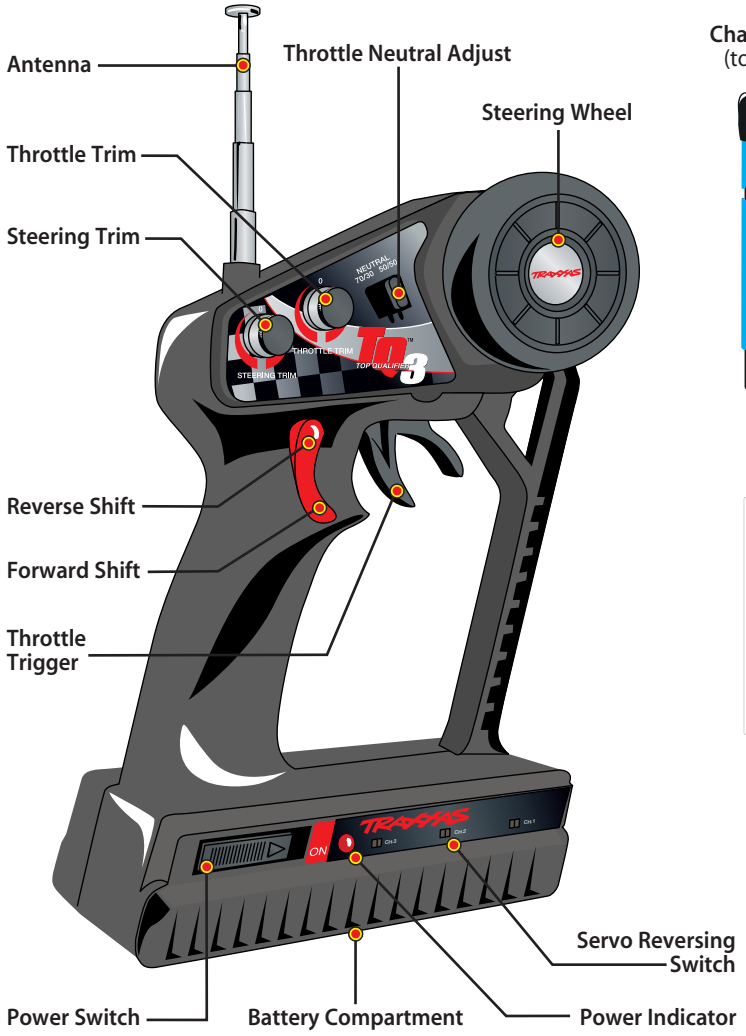
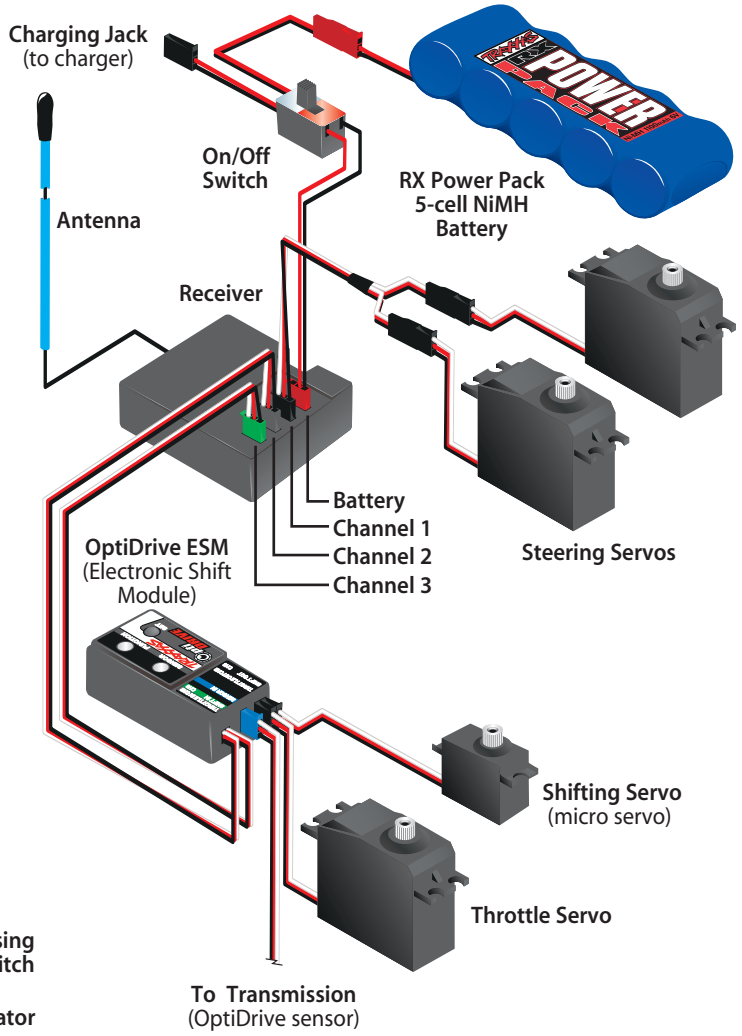
Your Revo is equipped with the TQ-3 radio system. The TQ-3 is a 3-channel system that provides up to a quarter mile range and control for up to three servo outputs. Revo is equipped with two high-torque steering servos connected via a "Y" plug adapter (one input, two equal outputs). The TQ-3 works in conjunction with the OptiDrive™ Electronic Shift Module to monitor and control the input and output signals for the throttle and shifting servos (channels). The OptiDrive monitors the voltage of the on-board RX Power Pack. The "Function" LED will flash red if the battery voltage is too low.

