BEFORE YOU START

The X10 is a high-competition, high-quality, 1/10 pan car intended for persons aged 16 years and older with previous experience building and operating RC model racing cars. This is not a toy; it is a precision racing model. This model racing car is not intended for use by beginners, inexperienced customers, or by children without direct supervision of a responsible, knowledgeable adult. If you do not fulfill these requirements, please return the kit in unused and unassembled form back to the shop where you have purchased it.

Before building and operating your X10, YOU MUST read through all of the operating instructions and instruction manual and fully understand them to get the maximum enjoyment and prevent unnecessary damage. Read carefully and fully understand the instructions before beginning assembly. Make sure you review this entire manual, download and use set-up book from the web, and examine all details carefully. If for some reason you decide The X10 is not what you wanted or expected, do not continue any further. Your hobby dealer cannot accept your X10 kit for return or exchange after it has been partially or fully assembled.

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

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 website 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

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

Contains:

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

WARNING: This product contains a chemical known to the state of California to cause cancer and birth defects or other reproductive harm.

CAUTION: CANCER HAZARD

Contains lead, a listed carcinogen. Lead is harmful if ingested. Wash thoroughly after using. DO NOT use product while eating, drinking or using tobacco products. May cause chronic effects to gastrointestinal tract, CNS, kidneys, and blood. MAY CAUSE BIRTH DEFECTS.

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

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

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

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 R/C 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 R/C model gets wet as may cause short circuit.

• Please dispose of batteries responsibly. Never put batteries into fire.

R/C & BUILDING TIPS

• Make sure all fasteners are properly tightened. Check them periodically.

• Make sure that chassis screws do not protrude from the chassis.

• For the best performance, it is very important that great care is taken to ensure the free movement of all parts.

• Clean all ball-bearings so they move very easily and freely.

• Tap or pre-thread the plastic parts when threading screws.

• Self-tapping screws cut threads into the parts when being tightened. Do not use excessive force when tightening the self-tapping screws because you may strip out the thread in the plastic. We recommended you stop tightening a screw when you feel some resistance.

• Ask your local hobby shop for any advice.

WARRANTY

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

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

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

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

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

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.

X10’18
**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)
- Cut
- Apply CA glue
- Apply oil
- Apply grease
- Ensure smooth non-binding movement
- Tighten screw gently
- Detail view
- Assembly view
- Follow Set-Up Book

**TOOLS REQUIRED**

- **HUDY TOOLS:**
  - Allen: 1.5mm
  - Allen: 2.0mm
  - Allen: 2.5mm
  - Allen: 3.0mm
  - Socket: 5.5mm
- Turnbuckle Wrench 4mm (HUDY #181040)
- Turnbuckle Wrench 3mm (HUDY #181030)
- Scissors (HUDY #188990)
- Combination Pliers (HUDY #189020)
- Side Cutters (HUDY #189010)
- Pocket Hobby Knife (HUDY #188981)
- Sandpaper
- Reamer (HUDY #107600) or (HUDY #107601)
- HUDY Premium Silicone Oil 700cSt (#106370)
- Oil 10000cSt (#106510)
- Side Cutters
- Combination Pliers
- Side Cutters
- Pocket Hobby Knife
- Sandpaper
- Reamer
- HUDY Premium Silicone Oil 700cSt (#106370)
- Oil 10000cSt (#106510)
- Side Cutters
- Combination Pliers
- Side Cutters
- Pocket Hobby Knife
- Sandpaper
- Reamer

**EQUIPMENT INCLUDED**

- Diff Grease (HUDY #106211)
- SAMPLE OF OPTIONAL PARTS
  - #37XXX OPTION 1
  - #37XXX OPTION 2
  - #37XXX OPTION 3
- XRAY offers wide range of optional tuning parts which are listed in tables like these. Please refer to the exploded view of each main section to verify which part is included in the kit while all other parts are available only as optional parts and must be purchased separately.

