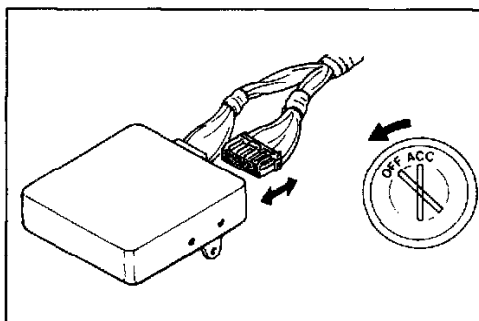
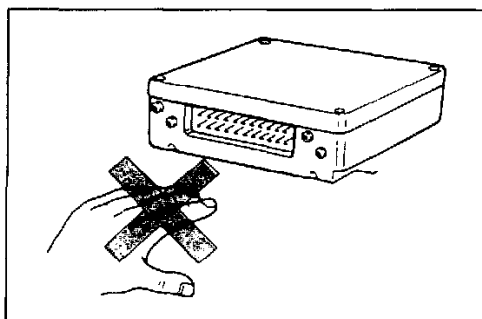


## Vehicle: Service Precautions

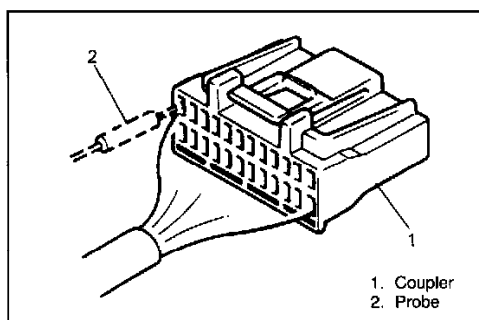
### Precautions For Electrical Circuit Service



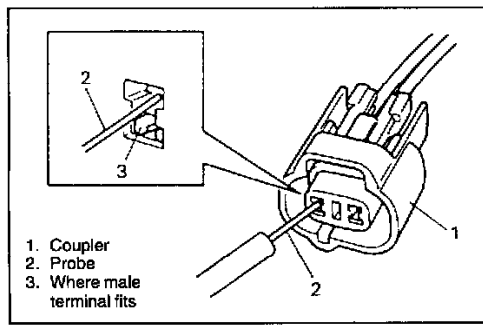
- When disconnecting and connecting coupler, make sure to turn ignition switch OFF , or electronic parts may get damaged.



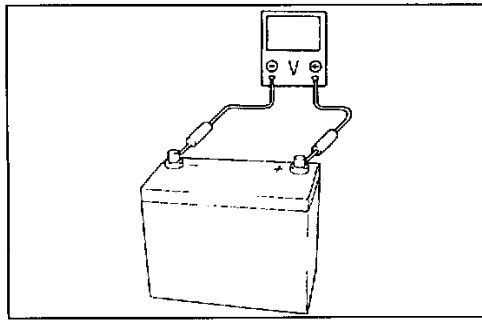
- Be careful not to touch the electrical terminals of parts which use microcomputers (e.g. electronic control unit like as ECM, TCM, ABS control module, SDM etc.). The static electricity from your body can damage these parts.
- Never connect any tester (voltmeter, ohmmeter, or whatever) to electronic control unit when its coupler is disconnected. Attempt to do it may cause damage to it.
- Never connect an ohmmeter to electronic control unit with its coupler connected to it. Attempt to do it may cause damage to electronic control unit and sensors.
- Be sure to use a specified voltmeter/ohmmeter. Otherwise, accurate measurements may not be obtained or personal injury may result.



- When taking measurements at electrical connectors using a tester probe, be sure to insert the probe from the wire harness side (backside) of the connector.



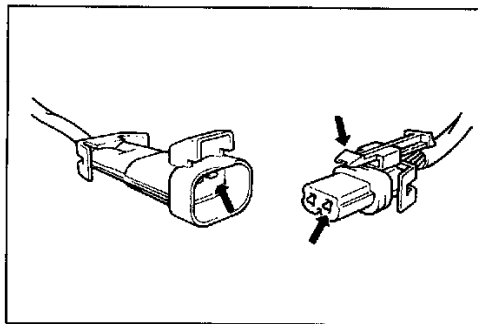
- When connecting meter probe from terminal side of coupler because it can't be connected from harness side, use extra care not to bend male terminal of coupler or force its female terminal open for connection. In case of such coupler as shown connect probe as shown to avoid opening female terminal. Never connect probe where male terminal is supposed to fit.
- When checking connection of terminals, check its male half for bend and female half for excessive opening and both for locking (looseness), corrosion, dust, etc.