TQ-3 Transmitter



Revo Wiring Diagram



The OptiDrive ESM is designed to adapt and work with aftermarket three channel radio systems (see page 15).

Learn terms related to the TRX 3.3 Racing Engine beginning on page 20.

Radio System Terminology

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

5-Cell Pack – Another term for RX Pack or rechargeable receiver pack. The RX pack is made up of five rechargeable NiMH battery cells and is used in place of the 4AA batteries in the model.

Channel - The 27 MHz frequency band is divided into 6 channels so that up to six models can be operated simultaneously. Each channel is referred to by its flag color and channel number, as shown below.

Channel	Frequency Band	Flag Color	Traxxas Part No.
1	26.995	Brown	2031
2	27.045	Red	2032
3	27.095	Orange	2033
4	27.145	Yellow	2034
5	27.195	Green	2035
6	27.255	Blue	2036

Clearing your frequency - A routine, verbal check to make sure nobody else in your area is operating on the same channel. Always clear your frequency by calling out your channel number before operating your model. Wait or move to another area if your channel is already being used.

Crystal (X-tal) - The plug-in device that determines which channel the radio system will operate on. For each channel, there are two crystals, one for the receiver and one for the transmitter. Of those two crystals, the one marked "RX" with the lower number (.455 MHz lower) must be inserted into the receiver.

Frequency band - The radio frequency used by the transmitter to send signals to your Revo. All Traxxas RTR models operate on a 27 MHz frequency band.

mAh – Abbreviation for milliamp hour. 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.

OptiDrive ESM – Electronic Shift Module. The onboard electronic controller that monitors vehicle speed and throttle position in order to control the action of the shifting servo. Also includes low battery indicator for the onboard receiver pack (RX Power Pack).

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

RX Pack - RX is a common abbreviation for the radio receiver and items associated with it. RX Pack denotes the optional rechargeable battery pack used to power the radio system in the model. It is available as Traxxas part number 3037.

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

Three-channel radio system - The TQ-3 radio system, consisting of the receiver, the transmitter, and the servos. The system uses three channels: one to operate the throttle, one to shift the transmission, and one to operate the steering.

