

1/10 LUXURY SHORT COURSE 2WD

XTRAY SCX



INSTRUCTION MANUAL
FOR SCX'23 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.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

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 NEGLIGENCE.

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

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

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



IMPORTANT NOTES - GENERAL

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

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

IMPORTANT NOTES - 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 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.

R/C & BUILDING TIPS

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

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

WARRANTY

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

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

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

Limitations of Liability

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



Combination Pliers
(HUDY #189020)

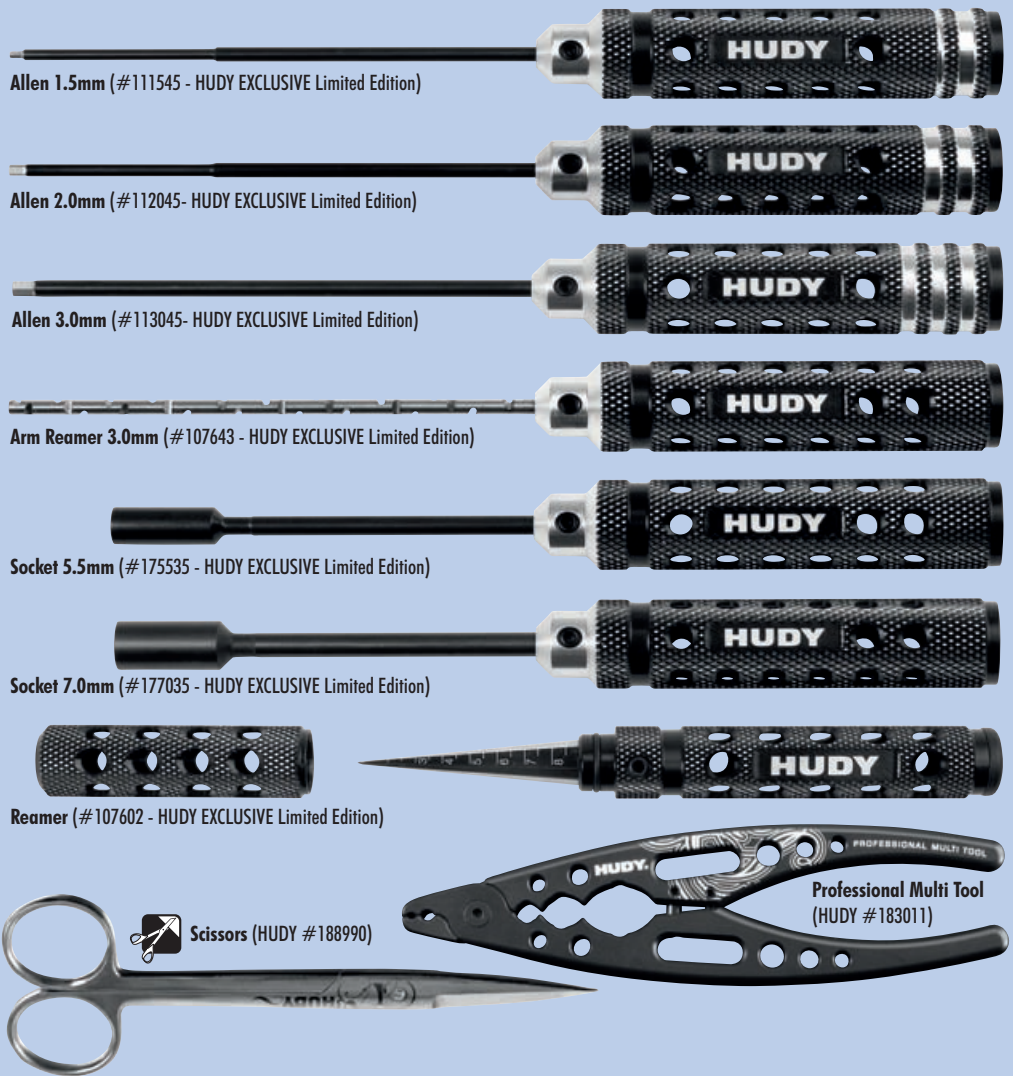
Side Cutters
(HUDY #189010)

Pocket Hobby Knife (HUDY #188981)

Special Tool for turnbuckles, nuts (HUDY #181090)

Turnbuckle Wrench 3mm (HUDY #181030)

Tweezer



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

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

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

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

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

Socket 7.0mm (#177035 - HUDY EXCLUSIVE Limited Edition)

Reamer (#107602 - HUDY EXCLUSIVE Limited Edition)

Scissors (HUDY #188990)

Professional Multi Tool
(HUDY #183011)

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



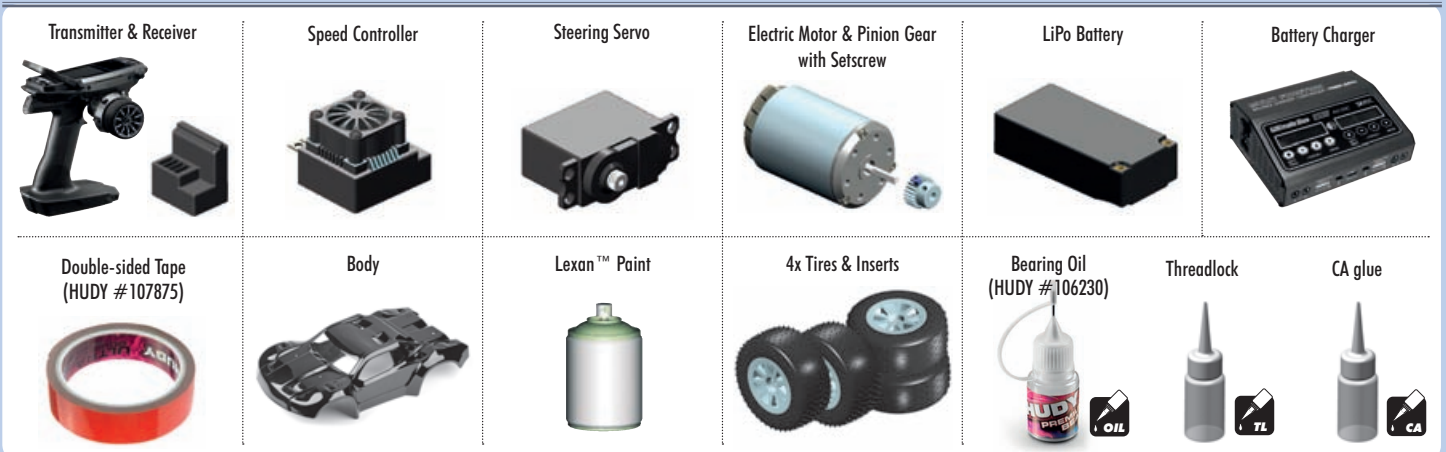
650cSt (#106365)
HUDY Premium Silicone Oils

500cSt (#106350)
HUDY Premium Silicone Oils

5.000cSt (#106450)
HUDY Premium Silicone Oils

(HUDY #106210)
Premium Graphite Grease

EQUIPMENT REQUIRED



Transmitter & Receiver

Speed Controller

Steering Servo

Electric Motor & Pinion Gear
with Setscrew

LiPo Battery

Battery Charger

Double-sided Tape
(HUDY #107875)

Body

Lexan™ Paint

4x Tires & Inserts

Bearing Oil
(HUDY #106230)

Threadlock

CA glue

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.



SAMPLE OF OPTIONAL PARTS

#32XXXX	TYPE1	OPTION 1
#32XXXX	TYPE1	OPTION 2
#32XXXX	TYPE1	INCLUDED

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.

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:

321200

STYLE A - indicates parts that are included in the bag marked for the section.

321100

STYLE B - indicates parts that are included in the box.

324900

STYLE C - indicates parts that are already assembled from previous steps.

TECH TIPS

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.



Do not use drive shafts when the pins are worn.

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.

1. GEAR DIFFERENTIAL



GEAR DIFE CASE		
#324911	HARD	INCLUDED
#324911-G	GRAPHITE	OPTION
GEAR DIFE PULLEY		
#324954	HARD	INCLUDED
#324954-G	GRAPHITE	OPTION



#325003
BALL ADJUSTABLE DIFFERENTIAL -
LCG - SET - HUDY SPRING STEEL™



When using ball differential you have to use
#325318 REAR DRIVE SHAFT 95MM WITH 2.5MM PIN - HUDY SPRING STEEL™



#325100
XRAY ACTIVE DIFFERENTIAL
- SET

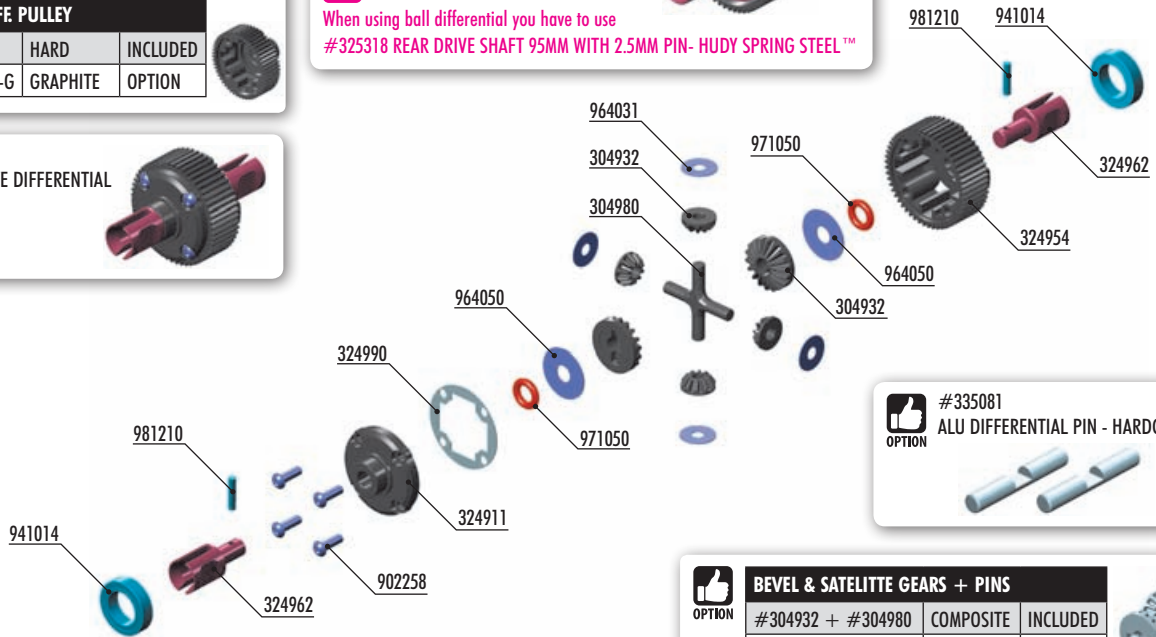


#335081
ALU DIFFERENTIAL PIN - HARDCOATED (2)



BEVEL & SATELLITE GEARS + PINS

#304932 + #304980	COMPOSITE	INCLUDED
#335030 + #335080	STEEL	OPTION



- 304932 GRAPHITE GEAR DIFF BEVEL & SATELLITE GEARS (2+4)
- 304980 COMPOSITE GEAR DIFF CROSS PIN
- 324990 DIFF GASKET (4)
- 324902 GEAR DIFFERENTIAL - LCG - SET
- 324911 COMPOSITE GEAR DIFFERENTIAL COVER - LCG
- 324954 COMPOSITE GEAR DIFFERENTIAL CASE - LCG - 53T
- 324962 GEAR DIFF OUTDRIVE ADAPTER - LCG - HUDY SPRING STEEL™ (2)

- 902258 HEX SCREW SH M2.5x8 (10)
- 941014 BALL-BEARING 10x15x4 RUBBER SEALED - GREASE (2)
- 964031 WASHER S 3.5x10x0.2 (10)
- 964050 WASHER S 5x15x0.3 (10)
- 971050 SILICONE O-RING 5x1.5 (10)
- 981210 PIN 2x10 (10)

2x



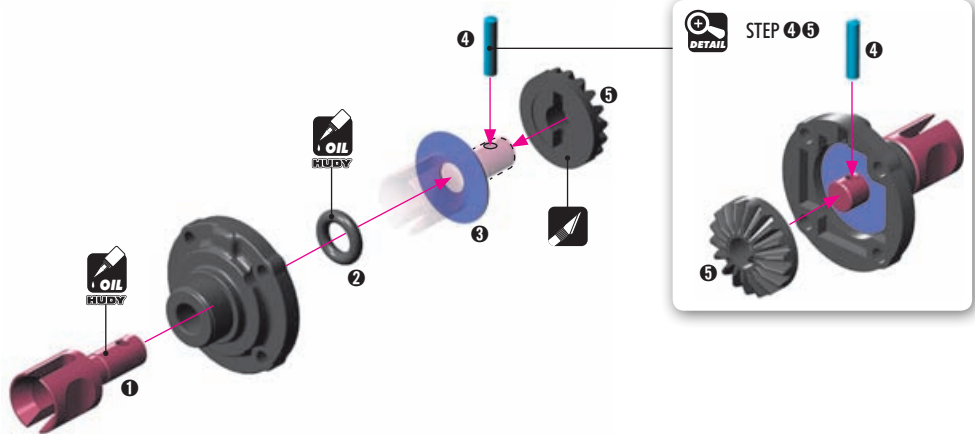
964050
S 5x15x0.3



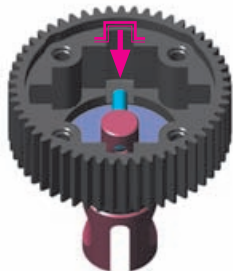
971050
O 5x1.5



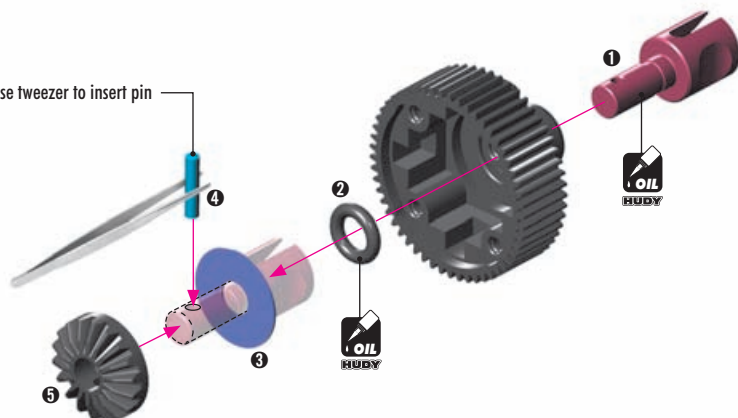
981210
P 2x10



NOTE ORIENTATION



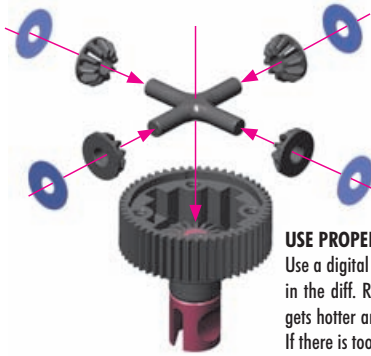
Use tweezers to insert pin



1. GEAR DIFFERENTIAL



964031
S 3.5x10x0.2



USE PROPER AMOUNT OF OIL IN THE DIFFS

Use a digital scale to measure the exact amount of oil in the diff. Remember that during operation the diff gets hotter and the heat may allow the oil to expand. If there is too much oil inside it may interfere with the diff operation and damage the internal gears.



Rear diff

Silicone oil 5.000cSt
Fill just above the diff pin.



Fill differential up to the top of the diff pin.



DO NOT fill the diff to the top of the housing.



TO ENSURE YOU HAVE THE SAME AMOUNT OF OIL FROM REBUILD TO REBUILD, DO THE FOLLOWING:



1 Put the diff (without oil) on the scale and check the weight (approximately 11.92g).

$$11.92g + 1.30g = 13.22g$$

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



2 Slowly pour oil into the diff and watch the weight. Add 1.30g of oil into the diff. The approximate weight of the diff including oil is 13.22g.

TIP TIPS FOR REAR DIFFERENTIAL

LOW-MEDIUM TRACTION 5.000cSt (HUDY #106450)
MEDIUM-HIGH TRACTION 10.000cSt (HUDY #106510)

NOTE: Softer oil increases rear traction, harder oil increases on-power steering.



HUDY ULTIMATE SILICONE OILS

OPTION HUDY	Oil	Status
#106450	5.000cSt - 50ml	INCLUDED
#106460	6.000cSt - 50ml	OPTION
#106470	7.000cSt - 50ml	OPTION
#106480	8.000cSt - 50ml	OPTION
#106490	9.000cSt - 50ml	OPTION
#106510	10.000cSt - 50ml	OPTION
#106492	11.000cSt - 50ml	OPTION
#106512	12.000cSt - 50ml	INCLUDED
#106515	15.000cSt - 50ml	INCLUDED
#106520	20.000cSt - 50ml	INCLUDED

SET-UP BOOK

DIFFERENTIAL OIL



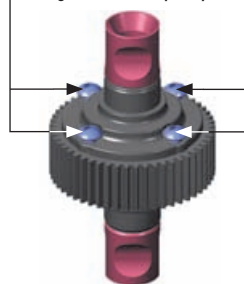
902258
SH M2.5x8



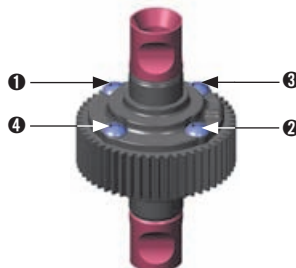
941014
BB 10x15x4



Tighten the screws equally but DO NOT tighten them completely.

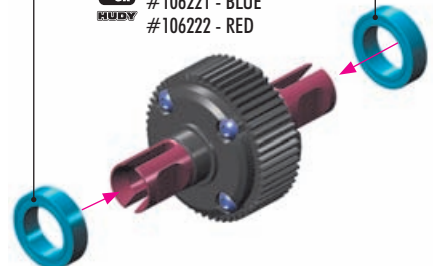


Finish tightening in this order.



Use HUDY Ball-Bearing Grease

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



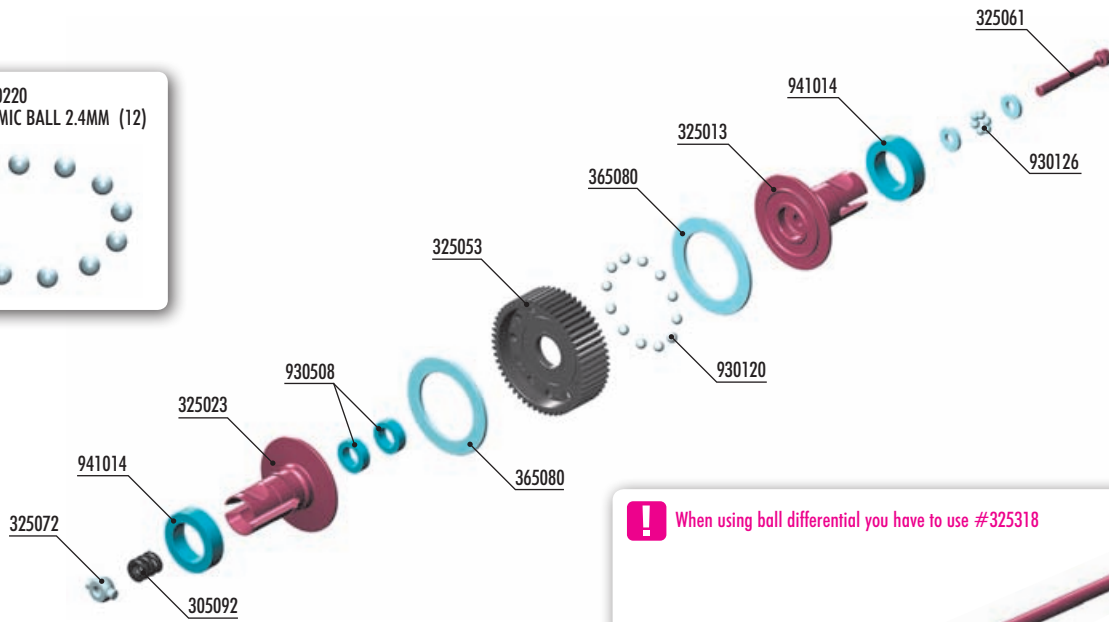


#325003 BALL ADJUSTABLE DIFFERENTIAL - LCG - SET - HUDY SPRING STEEL™

OPTION



#930220 CERAMIC BALL 2.4MM (12)



When using ball differential you have to use #325318



325318 REAR DRIVE SHAFT 95MM WITH 2.5MM PIN- HUDY SPRING STEEL™

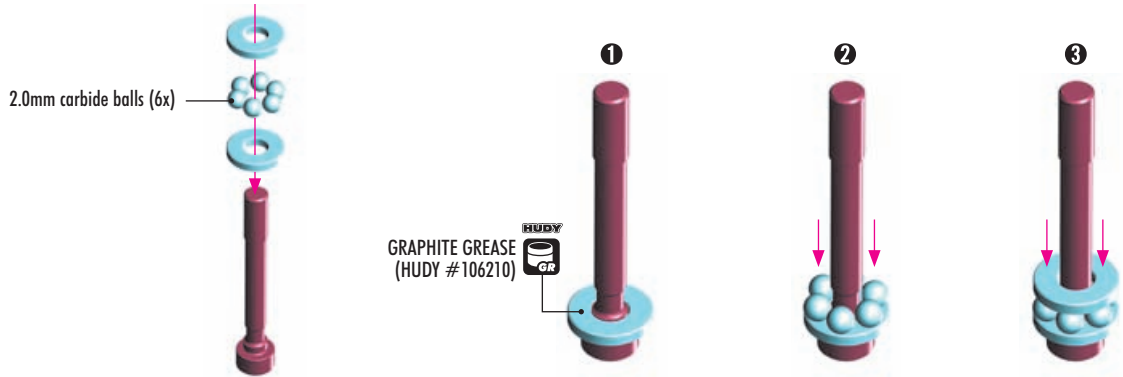


305092	BALL DIFFERENTIAL SPRING	325072	ALU BALL DIFFERENTIAL NUT
325003	BALL ADJUSTABLE DIFFERENTIAL - LCG - SET - HUDY SPRING STEEL™	365080	DIFF WASHER 17 x 24.5 x 1 (2)
325013	BALL DIFFERENTIAL SHORT OUTPUT SHAFT - LCG - HUDY SPRING STEEL™	930120	CARBIDE BALL 2.4MM FOR BALL DIFF (12)
325023	BALL DIFFERENTIAL LONG OUTPUT SHAFT - LCG - HUDY SPRING STEEL™	930126	CARBIDE BALL-BEARING AXIAL 2.6x6x1
325053	COMPOSITE BALL DIFFERENTIAL GEAR 53T	930508	BALL-BEARING 5x8x2.5 STEEL SEALED - OIL (2)
325061	SCREW FOR BALL DIFF ADJUSTMENT - SPRING STEEL™	941014	BALL-BEARING 10x15x4 RUBBER SEALED - GREASE (2)



930126
BA 2.6x6x1

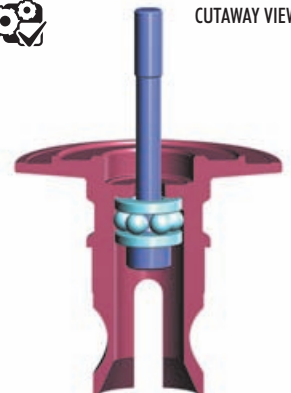
2.0mm carbide balls (6x)



GRAPHITE GREASE
(HUDY #106210)

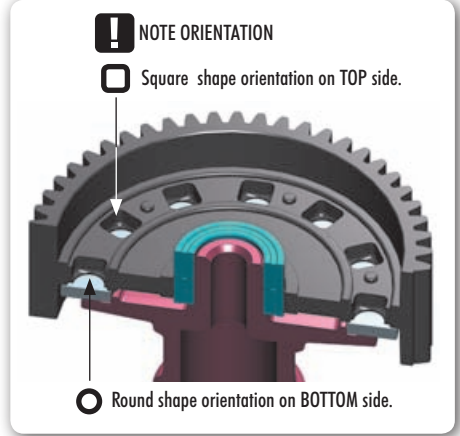
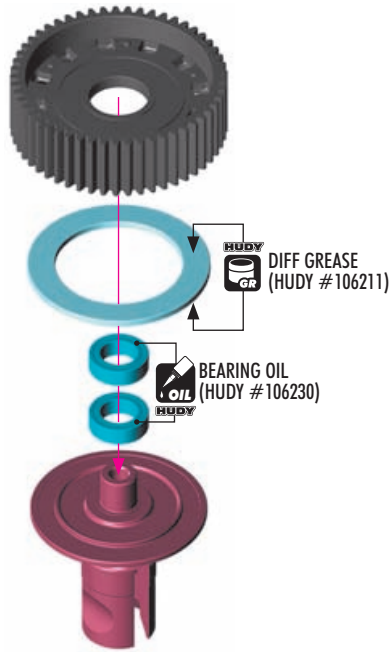


CUTAWAY VIEW

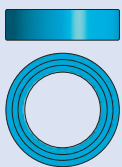
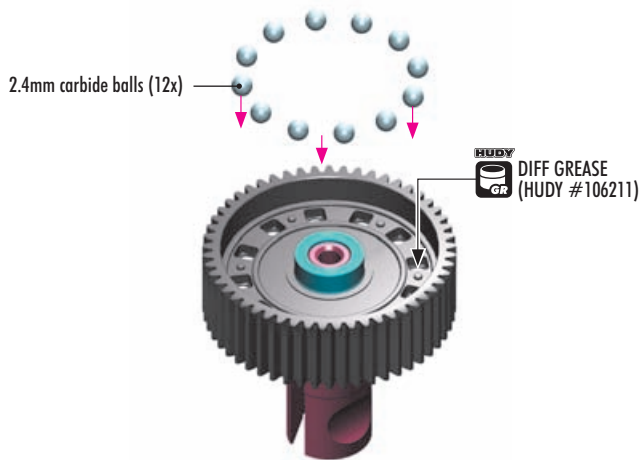




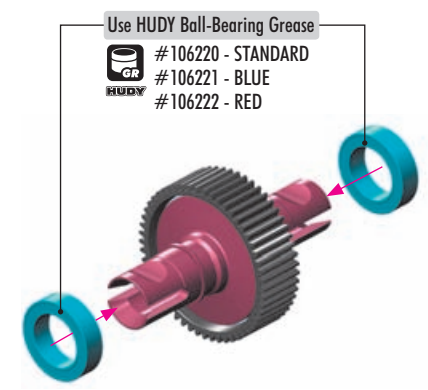
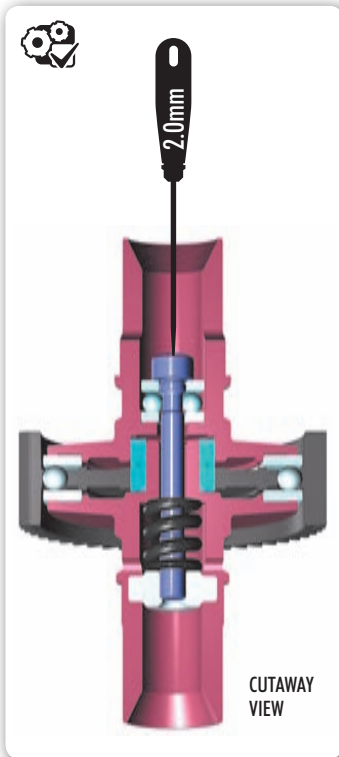
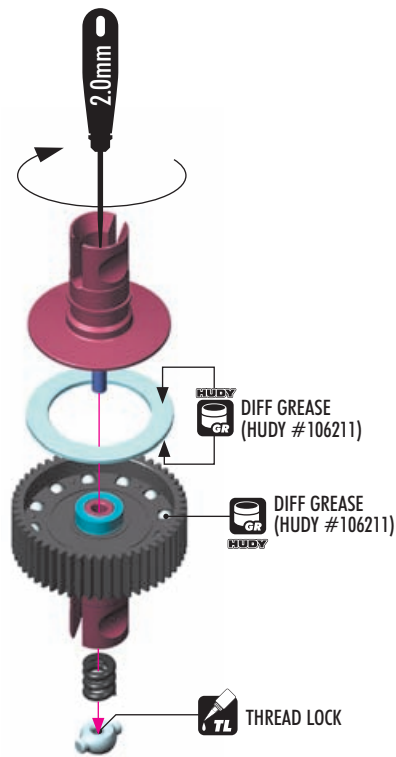
930508
BB 5x8x2.5



930120
B 2.4



941014
BB 10x15x4



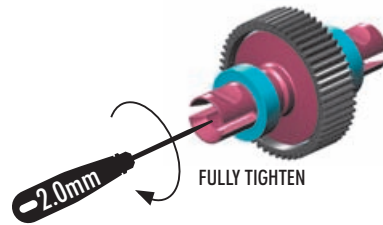
OPTION

BALL DIFF BREAK-IN & SET-UP INFO

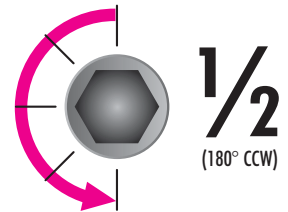
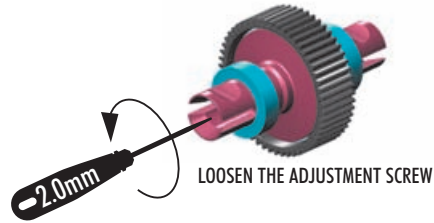


BEFORE RACING, follow these steps to properly break in the differential.

