

ESSENTIAL RC ANATOMY

BY THE RC CAR ACTION TEAM

Like every hobby, sport, and leisure pursuit, radio control has a lot of unique terminology that might sound like code until you learn what exactly the terms mean—at which point you realize that it was way simpler than you thought. There's no better place to start your RC experience than by learning the names and functions of RC vehicles' most essential features.

Individual vehicle designs vary, but you can count on all electric and nitro models to have the following components:

STEERING SERVO

Servos are the "muscles" of radio control. A servo has a motor inside of it that drives a set of reduction gears to amplify its torque. The torque is needed to push and pull the steering system to direct the car.

BATTERY

No surprise here—all electric cars have a battery onboard. Depending on the model you choose, a battery may be included, or you may need to purchase one separately—check before you buy!

RECEIVER

As its name states, the receiver receives the signals from the transmitter. The signals are relayed to the steering servo and speed control to operate the model. In this Traxxas Slash 4X4 (and in many other models), the receiver is housed in a protective enclosure.

MOTOR

The most inexpensive cars will have a brushed motor; faster, more expensive models will have brushless motors. Brushless power systems cost more than brushed but offer higher speeds, near-zero maintenance, and far longer life.

NIMH & LIPO

Two more terms that you can expect to see a lot of are "NiMH" and "LiPo." These refer to battery chemistries: NiMH is nickel-metal hydride, and LiPo is lithium polymer. NiMH batteries are the old standby—rugged and inexpensive, but heavy and not as long-running as LiPo batteries. Knowing the science isn't important, but what is important is safety. Both types of batteries are very safe, but LiPos are more sensitive to damage than NiMH batteries. Charge LiPo batteries with only a LiPo-specific charger or you will ruin the battery, potentially with a battery fire. Regardless of battery type, never leave batteries unattended while charging.

SPEED CONTROLLER

This is the electronic throttle that controls the model's speed as commanded by the transmitter.

CHASSIS

This is the platform that all the parts are bolted to. Most electric-car chassis are plastic, while most nitro cars use an aluminum chassis.

THROTTLE SERVO

In nitro cars, a servo is used to open and close the carburetor to control the engine's rpm.

ENGINE

With the exception of large-scale models with gasoline engines, model cars use "nitro engines," which are named for the fuel they burn. Model engines run on "nitro," a mix of nitromethane, methanol, and oil, which you purchase at the hobby store.

TUNED PIPE

This is the exhaust pipe... to keep things simple. It's called a "tuned" pipe because it is specially shaped, or tuned, to enhance engine power.

FUEL TANK

Yep, it holds the fuel.

RADIO BASICS

Most cars and trucks are sold ready to run, or RTR. This means that all the electronic gear is included and installed for you, including the transmitter and receiver. Car transmitters are very simple: There's a wheel for steering and a trigger for throttle. Squeeze the trigger to go forward; push it up to apply the brakes. If you're driving an electric car, most models are set up so that pushing the trigger up a second time after returning to neutral will activate reverse throttle. Unlike many toy RC cars that don't allow fine steering and throttle control, hobby-quality RC cars have "proportional" controls. The farther you turn the wheel, the more sharply the car will steer. The farther you pull the trigger, the faster the car will go.

BUILD IT YOURSELF

The vast majority of RC models are sold RTR, but if you dream of building a car yourself from a kit, you still have options. High-end racing cars are still offered almost exclusively as kits, but these aren't the best first-car choices unless you plan to jump straight into competition. Tamiya is the king of kits, with everything from super-simple beginner cars to competition models to ultra-detailed scale vehicles including tractor-trailers. All are easier to build than you think, and if you already imagine that building a car is fun to do, you won't be disappointed doing it yourself. On the other hand, if spinning wrenches isn't your thing, stick with an RTR. That's why they make 'em!