



SVE BULLETIN

SPECIAL VEHICLE ENGINEERING – BODY BUILDERS ADVISORY SERVICE

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Q-114

Date: November 8, 2004
Revised:

Aftermarket Plasma Cutting/Welding Operations on E-Series Vehicles

- Models Affected:** All E-Series; Van and Cutaway Model Year 2004 and later.
- Action Requested:** Please provide a copy of this bulletin to all Engineering, Manufacturing, Service, Parts and Sub-Contractors
- Background:** E-Series Instrument Cluster failures have been reported subsequent to plasma cutting or welding operations performed while modifying vehicle structural components. The E-Series Instrument Cluster circuitry for 2004 has proven to be more sensitive to induced voltage when compared to prior models.
- Recommendations:** Perform the following steps prior to any plasma cutting/welding operations. Steps 2, 3 and 4 below are new FTQP requirements and will be incorporated in The Guidelines Manual.

Step 1) Follow FTQP Guideline Procedures E 0403 and E 1114

E 0403

Drilling, Cutting or welding of any OEM steering or suspension component, including mounting brackets, is unacceptable. Any welding of the frame within 4 inches of the steering gear, or within 4 inches of any rivet attaching a suspension mounting bracket is unacceptable. If the suspension bracket is bolted and welding is done within 4 inches, the bolt must be retorqued to OEM specifications. See the appropriate Ford Truck Shop Manual.

E 1114

When welding is performed anywhere on the vehicle, protect the PCM from potential damage by first disconnecting battery cables, then disconnecting the module.

- Battery cables must be disconnected from the battery (ies) and isolated from each other and the vehicle
- The welder ground clamp must be positioned as close as possible to the area where welding is to be performed. Paint and other protective coatings must be removed from the weld site and the ground site to assure proper weld results. Apply appropriate corrosion protection to the affected areas upon completion.
- Do not use any driveline, exhaust or suspension component as a welding ground point.
- Avoid routing welding cables on, near, or across any electrical wiring or electronic components while welding is in progress.

The PCM module must be hooked up after reconnecting the battery cables to reduce the chance for harmful voltage spikes damaging sensitive electronics.

Step 2) In order to protect the Instrument Cluster from plasma cutting/welding induced voltage spikes disconnect wiring connectors C210, C211 and C212 located in the passenger kick panel. Figure 1 Page 3

Upon removing the kick panel, 5 connectors are visible.

The forward connector is the fuel system Inertia switch. No action needed.

The next connector is C212 a black square connector.

Disconnect prior to plasma cutting/welding.

The next connector is C210 a grey rectangular connector.

Disconnect prior to plasma cutting/welding.

The next connector is C211 a black rectangular connector.

Disconnect prior to plasma cutting/welding.

The last connector is the side door electrical harness. No action needed.

Step 3) Body to Frame ground strap located under vehicle on passenger side at "B" pillar must remain installed during modifications. Figure 2 Page 3

This ground strap must be in place during plasma cutting or welding operations.

Relocation of this ground strap is permissible only if, electrical and mechanical connections are equivalent to production.

Step 4) In order to protect the Restraint Control Module (RCM) from damage and to avoid accidental deployment and possible personal injury, disconnect the RCM as outlined in the E-Series Service Manual Section 501-20B. The RCM is located under the drivers seat. If the Module is removed from the vehicle it must be reinstalled in the same vehicle.

Additionally, the plasma cutter and/or welder ground strap can be modified to provide a ground return to both the body and frame. If one ground return is utilized it should be placed on the surface being modified.

Sincerely,

Daniel J. Snyder
Special Vehicle Engineering
Quality Programs

Figure 1 Wire Connectors

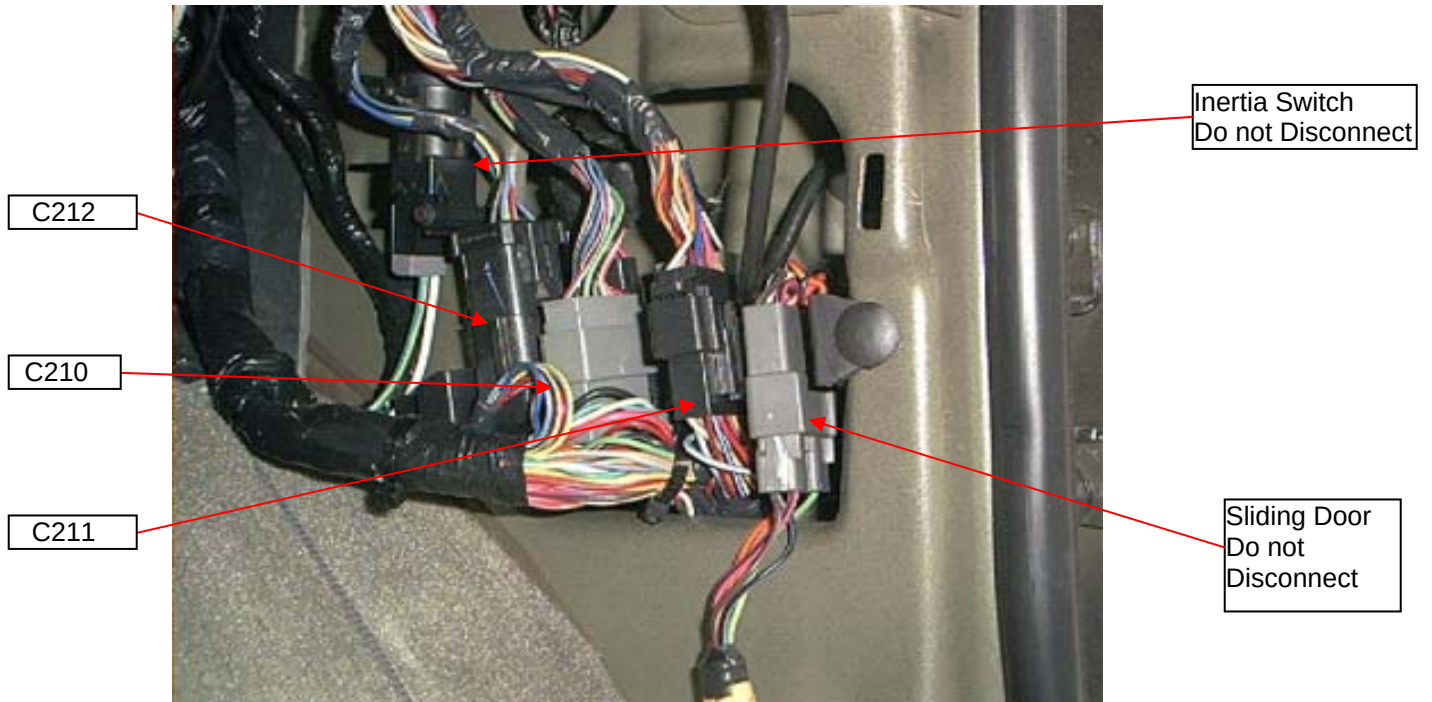


Figure 2 Ground Strap

