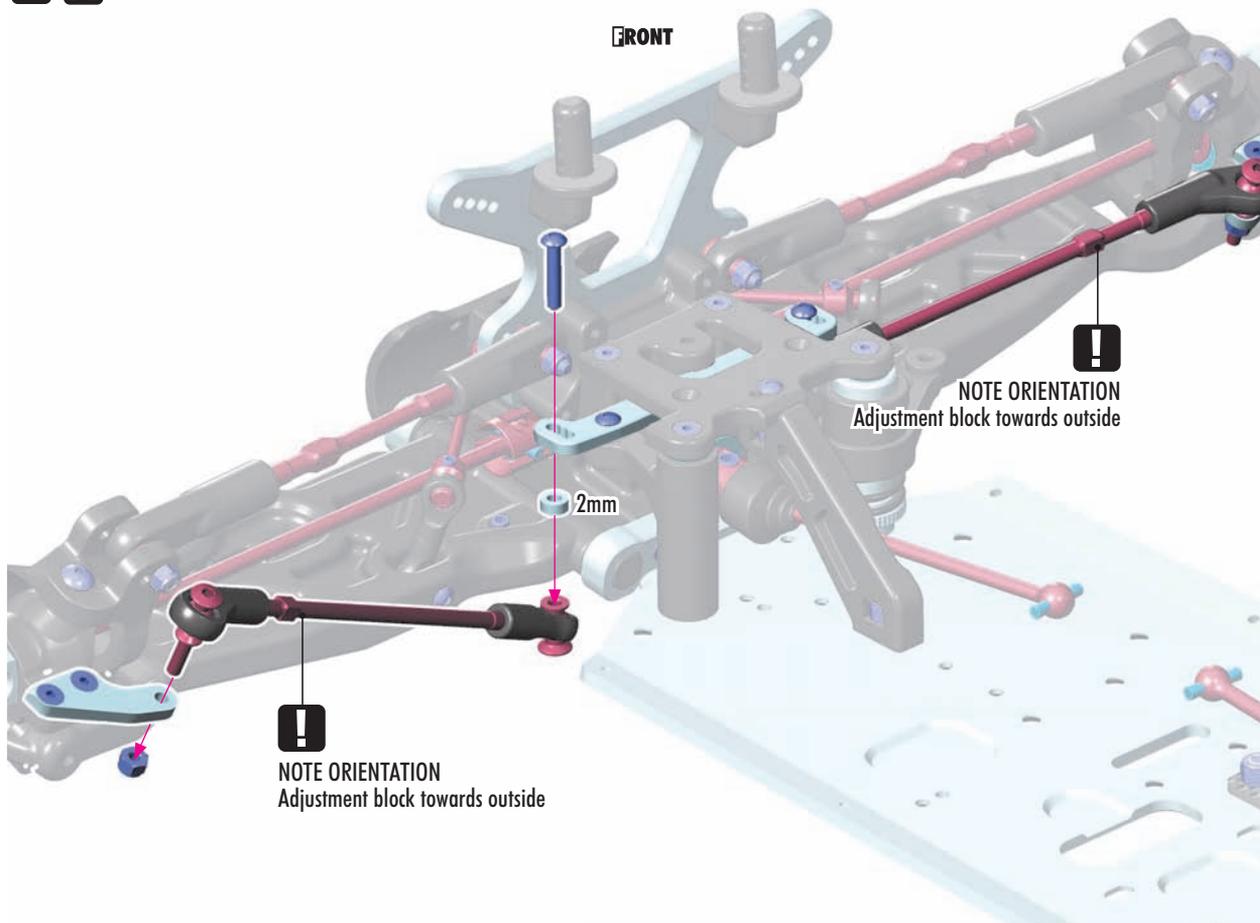


902312
SH M3x12



960030
N M3

2x L=R

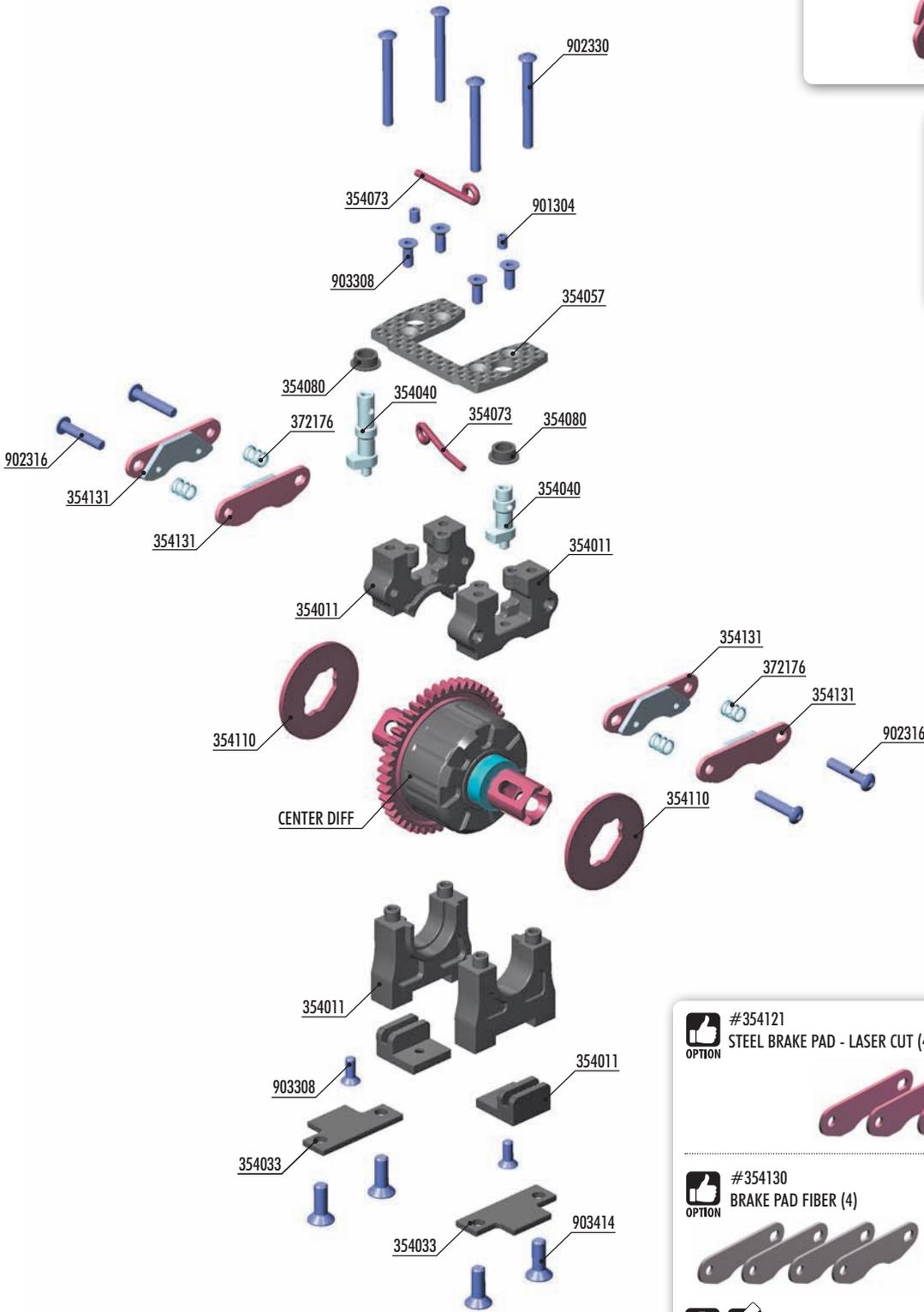


SET-UP BOOK

ACKERMANN
BUMP STEER
TOE-IN

8. CENTER DIFF & BRAKE

XT8



#354113
 SUPER-LIGHTWEIGHT VENTILATED BRAKE DISK -
 PRECISION-GROUND (2)



#354011-G
 CENTER DIFF MOUNTING PLATE
 SET - HIGHER - GRAPHITE



#354121
 STEEL BRAKE PAD - LASER CUT (4)



#354130
 BRAKE PAD FIBER (4)



#354132
 BRAKE PAD "SLS" (4)



! **CA** It is necessary to glue the brake pad with strong CA glue suitable for steel.

BAG

08

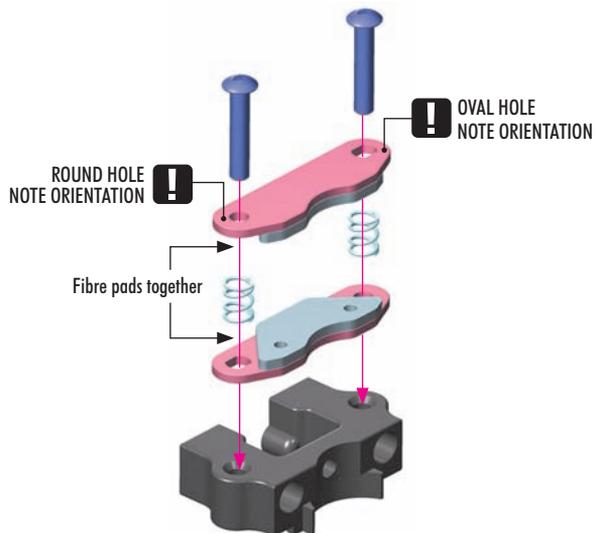
- 354011 CENTER DIFF MOUNTING PLATE - HIGHER - SET
- 354033 COMPOSITE 2-SPEED HOLDER PLATE (2)
- 354040 BRAKE CAM POST & ROD (2+2)
- 354057 GRAPHITE CENTER DIFF MOUNTING PLATE
- 354073 BRAKE CAME ROD (1+1)
- 354080 COMPOSITE BUSHING FOR DIFF MOUNTING PLATE (2)
- 354110 VENTILATED BRAKE DISK - LASER CUT - PRECISION-GROUND
- 354131 GLUED BRAKE PAD SET-ULTRA EFFICIENT (4)

- 372176 SPRING 4.25 COILS 3.6x6x0.4MM; C=1.5 - GOLD (SOFT) (2)
- 901304 HEX SCREW SB M3x4 (10)
- 902316 HEX SCREW SH M3x16 (10)
- 902330 HEX SCREW SH M3x30 (10)
- 903308 HEX SCREW SFH M3x8 (10)
- 903414 HEX SCREW SFH M4x14 (10)



902316
SH M3x16

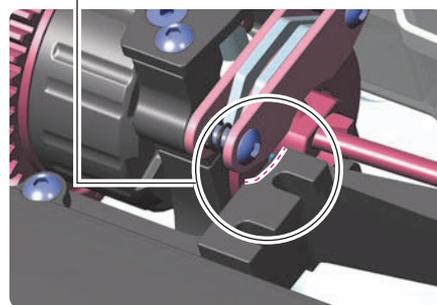
2x



#354011-G
CENTER DIFF MOUNTING PLATE
SET - HIGHER - GRAPHITE



When using ultra-efficient brake pads you need to remove from the servo holder on radio case.



#354121
STEEL BRAKE PAD - LASER CUT (4)



#354130
BRAKE PAD FIBER (4)

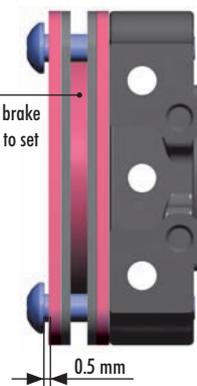


#354132
BRAKE PAD "SLS" (4)



It is necessary to glue the brake pad with strong CA glue suitable for steel.

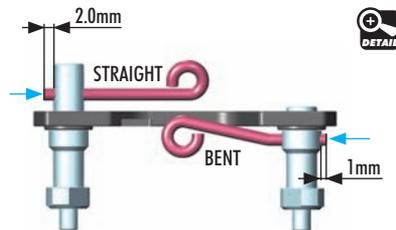
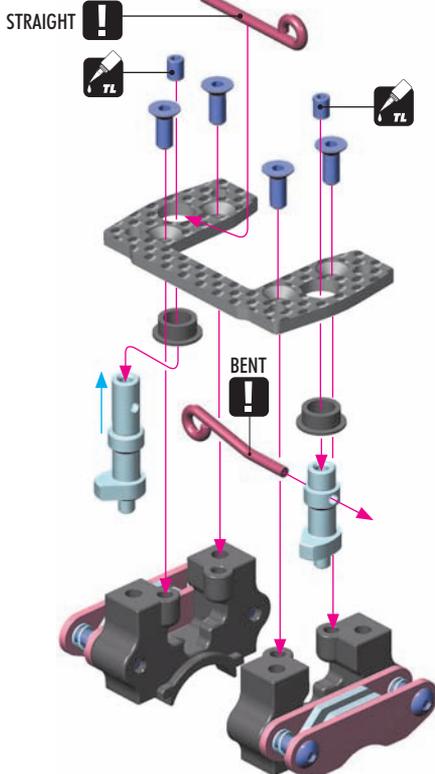
Temporarily insert brake disk between pads to set correct gap.



901304
SB M3x4



903308
SFH M3x8



8. CENTER DIFF & BRAKE

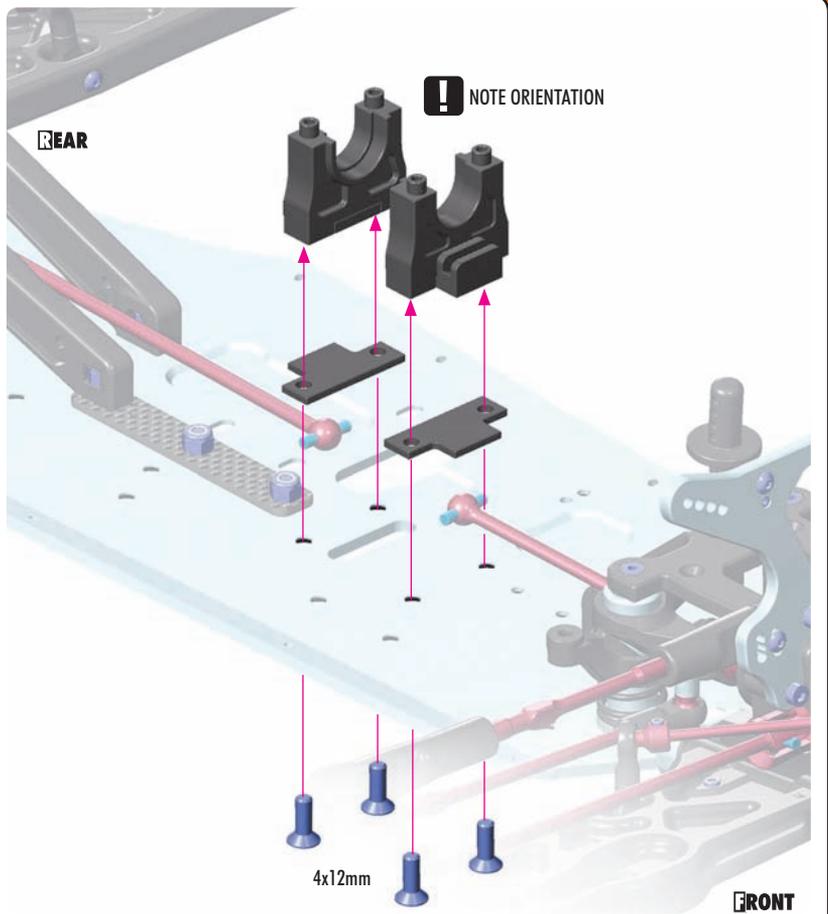
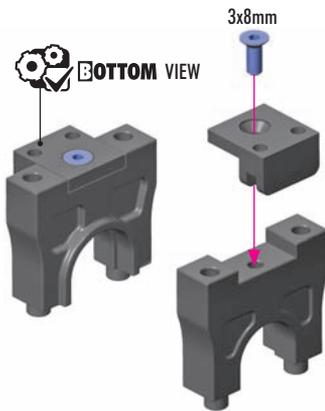


903308
SFH M3x8



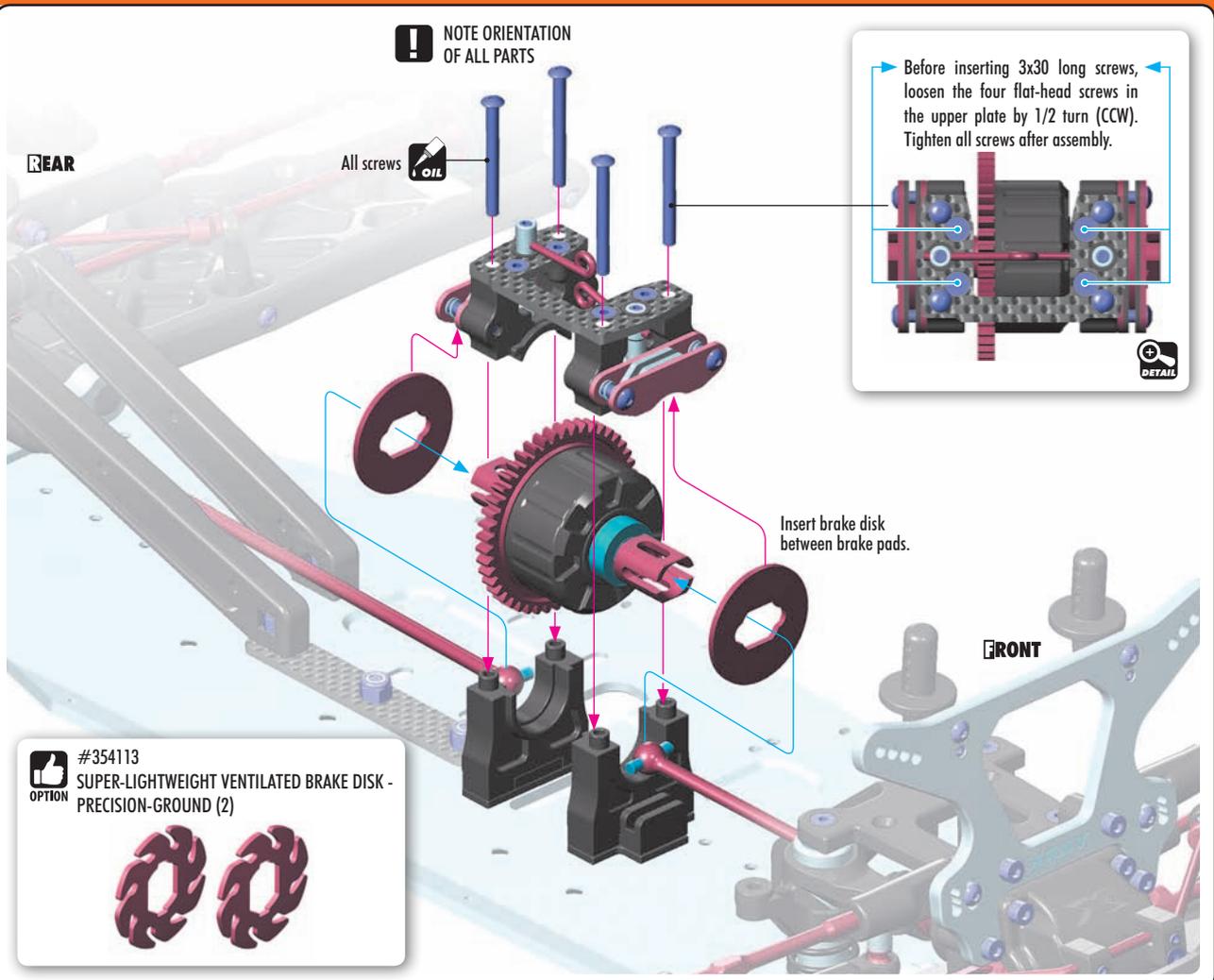
903412
SFH M4x12

! NOTE ORIENTATION
OF ALL PARTS



902330
SH M3x30

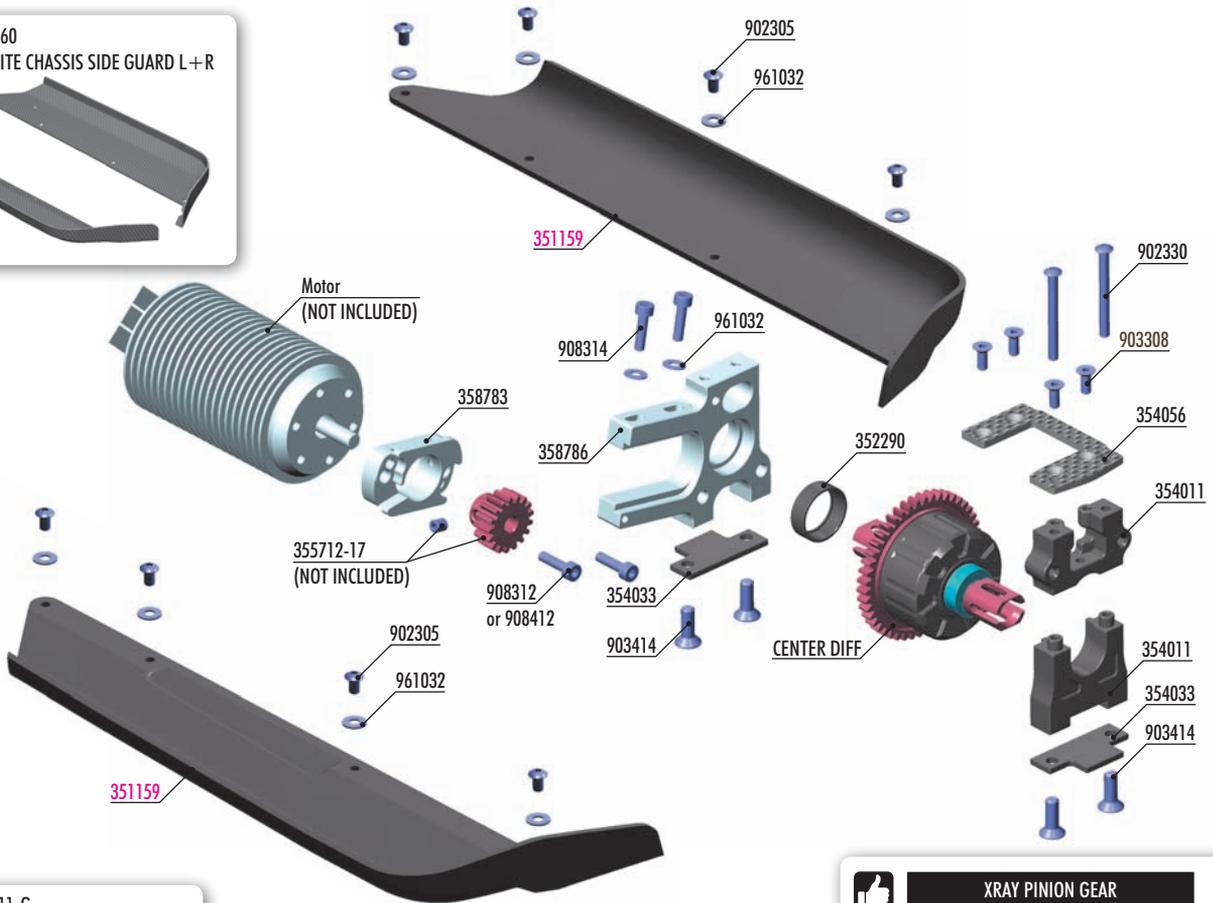
! NOTE ORIENTATION
OF ALL PARTS



8. CENTER DIFF & MOTOR

XT8E

#351160
GRAPHITE CHASSIS SIDE GUARD L+R
 OPTION



#354011-G
CENTER DIFF MOUNTING PLATE SET - HIGHER - GRAPHITE
 OPTION



XRAY PINION GEAR

OPTION	Part #	Teeth	Availability
	#355712	12T	OPTION
	#355713	13T	OPTION
	#355714	14T	OPTION
	#355715	15T	OPTION
	#355716	16T	OPTION
	#355717	17T	OPTION



