

XRAY

T1FK'05

1/10 LUXURY ELECTRIC
TOURING CAR



DESIGNED BY:

Jimmy Hendry



100%
Champion
2004

XRAY CARS
WORLD'S
BEST
TTC

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Champion
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best car action
award
craftsmanship

INSTRUCTION MANUAL

XRAY T1 Factory Kit 2005

The new XRAY T1 Factory Kit '05 (T1FK'05) is the 5th generation of XRAY's extremely successful T1 family of 1/10-scale on-road electric touring cars. The T1FK'05 is a large evolutionary leap forward, blending a brand new chassis platform and completely redesigned drive train with race-proven geometry. The extraordinary materials and racecar lineage combine to offer a responsive ride, luxurious elegant design, finest quality, and best track performance. With the highest number of adjustments to achieve the most performance out of any track condition, the T1FK'05 is a top-competition racecar of the next level of performance.

The T1FK'05 is the best-balanced touring car with the world's narrowest chassis. The new optimized layout concentrates more weight closer to the centerline of the chassis, giving improved traction, cornering speed, and steering on all surfaces. The redesigned drive train achieves even higher efficiency. The super-efficient C-hub suspension is retained from the predecessor T1 Factory Kit, using short-arm suspension components for superb handling.

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.
- Clear a work area for assembling the kit.
- Work on a light-colored towel so any dropped parts are easy to find.
- Only open bags of parts for the assembly section you are building; do not open parts bags before required.
- Make sure all screws are tight, and check them periodically. Make sure the chassis screws do not protrude below the chassis.
- For best performance, it is very important to ensure the free movement of all parts.
- Tap or pre-thread composite parts when threading screws.

Many new and updated features are present on the T1FK'05 to optimize performance, while reducing unnecessary weight and rotating mass without compromising strength and long life. All of these components combine to make the highest-performance, best-handling electric touring car in the world.

We have made every effort to make these instructions as easy to understand as possible. However, if you experience any difficulties or problems with this product, or have any questions, please contact the XRAY support team at support@teamxray.com and we will be very happy to assist you. Please visit our official Web site at www.teamxray.com, where you will find all the latest updates, setup information, option parts, and many other goodies.

We at XRAY take great pride on providing the best possible service and car to all of our customers.

- Self-tapping screws cut threads into the parts when tightened. Do not use excessive force when tightening self-tapping screws, or you may strip out the thread in the plastic. We recommend you stop tightening a screw when you feel some resistance.
- Use medium-grade (blue) threadlock on screws that thread into metal parts.

Please support your local hobby shop, and ask them for advice. We at XRAY Model Racing Cars support all local hobby dealers. We ask you to purchase XRAY products at your hobby dealer whenever possible, and give them your support as we do. If you have difficulty finding XRAY products, please visit us at www.teamxray.com for advice, or contact us via e-mail at support@teamxray.com, or contact the XRAY distributor in your country.

ADDITIONAL ITEMS REQUIRED:

Radio system (transmitter and receiver), steering servo, speed controller, motor, pinion gear, battery pack (6-cell), battery charger, 1/10-scale bodyshell (190 mm), tires, inserts, high-strength fibre tape, double-sided tape, CA glue, bearing oil, medium-grade (blue) threadlock.



TOOLS REQUIRED:

Cutting Pliers, Needlenose Pliers, Snap Ring Pliers, Allen Wrenches (1.5 mm, 2.0 mm, 2.5 mm, and 3.0 mm), Hobby Knife, Caster Clip Removal Tool, Turnbuckle Wrench, Shock Assembly Tool, Vernier Calipers (digital recommended), Soldering Iron and Solder.

For ease of assembly, we strongly recommend using high-quality HUDY tools. Visit www.hudy.net for more information on the entire range of HUDY products.

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 reserve all rights to change any specification without prior notice. All rights reserved.

CONTENTS

0. KIT	2	6. STEERING	13-14
1. BALL DIFFERENTIAL & FRONT MULTI-DIFF	3-4	7. SHOCK ABSORBERS	15-16
2. REAR TRANSMISSION	5-6	8. REAR ASSEMBLY	17
3. REAR SUSPENSION	7-8	FRONT ASSEMBLY	18
4. FRONT TRANSMISSION	9-10	9. FINAL ASSEMBLY	19
5. FRONT SUSPENSION	11-12	ACCESSORY ASSEMBLY	20-21

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 were set aside in Section 0.

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

0. KIT (FACTORY PRE-ASSEMBLED)

KIT	30 1112	6-CELL CHASSIS T1FK'05 - CNC MACHINED	90 4306	HEX SCREW SFH M3x6 - SILVER (10)
	30 1164	UPPER DECK T1FK'05 - CNC MACHINED	90 4308	HEX SCREW SFH M3x8 - SILVER (10)
	30 1200	COMPOSITE BUMPER	96 0030	NUT M3 (10)
	30 2002	ALU SUSP. ADJUSTABLE BULKHEADS T1FK'05 (4)		

The XRAY T1FK'05 comes partially pre-assembled. Before starting assembly, disassemble the chassis parts, noting the position and orientation of the parts, particularly the bulkheads. Keep the parts, including the screw hardware, close at hand. In the assembly steps that follow, each section begins with a parts list. Parts indicated with style B are from the previously disassembled chassis parts in section 0.

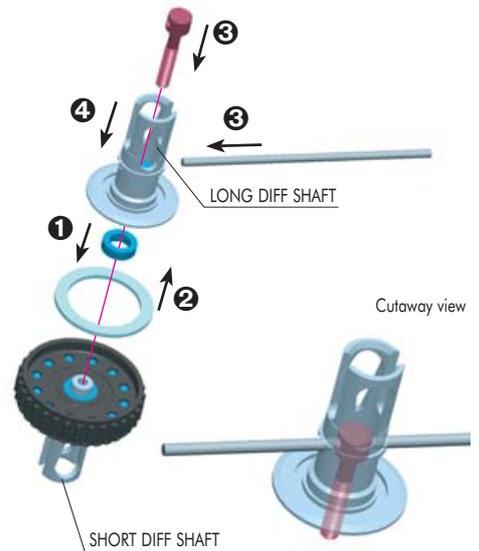


930508
BB 5x8

The ball differential is pre-assembled at the factory. Follow these steps if you need to clean or rebuild the ball differential.

1. Hold the short diff shaft with the installed pulley facing up. Place a #930508 (BB 5x8) ball-bearing on the center stub, atop the other bearing.
2. Put a very thin coat of grease on the side of a #305082 diff washer, and place it on the long diff shaft. The washer should seat centered on the long diff shaft, and the layer of grease will hold it in place.
3. Insert the #305040 diff screw into the top of the long diff shaft as shown, and align the holes in the screw with the holes in the diff shaft. Slide a small Allen wrench through the aligned holes in both pieces. The end of the diff screw should protrude from the center of the diff shaft.
4. Hold the lower diff half upward as shown, and lower the long diff shaft with the screw pointing down onto the short diff shaft. Carefully thread the diff screw into the center of the short diff shaft. Keep tightening until the diff washer just touches the diff balls, and then tighten another 1/4 turn or until you feel some resistance. Remove the Allen wrench.

ALWAYS HOLD THE DIFFERENTIAL VERTICAL DURING ASSEMBLY, SO THE PARTS STAY IN ALIGNMENT AND THE DIFF BALLS DO NOT FALL OUT.



To check the differential:

Slide two wrenches into the slots on both sides of the diff shafts. Hold both wrenches in one hand and try to turn the pulley; it should take some force to get the pulley to slip between the two outdrives. Then remove both wrenches and rotate one of the diff shafts while holding the pulley stationary. The action should feel smooth.

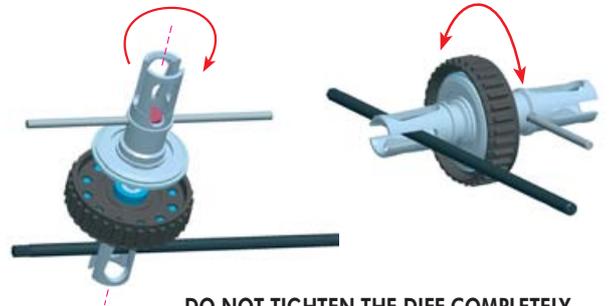
To tighten the differential:

Insert a small Allen wrench into the aligned holes in the setscrew and long diff shaft. Turn the long diff shaft 1/16 to 1/8 of a turn clockwise to tighten. Remove the Allen wrench and recheck the diff.

To loosen the differential:

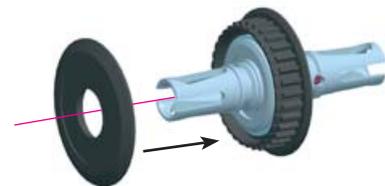
Same as tightening the differential, except turn the long diff shaft counter-clockwise to loosen.

IMPORTANT: When you build the differential, do not tighten it fully initially; the differential needs to be broken in properly. When you build the diff tighten it very gently. When you put the diff in the car and complete the assembly, run the car for a few minutes, tighten the diff a little bit, and then recheck the diff. Repeat this process several times until you have the diff tightened to the point you want it. Final adjustments should ALWAYS be made with the diff in the car and on the track.



DO NOT TIGHTEN THE DIFF COMPLETELY THE DIFF MUST BE BROKEN IN PROPERLY !

Slide two Labyrinth Dust Covers onto the ends of the diff shafts; the smooth sides of the covers face outward, away from the pulley. Squeeze the covers firmly until they both "snap" onto pulley; it may take a bit of effort to do this. Once snapped on, the covers seat perfectly.



FRONT MULTI-DIFF™ (not included in US kits)



902305
SH M3x5



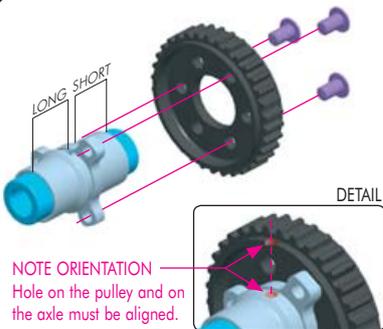
309319
SHIM 6x9x2



981212
P 2x12



970100
O 10x1.5



NOTE ORIENTATION
Hole on the pulley and on the axle must be aligned.

Attach the #305150 pulley to the #305102 front axle using three #902305 (SH M3x5) screws.

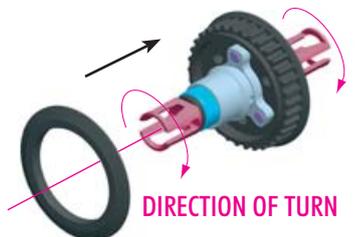
Attach pulley to SHORT side of front axle, opposite to side with hole through axle (for locking pin).



Slide #309319 spacer onto #305131 outdrive shaft.

Apply one-way lube to outdrive shaft, then slide into one-way bearing in end of front axle.

Repeat for other side.



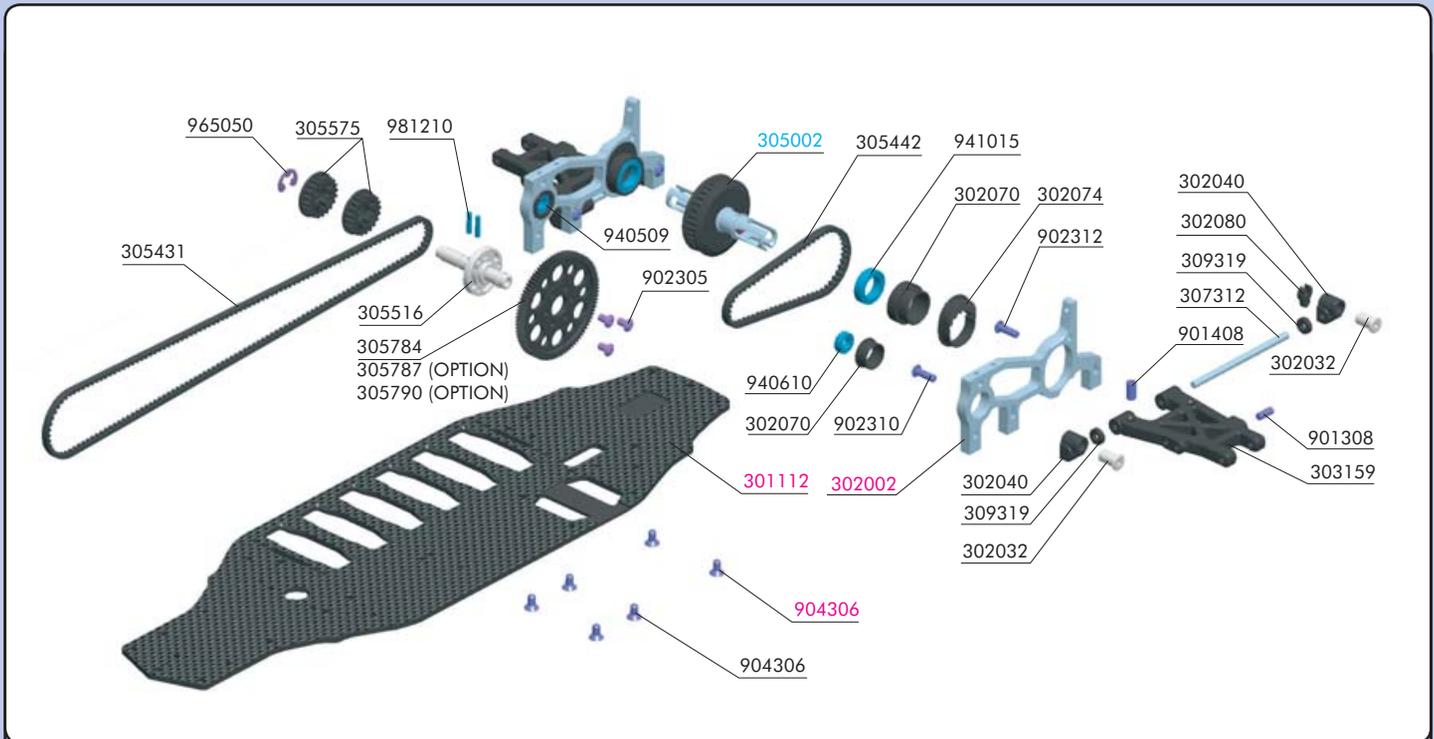
DIRECTION OF TURN

Slide two pulley covers onto the ends of the front axle. Squeeze the covers firmly until they both "snap" over the pulley; it may take a bit of effort to do this.

Verify that the outdrives rotate in the direction shown.

See page 22 for front Multi-Diff™ settings.

