4TEC 2.0
AWD CHASSIS

MODEL 83044-4



MUSTANG GT

TRAXXAS

OWNER'S MANUAL

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Officially licensed from Ford Motor Company, a global automotive industy leader, Traxxas' new Ford Mustang GT puts you behind the wheel of this legendary performance vehicle. The XL-5 ESC and Titan 550 horsepower stays true to the Mustang's performance heritage, cranking out tire-shredding torque for instant acceleration and power slides. The Ford Mustang GT is an impressive street machine with full-time AWD and oil-filled Ultra Shocks, fully assembled and Ready-To-Race®. Built to be driven, this Ford Mustang GT replica rests on the Traxxas 4-Tec™ 2.0 chassis that's all new from the ground up.

This manual contains the instructions you will need to operate, and maintain your model so that you can enjoy it for years to come. We want you to feel confident that you own one of the best-performing models in the market and that it is backed by a team of professionals who aim to provide the highest level of factory support possible. Traxxas models are about experiencing total performance and satisfaction, not just with your model, but also with the company that stands behind it.

We know you're excited about getting your new model on the road, but it's very important that you take some time to read through the Owner's Manual. This manual contains all the necessary set-up and operating procedures that allow you to unlock the performance and potential that Traxxas engineers designed into your model. **Even if you are an experienced R/C enthusiast, it's important to read and follow the procedures in this manual.**

Thank you again for going with Traxxas. We work hard every day to assure you the highest level of customer satisfaction possible. We truly want you to enjoy your new model!

Traxxas Support



Traxxas support is with you every step of the way. Refer to the next page to find out how to contact us and what your support options are.

Quick Start

This manual is designed with a Quick Start path that outlines the necessary procedures to get your model up and running in the shortest time possible. If you are an experienced R/C enthusiast, you will find it helpful and fast. Be sure and read through the rest of the manual to learn about important safety, maintenance, and adjustment procedures. Turn to page 9 to begin.

REGISTERING YOUR MODEL

In order to serve you better as our customer, please register your product within 10 days of your purchase online at Traxxas.com/register.

Traxxas.com/register

FCC Compliance

This device contains a module that complies with the limits for a Class B digital device as described in part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The limits for a Class B digital device are designed to provide reasonable protection against harmful interference in residential settings. This product generates, uses and can radiate radio frequency energy, and, if not operated in accordance with the instructions, may cause harmful interference to radio communications. The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Canada, Industry Canada (IC)

This Class B digital apparatus complies with Canadian ICES-003 and RSS-210. This device complies with Industry Canada license exempt RSS standard(s). Operation is subject to the following two conditions: This device may not cause interference, and this device must accept any interference, including interference that may cause undesired operation of the device.

Radio Frequency (RF) Exposure Statement

This equipment complies with radio frequency exposure limits set forth by FCC and Industry Canada for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body or bystanders and must not be co-located or operating in conjunction with any other antenna or transmitter.

Operation Frequency: 2406 - 2453 MHz
Maximum Radio Frequency Power: Maximum Peak Power 7 dBm

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Carefully read and follow all instructions in this and any accompanying materials to prevent serious damage to your model. Failure to follow these instructions will be considered abuse and/or neglect.

Before running your model, look over this entire manual and examine the model carefully. If for some reason you decide it is not what you wanted, then do not continue any further. **Your hobby dealer absolutely cannot accept a model for return or exchange after it has been run.**

WARNINGS, HELPFUL HINTS, & CROSS-REFERENCES

Throughout this manual, you'll notice warnings and helpful hints identified by the icons below. Be sure to read them!


An important warning about personal safety or avoiding damage to your model and related components.


Special advice from Traxxas to make things easier and more fun.


Refers you to a page with a related topic.

SUPPORT

If you have any questions about your model or its operation, call the Traxxas Technical Support Line toll-free at: **1-888-TRAXXAS (1-888-872-9927)***

Technical support is available Monday through Friday from 8:30am to 9:00pm central time. Technical assistance is also available at Traxxas.com. You may also e-mail customer support with your question at support@Traxxas.com. Join thousands of registered members in our online community at Traxxas.com.

Traxxas offers a full-service, on-site repair facility to handle any of your Traxxas service needs. Maintenance and replacement parts may be purchased directly from Traxxas by phone or online at Traxxas.com. You can save time, along with shipping and handling costs, by purchasing replacement parts from your local dealer.

Do not hesitate to contact us with any of your product support needs. We want you to be thoroughly satisfied with your new model!

*Toll-free support is available to U.S. residents only.

Traxxas
6250 Traxxas Way
McKinney, Texas 75070
Phone: 972-549-3000
Toll-free 1-888-TRAXXAS

Internet
Traxxas.com
E-mail: support@Traxxas.com

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All instructions and precautions outlined in this manual should be strictly followed to ensure safe operation of your model.

This model is not intended for use by children under 14 years of age without the supervision of a responsible and knowledgeable adult.



No previous experience with radio controlled models is required. Models require a minimum of setup, maintenance, or support equipment.

All of us at Traxxas want you to safely enjoy your new model. Operate your model sensibly and with care, and it will be exciting, safe, and fun for you and those around you. Failure to operate your model in a safe and responsible manner may result in property damage and serious injury. The precautions outlined in this manual should be strictly followed to help ensure safe operation. You alone must see that the instructions are followed and the precautions are adhered to.

Important Points to Remember

- Your model is not intended for use on public roads or congested areas where its operation can conflict with or disrupt pedestrian or vehicular traffic.
- Never, under any circumstances, operate the model in crowds of people. Your model is very fast and could cause injury if allowed to collide with anyone.
- Because your model is controlled by radio, it is subject to radio interference from many sources that are beyond your control. Since radio interference can cause momentary losses of radio control, always allow a safety margin in all directions around the model in order to prevent collisions.
- The motor, battery, and speed control can become hot during use. Be careful to avoid getting burned.
- Don't operate your model at night, or anytime your line of sight to the model may be obstructed or impaired in any way.
- **Most importantly, use good common sense at all times.**

Speed Control

Your XL-5 is an extremely powerful electronic device capable of delivering high current. Please closely follow these precautions to prevent damage to the speed control or other components.

- **15-Turn Motor Limit:** The XL-5 has a 15-turn modified motor limit for 540 size motors and a 12-turn modified motor limit for 550 size motors with 0 timing when the motor is properly geared. If the motor or speed control is overheating, try a smaller pinion gear. Do not attempt to use a more powerful motor (fewer turns) than the above-mentioned motor limits or you could experience frequent thermal shutdown.
- **Insulate the Wires:** Always insulate exposed wiring with heat shrink tubing to prevent short circuits.
- **Transmitter on First:** Switch on your transmitter first before switching on the speed control to prevent runaways and erratic performance.
- **Use Neutrally Timed Motors:** For reverse use, the motors must have 0° timing. Modified motors (with adjustable end bells) timed to 0° or Johnson/ Mabuchi (closed end bell) motors are recommended. Using motors with other than 0° timing will draw excess current in reverse, and can result in the speed control overheating and premature motor wear.
- **4-7 NiMH cells or 2 LiPo cells (2s) Only:** The XL-5 can only accept a maximum input voltage of 8.4 volts (NiMH), 7.4 volts (2s LiPo). Always adhere to the minimum and maximum limitations of the XL-5 as stated in the specifications table.
- **Use the Factory Installed Connectors:** If you decide to change the battery or motor connectors, only change one battery or motor connector at a time. This will prevent accidentally mis-wiring the speed control. If the XL-5 is not wired exactly as shown in the diagram, it can be damaged! Please note that modified speed controls can be subject to a rewiring fee when returned for service.
- **No Reverse Voltage:** The speed control is not protected against reverse polarity voltage. When changing the battery and/or motor, be sure to install the same type of connectors to avoid reverse polarity damage to the speed control. Removing the battery connectors on the speed control or using the same-gender connectors on the speed control will void the product's warranty.
- **Motor Capacitors Required:** Three 0.1µF (50V) ceramic capacitors should be properly installed on every motor to prevent radio interference. Capacitors have been provided with the XL-5.
- **No Schottky Diodes:** External schottky diodes are not compatible with reversing speed controls. Using a schottky diode with the XL-5 will damage the ESC and void the 30-day warranty.

Recycling Traxxas Power Cell NiMH Batteries

Traxxas strongly encourages you to recycle your Power Cell NiMH battery when it has reached the end of its useful life. **Do not throw your battery in the trash.** All Power Cell NiMH battery packs display the RBRC (Rechargeable Battery Recycling Corporation) icon, indicating they are recyclable. To find a recycling center near you, ask your local hobby dealer or visit www.call2recycle.org.

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WARNING! CAUTION! DANGER!

FIRE HAZARD! Your model is able to use LiPo batteries. Charging and discharging batteries has the potential for fire, explosion, serious injury, and property damage if not performed per the instructions. Before use, read and follow all manufacturer's instructions, warnings, and precautions. In addition, Lithium Polymer (LiPo) batteries pose a SEVERE risk of fire if not properly handled per the instructions and require special care and handling procedures for long life and safe operation. LiPo batteries are intended only for advanced users that are educated on the risks associated with LiPo battery use. Traxxas does not recommend that anyone under the age of 14 use or handle LiPo battery packs without the supervision of a knowledgeable and responsible adult. Dispose of used batteries according to the instructions.

Important Warnings for users of Lithium Polymer (LiPo) batteries:

- LiPo batteries have a minimum safe discharge voltage threshold that should not be exceeded. The electronic speed control is equipped with built-in Low-Voltage Detection that alerts the driver when LiPo batteries have reached their minimum voltage (discharge) threshold. It is the driver's responsibility to stop immediately to prevent the battery pack from being discharged below its safe minimum threshold.
- Low-Voltage Detection is just one part of a comprehensive plan for safe LiPo battery use. It is critical to follow all instructions for safe and proper charging, use, and storage of LiPo batteries. Make sure you understand how to use your LiPo batteries. If you have questions about LiPo battery usage, please consult with your local hobby dealer or contact the battery manufacturer. As a reminder, all batteries should be recycled at the end of their useful life.
- ONLY use a Lithium Polymer (LiPo) balance charger with a balance adapter port to charge LiPo batteries. Never use NiMH or NiCad-type chargers or charge modes to charge LiPo batteries. DO NOT charge with a NiMH-only charger. The use of a NiMH or NiCad charger or charge mode will damage the batteries and may cause fire and personal injury.
- NEVER charge LiPo battery packs in series or parallel. Charging packs in series or parallel may result in improper charger cell recognition and an improper charging rate that may lead to overcharging, cell imbalance, cell damage, and fire.
- ALWAYS inspect your LiPo batteries carefully before charging. Look for any loose leads or connectors, damaged wire insulation, damaged cell packaging, impact damage, fluid leaks, swelling (a sign of internal damage), cell deformity, missing labels, or any other damage or irregularity. If any of these conditions are observed, do not charge or use the battery pack. Follow the disposal instructions included with your battery to properly and safely dispose of the battery.
- DO NOT store or charge LiPo batteries with or around other batteries or battery packs of any type, including other LiPos.
- Store and transport your battery pack(s) in a cool dry place. DO NOT store in direct sunlight. DO NOT allow the storage temperature to exceed 140°F or 60°C, such as in the trunk of a car, or the cells may be damaged and create a fire risk.
- DO NOT disassemble LiPo batteries or cells.
- DO NOT attempt to build your own LiPo battery pack from loose cells.

