

STEP 4

GT7 BASIC SET-UP

TRANSMITTER ADJUSTMENTS

For proper ESC operation, adjust transmitter as follows:

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 70% throttle and 30% brake throw (or 7:3).
[adjusts trigger throw electronic/digital pistol-grip transmitters]

G. Set MECHANICAL TRIGGER THROW ADJUSTMENT to position with 2/3 throttle and 1/3 brake throw.
[adjusts trigger throw on mechanical/analog pistol-grip transmitters]

Checking That Transmitter Has Adequate Throw

With transmitter ON, GT7 OFF & connected to receiver & battery:

1. PRESS & HOLD SPEED CONTROL'S SET BUTTON

2. TURN ON SPEED CONTROL'S POWER *(while holding SET button)*

3. HOLD SET BUTTON UNTIL RED, YELLOW, & BLUE LEDs ON

4. RELEASE SPEED CONTROL'S SET BUTTON
Once yellow, blue, & red LEDs (top 2 LEDs + bottom LED) turn on, release the GT7's SET button. Red LED will stay on.

5. PULL TRANSMITTER THROTTLE IN DRIVE DIRECTION
Slowly pull throttle toward full drive—blue LED blinks until 500µS of throw is reached then it turns solid. (adjust throw in Step A above)

6. PUSH TRANSMITTER THROTTLE IN BRAKE DIRECTION
Slowly push throttle toward full brake—yellow LED blinks until 200µS of throw is reached then it turns solid. (adjust throw in Step B above)

Note: Without transmitter adjustments mentioned in Step A & B, ESC will still program & operate normally with a minimum of ±90µS of throw.

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NOT ALL TRANSMITTERS HAVE THESE ADJUSTMENTS.

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STEP 5

GT7 BASIC SET-UP

ONE-TOUCH PROGRAMMING

With GT7 connected to receiver & a charged battery pack:

1. TURN ON THE TRANSMITTER'S POWER

2. PRESS & HOLD SPEED CONTROL'S SET BUTTON

3. TURN ON THE SPEED CONTROL'S POWER
With transmitter throttle at neutral, and still pressing the SET button, slide the GT7's ON/OFF switch to ON position.

4. HOLD GT7'S SET BUTTON UNTIL RED LED IS ON
Continue pressing SET button until the GT7's red status LED turns solid red.

5. RELEASE GT7'S SET BUTTON WHEN LED IS 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-BRAKES
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 throttle is at neutral, and proper programming has been completed.

NOTE: If transmitter setting are changed, programming must be repeated. If you experience any problems, turn off ESC and repeat programming.

STEP 6

OPTIONAL GT7 SET-UP

THROTTLE PROGRAM SELECTION

The GT7 is equipped with 7 user-selectable Throttle Programs to choose from. The chart below shows how the different Throttle Programs change the feel of the throttle response. Refer to 'Factory-Installed Programs' chart below for Drive Frequency, Minimum Drive, Brake Frequency, Deadband, and Minimum Brake values for the factory installed Programs 1-7.

FEEL:

SMOOTH

AGGRESSIVE

PROGRAM#:

7

1

2

3

4

5

6

POSSIBLE APPLICATION

slick tracks

smooth modif.

aggr. modif.

stock

aggr. stock

oval

4-cell

Each Throttle Program is comprised of 3 parameters:

• Drive Profile--Drive PWM Frequency, Minimum Drive, & #drive steps.

• Brake Profile--Brake PWM Frequency & #braking steps.

• Minimum Brake Percentage--1 of 7 settings from 20 to 55%.
[Each Throttle Program stores its own Min.Brake setting independently]

FACTORY-INSTALLED PROGRAMS 1-7								
Program #:	1	2	3	4	5	6	7	
Drive Frequency (kHz):	15	11	7.5	4.5	3.5	2	23	
Minimum Drive (%):	3	2	2	4	3	3	1	
Brake Frequency (kHz):	3.5	4	5.5	5.5	1.5	3	5.5	
Deadband (%):	5	5	5	5	5	5	5	
Minimum Brake (%):	20	20	20	20	20	20	20	

NOTE: GT7 is factory set to Program #1.