BAG

08

- 352290 COMPOSITE BUSHING FOR ALU STEERING BLOCK (4)
- 354011 CENTER DIFF MOUNTING PLATE SET - HIGHER
- 354033 COMPOSITE 2-SPEED HOLDER PLATE (2)
- 354056 GRAPHITE CENTER DIFF MOUNTING PLATE
- 358783 ALU MOTOR MOUNT PLATE - V2
- 358786 XB8E/XT8E ALU MOTOR MOUNT
- 902305 HEX SCREW SH M3x5 (10)
- 902330 HEX SCREW SH M3x30 (10)

- 903308 HEX SCREW SFH M3x8 (10)
- 903414 HEX SCREW SFH M4x14 (10)
- 908312 HEX SCREW SOCKET HEAD CAP M3x12 (10)
- 908314 HEX SCREW SOCKET HEAD CAP M3x14 (10)
- 908412 HEX SCREW SOCKET HEAD CAP M4x12 (10)
- 961032 WASHER S 3.2 (10)

351159 CHASSIS SIDE GUARDS L+R



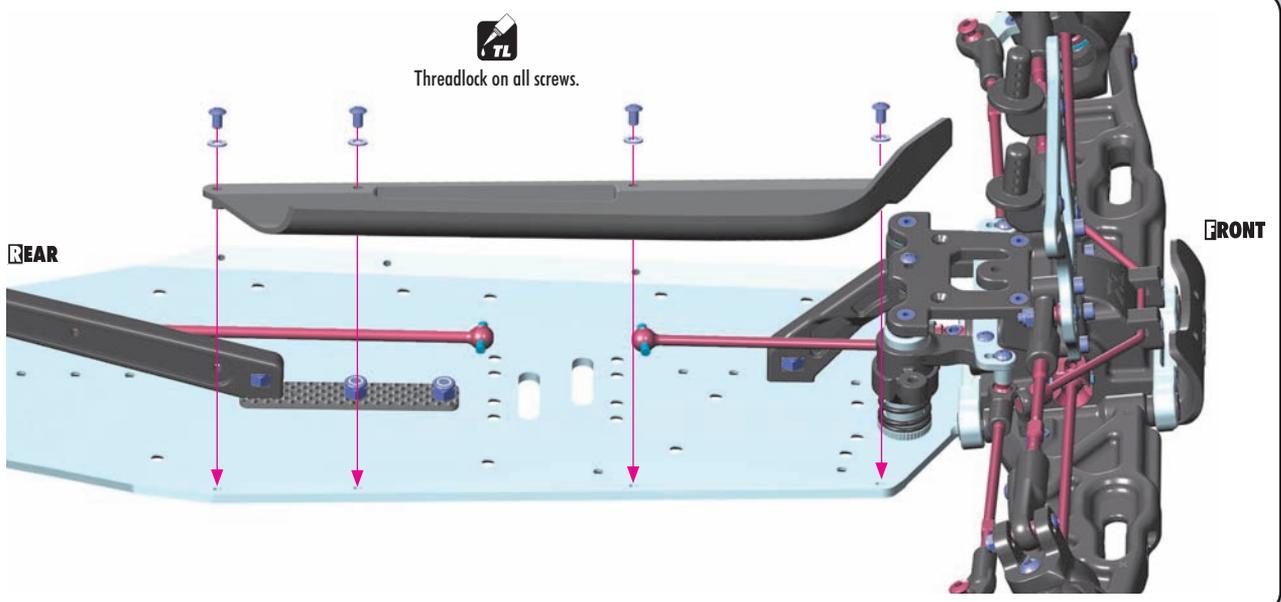
902305
SH M3x5



961032
S 3.2



Threadlock on all screws.



8. CENTER DIFF & MOTOR

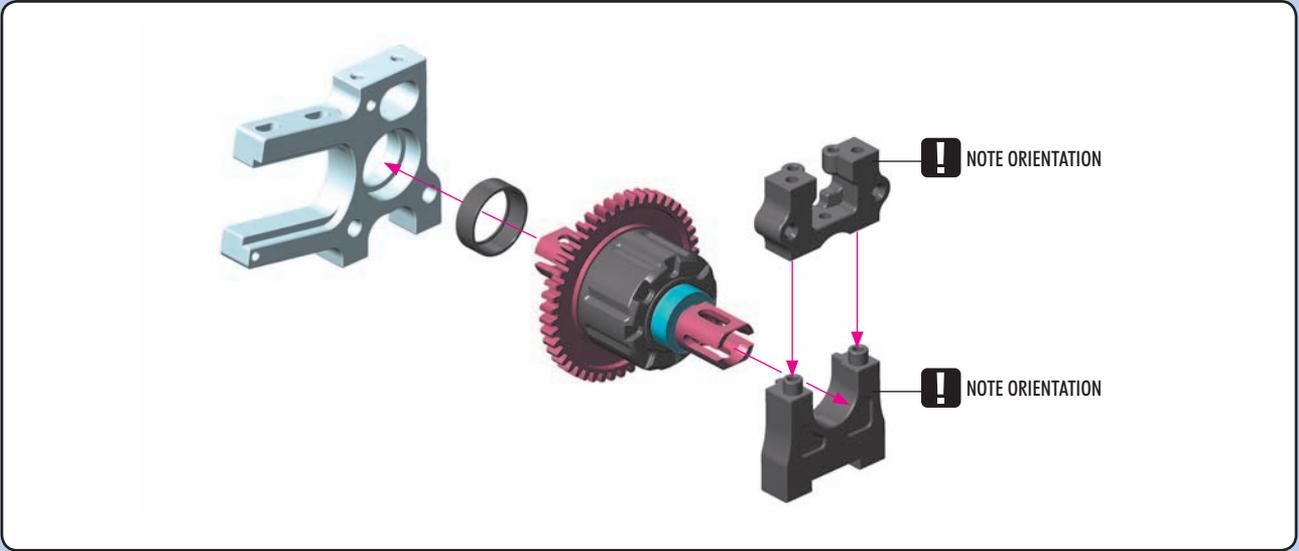
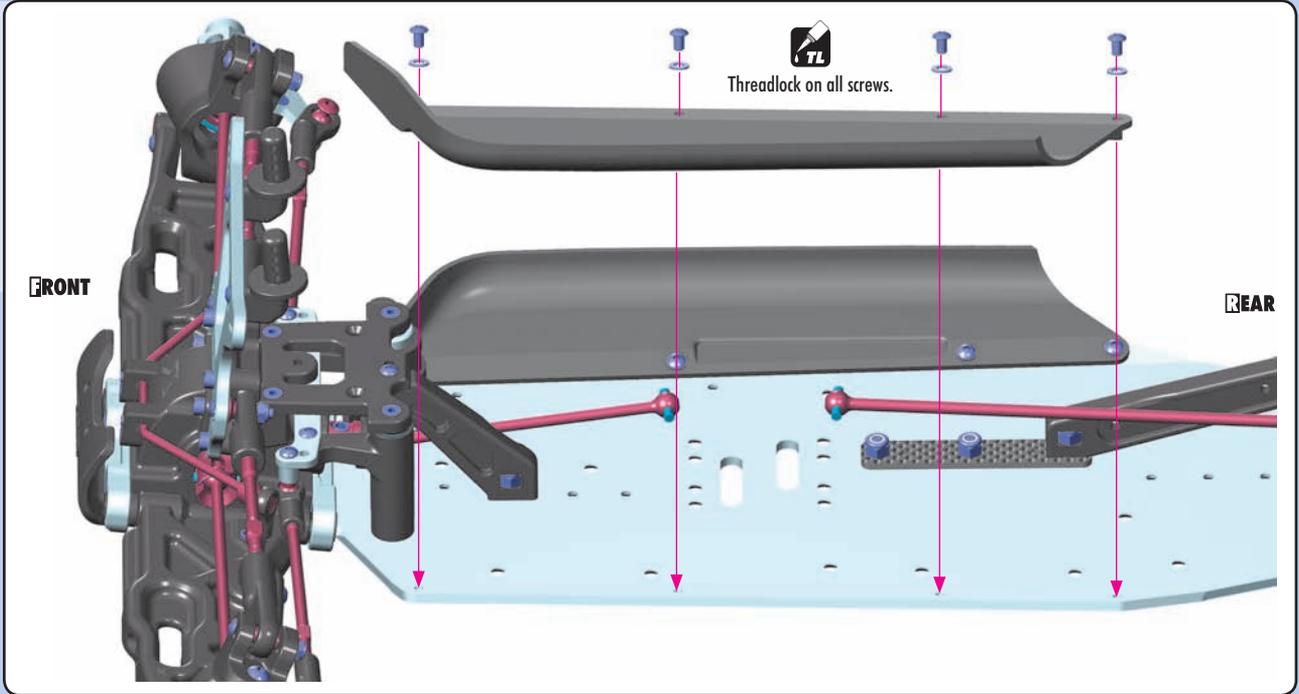
XT8E



902305
SH M3x5



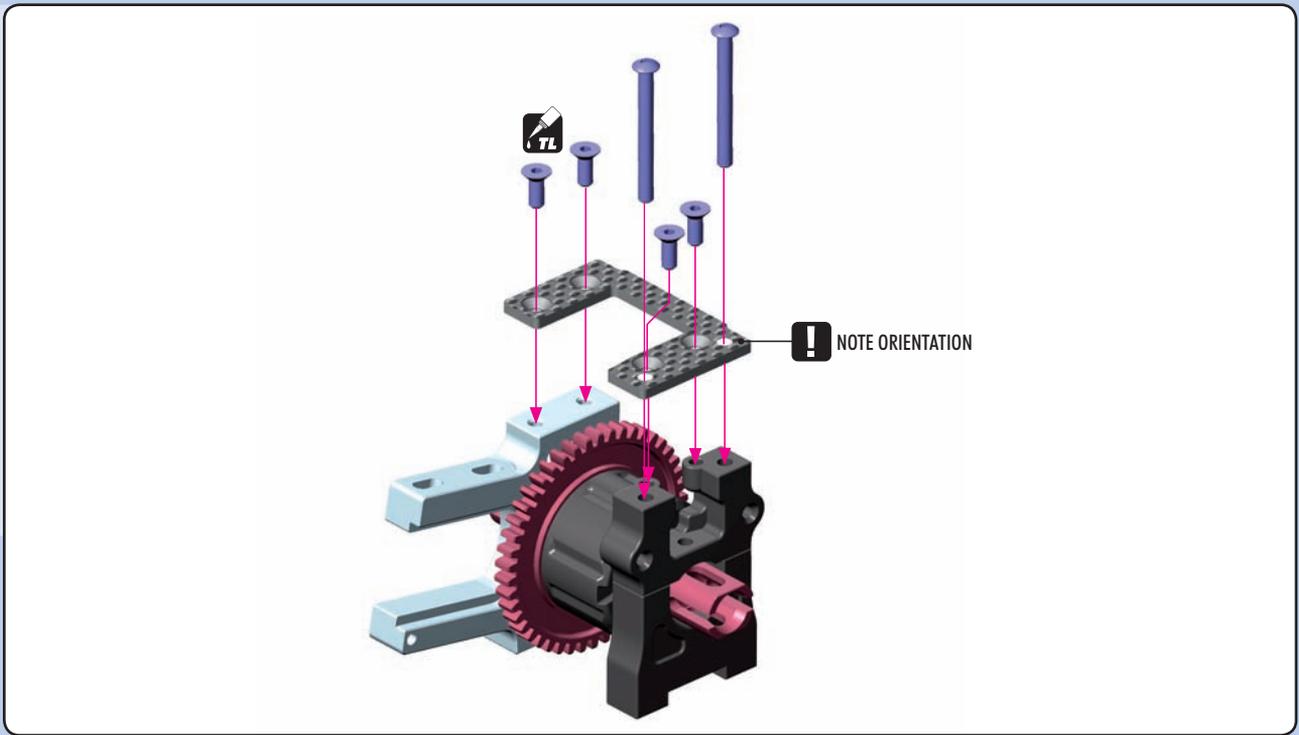
961032
S 3.2



902330
SH M3x30

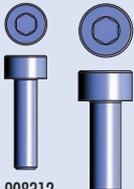
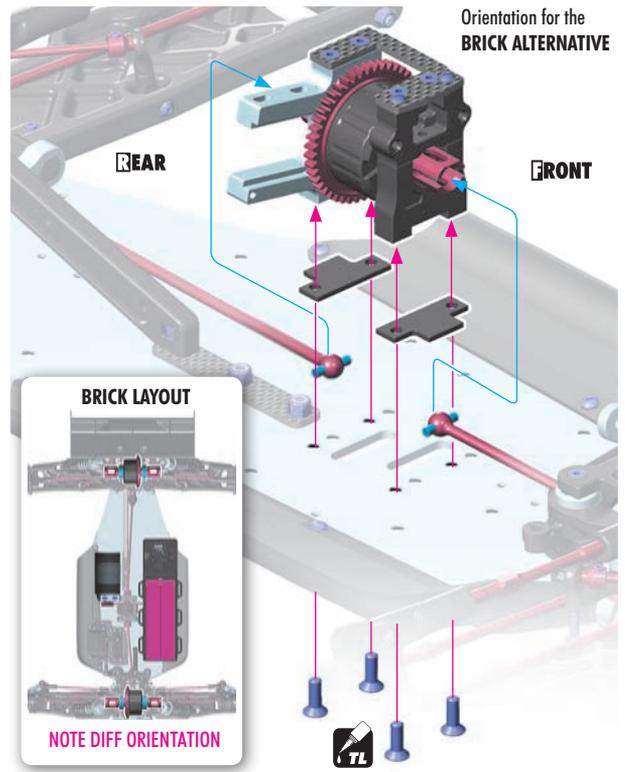
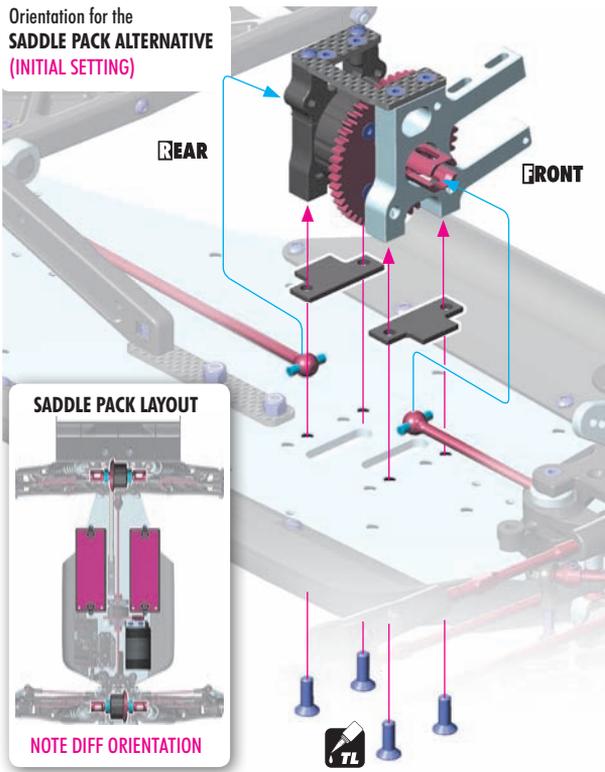


903308
SFH M3x8



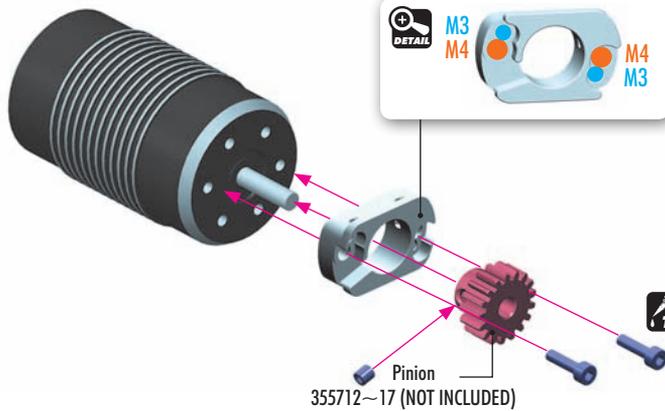


903414
SFH M4x14



908312
SCH M3x12

908412
SCH M4x12



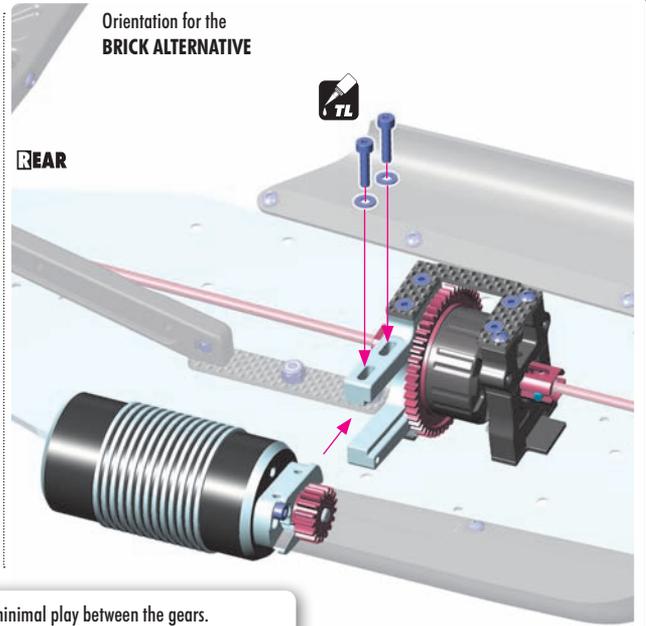
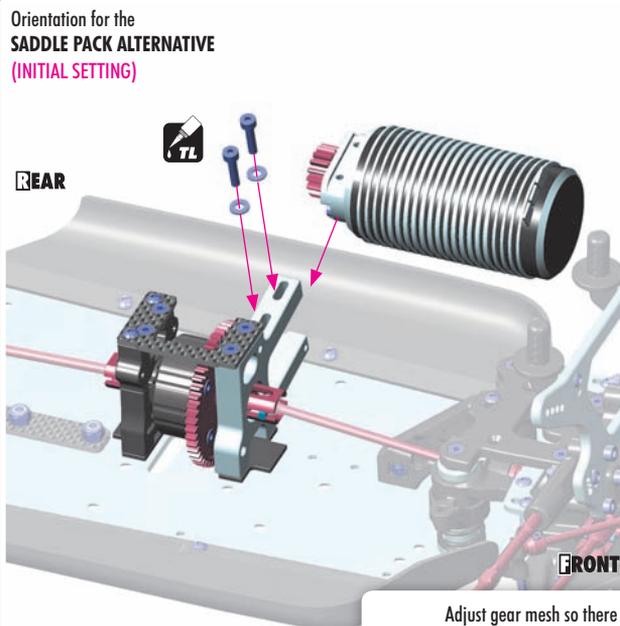
Use M3 or M4 screws which fit your motor.
(M4 INITIAL SETTING)



908314
SCH M3x14



961032
S 3.2



Adjust gear mesh so there is minimal play between the gears.
TOO TIGHT gear mesh will put excessive strain on all parts and damage the parts.
TOO LOOSE gear mesh may result in stripped gears.

