1/8 LUXURY GT

XRAY GTX8

INSTRUCTION MANUAL

GTX8'23

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. Also, please visit our Web site at www.teamxray.com to find the latest updates, set-up information, option parts, and many other goodies. We pride ourselves on taking excellent care of our customers.

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

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

SAFETY PRECAUTIONS

WARNING: This product contains a chemical known to the state of California to cause cancer and birth defects or other reproductive harm.
CAUTION: CANCER HAZARD
Wash thoroughly after using. DO NOT use product while eating, drinking or using tobacco products. May cause chronic effects to gastrointestinal tract, CNS, kidneys, and blood. MAY CAUSE BIRTH DEFECTS.

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

Take appropriate safety precautions prior to operating this model. You are responsible for this model's assembly and safe operation! Please read the instruction manual before building and operating this model and follow all safety precautions. Always keep the instruction manual at hand for quick reference, even after completing the assembly. Use only genuine and original authentic XRAY parts for maximum performance. Using any third party parts on this model will void guaranty immediately.
Improper operation may cause personal and/or property damage. XRAY and its distributors have no control over damage resulting from shipping, improper construction, or improper usage. XRAY assumes and accepts no responsibility for personal and/or property damages resulting from the use of improper building materials, equipment and operations. By purchasing any item produced by XRAY, the buyer expressly warrants that he/she is in compliance with all applicable federal, state and local laws and regulation regarding the purchase, ownership and use of the item. The buyer expressly agrees to indemnify and hold harmless XRAY for all claims resulting directly or indirectly from the purchase, ownership or use of the product. By the act of assembling or operating this product, the user accepts all resulting liability. If the buyer is not prepared to accept this liability, then he/she should return this kit in new, unassembled, and unused condition to the place of purchase.

IMPORTANT NOTES – GENERAL

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

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

IMPORTANT NOTES – NITRO ENGINES

- Always test the brakes and the throttle before starting your engine to avoid losing control of the model.
- Make sure the air filter is clean and oiled.
- Never run your engine without an air filter. Your engine can be seriously damaged if dirt and debris get inside the engine.
- For proper engine break-in, please refer to the manual that came with the engine.
- Do not run near open flames or smoke while running your model or while handling fuel.
- Some parts will be hot after operation. Do not touch the exhaust or the engine until they have cooled. These parts may reach 275°F during operation!

IMPORTANT NOTES – ELECTRICAL

- Insulate any exposed electrical wiring (using heat shrink tubing or electrical tape) to prevent dangerous short circuits. Take maximum care in wiring, connecting and insulating cables. Make sure cables are always connected securely. Check connectors for if they become loose. And if so, reconnect them securely. Never use R/C models with damaged wires. A damaged wire is extremely dangerous, and can cause short-circuits resulting in fire. Please have wires repaired at your local hobby shop.
- Low battery power will result in loss of control. Loss of control can occur due to a weak battery in either the transmitter or the receiver. Weak running battery may also result in an out of control car if your car's receiver power is supplied by the running battery. Stop operation immediately if the car starts to slow down.
- When not using RC model, always disconnect and remove battery.
- Do not disassemble battery or cut battery cables. If the running battery short-circuits, approximately 300W of electricity can be discharged, leading to fire or burns. Never disassemble battery or cut battery cables.
- Use a recommended charger for the receiver and transmitter batteries and follow 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 inflammable, explosive, and poisonous. Never use fuel indoors or in places with open fires and sources of heat.
- Always keep the fuel container cap tightly shut.
- Always read the warning label on the fuel container for safety information.
- Nitro-powered model engines emit poisonous vapors and gasses. These vapors irritate eyes and can be highly dangerous to your health. We recommend wearing rubber or vinyl gloves to avoid direct contact with nitro fuel.
- Nitro fuel for RC model cars is made of the combination of the methyl alcohol, castor or synthetic oil, nitro methane etc. The flammability and volatility of these elements is very high, so be very careful during handling and storage of nitro fuel.
- Keep nitro fuel away from open flame, sources of heat, direct sunlight, high temperatures, or near batteries.
- Store fuel in a cool, dry, dark, well-ventilated place, away from heating devices, open flames, direct sunlight, or batteries. Keep nitro fuel away from children.
- Do not leave the fuel in the carburetor or fuel tank when the model is not in use. There is danger that the fuel may leak out.
- Wipe up any spilled fuel with a cloth.
- Be aware of spilled or leaking fuel. Fuel leaks can cause fires or explosions.
- Do not dispose of fuel or empty fuel containers in a fire. There is danger of explosion.

R/C & BUILDING TIPS

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

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

WARRANTY

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

Due to the high performance level of this model car you will need to periodically maintain and replace consumable components. Any and all warranty coverage will not cover replacement of any part or component damaged by neglect, abuse, or improper or unreasonable use. This includes but is not limited to damage from crashing, chemical and/or water damage, excessive moisture, improper or no maintenance, or user modifications which compromise the integrity of components. Warranty will not cover components that are considered consumable on RC vehicles. XRAY does not pay nor refund shipping on any component sent to XRAY or its distributors for warranty. XRAY reserves the right to make the final determination of the warranty status of any component or part.

Limitations of Liability

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

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

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

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

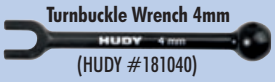
Combination Pliers (HUDY #189020)

Side Cutters (HUDY #189010)

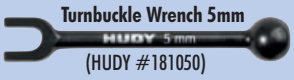
Pocket Hobby Knife (HUDY #188981)

Cross Wrench 3mm (HUDY #107581)

Turnbuckle Wrench 3mm (HUDY #181030)



Turnbuckle Wrench 4mm (HUDY #181040)



Turnbuckle Wrench 5mm (HUDY #181050)

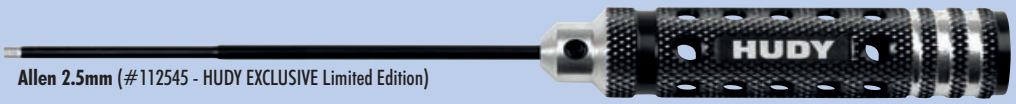
Special Tool for Turnbuckles & Nuts (HUDY #181090)

Tweezers

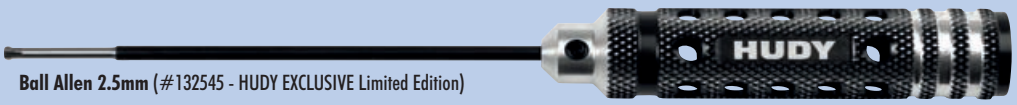
Scissors (HUDY #188990)

Allen 1.5mm (#111545 - HUDY EXCLUSIVE Limited Edition)

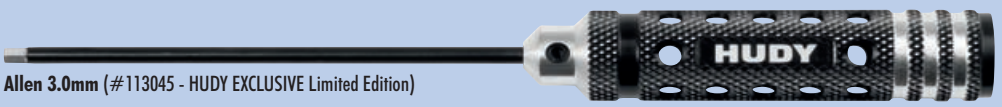
Allen 2.0mm (#112045 - HUDY EXCLUSIVE Limited Edition)



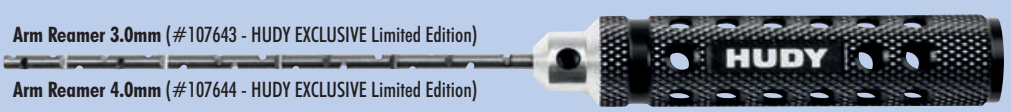
Allen 2.5mm (#112545 - HUDY EXCLUSIVE Limited Edition)



Ball Allen 2.5mm (#132545 - HUDY EXCLUSIVE Limited Edition)



Allen 3.0mm (#113045 - HUDY EXCLUSIVE Limited Edition)



Arm Reamer 3.0mm (#107643 - HUDY EXCLUSIVE Limited Edition)

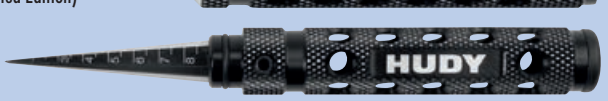
Arm Reamer 4.0mm (#107644 - HUDY EXCLUSIVE Limited Edition)

Socket 5.0mm (#175035 - HUDY EXCLUSIVE Limited Edition)

Socket 5.5mm (#175535 - HUDY EXCLUSIVE Limited Edition)

Phillips Screwdriver 5mm (#165045 - HUDY EXCLUSIVE Limited Edition)

Caster Clip Remover (#107612 - HUDY EXCLUSIVE Limited Edition)



Reamer (#107602 - HUDY EXCLUSIVE Limited Edition)

Wheel Nut Tool 17mm (HUDY #107570)

Wheel Nut & 3/4 Shoe Flywheel Multi Tool (HUDY #182016)

Professional Multi Tool (HUDY #183011)

EQUIPMENT REQUIRED

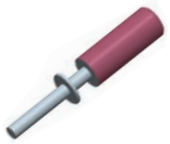
Transmitter & Receiver

Engine (FX G501 #670101)

Manifold & Exhaust (FX #679550)

Starter Box & Battery Pack (HUDY #104500)

Glow Plug Igniter



Steering and Throttle Servos

Double-sided Tape (HUDY #107875)

Lexan™ Paint

Fuel + Fuel Bottle (HUDY #104200)

GT BODY (XRAY #359731)

Battery Charger

Receiver Pack

Wheels & Tires

Bearing Oil (HUDY #106230)

Threadlock

CA glue

EQUIPMENT INCLUDED

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

800cSt (#106381)
HUDY Premium Silicone Oils

50.000cSt (#106551)
HUDY Premium Silicone Oils

300.000cSt (#106631)
HUDY Premium Silicone Oils

(HUDY #106210)
Premium Graphite Grease

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.

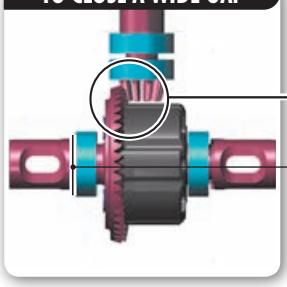
GTX TECH TIPS

TIP FRONT & REAR DIFF GEAR MESH ADJUSTMENT

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

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

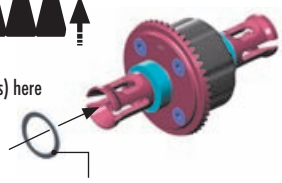
TO CLOSE A WIDE GAP



CLOSE A WIDE GAP

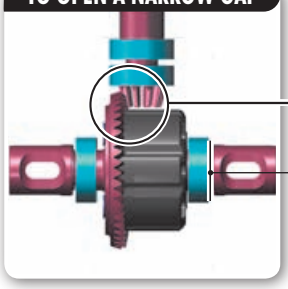
To CLOSE a wide gap: add 1 or 2 shims against diff spur gear

insert shim(s) here



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

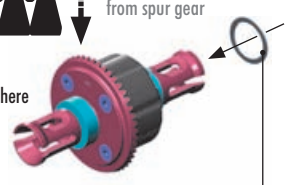
TO OPEN A NARROW GAP



OPEN A NARROW GAP

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

insert shim(s) here



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

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

SUSPENSION & DRIVETRAIN MAINTENANCE

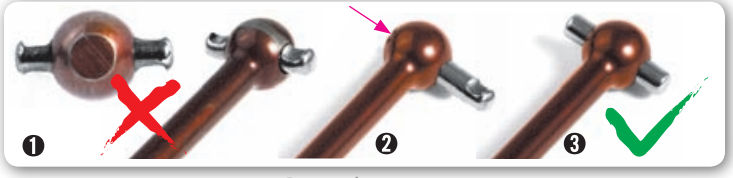
- Check suspension for free movement during building and operation, and especially after running and if you have crashed the car. If the suspension does not move freely, use the appropriate HUDY Arm Reamer to clean and resize the holes of the suspension arms.
- Regularly check the drive shaft pins (both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



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

❷ Press out the worn pins.

❸ Press in new pins and regularly inspect for wear.

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

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

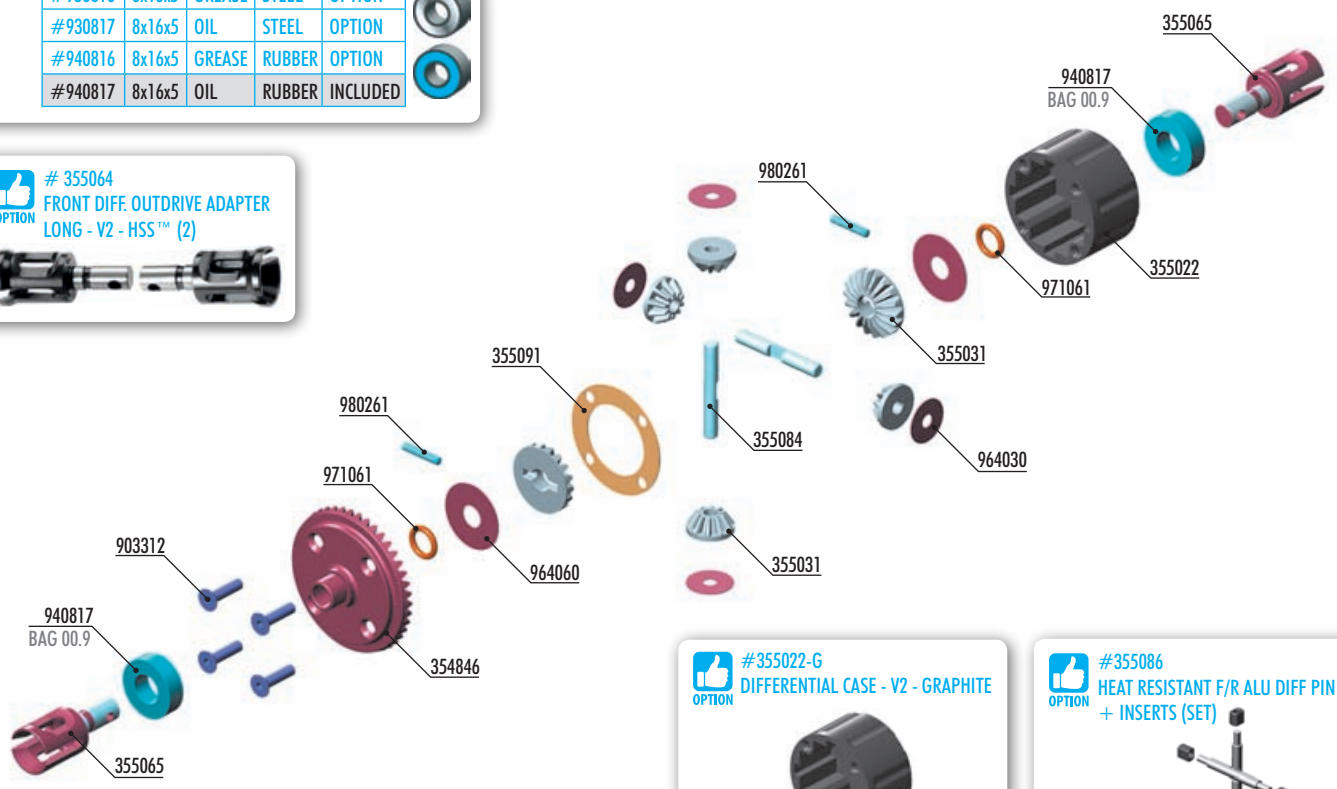
1. DIFFERENTIALS

OPTION

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

OPTION

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



OPTION

#355022-G
DIFFERENTIAL CASE - V2 - GRAPHITE

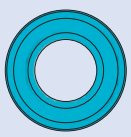
OPTION

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

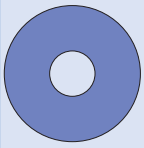
BAG 01

354846	FR/RE DIFF LARGE BEVEL GEAR 46T - FOR 13T PINION GEAR	903312	HEX SCREW SFH M3x12 (10)
355006	DIFFERENTIAL 46T - MATCHED FOR 13T PINION GEAR - SET	940817	BALL-BEARING 8x16x5 RUBBER SEALED - OIL (2)
355022	DIFFERENTIAL CASE - V2	964030	WASHER S 3.5x12x0.2 (10)
355031	STEEL DIFF BEVEL & SATELLITE GEARS - V2 (2+4)	964060	WASHER S 6x18x0.2 (10)
355065	DIFF OUTDRIVE ADAPTER - V2 - HUDY SPRING STEEL™ (2)	971061	SILICONE O-RING 6x1.55 (10)
355084	F/R DIFF PIN (2)	980261	PIN 2.5x11.5 (10)
355091	F/R DIFF GASKET (4)		

Numbers in parentheses ( ) refer to quantities when purchased separately.



940817
BB 8x16x5

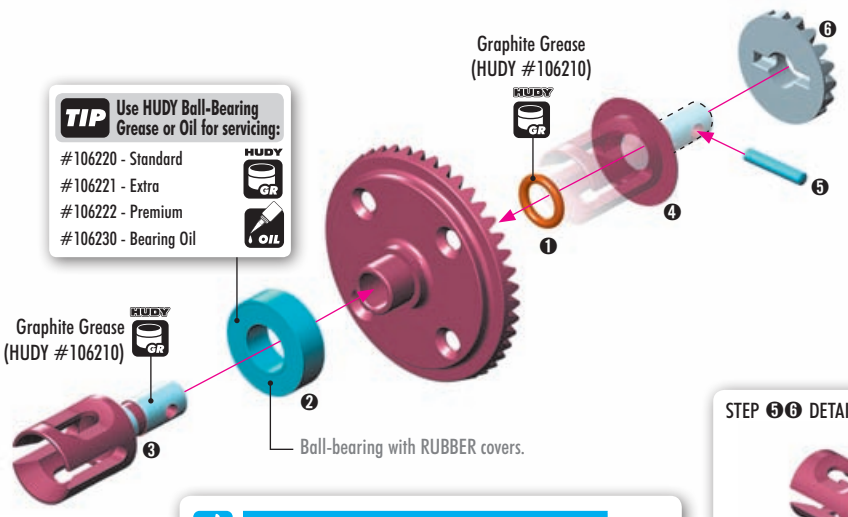


964060
S 6x18x0.2

971061
O 6x1.55

980212
P 2x11.6

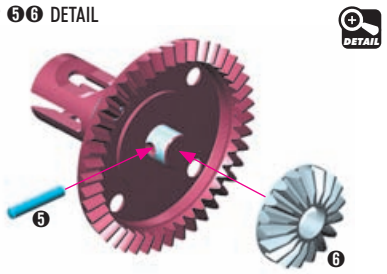
2x F=R



OPTION

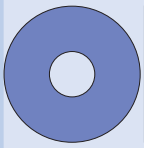
XRAY BALL-BEARING				
#930816	8x16x5	GREASE	STEEL	OPTION
#930817	8x16x5	OIL	STEEL	OPTION
#940816	8x16x5	GREASE	RUBBER	OPTION
#940817	8x16x5	OIL	RUBBER	INCLUDED

STEP 5 6 DETAIL

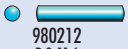


SET-UP BOOK
DIFFERENTIAL GEARS

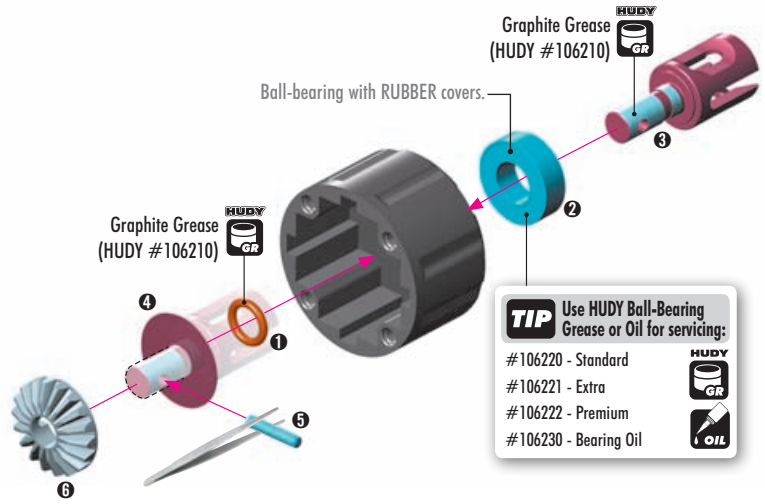

940817
BB 8x16x5


964060
S 6x18x0.2


971061
O 6x1.55

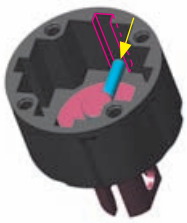

980212
P 2x11.6

2x F=R



TIP Use HUDY Ball-Bearing Grease or Oil for servicing:
#106220 - Standard
#106221 - Extra
#106222 - Premium
#106230 - Bearing Oil

STEP 5 DETAIL

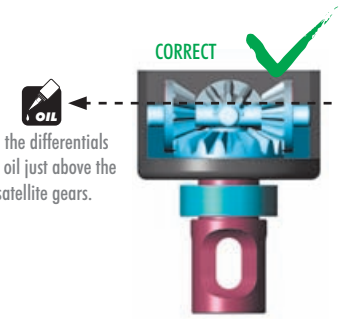



903312
SFH M3x12


964030
S 3.5x12x0.2

VERY IMPORTANT!

Use the following silicone oils included in the kit for initial settings:
FRONT diff: 300.000cSt / REAR diff: 50.000cSt



Fill the differentials with oil just above the satellite gears.

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:

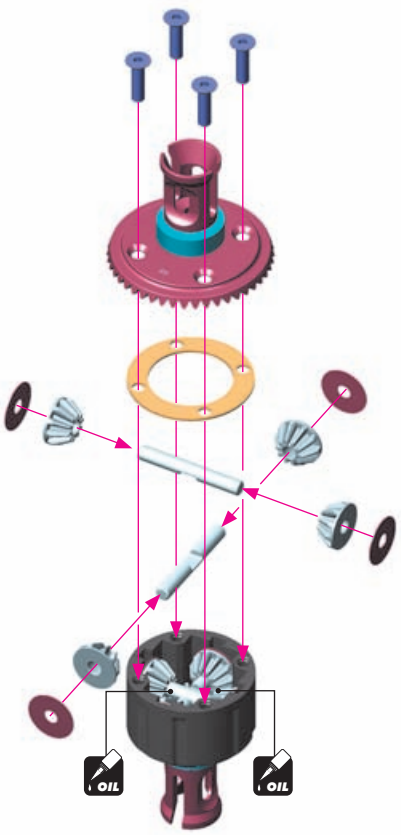
#107865 HUDY Ultimate Digital Pocket Scale 300g±0.01g

1. Put the diff (without oil) on the scale and check the weight:
- FRONT DIFF approx. 39.10g
- REAR DIFF approx. 39.10g

2. Slowly pour oil into the diff and watch the weight. The approximate weight of the diff+oil is REAR DIFF approx. 41.10g and FRONT DIFF approx. 41.10g

OIL

REAR DIFF	39.10g +	2.0g	= 41.10g
FRONT DIFF	39.10g +	2.0g	= 41.10g



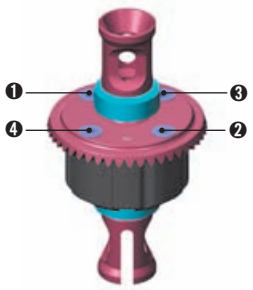
Front diff:
Silicone oil 300.000cSt
Fill just above the satellite gears.

Rear diff:
Silicone oil 50.000cSt
Fill just above the satellite gears.

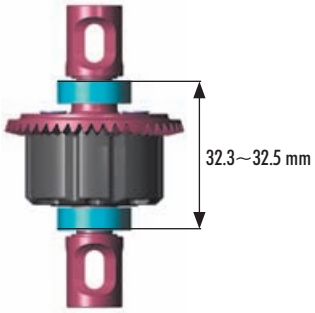
SET-UP BOOK
DIFFERENTIAL OIL

Tighten the screws equally.

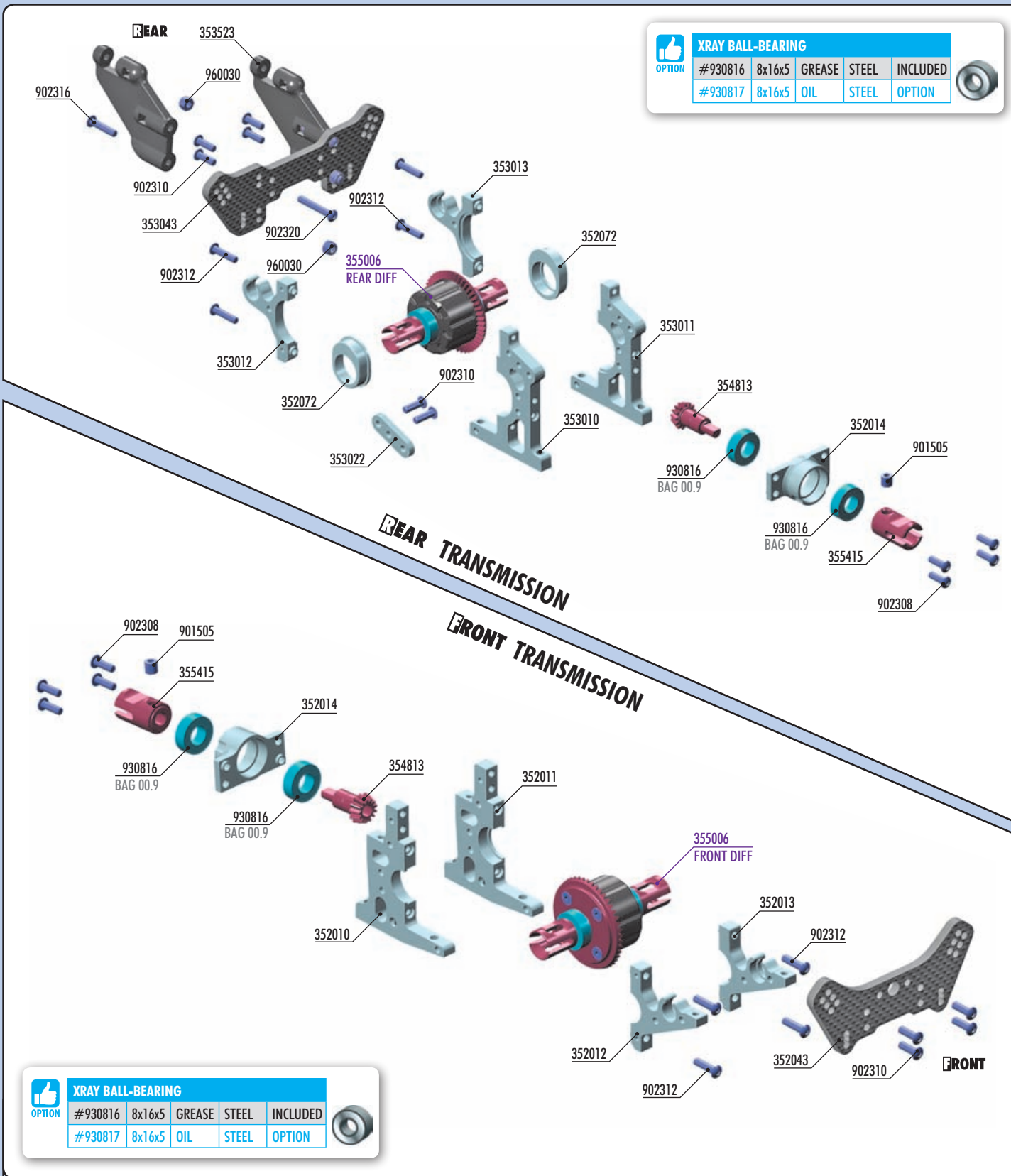
Finish tightening in this order.



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



2. FRONT & REAR TRANSMISSION



OPTION

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

OPTION

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

BAG 02

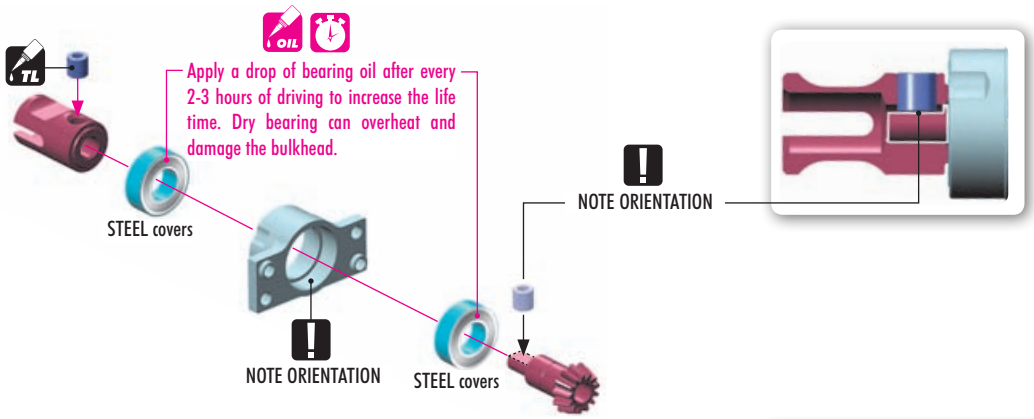
352010	ALU FRONT BULKHEAD - RIGHT - SWISS 7075 T6
352011	ALU FRONT BULKHEAD - LEFT - SWISS 7075 T6
352012	ALU FRONT ANTI-ROLL BAR BULKHEAD - RIGHT - SWISS 7075 T6
352013	ALU FRONT ANTI-ROLL BAR BULKHEAD - LEFT - SWISS 7075 T6
352014	GT ALU ADAPTER FOR CENTER JOINT - SWISS 7075 T6
352043	GRAPHITE FRONT SHOCK TOWER 4MM
352072	ALU ADJUSTMENT BALL-BEARING HUB - SWISS 7075 T6 (2)
353010	ALU REAR BULKHEAD - RIGHT - SWISS 7075 T6
353011	ALU REAR BULKHEAD - LEFT - SWISS 7075 T6
353012	ALU REAR ANTI-ROLL BAR BULKHEAD - RIGHT - SWISS 7075 T6
353013	ALU REAR ANTI-ROLL BAR BULKHEAD - LEFT - SWISS 7075 T6
353022	ALU REAR BRACE HOLDER - SWISS 7075 T6
353043	GRAPHITE REAR SHOCK TOWER 4MM
353523	GT COMPOSITE REAR HOLDER POST (2)
354813	BEVEL DRIVE PINION GEAR 13T - MATCHED FOR 46T LARGE BEVEL GEAR
355415	CENTRAL DOGBONE SHAFT UNIVERSAL JOINT - HUDY SPRING STEEL™ (2)
901505	HEX SCREW SB M5x5 (10)
902308	HEX SCREW SH M3x8 (10)
902310	HEX SCREW SH M3x10 (10)
902312	HEX SCREW SH M3x12 (10)
902316	HEX SCREW SH M3x16 (10)
902320	HEX SCREW SH M3x20 (10)
930816	BALL-BEARING 8x16x5 STEEL SEALED - GREASE (2)
960030	NUT M3 (10)
355006	DIFFERENTIAL 46T - MATCHED FOR 13T PINION GEAR - SET

Numbers in parentheses ( ) refer to quantities when purchased separately.

