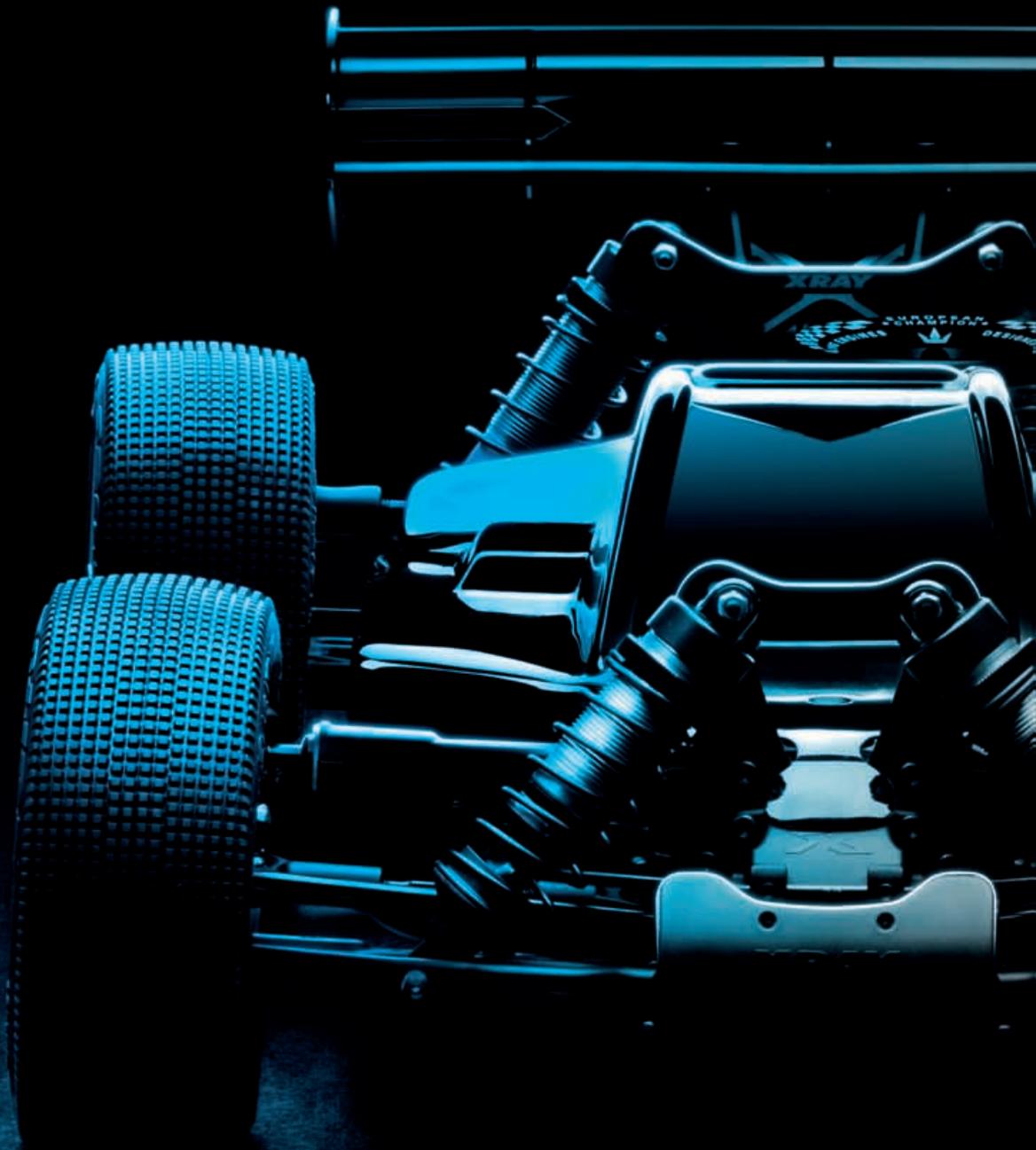


1/8 LUXURY OFF-ROAD BUGGY

# XRAY XB8



**INSTRUCTION MANUAL**

XRAY XB8'22

## BEFORE YOU START

This is a high-competition, high-quality RC car intended for persons aged 16 years and older with previous experience building and operating RC model racing cars. This is not a toy; it is a precision racing model. This model racing car is not intended for use by beginners, inexperienced customers, or by children without direct supervision of a responsible, knowledgeable adult. If you do not fulfill these requirements, please return the kit in unused and unassembled form back to the shop where you have purchased it.

Before building and operating your XRAY, **YOU MUST** read through all of the operating instructions and instruction manual and fully understand them to get the maximum enjoyment and prevent unnecessary damage. Read

carefully and fully understand the instructions before beginning assembly.

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

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

## 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](mailto:info@teamxray.com). Also, please visit our Web site at [www.teamxray.com](http://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](http://www.teamxray.com)**

### XRAY Europe

K Výstavisku 6992  
91101 Trenčín  
Slovakia, EUROPE  
Phone: +421-32-7401100  
Fax: +421-32-7401109  
Email: [info@teamxray.com](mailto:info@teamxray.com)

### XRAY USA

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

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

## SAFETY PRECAUTIONS

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

**CAUTION: CANCER HAZARD**

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

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

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

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

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

## IMPORTANT NOTES - GENERAL

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

## **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 flammable, explosive, and poisonous. Never use fuel indoors or in places with open fires and sources of heat.
- Always keep the fuel container cap tightly shut.
- Always read the warning label on the fuel container for safety information.
- Nitro-powered model engines emit poisonous vapors and gasses. These vapors irritate eyes and can be highly dangerous to your health. We recommend wearing rubber or vinyl gloves to avoid direct contact with nitro fuel.
- Nitro fuel for RC model cars is made of the combination of the methyl alcohol,

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

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

## **R/C & BUILDING TIPS**

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

- Ask your local hobby shop for any advice.

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

## **WARRANTY**

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

Due to the high performance level of this model car you will need to periodically maintain and replace consumable components. Any and all warranty coverage will not cover replacement of any part or component damaged by neglect, abuse, or improper or unreasonable use. This includes but is not limited to damage from

crashing, chemical and/or water damage, excessive moisture, improper or no maintenance, or user modifications which compromise the integrity of components. Warranty will not cover components that are considered consumable on RC vehicles. XRAY does not pay nor refund shipping on any component sent to XRAY or its distributors for warranty. XRAY reserves the right to make the final determination of the warranty status of any component or part.

### **Limitations of Liability**

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

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

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

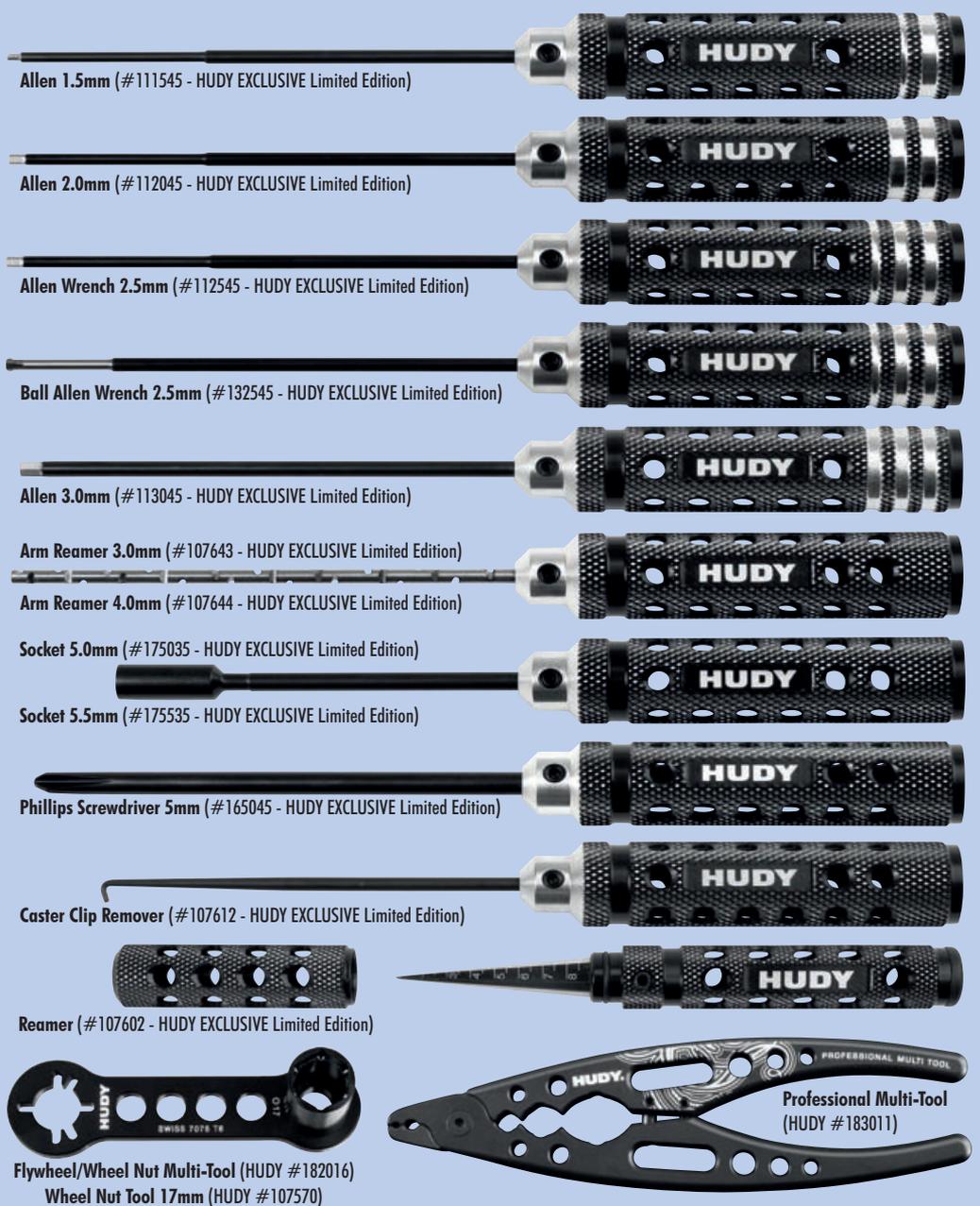
## **QUALITY CERTIFICATE**

XRAY MODEL RACING CARS uses only the highest quality materials, the best compounds for molded parts and the most sophisticated manufacturing processes of TQM (Total Quality Management). We guarantee that all parts of a newly-purchased kit are manufactured with the highest regard to quality. However, due to the many factors inherent in model racecar competition, we cannot guarantee any

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

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

# TOOLS REQUIRED



# EQUIPMENT REQUIRED

<p>Transmitter</p>	<p>Receiver</p>	<p>Engine (FX K303 #650105) .21ci (3.5cc)</p>	<p>Manifold &amp; Exhaust (FX #659505) (FX #659558)</p>	<p>Steering and Throttle Servos</p>
<p>Glow Plug Igniter</p>	<p>Fuel + Fuel Bottle (HUDY #104200)</p>	<p>Lexan™ Paint</p>	<p>Receiver Battery Pack</p>	<p>Starter Box &amp; Battery Pack (HUDY #104500)</p>
<p>Battery Charger</p>	<p>Tires &amp; Wheels</p>	<p>Bearing Oil (HUDY #106230)</p>	<p>Threadlock</p>	<p>CA glue</p>

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



At the beginning of each section is an exploded view of the parts to be assembled. There is also a list of all the parts and part numbers that are related to the assembly of that section. The part descriptions are color-coded to make it easier for you to identify the source of a part. Here are what the different colors mean:

STYLE A - indicates parts that are included in the bag marked for the section.  
 STYLE B - indicates parts that are included in the box.  
 STYLE C - indicates parts that are already assembled from previous steps.

## XB8 TECH TIPS

### TIP FRONT & REAR DIFF GEAR MESH ADJUSTMENT

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



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

### SUSPENSION & DRIVETRAIN MAINTENANCE

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

### HUDY SPRING STEEL™

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

### TIP DRIVE SHAFT PIN SERVICING

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

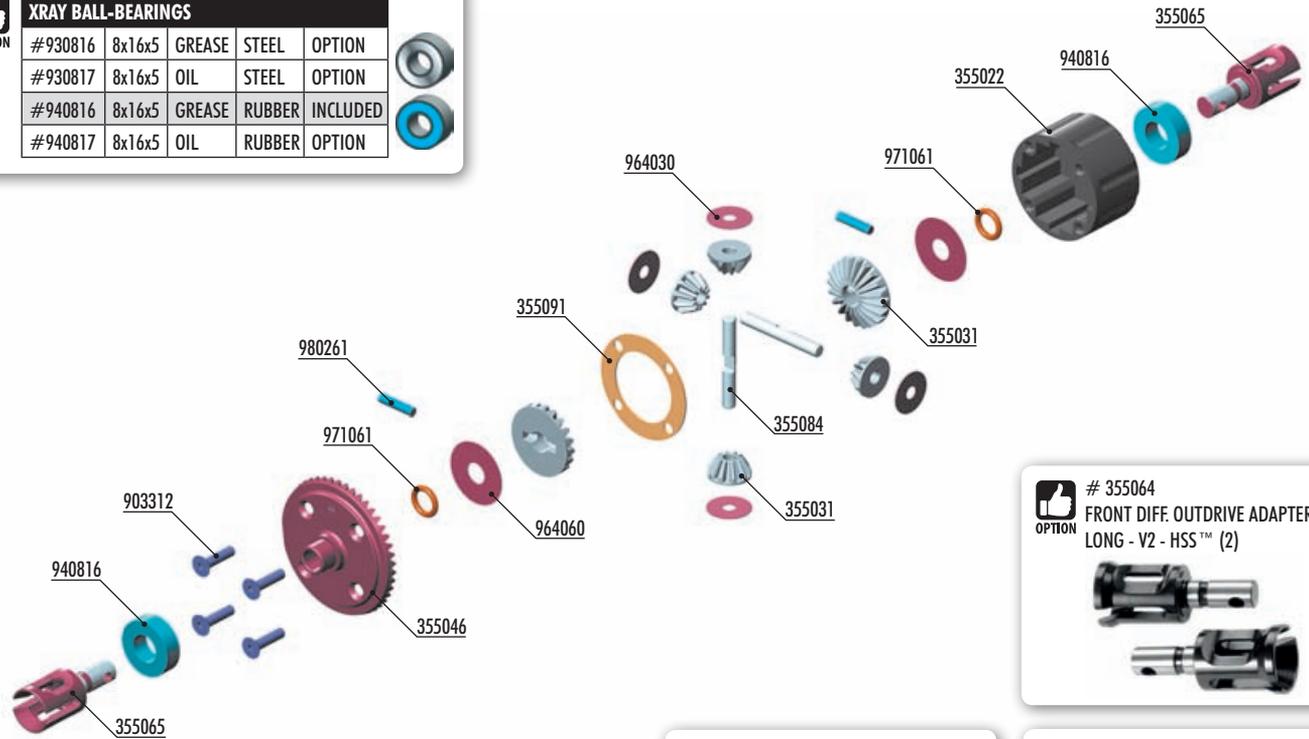


# 1. FRONT & REAR DIFFERENTIALS



## XRAY BALL-BEARINGS

OPTION	Part #	Size	Grease	Material	Status
	#930816	8x16x5	GREASE	STEEL	OPTION
	#930817	8x16x5	OIL	STEEL	OPTION
	#940816	8x16x5	GREASE	RUBBER	INCLUDED
	#940817	8x16x5	OIL	RUBBER	OPTION



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

**#355022-G**  
**OPTION** DIFFERENTIAL CASE - V2 - GRAPHITE

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

## BAGS



2x

- 355005 DIFFERENTIAL 46T - V2 - SET
- 355022 DIFFERENTIAL CASE - V2
- 355031 STEEL DIFF BEVEL & SATELLITE GEARS - V2 (2+4)
- 355046 FRONT/REAR DIFF LARGE BEVEL GEAR 46T - HUDY STEEL
- 355065 DIFF OUTDRIVE ADAPTER - V2 - HUDY SPRING STEEL™ (2)
- 355084 F/R DIFF PIN (2)
- 355091 F/R DIFF GASKET (4)

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



940816  
BB 8x16x5



964060  
S 6x18x0.2

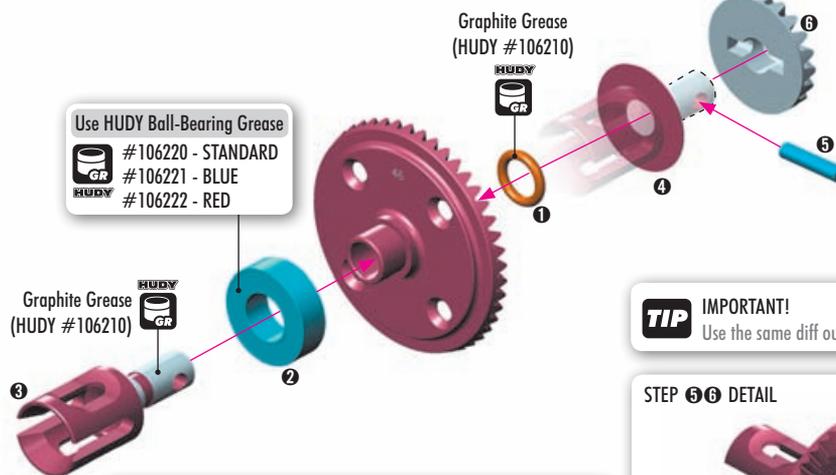


971061  
O 6x1.55



980261  
P 2.5x11.5

2x F=R

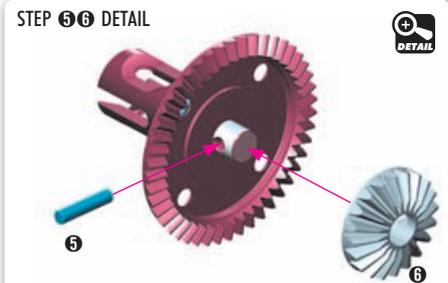


Use HUDY Ball-Bearing Grease  
 #106220 - STANDARD  
 #106221 - BLUE  
 #106222 - RED

Graphite Grease (HUDY #106210)

Graphite Grease (HUDY #106210)

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



## XRAY BALL-BEARING

OPTION	Part #	Size	Grease	Material	Status
	#930816	8x16x5	GREASE	STEEL	OPTION
	#930817	8x16x5	OIL	STEEL	OPTION
	#940816	8x16x5	GREASE	RUBBER	INCLUDED
	#940817	8x16x5	OIL	RUBBER	OPTION



**SET-UP BOOK**  
 DIFFERENTIAL GEARS

# 1. FRONT & REAR DIFFERENTIALS



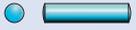
940816  
BB 8x16x5



964060  
S 6x18x0.2



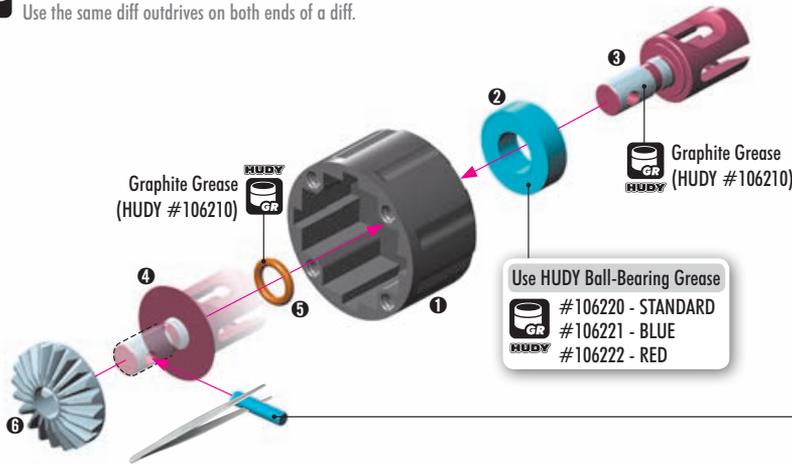
971061  
O 6x1.55



980261  
P 2.5x11.5

2x F=R

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

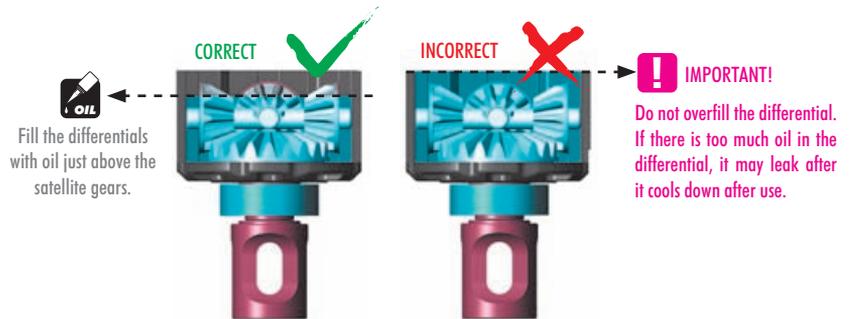


STEP 5 DETAIL



## VERY IMPORTANT!

Use the following silicone oils included in the kit for initial settings:  
FRONT diff: 7.000cSt / REAR diff: 3.000cSt



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

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



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

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

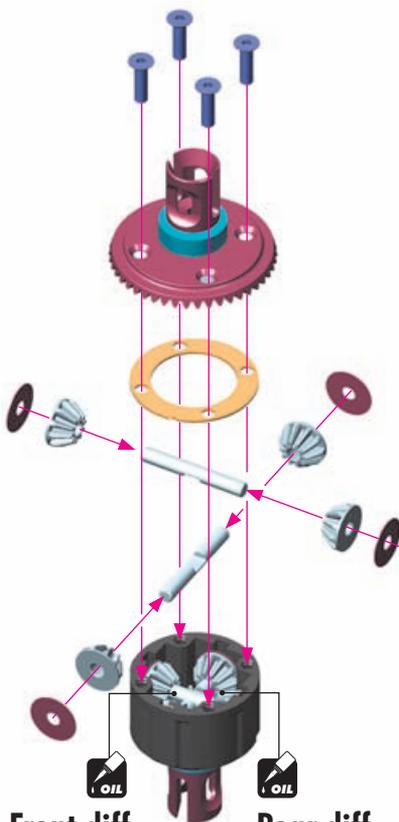
2. Slowly pour oil into the diff and watch the weight. Add 2.60g of oil into the diff. The approximate weight of the diff+oil is approx. 41.90g

$$\text{REAR DIFF } 39.30\text{g} + 2.60\text{g} = 41.90\text{g}$$

$$\text{FRONT DIFF } 39.30\text{g} + 2.60\text{g} = 41.90\text{g}$$

### SET-UP BOOK

DIFFERENTIAL OIL



**Front diff:**

Silicone oil 7.000cSt  
Fill just above the satellite gears.

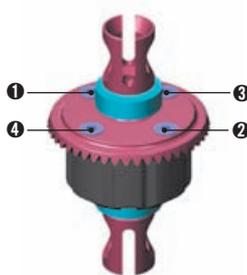
**Rear diff:**

Silicone oil 3.000cSt  
Fill just above the satellite gears.

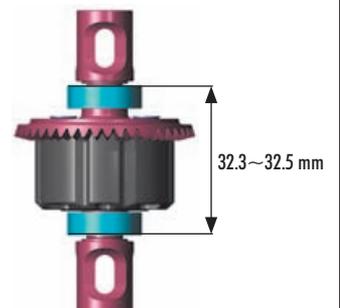
Tighten the screws equally.



Finish tightening in this order:



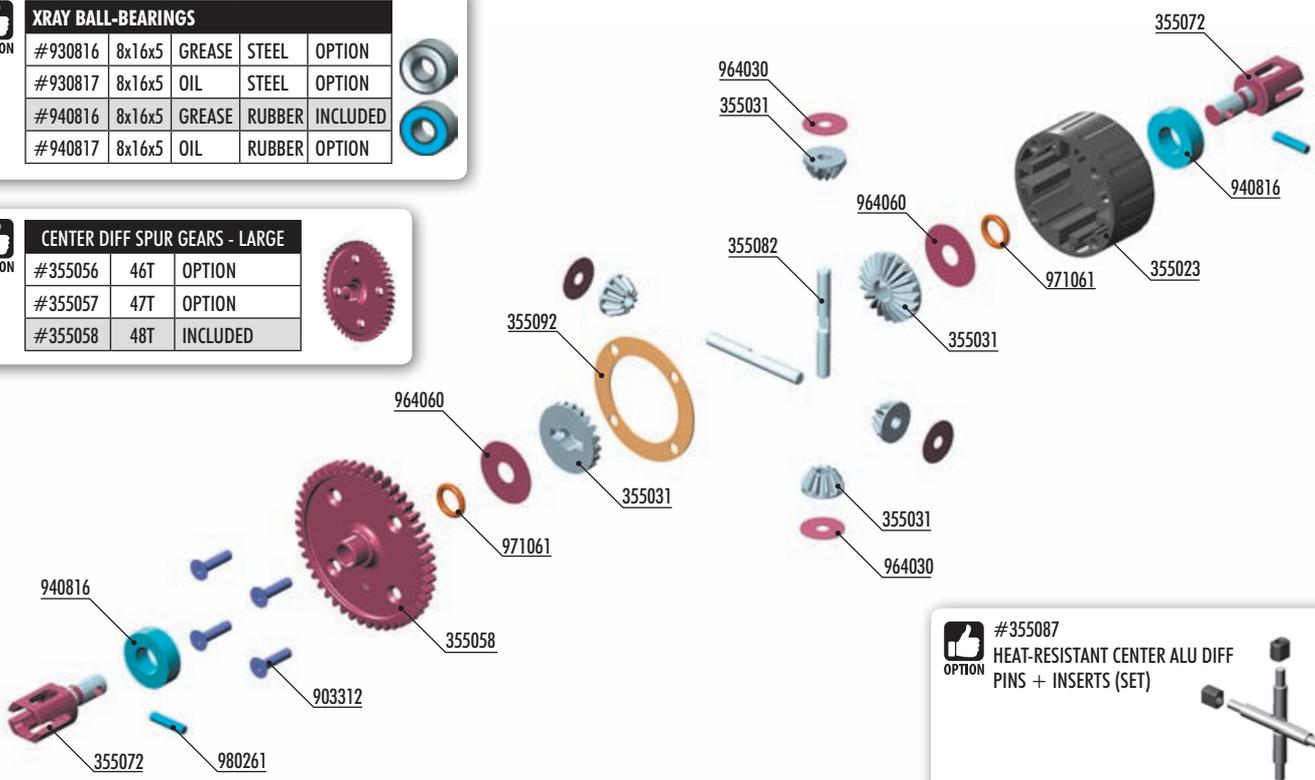
After assembly the differentials should have a length of 32.3–32.5 mm measured from the ends of the installed ball-bearings. If differentials are longer, retighten the 4 screws holding the crown gears.



# 1. CENTER DIFFERENTIAL

OPTION	XRAY BALL-BEARINGS			
#930816	8x16x5	GREASE	STEEL	OPTION
#930817	8x16x5	OIL	STEEL	OPTION
#940816	8x16x5	GREASE	RUBBER	INCLUDED
#940817	8x16x5	OIL	RUBBER	OPTION

OPTION	CENTER DIFF SPUR GEARS - LARGE	
#355056	46T	OPTION
#355057	47T	OPTION
#355058	48T	INCLUDED



**#355012**  
OPTION  
CENTER DIFFERENTIAL - V1 - SET

**#355023-G**  
OPTION  
CENTER DIFFERENTIAL CASE - V2 - GRAPHITE

**#355087**  
OPTION  
HEAT-RESISTANT CENTER ALU DIFF PINS + INSERTS (SET)

**#355083**  
OPTION  
HEAT-RESISTANT CENTER STEEL DIFF PINS + INSERTS (SET)



355013	CENTER DIFFERENTIAL - LARGE - SET - V2	903312	HEX SCREW SFH M3x12 (10)
355023	CENTER DIFFERENTIAL CASE - V2	940816	BALL-BEARING 8x16x5 RUBBER SEALED - GREASE (2)
355031	STEEL DIFF BEVEL & SATELLITE GEARS - V2 (2+4)	964030	WASHER S 3.5x12x0.2 (10)
355058	CENTER DIFF SPUR GEAR 48T - LARGE	964060	WASHER S 6x18x0.2 (10)
355072	LARGE CENTER DIFF OUTDRIVE ADAPTER - HUDY STEEL (2)	971061	SILICONE O-RING 6x1.55 (10)
355082	CENTER DIFF PIN (2)	980261	PIN 2.5x11.5 (10)
355092	CENTER DIFF GASKET (2)		

- 940816 BB 8x16x5
- 964060 S 6x18x0.2
- 971061 O 6x1.55
- 980261 P 2.5x11.5

**Graphite Grease (HUDY #106210)**

**Use HUDY Ball-Bearing Grease**

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

**STEP 5 6 DETAIL**

OPTION	CENTER DIFF SPUR GEARS - LARGE	
#355056	46T	OPTION
#355057	47T	OPTION
#355058	48T	INCLUDED

OPTION	XRAY BALL-BEARING			
#930816	8x16x5	GREASE	STEEL	OPTION
#930817	8x16x5	OIL	STEEL	OPTION
#940816	8x16x5	GREASE	RUBBER	INCLUDED
#940817	8x16x5	OIL	RUBBER	OPTION

# 1. CENTER DIFFERENTIAL



Graphite Grease (HUDY #106210)

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

**STEP 5 DETAIL**



**Center diff:**  
 Silicone oil 7.000cSt  
 Fill to just above the satellite gears.

**SET-UP BOOK**  
 DIFFERENTIAL OIL

## VERY IMPORTANT!

Use the following silicone oil included in the kit for initial setting:  
 Center diff: 7.000cSt

**CORRECT** ✓

**INCORRECT** ✗

**IMPORTANT!**  
 Do not overfill the differential. If there is too much oil in the differential, it may leak after it cools down after use.

To ensure you have the same amount of oil from rebuild to rebuild, do the following:  
 #107865 HUDY Ultimate Digital Pocket Scale 300g ± 0.01g

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

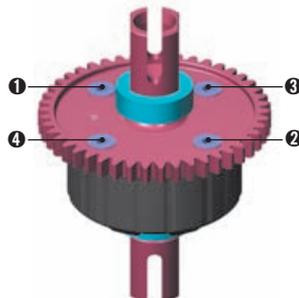
2. Slowly pour oil into the diff and watch the weight. Add 5.20g of oil into the diff. The approximate weight of the diff + oil is 48.17g.

**CENTER DIFF** 42.97g + 5.20g = 48.17g

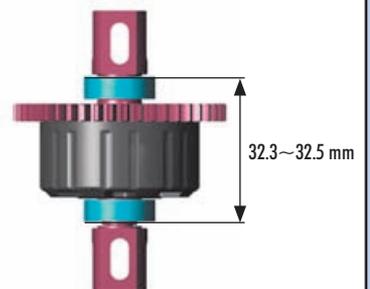
Tighten the screws equally.



