

# **INSTRUCTION MANUAL** FOR XB4C'24 & XB4D'24 EDITION

#### **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.

#### **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.teamxrav.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

Read carefully and fully understand the instructions before beginning assembly.

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

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

**XRAY Europe** K Vystavisku 6992 91101 Trenčín Slovakia, EUROPE Phone: 421-32-7401100 Fax: 421-32-7401109 E-mail: info@teamxray.com

**XRAY USA** 

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

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

#### SAFETY PRECAUTIONS

#### Contains:

LEAD (CAS 7439-92-1) ANTIMONY (CAS 7440-36-0)

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 Contains lead, a listed carcinogen. Lead is harmful if ingested. 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

# 🔼 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.

reference, even after completing the assembly. Use only genuine and original authentic XRAY parts for maximum performance. Using any third party parts on this model will void guaranty immediately.

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

- 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 RC 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 shortcircuit 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.

#### **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

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

compromise the integrity of components. Warranty will not cover components that are considered consumable on RC vehicles. XRAY DOES NOT pay nor refund shipping on any component sent to XRAY or its distributors for warranty. XRAY reserves the right to make the final determination of the warranty status of any component or part.

#### **Limitations of Liability**

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

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

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

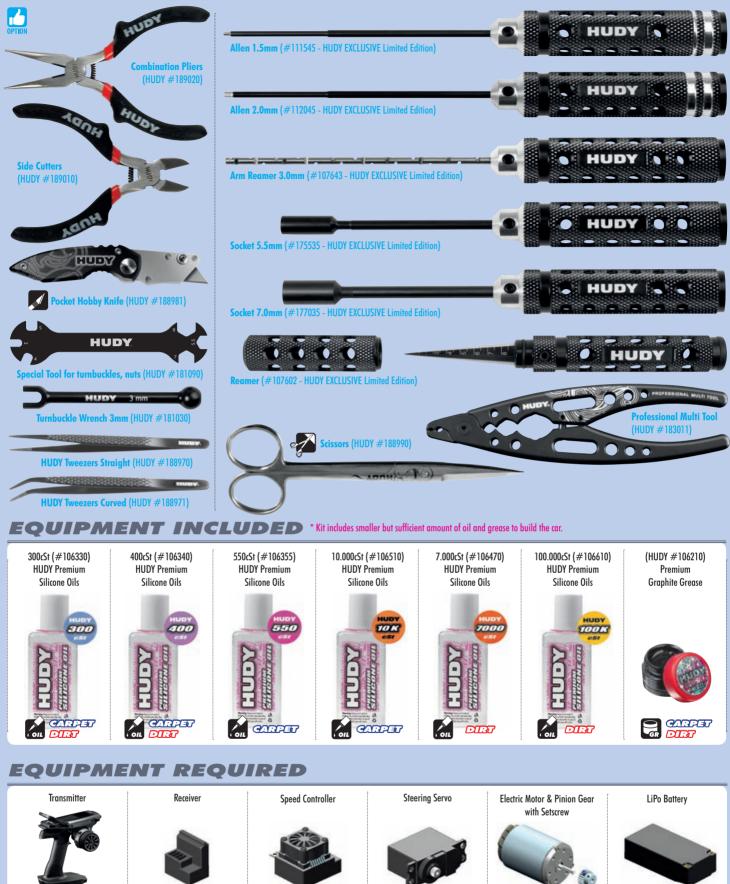
cannot guarantee any parts once you start racing the car. Products which have been worn out, abused, neglected or improperly operated will not be covered under warranty.

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**









4x Tires & Inserts







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## **NOT INCLUDED**



#### Follow Set-Up Book:

To ensure that you always have access to the most up-to-date version of the Set-up Book you can download the HUDY Set-up Book from their web site at [www.hudy. net] By offering this online version instead of including a hardcopy printed version in kits, you will always be assured of having the most current updated version.

### **COLOR INDICATIONS**

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:

|        | SAMPLE O | F OPTIC | NAL PARTS |
|--------|----------|---------|-----------|
| OPTION | #36XXXX  | TYPE1   | OPTION 1  |
|        | #36XXXX  | TYPE2   | OPTION 2  |
|        | #36XXXX  | TYPE    | INCLUDED  |
|        | #36XXXX  | TYPE3   | OPTION 3  |

XRAY offers wide range of optional tuning parts which are listed in a table like this. Please refer to the exploded view of each main section to verify which part is included in the kit while all other parts are available only as an optional part and must be purchased separately.

| <u>361201</u> | $\ensuremath{STYLE}\xspace \ensuremath{A}\xspace$ - indicates parts that are included in the bag marked for the section.      |
|---------------|---|
| 361113        | STYLE B - indicates parts that are included in the box.   |
| <u>364903</u> | $\label{eq:STYLE C} \textbf{STYLE C} \ \textbf{-} \ \textbf{indicates parts that are already assembled from previous steps}.$ |
| 365100        | STYLE D - indicates parts that are optional.  |

# TECH TIPS

DO NOT use drive shafts

when the pins are worn.

# 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.



Press out the worn pins.

Press in new pins and regularly inspect for wear.



For quick & easy drive pin replacements use #106000 HUDY Drive Pin Replacement Tool together with #106036 Ejector Pivot Pin & Alternating Pivot 2.5mm.



To replace the worn pins use only premium HUDY drive pins (#106053 2.5mm dia x 10mm length)

## **TIP** GRAPHITE PARTS PREPARATION

Follow this Tech Tip to prepare the graphite parts. Sand the edges with sandpaper, and then seal the edges with CA glue to reinforce them and help prevent delamination.



#### MANUAL STEPS ONLY FOR DIRT

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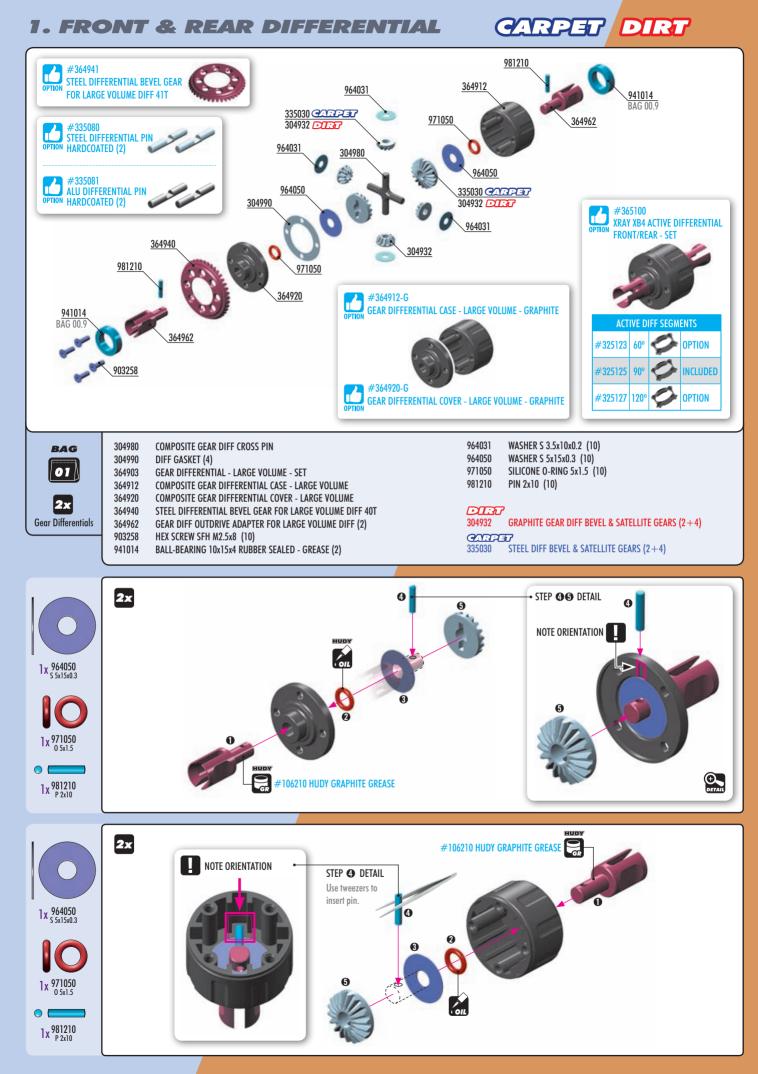
MANUAL STEPS ONLY FOR CARPET

#### MANUAL DUAL STEPS FOR CARPET AND DIRT

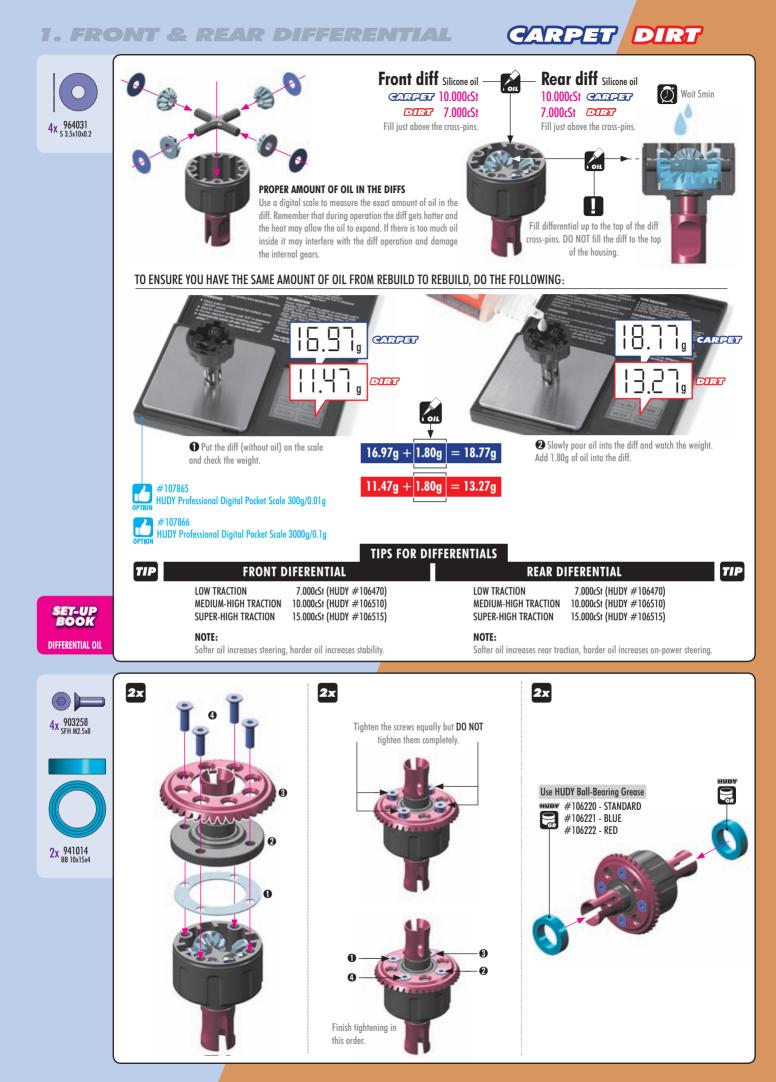
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| 3. REAR DRIVETR |      |   |
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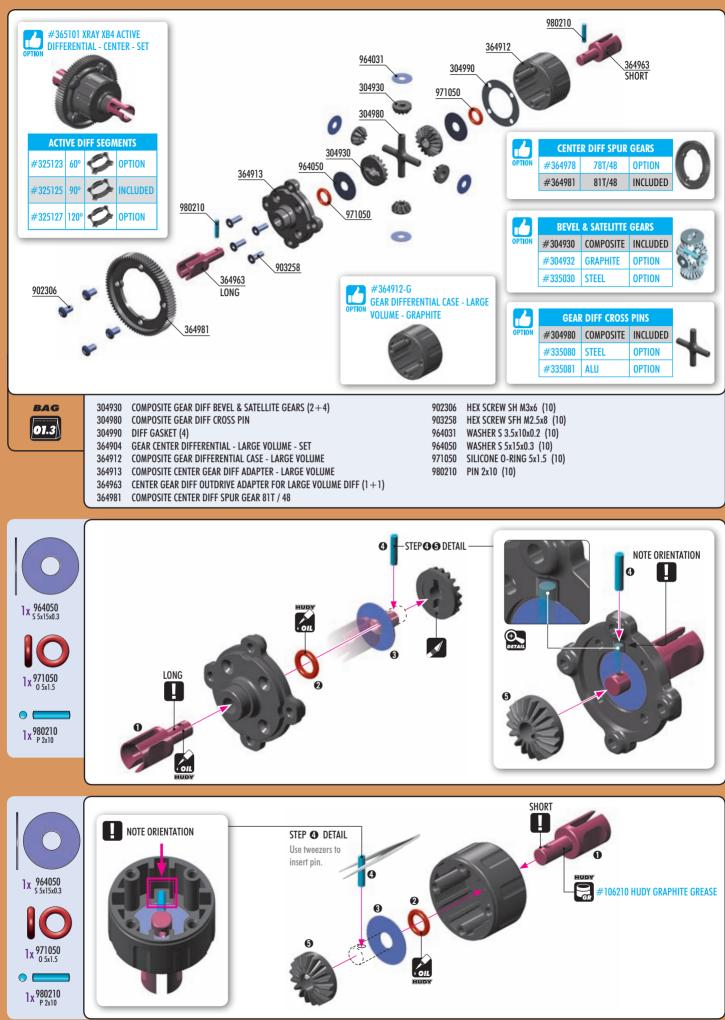








# **1. CENTER GEAR DIFFERENTIAL**





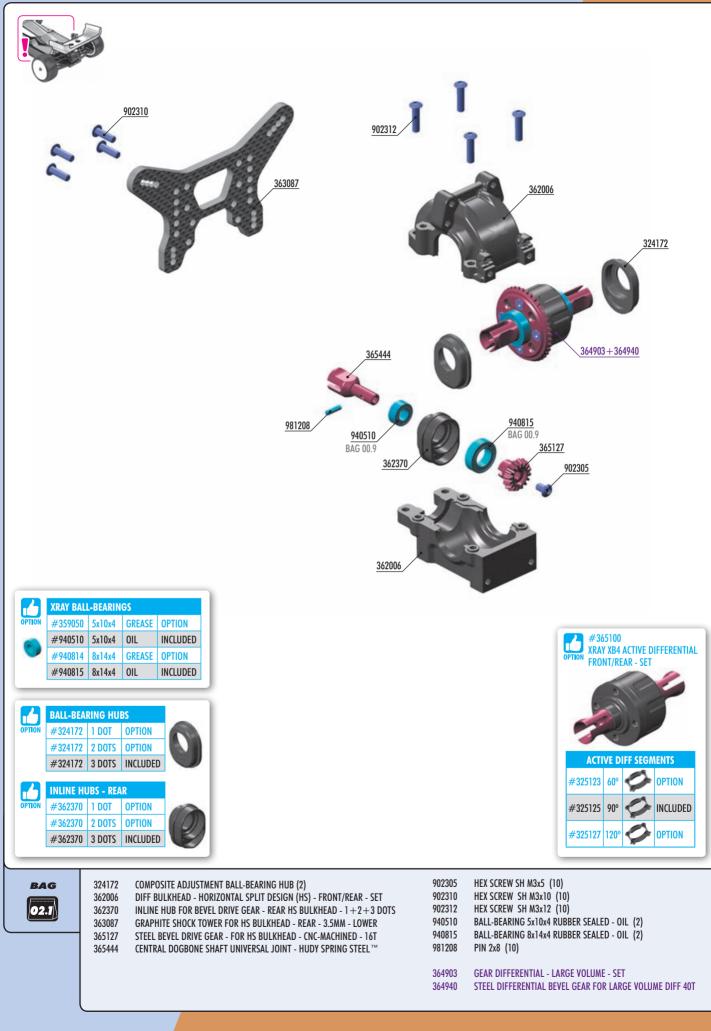
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# **1. CENTER GEAR DIFFERENTIAL**



