Model Airplane Flight School

Topic 3 – Electric Motors

Electric Motors

- Electric motors are not just for toys
- Electric motors come in different designs
- Electronic Speed Controls
- Choosing a motor
- Batteries
- Connecting the Motor to the Battery
- Safety Considerations with Electric Motors

Electric motors come in a wide range of sizes.

An electric motor does not present a model size limitation.

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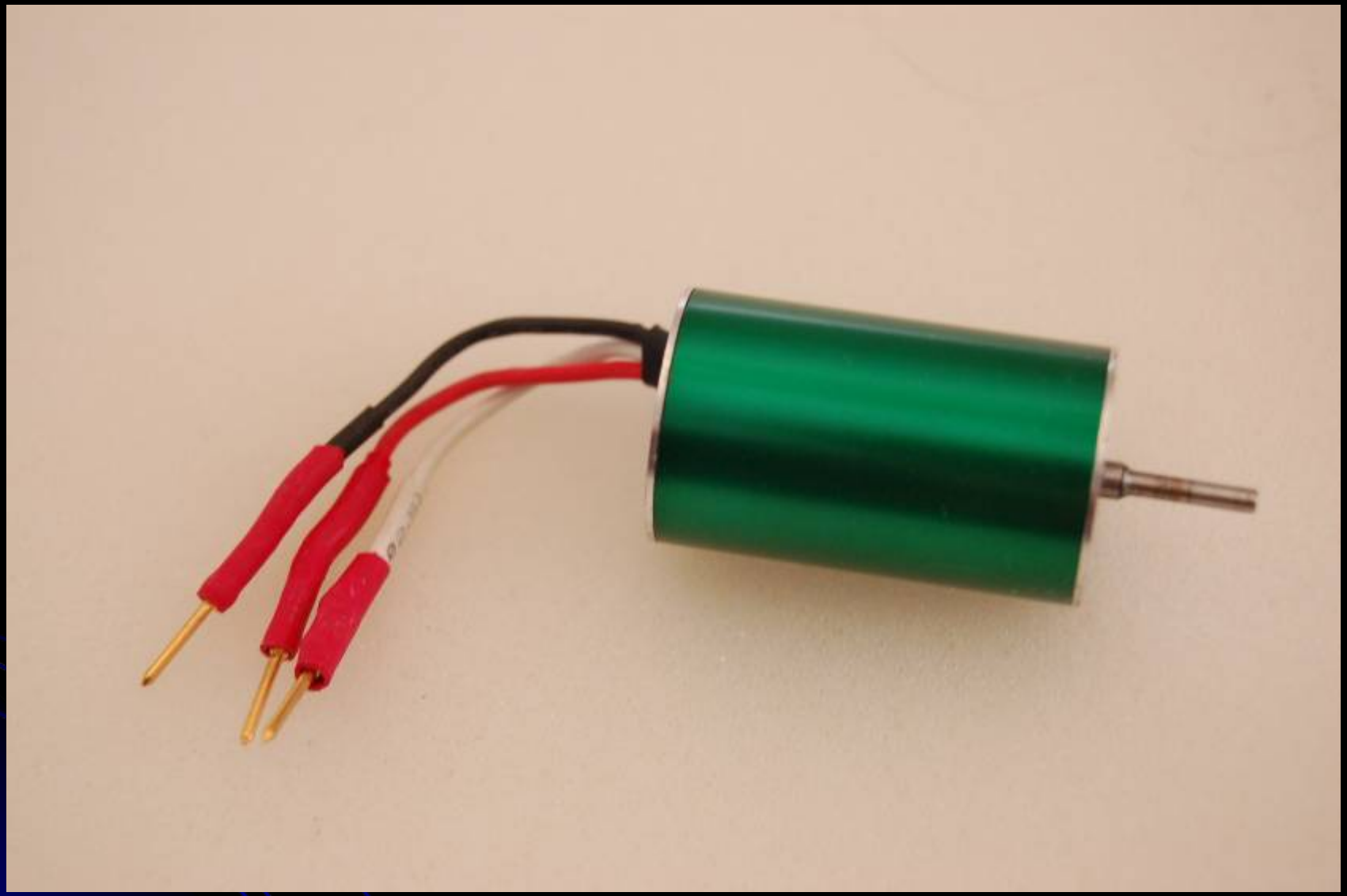
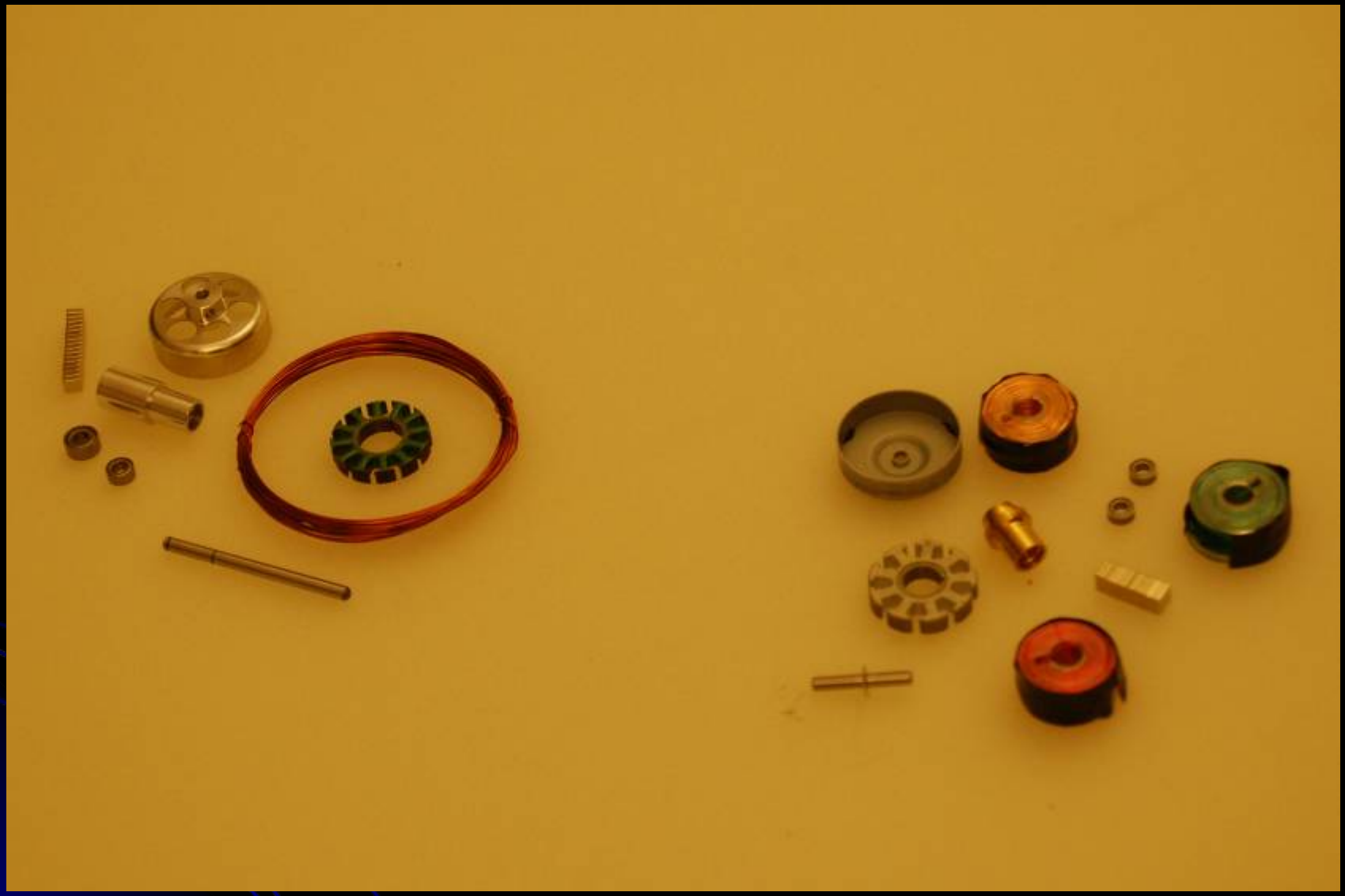
A brushed motor is most conventional.

