

PROPER GEARING

Motor operating temperature is the ONLY way to properly set vehicle gearing

Motor & ESC temperatures should **NEVER** exceed **160°F MAX** at any time during operation!

Change the gearing to avoid overheating!

DO NOT FREE-REV MOTOR!

Free-running your brushless motor in a no-load condition can cause rotor failure & ESC transistor damage that will not be covered by the product's warranty.

Because of the potential of damage from overheating that can cause ESC or motor failure, **you should start with small pinion sizes** and check the speed control and motor operating temperatures during the initial runs after installation. This is the best way to avoid excessive heating.

If ESC & motor temperatures remain low & stable, you can slowly increase the pinion size while again monitoring the temperatures to determine the safe gearing for your vehicle, motor, and climate/track conditions. Because these variables can change or be modified, **you should continually monitor ESC & motor temperatures** to protect your electronics from damage.

VOLTAGE CUT-OFF CIRCUITRY

This speed control has been designed specifically for high performance racing usage, and does not have any built-in voltage cut-off circuitry. To avoid premature LiPo battery failure, you should avoid letting the battery voltage drop below the cell's critical safety voltage during operation.

TEMPERATURE MONITORING

This speed control has a built-in diagnostic temperature monitoring feature that lets you quickly and easily check the ESC's operating temperature at any time with a click of the ESC's push-button.

While connected to a battery and powered ON, **simply tap the ESC's SET button and one of the on-board LED lights will flash 4 times** to indicate the operating temperature of the speed control:

WHITE flashing LED = normal operating temp--under 135°F (57°C).

BLUE flashing LED = medium operating temp--136-147°F (58-64°C).

YELLOW flashing LED = hot operating temp--148-167°F (65-75°C).

GREEN flashing LED = hotter operating temp--168-194°F (76-90°C).

RED flashing LED = **hottest** operating temp--195-215°F (91-102°C).

You are now pushing the ESC extremely hard and should be very careful to avoid overheating and possible thermal shut-down.

All LEDs flashing = DANGEROUS operating temp--216-239°F (103-115°C).

Your ESC is now about to thermally shut-down.

Reduce the pinion size/check drive train to avoid ESC overheating that could result in potential damage.

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TROUBLE-SHOOTING GUIDE

Steering Channel Works But Motor Will Not Run

- Possible receiver damage—Check operation with a different receiver.
- Possible internal damage—Refer to 'SERVICE PROCEDURES' section.
- Check motor or motor connections.
- Check ESC is plugged into receiver's throttle channel. Check signal harness wire sequence.

Receiver Glitches/Throttle Stutters During Acceleration

- Receiver or antenna too close to ESC, power wires, battery, or motor.
- Bad motor sensors, sensor harness, or connections—Check wiring, sensor harness, & connections, perform hall sensor test (Refer to 'MOTOR HALL SENSOR TEST' section).
- Low voltage to receiver—Try Novak Glitch Buster (#5626) on receiver to retain power.
- PowerCap damaged/missing—Replace PowerCap/Trans-Cap Module.
- Battery pack damaged or weak—Try a different battery pack.
- Motor magnet weak or overheated—Replace rotor (Refer to motor manufacturer's website).
- Excessive current to motor—Use a milder motor or a smaller pinion gear.
- Untidy wires or signal and power wired bundled together. Input harness and servo wires should be bundled separately. Power wires should be as short as possible.

Motor and Steering Servo Do Not Work

- Check wires, receiver signal harness wiring & color sequence, radio system, crystals, battery/motor connectors, & battery pack.
- Possible receiver damage—Check operation with a different receiver.
- Possible internal damage—Refer to Service Procedures.

Speed Control Runs Excessively Hot

- Gear ratio too low—Increase gear ratio/Reduce pinion (refer to 'PROPER GEAR SELECTION').
- Motor is damaged—Try a different motor.

