

1/8 LUXURY RACING TRUGGY

XRAY



DEVELOPED
DESIGNED
STYLED BY
Mirko Rudy
DIPLO.-ING. JUR. RUDY

MADE IN
EUROPE

INSTRUCTION MANUAL

XRAY

WORLD CHAMPIONS

INTRODUCTION

The XRAY XT9 is a modern, high-competition premium luxury racing 1/8 nitro truggy that is the epitome of high-performance and fine distinctive design. Your XT9 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 XT9.

XT9 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 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

The XRAY XT9 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 XT9 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 after using. DO NOT use product while eating, drinking or using tobacco products. May cause chronic effects to gastrointestinal tract, CNS, kidneys, and blood. MAY CAUSE BIRTH DEFECTS.

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

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

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

IMPORTANT NOTES - GENERAL

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

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

IMPORTANT NOTES - NITRO ENGINES

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

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.

XT9

- 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 exceed the monetary value of this product.

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





















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

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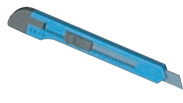




you start racing the car. Products which have been worn out, abused, neglected or improperly operated will not be covered under warranty.

We wish you enjoyment of this high-quality and high-performance RC car and wish you best success on the track!





SYMBOLS USED

Part bags used 	Assemble in the specified order 	Assemble left and right sides the same way 	Assemble front and rear the same way 	Pay attention here 	Assemble as many times as specified (here twice) 	Apply instant glue 	Apply oil 	Apply grease 	Apply threadlock 
Cut off shaded portion 	Use special tool 	Cut off remaining material 	Time 	Use cleaner 	Tighten screw gently 	Ensure smooth non-binding movement 	Use pliers 	Follow tip here 	Follow Set-Up Book 

TOOLS REQUIRED

Phillips 5.0mm (HUDY TOOLS) Allen 1.5 / 2.0 / 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) 	Cross Wrench (HUDY #107581) 	
Side Cutters (HUDY #189010) 	Hobby Knife 	Needle Nose Pliers (HUDY #189020) 	Snap Ring Pliers (HUDY #189040) 	Scissors (HUDY #188990) 	Body Reamer (HUDY #107600) or (HUDY #107601) 

TOOLS & EQUIPMENT INCLUDED

Silicone Shock Oil 	Silicone Diff Oil 	Air Filter Oil (HUDY #106240) 	Graphite Grease (HUDY #106210) 
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EQUIPMENT REQUIRED

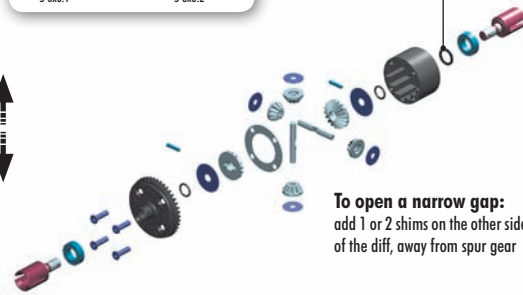
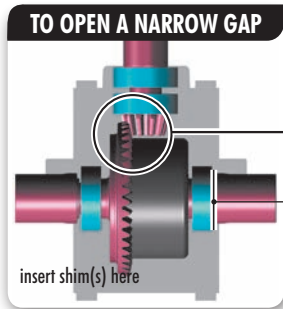
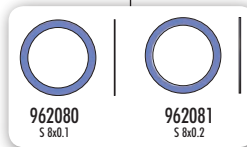
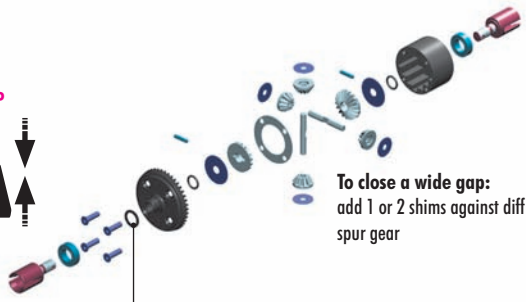
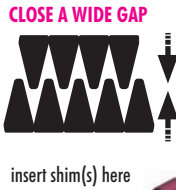
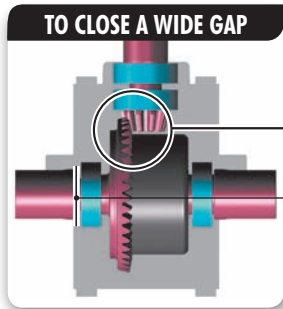
Transmitter Receiver Steering and Throttle Servos 	.21ci (3.5cc) Engine 	Manifold Exhaust 	Starter Box & Battery Pack 	Glow Plug Igniter 	Battery Charger 
Receiver Pack 	Threadlock 	CA Glue 	Transmitter Batteries 	Fuel 	Lexan™ Paint 

TIP FRONT & REAR DIFF GEAR MESH ADJUSTMENT

Before filling the differentials with oil we suggest that you first check 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 drive 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:

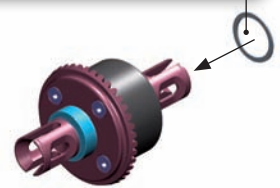
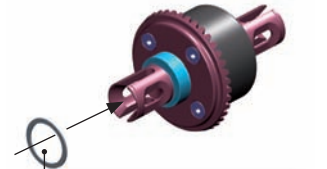
INCLUDED SHIM



OPTIONAL SHIM

For easier gear mesh adjustments, optional S13 x 0.2 shims are used. These shims can be placed behind the bearing.

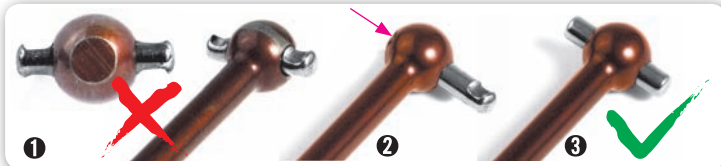
To close a wide gap:
add 1 or 2 shims against diff spur gear



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

TIP DRIVE SHAFT PINS SERVICING

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



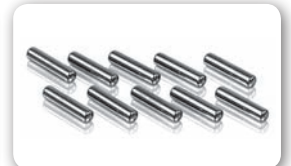
1 Do not use drive shafts when the pins are worn.

2 Press out the worn pins.

3 Press in new pins and regularly inspect for wear.



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



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

TIP GRAPHITE PARTS PROTECTION

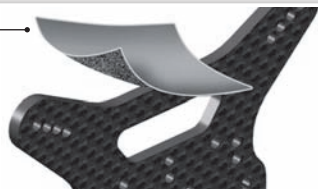
Follow this tech tip to protect the graphite parts.

Protect all XT9 Graphite Parts:

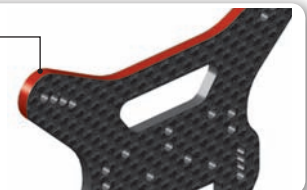
- Front shock tower
- Rear shock tower
- Steering plate
- Upper plate
- Center diff mounting plate

Fine sandpaper

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



Apply CA glue to all edges of the graphite parts.



TIP INSTALLING PIVOT BALLS INTO COMPOSITE BALL-JOINTS



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



2 Tighten screw until pivot ball is tight against block.



3 Lift ball joint until it snaps into place over pivot ball. Ball joint should move freely.

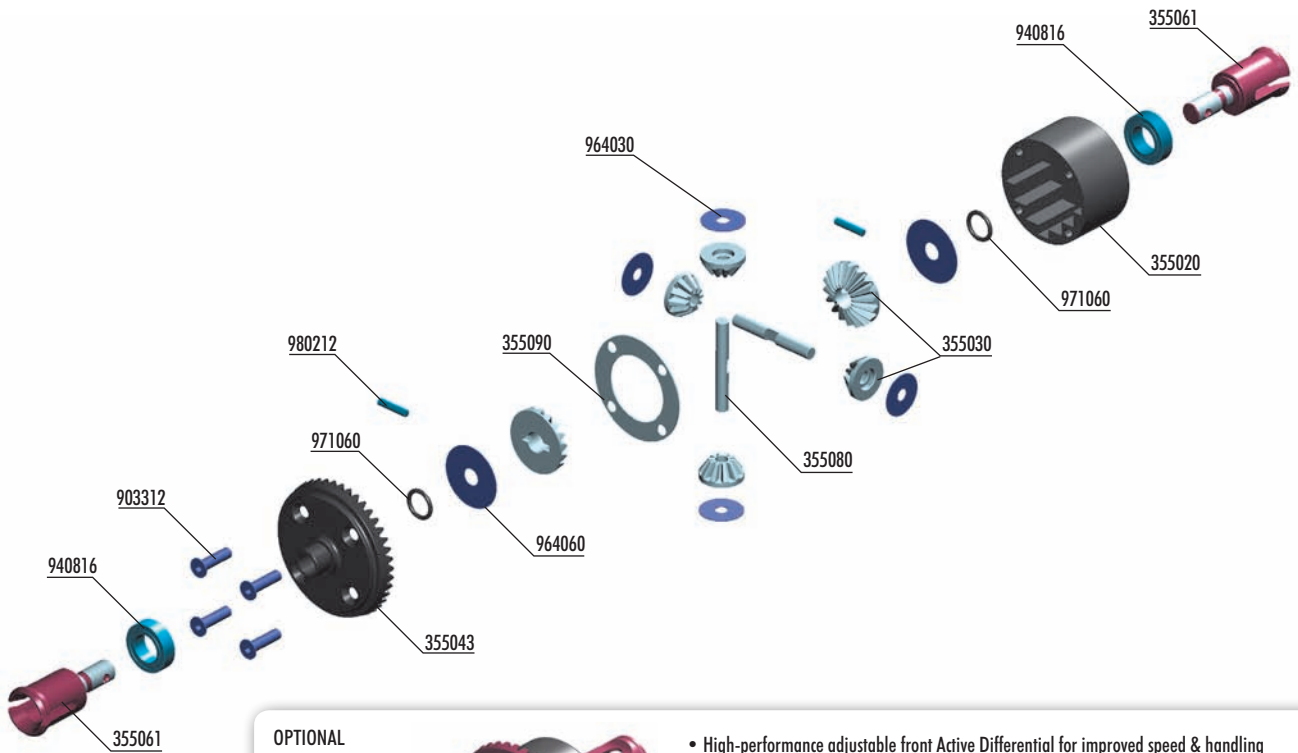


4 The finished joint.




5 Loosen and remove screw.

1. FRONT & REAR DIFFERENTIALS






OPTIONAL

ACTIVE FRONT DIFF
#355101




- High-performance adjustable front Active Differential for improved speed & handling
- Fully adjustable on- and off-power performance using different internal segments and gears
- Improves diff action and increases traction
- Easy and consistent steering


BAGS			
	35 5020 DIFFERENTIAL CASE	90 3312 HEX SCREW SFH M3x12 (10)	
	35 5030 STEEL DIFF BEVEL & SATELLITE GEARS (2+4)	94 0816 HIGH-SPEED BALL-BEARING 8x16x5 BLUE COVERED (2)	
	35 5043 FRONT/REAR DIFF LARGE BEVEL GEAR 43T - HUDY STEEL	96 4030 WASHER S 3.5x12x0.2 (10)	
	35 5061 FRONT DIFF OUTDRIVE ADAPTER - LONG (2) - HUDY SPRING STEEL™	96 4060 WASHER S 6x18x0.2 (10)	
	35 5080 DIFF PIN (2)	97 1060 SILICONE O-RING 6x1.5 (10)	
	35 5090 DIFF GASKET (4)	98 0212 PIN 2x11.6 (10)	




940816
BB 8x16x5



964060
S 6x18x0.2




971060
O 6x1.5



980212
P 2x11.6

SET-UP BOOK
DIFFERENTIAL GEARS

2x 

FRONT/REAR DIFF LARGE BEVEL GEAR	
#355043	DIFF LARGE BEVEL GEAR 43T (STANDARD)
#355041	DIFF LARGE BEVEL GEAR 41T (OPTION)

Graphite Grease (HUDY #106210)

TIP Use HUDY Ball-Bearing Grease for servicing:
#106220 - Standard
#106221 - Extra
#106222 - Premium

STEP 5&6 DETAIL



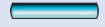
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BB 8x16x5



964060
S 6x18x0.2

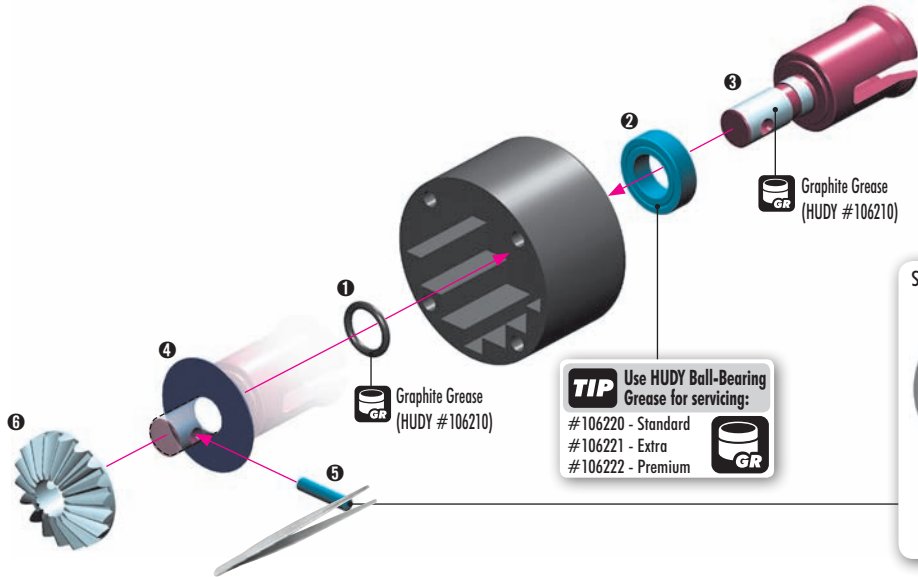


971060
O 6x1.5

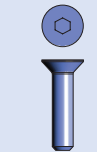


980212
P 2x11.6

2x
F=R



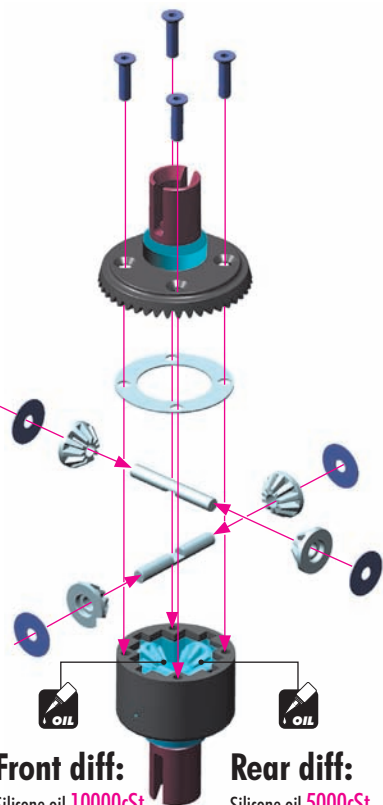
TIP Use HUDY Ball-Bearing Grease for servicing:
#106220 - Standard
#106221 - Extra
#106222 - Premium



903312
SFH M3x12



964030
S 3.5x12x0.2

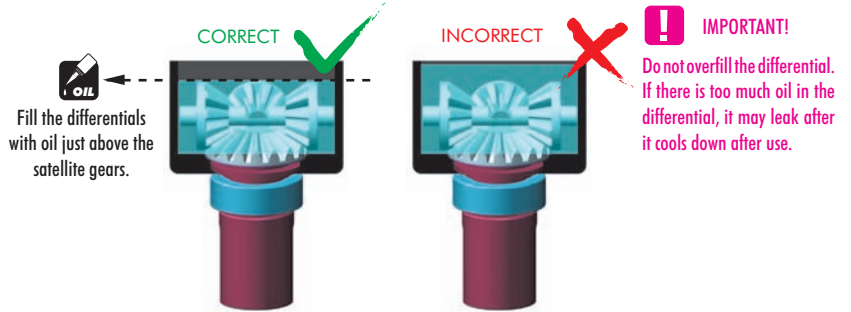


Front diff: Silicone oil 10000cSt
Fill just above the satellite gears.

Rear diff: Silicone oil 5000cSt
Fill just above the satellite gears.

VERY IMPORTANT!

Use these silicone oils included in the kit for initial settings:
Front diff: 10000cSt / Rear diff: 5000cSt



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



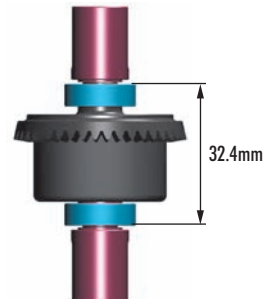
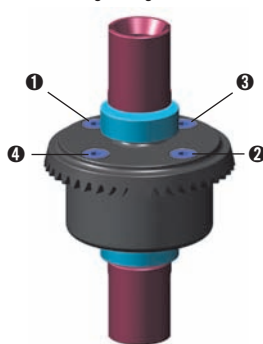
- Put the diff (without oil) on the scale and check the weight (approximately 44,5g).
- Slowly pour oil into the diff and watch the weight. Add 2,4g of oil into the diff. The approximate weight of the diff+oil is 46,9g.

SET-UP BOOK
DIFFERENTIAL OIL

Tighten the screws equally

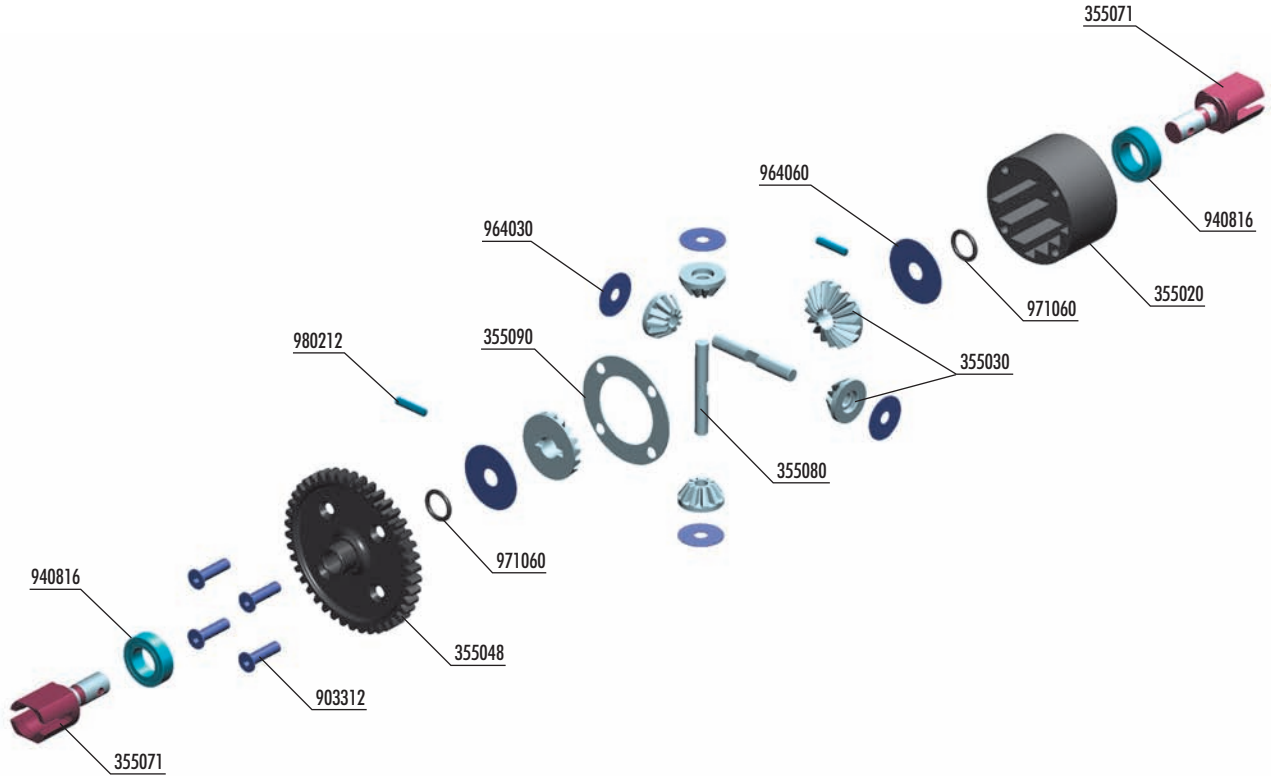


Finish tightening in this order



After assembly the differentials should have a length of 32,4 mm measured from the ends of the installed ball-bearings. If differentials are longer, retighten the 4 screws holding the crown gears.

CENTER DIFFERENTIAL

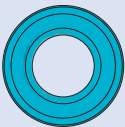


BAG

01.3

- 35 5020 DIFFERENTIAL CASE
- 35 5030 STEEL DIFF BEVEL & SATELLITE GEARS (2+4)
- 35 5048 CENTER DIFF SPUR GEAR 48T
- 35 5071 CENTER DIFF OUTDRIVE ADAPTER - LIGHTWEIGHT - HUDY STEEL (2)
- 35 5080 DIFF PIN (2)
- 35 5090 DIFF GASKET (4)

- 90 3312 HEX SCREW SFH M3x12 (10)
- 94 0816 HIGH-SPEED BALL-BEARING 8x16x5 BLUE COVERED (2)
- 96 4030 WASHER S 3.5x12x0.2 (10)
- 96 4060 WASHER S 6x18x0.2 (10)
- 97 1060 SILICONE O-RING 6x1.5 (10)
- 98 0212 PIN 2x11.6 (10)



940816

BB 8x16x5



964060

S 6x18x0.2



971060

O 6x1.5

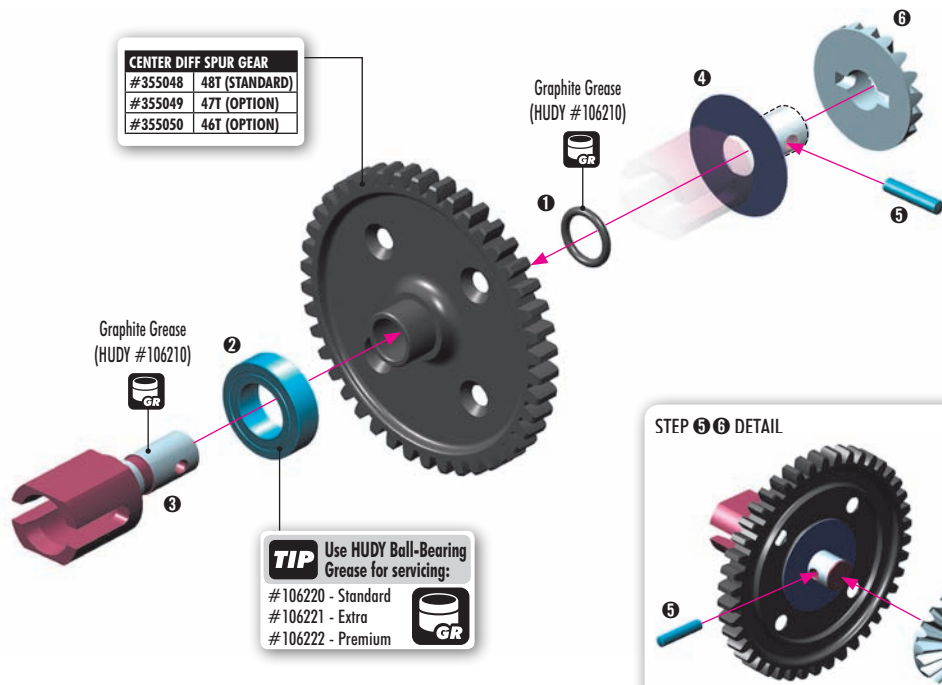


980212

P 2x11.6

SET-UP BOOK

DIFFERENTIAL GEARS



CENTER DIFF SPUR GEAR	
#355048	48T (STANDARD)
#355049	47T (OPTION)
#355050	46T (OPTION)

Graphite Grease
(HUDY #106210)

Graphite Grease
(HUDY #106210)

TIP Use HUDY Ball-Bearing Grease for servicing:
 #106220 - Standard
 #106221 - Extra
 #106222 - Premium

STEP 5 6 DETAIL



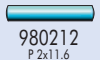
940816
BB 8x16x5



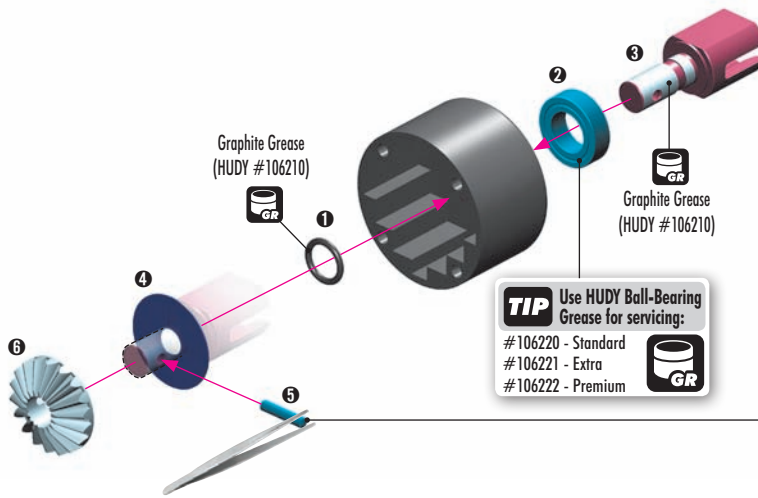
964060
S 6x18x0.2



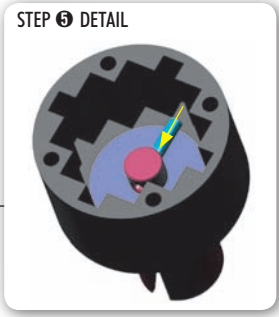
971060
O 6x1.5



980212
P 2x11.6



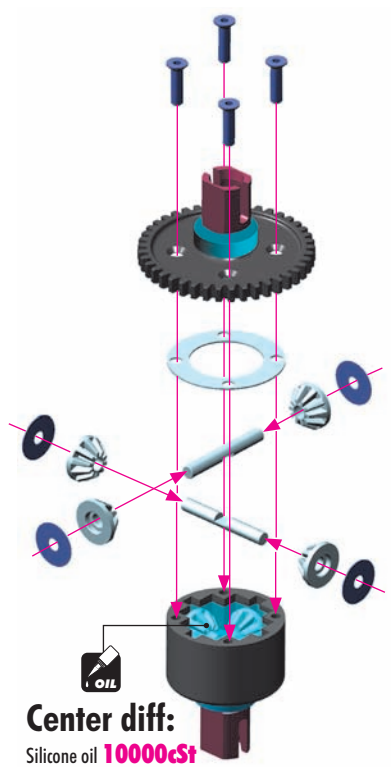
TIP Use HUDY Ball-Bearing Grease for servicing:
#106220 - Standard
#106221 - Extra
#106222 - Premium



903312
SFH M3x12



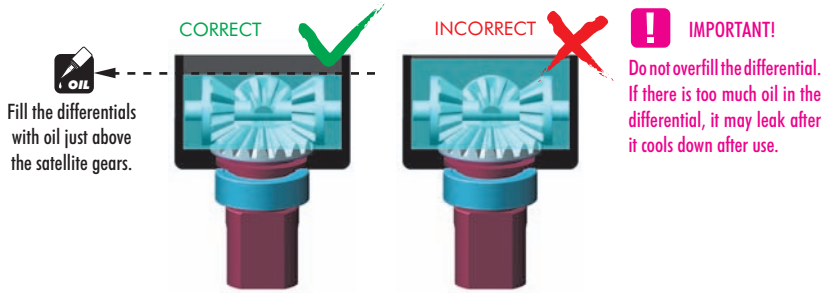
964030
S 3.5x12x0.2



Center diff:
Silicone oil **10000cSt**
Fill to just above the satellite gears.

VERY IMPORTANT!

