

STEP 5-ONE-TOUCH PROGRAMMING

With ESC connected to (at least) a receiver and a charged battery pack, and the transmitter's Aux/3rd channel (3Ch required for Dig) set to its *middle* position:

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 RED 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)
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 blue & red status LEDs will *turn on solid*, indicating that speed control is now ready to program the Aux/3rd channel that is used for the Dig feature. (Note: If using the Single Output Mode without Dig, ESC will exit programming here)
9. **CHANGE TRANSMITTER'S AUX/3rd CHANNEL TO ONE END POINT**
The blue & green status LEDs will *turn on solid*.
10. **CHANGE TRANSMITTER'S AUX/3rd CHANNEL TO OTHER END POINT**
The blue status LED will *turn on solid* & the green LED will *blink*.
11. **RETURN TRANSMITTER'S AUX/3rd CHANNEL TO NEUTRAL**
The blue, yellow, & red status LEDs will *turn on solid*, 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 and repeat One-Touch.

NOTE: Whenever the One-Touch Programming set-up is performed, the speed control will automatically revert back to the factory-default settings.

VOLTAGE CUT-OFF CIRCUITRY

When active (see Field Guide to turn ON/OFF), the built-in Novak Smart-Stop Voltage Cut-Off Circuitry lets you safely use 2S or 3S Lithium Polymer (LiPo) or Lithium Iron Phosphate (LiFe) battery packs by cutting off the speed control's throttle output when the critical safety voltages are reached.

The circuitry constantly monitors the pack voltage and automatically selects a 2S or 3S cut-off voltage value [6.25V (2S), 9.75V (3S) Li-Po; 4.75V (2S), 7.125V (3S) Li-Fe]. When the ESC detects that the critical safety voltage will soon be reached, it begins interrupting, or "blipping," the throttle output as an early warning that the battery's voltage is getting low and the throttle output will soon be completely shut off.

When the critical voltage is reached, the throttle output to the motor gets completely shut down to keep the voltage from dropping further (Red & Green LEDs will alternately flash & you still have steering control).

Re-charge battery after Smart-Stop circuitry shuts off throttle

Even though the pack's voltage will rise (after a short resting period) to a level high enough to run motor again, this is not good for LiPo or LiFe batteries.

Reaching critical safety voltage too many times can damage the cells.

DO NOT CONTINUE TO RUN VEHICLE AFTER THE SMART-STOP HAS SHUT DOWN THE THROTTLE OUTPUT THE FIRST TIME.

When the ESC is switched ON, the Yellow & Red LEDs will flash together 2 or 3 times to indicate LiPo/LiFe Cut-Off is ACTIVE.

With the Voltage Cut-Off Circuitry turned ON & using NiCd or NiMH cells, the circuitry will shut off the ESC's throttle output very early into the run, due to the different characteristics of these batteries. Change the ESC's Voltage Cut-Off Circuitry mode to OFF to use these batteries. See CUSTOM PROGRAMMING options on the Track Guide to properly adjust this setting.

WIRING AND COOLING FAN

The included cooling fan is recommended for 3-cell operation.

The M2 Dig ESC features a set of power output pins for running cooling fans, auxiliary lights, scale winches, etc. This power is regulated to 6.0VDC (same as the BEC), and switches on & off with the ESC's power switch, so you get maximum output without over powering by running directly from the battery pack's voltage.

The M2 Dig's heat sink is designed to accept a 25x25mm cooling fan, and comes with nylon 4-40x5/8" screws to secure it. To install, simply center fan on ESC and push the nylon screws down into the cross cuts of heat sink. If using metal screws (M3 or 4-40), thread them into the heat sink.

The pin-out label located on the ESC's case under the pins & LEDs shows the polarity of the power output pins, which are the two pins on the corner of the ESC. Positive (+) is on the left, and Negative (-) is on the right.

