THE T3 IS A HIGH-PERFORMANCE, HIGH-QUALITY, 1/10-SCALE TOURING CAR INTENDED FOR PERSONS AGED 16 YEARS AND OLDER WITH PREVIOUS EXPERIENCE BUILDING AND OPERATING RC MODEL RACING CARS. THIS IS NOT A TOY; IT IS A PRECISION RACING MODEL. THIS MODEL RACING CAR IS NOT INTENDED FOR USE BY BEGINNERS, INEXPERIENCED CUSTOMERS, OR BY CHILDREN WITHOUT DIRECT SUPERVISION OF A RESPONSIBLE, KNOWLEDGEABLE ADULT. IF YOU DO NOT FULLY UNDERSTAND SAFE USE REQUIREMENTS, PLEASE RETURN THE KIT IN UNUSED AND UNASSEMBLED FORM BACK TO THE PLACE WHERE YOU HAVE PURCHASED IT.

BEFORE YOU START

Always turn on your transmitter before you turn on the receiver in the car.
Use a transmitter designed for ground use with RC cars. Make sure that no one else is using the same frequency as yours in your operating area. Using the same frequency at the same time, whether it is driving, flying or sailing, can cause loss of control of the RC model, resulting in a serious accident.

Customer Support
We have made every effort to make these instructions as easy to understand as possible. However, if you have any difficulties, problems, or questions, please do not hesitate to contact the XRAY support team at info@teamxray.com. Also, please visit our Web site at www.teamxray.com to find the latest updates, set-up information, option parts, and many other goodies. We pride ourselves on taking excellent care of our customers.

You can join thousands of XRAY fans and enthusiasts in our online community at www.teamxray.com.

Safety Precautions
Contains:
LEAD (CAS 7439-92-1) ANTIMONY (CAS 7440-36-0)
WARNING: This product contains a chemical known to the state of California to cause cancer and birth defects or other reproductive harm.
CAUTION: CANCER HAZARD
Contains lead, a listed carcinogen. Lead is harmful if ingested. Wash thoroughly after using. DO NOT use product while eating, drinking or using tobacco products. May cause chronic effects to gastrointestinal tract, CNS, kidneys, and blood. MAY CAUSE BIRTH DEFECTS.

When building, using and/or operating this model always wear protective glasses and gloves.

Take appropriate safety precautions prior to operating this model. You are responsible for this model’s assembly and safe operation! Please read the instruction manual before building and operating this model and follow all safety precautions. Always keep the instruction manual at hand for quick reference, even after completing the assembly. Use only genuine and original XRAY parts for maximum performance. Using any third party parts on this model will void guaranty immediately.

Failure to follow these instructions will be considered as abuse and/or neglect.

Important Notes – General

This product is not suitable for children under 16 years of age without the direct supervision of a responsible and knowledgeable adult.

Carefully read all manufacturers warnings and cautions for any parts used in the construction and use of your model.

Assemble this kit only in places away from the reach of very small children.

First-time builders and users should seek advice from people who have building experience in order to assemble the model correctly and to allow the model to reach its performance potential.

Exercise care when using tools and sharp instruments.

Take care when building, as some parts may have sharp edges.

Keep small parts out of reach of small children. Children must not be allowed to put any parts in their mouth, or pull vinyl bag over their head.

Read and follow instructions supplied with paints and/or cement, if used (not included in kit).

Immediately after using your model, DO NOT touch equipment on the model such as the motor and speed controller, because they generate high temperatures. You may seriously burn yourself seriously touching them.

Follow the operating instructions for the radio equipment at all times.

Do not put fingers or any objects inside rotating and moving parts, as this may cause damage or serious injury as your finger, hair, clothes, etc. may get caught.

Be sure that your operating frequency is clear before turning on or running your model, and never share the same frequency with somebody else at the same time. Ensure that others are aware of the operating frequency you are using and when you are using it.

Use a transmitter designed for ground use with RC cars. Make sure that no one else is using the same frequency as yours in your operating area. Using the same frequency at the same time, whether it is driving, flying or sailing, can cause loss of control of the RC model, resulting in a serious accident.

Always turn on your transmitter before you turn on the receiver in the car. Always turn off the receiver before turning your transmitter off.

Keep the wheels of the model off the ground when checking the operation of the radio equipment.

Disconnect the battery pack before storing your model.

When learning to operate your model, go to an area that has no obstacles that can damage your model if your model suffers a collision.

Remove any sand, mud, dirt, grass or water before putting your model away.

If the model behaves strangely, immediately stop the model, check and clear the problem.

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

The model car is not intended for use on public places and roads or areas where its operation can conflict with or disrupt pedestrian or vehicular traffic.

Because the model car is controlled by radio, it is subject to radio interference from many sources that are beyond your control. Since radio interference can cause momentary loss of control, always allow a safety margin in all directions around the model in order to prevent collisions.

Do not use your model:

- Near real cars, animals, or people that are unaware that an RC car is being driven.
- In places where children and people gather.
- In residential districts and parks.
- In limited indoor spaces.
- In wet conditions.
- In the street.
- In areas where loud noises can disturb others, such as hospitals and residential areas.
- At night or anytime your line of sight to the model may be obstructed or impaired in any way.

