NISSAN NORTH AMERICA, INC.

SERVICE BULLETIN

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1995-99 MAXIMA EGI HARNESS WIRE BREAKAGE DIAGNOSIS AND REPAIR PROCEDURE

APPLIED VEHICLES: 1995-99 Maxima (A32)

This amended version of NTB98-008a updates the Applied Vehicle date range and corrects and adds information to the DTC Charts. Please discard all paper copies of NTB98-008a.

SERVICE INFORMATION

If a 1995-99 Maxima has any of the following incidents:

- MIL 'on',
- Engine no start, or
- Other system malfunctions such as A/C inop, A/C idle up inop, rough idle, oil pressure light inop,

The cause may be wire breakage in the engine control harness where it bends over the right rear of the engine next to the right strut tower (see Figure 1). See the symptom charts beginning on page 5 for possible diagnostic trouble codes (DTCs) or specific symptoms that can cause one or more of these incidents.

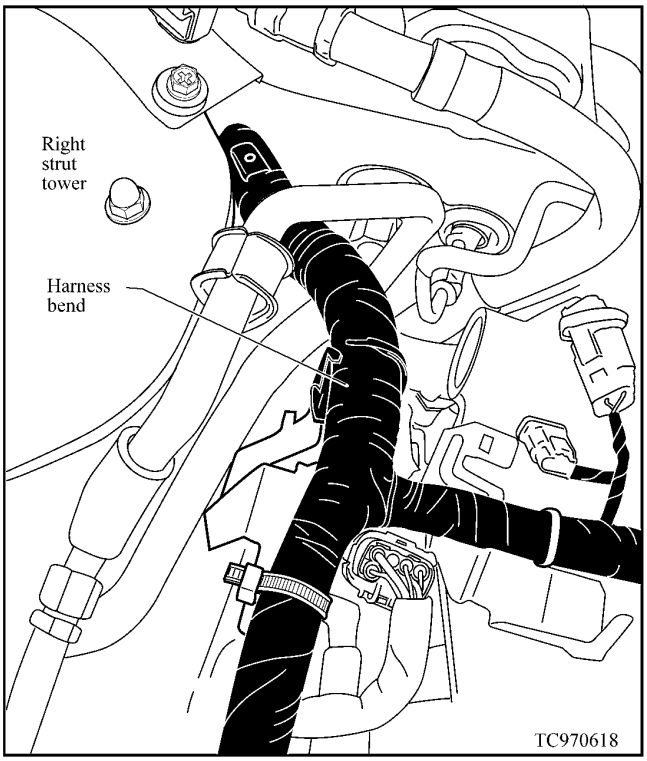

Figure 1

This repair procedure may apply to your MIL 'on' DTC or symptom if it is specifically listed on the charts. Note that for each DTC or symptom listed there can be more than one circuit to check using the following procedure.

Only incidents and circuits listed on the attached chart are applicable to this bulletin. All of the incident possibilities are circuits contained in wiring that pass through the bend in the engine control harness.

A kit (P/N 24299-0L725) containing a harness protector and four clips must be installed to prevent additional wire breakage.

SERVICE PROCEDURE

Diagnosis Procedure — MIL 'ON'

Use this procedure when the vehicle has come in with the MIL 'on' and a DTC stored in Self-Diagnosis memory.

1. Use CONSULT to display Self-Diagnosis Results.
2. Compare the DTC displayed by CONSULT to the DTC charts (Chart #s 1, 2, 3 and 4) beginning on page 5.
3. CONSULT can be used in Data Monitor mode as a preliminary check. Monitor the operation of the system indicated by the DTC.
4. Check for intermittent open or short circuits by aggressively wiggling the EGI harness side to side and up and down at the specified harness bend (see Figure 1) while watching the results on CONSULT Data Monitor. If the applicable monitored value changes or a DTC sets when you shake the harness then wire damage has been confirmed (see NOTE 1 below).
5. Use the correct year service manual Trouble Diagnosis for the DTC displayed together with the DTC chart to identify the wire color and pin location for the circuit in question.

    - If the wire color code is listed on the DTC chart, perform continuity check A.
    - If the wire is identified as "shielded wire" on the DTC chart, perform continuity checks A and B.

