1/8 LUXURY GT



INSTRUCTION MANUAL FOR GTX8.2 & GTXE.2

### **BEFORE YOU START**

The GTX is a high-competition, high-quality, 1/8-scale GT 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 GTX, YOU MUST read through all of the operating instructions and instruction manual and fully understand them to get the maximum enjoyment and prevent unnecessary damaae

Read carefully and fully understand the instructions before beginning assembly.

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

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

### **CUSTOMER SUPPORT**

We have made every effort to make these instructions as easy to understand as possible. However, if you have any difficulties, problems, or questions, please do not hesitate to contact the XRAY support team at info@ teamxray.com. Also, please visit our Web site at www.teamxray.com to find the latest updates, set-up information, option parts, and many other goodies. We pride ourselves on taking excellent care of our customers.

You can join thousands of XRAY fans and enthusiasts in our online community at: www.teamxray.com

### **XRAY Europe**

K Výstavisku 6992 91101 Trenčín Slovakia, EUROPE

Phone: +421-32-7401100 Fax: +421-32-7401109 Email: info@teamxrav.com

### ΧΡΑΥ ΙΙςΑ

RC America, 2030 Century Center Blvd #15 Irving. TX 75062

ΙΙςΔ 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 NEGLECT.

### 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 guaranty immediately.

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



# 🔼 IMPORTANT NOTES – GENERAL

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

- Keep the wheels of the model off the ground when checking the operation of the radio equipment.
- Disconnect the battery pack before storing your model.
- When learning to operate your model, go to an area that has no obstacles that can damage your model if your model suffers a collision.
- Remove any sand, mud, dirt, grass or water before putting your model away.
- If the model behaves strangely, immediately stop the model, check and clear the problem.
- To prevent any serious personal injury and/or damage to property, be responsible when operating all remote controlled models.
- The model car is not intended for use on public places and roads or areas where its operation can conflict with or disrupt pedestrian or vehicular traffic.
- Because the model car is controlled by radio, it is subject to radio interference from many sources that are beyond your control. Since radio interference can cause momentary loss of control, always allow a safety margin in all directions around the model in order to prevent collisions.
- Do not use your model:
  - Near real cars, animals, or people that are unaware that an RC car is being driven.
  - In places where children and people gather
  - In residential districts and parks
  - In limited indoor spaces
  - In wet conditions
  - In the street
  - In areas where loud noises can disturb others, such as hospitals and residential areas.
  - At night or anytime your line of sight to the model may be obstructed or impaired in any way.

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



# **A** 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
- · For proper engine break-in, please refer to the manual that came with the engine.
- 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
- 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
- Use a recommended charger for the receiver and transmitter batteries and follow the instructions

- correctly. Over-charging, incorrect charging, or using inferior chargers can cause the batteries to become dangerously hot. Recharge battery when necessary. Continual recharging may damage battery and, in the worst case, could build up heat leading to fire. If battery becomes extremely hot during recharging, please ask your local hobby shop for check and/or repair and/or replacement.
- Regularly check the charger for potential hazards such as damage to the cable, plug, casing or other defects. Ensure that any damage is rectified before using the charger again. Modifying the charger may cause short-circuit or overcharging leading to a serious accident. Therefore do not modify the charger.
- Always unplug charger when recharging is finished.
- Do not recharge battery while battery is still warm. After use, battery retains heat. Wait until it cools down before charaina
- 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.



# 📤 IMPORTANT NOTES – NITRO FUEL

- Handle fuel only outdoors. Never handle nitro fuel indoors, or mix nitro fuel in a place where ventilation is had
- 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,
- 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 hatteries
- 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 excess the monetary value of this product.

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

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

All rights reserved.

### **OUALITY 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.

### SYMBOLS USED

Part bags used



Assemble in the specified order



Assemble left and right sides the same way



Assemble front and rear the same







2x

Apply instant glue



Apply oil



Apply grease



Apply

Cut off shaded portion



Use special tool











Use cleaner

Pay attention

Tighten screw gently



Ensure smooth non-binding movement



Use pliers



Follow tip here



Follow Set-up Book

SET-UP BOOK

# **TOOLS REQUIRED**

Phillips 5.0mm (HUDY TOOLS)

Allen 1.5/2.0/2.5/3.0mm (HUDY TOOLS)

Ball Allen 2.5mm (HUDY TOOLS)

Arm Reamer 3mm/4mm (HUDY TOOLS)

Socket 5.0/5.5mm (HUDY TOOLS)





17mm Wheel Nut Tool (HUDY #107570)



Flywheel Tool (HUDY #182015)



Special Tool for all turnbuckles, nuts (HUDY #181090)



Turnbuckle Wrench (HUDY #181040 4mm) (HUDY #181050 5mm)



Side Cutters (HUDY #189010)



Pocket Hobby Knife (HUDY #188981)



**Needle Nose Pliers** (HUDY #189020)



Professional Multi Tool (HUDY #183011)



Scissors (HUDY #188990)



**Body Reamer** (HUDY #107600)



### **TOOLS & EQUIPMENT INCLUDED**

Silicone Shock Oil (HUDY #106411 1K 100ml)



Silicone Diff Oil (HUDY #106561 60K 100ml) (HUDY #106631 300K 100ml)



Air Filter Oil (HUDY #106240)



Electric

**Graphite Grease** (HUDY #106210)



### **NOT INCLUDED**

SET-UP BOOK

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

# **EQUIPMENT REQUIRED**







Speed Controller







Glow Plug Igniter



Steering and Throttle Servos



Receiver





LiPo Battery Pack



Double-sided Tape (HUDY #107875)



Lexan™ Paint



**Battery Charger** 



Receiver Pack



Threadlock & CA Glue



**GT BODY** (XRAY #359730 or #359731)



Wheels & Tires



Fuel + Fuel Bottle (HUDY #104200)

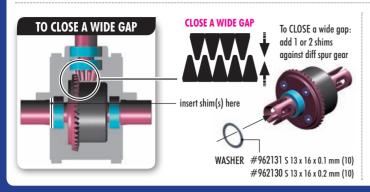


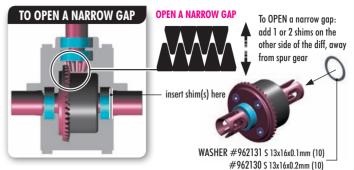


TIP FRONT & REAR DIFF GEAR MESH ADJUSTMENT

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:





### 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.

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.



Do not use drive shafts when the pins are worn.

Press out the worn pins.

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.

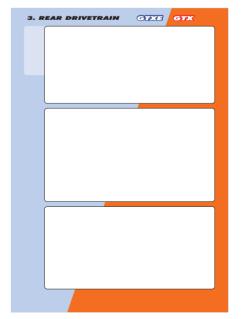
# MANUAL STEPS ONLY FOR GTX8

# BALL DIFFERENTIAL **611**

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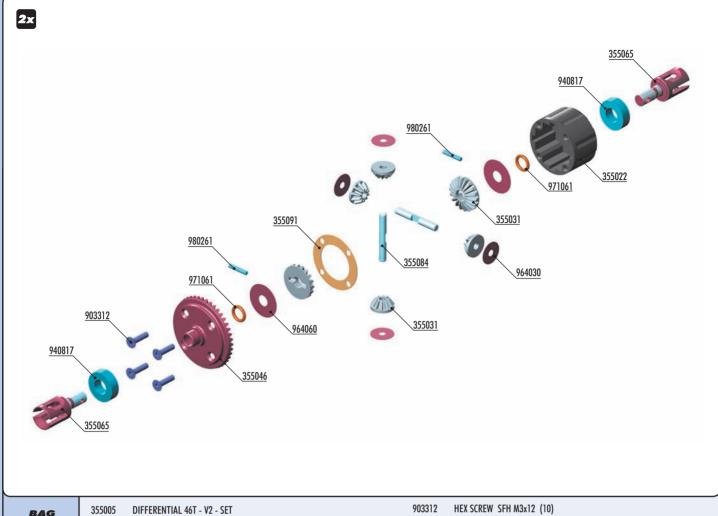
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### **MANUAL DUAL STEPS FOR GTXE & GTX8**



# 1. DIFFERENTIALS

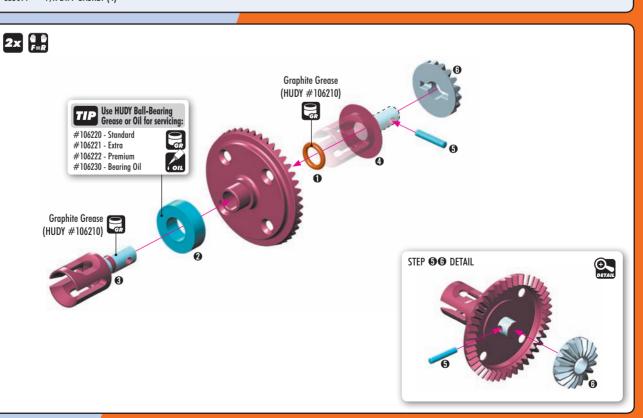




BAG 01 355025 DIFFERENTIAL 46T - V2 - SET
355022 DIFFERENTIAL CASE - V2
355031 STEEL DIFF BEVEL & SATELLITE GEARS - V2 (2+4)
355046 FRONT/REAR DIFF LARGE BEVEL GEAR 46T - HUDY STEEL
355065 DIFF OUTDRIVE ADAPTER - V2 - HUDY SPRING STEEL™ (2)
355084 F/R DIFF PIN (2)
355091 F/R DIFF GASKET (4)

903312 HEX SCREW SFH M3x12 (10)
940817 BALL-BEARING 8x16x5 RUBBER SEALED - OIL (2)
964030 WASHER S 3.5x12x0.2 (10)
964060 WASHER S 6x18x0.2 (10)
971061 SILICONE 0-RING 6x1.55 (10)
980261 PIN 2.5x11.5 (10)





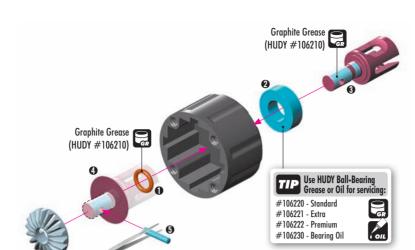


















# **VERY IMPORTANT!**

Use the following silicone oils included in the kit for initial settings: FRONT diff: 300.000cSt / REAR diff: 60.000cSt



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



SET-UP BOOK DIFFERENTIAL OIL 1. Put the diff (without oil) on the scale and check the weight:

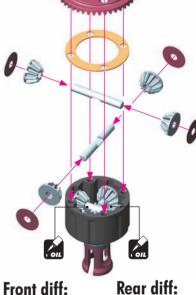
- FRONT DIFF approx. 39.94a

- REAR DIFF approx. 39.94g

The approximate weight of the diff+oil is REAR DIFF approx. 42.30g and FRONT DIFF approx. 42.52g

REAR DIFF	39.94g +	2.36g	= 42.30g
FRONT DIFF	39.94g +	2.58g	= 42.52g

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



# Front diff:

Silicone oil 300.000cSt Fill just above the satellite gears.

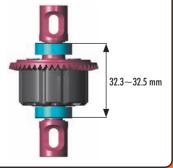
# Silicone oil 60.000cSt

Fill just above the satellite gears.





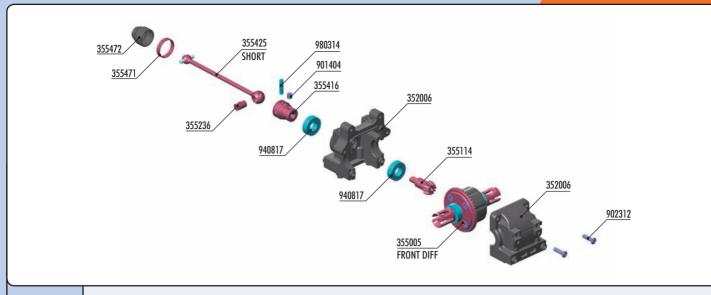
After assembly the differentials should have a length of  $32.3\sim32.5$  mm measured from the ends of the installed ball-bearings. If differentials are longer, retighten the 4 screws holding the crown gears.



# 2. FRONT TRANSMISSION



# GTX8



BAG 02 352006 DIFF BULKHEAD BLOCK SET FRONT/REAR 355005 DIFFERENTIAL 46T - V2 - SET 355114 BEVEL DRIVE GEAR 14T

355236 CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
355416 CENTRAL CVD SHAFT UNIVERSAL JOINT - HUDY SPRING STEEL™
355425 FRONT CENTRAL CVD DRIVE SHAFT - HUDY SPRING STEEL™

355471 DRIVE SHAFT LOCKING RING (2)

355472 DRIVE SHAFT BOOT (2)

901404 HEX SCREW SB M4x4 (10) 902312 HEX SCREW SH M3x12 (10)

940817 BALL-BEARING 8x16x5 RUBBER SEALED - OIL (2)

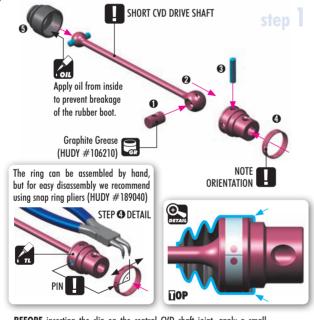
980314 PIN 3x14 (10)





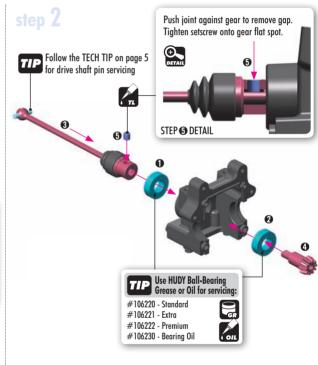


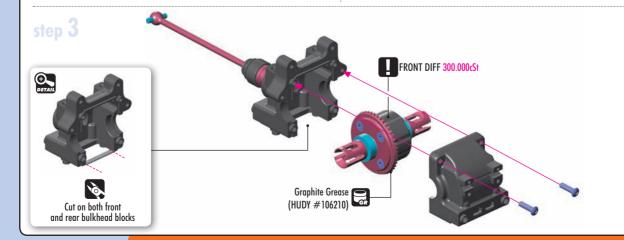




**BEFORE** inserting the clip on the central CVD shaft joint, apply a small amount of threadlock on the area where the clip goes.

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.

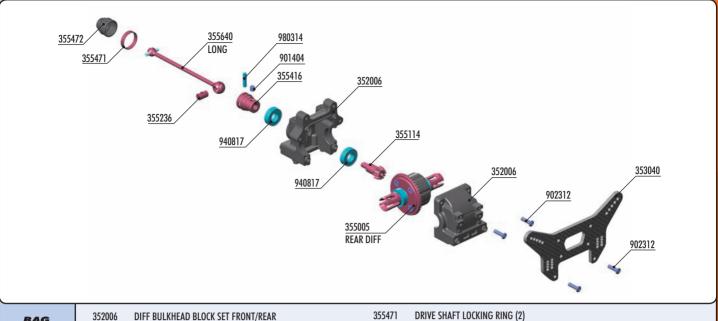




# 2. REAR TRANSMISSION



# GTX8



BAG

02

352006 DIFF BULKHEAD BLOCK SET FRONT/REAR 355005 DIFFERENTIAL 46T - V2 - SET GT GRAPHITE REAR SHOCK TOWER - CNC MACHINED 3.5 MM 353040 355114 **BEVEL DRIVE GEAR 14T** CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™ 355236 355416 CENTRAL CVD SHAFT UNIVERSAL JOINT - HUDY SPRING STEEL™ 355640 GT REAR CENTRAL CVD DRIVE SHAFT - HUDY SPRING STEEL™

355472 DRIVE SHAFT BOOT (2)

901404 HEX SCREW SB M4x4 (10) 902312 HEX SCREW SH M3x12 (10)

BALL-BEARING 8x16x5 RUBBER SEALED - OIL (2) 940817 980314

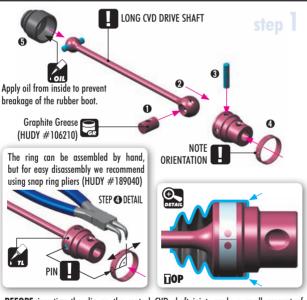
PIN 3x14 (10)





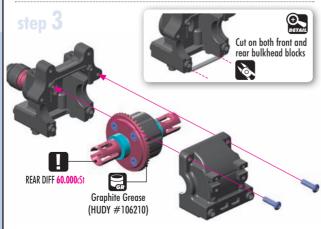


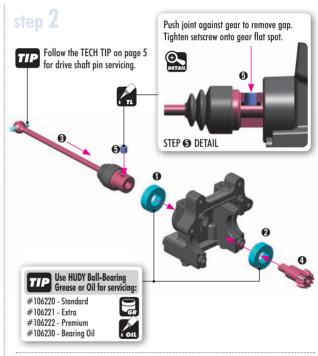


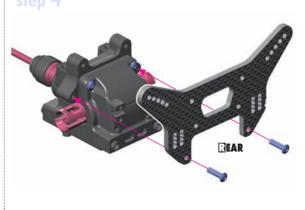


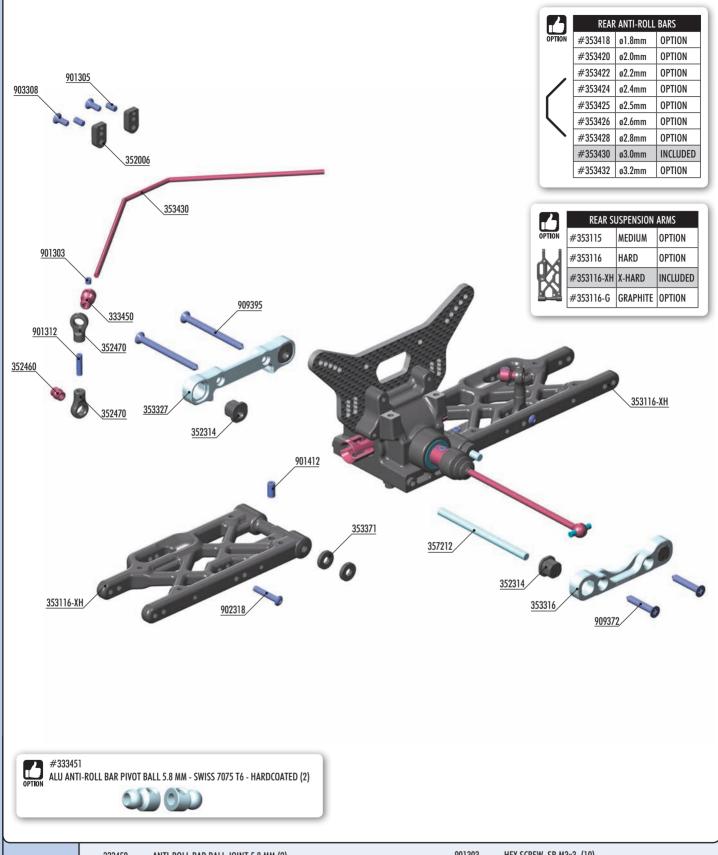
**BEFORE** inserting the clip on the central CVD shaft joint, apply a small amount of threadlock on the area where the clip goes.