Use the following silicone oil included in the kit for initial setting:
Center diff: **10000cSt**



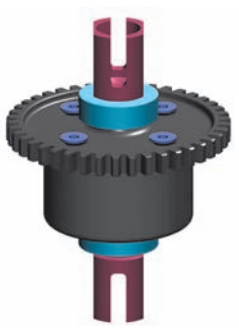
To ensure you have the same amount of oil from rebuild to rebuild, do the following:



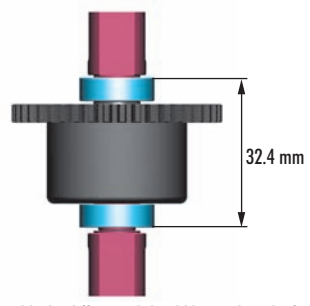
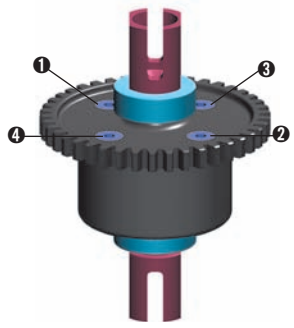
- Put the diff (without oil) on the scale and check the weight (approximately 40.6g).
- Slowly pour oil into the diff and watch the weight. Add 2.4g of oil into the diff. The approximate weight of the diff+oil is 43g.

SET-UP BOOK
DIFFERENTIAL OIL

Tighten the screws equally

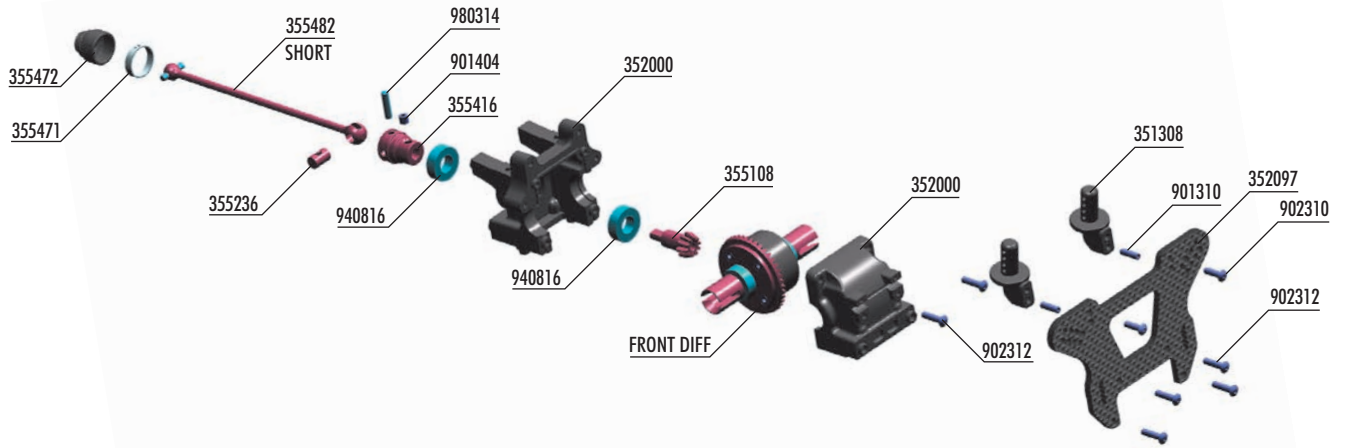


Finish tightening in this order



After assembly the differential should have a length of 32.4 mm measured from the ends of the installed ball-bearings. If differential is longer, retighten the 4 screws holding the spur gear.

2. FRONT TRANSMISSION

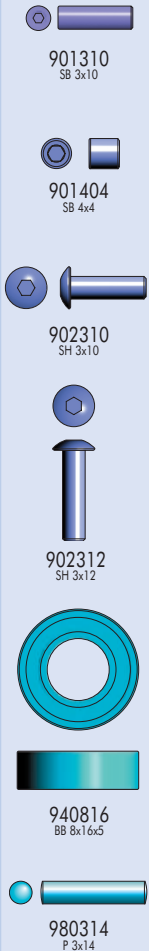


BAG

02

35 1308 XT8 BODY POSTS - V2
 35 2000 DIFF BULKHEAD BLOCK SET FRONT
 35 2097 XT8 GRAPHITE FRONT SHOCK TOWER - CNC MACHINED 3.5MM
 35 5108 BEVEL DRIVE GEAR 10T
 35 5236 XB9 CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
 35 5416 XB9 CENTRAL CVD SHAFT UNIVERSAL JOINT - HUDY SPRING STEEL™
 35 5471 XB9 DRIVE SHAFT LOCKING RING (2)
 35 5472 XB9 DRIVE SHAFT BOOT (2)

35 5482 XT9 CVD UNIVERSAL CENTRAL DRIVE SHAFT FRONT - HUDY SPRING STEEL™
 90 1310 HEX SCREW SB M3x10 (10)
 90 1404 HEX SCREW SB M4x4 (10)
 90 2310 HEX SCREW SH M3x10 (10)
 90 2312 HEX SCREW SH M3x12 (10)
 94 0816 HIGH-SPEED BALL-BEARING 8x16x5 RUBBER SEALED (2)
 98 0314 PIN 3x14 (10)



step 1

! SHORT CVD DRIVE SHAFT

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

Graphite Grease (HUDY #106210)

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

NOTE ORIENTATION **!**

TIP ASSEMBLED VIEW

STEP 4 DETAIL

PIN **!**

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.

step 3

DETAIL

Cut on both front and rear bulkhead blocks

FRONT DIFF 10000 cSt

Graphite Grease (HUDY #106210)

step 2

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

STEP 5 DETAIL

TIP Use HUDY Ball-Bearing Grease for servicing:
 #106220 - Standard
 #106221 - Extra
 #106222 - Premium

step 4

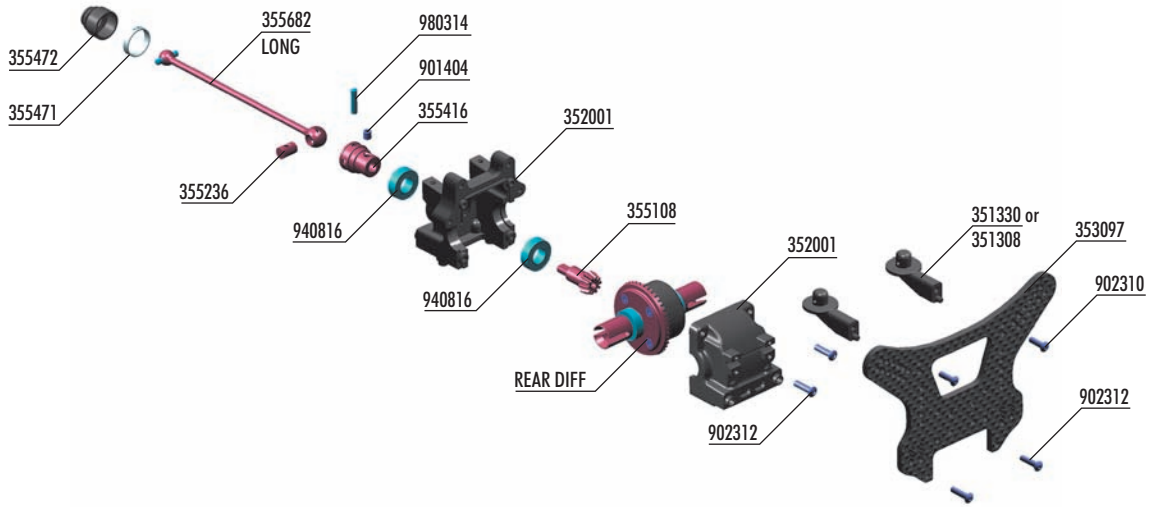
3.5mm

3x10

3x12

Follow the TECH TIP on page 5 to protect graphite parts **TIP**

REAR TRANSMISSION



BAG

02

35 1330 XB808 COMPOSITE REAR BODY POST - LONG
 35 2001 DIFF BULKHEAD BLOCK SET REAR
 35 3097 XT8 GRAPHITE REAR SHOCK TOWER - CNC MACHINED 3.5MM - V2
 35 5108 BEVEL DRIVE GEAR 10T
 35 5236 XB9 CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
 35 5416 XB9 CENTRAL CVD SHAFT UNIVERSAL JOINT - HUDY SPRING STEEL™
 35 5471 XB9 DRIVE SHAFT LOCKING RING (2)
 35 5472 XB9 DRIVE SHAFT BOOT (2)

35 5682 XT9 CVD UNIVERSAL CENTRAL DRIVE SHAFT REAR - HUDY SPRING STEEL™
 90 1404 HEX SCREW SB M4x4 (10)
 90 2310 HEX SCREW SH M3x10 (10)
 90 2312 HEX SCREW SH M3x12 (10)
 94 0816 HIGH-SPEED BALL-BEARING 8x16x5 RUBBER SEALED (2)
 98 0314 PIN 3x14 (10)



step 1

LONG CVD DRIVE SHAFT

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

Graphite Grease (HUDY #106210)

The ring can be assembled with hands but for easy using, we recommend using snap ring pliers (HUDY #189040)

NOTE ORIENTATION

TIP ASSEMBLED VIEW

STEP 4 DETAIL

PIN

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.

step 3

DETAIL

Cut on both front and rear bulkhead blocks

REAR DIFF 5000 cSt

Graphite Grease (HUDY #106210)

step 2

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

STEP 5 DETAIL

TIP Use HUDY Ball-Bearing Grease for servicing:
 #106220 - Standard
 #106221 - Extra
 #106222 - Premium

step 4

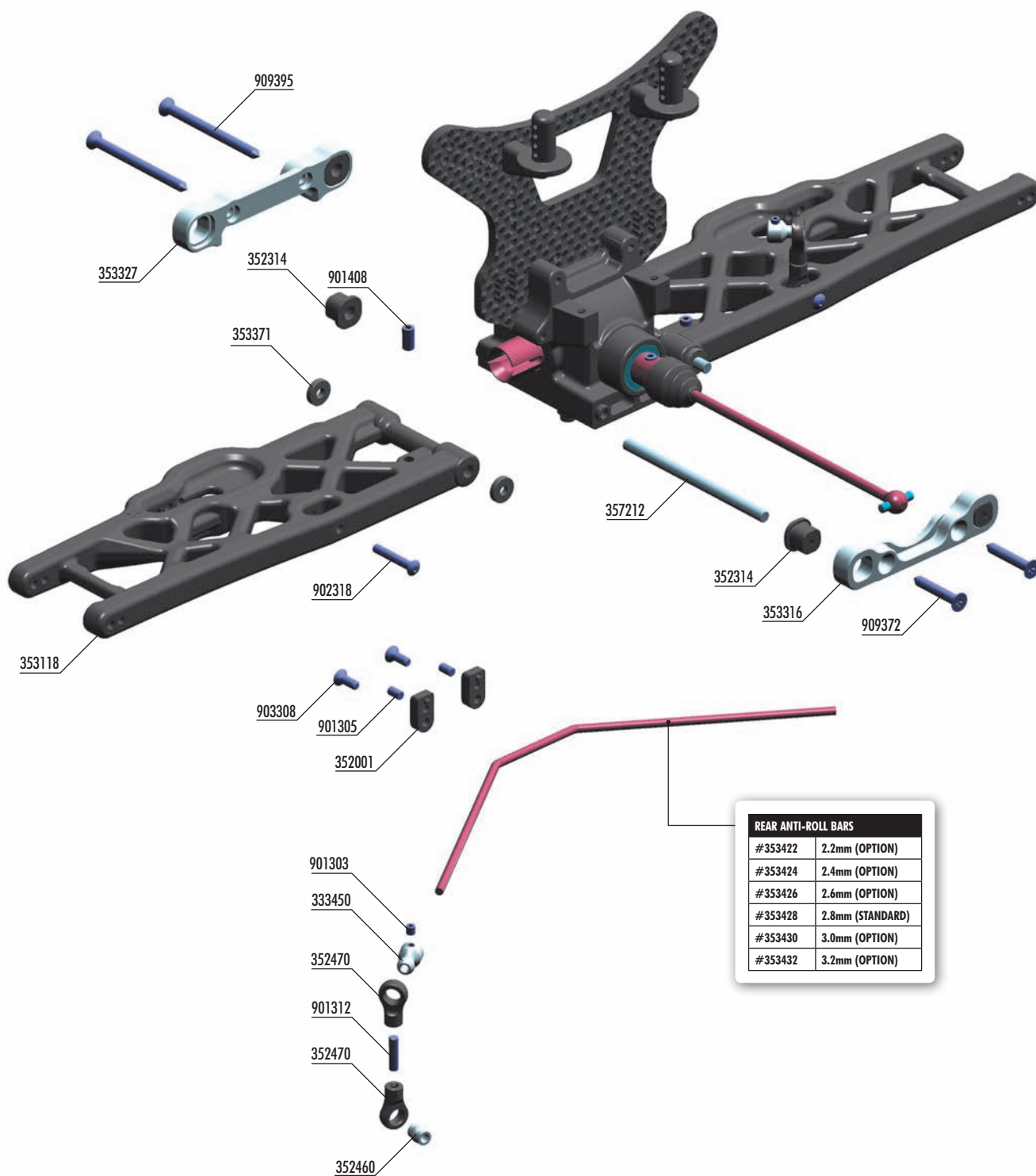
SHORT | **LONG**

Based on the type of body used, choose the appropriate body mount (short or long) and attach it to the shock tower at the proper height. If an original XRAY XT8 body is used, use the SHORT body post.

Follow the TECH TIP on page 5 to protect graphite parts

TIP

3. REAR SUSPENSION



BAG

03

- 33 3450 ANTI-ROLL BAR BALL JOINT 5.8 MM (2)
- 35 2001 DIFF BULKHEAD BLOCK SET REAR
- 35 2314 COMPOSITE ECCENTRIC BUSHINGS (2)
- 35 2460 PIVOT BALL 5.8 (10)
- 35 2470 BALL JOINT 5.8 (8)
- 35 3118 XT8 REAR LOWER SUSPENSION ARM
- 35 3304 ALU REAR LOWER SUSP. HOLDERS SET- SQUARE ADJ. ROLL-CENTER
- 35 3316 ALU REAR LOWER SUSP. HOLDER - FRONT - SQUARE ADJ. ROLL-CENTER
- 35 3327 ALU REAR LOWER SUSP. HOLDER - REAR - SQUARE ADJ. ROLL-CENTER
- 35 3371 SET OF COMPOSITE LOWER ARM SHIMS
- 35 3428 REAR ANTI-ROLL BAR 2.8MM
- 35 7212 LOWER INNER PIVOT PIN F+R (2)

- 90 1303 HEX SCREW SB M3x3 (10)
- 90 1305 HEX SCREW SB M3x5 (10)
- 90 1312 HEX SCREW SB M3x12 (10)
- 90 1408 HEX SCREW SB M4x8 (10)
- 90 2318 HEX SCREW SH M3x18 (10)
- 90 3308 HEX SCREW SFH M3x8 (10)
- 90 9372 SCREW PHILLIPS SS 3.5x22 (10)
- 90 9395 SCREW PHILLIPS SS 3.5x45 (10)



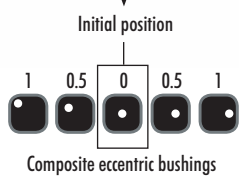
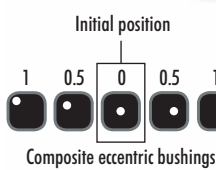
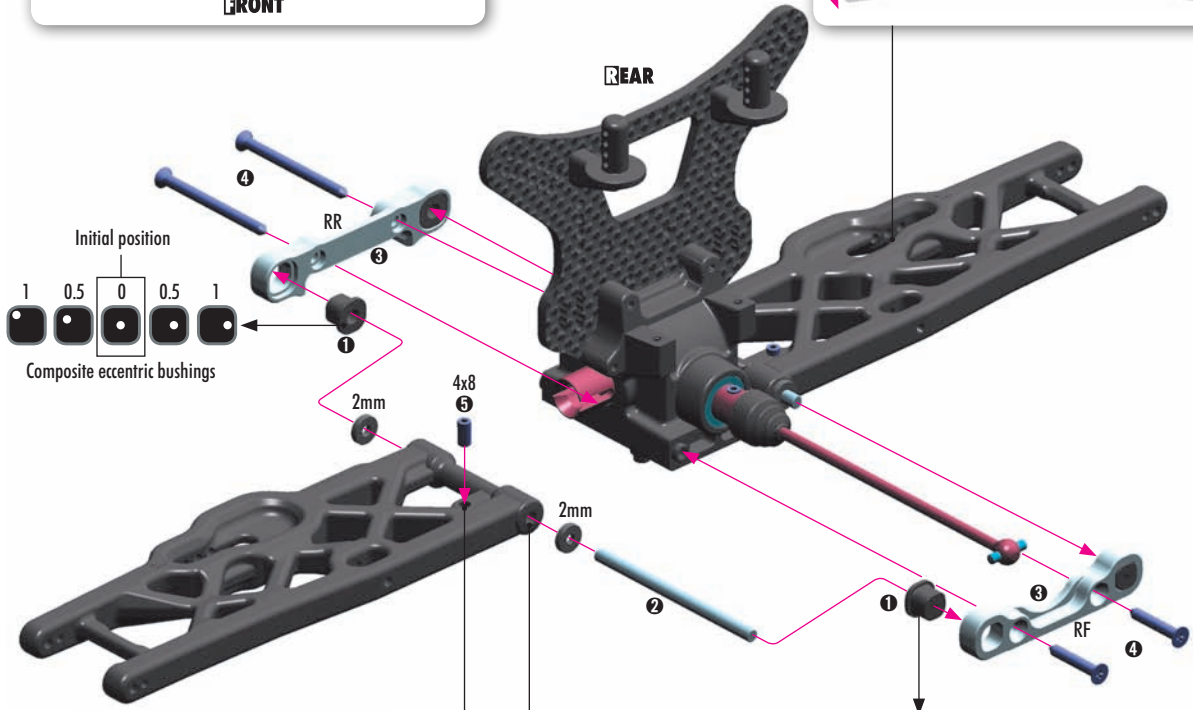
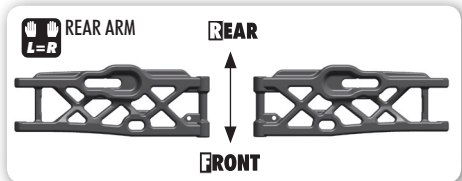
909395
SS 3.5x45



909372
SS 3.5x22



901408
SB M4x8



TIP **L=R**

If the suspension arm does not move freely use a HUDY Arm Reamer to resize the holes of the arms.

(HUDY #107634)

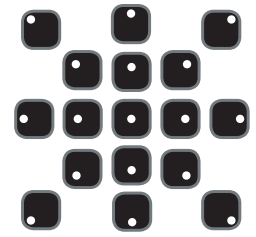
SET-UP BOOK

TOE-IN
ANTI-SQUAT
ROLL CENTER
DOWNSTOP
WHEELBASE
TRACK WIDTH

ECCENTRIC BUSHINGS HAVE TWO DIFFERENT OFFSETS FROM THE CENTER.



All possible mounting alternatives of eccentric bushings



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

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

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

ROLL-CENTER		
RR	RF	(mm)
		= 0mm
		= 1mm
		= -1mm

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

Example:

0(RR) - 0 (RF) = 3°

0(RR) - 0.5 (RF) = 3.5°

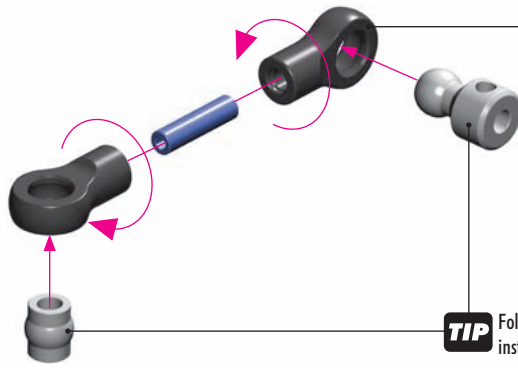
0(RR) - 1 (RF) = 4°

REAR SUSPENSION



901312
SB M3x12

2x L-R



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

901303
SB M3x3

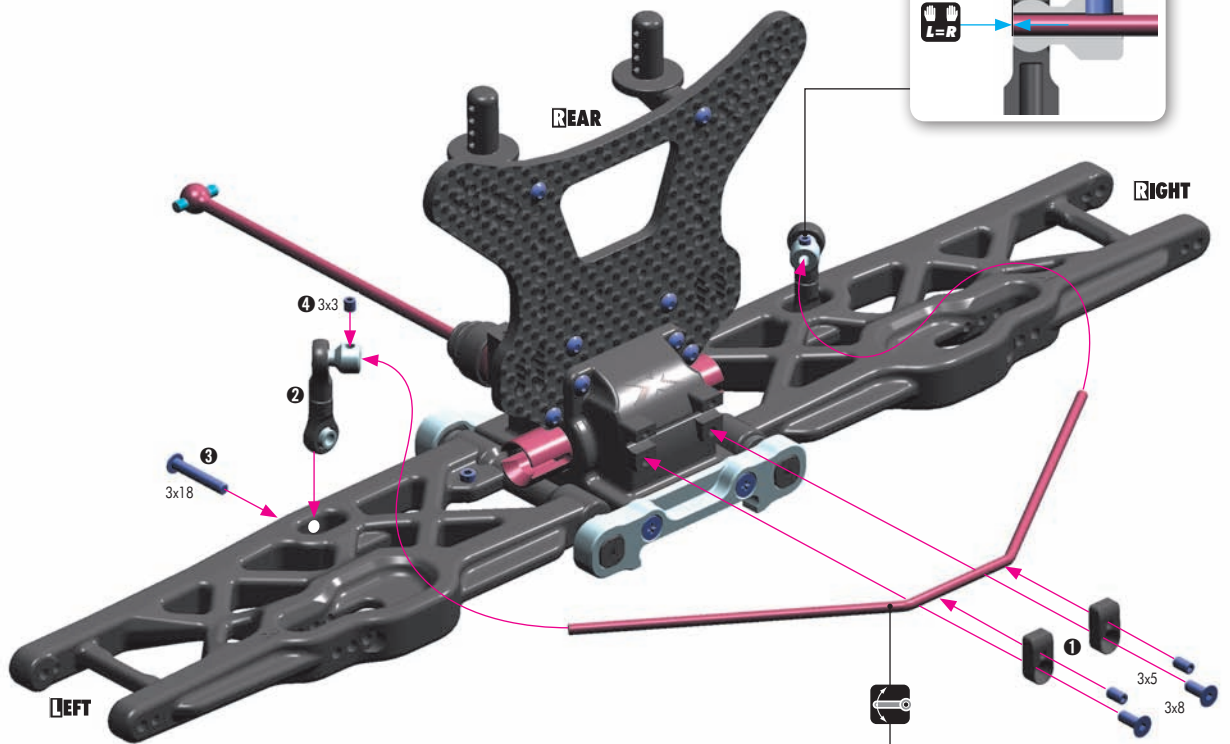
901305
SB M3x5



902318
SH M3x18



903308
SFH M3x8

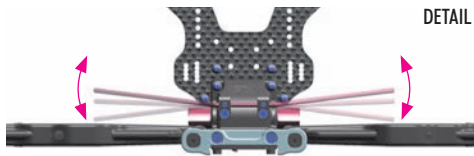


STEP 4 DETAIL

0mm

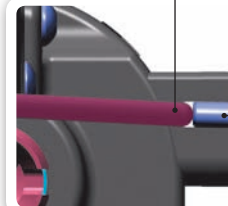
L=R

DETAIL



Step 1 check for free movement

DETAIL

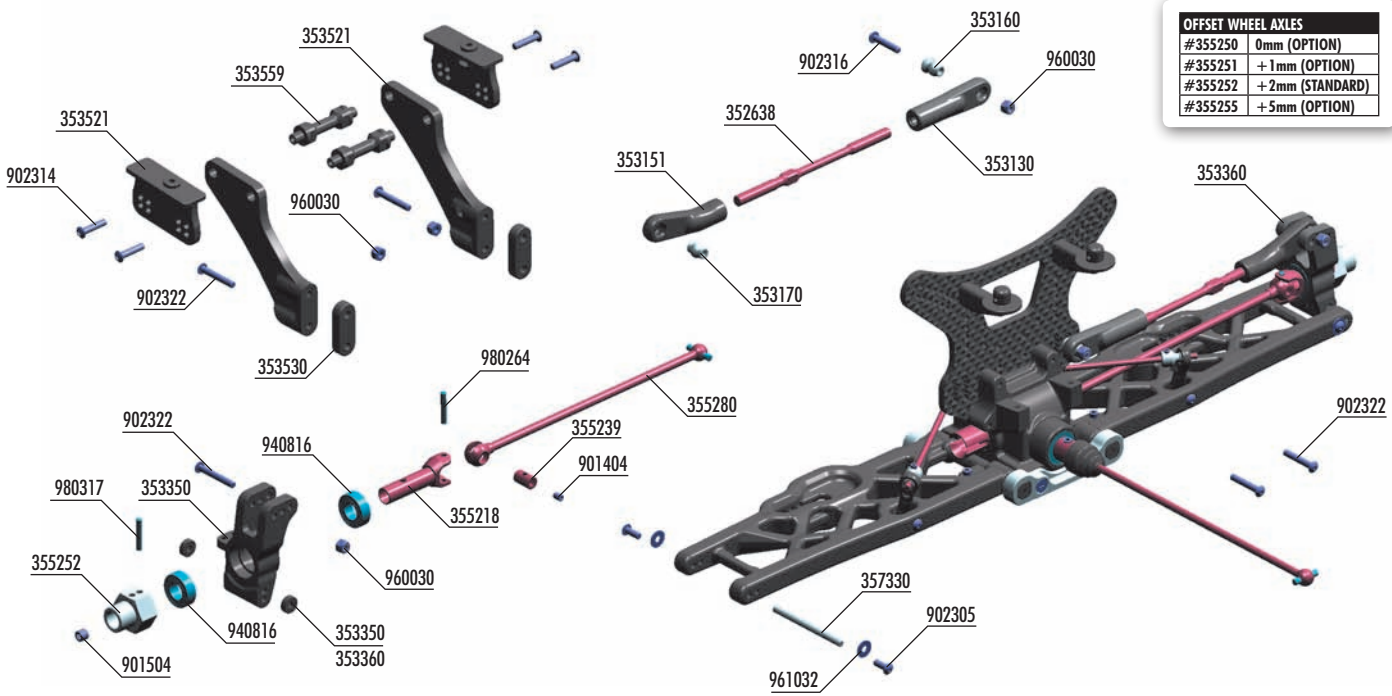


Step 1
Loosen the 3x5 setscrew if the anti-roll bar does not turn freely

SET-UP BOOK

ANTI-ROLL BAR

4. REAR SUSPENSION



OFFSET WHEEL AXLES	
#355250	0mm (OPTION)
#355251	+1mm (OPTION)
#355252	+2mm (STANDARD)
#355255	+5mm (OPTION)

BAG
04

- | | | | | | |
|---------|---|---------|--|---------|-------------------|
| 35 2638 | ADJ. TURNBUCKLE M5 L/R 91 MM - HUDY SPRING STEEL™ (2) | 35 5252 | ALU WHEEL AXLE OFFSET "+2MM" - HARD COATED (2) | 96 1032 | WASHER S 3.2 (10) |
| 35 3130 | REAR UPPER INNER CAMBER LINK BALL JOINT (2) | 35 5280 | XT8 UNIVERSAL CVD DRIVE SHAFT - HUDY SPRING STEEL™ | 98 0264 | PIN 2.5x14 (10) |
| 35 3151 | RELIEF REAR UPPER OUTER CAMBER LINK BALL JOINT (2) | 35 7330 | REAR LOWER OUTER PIVOT PIN (2) | 98 0317 | PIN 3x17 (10) |
| 35 3160 | MOUNTING BALL 6.8 (4) | | | | |
| 35 3170 | PIVOT BALL 6.8 (4) | 90 1404 | HEX SCREW SB M4x4 (10) | | |
| 35 3350 | REAR HUB CARRIER RIGHT | 90 1504 | HEX SCREW SB M5x4 (10) | | |
| 35 3360 | REAR HUB CARRIER LEFT | 90 2305 | HEX SCREW SH M3x5 (10) | | |
| 35 3521 | XB9 REAR WING POSTS | 90 2314 | HEX SCREW SH M3x14 (10) | | |
| 35 3530 | COMPOSITE ADJ. SHIM FOR REAR WING PLATE (2) | 90 2316 | HEX SCREW SH M3x16 (10) | | |
| 35 3559 | COMPOSITE REAR WING MOUNT BRACE (2) | 90 2322 | HEX SCREW SH M3x22 (10) | | |
| 35 5218 | CVD DRIVE AXLE - LIGHTWEIGHT - HUDY SPRING STEEL™ | 94 0816 | HIGH-SPEED BALL-BEARING 8x16x5 BLUE COVERED (2) | | |
| 35 5239 | CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™ | 96 0030 | NUT M3 (10) | | |

- 901404 SB M4x4
- 901504 SB M5x4
- 902305 SH M3x5
- 961032 S 3.2

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

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

STEP 6 Tighten the screw fully when the pin is installed

TIP Use HUDY Ball-Bearing Grease for servicing:
#106220 - Standard
#106221 - Extra
#106222 - Premium

ASSEMBLED VIEW

- 940816 BB 8x16x5
- 980317 P 3x17
- 980264 P 2.5x14

TIP Please ensure that the rear upright moves freely. If the rear upright is not moving freely use sandpaper to thin both wheelbase adjustment shims until the rear upright moves freely.