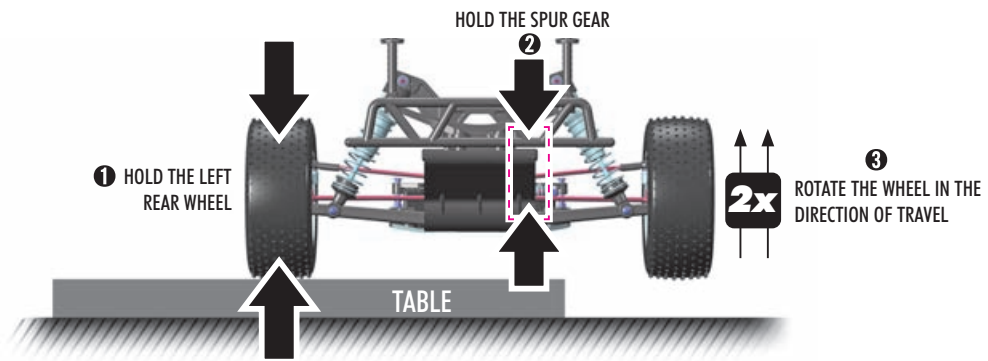
1



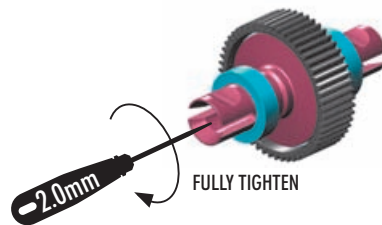
2 Loosen the adjustment screw 1/2 turn (180° CCW).



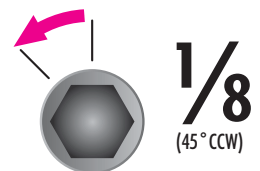
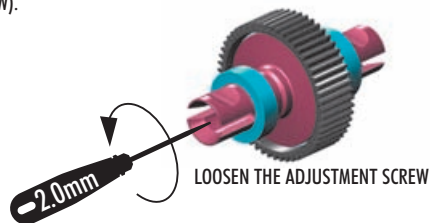
3



4



5 LOOSEN THE ADJUSTMENT SCREW 1/8 TURN (45° CCW).



BALL DIFFERENTIAL IS NOW READY

2. REAR TRANSMISSION



SLIPPER CLUTCH SPUR GEARS

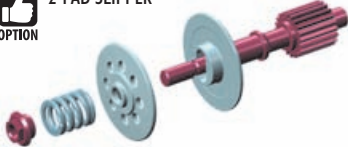
#365875	75T / 48	OPTION
#365878	78T / 48	INCLUDED
#365881	81T / 48	OPTION



#324017
GRAPHITE MOTOR PLATE - LCG - 3.0MM



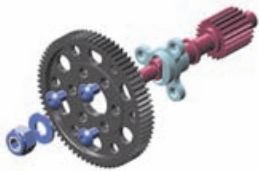
2-PAD SLIPPER



#324114 ALU 2-PAD TOP SHAFT 20T
#324126 ALU 2-PAD SLIPPER CLUTCH PLATE - SHORT
#324129 ALU 2-PAD SLIPPER CLUTCH PLATE - LCG
#364181 SLIPPER CLUTCH SPRING C=45 - BLACK
#324191 STEEL SLIPPER CLUTCH NUT



#324102
SOLID AXLE - LCG - LIGHTWEIGHT - SET



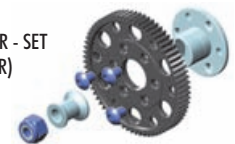
#323019-G
FRONT MOTOR GEAR BOX - LCG - GRAPHITE



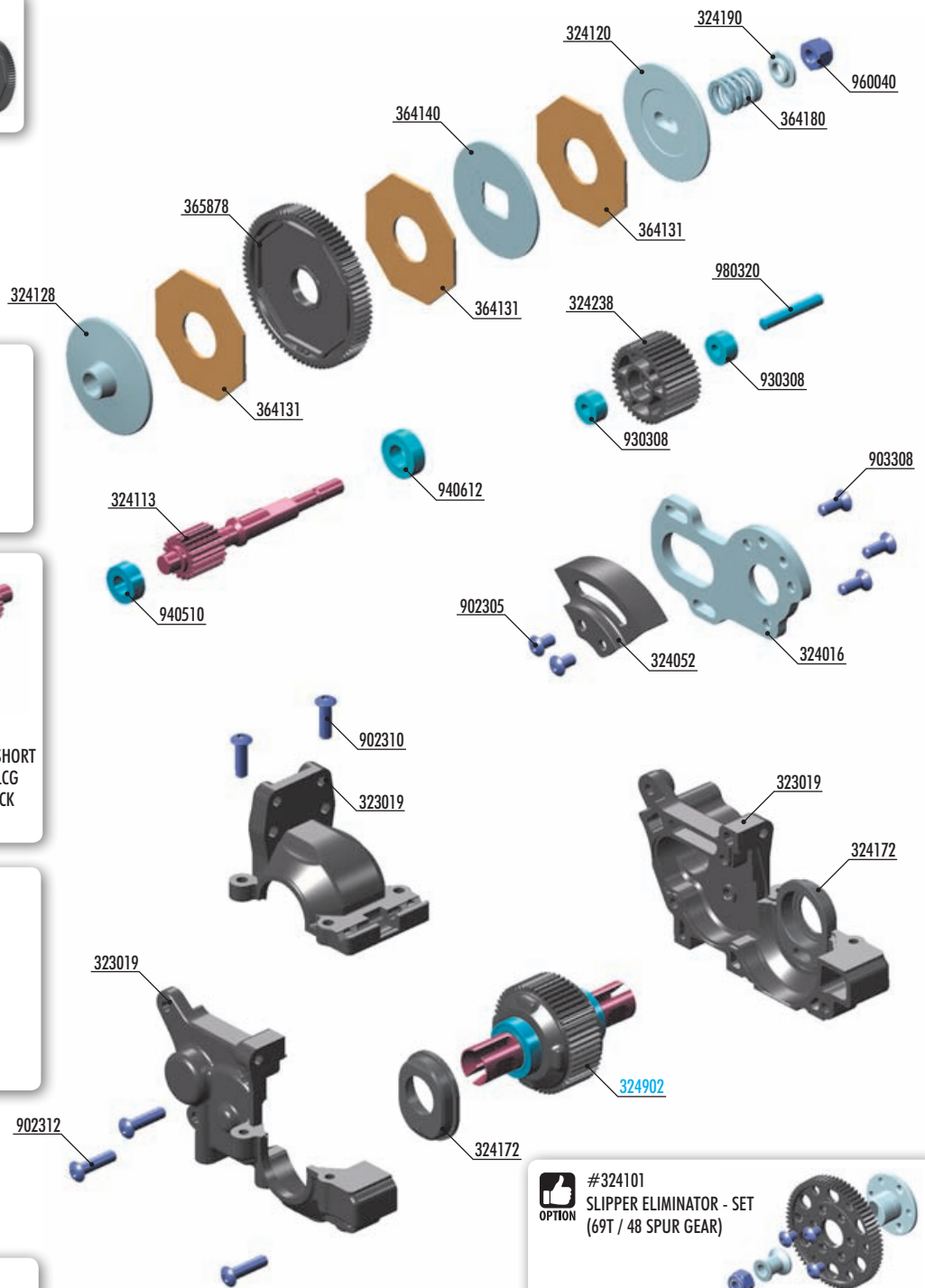
#980320-T
TITAN PIN 3X20 (2)



#324101
SLIPPER ELIMINATOR - SET
(69T / 48 SPUR GEAR)



#325872
SLIPPER ELIMINATOR
SPUR GEAR 72T / 48



BAG


02

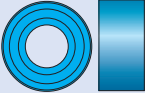
323019 COMPOSITE FRONT MOTOR GEAR BOX - LCG - SET
324016 ALU MOTOR PLATE - LCG - SWISS 7075 T6 (3MM)
324052 COMPOSITE GEAR COVER - LCG
324113 ALU 3-PAD TOP SHAFT 20T - LCG - SWISS 7075 T6 - HARD COATED
324120 ALU 3-PAD SLIPPER CLUTCH PLATE - SWISS 7075 T6
324128 ALU 3-PAD SLIPPER CLUTCH PLATE WITH ADAPTER - LCG
324172 COMPOSITE ADJUSTMENT BALL-BEARING HUB (2)
324190 ALU 3-PAD SLIPPER CLUTCH SHIM
324238 COMPOSITE GEAR 38T - LCG - GRAPHITE
364131 SLIPPER CLUTCH PAD SLS - SOFT (3)
364140 ALU 3-PAD SLIPPER CLUTCH PLATE DISC - 7075 T6
364180 SLIPPER CLUTCH SPRING C=30 - BLACK
365878 COMPOSITE 3-PAD SLIPPER CLUTCH SPUR GEAR 78T / 48


902305 HEX SCREW SH M3x5 (10)
902310 HEX SCREW SH M3x10 (10)
902312 HEX SCREW SH M3x12 (10)
903308 HEX SCREW SFH M3x8 (10)
930308 BALL-BEARING 3x8x4 STEEL SEALED - OIL (2)
940510 BALL-BEARING 5x10x4 RUBBER SEALED - OIL (2)
940612 BALL-BEARING 6x12x4 RUBBER SEALED - OIL (2)
960040 NUT M4 (10)
980320 PIN 3x20 (10)


324902 GEAR DIFFERENTIAL - LCG - SET


2. REAR TRANSMISSION



930308
BB 3x8x4


940612
BB 6x12x4


980320
P 3x20


 #980320-T
TITAN PIN 3X20 (2)





BEARING OIL (HUDY #106230) 

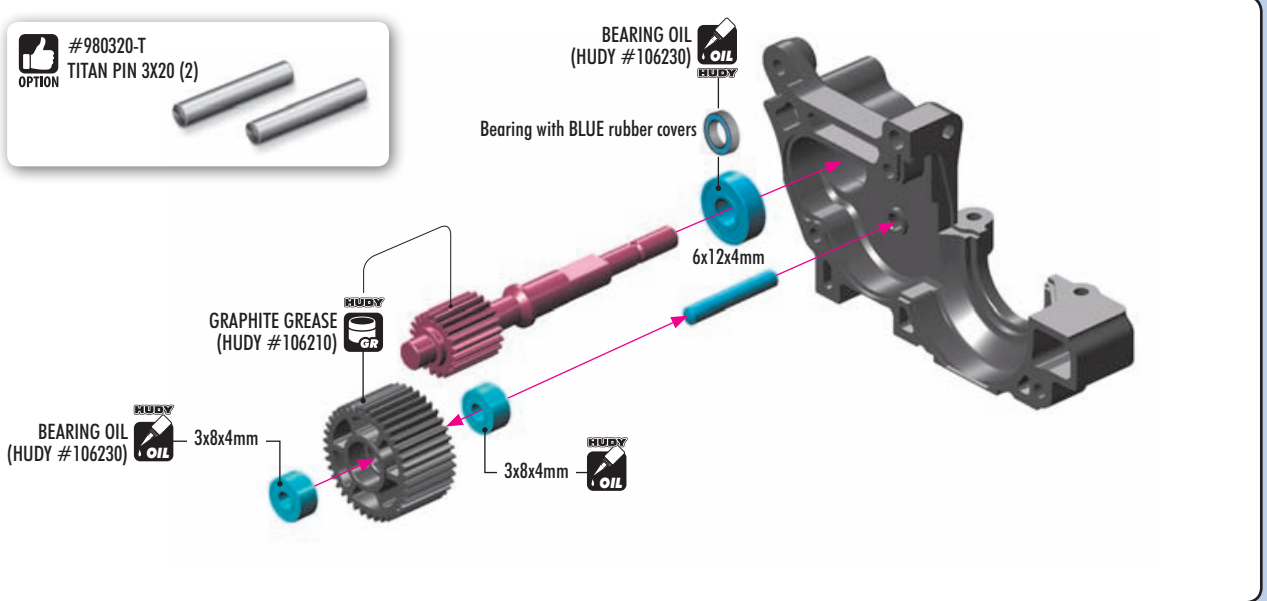
Bearing with BLUE rubber covers


6x12x4mm


GRAPHITE GREASE (HUDY #106210) 


BEARING OIL (HUDY #106230)  3x8x4mm

3x8x4mm 






902312
SH M3x12

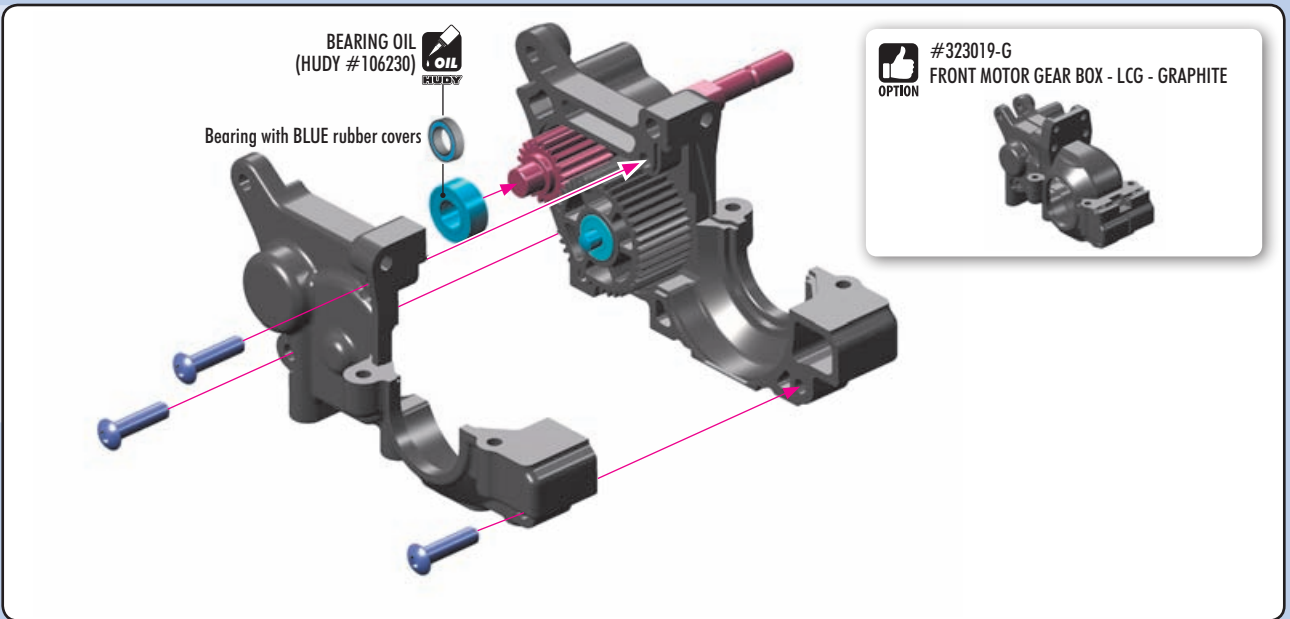

940510
BB 5x10x4


BEARING OIL (HUDY #106230) 

Bearing with BLUE rubber covers






 #323019-G
FRONT MOTOR GEAR BOX - LCG - GRAPHITE




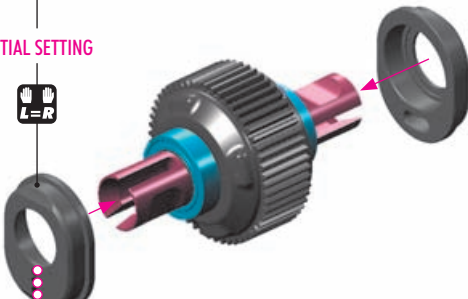




902310
SH M3x10

DIFFERENTIAL HEIGHT ADJUSTMENT

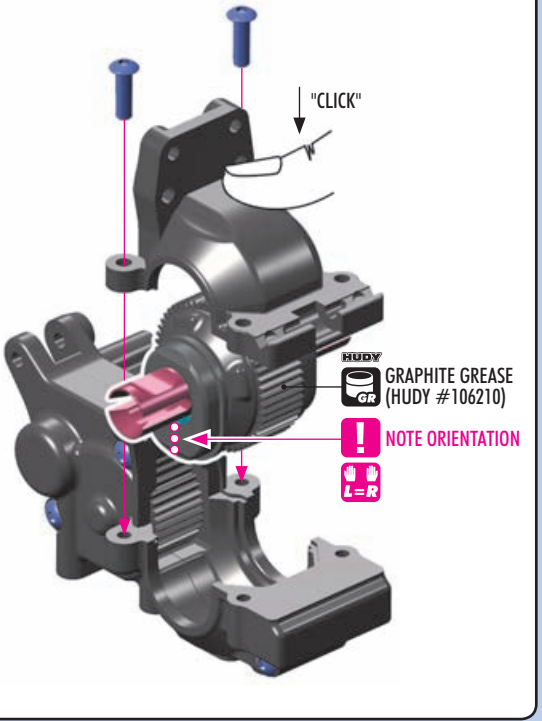
2x	HIGHEST	HIGHER	MIDDLE	1 dots	2 dots	3 dots
				MIDDLE		
	3 dots	2 dots	1 dots	MIDDLE	LOWER	LOWEST

INITIAL SETTING


 


 NOTE ORIENTATION


Dots must have same orientation on each side (dots up or down).



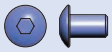
"CLICK"

GRAPHITE GREASE (HUDY #106210) 

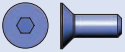
 NOTE ORIENTATION



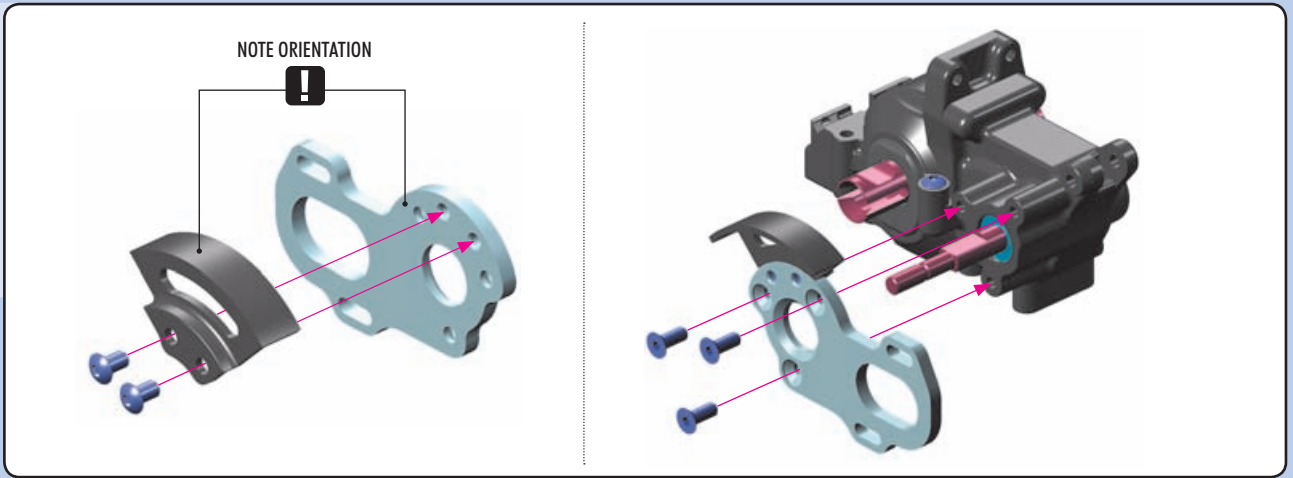
2. REAR TRANSMISSION



902305
SH M3x5



903308
SFH M3x8

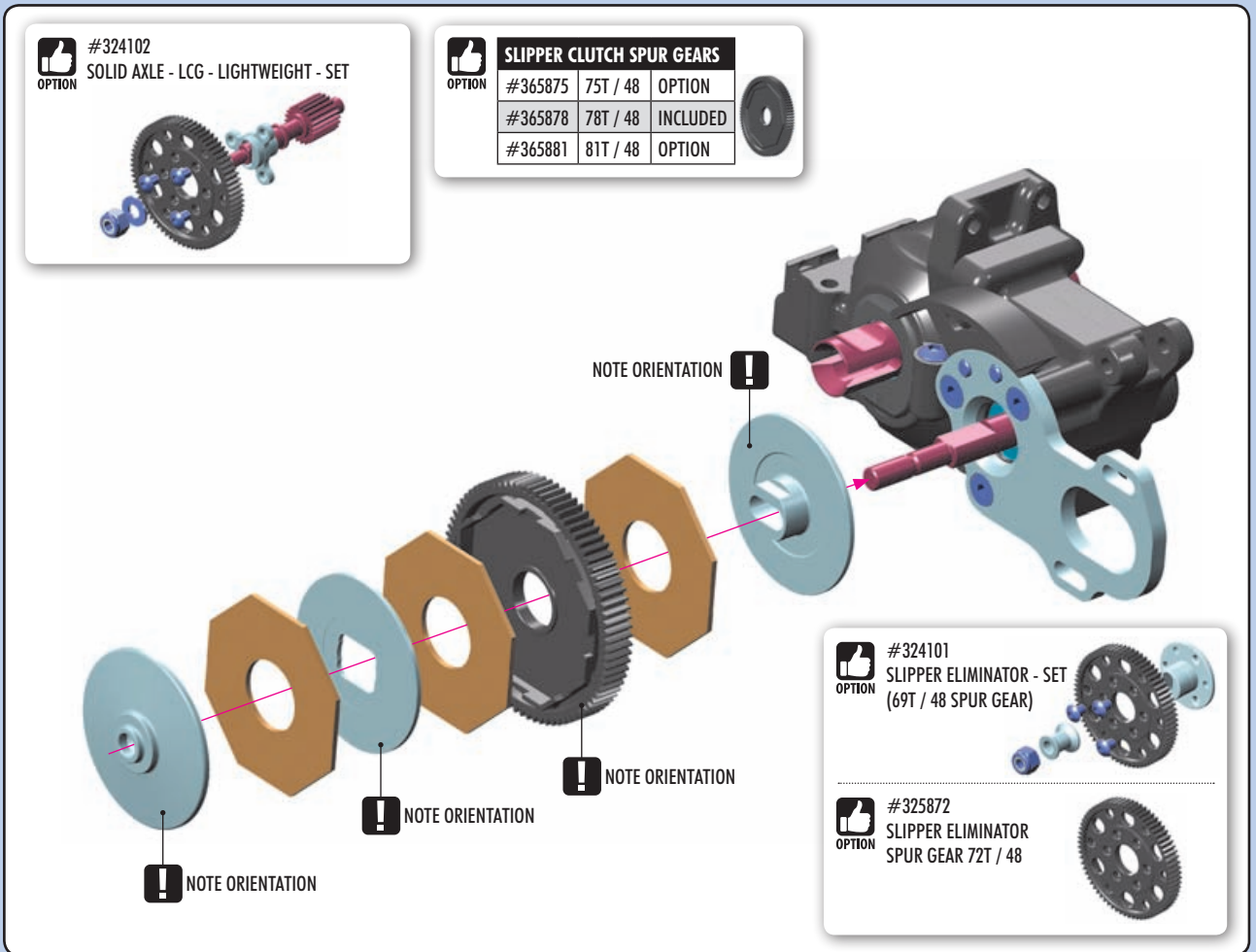


#324102
SOLID AXLE - LCG - LIGHTWEIGHT - SET



SLIPPER CLUTCH SPUR GEARS

#365875	75T / 48	OPTION
#365878	78T / 48	INCLUDED
#365881	81T / 48	OPTION



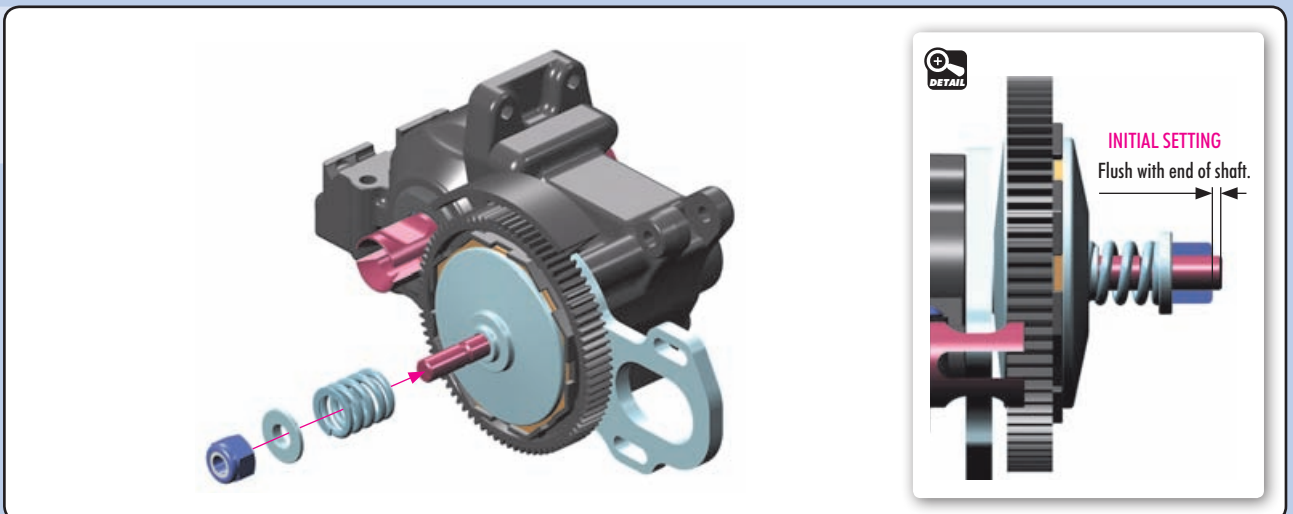
#324101
SLIPPER ELIMINATOR - SET
(69T / 48 SPUR GEAR)



