

# INTRODUCTION

The XRAY XB808 is a modern, high-competition premium luxury racing 1/8 nitro buggy that is the epitome of high-performance and fine distinctive design. Your XB808 offers highest performance, responsive handling, and traditionally exceptional XRAY quality, engineering, and design. The superb craftsmanship and attention to detail are clearly evident everywhere on the XRAY XB808.

XB808 was designed around a no compromise platform; the attention to detail creates a low maintenance, extra long life nitro buggy. The ultra-low center of gravity (CG) and optimized weight balance makes set-up, driving, and maintenance easy and quick.

#### **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 <u>info@teamxray.com</u>. Also, please visit our Web site at <u>www.teamxray.com</u> 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 The XRAY XB808 was created by blending highest-quality materials and excellent design. On high-speed flat tracks or bumpy tracks, whether driving for fun or racing to win, the XB808 delivers outstanding performance, speed, and precision handling.

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#### 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 offer 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.

#### 🛆 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.

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.

- 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 condit
- 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.

- 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 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

#### **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,

#### **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.

#### 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

#### **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 the instructions correctly. Over-charging, incorrect charging, or using inferior chargers can cause the batteries to become dangerously hot. Recharge battery when necessary. Continual recharging may damage battery and, in the worst case, could build up heat leading to fire. If battery becomes extremely hot during recharging, please ask your local hobby shop for check and/or repair and/or replacement.

- Regularly check the charger for potential hazards such as damage to the cable, plug, casing or other defects. Ensure that any damage is rectified before using the charger again. Modifying the charger may cause short-circuit or overcharging leading to a serious accident. Therefore do not modify the charger.
- Always unplug charger when recharging is finished.
- Do not recharge battery while battery is still warm. After use, battery retains heat. Wait until it cools down before charging.
- Do not allow any metal part to short circuit the receiver batteries or other electrical/ electronic device on the model.
- Immediately stop running if your RC model gets wet as may cause short circuit.
- Please dispose of batteries responsibly. Never put batteries into fire.

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 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.
- 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.

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.

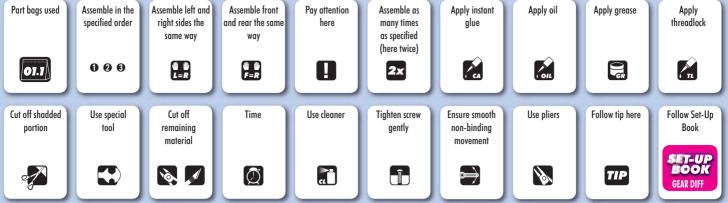
Take adequate safety precautions prior to operating this model. You are responsible for this model's assembly and safe operation.

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.

you start racing the car. Products which have been worn out, abused, neglected or improperly operated will not be covered under warranty. We wish you enjoyment of this high-quality and high-performance RC car and wish you best success on the track!

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

# SYMBOLS USED



# **TOOLS REQUIRED**

Phillips 5.0mm (HUDY #165049)		17mm Wheel Nut Tool (HUDY #107570)	Flywheel Tool (HUDY #182010)	Cross wrench (HUDY #107581)
Allen 1.5 / 2.0 / 2.5mm (HUDY #111549/#112049/#112549)				$\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{$
ARM REAMER 3mm/4mm (HUDY #107633/#107634)				$\boldsymbol{\times}$
Socket 5.0 / 5.5mm (HUDY #170058/#170059)				
Side Cutters	Hobby Knife	Needle Nose Pliers	Scissors	Body Reamer (HUDY #107600)
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### **TOOLS & EQUIPMENT INCLUDED**



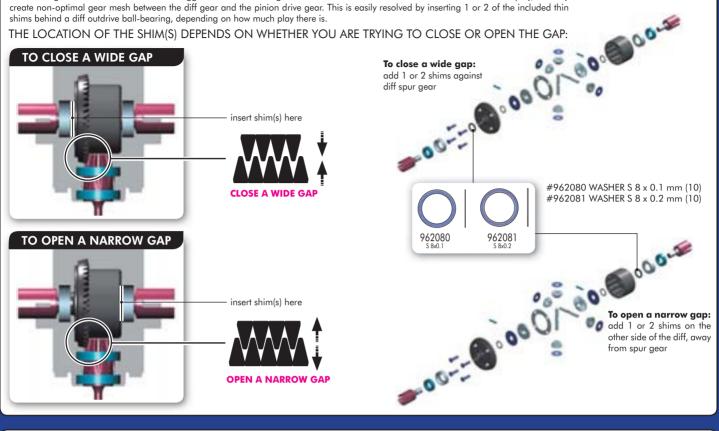
### EQUIPMENT REQUIRED

Transmitter Receiver	.21 Engine	Manifold Manifold Exhaust	Starter Box & Battery Pack	Glow Plug Igniter	Battery Charger
Receiver Pack	Threadlock	Transmitter Batteries	CA Glue	Fuel	Lexan Paint
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# 808 TECH TIPS

#### FRONT & REAR DIFF GEAR MESH ADJUSTMENT

Before filling in the differentials with oil we suggest first to check the gear mesh as below. 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.



# **DRIVE SHAFT PINS 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 and comfortable drive pin replacements use #106000 HUDY Drive Pin Replacement Tool.



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

#### **GRAPHITE PARTS PROTECTION**

Follow this tech tip to protect the graphite parts.

#### Protect all XB808 **Graphite Parts:**

- · Front shock tower
- Rear shock tower
- Steering plate
- Radio plate

Use fine sandpaper to sand smooth the edges of all graphite parts

Fine sandpaper







Place the pivot ball on the ball joint and use a screw to tighten it to an engine mount or some other part.



Tighten screw until pivot ball is tight against block



should move freely.

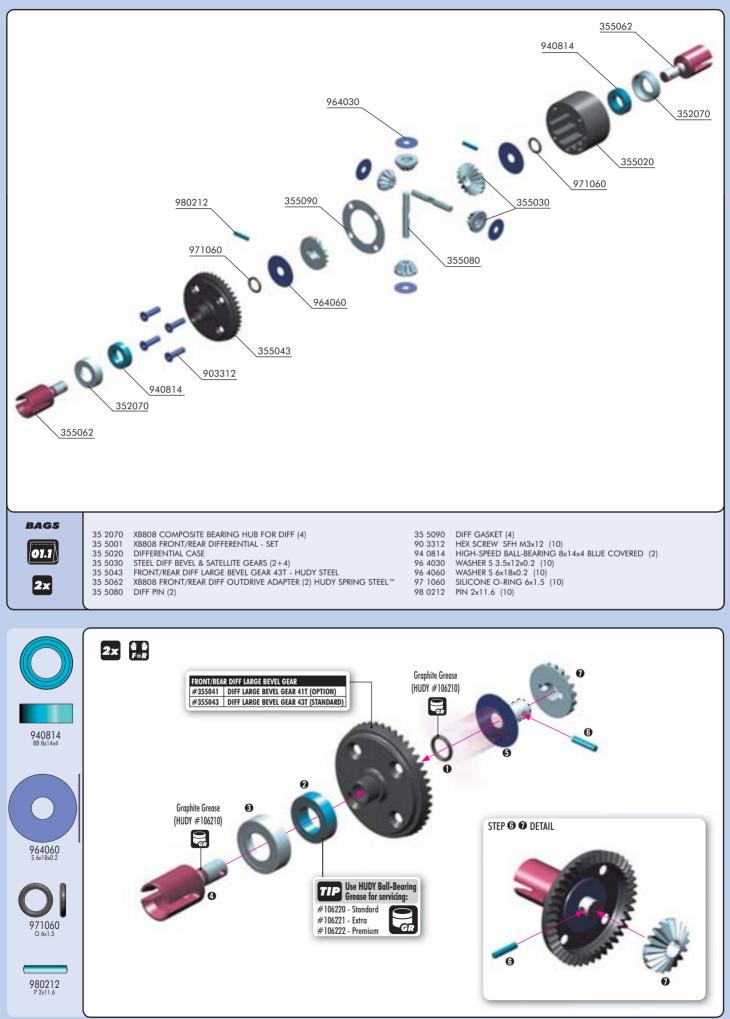


The finished joint.

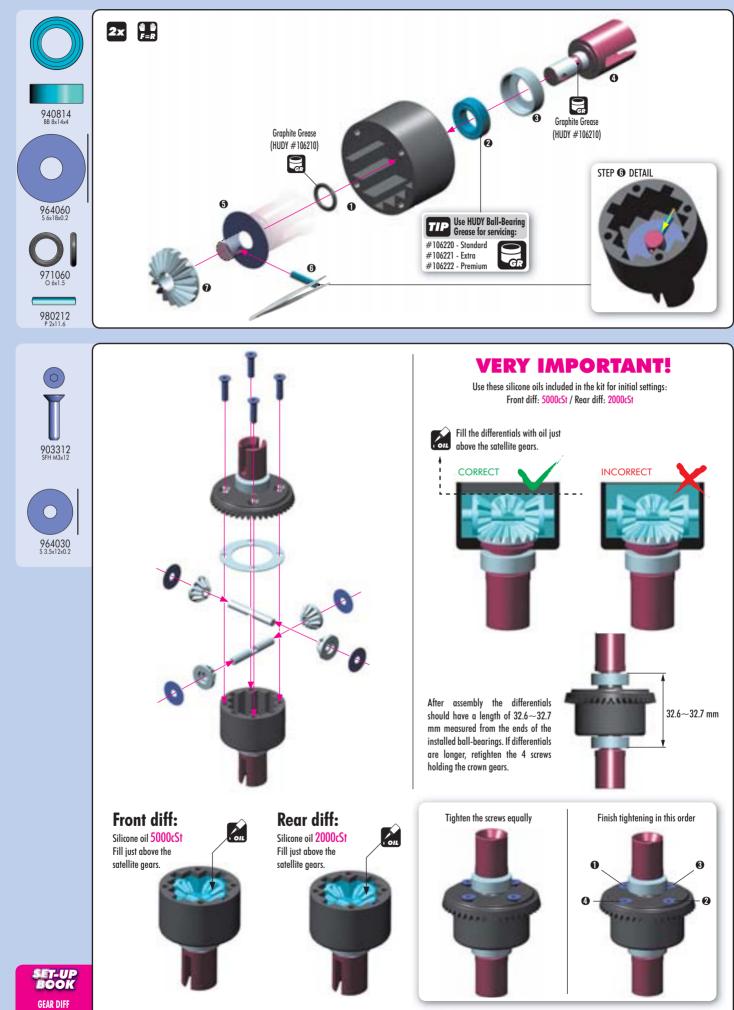


Loosen and remove screw.