2. REAR TRANSMISSION



BAG

02

- | | |
|---|--|
| <ul style="list-style-type: none"> 30 2032 ALU NUT FOR SUSP PIVOT PIN (2) 30 2040 LOWER SUSPENSION HOLDER (SET 2+1+1) 30 2070 ECCENTRIC NYLON HUB FOR BULKHEAD + COVERS (4+2) 30 2074 ECCENTRIC REAR NYLON HUBS 0° & 2° 30 2080 CASTER CLIPS SET 4+3+2+1 MM (2) 30 3159 SHORT SUSPENSION ARM - REAR LOWER - C-HUB 30 5431 HIGH-PERFORMANCE KEVLAR DRIVE BELT FRONT 3 x 507 MM 30 5442 HIGH-PERFORMANCE KEVLAR DRIVE BELT REAR 3 x 180 MM 30 5516 ALU SOLID LAYSHAFT T1FK'05 30 5575 FIXED PULLEY 20T (2) 30 5784 SPUR GEAR 84T / 48 30 5787 SPUR GEAR 87T / 48 (OPTION) 30 5790 SPUR GEAR 90T / 48 (OPTION) 30 7312 REAR WISHBONE PIVOT PIN BOTTOM T1FK'05 - C-HUB (2) 30 9319 UNIVERSAL SET OF PLASTIC SHIMS | <ul style="list-style-type: none"> 94 0509 HIGH-SPEED BALL-BEARING MR95ZZ 5 x 9 x 3 RUBBER COVERED (2) 94 0610 HIGH-SPEED BALL-BEARING MR106ZZ 6 x 10 x 3 RUBBER COVERED (2) 94 1015 HIGH-SPEED BALL-BEARING 10 x 15 x 4 RUBBER COVERED (2) 90 2305 HEX SCREW SH M3x5 (10) 90 2310 HEX SCREW SH M3x10 (10) 90 2312 HEX SCREW SH M3x12 (10) 90 4306 HEX SCREW SFH M3x6 - SILVER (10) 90 1308 HEX SCREW SB M3x8 (10) 90 1408 HEX SCREW SB M4x8 (10) 96 5050 E-CLIP 5 (10) 98 1210 PIN 2x10 (10) |
|---|--|
-
- | | |
|---|---|
| <ul style="list-style-type: none"> 30 5002 BALL DIFF. WITH LABYRINTH COVERS™ - (FACTORY KIT) | <ul style="list-style-type: none"> 30 1112 6-CELL CHASSIS T1FK'05 - CNC MACHINED 30 2002 ALU SUSP. ADJUSTABLE BULKHEADS T1FK'05 (4) 90 4306 HEX SCREW SFH M3x6 - SILVER (10) |
|---|---|



940610
BB 6x10



940509
BB 5x9



941015
BB 10x15

1. Press the plastic holders for the small ball-bearings into the rear bulkheads. The flanges on the holders go to the INSIDE of the bulkheads. The open holder (with hole) goes in the LEFT bulkhead. The closed holder (no hole) goes in the RIGHT bulkhead.
2. Press a #940610 (BB 6x10) ball-bearing into the OPEN plastic holder (with hole) in the LEFT bulkhead. Press a #940509 (BB 5x9) ball bearing into the CLOSED plastic holder (no hole) in the RIGHT bulkhead.
3. Press oval-shaped differential height adjusters into rear bulkheads, with large holes near the bottom. The flanges on the adjusters go to the INSIDE of the bulkheads.
4. Press large eccentric ball-bearing holders into the oval-shaped diff height adjusters. Align the tab of each holder with the middle notch in each adjuster as shown.
5. Press #941015 (BB 10x15) ball-bearings into the eccentric holders.

Make sure all bearings turn freely and easily.

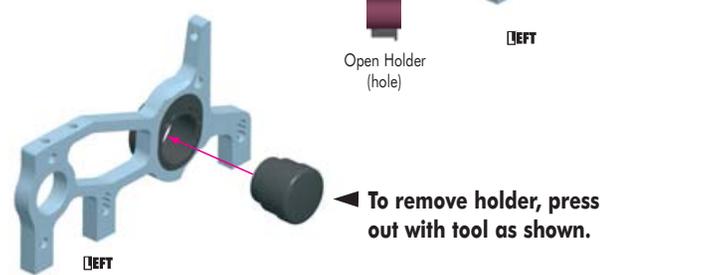
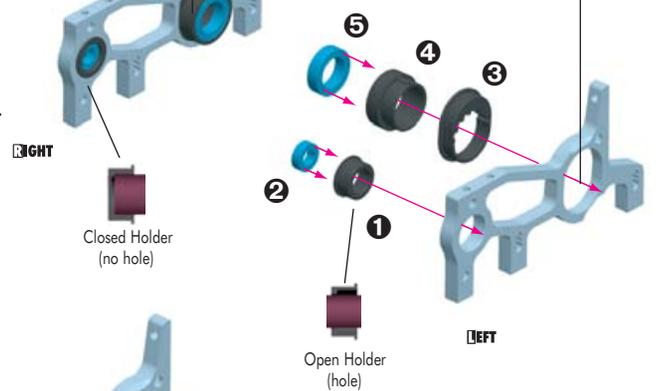
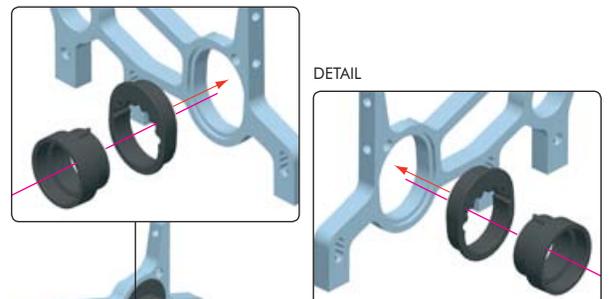
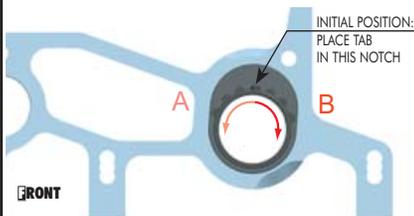
BELT TENSION ADJUSTMENT

To tighten rear belt:

Rotate rear nylon hubs in arrow direction (A)

To loosen rear belt:

Rotate rear nylon hubs in arrow direction (B)



REAR TRANSMISSION

981210
P 2x10

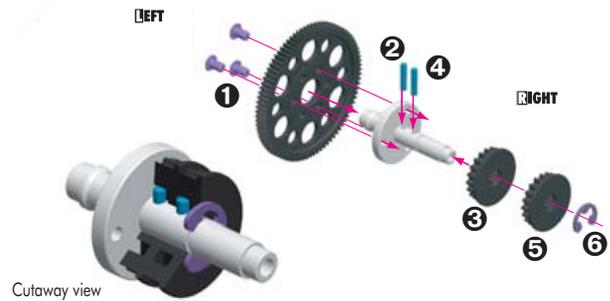


965050
C5



902305
SH M3x5

1. Attach #305784 spur gear to #305516 layshaft with three #902305 (SH M3x5) screws.
2. Press a #981210 (P 2x10) pin into the layshaft hole closest to the spur gear.
3. Slide a 20T pulley onto the layshaft, and seat it over the pin.
4. Press the other #981210 (P 2x10) pin into the other layshaft hole.
5. Slide the other 20T pulley onto the layshaft, and seat it over the second pin.
6. Snap a #965050 (C5) E-clip into the groove in the layshaft.



TIP

When using wide (28mm) rear foam tires, cut material from both arms as shown to mount shock lower joints to outer holes in arms. Counterbore the holes for hex screws SB M3x8.

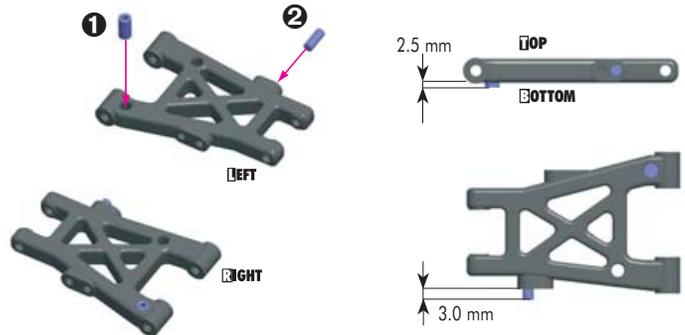


901408
SB M4x8

901308
SB M3x8

1. Thread a #901408 (SB M4x8) downstop adjustment screw into the hole at the front of the rear lower arm as shown. The screw must protrude 2.5 mm below the arm.
2. Thread a #901308 (SB M3x8) setscrew into the hole at the rear of the rear lower arm as shown. The setscrew must protrude 3.0 mm.

Repeat for the other arm, making sure to mirror the screw placement.



902310
SH M3x10



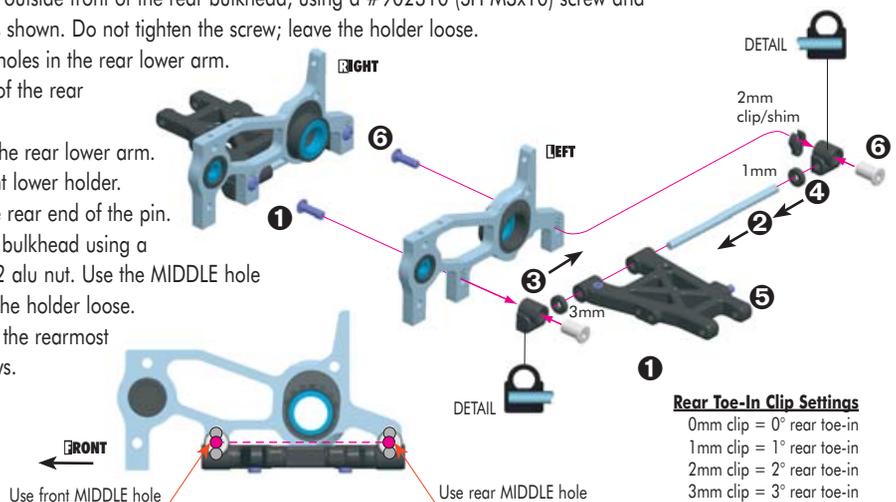
309319
SHIM 3x7x2



902312
SH M3x12

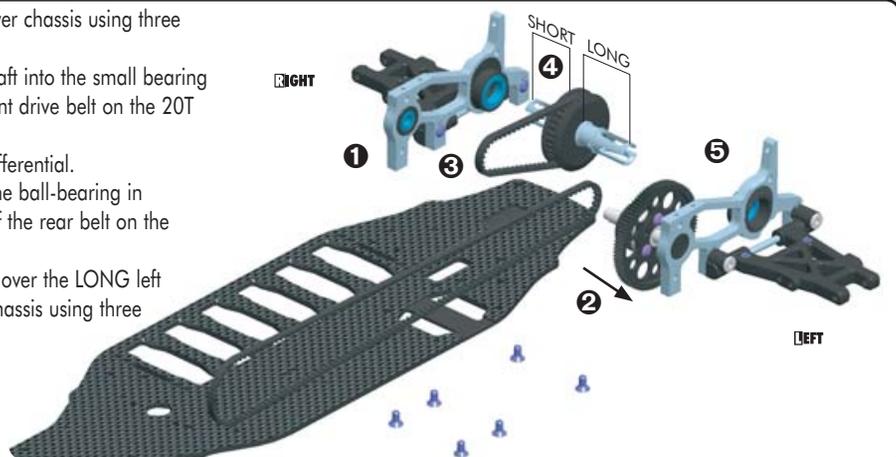
1. Mount a lower suspension holder to the outside front of the rear bulkhead, using a #902310 (SH M3x10) screw and #302032 alu nut. Use the MIDDLE hole as shown. Do not tighten the screw; leave the holder loose.
2. Slide a #307312 pivot pin through the holes in the rear lower arm.
3. Slide a 3mm shim onto the pin in front of the rear lower arm.
4. Slide a 1mm shim onto the pin behind the rear lower arm.
5. Insert the front end of the pin in the front lower holder.
6. Mount a lower suspension holder on the rear end of the pin. Attach the holder to the outside rear of the bulkhead using a #902312 (SH M3x12) screw and #302032 alu nut. Use the MIDDLE hole as shown. Do not tighten the screw; leave the holder loose.
7. Insert a 2mm clip on the screw between the rearmost holder and the bulkhead. Tighten the screws.

Repeat to attach the other arm to the other rear bulkhead.

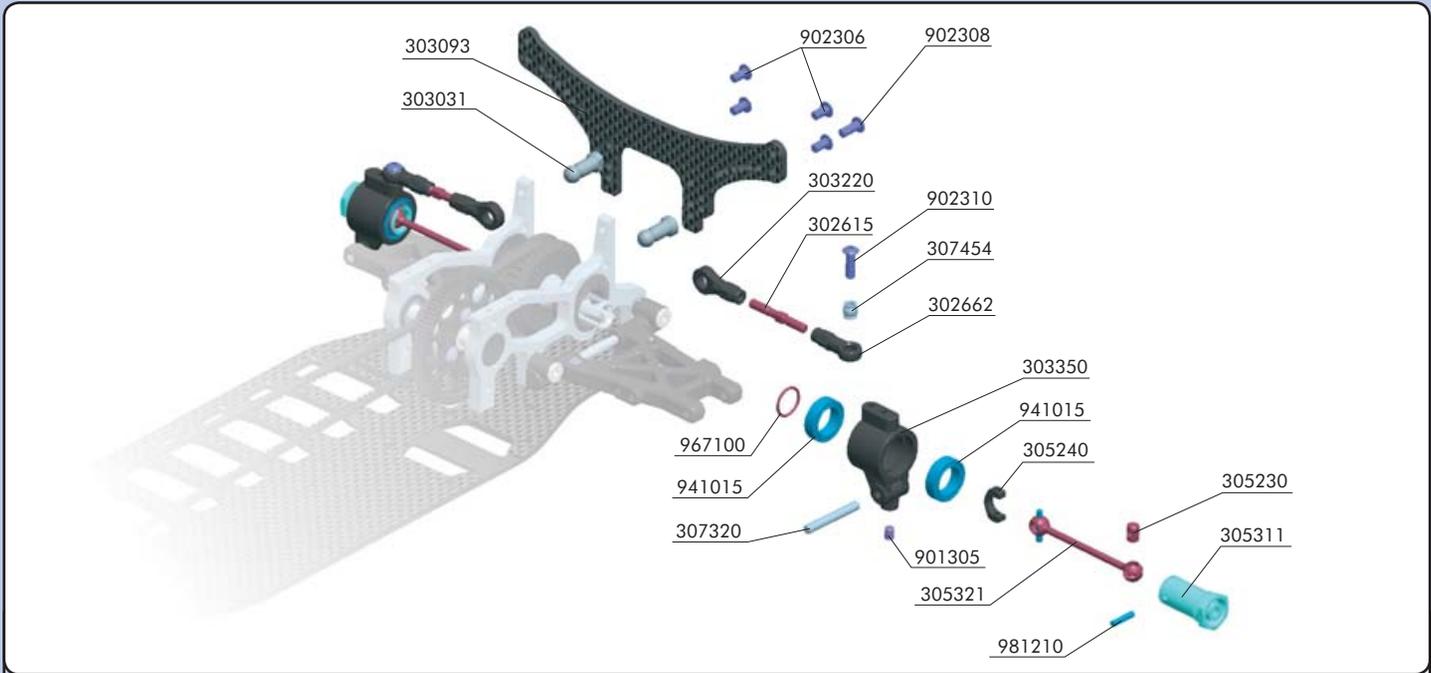


904306
SFH M3x6

1. Mount the right rear bulkhead to the lower chassis using three #904306 (SFH M3x6) screws.
2. Insert the left end of the #305516 layshaft into the small bearing in the left rear bulkhead. Place the long front drive belt on the 20T layshaft pulley closest to the spur gear.
3. Place the short rear belt onto the rear differential.
4. Insert the SHORT differential shaft into the ball-bearing in the RIGHT bulkhead. Place the other end of the rear belt on the layshaft's other fixed pulley.
5. Slide the left rear bulkhead into position over the LONG left differential shaft, and mount to the lower chassis using three #904306 (SFH M3x6) screws.



