Adjusting the Throttle Position Sensor (TPS) on a Bassa/CA Special/Jackal/V11EV

1. **Disconnect battery**

2. Remove throttle body covers. Remove the circlip and washer on the left-hand side (LHS) of the linkage, then disengage the throttle linkage—be careful with that circlip! There is one idle adjusting screw on LHS throttle body and another on the RHS (not shown); back out both of them (2.5 mm allen wrench) so they don't contact the linkage. Make sure the fast idle lever is in the off position and if necessary back off the nut that adjusts the fast idle—this is towards the center of the linkage (not shown).

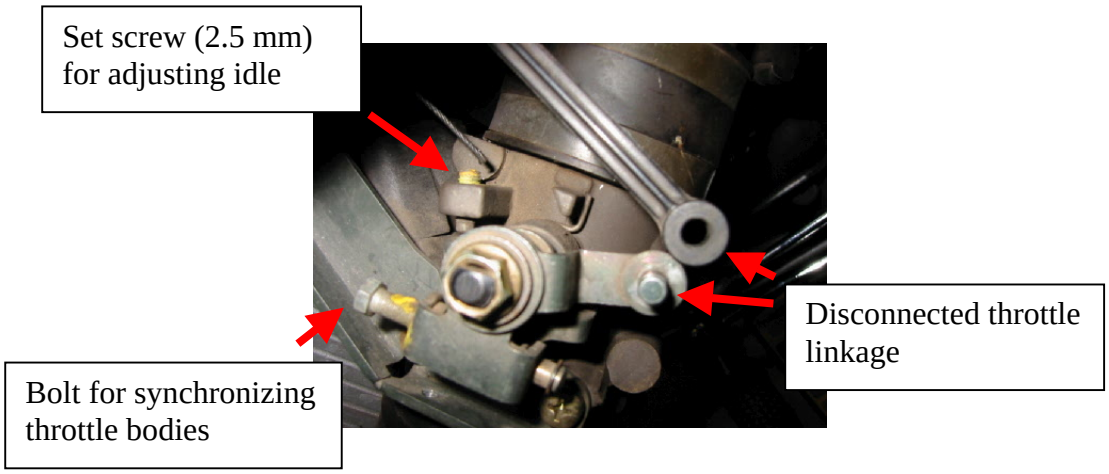

Figure 1. Throttle body and linkage (Left Side)

3. Set the TPS to 150 mV, at the fully closed position. The TPS is attached to the throttle body on the left side of the bike. There is a 3-wire plug that clips to the throttle position sensor (TPS); this is towards the front of the throttle body, but it is a little difficult to reach. Disconnect the TPS plug. The center wire to the plug is yellow, one outer wire is purple, the other purple/black. Trace the two outer wires to the big connector that plugs into the ECU. I use short pieces of thin but stiff wire (I use guitar string) as jumpers to tap into the connector from the backside. Connect the jumper from the purple wire to the negative lead of a voltmeter and the purple/black to positive. These are positions 22 (violet) and 11 (black/violet) on the ECU plug on my Bassa (YMMV). To make sure you have the correct pins, check for continuity from the TPS plug to the jumper wires, then re-connect the TPS plug.

