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EMISSIONS KIT FOR LS1
Part #60318, 60319

This kit includes the wiring for the rear oxygen sensors and the fuel tank pressure sensor.

STEP 1 - ROUTING THE WIRES

These kits are designed to piggy back the painless harness #60506 and #60507. Begin by locating the red wire (with a ring terminal), the tan/white, purple/white, pink and black wires (tie wrapped together), the tan, purple, pink and black wires (tie wrapped together), the orange/black, green and gray wires (tie wrapped together), and a black wire (with a ring terminal). Pass these wires through the Fuel Injection Harness grommet, from the passenger compartment into the engine compartment. These wires are terminated with the correct terminal and wire seal to fit the connectors supplied in the bag kit.

NOTE: DO NOT INSTALL CONNECTOR HOUSING ON THESE WIRES UNTIL AFTER THEY HAVE BEEN PASSED THROUGH THE GROMMET IN THE FIREWALL.

CAUTION: BE CAREFUL ROUTING THE WIRES THROUGH THE FIREWALL TO AVOID DAMAGING THE TERMINALS ON THE ENDS OF THE WIRES.

STEP 2 - INSTALLATION OF CONNECTORS IN THE ENGINE COMPARTMENT

In the bag kit you will find three connector housings and three Terminal Position Assurance locks (TPA). Take one of the four-way connector housings and insert the tan/white, purple/white, pink and black wires into the A, B, C and D cavities until the terminal locking tang engages, as shown in **Illustration 1**. Repeat this step for the tan, purple, pink and black wires using the remaining four-way connector. The connector with the striped wires will be connected to the left oxygen sensor and the other to the right.

NOTE: THE TERMINAL WILL ONLY FIT ONE WAY INTO THE CONNECTOR. DO NOT TRY TO FORCE THE TERMINAL.

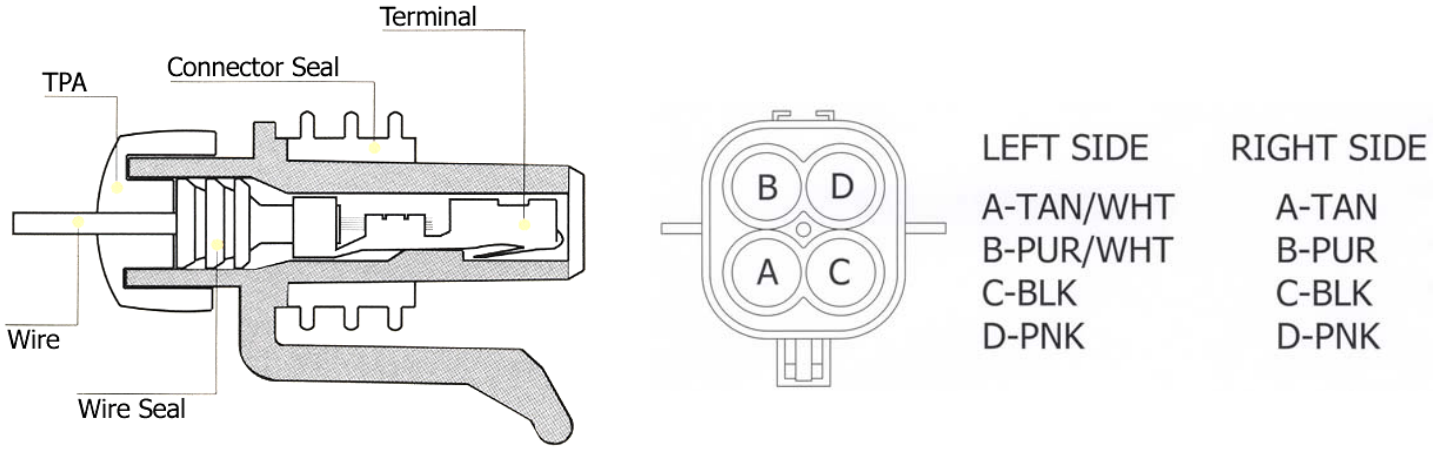

ILLUSTRATION 1 Rear Oxygen Sensor Connector pin out

Be sure to use the blue TPA on the connector housings after the wires have been inserted into the proper cavities. These connectors can now be routed and plugged into the rear oxygen sensors located behind or rear of the catalytic converter.

Take the black three-way connector housing and insert the orange/black wire into the A cavity, the green wire into the B cavity and the gray wire into the C cavity until the locking tangs engage, as shown in **Illustration 2**.

NOTE: THE TERMINAL WILL ONLY FIT ONE WAY INTO THE CONNECTOR. DO NOT TRY TO FORCE THE TERMINAL.

