**BEFORE YOU START**

The NT1 is a high-performance, high-quality, 1/10 scale nitro 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 NT1, YOU MUST read through all of the operating instructions and instruction manual and fully understand them to get the maximum enjoyment and prevent unnecessary damage.

**CUSTOMER SUPPORT**

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

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

**SAFETY PRECAUTIONS**

**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

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.

**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. Use 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.

**IMPORTANT NOTES – NITRO ENGINES**

- Always test the brakes and the throttle before starting your engine to avoid losing control of the model.
- Make sure the air filter is clean and oiled.
- Never run your engine without an air filter. Your engine can be seriously damaged if dirt and debris get inside the engine.
- For proper engine break-in, please refer to the manual that came with the engine.
- 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.

- Do not run near open flames or smoke while running your model or while handling fuel.
- Some parts will be hot after operation. Do not touch the exhaust or the engine until they have cooled. These parts may reach 275°F during operation!
**IMPORTANT NOTES – 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. Continued 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.

**IMPORTANT NOTES – NITRO FUEL**

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

**R/C & BUILDING TIPS**

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

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

**WARRANTY**

XRAY guarantees this model kit to be free from defects in both material and workmanship within 30 days of purchase. The total monetary value under warranty will in no case exceed the cost of the original kit purchased. This warranty does not cover any components damaged by use or modification or as a result of wear. Parts 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 the 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 end 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 corrosion, chemical and/or water damage, excessive moisture, improper or no maintenance, or user modifications which compromise the integrity of components. Warranty will not cover components that are considered consumable on RC vehicles. XRAY does not pay nor refund shipping on any component sent to XRAY or its distributors for warranty. XRAY reserves the right to make the final determination of the warranty status of any component or part.

Limitations of Liability

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

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

Disregard of the any of the above cautions may lead to accidents, personal injury, or property damage. XRAY MODEL RACING CARS assumes no responsibility for any injury, damage, or misuse of this product during assembly or operation, nor any addictions that may arise from the use of this product.

All rights reserved.

**QUALITY CERTIFICATE**

XRAY MODEL RACING CARS uses only the highest quality materials, the best compounds for molded parts and the most sophisticated manufacturing processes of TQM (Total Quality Management). We guarantee that all parts of a newly-purchased kit are manufactured with the highest regard to quality. However, due to the many factors inherent in model racing car 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!

Please note that raw materials such as aluminum, steel, brass, fibreglass, or carbon fibre may have small scratches on the surface which is a standard characteristic of any raw material. Scratches on the surface of any materials are NOT considered to be material defects.

Products may potentially have small amounts of corrosion on them. This may be caused by variances in weather during different times of the year, humidity in the shop or during shipping, and other contributing factors. Even though we have taken all precautions and protection methods to prevent corrosion, these small amounts of corrosion (if present) are unavoidable and considered to be acceptable.

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 numbers. We do reserve all rights to change any specification without prior notice. All rights reserved.
### SYMBOLS USED

- **TL**: Apply thread lock
- **O, L**: Apply oil (may indicate specific type)
- **O, GL**: Apply cyanacrylate (CA) glue
- **G, L**: Apply grease
- **V, A**: Assembly view
- **L**: Assemble left and right sides the same way
- **G**: Ensure smooth non-binding movement
- **C**: Cut off remaining material
- **2x**: Assemble as many times as specified (here twice)
- **1**: Number of teeth
- **I**: Scale
- **F**: Pay attention here
- **T**: Follow tip here
- **W**: Use pliers
- **P**: Part bags used
- **M**: Assemble in the specified order
- **S**: Follow Set-Up Book

### INCLUDED NON INCLUDED

- Silicone Shock Oil

### TOOLS REQUIRED

#### HUDY TOOLS

- Allen 1.5 / 2.0 / 2.5 / 3.0mm
- Phillips 3.5mm
- Exhaust Spring / Caster Clip Remover
- Flywheel Tool (HUDY #182010)
- Pinion Tool Set (XRAY #339901)
- Pliers (HUDY #189020)
- Reamer (HUDY #107602) (HUDY #107201)
- Scissors (HUDY #189990)
- Side Cutters (HUDY #189010)
- Hobby Knife
- Wrench Glowplug/Clutchnut (HUDY #107581)

#### XRAY TOOLS

- Pinion Tool Set (XRAY #339901)
- Flywheel Tool (HUDY #182010)
- Pliers (HUDY #189020)
- Reamer (HUDY #107602) (HUDY #107601)
- Scissors (HUDY #189990)
- Side Cutters (HUDY #189010)
- Hobby Knife
- Wrench Glowplug/Clutchnut (HUDY #107581)
- Turnbuckle Tool 3.0mm (HUDY #181030)

### EQUIPMENT REQUIRED

- Transmitter
- Receiver & Personal Transponder
- Steering & Throttle Servos
- Engine
- Starter Box (HUDY #104400) & Battery Pack
- Glowplug Igniter
- Manifold & Exhaust
- Lexan® Paint
- Bodyshell
- One-Way Lube (HUDY #106231)
- Receiver Battery Pack
- Fibre Tape (HUDY #107870)
- Wheels & Tires
- Model R/C Car Fuel (nitromethane)
- Bearing Oil (HUDY #106230)
- Graphite Grease (HUDY #106210)
- Air Filter & Oil
- Threadlock & CA Glue
- Tire Truer (HUDY #102003)

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To ensure that you always have access to the most up-to-date version of the XRAY Set-up Book, XRAY will now be offering only the digital online version at our Web site at www.teamxray.com. By offering this online version instead of including a hardcopy printed version in kits, you will always be assured of having the most up-to-date version.
### 1. FRONT GEAR DIFFERENTIAL & SOLID AXLE

**OPTIONAL:**
- #335100 XRAY Multi Differential - One-Way - Solid - Set
- #335180 XRAY Superlight Solid Axle Set - HUDY Spring Steel™

**BAG**
- 335000 FRONT GEAR DIFFERENTIAL - SET
- 335010 COMPOSITE FRONT DIFF CASE, COVER & 27T BELT PULLEY
- 335027 COMPOSITE TIMING BELT PULLEY 27T
- 335030 DIFF BEVEL & SATELLITE GEARS (2+4)
- 335040 COMPOSITE SOLID AXLE ADAPTER
- 335073 LIGHTWEIGHT DIFF OUTDRIVE ADAPTER - LONG - HUDY SPRING STEEL™ (2)
- 335080 DIFF PIN (2)
- 335081 ALU DIFF PIN - HARD COATED (2) (OPTION)
- 903206 HEX SCREW SFH M2x6 (10)
- 903258 HEX SCREW SFH M2.5x8 (10)
- 962051 WASHER S 5x10x0.2 (10)
- 964031 WASHER S 3.5x10x0.2 (10)
- 964050 WASHER S 5x15x0.3 (10)
- 971240 SILICONE O-RING 24x0.7 (10)
- 972050 SILICONE O-RING 25x0.7 (10)
- 981210 PIN 2x10 (10)

**STEP 1 DETAIL**
- Use tweezers to insert pin

**STEP 2 DETAIL**
- Use tweezers to insert pin

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

1. Put the diff (without oil) on the scale and check the weight (approximately 14.06g).

2. Slowly pour oil into the diff and watch the weight. Add 1.6g of oil into the diff. The approximate weight of the diff including oil is 15.66g.

OPTIONAL:
- #335081 Alu Differential Pin - Hardcoated (2)

Silicone oil 100.000 cSt

Fill differential up to the top of the diff pins. DO NOT fill the diff to the top of the housing.