3. REAR SUSPENSION



BAG



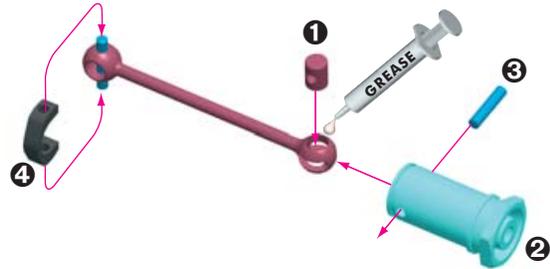
30 2615	ADJ. TURNBUCKLE L/R 30 MM - SPRING STEEL (2)	30 7320	REAR PIVOT PIN FOR C-HUB - SPRING STEEL (2)
30 2662	BALL JOINT 5 MM - OPEN (6)	30 7454	PIVOT BALL 5.0 MM DOUBLE BEVEL SHOULDERS (10)
30 3031	ROLL CENTER ALU HOLDER - SET (2)	90 1305	HEX SCREW SB M3x5 (10)
30 3093	SHOCK TOWER REAR - FACTORY KIT	90 2306	HEX SCREW SH M3x6 (10)
30 3220	BALL JOINT 5.8 MM (4)	90 2308	HEX SCREW SH M3x8 (10)
30 3350	COMPOSITE UPRIGHT REAR FOR C-HUB SUSPENSION	90 2310	HEX SCREW SH M3x10 (10)
30 5230	DRIVE SHAFT COUPLING - SPRING STEEL (2)	94 1015	HIGH-SPEED BALL-BEARING 10 x 15 x 4 RUBBER SEALED (2)
30 5240	DRIVE SHAFT REPLACEMENT PLASTIC CAP 3 MM (4)	96 7100	O-CLIP 10 (10)
30 5311	WHEEL AXLE - 22 MM - INTEGR. HEX HUB - (FACTORY KIT) (2)	98 1210	PIN 2x10 (10)
30 5321	DRIVE SHAFT - 51 MM - SPRING STEEL - (FACTORY KIT) (2)		



981210
P 2x10

Build TWO axles by performing the following steps.

1. Lightly grease a #305230 coupling and insert it into the drive shaft joint.
2. Lightly grease the drive shaft end and slide it into the #305311 wheel axle. Align the holes in the coupling with the holes in the wheel axle.
3. Insert a #981210 (P 2x10) pin through the aligned holes in the coupling and wheel axle. Make sure the pin is evenly spaced on both sides of the wheel axle.
4. Install the #305240 plastic cap onto the drive shaft pins.



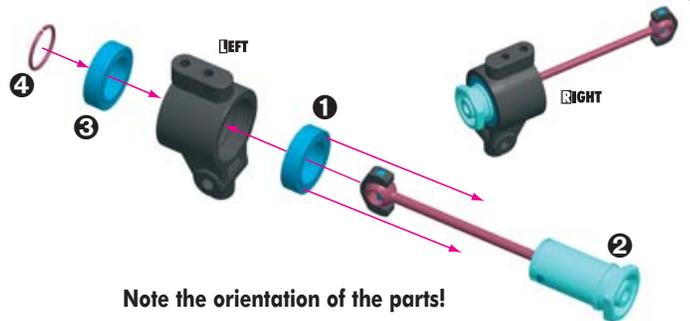
941015
BB 10x15



967100
C 10

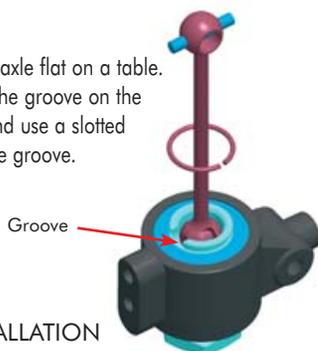
Build TWO rear uprights by performing the following steps.

1. Slide a #941015 (BB 10x15) ball-bearing onto the wheel axle.
2. Insert the wheel axle through the rear upright until the bearing seats in the rear upright. Note the orientation of the parts in the image.
3. Slide another #941015 (BB 10x15) ball-bearing onto the wheel axle. Press the bearing into the rear upright, making sure it seats properly.
4. Secure the wheel axle in the rear upright by installing a #967100 snap ring in the groove of the wheel axle.



TO INSTALL A SNAP RING:

Place the hex portion of the wheel axle flat on a table. Put one end of the snap ring into the groove on the opposite side of the axle cutout, and use a slotted screwdriver to work the clip into the groove.



TO REMOVE A SNAP RING:

Place the hex portion of the wheel axle flat on a table. Insert a small screwdriver in the axle cutout and pry it off, taking care not to let it fly off the workbench.

Use proper eye protection.



REAR SUSPENSION

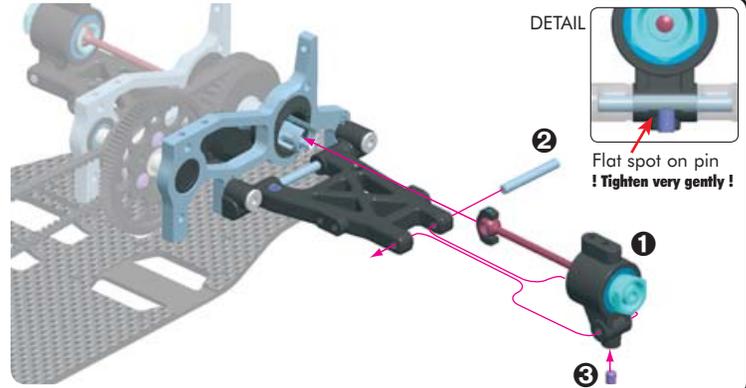


901305
SB M3x5

Install both rear uprights by performing the following steps.

1. Place the driveshaft plastic cap into the diff outdrive slot. Insert the rear upright into the end of the rear lower arm as shown. Align the hole in the bottom of the rear upright and holes in the arm.
2. Slide a #307320 pivot pin through the aligned holes. Make sure the flat spot on the pivot pin is toward the bottom.
3. Thread and tighten the #901305 (SB M3x5) set screw in the bottom of the rear upright until it is tight on the pivot pin. Be very careful not to over-tighten the screw, as the threads may strip in the composite rear upright.

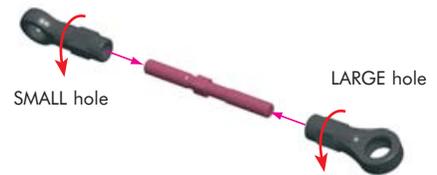
Check both rear uprights for freedom of movement.



Assemble TWO rear camber linkages by performing the following steps.

1. Thread ball joints onto the ends of a #302615 turnbuckle.

Important: There are two types of ball joints: two with large holes and two with small holes. Thread the ball joint with the LARGE hole onto the LONGER end of each turnbuckle. Adjust the turnbuckles to a length of 51.5 mm, measured end-to-end. The ball joints should be perpendicular (90°) to each other.



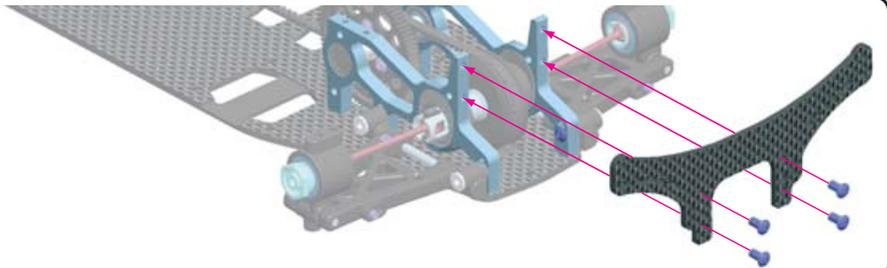
Note: Each turnbuckle has a CCW thread on one end and a CW thread on the other end.

1:1



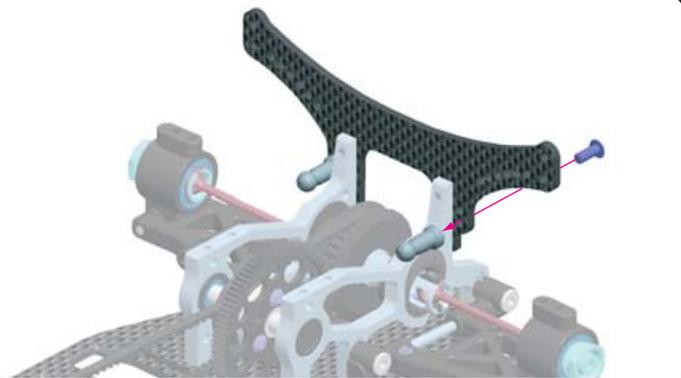
902306
SH M3x6

Mount the #303093 rear shock tower to the rear bulkheads with four #902306 (SH M3x6) screws.



902308
SH M3x8

Mount two #303031 alu roll center ball-mounts to the rear shock tower in the initial positions as shown using two #902308 (SH M3x8) screws.



902310
SH M3x10



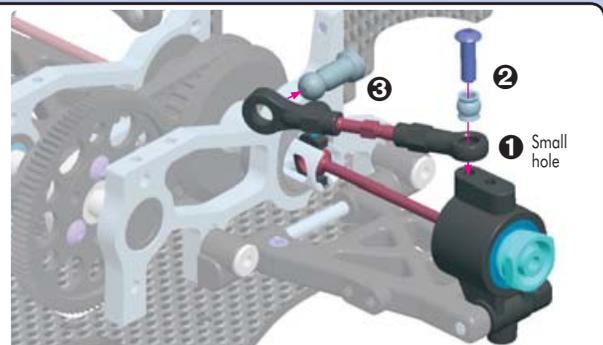
307454
PB 5mm

Assemble the TWO rear suspension arms by performing the following steps.

1. Place the assembled linkage so the ball joint with the SMALL hole is atop the rear upright.
2. Pass a #902310 (SH M3x10) screw downward through a #307454 pivot ball and turnbuckle ball joint, and thread into the INNERMOST hole in the top of the rear upright. Tighten until the pivot ball snaps into the ball joint, and then tighten the whole assembly.
3. Snap the other ball joint (with the LARGE hole) onto the alu mount on the rear shock tower.

Check the rear suspension for freedom of movement. The suspension arms must fall freely when lifted up then dropped.

If there is any binding that prevents the arms from moving freely, lightly squeeze the ball joints with pliers, and then recheck.



FRONT TRANSMISSION



901408
SB M4x8



901308
SB M3x8

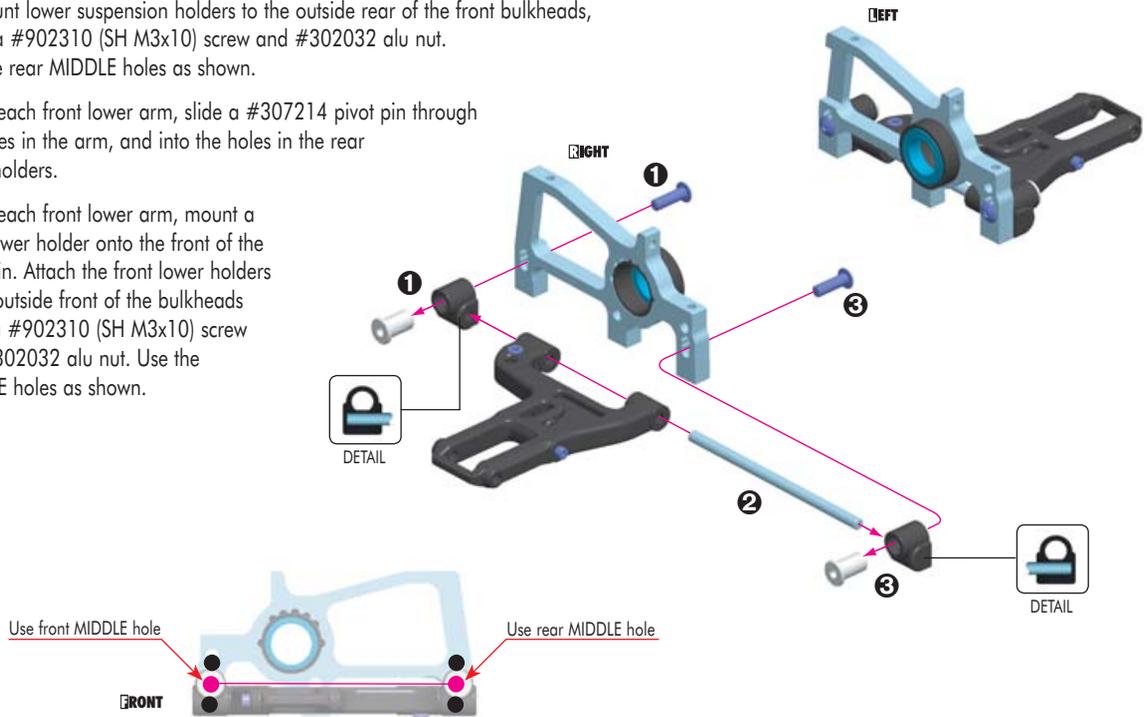
The left and right front lower arms are mirror images.

1. Thread a #901408 (SB M4x8) downstop adjustment screw into the innermost hole at the rear of each front lower arm, closest to the pivot pin holes. The screw must protrude 2.8 mm below the arm.
2. Thread one #901308 (SB M3x8) setscrew into the hole at the front of the arm as shown. The setscrew must protrude 3.0 mm.



902310
SH M3x10

1. Mount lower suspension holders to the outside rear of the front bulkheads, using a #902310 (SH M3x10) screw and #302032 alu nut. Use the rear MIDDLE holes as shown.
2. For each front lower arm, slide a #307214 pivot pin through the holes in the arm, and into the holes in the rear lower holders.
3. For each front lower arm, mount a front lower holder onto the front of the pivot pin. Attach the front lower holders to the outside front of the bulkheads using a #902310 (SH M3x10) screw and #302032 alu nut. Use the MIDDLE holes as shown.

