XRAY XB8

1/8 LUXURY NITRO OFF-ROAD BUGGY

HIGH PERFORMANCE

INSTRUCTION MANUAL

INTRODUCTION

The XRAY XB8 is a modern, high-competition premium luxury racing 1/8 nitro off-road car that is the epitome of high-performance and fine distinctive design. Your XB8 offers highest performance, responsive handling, and traditionally exceptional XRAY quality, engineering, and design. The superb craftsmanship and attention to detail are clearly evident everywhere on the XRAY XB8.

XB8 was designed around a no compromise platform; the attention to detail creates a low maintenance, extra long life nitro buggy. The ultra-low center of gravity (CG) and optimized weight balance makes set-up, driving, and maintenance easy and quick.

The XRAY XB8 was created by blending highest-quality materials and excellent design. On high-speed flat tracks or bumpy tracks, whether driving for fun or racing to win, the XB8 delivers outstanding performance, speed, and precision handling.

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 support@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.

R/C & BUILDING TIPS

- Read and fully understand the instruction manual before building.
- Always keep this instruction manual ready at hand for quick reference, even after completing the assembly.
- Make sure all fasteners are properly tightened. Check them periodically.
- Make sure that chassis screws do not protrude from the chassis.
- Use removable threadlock (for example, LocTite® 242 blue grade) whenever metal screws go into metal, especially for engine mounts and the flywheel nut.
- 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.
- Remove and clean the air filter with nitro fuel when it becomes dirty. Spray fuel through the clean side to ensure proper dirt removal. Squeeze the filter to remove excess fuel. Recoat the air filter with oil and reinstall properly.
- Use nitro cleaner or a mild degreaser to clean the chassis. Avoid spraying the electronics. Do not use water!
- 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 support@teamxray.com, or contact the XRAY distributor in your country.

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 off-road buggy 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.

BEFORE YOU START

At the beginning of each section is an exploded view of the parts to be assembled. There is also a list of all the parts and part numbers that are related to the assembly of that section.

The part descriptions are color-coded to make it easier for you to identify the source of a part. Here are what the different colors mean:

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

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

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

CONTENTS

IMPORTANT NOTES – GENERAL

- This product is not suitable for children except under the direct supervision of an 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 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.
- Immediately after using your model, do NOT touch equipment on the model such as the engine and muffler, because they generate high temperatures. You may 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.
- 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.
- 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, please be responsible when operating all remote controlled models. Extra attention is called for when operating any nitro powered model. These models can reach very high speeds and use highly poisonous and flammable fuels. Exhaust sound becomes noise sometimes to the other people.
- Do not use your model:
  - Near real cars, animals, or people that are unaware that an R/C 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 where loud noises can disturb others, such as hospitals and residential areas.
  - Never run indoors. There is a high risk of fire and/or damage.

IMPORTANT NOTES – ELECTRICAL

- Insulate any exposed electrical wiring (using heat shrink tubing or electrical tape) to prevent dangerous short circuits.
- 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.
- 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.
- Do not allow the transmitter batteries to become low on charge, otherwise you risk losing control of the model.
- Do not allow any metal part to short circuit the receiver batteries or other electrical/electronic device on the model.

IMPORTANT NOTES – NITRO ENGINES

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

IMPORTANT NOTES – NITRO FUEL

- Handle fuel only outdoors. Never handle nitro fuel indoors, or mix nitro fuel in a place where ventilation is bad.
- Only use nitro fuel for R/C models. Do not use gasoline or kerosene in R/C models as it may cause a fire or explosion, and ruin your engine.
- Nitro fuel is highly inflammable, explosive, and poisonous. Never use fuel indoors or in places with open fires and sources of heat.
- Always keep the fuel container cap tightly shut.
- Always read the warning label on the fuel container for safety information.
- Nitro-powered model engines emit poisonous vapors and gasses. These vapors irritate eyes and can be highly dangerous to your health. We recommend wearing rubber or vinyl gloves to avoid direct contact with nitro fuel.
- Nitro fuel for RC model cars is made of the combination of the methyl alcohol, castor or synthetic oil, nitro methane etc. The flammability and volatility of these elements is very high, so be very careful during handling and storage of nitro fuel.
- Keep nitro fuel away from open flame, sources of heat, direct sunlight, high temperatures, or near batteries.
- Store fuel in a cool, dry, dark, well-ventilated place, away from heating devices, open flames, direct sunlight, or batteries. Keep nitro fuel away from children.
- Do not leave the fuel in the carburetor or fuel tank when the model is not in use. There is danger that the fuel may leak out.
- Wipe up any spilled fuel with a cloth
- Be aware of spilled or leaking fuel. Fuel leaks can cause fires or explosions.
- Do not dispose of fuel or empty fuel containers in a fire. There is danger of explosion.

FIRST AID

- Do not swallow nitro fuel or get it in your eyes. If this happens, immediate measures should be taken.
- If fuel is swallowed, immediately drink large quantities of water and induce vomiting. Consult a physician or poison control center immediately.
- If fuel gets into the eyes, rinse them well with water, and then consult a physician immediately.
- If fuel gets onto the skin, wash it with soap and water well.

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.

SYMBOLS USED

Part bags used

Assemble in the specified order

Assemble left and right sides the same way

Assemble front and rear the same way

F=R

Pay attention here

Assemble as many times as specified (here twice)

Apply instant glue

Apply oil

Ensure smooth non-binding movement

Use pliers

Cut off shadded portion

Use special tool

Cut off remaining material

Cut off remaining material from all plastic parts.

Tighten screw gently

CORECT ✓

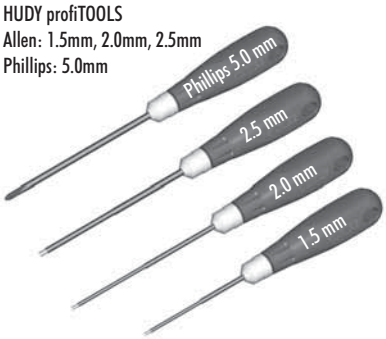
WRONG ✗

Overtightened

The threads are stripped.

TOOLS INCLUDED

HUDY profiTOOLS
Allen: 1.5mm, 2.0mm, 2.5mm
Phillips: 5.0mm



17mm Wheel Nut Tool

3mm Allen Wrench

Special Tool for all turnbuckles, nuts and shock clips

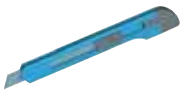
TOOLS REQUIRED

Needle Nose Pliers

Scissors

Side Cutters

Hobby Knife



Pliers

Cross wrench
(HUDY #107581)

Reamer
(HUDY #107600)

EQUIPMENT INCLUDED

Silicone Shock Oil

Silicone Diff Oil - Thick

Silicone Diff Oil - Thin

Air Filter Oil

5-cell 1200NiMh Receiver Pack

EQUIPMENT REQUIRED

Transmitter

Receiver

Steering and Throttle Servos

.21 Engine

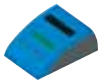
Manifold

Exhaust

Starter Box

Glow Plug Igniter

Battery Charger



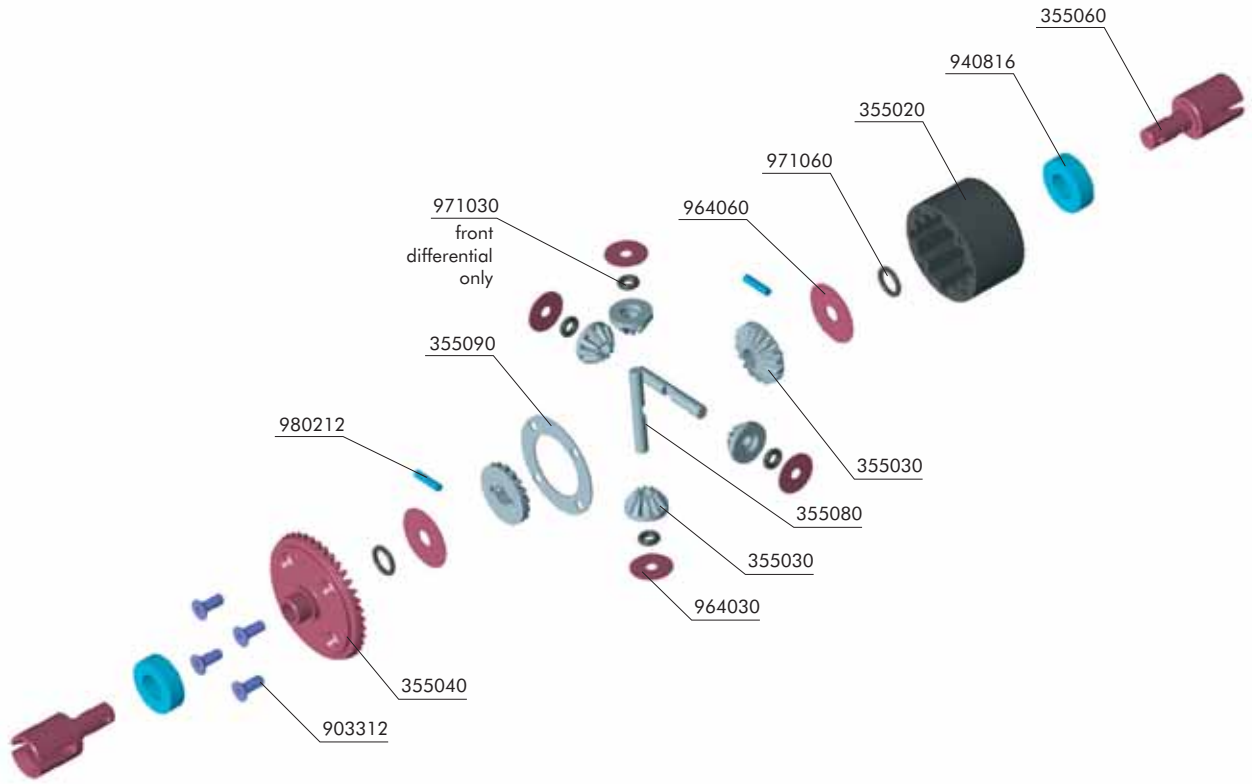
Tires & Inserts

Fuel

Lexan Paint

PROBLEM	CAUSE	SOLUTION
Engine does not start	• Fuel tank is empty or carburetor is not primed • Bad glowplug or dead glowdriver battery • Fuel lines, fuel filter, air cleaner, or muffler is clogged • Engine is flooded due to over-priming • Carburetor is not adjusted properly • Throttle servo linkage not adjusted properly	• Fill fuel tank with fuel and prime • Replace glowplug or recharge/replace glowdriver battery • Clean or replace clogged part(s) • Remove glowplug, turn car over to discharge fuel from cylinder. Test glowplug and replace if defective • Set idle and main/slow needle adjusting screw to standard starting position • Move throttle servo to neutral position and re-adjust linkage(s)
Engine starts but then stalls	• Fuel tank is empty • Fuel lines, fuel filter, air cleaner, or muffler is clogged • Carburetor is not adjusted properly • Engine has overheated	• Fill fuel tank with fuel • Clean or replace clogged part(s) • Re-adjust idle and main/slow needle adjusting screw • Allow engine to thoroughly cool down and open main needle adjusting screw 30° turn richer (CCW)
Bad reaction and response from engine	• Carburetor is not adjusted properly • Fuel lines, fuel filter, air cleaner, or muffler is clogged • Low fuel pressure from muffler	• Re-adjust main/slow needle adjusting screw • Clean or replace clogged part(s) • Properly install pressure line between muffler and fuel tank
Car is hard to control	• Weak transmitter and/or receiver batteries • Low reception from radio antennas • Servo linkages not adjusted properly	• Recharge or replace batteries • Fully extend transmitter and receiver antennas • Move servo to neutral then re-adjust linkage(s)
Steering does not work properly	• Weak transmitter and/or receiver batteries • Bent linkages or driveshafts • Loose steering components • Drivetrain damage	• Recharge or replace batteries • Check tightness of steering components and tighten if necessary • Replace damaged parts
Handling problems	• Shocks are not working properly • Suspension is binding • Improper tires	• Rebuild the shocks and replace worn or broken parts • Make sure suspension moves freely. Replace worn or broken parts • Use different tires
Steering feels sluggish or vague	• Suspension is binding • Damaged steering servo	• Make sure suspension moves freely, and replace worn or broken parts • Check the steering servo for damage and wear, and replace/repair if necessary
The car does not drive straight	• Suspension is binding • Steering trim is off-center • Wheels are loose • Damaged steering servo	• Make sure suspension moves freely, and replace worn or broken parts • Adjust steering trim until car drives straight • Check the make sure the wheel nuts are properly tightened • Check the steering servo for damage and wear, and replace/repair if necessary

1. FRONT & REAR DIFFERENTIAL



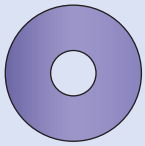
BAGS

1.1

1.2

35 5020	DIFFERENTIAL CASE	94 0816	HIGH-SPEED BALL-BEARING 8x16x5 BLUE COVERED (2)
35 5030	STEEL DIFF BEVEL & SATELLITE GEARS (2+4)	96 4030	WASHER S 3.5x12x0.2 (10)
35 5040	FRONT/REAR DIFF LARGE BEVEL GEAR 40T - HUDY STEEL	96 4060	WASHER S 6x18x0.2 (10)
35 5060	FRONT/REAR DIFF OUTDRIVE ADAPTER (2) - HUDY SPRING STEEL™	97 1030	SILICONE O-RING 3x1.5 (10)
35 5080	DIFF PIN (2)	97 1060	SILICONE O-RING 6x1.5 (10)
35 5090	DIFF GASKET (4)	98 0212	PIN 2x11.6 (10)
90 3312	HEX SCREW SFH M3x12 (10)		

940816
BB 8x16x5

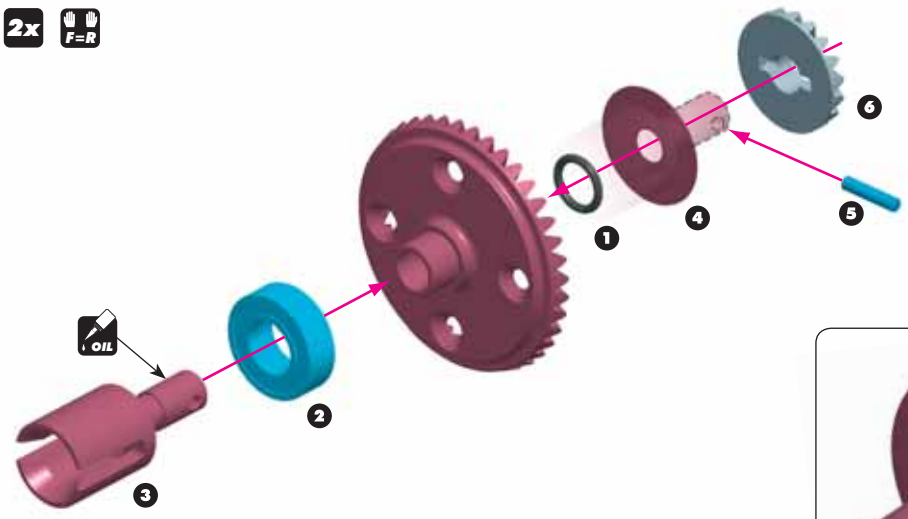


964060
S 6x18x0.2

971060
O 6x1.5

980212
P 2x11.6

2x F=R



ASSEMBLED VIEW

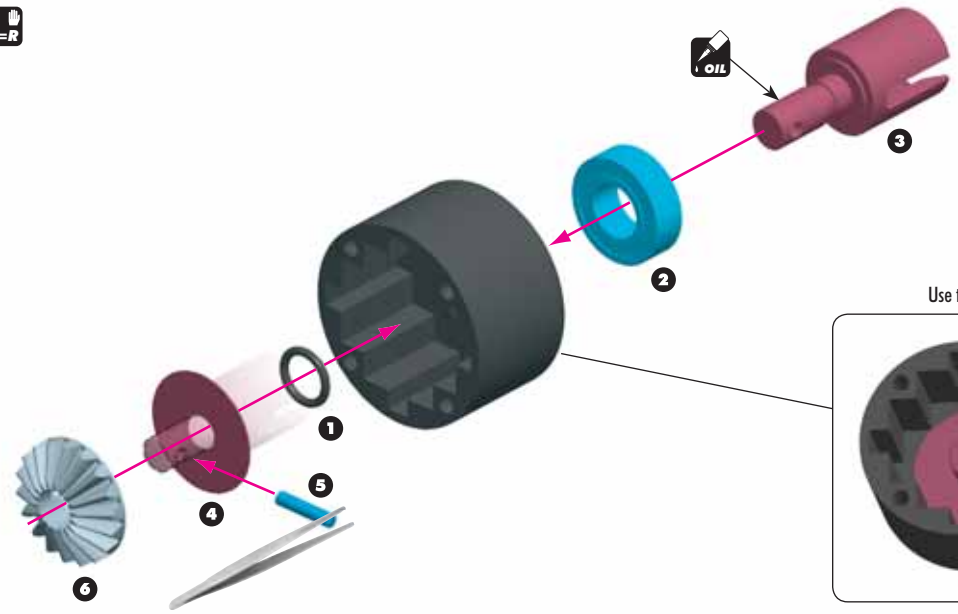
940816
BB 8x16x5

964060
S 6x18x0.2

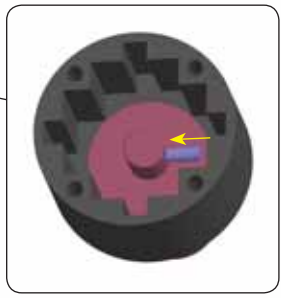
971060
O 6x1.5

980210
P 2x11.6

2x F=R



Use tweezers to insert pin

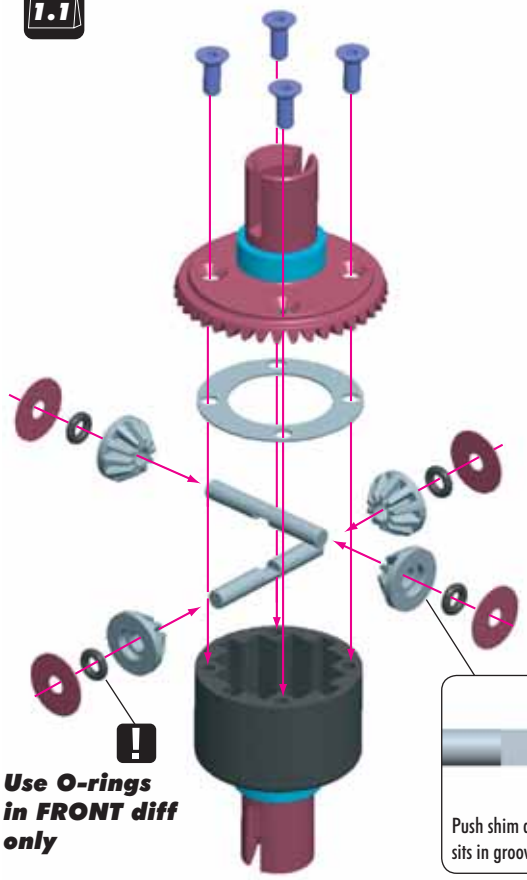


903312
SFH M3x12

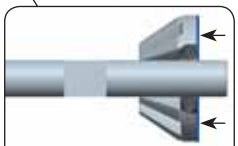
971030
O 3x1.5

964030
S 3.5x12x0.2

1.1 FRONT DIFFERENTIAL

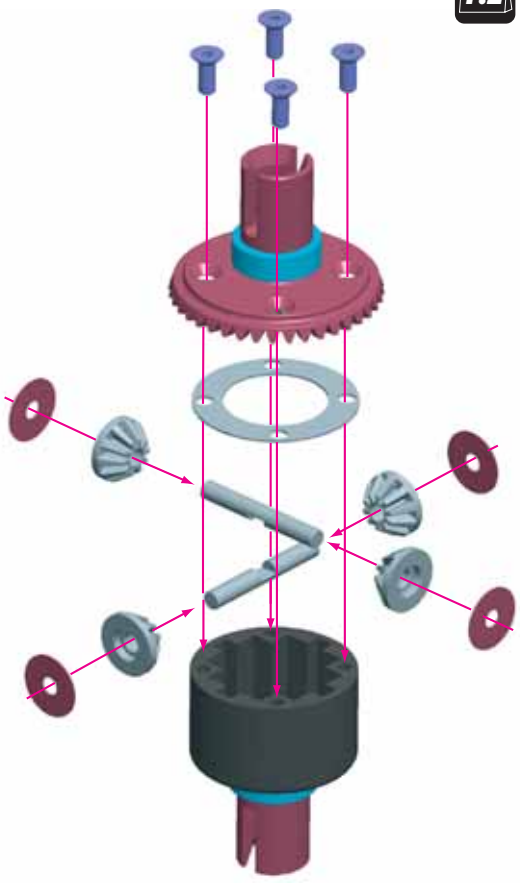


Use O-rings in FRONT diff only



Push shim against O-ring so it sits in groove

1.2 REAR DIFFERENTIAL



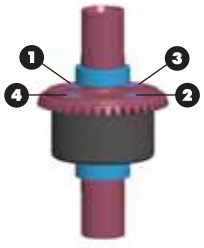
Front diff:

THICK silicone oil 5.000~10.000W
Fill 80% full

THICK OIL

Tight the screws equally

Finish tightening in this order

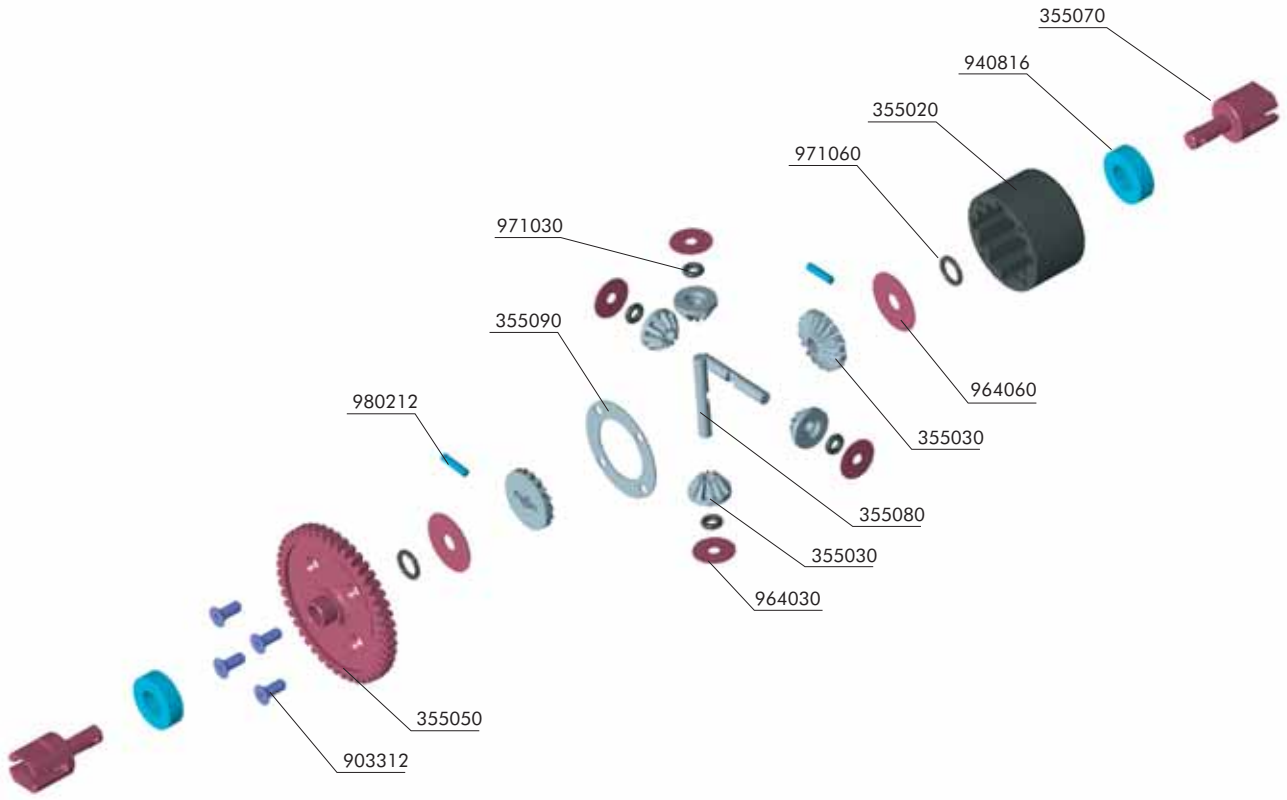


Rear diff:

THIN silicone oil 1000W
Fill 80% full

THIN OIL

CENTER DIFFERENTIAL

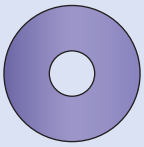


BAG

1.3

35 5020	DIFFERENTIAL CASE	90 3312	HEX SCREW SFH M3x12 (10)
35 5030	STEEL DIFF BEVEL & SATELLITE GEARS (2+4)	94 0816	HIGH-SPEED BALL-BEARING 8x16x5 BLUE COVERED (2)
35 5050	CENTER DIFF SPUR GEAR 46T - HUDY STEEL	96 4030	WASHER S 3.5x12x0.2 (10)
35 5070	CENTER DIFF OUTDRIVE ADAPTER (2) - HUDY STEEL	96 4060	WASHER S 6x18x0.2 (10)
35 5080	DIFF PIN (2)	97 1030	SILICONE O-RING 3x1.5 (10)
35 5090	DIFF GASKET (4)	97 1060	SILICONE O-RING 6x1.5 (10)
		98 0212	PIN 2x11.6 (10)

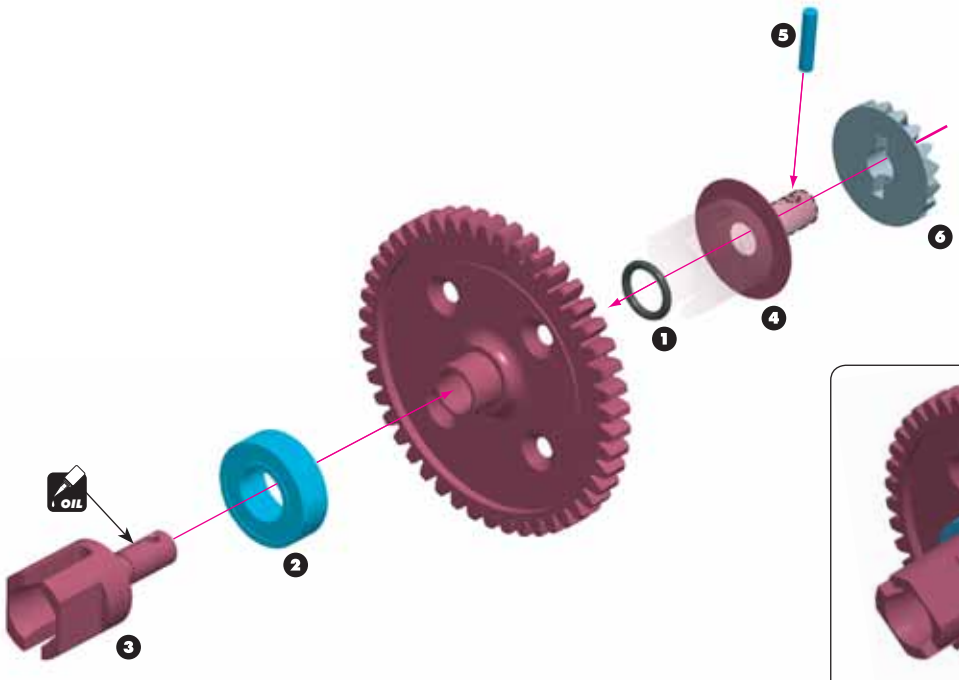
940816
BB 8x16x5



964060
S 6x18x0.2

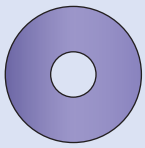
971060
O 6x1.5

980212
P 2x11.6



ASSEMBLED VIEW

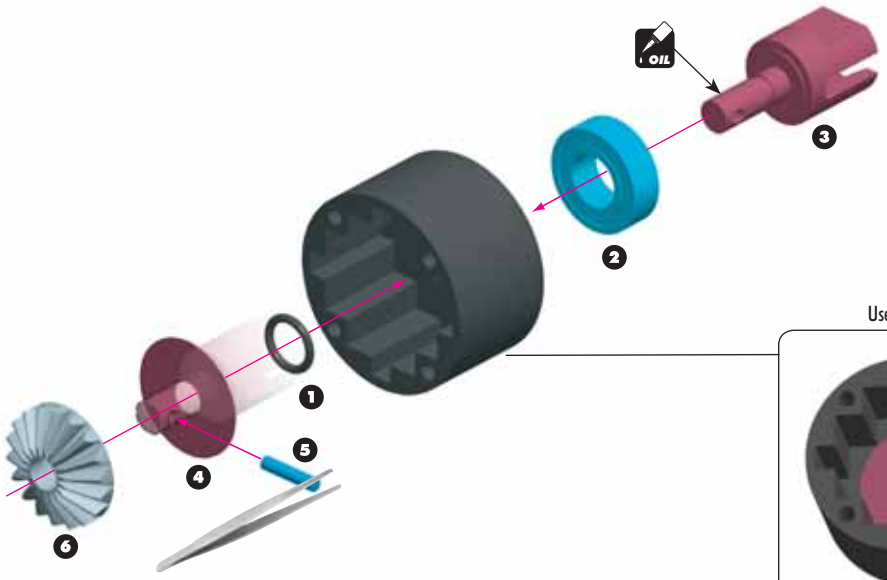
940816
BB 8x16x5



964060
S 6x18x0.2

971060
O 6x1.5

980212
P 2x11.6

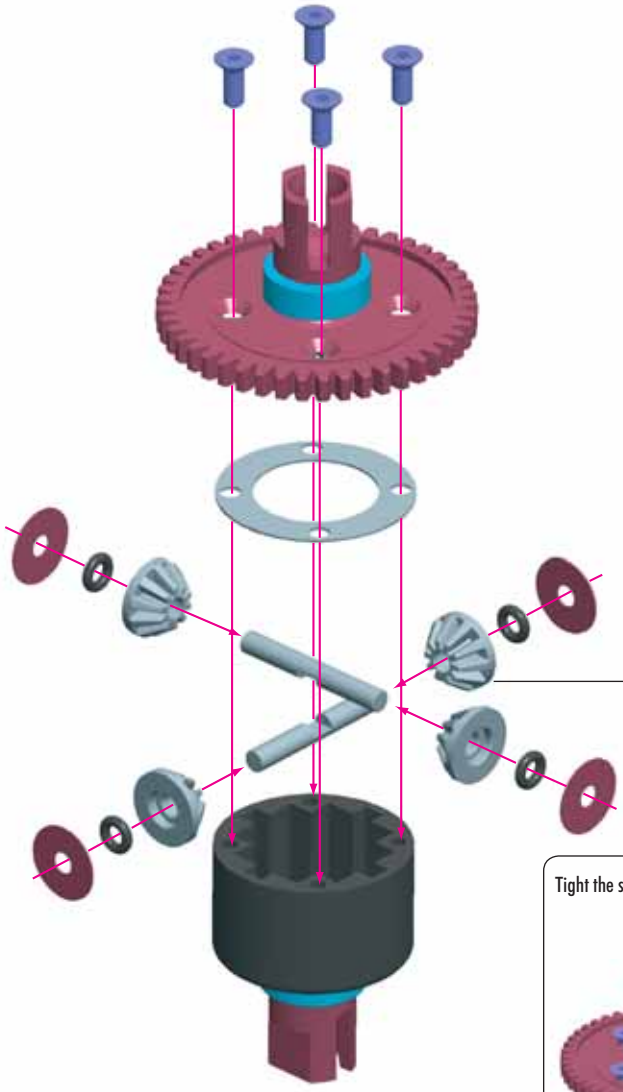


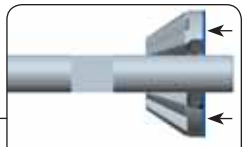
Use tweezers to insert pin

903312
SFH M3x12

971030
O 3x1.5

964030
S 3.5x12x0.2





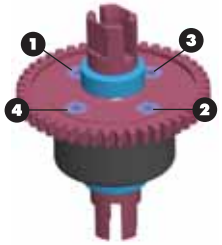
Push shim against O-ring so it sits in groove