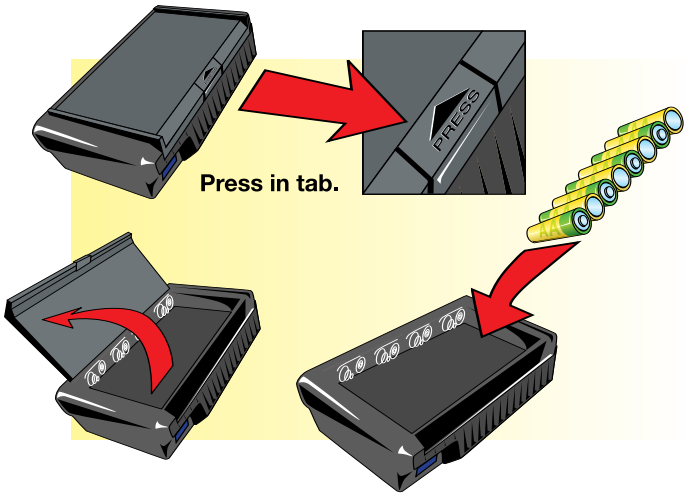
Transmitter - The hand-held radio unit that sends throttle and steering instructions to your Revo.

Trim - The fine-tuning adjustment of the neutral position of the servos, made by turning the throttle and steering trim knobs on the face of the transmitter.

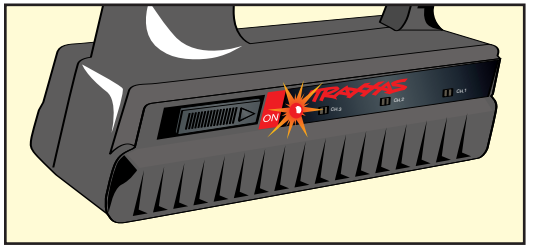
Y Adapter – Servo cable adapter that takes one input signal and directs it to two equal output signals. Used to connect dual steering servos to the channel one receiver output.

Installing Transmitter Batteries

Your TQ-3 transmitter uses 8 AA batteries. The battery compartment is located in the base of the transmitter.



1. Remove the battery compartment door by pressing the tab and lifting the door up.
2. Install the batteries in the correct orientation as indicated in the battery compartment.
3. Reinstall the battery door and snap it closed.



4. Turn on the transmitter and check the power indicator for a solid red light.

If the power indicator light flashes, then the transmitter batteries are weak, discharged or possibly installed incorrectly. Replace with new or freshly charged batteries. The power indicator light does not indicate the charge level of the RX Power Pack installed in the model.

Use the Right Batteries

Your transmitter uses AA batteries. Use new alkaline batteries, or rechargeable batteries such as NiCad or 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 much more quickly than regular alkaline batteries.

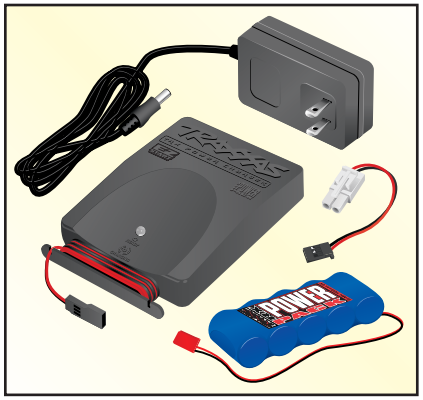
Caution: Discontinue running your Revo at the first sign of weak batteries (flashing red light) to avoid losing control.

If the power indicator doesn't light red, check the polarity of the batteries. Check rechargeable batteries for a full charge.

To prevent losing control of your model, it is important to stop at the first sign of weak receiver battery. Visible warning signals include sluggish steering response and shortened radio range.

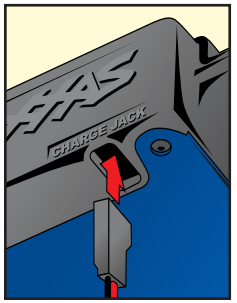
In addition, the OptiDrive is equipped with a low-voltage indicator and a failsafe circuit. When the voltage of the receiver battery drops below 4.3 volts, the "Function" LED on the OptiDrive will flash red. If the voltage drops below 4.3 volts for more than 2 seconds, the OptiDrive ignores throttle and shift signals and applies 25% brakes (failsafe mode). Steering will still be operational and the "Function" LED on the OptiDrive will flash red. The OptiDrive will stay in failsafe mode until the power is turned off or the receiver battery voltage rises above 4.3 volts for more than 2 seconds. Anytime the "Function" LED flashes red, it is time to stop and recharge your battery pack . Do not try to continue running your model with weak receiver batteries on board.