930816
BB 8x16x5

901505
SB M5x5

2x FRONT & REAR TRANSMISSION



TIP Use HUDY Ball-Bearing Grease or Oil for servicing:

HUDY

GR OIL

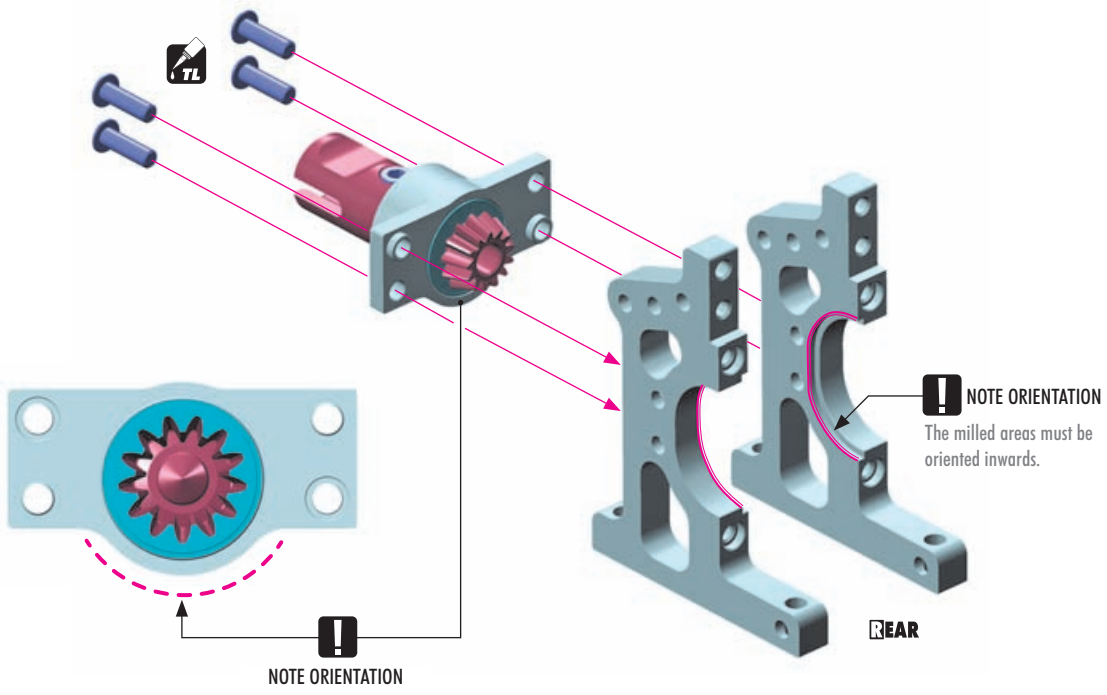
#106220 - Standard
#106221 - Extra
#106222 - Premium
#106230 - Bearing Oil

OPTION

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

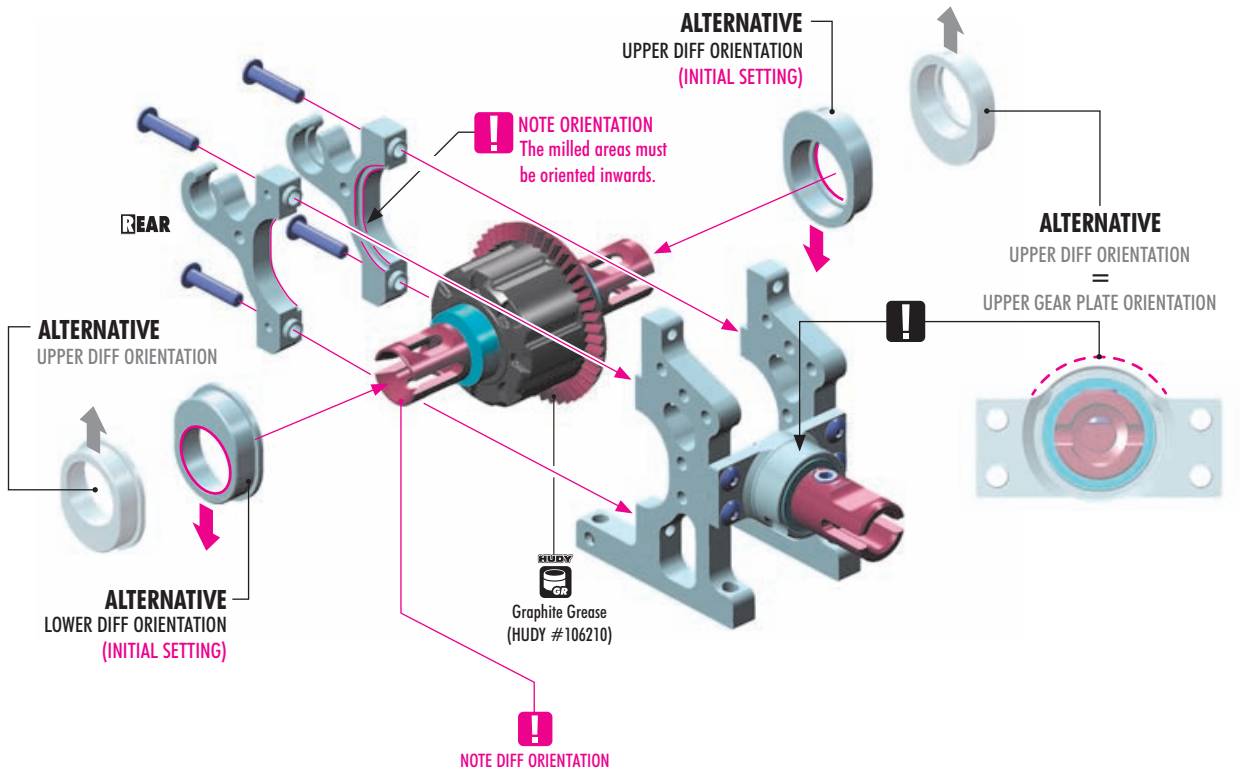
902308
SH M3x8

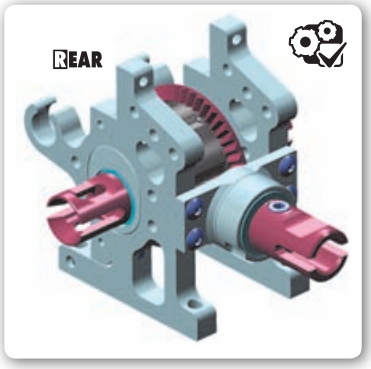
REAR TRANSMISSION

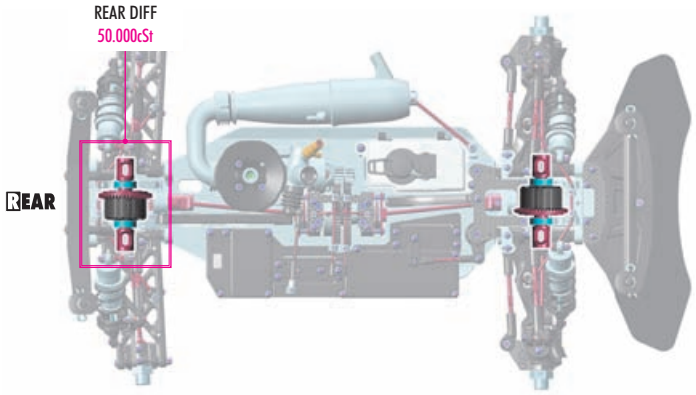


902312
SH M3x12

REAR TRANSMISSION





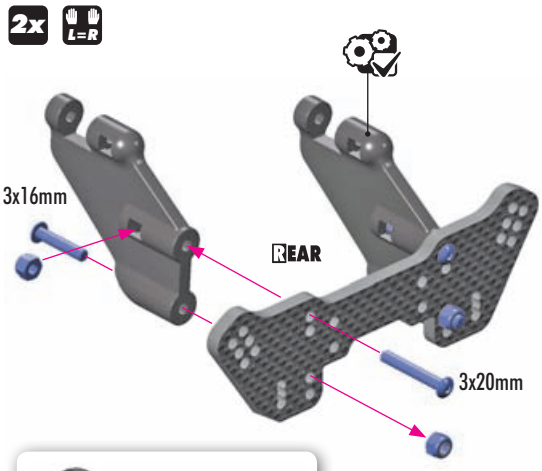


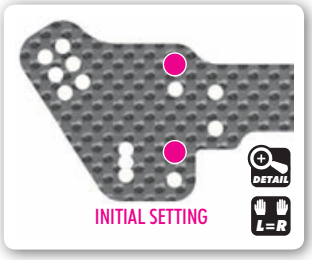
902310
SH M3x10

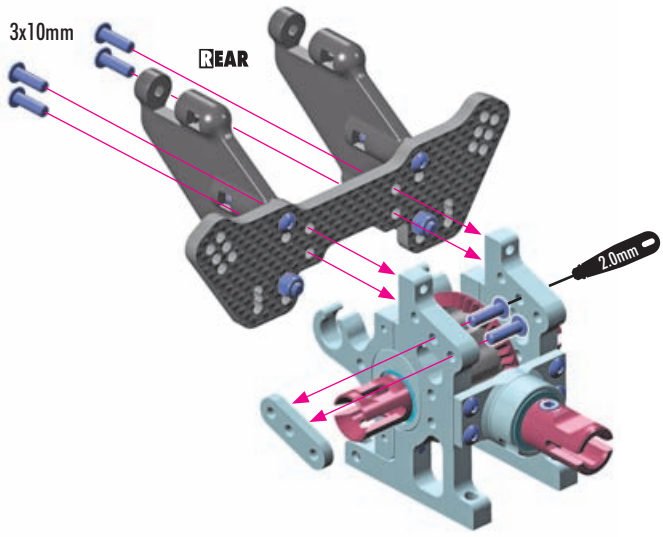
902320
SH M3x20

902316
SH M3x16

960030
N M3

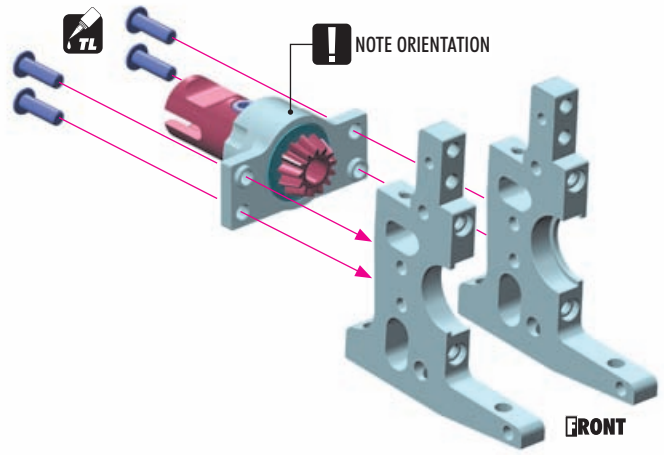






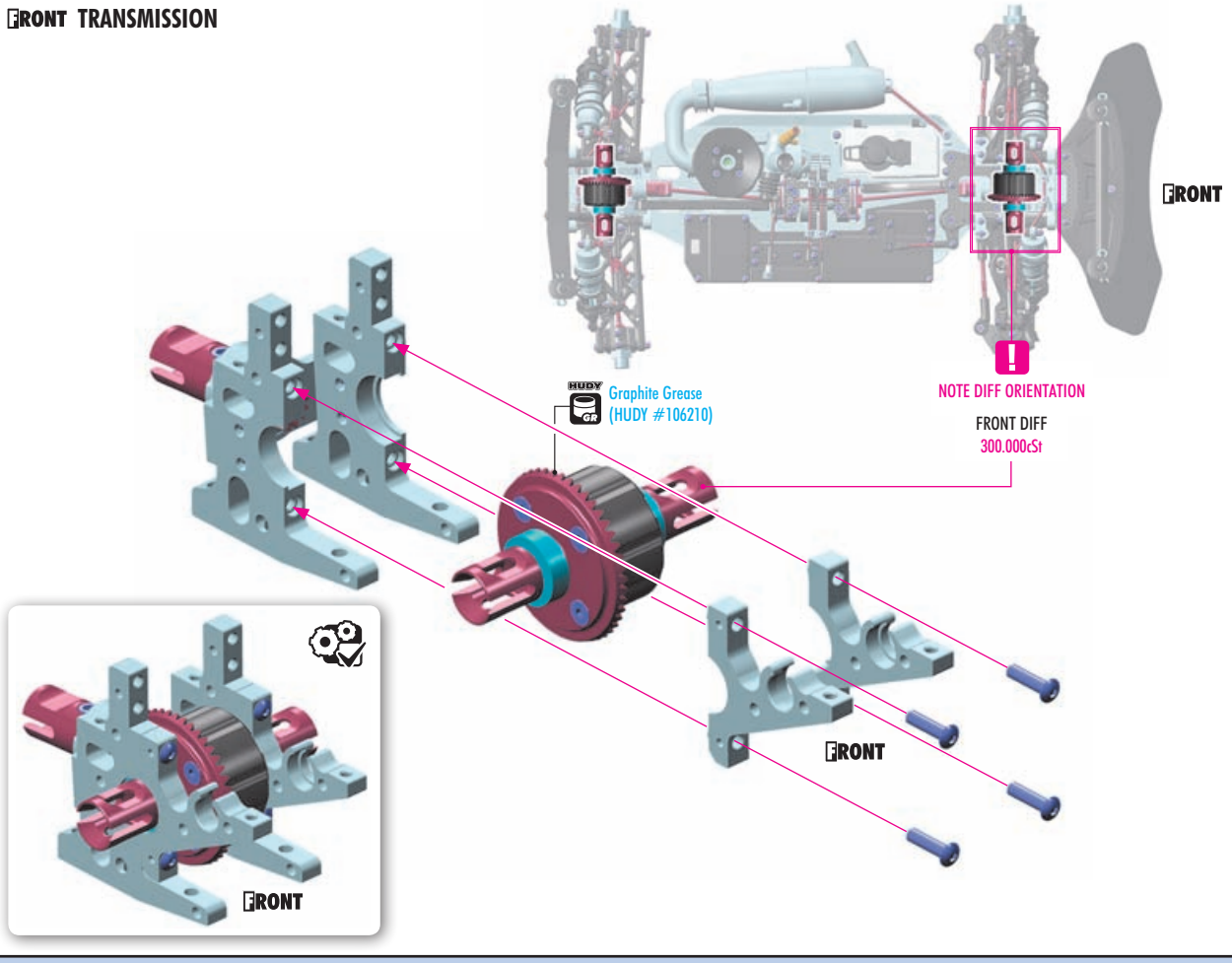
902308
SH M3x8

FRONT TRANSMISSION

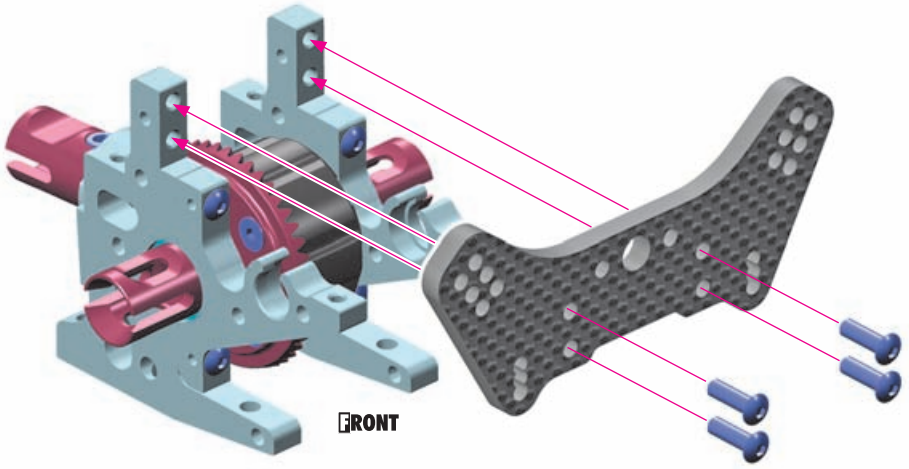


902312
SH M3x12

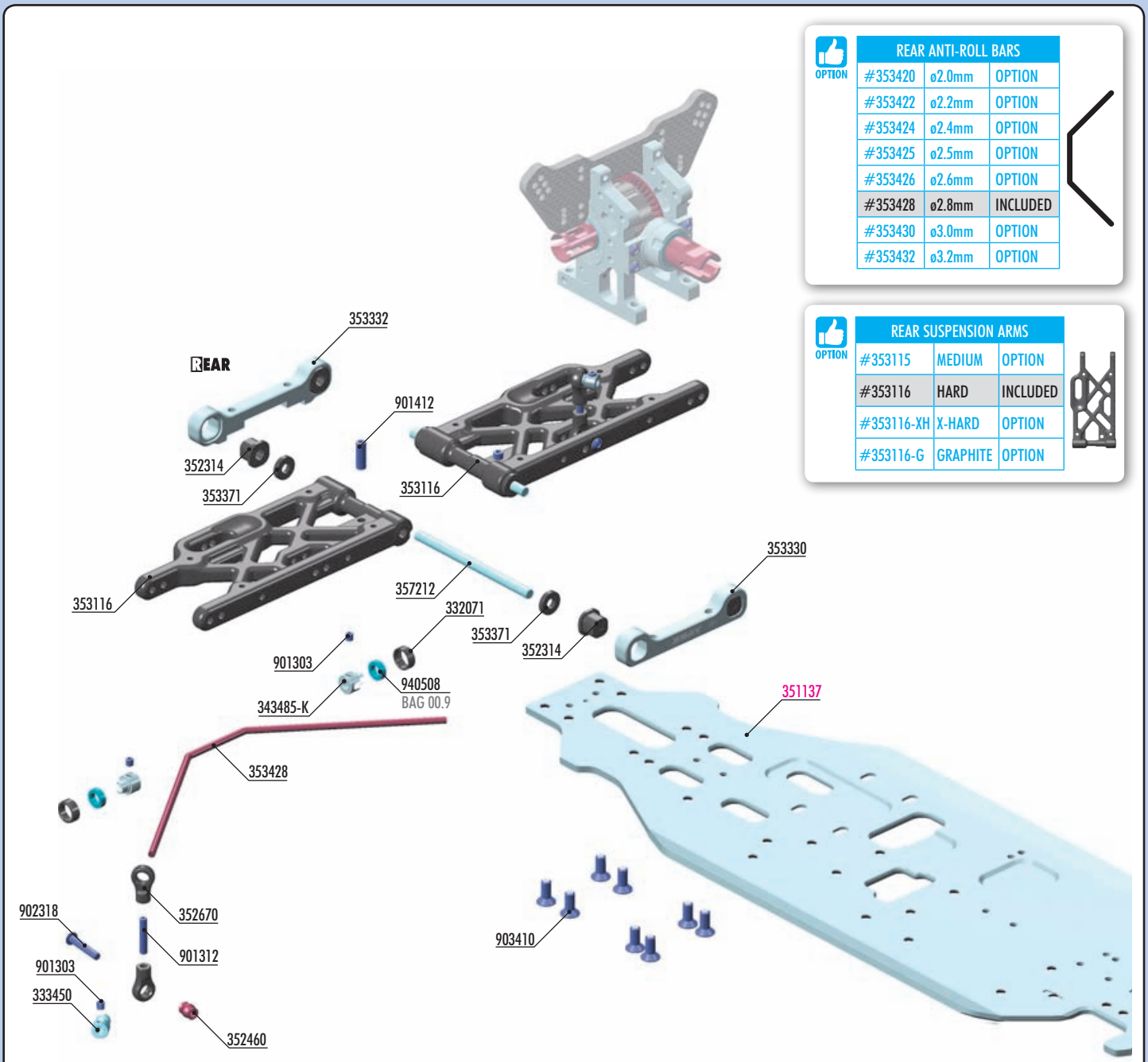
FRONT TRANSMISSION



902310
SH M3x10



3. REAR SUSPENSION



OPTION

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

OPTION

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

OPTION

ALU ANTI-ROLL BAR COLLAR		
#343483-K	ø2.2mm	OPTION
#343484-K	ø2.4mm	OPTION
#343482-K	ø2.6mm	OPTION
#343485-K	ø2.8mm	INCLUDED
#343481-K	ø3.0mm	OPTION

OPTION

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

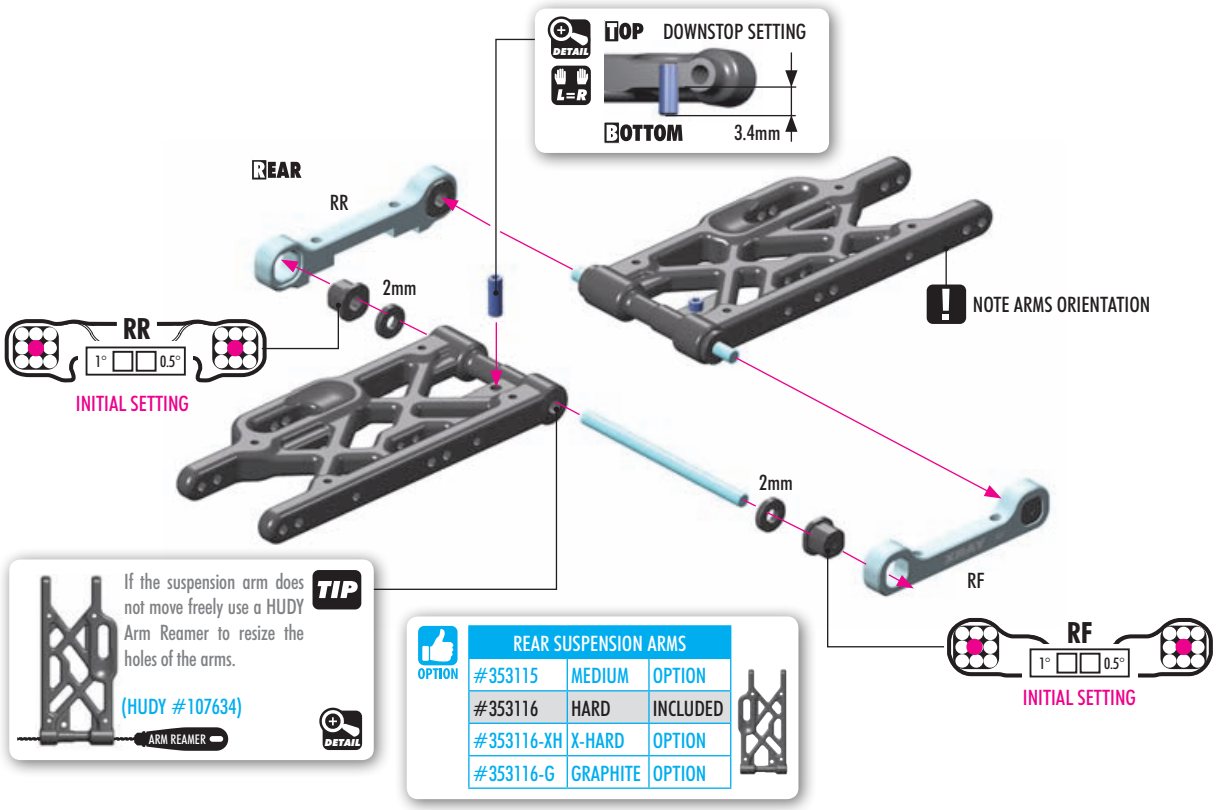
BAG 03

332071	COMPOSITE BALL-BEARING HUB (4)	901303	HEX SCREW SB M3x3 (10)
333450	ANTI-ROLL BAR BALL JOINT 5.8 MM (2)	901312	HEX SCREW SB M3x12 (10)
343485-K	ALU CUTTED ANTI-ROLL BAR COLLAR ø2.8 - BLACK (2)	901412	HEX SCREW SB M4x12 (10)
352314	COMPOSITE ECCENTRIC BUSHINGS - V2 (2)	902318	HEX SCREW SH M3x18 (10)
352460	PIVOT BALL 5.8 (10)	903410	HEX SCREW SFH M4x10 (10)
352670	COMPOSITE BALL JOINT 5.8 (8)	940508	BALL-BEARING 5x8x2.5 RUBBER SEALED - OIL (2)
353116	COMPOSITE REAR LOWER SUSPENSION ARM - HARD		
353330	ALU REAR LOWER SUSP. HOLDER - FRONT - SQUARE ADJ. ROLL-C.	351137	GTX'23 ALU CHASSIS - SWISS 7075 T6 (3MM)
353332	ALU REAR LOWER SUSP. HOLDER - REAR - SQUARE ADJ. ROLL-C.		
353371	SET OF COMPOSITE LOWER ARM SHIMS		
353428	REAR ANTI-ROLL BAR 2.8MM		
357212	LOWER INNER PIVOT PIN F+R (2)		

Numbers in parentheses ( ) refer to quantities when purchased separately.

353371
SHIM 4x10x2

901412
SB M4x12



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

(HUDY #107634)

ARM REAMER

TIP

DETAIL

OPTION

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

ANTI-SQUAT

RR	RF	(°)
		=1°
		=2°
		=0°
		=2°
		=1°
		=3°
		=0°
		=1°
		=-1°

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

ROLL CENTER

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

TRACK-WIDTH

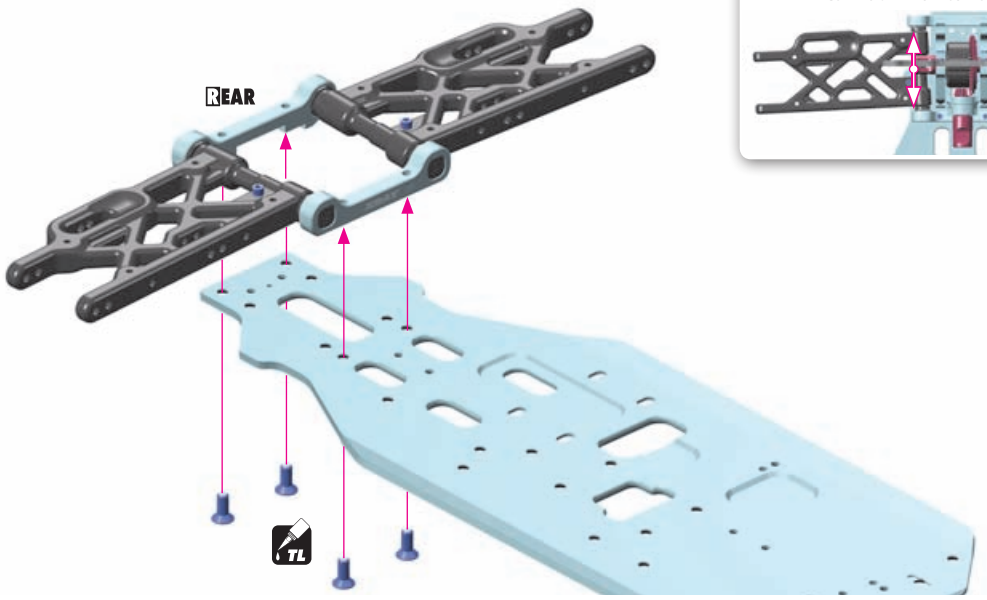
RR	RF	(mm)
		=308
		=306
		=310

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° off set. The 0.5mm, 0.5° represent the half change.

TOE-IN

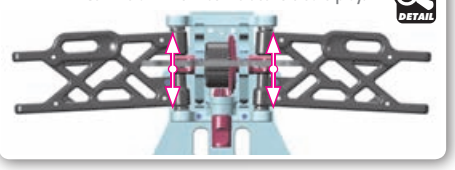
RR	RF	(°)
		=3°
		=4°
		=2°
		=2°
		=3°
		=1°
		=4°
		=5°
		=3°

903410
SFH M4x10



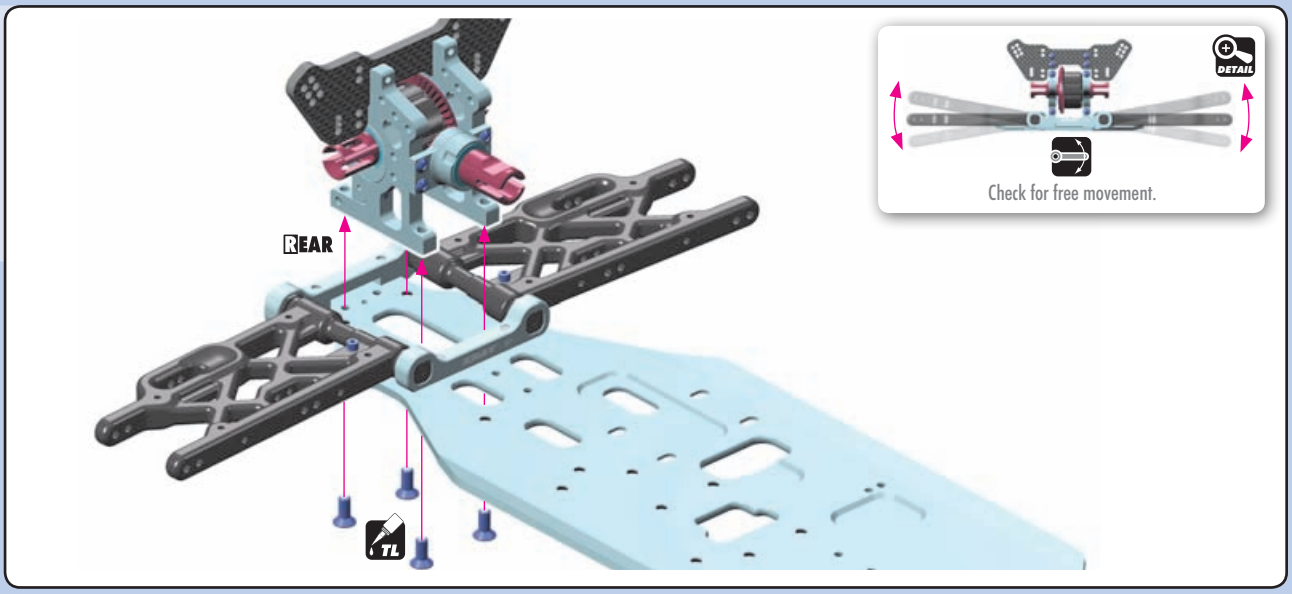
Push the arm from both sides to create play.

DETAIL



3. REAR SUSPENSION

903410
SFH M4x10



901312
SB M3x12

940508
BB 5x8x2.5

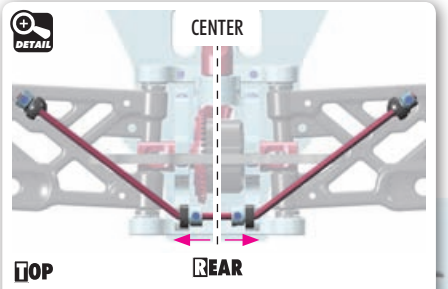
REAR ANTI-ROLL BARS

OPTION

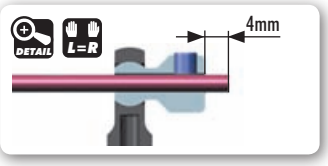
REAR ANTI-ROLL BARS		
#353420	ø2.0mm	OPTION
#353422	ø2.2mm	OPTION
#353424	ø2.4mm	OPTION
#353425	ø2.5mm	OPTION
#353426	ø2.6mm	OPTION
#353428	ø2.8mm	INCLUDED
#353430	ø3.0mm	OPTION
#353432	ø3.2mm	OPTION

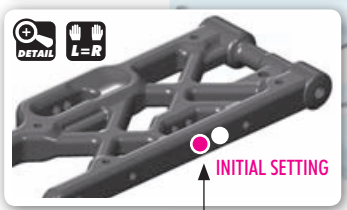
901303
SB M3x3

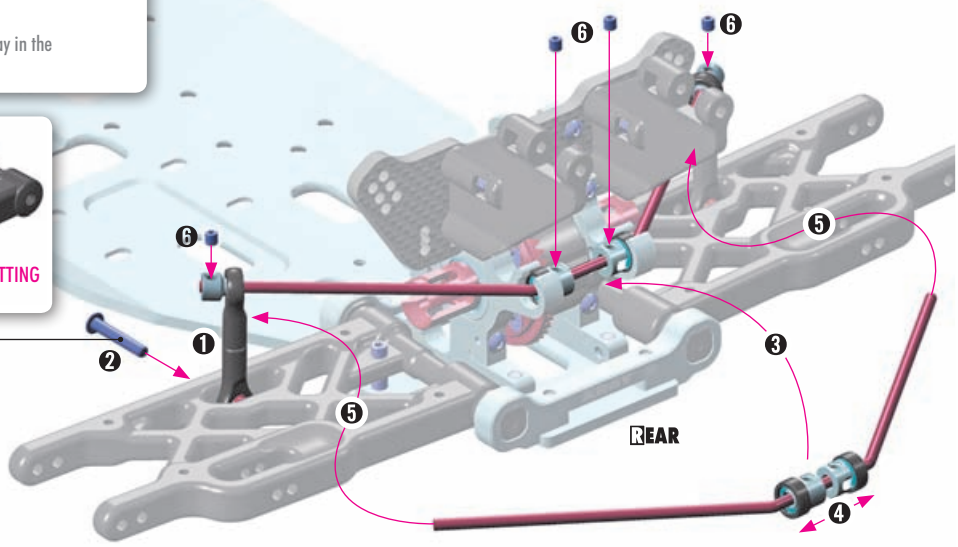
902318
SH M3x18



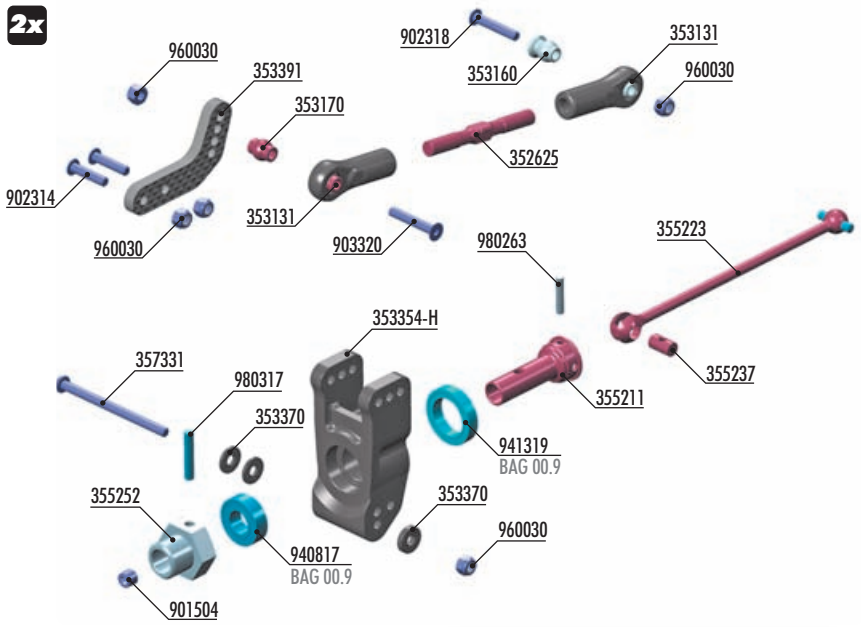
Set the bar into the center, remove the play in the bushings, and tighten the set-screws fully.



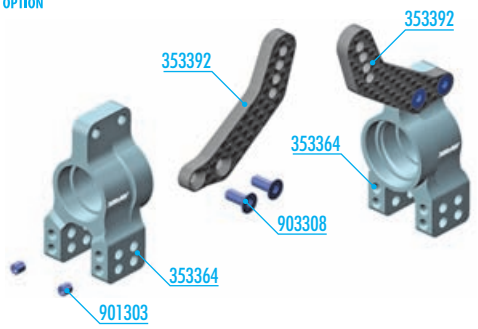




SET-UP BOOK
ANTI-ROLL BAR



OPTION #350909 XRAY GTX ALU REAR UPRIGHTS - SET



OPTION

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

OPTION

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

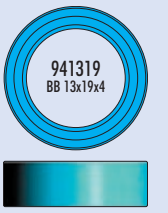
OPTION

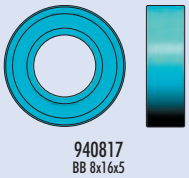
XRAY BALL-BEARING				
#930816	8x16x5	GREASE	STEEL	OPTION
#940816	8x16x5	GREASE	RUBBER	OPTION
#931318	13x19x4	GREASE	STEEL	OPTION
#941318	13x19x4	GREASE	RUBBER	OPTION
#930817	8x16x5	OIL	STEEL	OPTION
#940817	8x16x5	OIL	RUBBER	INCLUDED
#931319	13x19x4	OIL	STEEL	OPTION
#941319	13x19x4	OIL	RUBBER	INCLUDED

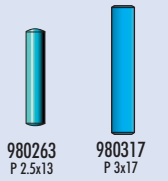
BAG 04

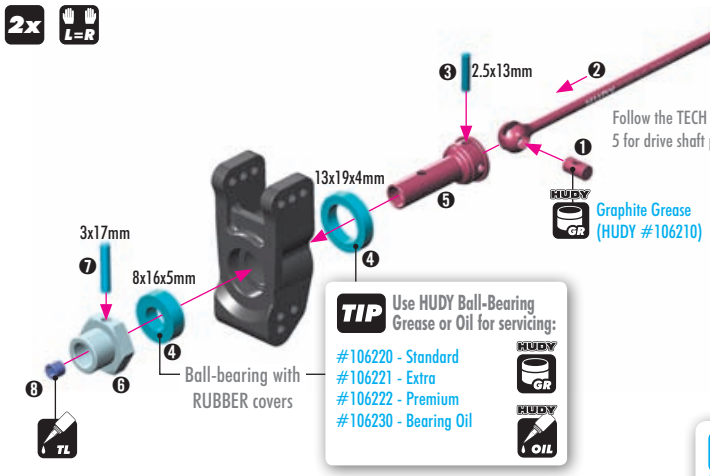
352625	ADJ. TURNBUCKLE M5 L/R 46MM - HUDY SPRING STEEL™ (2)
353131	REAR UPPER INNER CAMBER LINK BALL JOINT - V3 (2)
353160	MOUNTING BALL 6.8 (4)
353170	PIVOT BALL 6.8 (4)
353354-H	COMPOSITE REAR UPRIGHT LB - HARD
353370	SET OF COMPOSITE REAR HUB CARRIER SHIMS
353391	GRAPHITE REAR ROLL CENTER UPRIGHT PLATE 4MM - V2 (2)
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)
903320	HEX SCREW SFH M3x20 (10)
940817	BALL-BEARING 8x16x5 RUBBER SEALED - OIL (2)
941319	BALL-BEARING 13x19x4 RUBBER SEALED - OIL (2)
960030	NUT M3 (10)
980263	PIN 2.5x13 (10)
980317	PIN 3x17 (10)

Numbers in parentheses ( ) refer to quantities when purchased separately.