**EQUIPMENT REQUIRED**

- Transmitter
- Receiver
- Steering Servo
- Electric Motor & Pinion Gear and Set-screw
- Bearing Oil (HUDY #106230)
- Speed Controller
- Tire Truer (HUDY #102003)
- Body Shell
- LiPo Battery
- Lexan™ Paint
- Battery Charger
- Fibre Tape (HUDY #107870)
- Double-sided Tape (HUDY #107875)
- Tires
PREPARE ALL GRAPHITE PARTS
To protect and seal edges of graphite parts, sand edges smooth and then apply CA glue.

Use fine sandpaper to sand smooth the edges of all graphite parts.

Apply CA glue to all edges of the graphite parts.
1. FRONT SUSPENSION

**UPPER SUSPENSION ARMS**

- #373120-O: ALU SHIM 5.3x7.8x0.5MM - ORANGE (10)
- #371013: X10/18 CHASSIS - 2.5MM GRAPHITE
- #371050: X10 GRAPHITE 2.5MM MOUNTING PLATE RISERS (2)
- #371061: X10 GRAPHITE 2.5MM ARM MOUNT PLATE
- #372011: COMPOSITE FRONT UPPER ARM MOUNT - RIGHT - HARD
- #372021: COMPOSITE FRONT UPPER ARM MOUNT - LEFT - HARD
- #371212: SUSPENSION ARM - FRONT LOWER - RIGHT - HARD
- #371222: SUSPENSION ARM - FRONT LOWER - LEFT - HARD
- #371311: FRONT UPPER SUSPENSION ARM & BALL JOINT - HARD
- #372131: COMPOSITE FRONT UPPER BALL JOINT (2)
- #372111: COMPOSITE FRONT STEERING BLOCK - RIGHT - HARD
- #372221: COMPOSITE STEERING BLOCK - LEFT - HARD
- #372293: STEEL SHIM 0.4MM - BLACK (2)
- #372294: STEEL SHIM 0.6MM - GOLD (2)

**LOWER SUSPENSION ARMS**

- #373212-R: COMPOSITE HOLLOW BALL JOINT 6.0MM (2)
- #373211-R: COMPOSITE HOLLOW BALL JOINT 5.2MM (2)
- #373121-R: COMPOSITE HOLLOW BALL JOINT 4.0MM (2)
- #373011-R: COMPOSITE HOLLOW BALL JOINT 3.6MM (2)
- #372011-R: COMPOSITE HOLLOW BALL JOINT 3.2MM (2)
- #371011-R: COMPOSITE HOLLOW BALL JOINT 2.8MM (2)
- #370911-R: COMPOSITE HOLLOW BALL JOINT 2.5MM (2)

**UPPER ARM MOUNTS**

- #373120-O: COMPOSITE UPPER ARM MOUNT - RIGHT - HARD
- #373121-O: COMPOSITE UPPER ARM MOUNT - LEFT - HARD

**ALU ECCENTRIC BUSHINGS**

- #372316-0: ALU ECCENTRIC BUSHING 0.0MM - ORANGE (2)
- #372317-0: ALU ECCENTRIC BUSHING 0.5MM OPTION
- #372318-0: ALU ECCENTRIC BUSHING 1.0MM OPTION

**M3 NUTS**

- #960030: STEEL SILVER INCLUDED
- #960031: ALU SILVER OPTION
- #296530-O: ALU ORANGE OPTION

**UPPER ARM POSITION ADJUSTMENT SHIMS**

The shims influence the camber gain change.
- **MORE shims** = less camber gain, reduced initial steering, reduced steering sensitivity (less twitchy).
- **LESS shims** = more camber gain, increased initial steering, increased steering sensitivity.

Use same shim thickness on both left & right sides.