Charging and handling precautions for all battery types:

- BEFORE you charge, ALWAYS confirm that the charger settings exactly match the type (chemistry), specification, and configuration of the battery to be charged.
- DO NOT attempt to charge non-rechargeable batteries (explosion hazard), batteries that have an internal charge circuit or a protection circuit, batteries that have been altered from original manufacturer configuration, or batteries that have missing or unreadable labels, preventing you from properly identifying the battery type and specifications.
- DO NOT exceed the maximum manufacturer recommended charge rate.
- DO NOT let any exposed battery contacts or wires touch each other. This will cause the battery to short circuit and create the risk of fire.
- While charging or discharging, ALWAYS place the battery (all types of batteries) in a fire retardant/fire proof container and on a non-flammable surface such as concrete.
- DO NOT charge batteries inside of an automobile. DO NOT charge batteries while driving in an automobile.
- NEVER charge batteries on wood, cloth, carpet, or on any other flammable material.

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(continued on next page)

(continued from previous page)

- ALWAYS charge batteries in a well-ventilated area.
- REMOVE flammable items and combustible materials from the charging area.
- DO NOT leave the charger and battery unattended while charging, discharging, or anytime the charger is ON with a battery connected. If there are any signs of a malfunction or in the event of an emergency, unplug the charger from the power source and disconnect the battery from the charger.
- DO NOT operate the charger in a cluttered space, or place objects on top of the charger or battery.
- If any battery or battery cell is damaged in any way, DO NOT charge, discharge, or use the battery.
- Keep a Class D fire extinguisher nearby in case of fire.
- DO NOT disassemble, crush, short circuit, or expose the batteries to flame or other source of ignition. Toxic materials could be released. If eye or skin contact occurs, flush with water.
- If a battery gets hot to the touch during the charging process (temperature greater than 110°F / 43°C), immediately disconnect the battery from the charger and discontinue charging.
- Allow the battery pack to cool off between runs (before charging).
- ALWAYS unplug the charger and disconnect the battery when not in use.
- ALWAYS unplug the battery from the electronic speed control when the model is not in use and when it is being stored or transported.
- DO NOT disassemble the charger.
- REMOVE the battery from your model or device before charging.
- DO NOT expose the charger to water or moisture.
- ALWAYS store battery packs safely out of the reach of children or pets. Children should always have adult supervision when charging and handling batteries.
- Nickel-Metal Hydride (NiMH) batteries must be recycled or disposed of properly.
- Always proceed with caution and use good common sense at all times.

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Your model comes with a set of specialty metric tools. You'll need to purchase other items, available from your hobby dealer, to operate and maintain your model.

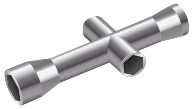
SUPPLIED TOOLS AND EQUIPMENT



2.0mm "L" wrench



1.5mm "L" wrench



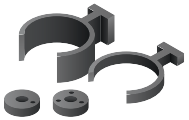
4-way wrench



Optional pinion gear



Body clips



Various pre-load spacers and shock pistons (on parts tree) *see page 24*



Fixed body mounts

REQUIRED EQUIPMENT
(SOLD SEPARATELY)



6 or 7-cell NiMH battery pack, or 2s LiPo battery pack, with Traxxas High-Current connector*



EZ-Peak™ Plus (part #2970)

Battery charger*



4 AA alkaline batteries

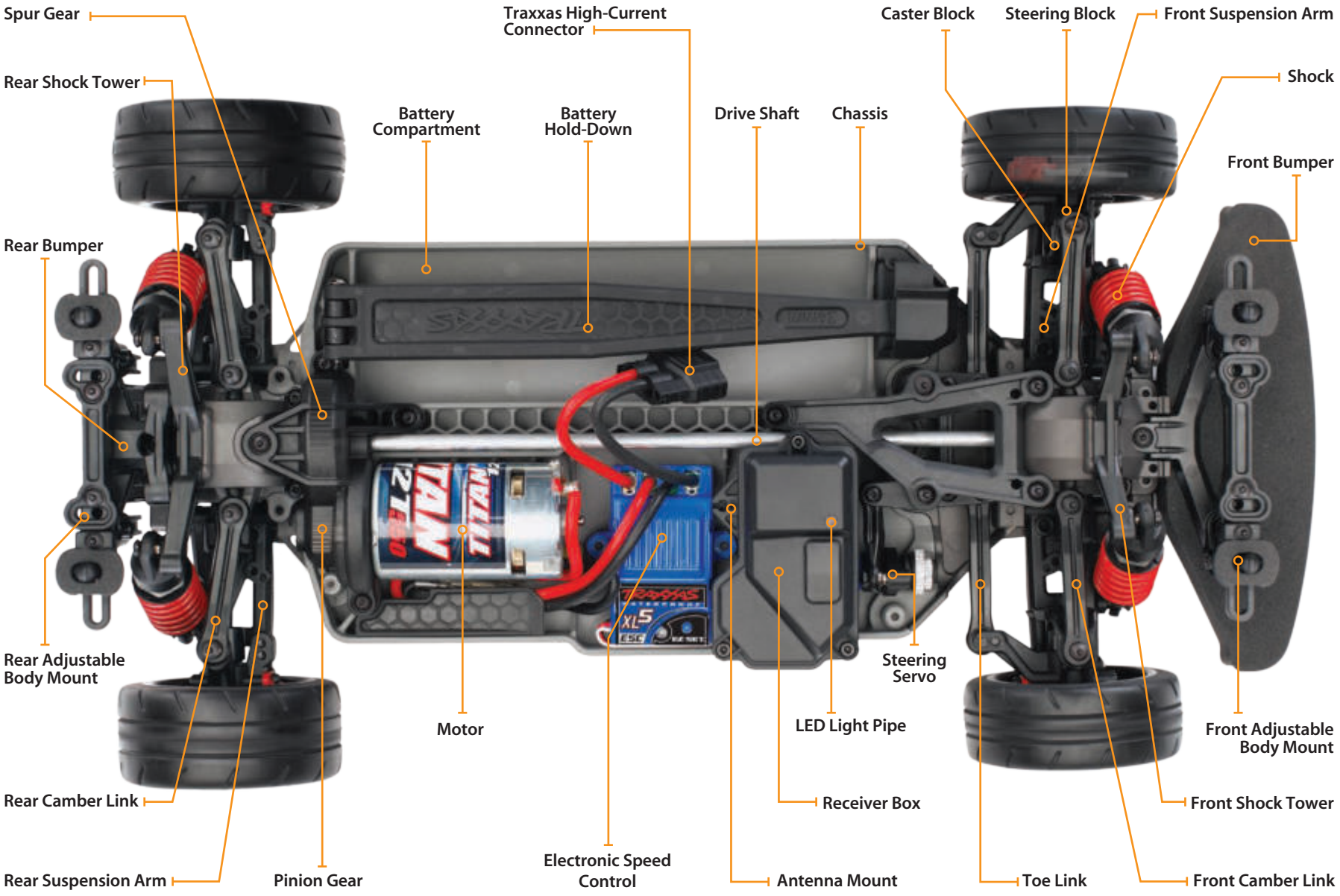
*Battery and charger style are subject to change and may vary from images.

For more information on batteries, see *Use the Right Batteries* on page 13.

Recommended Equipment
These items are not required for the operation of your model, but are a good idea to include in any R/C toolbox:

- Safety glasses
- Traxxas Ultra Premium Tire Glue, Part #6468 (CA glue)
- Hobby knife
- Side cutters and/or needle nose pliers
- Phillips screwdriver
- Soldering iron

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The following guide is an overview of the procedures for getting your model running. Look for the Quick Start logo on the bottom corners of Quick Start pages.

1. Read the safety precautions on pages 4-6

For your own safety, understand where carelessness and misuse could lead to personal injury.

2. Charge the battery pack • See page 13

Your model requires a battery pack and a compatible battery charger (not included). Never use a NiMH or NiCad charger to charge LiPo batteries.

3. Install batteries in the transmitter • See page 13

The transmitter requires 4 AA alkaline or rechargeable batteries (sold separately).

4. Install battery pack in the model • See page 14

Your model requires a fully charged battery pack (not included).

5. Install the antenna • See page 14

The receiver antenna and antenna tube must be properly installed before operating your model.

6. Turn on the radio system • See page 15

Make a habit of turning the transmitter on first and off last.

7. Check servo operation • See page 16

Make sure the steering servo is working correctly.

8. Range test the radio system • See page 16

Follow this procedure to make sure your radio system works properly at a distance and that there is no interference from outside sources.

9. Detail your model • See page 10

Install wings (if necessary) and apply other decals if desired.

10. Drive your model • See page 21

Driving tips and adjustments for your model.

11. Maintaining your model • See page 27

Follow these critical steps to maintain the performance of your model and keep it in excellent running condition.

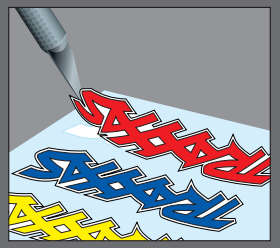
The Quick Start Guide is not intended to replace the full operating instructions available in this manual. Please read this entire manual for complete instructions on the proper use and maintenance of your model.

Look for the Quick Start logo at the bottom of Quick Start pages.

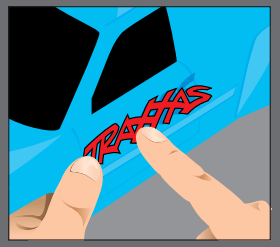
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Applying the Decals

The main decals for your model have been applied at the factory. Additional decals have been printed on self-adhesive clear mylar and are die-cut for easy removal. Use a hobby knife to lift the corner of a decal and lift it from the backing.



To apply the decals, place one end down, hold the other end up, and gradually smooth the decal down with your finger as you go. This will prevent air bubbles. Placing both ends of the decal down and then trying to smooth it out will result in air pockets. Look at the photos on the box for typical decal placement.