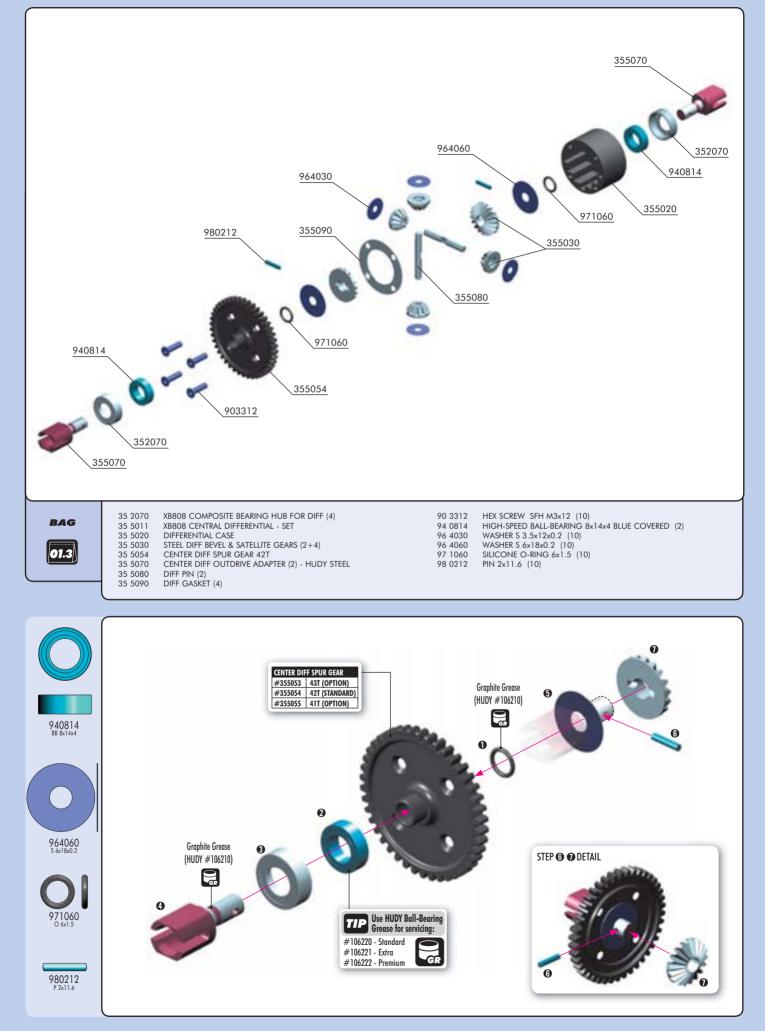
### **1. FRONT & REAR DIFFERENTIALS**



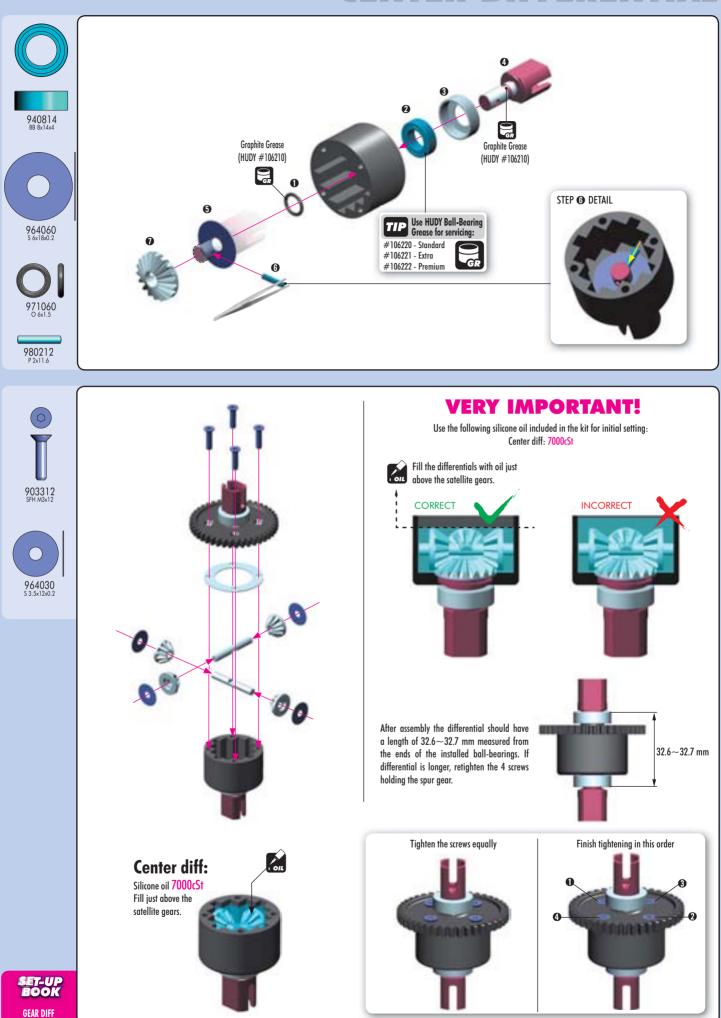
#### FRONT & REAR DIFFERENTIALS



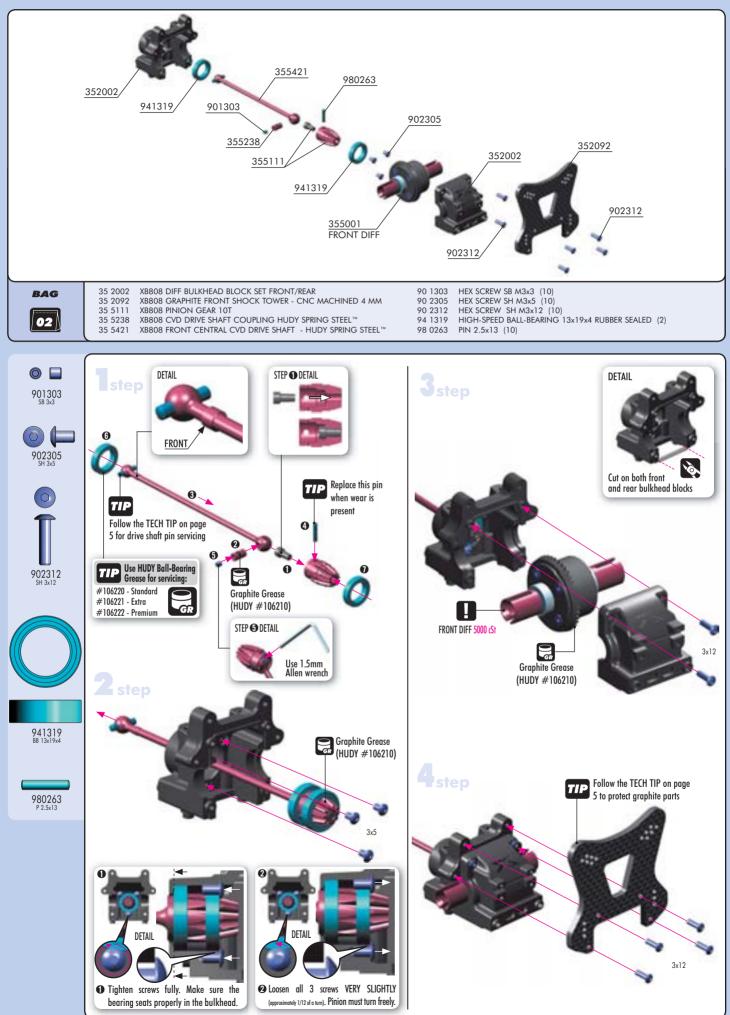
### **CENTER DIFFERENTIAL**



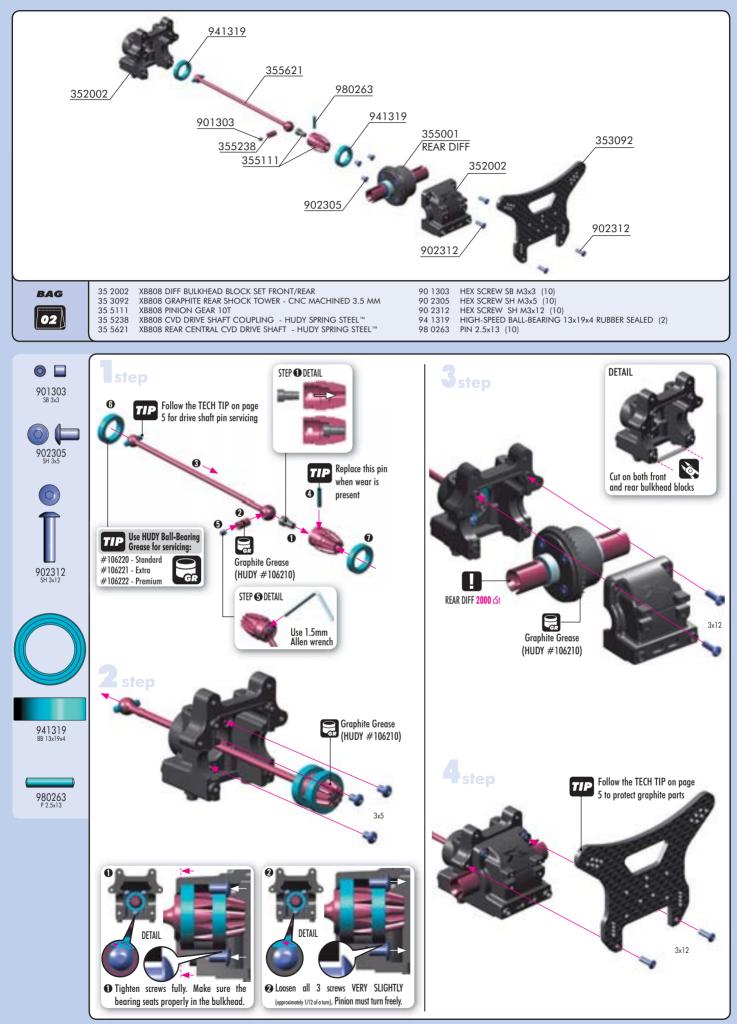
### CENTER DIFFERENTIAL



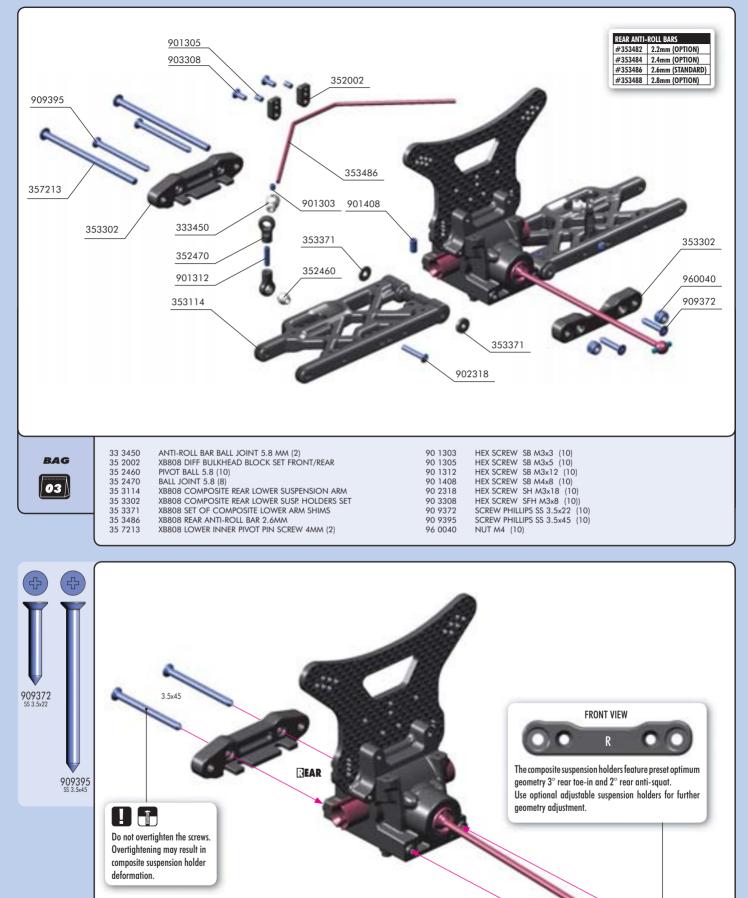
# 2. FRONT TRANSMISSION



#### REAR TRANSMISSION



#### 3. REAR SUSPENSION



deformation.