#325872
SLIPPER ELIMINATOR
SPUR GEAR 72T / 48

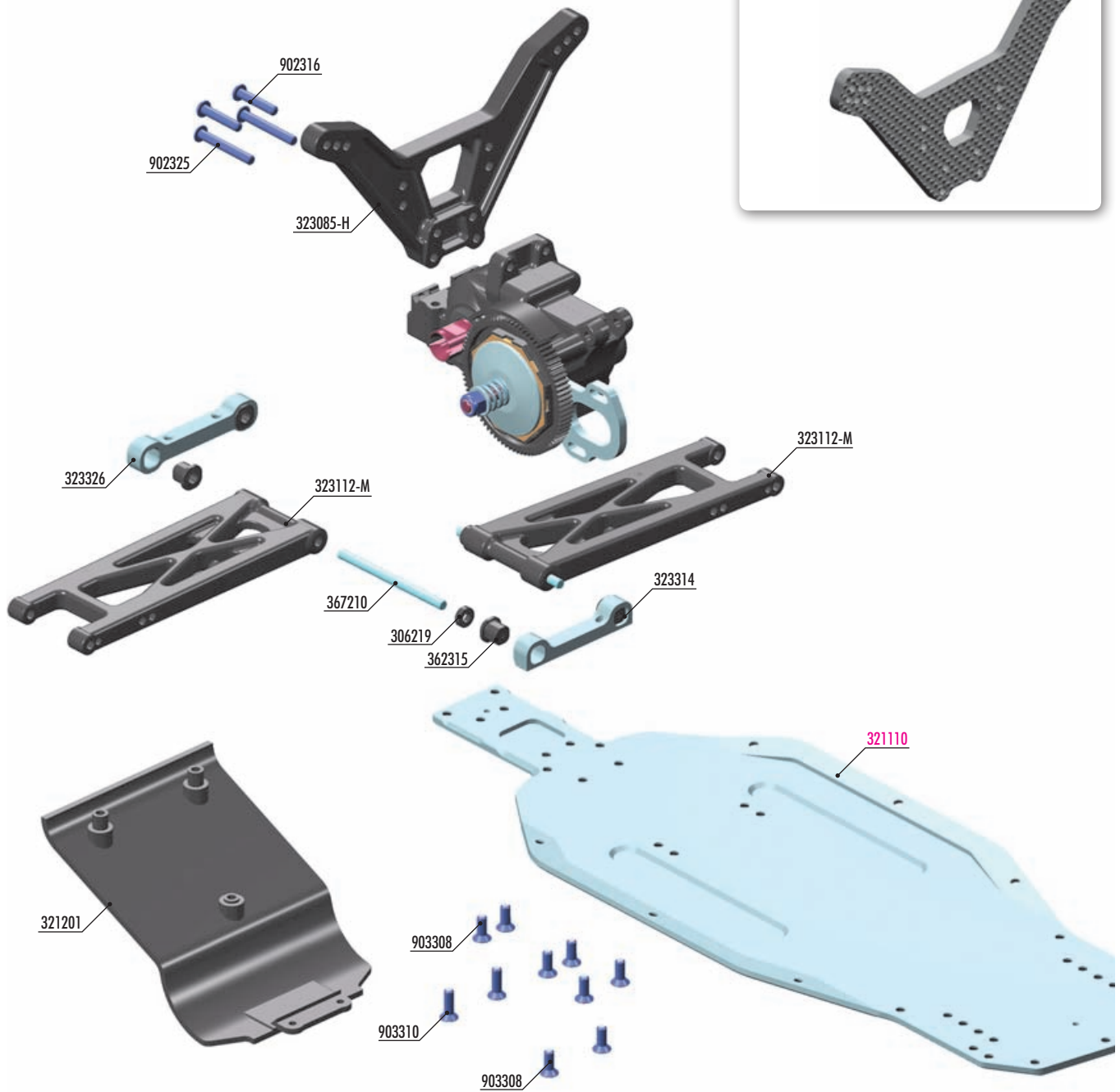


960040
N M4



INITIAL SETTING
Flush with end of shaft.

3. REAR SUSPENSION



REAR SUSPENSION ARMS		
#323112-M	MEDIUM	INCLUDED
#323112-H	HARD	OPTION
#323112-G	GRAPHITE	OPTION



BAG

03

- | | | | |
|----------|--|--------|---|
| 306219 | COMPOSITE SET OF SERVO SHIMS (4) | 902316 | HEX SCREW SH M3x16 (10) |
| 321201 | SCX COMPOSITE FRONT & REAR BUMPERS (1+2) | 902325 | HEX SCREW SH M3x25 (10) |
| 323085-H | COMPOSITE SHOCK TOWER REAR - LCG - HARD | 903308 | HEX SCREW SFH M3x8 (10) |
| 323112-M | COMPOSITE SUSPENSION ARM REAR LOWER - MEDIUM | 903310 | HEX SCREW SFH M3x10 (10) |
| 323314 | ALU REAR LOWER SUSP. HOLDER FOR BENT SIDES CHASSIS - FRONT | 321110 | SCX ALU CHASSIS WITH BENT SIDES - SWISS 7075 T6 (2.5MM) |
| 323326 | ALU REAR LOWER SUSP. HOLDER FOR BENT SIDES CHASSIS - REAR | | |
| 367210 | SUSPENSION PIVOT PIN (2) | | |
| 362315 | ECCENTRIC BUSHING SET (2) | | |

3. REAR SUSPENSION

IO

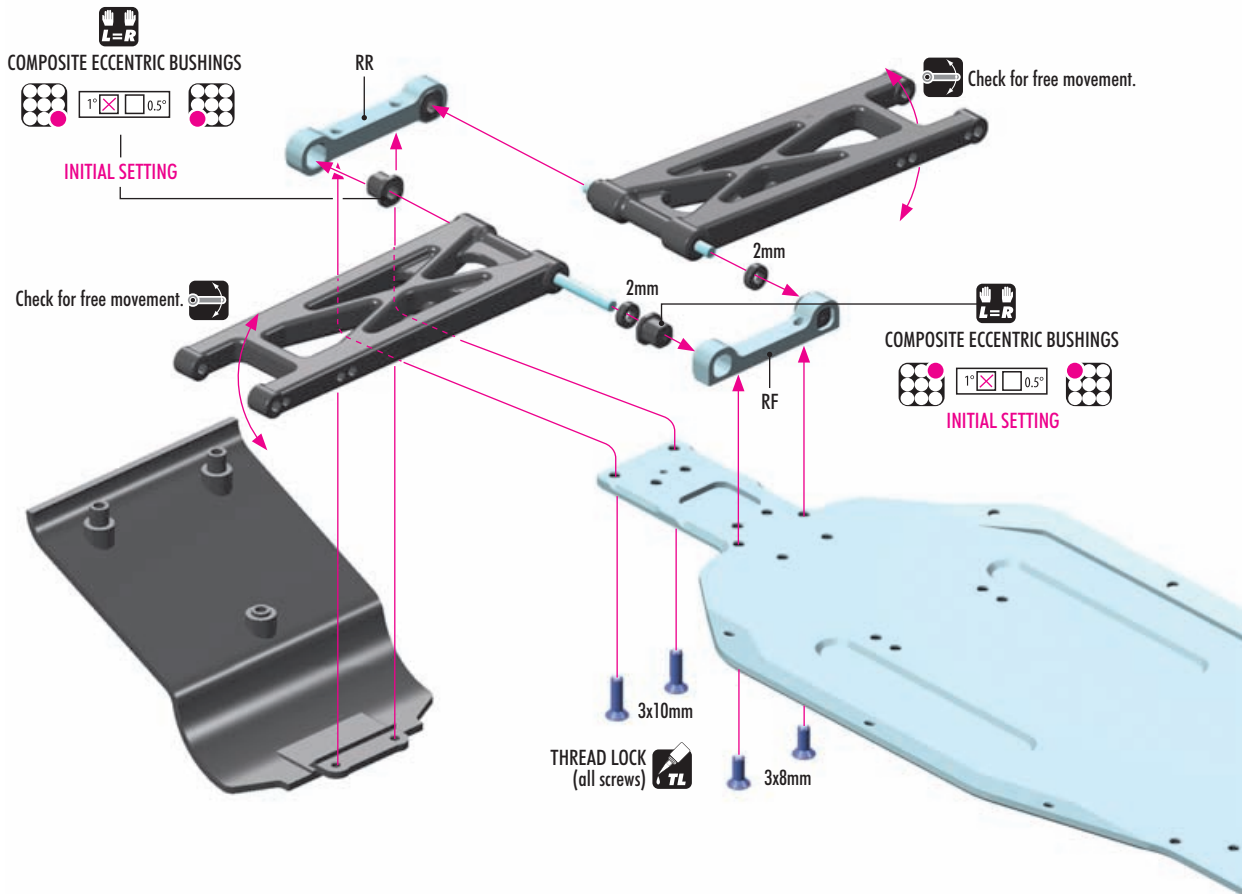
306219
SHIM 3x6x2



903308
SFH M3x8



903310
SFH M3x10



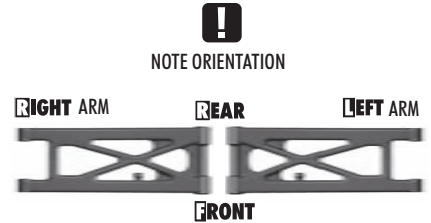
SET-UP BOOK

TOE-IN
ANTI-SQUAT
ROLL CENTER
TRACK-WIDTH

OPTION	REAR SUSPENSION ARMS		
#323112-M	MEDIUM	INCLUDED	
#323112-H	HARD	OPTION	
#323112-G	GRAPHITE	OPTION	

MEDIUM - For very-low & low traction
 HARD - For medium & high traction
 GRAPHITE - For high & very-high traction

TIP If the suspension arm does not move freely use a HUDY Arm Reamer to size the holes of the arms.
 Arm Reamer 3.0mm (HUDY #107633)



ECCENTRIC BUSHINGS HAVE TWO DIFFERENT OFFSETS FROM THE CENTER.



The XRAY rear alu lower suspension holders provide great 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 Set-up Book (#209100).

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

ROLL CENTER			(mm)
RR	RF		
□	□	□	= +0.75mm
□	□	□	= 0mm
□	□	□	= -0.75mm

TRACK-WIDTH			(mm)
RR	RF		
□	□	□	= +1.5mm
□	□	□	= 0mm
□	□	□	= -1.5mm

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

The track-width is directly influenced by the size of the wheels and tires used.

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.

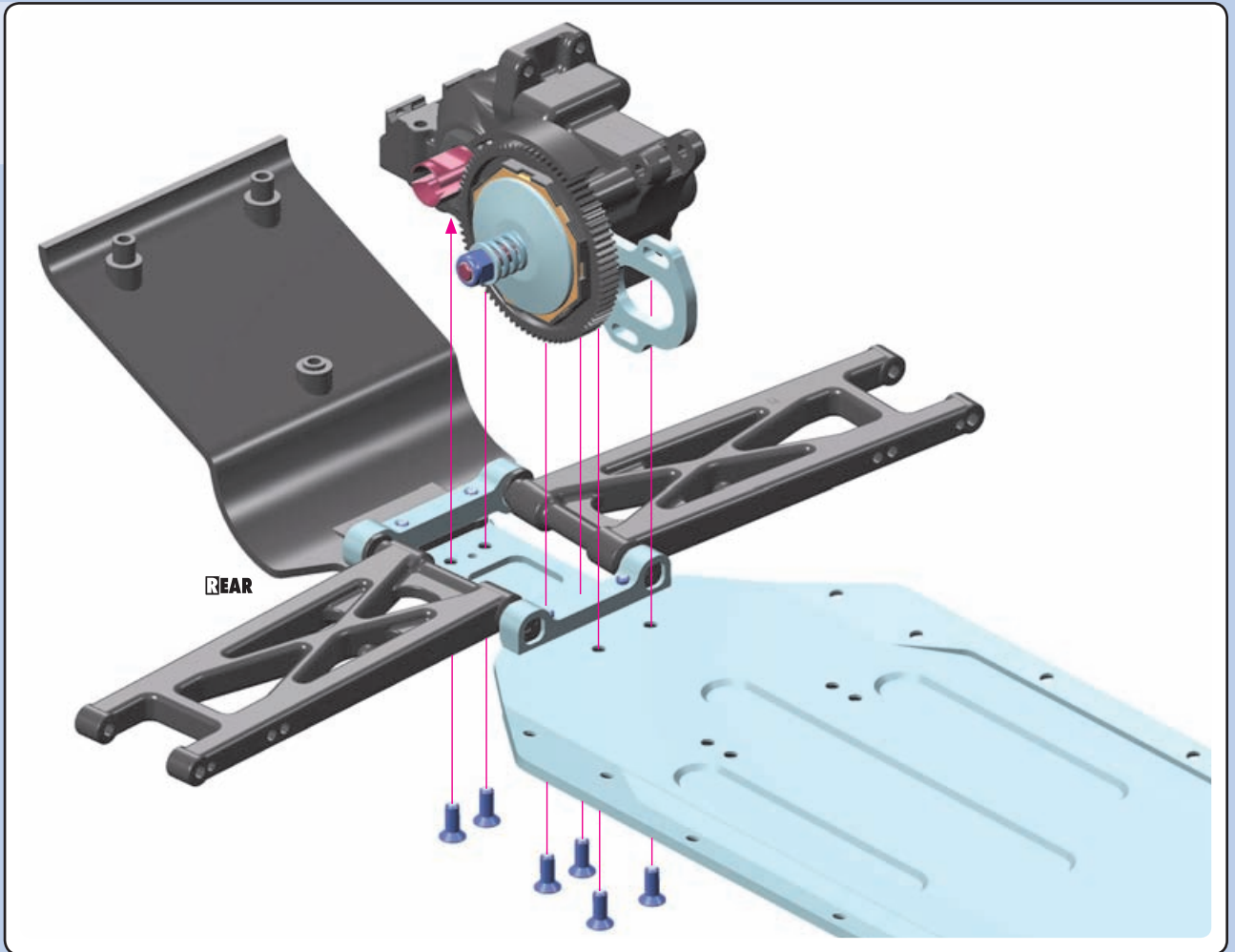
Example:

0(RR) - 0 (RF) = 2°		= 2°
0(RR) - 0.5 (RF) = 2.5°		= 2.5°
0(RR) - 1 (RF) = 3°		= 3°

3. REAR SUSPENSION



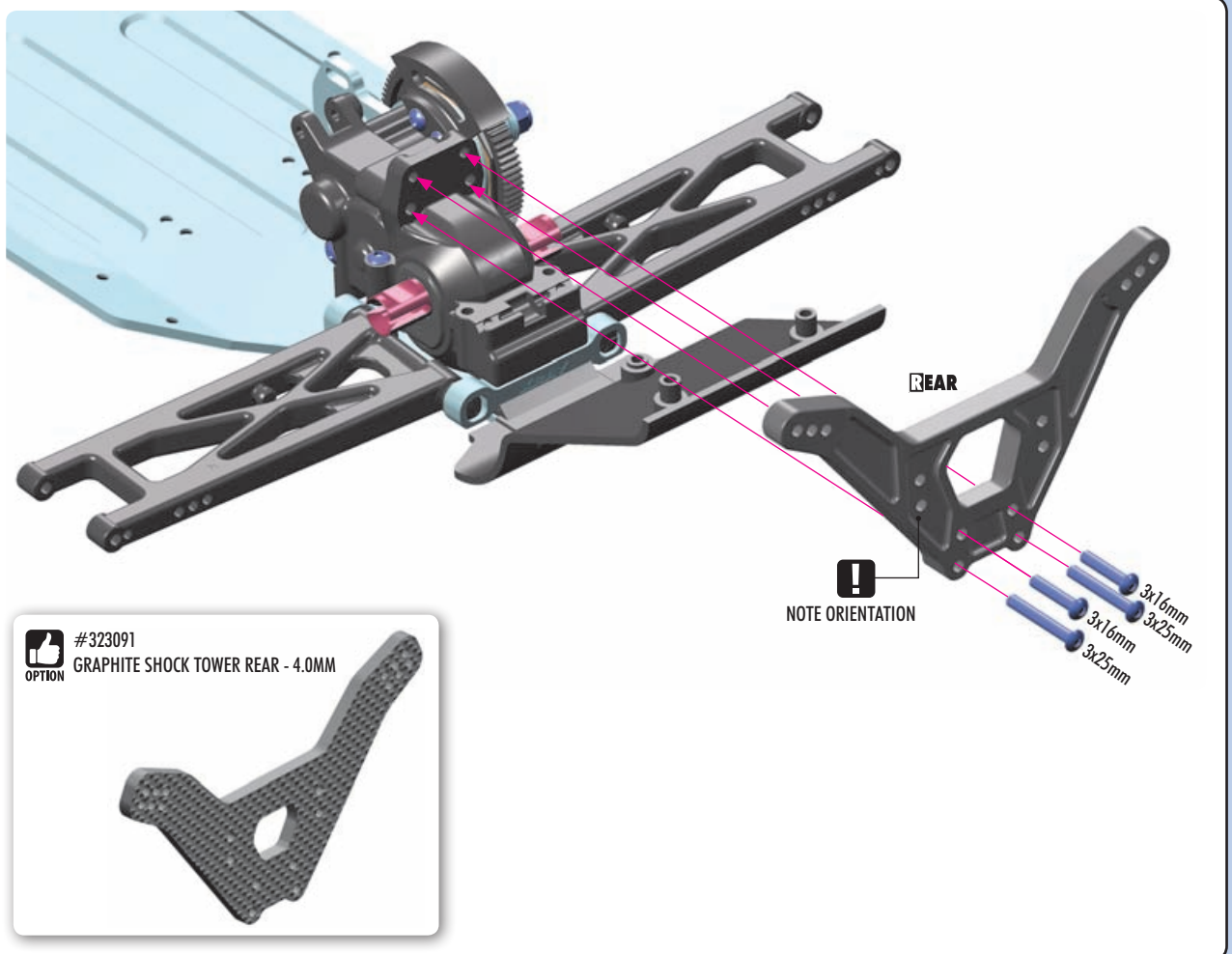
903308
SFH M3x8



902316
SH M3x16



902325
SH M3x25



#323091
GRAPHITE SHOCK TOWER REAR - 4.0MM



3. REAR DRIVETRAIN

2x **L=R**

323045, 323044, 302665, 322612, 362651, 362280, 323382, 303123, 323354-H, 362316, 902205, 940513, 902312, 365357, 962030, 941014, 962031, 327321, 902254, 980210, 980210, 325319, 365230

! When using ball differential you have to use #325318

OPTION # 325318
REAR DRIVE SHAFT 95MM WITH 2.5MM PIN- HUDY SPRING STEEL™

BAG 03			
302665	COMPOSITE BALL JOINT 4.9MM - CLOSED WITH HOLE (4)	362651	BALL END 4.9MM WITH THREAD 8MM (2)
303123	ALU SHIM 3x6x2.0MM (10)	365230	DRIVE SHAFT COUPLING - HUDY SPRING STEEL™
306219	COMPOSITE SET OF SERVO SHIMS (4)	365357	ALU WHEEL HUB 12MM - OFFSET (+2.5mm) - (2)
322612	ADJUSTABLE TURNBUCKLE 75MM M3 L/R - HUDY SPRING STEEL™ (2)	902205	HEX SCREW SH M2x5 (10)
323044	COMPOSITE REAR ROLL CENTER HOLDER	902254	HEX SCREW SH M2.5x4 (10)
323045	SCX ALU REAR HOLDER ADAPTER FOR BUMPER	902312	HEX SCREW SH M3x12 (10)
323354-H	COMPOSITE UPRIGHT REAR - HARD	902322	HEX SCREW SH M3x22 (10)
323382	ALU REAR HUB PLATE FOR MULTI ADJ. UPRIGHT - 1-HOLE - 7075 T6	940513	BALL-BEARING 5x12x4 RUBBER SEALED - GREASE (2)
325319	DRIVE SHAFT 93MM WITH 2.5MM PIN - HUDY SPRING STEEL™	941014	BALL-BEARING 10x15x4 RUBBER SEALED - GREASE (2)
325340	REAR DRIVE AXLE LB - HUDY SPRING STEEL™	962030	WASHER S 3x6x0.3 (10)
327321	REAR ARM PIVOT PIN (2)	962031	WASHER S 3x6x0.1 (10)
362280	ALU CONICAL SHIM 3x6x2.0MM (10)	980210	PIN 2x9.8 (10)
362316	ECCENTRIC BUSHING SET - OPEN (2)		

2x **L=R**

902205 SH M2x5

940513 BB 5x12x4

941014 BB 10x15x4

980210 P 2x10

Use HUDY Ball-Bearing Grease

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

GRAPHITE GREASE (HUDY #106210)

10x15x4mm

5x12x4mm

Bearing with black rubber covers

HUDY Ball-Bearing Grease

OPTION #325341
REAR ADJUSTABLE DRIVE AXLE LB HUDY SPRING STEEL™

OPTION #325390
ALU SHIM 10x12x2MM (2)

OPTION **XRAY BALL-BEARING**

#940512	5x12x4	OIL	OPTION
#941015	10x15x4	OIL	OPTION
#940513	5x12x4	GREASE	INCLUDED
#941014	10x15x4	GREASE	INCLUDED

OPTION **REAR UPRIGHTS**

#323354-H	HARD	INCLUDED
#323354-G	GRAPHITE	OPTION
#323355	ALU	OPTION

OPTION **WHEEL HEX HUBS 12MM**

#365360	+4.5mm	6 slots	OPTION
#365359	+3.75mm	5 slots	OPTION
#365358	+3.0mm	4 slots	OPTION
#365357	+2.25mm	3 slots	INCLUDED
#365356	+1.5mm	2 slots	OPTION
#365355	+0.75mm	1 slot	OPTION
#365353	0mm	0 slots	OPTION
#365354	-0.75mm	Lightw.	OPTION
#365361	-1.25mm	Lightw.	OPTION

OPTIONAL HEX HUB EFFECTS

Different offset hex hubs are used to increase or decrease the track-width.