Center diff:

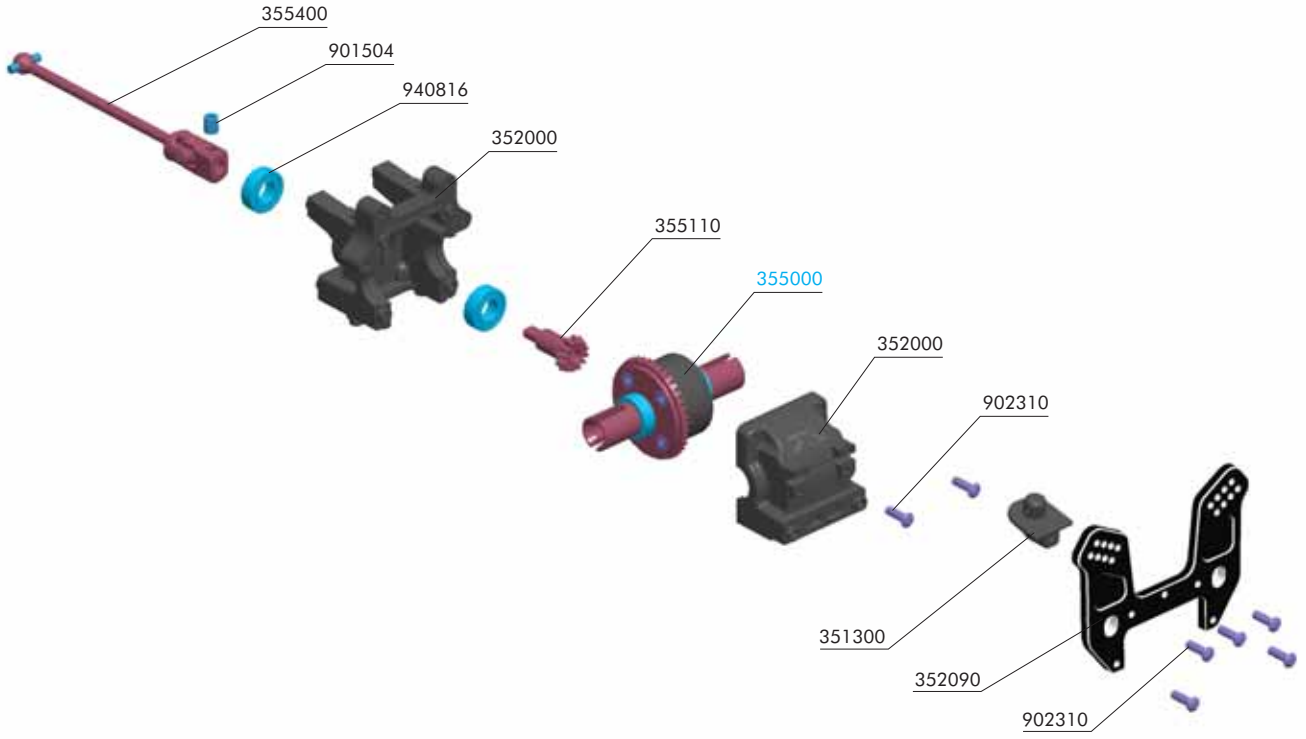
THICK silicone oil 5.000~10.000W
Fill 80% full

Tight the screws equally

Finish tightening in this order



2. FRONT TRANSMISSION

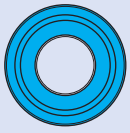


BAG 2.1

35 1300	BODY POSTS	90 1504	HEX SCREW SB M5x4 (10)
35 2000	DIFF BULKHEAD BLOCK SET FRONT	90 2310	HEX SCREW SH M3x10 (10)
35 2090	ALU FRONT SHOCK TOWER - CNC MACHINED 7075 T6 (4MM)	94 0816	HIGH-SPEED BALL-BEARING 8x16x5 BLUE COVERED (2)
35 5400	FRONT UNIVERSAL CENTRAL DRIVE SHAFT - HUDY SPRING STEEL		
35 5110	BEVEL DRIVE GEAR 12T	35 5000	FRONT/REAR DIFFERENTIAL - SET

901504
SB 5x4

902310
SH 3x10



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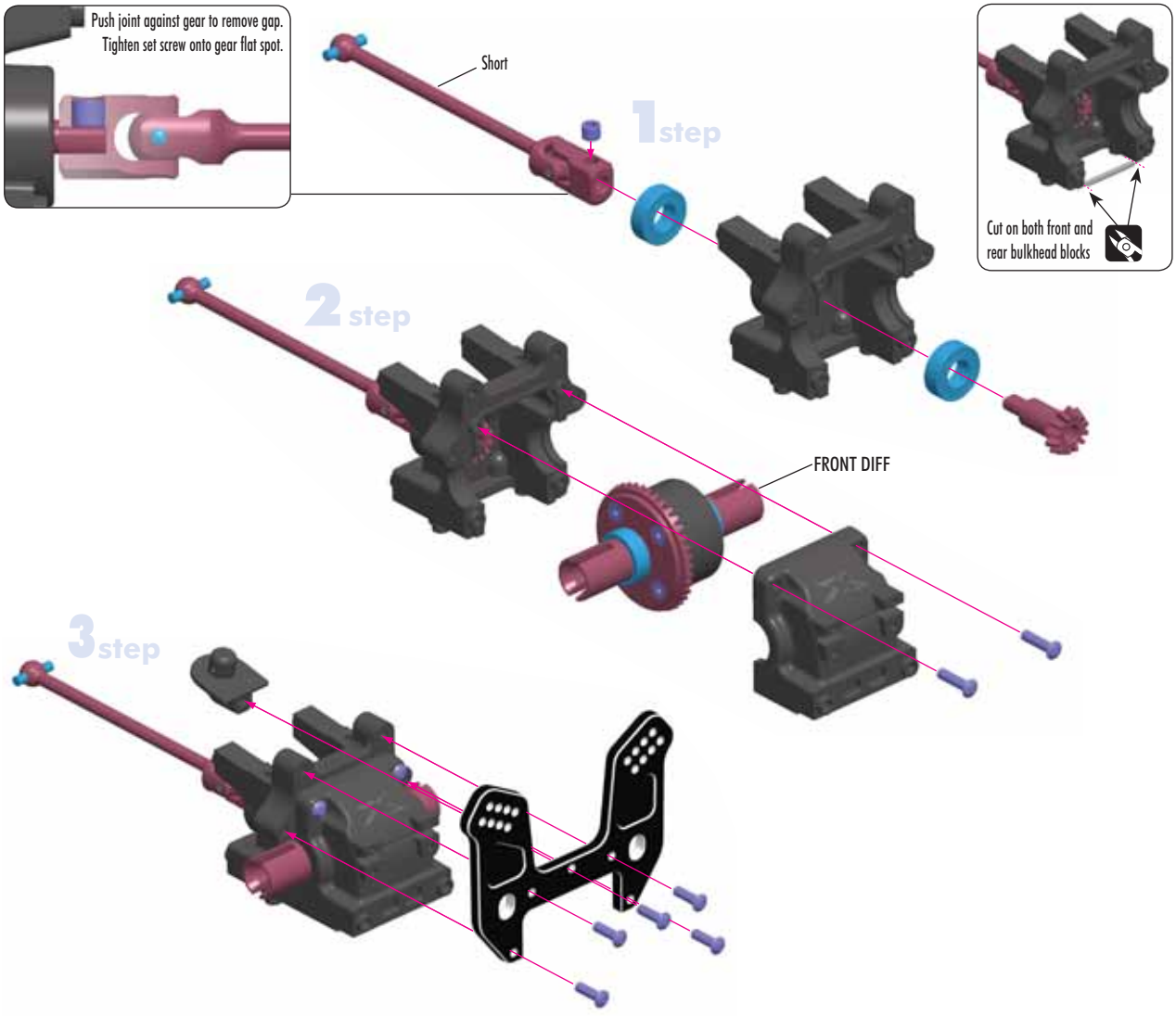
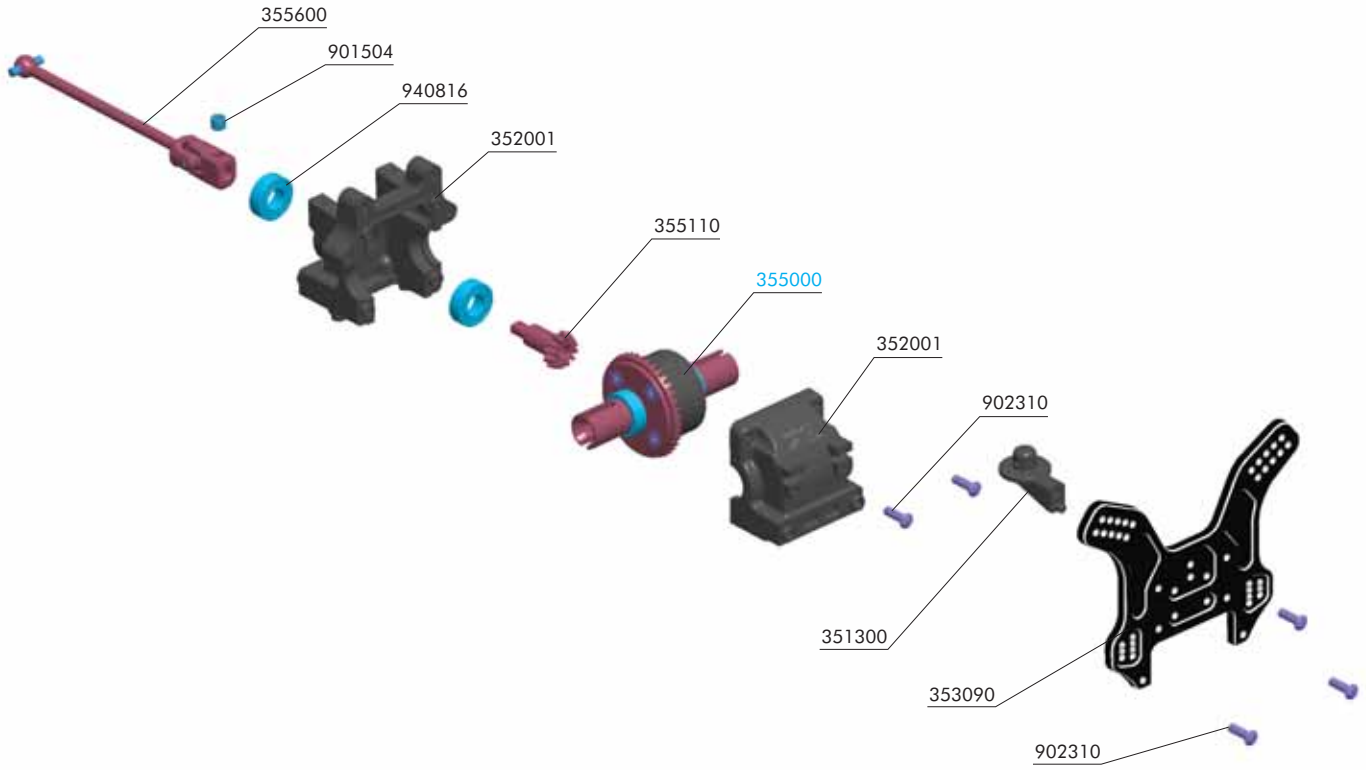
BB 8x16X5





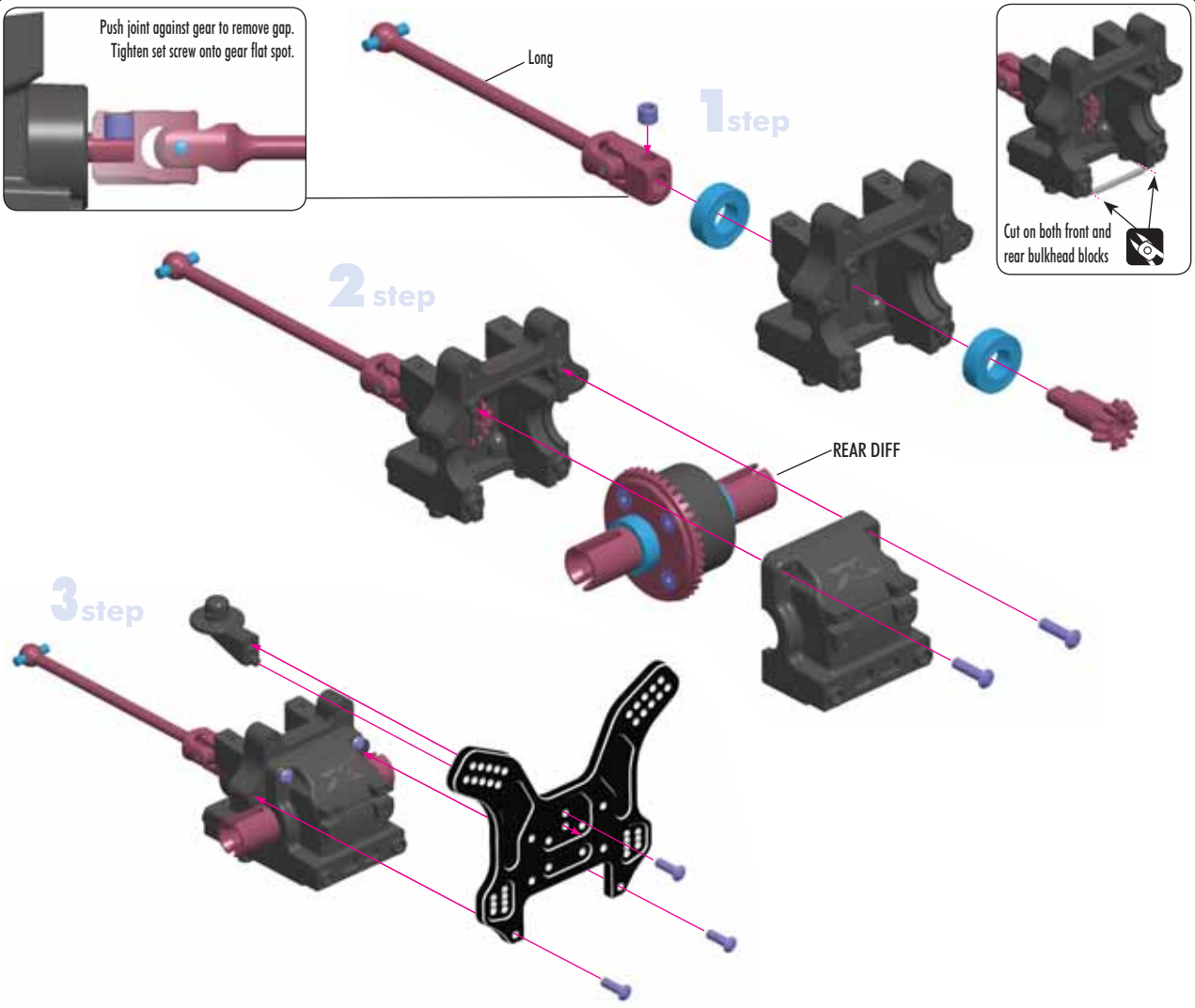
BAG 2.2

35 1300	BODY POSTS	90 1504	HEX SCREW SB M5x4 (10)
35 2001	DIFF BULKHEAD BLOCK SET REAR	90 2310	HEX SCREW SH M3x10 (10)
35 3090	ALU REAR SHOCK TOWER - CNC MACHINED 7075 T6 (4MM)	94 0816	HIGH-SPEED BALL-BEARING 8x16x5 BLUE COVERED (2)
35 5600	REAR UNIVERSAL CENTRAL DRIVE SHAFT - HUDY SPRING STEEL		
35 5110	BEVEL DRIVE GEAR 12T	35 5000	FRONT/REAR DIFFERENTIAL - SET

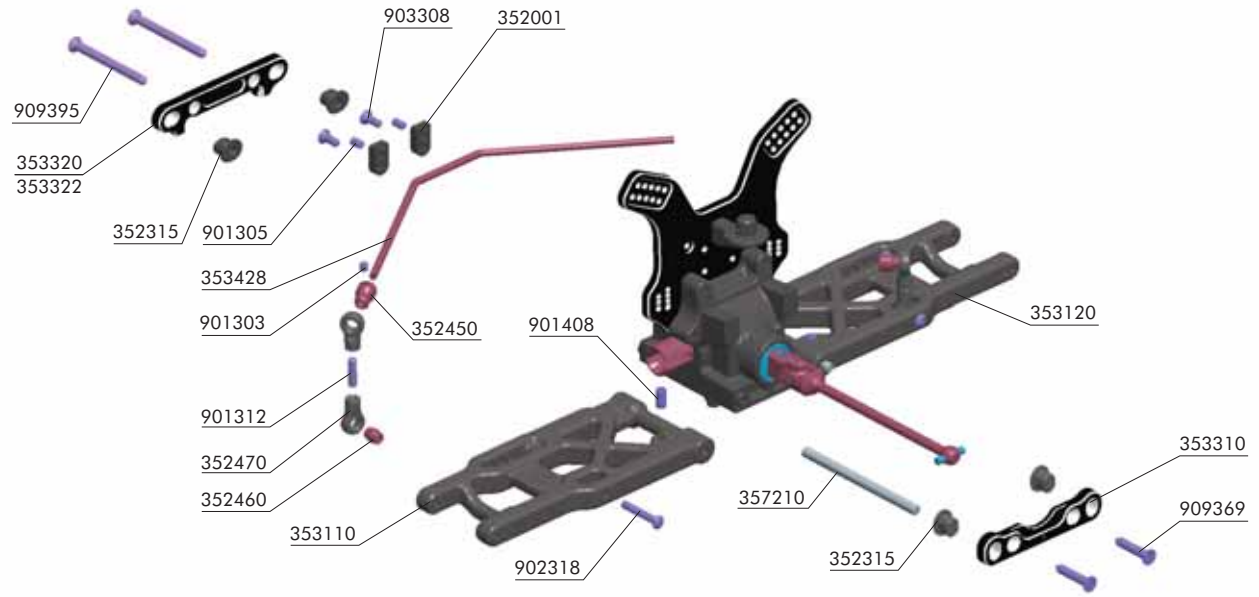
901504
SB 5x4

902310
SH 3x10

940816
BB 8x16X5

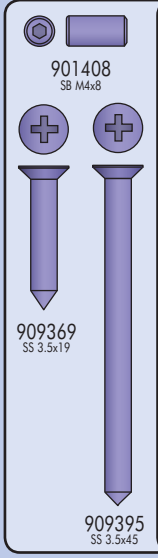


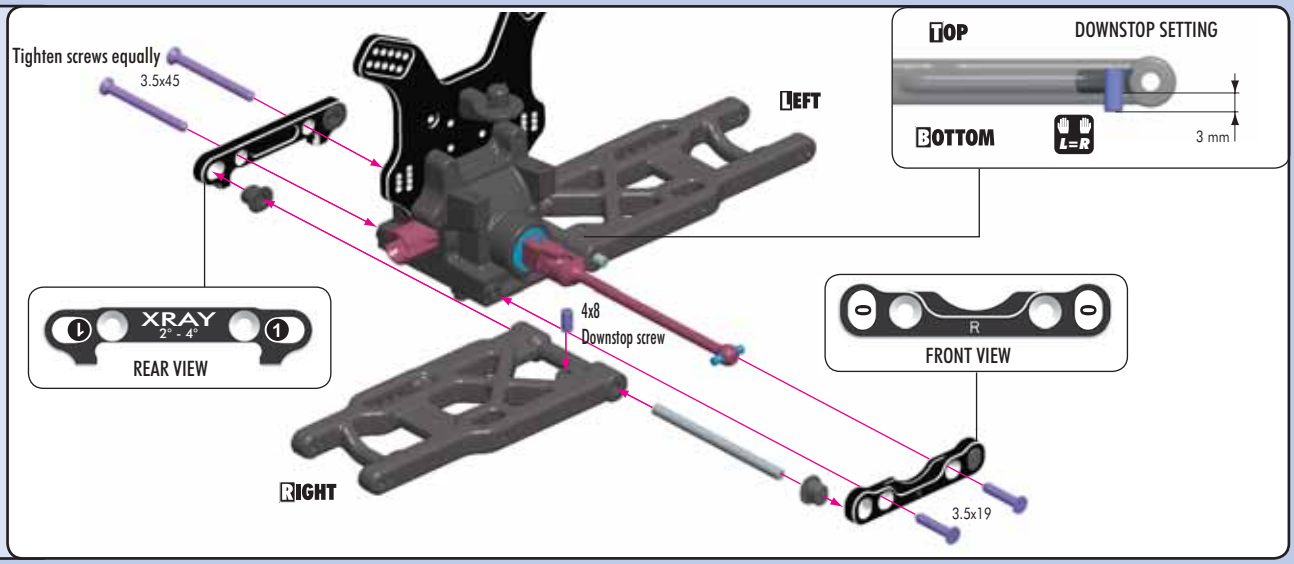
3. REAR SUSPENSION

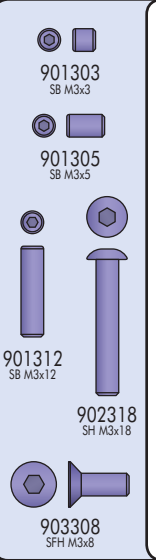


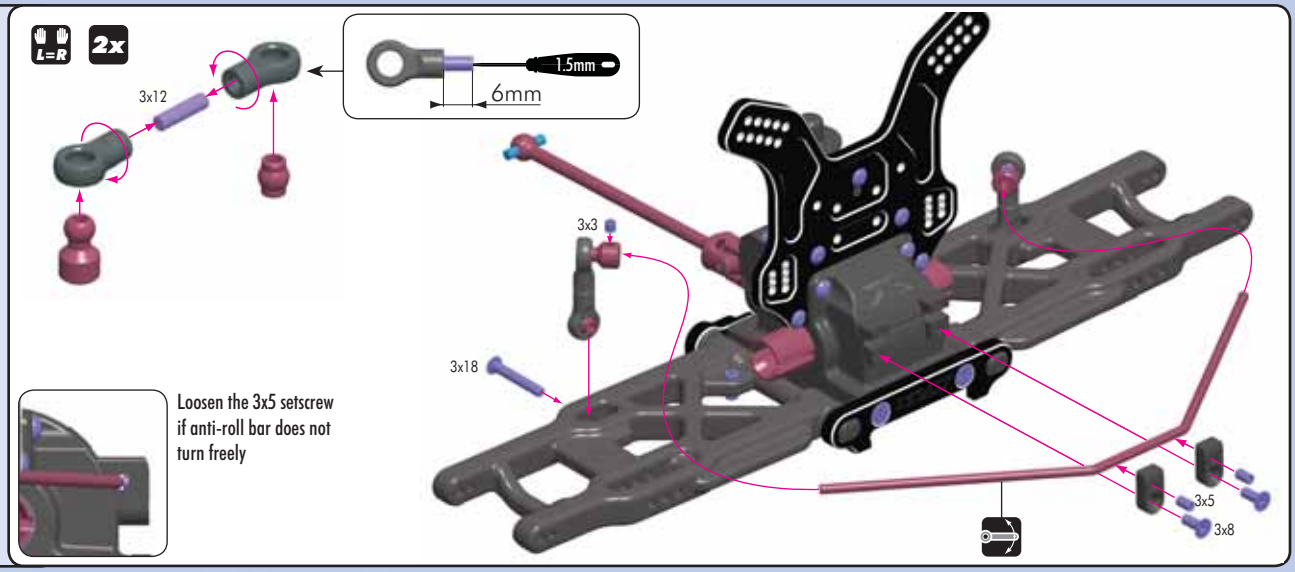
BAG 3

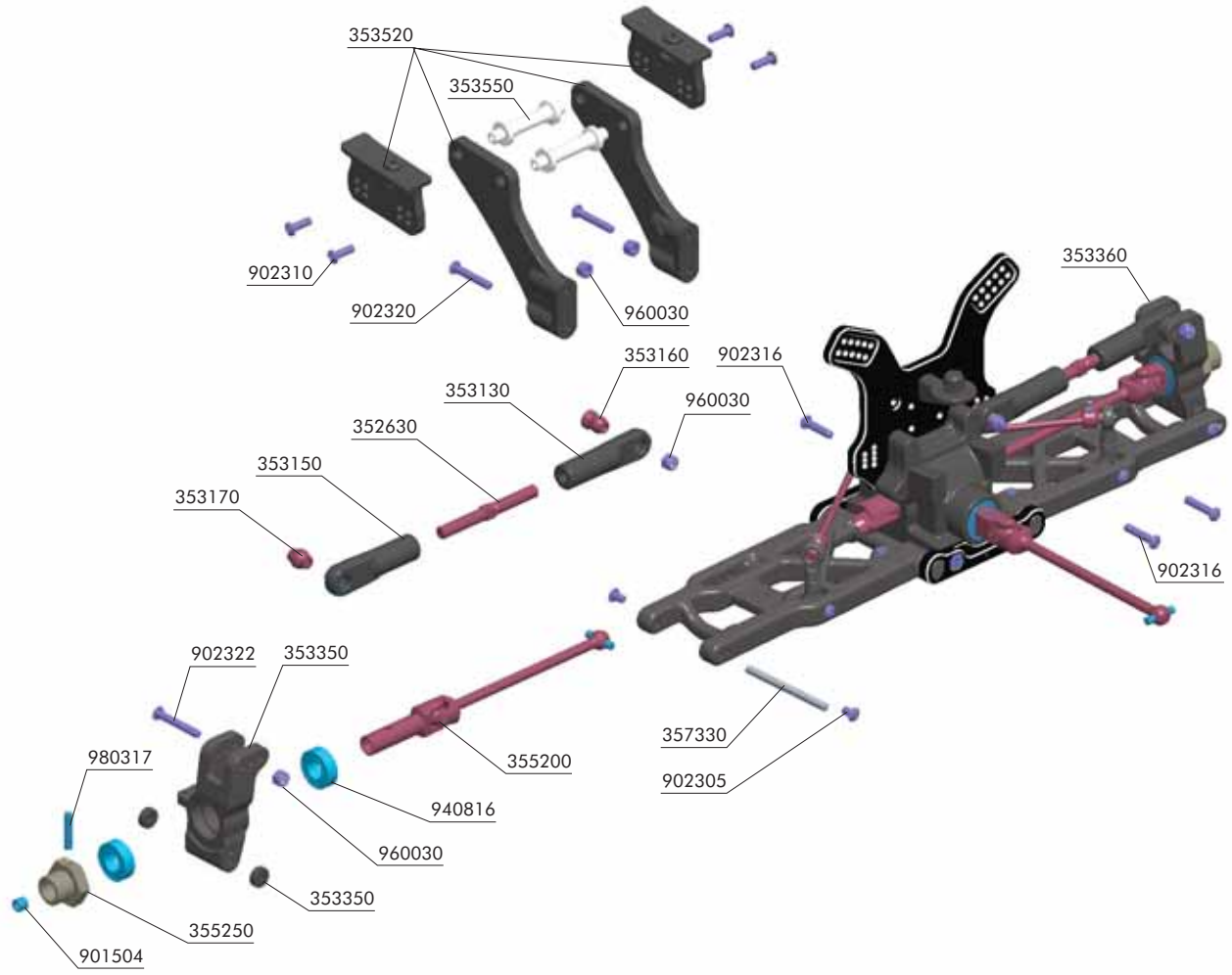
35 2001	DIFF BULKHEAD BLOCK SET REAR	35 3428	REAR ANTI-ROLL BAR 2.8MM
35 2315	ECCENTRIC BUSHING (2)	35 7210	LOWER INNER PIVOT PIN F/R (2)
35 2450	ANTI ROLL BAR BALL JOINT 5.8 (4)	90 1303	HEX SCREW SB M3x3 (10)
35 2460	PIVOT BALL 5.8 (10)	90 1305	HEX SCREW SB M3x5 (10)
35 2470	BALL JOINT 5.8 (8)	90 1312	HEX SCREW SB M3x12 (10)
35 3110	REAR LOWER SUSPENSION ARM RIGHT	90 1408	HEX SCREW SB M4x8 (10)
35 3120	REAR LOWER SUSPENSION ARM LEFT	90 2318	HEX SCREW SH M3x18 (10)
35 3310	ALU REAR LOWER SUSP. HOLDER - FRONT - 7075 T6 (5MM)	90 3308	HEX SCREW SFH M3x8 (10))
35 3320	ALU REAR LOWER SUSP. HOLDER 0°-2°- REAR - 7075 T6 (5MM)	90 9369	SCREW PHILLIPS SS 3.5x19 (10)
35 3322	ALU REAR LOWER SUSP. HOLDER 2°-4°- REAR - 7075 T6 (5MM)	90 9395	SCREW PHILLIPS SS 3.5x45 (10)