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.





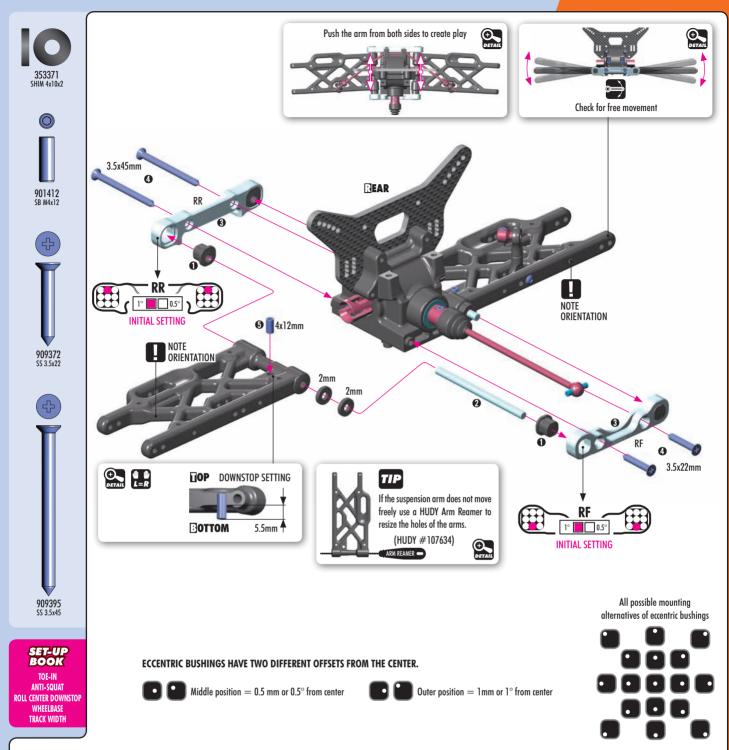




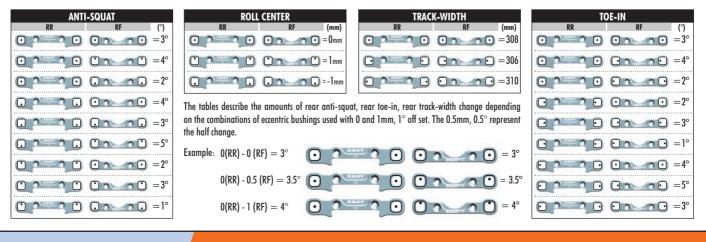
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333450	ANTI-ROLL BAR BALL JOINT 5.8 MM (2)	901303	HEX SCREW SB M3x3 (10)
	• • • • • • • • • • • • • • • • • • • •		, , ,
352006	DIFF BULKHEAD BLOCK SET FRONT/REAR	901305	HEX SCREW SB M3x5 (10)
352314	COMPOSITE ECCENTRIC BUSHINGS - V2 (2)	901312	HEX SCREW SB M3x12 (10)
352460	PIVOT BALL 5.8 (10)	901412	HEX SCREW SB M4x12 (10)
352470	BALL JOINT 5.8 (8)	902318	HEX SCREW SH M3x18 (10)
353116-XH	COMPOSITE REAR LOWER SUSPENSION ARM - X-HARD	903308	HEX SCREW SFH M3x8 (10))
353316	ALU REAR LOWER SUSP. HOLDER - FRONT - SQUARE ADJ. ROLL CENTER	909372	SCREW PHILLIPS SS 3.5x22 (10)
353327	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)		





The new 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).









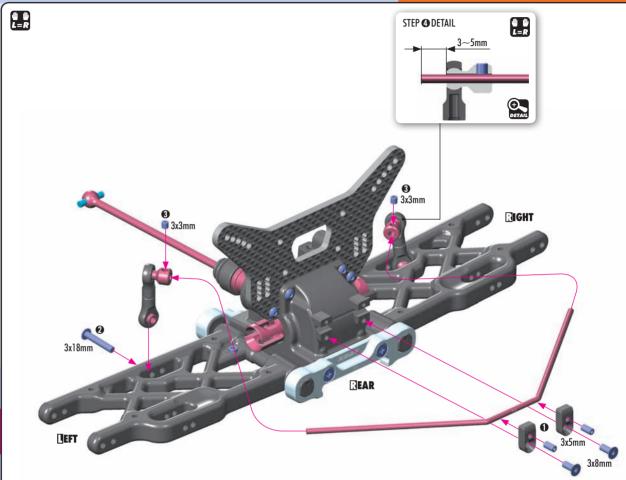




902318 SH M3x18

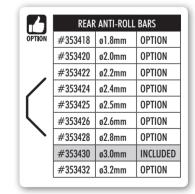










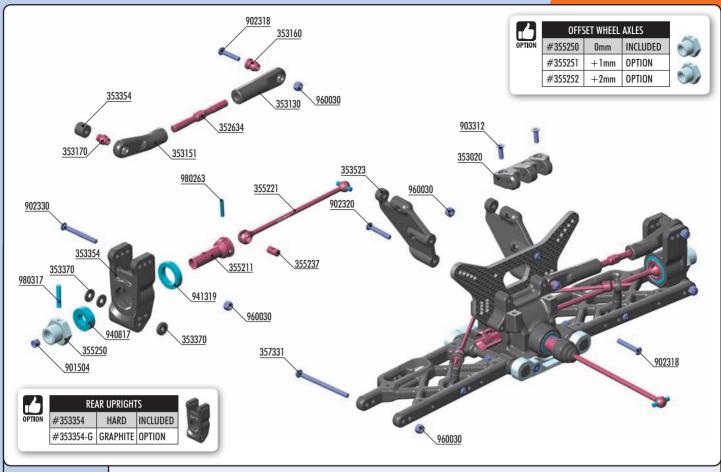




# 4. REAR SUSPENSION

# GLII

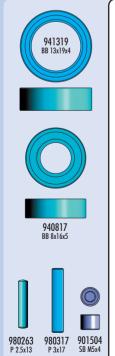
# GTX8

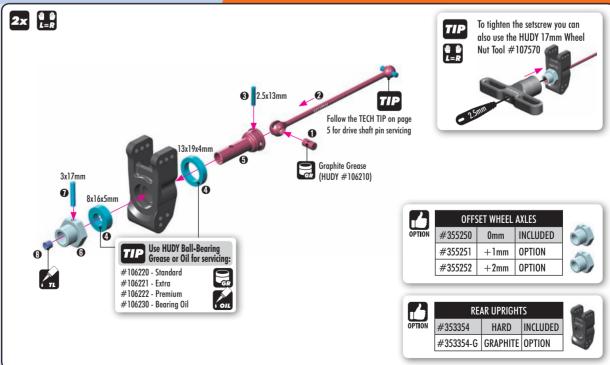


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357331 REAR LOWER OUTER PIVOT PIN SCREW 3MM (2) ADJ. TURNBUCKLE M5 L/R 50 MM - HUDY SPRING STEEL TM (2) 352634 353020 **COMPOSITE REAR BRACE HOLDER** 901504 HEX SCREW SB M5x4 (10) 353130 REAR UPPER INNER CAMBER LINK BALL JOINT (2) HEX SCREW SH M3x18 (10) 353151 REAR UPPER OUTER CAMBER LINK BALL JOINT - RELIEF (2) 902318 HEX SCREW SH M3x20 (10) 353160 MOUNTING BALL 6.8 (4) 902320 HEX SCREW SH M3x30 (10) PIVOT BALL 6.8 (4) 902330 353170 COMPOSITE REAR UPRIGHT LB 903312 HEX SCREW SFH M3x12 (10) 353354 SET OF COMPOSITE REAR HUB CARRIER SHIMS 940817 BALL-BEARING 8x16x5 RUBBER SEALED - OIL (2) 353370 941319 BALL-BEARING 13x19x4 RUBBER SEALED - OIL (2) GT COMPOSITE REAR HOLDER POST (2) 353523 355211 CVD DRIVE AXLE - HUDY SPRING STEEL 960030 NUT M3 (10) PIN 2.5x13 (10) 355221 CVD UNIVERSAL DRIVE SHAFT - HUDY SPRING STEEL™ 980263 CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™ 980317 PIN 3x17 (10) 355237 ALU WHEEL AXLE - BLACK COATED (2) 355250