**ALU SHIM**

- #303121-O: ALU SHIM 3x4x0.5MM - ORANGE (10)
- #371013: ALU SHIM 3x4x0.5MM - C = 3.5 - GOLD (2)
- #372111: ALU SHIM 3x4x0.5MM - BLACK (2)
- #372293: ALU SHIM 3x4x0.5MM - STAINLESS (2)
- #372294: ALU SHIM 3x4x0.5MM - GOLD (2)

**COMPOSITE BALL JOINT**

- #373240: COMPOSITE PIVOTBALL UNIVERSAL 6.0 MM (2)
- #373241: COMPOSITE PIVOTBALL UNIVERSAL 6.0 MM (2)

**PIVO TBALL UNIVERSAL**

- #373241: PIVOTBALL UNIVERSAL 6.0 MM (2)

**ADJUSTMENT SHIMS**

- #372316-O: ALU ECCENTRIC BUSHING + CASTER CLIPS (2)
- #372620: ADJ. TURNBUCKET MXA7 17 MA - HUDY SPRING STEEL™ (2)
- #372650: BALL-END 4.2MM - THREADED - HUDY SPRING STEEL™ (2)
- #372316-O: ALU SHIM 5.3x7.8x0.5MM - ORANGE (10)
- #372317-O: ALU SHIM 5.3x7.8x0.5MM - HARD (10)
- #372318-O: ALU SHIM 5.3x7.8x0.5MM - GRAPHITE (10)

**Pivot Points**

- #372292: STEEL SHIM 0.2MM - SILVER (2)
- #372293: STEEL SHIM 0.4MM - BLACK (2)
- #372294: STEEL SHIM 0.6MM - GOLD (2)

**Pivot Pins**

- #372280: KING PIN (2)
- #372290: ALU SHIM 3.0x4x0.5 (4)
- #372292: STEEL SHIM 0.2MM - SILVER (2)
- #372293: STEEL SHIM 0.4MM - BLACK (2)

**Front Wheel Axle**

- #372290: FRONT WHEEL AXLE - HUDY SPRING STEEL™ (2)

**Upper Pivot Point**

- #372290: FRONT UPPER PIVOT PIN 2x31MM (2)
1. FRONT SUSPENSION

The flat of the nut must be **PARALLEL** to the lower arm.

**NOTE ORIENTATION**

If the arm does not have enough play, remove the clips and thin the clips slightly with sandpaper. The arms must have free movement and not bind.

**NOTE ORIENTATION**

The thickness of shims changes the steering linkage angle. Thicker shims gives decreased in-corner steering, but car becomes easier to drive.

- #303122-O SHIM 3x6x1
- #303123-O SHIM 3x6x2

**UPPER SUSPENSION ARMS**

- #372130 MEDIUM OPTION
- #372131 HARD INCLUDED

**M3 NUTS**

- #960030 STEEL SILVER INCLUDED
- #960031 ALU SILVER OPTION
- #296530-O ALU ORANGE OPTION
The thickness of shims used affects the ride height of the car, so determine the proper amount of shimming based on tire diameter.

**RIDE HEIGHT ADJUSTMENT**

**INITIAL SETTING**
- above upper arm (0.5mm)
- above steering block (1.3mm)
- below steering block (0.2mm)

**TIP**
Arm Reamer 3.0mm

The different holes for suspension mounting allows for wheelbase adjustment.
3. REAR SUSPENSION

M3 NUTS
- #960030 STEEL SILVER INCLUDED
- #960031 ALU SILVER OPTION
- #296530-O ALU ORANGE OPTION

SIDE SPRINGS
- #373584 C=0.6 SILVER OPTION
- #373585 C=0.9 GOLD OPTION
- #373586 C=1.2 BLACK INCLUDED
- #373587 C=1.5 SILVER OPTION
- #373588 C=1.8 GOLD OPTION

303241 BALL UNIVERSAL 5.8 MM HEX (4)
306219 COMPOSITE SET OF SERVO SHIMS (4)
371076 X10’18 REAR BRACE - GRAPHITE 2.5MM
371095 X10’18 GRAPHITE PLATE FOR MOUNTS & ANTENNA HOLDER
371155 X10’18 GRAPHITE 2.5MM REAR POD LOWER PLATE
371190 COMPOSITE POD LINK (2)
372650 BALL-END 4.2MM THREADED - HUDY SPRING STEEL™ (2)
372662 COMPOSITE BALL-JOINT 4.2 MM (4)
373014 ALU REAR BULKHEAD - MOTOR (RIGHT)
373024 ALU REAR BULKHEAD - LEFT
373035 X10’18 GRAPHITE REAR BULKHEAD BRACE
373066 ALU PIVOT BALL
373073-O ALU REAR BRACE MOUNT 16MM - ORANGE (2)
373094 LOWER & UPPER PIVOT BRACE - LOW ROLL-CENTER - HARD - V3
373547 X10 REAR POD UPPER PLATE - GRAPHITE 2.5MM
373586 SIDE SPRING C=1.2 - BLACK (2)

