Ski-doo 600/800 E-TEC Fuel Programmer User Instructions (141-100)

Fuel Programming Instructions

Basic Understanding of the Straightline Performance E-TEC Fuel Controller.

The controller functions like a carburetor. It takes the knowledge and experience that many of us have, and converts it to a fuel injection interface. The Straightline Fuel Controller (SFC) breaks the stock rpm curve down into 3 different sections with each section correlating to a carb tuning adjustment. The GREEN zone correlates to adjusting the fuel mixture screw on a carburetor. The YELLOW zone correlates to adjusting the needle in a carburetor. The RED zone correlates to changing the main jet in a carburetor. Each zone has a pre set range of fuel adjustability by Straightline which correlates to an on-board adjustable mode. The SFC is called a "piggy-back" type of EFI controller meaning that it reads the stock rpm signal from the ECU, modifies the signal, and then sends it to the new injector. With the SFC EFI controller, tuning your vehicle is as simple as pressing buttons. No tools. No down time. Simply jump on, go for a ride and make tuning adjustments on the fly.

The SFC unit comes with three interactive buttons that are used to enter the adjusting mode and change the on-board tuning features' light settings. When power is applied to the unit, the adjusting mode may be accessed at any time by pressing the Mode button. The adjusting mode is distinguishable by at least one or more LEDs flashing. The current adjust mode is determined by the color of the flashing LED(s) and whether or not the 8th LED is blinking blue. The adjusting mode is exited by waiting several seconds without pressing any buttons. Upon exiting, the light setting is automatically saved for each individual mode.

Understanding the Basic Modes of Operation

Green Mode - Mode 1 – Low Speed Operation
Mode adjusts how much fuel is added when the Green zone is engaged. This mode is for low speed operation. 4500-6500

Yellow Mode - Mode 2 – Cruise Mode
Mode adjusts how much fuel is added when the Yellow zone is engaged. This mode is for crusing speed operation. 6000-7450

Red Mode - Mode 3 - Full Throttle Mode
Mode adjusts how much fuel is added when the Red zone is engaged. This mode is for full throttle operation. 7450-8150

Base Settings
Your controller comes pre-programmed to ACCEPT adjustments for typical modifications similar too: air box, head, exhaust, big bore.

Controlling the Fuel on the E-TEC
The SFC controller can be adjusted "on the fly" to tune your vehicle. No computer or other external device is needed to make tuning adjustments. All that is required is for your E-TEC to be running which provides power to the SFC controller. The SFC comes pre-programmed to the recommended settings dependant on what performance parts the machine has installed. You enter the adjustment mode by pressing the MODE button. Correctly entering the adjustment mode will display flashing LEDs on the LED display. Pressing the MODE button repetitively will move you through all the modes. Take note that the MODE button is sensitive and will at times skip a mode. Pressing the MODE button at the last mode will bring you back to the first mode. To exit the adjustment mode and return to operation mode you just wait several seconds until the LED display reverts back to solid LED colors. The six modes available are distinguished by an LED color combination. The six modes in respective order are as follows: Green, Yellow, Red, Green-Blue, Yellow-Blue, and Red-Blue. All six modes have 15 possible light settings.

The settings are adjusted by pressing the PLUS (+) and MINUS (-) buttons. For easy reference the LEDs are numbered 1 through 8. Half step settings are represented by two same color LEDs flashing (ex: 4.5 has 4th and 5th LEDs lit). The 0.5 setting is represented by the 1st LED blinking at a much faster rate. Modes 4, 5, and 6 are distinguished by the 8th LED also blinking blue. Every mode represents an adjustable feature within your E-TEC's engine RPM. Each mode can be defined as either a FUELING mode or a SWITCH POINT mode as follows:

FUELING MODES - Modify the fuel amount compared to the stock fuel when the corresponding zone is active. The higher the light setting the MORE fuel is being added. The lower the light setting the closer you are to running STOCK fuel levels.

SWITCH POINT MODES – Determine the transition point between two corresponding zones. The higher the light setting the longer it takes for a zone to engage. The lower the light setting the faster a zone will engage. Note: Switch point modes do not have to be adjusted that frequently.

Mode 1 – _GREEN – Low Speed_
Represents fuel modification under CRUISE conditions. When the LED display shows solid GREEN lights then the GREEN zone is active and fuel is modified by this mode. Mode has the largest affect on fuel mileage.

Mode 2 – _YELLOW – Cruise Speed_
Represents fuel modification under ACCELERATION conditions. When the LED display shows solid YELLOW lights then the YELLOW zone is active and fuel is modified by this mode.