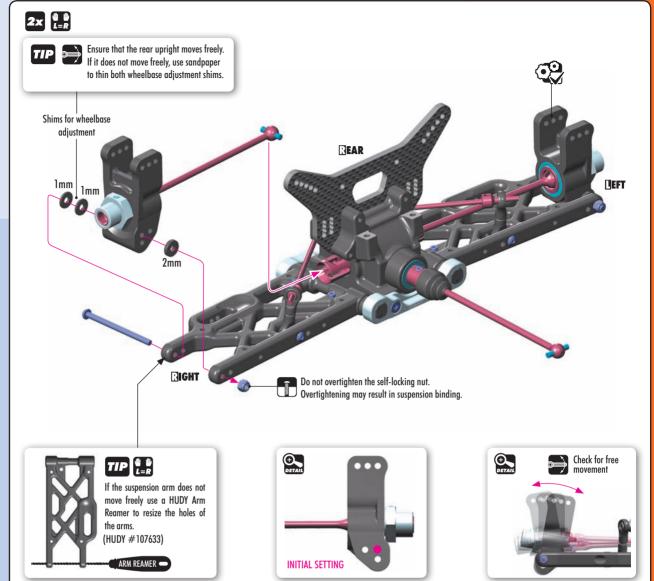


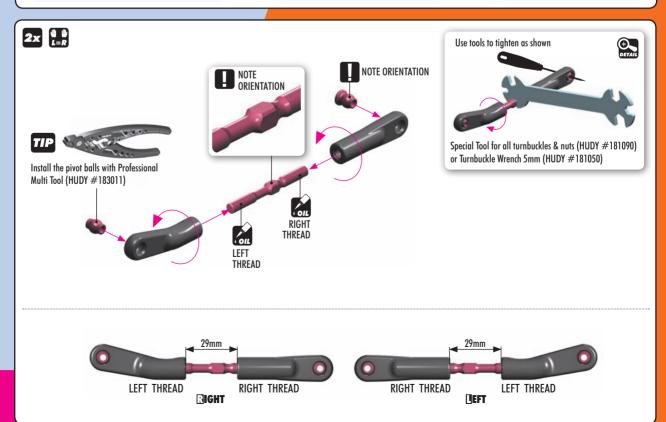














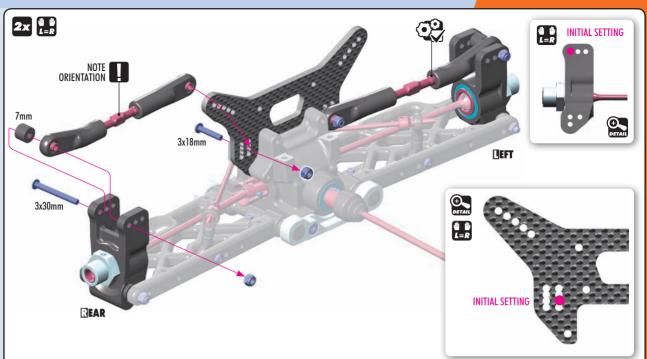




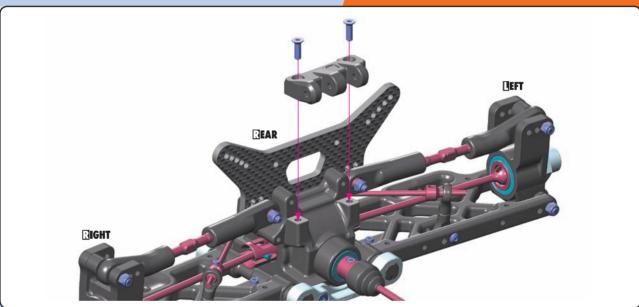




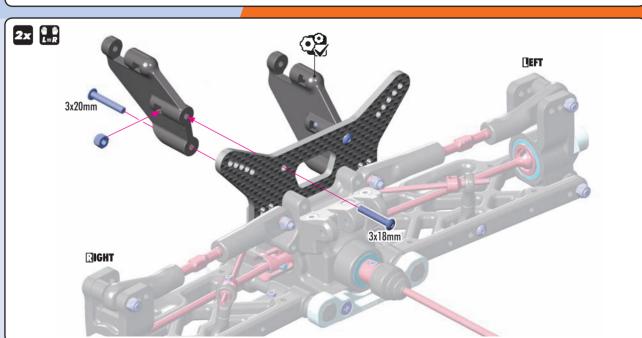






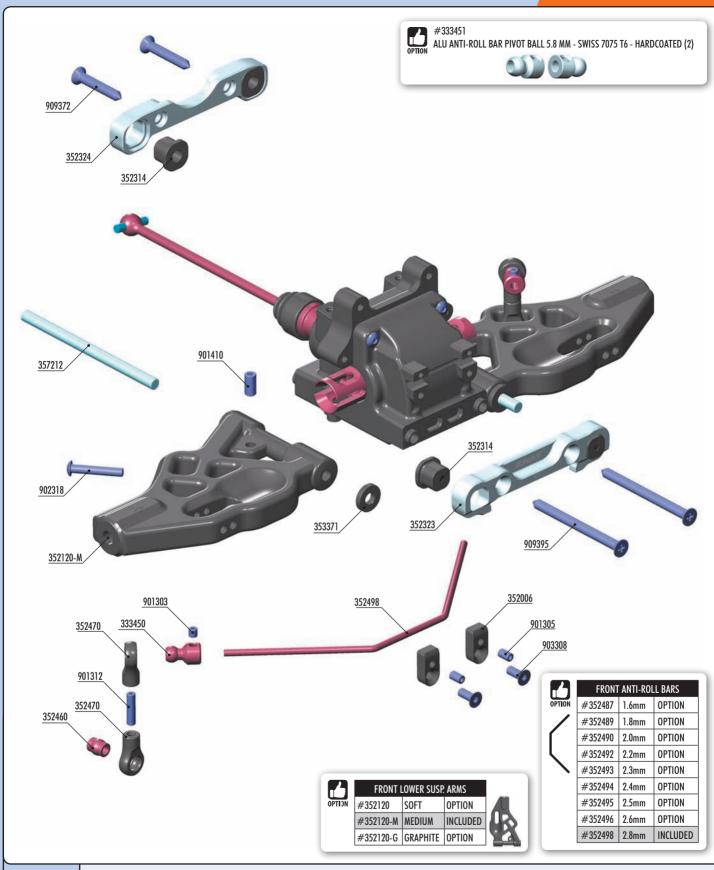






# 5. FRONT SUSPENSION



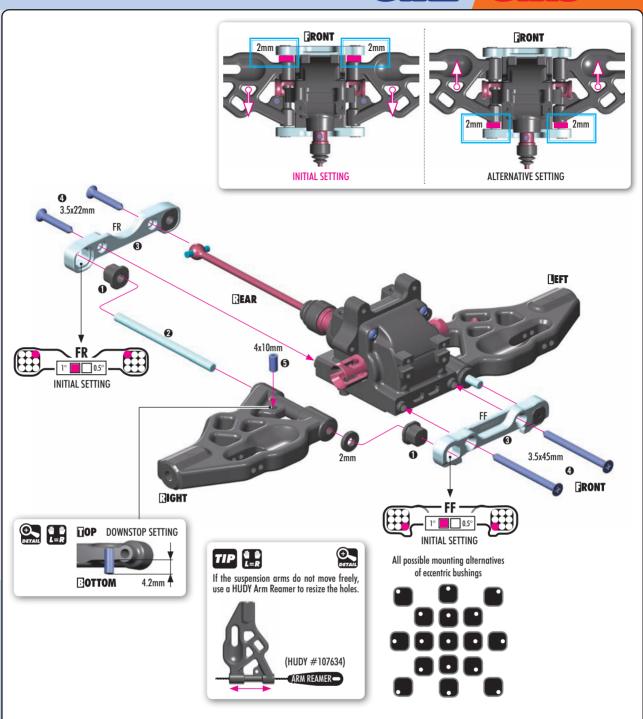


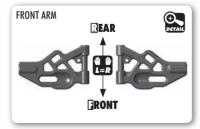


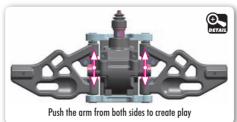
333450	ANTI-ROLL BAR BALL JOINT 5.8 MM (2)	357212	LOWER INNER PIVOT PIN $F+R$ (2)
352006	DIFF BULKHEAD BLOCK SET FRONT/REAR		
352120-M	COMPOSITE FRONT LOWER SUSPENSION ARM - MEDIUM	901303	HEX SCREW SB M3x3 (10)
352314	COMPOSITE SQUARE ADJ. ROLL CENTER BUSHINGS - V2 (2)	901305	HEX SCREW SB M3x5 (10)
352323	ALU FRONT LOWER SUSP. HOLDER - FRONT - SQUARE ADJ. ROLL CENTER - V2	901312	HEX SCREW SB M3x12 (10)
352324	ALU FRONT LOWER SUSP. HOLDER - REAR - SQUARE ADJ. ROLL CENTER - V2	901410	HEX SCREW SB M4x10 (10)
352460	PIVOT BALL 5.8 (10)	902318	HEX SCREW SH M3x18 (10)
352470	BALL JOINT 5.8 (8)	903308	HEX SCREW SFH M3x8 (10))
352498	FRONT ANTI-ROLL BAR 2.8MM	909372	SCREW PHILLIPS SS 3.5x22 (10)
353371	SET OF COMPOSITE LOWER ARM SHIMS	909395	SCREW PHILLIPS SS 3.5x45 (10)













### Eccentric bushings have two different offsets from the center.

- Middle position = 0.5 mm or 0.5° from center
- Outer position = 1mm or 1 $^\circ$  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)	
0,0	0	=308	
0,-0	0	=306	
0,-0	0	=310	

ROL	ROLL CENTER			
FF	FR	(mm)		
<u> </u>	0	=1		
<u> </u>	0	=0		
		=-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 1 mm,  $1^{\circ}$  offset. The 0.5mm, 0.5 $^{\circ}$  represents the half change.

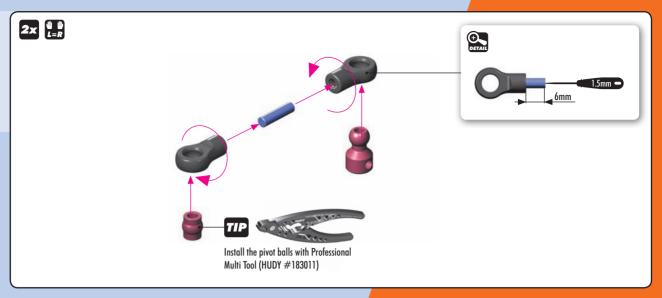
SET-UP BOOK KICK UP ROLL CENTER DOWNSTOP WHEELBASE TRACK WIDTH

# 5. FRONT SUSPENSION

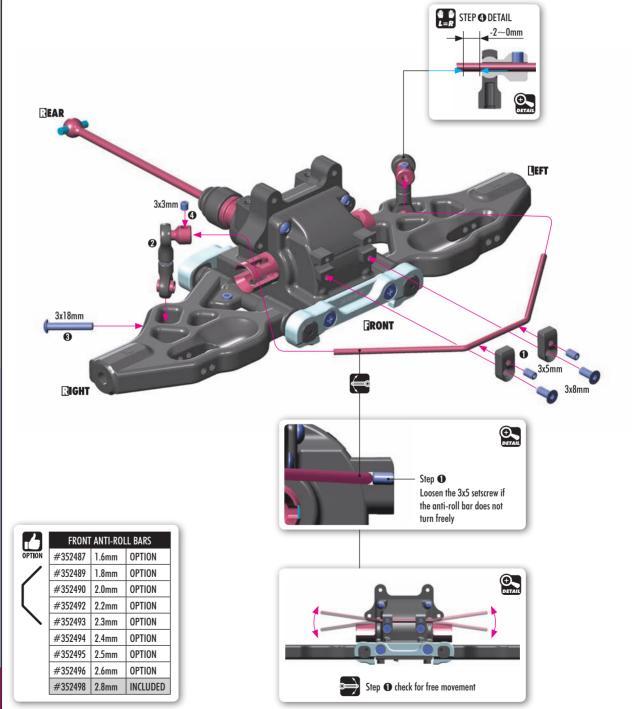






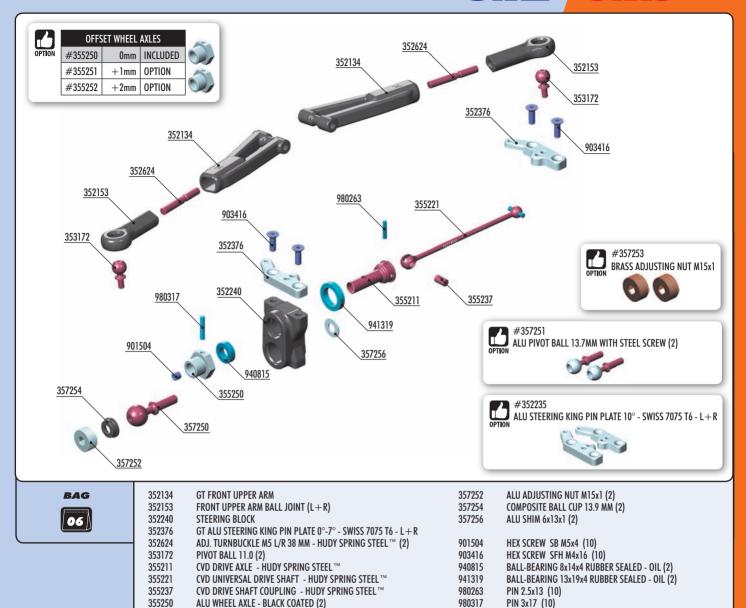


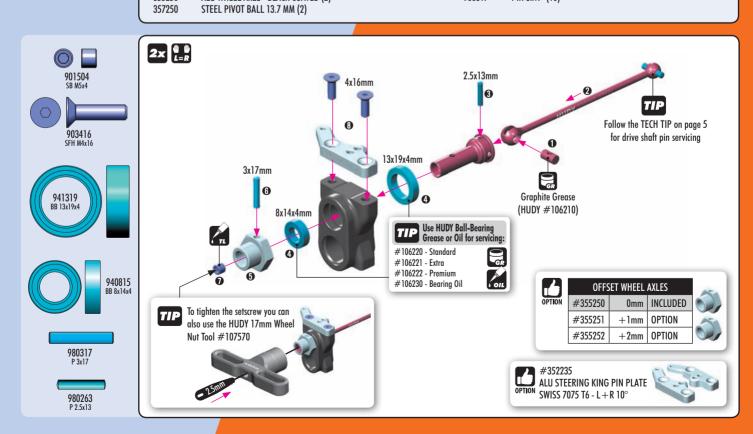




SET-UP BOOK ANTI-ROLL BAR



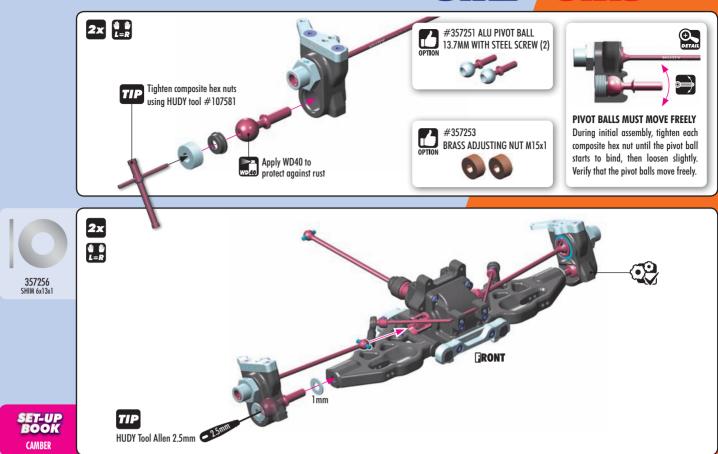


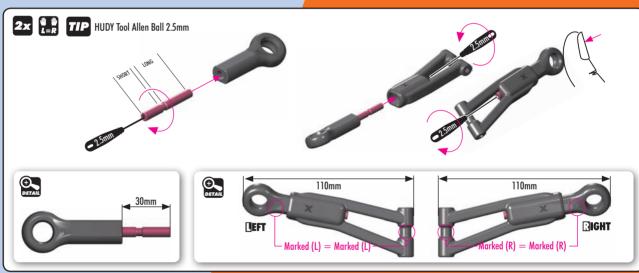


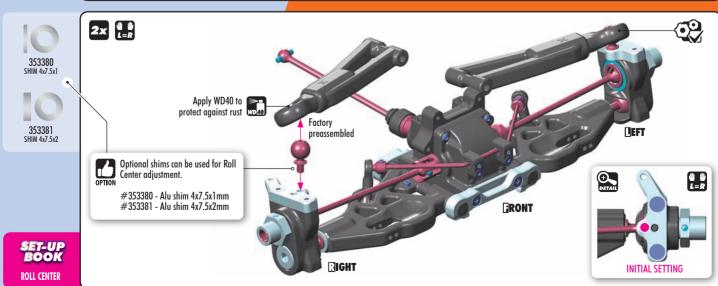
# 6. FRONT SUSPENSION

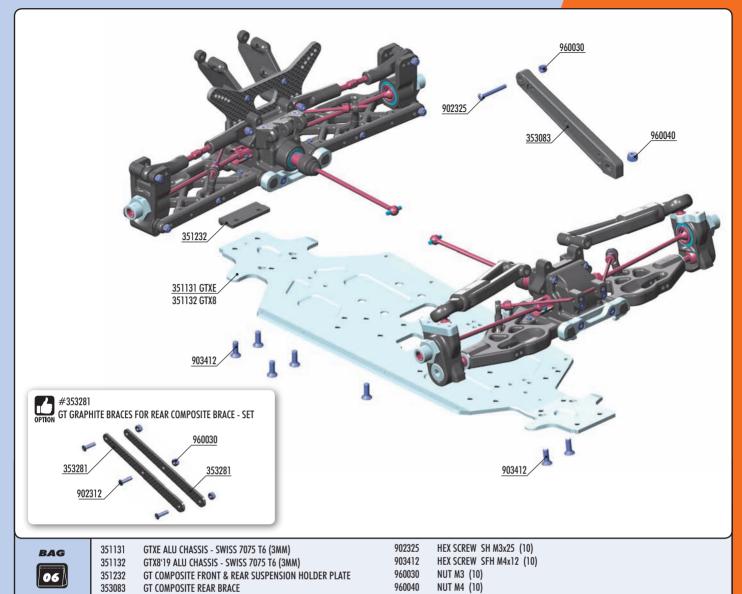


# GTX8

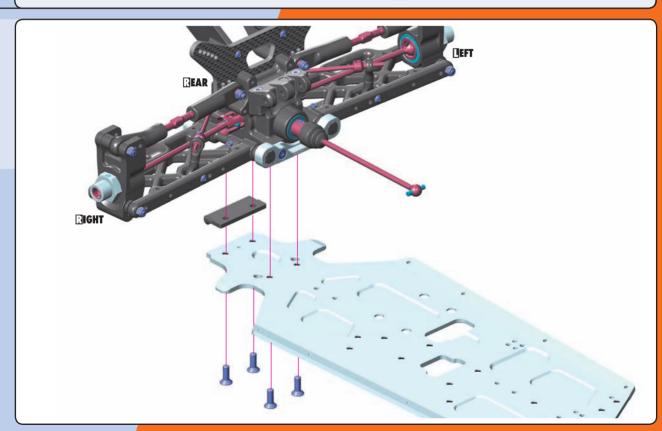












# 6. F&R ASSEMBLY





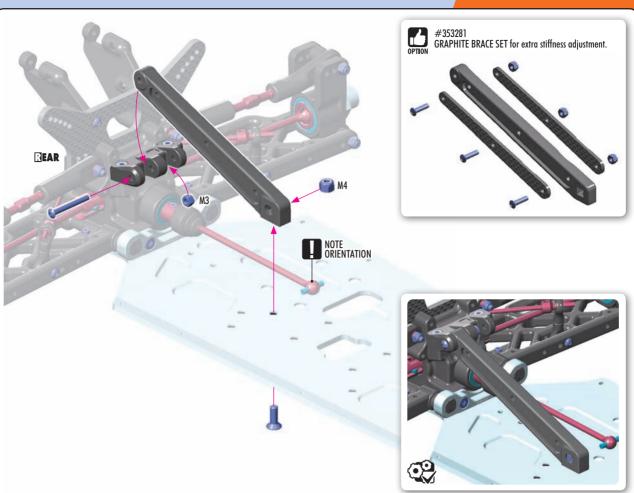




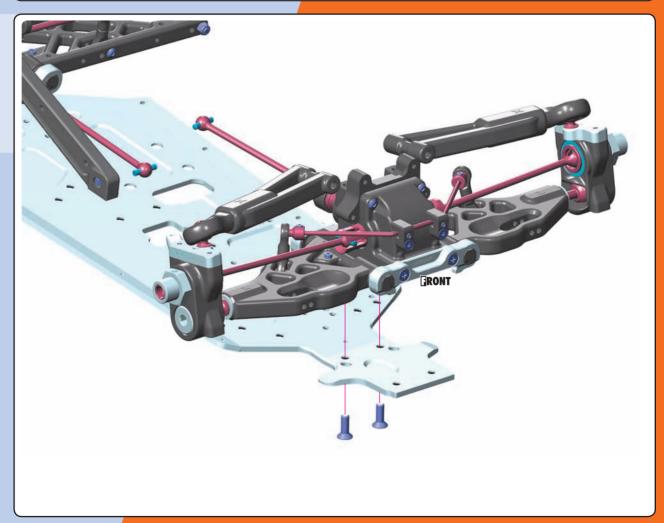


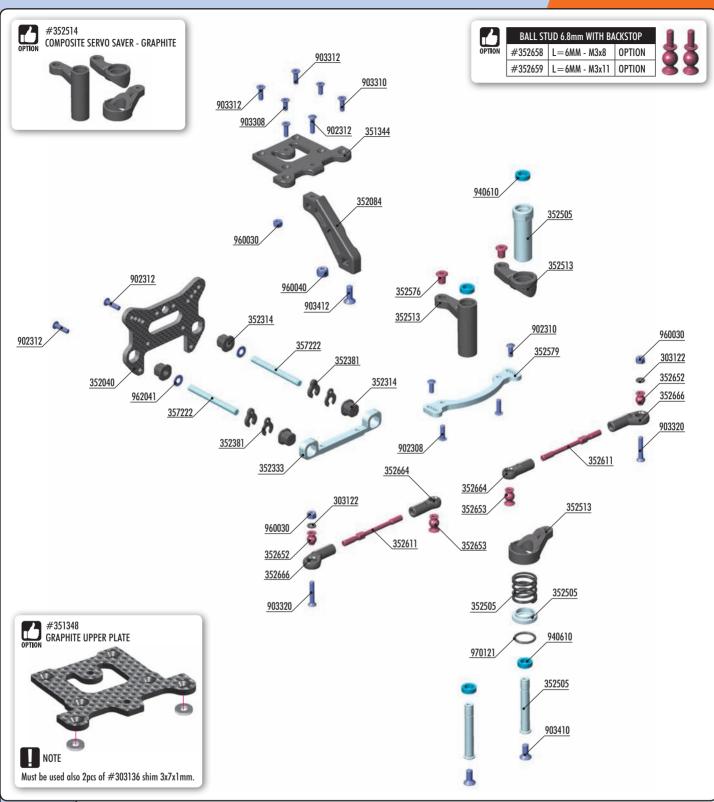












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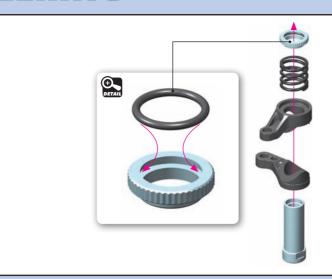
303122	ALU SHIM 3x6x1.0MM (10)	902308	HEX SCREW SH M3x8 (10)
351344	COMPOSITE UPPER PLATE	902310	HEX SCREW SH M3x10 (10)
352040	GT GRAPHITE FRONT SHOCK TOWER - CNC MACHINED 3.5 MM	902312	HEX SCREW SH M3x12 (10)
352084	COMPOSITE FRONT BRACE	903308	HEX SCREW SFH M3x8 (10)
352314	COMPOSITE SQUARE ADJ. ROLL CENTER BUSHINGS - V2 (2)	903310	HEX SCREW SFH M3x10 (10)
352333	ALU FRONT UPPER ARM HOLDER - SWISS 7075 T6 (6MM)	903312	HEX SCREW SFH M3x12 (10)
352381	CASTER CLIPS (2)	903320	HEX SCREW SFH M3x20 (10)
352505	SERVO SAVER COMPLETE SET	903410	HEX SCREW SFH M4x10 (10)
352513	COMPOSITE SERVO SAVER	903412	HEX SCREW SFH M4x12 (10)
352576	STEERING PLATE BUSHING (2)	940610	BALL-BEARING 6x10x3 RUBBER SEALED - OIL (2)
352579	ALU STEERING PLATE - SWISS 7075 T6	960030	NUT M3 (10)
352611	ADJ. TURNBUCKLE M4 L/R 52.5 MM - HUDY SPRING STEEL™ (2)	960040	NUT M4 (10)
352652	BALL STUD 6.8MM (4)	962041	WASHER S 4x8x0.5 (10)
352653	BALL STUD 6.8MM WITH BACKSTOP - M3 (2)	970121	0-RING 12.1 x 1.6 (10)
352664	COMPOSITE STEERING BALL JOINT 6.8MM - V3 (2)		
352666	COMPOSITE RELIEF STEERING BALL JOINT 6.8MM (2)		
357222	FRONT UPPER PIVOT PIN 4x45 (2)		

