

Thank you for your purchase of our **Test/Bypass Cable** for **Mini-Blade** fuse slots, which is normally used with a Totally Integrated Power Module (TIPM) fuse box. Please visit our website for a current list of applicable tested vehicles. The following instructions apply to both cable types that we offer (Simple or Standard), although some tests utilizing LED feedback require the Standard Cable.

### Cable Capabilities:

- Bypasses a faulty fuel pump relay. It works for vehicles that won't start (fuel pump relay won't pass 12 VDC to the fuel pump) or those that power the fuel pump when the vehicle is off (fuel pump stuck on), which drains your car battery.
- Checks fuel pump functionality. Service departments often claim that you have a bad fuel pump when the TIPM fuel pump relay is the true problem. With the vehicle turned off, your cable can power your fuel pump and you'll be able to hear it.
- Can be used to drain the fuel tank by powering the fuel pump while the vehicle is turned off. This capability is useful if improper fuel was dispensed into the tank or fuel tank modifications are needed, such as a fuel pump replacement.
- (Standard cable only) Can check the fuel pump relay's ability to pass 12 VDC to the fuel pump using LED feedback. This is effective if your vehicle won't start due to a faulty fuel pump relay or the battery drains due to a fuel pump relay that is stuck on.

### Cable Limitations:

- If you have a 2011-2013 Dodge Durango or Jeep Grand Cherokee that has an external relay installed per the nationwide recall, this cable will be ineffective because your dealer cut wires under your TIPM.
- Possible loss of remote start, depending on your cable configuration and vehicle type, due to the TIPM disabling fuse slot M7 power during the engine cranking process.
- It is unknown if your TIPM M7 fuse slot removes power to the cable and fuel pump during a crash. Return the unused cable to us for a refund if you are unwilling to accept this risk. This cable is mainly used for diagnostic testing.
- Although rare, low battery voltages or cold weather can cause some TIPMs to disable power to the M7 circuit used by the TIPM cable. It's not a cable problem, but a TIPM limitation.

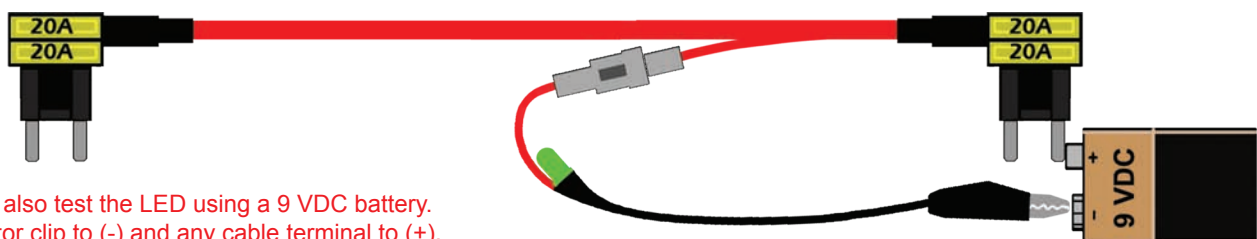


Our cables are used with the TIPM-7 series fuse box shown at left, utilizing fuse slots M7 and M25. M7 consists of three terminals (right position provides 12 VDC when vehicle is on or off while the left position provides 12 VDC only when the key is on). One side of M25 is connected to the faulty fuel relay while the other side connects to the fuel pump. A fuse slot diagram is shown under your TIPM lid.

**NOTE:** Visit our website for a TIPM testing/bypass cable video showing the tests listed below. For a permanent fix with no limitations and additional functionality, our new patent pending TIPM Plug-In Relay Circuit Board is the most cost effective option. We also repair TIPMs with 24 hour service and a one year warranty. Discounts on these items are available to existing customers. See our website for details.