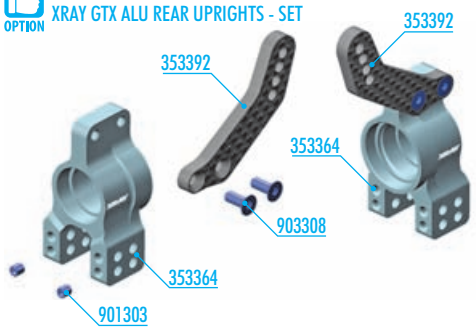
OPTION

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

OPTION

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

OPTION #350909 XRAY GTX ALU REAR UPRIGHTS - SET



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

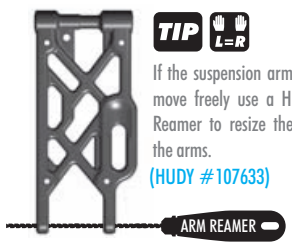
1mm 1mm

2mm

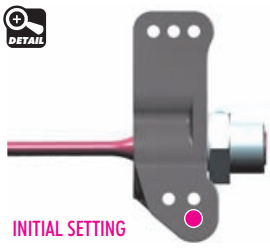
REAR

RIGHT

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



TIP L=R If the suspension arm does not move freely use a HUDY Arm Reamer to resize the holes of the arms. (HUDY #107633)



2x L=R

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

NOTE ORIENTATION

NOTE ORIENTATION

OIL LEFT THREAD

OIL RIGHT THREAD

Use tools to tighten as shown.

DETAIL

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

18mm

LEFT THREAD RIGHT RIGHT THREAD

18mm

RIGHT THREAD LEFT LEFT THREAD

SET-UP BOOK
CAMBER

902314
SH M3x14

902318
SH M3x18

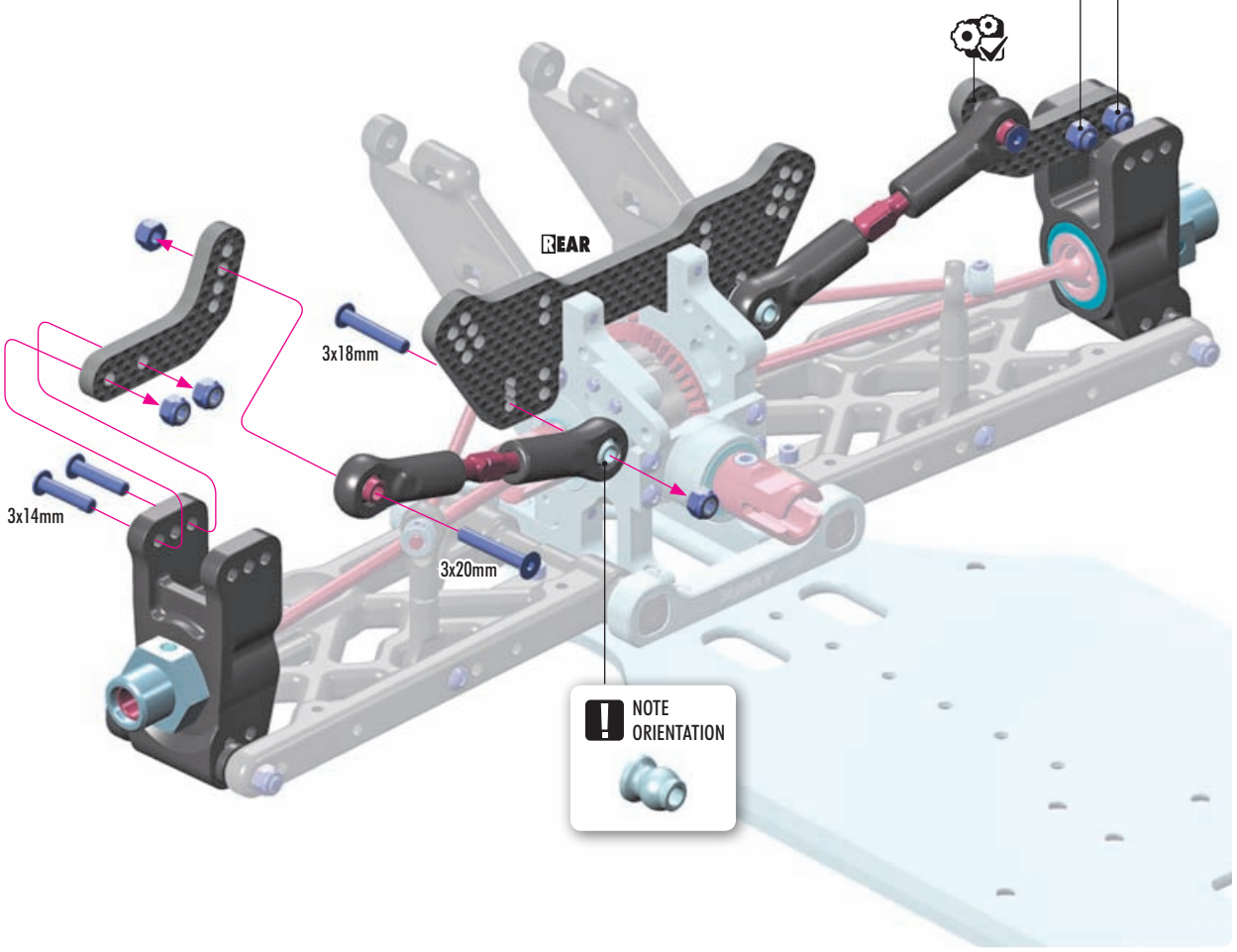
903320
SFH M3x20

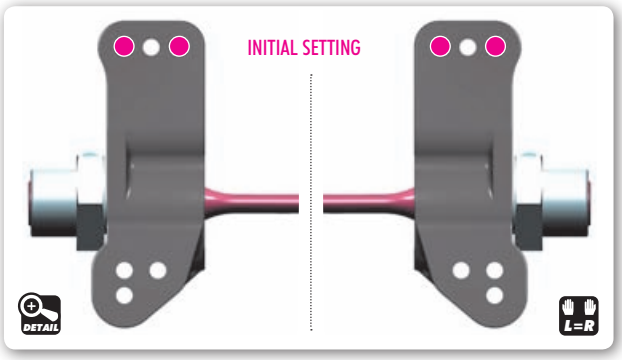
960030
N M3

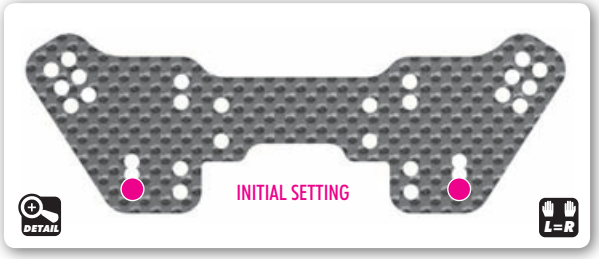
2x L=R

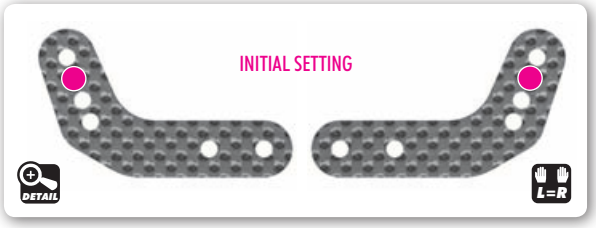
Install the nut with Multi Tool (HUDY #181090).

TIP HUDY



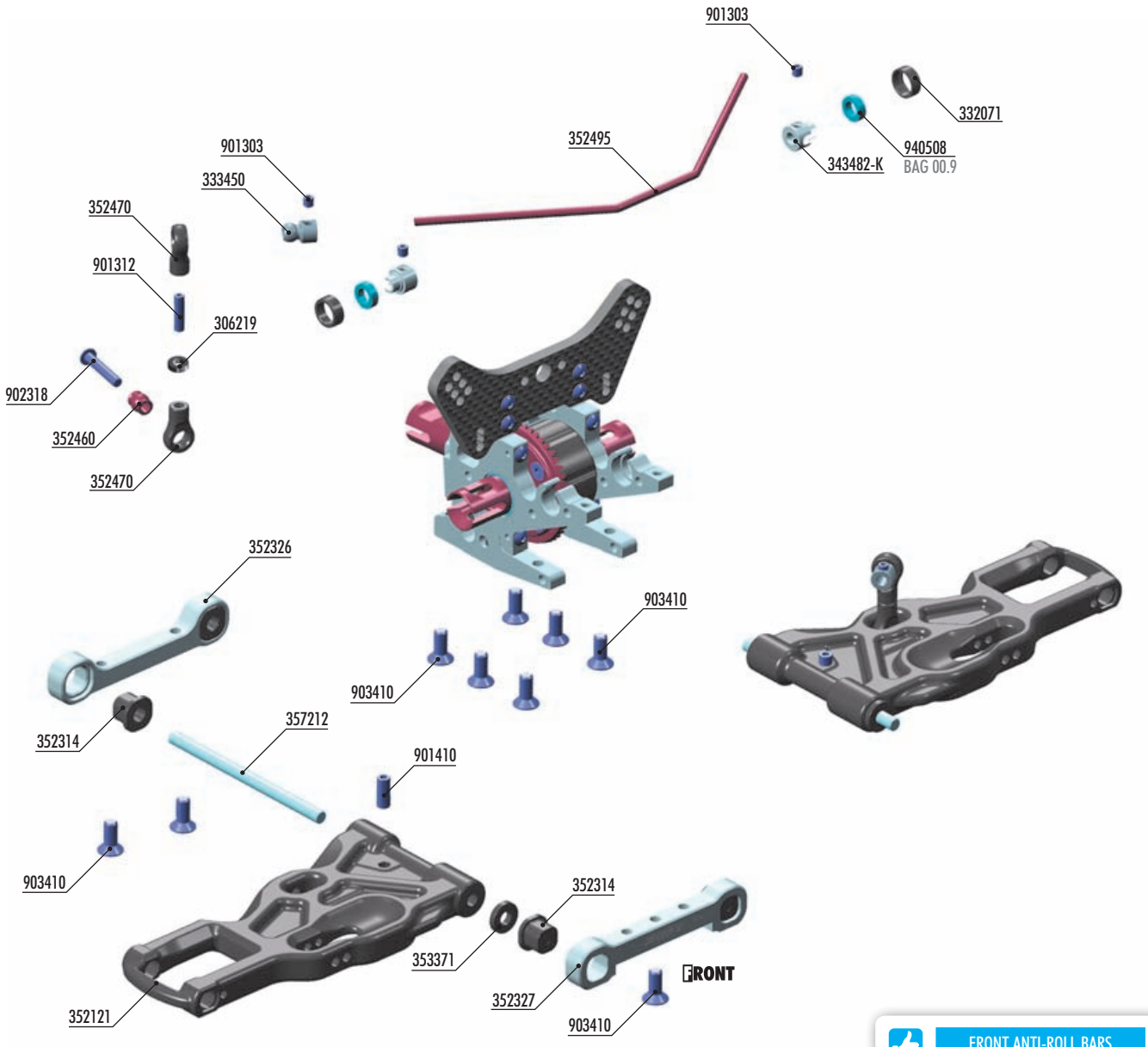






5. FRONT SUSPENSION

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



OPTION	FRONT LOWER SUSP. ARMS		
	#352121-S	SOFT	OPTION
	#352121	MEDIUM	INCLUDED
	#352121-H	HARD	OPTION
	#352121-G	GRAPHITE	OPTION

OPTION	ALU ANTI-ROLL BAR COLLAR		
	#343483-K	ø2.2mm	OPTION
	#343484-K	ø2.4mm	OPTION
	#343482-K	ø2.6mm	INCLUDED
	#343485-K	ø2.8mm	OPTION
	#343481-K	ø3.0mm	OPTION

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

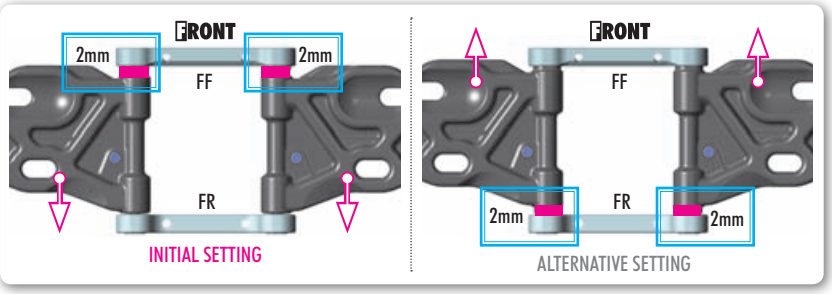
BAG 05

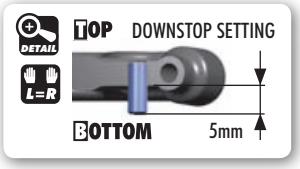
306219	COMPOSITE SET OF SHIMS (4)	353371	SET OF COMPOSITE LOWER ARM SHIMS
332071	COMPOSITE BALL-BEARING HUB (4)	357212	LOWER INNER PIVOT PIN F+R (2)
333450	ANTI-ROLL BAR BALL JOINT 5.8 MM (2)		
343482-K	ALU CUTTED ANTI-ROLL BAR COLLAR ø2.6 - BLACK (2)	901303	HEX SCREW SB M3x3 (10)
352121	C-HUB COMPOSITE FRONT LOWER SUSPENSION ARM - MEDIUM	901312	HEX SCREW SB M3x12 (10)
352314	COMPOSITE SQUARE ADJ. ROLL CENTER BUSHINGS - V2 (2)	901410	HEX SCREW SB M4x10 (10)
352326	ALU FRONT LOWER SUSP. HOLDER - REAR - SQUARE ADJ. ROLL-C.	902318	HEX SCREW SH M3x18 (10)
352327	ALU FRONT LOWER SUSP. HOLDER - FRONT - SQUARE ADJ. ROLL-C.	903410	HEX SCREW SFH M4x10 (10))
352460	PIVOT BALL 5.8 (10)	940508	BALL-BEARING 5x8x2.5 RUBBER SEALED - OIL (2)
352470	BALL JOINT 5.8 (8)		
352495	FRONT ANTI-ROLL BAR 2.5MM		

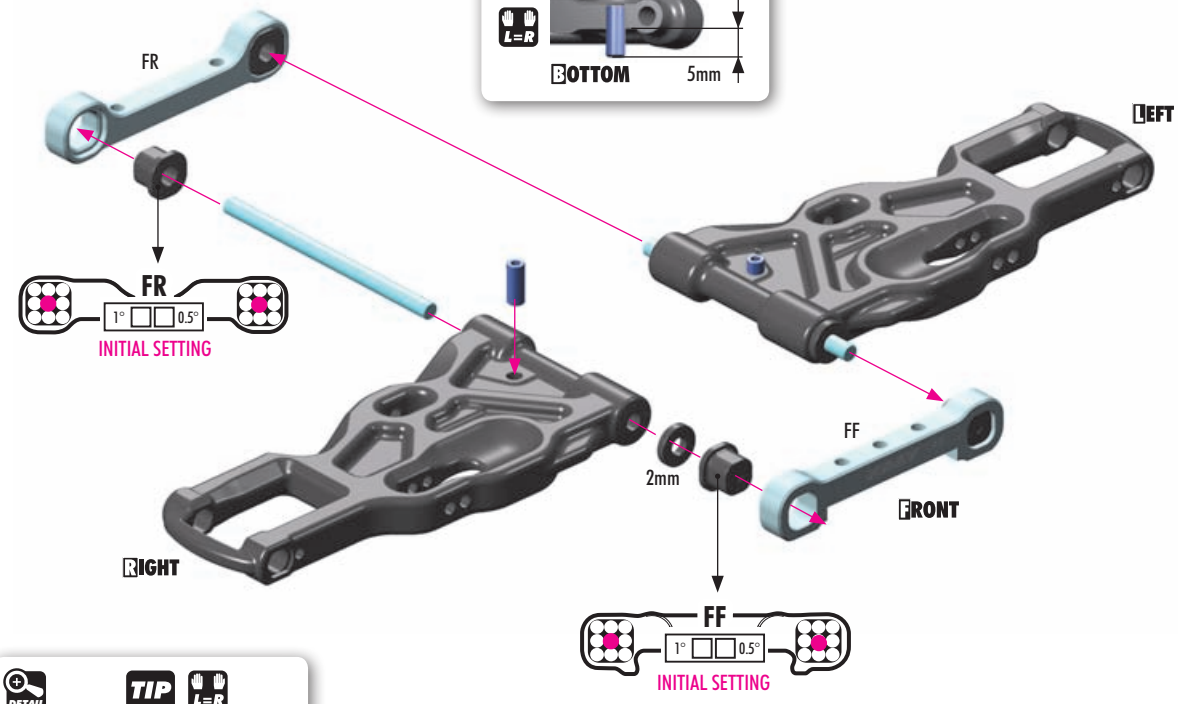
Numbers in parentheses ( ) refer to quantities when purchased separately.

353371
SHIM 4x10x2

901410
SB M4x10

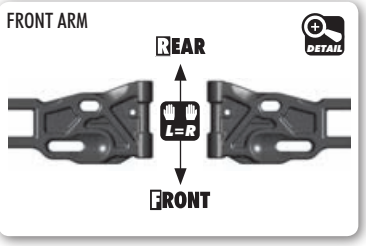


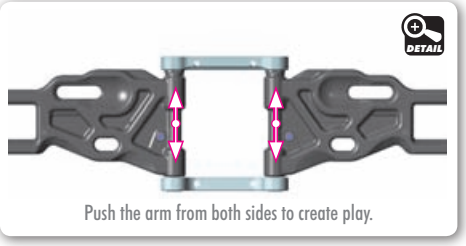




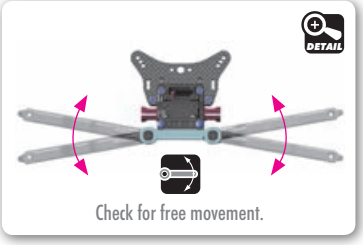
OPTION

FRONT LOWER SUSP. ARMS		
#352121-S	SOFT	OPTION
#352121	MEDIUM	INCLUDED
#352121-H	HARD	OPTION
#352121-G	GRAPHITE	OPTION





Push the arm from both sides to create play.



Check for free movement.

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

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

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

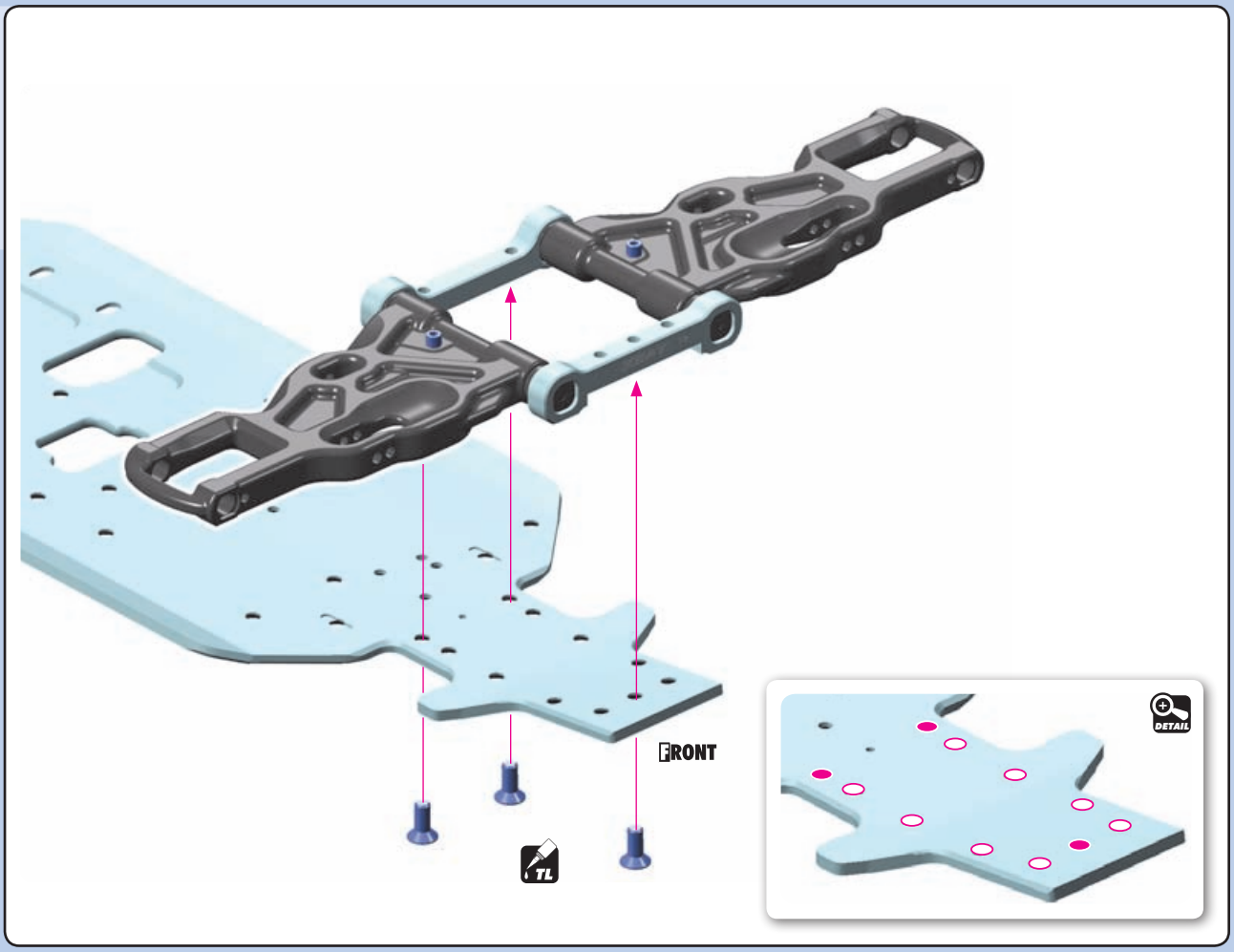
ROLL CENTER		
FF	FR	(mm)
		=1
		=0
		=-1

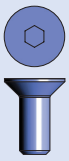
The tables below describe the amounts of kick-up, front track-width change depending on the combinations of eccentric bushings used with 0 and 1mm, 1° offset. The 0.5mm, 0.5° represents the half change.

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

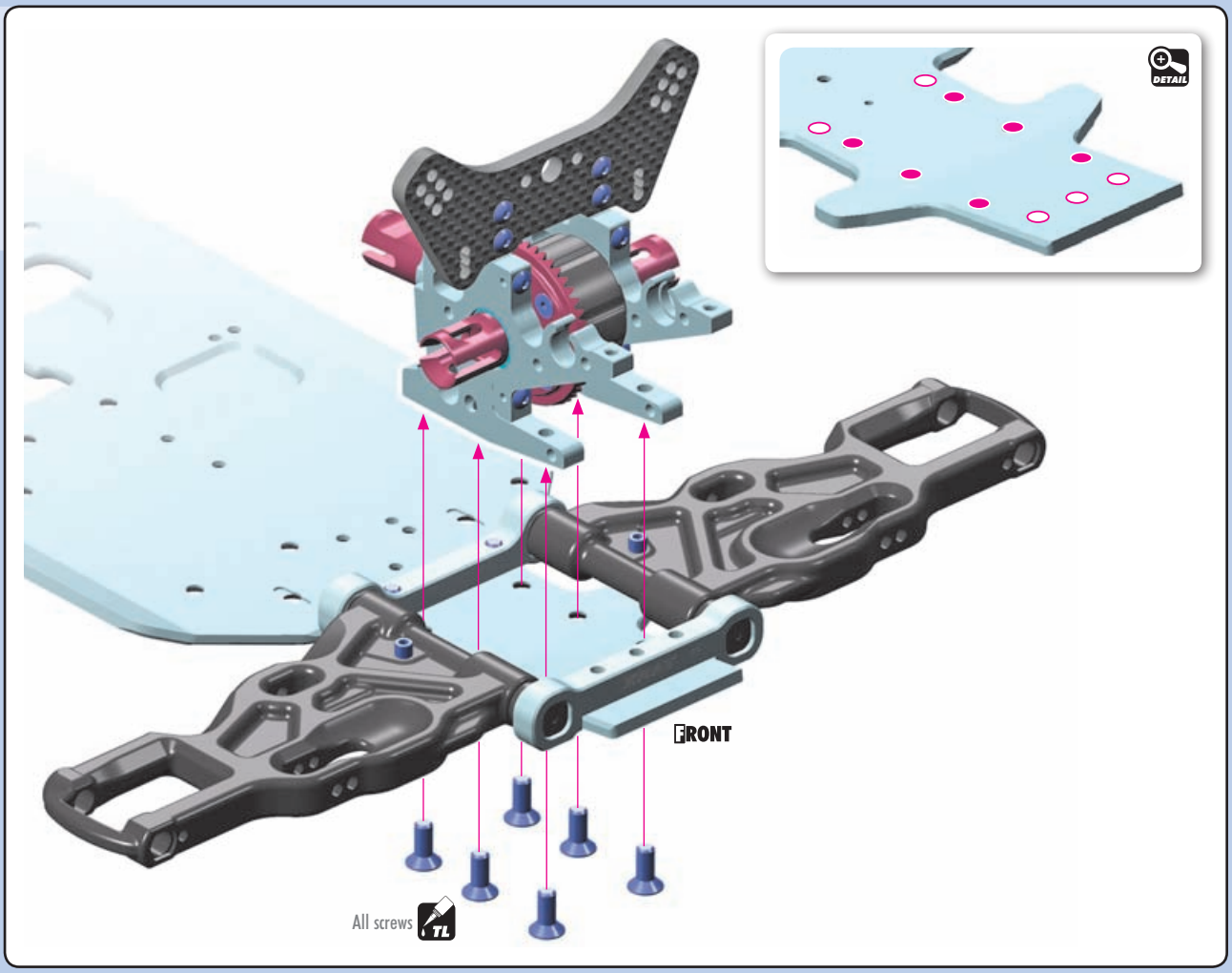
5. FRONT SUSPENSION

903410
SFH M4x10





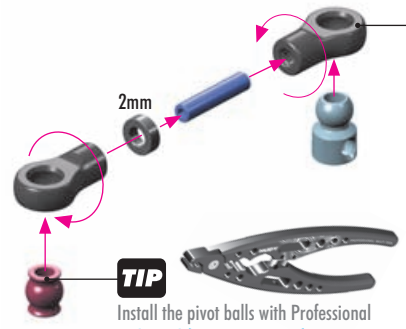
903410
SFH M4x10



306219
SHIM 3x6x2

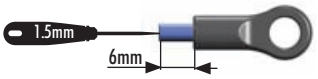
901312
SB M3x12

2x L=R



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

DETAIL



DETAIL L=R

940508
BB 5x8x2.5

FRONT ANTI-ROLL BARS

BEARING OIL (HUDY #106230) OIL

Cut away excessive material.

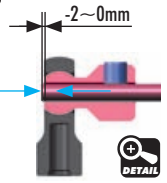
OPTION

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

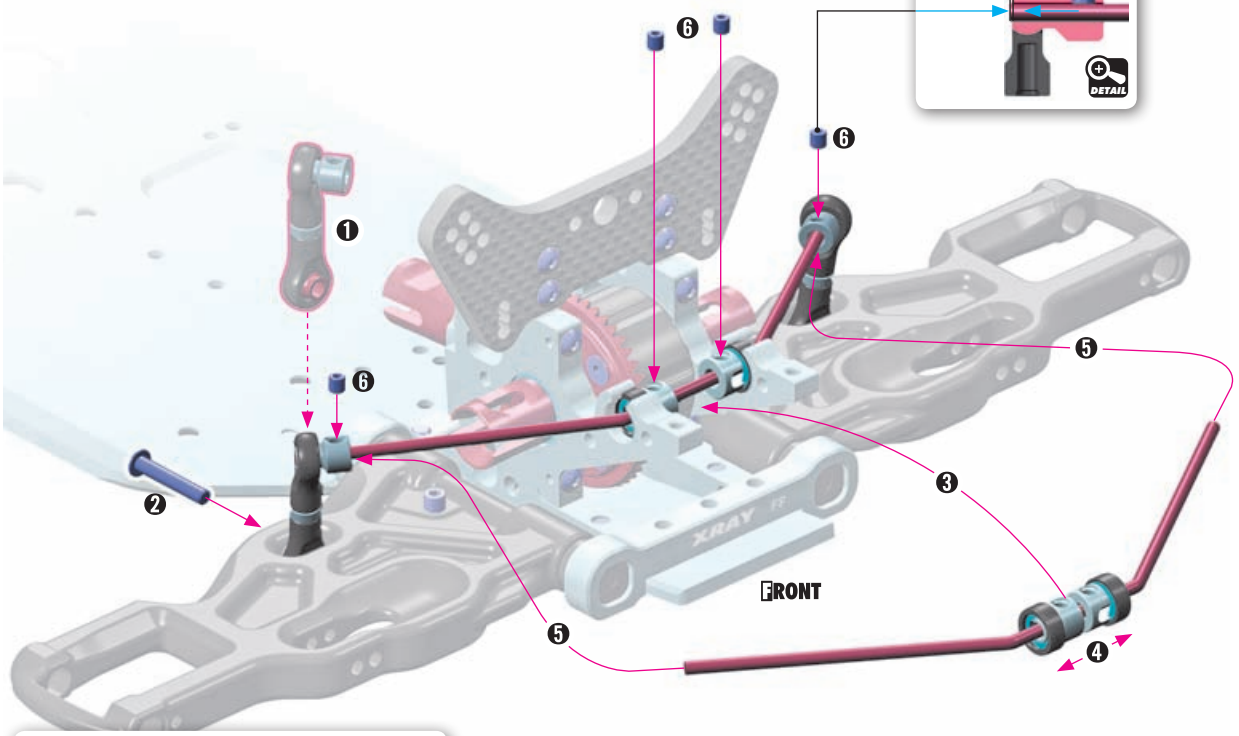
901303
SB M3x3

902318
SH M3x18

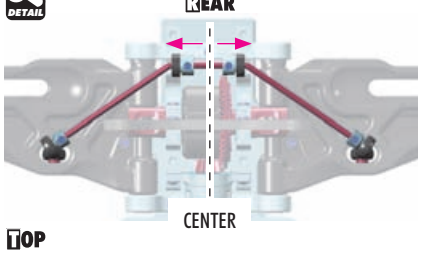
L=R STEP ❹ DETAIL



DETAIL



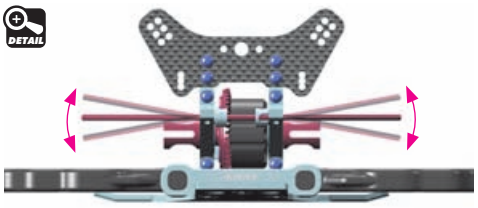
DETAIL



TOP

Set the bar into the center, remove the play in the bushings, and tighten the set-screws fully.

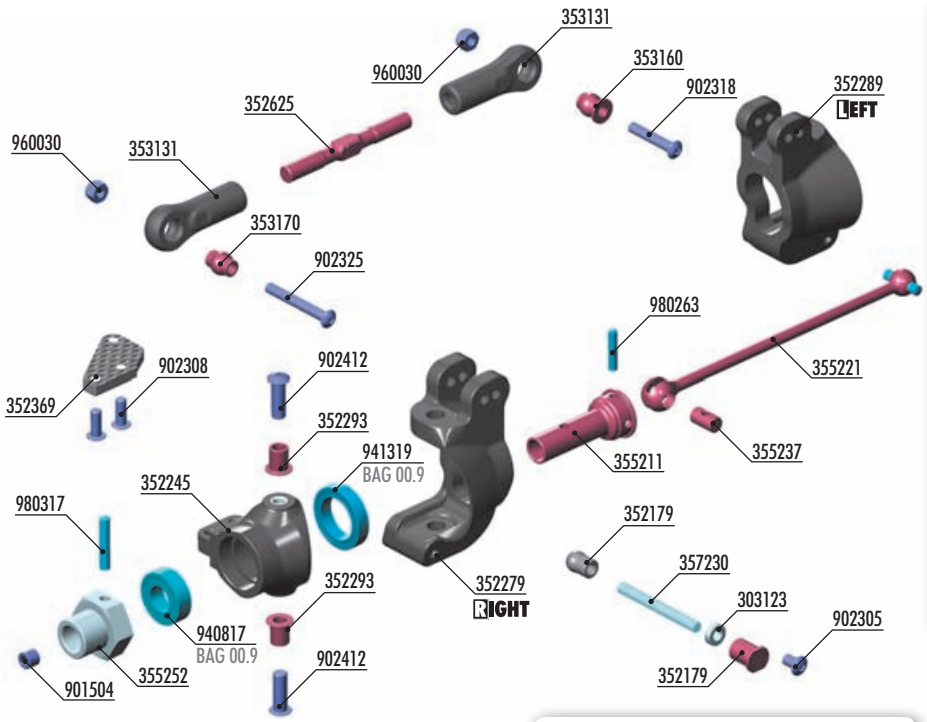
DETAIL



Step ❹ check for free movement.