Selecting Throttle Program

With the GT7 connected to a charged battery pack:

1. TURN ON THE SPEED CONTROL'S POWER
TRANSMITTER ON: Red status LED will be on, indicating that speed control is at neutral.
TRANSMITTER OFF (or input harness disconnected):
When speed control is powered on and no input signal is being received from the receiver, the green and red status LEDs will both turn on solid. This acts as a system check at all times to let you know the condition of the connection between your receiver and the GT7.

2. PRESS & HOLD SPEED CONTROL'S SET BUTTON
Press and hold SET button on GT7 until all 4 LEDs turn on.

3. RELEASE SPEED CONTROL'S SET BUTTON
All status LEDs will flash together. The number of times the LEDs flash indicates the Throttle Program selected.

4. PRESS & RELEASE SET BUTTON TO SELECT PROGRAM
Each press will change to the next consecutive Program.

5. WAIT FOR SPEED CONTROL TO EXIT PROGRAMMING
SET button not pressed for 3 sec.--ESC exits programming.

AFTER STEP 5, GT7 IS FULLY PROGRAMMED & READY TO RUN
(Your GT7 is now set-up just like our top factory drivers prefer it)
Steps 6 & 7 are considered optional & Step 8 is strictly advanced!

STEP 7

OPTIONAL GT7 SET-UP

MINIMUM BRAKE ADJUSTMENT

The GT7 lets you set the minimum braking force for each of the 7 Throttle Programs—each Program stores its own value independently. The value for the minimum braking force is a percentage of full-brakes (transmitter's throttle at full-brake position). The 7 available choices are 20, 30, 35, 40, 45, 50, & 55%. Brakes then range from selected value to 100% braking force.

Selecting Minimum Brake %--TRANSMITTER ON

With transmitter ON & GT7 connected to receiver and battery:

1. TURN ON THE SPEED CONTROL'S POWER

2. PRESS & HOLD SPEED CONTROL'S SET BUTTON
With transmitter throttle at neutral, press and hold SET button on GT7 until all 4 LEDs turn on.

3. PUSH TRANSMITTER THROTTLE TO FULL-BRAKES
When the transmitter's throttle is moved to the full-brake position while still pressing SET button on the GT7, only the blue status LED will remain on (2nd LED from top).

4. RELEASE SPEED CONTROL'S SET BUTTON
Blue status LED will flash. The number of times the LED flashes indicates the Minimum Brake selection (1 of 7).

5. PRESS & RELEASE SET BUTTON TO CHANGE SELECTION
Each press will change to the next consecutive Minimum Brake value. (After value #7, the sequence begins again at value #1)

6. WAIT FOR SPEED CONTROL TO EXIT PROGRAMMING
When SET button is not pressed for about 3 seconds, the selected Minimum Brake value is loaded into memory. The blue status LED will then flash a few times rapidly, then the status LEDs will come on, one at a time, scrolling from top-to-bottom indicating that you are exiting programming. The red status LED will then turn on solid, indicating that the speed control is at neutral and ready to go.

Selecting Minimum Brake %--WITHOUT TRANSMITTER

With the transmitter power OFF (or input harness disconnected):

1. TURN ON THE SPEED CONTROL'S POWER
Green and red status LEDs will both turn on solid indicating no input signal is being received.

2. PRESS & HOLD SPEED CONTROL'S SET BUTTON
Continue to hold SET button on GT7 beyond the point when all 4 LEDs turn on, until only the blue status LED is on.

3. RELEASE SPEED CONTROL'S SET BUTTON
Blue status LED will flash. The number of times the LED flashes indicates the Minimum Brake selection (1 of 7).

4. PRESS & RELEASE SET BUTTON TO SELECT PROGRAM
Each press will change to the next consecutive Program.

5. WAIT FOR SPEED CONTROL TO EXIT PROGRAMMING
When SET button is not pressed for about 3 seconds, the blue status LED flashes rapidly, the four status LEDs scroll from top-to-bottom, and ESC exits back to neutral.