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

- Insulate any exposed electrical wiring (using heat shrink tubing or electrical tape) to prevent dangerous short circuits. Take maximum care in wiring, connecting and insulating cables. Make sure cables are always connected securely. Check connectors for if they become loose. And if so, reconnect them securely. Never use R/C models with damaged wires. A damaged wire is extremely dangerous, and can cause short-circuits resulting in fire. Please have wires repaired at your local hobby shop.
- Low battery power will result in loss of control. Loss of control can occur due to a weak battery in either the transmitter or the receiver. Weak running battery may also result in an out of control car if your car’s receiver power is supplied by the running battery. Stop operation immediately if the car starts to slow down.
- When not using RC model, always disconnect and remove battery.
- Do not disassemble battery or cut battery cables. If the running battery short-circuits, approximately 300W of electricity can be discharged, leading to fire or burns. Never disassemble battery or cut battery cables.
- Use a recommended charger for the receiver and transmitter batteries and follow the instructions correctly. Over-charging, incorrect charging, or using inferior chargers can cause the batteries to become dangerously hot.
- Recharge battery when necessary. Continual recharging may damage battery and, in the worst case, could build up heat leading to fire. If battery becomes extremely hot during recharging, please ask your local hobby shop for check and/or repair and/or replacement.
- Regularly check the charger for potential hazards such as damage to the cable, plug, casing or other defects. Ensure that any damage is rectified before using the charger again. Modifying the charger may cause short-circuit or overcharging leading to a serious accident. Therefore do not modify the charger.
- Always unplug charger when recharging is finished.
- Do not recharge battery while battery is still warm. After use, battery retains heat. Wait until it cools down before charging.
- Do not allow any metal part to short circuit the receiver batteries or other electrical/electronic device on the model.
- Immediately stop running if your RC model gets wet as may cause short circuit.
- Please dispose of batteries responsibly. Never put batteries into fire.

**R/C & BUILDING TIPS**

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

**WARRANTY**

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

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

**LIMITATIONS OF LIABILITY**

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

**QUALITY CERTIFICATE**

XRAY MODEL RACING CARS uses only the highest quality materials, the best compounds for molded parts and the most sophisticated manufacturing processes of TQM (Total Quality Management). We guarantee that all parts of a newly-purchased kit are manufactured with the highest regard to quality. However, due to the many factors inherent in model racecar competition, we cannot guarantee any parts once you start racing the car. Products which have been worn out, abused, neglected or improperly operated will not be covered under warranty. We wish you enjoyment of this high-quality and high-performance RC car and wish you best success on the track!

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

Part bags used
Assemble in the specified order
Assemble left and right sides the same way
Pay attention here
Assemble as many times as specified (here twice)
Apply thread lock
Apply CA glue
Apply oil
Apply grease
Use pliers
Ensure smooth non-binding movement
Tighten screw gently
Correct
Wrong
Overtightened
The threads are stripped.
Follow Set-Up Book

Tools Required

HUDY Tools: Allen: 1.5 mm, 2.0 mm, 3.0 mm
Socket: 5.5 mm, 7.0 mm
Combination Pliers (HUDY #189020)
Side Cutters (HUDY #189010)
Hobby Knife
Tubing 3mm, 4mm (HUDY #181030, HUDY #181040)
Reamer (HUDY #107600)

Equipment Included

XRAY Premium Silicone Oil 350cSt (#359235)
Diff. Grease (HUDY #106211)
Graphite Grease (HUDY #106210)

Equipment Required

Transmitter
Receiver
Steering Servo
Electric Motor & Pinion Gear and Setscrew
Boing Oil (HUDY #106230)
Speed Controller
190mm Bodyshell
5-cell or 6-cell Battery Pack (Inline)
Lexan Paint
Battery Charger
Fibre Tape (HUDY #107870)
Double-sided Tape
Wheels & Tires & Inserts
The XRAY T3 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.

COLOR INDICATIONS

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

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

- 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.

To protect and seal edges of graphite parts, sand edges smooth and then apply CA glue. Do this for: chassis edges, filled battery slots, countersunk holes for front bumper screws.

For the US extra-thick chassis, we recommend rounding the bottom forward edge of the chassis (using a file or sandpaper).

Lightly file edges of battery slots to remove sharp edges. Please note that the US Foam-Spec 3.0mm Thick Chassis requires the battery slots to be filed more than the standard 2.5mm thick chassis. Do not file battery slots too much, or batteries may protrude below the chassis bottom.

Apply only a bit of CA glue on the countersunk holes.

For the US thick chassis, we recommend rounding the bottom forward edge of the chassis (using a file or sandpaper).
1. ALU BALL DIFF. & FRONT SOLID AXLE

- ALU BALL DIFFERENTIAL 34T + 38T PULLEY - 7075 T6 - SET
- ALU T6 DIFF SHORT OUTPUT SHAFT - HARD COATED - BLACK
- SCREW FOR EXTERNAL DIFF ADJUSTMENT - SPRING STEEL
- DIFF PULLEY 38T WITH LABYRINTH DUST COVERS
- DIFF WASHER 17 x 23 x 1 (2)
- XRAY MULTI-DIFF™ (OPTION)
- COMPOSITE SOLID AXLE DRIVESHAFT ADAPTERS (2)
- ALU SOLID AXLE DRIVESHAFT ADAPTERS (2) (OPTION)
- COMPOSITE SOLID AXLE 38T - SET
- HEX SCREW SH M3x10 (10)
- CARBIDE BALL 2.4 MM (12)
- BALL-BEARING MR85ZZ 5x8x2.5 (2)
- HIGH-SPEED BALL-BEARING 10x15x4 RUBBER SEALED (2)
- CONE WASHER ST 3x8x0.5 (10)
- CH-CLIP 8 (10)

Insert CH-clip into the groove with snap ring pliers
Snap ring pliers (HUDY #189040)

DIFF GREASE (HUDY #106211)
BEARING OIL (HUDY #106230)

DIFF GREASE (HUDY #106211)
BEARING OIL (HUDY #106230)
**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.