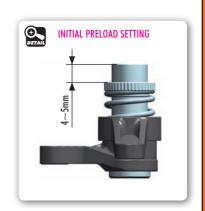
# 7. STEERING





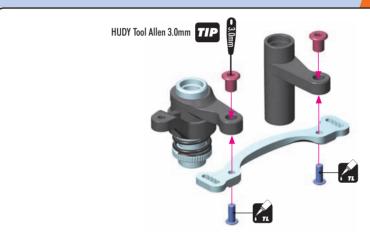


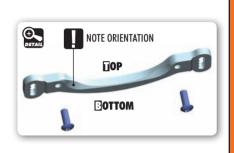




SET-UP BOOK SERVO SAVER

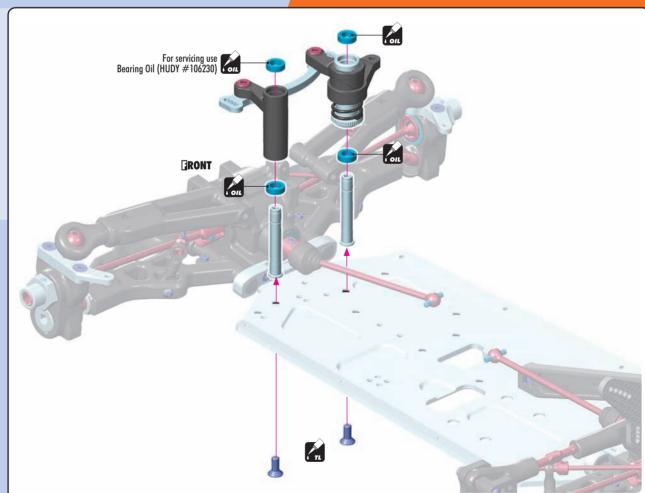




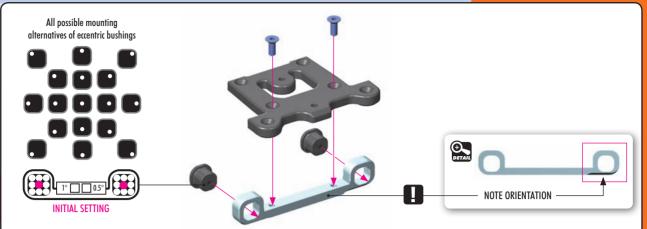




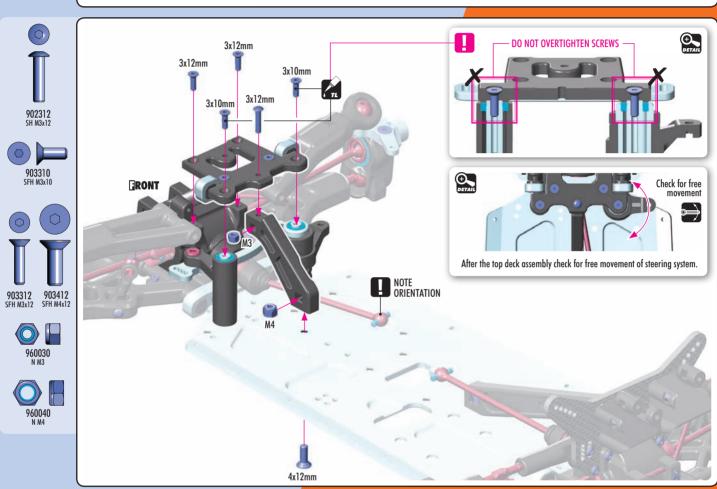


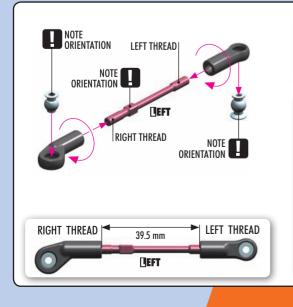






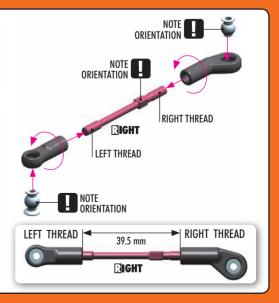
SET-UP BOOK ROLL CENTER







Follow the TECH TIP on page 5

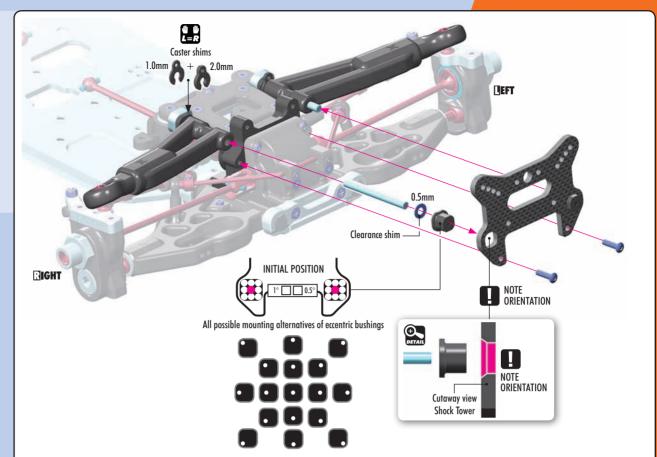


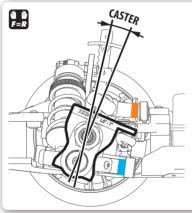






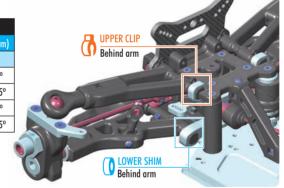






CASTER				
UPPER CLIP	LOWER SHIM (Behind arm)			
(Behind arm)	4mm 2mm 0			
3mm	28°	25°	22°	
2mm	29.5° 26.5°		23.5°	
1mm	31°	28°	25°	
0	32.5° 29.5° 26.5°		26.5°	

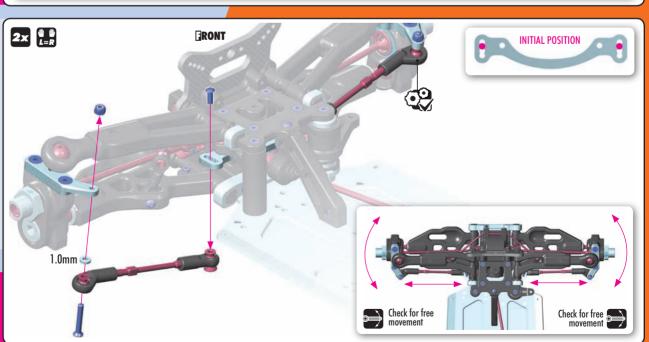
The clearance shim 0.5mm can be installed anywhere and will not affect caster.

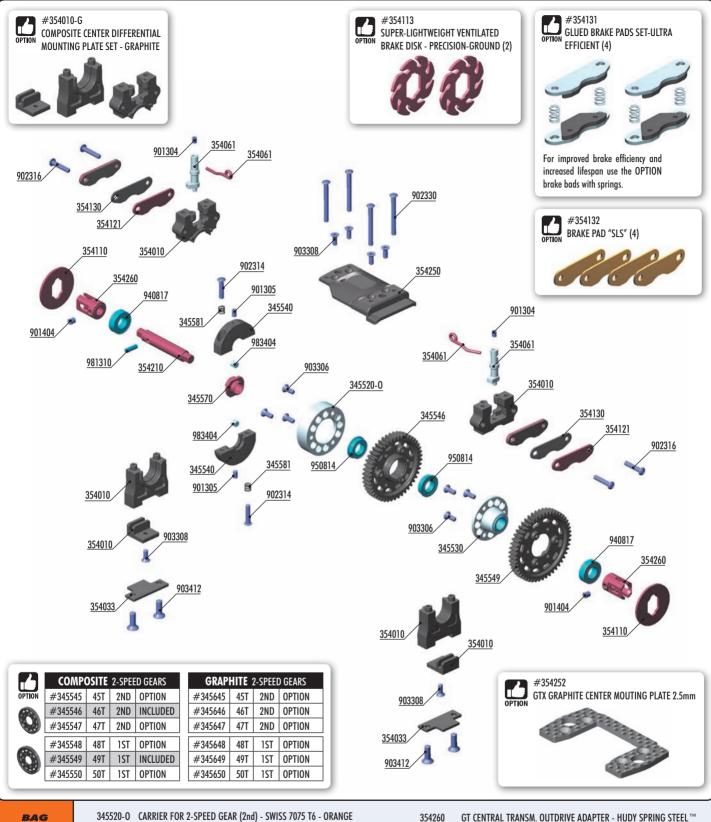


SET-UP BOOK ROLL CENTER CASTER



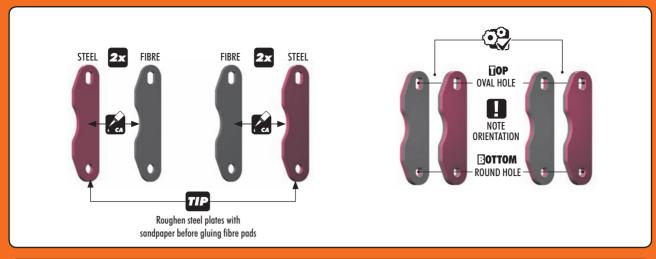
SET-UP BOOK ACKERMANN BUMP STEER TOE-IN



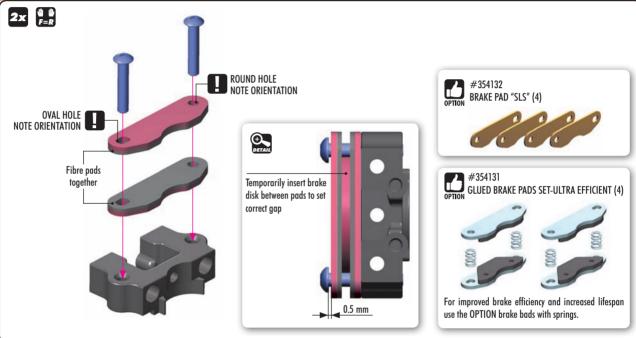




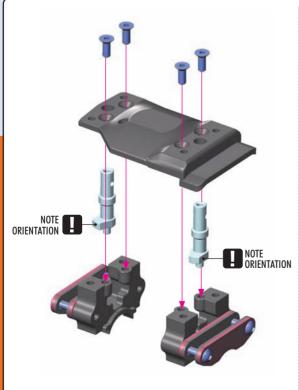
345520-0 345530	CARRIER FOR 2-SPEED GEAR (2nd) - SWISS 7075 T6 - ORANGE ALU DRIVE FLANGE WITH ONE-WAY BEARING - SWISS 7075 T6	354260	GT CENTRAL TRANSM. OUTDRIVE ADAPTER - HUDY SPRING STEEL $^{\mbox{\tiny TM}}$
345540	COMPOSITE 2-SPEED GEAR BOX SHOE - SET	901304	HEX SCREW SB M3x4 (10)
345546	COMPOSITE 2-SPEED GEAR 46T (2nd) - H	901305	HEX SCREW SB M3x5 (10)
345549	COMPOSITE 2-SPEED GEAR 49T (1st)	901404	HEX SCREW SB M4x4 (10)
345570	ADAPTER 2-SPEED	902314	HEX SCREW SH M3x14 (10)
345581	GEAR BOX SPRING C=13.0 (2)	902316	HEX SCREW SH M3x16 (10)
354010	CENTER DIFF MOUNTING PLATE - SET	902330	HEX SCREW SH M3x30 (10)
354033	GT COMPOSITE 2-SPEED HOLDER PLATE (2)	903306	HEX SCREW SFH M3x6 (10)
354061	ALU BRAKE CAM POST & ROD (2+2) HARD COATED	903308	HEX SCREW SFH M3x8 (10)
354110	VENTILATED BRAKE DISK - LASER CUT - PRECISION-GROUND	903412	HEX SCREW SFH M4x12 (10)
354121	STEEL BRAKE PAD - LASER CUT (4)	940817	BALL-BEARING 8x16x5 RUBBER SEALED - OIL (2)
354130	BRAKE PAD FIBER (4)	950814	BALL-BEARING 8x14x4 FLANGED - STEEL SEALED - OIL (2)
354210	GT 2-SPEED SHAFT - HUDY SPRING STEEL™	981310	PIN 3x10 (10)
354250	GT COMPOSITE 2-SPEED UPPER PLATE	983404	ROLLER PIN 4x4 MM (2)

