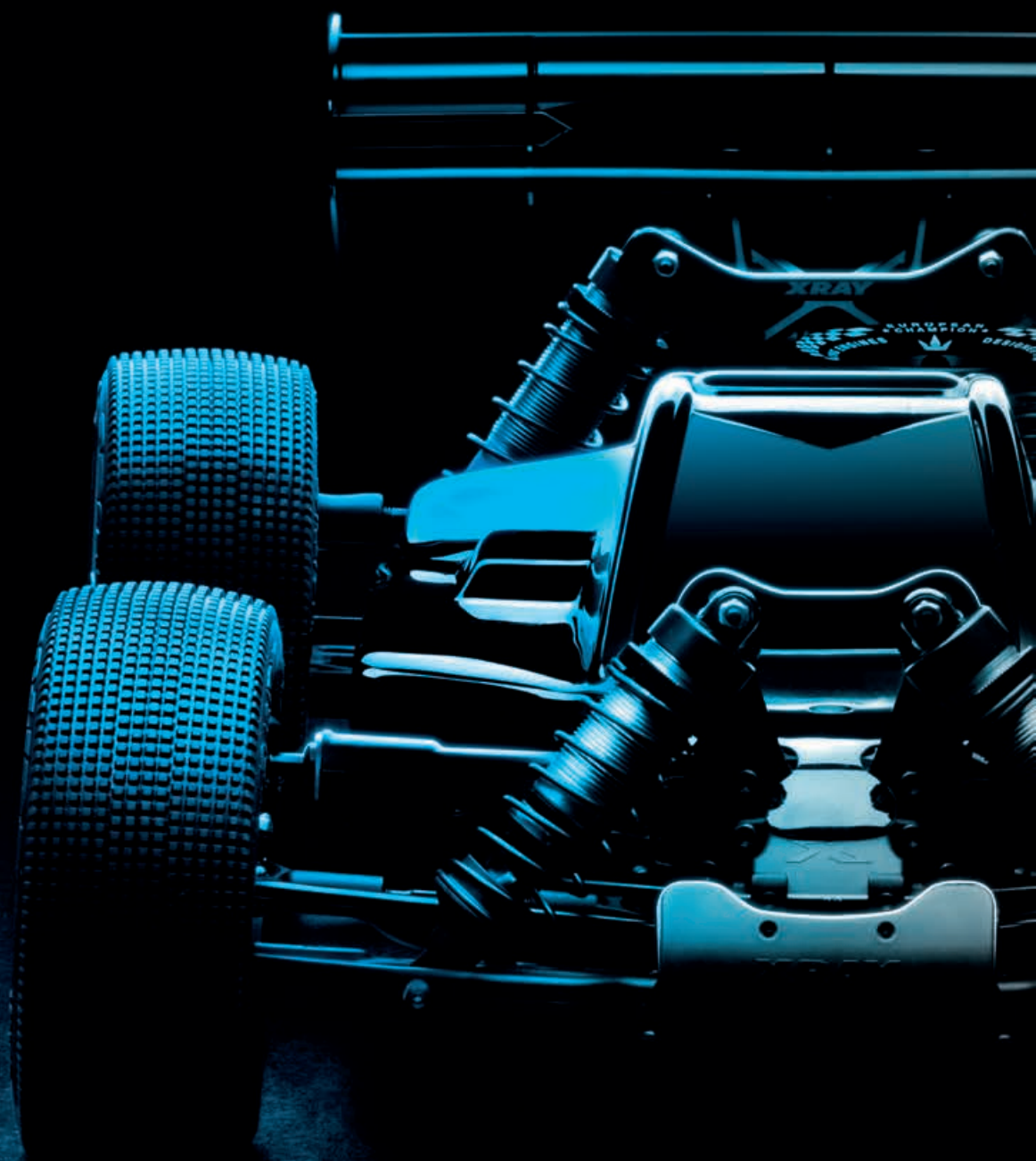


1/8 LUXURY OFF-ROAD BUGGY

XRAY XB8



INSTRUCTION MANUAL

XRAY XB8'25

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.

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**

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.

XRAY Europe

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

XRAY USA

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

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.



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.



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.

- 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 – ELECTRICAL

- Insulate any exposed electrical wiring (using heat shrink tubing or electrical tape) to prevent dangerous short circuits. Take maximum care in wiring, connecting and insulating cables. Make sure cables are always connected securely. Check connectors for if they become loose. And if so, reconnect them securely. Never use R/C models with damaged wires. A damaged wire is extremely dangerous, and can cause short-circuits resulting in fire. Please have wires repaired at your local hobby shop.
- Low battery power will result in loss of control. Loss of control can occur due to a weak battery in either the transmitter or the receiver. Weak running battery may also result in an out of control car if your car's receiver power is supplied by the running battery. Stop operation immediately if the car starts to slow down.
- When not using RC model, always disconnect and remove battery.
- DO NOT disassemble battery or cut battery cables. If the running battery short-circuits, approximately 300W of electricity can be discharged, leading to fire or burns. Never disassemble battery or cut battery cables.
- Use a recommended charger for the receiver and transmitter batteries and follow the instructions correctly. Over-charging, incorrect charging, or using inferior chargers can cause the batteries to become dangerously hot. Recharge battery when necessary. Continual recharging may

damage battery and, in the worst case, could build up heat leading to fire. If battery becomes extremely hot during recharging, please ask your local hobby shop for check and/or repair and/or replacement.

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

IMPORTANT NOTES – NITRO FUEL

- Handle fuel only outdoors. Never handle nitro fuel indoors, or mix nitro fuel in a place where ventilation is bad.
- Only use nitro fuel for R/C models. DO NOT use gasoline or kerosene in R/C models as it may cause a fire or explosion, and ruin your engine.
- Nitro fuel is highly flammable, explosive, and poisonous. Never use fuel indoors or in places with open fires and sources of heat.
- Always keep the fuel container cap tightly shut.
- Always read the warning label on the fuel container for safety information.
- Nitro-powered model engines emit poisonous vapors and gasses. These vapors irritate eyes and can be highly dangerous to your health. We recommend wearing rubber or vinyl gloves to avoid direct contact with nitro fuel.
- Nitro fuel for RC model cars is made of the combination of the methyl alcohol, castor oil

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.

WARRANTY

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

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

warranty. XRAY reserves the right to make the final determination of the warranty status of any component or part.

Limitations of Liability

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

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

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

QUALITY CERTIFICATE

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

abused, neglected or improperly operated will not be covered under warranty.

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

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

TOOLS REQUIRED



OPTION

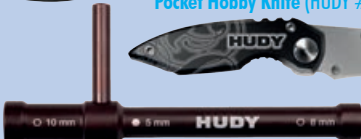


Combination Pliers
(HUDY #189020)

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)



HUDY Tweezers Straight (HUDY #188970)



HUDY Tweezers Curved (HUDY #188971)



Scissors (HUDY #188990)



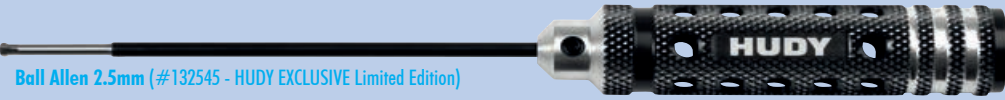
Allen 1.5mm (#111545 - HUDY EXCLUSIVE Limited Edition)



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



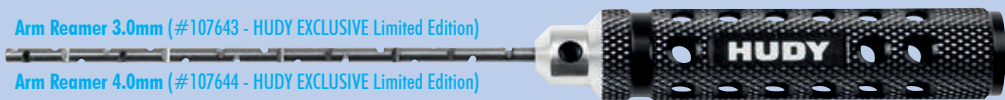
Allen 2.5mm (#112545 - HUDY EXCLUSIVE Limited Edition)



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



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



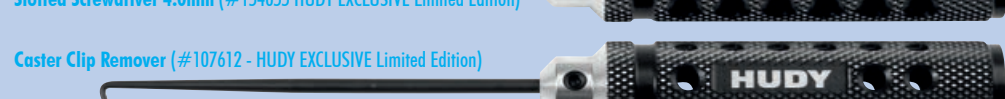
Arm Reamer 3.0mm (#107643 - HUDY EXCLUSIVE Limited Edition)



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)



Slotted Screwdriver 3.0mm (#153055 HUDY EXCLUSIVE Limited Edition)



Slotted Screwdriver 4.0mm (#154055 HUDY EXCLUSIVE Limited Edition)



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



Reamer (#107602 - HUDY EXCLUSIVE Limited Edition)

Flywheel/Wheel Nut Multi-Tool (HUDY #182016)



Wheel Nut Tool 17mm (HUDY #107570)



Professional Multi-Tool
(HUDY #183011)

EQUIPMENT REQUIRED

Transmitter



Receiver



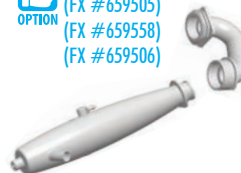
OPTION

Engine .21ci (3.5cc)
(FX K303 #650105)
(FX K303L #650106)
(FX K502 #650304)



OPTION

Manifold & Exhaust
(FX #659505)
(FX #659558)
(FX #659506)



Steering and Throttle Servos



Glow Plug Igniter



OPTION

Fuel + Fuel Bottle
(HUDY #104200)



Lexan™ Paint



Receiver Battery Pack



OPTION

Starter Box & Battery Pack
(HUDY #104500)



Battery Charger



Tires & Wheels



OPTION

Bearing Oil
(HUDY #106230)



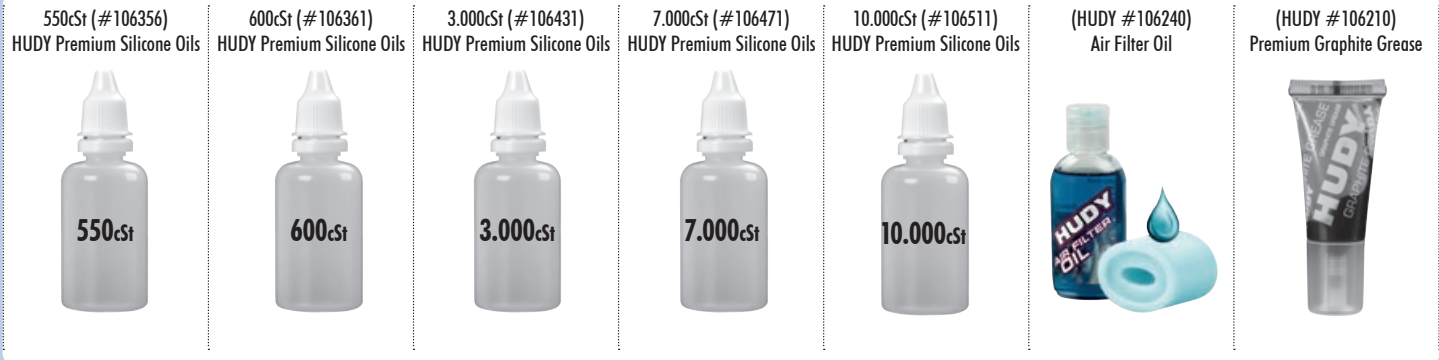
Threadlock



CA glue



EQUIPMENT INCLUDED



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:

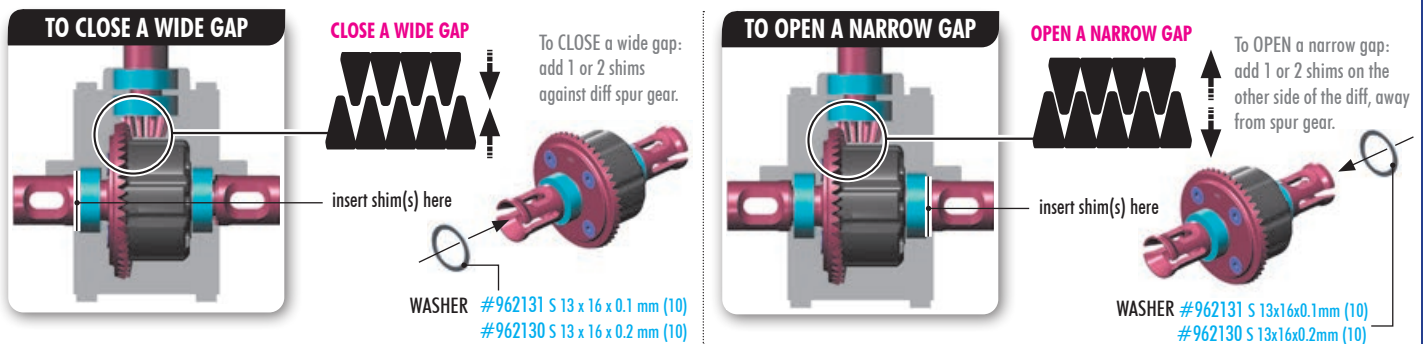
- 351203 **STYLE A** - indicates parts that are included in the bag marked for the section.
- 351192 **STYLE B** - indicates parts that are included in the box.
- 355006 **STYLE C** - indicates parts that are already assembled from previous steps.
- 350912 **STYLE D** - indicates parts that are optional.

XB8 TECH TIPS

TIP FRONT & REAR DIFF GEAR MESH ADJUSTMENT

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



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

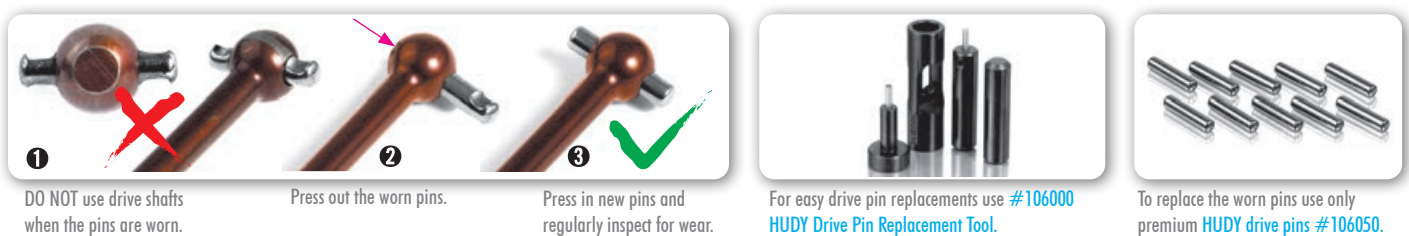
- Check suspension for free movement during building and operation, and especially after running and if you have crashed the car. If the suspension DOES NOT move freely, use the appropriate HUDY Arm Reamer to clean and resize the holes of the suspension arms.
- Regularly check the drive shaft pins (both side and center) and if they show any wear they 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 pins that connect the center driveshafts with the pinion gear and the pins connecting the wheel drive shafts to the wheel axles.
- Pivot balls and ball joints will wear naturally and over time will develop minor play. If there is excess play, the pivot balls and ball joints should 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.
- Clean and re-grease after every 2 hours of driving.

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 may fade over time, but this will not affect the strength of the material. The brown color is only a surface treatment, and any color fade will not impact the durability of the part.

TIP DRIVE SHAFT PIN SERVICING


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



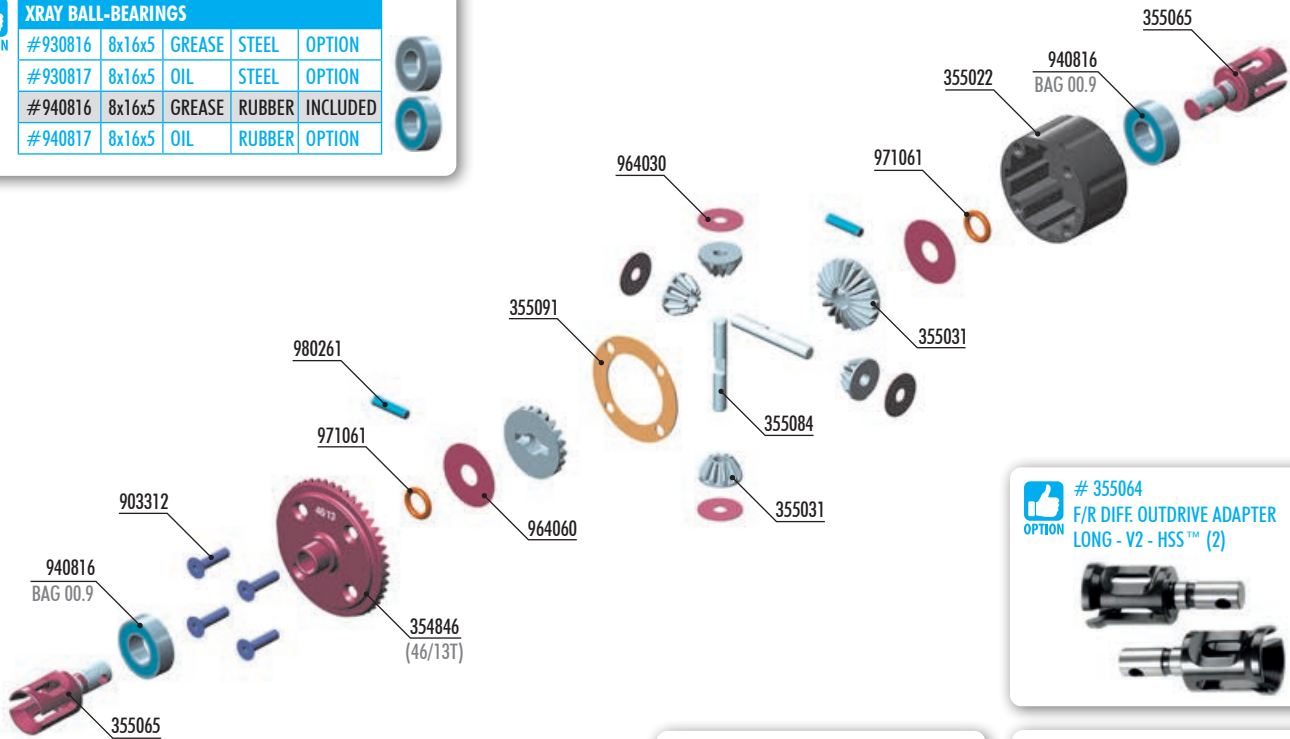
1. FRONT & REAR DIFFERENTIALS



OPTION

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

2x





OPTION

355064
F/R DIFF. OUTDRIVE ADAPTER
LONG - V2 - HSS™ (2)





OPTION

#355022-G
DIFFERENTIAL CASE - V2 - GRAPHITE





OPTION

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



BAGS
01.1
2x

- | | | | |
|--------|---|--------|--|
| 354846 | F/R DIFF LARGE BEVEL GEAR 46T - MATCHED FOR 13T PINION GEAR | 903312 | HEX SCREW SFH M3x12 (10) |
| 355006 | DIFFERENTIAL 46T - MATCHED FOR 13T PINION GEAR - SET | 940816 | BALL-BEARING 8x16x5 RUBBER SEALED - GREASE (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) | | |

- 

2x 940816
BB 8x16x5
- 

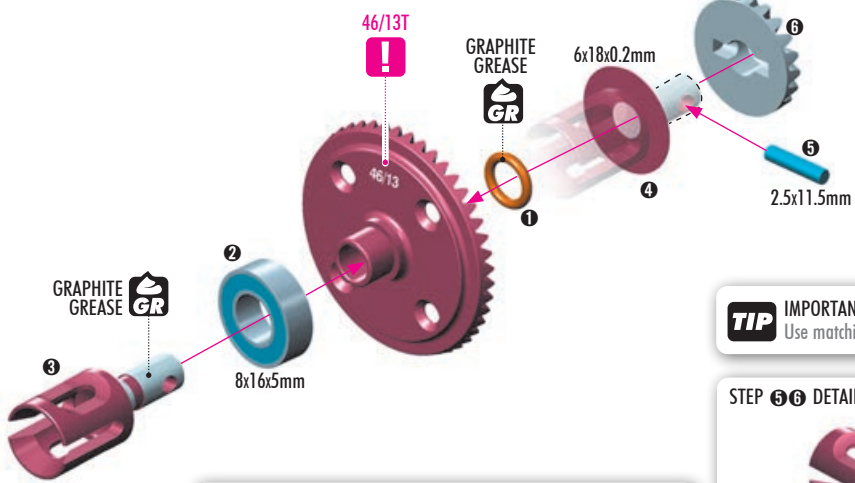
2x 964060
S 6x18x0.2
- 


2x 971061
O 6x1.55
- 

2x 980261
P 2.5x11.5


SET-UP
BOOK
DIFFERENTIAL GEARS

2x

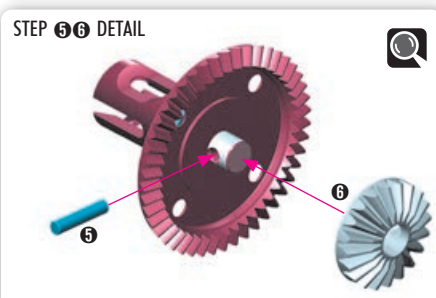




OPTION

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

TIP IMPORTANT!
Use matching outdrives on left and right sides of a diff.



1. FRONT & REAR DIFFERENTIALS



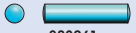
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BB 8x16x5



2x 964060
S 6x18x0.2



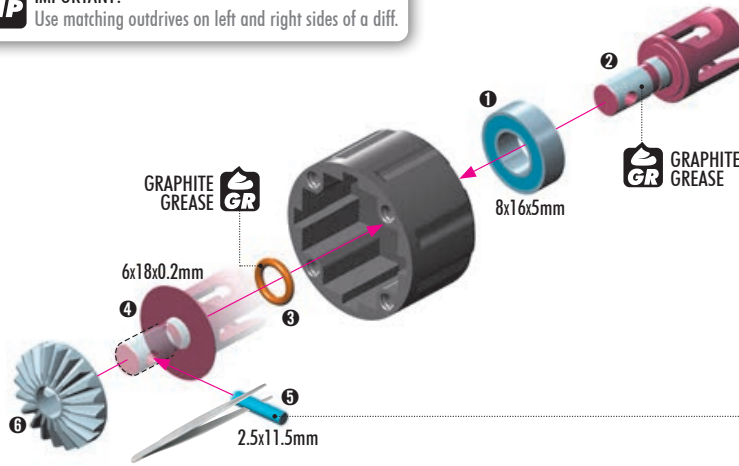
2x 971061
O 6x11.55



2x 980261
P 2.5x11.5

2x

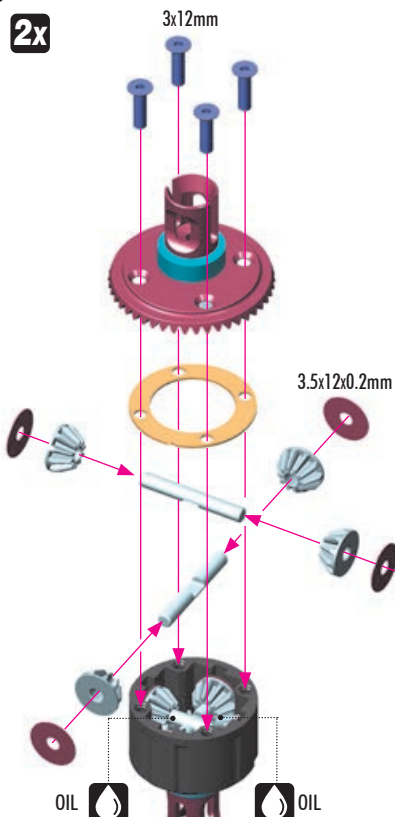
TIP IMPORTANT!
Use matching outdrives on left and right sides of a diff.



STEP 5 DETAIL



2x



OIL

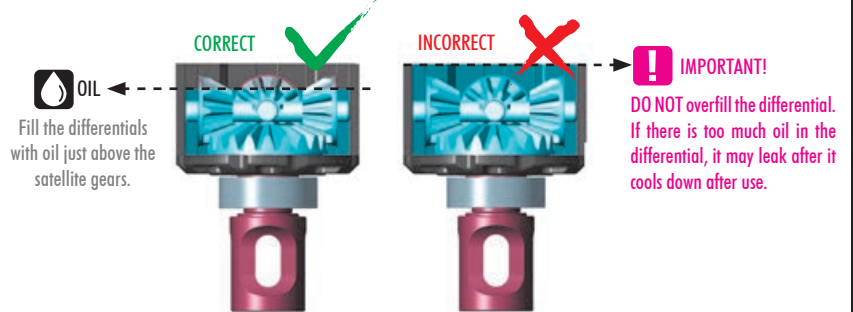
Front diff:
Silicone oil 10.000cSt
Fill just above the
satellite gears.

OIL

Rear diff:
Silicone oil 3.000cSt
Fill just above the
satellite gears.

VERY IMPORTANT!

Use the following silicone oils included in the kit for initial settings:
FRONT diff: 10.000cSt / REAR diff: 3.000cSt



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

#107865
OPTION HUDDY Ultimate Digital Pocket Scale 300g ± 0.01g



1. Put the diff (without oil) on the scale and check the weight:
- REAR DIFF approx. 39.30g
- FRONT DIFF approx. 39.30g

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

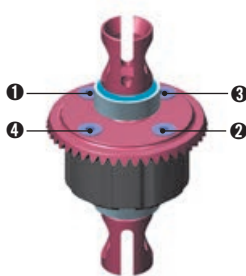
REAR DIFF 39.30g + 2.60g = 41.90g

FRONT DIFF 39.30g + 2.60g = 41.90g

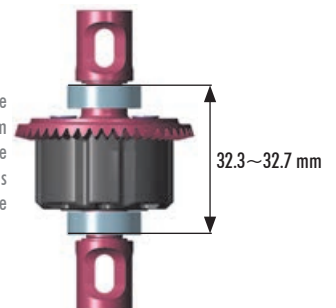
Tighten the screws equally.



Finish tightening in this order:



After assembly the differentials should have a length of 32.3~32.7 mm measured from the ends of the installed ball-bearings. If the differentials are longer, check that the gear is properly seated on the case and retighten the 4 screws while holding the crown gear.



1. CENTER DIFFERENTIAL



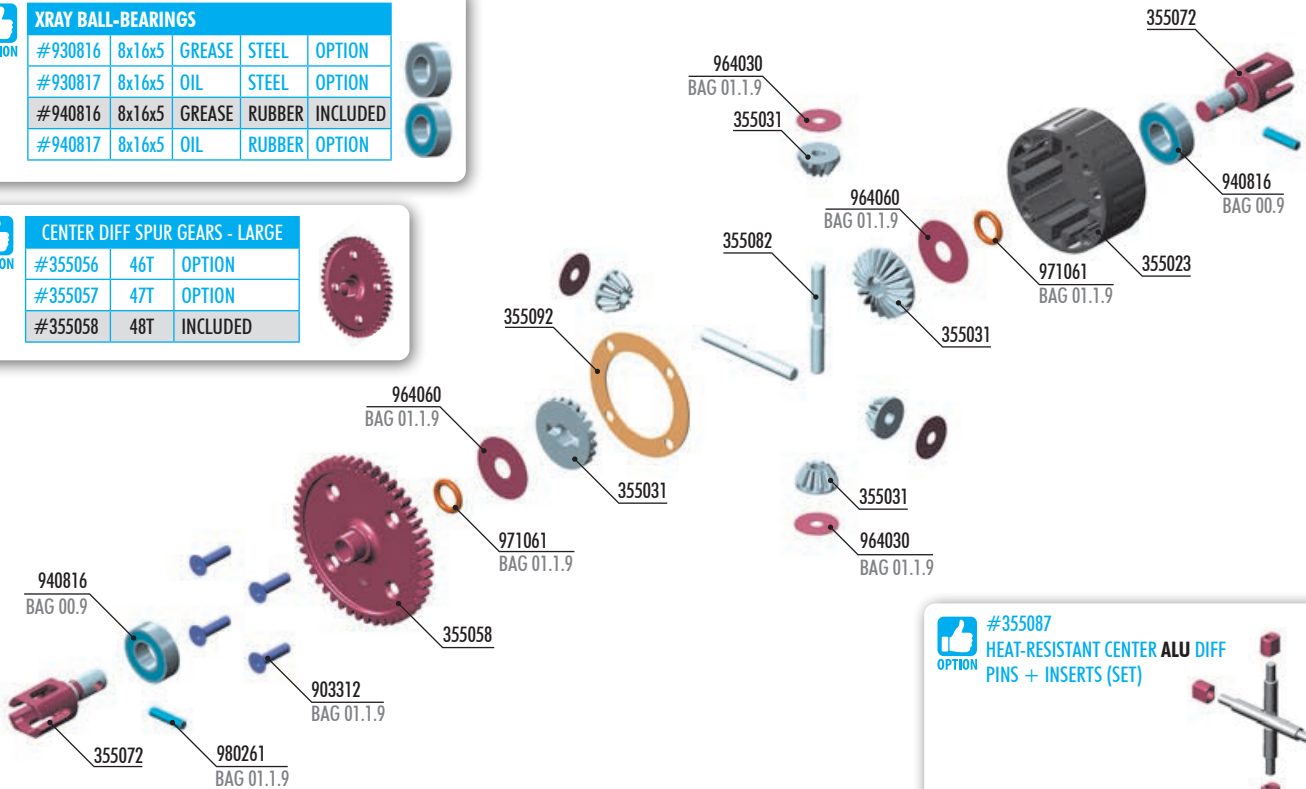
XRAY BALL-BEARINGS

| | | | | |
|---------|--------|--------|--------|----------|
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| #930817 | 8x16x5 | OIL | STEEL | OPTION |
| #940816 | 8x16x5 | GREASE | RUBBER | INCLUDED |
| #940817 | 8x16x5 | OIL | RUBBER | OPTION |



CENTER DIFF SPUR GEARS - LARGE

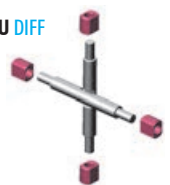
| | | |
|---------|-----|----------|
| #355056 | 46T | OPTION |
| #355057 | 47T | OPTION |
| #355058 | 48T | INCLUDED |



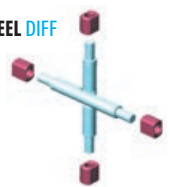
#355023-G
CENTER DIFFERENTIAL CASE - V2 - GRAPHITE



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



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

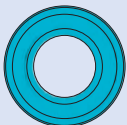


BAG

01.3

- 355013 CENTER DIFFERENTIAL - LARGE - SET - V2
- 355023 CENTER DIFFERENTIAL CASE - V2
- 355031 STEEL DIFF BEVEL & SATELLITE GEARS - V2 (2+4)
- 355058 CENTER DIFF SPUR GEAR 48T - LARGE
- 355072 LARGE CENTER DIFF OUTDRIVE ADAPTER - HUDY STEEL (2)
- 355082 CENTER DIFF PIN (2)
- 355092 CENTER DIFF GASKET (2)

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



1x 940816
BB 8x16x5



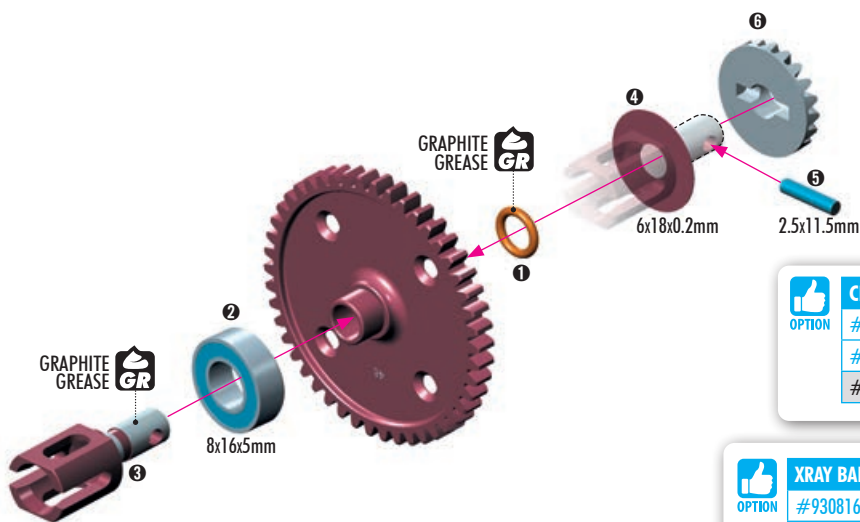
1x 964060
S 6x18x0.2



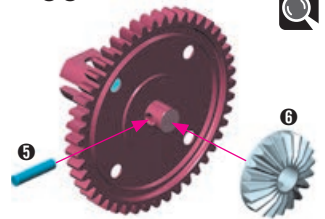
1x 971061
O 6x1.55



1x 980261
P 2.5x11.5



STEP 5 6 DETAIL



CENTER DIFF SPUR GEARS - LARGE

| | | |
|---------|-----|----------|
| #355056 | 46T | OPTION |
| #355057 | 47T | OPTION |
| #355058 | 48T | INCLUDED |



XRAY BALL-BEARINGS

| | | | | |
|---------|--------|--------|--------|----------|
| #930816 | 8x16x5 | GREASE | STEEL | OPTION |
| #930817 | 8x16x5 | OIL | STEEL | OPTION |
| #940816 | 8x16x5 | GREASE | RUBBER | INCLUDED |
| #940817 | 8x16x5 | OIL | RUBBER | OPTION |



1x 980261
P 2.5x11.5



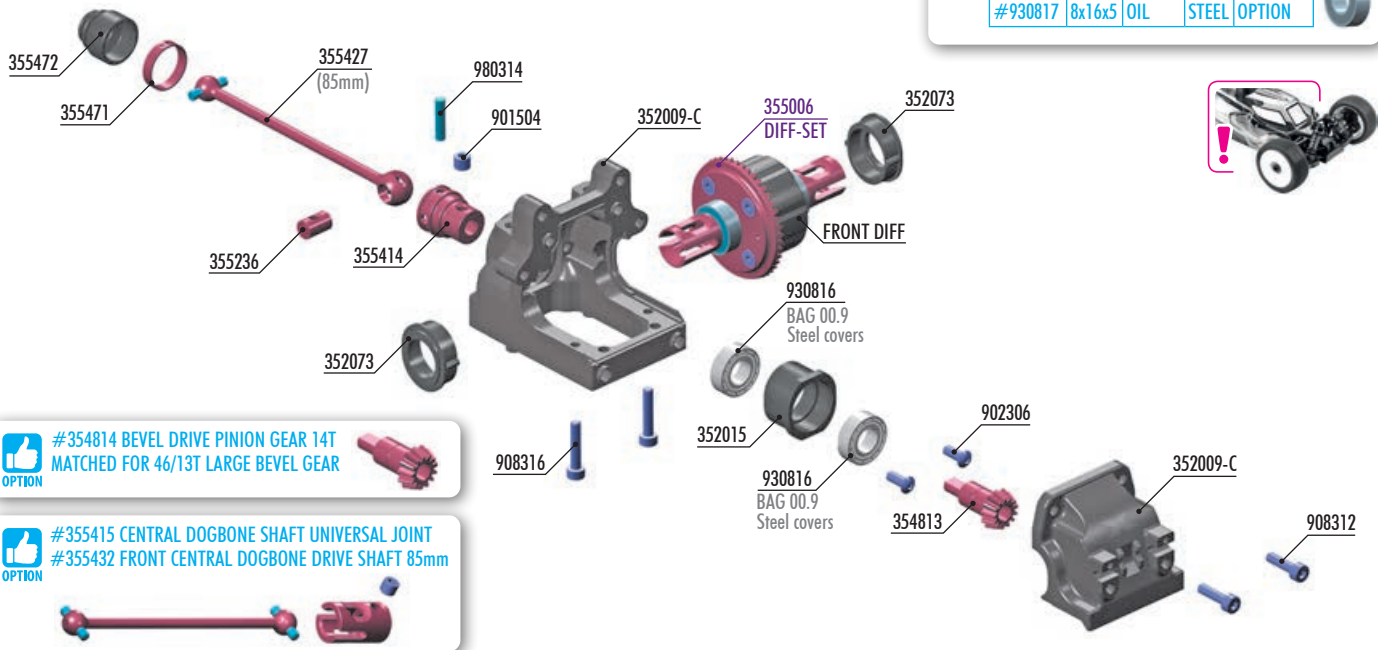
DIFFERENTIAL OIL

CENTER DIFF $42.97\text{g} + 5.20\text{g} = 48.17\text{g}$

Figure 1 shows a 3D perspective view of the upper part of the assembly. It includes a red upper bracket, a blue bush, a black gear with 12 teeth, and a red lower bracket. A dimension line indicates the height of the gear assembly is 32.3~32.7 mm.