6. Perform the indicated continuity check(s) on the wire(s)for the circuit in question to isolate the short or open to the incident wire(s). It may be necessary to shake the harness as outlined in step 4 to verify intermittent conditions. Ohmmeter values should not change while shaking the harness (see NOTE 1 below).

    - If an open circuit is confirmed in a color-coded wire, perform the repair procedure beginning on page 8.
    - If the open or short is confirmed in a "shielded wire," replace the entire harness.

    NOTE 1: If you cannot confirm an open or short circuit with CONSULT, it is necessary to perform the continuity check outline in steps 5 and 6 above. If you cannot confirm an open or short in the specified wire(s) as they pass through the indicated harness bend with the continuity check, this bulletin does not apply.

Diagnosis Procedure — Non MIL Symptom

Use this procedure if the vehicle symptom is listed on the Vehicle Symptom Chart (Chart 5, page 8).

1. Verify the symptom in question is listed in Chart 5.
2. Refer to the system wiring diagram in the correct year service manual together with Chart 5 to determine the wire colors and pin location for the circuit in question.
3. Perform continuity check A on the wire(s)for the circuit in question to isolate the short or open to the incident wire(s).
4. Check for intermittent open or short circuits by aggressively wiggling the EGI harness side to side and up and down at the specified harness bend and performing the indicated continuity check(s). If ohmmeter values change while shaking the harness the wire damage has been confirmed (see NOTE 2 below).

    - If an open circuit is confirmed in a color-coded wire, perform the repair procedure for color-coded wires beginning on page 8.

      NOTE 2: If you cannot confirm an open or short circuit in the specified wire(s) as they pass through the indicated harness bend, this bulletin does not apply.

Continuity Check A, (open circuit check) Figure 2

1. Turn Ignition Key Off and disconnect the vehicle battery.
2. Disconnect the ECM and the engine component connectors.
3. Connect a jumper wire to the harness side of the appropriate pin of the ECM connector.

   IMPORTANT: Be very careful not to spread or otherwise damage the connector pin.

4. Route the jumper wire to the engine compartment.
5. Connect an ohmmeter between the jumper wire and the harness side of the appropriate pin of the component connector.
6. Aggressively wiggle the EGI harness side to side and up and down while you monitor the ohmmeter reading.

- Resistance value should be close to zero ohms. If resistance value is high/over range or fluctuates, an open circuit exists.

  NOTE: If resistance is high or over range, be sure it is not caused by poor ohmmeter probe or jumper wire connections.

