

2022 CHEVROLET CORVETTE SERVICE MANUAL

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Serial Data Circuit Wiring Repairs

Special Tools

- J-38125-8, Splice Sleeve Crimping Tool
- DuraSeal splice sleeves
- A wire stripping tool

For equivalent regional tools, refer to Special Tools.

The DuraSeal splice sleeves have the following 2 critical features:

- A special heat shrink sleeve environmentally seals the splice. The heat shrink sleeve contains a sealing adhesive inside.
- A cross hatched (knurled) core crimp provides necessary contact integrity for the sensitive, low energy circuits.

GM Local Area Network (GMLAN) and Controller Area Network (CAN) serial data circuits require special wiring repair procedures due to the sensitive nature of the circuitry. Follow the specific procedures and instructions when working on GMLAN and CAN connectors and terminals. Local Interconnect Network (LIN) serial data circuits do not require any special wiring repair procedure.

GMLAN and CAN Repairs

Note:

When making a repair to any GMLAN or CAN network, the original wire length after the repair must be the same length as before the repair. If the network is a twisted pair, the twist must be maintained after the repair is completed.

Low speed GMLAN has a single wire and communicates at a slower speed. High speed GMLAN and CAN has two wires in a twisted pair and works at higher speeds. For more information on GMLAN and CAN serial data protocol, refer to Data Link Communications Description and Operation.

GMLAN and CAN Connector Terminal Repair

Note:

A terminated lead can be used to replace damaged connector terminals for both GMLAN and CAN systems. When making a connector terminal repair on a GMLAN high speed system or CAN with twisted pair wires, do not untwist the wires more than necessary to make the repair.

If the individual terminals are damaged on any GMLAN or CAN connection, use the appropriate connector repair procedure in order to repair the terminal. Refer to Connector Repairs for the appropriate connector repair procedure.

GMLAN and CAN Wire Repair

Note:

Refer to Wiring Repairs in the service information connector end views or the vehicle schematics in order to determine the correct wire size for the circuit you are repairing. You must obtain this information in order to ensure circuit integrity.

If any wire except the pigtail is damaged, repair the wire by splicing in a new section of wire of the same gauge size (0.5 mm², 0.8 mm², 1.0 mm² etc.). Use the DuraSeal splice sleeves and EL-38125-10 tool. For wiring repair, refer to Special Tools.

Media Oriented Systems Transport (MOST) Wiring Repair

Note:

If harness repair/analysis is performed on any MOST circuit, unshielded twisted pair wire should be 0.35 mm² (22 AWG) wire with at least

one twist per each 1 45/64 inch (45 mm) and must not be untwisted for more than 3 15/16 of an inch (10 cm).

The following conditions need to be met to ensure a valid continuity:

- Untwisted length for all MOST 50 circuits at each wire harness connector should be no longer 50 mm max (25 mm preferred).
- When wire repairs are made, a minimum 25 twists/meter for all MOST 50 circuits.
- MOST 50 has specific receive and transmit I/O.

The transmit of one module is connected to receive of the next module in ring topology.

Ethernet Wiring Repair

Note:

- Do not splice wires or perform your own crimps.
 - Service harness kits will be released per vehicle and the kit will contain a length for each leg/peripheral device.
 - The lengths are designed to allow for some extra slack but loop-backs and hard turns or pinches are not desirable.
 - Twisted pairs are supplied with terminals already crimped.
 - If for any reason an Ethernet wiring repair kit is not available, the preferred repair procedure is to replace the entire harness.
1. Remove the respective Ethernet connector from each module (end-to-end connection).
 2. Depopulate the terminals using the proper terminal removal tool from both connectors.
 3. Overlay the proper twisted pair provided in Ethernet Wiring Repair kit.
 4. Insert terminals into connectors.
 5. Reinstall connectors.
 6. Neatly secure Ethernet wiring to existing harness taking up extra length without pinching wires.