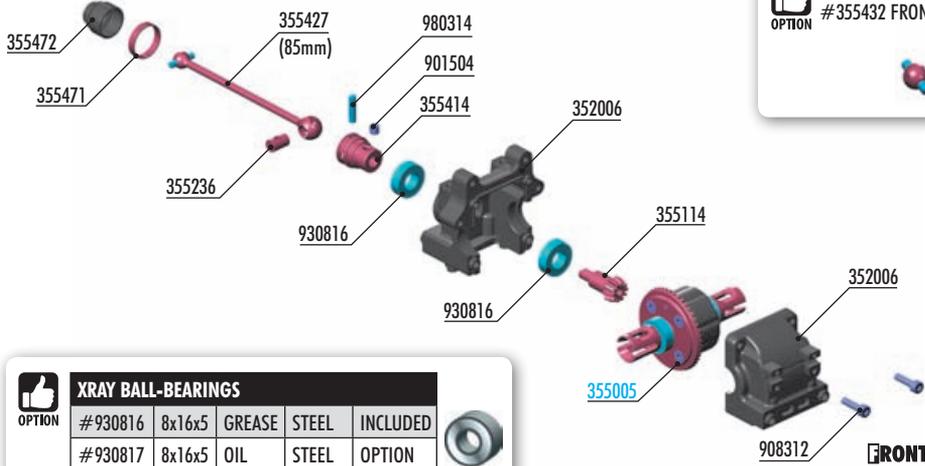
Finish tightening in this order:



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



## 2. FRONT TRANSMISSION



**OPTION** #355415 CENTRAL DOGBONE SHAFT UNIVERSAL JOINT - HUDY SPRING STEEL™  
**OPTION** #355432 FRONT CENTRAL DOGBONE DRIVE SHAFT 85MM - HUDY SPRING STEEL™

**OPTION** **XRAY BALL-BEARINGS**

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

**BAG**  
02

- 352006 DIFF BULKHEAD BLOCK SET FRONT/REAR
- 355114 BEVEL DRIVE GEAR 14T
- 355236 CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
- 355414 CENTRAL CVD SHAFT UNIVERSAL JOINT - HUDY SPRING STEEL™
- 355427 FRONT CENTRAL CVD DRIVE SHAFT 85MM - HUDY SPRING STEEL™
- 355471 DRIVE SHAFT LOCKING RING (2)
- 355472 DRIVE SHAFT BOOT (2)

- 901504 HEX SCREW SB M5x4 (10)
- 908312 HEX SCREW SOCKET HEAD CAP SCH M3x12 (10)
- 930816 BALL-BEARING 8x16x5 STEEL SEALED - GREASE (2)
- 980314 PIN 3x14 (10)
- 355005 DIFFERENTIAL 46T - V2 - SET

- 901504 SB M5x4
- 930816 BB 8x16x5
- 980314 P 3x14

**step 1**

**!** 85mm - SHORT CVD DRIVE SHAFT

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

**Graphite Grease (HUDY #106210)**

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

**NOTE ORIENTATION !**

**STEP 4 DETAIL**

**PIN !**

**TOP**

**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 2**

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

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

**STEP 5 DETAIL**

**Use HUDY Ball-Bearing Grease**

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

**OPTION** **XRAY BALL-BEARING**

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

- 908312 SCH M3x12

**step 3**

**!** FRONT DIFF 7.000cSt

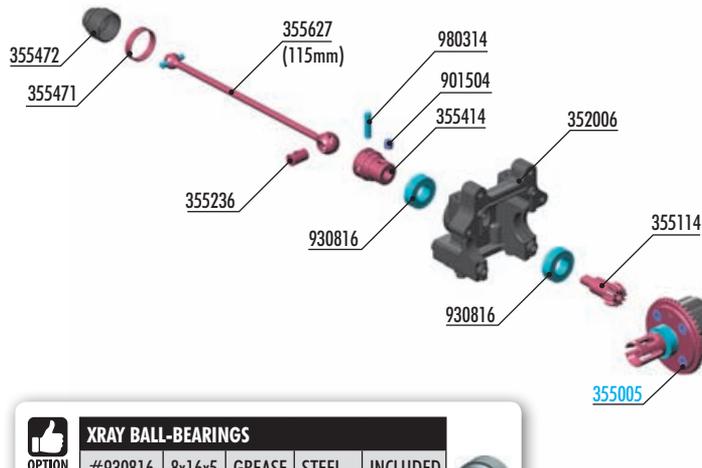
**Graphite Grease (HUDY #106210)**

**+** Cut on both front and rear bulkhead blocks

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

**FRONT**

## 2. REAR TRANSMISSION



**OPTION** #355415 CENTRAL DOGBONE SHAFT UNIVERSAL JOINT - HUDY SPRING STEEL™ + #355632 FRONT CENTRAL DOGBONE DRIVE SHAFT 116MM - HUDY SPRING STEEL™



XRAY BALL-BEARINGS					
<b>OPTION</b>	#930816	8x16x5	GREASE	STEEL	INCLUDED
	#930817	8x16x5	OIL	STEEL	OPTION



**BAG**

**02**

- 352006 DIFF BULKHEAD BLOCK SET FRONT/REAR
- 353054 GRAPHITE REAR SHOCK TOWER 4MM
- 355114 BEVEL DRIVE GEAR 14T
- 355236 CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
- 355414 CENTRAL CVD SHAFT UNIVERSAL JOINT - HUDY SPRING STEEL™
- 355627 REAR CENTRAL CVD DRIVE SHAFT 115MM - HUDY SPRING STEEL™
- 355471 DRIVE SHAFT LOCKING RING (2)

- 355472 DRIVE SHAFT BOOT (2)
- 901504 HEX SCREW SB M5x4 (10)
- 908312 HEX SCREW SOCKET HEAD CAP SCH M3x12 (10)
- 930816 BALL-BEARING 8x16x5 RUBBER SEALED - GREASE (2)
- 980314 PIN 3x14 (10)

355005 DIFFERENTIAL 46T - V2 - SET

**REAR**



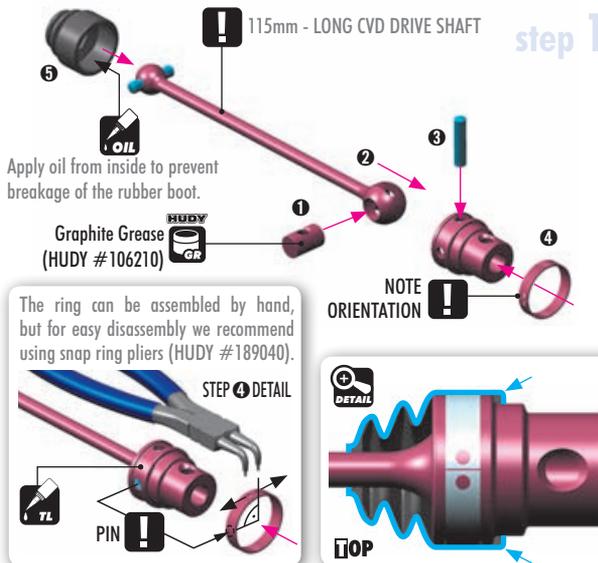
901504  
SB M5x4



930816  
BB 8x16x5



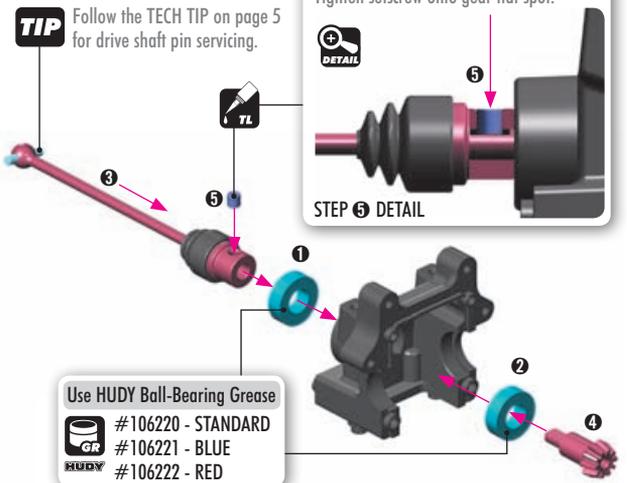
980314  
P 3x14



**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.

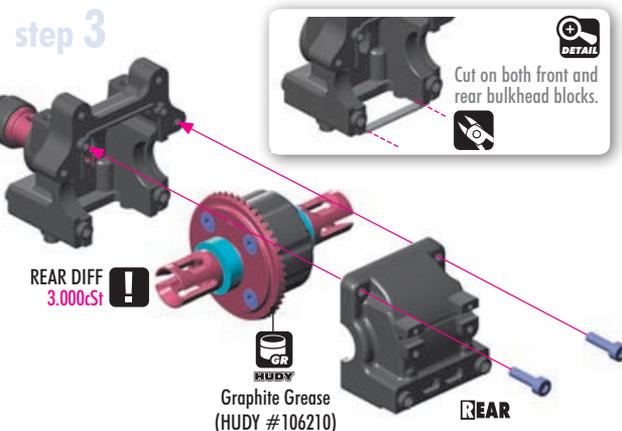
**step 2**



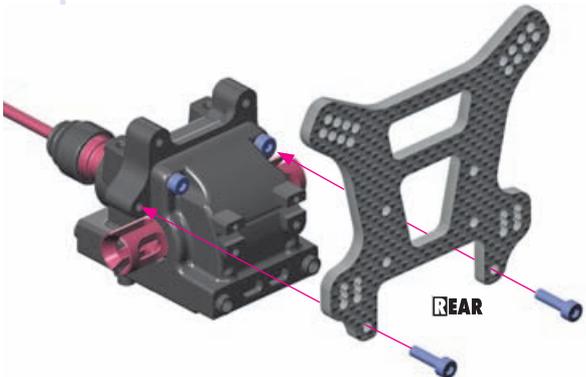
XRAY BALL-BEARING					
<b>OPTION</b>	#930816	8x16x5	GREASE	STEEL	INCLUDED
	#930817	8x16x5	OIL	STEEL	OPTION



908312  
SCH M3x12



**step 4**



# 3. REAR SUSPENSION

**SHORT - REAR SUSPENSION ARMS**

OPTION	#353113	RIGHT	OPTION
	#353123	LEFT	OPTION

+ **SUSPENSION HOLDERS**

	#353317	FRONT (RF)	OPTION
	#353325	REAR (RR)	OPTION



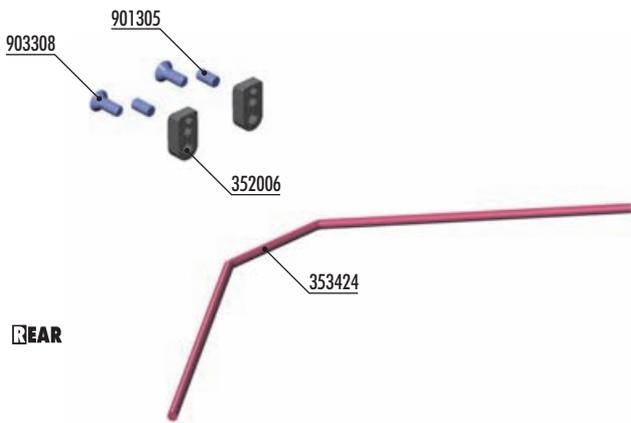
**FLAT - REAR SUSPENSION ARMS**

OPTION	#353115	MEDIUM	OPTION
	#353116	HARD	INCLUDED
	#353116-XH	X-HARD	OPTION
	#353116-G	GRAPHITE	OPTION

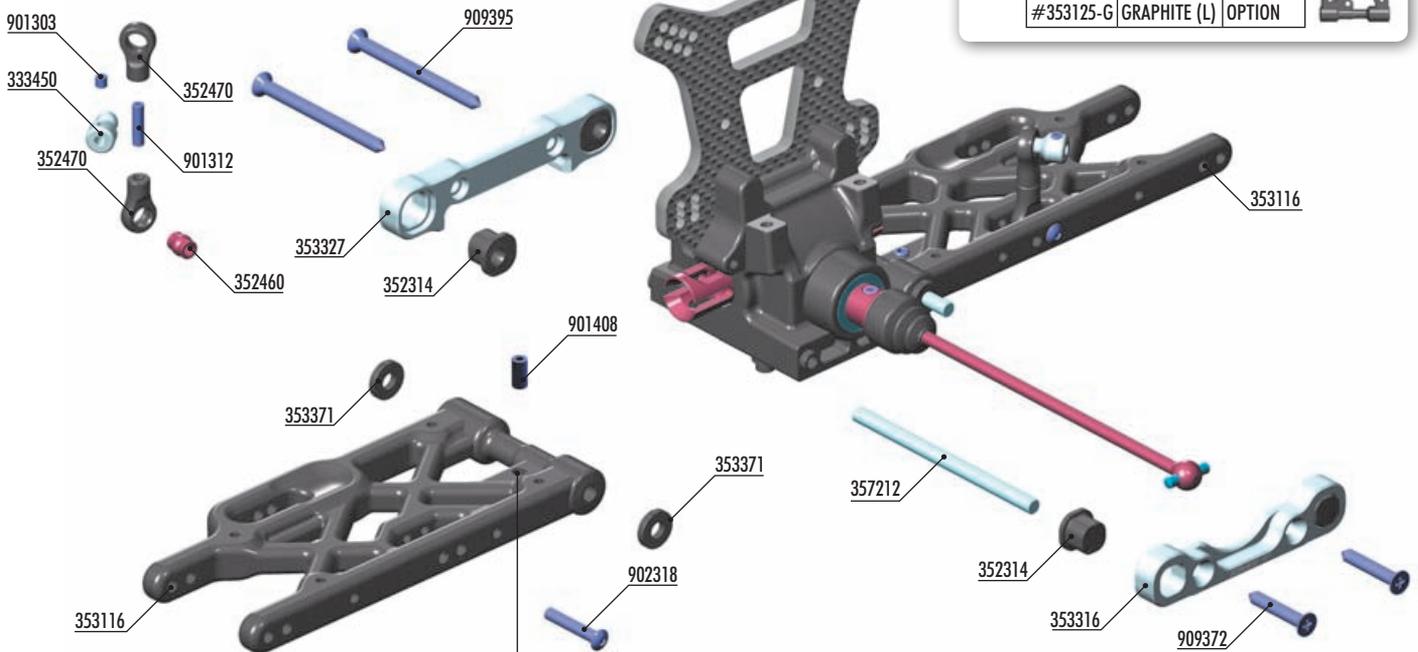


**LSM - REAR SUSPENSION ARMS**

OPTION	#353124-H	HARD (R)	OPTION
	#353125-H	HARD (L)	OPTION
	#353124-G	GRAPHITE (R)	OPTION
	#353125-G	GRAPHITE (L)	OPTION

REAR



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



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



**OPTION** **REAR ANTI-ROLL BARS**

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



- 333450 ANTI-ROLL BAR BALL JOINT 5.8 MM (2)
- 352006 DIFF BULKHEAD BLOCK SET FRONT/REAR
- 352314 COMPOSITE ECCENTRIC BUSHINGS - V2 (2)
- 352460 PIVOT BALL 5.8 (10)
- 352470 BALL JOINT 5.8 (8)
- 353116 COMPOSITE REAR LOWER SUSPENSION ARM - HARD
- 353316 ALU REAR LOWER SUSP. HOLDER - FRONT - SQUARE ADJ. ROLL CENTER
- 353327 ALU REAR LOWER SUSP. HOLDER - REAR - SQUARE ADJ. ROLL CENTER
- 353371 SET OF COMPOSITE LOWER ARM SHIMS
- 353424 REAR ANTI-ROLL BAR 2.4MM
- 357212 LOWER INNER PIVOT PIN F+R (2)

- 901303 HEX SCREW SB M3x3 (10)
- 901305 HEX SCREW SB M3x5 (10)
- 901312 HEX SCREW SB M3x12 (10)
- 901408 HEX SCREW SB M4x8 (10)
- 902318 HEX SCREW SH M3x18 (10)
- 903308 HEX SCREW SFH M3x8 (10)
- 909372 SCREW PHILLIPS SS 3.5x22 (10)
- 909395 SCREW PHILLIPS SS 3.5x45 (10)

# 3. REAR SUSPENSION



353371  
SHIM 4x10x2



901408  
SB M4x8



909372  
SS 3.5x22



909395  
SS 3.5x45

**MEDIUM**  
SUSPENSION ARMS

**RR** 1° 0.5°  
**RF** 1° 0.5°

**Do not use INNER positions.**

**HARD**  
SUSPENSION ARMS

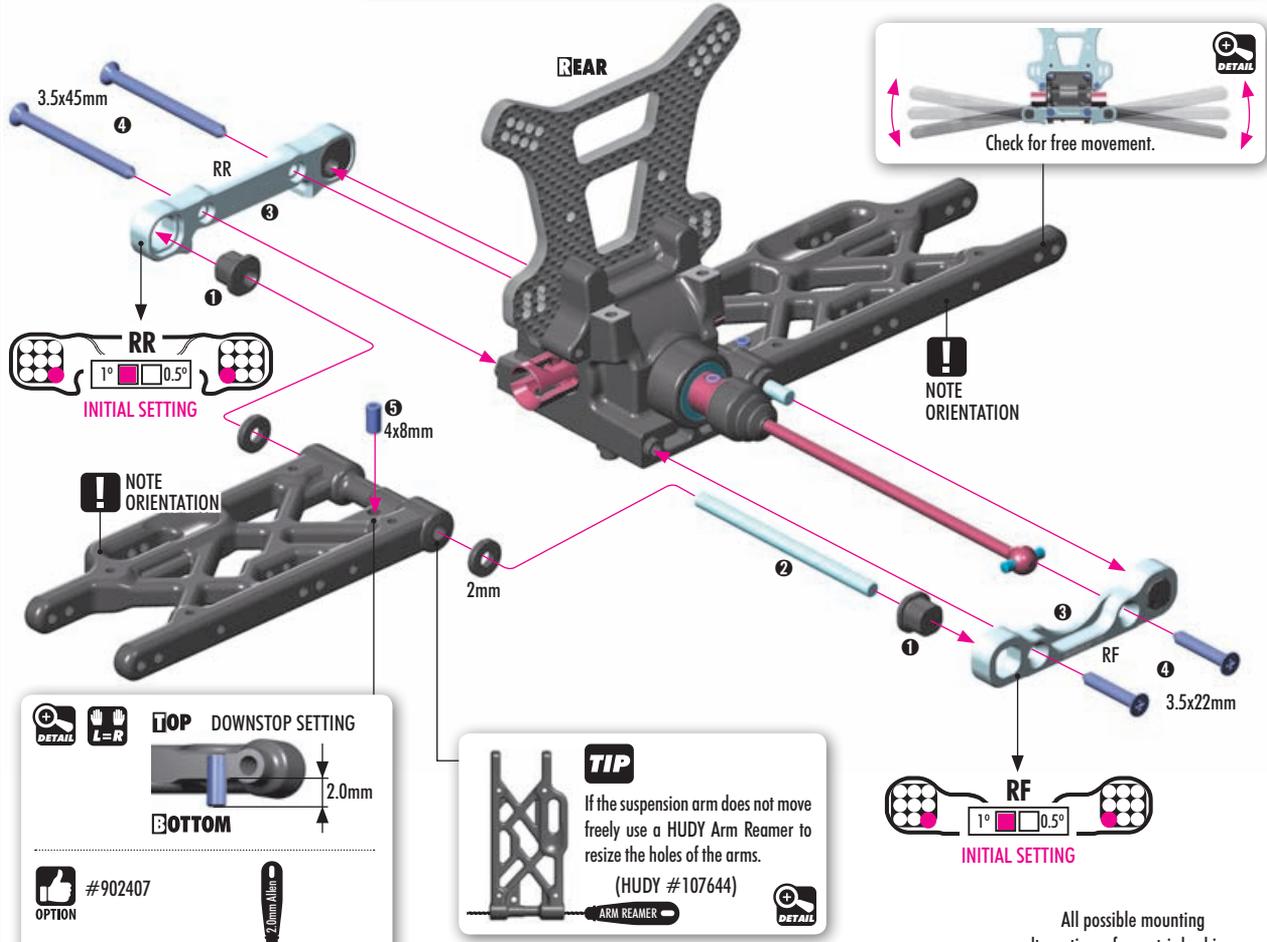
**RR** 1° 0.5°  
**RF** 1° 0.5°

**All positions are available.**

**X-HARD / GRAPHITE**  
SUSPENSION ARMS

**RR** 1° 0.5°  
**RF** 1° 0.5°

**Do not use OUTER positions.**



**TOP** DOWNSTOP SETTING

**BOTTOM**

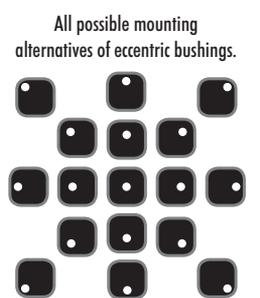
#902407  
OPTION

Downstop screw for fine tuning.

**TIP**

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

ARM REAMER



**ECCENTRIC BUSHINGS HAVE TWO DIFFERENT OFFSETS FROM THE CENTER.**

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

**SET-UP BOOK**

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

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

ANTI-SQUAT		
RR	RF	(°)
0	0	=3°
0	0.5	=4°
0	1	=2°
0.5	0	=4°
0.5	0.5	=3°
0.5	1	=5°
1	0	=2°
1	0.5	=3°
1	1	=1°

ROLL CENTER		
RR	RF	(mm)
0	0	=0mm
0	0.5	=1mm
0	1	=-1mm

TRACK-WIDTH		
RR	RF	(mm)
0	0	=308
0	0.5	=306
0	1	=310

TOE-IN		
RR	RF	(°)
0	0	=3°
0	0.5	=4°
0	1	=2°
0.5	0	=2°
0.5	0.5	=3°
0.5	1	=1°
1	0	=2°
1	0.5	=4°
1	1	=3°

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

**Anti-Squat Example:**

0(RR) - 0 (RF) = 3°    = 3°

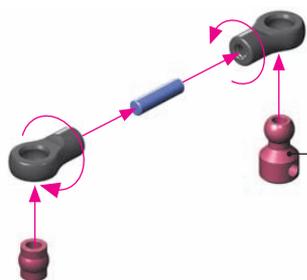
0(RR) - 0.5 (RF) = 3.5°    = 3.5°

0(RR) - 1 (RF) = 4°    = 4°

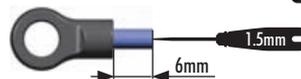
# 3. REAR SUSPENSION

901312  
SB M3x12

2x  
L=R



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



DETAIL

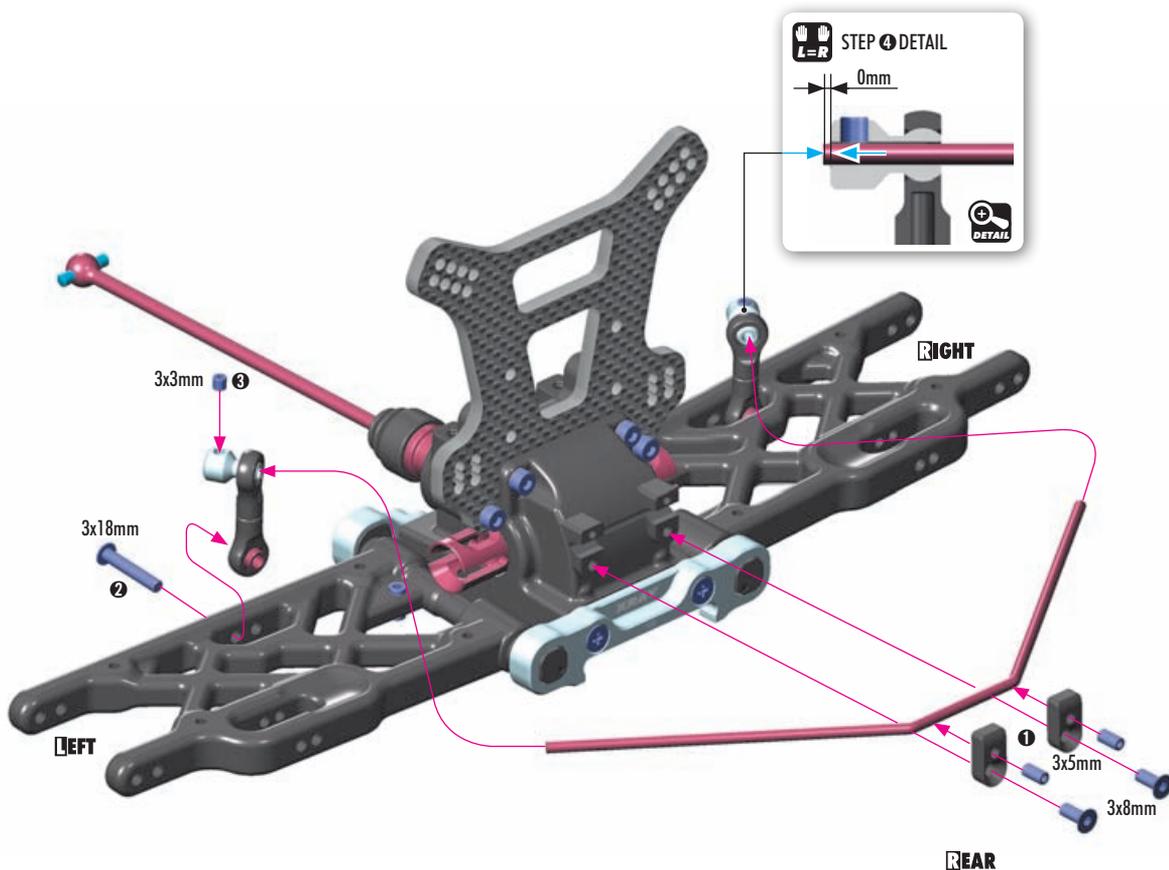
901303  
SB M3x3

901305  
SB M3x5

902318  
SH M3x18

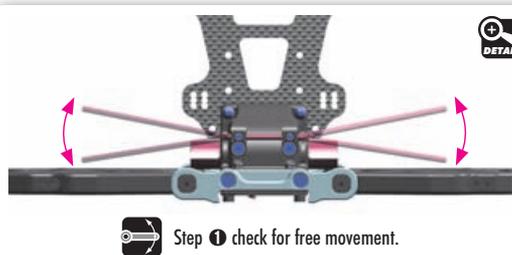
903308  
SFH M3x8

L=R

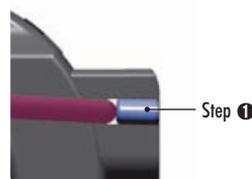


**SET-UP BOOK**  
ANTI-ROLL BAR

INITIAL SETTING



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

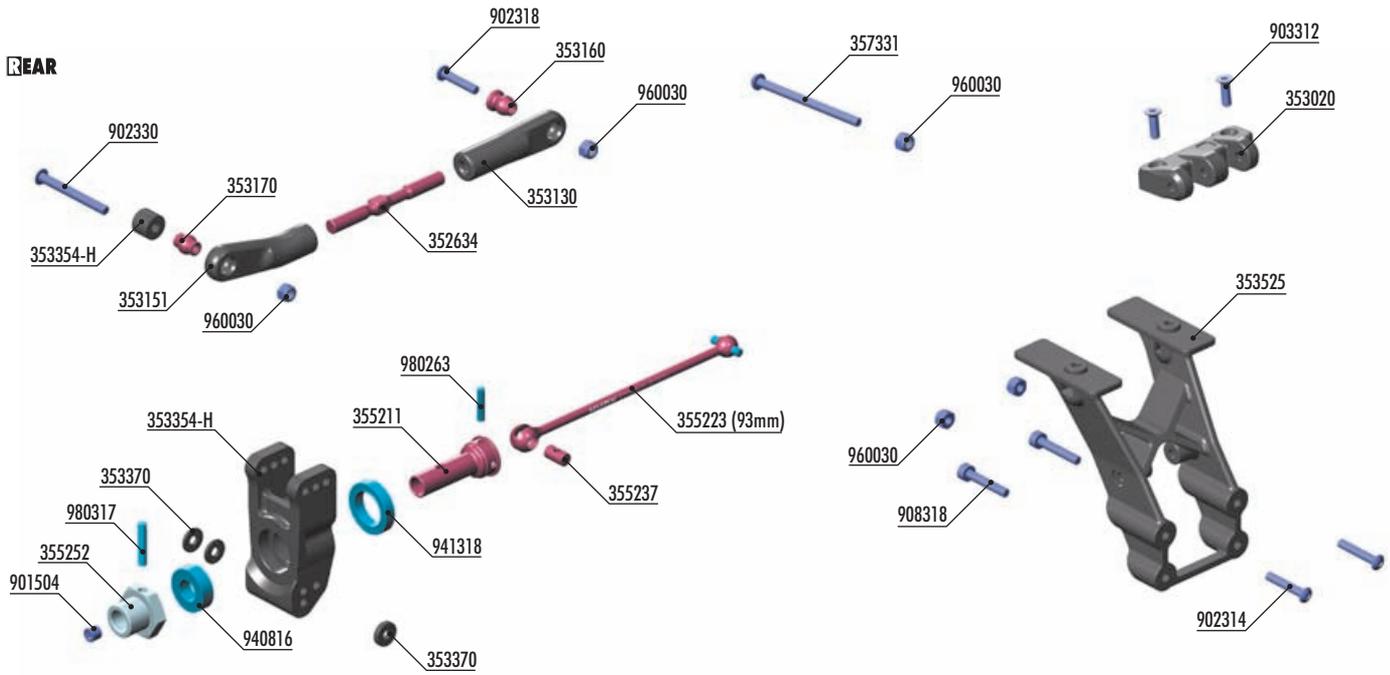


OPTION

REAR ANTI-ROLL BARS

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

# 4. REAR SUSPENSION



REAR UPRIGHTS			
<b>OPTION</b>	#353354	MEDIUM	OPTION
	#353354-H	HARD	INCLUDED
	#353354-G	GRAPHITE	OPTION
	#350908	ALU-SET	OPTION

**OPTION** #355215  
CVD ADJUSTABLE DRIVE AXLE - HUDY SPRING STEEL™

XRAY BALL-BEARINGS					
<b>OPTION</b>	#930816	8x16x5	GREASE	STEEL	OPTION
	#940816	8x16x5	GREASE	RUBBER	INCLUDED
	#931318	13x19x4	GREASE	STEEL	OPTION
	#941318	13x19x4	GREASE	RUBBER	INCLUDED
	#930817	8x16x5	OIL	STEEL	OPTION
	#940817	8x16x5	OIL	RUBBER	OPTION
	#931319	13x19x4	OIL	STEEL	OPTION
	#941319	13x19x4	OIL	RUBBER	OPTION

**OPTION** #350908  
XRAY XB8 ALU REAR UPRIGHTS - SET

Diagram showing the XRAY XB8 ALU rear uprights set with components labeled:

- 903308, 353394, 353366, 941318, 353366, 353394, 903308, 353184, 940816, 353184



- 352634 ADJ. TURNBUCKLE M5 L/R 50 MM - HUDY SPRING STEEL™ (2)
- 353020 COMPOSITE REAR BRACE HOLDER
- 353130 REAR UPPER INNER CAMBER LINK BALL JOINT (2)
- 353151 RELIEF REAR UPPER OUTER CAMBER LINK BALL JOINT (2)
- 353160 MOUNTING BALL 6.8 (4)
- 353170 PIVOT BALL 6.8 (4)
- 353354-H COMPOSITE REAR UPRIGHT - HARD
- 353370 SET OF COMPOSITE REAR HUB CARRIER SHIMS
- 353525 COMPOSITE REAR WING HOLDER FOR FORWARD WING POSITION
- 355211 CVD DRIVE AXLE - HUDY SPRING STEEL™
- 355223 CVD UNIVERSAL DRIVE SHAFT 93MM - HUDY SPRING STEEL™
- 355237 CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
- 355252 ALU WHEEL AXLE OFFSET " + 2MM" - BLACK COATED (2)

- 357331 REAR LOWER OUTER PIVOT PIN SCREW 3MM (2)
- 901504 HEX SCREW SB M5x4 (10)
- 902314 HEX SCREW SH M3x14 (10)
- 902318 HEX SCREW SH M3x18 (10)
- 902330 HEX SCREW SH M3x30 (10)
- 903312 HEX SCREW SFH M3x12 (10)
- 908318 HEX SCREW SOCKET HEAD CAP SCH M3x18 (10)
- 940816 BALL-BEARING 8x16x5 RUBBER SEALED - GREASE (2)
- 941318 BALL-BEARING 13x19x4 RUBBER SEALED - GREASE (2)
- 960030 NUT M3 (10)
- 980263 PIN 2.5x13 (10)
- 980317 PIN 3x17 (10)

# 4. REAR SUSPENSION

**901504**  
SB M5x4

**940816**  
BB 8x16x5

**941318**  
BB 13x19x4

**980263**  
P 2.5x13

**980317**  
P 3x17

**2x** **L=R**

**NOTE ORIENTATION**

**93mm** - SHORT CVD DRIVE SHAFT

**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.

**Graphite Grease (HUDY #106210)**

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

OFFSET WHEEL AXLES			
OPTION	#355250	0mm	OPTION
	#355251	+1mm	OPTION
	#355252	+2mm	INCLUDED

REAR UPRIGHTS			
OPTION	#353354	MEDIUM	OPTION
	#353354-H	HARD	INCLUDED
	#353354-G	GRAPHITE	OPTION
	#350908	ALU-SET	OPTION

**#355215**  
CVD ADJUSTABLE DRIVE AXLE - HUDY SPRING STEEL™

Drive shaft position  
4 | 3 | 2 | 1

**353370**  
SHIM 3x9x1

**353370**  
SHIM 3x9x2

**960030**  
N M3

**2x** **L=R**

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

Shims for wheelbase adjustment  
2 + 1 + 1mm

**REAR** **LEFT** **RIGHT**

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

**TIP** **L=R** **ARM REAMER** (HUDY #107643)  
If the rear upright does not move freely, use a HUDY Arm Reamer to resize the hole.