Do not overtighten the screws.

Overtightening may result in

composite suspension holder

3.5x22

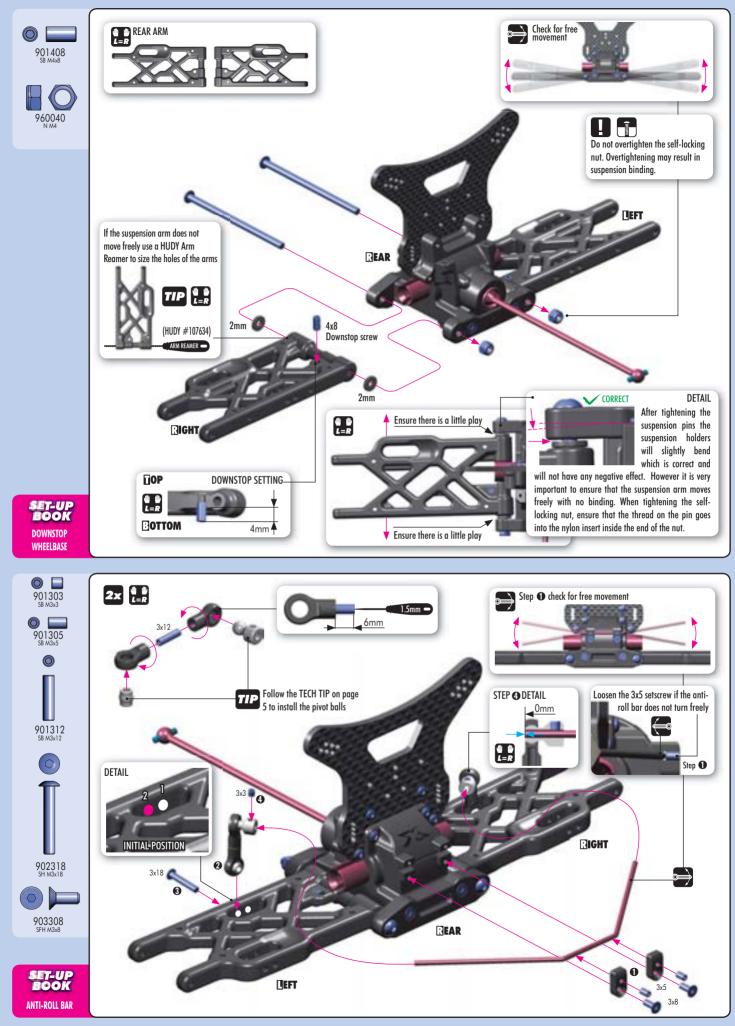
BOOK

TOE-IN

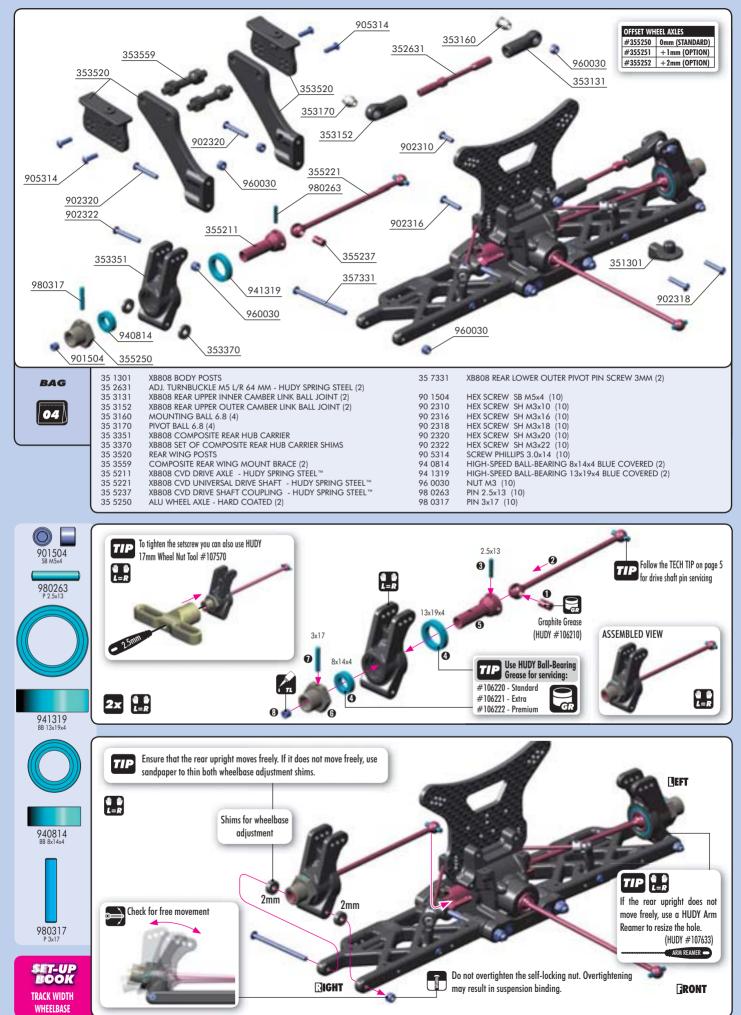
ANTI-SQUAT

**ROLL CENTER** 

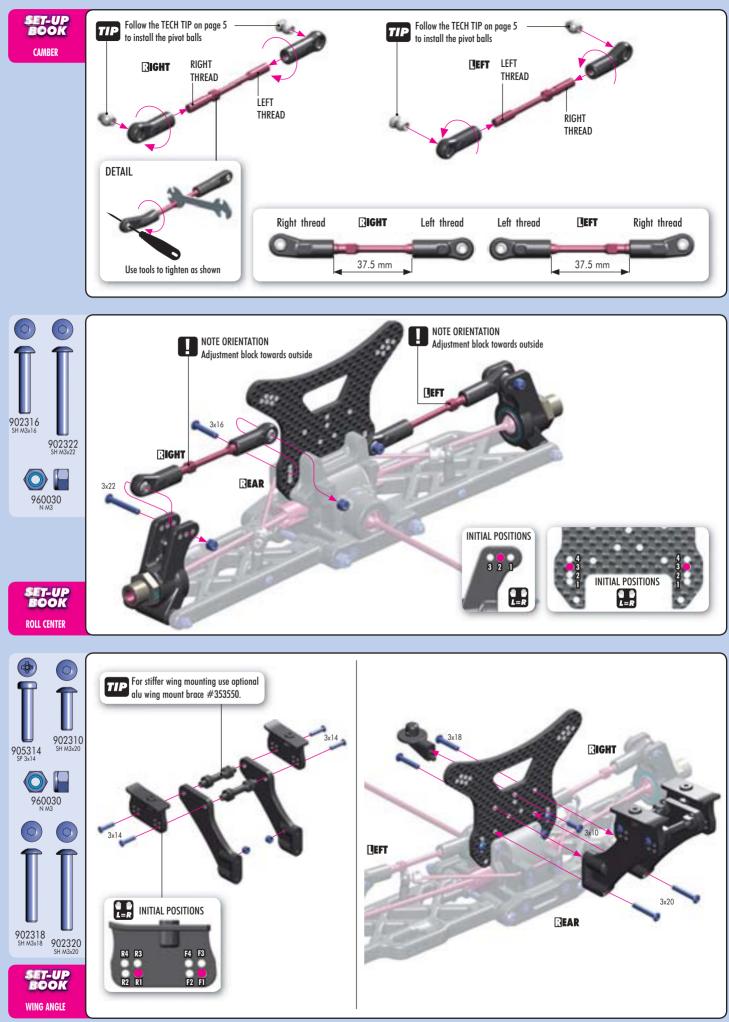
#### **REAR SUSPENSION**



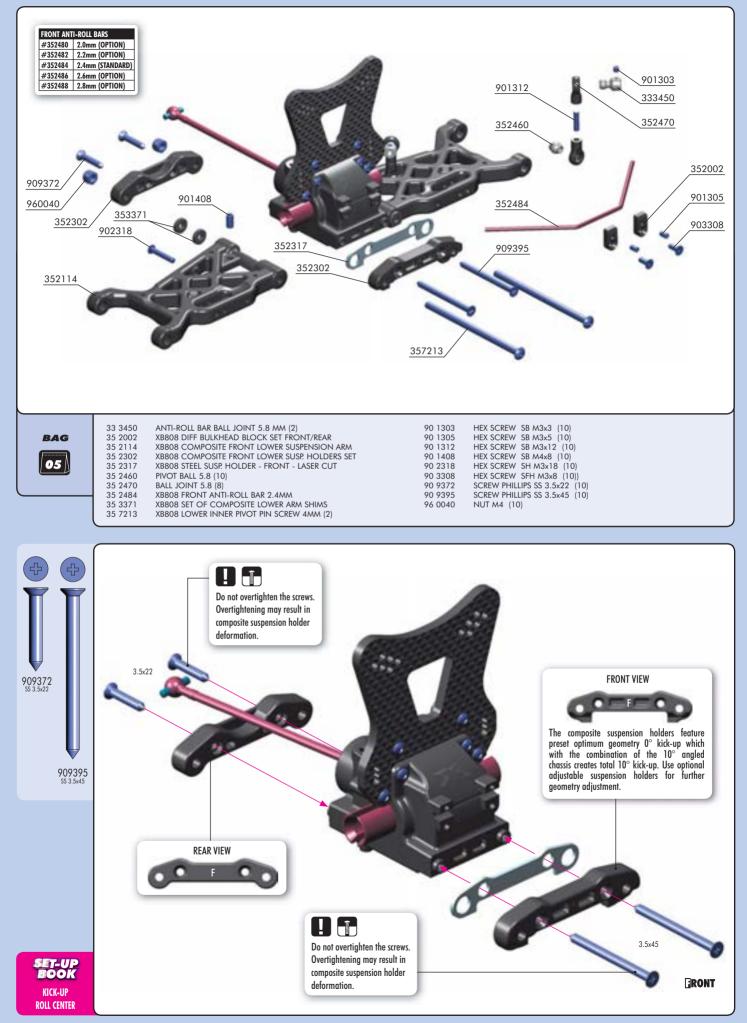