INTRODUCTION

Your model includes the TQ 2.4GHz transmitter. When powered on, the TQ 2.4GHz will automatically locate and lock onto an available frequency, allowing multiple models to be raced together without frequency conflicts. Just switch on and drive! The included TQ 2.4GHz radio system has been programmed for your model at the factory and does not require adjustment, but it does have settings you may need to access to maintain proper operation of your model. The detailed instructions (page 15) included in this manual will help you understand and operate the functions of the new TQ 2.4GHz radio system. For additional information and how-to videos, visit Traxxas.com.

RADIO AND POWER SYSTEM TERMINOLOGY

Please take a moment to familiarize yourself with these radio and power system terms. They will be used throughout this manual.

BEC (Battery Eliminator Circuit) - The BEC can either be in the receiver or in the ESC. This circuit allows the receiver and servos to be powered by the main battery pack in an electric model. This eliminates the need to carry a separate pack of 4 AA batteries to power the radio equipment.

Current - Current is a measure of power flow through the electronics, usually measured in amps. If you think of a wire as a garden hose, current is a measure of how much water is flowing through the hose.

ESC (Electronic Speed Control) - An electronic speed control is the electronic motor control inside the model. The XL-5 uses MOSFET power transistors to provide precise, digital proportional throttle control. Electronic speed controls use power more efficiently than mechanical speed controls so that the batteries run longer. An electronic speed control also has circuitry that prevents loss of steering and throttle control as the batteries lose their charge.

Frequency band - The radio frequency used by the transmitter to send signals to your model. This model operates on the 2.4GHz direct-sequence spread spectrum.

LiPo - Abbreviation for Lithium Polymer. Rechargeable LiPo battery packs are known for their special chemistry, which allows extremely high energy density and current handling in a compact size. These are high-performance batteries that require special care and handling. For advanced users only.

mAh – Abbreviation for milliamp hour, a measure of the capacity of the battery pack. The higher the number, the longer the battery will last between recharges.

Neutral position - The standing position that the servos seek when the transmitter controls are at the neutral setting.

NiCad - Abbreviation for nickel-cadmium. The original rechargeable hobby pack, NiCad batteries have very high current handling, high capacity, and can last up to 1000 charging cycles. Good charging procedures are required to reduce the possibility of developing a "memory" effect and shortened run times.

NiMH - Abbreviation for nickel-metal hydride. Rechargeable NiMH batteries offer high current handling and much greater resistance to the "memory" effect. NiMH batteries generally allow higher capacity than NiCad batteries. They can last up to 500 charge cycles. A peak charger designed for NiMH batteries is required for optimal performance.

Receiver - The radio unit inside your model that receives signals from the transmitter and relays them to the servos.

Resistance - In an electrical sense, resistance is a measure of how an object resists or obstructs the flow of current through it. When flow is constricted, energy is converted to heat and is lost.

Servos - Small motor units in your model that operate the steering and throttle mechanisms.

Transmitter - The hand-held radio unit that sends throttle and steering instructions to your model.

Trim - The fine-tuning adjustment of the neutral position of the servos, made by adjusting the steering trim knob on the face of the transmitter.

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Thermal Shutdown Protection - Temperature sensing electronics are used in the ESC to detect overloading and overheating of the transistor circuitry. If excessive temperature is detected, the unit automatically shuts down to prevent damage to the electronics.

2-channel radio system - The TQ 2.4GHz radio system, consisting of the receiver, the transmitter, and the servos. The system uses two channels: one to operate the throttle and one to operate the steering.

2.4GHz Spread Spectrum – This model is equipped with the latest R/C technology. Unlike AM and FM systems that require frequency crystals and are prone to frequency conflicts, the TQ 2.4GHz system automatically selects and locks onto an open frequency, and offers superior resistance to interference and "glitching."

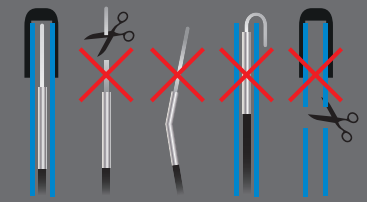
Voltage - Voltage is a measure of the electrical potential difference between two points, such as between the positive battery terminal and ground. Using the analogy of the garden hose, while current is the quantity of water flow in the hose, voltage corresponds to the pressure that is forcing the water through the hose.

550 and 540 - These numbers refer to the size of the motor. 550 motors have armatures that are 30% longer than 540 motors.

IMPORTANT RADIO SYSTEM PRECAUTIONS

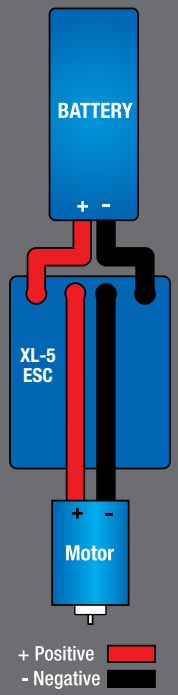
- Do not kink the receiver antenna wire. Kinks in the antenna wire will reduce range.
- DO NOT CUT any part of the receiver antenna wire. Cutting the antenna will reduce range.
- You must extend the antenna wire in the model as far as possible for maximum range. In doing so, the antenna wire will be extended outside of the vehicle body. Do not wrap or coil the antenna wire to keep it from extending out of the body.
- The antenna wire must be installed into the antenna tube to protect it from getting cut or damaged, which will reduce range. When installing the antenna wire into the antenna tube, be careful not to kink the wire by pressing it against the antenna tube cap. The antenna wire should extend to just below or to within one-half inch below the cap.

To prevent loss of radio range, do not kink or cut the black wire, do not bend or cut the metal tip, and do not bend or cut the white wire at the end of the metal tip.



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XL-5 Wiring Diagram

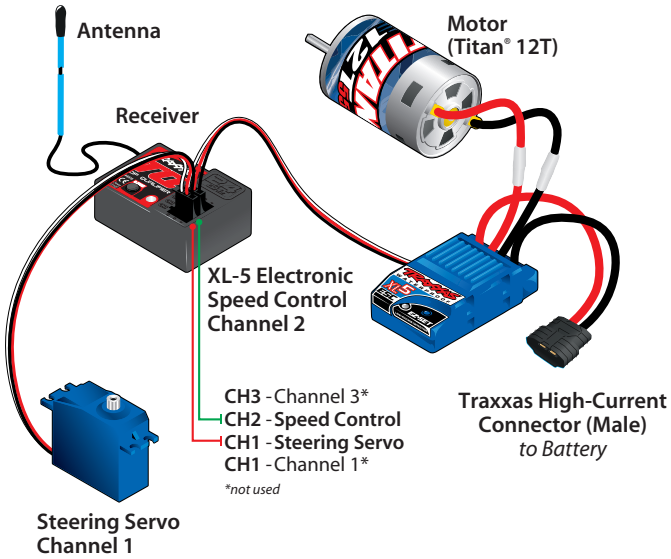


Your model is equipped with the Traxxas TQ 2.4GHz transmitter. The transmitter has two channels: Channel one operates the steering, and channel two operates the throttle. The receiver inside the model has three output channels. Your model is equipped with one servo and an electronic speed control.

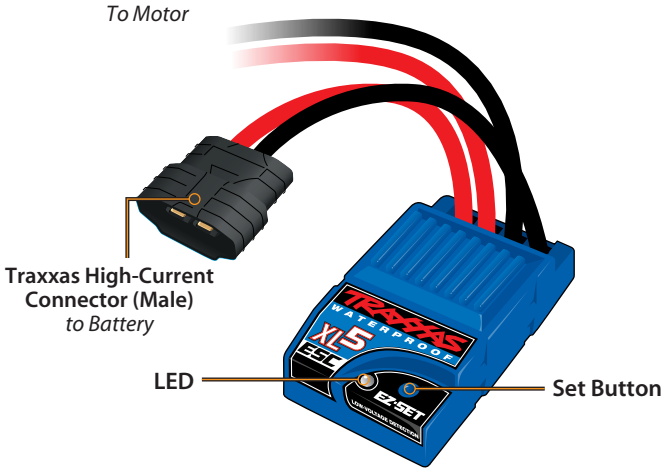
TRANSMITTER AND RECEIVER



MODEL WIRING DIAGRAM



XL-5 ELECTRONIC SPEED CONTROL



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INSTALLING TRANSMITTER BATTERIES

Your TQ 2.4GHz transmitter uses 4 AA batteries. The battery compartment is located in the base of the transmitter.



1. Remove the battery compartment door by pressing the tab and sliding the door open.
2. Install the batteries in the correct orientation as indicated in the battery compartment.
3. Reinstall the battery compartment door and snap it closed.
4. Turn on the transmitter and check the status LED for a solid green light.



If the status LED flashes red, the transmitter batteries may be weak, discharged, or possibly installed incorrectly. Replace with new or freshly charged batteries. The status LED does not indicate the charge level of the battery pack installed in the model. Refer to the Troubleshooting section on page 17 for more information on the transmitter status LED codes.

SELECTING A CHARGER AND BATTERIES FOR YOUR MODEL

Your model does not include a battery or charger. The speed control in the model is compatible with both LiPo and NiMH batteries. One NiMH or 2s LiPo battery equipped with a Traxxas High Current connector is required. Traxxas Power Cell iD batteries are strongly recommended for maximum performance and safer charging. The following chart lists all the available Power Cell batteries for your model:

LiPo Batteries with iD

2843X	5800mAh 7.4V 2-Cell 25C LiPo Battery
2869X	7600mAh 7.4V 2-Cell 25C LiPo Battery

NiMH Batteries with iD

2923X	Battery, Power Cell, 3000mAh (NiMH, 7-C flat, 8.4V)
2940X	Battery, Series 3 Power Cell, 3300mAh (NiMH, 7-C flat, 8.4V)
2950X	Battery, Series 4 Power Cell, 4200mAh (NiMH, 7-C flat, 8.4V)
2960X	Battery, Series 5 Power Cell, 5000mAh (NiMH, 7-C flat, 8.4V)

WARNING: FIRE HAZARD!
Users of Lithium Polymer (LiPo) batteries must read the Warnings and Precautions beginning on page 4. You MUST use a LiPo charger for LiPo batteries or battery damage with the potential for fire will result.

Make certain you choose the correct type of charger for the batteries you select. Traxxas recommends you choose a genuine Traxxas EZ-Peak iD charger for safer charging and maximum battery life and performance.

Charger	Part No.	NiMH Compatible	LiPo Compatible	Battery iD	Max. Cells
EZ-Peak Plus, 4 amps	**2970**	YES	YES	YES	3s
EZ-Peak Live, 12 amps	**2971**	YES	YES	YES	4s
EZ-Peak Dual, 8 amps	**2972**	YES	YES	YES	3s
EZ-Peak Live Dual, 26+ amps	**2973**	YES	YES	YES	4s

If the status LED doesn't light green, check the polarity of the batteries. Check rechargeable batteries for a full charge. If you see any other flashing signal from the LED, refer to the chart on page 17 to identify the code.