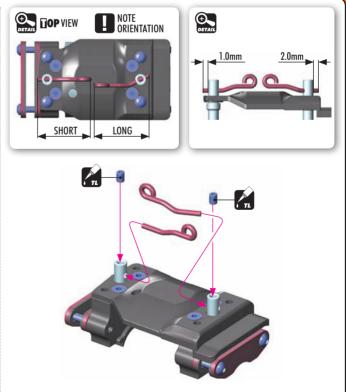




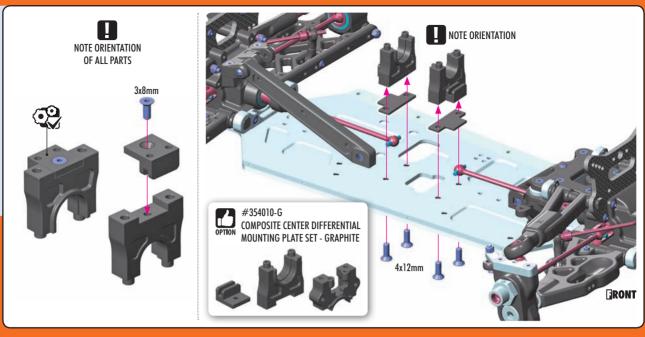






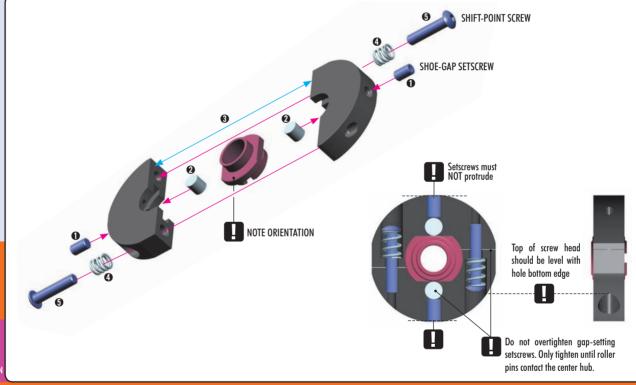








983404 RP 4x4

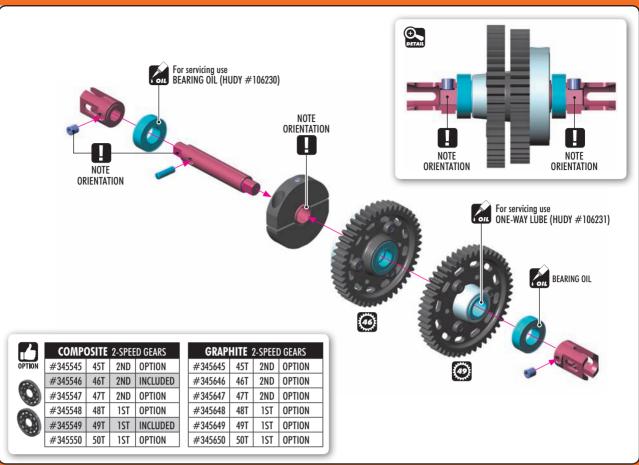




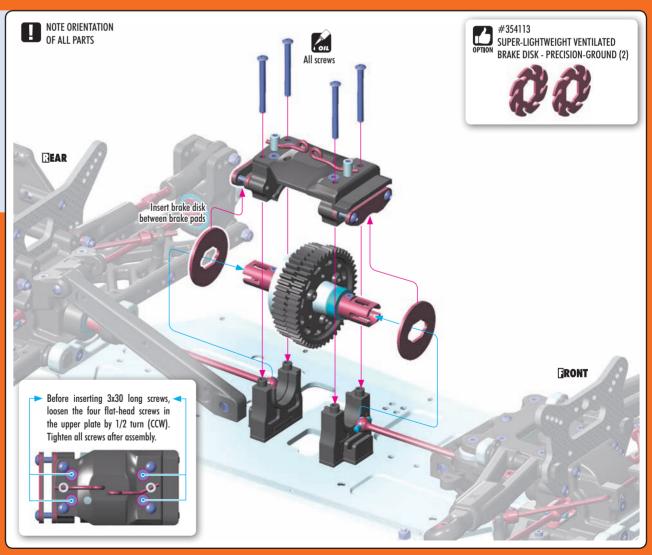






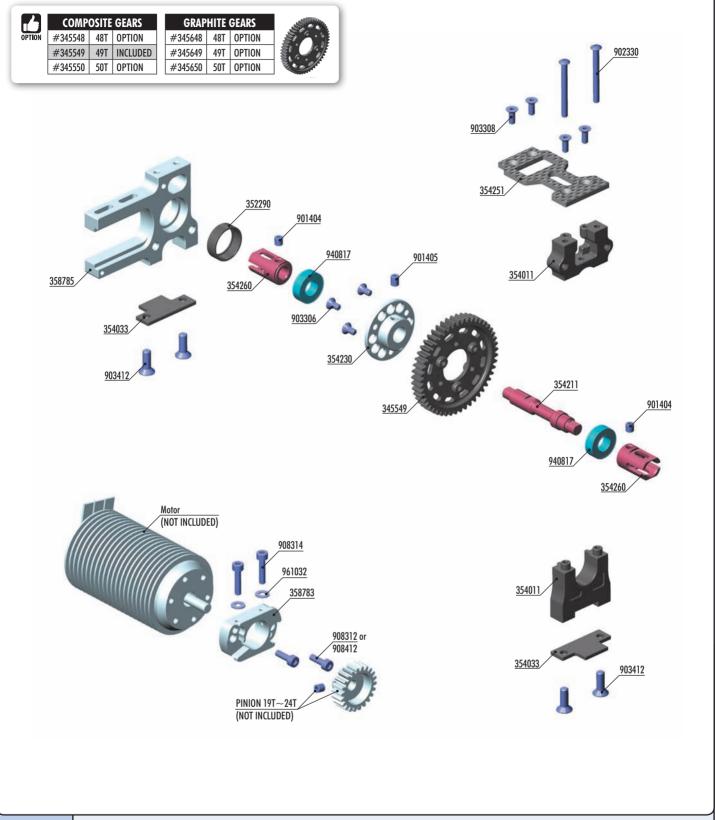






# 8. CENTER SOLID SHAFT & MOTOR







901405

HEX SCREW SB M4x5 (10)

0.455.40	COMPOSITE O CREED CEAD ACT /1 ./	000000	HEA CCDEM CH M3"30 \10/
345549	COMPOSITE 2-SPEED GEAR 49T (1st)	902330	HEX SCREW SH M3x30 (10)
352290	COMPOSITE BUSHING FOR ALU STEERING BLOCK (4)	903306	HEX SCREW SFH M3x6 (10)
354011	CENTER DIFF MOUNTING PLATE - SET	903308	HEX SCREW SFH M3x8 (10)
354033	GT COMPOSITE 2-SPEED HOLDER PLATE (2)	903412	HEX SCREW SFH M4x12 (10)
354211	GTE SOLID SHAFT - HUDY SPRING STEEL™	908312	HEX SCREW SOCKET HEAD CAP M3x12 (10)
354230	GTE ALU CENTER SPUR GEAR COLLAR	908314	HEX SCREW SOCKET HEAD CAP M3x14 (10)
354251	GTE GRAPHITE CENTER UPPER PLATE	908412	HEX SCREW SOCKET HEAD CAP M4x12 (10)
354260	GT CENTRAL TRANSM. OUTDRIVE ADAPTER - HUDY SPRING STEEL™	940817	BALL-BEARING 8x16x5 RUBBER SEALED - OIL (2)
358783	ALU MOTOR MOUNT PLATE	961032	WASHER S 3.2 (10)
358785	GTE ALU MOTOR MOUNT		
901404	HEX SCREW SB M4x4 (10)		

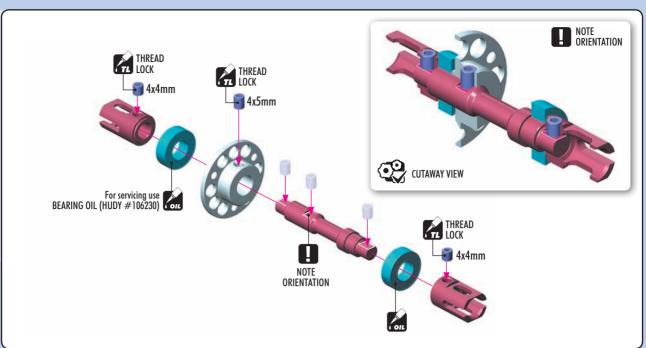
# 8. CENTER SOLID SHAFT & MOTOR



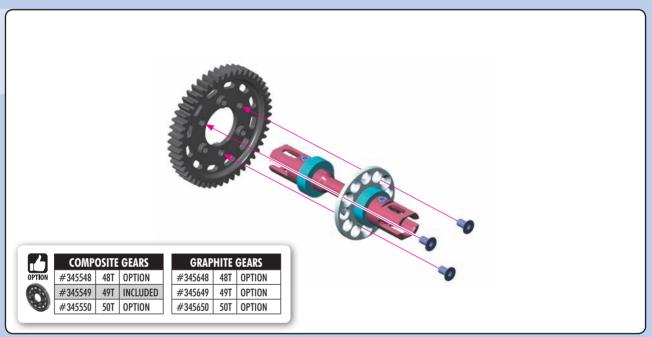


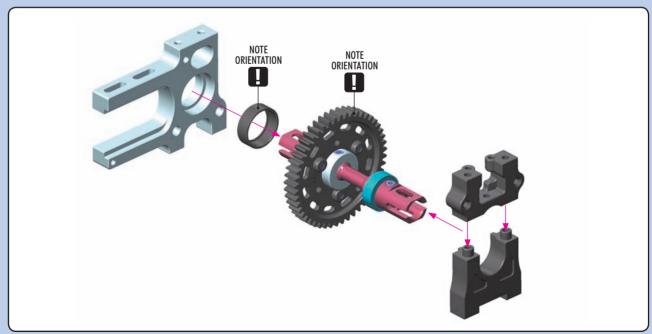








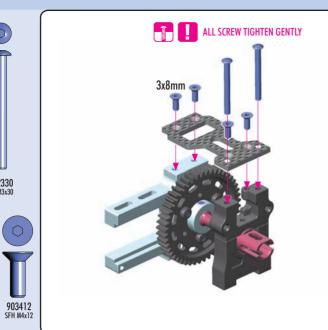


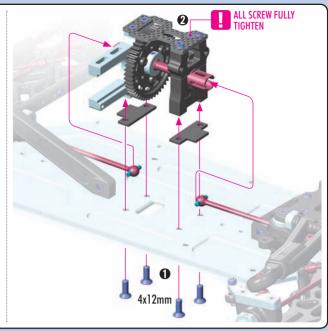


# 8. CENTER SOLID SHAFT & MOTOR





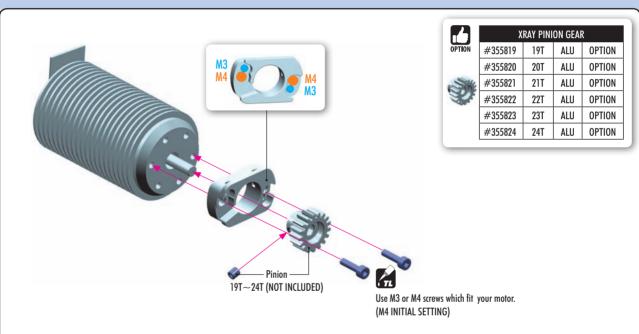






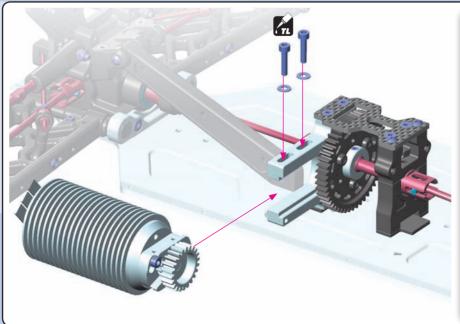
903308 SFH M3x8











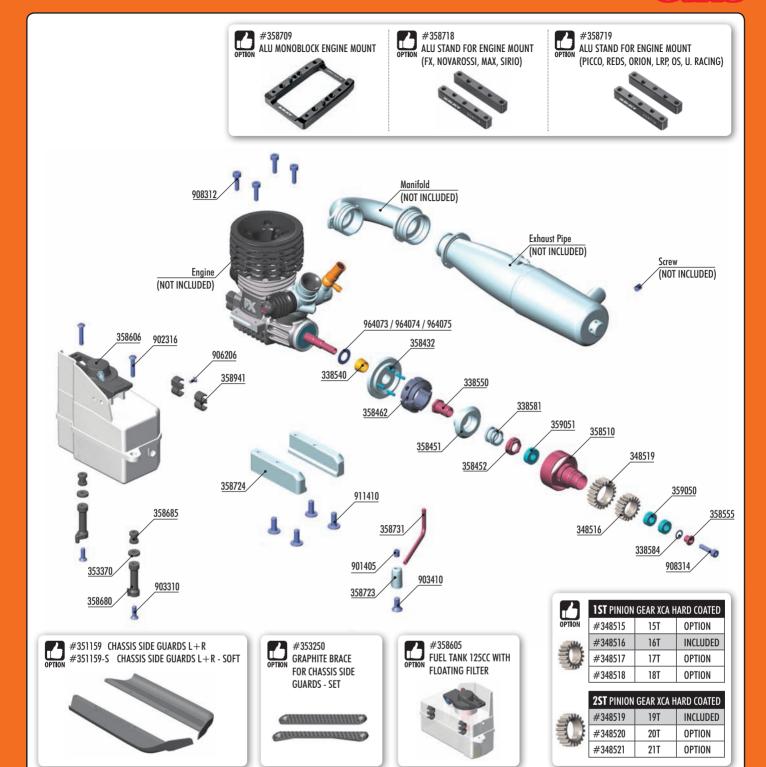


### GEAR MESH ADJUSTMENT

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.



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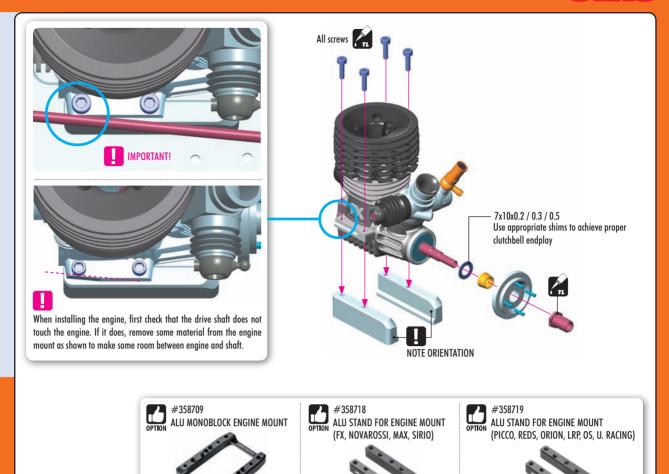
338540	FLYWHEEL COLLAR 7MM	358731	EXHAUST MOUNTING WIRE - LONG
338550	FLYWHEEL NUT - HUDY SPRING STEEL™	358941	COMPOSITE TUBING HOLDER FOR FUEL TANK (2)
338581	CLUTCH SPRING - MEDIUM - V2	359050	BALL-BEARING 5x10x4 STEEL SEALED - GREASE (2)
338584	SHIM 5x7x0.2 (10)	359051	BALL-BEARING 5x12x4 STEEL SEALED - GREASE (2)
348516	XCA ALU 7075 T6 HARD COATED PINION GEAR - 16T (1ST)		
348519	XCA ALU 7075 T6 HARD COATED PINION GEAR - 19T (2ND)	901405	HEX SCREW SB M4x5 (10)
353370	SET OF COMPOSITE REAR HUB CARRIER SHIMS	902316	HEX SCREW SH M3x16 (10)
358432	GT ALU 4-SHOE FLYWHEEL	903310	HEX SCREW SFH M3x10 (10)
358451	GT ALU 4-SHOE CLUTCH PRESSURE SLEEVE	903410	HEX SCREW SFH M4x10 (10)
358452	GT 4-SHOE FLYWHEEL NUT	906206	SCREW PHILLIPS FH 2.2x6 (10)
358462	GT COMPOSITE CLUTCH 4-SHOE - GRAPHITE	908312	HEX SCREW (CAP HEAD) 3x12 (10)
358510	GT 2-SPEED CLUTCH BELL - LIGHTWEIGHT	908314	HEX SCREW (CAP HEAD) 3x14 (10)
358555	GT CLUTCH BELL BUSHING - HUDY SPRING STEEL™	911410	HEX SCREW FLANGED SH M4x10 (10)
358606	FUEL TANK 150CC WITH FLOATING FILTER	964073	WASHER S 7x10x0.2 (10)
358680	FUEL TANK MOUNTING POST (2)	964074	WASHER S 7x10x0.3 (10)
358685	FUEL TANK MOUNTING GROMMET (4)	964075	WASHER S 7x10x0.5 (10)
358723	EXHAUST WIRE MOUNT SET		
358724	ALU ENGINE MOUNT - CNC MACHINED $(L+R)$		

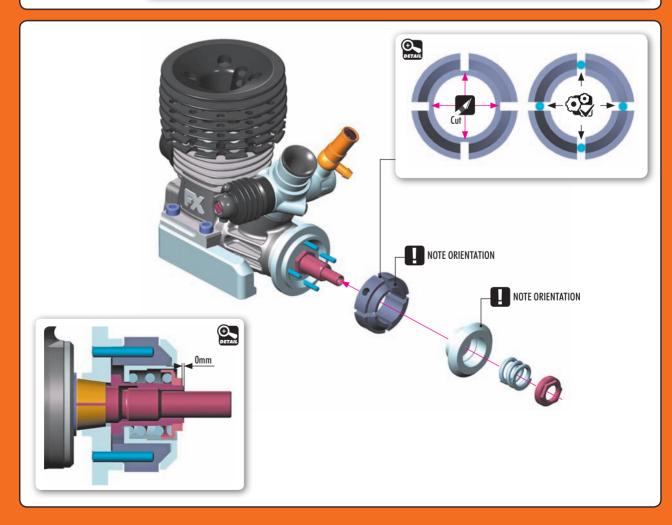


964073 5 7x10x0.2

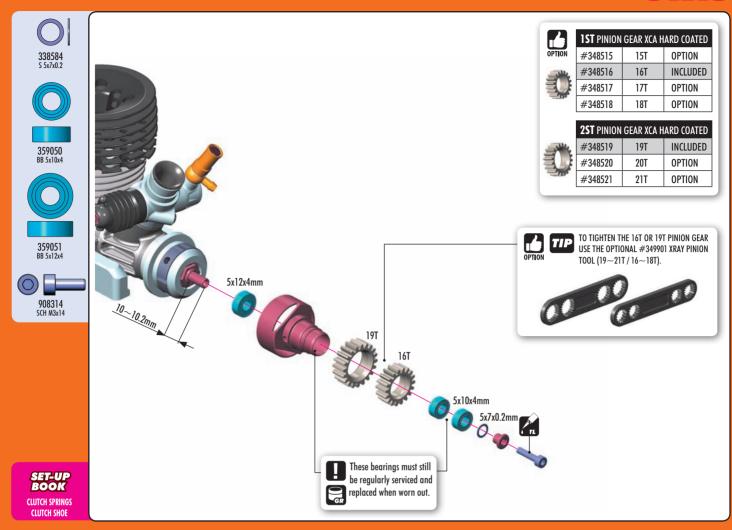


964075 \$ 7x10x0.5

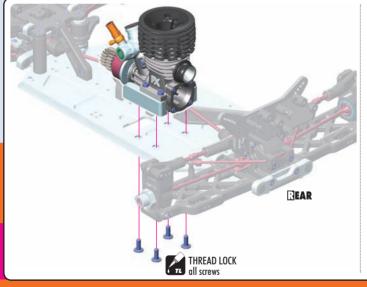










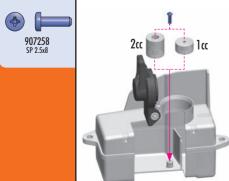




Adjust gear mesh so there is minimal play between the gears.