Model Runs Slowly/Slow Acceleration

- Gear ratio too high—Reduce gear ratio/Increase pinion (refer to 'PROPER GEAR SELECTION').
- Check battery & connectors—Check battery pack & connectors. Replace if needed.
- Incorrect transmitter/ESC adjustment—Refer to 'TRANSMITTER ADJUSTMENTS'.
- PowerCap damaged/missing—Replace PowerCap or Power Trans-Cap Module.

ESC Is Melted Or Burnt/ESC Runs With Switch Off

- Internal damage—Refer to Service Procedures.

No Power to the ESC

- Check power wire connections to your battery, ESC, receiver pack, or booster circuit.
- Be sure that the booster circuit or receiver pack switch is turned ON.

ERROR/LED CODES

- **White status LED blinking**—Electronic motor timing turned off/0° advancement.
- **Red & Green status LEDs on solid**—Check input signal harness connections at ESC and receiver. Check input signal harness wiring sequence—Refer to **STEP 3**.
- **Red status LED on solid & Green LED blinking**—Check motor sensor harness connection. Possible internal motor damage.
- **Blue & Green status LEDs both blinking**. Misfire shut-down—return throttle to neutral position to regain motor control—check 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 & Yellow status LEDs blinking**. Possible Motor thermal shut-down—Check gear ratio & free operation of drive train for possible overloading/Motor 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 & Green (Misfire Detection), Blue & Red (ESC Thermal Shut-Down), or Blue & Yellow (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 'ONE-TOUCH' & 'TRANSMITTER ADJUSTMENTS').

SERVICE PROCEDURES

Before sending your product in for service, review the **Trouble-Shooting Guide**. Product may appear to have failed when other problems exist. After reviewing instructions, if you feel that you require service, obtain the most current service options & pricing as follows:

WEB: Print out the **PRODUCT SERVICE FORM** from CUSTOMER SERVICE section of the web site. Fill out required information on form and return it with the product requiring service.

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

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

TRADE-IN PROGRAM: Novak offers a trade-in program for non-warranty items toward current and discontinued products. You can replace, exchange, or upgrade Novak products as listed within the trade-in program. Complete a Non-Warranty Service Form to be eligible.

ADDITIONAL NOTES:

- Dealers/distributors aren't 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.

SET-UP GUIDE

NOVAK

NOVAL SPEC



#55-1743-1
1-2012

The Novak Oval Spec speed control has been designed along with the top racers to meet the demands of 1S sensor-based brushless motor racing.

The Oval Spec has a simplified interface that gives you all the adjustability you need to turn the fastest possible laps without the need for external programming devices or computers. 7 user-adjustable parameters include 3 Ranges of Maximum Timing Advance to best suit different motors and racing classes, Timing RPM Start Point, Timing RPM End Point, Drive Frequency, Minimum Drive, & Dead Band, plus it has On-Board Temperature Monitoring to keep things in check.

ACCESSORIES

PLUG-IN INPUT SIGNAL HARNESS (MINI-JST) [Novak kits #5304 & #5309]
Input signal harness with 2mm Mini plug on ESC end--4.5" (#5304), 9" (#5309).

BRUSHLESS MOTOR CONNECTOR WIRE SET [Novak kit #5332]
Flexible 14GA wire with gold-plated connectors for low-resistance connections.

BRUSHLESS SENSOR HARNESSES [Novak kit #5351-#5353]
Shielded sensor harness protects sensor wires--4" (#5351), 6" (#5352), 9" (#5353).

SUPER-FLEX SILICONE 14GA WIRE SET [Novak kit #5508]
Two each of 9" length black, red, blue, yellow, and orange 14GA wire.

SUPER-FLEX SILICONE 12GA WIRE-BLACK/RED/BLUE [Novak kit #5512]
3 foot lengths of black, red, and blue ultra low-resistance 12GA wire.

SUPER-FLEX SILICONE 12GA WIRE-BLACK/RED [Novak kit #5530]
3 foot lengths of black and red ultra low-resistance 12GA wire.

REPLACEMENT REMOTE POWER PROGRAMMING SWITCH [Novak kit #5602]
Replacement ON/OFF switch/programming button harness for Novak speed controls.