### 1) How To Test The LED and Ground Connection (Standard Cable Only)

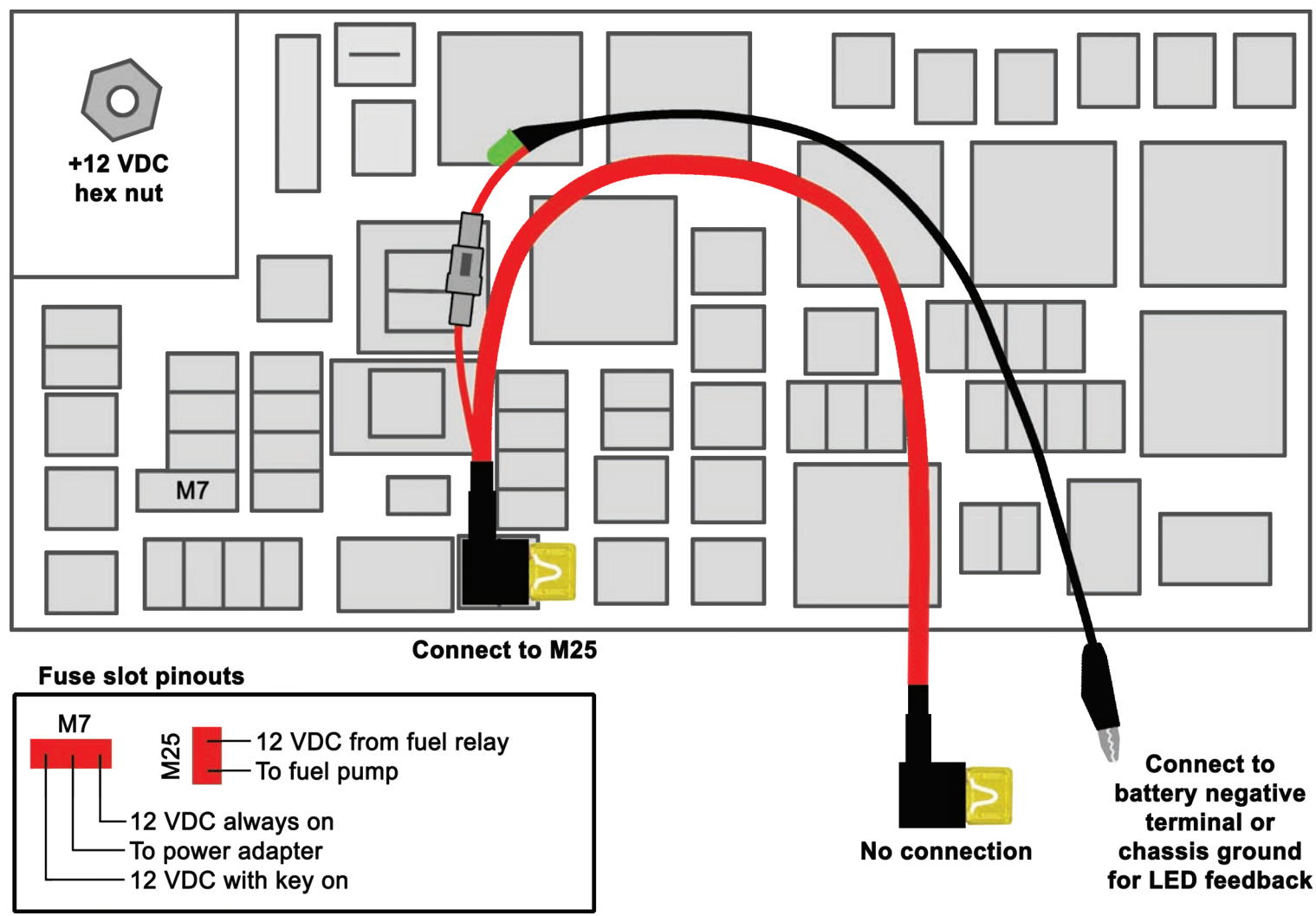
- A proper ground connection and functioning LED is critical for accurate testing.
- Turn vehicle off and open your hood.
- Connect the alligator clip to the battery's negative terminal, a ground lug, or chassis ground (metal framework) connection.
- Remove the existing 20A fuse in fuse slot M7. Verify that M7 is your power adapter (cigarette lighter).
- Insert one end of the test/bypass cable into the RIGHT slots of the M7 fuse slot. Ensure the opposite end of the cable doesn't touch anything. The green LED should light up. If not lit, confirm a proper alligator clip ground connection to bare metal.



**NOTE:** You can also test the LED using a 9 VDC battery. Attach the alligator clip to (-) and any cable terminal to (+).