Use the Right Batteries

Your transmitter uses AA batteries. Use new alkaline batteries (Part # 2914) or rechargeable batteries, such as NiMH (nickel-metal hydride) batteries, in your transmitter. Make sure rechargeable batteries are fully charged according to the manufacturer's instructions.

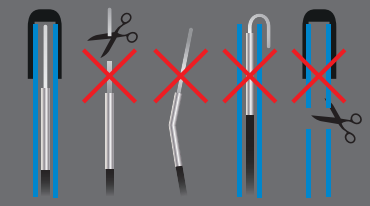
If you use rechargeable batteries in your transmitter, be aware that when they begin to lose their charge, they lose power more quickly than regular alkaline batteries.

Caution: Discontinue running your model at the first sign of weak batteries (flashing red light) to avoid losing control.

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Battery iD
Traxxas recommended battery packs are equipped with Traxxas Battery iD. This exclusive feature allows Traxxas battery chargers (sold separately) to automatically recognize connected battery packs and optimize the charge settings for the battery. This eliminates the need to worry over charger settings and menus for the easiest and safest charging solution possible. Visit Traxxas.com to learn more about this feature and available Traxxas iD chargers and batteries.

To prevent loss of radio range, do not kink or cut the black wire, do not bend or cut the metal tip, and do not bend or cut the white wire at the end of the metal tip.



INSTALLING THE BATTERY PACK

Install the battery pack with the battery wires facing the front of the model. Swing the battery hold down towards the chassis and snap (lock) the end into the front hold-down retainer.

Note: The battery hold-down can be rotated on its pivot to accommodate different height battery packs.



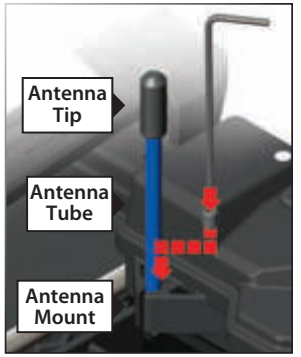
The Traxxas High-Current Connector



Your model is equipped with the Traxxas High-Current Connector. Standard connectors restrict current flow and are not capable of delivering the power needed to maximize the output of the XL-5. The Traxxas connector's gold-plated terminals with large contact surfaces ensure positive current flow with the least amount of resistance. Secure, long-lasting, and easy to grip, the Traxxas connector is engineered to extract all the power your battery has to give.

SETTING UP THE ANTENNA

The receiver antenna has been set up and installed from the factory. The antenna is secured by a 3x4mm set screw. To remove the antenna tube, simply remove the set screw with the included 1.5mm wrench.



When reinstalling the antenna, first slide the antenna wire into the bottom of the antenna tube until the white tip of the antenna is at the top of the tube under the black cap. Next, insert the antenna tube into the mount while making sure that the antenna wire is in the slot in the antenna mount; then, install the set screw next to the antenna tube. Use the supplied 1.5mm wrench to tighten the screw just until the antenna tube is securely in place. Do not over tighten. **Do not bend or kink the antenna wire! See the side bar for more information. Do not shorten the antenna tube.**

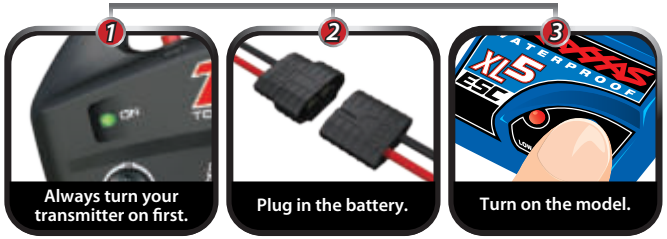
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RADIO SYSTEM CONTROLS



RADIO SYSTEM RULES

- Always turn your transmitter on first and off last. This procedure will help to prevent your model from receiving stray signals from another transmitter, or other source, and running out of control. Your model has electronic fail-safes to prevent this type of malfunction, but the first, best defense against a runaway model is to always turn the transmitter on first and off last.



- Always use new or freshly charged batteries for the radio system. Weak batteries will limit the radio signal between the receiver and the transmitter. Loss of the radio signal can cause you to lose control of your model.
- In order for the transmitter and receiver to bind to one another, the receiver in the model must be turned on within 20 seconds of turning on the transmitter. The transmitter LED will flash fast red, indicating a failure to link. If you miss it, simply turn off the transmitter and start over.
- Always turn on the transmitter before plugging in the battery.

RADIO SYSTEM BASIC ADJUSTMENTS



Steering Trim

The steering trim knob located on the face of the transmitter adjusts the neutral (center) point of the steering channel. If your model pulls to the right or left when the steering wheel is centered, turn the knob until the model drives straight when the steering wheel is centered.

Channel Reversing

The TQ 2.4GHz transmitter has been programmed with the correct servo direction settings for your model and should not require adjustment. These instructions are for reference and troubleshooting only.

Reversing a channel reverses the direction of the corresponding servo. For example, if you turn the steering wheel to the right and the model turns left, Channel 1 would need to be reversed to correct the servo direction. Use the following procedures to reverse the steering and throttle channels, if necessary. ***Servo reversing should only be required if you accidentally reset the direction of a channel. Do not reverse the steering or throttle channels unless necessary.***

Steering reversing procedure:

1. Press and hold the SET button on the transmitter for two seconds. The status LED will flash green.
2. Turn and hold the steering wheel to the full left or full right position (it does not matter which position you choose).
3. While holding the steering wheel in position, press the SET button to reverse the channel.
4. The channel is now reversed. Confirm correct servo operation before running your model.

Make certain the model's receiver antenna is properly installed before operating your model. See "Setting up the Antenna." *Failure to properly install the receiver antenna will result in greatly reduced radio range and potential loss of control.*

Remember, always turn the transmitter on first and off last to avoid damage to your model.

When rechargeable batteries begin to lose their charge, they will fade much faster than alkaline dry cells. Stop immediately at the first sign of weak batteries. Never turn the transmitter off when the battery pack is plugged in. The model could run out of control.

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Using Reverse: While driving, push the throttle trigger forward to apply brakes. Once stopped, return the throttle trigger to neutral. Push the throttle trigger forward again to engage proportional reverse.

Throttle reversing procedure:
Note: Throttle reversing is often times unnecessary on electric models, as issues with the throttle can usually be solved by reprogramming the speed control and/or verifying that the motor is wired correctly. Before attempting to reverse the throttle channel using the procedure below, you should first recalibrate the speed control. Refer to "*XL-5 Setup Programming*" on page 18.

1. Press and hold the SET button on the transmitter for two seconds. The status LED will flash green.
2. Move and hold the throttle trigger to the full forward or full brake position (it does not matter which position you choose).
3. While holding the throttle trigger in position, press the SET button to reverse the channel.
4. The channel is now reversed. Recalibrate the speed control and then confirm correct servo operation before running your model.

USING THE RADIO SYSTEM

The TQ 2.4GHz Radio System has been adjusted at the factory for correct operation with your model. The adjustment should be checked before running the model, in case of movement during shipping. Here's how:

1. Turn the transmitter switch on. The status LED on the transmitter should be solid green (not flashing).
2. **Elevate the model on a block or a stand so that all the tires are off the ground.** Make sure your hands are clear of the moving parts of the model.
3. Plug the battery pack in the model into the speed control.
4. Press and release the EZ-Set button on the speed control to turn the model on. The speed control's LED will glow red. To turn the speed control off, press the EZ-Set button until the LED turns off.

   Note: If the LED shines green after the speed control is turned on, Low-Voltage Detection is activated. This may cause poor performance from NiMH battery packs. Make sure to turn the Low-Voltage Detection on when using LiPo batteries. **Never use LiPo batteries while Low-Voltage Detection is turned off.** See page 18 for more information.
5. Turn the steering wheel on the transmitter back and forth and check for rapid operation of the steering servo. Also, check that the steering mechanism is not loose or binding. If the steering operates slowly, check for weak batteries.
6. When looking down at the model, the front wheels should be pointing straight ahead. If the wheels are turned slightly to the left or right, slowly adjust the steering trim control on the transmitter until they are pointing straight ahead.



7. Gently operate the throttle trigger to ensure that you have forward and reverse operation, and that the motor stops when the throttle trigger is at neutral. **Warning**: **Do not apply full throttle in forward or reverse while the model is elevated.**
8. Once adjustments are made, turn off the receiver on your model, followed by the hand-held transmitter.

Range-Testing the Radio System
Before each running session with your model, you should range-test your radio system to ensure that it operates properly.

1. Turn on the radio system and check its operation as described in the previous section.
2. Have a friend hold the model. Make sure hands and clothing are clear of the wheels and other moving parts on the model.
3. Walk away from the model with the transmitter until you reach the farthest distance you plan to operate the model.
4. Operate the controls on the transmitter once again to be sure that the model responds correctly.
5. Do not attempt to operate the model if there is any problem with the radio system or any external interference with your radio signal at your location.

The TQ 2.4GHz transmitter has a directional antenna. For maximum range, hold the antenna upright and pointed in the direction of the model. Pointing the transmitter away from the model will reduce radio range.



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Higher Speeds Require Greater Distance

The faster you drive your model, the more quickly it will near the limit of radio range. At top speeds, models can cover anywhere between 50 to 100 feet every second! It's a thrill, but use caution to keep your model in range. If you want to see your model achieve its maximum speed, it is best to position yourself in the middle of the truck's running area, not the far end, so you drive the truck towards and past your position. In addition to maximizing the radio's range, this technique will keep your model closer to you, making it easier to see and control.

Your model's radio system is designed to operate reliably up to the approximate distance that it is no longer easy or comfortable to see and control the model. Most drivers will struggle to see and drive their model at distances farther than a football field (300+ feet). At greater distances, you could lose sight of your model and you may also exceed the radio system's operating range which will cause the fail-safe system to activate. For best visibility and control of your model keep your model within 200 feet, regardless of the maximum range available.

No matter how fast or far you drive your model, always leave adequate space between you, the model, and others. Never drive directly toward yourself or others.

TQ 2.4GHz Binding Instructions

For proper operation, the transmitter and receiver must be electronically 'bound.' **This has been done for you at the factory.** Should you ever need to re-bind the system or bind to an additional transmitter or receiver, follow these instructions. **Note**: The receiver must be connected to a 4.8-6.0v (nominal) power source for binding and the transmitter and receiver must be within 5 feet of each other.