SET-UP BOOK
ANTI-ROLL BAR

6. FRONT SUSPENSION



OPTION	STEERING BLOCK		
	#352245	COMPOSITE	INCLUDED
	#352254	ALU*	OPTION

OPTION	CASTER BLOCK - RIGHT			
	#352273	18° RIGHT	ALU*	OPTION
	#352277	16° RIGHT	COMP.	OPTION
	#352278	6° RIGHT	ALU*	OPTION
	#352279	6° RIGHT	COMP.	INCLUDED

OPTION	CASTER BLOCK - LEFT			
	#352283	18° LEFT	ALU*	OPTION
	#352287	16° LEFT	COMP.	OPTION
	#352288	6° LEFT	ALU*	OPTION
	#352289	6° LEFT	COMP.	INCLUDED

*To use alu C-hub and alu steering blocks you need to use also these additional parts:

*#352655 - Ball Stud 6.8mm with Backstop L=6mm - M4 (2)
*#352292 - Steel Steering Block Pivot Pin (2)
*#352294 - Composite Bushing for Alu Caster Block (2)

OPTION #352180 STEEL BALL MOUNT (2)

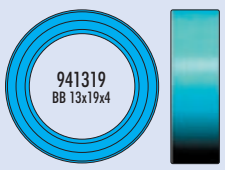
OPTION	OFFSET WHEEL AXLES		
	#355250	0mm	OPTION
	#355251	+1mm	OPTION
	#355252	+2mm	INCLUDED

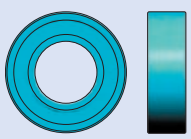
OPTION	ECCENTRIC BUSHINGS			
	#352170	0° - STEEL		OPTION
	#352174	1° - STEEL		OPTION
	#352175	2° - STEEL		OPTION
	#352179	0° - COMP.		INCLUDED

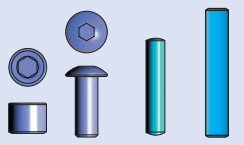
BAG 06

303123	ALU SHIM 3x6x2.0MM (10)
352179	COMPOSITE BUSHING & BALL MOUNT SET (2+2)
352245	C-HUB STEERING BLOCK LB WITH ALU INSERTS
352279	COMPOSITE C-HUB 6° RIGHT
352289	COMPOSITE C-HUB 6° LEFT
352293	STEEL C-HUB BUSHING (2)
352369	GRAPHITE STEERING PLATE (2)
352625	ADJ. TURNBUCKLE M5 L/R 46 MM - HUDY SPRING STEEL™ (2)
353131	REAR UPPER INNER CAMBER LINK BALL JOINT - V3 (2)
353160	MOUNTING BALL 6.8 (4)
353170	PIVOT BALL 6.8 (4)
355211	CVD DRIVE AXLE - HUDY SPRING STEEL™
355221	CVD UNIVERSAL DRIVE SHAFT 94MM - HUDY SPRING STEEL™
355237	CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
355252	ALU WHEEL AXLE OFFSET "+2MM" - HARD COATED (2)
357230	FRONT LOWER OUTER PIVOT PIN (2)
901504	HEX SCREW SB M5x4 (10)
902305	HEX SCREW SH M3x5 (10)
902308	HEX SCREW SH M3x8 (10)
902318	HEX SCREW SH M3x18 (10)
902325	HEX SCREW SH M3x25 (10)
902412	HEX SCREW SH M4x12 (10)
940817	BALL-BEARING 8x16x5 RUBBER SEALED - OIL (2)
941319	BALL-BEARING 13x19x4 RUBBER SEALED - OIL (2)
960030	NUT M3 (10)
980263	PIN 2.5x13 (10)
980317	PIN 3x17 (10)

Numbers in parentheses ( ) refer to quantities when purchased separately.





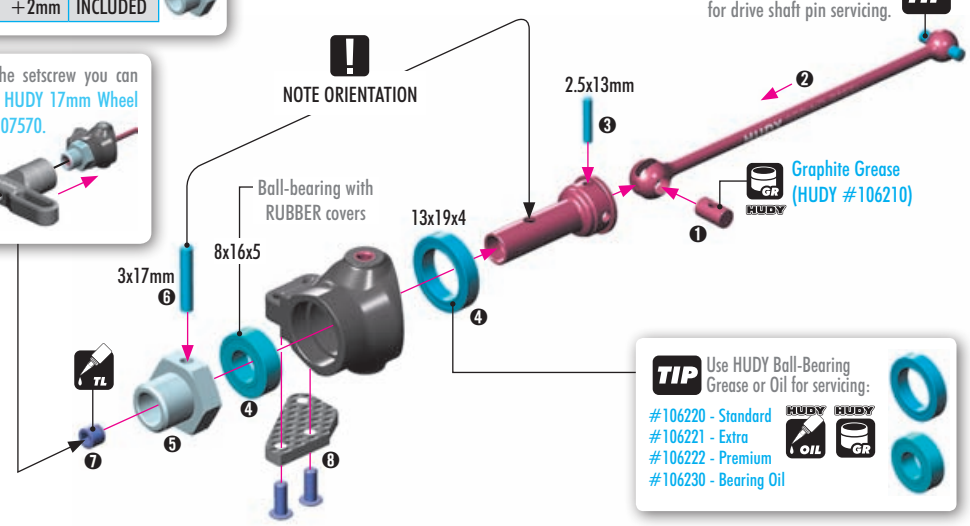


OPTION

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

2x

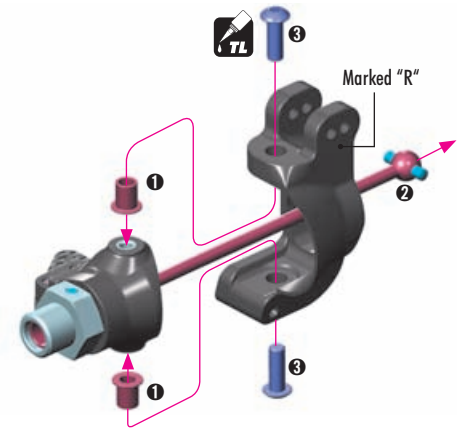
TIP To tighten the setscrew you can also use the HUDY 17mm Wheel Nut Tool #107570.



TIP Use HUDY Ball-Bearing Grease or Oil for servicing:
#106220 - Standard
#106221 - Extra
#106222 - Premium
#106230 - Bearing Oil

902412
SH M4x12

2x L=R

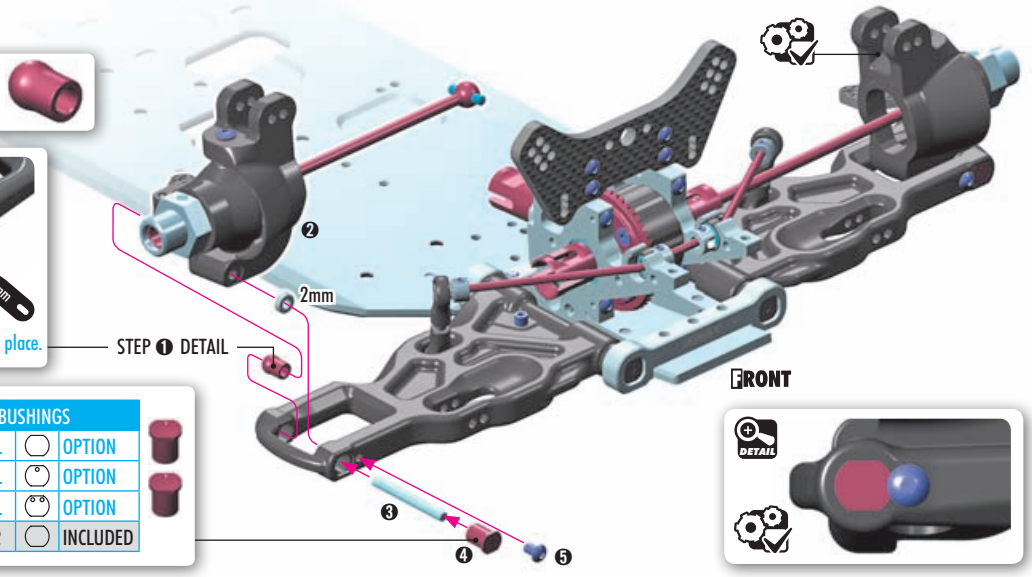


303123
SHIM 3x6x2

902305
SH M3x5

2x L=R

OPTION #352180
STEEL BALL MOUNT (2)



DETAIL

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

OPTION

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

DETAIL

2x L=R

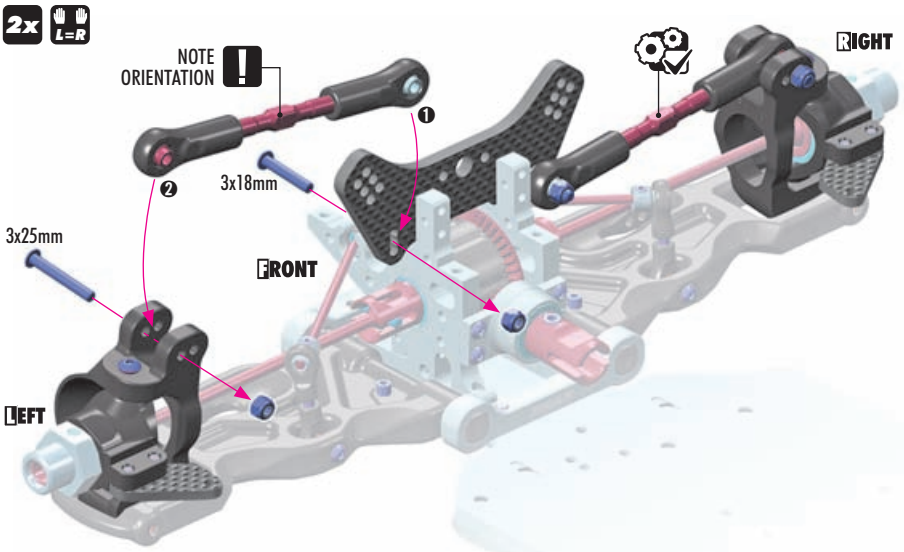
TIP Install the pivot balls with Professional Multi Tool (HUDY #183011).

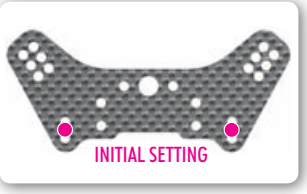
960030
N M3

902318
SH M3x18

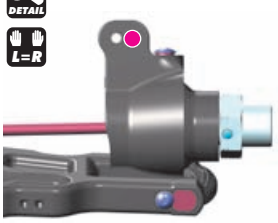
902325
SH M3x25

2x L=R



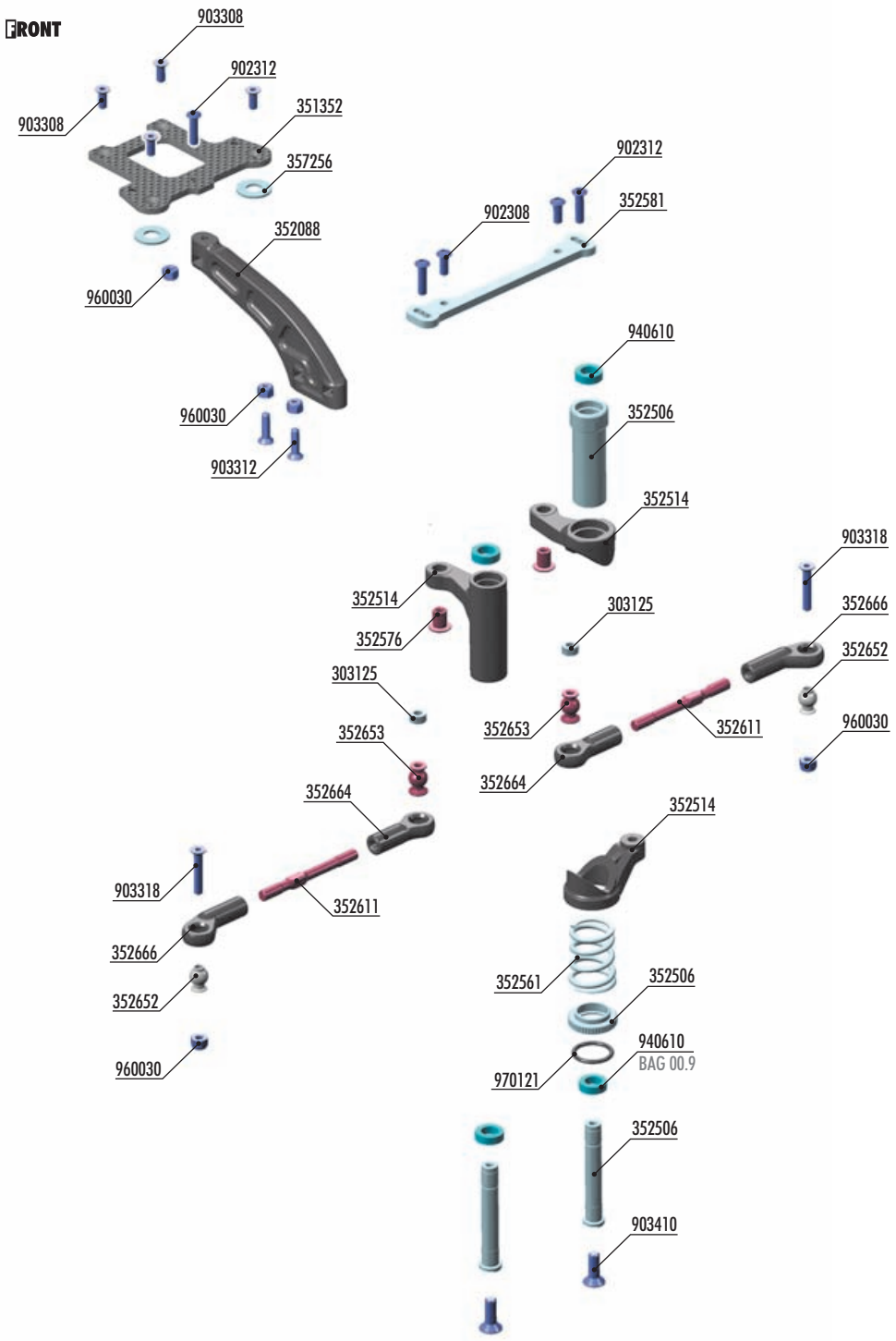


DETAIL L=R INITIAL SETTING



SET-UP BOOK
ROLL CENTER

7. STEERING



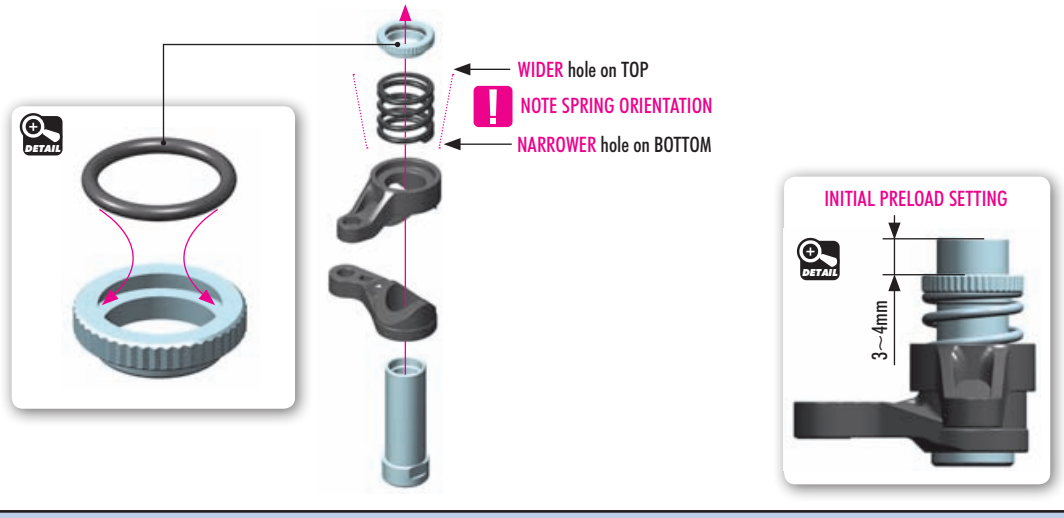
BAG 07

303125	ALU SHIM 3x6x3.0MM (10)
351352	GRAPHITE UPPER PLATE 2.5MM
352088	COMPOSITE FRONT BRACE
352506	SERVO SAVER WITH CHASSIS LOCK & HARD SPRING - G - SET
352514	COMPOSITE SERVO SAVER - GRAPHITE
352561	SERVO SAVER SPRING PROGRESSIVE
352576	STEERING PLATE BUSHING (2)
352581	ALU STEERING PLATE - SWISS 7075 T6
352611	ADJ. TURNBUCKLE M4 L/R 53MM - HUDY SPRING STEEL™ (2)
352652	BALL STUD 6.8MM (4)
352653	BALL STUD 6.8MM WITH BACKSTOP - M3 (2)
352664	COMPOSITE STEERING BALL JOINT 6.8MM - V3 (2)
352666	COMPOSITE RELIEF STEERING BALL JOINT 6.8MM (2)
357256	ALU SHIM 6x13x1MM (2)
902308	HEX SCREW SH M3x8 (10)
902312	HEX SCREW SH M3x12 (10)
903308	HEX SCREW SFH M3x8 (10)
903312	HEX SCREW SFH M3x12 (10)
903318	HEX SCREW SFH M3x18 (10)
903410	HEX SCREW SFH M4x10 (10)
940610	BALL-BEARING 6x10x3 RUBBER SEALED - OIL (2)
960030	NUT M3 (10)
970121	O-RING 12.1 x 1.6 (10)

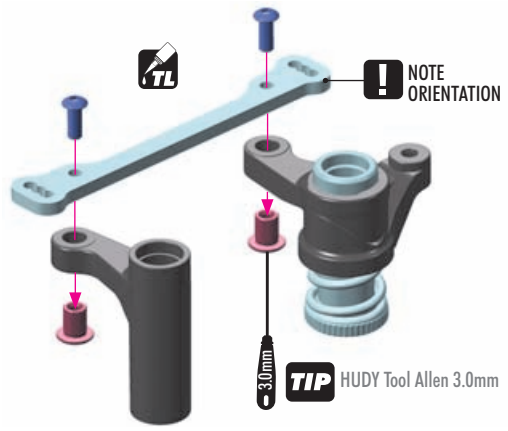
Numbers in parentheses ( ) refer to quantities when purchased separately.

970121
O 12.1x1.6

SET-UP BOOK
SERVO SAVER

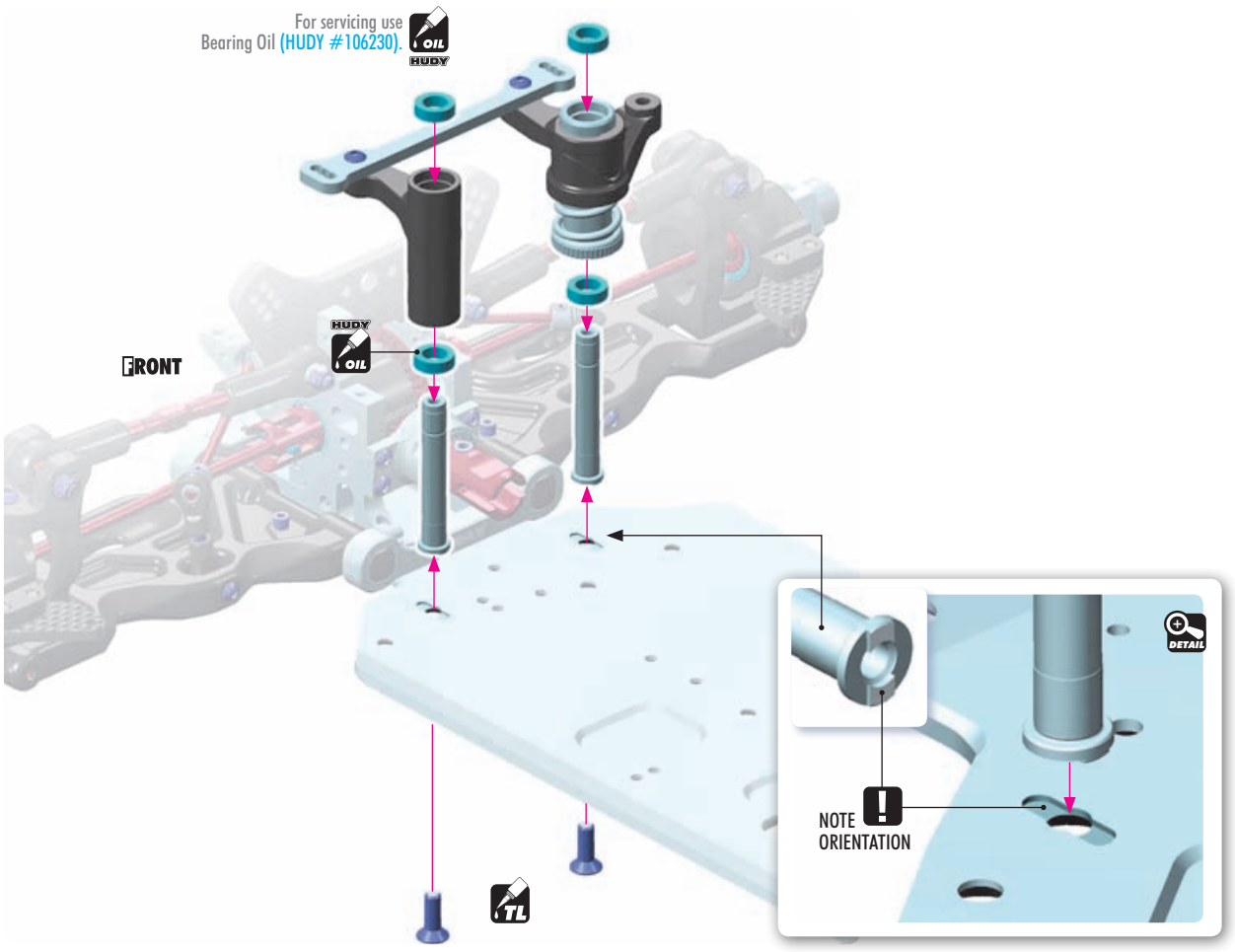


902308
SH M3x8



903410
SFH M4x10

940610
BB 6x10x3



7. STEERING

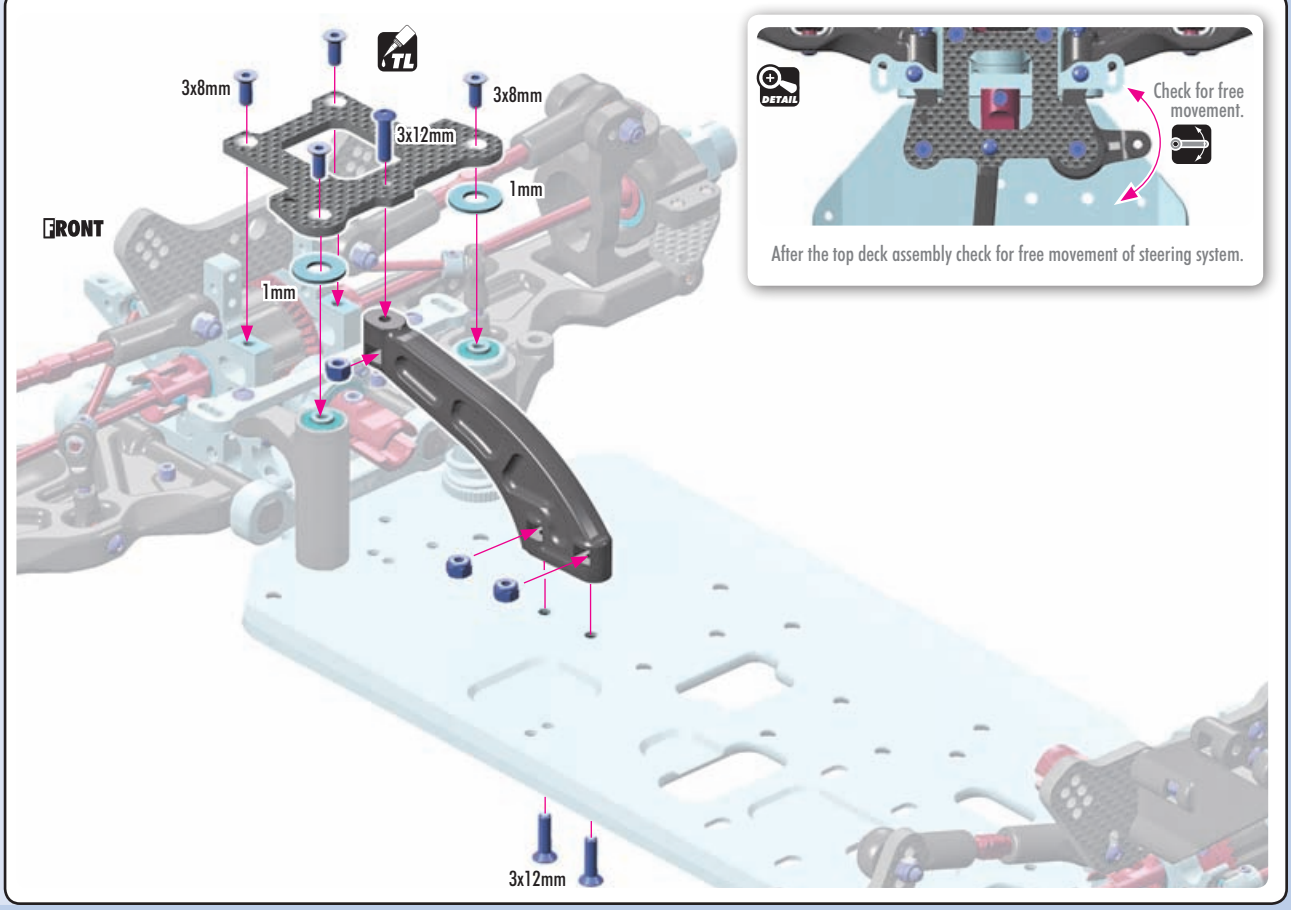
357256
SHIM 6x13x1

902312
SH M3x12

903308
SFH M3x8

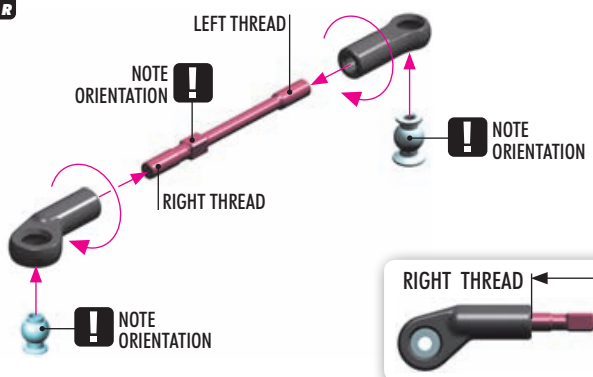
903312
SFH M3x12

960030
N M3

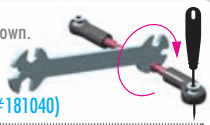


After the top deck assembly check for free movement of steering system.

2x L=R



TIP Use tools to tighten as shown.



Special Tool (HUDY #181090)
Turnbuckle Wrench 4mm (HUDY #181040)

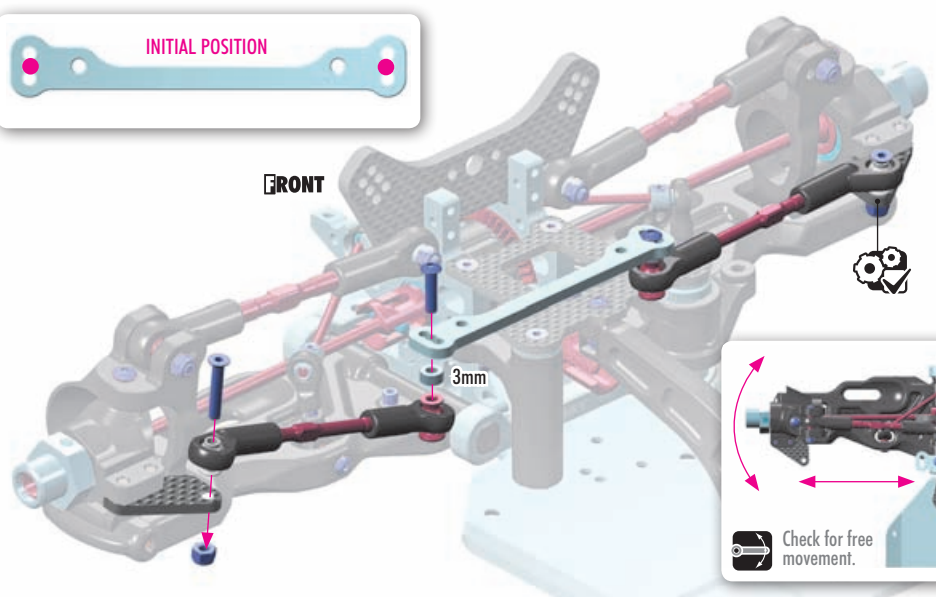
Install the pivot balls with Professional Multi Tool (HUDY #183011).

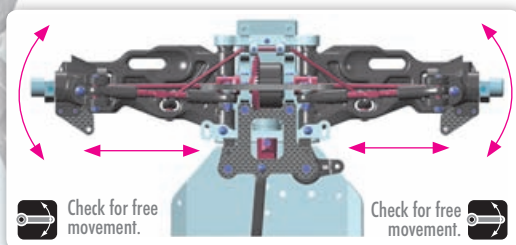
303125
SHIM 3x6x3

902312
SH M3x12

903318
SFH M3x18

960030
N M3





OPTION #354010-G
COMPOSITE CENTER DIFFERENTIAL MOUNTING PLATE SET - GRAPHITE

OPTION

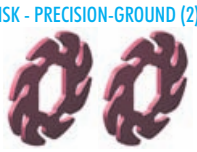
COMPOSITE 2-SPEED GEARS			
#345545	45T	2ND	OPTION
#345546	46T	2ND	OPTION
#345547	47T	2ND	INCLUDED

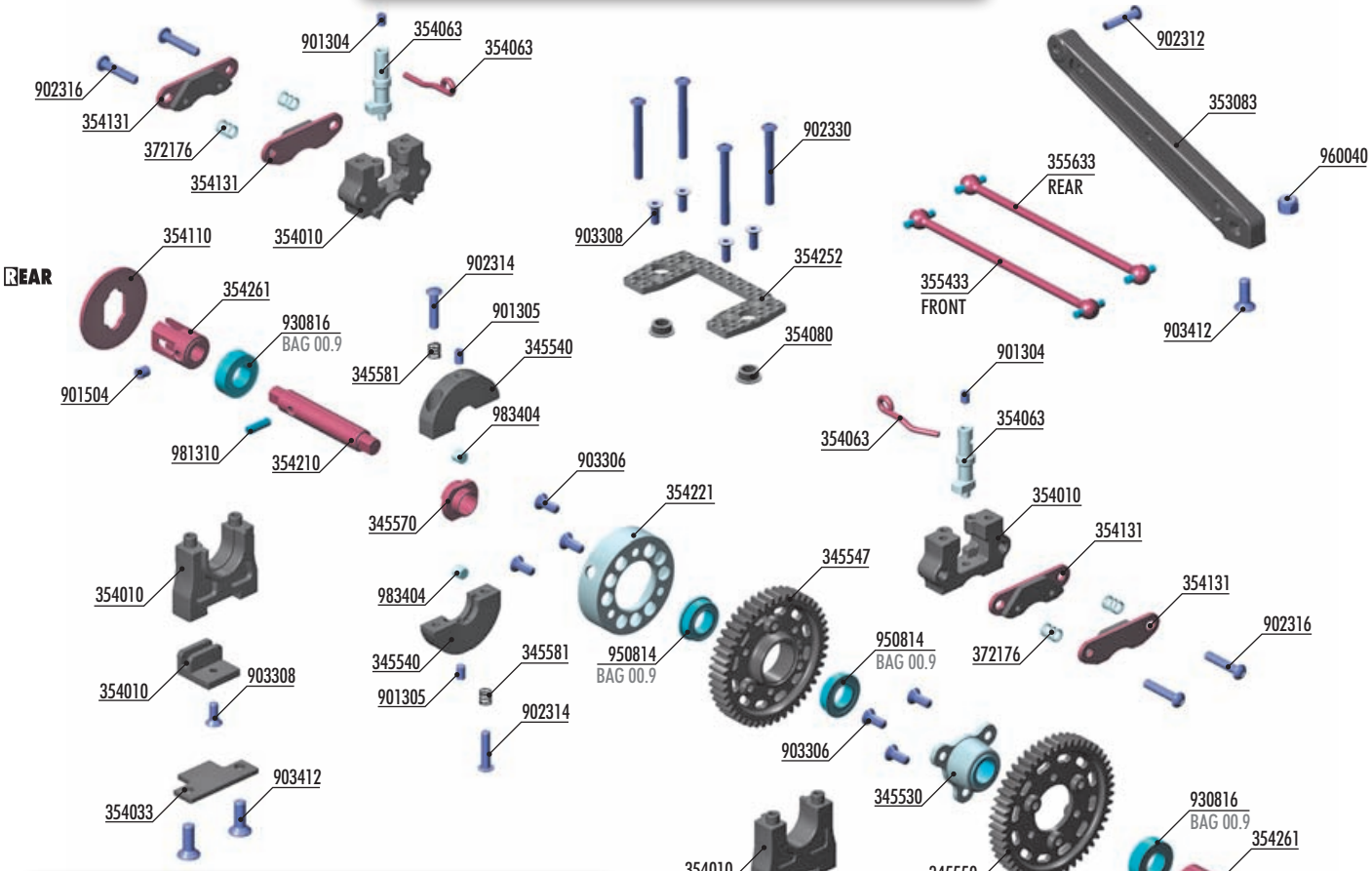
GRAPHITE 2-SPEED GEARS			
#345645	45T	2ND	OPTION
#345646	46T	2ND	OPTION
#345647	47T	2ND	OPTION

#345548	48T	1ST	OPTION
#345549	49T	1ST	OPTION
#345550	50T	1ST	INCLUDED

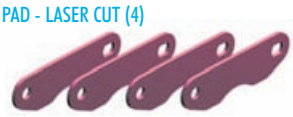
#345648	48T	1ST	OPTION
#345649	49T	1ST	OPTION
#345650	50T	1ST	OPTION

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





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



OPTION #354130
BRAKE PAD FIBER (4)

OPTION #354132
BRAKE PAD "SLS" (4)

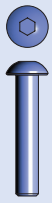
It is necessary to glue the brake pad with strong CA glue suitable for steel.