### 2) How To Test Your Fuel Pump Relay (Standard Cable Only)

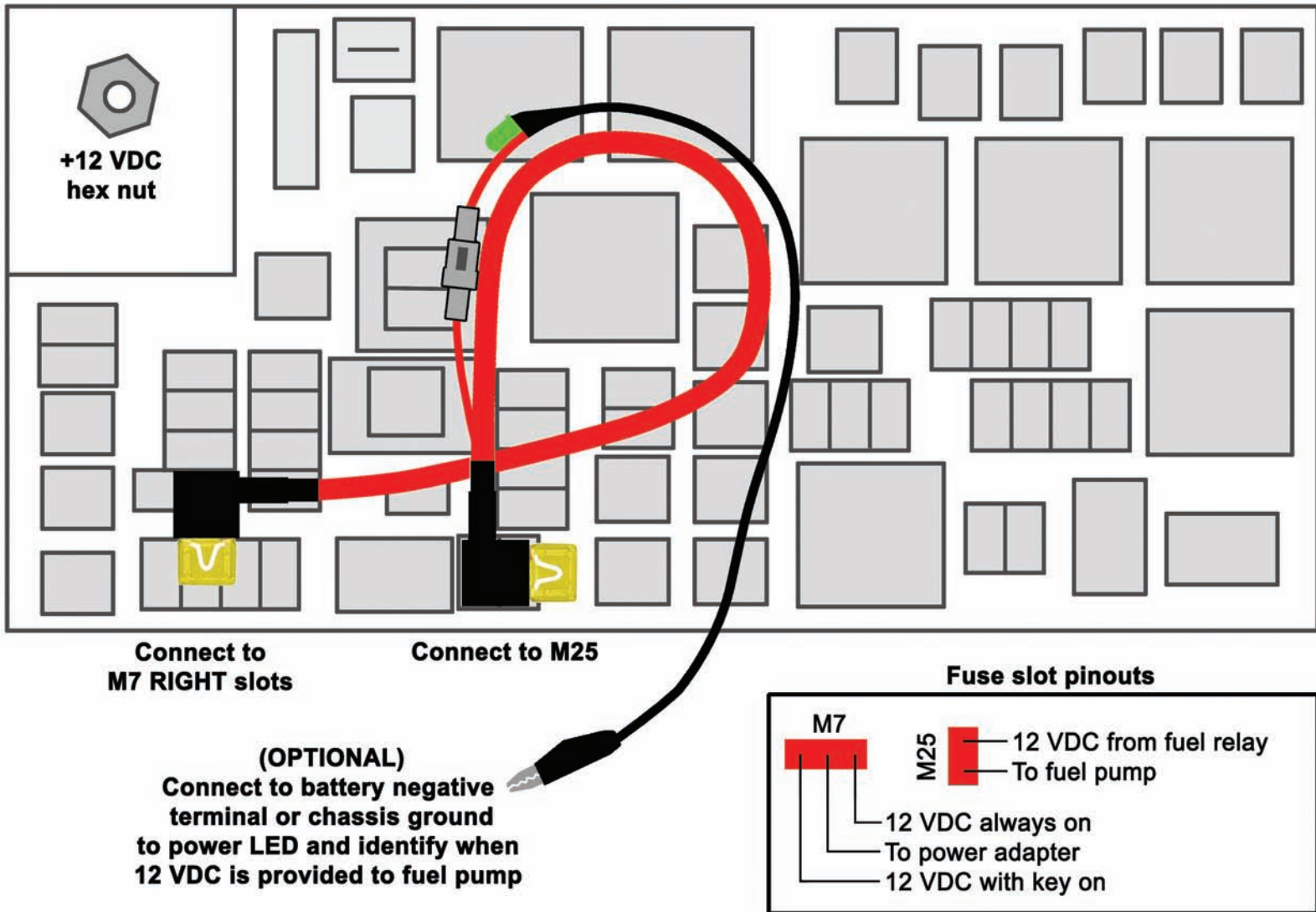
- Turn vehicle off
- Open hood and remove 20A fuel pump fuse M25. Verify that M25 is your fuel pump slot.
- Insert one end of your test/bypass cable into the M25 slot of your fuse box, with orientation per the image below.
- Connect the alligator clip to the battery's negative terminal, a ground lug, or chassis ground connection. **DO NOT** connect the alligator clip to the positive 12 VDC terminal hex nut located in the upper left corner of your TIPM.
- If the green LED immediately lights up, your fuel pump relay is stuck in the "on" position and will eventually drain your battery. You can likely hear the fuel pump motor (located near your gas tank) if in a quiet environment. Use your cable in bypass mode to keep your vehicle on the road and prevent battery drainage. Just make sure to remove the lower 20A fuse on the M25 end of the cable, per the instructions in section #4, "How to Bypass a Defective Fuel Pump Relay".
- If the green LED is not lit, which is normal, have someone attempt to start your vehicle. Watch the green LED.
- If the vehicle starts and the green LED remains continuously lit, everything is functioning properly at this point in time. Fuel pump relays fail intermittently, so you may want to test again at a time of day that failure is common.
- If the vehicle starts and the green LED flickers on and off, your fuel pump relay is going bad. Our test vehicle experienced this type of flickering on and off for approximately 30-60 seconds when first started, but the fuel pump was still able to deliver enough fuel to not starve the engine. After several minutes, the fuel pump relay would work appropriately and the green LED would remain lit. History shows this problem will become worse and you're likely in the early stages of fuel pump relay failure.
- If the vehicle does not start and the green LED never lights up, your fuel pump relay is faulty. See section #4, "How to Bypass a Defective Fuel Pump Relay" to start your vehicle.
- If the vehicle starts and the green LED is not illuminated, make sure you properly connected the alligator clip to ground.