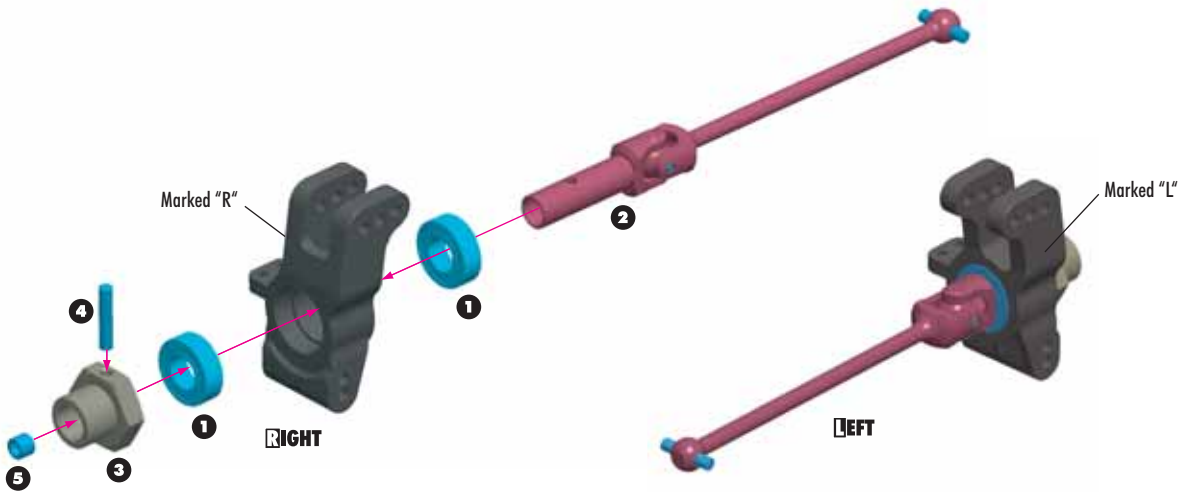
BAG 4

35 2630	ADJ. TURNBUCKLE M5 L/R 50 MM - SPRING STEEL (2)	35 7330	REAR LOWER OUTER PIVOT PIN (2)
35 3130	REAR UPPER INNER CAMBER LINK BALL JOINT (2)	90 1504	HEX SCREW SB M5x4 (10)
35 3150	REAR UPPER OUTER CAMBER LINK BALL JOINT (2)	90 2305	HEX SCREW SH M3x5 (10)
35 3160	MOUNTING BALL 6.8 (4)	90 2310	HEX SCREW SH M3x10 (10)
35 3170	PIVOT BALL 6.8 (4)	90 2316	HEX SCREW SH M3x16 (10)
35 3350	REAR HUB CARRIER RIGHT	90 2320	HEX SCREW SH M3x20 (10)
35 3360	REAR HUB CARRIER LEFT	90 2322	HEX SCREW SH M3x22 (10)
35 3520	REAR WING POSTS	94 0816	HIGH-SPEED BALL-BEARING 8x16x5 BLUE COVERED (2)
35 3550	ALU REAR WING MOUNT BRACE (2)	96 0030	NUT M3 (10)
35 5200	UNIVERSAL DRIVE SHAFT F/R - HUDY SPRING STEEL™	98 0317	PIN 3x17 (10)
35 5250	ALU WHEEL AXLE - HARD COATED (2)		

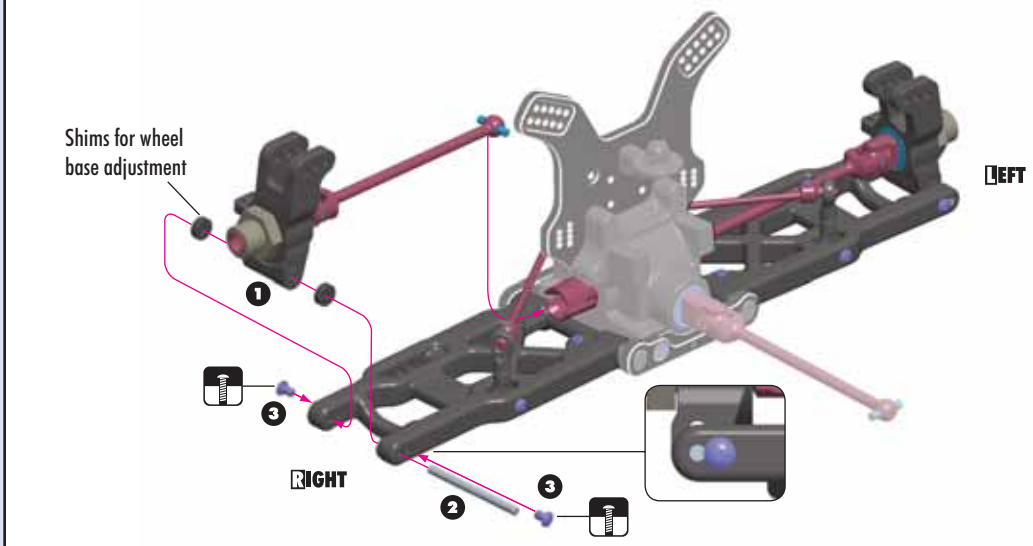
901504
SB M5x4

940816
BB 8x16x5

980317
P 3x17



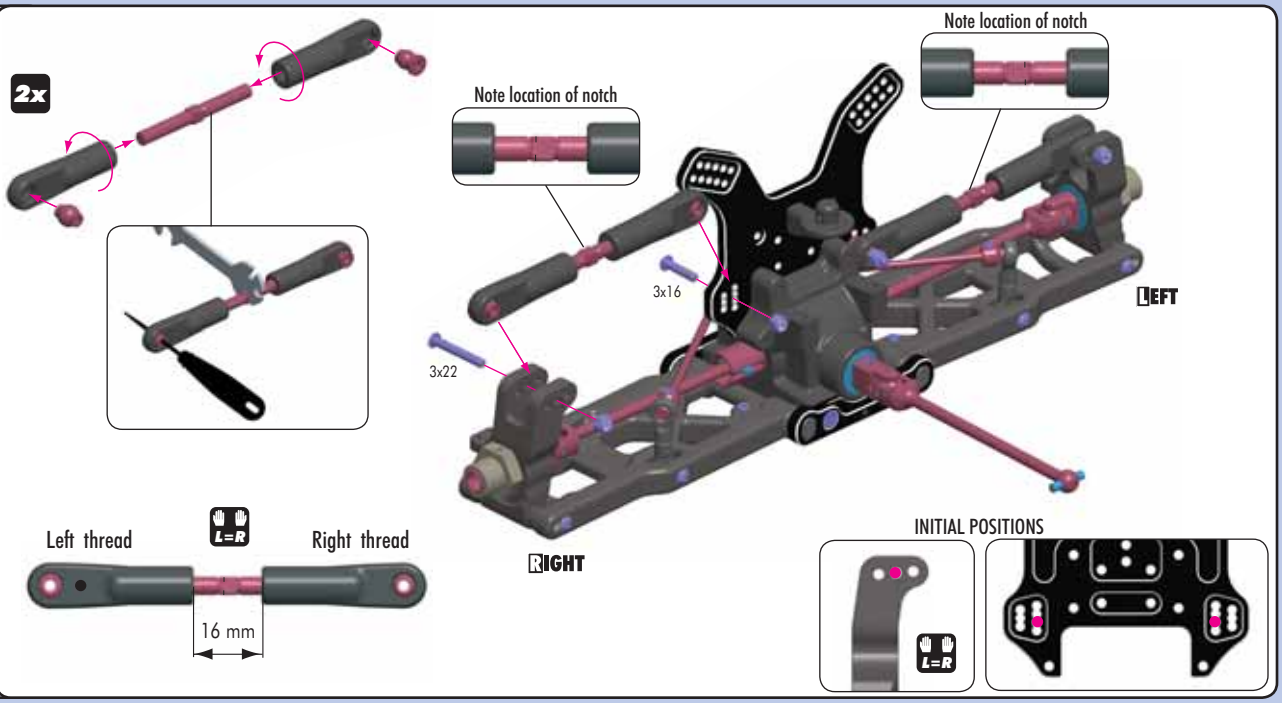
902305
SH M3x5



902316
SH M3x16

902322
SH M3x22

960030
N M3

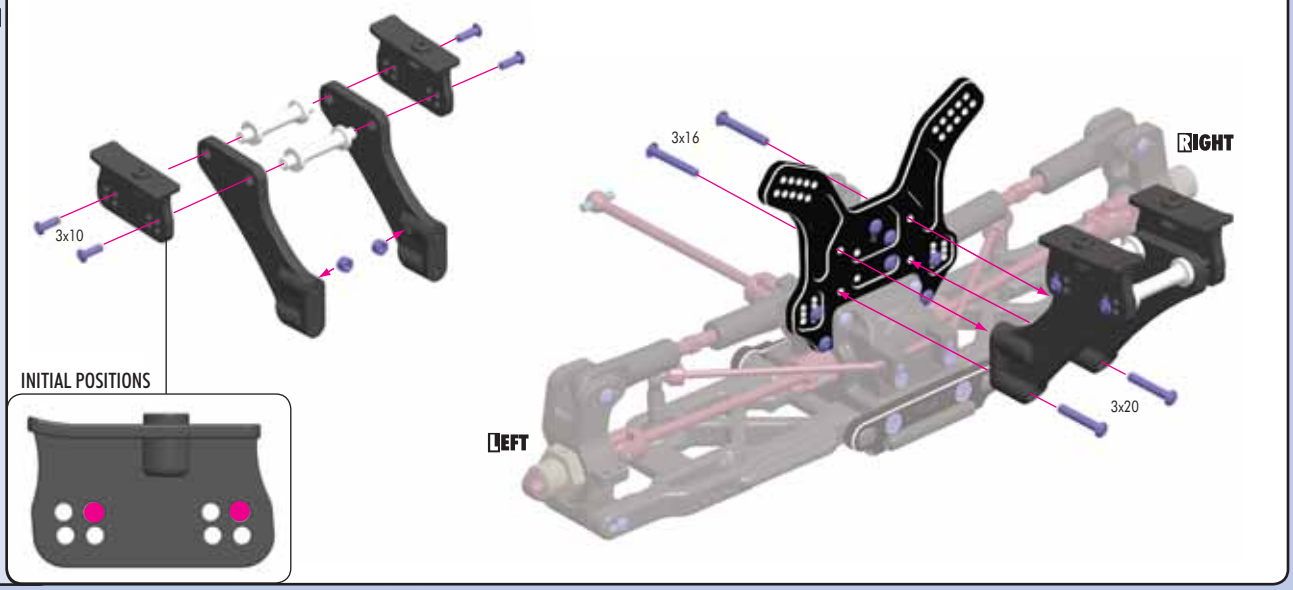


902310
SH M3x10

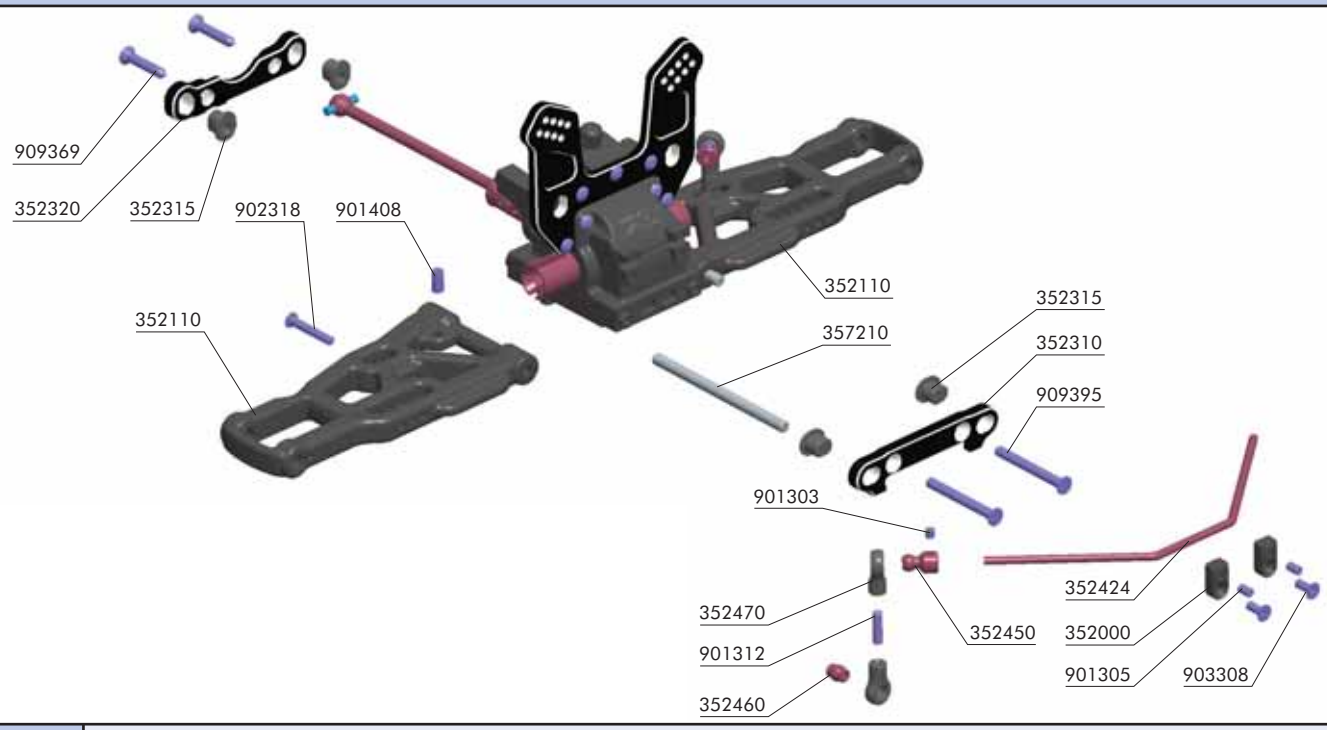
902316
SH M3x16

902320
SH M3x20

960030
N M3

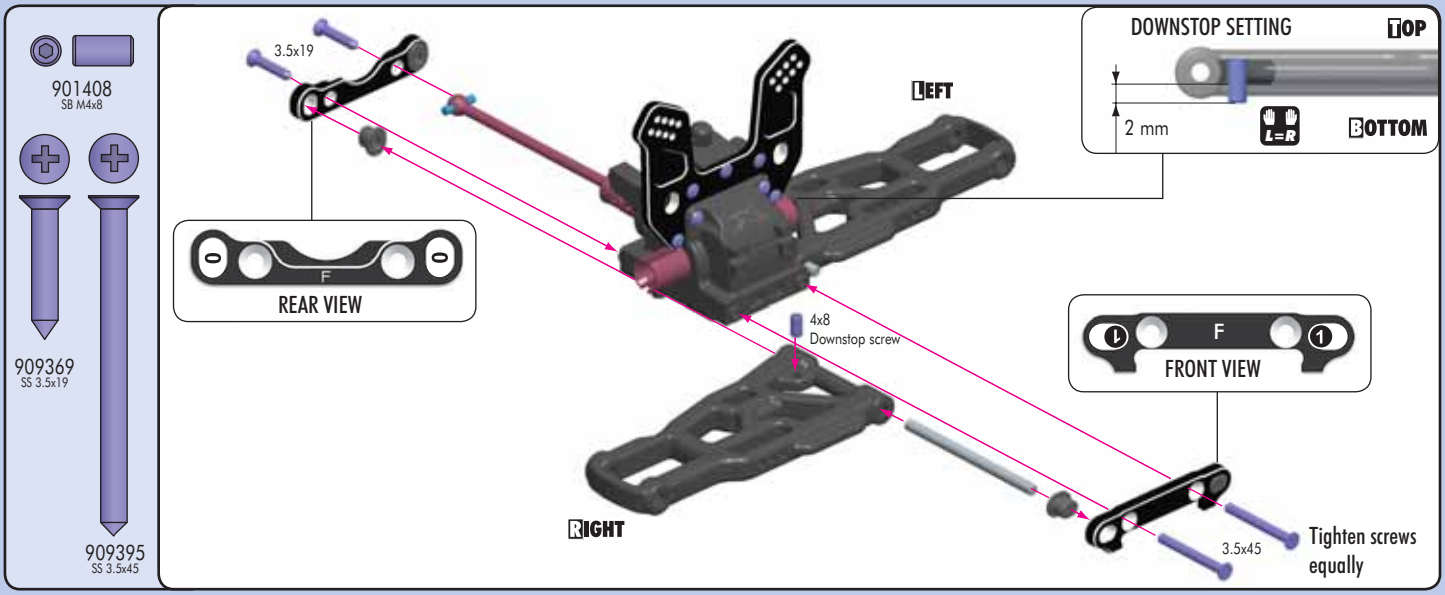


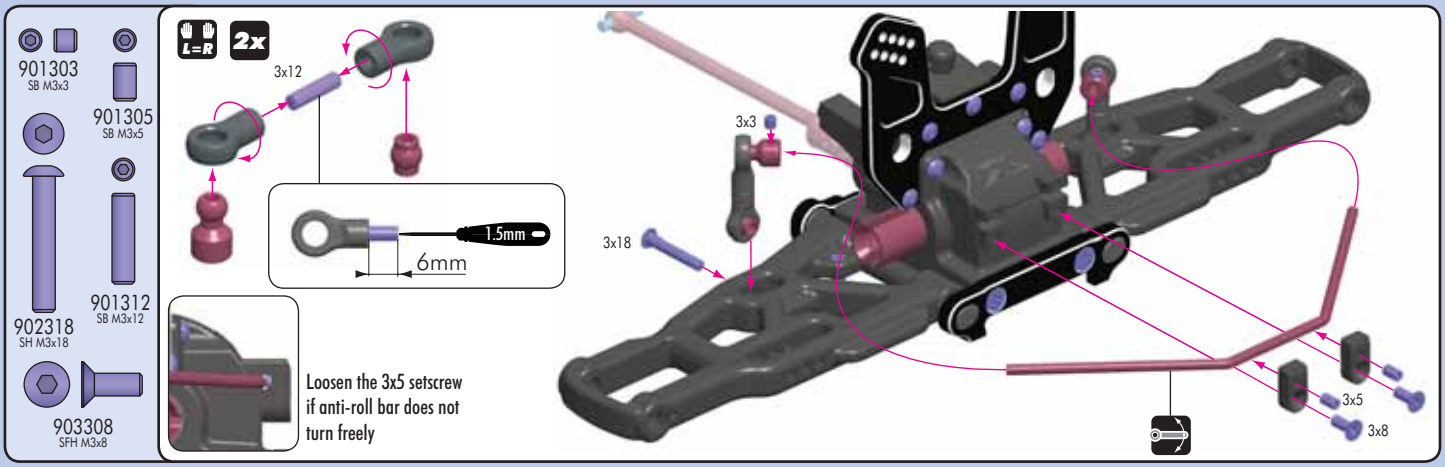
5. FRONT SUSPENSION



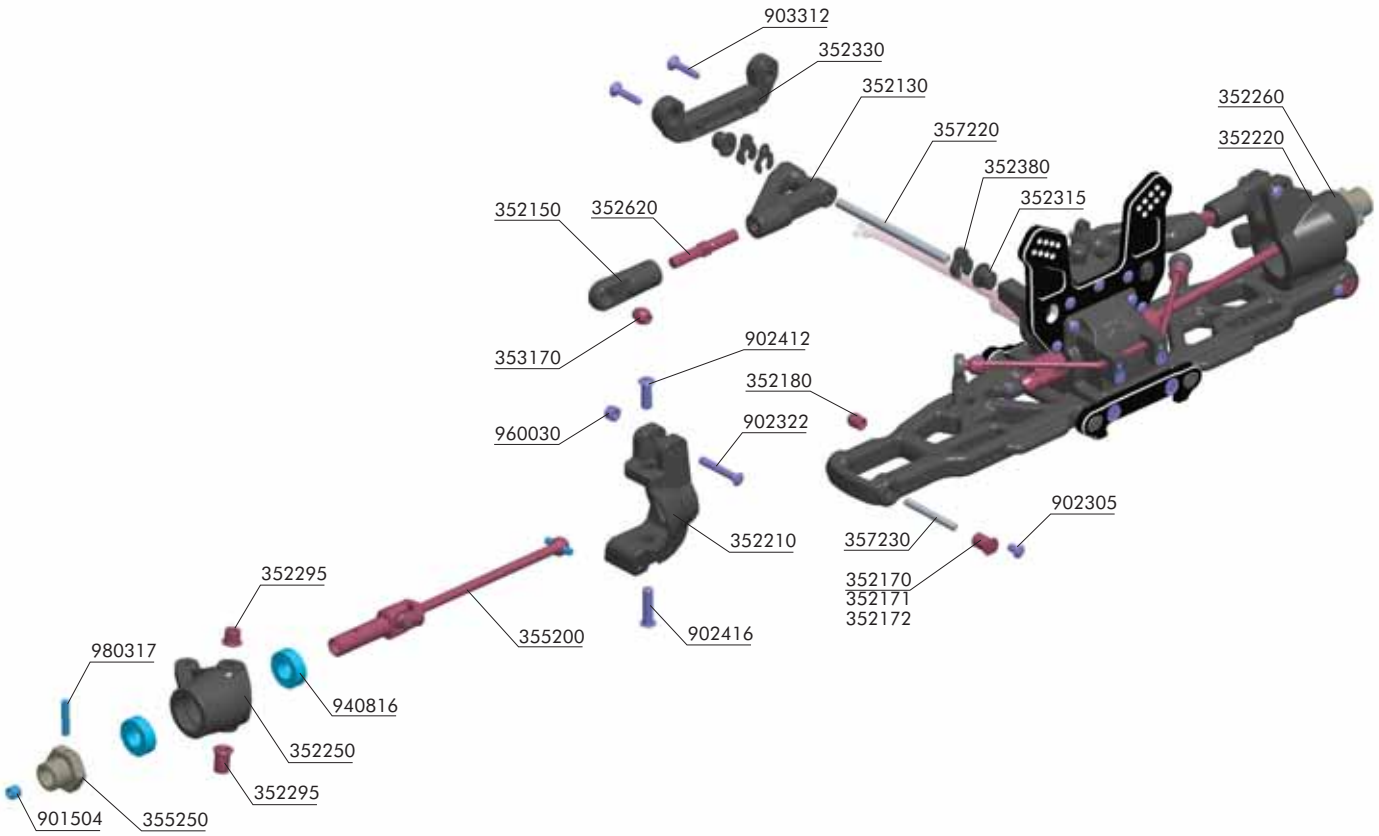
BAG 5

35 2000	DIFF BULKHEAD BLOCK SET FRONT	35 7210	LOWER INNER PIVOT PIN F/R (2)
35 2110	FRONT LOWER ARM	90 1303	HEX SCREW SB M3x3 (10)
35 2310	ALU FRONT LOWER SUSP. HOLDER - FRONT - 7075 T6 (5MM)	90 1305	HEX SCREW SB M3x5 (10)
35 2315	ECCENTRIC BUSHING (2)	90 1312	HEX SCREW SB M3x12 (10)
35 2320	ALU FRONT LOWER SUSP. HOLDER - REAR - 7075 T6 (5MM)	90 1408	HEX SCREW SB M4x8 (10)
35 2424	FRONT ANTI-ROLL BAR 2.4MM	90 2318	HEX SCREW SH M3x18 (10)
35 2450	ANTI ROLL BAR BALL JOINT 5.8 (4)	90 3308	HEX SCREW SFH M3x8 (10))
35 2460	PIVOT BALL 5.8 (10)	90 9369	SCREW PHILLIPS SS 3.5x19 (10)
35 2470	BALL JOINT 5.8 (8)	90 9395	SCREW PHILLIPS SS 3.5x45 (10)





6. FRONT SUSPENSION

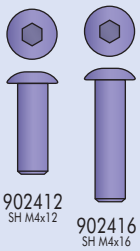


BAG

6.1

35 2130	FRONT UPPER ARM	35 3170	PIVOT BALL 6.8 (4)
35 2150	FRONT UPPER ARM BALL JOINT (2)	35 5200	UNIVERSAL DRIVE SHAFT F/R - HUDY SPRING STEEL™
35 2170	STEEL ECCENTRIC BUSHING 0° (2)	35 5250	ALU WHEEL AXLE - HARD COATED (2)
35 2171	STEEL ECCENTRIC BUSHING 1° (2)	35 7220	FRONT UPPER PIVOT PIN (2)
35 2172	STEEL ECCENTRIC BUSHING 2° (2)	35 7230	FRONT LOWER OUTER PIVOT PIN (2)
35 2180	BALL MOUNT (2)	90 1504	HEX SCREW SB M5x4 (10)
35 2210	C-HUB RIGHT	90 2305	HEX SCREW SH M3x5 (10)
35 2220	C-HUB LEFT	90 2322	HEX SCREW SH M3x22 (10)
35 2250	STEERING BLOCK RIGHT	90 2412	HEX SCREW SH M4x12 (10)
35 2260	STEERING BLOCK LEFT	90 2416	HEX SCREW SH M4x16 (10)
35 2295	STEEL STEERING BUSHING (2+2)	90 3312	HEX SCREW SFH M3x12 (10)
35 2315	ECCENTRIC BUSHING (2)	94 0816	HIGH-SPEED BALL-BEARING 8x16x5 BLUE COVERED (2)
35 2380	CASTER CLIPS (2)	96 0030	NUT M3 (10)
35 2330	COMPOSITE FRONT UPPER SUSP. HOLDER - REAR	98 0317	PIN 3x17 (10)
35 2620	ADJ. TURNBUCKLE M5 L/R 35 MM - SPRING STEEL (2)		