Charging the Receiver Batteries

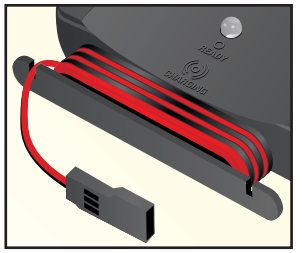


To power the radio system in the truck, your Revo is equipped with the RX Power Pack, a rechargeable 5-cell nickel metal hydride (NiMH) battery pack. The RX Power Pack must be fully charged before running the truck. The supplied TRX Power Charger is a peak-detecting unit that will charge the supplied RX Power Pack in about one hour. The peak-detection circuitry automatically shuts off the charger when the maximum charge has been achieved. Revo has a built in charging jack so you do not have to remove the battery pack from the model. The long charger cord allows easy handling of the truck while the battery is charging.

1. The TRX Power Charger can operate on either AC or DC power*. An AC power supply is supplied with the charger. Plug the end of the AC power supply into the back of the charger.
2. Plug the AC power supply into any 110-volt (U.S. models) wall outlet. The charger light should glow steady green (no battery connected).
3. Plug the charger output cord into the charging jack located under the right front of the truck. The charging jack is protected by a rubber plug.
4. The green light on the charger should begin to flash quickly, indicating that fast charging is in progress.
5. When the light turns solid green (not flashing), the battery pack is fully charged and ready for use.
6. Put the rubber plug back over the charging jack on the truck.



After fast charging has completed, the TRX Power Charger continues to charge in trickle (slow) charge mode. It will continue until the battery is disconnected. The TRX Power Charger will automatically shut off after 90 minutes of fast charging time. When the charger is not in use, wind the charging cord around the cord holder. To secure the cord, insert the end of it into the retaining slot on either end of the cord holder. The TRX Power Charger is designed to be conveniently mounted to a wall or other vertical surface using the supplied #8 x 1" wood screws.



* With optional DC car adapter

The TRX Power Charger can be powered by our optional DC car adapter (sold separately). It features a tangle-free, extra-long wire and integrated fuse. The long charging cord allows the model to remain outside the car while charging. **Caution! Never charge batteries in an enclosed car interior or while driving. Never leave charging batteries unattended. Monitor them closely.**

Battery Care

Some precautions should be taken to maintain the performance of the rechargeable NiMH receiver pack in your model. Improper use of the battery pack could result in personal injury or damage to your truck.

- Only use approved chargers for NiMH battery packs (such as the Traxxas TRX Power Charger). Do not exceed the maximum charge rate of 1 amp.
- Do not short-circuit the battery pack. This may cause burns and severe damage to the battery pack
- Do not burn or puncture the batteries. Toxic materials could be released. If eye or skin contact occurs, flush with water.
- Store the battery pack in a dry location, away from heat sources and direct sunlight.
- Nickel Metal Hydride batteries must be recycled or disposed of properly.
- Do not completely discharge the RX Power Pack or you could damage it. Do not use dischargers on the pack. Store the battery with at least 25% charge. Stop running and recharge at the first indication of reduced voltage.
- After connecting a fully-drained battery to the charger it may take up to 15 seconds for the charger to sense the battery and begin to charge. To start charging immediately, plug the battery pack into the charger and then plug the charger into the wall socket.

