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EMISSIONS KIT FOR '99-'02 LS-1 ENGINES Part #60324 & #60325

This emission harness is designed to supplement the Painless harness #60508 or #60509. Included in this harness is the wiring for the rear oxygen sensors, fuel tank pressure sensor, secondary air injection pump, secondary air injection bleed valve, e.g.r. valve, canister purge solenoid and the canister vent solenoid.

STEP 1 - UNPLUG THE COMPUTER

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

Disconnect the ground cable from the battery. Unplug the blue and red computer connectors by loosening the retaining bolts in the center of the connectors and pulling straight out and away from the computer. **BE CAREFUL NOT TO DAMAGE THE COMPUTER PINS!** Now would be a good time to take a marker and mark on the metal housing each of the metal computer connectors with its respective color. This should eliminate any confusion of which connector is which, once the secondary locks are removed. 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. See Figure 1.

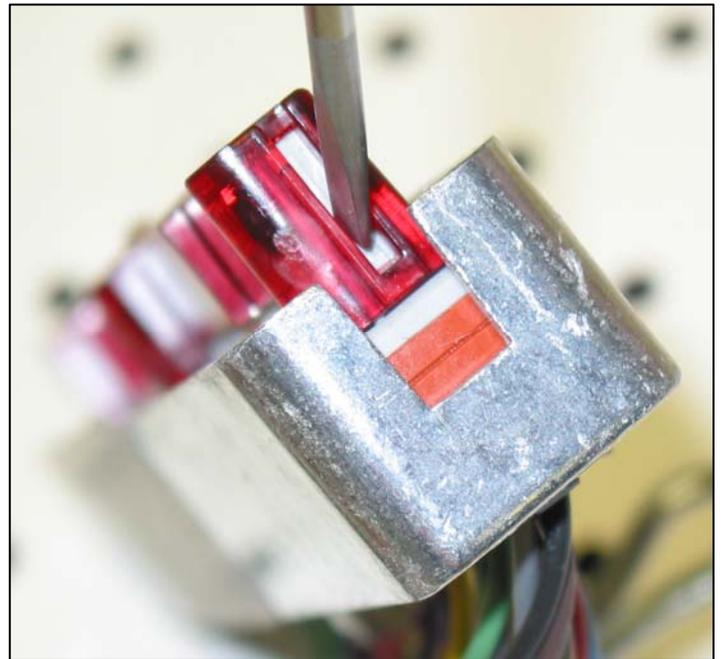


Figure 1 Remove the secondary locks.

STEP 2 – INSERT THE EMISSION WIRES INTO THE COMPUTER CONNECTORS

This emission harness is designed with the same dimensions as the 60508 or 60509 LS-1 Fuel Injection Harness. It is done this way so you can route these additional wires in the same fashion as you did the harness. Notice that connector (K) is a separate pigtail. Depending on the year of LS-1 engine you are using, you may or may not need this connector. This E.G.R. connector is pinned out at the factory. This is done because of the connector type needed. You will need to route these five wires through the firewall grommet from the engine side into the passenger compartment before inserting them into the computer connectors. Insert the emission wires into the correct computer connector according to the two diagrams in Figure 2. Notice that in each section there are no two wires colored exactly the same. Insert each wire until they click into place in the connector. After you have inserted all the wires, replace

the blue and red secondary locks onto the connectors. These secondary locks only fit one way onto the connector and should easily slide and click into place. Reinstall the computer connectors onto the computer.