901504
SB M5x4

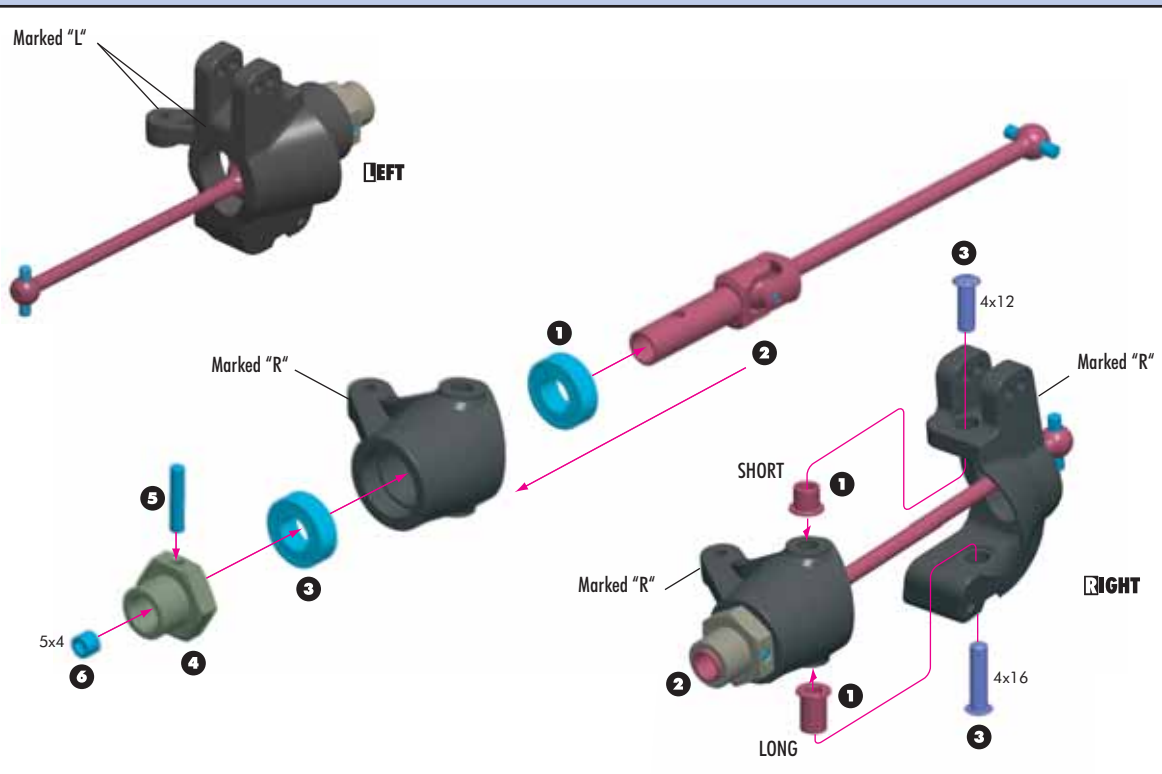


902412
SH M4x12

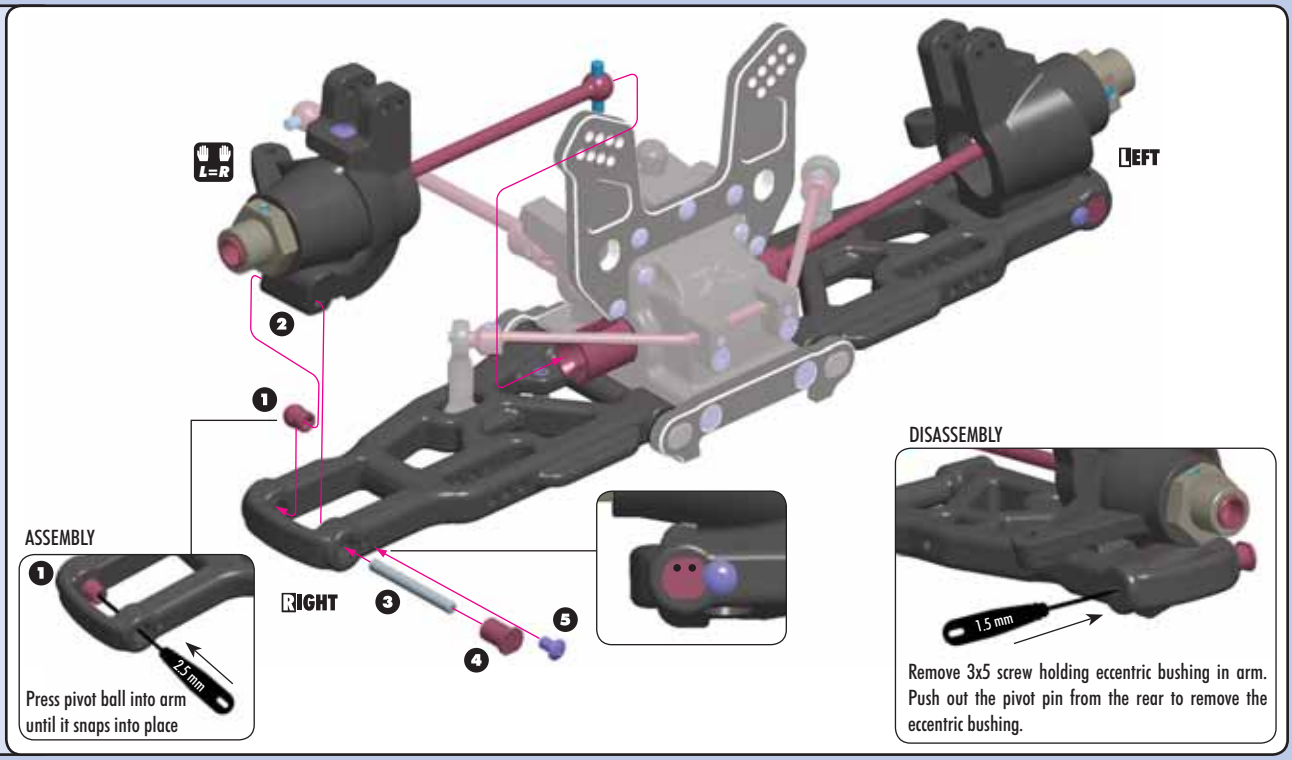
902416
SH M4x16

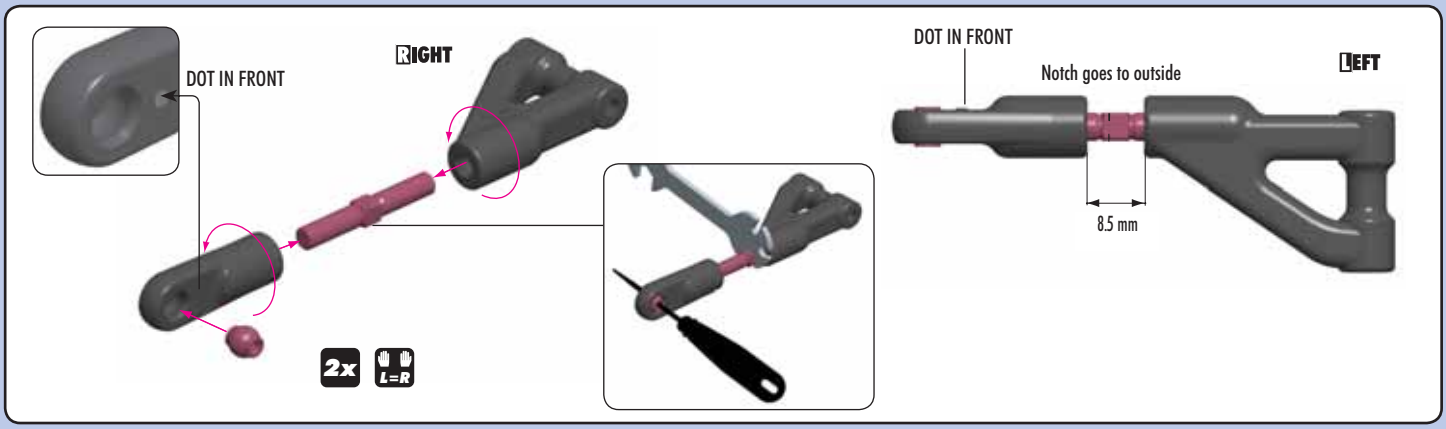
940816
BB 8x16x5

980317
P 3x17



902305
SH M3x5

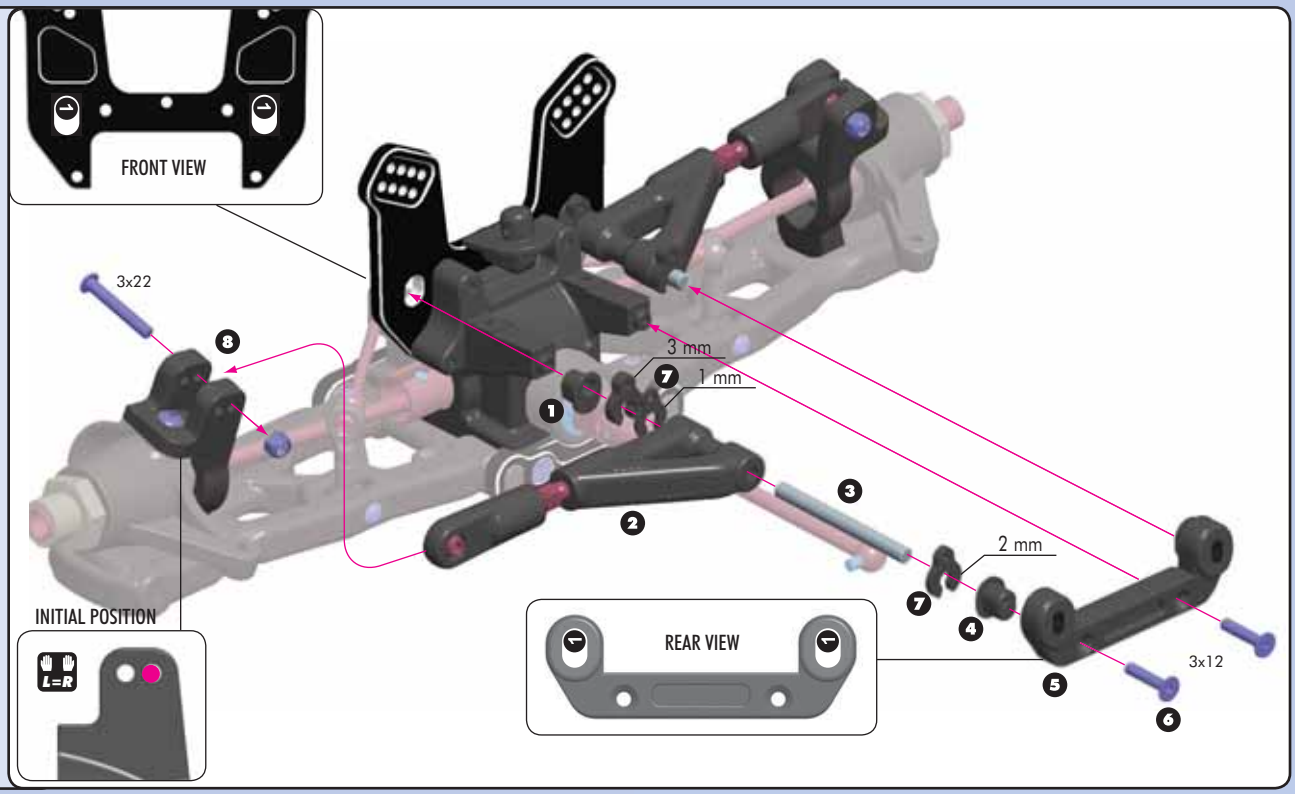




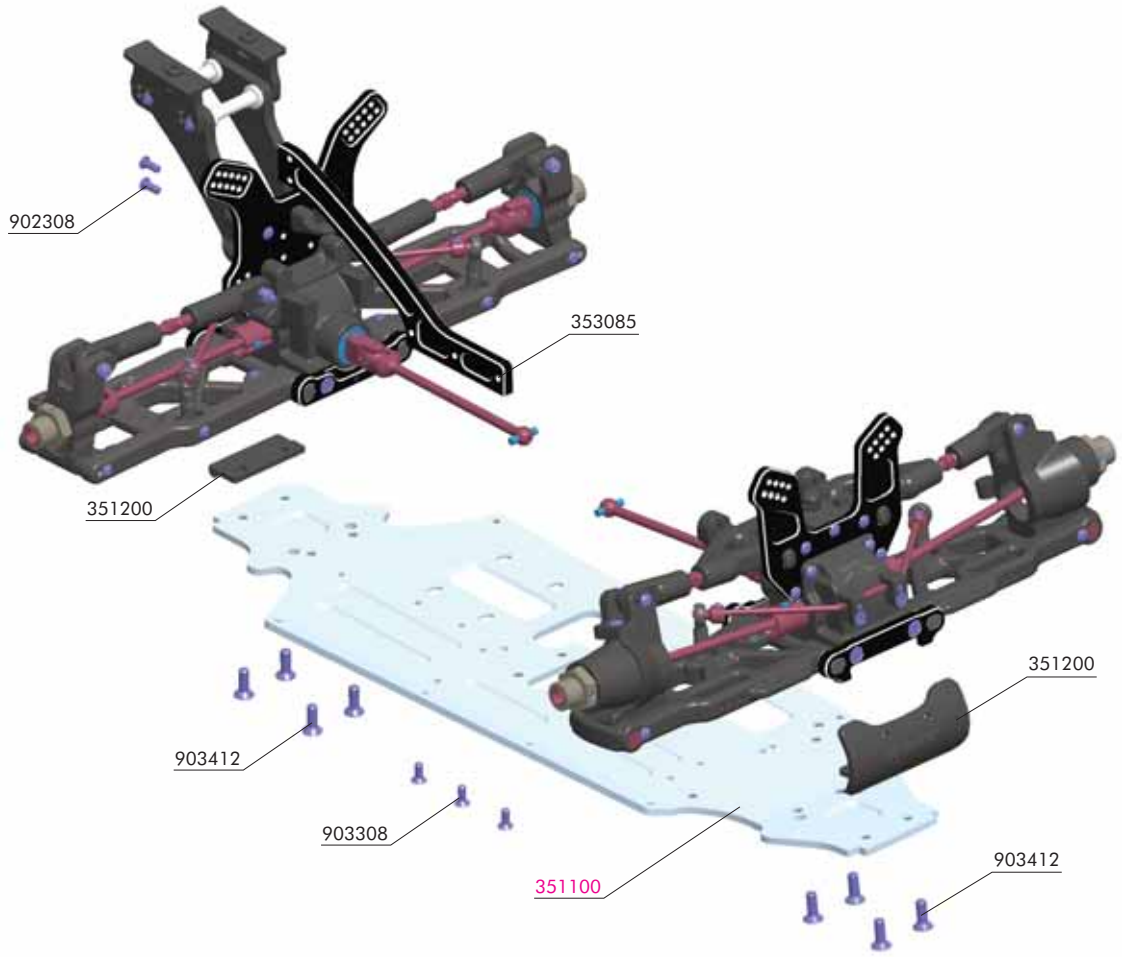
902322
SH M3x22

903312
SFH M3x12

960030
N M3



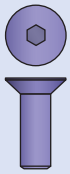
FRONT & REAR ASSEMBLY



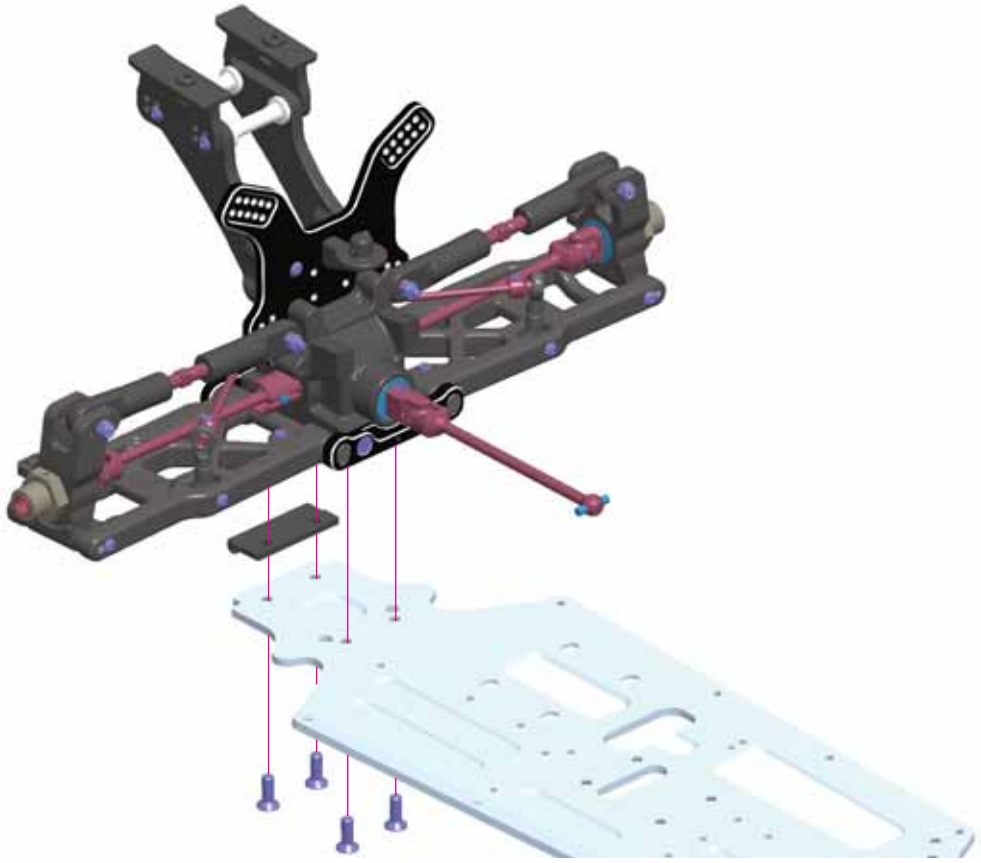
BAG

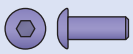
6.2

35 1200	FRONT & REAR BUMPER	90 3412	HEX SCREW SFH M4x12 (10)
35 3085	ALU REAR BRACE 7075 T6 (5MM)		
90 2308	HEX SCREW SH M3x8 (10)	35 1100	ALU CHASSIS - CNC MACHINED 7075 T6 (3MM)
90 3308	HEX SCREW SFH M3x8 (10)		



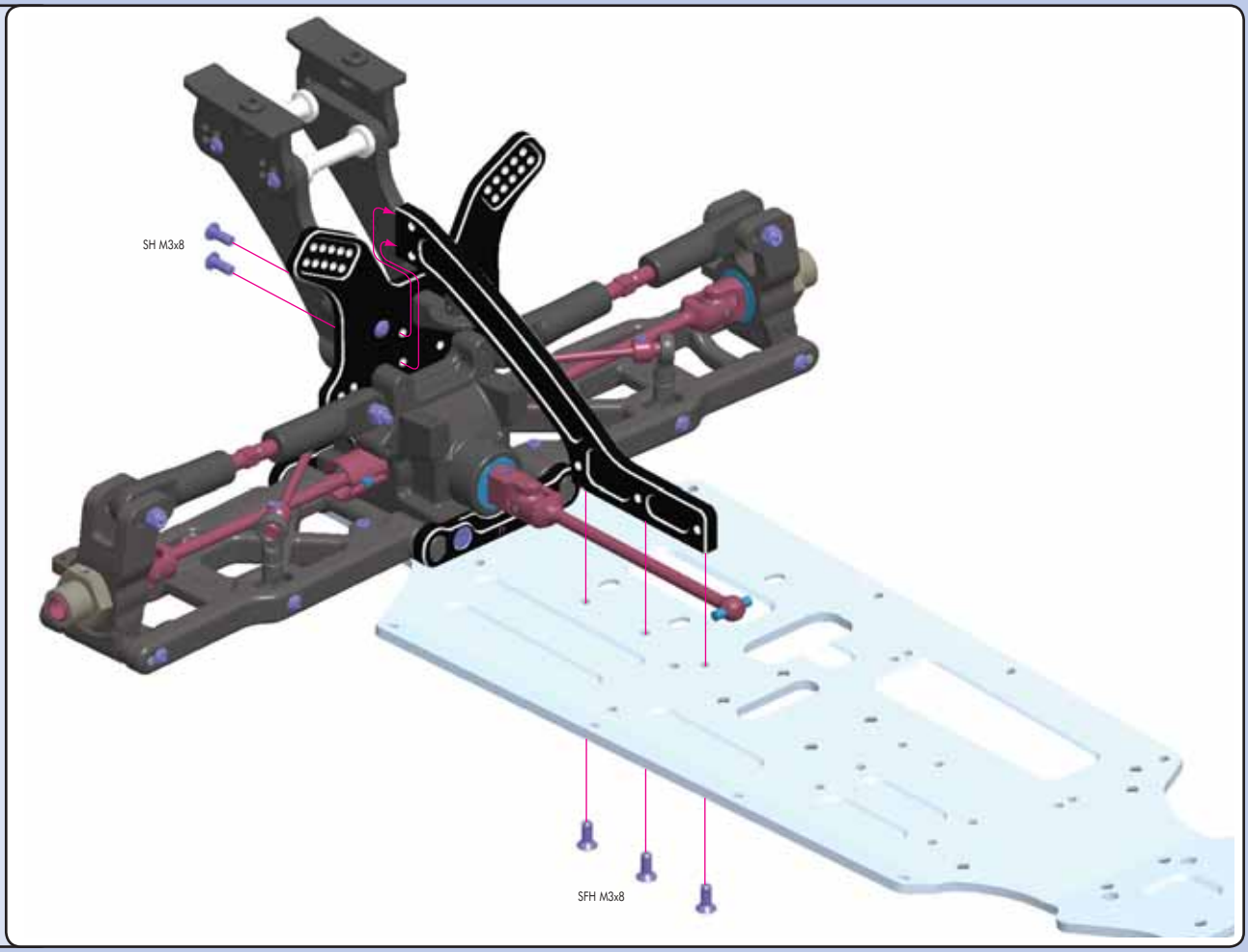
903412
SFH M4x12



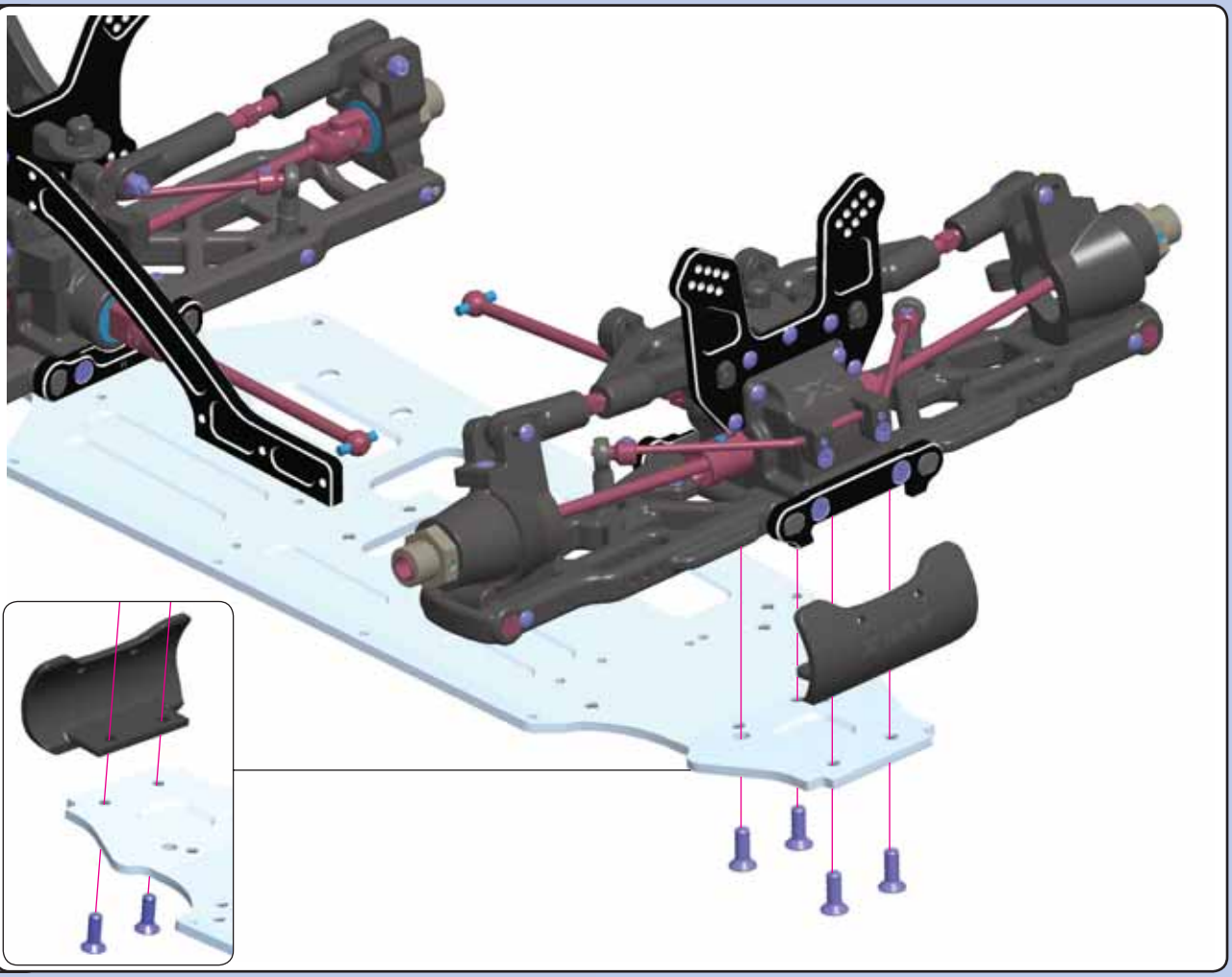


902308
SH M3x8

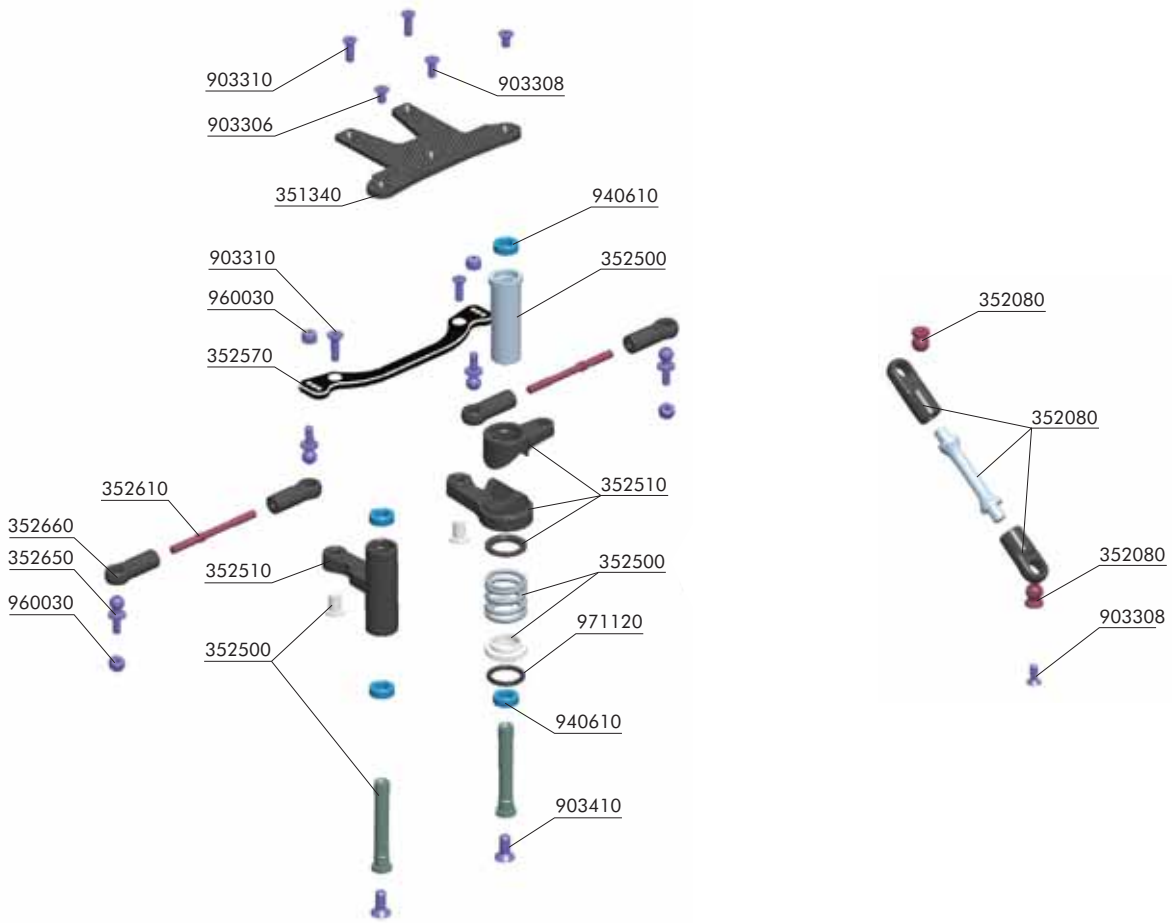
903308
SFH M3x8



903412
SFH M4x12



7. STEERING

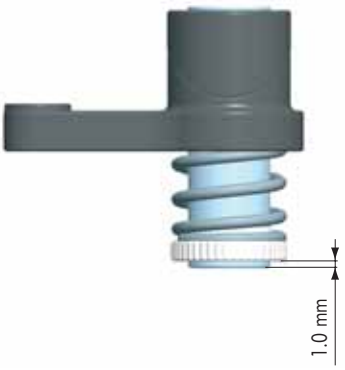


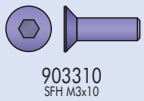
BAG 7

35 1340	GRAPHITE UPPER PLATE	90 3306	HEX SCREW SFH M3x6 (10)
35 2080	FRONT TORQUE ROD SET	90 3308	HEX SCREW SFH M3x8 (10)
35 2500	SERVO SAVER COMPLETE SET	90 3310	HEX SCREW SFH M3x10 (10)
35 2510	COMPOSITE SERVO SAVER	90 3410	HEX SCREW SFH M4x10 (10)
35 2570	ALU STEERING PLATE 7075 T6 (3MM)	94 0610	HIGH-SPEED BALL-BEARING 6x10x3 BLUE COVERED (2)
35 2610	ADJ. TURNBUCKLE M3 L/R 45 MM - SPRING STEEL (2)	96 0030	NUT M3 (10)
35 2650	BALL STUD 5.8MM (4)	97 1120	SILICONE O-RING 12x1.6 (10
35 2660	STEERING BALL JOINT 5.8MM (4)		

