



**FLOW LIKE AN EFI.
TUNE LIKE A CARB.**

Thank you for choosing the Techclusion Fuel Injection (TFI) controller. This TFI is usable for the following:

➤ **2014 HD TOURING MODELS ONLY**

This product is a great fit for stock bikes with exhaust and intake mods.

This is an Electronic Jet Kit. Like jet kits in the past, the more you modify, the more responsibility you take in getting your fuel curve right. Go to www.TFIcontrollers.com for more product information.

Due to the complexity of the newer motorcycles, dealer install may be required.

IMPORTANT – PLEASE READ CAREFULLY

Some vehicles modifications with Techclusion Inc. products must not be used on public roads and in some cases may be restricted to close course competition. Those products not identified as US EPA legal are intended for off-road or marine applications only. Not intended for use on emission controlled vehicles.

WARRANTY

This product is warranted for 2 years from original date of purchase against defects in materials or workmanship. The customer must provide a valid proof of purchase to obtain the benefits of the warranty. Any modifications of the controller (cut wires, soldered wires, extensive abuse, etc.) will void the warranty. Please contact the manufacturer to obtain a RMA number in order to return the product.



INSTALLATION

1. Before installing the TFI you must first disconnect the negative lead from the battery.
2. Determine a location for the TFI unit. We suggest under the seat or behind a side cover. (Figure #1)
3. Making sure that your motorcycle is cold (be sure to disconnect the fuel line using the quick disconnect feature on the fuel fitting, **DO NOT UNSCREW THE FITTING**) and remove the rear tank mounting bolt (under the seat) loosen front bolt and lift the fuel tank up and forward (make sure not to come in contact with the steering with the front of the fuel tank when propping it up). You will need something to hold the fuel tank up (block of wood or a towel) from the frame to gain access to injectors. Removing air cleaner assembly can also help with gaining access to the injectors.
4. Underneath fuel tank locate the fuel injectors. (See owners' manual for help if needed)
5. Disconnect factory injector connectors from fuel injectors and replace with TFI injector connectors from TFI unit. The connector pair with double pinned RED wires and a YELLOW wire is the TFI's channel #1 and needs to be installed to the front injector. (Figures #4,5,6,7)
IMPORTANT: Make sure all connections are firmly secure and allow a little slack at the connections to prevent engine vibration from damaging/breaking a wire on the harness.
6. Disconnect factory O2 connections. The factory O2 connections are located under the right side cover. There will be two connections to unplug. Both are a four wire connection. Plug in the supplied O2 bypasses back into the connection. The connectors going back to the sensor can be zip tied out of the way.
7. Replace the fuel tank. (Make sure all bolts are in place and fuel connections are correct)
8. Connect TFI ground lead to negative terminal of battery along with factory ground lead.
9. With rubber plug removed from TFI, turn motorcycle key switch to the "ON" position. As the bikes electrical system goes through initial start up mode you "may" see LED's flashing on TFI for a few seconds then go out, this is normal.
10. **START** your motorcycle. The green LED should now be on steady and the yellow will flash rapidly for up to 15 seconds and then go out. If green or red LEDs continue flashing **after startup** please refer to the troubleshooting section.



TUNING

POT #1 - GREEN LED:

Air fuel mixture screw adjustment. With TFI installed and the bike fully warmed up, screwdriver in hand, locate the green LED and the pot right below it. Using the throttle raise the RPM to a high idle or about 2000-RPM. Once there, slowly turn the green pot clockwise from the 1:00 position (off) until you achieve the highest RPM and smoothest running sound (like a mixture screw on a carburetor). You should find the best setting between 2:30 and 4:00 o'clock. If you turn the green pot clockwise and the engine does not accept any more fuel (RPM drops when adding fuel) you may have one or more of these problems (See troubleshooting section).

POT #2 – YELLOW LED:

Acceleration fuel adjustment. Anytime the LED is on, this pot is adding fuel. In neutral raise the RPM slowly up through the mid range and see no yellow LED. However, opening the throttle quickly from idle you “should” see the yellow LED come on. Fine tuning: Start with the suggested setting and then add one clock position at a time until the bike says too much (hesitation) then back off 2 clock positions, if adding makes it worse go opposite direction. The yellow pot adds its fuel below 70% of maximum RPM. If no yellow LED there is not enough load to turn it on. At that point the street or dyno will be able to show the difference.

POT #3 – RED LED:

Main jet fuel adjustment. It adds about 5 points of main jet fuel with every clock position. For example, one clock position is the same as 150 to 155 main jets. Fine tuning: Start with the suggested setting and then add one clock position at a time until the bike says too much (hesitation) then back off 1 clock position, if adding makes it worse go opposite direction. The red pot adds most of its fuel above 70% of maximum RPM.