The two sets of three pins behind the power output pins are for the input signal harnesses. The polarity is the same for both: Positive in the middle, Negative on the left, and signal on the right.

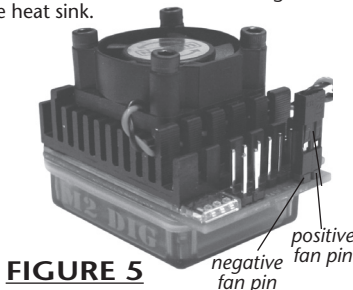


FIGURE 5

OPTIONAL RECEIVER PACK USAGE

If you are planning to use an external receiver battery pack with the M2 Dig 3S ESC 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. To turn the vehicle ON, switch the receiver pack ON. Then, turn the ESC's switch ON, then OFF to allow the ESC to be powered by an external source.
3. To turn the vehicle OFF, turn the receiver pack's switch OFF.

ALTERNATIVE METHOD

1. Plug the external 5 cell (1.2 VDC/Cell) receiver battery pack into the battery slot of the receiver.
2. Unplug the ESC's red wire from the input harness going to the receiver. Insulate the red wire to keep it from shorting.
3. To turn the vehicle ON, switch the receiver pack ON, then turn the ESC's switch ON.
4. To turn vehicle OFF, turn ESC's switch OFF, then turn receiver pack's switch OFF.

SERVICE PROCEDURES

Before sending your speed control in for service, review the **Trouble-Shooting Guide** (in Field Guide). The ESC may appear to have failed when other problems exist. After reviewing instructions, if you feel that your ESC requires service, please obtain the most current product service options and pricing by the following ways:

WEB SITE: Print a copy of the **PRODUCT SERVICE FORM** from the CUSTOMER SERVICE section of the Web site. 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.

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 •

TRADE-IN PROGRAM: For non-warranty work, Novak offers a trade-in program for current and discontinued products. You can replace, exchange or upgrade any Novak speed control to any available speed control listed within the trade-in program. You must 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.

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PRODUCT WARRANTY

The M2 Dig 3S Dual Brush 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 more than 9 cells (1.2 volts DC/cell) or more than 3 LiPo/LiFe cells input voltage, damage resulting from using LiPo batteries without Smart-Stop circuitry active, using insufficient LiPo batteries that cannot supply the amount of current 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 from not removing the red wire from the ESC's input harness when using external BEC, damage resulting from thermal overload or short-circuiting motor, damage from incorrect installation of a PowerCap or module on the ESC or from using a damaged PowerCap or module, using a Schottky diode, using non-Novak Trans-Cap module-3S, splices to input or ON/OFF switch 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 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. 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. Designed by Novak Electronics, Inc. in Irvine, CA and assembled with globally sourced components.

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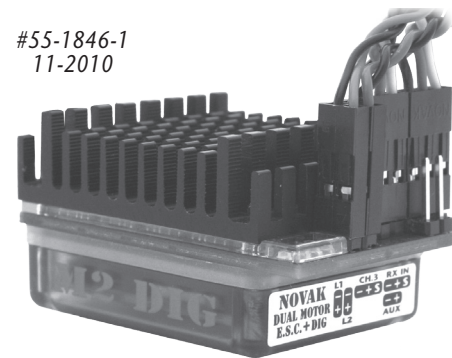
www.teammovak.com

BASIC SET-UP GUIDE - M2 DIG

- See "Field Guide" sheet for Proper Gearing, Profile Selection, Custom Programming & One-Touch Set-Up •

NOVAK

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M2 DIG



The Ultimate Dual Motor Crawling Speed Controller

The M2 Dig 3S Dual Brush ESC has the ability to run on 2S or 3S Li-Po/Li-Fe batteries and can independently control two brushed motors to perform dig maneuvers. Proportional Dig Mode allows for variable amounts of dig power, plus the level of dig power is programmable separately from the Hill/Drag Brake adjustment.