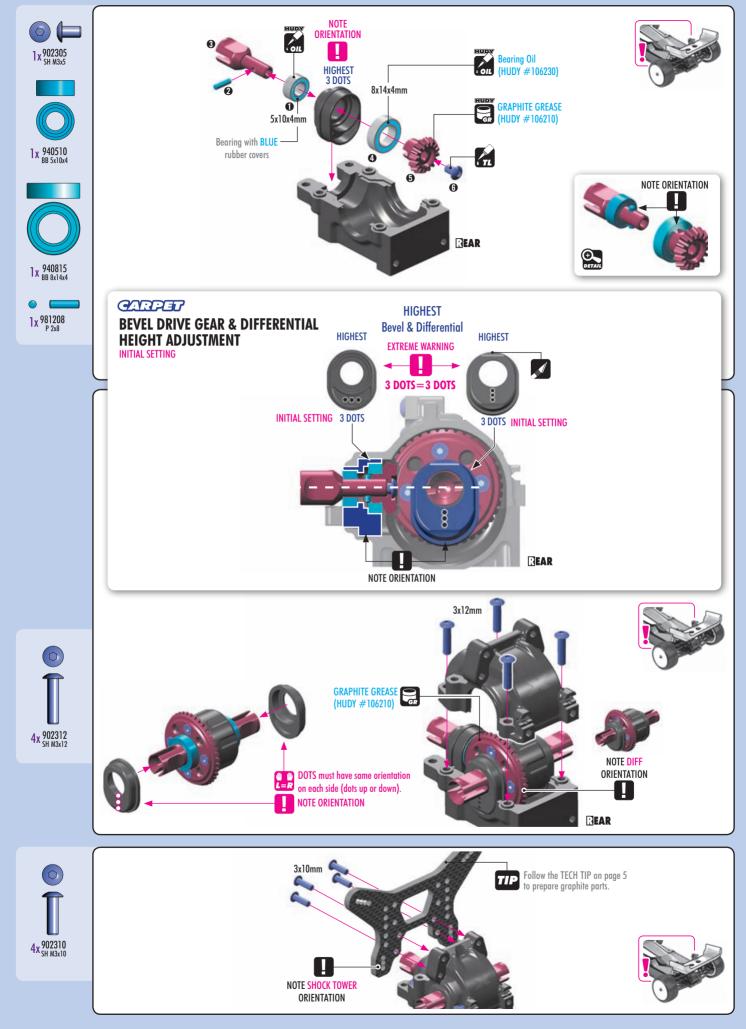


2. REAR CENTRAL TRANSMISSION GARDET DIRT

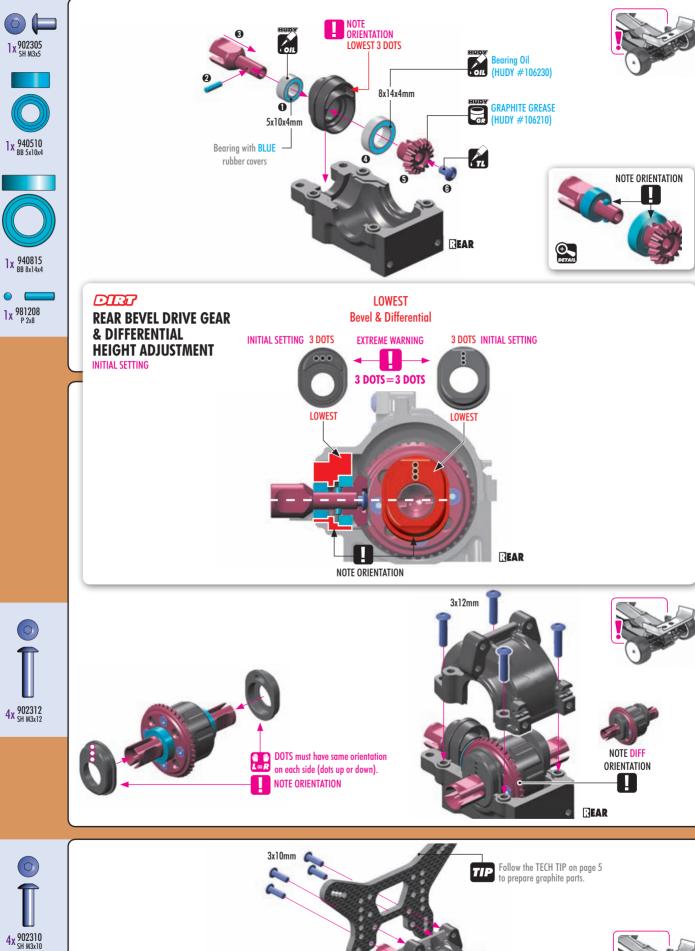


# 2. REAR CENTRAL TRANSMISSION





# 2. REAR CENTRAL TRANSMISSION

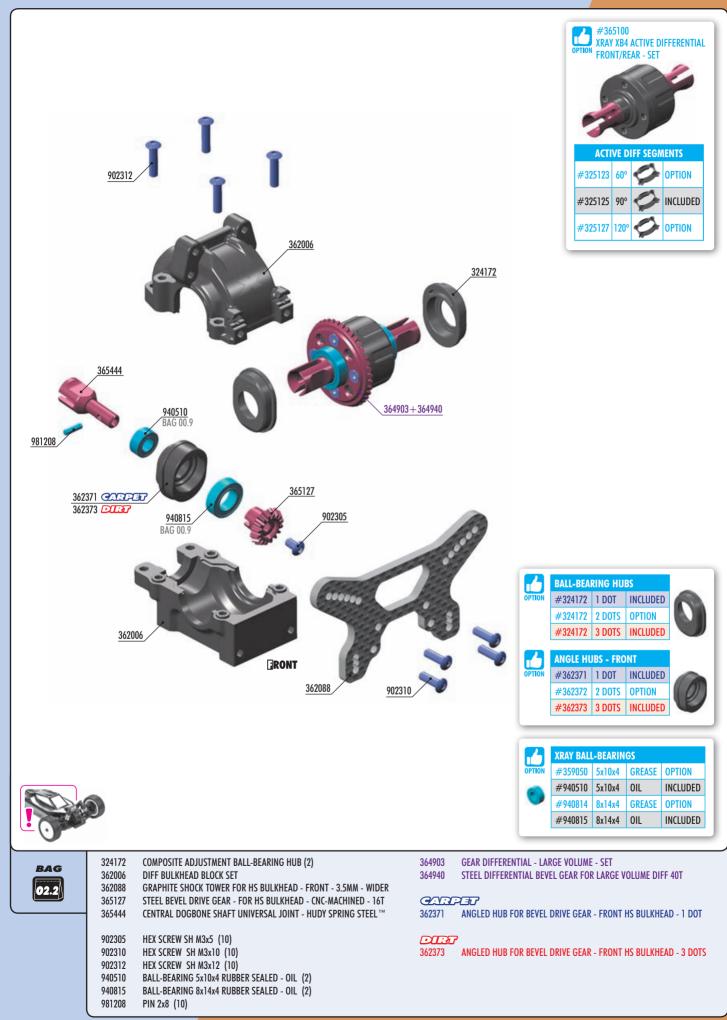




DIRT

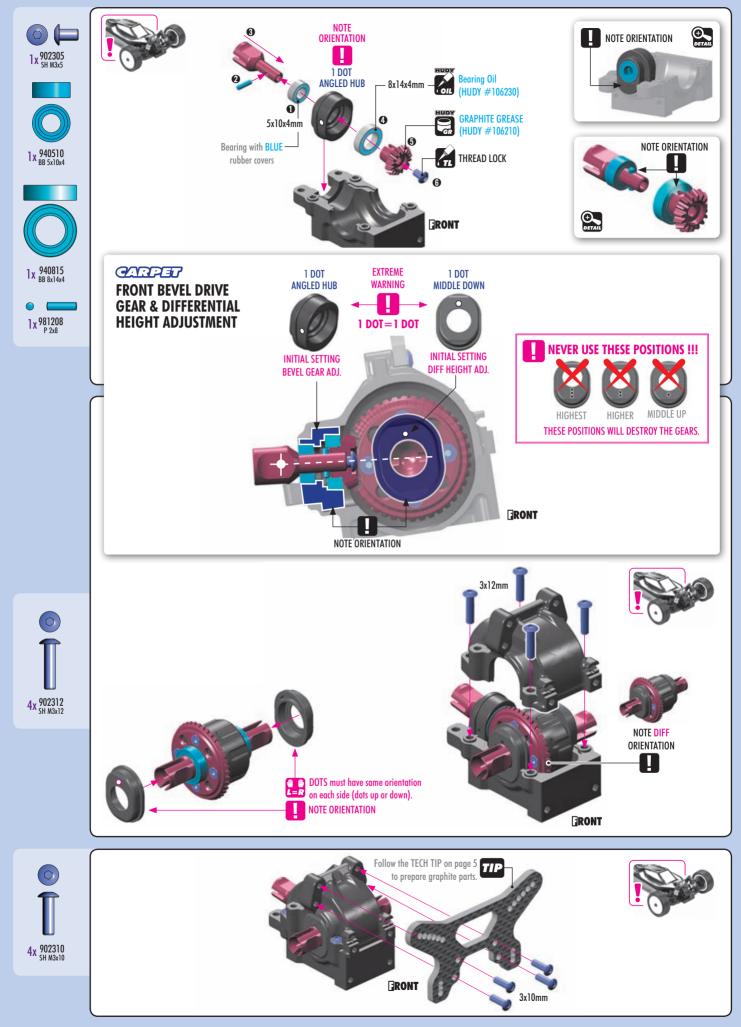


# 2. FRONT CENTRAL TRANSMISSION GARPET DIRT



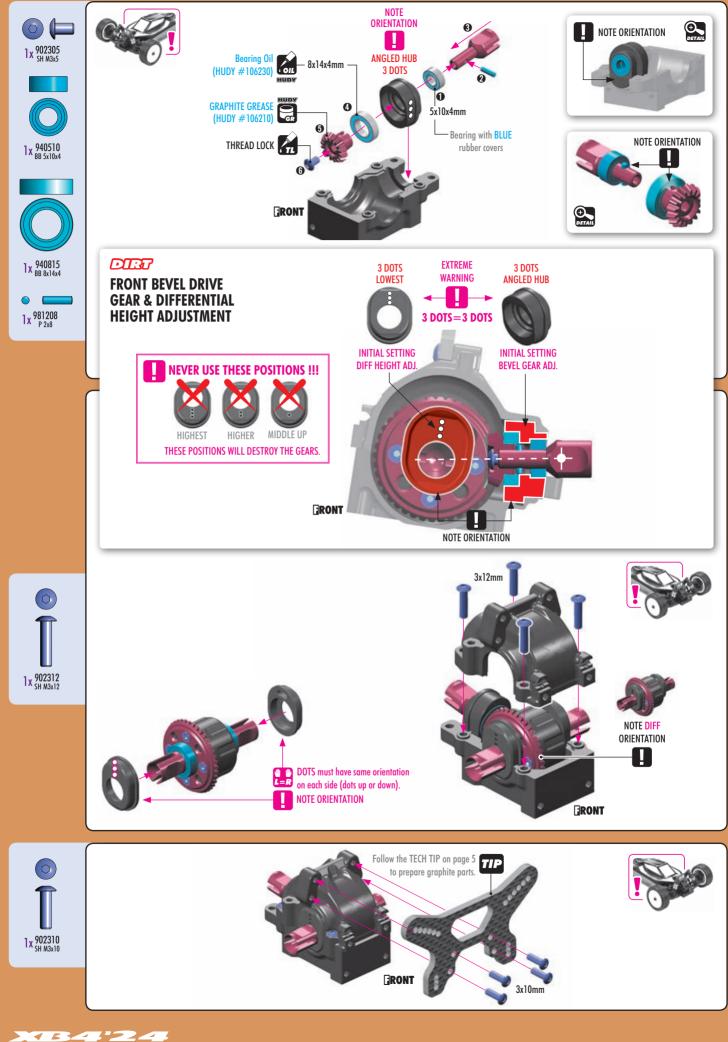
## **2. FRONT CENTRAL TRANSMISSION**

# GARPET

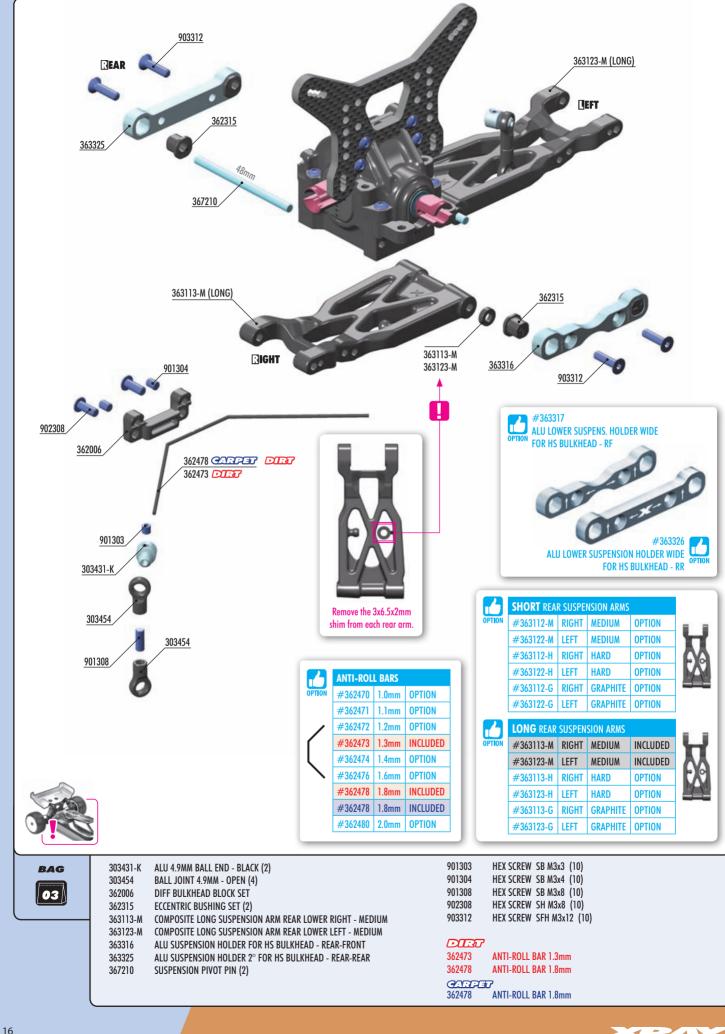


# 2. FRONT CENTRAL TRANSMISSION





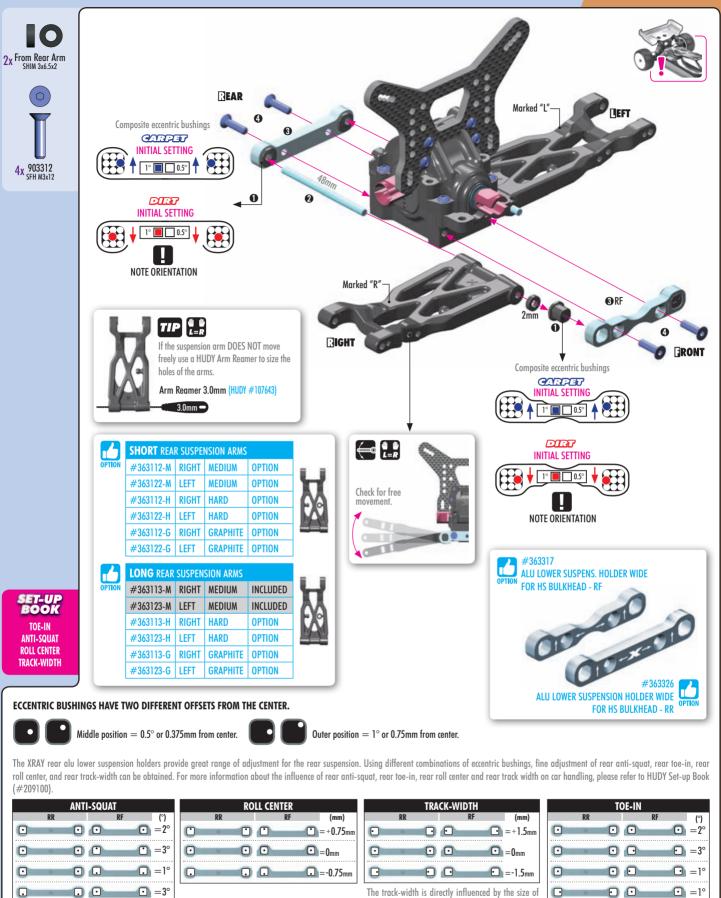
## **3. REAR SUSPENSION**







CARPET DIRT



The tables describe the amounts of adjustment using the center and outside positions of the eccentric bushings. The middle position eccentric bushings allow for finer adjustment increments.