971120
O 12x1.6

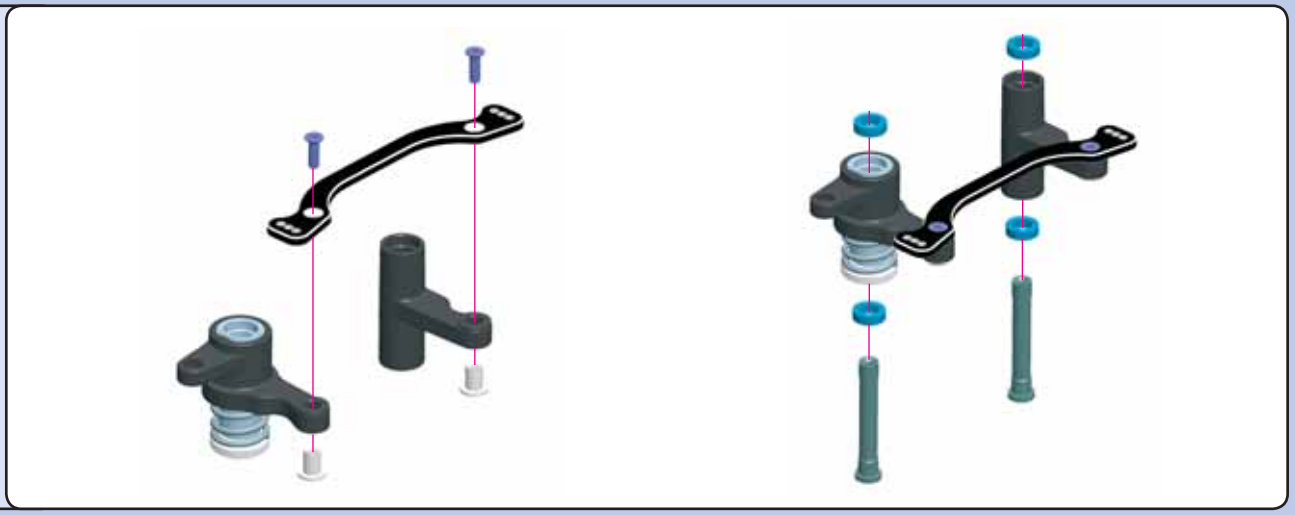
INITIAL PRELOAD SETTING





903310
SFH M3x10

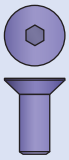
940610
BB 6x10x3



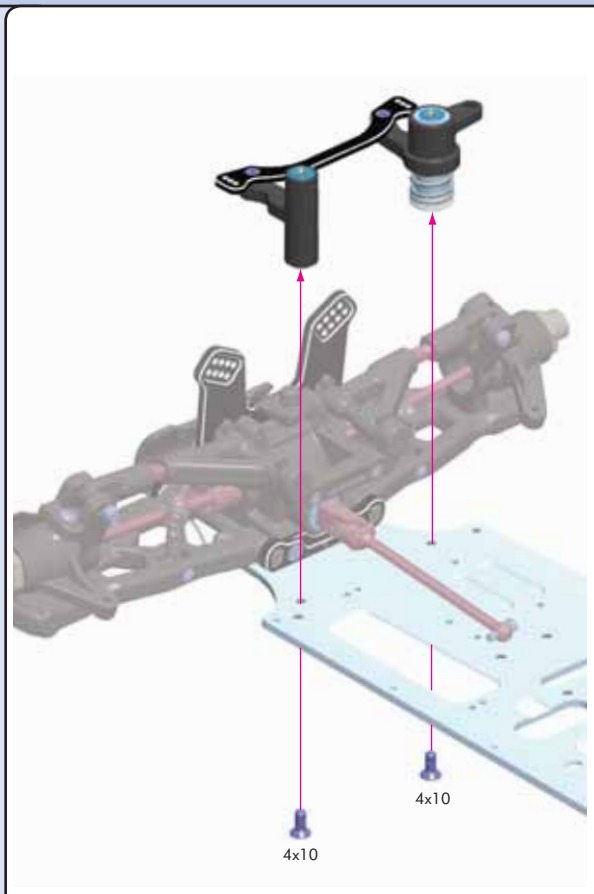
903306
SFH M3x6

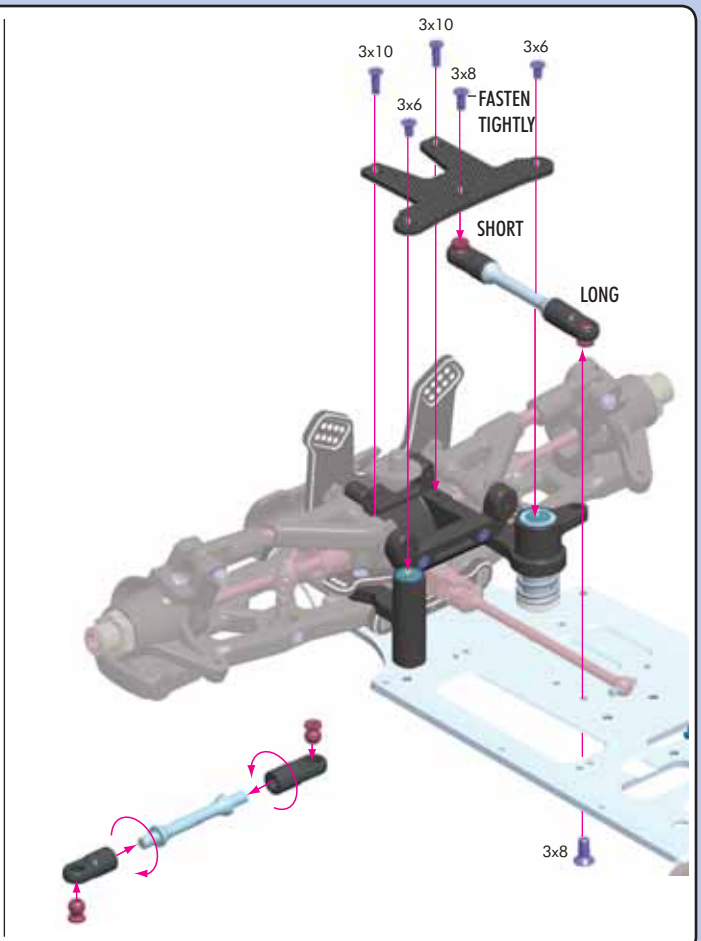
903308
SFH M3x8

903310
SFH M3x10

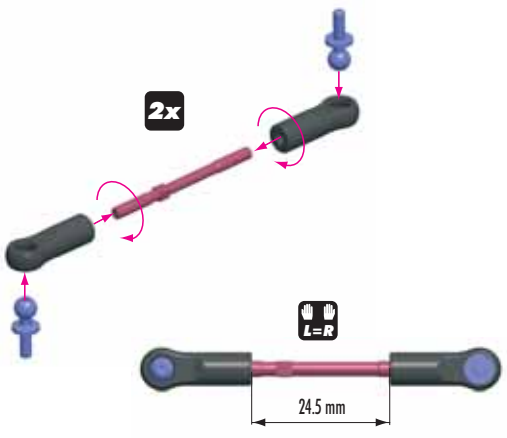


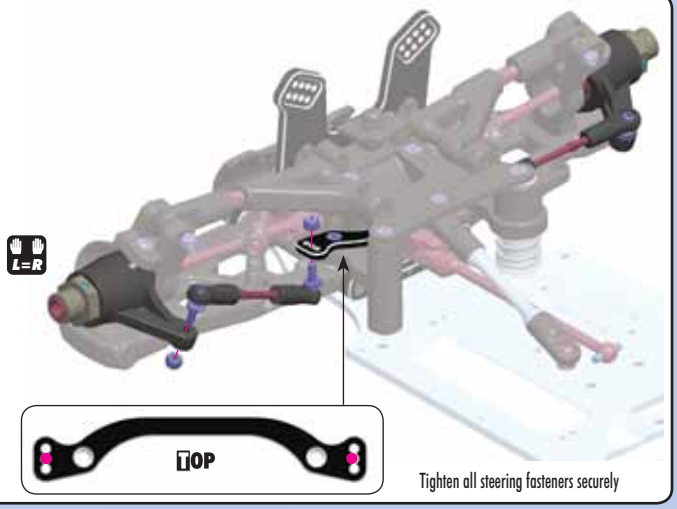
903410
SFH M4x10





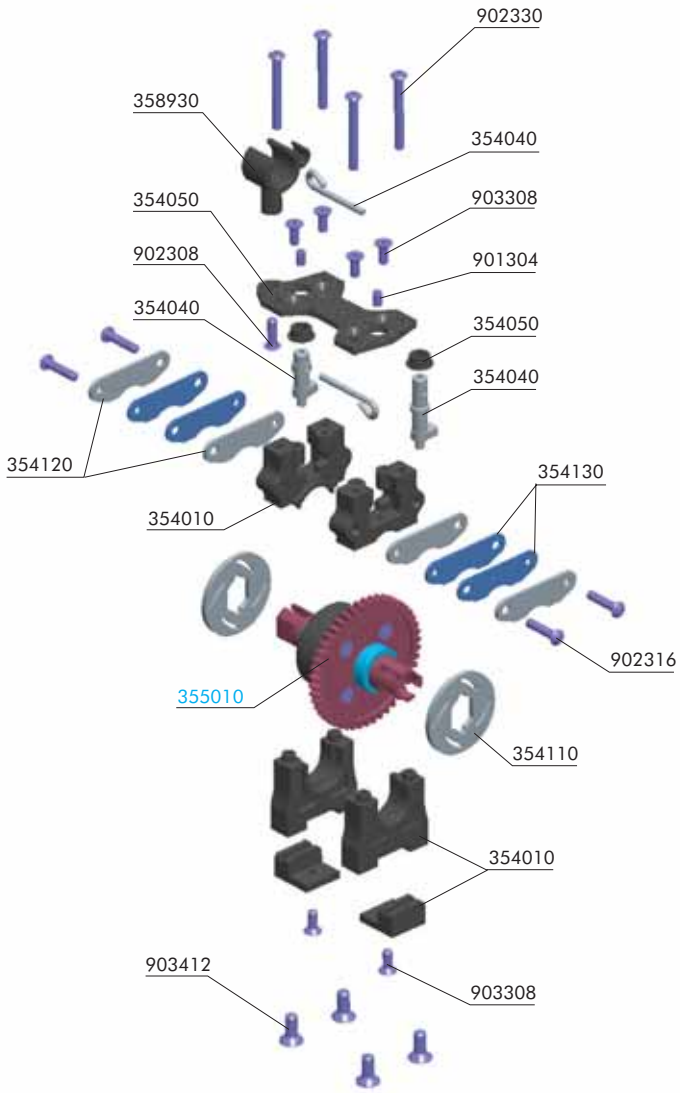
960030
N M3





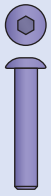
Tighten all steering fasteners securely

8. CENTER DIFF & BRAKE

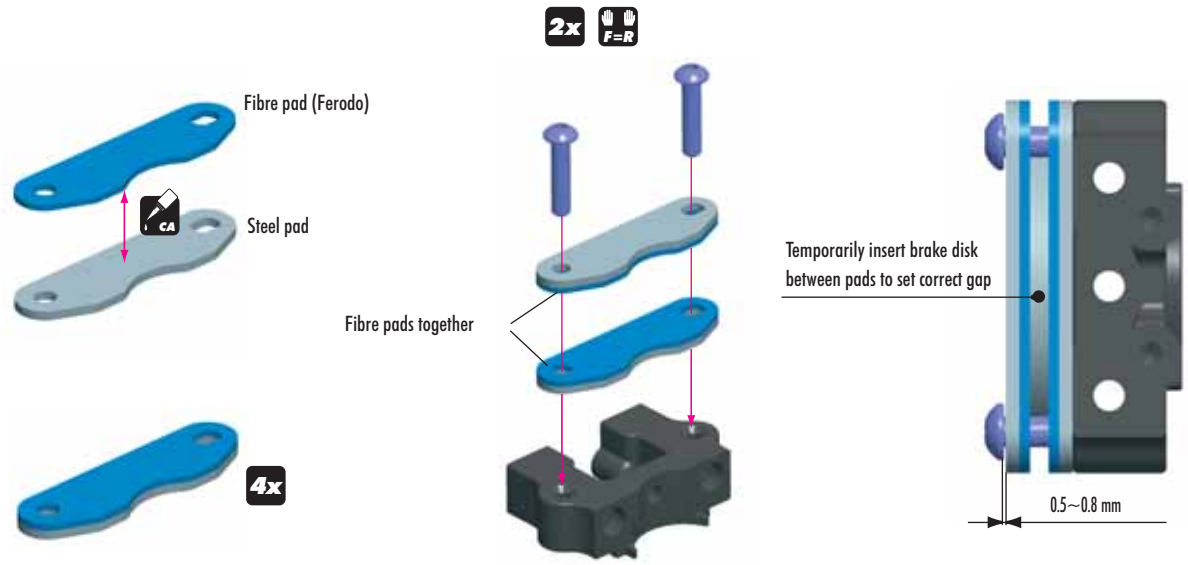


BAG 8

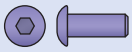
35 4010	CENTER DIFF MOUNTING PLATE - SET	90 1304	HEX SCREW SB M3x4 (10)
35 4040	BRAKE CAM POST & ROD (2+2)	90 2308	HEX SCREW SH M3x8 (10)
35 4050	GRAPHITE CENTER DIFF MOUNTING PLATE	90 2316	HEX SCREW SH M3x16 (10)
35 4110	VENTILATED BRAKE DISK - LASER CUT - PRECISION-GROUND	90 2330	HEX SCREW SH M3x30 (10)
35 4120	STEEL BRAKE PAD - LASER CUT (4)	90 3308	HEX SCREW SFH M3x8 (10)
35 4130	BRAKE PAD FERODO (4)	90 3412	HEX SCREW SFH M4x12 (10)
35 8930	FUEL FILTER MOUNT & TUBING HOLDERS		
		35 5010	CENTRAL DIFFERENTIAL - SET



902316
SH M3x16

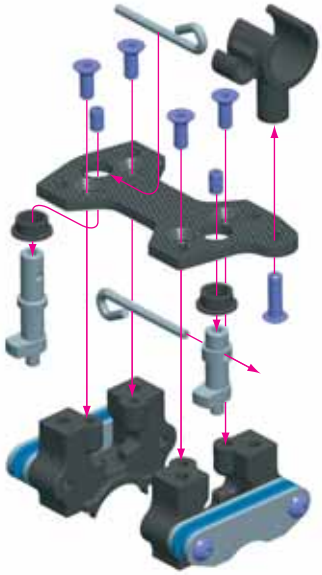


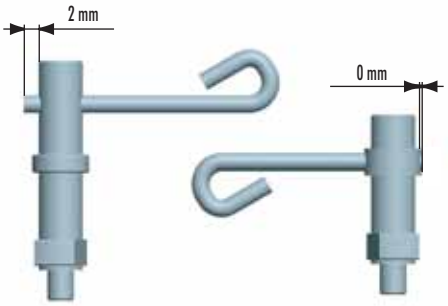
901304
SB M3x4

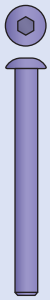


902308
SH M3x8

903308
SFH M3x8





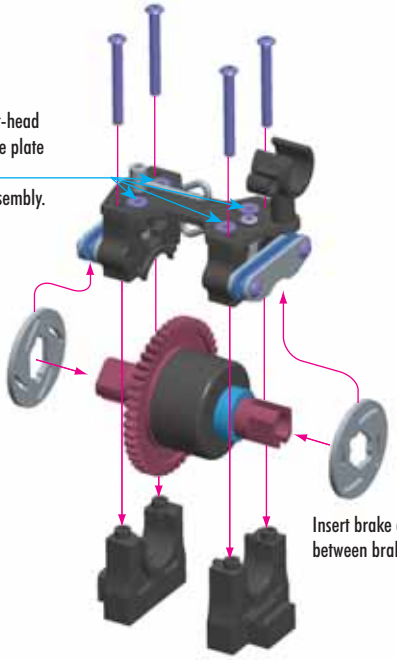


902330
SH M3x30

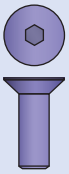
903308
SFH M3x8

NOTE ORIENTATION

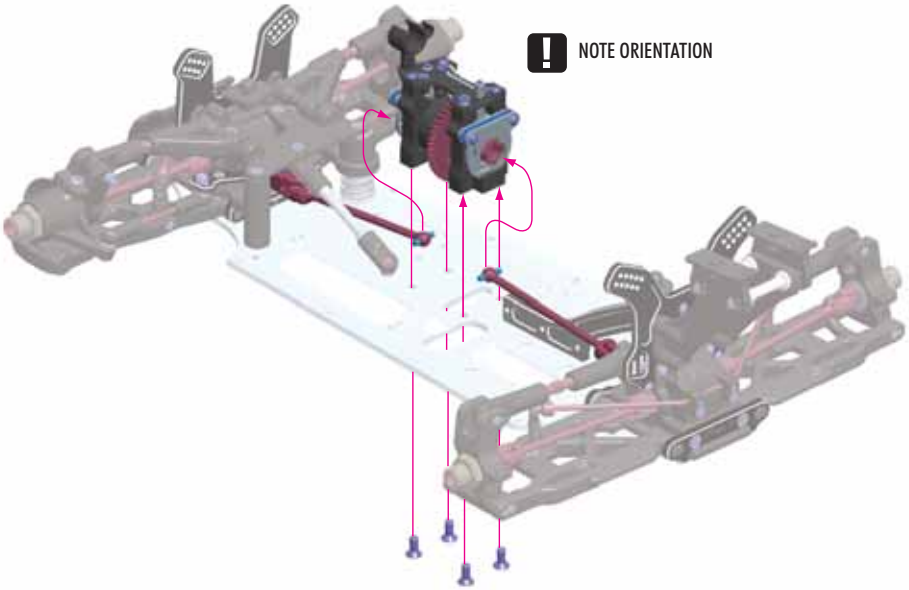
Before inserting 3x30 long screws, loosen the four flat-head screw in the upper graphite plate by 1/2 turn.
Tighten all screws after assembly.



Insert brake disk between brake pads

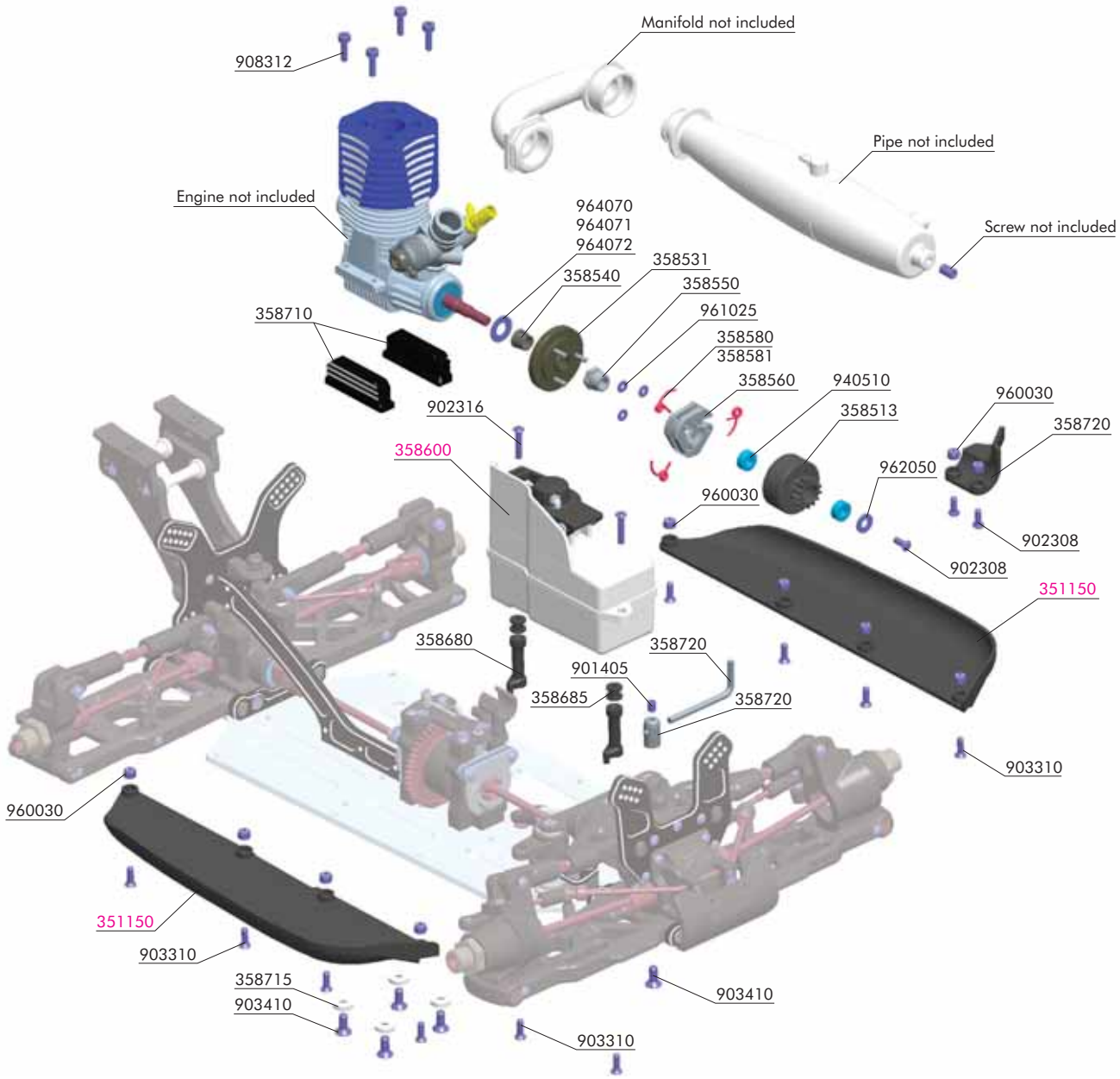


903412
SFH M4x12



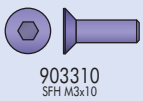
NOTE ORIENTATION

9. FUEL TANK & ENGINE



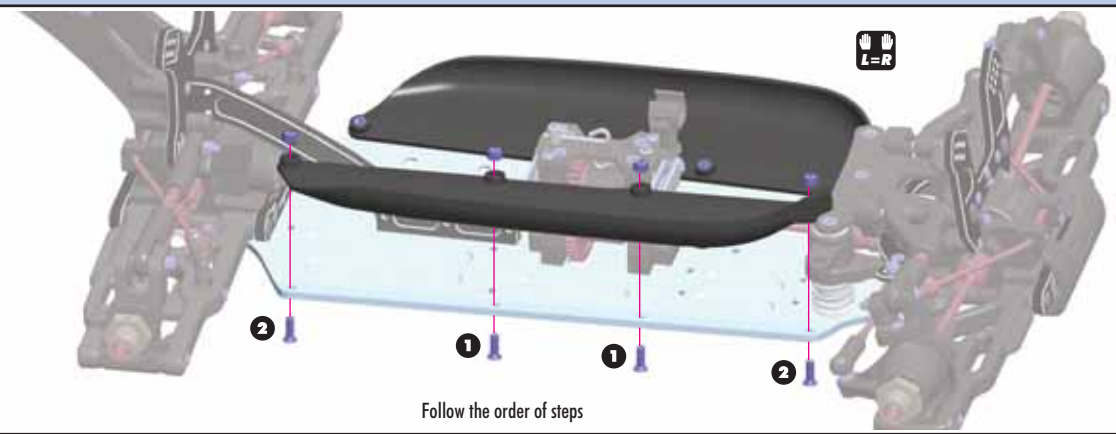
BAG 9

35 8513	CLUTCH BELL 13T	90 2316	HEX SCREW SH M3x16 (10)
35 8531	FLYWHEEL - HARD COATED	90 3310	HEX SCREW SFH M3x10 (10)
35 8540	FLYWHEEL COLLAR	90 3410	HEX SCREW SFH M4x10 (10)
35 8550	FLYWHEEL NUT - HUDY SPRING STEEL™	90 8312	HEX SCREW (CAP HEAD) 3x12 (10)
35 8560	ALU CLUTCH SHOES - CNC MACHINED (3)	94 0510	HIGH-SPEED BALL-BEARING 5x10x4 BLUE COVERED (2)
35 8580	CLUTCH SPRINGS 0.9MM (3)	96 0030	NUT M3 (10)
35 8581	CLUTCH SPRINGS 1MM (3)	96 1025	WASHER S 2.5 (10)
35 8680	FUEL TANK MOUNTING POST (2)	96 2050	WASHER S 5x10x1.0 (10)
35 8685	FUEL TANK MOUNTING GROMMET (4)	96 4070	WASHER S 7x12x0.2 (10)
35 8710	ALU ENGINE MOUNT - CNC MACHINED	96 4071	WASHER S 7x12x0.3 (10)
35 8715	SHIM FOR ENGINE MOUNT (4)	96 4072	WASHER S 7x12x0.5 (10)
35 8720	EXHAUST WIRE MOUNT SET		
90 1405	HEX SCREW SB M4x5 (10)	35 1150	CHASSIS SIDE GUARDS L+R
90 2308	HEX SCREW SH M3x8 (10)	35 8600	FUEL TANK 120CC - SET