2. FRONT TRANSMISSION

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



#354814 BEVEL DRIVE PINION GEAR 14T
MATCHED FOR 46/13T LARGE BEVEL GEAR

#355415 CENTRAL DOGBONE SHAFT UNIVERSAL JOINT
#355432 FRONT CENTRAL DOGBONE DRIVE SHAFT 85mm

| | | | | |
|-------------------------|----------|--|--------|--|
| BAG 02 | 352009-C | SEMI-SPLIT DIFF BULKHEAD BLOCK SET FRONT/REAR FOR COLLAR | 901504 | HEX SCREW SB M5x4 (10) |
| | 352015 | GEARBOX PINION HEIGHT INSERT (1+1) | 902306 | HEX SCREW SH M3x6 (10) |
| | 352073 | GEARBOX DIFF HEIGHT INSERT (2+2) | 908312 | HEX SCREW SOCKET HEAD CAP SCH M3x12 (10) |
| | 354813 | BEVEL DRIVE PINION GEAR 13T - MATCHED FOR 46T LARGE BEVEL GEAR | 908316 | HEX SCREW SOCKET HEAD CAP SCH M3x16 (10) |
| | 355236 | CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™ | 930816 | BALL-BEARING 8x16x5 STEEL SEALED - GREASE (2) |
| | 355414 | CENTRAL CVD SHAFT UNIVERSAL JOINT - HUDY SPRING STEEL™ | 980314 | PIN 3x14 (10) |
| | 355427 | FRONT CENTRAL CVD DRIVE SHAFT 85mm - HUDY SPRING STEEL™ | | |
| | 355471 | DRIVE SHAFT LOCKING RING (2) | | |
| | 355472 | DRIVE SHAFT BOOT (2) | | |
| | | | 355006 | DIFFERENTIAL 46T - MATCHED FOR 13T PINION GEAR - SET |

1x 980314
P 3x14

TOP VIEW

1 85mm - SHORT CVD DRIVE SHAFT

2 GRAPHITE GREASE

3 3x14mm

4 NOTE ORIENTATION

STEP 4 DETAIL

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

THREAD LOCK

PIN

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

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

AFTER inserting the clip on the central CVD shaft joint, turn the clip so that the slot is 90° from the pin. This will prevent the pin from opening the clip.

2x 902306
SH M3x6

2x 930816
BB 8x16x5
(Steel covers)

Inline hub for bevel drive gear positions.

LOWER CENTER UPPER

Steel covers 8x16x5mm

8x16x5mm

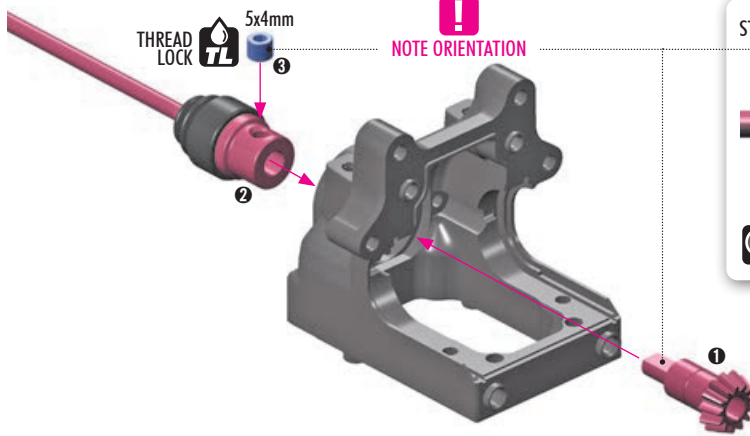
3x6mm

INITIAL SETTING

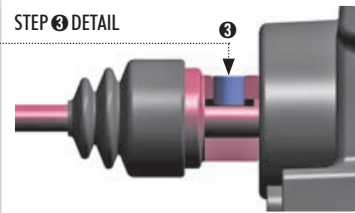
INITIAL SETTING

2. FRONT TRANSMISSION

1x 901504
SB M5x4



STEP 3 DETAIL

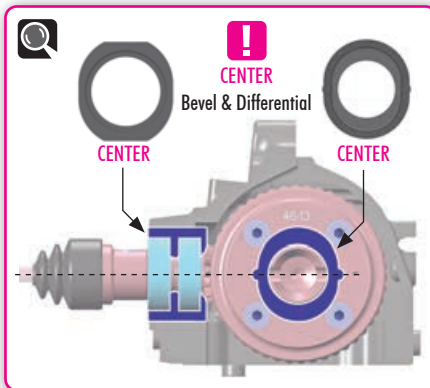
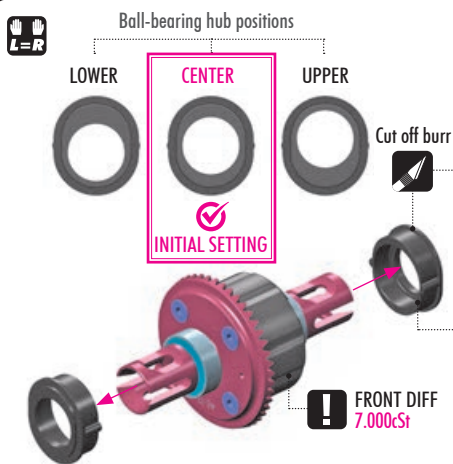


Push joint against gear to remove gap.
Tighten setscrew onto gear flat spot.

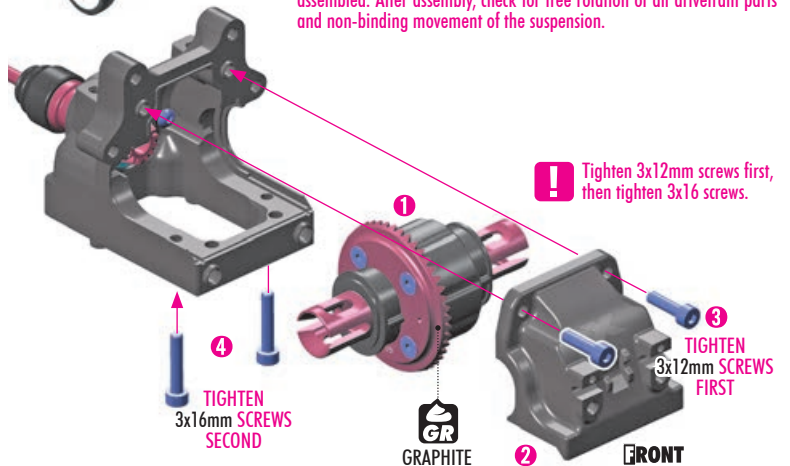


2x 908312
SCH M3x12

2x 908316
SCH M3x16



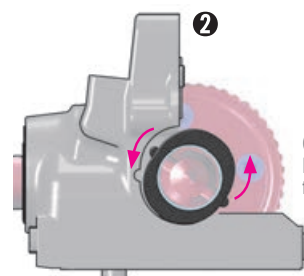
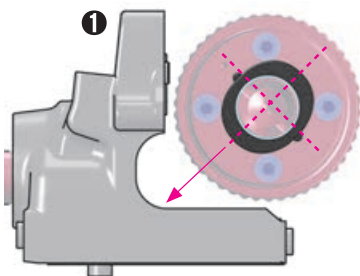
During initial assembly, there is no need to check gear mesh or diff play. Fitment should not be checked until suspension holders are installed on the bulkheads and the complete assembly is mounted to the chassis. All parts have specifically designed tolerances for proper operation once fully assembled. After assembly, check for free rotation of all drivetrain parts and non-binding movement of the suspension.



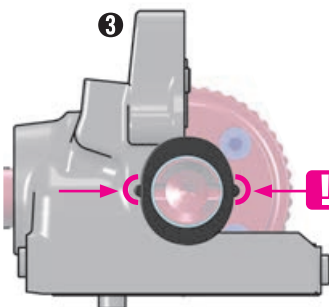
GEAR
RATIO

Internal Gear Ratio = 3.54 46 : 13 = 3.54
(Bevel) (Pinion) (IGR)

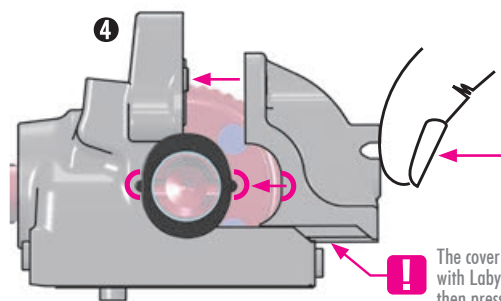
INSTALLING THE DIFFERENTIAL WHILE FIRST TIME BUILDING THE CAR



Check that left and right Diff Height Inserts are installed in the same orientation.

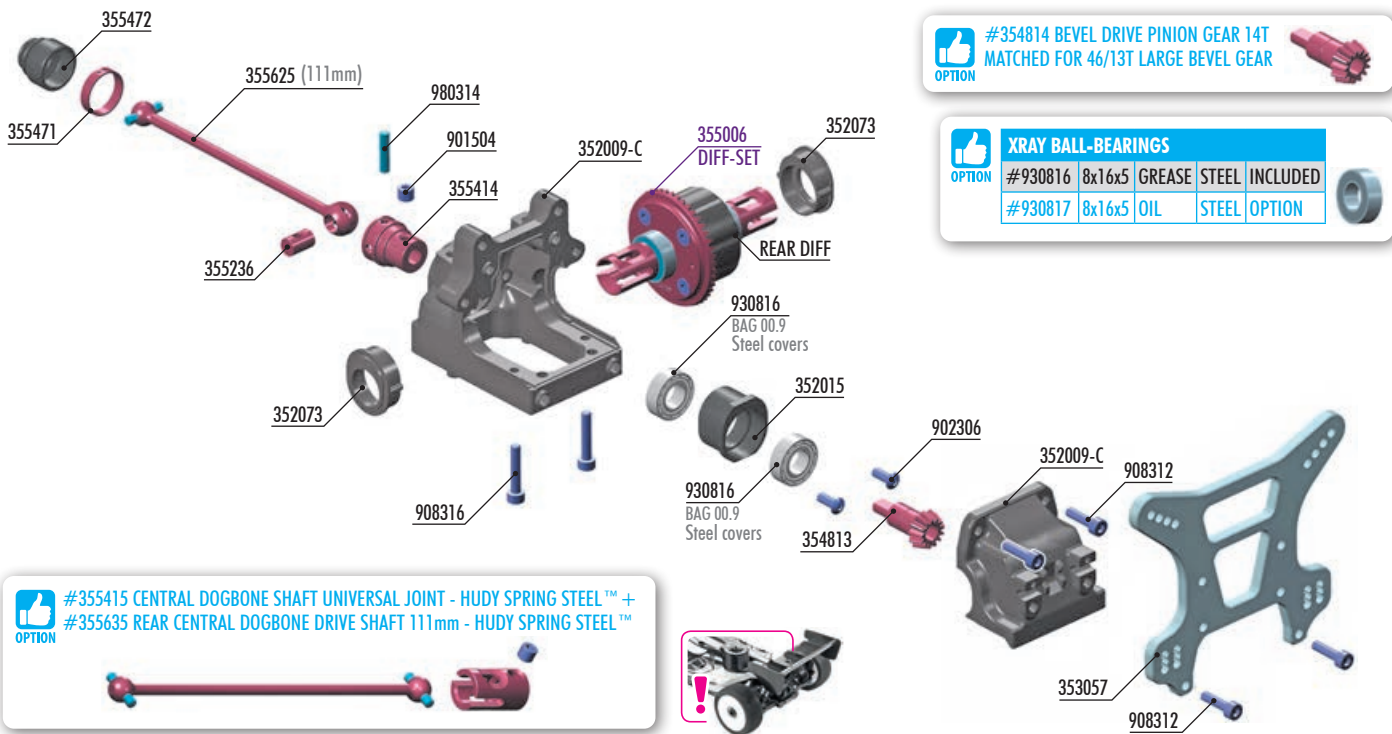


EXTREMELY IMPORTANT
Hub must be inserted in groove and properly pressed into bulkhead.



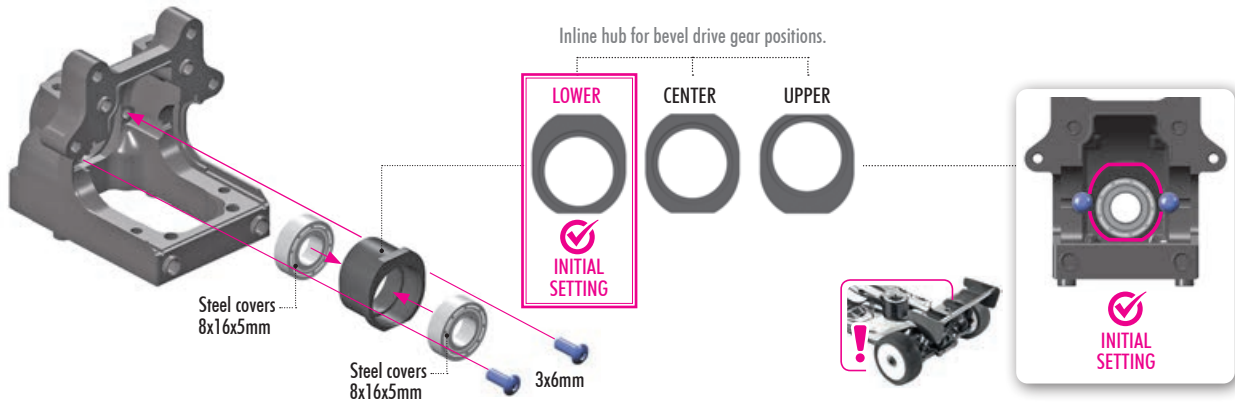
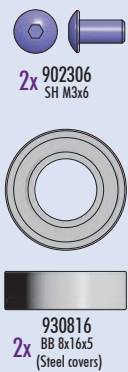
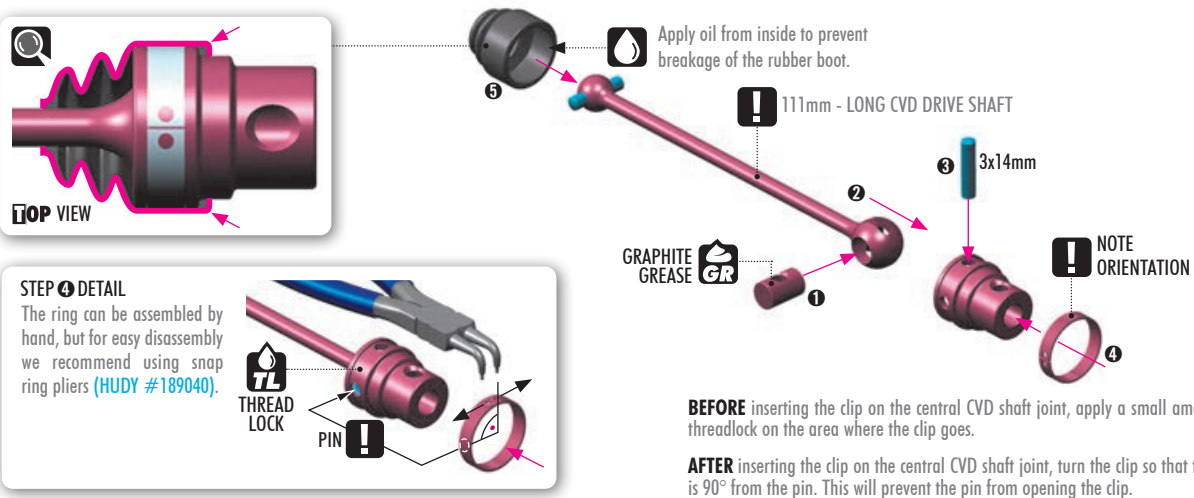
The cover must be aligned with Labyrinth Groove and then pressed into place.

2. REAR TRANSMISSION



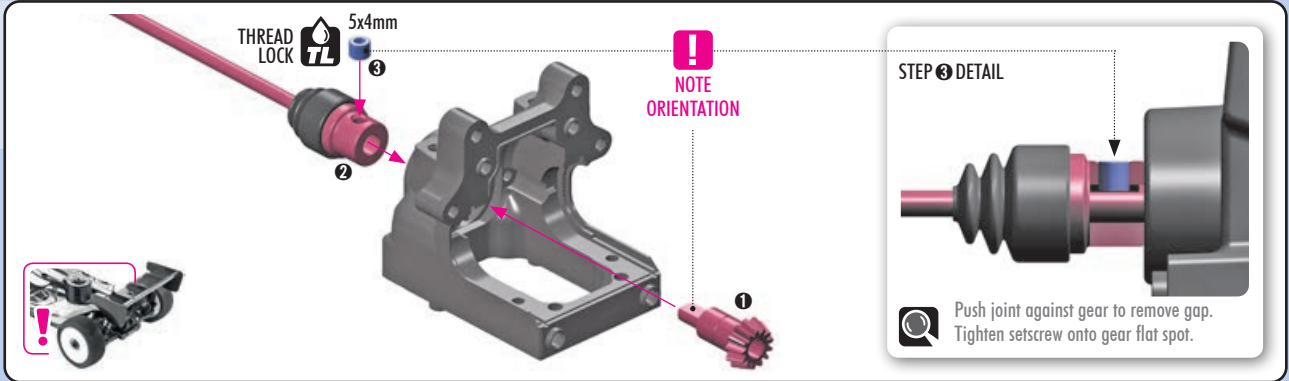
02

- 355006 DIFFERENTIAL 46T - MATCHED FOR 13T PINION GEAR - SET



2. REAR TRANSMISSION

1x 901504
SB M5x4

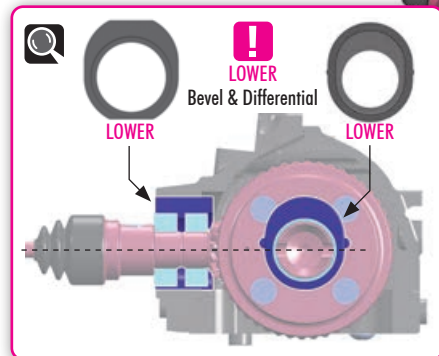


2x 908312
SCH M3x12

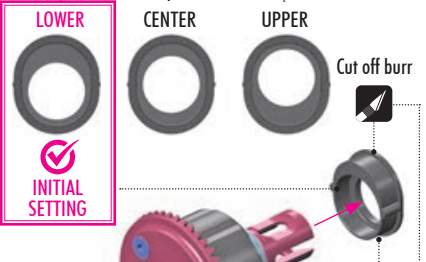
2x 908316
SCH M3x16

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

GEAR RATIO
Internal Gear Ratio = **3.54**
46 : 13 = 3.54
(Bevel) (Pinion) (IGR)



Ball-bearing hub positions



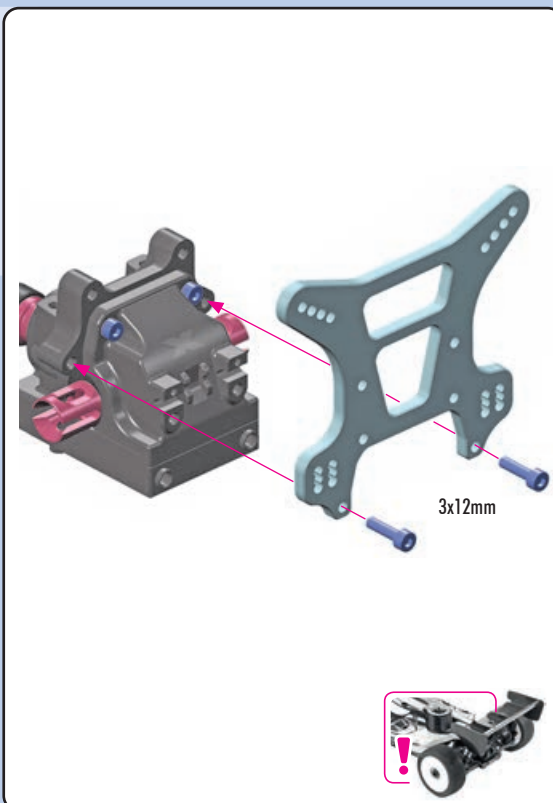
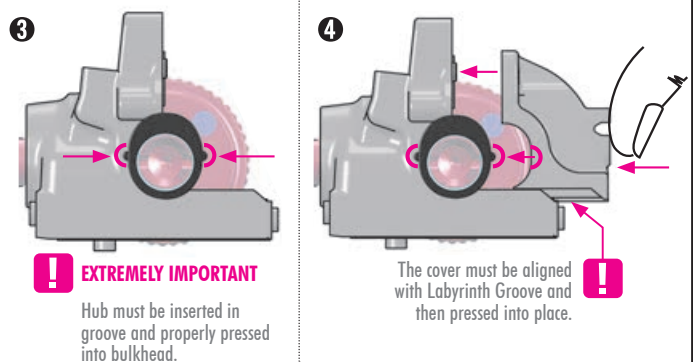
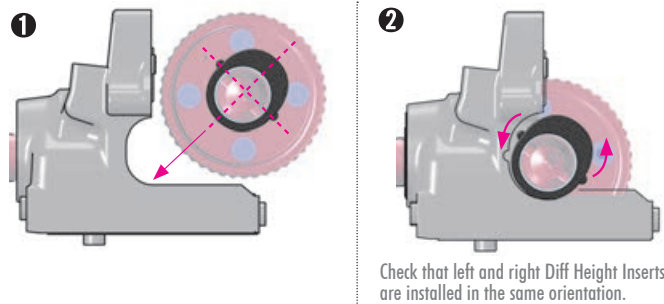
! REAR DIFF 3.000cSt

! TIGHTEN 3x16mm SCREWS SECOND

GRAPHITE GREASE

! TIGHTEN 3x12mm SCREWS FIRST

INSTALLING THE DIFFERENTIAL WHILE FIRST TIME BUILDING THE CAR



3. REAR SUSPENSION



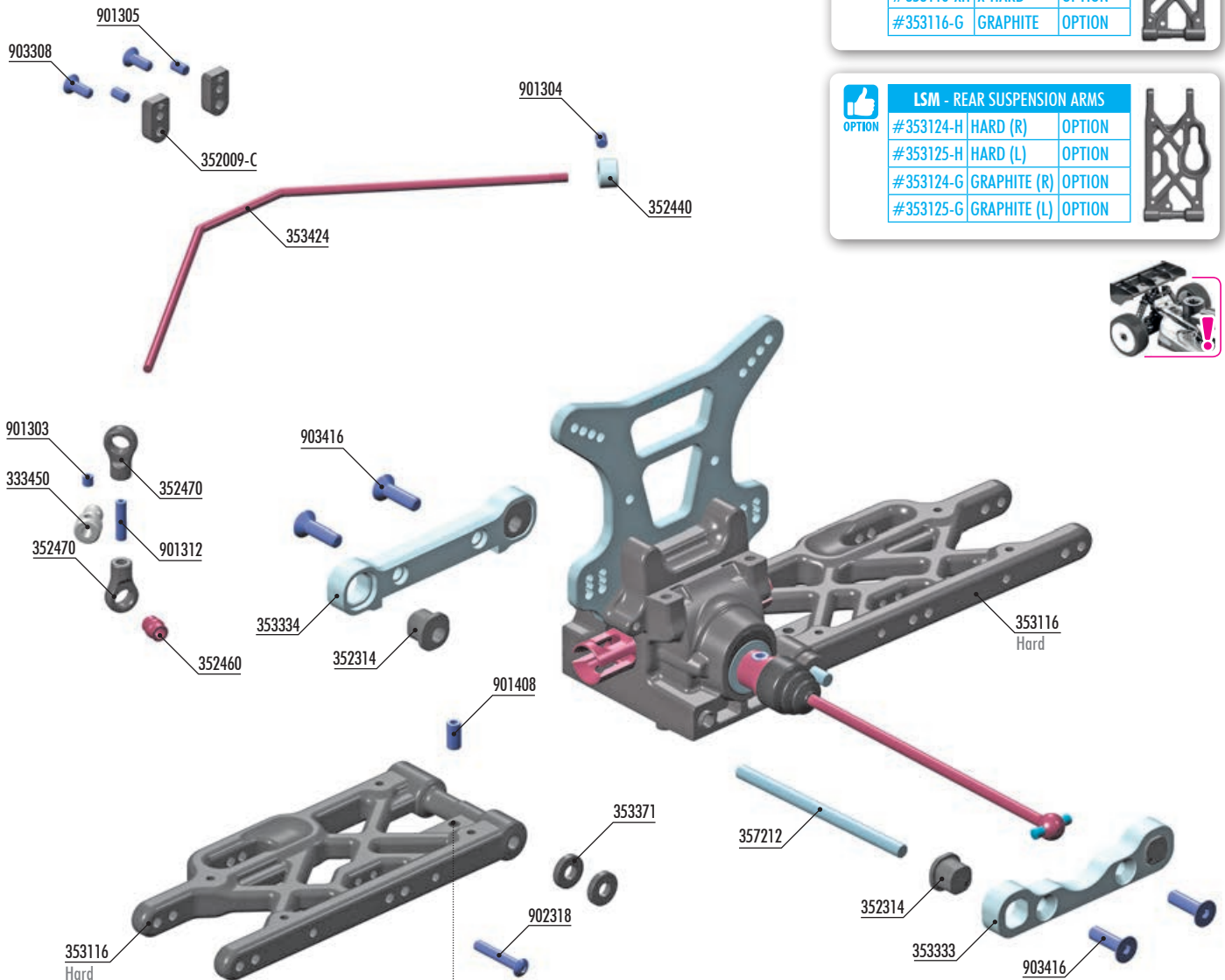
FLAT - REAR SUSPENSION ARMS

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



LSM - REAR SUSPENSION ARMS

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



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



#902409
HEX SCREW SH M4x10 WITH HEX FROM BOTTOM (4)



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



REAR ANTI-ROLL BARS

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

BAG

03

- 333450 ANTI-ROLL BAR BALL JOINT 5.8mm (2)
- 352009-C SEMI-SPLIT DIFF BULKHEAD BLOCK SET FRONT/REAR FOR COLLAR
- 352314 COMPOSITE ECCENTRIC BUSHINGS - V2 (2)
- 352440 ALU ANTI-ROLL BAR COLLAR 3.5x7.8x4.9mm (2)
- 352460 PIVOT BALL 5.8 (10)
- 352470 BALL JOINT 5.8 (8)
- 353116 COMPOSITE REAR LOWER SUSPENSION ARM - HARD
- 353333 ALU REAR LOWER SUSP. HOLDER FOR SEMI-SPLIT BULKHEAD - FRONT
- 353334 ALU REAR LOWER SUSP. HOLDER FOR SEMI-SPLIT BULKHEAD - REAR
- 353371 SET OF COMPOSITE LOWER ARM SHIMS
- 353424 REAR ANTI-ROLL BAR 2.4mm
- 357212 LOWER INNER PIVOT PIN F+R (2)

- 901303 HEX SCREW SB M3x3 (10)
- 901304 HEX SCREW SB M3x4 (10)
- 901305 HEX SCREW SB M3x5 (10)
- 901312 HEX SCREW SB M3x12 (10)
- 901408 HEX SCREW SB M4x8 (10)
- 902318 HEX SCREW SH M3x18 (10)
- 903308 HEX SCREW SFH M3x8 (10)
- 903416 HEX SCREW SFH M4x16 (10)

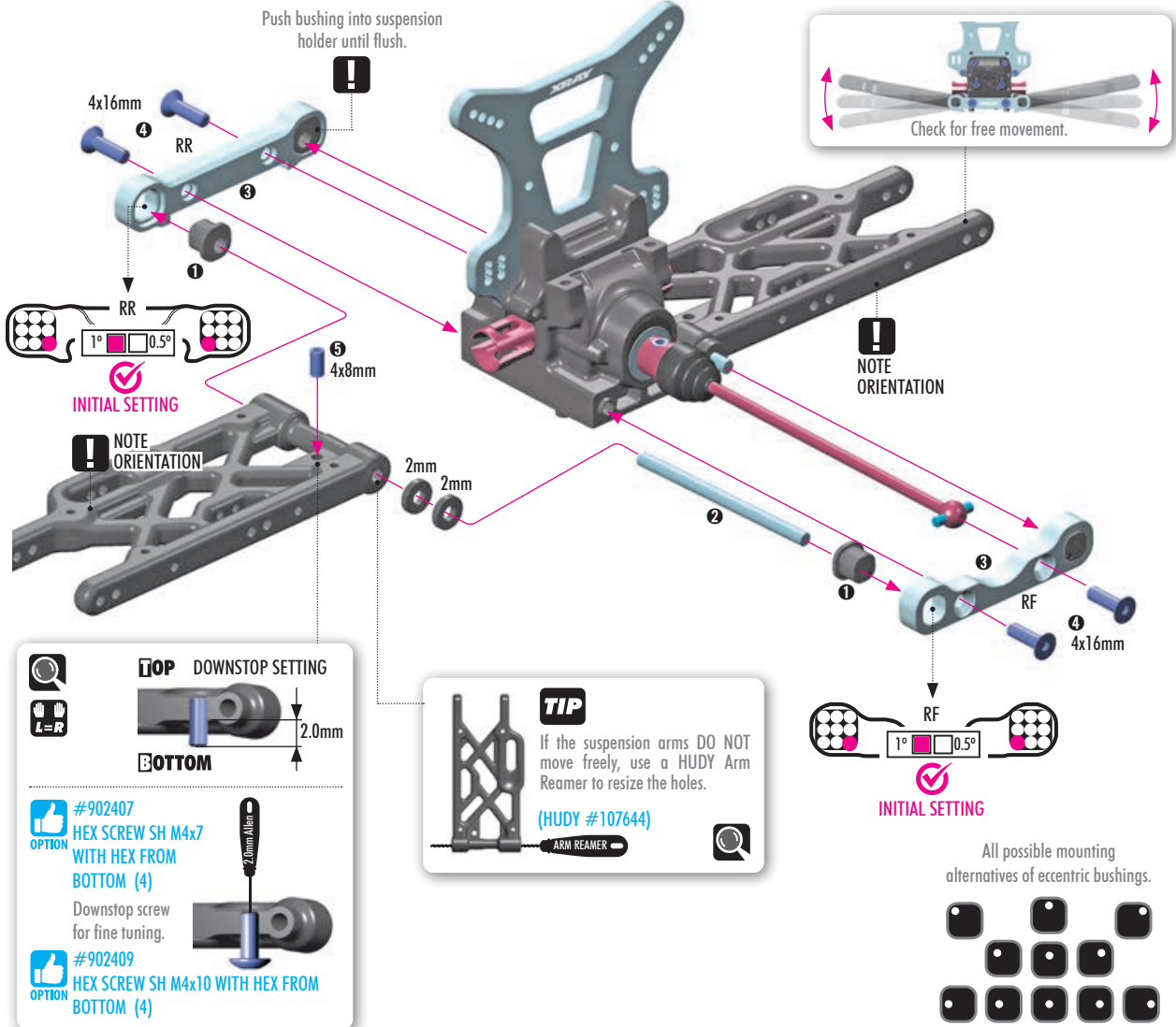
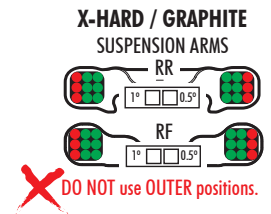
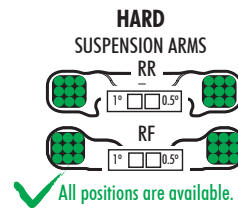
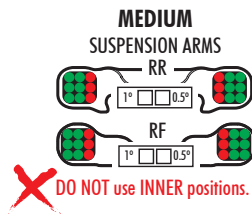
3. REAR SUSPENSION

10

4x 353371
SHIM 4x10x2

2x 901408
SB M4x8

4x 903416
SFH M4x16



SET-UP BOOK

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

ECCENTRIC BUSHINGS HAVE TWO DIFFERENT OFFSETS FROM THE CENTER.