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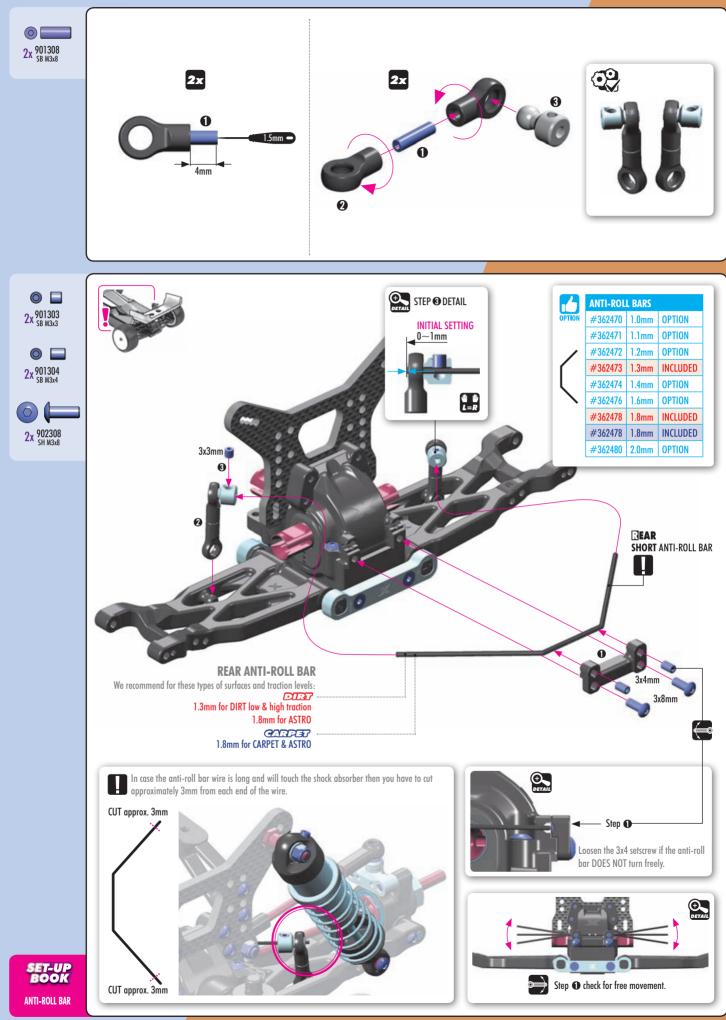
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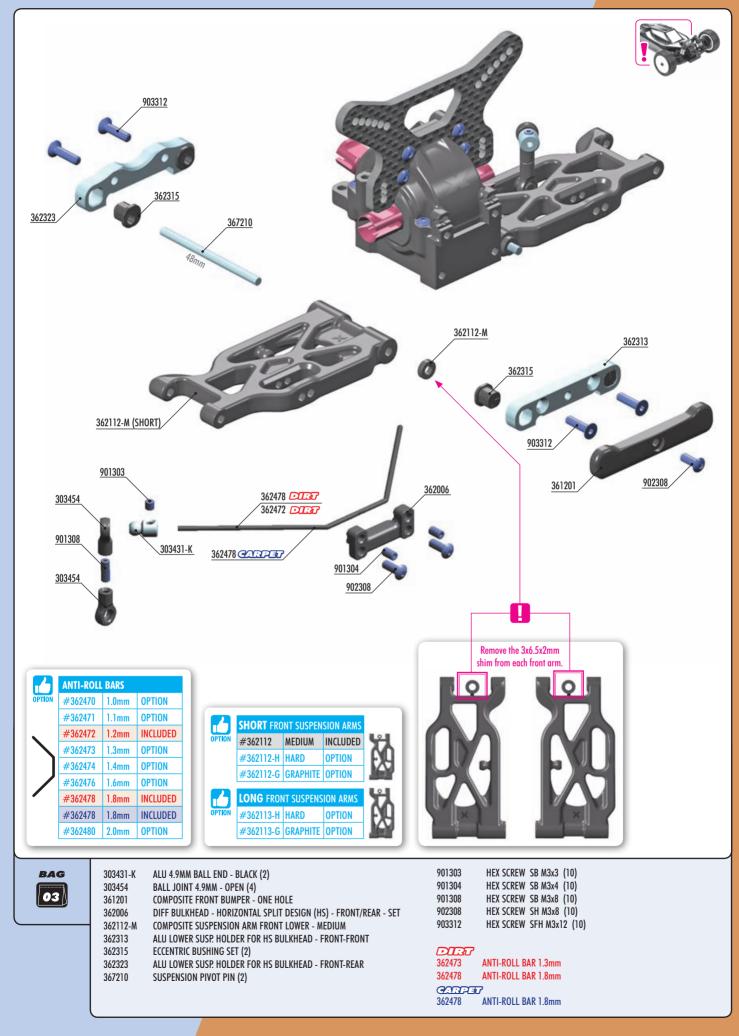
# **3. REAR SUSPENSION**



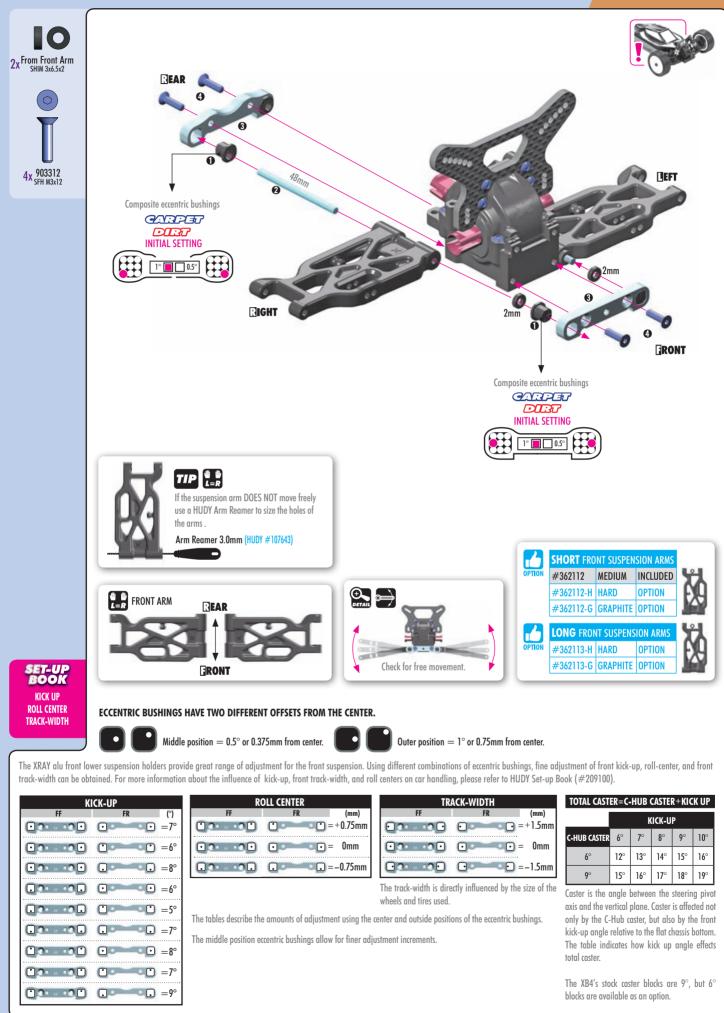


# **3. FRONT SUSPENSION**

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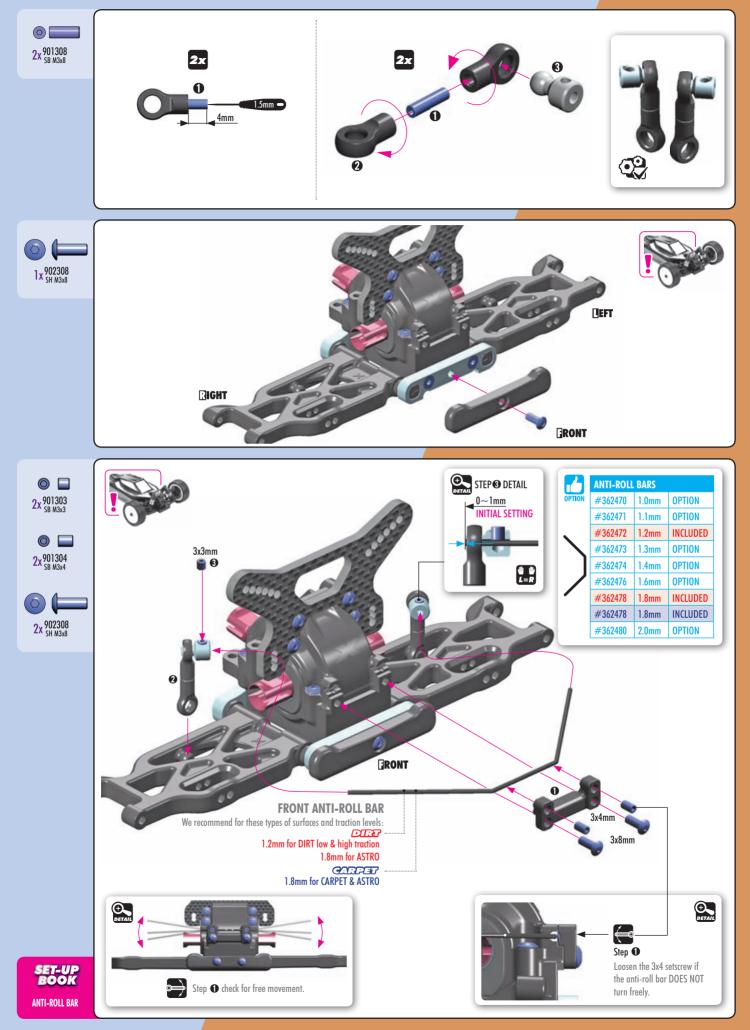
## **3. FRONT SUSPENSION**