903310
SFH M3x10

960030
N M3



Follow the order of steps

902308
SH M3x8

908312
SCH M3x12

940510
BB 5x10x4

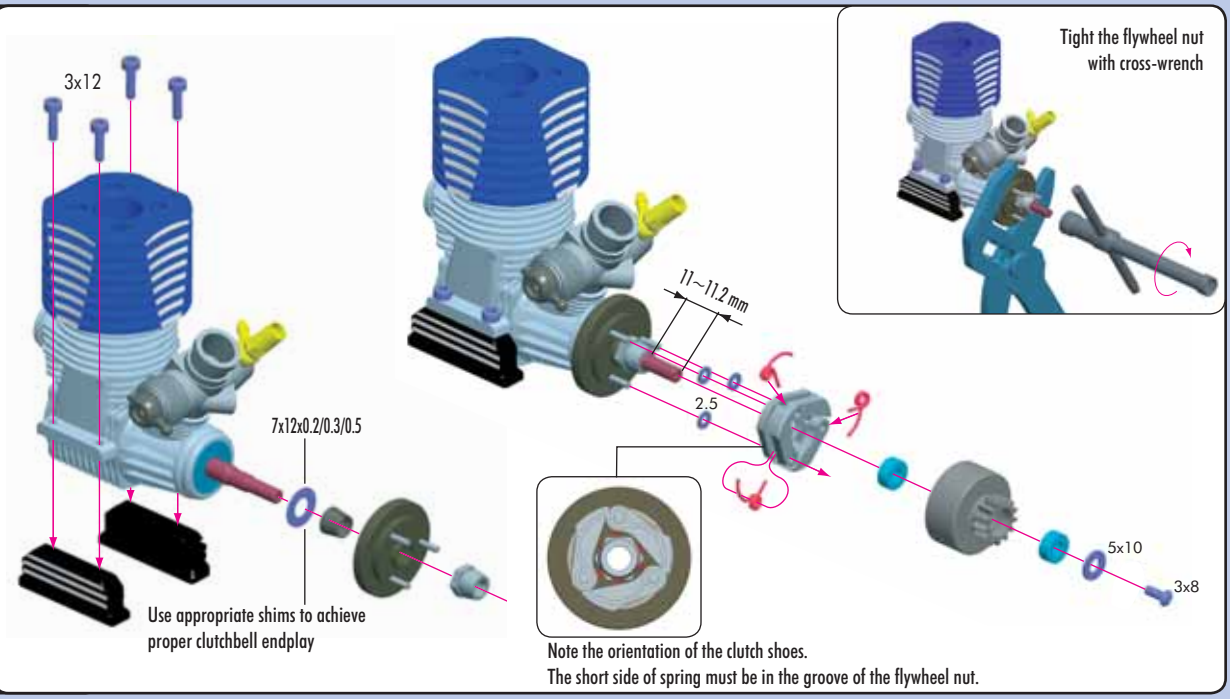
961025
S 2.5

962050
S 5x10x1

964070
S 7x12x0.2

964071
S 7x12x0.3

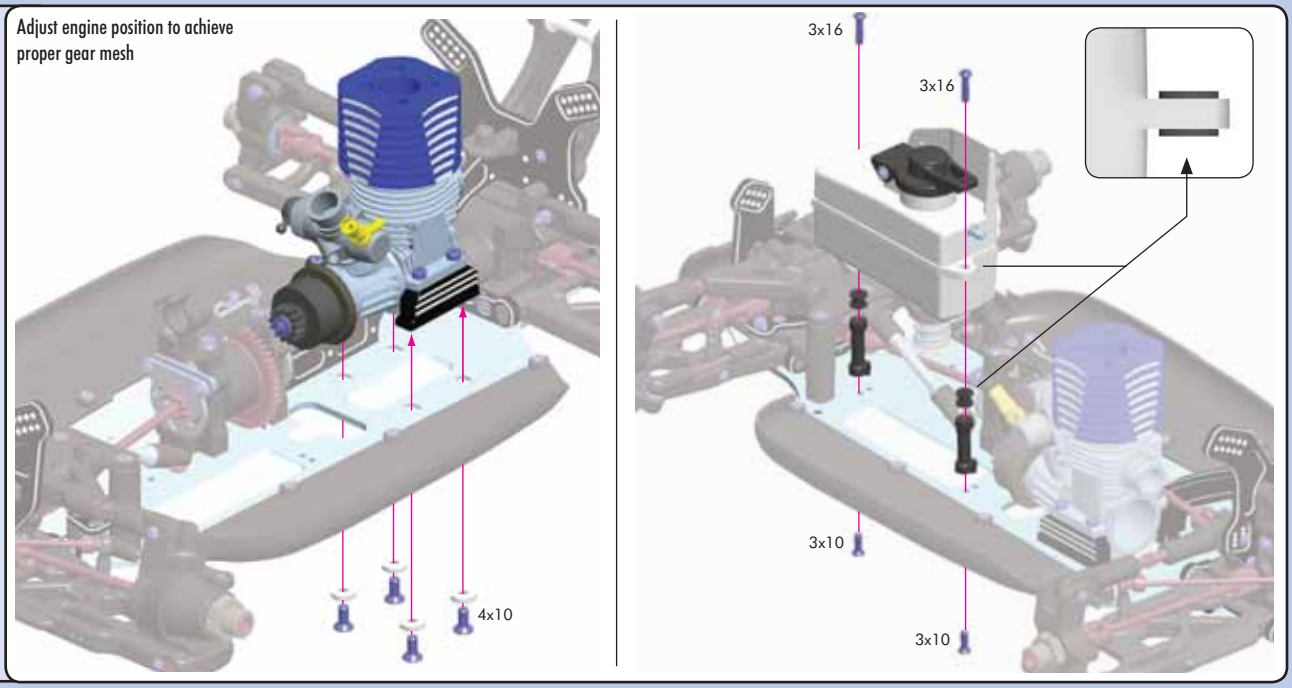
964072
S 7x12x0.5



902316
SH M3x16

903310
SFH M3x10

903410
SFH M4x10

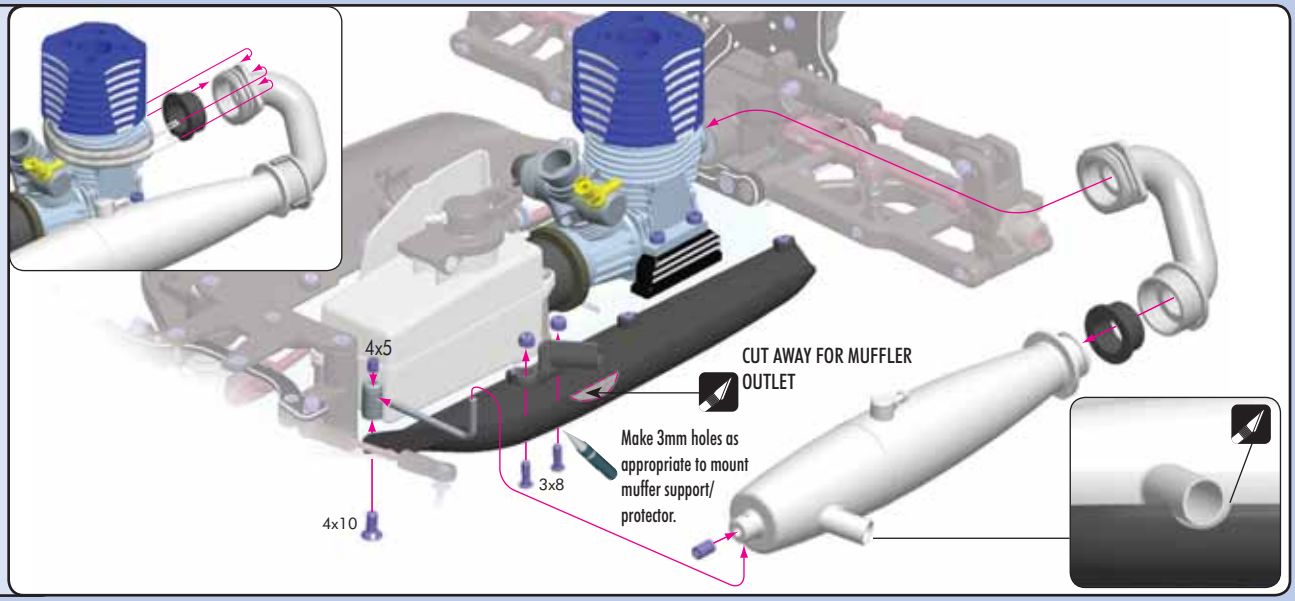


901405
SB M4x5

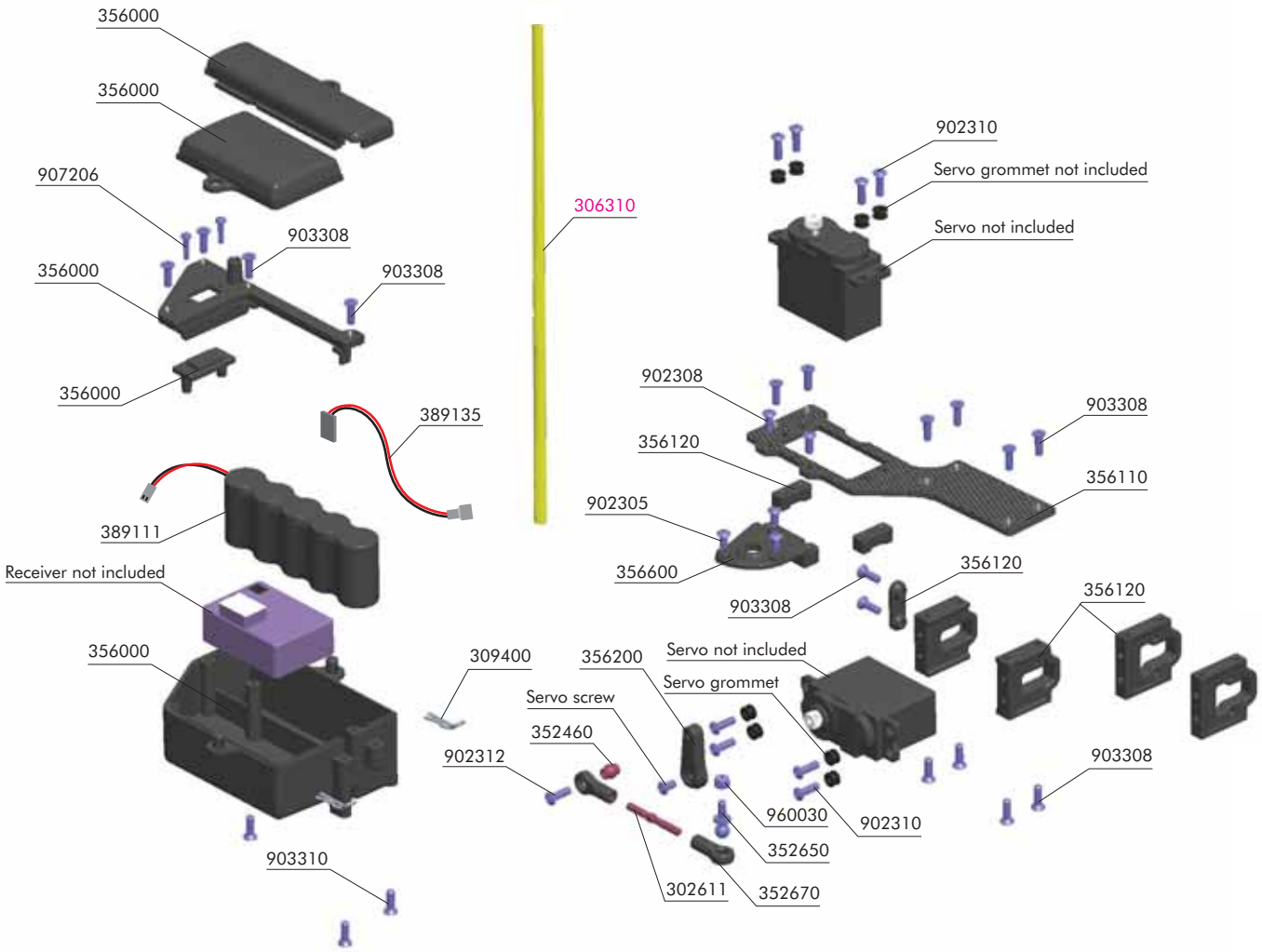
902308
SH M3x8

903410
SFH M4x10

960030
N M3



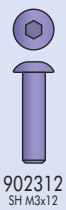
10. RADIO CASE



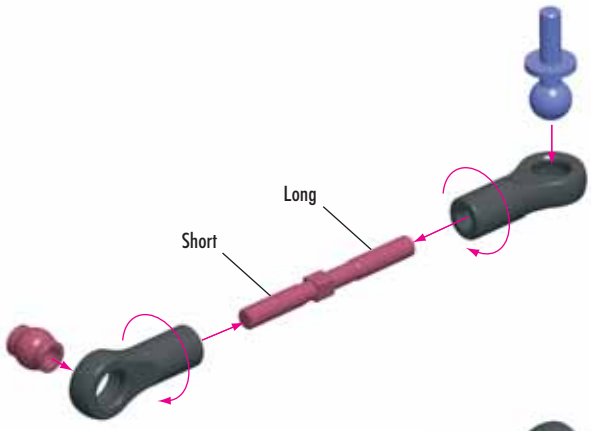
BAG

10

30 2611	ADJ. TURNBUCKLE M3 L/R 35 MM - SPRING STEEL (2)	38 9135	CONNECTING CABLE RECEIVER/BATT. PACK
30 9400	BODY CLIP (8)	90 2305	HEX SCREW SH M3x5 (10)
35 2460	PIVOT BALL 5.8 (10)	90 2308	HEX SCREW SH M3x8 (10)
35 2650	BALL STUD 5.8MM (4)	90 2310	HEX SCREW SH M3x10 (10)
35 2670	SERVO BALL JOINT 5.8MM (4)	90 2312	HEX SCREW SH M3x12 (10)
35 6000	RADIO CASE SET	90 3308	HEX SCREW SFH M3x8 (10)
35 6110	GRAPHITE RADIO PLATE	90 3310	HEX SCREW SFH M3x10 (10)
35 6120	STEERING SERVO MOUNT - SET	90 7206	SCREW PHILLIPS 2x6 (10)
35 6200	BRAKE/THROTTLE ARMS & STEERING SERVO ARMS - SET	96 0030	NUT M3 (10)
35 6600	TRANSPONDER MOUNT		
38 9111	XRAY BATTERY 5-CELL -1200mAh NiMH- 6.0V PRO	30 6310	ANTENNA TUBE (2)



902312
SH M3x12



Use appropriate servo arm:

K - KO Propo, JR, Sanwa, Multiplex
H - Hitec
F - Futaba

902308
SH M3x8

902310
SH M3x10

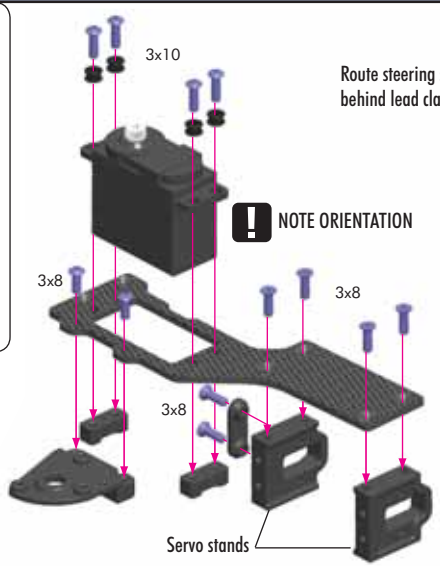
903308
SFH M3x8

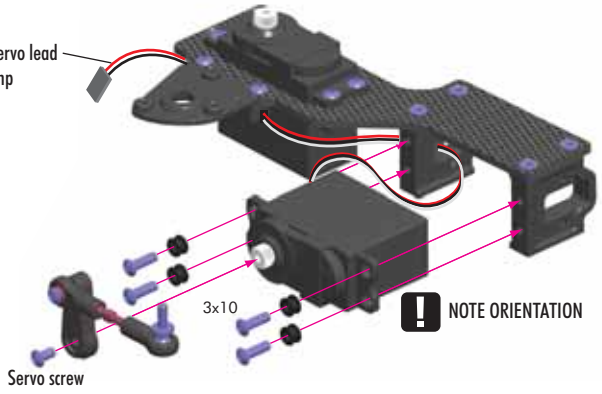
KO PROPO

FUTABA

SANWA

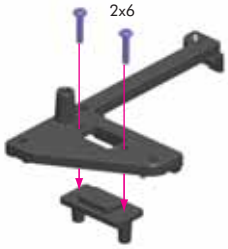
Use appropriate servo stands

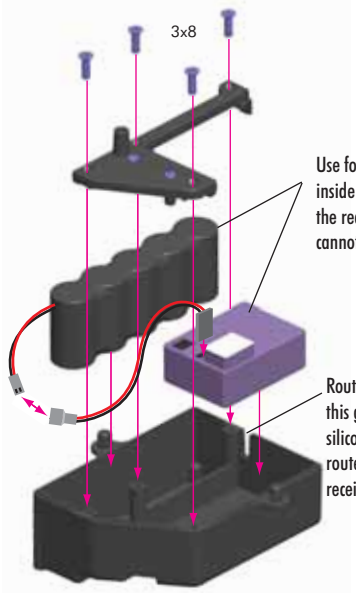


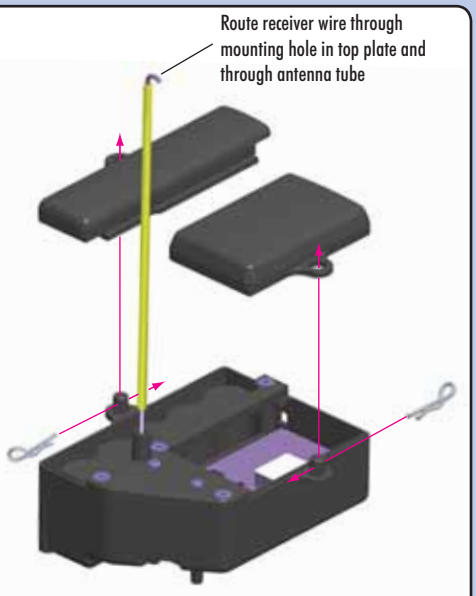


903308
SFH M3x8

907206
SP M2x6



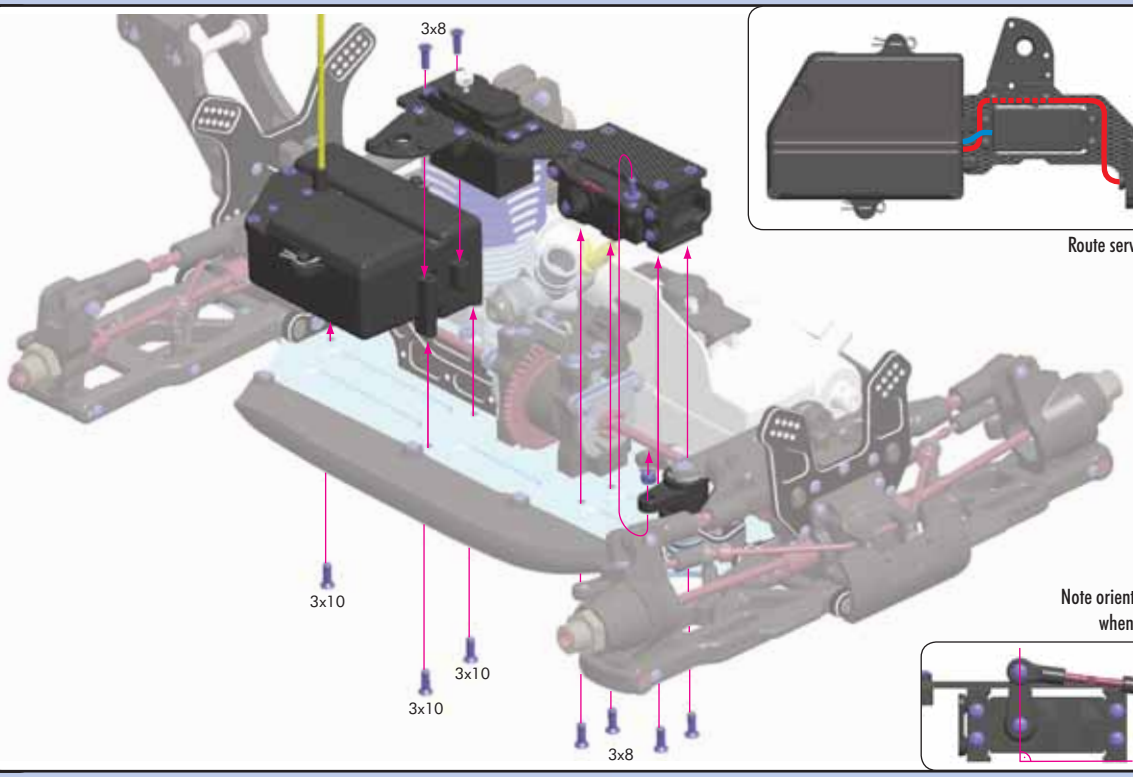


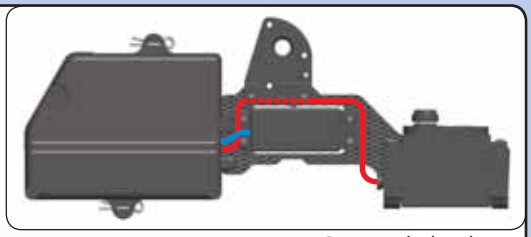


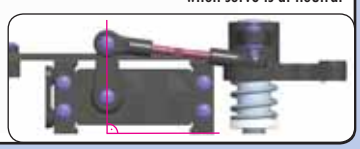
903308
SFH M3x8

903310
SFH M3x10

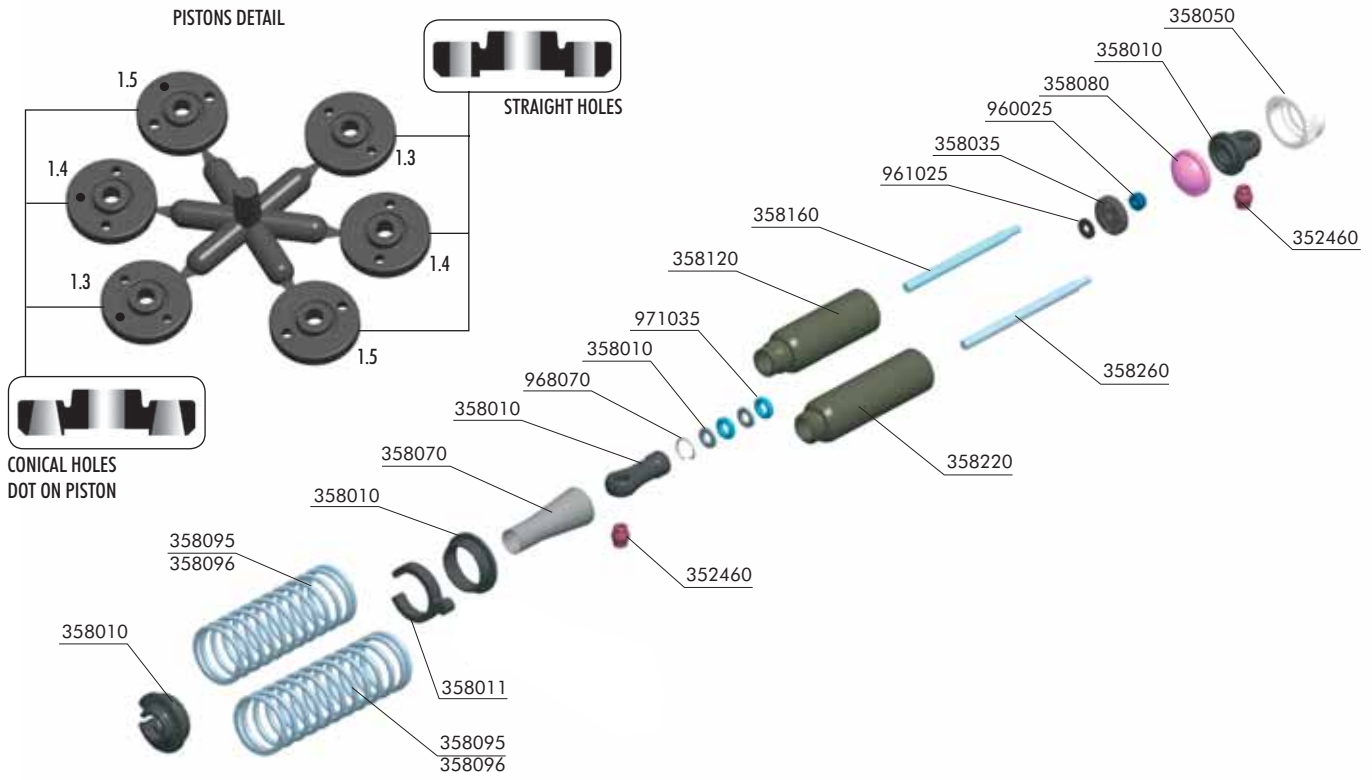
960030
N M3







11. SHOCK ABSORBERS



BAGS

11.1

11.2

35 2460	PIVOT BALL 5.8 (10)	35 8120	ALU FRONT SHOCK BODY - HARD COATED (2)
35 8010	COMPOSITE FRAME SHOCK PARTS	35 8160	FRONT SHOCK SHAFT (2)
35 8011	COMPOSITE SHOCK ADJUSTABLE CLIPS	35 8220	ALU REAR SHOCK BODY - HARD COATED (2)
35 8035	SHOCK PISTON SET (2)	38 8260	REAR SHOCK SHAFT (2)
35 8050	ALU SHOCK CAP NUT (2)	96 0025	NUT M2.5 (10)
35 8070	SHOCK BOOT (4)	96 1025	WASHER S 2.5 (10)
35 8080	SHOCK RUBBER MEMBRANE (4)	96 8070	G-CLIP 7 (10)
35 8095	XRAY SPRING-SET SOFT LIGHT-BLUE (2+2)	97 1035	SILICONE O-RING 3.5x2 (10)
35 8096	XRAY SPRING-SET HARD DARK-BLUE (2+2)		

960025
N M2.5

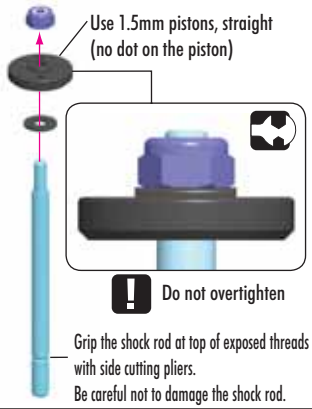
961025
S 2.5

968070
G 7

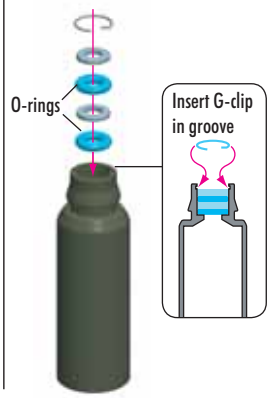
971035
O 3.5x2

BAG 11.1

1step

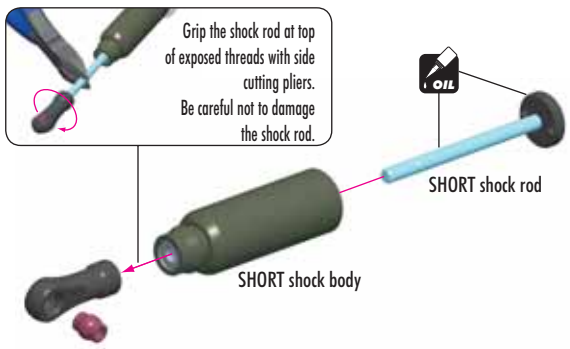


2step



FRONT SHOCKS 2x

3step



960025
N M2.5

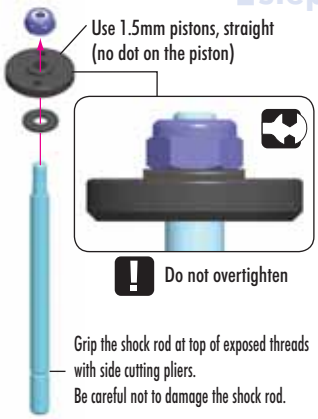
961025
S 2.5

968070
G 7

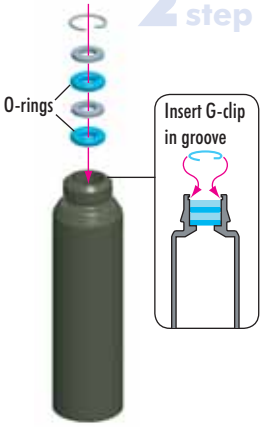
971035
O 3.5x2

BAG 11.2

1step

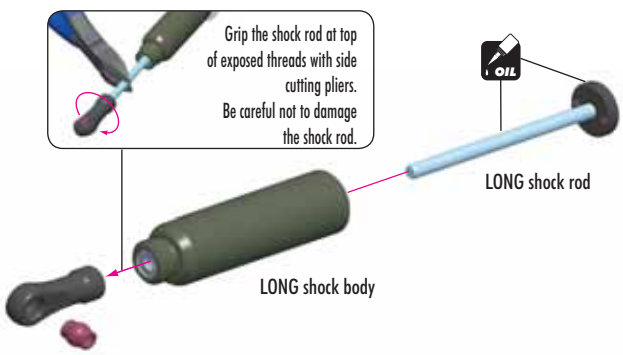


2step



REAR SHOCKS 2x

3step



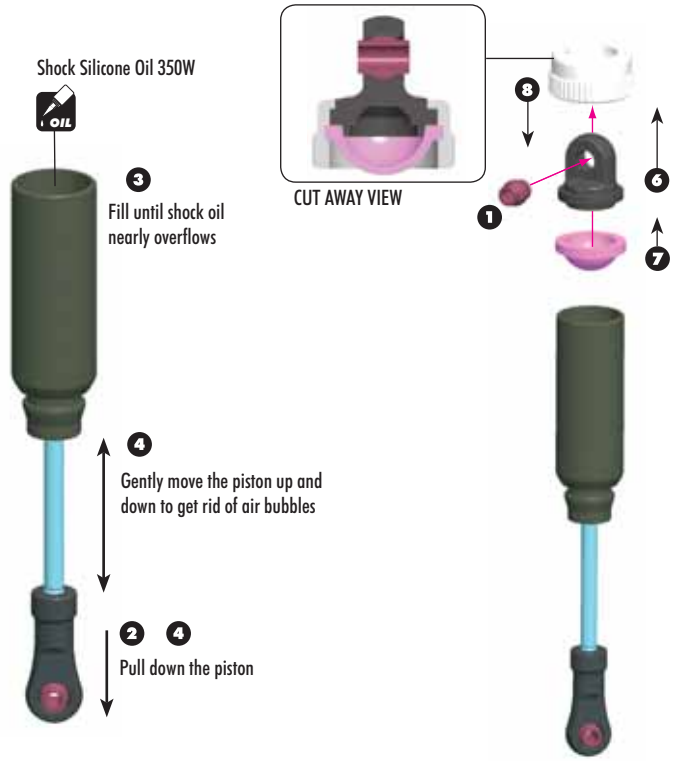
1. Install the pivot ball into the composite pivot mount.
2. Extend the shock rod so the piston is near the bottom of the shock body.
3. Hold shock upright and slightly overfill the shock body with shock oil.
4. Let the oil settle and allow air bubbles to rise to the top. Slowly move the piston up and down until no more air bubbles appear. Add shock oil as necessary.
5. Pull the piston most of the way out of the shock body.

6. Insert the top composite pivot mount in the alu collar. Ensure the notch in the collar fits over the tab on the top pivot mount.
7. Insert the rubber membrane in the alu collar. The membrane must be installed properly.
8. Place the top assembly on the shock body, then thread it fully onto the shock body. Excess oil should spill out.

Shock bleeding:
Check the shock for proper operation. The shock rod must move in and out freely with only "hydraulic" damping.

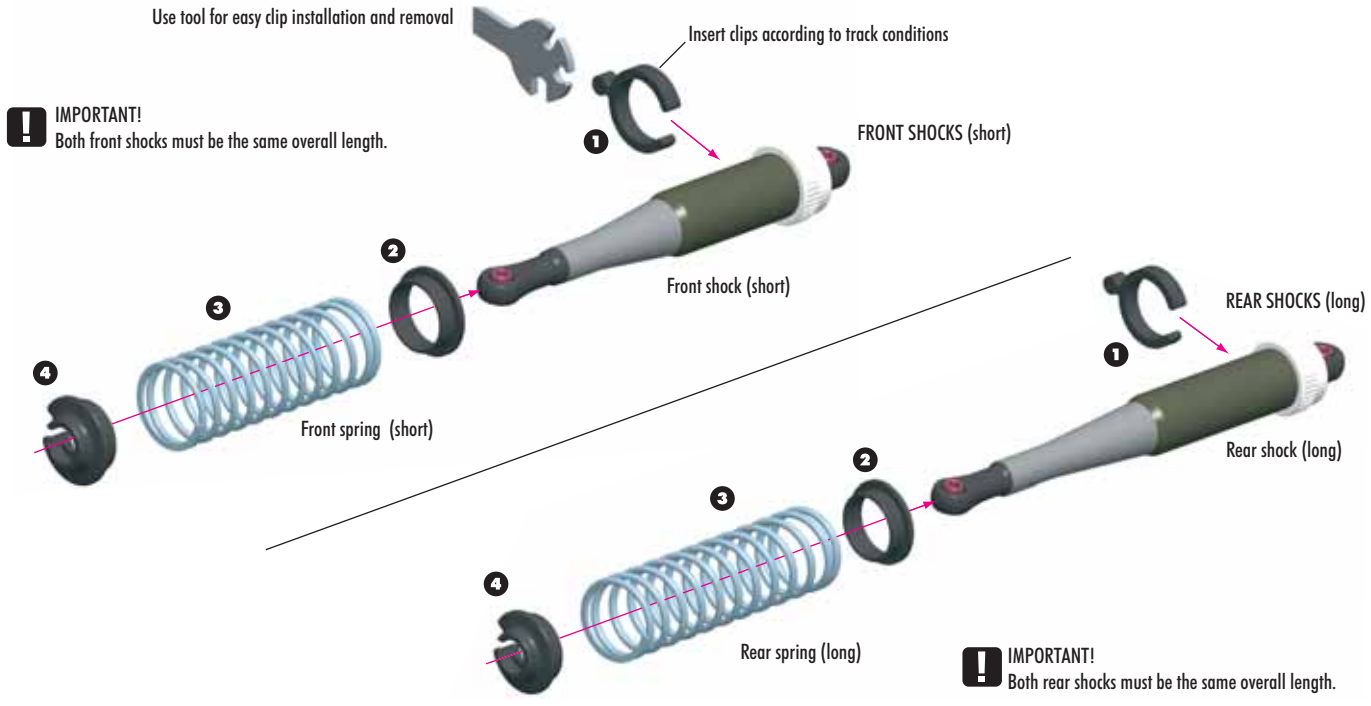
The shock rod should not extend out by itself when pushed in and released. If this happens, extend the shock rod, loosen the top collar, and then slightly push the shock rod into the shock body. Excess oil should escape out the top of the shock. Retighten the top collar and retest. Repeat bleeding as required.

The shock rod should not be drawn into the shock body when pulled out and released. If this happens, remove the top collar assembly (including bladder). Fill the shock body with more shock oil and reassemble. Retest. Repeat bleeding as required.