LESS OFFSET	MORE OFFSET
Rear - more traction	Rear - less traction
Front - more steering	Front - less steering

OPTION #305231
DRIVE SHAFT COUPLING HUDY SPRING STEEL

3. REAR DRIVETRAIN

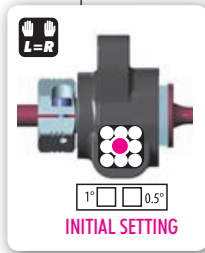
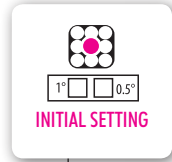


303123
SHIM 3x6x2

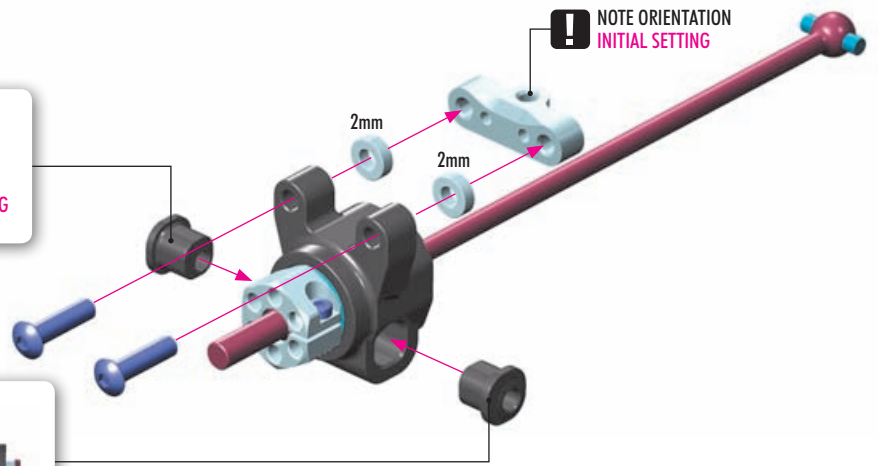


902312
SH M3x12

2x L=R



NOTE ORIENTATION
INITIAL SETTING



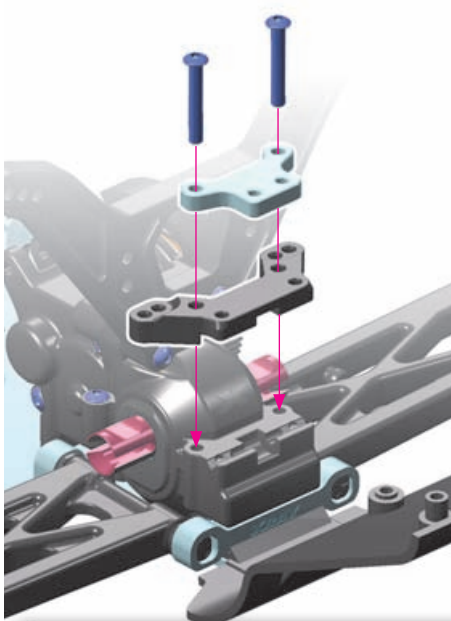
#323381
ALU REAR HUB PLATE FOR MULTI ADJUSTABLE
UPRIGHT - SWISS 7075 T6



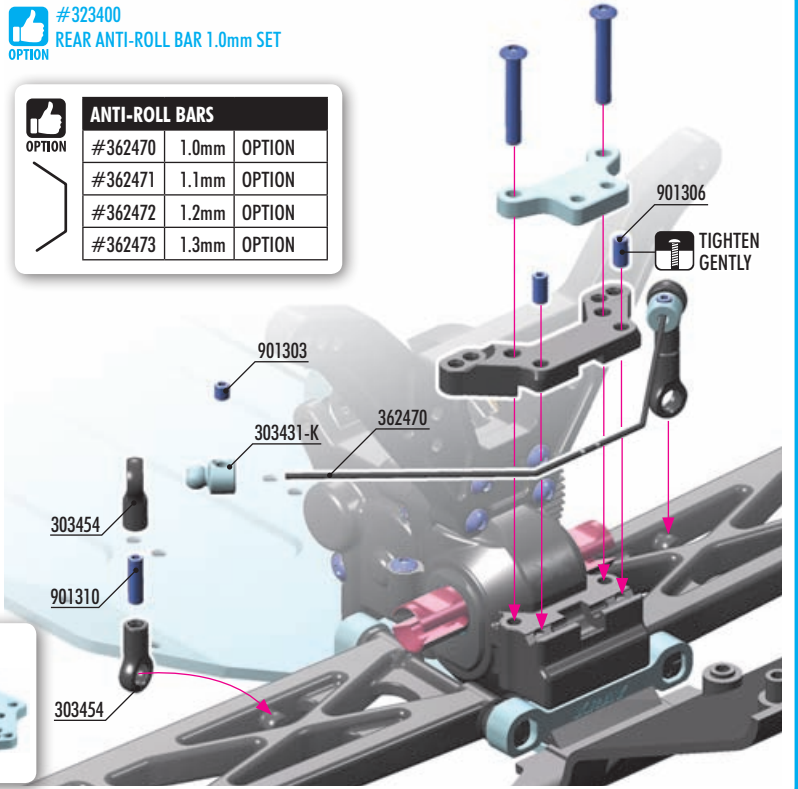
902322
SH M3x22

#323400
REAR ANTI-ROLL BAR 1.0mm SET

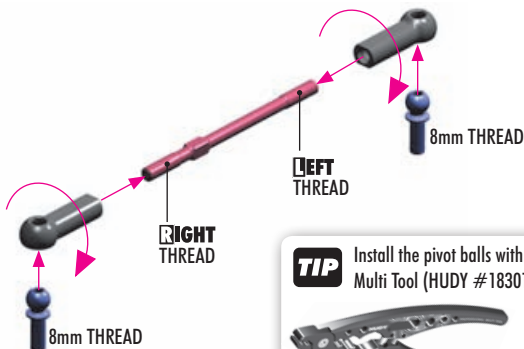
OPTION	ANTI-ROLL BARS		
#362470	1.0mm	OPTION	
#362471	1.1mm	OPTION	
#362472	1.2mm	OPTION	
#362473	1.3mm	OPTION	



OPTION	REAR ROLL CENTER HOLDER		
#323044	COMPOSITE	INCLUDED	
#323043	ALU	OPTION	
#323044-G	COMPOSITE	OPTION	






2x L=R






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



3. REAR DRIVETRAIN

- IO**
306219
SHIM 3x6x2
- 
902254
SH M2.5x4
- 
962030
S 3x6x0.3
- 
962031
S 3x6x0.1

2x 


!  3x6x0.1mm (use for MEDIUM suspension arm)
 3x6x0.3mm (use for HARD or GRAPHITE suspension arm)


Ensure that the rear upright moves freely. Check for free movement.

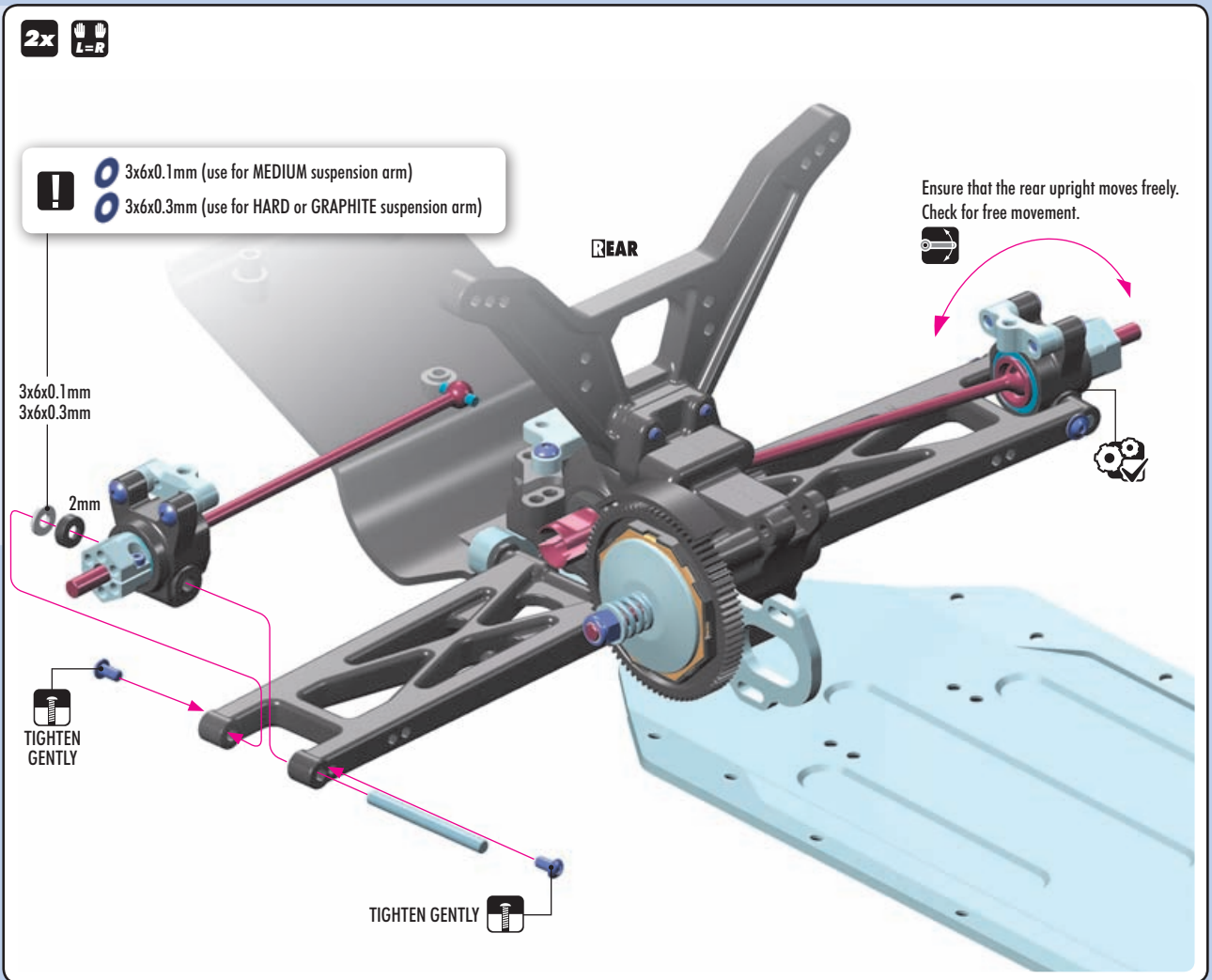
REAR

3x6x0.1mm
3x6x0.3mm


2mm


TIGHTEN GENTLY 

TIGHTEN GENTLY 




- 
362280
CON. SHIM 3x6x2

2x 

NOTE ORIENTATION 




CONICAL SHIM 2mm

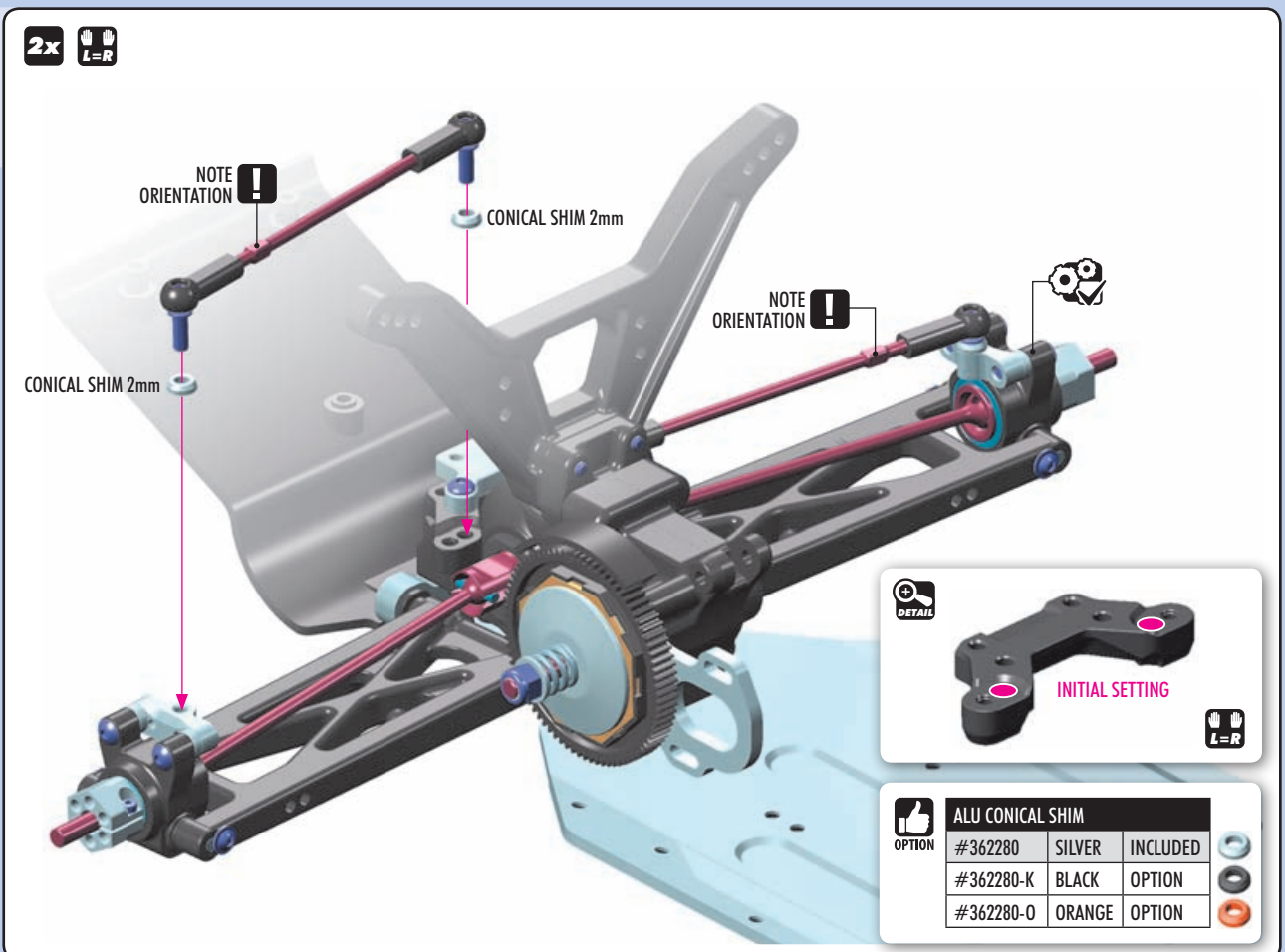
CONICAL SHIM 2mm

NOTE ORIENTATION 

INITIAL SETTING

ALU CONICAL SHIM

OPTION	ALU CONICAL SHIM		
#362280	SILVER	INCLUDED	
#362280-K	BLACK	OPTION	
#362280-O	ORANGE	OPTION	

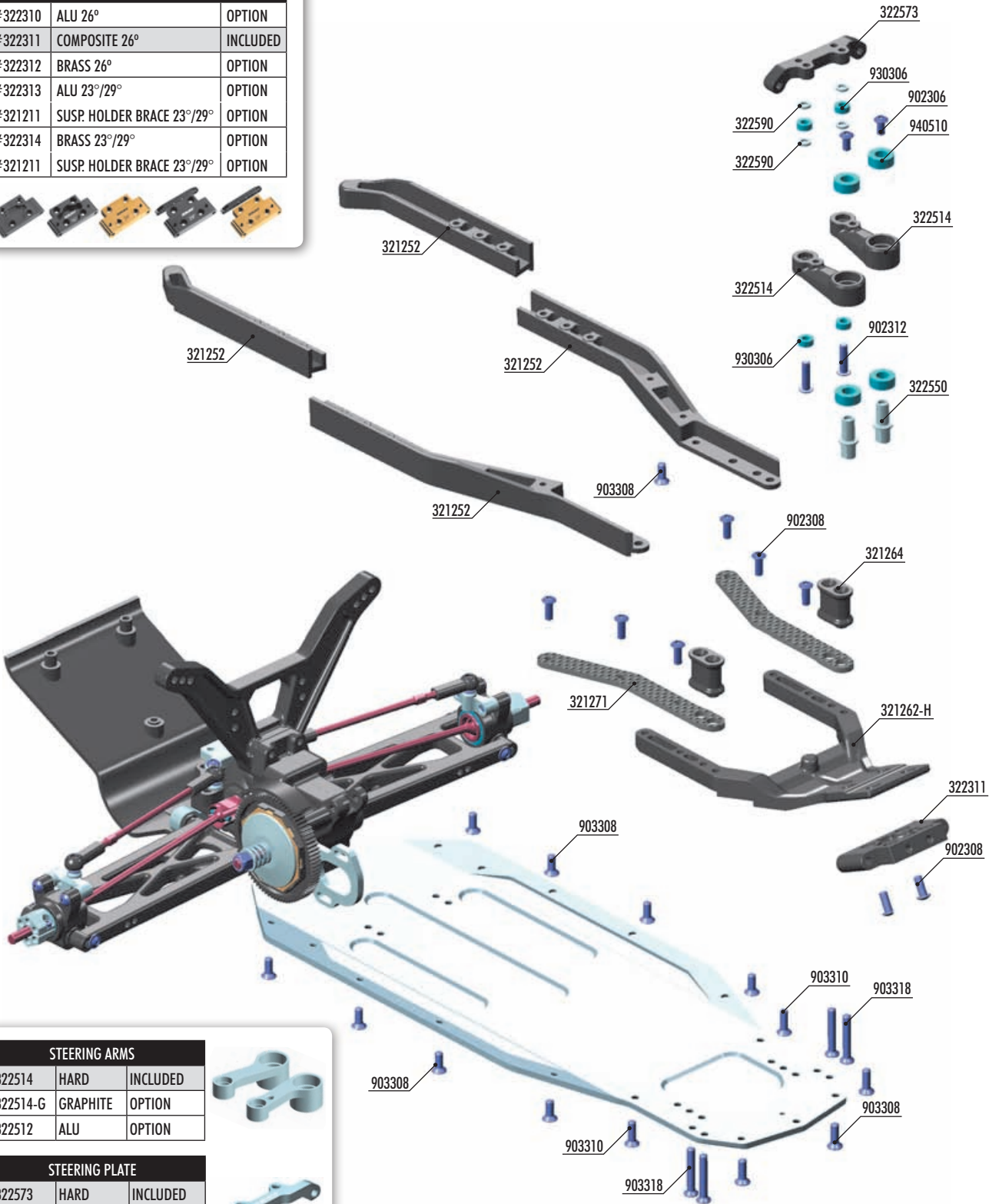


4. FRONT ASSEMBLY



FRONT LOWER ARM MOUNT

#322310	ALU 26°	OPTION
#322311	COMPOSITE 26°	INCLUDED
#322312	BRASS 26°	OPTION
#322313	ALU 23°/29°	OPTION
#321211	SUSP. HOLDER BRACE 23°/29°	OPTION
#322314	BRASS 23°/29°	OPTION
#321211	SUSP. HOLDER BRACE 23°/29°	OPTION



STEERING ARMS

#322514	HARD	INCLUDED
#322514-G	GRAPHITE	OPTION
#322512	ALU	OPTION



STEERING PLATE

#322573	HARD	INCLUDED
#322573-G	GRAPHITE	OPTION
#322572	ALU	OPTION



BAG

04

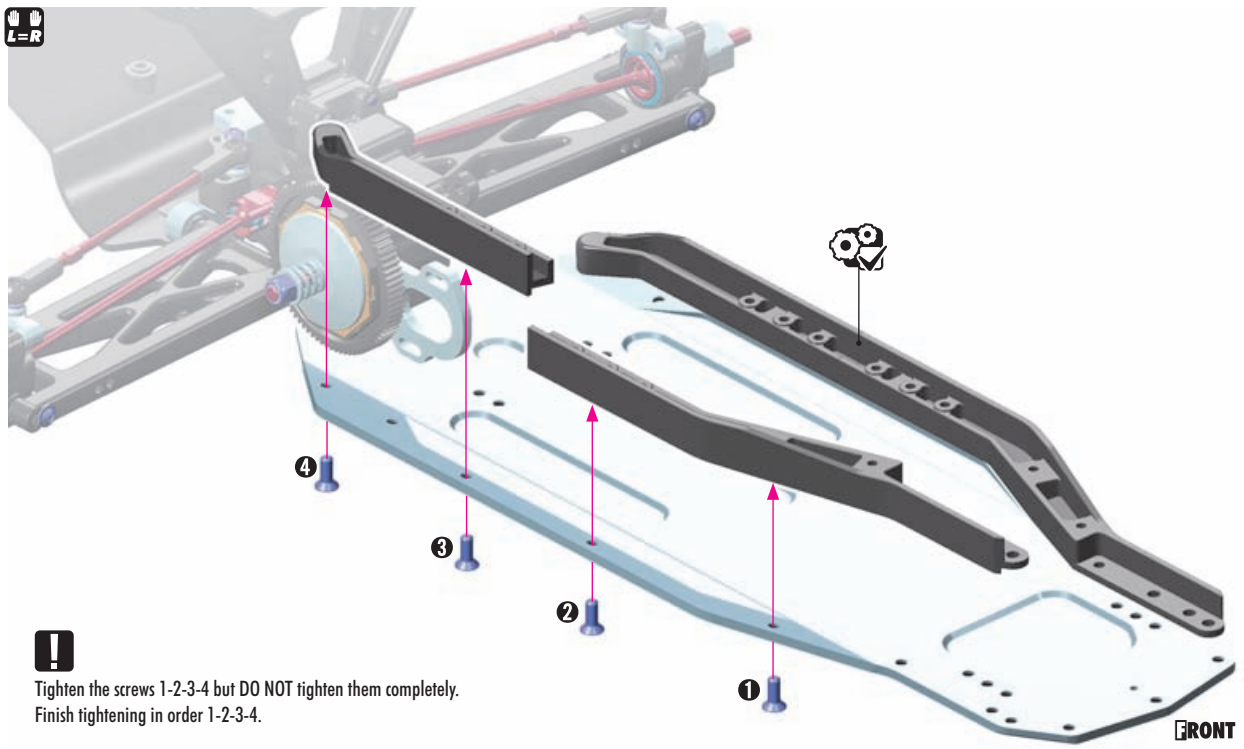
- 321252 SCX COMPOSITE CHASSIS SIDE GUARDS FOR BENT SIDES CHASSIS L + R
- 321262-H COMPOSITE CHASSIS FRONT GUARD - HARD - V2
- 321264 COMPOSITE FRONT CHASSIS SIDE BRACE - SHORT (2)
- 321271 GRAPHITE CHASSIS SIDE GUARD BRACE FOR BENT SIDES CHASSIS (2)
- 322311 COMPOSITE FRONT LOWER SUSPENSION HOLDER
- 322514 COMPOSITE STEERING ARM WITH STEERING MOUNT HOLE (2)
- 322550 ALU SERVO SAVER PIVOT SHAFT (2)
- 322573 COMPOSITE STEERING PLATE - FRONT/REAR MOUNTING POSITIONS
- 322590 ALU SHIM 3x4.7x1.0MM (10)

- 902306 HEX SCREW SH M3x6 (10)
- 902308 HEX SCREW SH M3x8 (10)
- 902312 HEX SCREW SH M3x12 (10)
- 903308 HEX SCREW SFH M3x8 (10)
- 903310 HEX SCREW SFH M3x10 (10)
- 903318 HEX SCREW SFH M3x18 (10)
- 930306 BALL-BEARING 3x6x2.5 STEEL SEALED - OIL (2)
- 940510 BALL-BEARING 5x10x4 RUBBER SEALED - OIL (2)

4. FRONT ASSEMBLY

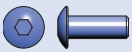


903308
SFH M3x8



Tighten the screws 1-2-3-4 but DO NOT tighten them completely. Finish tightening in order 1-2-3-4.

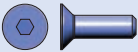
FRONT



902308
SH M3x8



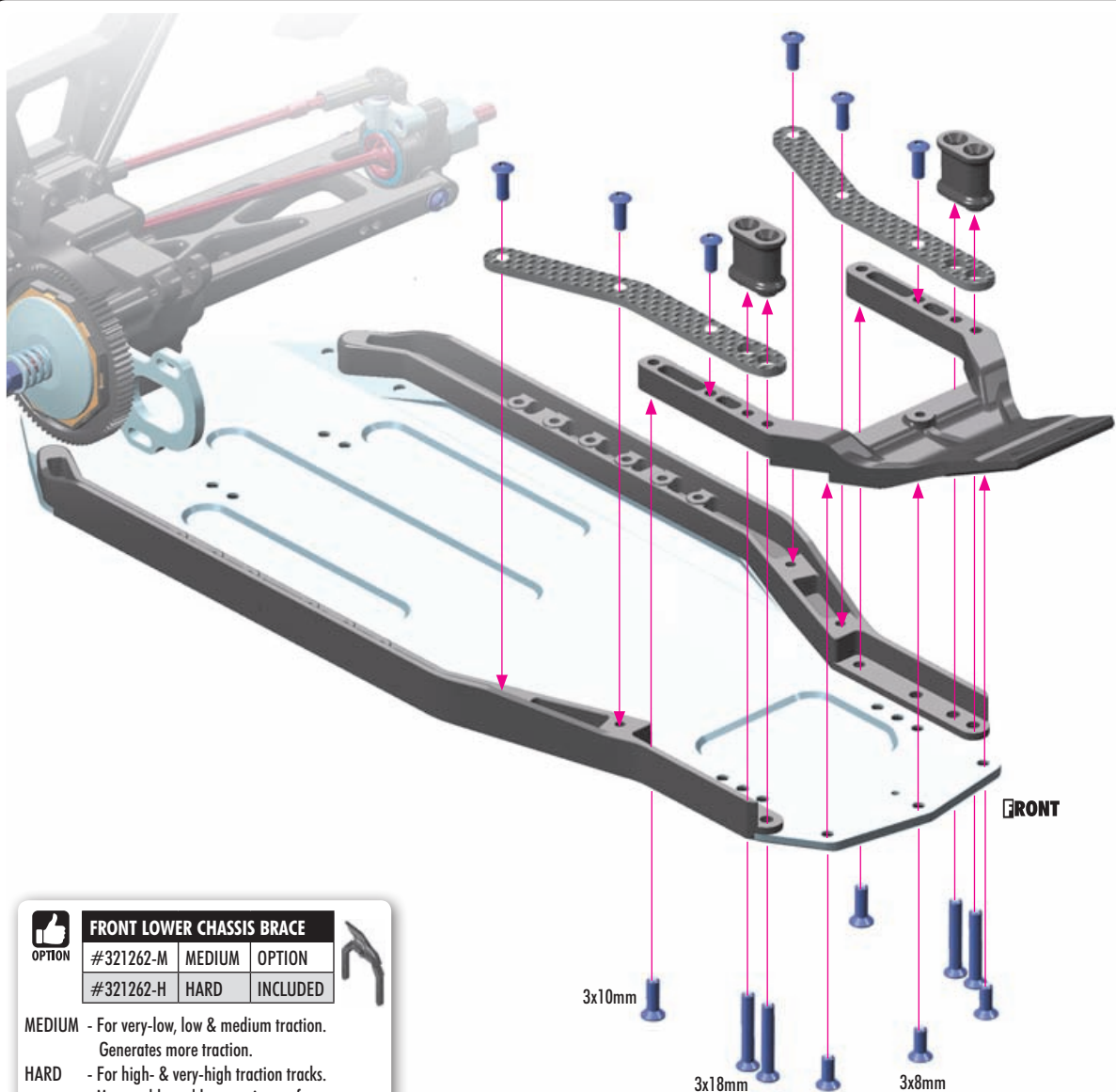
903308
SFH M3x8



903310
SFH M3x10



903318
SFH M3x18



OPTION

FRONT LOWER CHASSIS BRACE

#321262-M	MEDIUM	OPTION
#321262-H	HARD	INCLUDED

MEDIUM - For very-low, low & medium traction. Generates more traction.

HARD - For high- & very-high traction tracks. More stable and less traction on front susp.