**INITIAL SETTING**

**Check for free movement.**

**SET-UP BOOK**  
CAMBER

**2x** **L=R**

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

**NOTE ORIENTATION**

**RIGHT THREAD** **LEFT THREAD**

**NOTE ORIENTATION**

Use tools to tighten as shown.

Special Tool for all turnbuckles & nuts (HUDY #181090) or Turnbuckle Wrench 5mm (HUDY #181050).

**LEFT THREAD** 26.5mm **RIGHT THREAD** **RIGHT THREAD** 26.5mm **LEFT THREAD**

**RIGHT** **LEFT**

# 4. REAR SUSPENSION

**2x** **L-R**

**353354-H**  
SHIM 3x9x7

**902318**  
SH M3x18

**902330**  
SH M3x30

**960030**  
N M3

**INITIAL SETTING**

**INITIAL SETTING**

**903312**  
SFH M3x12

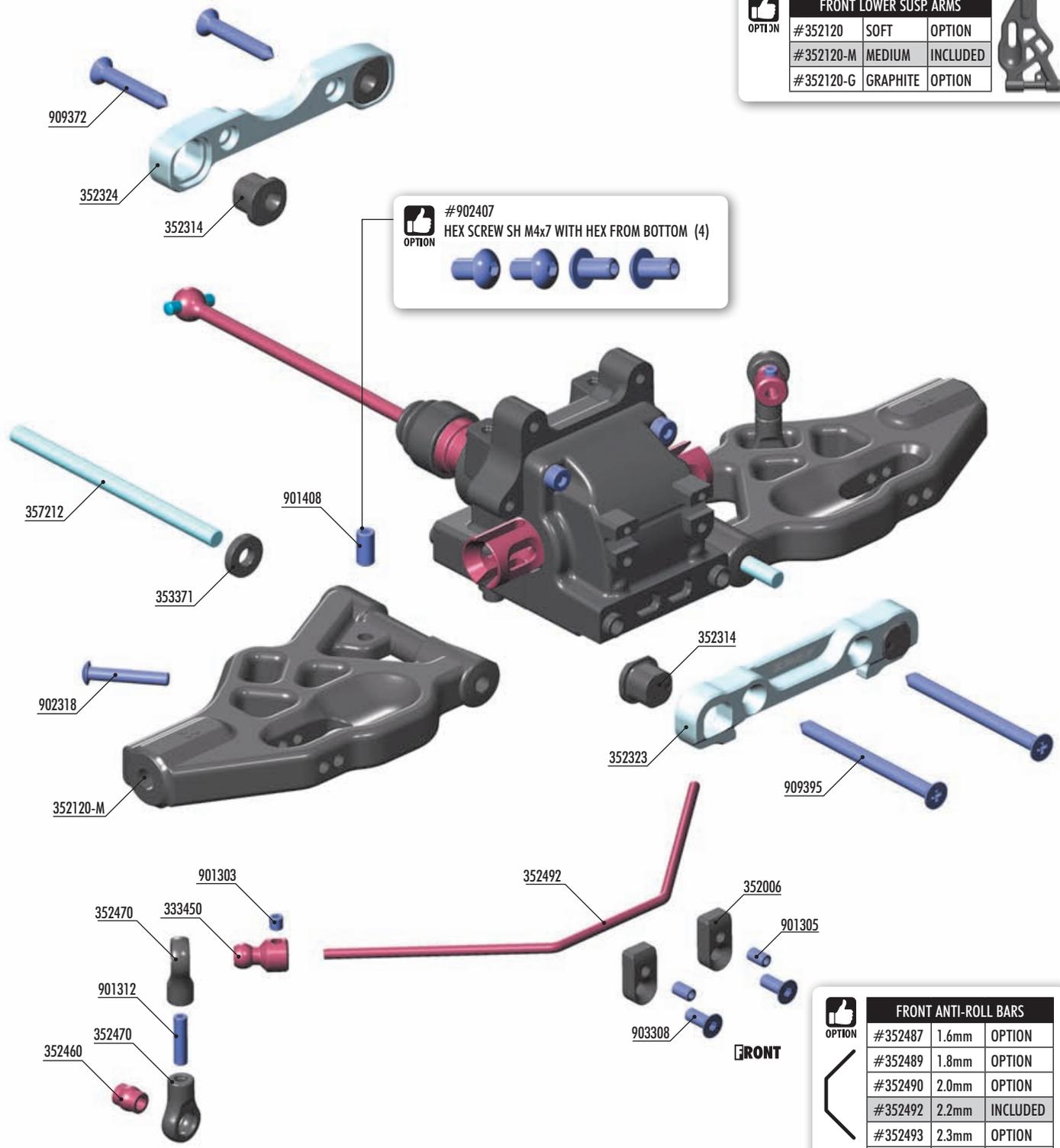
**902314**  
SH M3x14

**908318**  
SCH M3x18

**960030**  
N M3

# 5. FRONT SUSPENSION

FRONT LOWER SUSP. ARMS		
#352120	SOFT	OPTION
#352120-M	MEDIUM	INCLUDED
#352120-G	GRAPHITE	OPTION



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

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

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



333450	ANTI-ROLL BAR BALL JOINT 5.8 MM (2)	357212	LOWER INNER PIVOT PIN F+R (2)
352006	DIFF BULKHEAD BLOCK SET FRONT/REAR	901303	HEX SCREW SB M3x3 (10)
352120-M	COMPOSITE FRONT LOWER SUSPENSION ARM - MEDIUM	901305	HEX SCREW SB M3x5 (10)
352314	COMPOSITE SQUARE ADJ. ROLL CENTER BUSHINGS - V2 (2)	901312	HEX SCREW SB M3x12 (10)
352323	ALU FRONT LOWER SUSP. HOLDER - FRONT - SQUARE ADJ. ROLL CENTER - V2	901408	HEX SCREW SB M4x8 (10)
352324	ALU FRONT LOWER SUSP. HOLDER - REAR - SQUARE ADJ. ROLL CENTER - V2	902318	HEX SCREW SH M3x18 (10)
352460	PIVOT BALL 5.8 (10)	903308	HEX SCREW SFH M3x8 (10)
352470	BALL JOINT 5.8 (8)	909372	SCREW PHILLIPS SS 3.5x22 (10)
352492	FRONT ANTI-ROLL BAR 2.4MM	909395	SCREW PHILLIPS SS 3.5x45 (10)
353371	SET OF COMPOSITE LOWER ARM SHIMS		

# 5. FRONT SUSPENSION



353371  
SHIM 4x10x2



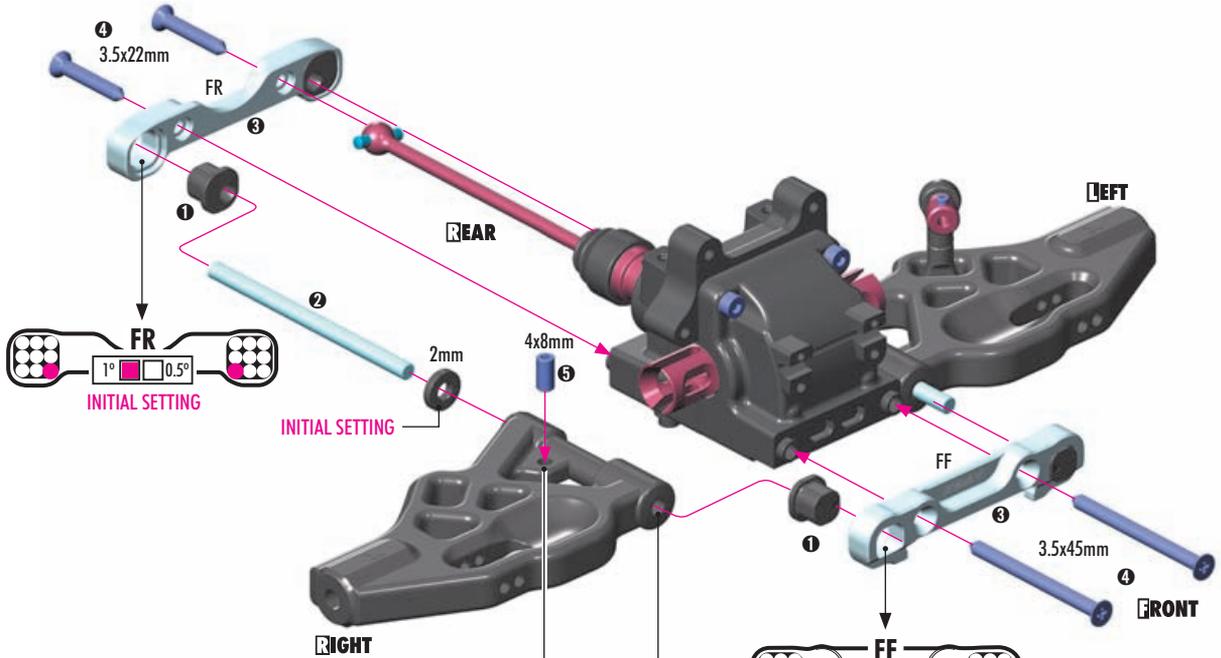
901408  
SB M4x8



909372  
SS 3.5x22



909395  
SS 3.5x45



**TOP** DOWNSTOP SETTING

**OPTION** #902407

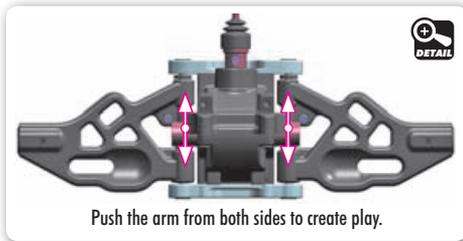
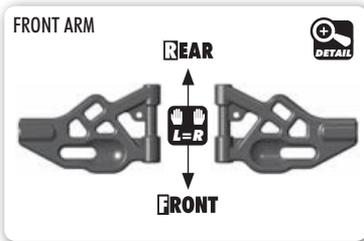
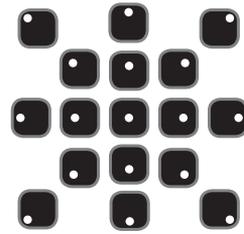
Downstop screw for fine tuning.

**TIP** L=R

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

(HUDY #107644)  
ARM REAMER

All possible mounting alternatives of eccentric bushings.



Eccentric bushings have two different offsets from the center.

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

TRACK-WIDTH		
FF	FR	(mm)
		= 308
		= 306
		= 310*

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

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

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

\* Not recommended to use this setting.

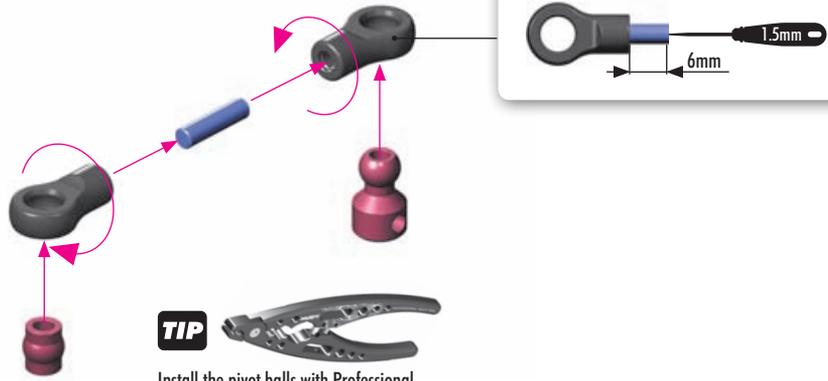
**SET-UP BOOK**  
KICK UP  
ROLL CENTER DOWNSTOP  
WHEELBASE  
TRACK WIDTH

# 5. FRONT SUSPENSION



901312  
SB M3x12

2x L=R



**TIP**

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



901303  
SB M3x3



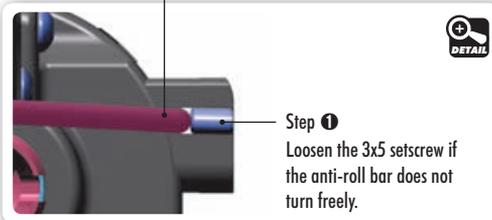
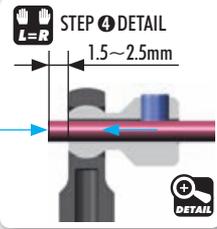
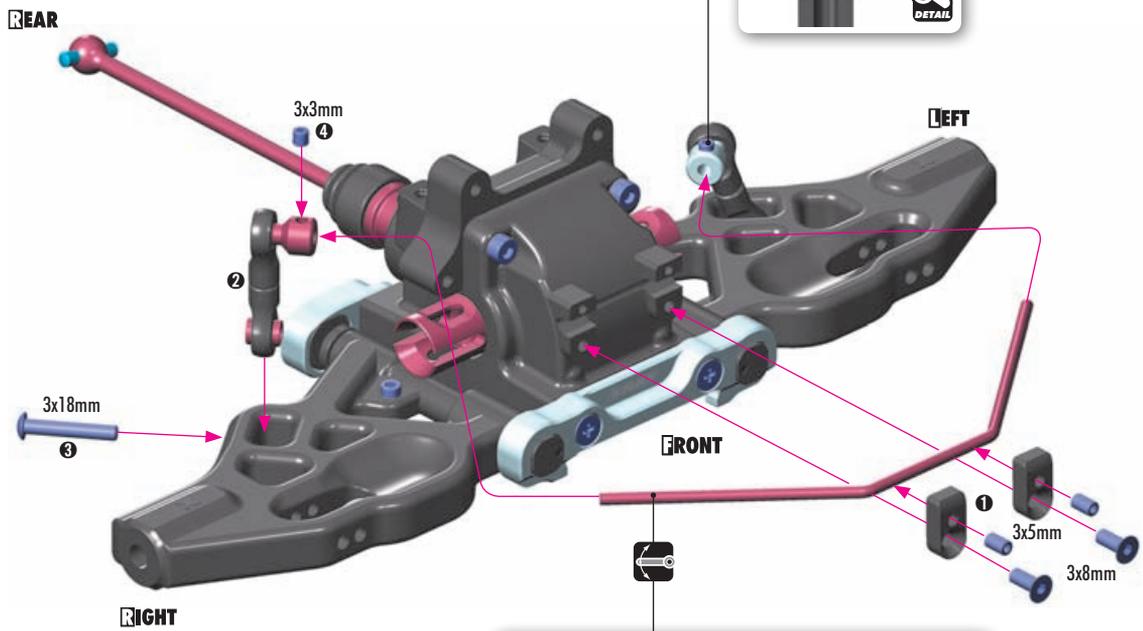
901305  
SB M3x5



902318  
SH M3x18



903308  
SFH M3x8



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



**SET-UP BOOK**  
ANTI-ROLL BAR

# 6. FRONT SUSPENSION

**#350907**  
C-HUB FRONT SUSPENSION CONVERSION SET  
OPTION



**#357253**  
BRASS ADJUSTING NUT M15x1  
OPTION



**FRONT UPPER SUSP. ARMS**

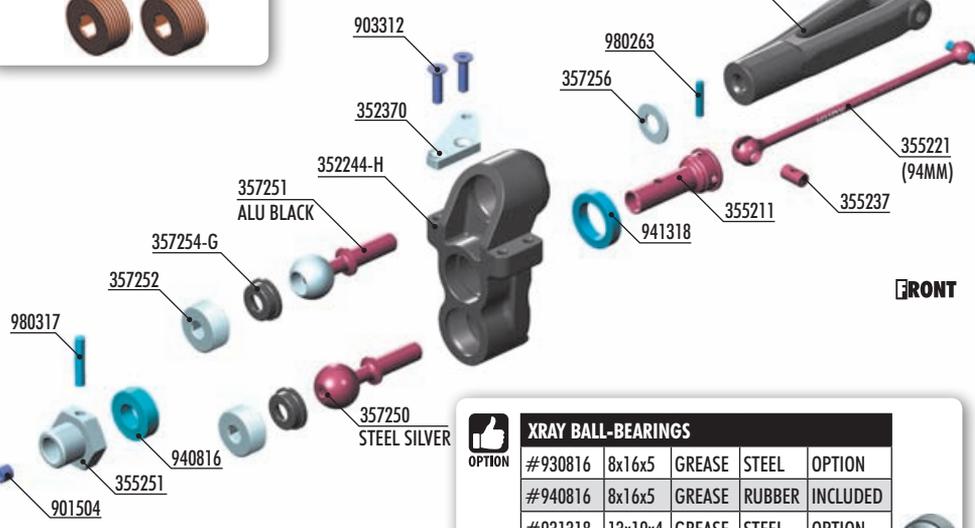
#352133	SOFT	OPTION
#352133-M	MEDIUM	INCLUDED
#352133-G	GRAPHITE	OPTION

**OFFSET WHEEL AXLES**

#355250	0mm	OPTION
#355251	+1mm	INCLUDED
#355252	+2mm	OPTION

**STEERING BLOCKS**

#352244	MEDIUM	OPTION
#352244-H	HARD	INCLUDED
#352244-G	GRAPHITE	OPTION



**ALU STEERING PLATE**

#352372	1 DOTS	OPTION
#352370	2 DOTS	INCLUDED

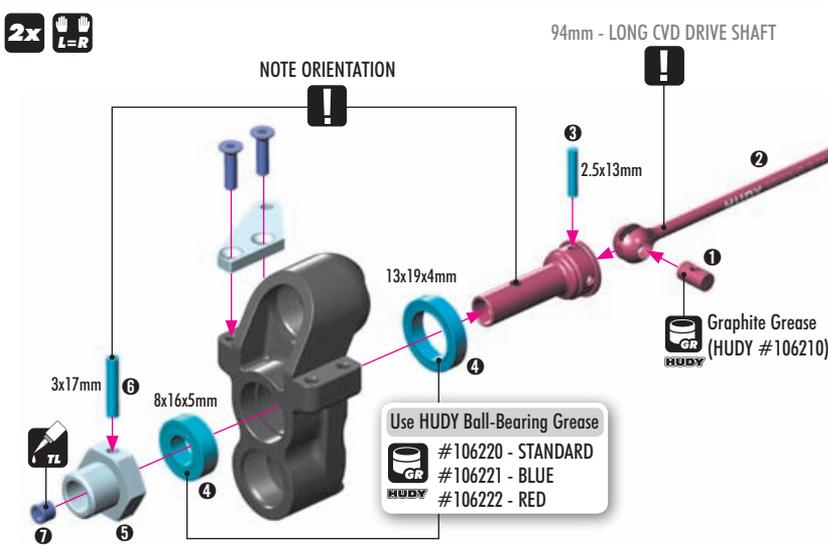
**XRAY BALL-BEARINGS**

#930816	8x16x5	GREASE	STEEL	OPTION
#940816	8x16x5	GREASE	RUBBER	INCLUDED
#931318	13x19x4	GREASE	STEEL	OPTION
#941318	13x19x4	GREASE	RUBBER	INCLUDED
#930817	8x16x5	OIL	STEEL	OPTION
#940817	8x16x5	OIL	RUBBER	OPTION
#931319	13x19x4	OIL	STEEL	OPTION
#941319	13x19x4	OIL	RUBBER	OPTION



- 352133-M FRONT UPPER ARM
- 352244-H PB STEERING BLOCK LB - HARD
- 352370 ALU STEERING PLATE - SWISS 7075 T6 (L+R)
- 355211 CVD DRIVE AXLE - HUDY SPRING STEEL™
- 355221 CVD UNIVERSAL DRIVE SHAFT 94MM - HUDY SPRING STEEL™
- 355237 CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
- 355251 ALU WHEEL AXLE OFFSET "+1MM" - HARD COATED (2)
- 357250 STEEL PIVOT BALL 13.7 MM (2)
- 357251 ALU PIVOT BALL 13.7 MM WITH STEEL SCREW (2)
- 357252 ALU ADJUSTING NUT M15x1 (2)
- 357254-G COMPOSITE BALL CUP 13.9 MM - GRAPHITE (2)
- 357256 ALU SHIM 6x13x1 (2)
- 901504 HEX SCREW SB M5x4 (10)
- 903312 HEX SCREW SFH M3x12 (10)
- 940816 BALL-BEARING 8x16x5 RUBBER SEALED - GREASE (2)
- 941318 BALL-BEARING 13x19x4 RUBBER SEALED - GREASE (2)
- 980263 PIN 2.5x13 (10)
- 980317 PIN 3x17 (10)

- 901504 SB M5x4
- 940816 BB 8x16x5
- 941318 BB 13x19x4
- 980263 P 2.5x13
- 980317 P 3x17



**#355222**  
UNIVERSAL DRIVE SHAFT - HUDY SPRING STEEL™  
OPTION

**OFFSET WHEEL AXLES**

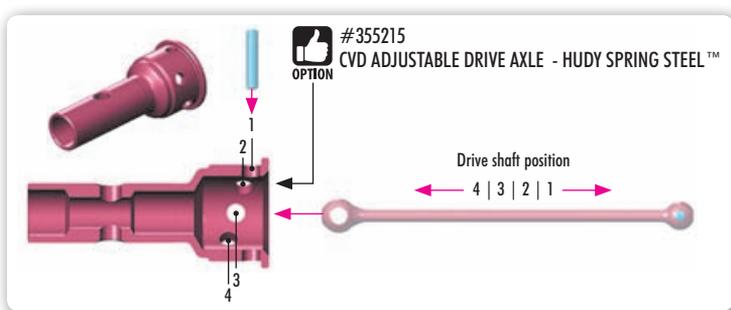
#355250	0mm	OPTION
#355251	+1mm	INCLUDED
#355252	+2mm	OPTION

**STEERING BLOCKS**

#352244	MEDIUM	OPTION
#352244-H	HARD	INCLUDED
#352244-G	GRAPHITE	OPTION

**ALU STEERING PLATE**

#352372	1 DOTS	OPTION
#352370	2 DOTS	INCLUDED



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

# 6. FRONT SUSPENSION

**2x** **L-R**

**!** ALU pivot ball BLACK color

**!** STEEL pivot ball SILVER color

**TIP** Tighten hex nuts using HUDY tool #107581.

**OPTION** **#357253 Brass Adjusting Nut M15x1**

**DETAIL**

**PIVOT BALLS MUST MOVE FREELY**  
During initial assembly, tighten each hex nut until the pivot ball starts to bind, then loosen slightly. Verify that the pivot balls move freely.

**357256**  
SHIM 6x13x1

**2x** **L-R**

**TIP** HUDY Tool Allen 2.5mm

1mm

**OPTION**

FRONT UPPER SUSP. ARMS		
#352133	SOFT	OPTION
#352133-M	MEDIUM	INCLUDED
#352133-G	GRAPHITE	OPTION

**SET-UP BOOK**  
CAMBER  
TRACK-WIDTH

**2x** **L-R**

**TIP** HUDY Tool Allen 2.5mm

**RIGHT**

**FRONT**

**LEFT**

**SET-UP BOOK**  
ROLL CENTER



## 6. FRONT & REAR ASSEMBLY

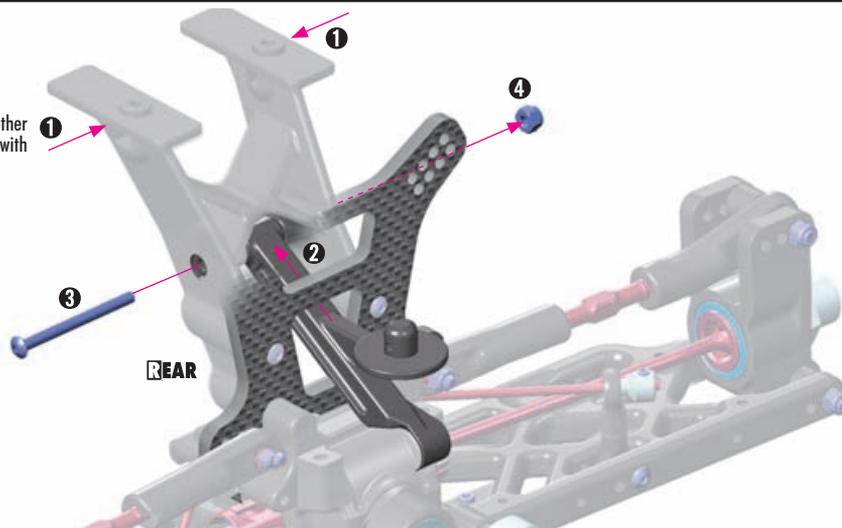


902335  
SH M3x35



960030  
N M3

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



902340  
SH M3x40

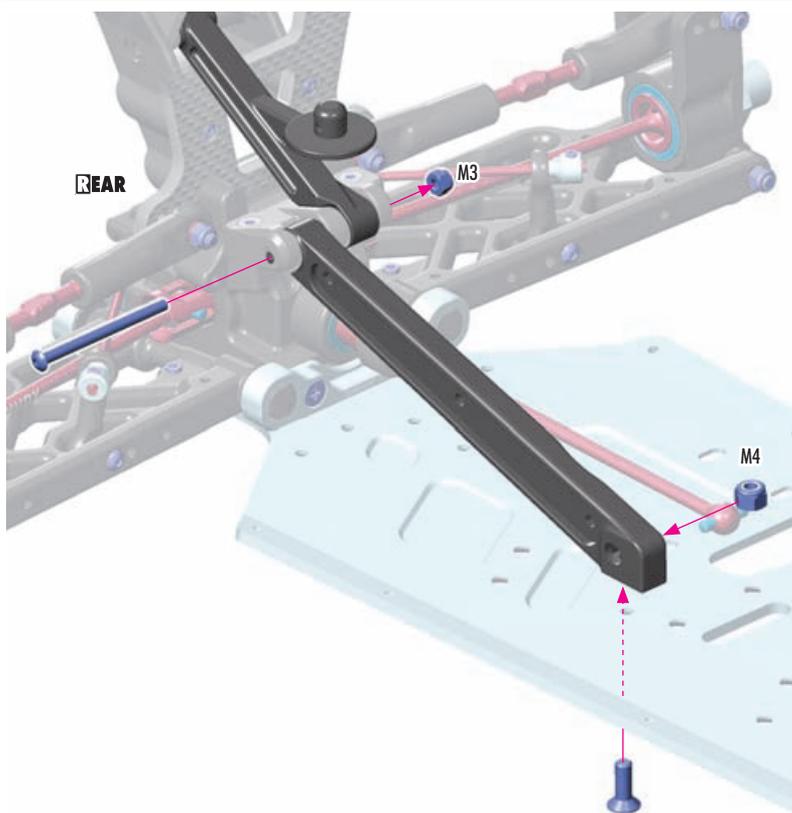


903412  
SFH M4x12

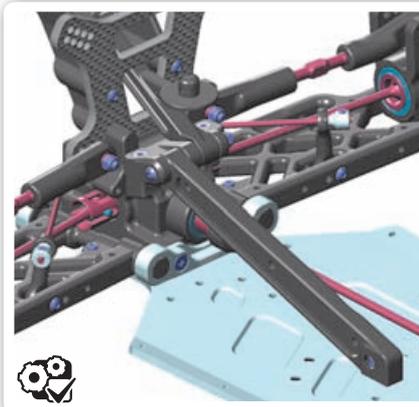


960030 N M3  
960040 N M4

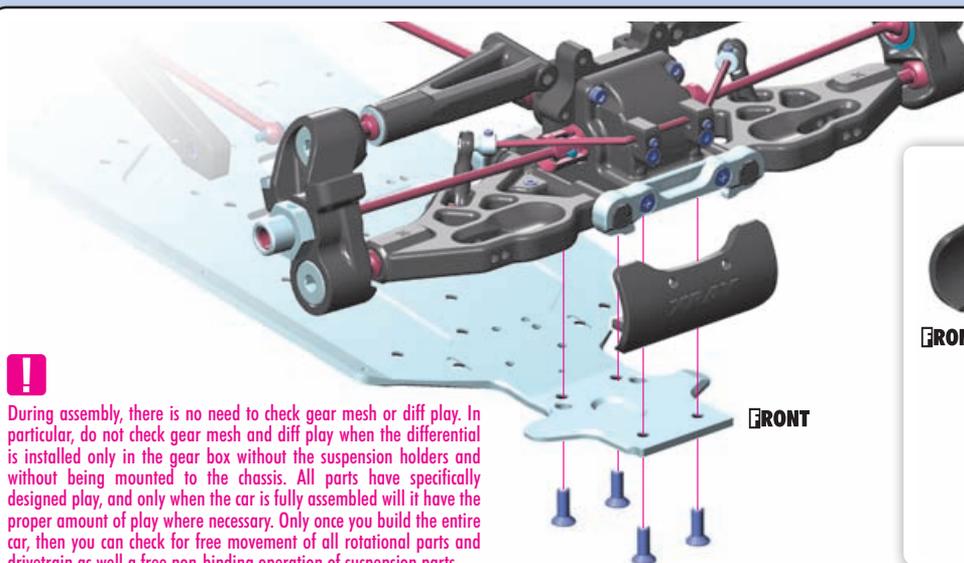
REAR



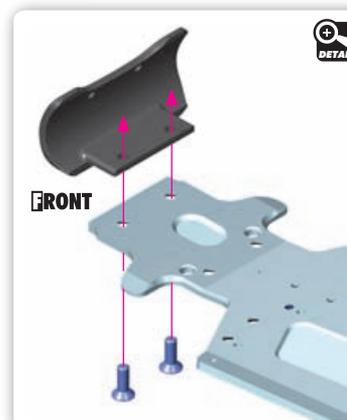
#353280  
OPTION GRAPHITE BRACE SET for extra stiffness adjustment.