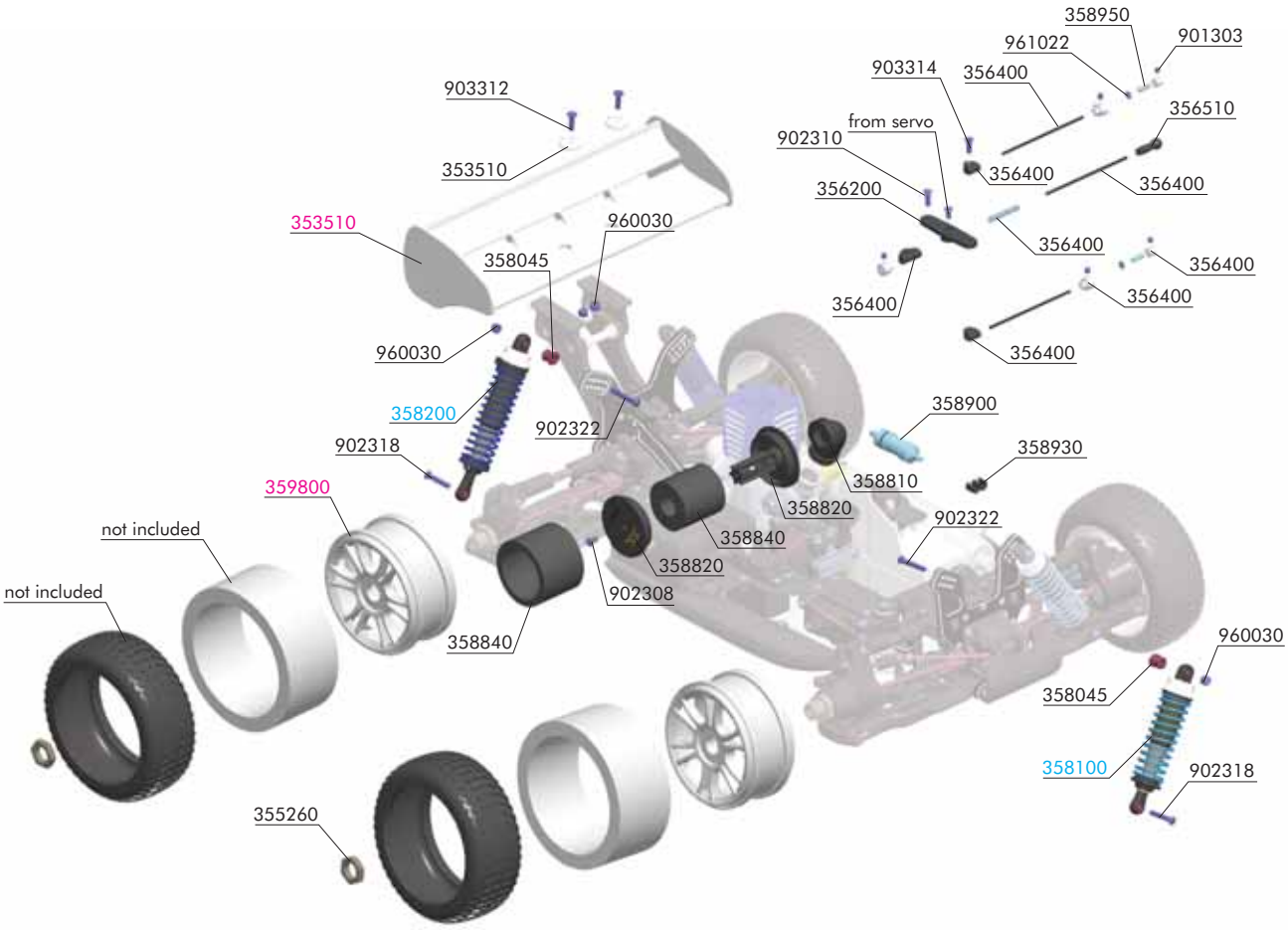


4x Use for front and rear shocks


CUT AWAY VIEW



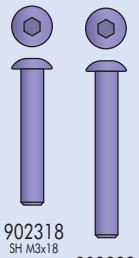
12. FINAL ASSEMBLY



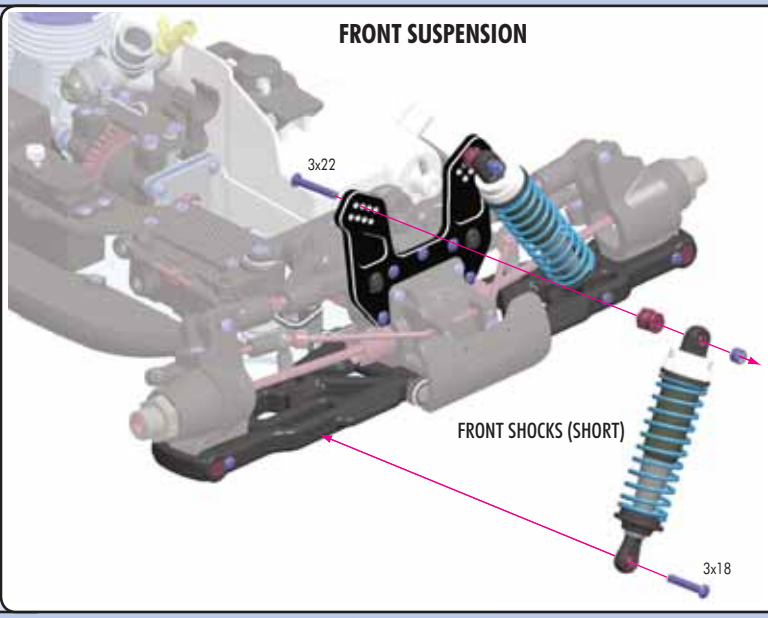
BAG

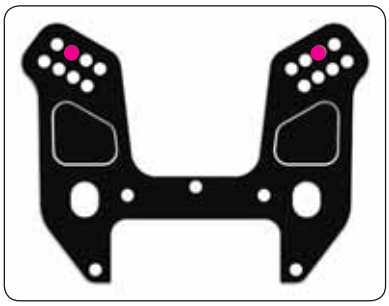
12

35 5260	WHEEL NUT - HARD COATED (2)	90 2310	HEX SCREW SH M3x10 (10)
35 6200	BRAKE/THROTTLE ARMS & SERVO ARMS - SET	90 2318	HEX SCREW SH M3x18 (10)
35 6400	BRAKE/THROTTLE SYSTEM - SET	90 2322	HEX SCREW SH M3x22 (10)
35 6510	CLOSED BALL JOINT 3.9 (4)	90 3312	HEX SCREW SFH M3x12 (10)
35 8045	SHOCK PIVOT BALL WITH HEX (2)	90 3314	HEX SCREW SFH M3x14 (10)
35 8810	AIR FILTER ELBOW	96 0030	NUT M3 (10)
35 8820	AIR FILTER BODY & CAP	96 1022	WASHER S 2.2 (10)
35 8840	AIR FILTER FOAM & OIL		
35 8900	FUEL FILTER SET	35 8100	FRONT SHOCK ABSORBERS COMPLETE SET (2)
35 8930	FUEL FILTER MOUNT & TUBING HOLDERS	35 8200	REAR SHOCK ABSORBERS COMPLETE SET (2)
35 8950	SILICONE TUBING 1M (2.4 x 5.5MM)		
90 1303	HEX SCREW SB M3x3 (10)	35 3510	REAR WING
90 2308	HEX SCREW SH M3x8 (10)	35 9800	WHEELS STARBURST - WHITE (4)



FRONT SUSPENSION





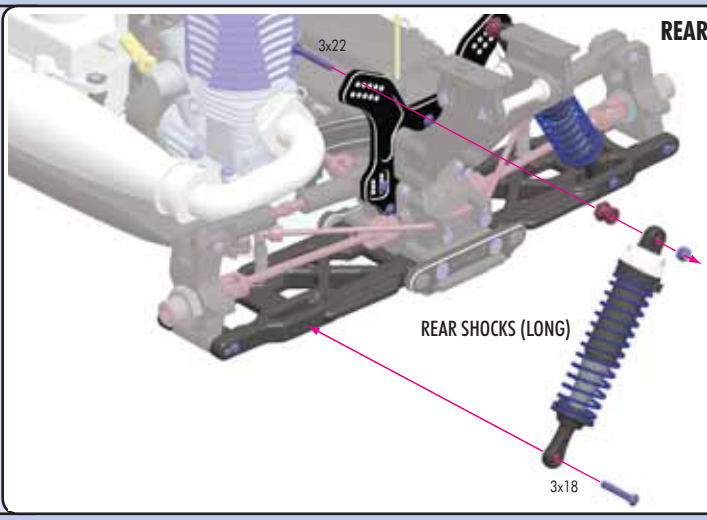
INITIAL POSITIONS

L=R

902318
SH M3x18

902322
SH M3x22

960030
N M3



REAR SUSPENSION

INITIAL POSITIONS

L=R

901303
SB M3x3

902310
SH M3x10

903314
SFH M3x14

961022
S 2.2

SILICONE TUBING

2xCUT

10mm

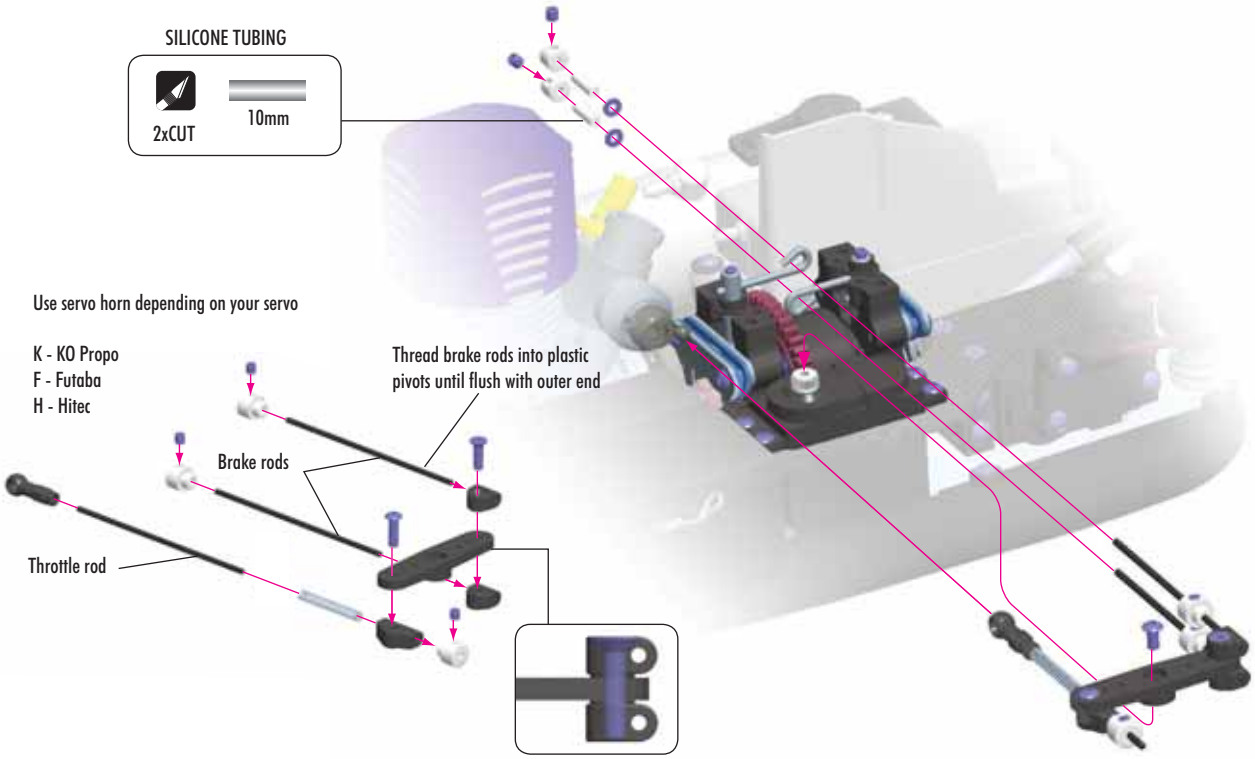
Use servo horn depending on your servo

K - KO Propo
F - Futaba
H - Hitec

Thread brake rods into plastic pivots until flush with outer end

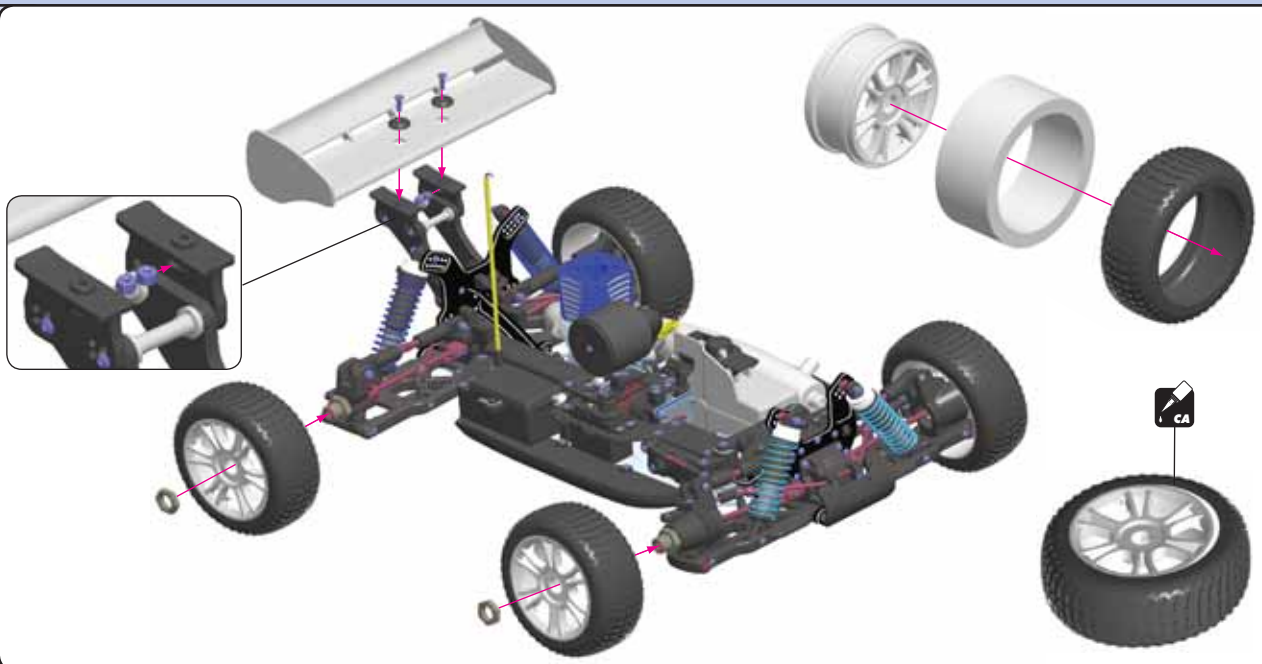
Brake rods

Throttle rod



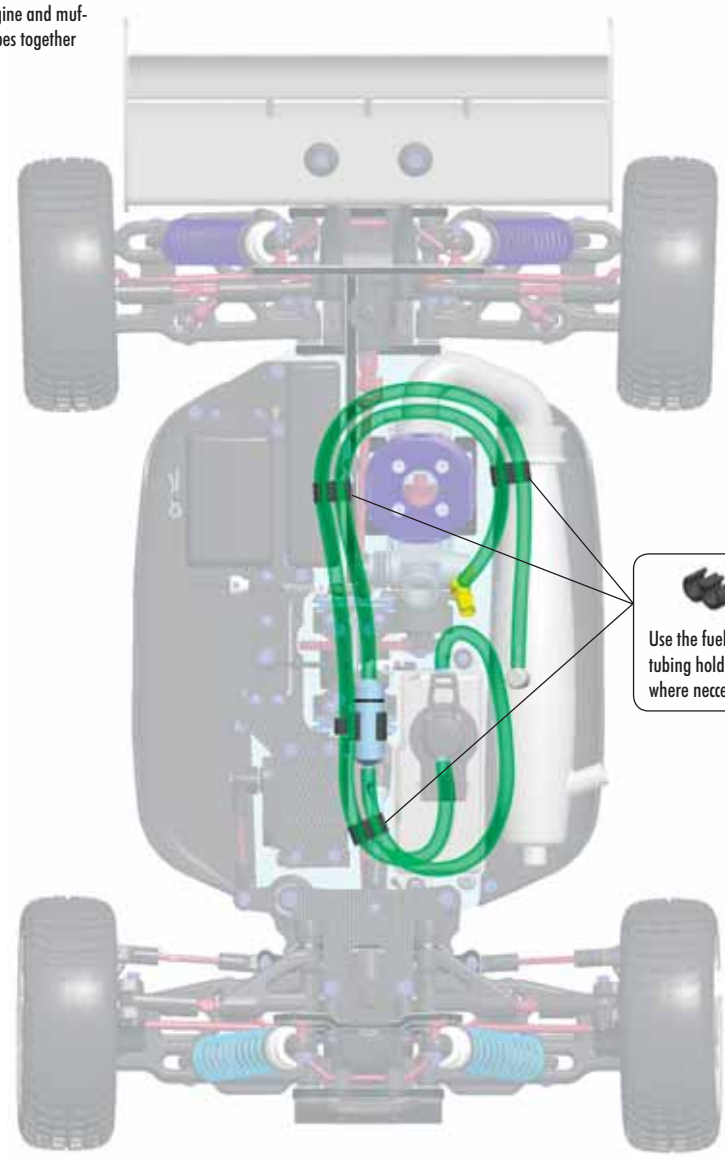
903312
SFH M3x12

960030
N M3

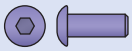


Cut the silicone tube depending on engine and muffler. Use the plastic clips to hold the tubes together

The fuel filter has a small hole that fits into notch on the composite holder to prevent the filter from turning freely

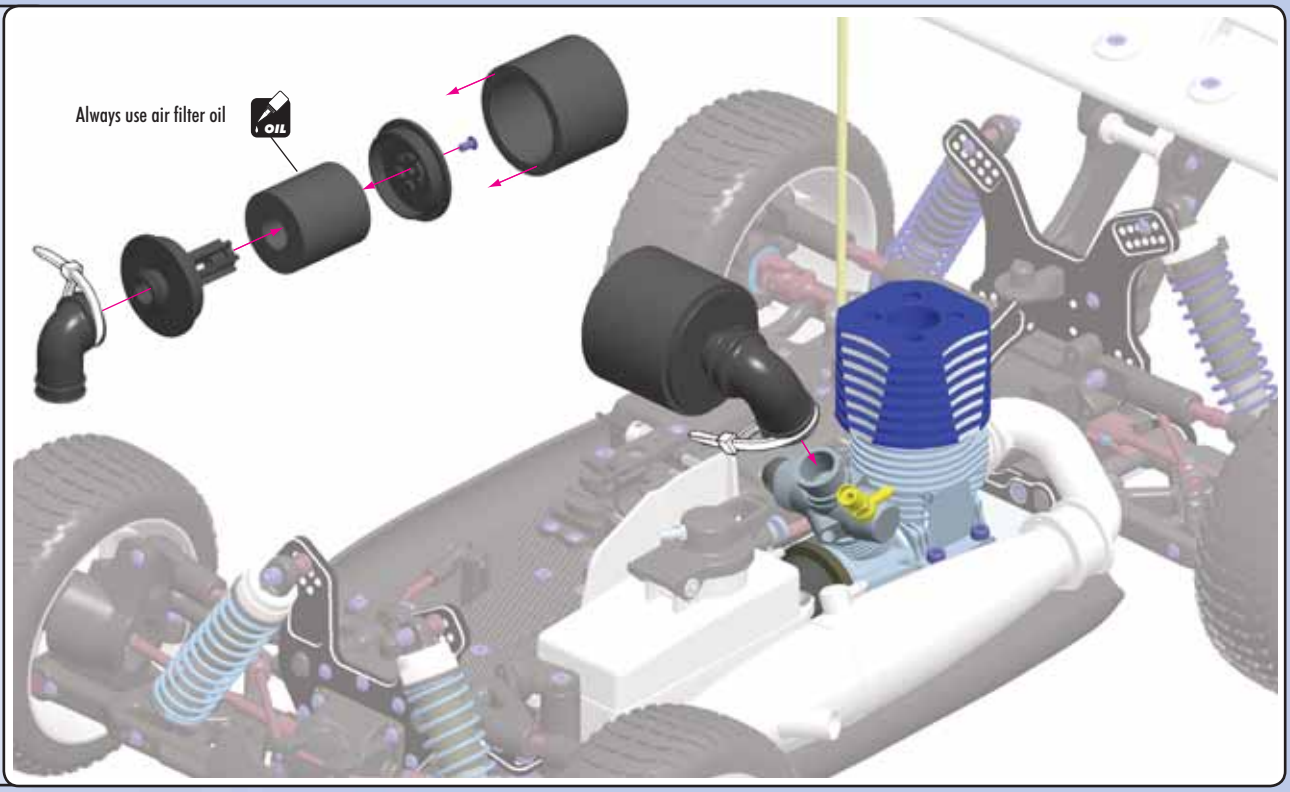


Use the fuel tubing holders where neccessary



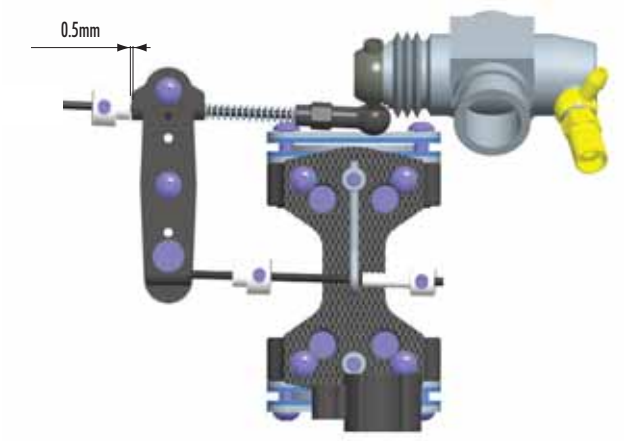
902308
SH M3x8

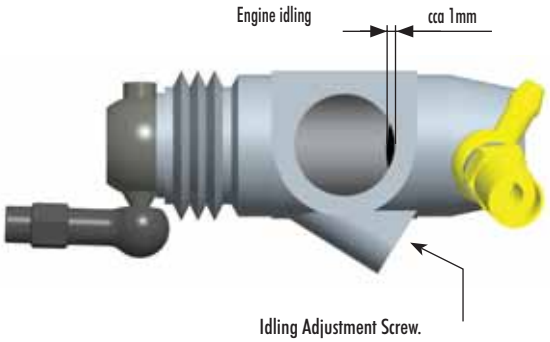
Always use air filter oil



Neutral (Idle)

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

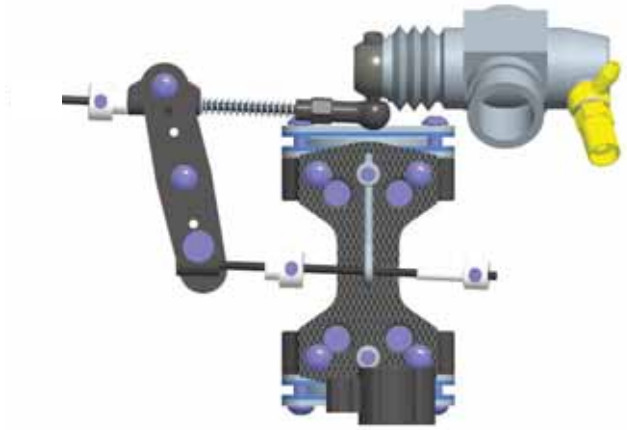


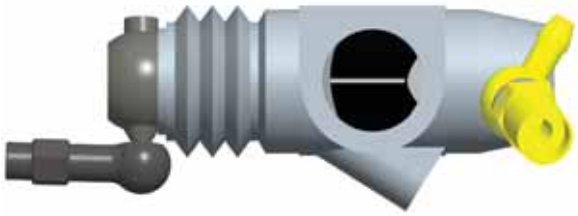


Idling Adjustment Screw.
Use to adjust the idle setting of the carburetor.
Do not allow carburetor to close to less than 1mm.

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

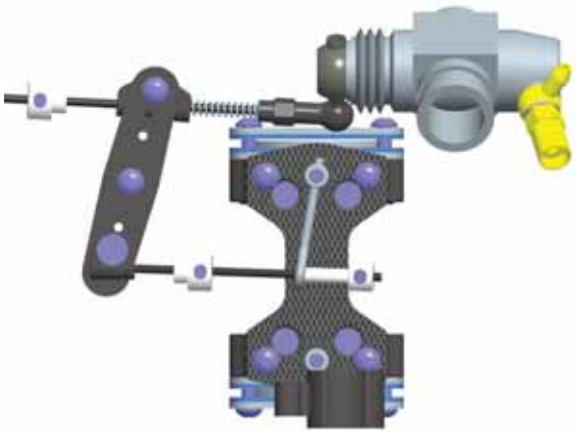
High throttle



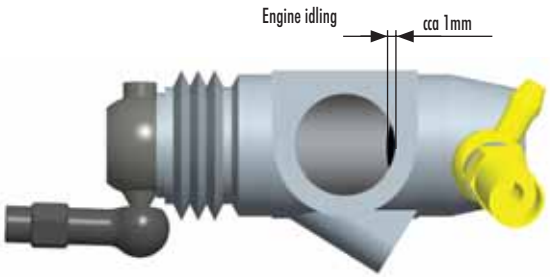


* Adjust the servo-horn mounting position for the carburetor to open fully.
* Change the pivot mounting position on the servo horn in case the carburetor is not opening fully or if it is opening excessively. Or if available on the transmitter, adjust the throttle high end point.

Brake

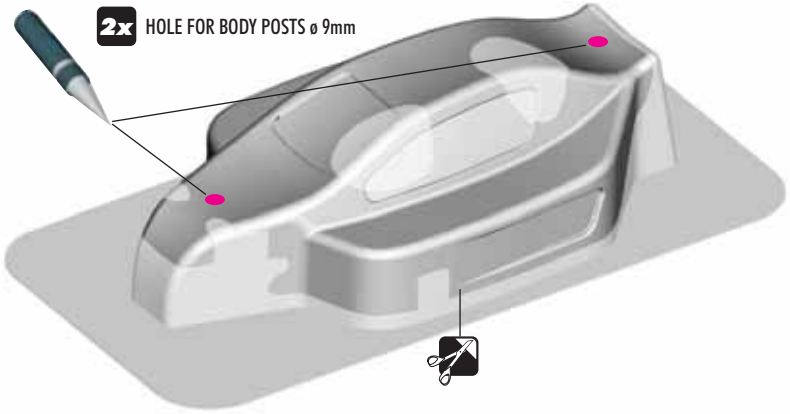


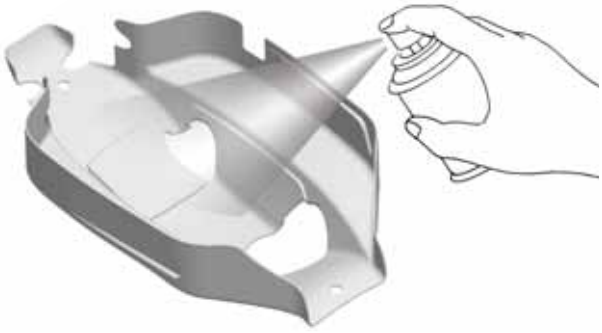
Brake adjusting knobs:
Upper linkage - rear brake
Lower linkage - front brake



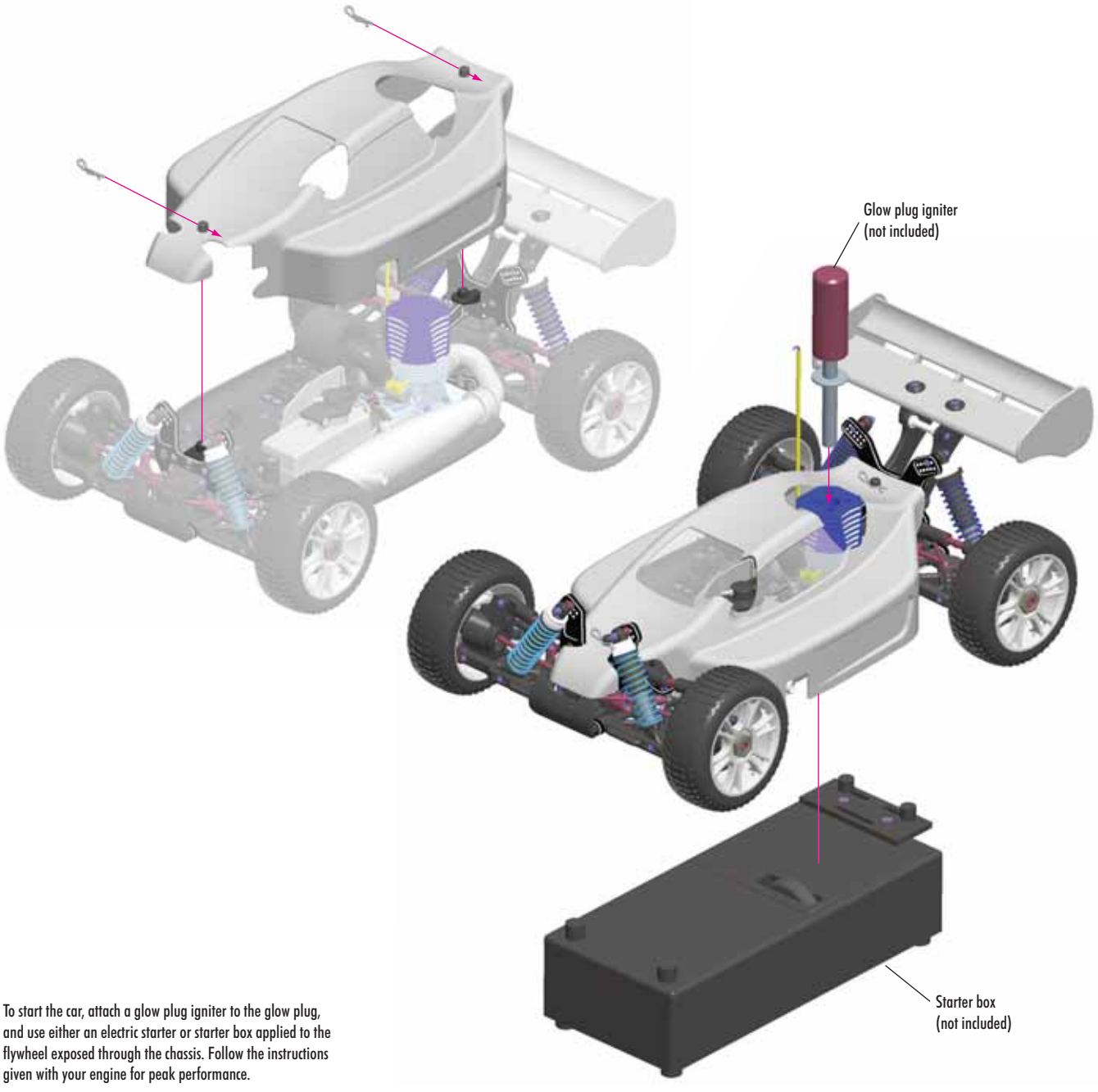
* Adjust the adjustable collars so the brakes work smoothly.
* If the brakes apply too much or not enough, adjust the adjustable collars accordingly. Or if available on the transmitter, adjust the brake endpoint.
* To tighten brakes, turn collar to thread brake rod INTO pivot.
* To loosen brakes, turn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

BODY PREPARATION





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



To start the car, attach a glow plug igniter to the glow plug, and use either an electric starter or starter box applied to the flywheel exposed through the chassis. Follow the instructions given with your engine for peak performance.

Preparing to operate the engine

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

Starting and running the engine

Be sure to observe the following starting process. Non-observance will make model car start suddenly, and may lead the damage or unexpected accidents.

1. Make sure the transmitter and receiver batteries are fully charged.
2. Put the car on the starter box and keep the tires from touching the ground.
3. Turn on the switch of the receiver.
4. Turn on the switch of the transmitter.
5. Make sure the steering servo and engine control servo work normally and adjust them correctly.
6. Put the fuel in the fuel tank, and close the cap securely.
7. Apply the glow igniter to the engine glowplug.
8. Push the model car onto the starter box to start the engine. (If the engine is new, follow the instruction manual and be sure to break in the new engine properly).
9. When the engine is running, remove the glow igniter.
10. Follow your engine break-in procedure and tune the engine as appropriate.

Stopping the engine

Before you stop the engine, try to make sure the engine is at idle first.

There are several ways to stop the engine:

1) Use a rag to cover the exhaust tip. Be careful! The exhaust is extremely hot so use a thick rag and gloves.
2) Pinch the fuel tubing to stop the flow of fuel to the carb. Be careful, this can make the motor run lean which can damage the motor.
3) Put your hand over the air filter, or squeeze the air filter element to block the airflow.
4) Press an object (such as a screwdriver handle or shoe) against the rotating flywheel to stop its rotation. Be very careful, and do not stick your hand or fingers near the rotating flywheel.

Finish to operate

1. Stop the engine.
2. Turn off the switch of the receiver.
3. Turn off the switch of the transmitter.

Maintenance after running

Take proper care of your car after running to keep it performing well, and take notice of any damage and wear.

1. Do not leave fuel in the tank.
2. Go outside to drain any residual oil in the exhaust pipe.
3. Clean the car and remove all sand, mud, and other debris.
4. Use after-run oil in your engine after you have finished running for the day.

XB8 SET-UP

Your XRAY XB8 luxury nitro buggy is a top competition, precision racing machine that features multiple adjustments that allow you to set up for any track condition. The XB8 includes innovative set-up features that allow you to change adjustments quickly and easily without the risk of losing small parts such as clips and screws. Everything necessary to achieve a full range of adjustment is included in your XB8 kit.