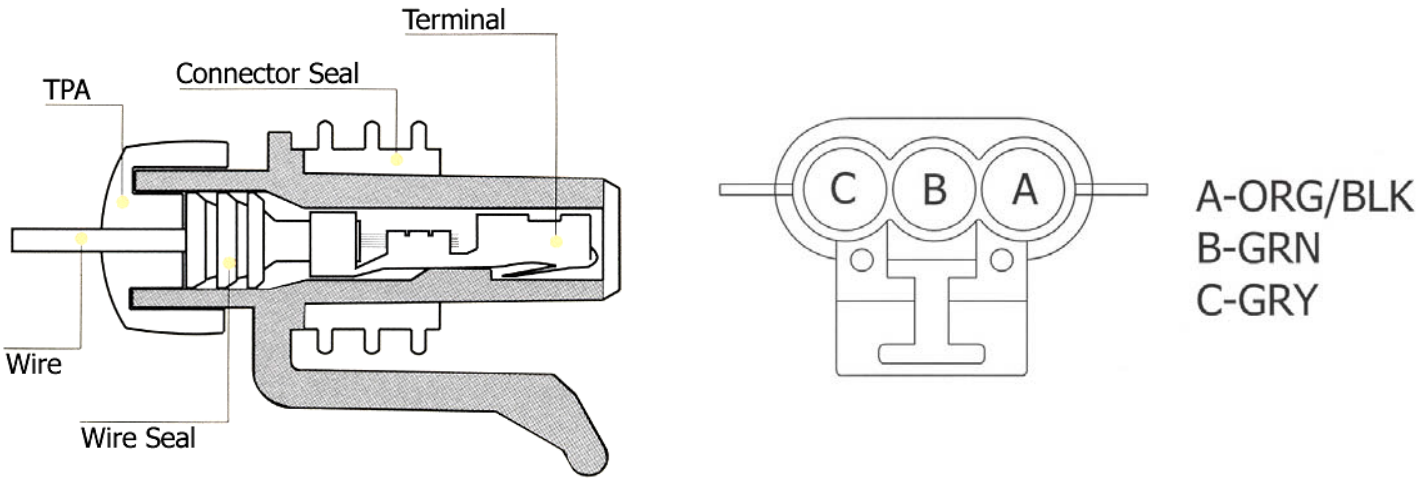

ILLUSTRATION 2 Fuel pressure sensor connector pin out

Be sure to install the white TPA on the connector housing after the wires have been inserted into the proper cavities. This connector can now be routed and plugged into the fuel tank pressure sensor located on fuel tank pump assembly.

Connect the red wire with the ring terminal to the starter solenoid “BATT” terminal.

STEP 3 - UNPLUGGING THE COMPUTER

CAUTION: REMOVING THE COMPUTER CONNECTORS FROM THE COMPUTER WHILE THE IGNITION IS ON WILL DAMAGE THE COMPUTER!

First make sure that the battery is disconnected, unplug the blue and the red computer connector by removing the retaining bolts using a 7mm socket, and pulling straight out and away from the computer. BE CAREFUL NOT TO DAMAGE THE COMPUTER PINS! Remove the red and blue secondary locks from the computer connectors by releasing the retaining clips and pulling them out and away from the connector assemblies.

STEP 4 - CONNECTING THE REAR OXYGEN SENSORS AT THE COMPUTER

Using **Illustration 3** for reference, look on the rear side of the blue 80 pin computer connector housing for the cavity marked “1”. Once you have located the “1” cavity, insert the tan wire terminal into this cavity, pushing in until the locking tang engages. Next, insert the tan/white wire terminal into the “2” cavity. Directly across from these two cavities are the “41” and “42” cavities, insert the purple wire terminal into the “41” cavity and the purple/white wire terminal into the “42” cavity. This will complete all of the oxygen sensor wires.