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**COMPOSITE FRONT SOLID AXLE (EU RUBBER-SPEC ONLY)**

- **BEARING OIL** (Hudy #106230)
- **EU RUBBER-SPEC 38T Pulley**

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**FRONT & REAR AXLES**

- #305003 ALU DIFF 34T + 38T PULLEY
- #305104 XRAY ALU MULTI-DIFF™
- #305188 COMPOSITE SOLID AXLE 38T PULLEY
2. FRONT & REAR SUSPENSION

- 302027-O T3 ALU FRONT LOWER SUSPENSION ADJUST. BULKHEAD - ORANGE
- 302033-K ALU NUT FOR SUSPENSION HOLDER - BLACK (2)
- 302044 LOWER SUSPENSION HOLDERS (2+2+2)
- 302045-O T3 ALU LOWER SUSPENSION BLOCK - ORANGE
- 302046-O T3 ALU LOWER SUSPENSION HOLDER - ORANGE
- 302163 FRONT SUSPENSION ARM - HARD - RUBBER-SPEC - 1-HOLE
- 302164 FRONT SUSPENSION ARM - EXTRA-HARD - FOAM-SPEC - 1-HOLE
- 303134-K MOTOR BULKHEAD HOLDER - BLACK
- 303132 STEEL SHIM FOR LOWER SUSP. HOLDER 3x7.5x0.75 (10)
- 303134-K ALU SHIM FOR LOWER SUSP. HOLDER 3x7.5x1.5 - BLACK (10)
- 303163 (EU RUBBER-SPEC)
- 303164 (US FOAM-SPEC)
- 303129 COMPOSITE SET OF WHEELBASE SHIMS (3x1MM; 1x2MM) (2)
- 303129 T3 CHASSIS 2.5MM GRAPHITE - 6-CELL - RUBBER-SPEC
- 303130 T3 CHASSIS 3.0MM GRAPHITE - 6-CELL - FOAM-SPEC
- 303163 (EU RUBBER-SPEC)
- 303164 (US FOAM-SPEC)
- 307215 T2 FRONT SUSPENSION PIVOT PIN (2)
- 307314 T2'008 REAR SUSPENSION PIVOT PIN (2)
- 3013129 (EU RUBBER-SPEC)
- 3013130 (US FOAM-SPEC)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>901308</td>
<td>HEX SCREW SB M3x8 (10)</td>
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<td>9013129</td>
<td>HEX SCREW SB M4x8 (10)</td>
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<tr>
<td>9013306</td>
<td>HEX SCREW SH M3x14 (10)</td>
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<td>HEX SCREW SH M3x16 (10)</td>
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<td>9013306</td>
<td>HEX SCREW SHF M3x6 (10)</td>
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<td>301129</td>
<td>T3 CHASSIS 2.5MM GRAPHITE - 6-CELL - RUBBER-SPEC</td>
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<td>301130</td>
<td>T3 CHASSIS 3.0MM GRAPHITE - 6-CELL - FOAM-SPEC</td>
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<tr>
<td>302027</td>
<td>T3 ALU FRONT LOWER SUSP ADJUST. BULKHEAD - ORANGE</td>
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<tr>
<td>302033</td>
<td>T3 ALU LOWER SUSPENSION BLOCK - ORANGE</td>
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<td>302044</td>
<td>T3 ALU LOWER SUSPENSION HOLDER - ORANGE</td>
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<td>302045</td>
<td>T3 ALU LOWER SUSPENSION HOLDER - ORANGE</td>
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<td>302046</td>
<td>T3 ALU LOWER SUSPENSION BLOCK - ORANGE</td>
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<td>302163</td>
<td>FRONT SUSPENSION ARM - HARD - RUBBER-SPEC - 1-HOLE</td>
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<tr>
<td>302164</td>
<td>FRONT SUSPENSION ARM - EXTRA-HARD - FOAM-SPEC - 1-HOLE</td>
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<tr>
<td>303134</td>
<td>MOTOR BULKHEAD HOLDER - BLACK</td>
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<td>303132</td>
<td>STEEL SHIM FOR LOWER SUSP HOLDER 3x7.5x0.75 (10)</td>
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<td>303134</td>
<td>ALU SHIM FOR LOWER SUSP HOLDER 3x7.5x1.5 - BLACK (10)</td>
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<tr>
<td>303163</td>
<td>REAR SUSPENSION ARM - HARD - RUBBER-SPEC - 1-HOLE</td>
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<td>303164</td>
<td>REAR SUSPENSION ARM - EXTRA-HARD - FOAM-SPEC - 1-HOLE</td>
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<tr>
<td>303163</td>
<td>COMPOSITE SET OF WHEELBASE SHIMS (3x1MM; 1x2MM) (2)</td>
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<td>303164</td>
<td>T3 CHASSIS 2.5MM GRAPHITE - 6-CELL - RUBBER-SPEC</td>
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<td>303164</td>
<td>T3 CHASSIS 3.0MM GRAPHITE - 6-CELL - FOAM-SPEC</td>
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<td>T3 CHASSIS 2.5MM GRAPHITE - 6-CELL - RUBBER-SPEC</td>
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<td>303164</td>
<td>T3 CHASSIS 3.0MM GRAPHITE - 6-CELL - FOAM-SPEC</td>
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</tbody>
</table>
When tightening the screws, push the alu holders gently against screw tightening direction.

The rear aluminum holders have integrated rear toe-in (approximately 1° rear toe-in).