The M2 Dig is factory-loaded with 3 throttle profiles, Thermal Overload Protection, high-power BEC, external dig indicator LEDs, and includes everything needed to operate, including cooling fan and external PowerCap.

This one-of-a-kind speed control requires a three-channel transmitter to operate. Refer to the Novak Web site for a complete list of compatible transmitters.

To benefit from all of the technical features of the M2 Dig, PLEASE READ ALL INSTRUCTIONS BEFORE OPERATION

ACCESSORIES

INPUT SIGNAL HARNESS [Novak kits #5315 & #5320]

Double-ended input signal harness with 3-pin JST connectors on each end. Available in both short and long lengths.

4.5" harness in Novak kit #5315, and 9.0" harness in Novak kit #5320.

DIG INDICATOR LED HARNESES [Novak kit #5346]

Replacement red and blue external LED Dig Indicator LED light harnesses to let you know which dig is engaged. 6 inches long.

NOVALINK™ PC PROGRAMMING INTERFACE [Novak kit #5440]

Optional fully adjustable PC interface, which includes a USB cord and software disk.

3-AMP HIGH-VOLTAGE UNIVERSAL BEC [Novak kit #5463]

Optional BEC regulates voltage output and is recommended for use with 3S Li-Po.

SUPER-FLEX SILICONE 14GA WIRE SET [Novak kit #5508]

Two each of 9" length black, red, blue, yellow, and orange 14 GA silicone wire.

POWER PROGRAMMING SWITCH [Novak kit #5602]

Replacement combination ON/OFF Power Switch and One-Touch Programming Button harness with 3-pin JST plug for connecting to ESC.

GLITCH BUSTER CAPACITOR [Novak kit #5626]

Plug-in cap stores power to help BEC during surges of high load. Great for 2.4GHZ.

25x25x10mm COOLING FANS [Novak kits #5647 & #5651]

Black auxiliary cooling fan fits ESC's heat sink perfectly & has 2-pin plug for easy connection. Single fan in Novak kit #5647, and 2-pack of fans in Novak kit #5651.

POWER-CAP HARNESS [Novak kit #5682]

Replacement PowerCap harness for M2 Dig ESC. Required for use.

POWER TRANS-CAP MODULE-3S LiPo [Novak kit #5686]

Optional Power Trans-Cap module. Lowers operating temperatures.

LOW-LOSS POWER CONNECTORS-3.5mm [Novak kit #5731]

Gold-plated Low-Loss connectors for wiring electronics. 5 pair/includes heat shrink.

LEAD-FREE SILVER SOLDER [Novak kit #5831-#5833]

Novak solder contains 3% Silver for high-conductivity and is available in three sizes. 6g in Novak kit #5831, 15g in Novak kit #5832, and 100g in Novak kit #5833.

MOUNTING TAPE 25x35mm [Novak kit #5840 & #5841]

Premium Novak double-sided mounting tape to secure electronics in vehicles. 10 pieces in Novak kit #5840, and 100 pieces in Novak kit #5841.

HEAT SHRINK TUBING [Novak kit #5850 & #5851]

Novak heat shrink tubing is 6" long and available in six sizes: 1/16" - 3/8". 6 piece assortment in Novak kit #5850, and 24 piece assortment in Novak kit #5851.

SPECIFICATIONS

Input Voltage.....	2-3 Li-Po/Li-Fe cells, 4-9 Ni-MH cells
ESC Footprint.....	1.16"x1.47" (29.5 x 37.3mm)
ESC Weight (w/o wires).....	1.30 ounce (36.9 grams)
B.E.C. Voltage/Current (built-in).....	6.0 volts DC / 5 amps
Power Wire (Battery/Motor).....	14G Super-Flex Silicone
On-Resistance (Dual Motor).....	0.0016 ohm. @25°C trans.temp.
On-Resistance (Single Motor).....	0.0008 ohm. @25°C trans.temp.
Motor Limit-2S (Brushed-only).....	27-turn 540-sized
Motor Limit-3S (Brushed-only).....	33-turn 540-sized
Throttle Profiles.....	3 (Dig, Proportional Dig, & Single Output Mode)
Voltage Cut-Off-Li-Po.....	6.25V (2S); 9.75V (3S)
Voltage Cut-Off-Li-Fe.....	4.75V (2S); 7.125V (3S)
Status LEDs.....	4 (on-board), 2 (external dig indicators)