Remove the nozzle of the bottle to allow easy filling of the diff.

#107865 HUDY Ultimate Digital Pocket Scale 300g ± 0.01g
The front diff can be easily changed into a solid axle. Remove the internal gears and replace with the solid axle locking body. DO NOT add silicone oil inside the housing when making a solid axle.

After disassembling the differential, the large O-ring may have an increased size and may be more difficult to re-install. We recommend either replacing the O-ring or carefully inserting the O-ring in the diff cover.

Tighten the screws equally but do NOT tighten them completely.

Finish tightening in this order.
## 1. REAR GEAR DIFFERENTIAL

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<tr>
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<th>Description</th>
<th>Quantity Details</th>
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<tr>
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<td>DIFF BEVEL &amp; SATELLITE GEARS (2 + 4)</td>
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<td>33 5040</td>
<td>REAR GEAR DIFFERENTIAL - SET</td>
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<td>33 5060</td>
<td>COMPOSITE REAR DIFF CASE &amp; COVER</td>
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<td>33 5072</td>
<td>LIGHTWEIGHT DIFF OUTDRIVE ADAPTER - HUDY SPRING STEEL™ (2)</td>
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<td>ALU DIFF PIN - HARD COATED (2) (OPTION)</td>
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<td>HEX SCREW SFH M2.5x8 (10)</td>
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<td>96 2051</td>
<td>WASHER S 5x10x0.2 (10)</td>
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<td>98 1210</td>
<td>PIN 2x10 (10)</td>
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</table>

**Use tweezers to insert pin.**
TO ENSURE YOU HAVE THE SAME AMOUNT OF OIL FROM REBUILD TO REBUILD, DO THE FOLLOWING:

1. Put the diff (without oil) on the scale and check the weight (approximately 14.62g)

\[ 14.62g + 1.6g = 16.22g \]

2. Slowly pour oil into the diff and watch the weight. Add 1.6g of oil into the diff. The approximate weight of the diff including oil is 16.22g.

3. Fill differential up to the top of the diff pins. DO NOT fill the diff to the top of the housing.

OPTIONAL:
- #335081 Alu Differential Pin - Hardcoated (2)
After disassembling the differential, the large O-ring may have an increased size and may be more difficult to re-install. We recommend either replacing the O-ring or carefully inserting the O-ring in the diff cover.

Tighten the screws equally but do NOT tighten them completely.

Finish tightening in this order.
### REAR SUSPENSION

#### REAR ANTI-ROLL BARS
- **333470**: 2.0 MM WIRE STANDARD
- **333472**: 2.2 MM WIRE OPTION
- **333474**: 2.4 MM WIRE OPTION
- **333476**: 2.6 MM WIRE OPTION

#### PILOT BALLS
- **337250**: STEEL STANDARD
- **337251**: ALU OPTION
- **337252**: TITAN OPTION

#### WHEEL HUBS
- **335250**: STANDARD
- **335251**: OFFSET -0.75MM OPTION
- **335252**: OFFSET +0.75MM OPTION

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### BAG

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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<tr>
<td>29 6530-O</td>
<td>ALU NUT M3 - ORANGE (10)</td>
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<td>ALU SHIM 3x6x1.0MM - ORANGE (10)</td>
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<td>30 3123-O</td>
<td>ALU SHIM 3x6x2.0MM - ORANGE (10)</td>
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<td>30 3141-O</td>
<td>ALU SHIM 3x5x1.0MM - ORANGE (10)</td>
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<td>BALL UNIVERSAL 5.8 MM HEX (4)</td>
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<td>ALU SHIM 3x6x1.0MM - ORANGE (10)</td>
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<td>33 1107</td>
<td>CHASSIS 3MM - CNC MACHINED - SWISS 7075 T6</td>
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<td>33 2070</td>
<td>COMPOSITE ADJUST. BALL-BEARING HUB (4)</td>
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<td>COMPOSITE SUSPENSION ARM REAR LOWER - V2</td>
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<td>ADJ. TURNBUCKLE L/R 25 MM - HUDY SPRING STEEL™ (2)</td>
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<td>COMPOSITE STEERING &amp; SERVO BALL JOINT 5.8 MM (4+2)</td>
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<td>33 3015</td>
<td>ALU LOWER BULKHEAD REAR RIGHT - SWISS 7075 T6</td>
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<td>33 3025</td>
<td>ALU LOWER BULKHEAD REAR LEFT - SWISS 7075 T6</td>
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<td>33 3035</td>
<td>ALU UPPER CLAMP REAR (L+R) - SWISS 7075 T6</td>
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<td>33 3062</td>
<td>GRAPHITE ROLL-CENTER BRIDGE</td>
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<td>33 3082</td>
<td>GRAPHITE SHOCK TOWER REAR 3 MM</td>
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<td>COMPOSITE SUSPENSION ARM REAR LOWER - V2</td>
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<td>33 3311</td>
<td>COMPOSITE UPPER REAR FOR AERO DISC</td>
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<td>COMPOSITE ANTI-ROLL BAR BALL JOINT 4.9 MM - V2 (4)</td>
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<td>ANTI-ROLL BAR FOR BALL-BEARINGS - REAR 2.0 MM</td>
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<td>ALU LOWER 2-PIECE REAR SUSPENSION HOLDER (1)</td>
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<td>ALU REAR LOWER 1-PIECE SUSPENSION HOLDER - REAR - RR</td>
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<td>33 4010</td>
<td>ALU BRAKE STAND - SWISS 7075 T6</td>
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<td>ALU FRONT MIDDLE SHAFT HOLDER - SWISS 7075 T6</td>
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<td>BRAKE CAM POST - STEEL</td>
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<td>33 4052</td>
<td>COMPOSITE BRAKE UPPER PLATE</td>
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<td>33 4070</td>
<td>COMPOSITE 6x1.5X5 BALL-BEARING HUB (2)</td>
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<td>33 4110</td>
<td>VENTILATED BRAKE DISK - LASER CUT - PRECISION-GROUND</td>
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<td>33 4120</td>
<td>HARDENED STEEL BRAKE PAD - LASER CUT (2)</td>
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<td>ALU CUTTED ANTI-ROLL BAR COLLAR - BLACK (2)</td>
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<td>90 1316</td>
<td>HEX SCREW SB M3x16 (10)</td>
</tr>
<tr>
<td>90 1406</td>
<td>HEX SCREW SB M4x6 (10)</td>
</tr>
<tr>
<td>90 2306</td>
<td>HEX SCREW MH M3x6 (10)</td>
</tr>
<tr>
<td>90 2308</td>
<td>HEX SCREW MH M3x8 (10)</td>
</tr>
<tr>
<td>90 2320</td>
<td>HEX SCREW MH M3x20 (10)</td>
</tr>
<tr>
<td>90 3306</td>
<td>HEX SCREW SFH M3x6 (10)</td>
</tr>
<tr>
<td>90 3308</td>
<td>HEX SCREW SFH M3x8 (10)</td>
</tr>
<tr>
<td>91 0508</td>
<td>BALL-BEARING 5x8x2.5 RUBBER SEAL (2)</td>
</tr>
<tr>
<td>94 0508</td>
<td>HIGH-SPEED BALL-BEARING 5x8x2.5 RUBBER SEAL (2)</td>
</tr>
<tr>
<td>94 0613</td>
<td>HIGH-SPEED BALL-BEARING 6x13x5 RUBBER SEAL (2)</td>
</tr>
<tr>
<td>94 1016</td>
<td>HIGH-SPEED BALL-BEARING 10x16x4 RUBBER SEAL (2)</td>
</tr>
<tr>
<td>98 1208</td>
<td>PIN 2x8 (10)</td>
</tr>
<tr>
<td>98 1212</td>
<td>PIN 2x10 (10)</td>
</tr>
</tbody>
</table>
**REAR SUSPENSION**

---

**NOTE ORIENTATION**
Both bushings must be in same position

---

**BEARING OIL**

---

**OPTIONAL:**
#335451 High-Performance Kevlar® Drive Belt Rear 5.5x177mm - V2

---

**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

---

**INITIAL POSITION**

---

**REAR BELT TENSION 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.

Use (-0.5mm) suspension holders for initial assembly.