Follow these steps when assembling the motor mount bulkhead:
1. Mount the screws on the motor bulkhead but do NOT tighten them fully.
2. Mount the motor bulkhead holder to the motor bulkhead using M3x6 screw. Tighten fully.
3. Tighten fully all screws from the bottom of the chassis.

Mount the screws on the motor bulkhead but do NOT tighten them fully.
Mount the motor bulkhead holder to the motor bulkhead using M3x6 screw. Tighten fully.
Tighten fully all screws from the bottom of the chassis.

When tightening the screws, push the alu holders gently against screw tightening direction.

The rear aluminum holders have integrated rear toe-in (approximately 1° rear toe-in).

Mount the screws on the motor bulkhead but do NOT tighten them fully.
Mount the motor bulkhead holder to the motor bulkhead using M3x6 screw. Tighten fully.
Tighten fully all screws from the bottom of the chassis.

Follow these steps when assembling the motor mount bulkhead:
1. Mount the screws on the motor bulkhead but do NOT tighten them fully.
2. Mount the motor bulkhead holder to the motor bulkhead using M3x6 screw. Tighten fully.
3. Tighten fully all screws from the bottom of the chassis.

Mount the screws on the motor bulkhead but do NOT tighten them fully.
Mount the motor bulkhead holder to the motor bulkhead using M3x6 screw. Tighten fully.
Tighten fully all screws from the bottom of the chassis.
2. FRONT & REAR SUSPENSION

TOE-IN ADJUSTMENT  TRACK-WIDTH ADJUSTMENT  WHEELBASE ADJUSTMENT  ROLL CENTER ADJUSTMENT  SQUAT ADJUSTMENT

It is extremely important that the arms move freely on the pivot pins. If they do not, use the #107633 HUDY Arm Reamer to slightly resize the holes in the arms.

TOE-IN ADJUSTMENT  TRACK-WIDTH ADJUSTMENT  WHEELBASE ADJUSTMENT  ROLL CENTER ADJUSTMENT  SQUAT ADJUSTMENT

THICK ALU SHIM  3 x 7.5 x 1.5mm  use only for US FOAM-SPEC

THICK COMPOSITE SHIM  3 x 6 x 2mm

THIN COMPOSITE SHIM  3 x 6 x 1mm

3 x 14mm (EU RUBBER-SPEC)  3 x 16mm (US FOAM-SPEC)

Use these suspension holders for initial assembly

Roll Center Position: -0.75mm
Roll Center Position: 0mm
Roll Center Position: +0.75mm

FRONT LEFT ARM

FRONT RIGHT ARM

It is extremely important that the arms move freely on the pivot pins. If they do not, use the #107633 HUDY Arm Reamer to slightlyresize the holes in the arms.

THICK ALU SHIM  3 x 7.5 x 1.5mm  use only for US FOAM-SPEC

THIN BLACK STEEL SHIM  3 x 7.5 x 0.75mm  use only for US FOAM-SPEC

Used only for US FOAM-SPEC

3 x 7.5 x 1.5mm

3 x 6 x 2mm

3 x 6 x 1mm

3 x 14mm (EU RUBBER-SPEC)  3 x 16mm (US FOAM-SPEC)

Rear Left Arm

Front Left Arm

Front Right Arm

It is extremely important that the arms move freely on the pivot pins. If they do not, use the #107633 HUDY Arm Reamer to slightly resize the holes in the arms.

Roll Center Position: -0.75mm
Roll Center Position: 0mm
Roll Center Position: +0.75mm
### 3. CENTRAL TRANSMISSION

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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<tr>
<td>30 2024-O</td>
<td>T3 ALU UPPER CLAMP FOR BULKHEADS - ORANGE</td>
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<td>30 2069</td>
<td>T3 COMPOSITE LAYSHAFT BEARING SUPPORT SHIM (2)</td>
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<td>30 2077</td>
<td>SET OF COMPOSITE HUBS +1MM FOR BULKHEADS (4+2) (OPTION)</td>
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<td>30 2078</td>
<td>SET OF COMPOSITE HUBS FOR BULKHEADS (4+2)</td>
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<td>30 2087</td>
<td>SHOCK TOWER FRONT 3.0MM GRAPHITE - V2</td>
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<tr>
<td>30 3089</td>
<td>T3 SHOCK TOWER REAR 3.0MM GRAPHITE</td>
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<tr>
<td>30 5003</td>
<td>ALU BALL DIFFERENTIAL 34T + 38T PULLEY - 7075 T6 - SET</td>
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<td>30 5188</td>
<td>COMPOSITE SOLID AXLE 38T - SET</td>
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<td>30 5211-K</td>
<td>ALU SOLID LAYSHAFT - BLACK</td>
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<td>HIGH-SPEED BALL-BEARING 5x10x4 RUBBER SEALED (2)</td>
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<td>E-CLIP 5 (10)</td>
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<td>98 1212</td>
<td>PIN 2x12 (10)</td>
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<td>30 5882</td>
<td>OFFSET SPUR GEAR 112T / 64 (OPTION)</td>
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<tr>
<td>30 5884</td>
<td>OFFSET SPUR GEAR 114T / 64 (OPTION)</td>
</tr>
<tr>
<td>30 5886</td>
<td>OFFSET SPUR GEAR 116T / 64 (OPTION)</td>
</tr>
<tr>
<td>30 5888</td>
<td>OFFSET SPUR GEAR 118T / 64 (OPTION)</td>
</tr>
<tr>
<td>30 5880</td>
<td>OFFSET SPUR GEAR 120T / 64 (OPTION)</td>
</tr>
<tr>
<td>96 6110</td>
<td>E-CLIP 5 (10)</td>
</tr>
<tr>
<td>98 1212</td>
<td>PIN 2x12 (10)</td>
</tr>
</tbody>
</table>