PRECAUTIONS

WATER & ELECTRONICS DON'T MIX!

Allowing water, moisture or other foreign materials to get inside ESC will void warranty.

MUST BE 14 YEARS OR OLDER TO OPERATE

This product is not a toy and is not intended for use by children under 14 years of age without the strict supervision of an adult.

NO SCHOTTKY DIODES!

Schottky diodes are never used with reversible speed controls. Do not use Schottky diodes with M2 Dig 3S ESC!

DISCONNECT BATTERIES WHEN NOT IN USE

Always disconnect batteries from ESC to avoid short circuits and possible fire hazard.

2-3S LiPo/LiFe OR 4-9 NiMH CELLS ONLY

If using LiPo or LiFe battery packs, use 2 or 3-cell (2-3S) LiPo/LiFe batteries for the vehicle's main battery & be sure the speed control's Voltage Cut-Off Circuitry option is turned ON and set to the setting for the proper battery type.

If using NiCd or NiMH batteries, NEVER use more than 9 cells (1.2VDC/cell) in the vehicle's main battery pack, and disable ESC's Voltage Cut-Off Circuitry (Page 7).

NO REVERSE VOLTAGE!

Reverse battery polarity can damage ESC & void warranty. Disconnect battery immediately if a reverse connection occurs.

POWER-CAP MODULE REQUIRED

An external PowerCap is installed on speed control & MUST be used at all times. Failure to use the PowerCap will result in higher operating temperatures & possible thermal shut-down or damage which is not covered under warranty.

GOOD QUALITY LiPo BATTERIES SUGGESTED

Using LiPo batteries that cannot supply the amount of current required by this system will result in possible battery pack, ESC & motor damage, and will void the warranty. It is recommended to use a 25C or higher rating.

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 RADIO SYSTEM SUGGESTED

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

NO CA GLUE

Exposure to CA glue or its fumes can cause damage to internal components of the ESC and result in premature failure.

STEP 1-CONNECT INPUT HARNESS

The M2 Dig has user-replaceable input harnesses with the industry-standard 3-pin JST connector on both ends, and works with all major radio brand's new receivers (Refer to Figure 1 to see how to connect the included user-replaceable input harness).

1. CONNECT ESC TO THR/CH.2 OF RECEIVER

The throttle channel harness connects to the 3-pin header closest to the edge of the ESC's case.

2. CONNECT ESC TO AUX/CH.3 OF RECEIVER

(See TRANSMITTER ADJUSTMENTS for proper adjustment) NOTE: AUX/Ch3 harness is not required for PROFILE 3.

If the M2 Dig ESC is being used for a boat, tank, or robot application, see APPLICATIONS for connection and set up. Some very old receivers must have the wiring sequence in the plastic 3-pin JST connector housing changed on the receiver end. This is important, as the receiver & servo electronics may be damaged if the sequence is incorrect.

For instructions on changing the wiring sequence for older receivers, visit the Novak Web site.

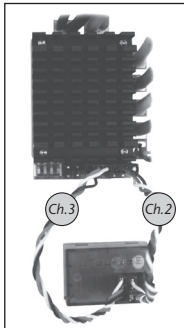


FIGURE 1
Input harnesses plugged into Ch.2 & Ch.3 of receiver.

STEP 2-MOUNT ESC

Mount the ESC so the power wires are as far away from other electronics as possible. Make sure that the ESC 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 POWERCAP TO CHASSIS

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

3. INSTALL ON/OFF SWITCH

Use 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.