REAR ROLL CENTER INSERT POSITIONS

<table>
<thead>
<tr>
<th>Position</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1.5mm</td>
<td>-0.5mm</td>
</tr>
<tr>
<td>0.5mm</td>
<td>1.5mm</td>
</tr>
</tbody>
</table>

INITIAL SETTING
Set the bar into the center, remove the play in the bushings, and tighten the setscrews fully.

When the bars are set, verify that both sides move at the same time. If they do, the bars are set up correctly. If not, make sure that both downstops are the same and that the bar wire is flat.

If the sides still do not move at the same time, adjust the length of the bar holders.

Tighten composite hex nuts using HUDY tool #107581

OPTIONAL:
- #337252 Alu nut
- #337254 Composite cup

During initial assembly, tighten each composite hex nut until the pivot ball starts to bind, then loosen slightly. Verify that the pivot balls move freely.

Use ball joints WITH DOT

Follow the TECH TIP on page 43 to install the pivot balls.

90° angle difference between the ball joints

WHEEL HUBS

| 335250  | STANDARD |
| 335251  | OFFSET -0.75MM OPTION |
| 335252  | OFFSET + 0.75MM OPTION |

PIVOT BALLS

| 337250  | STEEL STANDARD |
| 337251  | ALU OPTION |
| 337255  | TITAN OPTION |

BEARING OIL

3x4

3x3

OPTIONAL:
- #337252 Alu nut
- #337254 Composite cup

NOTE ORIENTATION

TIP
REAR SUSPENSION

Ensure that both suspension assemblies move freely.

OPTIONAL:
#335305 CVD Rear Drive Shaft - Set - HUDY Spring Steel™ (1)

OPTIONAL:
#335321 Alu Rear Drive Shaft - Alu 7075 T6

Ensure that both suspension assemblies move freely.

Roughen steel plates with sandpaper before gluing fibre pads

NOTE ORIENTATION

FIBRE PADS FACE TOGETHER

BEARING OIL

NOTE ORIENTATION

Hole on outer side.
OPTIONAL:
#334141 Alu Lightweight Brake Disk Adapter - Swiss 7075 T6

NOTE ORIENTATION

OPTIONAL:
#335511 2-Speed Shaft - Lightweight

STEP DETAIL
Tighten setscrew onto flat spot

Pin must protrude equally on both sides of camshaft

BEARING OIL
### 3. REAR TRANSMISSION

**2-SPEED GEARS**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>335533</td>
<td>53T (2nd) OPTION</td>
</tr>
<tr>
<td>335541</td>
<td>57T (1st) OPTION</td>
</tr>
<tr>
<td>335550</td>
<td>58T (1st) OPTION</td>
</tr>
<tr>
<td>335569</td>
<td>60T (1st) OPTION</td>
</tr>
<tr>
<td>335643</td>
<td>GRAPHITE 53T (2nd) OPTION</td>
</tr>
<tr>
<td>335645</td>
<td>GRAPHITE 54T (2nd) OPTION</td>
</tr>
<tr>
<td>335646</td>
<td>GRAPHITE 55T (2nd) OPTION</td>
</tr>
<tr>
<td>335653</td>
<td>GRAPHITE 57T (1st) OPTION</td>
</tr>
<tr>
<td>335654</td>
<td>GRAPHITE 58T (1st) OPTION</td>
</tr>
<tr>
<td>335655</td>
<td>GRAPHITE 59T (1st) OPTION</td>
</tr>
<tr>
<td>335656</td>
<td>60T (1st) OPTION</td>
</tr>
</tbody>
</table>

**Options**

- 33 5522: ALU small carrier for 2-speed gear (2nd) + ball-bearing - ALU 7075 T6
- 33 5530: Drive flange with one-way bearing - ALU 7075 T6
- 33 5541: Composite small 2-speed gear box shoe - SET
- 33 5554: Composite 2-speed gear 54T (2nd) - V3
- 33 5559: Composite 2-speed gear 59T (1st)
- 33 5571: Adapter small 2-speed
- 33 5590: Hex screw SFH M3x6 - grinded (3)
- 33 5583: Spring for small gear box - medium-hard (2)
- 33 5600: Composite belt pulley cover SET

**Optional**

- #335731-O Alu Lightweight Locating Collar - Orange (2)

**BAG**

- 33 5828: Composite belt pulley 18T - 2-speed-side
- 90 1210: Pin 2x10 (10)
- 90 1212: Pin 2x12 (10)
- 98 3404: Roller pin 4x4 mm (2)

**NOTE ORIENTATION**

- 2-speed gears
  - 33 5553 53T (2nd) OPTION
  - 33 5554 54T (2nd) STANDARD
  - 33 5555 55T (2nd) OPTION
  - 33 5557 57T (1st) OPTION
  - 33 5558 58T (1st) OPTION
  - 33 5559 59T (1st) STANDARD
  - 33 5560 60T (1st) OPTION
  - 33 5563 GRAPHITE 53T (2nd) OPTION
  - 33 5564 GRAPHITE 54T (2nd) OPTION
  - 33 5565 GRAPHITE 55T (2nd) OPTION
  - 33 5567 GRAPHITE 57T (1st) OPTION
  - 33 5568 GRAPHITE 58T (1st) OPTION
  - 33 5569 GRAPHITE 59T (1st) OPTION
  - 33 5571 ADAPTER SMALL 2-SPEED
  - 33 5590 HEX SCREW SFH M3x6 - GRUNDED (3)
  - 33 5583 SPRING FOR SMALL GEAR BOX - MEDIUM-HARD (2)
  - 33 5600 COMPOSITE BELT PULLEY COVER SET
  - 33 5828 COMPOSITE BELT PULLEY 18T - 2-SPEED-SIDE
  - 90 1303 HEX SCREW SB M3x3 (10)
  - 90 3306 HEX SCREW SFH M3x6 (10)
  - 90 6260 HEX SCREW SOCKET HEAD CAP M2.5x10 (10)
  - 96 5050 E-CLIP 5 (10)
  - 98 1210 PIN 2x10 (10)
  - 98 1212 PIN 2x12 (10)
  - 98 3404 ROLLER PIN 4x4 MM (2)
Adjust the shoe gap according to the Set-Up Book.

IMPORTANT!

Set screws must NOT protrude.
Top of screw head should be level with hole bottom edge.
Do not overtighten gap-setting setscrews. Only tighten until roller pins contact the center hub.

Use HUDY Reamer #107600 to slightly chamfer the edges on all 3 holes for screws.

OPTIONAL:

#335531-O Alu Lightweight Drive Flange w/ 1-way Bearing - Orange
The NT1 kit comes with both types of front anti-roll bars; blade-style or wire. Decide which anti-roll bar to use.

**Blade anti-roll bar (Alternative 1)** is recommended for long, fast tracks when maximum cornering speed is needed. With the blade anti-roll bar, the car will not dive in the corners and will maintain maximum speed. Follow the “Alternative 1” assembly steps (starting on page 25).