**T3 MOUNTS:**
- 30 5188 (EU RUBBER-SPEC) (10)
- 30 5188 (US FOAM-SPEC) (10)
### 3. CENTRAL TRANSMISSION

**Gearing Adjustment**

| 902304 | SH M3x4 965050 C5 981212 P 2x12 940510 BB 5x10x4 |

**Spur Gears**

| #305778 | OFFSET SPUR GEAR 78T / 48P |
| #305781 | OFFSET SPUR GEAR 81T / 48P |
| #305784 | SPUR GEAR 84T / 48P |
| #305787 | SPUR GEAR 87T / 48P |
| #305874 | OFFSET SPUR GEAR 104T / 64P |
| #305876 | OFFSET SPUR GEAR 106T / 64P |
| #305878 | OFFSET SPUR GEAR 108T / 64P |
| #305880 | OFFSET SPUR GEAR 110T / 64P |
| #305882 | OFFSET SPUR GEAR 112T / 64P |
| #305884 | OFFSET SPUR GEAR 114T / 64P |
| #305886 | OFFSET SPUR GEAR 116T / 64P |

**Setup Book**

**Gearing Adjustment**

- US FOAM-SPEC kit contains a front ball differential.
- EU RUBBER-SPEC kit contains a front composite solid axle.

---

**ALTERNATIVE 5-cell or 6-cell Battery Pack**

- BEARING OIL (HUDY #106230)

**ALTERNATIVE LiPo Battery Pack**

- BEARING OIL (HUDY #106230)

---

**Important!**

- ALTERNATIVE for 5-cell or 6-cell battery pack.
- NOTE ORIENTATION OF DIFFS AND BELTS

---

**WARNING!**

- #305104 XRAY Multi-Diff™ can not be used with LiPo Battery Pack alternative.

---

**Important!**

- ALTERNATIVE for LiPo battery pack.
- NOTE ORIENTATION OF DIFFS AND BELTS

---

See page 31 for more information about balancing the car.
3. CENTRAL TRANSMISSION

**FRONT BELT TENSION ADJUSTMENT**
Front diff upper position is recommended for tight and technical carpet tracks. The upper position improves handling in chicanes as it provides more traction, increased steering and makes the car easier to drive.

**REAR BELT TENSION ADJUSTMENT**
Rear diff upper position is recommended for tight and technical carpet tracks. The upper position improves handling in chicanes as it provides more traction, increased steering and makes the car easier to drive.

**INITIAL POSITION EU RUBBER-SPEC**
- Place tab in this top notch

**INITIAL POSITION US FOAM-SPEC**
- Place tab in this bottom notch

**NOTE ORIENTATION**
- IMPORTANT!
  - Tighten the M3x6 screws carefully so the ball-bearing will move freely but without play.

**TO LOOSEN FRONT BELT:**
- Rotate both front nylon hubs in arrow direction (A)

**TO TIGHTEN FRONT BELT:**
- Rotate both front nylon hubs in arrow direction (B)

**TO LOOSEN REAR BELT:**
- Rotate both rear nylon hubs in arrow direction (A)

**TO TIGHTEN REAR BELT:**
- Rotate both rear nylon hubs in arrow direction (B)

**FRONT BELT TENSION ADJUSTMENT**
Front diff lower position is recommended for large open asphalt tracks with long sweepers.

**REAR BELT TENSION ADJUSTMENT**
Rear diff lower position is recommended for large open asphalt tracks with long sweepers.

**FRONT**
- INITIAL POSITION EU RUBBER-SPEC
- PLACE TAB IN THIS BOTTOM NOTCH

**REAR**
- INITIAL POSITION US FOAM-SPEC
- PLACE TAB IN THIS TOP NOTCH

**INITIAL POSITION EU RUBBER-SPEC**
- Place tab in this bottom notch

**INITIAL POSITION US FOAM-SPEC**
- Place tab in this top notch

**IMPORTANT!**
- Tighten the M3x6 screws carefully so the ball-bearing will move freely but without play.

**INITIAL POSITION US FOAM-SPEC**
- Place tab in this top notch

**INITIAL POSITION EU RUBBER-SPEC**
- Place tab in this bottom notch

**NOTE ORIENTATION**
- IMPORTANT!
  - Tighten the M3x6 screws carefully so the ball-bearing will move freely but without play.

**FRONT**
- INITIAL POSITION EU RUBBER-SPEC
- PLACE TAB IN THIS BOTTOM NOTCH

**REAR**
- INITIAL POSITION US FOAM-SPEC
- PLACE TAB IN THIS TOP NOTCH

**INITIAL POSITION EU RUBBER-SPEC**
- Place tab in this bottom notch

**INITIAL POSITION US FOAM-SPEC**
- Place tab in this top notch

**IMPORTANT!**
- Tighten the M3x6 screws carefully so the ball-bearing will move freely but without play.

**INITIAL POSITION EU RUBBER-SPEC**
- Place tab in this bottom notch

**INITIAL POSITION US FOAM-SPEC**
- Place tab in this top notch

**IMPORTANT!**
- Tighten the M3x6 screws carefully so the ball-bearing will move freely but without play.
4. STEERING

**ACKERMANN ADJUSTMENT**

**FRONT TOE-IN ADJUSTMENT**

There are 5 different Ackermann settings possible with the Quick-Saver™

For initial Ackermann setting, use Step 2 (2nd shortest length).

