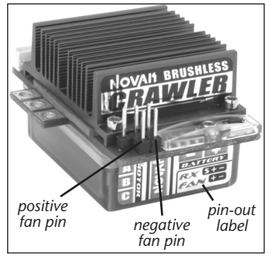
AUXILLIARY POWER OUTPUT

The Goat ESC features a set of power output pins for running auxiliary cooling fans for motor or ESC cooling, or for detail items like a scale winch or lights, and they will switch on & off with the ESC's power switch. These pins output 6.0 VDC *(same as the BEC)*, so you will get maximum output from cooling fans without over-powering them by running directly from the battery pack's voltage.

The pin-out label located on the front lower section of the ESC's case *(under the pins, push button, & LEDs)* shows the polarity of the power output pins.



They are the 2 pins on the front edge of the circuit board--Positive (+) is on the left, and Negative (–) is on the right. ***The set of 3 pins behind them are for the user-replaceable input signal harness--The polarity of those is the same: Positive in the middle, Negative on the right, and the extra pin on the left is for the input signal.***

The Novak 30x30mm cooling fan *(Novak kit #5648)* is the same one that comes with the GTB ESC, and not only fits the size of the ESC's heat sink perfectly, it also comes with the connector already on it to match the pins on the Goat ESC. Fans that do not have the proper connector on them will need a connector *(one end of an old receiver input harness would work well)* put on, or will need to be soldered to the pins--***Take extra care if attempting to solder to the fan power output pins***--Do not overheat the pins or circuit board, and do not allow any solder or wire strands to cause a short circuit with other pins.

USING A RECEIVER BATTERY PACK

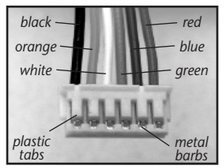
If you are planning to use an external receiver battery pack to power the electronics you need to do the following:

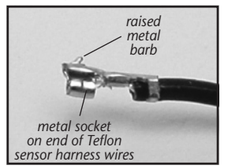
1. Plug the external 5 cell (1.2VDC/cell) receiver battery pack into the battery slot of the receiver.
2. Leave the **ESC's ON/OFF switch** in the ***OFF*** position, and **use receiver battery pack's ON/OFF switch** to turn the ***system power on and off***—Do not use the ESC's switch.

SENSOR HARNESS WIRING

Should any of the 26G Teflon wires pull out of the connector on the end of the motor's sensor harness, re-insert them in the appropriate slot in the connector as shown below. There is a small plastic tab that grabs a small raised barb on the back of the metal socket crimped onto the Teflon wire's end. The plastic tab should be checked to make sure it has not deformed excessively before inserting the metal socket into the plastic connector housing with the barb toward to plastic tabs.

If the motor's sensor harness gets damaged, please contact our Customer Service Dept.





Novak Electronics, Inc.

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Customer Service e-mail: ***cs@teamnovak.com***

Monday-Friday: 8:00am-5:00pm (PST)

www.teamnovak.com

TROUBLE-SHOOTING GUIDE

Steering Channel Works But Motor Will Not Run

- ***Red & Green status LEDs on solid***—Check input signal harness connections at ESC and receiver. Check input signal harness wiring sequence—Refer to Step 1.
- ***Red status LED on solid & Green LED blinking***—Check motor sensor harness connection. Possible internal motor damage.
- ***Blue & Green status LEDs both blinking.*** Possible ESC shut-down due to locked rotor detection—return throttle to neutral position to regain motor control—check vehicle's drive train for free operation.
- ***Blue & Red status LEDs blinking.*** Possible ESC thermal shut-down—Check gear ratio & free operation of drive train for possible overloading/ESC is being severely over-loaded—allow system to cool & return throttle to neutral position to regain motor control. ***LEDs will continue to blink until system is cooled down.***
- ***Blue & Amber status LEDs blinking.*** Possible motor thermal shut-down—Check gear ratio & free operation of drive train for possible overloading/motor is being over-loaded—allow system to cool & return throttle to neutral position to regain motor control. ***LEDs will continue to blink until system is cooled down.***
- ***Blue & Green (Locked Rotor Detection), Blue & Red (ESC Thermal Shut-Down), or Blue & Amber (Motor Thermal Shut-Down) status LEDs blinking.*** ESC may have shut-down **& ESC's neutral point is too far off** to sense that transmitter throttle has been returned to neutral—Refer to Step 4.
- Possible receiver damage—Check operation with a different receiver.
- Possible internal damage—Refer to Service Procedures.