Setting up the Antenna

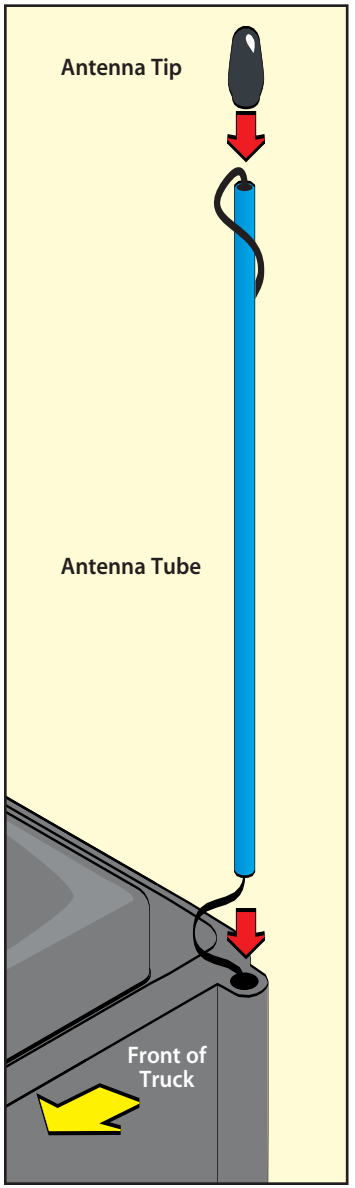
1. Locate the black antenna wire that exits the receiver cover. The receiver cover is mounted on the top of the chassis, near the front. The antenna wire exits the cover just ahead of the fuel tank.

2. Pull the wire straight with your fingers and then insert the end of the wire into one end of the antenna tube. Push the wire all the way through the antenna tube.

3. Insert the base of the tube into the molded post on the side of the radio box.

4. Place the antenna tip over the top of the tube to secure the antenna wire.

5. On the transmitter, always fully extend the telescoping antenna when running your Revo. Make a habit of holding the transmitter so that the antenna points straight up.



TRX Charger Specifications:

Input voltage:
10.6/16v (min/max)

Fast charge current:
750/1000mA (min/max)

Slow (trickle) charge current:
22/55mA (min/max)

Delta Peak:
10mv

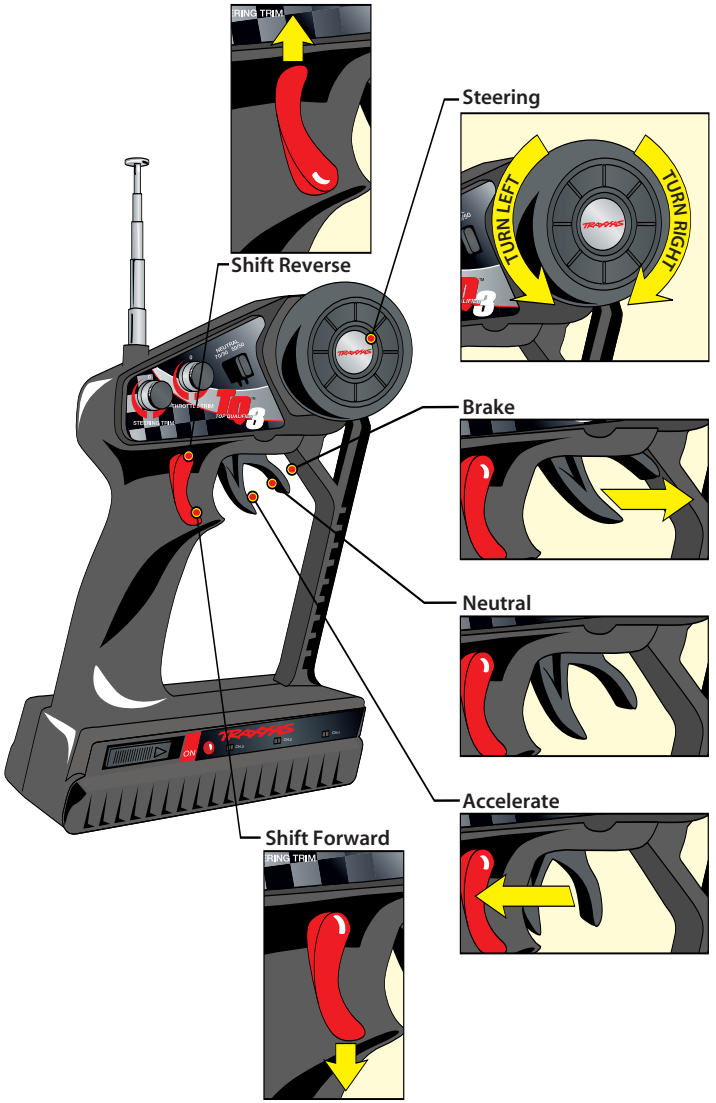
Maximum charge time:
90 minutes

Spray a little window cleaner on the antenna wire to make it easier to push through the antenna tube.