Step 1 gives the most Ackermann and makes the car understeer more into and out of corners. It offers good cornering speed and creates very good traction mainly in chicanes, because the car will be more stable.

We recommend using Step 1 on low-traction carpet tracks with a lot of chicanes.

Step 5 gives the least Ackermann and creates a lot of steering into and out of corners. However, the car is more difficult to drive in chicanes because there is less traction and stability.

We recommend using Step 5 on high-traction asphalt tracks.

**NOTE** position of adjusting points on turnbuckles (towards outside).

Splines for servo on this side (away from linkage).
Install this stand when using the EU Edition car on carpet; the stand will decrease front traction so that the front tires do not overheat too quickly, thus preventing the car from stopping quickly in corners. The stand is not necessary on asphalt tracks because the car will understeer more.

**ALU CHASSIS BRACE**

For super-high traction tracks where tires have a lot of natural traction, we recommend using the optional front brace which will make the car easier to drive with smoother steering.

The brace is also helpful for foam tires because it makes the car turn more smoothly and prevents the car from being nervous (which is typical on high-grip carpet tracks).

There are two positions for the alu brace: forward (1) or rearward (2).

As well, the orientation of the brace depends on the position of the front (long) belt. Always orient the brace so the belt passes beneath the brace without rubbing.

**US FOAM-SPEC**

There are two positions for the alu brace: forward (1) or rearward (2).

As well, the orientation of the brace depends on the position of the front (long) belt. Always orient the brace so the belt passes beneath the brace without rubbing.
5. FRONT & REAR TRANSMISSION

- FRONT & REAR TRANSMISSION
  - FOR CAR USE: 305231-K (US FOAM-SPEC), 305232 (EU RUBBER-SPEC)
  - FOR TRUCK USE: 302373 (US FOAM-SPEC), 302363 (EU RUBBER-SPEC)

- DRIVE SHAFTS
  - 305326 EU RUBBER-SPEC - 52MM - STEEL
  - 305323 (US FOAM-SPEC) - 50MM - STEEL
  - 305322 US FOAM-SPEC - 52MM - ALU
  - 305321 EU RUBBER-SPEC - 52MM - ALU
  - 305320 US FOAM-SPEC - 50MM - ALU

- COMPOSITE ANTI-ROLL BAR HOLDERS - V2
  - 303411

- COMPOSITE C-HUBS
  - LEFT: 302374 (US FOAM-SPEC), 302364 (EU RUBBER-SPEC)
  - RIGHT: 302373 (US FOAM-SPEC), 302363 (EU RUBBER-SPEC)

- COMPOSITE STEERING BLOCKS
  - HARD: 302253 (US FOAM-SPEC)
  - MEDIUM: 302252 (EU RUBBER-SPEC)

- ALU ADJUSTABLE TURNBUCKLE
  - 4x15MM - L/L 1+1
  - 4x10MM - L/L 2+2

- BALL JOINTS
  - 5MM: 302484
  - UNIDIRECTIONAL: 302664

- BALL JOINT 5MM - OPEN (4)
  - 303122-K
  - 303123-K

- ALU STEERING BUSHINGS
  - 2+2

- REAR ANTI-ROLL BAR INCLUDED ONLY IN EU RUBBER-SPEC KITS

- DRIVE SHAFT REPLACEMENT PLASTIC CAP 3.5 MM (4)
  - 305241

- ALU WHEEL HUB - BLACK (2)
  - 305350-K

- HIGH-SPEED BALL-BEARING 5x10x4 RUBBER SEALED (2)
  - 90 2314

- FOR EASY AND COMFORTABLE INSTALLATION OF THE #305241 PLASTIC CAPS USE PLIERS AS SHOWN.

- THE NEW #305241 3.5MM PLASTIC CAPS ARE FOR USE ONLY WITH ALU BALL DIFFS OR ALU BALL DIFFS INCLUDED IN THE KITS.

- USE THE PLASTIC CAPS WITH COMPOSITE SOLID AXLES INCLUDED IN THE KITS.

- DRIVE SHAFTS MAY BE COMBINED. FOR EXAMPLE, YOU MAY USE THE LONGER 52MM SHAFTS IN THE US Foam Spec edition and the standard 50MM shafts in the EU Rubber Spec edition. HOWEVER, WE RECOMMEND USING THE DRIVE SHAFTS THAT ARE INCLUDED IN THE KIT SINCE THE DRIVE SHAFT LENGTHS HAVE BEEN CAREFULLY CHOSEN TO OPTIMIZE SPEED AND EASE OF DRIVING.

- LONGER DRIVE SHAFTS (52MM) MAKE THE CAR EASIER TO DRIVE BECAUSE THEY GIVE MORE TRACTION AND IMPROVE THE SHAFT RESPONSE IN EZ Chicanes. HOWEVER, THE CAR WILL UNDERSTEER MORE THAN WITH SHORTER (50MM) SHAFTS WHICH GIVE A LOT OF STEERING AND IMPROVE THE STABILITY, MAINLY IN CHICANES. HOWEVER, THE CAR WILL UNDERSTEER MORE THAN WITH SHORTER (50MM) SHAFTS WHICH GIVE A LOT OF STEERING AND IMPROVE THE STABILITY, MAINLY IN CHICANES.

- FOR EASY AND COMFORTABLE INSTALLATION OF THE #305241 PLASTIC CAPS USE PLIERS AS SHOWN.
**5. FRONT & REAR TRANSMISSION**

**EU RUBBER-SPEC**

**INITIAL POSITION**
Quick Roll Center™ tabs in upper inner holes

**US FOAM-SPEC**

**INITIAL POSITION**
Quick Roll Center™ tabs in lower outer holes

**DETAIL STEP**
After you tighten the screw into the upright, pull the linkage upward so the ball joint “snaps” onto the pivot ball. The whole assembly should move freely.