Too tight gear mesh will put excessive strain on all parts and damage the parts. Too loose gear mesh may result in stripped gears.





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**

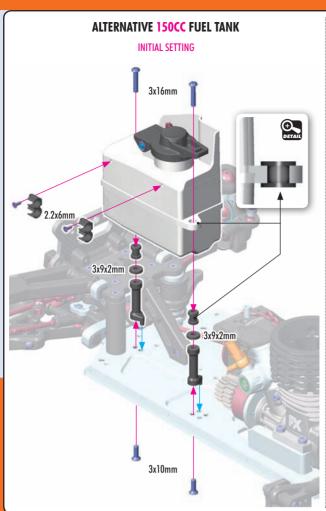
The smaller insert decreases the fuel tank volume by 1cc.

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.

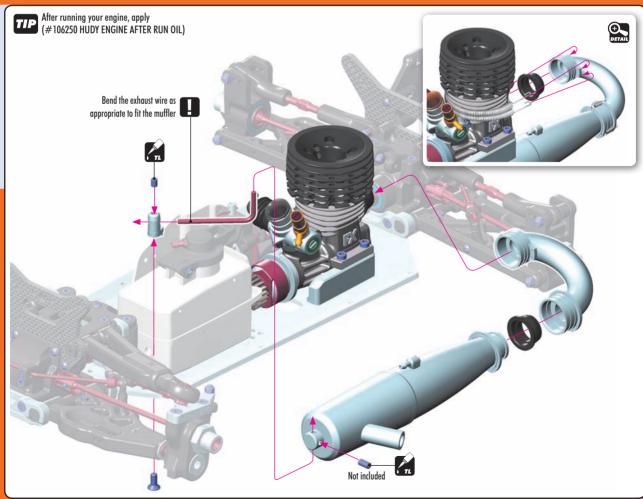




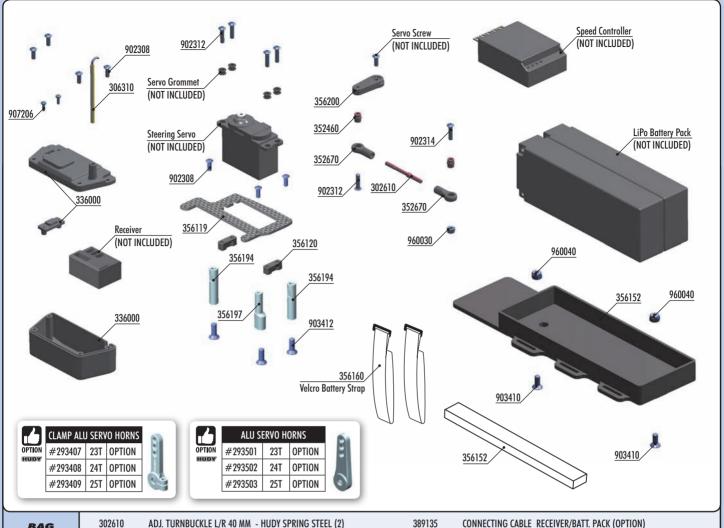












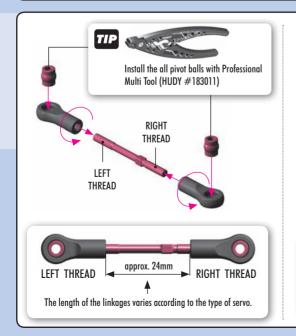


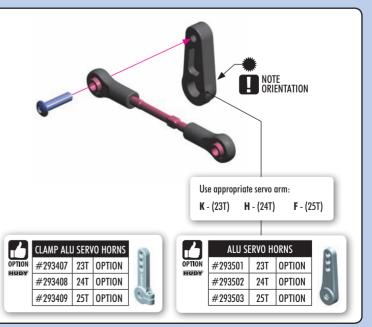
ADJ. TURNBUCKLE L/R 40 MM - HUDY SPRING STEEL (2) 302610 ANTENNA TUBE (2) 306310 COMPOSITE RECEIVER CASE - V2 336000 336060 RECEIVER SWITCH - SET (OPTION) **PIVOT BALL 5.8 (10)** 352460 SERVO BALL JOINT 5.8MM (4) 352670 356119 **GRAPHITE RECEIVER CASE TOP PLATE** 356120 STEERING SERVO MOUNT - SET GTX8E'16 COMPOSITE BATTERY PLATE 356152 VELCRO BATTERY STRAP 20x300MM (2) 356160 ALU MOUNT FOR RECEIVER BOX 356194 ALU ECCENTRIC MOUNT FOR RECEIVER BOX 356197 356200 BRAKE/THROTTLE ARMS & STEERING SERVO ARMS - SET

CONNECTING CABLE RECEIVER/BATT. PACK (OPTION)

HEX SCREW SH M3x8 (10) HEX SCREW SH M3x12 (10) HEX SCREW SH M3x14 (10) 902308 902312 902314 HEX SCREW SFH M4x10 (10) 903410 903412 HEX SCREW SFH M4x12 (10) 907206 SCREW PHILLIPS 2x6 (10) 960030 NUT M3 (10) 960040 NUT M4 (10)

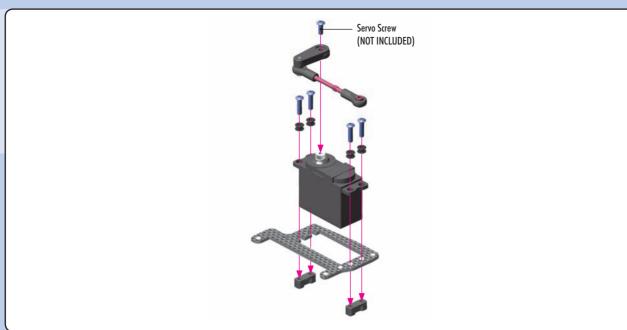




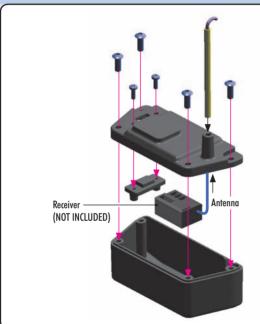










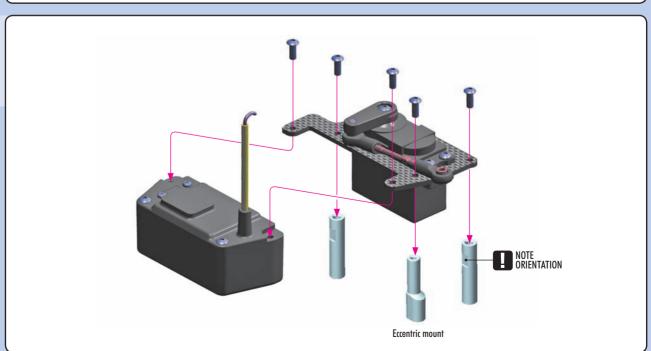






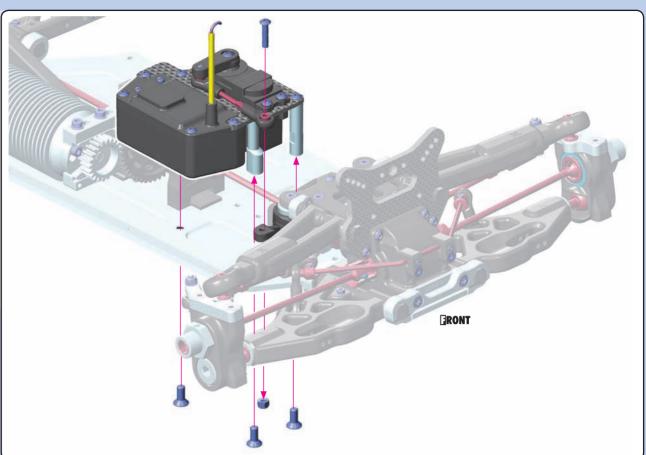
If the receiver box has 2 different-size openings for cable entry (narrow and wider), cut away the tab for the appropriate opening to allow the cables to fit properly.





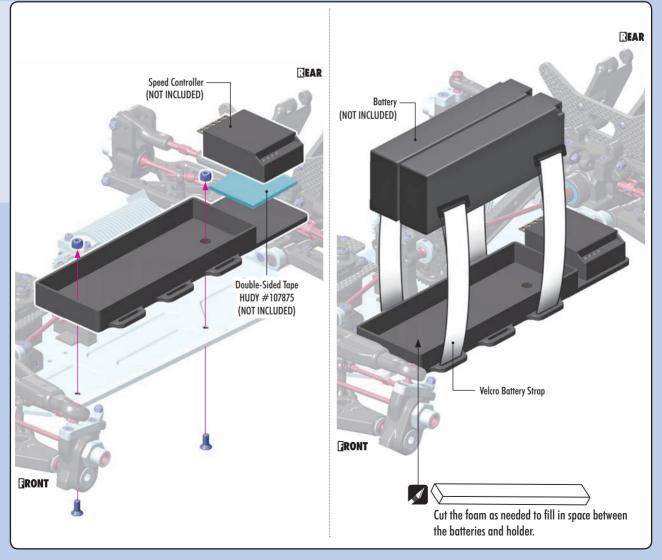


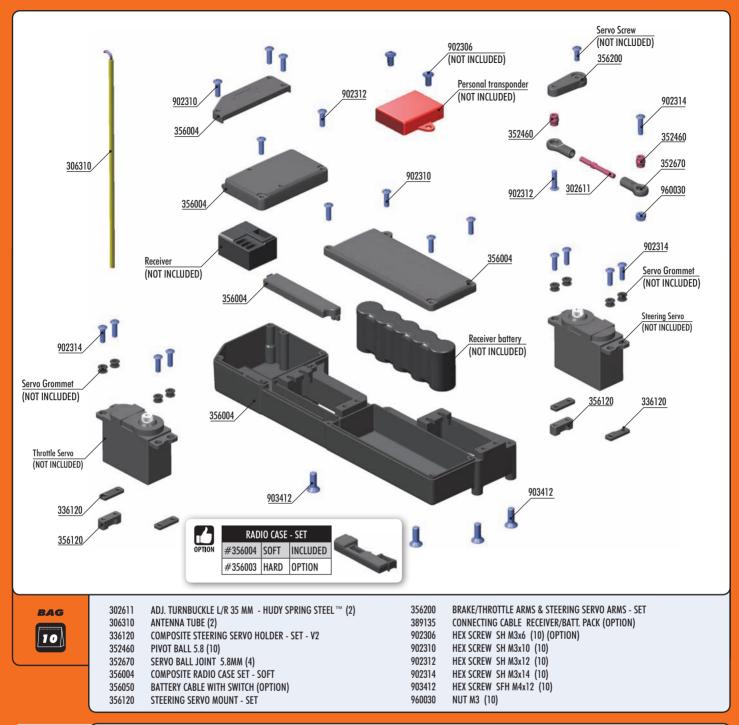


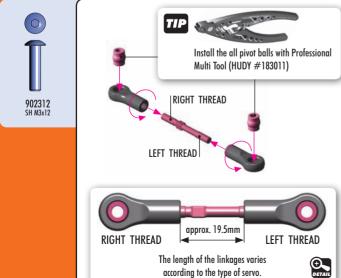






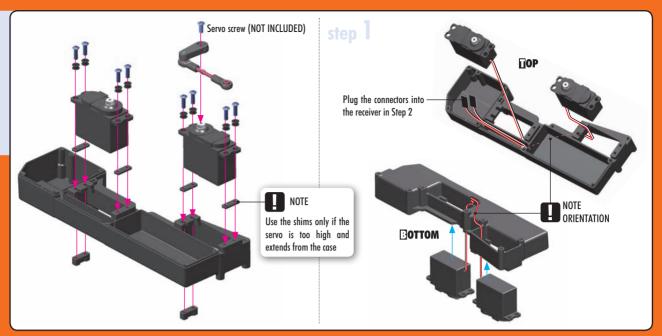




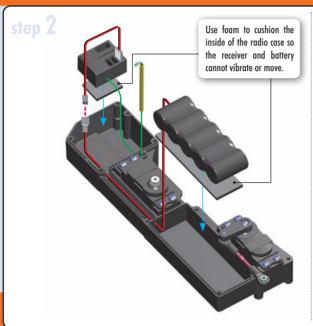


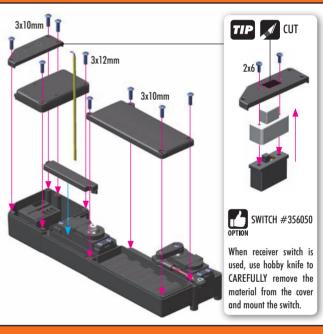
















903412 SFH M4x12



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

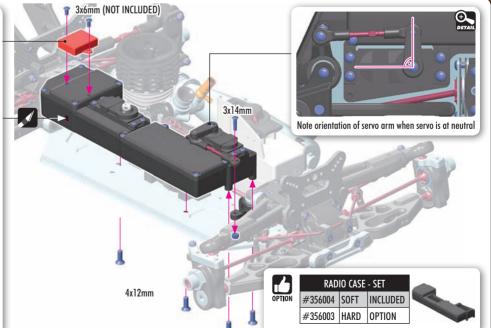
# ALTERNATIVE 1

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

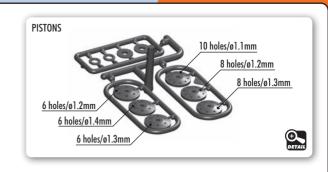
Place the transponder inside of the radio box by using double-sided tape.

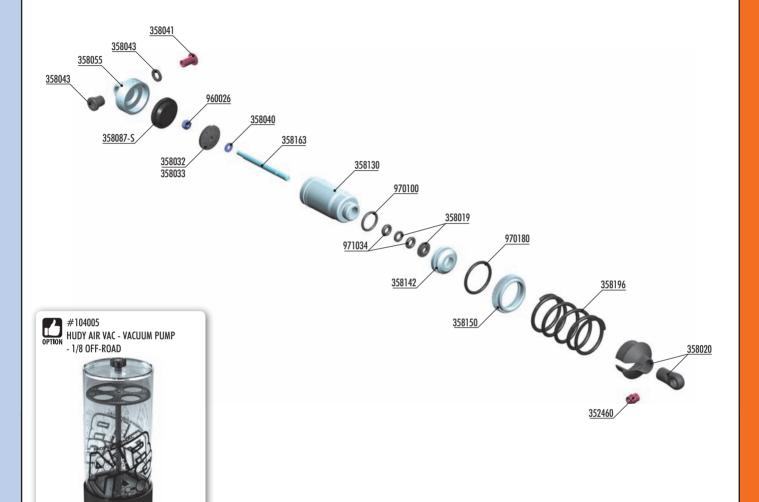














#358027 PISTON 5-HOLE (1.5mm) & 2-HOLE (1.0mm) (4) #358028 PISTON 6-HOLE (1.3mm) & 2-HOLE (1.1mm) (4) #308029 PISTON 6-HOLE (1.4mm) & 2-HOLE (1.1mm) (4) #358030 PISTON 8-HOLE (1.2mm) & 2-HOLE (1.2mm) (4) #358031 PISTON 8-HOLE (1.3mm) & 2-HOLE (1.2mm) (4)



	SHOCK RUBBER MEMBRANE CELL			
OPTION	#358087-S	SOFT	INCLUDED	
	#358087-M	MEDIUM	OPTION	
	// 030007 III	MEDIOM	01 11011	



BAG	
	,

358142

352460 PIVOT BALL 5.8 - V3 (10) 358019 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 COMPOSITE SHOCK 6-HOLE PISTON SET (1.2; 1.3; 1.4MM) - DELRIN - V2 358033 358040 HARDENED SHOCK SHIMS (4) 358041 STEEL SHOCK BUSHING (2) 358043 COMPOSITE SHOCK BUSHING & SHIM (2+2) 358055 ALU SHOCK CAP NUT - BLACK COATED (2) 358087-S SHOCK RUBBER MEMBRANE CELL - SOFT (4) GT ALU SHOCK BODY - HARD COATED (2) 358130

ALU SHOCK BODY NUT FOR SHOCK BOOT (2)

358150 ALU SHOCK BODY ADJ. NUT (2)
358163 GT SHOCK SHAFT (2)
358196 XRAY GT SPRING - 3 DOTS (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)

# 11. SHOCK ABSORBERS

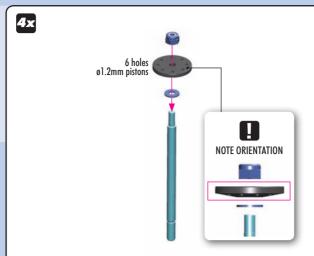
















# DO NOT OVERTIGHTEN

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.