COMPOSITE SPRING HOLDER (2)
COMPOSITE SIDE SPRING HOLDER (2)
COMPOSITE ANTENNA MOUNT
ALU MOUNT 29.5MM - ORANGE (2)
SIDE LINKAGE TUBE (2)
COMPOSITE SIDE LINKAGE SHAFT (2)

HEX SCREW SB M3x8 (10)
HEX SCREW SH M2.5x8 (10)
HEX SCREW SH M3x6 (10)
HEX SCREW SH M3x8 (10)
HEX SCREW SHF M3x6 (10)
HEX SCREW SHF M3x10 (10)
NUT M3 (10)
NUT M3 (10)
**3. REAR SUSPENSION**

- **NOTE ORIENTATION**
  - Do not tighten fully, pivotballs must turn freely.

- **Lightly tighten the screws so there is no free play, but do not overtighten otherwise the ball will not move freely.**

- **Ensure free, smooth movement without excessive freeplay.**

- **3x10mm**
  - Do not tighten fully.

- **M3 NUTS**
  - Steel Silver Included
  - Alu Silver Option
  - Alu Orange Option

- **3x6mm**
  - SH M3x6
  - SFH M3x6

- **3x10mm**
  - SFH M3x10

- **SH M2.5x8**
  - 902258

- **SH M3x6**
  - 902306

- **M3 NUTS**
  - 960030

- **Do not tighten fully, pivotballs must turn freely.**

- **Alu Orange Option**
  - 960030-0

- **2x**

**XRAY**
3. REAR SUSPENSION

OUTER POSITION - (INITIAL SETTING) the side link is straight, easier to drive
INNER POSITION - the side link is angled, increased in-corner steering

NOTE ORIENTATION

TIGHTEN FULLY

Ensure free, smooth movement

NOTE ORIENTATION

SIDE SPRINGS

<table>
<thead>
<tr>
<th>Side Springs</th>
<th>C</th>
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<th>Option</th>
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<td>#373588</td>
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NOTE ORIENTATION

REAR BRACE

DETAIL

POD Linkage position

0.5mm

"CLICK"

NOTE ORIENTATION

REAR SUSPENSION

903306 SFR 6x6

901308 SR 6x6

960030 N M3

SIDE SPRINGS

OPTION

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NOTE ORIENTATION

REAR

M3 NUTS

OPTION

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<td>ORANGE</td>
<td>OPTION</td>
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3. REAR SUSPENSION

**ALTERNATIVE 1** SHORT SHOCK REARWARD MOUNT POSITION

**ALTERNATIVE 2** LONG SHOCK FORWARD MOUNT POSITION

"SHORT SHOCK" INITIAL SETTING

"LONG SHOCK"

---

Add oil in each slot of the COMPOSITE side shock tubes.

**NOTE:**
Add oil only in the slots, not on the whole tube.
After assembling the side tubes, check for smooth operation.
It is very important to re-oil the side tubes, at least once per race day.
You may use different oil thicknesses depending on track conditions.

**TIP**
- For HIGH grip: use SOFTER oils
- For LOW grip or ASPHALT: use HARDER oils
### 4. BALL DIFFERENTIAL

<table>
<thead>
<tr>
<th>SPUR GEARS</th>
<th>M3 NUTS</th>
<th>COMPOSITE SPUR GEAR - 96T / 64P</th>
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<td>#375092</td>
<td>#375896</td>
<td>NUT M3 4/6 / 64P INCLUDED.</td>
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<th>ALU SHIM 3x5x1MM - ORANGE (10)</th>
<th>ALU SHIM 3x5x0.5MM - ORANGE (10)</th>
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<td>ALU UPPER CLAMP FOR BALL-BEARING</td>
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<th>STEEL REAR AXLE SHAFT - Hudy Spring Steel™</th>
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<th>D-LOCK DIFF PLATE (2)</th>
<th>ALU HEX SCREW M3x10 (6)</th>
<th>COMPOSITE SPUR GEAR - 96T / 64P</th>
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- **Option**