GLITCH BUSTER CAPACITOR [Novak kit #5626]
Supplies reserve power to receiver during spikes of heavy load to avoid drop-out.

25x25x10mm BLACK COOLING FAN--Mini [Novak kit #5649]
Replacement cooling fan with 2mm mini plug harness to fit Novak speed controls.

POWER CONNECTORS--3.5mm & 4mm [Novak kit #5731 & #5741]
Low-Loss connectors generate dozens of wiring routing and installation options.

LEAD-FREE SILVER SOLDER [Novak kit #5831-#5833]
3% Silver solder for high-conductivity--6gr (#5831), 15gr (#5832), 100gr (#5833).

MOUNTING TAPE 25x35mm [Novak kit #5840 & #5841]
Cushioned, double-sided tape for mounting electronics--10pc (#5840), 100pc (#5841).

HEAT SHRINK TUBING [Novak kit #5850 & #5851]
6" long heat shrink tubing in six sizes: 1/16" - 3/8"--6pc kit (#5850), 24pc kit (#5851).

PRODUCT WARRANTY

This Brushless ESC is guaranteed to be free from defects in materials or workmanship for a period of 120 days from original purchase date (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 more than 1 LiPo cell input voltage, damage resulting from using insufficient LiPo batteries that cannot supply the amperage required by this system, cross-connection of battery/motor power wires, overheating solder tabs, reverse voltage application, improper use or installation of external BEC, damage resulting from thermal overload or short-circuiting motor, damage from incorrect installation of FET servo or receiver battery pack, damage due to free revving motor, damage resulting from use of a non-Novak motor or a non-sensored motor, operating ESC without factory-installed PowerCaps or operating with damaged PowerCaps, using a Schottky diode, splices to input 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 natural disaster. Because Novak has no control over connection & use of ESC 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 ESC & motor is thoroughly tested & cycled before leaving our facility and is, therefore, considered operational. By the act of connecting/operating ESC, 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. This product is not intended for use by children under 14 years of age without the strict supervision of an adult. Use of this product in an uncontrolled manner may result in physical damage or injuries—take extra care when operating any remote control vehicle. Melted ESCs/motors are not covered by the warranty.

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SPECIFICATIONS

Input Voltage..... 1S LiPo
Motor Compatibility Sensor-Based Brushless
ESC Size..... 1.16" x 1.47" x 0.7" (29.5 x 37.3 x 17.8mm)
ESC Weight (w/o wires) 1.29 ounce (36.6 grams)
Power Wire (Battery/Motor)..... 12G Super-Flex Silicone
On-Resistance..... 0.0004 ohm (@25°C trans.temp.)
Adjustable Parameters..... 7
On-Board Diagnostics..... Temperature Monitoring, Hall Sensor Test

PRECAUTIONS

WATER & ELECTRONICS DON'T MIX!

Allowing water, moisture, or other foreign materials to get inside the speed control will void product's warranty.

MUST BE 14 YEARS OR OLDER TO OPERATE

Strict adult supervision is required for use by children under 14 years of age.

SENSOR-BASED BRUSHLESS MOTORS ONLY

Designed for use with sensor-based brushless motors.

DO NOT FREE REV OR OPERATE WITHOUT LOAD!

This includes running motor without a pinion or holding car in the air and running motor at or close to full power. *Free revving will void the warranty!*

NO SCHOTTKY DIODES!

Do not use Schottky diodes with with brushless ESCs!

1S LiPo USE ONLY

This ESC is designed for 1S LiPo pack usage ONLY.

DISCONNECT BATTERIES WHEN NOT IN USE

Always disconnect batteries from the ESC when not in use or left unattended to avoid short circuits and possible fire hazard.

POWERCAP REQUIRED

An external PowerCap is installed on the ESC & MUST be used at all times. Failure to use the correct Novak PowerCap will result in higher ESC temperatures & possible damage.