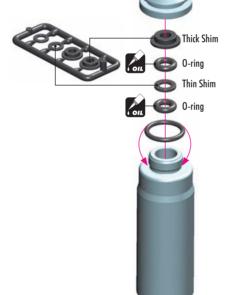




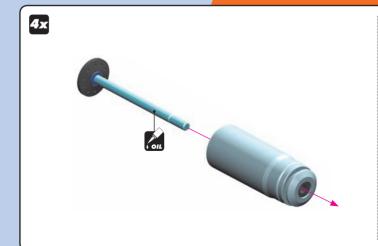


4x

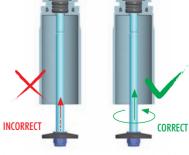
There are two different thickness shims, use them as shown. Use the same procedure when building both front and rear shocks.







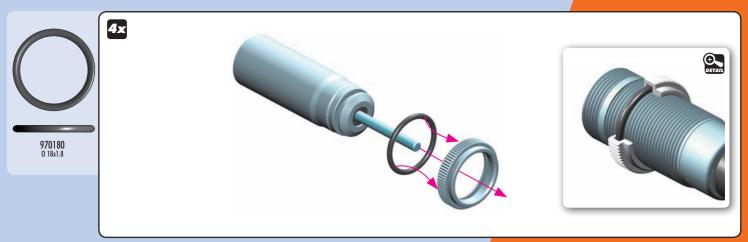


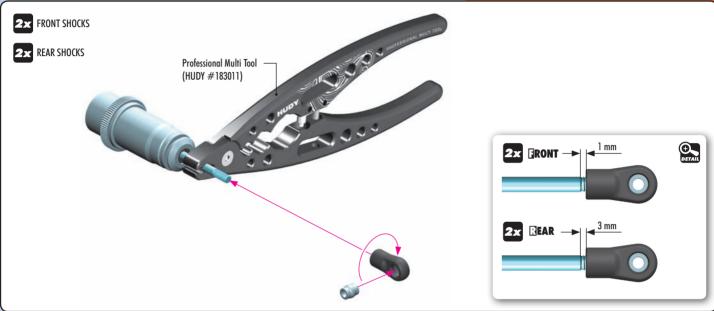


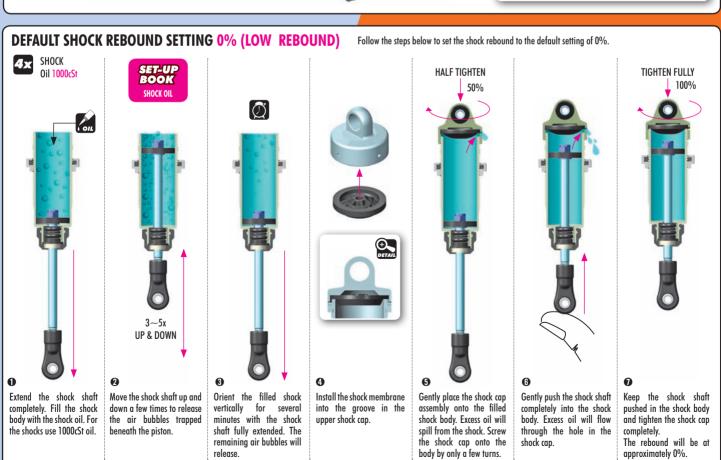
Do not push the shock rod straight through the lower shock body assembly; O-ring damage may result.

Twist the shock rod through the lower shock body assembly.







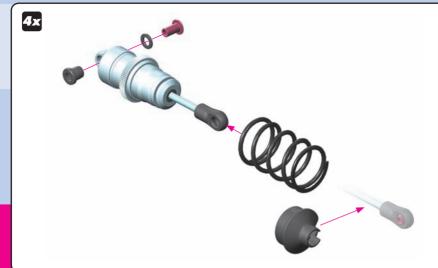


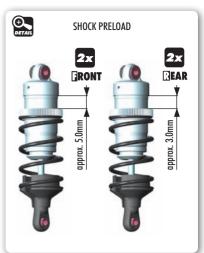
release.

approximately 0%.









### 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)



Extend the shock shaft completely and remove the shock cap.



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



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



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



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



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)





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



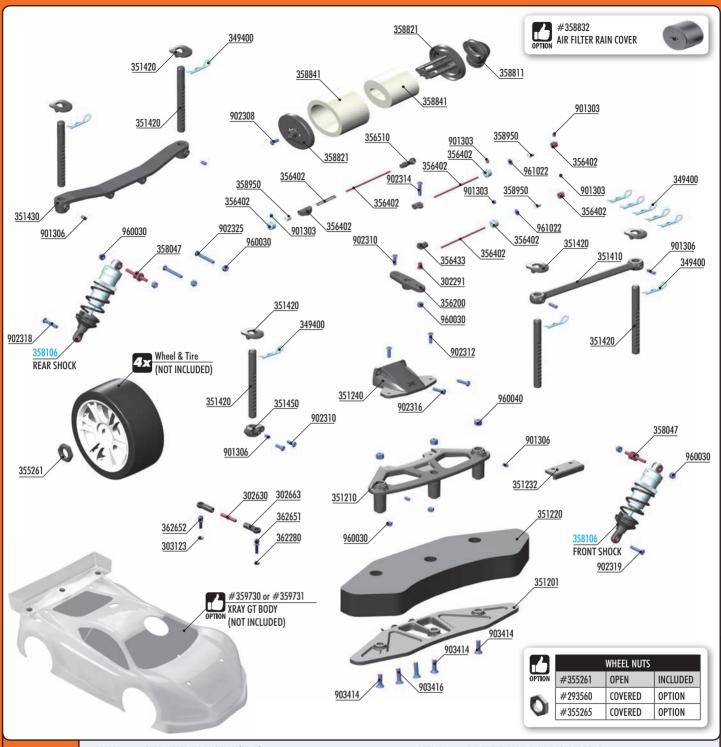
Orient the filled shock vertically for several minutes with the shock shaft fully extended. The remaining air bubbles will release.



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%.

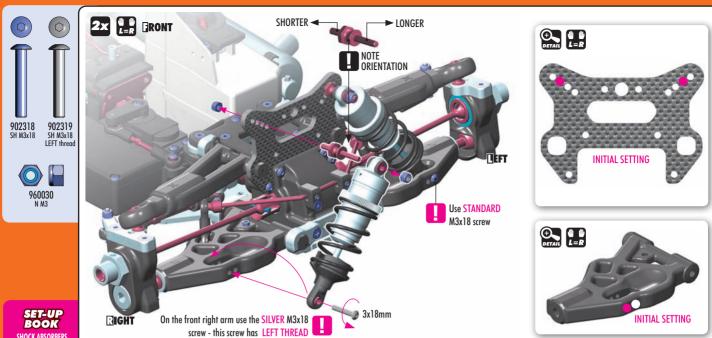


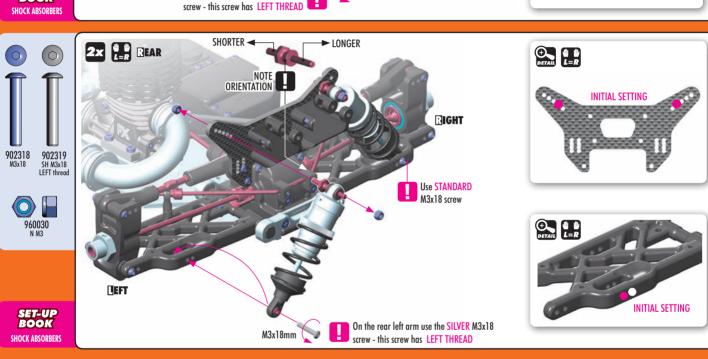


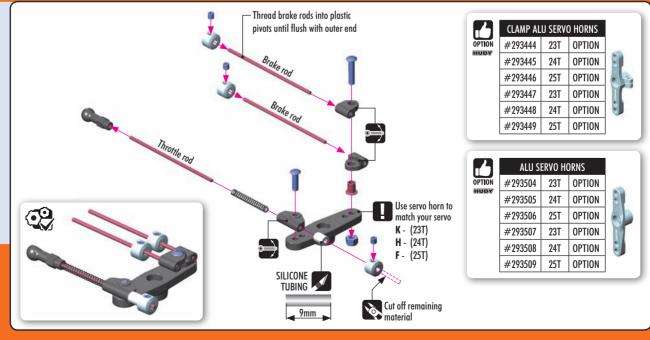




302291	STEEL STEERING BUSHING (2+2)	358841	AIR FILTER FOAM & OIL - LOW PROFILE
302630	ADJ. TURNBUCKLE L/R 20 MM - HUDY SPRING STEEL™ (2)	358950	SILICONE TUBING 1M (2.4 x 5.5MM)
302663	COMPOSITE BALL JOINT 4.9MM - OPEN - V2 (8)	362280	ALU CONICAL SHIM 3x6x2.0MM (10)
303123	ALU SHIM 3x6x2.0MM (10)	362651	BALL END 4.9MM WITH THREAD 8MM (2)
349400	BODY CLIP (10)	362652	BALL END 4.9MM WITH THREAD 10MM (2)
351201	GT COMPOSITE FRONT BUMPER		
351210	GT COMPOSITE FRONT UPPER BUMPER	901303	HEX SCREW SB M3x3 (10)
351220	GT FOAM BUMPER	901306	HEX SCREW SB M3x6 (10)
351232	GT COMPOSITE FRONT & REAR SUSPENSION HOLDER PLATE	902308	HEX SCREW SH M3x8 (10)
351240	GT COMPOSITE FRONT UPPER BUMPER BRACE	902310	HEX SCREW SH M3x10 (10)
351410	GT COMPOSITE FRONT HOLDER FOR BODY POSTS	902312	HEX SCREW SH M3x12 (10)
351420	GT COMPOSITE BODY POSTS (2)	902314	HEX SCREW SH M3x14 (10)
351430	GT COMPOSITE REAR HOLDER FOR BODY POSTS	902316	HEX SCREW SH M3x16 (10)
351450	GT COMPOSITE CENTER BODY POST HOLDER	902318	HEX SCREW SH M3x18 (10)
355261	WHEEL NUT - RIBBED - HARD COATED (2)	902319	HEX SCREW SH M3x18 - LEFT THREAD (10)
356200	BRAKE/THROTTLE ARMS & SERVO ARMS - SET	902325	HEX SCREW SH M3x25 (10)
356402	XB8 BRAKE/THROTTLE SYSTEM - SET	903414	HEX SCREW SFH M4x14 (10)
356433	GT COMPOSITE BRAKE WIRE HOLDER (2)	903416	HEX SCREW SFH M4x16 (10)
356510	CLOSED BALL JOINT 3.9 (4)	960030	NUT M3 (10)
358047	STEEL SCREW SHOCK PIVOT BALL WITH HEX (2)	960040	NUT M4 (10)
358811	AIR FILTER ELBOW - LOW PROFILE	961022	WASHER S 2.2 (10)
358821	AIR FILTER BODY & CAP - LOW PROFILE	358106	GTX8 SHOCK ABSORBERS (2)
030021	THE PERSON WITH CONTINUING	330100	OTAU SHOCK ADSORDERS (2)







901303 SB M3x3

902314 SH M3x14

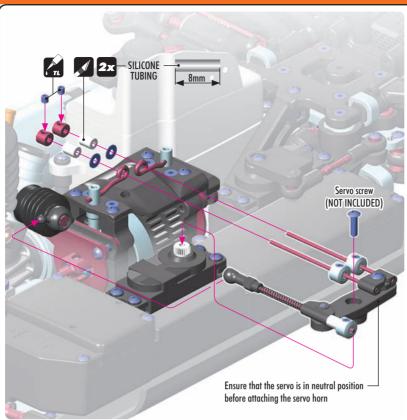
960030



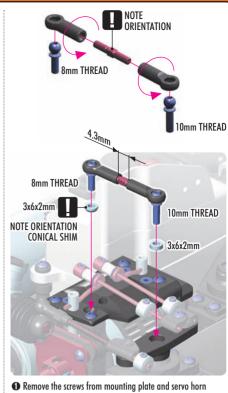




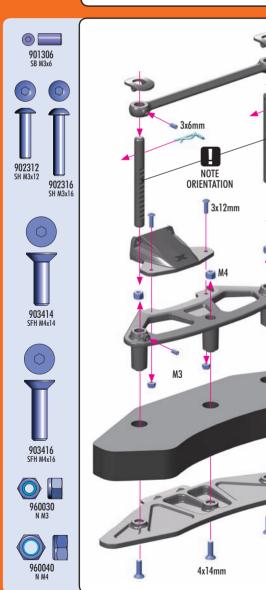


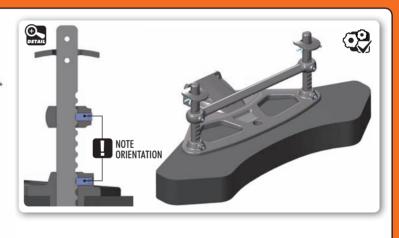


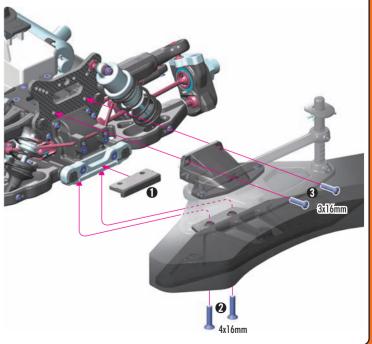
3x6mm



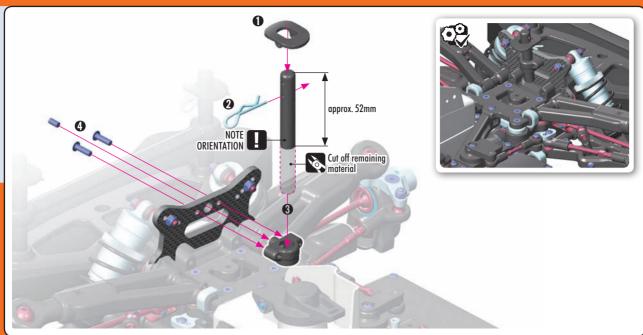
- 2 Install the servo brace
- 3 Check free move