4. INSTALL LED DIG INDICATOR LIGHTS

Secure the indicator LEDs to the chassis or body of the vehicle where they will be easily visible during operation. Note the proper LED connection on the ESC's pin-out label.

EXTERNAL BEC USAGE

If your vehicle uses very high-power servos OR you are using a 3S LiPo/LiFe battery, you should use an external BEC module (Novak #5463) and possibly a cooling fan (Novak #5647) on the ESC. The external BEC module has a switching BEC and will be able to supply the power required by the servos. The ESC's internal BEC will supply power to the ESC and fan. This keeps the servos from pulling too much current from the ESC's internal BEC that results in saturation of the BEC and the ESC & receiver cutting out. Refer to WIRING AND COOLING FAN on P4 for fan installation instructions.

1. MOUNT EXTERNAL BEC IN VEHICLE

Use tie-wraps or double-sided tape to mount the BEC and the ON/OFF switch in your vehicle, close to the main battery pack.

2. SOLDER WIRES TO MAIN POWER SOURCE

Solder red (positive) wire of BEC to ESC's positive power wire tab. Solder black (negative) wire of BEC to ESC's negative power wire tab. Shorten red and black BEC wires, if possible.

3. PLUG THE BEC INTO THE RECEIVER

Plug the BEC's 3-pin JST connector into the receiver's battery slot, making sure the polarity of the wires is correct.

4. REMOVE RED WIRE FROM BOTH OF THE ESC'S INPUT HARNESSSES

Remove the red wires from the 3-pin JST connectors on the ESC's input signal harnesses that are going to the Throttle & AUX/3rd Channels of the receiver. Insulate the red wires to avoid short-circuiting, as these wires are live.

Damage will occur if red wires are not disconnected and will void warranty!