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<tr>
<th>COMPOSITE SPUR GEAR - 96T / 64P</th>
<th>ALU SHIM 3x5x0.5MM - ORANGE (10)</th>
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<th>COMPOSITE SPUR GEAR - 96T / 64P</th>
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<th>ALU DIFF HUB - ORANGE</th>
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</thead>
<tbody>
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</table>
**4. BALL DIFFERENTIAL**

Depending on the tires and their diameter, there are three ways to mount the alu upper clamp:

1. Shims above clamp.
2. Shims between clamp and bulkhead.
3. Shims between clamp and bulkhead, clamp turned upside-down.

The shim thickness affects the ride height of the car, so determine the proper amount of shimming based on tire diameter.

**IMPORTANT:** Always use the same thickness of shims on both left & right sides.

Use additional shims to widen the rear track-width. Use the same shims on both sides. For initial assembly use 6.4x8.4x1mm shims.

The axle must have a VERY small amount of side play. If there is no side play, the axle may bind in the ball-bearings and damage the bearings.

**SPUR GEARS**

- #375872 72T / 64P OPTION
- #375875 75T / 64P OPTION
- #375876 76T / 64P OPTION
- #375878 78T / 64P OPTION
- #375880 80T / 64P OPTION
- #375896 96T / 64P INCLUDED

**DIFFERENTIAL**

This nut affects the tightness and stiffness of the rear differential. Tighten the nut gently so the diff does not slip under power, but do not overtighten or the diff balls and/or plates may be damaged.

**Diff Grease** (HUDY #106211)

**Bearing Oil** (HUDY #106230)

**Diff Grease** (HUDY #106220)

**Diff Grease** (HUDY #106230)
5. SHOCK ABSORBER

Carefully remove the shock piston from the frame, and remove all excess plastic flash.

**SHOCK SPRINGS**

<table>
<thead>
<tr>
<th>Hudy Shock Oils</th>
<th>Option</th>
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</thead>
<tbody>
<tr>
<td>#106315 10cSt</td>
<td>SILVER</td>
</tr>
<tr>
<td>#106310 15cSt</td>
<td>GOLD</td>
</tr>
<tr>
<td>#106320 20cSt</td>
<td>1.0-1.9</td>
</tr>
<tr>
<td>#106325 25cSt</td>
<td>2.0-2.5</td>
</tr>
<tr>
<td>#106330 30cSt</td>
<td>2.1</td>
</tr>
<tr>
<td>#106335 35cSt</td>
<td>2.1-2.5</td>
</tr>
<tr>
<td>#106340 40cSt</td>
<td>2.5</td>
</tr>
<tr>
<td>#106345 45cSt</td>
<td>3.0-3.5</td>
</tr>
<tr>
<td>#106350 50cSt</td>
<td>3.5-4.0</td>
</tr>
<tr>
<td>#106355 55cSt</td>
<td>4.0-4.5</td>
</tr>
<tr>
<td>#106360 60cSt</td>
<td>4.5-5.0</td>
</tr>
<tr>
<td>#106365 65cSt</td>
<td>5.0-5.5</td>
</tr>
<tr>
<td>#106370 70cSt</td>
<td>5.5-6.0</td>
</tr>
<tr>
<td>#106375 75cSt</td>
<td>6.0-6.5</td>
</tr>
<tr>
<td>#106380 80cSt</td>
<td>6.5-7.0</td>
</tr>
<tr>
<td>#106390 90cSt</td>
<td>7.0-7.5</td>
</tr>
<tr>
<td>#106410 100cSt</td>
<td>7.5-8.0</td>
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<tr>
<td>#106420 200cSt</td>
<td>8.0-8.5</td>
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**SHOCK SPRINGS**