A brushless motor has three wires and no mechanical switching circuit.

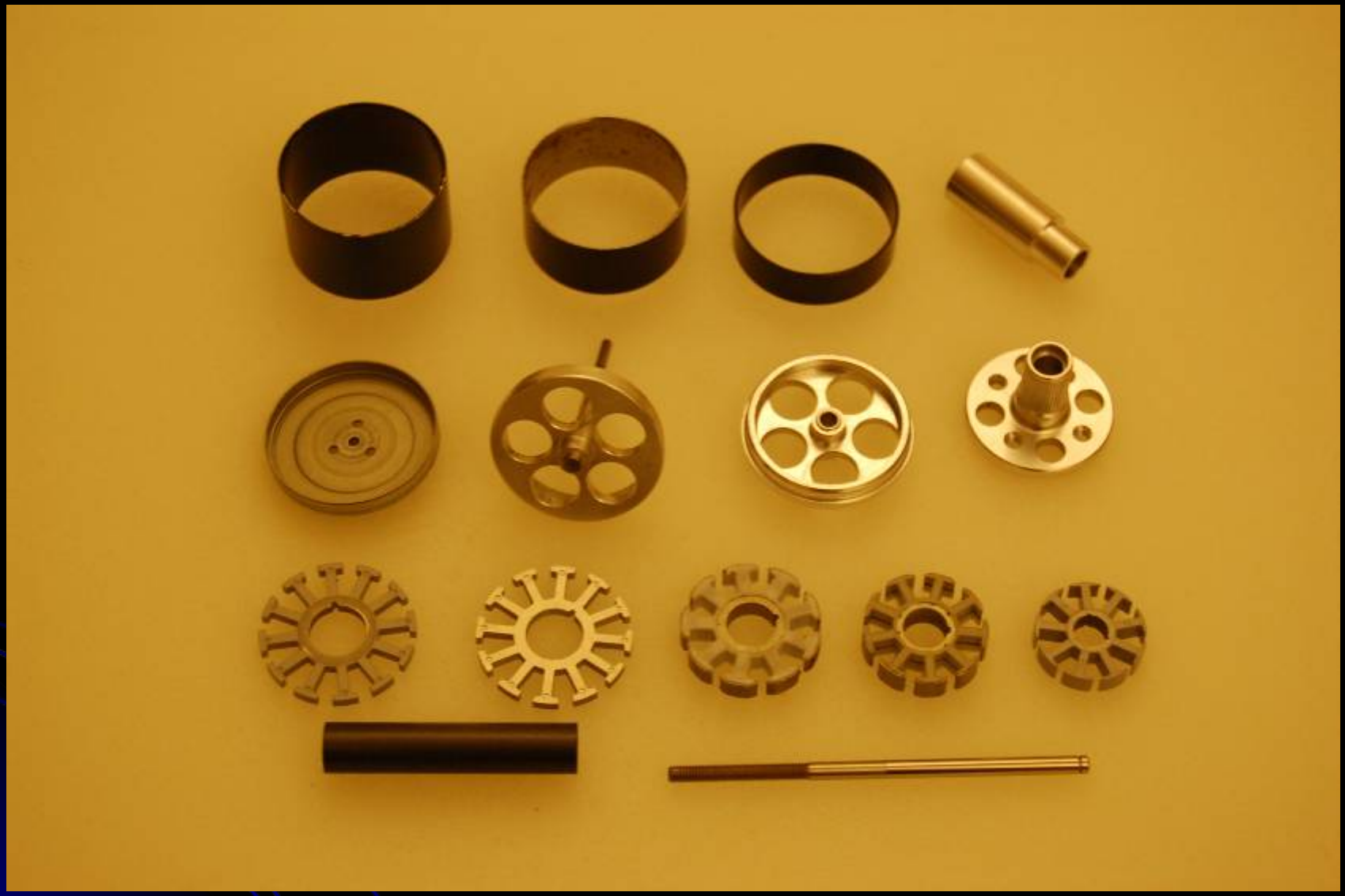


An in-runner is a conventional electric motor with the stator coils on the outside.

The case of an out-runner rotates around the stator coils.



Complete kits for two brushless out-runner motors.



Out-runner parts: Everything but the wire.