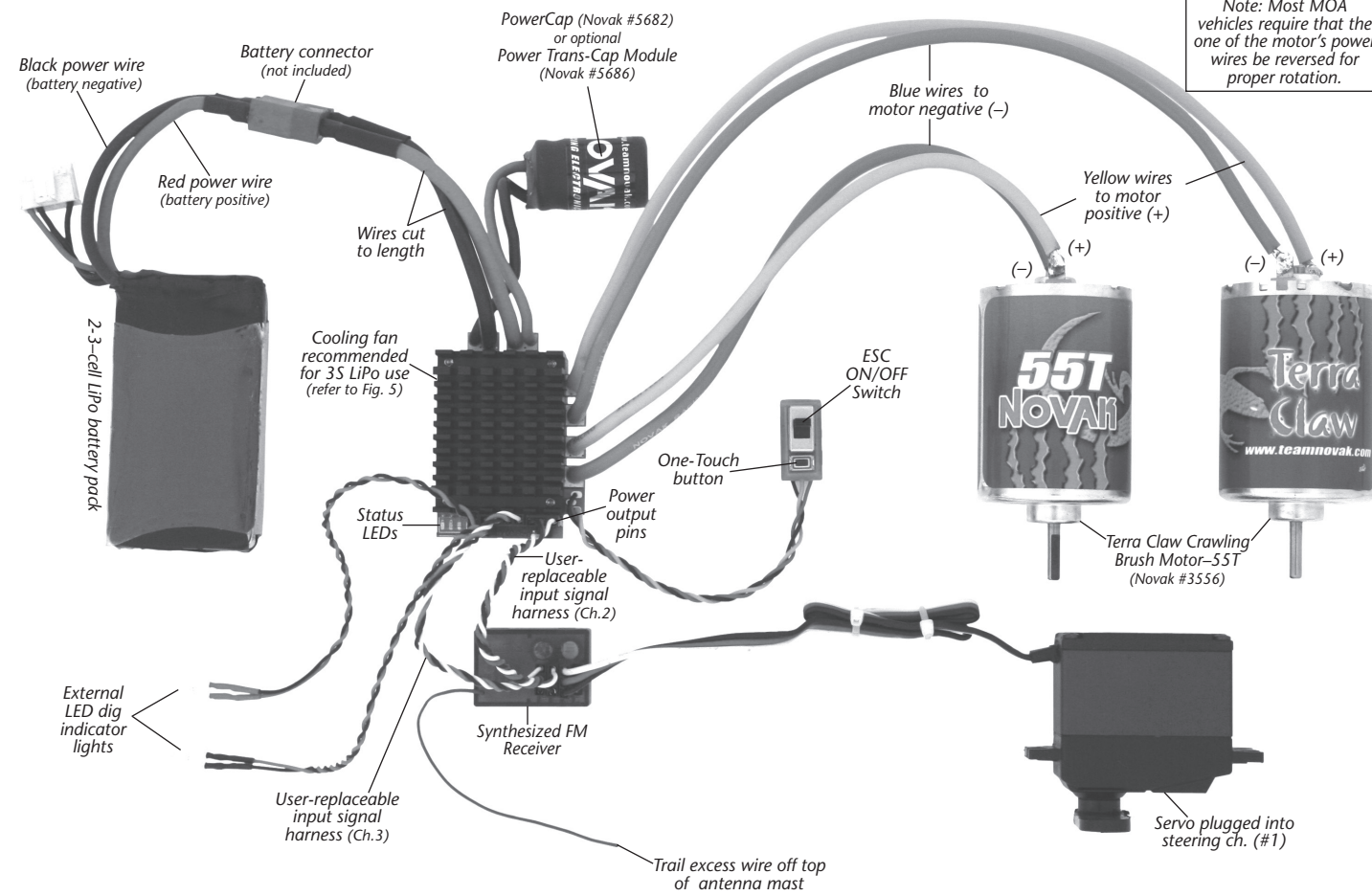
5. EXTERNAL BEC OPERATION

Turn on external BEC's power switch first, and then turn on ESC's power switch. The external BEC will be providing power for the servos and receiver only, NOT the ESC. When turning off the radio system, turn ESC off first, then the external BEC.

