



APEX SUPERCHARGER EFI CONTROLLER SETUP

Tools Required: 10mm Wrench
IF YOU ARE RUNNING OUTSIDE 6000 to 9000 feet, you should really have a Wide band O2 gauge, since these settings have not been tested YET. Once we have recommended setting an O2 gauge will not be required.

Installation:

1. Remove Hood and Left-hand Upper Side Pod.
2. Locate the grey connector on the top of the Delta box left-hand side. The connector is about midway along the delta box. It is a 12 pin connector. One side has 10 wires and the other has 9 wires. Disconnect the plug. Release the OEM grey connector from the clip holding it to the delta box.
3. Find a convenient TEMPORARY location for the controller. You may want to make adjustments as you personalize the controller for your riding style.
4. Connect the controller into the OEM plugs and snap the controllers plug onto the delta boxes mounting clip.
5. **ULTRA IMPORTANT:** Remove one of the 6mm bolts that holds the headlight assembly onto the delta box near the grey connector. YOU MUST GROUND THE BLACK WIRE RUNNING TO THE CONTROL BOX UNDER THE BOLT. Reinstall the 6mm bolt with the wire securely in place.
6. Connect the blue silicon hose to the small nipple on the front of the airbox. The nipple is located just above and in-between throttle bodies 2 and 3. INSURE THAT THERE ARE NO KINKS IN THIS HOSE.
7. Start the snowmobile. After a couple of seconds you will see all 8 Green LEDs scroll across for several seconds.
8. Reinstall the Left-hand Upper Side Pod and the Hood.

Operation and Tuning: THESE SETTINGS WORK WELL FROM 6000 to 9000ft.

1. With the sled idling you should see #1 LED green. Number 8 LED may or may not appear Blue at an idle. This #8 Blue LED indicated Boost. Working the throttle should make #8 LED light up BLUE. If you never see a BLUE LED in #8 while riding there is a problem. STOP!!!
2. There are 8 LEDs and 3 Buttons. Each LED can illuminate Red, Yellow, Green or Blue.
3. Programming LEDs: LED 2 on equals setting 2, LED 2& 3 on equals setting 2.5, LED 3 on equals setting 3, and so on (LED 1 fast blink equals 0.5 and slow blink equals setting 1). The center button is the MODE button. There are 6 user adjustable modes. Pushing the Mode button will advance you through the modes:
 - a. **Mode 1: Green** – Idle / Cruise Mixture Level – **LEAVE THE SETTING AT 0.5** fast blink.
 - b. **Mode 2: Yellow** – Needle Enrichment – **Set at 5**. Typically no adjustment is required.
 - c. **Mode 3: Red** – Main Jet – **Set at 7**. Can be increased to 8 or dropped. BE CAREFUL, YOU CAN ADJUST TOO LEAN!!!!
 - d. **Mode 4: Green/Blue** – Boost Fuel adder. The setting adds addition fuel to the fuel already being supplied in Mode 1,2 or 3. **Set at 5.5**. This is a good adjustment to increase or decrease as you go up and down in altitude. Try up and down in increments of 1 (4.5 or 6.5)
 - e. **Mode 5: Yellow/Blue** – Accelerator Pump. Adjust to riding style. **Set at 2.5**. Very hard acceleration. Set at 3 or 3.5. Softer touch on the throttle try 1.5 or 2

- f. **Mode 6: Red/Blue** – Altitude compensation. **Set at 2.5**. At 6000 feet try 3 to 4, at 10,000 feet try 1.5 or 2. **AUTOMATIC ALTITUDE COMP IS COMING.**
4. The programming mode and the operating mode lights do not necessary mean the same thing. #8 LED as Blue indicates the presence of boost.
5. Operating LEDs:
 - a. Green (with or without Blue) indicates Idle/Cruise mode or Pilot Circuit.
 - b. Yellow (with or without Blue) indicates Needle jet enrichment. This circuit is timed and only comes on for 1 second at a time. Typically during medium to hard acceleration.
 - c. Red ((with or without Blue) indicates Main Jet / Full throttle.
 - d. Blue LED in #8 indicates Boost. You will always have Green, Yellow or Red LEDs on starting at #1.
 - e. The greater the number Green, Yellow or Red LEDs the harder you are pushing the sled. The number of LEDs actually represents the amount of Pulse width the OEM computer is providing.

Notes:

1. The TORS (Throttle OverRide System) may activate due to a fast throttle closure. This can appear as code 84 (or 15,16). If this happens let the sled return to an idle and the code should clear. Stop and restart the sled if required.
 - a. Even though overriding the TORS system by unplugging the single wire with a black connector and the single wire with a white connector and connecting the black plug to the white plug located under the plastic cover holding the key switch and the cigarette lighter and enclosed in the large rubber wrap completely makes this problem go away, we DO NOT recommend this because of safety concerns.
 - b. Also we have found that shortening the two throttle return springs accessible by removing the airbox / intercooler about 1/2" eliminates the problem we recommend against this because the throttle return springs could be damaged and you throttle could stick. We DO NOT recommend this.
 - c. MPI will have a programming update that will eliminate this issue by adjusting the response of the throttle position sensor's input to the factory ECU. This modification will not require any mechanical alterations, simply reprogram your controller. We will notify you when the upgrade is available.
2. Radical changes in the controllers' settings **CAN CAUSE SERIOUS DAMAGE TO YOUR SNOWMOBILE**. If the sled does not act correctly and anything seems out of the ordinary compared to your unit when it was stock (other than it now hauls ass). STOP and seek advise. Advise is free and motors are expensive

Possible Settings for Sea Level (We will be testing and programming as soon as possible!):

1. Green = 1.5 to 2.5 (start 1.5)
2. Yellow = 6 to 8 (start 6)
3. Red = 2 to 8 (the higher the red, the lower the Blue/Green) (start 3)
4. Blue/Green = 4.5 to 7 (the higher the Blue/Green, the Lower the Red) (start 5.5)
5. Blue/Yellow = 1 to 2 (start 1.5)
6. Blue/Red = 8 (leave at 8)

MPI apologizes for the inconvenience being experienced by our sea-level customers, the majority of our low altitude sales are through low altitude dealers who are currently working on tuning and clutching setups.