1. Press and hold the SET button on the transmitter.
2. Turn on the transmitter and release the SET button. The status LED will flash red slowly, indicating that the transmitter is in bind mode.
3. Press and hold the LINK button on the receiver.
4. Turn on the speed control by pressing the EZ-Set button and release the LINK button.
5. When the LEDs on both the transmitter and the receiver turn solid green, the system is bound and ready for use. Confirm that the steering and throttle operate properly before driving your model.

TRANSMITTER LED CODES

LED Color / Pattern	Name	Notes
Solid green	Normal Driving Mode	See page 15 for information on how to use the transmitter controls.
Slow red (0.5 sec on / 0.5 sec off)	Binding	See this page for more information on binding.
Flashing medium red (0.25 sec on / 0.25 sec off)	Low Battery Alarm	Put new batteries in the transmitter. See page 13 for more information.
Flashing fast red (0.125 sec on / 0.125 sec off)	Link Failure / Error	Transmitter and receiver are no longer bound. Turn the system off and then back on to resume normal operation. Find source of the link failure (i.e., out of range, low batteries, damaged antenna).

RECEIVER LED CODES

LED Color / Pattern	Name	Notes
Solid green	Normal Driving Mode	See page 15 for information on how to use your transmitter controls.
Slow red (0.5 sec on / 0.5 sec off)	Binding	See this page for more information on binding.
Flashing fast red (0.125 sec on / 0.125 sec off)	Fail-Safe / Low-Voltage Detect	Consistent low voltage in the receiver triggers Fail-Safe so that there is enough power to center the throttle servo before it completely loses power.

Fail-Safe
Your Traxxas radio system is equipped with a built-in fail-safe function that returns the throttle to its last saved neutral position in the event of a signal loss. The LED on the transmitter and the receiver will rapidly flash red when the fail-safe mode is activated. If fail-safe activates while you are operating your model, determine the reason for signal loss and resolve the problem before operating your model again.

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XL-5 Specifications

Input Voltage
4-7 cells NiMH; 2S LiPo

Case Size
1.23"W x 2.18"L x 0.75"H

Weight
2.0 ounces / 57 grams

Motor Limit
15-turns (540 Size) /
12-turns (550 Size)

On Resistance Forward
0.005 Ohms

On Resistance Reverse
0.014 Ohms

Peak Current - Forward
100A

Peak Current - Reverse
60A

Braking Current
60A

Continuous Current
15A

BEC Voltage
6.0 VDC

BEC Current
1A

Power Wire
14 Gauge / 5"

Input Harness Wire
26 Gauge / 9"

Transistor Type
MOSFET

PWM Frequency
1700 Hz

Thermal Protection
Thermal Shutdown

Single Button Setup
Yes

Low-Voltage Detection
Yes (User Enabled)

XL-5 Battery Settings (Low-Voltage Detection Setting)
The XL-5 electronic speed control is equipped with built-in Low-Voltage Detection. The Low-Voltage Detection circuitry constantly monitors the battery voltage. When the battery voltage begins to reach the minimum recommended discharge voltage threshold for LiPo battery packs, the XL-5 will limit the power output to 50% throttle. When the battery voltage attempts to fall below the minimum threshold, the XL-5 will shut down all motor output. The LED on the speed control will slowly blink red, indicating a low-voltage shutdown. The XL-5 will stay in this mode until a fully charged battery is connected.

When you turn your model on, the XL-5 speed control's status LED will glow green, indicating that **Low-Voltage Detection is activated** to prevent over-discharging of LiPo batteries. **LiPo batteries are intended only for the most advanced users that are educated on the risks associated with LiPo battery use.**

WARNING: FIRE HAZARD!
Do not use LiPo batteries in this vehicle with Low-Voltage Detection disabled.

Verify that Low-Voltage Detection is ACTIVATED:
1. Turn on the transmitter (with the throttle at neutral).
2. Connect a fully charged battery pack to the XL-5.
3. Press and release the EZ-Set button to turn the XL-5 on. If the LED is solid red, then the Low-Voltage Detection is DISABLED (not safe to use LiPo batteries). If the LED is solid green, then Low-Voltage Detection is ACTIVATED.

To activate Low-Voltage Detection (LiPo setting):
1. Make sure the LED on the XL-5 is on and RED.
2. Press and hold the EZ-Set button (the LED will turn off). After ten seconds, the motor will beep twice and the LED will shine GREEN. Release the button.



3. Low-Voltage Detection is now ACTIVATED.

To disable Low-Voltage Detection (NiMH setting):
1. Make sure the LED on the XL-5 is on and GREEN.
2. Press and hold the EZ-Set button (the LED will turn off). After ten seconds, the motor will beep three times and the LED will shine RED. Release the button.



3. Low-Voltage Detection is now DISABLED.

XL-5 Setup Programming (Calibrating your ESC and transmitter)
Read through all of the programming steps before you begin. If you get lost during programming or receive unexpected results, simply unplug the battery, wait a few seconds, plug the battery pack in, and start over.

1. Disconnect one of the motor wires between the XL-5 and the motor. This is a precaution to prevent runaway when the speed control is turned on before it is programmed.
2. Connect a fully charged battery pack to the XL-5.
3. Turn on the transmitter (with the throttle at neutral).
4. Press and hold the EZ-Set button (A). The LED will first turn green and then red. Release the button.
5. When the LED blinks RED ONCE, pull the throttle trigger to the full throttle position and hold it there (B).
6. When the LED blinks RED TWICE, push the throttle trigger to the full reverse and hold it there (C).
7. When the LED blinks GREEN ONCE, programming is complete. The LED will then shine green or red (depending on Low-Voltage Detection setting), indicating the XL-5 is on and at neutral (D).









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XL-5 Operation

To operate the speed control and test the programming, reconnect the motor wires and place the vehicle on a stable block or stand so that all of the driven wheels are off the ground.

Note that in steps 1-8 below, Low-Voltage Detection is ACTIVATED (factory default) and the LED shines green. If Low-Voltage Detection is DISABLED, the LED will shine red instead of green in steps 1-8 below. ***Never use LiPo batteries while Low-Voltage Detection is disabled.***

1. With the transmitter on, press and release the EZ-Set button. The LED will shine GREEN. This turns the XL-5 on. If you press and release too quickly, you may hear the steering servo jump but the LED may not stay on. Simply press the button again until the LED shines GREEN and then release.
2. Apply forward throttle. The LED will turn off until full throttle power is reached. At full throttle, the LED will shine GREEN.
3. Move the trigger forward to apply the brakes. Note that braking control is fully proportional. The LED will turn off until full braking power is reached. At full brakes, the LED will shine GREEN.
4. Return the throttle trigger to neutral. The LED will shine GREEN.
5. Move the throttle trigger forward again to engage reverse (Profile #1). The LED will turn off. Once full reverse power is reached, the LED will shine GREEN.
6. To stop, return the throttle trigger to neutral. Note that there is no programmed delay when changing from reverse to forward. Use caution to avoid slamming the speed control from reverse to forward. On high-traction surfaces, this could result in transmission or driveline damage.
7. To turn the XL-5 off, press and hold the EZ-Set button for 1½ seconds or until the green LED turns off.
8. The XL-5 is equipped with thermal shutdown protection to guard against overheating caused by excessive current flow. If the operating temperature exceeds safe limits, the XL-5 will automatically shut down. The LED on the face of the XL-5 will rapidly blink red, even if the throttle trigger is moved back and forth. Once the temperature returns to a safe level, the XL-5 will once again function normally.

XL-5 Profile Selection

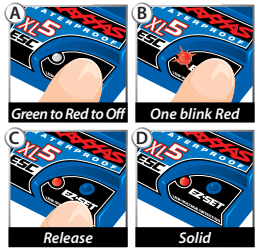
The speed control is factory set to Sport Mode (100% forward, brakes, and reverse). To disable reverse (Race Mode) or to allow 50% power (patented Training Mode), follow these steps. The speed control should be connected to the receiver and the transmitter adjusted as described previously. The profiles are selected by entering the programming mode.

Profile Description

Profile #1 (Sport Mode): 100% Forward, 100% Brakes, 100% Reverse
Profile #2 (Race Mode): 100% Forward, 100% Brakes, No Reverse
Profile #3 (Training Mode): 50% Forward, 100% Brakes, 50% Reverse

Selecting Sport Mode

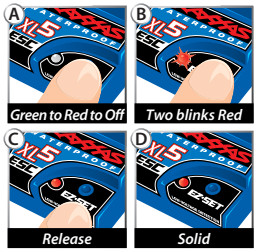
(Profile #1: 100% Forward, 100% Brakes, 100% Reverse)



1. Connect a fully charged battery pack to the XL-5 and turn on your transmitter.
2. With the XL-5 off, press and hold the EZ-Set button until the LED turns solid green, then solid red and then begins blinking red (indicating the Profile numbers).
3. When the LED blinks RED ONCE, release the EZ-Set button.
4. The LED will blink and then turn solid green (Low-Voltage Detection ACTIVE) or red (Low-Voltage Detection DISABLED). The model is ready to drive.

Selecting Race Mode

(Profile #2: 100% Forward, 100% Brakes, No Reverse)



1. Connect a fully charged battery pack to the XL-5 and turn on your transmitter.
2. With the XL-5 off, press and hold the EZ-Set button until the LED turns solid green, then solid red and then begins blinking red (indicating the Profile numbers).
3. When the LED blinks RED TWICE, release the EZ-Set button.
4. The LED will blink and then turn solid green (Low-Voltage Detection ACTIVE) or red (Low-Voltage Detection DISABLED). The model is ready to drive.

Patented Training Mode (Profile #3) reduces forward and reverse throttle by 50%. Training Mode is provided to reduce the power output, allowing beginning drivers to better control the model. As driving skills improve, simply change to Sport or Race Mode for full-power operation.

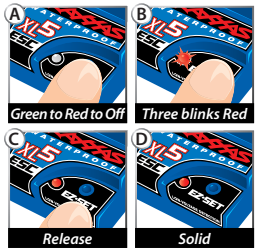
Tip For Fast Mode Changes
The XL-5 is set to Profile 1 (Sport Mode) as the default. To quickly change to Profile 3 (Training Mode), with the transmitter on, press and hold the EZ-Set button until the light blinks red three times and then release. For full power, quickly change back to Profile 1 (Sport Mode) by pressing and holding the EZ-Set button until the light blinks red one time and then releasing.

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Throttle Neutral Protection
The XL-5 speed control features Throttle Neutral Protection, which prevents the model from suddenly accelerating if the speed control is switched on while the transmitter's trigger is being held. When the trigger is returned to neutral, the XL-5 will operate properly.