Don't shorten the length of the antenna wire. Its length is tuned to the frequency band; cutting it could severely shorten the radio system's range.

Don't push the transmitter antenna down from the top. Pull it down from the bottom, one segment at a time, to prevent binding and kinking the antenna mast.

TQ-3 Radio System Controls



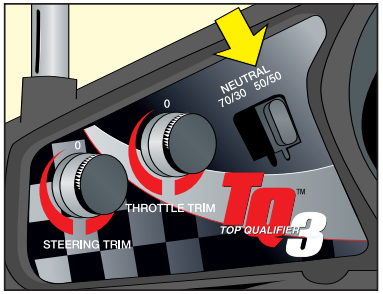
TQ-3 Radio System Adjustments

In addition to the electronic throttle and steering trim controls, your radio system features throttle neutral adjustment and servo reversing switches.

Throttle Neutral Adjustment

The throttle neutral adjustment is located on the transmitter face and controls the forward/reverse travel of the throttle trigger. Change the adjustment by pressing the button and sliding it to the desired position. There are two settings available:

- 50/50: Allows equal travel for both acceleration and braking.
- 70/30: Allows more throttle travel (70%) and less brake travel (30%).



50/50 is the required setting for Revo with the TRX 3.3 Racing Engine.

Electronic Throttle Trim

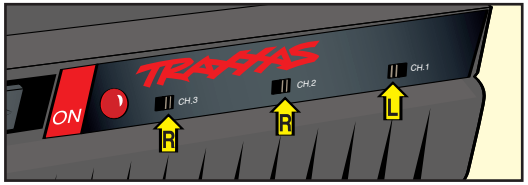
The electronic throttle trim located on the face of the transmitter adjusts the neutral (center) point of the throttle servo when the servo is at rest. This control has been preset for you at the factory. If necessary, adjust the control so that the carburetor is at idle, and the brakes are not applied (the model will roll freely). Do not use the throttle trim to raise or lower the engine idle speed. Make the idle speed adjustment on the carburetor.

Electronic Steering Trim

The electronic steering trim located on the face of the transmitter adjusts the neutral (center) point of the steering servos when the servos are at rest. Adjust this control to make the model drive straight with no steering input at the wheel.

Servo Reversing Switches

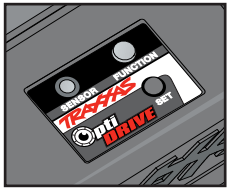
The servo reversing switches are located on the front of the transmitter, next to the on/off switch. Moving a switch reverses the direction of the corresponding servo. Each switch corresponds to a channel, as shown below. For example, if you turn the steering wheel to the right and your front wheels turn left, you would move the channel 1 switch to correct the servo direction. It may be necessary to adjust the corresponding trim control after moving a switch. The default position for the servo reversing switches is shown.



TQ-3 Channel to Servo Chart

Channel	Servo
1	Steering
2	Throttle and braking
3	Shifting

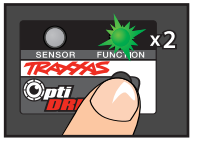
Programming the OptiDrive™ ESM



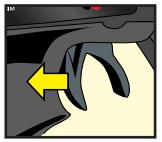
The OptiDrive ESM electronically monitors vehicle speed and controls forward and reverse shifting. Controlling the shift action electronically rather than by mechanical systems reduces the number of components in the transmission. The transmission weighs less, there is lower rotational mass for quicker acceleration, and constant drive engagement for smooth power delivery.