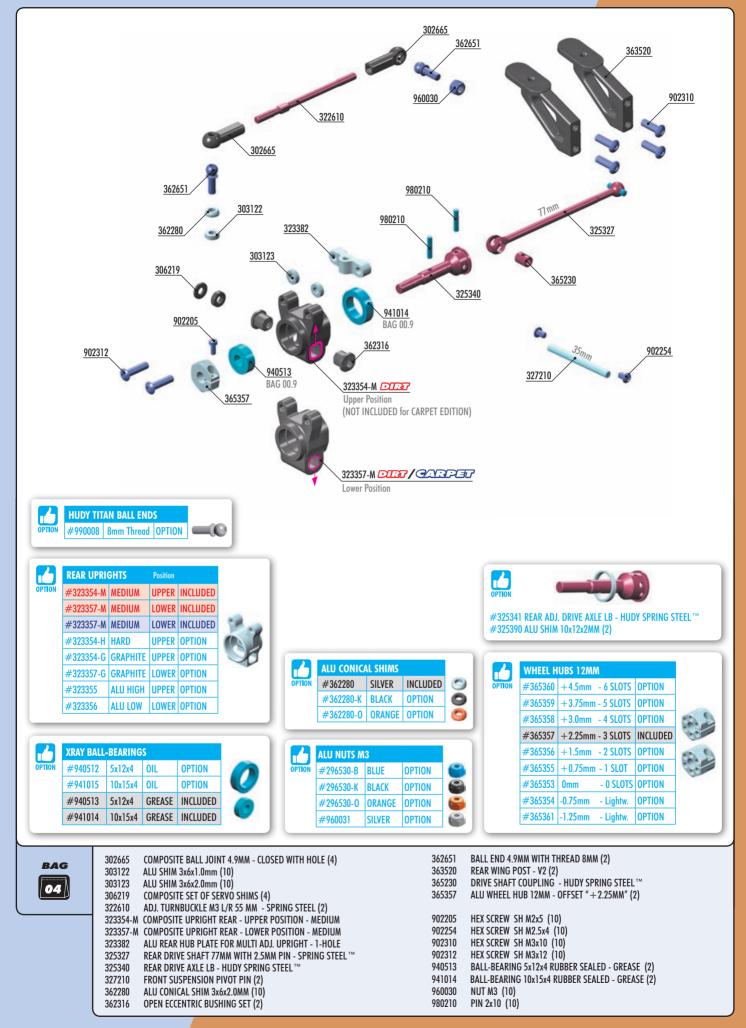


## **3. FRONT SUSPENSION**

XB4'24

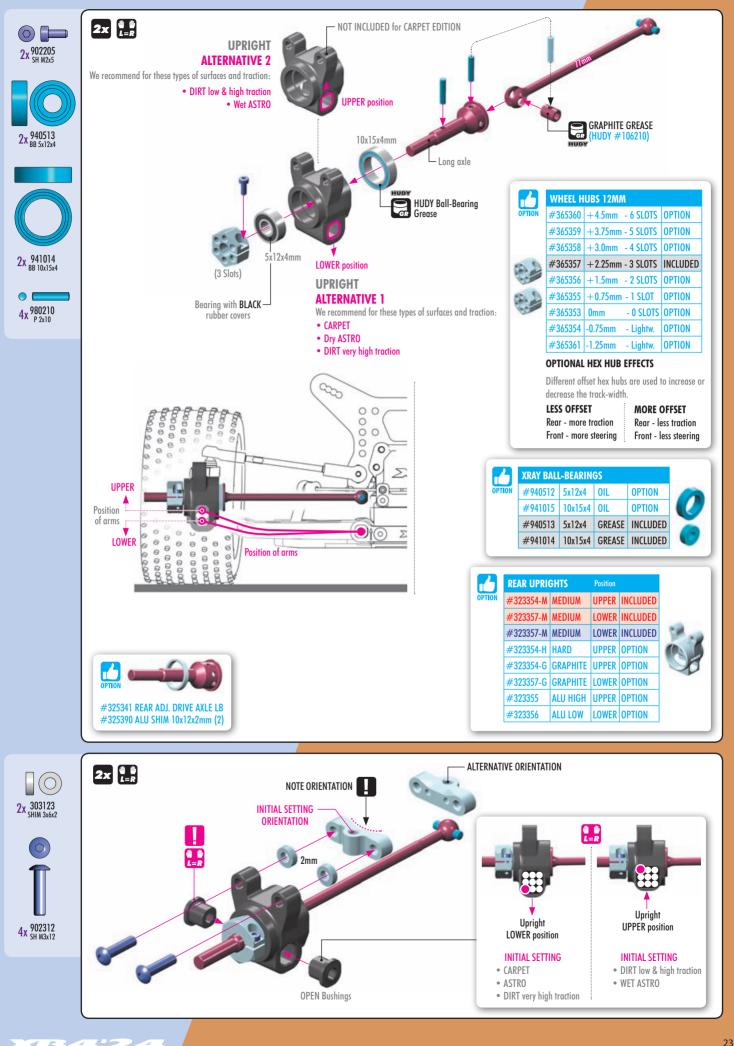


## 4. REAR TRANSMISSION

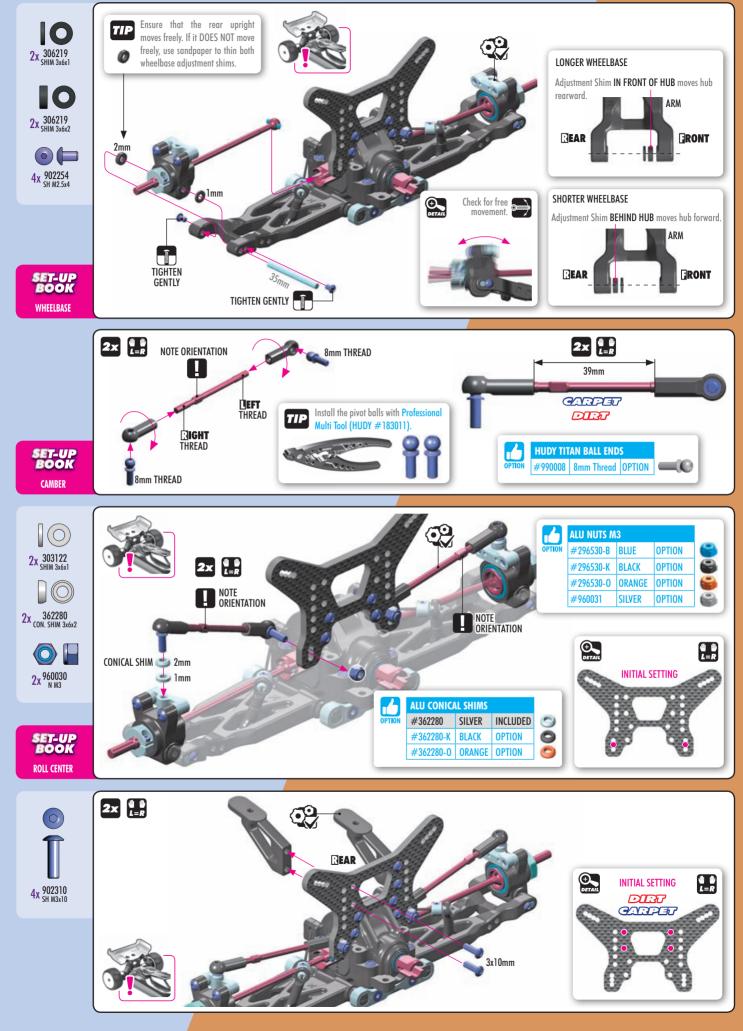




## 4. REAR TRANSMISSION

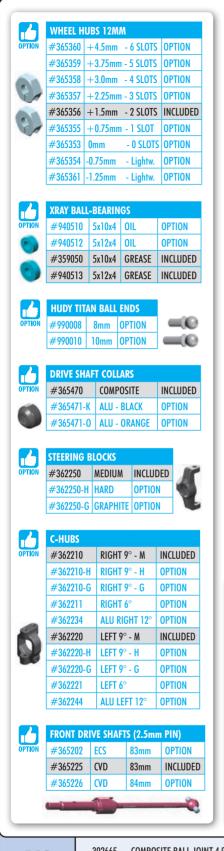
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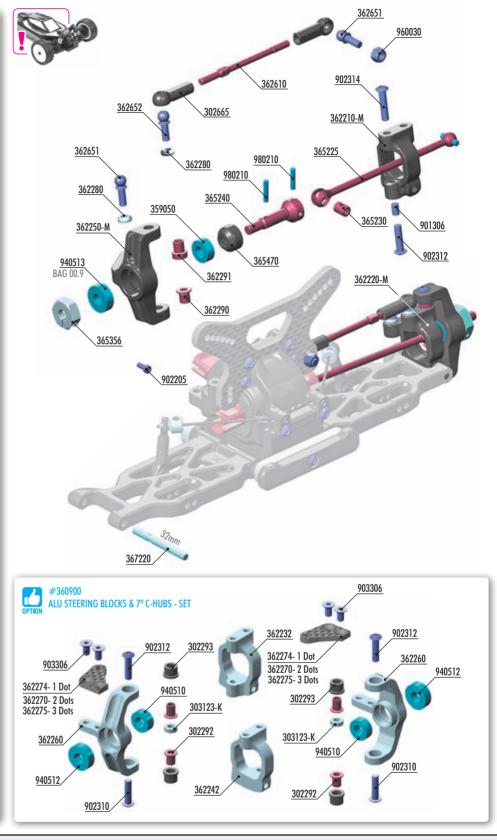
## 4. REAR TRANSMISSION



# 4. FRONT TRANSMISSION

GARPET DIRT





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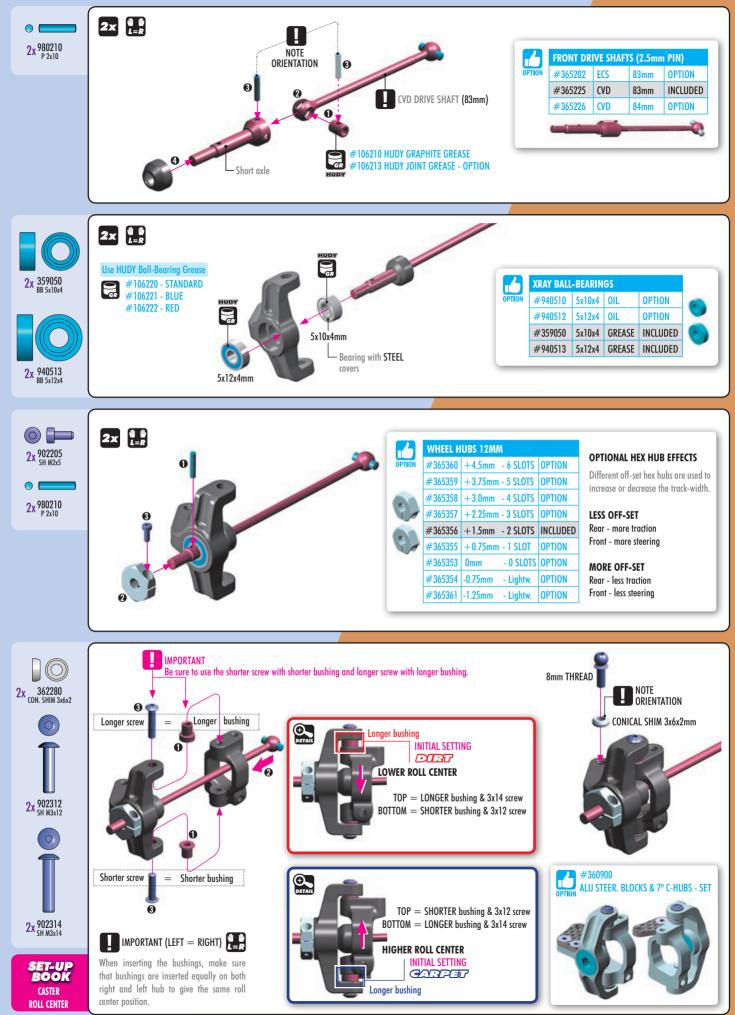
| 302665   | COMPOSITE BALL JOINT 4.9MM - CLOSED WITH HOLE (4)          | 365356 |
|----------|--|--------|
| 362210-M | COMPOSITE C-HUB 9° DEG. RIGHT - MEDIUM                     | 365470 |
| 362220-M | COMPOSITE C-HUB 9° DEG. LEFT - MEDIUM                      | 367220 |
| 362250-M | COMPOSITE STEERING BLOCK - MEDIUM                          |        |
| 362280   | ALU CONICAL SHIM 3x6x2.0MM (10)                            | 359050 |
| 362290   | STEEL STEERING BUSHING - SHORT (2)                         | 901306 |
| 362291   | STEEL STEERING BUSHING - LONG (2)                          | 902205 |
| 362610   | ADJ. TURNBUCKLE M3 L/R 50 MM - SPRING STEEL (2)            | 902312 |
| 362651   | BALL END 4.9MM WITH THREAD 8MM (2)                         | 902314 |
| 362652   | BALL END 4.9MM WITH THREAD 10MM (2)                        | 940513 |
| 365225   | FRONT DRIVE SHAFT 83MM WITH 2.5MM PIN - HUDY SPRING STEEL™ | 960030 |
| 365230   | DRIVE SHAFT COUPLING - HUDY SPRING STEEL™                  | 980210 |
| 365240   | FRONT DRIVE AXLE - HUDY SPRING STEEL™                      |        |

| 5470  | COMPOSITE DRIVE SHAFT SAFETY COLLAR (3)       |
|-------|---|
| 57220 | FRONT ARM PIVOT PIN (2)                       |
| 59050 | BALL-BEARING 5x10x4 STEEL SEALED - GREASE (2) |
| 11306 | HEX SCREW SB M3x6 (10)                        |
| 12205 | HEX SCREW SH M2x5 (10)                        |
| 2312  | HEX SCREW SH M3x12 (10)                       |
| )2314 | HEX SCREW SH M3x14 (10)                       |

ALU WHEEL HUB 12MM - OFFSET "+1.50MM" (2)

- BALL-BEARING 5x12x4 RUBBER SEALED GREASE (2)
- 0 NUT M3 (10) 0 PIN 2x10 (10)