903412  
SFH M4x12



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

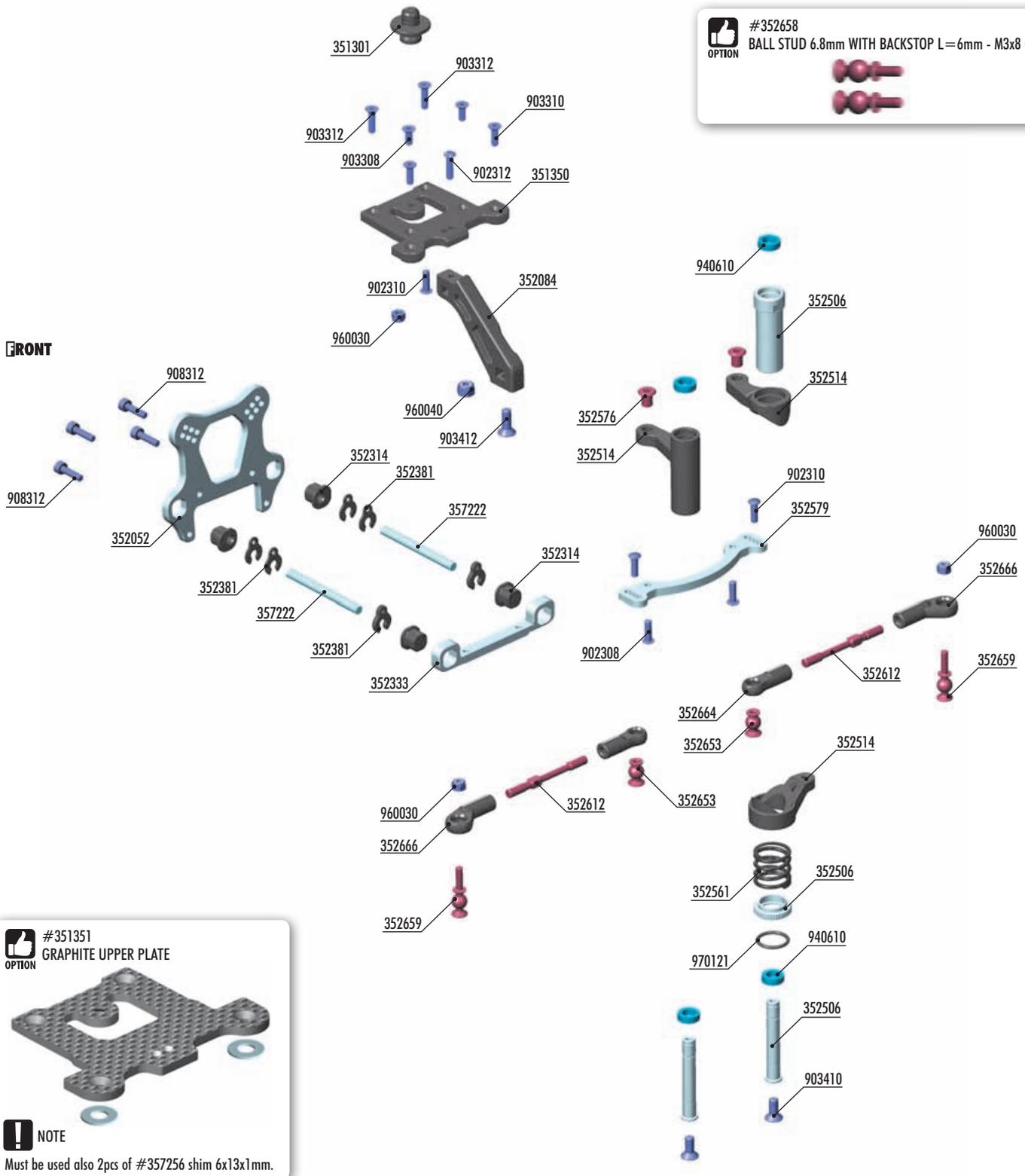


# 7. STEERING

**#352658**  
**OPTION** BALL STUD 6.8mm WITH BACKSTOP L=6mm - M3x8 (2)



**FRONT**



**#351351**  
**OPTION** GRAPHITE UPPER PLATE



**NOTE**

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

**BAG**

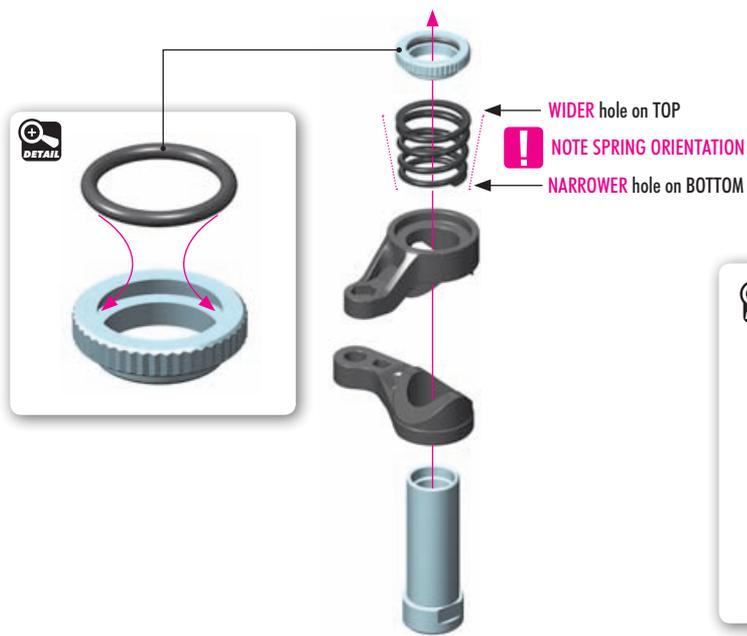
**07**

- |        |  |        |  |
|--------|--|--------|--|
| 351301 | BODY POSTS   | 352666 | COMPOSITE RELIEF STEERING BALL JOINT 6.8MM (2) |
| 351350 | COMPOSITE UPPER PLATE WITH TWO BRACE POSITIONS               | 357222 | FRONT UPPER PIVOT PIN 4x45 (2)                 |
| 352084 | COMPOSITE FRONT BRACE  | 902308 | HEX SCREW SH M3x8 (10)                         |
| 352052 | ALU FRONT SHOCK TOWER - CNC MACHINED 7075 T6 (4MM)           | 902310 | HEX SCREW SH M3x10 (10)                        |
| 352314 | COMPOSITE SQUARE ADJ. ROLL CENTER BUSHINGS - V2 (2)          | 902312 | HEX SCREW SH M3x12 (10)                        |
| 352333 | ALU FRONT UPPER ARM HOLDER - SWISS 7075 T6 (6MM)             | 903308 | HEX SCREW SFH M3x8 (10)                        |
| 352381 | CASTER CLIPS (2)   | 903310 | HEX SCREW SFH M3x10 (10)                       |
| 352506 | SERVO SAVER WITH CHASSIS LOCK & HARD SPRING - GRAPHITE - SET | 903312 | HEX SCREW SFH M3x12 (10)                       |
| 352514 | COMPOSITE SERVO SAVER - GRAPHITE                             | 903410 | HEX SCREW SFH M4x10 (10)                       |
| 352561 | SERVO SAVER SPRING PROGRESSIVE                               | 903412 | HEX SCREW SFH M4x12 (10)                       |
| 352576 | STEERING PLATE BUSHING (2)                                   | 908312 | HEX SCREW SOCKET HEAD CAP SCH M3x12 (10)       |
| 352579 | ALU STEERING PLATE - SWISS 7075 T6                           | 940610 | BALL-BEARING 6x10x3 RUBBER SEALED - OIL (2)    |
| 352612 | ADJ. TURNBUCKLE M4 L/R 45 MM - HUDY SPRING STEEL™ (2)        | 960030 | NUT M3 (10)                                    |
| 352653 | BALL STUD 6.8MM WITH BACKSTOP - M3 (2)                       | 960040 | NUT M4 (10)                                    |
| 352659 | BALL STUD 6.8MM WITH BACKSTOP L=6MM - M3x11 (2)              | 970121 | O-RING 12.1 x 1.6 (10)                         |
| 352664 | COMPOSITE STEERING BALL JOINT 6.8MM - V3 (2)                 |        |  |

# 7. STEERING



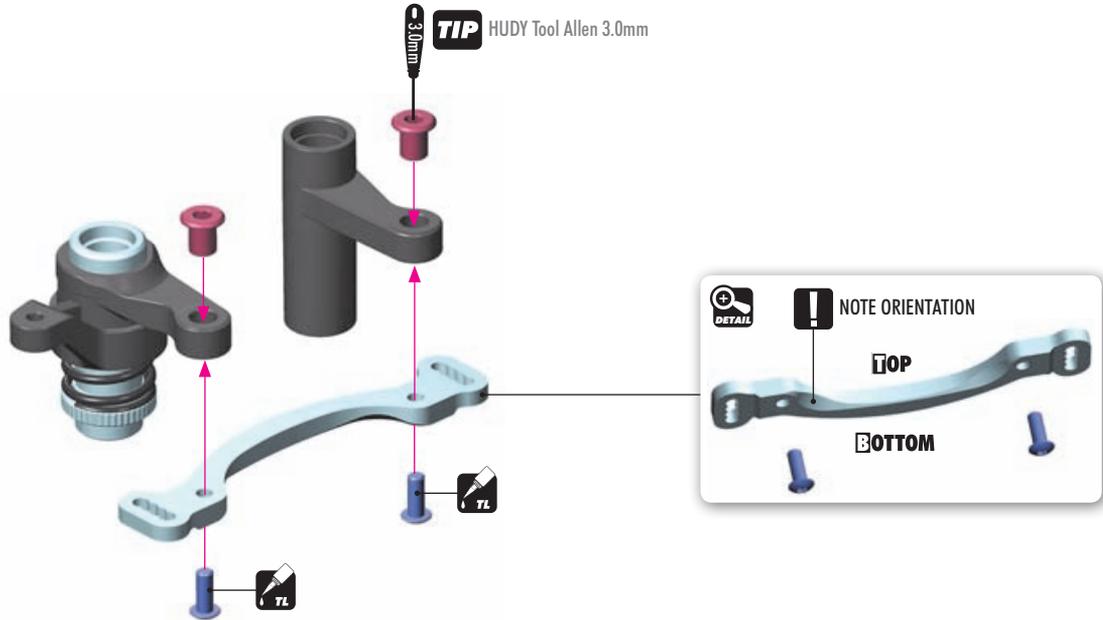
970121  
O 12.1x1.6



**SET-UP BOOK**  
SERVO SAVER



902308  
SH M3x8

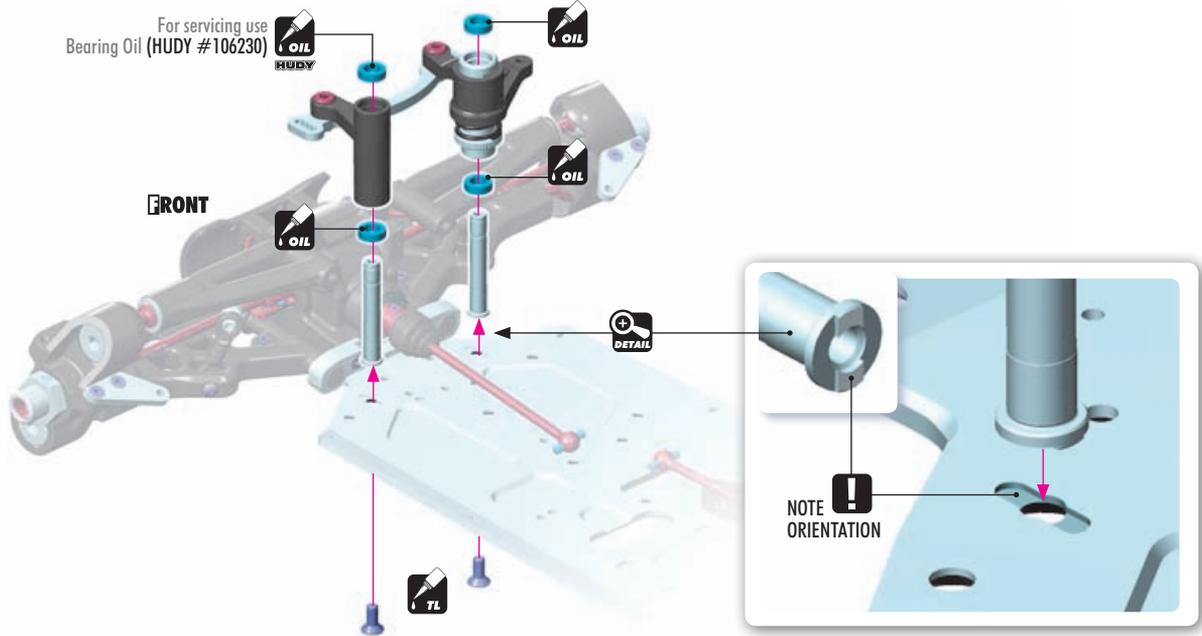


903410  
SFH M4x10



940610  
BB 6x10x3

For servicing use  
Bearing Oil (HUDY #106230)



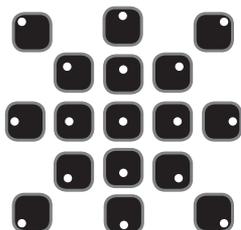


902310  
SH M3x10

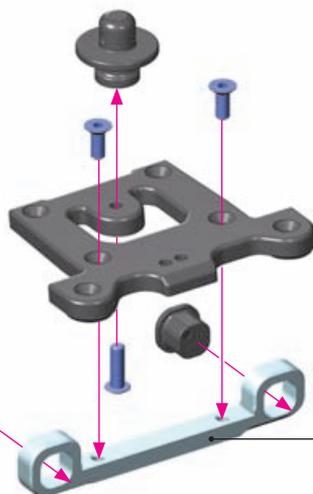


903308  
SFH M3x8

All possible mounting alternatives of eccentric bushings.



INITIAL SETTING



**SET-UP BOOK**  
ROLL CENTER



902312  
SH M3x12



903310  
SFH M3x10



903312  
SFH M3x12

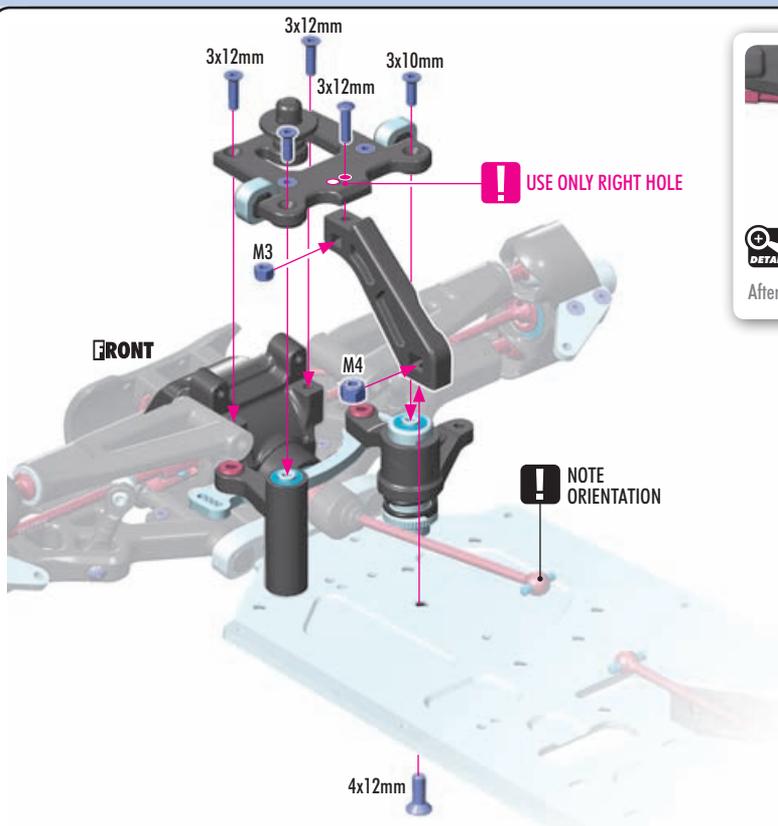
903412  
SFH M4x12



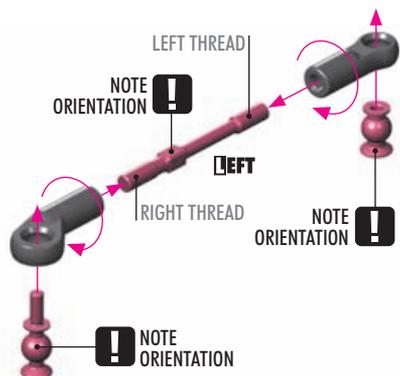
960030  
N M3



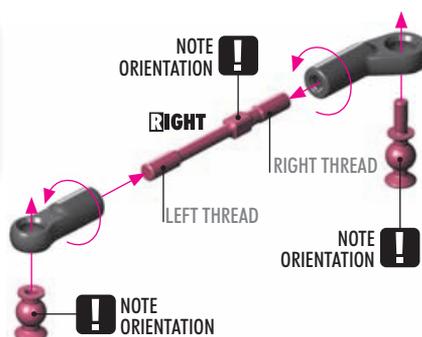
960040  
N M4



After the top deck assembly check for free movement of steering system.



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



# 7. STEERING



908312  
SCH M3x12

**FRONT**

**INITIAL SETTING**

1.0mm | 1.0mm | 2.0mm

**NOTE ORIENTATION**

**LEFT**

**RIGHT**

All possible mounting alternatives of eccentric bushings.

CASTER	
UPPER CLIP (Behind arm)	LOWER SHIM (Behind arm)
4mm	21°
3mm	22.5°
2mm	24°
1mm	25.5°
0	27°

**UPPER CLIP**  
Behind arm

**LOWER SHIM**  
Behind arm

**CASTER**

## SET-UP BOOK

ROLL CENTER  
CASTER



902310  
SH M3x10



960030  
N M3

**2x** **L=R**

**FRONT** **RIGHT**

**INITIAL SETTING**

**NOTE ORIENTATION**  
Adjustment block towards outside.

**LEFT**

**NOTE ORIENTATION**  
Adjustment block towards outside.

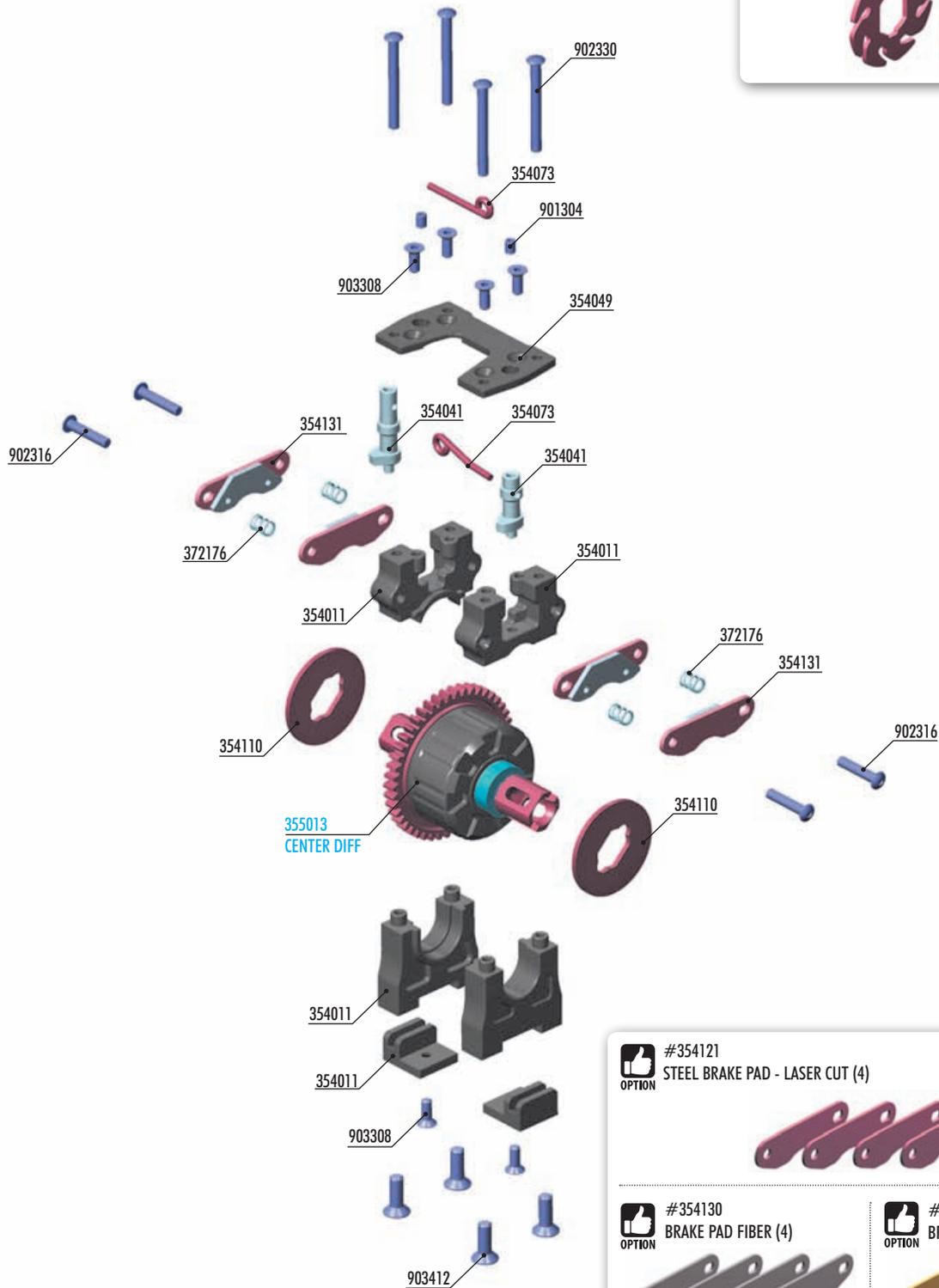
Check for free movement.

Check for free movement.

## SET-UP BOOK

ACKERMANN  
BUMPS STEER  
TOE-IN

## 8. CENTER DIFF & BRAKE



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



**#354121**  
**OPTION** STEEL BRAKE PAD - LASER CUT (4)



**#354130**  
**OPTION** BRAKE PAD FIBER (4)



**#354132**  
**OPTION** BRAKE PAD "SLS" (4)



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

**BAG**

**08**

354011 CENTER DIFF MOUNTING PLATE SET - HIGHER  
 354041 ALU BRAKE CAM POST & ROD (2+2) HARD COATED  
 354049 COMPOSITE CENTER DIFF MOUNTING PLATE  
 354073 BRAKE CAME ROD (1+1)  
 354110 VENTILATED BRAKE DISK - LASER CUT - PRECISION-GROUND  
 354131 GLUED BRAKE PAD SET - ULTRA-EFFICIENT (4)  
 372176 SPRING 4.25 COILS 3.6x6x0.4MM; C=1.5 - GOLD (SOFT) (2)

901304 HEX SCREW SB M3x4 (10)  
 902316 HEX SCREW SH M3x16 (10)  
 902330 HEX SCREW SH M3x30 (10)  
 903308 HEX SCREW SFH M3x8 (10)  
 903412 HEX SCREW SFH M4x12 (10)

**355013** CENTER DIFFERENTIAL - LARGE - SET



# 8. CENTER DIFF & BRAKE

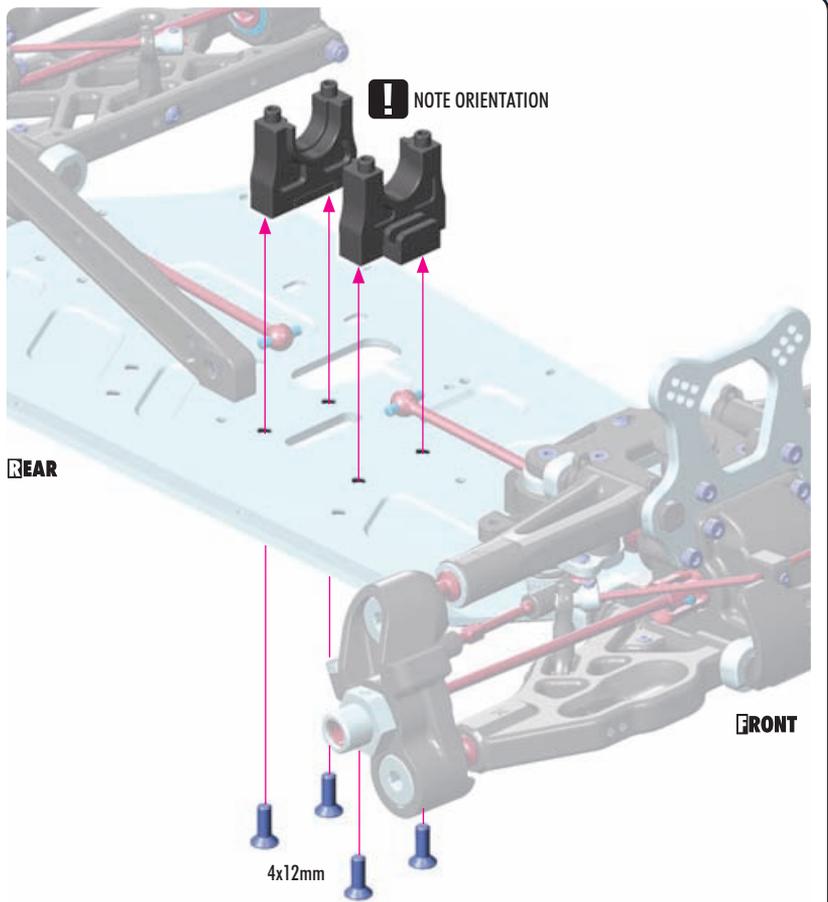
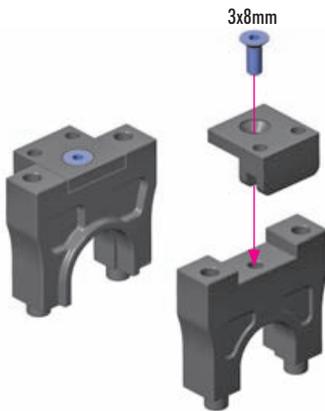


903308  
SFH M3x8



903412  
SFH M4x12

**!** NOTE ORIENTATION  
OF ALL PARTS



**!** NOTE ORIENTATION

REAR

FRONT

4x12mm

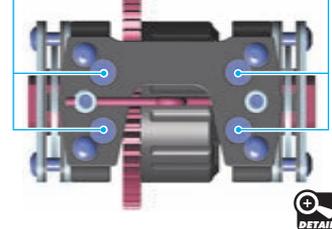


902330  
SH M3x30

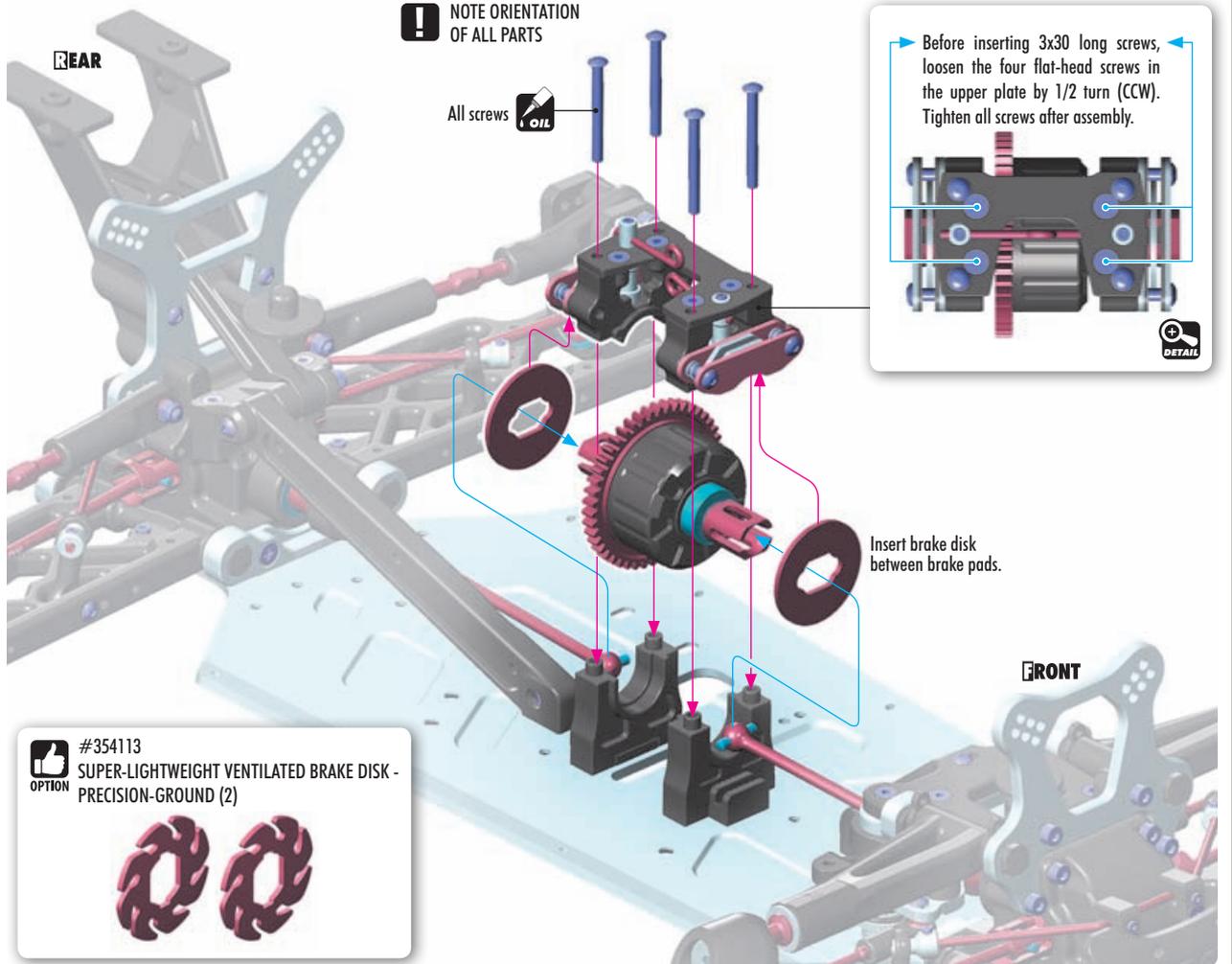
**!** NOTE ORIENTATION  
OF ALL PARTS

All screws OIL

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



DETAIL

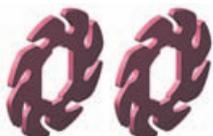


REAR

FRONT

Insert brake disk  
between brake pads.