<table>
<thead>
<tr>
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<tr>
<td>#378092 1.5 SILVER</td>
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<td>#378093 2.0 GOLD</td>
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<tr>
<td>#378094 2.1 BLACK</td>
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<td>#378095 2.0-2.5 BLACK</td>
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<tr>
<td>#378096 2.1-2.5 BLACK</td>
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**HUDDY SHOCK OILS**

<table>
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<tbody>
<tr>
<td>#378071-O ALU SHOCK ADAPTER - ORANGE</td>
</tr>
<tr>
<td>#378070-O ALU SHOCK SPRING COLLAR - ORANGE</td>
</tr>
<tr>
<td>#378060 ALU SHOCK SHAFT</td>
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<tr>
<td>#378050-O ALU SHOCK BODY CAP - UPPER - ORANGE</td>
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<tr>
<td>#378040-O ALU SHOCK ADJUSTABLE COLLAR - ORANGE</td>
</tr>
<tr>
<td>#378030-O ALU SHOCK BODY CAP - LOWER - ORANGE</td>
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<tr>
<td>#378020 ALU THREADED SHOCK BODY - HARDCOATED</td>
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<tr>
<td>#378011 COMPOSITE SHOCK PARTS - FRAME</td>
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<tr>
<td>#378001 SHOCK ABSORBER SET</td>
</tr>
<tr>
<td>#378000 SHOCK RUBBER MEMBRANE (2)</td>
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<tr>
<td>#378003 SHOCK SPRING - GOLD</td>
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<tr>
<td>#378002 SHOCK ADJUSTABLE SHOCK SPRING</td>
</tr>
<tr>
<td>#965015 E-CLIP 1.5 (10)</td>
</tr>
<tr>
<td>#950150 E-CLIP 2.0 (10)</td>
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</table>
**5. SHOCK ABSORBER**

**DEFAULT SHOCK SETTING FOR CENTER SHOCK ABSORBER** Follow the steps below to set the shock.

1. **Extend the shock shaft completely.** Fill the shock body with the shock oil.
2. **Move the shock shaft up and down a few times to release the air bubbles trapped beneath the piston.**
3. **Orient the filled shock vertically for several minutes with the shock shaft fully extended.** The remaining air bubbles will release.
4. **Install the shock membrane into the groove in the upper shock cap.**
5. **Gently place the shock cap assembly onto the filled shock body.** Excess oil will spill from the shock. Screw the shock cap onto the body by only a few turns, approx. 50%. Excess oil will flow through the hole in the shock cap.
6. **Gently push the shock shaft completely into the shock body.** Excess oil will flow through the hole in the shock cap.
7. **Keep the shock shaft pushed in the shock body and tighten the shock cap completely.** Tighten the cap fully but do not overtighten or the rubber membrane may be damaged. Make sure that there is no oil leakage after the cap is tightened.

**Oil 700cSt**

**UP & DOWN**

**HALF TIGHTEN**

**50%**

**TIGHTEN FULLY**

**100%**

**5. SHOCK ABSORBER**

**Oil 700cSt**

**UP & DOWN**

**HALF TIGHTEN**

**50%**

**TIGHTEN FULLY**

**100%**
5. SHOCK ABSORBER

ALTERNATIVE 1 - SHORT SHOCK
(INITIAL SETTING)

Press the collar FULLY onto the end of the shock shaft and tighten the M3x3 setscrew.

For initial setting, thread fully.

SHORT SHOCK:
Shock is built WITHOUT adaptor.
Front mount is REARWARD.
Improves steering response, quicker direction changes.

LONG SHOCK:
Shock is built WITH adaptor.
Front mount is FORWARD.
Improves driveability over bumps, improves on-power traction.

ALTERNATIVE 2 - LONG SHOCK

For the LONG shock alternative, use the shock adaptor.

Press the collar FULLY onto the end of the shock shaft and tighten the M3x3 setscrew.