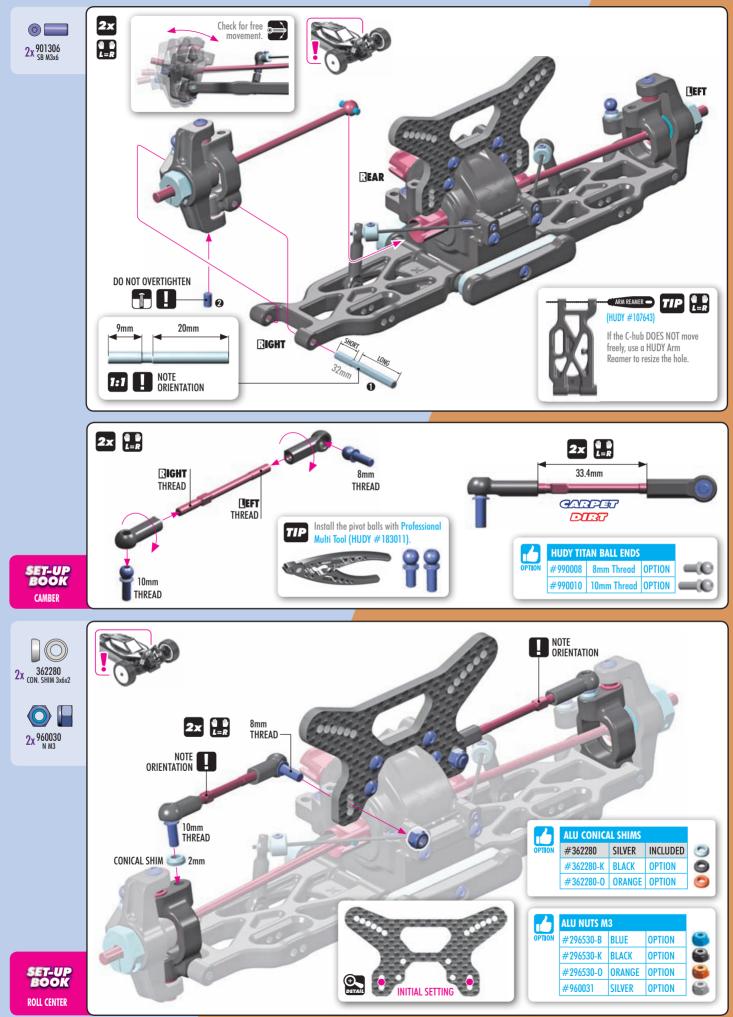
# **4. FRONT TRANSMISSION**



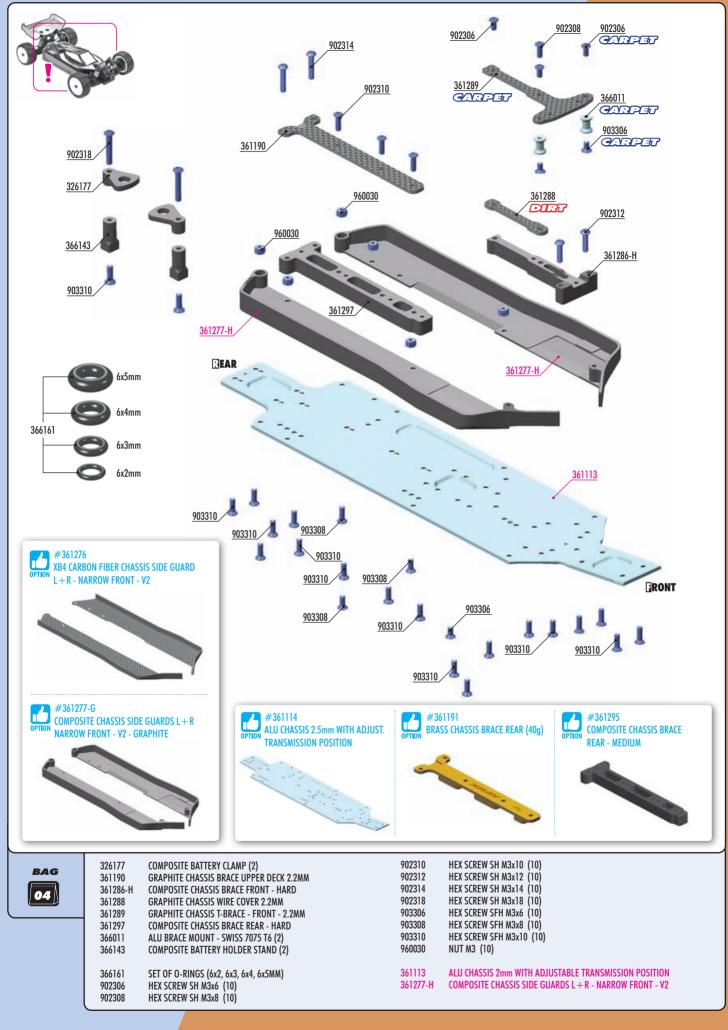


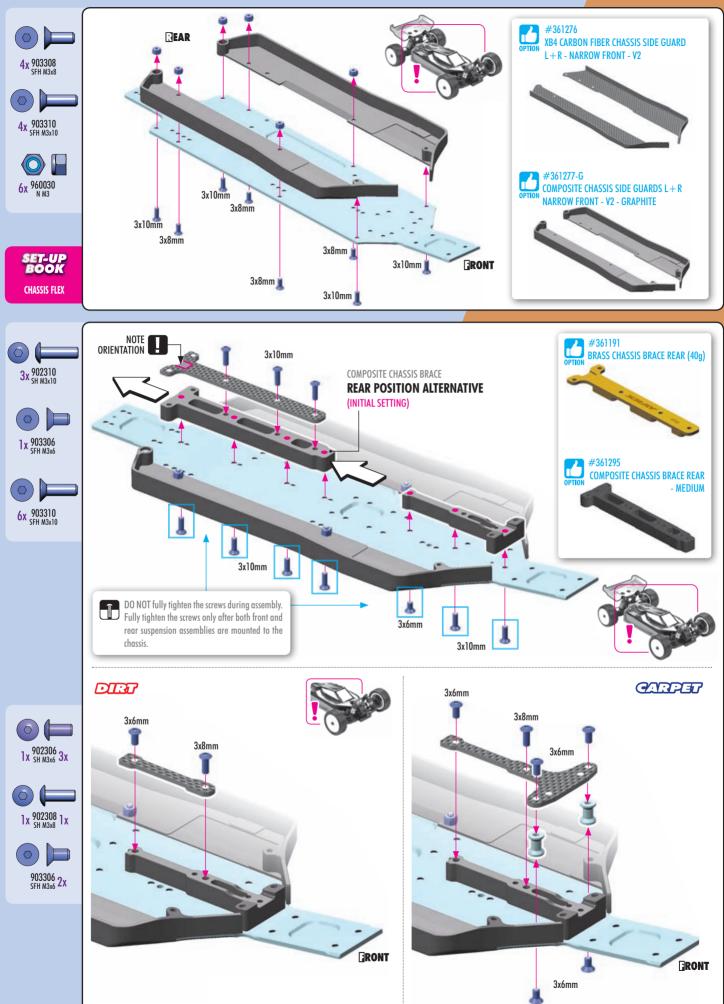
# **4. FRONT TRANSMISSION**

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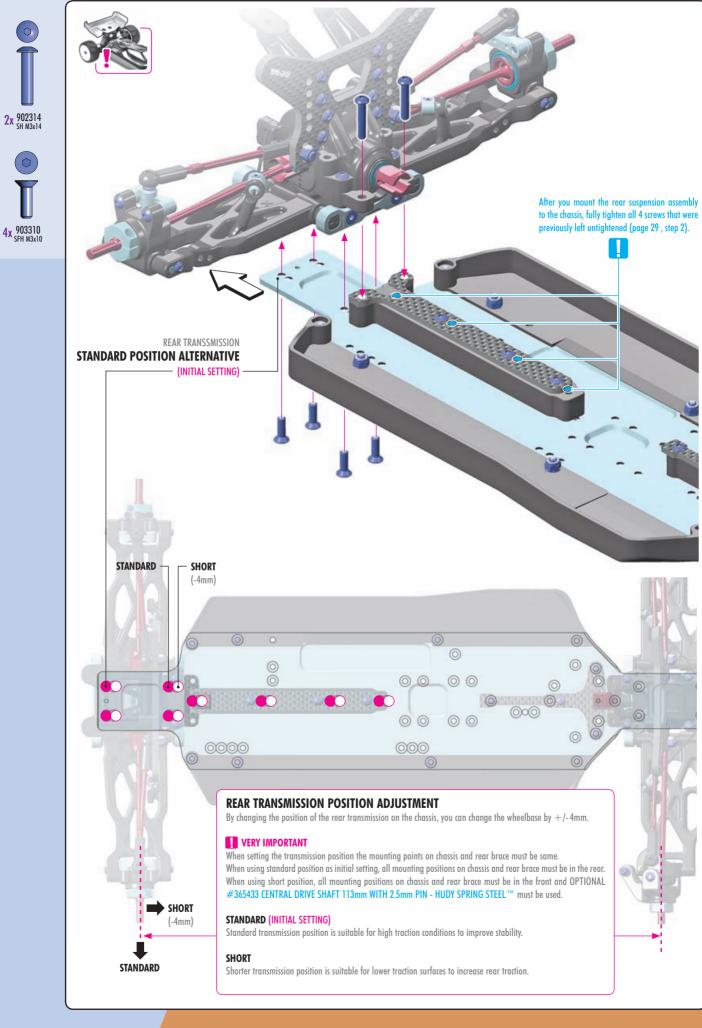


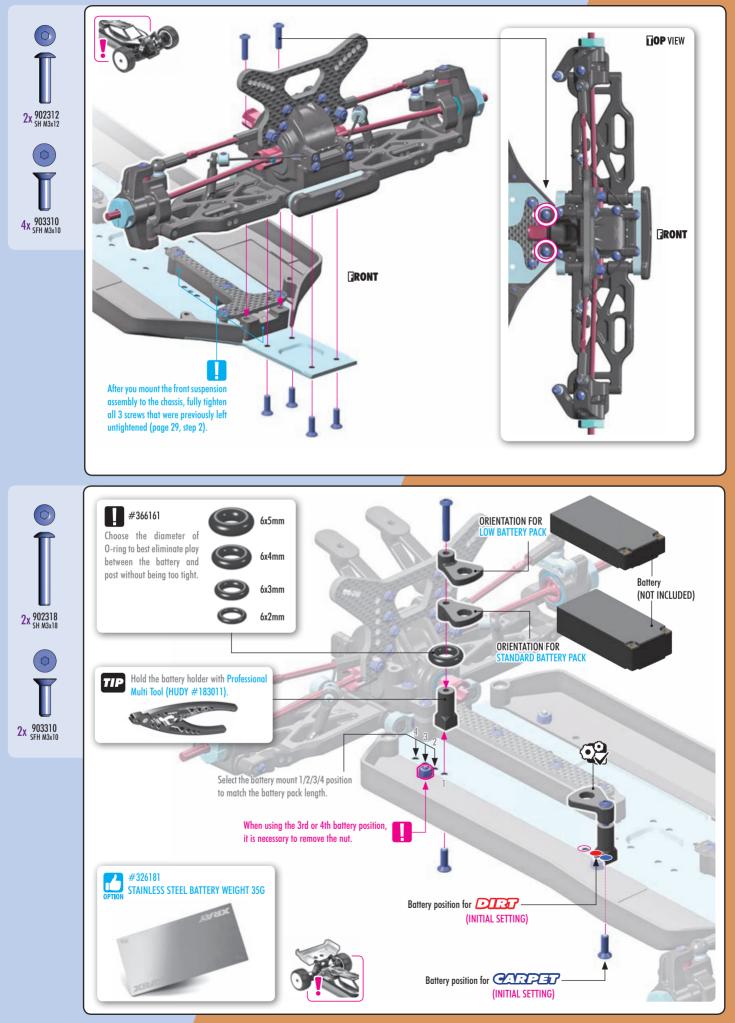
CARPET DIRT

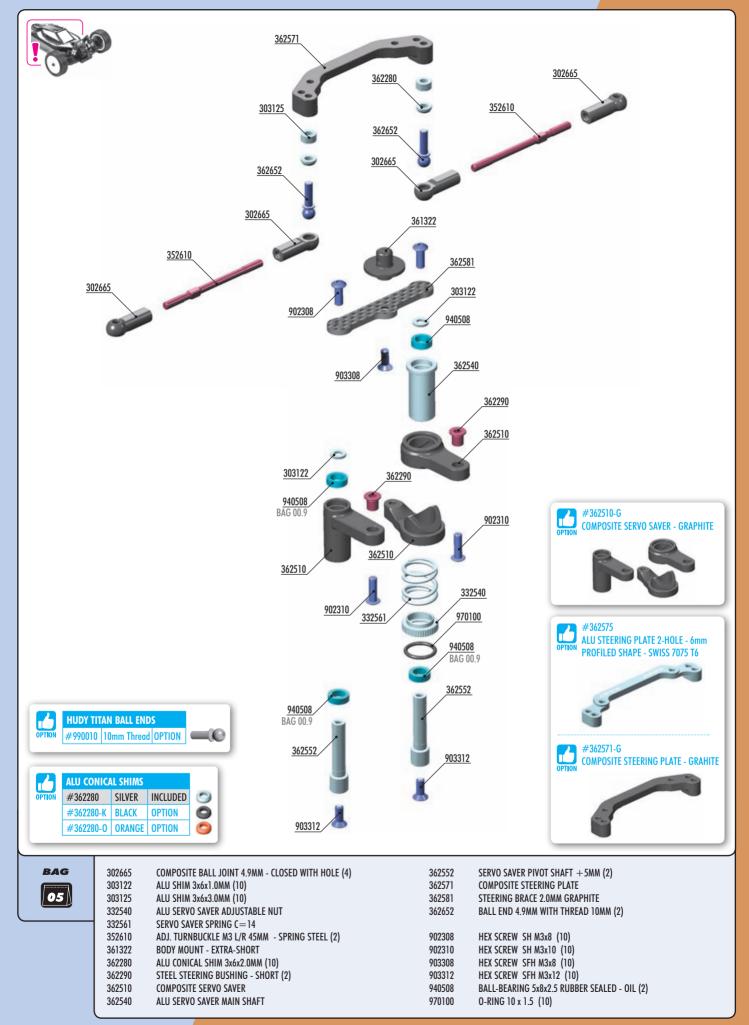




# GARPET DIRT





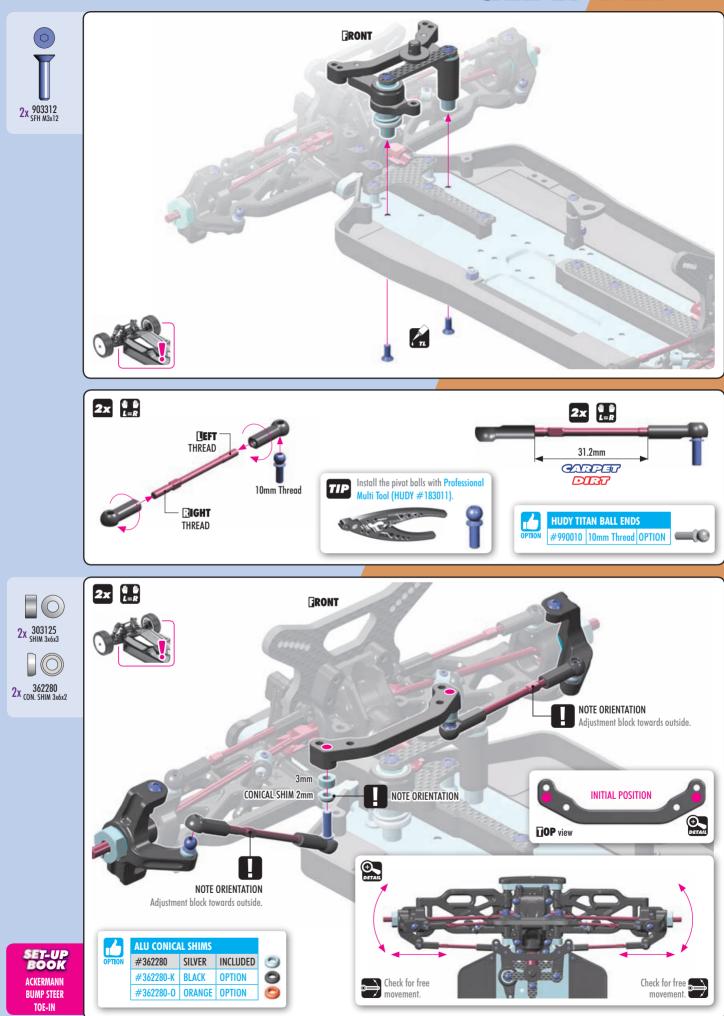


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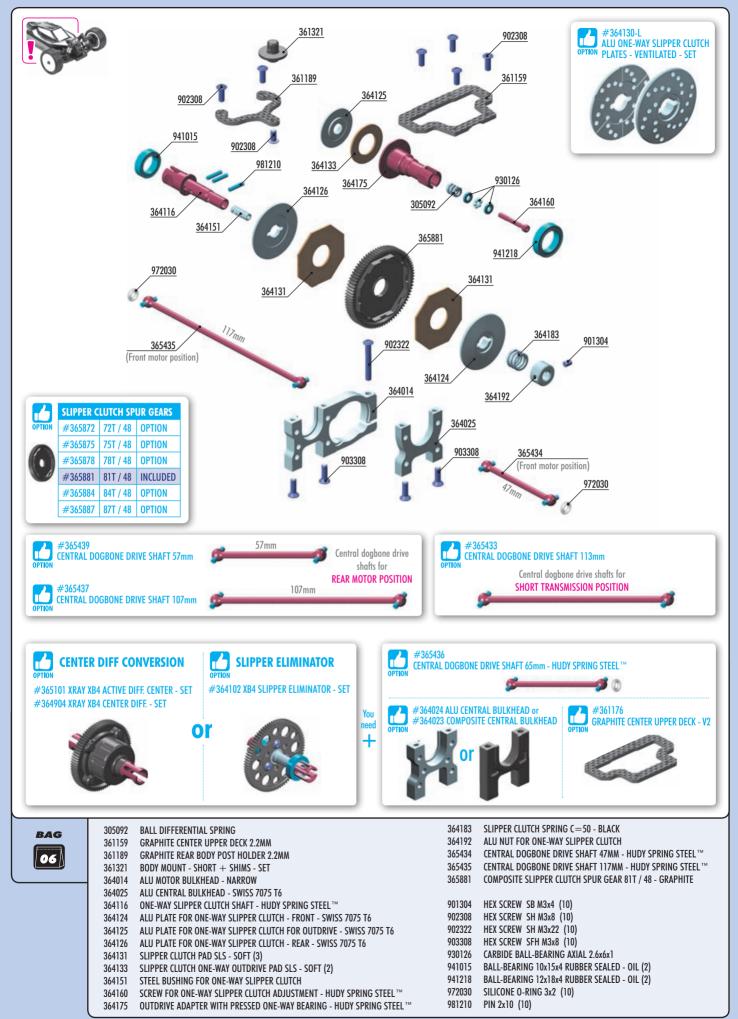
# **5. STEERING**