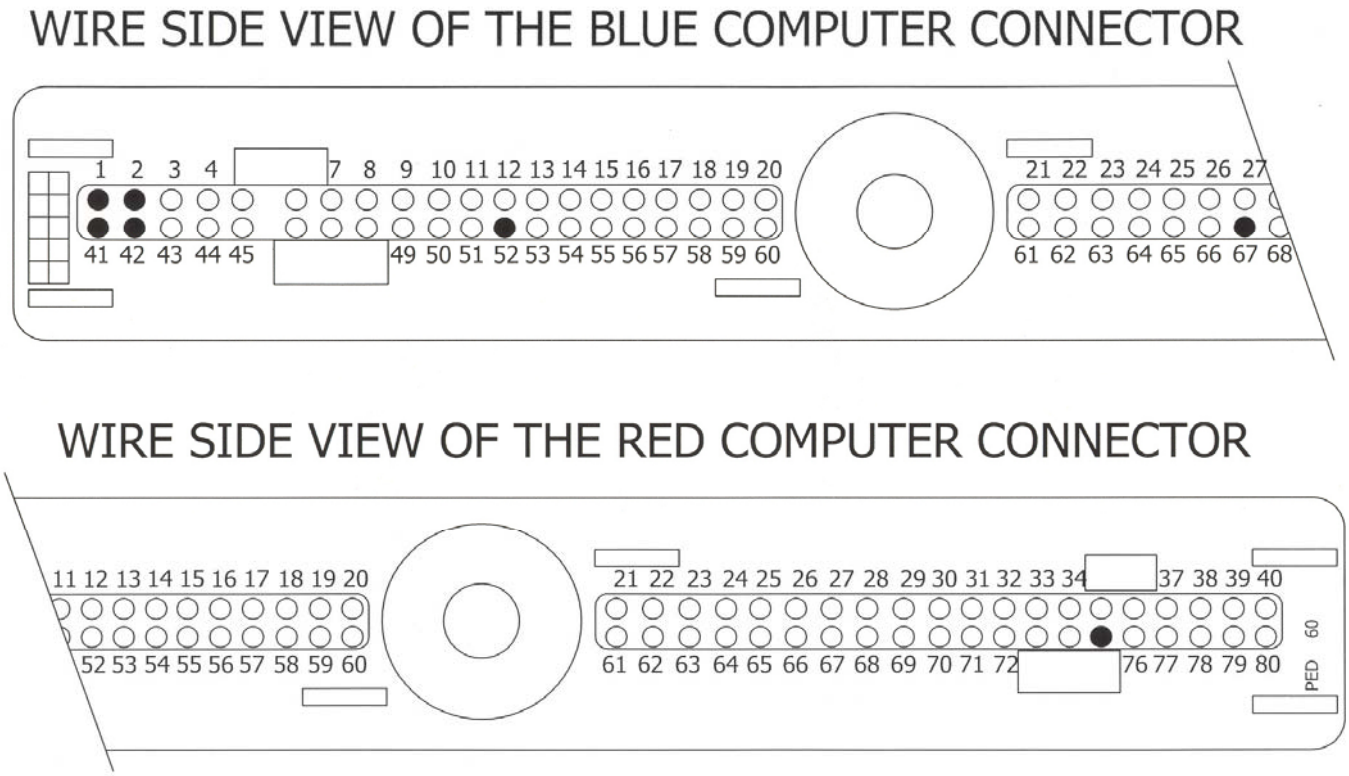

ILLUSTRATION 3 Computer connector pin out

STEP 5 - CONNECTING THE FUEL TANK PRESSURE SENSOR AT THE COMPUTER

On the same blue 80 pin connector, locate the “52” cavity, and insert the orange/black wire terminal until the locking tang engages. Next, locate the “67” cavity and insert the green wire terminal until the locking tang engages, this is the last wire to be installed in the blue computer connector. Look on the wire side of the red computer connector and locate the “75” cavity and insert the gray wire terminal until the locking tang engages, this will complete all of the fuel tank pressure sensor wires.

STEP 6 - REPLACING THE COMPUTER CONNECTORS AT THE COMPUTER

Replace the red and blue secondary locks on both computer connectors. Be careful to line up the "fingers" on the locks with the connector openings. Once you have the secondary locks in place, reinstall the computer connector into the computer. The relays and fuse holders should be positioned near the computer of the Painless Fuel Injection Harness. Screws and mounting hardware for securing the relays and fuse holders is included in the bag kit.

CAUTION: USE CARE WHEN RE-INSTALLING THE COMPUTER CONNECTOR, TO AVOID DAMAGING THE COMPUTER PINS.

STEP 7 – POWER AND GROUND

Take the pink wire located near the relay and route it to a switched 12 volt source, this 12 volt source can come from the painless fuse block or the factory fuse block. NOTE: THE PINK WIRE IS ONLY A RELAY ACTIVATION THAT WILL PULL LESS THAN A 1 AMP LOAD. The relay base is designed to lock onto the relay base of the Painless fuse block or it can be mounted using the screw provided in this kit. Terminals are provided to piggy back this wire onto one of the vehicles existing fuses. Locate the black wire with a ring terminal and use one of the grounding bolts on the back of the engine cylinder head to ground the kit.

NOTE: DOUBLE CHECK ALL ROUTING, MAKING SURE THAT THERE IS ENOUGH SLACK TO ALLOW FOR ANY ENGINE MOVEMENT. REINSTALL ANY GROMMETS OR OTHER PARTS TAKEN OFF. START AND DRIVE THE VEHICLE FOR AT LEAST THIRTY MINUTES, THEN CHECK FOR ANY TROUBLE CODES STORED IN THE COMPUTER. PAINLESS WIRING OFFERS A TECHNICAL ASSISTANCE LINE TO ANSWER ANY QUESTIONS YOU MAY HAVE. THE NUMBER IS (800)423-9696. PHONES ARE ANSWERED MONDAY THROUGH FRIDAY FROM 8 AM TO 5 PM CENTRAL TIME, NOT INCLUDING HOLIDAYS. PLEASE LEAVE A MESSAGE IF YOU ARE UNABLE TO REACH US AND WE WILL RETURN YOU'RE CALL AS SOON AS POSSIBLE.

Painless Performance Limited Warranty and Return Policy

Chassis harnesses and fuel injection harnesses are covered under a lifetime warranty. All other products manufactured and/or sold by Painless Performance are warranted to the original purchaser to be free from defects in material and workmanship under normal use. Painless Performance will repair or replace defective products without charge during the first 12 months from the purchase date. No products will be considered for warranty without a copy of the purchase receipt showing the sellers name, address and date of purchase. You must return the product to the dealer you purchased it from to initiate warranty procedures.