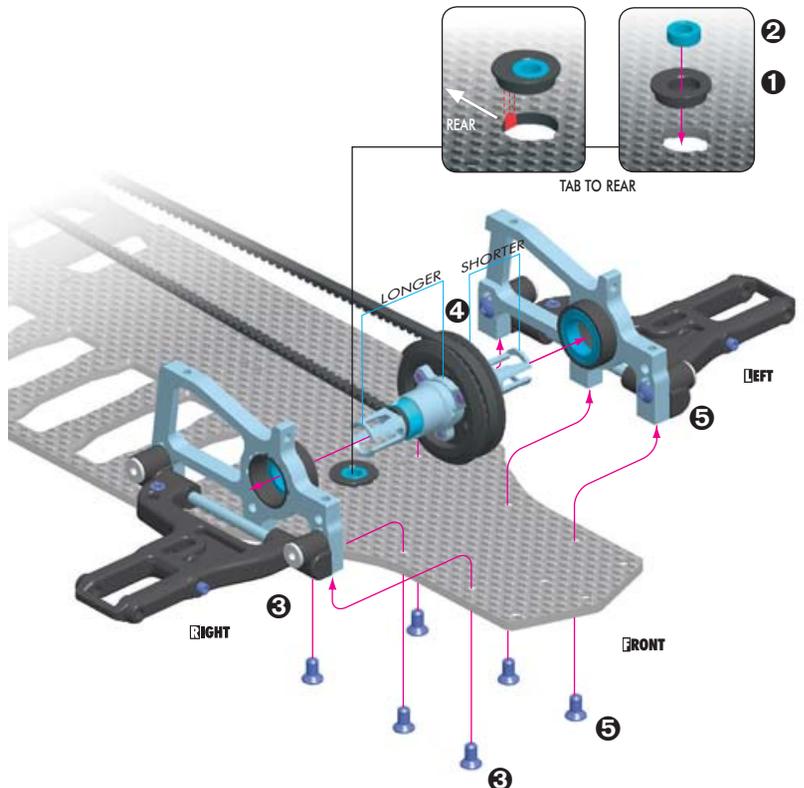


930407
BB 4x7

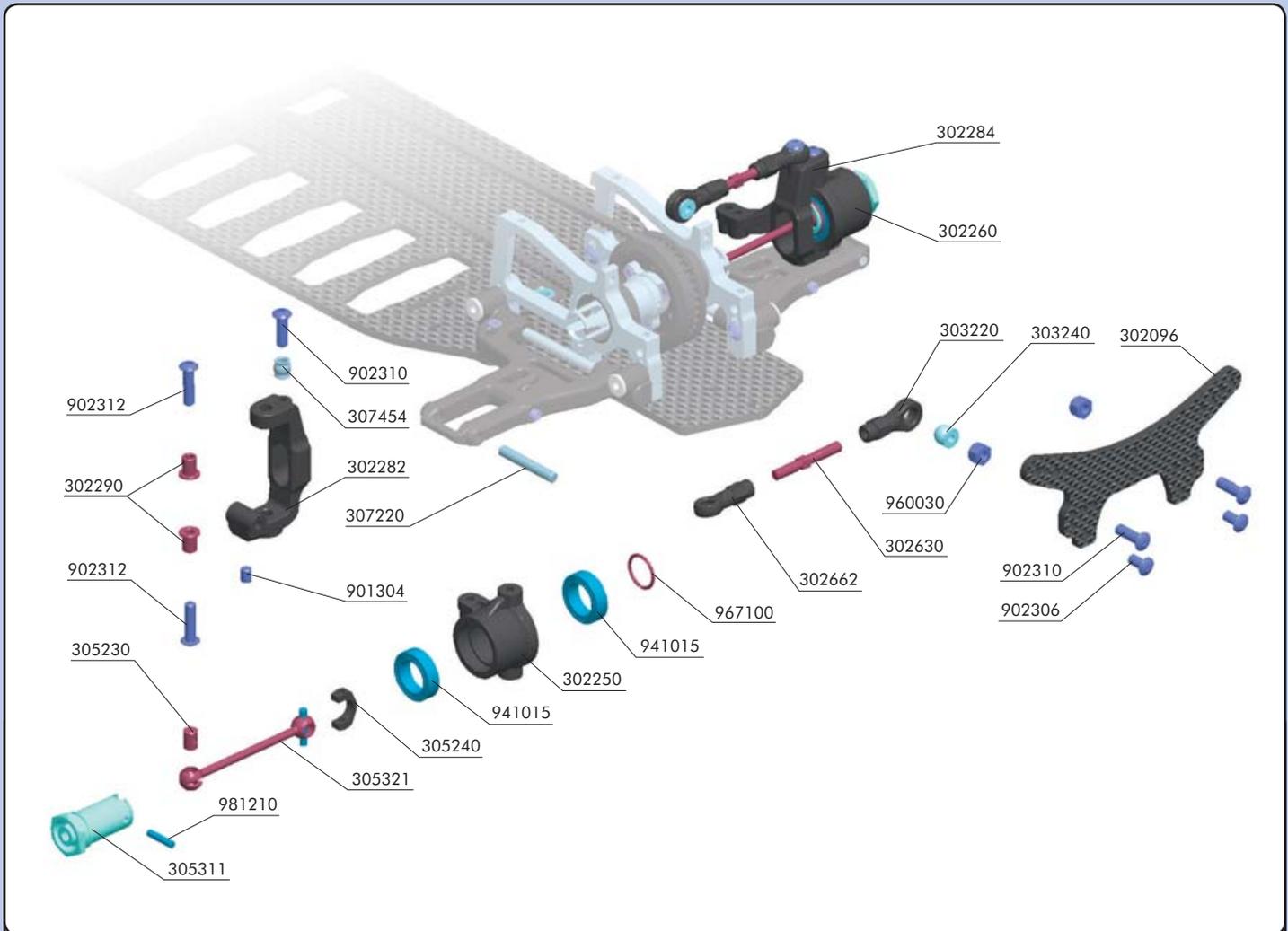


904306
SFH M3x6

1. Press the #302551 eccentric servo saver plastic holder into the corresponding hole in the chassis. The tab goes to the REAR.
2. Press the #930407 (BB 4x7) ball-bearing into the plastic holder in the chassis.
3. Mount the right front bulkhead to the lower chassis using three #904306 (SFH M3x6) screws.
4. Place the front Multi-Diff™ or ball differential inside the front end of the long front drive belt. Orient the front Multi-Diff™ or ball differential so the LONG output shaft points toward the RIGHT front bulkhead, then slide the output shaft through the ball-bearing.
5. Slide the left front bulkhead into position over the other end of the front Multi-Diff™ or ball differential, and mount to the lower chassis using three #904306 (SFH M3x6) screws.



5. FRONT SUSPENSION



BAG

05

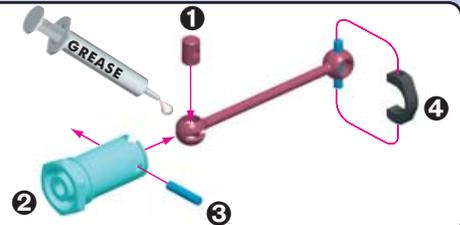
30 2096	SHOCK TOWER FRONT - FACTORY KIT	30 5321	DRIVE SHAFT - 51 MM - SPRING STEEL - (FACTORY KIT) (2)
30 2250	COMPOSITE STEERING BLOCK RIGHT FOR C-HUB SUSP.	30 7220	FRONT PIVOT PIN FOR C-HUB (2)
30 2260	COMPOSITE STEERING BLOCK LEFT FOR C-HUB SUSP.	30 7454	PIVOT BALL 5.0 MM DOUBLE BEVEL SHOULDERS (10)
30 2282	COMPOSITE C-HUB FRONT BLOCK, RIGHT - MEDIUM - CASTER 3°	90 1304	HEX SCREW SB M3x4 (10)
30 2284	COMPOSITE C-HUB FRONT BLOCK, LEFT - MEDIUM - CASTER 3°	90 2306	HEX SCREW SH M3x6 (10)
30 2290	C-HUB BUSHING (4)	90 2310	HEX SCREW SH M3x10 (10)
30 2630	ADJ. TURNBUCKLE L/R 20 MM - SPRING STEEL (2)	90 2312	HEX SCREW SH M3x12 (10)
30 2662	BALL JOINT 5 MM - OPEN (6)	94 1015	HIGH-SPEED BALL-BEARING 10 x 15 x 4 RUBBER SEALED (2)
30 3220	BALL JOINT 5.8 MM (4)	96 0030	NUT M3 (10)
30 3240	BALL UNIVERSAL 5.8 MM HEX (4+4)	96 7100	O-CLIP 10 (10)
30 5230	DRIVE SHAFT COUPLING - SPRING STEEL (2)	98 1210	PIN 2x10 (10)
30 5240	DRIVE SHAFT REPLACEMENT PLASTIC CAP 3 MM (4)		
30 5311	WHEEL AXLE - 22 MM - INTEGR. HEX HUB - (FACTORY KIT) (2)		



981210
P 2x10

Build TWO axles by performing the following steps.

1. Lightly grease a #305230 coupling and insert it into the drive shaft joint.
2. Lightly grease the drive shaft end and slide it into the #305311 wheel axle. Align the holes in the coupling with the holes in the wheel axle.
3. Insert a #981210 (P 2x10) pin through the aligned holes in the coupling and wheel axle. Make sure the pin is evenly spaced on both sides of the wheel axle.
4. Install the #305240 plastic cap onto the drive shaft pins.



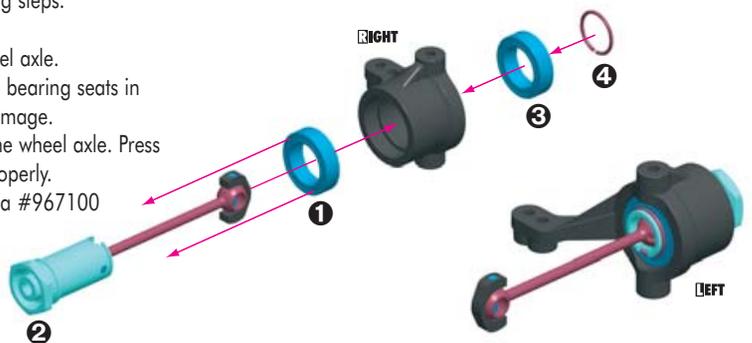
941015
BB 10x15



967100
C 10

Build TWO front steering blocks by performing the following steps.

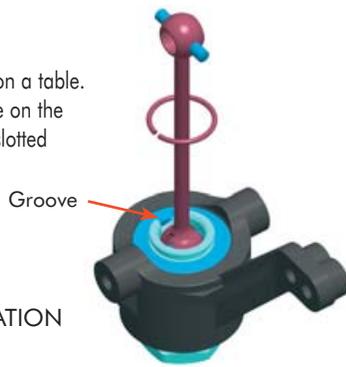
1. Slide a #941015 (BB 10x15) ball-bearing onto the wheel axle.
2. Insert the wheel axle through the steering block until the bearing seats in the steering block. Note the orientation of the parts in the image.
3. Slide another #941015 (BB 10x15) ball-bearing onto the wheel axle. Press the bearing into the steering block, making sure it seats properly.
4. Secure the wheel axle in the steering block by installing a #967100 snap ring in the groove of the wheel axle.



FRONT SUSPENSION

TO INSTALL A SNAP RING:

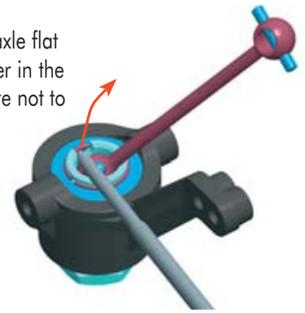
Place the hex portion of the wheel axle flat on a table. Put one end of the snap ring into the groove on the opposite side of the axle cutout, and use a slotted screwdriver to work the clip into the groove.



INSTALLATION

TO REMOVE A SNAP RING:

Place the hex portion of the wheel axle flat on a table. Insert a small screwdriver in the axle cutout and pry it off, taking care not to let it fly off the workbench.



Use proper eye protection.

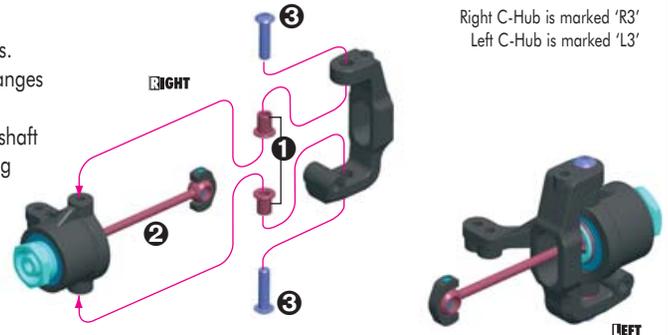
REMOVAL



902312
SH M3x12

Assemble the TWO front C-hubs by performing the following steps.

1. Insert two #302290 bushings into the C-hub upper and lower holes. Install the bushings from the inside of the C-hub as shown, with the flanges facing into the C-hub.
2. Insert the steering block assembly into the C-hub, passing the driveshaft through the oblong hole in the side of the C-hub. Insert the left steering block assembly into C-hub marked L3, and insert the right steering block assembly into C-hub marked R3.
3. Pass two #902312 (SH M3x12) screws through the bushings, and thread into the top and bottom of the steering block. The steering blocks should move freely.



Right C-Hub is marked 'R3'
Left C-Hub is marked 'L3'



901304
SB M3x4



902306
SH M3x6



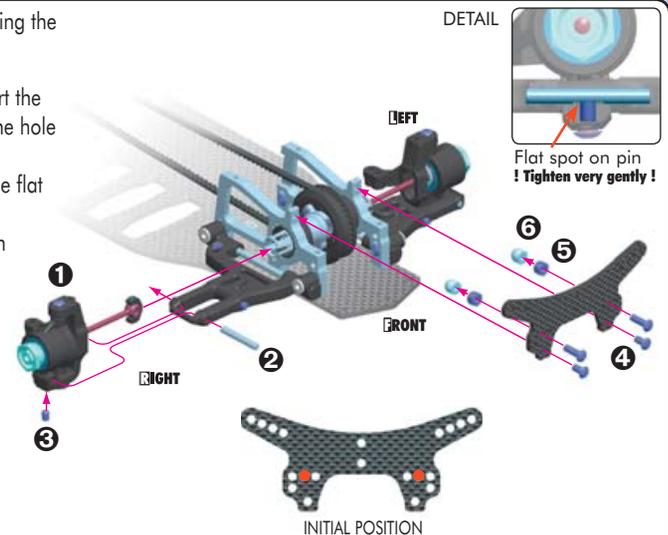
902310
SH M3x10



960030
N M3

Install both front C-hub assemblies in the front lower arms by performing the following steps.

1. Place the driveshaft plastic cap into the front axle outdrive slot. Insert the C-hub assembly into the end of the front lower arm as shown. Align the hole in the bottom of the C-hub and holes in the arm.
2. Slide a #307220 pivot pin through the aligned holes. Make sure the flat spot on the pivot pin is toward the bottom.
3. Thread and tighten the #901304 (SB M3x4) set screw in the bottom of the C-hub until it is tight on the pivot pin's flat spot. Be very careful not to overtighten the screw, as the threads may strip in the composite C-hub. The C-hub assembly should move freely.
4. Mount the #302096 front shock tower to the front bulkheads with two #902306 (SH M3x6) screws.
5. Mount two #960030 M3 nuts to the rear of the front shock tower using two #902310 (SH M3x10) hex screws, using the holes shown.
6. Mount two #303240 balls to the rear of the shock tower on the same screws, against the M3 nuts.



DETAIL

Flat spot on pin!
! Tighten very gently !

INITIAL POSITION

Assemble TWO front camber linkages by threading ball joints onto the ends of a #302630 turnbuckle as shown. The ball joints should be perpendicular (90°) to each other. Adjust the linkages to a length of 49 mm, measured end-to-end.

Note: Each turnbuckle has a CCW thread on one end and a CW thread on the other end.