# **6. SLIPPER CLUTCH ASSEMBLY**

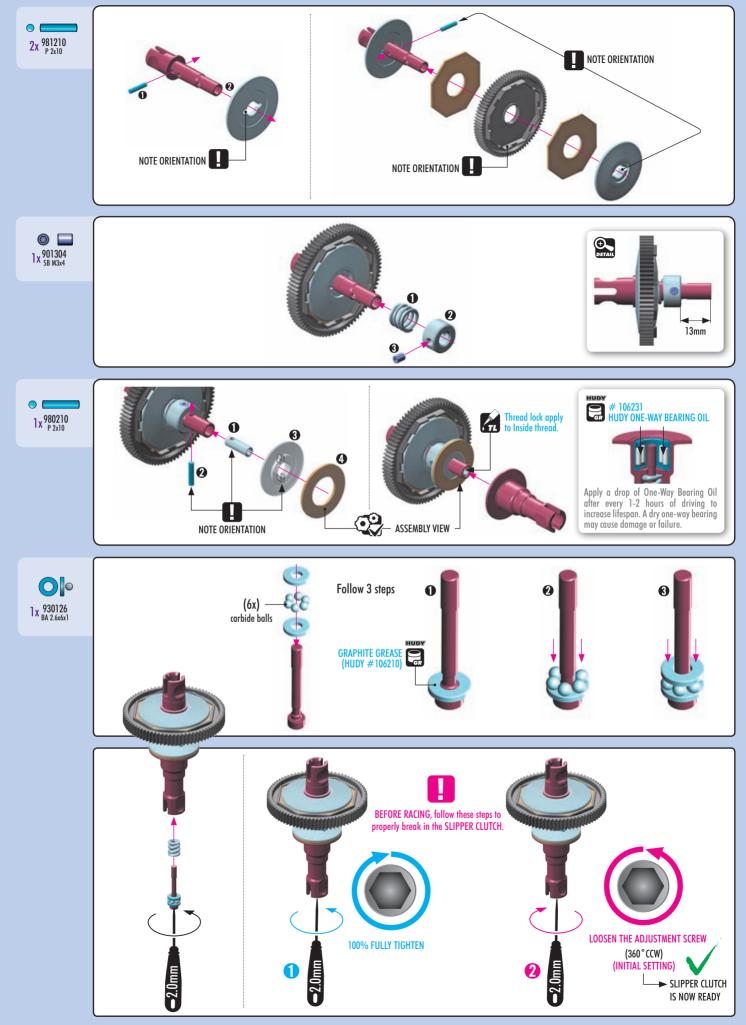
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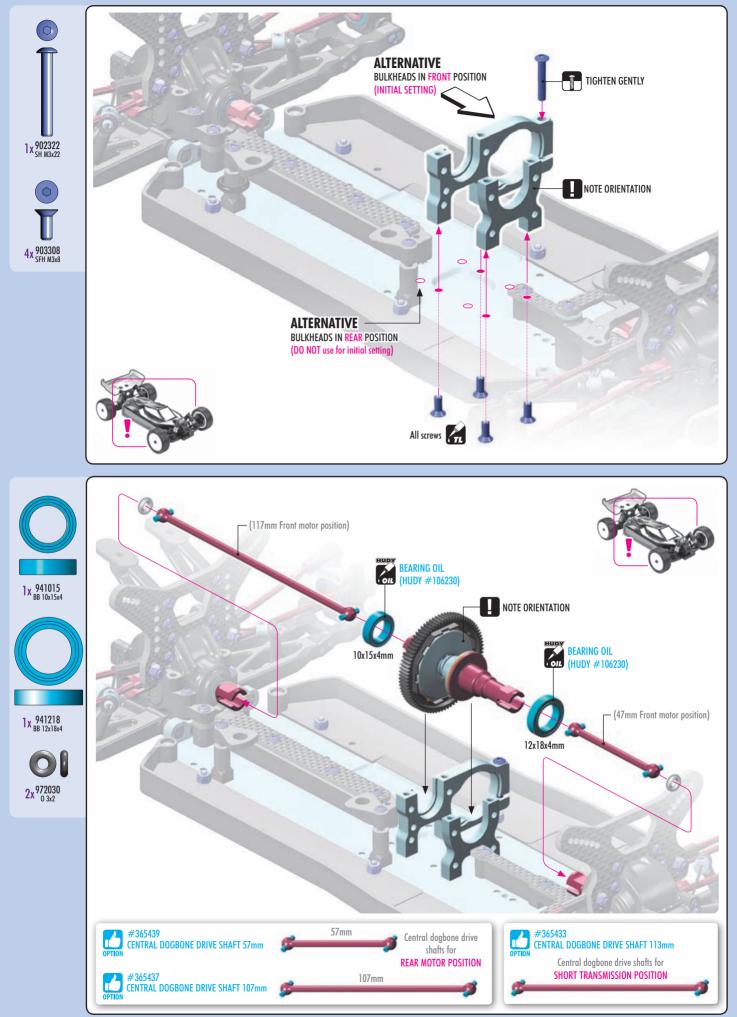


## 6. SLIPPER CLUTCH ASSEMBLY



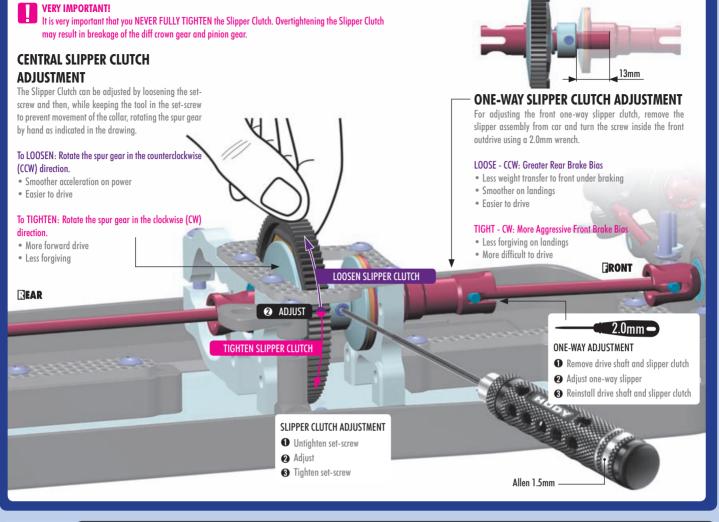
### **6. SLIPPER CLUTCH ASSEMBLY**

# GARPET

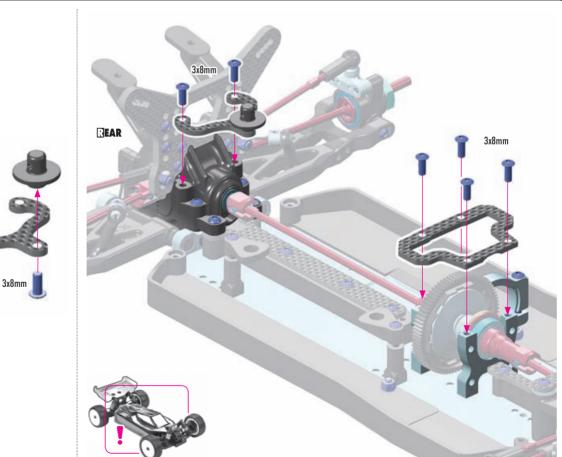


### 6. SLIPPER CLUTCH ASSEMBLY

# CARPET







>KERANG

## 6. CENTER DIFF ASSEMBLY

#### ONE-WAY SLIPPER **CENTER DIFFERENTIAL CLUTCH CONVERSION** 36132 #364904 902308 941015 #364101 **ONE-WAY SLIPPER CLUTCH SET** 902308 361189 941015 972030 902308 902322 #364025 ALU CENTRAL BULKHEAD 365435 361176 (Front motor position) 364014 364023 #365101 XRAY XB4 ACTIVE DIFFERENTIAL - CENTER - SET 365436 (Front motor position) #365434 CENTRAL DOGBONE DRIVE SHAFT 47mm 903308 903308 #361159 GRAPHITE CENTER 972030 **ACTIVE DIFF SEGMENTS UPPER DECK** #325123 609 OPTION #365433 16 CENTRAL DOGBONE DRIVE SHAFT 113mm #325125 INCLUDED Central dogbone drive shafts for SHORT TRANSMISSION POSITION #325127 120 OPTION #364102 16 **XB4 SLIPPER ELIMINATOR - SET** #364024 ALU CENTRAL BULKHEAD (75mm) #365438 1 Central dogbone **CENTRAL DOGBONE DRIVE SHAFT 75mm** drive shafts for **REAR MOTOR POSITION** #365437 CENTRAL DOGBONE DRIVE SHAFT 107mm (107mm) HEX SCREW SH M3x8 (10) 902308 361176 **GRAPHITE CENTER UPPER DECK 2.2MM - V2** BAG HEX SCREW SH M3x22 (10) 902322 361189 **GRAPHITE REAR BODY POST HOLDER 2.2MM** 361321 BODY MOUNT - SHORT + SHIMS - SET 903308 HEX SCREW SFH M3x8 (10) 06 BALL-BEARING 10x15x4 RUBBER SEALED - OIL (2) ALU MOTOR BULKHEAD - NARROW 941015 364014 **COMPOSITE CENTRAL BULKHEAD - LOWER** 972030 SILICONE O-RING 3x2 (10) 364023 365435 CENTRAL DOGBONE DRIVE SHAFT 117MM - HUDY SPRING STEEL™ 365436 CENTRAL DOGBONE DRIVE SHAFT 65MM - HUDY SPRING STEEL™ 364904 **GEAR CENTER DIFFERENTIAL - LARGE VOLUME - SET** TIGHTEN GENTLY **ALTERNATIVE BULKHEADS IN FRONT POSITION** (INITIAL SETTING) 1x 902318 SH M3x18 #364024 4x 903308 **ALU CENTRAL BULKHEAD ALTERNATIVE** BULKHEADS IN REAR POSITION (DO NOT use for initial setting) All screws

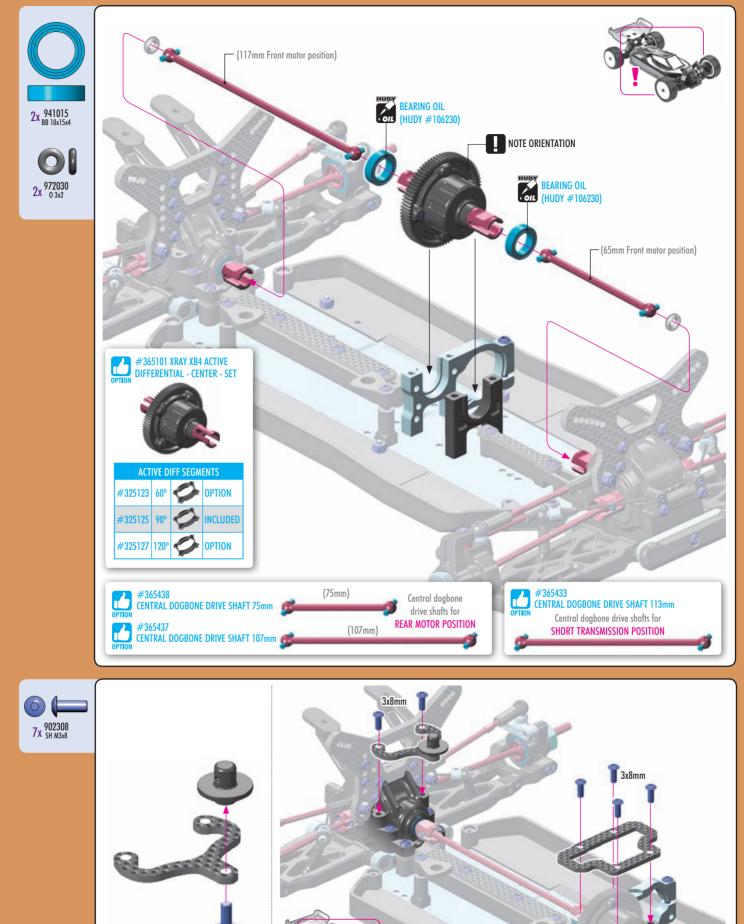
XB4'24



## 6. CENTER DIFF ASSEMBLY

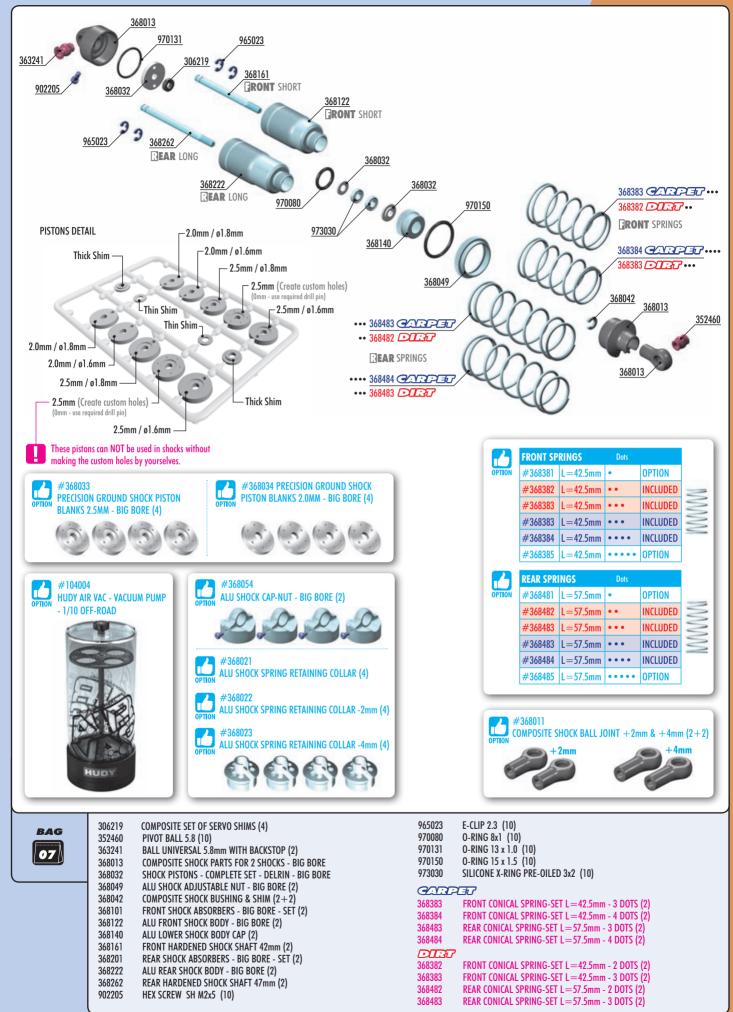
3x8mm

# DIRT





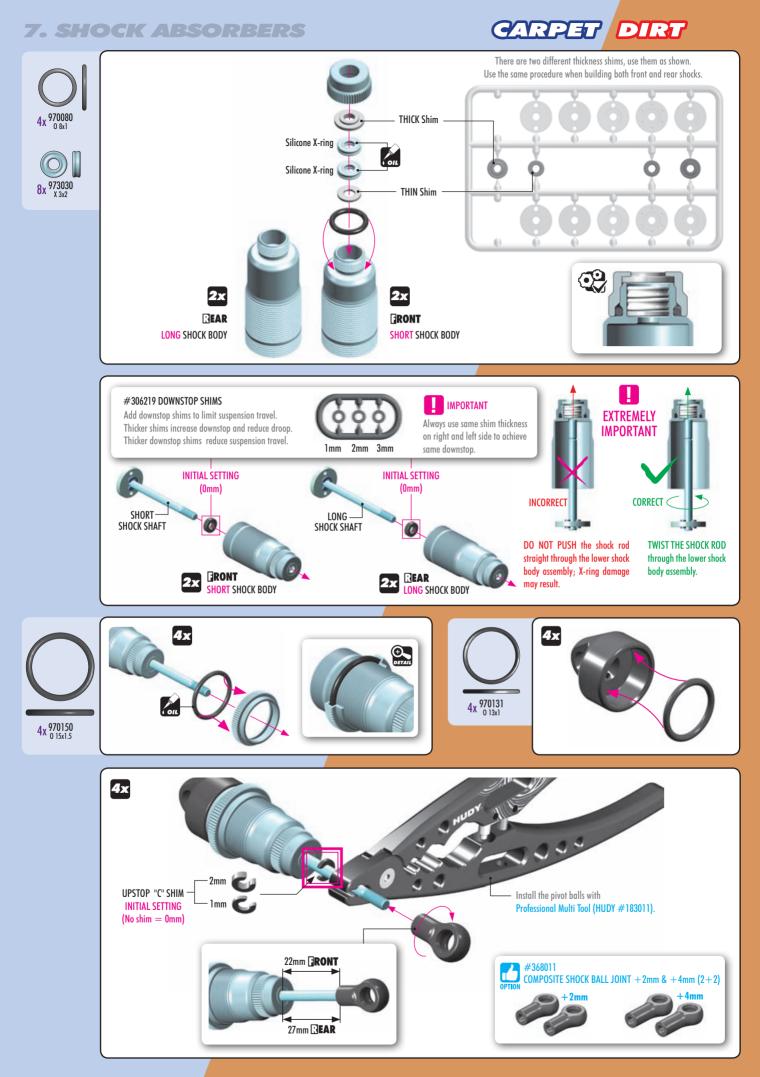
### 7. SHOCK ABSORBERS



### 7. SHOCK ABSORBERS







7. SHOCK ABSORBERS

. OIL

011 Mitt

• DIRT

 ASTRO Front (short) Oil **400cSt** 

Rear (long)

Oil 300cSt

4x 902205 SH M2x5

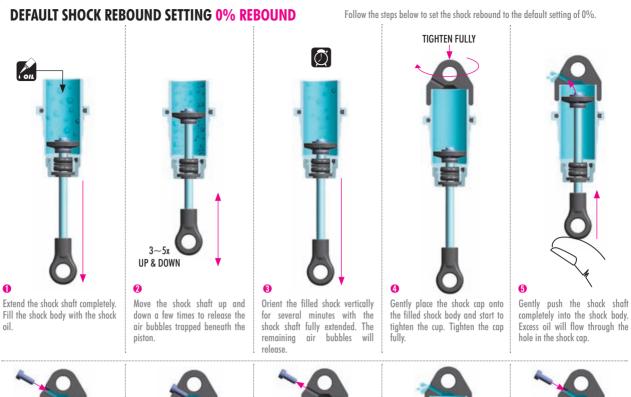
SHOCK OIL

CARPER

• CARPET

Front (short) 0il 550cSt Rear (long) 0il 400cSt • ASTRO Front (short) 0il 400cSt Rear (long) 0il 300cSt

# ARPET DIRT



A SET-UP BOOK

Keep the shock shaft pushed in the shock body and insert the screw into the shock cap. Tighten gently.