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

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

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

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

| TRACK-WIDTH | | |
|-------------|-----|------|
| RR | RF | (mm) |
| 0 | 0 | =308 |
| 0 | 0.5 | =306 |
| 0 | 1 | =310 |
| 0.5 | 0 | =306 |
| 0.5 | 0.5 | =308 |
| 0.5 | 1 | =312 |
| 1 | 0 | =310 |
| 1 | 0.5 | =308 |
| 1 | 1 | =306 |

| TOE-IN | | |
|--------|-----|-----|
| RR | RF | (°) |
| 0 | 0 | =3° |
| 0 | 0.5 | =4° |
| 0 | 1 | =2° |
| 0.5 | 0 | =4° |
| 0.5 | 0.5 | =3° |
| 0.5 | 1 | =5° |
| 1 | 0 | =2° |
| 1 | 0.5 | =3° |
| 1 | 1 | =1° |


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

Anti-Squat Example:

| | | | |
|-------------------------|---|-----|--------|
| 0(RR) - 0 (RF) = 3° | 0 | 0 | = 3° |
| 0(RR) - 0.5 (RF) = 3.5° | 0 | 0.5 | = 3.5° |
| 0(RR) - 1 (RF) = 4° | 0 | 1 | = 4° |


3. REAR SUSPENSION


2x 901312
SB M3x12

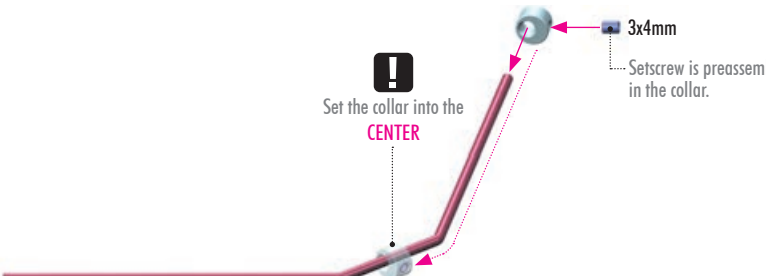
2x 

3x12mm

1.5mm 6mm

TIP 
Install with HUDY Multi Tool.


1x 901304
SB M3x4





3x4mm
Setscrew is preassembled in the collar.


Set the collar into the **CENTER**


Eccentric collar
NOTE ORIENTATION

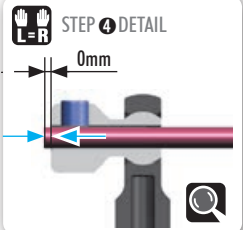
CUTTAWAY VIEW


2x 901303
SB M3x3


2x 901305
SB M3x5


2x 902318
SH M3x18


2x 903308
SFH M3x8


STEP 4 DETAIL

0mm


Setscrews are preassembled in the ball joints.

3x18mm

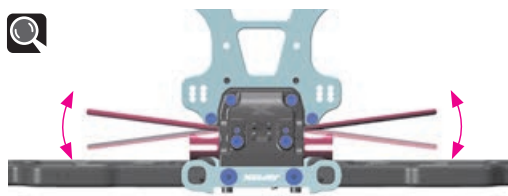
3x5mm 3x8mm

INITIAL SETTING






SET-UP BOOK
ANTI-ROLL BAR



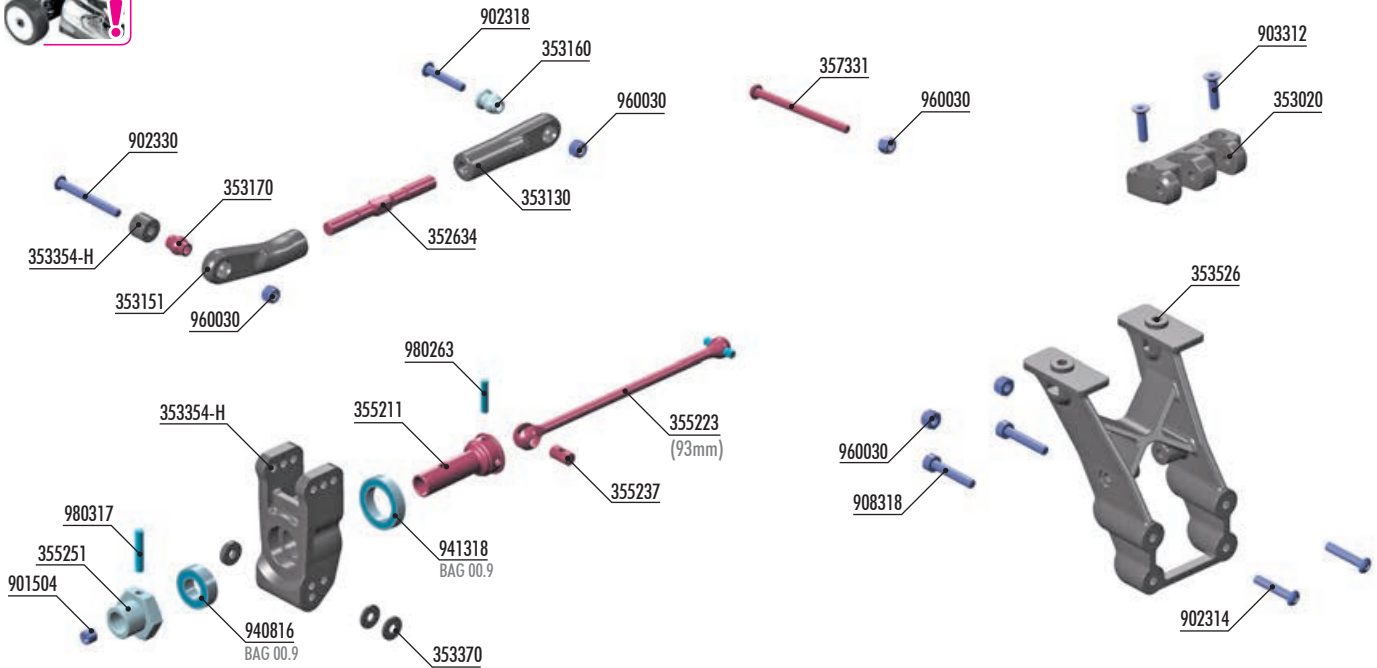
Step 1 check for free movement.

Loosen the 3x5mm setscrew if the anti-roll bar DOES NOT turn freely.


Step 1

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

4. REAR SUSPENSION



OFFSET WHEEL AXLES

| # | Offset | Status |
|---------|--------|----------|
| #355250 | 0mm | OPTION |
| #355251 | +1mm | INCLUDED |
| #355252 | +2mm | OPTION |
| #355253 | +3mm | OPTION |
| #355254 | +4mm | OPTION |



REAR UPRIGHTS

| # | Material | Status |
|-----------|----------|----------|
| #353354 | MEDIUM | OPTION |
| #353354-H | HARD | INCLUDED |
| #353354-G | GRAPHITE | OPTION |
| #350912 | ALU-SET | OPTION |



XRAY BALL-BEARINGS

| # | Size | Lubricant | Material | Status |
|---------|---------|-----------|----------|----------|
| #930816 | 8x16x5 | GREASE | STEEL | OPTION |
| #940816 | 8x16x5 | GREASE | RUBBER | INCLUDED |
| #931318 | 13x19x4 | GREASE | STEEL | OPTION |
| #941318 | 13x19x4 | GREASE | RUBBER | INCLUDED |
| #930817 | 8x16x5 | OIL | STEEL | OPTION |
| #940817 | 8x16x5 | OIL | RUBBER | OPTION |
| #931319 | 13x19x4 | OIL | STEEL | OPTION |
| #941319 | 13x19x4 | OIL | RUBBER | OPTION |



#353130-G REAR UPPER INNER CAMBER LINK BALL JOINT - GRAPHITE (2)



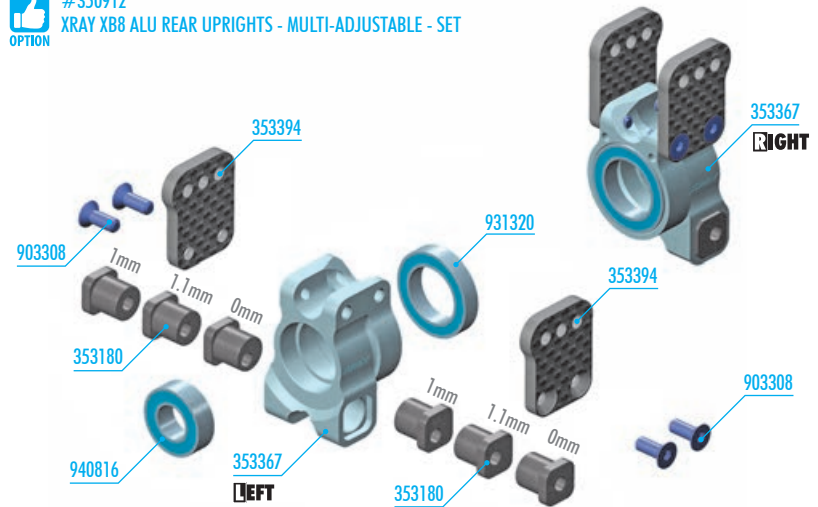
#353151-G RELIEF REAR UPPER OUTER CAMBER LINK BALL JOINT - GRAPHITE (2)



#355215 CVD ADJUSTABLE DRIVE AXLE - HUDY SPRING STEEL™



#350912 XRAY XB8 ALU REAR UPRIGHTS - MULTI-ADJUSTABLE - SET



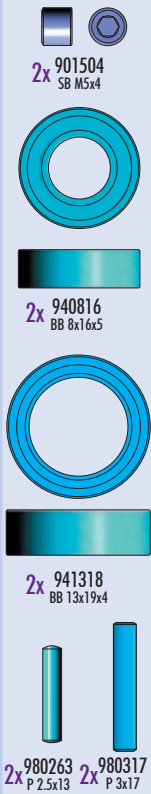
BAG

04

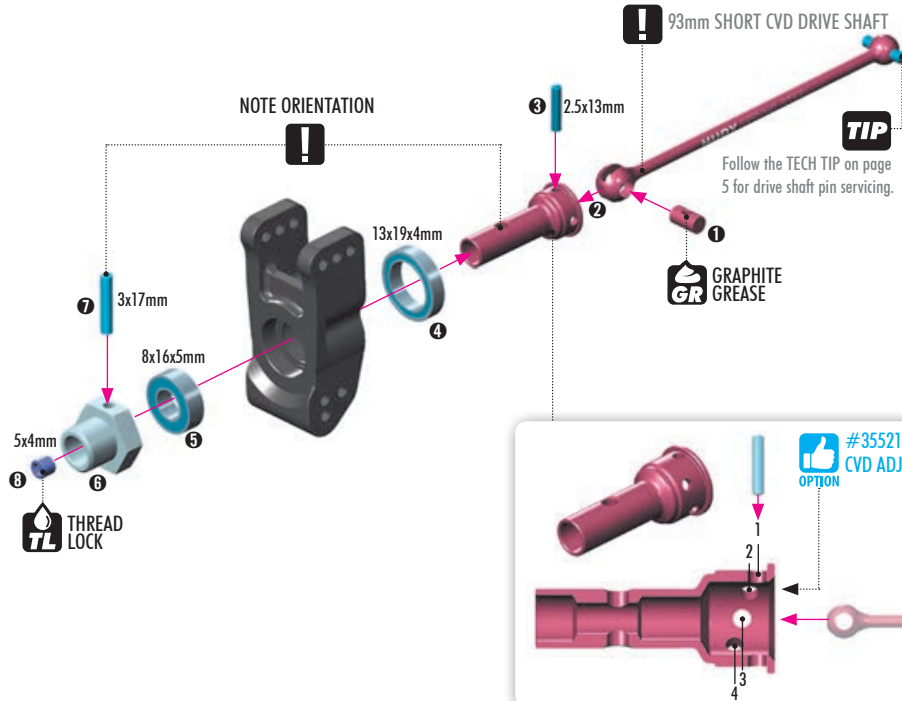
352634 ADJ. TURNBUCKLE M5 L/R 50mm - HUDY SPRING STEEL™ (2)
 353020 COMPOSITE REAR BRACE HOLDER
 353130 REAR UPPER INNER CAMBER LINK BALL JOINT (2)
 353151 RELIEF REAR UPPER OUTER CAMBER LINK BALL JOINT (2)
 353160 MOUNTING BALL 6.8 (4)
 353170 PIVOT BALL 6.8 (4)
 353354-H COMPOSITE REAR UPRIGHT - HARD
 353370 SET OF COMPOSITE REAR HUB CARRIER SHIMS
 353526 COMPOSITE REAR WING HOLDER FOR SEMI-SPLIT BULKHEAD
 355211 CVD DRIVE AXLE - HUDY SPRING STEEL™
 355223 CVD UNIVERSAL DRIVE SHAFT 93mm - HUDY SPRING STEEL™
 355237 CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
 355251 ALU WHEEL AXLE OFFSET "+1mm"- BLACK COATED (2)

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

4. REAR SUSPENSION

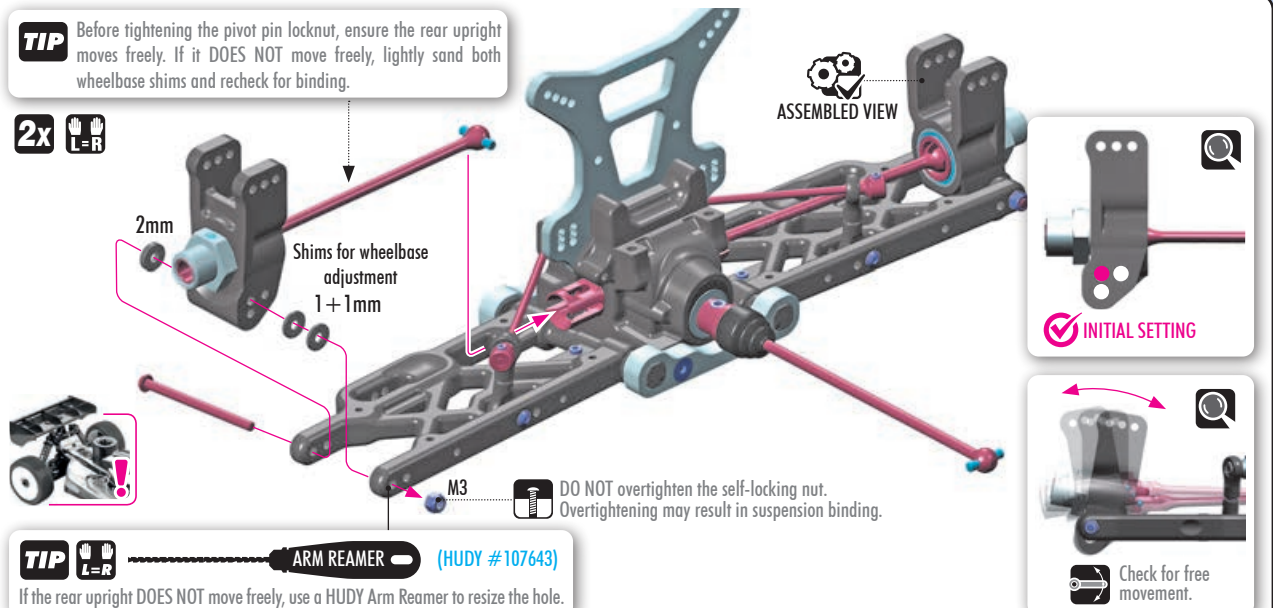


2x L=R

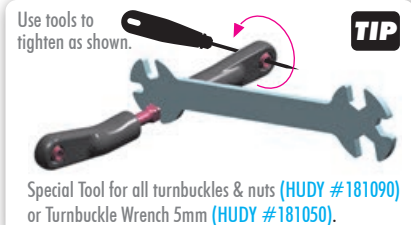
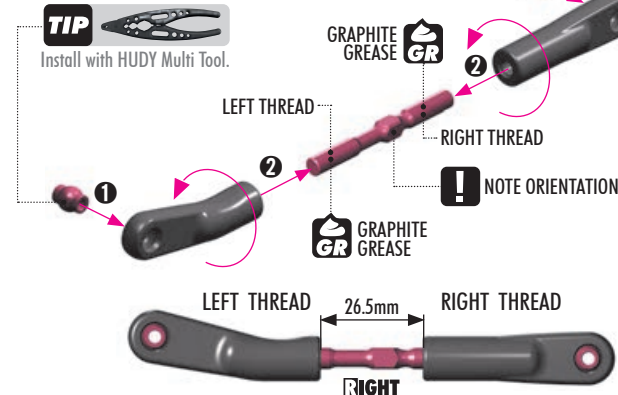


TIP Before tightening the pivot pin locknut, ensure the rear upright moves freely. If it DOES NOT move freely, lightly sand both wheelbase shims and recheck for binding.

2x L=R

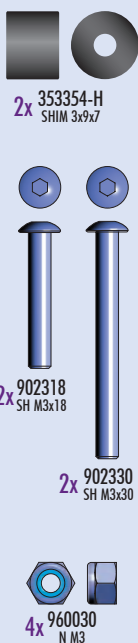


- 1 Install pivot balls with HUDY Multi Tool.
- 2 Install ball joints on turnbuckle.



SET-UP BOOK
CAMBER

4. REAR SUSPENSION

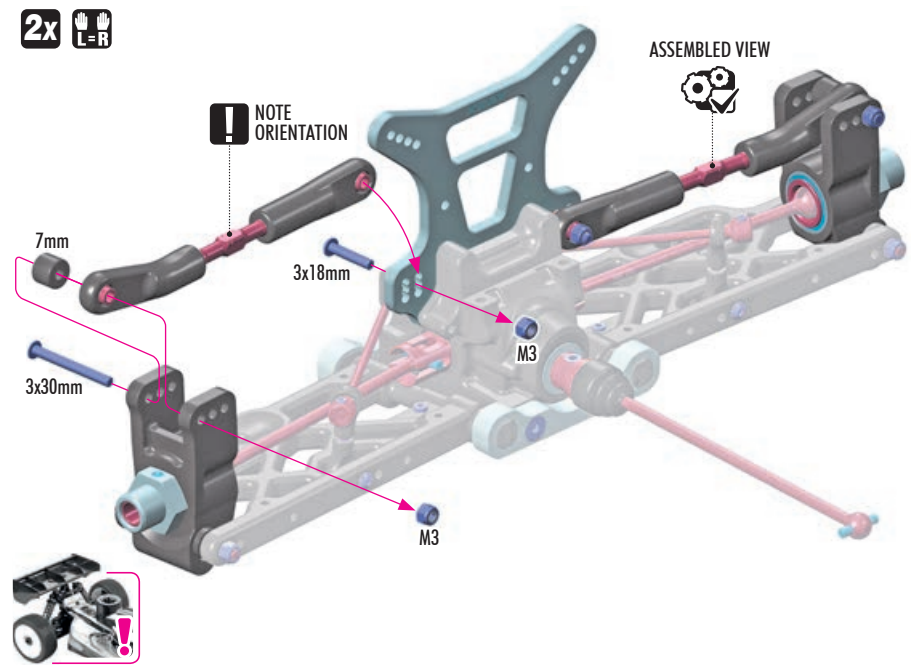


2x 353354-H
SHIM 3x9x7

2x 902318
SH M3x18

2x 902330
SH M3x30

4x 960030
N M3



2x L=R

NOTE ORIENTATION

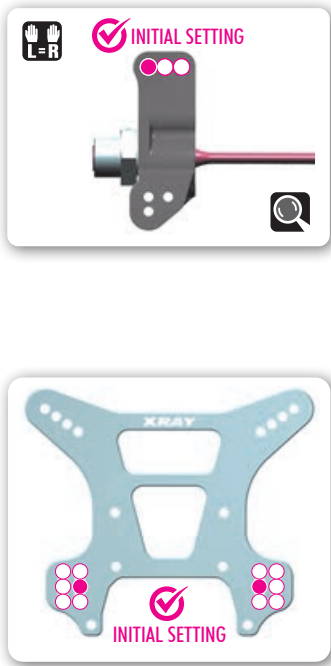
7mm

3x18mm

3x30mm


M3

ASSEMBLED VIEW

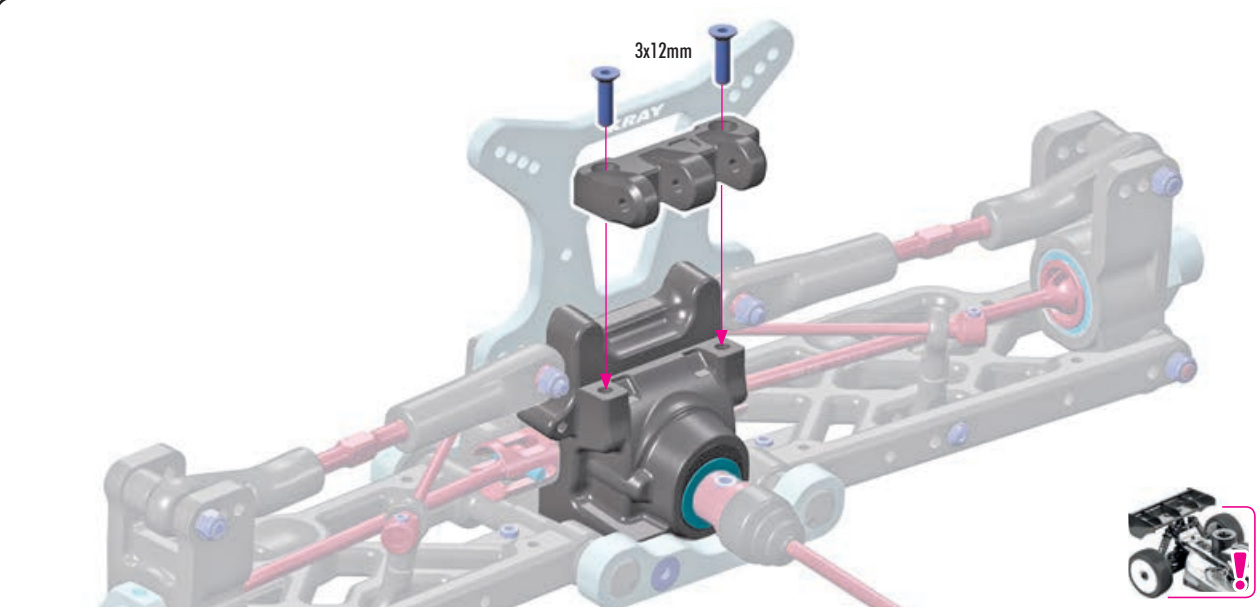


INITIAL SETTING

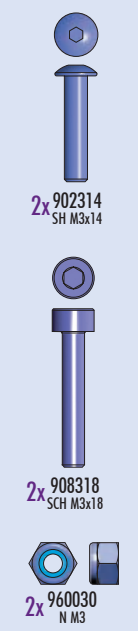
INITIAL SETTING



2x 903312
SFH M3x12



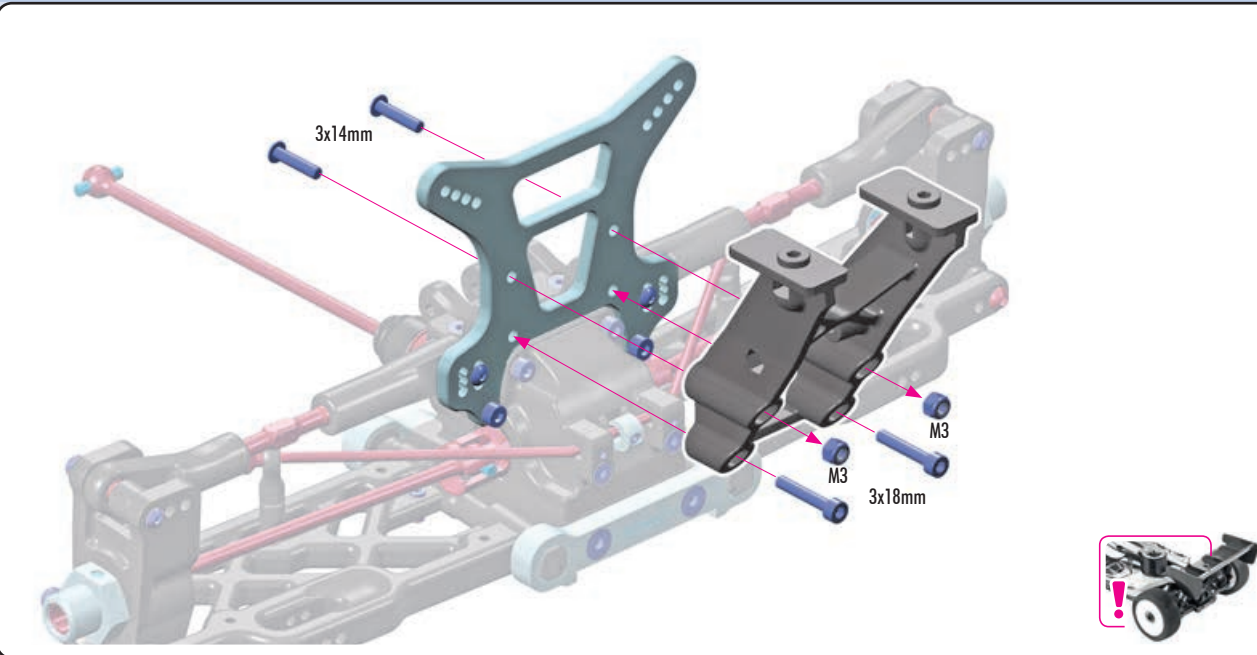
3x12mm



2x 902314
SH M3x14

2x 908318
SCH M3x18

2x 960030
N M3



3x14mm

M3

M3

3x18mm

5. FRONT SUSPENSION



FRONT LOWER SUSP. ARMS

| | | |
|-----------|----------|----------|
| #352120 | SOFT | OPTION |
| #352120-M | MEDIUM | INCLUDED |
| #352120-G | GRAPHITE | OPTION |



903416

352341

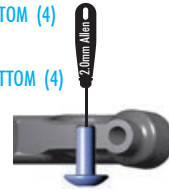
352314



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



#902409
HEX SCREW SH M4x10 WITH HEX FROM BOTTOM (4)



357212

901408

902318

352120-M

353371

352314

352340

901304

903416

901303

333450

901305

901312

352470

352460

352470

352440

352492

352009-C

901305

903308



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



FRONT ANTI-ROLL BARS

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

BAG

05

- 333450 ANTI-ROLL BAR BALL JOINT 5.8mm (2)
- 352009-C SEMI-SPLIT DIFF BULKHEAD BLOCK SET FRONT/REAR FOR COLLAR
- 352120-M COMPOSITE FRONT LOWER SUSPENSION ARM - MEDIUM
- 352314 COMPOSITE SQUARE ADJ. ROLL CENTER BUSHINGS - V2 (2)
- 352340 ALU FRONT LOWER SUSP. HOLDER FOR SEMI-SPLIT BULKHEAD - FRONT
- 352341 ALU FRONT LOWER SUSP. HOLDER FOR SEMI-SPLIT BULKHEAD - REAR
- 352440 ALU ANTI-ROLL BAR COLLAR 3.5x7.8x4.9mm (2)
- 352460 PIVOT BALL 5.8 (10)
- 352470 BALL JOINT 5.8 (8)
- 352492 FRONT ANTI-ROLL BAR 2.4mm
- 353371 SET OF COMPOSITE LOWER ARM SHIMS

- 357212 LOWER INNER PIVOT PIN F+R (2)
- 901303 HEX SCREW SB M3x3 (10)
- 901304 HEX SCREW SB M3x4 (10)
- 901305 HEX SCREW SB M3x5 (10)
- 901312 HEX SCREW SB M3x12 (10)
- 901408 HEX SCREW SB M4x8 (10)
- 902318 HEX SCREW SH M3x18 (10)
- 903308 HEX SCREW SFH M3x8 (10)
- 903416 HEX SCREW SFH M4x16 (10)

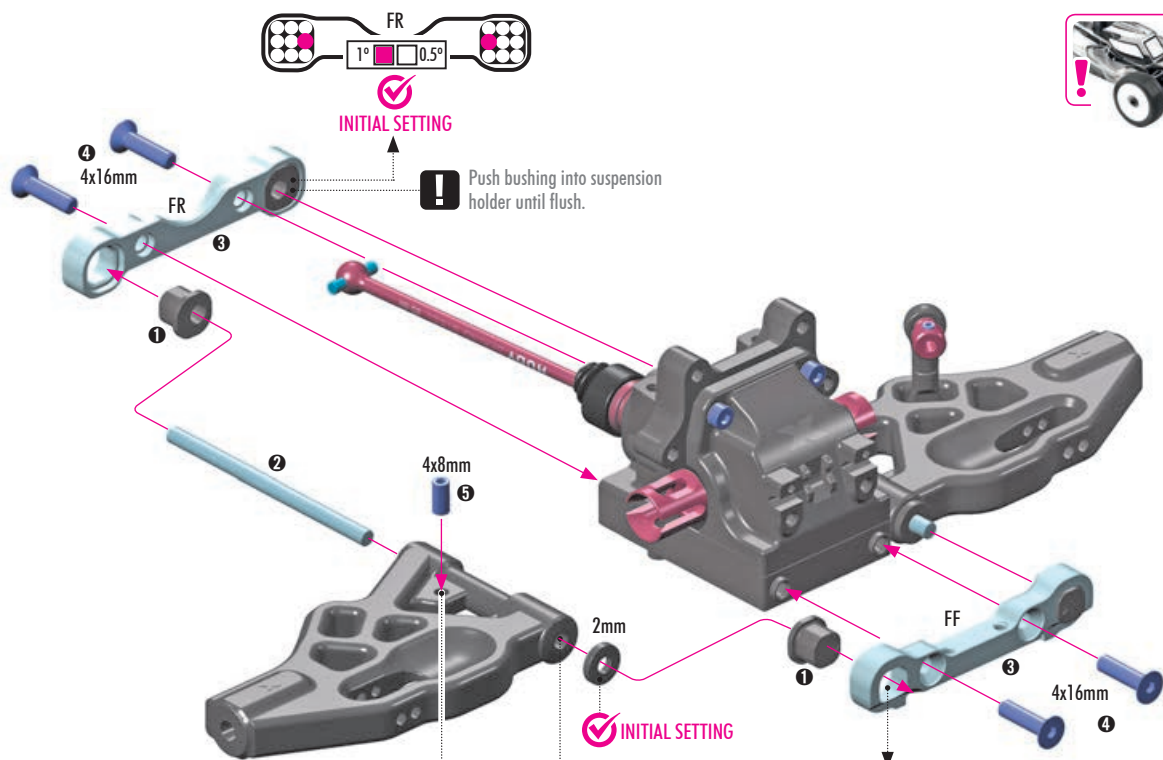
5. FRONT SUSPENSION

10

2x 353371
SHIM 4x10x2

2x 901408
SB M4x8

4x 903416
SFH M4x16



TOP DOWNSTOP SETTING



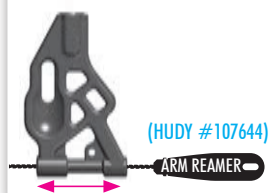
#902407
HEX SCREW SH M4x7
WITH HEX FROM
BOTTOM (4)

Downstop screw
for fine tuning.