# 4. REAR SUSPENSION



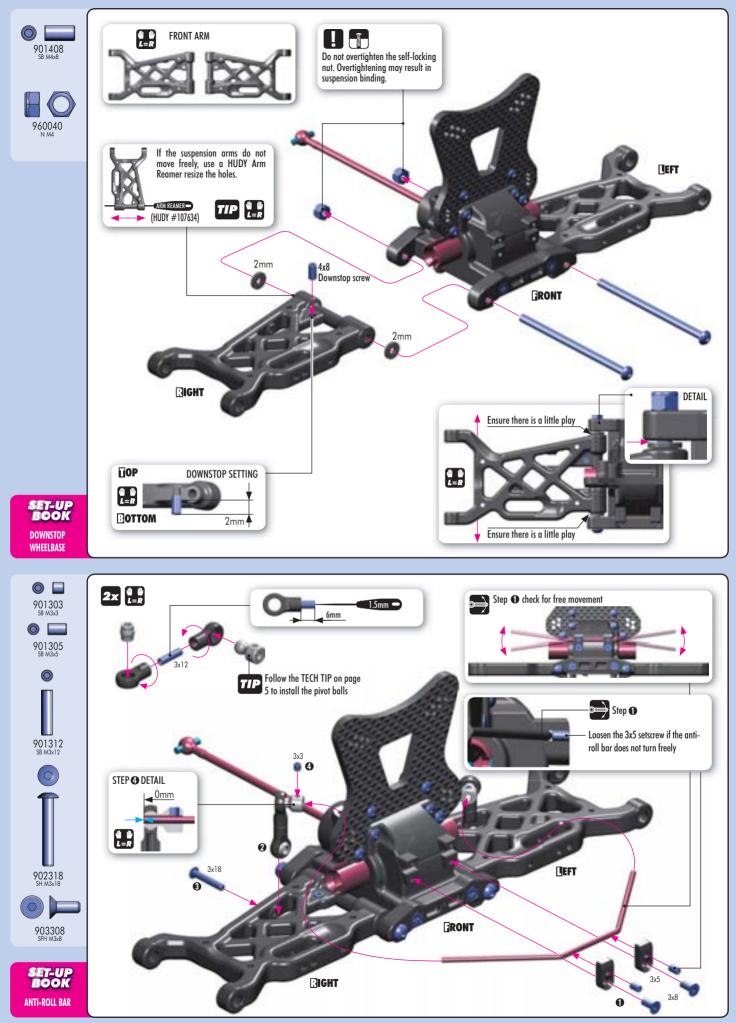
### **REAR SUSPENSION**



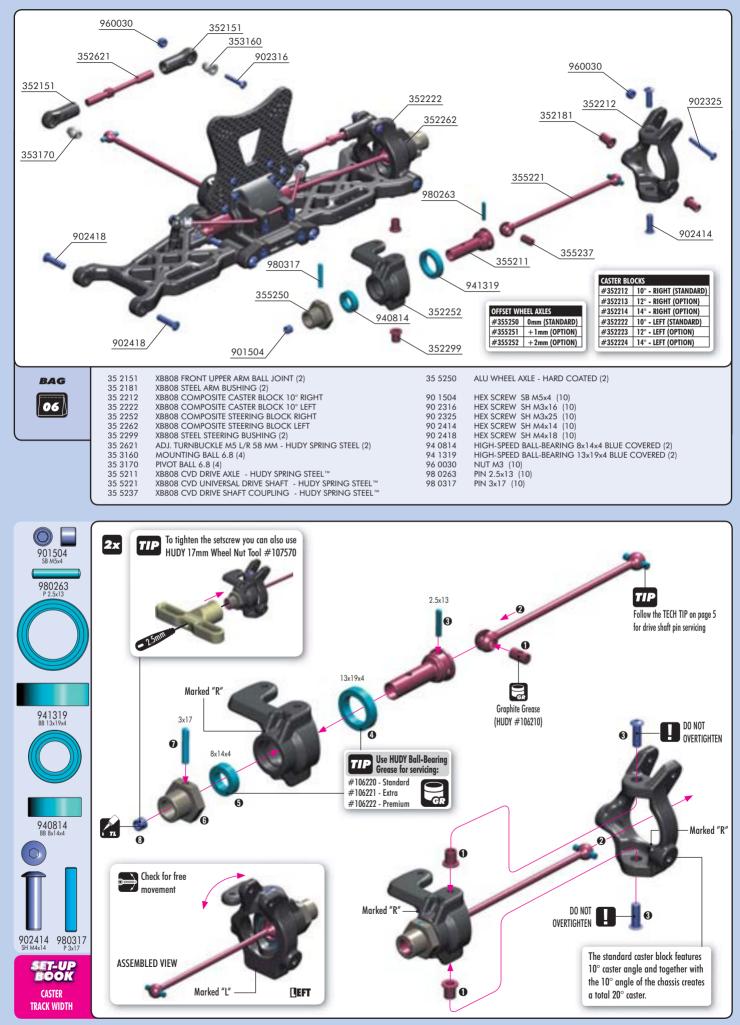
### 5. FRONT SUSPENSION



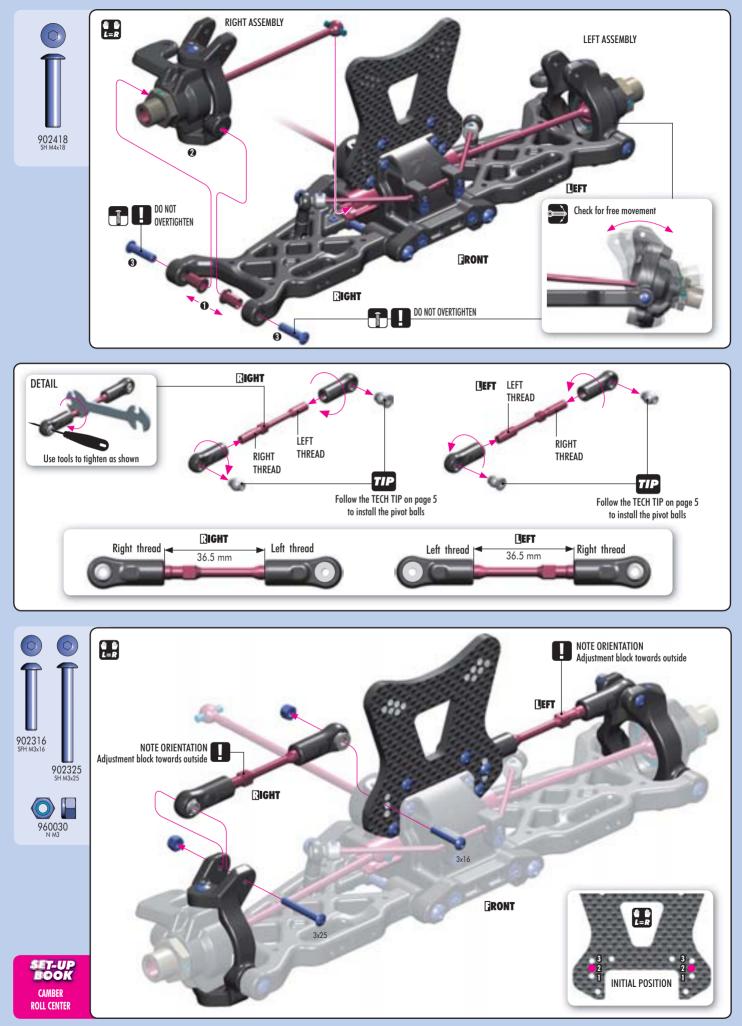
# **FRONT SUSPENSION**



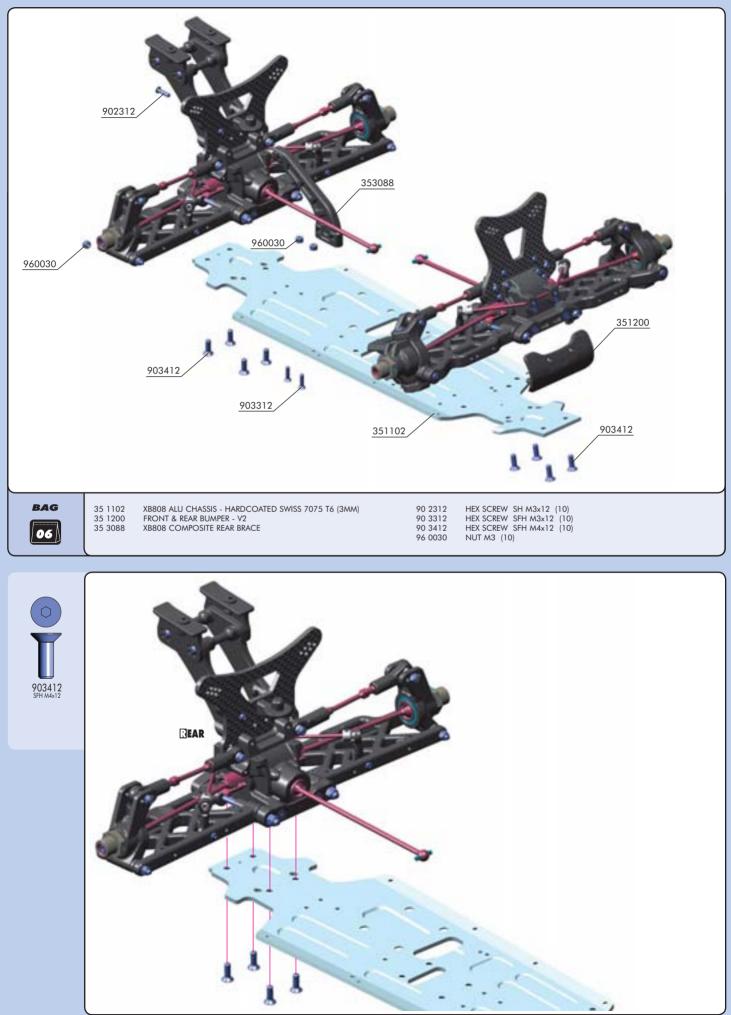
# 6. FRONT SUSPENSION



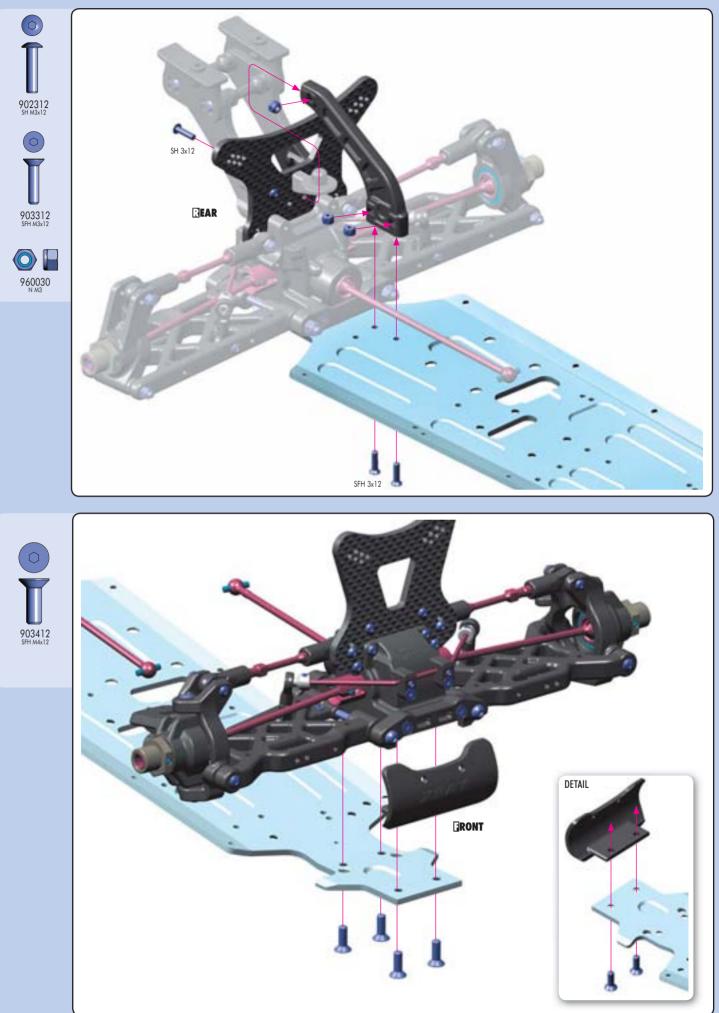