**Wire anti-roll bar (Alternative 2)** is recommended for smaller, technical tracks when fast direction changes and side weight changes are needed. Follow the “Alternative 2” assembly later in this section; do not assemble the blade bar as described immediately below.

### ALTERNATIVE 1 (BLADE ANTI-ROLL BAR)

1. Pre-thread mount with the set-screw
2. After anti-roll bar is inserted, install and tighten the set-screw

**IMPORTANT!**

The position of the front arm directly influences the steering Ackermann (angle of the steering linkages). When the arm is moved to rearward position (shim in front of the arm), the angle of the steering linkages changes and gives less Ackermann. By decreasing the Ackermann, the car gets more turn-in & increased steering at corner exit, but less cornering speed. The Ackermann can be changed by Ackermann inserts (see page 30, step 1).

**Optional:**

#332401-O Downstop Independent Alu Front Anti-Roll Bar - Orange

---

**Forward Arm Position (A)**

**Shim behind arm**

- Each anti-roll bar blade has a hex hole at its end. Use a 1.5mm hex wrench to adjust the blades.
- Do not insert ball into cup too deeply or bars will bind during operation

**Rearward Arm Position (B)**

**INITIAL SETTING**

Shim in front of arm

**REARWARD ARM POSITION**

Ensure that the suspension arms move freely. Ensure that the eccentric holders move freely.

When the bar is set, verify that both sides move at the same time. If they do, the bars are set up correctly. If not, make sure that both downstops are the same. If the arms still do not move at the same time, gently loosen the screw which holds eccentric bushing and rotate the bushing until the arms move at the same time. Retighten the screws fully.

**Optional:**

#332113 Suspension Arm Front Lower for Wire Anti-Roll Bar - Hard
FRONT SUSPENSION

NOTE ORIENTATION
Both bushings must be in same position

BEARING OIL

TO LOOSEN FRONT BELT: Rotate both front nylon hubs in arrow direction A

NOTE ORIENTATION
Both bushings must be in same position

TO TIGHTEN FRONT BELT: Rotate both front nylon hubs in arrow direction B

INITIAL POSITION

OPTIONAL:
#335431 High-Performance Kevlar® Drive Belt Front 5.0x186mm - V2

NOTE ORIENTATION

BEARING OIL

NOTE ORIENTATION

BEARING OIL

NOTE ORIENTATION

BEARING OIL

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BEARING OIL

NOTE ORIENTATION

NOTE ORIENTATION
Tighten composite hex nuts using HUDY tool #107581

OPTIONAL:
- #332133 Composite Suspension Arm Front Upper with Hole - Hard
- #332213 Composite Steering Block 1° Kingpin Right for Aero Disc
- #332223 Composite Steering Block 1° Kingpin Left for Aero Disc
  (Recommended to use for more steering)

PIVOT BALLS

<table>
<thead>
<tr>
<th>PART</th>
<th>TYPE</th>
<th>OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>337250</td>
<td>STEEL</td>
<td>STANDARD</td>
</tr>
<tr>
<td>337251</td>
<td>ALU</td>
<td>OPTION</td>
</tr>
<tr>
<td>337255</td>
<td>TITAN</td>
<td>OPTION</td>
</tr>
</tbody>
</table>

Pivot balls must move freely. During initial assembly, tighten each composite hex nut until the pivot ball starts to bind, then loosen slightly. Verify that the pivot balls move freely.

Use the composite ball cup #337254 from BAG

OPTIONAL:
- #337252 Alu Nut
- #337254 Composite Cup

Left and right arms are identical

Do not tighten fully. This screw will be tightened after assembling the radio plate (see page 33).

Do not tighten fully. This screw will be tightened after assembling the radio plate (see page 33).

FRONT ROLL CENTER INSERT POSITIONS

-1.5mm -0.5mm +0.5mm +1.5mm

INITIAL SETTING

902310 SH M3x10
901306 SB M3x6

Use (+0.5mm) suspension holders for initial assembly

NOTE ORIENTATION

NOTE ORIENTATION

NOTE ORIENTATION

NOTE ORIENTATION
FRONT SUSPENSION

NOTE ORIENTATION
MARKED 'L'
MARKED 'R'

TIGHTEN THE SCREW FULLY WHEN THE PIN IS INSTALLED

BEARING OIL
BEARING OIL

WHEEL HUBS

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CODE</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>935250</td>
<td></td>
<td>STANDARD</td>
</tr>
<tr>
<td>935251</td>
<td>OFFSET</td>
<td>OFFSET -0.75MM</td>
</tr>
<tr>
<td>935252</td>
<td>OFFSET</td>
<td>OFFSET +0.75MM</td>
</tr>
</tbody>
</table>

Ensure that the front suspension moves freely

MARKED "L"
MARKED "R"

STEERING BLOCK

MARKED "L"
MARKED "R"
The position of the front arm directly influences the steering Ackermann (angle of the steering linkages). When the arm is moved to rearward position (shim in front of the arm), the angle of the steering linkages changes and gives less Ackermann. By decreasing the Ackermann, the car gets more turn-in & increased steering at corner exit, but less cornering speed. The Ackermann can be changed by Ackermann inserts (see page 30, step 1).

### Forward Arm Position (A)
Shim behind arm

### Rearward Arm Position (B)
(Initial Setting)
Shim in front of arm

**IMPORTANT!**

**Front Anti-Roll Bars**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>332472</td>
<td>2.2 mm wire</td>
<td>Option</td>
</tr>
<tr>
<td>332474</td>
<td>2.4 mm wire</td>
<td>Option</td>
</tr>
<tr>
<td>332476</td>
<td>2.6 mm wire</td>
<td>Standard</td>
</tr>
<tr>
<td>332478</td>
<td>2.8 mm wire</td>
<td>Option</td>
</tr>
</tbody>
</table>

**Bearings with Steel Covers**
Wire should be flush with end of pivot ball.

NOTE ORIENTATION

The alu ball end must be parallel with the upper arm in order to prevent the ball end from touching the upper arm when the suspension is lifted up.

Set the bar into the center, remove the play in the bushings, and tighten the set-screws fully.

When the bars are set, verify that both sides move at the same time. If they do, the bars are set up correctly. If not, make sure that both downstops are the same and that the bar wire is flat. If the sides still do not move at the same time, adjust the length of the bar holders.
5. FRONT TRANSMISSION