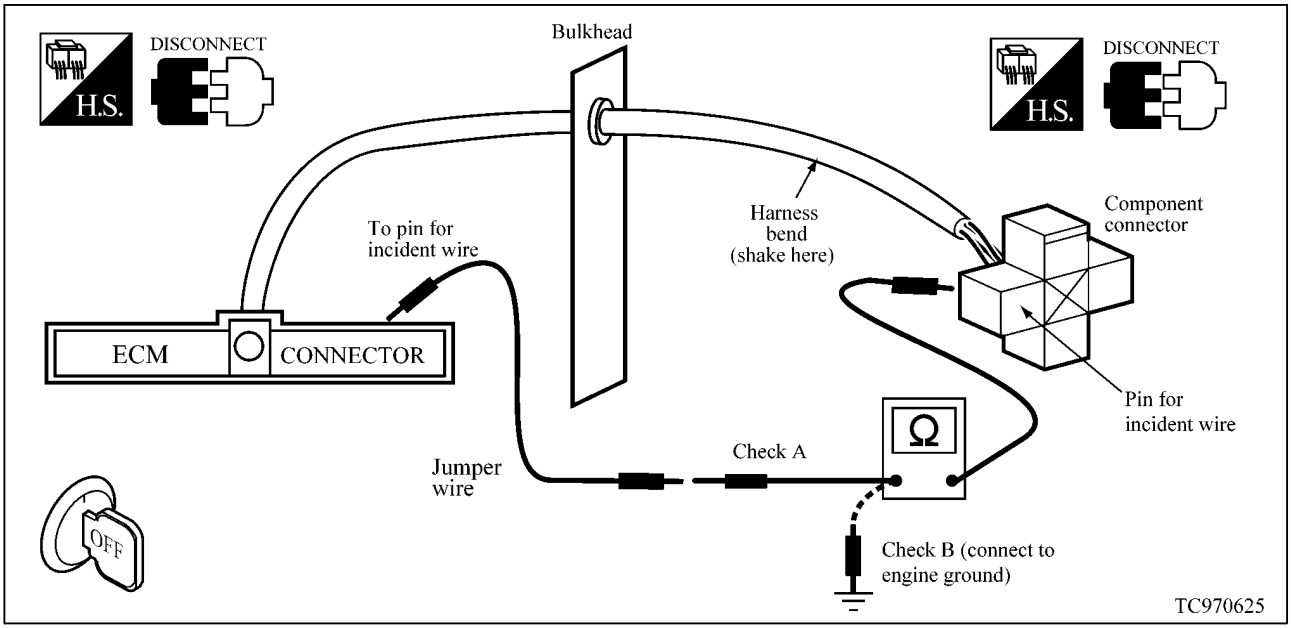

Figure 2

Continuity Check B (short to ground check — shielded wires only)

1. After completing Continuity Check A, move the ohmmeter lead from the component connector to an engine ground.
2. Again aggressively wiggle the EGI harness side to side and up and down while you monitor the ohmmeter reading.

   - The resistance value should indicate an open circuit with infinite resistance (over range). If other than infinite resistance is indicated, the wire's shield is shorted to the signal wire and you must replace the harness.

     NOTE: If the resistance value indicates an open circuit, be sure it is not caused by poor ohmmeter probe or jumper wire connections.

ENGINE DTC CHART #1

DTC	Circuit	Wire Color
P0100	Air Flow Meter to ECM;QA-	Shielded wire
“ “	Air Flow Meter to ECM;QA+	Shielded wire
“ “	Air Flow Meter to ECM;VB	R
P0105	Absolute Pressure Sensor to ECM;ABSOLUTE PRESS SEN	Shielded wire
“ “	Absolute Pressure Sensor to ECM;AVCC	R
“ “	Absolute Pressure Sensor to ECM;GND-A	B, not shielded
P0110	Intake Air Temp. Sensor to ECM;GND-A	B
“ “	Intake Air Temp. Sensor to ECM;TAMB	SB
P0115	Coolant Temp. Sensor to ECM;GND-A	B
“ “	Coolant Temp. Sensor to ECM;TW	Y
P0120	Throttle Position Sensor ECM;AVCC	R
“ “	Throttle Position Sensor ECM;GND-A	B
“ “	Throttle Position Sensor ECM;TV01	Shielded wire
P0125	Coolant Temp. Sensor to ECM;GND-A	B
“ “	Coolant Temp. Sensor to ECM;TW	Y
P0130	02 Sensor Front-Bank 1 to ECM;02SFR	Shielded wire
P0131	02 Sensor Front-Bank 1 to ECM;02SFR	Shielded wire
P0134	02 Sensor Front-Bank 1 to ECM;02SFR	Shielded wire
P0135	02 Sensor Front-Bank 1 to ECM;02HFR	L/Y
“ “	02 Sensor Front-Bank 1 to IGN Fuse	R/B
P0136	(1995-96MY only) Engine Ground to ECM;02H-	B
“ “	(1997MY only) Engine Ground F18, F19 to F105	B
P0138	99CAL 02 Sensor Rear B1 to ECM	Shielded wire
P0139	99CAL 02 Sensor Rear B1 to ECM	Shielded wire
P0141	99CAL 02 Sensor Rear B1 to ECM	R
“ “	99CAL Fuse 31 B+ to 02 Sensor Rear B1	R/B
P0150	02 Sensor Front-Bank 2 to ECM;02SFL	Shielded wire
P0151	02 Sensor Front-Bank 2 to ECM;02SFR	Shielded wire
P0154	02 Sensor Front-Bank 2 to ECM;02SFR	Shielded wire
P0155	02 Sensor Front-Bank 2 to ECM;02HFL	L
“ “	02 Sensor Front-Bank 2 to IGN Fuse	R/B
P0158	99CAL 02 Sensor Rear B2 to ECM	Shielded wire
P0159	99CAL 02 Sensor Rear B2 to ECM	Shielded wire
P0161	99CAL 02 Sensor Rear B2 to ECM	R
“ “	99CAL Fuse 31 B+ to 02 Sensor Rear B2	R/B
P0301	Injector No. 1 to ECM;INJ#1	R/B
P0302	Injector No. 2 to ECM;INJ#2	R/G
P0303	Injector No. 3 to ECM;INJ#3	R/Y
P0304	Injector No. 4 to ECM;INJ#4	B/OR
P0305	Injector No. 5 to ECM;INJ#5	L/W
P0306	Injector No. 6 to ECM;INJ#6	PU/R