**OPTIONAL 1-HOLE REAR UPRIGHTS**
An optional 1-hole rear upright is available for fine tuning. This optional upright may be used on high-traction tracks or tracks with long sweepers, since the position of the center hole will allow faster driving through those corners because of better cornering speed.

"CLICK"
ROLLER CENTER ADJUSTMENT

**EU RUBBER SPEC**

- Quick Roll Center™ tabs in upper inner holes
- **INITIAL POSITION**

**US FOAM SPEC**

- Quick Roll Center™ tabs in lower outer holes
- **INITIAL POSITION**

**DETAIL STEP**

1. After you tighten the screw into the upright, pull the linkage upward so the ball joint “snaps” onto the pivot ball. The whole assembly should move freely.

**RUBBER**

- EU RUBBER SPEC (54 mm)
- L1, L2

**US FOAM**

- US FOAM SPEC (52.1 mm)
- "4L"
When the bars are set, verify that both sides move at the same time. If yes, the bars are set up correctly. If not, make sure that both downstops are the same and that the bar wire is flat.

Only tighten enough to remove excessive free play; anti-roll bar must still move freely.

Wire should be flush with end of pivot ball.
5. FRONT & REAR TRANSMISSION

**REAR ANTI-ROLL BAR (EU RUBBER-SPEC ONLY)**

- Initial position = **MIDDLE** ball
- Use the **INNER** ball on low-traction tracks (mainly low-traction carpet tracks). The car will have more traction & more steering, but will be more difficult to drive because the car will roll more. Recommended on chicane tracks.
- Use the **MIDDLE** ball on low- to medium-traction tracks (asphalt, carpet). The car will have a little less rear traction and the car will roll little less which will make it easier to drive with more cornering speed.
- Use the **OUTER** ball on high-traction tracks (mainly high-traction asphalt tracks). The car will roll even less which will allow the use of more throttle in the corners, however the car will have less traction.

**ASSEMBLY VIEW**

- Only tighten enough to remove excessive free play; anti-roll bar must still move freely.
- Wire should be flush with end of pivot ball.
- When the bars are set, verify that both sides move at the same time. If yes, the bars are set up correctly. If not, make sure that both downstops are the same and that the bar wire is flat.
### 6. SHOCK ABSORBERS

#### XRAY SPRINGS

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Spring Set</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>#308373</td>
<td>C = 2.2</td>
<td>(2)</td>
</tr>
<tr>
<td>#308374</td>
<td>C = 2.4</td>
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<tr>
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<td>C = 2.6</td>
<td>(2)</td>
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<tr>
<td>#308376</td>
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<td>C = 3.0</td>
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<td>#308378</td>
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<td>(2)</td>
</tr>
<tr>
<td>#308379</td>
<td>C = 3.4</td>
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#### SPRING SET (24)

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<tr>
<th>Part Number</th>
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<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>#308390</td>
<td>(14 LB) YELL - SUPER-SOFT</td>
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<td>#308393</td>
<td>(17.5 LB) WHITE - SOFT</td>
<td>(4)</td>
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<tr>
<td>#308395</td>
<td>(22.5 LB) BLUE - SOFT-MEDIUM</td>
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<tr>
<td>#308396</td>
<td>(28 LB) VIOLET - MEDIUM</td>
<td>(4)</td>
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<tr>
<td>#308397</td>
<td>(33 LB) PURPLE - MEDIUM-HARD</td>
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<tr>
<td>#308398</td>
<td>(38 LB) RED - HARD</td>
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#### ADDITIONAL SPRING SET (20)

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<td>#308380</td>
<td>(15 LB) BLUE-GREEN</td>
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<td>#308381</td>
<td>(20 LB) LIGHT-BLUE</td>
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<tr>
<td>#308383</td>
<td>(25 LB) DARK-BLUE</td>
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<tr>
<td>#308384</td>
<td>(30 LB) LIGHT-PURPLE</td>
<td>(4)</td>
</tr>
<tr>
<td>#308385</td>
<td>(35 LB) LIGHT-RED</td>
<td>(4)</td>
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</table>

#### XRAY SELECTED ULTIMATE RACING SPRINGS (24)

<table>
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<tr>
<th>Part Number</th>
<th>Spring Set</th>
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</thead>
<tbody>
<tr>
<td>#308375</td>
<td>XRAY SPRING-SET C = 3.0</td>
<td></td>
</tr>
<tr>
<td>#308376</td>
<td>XRAY SPRING-SET D = 1.8</td>
<td>(30 LB) LIGHT-PURPLE</td>
</tr>
<tr>
<td>#308377</td>
<td>XRAY SPRING-SET D = 1.5</td>
<td>(17.5 LB) WHITE - SOFT</td>
</tr>
</tbody>
</table>

#### SHOCK OIL

- Initial Assembly Alternative
- Alternative

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**Carefully remove the shock pistons from the frame, and remove all excess plastic flash.**
5. SHOCK ABSORBERS

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Follow this tech tip to properly install pivot balls into the top pivot and bottom ball joint.

Parts Needed:
- M3 x 16 SH screw
- M3 shim

Note that the composite parts have two sides, noticeable around the pivot ball hole: one side has a shiny finish, the other side has a regular finish.

1. **SHINY FINISH SIDE**

   Install pivot balls into top pivot or lower ball joint as shown, on the proper sides.

   Note that the lower pivot ball has an extra shoulder.

2. **SHINY FINISH SIDE**

   Ensure pivot balls move freely.