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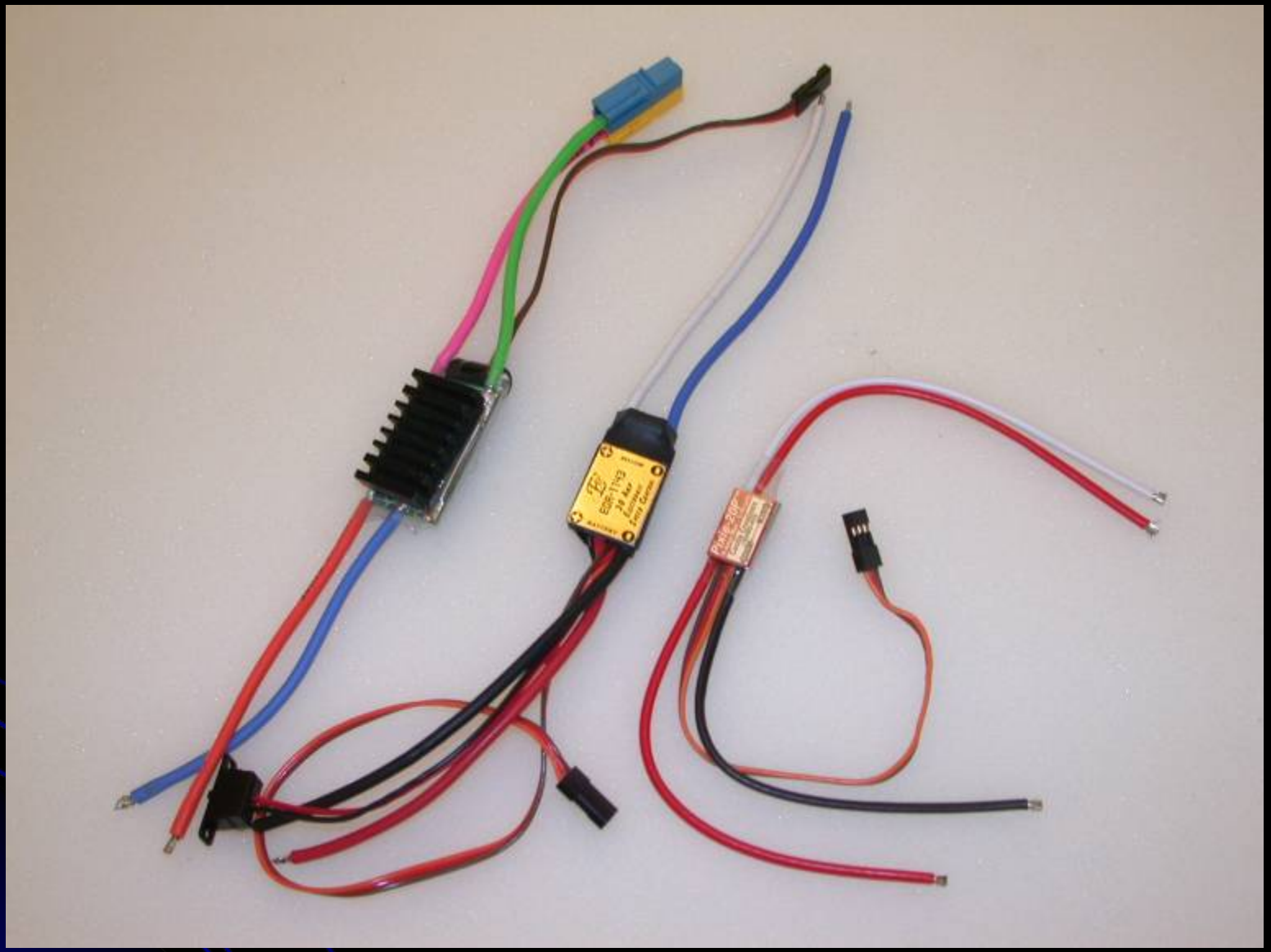
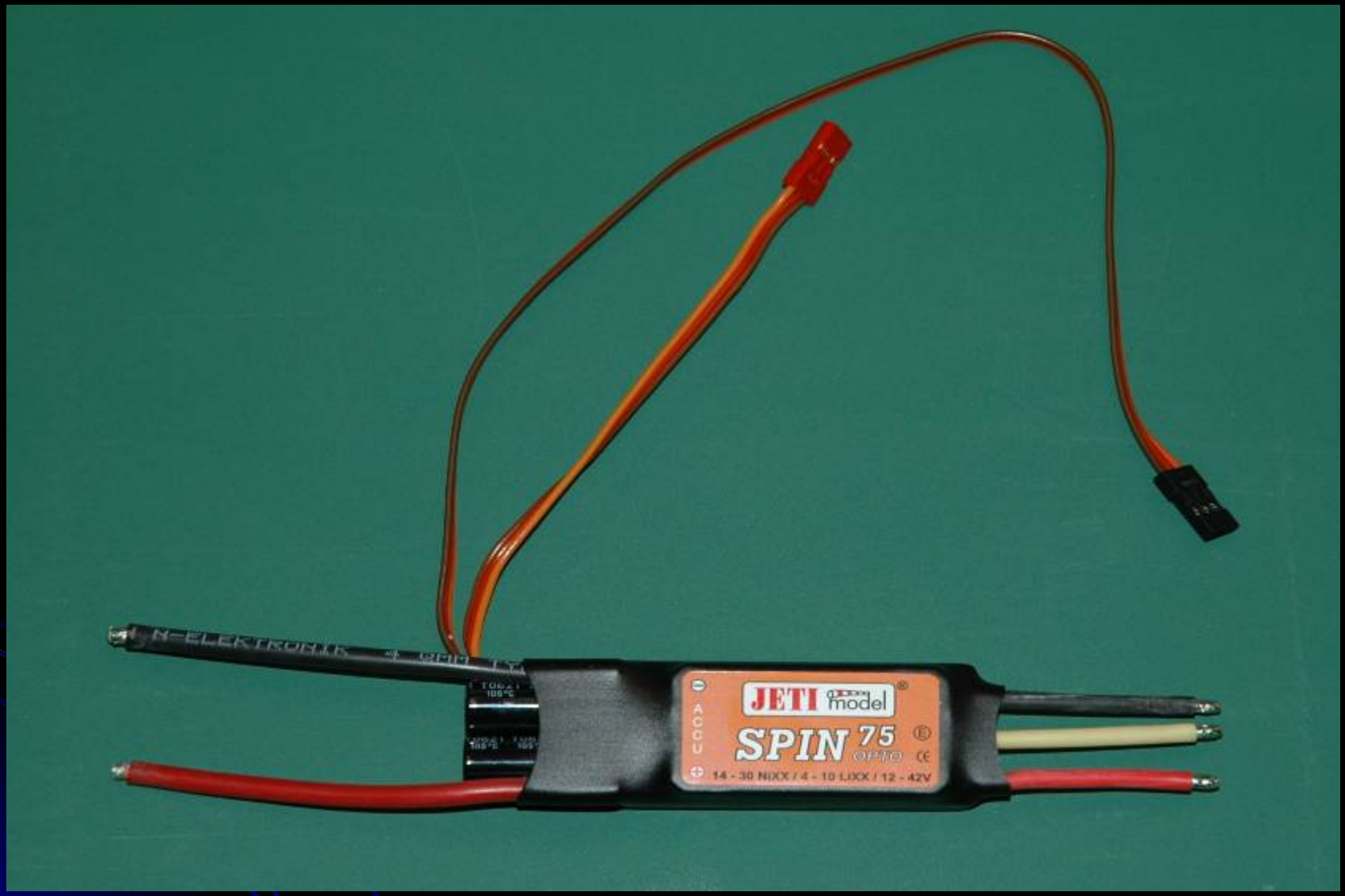
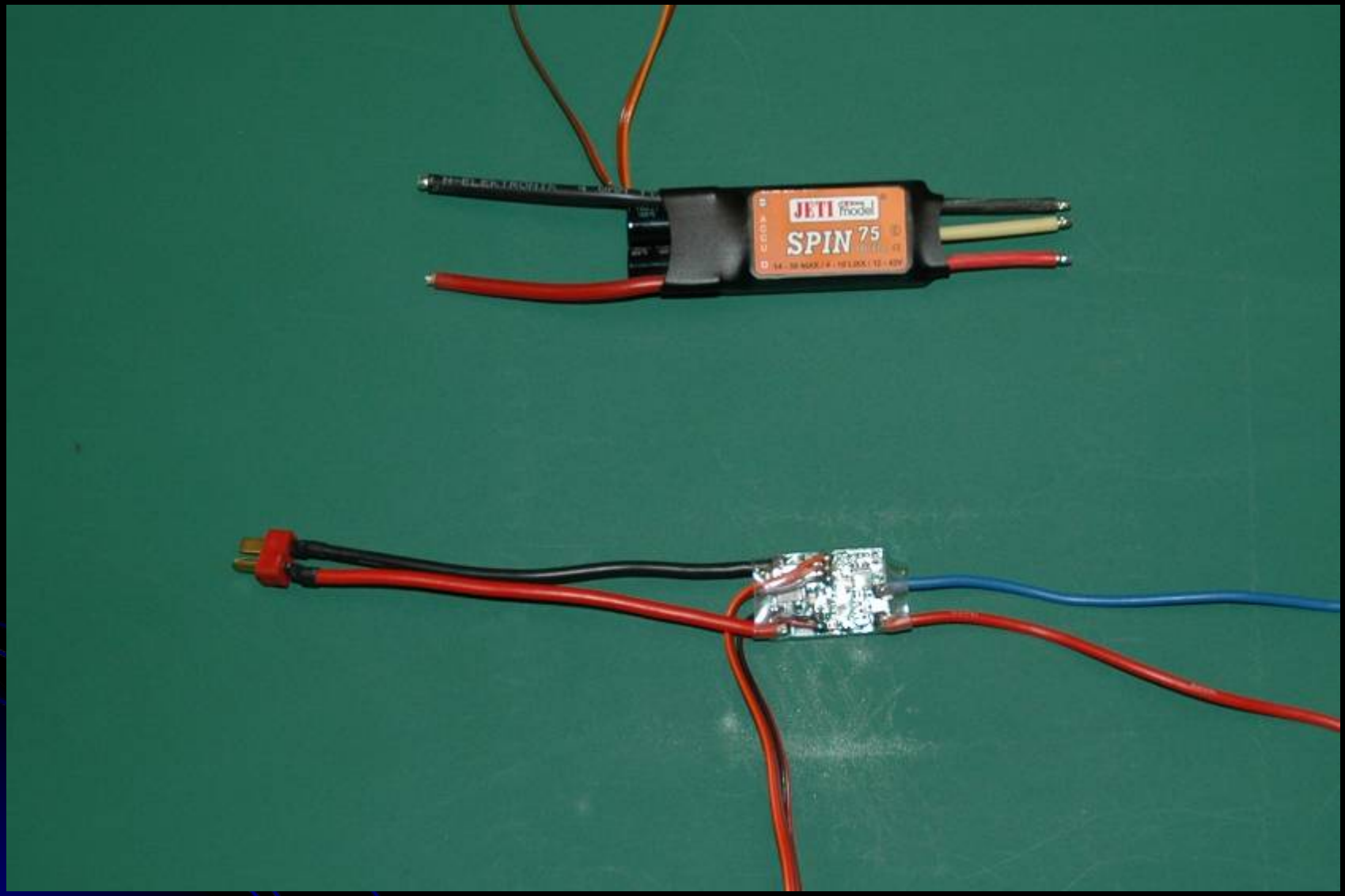