GOOD QUALITY LiPo BATTERIES SUGGESTED

Using low quality LiPo batteries that cannot supply the amperage required by this system will result in possible battery, ESC, & motor damage, and will void the warranty.

TRANSMITTER ON FIRST

Always turn on transmitter power first so you will have control of vehicle when you turn the ESC's power on.

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

INSULATE WIRES & NO REVERSE VOLTAGE!

Insulate all exposed wiring with heat shrink tubing or electrical tape to prevent short circuits, & never reverse connect the battery--ESC damage will occur & void the warranty.

NO CA GLUE

CA glue or its fumes can damage the PC board and internal components of the ESC & cause premature failure.

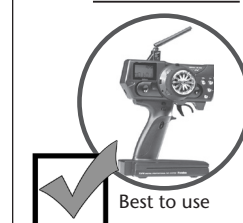
GOOD QUALITY RADIO SYSTEM SUGGESTED

With higher performance electronic systems, undesirable radio system noise may occur when used with lower quality radio systems.

Use of high quality 2.4GHz radio systems is best--*Avoid cheap 2.4GHz systems.* FM radio systems are acceptable, as long as the system is high quality.

AM radio systems are NOT recommended.

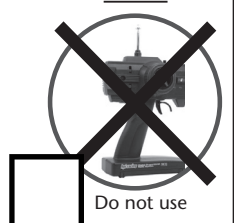
2.4 GHz



FM



AM



STEP 1-MOUNT ESC

Mount the speed control so that the power wires will not interfere with the vehicle's moving parts. Select an installation location that has good airflow for cooling the ESC as this will result in more efficient operation.

1. MOUNT SPEED CONTROL IN VEHICLE

Mount the ESC to the vehicle's chassis using the included double-sided tape (do NOT use glue). Avoid contact with the chassis side walls or other vehicle components to avoid vibration damage.

Keep receiver and antenna as far from ESC, power wires, battery, & servo as possible--These components all emit RF noise.

Note: Mount antenna as close to receiver as possible--trail excess wire off top of antenna mast (cutting/coiling excess wire reduces radio range--2.4GHz too).

2. INSTALL ON/OFF SWITCH/PROGRAMMING BUTTON

Mount the ESC's ON/OFF switch/button with the included double-sided tape to where it will be easy to access--select a place where it will not get damaged/switched OFF in a crash.

If using an External Receiver Pack: The programming button/switch harness can be removed from the ESC during operation--You must use an input signal harness with a RED wire in it to supply power to the ESC.

3. SECURE POWER WIRES TO AVOID VIBRATION DAMAGE

To prevent vibration damage, use the included tie-wraps to secure the speed control's PowerCap module and battery & motor power wires together and/or to a point on the vehicle to help prevent vibration and stress on the ESC's solder joints and the solder tabs.

STEP 2-CONNECT MOTOR

1. INSTALL PINION GEAR

Tighten the pinion gear's set screw onto the flat of the motor shaft. Align the pinion and the spur gears.

2. ADJUST MOTOR FOR PROPER GEAR MESH

A. You NEED a small amount of free play between the pinion and spur gear (about the thickness of a piece of paper)--check for free play at several points around spur gear to ensure a proper mesh (Make sure the gear mesh is NOT TOO TIGHT).

B. Tighten the motor mounting screws--Avoid using excessive force that could break the screws or strip the threaded holes in motor.

3. CONNECT MOTOR POWER WIRES TO MOTOR

The motor power wires are all the same color, therefore refer to the Phase markings that are stamped on the ESC's case under the solder tabs.

A. Connect the ESC's Phase 'A' silicone motor power wire to the motor's Phase A solder tab.

B. Connect the Phase 'B' power wire to motor's Phase B solder tab.

C. Connect the Phase 'C' power wire to motor's Phase C solder tab.

4. CONNECT MOTOR SENSOR HARNESS TO ESC

Insert the 6-pin connector of the motor's sensor harness into ESC's sensor harness socket--connector is keyed and only inserts in one direction.