3x10mm

3x18mm

3x8mm

FRONT

4. FRONT ASSEMBLY



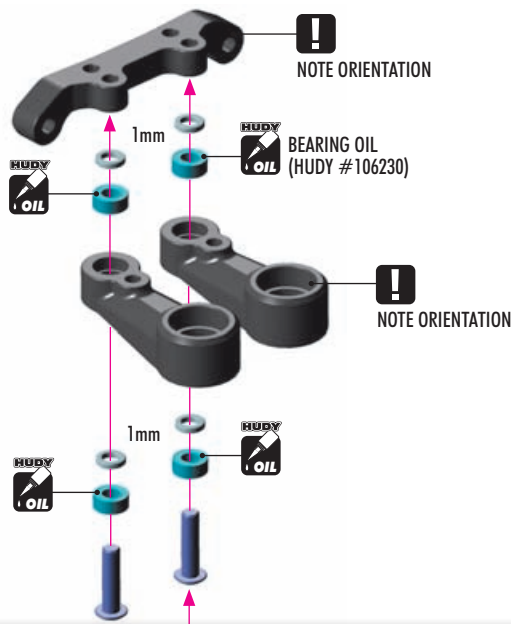
322590
SHIM 3x4.7x1



902312
SH M3x12



930306
BB 3x6x2.5



OPTION

STEERING ARMS		
#322514	HARD	INCLUDED
#322514-G	GRAPHITE	OPTION
#322512	ALU	OPTION



COMPOSITE - Easy to drive, more forgiving, less steering.
ALU - More aggressive, more steering, more precise steering.



OPTION

STEERING PLATE		
#322573	HARD	INCLUDED
#322573-G	GRAPHITE	OPTION
#322572	ALU	OPTION



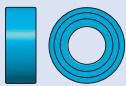
COMPOSITE - Easy to drive and more forgiving.
ALU - More aggressive, more precise steering.

! Tighten the screws gently but fully, and then loosen 1/3 turn so the composite dual servo saver moves freely.

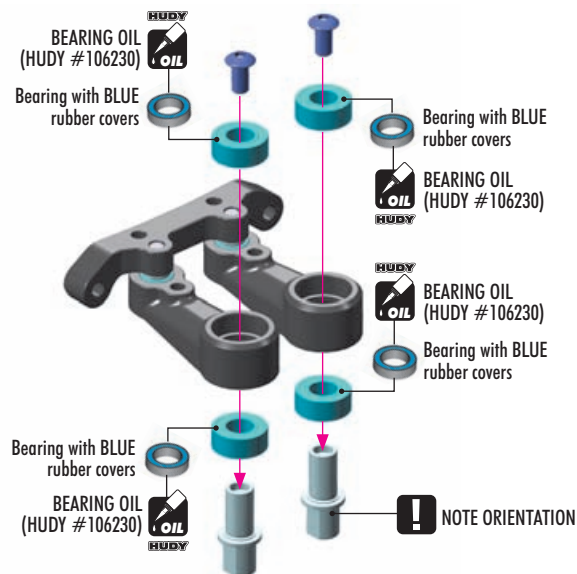
- 1 tighten fully
- 2 loosen 1/3 ccw
- 3 check moves freely



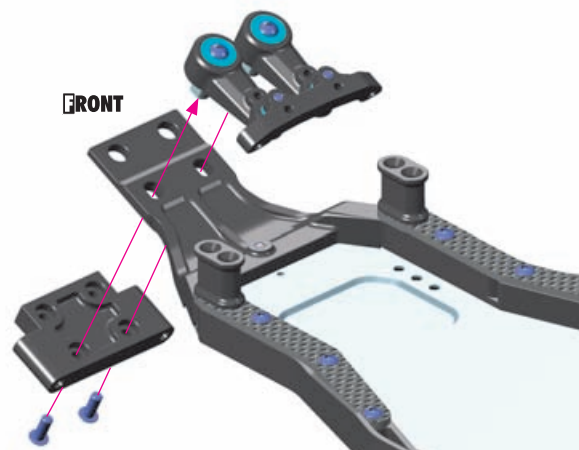
902306
SH M3x6



940510
BB 5x10x4



902308
SH M3x8



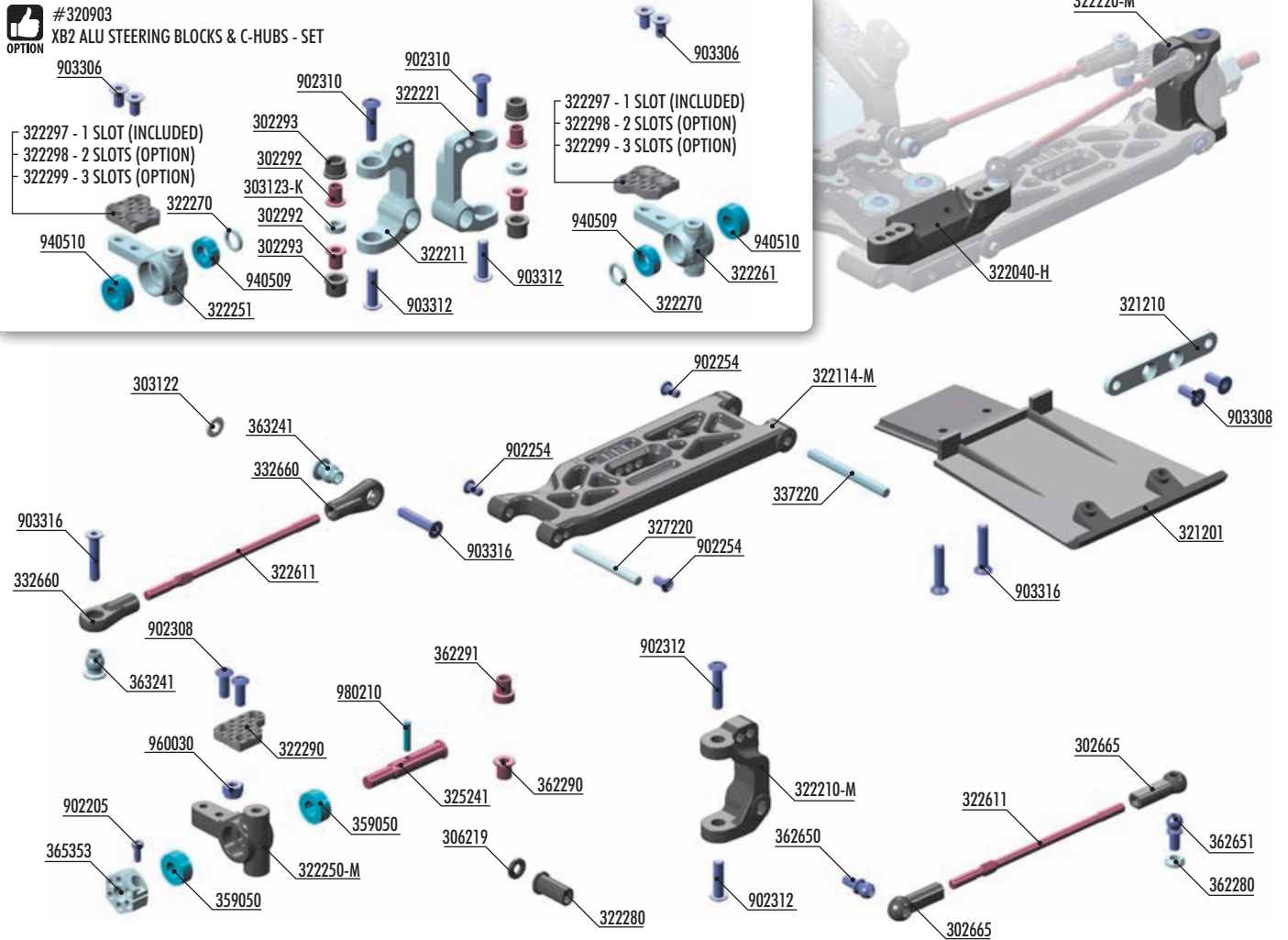
OPTION

FRONT LOWER ARM MOUNT		
#322310	ALU 26°	OPTION
#322311	COMPOSITE 26°	INCLUDED
#322312	BRASS 26°	OPTION
#322313	ALU 23°/29°	OPTION
#321211	SUSP. HOLDER BRACE 23°/29°	OPTION
#322314	BRASS 23°/29°	OPTION
#321211	SUSP. HOLDER BRACE 23°/29°	OPTION



COMPOSITE - Generates more traction in front.
ALU - Makes car more stable.
BRASS - Adds more weight in front, less weight transfer.

5. FRONT SUSPENSION



WHEEL HEX HUBS 12MM

#365360	+4.5mm	6 slots	OPTION
#365359	+3.75mm	5 slots	OPTION
#365358	+3.0mm	4 slots	OPTION
#365357	+2.25mm	3 slots	OPTION
#365356	+1.5mm	2 slots	OPTION
#365355	+0.75mm	1 slot	OPTION
#365353	0mm	0 slots	INCLUDED
#365354	-0.75mm	Lightw.	OPTION
#365361	-1.25mm	Lightw.	OPTION



XRAY BALL-BEARING

#940510	5x10x4	OIL	OPTION
#359050	5x10x4	GREASE	INCLUDED



FRONT ROLL CENTER HOLDER

#322040-M	MEDIUM	OPTION
#322040-H	HARD	INCLUDED



STEERING BLOCK

#322250-M	MEDIUM	INCLUDED
#322250-H	HARD	OPTION
#322250-G	GRAPHITE	OPTION



STEERING BLOCK EXTENSION

#322290	2-SLOTS	INCLUDED
#322291	1-SLOT	OPTION
#322292	0-SLOTS	OPTION
#322293	3-SLOTS	OPTION



C-HUB

#322210-M	RIGHT	MEDIUM	INCLUDED
#322210-H	RIGHT	HARD	OPTION
#322210-G	RIGHT	GRAPHITE	OPTION
#322220-M	LEFT	MEDIUM	INCLUDED
#322220-H	LEFT	HARD	OPTION
#322220-G	LEFT	GRAPHITE	OPTION



SUSPENSION ARM

#322114-M	MEDIUM	INCLUDED
#322114-H	HARD	OPTION
#322114-G	GRAPHITE	OPTION

BAG

05

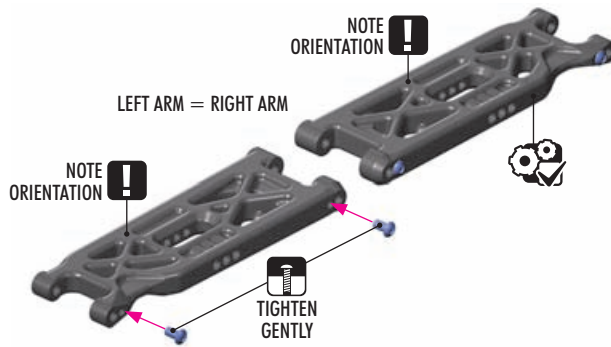
302665	COMPOSITE BALL JOINT 4.9MM - CLOSED WITH HOLE (4)
303122	ALU SHIM 3x6x1.0MM (10)
306219	COMPOSITE SET OF SERVO SHIMS (4)
321201	SCX COMPOSITE FRONT & REAR BUMPERS (1+2)
321210	ALU SUSPENSION HOLDER BRACE - SWISS 7075 T6 (3MM)
322040-H	COMPOSITE FRONT ROLL-CENTER HOLDER - HARD
322114-M	COMPOSITE SUSPENSION ARM FRONT LOWER - MEDIUM
322210-M	COMPOSITE C-HUB 0° DEG. RIGHT - MEDIUM
322220-M	COMPOSITE C-HUB 0° DEG. LEFT - MEDIUM
322250-M	COMPOSITE STEERING BLOCK - MEDIUM
322280	COMPOSITE CASTER ECCENTRIC BUSHING (2+2+2)
322290	GRAPHITE EXTENSION FOR STEERING BLOCK (2) - 2 SLOTS
322611	ADJUSTABLE TURNBUCKLE 70MM M3 L/R - HUDY SPRING STEEL™ (2)
325241	FRONT DRIVE AXLE - HUDY SPRING STEEL™
337220	FRONT SUSPENSION PIVOT PIN (2)
332660	COMPOSITE STEERING & SERVO BALL JOINT 5.8 MM (4+2)
327220	FRONT ARM PIVOT PIN (2)

362280	ALU CONICAL SHIM 3x6x2.0MM (10)
362290	STEEL STEERING BUSHING - SHORT (2)
362291	STEEL STEERING BUSHING - LONG (2)
362650	BALL END 4.9MM WITH THREAD 6MM (2)
362651	BALL END 4.9MM WITH THREAD 8MM (2)
363241	BALL UNIVERSAL 5.75MM WITH BACKSTOP (2)
365353	ALU WHEEL HUB 12MM - V2 (2)
359050	BALL-BEARING 5x10x4 STEEL SEALED - GREASE (2)
902205	HEX SCREW SH M2x5 (10)
902254	HEX SCREW SH M2.5x4 (10)
902308	HEX SCREW SH M3x8 (10)
902312	HEX SCREW SH M3x12 (10)
903308	HEX SCREW SFH M3x8 (10)
903316	HEX SCREW SFH M3x16 (10)
960030	NUT M3 (10)
980210	PIN 2x9.8 (10)

5. FRONT SUSPENSION



2x L=R

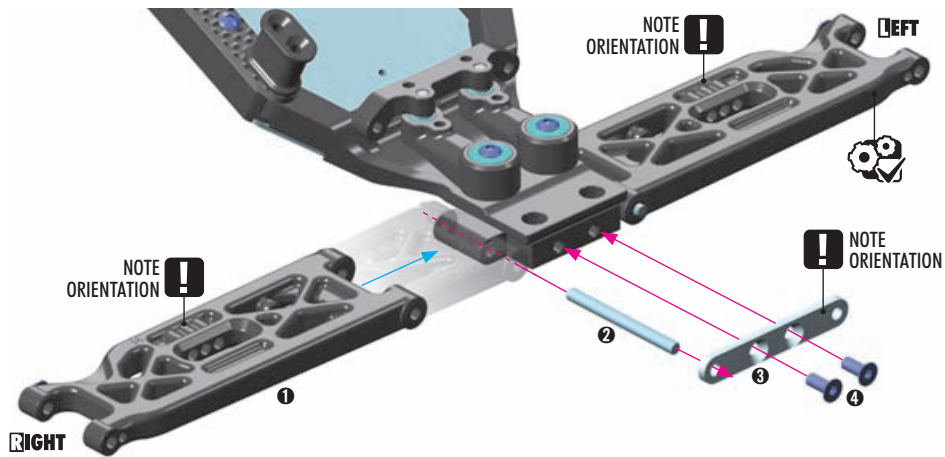


SUSPENSION ARM		
OPTION	#322114-M	MEDIUM INCLUDED
	#322114-H	HARD OPTION
	#322114-G	GRAPHITE OPTION

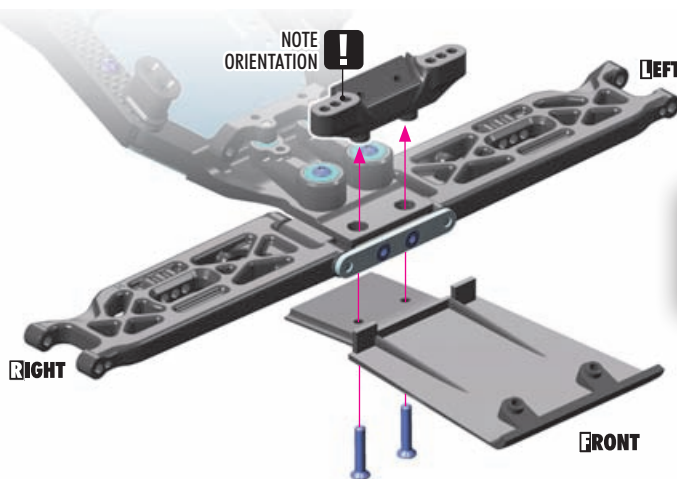
MEDIUM - For very-low & low traction.
 HARD - For medium & high traction.
 GRAPHITE - For high & very-high traction.



L=R



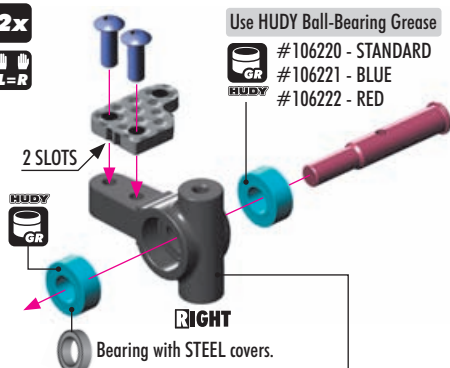
NOTE ORIENTATION



FRONT ROLL CENTER HOLDER		
OPTION	#322040-M	MEDIUM OPTION
	#322040-H	HARD INCLUDED



2x L=R



OPTION #320903 ALU STEERING BLOCKS & C-HUBS - SET



STEERING BLOCK		
OPTION	#322250-M	MEDIUM INCLUDED
	#322250-H	HARD OPTION
	#322250-G	GRAPHITE OPTION

MEDIUM - More steering on low traction.
 HARD - More free in corner on high grip.
 GRAPHITE - Less stopping in corner on high traction.

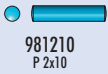


STEERING BLOCK EXTENSION			
OPTION	#322290	2-SLOTS INCLUDED	Turns outside wheels less, easier to drive, less aggressive.
	#322291	1-SLOT OPTION	Between 2 and 0.
	#322292	0-SLOTS OPTION	Most aggressive steering, recommended for very technical tracks.
	#322293	3-SLOTS OPTION	Increased steering angle which increases steering in slow corners.

5. FRONT SUSPENSION

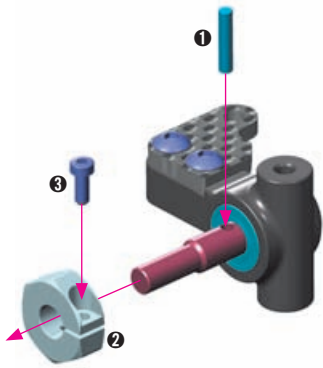


902205
SH M2x5



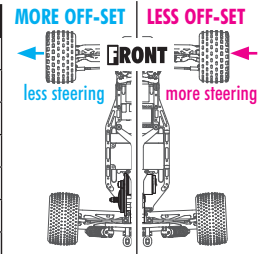
981210
P 2x10

2x



WHEEL HEX HUBS 12MM

#365360	+4.5mm	6 slots	OPTION
#365359	+3.75mm	5 slots	OPTION
#365358	+3.0mm	4 slots	OPTION
#365357	+2.25mm	3 slots	OPTION
#365356	+1.5mm	2 slots	OPTION
#365355	+0.75mm	1 slot	OPTION
#365353	0mm	0 slots	INCLUDED
#365354	-0.75mm	Lightw.	OPTION
#365361	-1.25mm	Lightw.	OPTION

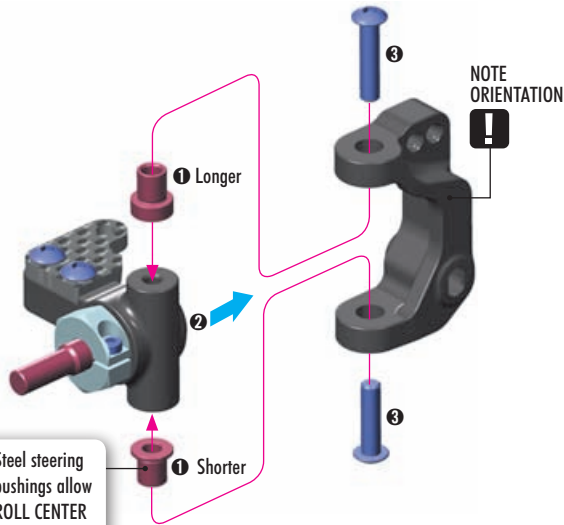


OPTIONAL HEX HUB EFFECTS
Different off-set hex hubs are used to increase or decrease the track-width.

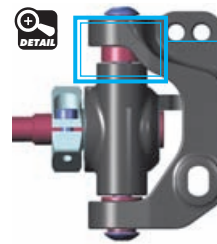


902312
SH M3x12

2x

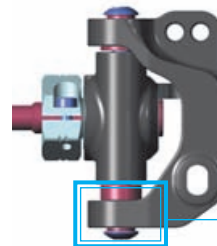


Steel steering bushings allow ROLL CENTER adjustment.



LOWER ROLL CENTER (INITIAL SETTING)

TOP = LONGER bushing
BOTTOM = SHORTER bushing
Recommended for rough tracks to improve stability.



HIGHER ROLL CENTER

TOP = SHORTER bushing
BOTTOM = LONGER bushing
Recommended for smooth tracks to gain more steering.



C-HUB

#322210-M	RIGHT	MEDIUM	INCLUDED
#322210-H	RIGHT	HARD	OPTION
#322210-G	RIGHT	GRAPHITE	OPTION
#322220-M	LEFT	MEDIUM	INCLUDED
#322220-H	LEFT	HARD	OPTION
#322220-G	LEFT	GRAPHITE	OPTION



MEDIUM - For low traction. More steering on low grip.
HARD - For medium traction. More steering, more free in corners.
GRAPHITE - For high traction. More precise steering, less stoping in corners.

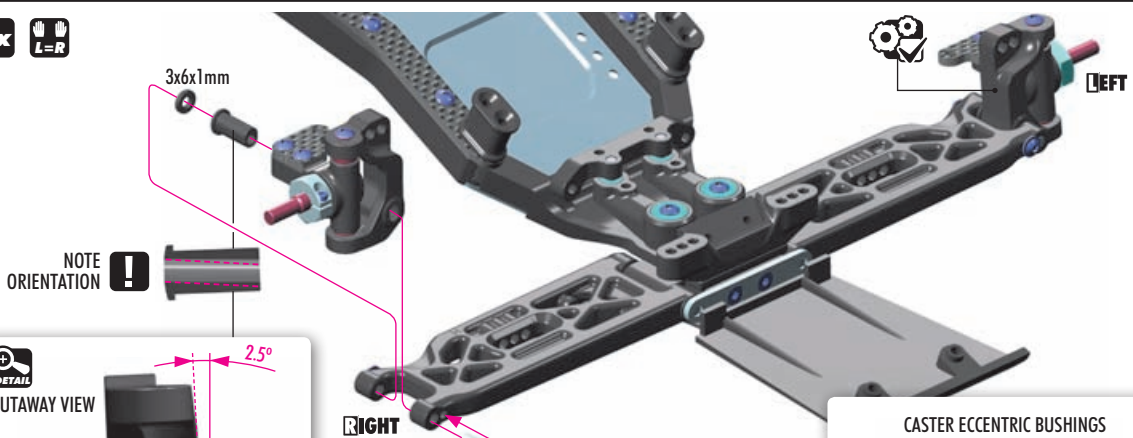


306219
SHIM 3x6x1



902254
SH M2.5x4

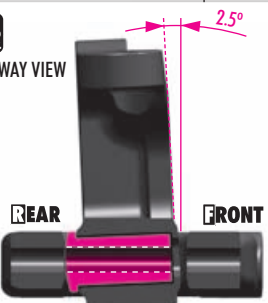
2x



NOTE ORIENTATION

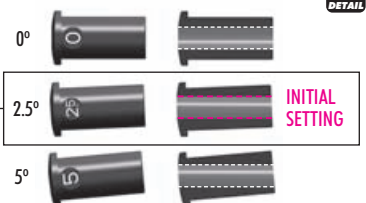


CUTAWAY VIEW



LESS CASTER = increased steering off-power
MORE CASTER = less steering off-power

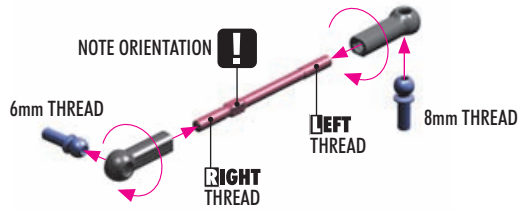
CASTER ECCENTRIC BUSHINGS



5. FRONT SUSPENSION

ROLL CENTER LINKS

2x L=R



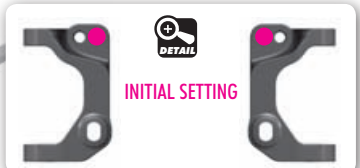
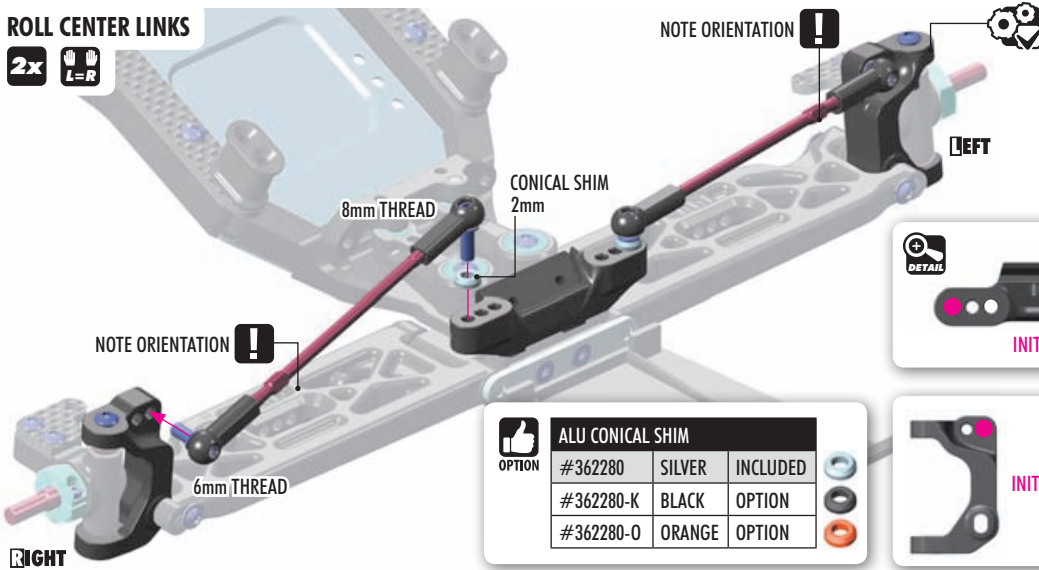
TIP Install the pivot balls with Professional Multi Tool (HUDY #183011).