TIP (HUDY #107633) If the rear upright does not move freely, use a HUDY Arm Reamer to resize the hole.

INITIAL POSITION

2mm

2mm

RIGHT

LEFT

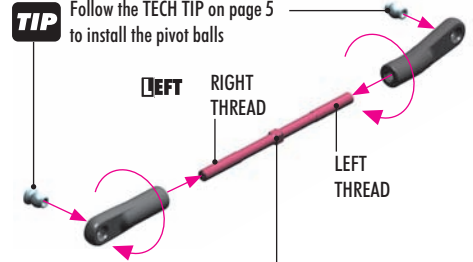
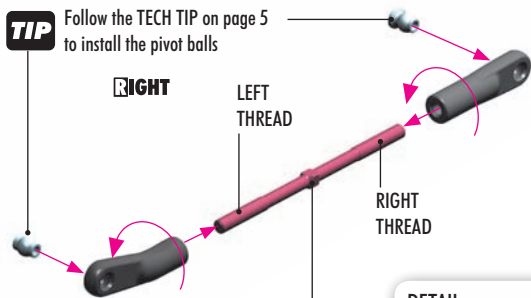
ARM REAMER

SET-UP BOOK
TRACK WIDTH
WHEELBASE

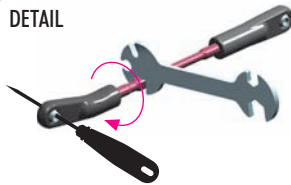
REAR SUSPENSION

SET-UP BOOK

CAMBER



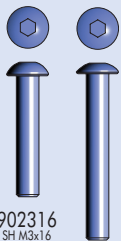
DETAIL



Use tools to tighten as shown
Special Tool for all turnbuckles, nuts (HUDY #108090)



2x

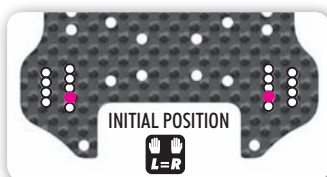


902316
SH M3x16

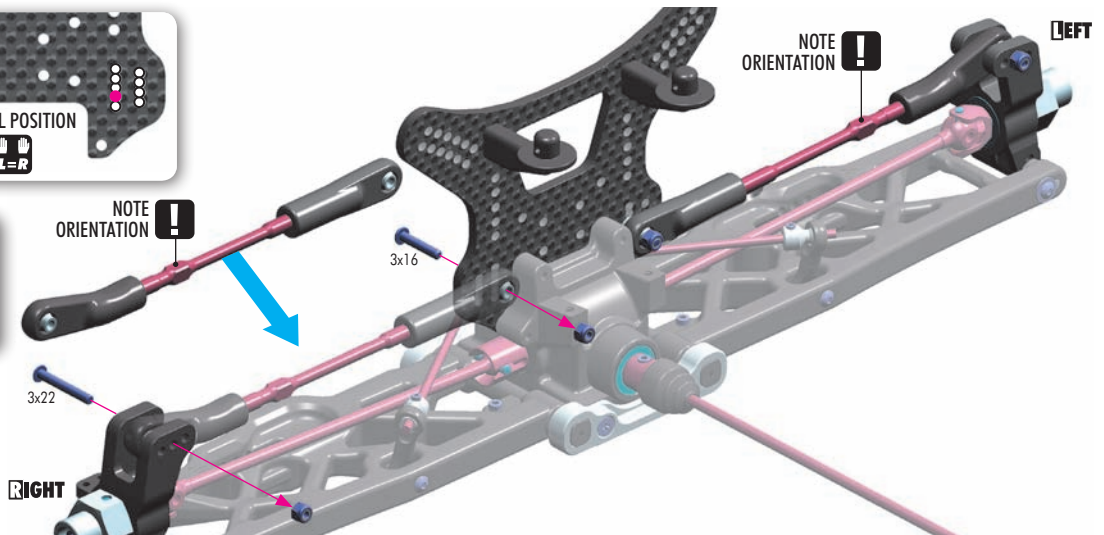
902322
SH M3x22



960030
N M3



2x



SET-UP BOOK

ROLL CENTER



902314
SH M3x14

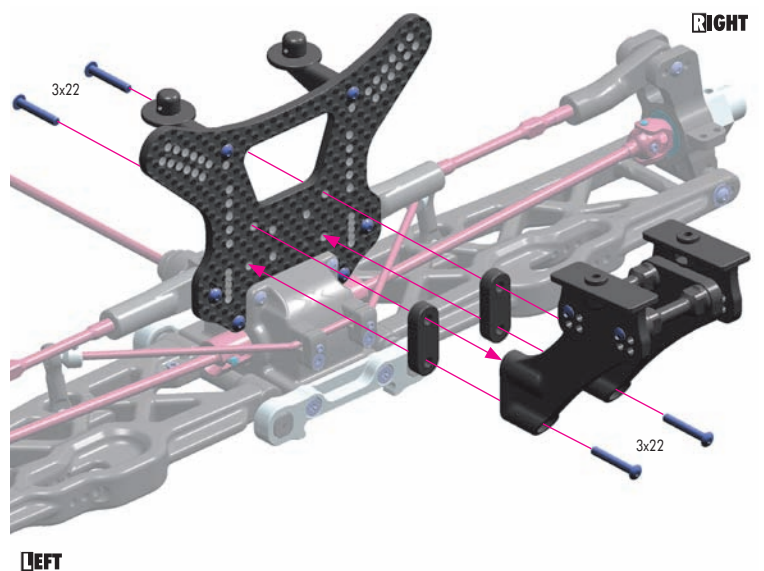
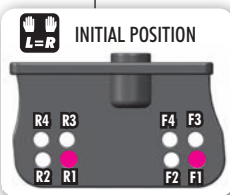
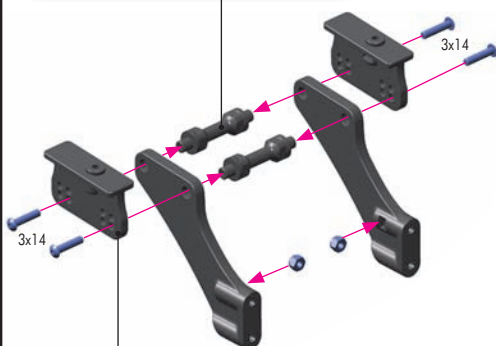


902322
SH M3x22



960030
N M3

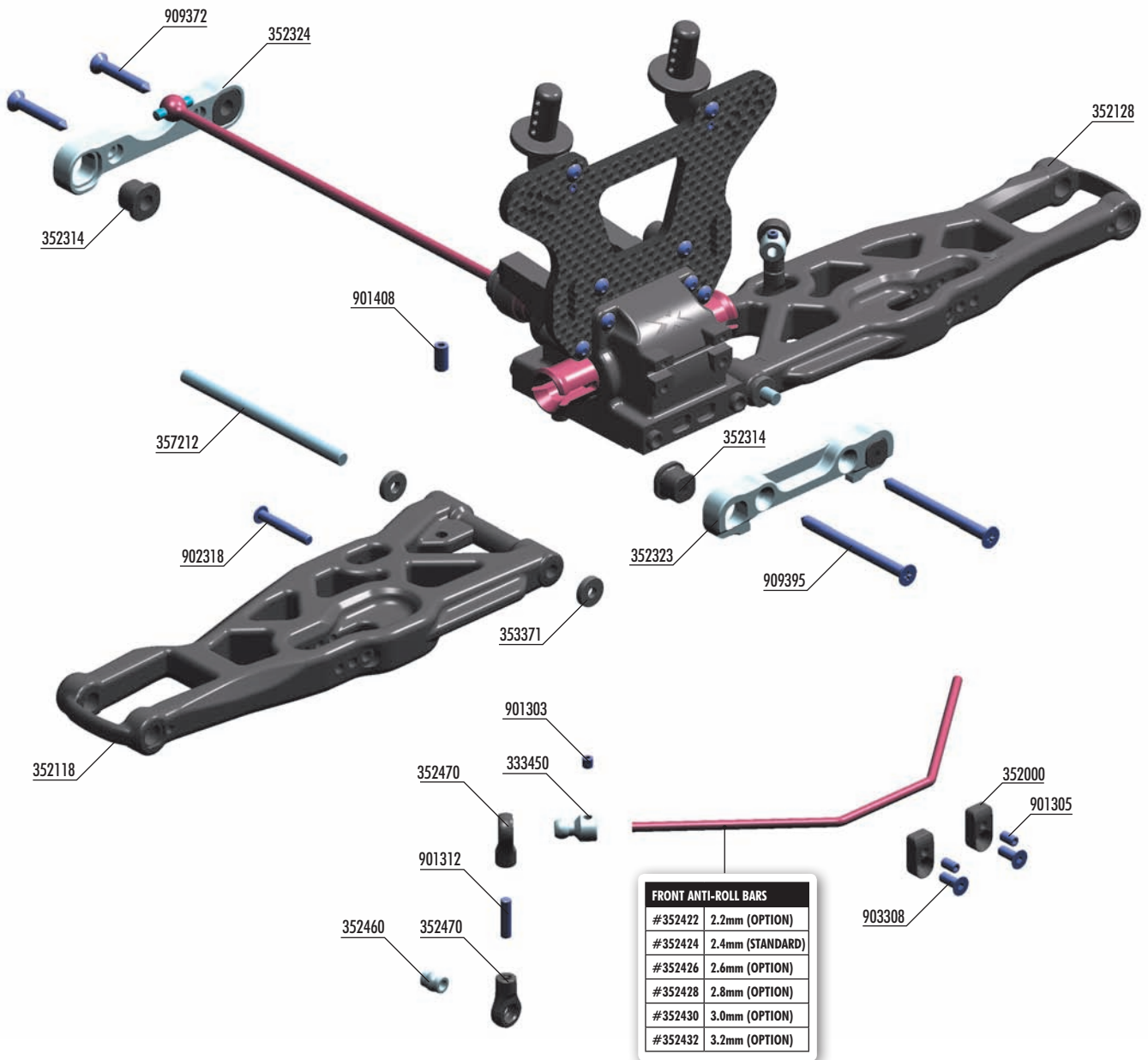
TIP For stiffer wing mounting use optional alu wing mount brace #353550.



SET-UP BOOK

REAR WING

5. FRONT SUSPENSION



FRONT ANTI-ROLL BARS	
#352422	2.2mm (OPTION)
#352424	2.4mm (STANDARD)
#352426	2.6mm (OPTION)
#352428	2.8mm (OPTION)
#352430	3.0mm (OPTION)
#352432	3.2mm (OPTION)

BAG

05

- 33 3450 ANTI-ROLL BAR BALL JOINT 5.8 MM (2)
- 35 2000 DIFF BULKHEAD BLOCK SET FRONT
- 35 2118 XT8 FRONT LOWER SUSPENSION ARM RIGHT
- 35 2128 XT8 FRONT LOWER SUSPENSION ARM LEFT
- 35 2304 ALU FRONT LOWER SUSP. HOLDERS SET - SQUARE ADJ. ROLL-CENTER
- 35 2323 ALU FRONT LOWER SUSP. HOLDER - FRONT - SQUARE ADJ. ROLL-CENTER
- 35 2324 ALU FRONT LOWER SUSP. HOLDER - REAR - SQUARE ADJ. ROLL-CENTER
- 35 2314 COMPOSITE SQUARE ADJ. ROLL-CENTER BUSHINGS (2)
- 35 2424 FRONT ANTI-ROLL BAR 2.4MM
- 35 2460 PIVOT BALL 5.8 (10)
- 35 2470 BALL JOINT 5.8 (8)

- 35 3371 SET OF COMPOSITE LOWER ARM SHIMS
- 35 7212 LOWER INNER PIVOT PIN F+R (2)
- 90 1303 HEX SCREW SB M3x3 (10)
- 90 1305 HEX SCREW SB M3x5 (10)
- 90 1312 HEX SCREW SB M3x12 (10)
- 90 1408 HEX SCREW SB M4x8 (10)
- 90 2318 HEX SCREW SH M3x18 (10)
- 90 3308 HEX SCREW SFH M3x8 (10))
- 90 9372 SCREW PHILLIPS SS 3.5x22 (10)
- 90 9395 SCREW PHILLIPS SS 3.5x45 (10)

FRONT SUSPENSION



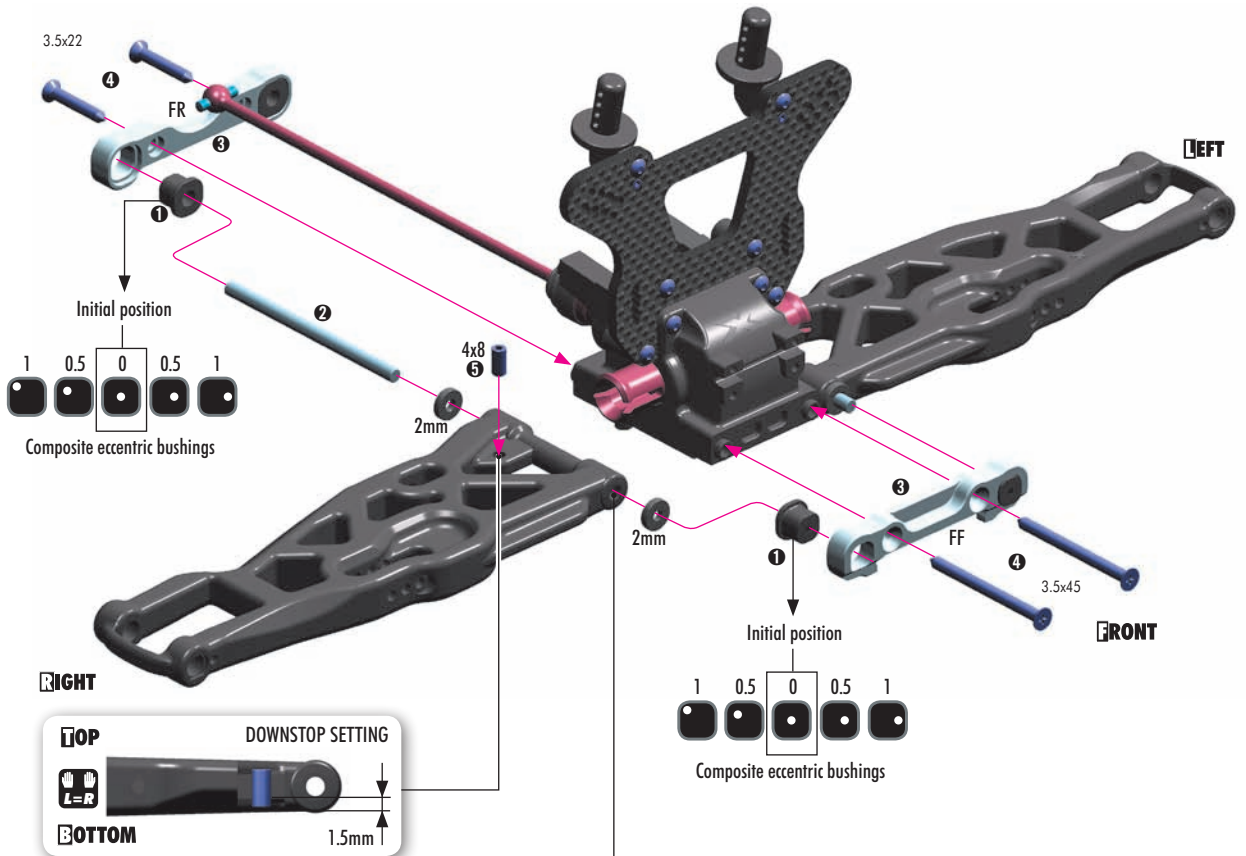
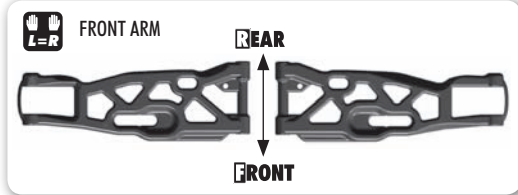
909395
SS 3.5x45



909372
SS 3.5x22

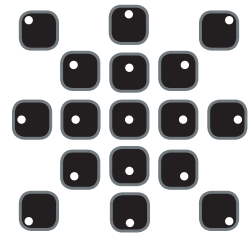


901408
SB M4x8



TIP If the suspension arms do not move freely, use a HUDY Arm Reamer resize the holes.
ARM REAMER (HUDY #107634)

All possible mounting alternatives of eccentric bushings



Eccentric bushings have two different offsets from the center.



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

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

KICK-UP		
FF	FR	(°)
		= 6°
		= 5°
		= 7°
		= 5°
		= 4°
		= 6°
		= 7°
		= 6°
		= 8°

ROLL-CENTER		
FF	FR	(mm)
		= 1
		= 0
		= -1

The tables below describe the amounts of kick-up, change depending on the combinations of eccentric bushings used with 0 and 1mm, 1° off set. The 0.5mm, 0.5° represent the half change.



C-Hub Caster	TOTAL CASTER = C-HUB CASTER + CASTER ECCENTRIC BUSHING + KICK-UP				
	KICK-UP				
	4°	5°	6°	7°	8°
17°	21°	22°	23°	24°	25°
16°	20°	21°	22°	23°	24°
15°	19°	20°	21°	22°	23°
14°	18°	19°	20°	21°	22°
13°	17°	18°	19°	20°	21°

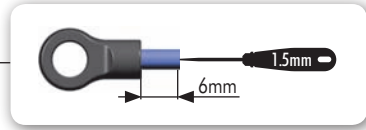
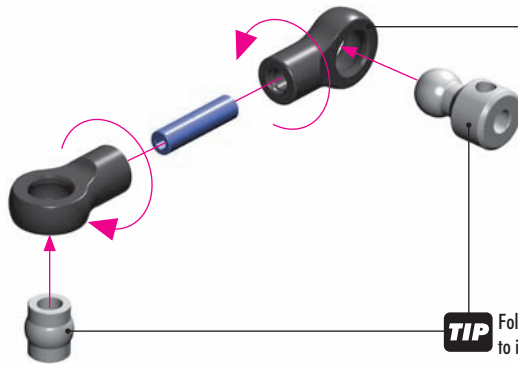
Total caster is the angle that the C-hub is to the flat chassis bottom. Caster is affected not only by front kick up but also by the C-hub caster and caster eccentric bushing. The combination of all three represents the total caster angle. The XT9 includes a 15°caster block with the centric bushing. 1 and 2mm eccentric bushings can be purchased as options.

FRONT SUSPENSION



901312
SB M3x12

2x L-R



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

901303
SB M3x3

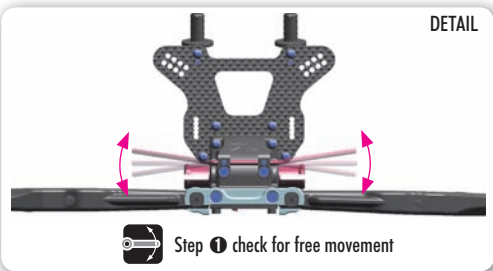
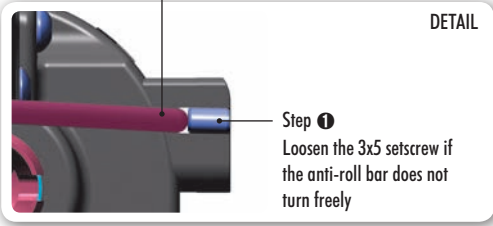
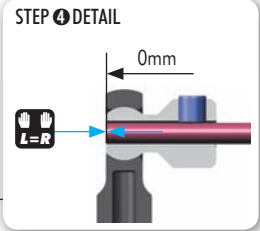
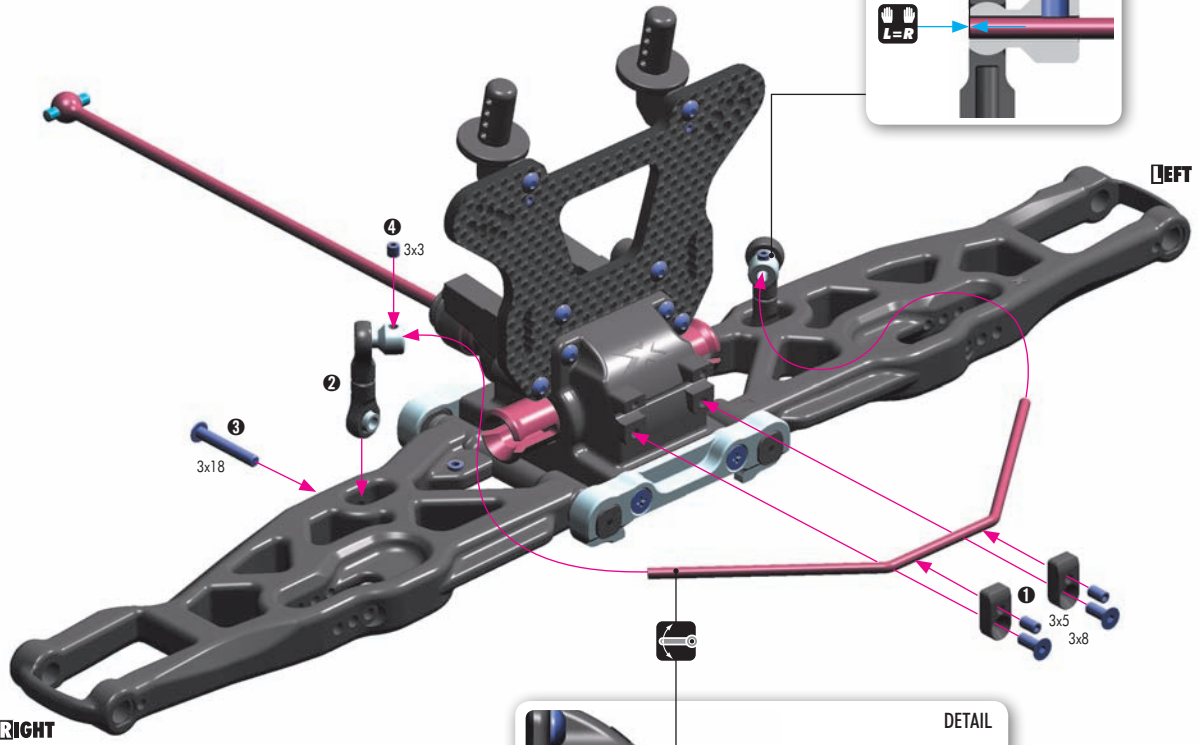
901305
SB M3x5



902318
SH M3x18

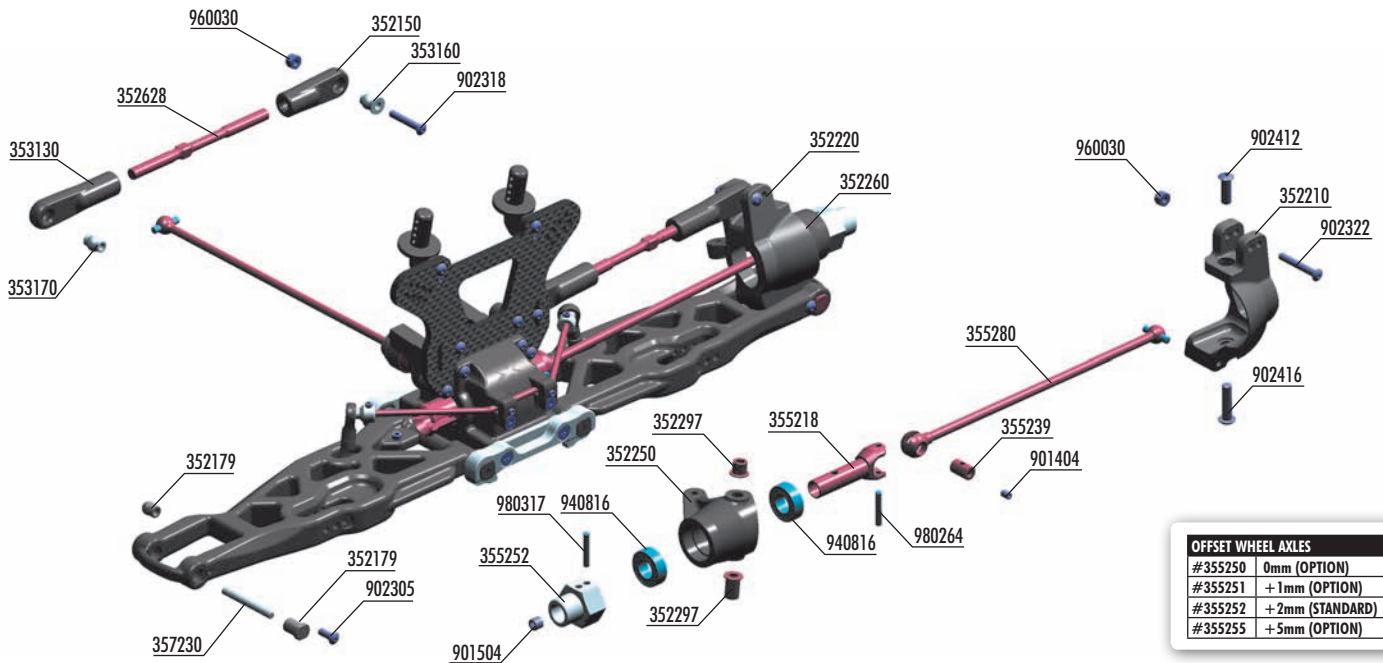


903308
SFH M3x8



SET-UP BOOK
ANTI-ROLL BAR

6. FRONT SUSPENSION

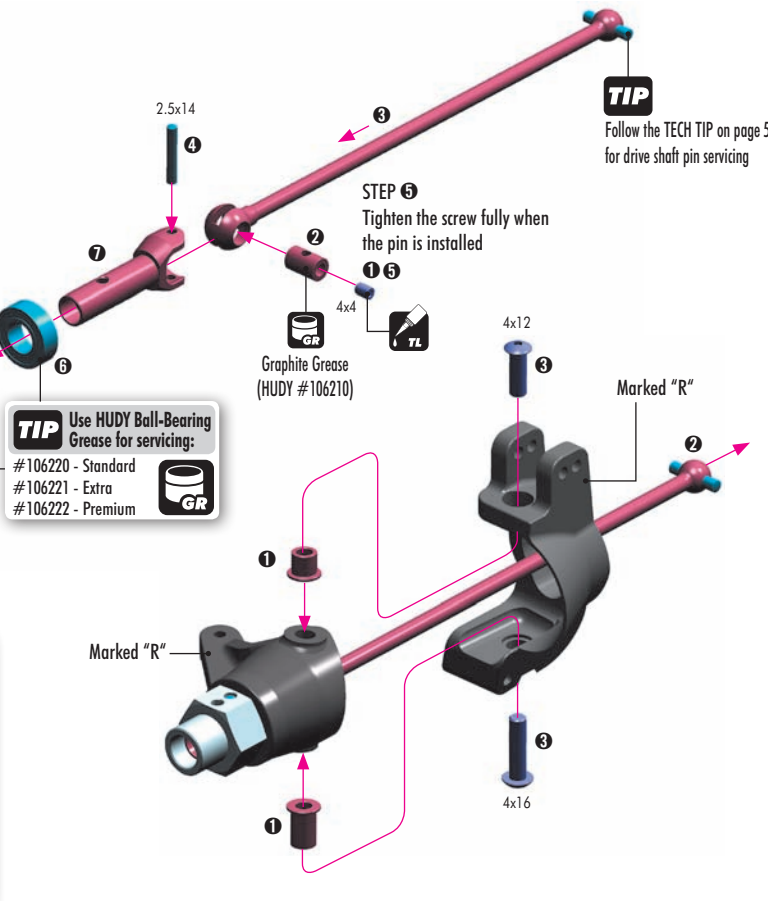
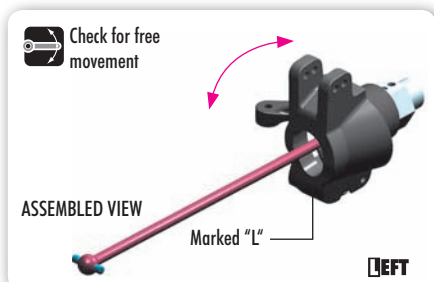
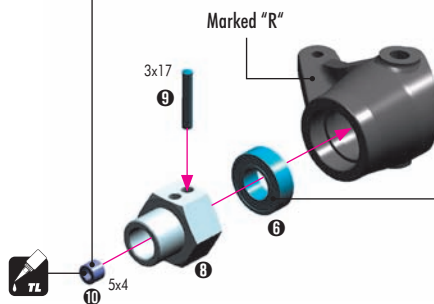
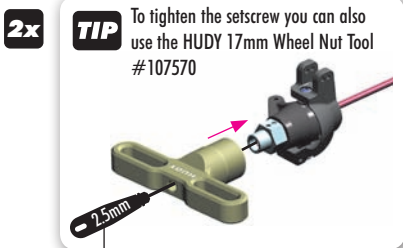
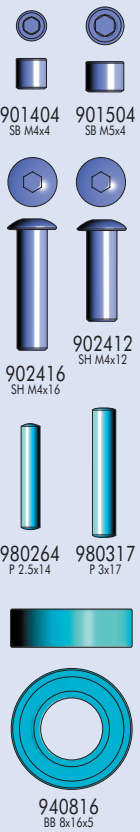