9. FUEL TANK & ENGINE

XT8

OPTION #358709
ALU MONOBLOCK ENGINE MOUNT - SWISS 7075 T6



OPTION #358718
ALU STAND (FX, NOVAROSS, MAX, SIRIO)



OPTION #358719
ALU STAND (PICCO, REDS, ORION, LRP, OS, ULT. RACING)



OPTION #351160
GRAPHITE CHASSIS SIDE GUARD L+R



OPTION #358400
XRAY COMPLETE 4-SHOE CLUTCH SET



4-SHOE CLUTCH SHOES			GRIP	
OPTION #358457	ALU HARD (4)	1.00g	HIGH	OPTION
#358456	ALU MED (4)	1.00g		OPTION
#358461	GRAPHITE (4)	1.00g	LOW	OPTION
#358460	ALU HARD (4)	1.15g		OPTION
#358459	ALU MEDIUM (4)	1.15g		INCLUDED
#358458	ALU SOFT (4)	1.15g		OPTION

CLUTCH SPRINGS (4pcs)		RPM	
OPTION #358480	SOFT	GOLD	EARLY INCLUDED
#358481	MEDIUM	GREY	LATE OPTION
#358482	HARD	SILVER	LATE OPTION

CLUTCHBELL 4 SHOE CLUTCH		
OPTION #358413	13T	OPTION
#358413-L	13T Lightweight	OPTION

OPTION #650105 FX K303 - 3 PORTS
#650304 FX K502 - 5 PORTS

FX EUROPEAN CHAMPION

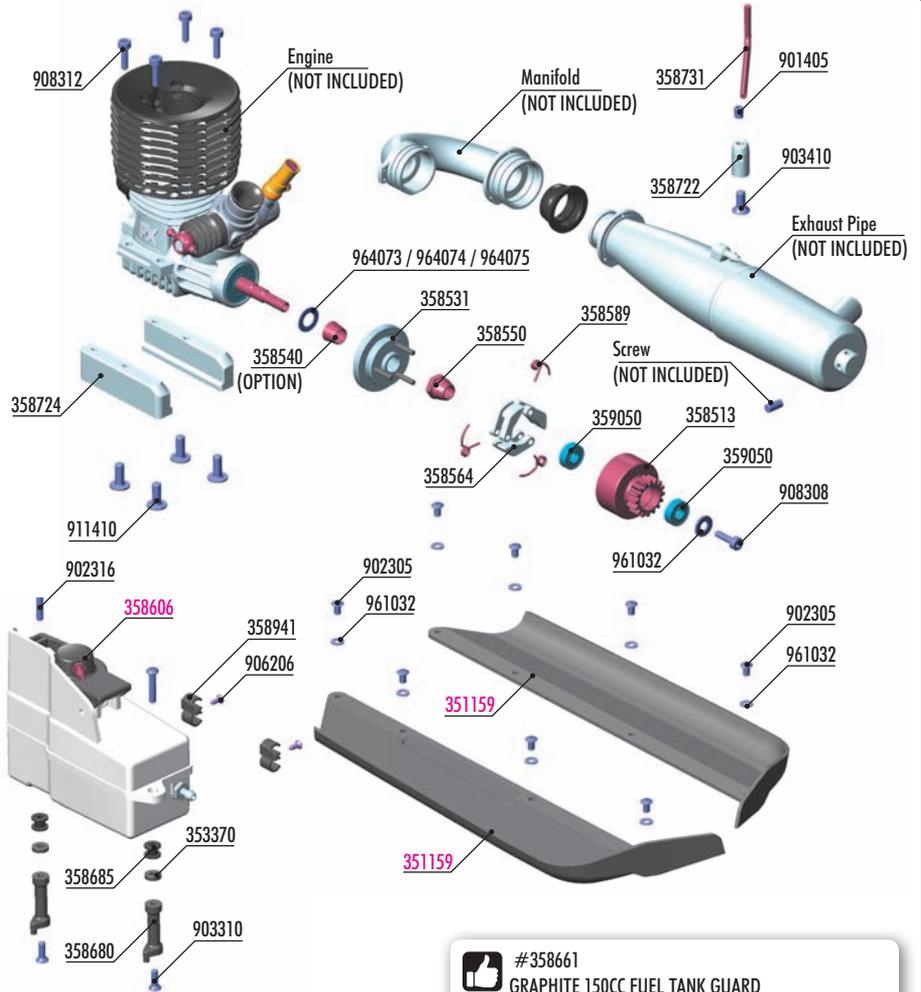


- DLC
- CERAMIC BEARING
- BALANCED

OPTION #659505 FX MUFFLER 3.5CC EFRA 2131 + MANIFOLD M - CHROME
#659506 FX MUFFLER 3.5CC EFRA 2131 + MANIFOLD MEDIUM
#659558 FX MUFFLER 3.5CC EFRA 2169 + MANIFOLD MEDIUM



FX EUROPEAN CHAMPION



OPTION

CLUTCH SHOE		
#358563	GRAPHITE (2)	OPTION
#358564	ALU - HARD (3)	INCLUDED

OPTION #353250
GRAPHITE BRACE FOR CHASSIS SIDE GUARDS - SET



OPTION #358661
GRAPHITE 150CC FUEL TANK GUARD



OPTION

HIGH TORQUE CLUTCH SPRING			
#358587	GOLD	SOFT	OPTION
#358588	GRAY	MEDIUM	OPTION
#358589	SILVER	HARD	INCLUDED

OPTION

CLUTCHBELL 3 SHOE CLUTCH		
#358512	12T	OPTION
#358513	13T	INCLUDED
#358525	15T	OPTION
#358517	13T Lightweight	OPTION
#358518	14T Lightweight	OPTION

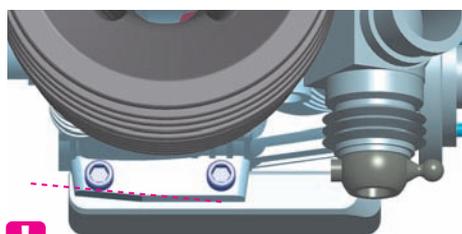
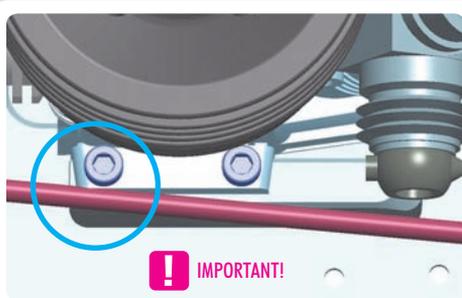
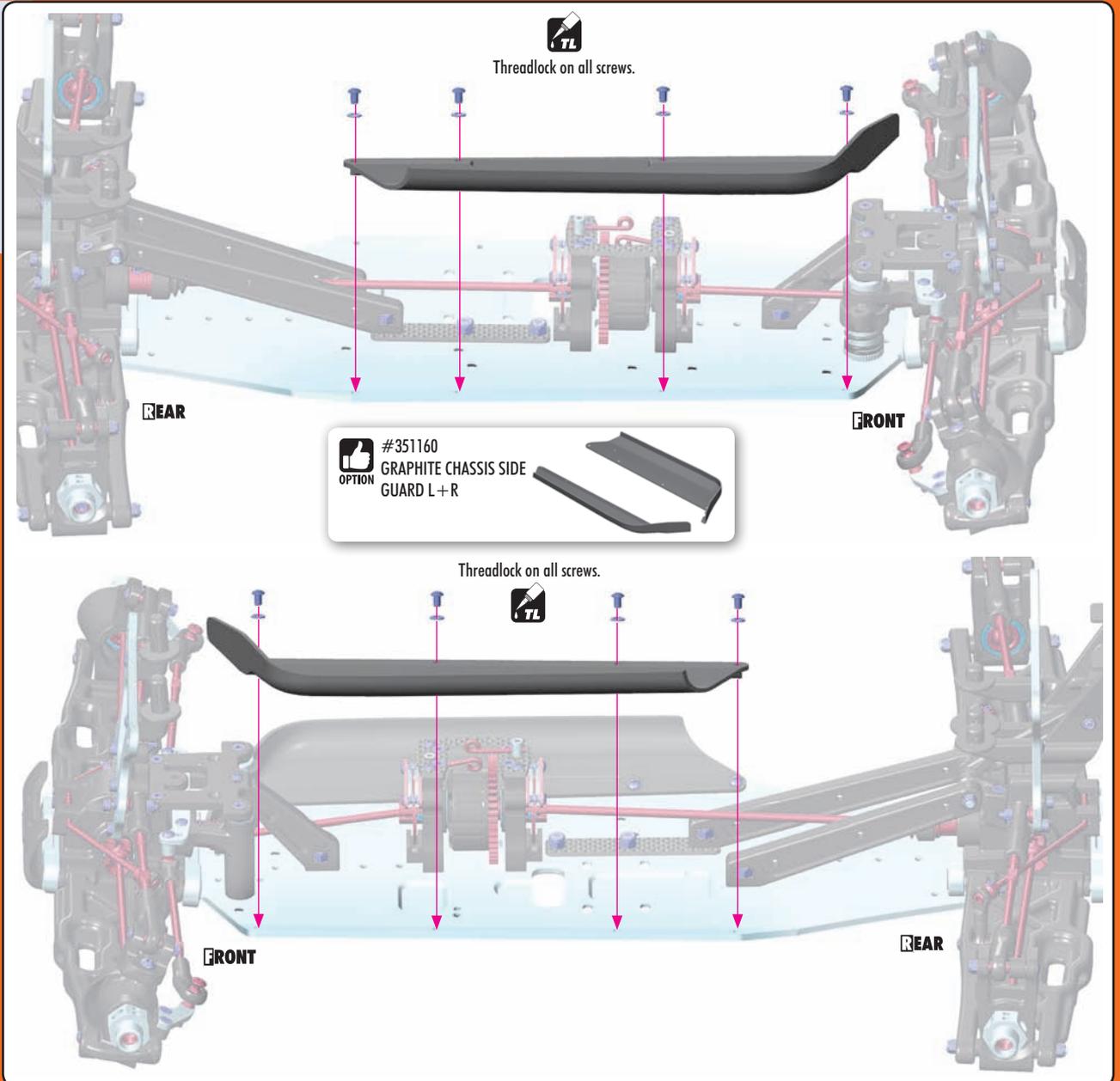
BAG

09

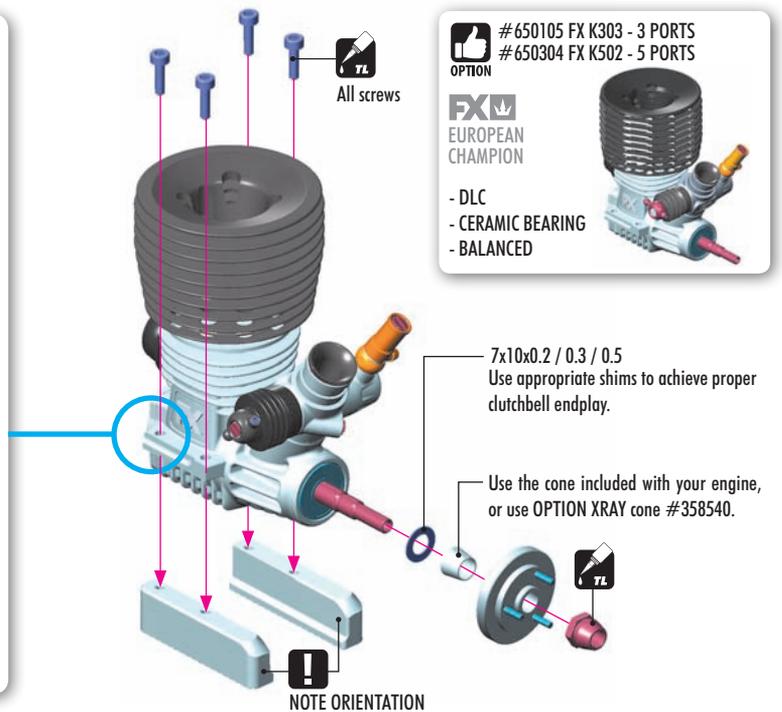
- 353370 SET OF COMPOSITE REAR HUB CARRIER SHIMS
- 358513 CLUTCH BELL 13T
- 358531 FLYWHEEL
- 358540 FLYWHEEL COLLAR (OPTION)
- 358550 FLYWHEEL NUT - HUDY SPRING STEEL™
- 358564 ALU CLUTCH SHOE - HARD (3)
- 358589 HIGH TORQUE CLUTCH SPRINGS - SILVER - HARD (3)
- 358680 FUEL TANK MOUNTING POST (2)
- 358685 FUEL TANK MOUNTING GROMMET (4)
- 358722 EXHAUST WIRE MOUNT SET
- 358724 ALU ENGINE MOUNT - CNC MACHINED (L+R)
- 358731 EXHAUST MOUNTING WIRE - LONG
- 358941 COMPOSITE TUBING HOLDER FOR FUEL TANK (2)
- 359050 BALL-BEARING 5x10x4 STEEL SEALED - GREASE - V2 (2)
- 901405 HEX SCREW SB M4x5 (10)

- 902305 HEX SCREW SH M3x5 (10)
- 902316 HEX SCREW SH M3x16 (10)
- 903310 HEX SCREW SFH M3x10 (10)
- 903410 HEX SCREW SFH M4x10 (10)
- 906206 SCREW PHILLIPS FH 2.2x6 (10)
- 908308 HEX SCREW (CAP HEAD) 3x8 (10)
- 908312 HEX SCREW (CAP HEAD) 3x12 (10)
- 911410 HEX SCREW FLANGED SH M4x10 (10)
- 961032 WASHER S 3.2 (10)
- 964073 WASHER S 7x10x0.2 (10)
- 964074 WASHER S 7x10x0.3 (10)
- 964075 WASHER S 7x10x0.5 (10)

- 351159** CHASSIS SIDE GUARDS L+R
- 358606** FUEL TANK 150CC WITH FLOATING FILTER & TRANSIENT JET

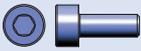


When installing the engine, first check that the drive shaft does not touch the engine. If it does, remove some material from the engine mount as shown to make some room between engine and shaft.





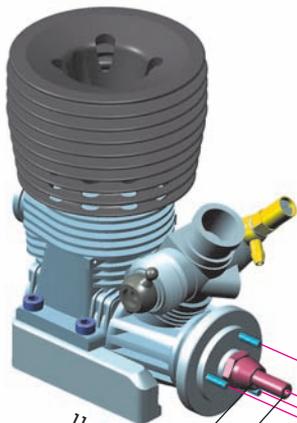
359050
BB 5x10x4



908308
SCH M3x8



961032
S 3.2



! Note the orientation of the clutch shoes. The short side of spring must be in the groove of the flywheel nut.



! These bearings must still be regularly serviced and replaced when worn out.

11-11.2 mm



TIP Hold the flywheel using HUDY Flywheel Tool #182015.

TIP Tighten the clutch nut using HUDY tool #107581.

SET-UP BOOK
CLUTCH SPRINGS
CLUTCH SHOE



CLUTCHBELLS		
#358512	12T	OPTION
#358513	13T	INCLUDED
#358525	15T	OPTION
#358517	13T Lightweight	OPTION
#358518	14T Lightweight	OPTION



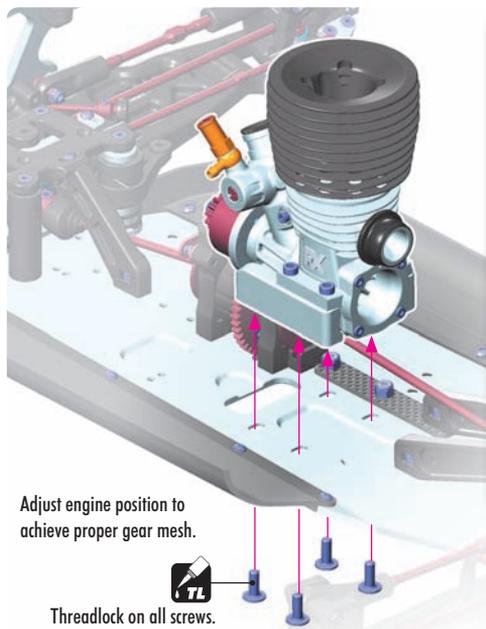
HIGH TORQUE CLUTCH SPRINGS			
#358587	GOLD	SOFT	OPTION
#358588	GRAY	MEDIUM	OPTION
#358589	SILVER	HARD	INCLUDED



CLUTCH SHOE		
#358563	GRAPHITE (2)	OPTION
#358564	ALU - HARD (3)	INCLUDED



911410
SHF M4x10



Adjust engine position to achieve proper gear mesh.



Threadlock on all screws.



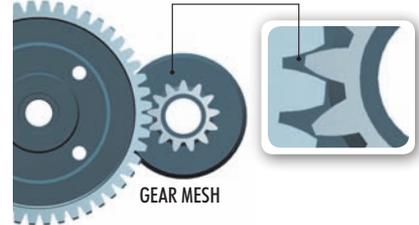
#358709
ALU MONOBLOCK ENGINE MOUNT - SWISS 7075 T6



#358718
ALU STAND (FX, NOVAROSS, MAX, SIRIO)



#358719
ALU STAND (PICCO, REDS, ORION, LRP, OS, ULT. RACING)



GEAR MESH



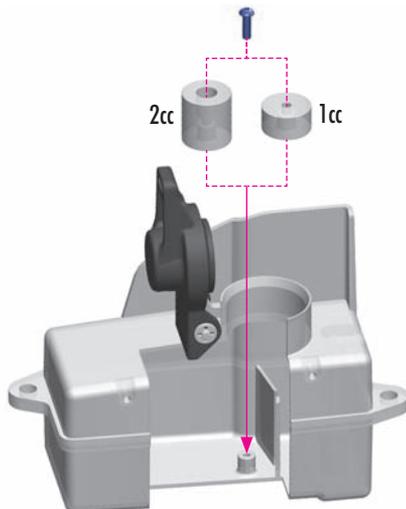
EXTREMELY IMPORTANT

It is very important that your XT8 has properly-adjusted gear mesh. Adjust the gear mesh so there is adequate (or slightly larger) space between the spur gear and clutchbell teeth. Adjust the gear mesh by sliding the engine mounts in the slots of the chassis. You should be able to rock one gear back and forth slightly while holding the other one firmly. Be sure to check the gear mesh all the way around the spur gear. Tighten the screws once the engine alignment and gear mesh are correct, and then re-check the gear mesh to ensure the engine mounts did not move.

SET-UP BOOK
GEARING
GEAR MESH ADJ.



907258
SP 2.5x8



2cc 1cc

The fuel tank has the larger fuel volume and includes OPTIONAL tank inserts for decreasing the volume of the tank. Using the inserts allows you to adjust the volume of fuel inside the tank; this works in conjunction with variables such as fuel filter capacity and/or length of fuel line to ensure you have the legal fuel volume limit for racing.

Tube holders are easily connected to the fuel tank by screws. Using screws is much more secure than using glue to attach the holders to the fuel tank.

2CC FUEL TANK INSERT

The larger insert decreases the fuel tank volume by 2cc, and is recommended for use when the fuel filter is used.



1CC FUEL TANK INSERT

The smaller insert decreases the fuel tank volume by 1cc.



NOTE ORIENTATION



NOTE ORIENTATION



NOTE: The fuel tank insert can be easily mounted to the bottom of the fuel tank using the provided screw, when the fuel tank cap is opened fully.



353370
SHIM 3x9x2



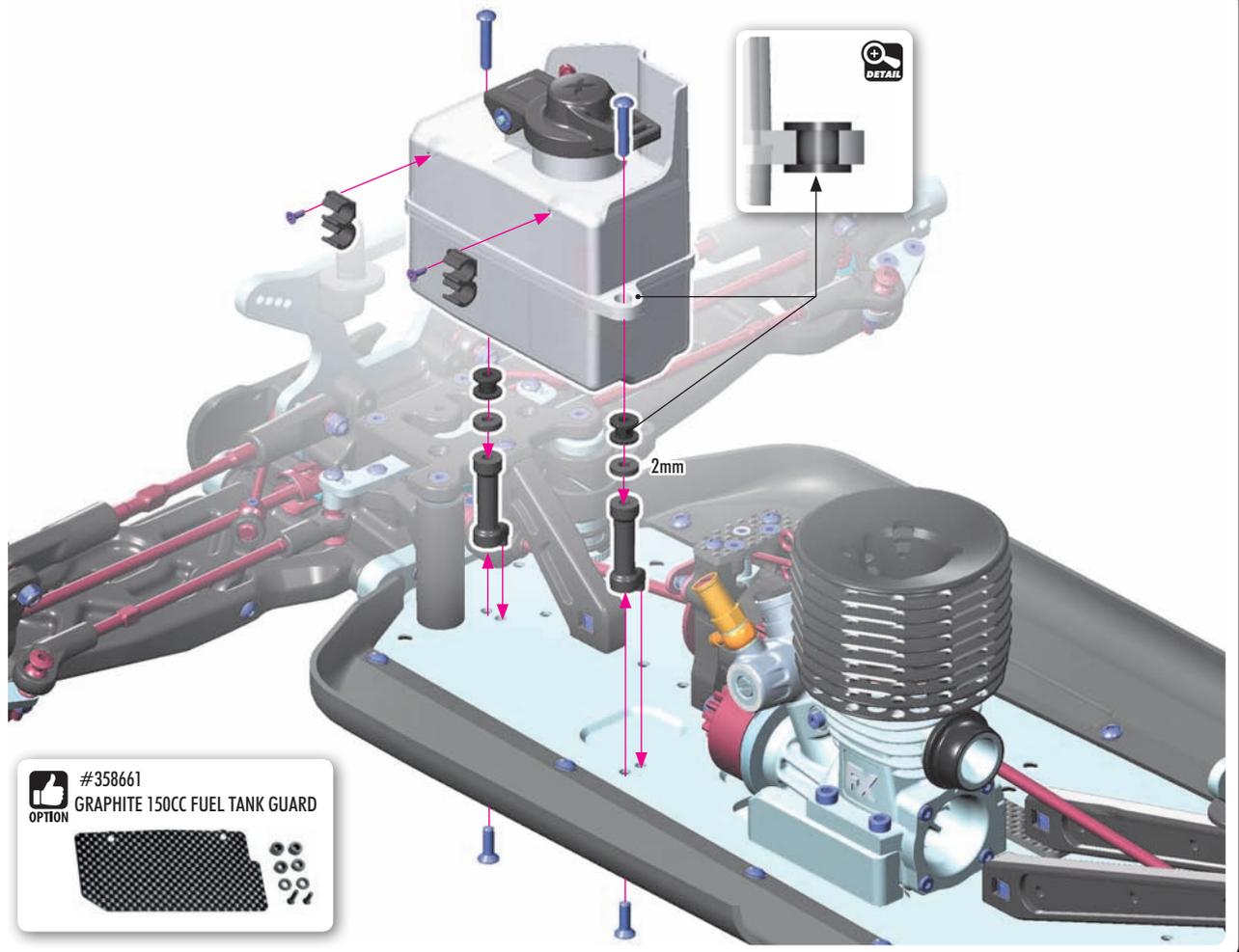
902316
SH M3x16



903310
SFH M3x10



906206
SFP 2.2x6



#358661
GRAPHITE 150CC FUEL TANK GUARD
OPTION

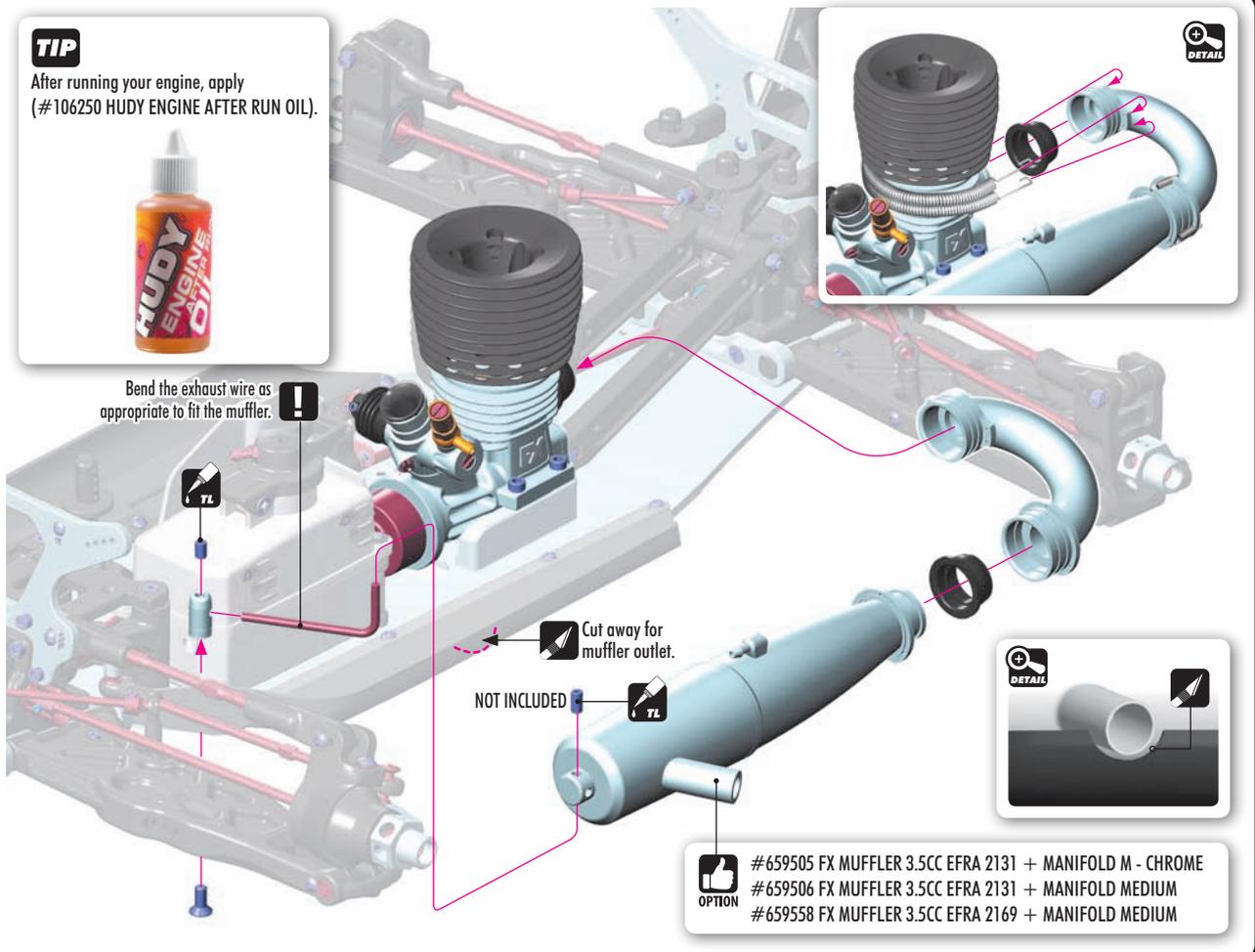


901405
SB M4x5



903410
SFH M4x10

TIP
After running your engine, apply
(#106250 HUDY ENGINE AFTER RUN OIL).