Receiver Glitches/Throttle Stutters During Acceleration

- Receiver or antenna too close to ESC, power wires, battery, or motor.
- Bad connections—Check wiring, connectors, & sensor harness.
- Low voltage to receiver—Try Glitch Buster capacitor on receiver *(Novak part#5626)*.
- External Power Capacitor damaged/not installed—Replace Power Capacitor.
- Battery pack damaged or weak—Try a different battery pack.
- Motor's magnet has weakened or overheated—Replace rotor.

Motor and Steering Servo Do Not Work

- Check wires, receiver signal harness wiring & color sequence, radio system, crystals, battery/motor connectors, & battery pack.
- Power wires too close to signal wires—Do not bundle power & signal wires together.
- Possible receiver damage—Check operation with a different receiver.
- Possible internal damage—Refer to Service Procedures.

Brushless Motor Runs Backwards

- Reverse motor rotation direction—Refer to 'Programming/Gearing' sheet.

Speed Control Runs Excessively Hot

- Gear ratio too low—Increase gear ratio *(see 'GEAR SELECTION')*.

Model Runs Slowly/Slow Acceleration

- Gear ratio too high—Reduce gear ratio *(see 'GEAR SELECTION')*.
- Check battery & connectors—Try another battery; replace connectors/battery if needed.
- Incorrect transmitter/ESC adjustment—Refer to Step 4.
- External Power Capacitor damaged/not installed—Replace Power Capacitor.

ESC Is Melted Or Burnt/ESC Runs With Switch Off

- Internal damage—Refer to Service Procedures.

****For more assistance call our Customer Service Department or check our website.***

SERVICE PROCEDURES

Before sending your speed control or brushless motor system in for service, review Trouble-Shooting guide and instructions. System may appear to have failed when other problems exist.

After reviewing instructions, if you feel that your ESC/system requires service, please obtain the most current product service options and pricing by the following ways:

WEBSITE: Print a copy of the ***PRODUCT SERVICE FORM*** from the CUSTOMER SERVICE section of the website. Fill out the needed information on this form and return it with the Novak product that requires servicing.

PHONE/FAX: If you do not have access to the internet, please contact our customer service department by phone or fax as listed below.

WARRANTY SERVICE: For warranty work, you *MUST CLAIM WARRANTY* on ***PRODUCT SERVICE FORM*** & include a valid cash register receipt with purchase date and dealer name & phone# on it, or an invoice from previous service. If warranty provisions have been voided, there will be service charges.

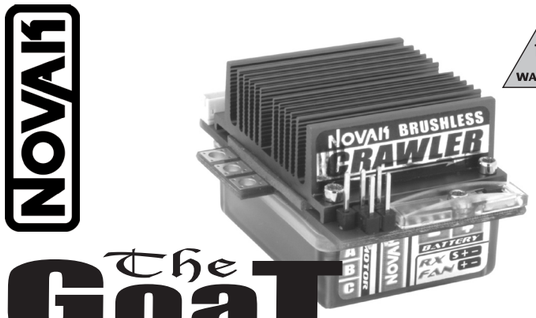
•ESCs returned without a serial number will not be serviced under warranty•

ADDITIONAL NOTES:

- Dealers/distributors are not authorized to replace products thought to be defective.
- If a hobby dealer returns your product for service, submit a completed ***PRODUCT SERVICE FORM*** to the dealer and make sure it is included with product.
- Novak Electronics, Inc. does not make any internal electronic components *(transistors, resistors, etc.)* available for sale.