362280
CON. SHIM 3x6x2

ROLL CENTER LINKS

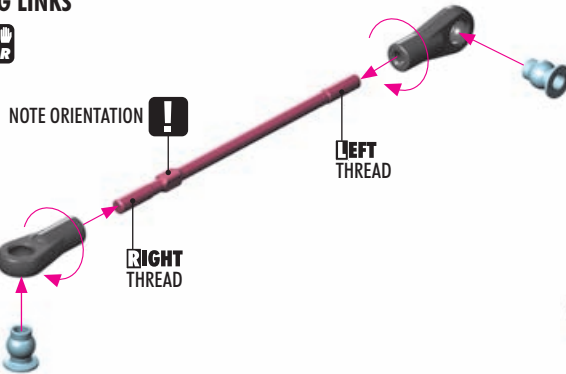
2x L=R



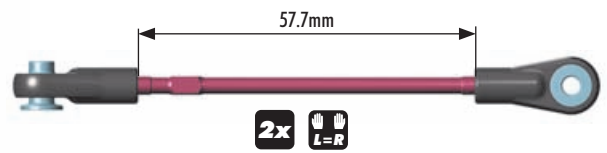
OPTION	ALU CONICAL SHIM		
#362280	SILVER	INCLUDED	
#362280-K	BLACK	OPTION	
#362280-O	ORANGE	OPTION	

STEERING LINKS

2x L=R



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



303122
SHIM 3x6x1



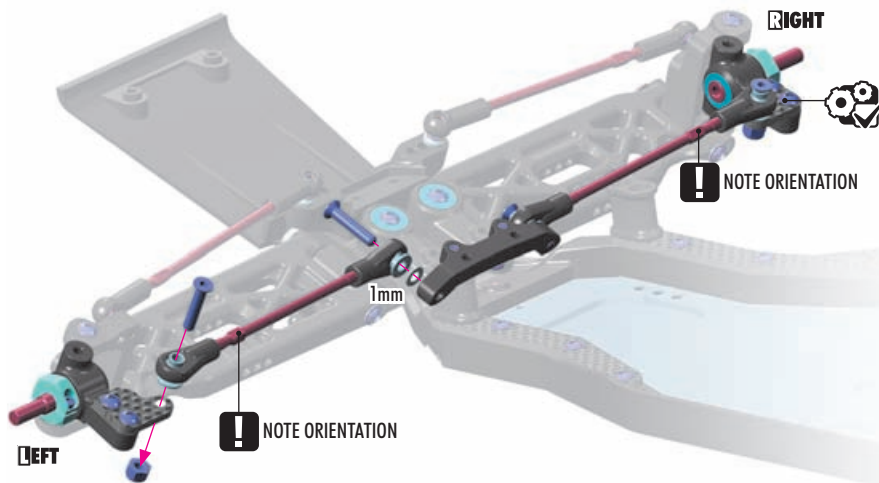
903316
SFH M3x16



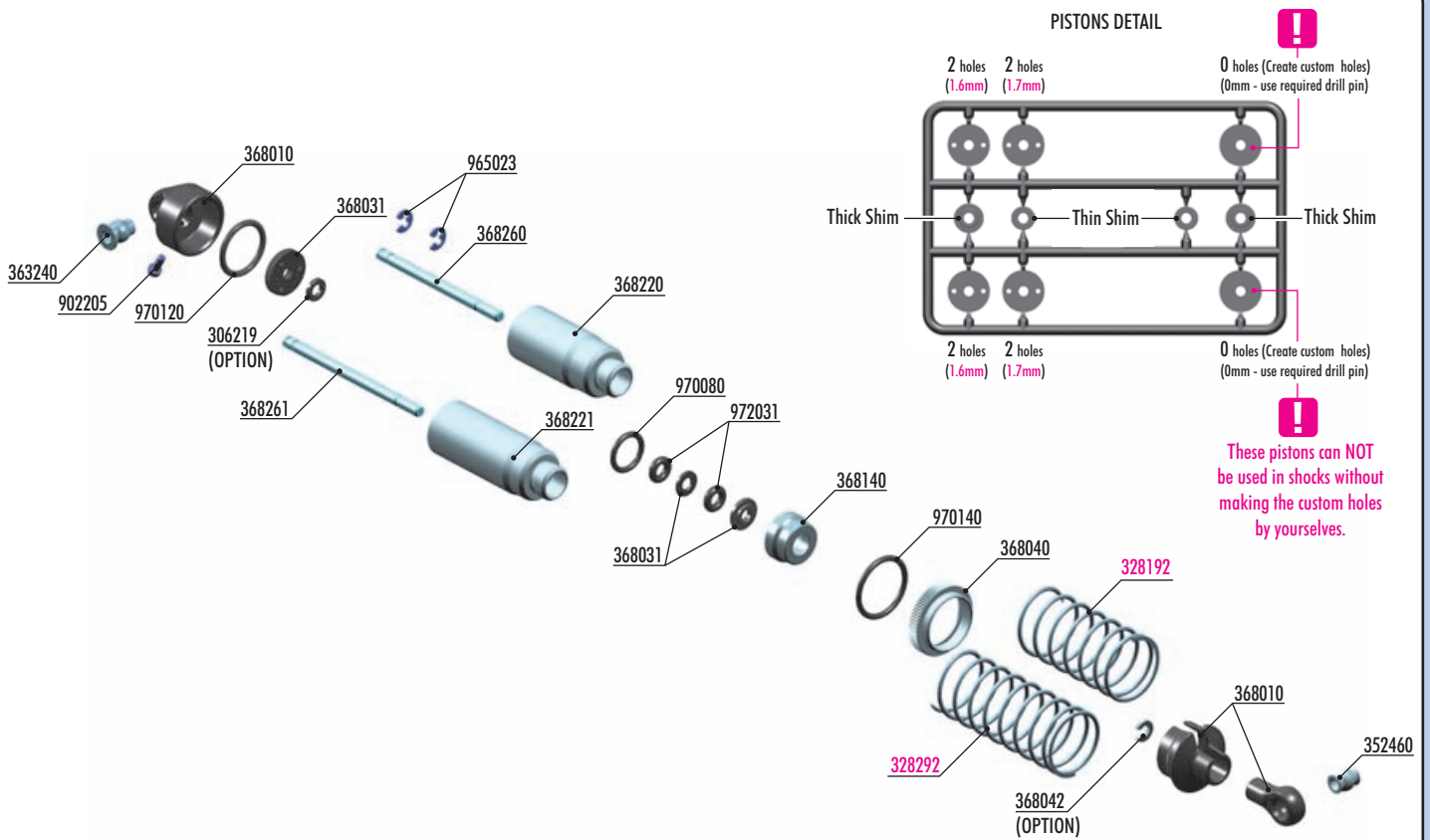
960030
NUT M3

STEERING LINKS

2x L=R



6. SHOCK ABSORBERS



#368042
COMPOSITE SHOCK BUSHING & SHIM (2+2)
OPTION

FRONT SPRINGS

#368175	PROGRESS. 40mm	3 DOTS	OPTION
#368182	LINEAR 45mm	1 STRIPE & 3 DOTS	OPTION
#368183	LINEAR 45mm	1 DOT	OPTION
#368184	LINEAR 45mm	2 DOTS	OPTION
#368185	LINEAR 45mm	3 DOTS	OPTION
#368186	LINEAR 45mm	4 DOTS	OPTION

REAR SPRINGS

#368273	PROGRESS. 60mm	2 STRIPES	OPTION
#368275	PROGRESS. 55mm	2 DOTS	OPTION
#368283	LINEAR 63mm	1 STRIPE & 3 DOTS	OPTION
#368284	LINEAR 60mm	1 DOT	OPTION
#368285	LINEAR 60mm	2 DOTS	OPTION
#368286	LINEAR 60mm	3 DOTS	OPTION
#368287	LINEAR 60mm	4 DOTS	OPTION

#328011
COMPOSITE SHOCK BALL JOINT 21MM (2)
OPTION

#972030
SILICONE O-RING 3x2mm (10)
OPTION

#368051
ALU SHOCK CAP-NUT WITH VENT HOLE (2)
OPTION

#104004
HUDY AIR VAC - VACUUM PUMP
- 1/10 OFF-ROAD
OPTION

#368021
ALU SHOCK SPRING RETAINING COLLAR (4)
OPTION

#368022
ALU SHOCK SPRING RETAINING COLLAR -2MM (4)



- 306219 COMPOSITE SET OF SERVO SHIMS (4) (OPTION)
- 352460 PIVOT BALL 5.8 - V3 (10)
- 363240 BALL UNIVERSAL 5.8MM WITH BACKSTOP (2)
- 368010 COMPOSITE SHOCK PARTS
- 368031 SHOCK PISTONS - COMPLETE SET - DERLIN
- 368040 ALU SHOCK ADJUSTABLE NUT (2)
- 368042 COMPOSITE SHOCK BUSHING & SHIM (2+2) (OPTION)
- 368140 ALU LOWER SHOCK BODY CAP (2)
- 368200 REAR SHOCK ABSORBERS COMPLETE SET (2)
- 368220 ALU SHOCK BODY (2)
- 368221 ALU REAR SHOCK BODY (2)
- 368260 HARDENED SHOCK SHAFT (2)
- 368261 REAR HARDENED SHOCK SHAFT (2)

- 902205 HEX SCREW SH M2x5 (10)
- 965023 E-CLIP 2.3 (10)
- 970080 O-RING 8x1 (10)
- 970120 O-RING 12 x 1.0 (10)
- 970140 O-RING 14 x 1.5 (10)
- 972031 SILICONE O-RING 3x2.1 (10)

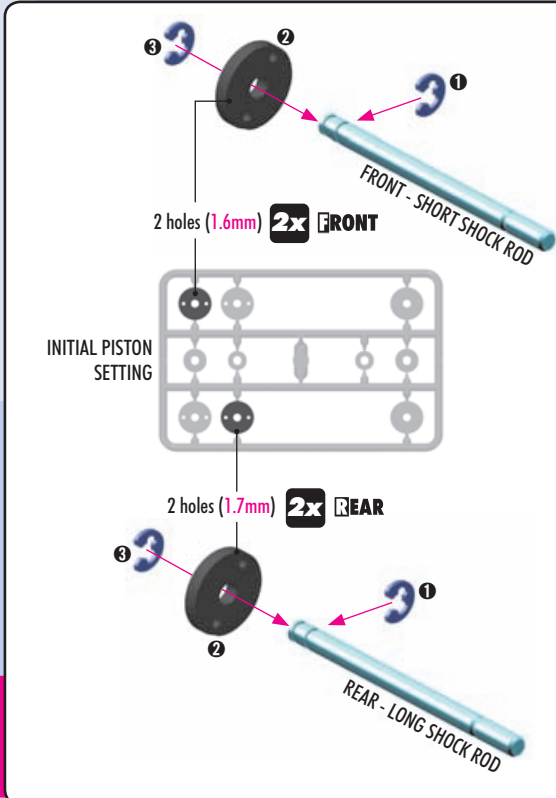
- 328192 FRONT SPRING-SET 49MM - 2 DOTS (2)**
- 328292 REAR SPRING-SET 67MM - 2 DOTS (2)**

6. SHOCK ABSORBERS

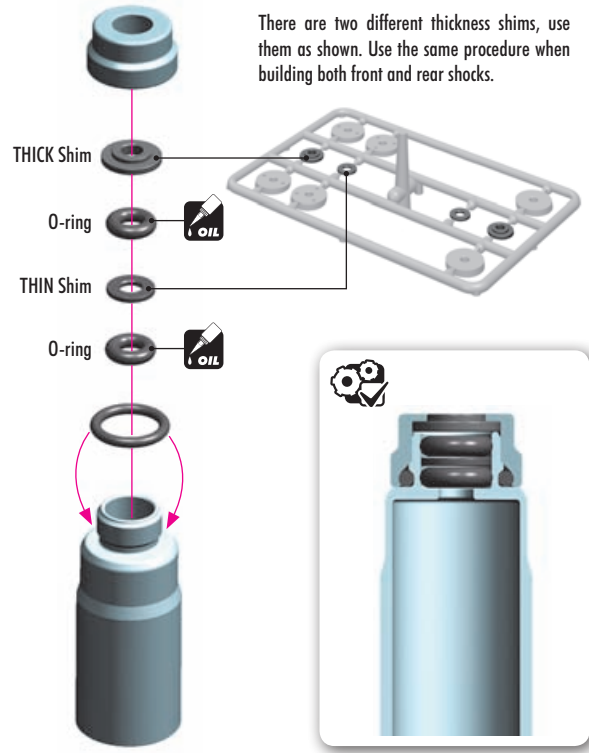
965023
C 2.3

970080
O 8x1

972031
O 3x2.1



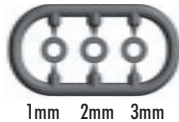
4x



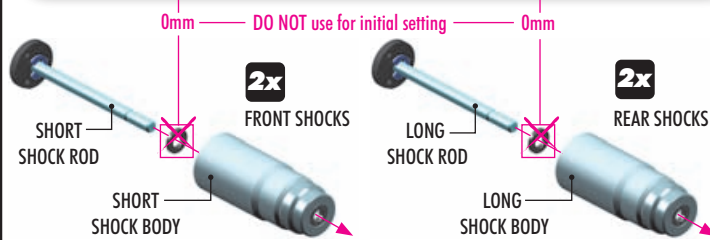
SET-UP BOOK
SHOCK DAMPING
SHOCK PISTONS



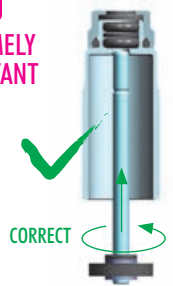
#306219
OPTION DOWNSTOP SHIMS
THICKER shim used, GREATER downstop is achieved.



! IMPORTANT
Always use same shim thickness on right and left side to achieve same downstop.



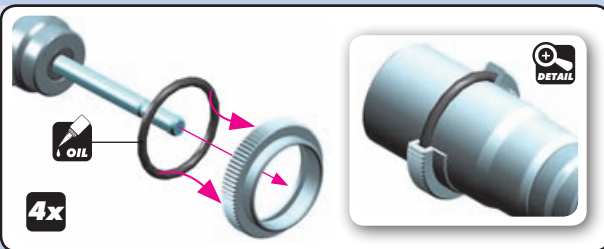
! EXTREMELY IMPORTANT



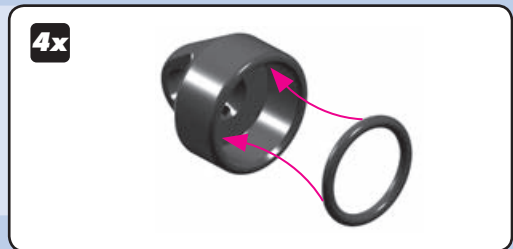
DO NOT push the shock rod straight through the lower shock body assembly; O-ring damage may result.

Twist the shock rod through the lower shock body assembly.

970140
O 14x1.5



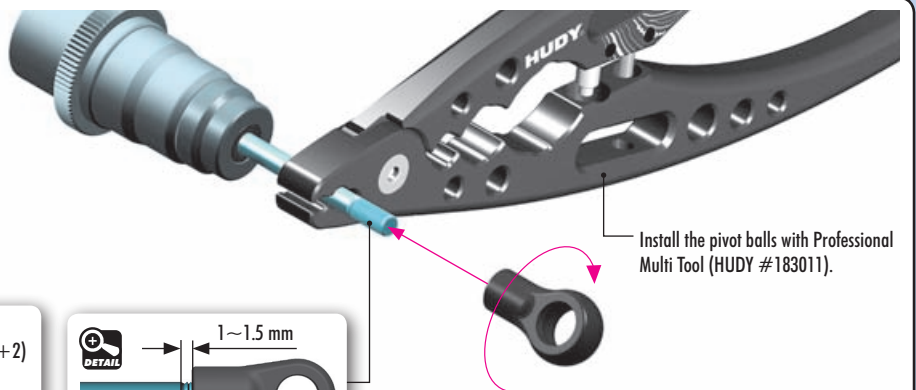
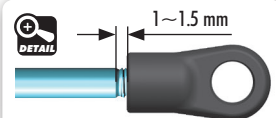
970120
O 12x1



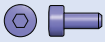
4x



#368042
OPTION COMPOSITE SHOCK BUSHING & SHIM (2+2)



6. SHOCK ABSORBERS



902205
SH M2x5



FRONT (SHORT)
Oil 650cSt
REAR (LONG)
Oil 500cSt

DEFAULT SHOCK REBOUND SETTING 0% REBOUND

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. For the FRONT shocks (short) use 650cSt oil. For the REAR shocks (long) use 500cSt oil.



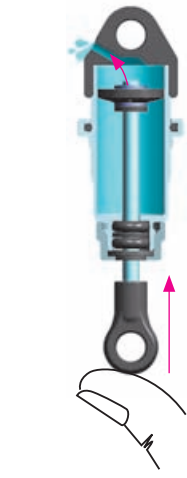
2 Move the shock shaft up and down a few times to release the air bubbles trapped beneath the piston.
3~5x
UP & DOWN



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



4 Gently place the shock cap onto the filled shock body and start to tighten the cap. Tighten the cap fully.



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



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



7 6x push the shaft up and down.



8 Untighten the screw.



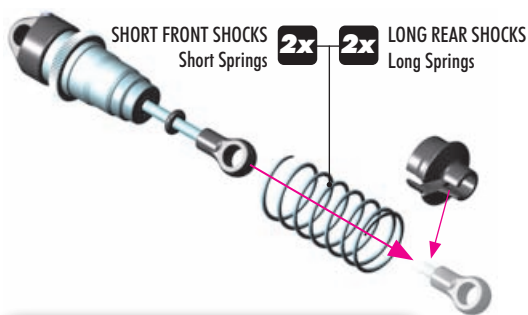
9 Gently push the shock shaft completely into the shock body. Excess oil will flow through the hole in the shock cap.



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

SET-UP BOOK

SHOCK OIL



SHORT FRONT SHOCKS
Short Springs

2x

LONG REAR SHOCKS
Long Springs

2x

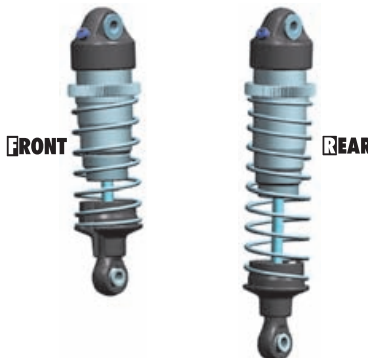
#368022
ALU SHOCK SPRING RETAINING COLLAR -2MM (4)
OPTION

#368021
ALU SHOCK SPRING RETAINING COLLAR (4)
OPTION



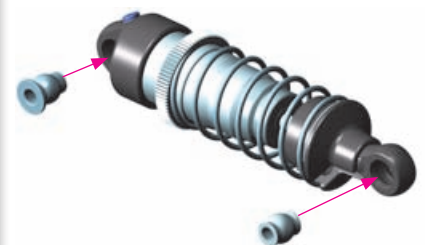
IMPORTANT

Both FRONT SHOCKS must be the same overall length.
Both REAR SHOCKS must be the same overall length.

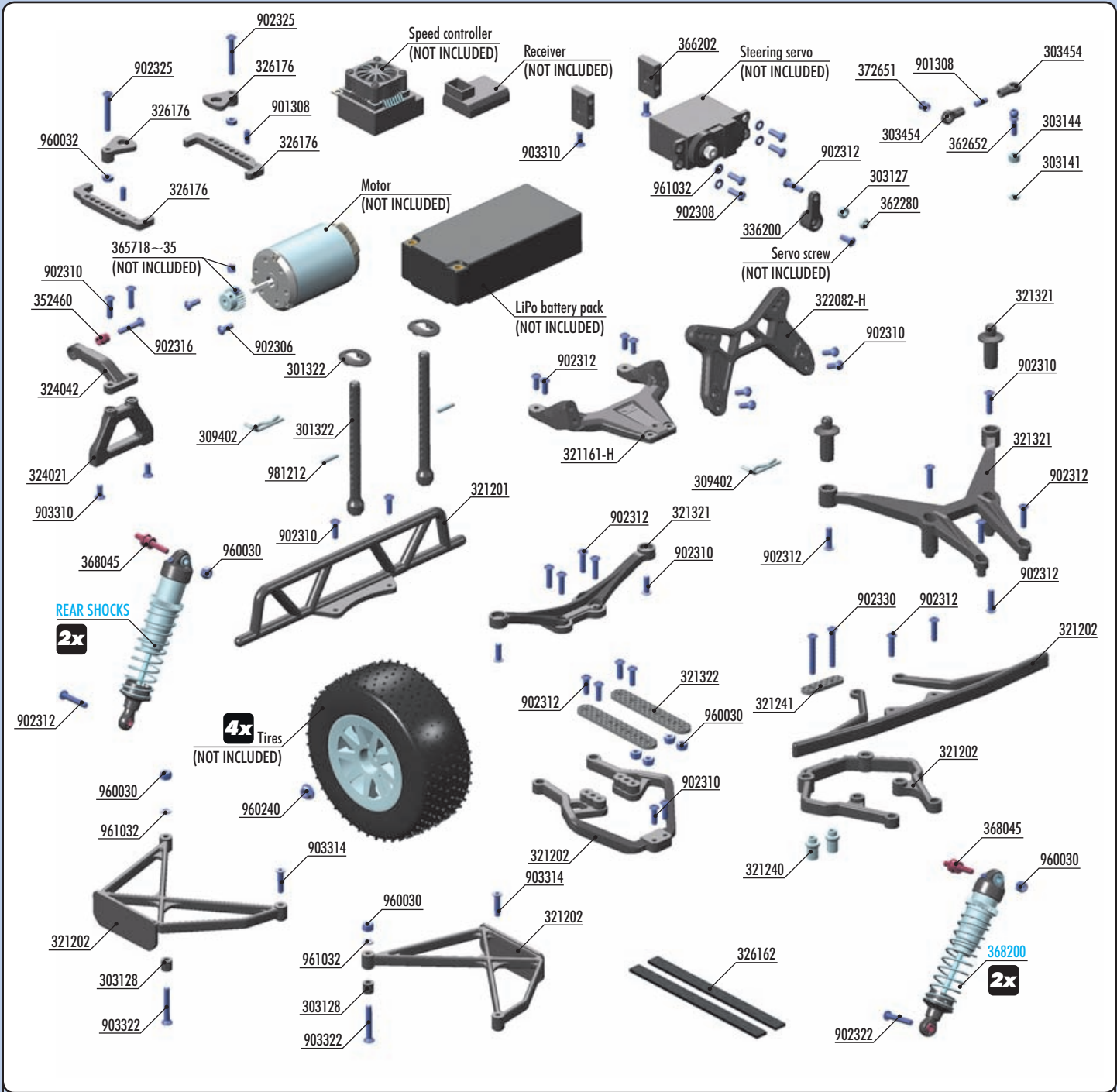


2x FRONT SHOCKS (SHORT)

2x REAR SHOCKS (LONG)



7. FINAL ASSEMBLY



BAG

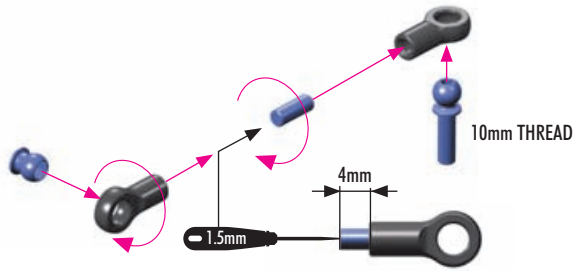
07

- | | | | |
|-----------|--|--------|--|
| 301322 | FRONT BODY MOUNT SET 6MM | 366202 | COMPOSITE SERVO MOUNT - HIGHER |
| 303127 | ALU SHIM 3x6x4.0MM (10) | 368045 | STEEL SCREW SHOCK PIVOT BALL WITH HEX (2) |
| 303128 | ALU SHIM 3x6x6.0MM (10) | 372651 | PIVOT BALL UNIVERSAL 4.9 MM - HUDY SPRING STEEL™ (2) |
| 303141 | ALU SHIM 3x5x1.0MM (10) | | |
| 303144 | ALU SHIM 3x5x4.0MM (10) | 901308 | HEX SCREW SB M3x8 (10) |
| 303454 | BALL JOINT 4.9MM - OPEN (4) | 902306 | HEX SCREW SH M3x6 (10) |
| 309402 | BODY CLIP FOR 6MM BODY POST (4) | 902308 | HEX SCREW SH M3x8 (10) |
| 321161-H | COMPOSITE FRONT UPPER DECK FOR ANTI-ROLL BAR - HARD | 902310 | HEX SCREW SH M3x10 (10) |
| 321201 | SCX COMPOSITE FRONT & REAR BUMPERS (1+2) | 902312 | HEX SCREW SH M3x12 (10) |
| 321202 | SCX COMPOSITE F & R BUMPER BRACES + SIDE GUARDS (2+1+2) | 902316 | HEX SCREW SH M3x16 (10) |
| 321240 | SCX ALU FRONT BRACE POST 17MM (2) | 902322 | HEX SCREW SH M3x22 (10) |
| 321241 | SCX GRAPHITE FRONT BUMPER BRACE 2.2MM | 902325 | HEX SCREW SH M3x25 (10) |
| 321321 | SCX COMPOSITE FRONT & REAR BODY HOLDER + BODY MOUNTS (8) | 902330 | HEX SCREW SH M3x30 (10) |
| 321322 | SCX GRAPHITE REAR BODY HOLDERS ADAPTER 2.2MM (2) | 903310 | HEX SCREW SFH M3x10 (10) |
| 322082-H | XT2 COMPOSITE SHOCK TOWER FRONT - HARD | 903314 | HEX SCREW SFH M3x14 (10) |
| 324021 | COMPOSITE MOUNT FOR UPPER BRACE - LCG | 903322 | HEX SCREW SFH M3x22 (10) |
| 324042 | COMPOSITE MOTOR UPPER BRACE - LCG | 960030 | NUT M3 (10) |
| 326162 | SELF-ADHESIVE RUBBER 1.5x6.5x155MM (2) | 960032 | NUT M3 (10) |
| 326176 | COMPOSITE LIPO BATTERY BACKSTOP FOR BENT SIDES CHASSIS (2+2) | 960240 | NUT M4 WITH SERRATED FLANGE (10) |
| 336200 | COMPOSITE STEERING SERVO ARMS - SET | 961032 | WASHER S 3.2 (10) |
| 352460 | PIVOT BALL 5.8 (10) | 981212 | PIN 2x12 (10) |
| 362280 | ALU CONICAL SHIM 3x6x2.0MM (10) | | |
| 362652 | BALL END 4.9MM WITH THREAD 10MM (2) | 368200 | SHOCK ABSORBERS COMPLETE SET (2) |
| 365718~35 | ALU PINION GEAR - HARD COATED 18T~35T / 48 (OPTION) | | |

7. FINAL ASSEMBLY



901308
SB M3x8



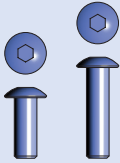
TIP Install the pivot balls with Professional Multi Tool (HUDY #183011).



