INTRODUCTION TO SPIKE ESC INSTRUCTIONS

The following instructions will help you get trouble-free speed control operation. These simple steps will allow your speed control to achieve maximum performance and minimize the chance of problems due to incorrect installation.

Consult the specifications printed on the speed control header card for limitations on the number of cells that the speed control can be used with. You should always ask your hobby dealer or call our service department before using the speed control for an application other than what is listed in these instructions.

The Spike is equipped with a 20 amp reverse protection fuse, which protects the speed control if the battery pack is hooked-up backwards. Replacement fuses can be purchased at a local electronics or automotive supply shop.

• An external diode can be used and may provide slight benefits in brake smoothness and resistance to brake fade.
• The Spike is designed to be used with any stock motor and run on 5 to 7 cells only (1.2 volts/cell connected in series). Using more than 7 cells may damage the speed control.
• When using an external receiver battery pack, the red wire in the speed control input plug should be removed from its plastic housing. Be sure to insulate the exposed metal pin.

MOUNTING THE SPEED CONTROL

The following mounting information will assure that your speed control performs at maximum efficiency and minimizes the chances of overheating and radio interference problems.

**MOUNTING THE SPEED CONTROL (Figure 1)**

1. Mount the ESC to the chassis using mounting tape. Mounting the ESC to achieve good airflow through the heat sinks is very important for maximum performance. For off-road cars, the ESC should be mounted in the chassis, and as far away from the receiver as possible to prevent radio interference.

2. Mount the ON/OFF switch in a convenient place using mounting tape or screws provided.

**MOUNTING THE RECEIVER**

To prevent radio interference, mount the receiver and antenna at least two inches away from the motor, batteries, power wires, servo, or any large piece of metal — such as a metal chassis. For off-road cars, the receiver and antenna should always be mounted on the rear shock tower. Mounting the receiver in the tub of the chassis, and as far away from the ESC as possible to prevent radio interference.

**STEP 1**

**MOUNTING THE SPEED CONTROL**

**STEP 2**

**HOOK-UP INSTRUCTIONS**

**INSTALLING MOTOR CAPACITORS (Figure 2)**

Motors generate radio noise which can interfere with your receiver and cause problems. Your speed control package includes two 0.1μF, 50V, non-polarized, ceramic capacitors. These capacitors must be used at all times on every motor to help reduce the radio noise generated by the motor and prevent possible damage to the speed control. Solder the capacitors between:

• **POSITIVE (+) motor brush tab & GROUND motor tab†.**

• **NEGATIVE (-) motor brush tab & GROUND motor tab†.**

**Figure 2** Proper installation of motor capacitors.

**STEP 3**

**TRANSMITTER ADJUSTMENTS**

Adjusting your transmitter is critical for proper speed control operation. The transmitter (TX) throttle adjustments are described below:

• **ATV, EPA, or ATL** — set all to maximum.
• **Throttle Trims and Sub Trims** — set all at neutral or zero.
• **Set the throttle reversing switch to reverse.**
The radio connector on this ESC is universal. It can be directly connected to any Futaba* J, Airtronics “Z”, Hitec “S”, or JR receiver without modification. For proper connection refer to your radio’s manual. The yellow “signal wire” on this ESC should be in the same position in the receiver slot as the white wire on Futaba, the blue wire on the new Airtronics “Z” connector, the yellow wire on the Hitec “S” connector, and the orange wire on JR. WARNING: This connector is NOT directly compatible with the old Airtronics connector style. For old Airtronics radios, it is highly recommended you use an Airtronics Servo Adapter to connect this ESC to the older style Airtronics radios.

**TROUBLE SHOOTING GUIDE**

- **SPEED CONTROL WORKS**
  - Problem: Receiver glitches or stuttering during acceleration.
  - Solution: Recharge battery pack. Fix broken or loose battery connectors.
  - Problem: Solid, consistent braking.
  - Solution: Check brake transistors for shorts, or replace if necessary. Replace brake capacitors if necessary.

- **SPEED CONTROL DOES NOT WORK**
  - Problem: Brake transistors are dead.
  - Solution: Replace brake transistors.
  - Problem: Brake pot is adjusted incorrectly.
  - Solution: Adjust brake pot to desired braking level.

**SERVICE PROCEDURES**

**PLEASE NOTE:** Speed controls that operate normally when received will be charged a minimum service fee and return shipping charges. Before sending your speed control in for service, it is important that you review the Trouble-Shooting Guide in this instruction set. The speed control may appear to have failed when other problems exist in the system — such as a defective transmitter, receiver or servo, or incorrect adjustments/installation.

- **No brakes.**
  - Solution: Check brake transistors for shorts, or replace if necessary. Replace brake capacitors if necessary.

- **Model runs slowly or has no acceleration.**
  - Solution: Check brake transistors for shorts, or replace if necessary. Replace brake capacitors if necessary.

**120-DAY LIMITED WARRANTY**

DuraTrax warrants this product to be free from defects in materials and workmanship for a period of 120-days from the date of purchase. During that period, we will repair or replace, at our option, any product that does not meet these standards. You will be required to provide proof of purchase date (receipt or invoice).

If, during the 120-day period, your DuraTrax product shows defects caused by abuse, misuse, or accident, it will be repaired or replaced at our option, at our service charge not greater than 50% of the current retail list price. Be sure to include your daytime telephone number in case we need to contact you about your repair.

This warranty does not cover components worn by use, application of reverse voltage, cross connections, poor installation, subjection of components to foreign materials, any alterations to wires, or tampering. In no case shall our liability exceed the original cost of the product.

Your warranty is voided if:

A. You apply reverse voltage to the Spike ESC by connecting the battery pack backwards, or plugging the motor connectors into the battery pack.

B. You allow any wires to become frayed which could cause a short.

C. You use more than 7 cells (1.2V/cell) in the main battery pack.

D. You tamper with any of the electronic components.

E. You allow water, moisture, or any other foreign material onto the ESC. Here are a few of the most common causes of radio problems:

- **CAPACITORS NOT INSTALLED ON MOTOR.** Electric motors generate radio noise that can interfere with the receiver. To prevent radio problems, every motor should have two 0.1uF (50V) ceramic capacitors installed (see step 2).

- **RECEIVER MOUNTED ON GRAPHITE OR METAL CHASSIS.** Graphite and metal chassis transmit radio noise generated by the motor. To prevent radio problems, mount the receiver on the rear shock tower or away from the chassis. If the receiver is mounted on the chassis, stand it on its side with the crystal as far away from the chassis as possible.

- **RECEIVER ANTENNA CUT OR MOUNTED WRONG.** If the receiver’s antenna is cut, the range will be reduced. The antenna should be mounted away from the motor and power wires. Coiling the antenna wire, or keeping the entire antenna inside the body will reduce the range and increase the risk of radio problems.