Bend the exhaust wire as appropriate to fit the muffler.

Cut away for muffler outlet.
NOT INCLUDED

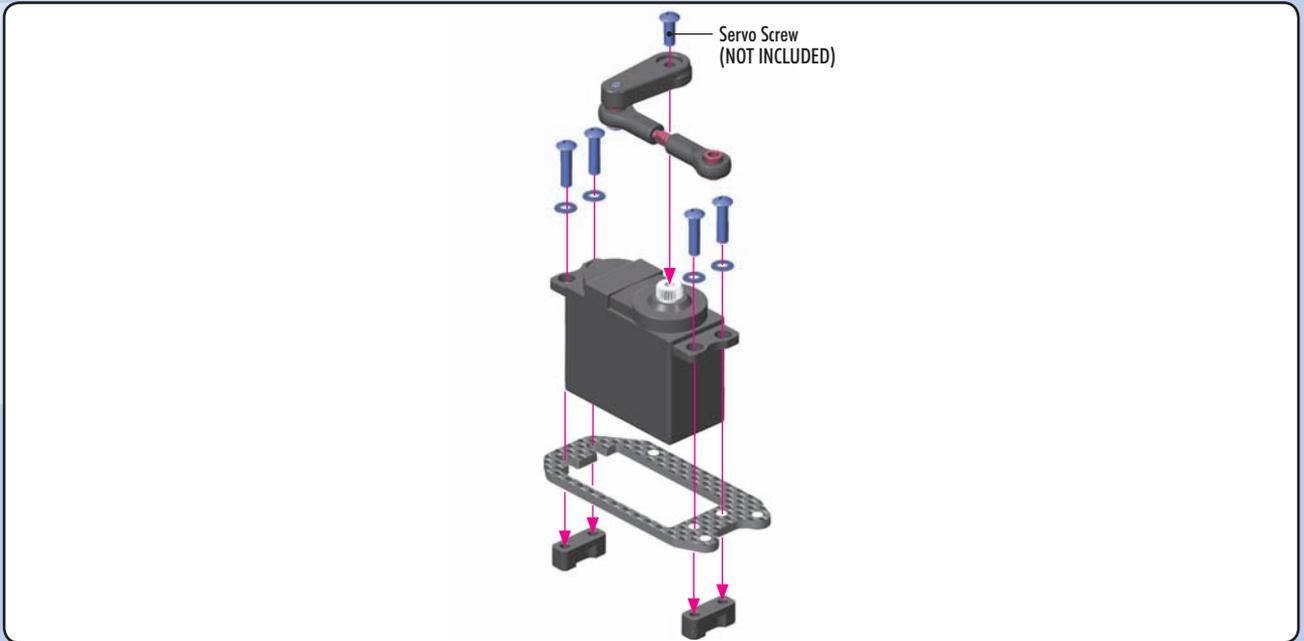
- OPTION**
- # 659505 FX MUFFLER 3.5CC EFRA 2131 + MANIFOLD M - CHROME
 - # 659506 FX MUFFLER 3.5CC EFRA 2131 + MANIFOLD MEDIUM
 - # 659558 FX MUFFLER 3.5CC EFRA 2169 + MANIFOLD MEDIUM



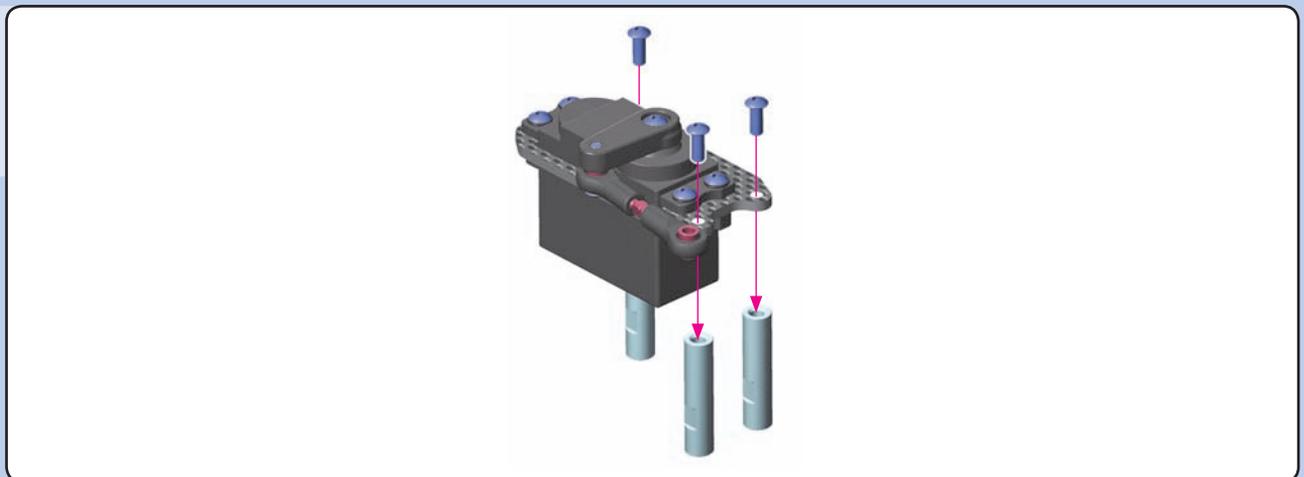
902312
SH M3x12



961032
S 3.2



902308
SH M3x8



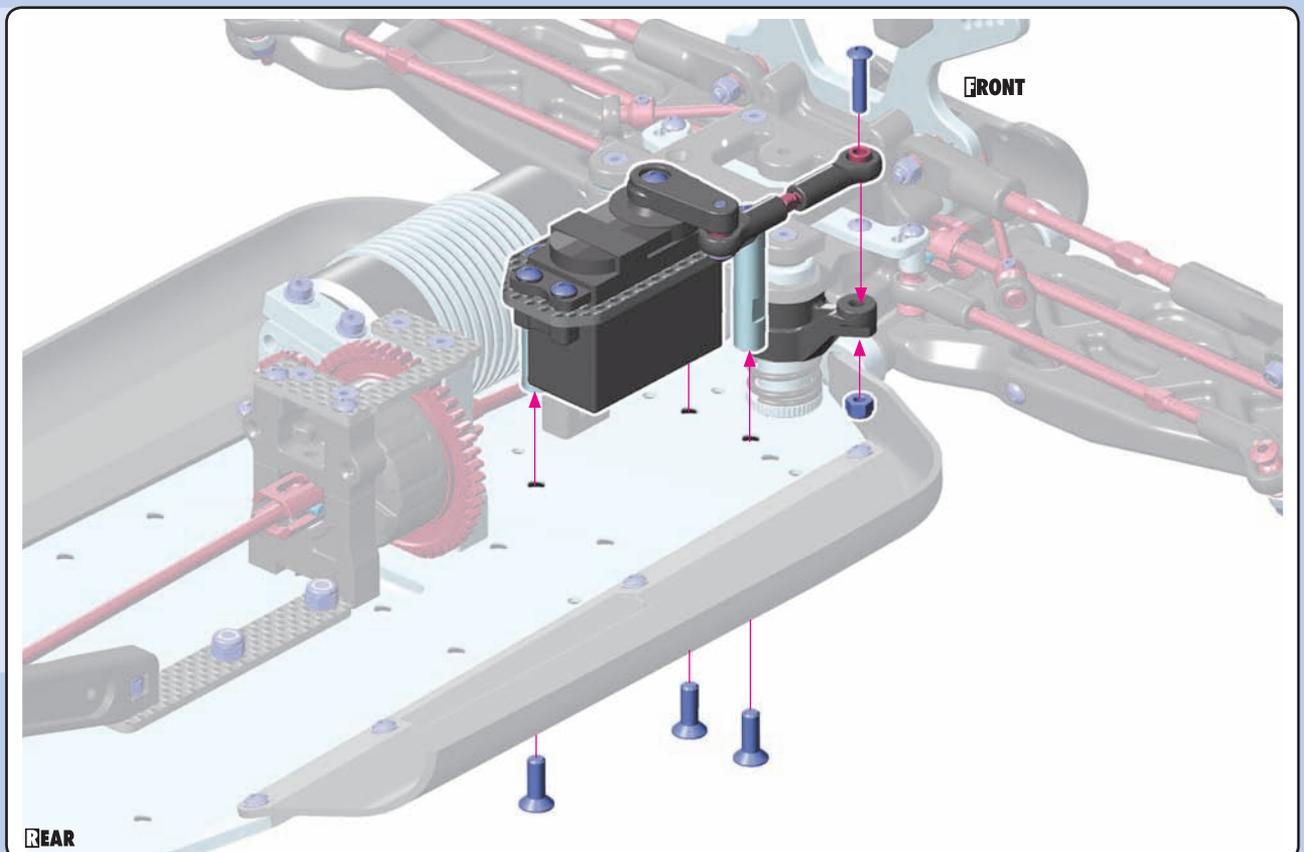
902314
SH M3x14



903412
SFH M4x12

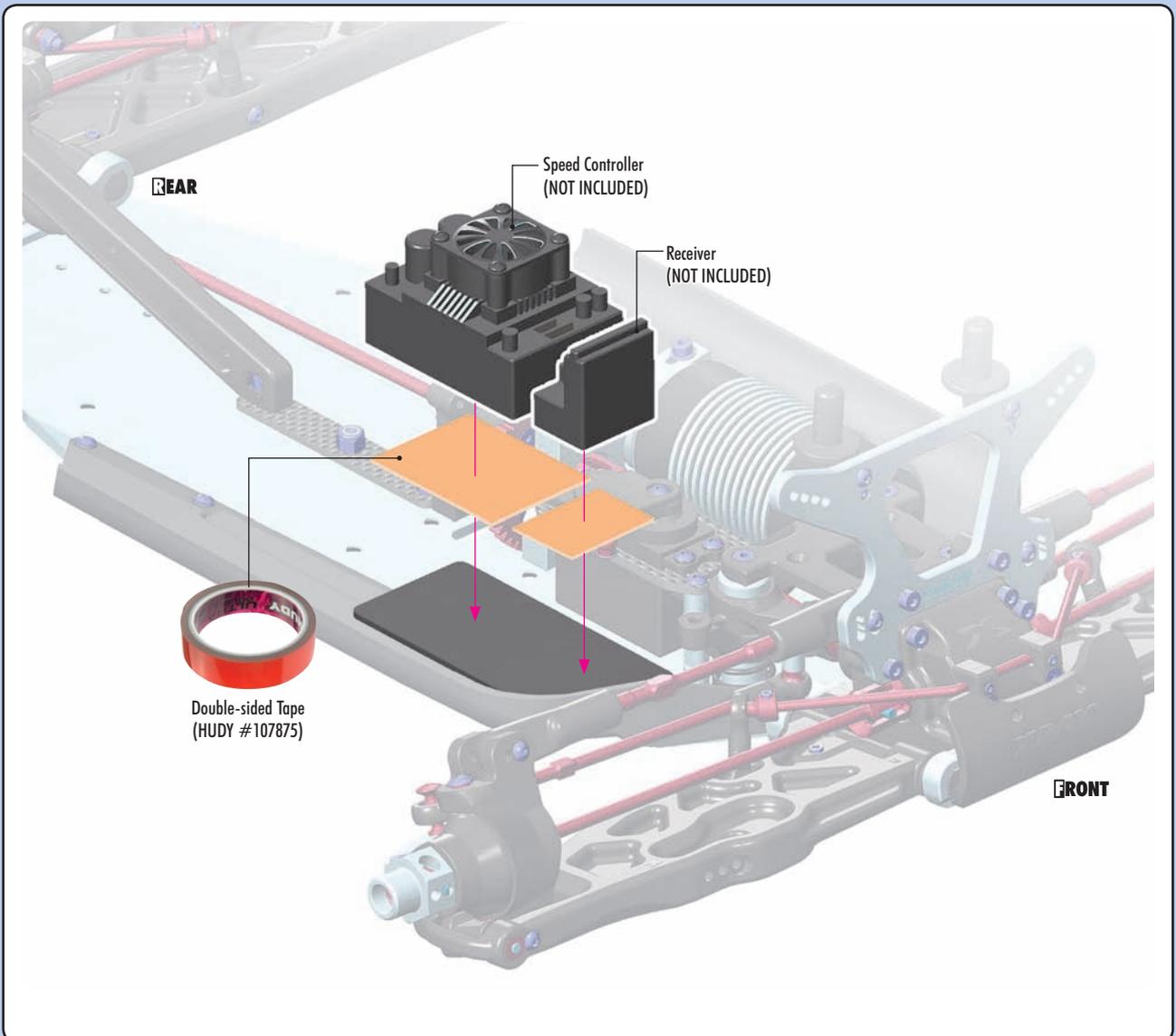
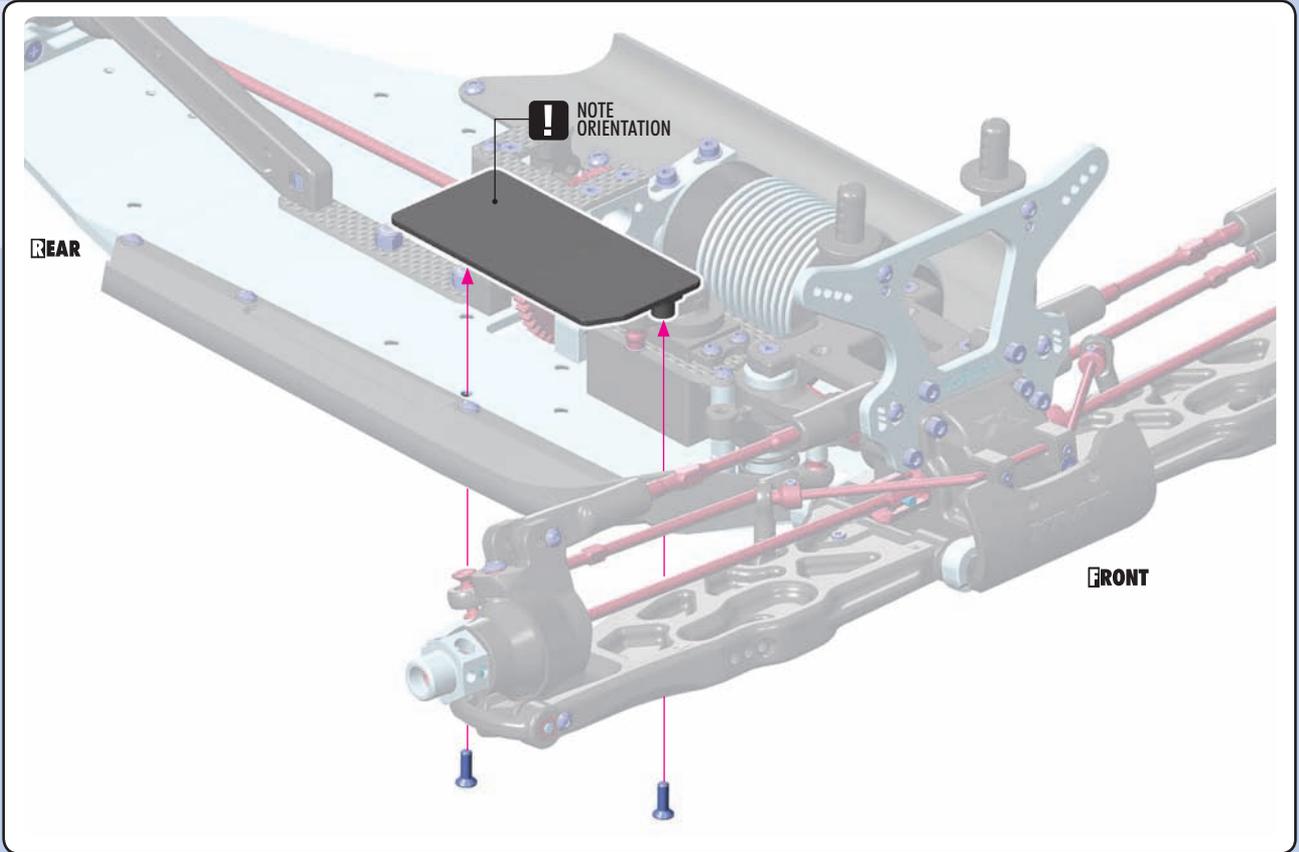


960030
N M3



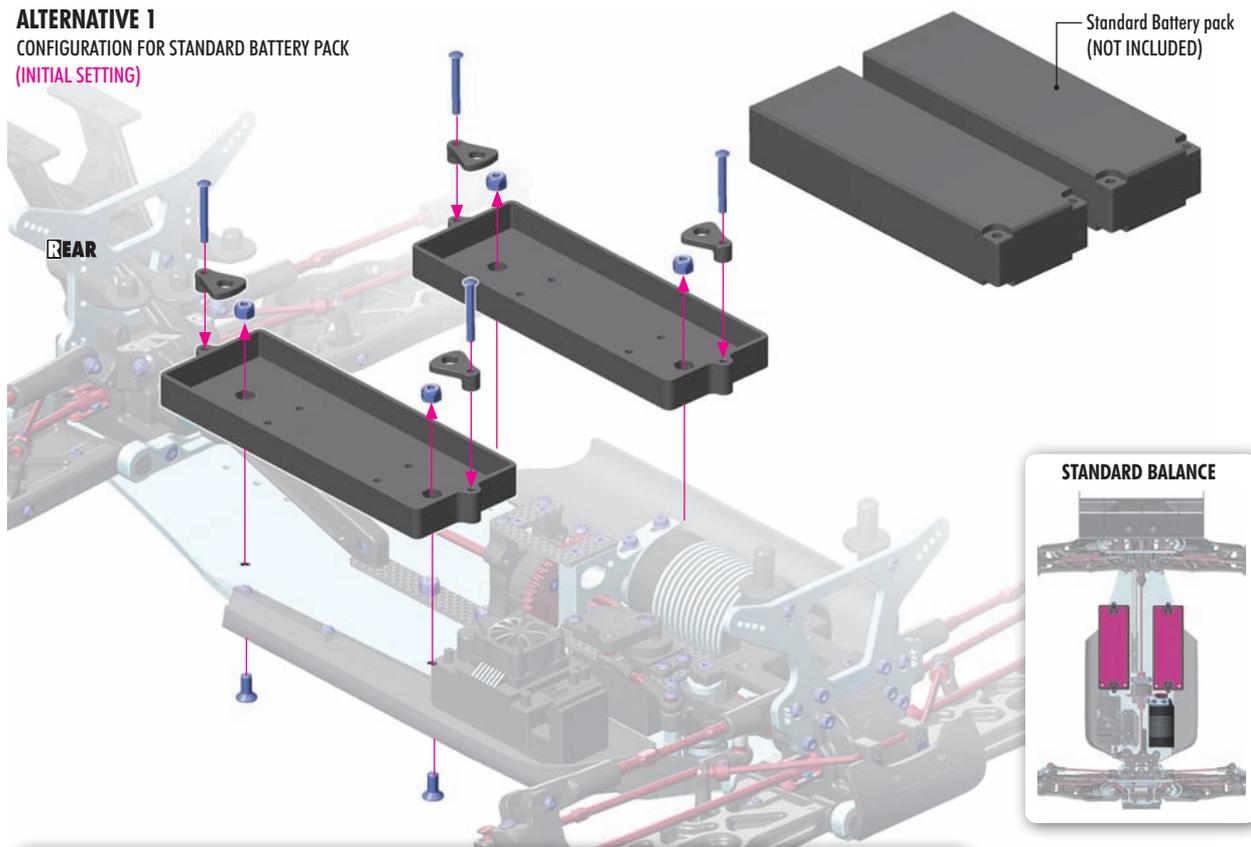


903310
SFH M3x10



-  902325
SH M3x25
-  903410
SFH M4x10
-  960040
N M4

ALTERNATIVE 1
CONFIGURATION FOR STANDARD BATTERY PACK
(INITIAL SETTING)



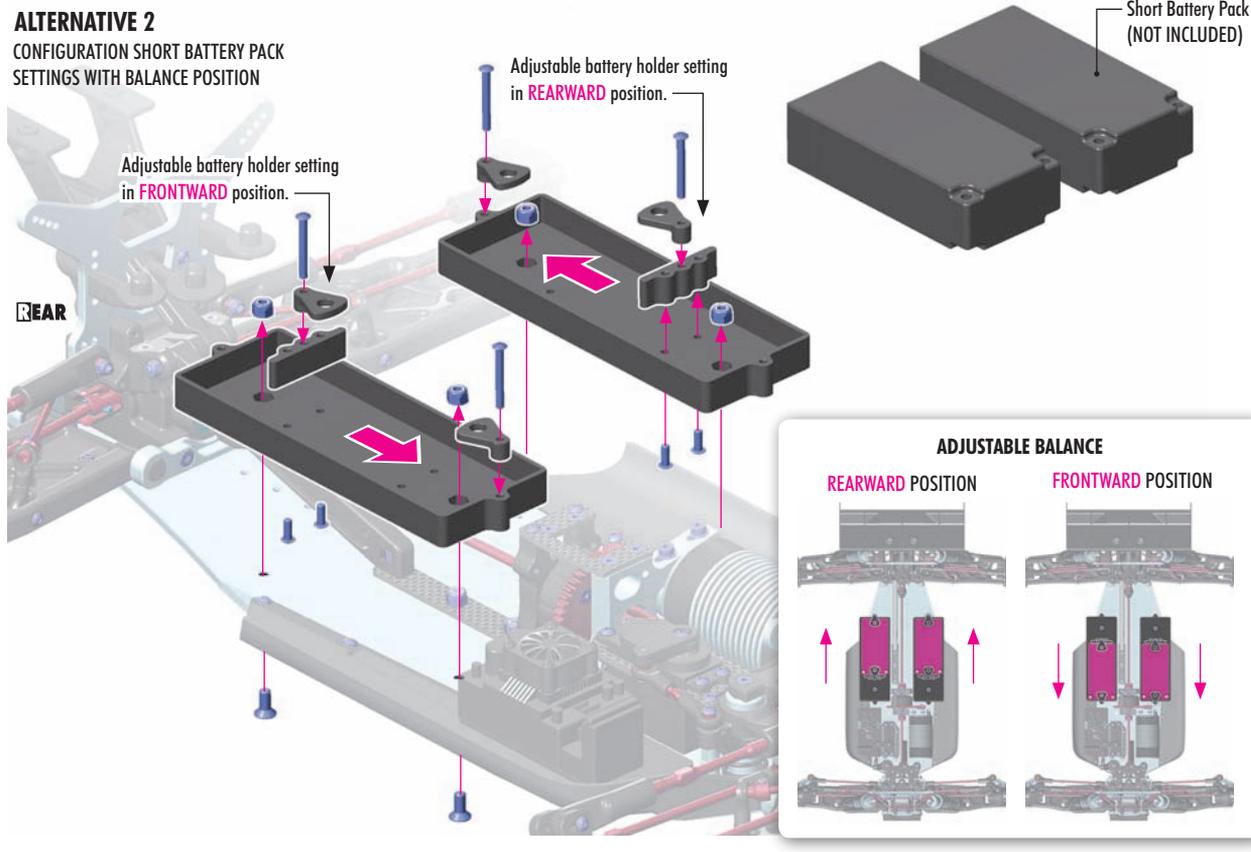
To ensure correct functioning of the battery holder, do not overtighten the screw; the holder must be able to move.