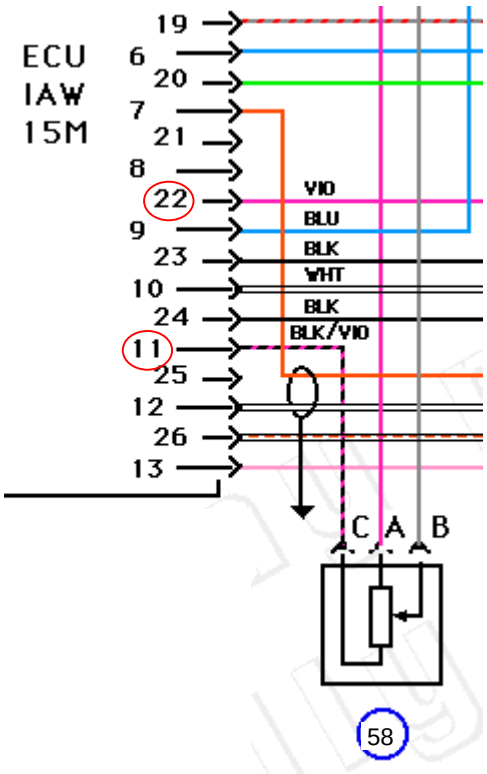

Figure 2. Partial schematic showing pin-outs for TPS

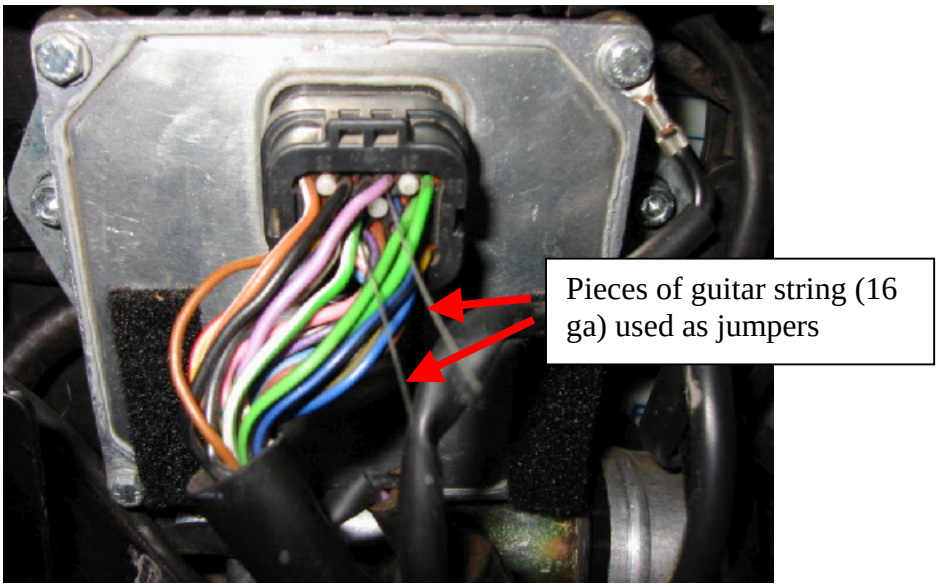

Figure 3. Engine Control Unit, Connector and Jumpers

Reconnect the battery and turn on the ignition (but don't start the bike). Check the voltage at the TPS—it should read 150 mV. Open and close the throttle several times to see if the reading is stable. Ignition off.

To re-position the TPS, which is what you need to do if you have to re-set the voltage, first scrape off the yellow paint or glue or whatever it is they use to fix the screws and use a torx driver to loosen them. A tip here: mark the starting position before you adjust the TPS--that way you can get close to the original position if things go wrong. You'll probably find that the torx driver you have doesn't fit because the starter is in the way. What I did was cut off about 1/4 inch from one of those cheap torx bits from a multipurpose screwdriver kit (the ones that have slotted, Phillips, etc bits that all fit into a screwdriver). You can then turn the torx bit with a 1/4 inch wrench (it helps to use a piece of tape to hold the bit in position in the wrench). If you use a torx bit this way, you don't have to replace the screws, cut slots in them or booger them up in any way. Adjustments to the TPS are very sensitive to position, and the voltage can change when you tighten up the torx screws.

4. Set the idle. After setting the TPS in the fully closed position, clean, lube and reconnect the throttle linkage. If it has been a while, lube all of the pivot points on the throttle linkage—it will make a noticeable difference. Then, turn on the ignition, and turn in the right-hand side (non-TPS side) idle adjuster screw until the voltage from the TPS reads ~520 mV. Finally, turn the LH idle screw adjuster until the TPS voltage goes up the smallest possible amount, then back it off a hair. The objective here is to adjust the screws so they both hit their stops at the same time. Several other write-ups note the redundancy in the idle-adjusting screws and state that it is unnecessary to adjust both sides. That is true, but this is a very simple thing to do and this may relieve some stresses in the linkage. Ignition off.

5. Turn the fast-idle bolt in until it almost touches the linkage. Check its operation by moving the fast-idle lever.

6. Turned the air-bleed screws on the bottom of the throttle bodies all the way in until they lightly seat (again make note of original position if you're concerned about going back to a reasonable starting point) and then back them out 1/4 turn.

7. Start the bike, shoot for an idle speed of 1050 rpm. Using mercury sticks or a Twinmax electronic unit, synchronize the TBs with the air bleed screws (turning the screws in slows the idle).

8. With the bike running, synchronize the throttle bodies at 2500-3000 rpm using the synchronizing bolt on the LHS throttlebody.

Yes, it is difficult or impossible to synchronize at all rpms, so either repeat steps 3 to 8 endlessly or go for a ride.

9. When you're satisfied everything is as it should be, replace the TB covers.