- Before measuring voltage at each terminal, check to make sure that battery voltage is liv or higher. Such terminal voltage check at low battery voltage will lead to erroneous diagnosis.

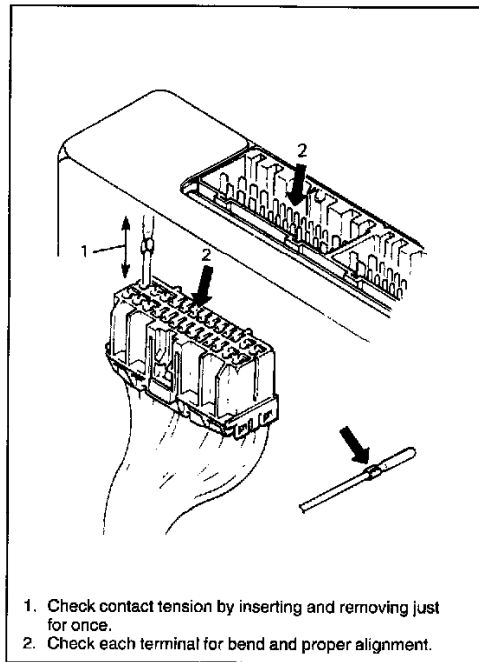
#### INTERMITTENT AND POOR CONNECTION

Most intermittent are caused by faulty electrical connections or wiring, although a sticking relay or solenoid can occasionally be at fault. When checking it for proper connection, perform careful check of suspect circuits for:

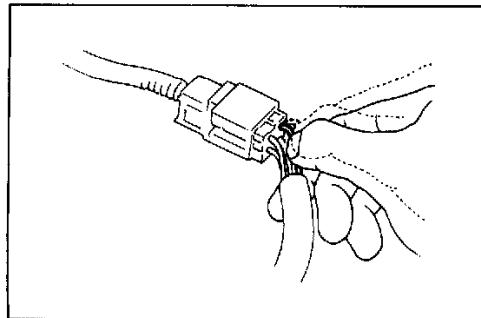


- Poor mating of connector halves, or terminals not fully seated in the connector body (backed out).
- Dirt or corrosion on the terminals. The terminals must be clean and free of any foreign material which could impede proper terminal contact.

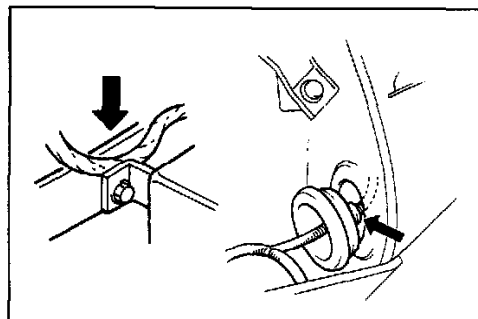
However, cleaning the terminal with a sand paper or the like is prohibited.



- Damaged connector body, exposing the terminals to moisture and dirt, as well as not maintaining proper terminal orientation with the component or mating connector.
  - Improperly formed or damaged terminals.
- Check each connector terminal in problem circuits carefully to ensure good contact tension by using the corresponding mating terminal.
- If contact tension is not enough, reform it to increase contact tension or replace.



- Poor terminal-to-wire connection.
- Check each wire harness in problem circuits for poor connection by shaking it by hand lightly. If any abnormal condition is found, repair or replace.



- Wire insulation which is rubbed through, causing an intermittent short as the bare area touches other wiring or parts of the vehicle.
  - Wiring broken inside the insulation. This condition could cause a continuity check to show a good circuit, but if only 1 or 2 strands of a multi-strand-type wire are intact, resistance could be far too high.
- If any abnormality is found, repair or replace.