BASIC SET-UP GUIDE -- GOAT

• See 'Programming/Gearing' sheet for Proper Gearing, Profile Selection, Custom Programming, & Li-Po Cut-Off •



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SPECIFICATIONS

Input Voltage	4-7 cells *(1.2 VDC/cell)*, 2 Li-Po cells
ESC Footprint	1.18"x1.54" *[30x39mm]*
ESC Weight *(w/o wires)*	1.49 ounce *[42 grams]*
B.E.C. Voltage/Current	6.0 volts DC/5 amps
Power Wire *(Battery/Motor)*	14G Super-Flex Silicone
On-Resistance *(Brushless)*	0.0012Ω *@25°C trans.temp.*
On-Resistance *(Brush-Mode)*	0.0012Ω *@25°C trans.temp.*
Rated Current *(Brushless)*	120A *[per phase] @25°C trans.temp.*
Rated Current *(Brush-Mode)*	120A *[Fwd & Brakes] @25°C trans.temp.*
Motor Limit *(Brushless)*	Down to 18.5-turn Novak
Motor Limit *(Brush-Mode)*	27-turn
Throttle Programs *(Brushless)*	3 *[2 crawling & 1 robotic]*
Throttle Program *(Brush-Mode)*	1 *[Fwd/Drag Brake/Rev]*

The Ultimate Rock Crawling Controller for Brushless & Brush Motors and Full Programmability!

The Goat Brushless/Brush Crawler electronic speed control gives you the best of everything--Sensor-based brushless motor control and brush motor control in one ESC with Auto-Detect Brush-Mode, plus complete on-board programming of Minimum Brake, Drag/Hill Brake, Dead Band, LiPo Cut-Off, Motor Rotation, & Drive Frequency (in Brush Mode).....all the versatility needed for your crawler!

The Goat ESC is factory-loaded with 4 throttle programs to choose from *(including a Servo/Robotic Mode)*, Novak's Crawler-exclusive brushless holding power & linear ramp-up braking, ***Thermal Overload Protection***, ***high-power B.E.C.*** for extra-strong/fast servo response, ***Polar Drive & Digital Anti-Glitch circuitries*** for cool & smooth operation, & an auxiliary power output. Add to this the user-replaceable battery wires & input harness, and the Goat has it all*!*

To benefit from all of the technical features the Goat has to offer, PLEASE READ ALL INSTRUCTIONS BEFORE OPERATION

PRECAUTIONS

WATER & ELECTRONICS DON'T MIX!
Never allow water, moisture, or other foreign materials to get inside ESC, motor, or on the PC Boards. ***Water damage will void the warranty!***

NO SCHOTTKY DIODE!
Schottky diodes must NOT be used in Brushless-Mode or Brush-Mode with the Goat ESC *(Schottky diodes are never used with reversible ESCs, including brushless).*
Schottky diode usage will damage ESC & void warranty.

DISCONNECT BATTERIES WHEN NOT IN USE
Always disconnect the battery pack from the speed control when not in use to avoid short circuits and possible fire hazard.

4 TO 7 CELLS OR 2-CELL Li-Po ONLY
If using Ni-Cd or Ni-MH batteries, ***NEVER*** use fewer than 4 or more than 7 cells *(1.2VDC/cell)* in the vehicle's main battery pack.
If using Li-Po batteries, ***ONLY*** use a 2-cell (2S) pack for the vehicle's main battery & be sure the Li-Po Cut-Off programming option is turned ***ON***.

NOVAK BRUSHLESS MOTORS ONLY
The Goat ESC is designed for use with sensor-based Novak Brushless Motors. You may replace with Novak sensored motors down to 18.5 turns. In Brush-Mode, you may use down to a 27-turn stock brush motor.