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>33 3071</td>
<td>BELT TENSIONER SET</td>
</tr>
<tr>
<td>33 5441</td>
<td>PUR-REINFORCED DRIVE BELT SIDE 4.5 x 390 MM</td>
</tr>
<tr>
<td>33 5712</td>
<td>FRONT MIDDLE SHAFT - HUDY SPRING STEEL™ - LIGHTWEIGHT</td>
</tr>
<tr>
<td>33 5722-O</td>
<td>ALU FRONT MIDDLE SHAFT HOLDER - ORANGE</td>
</tr>
<tr>
<td>33 5790</td>
<td>COMPOSITE BALL-BEARING BUSHING FOR MIDDLE SHAFT (2)</td>
</tr>
<tr>
<td>33 5800</td>
<td>COMPOSITE BELT PULLEY COVER SET</td>
</tr>
<tr>
<td>33 5859</td>
<td>COMPOSITE BELT PULLEY 19T - MID-CENTER</td>
</tr>
<tr>
<td>33 5885</td>
<td>COMPOSITE BELT PULLEY 25T - MID-SIDE</td>
</tr>
<tr>
<td>33 5886</td>
<td>COMPOSITE BELT PULLEY 26T - MID-SIDE</td>
</tr>
<tr>
<td>33 6230</td>
<td>COMPOSITE BATTERY MOUNT L+R (2)</td>
</tr>
<tr>
<td>33 6231-O</td>
<td>ALU RADIO PLATE MOUNTS L+R (2) - SWISS 7075 T6 - ORANGE (OPTION)</td>
</tr>
<tr>
<td>34 5732-O</td>
<td>ALU MIDDLE SHAFT LOCATING COLLAR - SHORT - LIGHTWEIGHT - ORANGE</td>
</tr>
<tr>
<td>90 2312</td>
<td>HEX SCREW SH M3x12 (10)</td>
</tr>
<tr>
<td>90 3306</td>
<td>HEX SCREW SFH M3x6 (10)</td>
</tr>
<tr>
<td>90 3308</td>
<td>HEX SCREW SFH M3x8 (10)</td>
</tr>
<tr>
<td>94 0613</td>
<td>HIGH-SPEED BALL-BEARING 6x13x5 RUBBER SEALED (2)</td>
</tr>
<tr>
<td>95 0510</td>
<td>BALL-BEARING FR85ZZ 5x10x4 FLANGED (2)</td>
</tr>
<tr>
<td>96 2060</td>
<td>WASHER S 6x8x0.5 (10)</td>
</tr>
<tr>
<td>96 5050</td>
<td>E-CLIP 5 (10)</td>
</tr>
<tr>
<td>98 1212</td>
<td>PIN 2x12 (10)</td>
</tr>
</tbody>
</table>

**BAG**

- 940613 - BEARING OIL
- 965050 - BEARING OIL

**NOTES**

- Orientation
- Wheel Set

**CUTAWAY VIEW**

- Belt Tensioner Set
- Pur-Reinforced Drive Belt Side
- Front Middle Shaft - HUDY Spring Steel™ - Lightweight
- Alu Front Middle Shaft Holder - Orange
- Composite Ball-Bearing Bushing for Middle Shaft (2)
- Composite Belt Pulley Cover Set
- Composite Belt Pulley 19T - Mid-Center
- Composite Belt Pulley 25T - Mid-Side
- Composite Belt Pulley 26T - Mid-Side
- Composite Battery Mount L+R (2)
- Alu Radio Plate Mounts L+R (2) - Swiss 7075 T6 - Orange (Option)
- Alu Middle Shaft Locating Collar - Short - Lightweight - Orange
- Hex Screw SH M3x12 (10)
- Hex Screw SFH M3x6 (10)
- Hex Screw SFH M3x8 (10)
- High-Speed Ball-Bearing 6x13x5 Rubber Sealed (2)
- Ball-Bearing FR85ZZ 5x10x4 Flanged (2)
- Washer S 6x8x0.5 (10)
- E-Clip 5 (10)
- Pin 2x12 (10)
NOTE ORIENTATION TO ADJUST THE BELT TENSIONER
1. Loosen upper screw
2. Move belt tensioner as needed
3. Re-tighten the screw

OPTIONAL:
- #330231-0 Alu Radio Plate Mounts (L + R) - Swiss 7075 T6 - Orange
- #335442 High-Performance Kevlar® Drive Belt Side 4.5x396mm - V2

THREAD LOCK

OPTIONAL:
- #903308 SFH M3x6
- #903308 SFH M3x8
- #903308 SFH M3x8
- #902312 SH M3x12
- #950510 BB 5x10x4
Follow the TECH TIP on page 43 to install the pivot balls.
There are two different Ackermann inserts labeled AD and CB. You can insert each of the Ackermann inserts in two different orientations which will result in the different Ackermann settings. Note the orientation of the mounting positions.

ACKERMANN SETTINGS

There are two different Ackermann inserts labeled AD and CB. You can insert each of the Ackermann inserts in two different orientations which will result in the different Ackermann settings. Note the orientation of the mounting positions.

BUMPSTEER SETTING

The new NT1 has decreased bumpsteer by 4mm compared to the previous version. The thickness of shims changes the angles of the steering linkage. When no shims are used, the car has maximum steering response and in-corner steering. By adding shims, the car becomes less responsive, but easier to drive.

RECOMMENDED BUMPSTEER SETTING:
- when spec (big, hard tires) are used: no shims
- when softer tires or tires with additive are used: 4mm thick shim
7. FUEL TANK & ELECTRONICS

- **Front Body Mount Set +2mm Height**
- **Ball Universal 5.8mm Hex (4)**
- **Antenna Tube (2)**
- **Body Clip for 6mm Body Post (4)**
- **Composite Steering & Servo Ball Joint 5.8mm (4+2)**
- **Composite Receiver Case - V2**
- **Graphite Radio Plate - Multi-Flex™**
- **Composite Steering Servo Holder - Set**
- **Alu Radio Plate Multi-Flex™ Bushing - Flexible (2)**
- **Alu Radio Plate Multi-Flex™ Bushing - Fixed (2)**
- **Composite Battery Plate**
- **Composite Roll-Over Bar with Eyelet**
- **Steering Servo Arms - Set**
- **Fuel Tank 75cc - Set - V3**
- **Fuel Tank Mounting Grommet (3)**
- **Composite Shim for Body Post (2)**
- **FUEL TANK MOUNTING GROMMET (3)**
- **Fuel Tank 75cc - Set - V3**
- **FUEL TANK MOUNTING GROMMET (3)**
- **Compoiste Shim for Body Post (2)**
- **Hex Screw SFH M3x6 (10)**
- **Hex Screw SFH M3x8 (10)**
- **Hex Screw SFH M3x10 (10)**
- **Hex Screw SFH M3x12 (10)**
- **Hex Screw SFH M3x16 (10)**
- **Hex Screw SFH M3x18 (10)**
- **Screw Phillips 2.5x8 (10)**
- **Screw Phillips 2.5x10 (10)**
- **Screw Phillips 2.5x12 (10)**
- **Silicone O-Ring 3.5x2 (10)**
- **Pin 2x12 (10)**

**Important!**

- Tighten the screws gently to make sure that the O-ring does not bind.
- The purpose of the O-rings is to create movement of the fuel tank in all directions.

**Option Only**

- Use 3mm lowering shims ONLY when using optional micro-size receiver battery pack.

**Ensure that bar is square with radio plate**

**Install insert ONLY if fuel capacity is over the limit**
Follow the TECH TIP on page 43 to install the pivot balls.

Use different servo shims depending on your steering servo.

Use appropriate servo arm:
- K (23T)
- H (24T)
- F (25T)

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

NOTE ORIENTATION

Thin thick

NOTE

Use appropriate inserts for your servo, to ensure the servo has minimal play (movement) in the servo holder.

Use HUDY ALU SERVO HORNS
- #925491 23T RD Propo, Airtronics, JR, Sanwa (OPTION)
- #925492 24T Hitec (OPTION)
- #925493 25T Futaba (OPTION)

Follow the TECH TIP on page 43 to install the pivot balls.
When using fixed bushing, tighten fully.

The fixed setting is recommended for high-traction conditions.

When using the flex bushing, tighten the screw fully and then loosen 1/8 of a turn to allow the top deck to flex.

The flex setting is recommended for low-traction tracks to generate more traction.

Recommended for softer tires or tires with additive to improve stability and make the car easier to drive.

Recommended for spec hard tires to improve in-corner steering.

OPTIONAL:
#336091 Graphite Brace for Flex Radio Plate 2.5mm

Servo arm must be perpendicular to linkage when servo is in neutral.

NT1 has the option to set the flex setting also by tightening and untightening the screws that connect the radio plate with the upper arm holder. By removing one of the 2 set of screws, in-corner steering is improved.

