

Test Bench

TRIED • TESTED • TORTURED

CASTLE CREATIONS SIDEWINDER SV3 AND 1406-SERIES MOTOR COMBO

We're all familiar with the relationship between speed, performance, and price: all three go up together. So, it's always a pleasant surprise when a product like the Castle Creations Sidewinder SV3 brushless power system comes along—here's a setup that costs less than \$150, is fully adjustable (check the specs below), 3S-capable, waterproof, and includes a 4-pole motor that by itself barely costs less than the speed-control-and-motor combo. It's like getting the speed control free!

To test the Sidewinder system, I installed the speed control and supplied Neu-Castle 1406-series 6900Kv motor in the HPI Sprint 2 Sport Porsche Falken Tires 911 GT3 that we featured in the August issue's "Street Hustlers" comparison test. I installed 2mm spacers between the motor and motor plate to prevent the motor wires from rubbing the Sprint's layshaft support, but otherwise the motor dropped right in. You'll need to install the connector of your choice before the Sidewinder speed control is ready for action, but Castle does make the job easier by tinning the power leads for you (need help soldering? See the how-to in the September issue). I installed a Traxxas High Current Connector, taped the speed control to the Sprint 2 chassis,

bundled the wiring with zip ties, and slid in a Traxxas 2S 4200mAh Power Cell LiPo. On power-up, the speed control beeped twice to count off the number of LiPo cells and throttled up and down smoothly without calibration, but I performed the calibration steps as detailed in the "Quick Start" guide anyway—it's always better to be sure of your setup. Calibration completed, I

walked out of my front door and onto the quiet neighborhood street that was about to become an RC autobahn.

I went straight for a full-throttle dump, and the Sidewinder/6900Kv motor combo set all four of the Sprint 2's gumball slicks instantly ablaze. The car stepped sideways, hooked up, and accelerated quickly to its top speed of 45.6mph—more than double the speed of the Sprint 2 with its stock 15-turn brushed motor, which maxxed out at 21mph on a 7.2V NiMH battery. Now that's a speed boost! Testing in the Texas heat was tough on the car though; with an ambient temperature of 101°F and the pavement temp'ing at over 130°, the power system was heat-soaked after about five minutes and went into protective thermal shut-down as it is designed to do.

I put the Sprint 2 back into action in the cooler air of the evening, and the Sidewinder ran happily until the pack reached the default cutoff setting of 3.2 volts per cell. Power delivery is very punchy with the out of the box settings, and the brakes are powerful. Low-speed roll on is also impressively smooth, especially for a sensorless system, and double—especially for one that is so affordably priced. I was happy with the speed control's default settings, but in the interest of a thorough test, I made changes to drag brake (added more) and punch (dialed it down). The changes were effective, and once I got into the rhythm of counting beeps and triggering the throttle to move through the programming menu, making the adjustments was easy. But I do recommend the Castle Link programmer highly—see the sidebar.

SPECS

SIDEWINDER SV3

Input Voltage: 7.4 – 11.1V

Brake: Proportional

Reverse throttle: Selectable; 2-second delay, no delay, or off (brake only)

Dimensions: .93 x 1.48 x 0.79" (49 x 38 x 20mm)

Weight: 1.96 oz. (55.5 g) w/o connector

Low-voltage cutoff: Yes, adjustable

Brushed motor compatible: Yes

Connectors: 4mm bullet, gold plated

ADJUSTABLE FEATURES:

• **Braking power:** 25, 50, 75, 100%

• **Reverse throttle maximum:** 25, 50, 75, 100%

• **Punch/traction control:** High, medium, low, lowest, disabled

• **Drag brake:** Zero, 10, 20, 30, 40%

• **Dead band:** 0.15, 0.10, 0.075, 0.05, 0.025ms

• **Low voltage cutoff:** Off, auto-detect, 3.5, 6, 9, 12V

• **Motor timing:** Low, normal, high

NEU CASTLE 1406 BRUSHLESS MOTOR

Available motors (Kv): 4600, 5700, 6700, 7700

Dimensions (length x diameter): 1.9 x 1.4" (50 x 36mm)

Shaft Diameter: 1/8" (3.2mm)

Poles: 4

Magnets: High-power neodymium

Weight: 5.9 oz. (169.5 g)

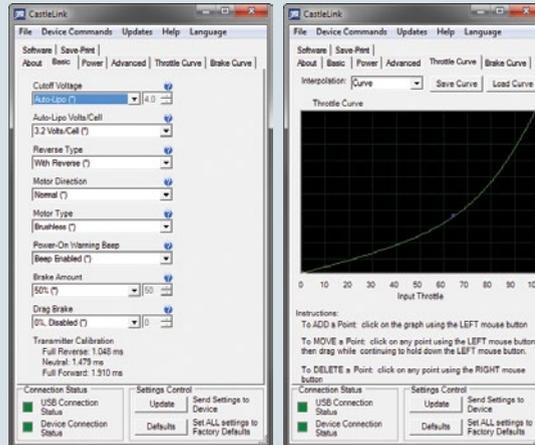
Connectors: 4mm bullet, gold plated

Wire Length: 9.5" (241mm)

No power loss here—the beefy 4mm gold-plated bullet connectors have less electrical resistance than the wires they are connected to.

Programming via PC

All of the Sidewinder's available settings and how to adjust them are clearly detailed in the manual and the programming logic isn't difficult to understand, but cycling through the settings in sequence and counting beeps along the way isn't exactly a blast. To easily exploit the Sidewinder's adjustability, I highly recommend the Castle Link programmer. The USB device connects the Sidewinder to your computer and allows you to adjust everything by making simple menu selections. There's nothing to figure out, no instructions required—just point, click, and upload the settings to the speed control. The software also maintains the latest firmware for Castle speed controls, so your speed control always has the latest specs, and resetting to factory defaults can be done with a single click.



The Castle Link software is very simple to use; just select the settings you want from the from menus. You can even customize power delivery by manipulating a visual representation of the throttle curve.

THE VERDICT

The Sidewinder SV3 and 1406-series motor combo delivers excellent performance and is a real bargain. There are other motor winds available with the Sidewinder (see "Specs") so you can choose the best system for your needs, and installation is simple. Programming the controller may seem intimidating when you read the manual, but it's actually very easy—just try it! Or, buy the Castle Link programmer. The Sidewinder SV3 combo is already a steal, what's another \$25? For any 1/10 scale application, 2WD or 4WD, in a model weighing five pounds or less (as Castle recommends), I can't fault the Sidewinder SV3 and 1406-series motor. —Peter Vieira

SOURCES

Castle Creations
castlecreations.com