Fuel Pump Relay Test

### 3) How To Test Your Fuel Pump (Simple or Standard Cables)

- Turn vehicle off
- Open hood and remove 20A fuel pump fuse M25. Verify that M25 is your fuel pump slot.
- Insert one end of your test/bypass cable into the M25 fuse slot, with orientation per the image below if using a Standard Cable with LED.
- Remove the existing 20A fuse in fuse slot M7. Verify that M7 is your power adapter (cigarette lighter).
- Insert the free end of your test/bypass cable into the **RIGHT** slots of the M7 fuse slot. The M7 fuse slot consists of three terminals (the far right terminals provide 12VDC when the vehicle is on or off).
- If your fuel pump is working properly, you'll hear the fuel pump motor (located near your gas tank) if in a quiet environment.
- (Standard Cables only) Connect the alligator clip to the battery's negative terminal, a ground lug, or chassis ground connection and you should see the green LED light up, indicating that 12 VDC is being provided to the fuel pump. If you see the green LED but don't hear the fuel pump, you may have a bad fuel pump. If you DO NOT see a green LED, but do hear the fuel pump, you likely need to check your alligator clip ground connection.



Fuel Pump Test

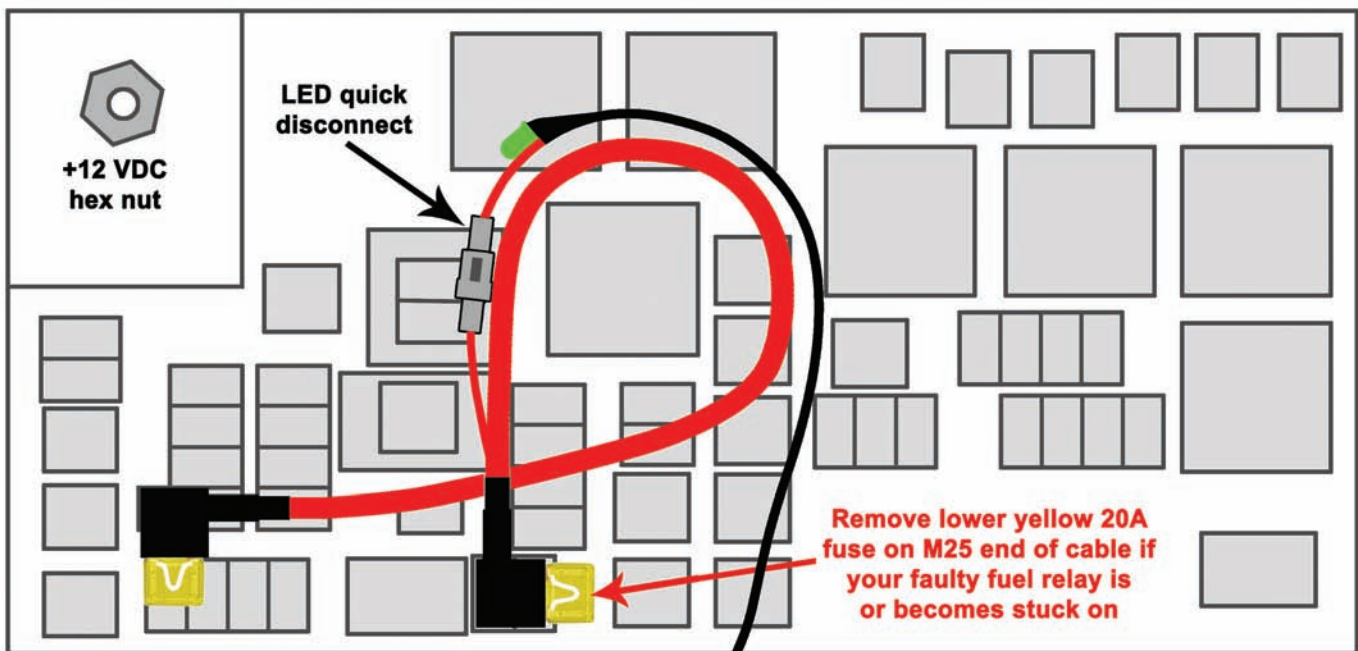
#### 4) How To Bypass A Defective Fuel Pump Relay And Stay On The Road (Simple or Standard Cables)