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



# 9. FUEL TANK & ENGINE



#358709  
ALU MONOBLOCK ENGINE MOUNT - SWISS 7075 T6



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



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



#351159-S  
COMPOSITE CHASSIS SIDE GUARD L+R - SOFT



#351160  
CARBON FIBER CHASSIS SIDE GUARD L+R



#358400  
XRAY COMPLETE 4-SHOE CLUTCH SET



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



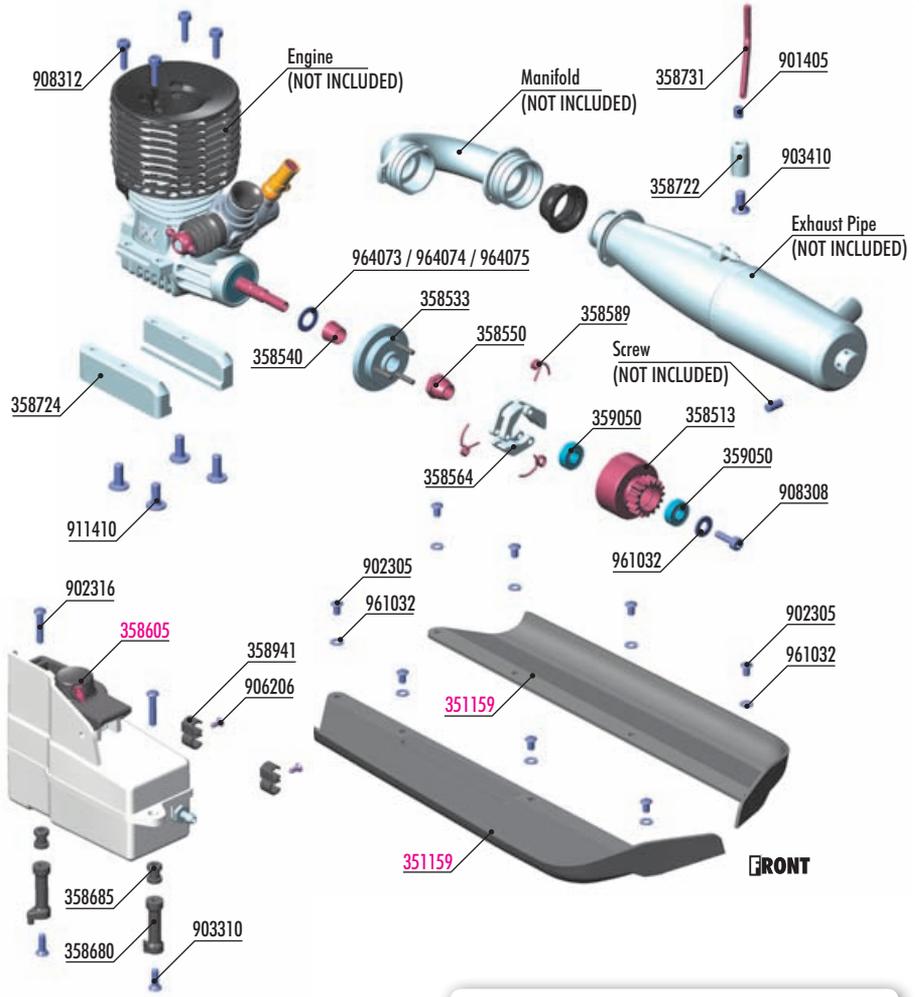
CLUTCH SPRINGS (4pcs)			RPM	
#358480	SOFT	GOLD	EARLY	INCLUDED
#358481	MEDIUM	GREY		OPTION
#358482	HARD	SILVER	LATE	OPTION



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



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



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



#650105  
FX K303  
- 3 PORTS  
- DLC  
- CERAMIC BEARING  
- BALANCED

FX EUROPEAN CHAMPION



#358660  
GRAPHITE 125CC FUEL TANK GUARD

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



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

FX EUROPEAN CHAMPION



- 358513 CLUTCH BELL 13T
- 358533 FLYWHEEL - HIGH TORQUE - LIGHTWEIGHT
- 358540 FLYWHEEL COLLAR
- 358550 FLYWHEEL NUT - HUDY SPRING STEEL™
- 358564 ALU CLUTCH SHOE - HARD (3)
- 358589 HIGH TORQUE CLUTCH SPRINGS - HARD (3)
- 358680 FUEL TANK MOUNTING POST (2)
- 358685 FUEL TANK MOUNTING GROMMET (4)
- 358722 EXHAUST WIRE MOUNT SET
- 358724 ALU ENGINE MOUNT - CNC MACHINED (L+R)
- 358731 EXHAUST MOUNTING WIRE - LONG
- 358941 COMPOSITE TUBING HOLDER FOR FUEL TANK (2)
- 359050 BALL-BEARING 5x10x4 STEEL SEALED - GREASE - V2 (2)
- 901405 HEX SCREW SB M4x5 (10)

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

351159 CHASSIS SIDE GUARDS L+R  
358605 FUEL TANK 125CC WITH FLOATING FILTER & TRANSIENT JET

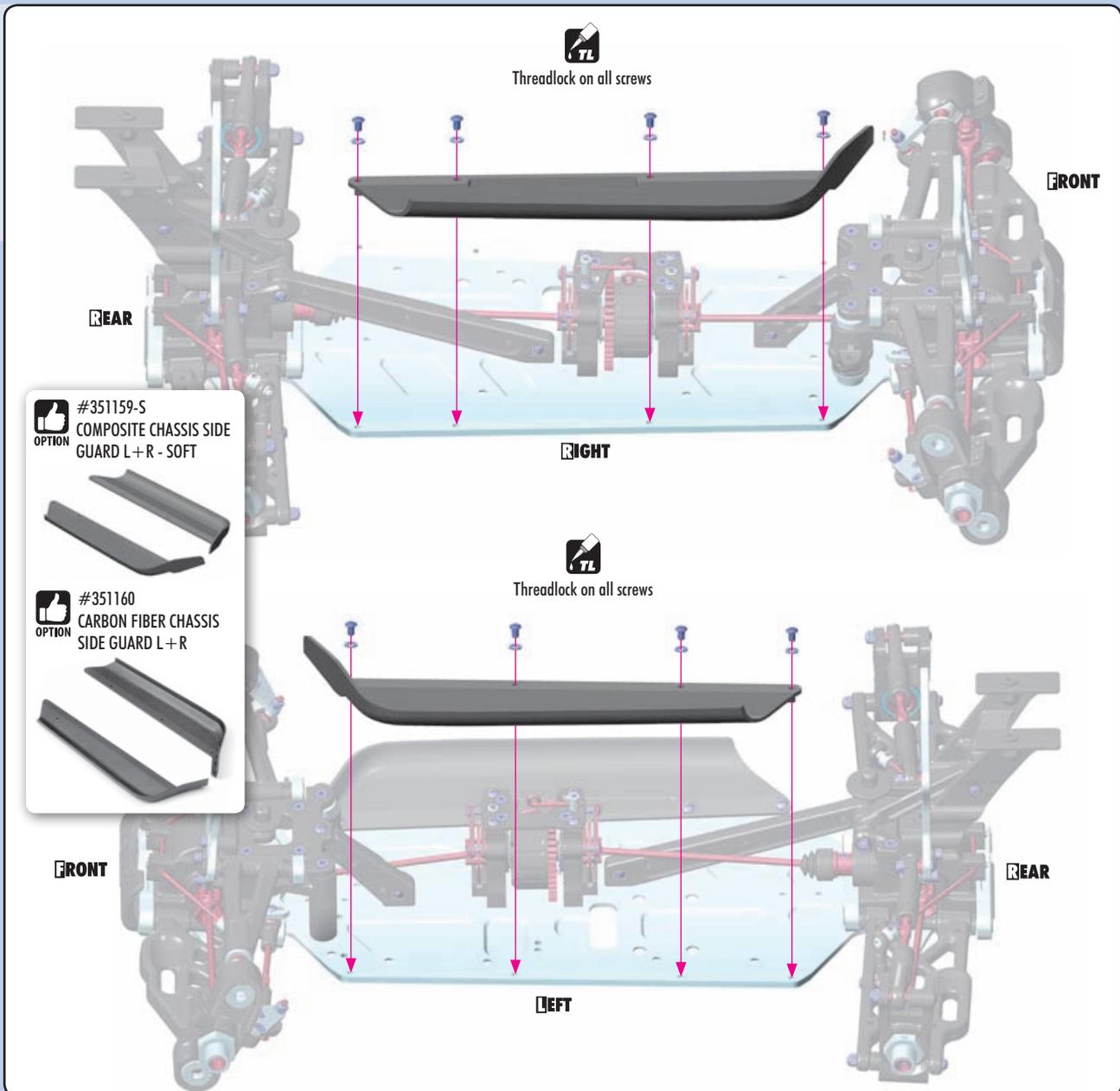
# 9. FUEL TANK & ENGINE



902305  
SH M3x5



961032  
S 3.2



#351159-S  
COMPOSITE CHASSIS SIDE  
GUARD L+R - SOFT



#351160  
CARBON FIBER CHASSIS  
SIDE GUARD L+R



908312  
SCH M3x12



964073  
S 7x10x0.2



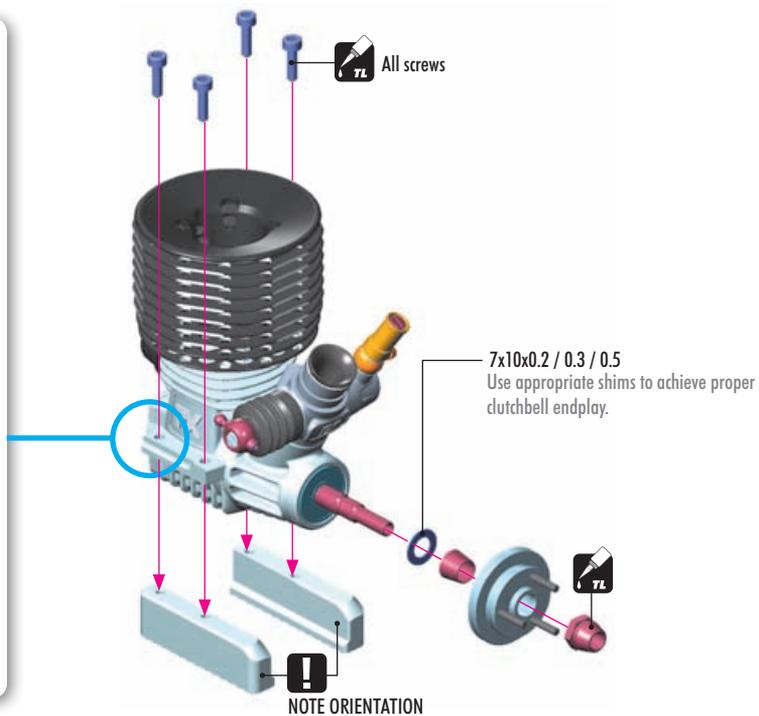
964074  
S 7x10x0.3



964075  
S 7x10x0.5



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



# 9. FUEL TANK & ENGINE



359050  
BB 5x10x4



908308  
SCH M3x8



961032  
S 3.2



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



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

10~10.2mm

3.2mm



**TIP** Hold the flywheel using HUDY Flywheel Tool #182015.

**TIP** Tighten the clutch nut using HUDY tool #107581.



### CLUTCH SHOE

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



### CLUTCHBELL 3 SHOE CLUTCH

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



### HIGH TORQUE CLUTCH SPRING

#358587	GOLD	SOFT	OPTION
#358588	GRAY	MEDIUM	OPTION
#358589	SILVER	HARD	INCLUDED



## SET-UP BOOK

CLUTCH SPRINGS  
CLUTCH SHOE



911410  
SHF M4x10

FRONT



#358709 ALU MONOBLOCK ENGINE MOUNT  
SWISS 7075 T6



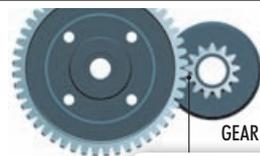
#358718 ALU STAND  
(FX, NOVAROSSO, MAX, SIRIO)



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



Adjust engine position to achieve proper gear mesh.



GEAR MESH



### EXTREMELY IMPORTANT

It is very important that your XB8 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.

REAR

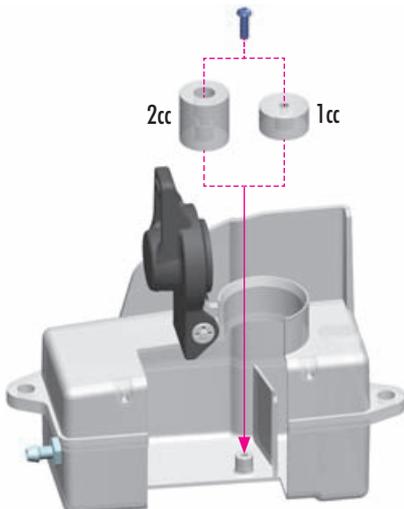
Threadlock on all screws

## SET-UP BOOK

GEARING  
GEAR MESH ADJ.



907258  
SP 2.5x8



2cc

1cc

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

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

### 2CC FUEL TANK INSERT

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



NOTE ORIENTATION



### 1CC FUEL TANK INSERT

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



NOTE ORIENTATION



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

# 9. FUEL TANK & ENGINE



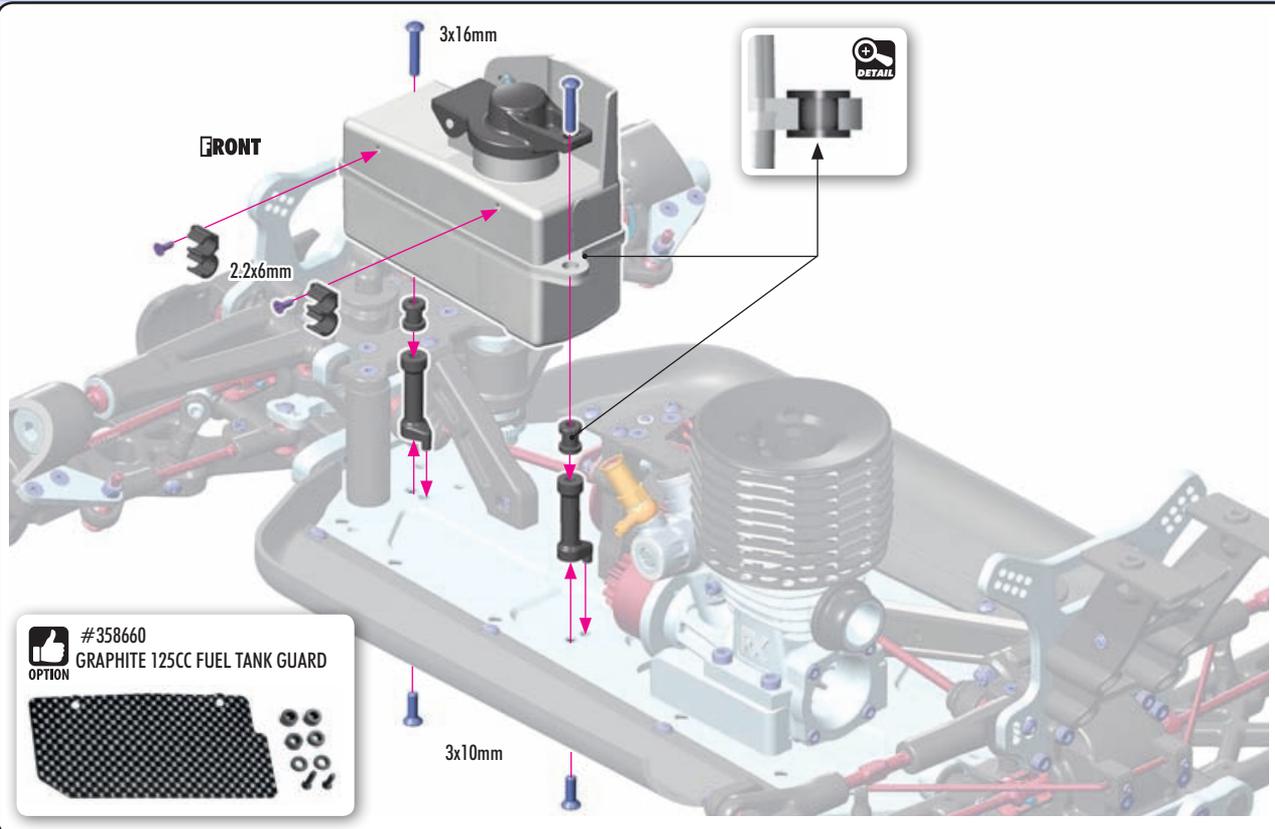
902316  
SH M3x16



903310  
SFH M3x10



906206  
SFP 2.2x6



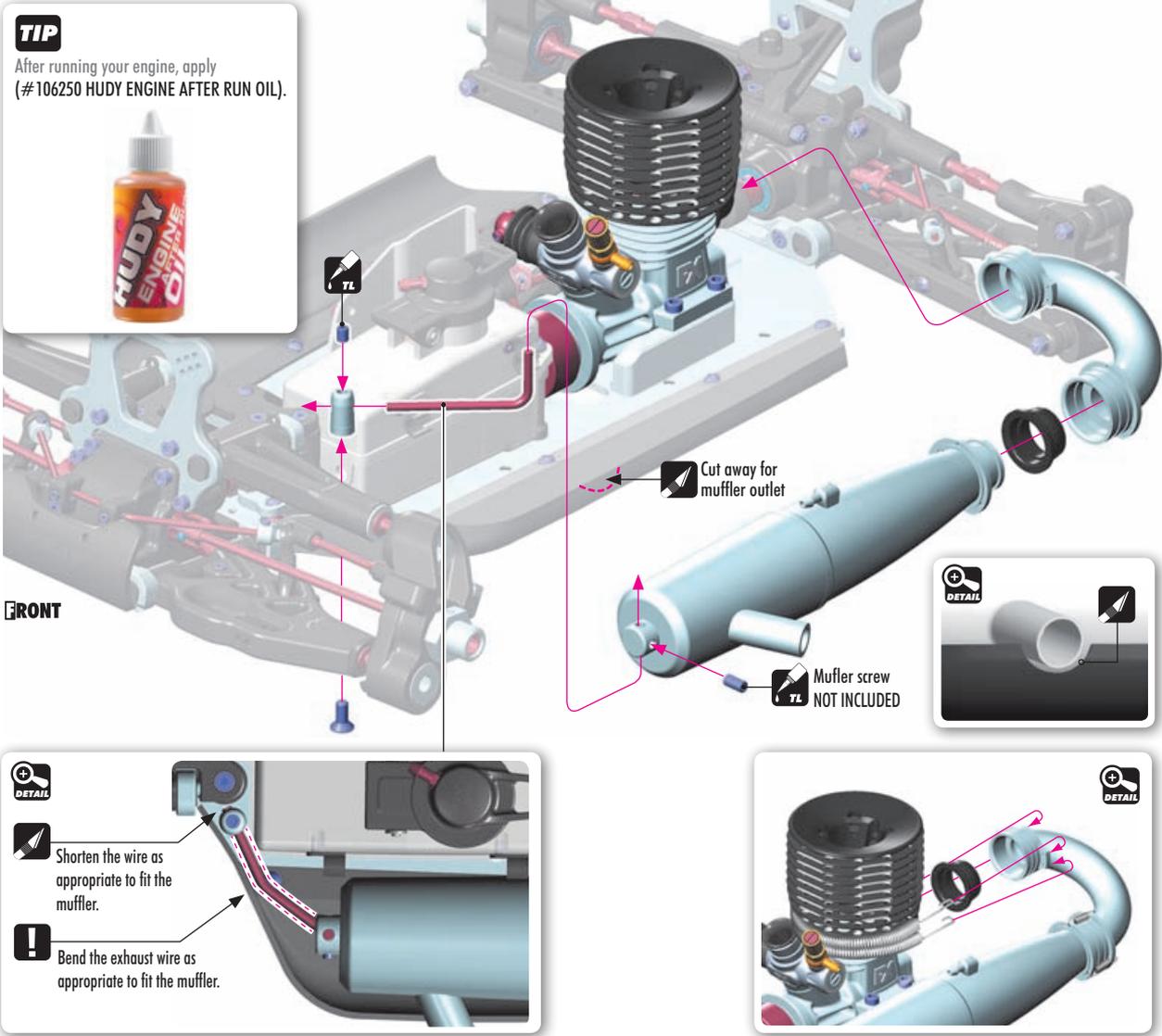
**#358660**  
**OPTION** GRAPHITE 125CC FUEL TANK GUARD



901405  
SB M4x5



903410  
SFH M4x10

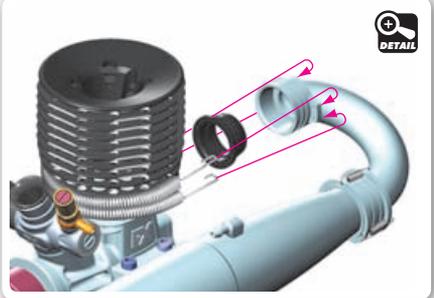


**TIP**  
After running your engine, apply  
(#106250 HUDY ENGINE AFTER RUN OIL).

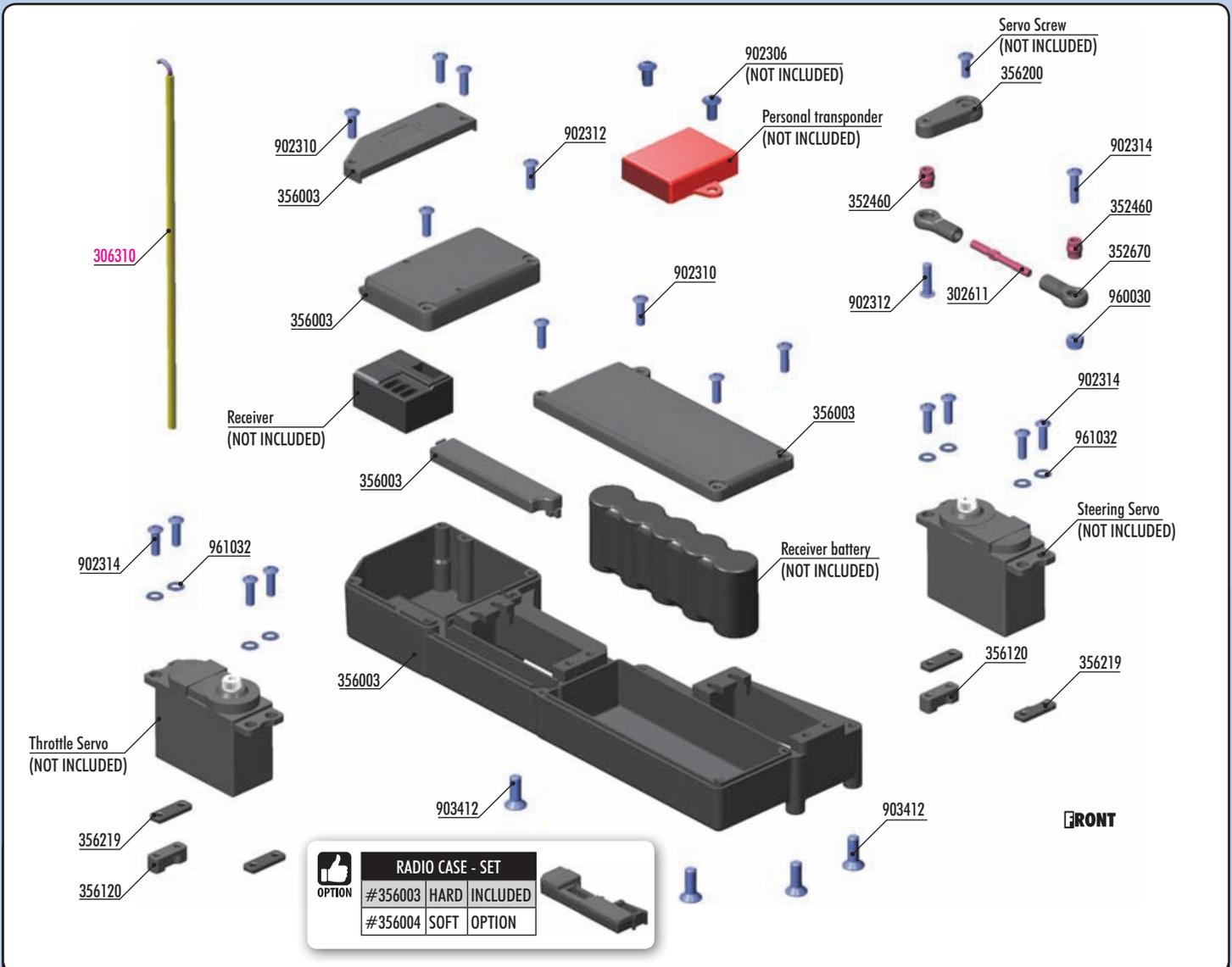
**DETAIL**

Shorten the wire as appropriate to fit the muffler.

**!** Bend the exhaust wire as appropriate to fit the muffler.



# 10. RADIO CASE



**BAG**

**10**

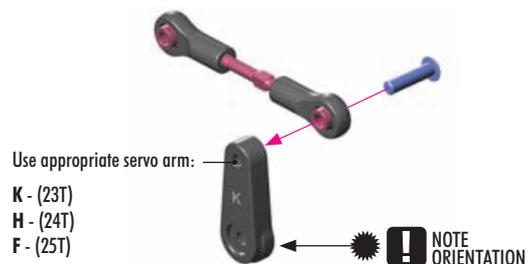
- 302611 ADJ. TURNBUCKLE L/R 35 MM - HUDY SPRING STEEL™ (2)
- 352460 PIVOT BALL 5.8 (10)
- 352670 SERVO BALL JOINT 5.8MM (4)
- 356003 COMPOSITE RADIO CASE SET - HARD
- 356050 BATTERY CABLE WITH SWITCH (OPTION)
- 356120 STEERING SERVO MOUNT - SET
- 356200 BRAKE/THROTTLE ARMS & STEERING SERVO ARMS - SET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

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

306310 ANTENNA TUBE (2)



902312  
SH M3x12



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

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

# 10. RADIO CASE



902314  
SH M3x14



961032  
S 3.2

**step 1**

Servo screw (NOT INCLUDED)

**TOP**

Plug the connectors into the receiver in Step 2.

**BOTTOM**

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

**NOTE**  
ORIENTATION



902310  
SH M3x10



902312  
SH M3x12



907206  
SP M2x6

**step 2**

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

3x10mm

3x12mm

3x10mm

**TIP** CUT

2x6

**SWITCH #356050**  
OPTION

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



902314  
SH M3x14



903412  
SFH M4x12



960030  
N M3

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

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

**ALTERNATIVE 1**  
When the transponder is placed at the top of the radio box, cut out some material from the radio box in order to allow the transponder wire to come inside.

**ALTERNATIVE 2**  
Place the transponder inside of the radio box by using double-sided tape.

3x6mm (NOT INCLUDED)

3x14mm

Hole for radio case - SOFT

Hole for optional radio case - HARD (INITIAL SETTING)

4x12mm

**FRONT**

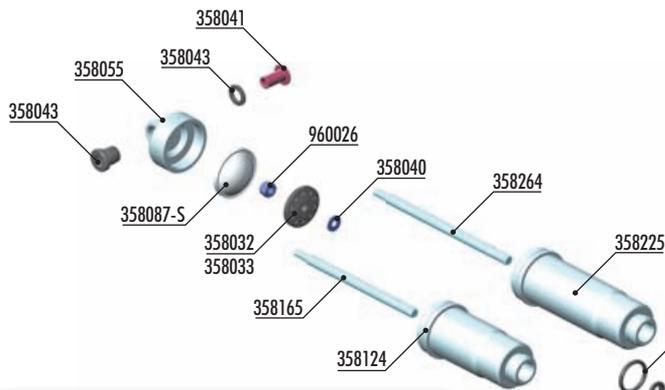
**DETAIL**

Note orientation of servo arm when servo is at neutral.

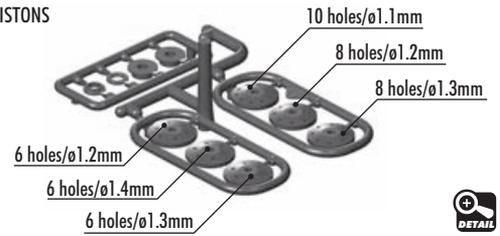
RADIO CASE - SET		
#356003	HARD	INCLUDED
#356004	SOFT	OPTION

**OPTION**

# 11. SHOCK ABSORBERS



## PISTONS



#358126 ALU FRONT SHOCK BODY -2mm (2)



#358164 FRONT SHOCK SHAFT 59mm (2)  
#358265 REAR SHOCK SHAFT 71.5mm (2)



### SHOCK RUBBER MEMBRANE (4)

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



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



#358107 XB8 FRONT SHOCK ABSORBERS ZERO REBOUND SET (2)  
#358207 XB8 REAR SHOCK ABSORBERS ZERO REBOUND SET (2)



FRONT COMPLETE SET (2)

REAR COMPLETE SET (2)



### SHOCK SPRINGS

#	C	DOTS	FRONT	OPTION
#358315	C=0.77-0.80	3 DOTS	FRONT	OPTION
#358316	C=0.80-0.83	4 DOTS	FRONT	INCLUDED
#358317	C=0.83-0.86	5 DOTS	FRONT	OPTION
#358334	C=0.66-0.68	2 DOTS	REAR	OPTION
#358335	C=0.68-0.70	3 DOTS	REAR	INCLUDED
#358336	C=0.70-0.73	4 DOTS	REAR	OPTION



### FRONT & REAR PROGRESSIVE SPRINGS

#	C	FRONT	REAR	OPTION
#358174	C=0.7-0.8	Grey	SHORT	OPTION
#358274	C=0.5-0.6	Grey	MEDIUM	OPTION
#358275	C=0.65-0.7	1 STRIPE	MEDIUM	OPTION
#358276	C=0.7-0.75	2 STRIPES	MEDIUM	OPTION



### REAR PROGRESSIVE SPRINGS

#	C	FRONT	REAR	OPTION
#358279	C=0.55-0.63	2 STRIPES	LONG	OPTION
#358280	C=0.6-0.68	3 STRIPES	LONG	OPTION
#358281	C=0.65-0.7	4 STRIPES	LONG	OPTION



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



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



### FRONT LINEAR SPRINGS

#	C	FRONT	REAR	OPTION
#358183	C=0.70	Grey	SHORT	OPTION
#358184	C=0.75	Silver	SHORT	OPTION
#358185	C=0.80	Grey-Blue	SHORT	OPTION

### REAR LINEAR SPRINGS

#	C	FRONT	REAR	OPTION
#358282	C=0.47	White	LONG	OPTION
#358283	C=0.50	Grey	LONG	OPTION
#358284	C=0.53	Silver	LONG	OPTION
#358285	C=0.57	Grey-Blue	LONG	OPTION
#358287	C=0.65	Violet	LONG	OPTION
#358288	C=0.70	Purple	LONG	OPTION

## BAGS



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

- 358150 ALU SHOCK BODY ADJ. NUT (2)
- 358165 FRONT SHOCK SHAFT 61mm (2)
- 358225 ALU REAR SHOCK BODY - HARD COATED - V2 (2)
- 358264 REAR SHOCK SHAFT 67.5mm (2)

- 960026 NUT M2.5 - SHORT (10)
- 970100 O-RING 10 x 1.5 (10)
- 970180 O-RING 18 x 1.8 (10)
- 971034 SILICONE O-RING 3.5x2 (10)

- 358316 XRAY FRONT SPRING 69MM - 4 DOTS (2)
- 358335 XRAY REAR SPRING 85MM - 3 DOTS

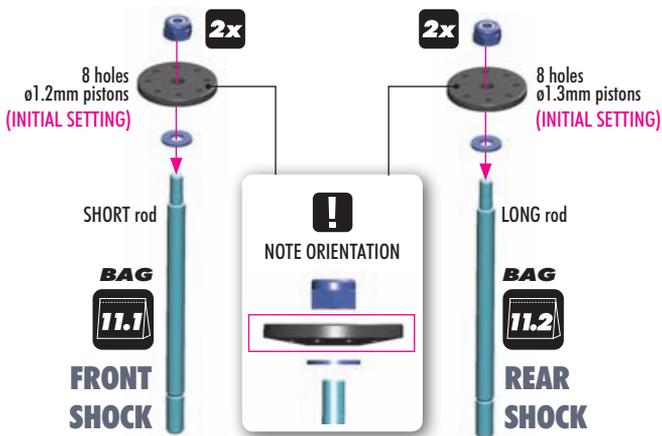
# 11. SHOCK ABSORBERS



358040  
5 2.5x6x0.5



960026  
N M2.5



#358265

REAR SHOCK SHAFT 71.5mm (2)



#358164

FRONT SHOCK SHAFT 59mm (2)



#358027 PISTON 5-HOLE (1.5mm) & 2-HOLE (1.0mm) (4)

#358028 PISTON 6-HOLE (1.3mm) & 2-HOLE (1.1mm) (4)

#308029 PISTON 6-HOLE (1.4mm) & 2-HOLE (1.1mm) (4)

#358030 PISTON 8-HOLE (1.2mm) & 2-HOLE (1.2mm) (4)

#358031 PISTON 8-HOLE (1.3mm) & 2-HOLE (1.2mm) (4)



DO NOT OVERTIGHTEN

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



TIGHTEN GENTLY

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

## SET-UP BOOK

SHOCK DAMPING  
SHOCK PISTONS



970100  
0 10x1.5

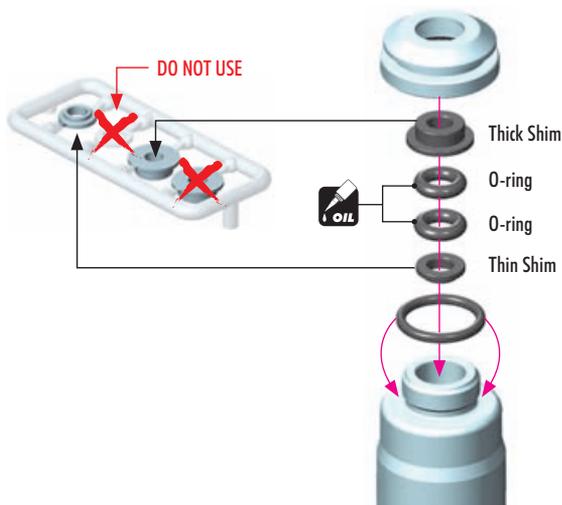


971034  
0 3.4x2

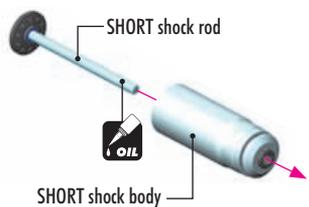
2x FRONT SHOCKS (SHORT)

2x REAR SHOCKS (LONG)

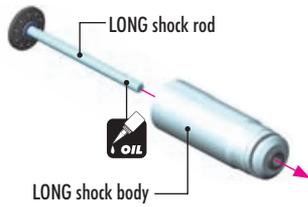
There are two different thickness shims, use them as shown. Use the same procedure when building both front and rear shocks.