NO REVERSE VOLTAGE!
Reverse battery polarity can damage ESC & void warranty. Disconnect battery immediately if a reverse connection occurs.

POWER CAPACITOR REQUIRED
An external power capacitor is installed on ESC & ***MUST*** be used. ***Failure to use Capacitor will result in higher temperatures & possible thermal shut-down or damage.***

TRANSMITTER ON FIRST
Always turn on the power of the transmitter first so that you will have control of the vehicle when you turn it on.

GOOD QUALITY TRANSMITTER SUGGESTED
With the higher performance of brushless systems, undesirable radio system noise may occur when used with lower quality transmitters *(like some RTR radios)*.

DO NOT BUNDLE POWER & SIGNAL WIRES TOGETHER
RF noise in the power wires can adversely effect radio system performance.

INSULATE WIRES
Always insulate exposed wiring with heat shrink tubing or electrical tape to prevent short circuits, which can damage ESC.

NO CA GLUE
Exposure to CA glue or its fumes can cause damage to internal components of the speed control and result in premature failure.

OPTIONAL ACCESSORIES

REPLACEMENT/UPGRADE POWER CAPACITOR *[Novak kit #5682]*
The Goat ESC comes with a factory-installed Power Capacitor, and one ***MUST BE USED*** to maintain cool & smooth operation. *Upgrade Power Capacitor available in Novak kit #5675---Novak has done extensive testing & research to find Power Capacitors with the best quality factors—other similar rated capacitors will not provide equal protection.*

SUPER-FLEX SILICONE 14G WIRE *[Novak kits #5500 & 5508]*
Novak Super-Flex wire for power wiring. 14 gauge silicone wire in kit #5500 *(36"red & 36"black)* or kit #5508 *(2 each of 9"red/black/blue/yellow/orange).*

INPUT SIGNAL HARNESS *[Novak kits #5315 & 5320]*
User-replaceable input signal harness is available in both short and long lengths. *4.5" harness in Novak kit#5315, and 9.0" harness in Novak kit #5320.*

VELOCITI RIBBED END BELL & BEARING SET
Ribbed front end bell with bearing factory-installed & rear bearing--Novak kit #5919.

30x30mm COOLING FANs *[Novak kits #5648 & 5652]*
Cooling fans that fit ESC's heat sink perfectly & have correct power plug for easy connection. *Single fan in Novak kit#5648, and 2-pack of fans in Novak kit #5651.*

LEAD-FREE 3% SILVER SOLDER *[Novak kit #5830]*
High silver content for making ultra low-resistance solder joints for high efficiency and better performance. *Tube with 10 feet of solder in Novak kit #5830.*

PRODUCT WARRANTY

The Goat Brushless/Brush Crawler ESC is guaranteed to be free from defects in materials or workmanship for a period of 120 days from the original date of purchase *(verified by dated, itemized sales receipt)*. Warranty does not cover incorrect installation, components worn by use, damage to case or exposed circuit boards, damage from using fewer than 4 or more than 7 cells *(1.2 volts DC/cell)* or more than 2 LiPo cells input voltage, cross-connection of battery/motor power wires, overheating solder tabs, reverse voltage application, damage resulting from thermal overload or short-circuiting motor (or connecting a brushless motor sensor harness while operating in Brush-Mode), damage from incorrect installation of FET servo or receiver battery pack, not using or incorrect installation of a Power Capacitor on the ESC or from using a damaged Power Capacitor, using a Schottky diode in Brushless or Brush-Mode, using non-Novak Power Capacitor or motor, splices to input, ON/OFF switch, or sensor harnesses, damage from excessive force when using the One-Touch/SET button or from disassembling case, tampering with internal electronics, allowing water, moisture, or any other foreign material to enter ESC or get onto the PC board, incorrect installation/wiring of input plug plastic, allowing exposed wiring or solder tabs to short-circuit, or any damage caused by a crash, flooding, or act of God.