#### **FRONT SUSPENSION**



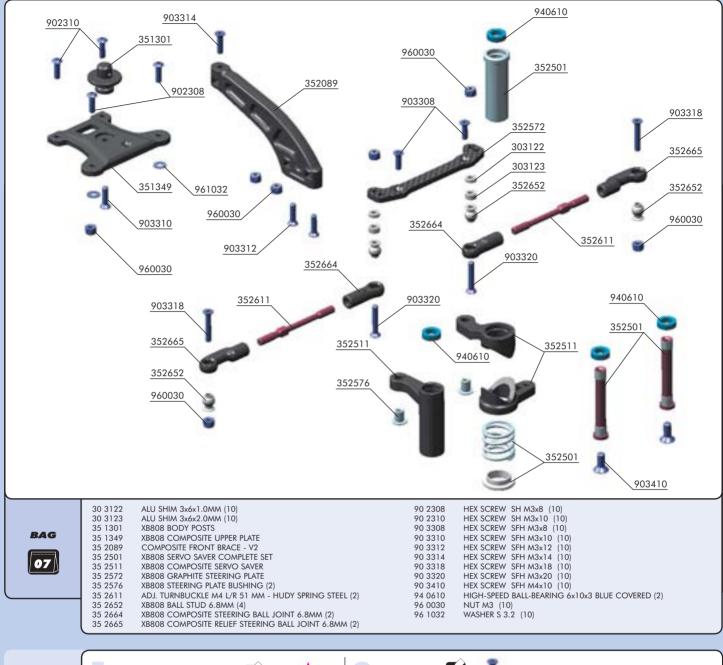
#### FRONT & REAR ASSEMBLY



FRONT & REAR ASSEMBLY



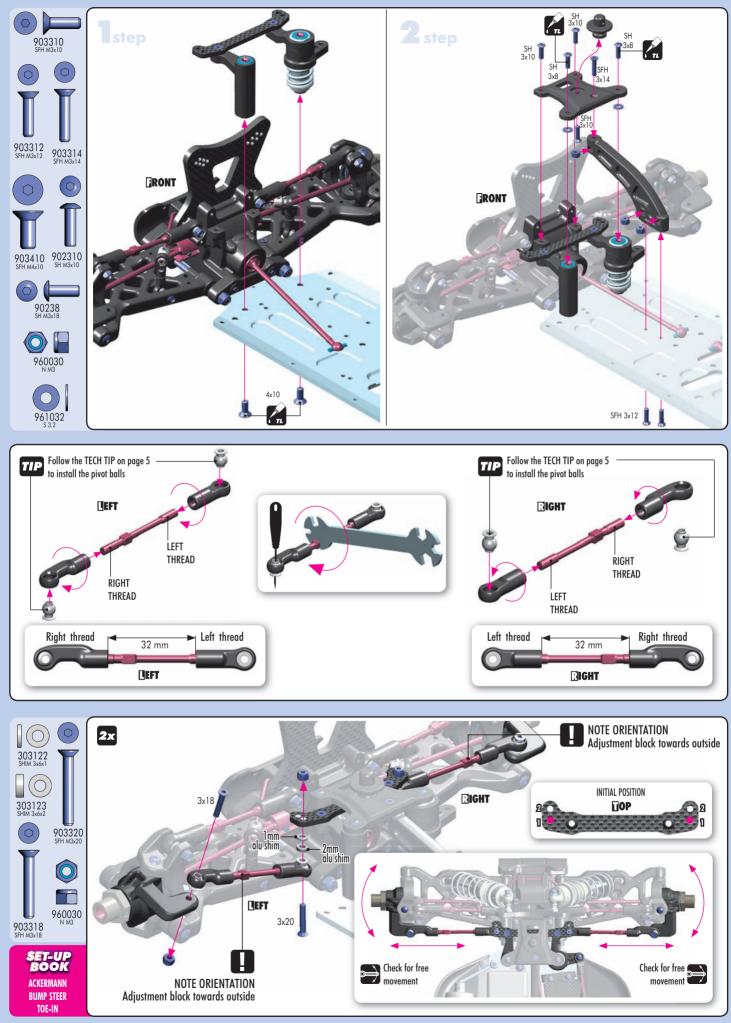
# 7. STEERING



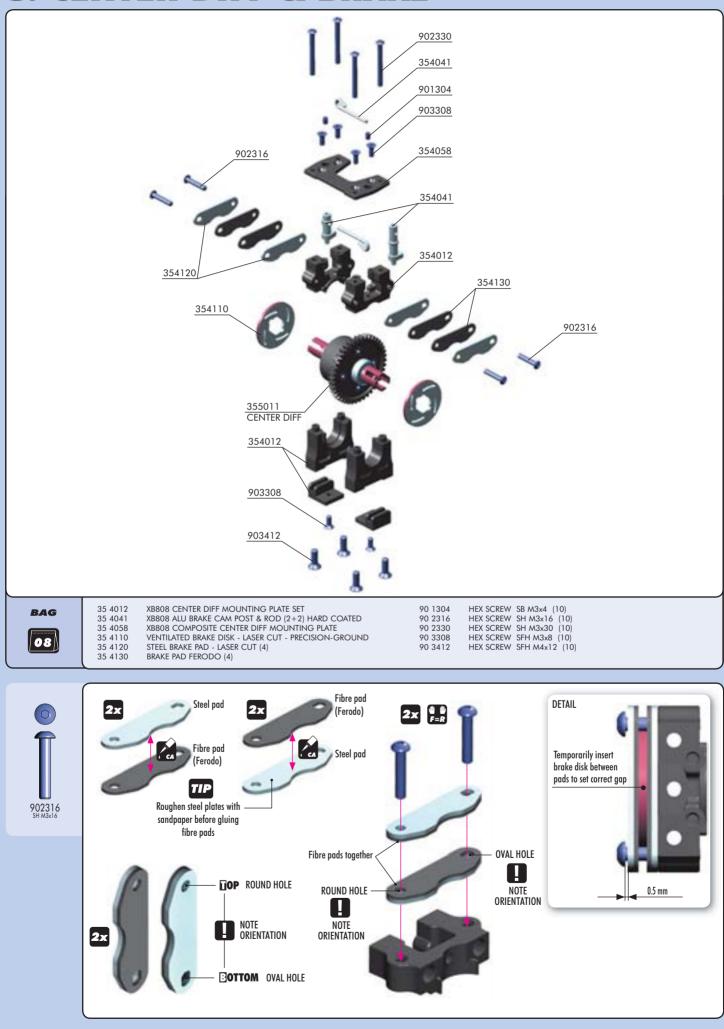


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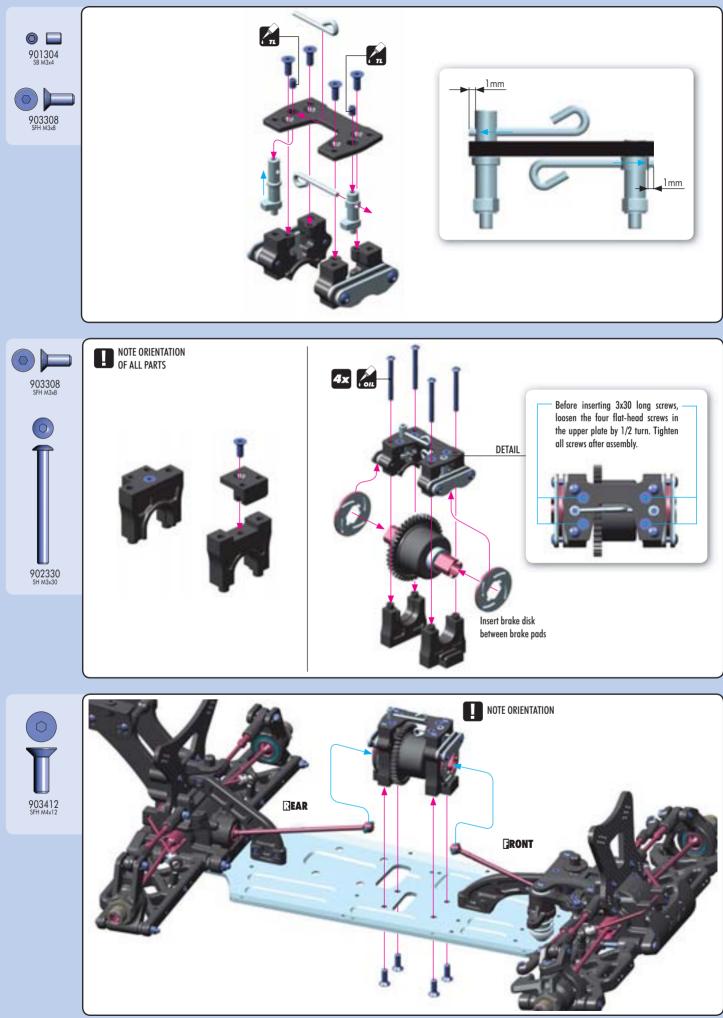
#### STEERING