#902409
HEX SCREW SH M4x10 WITH HEX
FROM BOTTOM (4)

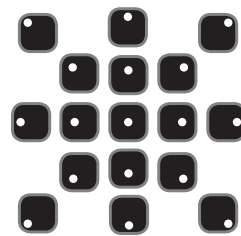
TIP

If suspension arms do not pivot freely
after checking eccentric bushings, a
HUDY arm reamer can eliminate any
remaining binding.

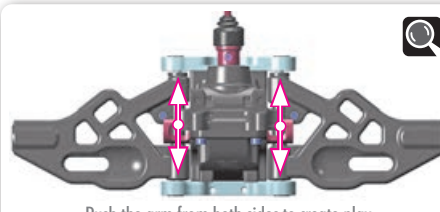
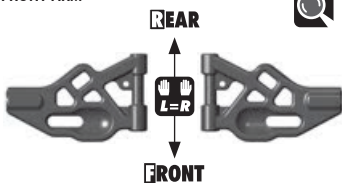


INITIAL SETTING

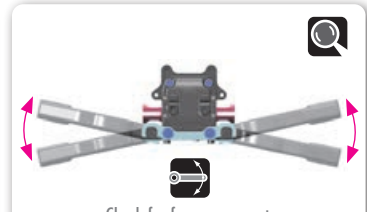
All possible mounting alternatives
of eccentric bushings.



FRONT ARM



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 = 1 mm 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).

| FF | FR | (mm) |
|----|----|-------|
| 0 | 0 | =308 |
| 0 | 1 | =306 |
| 0 | -1 | =310* |

| FF | FR | (mm) |
|----|----|------|
| 0 | 0 | =1 |
| 0 | 1 | =0 |
| 0 | -1 | =-1 |

The tables above describe the changes to kick-up and front track width when using the 0 and 1mm/1deg offset bushings. The .5mm/.5deg bushings reduce setting changes by half.

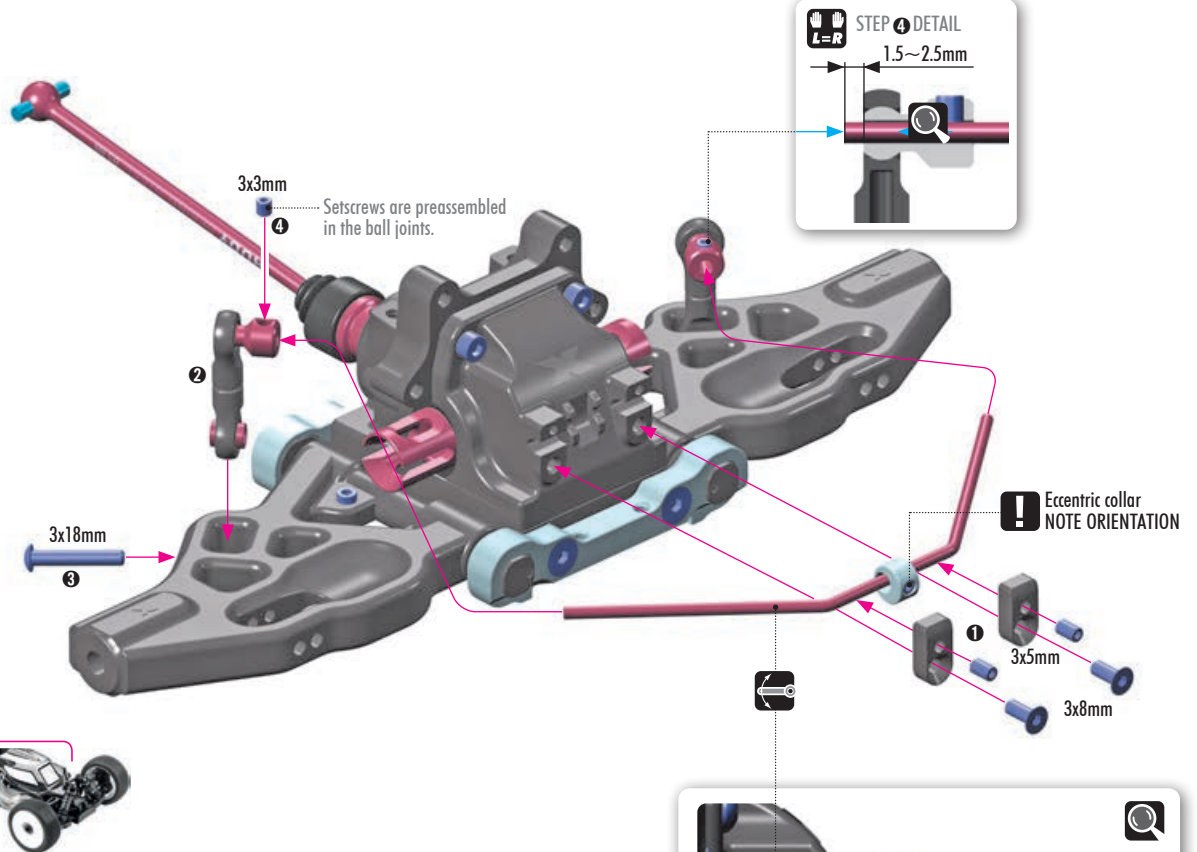
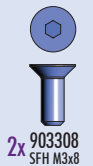
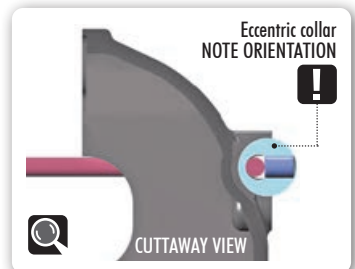
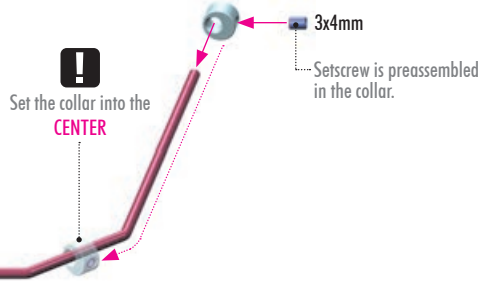
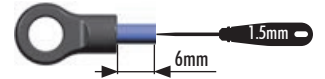
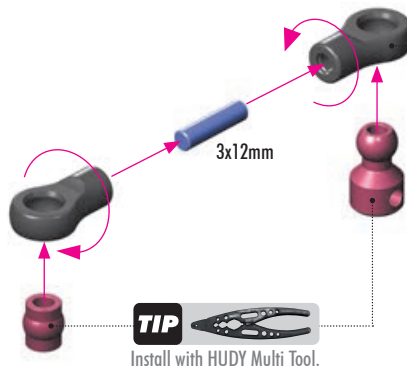
* NOT recommended to use this setting.

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

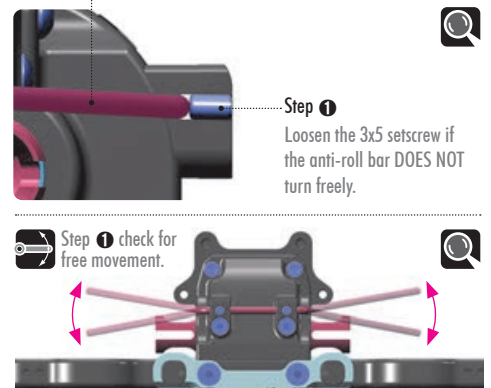
5. FRONT SUSPENSION



2x L=R



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



SET-UP BOOK
ANTI-ROLL BAR

6. FRONT SUSPENSION

#352194
LEXAN® FRONT UPPER
ARM WINGS IFMAR
LEGAL - SET

#357253
BRASS ADJUSTING NUT M15x1

OFFSET WHEEL AXLES

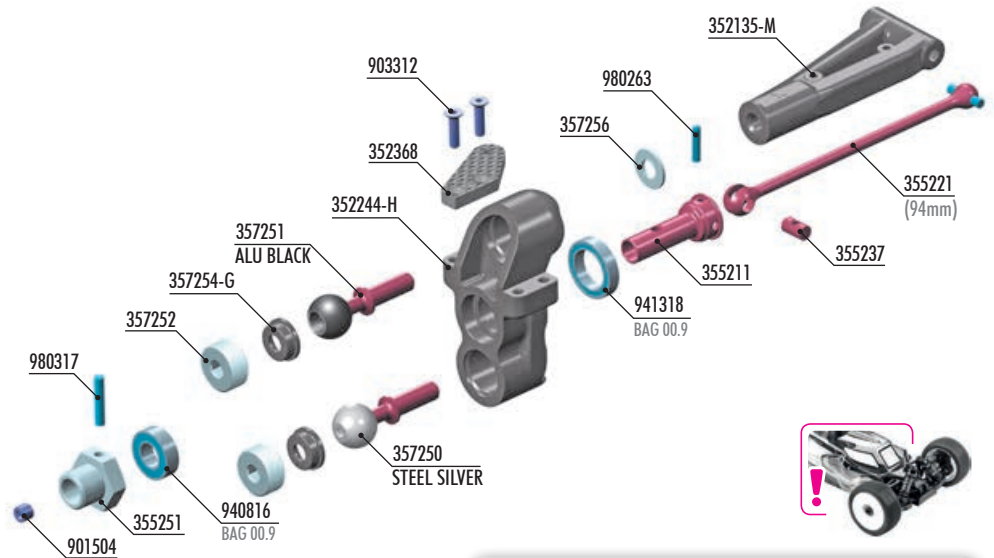
| # | Offset | Status |
|---------|--------|----------|
| #355250 | 0mm | OPTION |
| #355251 | +1mm | INCLUDED |
| #355252 | +2mm | OPTION |
| #355253 | +3mm | OPTION |
| #355254 | +4mm | OPTION |

FRONT UPPER SUSP. ARMS

| # | Material | Status |
|-----------|----------|----------|
| #352135 | SOFT | OPTION |
| #352135-M | MEDIUM | INCLUDED |
| #352135-G | GRAPHITE | OPTION |

STEERING BLOCKS

| # | Material | Status |
|-----------|----------|----------|
| #352244 | MEDIUM | OPTION |
| #352244-H | HARD | INCLUDED |
| #352244-G | GRAPHITE | OPTION |



STEERING PLATES

| # | Pattern | Material | Status |
|---------|---------|----------|----------|
| #352366 | 1 DOT | CARBON | OPTION |
| #352367 | 2 DOTS | CARBON | OPTION |
| #352368 | 3 DOTS | CARBON | INCLUDED |
| #352372 | 1 DOT | ALU | OPTION |
| #352370 | 2 DOTS | ALU | OPTION |

XRAY BALL-BEARINGS

| # | Size | Seal | Material | Status |
|---------|---------|--------|----------|----------|
| #930816 | 8x16x5 | GREASE | STEEL | OPTION |
| #940816 | 8x16x5 | GREASE | RUBBER | INCLUDED |
| #931318 | 13x19x4 | GREASE | STEEL | OPTION |
| #941318 | 13x19x4 | GREASE | RUBBER | INCLUDED |
| #930817 | 8x16x5 | OIL | STEEL | OPTION |
| #940817 | 8x16x5 | OIL | RUBBER | OPTION |
| #931319 | 13x19x4 | OIL | STEEL | OPTION |
| #941319 | 13x19x4 | OIL | RUBBER | OPTION |

BAG

06

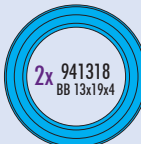
352135-M FRONT UPPER ARM - MEDIUM
352244-H PB STEERING BLOCK LB - HARD
352368 CARBON STEERING PLATE - 3 DOTS (1+1)
355211 CVD DRIVE AXLE - HUDY SPRING STEEL™
355221 CVD UNIVERSAL DRIVE SHAFT 94mm - HUDY SPRING STEEL™
355237 CVD DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
355251 ALU WHEEL AXLE OFFSET "+1mm" - HARD COATED (2)
357250 STEEL PIVOT BALL 13.7mm (2)
357251 ALU PIVOT BALL 13.7mm WITH STEEL SCREW (2)

357252 ALU ADJUSTING NUT M15x1 (2)
357254-G COMPOSITE BALL CUP 13.9mm - GRAPHITE (2)
357256 ALU SHIM 6x13x1 (2)
901504 HEX SCREW SB M5x4 (10)
903312 HEX SCREW SFH M3x12 (10)
940816 BALL-BEARING 8x16x5 RUBBER SEALED - GREASE (2)
941318 BALL-BEARING 13x19x4 RUBBER SEALED - GREASE (2)
980263 PIN 2.5x13 (10)
980317 PIN 3x17 (10)

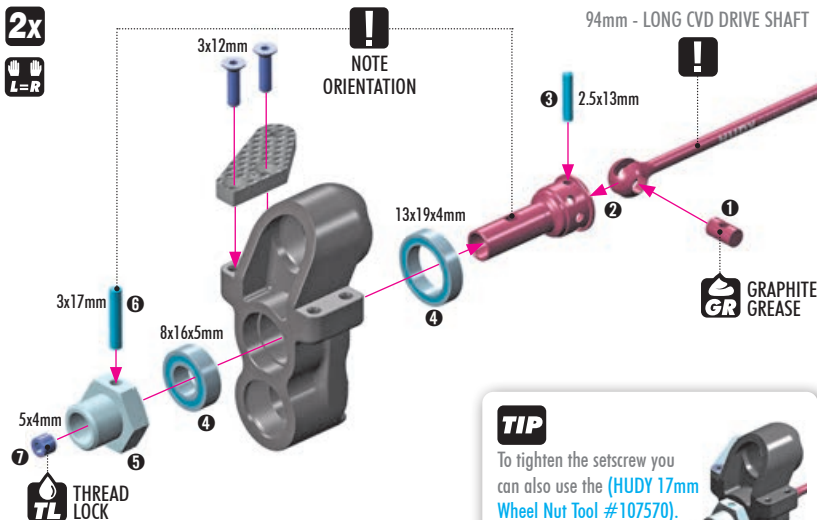
2x 901504
SB M5x4



2x 940816
BB 8x16x5



2x 980263 P 2.5x13
2x 980317 P 3x17



STEERING PLATES

| # | Pattern | Material | Status |
|---------|---------|----------|----------|
| #352366 | 1 DOT | CARBON | OPTION |
| #352367 | 2 DOTS | CARBON | OPTION |
| #352368 | 3 DOTS | CARBON | INCLUDED |
| #352372 | 1 DOT | ALU | OPTION |
| #352370 | 2 DOTS | ALU | OPTION |

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



Be careful NOT to overtighten the setscrew, as excessive tension in the drive axle may cause it to break. Instead, use thread lock to secure the setscrew.

#355222
UNIVERSAL DRIVE SHAFT - HUDY SPRING STEEL™

OFFSET WHEEL AXLES

| # | Offset | Status |
|---------|--------|----------|
| #355250 | 0mm | OPTION |
| #355251 | +1mm | INCLUDED |
| #355252 | +2mm | OPTION |
| #355253 | +3mm | OPTION |
| #355254 | +4mm | OPTION |

STEERING BLOCKS

| # | Material | Status |
|-----------|----------|----------|
| #352244 | MEDIUM | OPTION |
| #352244-H | HARD | INCLUDED |
| #352244-G | GRAPHITE | OPTION |

6. FRONT SUSPENSION

2x

L=R

! ALU pivot ball
BLACK color

! STEEL pivot ball
SILVER color

TIP

Tighten hex nuts using
HUDY tool #107581.

#357253
BRASS ADJUSTING NUT M15x1

OPTION

PIVOT BALLS MUST MOVE FREELY

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

10

2x 357256
SHIM 6x13x1

SET-UP
BOOK

CAMBER
TRACK-WIDTH

2x

L=R

Lexan® Wings (NOT INCLUDED)

#352194
XB8 LEXAN® FRONT UPPER ARM WINGS IFMAR LEGAL - SET

OPTION

TIP

2.5mm
HUDY Tool Allen 2.5mm

3x6mm

1mm

FRONT UPPER SUSP. ARMS

| | | |
|-----------|----------|----------|
| #352135 | SOFT | OPTION |
| #352135-M | MEDIUM | INCLUDED |
| #352135-G | GRAPHITE | OPTION |

SET-UP
BOOK

ROLL CENTER

2x

L=R

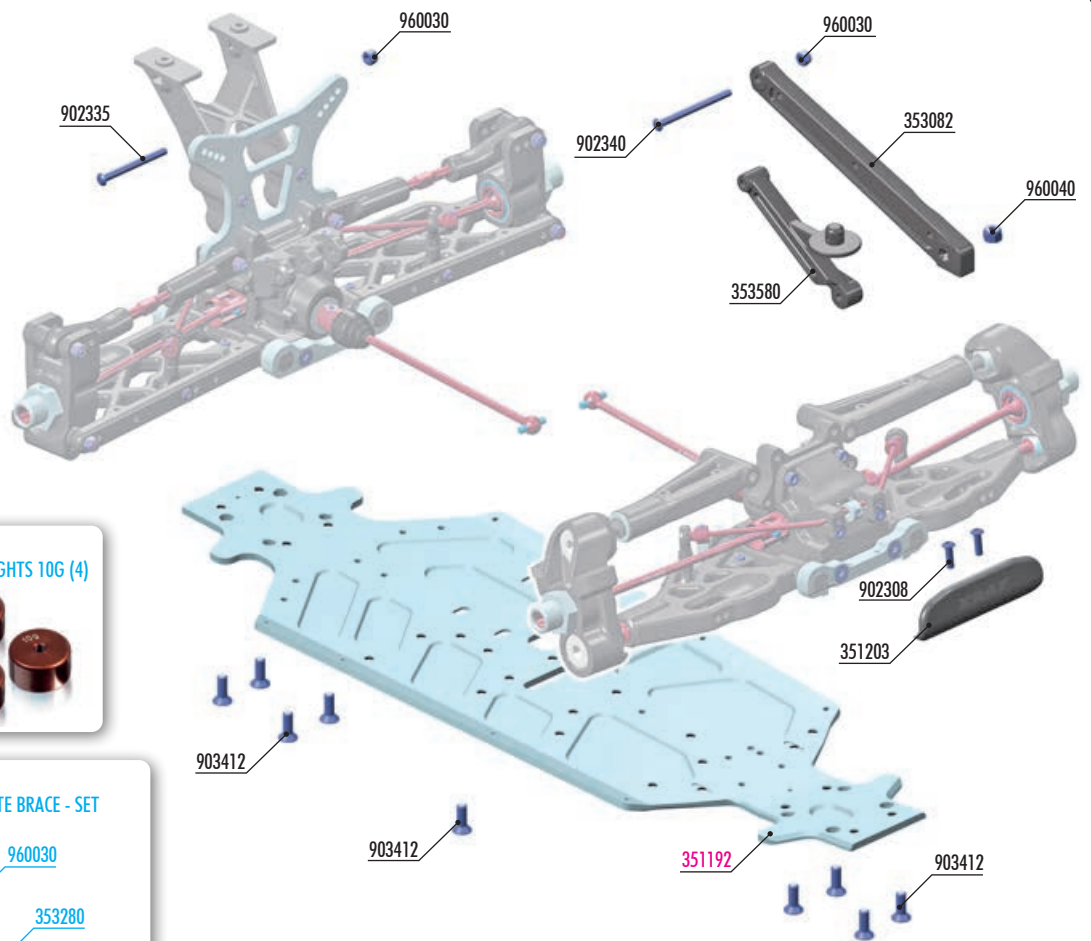
TIP

2.5mm
HUDY Tool Allen 2.5mm

ASSEMBLED
VIEW

!

6. FRONT & REAR ASSEMBLY

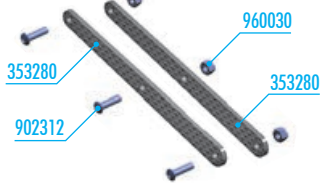


#293084
PRECISION BALANCING CHASSIS WEIGHTS 10G (4)
OPTION



903308
SFH M3x8

#353280
CARBON BRACES FOR REAR COMPOSITE BRACE - SET
OPTION



BAG

06

351203 COMPOSITE FRONT BUMPER FOR SEMI-SPLIT BULKHEAD
353082 COMPOSITE REAR BRACE - MEDIUM - M
353580 COMPOSITE WING HOLDER BRACE WITH REAR BODY POST

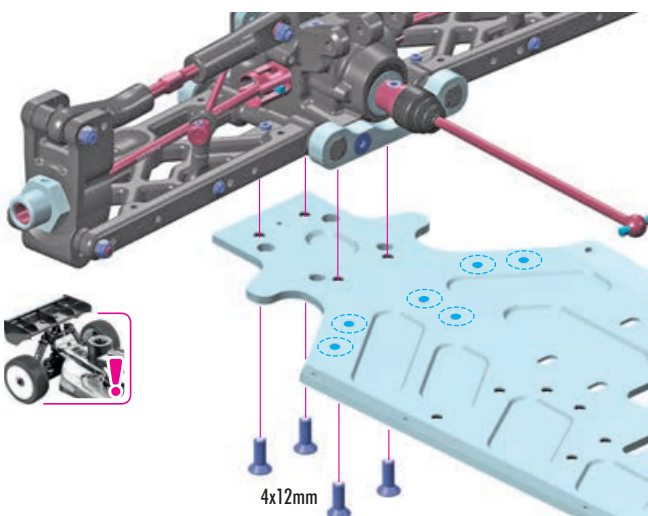
902308 HEX SCREW SH M3x8 (10)
902335 HEX SCREW SH M3x35 (10)

902340 HEX SCREW SH M3x40 (10)
903412 HEX SCREW SFH M4x12 (10)
960030 NUT M3 (10)
960040 NUT M4 (10)

351192 ALU CHASSIS - SWISS 7075 T6 (3MM)



4x 903412
SFH M4x12



#293084
PRECISION BALANCING CHASSIS WEIGHTS 10G (4)
OPTION



903308
SFH M3x8

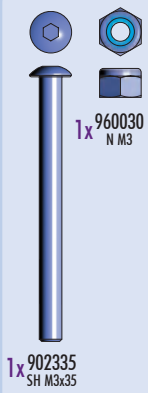


Locations for weights



During initial assembly, there is NO need to check gear mesh or diff play. Fitment should NOT be checked until suspension holders are installed on the bulkheads and the complete assembly is mounted to the chassis. All parts have specifically designed tolerances for proper operation once fully assembled. After assembly, check for free rotation of all drivetrain parts and non-binding movement of the suspension.

6. FRONT & REAR ASSEMBLY



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

NOTE



Overtightening will deform the composite wing holder, and will NOT allow you to mount the wing as per the instructions on page 46 step 2.

3x35mm

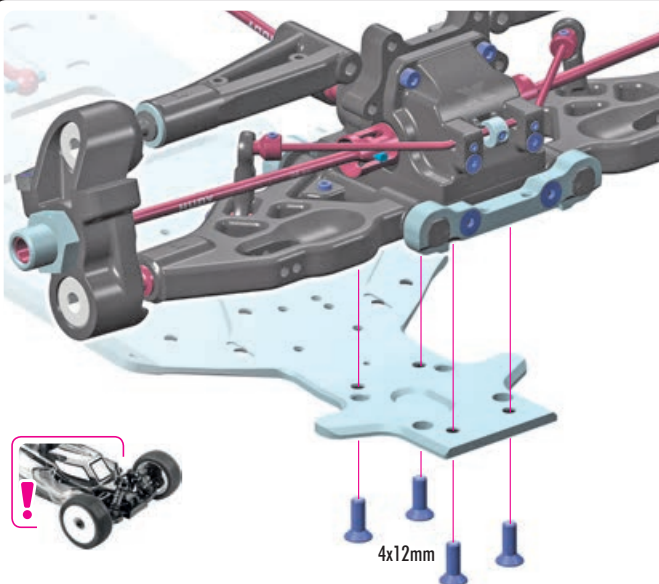
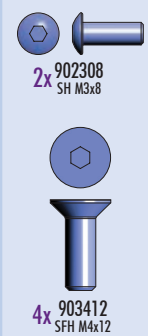
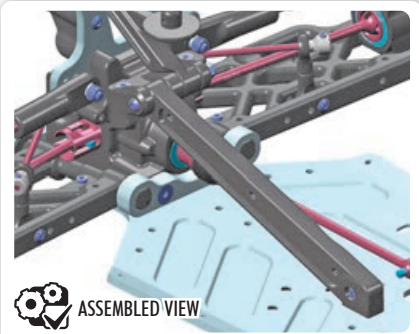
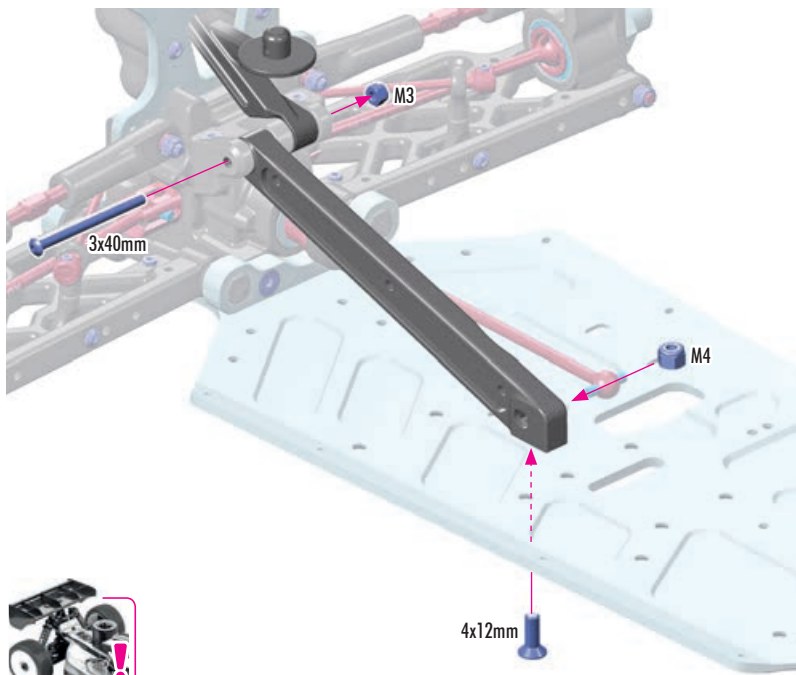
M3



#353280

CARBON BRACE SET for extra stiffness adjustment.

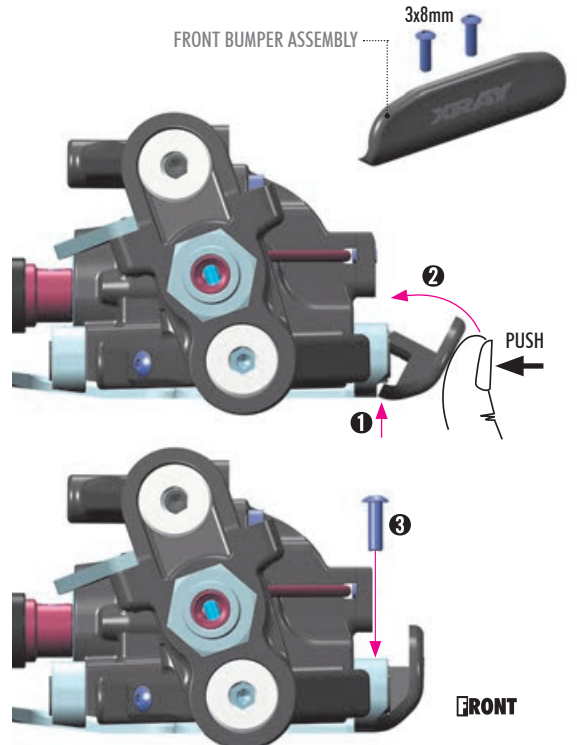
OPTION



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

FRONT BUMPER ASSEMBLY

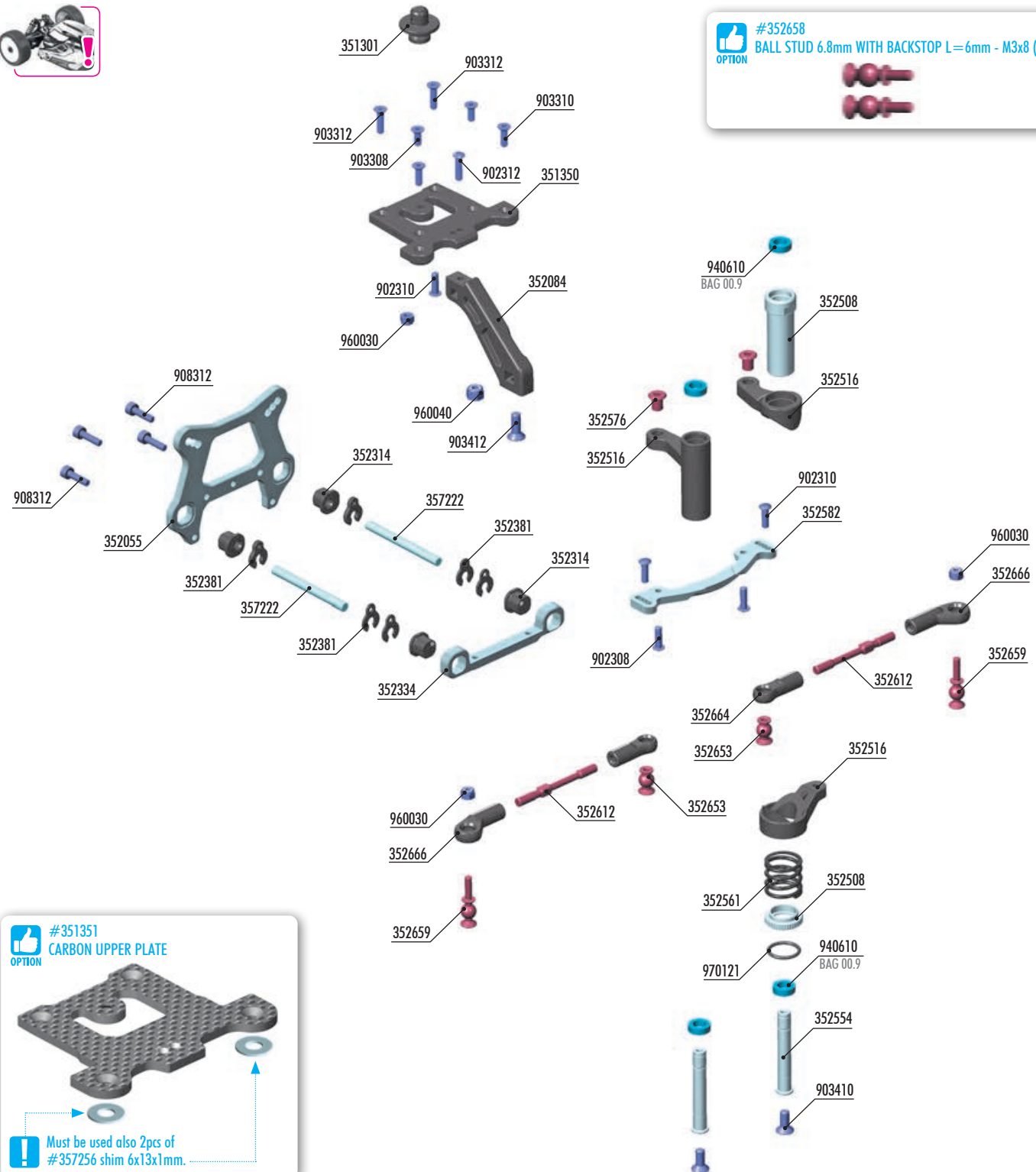
3x8mm



7. STEERING



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



#351351
CARBON UPPER PLATE



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

BAG

07

351301 BODY POSTS
351350 COMPOSITE UPPER PLATE WITH TWO BRACE POSITIONS
352055 ALU FRONT SHOCK TOWER FOR SEMI-SPLIT BULKHEAD - LOWER
352084 COMPOSITE FRONT BRACE
352314 COMPOSITE SQUARE ADJ. ROLL CENTER BUSHINGS - V2 (2)
352334 ALU FRONT UPPER ARM HOLDER FOR SEMI-SPLIT BULKHEAD
352381 CASTER CLIPS (2)
352508 SERVO SAVER FOR SEMI-SPLIT BULKHEAD - GRAPHITE - SET
352516 COMPOSITE SERVO SAVER FOR SEMI-SPLIT BULKHEAD - GRAPHITE
352554 ALU SERVO SAVER PIVOT SHAFT WITH CHASSIS LOCK (2)
352561 SERVO SAVER SPRING PROGRESSIVE
352576 STEERING PLATE BUSHING (2)
352582 ALU STEERING PLATE FOR SEMI-SPLIT BULKHEAD - SWISS 7075 T6
352612 ADJ. TURNBUCKLE M4 L/R 45mm - HUDY SPRING STEEL™ (2)
352653 BALL STUD 6.8mm WITH BACKSTOP - M3 (2)
352659 BALL STUD 6.8mm WITH BACKSTOP L=6mm - M3x11 (2)
352664 COMPOSITE STEERING BALL JOINT 6.8mm - V3 (2)