POT #4 – RPM SWITCH POINTS – POT HAS TWO FUNCTIONS

1. Sets RPM that the red LED pot (main jet fuel) turns on. All Harley. One clock position is roughly 1000 RPM. This pot should be set to about 70% of redline. (For example: Harley Softail redlines at 5600 rpm and 4000 is roughly 70% of redline which would be 4:00 o'clock). Verify setting by raising the RPM in neutral, look for green and yellow LEDs to shut off and the red to turn on at the chosen RPM or refer to suggested settings if you have no tachometer.
2. Shuts off idle fuel. In some cases modified engines can produce a richer than normal idle mixture and also may help with decal popping. 1:00 o'clock through 6:00 o'clock sets RPM that the red LED pot (main jet fuel) turns on. When the 4th pot is turned to 7:00 o'clock the software is instructed not to add fuel until 1250 RPM. Also, when setting the 4th pot at 7:00 o'clock the software automatically defaults to 4000 RPM (internally) to switch to the red LED pot (main jet fuel).



TROUBLESHOOTING

Motorcycle

Fuel injected bikes all have the same exact fuel curve and is corrected everyday by the on board weather station. Nothing is leaner than a stock fuel injection map. So with our box on and the bike fully warmed up, if you slowly turn on the green pot and the engine does not accept any more fuel (RPM drops when adding fuel) then you “may” have one or more of these problems. Problems are listed from most common to least.

1. Engine not fully warmed up.
2. A vacuum leak on the intake.
3. High lift cams affecting map at light loads and low RPM.
4. The loss of TPS and ECU sync.
5. Cylinder head temp sensor malfunction.

TFI

Please confirm/check connections if you experience any of the following:

- Just the Green or Red LED’s flash after startup
- No LED’s are visible
- Bike doesn’t start If still a problem call tech support at 877-764-3337.

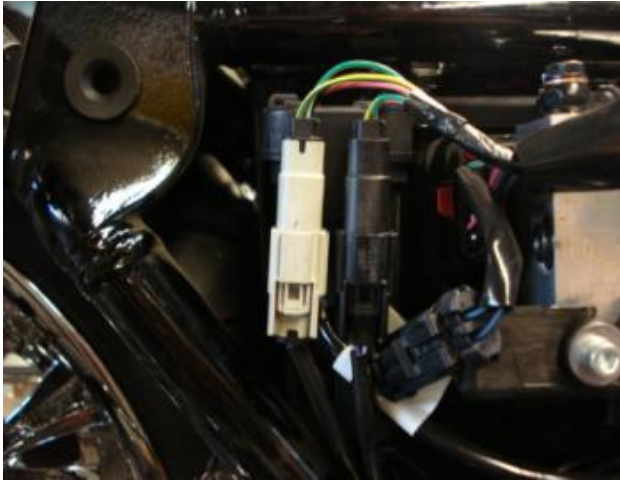
POUR FUEL MILEAGE

Solution:

1. Check your Green pot setting. This setting is generally responsible for 90% of your mileage. In the hundreds of installs performed, we have never gone beyond the 4:00 setting. Try backing down the green setting slightly. You can slightly lower the yellow and red settings also.
2. RPM pot adjusted too low**. Make sure the Red LED is turning on no lower than 70-75% of the maximum rpm.
3. Make sure your engine passes the 2000-RPM test under the Green Pot in the TUNING section.

If you still have mileage issues call tech support for further assistance.