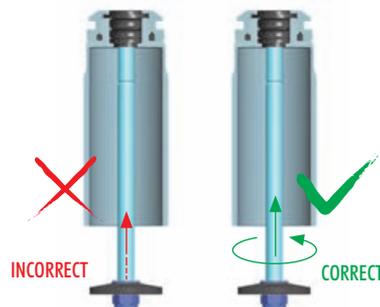
2x FRONT SHOCKS



2x REAR SHOCKS



## ! EXTREMELY IMPORTANT



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

Twist the shock rod through the lower shock body assembly.

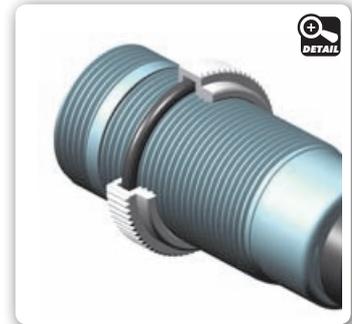
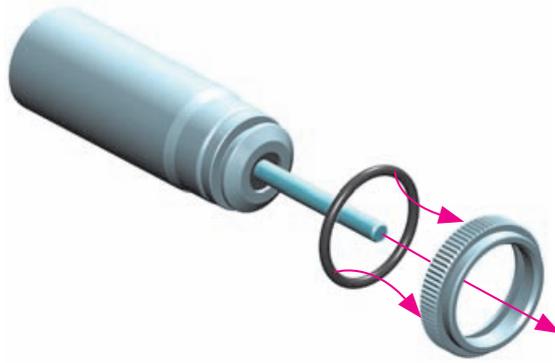
# 11. SHOCK ABSORBERS



970180  
0 18x1.8

**2x** FRONT SHOCKS

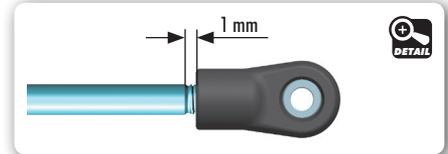
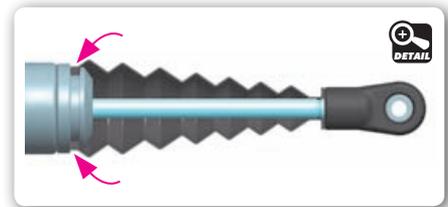
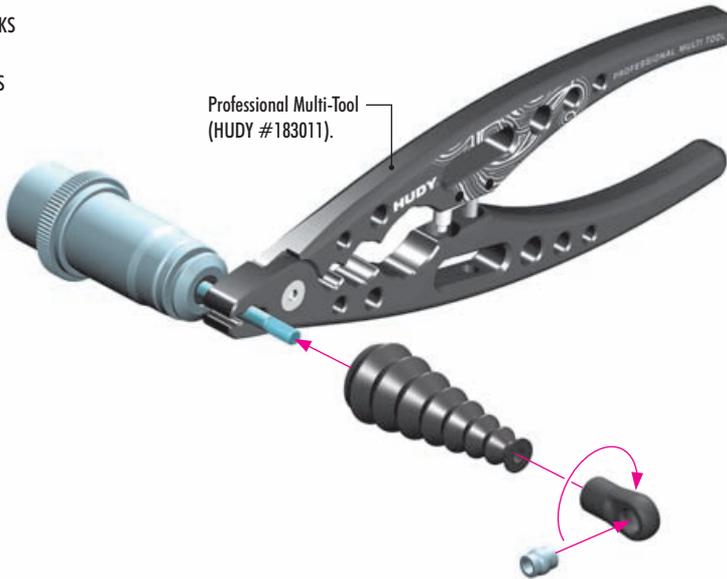
**2x** REAR SHOCKS



**2x** FRONT SHOCKS

**2x** REAR SHOCKS

Professional Multi-Tool  
(HUDY #183011).



## DEFAULT SHOCK REBOUND SETTING 0% (LOW REBOUND)

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

**2x** FRONT (SHORT)

Oil 550cSt

**2x** REAR (LONG)

Oil 600cSt

**SET-UP BOOK**  
SHOCK OIL



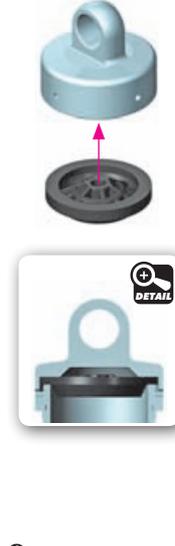
**1** Extend the shock shaft completely. Fill the shock body with the shock oil. For the FRONT shocks (short) use 550cSt oil. For the REAR shocks (long) use 600cSt oil.



**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.

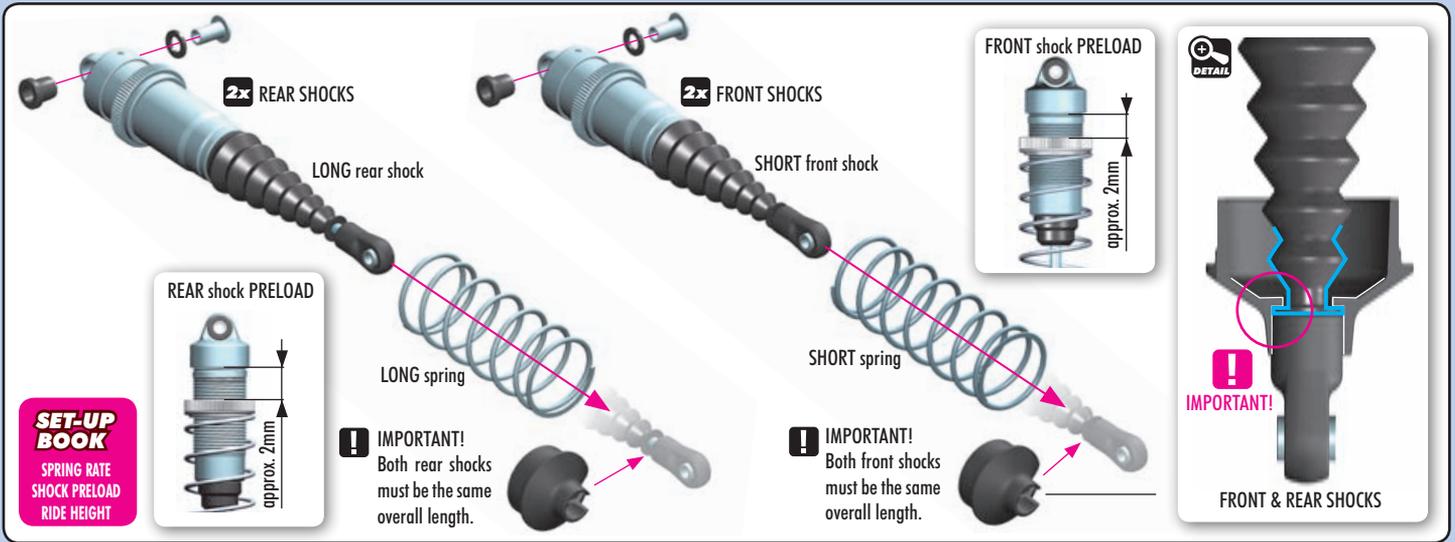


**6** Gently push the shock shaft completely into the shock body. Excess oil will flow through the hole in the shock cap.



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

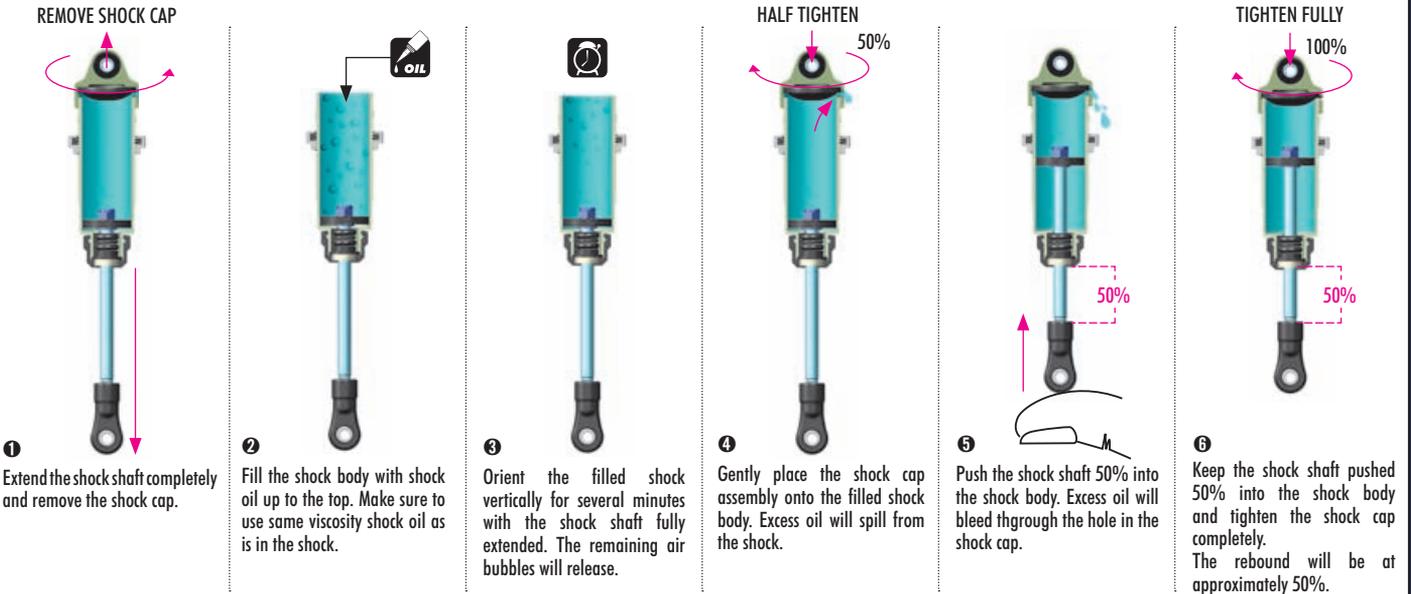
# 11. SHOCK ABSORBERS



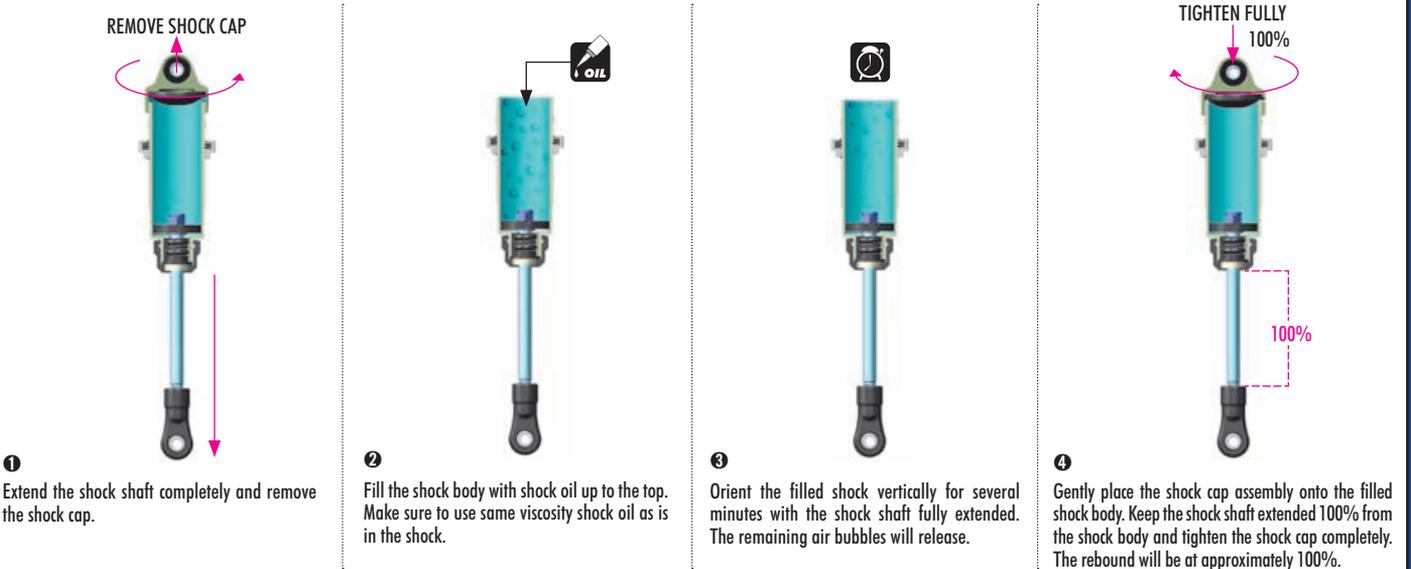
## TIP ALTERNATE SHOCK REBOUND SETTING (50% AND 100%)

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

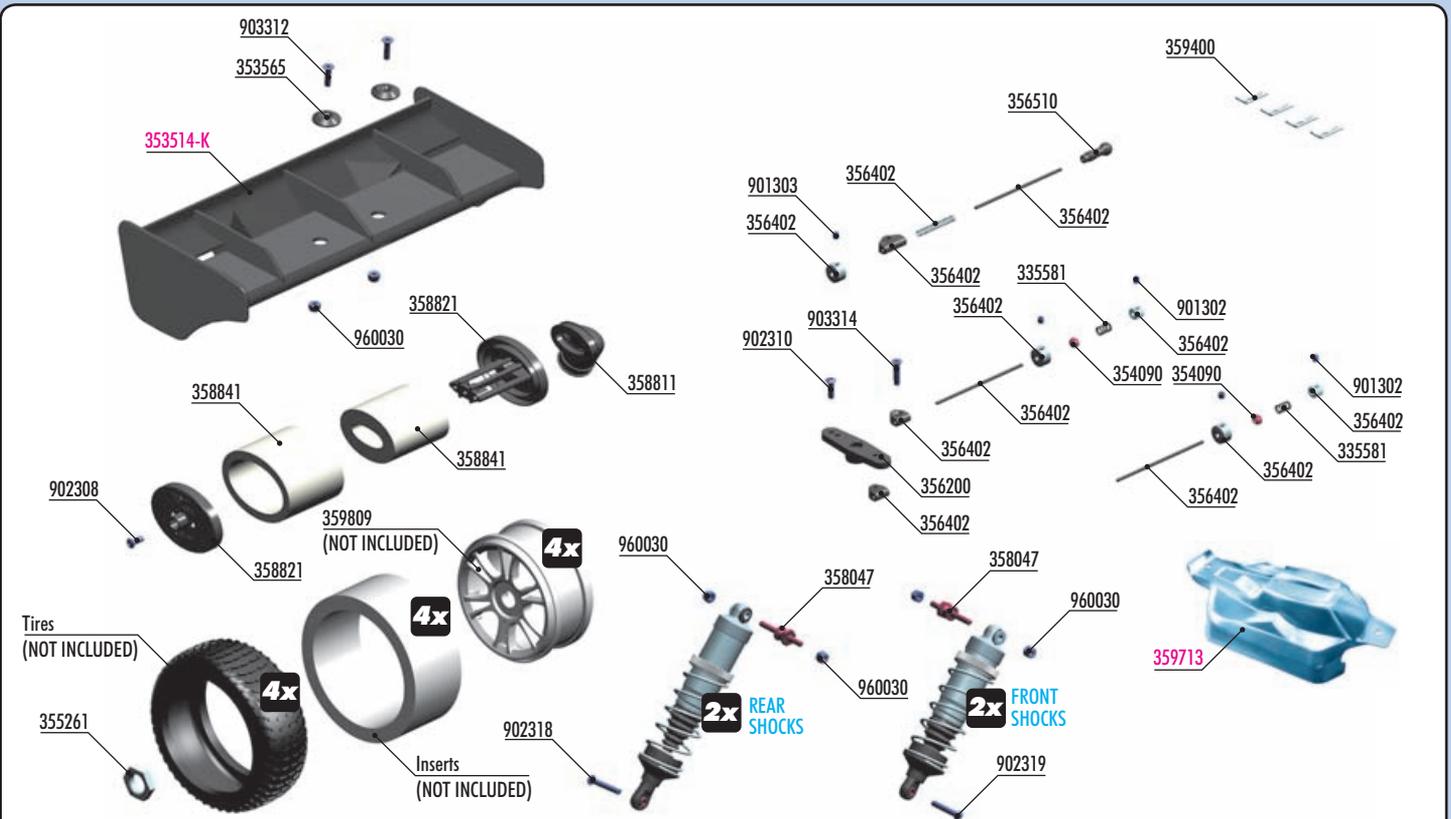
### SETTING THE SHOCK REBOUND TO 50% (MEDIUM REBOUND)



### SETTING THE SHOCK REBOUND TO 100% (HIGH REBOUND)



# 12. FINAL ASSEMBLY



**#358832**  
OPTION AIR FILTER RAIN COVER

**SERVO BRACE LINK**  
OPTION

A connecting brace between the throttle servo and the radio box compensates for the softer, more flexible radio box, as well as eliminating throttle servo vibrations to the chassis.

**WINGS**

Part #	Color	Included
#353514-K	BLACK	INCLUDED
#353514	WHITE	OPTION
#353514-Y	YELLOW	OPTION
#353512	LEXAN®	OPTION

**XRAY XB8 BODIES**

Part #	Body Type	Included
#359711	HIGH-SPEED	OPTION
#359712	HIGH-SPEED LIGHTWEIGHT	OPTION
#359713	"EAZY"	INCLUDED
#359714	"EAZY" LIGHTWEIGHT	OPTION

**XRAY STARBURST WHEELS**

Part #	Color	Included
#359808	PINK	OPTION
#359809	YELLOW	OPTION

**HUDY REAR WING SHIM**

Part #	Color	Included
#293561	SILVER	OPTION
#293561-0	ORANGE	OPTION
#293561-K	BLACK	OPTION
#353561	SILVER	OPTION

**WHEEL NUTS**

Part #	Type	Included
#355261	OPEN	INCLUDED
#293560	COVERED	OPTION
#355265	COVERED	OPTION

**HUDY CLAMP ALU SERVO HORNS**

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

**HUDY ALU SERVO HORNS**

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



302630	ADJ. TURNBUCKLE L/R 20 MM - HUDY SPRING STEEL™ (2) (OPTION)	362280	ALU CONICAL SHIM 3x6x2.0MM (10) (OPTION)
302663	COMPOSITE BALL JOINT 4.9MM - OPEN - V2 (8) (OPTION)	362651	BALL END 4.9MM WITH THREAD 8MM (2) (OPTION)
303125	ALU SHIM 3x6x3.0MM (10) (OPTION)	362652	BALL END 4.9MM WITH THREAD 10MM (2) (OPTION)
335581	SPRING C=7.8 - MEDIUM - SILVER (2)	901302	HEX SCREW SB M3x2.5 (10)
353565	COMPOSITE REAR WING SHIM - BLACK (2)	901303	HEX SCREW SB M3x3 (10)
354090	BALL-SHAPED BRAKE SHIM (2)	902308	HEX SCREW SH M3x8 (10)
355261	WHEEL NUT - RIBBED - HARD COATED (2)	902310	HEX SCREW SH M3x10 (10)
356200	BRAKE/THROTTLE ARMS & SERVO ARMS - SET	902318	HEX SCREW SH M3x18 (10)
356402	XB8 BRAKE/THROTTLE SYSTEM - SET - V2	902319	HEX SCREW SH M3x18 - LEFT THREAD (10)
356510	CLOSED BALL JOINT 3.9 (4)	903312	HEX SCREW SFH M3x12 (10)
358047	STEEL SCREW SHOCK PIVOT BALL WITH HEX (2)	903314	HEX SCREW SFH M3x14 (10)
358811	AIR FILTER ELBOW - LOW PROFILE	960030	NUT M3 (10)
358821	AIR FILTER BODY & CAP - LOW PROFILE		
358841	AIR FILTER FOAM & OIL - LOW PROFILE		
358950	SILICONE TUBING 1M (2.4 x 5.5MM)		
359400	BODY CLIP (10)		

**353514-K** REAR WING - FRONTWARD - BLACK  
**359713** XRAY XB8 / XB8E "EAZY" BODY

# 12. FINAL ASSEMBLY

902318 SH M3x18  
902319 SH M3x18 LEFT thread  
960030 N M3

**FRONT SHOCKS (SHORT)**  
2x  
L=R

NOTE ORIENTATION

SHORTER → LONGER

LEFT

FRONT

RIGHT

3x18mm

Use **STANDARD** M3x18 screw

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

INITIAL SETTING

INITIAL SETTING

L=R

902318 SH M3x18  
902319 SH M3x18 LEFT thread  
960030 N M3

**REAR SHOCKS (LONG)**  
2x  
L=R

NOTE ORIENTATION

SHORTER → LONGER

RIGHT

REAR

LEFT

M3x18mm

Use **STANDARD** M3x18 screw

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

INITIAL SETTING

INITIAL SETTING

L=R

901303 SB M3x3  
902310 SH M3x10  
903314 SFH M3x14

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

Brake rod

Brake rod

Throttle rod

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

Cut off remaining material

Small gap

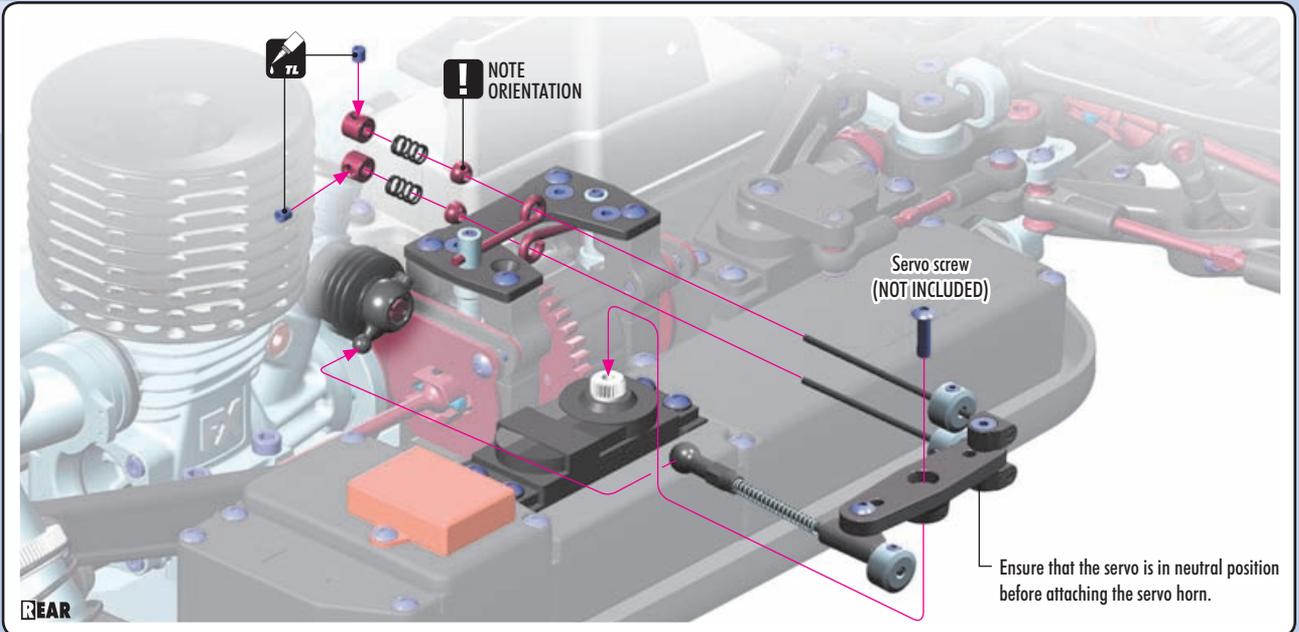
Small gap

Tighten screw until snug. Pivots should move freely.

ALU SERVO HORNS			CLAMP ALU SERVO HORNS		
OPTION BODY		OPTION	OPTION BODY		OPTION
#293504	23T	OPTION	#293444	23T	OPTION
#293505	24T	OPTION	#293445	24T	OPTION
#293506	25T	OPTION	#293446	25T	OPTION
#293507	23T	OPTION	#293447	23T	OPTION
#293508	24T	OPTION	#293448	24T	OPTION
#293509	25T	OPTION	#293449	25T	OPTION

# 12. FINAL ASSEMBLY

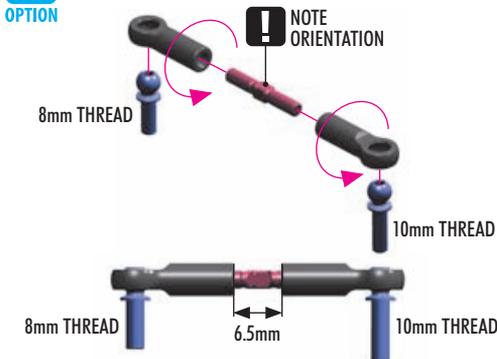
901302  
SB M3x2.5



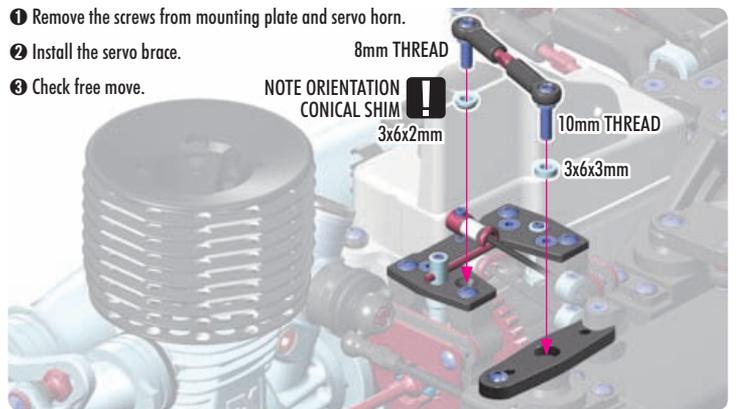
303125  
SHIM 3x6x3

362280  
CON. SHIM 3x6x2

## SERVO BRACE LINK

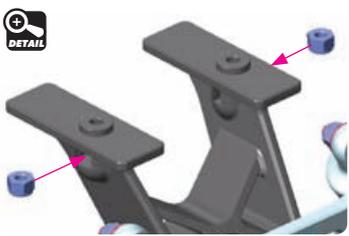


- 1 Remove the screws from mounting plate and servo horn.
- 2 Install the servo brace.
- 3 Check free move.



903312  
SFH M3x12

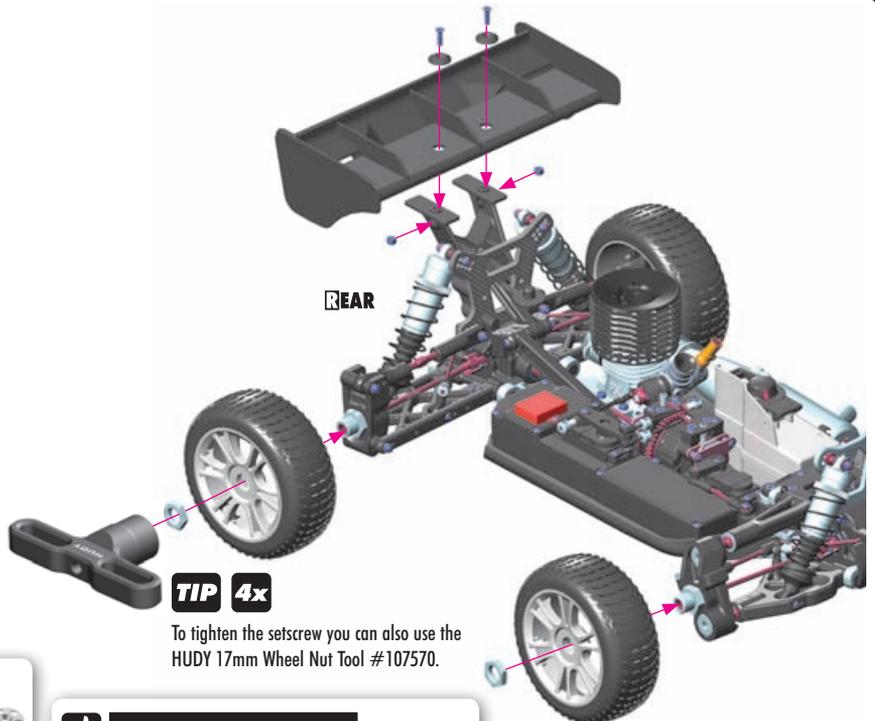
960030  
N M3



WINGS			
#353514-K	BLACK	INCLUDED	
#353514	WHITE	OPTION	
#353514-Y	YELLOW	OPTION	
#353512	LEXAN®	OPTION	



HUDY REAR WING SHIM			
#293561	SILVER	OPTION	
#293561-O	ORANGE	OPTION	
#293561-K	BLACK	OPTION	
#353561	SILVER	OPTION	



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

XRAY STARBURST WHEELS		
#359808	Pink	OPTION
#359809	Yellow	OPTION

# 12. FINAL ASSEMBLY



#358832  
OPTION  
AIR FILTER RAIN COVER



#106245  
OPTION  
HUDY AIR FILTER SEALANT



Apply #106240 HUDY air filter oil and follow the engine instructions to service the air filter.