352666 COMPOSITE RELIEF STEERING BALL JOINT 6.8mm (2)
357222 FRONT UPPER PIVOT PIN 4x45 (2)

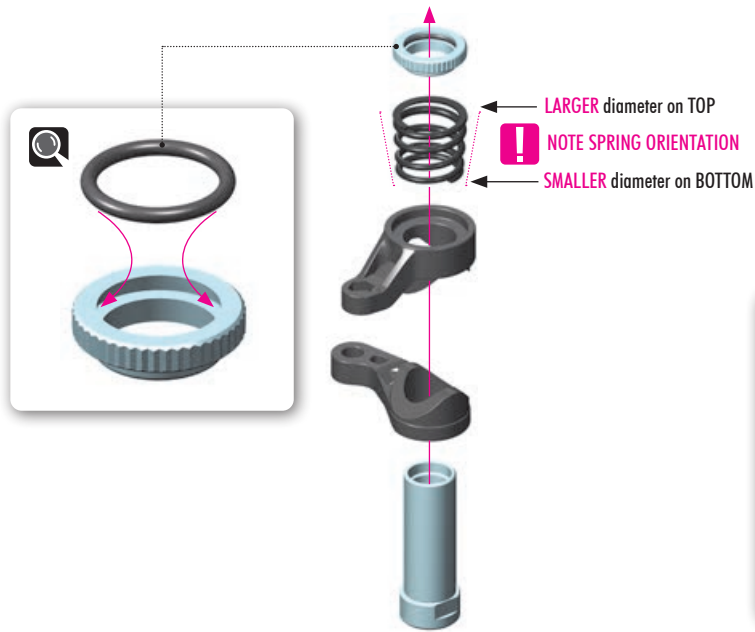
902308 HEX SCREW SH M3x8 (10)
902310 HEX SCREW SH M3x10 (10)
902312 HEX SCREW SH M3x12 (10)
903308 HEX SCREW SFH M3x8 (10)
903310 HEX SCREW SFH M3x10 (10)
903312 HEX SCREW SFH M3x12 (10)
903410 HEX SCREW SFH M4x10 (10)
903412 HEX SCREW SFH M4x12 (10)
908312 HEX SCREW SOCKET HEAD CAP SCH M3x12 (10)
940610 BALL-BEARING 6x10x3 RUBBER SEALED - OIL (2)
960030 NUT M3 (10)
960040 NUT M4 (10)
970121 O-RING 12.1 x 1.6 (10)

7. STEERING

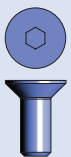
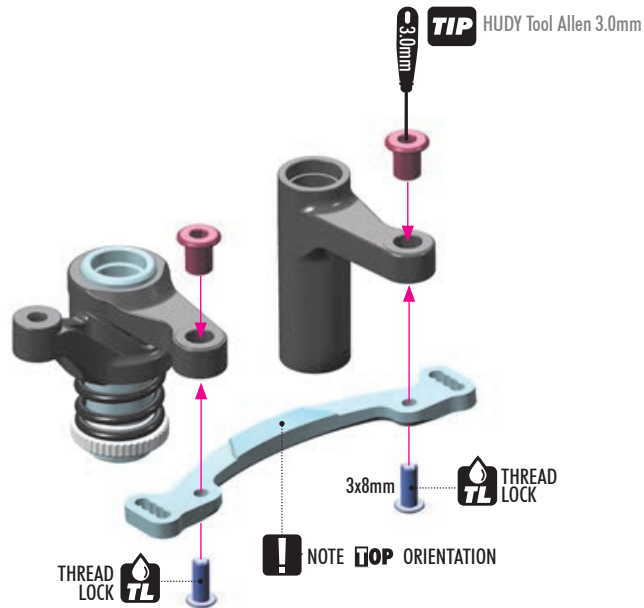


1x 970121
O 12.1x1.6

**SET-UP
BOOK**
SERVO SAVER



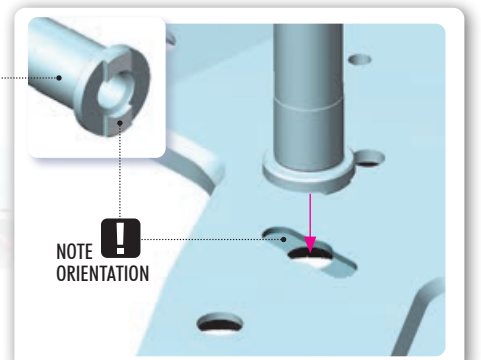
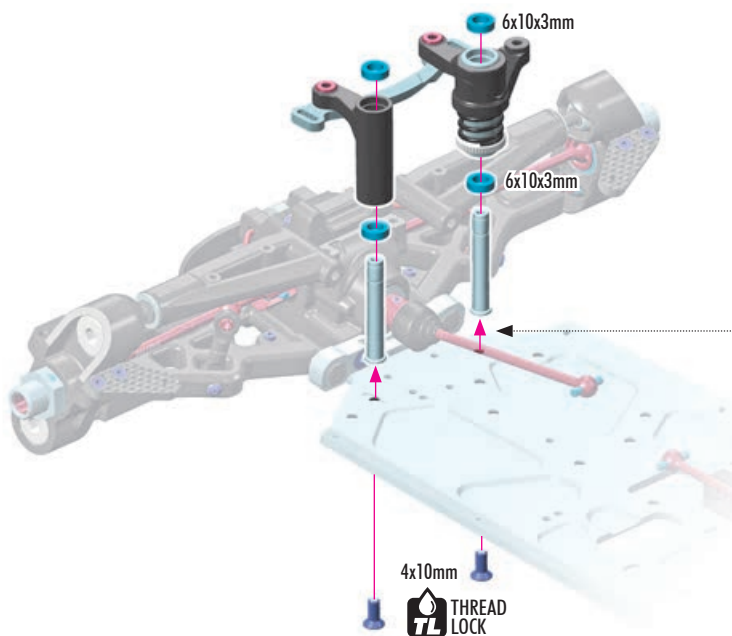
2x 902308
SH M3x8



2x 903410
SFH M4x10

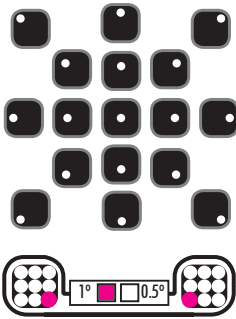


4x 940610
BB 6x10x3

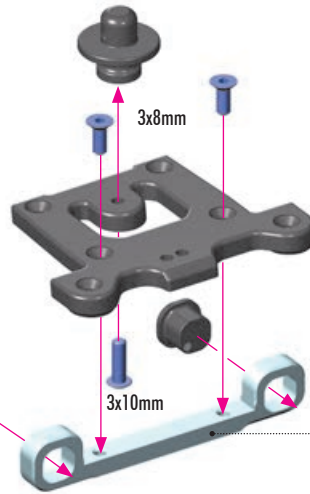




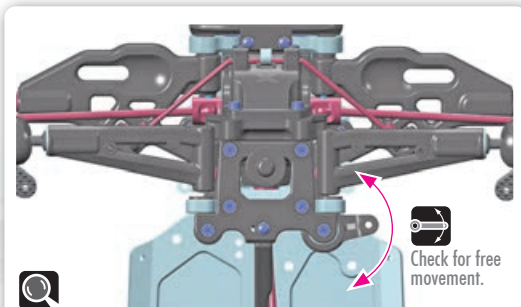
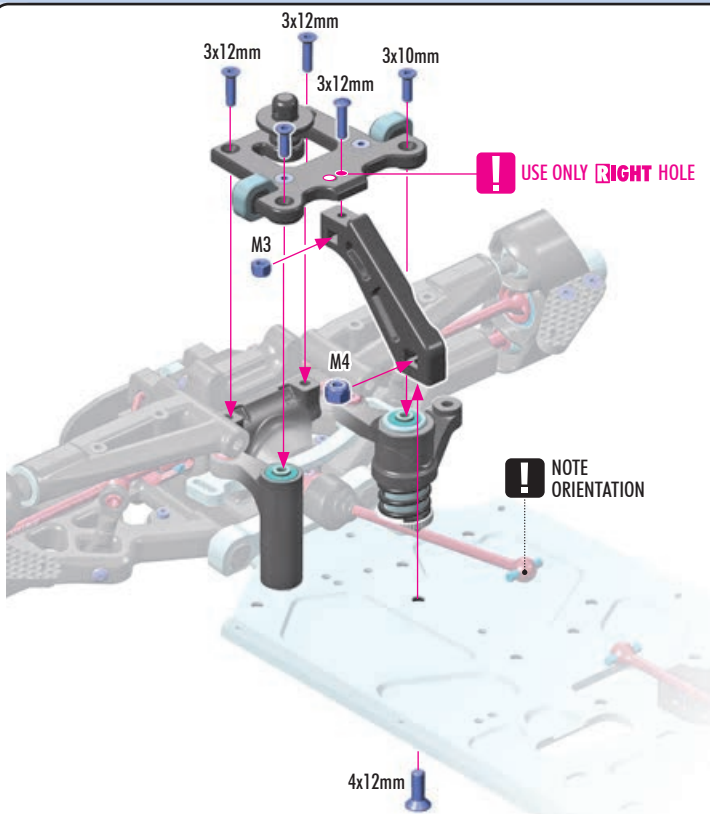
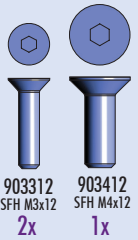
All possible mounting
alternatives of eccentric bushings.



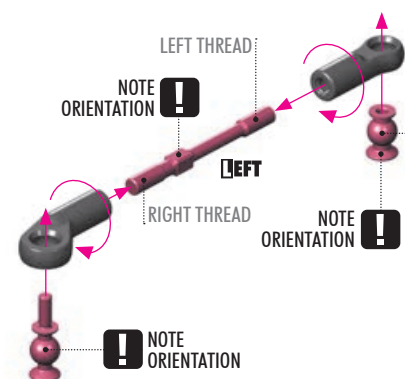
INITIAL SETTING



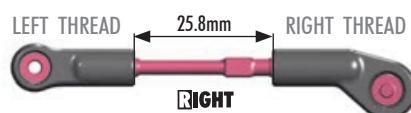
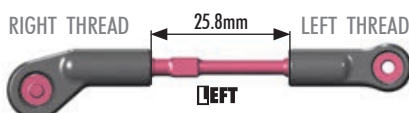
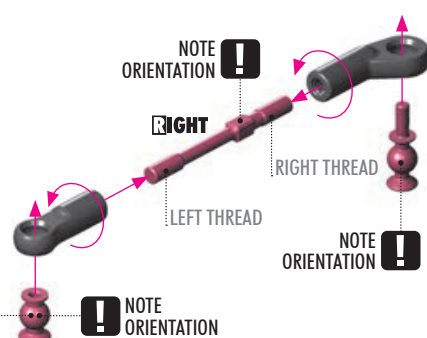
SET-UP
BOOK
ROLL CENTER




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

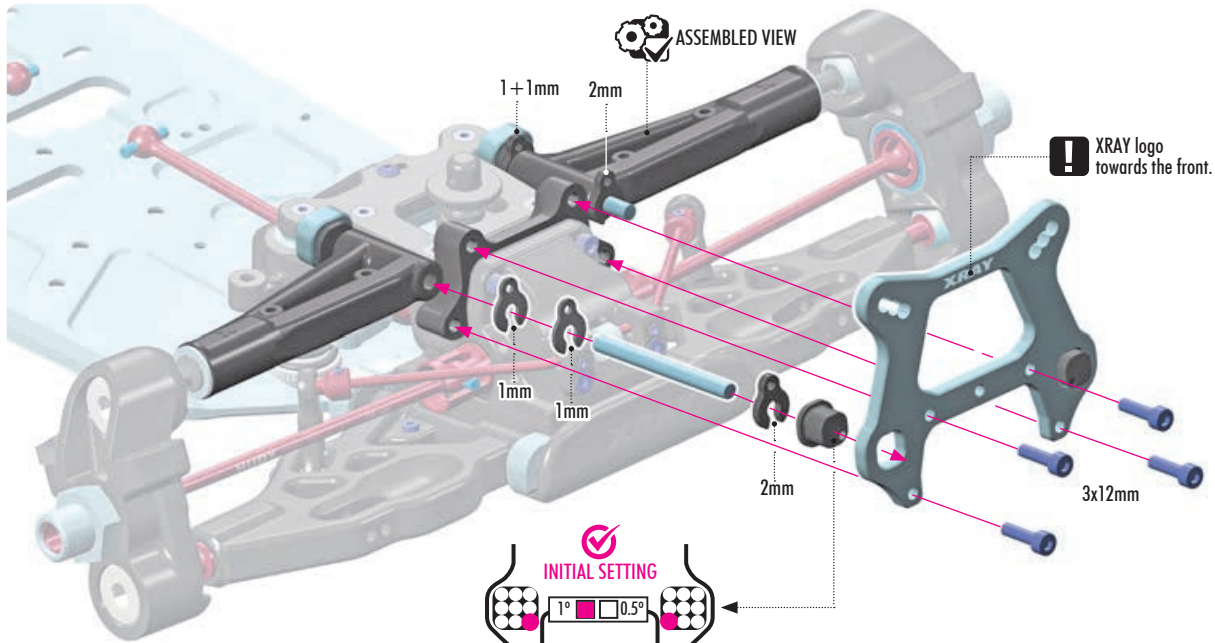


TIP
Install with HUDY Multi Tool.

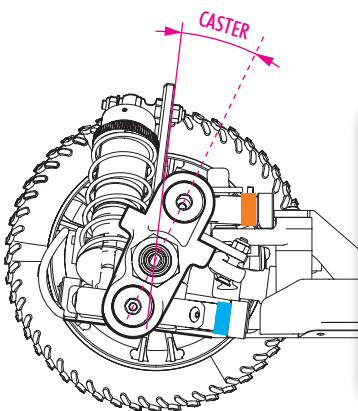
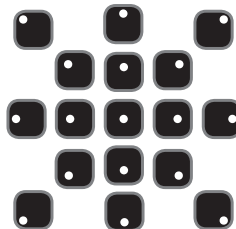


7. STEERING


4x 908312
 SCH M3x12



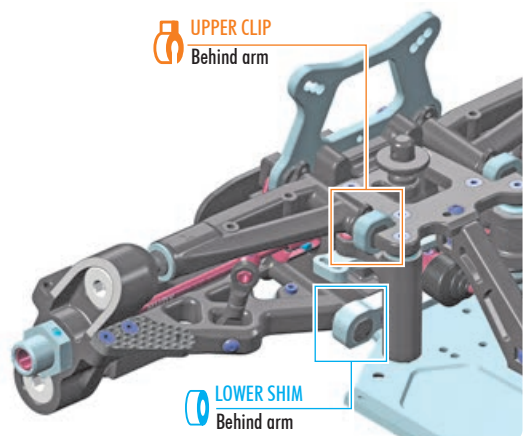
All possible mounting alternatives of eccentric bushings.



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

 **UPPER CLIP**
 Behind arm

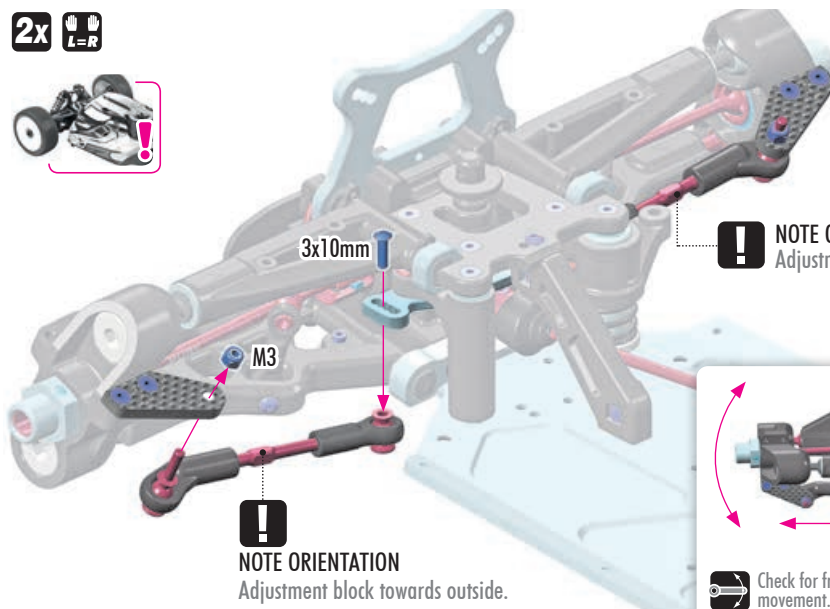
 **LOWER SHIM**
 Behind arm



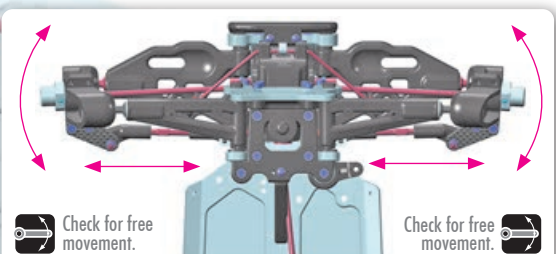
SET-UP BOOK
 ROLL CENTER
 CASTER


2x 902310
 SH M3x10

2x 960030
 N M3



NOTE ORIENTATION
 Adjustment block towards outside.



SET-UP BOOK
 ACKERMANN
 BUMP STEER
 TOE-IN

8. CENTER DIFF & BRAKE

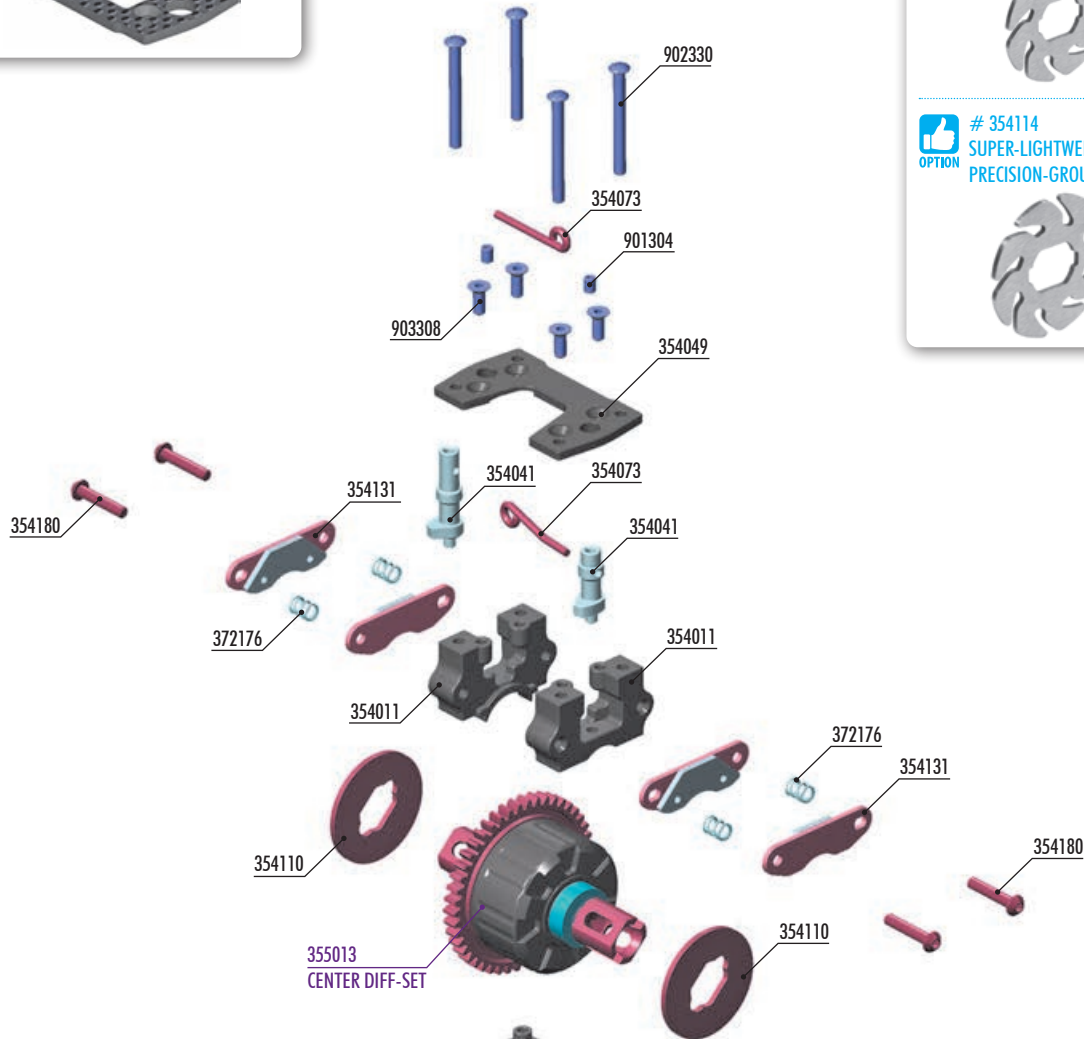
#354057
CARBON CENTER DIFF MOUNTING PLATE
OPTION



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



#354114
SUPER-LIGHTWEIGHT VENTILATED BRAKE DISK
PRECISION-GROUND - LARGE (2)
OPTION



#354011-G
CENTER DIFF MOUNTING PLATE SET
HIGHER - GRAPHITE
OPTION



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



#354130
BRAKE PAD FIBER (4)
OPTION



#354132
BRAKE PAD "SLS" (4)
OPTION



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

BAG

08

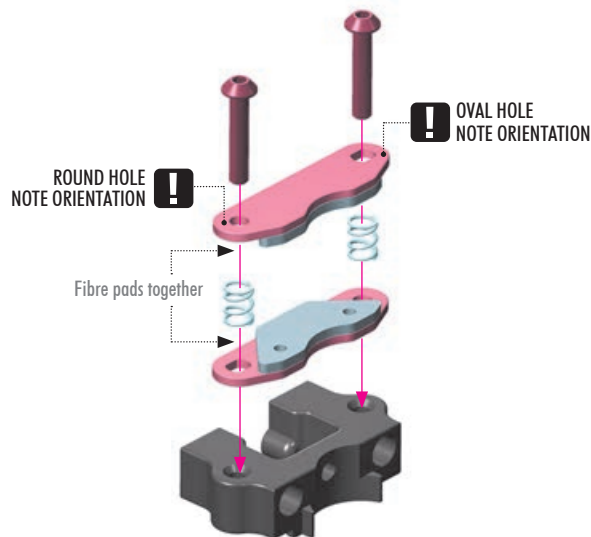
354011 CENTER DIFF MOUNTING PLATE SET - HIGHER
354041 ALU BRAKE CAM POST & ROD (2+2) HARD COATED
354049 COMPOSITE CENTER DIFF MOUNTING PLATE
354073 BRAKE CAME ROD (1+1)
354110 VENTILATED BRAKE DISK - LASER CUT - PRECISION-GROUND
354131 GLUED BRAKE PAD SET - ULTRA-EFFICIENT (4)
354180 STEEL BRAKE PAD GUIDE PIN SCREW (2)
372176 SPRING 4.25 COILS 3.6x6x0.4mm; C=1.5 - GOLD (SOFT) (2)

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

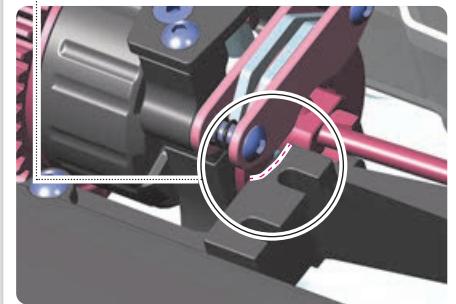
355013 CENTER DIFFERENTIAL - LARGE - SET

8. CENTER DIFF & BRAKE

2x 



When using ultra-efficient brake pads, carefully remove a small amount of material from radio tray as shown.



 #354121
STEEL BRAKE PAD - LASER CUT (4)



 #354130
BRAKE PAD FIBER (4)

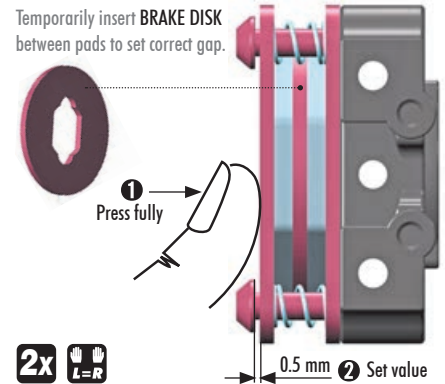


 #354132
BRAKE PAD "SLS" (4)



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

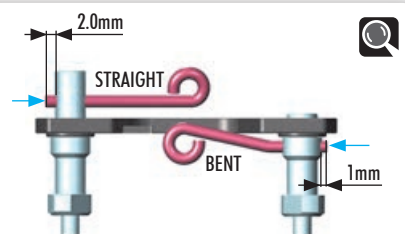
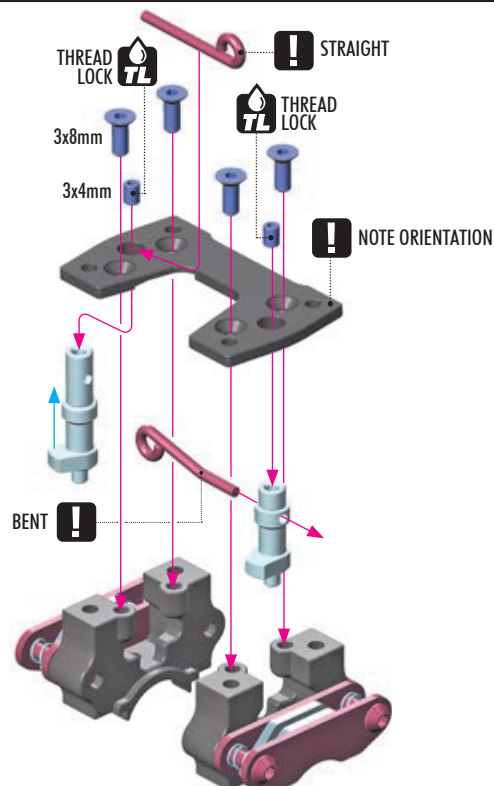
Temporarily insert BRAKE DISK between pads to set correct gap.



2x 

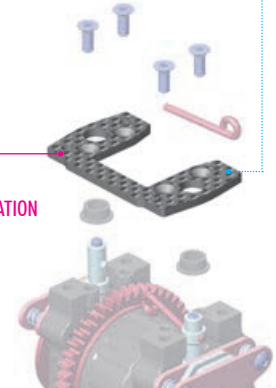

2x 901304
SB M3x4


4x 903308
SFH M3x8

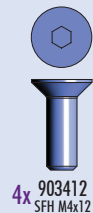


 #354057
CARBON CENTER DIFF MOUNTING PLATE

! REVERT ORIENTATION

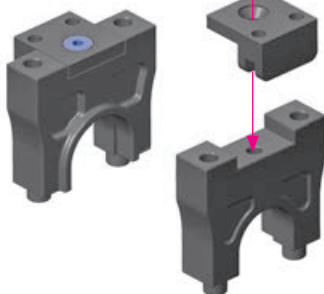


8. CENTER DIFF & BRAKE



! NOTE ORIENTATION
OF ALL PARTS

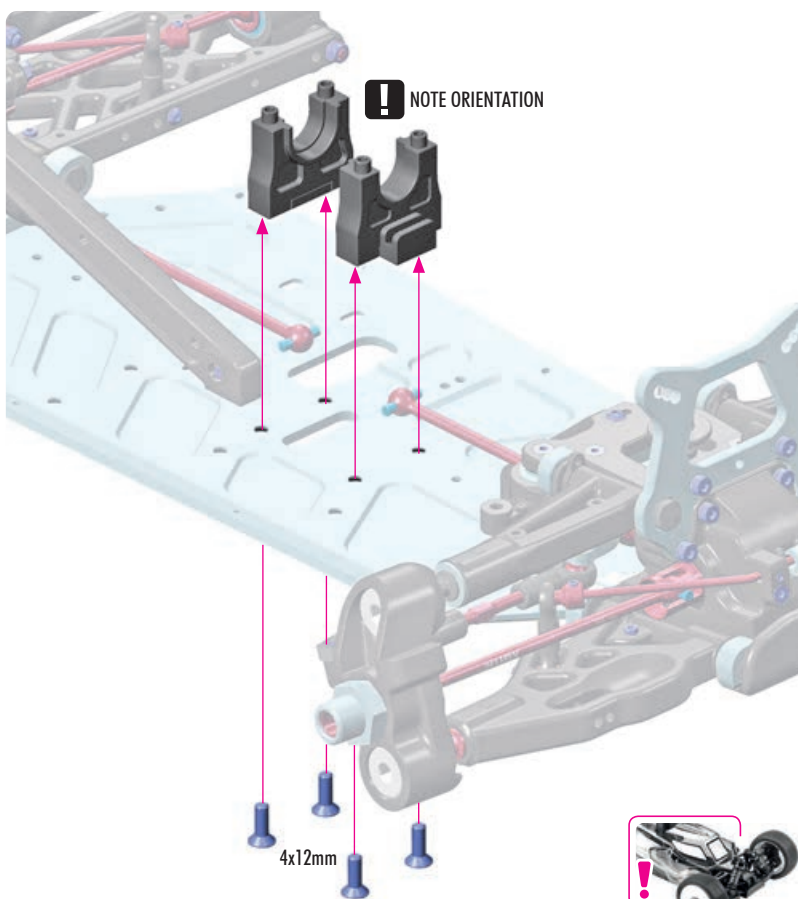
3x8mm



#354011-G
CENTER DIFF MOUNTING PLATE SET
HIGHER - GRAPHITE



! NOTE ORIENTATION



4x12mm

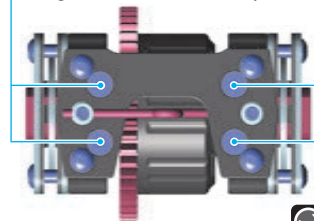


! NOTE ORIENTATION
OF ALL PARTS

OIL
All screws

3x30mm

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



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



354114
SUPER-LIGHTWEIGHT VENTILATED BRAKE DISK
PRECISION-GROUND - LARGE (2)



Insert brake disk
between brake pads.