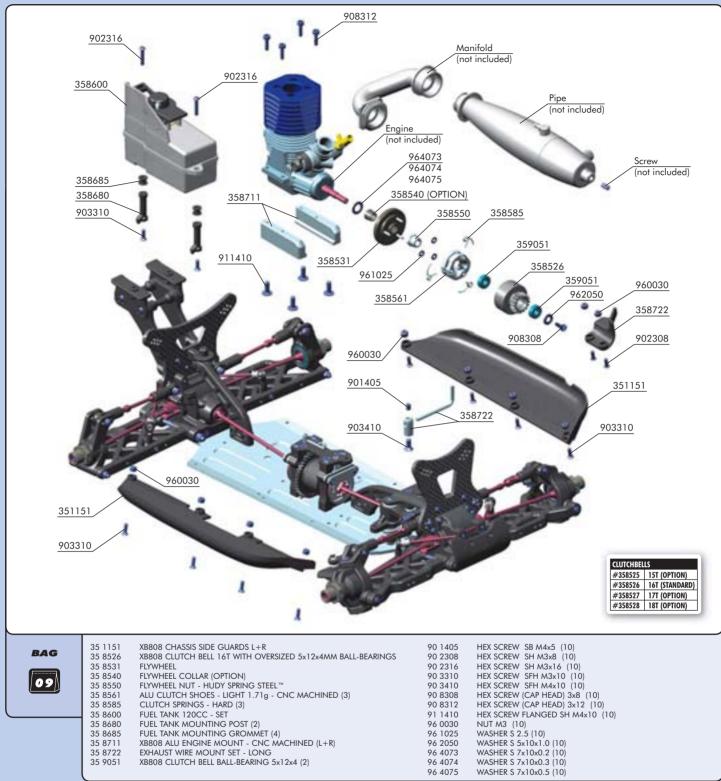
#### 8. CENTER DIFF & BRAKE

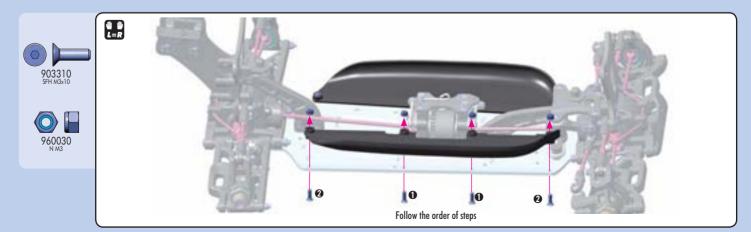


#### **CENTER DIFF & BRAKE**

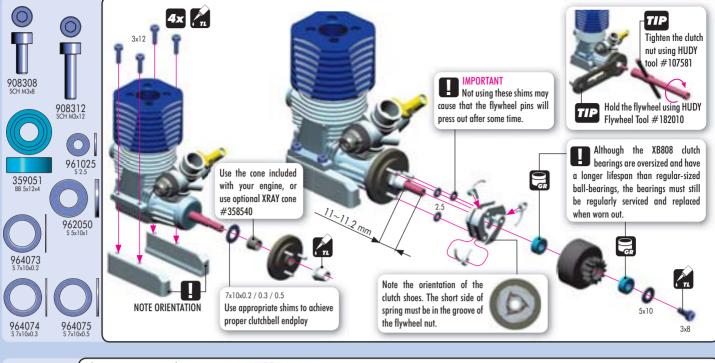


# 9. FUEL TANK & ENGINE

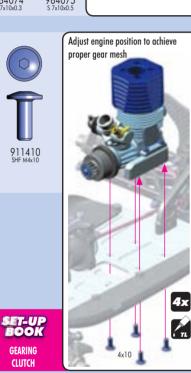


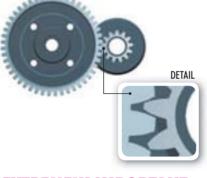


#### FUEL TANK & ENGINE



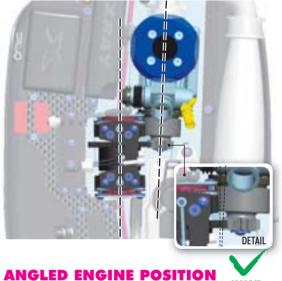




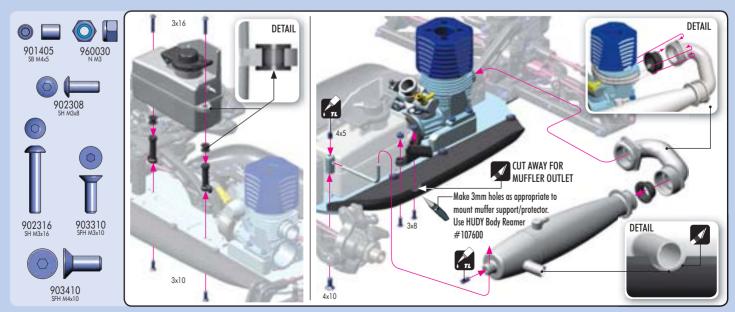


**EXTREMELY IMPORTANT** 

It is very important that your XB808 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.

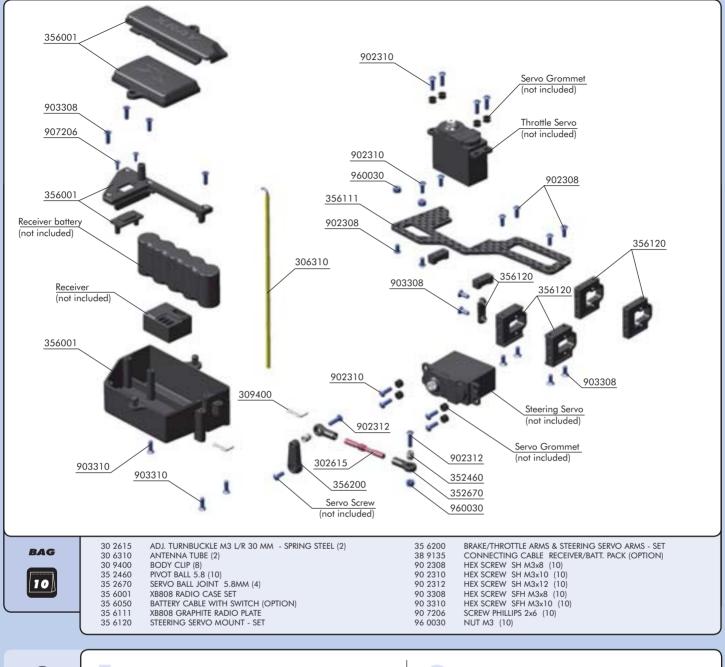


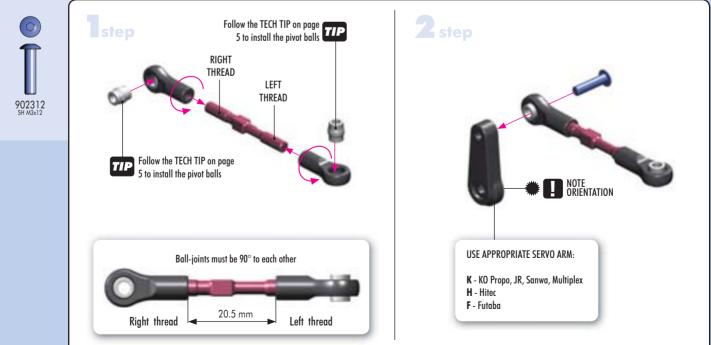
CORRECT Please note that the engine is not parallel with the chassis centerline, so that the clutchbell engages the spur gear at a slight angle. This is correct and will not have any effect on handling, performance, or lifespan of any parts.



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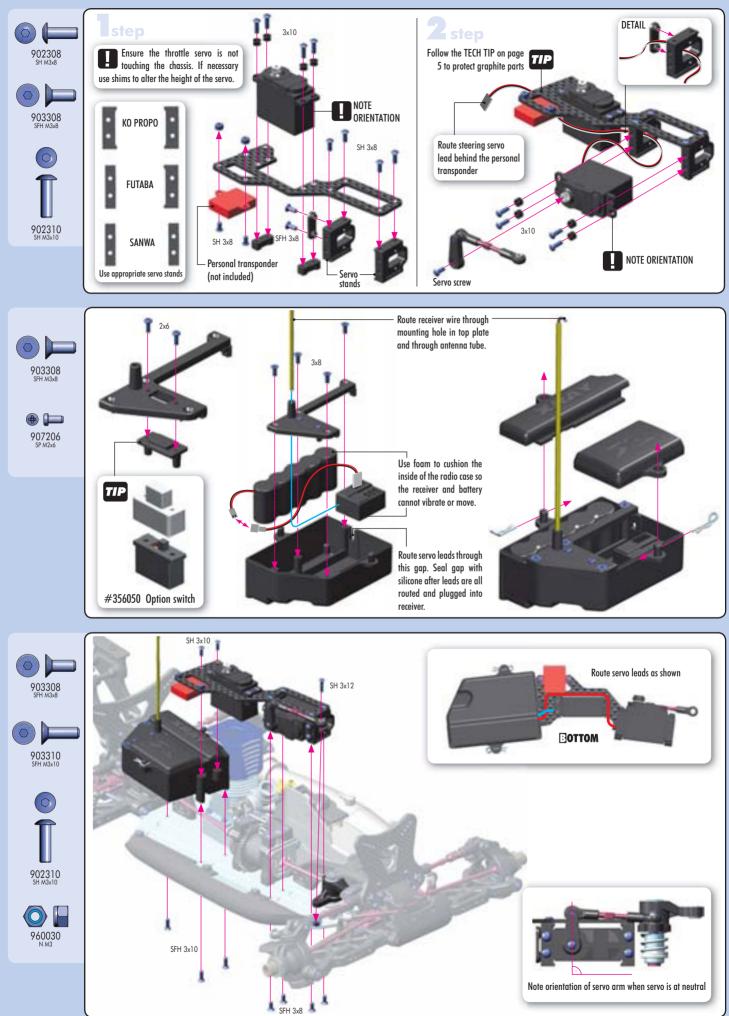
# 10. RADIO CASE