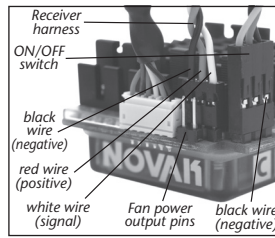
5. CHECK FOR PROPER GEARING DURING INITIAL RUNS

ESC/Motor should never exceed 160°F--Lower gearing or check vehicle's drive train for binding or other problems if you experience high temperatures.

STEP 3-CONNECT RECEIVER

The ESC has a user-replaceable input harness with a 2mm mini plug on ESC end of it and the industry-standard connector on receiver end.

The ESC works with all major radio brand's new receivers. Some very old receivers need the wiring sequence changed in the plastic 3-pin connector on the receiver end--Receiver/servo may be damaged if sequence is incorrect. For instructions on changing the wiring sequences on older receivers, visit our web site.



1. CONNECT 2mm MINI PLUG TO RECEIVER HARNESS PINS ON ESC

Insert 2mm mini plug of receiver input harness onto ESC's 3-pin Rx header.

• If using receiver pack/booster with ESC's switch/button harness INSTALLED: Remove RED wire from receiver input signal harness and leave ESC's switch ON.

• If using external receiver battery with ESC's switch/button harness REMOVED: Use receiver input signal harness wire RED wire intact to power ESC'.

2. CONNECT RECEIVER HARNESS TO RECEIVER

Insert 3-pin connector of receiver harness into Ch.2 (throttle) slot of receiver.

STEP 4-CONNECT BATTERY

1. CONNECT BATTERY POWER WIRES TO BATTERY PACK

Connect a fully charged, high-quality 1S LiPo battery pack to the speed control's BLACK (positive) and RED (negative) battery power wires.

To use a battery connector on ESC, we suggest using polarized, low-loss, high power connectors like Dean's Ultra Plug. Use a female connector on battery.

STEP 5-ONE-TOUCH PROGRAMMING

With ESC connected to a charged battery, receiver, & motor's sensor harness:

1. TURN ON THE TRANSMITTER'S POWER

2. PRESS & HOLD ESC'S ONE-TOUCH/SET BUTTON

(Re-install ON/OFF switch/programming harness if it was removed for operation)

3. TURN ON THE SPEED CONTROL'S POWER

With transmitter trigger at neutral (and still pressing the SET button), slide the ESC's switch to the ON position.

4. CONTINUE HOLDING SET BUTTON UNTIL RED LED COMES ON

5. RELEASE SET BUTTON AS SOON AS RED LED TURNS ON

6. PULL TRANSMITTER THROTTLE TO FULL-ON POSITION

Hold it there until the green status LED turns solid green (motor will not run).

7. PUSH TRANSMITTER THROTTLE TO FULL-BRAKE/REVERSE

Hold it there until the green status LED blinks green.

8. RETURN TRANSMITTER THROTTLE TO NEUTRAL

The red status LED will turn solid red, indicating that speed control is at neutral and that proper programming has been completed.

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

NOTE: One-Touch Programming reverts ESC back to factory-default settings.

ESC PROGRAMMING -->

TO CHANGE THE SETTINGS OF THE 'ADJUSTABLE PARAMETERS':

1. CONNECT THE ESC TO A CHARGED BATTERY PACK & RECEIVER.

2. TURN ON TRANSMITTER & SLIDE ESC'S POWER SWITCH TO 'ON' POSITION

3. WITH ESC AT NEUTRAL, PRESS & HOLD ESC'S SET BUTTON

Release ESC's SET button once the LED is lit for the setting you wish to change. To skip, continue to press & hold SET button until desired parameter is reached.

4. SELECT PARAMETER VALUE (refer to tables in 'Adjustable Parameters' to the right) LED flashes to indicate active setting. Quick press & release button to change.

5. PRESS & HOLD SET BUTTON TO STORE NEW SELECTION

When button is pressed & held for 1 second, new selection is stored in ESC's memory. Status LEDs will scroll across to confirm ESC programming & ESC returns to neutral.