OFFSET WHEEL AXLES	
#35250	0mm (OPTION)
#35251	+1mm (OPTION)
#35252	+2mm (STANDARD)
#35255	+5mm (OPTION)



- 35 2150 FRONT UPPER ARM BALL JOINT (2)
- 35 2179 COMPOSITE BUSHING & BALL MOUNT SET (2+2)
- 35 2210 COMPOSITE C-HUB RIGHT
- 35 2220 COMPOSITE C-HUB LEFT
- 35 2250 STEERING BLOCK RIGHT - V2 (HAND MODIFIED)
- 35 2260 STEERING BLOCK LEFT - V2 (HAND MODIFIED)
- 35 2297 STEEL STEERING BUSHING - LONG (2+2)
- 35 2628 XT8 ADJ. TURNBUCKLE M5 L/R 75 MM - SPRING STEEL (2)
- 35 3130 REAR UPPER INNER CAMBER LINK BALL JOINT (2)
- 35 3160 MOUNTING BALL 6.8 (4)
- 35 3170 PIVOT BALL 6.8 (4)
- 35 5218 CVD DRIVE AXLE - LIGHTWEIGHT - HUDY SPRING STEEL™
- 35 5239 CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
- 35 5252 ALU WHEEL AXLE OFFSET "+2MM" - HARD COATED (2)

- 35 5280 XT8 UNIVERSAL CVD DRIVE SHAFT - HUDY SPRING STEEL™
- 35 7230 FRONT LOWER OUTER PIVOT PIN (2)
- 90 1404 HEX SCREW SB M4x4 (10)
- 90 1504 HEX SCREW SB M5x4 (10)
- 90 2305 HEX SCREW SH M3x5 (10)
- 90 2318 HEX SCREW SH M3x18 (10)
- 90 2322 HEX SCREW SH M3x22 (10)
- 90 2412 HEX SCREW SH M4x12 (10)
- 90 2416 HEX SCREW SH M4x16 (10)
- 94 0816 HIGH-SPEED BALL-BEARING 8x16x5 BLUE COVERED (2)
- 96 0030 NUT M3 (10)
- 98 0264 PIN 2.5x14 (10)
- 98 0317 PIN 3x17 (10)



SET-UP BOOK
 CASTER
 TRACK WIDTH

FRONT SUSPENSION



902305
SH M3x5



ASSEMBLY 1



Press pivot ball into arm until it snaps into place

ECCENTRIC BUSHINGS	
#352170	0° - STEEL (OPTION)
#352171	1° - STEEL (OPTION)
#352179	0° - COMPOSITE (STANDARD)

! The caster bushing influences the total caster of the car. Please see page 18.

DISASSEMBLY

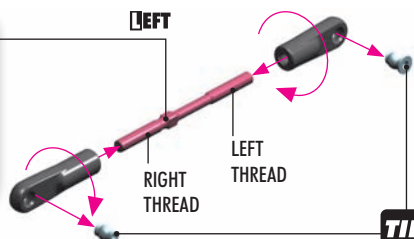


Remove 3x5 screw holding composite bushing in arm. Push out the pivot pin from the rear to remove the composite bushing.

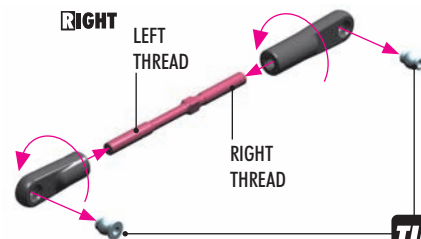
DETAIL



Use tools to tighten as shown



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



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



SET-UP BOOK

CAMBER



902318
SFH M3x18

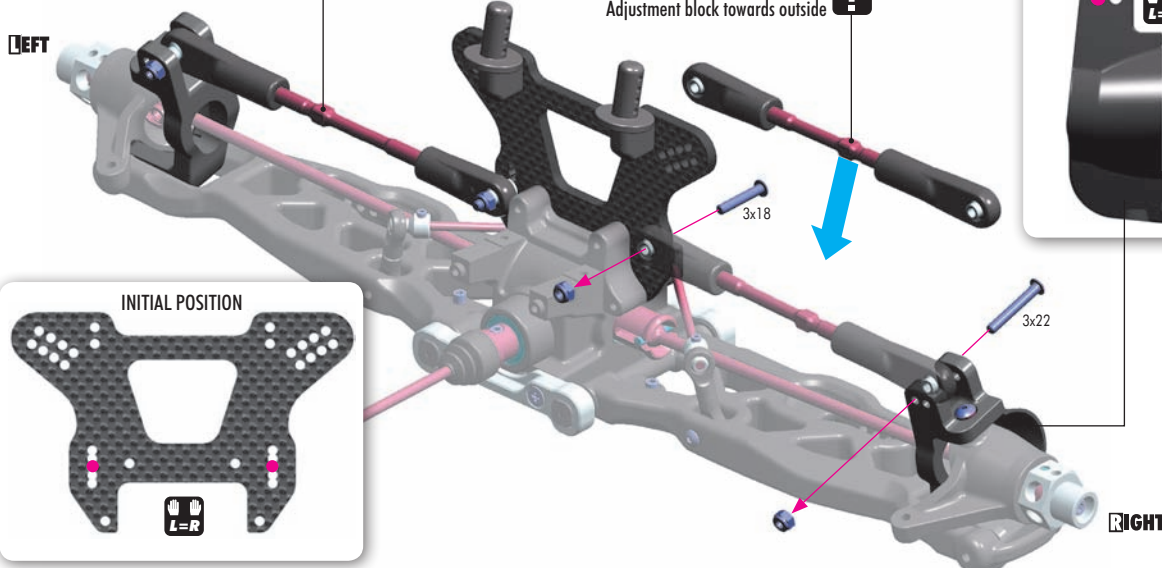
902322
SH M3x22



960030
N M3



NOTE ORIENTATION
Adjustment block towards outside

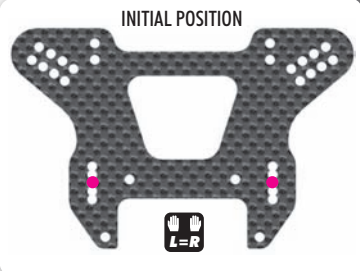


NOTE ORIENTATION
Adjustment block towards outside

INITIAL POSITION



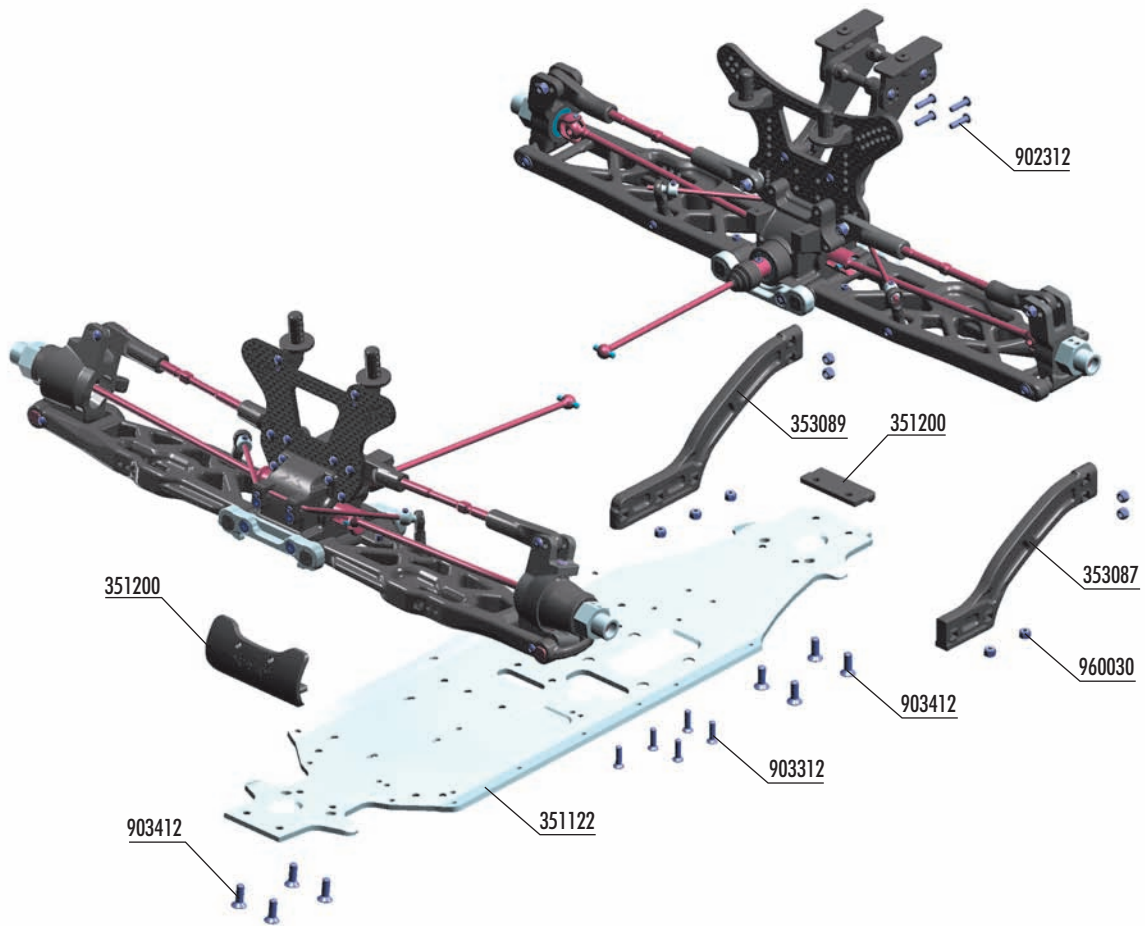
INITIAL POSITION



SET-UP BOOK

ROLL CENTER

FRONT & REAR ASSEMBLY



BAG

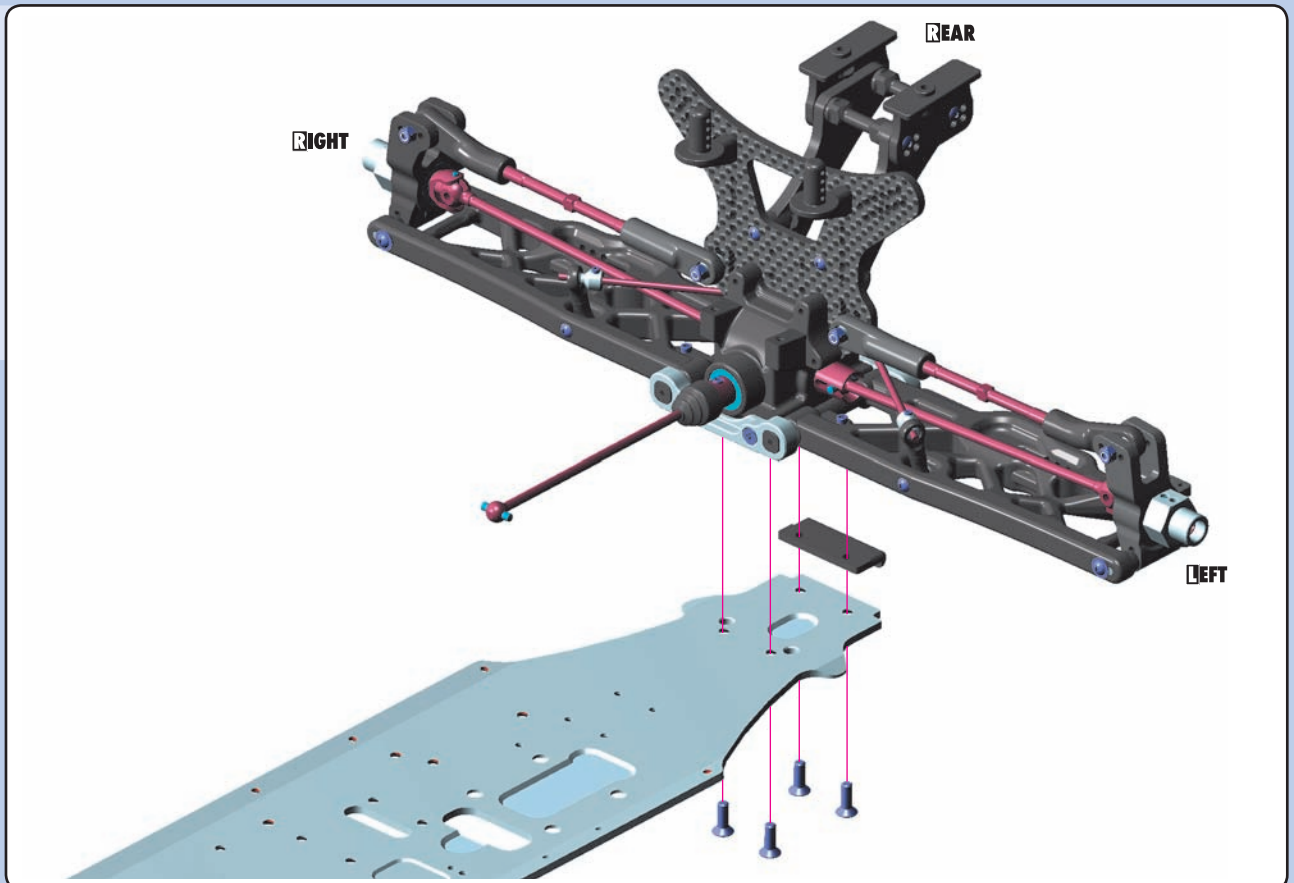
06

35 1122 XT9 ALU CHASSIS - HARDCOATED SWISS 7075 T6 (3MM)
 35 1200 FRONT & REAR BUMPER - V2
 35 3087 COMPOSITE REAR BRACE - SHORT
 35 3089 COMPOSITE REAR BRACE - V2

90 2312 HEX SCREW SH M3x12 (10)
 90 3312 HEX SCREW SFH M3x12 (10)
 90 3412 HEX SCREW SFH M4x12 (10)
 96 0030 NUT M3 (10)



903412
 SFH M4x12



FRONT & REAR ASSEMBLY



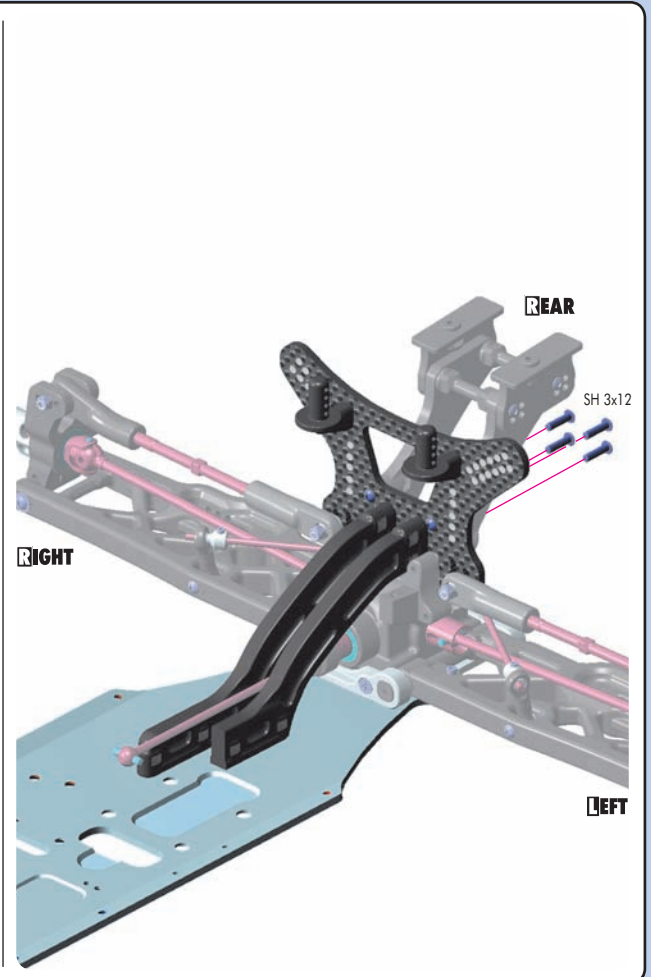
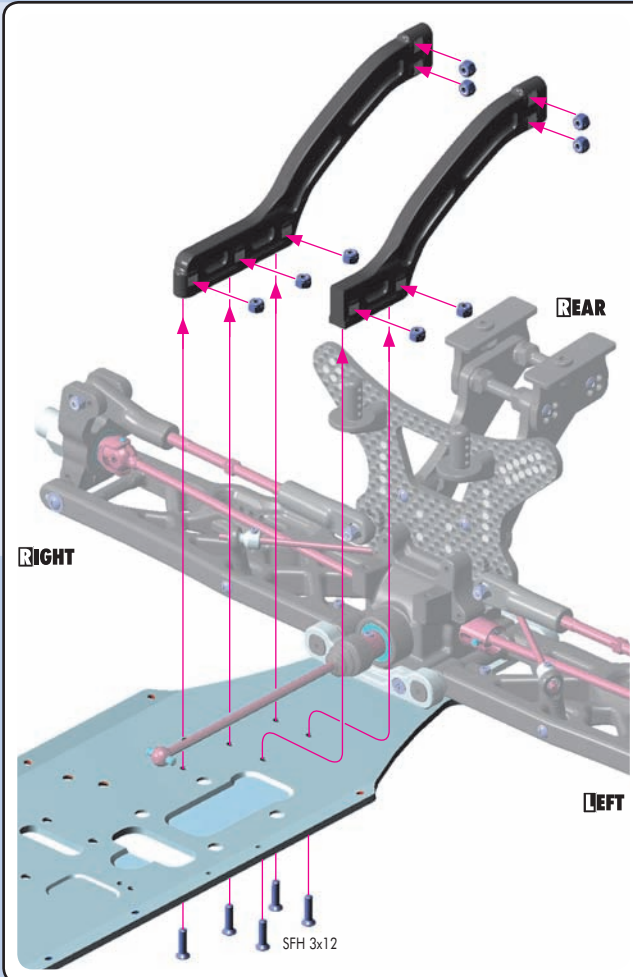
902312
SFH M3x16



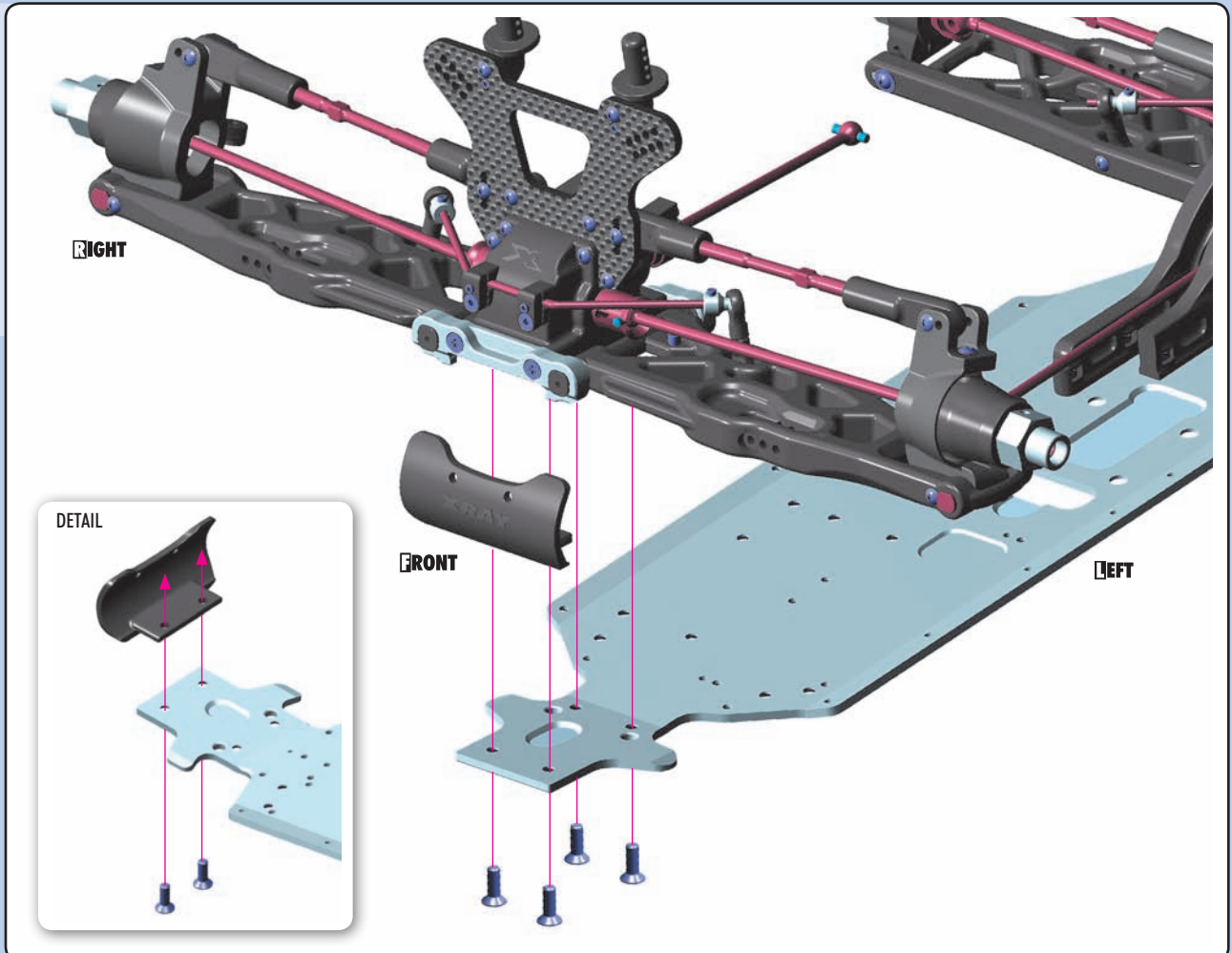
903312
SFH M3x12



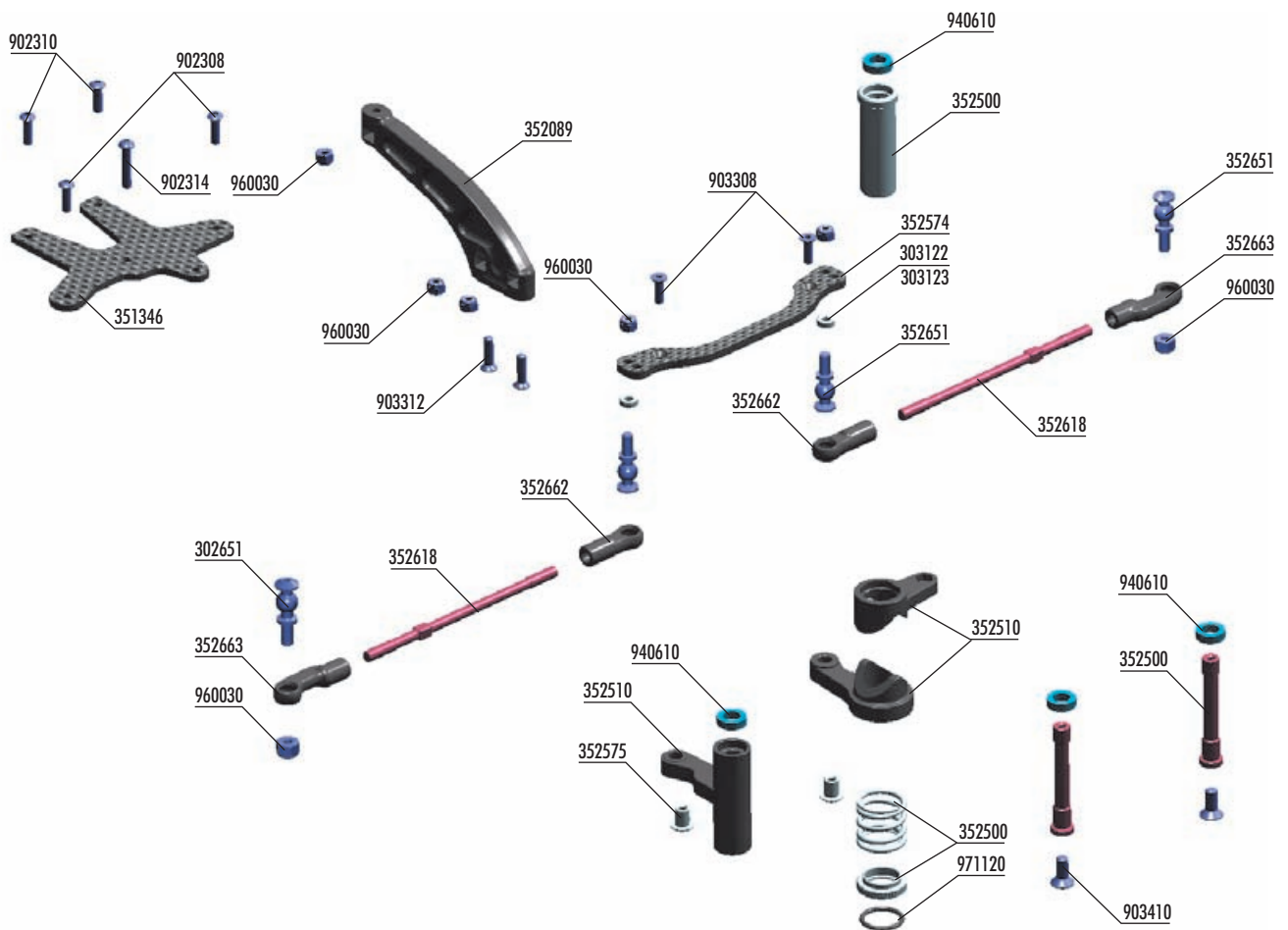
960030
N M3



903412
SFH M4x12



7. STEERING



BAG

07

- | | | | |
|---------|---|---------|---|
| 30 3122 | ALU SHIM 3x6x1.0MM (10) | 90 2308 | HEX SCREW SH M3x8 (10) |
| 30 3123 | ALU SHIM 3x6x2.0MM (10) | 90 2310 | HEX SCREW SH M3x10 (10) |
| 35 1346 | XT9 GRAPHITE UPPER PLATE | 90 2314 | HEX SCREW SH M3x14 (10) |
| 35 2089 | COMPOSITE FRONT BRACE - V2 | 90 3308 | HEX SCREW SFH M3x8 (10) |
| 35 2500 | SERVO SAVER COMPLETE SET - V2 | 90 3312 | HEX SCREW SFH M3x12 (10) |
| 35 2510 | COMPOSITE SERVO SAVER | 90 3410 | HEX SCREW SFH M4x10 (10) |
| 35 2574 | XT8 GRAPHITE STEERING PLATE | 94 0610 | HIGH-SPEED BALL-BEARING 6x10x3 BLUE COVERED (2) |
| 35 2575 | STEERING PLATE BUSHING (2) | 96 0030 | NUT M3 (10) |
| 35 2618 | XT8 ADJ. TURNBUCKLE M4 L/R 86 MM - HUDY SPRING STEEL™ (2) | 97 1120 | SILICONE O-RING 12x1.6 (10) |
| 35 2651 | BALL STUD 5.8MM WITH BACKSTOP - V2 (2) | | |
| 35 2662 | STEERING BALL JOINT 5.8MM FOR M4 (2) | | |
| 35 2663 | RELIEF STEERING BALL JOINT 5.8MM FOR M4 (2) | | |