9. FUEL TANK & ENGINE



#358709
ALU MONOBLOCK ENGINE
MOUNT - SWISS 7075 T6



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



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



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



#358400
XRAY COMPLETE 4-SHOE CLUTCH SET



4-SHOE CLUTCH SHOES

| # | GRIP | OPTION |
|------------------------|-------|----------|
| #358457 ALU HARD (4) | 1.00g | OPTION |
| #358456 ALU MED (4) | 1.00g | OPTION |
| #358461 GRAPHITE (4) | 1.00g | OPTION |
| #358460 ALU HARD (4) | 1.15g | OPTION |
| #358459 ALU MEDIUM (4) | 1.15g | INCLUDED |
| #358458 ALU SOFT (4) | 1.15g | OPTION |



CLUTCH SPRINGS (4pcs)

| # | RPM | OPTION |
|----------------|--------|----------------|
| #358480 SOFT | GOLD | EARLY INCLUDED |
| #358481 MEDIUM | GREY | OPTION |
| #358482 HARD | SILVER | LATE OPTION |



CLUTCHBELL 4 SHOES CLUTCH

| # | OPTION |
|---------------------------|--------|
| #358413 13T | OPTION |
| #358413-L 13T Lightweight | OPTION |
| #358414-L 14T Lightweight | OPTION |



#650105
FX K303



- 3 PORTS
- DLC
- CERAMIC BEARING
- BALANCED

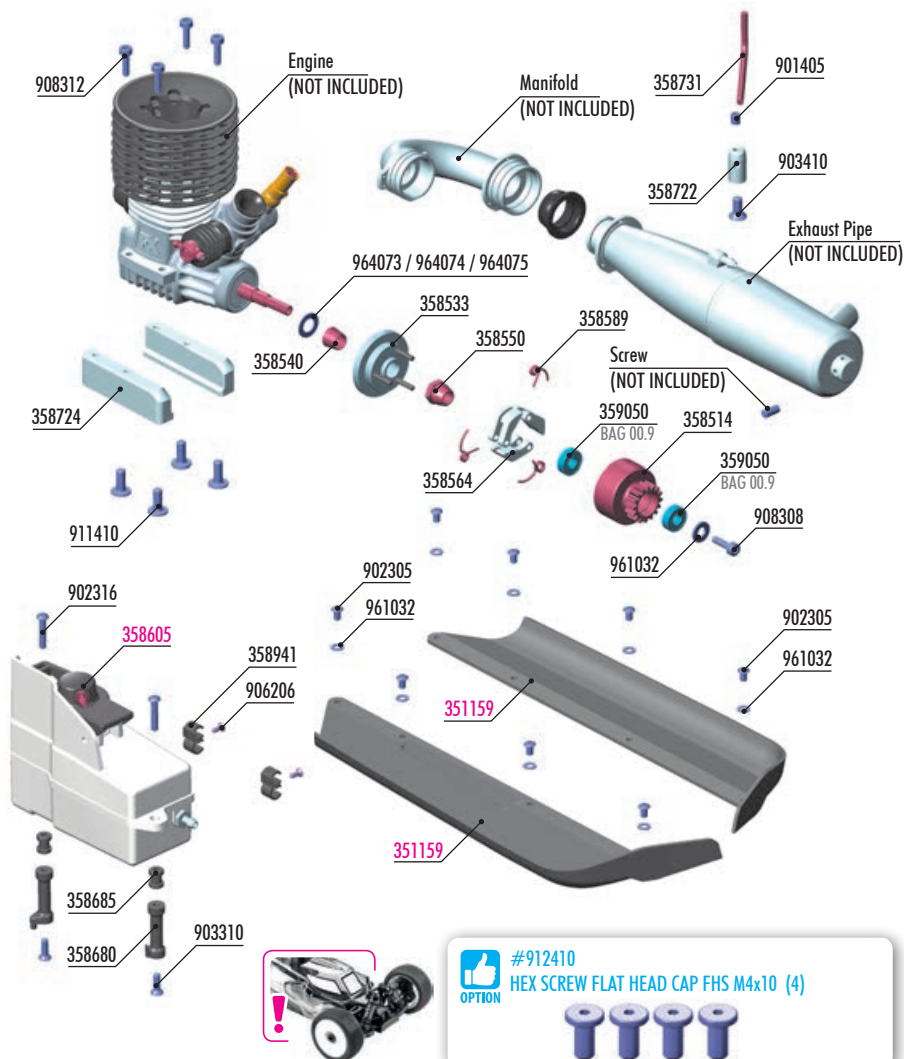
FX EUROPEAN CHAMPION



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



FX EUROPEAN CHAMPION



CLUTCH SHOE

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



#353250

CARBON BRACE FOR CHASSIS SIDE GUARDS - SET



#912410
HEX SCREW FLAT HEAD CAP FHS M4x10 (4)



#358660
CARBON 125CC FUEL TANK GUARD



HIGH TORQUE CLUTCH SPRING

| # | OPTION |
|----------------|---------------|
| #358588 GRAY | MEDIUM OPTION |
| #358589 SILVER | HARD INCLUDED |



CLUTCHBELL 3 SHOES CLUTCH

| # | OPTION |
|-------------------------|----------|
| #358512 12T | OPTION |
| #358513 13T | OPTION |
| #358514 14T | INCLUDED |
| #358525 15T | OPTION |
| #358517 13T Lightweight | OPTION |
| #358518 14T Lightweight | OPTION |



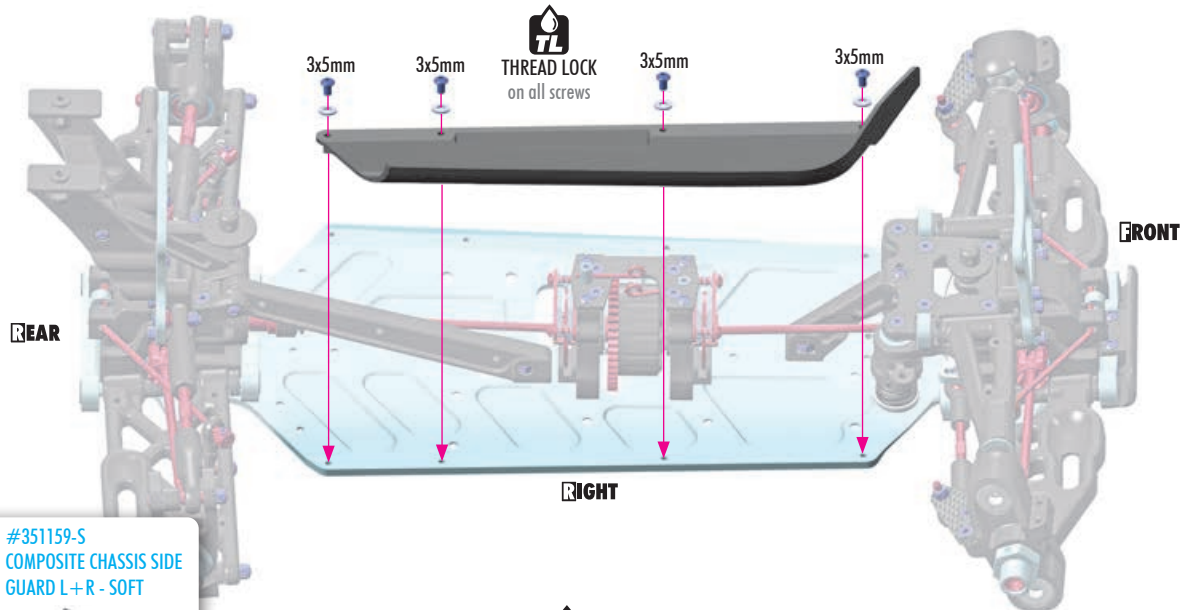
BAG

09

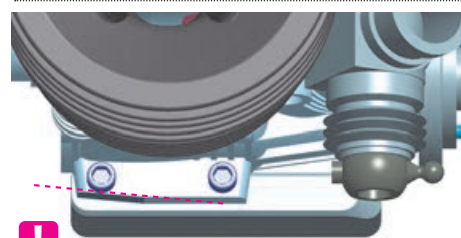
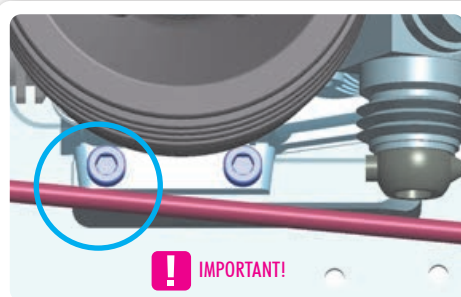
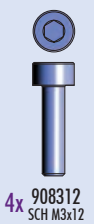
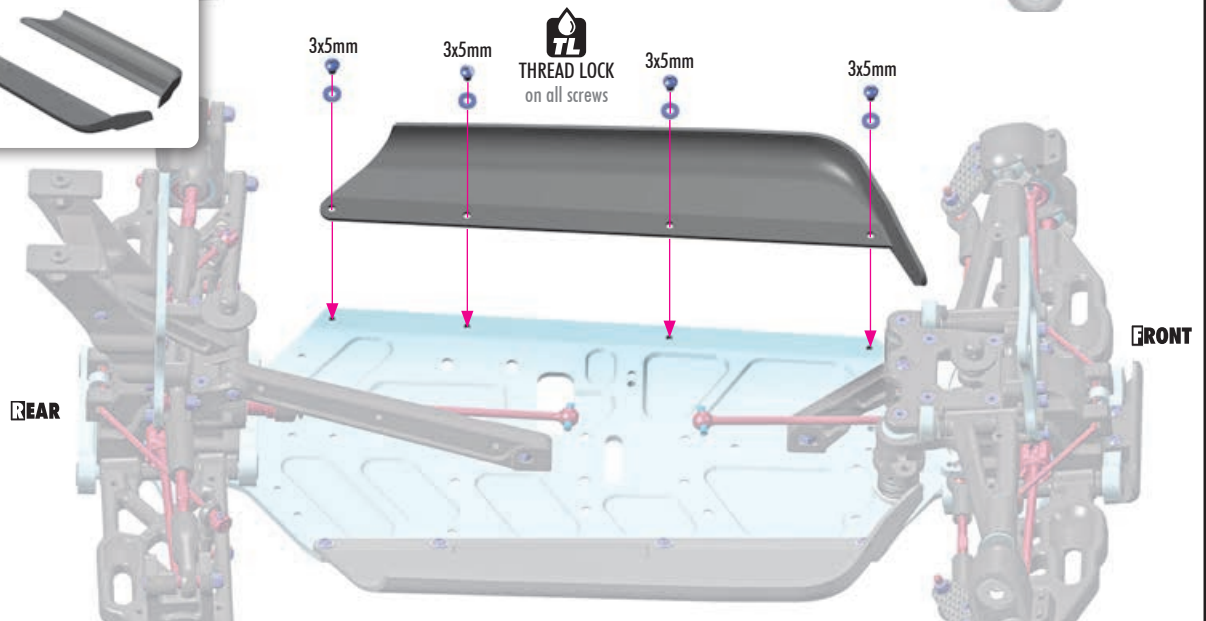
358514 CLUTCH BELL 14T
358533 FLYWHEEL - HIGH TORQUE - LIGHTWEIGHT
358540 FLYWHEEL COLLAR
358550 FLYWHEEL NUT - HUDY SPRING STEEL™
358564 ALU CLUTCH SHOE - HARD (3)
358589 HIGH TORQUE CLUTCH SPRINGS - HARD (3)
358680 FUEL TANK MOUNTING POST (2)
358685 FUEL TANK MOUNTING GROMMET (4)
358722 EXHAUST WIRE MOUNT SET
358724 ALU ENGINE MOUNT - CNC MACHINED (L+R)
358731 EXHAUST MOUNTING WIRE - LONG
358941 COMPOSITE TUBING HOLDER FOR FUEL TANK (2)
359050 BALL-BEARING 5x10x4 STEEL SEALED - GREASE - V2 (2)
901405 HEX SCREW SB M4x5 (10)

902305 HEX SCREW SH M3x5 (10)
902316 HEX SCREW SH M3x16 (10)
903310 HEX SCREW SFH M3x10 (10)
903410 HEX SCREW SFH M4x10 (10)
906206 SCREW PHILLIPS FH 2.2x6 (10)
908308 HEX SCREW (CAP HEAD) 3x8 (10)
908312 HEX SCREW (CAP HEAD) 3x12 (10)
911410 HEX SCREW FLANGED SH M4x10 (10)
961032 WASHER S 3.2 (10)
964073 WASHER S 7x10x0.2 (10)
964074 WASHER S 7x10x0.3 (10)
964075 WASHER S 7x10x0.5 (10)
351159 CHASSIS SIDE GUARDS L+R
358605 FUEL TANK 125CC WITH FLOATING FILTER & TRANSIENT JET

9. FUEL TANK & ENGINE

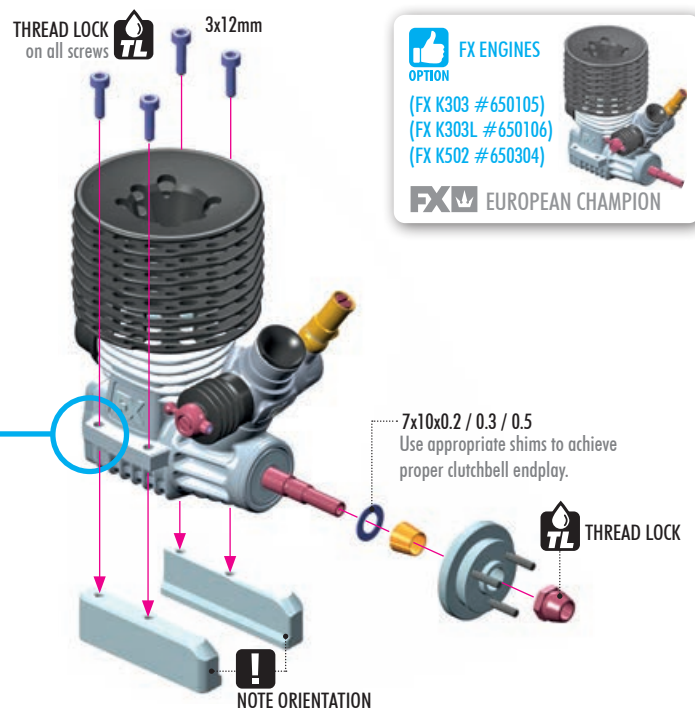


#351159-S
COMPOSITE CHASSIS SIDE
GUARD L+R - SOFT



When installing the engine, first check that the drive shaft DOES NOT touch the engine. If it does, remove material from the engine case as shown to create clearance between the engine and driveshaft.

THREAD LOCK
on all screws



FX ENGINES
OPTION

(FX K303 #650105)
(FX K303L #650106)
(FX K502 #650304)

FX EUROPEAN CHAMPION

7x10x0.2 / 0.3 / 0.5
Use appropriate shims to achieve
proper clutchbell endplay.

THREAD LOCK

NOTE ORIENTATION

9. FUEL TANK & ENGINE



2x 359050
BB 5x10x4



1x 908308
SCH M3x8



1x 961032
S 3.2

SET-UP BOOK

CLUTCH SPRINGS
CLUTCH SHOE



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



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



TIP Hold the flywheel using HUDY Flywheel Tool #182016.

TIP Tighten the clutch nut using HUDY tool #107581.

10~10.2mm
5x10x4mm
5x10x4mm
3.2mm
3x8mm

THREAD LOCK



Final Drive Ratio

$$(48 : 14) \times 3.54 = 12.14$$

(Center Spur) (Clutchbell) (Internal ratio) (FDR)



CLUTCH SHOE

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



CLUTCHBELL 3 SHOE CLUTCH

#358512 12T OPTION
#358513 13T OPTION
#358514 14T INCLUDED
#358525 15T OPTION
#358517 13T Lightweight OPTION
#358518 14T Lightweight OPTION



HIGH TORQUE CLUTCH SPRING

#358588 GRAY MEDIUM OPTION
#358589 SILVER HARD INCLUDED



4x 911410
SHF M4x10



#358709 ALU MONOBLOCK ENGINE MOUNT

SWISS 7075 T6



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



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

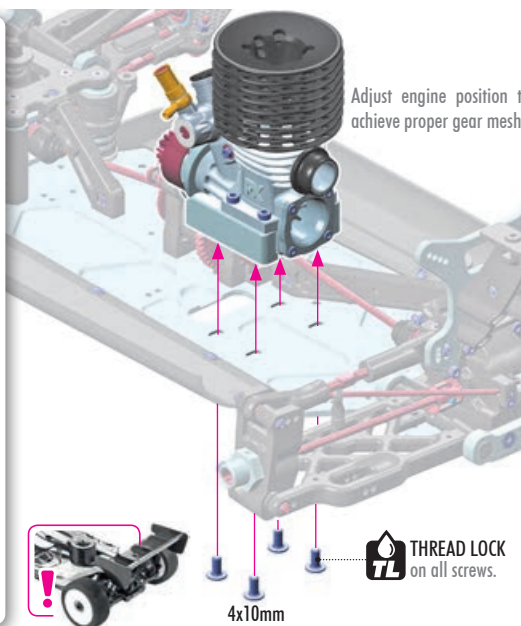


#912410
HEX SCREW FLAT HEAD CAP FHS M4x10 (4)

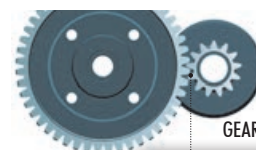


SET-UP BOOK

GEARING
GEAR MESH ADJ.



Adjust engine position to achieve proper gear mesh.



GEAR MESH



EXTREMELY IMPORTANT

It is very important that your XB8 has properly-adjusted gear mesh. Adjust the gear mesh so there is adequate (or slightly larger) space between the spur gear and clutchbell teeth. Adjust the gear mesh by sliding the engine mounts in the slots of the chassis. You should be able to rock one gear back and forth slightly while holding the other one firmly. Be sure to check the gear mesh all the way around the spur gear. Tighten the screws once the engine alignment and gear mesh are correct, and then re-check the gear mesh to ensure the engine mounts did not move.

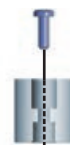
THREAD LOCK on all screws.

The fuel tank volume can be adjusted using the included inserts. The inserts reduce fuel capacity inside the tank to adjust for fuel filter and fuel line capacity and ensure a legal fuel volume 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.

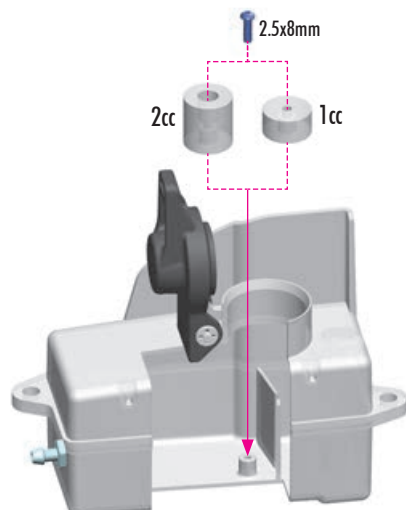


NOTE ORIENTATION

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.



1x 907258
SP 2.5x8



2cc

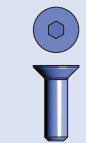
1cc

2.5x8mm

9. FUEL TANK & ENGINE



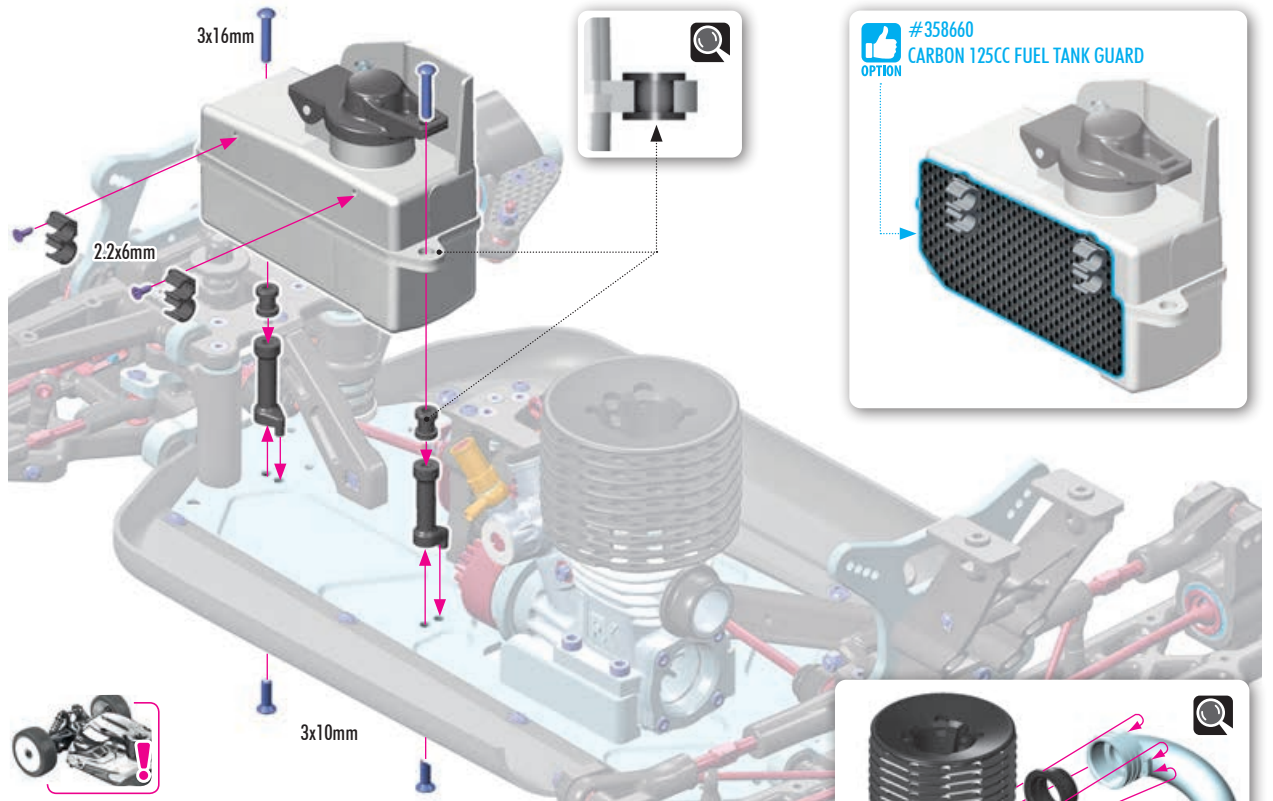
2x 902316
SH M3x16



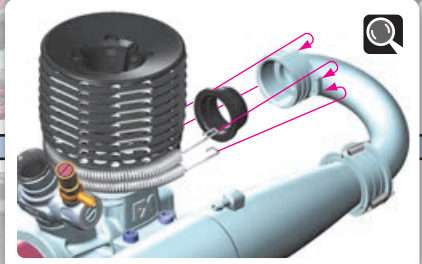
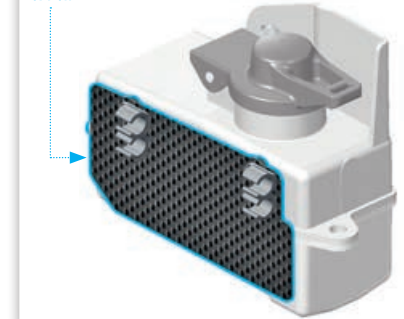
2x 903310
SFH M3x10



2x 906206
SFP 2.2x6



#358660
CARBON 125CC FUEL TANK GUARD
OPTION



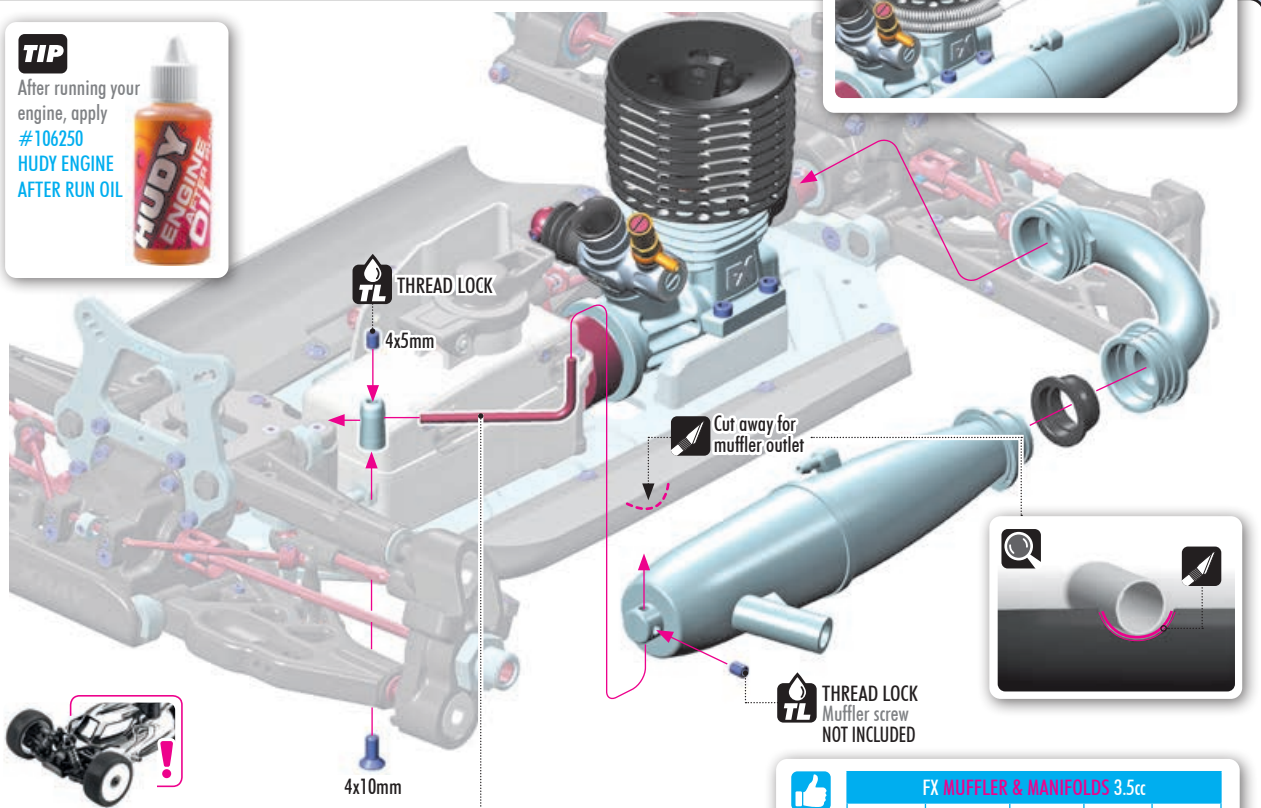
1x 901405
SB M4x5



1x 903410
SFH M4x10

TIP

After running your engine, apply
#106250
HUDY ENGINE
AFTER RUN OIL

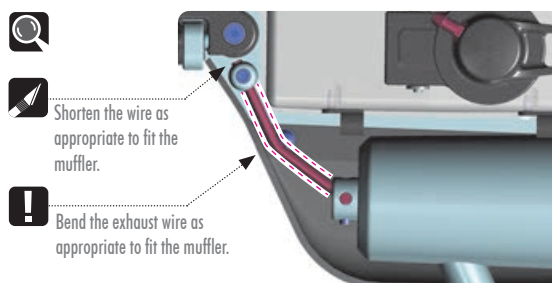


THREAD LOCK

4x5mm

Cut away for
muffler outlet

THREAD LOCK
Muffler screw
NOT INCLUDED



Shorten the wire as
appropriate to fit the
muffler.

Bend the exhaust wire as
appropriate to fit the muffler.

OPTION

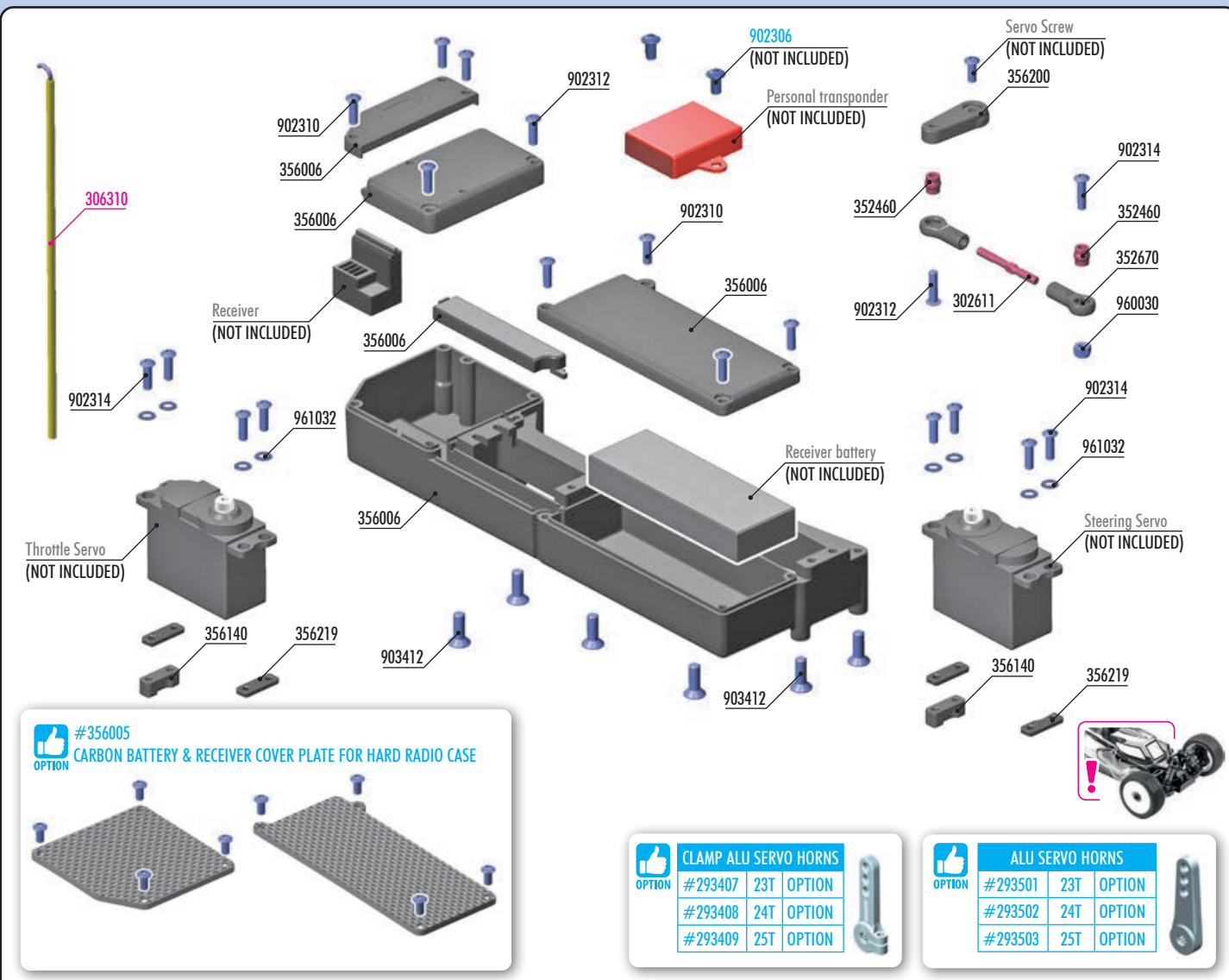
| FX MUFFLER & MANIFOLDS 3.5cc | | | | |
|------------------------------|-----------|--------|--------|--------|
| #659505 | EFRA 2131 | MEDIUM | CHROME | OPTION |
| #659506 | EFRA 2131 | MEDIUM | - | OPTION |
| #659558 | EFRA 2169 | MEDIUM | - | OPTION |

| FX MUFFLER 3.5cc | | |
|------------------|-----------|--------|
| #659503 | EFRA 2131 | OPTION |
| #659508 | EFRA 2169 | OPTION |

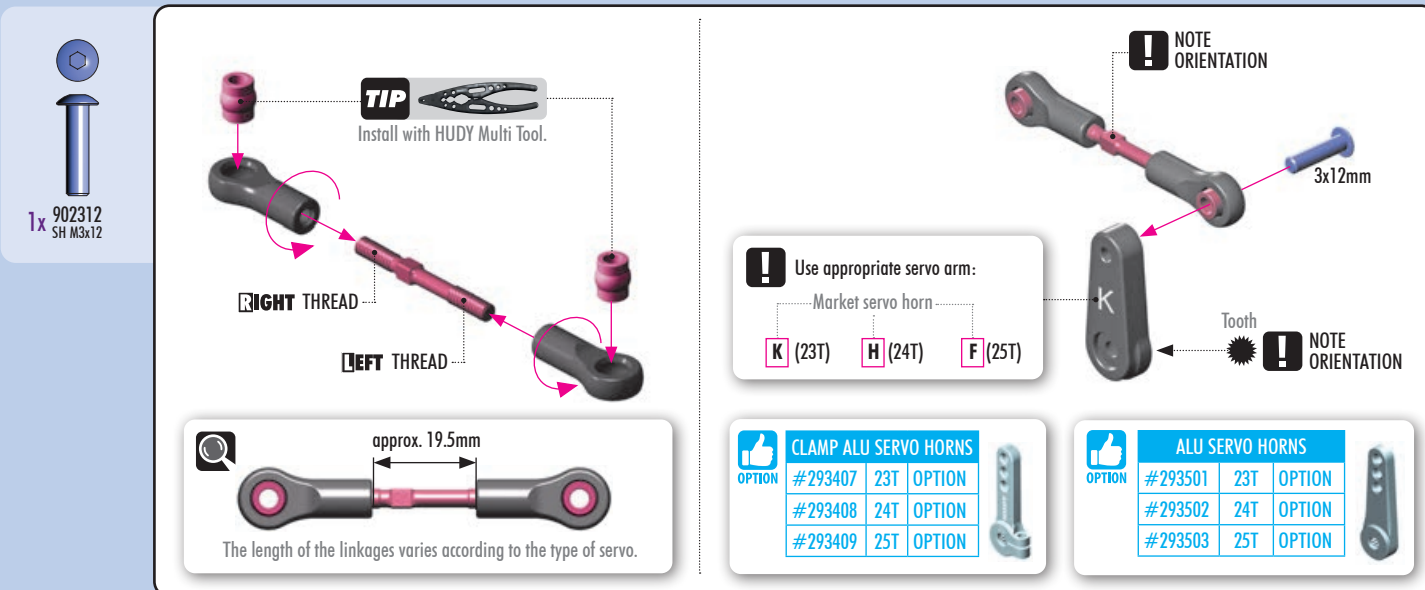
| FX MANIFOLDS 3.5cc | | |
|--------------------|--------------|--------|
| #659704 | MEDIUM | OPTION |
| #659706 | SHORT-MEDIUM | OPTION |

FX
EUROPEAN
CHAMPION

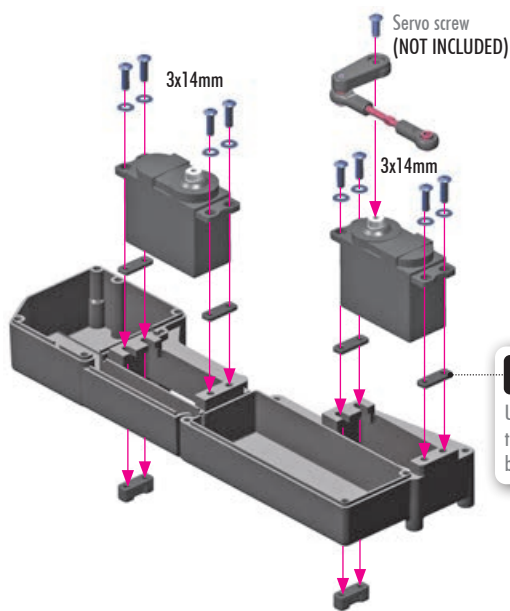
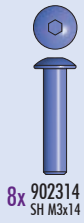
10. RADIO CASE



| | | | | |
|------------------------------|--------|---|--------|--------------------------|
| <div>BAG</div> <div>10</div> | 302611 | ADJ. TURNBUCKLE L/R 35mm - HUDY SPRING STEEL™ (2) | 902310 | HEX SCREW SH M3x10 (10) |
| | 352460 | PIVOT BALL 5.8 (10) | 902312 | HEX SCREW SH M3x12 (10) |
| | 352670 | SERVO BALL JOINT 5.8mm (4) | 902314 | HEX SCREW SH M3x14 (10) |
| | 356006 | COMPOSITE RADIO CASE SET - SPLIT | 903412 | HEX SCREW SFH M4x12 (10) |
| | 356050 | BATTERY CABLE WITH SWITCH (OPTION) | 960030 | NUT M3 (10) |
| | 356140 | COMPOSITE SERVO MOUNT - SMALL (2) | 961032 | WASHER S 3.2 (10) |
| | 356200 | BRAKE/THROTTLE ARMS & STEERING SERVO ARMS - SET | | |
| | 356219 | COMPOSITE SERVO SHIMS 1.0, 1.5 & 2.5mm (2+2+2) | | |
| | 902306 | HEX SCREW SH M3x6 (10) (OPTION) | 306310 | ANTENNA TUBE (2) |
| | | | | |