ENGINE DTC CHART #2

DTC	Circuit	Wire Color
P0325	Knock Sensor to ECM;KNK	Shielded wire
P0335	Crank Position Sensor to ECM;POS	Shielded wire
" "	Crank Position Sensor to ECM;VB	R
" "	Crank Position Sensor to Engine Ground	Shielded wire
P0340	Camshaft Position Sensor (Phase) to ECM;PHASE	Shielded wire
" "	Camshaft Position Sensor (Phase) to Engine Ground	Shielded wire
P0443	96-7MY Purge Control Solenoid Valve to ECM	L/Y
" "	96-7MY Fuse B+ to Purge Control Solenoid Valve	R/Y
" "	98MY Purge Volume Control Valve to ECM;EVP#1	Y
" "	98MY Purge Volume Control Valve to ECM;EVP#2	G
" "	98MY Purge Volume Control Valve to ECM;EVP#3	G/B
" "	98MY Purge Volume Control Valve to ECM;EVP#4	L/R
" "	98MY Purge Volume Control Valve to ECM;EVP#5	R(2 wires)
" "	99MY Purge Volume Control Solenoid Valve to ECM	R
" "	99MY Fuse B+ to Purge Volume Control Solenoid Valve	Y
" "	99MY ECCS Relay to ECM VB terminals	R
P0500	Speed Sensor to Speedometer (2-wires)	LG/B BR/W
P0505	IACV-AAC Valve to ECM;VB	R
" "	IACV-AAC Valve to ECM-ISC#1	PU/G
" "	IACV-AAC Valve to ECM-ISC#2	GY/G
" "	IACV-AAC Valve to ECM-ISC#3	Y
" "	IACV-AAC Valve to ECM-ISC#4	GY/L
P0510	Closed Throttle Position Switch to ECM;IDLE	GY/L
" "	Closed Throttle Position Switch to IGN Fuse	G
P1105	MAP/Baro Switch Solenoid Valve to ECM;SOL	OR/Y
" "	MAP/Baro Switch Solenoid Valve to IGN Fuse	R/Y
P1130	99CAL Swirl Control S/V to ECM	OR/Y
" "	99CAL Fuse 17 B+ to Swirl Control S/V	R/Y
P1148	02 Sensor Front B1 to ECM	Shielded wire
P1165	99CAL Swirl Control Vacuum Check Switch to ECM	PU
P1168	02 Sensor Front B2 to ECM	Shielded wire
P1320	Engine Ground to ECM;GND-1	B
" "	IGN Coil No.1 to ECM;IGN#1	Y/R
" "	IGN Coil No.2 to ECM;IGN#2	G/R
" "	IGN Coil No.3 to ECM;IGN#3	L/R
" "	IGN Coil No.4 to ECM;IGN#4	G/Y
" "	IGN Coil No.5 to ECM;IGN#5	PU/W
" "	IGN Coil No.6 to ECM;IGN#6	GY/R