Because Novak has no control over the connection & use of the speed control or other related electronics, no liability may be assumed nor will be accepted for any damage resulting from the use of this product. Every Novak speed control & motor is thoroughly tested & cycled before leaving our facility and is, therefore, considered operational. *By the act of connecting/operating speed control, user accepts all resulting liability.* In no case shall our liability exceed the product's original cost. We reserve the right to modify warranty provisions without notice. Designed by Novak Electronics, Inc. in Irvine, CA and assembled with globally sourced components.

STEP 1–CONNECT INPUT HARNESS

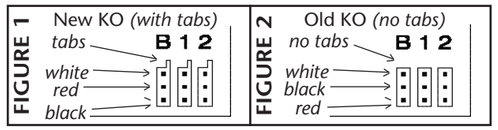
The Goat ESC has the industry-standard receiver input connector on a user-replaceable input harness & ***works with all major radio brand's new receivers***. However, some very old receivers must have the wiring sequence in the plastic 3-pin connector housing changed. ***This is important, because receiver & servo electronics may be damaged if the sequence is incorrect.***

CHANGING WIRING SEQUENCE @ RECEIVER END

JR • Hitec • Futaba • New KO • Airtronics Z

JR, Hitec, Futaba, new KO, & Airtronics Z receivers do not need input harness re-wiring. *Airtronics Z receivers have blue plastic cases & new KO cases have tabs on the input harness openings as in* ***Figure 1****.*

- Plug one end of the input signal harness into the *THROTTLE CHANNEL (#2)* of receiver with the ***BLACK wire toward the outside edge*** of receiver case.
- Plug the other end of the input harness into 3-pin header on the ESC case with the ***WHITE wire toward the outside of*** the ESC.

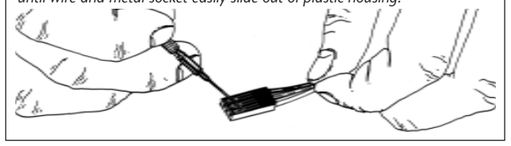


Old-style KO • Old-style Sanwa/Airtronics

If you have an older KO or Sanwa/Airtronics, you must change the sequence of the ESC's input harness wires--*Old Sanwa/Airtronics cases are black color & Old KO cases do not have tab openings, as in* ***Figure 2*** *above.*

- Using a small flat blade screwdriver, ***remove the red & black wires*** from the plastic housing at the receiver end of the input harness as in ***Figure 3*** below.
- ***Interchange the red and black wires*** in the plastic 3-pin connector housing at the receiver end of the input harness.
- Insert modified end of the harness into the *THROTTLE CHANNEL (#2)* of receiver with the ***RED wire toward the outside edge*** of receiver case.
- Plug the other end of the input harness into the ESC with the ***WHITE wire toward the 'S' (signal) marking*** on the ESC's case.

FIGURE 3 *With a small standard screwdriver, gently lift plastic prong until wire and metal socket easily slide out of plastic housing.*



STEP 2–ESC MOUNTING

Mount the speed control so that the power wires as far away from other electronics as possible. Make sure that the speed control or the power wires will not interfere with any moving parts in the vehicle. Select a location that has good cooling and allows airflow through heat sinks.

If the ESC gets air flow, it will run cooler; and that means it will be more efficient!

1. MOUNT SPEED CONTROL IN VEHICLE

Use the included double-sided tape to mount the speed control in vehicle *(do not use glue). Avoid contact with side walls or other chassis components to avoid vibration damage.*

Be sure receiver & antenna are mounted as far from ESC, power wires, battery, & servo as possible--these components all emit RF noise when throttle is applied. On graphite or aluminum chassis vehicles, it may help to place receiver on edge with crystal & antenna as far above chassis as possible.

Note: Mount antenna as close to receiver as possible--trail any excess wire off top of antenna mast (cutting or coiling excess antenna wire will reduce radio range).