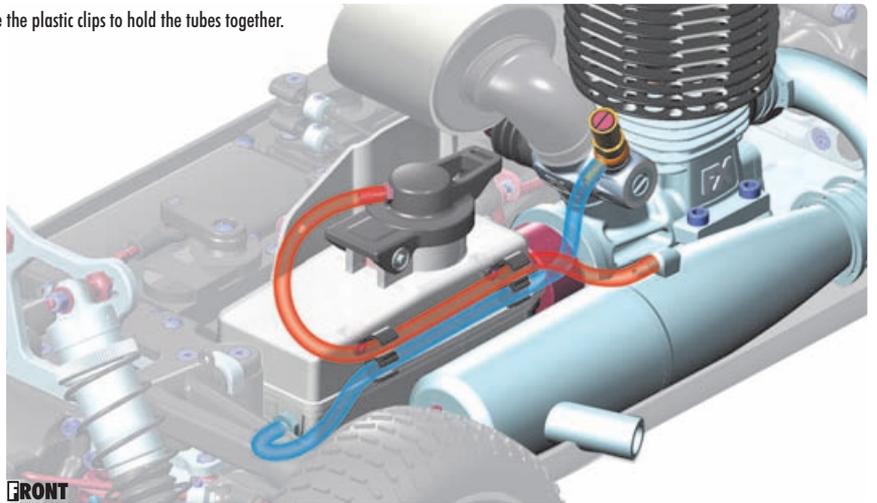


Cut the silicone tube depending on engine and muffler. Use the plastic clips to hold the tubes together.

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.



- 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.

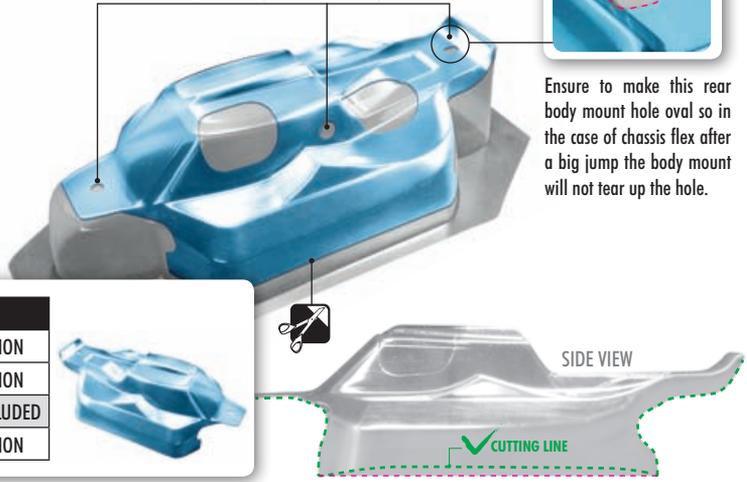


**TIP** To reinforce the body or to fix broken body use #106281 HUDY BODY FIX.



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

Body Reamer (HUDY #107602)



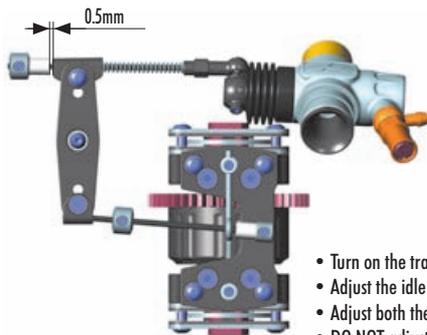
Ensure to make this rear body mount hole oval so in the case of chassis flex after a big jump the body mount will not tear up the hole.

OPTION	XRAY XB8 BODIES	
#359711	HIGH-SPEED	OPTION
#359712	HIGH-SPEED LIGHT.	OPTION
#359713	"EAZY"	INCLUDED
#359714	"EAZY" LIGHT.	OPTION

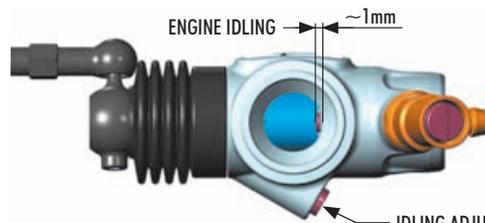
# THROTTLE LINKAGE ADJUSTMENT

## NEUTRAL (IDLE)

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

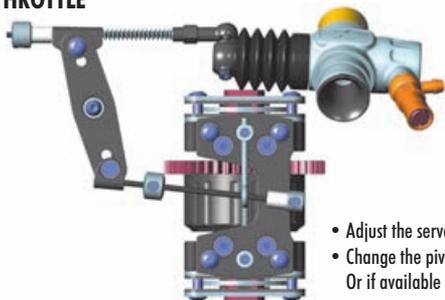


- Turn on the transmitter and receiver and set the engine control servo trim to the neutral position.
- Adjust the idle adjustment screw on the carburetor to open approx. 1mm.
- Adjust both the throttle linkage and brake linkages accordingly.
- DO NOT adjust the linkage with the engine running.



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

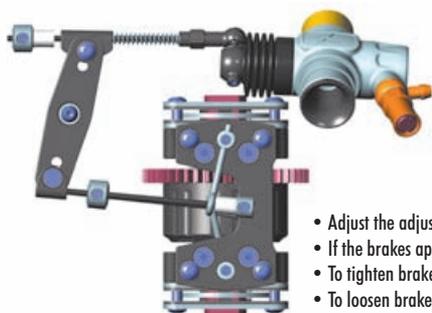
## FULL THROTTLE



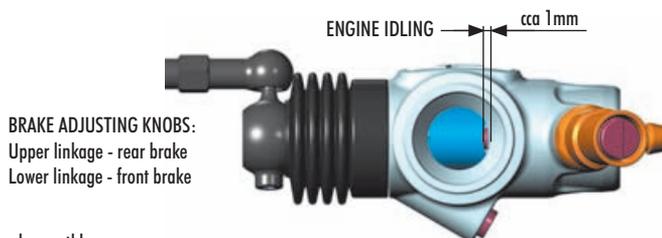
- Adjust the servo-horn mounting position for the carburetor to open fully.
- Change the pivot mounting position on the servo horn in case the carburetor is not opening fully or if it is opening excessively. Or if available on the transmitter, adjust the throttle high end point.



## BRAKE



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



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

# TROUBLESHOOTING GUIDE

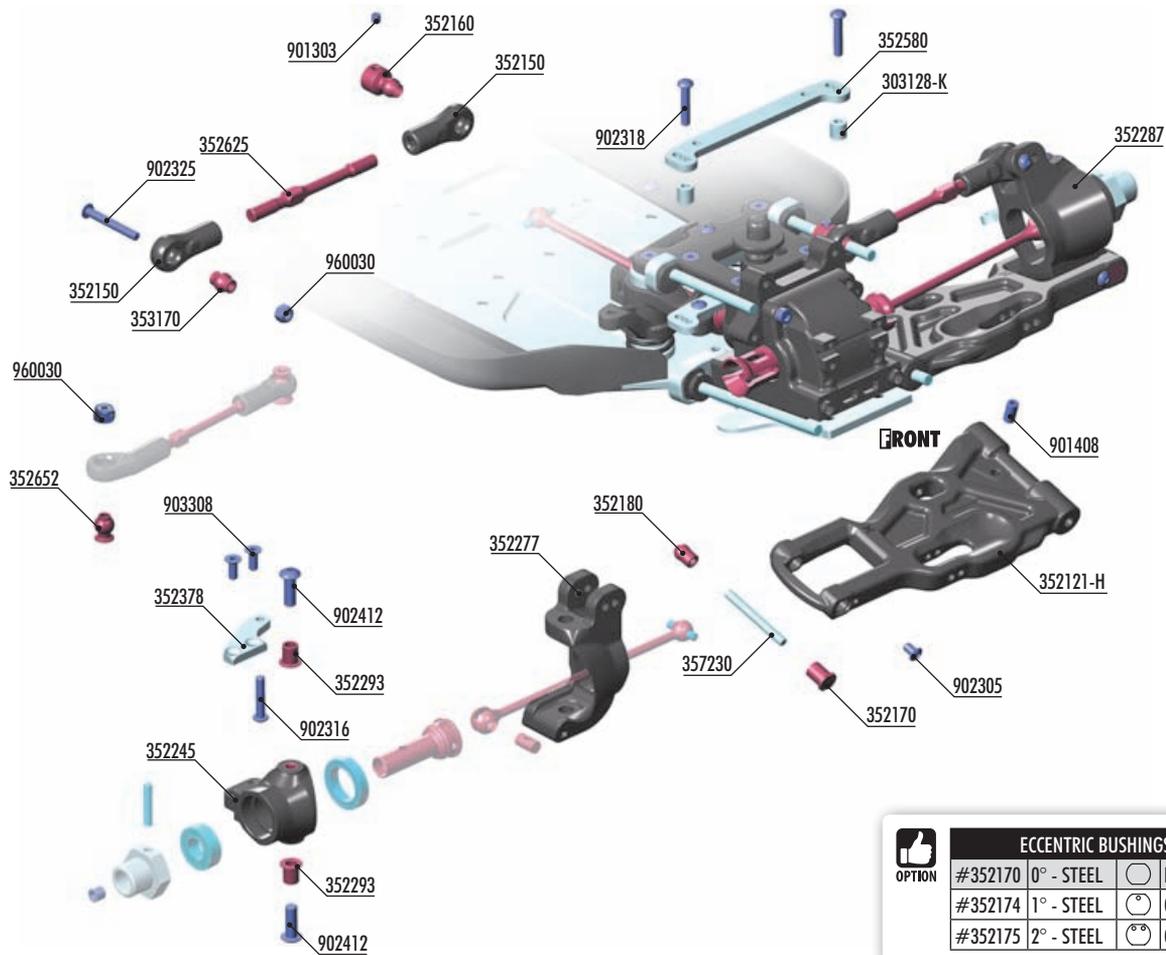
PROBLEM	CAUSE	SOLUTION
ENGINE DOES NOT START	<ul style="list-style-type: none"> <li>• Fuel tank is empty or carburetor is not primed</li> <li>• Bad glowplug or dead glowdriver battery</li> <li>• Fuel lines, fuel filter, air cleaner, or muffler is clogged</li> <li>• Engine is flooded due to over-priming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

# FRONT C-HUB SUSPENSION



## #350907 FRONT C-HUB SUSPENSION - SET

OPTION

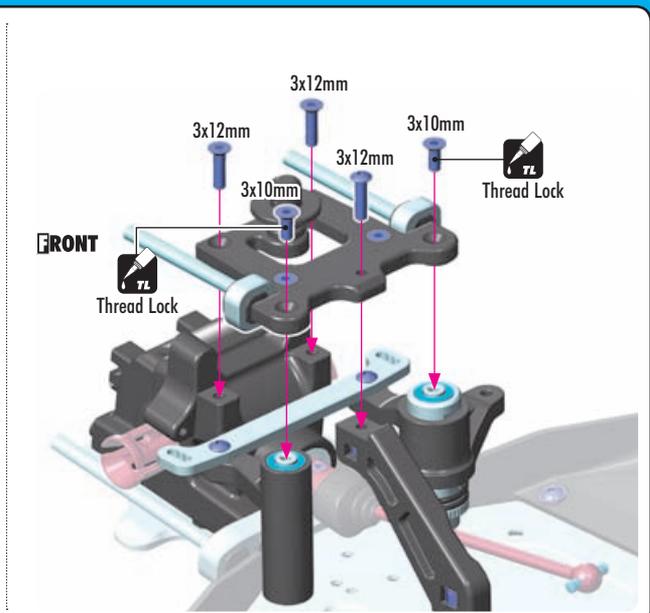
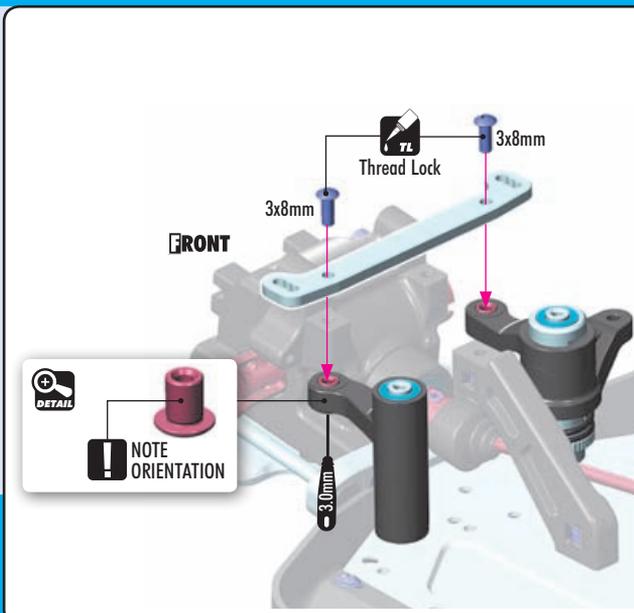


ECCENTRIC BUSHINGS			
	#352170	0° - STEEL	INCLUDED
	#352174	1° - STEEL	OPTION
	#352175	2° - STEEL	OPTION

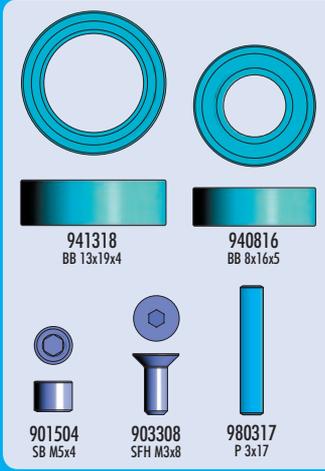
- 303128-K ALU SHIM 3x6x6MM (10)
- 352121-H COMPOSITE FRONT LOWER SUSPENSION ARM - HARD
- 352150 FRONT UPPER ARM BALL JOINT (2)
- 352160 STEEL MOUNTING BALL 6.8MM (2)
- 352170 STEEL ECCENTRIC BUSHING 0° (2)
- 352180 BALL MOUNT (2)
- 352245 STEERING BLOCK
- 352277 COMPOSITE CASTER BLOCK 16° RIGHT
- 352287 COMPOSITE CASTER BLOCK 16° LEFT

- 352293 STEEL BUSHING FOR CASTER BLOCK (2)
- 352378 ALU STEERING PLATE - SWISS 7075 T6 (L+R)
- 352580 ALU STEERING PLATE - SWISS 7075 T6
- 352625 ADJ. TURNBUCKLE M5 L/R 46 MM (2)
- 352652 BALL STUD 6.8MM (4)
- 353170 PIVOT BALL 6.8 (4)
- 357230 FRONT LOWER OUTER PIVOT PIN (2)

- 901303 HEX SCREW SB M3x3 (10)
- 901408 HEX SCREW SB M4x8 (10)
- 902305 HEX SCREW SH M3x5 (10)
- 902316 HEX SCREW SH M3x16 (10)
- 902318 HEX SCREW SH M3x18 (10)
- 902325 HEX SCREW SH M3x25 (10)
- 902412 HEX SCREW SH M4x12 (10)
- 903308 HEX SCREW SFH M3x8 (10)
- 960030 NUT M3 (10)



# FRONT C-HUB SUSPENSION



**2x** **L=R**

**NOTE ORIENTATION** !

Graphite Grease (HUDY #106210)

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

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



**2x** **L=R**

Marked "R"

SHORT ①

LONG ①

**2x** **L=R**

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

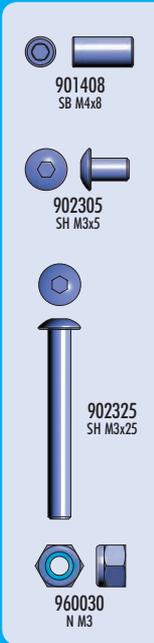
LEFT THREAD

RIGHT THREAD

21.5mm

LEFT

RIGHT



**2x** **L=R**

**NOTE ORIENTATION** !

**TIP** Press pivot ball into arm until it snaps into place.

**TOP** DOWNSTOP SETTING

STEP ① DETAIL **BOTTOM** 0.0mm

**TIP** Press pivot ball into arm until it snaps into place.

**OPTION**

ECCENTRIC BUSHINGS			
#352170	0° - STEEL	○ INCLUDED	
#352174	1° - STEEL	○ OPTION	
#352175	2° - STEEL	○ OPTION	

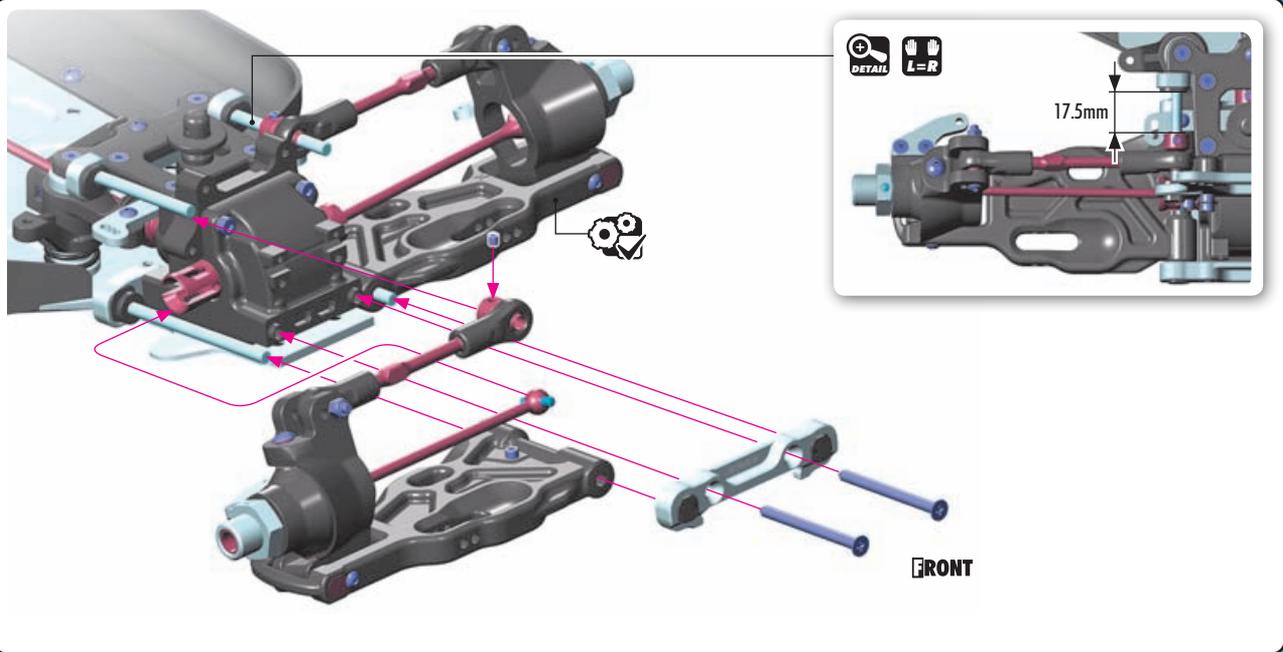
# FRONT C-HUB SUSPENSION



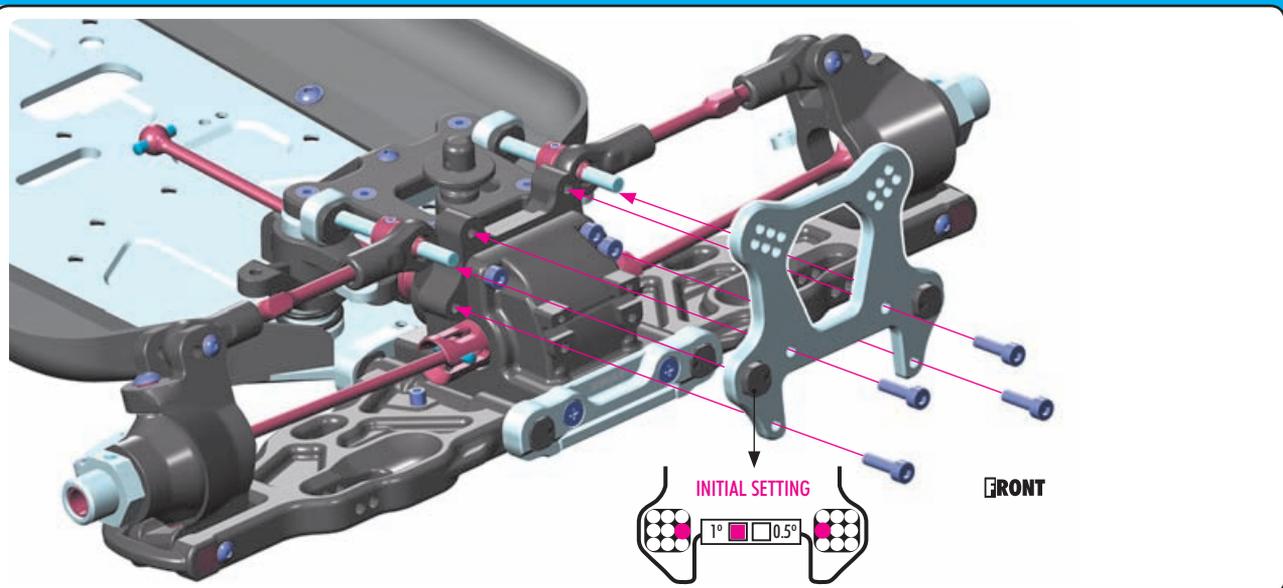
901303  
SB M3x3



909395  
SS 3.5x45



908312  
SCH M3x12



901303  
SB M3x3



901305  
SB M3x5



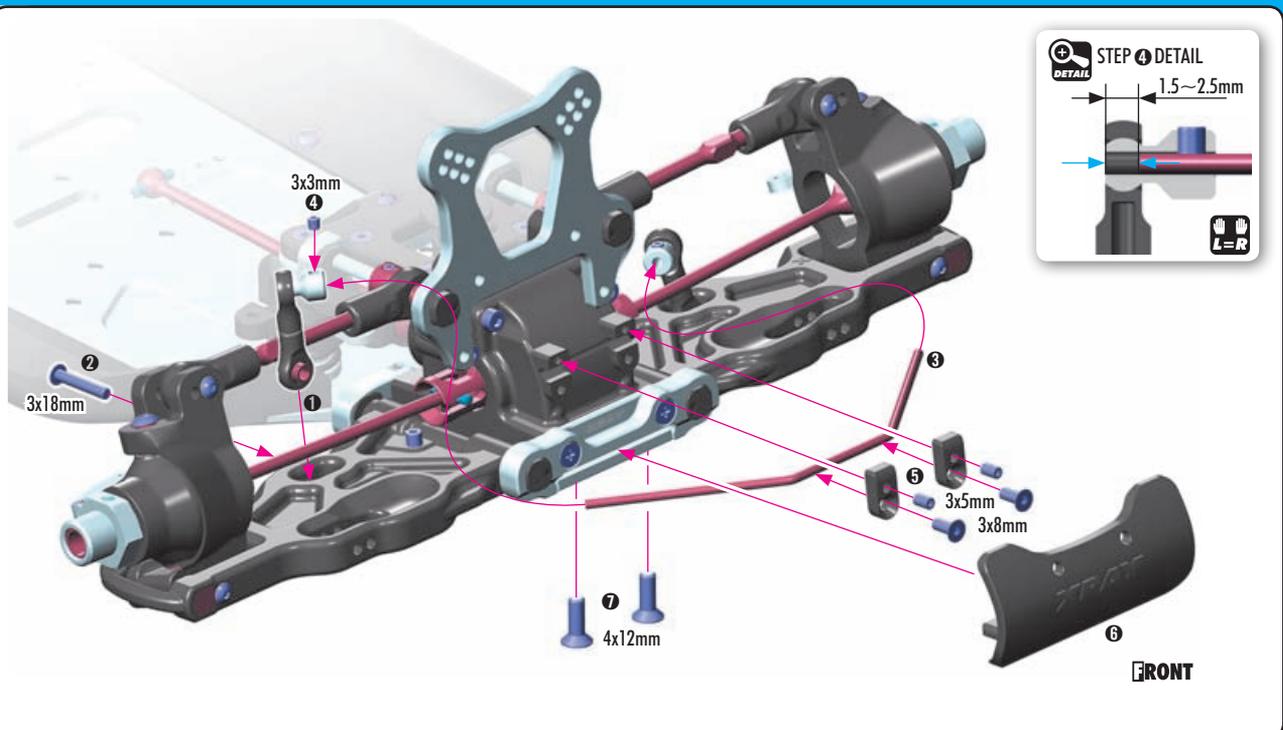
902318  
SH M3x18



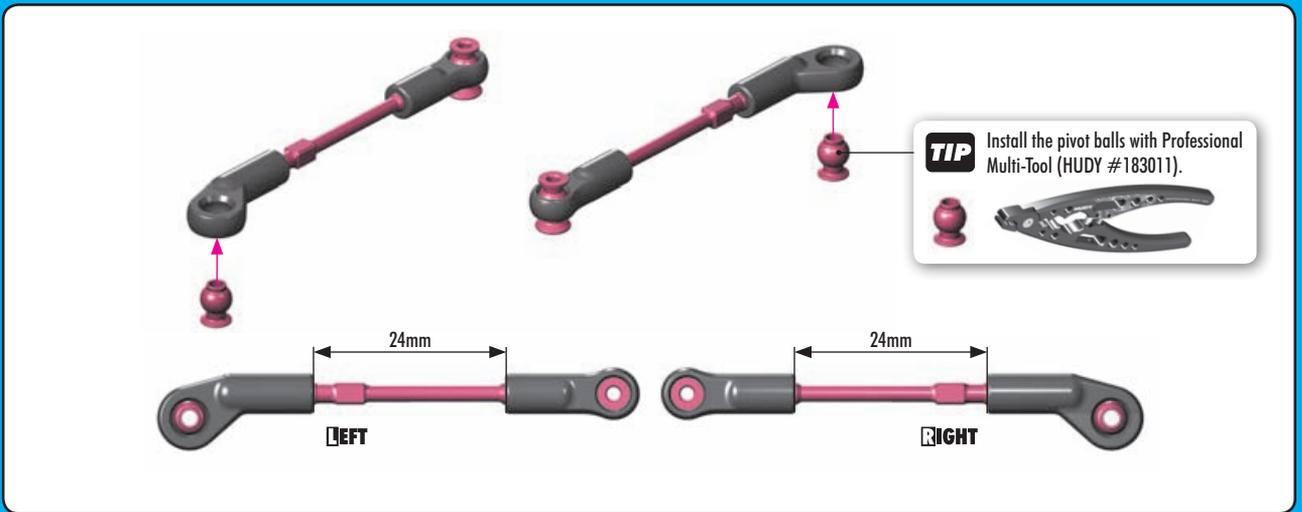
903308  
SFH M3x8



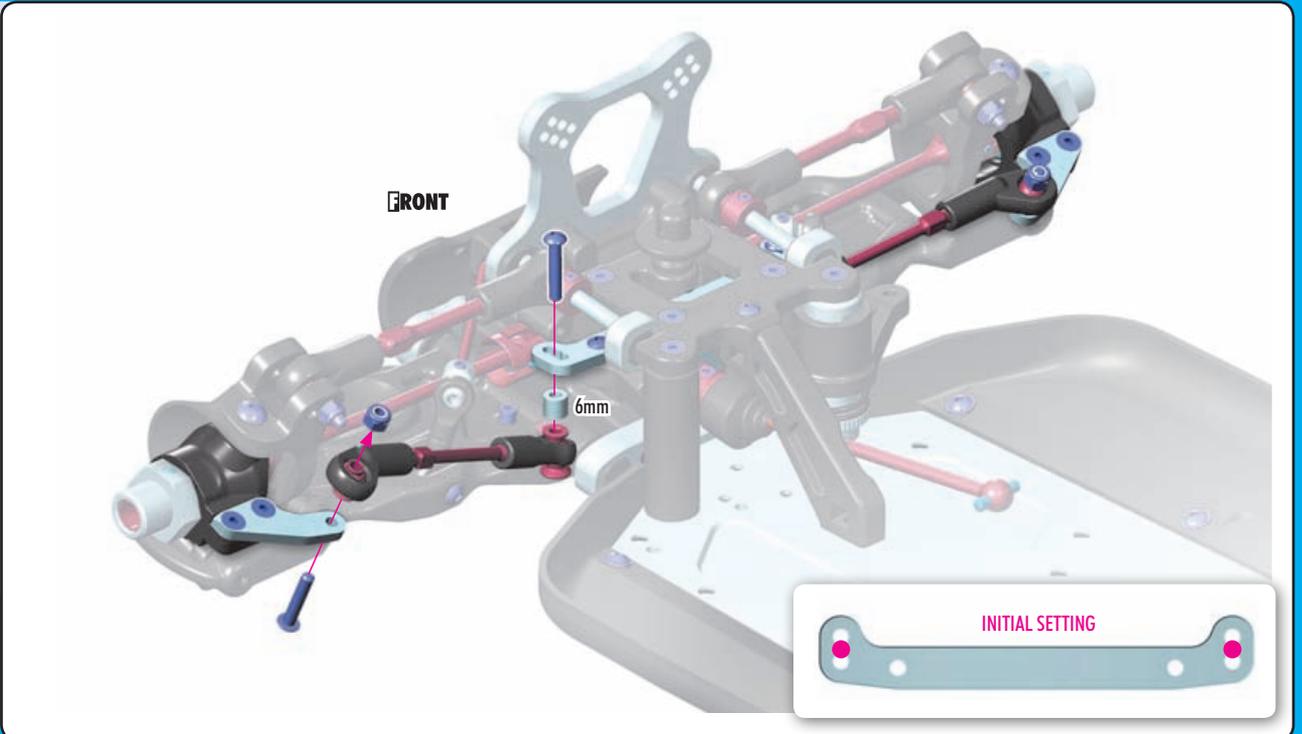
903412  
SFH M4x12



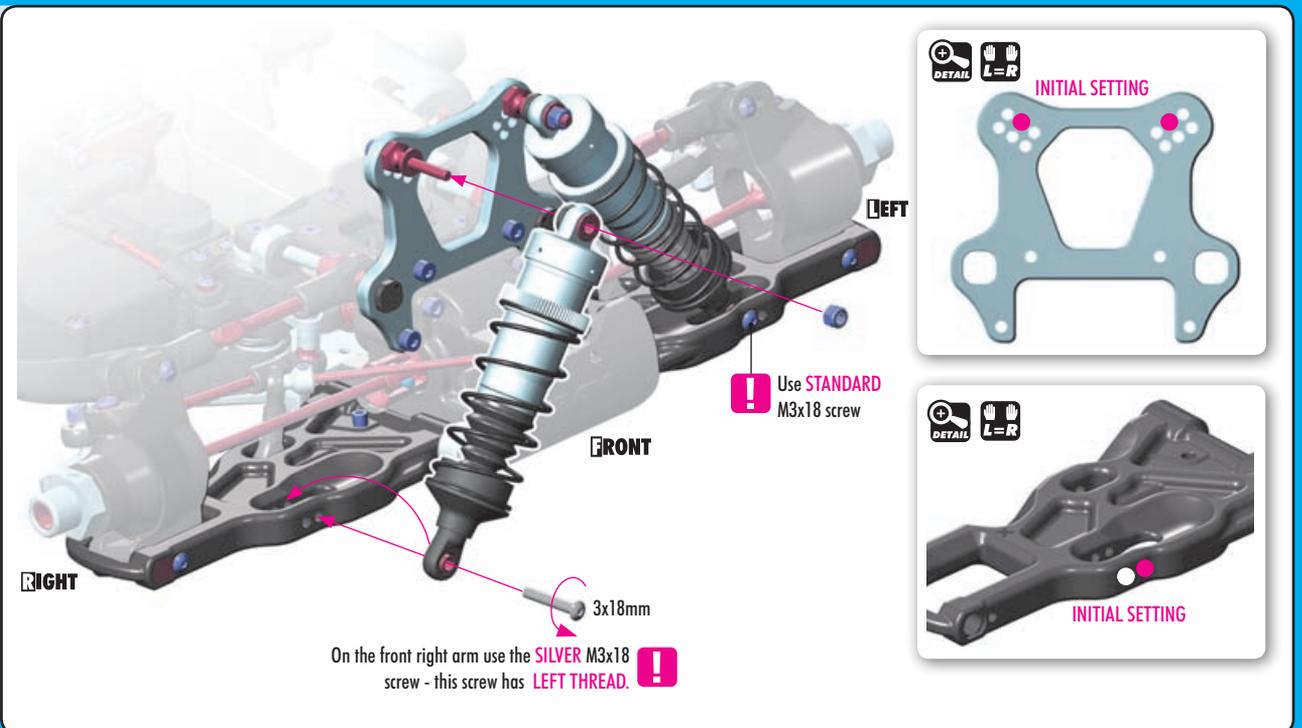
# FRONT C-HUB SUSPENSION



-  303128-K SHIM 3x6x6
-   902318 SH M3x18
-  960030 N M3



-  902318 SH M3x18
-  902319 SH M3x18 LEFT thread
-  960030 N M3



## 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  
#106213



HUDY  
#106220



HUDY  
#106222



HUDY  
#106221



HUDY #106230



RACE

TRACK

NAME  DATE

TEMPERATURE AIR  TEMPERATURE TRACK

LAPS  FINAL POSITION  BEST LAP TIME  RACE LENGTH

/sec /min

**TRACKS**

SIZE  OPEN  MEDIUM  TIGHT

TRACTION  LOW  MEDIUM  HIGH

SURFACE  SMOOTH  MEDIUM  BUMPY

TYPE  HARD PACKED  SOFT DIRT  CLAY  
 BLUE GROVE  ASTRO TURF  GRASS

CONDITION  DRY  DUSTY  WET  MUD

**DIFFERENTIAL**

FRONT CENTER REAR

CASE MATERIAL    CASE MATERIAL

OIL    OIL

CROWN GEAR    CROWN GEAR

**GEARING**

CLUTCH SHOE 3  4

SPRINGS

CLUTCH BELL  /T SPUR GEAR  /T

**SHOCKS**

FRONT	TYPE	REAR
<input type="text"/>	SPRINGS	<input type="text"/>
<input type="text"/>	MEMBRANE	<input type="text"/>
<input type="text"/>	OIL	<input type="text"/>