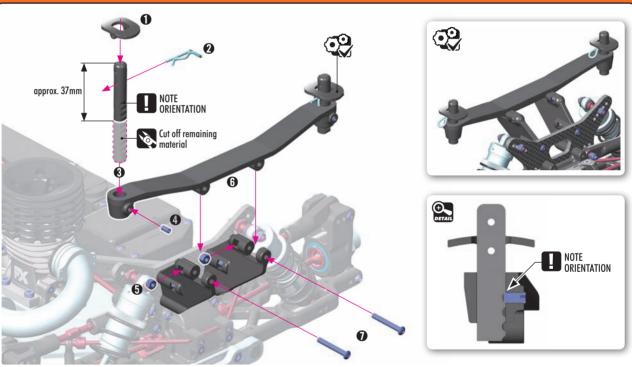


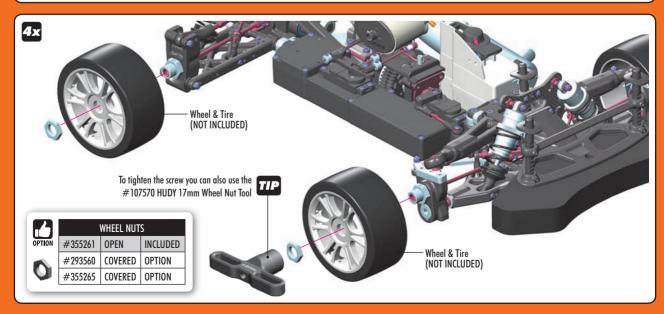




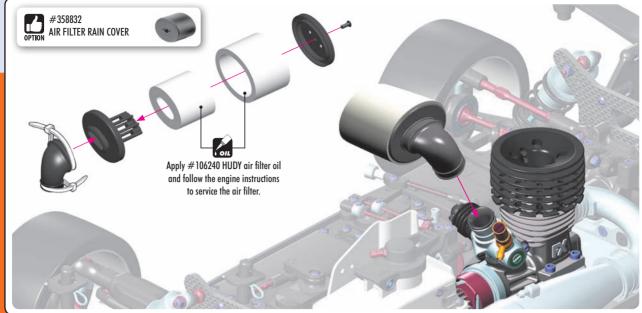


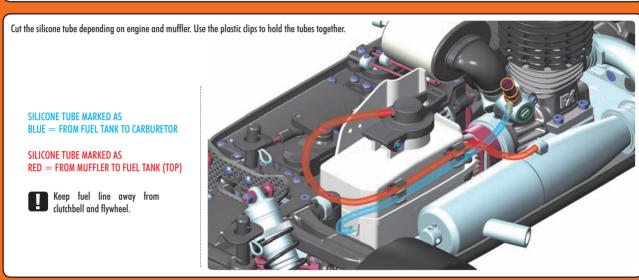


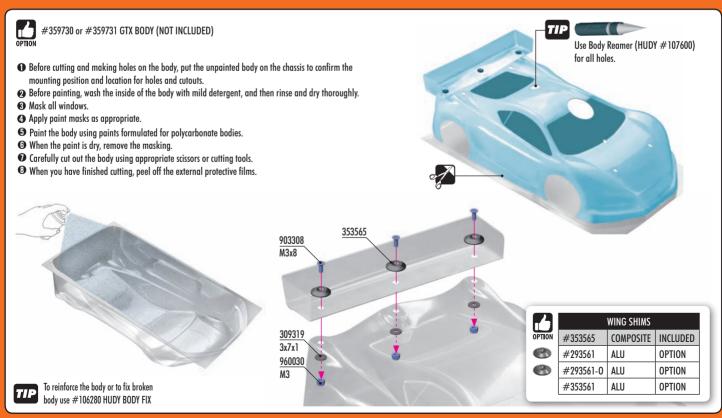




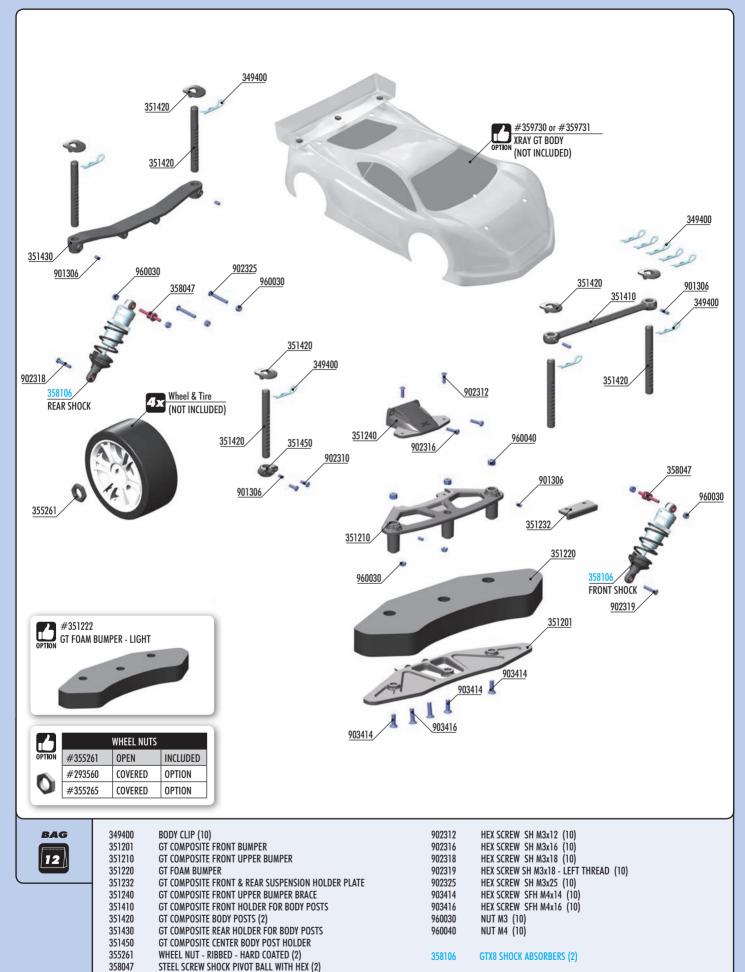












901306

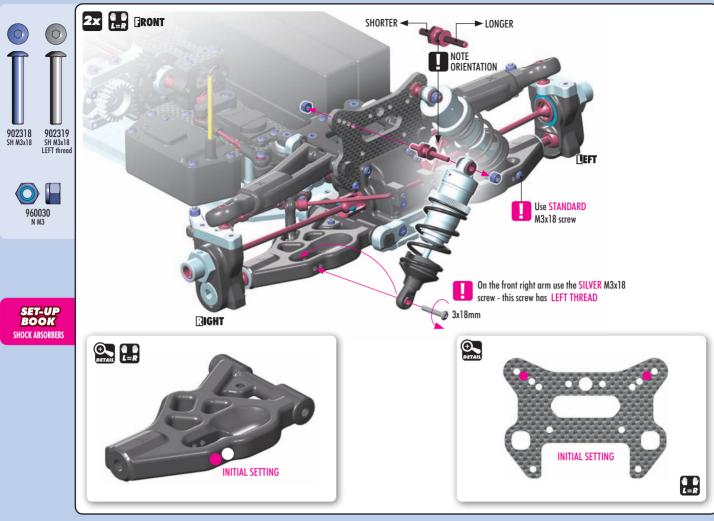
902310

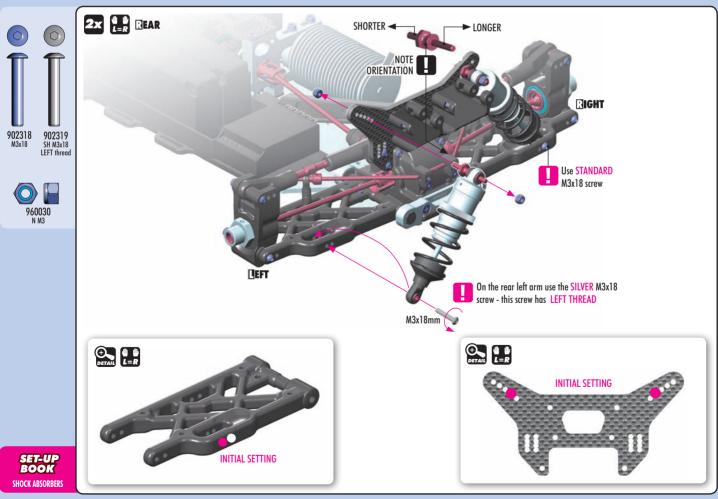
HEX SCREW SB M3x6 (10)

HEX SCREW SH M3x10 (10)

# 12. FINAL ASSEMBLY

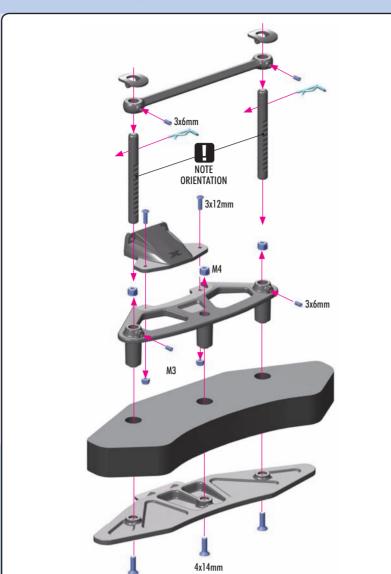


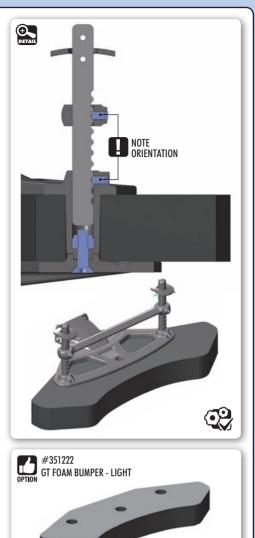




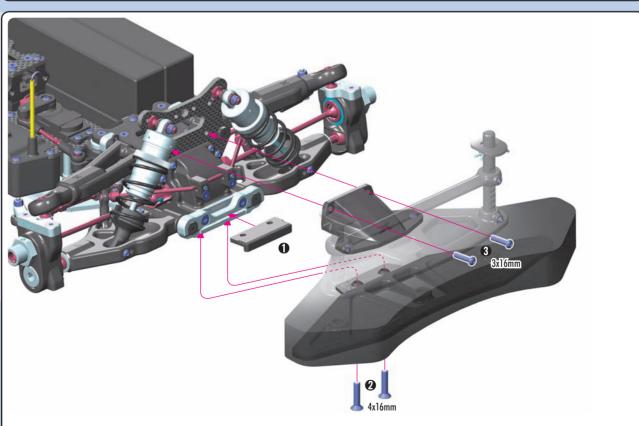








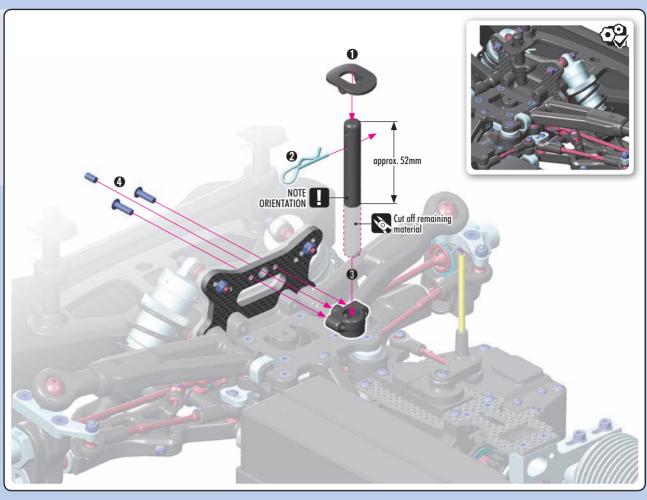




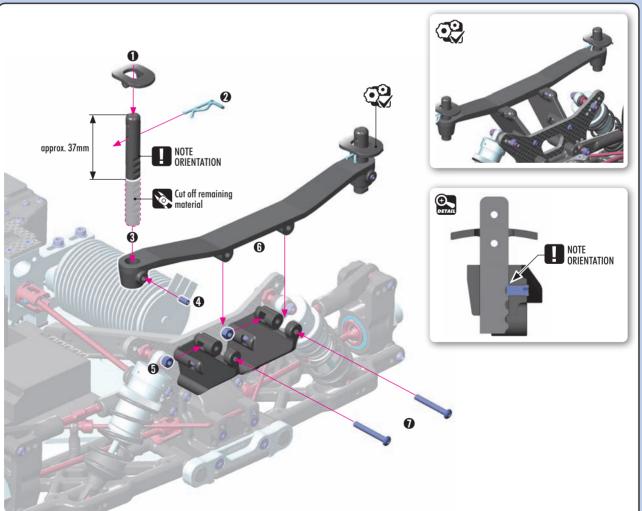




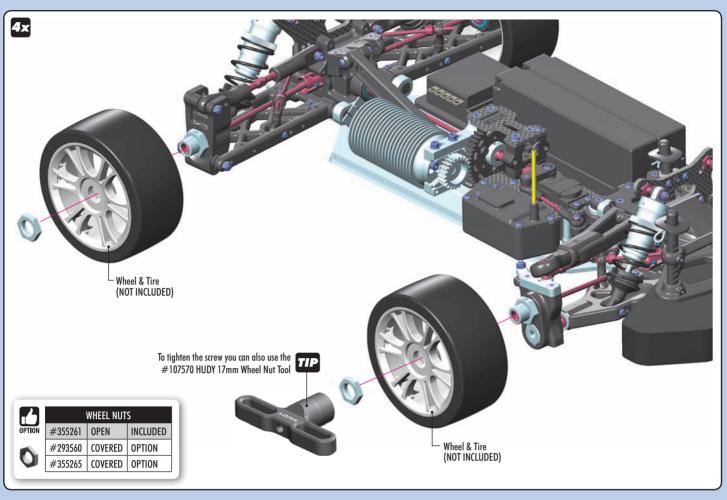
902310 SH M3x10

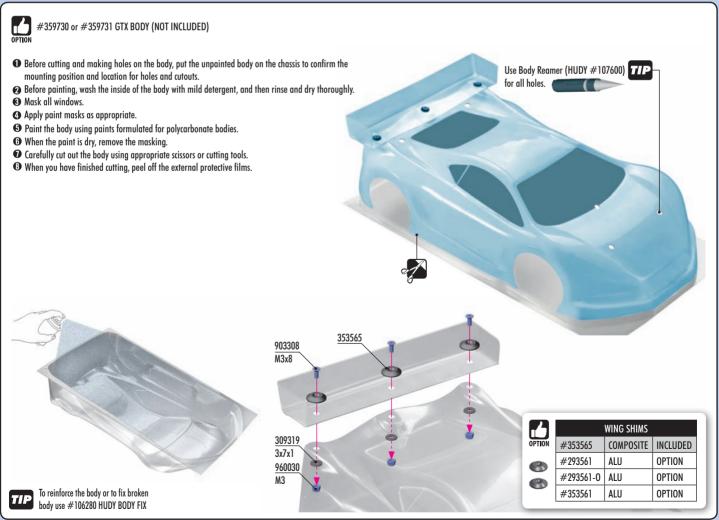












#### **ENGINE OPERATION**

### 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

#### 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.
- 2. 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.
- 7. Put fuel in the fuel tank, and close the cap securely.
- Apply the glow igniter to the engine glowplug.
- 9. 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).
- 10. When the engine has started, remove the glow igniter.
- 11. 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 raa to cover the exhaust tip. Be careful! The exhaust is extremely hot so use a thick raa 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

- 1. Stop the engine.
- 2. Turn off the receiver in the car
- 3. 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

- 1. Do not leave fuel in the tank.
- 2. Go outside to drain any residual fuel from the exhaust pipe.

- 3. Clean the car and remove all sand, mud, and other debris
- 4. Use after-run oil in your engine after you have finished running for the day.

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

### 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 ballbearings 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.
- Spray the seals with motor cleaner and blow dry with compressed air.
- Spray the bearing on both sides with motor cleaner
- Spin the bearing while it is still wet to dislodge any particles with the cleaner.
- Spray the bearing on both sides again.
- 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.
- ing 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.

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.

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 press-

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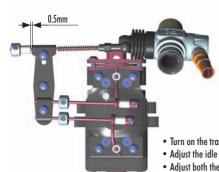


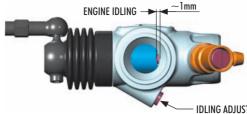






# NEUTRAL (IDLE) ADJUST INDIVIDUAL LINKAGES SEPARATELY TO AVOID INTERFERING WITH THE OPERATION OF THE OTHERS

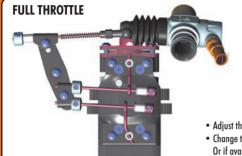




• Turn on the transmitter and receiver and set the engine control servo trim to the neutral position.

- 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.

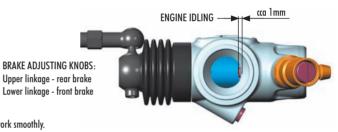
IDLING ADJUSTMENT SCREW.
Use to adjust the idle setting of the carburetor. Do not allow carburetor to close to less than 1mm.





- 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.





- 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.

# TROUBLESHOOTING GUIDE

PROBLEM	CAUSE	SOLUTION		
ENGINE DOES NOT START	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	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> <li>Fuel tank is empty</li> <li>Fuel lines, fuel filter, air cleaner, or muffler is clogged</li> <li>Carburetor is not adjusted properly</li> <li>Engine has overheated</li> <li>Fill fuel tank with fuel</li> <li>Clean or replace clogged part(s)</li> <li>Re-adjust idle and main/slow needle adjusting screw</li> <li>Allow engine to thoroughly cool down and open main needle adjusting screw 30° tur</li> </ul>			
BAD REACTION AND RESPONSE From Engine	Carburetor is not adjusted properly     Fuel lines, fuel filter, air cleaner, or muffler is clogged     Low fuel pressure from muffler	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	Weak transmitter and/or receiver batteries     Low reception from radio antennas     Servo linkages not adjusted properly	Recharge or replace batteries     Fully extend transmitter and receiver antennas     Move servo to neutral then re-adjust linkage(s)		
STEERING DOES NOT WORK PROPERLY  • Weak transmitter and/or receiver batteries • Bent linkages or driveshafts • Loose steering components • Drivetrain damage		Recharge or replace batteries     Check tightness of steering components and tighten if necessary     Replace damaged parts		
Shocks are not working properly     Suspension is binding     Improper tires		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	Suspension is binding     Damaged steering servo	Make sure suspension moves freely, and replace worn or broken parts     Check the steering servo for damage and wear, and replace/repair if necessary		
Suspension is binding  Steering trim is off-center Wheels are loose Damaged steering servo  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		Adjust steering trim until car drives straight     Check the make sure the wheel nuts are properly tightened		

NOTES		

# www.teamxray.com

### XRAY EUROPE

XRAY, K VÝSTAVISKU 6992, 91101 TRENCIN, SLOVAKIA, EUROPE PHONE: +421-32-740 11 00, FAX: +421-32-740 11 09, info@teamxray.com

# XRAY USA

RC AMERICA, 2030 Century Center Blvd #15, Irving, TX 75062, USA PHONE: 214-744-2400, FAX: 214-744-2401, xray@rcamerica.com