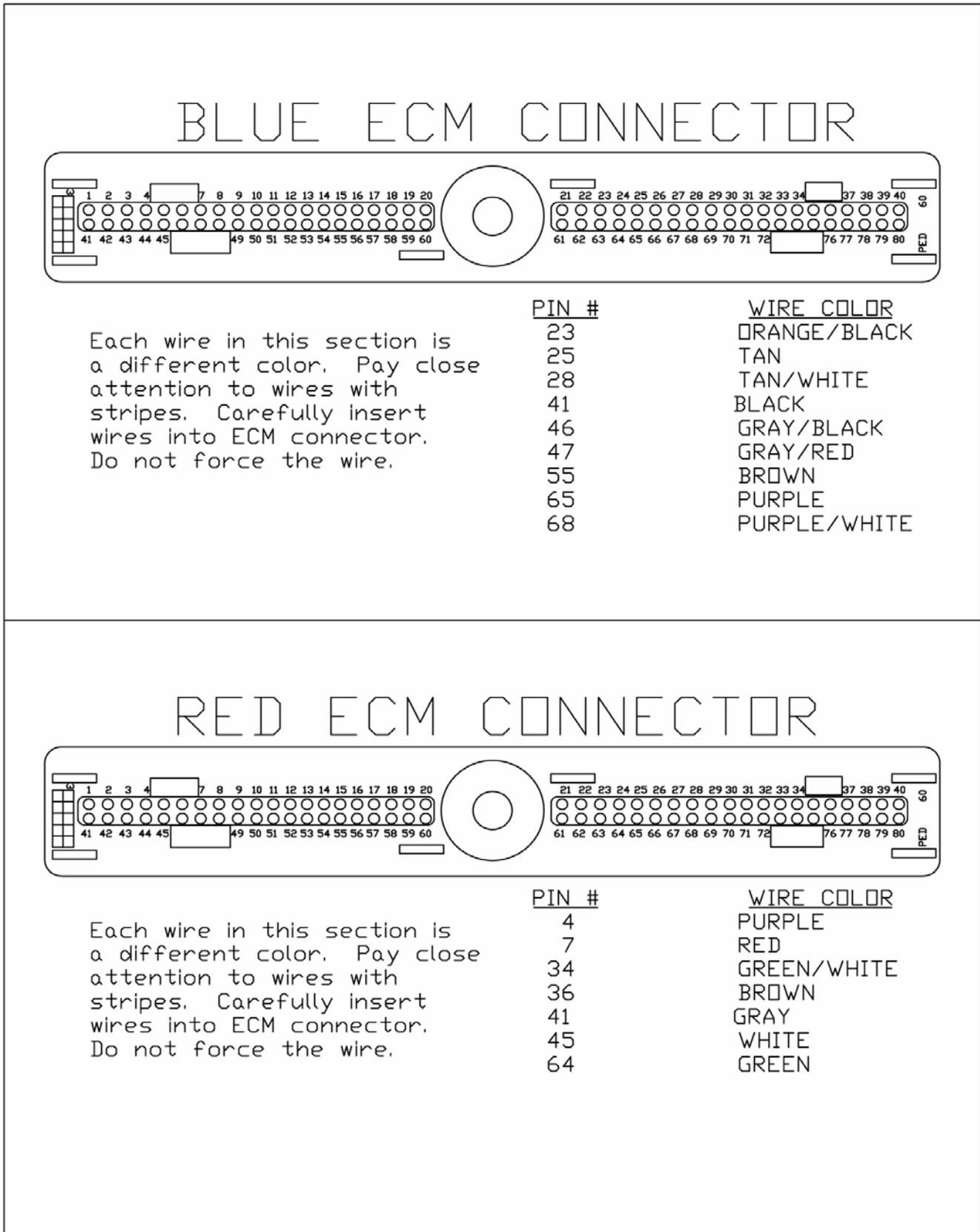


Figure 2 ECM connectors pin out

STEP 3 – MOUNT THE FUSE BLOCK

Mount the fuse block and relays in the desired location. Make sure you have left enough length in the wires marked ECM RED CONNECTOR and ECM BLUE CONNECTOR as to not pull on or stress the ECM connectors. Connect the wire labeled FUSEBLOCK IGNITION to an ignition hot, 12 volt source. Carefully route the rest of the harness through the firewall grommet. We have provided you with extra tie straps in order to make the installation easier for you. After routing the harness through the firewall you can now route each group of wires to their prospective emission component. Once the groups of wires have been routed to the correct emission component, refer to Figure 3 for connector pin out. Insert the wires into each connector and plug the connector into the corresponding emission device.