BAG 08

345530	ALU DRIVE FLANGE WITH ONE-WAY BEARING - SWISS 7075 T6
345540	COMPOSITE 2-SPEED GEAR BOX SHOE - SET
345547	COMPOSITE 2-SPEED GEAR 47T (2nd) - H
345550	COMPOSITE 2-SPEED GEAR 50T (1st)
345570	ADAPTER 2-SPEED
345581	GEAR BOX SPRING C=13.0 (2)
353083	COMPOSITE REAR BRACE
354010	CENTER DIFF MOUNTING PLATE - SET
354033	COMPOSITE 2-SPEED HOLDER PLATE (2)
354063	ALU BRAKE CAM POST & ROD (2+2) HARD COATED
354080	COMPOSITE BUSHING FOR DIFF MOUNTING PLATE (2)
354110	VENTILATED BRAKE DISK - LASER CUT - PRECISION-GROUND
354131	GLUED BRAKE PADS SET-ULTRA EFFICIENT (4)
354210	2-SPEED SHAFT - HUDY SPRING STEEL™
354221	CARRIER FOR 2-SPEED GEAR (2nd) - SWISS 7075 T6
354252	GT GRAPHITE CENTER MOUNTING PLATE 2.5MM
354261	CENTRAL TRANSM. OUTDRIVE ADAPTER - HUDY SPRING STEEL™ (2)
355433	FRONT CENTRAL DOGBONE DRIVE SHAFT 88MM - HUDY SPRING STEEL™
355633	REAR CENTRAL DOGBONE DRIVE SHAFT 98MM - HUDY SPRING STEEL™
372176	SPRING 4.25 COILS 3.6x6x0.4MM; C=1.5 - GOLD (SOFT) (2)
901304	HEX SCREW SB M3x4 (10)
901305	HEX SCREW SB M3x5 (10)
901504	HEX SCREW SB M5x4 (10)
902312	HEX SCREW SH M3x12 (10)
902314	HEX SCREW SH M3x14 (10)
902316	HEX SCREW SH M3x16 (10)
902330	HEX SCREW SH M3x30 (10)
903306	HEX SCREW SFH M3x6 (10)
903308	HEX SCREW SFH M3x8 (10)
903412	HEX SCREW SFH M4x12 (10)
930816	BALL-BEARING 8x16x5 RUBBER SEALED - OIL (2)
950814	BALL-BEARING 8x14x4 FLANGED - STEEL SEALED - OIL (2)
960040	NUT M4 (10)
981310	PIN 3x10 (10)
983404	ROLLER PIN 4x4 MM (2)

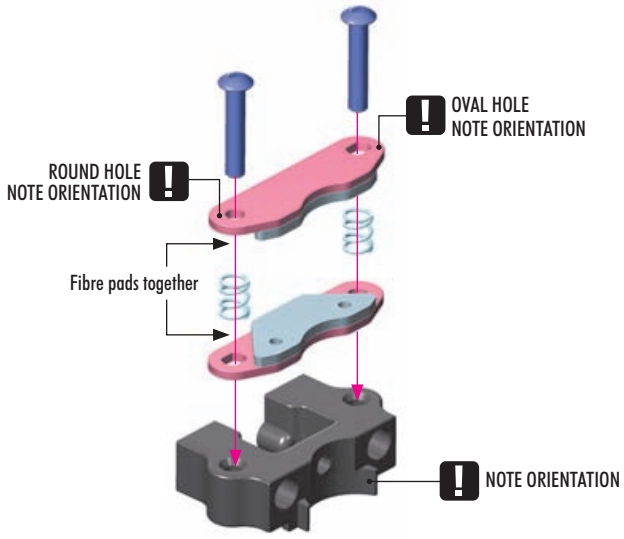
Numbers in parentheses ( ) refer to quantities when purchased separately.

8. CENTRAL TRANSMISSION



902316
SH M3x16

2x F=R



DETAIL

Temporarily insert brake disk between pads to set correct gap.

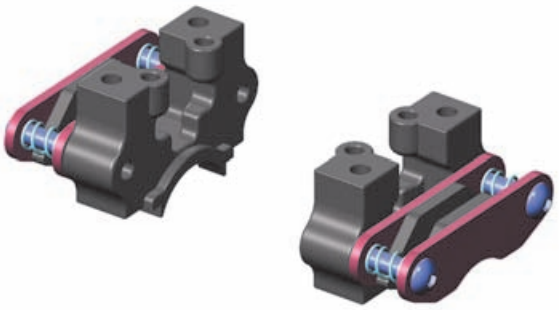
OPTION #354121
STEEL BRAKE PAD - LASER CUT (4)

OPTION #354130
BRAKE PAD FIBER (4)

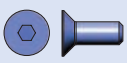
OPTION #354132
BRAKE PAD "SLS" (4)

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

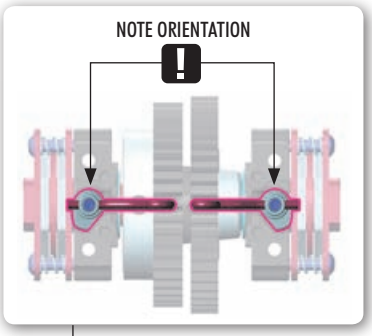
ASSEMBLY VIEW



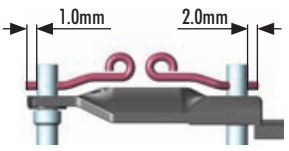
901304
SB M3x4

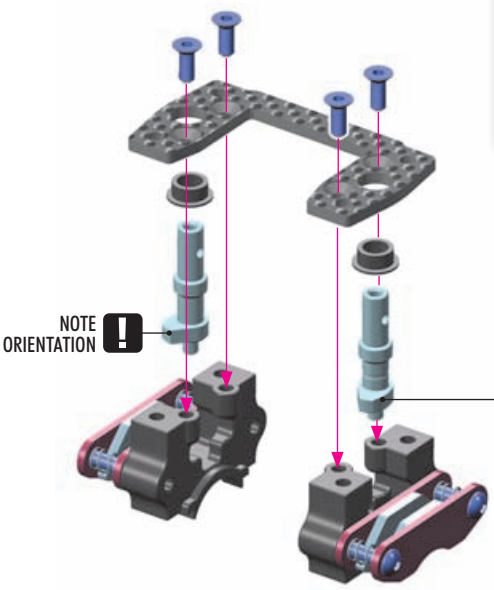


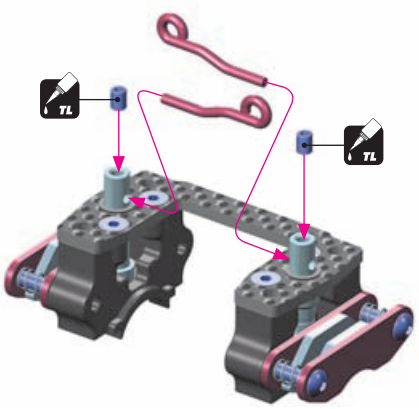
903308
SFH M3x8



DETAIL

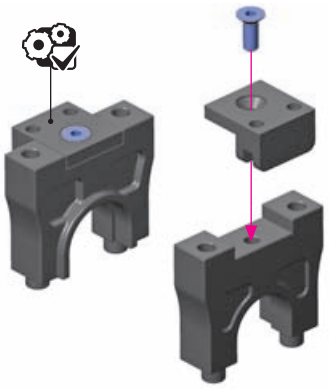






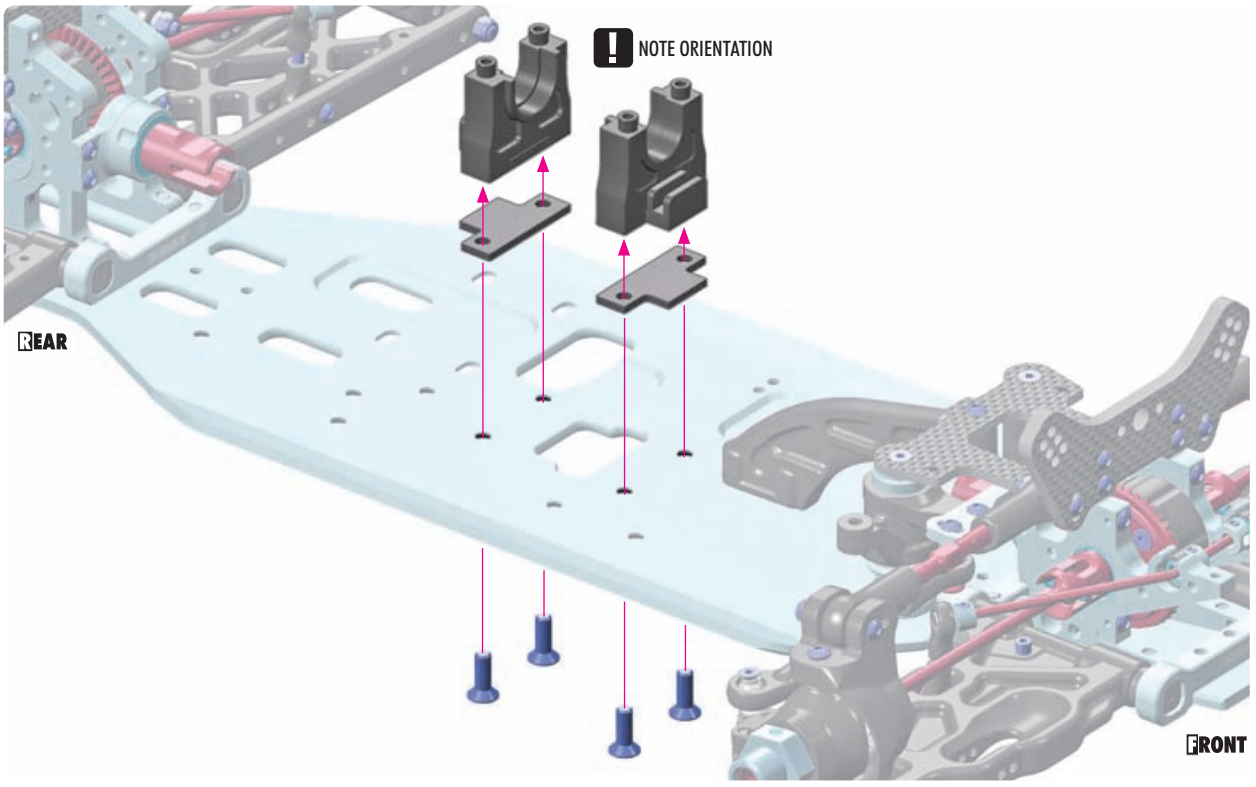
903308
SFH M3x8

NOTE ORIENTATION
OF ALL PARTS



OPTION #354010-G
COMPOSITE CENTER DIFFERENTIAL
MOUNTING PLATE SET - GRAPHITE

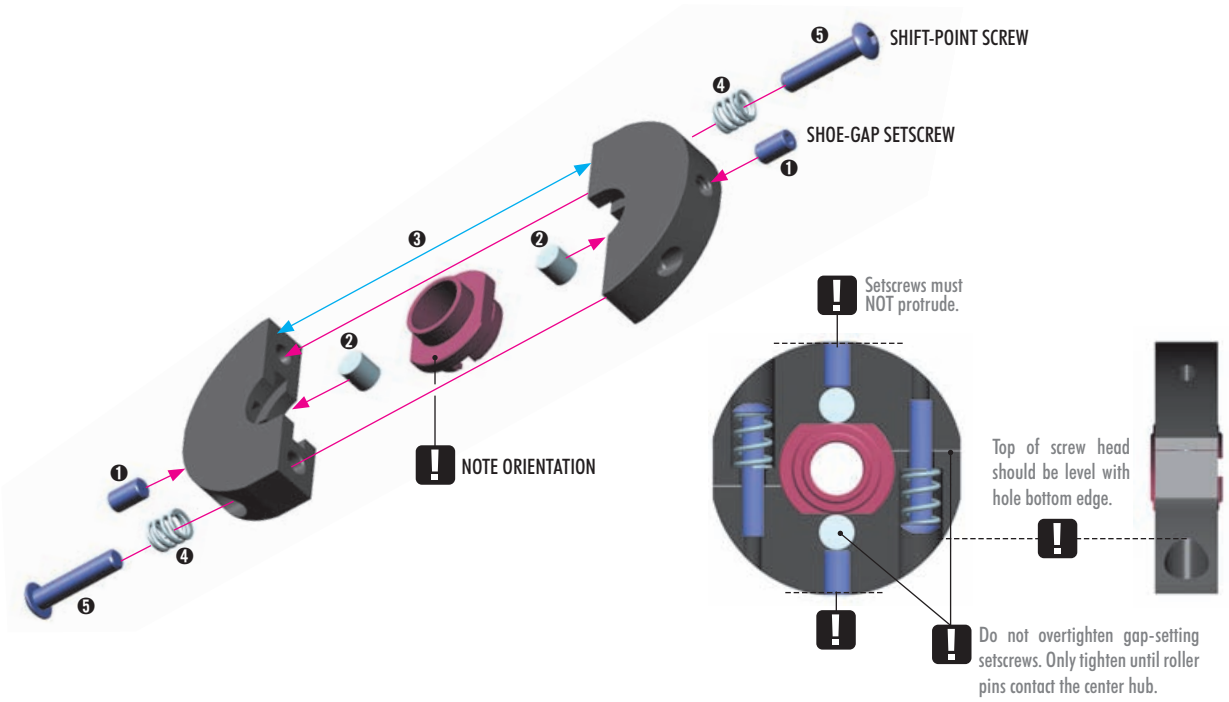
903412
SFH M4x12



901305
SB M3x5

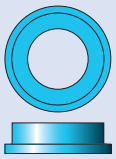
902314
SH M3x14

983404
RP 4x4



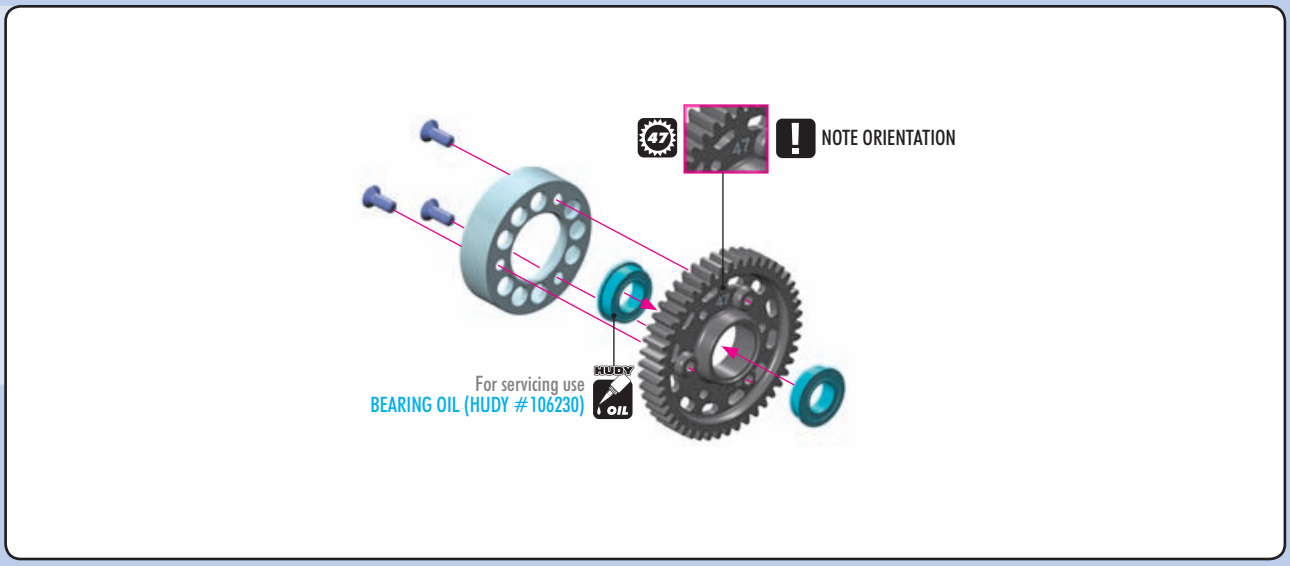
SET-UP BOOK
2-SPEED TRANSMISSION

8. CENTRAL TRANSMISSION

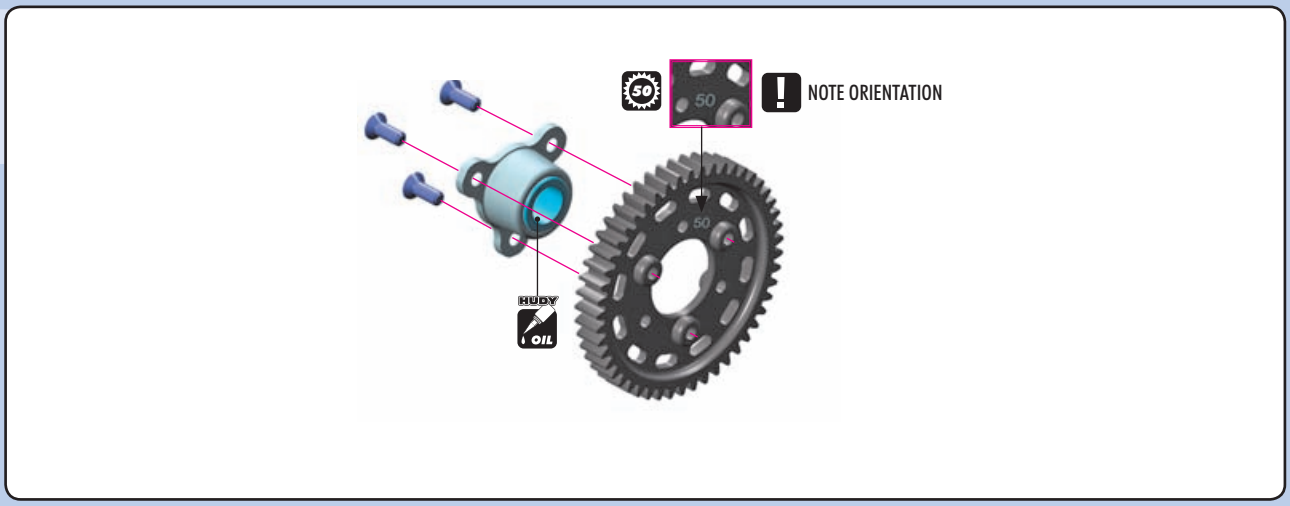


950814
BB 8x14x4

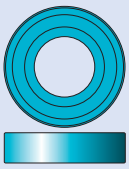
903306
SFH M3x6



903306
SFH M3x6

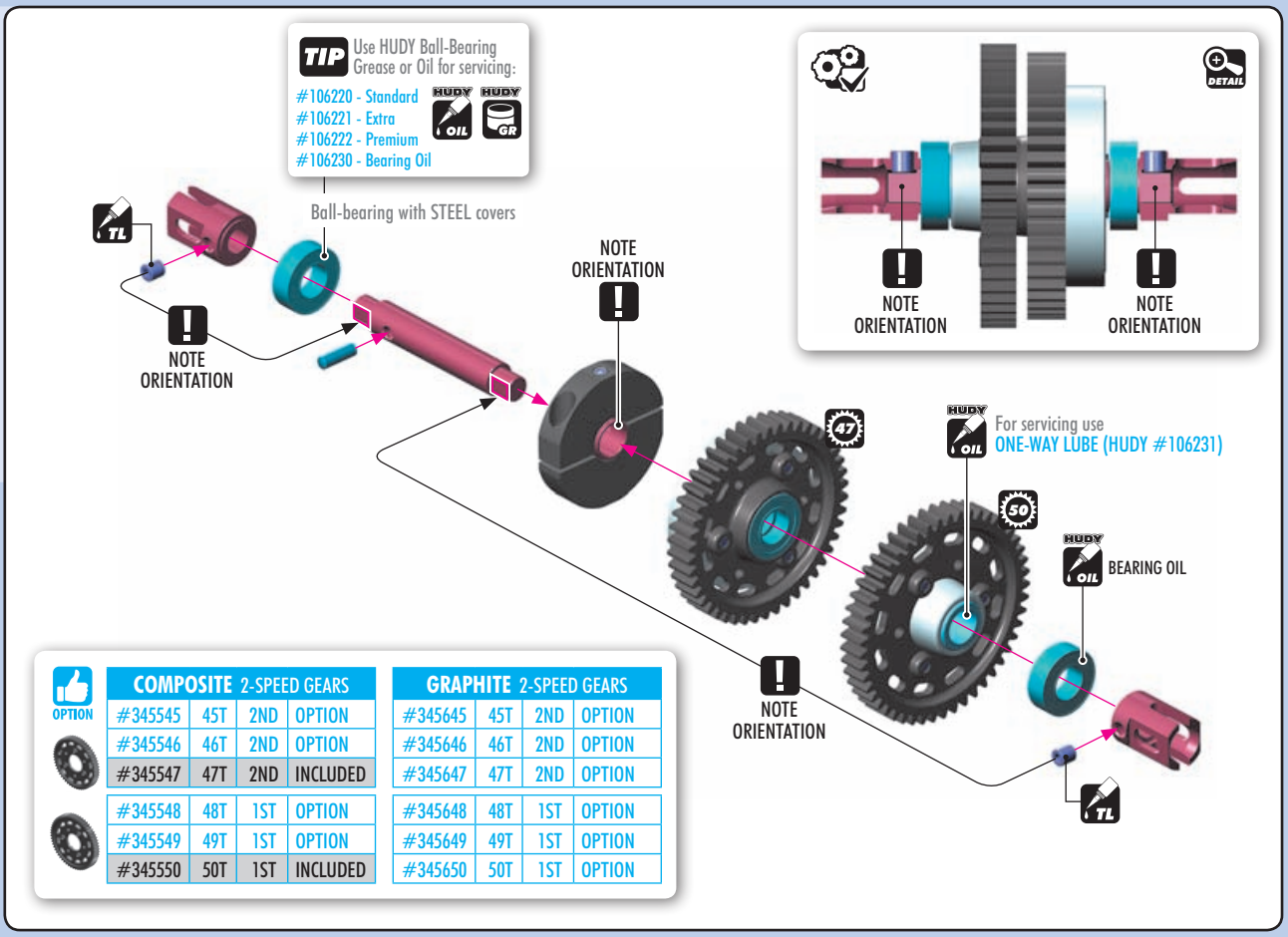


901504
SB M5x4



930816
BB 8x16x5

981310
P 3x10

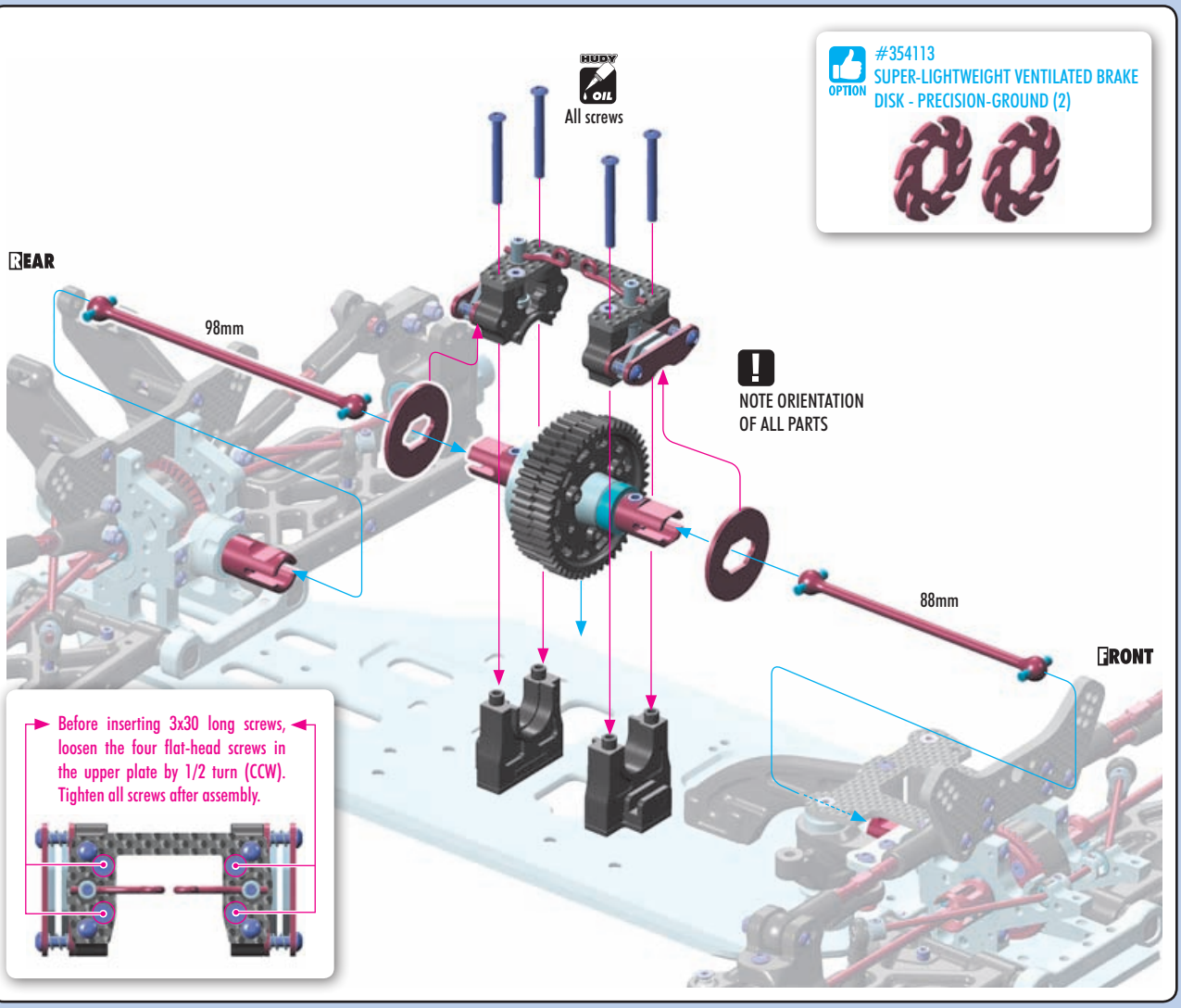


OPTION

COMPOSITE 2-SPEED GEARS			
#345545	45T	2ND	OPTION
#345546	46T	2ND	OPTION
#345547	47T	2ND	INCLUDED
#345548	48T	1ST	OPTION
#345549	49T	1ST	OPTION
#345550	50T	1ST	INCLUDED

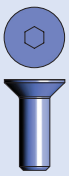
GRAPHITE 2-SPEED GEARS			
#345645	45T	2ND	OPTION
#345646	46T	2ND	OPTION
#345647	47T	2ND	OPTION
#345648	48T	1ST	OPTION
#345649	49T	1ST	OPTION
#345650	50T	1ST	OPTION

902330
SH M3x30



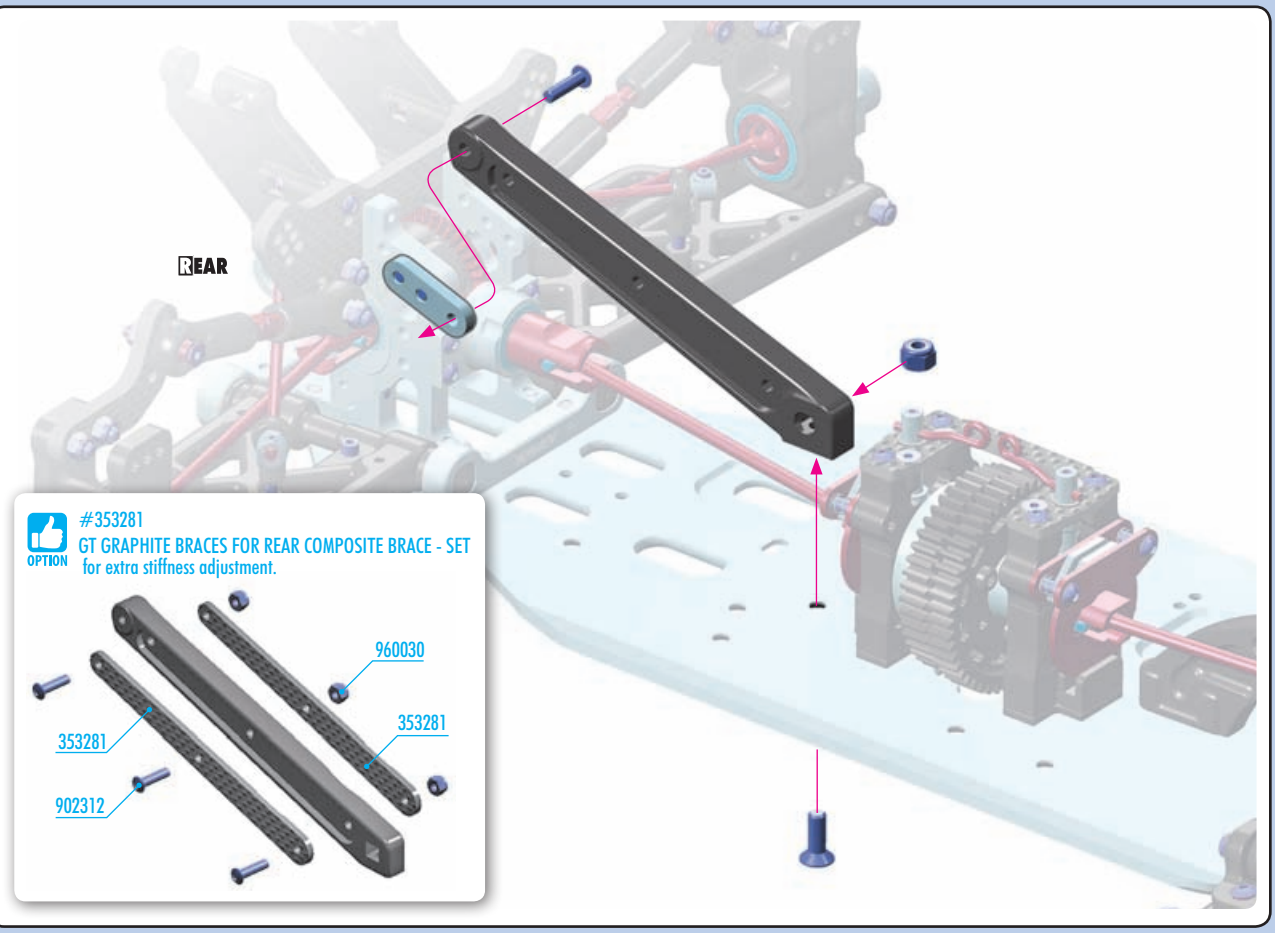
OPTION #354113
SUPER-LIGHTWEIGHT VENTILATED BRAKE DISK - PRECISION-GROUND (2)

902312
SH M3x12



903412
SFH M4x12

960040
N M4

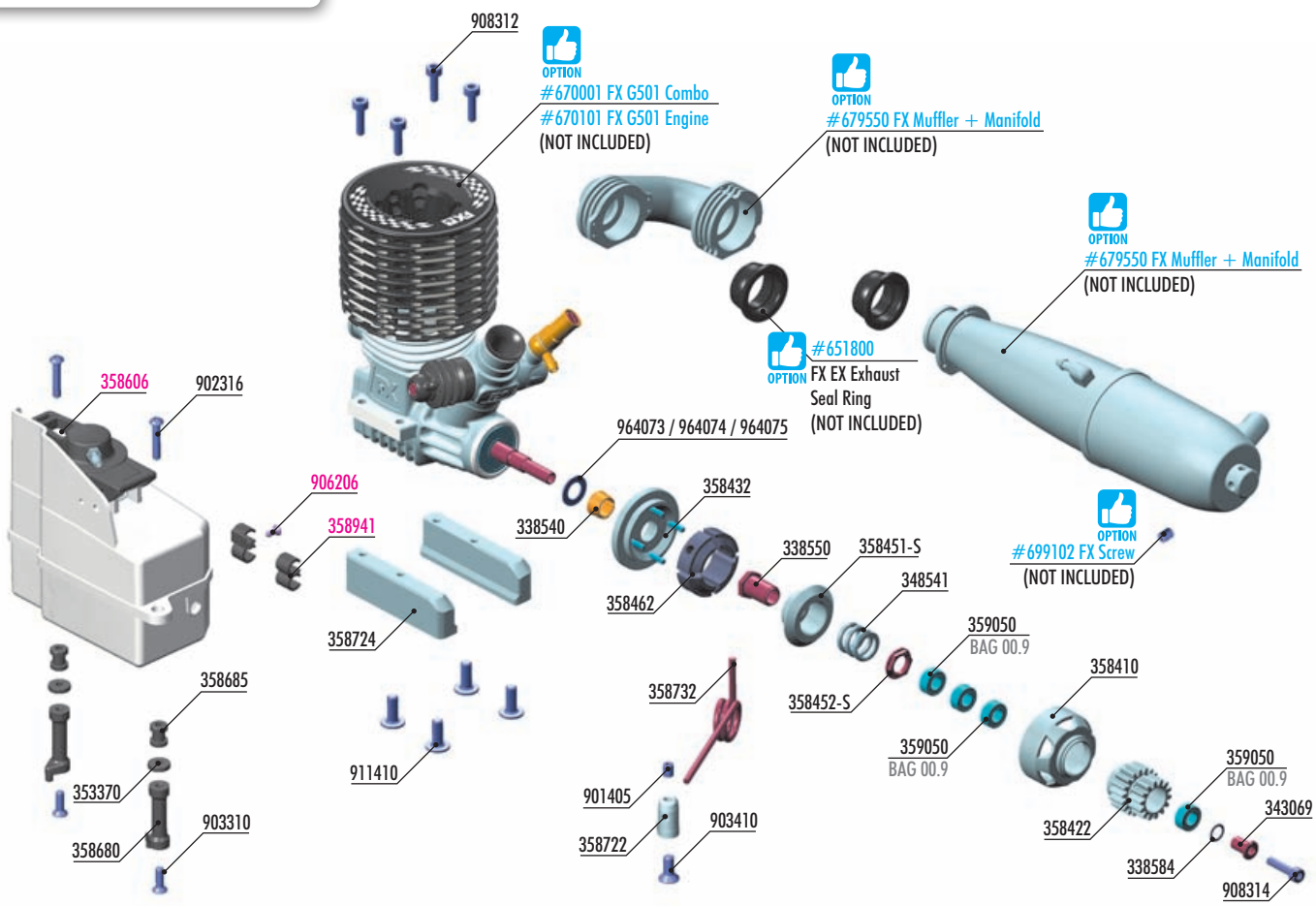


OPTION #353281
GT GRAPHITE BRACES FOR REAR COMPOSITE BRACE - SET
for extra stiffness adjustment.