ORIENTATION FOR LOW BATTERY PACK

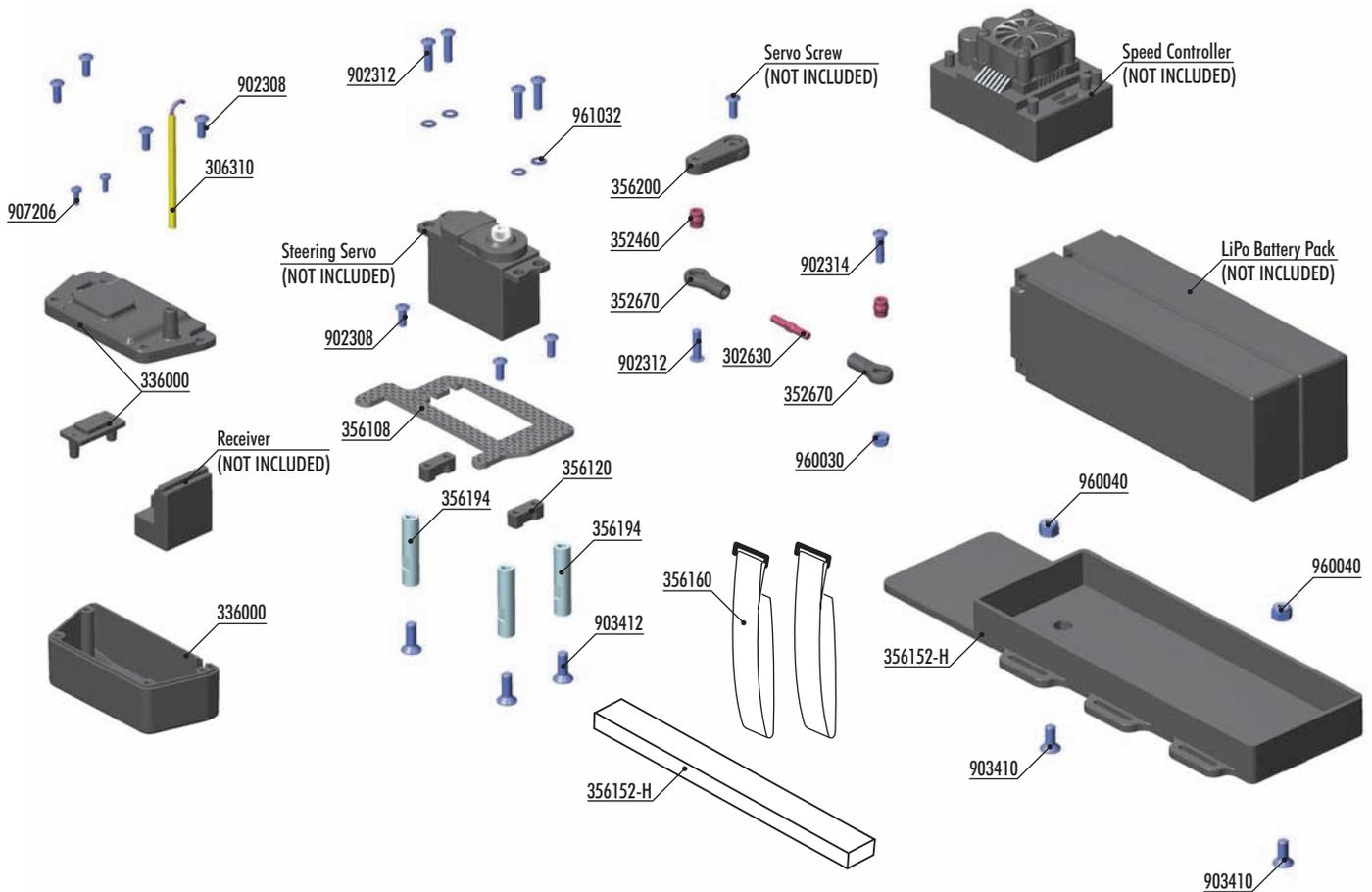
ORIENTATION FOR STANDARD BATTERY PACK

HEIGHT ADJUSTMENT
1 turn = 0.5mm

ALTERNATIVE 2
CONFIGURATION SHORT BATTERY PACK
SETTINGS WITH BALANCE POSITION



Radio case orientation for the BRICK ALTERNATIVE



BAG

10.1

- 302630 ADJ. TURNBUCKLE L/R 20 MM - HUDY SPRING STEEL™ (2)
- 306310 ANTENNA TUBE (2)
- 352460 PIVOT BALL 5.8 (10)
- 352670 SERVO BALL JOINT 5.8MM (4)
- 356120 STEERING SERVO MOUNT - SET
- 356194 ALU MOUNT FOR RECEIVER BOX
- 356200 BRAKE/THROTTLE ARMS & STEERING SERVO ARMS - SET

- 902308 HEX SCREW SH M3x8 (10)
- 902312 HEX SCREW SH M3x12 (10)
- 902314 HEX SCREW SH M3x14 (10)
- 903412 HEX SCREW SFH M4x12 (10)
- 960030 NUT M3 (10)
- 961032 WASHER S 3.2 (10)

BAG

10.3

- 336000 COMPOSITE RECEIVER CASE - V2
- 336060 RECEIVER SWITCH - SET (OPTION)
- 356108 XB8E/XT8E BRICK BATTERY GRAPHITE SERVO HOLDER
- 356152-H XB8E/GTXE/XT8E COMPOSITE BATTERY PLATE - HARD
- 356160 VELCRO BATTERY STRAP 20x300MM (2)

- 902308 HEX SCREW SH M3x8 (10)
- 903410 HEX SCREW SFH M4x10 (10)
- 907206 SCREW PHILLIPS 2x6 (10)
- 960040 NUT M4 (10)



902312 SH M3x12

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

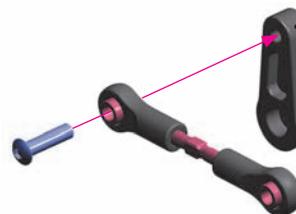


The length of the linkages varies according to the type of servo.

Use appropriate servo arm:

- K - (23T) H - (24T) F - (25T)

NOTE ORIENTATION

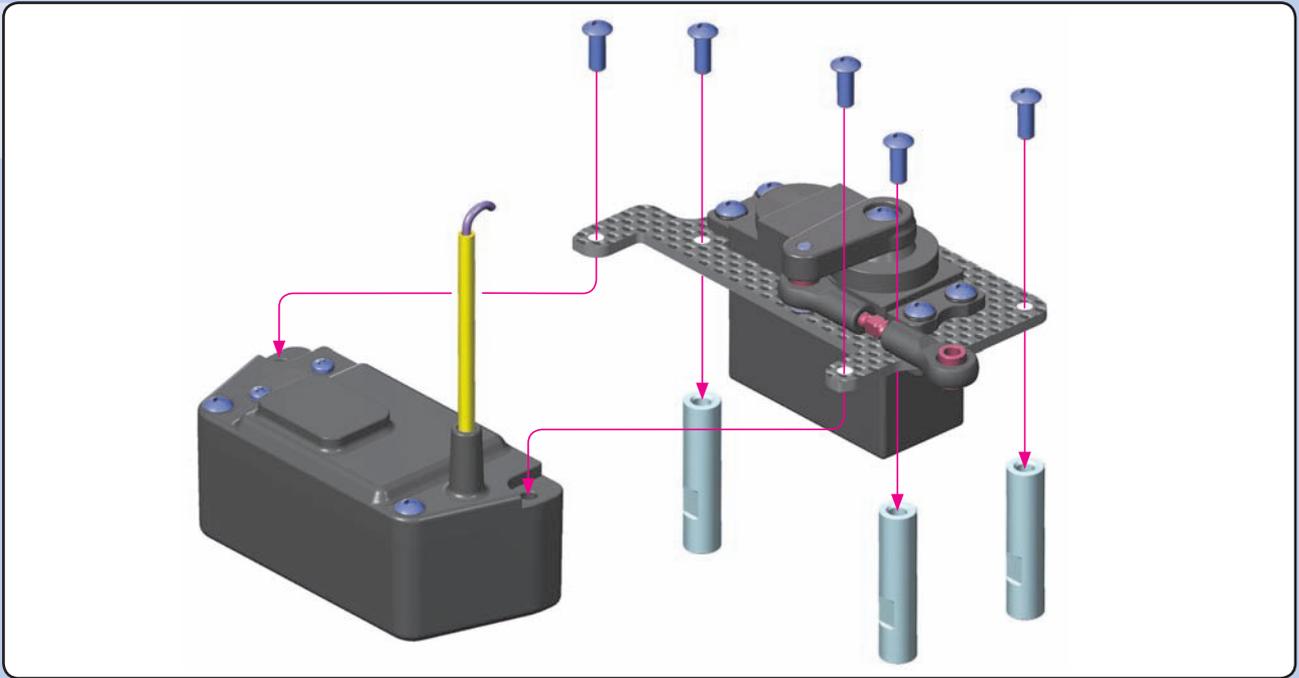
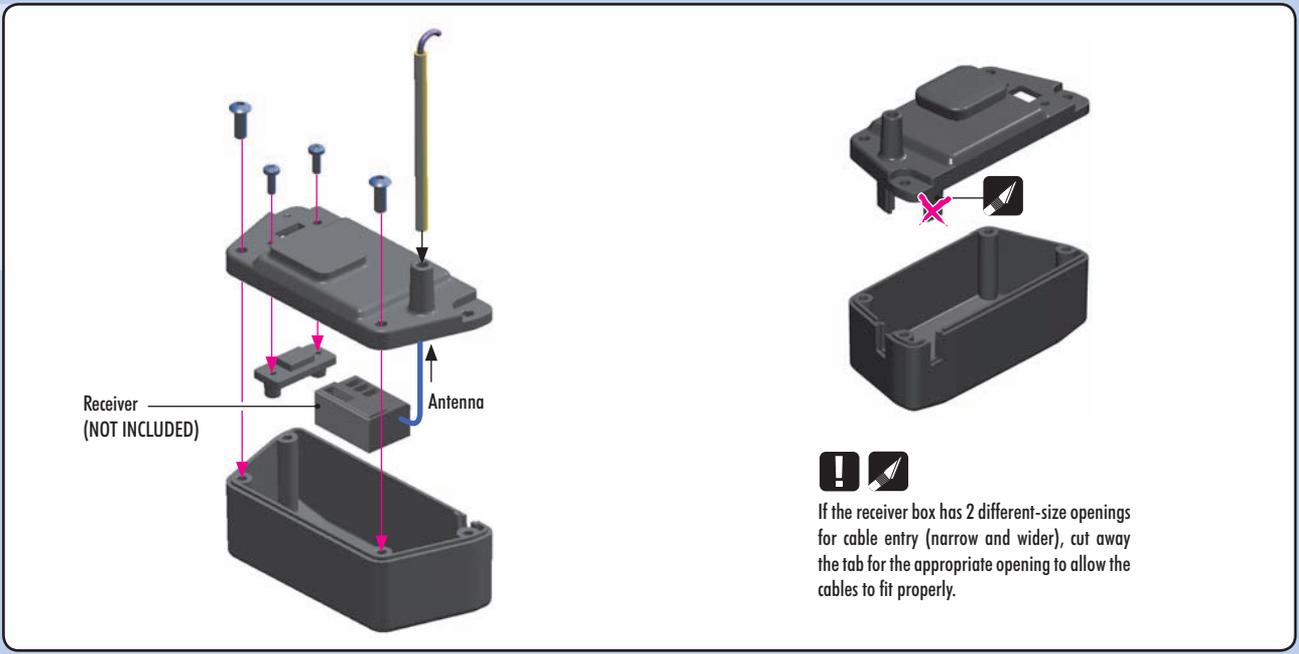
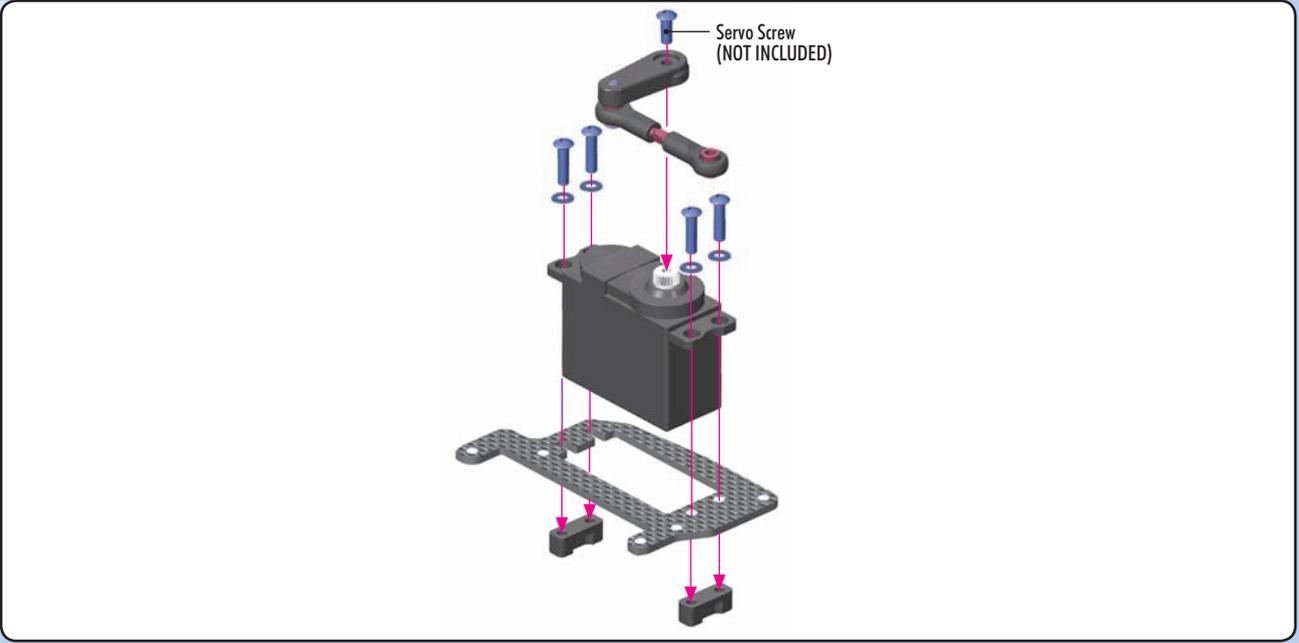


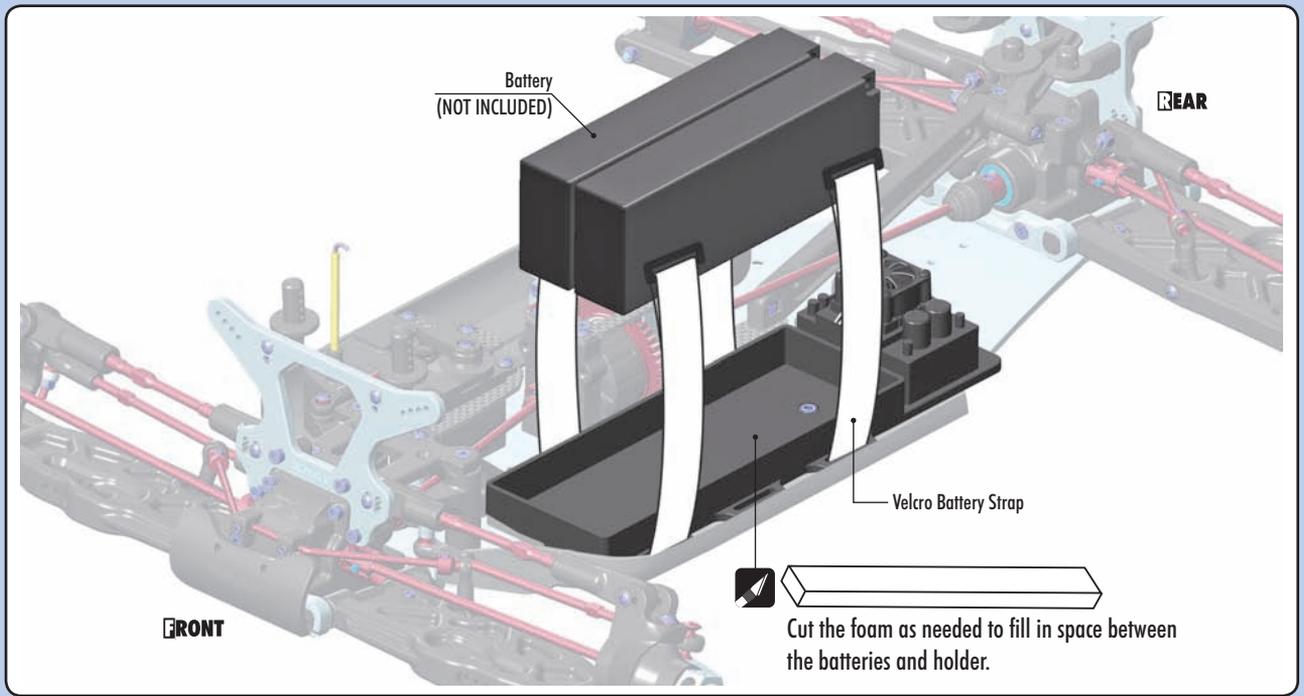
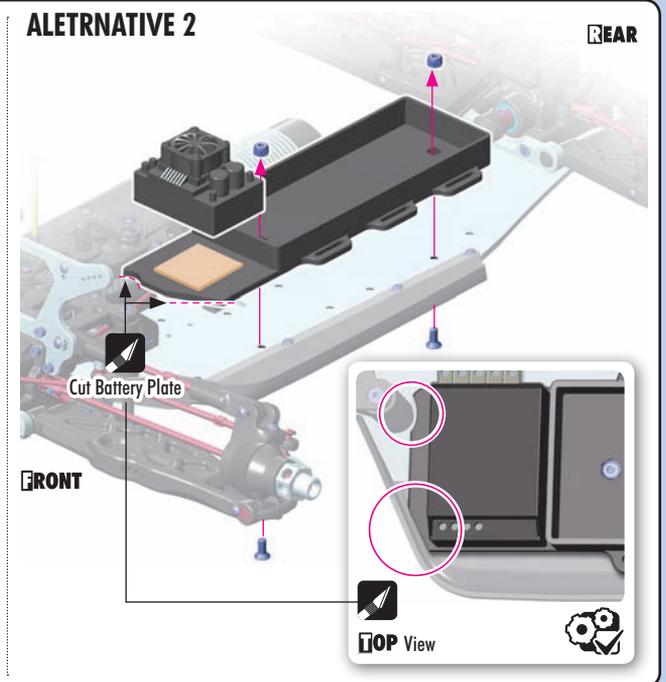
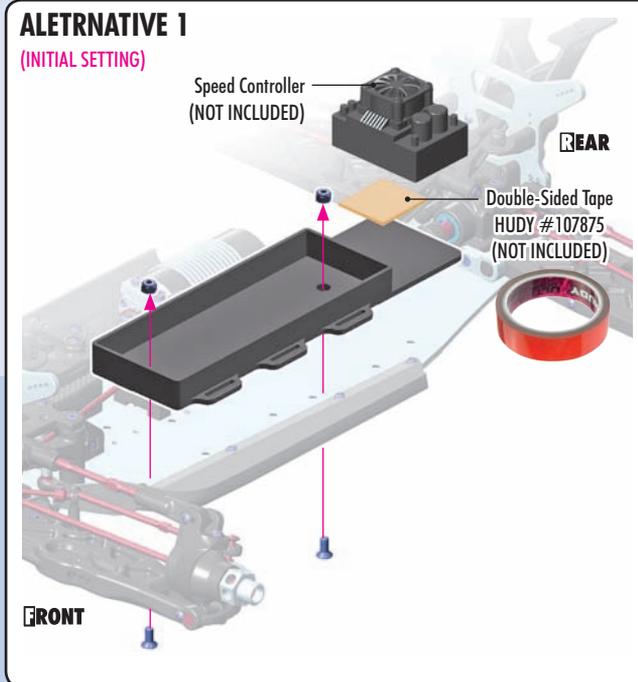
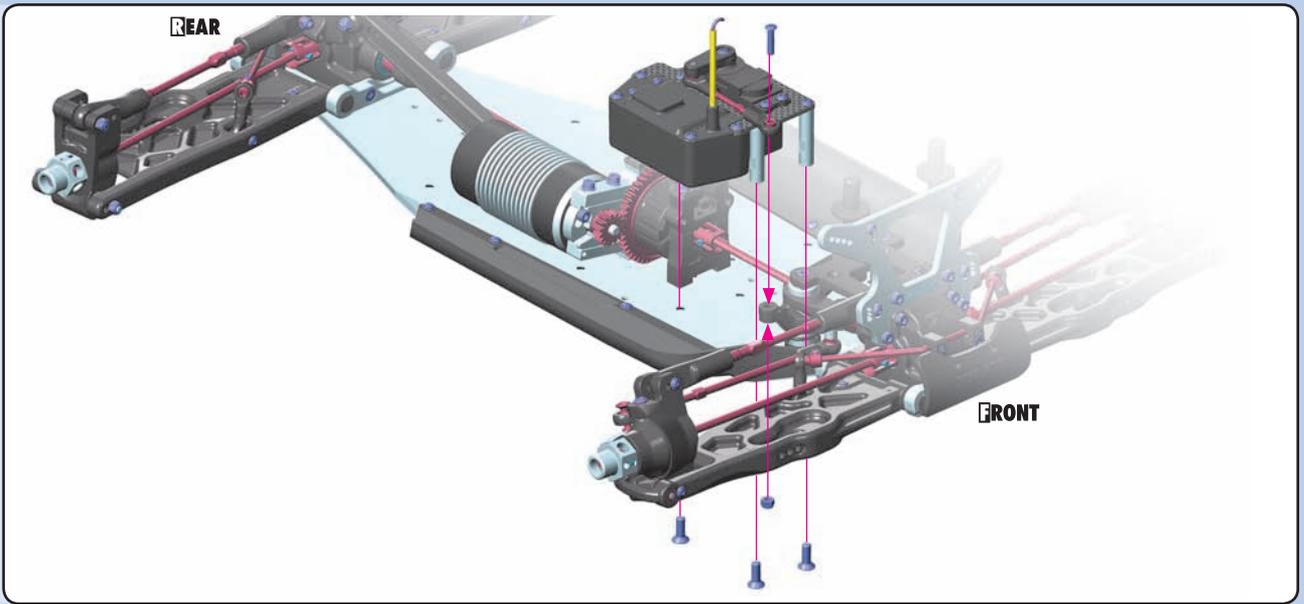
ALU SERVO HORNS