903308
SFH M3x8



940610
BB 6x10x3

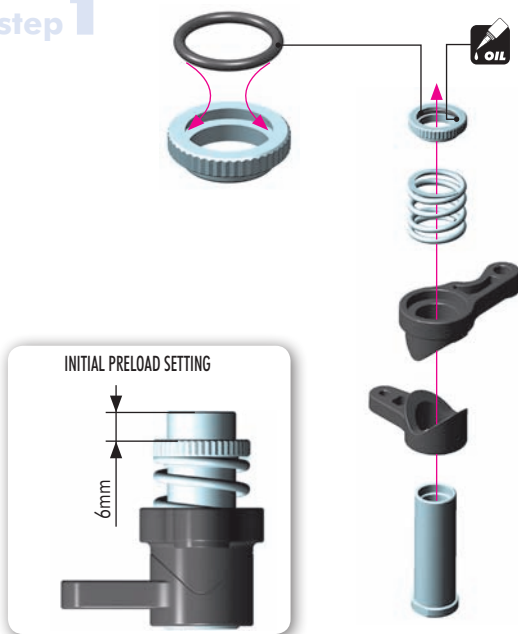


971120
O 12x1.6

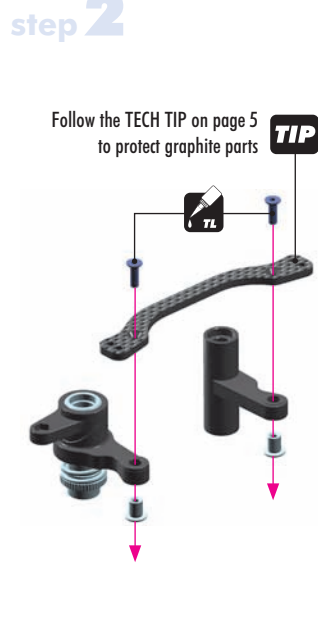
SET-UP BOOK

SERVO SAVER

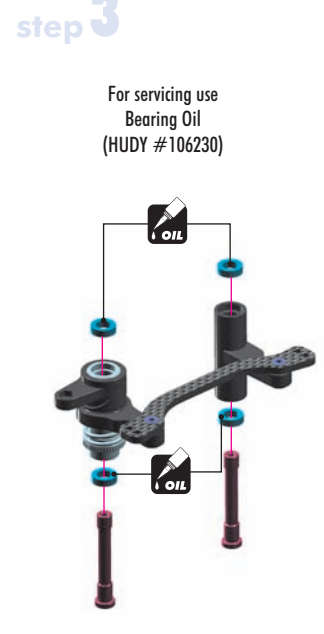
step 1



step 2

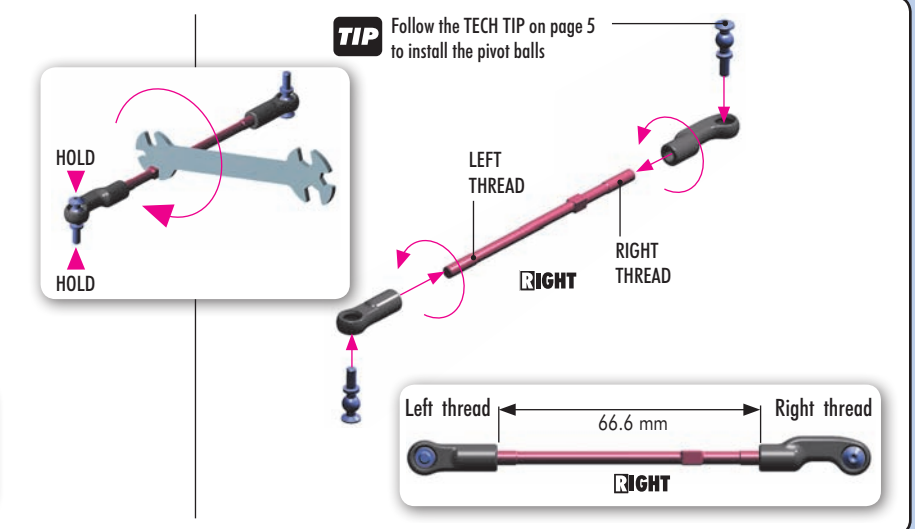
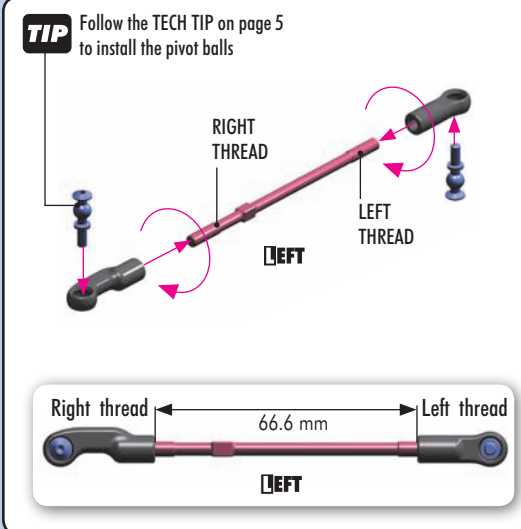
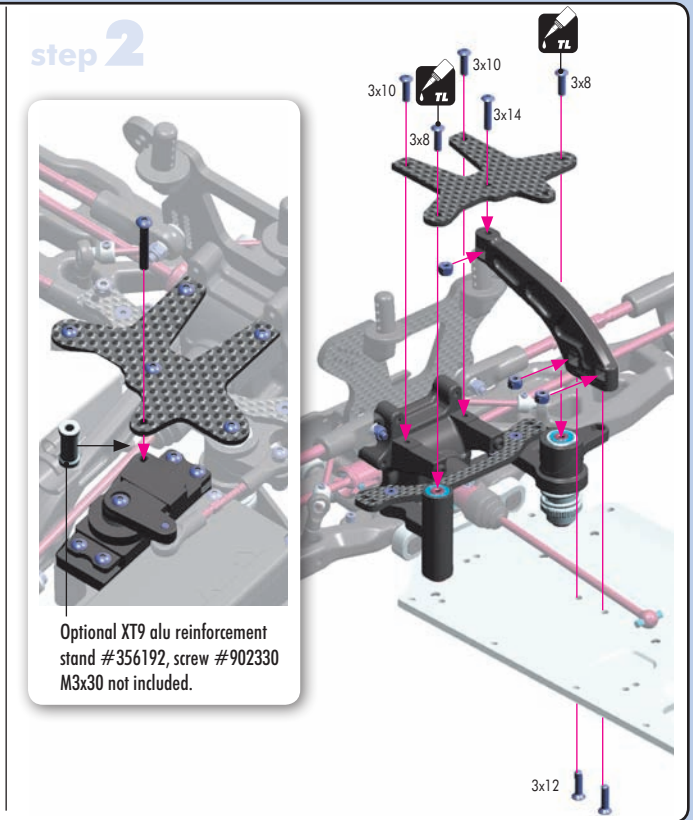
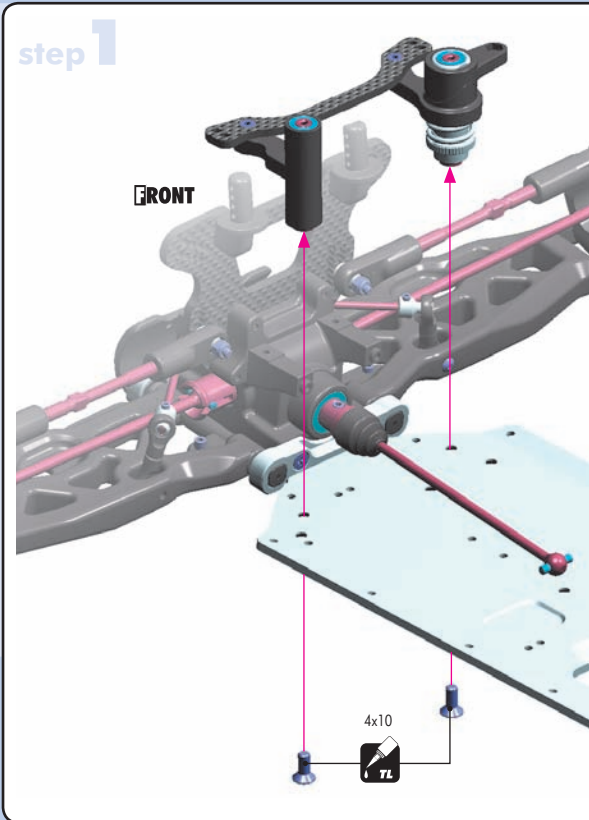


step 3

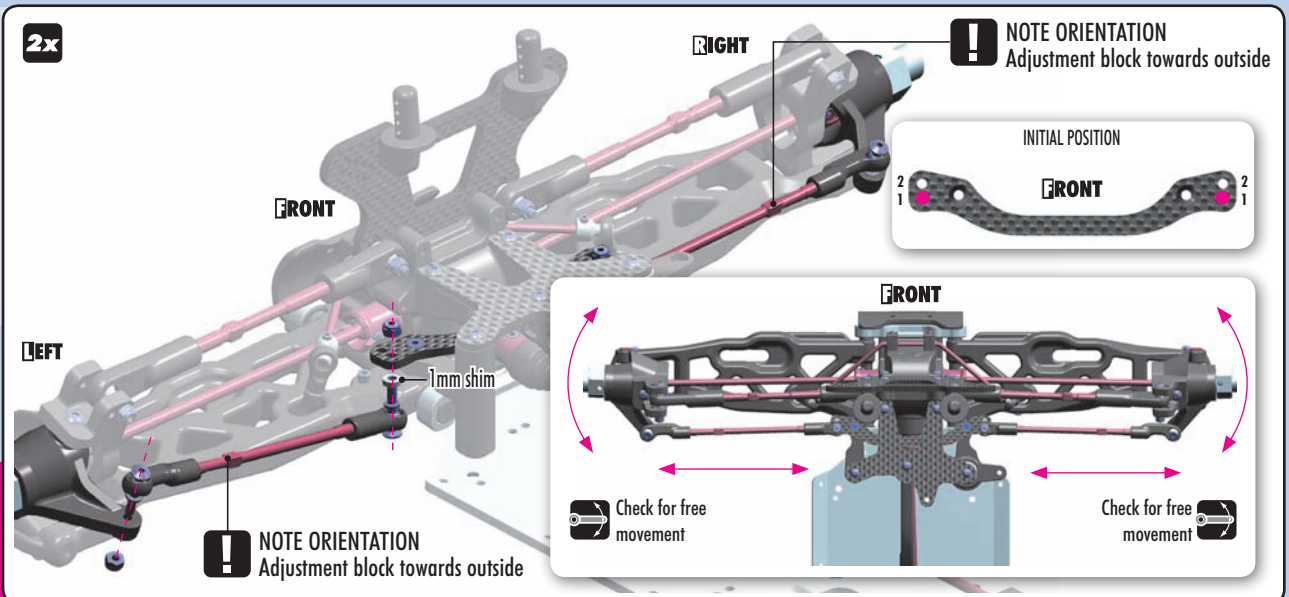


For servicing use
Bearing Oil
(HUDY #106230)

-  902308
SH M3x8
-  902310 SH M3x10 902314 SH M3x14
-  903312 SFH M3x12 903410 SFH M4x10
-  960030
N M3

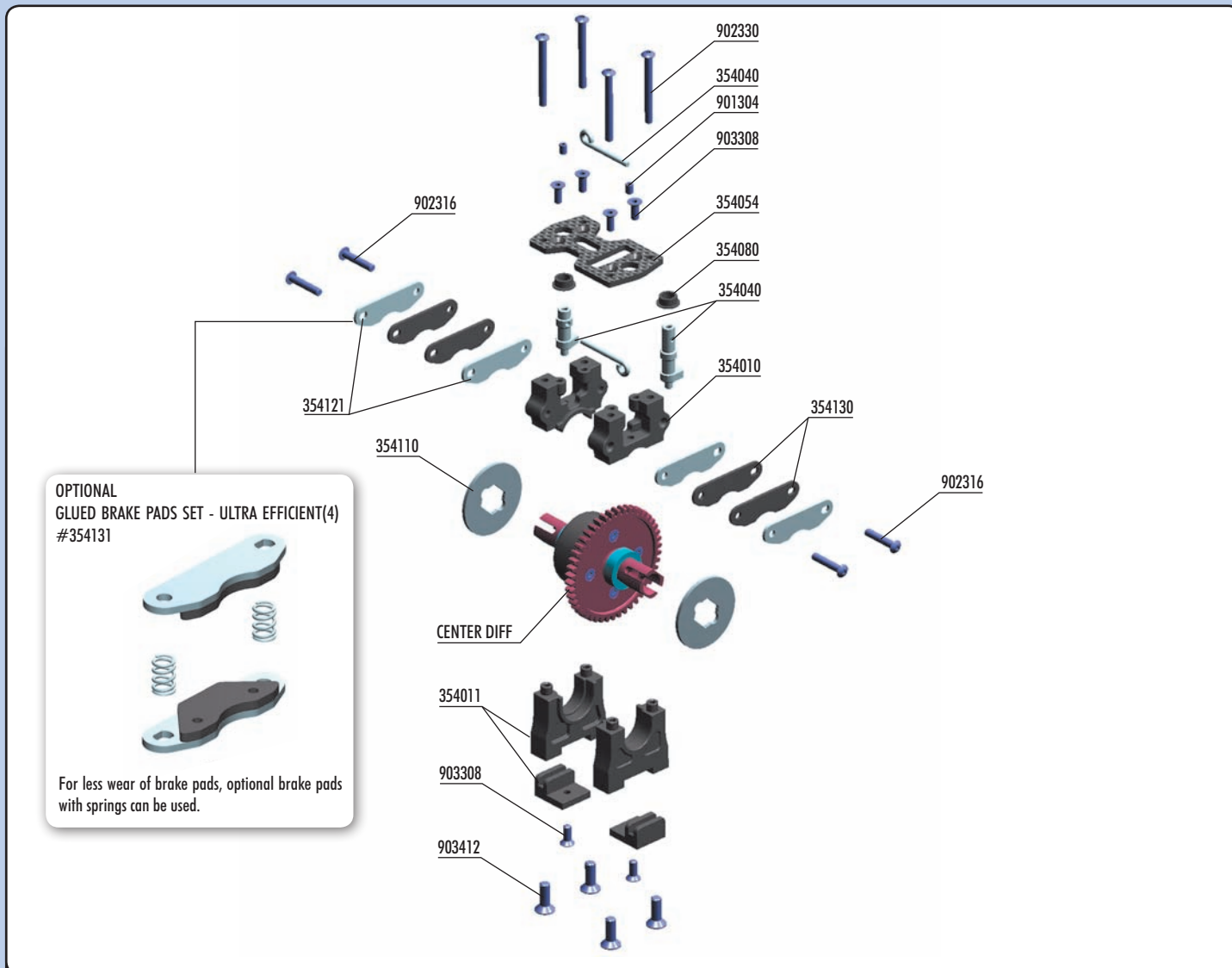


-  303123
SHIM 3x6x2
-  960030
N M3



SET-UP BOOK
ACKERMANN
BUMP STEER
TOE-IN

8. CENTER DIFF & BRAKE



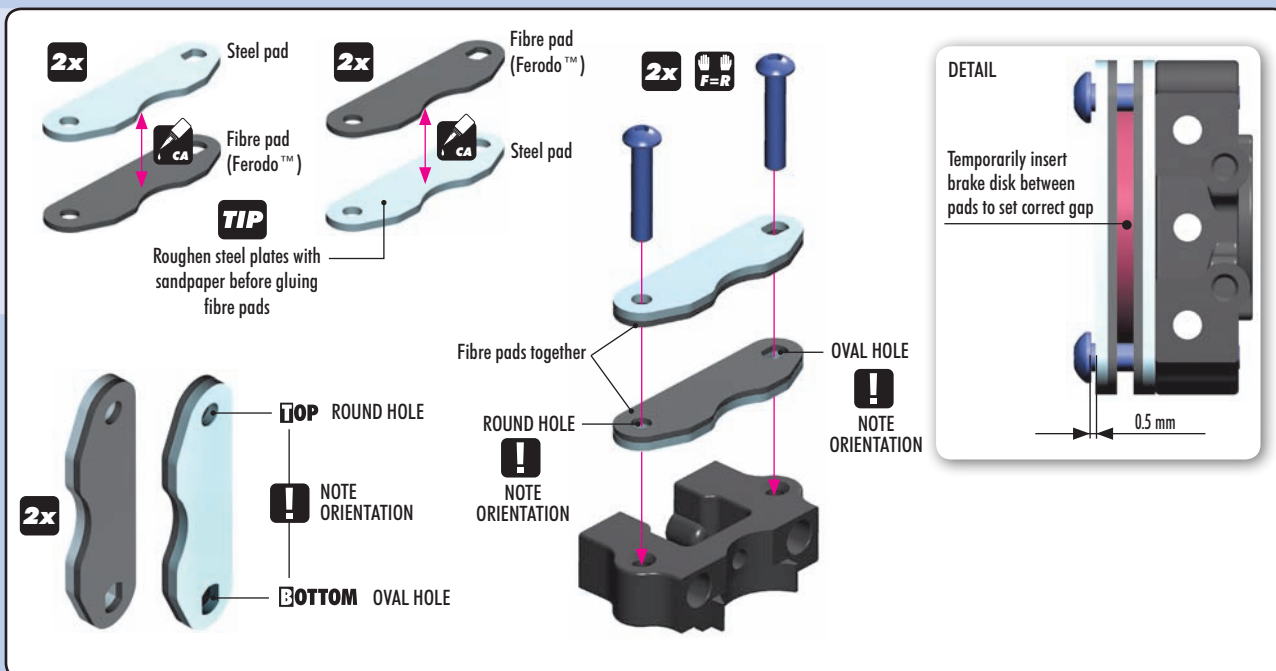
BAG

08

35 4011	CENTER DIFF MOUNTING PLATE - SET	35 4130	BRAKE PAD FERODO (4)
35 4040	BRAKE CAM POST & ROD (2+2)	90 1304	HEX SCREW SB M3x4 (10)
35 4054	XT8 GRAPHITE CENTER DIFF MOUNTING PLATE	90 2316	HEX SCREW SH M3x16 (10)
35 4080	COMPOSITE BUSHING FOR DIFF MOUNTING PLATE (2)	90 2330	HEX SCREW SH M3x30 (10)
35 4110	VENTILATED BRAKE DISK - LASER CUT - PRECISION-GROUND	90 3308	HEX SCREW SFH M3x8 (10)
35 4121	STEEL BRAKE PAD - LASER CUT (4)	90 3412	HEX SCREW SFH M4x12 (10)



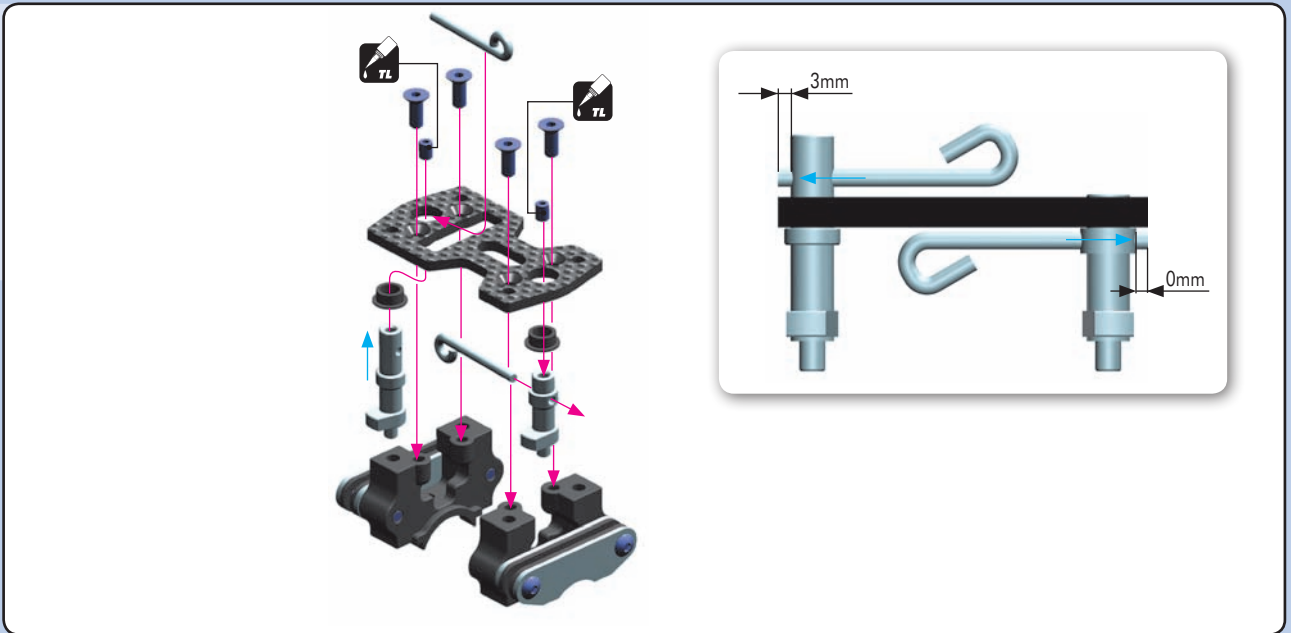
902316
SH M3x16



CENTER DIFF & BRAKE

901304
SB M3x4

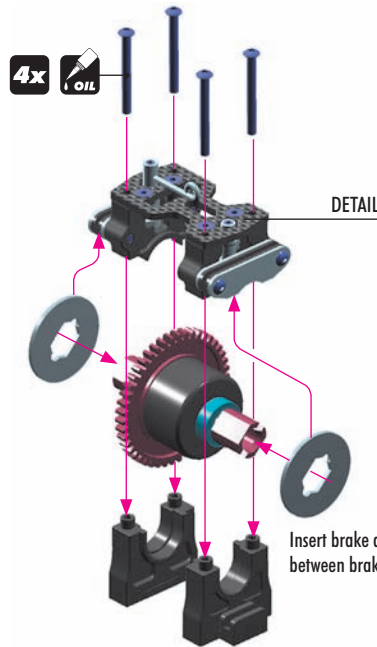
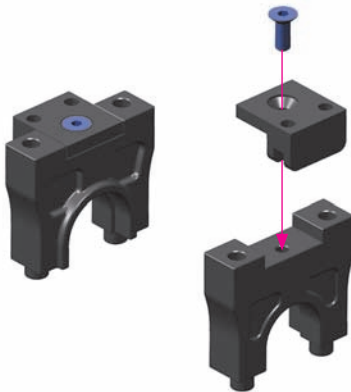
903308
SFH M3x8



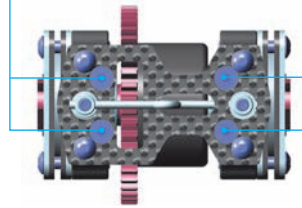
903308
SFH M3x8

902330
SH M3x30

! NOTE ORIENTATION
OF ALL PARTS



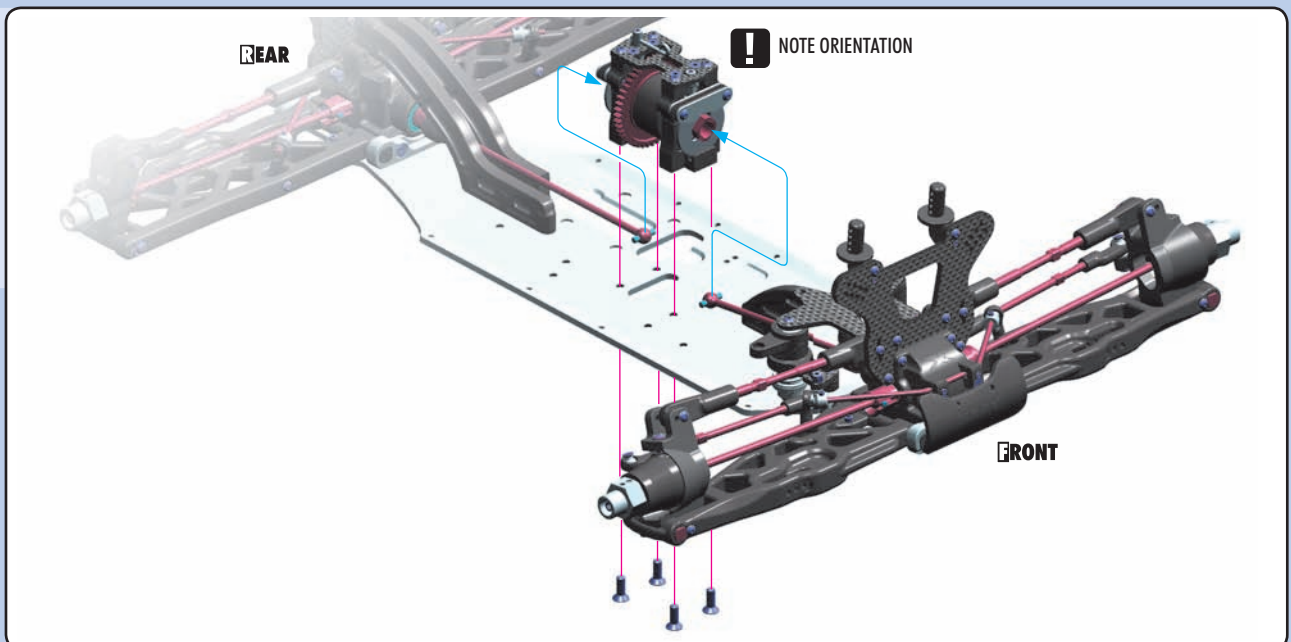
Before inserting 3x30 long screws, loosen the four flat-head screws in the upper plate by 1/2 turn. Tighten all screws after assembly.