** : Some engine setups can dictate a higher or lower setting on the RPM pot.



Oxygen Sensor Connections

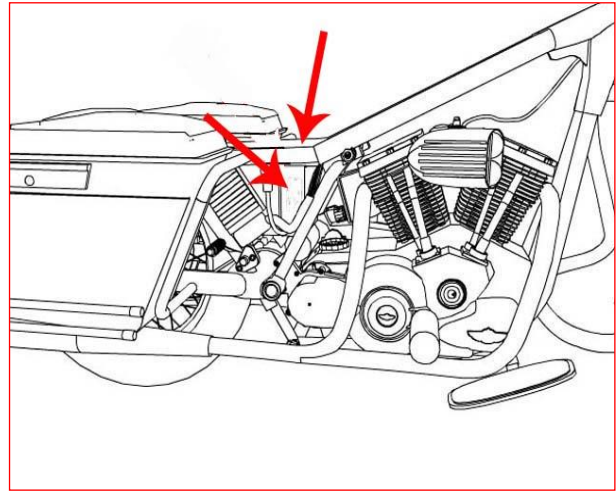


Figure 1

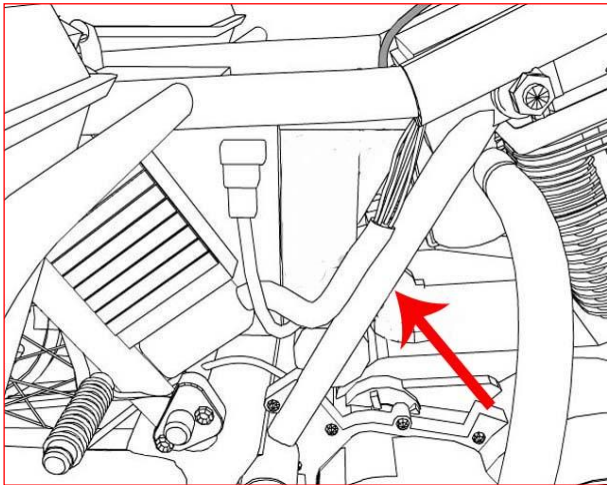


Figure 2

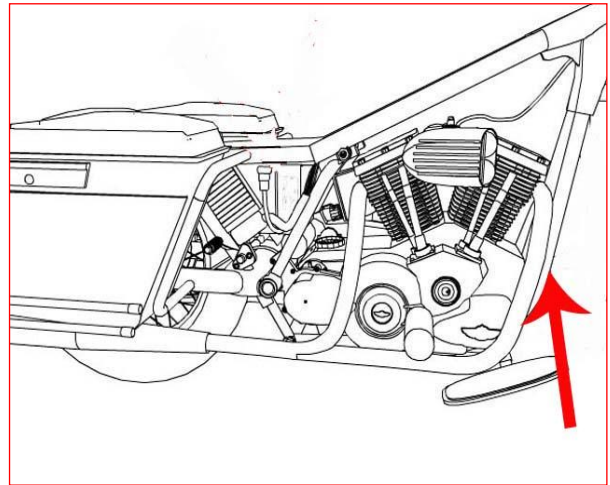


Figure 3

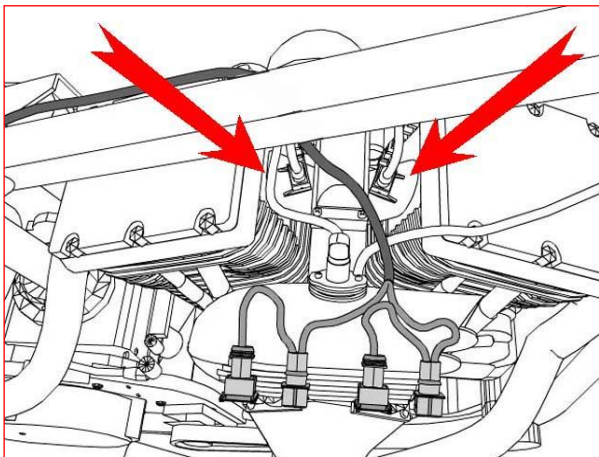


Figure 4

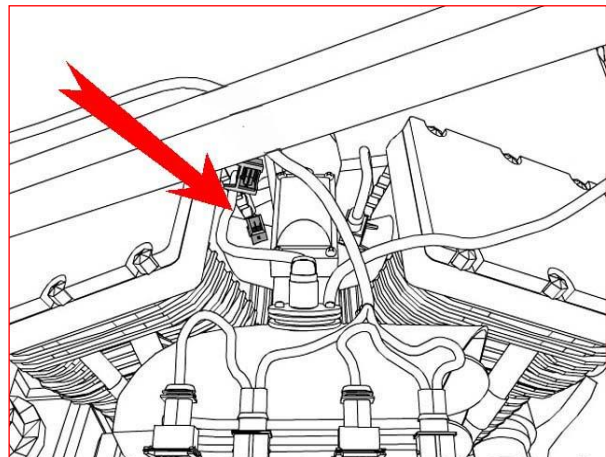


Figure 5

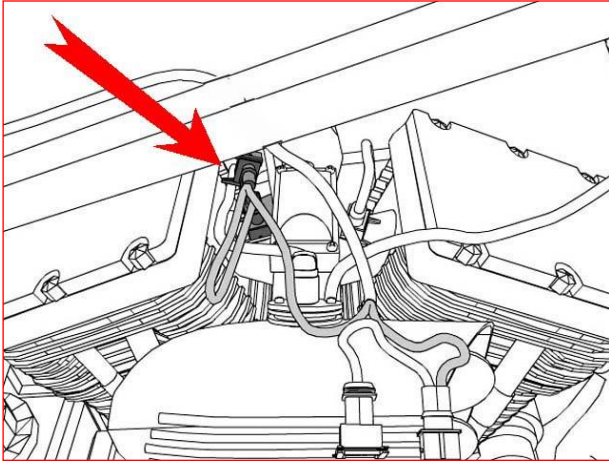


Figure 6

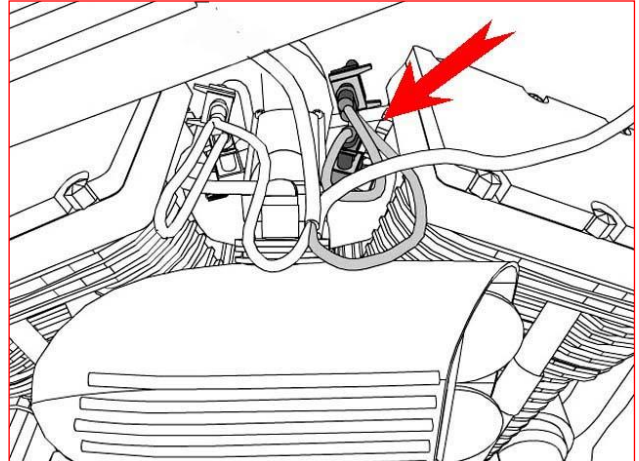


Figure 7