/cst /cst

**STANDARD PISTONS**

<input type="checkbox"/> 6 HOLES	<input type="checkbox"/> 1.1 mm	<input type="checkbox"/> 6 HOLES
<input type="checkbox"/> 8 HOLES	<input type="checkbox"/> 1.2 mm	<input type="checkbox"/> 8 HOLES
<input type="checkbox"/> 10 HOLES	<input type="checkbox"/> 1.3 mm	<input type="checkbox"/> 10 HOLES
<input type="checkbox"/> OTHER	<input type="checkbox"/> 1.4 mm	<input type="checkbox"/> OTHER

**VALVE PISTONS**

<input type="checkbox"/> 5+2 HOLES	<input type="checkbox"/> 1.5 mm	<input type="checkbox"/> 5+2 HOLES
<input type="checkbox"/> 6+2 HOLES	<input type="checkbox"/> 1.3 mm	<input type="checkbox"/> 6+2 HOLES
<input type="checkbox"/> 8+2 HOLES	<input type="checkbox"/> 1.4 mm	<input type="checkbox"/> 8+2 HOLES
<input type="checkbox"/>	<input type="checkbox"/> 1.2 mm	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/> 1.3 mm	<input type="checkbox"/>

**ANTI-ROLL BAR**

FRONT  /mm THICKNESS  /mm REAR

**TIRES**

FRONT BRAND  REAR

COMPOUND

INSERTS

WHEELS

**ENGINE**

TYPE

MUFFLER

MANIFOLD

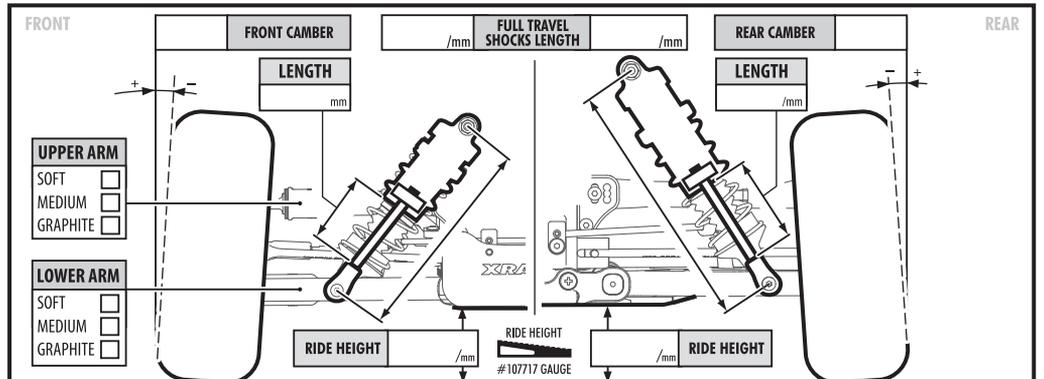
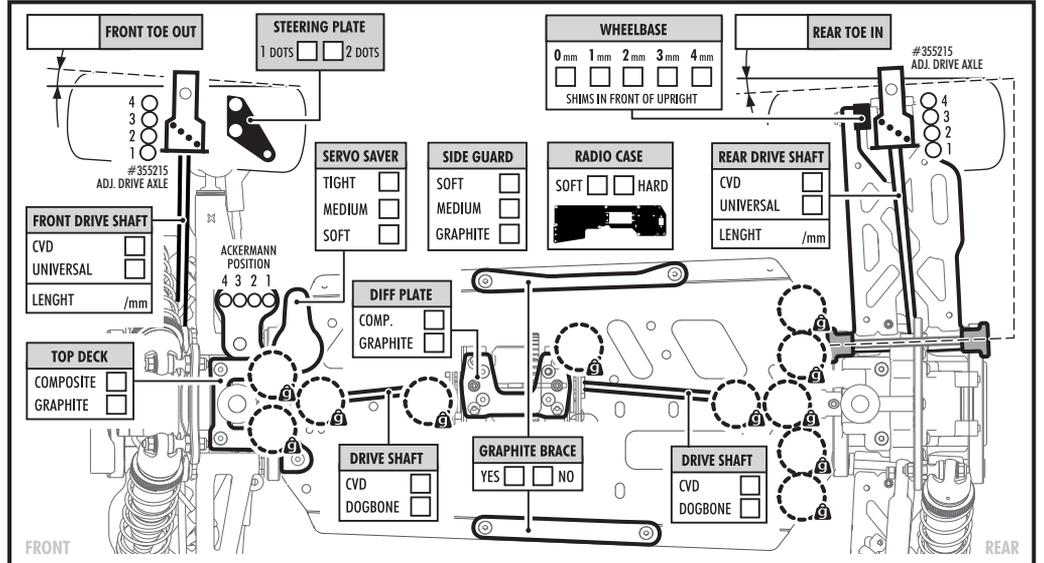
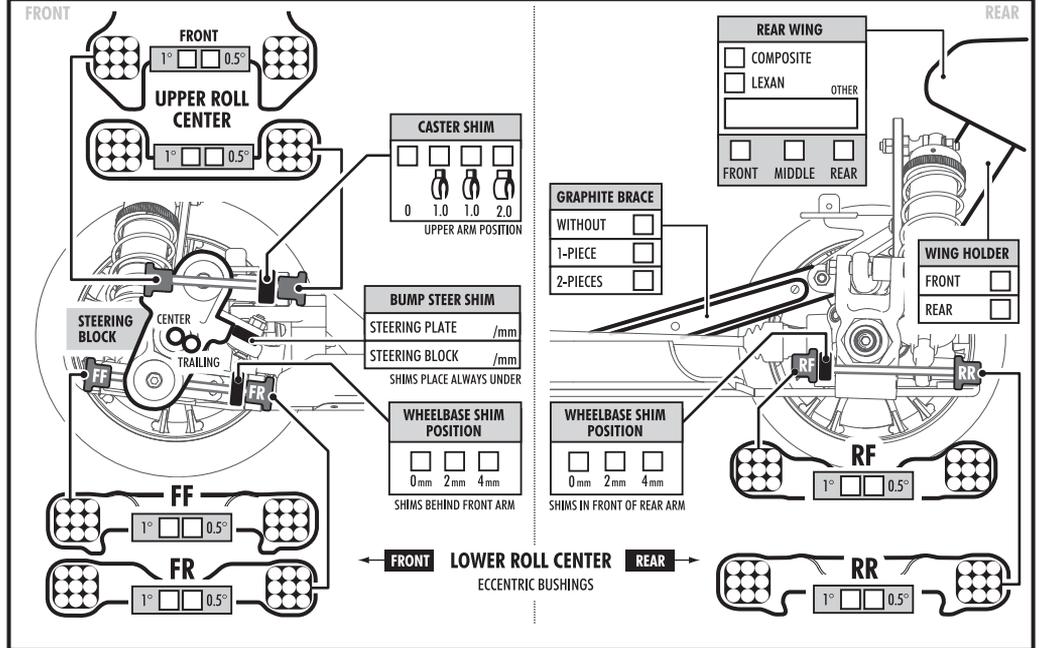
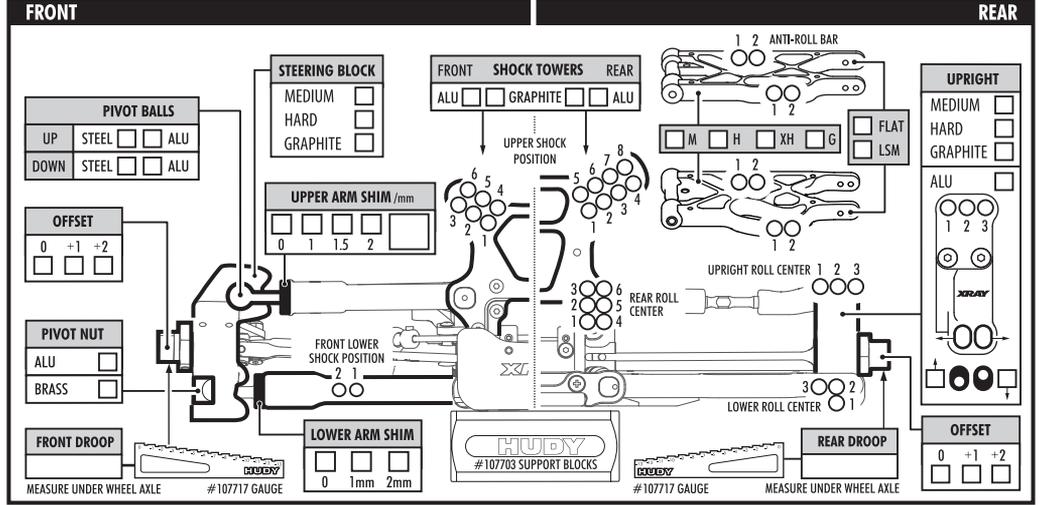
PLUG

FUEL

**BODY** OTHER

EAZY  EAZY LIGHT

**TOTAL WEIGHT**  /g



RACE

TRACK

NAME  DATE

TEMPERATURE AIR  TEMPERATURE TRACK

LAPS  FINAL POSITION  BEST LAPTIME  RACE LENGTH

/sec /min

**TRACKS**

SIZE  OPEN  MEDIUM  TIGHT

TRACTION  LOW  MEDIUM  HIGH

SURFACE  SMOOTH  MEDIUM  BUMPY

TYPE  HARD PACKED  SOFT DIRT  CLAY

BLUE GROVE  ASTRO TURF  GRASS

CONDITION  DRY  DUSTY  WET  MUD

**DIFFERENTIAL**

FRONT	CENTER	REAR
CASE MATERIAL <input type="text"/>	<input type="text"/>	CASE MATERIAL <input type="text"/>
OIL <input type="text"/>	<input type="text"/>	OIL <input type="text"/>
CROWN GEAR <input type="text"/>	<input type="text"/>	CROWN GEAR <input type="text"/>

**GEARING**

CLUTCH SHOE  3  4

SPRINGS

CLUTCH BELL  /T SPUR GEAR  /T

**SHOCKS**

FRONT	REAR
TYPE <input type="text"/>	<input type="text"/>
SPRINGS <input type="text"/>	<input type="text"/>
MEMBRANE <input type="text"/>	<input type="text"/>
OIL <input type="text"/> /cSt	<input type="text"/> /cSt

**STANDARD PISTONS**

<input type="checkbox"/> 6 HOLES	<input type="checkbox"/> 1.1 mm	<input type="checkbox"/> 6 HOLES
<input type="checkbox"/> 8 HOLES	<input type="checkbox"/> 1.2 mm	<input type="checkbox"/> 8 HOLES
<input type="checkbox"/> 10 HOLES	<input type="checkbox"/> 1.3 mm	<input type="checkbox"/> 10 HOLES
<input type="checkbox"/> OTHER	<input type="text"/>	<input type="checkbox"/> OTHER

**VALVE PISTONS**

<input type="checkbox"/> 5+2 HOLES	<input type="checkbox"/> 1.5 mm	<input type="checkbox"/> 5+2 HOLES
<input type="checkbox"/> 6+2 HOLES	<input type="checkbox"/> 1.3 mm	<input type="checkbox"/> 6+2 HOLES
<input type="checkbox"/> 8+2 HOLES	<input type="checkbox"/> 1.4 mm	<input type="checkbox"/> 8+2 HOLES
<input type="checkbox"/> 8+2 HOLES	<input type="checkbox"/> 1.2 mm	<input type="checkbox"/> 8+2 HOLES
<input type="checkbox"/> 8+2 HOLES	<input type="checkbox"/> 1.3 mm	<input type="checkbox"/> 8+2 HOLES

**ANTI-ROLL BAR**

FRONT  /mm THICKNESS REAR  /mm

**TIRES**

FRONT	REAR
BRAND <input type="text"/>	<input type="text"/>
COMPOUND <input type="text"/>	<input type="text"/>
INSERTS <input type="text"/>	<input type="text"/>
WHEELS <input type="text"/>	<input type="text"/>

**ENGINE**

TYPE

MUFFLER

MANIFOLD

PLUG

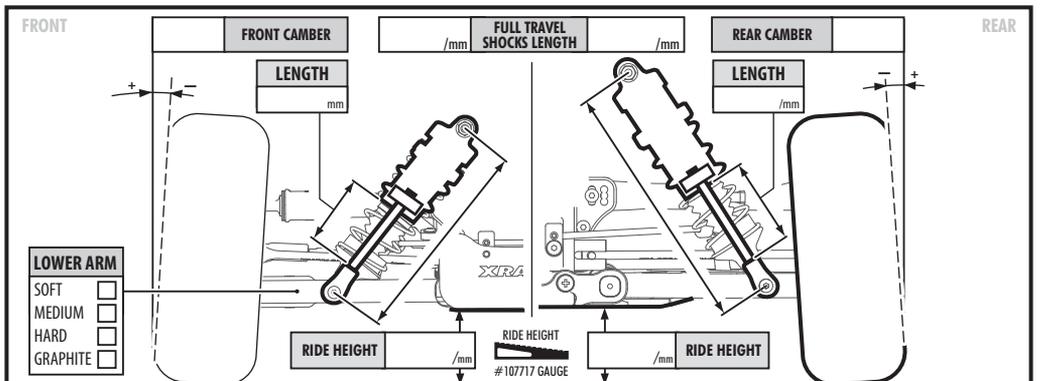
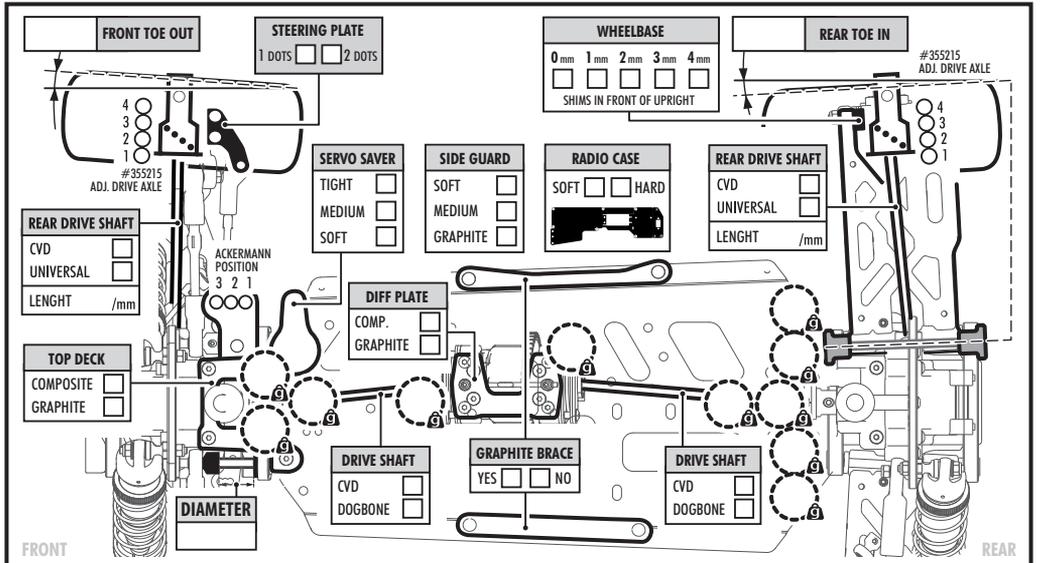
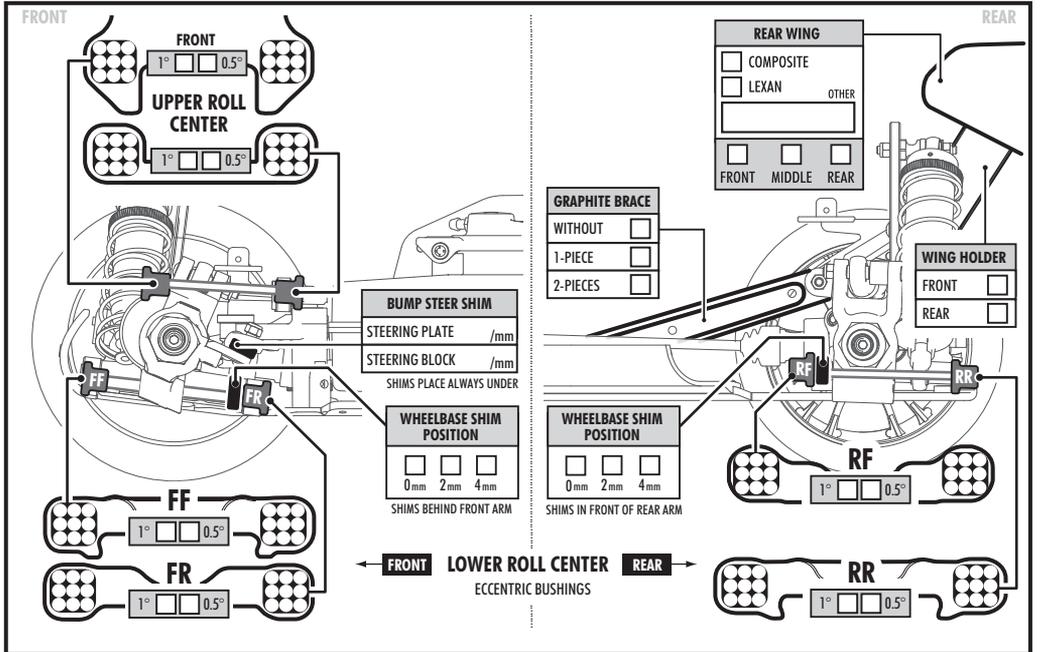
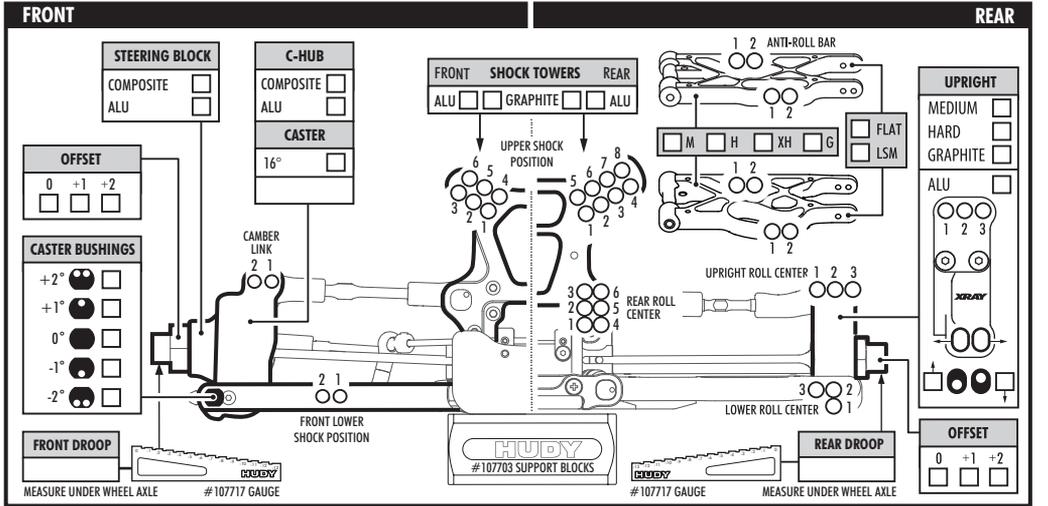
FUEL

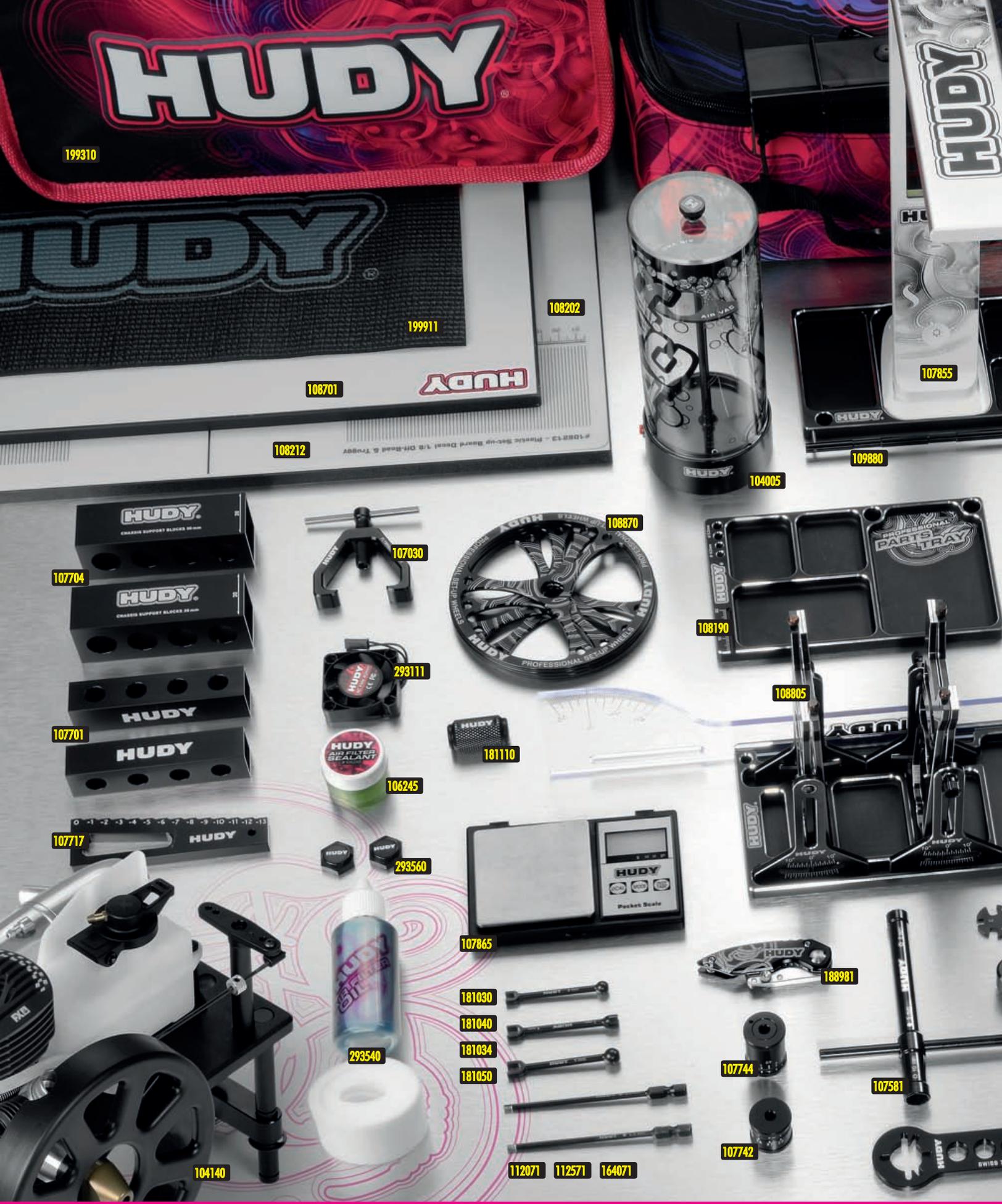
**BODY**

EAZY  EAZY LIGHT

OTHER

**TOTAL WEIGHT**  /g





- #104005 HUDY Air Vac - Vacuum Pump - 1/8 Off-Road
- #104140 HUDY Engine Break-In Bench
- #104500 HUDY Star-Box 1/8 Off-Road
- #105500 HUDY Universal Tire Balancing Station
- #105510 Wheel Adapter for 1/8 Off-Road Cars, Truggy & Rally Game
- #106000 HUDY Drive Pin Replacement Tool (for 3mm Pins)
- #106200 HUDY Magic Cleaning Gum
- #106245 HUDY Air Filter Sealant
- #107030 HUDY Flywheel Puller
- #107090 HUDY Bearing Check Tool
- #107570 HUDY 17mm Off-Road Wheel Nut Tool
- #107581 HUDY Cross Wrench Glowplug # 8mm / Clutchnut # 10mm
- #107602 Limited Edition - Reamer for Body 0-18mm + Cover - Large

- #107612 Limited Edition - Exhaust Spring / Caster Clip Remover
- #107644 Limited Edition - Arm Reamer # 4.0mm
- #107701 Chassis Droop Gauge Support Blocks 20mm for 1/8 - LW(2)
- #107704 Chassis Droop Gauge Support Blocks 30mm 1/8 Off-Road - LW (2)
- #107717 Chassis Droop Gauge 0 to -13 mm for 1/8 Off-Road
- #107742 HUDY Adjustable Ride Height Gauge 20-30mm
- #107744 HUDY Adjustable Ride Height Gauge 30-45mm
- #107762 HUDY Adjustable Camber Gauge 110mm
- #107780 HUDY Adjustable Droop Gauge 80-140mm
- #107783 HUDY Droop Gauge 70-140mm
- #107855 HUDY Pit LED
- #107865 HUDY Ultimate Digital Pocket Scale 300g/0.01g
- #108170 HUDY Off-Road & Truggy Car Stand

- #108190 HUDY Alu Tray for Parts
- #108202 Flat Set-Up Board for 1/8 Off-Road & Truggy
- #108212 Plastic Set-up Board Decal for 1/8 Off-Road & Truggy
- #108701 Flat Set-Up Board for 1/8 Off-Road & GT - Lightweight
- #108805 Universal Exclusive Set-up System for 1/8 Off-Road Cars
- #108841 Upside Measure Plate for 1/8 Truggy
- #108860 Alu Nut for 1/8 Off-Road System (4)
- #108870 Alu Set-up Wheel for 1/8 Off-Road Cars - V2 (4)
- #109802 HUDY Alu Tray for 1/8 Off-Road Diff & Shocks
- #109841 HUDY Alu Tray for 1/8 Off-Road Diff Assembly
- #109860 HUDY Alu Tray for Set-Up System
- #109880 HUDY Alu Tray for Accessories & Pit LED
- #111545 Limited Edition - Allen Wrench # 1.5mm

EXCLUSIVE PROFESSIONAL

# HUDY

199184

104500

HUDY

108170



199060



109802

199270



106200



105510

105500

109841



106000



107762



107780



107783

108860



109860

181090



107602



107090

107570



183011



188990



182015



107644

154060

107612

113045

112545

132545

112045

112045

132045

111545

164045

175535

170050



- #112045 Limited Edition - Allen Wrench # 2.0mm
- #112071 Power Tool Tip Allen 2.0 x 90 mm
- #112545 Limited Edition - Allen Wrench # 2.5mm
- #112571 Power Tool Tip Allen 2.5 x 90 mm
- #113045 Limited Edition - Allen Wrench # 3.0mm
- #132045 Limited Edition - Allen Wrench + Ball Repl. Tip # 2.0mm
- #132545 Limited Edition - Allen Wrench + Ball Repl. Tip # 2.5mm
- #154060 Long Slotted Screwdriver 4.0 mm - for Engine Adjust. - SPC - V2
- #164045 Limited Edition - Phillips Screwdriver # 4.0mm
- #164071 Power Tool Tip Phillips 4.0 x 90 mm
- #170050 Socket Driver 5.0 mm
- #175535 Limited Edition - Socket Driver # 5.5mm
- #181030 HUDY Spring Steel Turnbuckle Wrench 3 mm

- #181034 HUDY Spring Steel Turnbuckle Wrench 3 & 4mm
- #181040 HUDY Spring Steel Turnbuckle Wrench 4 mm
- #181050 HUDY Spring Steel Turnbuckle Wrench 5 mm
- #181090 HUDY Special Tool For Turnbuckles & Nuts
- #181110 HUDY Ball Joint Wrench
- #182015 HUDY 1/8 Off-Road Flywheel/Wheel Nut Multi-Tool
- #183011 HUDY Professional Multi Tool
- #188981 HUDY Pocket Hobby Knife
- #188990 HUDY Professional Body Scissors
- #199060 HUDY Alu Tool Stand
- #199184 HUDY Car Bag - 1/8 & 1/10 Off-Road
- #199270 HUDY LiPo Safety Bag
- #199310 HUDY Pit Bag - Compact

- #199911 HUDY Pit Mat Roll 750x1200mm with Printing
- #293111 HUDY Brushless RC Fan 40mm
- #293540 Air Filter Foam & Oil (10) - XRAY XB8 Low Profile Style
- #293560 HUDY Alu Wheel Nut with Cover - Ribbed (2)

For more information about tools, set-up equipment and accessories suitable for your car please visit:

[www.hudy.net](http://www.hudy.net)

[www.teamxray.com](http://www.teamxray.com)

**XRAY EUROPE**

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

**XRAY USA**

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



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/TeamXrayRC



/XrayRacing



/XrayRacing