IMPORTANT
Remove only 1 screw per side: either the front or the rear screw. Repeat for the other side. Never drive with all four screws removed.
Use an appropriate receiver battery pack.

The NT1 accommodates standard 5-cell receiver packs or optional micro-size packs.

Use tape to mount the receiver battery pack to the lower holder.

**OPTIONAL:**
- #336155 - Graphite Battery Plate - V2
- #336156 - Brass Battery Plate for LiPo Batteries - V2

The battery holder has a direct effect on chassis flex and car weight.

Use the graphite battery plate to slightly stiffen the chassis flex for better stability.

Use the brass battery plate to stiffen the chassis flex and increase weight. Recommended for high-traction tracks or soft tires (or tires with additive) to eliminate traction roll and make the car easier to drive.
### 8. ENGINE & CLUTCH

<table>
<thead>
<tr>
<th>Part Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>33 8500</td>
<td>SOFT CLUTCH SPRING</td>
</tr>
<tr>
<td>33 8501</td>
<td>MEDIUM CLUTCH SPRING</td>
</tr>
<tr>
<td>34 8541</td>
<td>ULTRA-STABLE CLUTCH SPRING</td>
</tr>
<tr>
<td>33 8583</td>
<td>CONICAL WASHER SET</td>
</tr>
</tbody>
</table>

#### 1ST PINION GEARS

<table>
<thead>
<tr>
<th>Part Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>33 8515</td>
<td>XCA HARDCOATED PINION GEAR - 15T (1st)</td>
</tr>
<tr>
<td>33 8516</td>
<td>XCA HARDCOATED PINION GEAR - 16T (1st)</td>
</tr>
<tr>
<td>33 8517</td>
<td>XCA HARDCOATED PINION GEAR - 17T (1st)</td>
</tr>
<tr>
<td>33 8518</td>
<td>XCA HARDCOATED PINION GEAR - 18T (1st)</td>
</tr>
</tbody>
</table>

#### 2ST PINION GEARS

<table>
<thead>
<tr>
<th>Part Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>33 8520</td>
<td>XCA HARDCOATED PINION GEAR - 20T (2nd)</td>
</tr>
<tr>
<td>33 8521</td>
<td>XCA HARDCOATED PINION GEAR - 21T (2nd)</td>
</tr>
<tr>
<td>33 8522</td>
<td>XCA HARDCOATED PINION GEAR - 22T (2nd)</td>
</tr>
<tr>
<td>33 8523</td>
<td>XCA HARDCOATED PINION GEAR - 23T (2nd)</td>
</tr>
<tr>
<td>33 8524</td>
<td>XCA HARDCOATED PINION GEAR - 24T (2nd)</td>
</tr>
</tbody>
</table>

### Screw (not included)

<table>
<thead>
<tr>
<th>Part Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>33 8500</td>
<td>CLUTCH PRELOAD ADJ. NUT - HUDY SPRING STEEL™</td>
</tr>
<tr>
<td>33 8510</td>
<td>ALU ENGINE MOUNT (2)</td>
</tr>
<tr>
<td>33 8520</td>
<td>ALU STAND FOR ENGINE MOUNT (2)</td>
</tr>
<tr>
<td>33 8530</td>
<td>EXHAUST MOUNTING WIRE - EXTRA-LONG</td>
</tr>
<tr>
<td>35 9050</td>
<td>CLUTCH BELL BALL-BEARING MR105ZZ 5x10x4 (2)</td>
</tr>
</tbody>
</table>

### Muffler (not included)

<table>
<thead>
<tr>
<th>Part Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>33 8530</td>
<td>CARBIDE BALL-BEARING AXIAL F5-10 5x10x4 WITH GROOVE</td>
</tr>
<tr>
<td>94 0508</td>
<td>HIGH-SPEED BALL-BEARING 5x8x2.5 RUBBER SEALED (2)</td>
</tr>
<tr>
<td>94 0473</td>
<td>WASHER S 7x10x0.2 (10)</td>
</tr>
<tr>
<td>94 0474</td>
<td>WASHER S 7x10x0.3 (10)</td>
</tr>
<tr>
<td>94 0475</td>
<td>WASHER S 7x10x0.5 (10)</td>
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### Engine (not included)

<table>
<thead>
<tr>
<th>Part Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>33 8533</td>
<td>ALU ENGINE MOUNT (2)</td>
</tr>
<tr>
<td>90 3310</td>
<td>ALU STAND FOR ENGINE MOUNT (2)</td>
</tr>
<tr>
<td>90 8310</td>
<td>EXHAUST MOUNTING WIRE - EXTRA-LONG</td>
</tr>
<tr>
<td>93 0150</td>
<td>CARBIDE BALL-BEARING AXIAL F5-10 5x10x4 WITH GROOVE</td>
</tr>
</tbody>
</table>

### Manifold (not included)

<table>
<thead>
<tr>
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</tr>
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<tbody>
<tr>
<td>33 8533</td>
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</tr>
<tr>
<td>90 3310</td>
<td>ALU STAND FOR ENGINE MOUNT (2)</td>
</tr>
<tr>
<td>90 8310</td>
<td>EXHAUST MOUNTING WIRE - EXTRA-LONG</td>
</tr>
<tr>
<td>93 0150</td>
<td>CARBIDE BALL-BEARING AXIAL F5-10 5x10x4 WITH GROOVE</td>
</tr>
</tbody>
</table>
ENGINE & CLUTCH

Tighten the clutch nut using HUDY tool #107581.

Use the flywheel collar that comes with your engine, or use optional XRAY collars:
- #338540 – XRAY flywheel collar for Ø6mm crankshafts
- #338541 – XRAY flywheel collar for Ø7mm crankshafts

The flywheel collar must stay inside the flywheel. If the flywheel collar is too long – if it is flush with the flywheel or protrudes slightly – remove a small amount of material from the end, or use an XRAY collar.

Hold the flywheel using HUDY Flywheel Tool #182010.

Shim (for adjusting flywheel distance)

Clutch weights are machined as 1 piece, with thin film connecting the pieces together. You need to cut the connecting film to separate the 3 shoes.

OPTIONAL:
- #338578 Clutch Shoe - High-Dynamic - Red

Adjust with spring preload collar

Adjust with shims behind flywheel

NOTE ORIENTATION

TECH TIP FOR EXTRA BOTTOM-END POWER

For extra bottom-end power, thread a M3x4 setscrew (#901304) into each clutch flyweight as shown. The setscrew will add more weight to the end of the flyweight which will cause the flyweight to open harder, giving more bottom-end power. This is recommended for high-traction tracks where bottom-end power is required.

IMPORTANT!
Install setscrew into free (non-pivot) end of flyweight.

After inserting the setscrew, some excess material may come out of the hole. REMOVE this excess material with a knife.

TECH TIP FOR NT1 CLUTCH SHOE

To ensure that the NT1 clutch shoe works properly and for a long time, it is very important to run in the clutch shoe. Please follow these run-in steps to help ensure proper clutch operation:

1. Install clutch according to this Instruction Manual.
2. Check that the spring preload is not too much; for run-in process use less preload.
3. When you start the engine, the clutch should start to engage under low RPM. If the clutch engages only under high RPM, stop the engine and loosen the spring preload collar. Repeat until the clutch engages under low RPM.
4. Run in the clutch shoe on the track, or on the starter box if you have only limited time. (We recommend running it in on the track.)
5. Run in the clutch shoe for 1 tank of fuel using a soft preload setting, and then after that slightly tighten the spring preload. DO NOT run in the clutch shoe under high RPM.
6. Continue this process until the clutch shoe is properly run in; this will be indicated by a dark and glossy surface colour on the top of the clutch shoe.
These shims are used to adjust clutchbell endplay.