902310
SH M3x10



307454
PB 5 mm

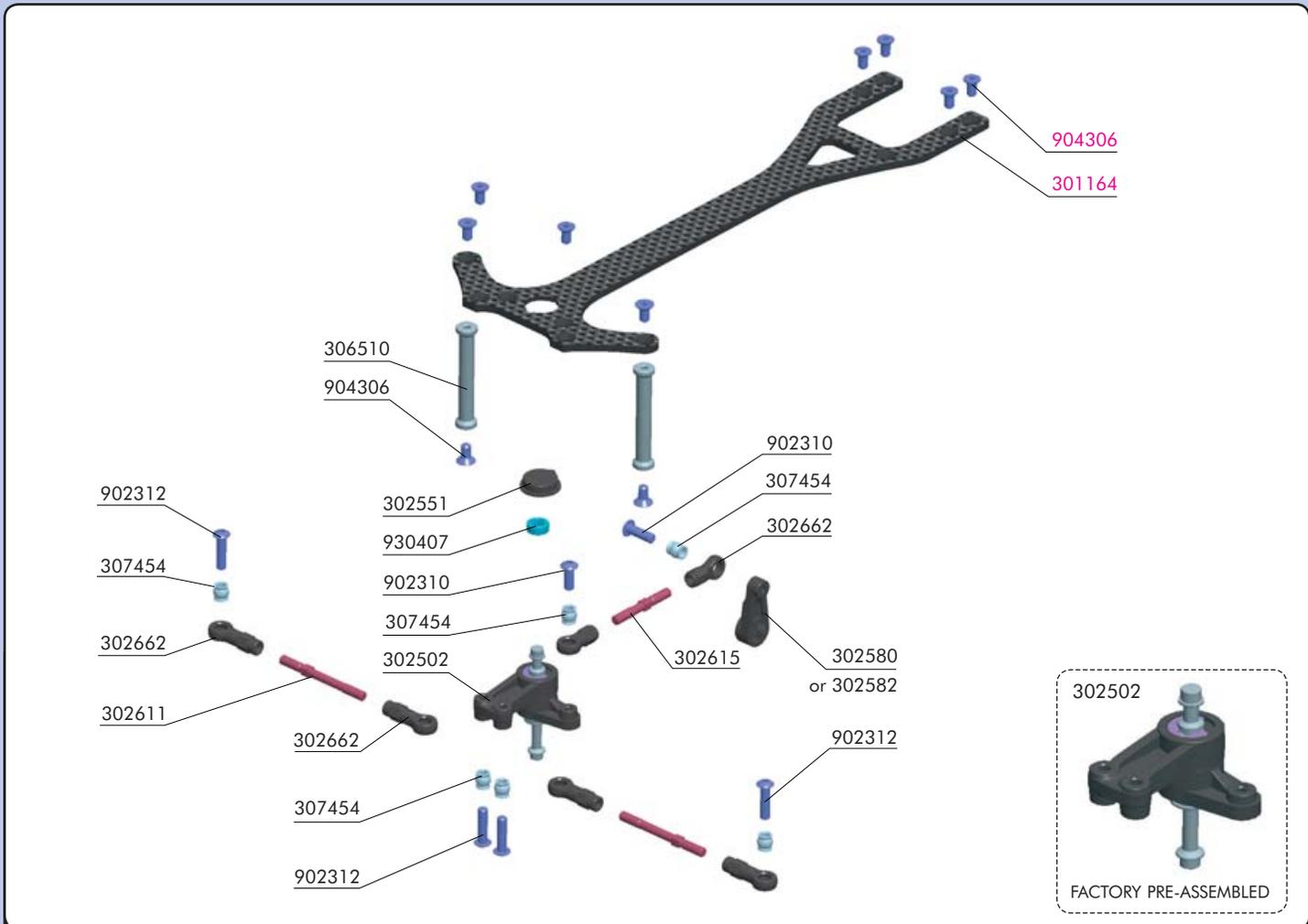
Assemble TWO front suspension arms by performing the following steps.

1. Place the assembled camber linkage between the front shock tower and C-hub.
2. Pass a #902310 (SH M3x10) screw downward through a #307454 pivot ball and linkage ball joint, and thread into the hole in the top of the C-hub. Tighten until the pivot ball snaps into the ball joint, and then tighten the whole assembly.
3. Snap the linkage ball joints onto the balls at the rear of the shock tower.

Check arms for free movement.



6. STEERING



BAG

06

- 30 2502 CENTRAL SERVO SAVER T1FK'05 (SET)
- 30 2551 SERVO SAVER PLASTIC COVER - ECCENTRIC (2)
- 30 2580 COMPOSITE SERVO HORN - KO, JR, AIRTRONICS, MULTIPLEX
- 30 2582 COMPOSITE SERVO HORN - FUTABA, ROBE
- 30 2611 ADJ. STEERING ROD L/R 35 MM - SPRING STEEL (2)
- 30 2615 ADJ. STEERING ROD 30 MM - SPRING STEEL (2)
- 30 2662 BALL JOINT 5 MM - OPEN (6)
- 30 6510 ALU TOP DECK MOUNT (2)
- 30 7454 PIVOT BALL 5.0 MM DOUBLE BEVEL SHOULDERS (10)

- 90 2310 HEX SCREW SH M3x10 (10)
- 90 2312 HEX SCREW SH M3x12 (10)
- 90 4306 HEX SCREW SFH M3x6 - SILVER (10)
- 93 0407 BALL-BEARING MR74ZZ 4x7x2.5 (2)

- 30 1164 UPPER DECK T1FK'05 - CNC MACHINED
- 90 4306 HEX SCREW SFH M3x6 - SILVER (10)



Assemble the right and left steering rods by threading #302662 ball joints onto the ends of #302611 turnbuckles. The ball joints should be parallel with each other. Adjust to the proper lengths as shown.

Note: Each turnbuckle has a CCW thread on one end and a CW thread on the other end.

1:1



LEFT
62 mm



RIGHT
60.5 mm

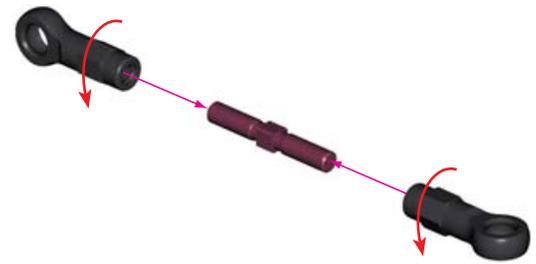
Assemble the servo link by threading #302662 ball joints onto the ends of a #302615 turnbuckle. The ball joints should be perpendicular (90°) to each other. Adjust to the proper length as shown.

Note: The turnbuckle has a CCW thread on one end and a CW thread on the other end.

1:1



approx. 53 mm



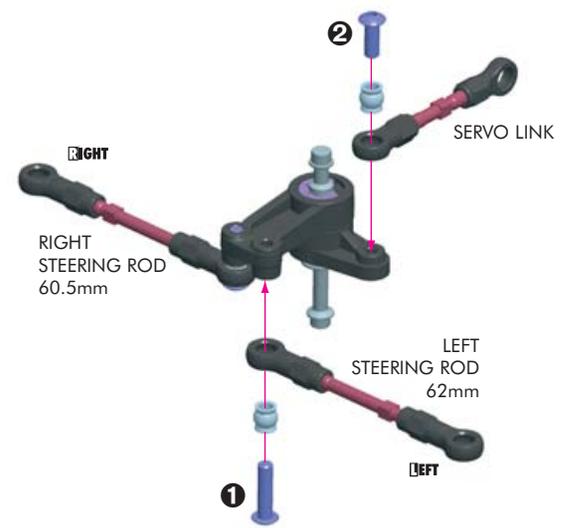


1. Attach the left and right steering rods to the servo saver.
 Pass a #902312 (SH M3x12) screw upward through the following parts:

- #307454 pivot ball
- steering rod inner ball joint (on long end)

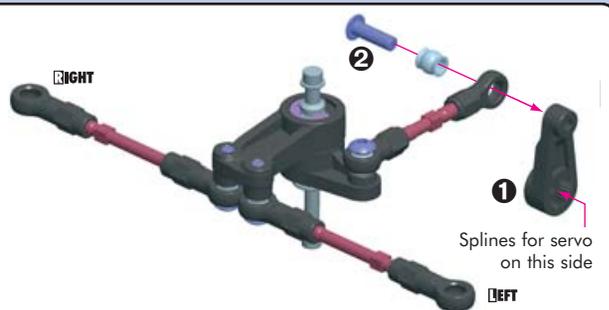
Thread the screw into the inner hole on the bottom of the servo saver.
 Tighten until the pivot ball snaps into the ball joint, and then tighten the whole assembly.

2. Attach the servo link to the servo saver. Pass a #902310 (SH M3x10) screw downward through a #307454 pivot ball and servo link ball joint, and thread into the servo saver side arm.
 Tighten until the pivot ball snaps into the ball joint, and then tighten the whole assembly.



1. Choose the proper servo horn to fit your servo; see the parts list.
 Orient the servo horn as shown in the image.

2. Pass a #902310 (SH M3x10) screw through a #307454 pivot ball and servo link ball joint, and into the hole at the end of the servo horn.
 Tighten until the pivot ball snaps into the ball joint, and then tighten the whole assembly.



Check all servo saver arms for freedom of movement.



1. Press a #302551 eccentric servo saver plastic cover into the corresponding hole in the bottom of the upper deck. The tab goes to the REAR.

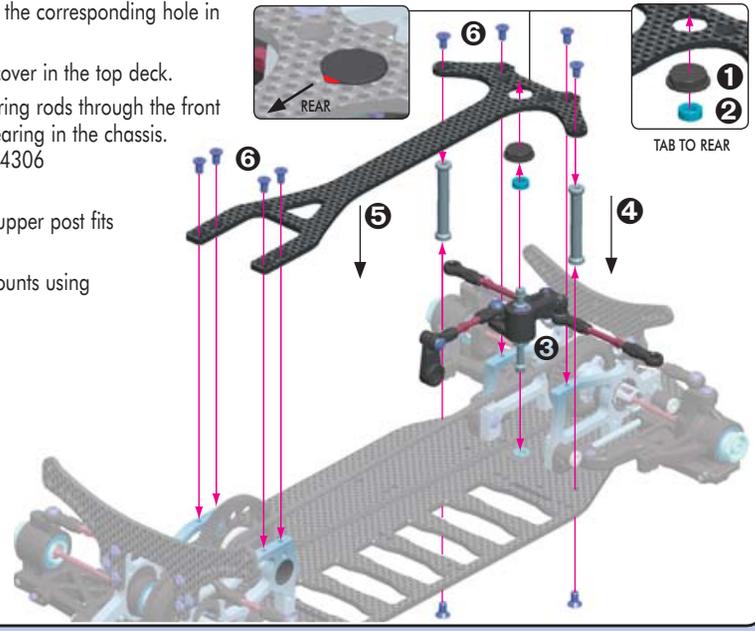
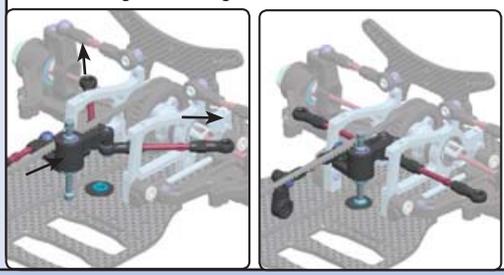
2. Press a #930407 (BB 4x7) ball-bearing into the plastic cover in the top deck.

3. Position the servo saver in the chassis, and slide the steering rods through the front bulkheads. Place the servo saver lower post into the ball-bearing in the chassis.

4. Attach the alu top deck mounts to the chassis using #904306 (SFH M3x6) screws.

5. Place the top deck atop the bulkheads. The servo saver upper post fits into the ball-bearing in the top deck.

6. Attach the upper deck to the bulkheads and top deck mounts using eight #904306 (SFH M3x6) screws.



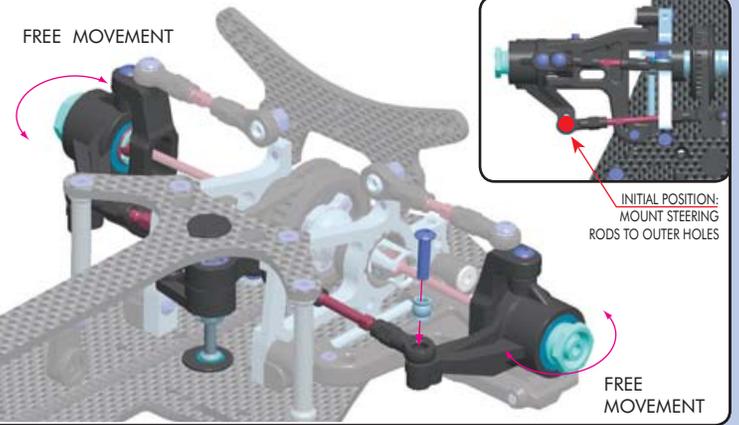
Slide steering rods through bulkheads



Attach the left and right steering rods to the steering blocks.

Pass a #902312 (M3x12) screw downward through a #307454 pivot ball and the steering rod ball joint, and thread into the steering block outer position.
 Tighten until the pivot ball snaps into the ball joint, and then tighten the whole assembly.

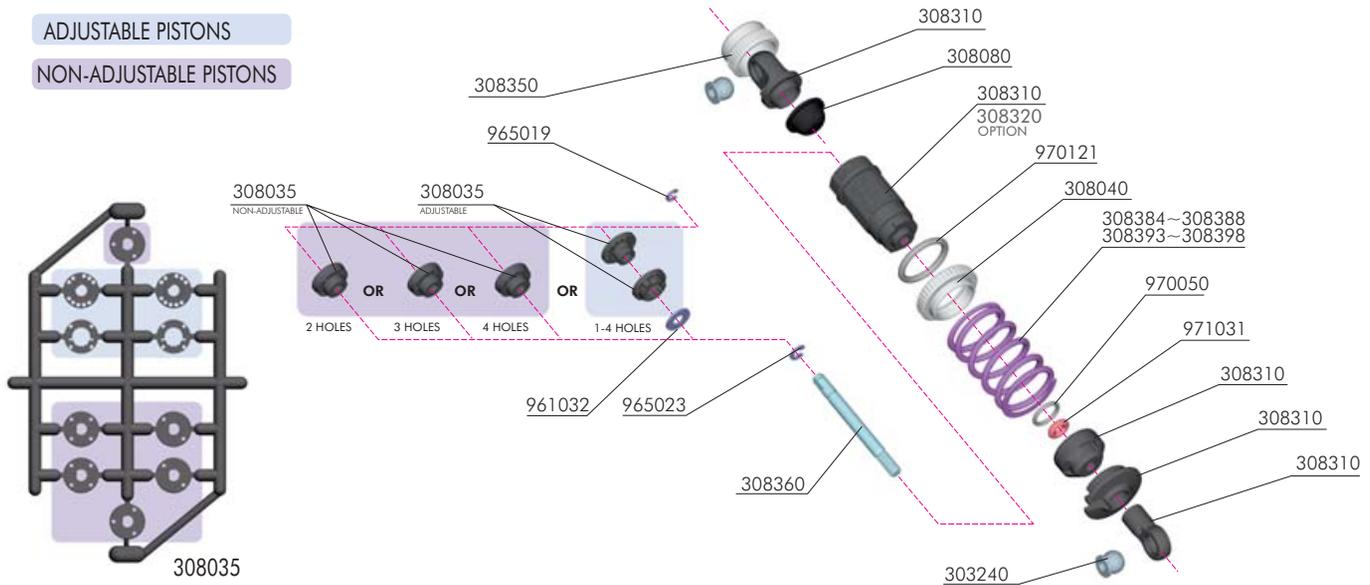
Check the steering system for freedom of movement.



7. SHOCK ABSORBERS

ADJUSTABLE PISTONS

NON-ADJUSTABLE PISTONS



BAG

07

30 3240	BALL UNIVERSAL 5.8 MM HEX (4+4)	30 8390	XRAY SELECTED ULTIMATE RACING SPRINGS (24)
30 8035	NYLON PISTONS ADJUSTABLE + NON-ADJUST. (SET 2+6)	96 1032	WASHER S 3.2 (10)
30 8040	SHOCK ADJ. NUT ALU + O-RING (4+4)	96 5019	E-CLIP 1.9 (10)
30 8080	SHOCKABSORBER MEMBRANES (4)	96 5023	E-CLIP 2.3 (10)
30 8310	NYLON FRAME SHOCK PARTS 4-STEP	97 0050	O-RING 5x1 (10)
30 8350	SHOCK CAP-NUT ALU (2)	97 0121	O-RING 12.1x1.6 (10)
30 8360	HARDENED PISTON RODS FOR KEYED PISTONS (2)	97 1031	SILICONE O-RING 3.1x1.6 (10)
30 8380	ADDITIONAL XRAY ULTIMATE RACING SPRINGS (20)		

Properly functioning shocks are very important to the performance of your car. This XRAY shock set contains parts to build four externally-adjustable or non-adjustable shocks. Both adjustable and non-adjustable shocks feature XRAY's unique keying system that positively locks the pistons to the shock rods. Carefully cut the parts from the frames, and then VERY carefully trim any excess flash with a sharp hobby knife. We recommend you use extra-fine sandpaper to gently smooth small flashing. The side walls of the pistons must be perfectly round and smooth for proper operation.