2. SECURE POWER CAPACITOR TO CHASSIS

Use included double-sided tape, or a tie-wrap, to mount Power Capacitor to the vehicle's chassis or shock tower. *Capacitor can also be tie-wrapped along the power wires--this requires less space on the chassis and provides good isolation from vibration.*

3. INSTALL ON/OFF SWITCH

Use a screw or the included double-sided tape, and mount the switch where it will be easy to access--be sure to select a position where it will not get damaged or get switched OFF during a crash or roll-over.

STEP 3–WIRING SPEED CONTROL, MOTOR, & BATTERY

NOVAK BRUSHLESS MOTORS *(Fig.4)*

Amber LED flashes 4 times at start-up when transmitter signal is present

1. MOTOR CAPACITORS NOT NEEDED

Novak brushless motors do not require external motor capacitors.

2. DO NOT USE SCHOTTKY DIODES

Schottky diodes must NOT be used with reversible ESCs (including brushless). Schottky diode usage will damage the ESC & void warranty.

3. FACTORY-INSTALLED POWER CAPACITOR REQUIRED

The factory-installed Power Capacitor MUST be used with brushless & brush-type motors. ***If Power Capacitor becomes dented or damaged, ESC failure can occur****--replace immediately.* ***Longer Power Capacitor wires will decrease performance.***

4. SOLDER MOTOR POWER WIRES TO MOTOR

****Skip this step if installing complete system with ESC factory-wired to motor.***

A. Cut the ***BLUE, YELLOW, & ORANGE*** silicone motor power wires to the desired length, and strip 1/8-3/16" of insulation from the end of each wire. Tightly twist the exposed strands of wire, and tin the exposed end section of each wire with solder with a good, high heat iron.

B. Solder the ESC's ***BLUE Phase 'A'*** motor wire to the ***motor's phase 'A' solder tab***. Apply heat to exposed wire with soldering iron, and add solder to the tip of the iron & the wire--Add just enough solder to form a clean & continuous joint from the solder tab up onto the wire.

IMPORTANT NOTE: **DO NOT OVERHEAT SOLDER TABS**
Prolonged/excessive heating of solder tabs (motor or ESC) will cause damage.

C. Solder the ESC's ***YELLOW Phase 'B'*** motor wire to the ***motor's phase 'B' solder tab*** as described in Step 5B above.

D. Solder the ESC's ***ORANGE Phase 'C'*** motor wire to the ***motor's phase 'C' solder tab*** as described in Step 5B above.

Note: Make sure no wire strands have strayed to an adjacent solder tab, this will result in short-circuiting & severe ESC damage, which will void the warranty.

5. CONNECT MOTOR'S SENSOR HARNESS TO ESC

Insert the 6-pin connector on the end of the motor's Teflon sensor wires into ESC's sensor harness socket--the connector is keyed and will only go together in one direction. ***Spiral wrap can be used to protect sensor wires.***

6. CONNECT SPEED CONTROL TO BATTERY PACK

Connect the speed control's Tamiya-style JST battery connector to a charged 4 to 7 cell *(1.2VDC/cell)* or 2-cell LiPo battery pack.

BRUSH-TYPE MOTORS *(Fig.5-6)*

Red LED flashes 4x at start-up when ESC is is Brush-Mode (trans.on)

1. DISCONNECT BRUSHLESS MOTOR SENSOR HARNESS

The Goat Brushless/Brush Crawler speed control automatically switches to Brush-Mode when the ESC's power is switched ON and no brushless motor sensor harness is connected to it.

2. MOTOR CAPACITORS

Electric brush-type motors generate RF noise that causes interference. The included 0.1µF (50V) non-polarized, ceramic capacitors must be used on all motors to reduce motor noise & prevent ESC damage.