STEP 8

ADVANCED PROGRAMMING

CUSTOMIZING PROGRAM 7

The GT7'S 7th Throttle Program can be customized to fine tune the speed control to feel just the way you like it. The 7th Throttle Program lets you tune the following items:

• Drive Profile--1 of 5 Drive Profiles (each profile is comprised of Drive PWM Frequency, Minimum Drive %, & number of throttle steps for the transmitter's forward/drive trigger throw).

• Brake Profile--1 of 5 Brake Profiles (each Brake Profile is comprised of Brake PWM Frequency & number of braking steps for brake throw).

• Braking Type--1 of 2 types of braking styles (STD.BRAKE--Novak's Constant Force braking or DRAG BRAKE style braking).

• Minimum Brake Percentage--1 of 7 settings from 20 to 55%.
See 'Custom Profile Data' chart (above/right) for Profile values.

Entering Program 7 Customizing Mode

With the transmitter power OFF (or input harness disconnected):

1. TURN ON THE SPEED CONTROL'S POWER

2. BE SURE THAT THROTTLE PROGRAM 7 IS ACTIVE
If you are not sure that Program 7 is selected, follow the procedures in Step 6 to check/select Program 7.

3. DOUBLE-CLICK SPEED CONTROL'S SET BUTTON
With Program 7 active & speed control in neutral, momentarily press & release SET button twice on GT7 to enter Program 7 customizing mode. All 4 LEDs will turn on solid for about 1 second, then turn off. The green status LED (3rd LED down/marked "DRIVE PROFILE" on label) will then flash to indicate the active Drive Profile.

4. PRESS & RELEASE SET BUTTON TO SELECT DRIVE PROFILE
Each press will change to the next consecutive Profile.

5. WAIT FOR SPEED CONTROL'S LED TO FLASH YELLOW
If SET button not pressed for 3 seconds, the Drive Profile is stored into memory and either the yellow status LED (top LED/"STD. BRAKE" on label) or the yellow & blue LEDs (top 2 LEDs/"DRAG BRAKE" on label) will then flash to indicate the active Constant Force or Drag Brake Profile (select in Step 7).

6. PRESS & RELEASE SET BUTTON TO SELECT BRAKE PROFILE
Each press will change to the next consecutive Profile.

7. PRESS & HOLD SET BUTTON TO SELECT BRAKING TYPE
If SET button is pressed and held for 3 seconds at any time in customizing mode, the Braking Type is switched. Yellow LED=Constant Force • Yellow & Blue LEDs=Drag Brake.

8. WAIT FOR SPEED CONTROL'S LED TO FLASH BLUE
If SET button is not pressed for 3 seconds, Brake Profile is stored into memory and blue status LED (2nd LED down/ marked "MIN. BRAKE" on label) will then flash to indicate the active Minimum Brake setting.

9. PRESS & RELEASE SET BUTTON TO SELECT MIN. BRAKE
Each press will change to the next consecutive setting.

10. LEDs SCROLL UP & DOWN, THEN PROGRAMMING LOOP STARTS OVER AT SELECT DRIVE PROFILE
Pressing SET button during LED scroll lets you exit the customizing mode. If you do not press the SET button, the programming loop will repeat itself 3 more times, before exiting the customizing mode by itself.

Restoring Programming to GT7 Factory Defaults
Every time you perform the One-Touch Set-Up, the GT7's factory default programming values are restored. This is also the only way to get back to the original 7th Program with 23kHz.