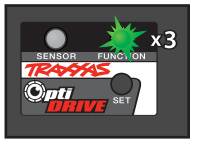
The OptiDrive module prevents the transmission from changing directions while the truck is in motion. The truck must be completely stopped to change directions, regardless of the position of the shift selector switch on the transmitter. The OptiDrive module is preset at the factory. If the transmitter throttle trim adjustment is changed, then the OptiDrive module will need to be re-programmed.

1. The engine must be shut off. The radio system must be on (receiver and transmitter).
2. Set the TQ-3 Transmitter to its factory default shift settings:
   - Set the THROTTLE NEUTRAL switch to the 50/50 setting.
   - Set the THROTTLE TRIM to the center "0" setting, then adjust the THROTTLE TRIM until the carburetor closes.
   - Set the CHANNEL 2 SERVO REVERSING SWITCH to the right position.
   - Set the CHANNEL 3 SERVO REVERSING SWITCH to the right position.
   - DO NOT change the position of any of the servo reversing switches after programming the OptiDrive. If settings were changed after programming the OptiDrive, it will have to be reprogrammed.
3. With the throttle at neutral, press and hold the SET button until the Function LED flashes green twice and then release the button immediately. You are now in programming mode.

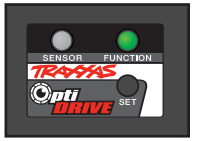


4. Pull the transmitter throttle trigger to the full throttle position. Hold it there until the Function LED flashes green three times. **Note:** The throttle servo will not move during programming even though it is connected to the controller.





5. Release the transmitter throttle trigger allowing it to return to neutral. The Function LED will turn solid green, indicating that the shifting servo is OK to shift and the programming has been completed. The controller is now programmed and ready to go!



   - If the transmitter throttle settings are changed, it will be necessary to complete the programming sequence again.
   - If the SET button is released before the Function LED flashes green twice in step 3, the OptiDrive will return to the normal operation mode.
   - If you experience any problems during programming, turn the receiver off, then on again, and repeat the programming steps.

For instructions on how to use the OptiDrive with aftermarket radio systems, or to access advanced programming options, visit our website, www.Traxxas.com.

Large adjustments to the throttle trim and/or throttle linkage may require re-setting the OptiDrive to maintain proper shifting action.

For transmission durability, the OptiDrive ESM limits the model's reverse speed to about 70% of full throttle. If settings are changed, and you notice a decrease in forward top speed, you could have the OptiDrive system reversed. Return the TQ-3 servo-reversing switches for channels two and three back to their default settings and re-program the OptiDrive Module. For programming with aftermarket radio systems, please see our website.

OptiDrive Operation

- **Green "Function"** Shift allowed

- **Red flashing "Function"** Low battery, see pg. 12

- **Red "Sensor"**
  a) Sensor, throttle or shift circuit is broken. Possible disconnected or broken sensor, throttle or shift wires. Possible damaged sensor.
  b) Receiver has lost signal from the transmitter, the OptiDrive has entered fail-safe (throttle and shift servos become unresponsive).

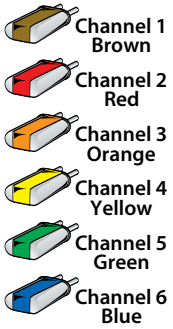
- **Blue flashing "Sensor"** Normal operation as vehicle moves. Indicates signal pulse from sensor. Depending on the rotor position, solid blue or off when vehicle is at rest.

Remember, always turn the TQ-3 transmitter *on first* and *off last* to avoid damage to your Revo. Never turn the radio off while the engine is running.

TQ-3 Radio System Rules

- Each time you prepare to run your Revo, you must clear your frequency to be sure no one else in the area is using the same channel as you.

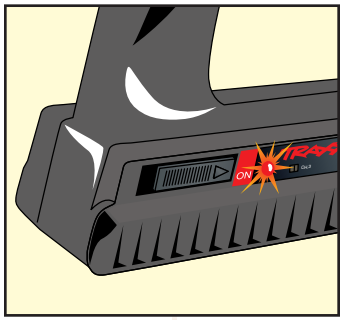
  There are six possible channels, numbered 1 through 6. Each is represented by a color. Look at the crystal plugged into the back of your transmitter to determine which channel your truck is assigned to.