Selecting Training Mode

(Profile #3: 50% Forward, 100% Brakes, 50% Reverse)



1. Connect a fully charged battery pack to the XL-5 and turn on your transmitter.
2. With the XL-5 off, press and hold the EZ-Set button until the LED turns solid green, then solid red and then begins blinking red (indicating the Profile numbers).
3. When the LED blinks RED THREE TIMES, release the EZ-Set button.
4. The LED will blink and then turn solid green (Low-Voltage Detection ACTIVE) or red (Low-Voltage Detection DISABLED). The model is ready to drive.

Note: If you missed the mode you wanted, keep the EZ-Set button pressed down and the blink cycle will repeat until the button is released and a Mode is selected.

LED Codes and Protection Modes

- **Solid Green:** XL-5 power-on light. Low-Voltage Detection is ACTIVATED (LiPo setting).
- **Solid Red:** XL-5 power-on light. Low-Voltage Detection is DISABLED (NiMH setting). **Never use LiPo batteries while Low-Voltage Detection is disabled.**
- **Fast Blinking Red:** The XL-5 is equipped with thermal shutdown protection to guard against overheating caused by excessive current flow. If the operating temperature exceeds safe limits, the XL-5 will automatically shut down. Let the XL-5 cool. Make sure your model is properly geared for the conditions.
- **Slow Blinking Red (when Low-Voltage Detection is activated):** The XL-5 has entered Low-Voltage Protection. When the battery voltage begins to reach the minimum recommended discharge voltage threshold for LiPo battery packs, the XL-5 will limit the power output to 50% throttle. When the battery voltage attempts to fall below the minimum threshold, the XL-5 will shut down all motor output. The LED on the speed control will slowly blink red, indicating a low-voltage shutdown. The XL-5 will stay in this mode until a fully charged battery is connected.
- **Fast Blinking Green:** The XL-5's LED will blink fast green if the speed control is not receiving a signal. Make certain the speed control is properly plugged into the receiver and the transmitter is switched on.

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Now it's time to have some fun! This section contains instructions on driving and making adjustments to your model. **Before you go on, here are some important precautions to keep in mind.**

- Allow the model to cool for a few minutes between runs. This is particularly important when using high-capacity (2400mAh and above) battery packs that allow extended periods of running. Monitoring temperatures will extend the lives of the batteries and motor.
- Do not continue to operate the model with low batteries or you could lose control of it. Indications of low battery power include slow operation and sluggish servos (slow to return to center). Stop immediately at the first sign of weak batteries. When the batteries in the transmitter become weak, the red power light will begin to flash. Stop immediately and install new batteries.
- Do not drive the model at night, on public streets, or in large crowds of people.
- If the model becomes stuck against an object, do not continue to run the motor. Remove the obstruction before continuing. Do not push or pull objects with the model.
- Because the model is controlled by radio, it is subject to radio interference from many sources beyond your control. Since radio interference can cause momentary losses of control, allow a safety margin of space in all directions around the model in order to prevent collisions.
- Use good, common sense whenever you are driving your model. Intentionally driving in an abusive and rough manner will only result in poor performance and broken parts. Take care of your model so that you can enjoy it for a long time to come.
- When using optional pinions for top speed running, limit your driving to paved surfaces only. Repetitive starting and stopping and extensive drifting around turns will create excess heat and overheat the ESC and/or motor. Running in grass and off-road could also cause excessive loads on the electrical system.
- The Titan 12T motor will benefit from a short break-in period to ensure optimum performance and longer motor life. For the first battery pack, use the stock installed pinion gear and drive smoothly on a flat, paved surface. Accelerate smoothly (avoiding full throttle starts), with most of the driving being done at higher speeds. This will help ensure that the motor provides the best performance and longest life.

About Run Time

A large factor affecting run time is the type and condition of your batteries. The milliamp hour (mAh) rating of the batteries determines how large their "fuel tank" is. A 3000 mAh battery pack will theoretically run twice as long as a 1500 mAh sport pack. Because of the wide variation in the types of batteries that are available and the methods with which they can be charged, it's impossible to give exact run times for the model.

Another major factor that affects run time is how the model is driven. Run times may decrease when the model is driven repetitively from a stop to top-speed and with repetitive hard acceleration.

Tips for Increasing Run Time

- Use batteries with the highest mAh rating you can purchase.
- Use a high-quality peak-detecting charger.
- Read and follow all maintenance and care instructions provided by the manufacturer of your batteries.
- Vary your speed. The Titan12T is a fan cooled motor, therefore moderate to top-speed running helps reduce motor temperatures.
- Lower your gear ratio. Installing a smaller pinion gear will lower your gear ratio, causing less power draw from the motor.
- Maintain your model. Do not allow dirt or damaged parts to cause binding in the drivetrain. Keep the motor clean and the motor bushings lightly lubricated.

mAh Ratings and Power Output

The mAh rating of the battery can affect your top speed performance. The higher capacity battery packs experience less voltage drop under heavy load than low mAh rated packs. The higher voltage potential allows increased speed until the battery begins to become discharged.

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RUNNING IN WET CONDITIONS

Your new Traxxas model is designed with water-resistant features to protect the electronics in the model (receiver, servos, electronic speed control). This gives you the freedom to have fun driving your model through puddles, wet grass, snow, and through other wet conditions. Though highly water resistant, the model should not be treated as though it is submersible or totally, 100% waterproof. Water resistance applies only to the installed electronic components. Running in wet conditions requires additional care and maintenance for the mechanical and electrical components to prevent corrosion of metal parts and maintain their proper function.

Precautions

- **Without proper care, some parts of your model can be seriously damaged due to contact with water. Know that additional maintenance procedures will be required after running in wet conditions in order to maintain the performance of your model. Do not run your model in wet conditions if you are not willing to accept the additional care and maintenance responsibilities.**
- Not all batteries can be used in wet environments. Consult your battery manufacturer to see if their batteries can be used in wet conditions.
- The Traxxas TQ 2.4GHz transmitter is not water resistant. Do not subject it to wet conditions such as rain.
- Do not operate your model during a rain storm or other inclement weather where lightning may be present.
- Do NOT allow your model to come in contact with salt water (ocean water), brackish water (between fresh water and ocean water), or other contaminated water. Salt water is highly conductive and highly corrosive. Use caution if you plan to run your model on or near a beach.
- Even casual water contact can reduce the life of your motor. Special care must be taken to modify your gearing and/or your driving style in wet conditions to extend the life of the motor (details follow).

Before Running Your Vehicle in Wet Conditions

1. Consult the section "After Running Your Vehicle in Wet Conditions" before proceeding. Make sure you understand the additional maintenance required with wet running.
2. The wheels have small holes molded in to allow air to enter and exit the tire during normal running. Water will enter these holes and get trapped inside the tires if holes are not cut in the tires. Cut two small holes (3mm or 1/8" diameter) in each tire. Each hole should be near the tire centerline, 180 degrees apart.
3. Confirm that the receiver box O-ring and cover are installed correctly and secure. Make sure the screws are tight and the blue O-ring is not visible protruding from the edge of the cover.
4. Confirm that your batteries can be used in wet conditions.
5. Use lower gearing (smaller pinion gears, as low as 19T, with the stock 70-T spur gear) when running in mud, deep puddles, snow, or other similar situations that will restrict the tires and put much higher loads on the motor.

Motor Precautions

- Titan motor life can be greatly reduced in mud and water. If the motor gets excessively wet or submerged, use very light throttle (run the motor slowly) until the excess water can run out. Applying full throttle to a motor full of water can cause rapid motor failure. Your driving habits will determine motor life with a wet motor. Do not submerge the motor under water.
- Do not gear the motor by temperature when running in wet conditions. The motor will be cooled by water contact and will not give an accurate indication of appropriate gearing.

After Running Your Vehicle in Wet Conditions

1. Drain the tires by spinning the tires at high speed to "sling" the water out. One way to do this is to make several high-speed passes on a flat, dry surface, if possible.
2. Remove the batteries.
3. Rinse excess dirt and mud off the car with low-pressure water, such as from a garden hose. Do NOT use pressure washer or other high-pressure water. Avoid directing water into the bearings, transmission, etc.
4. Blow off the car with compressed air (optional, but recommended). Wear safety glasses when using compressed air.
5. Remove the wheels from the car.
6. Spray all the bearings, drivetrain, and fasteners with WD-40® or similar water displacing light oil.

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7. Let the car stand or you may blow off with compressed air. Placing the car in a warm, sunny spot will aid drying. Trapped water and oil will continue to drip from the car for a few hours. Place it on a towel or piece of cardboard to protect the surface underneath.
8. As a precautionary step, remove the sealed receiver box cover. While unlikely, humidity or tiny amounts of moisture or condensation may enter the receiver box during wet running. This can cause long-term problems with the sensitive electronics in the receiver. Removing the receiver box cover during storage allows the air inside to dry. This step can improve the long-term reliability of the receiver. It is not necessary to remove the receiver or unplug any of the wires.
9. **Additional Maintenance**: Increase your frequency of disassembly, inspection, and lubrication of the following items. This is necessary after extended wet use or if the vehicle will not be used for an extended period of time (such as a week or longer). This additional maintenance is needed to prevent any trapped moisture from corroding internal steel components.
   - **Stub axle housing bearings**: Remove, clean, and re-oil the bearings.
   - **Titan motor**: Remove the motor, clean with aerosol motor cleaner, and re-oil the bushings with lightweight motor oil. Be sure to wear eye protection when using spray aerosol cleaners.

RECEIVER BOX: MAINTAINING A WATERTIGHT SEAL

Removing and Installing Radio Gear

The unique design of the receiver box allows the removal and installation of the receiver without losing the ability to maintain a watertight seal in the box. The patent-pending wire clamp feature gives you the ability to also install aftermarket radio systems and maintain the watertight features of the receiver box.

Removing the Receiver

1. To remove the cover, remove the three 2.5x10mm socket-head cap screws.
2. To remove the receiver from the box, simply lift it out and set to the side.
3. Unplug the servo cables from the receiver and remove the receiver.

Receiver Installation

1. Always install the wires into the receiver box before installing the receiver.
2. Install the antenna wire and the servo cables into the receiver box.



3. Arrange the wires neatly using the wire guides in the receiver box. The excess wire will be bundled inside the receiver box. Label which wire is for which channel.



4. Apply a small bead of silicone grease (Traxxas part #1647) to the wire clamp.
5. Using double-sided adhesive foam tape, install the receiver into the box.

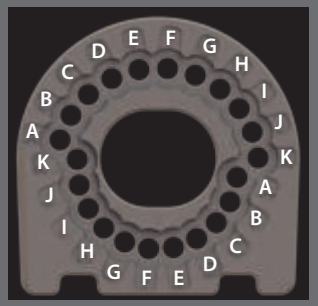
Note: For best performance, it is recommended that the receiver be installed in the original orientation as shown.