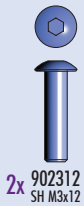
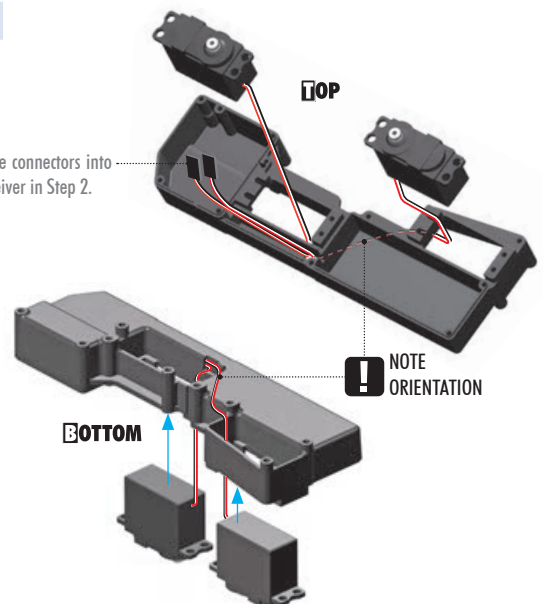


10. RADIO CASE

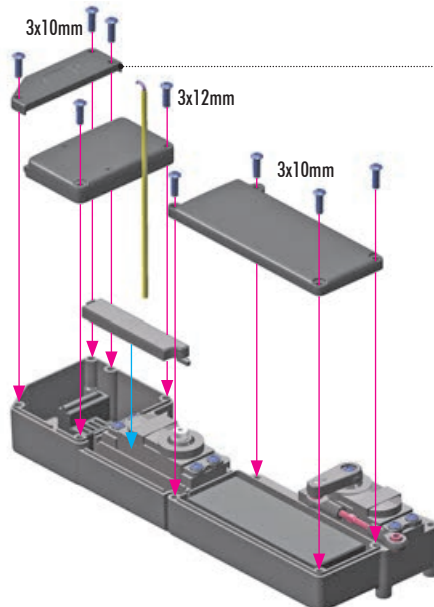
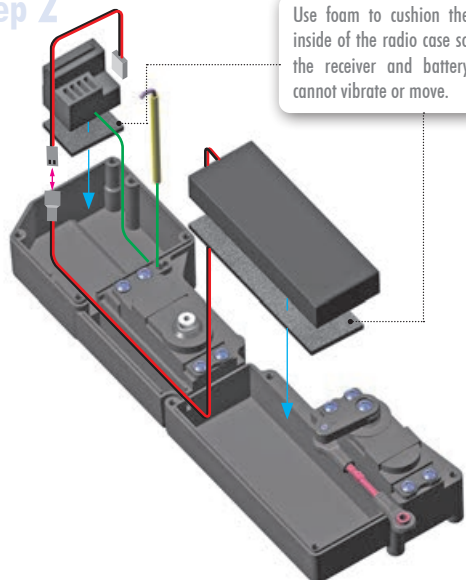


step 1

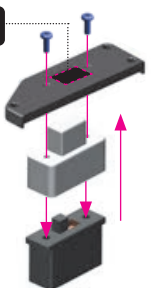
Plug the connectors into the receiver in Step 2.



step 2

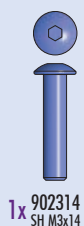


TIP



#356050 SWITCH
OPTION

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



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

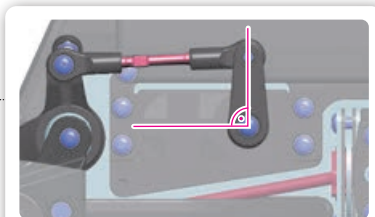
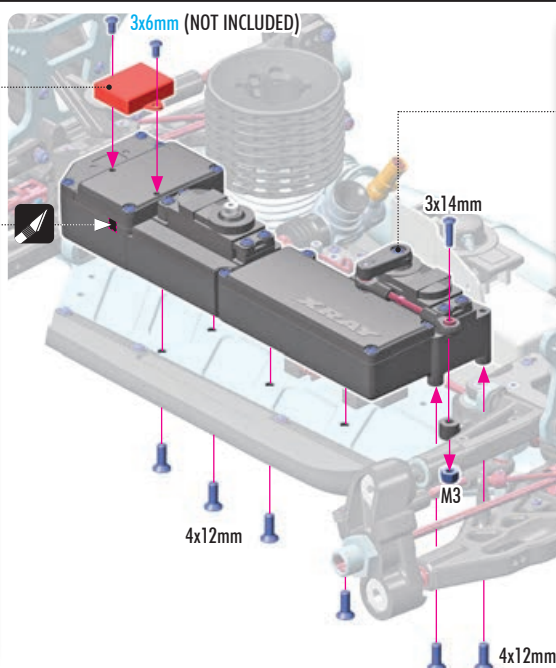
When the transponder is placed on top of the radio case cover, trim material from the case to allow the transponder wires to enter the case.

ALTERNATIVE 1

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

ALTERNATIVE 2

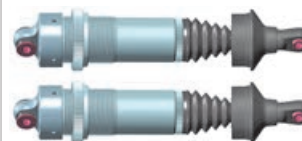
Place the transponder inside of the radio box by using double-sided tape.



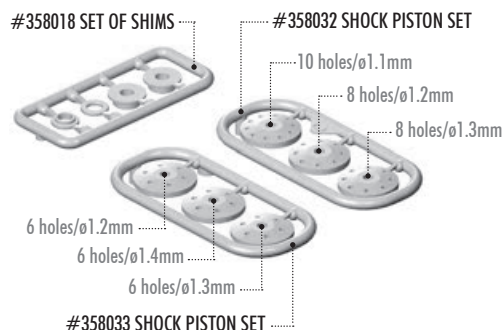
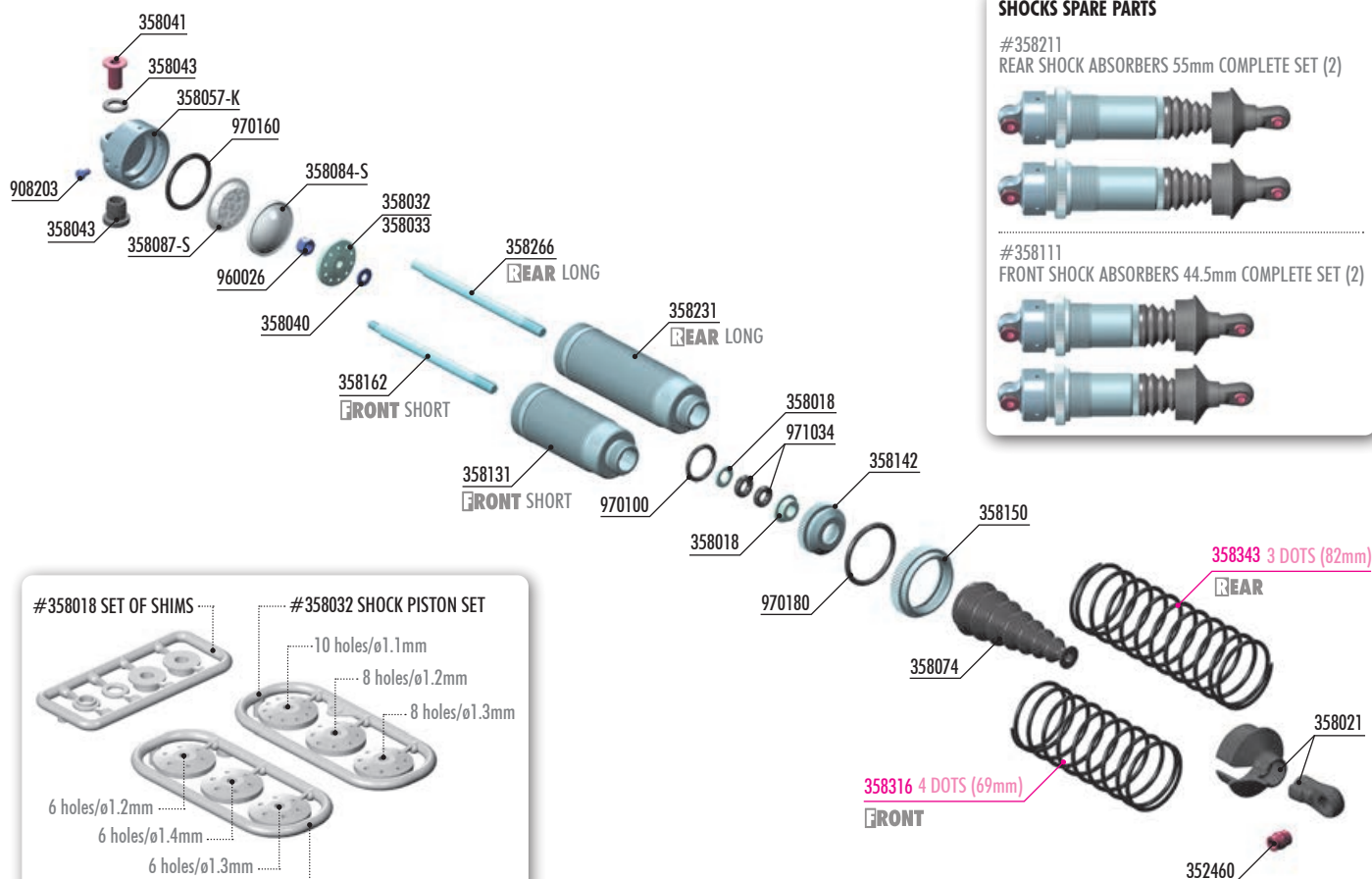
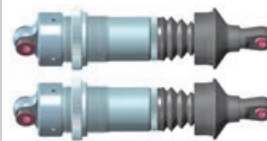
11. SHOCK ABSORBERS

SHOCKS SPARE PARTS

#358211
REAR SHOCK ABSORBERS 55mm COMPLETE SET (2)



#358111
FRONT SHOCK ABSORBERS 44.5mm COMPLETE SET (2)



SHOCK RUBBER MEMBRANE (4)

| | | | |
|-----------|--------|--------|----------|
| #358084-S | RIBBED | SOFT | INCLUDED |
| #358087-S | CELL | SOFT | INCLUDED |
| #358087-M | CELL | MEDIUM | OPTION |



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



SHOCK SPRINGS

| # | C | DOTS | LENGTH | TYPE | STATUS |
|---------|-------------|--------|--------|-------|----------|
| #358315 | C=0.77-0.80 | 3 DOTS | 69mm | FRONT | OPTION |
| #358316 | C=0.80-0.83 | 4 DOTS | 69mm | FRONT | INCLUDED |
| #358317 | C=0.83-0.86 | 5 DOTS | 69mm | FRONT | OPTION |
| #358342 | C=0.66-0.68 | 2 DOTS | 82mm | REAR | OPTION |
| #358343 | C=0.68-0.70 | 3 DOTS | 82mm | REAR | INCLUDED |
| #358344 | C=0.70-0.73 | 4 DOTS | 82mm | REAR | OPTION |
| #358334 | C=0.66-0.68 | 2 DOTS | 85mm | REAR | OPTION |
| #358335 | C=0.68-0.70 | 3 DOTS | 85mm | REAR | OPTION |



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



BAGS

11.1

11.2

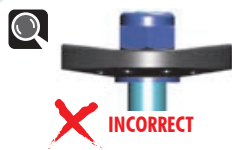
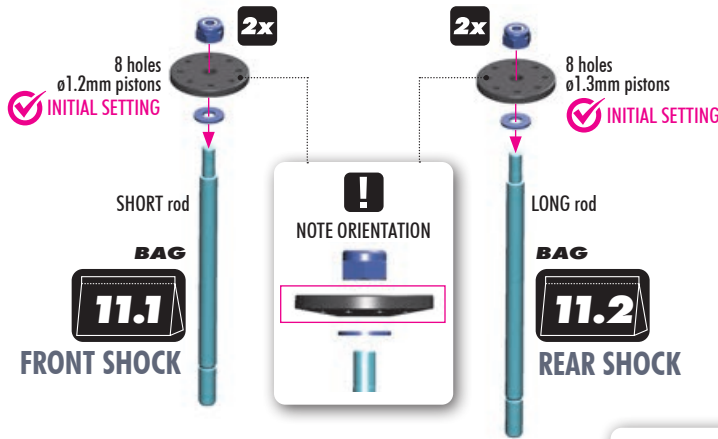
- 352460 PIVOT BALL 5.8 - V3 (10)
- 358018 COMPOSITE SET OF SHIMS FOR SHOCKS - V2 (2)
- 358021 COMPOSITE SHOCK PARTS WITH KEYED BALL JOINTS
- 358032 SHOCK PISTON SET 8-HOLE (1.2; 1.3) 10-H. (1.1mm) - DELRIN - V3
- 358033 COMPOSITE SHOCK 6-HOLE PISTON SET (1.2; 1.3; 1.4mm) - DELRIN - V3
- 358040 HARDENED SHOCK SHIMS (4)
- 358041 STEEL SHOCK BUSHING (2)
- 358043 COMPOSITE SHOCK BUSHING & SHIM (2+2)
- 358057-K MULTI ADJ. 3-IN-1 ALU SHOCK CAP - SWISS 7075 T6 (2)
- 358074 FOLDING SHOCK BOOT (4)
- 358084-S SHOCK RUBBER MEMBRANE BOTTOM RIBBED - SOFT (4)
- 358087-S SHOCK RUBBER MEMBRANE CELL - SOFT (4)
- 358131 ALU FRONT SHOCK BODY 44.5mm - SWISS 7075 T6 (2)
- 358142 ALU SHOCK BODY NUT FOR SHOCK BOOT (2)
- 358150 ALU SHOCK BODY ADJ. NUT (2)
- 358162 FRONT SHOCK SHAFT 56mm (2)
- 358231 ALU REAR SHOCK BODY 55mm - SWISS 7075 T6 (2)
- 358266 REAR SHOCK SHAFT 66.5mm (2)

- 908203 HEX SCREW SOCKET HEAD CAP M2x3 (10)
- 960026 NUT M2.5 - SHORT (10)
- 970100 O-RING 10 x 1.5 (10)
- 970160 O-RING 16 x 2.0 (10)
- 970180 O-RING 18 x 1.8 (10)
- 971034 SILICONE O-RING 3.5x2 (10)

- 358316 XRAY FRONT SPRING 69mm - 4 DOTS (2)
- 358343 XRAY REAR SPRING 82mm - 3 DOTS (2)

- 358111 FRONT SHOCK ABSORBERS 44.5mm - COMPLETE SET (2)
- 358211 REAR SHOCK ABSORBERS 55mm - COMPLETE SET (2)

11. SHOCK ABSORBERS



DO NOT OVERTIGHTEN
The self-locking nut is overtightened, causing distortion of the piston. This will negatively affect the free movement of the piston in the shock body.



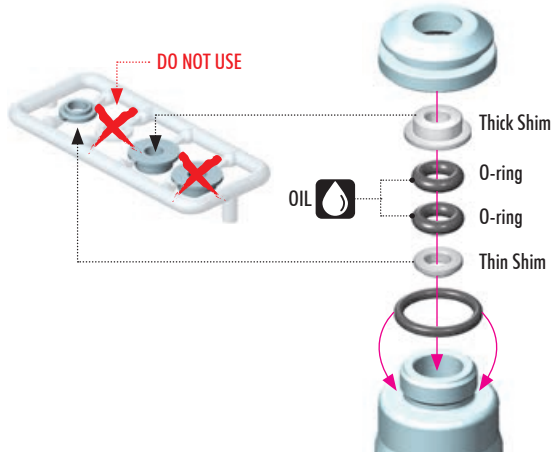
TIGHTEN GENTLY
The self-locking nut is gently tightened. The piston remains undistorted and fits inside the shock body perfectly, ensuring smooth movement of the piston.

SET-UP BOOK
SHOCK DAMPING
SHOCK PISTONS

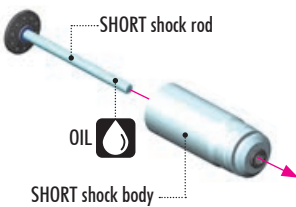


2x FRONT SHOCKS (SHORT)
2x REAR SHOCKS (LONG)

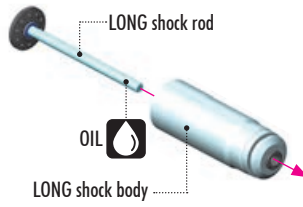
There are two different thickness shims, use them as shown. Use the same procedure when building both front and rear shocks.



2x FRONT SHOCKS

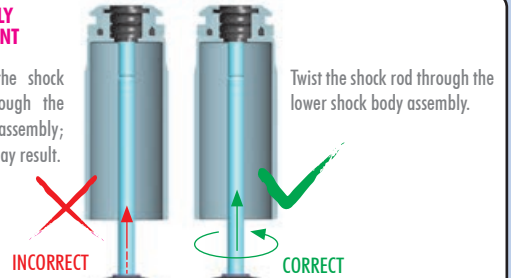


2x REAR SHOCKS

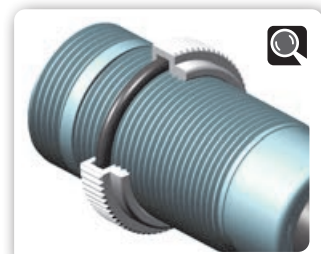
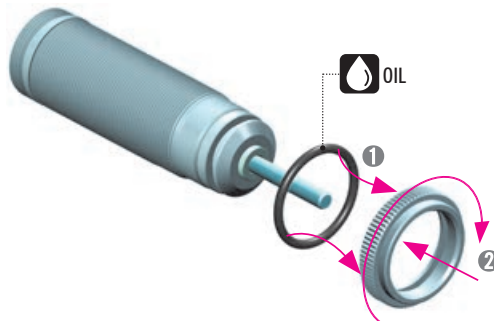


EXTREMELY IMPORTANT

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



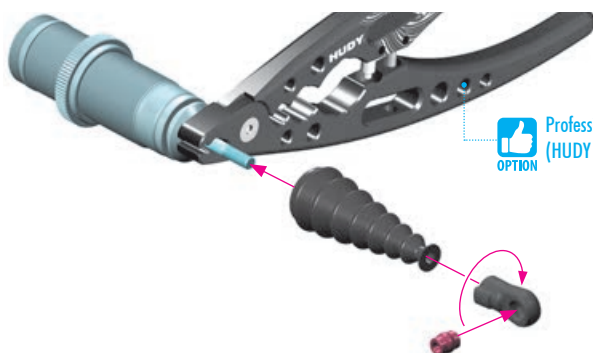
2x FRONT SHOCKS
2x REAR SHOCKS



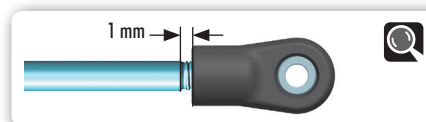
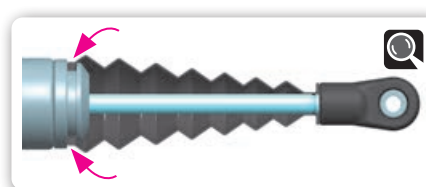
11. SHOCK ABSORBERS

2x FRONT SHOCKS

2x REAR SHOCKS



Professional Multi-Tool
(HUDY #183011).
OPTION



SHOCK TYPE: CELL MEMBRANE

for LOW GRIP

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

Oil level after filling

CORRECT FILLING

INCORRECT FILLING

FRONT (SHORT)
Oil 600cSt

REAR (LONG)
Oil 550cSt

1

Extend the shock shaft completely. Fill the shock body with the shock oil.

2

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

3~5x
UP & DOWN

3

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

4x 908203 SCH M2x3

Cell Membrane

4

Install the CELL shock membrane and screw into the groove in the upper shock cap.

SHOCK CAP HALF 50% TIGHTEN

1

Gently place the shock cap assembly onto the filled shock body.

2

Slowly compress the shock shaft towards the top of the shock body and hold in this position. Excess oil will be expelled from the shock.

SHOCK CAP 100% TIGHTEN FULLY

6

While still holding the shock shaft in position, fully tighten the shock cap.

SHOCK TYPE: RIBBED MEMBRANE

for BUMPY - HIGH GRIP

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

Oil level after filling

CORRECT FILLING

INCORRECT FILLING

FRONT (SHORT)
Oil 600cSt

REAR (LONG)
Oil 550cSt

1

Extend the shock shaft completely. Fill the shock body with the shock oil.

2

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

3~5x
UP & DOWN

3

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

4x 908203 SCH M2x3

Ribbed Membrane

4

Install the RIBBED shock membrane and screw into the groove in the upper shock cap.

SHOCK CAP HALF 50% TIGHTEN

1

Gently place the shock cap assembly onto the filled shock body.

2

Slowly compress the shock shaft towards the top of the shock body and hold in this position. Excess oil will be expelled from the shock.

SHOCK CAP 100% TIGHTEN FULLY

6

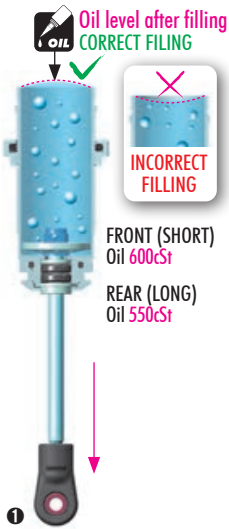
While still holding the shock shaft in position, fully tighten the shock cap.

11. SHOCK ABSORBERS

SHOCK TYPE: **EMULSION**

for DEFAULT STANDARD

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



1 Extend the shock shaft completely. Fill the shock body with the shock oil.



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



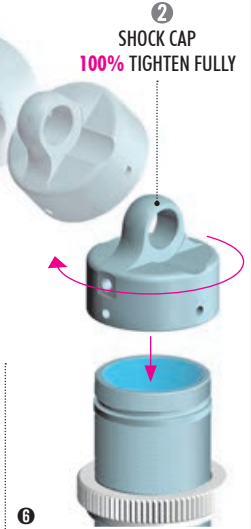
3 Orient the filled shock vertically for several minutes with the shock shaft fully extended. The remaining air bubbles will release.



4 Install o-ring in the cap.



5 Fill the shock cap with oil up to the o-ring.



6 Carefully place the shock cap onto the oil filled shock body and tighten the cap. Some oil may spill from the shock during this process.

7 Slowly compress the shock shaft completely into the shock body. Excess oil will flow through the hole in the shock cap.



8 With the shock shaft still compressed, tighten the screw.



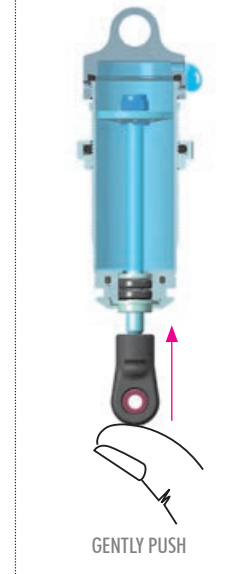
9 6x push the shaft up and down.



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



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



12 Tighten the screw.



2x REAR SHOCKS

LONG rear shock

LONG spring

REAR shock PRELOAD

approx. 2mm

2x FRONT SHOCKS

SHORT front shock

SHORT spring

FRONT shock PRELOAD

approx. 2mm

SET-UP BOOK

SPRING RATE

SHOCK PRELOAD

RIDE HEIGHT

IMPORTANT!

Both rear shocks must be the same overall length.

IMPORTANT!

Both front shocks must be the same overall length.

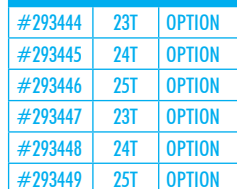
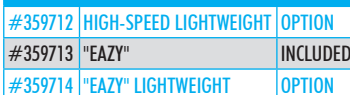
FRONT & REAR SHOCKS

This diagram illustrates the rear chassis assembly, including the following components and their assembly order:

- 903312**, **353565**, **902256**, **353517-Y**: Components for the rear chassis frame.
- 358950**: A coiled cable.
- 358821**, **960030**, **358811**, **358841**: Components for the rear axle and suspension.
- 902308**, **358821**, **359809 (NOT INCLUDED)**: Components for the rear wheel assembly.
- 4x**: Four rear wheels.
- 355261**: A tire.
- Inserts (NOT INCLUDED)**: Four inserts for the rear wheel assembly.
- 902318**: A component for the rear wheel assembly.
- 901303**, **356402**, **903314**, **902310**, **356402**, **356200**, **356402**: Components for the rear suspension and shock absorbers.
- 2x REAR SHOCK**: Two rear shock absorbers.
- 356510**, **356402**, **335581**, **901302**, **356402**, **354090**, **356402**, **355581**, **356402**: Components for the rear suspension and shock absorbers.
- 359400**: A component for the rear suspension.
- 359713**: A component for the rear suspension.
- 2x FRONT SHOCK**: Two front shock absorbers.



| | | |
|-----------|--------|----------|
| #353517-K | BLACK | OPTION |
| #353517 | WHITE | OPTION |
| #353517-Y | YELLOW | INCLUDED |
| #353512 | LEXAN® | OPTION |



12

| | |
|--------|---------------------------------------|
| 901302 | HEX SCREW SB M3x2.5 (10) |
| 901303 | HEX SCREW SB M3x3 (10) |
| 902256 | HEX SCREW SH M2.5x6 (10) |
| 902308 | HEX SCREW SH M3x8 (10) |
| 902310 | HEX SCREW SH M3x10 (10) |
| 902318 | HEX SCREW SH M3x18 (10) |
| 902319 | HEX SCREW SH M3x18 - LEFT THREAD (10) |
| 903312 | HEX SCREW SFH M3x12 (10) |
| 903314 | HEX SCREW SFH M3x14 (10) |
| 960030 | NUT M3 (10) |
| 960040 | NUT M4 (10) |

353517-Y WICKERBILL REAR WING - YELLOW
359713 XRAY XB8 / XB8E "Eazy" BODY

12. FINAL ASSEMBLY

902318
SH M3x18
1x

902319
SH M3x18
LEFT thread
1x

2x 960030
N M3

2x 960040
N M4

! FRONT SHOCKS (SHORT)

2x
L=R

SHORTER M4 → LONGER M3

! NOTE ORIENTATION

NUT M4 **!**

NUT M3 **!**

Use **STANDARD** M3x18 screw

3x18mm

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

INITIAL SETTING

INITIAL SETTING

! Spring retainer
NOTE ORIENTATION

REAR FRONT

SET-UP BOOK
SHOCK ABSORBERS

902318
SH M3x18
1x

902319
SH M3x18
LEFT thread
1x

4x 960030
N M3

! REAR SHOCKS (LONG)

2x
L=R

! NOTE ORIENTATION

SHORTER → LONGER

M3

M3 **!**

Use **STANDARD** M3x18 screw

3x18mm

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

INITIAL SETTING

INITIAL SETTING

! Spring retainer
NOTE ORIENTATION

FRONT REAR

SET-UP BOOK
SHOCK ABSORBERS

3x 901303
SB M3x3

1x 902310
SH M3x10

1x 903314
SFH M3x14

Setscrews are preassembled in the collars.

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

Brake rod

Brake rod

Throttle rod

3x3mm

3x3mm

3x14mm

3x10mm

3x3mm

! Use servo horn to match your servo.

Market servo horn

K (23T) **H** (24T) **F** (25T)

Cut off remaining material

Small gap


Small gap

Tighten screw until snug. Pivots should move freely.


ALU SERVO HORNS

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

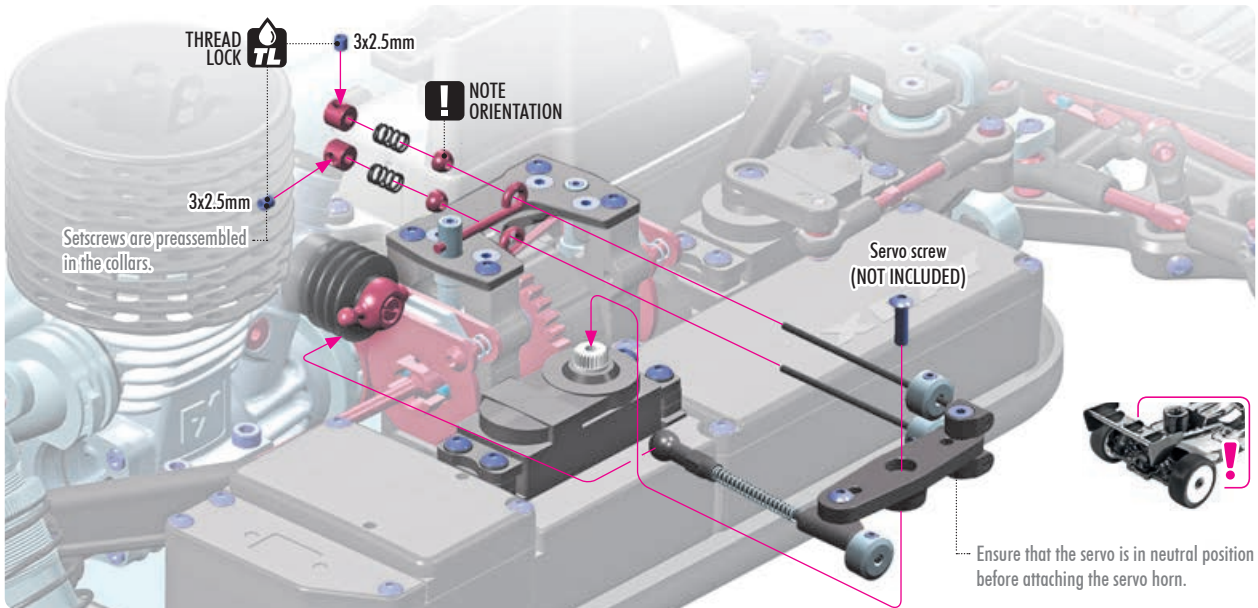
12. FINAL ASSEMBLY



2x 901302
SB M3x2.5



Setscrews are preassembled in the collars.



THREAD LOCK


3x2.5mm

NOTE ORIENTATION


3x2.5mm

Servo screw (NOT INCLUDED)


Ensure that the servo is in neutral position before attaching the servo horn.



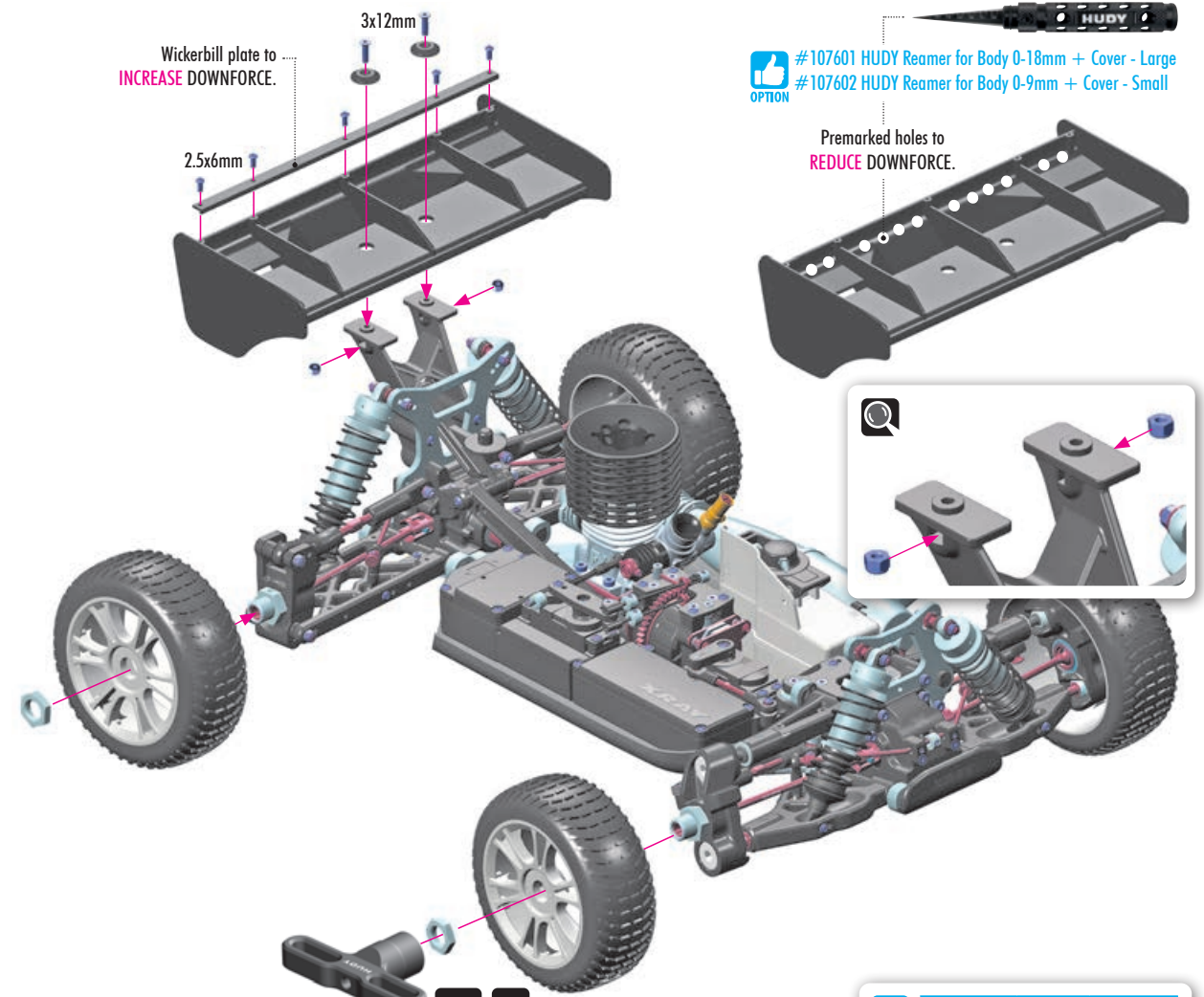
5x 902256
SH M2.5x6



2x 903312
SFH M3x12



2x 960030
N M3



Wickerbill plate to INCREASE DOWNFORCE.