We recommend you build all four shocks simultaneously. Ensure you have a clean work area to build the shocks.

ADJUSTABLE PISTONS

Apply a drop or two of shock oil to the piston pieces. Press upper piston (A) into lower piston (B) as shown. The upper piston with holes (A) has a small tab that must exactly fit into one of the notches in lower piston (B).



965023
C 2.3

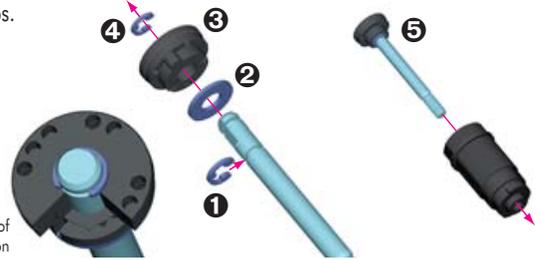
961032
S 3.2

965019
C 1.9

Assemble FOUR adjustable shock rod assemblies by performing the following steps.

1. Press a #965023 (C 2.3) E-clip into the lower groove in the shock rod.
2. Place a #961032 (S 3.2) washer onto the shock rod atop the C-clip.
3. Press the piston assembly onto the shock rod, aligning flat in pistons with flat on the shock rod.
4. Press a #965019 (C 1.9) E-clip into the upper groove in the shock rod.
5. Apply a drop or two of shock oil to the piston rod assembly, and then insert the shock rod assembly into the shock body.

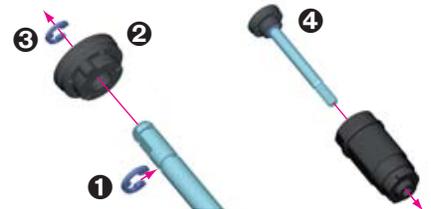
Cutaway view of adjustable piston



NON-ADJUSTABLE PISTONS

Assemble FOUR non-adjustable piston rod assemblies by performing the following steps. Use the 3-hole non-adjustable pistons.

1. Press a #965023 (C 2.3) E-clip into the lower groove in the shock rod.
2. Press a 3-hole piston onto the shock rod, aligning flat in piston with flat on the shock rod.
3. Press a #965019 (C 1.9) E-clip into the upper groove of the shock rod.
4. Apply a drop or two of shock oil to the piston rod assembly, and then insert the shock rod assembly into the shock body.

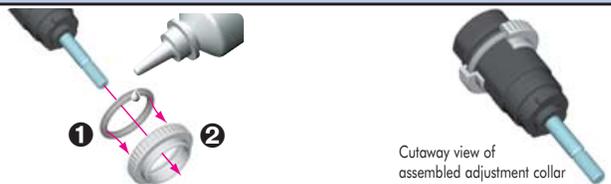


970121
O 12.1x1.6

Perform the following steps for all four shocks.

1. Lubricate the inner edge of a #970121 (O12.1x1.6) O-ring with a drop or two of shock oil. Insert it into the groove of a #308040 threaded collar.
2. Carefully thread the collar onto the shock body as shown.

Be careful not to cross-thread the collar on the shock body.



Cutaway view of assembled adjustment collar

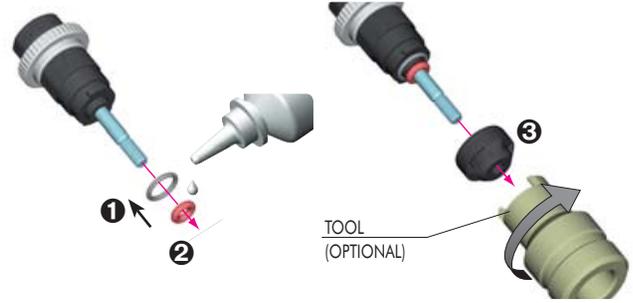


970050
O 5x1



971031
O 3.1x1.6

1. Insert the larger #970050 (O 5x1) O-ring onto the shock body, until it seats around the shock body extension.
2. Lubricate the small #971031 (O 3.1x1.6) O-ring with a drop or two of shock oil. Taking care not to rip or damage the O-ring, slide it over the end of the shock rod.
3. Install the end-cap onto the bottom of the shock body. Lock it in place by pressing it on, then turning it CW about 1/8 of a turn. For easy assembly, use a #183010 HUDY Shock Assembly Tool.



Grip the shock rod. Use either a shock rod clamping tool, or grip the top of the shock rod's exposed thread with side-cutting pliers.

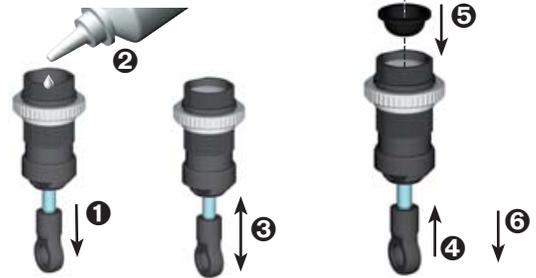
Thread the ball joint onto the shock rod until approximately 1mm of thread is exposed.



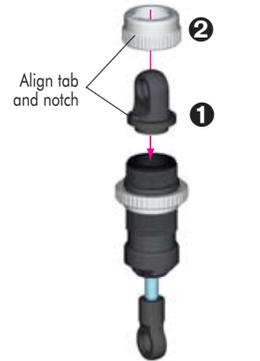
HINT: Pre-thread the ball joint using an M3 screw.

WARNING! Be careful not to pre-thread too far, since the ball joint may split or the plastic threads may strip out

1. Fully extend the piston rod so the piston is at the bottom of the shock body.
2. Hold the shock upright and slightly overfill the shock body with shock oil.
3. 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.
4. Pull the piston rod most of the way out of the shock body.
5. Place the rubber bladder on top of the shock body. Some oil should spill out.
6. Move the piston out very slightly so the bladder seals against the top of the shock body.



1. Place the top pivot mount on top of the bladder. Note the tab on the top pivot mount.
2. Place the #308350 collar over the top pivot mount, and thread it fully onto the shock body. More excess oil may escape. **Ensure the notch in the collar fits over the tab on the top pivot mount.**



Shock bleeding:

Turn the shock upside down and pull the shock rod out to full extension. Release the shock end-cap by turning it CCW and pulling it slightly away from the shock body. Let the shock "vent" for at least 10 minutes; excess oil should seep out the end of the shock body. If the shock rod doesn't retract slightly into the shock body, push it in by 1~2mm. Replace the end-cap.

Check the shock for proper operation. The shock rod must move in and out freely with only "hydraulic" dampening. The shock rod should not extend out by itself when pushed in and released, nor should it be drawn into the shock body when extended and released. If this happens, reopen the shock, refill with oil, reassemble, and repeat the bleeding procedure.

Shock length adjustment:

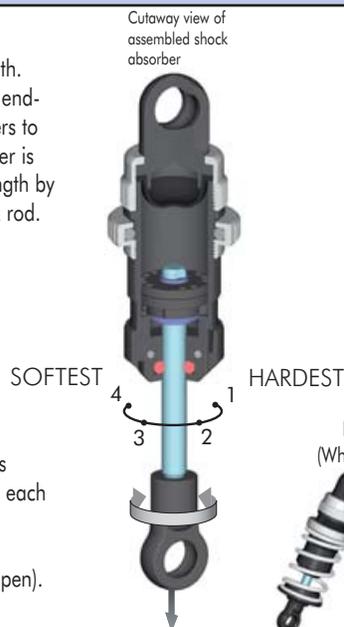
It is VERY important that all shocks are equal length. Fully extend the shock absorber and measure the end-to-end length; we recommend using digital calipers to give an accurate measurement. If a shock absorber is shorter or longer than others, adjust the shock length by tightening or loosening the ball joint on the shock rod.

Damping adjustment:

If you built the adjustable shocks, fully extend the shock rod and turn it slightly to lock the piston in the shock body.

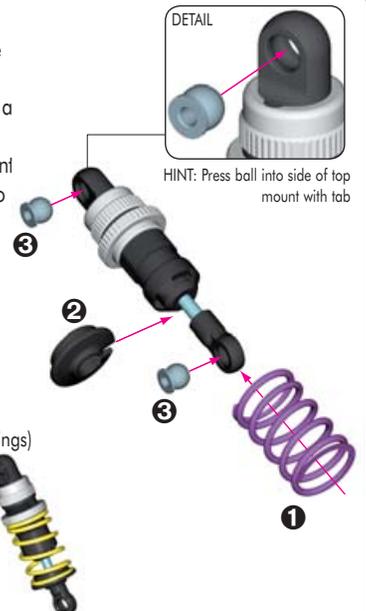
Turning the shock rod fully CCW aligns 4 holes in the pistons (softest damping). Turning the shock rod fully CW aligns 1 hole in the pistons (hardest damping). The shocks have four settings, each of which can be felt by a slight "click".

Set all four shocks initially to position 3 (3 holes open).

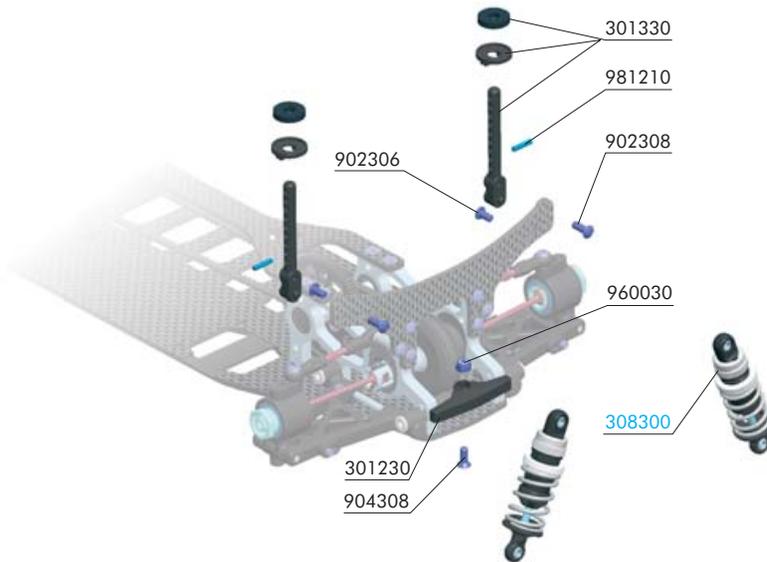


Final shock assembly:

1. Slide a spring onto the end of the shock.
2. Secure the spring with a spring cup, and settle the spring cup on the ball joint.
3. Use pliers to install two #303240 balls in each shock; one in each of the upper and lower eyelets.



8. REAR ASSEMBLY



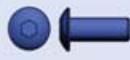
BAG

08

30 1230 COMPOSITE BUMPER REAR
 30 1330 REAR BODY MOUNT SET
 90 2306 HEX SCREW SH M3x6 (10)
 90 2308 HEX SCREW SH M3x8 (10)

90 4308 HEX SCREW SFH M3x8 - SILVER (10)
 96 0030 NUT M3 (10)
 98 1210 PIN 2x10 (10)

30 8300 XRAY SHOCK ABSORBER-SET 4-STEP (2)



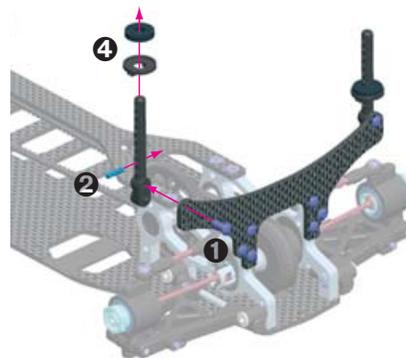
902308
SH M3x8



981210
P 2x10

Assemble TWO rear body posts by performing the following steps.

1. Mount the body post to the front of the rear shock tower. The bottom plastic pin fits into the lower hole. Use a #902308 (SH M3x8) screw to fasten each body post to the shock tower.
2. Insert a #981210 (P 2x10) pin into one of the holes in the rear body post. Insert the other pin into the same hole in the other body post.
3. Glue a rubber washer to the top of a plastic body support.
4. Slide the body support onto the body post, and snap onto the pin.



CA GLUE



902306
SH M3x6

Attach TWO rear shocks by performing the following steps.

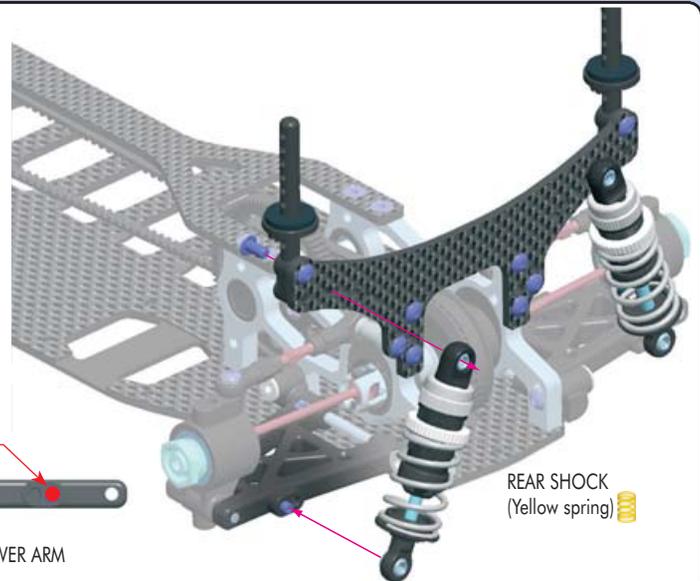
1. Mount the top pivot ball of the assembled rear shock to the rear shock tower using #902306 (SH M3x6) screw. Use the indicated hole as shown.
2. Thread the lower pivot ball of the assembled rear shock onto the protruding screw at the back of the rear lower arm.



REAR SHOCK TOWER



REAR LOWER ARM



REAR SHOCK
(Yellow spring)



904308
SFH M3x8

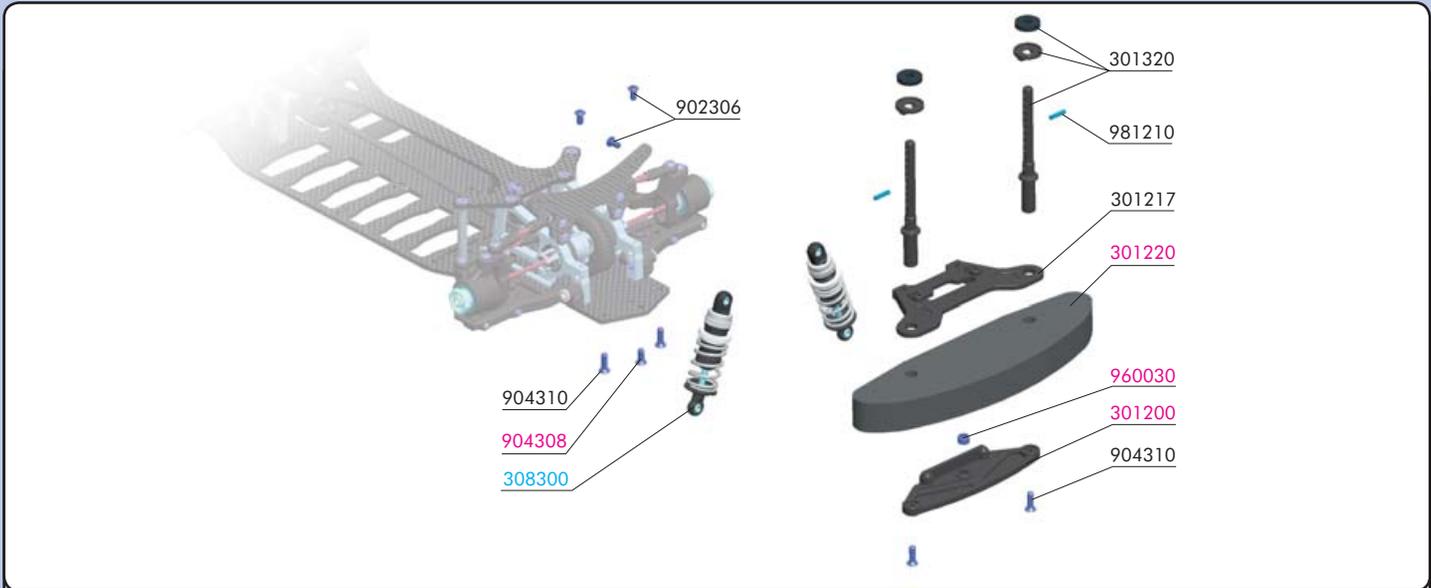


960030
N M3

Attach #301230 rear bumper to back edge of chassis using #904308 (SFH M3x8) screw and #960030 (N M3) nut.