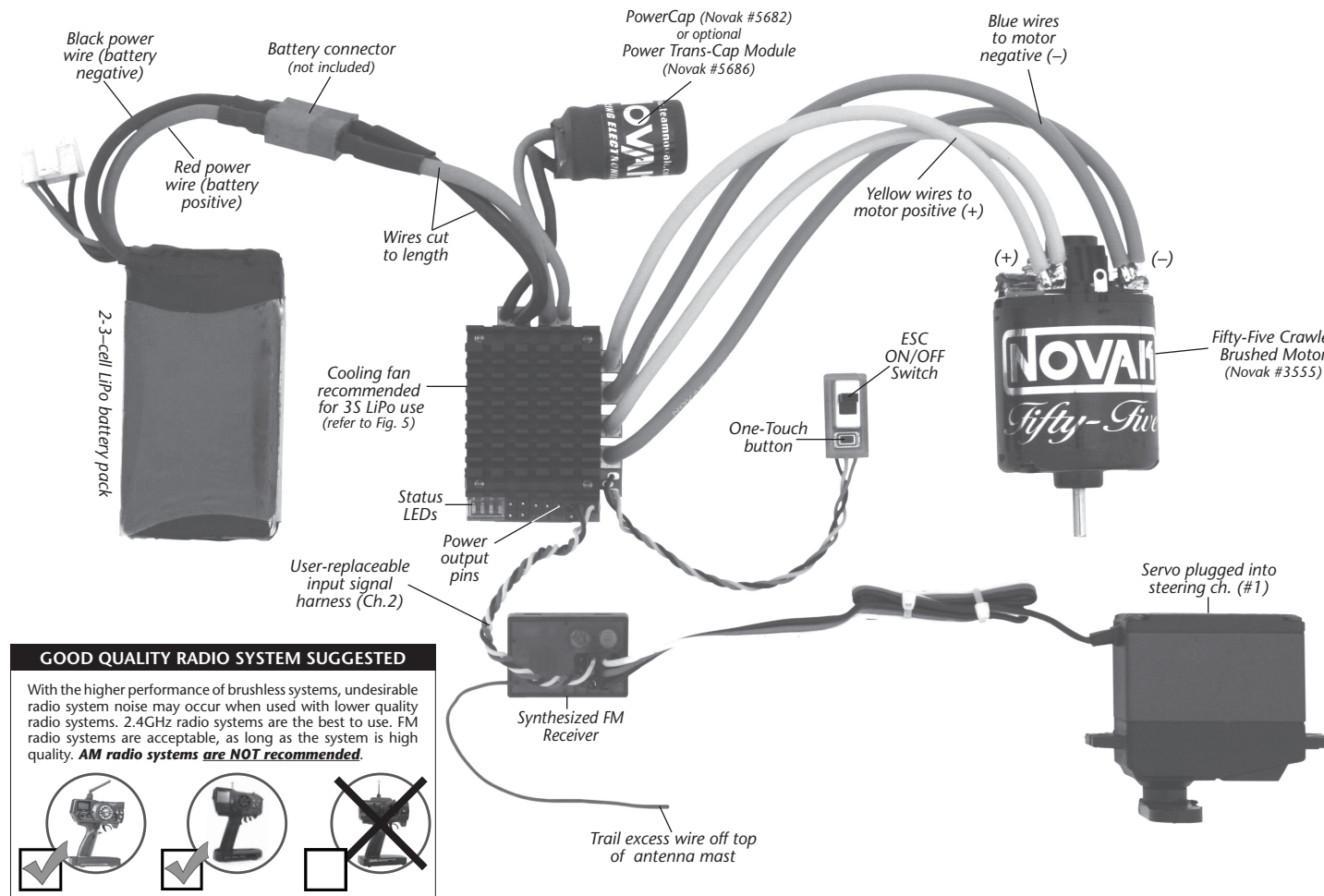
When the external Novak BEC is switched ON, its blue light will turn on.

NOTE: Double check that your battery pack is fully charged before operation. You will NOT have radio control of external BEC if the main battery fails or is fully discharged.

DUAL-BRUSHED MOTOR SET-UP PHOTO (FIGURE 2)



SINGLE-BRUSHED MOTOR SET-UP PHOTO (FIGURE 3)



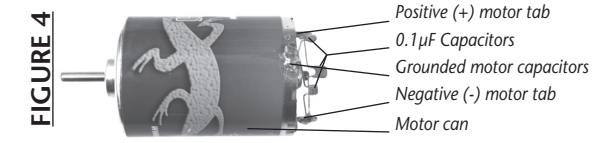
STEP 3-WIRE ESC TO MOTORS

1. MOTOR CAPACITORS

Electric motors generate RF noise that can cause radio interference. The included 0.1µF (50V) [Novak #5620] non-polarized, ceramic capacitors may be used to reduce motor noise, if needed.

Solder 0.1µF (50V) capacitors between:

- POSITIVE (+) motor tab & NEGATIVE (-) motor tab.
- POSITIVE (+) motor tab & Motor Can
- NEGATIVE (-) motor tab & Motor Can



Do NOT touch capacitor leads to motor can, except for the capacitors that are grounded to the can.

2. INSTALL PINION GEAR & ADJUST FOR PROPER GEAR MESH

Install pinion on motor and align pinion and spur gears. Tighten pinion's set screw on the flat of motor shaft.

- A. Adjust the motor position for proper amount of free play. You NEED a small amount of play between the pinion gear and the spur gear (about the thickness of a piece of paper)--check the free play at several positions around the spur gear to ensure a proper mesh (just in case the gears are out of round).