DOWNSTOP ADJUSTMENT
The length of the shock absorber affects the amount of rear downstop. To adjust, thread the ball-joint on or off the threaded post on the bottom spring cap.
6. FINAL ASSEMBLY

- 301159-0: ALU COUNTERSINK SHIM - ORANGE (4)
- 305968-306000: PINION GEAR HARD COATED 18-50T/64P (OPTION)
- 306200-0: ALU SERVO MOUNT - ORANGE (2)
- 306219: COMPOSITE SET OF SERVO SHIMS (4)
- 309402: BODY CLIP FOR 6MM BODY POST (4)
- 371040: X10 GRAPHITE 2.5MM FRONT BUMPER & SHIMS - V2
- 371225: X10 FOAM BUMPER
- 371325: X10 COMPOSITE BODY POST (2)
- 371345: COMPOSITE SHIM FOR BODY POST (2)
- 371349: GRAPHITE 2.5MM SHIM FOR 4MM BODY POST (2)
- 372503: COMPOSITE SERVO SAVER - X-STIFF - SET - V2
- 372615-0: ALU ADJ. TURNBUCKLE M3x50 MIN - SWISS 7075 T6 - ORANGE (2)
- 372650: BALL-END 4.2MM - THREADED - HUDY SPRING STEEL™ (2)
- 372661: COMPOSITE STEERING BALL-JOINT 4.2 MM OPEN (4)
- 375390: ALU HEX SCREW M3x8 FOR REAR WHEELS (6)
- 376130: COMPOSITE Lipo BATTERY BACKSTOP (2)
- 376310: FIBERGLASS SOLID ANTENNA ROD + CAP
- 376310: COMPOSITE HEX SCREW M3x3 (10)
- 376310: COMPOSITE HEX SCREW M3x8 (10)
- 376310: COMPOSITE HEX SCREW M3x10 (10)
- 376310: COMPOSITE HEX SCREW M3x12 (10)
- 901303: BALL-BEARING 1/8” x 5/16” x 9/64” FLANGED (2)
- 902308: NUT M3 (10)
- 902310: PIN 2x12 (10)
6. FINAL ASSEMBLY

ALTERNATIVE 1 - STANDARD size servo
(INITIAL SETTING)

For basic set-up use 3x6x2mm composite shims.
For STANDARD size servo use the INCLUDED #306200-O alu servo mounts.

ALTERNATIVE 2 - MID size servo
(OPTIONAL)

For basic set-up use 3x6x2mm composite shims.
For MID size servo use the OPTIONAL #376255-O alu servo mounts.

INITIAL SETTING

Note the orientation of servo saver when servo is in neutral.

Futaba

Hitec

KO Propo

NOTE ORIENTATION

Use the adapter that matches your servo.

MID size servo
(NOT INCLUDED)

STANDARD size servo
(NOT INCLUDED)

SERVO SCREW (NOT INCLUDED)

NOTE ORIENTATION

FINAL ASSEMBLY

STANDARD size servo
(NOT INCLUDED)

MID size servo
(NOT INCLUDED)

THREAD LOCK

FORWARD

REAR
The bodies for 1/10 pan cars are available in different lengths. The bumper position depends on the length of the body.
Adjust the gear mesh so there is appropriate space between the spur gear and pinion teeth. There should be a very small amount of free play.

### PINION GEARS ALU HARD-COATED

<table>
<thead>
<tr>
<th>Model</th>
<th>Teeth</th>
<th>Pitch Diameter</th>
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<tbody>
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</table>
6. FINAL ASSEMBLY

**ELECTRONICS CONFIGURATION:**

**REARWARD POSITION (INITIAL POSITION)**

When inserting or removing batteries, remove graphite plate for mounts and antenna holder.

- **Receiver** (NOT INCLUDED)
- **Speed Controller** (NOT INCLUDED)
- **Double-sided Tape**
  - (HUDY #107875)
  - (NOT INCLUDED)

**FORWARD POSITION**

When inserting or removing batteries, remove graphite plate for mounts and antenna holder.

- **Receiver** (NOT INCLUDED)
- **Speed Controller** (NOT INCLUDED)
- **Double-sided Tape**
  - (HUDY #107875)
  - (NOT INCLUDED)

Battery Pack
- (NOT INCLUDED)
Gently tighten the wheel nuts so the wheel turns freely, but without excessive axial play.