Brushed speed controls: Two wires in, two wires out.



A brushless speed control: Two wires in, three wires out.



Pop quiz: Which is which?

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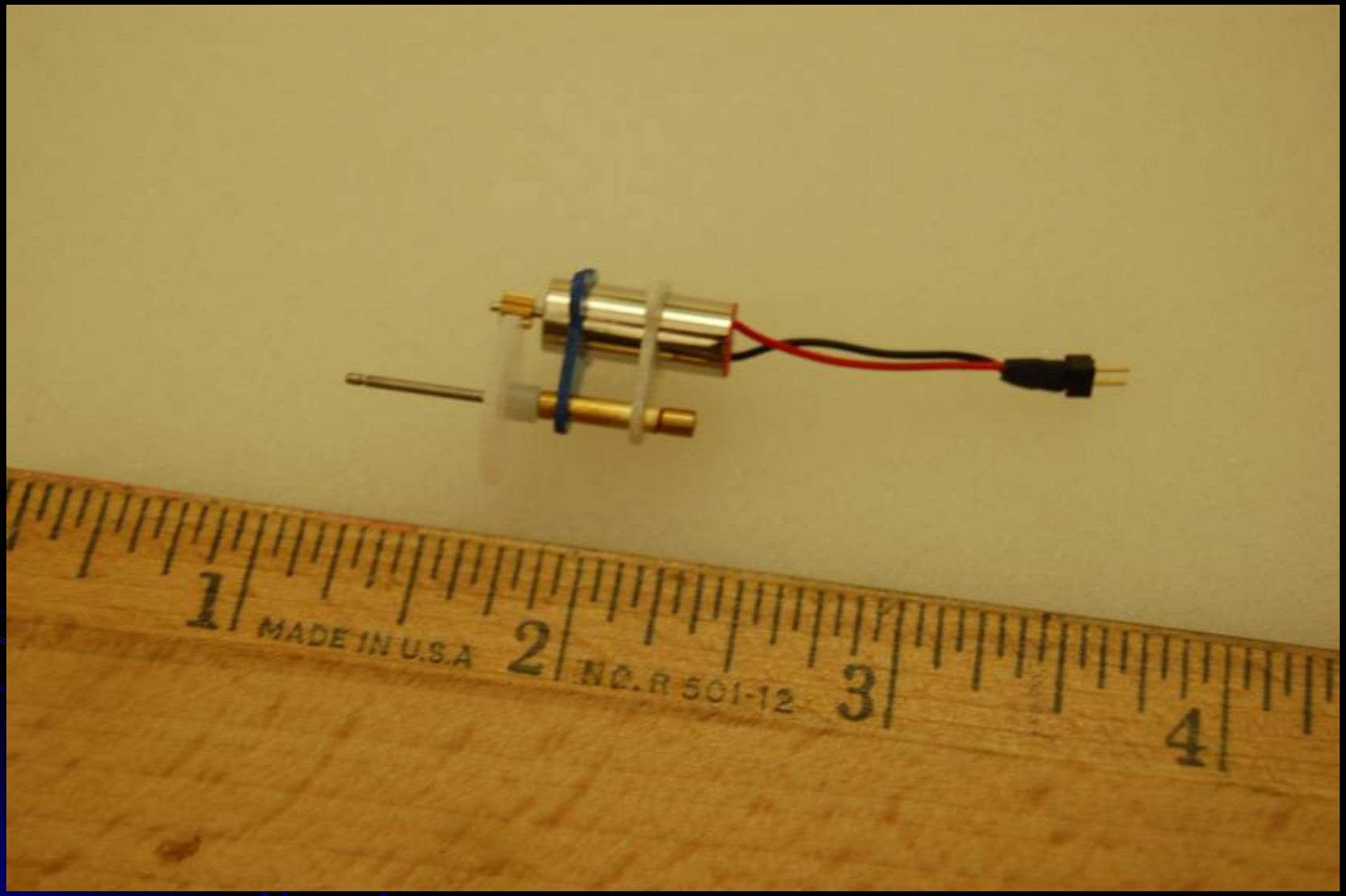
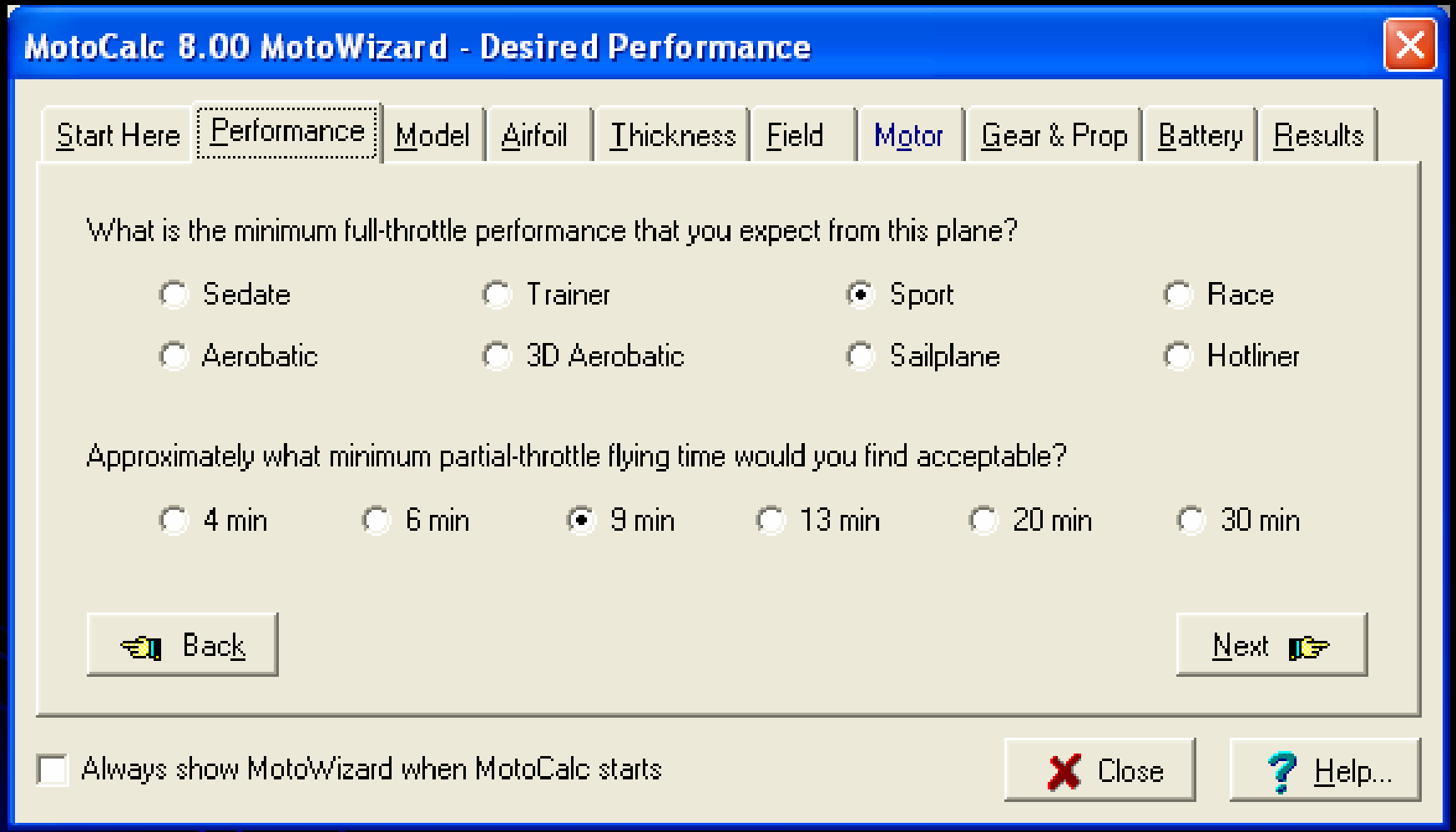
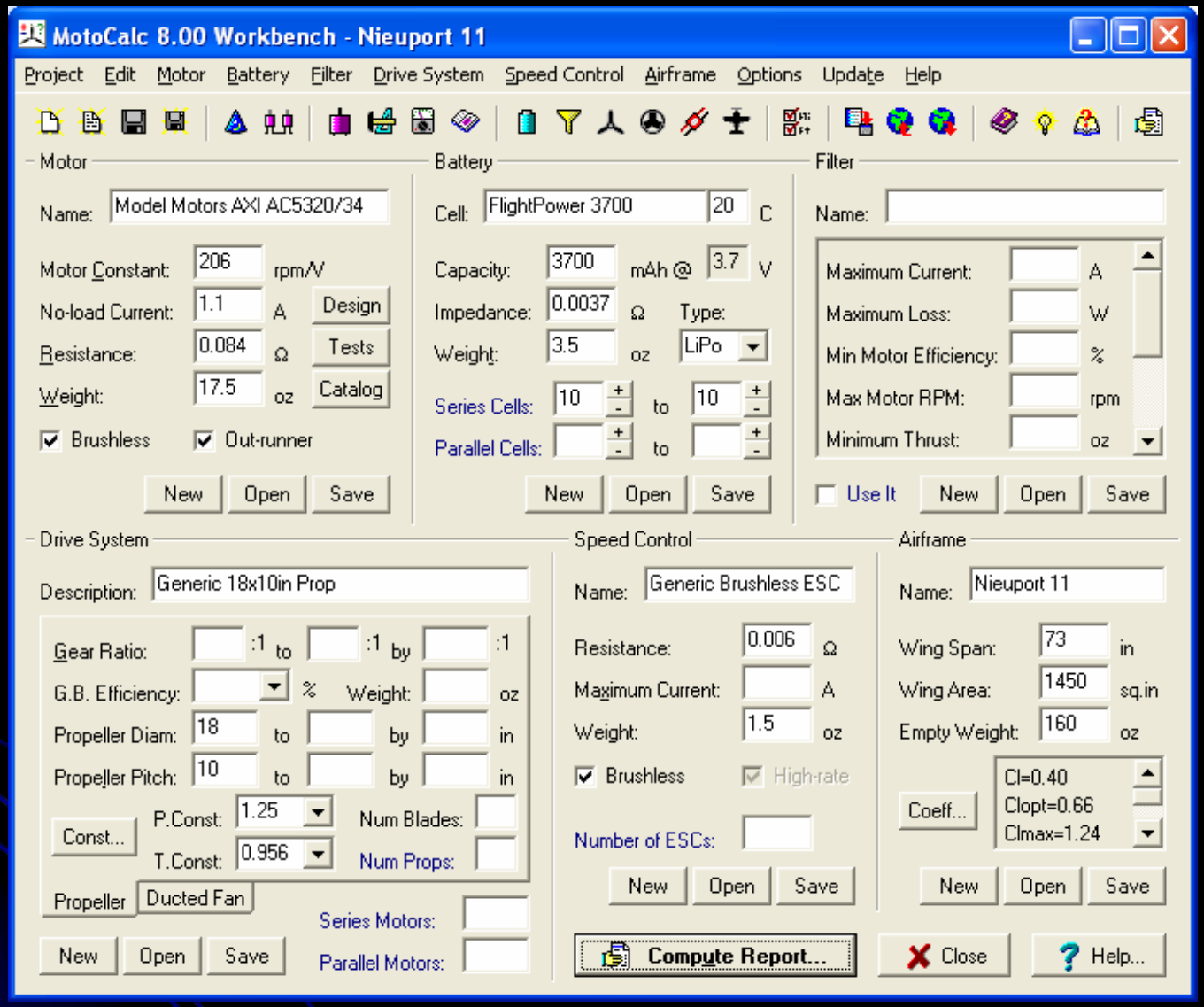
A large motor capable of 3500 watts.