- Turn vehicle off
- Open hood and remove 20A fuel pump fuse M25. Verify that M25 is your fuel pump slot.
- Insert one end of the test/bypass cable into the M25 slot of your fuse box, with orientation per the image below if using a Standard Cable with LED.
- Remove the existing 20A fuse in fuse slot M7. Verify that M7 is your power adapter (cigarette lighter).
- Insert the free end of your test/bypass cable into the **LEFT** slots of the M7 fuse slot. The M7 fuse slot consists of three terminals (the far left terminals provide 12VDC power **ONLY** when the key is on). This connection provides alternate power directly to the fuel pump when the key is on, thereby bypassing the defective fuel pump relay.
- (Standard Cables only) Optionally connect the alligator clip to the battery's negative terminal, a ground lug, or chassis ground connection in order illuminate the LED when 12 VDC power is provided to the fuel pump.
- Start vehicle.
- (Standard Cables only) You'll see the green LED light up, indicating that alternate power from the power adapter (cigarette lighter) circuit is now powering your fuel pump if the original faulty fuel pump relay cannot. **Disconnect the black ground wire, LED, and alligator clip cable assembly by pulling on both ends of the white plastic disconnects.** Save this part, perhaps in your glove box, for possible future use.
- You can start, drive, and turn off your vehicle as you normally do. Your test/bypass cable is intended as a temporary solution until you can implement a permanent fix. Due to the large number of vehicle types with fuel pump relay problems, it is unknown if any auto shut down features are affected during a crash. Use this cable in bypass mode at your own risk.
- You can continue to plug low power devices (cell phone, iPad, etc.) into the cigarette lighter, but avoid high current devices such as an inverter.
- If you experience problems starting your vehicle, try cycling the key from OFF to ACC to RUN and then put your foot on the brake and start the vehicle. Some TIPMs appear to conserve power by disabling the left slots of the M7 circuit during the starting process. Less than 1% have reported this issue while in bypass mode. Bypass mode powers your fuel pump in ACC and RUN modes only, so your fuel pump will be off when the vehicle is turned off. Remote start may not work with this cable.
- **If your fuel pump relay has been or becomes stuck in the ON position when the vehicle is off, which can drain your battery, please remove the lower 20A fuse on the M25 end of the cable.** This action will completely disconnect the faulty fuel pump relay from all active circuitry and prevent future battery drainage. Alternate bypass power will still be permitted to travel from the M7 fuse slot through the cable to M25 and to your fuel pump. Then start the vehicle.

**NOTE:** Make sure there are no sharp bends in the cable, especially near the fuses.

**IMPORTANT:** Remove the black ground wire, LED, and alligator clip cable assembly when in Bypass Mode (Standard cables only).