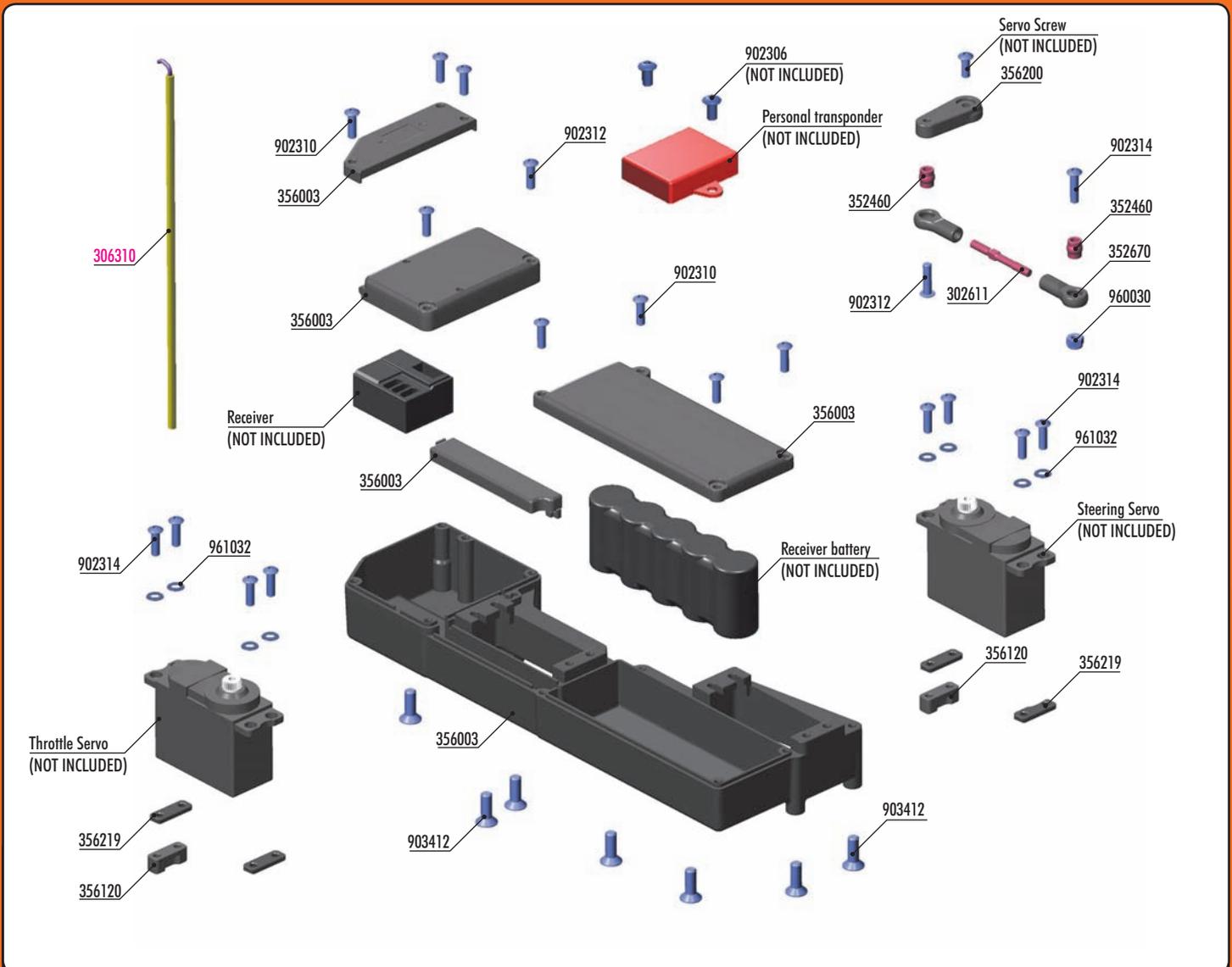
#293501	23T	OPTION
#293502	24T	OPTION
#293503	25T	OPTION

CLAMP ALU SERVO HORNS

#293407	23T	OPTION
#293408	24T	OPTION
#293409	25T	OPTION







BAG

10

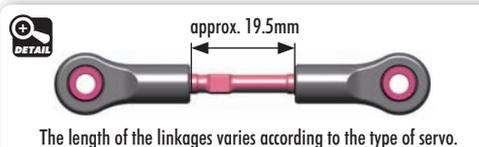
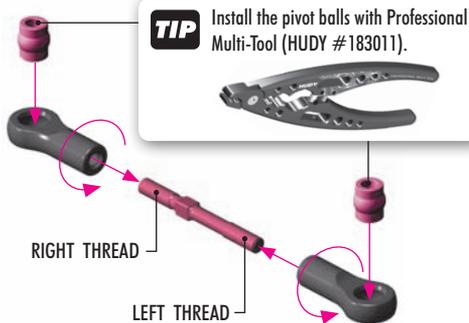
- 302611 ADJ. TURNBUCKLE L/R 35 MM - HUDY SPRING STEEL™ (2)
- 352460 PIVOT BALL 5.8 (10)
- 352670 SERVO BALL JOINT 5.8MM (4)
- 356003 COMPOSITE RADIO CASE SET - HARD
- 356050 BATTERY CABLE WITH SWITCH (OPTION)
- 356120 STEERING SERVO MOUNT - SET
- 356200 BRAKE/THROTTLE ARMS & STEERING SERVO ARMS - SET
- 356219 COMPOSITE SERVO SHIMS 1.0, 1.5 & 2.5MM (2+2+2)
- 389135 CONNECTING CABLE RECEIVER/BATT. PACK (OPTION)

- 902306 HEX SCREW SH M3x6 (10) (OPTION)
- 902310 HEX SCREW SH M3x10 (10)
- 902312 HEX SCREW SH M3x12 (10)
- 902314 HEX SCREW SH M3x14 (10)
- 903412 HEX SCREW SFH M4x12 (10)
- 960030 NUT M3 (10)
- 961032 WASHER S 3.2 (10)

306310 ANTENNA TUBE (2)

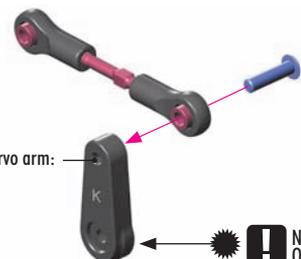


902312 SH M3x12



Use appropriate servo arm:

- K - (23T)
- H - (24T)
- F - (25T)



OPTION	CLAMP ALU SERVO HORNS		
#293407	23T	OPTION	
#293408	24T	OPTION	
#293409	25T	OPTION	

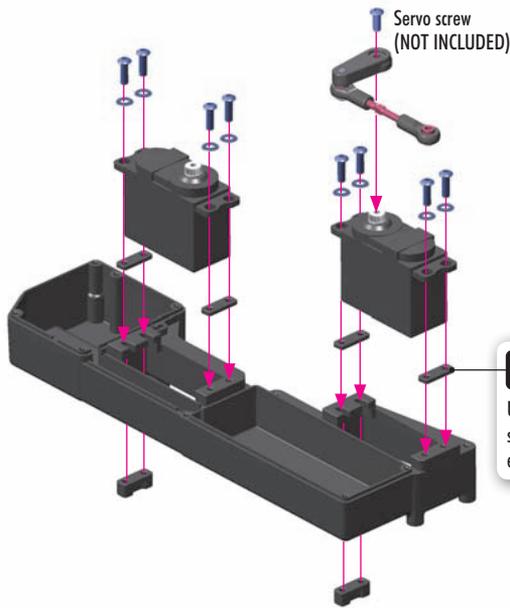
OPTION	ALU SERVO HORNS		
#293501	23T	OPTION	
#293502	24T	OPTION	
#293503	25T	OPTION	



902314
SH M3x14



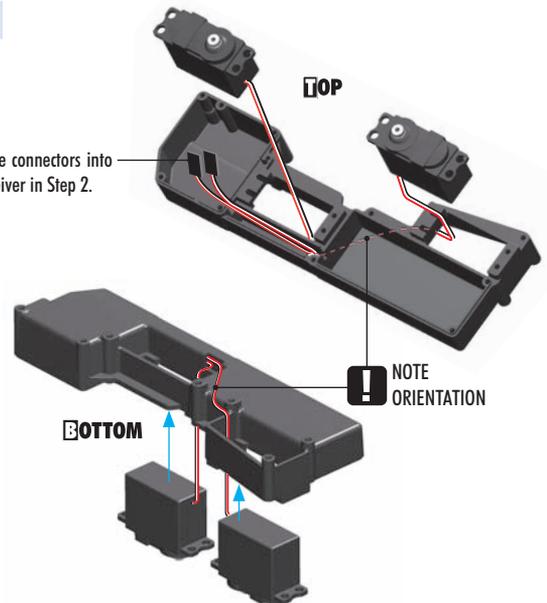
961032
S 3.2



NOTE
Use the shims only if the servo is too high and extends from the case.

step 1

Plug the connectors into the receiver in Step 2.



NOTE
ORIENTATION



902310
SH M3x10

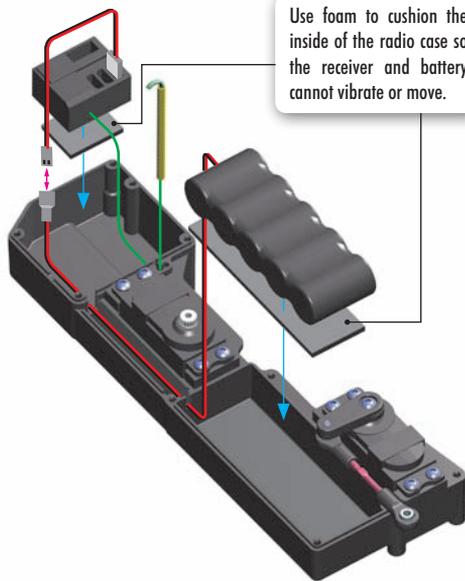


902312
SH M3x12

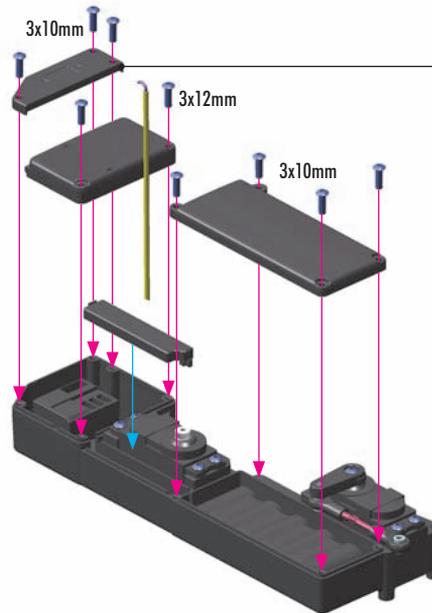


907206
SP M2x6

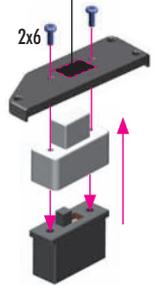
step 2



Use foam to cushion the inside of the radio case so the receiver and battery cannot vibrate or move.



TIP CUT



OPTION
SWITCH #356050

When receiver switch is used, use hobby knife to CAREFULLY remove the material from the cover and mount the switch.



902314
SH M3x14



903412
SFH M4x12



960030
N M3

Personal transponder (NOT INCLUDED)
#902306 Screws (NOT INCLUDED)

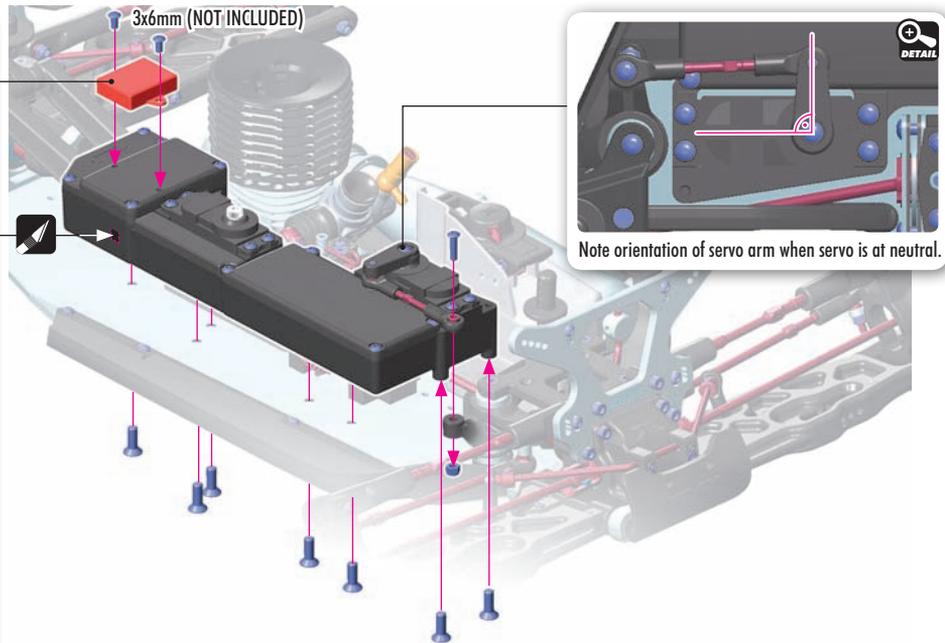
Personal transponder can be placed on the top of the radio box or inside of the radio box.

ALTERNATIVE 1

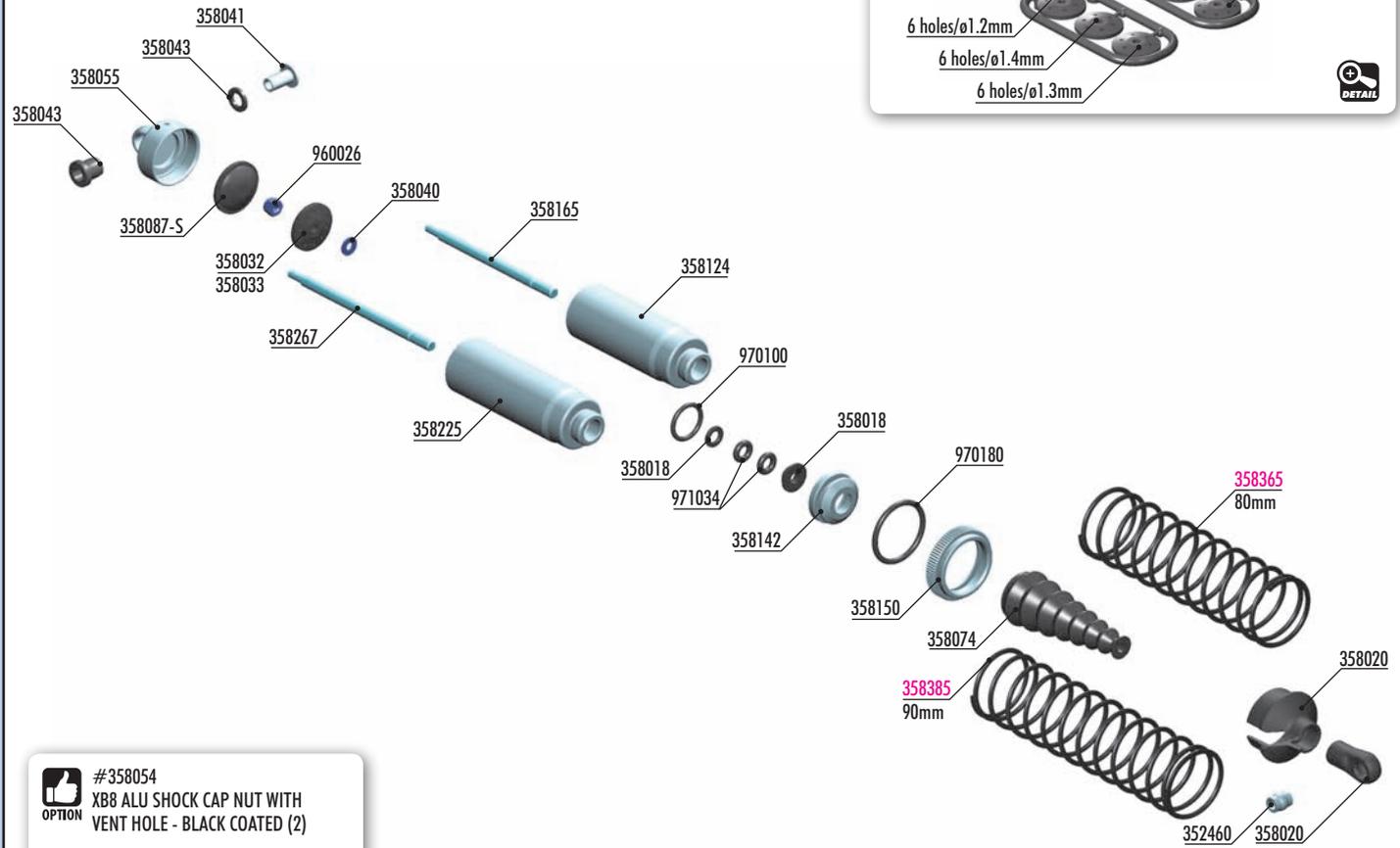
When the transponder is placed at the top of the radio box, cut out some material from the radio box in order to allow the transponder wire to come inside.

ALTERNATIVE 2

Place the transponder inside of the radio box by using double-sided tape.



Note orientation of servo arm when servo is at neutral.



#358054
XB8 ALU SHOCK CAP NUT WITH VENT HOLE - BLACK COATED (2)



SHOCK RUBBER MEMBRANE (4)

#358084	RIBBED	MEDIUM	OPTION
#358084-S	BRIBBED	SOFT	OPTION
#358087-S	CELL	SOFT	INCLUDED
#358087-M	CELL	MEDIUM	OPTION

2-WAY FLOW DELRIN SHOCK PISTON (4pcs)

#358027	5-HOLE (1.5mm)	2-HOLE (1.0mm)	OPTION
#358028	6-HOLE (1.3mm)	2-HOLE (1.1mm)	OPTION
#358029	6-HOLE (1.4mm)	2-HOLE (1.1mm)	OPTION
#358027	8-HOLE (1.2mm)	2-HOLE (1.2mm)	OPTION
#358027	8-HOLE (1.3mm)	2-HOLE (1.2mm)	OPTION



#104005
HUDY AIR VAC - VACUUM PUMP - 1/8 OFF-ROAD



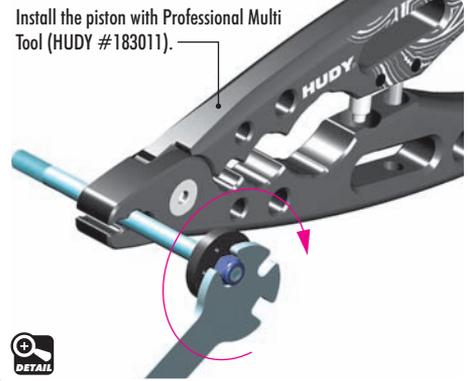
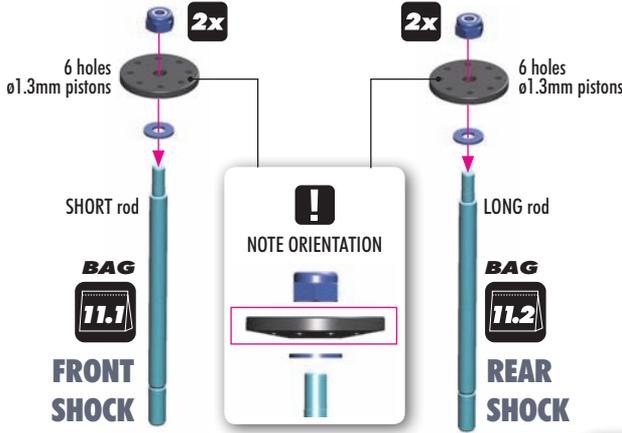
BAGS



- 352460 PIVOT BALL 5.8 - V3 (10)
- 358018 COMPOSITE SET OF SHIMS FOR SHOCKS - V2 (2)
- 358020 COMPOSITE SHOCK PARTS
- 358032 SHOCK PISTON SET 8-HOLE (1.2; 1.3) 10-H. (1.1MM) - DELRIN - V2
- 358033 COMPOSITE SHOCK 6-HOLE PISTON SET (1.2; 1.3; 1.4MM) - DELRIN - V2
- 358040 HARDENED SHOCK SHIMS (4)
- 358041 STEEL SHOCK BUSHING (2)
- 358043 COMPOSITE SHOCK BUSHING & SHIM (2+2)
- 358055 ALU SHOCK CAP NUT WITH 4 VENT HOLES - BLACK COATED (2)
- 358074 FOLDING SHOCK BOOT (4)
- 358087-S SHOCK RUBBER MEMBRANE CELL - SOFT (4)
- 358124 ALU FRONT SHOCK BODY - HARD COATED - V2 (2)
- 358142 ALU SHOCK BODY NUT FOR SHOCK BOOT (2)

- 358150 ALU SHOCK BODY ADJ. NUT (2)
- 358165 FRONT SHOCK SHAFT 61mm (2)
- 358225 ALU REAR SHOCK BODY - HARDCOATED (2)
- 358267 REAR SHOCK SHAFT (2)
- 960026 NUT M2.5 - SHORT (10)
- 970100 O-RING 10 x 1.5 (10)
- 970180 O-RING 18 x 1.8 (10)
- 971034 SILICONE O-RING 3.5x2 (10)

- 358365 XRAY FRONT SPRING 80MM - 3 DOTS (2)
- 358385 XRAY REAR SPRING 90MM - 3 DOTS



OPTION	2-WAY FLOW DELRIN SHOCK PISTON (4pcs)		
#358027	5-HOLE (1.5mm)	2-HOLE (1.0mm)	OPTION
#358028	6-HOLE (1.3mm)	2-HOLE (1.1mm)	OPTION
#358029	6-HOLE (1.4mm)	2-HOLE (1.1mm)	OPTION
#358027	8-HOLE (1.2mm)	2-HOLE (1.2mm)	OPTION
#358027	8-HOLE (1.3mm)	2-HOLE (1.2mm)	OPTION



DO NOT OVERTIGHTEN

The self-locking nut is overtightened, causing distortion of the piston. This will negatively affect the free movement of the piston in the shock body.