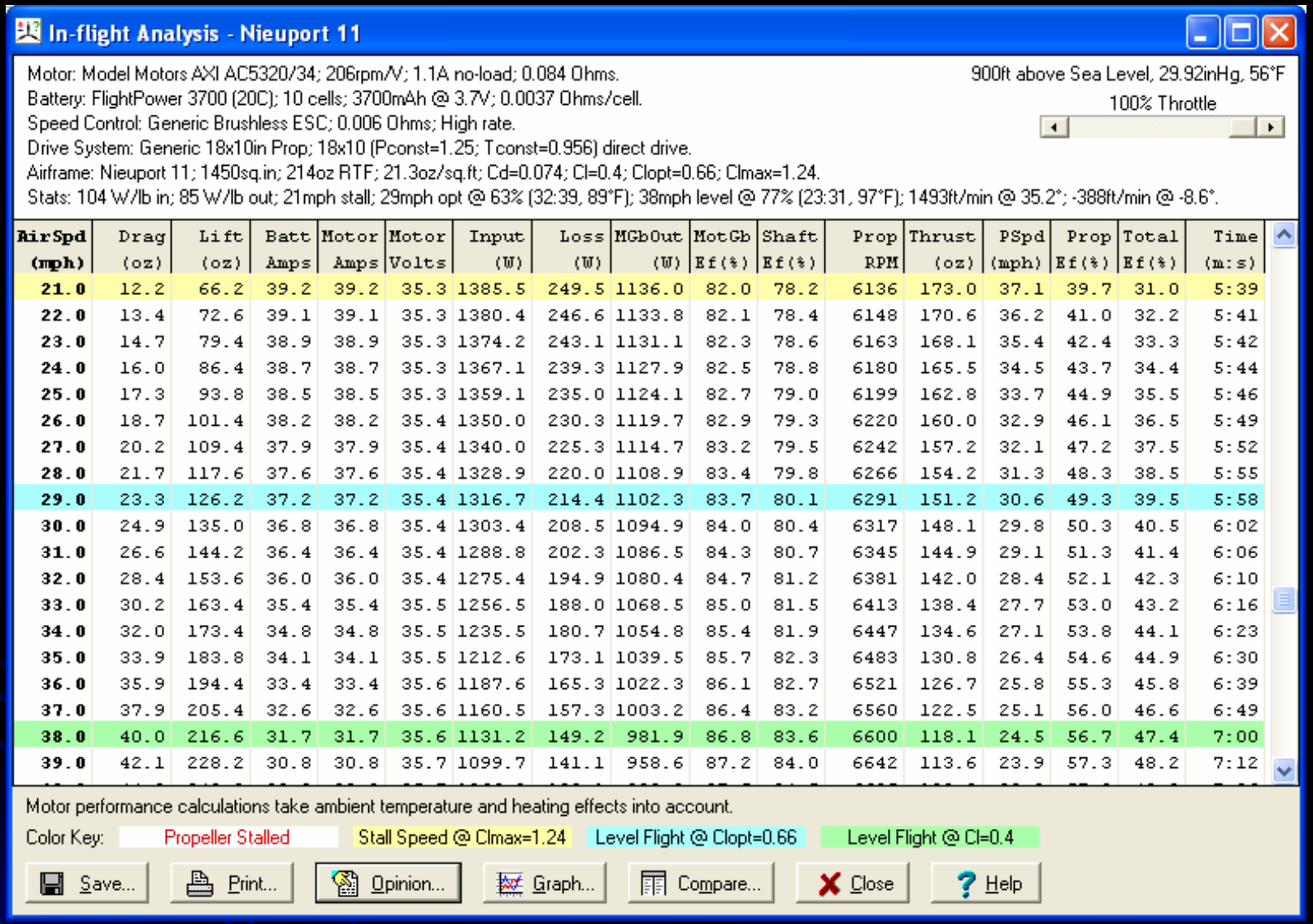
A small motor that once made a pager vibrate.