8. FRONT ASSEMBLY



BAG

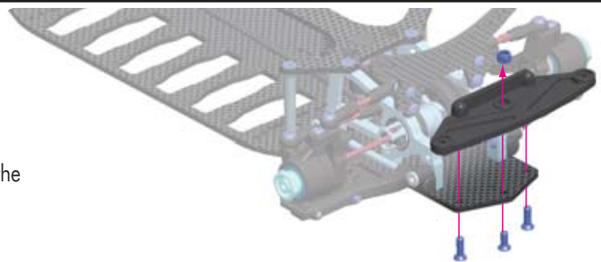
08

30 1217 COMPOSITE UPPER BUMPER SUPPORT
 30 1320 FRONT BODY MOUNTS (SET)
 90 2306 HEX SCREW SH M3x6 (10)
 90 4310 HEX SCREW SFH M3x10 - SILVER (10)
 98 1210 PIN 2x10 (10)

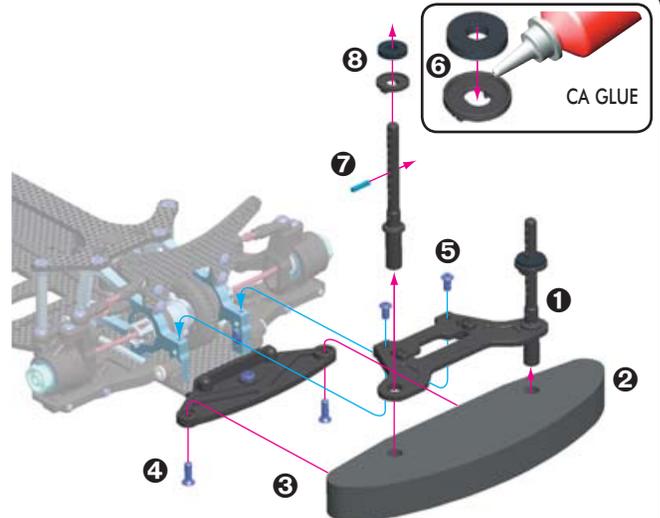
30 1200 COMPOSITE BUMPER
 30 1220 FOAM BUMPER
 90 4308 HEX SCREW SFH M3x8 - SILVER (10)
 96 0030 NUT M3 (10)
 30 8300 XRAY SHOCK ABSORBER-SET 4-STEP (2)



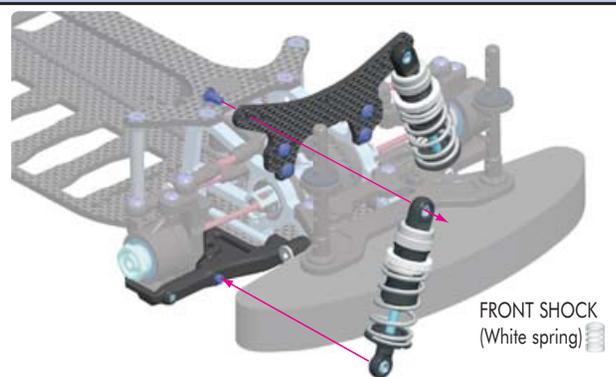
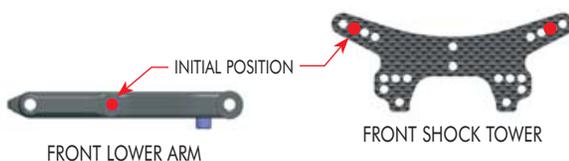
1. Place a #960030 (N M3) nut into the hex recess atop the #301200 lower bumper.
2. Place the lower bumper onto the front of the chassis.
3. Thread a #904308 (SFH M3x8) screw up through the bottom of the chassis, through the bumper, and into the M3 nut.
4. Thread two #904310 (SFH M3x10) screws up through the bottom of the chassis and into the lower bumper.



1. Insert the front body posts into the holes of the #301217 upper bumper support.
2. Slide the #301220 foam bumper up onto the body posts; the posts should extend down through the foam bumper.
3. Position the bumper assembly onto the lower bumper.
4. Secure the body posts to the lower bumper by threading two #904310 (SFH M3x10) screws upward through lower bumper into the bodyposts.
5. Secure the upper bumper support to the front bulkheads with two #902306 (SH M3x6) screws.
6. Glue rubber washers to the tops of the plastic body supports.
7. Insert a #981210 (P 2x10) pin into a hole in a front body post. Insert the other pin into the same hole in the other body post.
8. Slide the body supports into the body posts, and snap onto the pins.

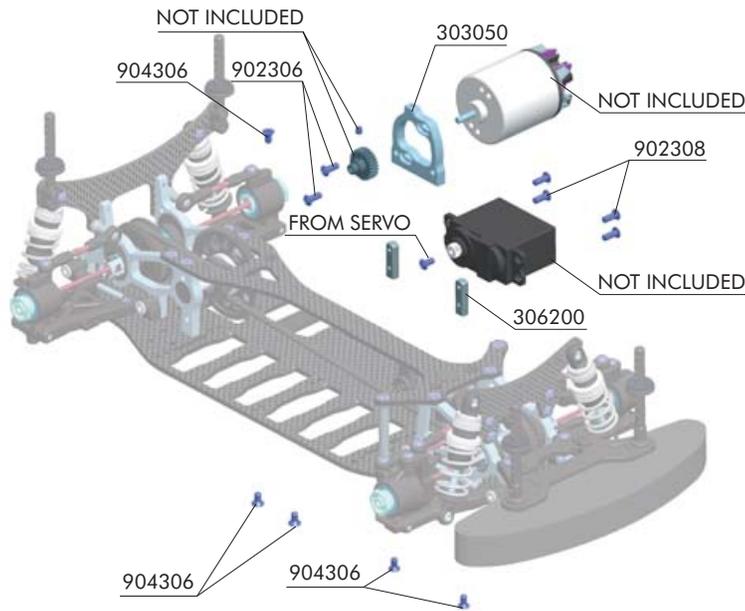


- Attach TWO front shocks by performing the following steps.
1. Mount the top pivot ball of the assembled front shock to the graphite shock tower using #902306 (SH M3x6) screw. Use the indicated hole as shown.
 2. Thread the lower pivot ball of the assembled front shock onto the protruding screw at the front of the front lower arm.



FRONT SHOCK
(White spring)

9. FINAL ASSEMBLY



BAG

09

30 3050 CENTRAL MOTOR MOUNT
 30 5716-34 PINION GEAR ALU HARD COATED 48T (OPTION)
 30 6200 ALU SERVO MOUNT (2)

90 2306 HEX SCREW SH M3x6 (10)
 90 2308 HEX SCREW SH M3x8 (10)
 90 4306 HEX SCREW SFH M3x6 - SILVER (10)



902308
SH M3x8



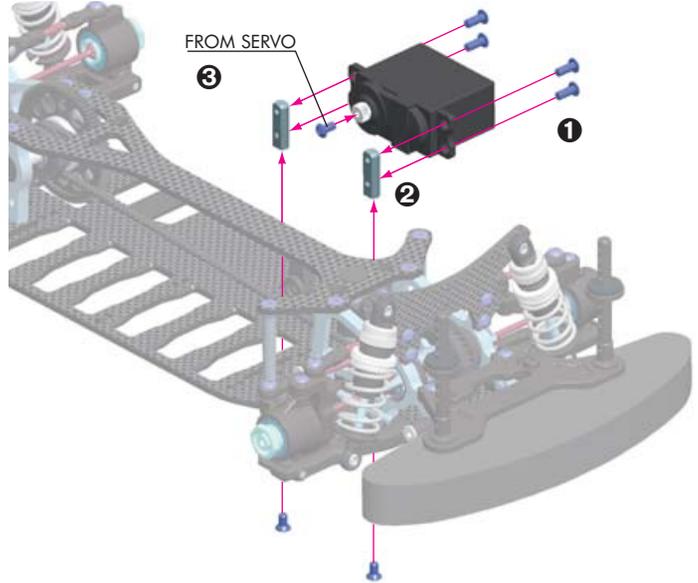
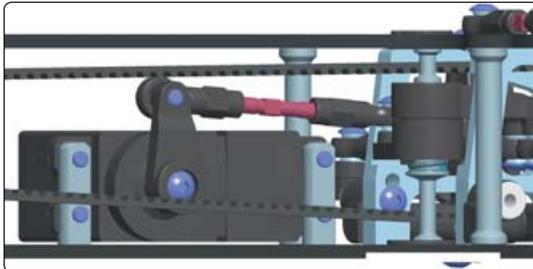
904306
SFH M3x6

1. Attach the servo to the #306200 servo mounts using four #902308 (SH M3x8) screws. The servo output shaft should go to the REAR.

2. Attach the servo mounts to the chassis using two #904306 (SFH M3x6) screws.

3. Attach the servo horn to the servo using the screw that comes with the servo.

If the servo does not fit properly, you may have to add shims between the servo tabs and the mounting posts.



DETAIL



904306
SFH M3x6



902306
SH M3x6

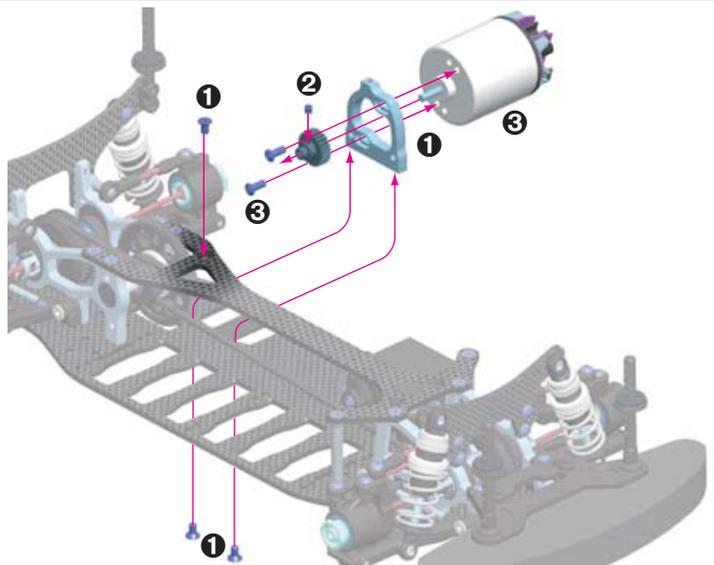
1. Attach the central motor mount to the chassis using two #904306 (SFH M3x6) screws, and to the top deck with one #904306 (SFH M3x6) screw.

2. Mount a pinion gear to the motor shaft and secure with setscrew. Pinion gear is NOT included in the kit.

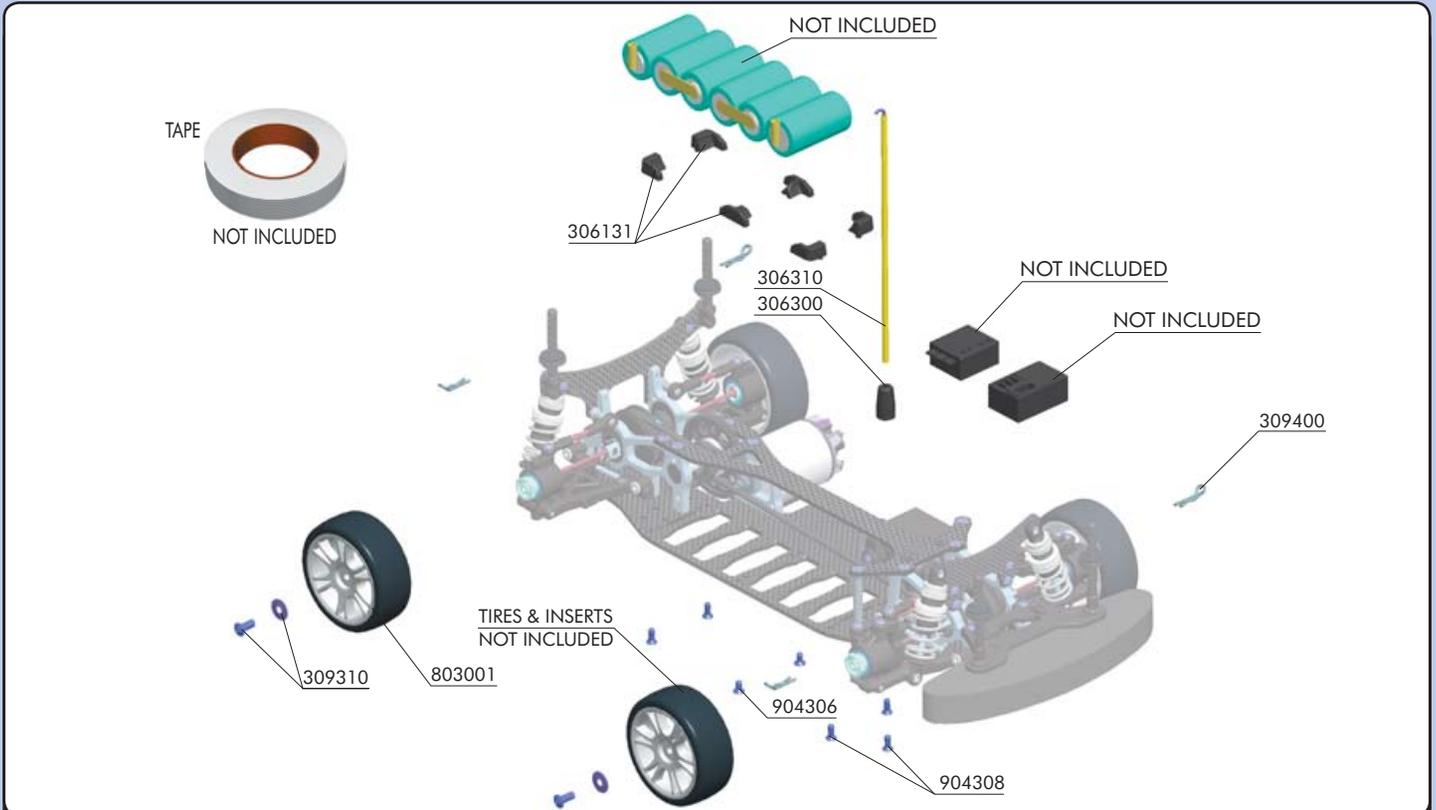
3. Mount the motor to the central motor mount using two #902306 (SH M3x6) screws.