9. FUEL TANK & ENGINE

OPTION

ALU PINION GEARS		
#358423	14/19T	OPTION
#358422	14/18T	INCLUDED
#358421	13/18T	OPTION
#358420	13/17T	OPTION



OPTION
#358661
GRAPHITE 150CC FUEL TANK GUARD

OPTION
#358709
ALU MONOBLOCK ENGINE MOUNT

OPTION

ALU STAND FOR ENGINE MOUNT		
#358718	FX, NOVAROSSI, MAX, SIRIO	OPTION
#358719	PICCO, REDS, ORION, LRP, OS, U. RACING	OPTION

BAG 09

338540	FLYWHEEL COLLAR 7MM
338550	FLYWHEEL NUT - HUDY SPRING STEEL™
343069	STEEL BUSHING (2)
348541	CLUTCH SPRING - MEDIUM - V2
353370	SET OF COMPOSITE REAR HUB CARRIER SHIMS
358403	GT 4-SHOE CLUTCH FOR ALU CLUTCH BELL - SET
358410	GT 2-SPEED ALU CLUTCH BELL - LIGHTWEIGHT
358422	ALU PINION GEAR 14/18T
358432	GT ALU 4-SHOE FLYWHEEL
358451-S	GT ALU 4-SHOE CLUTCH PRESSURE SLEEVE
358452-S	GT 4-SHOE FLYWHEEL NUT
358462	GT COMPOSITE CLUTCH 4-SHOE - GRAPHITE
358680	FUEL TANK MOUNTING POST (2)
358685	FUEL TANK MOUNTING GROMMET (4)
358722	EXHAUST WIRE MOUNT SET - LONG
358724	ALU ENGINE MOUNT - CNC MACHINED (L+R)
358732	EXHAUST MOUNTING WIRE 100MM
338584	SHIM 5x7x0.2 (10)
359050	BALL-BEARING 5x10x4 STEEL SEALED - GREASE (2)
901405	HEX SCREW SB M4x5 (10)
902316	HEX SCREW SH M3x16 (10)
903310	HEX SCREW SFH M3x10 (10)
903410	HEX SCREW SFH M4x10 (10)
908312	HEX SCREW (CAP HEAD) 3x12 (10)
908314	HEX SCREW (CAP HEAD) 3x14 (10)
911410	HEX SCREW FLANGED SH M4x10 (10)
964073	WASHER S 7x10x0.2 (10)
964074	WASHER S 7x10x0.3 (10)
964075	WASHER S 7x10x0.5 (10)
358606	FUEL TANK 150CC WITH FLOATING FILTER & TRANSIENT JET
906206	SCREW PHILLIPS FH 2.2x6 (10)
358941	COMPOSITE TUBING HOLDER FOR FUEL TANK (2)

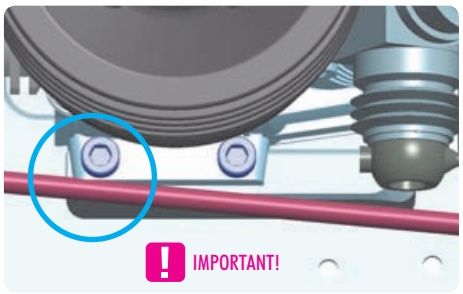
Numbers in parentheses ( ) refer to quantities when purchased separately.

908312
SCH M3x12

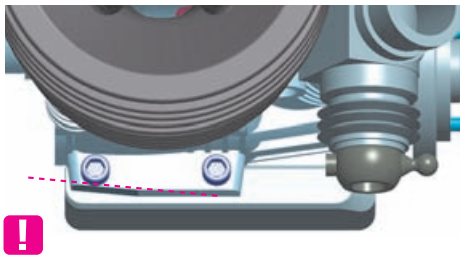
964073
S 7x10x0.2

964074
S 7x10x0.3

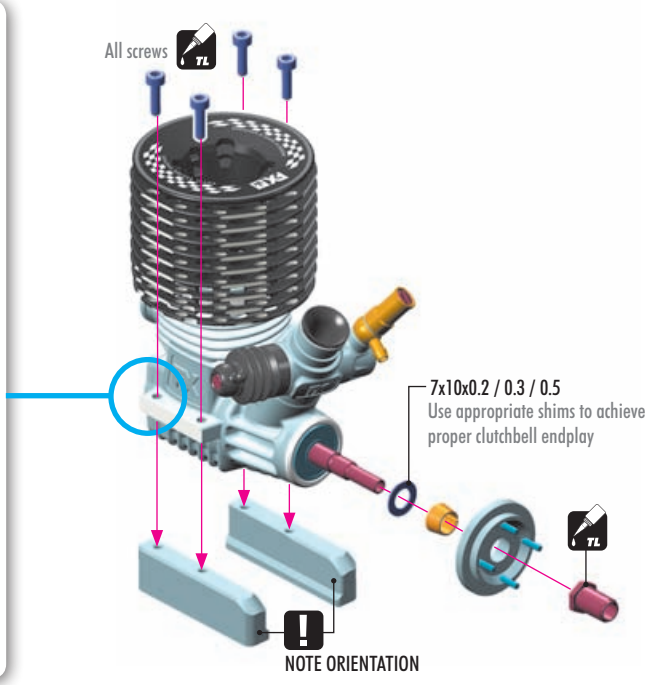
964075
S 7x10x0.5



IMPORTANT!



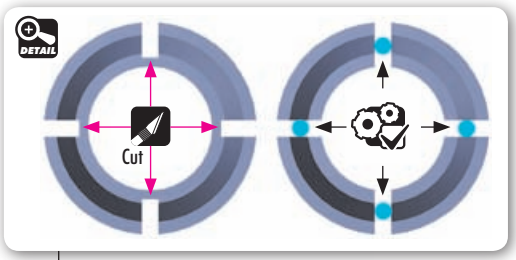
When installing the engine, first check that the drive shaft does not touch the engine. If it does, remove some material from the engine mount as shown to make some room between engine and shaft.

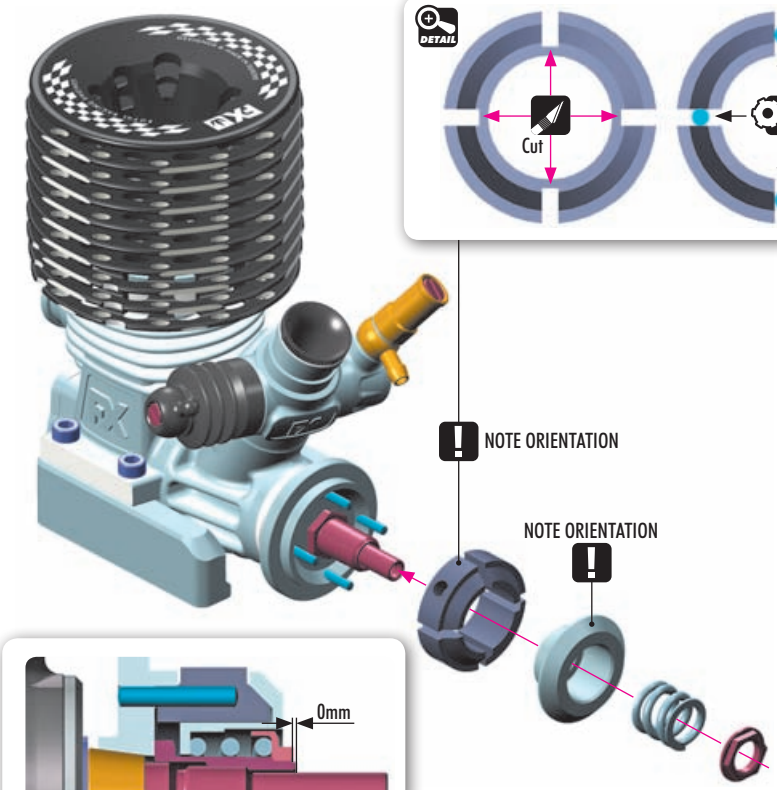


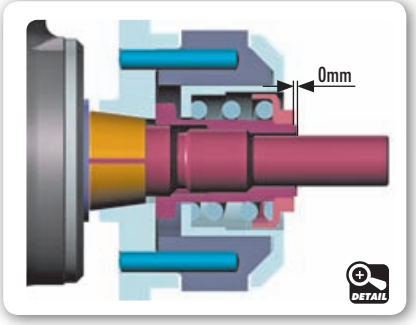
OPTION #358709
ALU MONOBLOCK ENGINE MOUNT

OPTION #358718
ALU STAND FOR ENGINE MOUNT
(FX, NOVAROSSI, MAX, SIRIO)

OPTION #358719
ALU STAND FOR ENGINE MOUNT
(PICCO, REDS, ORION, LRP, OS, U. RACING)







9. FUEL TANK & ENGINE

338584
S 5x7x0.2

359050
BB 5x10x4

908314
SCH M3x14

10~10.2mm

5x10x4mm

18T

14T

5x10x4mm

5x7x0.2mm

OPTION	ALU PINION GEARS		
	#358423	14/19T	OPTION
	#358422	14/18T	INCLUDED
	#358421	13/18T	OPTION
	#358420	13/17T	OPTION

TIP TO TIGHTEN THE 17T OR 18T PINION GEAR USE THE OPTIONAL #349901 XRAY PINION TOOL (19~21T / 16~18T).

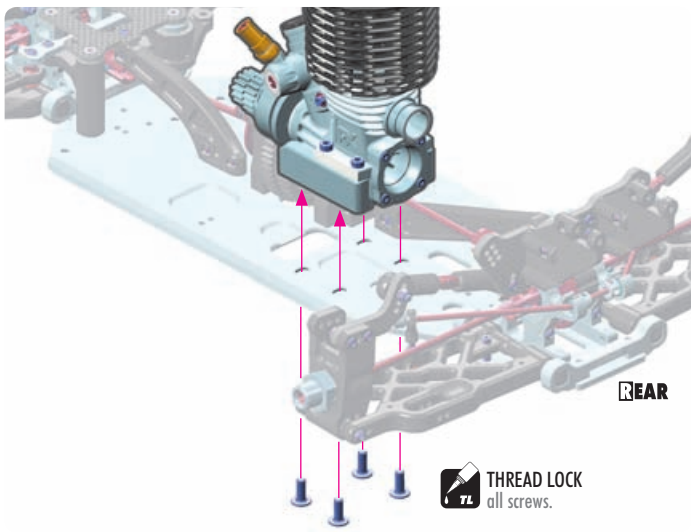
OPTION

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

GR

SET-UP BOOK
CLUTCH SPRINGS
CLUTCH SHOE

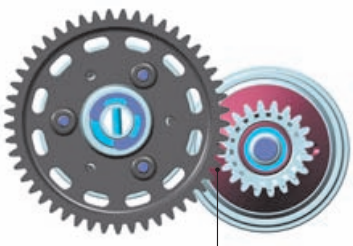
911410
SHF M4x10



REAR

THREAD LOCK
all screws.

DETAIL



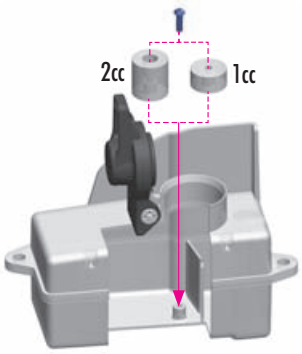
GEAR MESH

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

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

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

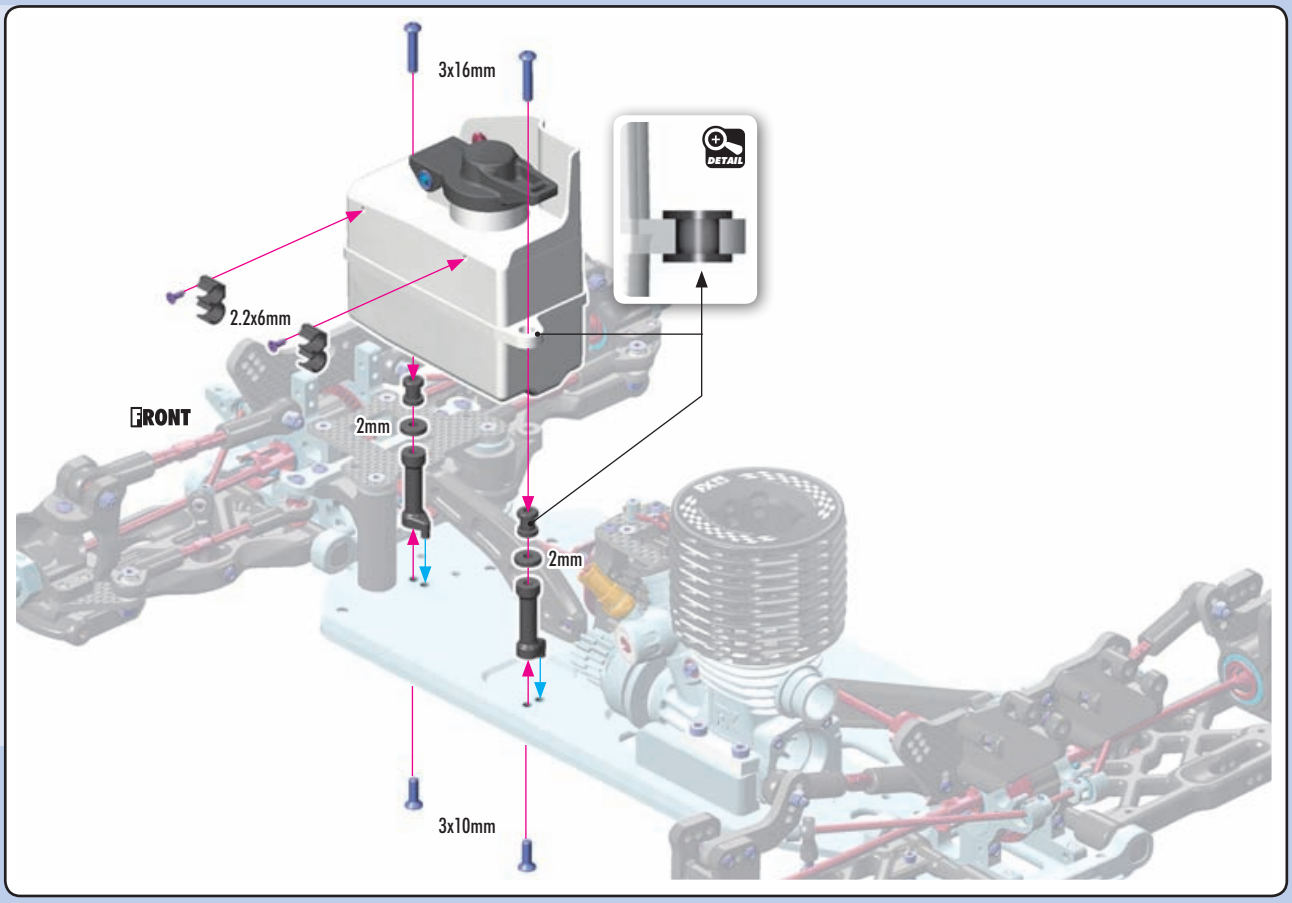
NOTE: The fuel tank insert can be easily mounted to the bottom of the fuel tank using the provided screw, when the fuel tank cap is opened fully.

353370
SHIM 3x9x2

902316
SH M3x16

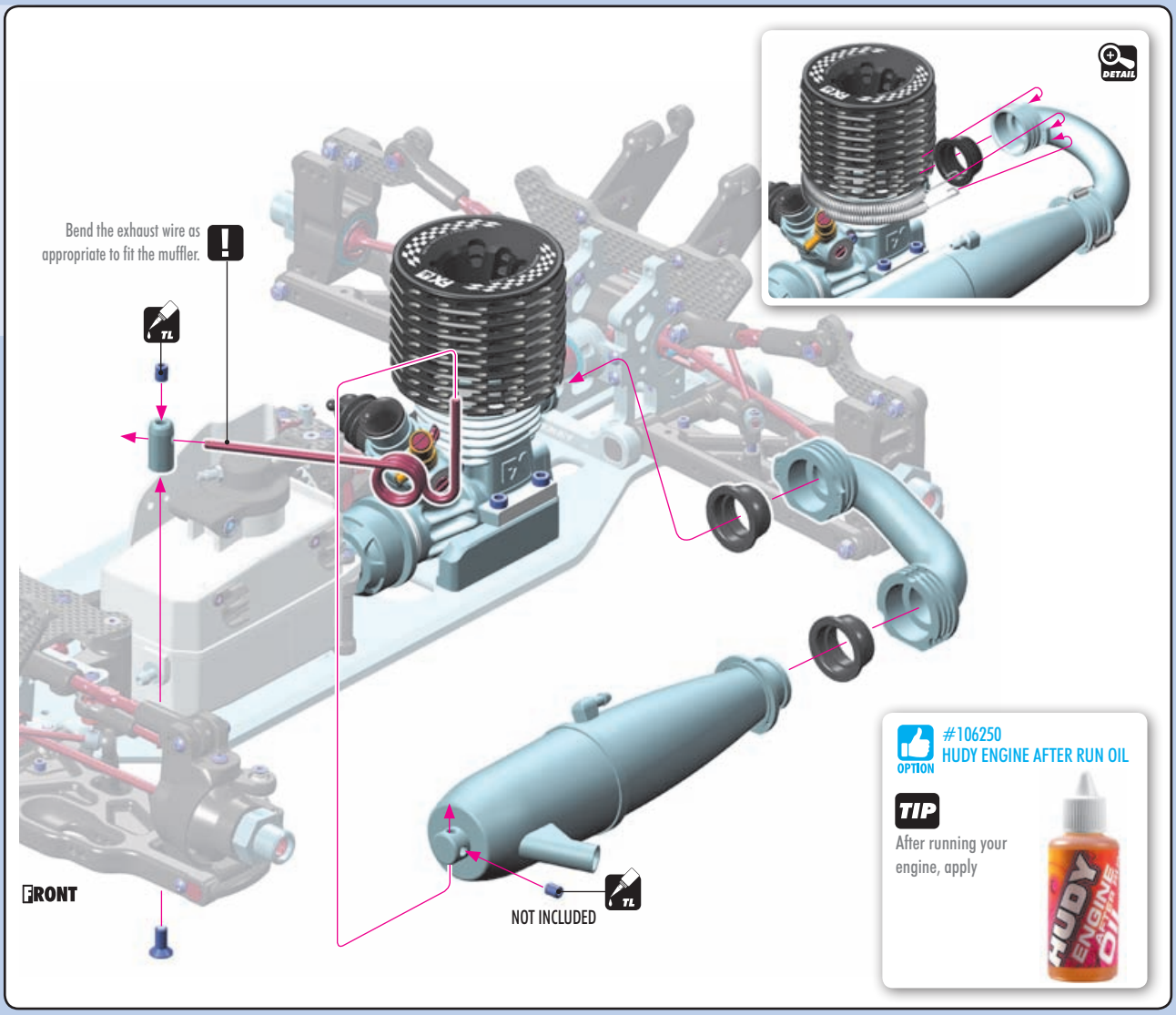
903310
SFH M3x10

906206
SFP 2.2x6



901405
SB M4x5

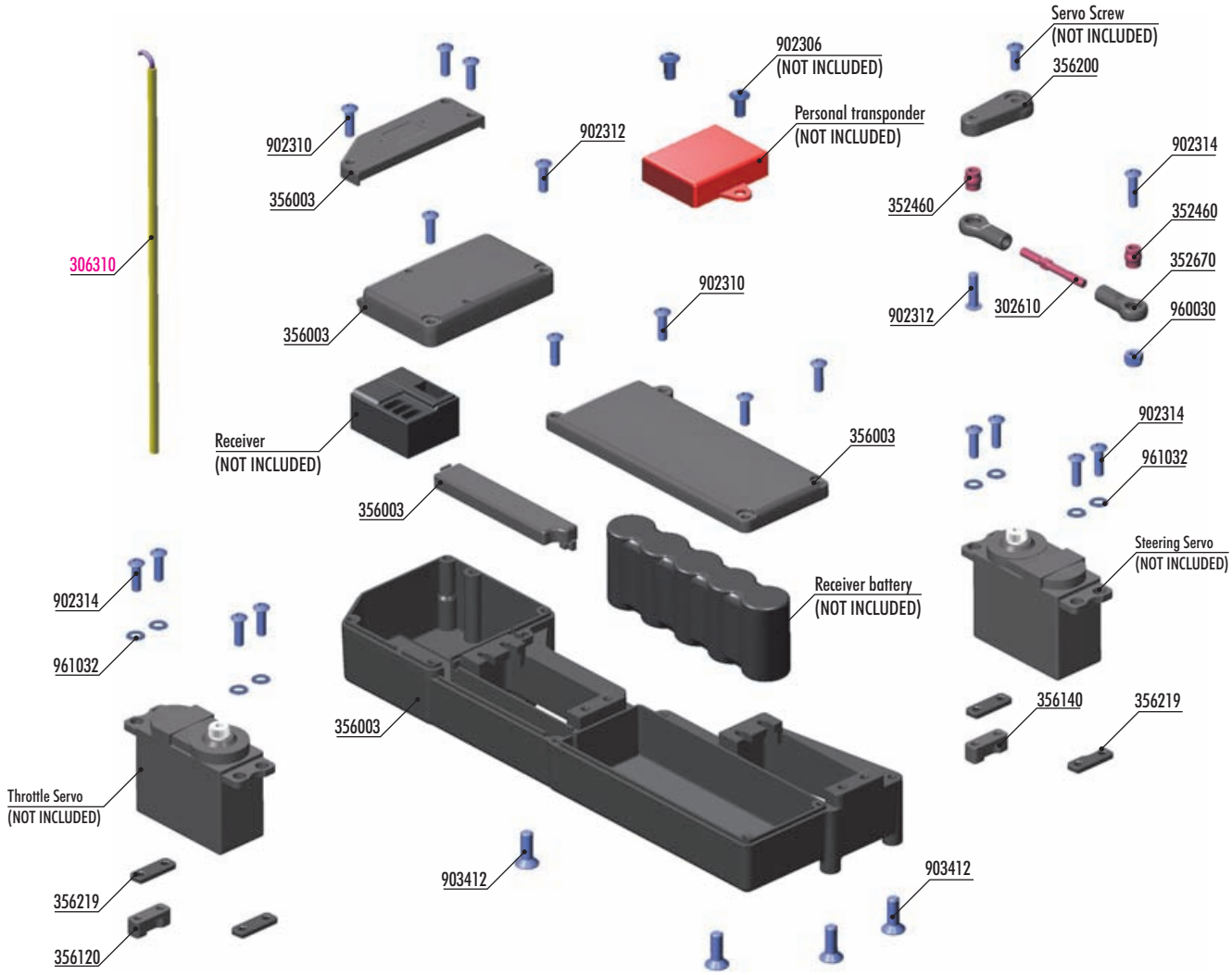
903410
SFH M4x10



OPTION #106250
HUDY ENGINE AFTER RUN OIL

TIP
After running your engine, apply

10. RADIO CASE

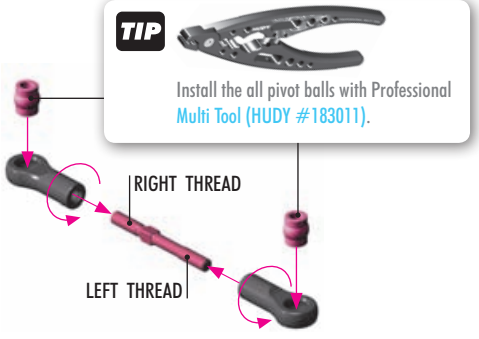


BAG 10

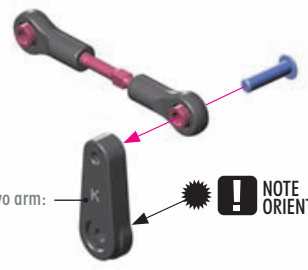
302610	ADJ. TURNBUCKLE M3 L/R 39MM - HUDY SPRING STEEL™ (2)	902306	HEX SCREW SH M3x6 (10) (OPTION)
352460	PIVOT BALL 5.8 (10)	902310	HEX SCREW SH M3x10 (10)
352670	SERVO BALL JOINT 5.8MM (4)	902312	HEX SCREW SH M3x12 (10)
356003	COMPOSITE RADIO CASE SET	902314	HEX SCREW SH M3x14 (10)
356050	BATTERY CABLE WITH SWITCH (OPTION)	903412	HEX SCREW SFH M4x12 (10)
356140	COMPOSITE SERVO MOUNT - SMALL (2)	960030	NUT M3 (10)
356200	BRAKE/THROTTLE ARMS & STEERING SERVO ARMS - SET	961032	WASHER S 3.2 (10)
356219	COMPOSITE SERVO SHIMS 1.0, 1.5 & 2.5MM (2+2+2)		
389135	CONNECTING CABLE RECEIVER/BATT. PACK (OPTION)	306310	ANTENNA TUBE (2)

Numbers in parentheses ( ) refer to quantities when purchased separately.

902312
SH M3x12



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



OPTION HUDY

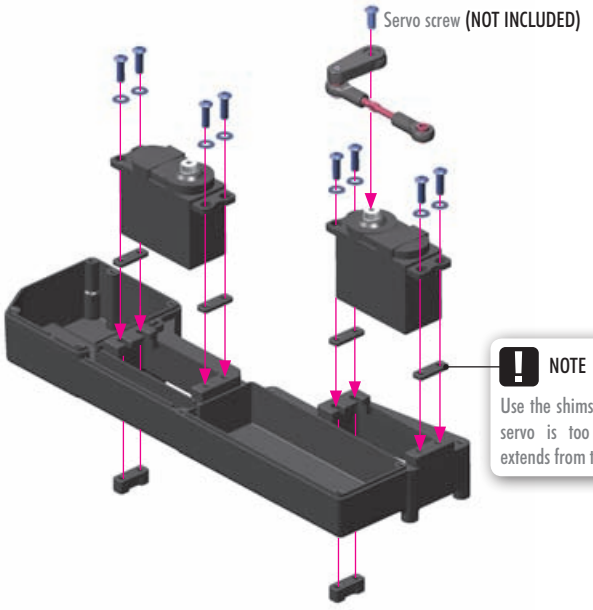
CLAMP ALU SERVO HORNS		
#293407	23T	OPTION
#293408	24T	OPTION
#293409	25T	OPTION

OPTION HUDY

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

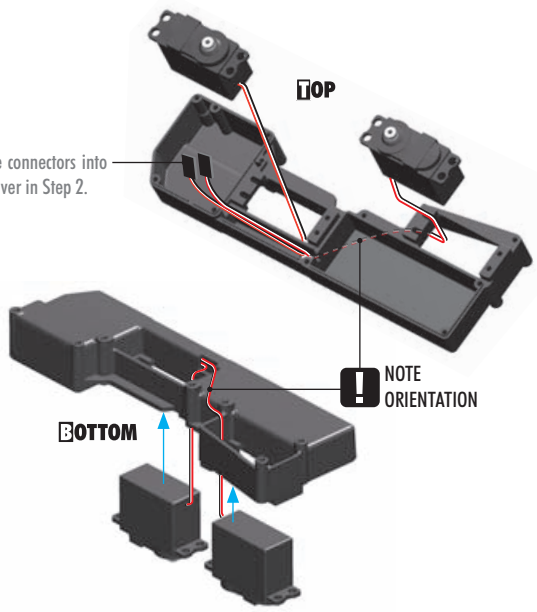
902314
SH M3x14

961032
S 3.2



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

step 1



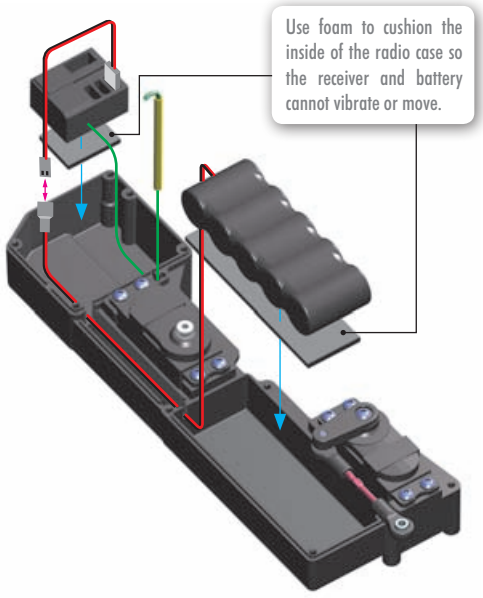
902310
SH M3x10

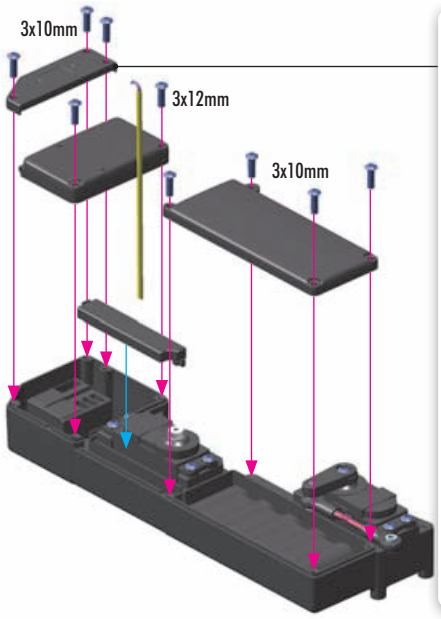
902312
SH M3x12

907206
SP M2x6

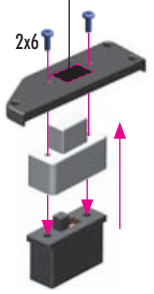
step 2

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





TIP CUT



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

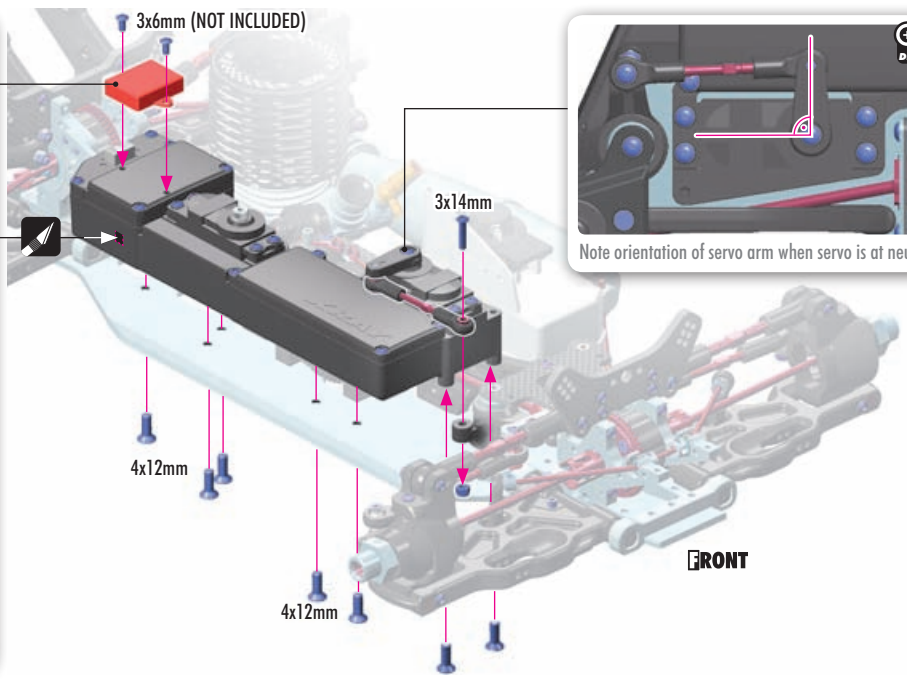
960030
N M3

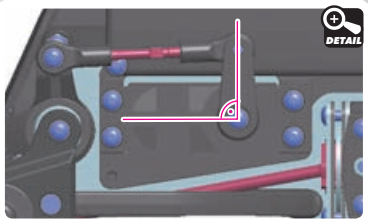
Personal transponder (NOT INCLUDED)
#902306 Screws (NOT INCLUDED)

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.

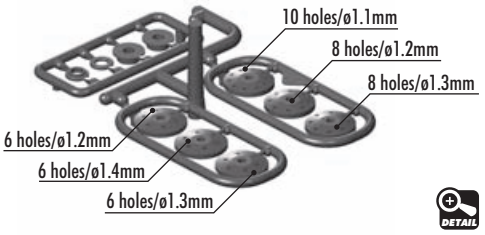




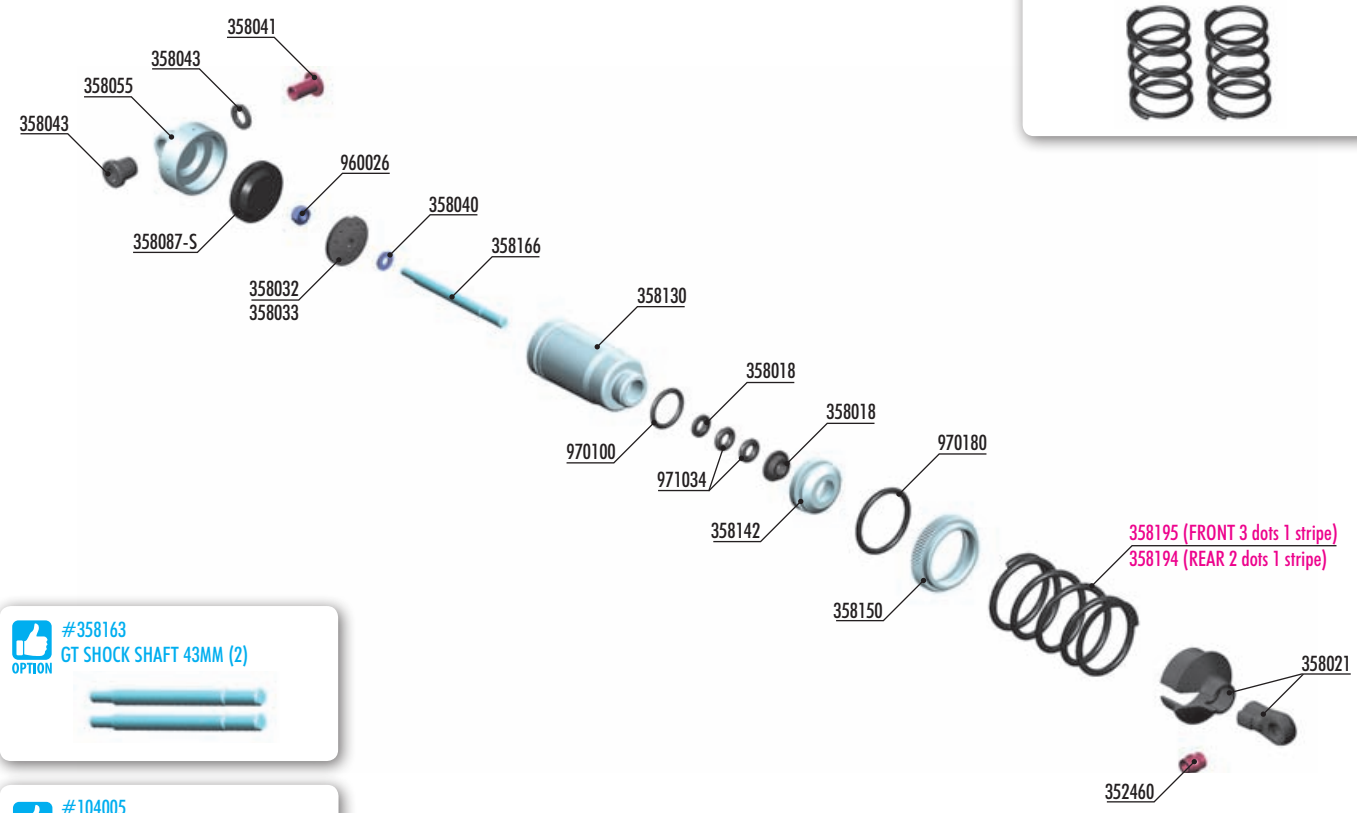
Note orientation of servo arm when servo is at neutral.