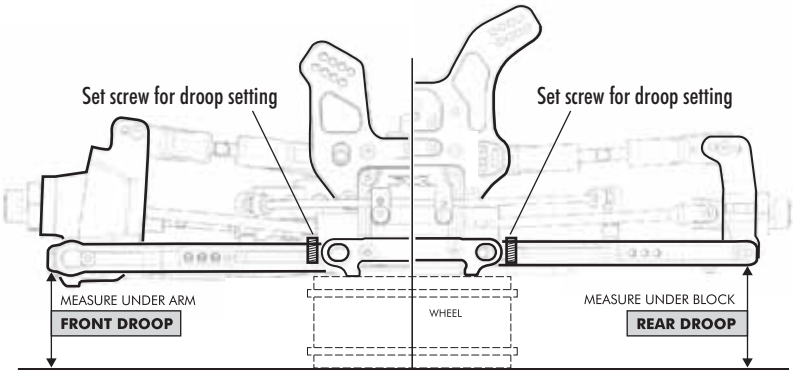
Please refer to the XB8 Basic Set-Up Sheet for a good overall starting point. After rebuilding the chassis, or in case you become lost with your set-up, always return to the basic starting set-up described here. If you choose to experiment with set up, make small adjustments one at a time, and see if you find any improvement with each adjustment. We strongly advise you to record and keep track of your set-up changes, record which set-ups work best at different racetracks under various conditions. You can use the XRAY XB8 Set-Up Sheet to record your data and set-ups.

This set-up section describes how to adjust your XB8 to suite your driving style. For each individual set-up area, we describe the effects of changing the adjustment, and also how to make the adjustment.

❍ DROOP

Adjust front/rear droop by adjusting the front/rear down stop screws.
Tighten the screws to increase the droop height (less arm movement).
Loosen the screws to decrease the droop height (more arm movement).

Droop is a very sensitive adjustment, since it affects and alters weight transfer, and all aspects of chassis performance are affected: braking, acceleration, jumping, traction and rough track handling.



IMPORTANT!
Make equal adjustments on both left and right sides of the car, 1/2 turn of adjustment at a time.

TIP: Set the car to full travel as a starting point. The front is usually unchanged and left at full travel. For the front and rear, most drivers will use about 2mm of adjustment range for most North American tracks. Experiment to find the best compromise for your particular track and driving style.

Droop height	Front/ Rear	Characteristics
Less droop = turning the screw in	Front	· less on power steering · better for smaller jumps
	Rear	· less off-power traction
More droop = turning the screw out	Front	· more on power steering · better handling on rough tracks
	Rear	· more rear traction · better handling on rough tracks

❍ ROLL CENTER

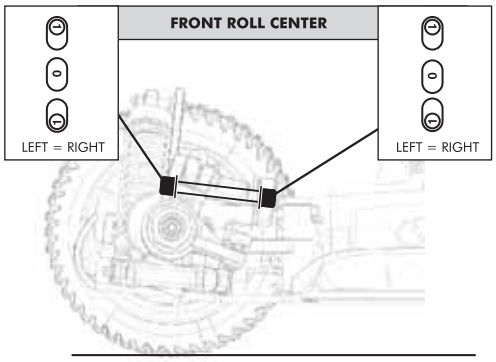
You can adjust the front and rear roll centers of the XB8 by changing the mounting locations of various components.

Front Roll Center

You can raise or lower the front roll center by adjusting the following components:

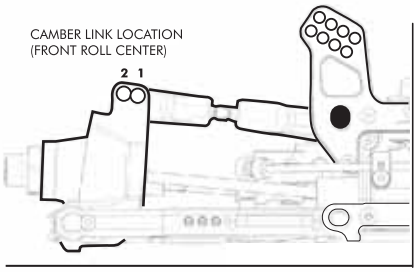
- Front upper arm inner pin mounting position.
  Use the eccentric bushings at the front and rear of each pin to raise or lower the pin.
- Front upper camber link outer mounting position.
  The outer end of the front upper camber link can be attached to the front C-hub blocks in one of 2 positions (inner and outer).

IMPORTANT!
Make equal adjustments on both left and right sides of the car.



Front upper arm - inner pin	Characteristics
Higher position = lower roll center	· increases on-power steering · car is less responsive · better on smooth, high-grip tracks with long fast corners
Lower position = higher roll center	· decreases on-power steering · car is more responsive · use in high-grip conditions to avoid traction rolling · use on tracks with quick direction changes (chicanes)

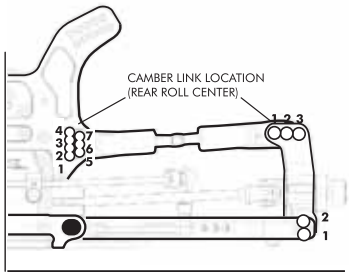
Front upper camber link - front C-hub	Characteristics
Inner hole	· increases camber gain · slightly more off-power steering · slightly quicker steering response
Outer hole	· slows down steering response · decreases camber gain · steering more "forgiving"



Rear Roll Center

You can raise or lower the rear roll center by adjusting the following components:

- Rear upright lower mounting position.
  The rear lower arm attaches to the rear upright in one of two mounting holes.
- Rear upper camber link mounting position.
  The inner end of the rear upper camber link can be attached to the rear shock tower in one of 7 positions. The outer end of the rear upper camber link can be attached to the rear upright in one of 3 positions.



Rear upright - lower pin	Effect on Rear Roll Center
Upper hole	· lower rear roll center
Lower hole	· higher rear roll center

Rear upper camber link - shocktower	Effect on Rear Roll Center
Upper holes	· lower rear roll center
Lower holes	· higher rear roll center

Rear roll center	Characteristics
Higher	· increases on-power traction · decreases traction under braking · use to avoid traction rolling at corner entry · use under low-traction conditions · reduces rear tire wear
Lower	· decreases rear traction · use to avoid traction rolling mid-corner and corner exit

Rear upper camber link - length	Characteristics
Shorter link = outer hole on tower and/or inner hole on hub	· increases rear camber gain · increases traction slightly · decreases steering and stability
Longer link = inner hole on tower and/or outer hole on hub	· decreases rear camber gain · increases stability · slows down the car's responsiveness

❍ SHOCK ABSORBERS

Adjust the shock absorbers and their mounting positions to suit track conditions.

Piston Hole Type

There are two different types of shock pistons that can be used in the XB8.

Piston hole type	Characteristics
Conical up (with dot on the piston)	· less dampening when shock is compressed · more dampening on rebound
Conical down (with dot on the piston)	· more dampening when shock is compressed · less dampening on rebound
Straight	· equal damping all the time (compressing and rebounding)


CONICAL UP HOLES


CONICAL DOWN HOLES


STRAIGHT HOLES

Shock Oil

You can use shock oils of different weights in a shock absorber.

Shock Oil	Characteristics
Thinner	· same characteristics as larger pistons holes
Thicker	· same characteristics as smaller pistons holes

Note that typically you should use piston hole sizes to suit the track conditions rather than alter the oil viscosity.

Use only the genuine premium quality Xray silicone shock oils.
The shock oils are availabe in 50ml size in these viscosities:

Part	Viscosity	Part	Viscosity
359515	150 W	359545	450 W
359520	200 W	359550	500 W
359525	250 W	359560	600 W
359530	300 W	359570	700 W
359535	350 W	359580	800 W
359540	400 W	359590	900 W

Piston Hole Size

For each type of shock piston (conical or straight holes), there are three pistons with holes of different sizes.

Piston hole size	Characteristics
Smaller	· harder damping · slower chassis weight transfer · slower response · decreases chance of bottoming out when landing if used with "thicker" oil · decreases chassis roll if used with "thicker" oil · use with thinner oil if track is rough
Larger	· softer damping · increases traction · quicker chassis weight transfer · quicker response · increases chance of bottoming out when landing if used with "thinner" oil · increases chassis roll if used with "thinner" oils · use with thicker oil if track is smooth

IMPORTANT!
Make equal adjustments on both left and right sides of the car.

Shock Springs

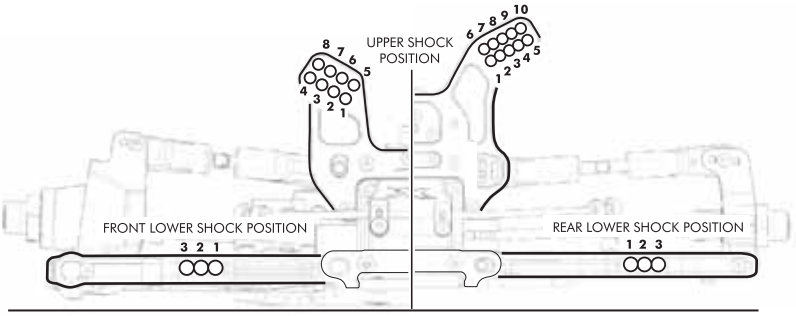
You can use shock springs of different rates to alter performance.

Shock spring	Characteristics
Softer	· more chassis roll · more traction · better on bumpy tracks · increases chance of bottoming out when landing
Stiffer	· less chassis roll · less traction · more responsive · better on smooth tracks · decreases chance of bottoming out when landing

Shock Mounting Position

You can change the shock mounting position by leaning the shocks at different angles, and also moving the shock closer or further from the centerline of the car. You accomplish this by moving the shock top and bottom mounts to different locations on the shock towers and lower arms

Shock position	Characteristics
More inclined = moving in on tower and/or moving out on lower arm	· softer initial damping · more progressive damping · more lateral (side) traction · makes the handling more "forgiving" · may be better on high-bite tracks, since it slows down the handling and makes it easier to driver
Less inclined = moving out on tower and/or moving in on lower arm	· harder damping · less lateral (side) traction · makes the car more responsive · usually better suited on technical tracks



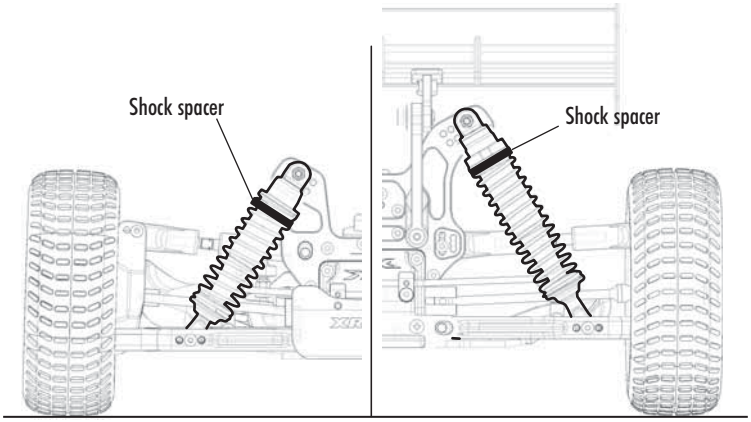
Shock Preload

Adjust the front/rear shock spring preload by using preload clips of various thicknesses above the shock springs.

IMPORTANT!

Make equal adjustments on both left and right sides of the car.

Shock preload	Characteristics
Less preload = thinner/less spacers	· lower ride height · may give higher corner speed on high bite tracks · better suited to smooth tracks
More preload = thicker/more spacers	· higher ride height · less prone to bottoming out · better suited to rough tracks



❍ STEERING

You can adjust the Ackermann angle and the spring preload of the central servo saver.

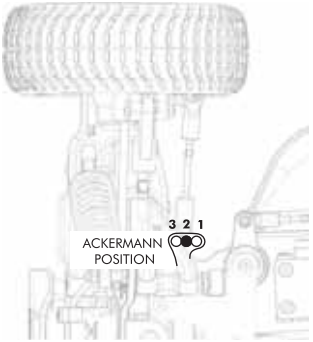
IMPORTANT!

Make equal adjustments on both left and right sides of the steering plate.

Ackermann

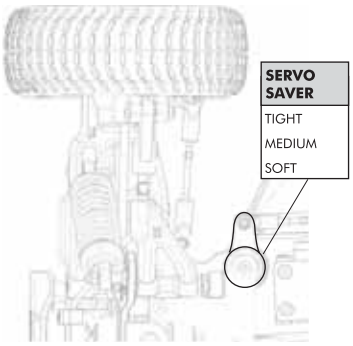
Adjust the Ackermann angle by moving the inside ends of the steering rods into different holes in the steering plate.

Steering rod inner mounting position	Characteristics
Forward holes = steeper angle	· smoothens out steering response · car reacts smoothly · better suited to smooth flowing tracks with high speed corners
Rearward holes = shallower angle	· quickens initial steering response · car reacts faster to steering input · better suited to small, tight tracks



Servo Saver Preload

Adjust the preload of the central servo saver by adjusting the tension on the spring with the threaded collar.



Servo saver spring preload	Characteristics
Softer	· less steering · better suited to standard servos
Stiffer	· more steering with a quicker reaction · better suited to high torque metal-geared servos

❍ CAMBER

Adjust the front/rear camber by adjusting the lengths of the upper camber linkages.

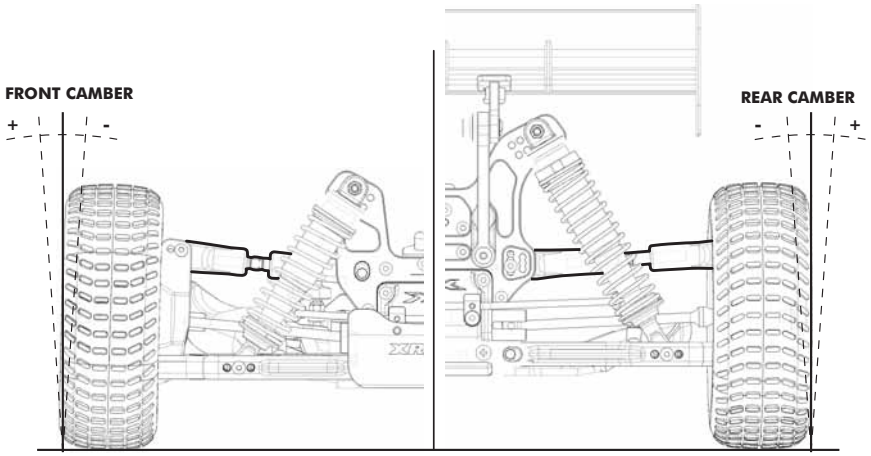
IMPORTANT!

Make equal adjustments on both left and right sides of the car.

Camber angle	Front/Rear	Characteristics
More negative camber (more inclined)	Front	· more steering
	Rear	· decreases rear traction entering and in corners
Less negative camber (more vertical)	Front	· less steering
	Rear	· increases rear traction entering and in corners up to a point · if the shock is too vertical and traction is lost, the traction will be lost very abruptly and the car will be hard to control.

Note that you can also change the camber gain by shortening or lengthening the length of the upper camber linkages, and angling them differently by placing the end ball joints in the different holes in shock towers and outer blocks (C-hubs and rear hubs).

Upper arm - length	Characteristics
Shorter link = outer hole on tower and/or inner hole on hub	· increases camber gain · increases traction
Longer link = inner hole on tower and/or outer hole on hub	· decreases camber gain · car handles smoother



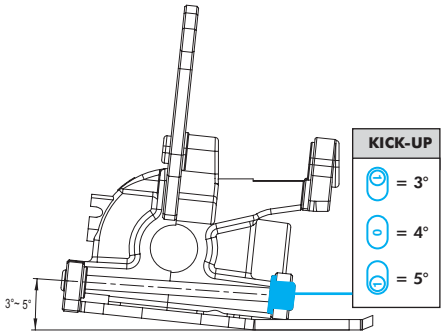
❍ FRONT KICK-UP

Adjust front kick-up of the front lower arms by changing the eccentric bushings in the plate at the rear of the front bulkhead. You should also adjust the angle of the front upper arms so that they are parallel with the front lower arms.

IMPORTANT!

Make equal adjustments on both left and right sides of the car.

Front kick-up angle	Characteristics
More kick-up	· more weight transfer to the front of the chassis off-throttle or under braking · chassis compresses or drops more off-throttle or under braking · handling is improved on bumpy tracks · decreased steering response
Less kick-up	· less weight transfer to the front of the chassis off-throttle or under braking · chassis compresses or drops less off-throttle or under braking · handling is improved on smooth tracks · increased steering response



After you adjust the front kick-up angle, you should adjust the angle of the front upper arm inner pin so that it is parallel with the front lower arm. This will help to prevent binding during suspension movement. Each front upper arm inner pin rides in two eccentric bushings (one on each end). By using different combinations of positions, you can angle the pin. Note that these eccentric bushings are also used to adjust the front roll center.

❍ CASTER

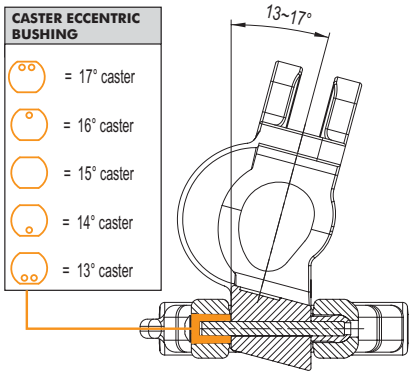
Adjust the front caster angle by changing the caster eccentric bushings in the front lower arms (in front of the C-hub). After you set the caster angle using the eccentric bushings, you must adjust the front upper arm position. The final caster also depends on the kick-up setting. Therefore once you set the caster on the C-hub you have to add the value of kick-up to calculate your final caster. Example: 15° caster on C-hub + 3° kick-up = 18° final caster. Use the reference table to calculate your final caster easily.

IMPORTANT!

Make equal adjustments on both left and right sides of the car.

Caster angle	Characteristics
Less caster (block more vertical)	· increases off-power steering into a corner · decreases on-power steering out of and in a corner · decreases straight-line stability
More caster (block more laid-back)	· decreases off-power steering into a corner · increases on-power steering out of and in a corner · increases straight-line stability

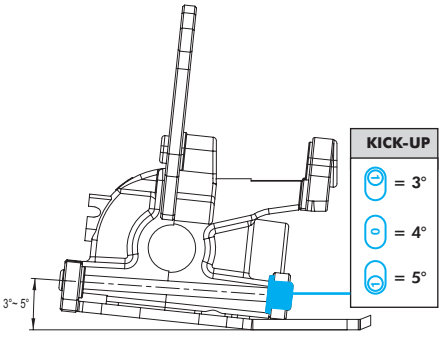
After you have set the caster using the eccentric bushings, you need to set the front upper arm position. Remove all clips around the front upper arm and move the front suspension a few times to let it settle. The front upper arm will move to its optimal position on the pin. Then insert the clips around the arm so that the arm stays in its optimum position.



The caster of C-hub is set using different eccentric bushings in different orientations. Refer to the table above.

TOTAL CASTER = C-HUB CASTER + KICK-UP

CASTER ECCENTRIC BUSHING	KICK-UP 3°	KICK-UP 4°	KICK-UP 5°
17°	20°	21°	22°
16°	19°	20°	21°
15°	18°	19°	20°
14°	17°	18°	19°
13°	16°	17°	18°



The kick-up is adjusted using different eccentric bushings in different orientations. Refer to the table above.

❍ TOE

You can adjust different types of toe angle on the XB8: front inboard toe, front toe, and rear toe-in.

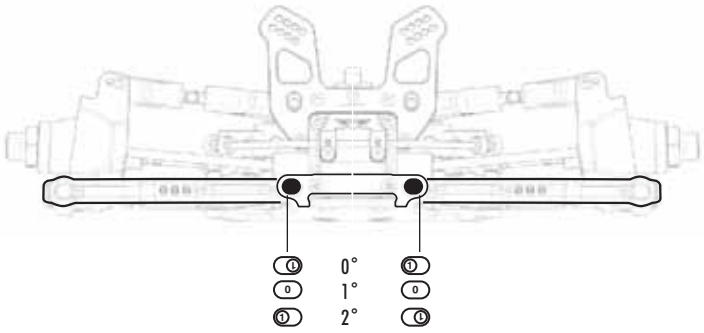
IMPORTANT!

Make equal adjustments on both left and right sides of the car.

Front Inboard Toe

Adjust front inboard toe of the front lower arms by changing the eccentric bushings in the plate at the very front of the front bulkhead.

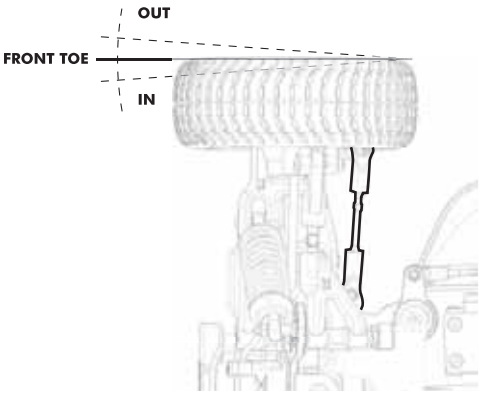
Inboard toe angle	Characteristics
Less inboard toe	· decreases steering
More inboard toe	· increases steering



Front Toe

Adjust front toe by adjusting the length of the left and right steering rods.

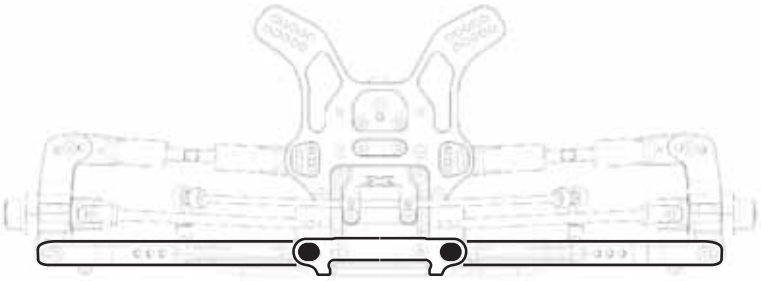
Steering rod length	Characteristics
More front toe-in = longer steering rod	· increases straight-line stability · decreases steering response · increases steering mid-corner and on-power corner exit
More front toe-out = shorter steering rod	· decreases straight-line stability · increases initial steering response · decreases steering on-power at corner exit

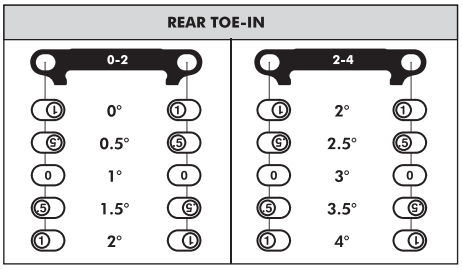


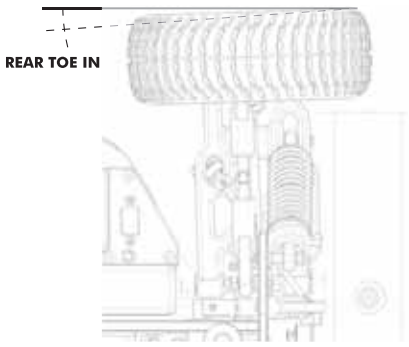
Rear Toe-In

Adjust rear toe-in by changing the rear plate and eccentric bushings at the very rear of the rear bulkhead. Use a combination of plates and eccentric bushings to achieve the desired rear toe-in angle. There are two different plates: one plate is used for rear toe-in angles 0°- 2°, while the other plate is used for rear toe-in angles of 2° - 4°. The eccentric bushings are used to give angles within these ranges.

Rear toe-in angle	Characteristics
More rear toe-in	· increases stability under braking · increases stability on power at corner exit · decreases top speed · if too much rear toe-in is used, the car will be twitchy to drive and harder to recover if it loses traction
Less rear toe-in	· increases steering · decreases stability on power at corner exit · increases top speed · if the car slides, it will be much easier to control





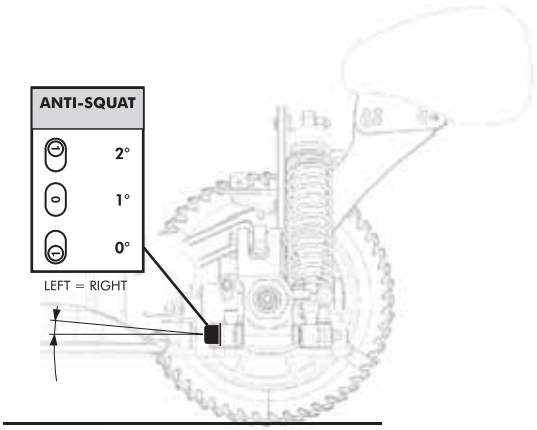


❍ REAR ANTI-SQUAT

Adjust rear anti-squat of the rear lower arms by changing the eccentric bushings in the plate at the front of the rear bulkhead.

IMPORTANT!
Make equal adjustments on both left and right sides of the car.

Rear anti-squat angle	Characteristics
Less anti-squat = flatter arm	· increases rear traction off-power · decreases rear traction on-power · better on a bumpy track
More anti-squat = leaning more backwards	· increases rear traction during acceleration · decreases rear traction off-power · better on smooth and/or slippery tracks

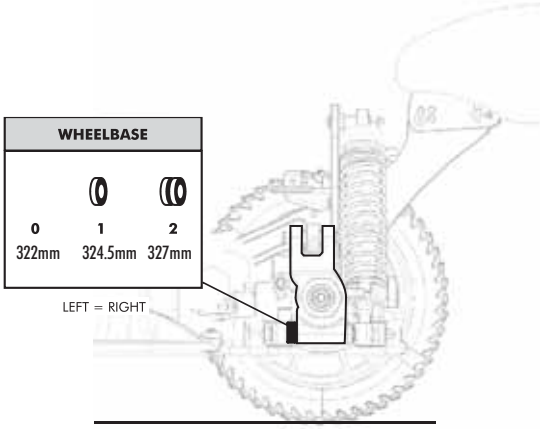


❍ WHEELBASE

Adjust the wheelbase by using the spacers on either side of the rear uprights (at the bottom pin).

IMPORTANT!
Make equal adjustments on both left and right sides of the car.

Wheelbase	Characteristics
Shorter wheelbase = less spacers in front of rear upright	· increases rearward weight transfer during acceleration · increases on-power traction · quicker off-power steering into corners · slight tendency to push on-power at corner exit · increases steering response · better on tighter, more technical tracks
Longer wheelbase = more spacers in front of rear upright	· decreases off-power steering into sharp corners · increases stability · slower initial steering reaction (off-power) · improves on-power steering at corner exit · better handling over bumps and ruts · better on more open tracks with high-speed corners



❍ ANTI-ROLL BARS

Adjust the stiffness of the front or rear anti-roll bar by using a thinner or thicker wire.

Anti-roll bar stiffness	Front/Rear	Characteristics
Softer = thinner wire	Front	· increases front chassis roll · increases front traction · decreases rear traction · increases off-power steering (may cause oversteer)
	Rear	· increases rear chassis roll · increases rear traction · decreases front traction · decreases on-power steering (increases understeer)
Stiffer = thicker wire	Front	· decreases front chassis roll · decreases front traction · decreases off-power steering at corner entry (increases understeer) · quicker steering response
	Rear	· decreases rear chassis roll · decreases rear traction · increases front traction · increases on-power steering (may cause oversteer) · quicker steering response in high speed chicanes

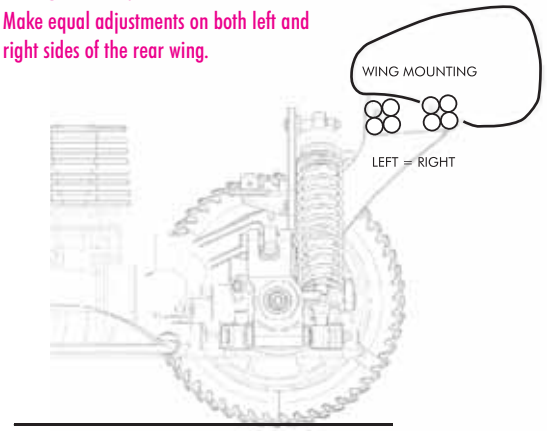
❍ REAR WING

Adjust the position and angle of the rear wing using the different mounting position of the wing supports.

Wing position/angle	Characteristics
Higher	· increases stability at higher speeds
Lower	· increases stability at lower speeds
Forward	· decreases rear traction
Rearward	· increases rear traction
Flatter angle	· level jumping or nose-diving
Steeper angle	· increases traction at higher speeds · less nose-diving

IMPORTANT!

Make equal adjustments on both left and right sides of the rear wing.



❍ CLUTCH

You can adjust the engagement characteristics of the clutch by changing the clutch springs or changing the orientation of the clutch shoes.

Clutch Springs

Adjust the engagement characteristics of the clutch by using different clutch springs.

Clutch springs	Characteristics
Thinner (0.9mm)	· clutch engages earlier at lower RPM · more gradual acceleration · easier to drive but not as aggressive
Thicker (1.0mm)	· clutch engages later at higher RPM · more sudden acceleration · car is more aggressive

Clutch Shoe Orientation

Adjust the engagement characteristics of the clutch by changing the orientation of the clutch shoes.

Clutch shoe orientation	Characteristics
Trailing shoes	· clutch engages more smoothly · more ideal for slick track conditions
Leading shoes	· clutch engages more aggressively · more ideal on high-traction tracks


Trailing shoes


Leading shoes

❍ DIFFERENTIALS

Adjust the characteristics of the differentials by using thinner or thicker silicone oil.

Changing the oil in the front differential affects overall steering response.
Changing the oil in the center differential affects the front-to-rear drive.
Changing the oil in the rear differential affects cornering traction and overall steering.

Differential	Oil thickness	Characteristics
Front	Thinner	· increases steering into corners (off-power) · if oil is too thin the steering may become inconsistent, especially it can lose forward traction (and steering) during acceleration out of corners
	Thicker	· increases stability into corners during braking · increases steering on-power at corner exit
Center	Thinner	· front wheels unload more during acceleration · decreases on-power steering (reduces oversteer) · easier to drive on rough tracks · if a high-power engine is used you could waste too much power and sometime "cook" the oil in the center differential because it "overloads"
	Thicker	· more all-wheel drive effect · better acceleration · increases on-power steering (reduces understeer) · better suited on high-bite, smooth tracks · car can be more nervous to drive especially if a high power engine is used - you might need to be smooth on the throttle
Rear	Thinner	· increases cornering traction · increases steering into corner
	Thicker	· decreases rear traction while cornering · reduces wheelspin

Use only the genuine premium quality Xray silicone diff oils. The differential oils are availabe in 50ml size in these viscosities:

Part number	Viscosity
359601	1 0000 W
359602	2 0000 W
359603	3 0000 W
359605	5 0000 W
359607	7 0000 W
359610	10 0000 W
359620	20 0000 W
359630	30 0000 W
359660	60 0000 W


Silicone Diff Oil

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