PROGRAM 7 CUSTOM PROFILE DATA					
Drive Profile:	1	2	3	4	5
Drive PWM Frequency (kHz):	1	5.5	12	15	20
Minimum Drive (%):	3	3	3	3	2
Std. Brake Profile:	1	2	3	4	5
Brake PWM Frequency (kHz):	2.5	3.5	5.5	8	11
Drag Brake Profile:	1	2	3	4	5
Brake PWM Frequencny (kHz):	2.5	3.5	5.5	8	11
Drag Brake Frequency (kHz):	2.5	3.5	5.5	8	11

RECEIVER BATTERY PACK

If using an external receiver battery pack with the GT7:

1. Plug an external 5 cell (1.2VDC/cell) receiver battery pack into the battery slot of the receiver.

2. Leave the GT7's ON/OFF switch in the OFF position.

3. Use receiver battery pack's ON/OFF switch to turn the system power on and off—Do not use the GT7's switch.

TROUBLE-SHOOTING GUIDE

This section describes possible ESC problems, causes, and solutions.

Steering Channel Works But Motor Will Not Run

• Check motor connections. Check motor and brushes.

• Make sure input signal harness is plugged into throttle channel of receiver and the ESC. Check throttle channel operation with a servo. Check wiring color sequence of receiver signal harness.

• Possible internal damage—Refer to Service Procedures.

Receiver Glitches/Throttle Stutters During Acceleration

• Receiver or antenna too close to speed control, power wires, battery, or motor—Refer to Step 2.

• Bad connections—Check wiring and connectors.

• Motor brushes worn—Replace brushes.

• Excessive motor current—Use milder motor or smaller pinion gear.

• External Power Capacitor damaged/not installed—Refer to Step 3/Replace Power Capacitor (possible internal damage).

Motor and Steering Servo Do Not Work

• Check wires, receiver signal harness wiring & color sequence, radio system, crystals, battery & motor connectors, and battery pack.

• Possible internal damage—Refer to Service Procedures.

Model Runs Slowly/Slow Acceleration

• Check motor and battery connectors—Replace if needed.

• Bad battery or motor—Check operation with another.

• Incorrect transmitter/ESC adjustment—Refer to Steps 4 & 5.

• External Power Capacitor damaged/not installed—Refer to Step 3/Replace Power Capacitor (possible internal damage).

• External Schottky diode damaged—check that diode is installed correctly/Refer to Step 3.

Motor Runs Backwards

• Motor wired backwards—Check wiring and reverse.

• Backwards motor timing—Reverse motor end bell.

ESC Is Melted Or Burnt/ESC Runs With Switch Off

• Internal damage—Refer to Service Procedures.


*For more assistance call our Customer Service Department.

SERVICE PROCEDURES

Before sending your GT7 in for service, review the Trouble-Shooting guide and instructions. The speed control may appear to have failed when other problems exist. After reviewing the instructions, if you feel that your GT7 requires service, please obtain the most current product service options and pricing by one of the following methods: **WEBSITE:** Print a copy of the **PRODUCT SERVICE FORM** from the 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/E-MAIL:** If you do not have access to the internet, contact our customer service department by phone, e-mail, or fax as listed in the CUSTOMER SERVICE section below. **WARRANTY SERVICE:** For warranty work, you **MUST CLAIM WARRANTY** on the **PRODUCT SERVICE FORM** and include a valid cash register receipt with purchase date on it, or an invoice from previous service work. If warranty provisions have been voided, there will be service charges. **ADDITIONAL NOTES:**

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

PRODUCT WARRANTY

The GT7 speed control 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 incorrecr installation, components worn by use, damage to case, damage from using fewer than 4 or more than 6 cells (1.2 volts DC/cell) input voltage, cross-connection of battery/motor, overheating solder tabs, reverse voltage application, damage resulting from thermal overload, damage from incorrect installation of FET servo or receiver battery pack, not installing three 0.1µF (50V) capacitors on motor, not installing or incorrect installation of a Novak power capacitor on the ESC, splices to input harness, 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. In no case shall our liability exceed the product's original cost. We reserve the right to modify warranty provisions without notice.  Because Novak Electronics, Inc. has no control over the connection and 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 is thoroughly tested and cycled before leaving our facility and is, therefore, considered operational. By the act of connecting/operating speed control, the user accepts all resulting liability.

CUSTOMER SERVICE

NOVAK ELECTRONICS, INC.

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

Friday: 8:00am-4:00pm (closed every other Friday)

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