3. **SHINY FINISH SIDE**

   Remove screw and shim.

   Tighten screw until pivot ball snaps into place.

After the shock is assembled you have to set the Shock Rebound.

1. Release the shock composite lower cap.
2. VERY SLOWLY do the following: Fully pull out the shock rod, push it back in fully, and then fully pull it out once more. Repeat this procedure the following number of times to achieve the desired Shock Rebound setting:
   - 10 times - approximately 75% rebound (high rebound - suggested for very low traction track)
   - 15 times - approximately 50% rebound (medium rebound - suggested for standard track)
   - 20 times - approximately 25% rebound (low rebound - suggested for very high traction track)

During the Rebound Adjustment procedure shock oil will leak out of the shock body through the O-ring on the shock rod… this is normal. During the Rebound Adjustment procedure DO NOT open the upper shock cap.

3. After you have set the Rebound Adjustment, re-install the shock lower composite cap.
4. Check the Shock Rebound setting by pushing the shock rod fully into the shock body, releasing it, and observing how far the shock rod extends by itself:
   - * 25% out of the shock body (low rebound)
   - * 50% out of the shock body (medium rebound)
   - * 75% out of the shock body (high rebound).

   If the shock rod extends too much, return to Step 1 and repeat the procedure.

   If the shock rod does not rebound enough, you will have to refill the shock with shock oil, and then repeat the bleeding and Shock Rebound procedures.

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): turn fully CCW, then turn CW by 1 click.
7. FRONT & REAR ASSEMBLY

TECH TIP:
To make the car more stable and easier to drive, move the front shocks forward. Stability increases mainly in chicanes. Note that the car will have less steering into corners.

• Upper mount (shock tower): Add a plastic nut and use a longer screw 3x8mm (NOT INCLUDED) to space the upper end of the shock away from the shock tower.

• Lower mount (lower arm): Add shims and use a longer setscrew 3x10mm (NOT INCLUDED) on the lower arms to space the lower end of the shock away from the arm.
**TECH TIP:**

To make the car more stable and easier to drive, move the rear shocks rearward. Stability increases mainly in chicanes. Note that the car will have less steering into corners.

- **Upper mount (shock tower):** Add a plastic nut and use a longer screw 3x8mm (NOT INCLUDED) to space the upper end of the shock away from the shock tower.
- **Lower mount (lower arm):** Add shims and use a longer setscrew 3x10mm (NOT INCLUDED) on the lower arms to space the lower end of the shock away from the arm.

When using optional 2-hole arms and optional 1-hole rear upright, use the second hole from the bottom on the shock tower.

**802306** SH M3x6

**902308** SH M3x8

**981212** PIN 2x12 (10)

**308132** REAR BODY MOUNT SET 6MM

**30 8301** T2 XRAY SHOCK ABSORBER-SET 4-STEP - SHORT (2)

**30 8306** XRAY T2’008 ALU SHOCK ABSORBER-SET (2) (OPTION)
For improved weight balance, we recommend using a narrow, light servo.

For 6-cell or 5-cell battery configuration:
- 306131

For LiPo battery configuration:
- 306182

For 6-cell or 5-cell battery configuration:
- 306131 for 6-cell or 5-cell battery configuration

For improved weight balance, we recommend using a narrow, light servo.

**IMPORTANT!**
When adjusting steering on the radio, it is recommended to use full steering adjustment in order to get the best steering from the car. It is important to verify that the steering block does not touch the C-hub, that would lead to chassis tweak due to extra servo strain.
When installing the motor on the bulkhead, rotate the spur gear so the motor screw can be installed through a hole in the spur gear. See the detail image below.

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.

Suggested to use 3x2.5mm set screw

For tightening and loosening the pinion set screw, use the indicated chassis hole.

IMPORTANT!
Check page 31 before taping the electronics to the chassis.

BATTERY ASSEMBLY CONFIGURATION

LIPO ALTERNATIVE

Use plastic nuts from the Last Aid bag.

6-CELL ALTERNATIVE

IOP 20
8. FINAL ASSEMBLY

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

**US Foam-Spec Notice:**

Some foam wheels may be slightly wider and may touch the front steering blocks. To correct this, we recommend grinding the inside edge of the wheel using a tire truer and a file. Make sure that both front tires/wheels are set to the same width, and that there are no rough edges.

Also, make sure that the front wheels and tires do not touch the steering blocks when the steering is turned, and that the wheels and tires do not touch the shocks.

We recommend using #107870 HUDY Fibre Reinforced Tape or the optional battery holders:

- #306163-K XRAY Graphite Battery Holder (for 6-cell chassis) - Black
  
  The XRAY Graphite Battery Holder can be used for LiPo as well. However, depending on the height of the LiPo batteries additional shims may have to be mounted below the stands.

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

**5-cell or 6-cell Battery Pack**

When using NiMH batteries, put the differentials and belts in the directions shown below. To balance the car, push the batteries inward towards the car centerline, and push the electronics outward toward the chassis edge.

You can check the balance on HUDY balancing tools #107880.

**ALTERNATIVE**

**LiPo Battery Pack**

When using LiPo batteries, the car balance is different than with NiMH batteries because LiPo batteries are much lighter. Therefore it is recommended to switch differential and belt positions. To balance the car, push the LiPo battery pack outward towards the chassis edge, and push the electronics inward toward the car centerline.

Approximately 30g of additional weight is needed to perfectly balance the car, depending on the electronics used.

**NOTE**

These battery alternatives can also be switched, meaning that you can use NiMH batteries with LiPo as alternative (and vice-versa).