MAKE SURE THE PINION/SPUR GEAR MESH IS NOT TOO TIGHT!
If gear mesh is too tight, motor shaft breakage can occur.

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

3. SOLDER MOTOR POWER WIRES

The M2 Dig 3S ESC has two sets of motor wires. These sets of motor wires are labeled as M1 and M2. For dual motor crawler or MOA (Motor-On-Axle) applications, it is best to use the M1 wire for the front motor and the M2 wire for the rear motor..

- A. DUAL M.O.A. INSTALLATIONS--The rear motor must be a reverse-rotation motor. If a reverse-rotation motor is not available, you may do one of the following:

- REVERSE THE POLARITY OF THE MOTOR: To do this, connect the M2 blue wire to the positive tab of the rear motor, and connect the M2 yellow wire to the negative tab of the rear motor. The motor wires for M1 will remain normal.
- ROTATE END BELL: If the motor you are using has an adjustable end bell, you may loosen the end bell, rotate the end bell 180° and re-tighten the end bell. This reconfigures the motor into a reverse-rotation mode.

- B. SINGLE OUTPUT INSTALLATIONS--For use with single or dual motor applications when using a two-channel transmitter--the Dig feature is not available in this Mode.

FOR SINGLE OUTPUT MODE, ESC MUST BE PUT IN PROFILE 3 BEFORE PERFORMING THE ONE-TOUCH PROGRAMMING

- FOR SINGLE MOTOR APPLICATIONS: Either set of motor wires may be used, or both sets may be used for increased performance. When using both sets of motor wires, both yellow wires connect to the positive terminal of the motor and both blue wires will connect to the negative terminal. See Figure 4. Use Throttle Profile 3 (refer to Throttle Profile Selection on P6 of Field Guide).
- FOR DUAL MOTOR APPLICATIONS: The M1 motor wires will connect to the front motor, and M2 motor wires will connect to the rear motor. Use Throttle Profile 3.

- C. Determine the best routing in vehicle for power wires. Prepare ends of motor power wires by stripping 1/8-1/4" of insulation from end of wire. Tin wire ends with solder.

- D. Lay tinned end of the wire flat on the solder tab and solder wires to proper tabs of the motor. Apply heat with soldering iron to the power wire and solder tab--begin adding solder to tip of iron and to wire--Add just enough solder to form a clean & continuous joint from the solder tab up onto the wire.

FACTORY-INSTALLED POWER-CAP REQUIRED
The factory-installed PowerCap MUST be used with brush-type motors. If PowerCap becomes dented or damaged, ESC failure can occur--replace immediately (Novak Kit #5682). Longer wires on PowerCap leads will decrease performance.

DO NOT USE SCHOTTKY DIODES
Schottky diodes must NOT be used with reversible ESCs. Schottky diode usage will damage the ESC & void warranty.

STEP 4-WIRE ESC TO BATTERY

To connect the M2 Dig to the battery pack using connectors, we suggest polarized, high power connectors like the Dean's Ultra.

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

1. INSTALL BATTERY CONNECTOR

- A. Cut BLACK & RED battery wires to desired length and strip 1/8-3/16" of insulation from each wire end. Tightly twist and tin the ends of the exposed wire with solder.
- B. Solder the ESC's RED (+) battery wire to the connector's POSITIVE (+) contact.
- C. Solder the ESC's BLACK (-) battery wire to the connector's NEGATIVE (-) contact.
- D. Cover the exposed solder joints with heat shrink tubing to prevent possible short circuits.

2. CONNECT ESC TO BATTERY PACK

Connect the speed control's battery connector to a fully charged 2-3 cell LiPo/LiFe or 4-9 NiMH cell (1.2 VDC/cell) battery pack.

NOTE: If using NiMH batteries, the Voltage Cut-Off Circuitry must be deactivated (P4).