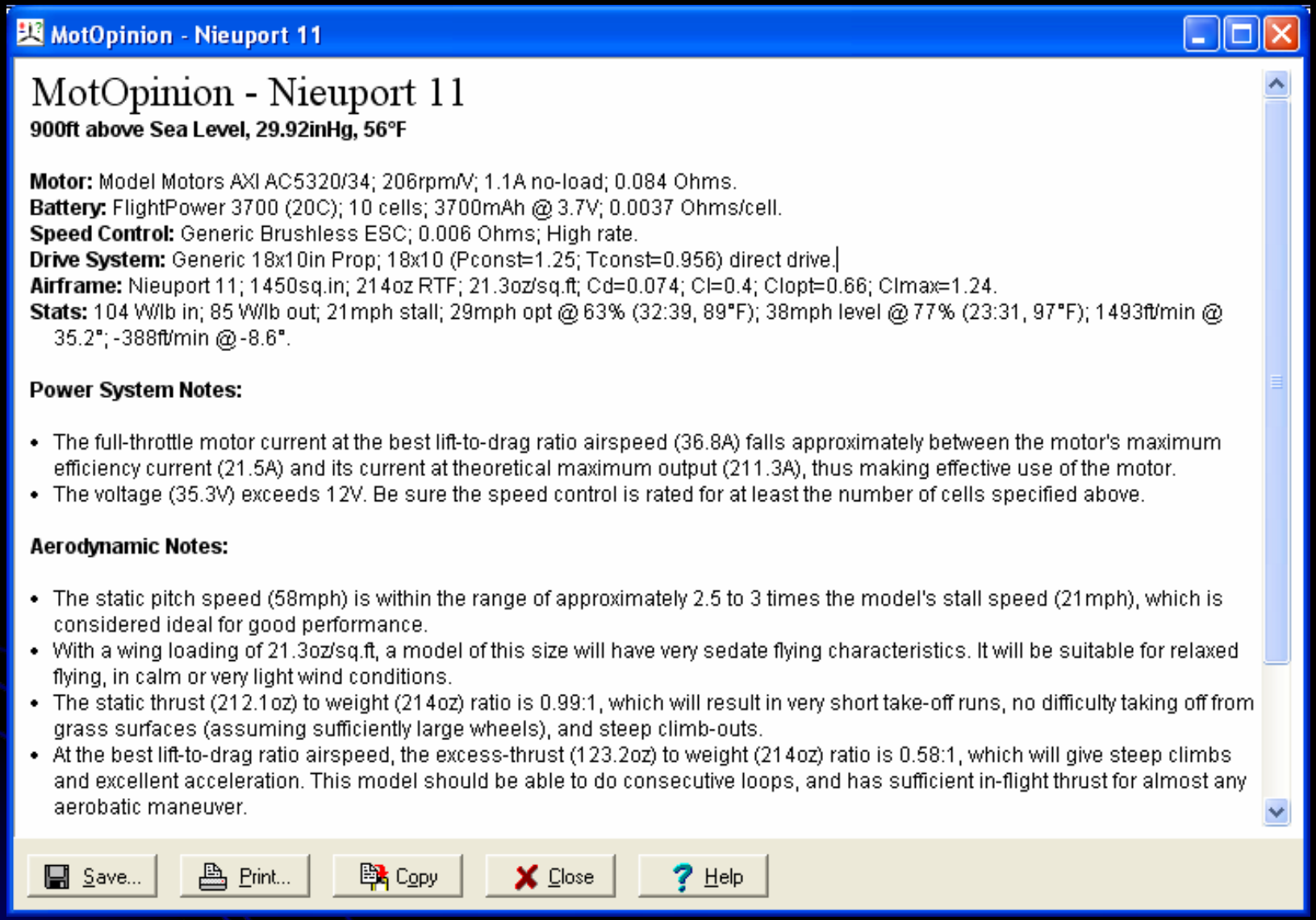
Describing your needs in MotoCalc.