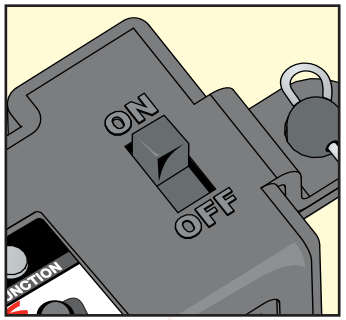
- Always turn your TQ-3 transmitter on first and off last. This procedure will help to prevent your Revo from receiving stray signals from another transmitter, or other source, and running out of control.

- Always have the transmitter and receiver turned on before you start the engine. Never turn the radio system off while the engine is running. The on/off switch in the model only turns the receiver on and off. It does not turn off the engine.

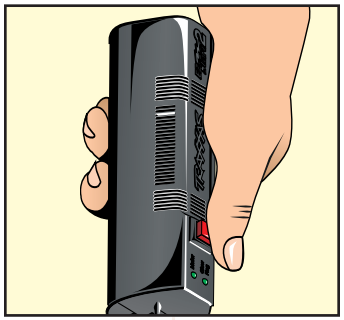
- Always use new or freshly charged batteries for the transmitter, and make sure the on-board 5-cell NiMH battery pack is fully charged. The function light on the OptiDrive will flash red if the 5-cell battery pack requires charging. Weak batteries will limit the range of the radio signal between the receiver and the transmitter. Loss of the radio signal can cause you to lose control of your Revo.



1 Always turn your transmitter on first.



2 Always turn your receiver on second.



3 Then start your engine.

Using the TQ-3 Radio System

The TQ-3 Radio System was pre-adjusted at the factory. The adjustment should be checked before running the model, in case of movement during shipping. Here's how:

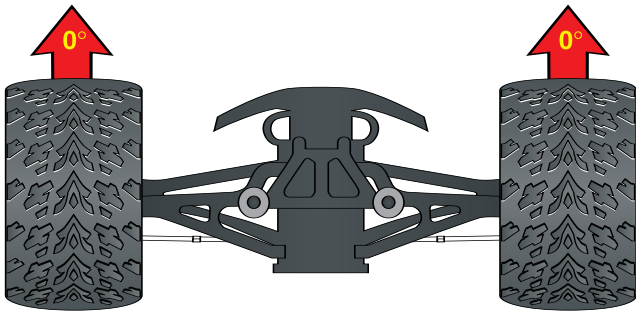
1. Fully extend the chrome antenna mast on the transmitter and turn the switch on. The red indicator light on the transmitter should be solid red (not flashing).

2. Turn on the receiver switch in the model. The switch is located in the top of the radio compartment. The function light on the OptiDrive ESM should be green. A red flashing LED indicates low voltage in the RX Power Pack. The sensor LED is intermittent depending on the rotor position.

3. Position Revo so that its front wheels are off the ground.

4. 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, then check the receiver pack to make sure it is fully charged.

5. When looking down at 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.



6. Operate the throttle trigger on the transmitter and check for rapid operation of the throttle servo. When the throttle trigger is pulled back, the carburetor should open (slide moves out). When the throttle trigger is pushed all the way forward, the brake should lock.

7. Operate the shift button on the transmitter and check for rapid operation of the shifting servo. Push the shift button down for forward. The servo will operate the spring-loaded shift mechanism and you will hear the transmission click into forward. Push the shift button up for reverse and you will again hear the transmission click and shift into gear.

8. Once adjustments are made, turn off the receiver on your Revo, followed by the hand-held transmitter.

Range-Testing the TQ-3 Radio System

Before each running session with your Revo, 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 (Using the TQ-3 Radio System).

2. Have a friend hold the model with the engine off.

3. Make sure your transmitter antenna is fully extended, and then 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.

When the engine is running, don't use the throttle trim on the transmitter to adjust the engine idle speed. Instead, use the idle speed adjustment on the carburetor.

Don't attempt to operate your Revo if there are any problems with your radio system or radio interference at your location.