303127
SHIM 3x6x4



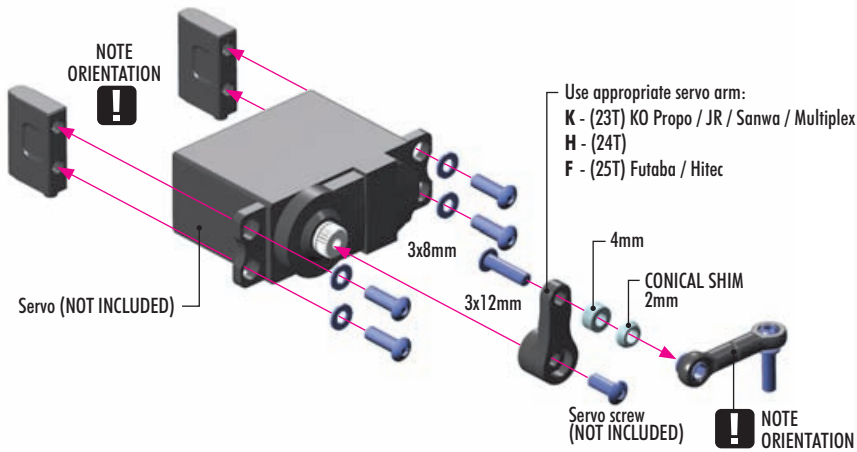
362280
CON. SHIM 3x6x2



902308 SH M3x8
902312 SH M3x12



961032
SHIM S 3.2



HUDY ALU SERVO HORNS

#293497	23T
#293498	24T
#293499	25T



HUDY CLAMP ALU SERVO HORNS

#293404	23T
#293405	24T
#293406	25T

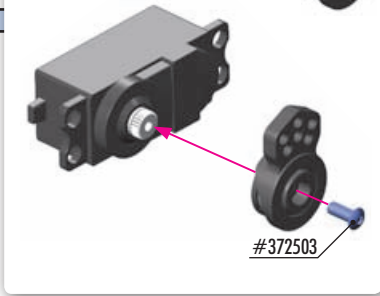
For more in-corner steering and better steering response, aluminum servo horns may be used.



TIP For increased safety of the servo during a crash we suggest to use optional servo saver that will absorb impacts and will eliminate servo damage. To install the servo saver the optional alu stands.



#372503
COMPOSITE SERVO SAVER - STIFF



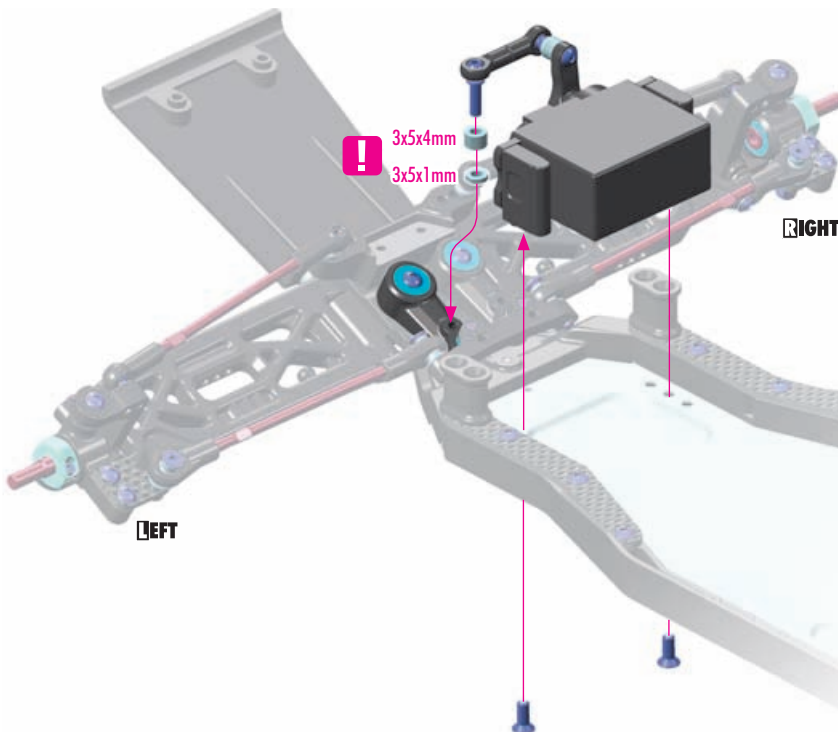
303141
SHIM 3x5x1



303144
SHIM 3x5x4



903310
SFH M3x10



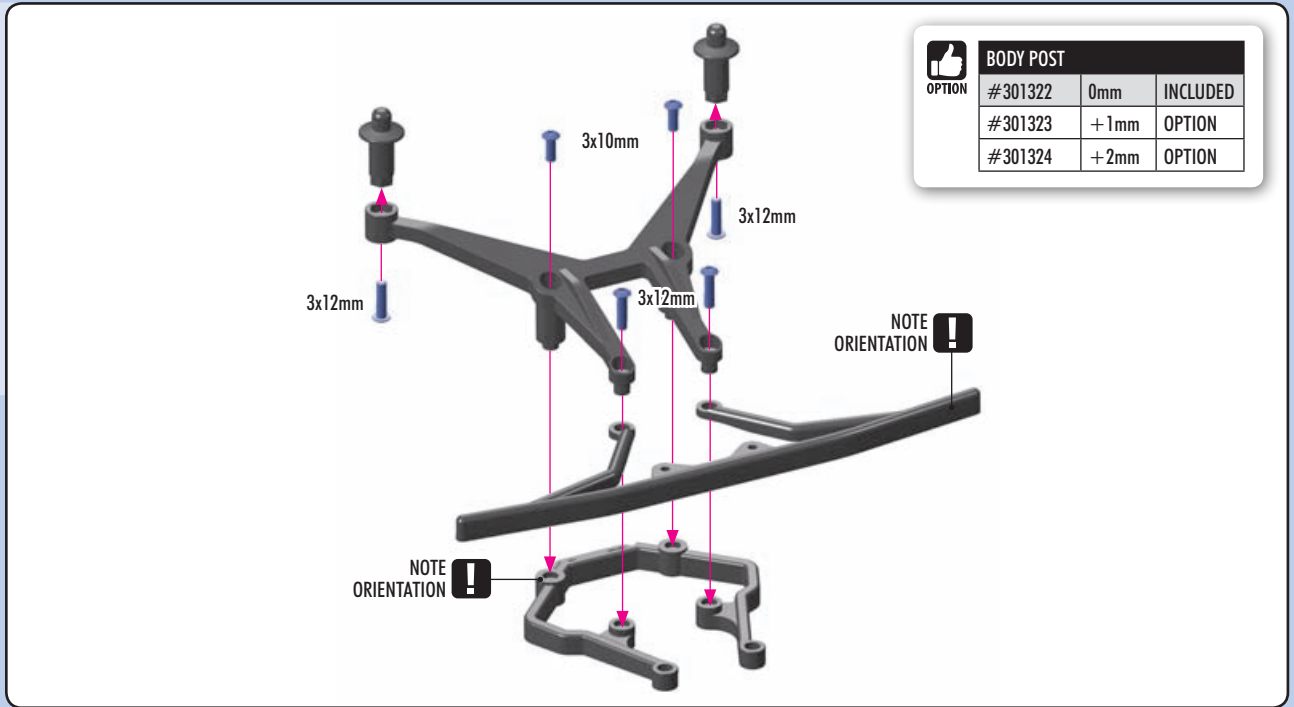
7. FINAL ASSEMBLY



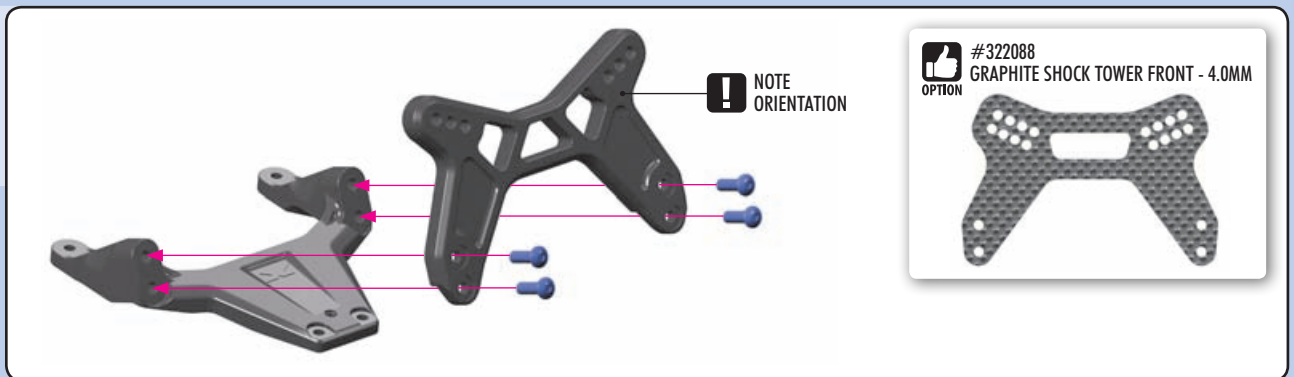
902310
SH M3x10



902312
SH M3x12



902310
SH M3x10



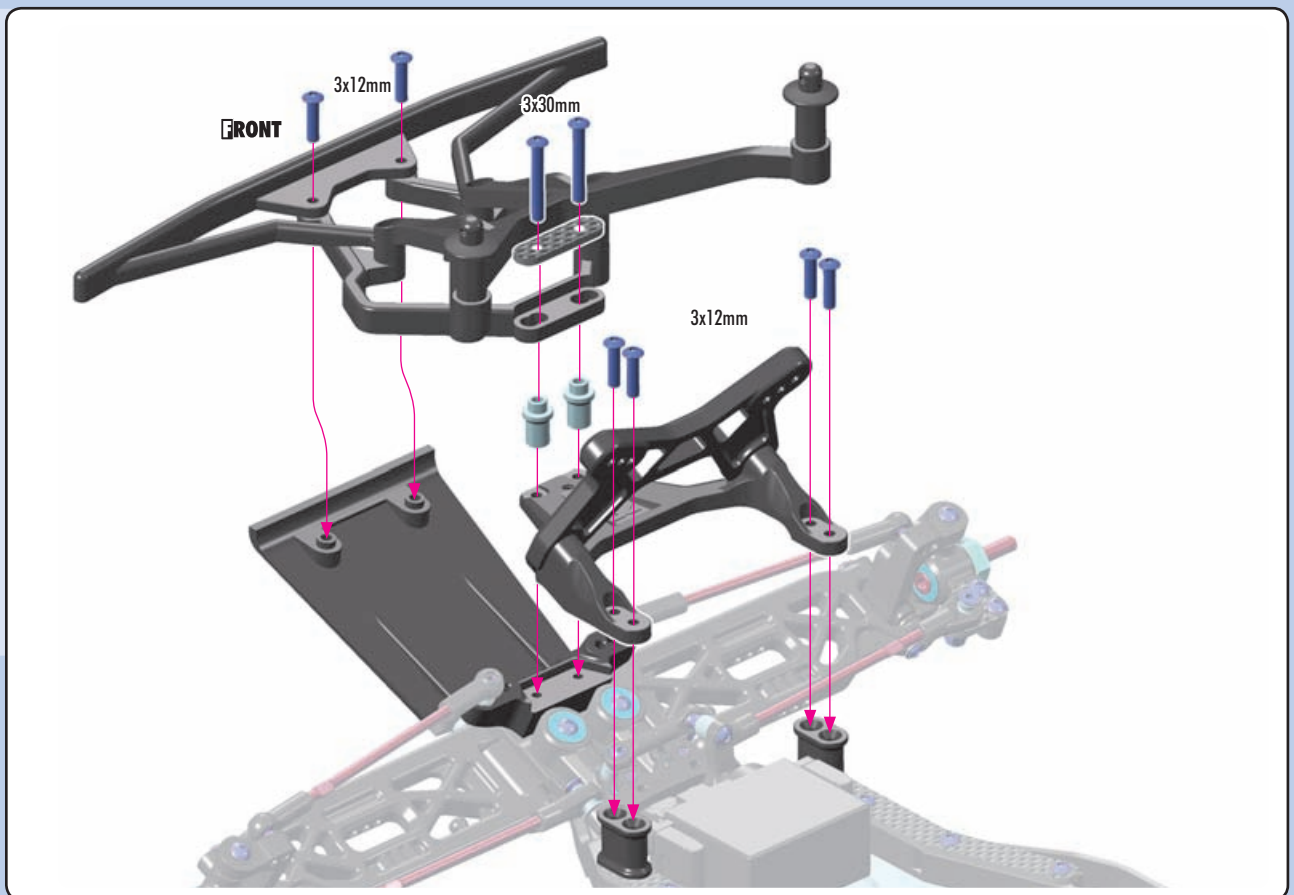
#322088
GRAPHITE SHOCK TOWER FRONT - 4.0MM



902312
SH M3x12



902330
SH M3x30



7. FINAL ASSEMBLY

2x **L=R**

902322 SH M3x22

960030 NUT M3

FRONT

SHORT SHOCK

NOTE ORIENTATION

NOTE ORIENTATION

INITIAL SETTING

INITIAL SETTING

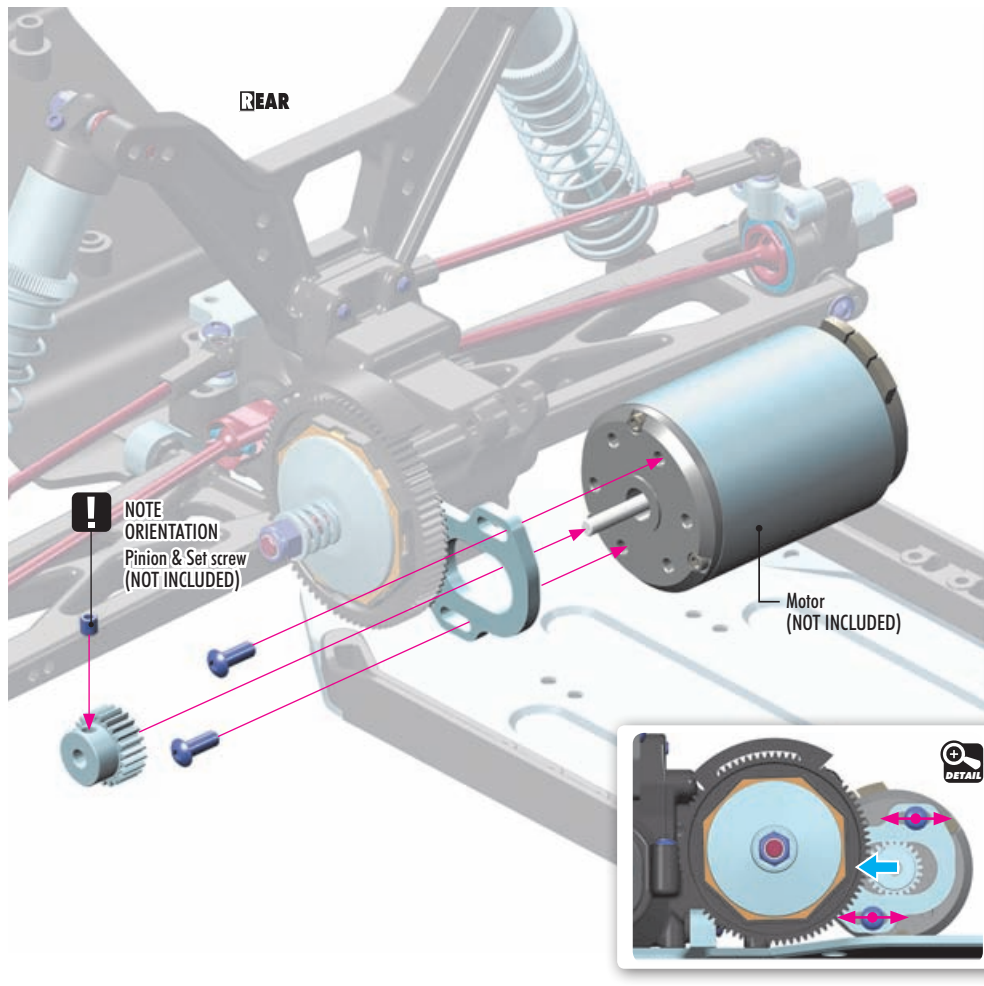
902312 SH M3x12

960030 NUT M3

INITIAL SETTING

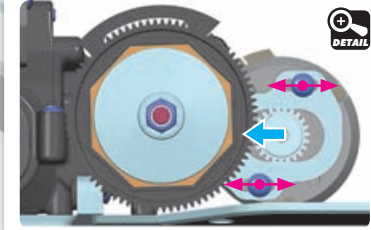
INITIAL SETTING

7. FINAL ASSEMBLY



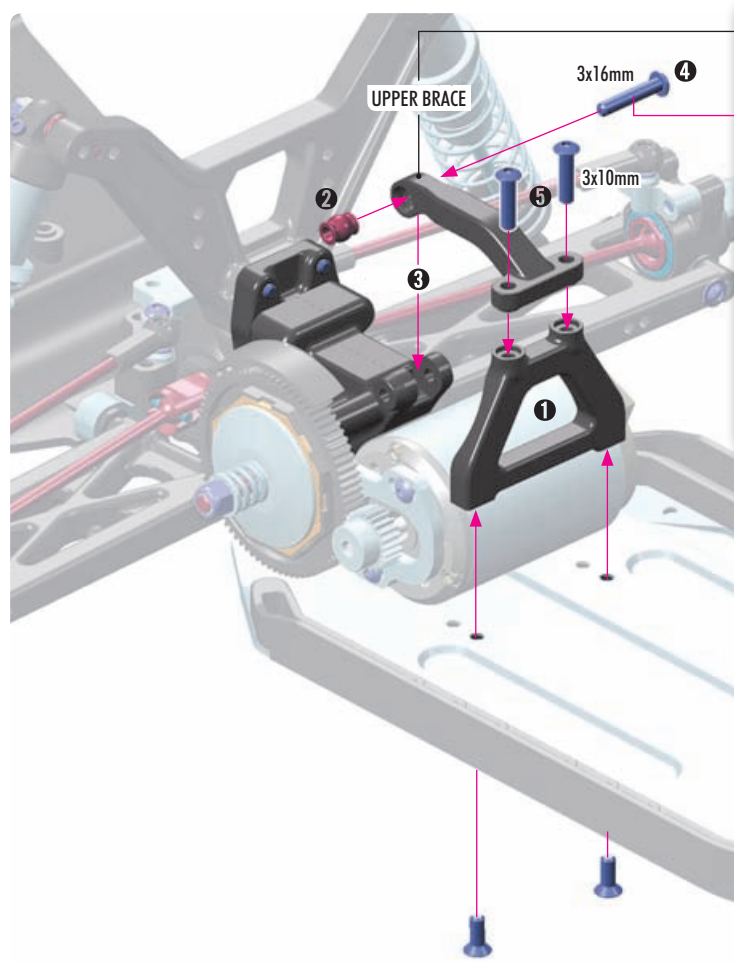
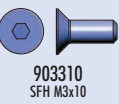
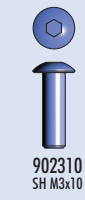
XRAY PINIONS (48P)

#365718	18T
#305919	19T
#294020	20T
#294021	21T
#294022	22T
#294023	23T
#305924	24T
#305925	25T
#365726	26T
#365727	27T
#365728	28T
#365729	29T
#365730	30T
#365731	31T
#365732	32T
#365733	33T
#365734	34T
#365735	35T
#365736	36T
#365737	37T
#365738	38T



Adjust the motor so the pinion meshes with the spur gear properly. Make sure the gear mesh is not too tight.

There should be a small amount of play between the teeth of the pinion gear and the spur gear.

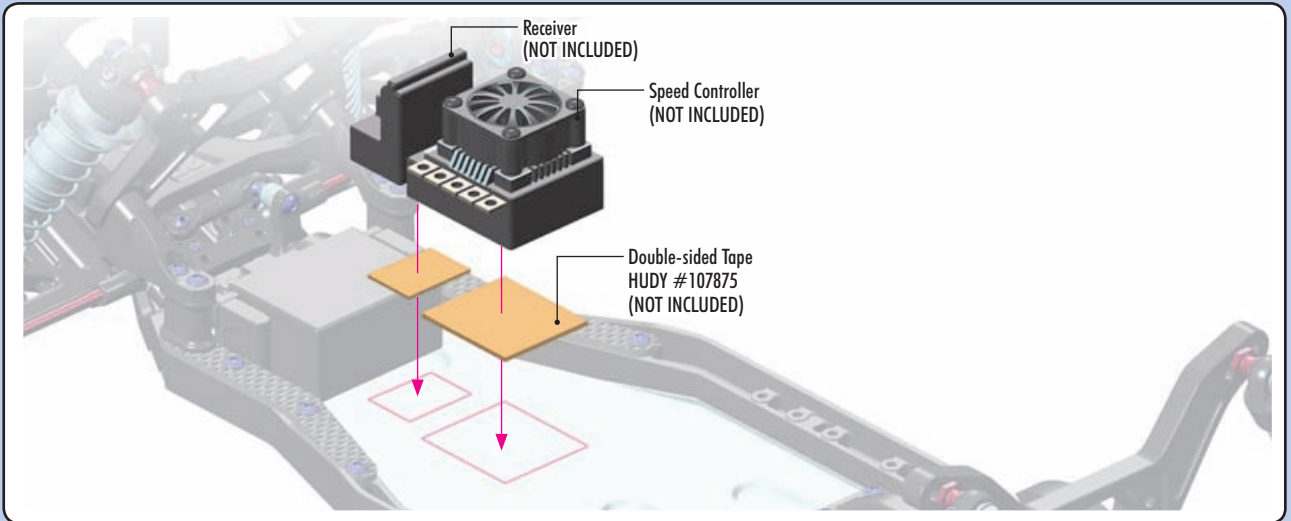


ADJUSTMENT WITHOUT UPPER BRACE

INCORRECT **IMPORTANT** **CORRECT**

The screw must be used even though the brace is not mounted. Make sure to not overtighten the screw. The screw cannot stick out past the gearbox.

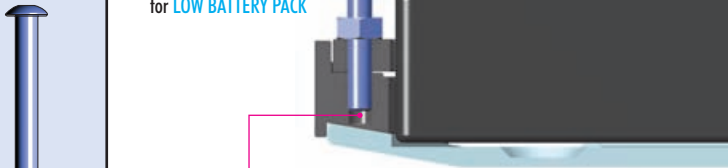
7. FINAL ASSEMBLY



901308
SB M3x8



NOTE ORIENTATION
for **LOW BATTERY PACK**



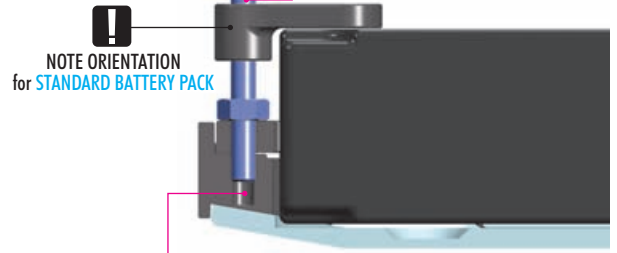
DO NOT over-tighten the screw to avoid side guard damage.

902325
SH M3x25

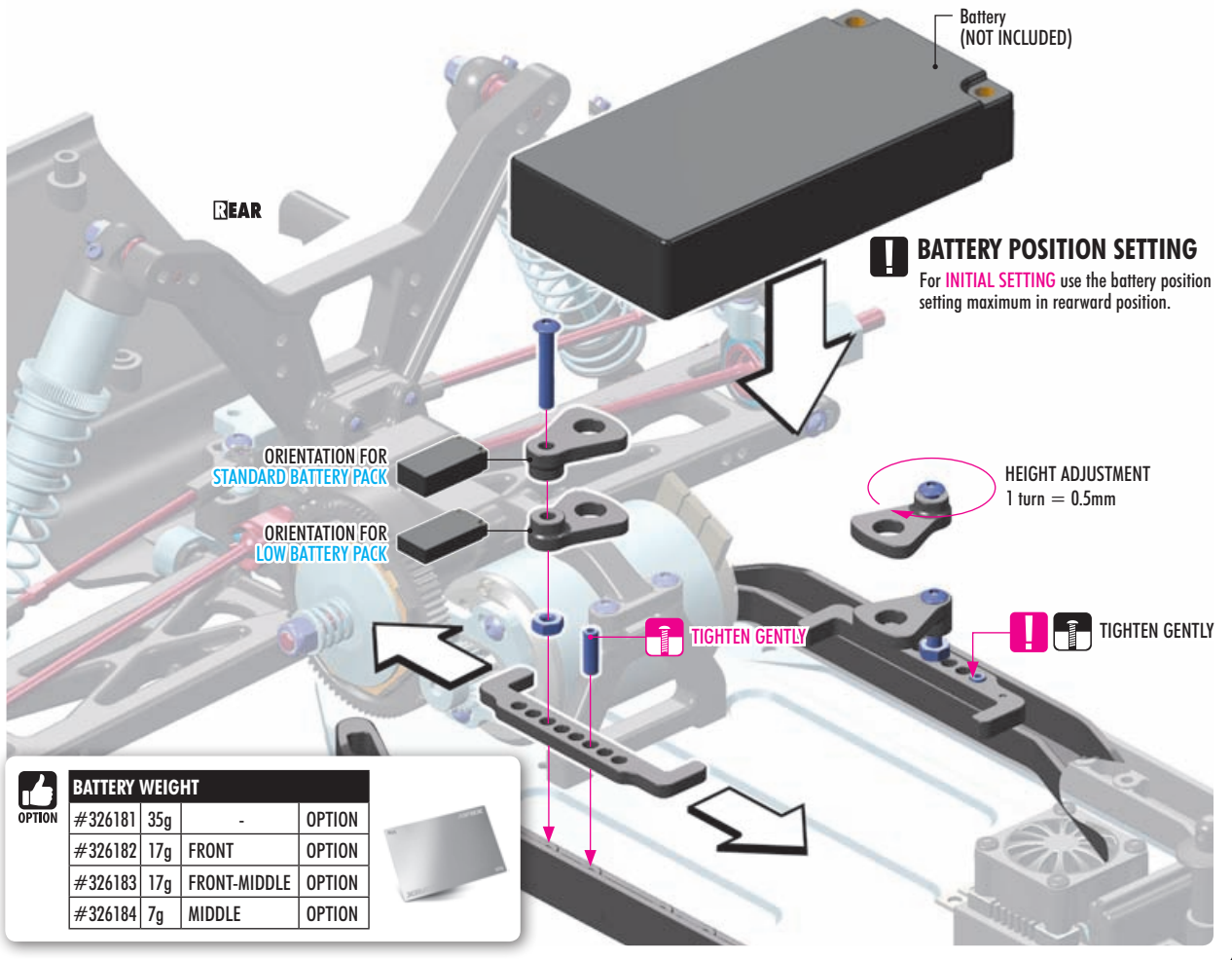


960032
NUT M3

NOTE ORIENTATION
for **STANDARD BATTERY PACK**



DO NOT over-tighten the screw to avoid side guard damage.