DEFAULT PARAMETER SETTINGS ARE LISTED IN BOLD IN THE TABLES TO THE RIGHT

There is no time constraint during selection of custom parameters.

MAX TIMING ADVANCE

#1 MAXIMUM TIMING ADVANCE (1 of 11 in 3 RPM Ranges) BLUE LED

The maximum degrees of Dynamic Timing Advance applied to the motor.

>> Increasing this setting increases the maximum amount of electronic motor timing applied to the motor. Select 1 of the 3 Timing Ranges in Parameter #4.

Setting (# of flashes)	1	2	3	4	5	6	7	8	9	10	11
Low Range (degrees):	Off	26	27	28	29	30	31	32	33	34	35
Mid Range (degrees):	Off	36	37	38	39	40	41	42	43	44	45
High Range (degrees):	Off	46	47	48	49	50	51	52	53	54	55

TIMING START RPM

#2 START RPM SELECTION (1 of 10) YELLOW LED

The RPM point at which Dynamic Timing Advance starts to be applied.

>> Increasing this setting raises the RPM when electronic timing comes ON.

Setting (# of flashes)	1	2	3	4	5	6	7	8	9	10
Start RPM:	Low	--	--	-->	--	--	-->	--	--	High

TIMING END RPM

#3 END/FINAL RPM SELECTION (1 of 10) GREEN LED

The RPM point at which Dynamic Timing Advance reaches the maximum timing.

>> Increasing this setting raises the RPM set point at which the electronic motor timing reaches the maximum advancement (setting #1 above).

Setting (# of flashes)	1	2	3	4	5	6	7	8	9	10
End/Final RPM:	Low	--	--	-->	--	--	-->	--	--	High

TIMING RANGE

#4 TIMING RANGE SELECTION (1 of 3) WHITE LED

The range of selectable degrees of Dynamic Timing Advance for Parameter #1.

Setting (# of flashes)	1	2	3
RPM Range:	Low	Mid	High

DRIVE FREQUENCY

#5 DRIVE FREQ. SELECTION (1 of 10) BLUE/YELLOW/GREEN LEDs

How the ESC's throttle response feels with respect to the transmitter's trigger input.

>> Increasing this setting makes the throttle response feel more aggressive.

Setting (# of flashes)	1	2	3	4	5	6	7	8	9	10
Drive Freq. (kHz):	32	31	30	29	28	27	26	25	24	23

MINIMUM DRIVE

#6 MIN. DRIVE SELECTION (1 of 10) BLUE/YELLOW/RED LEDs

Amount of forward drive applied with the first pulse of transmitter information sent.

>> Increasing this setting starts the forward drive at a higher level.

Setting (# of flashes)	1	2	3	4	5	6	7	8	9	10
Minimum Drive (%):	1	4	6	8	10	12	16	18	20	22

DEAD BAND

#7 DEAD BAND SELECTION (1 of 5) BLUE/YELLOW/WHITE LEDs

The space between Minimum Brake and Minimum Drive, with Neutral in the middle.

>> Increasing this setting increases the amount of 'free play', or distance your transmitter's trigger must move before forward drive or braking begins.