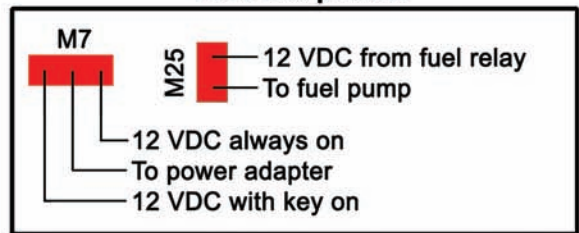


Connect to  
M7 LEFT slots

Connect to M25

Remove lower yellow 20A fuse on M25 end of cable if your faulty fuel relay is or becomes stuck on

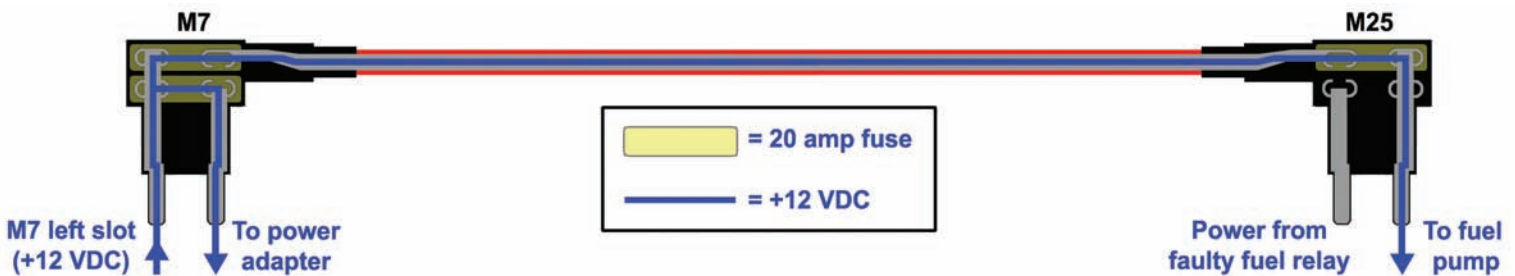
Fuse slot pinouts



(OPTIONAL)

Connect to battery negative terminal or chassis ground to power LED and identify when 12 VDC is provided to fuel pump. Disconnect and remove black ground wire LED assembly when testing is done.

Bypass Mode



Bypass Mode - Cable Explanation and Cross Section Diagram (Lower Fuse Removed on M25 End)

**Frequently Asked Questions** (Visit the online FAQ at [www.VerticalVisions.com](http://www.VerticalVisions.com) for additional questions and answers)

- 1) My car still won't start with the TIPM test/bypass cable installed. What might cause this?
  - TIPM test/bypass cable isn't hooked up to the proper fuse slots. It must be connected between M7 and M25.
  - Check cable fuses. Some people accidentally touch the cable to ground while plugged in to the TIPM, which may blow a fuse.
  - Make sure the top fuses on each end of our TIPM test/bypass cable are installed. Top fuses permit power to flow from one end of the cable (M7) to the other (M25). Bottom fuses allow the original fuse slot to function normally.
  - Check your fuel pump using the TIPM test/bypass cable to see if it's working. A fuel pump pressure test is recommended if all else fails.
  - Do you have gas in the vehicle? Is your fuel gauge working properly?
  - It's rare, but sometimes the TIPM can kill power to the M7 (left side) slot during the engine cranking process. This may happen in cold weather or with car batteries that have been drained recently. Temporarily move the M7 end of our cable to the right slot, which provides full-time power to the fuel pump and try to start the vehicle. Then, while the vehicle is running, quickly move the cable back to the left slot, allowing your vehicle to charge the battery to sufficient levels. If the vehicle still won't start with the cable providing full time power from the M7 right slot, you likely have a problem beyond the fuel pump and fuel pump relay.
  - Verify an external relay is not installed, as our cables are incompatible with them. Change the external relay if present.
  - Check/replace your cam shaft and/or crank shaft sensors. There are dozens of things that can prevent a vehicle from starting, beyond the fuel pump relay issue that our cable was designed to solve.
  - Cables allow power to pass from one end to the other. If your TIPM won't provide power to the cable, no power will be available to the fuel pump.

2) How long can I drive with the cable? Is it a permanent solution?

Answer: Many people have used our cables for extended periods of time (3-4 years), but we prefer to list it as a temporary solution due to the limitations listed above. Our cables mainly serve as testing tools to determine TIPM problems, but thousands of people use them to stay on the road. Our cables will not cause any engine codes or other problems to appear in your vehicle.

Questions? Please contact us via email or telephone. We greatly appreciate your business.