Mode 3 – _RED – FULL THROTTLE FUEL_
Represents fuel modification under FULL THROTTLE conditions. When the LED display shows solid RED lights then the RED zone is active and fuel is modified by this mode. Mode has the largest affect on tuning for the vehicle's top horsepower value.

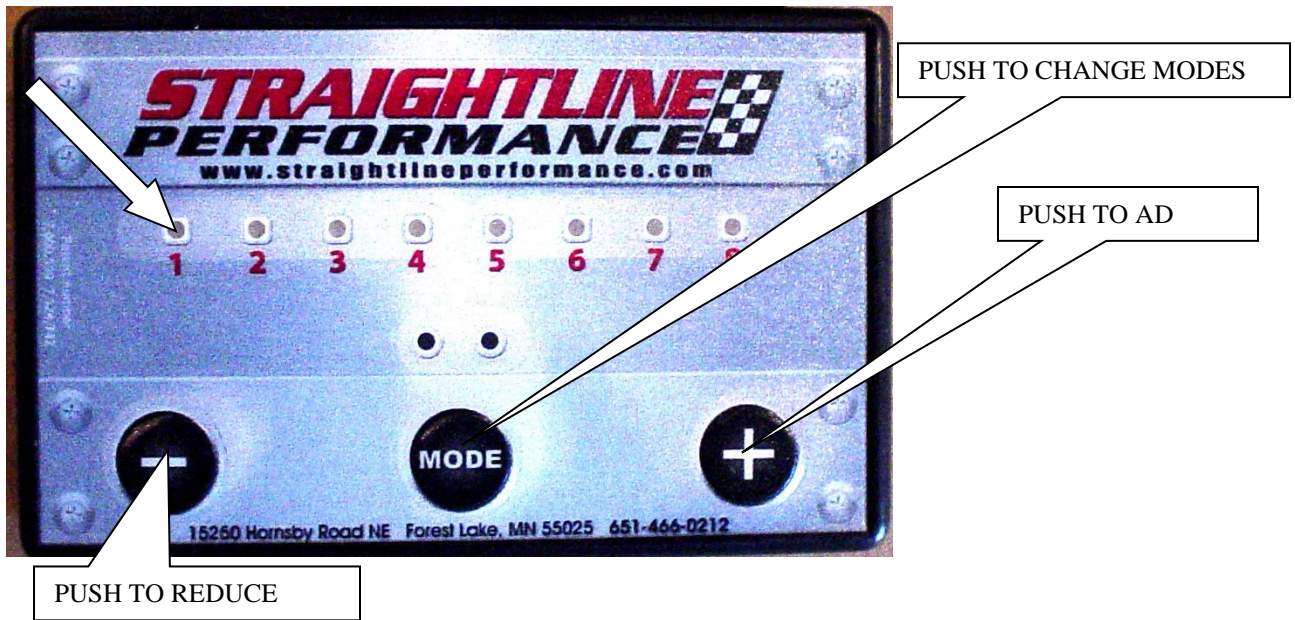**Mode 4** – _GREEN-BLUE – RPM POINT WHEN GREEN TURNS ON_
Represents when the green zone is activated.

Mode 5 – _YELLOW - BLUE MODE – RPM POINT WHEN YELLOW TURNS ON_
Represents transition between GREEN and YELLOW zones which relates to cruising and accelerating conditions.

Mode 6 – _RED - BLUE MODE – RPM POINT WHEN RED TURNS ON_
Represents transition between YELLOW and RED zones which relates to accelerating and full throttle conditions.

PUSH TO CHANGE MODES

PUSH TO AD

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1 2 3 4 5 6 7 8

MODE

− +

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PUSH TO REDUCE

The arrow represents the percent of fuel added from 1-15.

Light Setting	Description
0.5	1st LED is flashing at a faster rate than normal.
1.0	1st LED is flashing at a moderate rate.
1.5	1st and 2nd LEDs are flashing.
2.0	2nd LED is flashing.
2.5	2nd and 3rd LEDs are flashing.
3.0	3rd LED is flashing.
3.5	3rd and 4th LEDs are flashing.
4.0	4th LED is flashing.
4.5	4th and 5th LEDs are flashing.
5.0	5th LED is flashing.
5.5	5th and 6th LEDs are flashing.
6.0	6th LED is flashing.
6.5	6th and 7th LEDs are flashing.
7.0	7th LED is flashing.
7.5	7th and 8th LEDs are flashing.
8.0	8th LED is flashing.