6x push the shaft up and down.



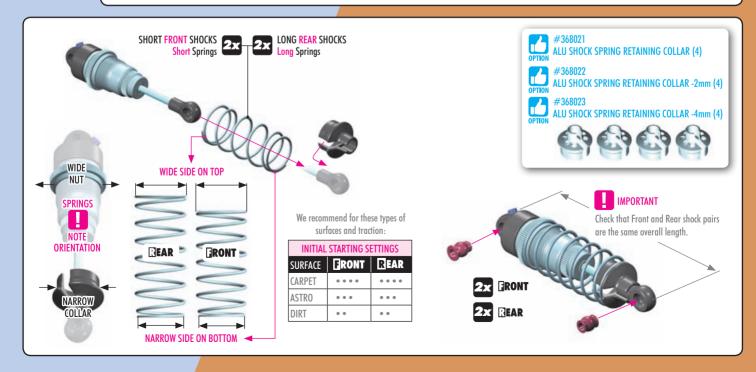
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Gently push the shock shaft completely into the shock body. Excess oil will flow through the hole in the shock cap.

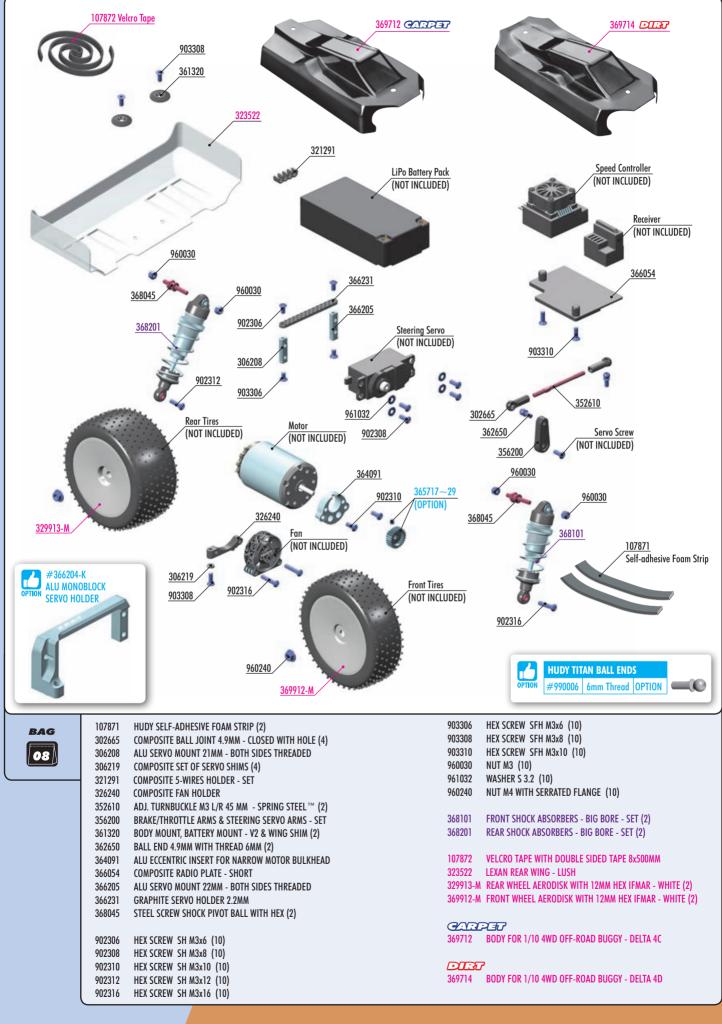


Tighten the screw. The rebound will be at approx. 0%

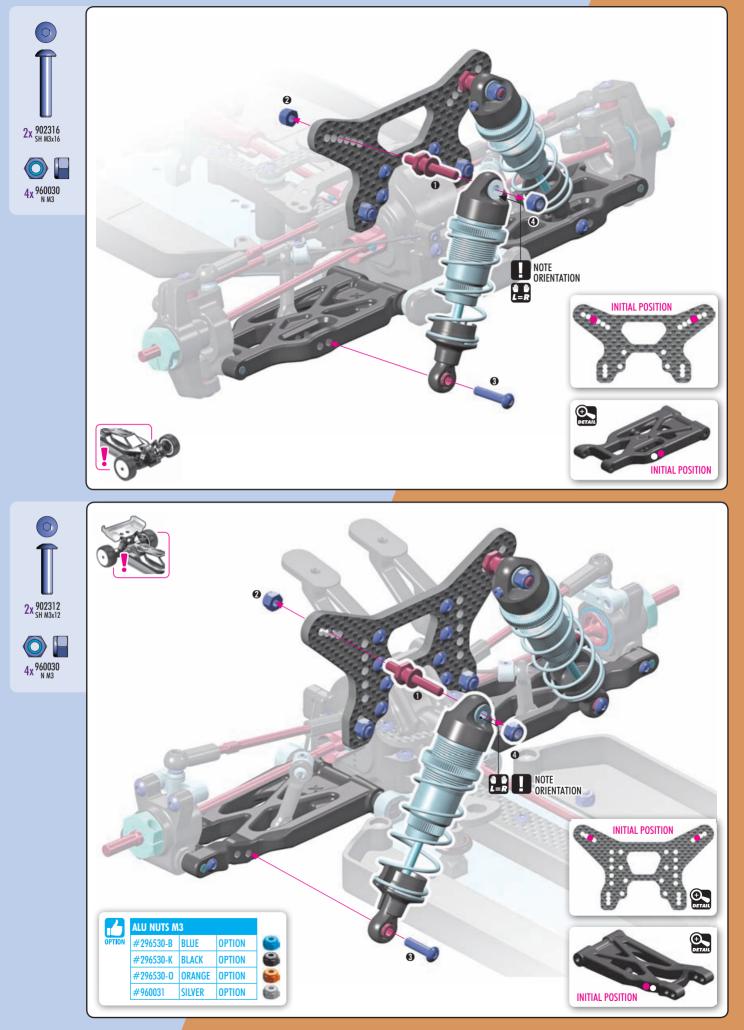


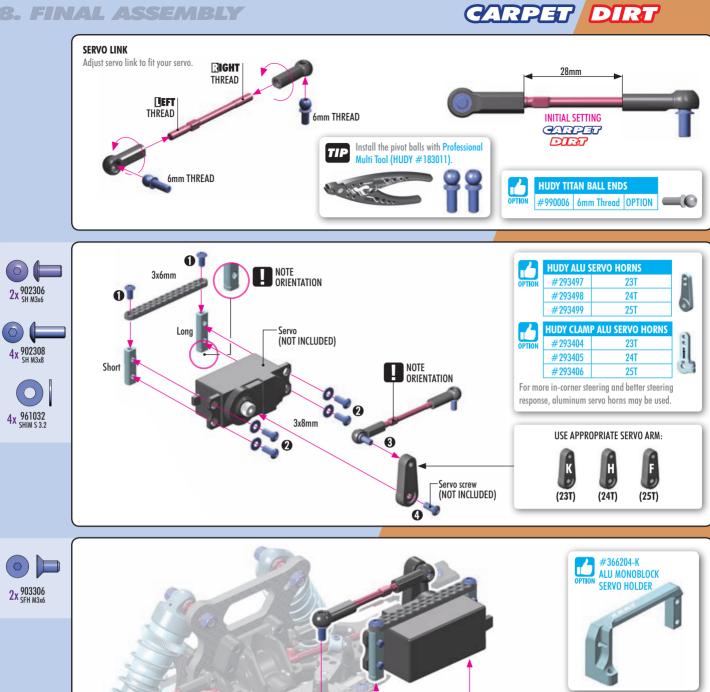


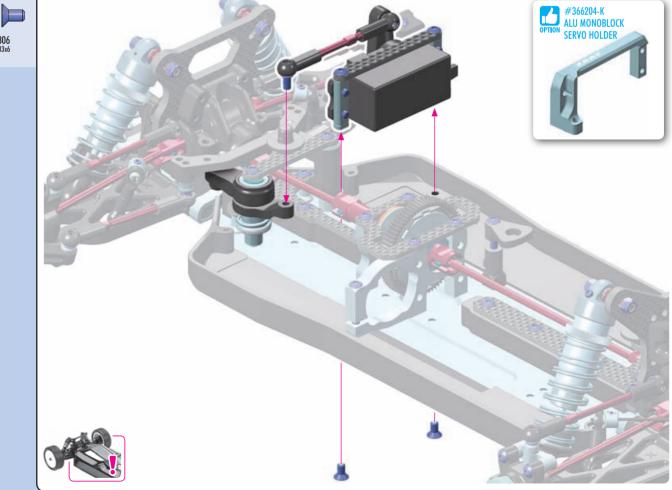
<u>1 B4</u>722

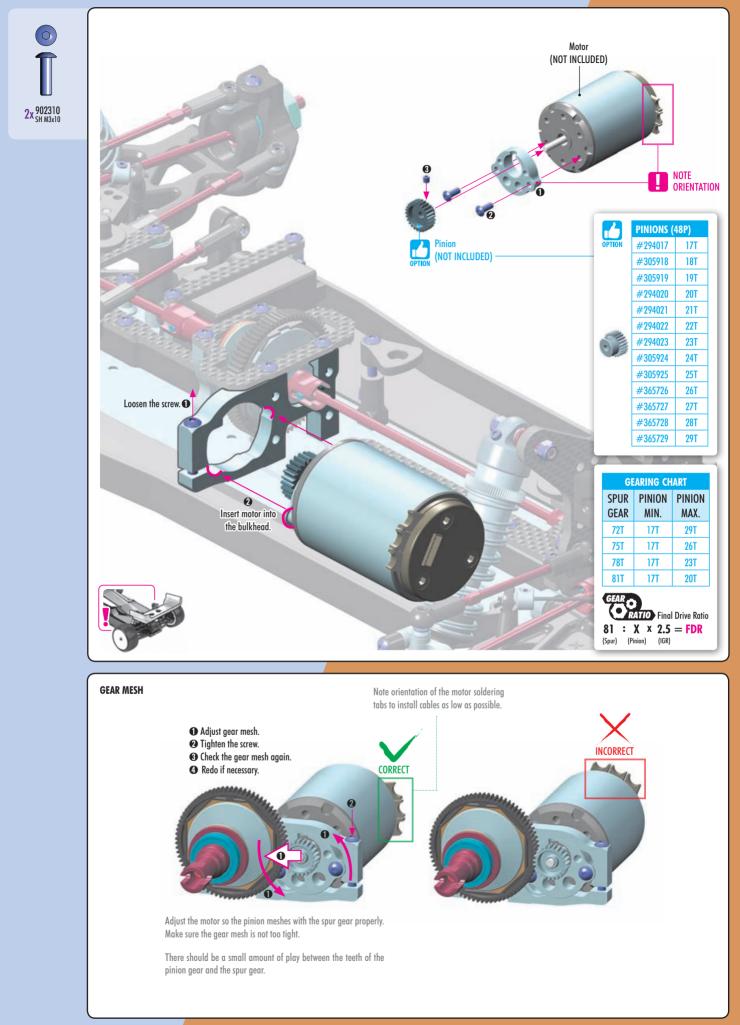


# GARPET DIRT



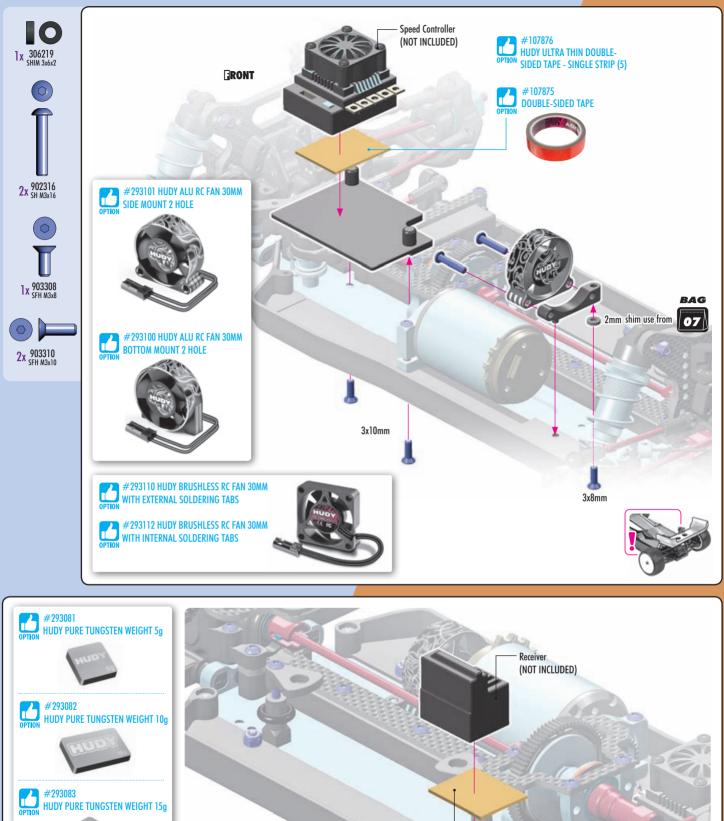
-53 







# GARPET DIRT

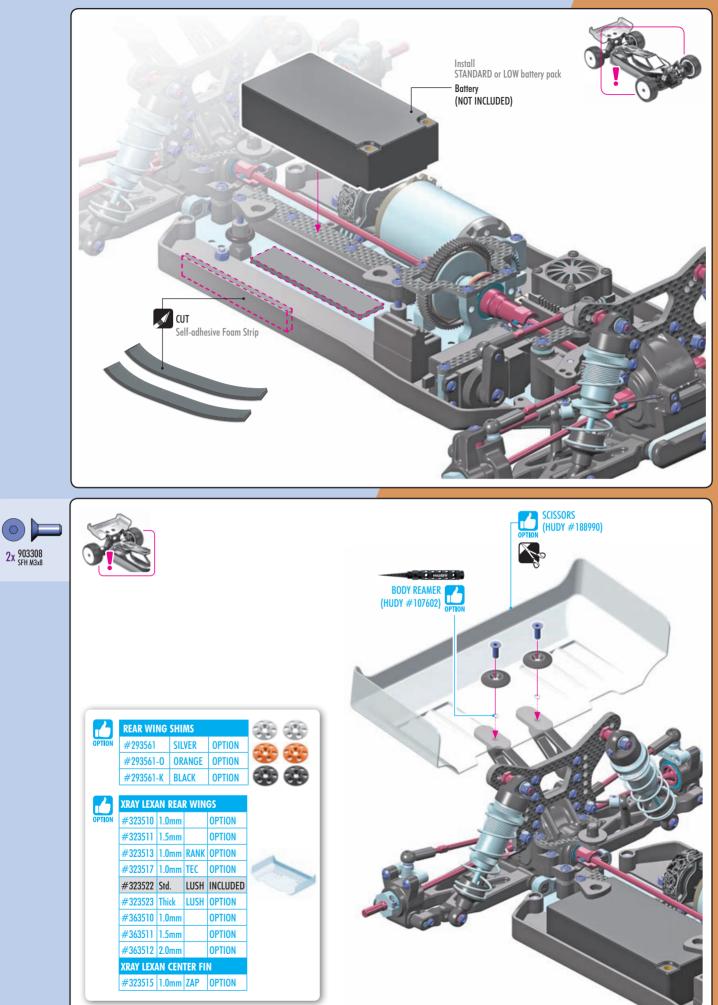


#107876

#107875 DOUBLE-SIDED TAPE

HUDY ULTRA THIN DOUBLE-SIDED TAPE - SINGLE STRIP (5)