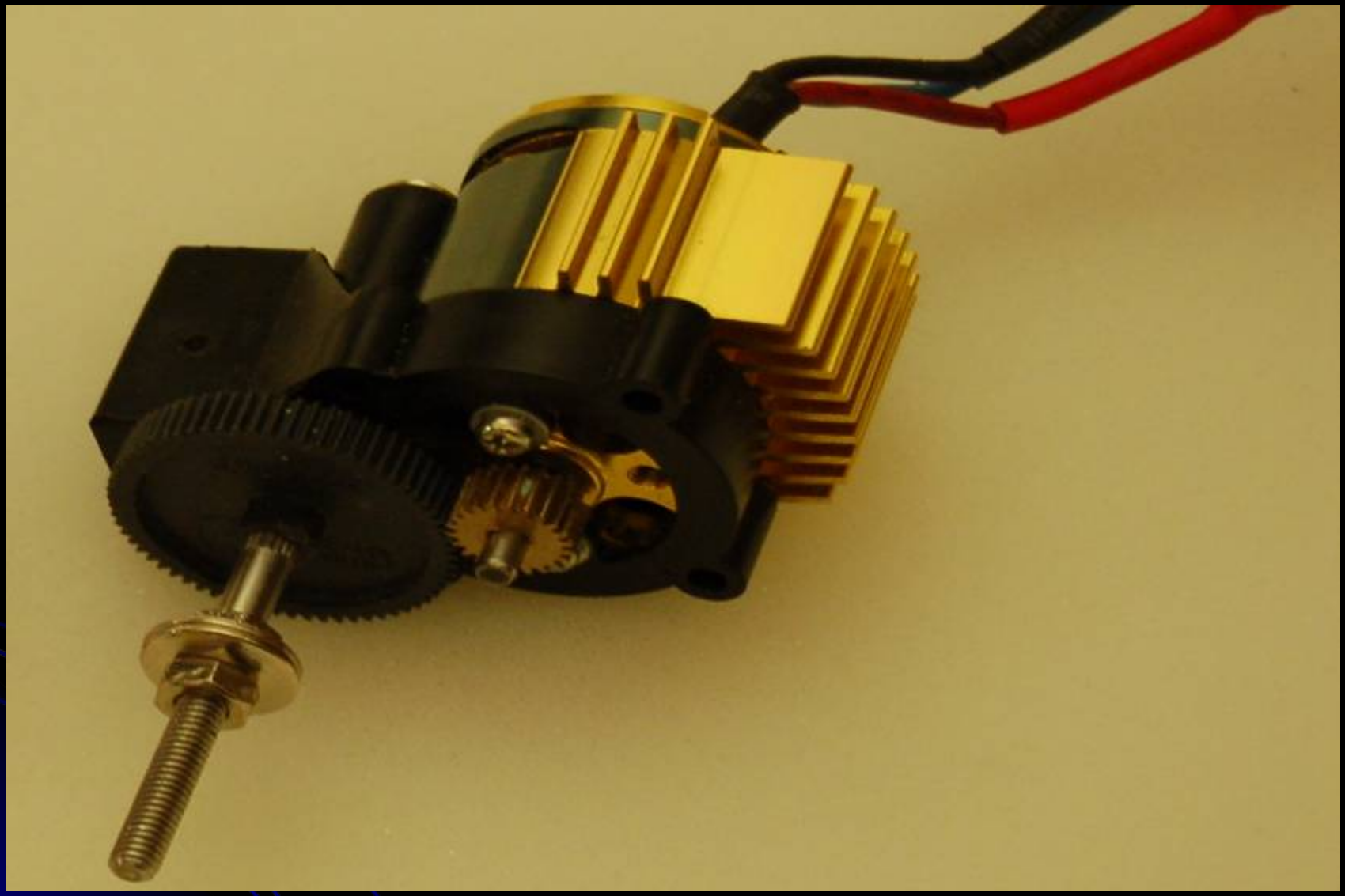
Specifications resulting from the needs analysis in MotoCalc.



MotoCalc analyses of the proposed system.



MotoCalc's opinion regarding how it will fly.



Motors can be geared for more torque.

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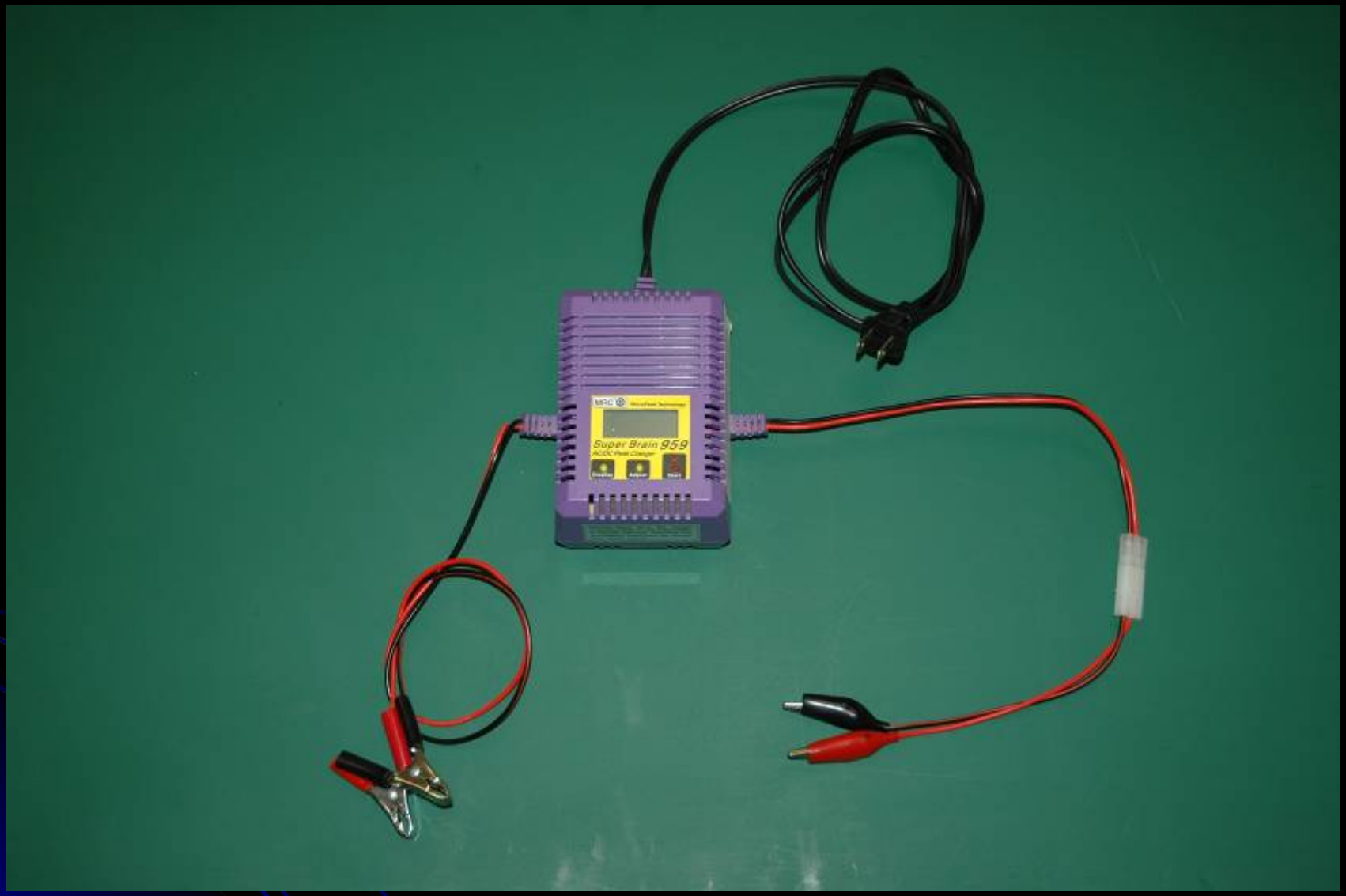
Batteries come in many shapes and sizes.

Lithium vs. NiCad: 5 oz. vs. 20.



A battery charger should be matched to your batteries and your needs.

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An electric model’s wiring harness.

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Safety locks help prevent unanticipated motor starts.