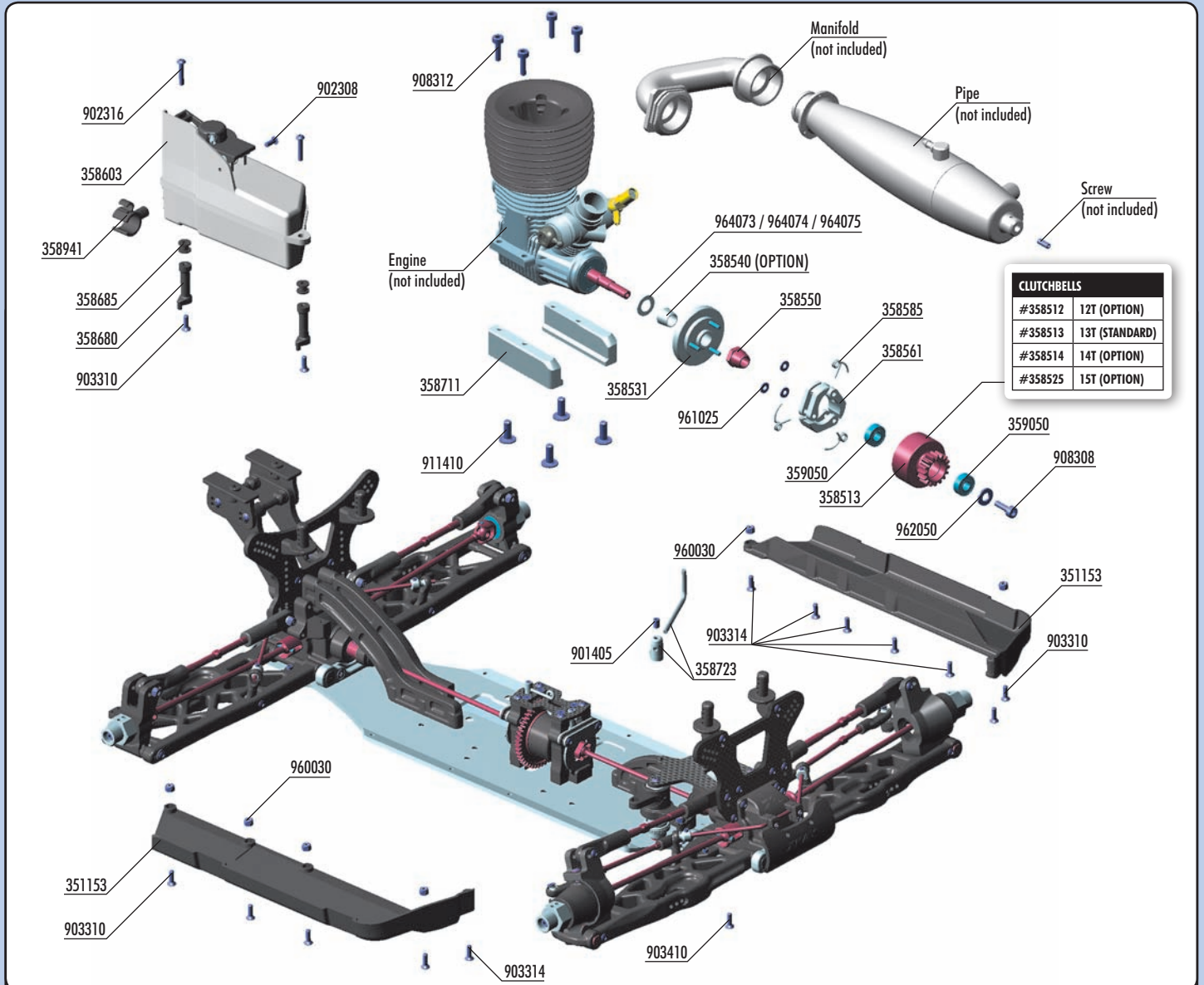
Insert brake disk
between brake pads

903412
SFH M4x12

903412
SFH M4x12



9. FUEL TANK & ENGINE



CLUTCHBELLS	
#358512	12T (OPTION)
#358513	13T (STANDARD)
#358514	14T (OPTION)
#358525	15T (OPTION)

BAG



- | | | | | | |
|---------|---|---------|---|---------|---------------------------------|
| 35 1153 | XB9 CHASSIS SIDE GUARDS L+R | 35 8723 | XB808'11 EXHAUST WIRE MOUNT SET | 90 8312 | HEX SCREW (CAP HEAD) 3x12 (10) |
| 35 8513 | CLUTCH BELL 13T | 35 8941 | COMPOSITE TUBING HOLDER FOR FUEL TANK (2) | 91 1410 | HEX SCREW FLANGED SH M4x10 (10) |
| 35 8531 | FLYWHEEL | | | 96 0030 | NUT M3 (10) |
| 35 8540 | FLYWHEEL COLLAR (OPTION) | 35 9050 | CLUTCH BELL BALL-BEARING 5x10x4 (2) | 96 1025 | WASHER S 2.5 (10) |
| 35 8550 | FLYWHEEL NUT - HUDY SPRING STEEL™ | 90 1405 | HEX SCREW SB M4x5 (10) | 96 2050 | WASHER S 5x10x1.0 (10) |
| 35 8561 | ALU CLUTCH SHOES - LIGHT 1.71g - CNC MACHINED (3) | 90 2316 | HEX SCREW SH M3x16 (10) | 96 4073 | WASHER S 7x10x0.2 (10) |
| 35 8585 | CLUTCH SPRINGS - HARD (3) | 90 3310 | HEX SCREW SFH M3x10 (10) | 96 4074 | WASHER S 7x10x0.3 (10) |
| 35 8603 | FUEL TANK 150CC - SET - V3 | 90 3314 | HEX SCREW SFH M3x14 (10) | 96 4075 | WASHER S 7x10x0.5 (10) |
| 35 8680 | FUEL TANK MOUNTING POST (2) | 90 3410 | HEX SCREW SFH M4x10 (10) | | |
| 35 8685 | FUEL TANK MOUNTING GROMMET (4) | 90 8308 | HEX SCREW (CAP HEAD) 3x8 (10) | | |
| 35 8711 | ALU ENGINE MOUNT - CNC MACHINED (L+R) | 90 8308 | HEX SCREW (CAP HEAD) 3x8 (10) | | |



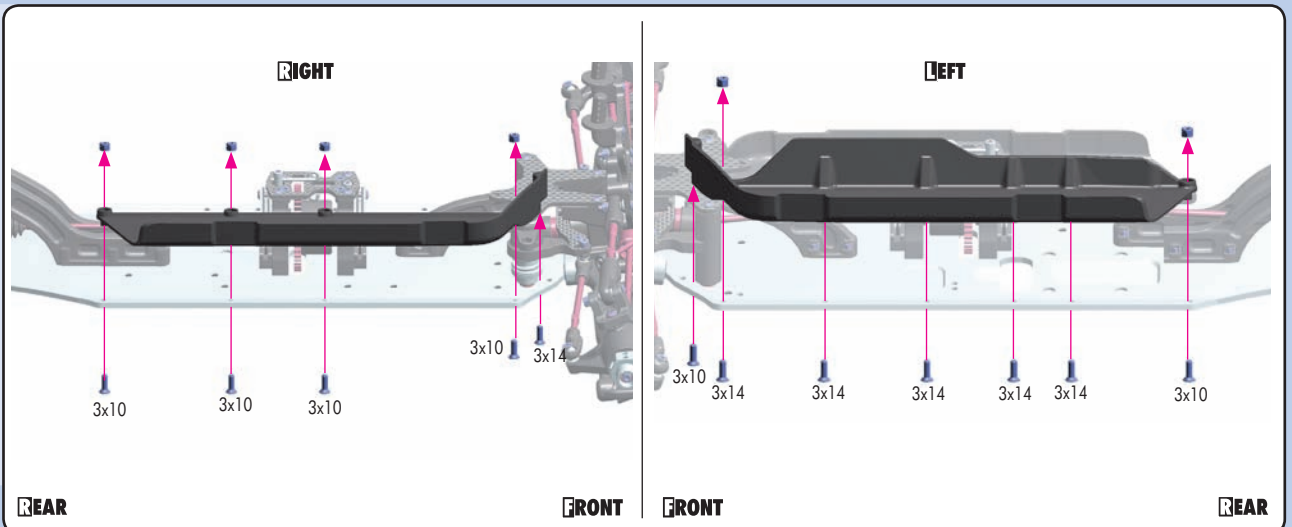
903310
SFH M3x10



903314
SFH M3x14



960030
N M3





908312
SCH M3x12



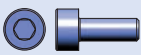
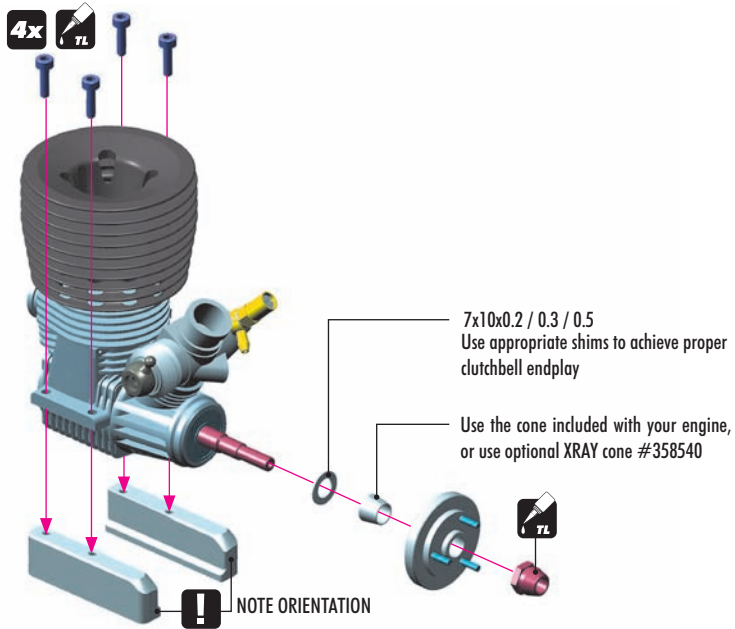
964075
S 7x10x0.5



964074
S 7x10x0.3



964073
S 7x10x0.2



908308
SCH M3x8



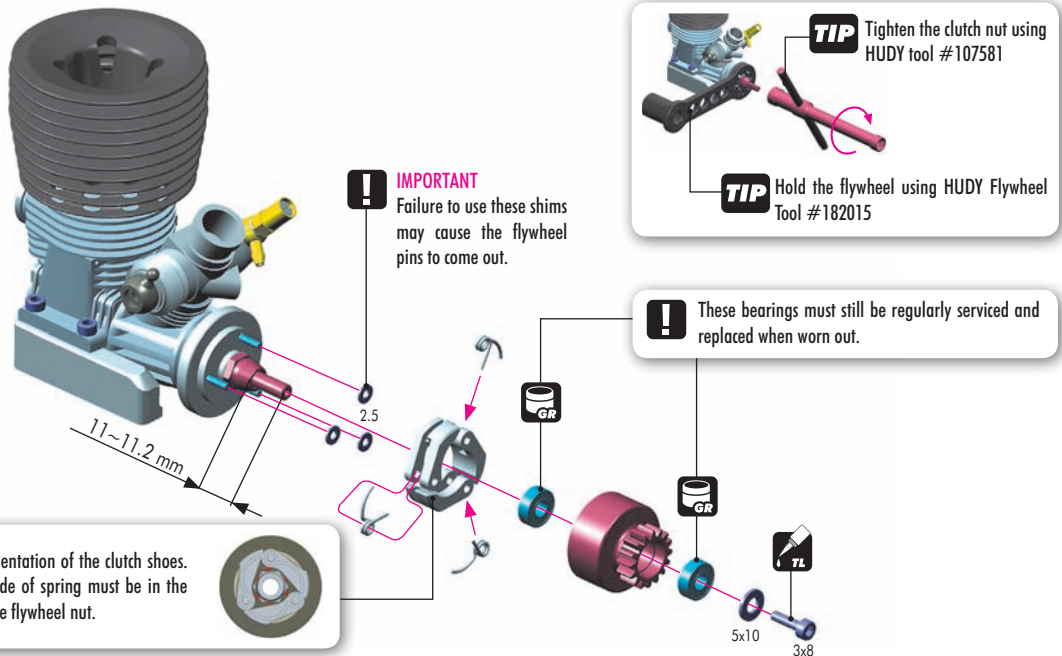
359050
BB 5x10x4



961025
S 2.5



962050
S 5x10x1

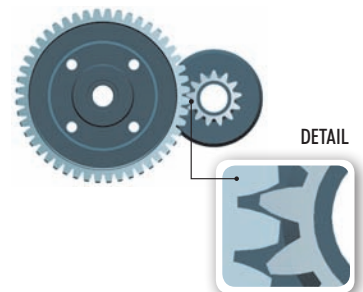
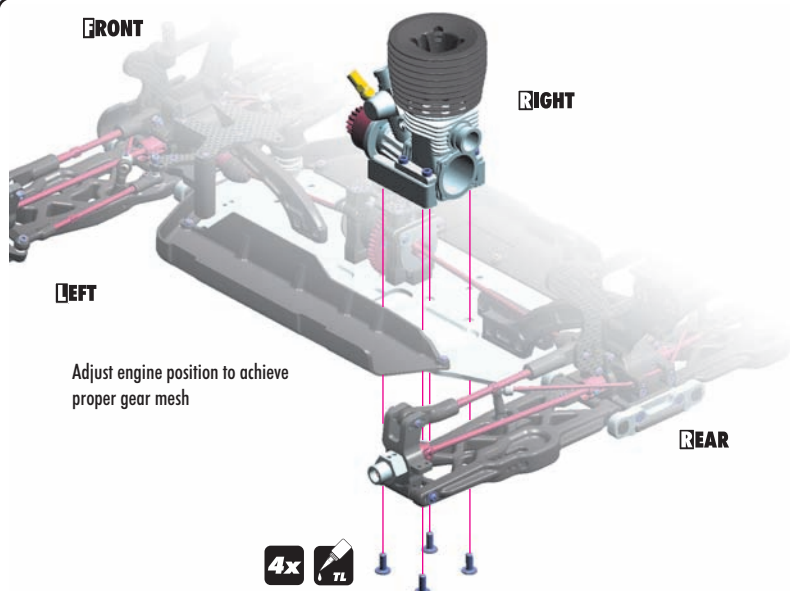


SET-UP BOOK

CLUTCH SPRINGS
CLUTCH SHOE



911410
SHF M4x10



EXTREMELY IMPORTANT

It is very important that your XT9 has properly-adjusted gear mesh. Adjust the gear mesh so there is adequate (or slightly larger) space between the spur gear and clutchbell teeth. Adjust the gear mesh by sliding the engine mounts in the slots of the chassis. You should be able to rock one gear back and forth slightly while holding the other one firmly. Be sure to check the gear mesh all the way around the spur gear. Tighten the screws once the engine alignment and gear mesh are correct, and then re-check the gear mesh to ensure the engine mounts did not move.

SET-UP BOOK

GEARING
GEAR MESH ADJ.

FUEL TANK & ENGINE



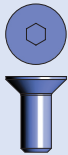
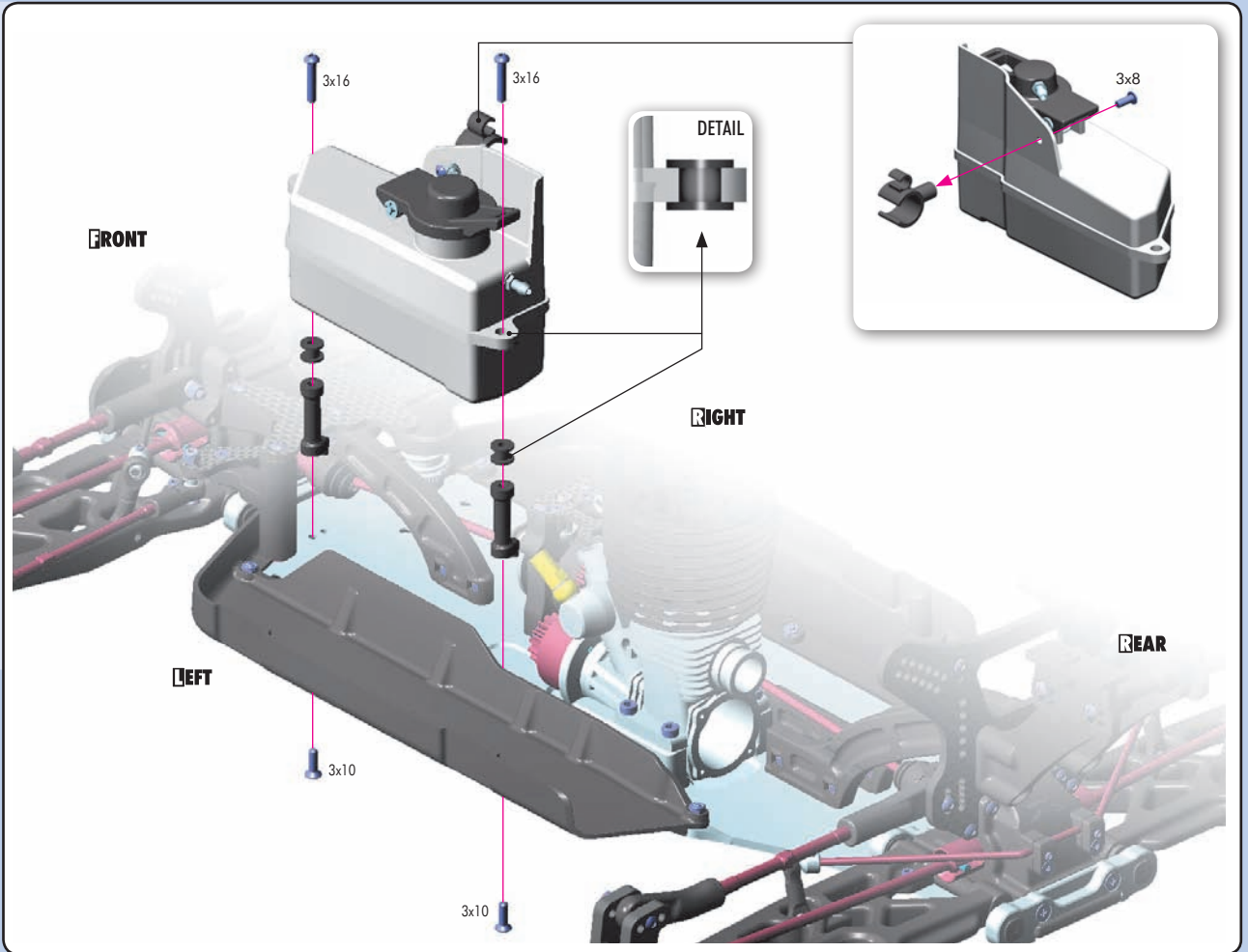
902308
SH M3x8



902316
SH M3x16



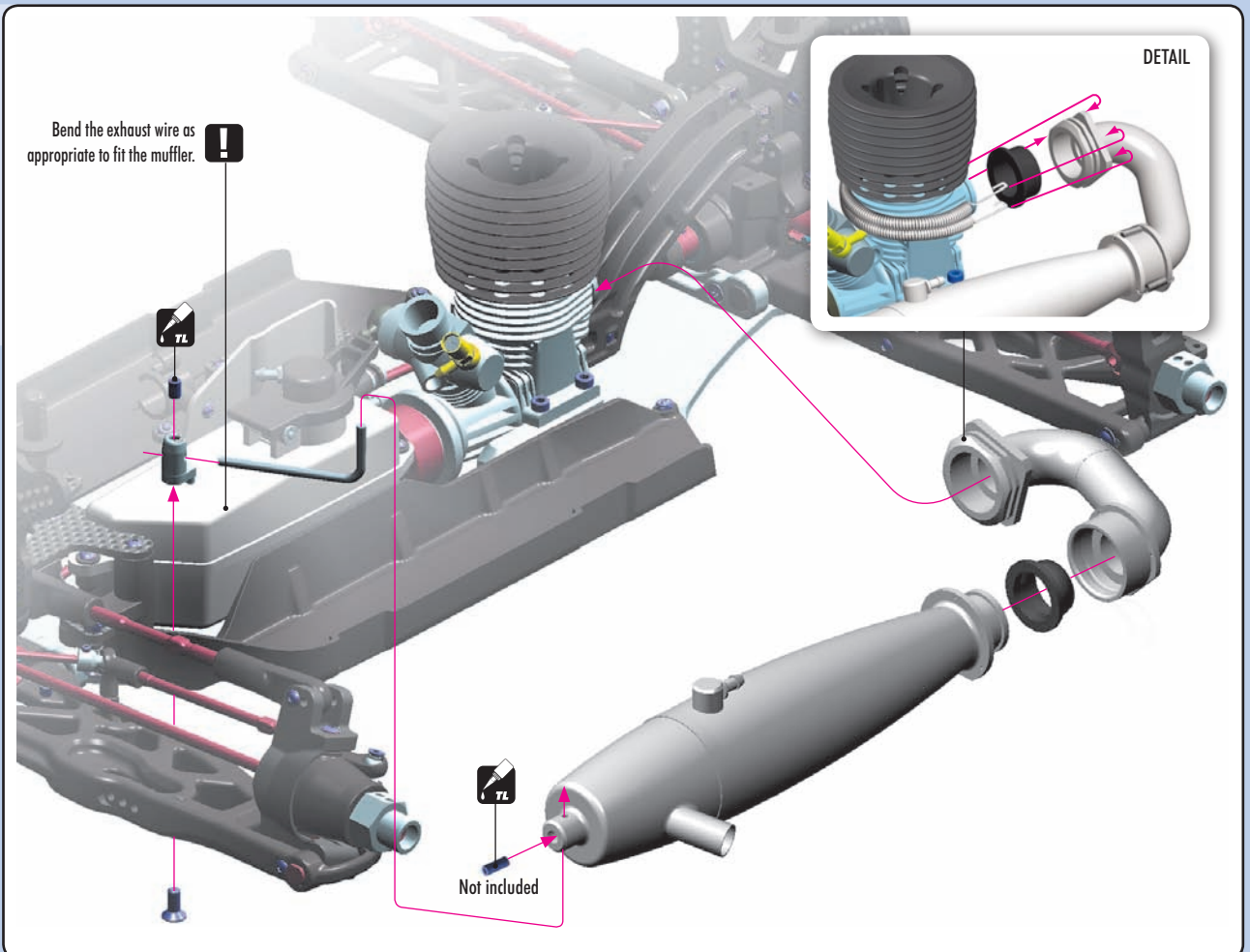
903310
SFH M3x10



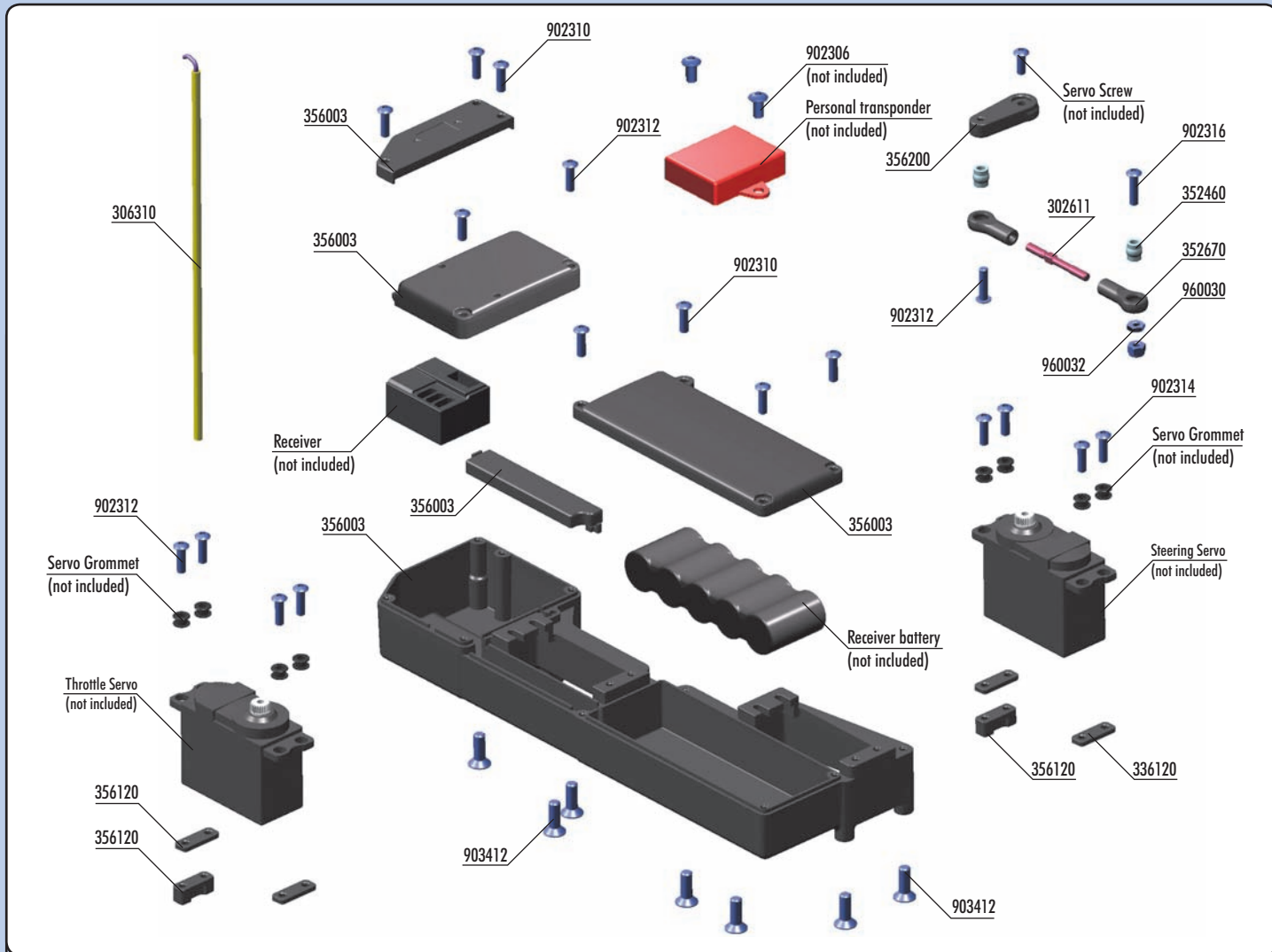
903410
SFH M4x10



901405
SB M4x5



10. RADIO CASE

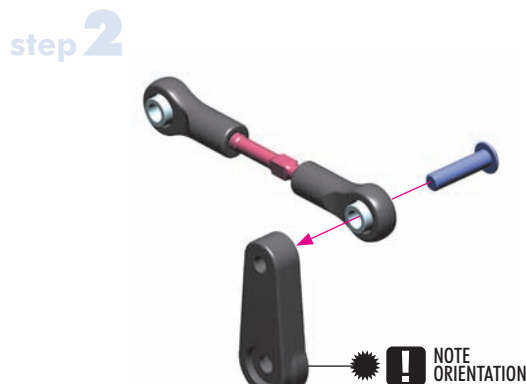
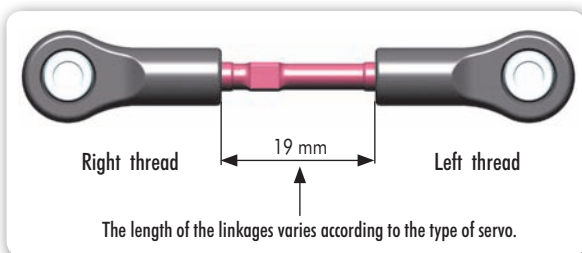
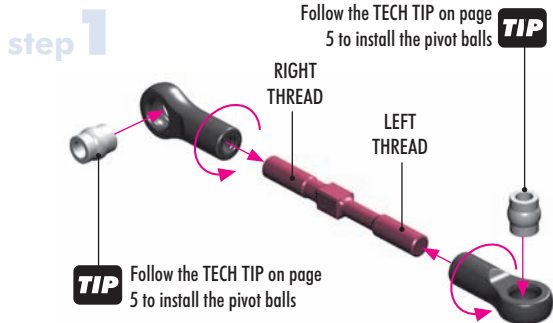


BAG

10

- 30 2611 ADJ. TURNBUCKLE L/R 35 MM - HUDY SPRING STEEL (2)
- 30 6310 ANTENNA TUBE (2)
- 33 6120 COMPOSITE STEERING SERVO HOLDER - SET - V2
- 35 2460 PIVOT BALL 5.8 (10)
- 35 2670 SERVO BALL JOINT 5.8MM (4)
- 35 6003 XB9 RADIO CASE SET
- 35 6050 BATTERY CABLE WITH SWITCH (OPTION)
- 35 6120 STEERING SERVO MOUNT - SET
- 35 6200 BRAKE/THROTTLE ARMS & STEERING SERVO ARMS - SET

- 38 9135 CONNECTING CABLE RECEIVER/BATT. PACK (OPTION)
- 90 2310 HEX SCREW SH M3x10 (10)
- 90 2312 HEX SCREW SH M3x12 (10)
- 90 2314 HEX SCREW SH M3x14 (10)
- 90 2316 HEX SCREW SH M3x16 (10)
- 90 3412 HEX SCREW SFH M4x12 (10)
- 96 0030 NUT M3 (10)
- 96 0032 NUT M3 (10)



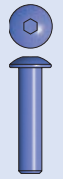
USE APPROPRIATE SERVO ARM:

- K - KO Propo, JR, Sanwa, Multiplex
- H - Hitec
- F - Futaba

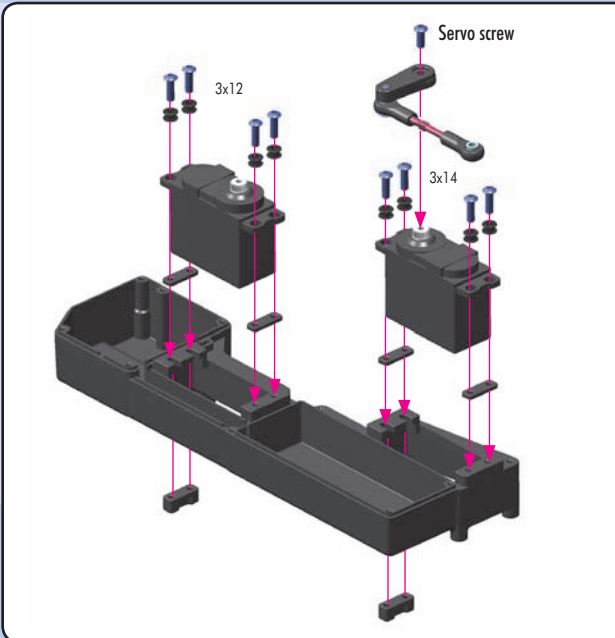
RADIO CASE



902312
SH M3x12

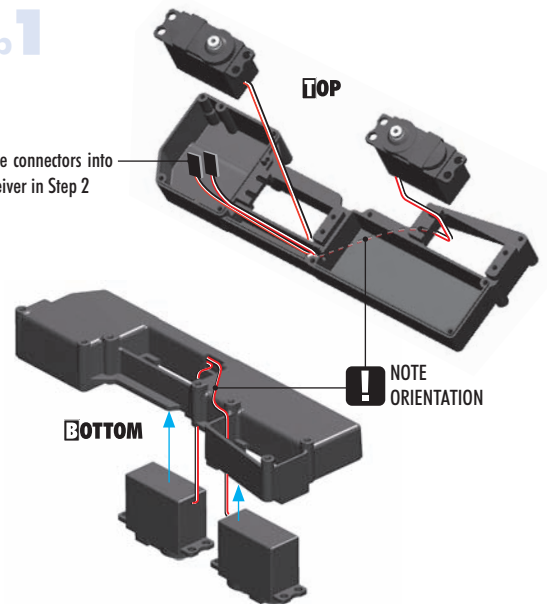


902314
SH M3x14



step 1

Plug the connectors into the receiver in Step 2



902310
SH M3x10

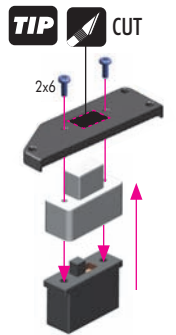
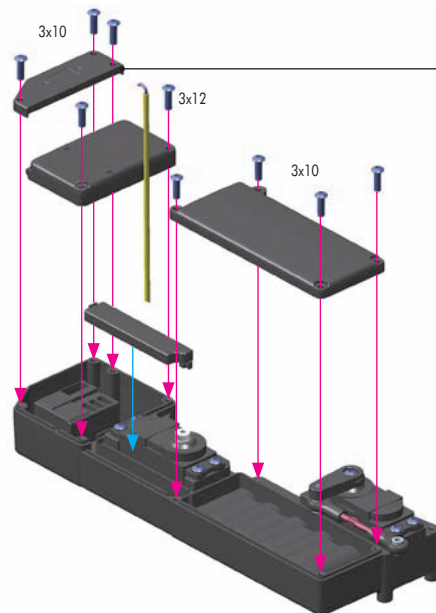
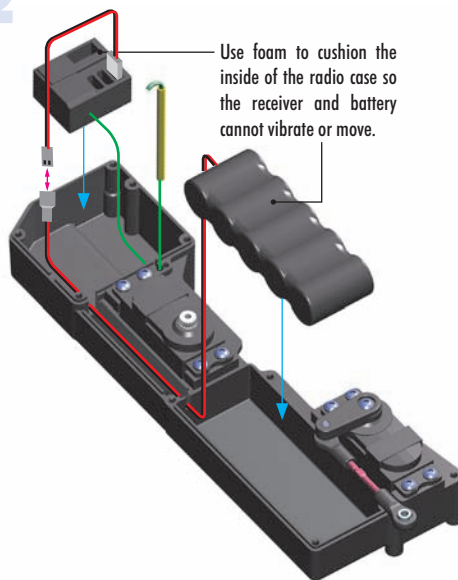


902312
SH M3x12



907206
SF M2x6

step 2



OPTIONAL SWITCH #356050

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



903412
SFH M4x12



902316
SH M3x16



960030
N M3



960033
N M3

Personal transponder (not included)
902306 Screws (not included)

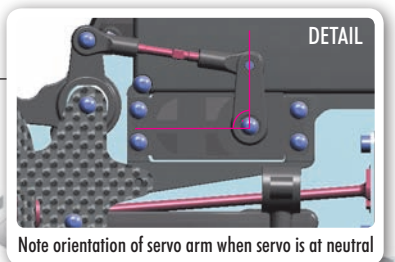
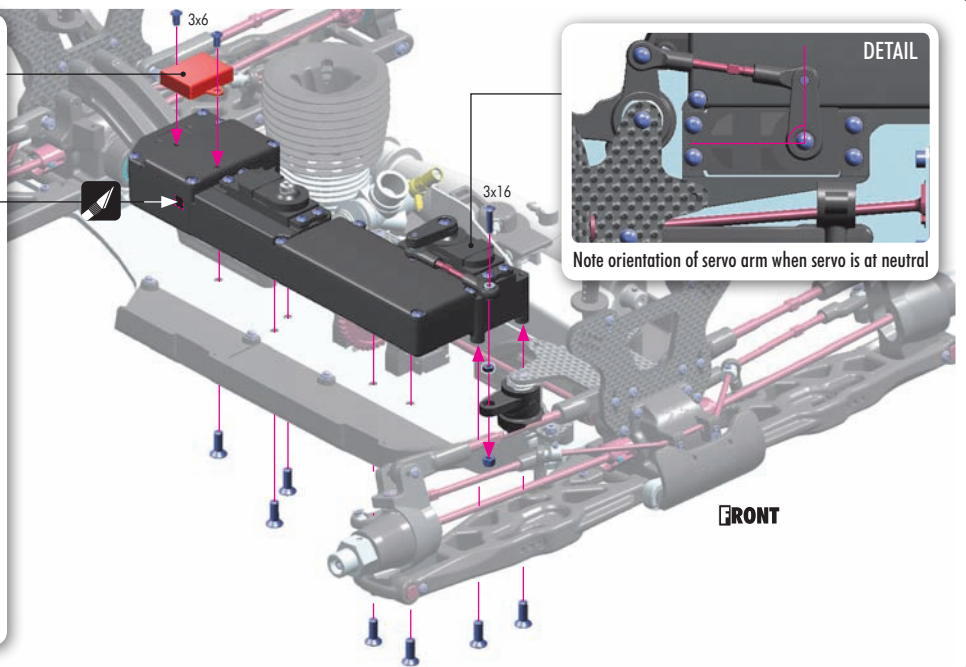
Personal transponder can be placed on the top of the radio box or inside of the radio box

ALTERNATIVE 1

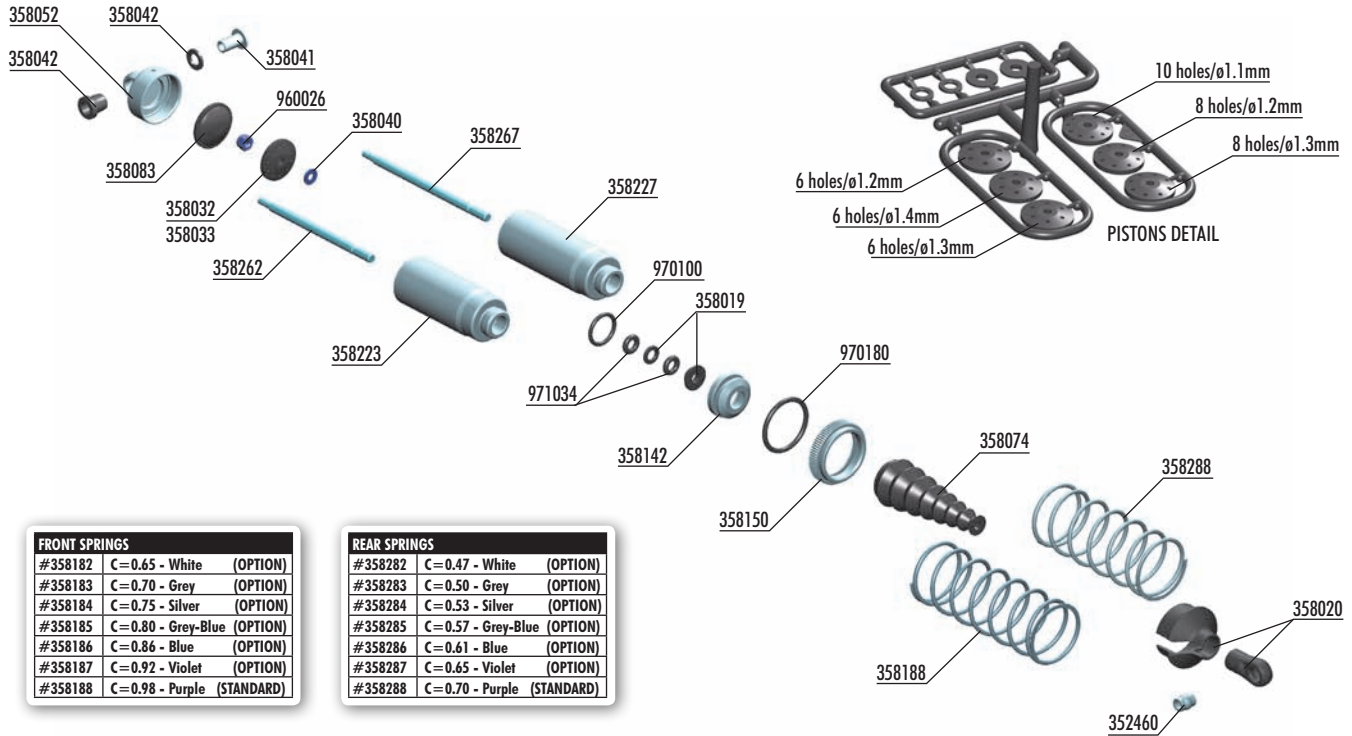
When the transponder is placed at the top of the radio box, cut out some material from the radio box in order to allow the transponder wire to come inside.

ALTERNATIVE 2

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



11. SHOCK ABSORBERS



FRONT SPRINGS		
#358182	C=0.65 - White	(OPTION)
#358183	C=0.70 - Grey	(OPTION)
#358184	C=0.75 - Silver	(OPTION)
#358185	C=0.80 - Grey-Blue	(OPTION)
#358186	C=0.86 - Blue	(OPTION)
#358187	C=0.92 - Violet	(OPTION)
#358188	C=0.98 - Purple	(STANDARD)

REAR SPRINGS		
#358282	C=0.47 - White	(OPTION)
#358283	C=0.50 - Grey	(OPTION)
#358284	C=0.53 - Silver	(OPTION)
#358285	C=0.57 - Grey-Blue	(OPTION)
#358286	C=0.61 - Blue	(OPTION)
#358287	C=0.65 - Violet	(OPTION)
#358288	C=0.70 - Purple	(STANDARD)

BAGS



- 35 2460 PIVOT BALL 5.8 - V3 (10)
- 35 8019 XB9 COMPOSITE SET OF SHIMS FOR SHOCKS (2)
- 35 8020 XB9 COMPOSITE SHOCK PARTS
- 35 8032 XB9 SHOCK PISTON SET 8-HOLE (1.2; 1.3) 10-H. (1.1MM)
- 35 8033 XB9 COMPOSITE SHOCK 6-HOLE PISTON SET (1.2; 1.3; 1.4MM)
- 35 8040 HARDENED SHOCK SHIMS (4)
- 35 8041 STEEL SHOCK BUSHING (2)
- 35 8042 COMPOSITE SHOCK BUSHING & SHIM (2+2)
- 35 8052 ALU SHOCK CAP NUT - HARD COATED (2)
- 35 8074 XB9 FOLDING SHOCK BOOT (4)
- 35 8083 SHOCK RUBBER MEMBRANE RIBBED (4)
- 35 8142 XB9 ALU SHOCK BODY NUT FOR SHOCK BOOT (2)

- 35 8150 ALU SHOCK BODY ADJ. NUT (2)
- 35 8188 XRAY XB808 FRONT SPRING SET C=0.98 - PURPLE (2)
- 35 8223 XB9 ALU REAR SHOCK BODY - HARD COATED (2)
- 35 8227 XT9 ALU REAR SHOCK BODY - HARD COATED (2)
- 35 8262 XB9 REAR SHOCK SHAFT (2)
- 35 8267 XT9 REAR SHOCK SHAFT (2)
- 35 8288 XRAY XB808 REAR SPRING SET C=0.70 - PURPLE (2)
- 96 0026 NUT M2.5 - SHORT (10)
- 97 0100 O-RING 10 x 1.5 (10)
- 97 0180 O-RING 18 x 1.8 (10)
- 97 1034 SILICONE O-RING 3.5x2 (10)

- 960026 N M2.5
- 358040 3 2.5xø1.5
- 971034 O 3.4x2
- 970100 O 10x1.5

NOTE ORIENTATION

TIGHTEN GENTLY - CORRECT

DO NOT OVERTIGHTEN - INCORRECT

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

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.

2x FRONT SHOCK (SHORT)

2x REAR SHOCK (LONG)

BAG 11.1

BAG 11.2

Grip the shock rod at top of exposed threads with side cutting pliers. Be careful not to damage the shock rod.

INCORRECT (Two diagrams showing incorrect gripping methods)

CORRECT (Diagram showing correct gripping method)

2x FRONT SHOCKS (SHORT)

2x REAR SHOCKS (LONG)

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

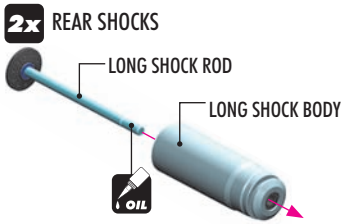
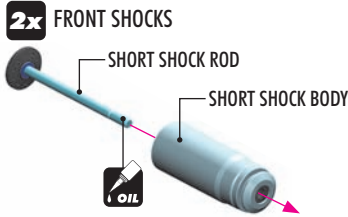
DETAIL

SET-UP BOOK
SHOCK DAMPING
SHOCK PISTONS

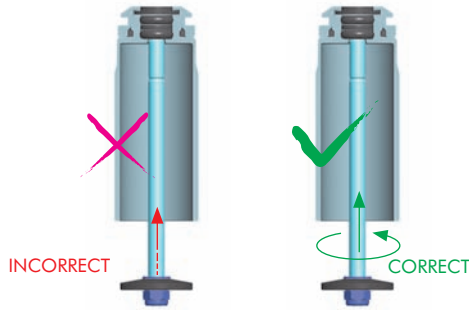
SHOCK ABSORBERS



970180
O 18x1.8

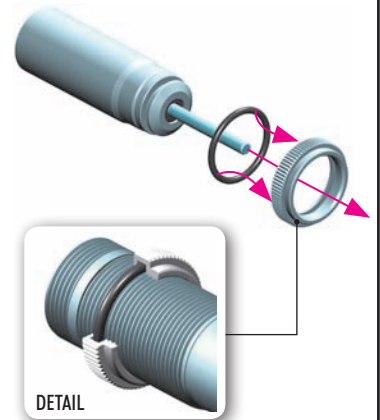


EXTREMELY IMPORTANT

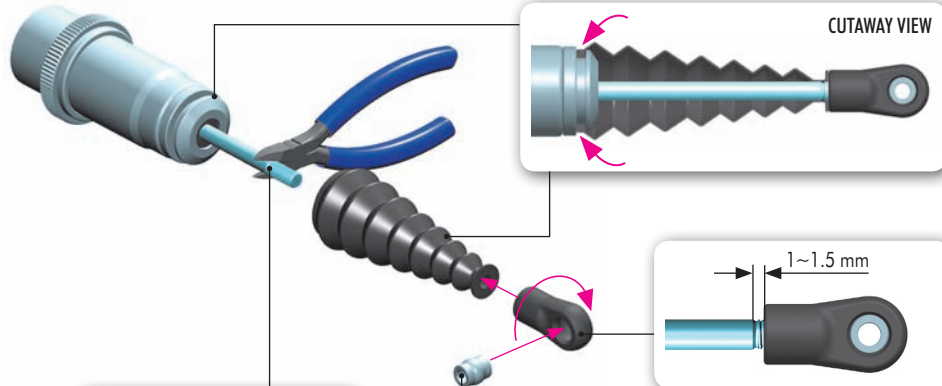


Do not push the shock rod straight through the lower shock body assembly; O-ring damage may result.

Twist the shock rod through the lower shock body assembly.



2x FRONT SHOCKS **2x REAR SHOCKS**



Grip the shock rod at top of exposed threads with side cutting pliers. Be careful not to damage the shock rod.

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

DEFAULT SHOCK REBOUND SETTING 0% (LOW REBOUND)

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

2x FRONT (SHORT)
Oil 450cSt

2x REAR (LONG)
Oil 550cSt

SET-UP BOOK
SHOCK OIL



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



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



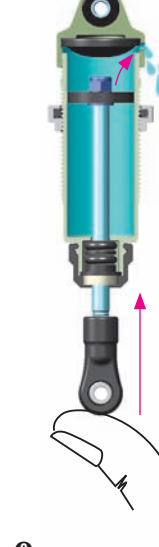
3 Orient the filled shock vertically for several minutes with the shock shaft fully extended. The remaining air bubbles will release.



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



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



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



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

2x REAR SHOCKS

2x FRONT SHOCKS

LONG REAR SHOCKS

SHORT FRONT SHOCKS

LONG SPRING

SHORT SPRING

FRONT SHOCK PRELOAD

approx. 14mm

REAR SHOCK PRELOAD

approx. 16mm

SET-UP BOOK

SPRING RATE SELECTION
SHOCK PRELOAD
RIDE HEIGHT

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

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

IMPORTANT!

FRONT & REAR SHOCKS

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

The default shock rebound setting is 0% (as described on page 34). Alternatively, you may set the shock rebound setting to 50% or 100% as described below. Remove the shock springs before performing shock rebound adjustment.

SETTING THE SHOCK REBOUND TO 50% (MEDIUM REBOUND)

REMOVE SHOCK CAP

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

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

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

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

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

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

SETTING THE SHOCK REBOUND TO 100% (HIGH REBOUND)

REMOVE SHOCK CAP

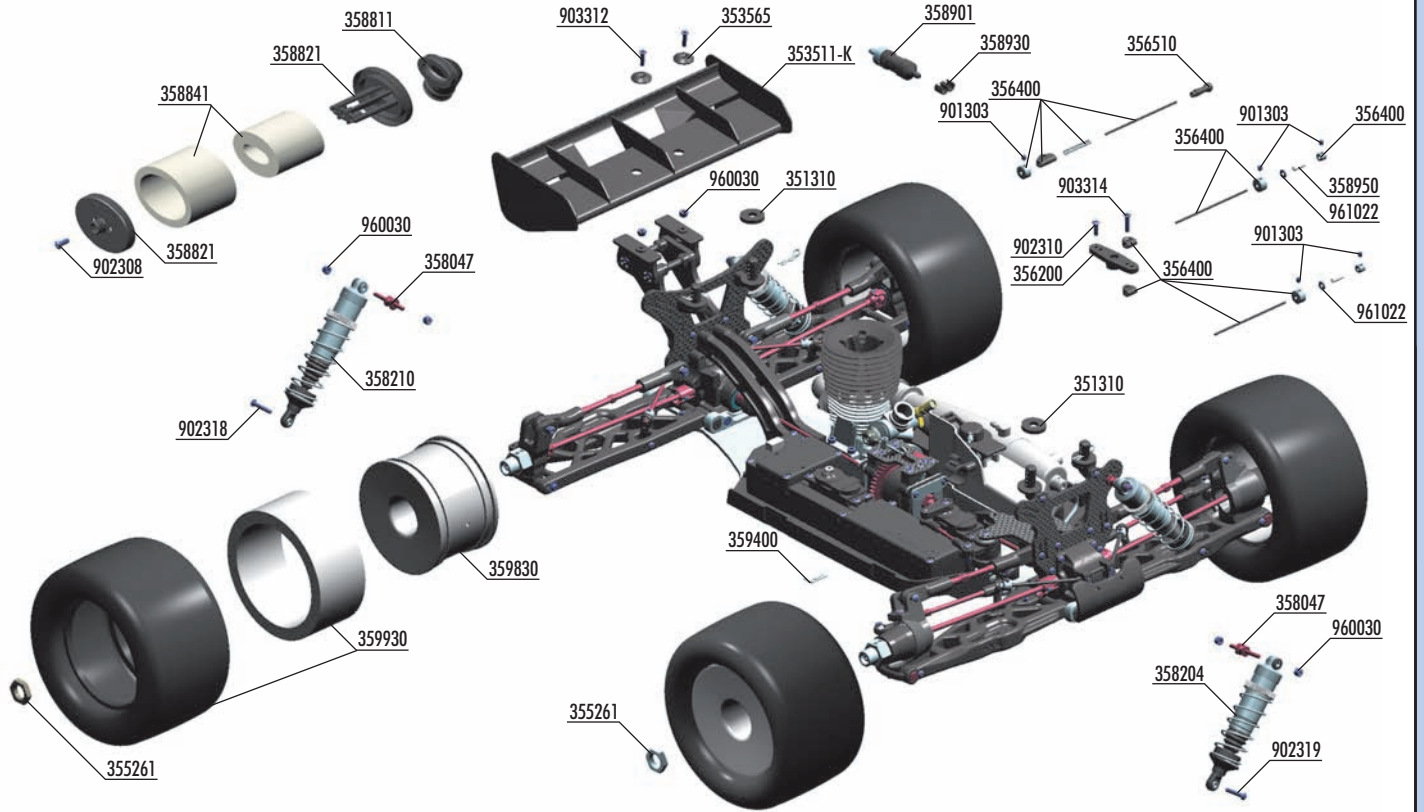
1 Extend the shock shaft completely and remove the shock cap.

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

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

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

12. FINAL ASSEMBLY



BAG

12

- | | | | |
|-----------|---|---------|---|
| 35 1310 | FOAM WASHER FOR BODY POSTS (4) | 35 8930 | FUEL FILTER MOUNT & TUBING HOLDERS |
| 35 3511-K | XB9 REAR WING - BLACK | 35 8950 | SILICONE TUBING 1M (2.4 x 5.5MM) |
| 35 3511 | XB9 REAR WING - WHITE (OPTION) | 35 9400 | BODY CLIP (10) |
| 35 3511-Y | XB9 REAR WING - YELLOW (OPTION) | 35 9720 | XRAY BODY FOR 1/8 TRUGGY |
| 35 3565 | COMPOSITE REAR WING SHIM - BLACK (2) | 35 9830 | TRUGGY WHEELS AERODISK - WHITE (4) |
| 35 5261 | WHEEL NUT - RIBBED - HARD COATED (2) | 35 9930 | XRAY TRUGGY PIN TIRE - THRAX + FOAM INSERTS (2) |
| 35 6200 | BRAKE/THROTTLE ARMS & SERVO ARMS - SET | | |
| 35 6400 | BRAKE/THROTTLE SYSTEM - SET | 90 1303 | HEX SCREW SB M3x3 (10) |
| 35 6510 | CLOSED BALL JOINT 3.9 (4) | 90 2308 | HEX SCREW SH M3x8 (10) |
| 35 8047 | STEEL SCREW SHOCK PIVOT BALL WITH HEX (2) | 90 2310 | HEX SCREW SH M3x10 (10) |
| 35 8204 | XB9 REAR SHOCK ABSORBERS + BOOTS COMPLETE SET (2) | 90 2318 | HEX SCREW SH M3x18 (10) |
| 35 8210 | XT9 REAR SHOCK ABSORBERS + BOOTS COMPLETE SET (2) | 90 2319 | HEX SCREW SH M3x18 - LEFT THREAD (10) |
| 35 8811 | AIR FILTER ELBOW - LOW PROFILE | 90 3312 | HEX SCREW SFH M3x12 (10) |
| 35 8821 | AIR FILTER BODY & CAP - LOW PROFILE | 90 3314 | HEX SCREW SFH M3x14 (10) |
| 35 8841 | AIR FILTER FOAM & OIL - LOW PROFILE | 96 0030 | NUT M3 (10) |
| 35 8901 | COMPOSITE FUEL FILTER SET | 96 1022 | WASHER S 2.2 (10) |

902318
SH M3x18



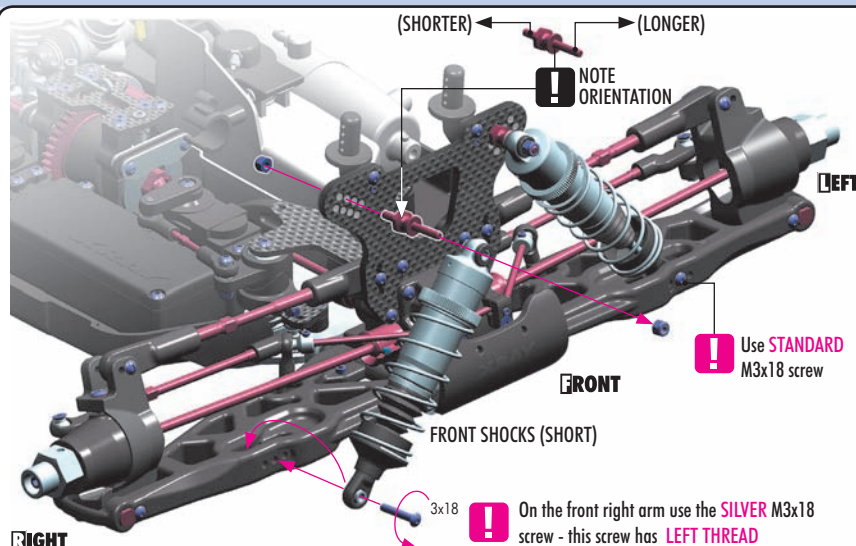
902319
SH M3x18
LEFT thread



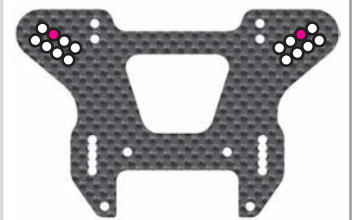
960030
N M3

SET-UP BOOK

SHOCK ABSORBERS



INITIAL POSITION



INITIAL POSITION



902318
M3x18



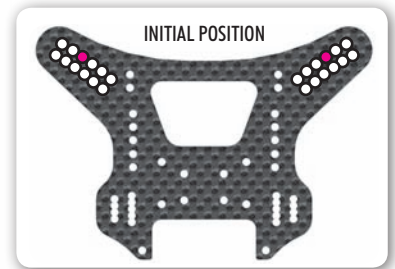
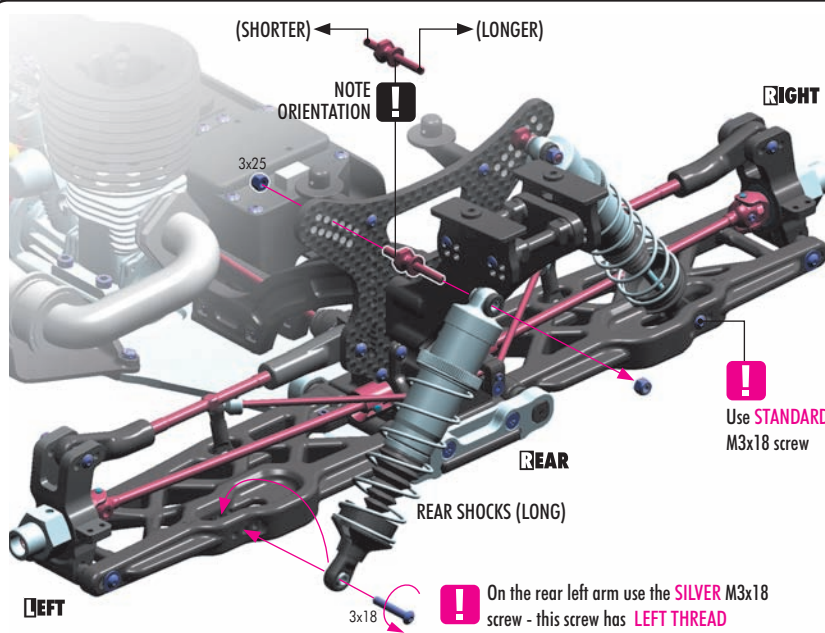
902319
SH M3x18
LEFT thread