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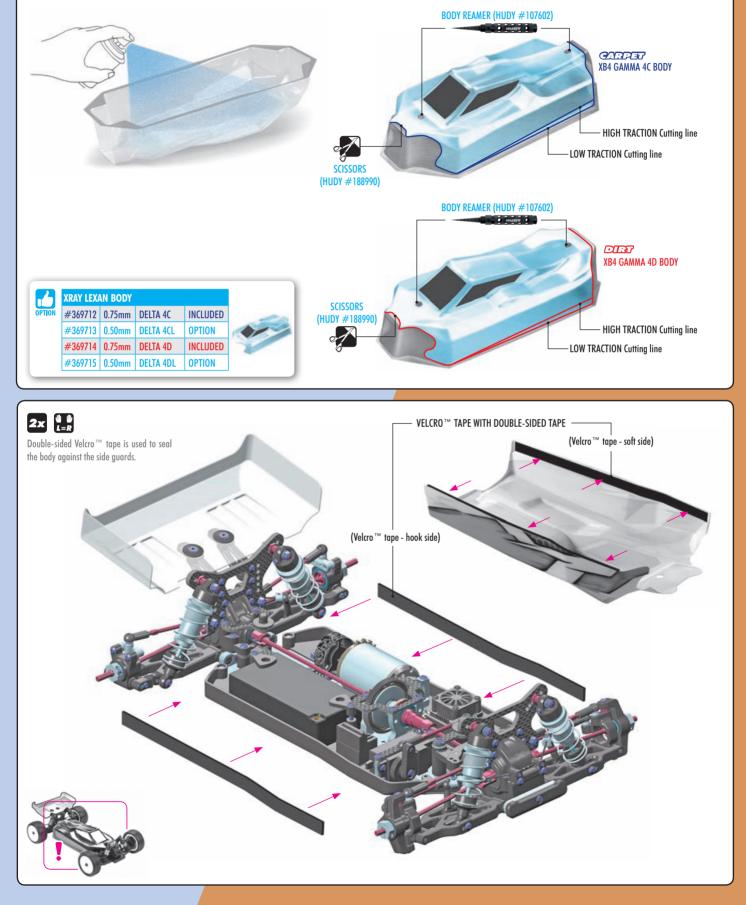




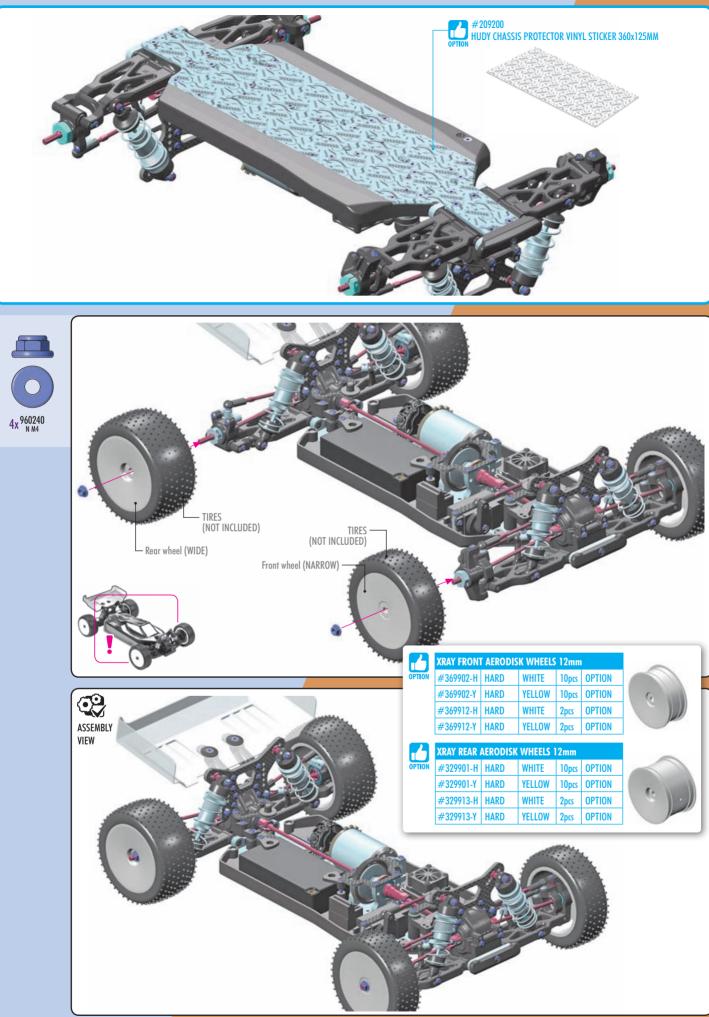
- Before cutting and making holes on the BODY, put the unpainted body on the chassis to confirm the mounting position and location for holes and cutouts. Before cutting and making holes on the WING, put the unpainted wing on the wing holders to confirm the mounting position and location for holes and cutouts.
- Ø 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.
- 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.
- ③ When you have finished cutting, peel off the external protective films.



GARPET DIRT





# MAINTENANCE

#### 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 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 larce 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.
- 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 must be properly maintained for smooth operation and long lifespan.

The ball-bearings are degreased and are lubricated with HUDY Bearing Oil or HUDY Grease. The following procedures are recommended to clean all of the bearings in your off-road car. For high-competition racing, we recommended doing this every 3-4 weeks, or before a major race.

- Remove the seals on both sides of the bearing (if present). If the seals bend a little and you can see a kink, carefully flatten the kink out by hand.
- ② Spray the seals with motor cleaner and blow dry with compressed air.
- ③ Spray the bearing on both sides with motor cleaner.
- () Spin the bearing while it is still wet to dislodge any particles with the cleaner.
- G Spray the bearing on both sides again.

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.

#### **RECOMMENDED PRODUCTS**

- Use correct oil or grease to lubricate the bearings:
- #106230 HUDY Bearing Oil
- #106220 HUDY Bearing Grease Standard
- #106221 HUDY Bearing Grease Blue
- #106222 HUDY Bearing Grease Red

#### **SUSPENSION & DRIVETRAIN MAINTENANCE**

- () Blow both sides of the bearing dry with compressed air to make sure particles come out.
- 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.
- (3) Place one drop of bearing oil into each side of the bearing.
- 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.

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HIIDV #106230







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- Check suspension for free movement during building and operation, and especially after running
  and if you have crashed the car. If the suspension DOES NOT move freely, use the appropriate
  HUDY Arm Reamer to clean and resize the holes of the suspension arms.
- Regularly check the drive shaft pins (both side and center) and if they show any wear must be immediately replaced by new pins. If the car is run with worn pins, excessive wear on the diff outdrives will result. The #106000 HUDY Drive Pin Replacement Tool (for 3mm Pins) is a compact, rugged multi-use tool set for replacing 3mm drive pins in drive shafts. Use the HUDY replacement drive shaft pins 3x12 (#106051).
- Regularly inspect and replace the connecting pins which connect the center drive shafts with the
  pinion gear, and also the pins that connect the wheel drive shafts with wheel axles. Use HUDY
  Graphite Grease to lubricate the drive shaft connecting joints and the diff gears.
- Pivot balls and ball-joints will naturally wear for some time and will generate play. If there
  is too much play the pivot balls and ball joints need to be replaced.
- If the car is run in wet conditions, apply WD-40® on all drivetrain parts before the run. After the run, clean and dry the parts again.





#106210 HUDY GRAPHITE GREASE

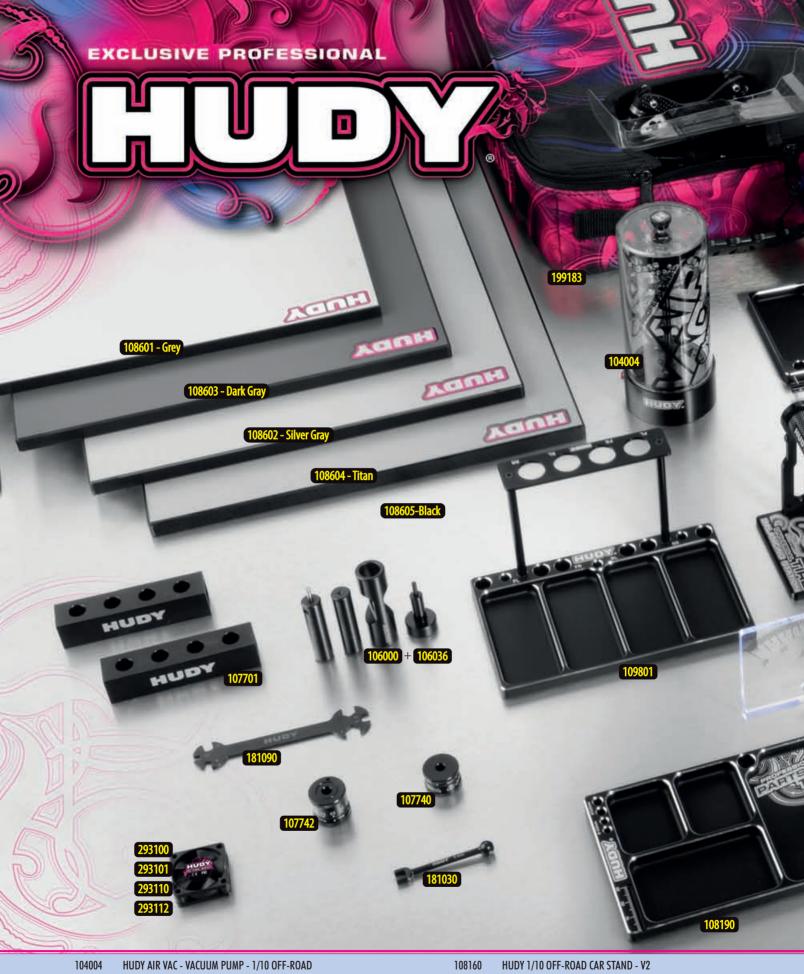
#106213 HUDY JOINT GREASE

#### **HUDY SPRING STEEL**<sup>™</sup>

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

brown color will fade (get lighter) but it will not affect the strength of the material. The brown color is only a surface treatment and if the brown color will wear the durability of the part will be still strong.

or



105500 HUDY UNIVERSAL TIRE BALANCING STATION 105520 WHEEL ADAPTER FOR 1/10 TOURING CARS - 12MM 106000 HUDY DRIVE PIN REPLACEMENT TOOL (FOR 3MM PINS) EJECTOR PIVOT PIN & ALTERNATING PIVOT 2.5MM FOR #106000 106036 107090 HUDY BEARING CHECKING TOOL 107601 LIMITED EDITION - REAMER FOR BODY 0-9MM + COVER - SMALL 107701 CHASSIS DROOP GAUGE SUPPORT BLOCKS 20MM FOR 1/8 - LW(2) 107740 HUDY ADJUSTABLE RIDE HEIGHT GAUGE 14-20MM 107742 HUDY ADJUSTABLE RIDE HEIGHT GAUGE 20-30MM HUDY PIT LED 107855 **CHASSIS BALANCING TOOL (2)** 107880

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108190 HUDY ALU TRAY FOR PARTS 108601 FLAT SET-UP BOARD FOR 1/10 OFF-ROAD - LIGHTWEIGHT - GREY 108602 FLAT SET-UP BOARD FOR 1/10 OFF-ROAD - LIGHTWEIGHT - SILVER GREY FLAT SET-UP BOARD FOR 1/10 OFF-ROAD - LIGHTWEIGHT - DARK GREY 108603 108604 FLAT SET-UP BOARD FOR 1/10 OFF-ROAD - LIGHTWEIGHT - TITAN FLAT SET-UP BOARD FOR 1/10 OFF-ROAD - LIGHTWEIGHT - BLACK 108605 HUDY SET-UP STATION FOR 1/10 OFF-ROAD CARS ALU NUT FOR 1/10 OFF-ROAD SET-UP SYSTEM (4) 108901 108960 109801 HUDY ALU TRAY FOR 1/10 OFF-ROAD DIFF & SHOCKS 109840 HUDY ALU TRAY FOR 1/10 OFF-ROAD DIFF ASSEMBLY 109860 HUDY ALU TRAY FOR SET-UP SYSTEM



109880 HUDY ALU TRAY FOR ACCESSORIES & PIT LED 111545 LIMITED EDITION - ALLEN WRENCH # 1.5MM 112045 LIMITED EDITION - ALLEN WRENCH # 2.0MM 132045 LIMITED EDITION - ALLEN WRENCH + BALL REPL. TIP # 2.0MM LIMITED EDITION - SLOTTED SCREWDRIVER # 3.0MM - LONG 153055 175535 LIMITED EDITION - SOCKET DRIVER # 5.5MM 177035 LIMITED EDITION - SOCKET DRIVER # 7.0MM HUDY SPRING STEEL TURNBUCKLE WRENCH 3 MM 181030 181090 HUDY SPECIAL TOOL FOR TURNBUCKLES & NUTS 183011 HUDY PROFESSIONAL MULTI TOOL

| 188990 | HUDY PROFESSIONAL BODY SCISSORS                           |
|--------|---|
| 199060 | HUDY ALU TOOL STAND                                       |
| 199183 | HUDY CAR BAG - 1/10 OFF-ROAD                              |
| 199270 | HUDY LIPO SAFETY BAG                                      |
| 298100 | HUDY TIN ROUND BOX 80X30MM                                |
| 293100 | HUDY ALU RC FAN 30MM - BOTTOM MOUNT 2 HOLE                |
| 293101 | HUDY ALU RC FAN 30MM - SIDE MOUNT 2 HOLE                  |
| 293110 | HUDY BRUSHLESS RC FAN 30MM - WITH EXTERNAL SOLDERING TABS |
| 293112 | HUDY BRUSHLESS RC FAN 30MM - WITH INTERNAL SOLDERING TABS |

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





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