3x12mm

2.5x6mm

Premarked holes to REDUCE DOWNFORCE.


#107601 HUDY Reamer for Body 0-18mm + Cover - Large
#107602 HUDY Reamer for Body 0-9mm + Cover - Small

TIP 4x
To tighten the setscrew you can also use the HUDY 17mm Wheel Nut Tool #107570.




OPTION

| HUDY REAR WING SHIM | | |
|---------------------|--------|--------|
| #293561 | SILVER | OPTION |
| #293561-0 | ORANGE | OPTION |
| #293561-K | BLACK | OPTION |
| #353561 | SILVER | OPTION |



OPTION

| XRAY STARBURST WHEELS | | |
|-----------------------|--------|--------|
| #359808 | Pink | OPTION |
| #359809 | Yellow | OPTION |



OPTION

| WINGS | | |
|-----------|--------|----------|
| #353517-K | BLACK | OPTION |
| #353517 | WHITE | OPTION |
| #353517-Y | YELLOW | INCLUDED |
| #353512 | LEXAN® | OPTION |

12. FINAL ASSEMBLY



#358832
AIR FILTER RAIN COVER
OPTION



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



#106245
HUDY AIR FILTER SEALANT
OPTION



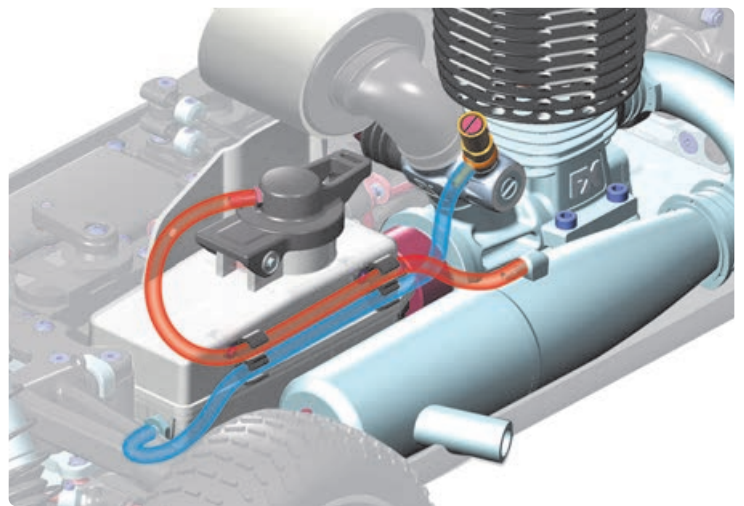
Cut the silicone tube depending on engine and muffler.
Use the plastic clips to hold the tubes together.

**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.

#358951
SILICONE TUBING 2.4x5.5x1000mm
FLUORESCENT YELLOW
OPTION



- 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.
- Before painting, wash the inside of the body with mild detergent, and then rinse and dry thoroughly.
- Mask all windows.
- Apply paint masks as appropriate.



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



OPTION

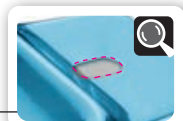
XRAY XB8 BODIES

| | | |
|---------|-------------------|----------|
| #359712 | HIGH-SPEED LIGHT. | OPTION |
| #359713 | "EAZY" | INCLUDED |
| #359714 | "EAZY" LIGHT. | OPTION |



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

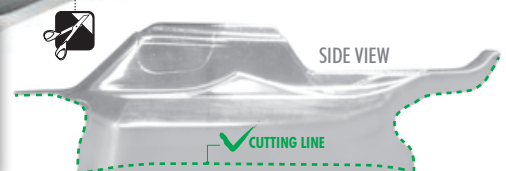
Body Reamer (HUDY #107602)



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



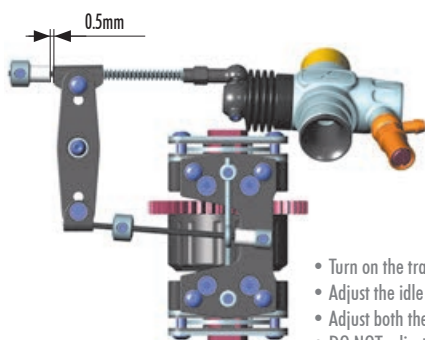
SIDE VIEW



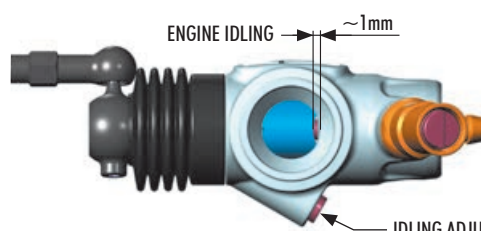
THROTTLE LINKAGE ADJUSTMENT

NEUTRAL (IDLE)

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

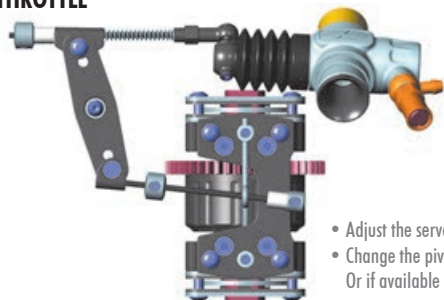


- Turn on the transmitter and receiver and set the engine control servo trim to the neutral position.
- Adjust the idle adjustment screw on the carburetor to open approx. 1mm.
- Adjust both the throttle linkage and brake linkages accordingly.
- DO NOT adjust the linkage with the engine running.

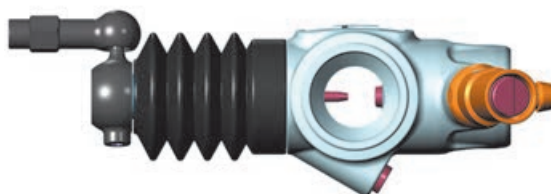


IDLING ADJUSTMENT SCREW.
Use to adjust the idle setting of the carburetor. DO NOT allow carburetor to close to less than 1mm.

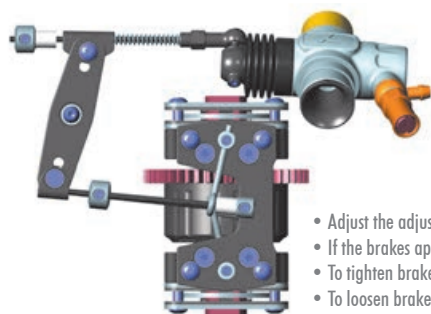
FULL THROTTLE



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



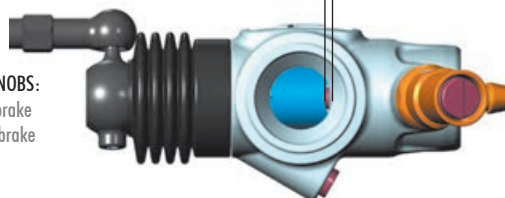
BRAKE



- 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.

ENGINE IDLING → cca 1mm

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

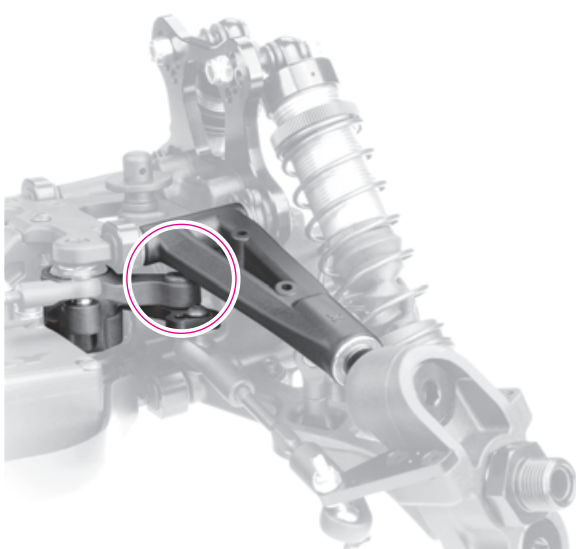


TROUBLESHOOTING GUIDE

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

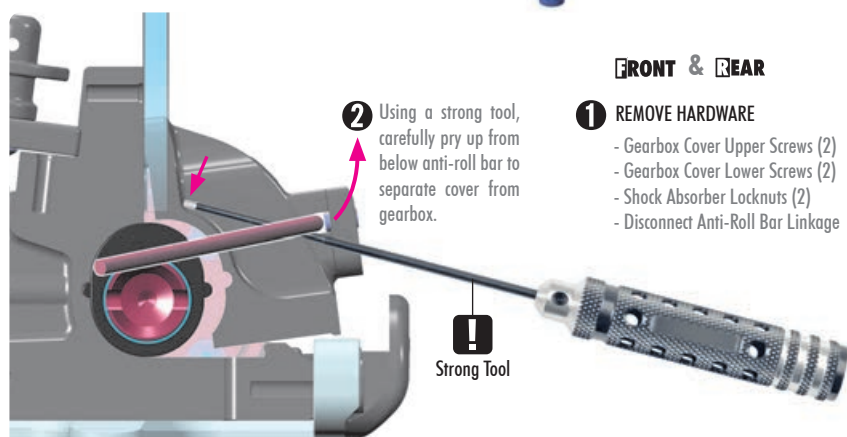
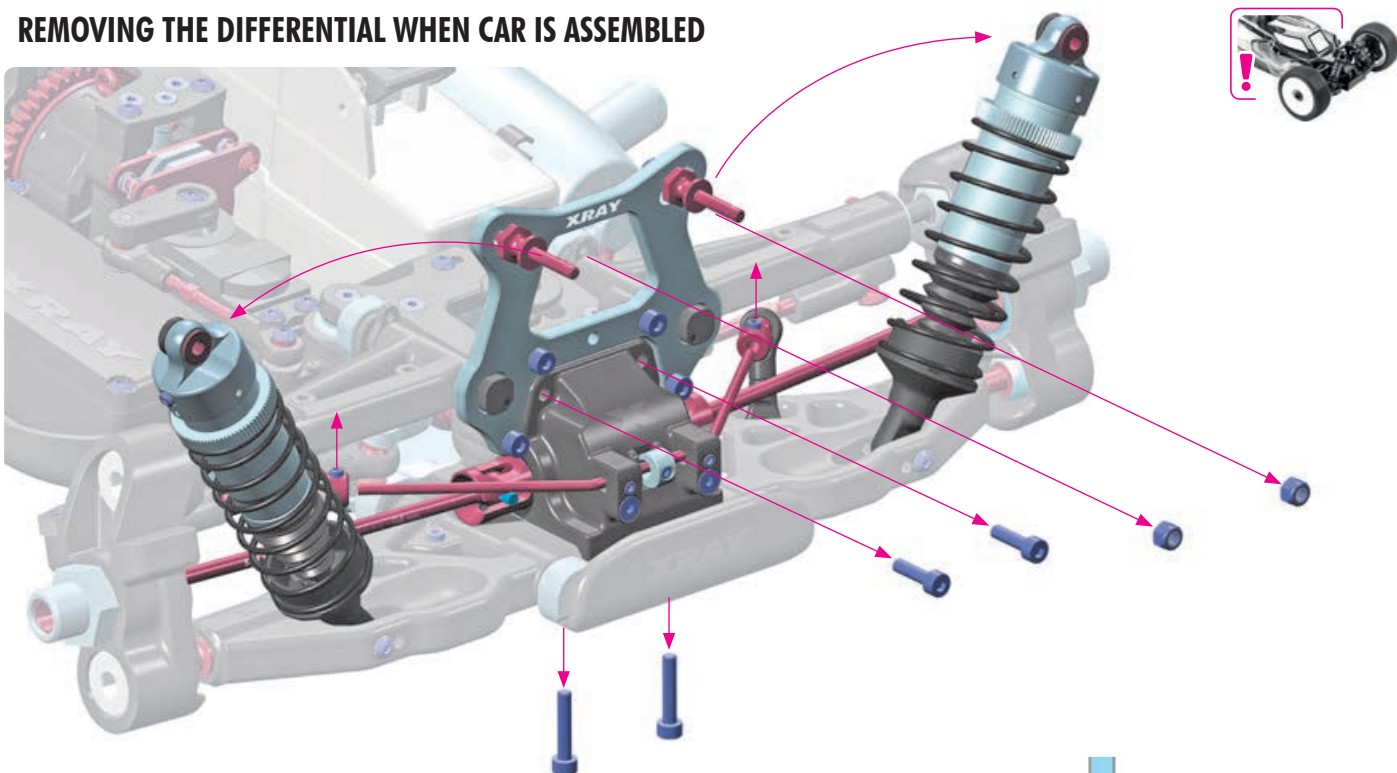
If more than 104-105mm front droop is used, certain set-up configurations may result in the upper arm contacting the steering bellcranks.

This will have limited impact on handling, but material can be removed from the bottom of the upper arm to avoid contact with the steering assembly if using additional droop.



DIFF MAINTENANCE

REMOVING THE DIFFERENTIAL WHEN CAR IS ASSEMBLED



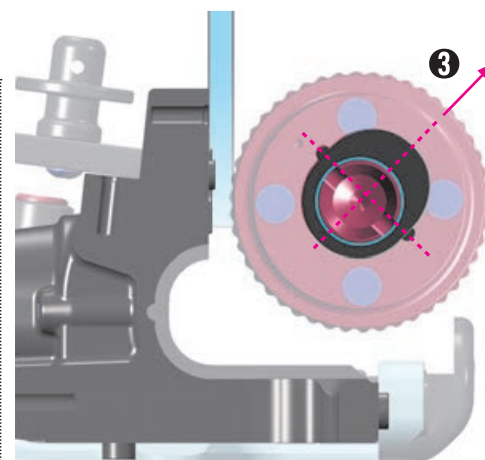
FRONT & REAR

1 REMOVE HARDWARE

- Gearbox Cover Upper Screws (2)
- Gearbox Cover Lower Screws (2)
- Shock Absorber Locknuts (2)
- Disconnect Anti-Roll Bar Linkage

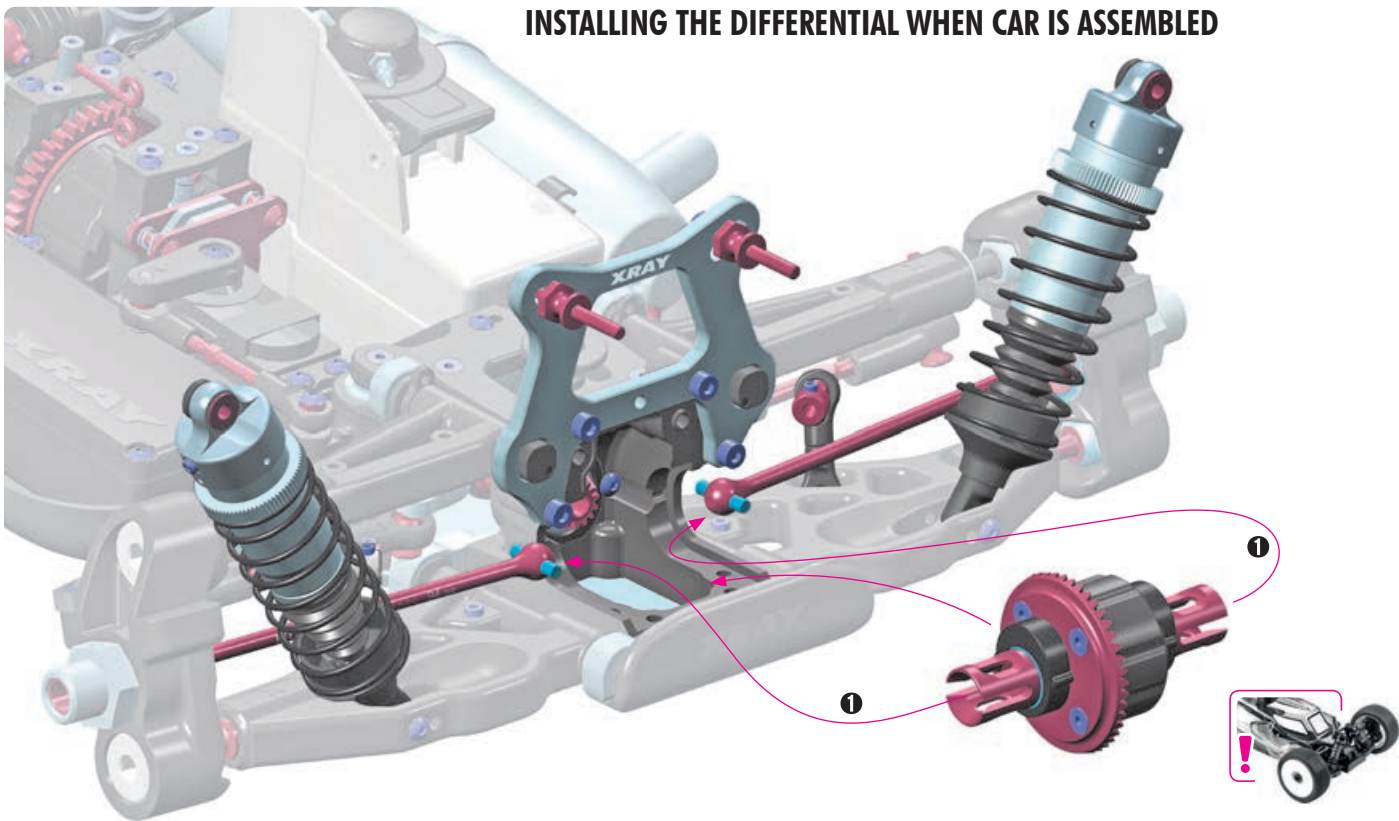
- 2 Using a strong tool, carefully pry up from below anti-roll bar to separate cover from gearbox.

! Strong Tool

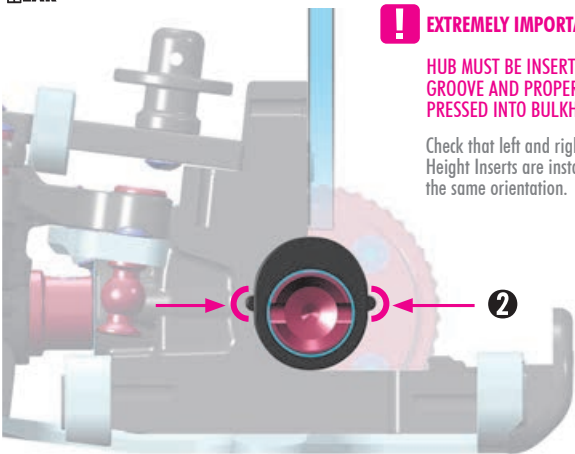
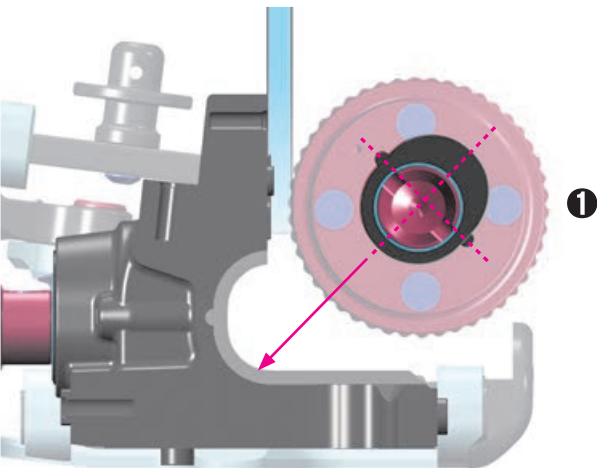


DIFF MAINTENANCE

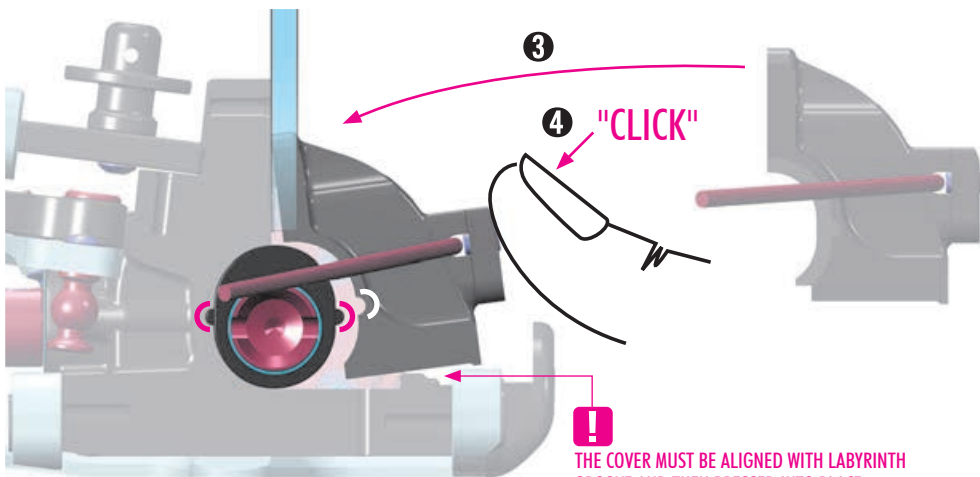
INSTALLING THE DIFFERENTIAL WHEN CAR IS ASSEMBLED



FRONT & REAR



! EXTREMELY IMPORTANT
HUB MUST BE INSERTED IN GROOVE AND PROPERLY PRESSED INTO BULKHEAD.
Check that left and right Diff Height Inserts are installed in the same orientation.



- 5 RE-INSTALL HARDWARE**
- Gearbox Cover Upper Screws (2)
 - Gearbox Cover Lower Screws (2)
 - Shock Absorber Locknuts (2)
 - Reconnect Anti-Roll Bar Linkage

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.



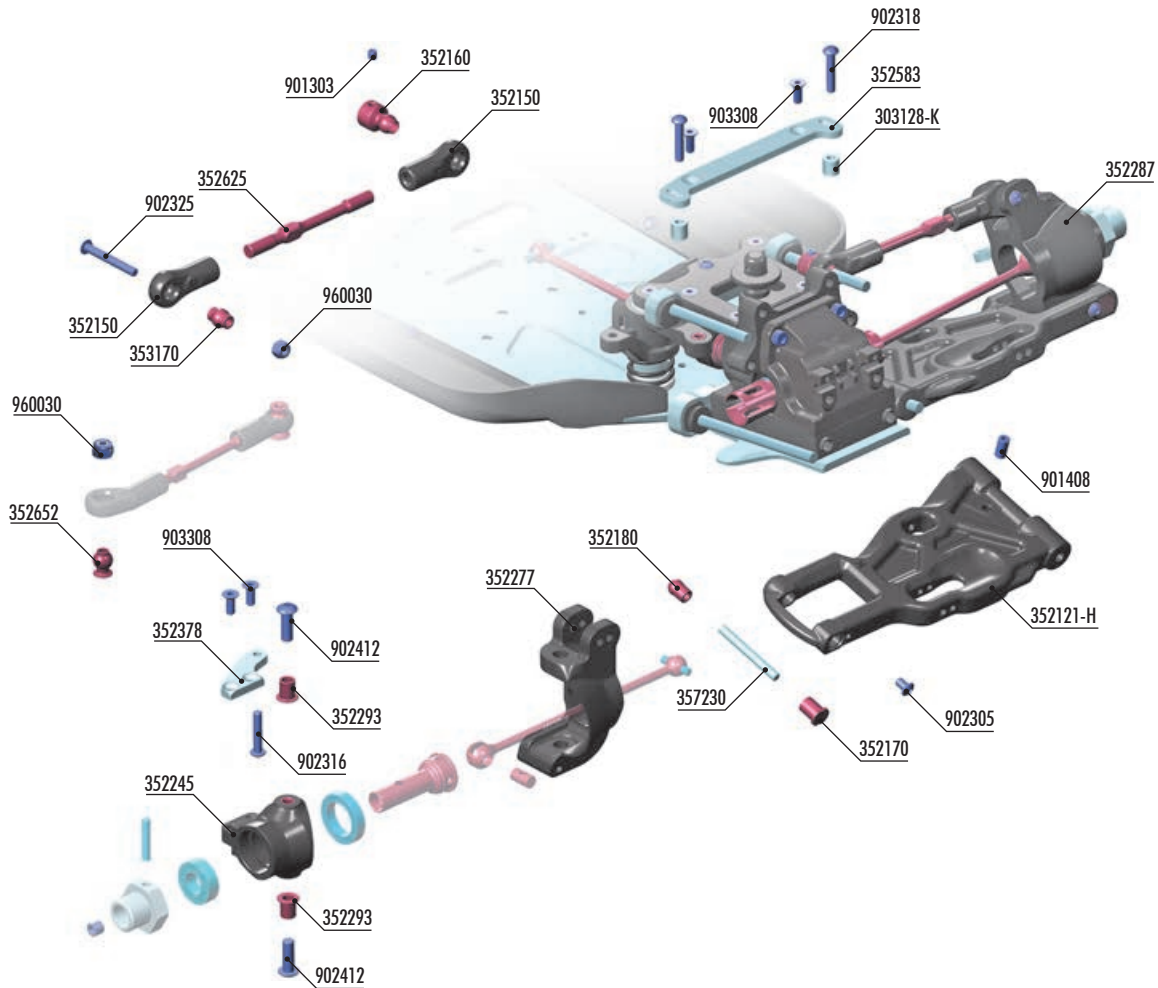
FRONT C-HUB SUSPENSION



#350910 FRONT C-HUB SUSPENSION - SET

For instructions on how to mount the optional #350910 C-hub suspension conversion set, please download the instructions from the Downloads section at www.teamxray.com/XB8

OPTION



OPTION

ECCENTRIC BUSHINGS

| # | ANGLE | MATERIAL | DIAGRAM | STATUS |
|---------|-------|----------|---------|----------|
| #352170 | 0° | STEEL | | INCLUDED |
| #352174 | 1° | STEEL | | OPTION |
| #352175 | 2° | STEEL | | OPTION |

- 303128-K ALU SHIM 3x6x6mm (10)
- 352121-H COMPOSITE FRONT LOWER SUSPENSION ARM - HARD
- 352150 FRONT UPPER ARM BALL JOINT (2)
- 352160 STEEL MOUNTING BALL 6.8mm (2)
- 352170 STEEL ECCENTRIC BUSHING 0° (2)
- 352180 BALL MOUNT (2)
- 352245 STEERING BLOCK
- 352277 COMPOSITE CASTER BLOCK 16° RIGHT
- 352287 COMPOSITE CASTER BLOCK 16° LEFT
- 352293 STEEL BUSHING FOR CASTER BLOCK (2)

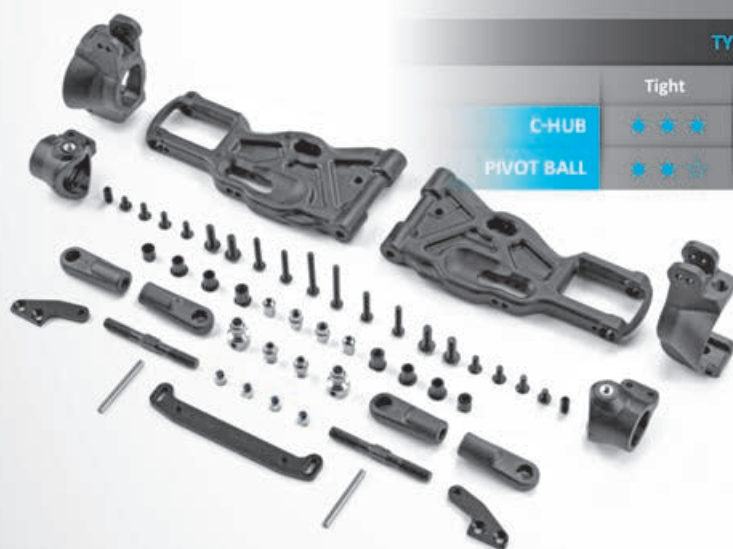
- 352378 ALU STEERING PLATE - SWISS 7075 T6 (L+R)
- 352583 ALU STEERING PLATE - SWISS 7075 T6
- 352625 ADJ. TURNBUCKLE M5 L/R 46mm (2)
- 352652 BALL STUD 6.8mm (4)
- 353170 PIVOT BALL 6.8 (4)
- 357230 FRONT LOWER OUTER PIVOT PIN (2)
- 901303 HEX SCREW SB M3x3 (10)
- 901408 HEX SCREW SB M4x8 (10)
- 902305 HEX SCREW SH M3x5 (10)

- 902316 HEX SCREW SH M3x16 (10)
- 902318 HEX SCREW SH M3x18 (10)
- 902325 HEX SCREW SH M3x25 (10)
- 902412 HEX SCREW SH M4x12 (10)
- 903308 HEX SCREW SFH M3x8 (10)
- 960030 NUT M3 (10)

C-HUB FRONT SUSPENSION CONVERSION SET

#350910

C-HUB CONVERSION SET



TRACK

| | TYPE | | CONDITIONS | | |
|------------|-------|-------|------------|-------|------------|
| | Tight | Open | Smooth | Rough | |
| C-HUB | ★ ★ ★ | ★ ★ ☆ | ★ ★ ★ | ★ ★ ☆ | C-HUB |
| PIVOT BALL | ★ ★ ☆ | ★ ★ ★ | ★ ★ ☆ | ★ ★ ★ | PIVOT BALL |

SUITED FOR SMOOTH & SHORT TECHNICAL TRACKS
PERFECT FOR SMOOTH SURFACE CONDITIONS
WHERE IT GENERATES INCREASED TRACTION & ENHANCED STEERING
COMPLETE SET INCLUDES ALL PARTS FOR CONVERSION

TIP

All ball-bearings are factory pre-oiled or pre-greased. The bearings are all packaged in BAG 00.9.

For pre-oiled ball-bearings, use:

#106230 HUDY Bearing Oil.

For pre-greased ball-bearings, use one of these bearing greases:

#106220 - HUDY Bearing Grease - suggested for extremely dusty track conditions.

#106221 - HUDY Bearing Grease "Blue" - suggested for medium dusty track conditions.

#106222 - HUDY Bearing Grease "Red" - suggested for low dusty track conditions.

Replace any bearings that develop a "gritty" feeling to prevent inefficiency and avoid failures.

Make sure to use only original XRAY ball-bearings, which all have specific tolerances, axial and radial play, and are all individually selected. Using 3rd party ball-bearings may result in bearing failures and damage to other parts.



EXCLUSIVE PROFESSIONAL

HUDY

199184

104500

108170

199060

109802

106200

105510

105500

199270

109841

106000

107762

107780

107783

108860

107602

109860

181090

107090

107570

183011

188990

182016

107644

154065

107612

113045

112545

132545

112045

132045

111545

164045

175535

- #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
- #154065 Limited Edition - Sl. Screwdriver for Engine # 4.0mm - Long
- #164045 Limited Edition - Phillips Screwdriver # 4.0mm
- #164071 Power Tool Tip Phillips 4.0 x 90 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 HUDY Wheel Nut & 3/4 Shoe Flywheel MultiTool 1/8 Buggy
- #183011 HUDY Professional Multi Tool
- #188981 HUDY Pocket Hobby Knife
- #188990 HUDY Professional Body Scissors
- #199060 HUDY Alu Tool Stand
- #199184 HUDY Car Bag - 1/8 & 1/10 Off-Road
- #199270 HUDY LiPo Safety Bag
- #199310 HUDY Pit Bag - Compact

- #199911 HUDY Pit Mat Roll 750x1200mm with Printing
- #293111 HUDY Brushless RC Fan 40mm with External Soldering Tabs
- #293113 HUDY Brushless RC Fan 40mm with Internal Soldering Tabs
- #293540 Air Filter Foam & Oil (10) - XRAY XB8 Low Profile Style
- #293560 HUDY Alu Wheel Nut with Cover - Ribbed (2)

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

www.hudy.net



www.teamxray.com

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