TIGHTEN GENTLY

The self-locking nut is gently tightened. The piston remains undistorted and fits inside the shock body perfectly, ensuring smooth movement of the piston.

SET-UP BOOK

SHOCK DAMPING
SHOCK PISTONS



970100
O 10x1.5

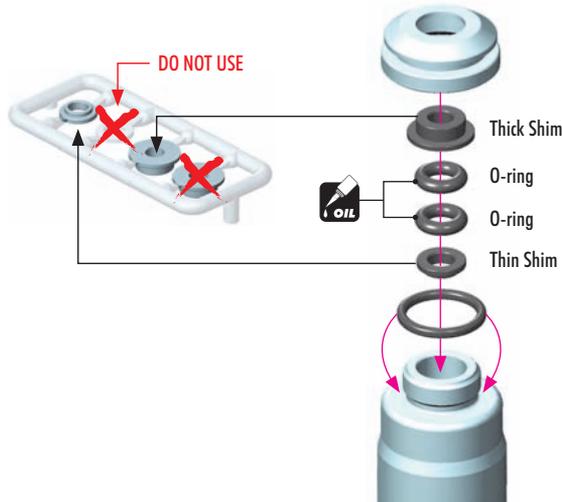


971034
O 3.4x2

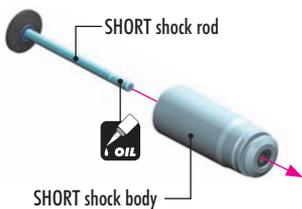
2x FRONT SHOCKS (SHORT)

2x REAR SHOCKS (LONG)

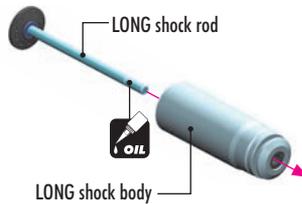
There are two different thickness shims, use them as shown. Use the same procedure when building both front and rear shocks.



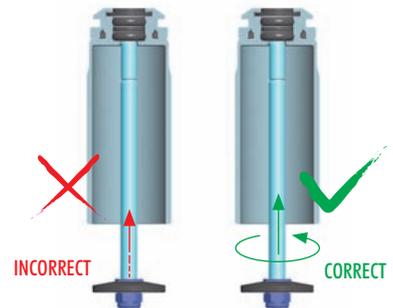
2x
FRONT SHOCKS



2x
REAR SHOCKS

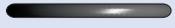


EXTREMELY IMPORTANT



Do not push the shock rod straight through the lower shock body assembly; O-ring damage may result.

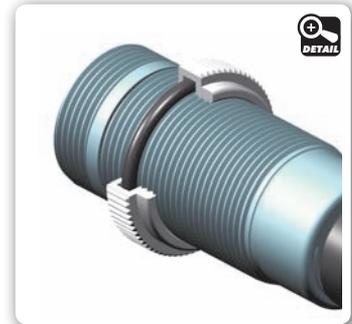
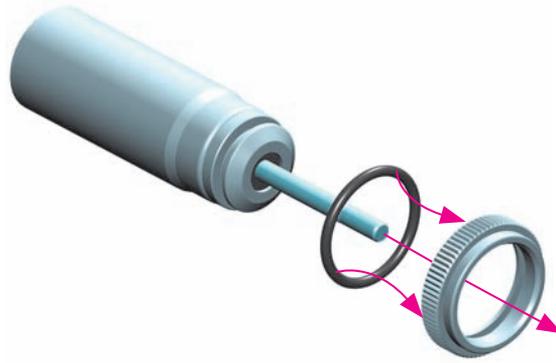
Twist the shock rod through the lower shock body assembly.



970180
Ø 18x1.8

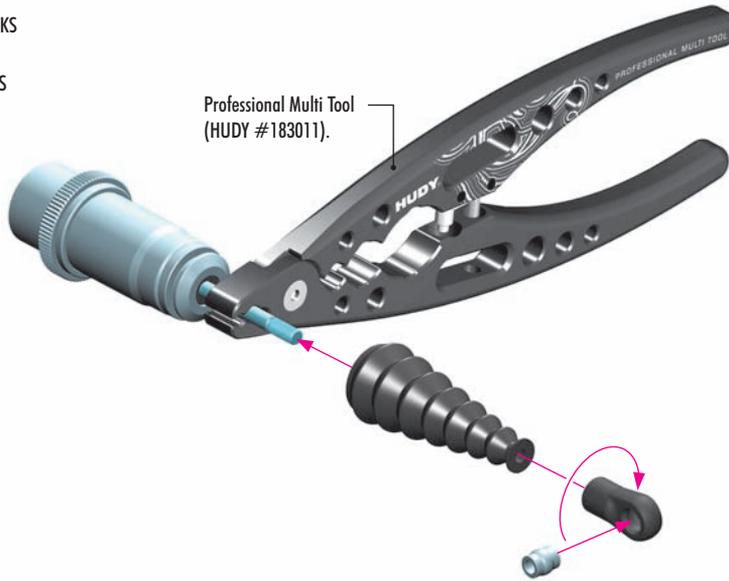
2x FRONT SHOCKS

2x REAR SHOCKS

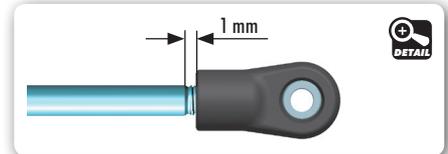
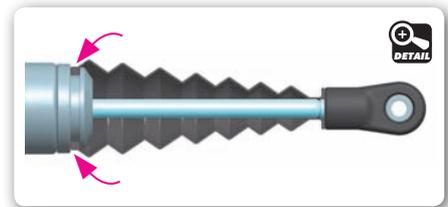


2x FRONT SHOCKS

2x REAR SHOCKS



Professional Multi Tool
(HUDY #183011).



DEFAULT SHOCK REBOUND SETTING 0% (LOW REBOUND)

Follow the steps below to set the shock rebound to the default setting of 0%.

2x FRONT (SHORT)

Oil 550cSt

2x REAR (LONG)

Oil 450cSt

SET-UP BOOK
SHOCK OIL



1 Extend the shock shaft completely. Fill the shock body with the shock oil. For the FRONT shocks (short) use 550cSt oil. For the REAR shocks (long) use 450cSt oil.



2 Move the shock shaft up and down a few times to release the air bubbles trapped beneath the piston.



3 Orient the filled shock vertically for several minutes with the shock shaft fully extended. The remaining air bubbles will release.



4 Install the shock membrane into the groove in the upper shock cap.



5 Gently place the shock cap assembly onto the filled shock body. Excess oil will spill from the shock. Screw the shock cap onto the body by only a few turns.



6 Gently push the shock shaft completely into the shock body. Excess oil will flow through the hole in the shock cap.



7 Keep the shock shaft pushed in the shock body and tighten the shock cap completely. The rebound will be at approximately 0%.

2x REAR SHOCKS
LONG rear shock
LONG spring

2x FRONT SHOCKS
SHORT front shock
SHORT spring

REAR shock PRELOAD
approx. 7mm

FRONT shock PRELOAD
approx. 5mm

IMPORTANT! Both rear shocks must be the same overall length.

IMPORTANT! Both front shocks must be the same overall length.

FRONT & REAR SHOCKS
IMPORTANT!

SET-UP BOOK
SPRING RATE
SHOCK PRELOAD
RIDE HEIGHT

TIP ALTERNATE SHOCK REBOUND SETTING (50% AND 100%)

The default shock rebound setting is 0% (as described on page 40). Alternatively, you may set the shock rebound setting to 50% or 100% as described below. Remove the shock springs before performing shock rebound adjustment.

SETTING THE SHOCK REBOUND TO 50% (MEDIUM REBOUND)

REMOVE SHOCK CAP

1 Extend the shock shaft completely and remove the shock cap.

2 Fill the shock body with shock oil up to the top. Make sure to use same viscosity shock oil as is in the shock.

3 Orient the filled shock vertically for several minutes with the shock shaft fully extended. The remaining air bubbles will release.

4 Gently place the shock cap assembly onto the filled shock body. Excess oil will spill from the shock.

5 Push the shock shaft 50% into the shock body. Excess oil will bleed through the hole in the shock cap.

6 Keep the shock shaft pushed 50% into the shock body and tighten the shock cap completely. The rebound will be at approximately 50%.

SETTING THE SHOCK REBOUND TO 100% (HIGH REBOUND)

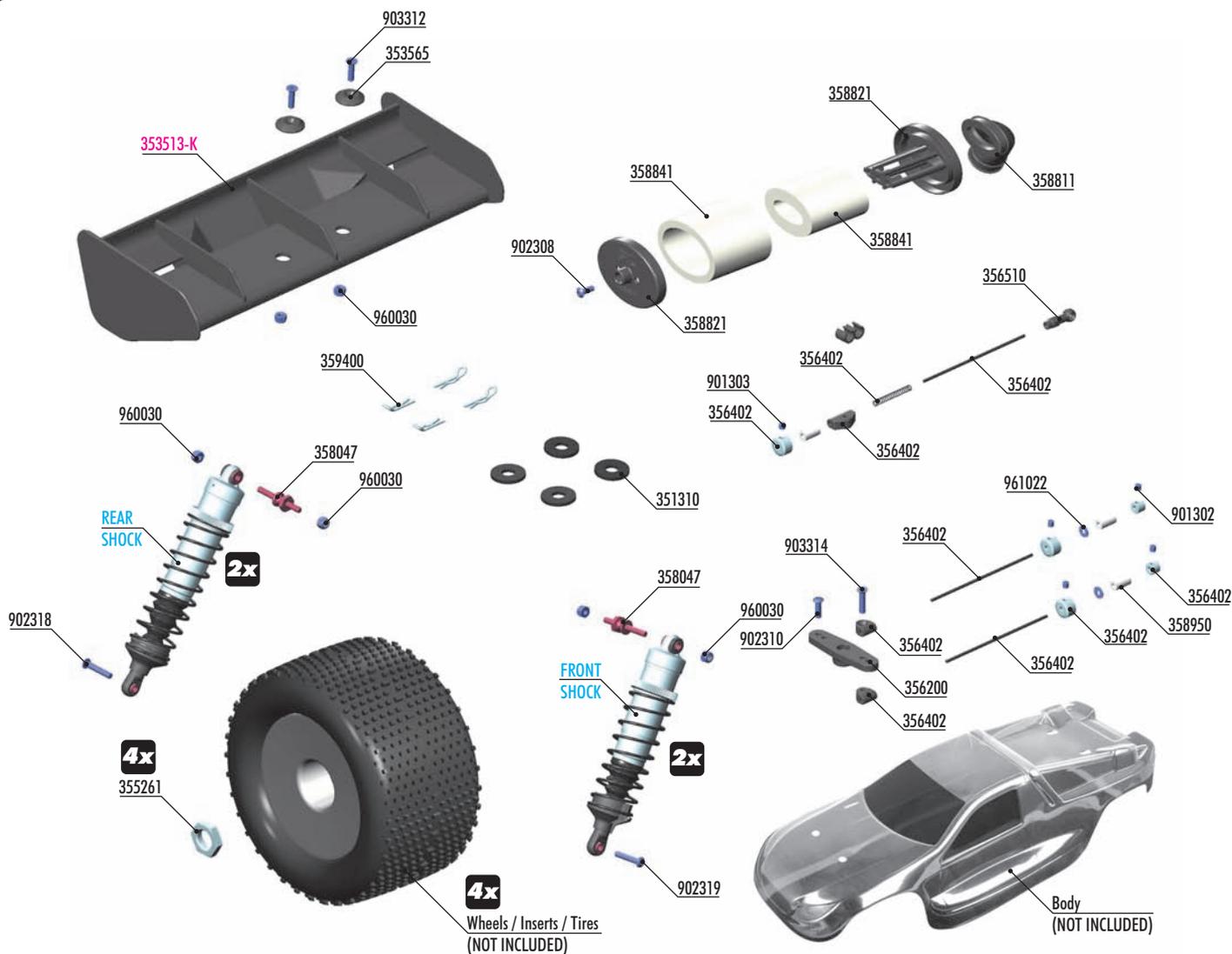
REMOVE SHOCK CAP

1 Extend the shock shaft completely and remove the shock cap.

2 Fill the shock body with shock oil up to the top. Make sure to use same viscosity shock oil as is in the shock.

3 Orient the filled shock vertically for several minutes with the shock shaft fully extended. The remaining air bubbles will release.

4 Gently place the shock cap assembly onto the filled shock body. Keep the shock shaft extended 100% from the shock body and tighten the shock cap completely. The rebound will be at approximately 100%.



CLAMP ALU SERVO HORNS			
OPTION	#293444	23T	OPTION
OPTION	#293445	24T	OPTION
OPTION	#293446	25T	OPTION
OPTION	#293447	23T	OPTION
OPTION	#293448	24T	OPTION
OPTION	#293449	25T	OPTION

ALU SERVO HORNS			
OPTION	#293504	23T	OPTION
OPTION	#293505	24T	OPTION
OPTION	#293506	25T	OPTION
OPTION	#293507	23T	OPTION
OPTION	#293508	24T	OPTION
OPTION	#293509	25T	OPTION

WHEEL NUTS			
OPTION	#355261	OPEN	INCLUDED
OPTION	#293560	COVERED	OPTION
OPTION	#355265	COVERED	OPTION

WING SHIMS			
OPTION	#353565	COMPOSITE	INCLUDED
OPTION	#293561	ALU	OPTION
OPTION	#293561-0	ALU	OPTION
OPTION	#353561	ALU	OPTION

WINGS			
OPTION	#353513-K	BLACK	INCLUDED
OPTION	#353513	WHITE	OPTION
OPTION	#353513-Y	YELLOW	OPTION
OPTION	#353512	LEXAN®	OPTION

OPTION	#358832	AIR FILTER RAIN COVER
--------	---------	-----------------------

BAG
12

- | | | | |
|--------|---|--------|---------------------------------------|
| 351310 | FOAM WASHER FOR BODY POSTS (4) | 901302 | HEX SCREW SB M3x2.5 (10) |
| 353565 | COMPOSITE REAR WING SHIM - BLACK (2) | 901303 | HEX SCREW SB M3x3 (10) |
| 355261 | WHEEL NUT - RIBBED - HARD COATED (2) | 902308 | HEX SCREW SH M3x8 (10) |
| 356200 | BRAKE/THROTTLE ARMS & SERVO ARMS - SET | 902310 | HEX SCREW SH M3x10 (10) |
| 356402 | BRAKE/THROTTLE SYSTEM - SET | 902318 | HEX SCREW SH M3x18 (10) |
| 356510 | CLOSED BALL JOINT 3.9 (4) | 902319 | HEX SCREW SH M3x18 - LEFT THREAD (10) |
| 358047 | STEEL SCREW SHOCK PIVOT BALL WITH HEX (2) | 903312 | HEX SCREW SFH M3x12 (10) |
| 358811 | AIR FILTER ELBOW - LOW PROFILE | 903314 | HEX SCREW SFH M3x14 (10) |
| 358821 | AIR FILTER BODY & CAP - LOW PROFILE | 960030 | NUT M3 (10) |
| 358841 | AIR FILTER FOAM & OIL - LOW PROFILE | 961022 | WASHER S 2.2 (10) |
| 358950 | SILICONE TUBING 1M (2.4 x 5.5MM) | | |
| 359400 | BODY CLIP (10) | | |

353513-K REAR WING - IFMAR - BLACK

902318
SH M3x18

902319
SH M3x18
LEFT thread

960030
N M3

SET-UP BOOK
SHOCK ABSORBERS

FRONT SHOCKS (SHORT)

SHORTER ← → LONGER

NOTE ORIENTATION

2x

L=R

Use **STANDARD** M3x18 screw

FRONT

3x18mm

On the front right arm use the **SILVER** M3x18 screw - this screw has **LEFT THREAD**.

INITIAL SETTING

L=R

INITIAL SETTING

L=R

902318
M3x18

902319
SH M3x18
LEFT thread

960030
N M3

SET-UP BOOK
SHOCK ABSORBERS

REAR SHOCKS (LONG)

SHORTER ← → LONGER

NOTE ORIENTATION

2x

L=R

Use **STANDARD** M3x18 screw

REAR

M3x18mm

On the rear left arm use the **SILVER** M3x18 screw - this screw has **LEFT THREAD**.

INITIAL SETTING

L=R

INITIAL SETTING

L=R

901303
SB M3x3

902310
SH M3x10

903314
SFH M3x14

SET-UP BOOK
SHOCK ABSORBERS

Thread brake rods into plastic pivots until flush with outer end.

Brake rod

Brake rod

Throttle rod

Use servo horn to match your servo
K - (23T) H - (24T) F - (25T)

Cut off remaining material

CLAMP ALU SERVO HORNS

#293444	23T	OPTION
#293445	24T	OPTION
#293446	25T	OPTION
#293447	23T	OPTION
#293448	24T	OPTION
#293449	25T	OPTION

ALU SERVO HORNS

#293504	23T	OPTION
#293505	24T	OPTION
#293506	25T	OPTION
#293507	23T	OPTION
#293508	24T	OPTION
#293509	25T	OPTION

DETAIL

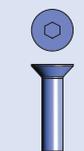
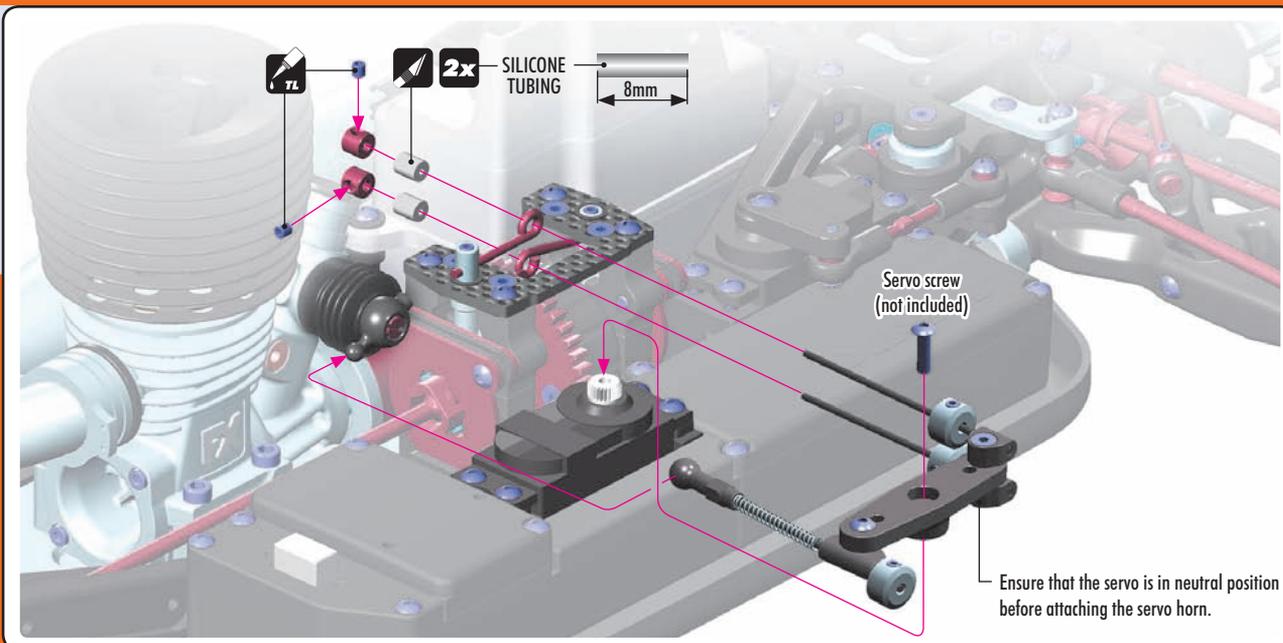
Small gap

Tighten screw until snug.
Pivots should move freely.