6. Plug the wires into the receiver. Refer to page 12 for the wiring diagram.
7. Make sure the box light pipe is aligned with the receiver LED. Make sure the O-ring is properly seated into the groove in the receiver box so that the cover will not pinch it or damage it in any way.



8. Install the cover and tighten the three 2.5x10mm socket-head cap screws securely.
9. Inspect the cover to make sure that the O-ring seal is not visible.

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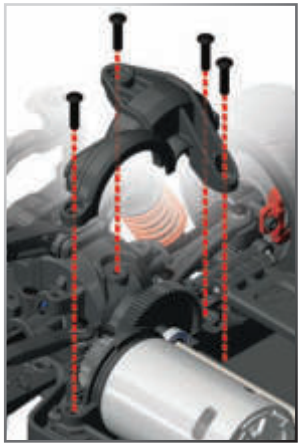


Screw Positions	Pinion Gear Size*	Pinion Gear Size**	Pinion Gear Size†
A	34-T	27-T	19-T
B	35-T	28-T	20-T
C	-	29-T	21-T
D	-	30-T	22-T
E	-	31-T	23-T
F	-	32-T	24-T
G	-	33-T	25-T
H	-	34-T	26-T
I	-	35-T	27-T
J	-	-	28-T
K	-	-	29-T

*for use with 55-T spur gear only
**for use with 62-T spur gear only
†for use with 70-T spur gear only

Once you become familiar with driving your model, you might need to make adjustments for better driving performance

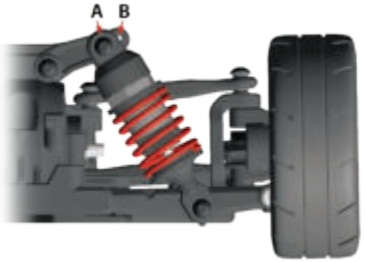
Adjusting Gear Mesh



Incorrect gear mesh is the most common cause of stripped spur gears. Your model includes a fixed gear positioning system to simplify the process and ensure proper gear mesh settings. Access the gears by removing the four 3x12mm button-head cap screws from the gear cover; remove the gear cover. Remove the motor/motor plate assembly from the chassis.

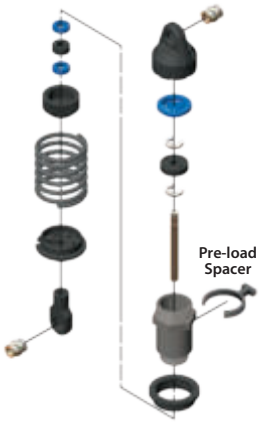
To set the gear mesh, use the chart to the left to identify the screw positions on the motor plate (A - K) that correspond with the chosen motor pinion gear size. Remove the two screws from the motor/motor plate and reinstall in the corresponding positions; reinstall the motor/motor plate assembly in the chassis.

Shock Mounting Positions



Big bumps and rough terrain require a softer suspension with the maximum possible suspension travel and ride height. Racing on a prepared track or on-road use requires a lower ride height and firmer, more progressive suspension settings. The more progressive suspension settings help reduce body roll (increased roll stiffness), dive during braking, and squat during acceleration. The suspension of your model has been set up for on-road performance.

Fine Tuning the Shocks



The four shocks on the model greatly influence its handling. Whenever you rebuild your shocks or make any changes to the pistons, springs, or oil, always make changes to them in pairs (front or rear). Piston selection depends on the range of oil viscosities that you have available. For example, using a two-hole piston with a lightweight oil will, at one point, give you the same damping as a three-hole piston with heavier oil. We recommend using the two-hole pistons with a range of oil viscosities from 10W to 50W (available from your hobby shop). The thinner viscosity oils (30W or less) flow more smoothly and are more consistent, while thicker oils provide more damping. Use only 100% pure silicone shock oil to prolong seal life. From the factory, shock oil is set to 50W in the front and rear shocks. The model's ride height can be adjusted by adding or removing the clip-on, spring pre-load spacers. Adjust the ride height so that the suspension arms are slightly above being parallel to the ground. Observe how the model handles in turns. Proper set-up will add stability and help prevent spin outs. Experiment with different springs and shock oils to find what works best for your current track conditions.

Centering Your Servo

If the trim controls on your transmitter seem off, you may need to re-center your servo. Additionally, whenever your servo has been removed for service or cleaning, it must be re-centered prior to installation in the model.

1. Disconnect the servo horn from the steering servo.
2. Connect the steering servo to channel 1 on the receiver. Connect the electronic speed control (ESC) to channel 2.
3. Place fresh "AA" batteries in the transmitter and turn the transmitter power switch on.
4. Turn the steering trim adjustment on the transmitter to the center "0" position.
5. Elevate the model on a block or stand so that all of the tires are off the ground. Connect a fresh battery pack to the speed control and turn on the ESC (see page 18). The servo will automatically jump to its center position.

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6. Turn off the power to the model followed by the transmitter. The servo horn is now ready to be installed.
7. Be careful not to move the servo shaft when installing the servo horn. Readjust the ESC as described in the "Adjusting the Electronic Speed Control" section.

Motors and Gearing

There are two different types of aftermarket motors that can be purchased for your model, stock and modified. Stock motors all have the same wire thickness and number of turns around the armature as governed by sanctioned racing organizations. They are inexpensive and widely available. Modified motors are more expensive, may feature ball bearings, and come in a variety of wire thicknesses and the number of turns of wire on the armature. The fewer number of turns of wire on the armature, the more powerful the motor will be. Keep in mind that the more powerful the motor, the less battery run time you will have.

One of the more significant advantages to your model's transmission is the extremely wide range of available gear ratios. It can be geared low enough to run extremely hot, modified motors. Modified motors should be geared lower (higher numerically) than stock motors because they reach their maximum power at higher rpms.
A modified motor that is geared incorrectly can actually be slower than a correctly-geared, stock motor. Use the following formula to calculate the overall ratio for combinations not listed on the gear chart:

$$\frac{\text{\# Spur Gear Teeth}}{\text{\# Pinion Gear Teeth}} \times 2.85 = \text{Final Gear Ratio}$$

If you are worried that you might be over-geared, check the temperature of the battery pack and motor. If the battery is extremely hot, and/or the motor is too hot to touch, your model is probably over-geared. If you are not able to run your model for at least four minutes before the battery dies, then change to a lower gear ratio. This temperature test assumes that the model is close to factory stock weight and operates freely with no excessive friction, dragging, or binding, and the battery is fully charged and in good condition.

The model is equipped with a Titan 12T 550 motor. The gear combination that comes stock on the model provides good overall acceleration and top speed. If you want more top speed and less acceleration, install optional high-speed gearing (more teeth).
If you want more acceleration and less top speed, use a smaller optional pinion gear (**optional gearing not included**).

The Titan 12T is equipped with an integrated cooling fan that is effective during medium to high-speed operation. The gearbox is specially vented to cool the motor.

Repetitive starting and stopping over short distances creates excess heat and will not allow the fan to cool the motor properly. For this type of driving, smaller pinion gears are recommended to reduce load on the motor. See the guide to the right.

Tuning the Sealed Gear Differentials

The action of the model's front and rear gear differentials can be tuned for different driving conditions and performance requirements, without major disassembly or removal of the suspension system.

From the factory, the differentials are sealed to maintain consistent long-term performance. Changing the oil in the differential with either lower or higher viscosity oil will vary the performance characteristics of the differentials. Changing to a higher viscosity oil in the differential will reduce the tendency for motor power to be transferred to the wheel with the least traction. You may notice this when making sharp turns on slick surfaces. The unloaded wheels on the inside of the turn have the least traction and tend to spin up to extremely high rpms. Higher viscosity (thicker) oil causes the differential to act like a limited-slip differential, distributing more equal power to the left and right wheels.

Your model will generally benefit from higher viscosity oil when racing on low traction surfaces. **Note:** Heavier oil will allow power to be transferred even with one or more tires off the ground. This can make the vehicle more likely to overturn on high-traction surfaces.

From the factory, the front differential is filled with SAE 30,000W viscosity silicone oil and the rear differential is filled with SAE 10,000W viscosity silicone oil.

Only use silicone oil in the differentials. Traxxas offers SAE 10,000W, 30,000W, and 50,000W viscosity oil (see your parts list). The differentials have to be removed from the vehicle and disassembled to change/replace oil.

Follow the steps on the next page to access and refill the front and rear differentials.

Gearing Compatibility Chart:
The chart below shows a full range of gear combinations acceptable for this model. This does NOT imply that these gear combinations should be used. Over-gearing (bigger pinions, smaller spurs) can overheat and damage the motor and/or speed control.

Pinion Gear \ Spur Gear	70
19	3.68
20	3.50
21	3.33
22	3.18
23	3.04
24	2.92
25	2.80
26	2.69
27	2.59
28	2.50
29	2.41

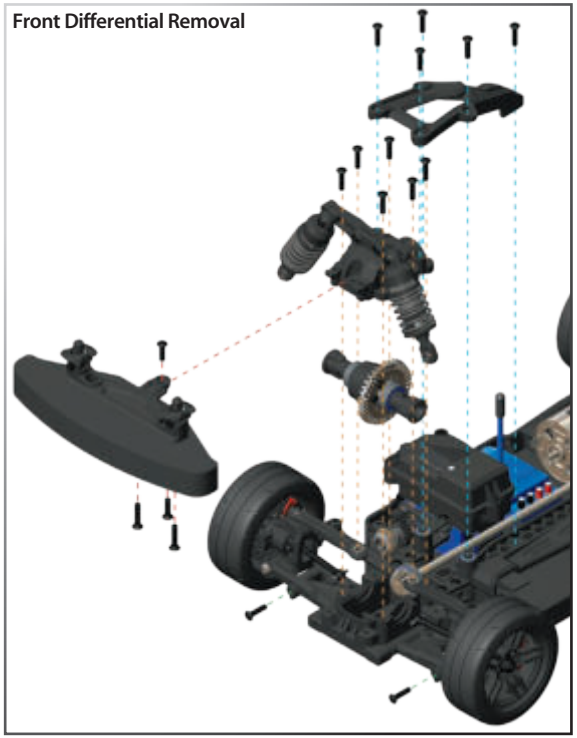
- Out of box setup, recommended for most running, 7-cell NiMH or 2S LiPo
- Included optional gearing, for high-speed running only
- Usable gearing range for 7-cell NiMH or 2s LiPo
- Fits, for high-speed running only