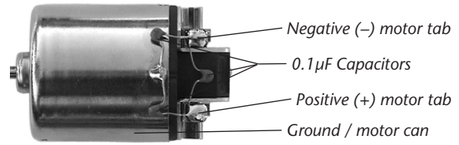
Note: Some motors come with built-in capacitors. If your motor only has 2 capacitors, you need to install a capacitor between the positive & negative motor tabs—If you experience radio interference with built-in capacitors only, install external ones.

Solder 0.1µF (50V) capacitors between:

- POSITIVE (+) & NEGATIVE (–) motor tabs.
- POSITIVE (+) motor tab & GROUND tab*.
- NEGATIVE (–) motor tab & GROUND tab*.

**If motor has no ground tab (as shown here), solder the capacitors to motor can.*

FIGURE 5



DO NOT USE SCHOTTKY DIODES

3. SOLDER ESC'S BLUE & YELLOW WIRES TO MOTOR

With brush-type motors, the ESC's ***BLUE*** power wire goes to the ***NEGATIVE (–) Motor Tab*** & the ***YELLOW*** power wire goes to the ***POSITIVE (+) Motor Tab***.

A. Cut the ESC's ***BLUE & YELLOW*** silicone motor power wire to the desired length to reach the motor, and strip about 1/4" of insulation from the end of each wire. Twist & tin the ends of each wire (individually).

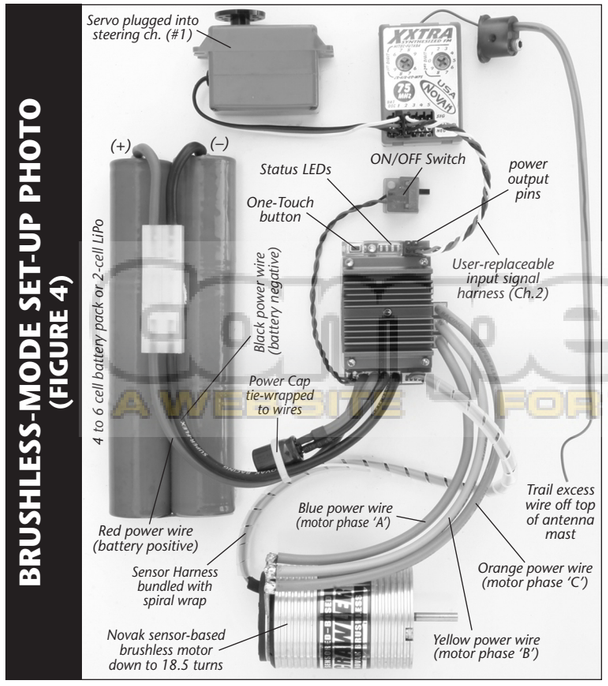
B. Solder the ***BLUE*** motor power wire to the ***NEGATIVE (–) Motor Tab***.

C. Solder the ***YELLOW*** motor power wire to the ***Positive (+) Motor Tab***.

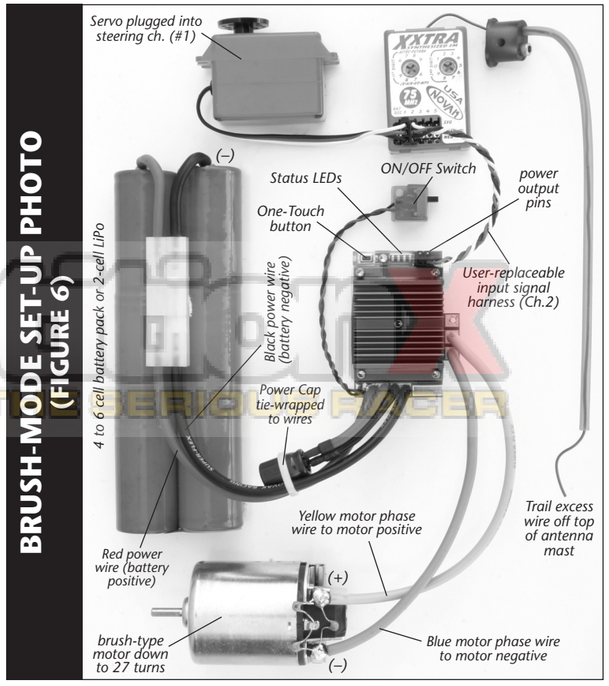
4. CONNECT SPEED CONTROL TO BATTERY PACK

Connect the speed control's Tamiya-style JST battery connector to a charged 4 to 7 cell *(1.2VDC/cell)* or 2-cell LiPo battery pack.