Small gap

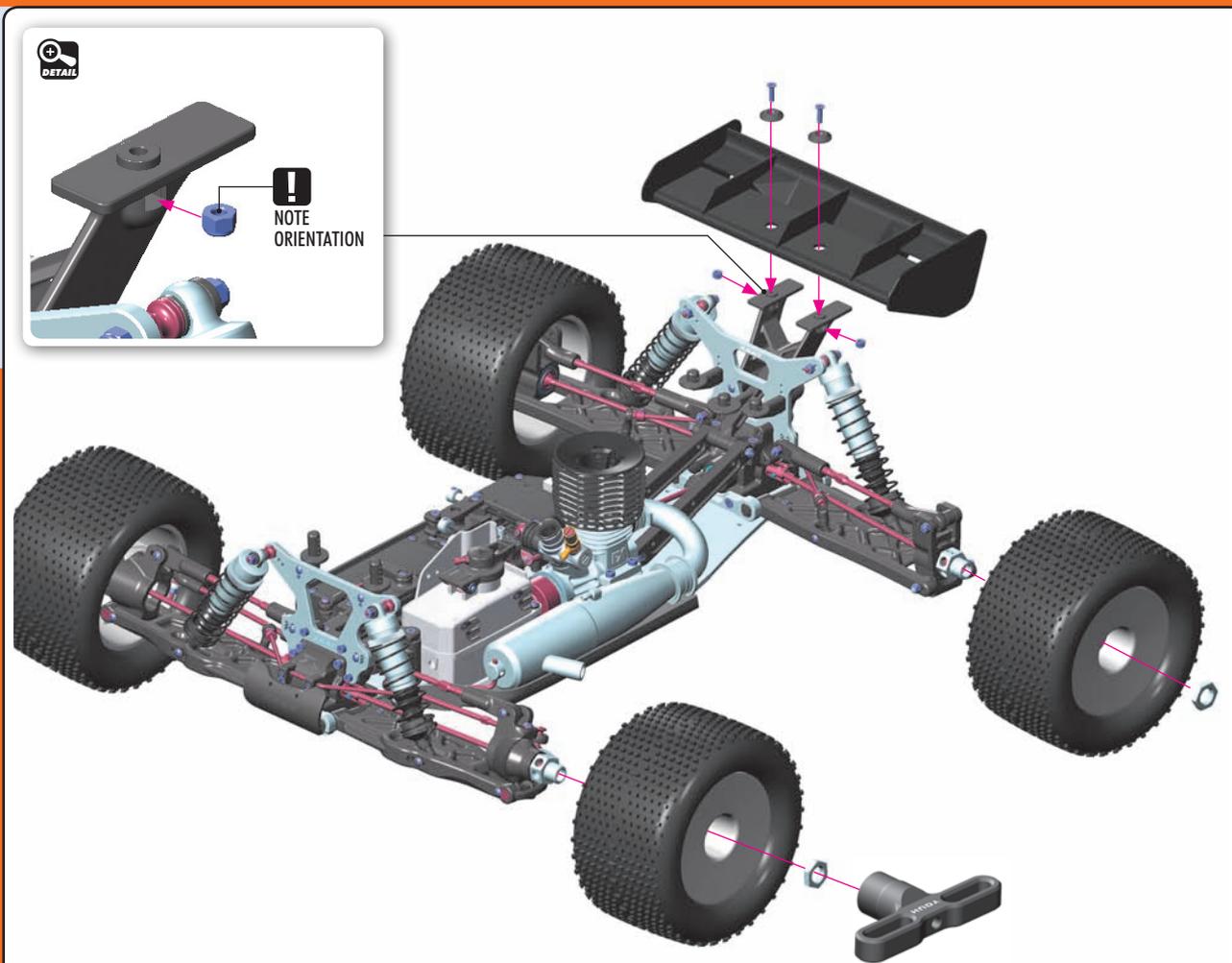
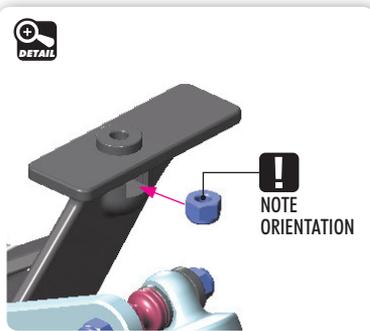
901302
SB M3x2.5

961022
S 2.2



903312
SFH M3x12

960030
N M3

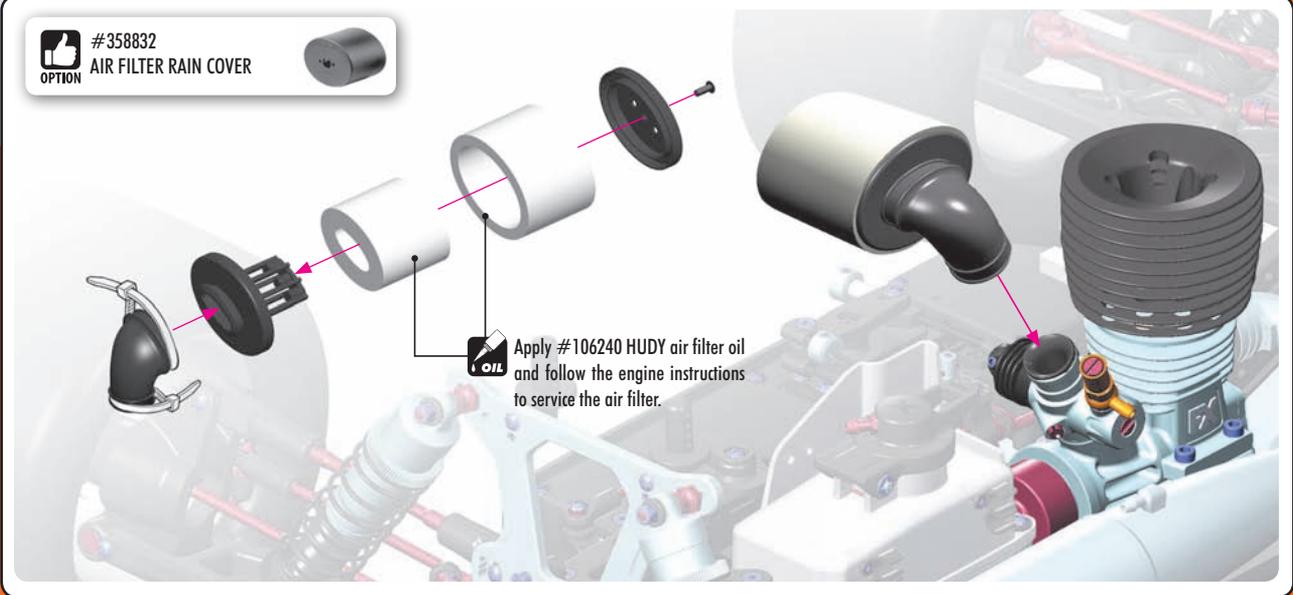


TIP 4x
To tighten the setscrew you can also use the HUDY 17mm Wheel Nut Tool #107570.

OPTION	WING SHIMS		
	#353565	COMPOSITE	INCLUDED
	#293561	ALU	OPTION
	#293561-0	ALU	OPTION
	#353561	ALU	OPTION

OPTION	WINGS		
	#353513-K	BLACK	INCLUDED
	#353513	WHITE	OPTION
	#353513-Y	YELLOW	OPTION
	#353512	LEXAN®	OPTION

OPTION	WHEEL NUTS		
	#355261	OPEN	INCLUDED
	#293560	COVERED	OPTION
	#355265	COVERED	OPTION

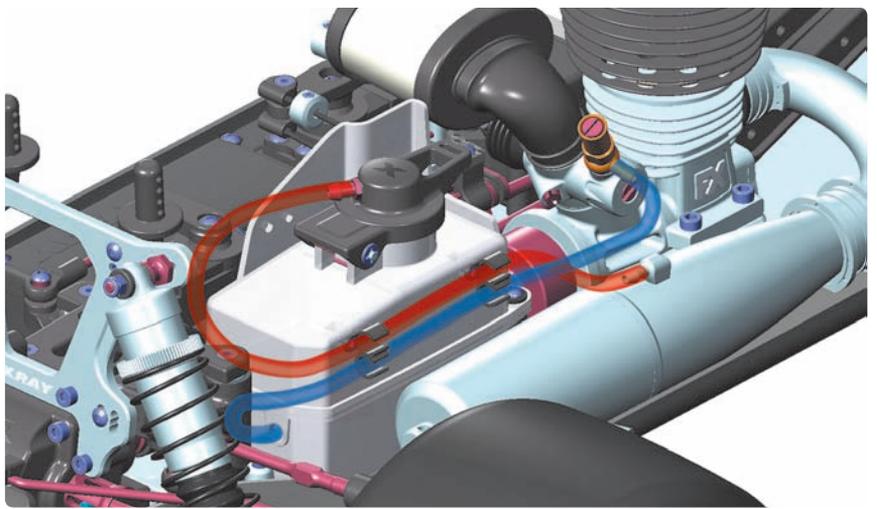


Cut the silicone tube depending on engine and muffler. Use the plastic clips to hold the tubes together.

SILICONE TUBE MARKED AS BLUE = FROM FUEL TANK TO CARBURETOR

SILICONE TUBE MARKED AS RED = FROM MUFFLER TO FUEL TANK (TOP)

! Keep fuel line away from clutchbell and flywheel.



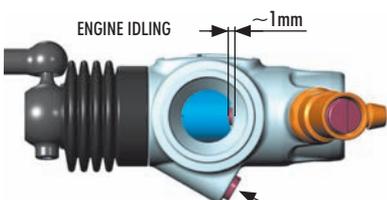
THROTTLE LINKAGE ADJUSTMENT

NEUTRAL (IDLE)



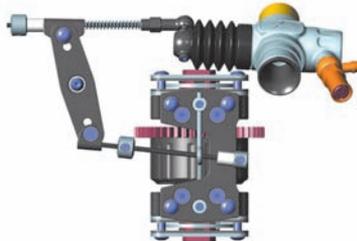
Turn on the transmitter and receiver and set the engine control servo trim to the neutral position. Adjust the idle adjustment screw on the carburetor to open approx. 1mm. Adjust both the throttle linkage and brake linkages accordingly. DO NOT adjust the linkage with the engine running.

ADJUST INDIVIDUAL LINKAGES SEPARATELY TO AVOID INTERFERING WITH THE OPERATION OF THE OTHERS



IDLING ADJUSTMENT SCREW
Use to adjust the idle setting of the carburetor. Do not allow carburetor to close to less than 1mm.

FULL THROTTLE



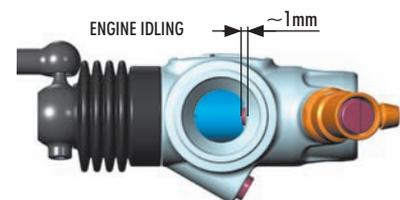
Adjust the servo-horn mounting position for the carburetor to open fully. Change the pivot mounting position on the servo horn in case the carburetor is not opening fully or if it is opening excessively. Or if available on the transmitter, adjust the throttle high end point.



BRAKE



Adjust the adjustable collars so the brakes work smoothly. If the brakes apply too much or not enough, adjust the adjustable collars accordingly. Or if available on the transmitter, adjust the brake endpoint. To tighten brakes, turn collar to thread brake rod INTO pivot. To loosen brakes, turn collar to thread brake rod OUT of pivot.



BRAKE ADJUSTING KNOBS:
Upper linkage - rear brake
Lower linkage - front brake

WING SHIMS

OPTION	#	COMPOSITE	INCLUDED
👍	#353565	COMPOSITE	INCLUDED
👎	#293561	ALU	OPTION
👎	#293561-0	ALU	OPTION
👎	#353561	ALU	OPTION

WINGS

OPTION	#	BLACK	INCLUDED
👍	#353513-K	BLACK	INCLUDED
👎	#353513	WHITE	OPTION
👎	#353513-Y	YELLOW	OPTION
👎	#353512	LEXAN®	OPTION

WHEEL NUTS

OPTION	#	OPEN	INCLUDED
👍	#355261	OPEN	INCLUDED
👎	#293560	COVERED	OPTION
👎	#355265	COVERED	OPTION

- | | | | | |
|-------------------|--------|---|--------|---------------------------------------|
| <p>BAG</p> | 351310 | FOAM WASHER FOR BODY POSTS (4) | 902318 | HEX SCREW SH M3x18 (10) |
| | 353565 | COMPOSITE REAR WING SHIM - BLACK (2) | 902319 | HEX SCREW SH M3x18 - LEFT THREAD (10) |
| | 355261 | WHEEL NUT - RIBBED - HARD COATED (2) | 903312 | HEX SCREW SFH M3x12 (10) |
| | 358047 | STEEL SCREW SHOCK PIVOT BALL WITH HEX (2) | 960030 | NUT M3 (10) |
| | 359400 | BODY CLIP (10) | | |
- 353513-K REAR WING - IFMAR - BLACK**

902318 SH M3x18

902319 SH M3x18 LEFT thread

960030 N M3

FRONT SHOCKS (SHORT)

2x

L=R

SHORTER ← → LONGER

NOTE ORIENTATION

FRONT

3x18mm

Use **STANDARD** M3x18 screw

On the front right arm use the **SILVER** M3x18 screw - this screw has **LEFT THREAD**.

INITIAL SETTING

L=R

INITIAL SETTING

L=R

SET-UP BOOK
SHOCK ABSORBERS

REAR SHOCKS (LONG)

2x

L=R

902318 M3x18

902319 SFH M3x18 LEFT thread

960030 N M3

! REAR SHOCKS (LONG)

! NOTE ORIENTATION

! On the rear left arm use the **SILVER** M3x18 screw - this screw has **LEFT THREAD**.

Use **STANDARD** M3x18 screw

INITIAL SETTING

L=R

INITIAL SETTING

L=R

SET-UP BOOK

SHOCK ABSORBERS

- 1 Before cutting and making holes on the body, put the unpainted body on the chassis to confirm the mounting position and location for holes and cutouts.
- 2 Before painting, wash the inside of the body with mild detergent, and then rinse and dry thoroughly.
- 3 Mask all windows.
- 4 Apply paint masks as appropriate.
- 5 Paint the body using paints formulated for polycarbonate bodies.
- 6 When the paint is dry, remove the masking.
- 7 Carefully cut out the body using appropriate scissors or cutting tools.
- 8 When you have finished cutting, peel off the external protective films.

Body Reamer (HUDY #107602)

DETAIL

Ensure to make this rear body mount hole oval so in the case of chassis flex after a big jump the body mount will not tear up the hole.

TIP To reinforce the body or to fix broken body use #106280 HUDY BODY FIX.

903312 SFH M3x12

960030 N M3

! NOTE ORIENTATION

TIP 4x

To tighten the setscrew you can also use the HUDY 17mm Wheel Nut Tool #107570.

WING SHIMS		
OPTION #353565	COMPOSITE	INCLUDED
#293561	ALU	OPTION
#293561-0	ALU	OPTION
#353561	ALU	OPTION

WHEEL NUTS		
OPTION #35261	OPEN	INCLUDED
#293560	COVERED	OPTION
#35265	COVERED	OPTION

WINGS		
OPTION #353513-K	BLACK	INCLUDED
#353513	WHITE	OPTION
#353513-Y	YELLOW	OPTION
#353512	LEXAN®	OPTION

PROBLEM	CAUSE	SOLUTION
ENGINE DOES NOT START	<ul style="list-style-type: none"> Fuel tank is empty or carburetor is not primed Bad glowplug or dead glowdriver battery Fuel lines, fuel filter, air cleaner, or muffler is clogged Engine is flooded due to over-priming Carburetor is not adjusted properly Throttle servo linkage not adjusted properly 	<ul style="list-style-type: none"> Fill fuel tank with fuel and prime Replace glowplug or recharge/replace glowdriver battery Clean or replace clogged part(s) Remove glowplug, turn car over to discharge fuel from cylinder. Test glowplug and replace if defective Set idle and main/slow needle adjusting screw to standard starting position Move throttle servo to neutral position and re-adjust linkage(s)
ENGINE STARTS BUT THEN STALLS	<ul style="list-style-type: none"> Fuel tank is empty Fuel lines, fuel filter, air cleaner, or muffler is clogged Carburetor is not adjusted properly Engine has overheated 	<ul style="list-style-type: none"> Fill fuel tank with fuel Clean or replace clogged part(s) Re-adjust idle and main/slow needle adjusting screw Allow engine to thoroughly cool down and open main needle adjusting screw 30° turn richer (CCW)
BAD REACTION AND RESPONSE FROM ENGINE	<ul style="list-style-type: none"> Carburetor is not adjusted properly Fuel lines, fuel filter, air cleaner, or muffler is clogged Low fuel pressure from muffler 	<ul style="list-style-type: none"> Re-adjust main/slow needle adjusting screw Clean or replace clogged part(s) Properly install pressure line between muffler and fuel tank
CAR IS HARD TO CONTROL	<ul style="list-style-type: none"> Weak transmitter and/or receiver batteries Low reception from radio antennas Servo linkages not adjusted properly 	<ul style="list-style-type: none"> Recharge or replace batteries Fully extend transmitter and receiver antennas Move servo to neutral then re-adjust linkage(s)
STEERING DOES NOT WORK PROPERLY	<ul style="list-style-type: none"> Weak transmitter and/or receiver batteries Bent linkages or driveshafts Loose steering components Drivetrain damage 	<ul style="list-style-type: none"> Recharge or replace batteries Check tightness of steering components and tighten if necessary Replace damaged parts
HANDLING PROBLEMS	<ul style="list-style-type: none"> Shocks are not working properly Suspension is binding Improper tires 	<ul style="list-style-type: none"> Rebuild the shocks and replace worn or broken parts Make sure suspension moves freely. Replace worn or broken parts Use different tires
STEERING FEELS SLUGGISH OR VAGUE	<ul style="list-style-type: none"> Suspension is binding Damaged steering servo 	<ul style="list-style-type: none"> Make sure suspension moves freely, and replace worn or broken parts Check the steering servo for damage and wear, and replace/repair if necessary
THE CAR DOES NOT DRIVE STRAIGHT	<ul style="list-style-type: none"> Suspension is binding Steering trim is off-center Wheels are loose Damaged steering servo 	<ul style="list-style-type: none"> Make sure suspension moves freely, and replace worn or broken parts Adjust steering trim until car drives straight Check the make sure the wheel nuts are properly tightened Check the steering servo for damage and wear, and replace/repair if necessary

MAINTENANCE

ENGINE OPERATION

PREPARING TO OPERATE THE ENGINE

- Never modify the engine or muffler.
- Confirm the position of needle and idling before running. Be sure to run a new engine smoothly.
- Make sure the air filter is clean and oiled.
- Never run your engine without an air filter. Your engine can be seriously damaged if dirt and debris get inside the engine.
- For proper engine break-in, please refer to the manual that came with the engine.
- The engine may not start or run properly if the air filter is dirty, or choked with sand and dust.
- If the fuel pipe is choked or deteriorates, the engine may not start, and there is danger that fuel will leak out.

STARTING AND RUNNING THE ENGINE

Be sure to observe the following starting process. Failure to do so may cause the model car to start suddenly, which may lead to damage or unexpected accidents.

- Make sure the transmitter and receiver batteries are fully charged.
- Make sure that your transmitter and receiver are both on the same frequency. If you have a transmitter with multiple model memory, make sure you have selected the proper profile for your car.
- Put the car on the starter box and keep the tires from touching the ground.
- Turn on the transmitter.
- Turn on the receiver in the car.
- Make sure the steering servo and engine servos work normally and adjust them correctly.
- Put fuel in the fuel tank, and close the cap securely.
- Apply the glow igniter to the engine glowplug.
- Push the model car onto the starter box to start the engine. (If the engine is new, follow the instruction manual and be sure to break in the new engine properly).
- When the engine has started, remove the glow igniter.
- Follow your engine break-in procedure and tune the engine as appropriate.

STOPPING THE ENGINE

Before you stop the engine, try to make sure the engine is at idle first. There are several ways to stop the engine:

- Use a rag to cover the exhaust tip. Be careful! The exhaust is extremely hot so use a thick rag and gloves.
- Pinch the fuel tubing to stop the flow of fuel to the carb. Be careful, this can make the motor run lean which can damage the motor.
- Put your hand over the air filter, or squeeze the air filter element to block the airflow.
- Press an object (such as a screwdriver handle or shoe) against the rotating flywheel to stop its rotation. Be very careful, and do not stick your hand or fingers near the rotating flywheel.

FINISHING OPERATIONS

- Stop the engine.
- Turn off the receiver in the car
- Turn off the transmitter.

MAINTENANCE AFTER RUNNING

Take proper care of your car after running to keep it performing well, and take notice of any damage and wear.

- Do not leave fuel in the tank.
- Go outside to drain any residual fuel from the exhaust pipe.
- Clean the car and remove all sand, mud, and other debris.
- Use after-run oil in your engine after you have finished running for the day.

SHOCK MAINTENANCE

The most important maintenance task for keeping consistent shock performance is refilling and bleeding them correctly. If built correctly, it will not be necessary to re-build them often. Replacing warped/hard rubber bladders and o-rings, scarred piston rods, or shaved/split/loose composite upper and lower ball joints are also important.

- For club racing, it is recommended to check the shocks for air inside before each race and only re-fill and bleed them if necessary. Before each race day, make sure you take the spring off of each shock, hold it up to your ear, and quickly compress the shock rod fully into the body while listening for any air making a “whistling” or “squishy” sound as it passes through the piston holes. If you hear any air, refill and bleed your shocks. For high-competition racing, it is recommended that the shocks be re-filled and bled before a large event.
- If building or pairing new shocks, always make sure they are the same length using a shock length measuring tool and adjust the lower ball joints as needed.
- If installing new rubber bladders, carefully trim the thin excess rubber from the edges of their lips. Curved body scissors work the best.
- Regularly inspect the amount of dirt on the felt protector in the shocks (if present) and regularly replace with a new one.
- During regular shock operation, oil naturally gets on the shock shaft and drop-by-drop slightly gets out of the shock body. Shocks should be inspected regularly after each race, and oil replaced as required.

SUSPENSION & DRIVETRAIN MAINTENANCE

- Check suspension for free movement during building and operation, and especially after running and if you have crashed the car. If the suspension does not move freely, use the appropriate HUDY Arm Reamer to clean and resize the holes of the suspension arms.
- Regularly check the drive shaft pins (both side and center) and if they show any wear must be immediately replaced by new pins. If the car is run with worn pins, excessive wear on the diff outdrives will result. The 106000 HUDY Drive Pin Replacement Tool (for 3mm Pins) is a compact, rugged multi-use tool set for replacing 3mm drive pins in drive shafts. Use the HUDY replacement drive shaft pins 3x14 (#106050).
- Regularly inspect and replace the connecting pins which connect the center drive shafts with the pinion gear, and also the pins that connect the wheel drive shafts with wheel axles. Use HUDY Graphite Grease to lubricate the drive shaft connecting joints and the diff gears.
- Pivot balls and ball-joints will naturally wear for some time and will generate play. If there is too much play the pivot balls and ball joints need to be replaced.
- If the car is run in wet conditions, apply WD-40® on all drivetrain parts before the run. After the run, clean and dry the parts again.

HUDY SPRING STEEL™

The HUDY Spring Steel™ used in the car is the strongest and most durable steel material on the RC market. While items made from HUDY Spring Steel™ are still subject to wear, the lifespan is considerably longer than any other material. As parts made from HUDY Spring Steel™ wear, the brown color will after some time “go down” but it will not affect the strength of the material. The brown color is only a surface treatment and if the brown color will wear the durability of the part will be still strong.

BEARING MAINTENANCE

Ball-bearings in an off-road car or truggy must be properly maintained for smooth operation and long lifespan.

Typically, the ball-bearings included in new cars are greased for highest lifespan and as such the drivetrain may not seem to be as free as with lightly-oiled ball-bearings. However, when the car is run the ball-bearings will become more free and the drivetrain will become very efficient.

There are several types of bearings discussed here: bearings which already come greased from the factory, bearings which must be lubricated using the HUDY Bearing Grease, and then there are also bearings in the steering system which need to be lubricated with HUDY Bearing Oil.

The following procedures are recommended to clean all of the bearings in your off-road car or truggy. For high-competition racing, we recommended doing this every 3-4 weeks, or before a major race.

1. Remove the seals on both sides of the bearing (if present). If the seals bend a little and you can see a kink, carefully flatten the kink out by hand.
2. Spray the seals with motor cleaner and blow dry with compressed air.
3. Spray the bearing on both sides with motor cleaner.
4. Spin the bearing while it is still wet to dislodge any particles with the cleaner.
5. Spray the bearing on both sides again.
6. Blow both sides of the bearing dry with compressed air to make sure particles come out.
7. Hold the inner part of the bearing with my left thumb/forefinger and spin it to make sure it spins free without any abnormal vibrations or sounds.
8. Place one drop of bearing oil into each side of the bearing.
9. Replace both seals at the same time by lining them up on each side of the bearing and lightly pressing them in all the way around the bearings circumference with your thumb and forefinger. Do not press too hard or use any type of tool, such as a wrench tip, to push the blue seals in as they will push in too far, bend and cause drag.

If you spin test the bearing after you have re-oiled and sealed it, it will not spin freely for an extended period of time. The lightest of oils may allow it to spin for 1-2 seconds. This is normal and once you have mounted the bearings in the car again, the drive train will spin freely.

Make sure you use a motor cleaner that does not leave a residue after it dries as this may cause drag and wear in the bearings.

CLUTCH BEARINGS

To prolong the lifespan of the clutch bearings, they must be regularly cleaned and lubricated (preferably after each run) using a high-quality grease such as HUDY Bearing Grease. However, after some time the clutch bearings must be replaced with new ones.

RECOMMENDED PRODUCTS

- Use HUDY Bearing Grease to regularly lubricate grease-bearing ball-bearings.
- Use HUDY Bearing Oil to lubricate the bearings of the steering system.
- Use HUDY Bearing Grease to regularly lubricate the clutch bearings.



HUDY #106230



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