960030
N M3

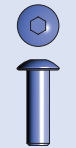
SET-UP BOOK

SHOCK ABSORBERS



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

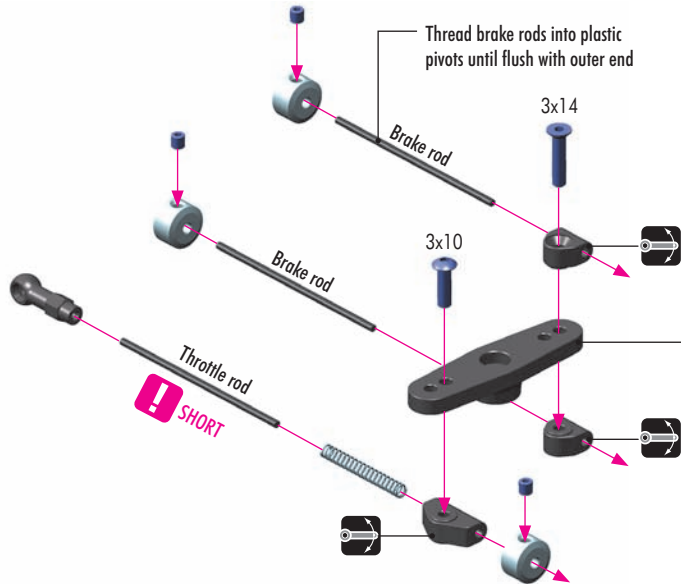
901303
SB M3x3



902310
SH M3x10

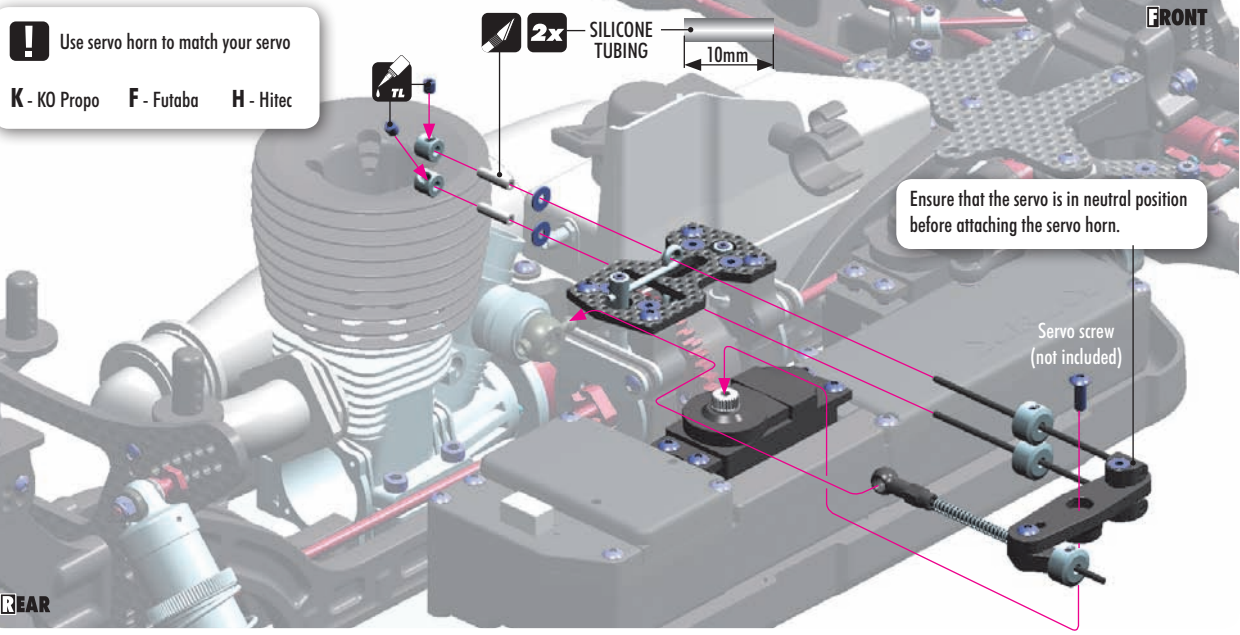


903314
SFH M3x14



961022
S 2.2

901303
SB M3x3



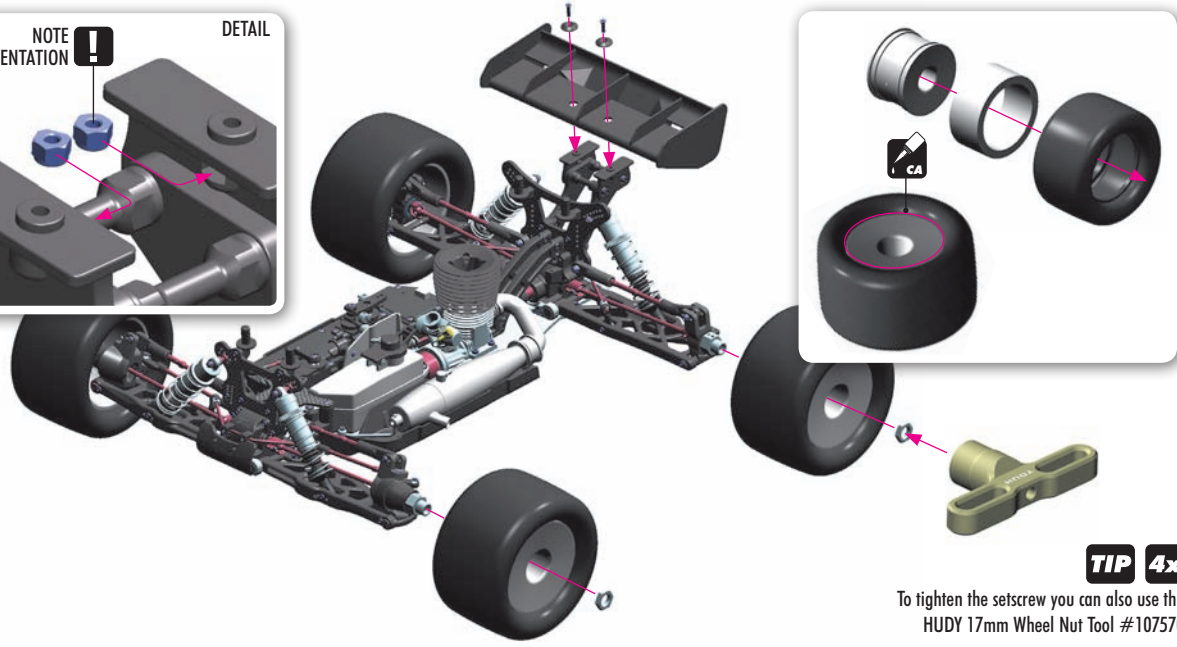
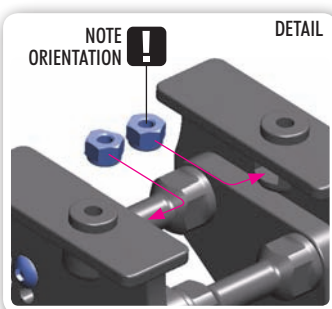
FINAL ASSEMBLY



903312
SFH M3x12

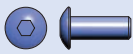


960030
N M3

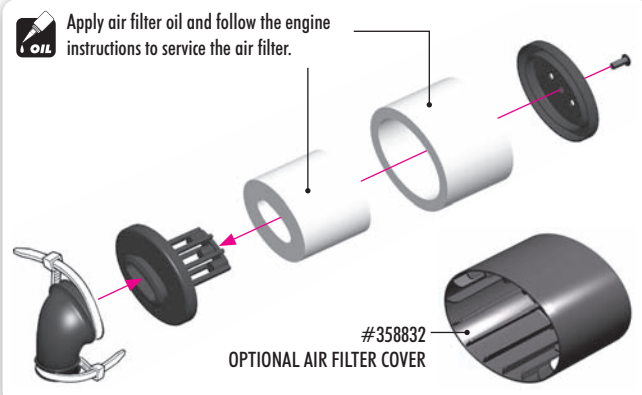


TIP 4x

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

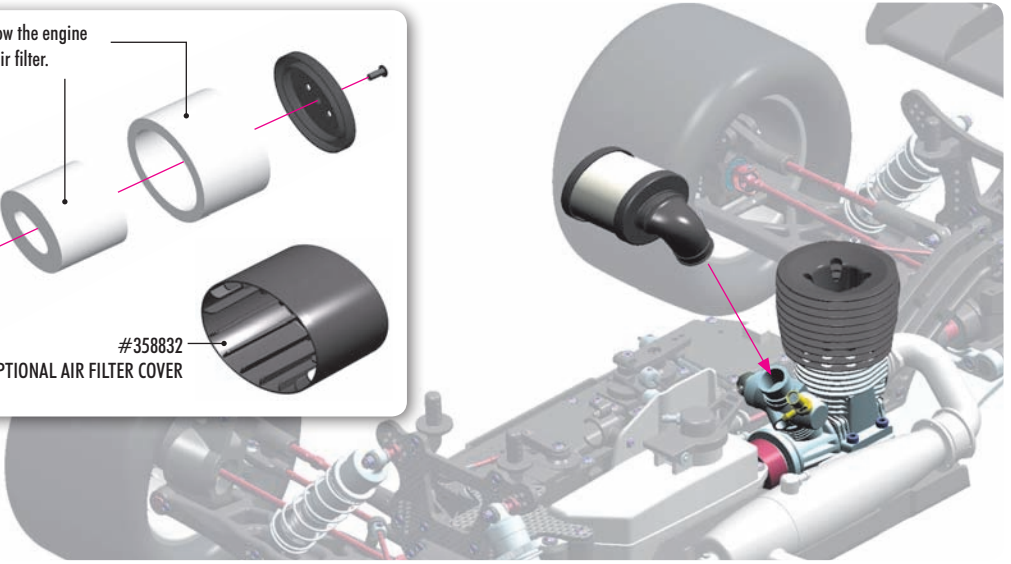


902308
SH M3x8

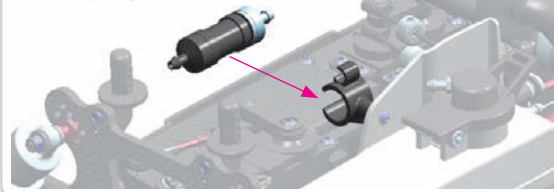


Apply air filter oil and follow the engine instructions to service the air filter.

#358832
OPTIONAL AIR FILTER COVER



The fuel filter has a small hole that fits into notch on the composite holder to prevent the filter from turning freely.

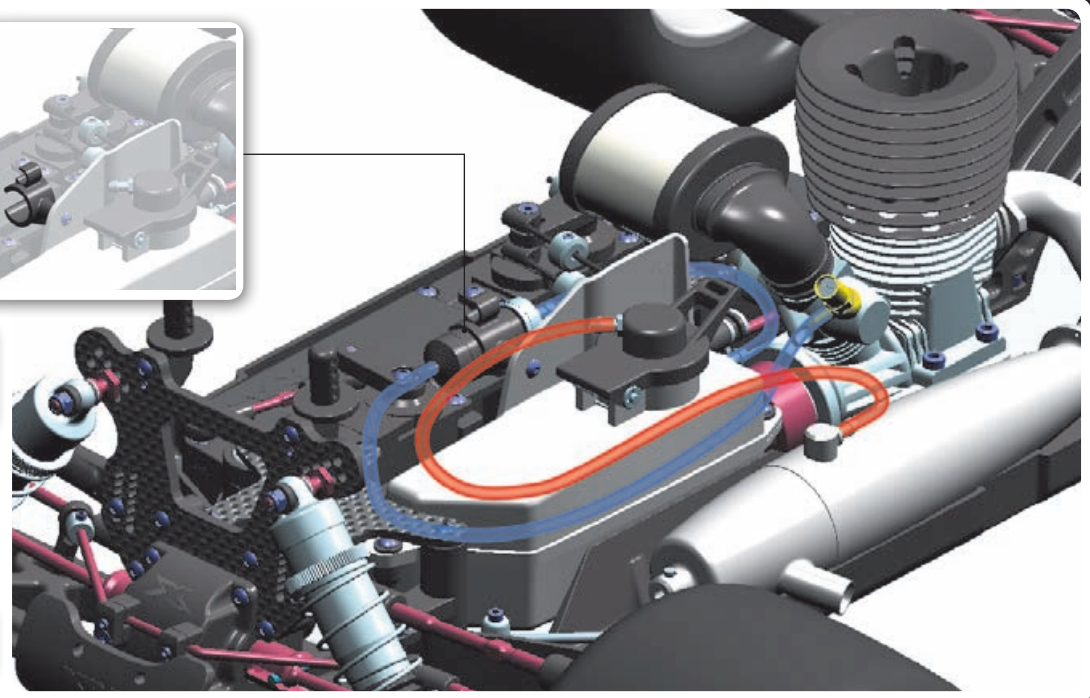


Cut the silicone tube depending on engine and muffler. Use the plastic clips to hold the tubes together.

SILICONE TUBE MARKED AS BLUE = FROM FUEL TANK TO CARBURETOR

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

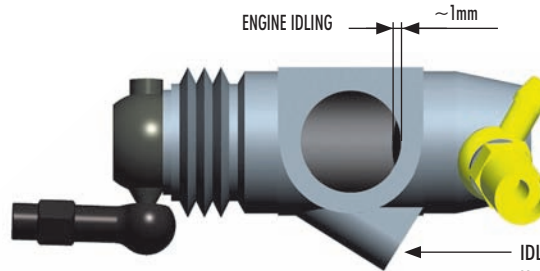
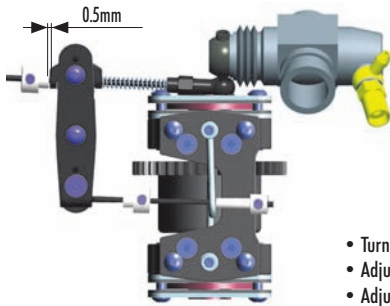
Keep fuel line away from clutchbell and flywheel.



THROTTLE LINKAGE ADJUSTMENT

NEUTRAL (IDLE)

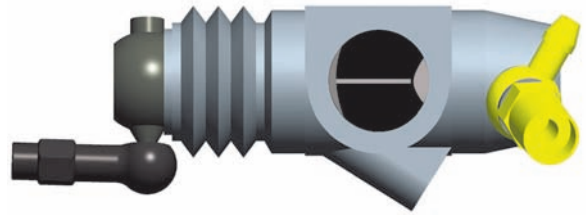
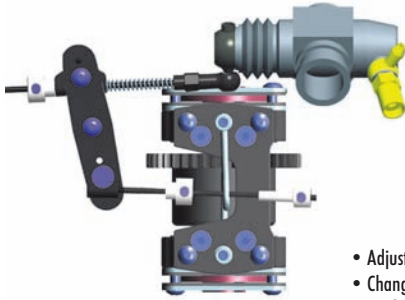
ADJUST INDIVIDUAL LINKAGES SEPARATELY TO AVOID INTERFERING WITH THE OPERATION OF THE OTHERS



- 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.

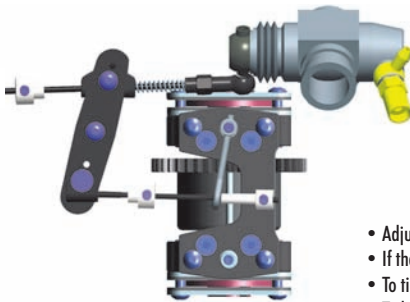
IDLING ADJUSTMENT SCREW.
Use to adjust the idle setting of the carburetor. Do not allow carburetor to close to less than 1mm.

FULL THROTTLE

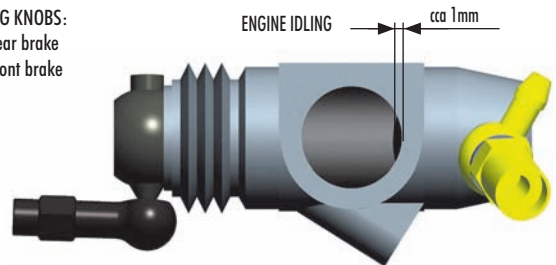


- Adjust the servo-horn mounting position for the carburetor to open fully.
- Change the pivot mounting position on the servo horn in case the carburetor is not opening fully or if it is opening excessively. Or if available on the transmitter, adjust the throttle high end point.

BRAKE



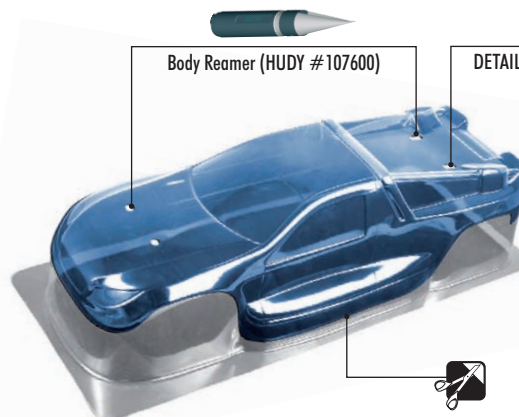
BRAKE ADJUSTING KNOBS:
Upper linkage - rear brake
Lower linkage - front brake



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

- 1 Before cutting and making holes on the body, put the unpainted body on the chassis to confirm the mounting position and location for holes and cutouts.
- 2 Before painting, wash the inside of the body with mild detergent, and then rinse and dry thoroughly.
- 3 Mask all windows.
- 4 Apply paint masks as appropriate.

- 5 Paint the body using paints formulated for polycarbonate bodies.
- 6 When the paint is dry, remove the masking.
- 7 Carefully cut out the body using appropriate scissors or cutting tools.
- 8 When you have finished cutting, peel off the external protective films.



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

NOTE

ENGINE OPERATION

PREPARING TO OPERATE THE ENGINE

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

STARTING AND RUNNING THE ENGINE

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

1. 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.
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.
7. Put fuel in the fuel tank, and close the cap securely.
8. 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 rag to cover the exhaust tip. Be careful! The exhaust is extremely hot so use a thick rag and gloves.
- Pinch the fuel tubing to stop the flow of fuel to the carb. Be careful, this can make the motor run lean which can damage the motor.
- Put your hand over the air filter, or squeeze the air filter element to block the airflow.
- Press an object (such as a screwdriver handle or shoe) against the rotating flywheel to stop its rotation. Be very careful, and do not stick your hand or fingers near the rotating flywheel.

FINISHING OPERATIONS

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.

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.

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

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

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

CLUTCH BEARINGS

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

RECOMMENDED PRODUCTS

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

HUDY #106230

HUDY #106220



HUDY #106222



HUDY #106221



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 #106210



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.

TROUBLESHOOTING GUIDE

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

RACE	
TRACK	
NAME	
CITY / COUNTRY	
CONTACT	

DATE	
-------------	--

TEMPERATURE / °F or °C	AIR	TRACK
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LAPS	FINAL POSITION	BEST LAP TIME/sec	RACE LENGTH/min.
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TRACK SIZE	<input type="checkbox"/> OPEN	<input type="checkbox"/> MEDIUM	<input type="checkbox"/> TIGHT
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TRACK TRACTION	<input type="checkbox"/> HIGH	<input type="checkbox"/> MEDIUM	<input type="checkbox"/> LOW
-----------------------	-------------------------------	---------------------------------	------------------------------

TRACK SURFACE	<input type="checkbox"/> SMOOTH	<input type="checkbox"/> MEDIUM	<input type="checkbox"/> BUMPY
----------------------	---------------------------------	---------------------------------	--------------------------------

TRACK TYPE	<input type="checkbox"/> HARD PACKED	<input type="checkbox"/> SOFT DIRT	<input type="checkbox"/> CLAY
	<input type="checkbox"/> BLUE GROOVE	<input type="checkbox"/> ASTRO TURF	<input type="checkbox"/> GRASS

TRACK CONDITION	<input type="checkbox"/> DRY	<input type="checkbox"/> DUSTY	<input type="checkbox"/> WET	<input type="checkbox"/> MUD
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DIFFERENTIALS		
TYPE		
FRONT	CENTER	REAR
DIFFERENTIAL - OIL		

GEARING			
CLUTCH BELL	T	SPUR GEAR	T
PINION	T	CROWN GEAR	T
SPRING		SHOE	

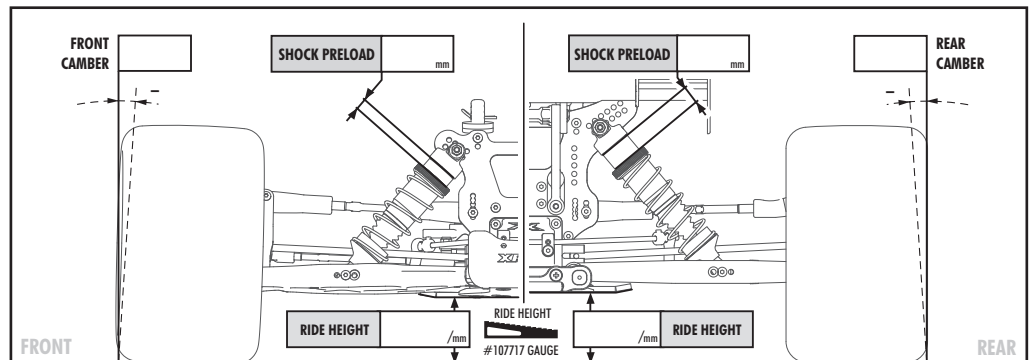
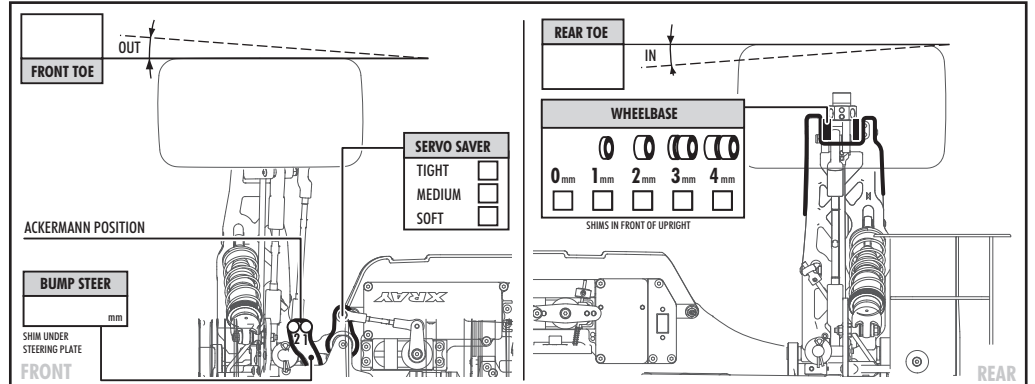
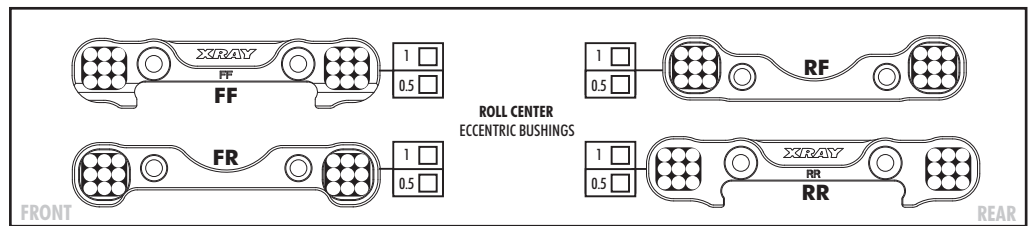
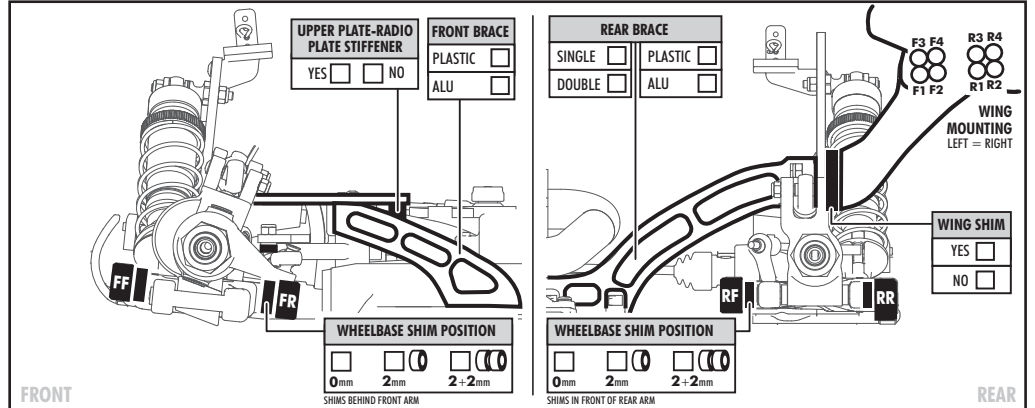
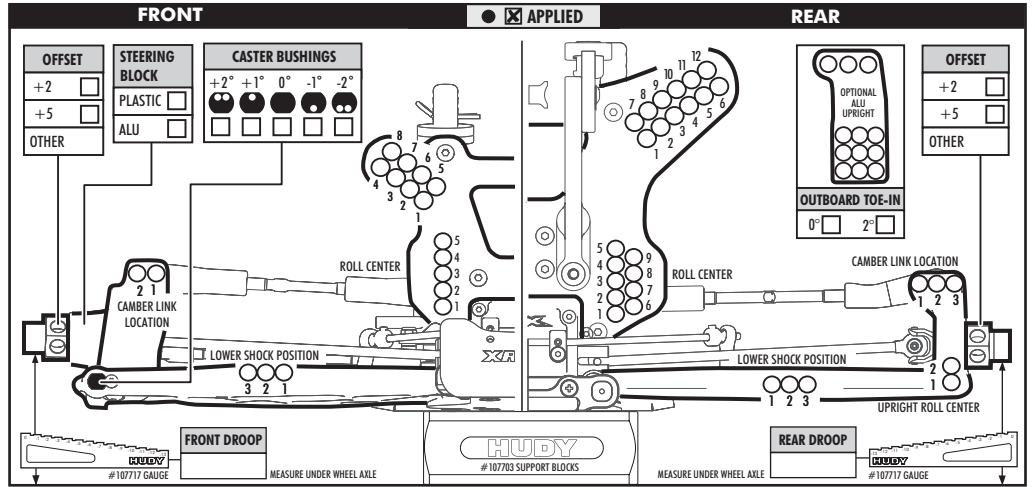
FRONT	SHOCKS	REAR
LINEAR SPRINGS		
#358186 = 0.86	<input type="checkbox"/> BLUE	= 0.61 #358286
#358187 = 0.92	<input type="checkbox"/> VIOLET	= 0.65 #358287
#358188 = 0.98	<input type="checkbox"/> PINK	= 0.70 #358288
OTHER		
OIL / cST		
REBOUND /%		
PISTONS		
<input type="checkbox"/> 6 HOLES	<input type="checkbox"/> 1.1mm	<input type="checkbox"/> 6 HOLES
<input type="checkbox"/> 8 HOLES	<input type="checkbox"/> 1.2mm	<input type="checkbox"/> 8 HOLES
<input type="checkbox"/> 10 HOLES	<input type="checkbox"/> 1.3mm	<input type="checkbox"/> 10 HOLES
	<input type="checkbox"/> 1.4mm	<input type="checkbox"/> 10 HOLES
OTHERS		

FRONT	ANTI ROLL BAR	REAR
	THICKNESS / mm	

FRONT	TIRES	REAR
	TYPE	
	INSERTS	
	WHEELS	

ENGINE	
TYPE	
MANIFOLD	
MUFFLER	
PLUG	
FUEL	

BODY	
TYPE	



COMMENTS

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