BRUSHLESS-MODE SET-UP PHOTO (FIGURE 4)



BRUSH-MODE SET-UP PHOTO (FIGURE 6)



STEP 4–ONE-TOUCH PROGRAMMING

With ESC connected to (at least) a receiver & a charged battery pack:

1. **TURN ON THE TRANSMITTER'S POWER**
2. **PRESS & HOLD ESC'S ONE-TOUCH/SET BUTTON**
3. **TURN ON THE SPEED CONTROL'S POWER**
   With transmitter throttle at neutral, and still **pressing the SET button**, slide the ESC's **ON/OFF switch** ***to ON position***.
4. **CONTINUE HOLDING SET BUTTON UNTIL RED LED COMES ON**
5. **RELEASE SET BUTTON AS SOON AS LED TURNS RED**
6. **PULL TRANSMITTER THROTTLE TO FULL-ON POSITION**
   Hold it there until the **green status LED** ***turns solid green***.
   Note: Motor will not run during programming even if connected.
7. **PUSH TRANSMITTER THROTTLE TO FULL-BRAKE/REVERSE**
   Hold it there until the **green status LED** ***blinks green***.
8. **RETURN TRANSMITTER THROTTLE TO NEUTRAL**
   Red status LED will ***turn solid red***, indicating that speed control is at neutral and that proper programming has been completed.

NOTE: If transmitter settings are changed, One-Touch Programming must be repeated. If you experience any problems, turn off ESC & repeat One-Touch.

REMEMBER: Whenever the One-Touch set-up is performed, the speed control will automatically revert back to the factory default settings & the Throttle Profile will revert to #1 when in Brushless-Mode.

TRANSMITTER ADJUSTMENTS

If you have any problems with Step 4, adjust transmitter as follows and then repeat the One-Touch programming in Step 4:

A. Set **HIGH ATV** or **EPA** to **maximum** setting.
[amount of throw at full throttle]

B. Set **LOW ATV, EPA**, or **ATL** to **maximum** setting.
[amount of throw at full brakes]

C. Set **EXPONENTIAL** to **zero** setting. *[throttle channel linearity]*

D. Set **THROTTLE CHANNEL REV. SWITCH** to **either** position.

E. Set **THROTTLE CHANNEL TRIM** to **middle** setting.
[adjusts neutral position/increases or decreases coast brakes]

F. Set **ELECTRONIC TRIGGER THROW ADJUSTMENT** to **50% throttle** and **50% brake** throw--*best for reversible ESCs.*
[adjusts trigger throw electronic/digital pistol-grip transmitters]

G. Set **MECHANICAL TRIGGER THROW ADJUSTMENT** to position with **1/2 throttle** and **1/2 brake** throw.

•NOT ALL TRANSMITTERS HAVE THESE ADJUSTMENTS•

CONNECTORS & WIRING HINTS

If you are going to use different power wire connectors, we suggest low-loss, high power connectors like Dean's Ultra. ***To prevent possible cross-connection of motor phase wires, we do not recommend the use of connectors on motor power wires of sensor-based brushless motors.***

- Use polarized connectors. *Reverse voltage will damage ESC & void warranty.*
- Use a female connector on battery packs to avoid shorting.

When wiring the vehicle's electronics, shorter length wires & clean/neat installations will give you better performance, higher efficiency, & less radio problems (glitching, poor range, etc.). Try your best to keep all power wires away from signal wires, the receiver, and the antenna.

NOVAK