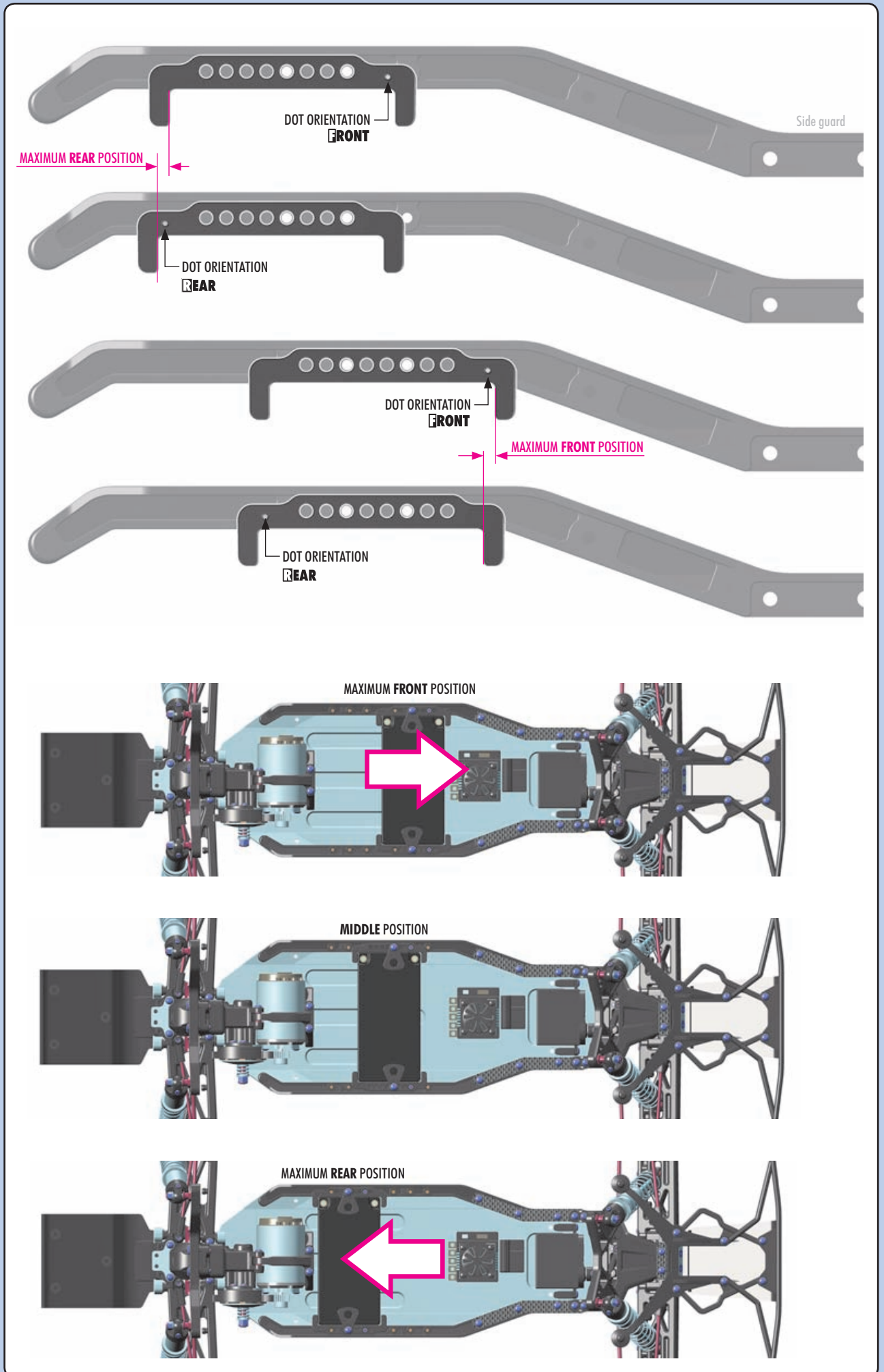


BATTERY WEIGHT

OPTION	Part #	Weight	Position	Type
	#326181	35g	-	OPTION
	#326182	17g	FRONT	OPTION
	#326183	17g	FRONT-MIDDLE	OPTION
	#326184	7g	MIDDLE	OPTION



7. FINAL ASSEMBLY



7. FINAL ASSEMBLY

2x

902310
SH M3x10

902312
SH M3x12

960030
NUT M3

981212
P 2x12

BODY MOUNT SET			
OPTION	#301322	0mm	INCLUDED
	#301323	+1mm	OPTION
	#301324	+2mm	OPTION

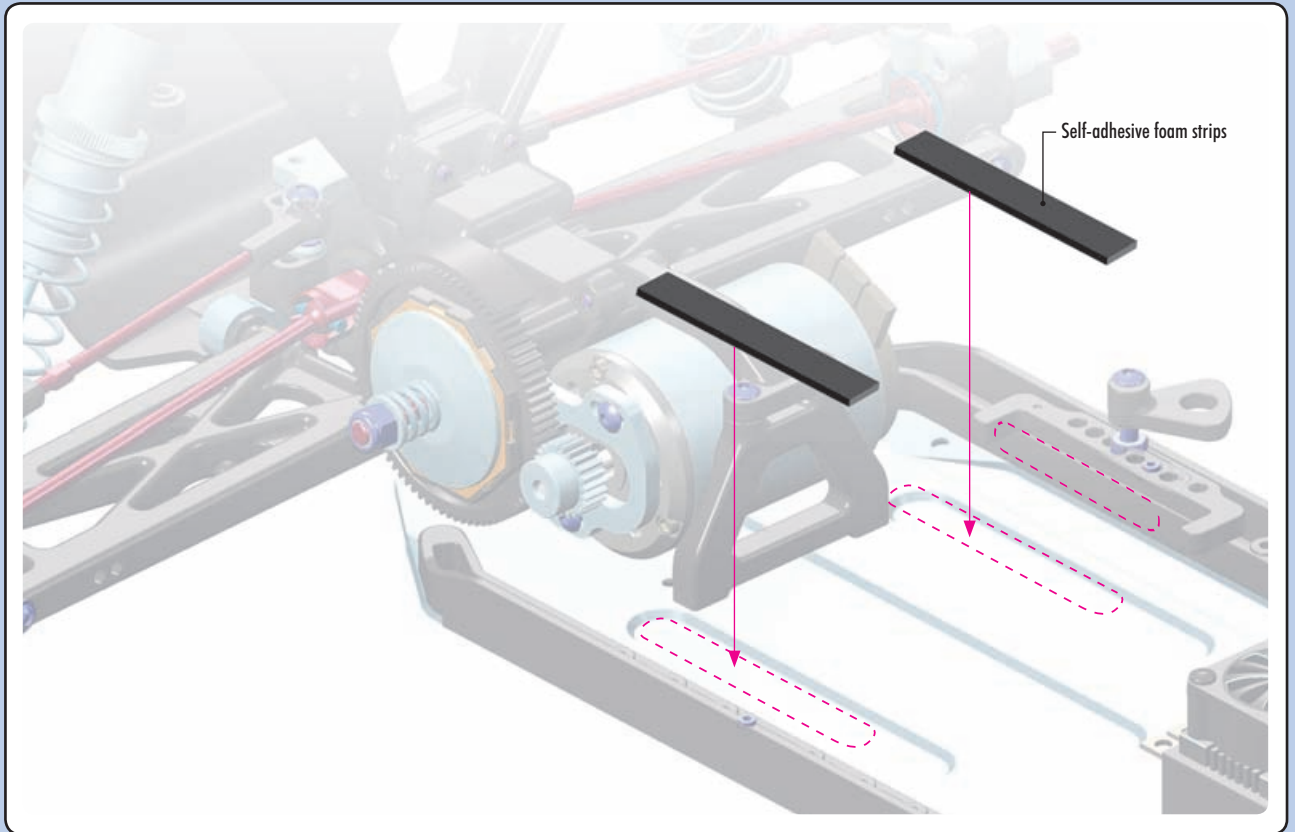
2x

902310
SH M3x10

902312
SH M3x12

REAR

7. FINAL ASSEMBLY



903314
SFH M3x14



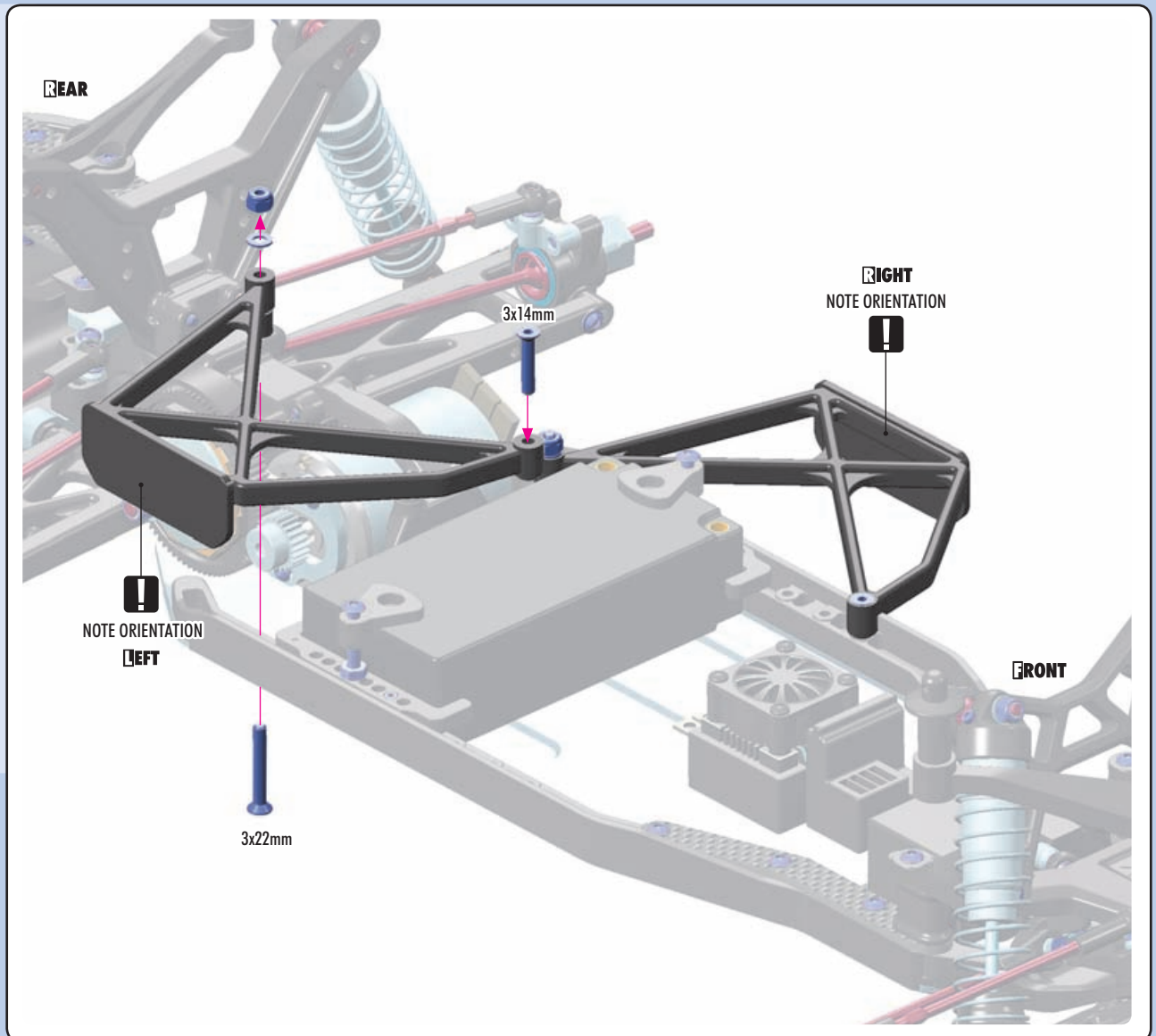
903322
SFH M3x22



960030
NUT M3



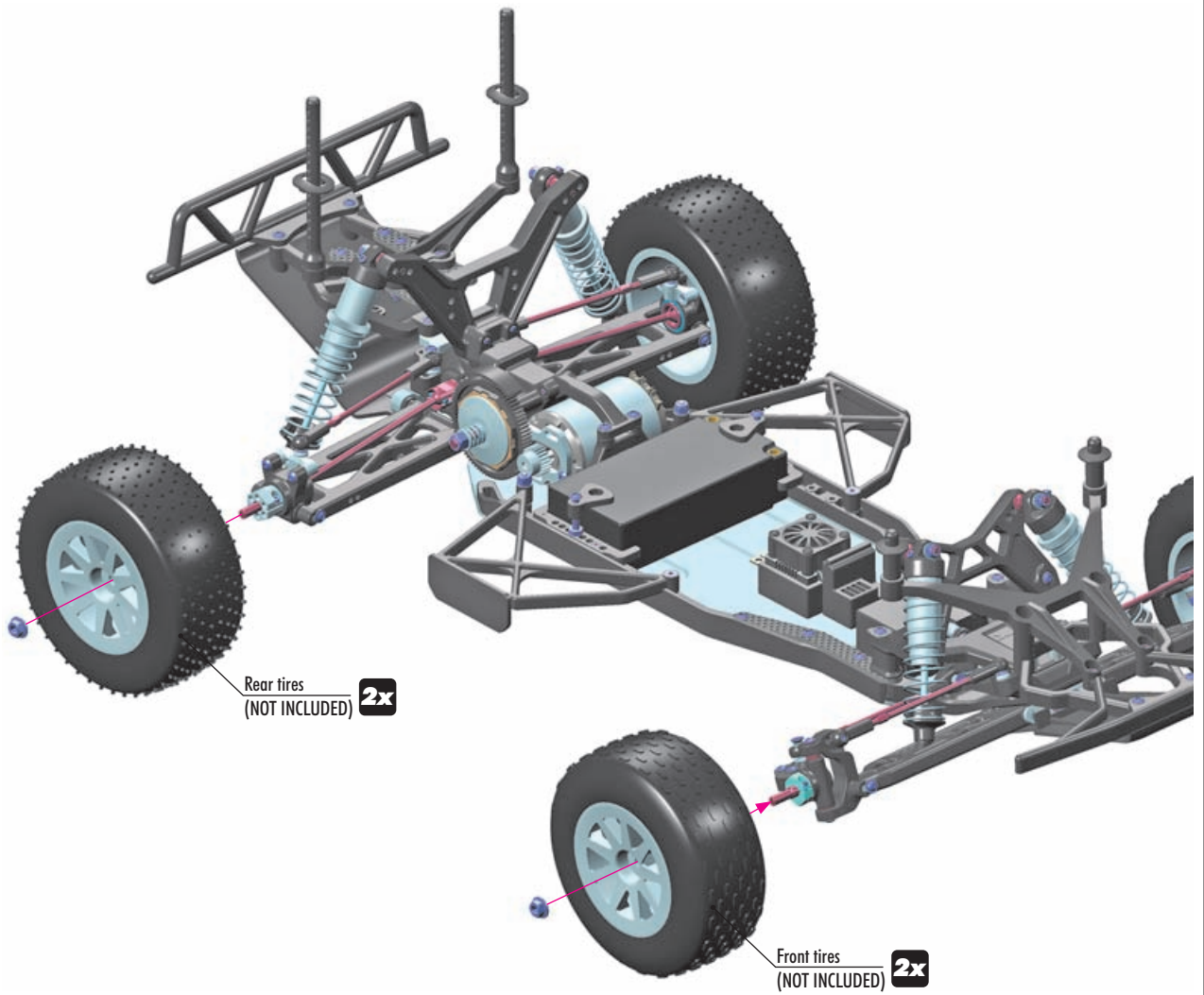
961032
SHIM S 3.2



7. FINAL ASSEMBLY



960240
N M4



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 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.
- 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.

- 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.

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

- 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 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 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.

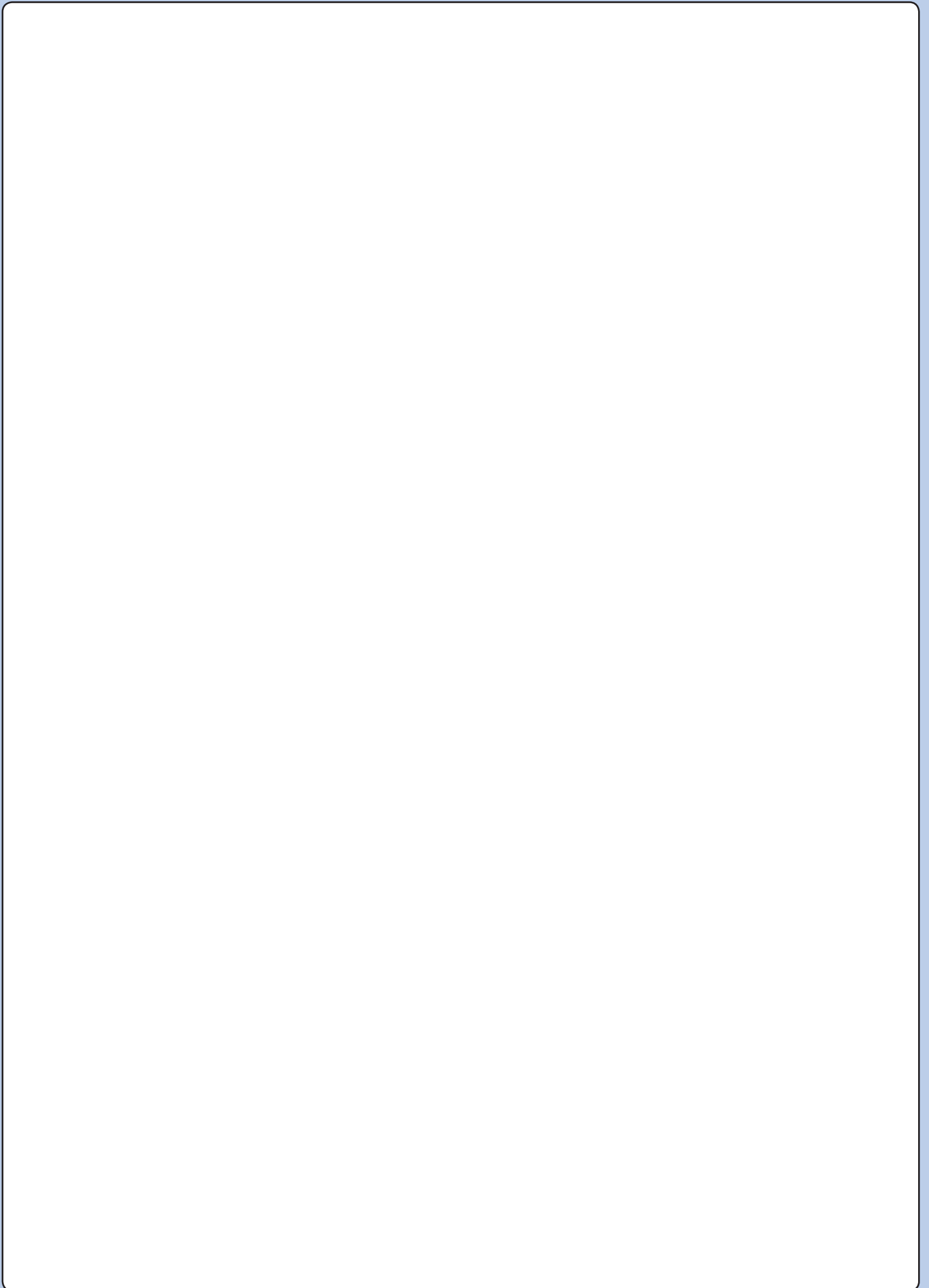


#106210 HUDY GRAPHITE GREASE or #106213 HUDY JOINT GREASE

HUDY SPRING STEEL™

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

brown color will 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.



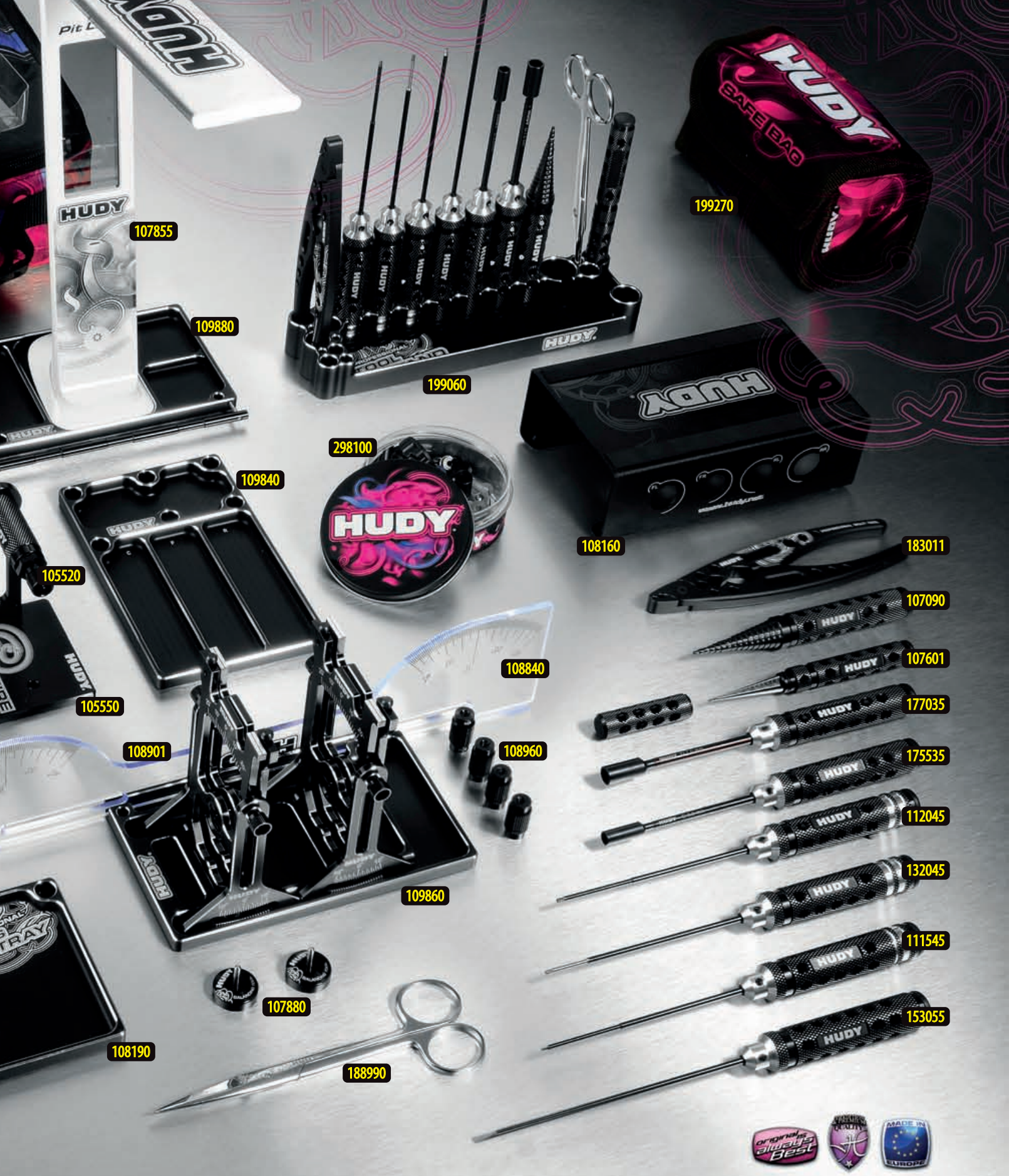
EXCLUSIVE PROFESSIONAL

HUDY



- 104004 HUDY AIR VAC - VACUUM PUMP - 1/10 OFF-ROAD
- 105500 HUDY UNIVERSAL TIRE BALANCING STATION
- 105520 WHEEL ADAPTER FOR 1/10 ON-ROAD & 1/10 OFF-ROAD - 12MM
- 106000 HUDY DRIVE PIN REPLACEMENT TOOL (FOR 3MM PINS)
- 106036 EJECTOR PIVOT PIN & ALTERNATING PIVOT 2.5MM FOR #106000
- 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
- 107855 HUDY PIT LED
- 107880 CHASSIS BALANCING TOOL (2)

- 108160 HUDY 1/10 OFF-ROAD CAR STAND - V2
- 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
- 108603 FLAT SET-UP BOARD FOR 1/10 OFF-ROAD - LIGHTWEIGHT - DARK GREY
- 108604 FLAT SET-UP BOARD FOR 1/10 OFF-ROAD - LIGHTWEIGHT - TITAN
- 108605 FLAT SET-UP BOARD FOR 1/10 OFF-ROAD - LIGHTWEIGHT - BLACK
- 108660 PLASTIC SET-UP BOARD DECAL 331X386MM - 1/10 OFF-ROAD
- 108840 UPSIDE MEASURE PLATE FOR 1/8 OFF-ROAD
- 108901 HUDY SET-UP STATION FOR 1/10 OFF-ROAD CARS (WITH #108840)
- 108960 ALU NUT FOR 1/10 OFF-ROAD SET-UP SYSTEM (4)
- 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
 153055 LIMITED EDITION - SLOTTED SCREWDRIVER # 3.0MM - LONG
 175535 LIMITED EDITION - SOCKET DRIVER # 5.5MM
 177035 LIMITED EDITION - SOCKET DRIVER # 7.0MM
 181030 HUDY SPRING STEEL TURNBUCKLE WRENCH 3 MM
 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
 293110 HUDY BRUSHLESS RC FAN 30MM - WITH EXTERNAL SOLDERING TABS
 298100 HUDY TIN ROUND BOX 80X30MM
 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:

www.hudy.net



www.teamxray.com

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