ENDPLAY SHIMS
These shims are used to adjust clutchbell endplay.

BEARING OIL
GRAPHITE GREASE

CLUTCH GAP SHIMS
These shims are used to adjust clutch gap.

Do not install this bearing when setting clutch gap.
Install this bearing when setting endplay.

IMPORTANT
Degrease this bearing with standard bearing cleaner, and then lubricate with light bearing oil.

To measure the clutch gap (0.6~0.7mm) you can also use HUDY Flywheel Tool #182010.

The clutch gap is A - B, the correct gap is 0.6-0.7mm
If the clutch gap is greater than this, you can easily calculate the thickness of shims required to set correct gap:
Thickmess of shims required (in mm) = A-B-0.7
For example, using the values A=5.5mm, B=4.5mm
Shim thickness = 5.5-4.5-0.7 = 0.3mm
Place shims on the small collar, outside the thrustbearing assembly.

Apply shims on crankshaft to set endplay to 0.05-0.15mm

Insert ENDPLAY SHIMS here (approximately 0.7~1.0mm)

To tighten the 23T pinion gear use the optional #339901 XRAY NT1 Pinion Tool (20~23T, 15~18T).

To tighten the 18T pinion gear use the optional #339901 XRAY NT1 Pinion Tool (20~23T, 15~18T).

To measure the clutch gap (0.6~0.7mm) you can also use HUDY Flywheel Tool #182010.

The clutch gap is A - B, the correct gap is 0.6-0.7mm
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To tighten the 18T pinion gear use the optional #339901 XRAY NT1 Pinion Tool (20~23T, 15~18T).
ENGINE & CLUTCH

The engine should be installed on the split mounts as follows:

STEP 1: Attach lower mounts to chassis.
STEP 2: Attach upper mounts to lower mounts.
STEP 3: Attach engine to upper mounts.
STEP 4: Loosen lower mount screws, adjust gear mesh, and then retighten lower mount screws.

After the gear mesh is initially set, you can remove the engine AND upper mounts as one assembly by removing the screws holding the upper mounts to the lower mounts. When re-installing the engine, you will not have to re-adjust the gear mesh.

Adjust gear mesh so there is minimal play between the gears.
Too tight gear mesh will put excessive strain on all parts and damage the parts.
Too loose gear mesh may result in stripped gears.

OPTIONAL:
#338713 Alu Monoblock Engine Mount
Reinforces the chassis flex around the engine area for improved steering.
RECOMMENDED FOR MEDIUM-HIGH TRACTION TRACKS

OPTIONAL:
#338716 Brass 1-Piece Engine Mount
Reinforces the chassis flex around the engine area and moves the weight balance more to the rear for even more steering and rotation of the car.
RECOMMENDED FOR HIGH-TRACTION TRACKS

Attach manifold to engine using appropriate springs

THREAD LOCK all screws
(screw not included)
30 1321 COMPOSITE BRACE FOR BUMPER (2)  
30 1323 FRONT BODY MOUNT SET +1MM HEIGHT  
30 1333 REAR BODY MOUNT SET +1MM HEIGHT  
30 2663 COMPOSITE BALL JOINT 4.9MM - OPEN (8)  
33 1200 COMPOSITE BUMPER  
33 1212 COMPOSITE UPPER HOLDER FOR BUMPER  
33 1221 FOAM BUMPER - HARD - V2 (OPTION)  
33 1222 FOAM BUMPER FOR ANTI-ROLL BAR  
33 2630 ADJ. TURNBUCKLE L/R 25 MM - HUDY SPRING STEEL™ (2)  
33 6400 BRAKE SYSTEM SET  
33 6401 SILICONE TUBING 1M (2.4 x 5.5MM)  
33 6402 SIL. TUBING 1M (2.4 x 5.5MM) YELLOW (OPTION)  
36 2650 BALL END 4.9MM WITH THREAD 6MM (2)  
36 2651 BALL END 4.9MM WITH THREAD 8MM (2)  
90 1303 HEX SCREW SB M3x3  (10)  
90 2306 HEX SCREW SH M3x6  (10)  
90 2308 HEX SCREW SH M3x8  (10)  
90 2310 HEX SCREW SH M3x10 (10)  
90 3308 HEX SCREW SFH M3x8  (10)  
90 3310 HEX SCREW SFH M3x10 (10)  
96 0030 NUT M3  (10)  
98 1212 PIN 2x12  (10)

**OPTIONAL:**

#301351-O Alu Adjustable Body Post Stop (2)  
#331201 Composite Wide Bumper

The wider front bumper is used without the foam bumper.  
The wider front bumper improves steering, but may allow more front damage under hard crashes.
NOTE ORIENTATION
Screw from servo

OPTIONAL:
#331216 Graphite Upper Holder for Bumper 2.5mm

FRONT

OPTIONAL:
#331221 Foam Bumper for Anti-Rail Bar - Hard - V2

REAR

REAR BODY MOUNTS
- 0mm STANDARD
- +1mm STANDARD
- +2mm OPTION

Insert rod through hole in brake arm. Bend rod to proper shape.

OPTIONAL:
#334061-O Alu Brake Post Arm - Swiss 7075 T6 - Orange

Do not overtighten screws; pivots must rotate freely

HUDY ALU SERVO HORNS
- #293494 23T KO Propo, Airtronics, JR, Sanwa (OPTION)
- #293495 24T Hitec (OPTION)
- #293496 25T Futaba (OPTION)

Use appropriate servo arm:
K - (23T)
H - (24T)
F - (25T)

Approx.15mm

IMPORTANT:
It is important to have the exact length of the linkage. Too long or too short link will cause the chassis bend and unwanted tweak problems. To check that the length is correct, composite balls must move freely.

6mm THREAD
8mm THREAD

6.3mm

NOTE ORIENTATION
Screw from servo

IMPORTANT:
It is important to have the exact length of the linkage. Too long or too short link will cause the chassis bend and unwanted tweak problems. To check that the length is correct, composite balls must move freely.
10. SHOCK ABSORBERS

**FRONT SPRINGS**
- 338182: PROGRESSIVE C = 4.0-5.6
- 338183: C = 4.6 DARK-BLUE
- 338184: C = 5.0 VIOLET
- 338185: C = 5.4 LIGHT-PURPLE
- 338186: C = 5.8 PURPLE
- 338187: C = 6.3 LIGHT-RED

**REAR SPRINGS**
- 338281: PROGRESSIVE C = 3.7-4.7
- 338282: C = 3.6 DARK-BLUE
- 338283: C = 4.0 VIOLET
- 338284: C = 4.5 LIGHT-PURPLE
- 338285: C = 5.0 PURPLE
- 338286: C = 5.6 LIGHT-RED

**Components**
- 308016: COMPOSITE NON-ADJUSTABLE PISTONS - DELRIN - V4
- 308040-O: SHOCK ADJ. NUT ALU + O-RING - ORANGE (4)
- 308081: SHOCK ABSORBER MEMBRANE - LOW (4)
- 308091: SHOCK FOAM INSERTS - LOW (4)
- 308316: COMPOSITE SHOCK BALL JOINT - OPEN (4)
- 308327-O: ALU CAP FOR XRAY SHOCK BODY - ORANGE (2)
- 308331: COMPOSITE FRAME SHOCK PARTS 4-STEP - SHORT
- 308352-O: ALU SHOCK CAP-NUT WITH HOLE - ORANGE (2)

**Accessory**
- 965023: E-CLIP 2.3 (10)
- 970121: O-RING 12.1x1.6 (10)
- 972030: SILICONE O-RING 3x2 (10)

**Tools**
- 965023 C 2.3
- 972030 O 3x2

**Notes**
- NOTE ORIENTATION
- INITIAL SETTING 1.2

**Guides**
- DO NOT USE CROSSED PARTS
Fully extend the piston rod so the piston is at the bottom of the shock body.

Hold the shock upright and slightly overfill the shock body with shock oil.