Setting (# of flashes)	1	2	3	4	5
Dead Band (%):	2	3	4	5	8

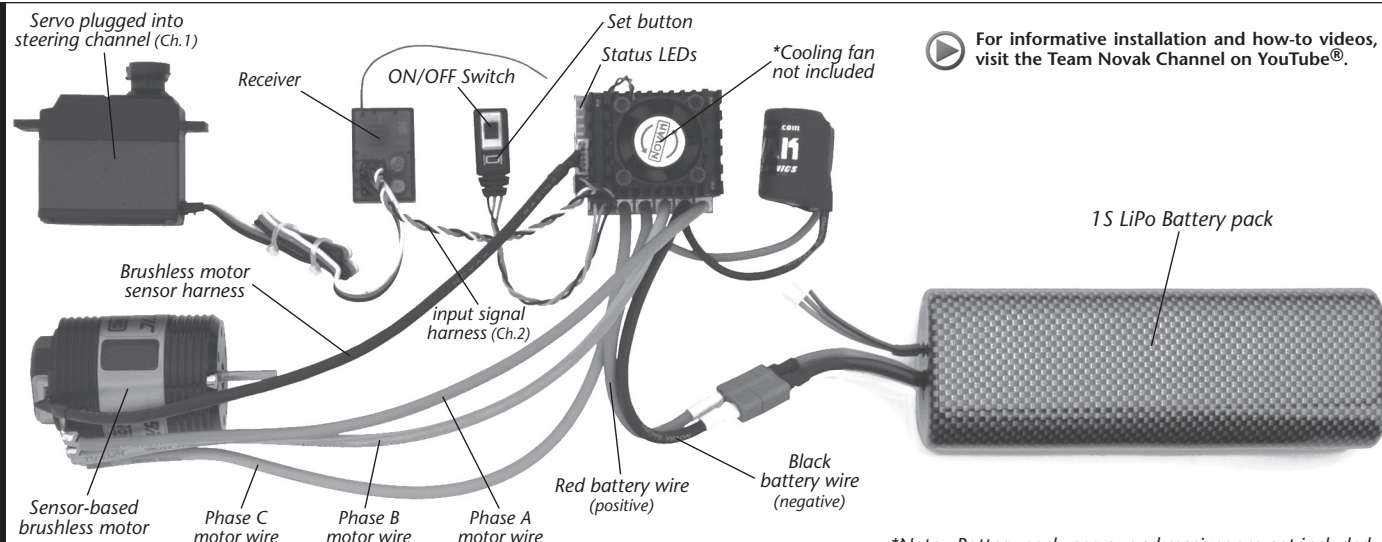
HALL SENSOR TEST

MOTOR SENSOR TEST BLUE LED FLASHING

>> Diagnostic feature to check functionality of brushless motor's hall effect sensors & harness/connections at ESC & motor. Once activated, slowly rotate the motor's output shaft--Appropriate LED will light up if sensor signal is received.

Sensor (color flashing)	A	B	C
LED Color:	BLUE	YELLOW	RED

BASIC SET-UP PHOTO



• ESC has 3 Blue motor phase wires--See case markings for Phase •

For informative installation and how-to videos, visit the Team Novak Channel on YouTube®.

www.teamnovak.com

*Note: Battery pack, servo, and receiver are not included.

MOTOR HALL SENSOR TEST

The Hall Sensor Test diagnostic feature allows you to easily check the sensors in the brushless motor connected to the ESC to determine if they are operating normally. This helps you pinpoint the cause of system problems, and reduce down time and customer service expenses when you can resolve the issue yourself.

To access this feature, simply follow these steps:

1. Follow the steps in the 'ESC PROGRAMMING' section to access the Hall Sensor Test option via the ESC's SET button.

2. Slowly rotate the motor's output/pinion shaft. If motor is installed in a vehicle, slowly rotate the drive train so that the motor also rotates.

3. As the motor is rotated, the BLUE, YELLOW, and RED status LEDs on the speed control should cycle through illuminating and going off.

If the BLUE, YELLOW, and RED LEDs light up & go off, one after another as the motor's shaft is rotated, the Hall Sensors in the motor are operating normally.

If any one of the BLUE, YELLOW, or RED status LEDs do not light, or remain on as the shaft is rotated, there is either a problem with the Sensor Harness (or its motor or ESC end connections) or with the Hall Effect Sensors in the motor's timing section.

If your motor has a user-replaceable double-ended sensor harness, replace it with another one to determine if this is the problem. If, after replacing the harness, all 3 of the LEDs still do not light up, it would appear that one of the motor's sensors has been damaged--replace the timing section of your motor, or if your motor is not user-rebuildable, send it in the manufacturer for the appropriate service.

Note: ESC Parameter values are subject to change due to ongoing development. Refer to our web site for updated values and more information on ESC parameters.