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.



ACCESSORY ASSEMBLY



BAG

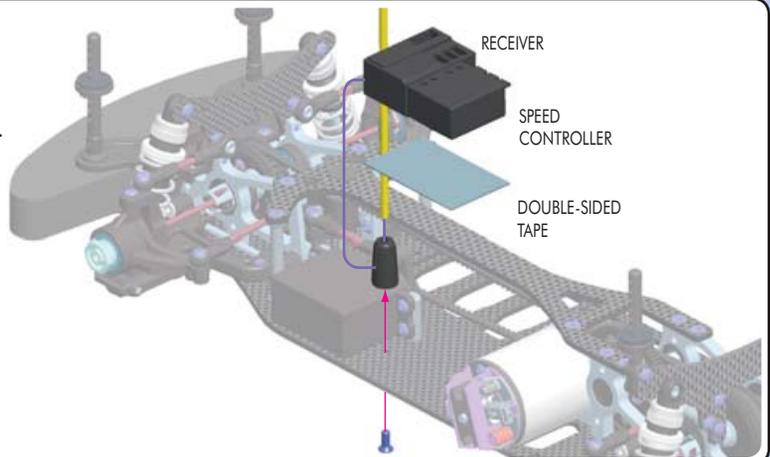


30 6131	SET OF BATTERY BACKSTOPS T1FK'05	30 9400	BODY CLIP (8)
30 6162	6-CELL BATTERY STRAP T1FK'05 (OPTION)	80 3001	HUDY 24 MM WHEELS STARBURST - WHITE (4)
30 6300	ANTENNA MOUNT		
30 6310	ANTENNA TUBE (2)	90 4306	HEX SCREW SFH M3x6 - SILVER (10)
30 9310	WHEEL MOUNTING HARDWARE (4+4)	90 4308	HEX SCREW SFH M3x8 - SILVER (10)



904308
SFH M3x8

1. Mount the receiver and speed controller to the chassis using double-sided tape.
2. Mount the #306300 antenna holder to the chassis in an available position using a #904308 (SFH M3x8) screw.
3. Slide the receiver's antenna wire through the #306310 antenna tube, and then place the wire in the slot on the side of the antenna mount.
4. Push the base of the antenna tube firmly into the hole of the antenna mount, making sure you don't pinch or cut the antenna wire.



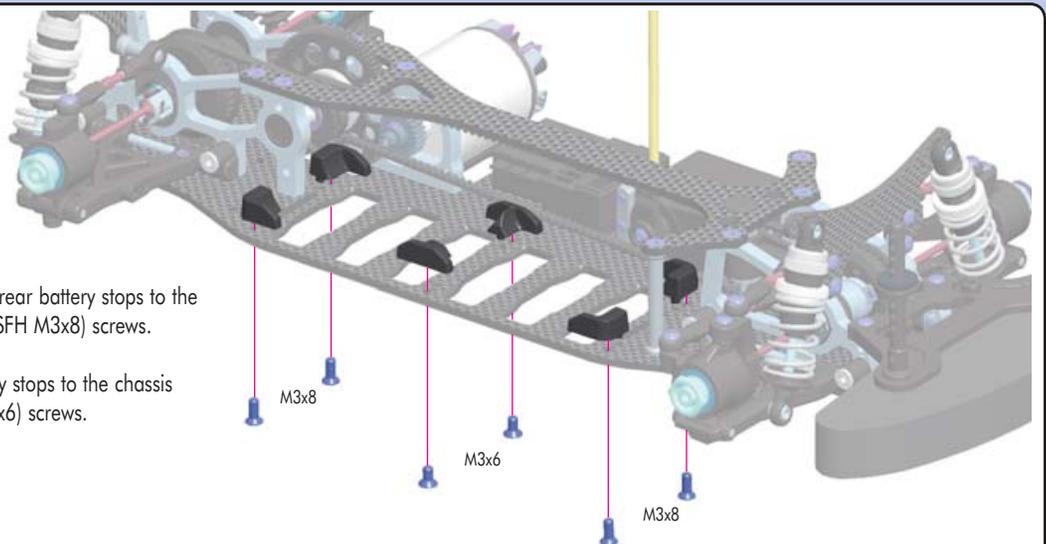
904308
SFH M3x8



904306
SFH M3x6

Attach the four front and rear battery stops to the chassis using #904308 (SFH M3x8) screws.

Attach the two side battery stops to the chassis using #904306 (SFH M3x6) screws.



ACCESSORY ASSEMBLY

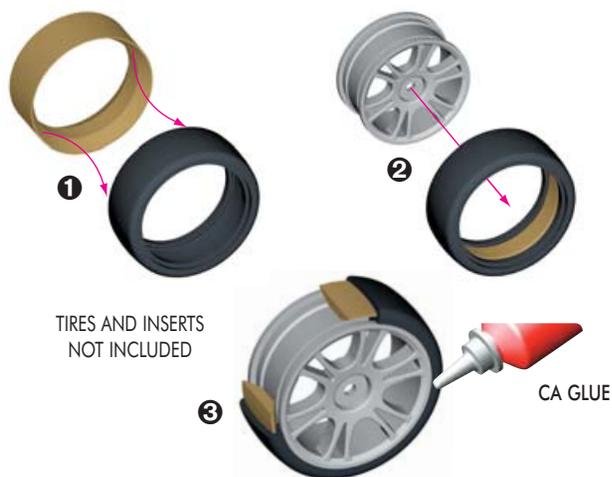
The XRAY T1FK'05 is a competition racecar, and therefore does not come supplied with tires and inserts. Check with racers at tracks you attend to determine the best tire/insert combinations.

To install rubber tires and inserts on the supplied wheels, do the following:

1. Install a foam insert into each tire, making sure it is centered.
2. Slide the tire (with insert) onto the wheel.
3. Carefully glue the tires to the wheels with CA glue.

WARNING:

Follow the adhesive manufacturer's instructions for proper use and safety. Wear proper eye and hand protection.



309310
SH M4x8

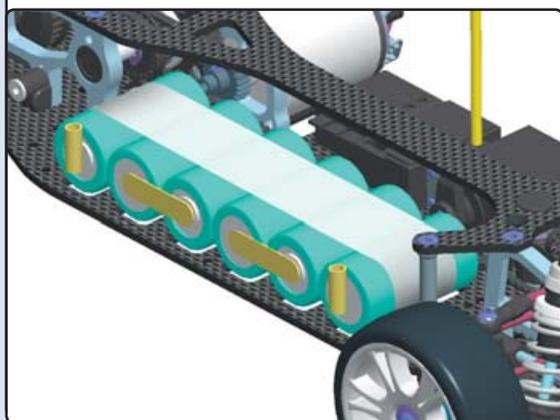
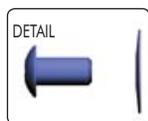


309310
ST 4x12

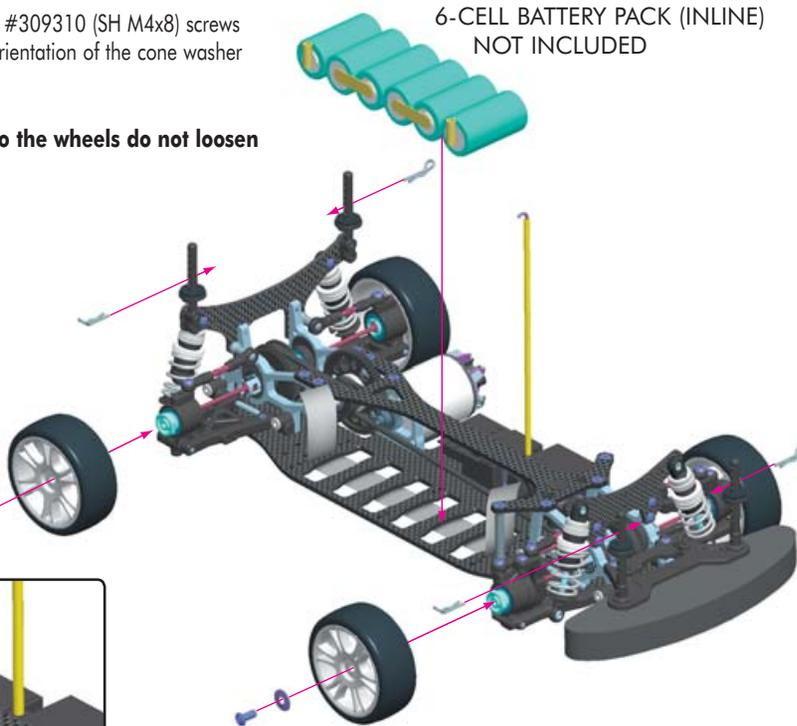
Mounting the Wheels

Mount the wheels on the wheel axle hex hubs using #309310 (SH M4x8) screws and #309310 (ST 4x12) cone washers. Note the orientation of the cone washer in the detail image.

Make sure the wheel screws are very tight, so the wheels do not loosen during racing.



6-CELL BATTERY PACK (INLINE)
NOT INCLUDED

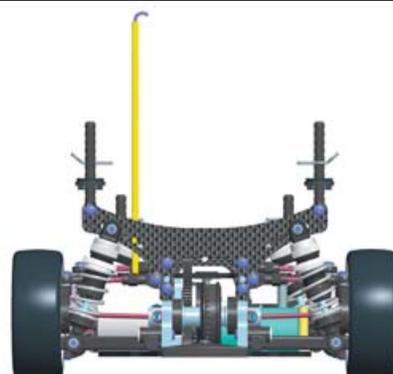
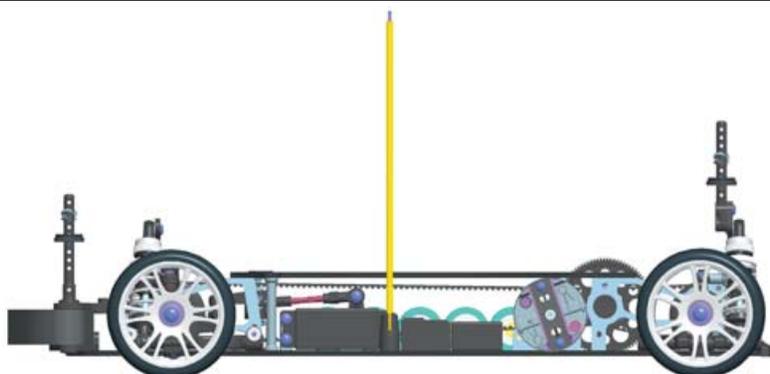


Mounting the Battery Pack

This car is designed to use a 6-cell inline battery pack composed of sub-C cells.

Place the battery pack onto the right side of the chassis between the battery stops as shown.

Use high-strength fibre tape to secure the battery pack to the chassis.



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.
- 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.

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.

SAFETY PRECAUTIONS

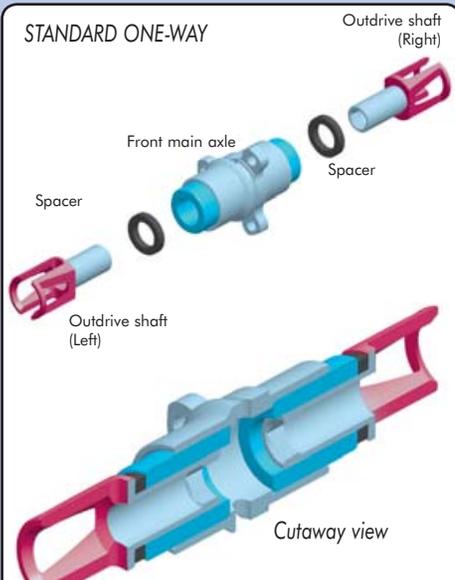
Take enough safety precautions prior to operating this model. You are responsible for this model's assembly and safe operation! Please read the instruction manual before building and operating this model and follow all safety precautions. This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. 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.

Improper operations 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 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. The T1FK'05 is a high competition, high quality, 1/10-scale electric touring car for persons age 14 and older. This is not a toy, it is a precision racing model.

XRAY guarantees this model kit to be free from defects in both material and workmanship. 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 60 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.

FRONT MULTI-DIFF™ SETTINGS

STANDARD ONE-WAY



Outdrive shaft (Right)

Front main axle

Spacer

Spacer

Outdrive shaft (Left)

Cutaway view

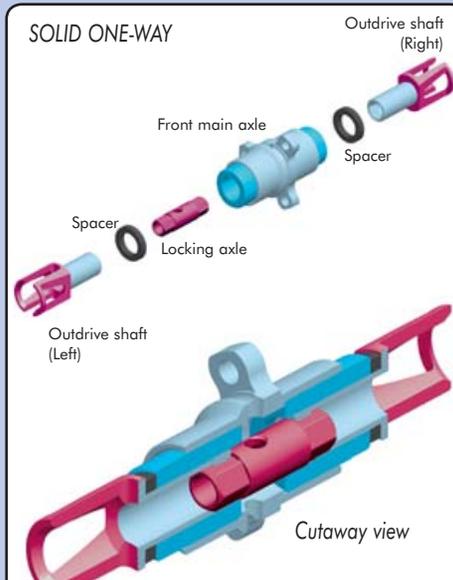
Outdrive shafts (left and right) are not connected to each other, nor to front main axle.

Off-power:
Outdrive shafts rotate forward independently of each other and front main axle.

On-power:
Both outdrive shafts rotate with front main axle (locked in one-way bearings)

Best used when...
traction is high, the car leans towards off-power understeer and the track does not require braking for the corners. Will give maximum off-power steering and increase efficiency (more runtime). Best suited to a smooth driving style.

SOLID ONE-WAY



Outdrive shaft (Right)

Front main axle

Spacer

Spacer

Outdrive shaft (Left)

Locking axle

Cutaway view

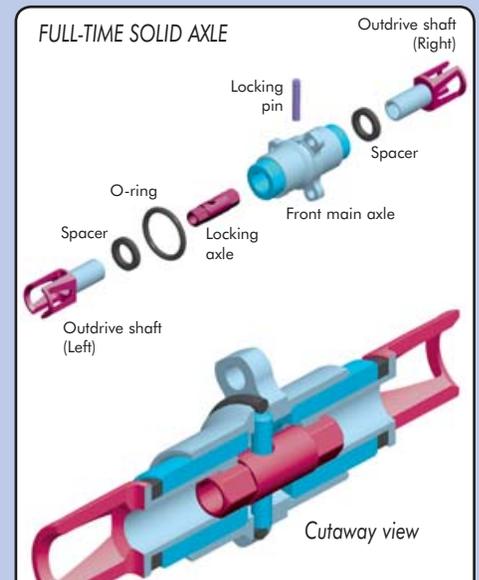
Both outdrive shafts (left and right) are connected together by internal locking axle, but are not connected to front main axle.

Off-power:
Both connected outdrive shafts rotate forward together (but independent of front main axle).

On-power:
Both outdrive shafts rotate with front main axle (locked in one-way bearings).

Best used when...
traction is medium to high and the track does not require braking for the corners. Will give good off-power steering and efficiency.

FULL-TIME SOLID AXLE



Outdrive shaft (Right)

Locking pin

Front main axle

Spacer

O-ring

Spacer

Outdrive shaft (Left)

Locking axle

Cutaway view

Both outdrive shafts (left and right) are connected to front main axle by internal locking axle and locking pin.

Off-power and on-power:
Both outdrive shafts rotate with front main axle.

Best used when...
traction is low to medium, the car leans towards off-power oversteer and/or the track requires braking for the corners. Will give less off-power steering and efficiency (less runtime). Best suited to an aggressive driving style.



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