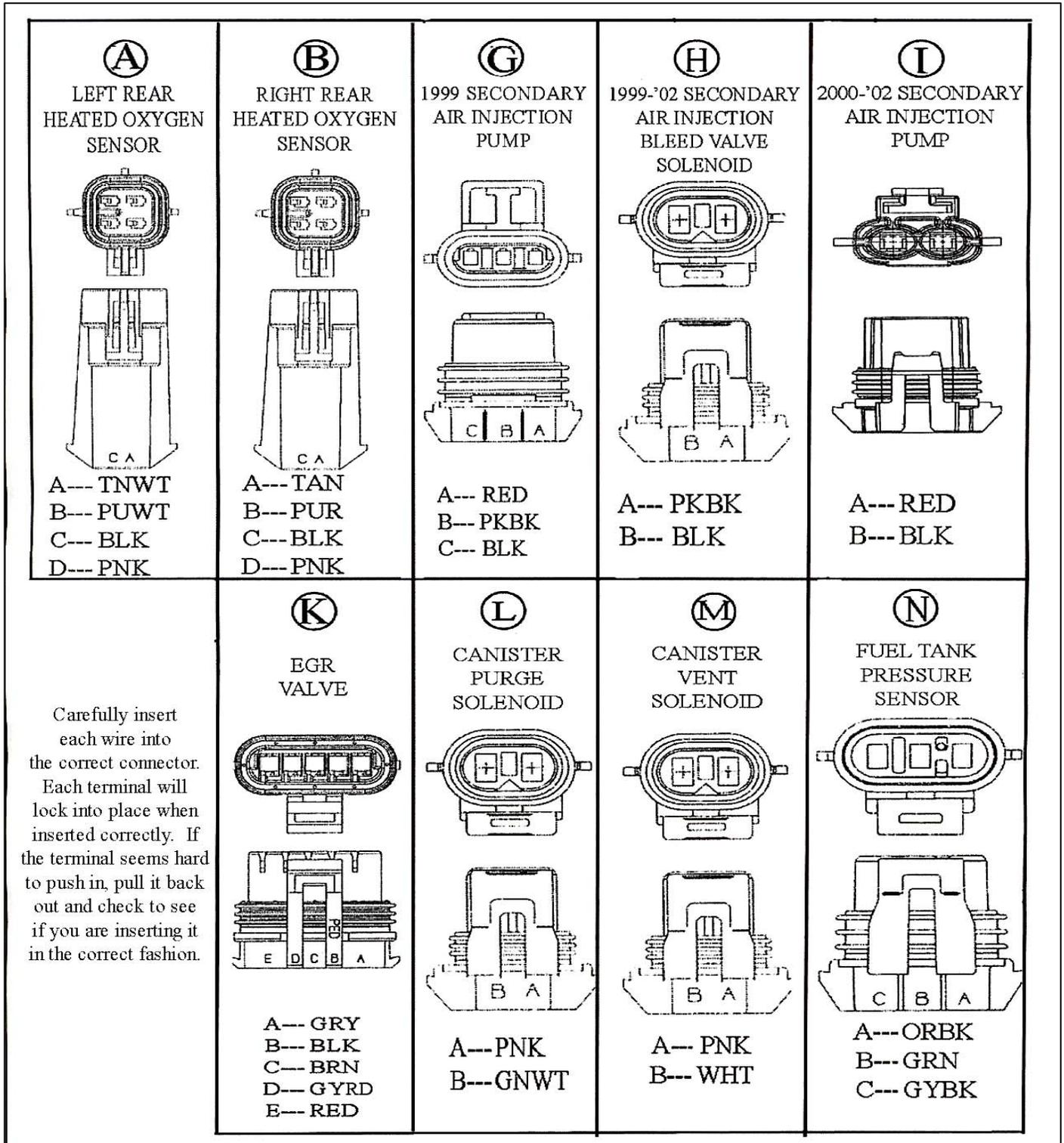


Figure 3 Emission connector pin out chart

STEP 4 – POWER AND GROUND

Locate the single, heavy red, 12 gauge wire. Connect this wire to a 12 volt B+ source. The best place to connect this wire is the battery post on the starter. Next, locate the two ground wires. Connect these to a good grounding source. The engine block and frame are good examples of grounds.

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.

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