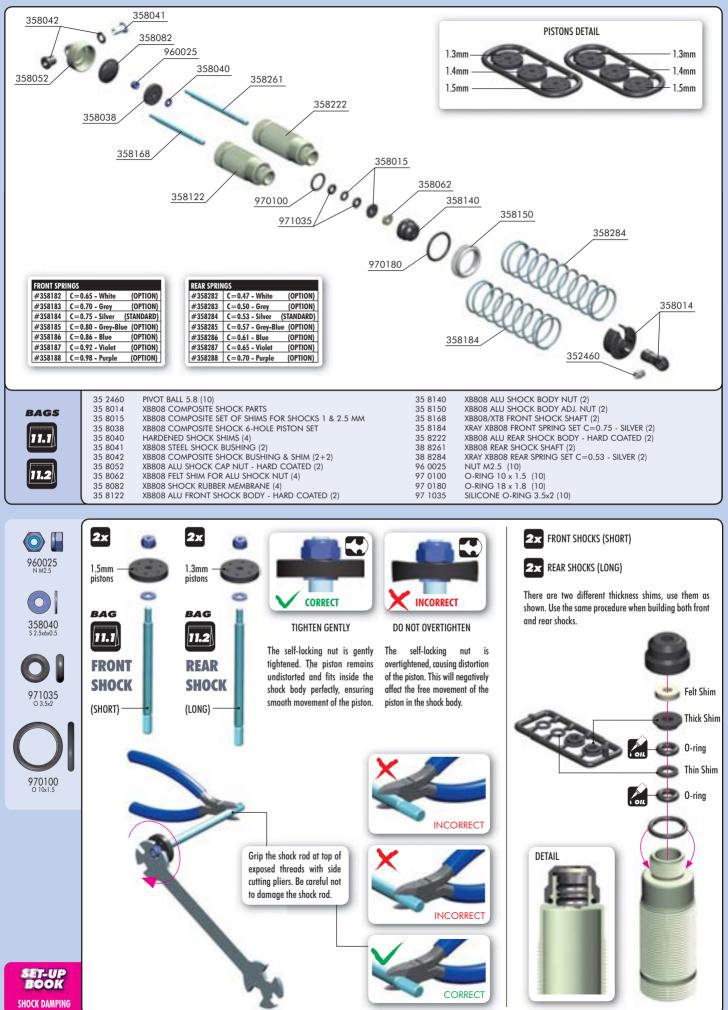




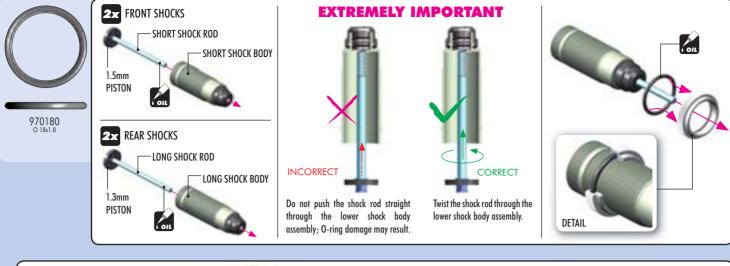
# RADIO CASE

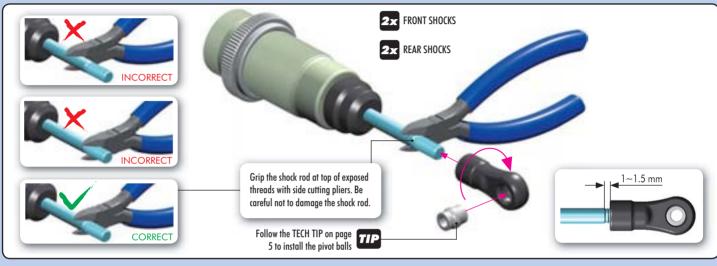


#### **11. SHOCK ABSORBERS**

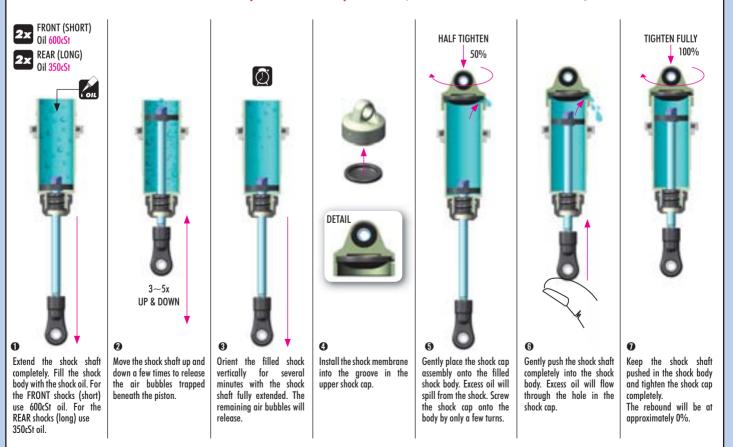


#### SHOCK ABSORBERS

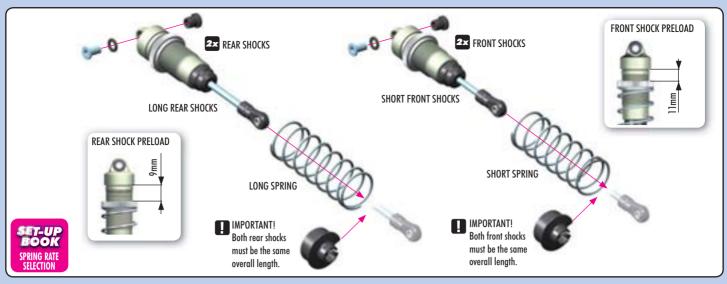




DEFAULT SHOCK REBOUND SETTING 0% (LOW REBOUND) Follow the steps below to set the shock rebound to the default setting of 0%.

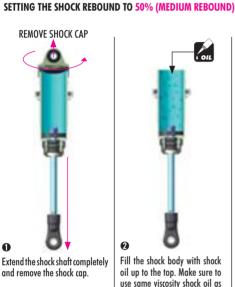


#### SHOCK ABSORBERS

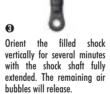


#### TIP ALTERNATE SHOCK REBOUND SETTING (50% AND 100%)

The default shock rebound setting is 0% (as described on page 31). Alternatively, you may set the shock rebound setting to 50% or 100% as described below. Remove the shock springs before performing shock rebound adjustment.









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.

G



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)

0

is in the shock.



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.

Ø



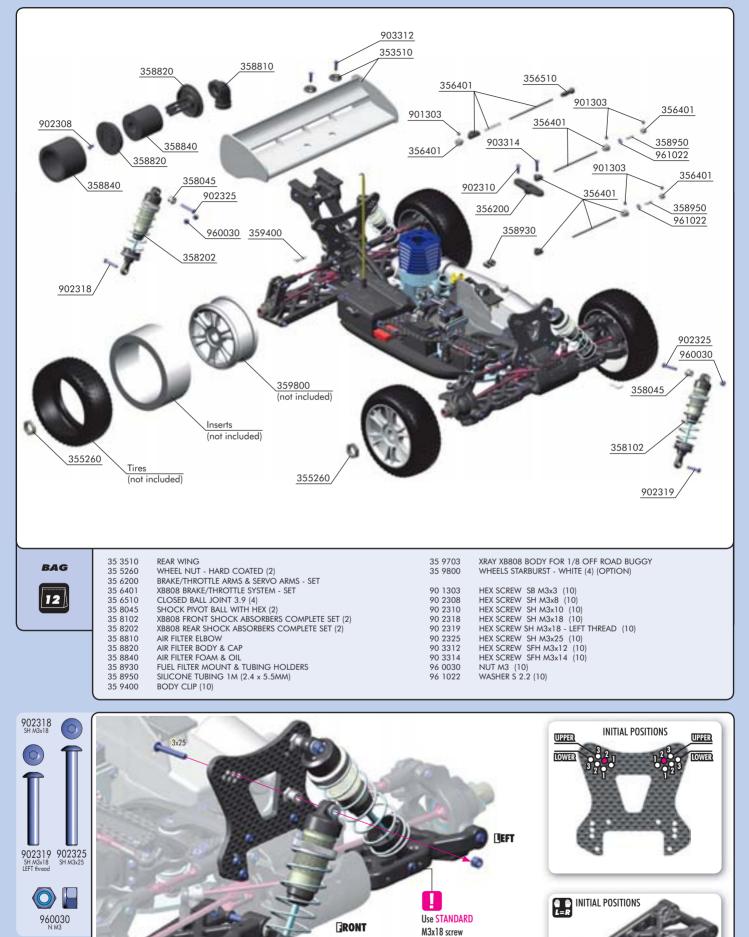
Orient the filled shock vertically for several minutes with the shock shaft fully extended. The remaining air bubbles will release.



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%.

0

# **12. FINAL ASSEMBLY**



FRONT SHOCKS (SHORT)