11. SHOCK ABSORBERS

PISTONS



OPTION #358196
XRAY GT SPRING SET C=6.0, 3 DOTS (2)



OPTION #358163
GT SHOCK SHAFT 43MM (2)

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

OPTION

SHOCK RUBBER MEMBRANE (4)			
#358084-S	BRIBBED	SOFT	OPTION
#358087-S	CELL	SOFT	INCLUDED
#358087-M	CELL	MEDIUM	OPTION

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)

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

BAG 11

352460 PIVOT BALL 5.8 - V3 (10)
358018 COMPOSITE SET OF SHIMS FOR SHOCKS - (2)
358021 COMPOSITE SHOCK PARTS WITH KEYED BALL JOINTS
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 - BLACK COATED (2)
358087-S SHOCK RUBBER MEMBRANE CELL - SOFT (4)
358130 GT ALU SHOCK BODY - V2 (2)
358142 ALU SHOCK BODY NUT FOR SHOCK BOOT (2)
358150 ALU SHOCK BODY ADJ. NUT (2)
358166 GT SHOCK SHAFT 46MM (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)

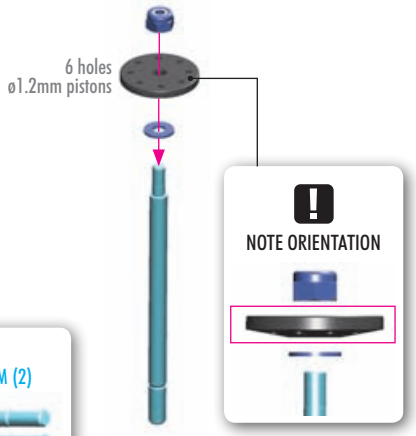
358194 XRAY GT PROGRESSIVE SPRING SET C=4.1-4.7, 2-DOTS WITH STRIPE (2)
358195 XRAY GT PROGRESSIVE SPRING SET C=5.2-5.8, 3-DOTS WITH STRIPE (2)

Numbers in parentheses ( ) refer to quantities when purchased separately.

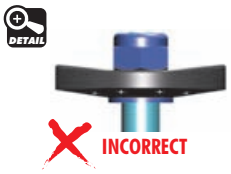
358040
S 2.5x6x0.5

960026
N M2.5

4x

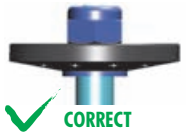


OPTION #358163
GT SHOCK SHAFT 43MM (2)



DO NOT OVERTIGHTEN

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



TIGHTEN GENTLY

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

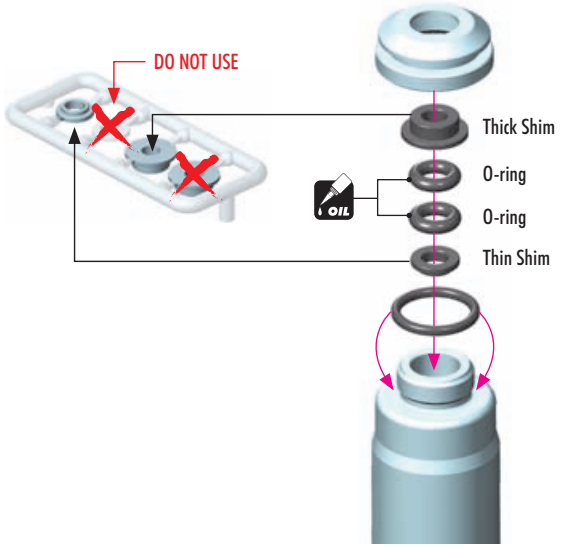
SET-UP BOOK
SHOCK DAMPING
SHOCK PISTONS

970100
O 10x1.5

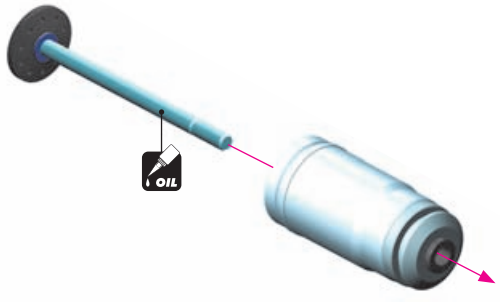
971034
O 3.4x2

4x

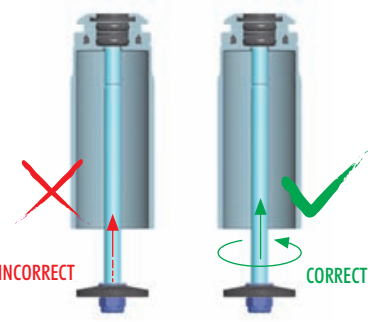
There are two different thickness shims, use them as shown. Use the same procedure when building both front and rear shocks.



4x



EXTREMELY IMPORTANT



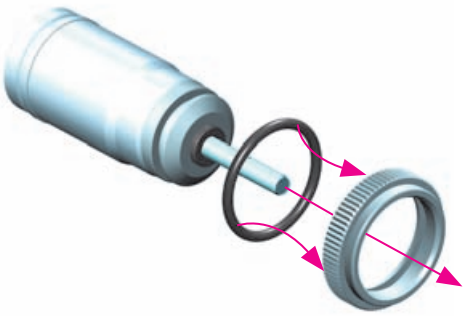
Do not push the shock rod straight through the lower shock body assembly; O-ring damage may result.

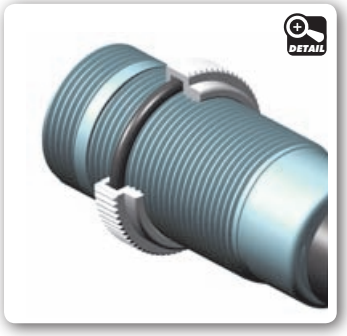
Twist the shock rod through the lower shock body assembly.

11. SHOCK ABSORBERS

970180
O 18x1.8

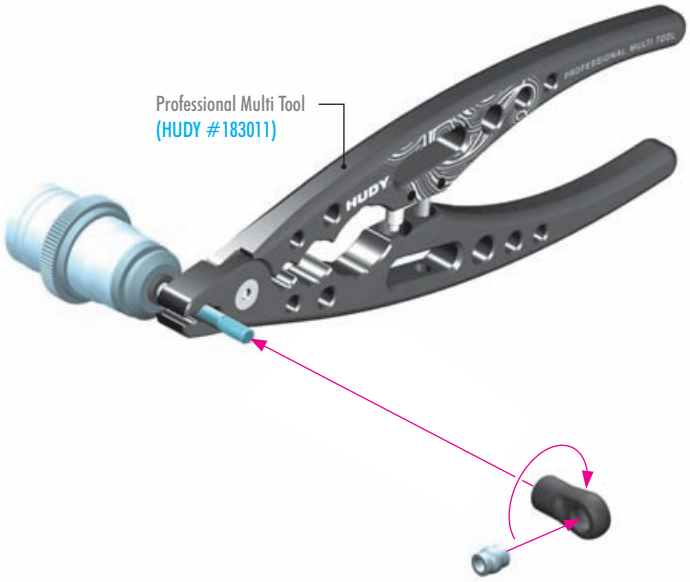
4x

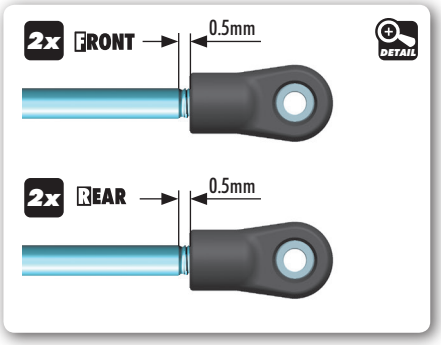




2x FRONT SHOCKS

2x REAR SHOCKS





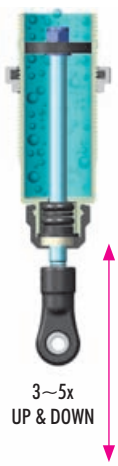
DEFAULT SHOCK REBOUND SETTING 0% (LOW REBOUND)

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

4x SHOCK
Oil 800cSt

SET-UP BOOK
SHOCK OIL

❶ Extend the shock shaft completely. Fill the shock body with the shock oil. For the shocks use 800cSt oil.

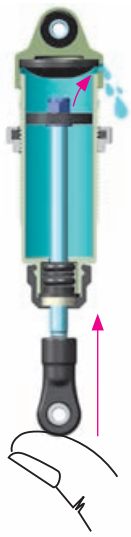


❷ Move the shock shaft up and down a few times to release the air bubbles trapped beneath the piston.

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

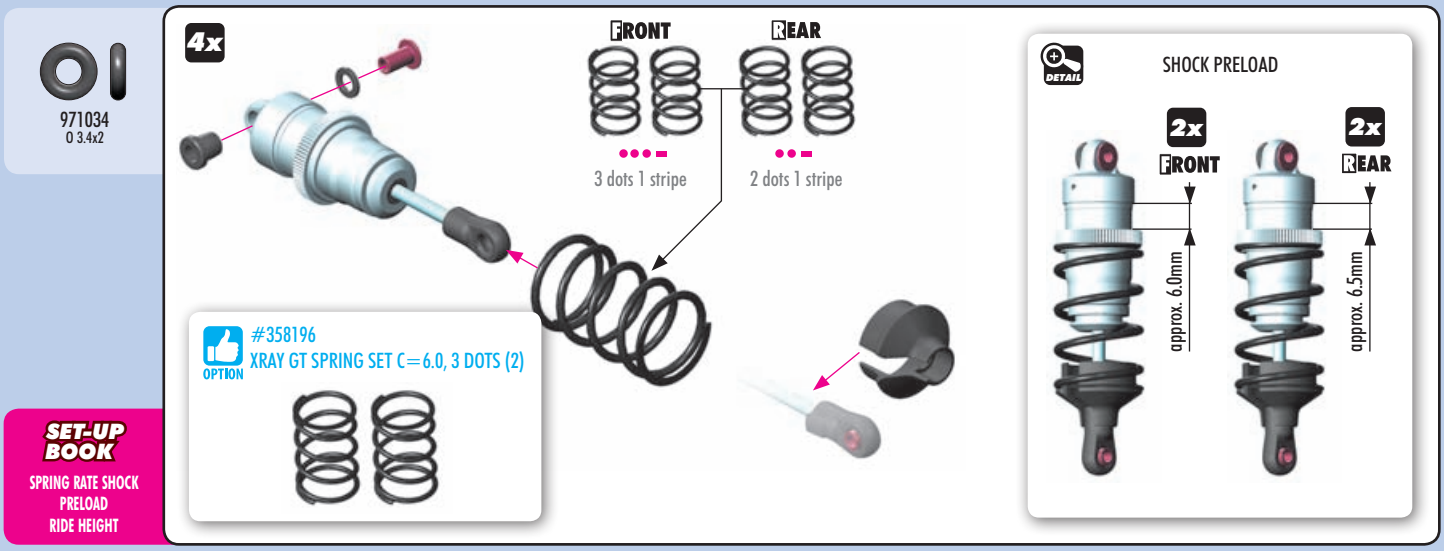
❹ Install the shock membrane into the groove in the upper shock cap.

❺ 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.



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

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

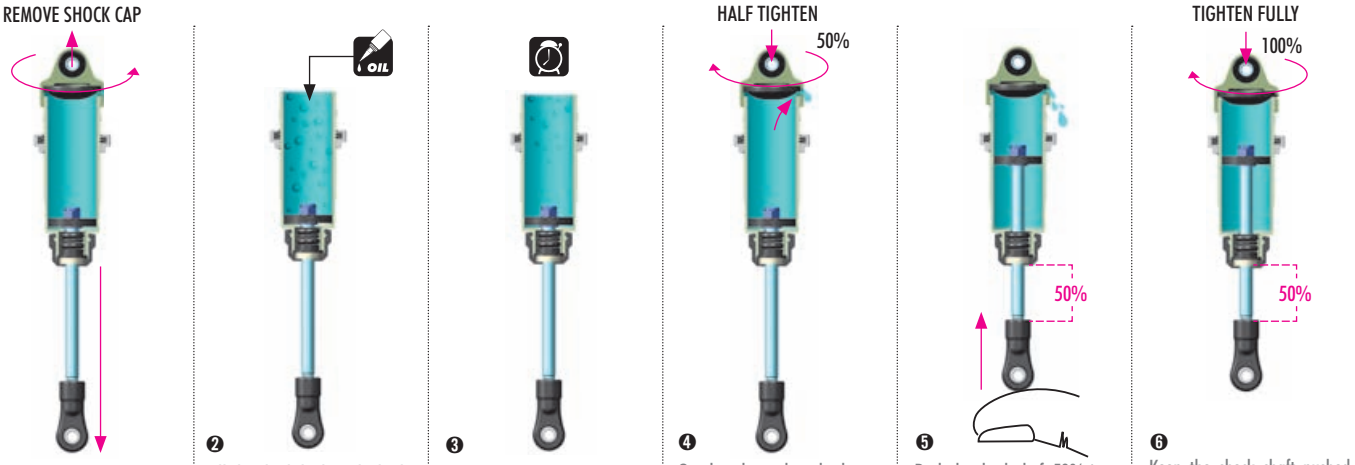


SET-UP BOOK
SPRING RATE SHOCK
PRELOAD
RIDE HEIGHT

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

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

SETTING THE SHOCK REBOUND TO 50% (MEDIUM REBOUND)



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

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

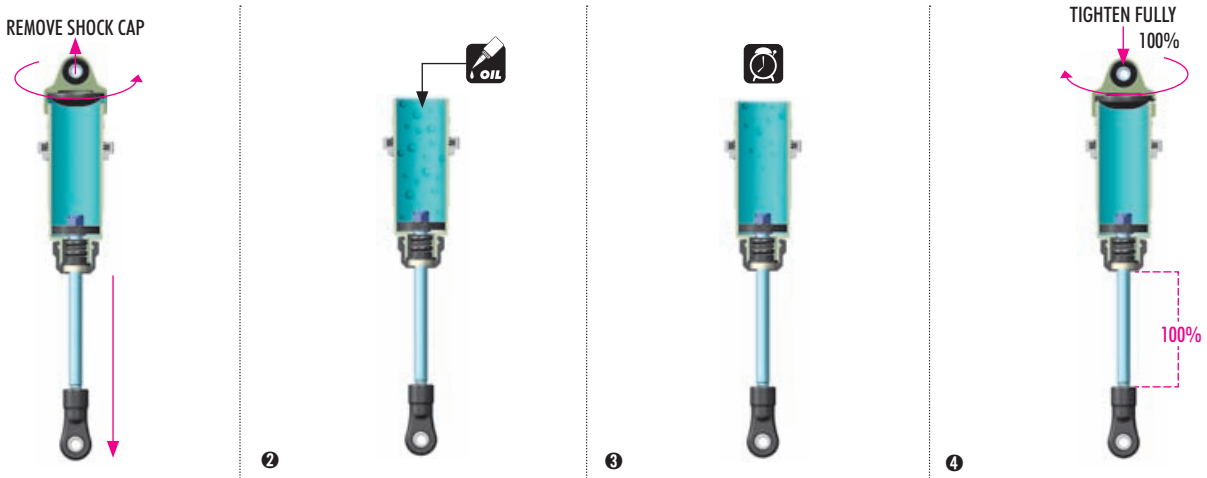
❸ Orient the filled shock vertically for several minutes with the shock shaft fully extended. The remaining air bubbles will release.

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

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

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

SETTING THE SHOCK REBOUND TO 100% (HIGH REBOUND)



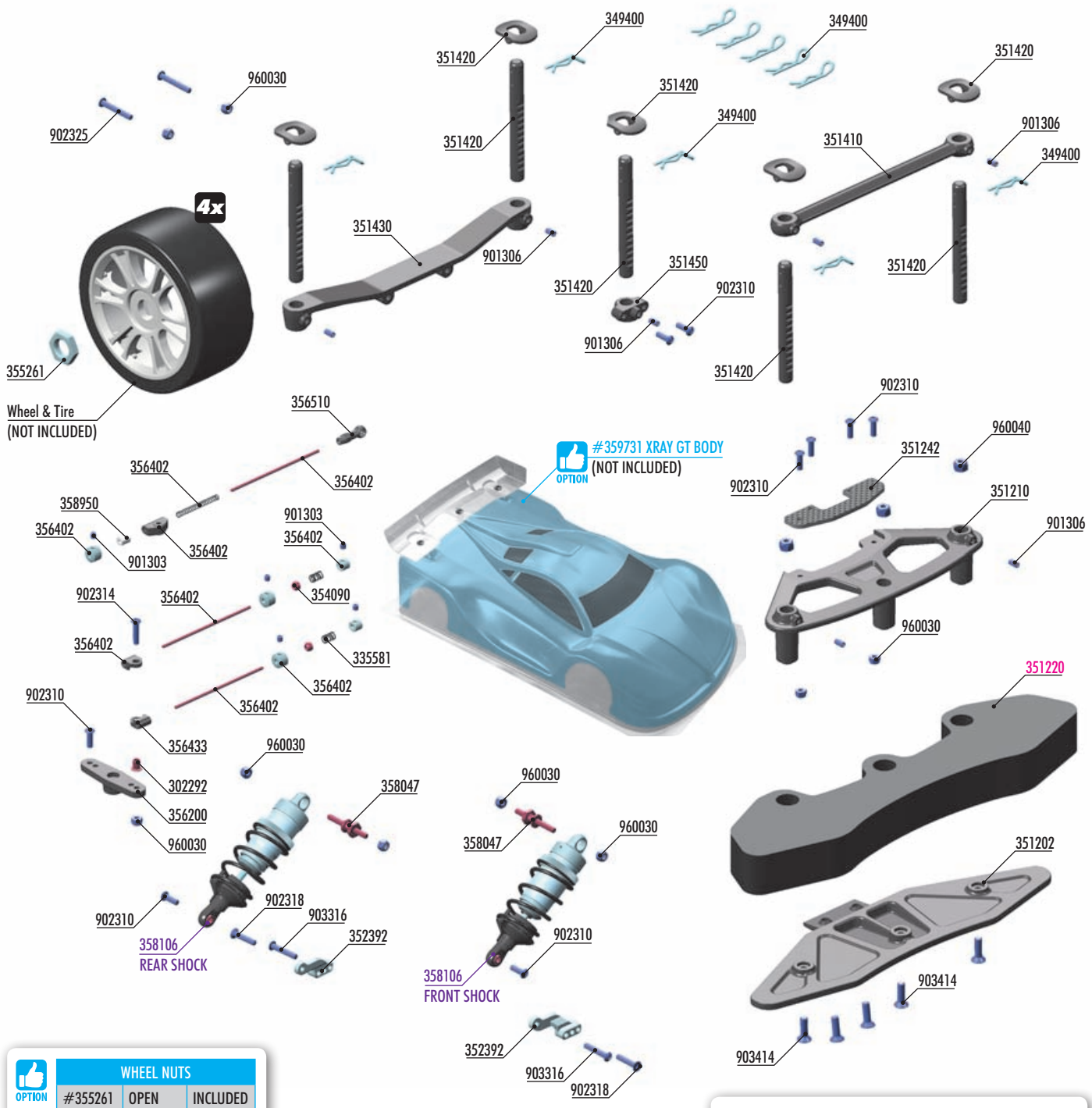
❶ Extend the shock shaft completely and remove the shock cap.

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

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

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

12. FINAL ASSEMBLY



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

OPTION

#351222 GT FOAM BUMPER - LIGHT
#351233 GT COMPOSITE DIFFUSOR + #351235 ADAPTER
#351460 GT HORIZONTAL BODY MOUNTING - SET

BAG 12

302292	STEEL STEERING BUSHING LONG (4)
335581	SPRING C=7.8 FOR GEAR BOX - MEDIUM - SILVER (2)
349400	BODY CLIP (10)
351202	COMPOSITE FRONT BUMPER - NARROW
351210	GT COMPOSITE FRONT UPPER BUMPER
351242	GT GRAPHITE PLATE FOR FRONT UPPER BUMPER
351410	GT COMPOSITE FRONT HOLDER FOR BODY POSTS
351420	GT COMPOSITE BODY POSTS (2)
351430	GT COMPOSITE REAR HOLDER FOR BODY POSTS
351450	GT COMPOSITE CENTER BODY POST HOLDER
352392	GT ALU SHOCK PLATE - SWISS 7075 T6 (L+R)
354090	BALL-SHAPED BRAKE BUSHING (2)
355261	WHEEL NUT - RIBBED - HARD COATED (2)
356200	BRAKE/THROTTLE ARMS & SERVO ARMS - SET
356402	XB8 BRAKE/THROTTLE SYSTEM - SET
356433	GT COMPOSITE BRAKE WIRE HOLDER (2)
356510	CLOSED BALL JOINT 3.9 (4)
358047	STEEL SCREW SHOCK PIVOT BALL WITH HEX (2)
358950	SILICONE TUBING 1M (2.4 x 5.5MM)
901303	HEX SCREW SB M3x3 (10)
901306	HEX SCREW SB M3x6 (10)
902310	HEX SCREW SH M3x10 (10)
902314	HEX SCREW SH M3x14 (10)
902318	HEX SCREW SH M3x18 (10)
902325	HEX SCREW SH M3x25 (10)
903316	HEX SCREW SFH M3x16 (10)
903414	HEX SCREW SFH M4x14 (10)
960030	NUT M3 (10)
960040	NUT M4 (10)
358106	GT SHOCK ABSORBER - V2 (2)
351220	GT FOAM BUMPER - V2

Numbers in parentheses ( ) refer to quantities when purchased separately.

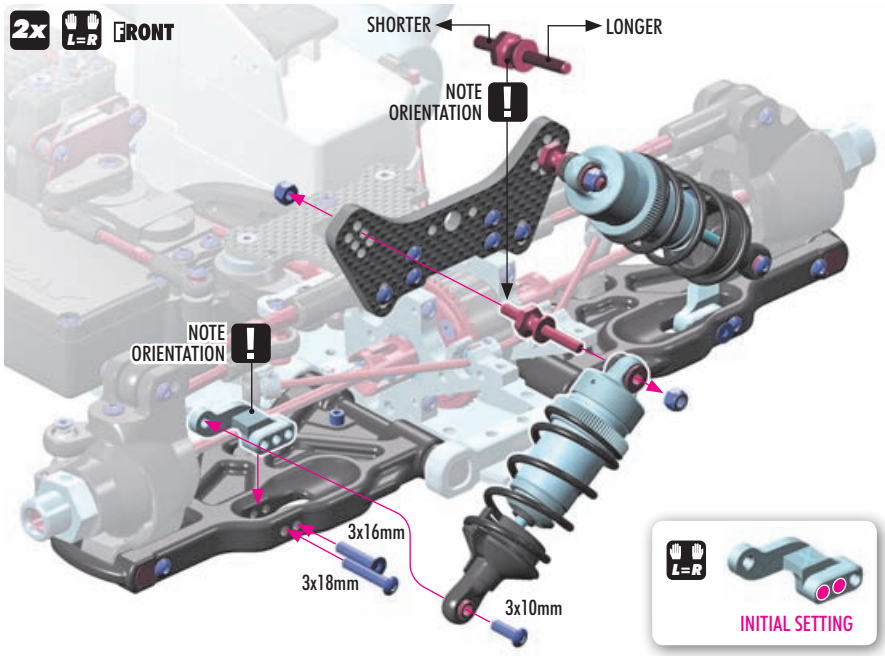
902310
SH M3x10

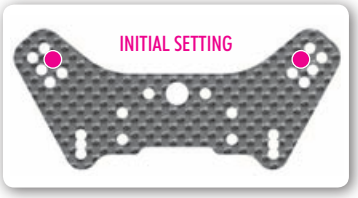
902318
SH M3x18

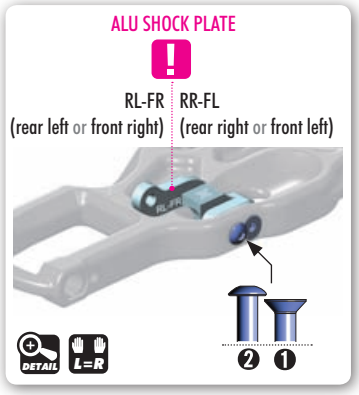
903316
SFH M3x16

960030
N M3

SET-UP BOOK
SHOCK ABSORBERS





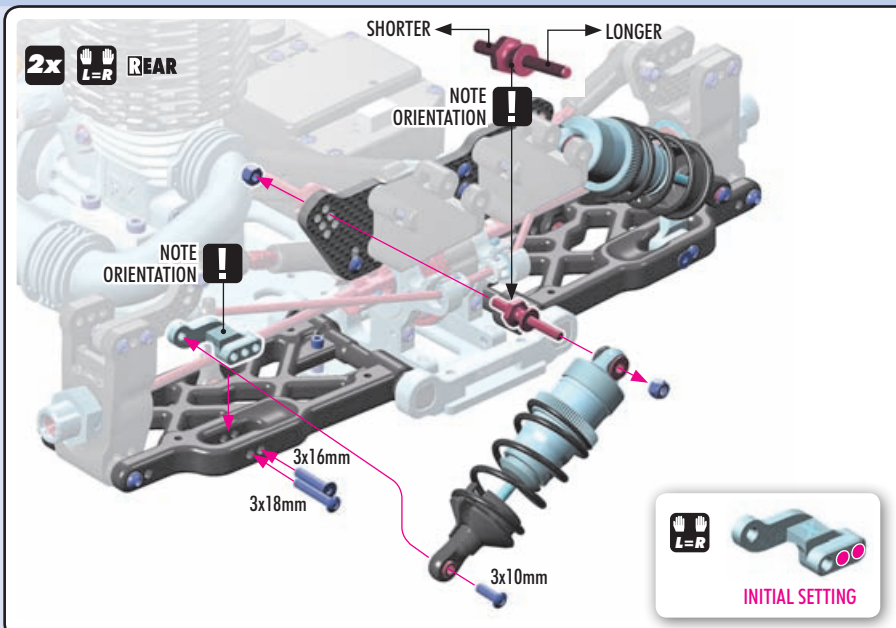


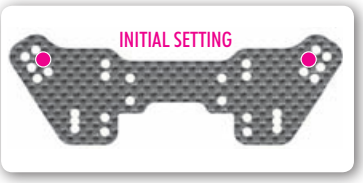
902310
SH M3x10

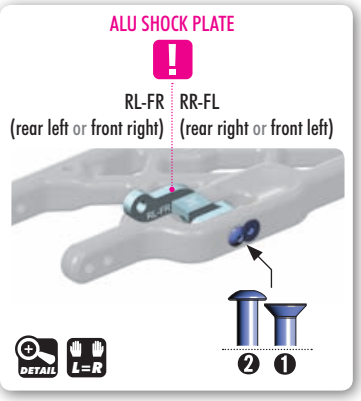
902318
SH M3x18

903316
SFH M3x16

960030
N M3





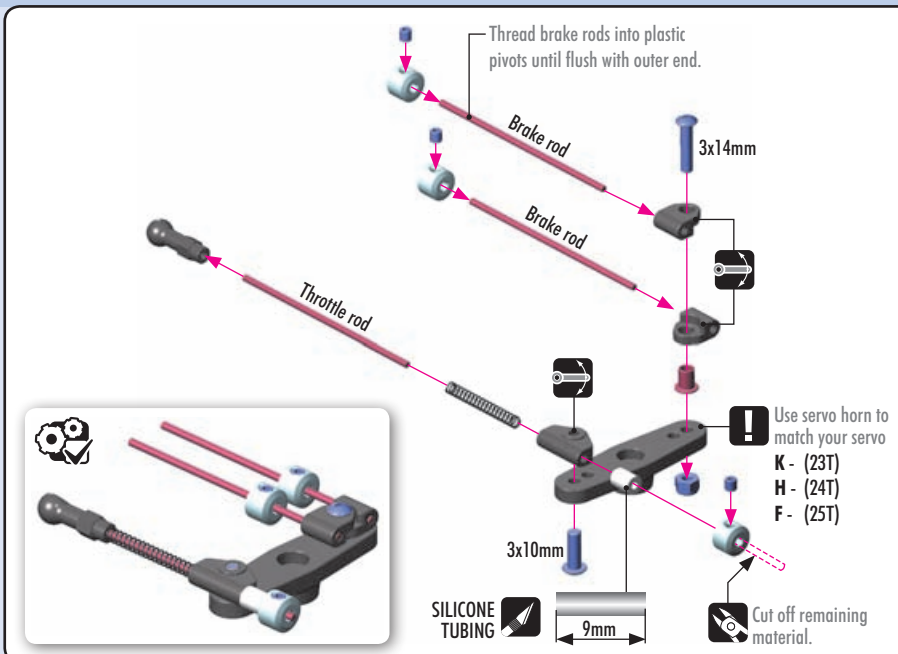


901303
SB M3x3

902310
SH M3x10

902314
SH M3x14

960030
N M3

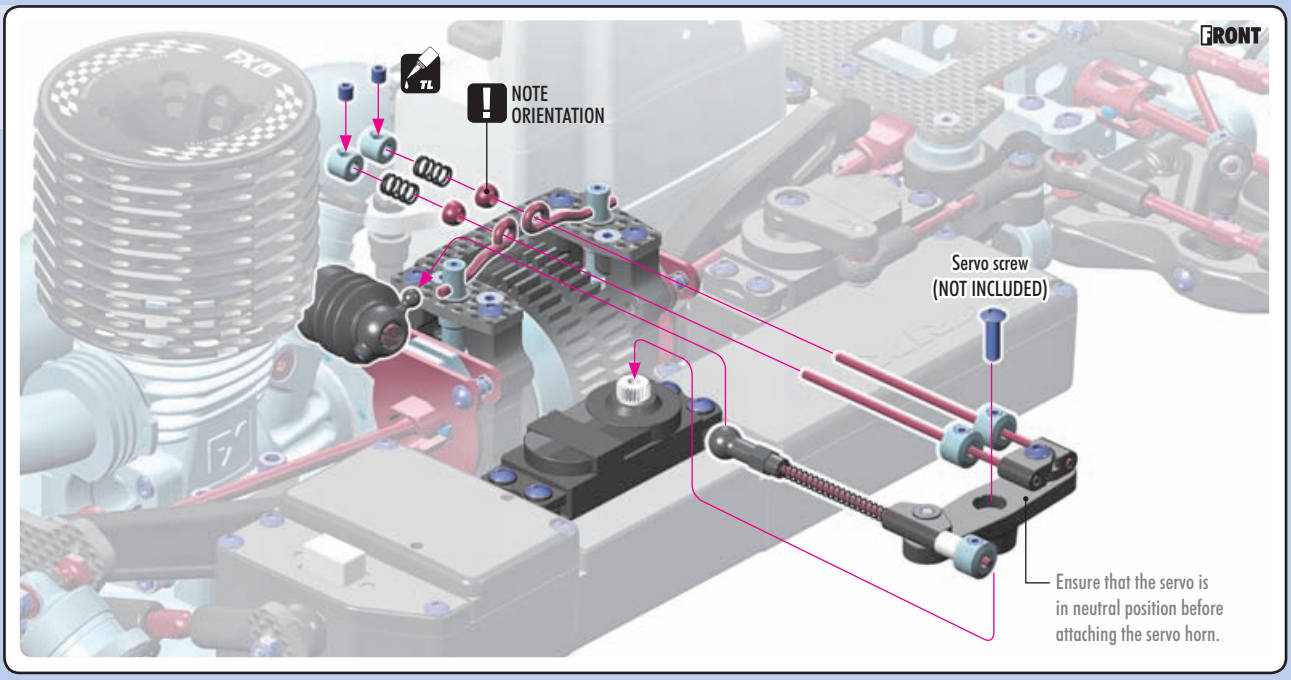


OPTION HUDY	CLAMP ALU SERVO HORNS		
	#293444	23T	OPTION
	#293445	24T	OPTION
	#293446	25T	OPTION
	#293447	23T	OPTION
	#293448	24T	OPTION
	#293449	25T	OPTION