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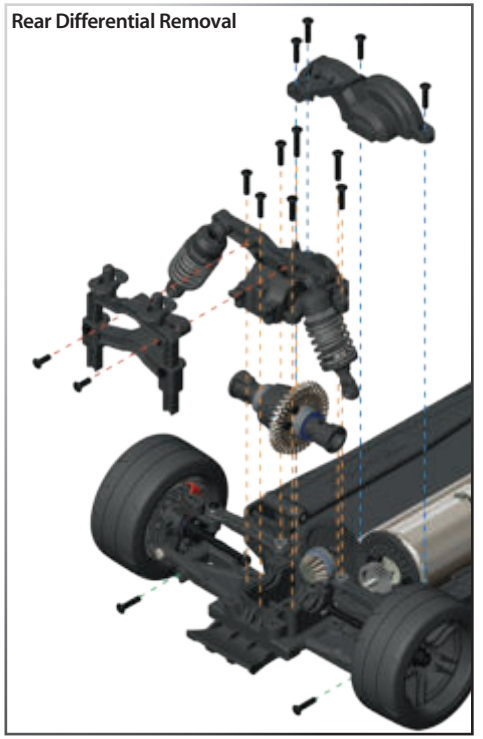
Front differential

1. Turn the chassis over and remove the 3x12mm countersunk screw and the two 3x15mm countersunk screws that hold the front bumper/body mount to the bulkhead.
2. Remove the 3x12mm button-head screw that secures the front body mount to the differential cover.
3. Slide the front bumper/body mount assembly off of the chassis.
4. Remove the five 3x12mm button-head screws from the front chassis brace; remove the chassis brace.
5. Remove the two 3x14mm button-head screws that hold the shocks to the shock tower.
6. Remove the four 3x12mm button-head screws from the differential cover.
7. Use a 1.5mm hex wrench to remove the two screw pins that hold the drive cups to the differential output shafts.
8. Remove the differential cover and slide the differential out of the front of the case.
9. To reinstall the differential, reverse the steps.

Front Differential Removal



Rear Differential Removal



Rear differential

1. Turn the chassis over and remove the 3x12mm countersunk screw and the two 3x15mm countersunk screws that hold the rear bumper to the bulkhead.
2. Slide the rear bumper off of the chassis.
3. Remove the two 3x10mm button-head screws that hold the rear body mount to the shock tower and the 3x12mm button-head screw that secures the rear body mount to the differential cover.
4. Remove the two 3x14mm button-head screws that hold the shocks to the shock tower.
5. Use a 1.5mm hex wrench to remove the two screw pins that hold the drive cups to the differential output shafts.
6. Remove the differential cover and slide the differential out of the front of the case.
7. To reinstall the differential, reverse the steps.

Refilling the differential

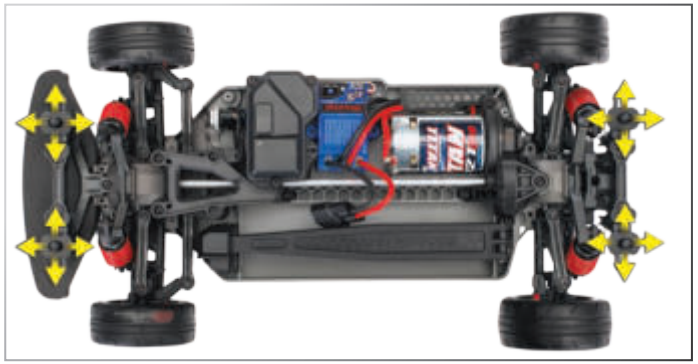
1. Remove the four 2.5x8mm screws from the differential case and carefully pull the differential case halves apart. Work over a towel to collect any fluid that drips from the differential.
2. Drain the fluid from the differential. You may wish to remove the spider gears from the differential to make this easier.
3. Place the spider gears back into the differential case, if you removed them. Fill the differential case with fluid until it the spider gears are submerged half way.
4. Rejoin the differential case halves, using care to align the screw holes. Be sure the rubber gaskets are in place, or the differential may leak.
5. Install the 2.5x8mm screws and tighten securely.

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CHASSIS ADJUSTABILITY

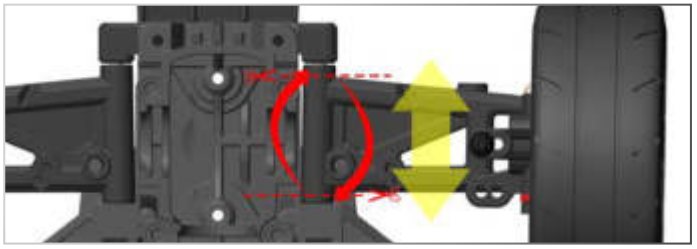
Adjustable Body Mounts

The 4-Tec 2.0 chassis features adjustable body mounts to accommodate many popular 200mm touring car body styles. To adjust the mounts forward or backward, simply remove the fixed screws and install them in the sliding channels. If you need to adjust for width, remove all four screws and pull the body posts out sideways. Reinsert the body posts in the opposite direction so that the screw will pass through the channel. Once you are satisfied with the positioning, tighten down the screws to secure the mounts. An optional set of fixed body mounts is also included with your model.



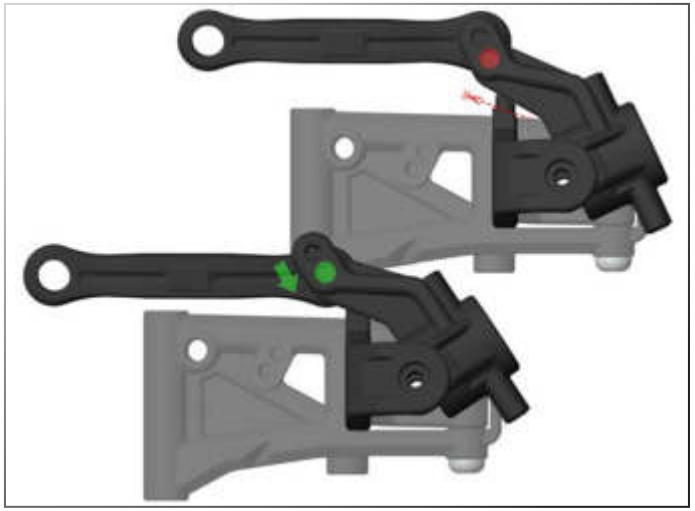
Adjustable Wheelbase

The 4-Tec 2.0 chassis allows you to lengthen or shorten the wheelbase by up to 3mm for the perfect body fit. Remove the rear suspension arms from the vehicle and trim material from the front or rear of the arms. Save the material you remove and add it to the opposite side of the arms to act as a spacer, or use washers to shim the arms. ***Note: The front suspension arms are not adjustable and should not be modified or trimmed.***



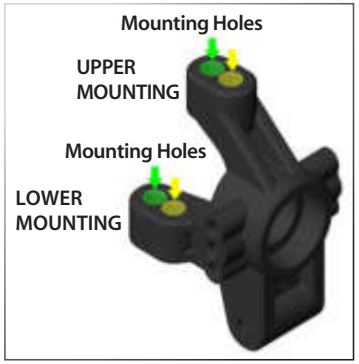
High-Angle Steering

The steering blocks on the 4-Tec 2.0 chassis feature a high-angle option when extra steering angle is desired (for example, when power drifting around a turn). First trim the plastic bump stop to allow greater range of motion from the steering blocks (see illustration). Next, drill out the inner hole on the steering block and move the steering link to the inner hole. When making this modification, we also recommend that you upgrade to constant-velocity driveshafts (sold separately) to avoid driveshaft chatter.



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Dual Rear Camber Link Mounts

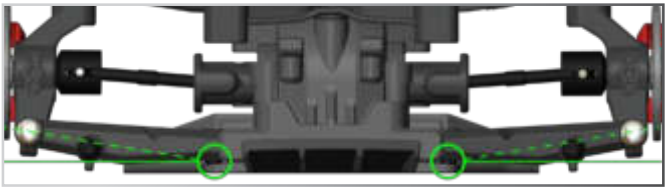


There are two separate mounting points for the rear camber links. Changing the location does not affect performance, but will allow the use of different bodies. The lower mounting points should be used with low-profile bodies; the upper mounting points will work with most body styles. Both mounting points feature two holes for wheel camber adjustment. Moving the links from the standard holes to the outer holes will increase camber and slightly reduce roll stiffness. This modification also requires adjustable camber links (part #8341X, sold separately) to lengthen the links and ensure proper camber settings.

Suspension Droop Adjustment

Suspension droop is the amount of downward travel on the wheels (how much the suspension arm hangs down when the chassis is off the ground). Molded screw bosses in the suspension arms allow you to adjust droop by using a 4mm set screw (part #4897, sold separately). Tightening the screw will decrease droop and allow you to tune the suspension for better stability when cornering.





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Your model requires timely maintenance in order to stay in top running condition. **The following procedures should be taken very seriously.**

Frequently inspect the vehicle for obvious damage or wear. Look for:

1. Cracked, bent, or damaged parts
2. Check the wheels and steering for binding.
3. Check the operation of the shock absorbers.
4. Check the wiring for any frayed wires or loose connections.
5. Check the mounting of the receiver, servo, and speed control.
6. Check the tightness of the wheel nuts with a wrench.
7. Check the operation of the radio system, especially the condition of the batteries.
8. Check for any loose screws in the chassis structure or suspension.
9. Check the operation of the steering servo and ensure that it is not binding.
10. Inspect the gears for wear, broken teeth, or debris lodged between the teeth.

Other periodic maintenance:

- **Chassis**: Keep the chassis clean of accumulated dirt and grime. Periodically inspect the chassis for damage.
- **Suspension**: Periodically inspect the model for signs of damage, such as bent or dirty suspension pins, bent camber links, loose screws, and any signs of stress or bending. Replace components as needed.
- **Steering**: Over time, you may notice increased looseness in the steering system. Replace any components as needed to restore factory tolerances.
- **Shocks**: Keep the oil level in the shocks full. Use only 100% pure silicone shock oil to prolong the life of the seals. If you are experiencing leakage around the top of the shock, inspect the bladder in the top cap for signs of damage or distortion from overtightening. If the bottom of the shock is leaking, then it is time for a rebuild. The Traxxas rebuild kit for two shocks is part #2362.
- **Driveline**: Inspect the driveline for signs of wear or any unusual noise or binding. Remove the gear cover and inspect the spur gear for wear and check the tightness of the set screw in the pinion gear. Tighten, clean, or replace components as needed.

Note: When replacing the spur gear, be sure the spur gear is fully seated on the center driveshaft as shown. There will be an audible "click" as the gear is pushed into place.



Storage

When you are through running your model for the day, blow it off with compressed air or use a soft bristled paint brush to dust-off the vehicle. Always disconnect and remove the battery from your model whenever the model is stored. If your model will be stored for a long time, then also remove the batteries from the transmitter.

Always wear eye protection when using compressed air or spray cleaners and lubricants.

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