**3**x18

On the front right arm use the SILVER M3x18

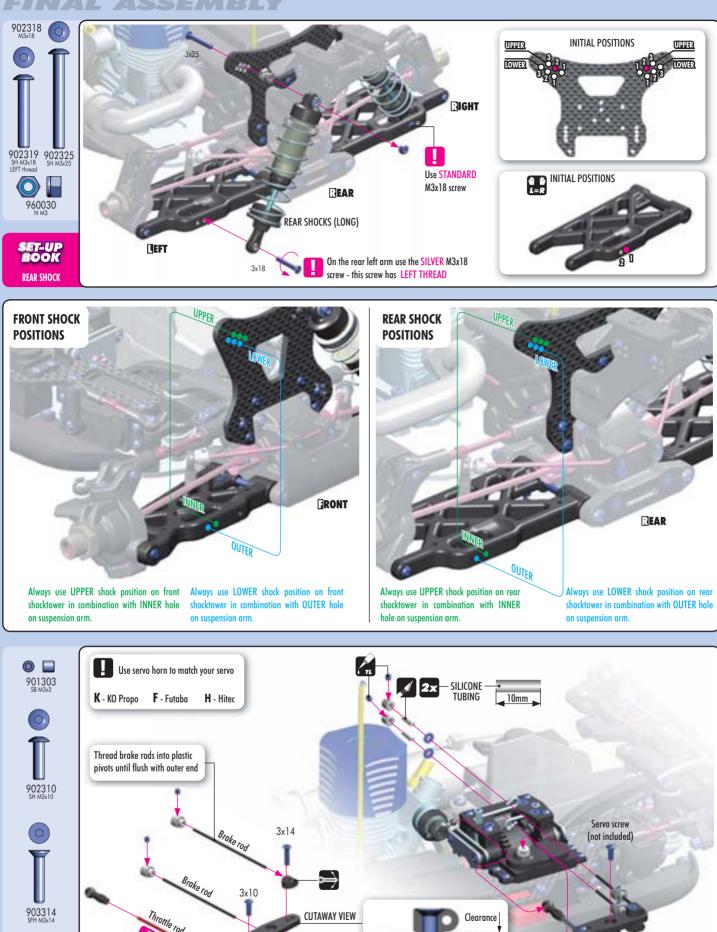
screw - this screw has LEFT THREAD

SET-UP BOOK

RIGHT

**RIGH** 

#### FINAL ASSEMBLY



i

Clearance

SCRAN

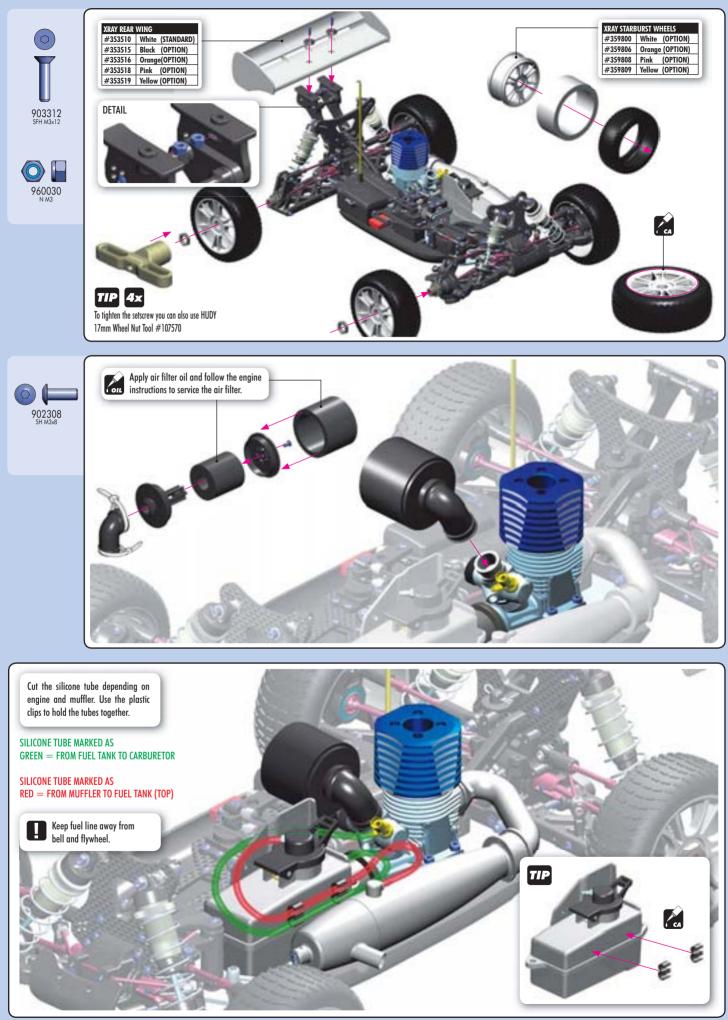
Ensure that the servo is in neutral position

before attaching the servo horn.

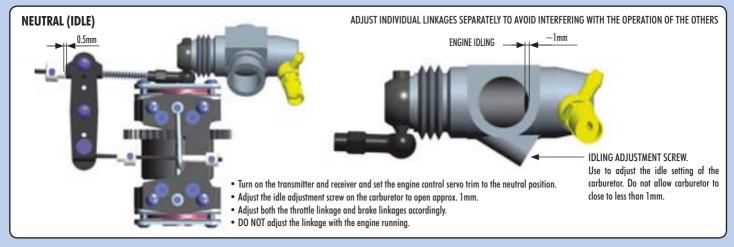
 $\bigcirc$ 

961022

FINAL ASSEMBLY



# THROTTLE LINKAGE ADJUSTMENT







• 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.

- Paint the body using paints formulated for polycarbonate bodies. (G) When the paint is dry, remove the masking.
- Carefully cut out the body using appropriate scissors or cutting tools.  $\ensuremath{\boldsymbol{\Theta}}$  When you have finished cutting, peel off the external protective films.



#### **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.

#### 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.

- 1. 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.
- 3. Put the car on the starter box and keep the tires from touching the ground.
- 4. Turn on the transmitter.
- 5. Turn on the receiver in the car.
- 6. Make sure the steering servo and engine servos work normally and adjust them correctly.

#### **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.

#### **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.

- 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.
- 7. Put fuel in the fuel tank, and close the cap securely.
- 8. 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).
- 10. When the engine has started, remove the glow igniter.
- 11. Follow your engine break-in procedure and tune the engine as appropriate.
- 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.

- 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.

#### 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.

#### **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.

- 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. HUDY #106230 **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. HUDY #106220 HUDY #106222 HIIDY #106221 Use HUDY Bearing Grease to regularly lubricate the clutch bearings. **SUSPENSION & DRIVETRAIN MAINTENANCE** 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

After the run, clean and dry the parts again.

If the car is run in wet conditions, apply WD-40® on all drivetrain parts before the run.

HUDY #106210

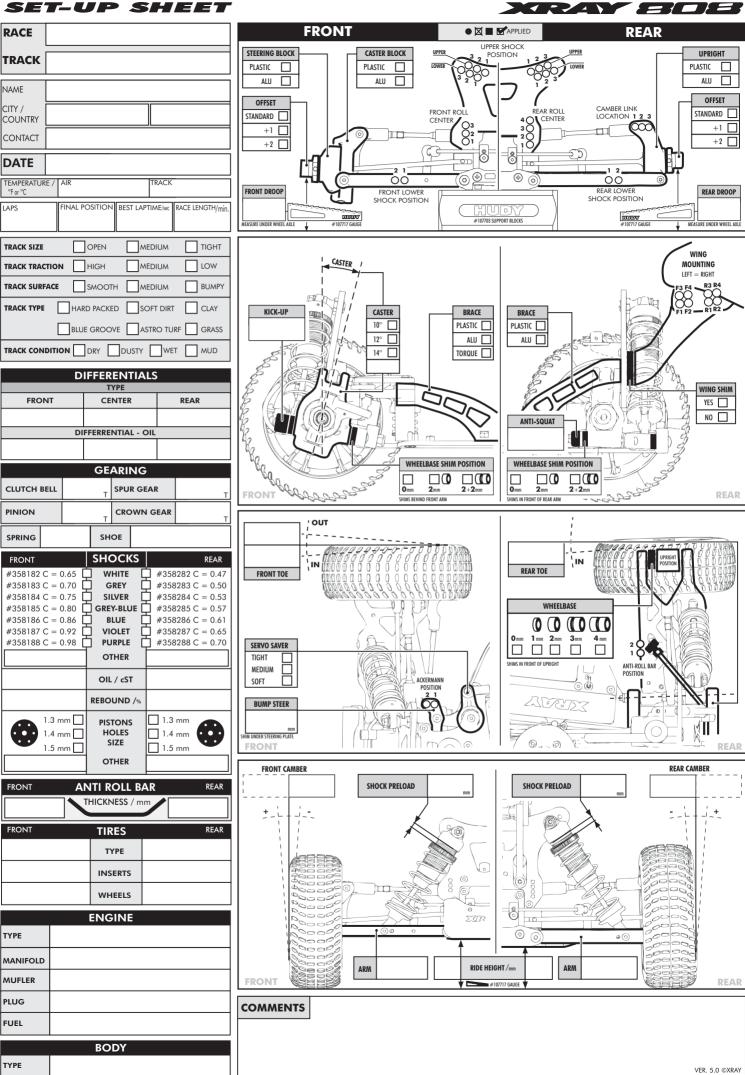
- · Check suspension for free movement during building and operation, and especially after running and if you have crashed the car. If the suspension does not move freely, use the
- appropriate HUDY Arm Reamer to clean and resize the holes of the suspension arms. Regularly check the drive shaft pins (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 aears.
- **HUDY SPRING STEEL™**

The HUDY Spring Steel<sup>™</sup> used in the car is the strongest and most durable steel material on the RC market. While items made from HUDY Spring Steel<sup>™</sup> 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.

# TROUBLESHOOTING GUIDE

PROBLEM	CAUSE	SOLUTION
ENGINE DOES NOT START	<ul> <li>Fuel tank is empty or carburetor is not primed</li> <li>Bad glowplug or dead glowdriver battery</li> <li>Fuel lines, fuel filter, air cleaner, or muffler is clogged</li> <li>Engine is flooded due to over-priming</li> <li>Carburetor is not adjusted properly</li> <li>Throttle servo linkage not adjusted properly</li> </ul>	<ul> <li>Fill fuel tank with fuel and prime</li> <li>Replace glowplug or recharge/replace glowdriver battery</li> <li>Clean or replace clogged part(s)</li> <li>Remove glowplug, turn car over to discharge fuel from cylinder. Test glowplug and replace if defective</li> <li>Set idle and main/slow needle adjusting screw to standard starting position</li> <li>Move throttle servo to neutral position and re-adjust linkage(s)</li> </ul>
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> </ul>	<ul> <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° turn richer (CCW)</li> </ul>
BAD REACTION AND RESPONSE FROM ENGINE	<ul> <li>Carburetor is not adjusted properly</li> <li>Fuel lines, fuel filter, air cleaner, or muffler is clogged</li> <li>Low fuel pressure from muffler</li> </ul>	<ul> <li>Re-adjust main/slow needle adjusting screw</li> <li>Clean or replace clogged part(s)</li> <li>Properly install pressure line between muffler and fuel tank</li> </ul>
CAR IS HARD TO CONTROL	<ul> <li>Weak transmitter and/or receiver batteries</li> <li>Low reception from radio antennas</li> <li>Servo linkages not adjusted properly</li> </ul>	<ul> <li>Recharge or replace batteries</li> <li>Fully extend transmitter and receiver antennas</li> <li>Move servo to neutral then re-adjust linkage(s)</li> </ul>
STEERING DOES NOT WORK PROPERLY	<ul> <li>Weak transmitter and/or receiver batteries</li> <li>Bent linkages or driveshafts</li> <li>Loose steering components</li> <li>Drivetrain damage</li> </ul>	<ul> <li>Recharge or replace batteries</li> <li>Check tightness of steering components and tighten if necessary</li> <li>Replace damaged parts</li> </ul>
HANDLING PROBLEMS	<ul> <li>Shocks are not working properly</li> <li>Suspension is binding</li> <li>Improper tires</li> </ul>	<ul> <li>Rebuild the shocks and replace worn or broken parts</li> <li>Make sure suspension moves freely. Replace worn or broken parts</li> <li>Use different tires</li> </ul>
STEERING FEELS Sluggish or vague	<ul><li>Suspension is binding</li><li>Damaged steering servo</li></ul>	<ul> <li>Make sure suspension moves freely, and replace worn or broken parts</li> <li>Check the steering servo for damage and wear, and replace/repair if necessary</li> </ul>
THE CAR DOES NOT DRIVE STRAIGHT	<ul> <li>Suspension is binding</li> <li>Steering trim is off-center</li> <li>Wheels are loose</li> <li>Damaged steering servo</li> </ul>	<ul> <li>Make sure suspension moves freely, and replace worn or broken parts</li> <li>Adjust steering trim until car drives straight</li> <li>Check the make sure the wheel nuts are properly tightened</li> <li>Check the steering servo for damage and wear, and replace/repair if necessary</li> </ul>

#### SET-UP SHEET





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