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

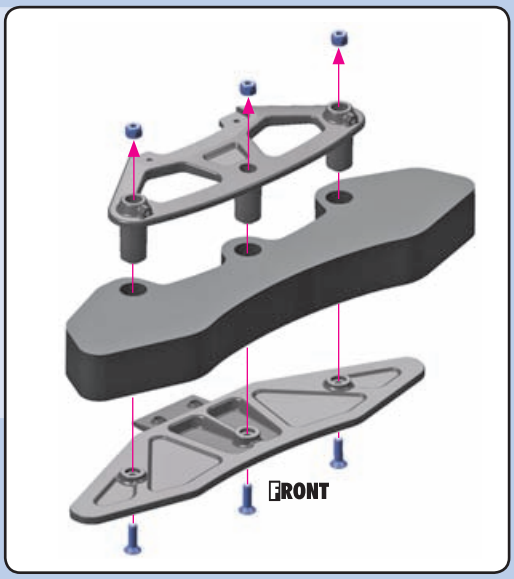
12. FINAL ASSEMBLY

901303
SB M3x3



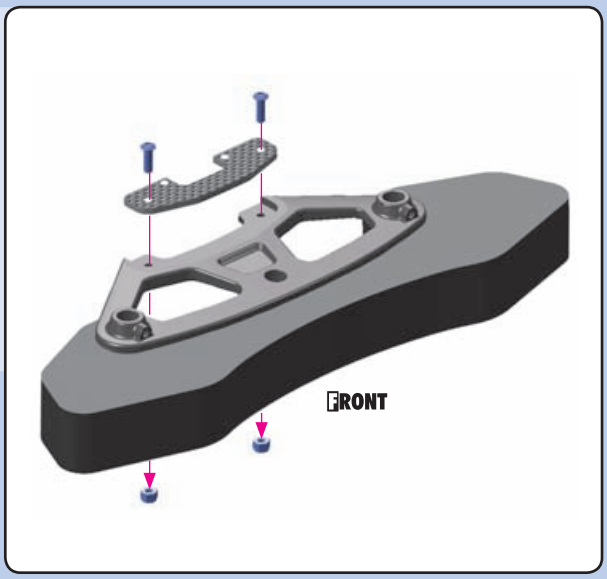
903414
SFH M4x14

960040
N M4



902310
SH M3x10

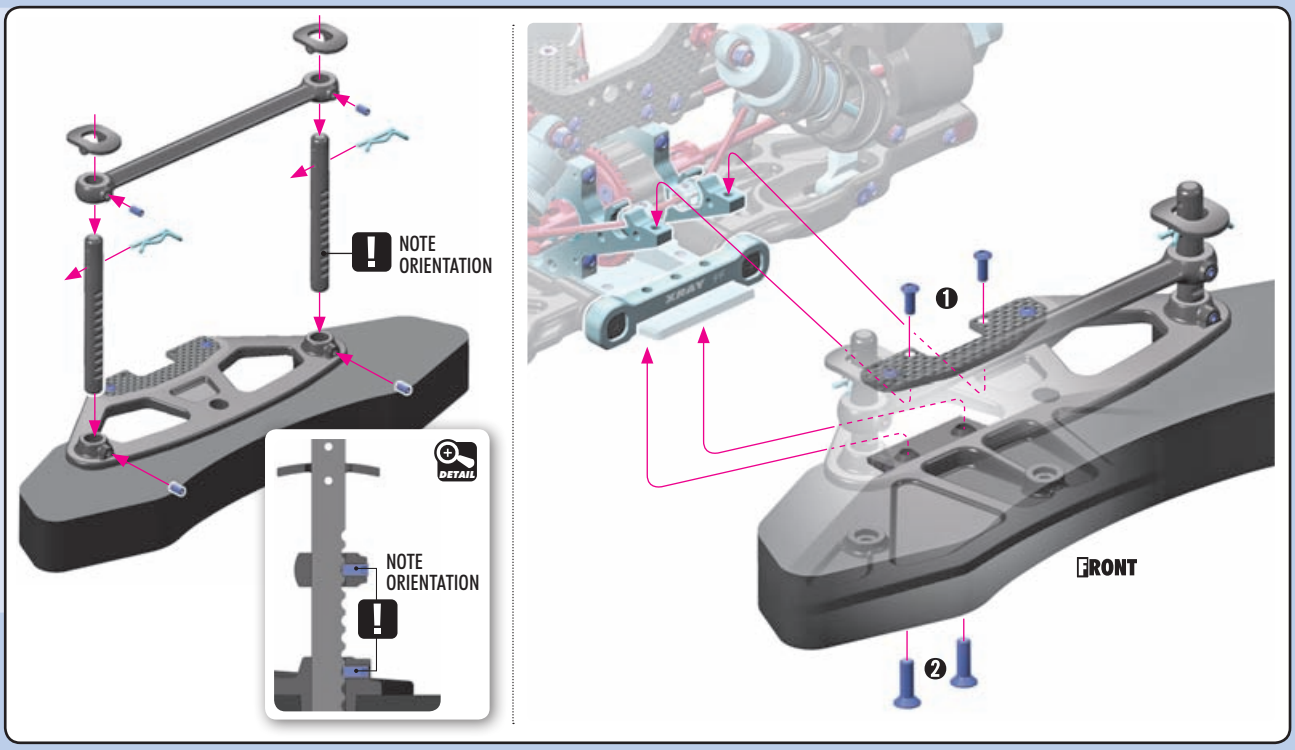
960030
N M3



901306
SB M3x6

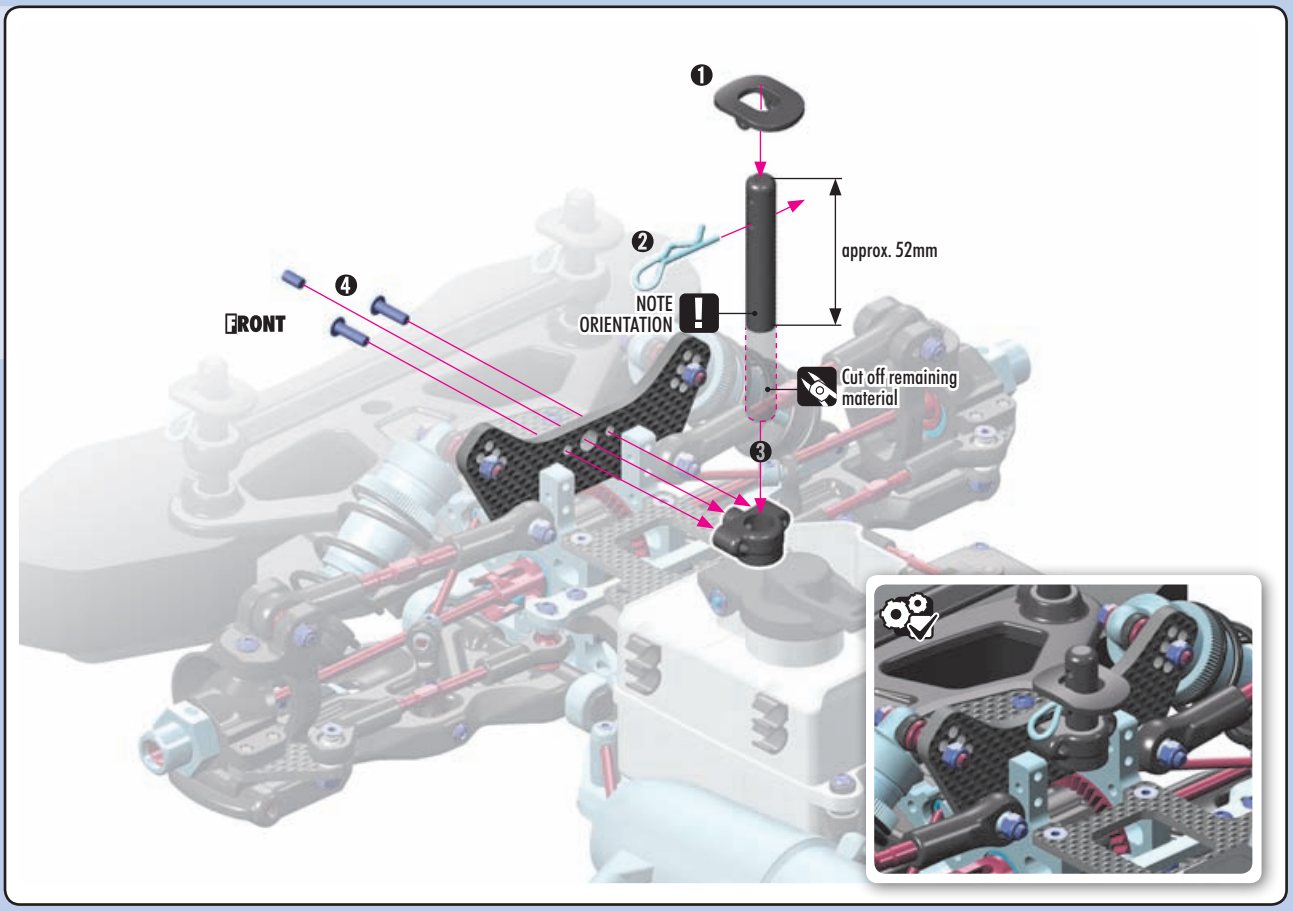
902310
SH M3x10

903414
SFH M4x14



901306
SB M3x6

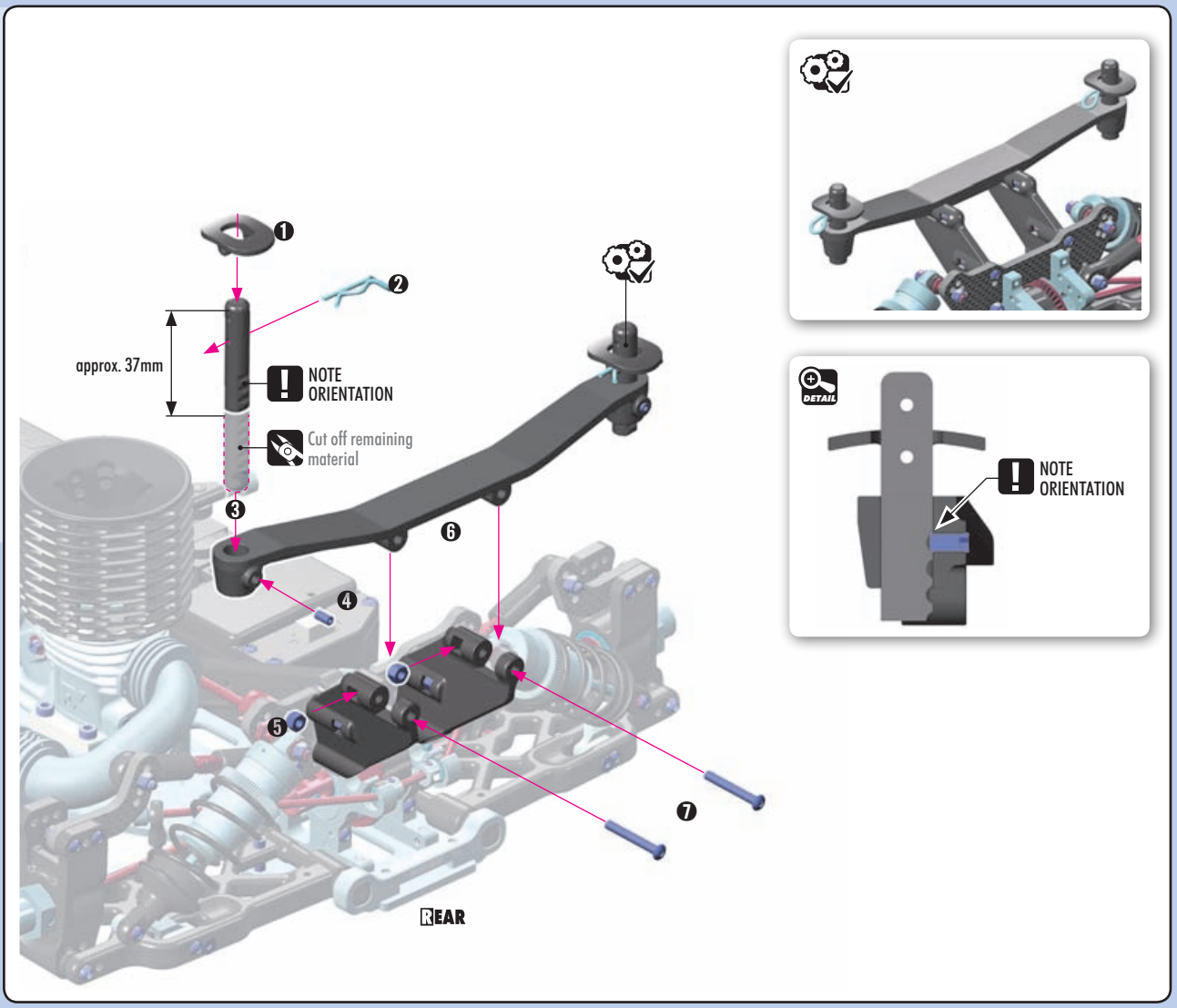
902310
SH M3x10



901306
SB M3x6

902325
SH M3x25

960030
N M3

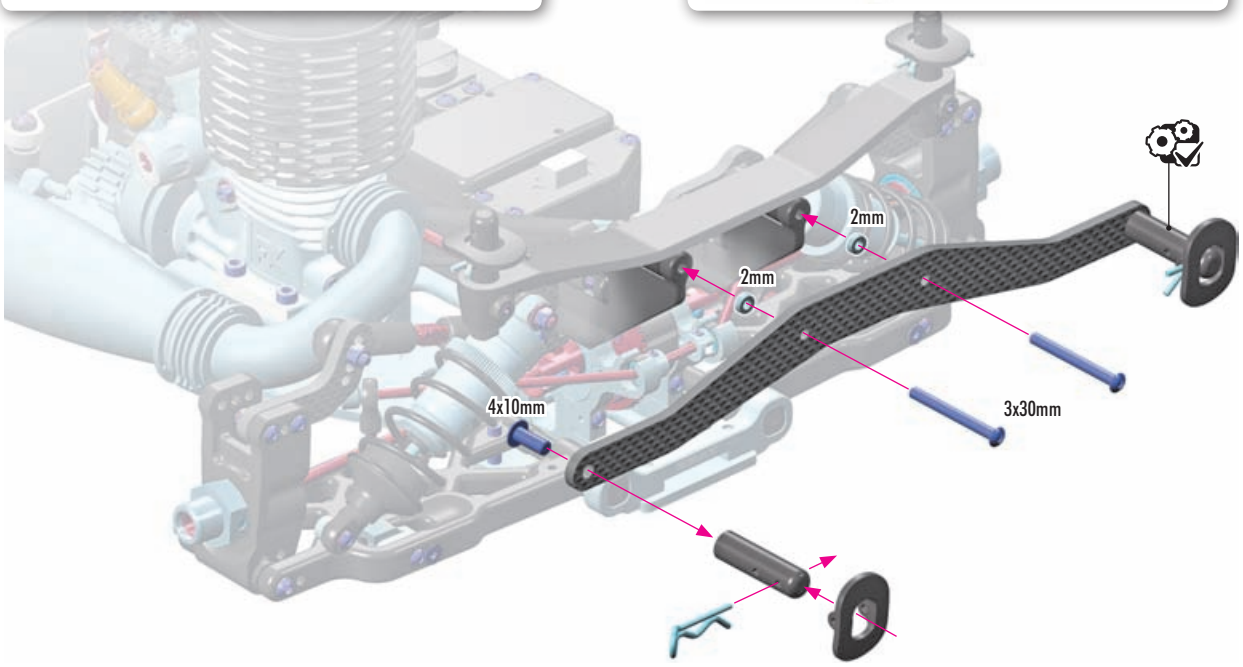


OPTION

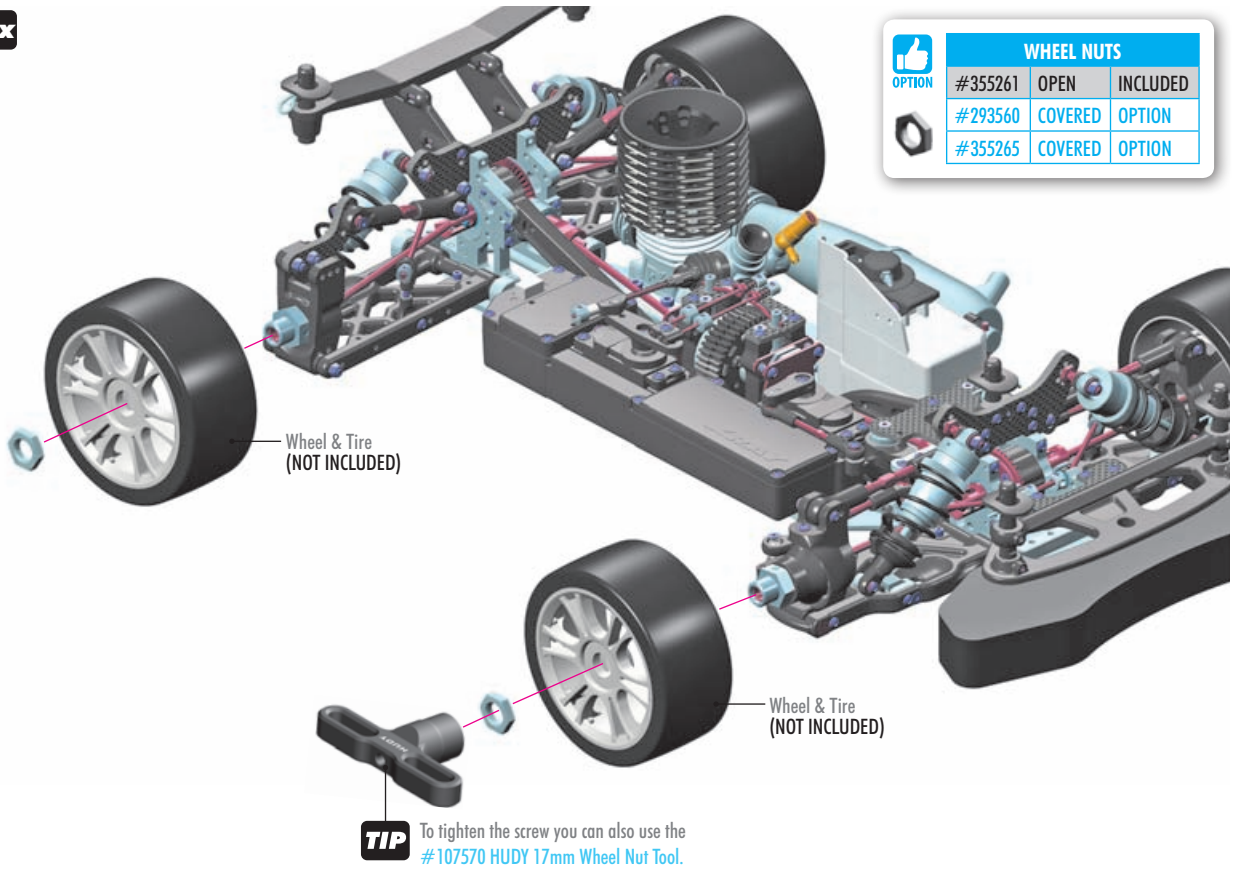
#351460
GT HORIZONTAL BODY MOUNTING - SET

OPTION

#351233 GT COMPOSITE DIFFUSOR
#351235 ADAPTER



4x



OPTION

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

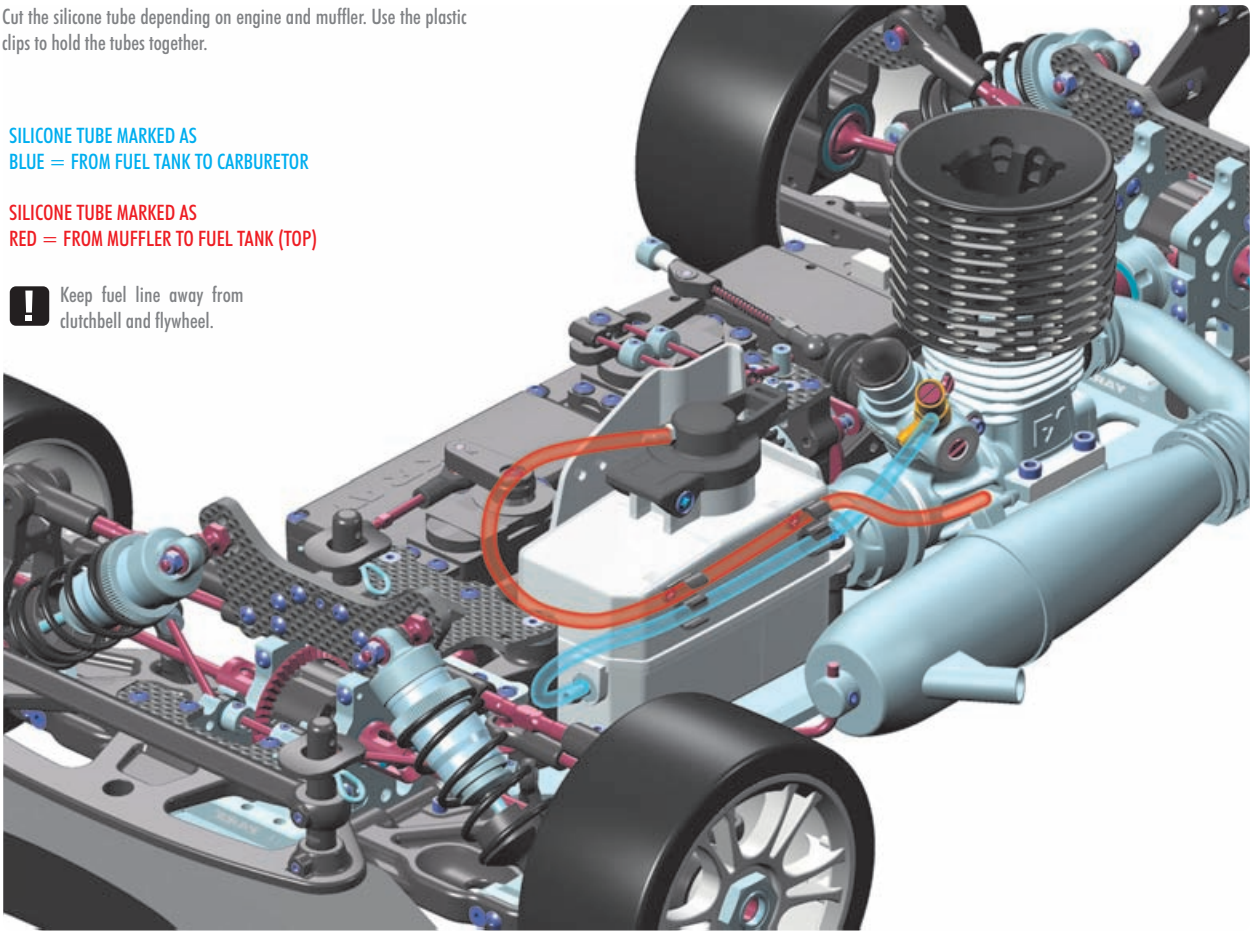
TIP To tighten the screw you can also use the #107570 HUDY 17mm Wheel Nut Tool.

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

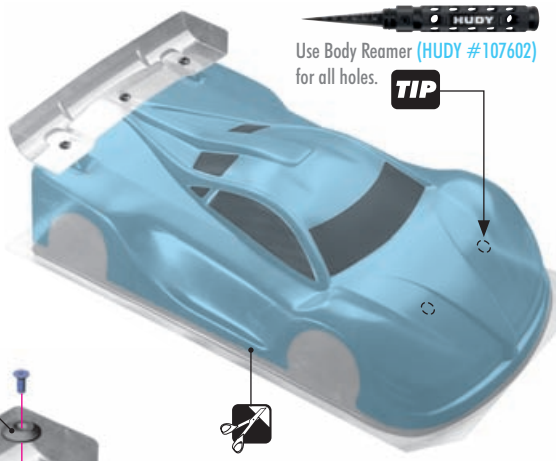
SILICONE TUBE MARKED AS
RED = FROM MUFFLER TO FUEL TANK (TOP)

Keep fuel line away from clutchbell and flywheel.



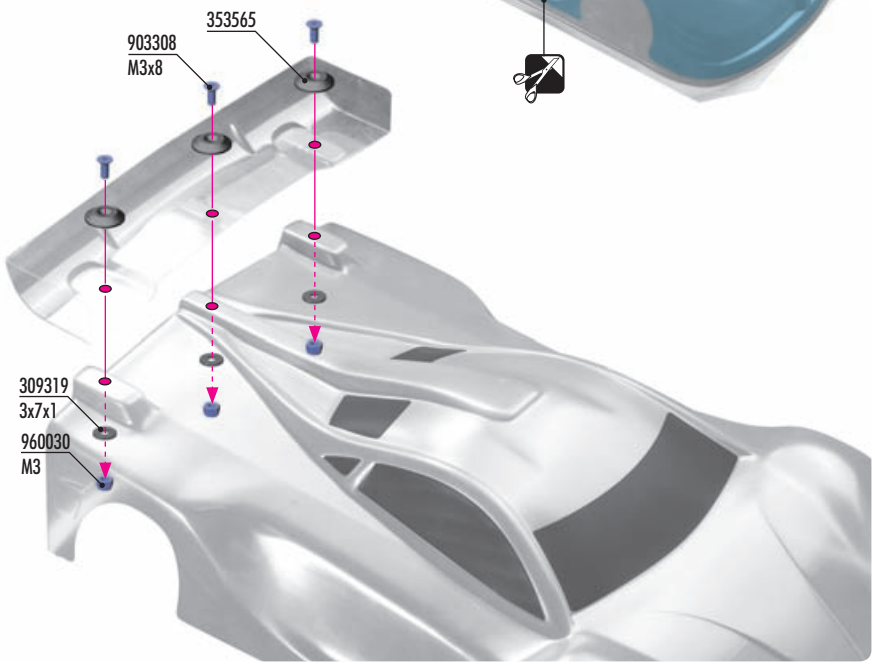
OPTION #359731 GTX BODY (NOT INCLUDED)

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



Use Body Reamer (HUDY #107602) for all holes.

TIP



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

OPTION

WING SHIMS		
#353565	COMPOSITE	INCLUDED
#293561	ALU	OPTION
#293561-K	ALU	OPTION
#293561-O	ALU	OPTION
#353561	ALU	OPTION

MAINTENANCE

ENGINE OPERATION

PREPARING TO OPERATE THE ENGINE

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

STARTING AND RUNNING THE ENGINE

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

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

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.

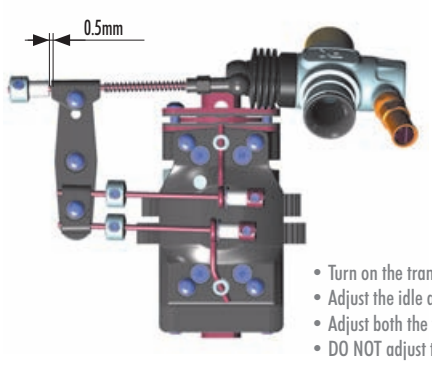
HUDY SPRING STEEL™

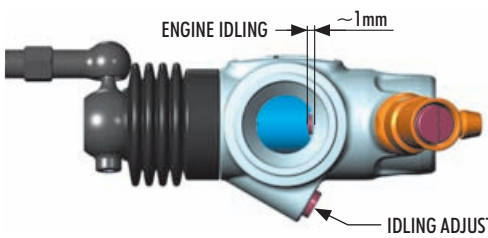
The HUDY Spring Steel™ used in the car is the strongest and most durable steel material on the RC market. While items made from HUDY Spring Steel™ are still subject to wear, the lifespan is considerably longer than any other material. As parts made from HUDY Spring Steel™ wear, the brown color will after 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.

THROTTLE LINKAGE ADJUSTMENT

NEUTRAL (IDLE)

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

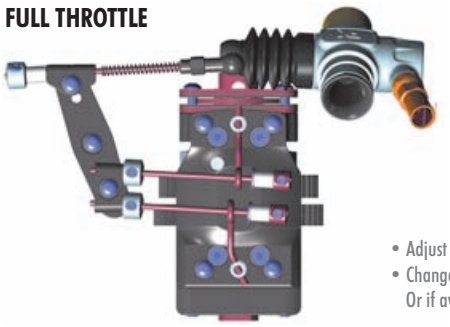


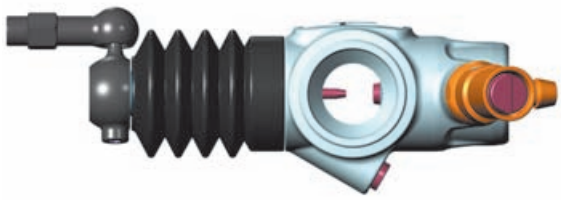


IDLING ADJUSTMENT SCREW.
Use to adjust the idle setting of the carburetor. Do not allow carburetor to close to less than 1mm.

- 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.

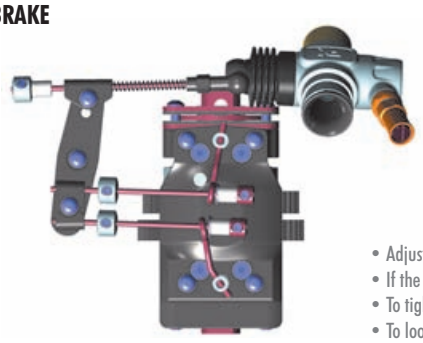
FULL THROTTLE

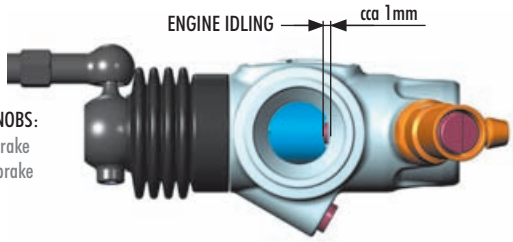




- Adjust the servo-horn mounting position for the carburetor to open fully.
- Change the pivot mounting position on the servo horn in case the carburetor is not opening fully or if it is opening excessively. Or if available on the transmitter, adjust the throttle high end point.

BRAKE



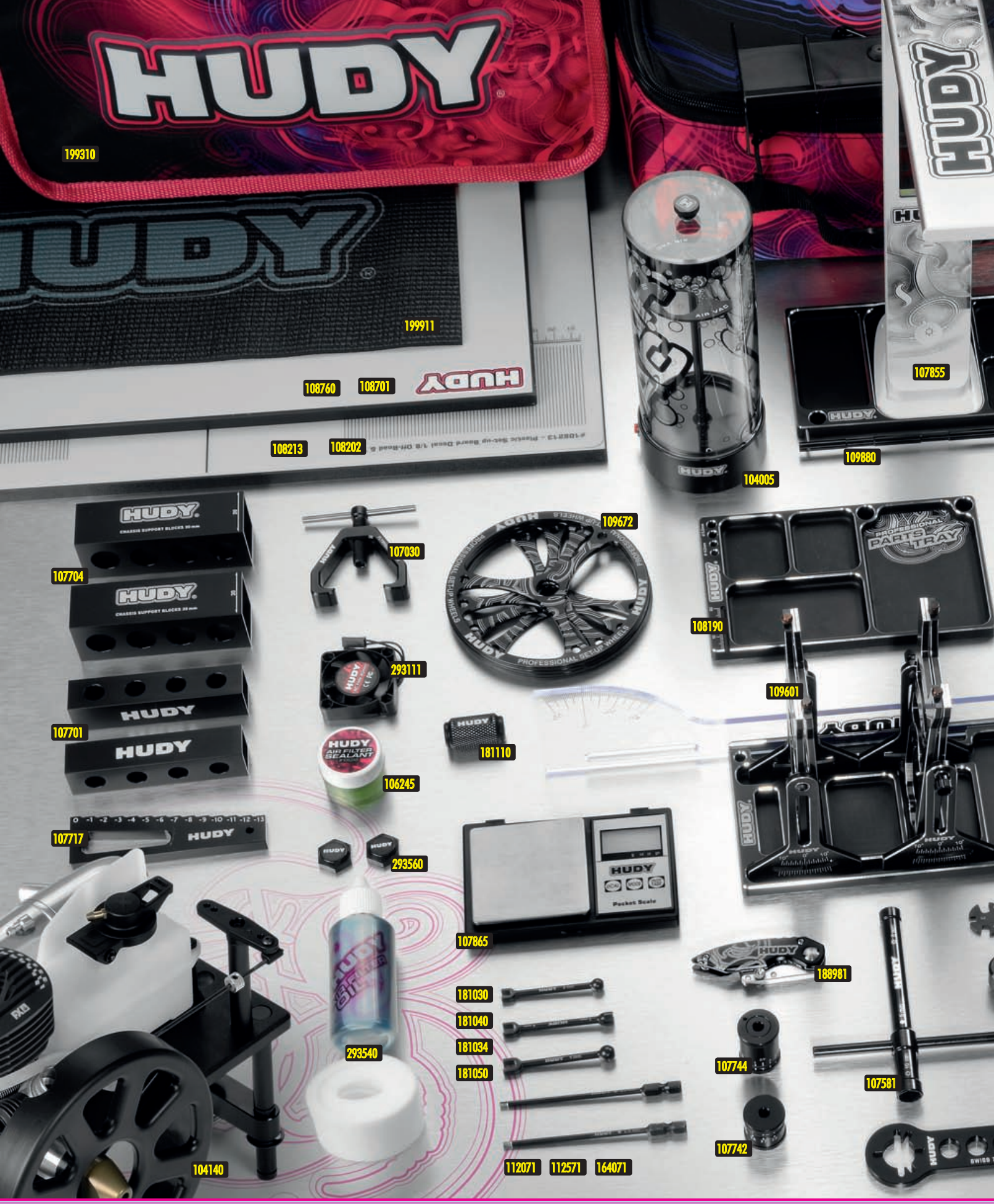


BRAKE ADJUSTING KNOBS:
Upper linkage - rear brake
Lower linkage - front brake

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

TROUBLESHOOTING GUIDE

PROBLEM	CAUSE	SOLUTION
ENGINE DOES NOT START	• Fuel tank is empty or carburetor is not primed • Bad glowplug or dead glowdriver battery • Fuel lines, fuel filter, air cleaner, or muffler is clogged • Engine is flooded due to over-priming • Carburetor is not adjusted properly • Throttle servo linkage not adjusted properly	• Fill fuel tank with fuel and prime • Replace glowplug or recharge/replace glowdriver battery • Clean or replace clogged part(s) • Remove glowplug, turn car over to discharge fuel from cylinder. Test glowplug and replace if defective • Set idle and main/slow needle adjusting screw to standard starting position • Move throttle servo to neutral position and re-adjust linkage(s)
ENGINE STARTS BUT THEN STALLS	• Fuel tank is empty • Fuel lines, fuel filter, air cleaner, or muffler is clogged • Carburetor is not adjusted properly • Engine has overheated	• Fill fuel tank with fuel • Clean or replace clogged part(s) • Re-adjust idle and main/slow needle adjusting screw • Allow engine to thoroughly cool down and open main needle adjusting screw 30° turn richer (CCW)
BAD REACTION AND RESPONSE FROM ENGINE	• Carburetor is not adjusted properly • Fuel lines, fuel filter, air cleaner, or muffler is clogged • Low fuel pressure from muffler	• Re-adjust main/slow needle adjusting screw • Clean or replace clogged part(s) • Properly install pressure line between muffler and fuel tank
CAR IS HARD TO CONTROL	• Weak transmitter and/or receiver batteries • Low reception from radio antennas • Servo linkages not adjusted properly	• Recharge or replace batteries • Fully extend transmitter and receiver antennas • Move servo to neutral then re-adjust linkage(s)
STEERING DOES NOT WORK PROPERLY	• Weak transmitter and/or receiver batteries • Bent linkages or driveshafts • Loose steering components • Drivetrain damage	• Recharge or replace batteries • Check tightness of steering components and tighten if necessary • Replace damaged parts
HANDLING PROBLEMS	• Shocks are not working properly • Suspension is binding • Improper tires	• Rebuild the shocks and replace worn or broken parts • Make sure suspension moves freely. Replace worn or broken parts • Use different tires
STEERING FEELS SLUGGISH OR VAGUE	• Suspension is binding • Damaged steering servo	• Make sure suspension moves freely, and replace worn or broken parts • Check the steering servo for damage and wear, and replace/repair if necessary
THE CAR DOES NOT DRIVE STRAIGHT	• Suspension is binding • Steering trim is off-center • Wheels are loose • Damaged steering servo	• Make sure suspension moves freely, and replace worn or broken parts • Adjust steering trim until car drives straight • Check the make sure the wheel nuts are properly tightened • Check the steering servo for damage and wear, and replace/repair if necessary



#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
#108213 Plastic Set-up Board Decal for 1/8 Off-Road & Truggy
#108701 Flat Set-Up Board for 1/8 Off-Road & GT – Lightweight
#108760 Plastic Set-Up Board Decal 399x545mm - 1/8 Off-Road & GT
#109601 HUDY Set-Up Station for 1/8 GT
#108860 Alu Nut for 1/8 Off-Road System (4)
#109672 Alu Set-Up Wheel for 1/8 GT (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

#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
#182016 Wheel Nut & 3/4 Shoe Flywheel Multi-Toll 1/8 GT
#183011 HUDY Professional Multi Tool
#188981 HUDY Pocket Hobby Knife
#188990 HUDY Professional Body Scissors
#199060 HUDY Alu Tool Stand
#199186 HUDY Car Bag - 1/8 On-Road GT
#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:

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www.teamxray.com

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