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.

Pull the piston rod most of the way out of the shock body. Let the shock rest for 5 minutes to allow the air bubbles to escape.

When installing the shock cap assembly on the shock body, some oil will leak out... this is normal.

Fully tighten the cap and clean off any excess oil.

After the shock is assembled, the shock rod will push itself out of the shock body fairly quickly.

Follow the next procedure to adjust the rebound.

After you insert the membrane ensure that it sits properly all around the alu cup properly.
REBOUND ADJUSTMENT

AFTER THE SHOCK IS ASSEMBLED YOU HAVE TO SET THE SHOCK REBOUND.

➊ Release the shock cap by 2-3 turns.

➋ Push the shock shaft fully up. For the first time the extra oil will release through the hole in the alu cap-nut.

➌ Tighten the shock cup. When tightening the shock cap, extra oil will again release through the hole in the alu cap-nut. When tightening, the shock shaft will push out from the shock body.

REBOUND CHECK

It is very important to push the shock shaft into the shock body slowly otherwise air can come into the shock body which would create bubbles.

100% rebound - repeat step 2 and 3 two - three times

75% rebound - repeat step 2 and 3 until the shock shaft will push out 75% of its length

50% rebound - repeat step 2 and 3 until the shock shaft will push out 50% of its length

25% rebound - repeat step 2 and 3 until the shock shaft will push out 25% of its length

0% rebound - repeat step 2 and 3 until the shock shaft will push out 0% of its length

If the shock shaft does not rebound enough, you will have to refill the shock with shock oil, and then repeat the bleeding and rebound adjustment 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.

TECH TIP

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.

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.

Ensure pivot balls move freely

SHINY FINISH SIDE

OPTIONAL:

# 308031-O Alu XRAY Shock Spring Retaining Collar - Orange (4)
FINAL ASSEMBLY

30 3123-O ALU SHOCK ABSORBER-SET - ORANGE (2)
30 9402 BODY CLIP FOR 6MM BODY POST (4)
33 8001-O ALU SHOCK ABSORBER-SET - ORANGE (2)
90 2306 HEX SCREW SH M3x6 (10)
90 2308 HEX SCREW SH M3x8 (10)
96 0240 NUT M4 WITH SERRATED FLANGE (10)

Wheels (not included)

INITIAL POSITION

FRONT SHOCKS (SHORETER SPRINGS)
Cut 2 pieces of silicone tubing and install as follows:*

- **SILICONE TUBE MARKED AS RED**: FROM MUFFLER TO FUEL TANK CAP
- **SILICONE TUBE MARKED AS BLUE**: FROM FUEL TANK TO CARBURETOR

**OPTIONAL:**

- #335270 Graphite Aerodynamic Disk - FRONT
  Front aerodynamic disc: improves steering
- #335370 Graphite Aerodynamic Disk - REAR
  Rear aerodynamic disc: improves stability and traction

---

* TIRES NOT INCLUDED

- REAR TIRES (WIDE)
- FRONT TIRES (NARROW)

---

REAR SHOCKS (LONGER SPRINGS)

- SHOCK TOWER
  - NOTE ORIENTATION
  - ARM

---

**SHOCK POSITION ADJUSTMENT**

902306

**SET-UP BOOK**

960240

---

**FINAL ASSEMBLY**

902306

**SH M3x6**

960240

**N M4**

TIRES NOT INCLUDED

OPTIONAL #335270

OPTIONAL #335370
CARB LINKAGE ADJUSTMENT

NEUTRAL (IDLE)

Turn on transmitter and receiver and set the throttle servo trim to the neutral position.

Adjust the idle adjustment screw on the carburetor to open approx. 0.5-1mm.

Adjust both collars on the carb and brake linkages accordingly. The carb linkage must have approximately 0.5mm of preload on the spring at neutral.

DO NOT ADJUST while the engine is running.

Approx. 0.5mm

FULL THROTTLE

With the engine NOT RUNNING but the receiver turned ON, apply full throttle at the transmitter.

Adjust the transmitter’s throttle servo high-end point so that the servo horn fully opens the carburetor when the transmitter’s throttle control (e.g., throttle trigger) is at 95% of full throttle. The servo should not have excessive strain when at full throttle, or throttle/carb damage will result.

If the transmitter does not have throttle high-end point adjustment, adjust the throttle linkage pivot position on the servo horn until full throttle is obtained.

Approx. 0.5-1mm

BRAKE

Adjust the composite collar on the brake linkage so the brakes work smoothly.

If the brakes apply too much or not enough, adjust the collar accordingly. If your transmitter has throttle servo low-end point adjustment (or brake adjustment), use that to set the appropriate amount of throttle servo horn throw.

Approx. 0.5-1mm

Engine idling
**SET-UP SHEET**

**RACE**

**TRACK**

**NAME**

**DATE**

**COUNTRY**

**TEMPERATURE / °F or °C**

**AIR**

**TRACK**

**LAPS**

**BEST LAP TIME**

**QUALIFYING POSITION**

**FINAL POSITION**

**TRACK CONDITION**

- Smooth
- Technical
- Mixed
- Bumpy

**TRACK TRACTION**

- Low
- Medium
- High

---

**FRONT DIFF**

- Gear Diff. Oil

---

**FRONT SHOCKS**

- Spring
- Oil
- Rebound

---

**ANTI-ROLL BAR**

- Blade
- Standard
- 47°

---

**FRONT TIRES**

- Manufacturer
- Shore
- Diameter
- 5 Min. Wear
- Rubber Tires

---

**ENGINE**

- **FUEL**
- **MANIFOLD**
- **AIR INTAKE**
- **CARB. DIA**

---

**CLUTCH / BRAKE**

- **STANDARD**
- **ADJ. NUT**
- **STEERING BLOCK RATIO**
- **STEERING BLOCK**

---

**BUMP / WHEELBASE**

- **RIDE HEIGHT**
- **WHEELBASE**

---

**SHAFT / BRACE**

- **NO**
- **YES**

---

**ROLL CENTER**

- **FRONT**
- **REAR**

---

**ENGINE MOUNT**

- **STANDARD**
- **MONOBLOCK**
- **BRASS**

---

**BATTERIES HOLDER**

- **BRASS**
- **GRAPHITE**
- **COMPOSITE**

---

**WIRE**

- **mm**

---

**SHAFT**

- **mm**

---

**CHASSIS WEIGHT BALANCE**

- **BALANCE IN**
- **BALANCE OUT**
- **REAR BALANCE**

---

**DESIGNER**

**MANUFACTURER**

**DIAMETER**

**5 MIN. WEAR**

---

**TIRE SET-UP SHEET**

**FRONT/REAR**

- **AERO DISK**
- **BUMP**

---

**ACKERMANN POSITION**

- **LEFT**
- **RIGHT**

---

**CAMBER**

- **UPPER ARM**
- **LOWER ARM**

---

**TOE**

- **OUT**
- **IN**

---

**ROLL CENTER**

- **FRONT**
- **REAR**

---

**KURY**

- **#107712**
- **#107702**
- **#107712**

---

**WING HEIGHT**

- **WING SIDE PLATES**

---

**COMMENTS**