ENGINE DTC CHART #3

DTC	Circuit	Wire Color
P1335	Crank Position Sensor to ECM;REF	Shielded wire
“ “	Crank Position Sensor to ECM:REF	Shielded wire
P1336	Crank Position Sensor to ECM;POS	Shielded wire
“ “	Crank Position Sensor to Engine Ground	Shielded wire
P1400	EGRC Solenoid Valve to IGN Fuse	R/Y
“ “	EGRC Solenoid Valve to IGN Fuse	L/B
P1401	EGR Temp. Sensor to ECM;EGRTS	L/OR
“ “	EGR Temp. Sensor to ECM;GND-A	B
P1445	Evap Canister Purge Volume Control Valve to ECM;EVP#1	Y
“ “	Evap Canister Purge Volume Control Valve to ECM;EVP#2	G
“ “	Evap Canister Purge Volume Control Valve to ECM;EVP#3	G/B
“ “	Evap Canister Purge Volume Control Valve to ECM;EVP#4	L/R
“ “	Evap Canister Purge Volume Control Valve to ECM;VB (2-wires)	R(2 wires)
P1492	98MY Purge Control Solenoid Valve to ECM	L/Y
“ “	98MY Fuse B+ to Purge Control Solenoid Valve	R/Y
P1900	Radiator Fan Relay Coil to ECM;RFRH	LG/B
“ “	Radiator Fan Relay Coil to ECM;RFRL	LG/R

TRANSMISSION DTC CHART #4

DTC	Circuit	Wire Color
P0705	Inhibitor Switch to ATCU;1 SW	PU/W
“ “	Inhibitor Switch to ATCU;2 SW	P/B
“ “	Inhibitor Switch to ATCU;D SW	Y/L
“ “	Inhibitor Switch to ATCU;NSW	R/G
“ “	Inhibitor Switch to ATCU;PSW	R/G
“ “	Inhibitor Switch to ATCU;R SW	G/W
“ “	Inhibitor Switch to IGN Fuse	G
P0710	A/T Fluid Temp Sensor to ECM GND-A	B
“ “	A/T Fluid Temp Sensor to ATCU;OIL TEMP SENS	G
P0720	A/T Revolution Sensor to ATCU;SPEED SEN1	Shielded wire
“ “	A/T Revolution Sensor to ECM;GND-A	Shielded wire
P0740	TCC Solenoid Valve to ATCU;LU DUTY SOL	G/B
P0745	Line Pressure Solenoid Valve to ATCU;PL DUTY SOL(DR)	G/R
P0745	Drop Resistor to ATCU;PL DUTY SOL(DR)	W/B
P0750	Shift Solenoid Valve to ATCU;SHIFT SOL A	R/Y
P0755	Shift Solenoid Valve to ATCU;SHIFT SOL B	LG/B
P1705	Throttle Position Switch to ATCU;WIDE OPEN SW	W/R
P1760	Overrun Clutch Solenoid Valve to ATCU; OVR/C SOL	BR/Y

SYMPTOM CHART #5

Symptom	Circuit	Wire Color
Starter Motor Inoperative	Inhibitor Switch to Engine Ground	B
Engine Stall/No Start	ECCS Relay to ECM;VB	R
“ “	Engine Ground to ECM;GND-C	B
“ “	Fuse B+ to ECM;VB	W
“ “	Ignition Switch to ECM;IG+	R
A/C Inoperative	A/C Relay to ECM;ACRLY	BR
A/C Inoperative	A/C Triple-Pressure Switch to ECM;ARCON	G/B
A/C On/Off Idle Adjust Inoperative	IACV-FICD Solenoid to ECM;PWST	G
A/C On/Off Idle Adjust Inoperative	IACV-FICD Solenoid to IGN Fuse	R/Y
A/C On/Off Idle Adjust Inoperative	IACV-FICD Solenoid Valve to Engine Ground (Manual A/C System)	B
Engine Mount Inoperative	Front Engine Mounting to BATT Fuse	W
Engine Mount Inoperative	Front Engine Mounting to ECM;EMNT1	W/L
Engine Mount Inoperative	Front Engine Mounting to ECM;EMNT2	W/R
Oil Pressure Warning Light Inop.	Oil Pressure Switch to Gauge	BR/Y

Repair Procedure (color-coded wires only)

Order the harness service kit (P/N 24299-0L725) from the Parts Information table on page 14.

1. Remove and discard all four clips (A through D) from the EGI harness (see Figure 3-1). You can cut clips C and D. Pull, but DO NOT CUT clips A and B from their brackets.

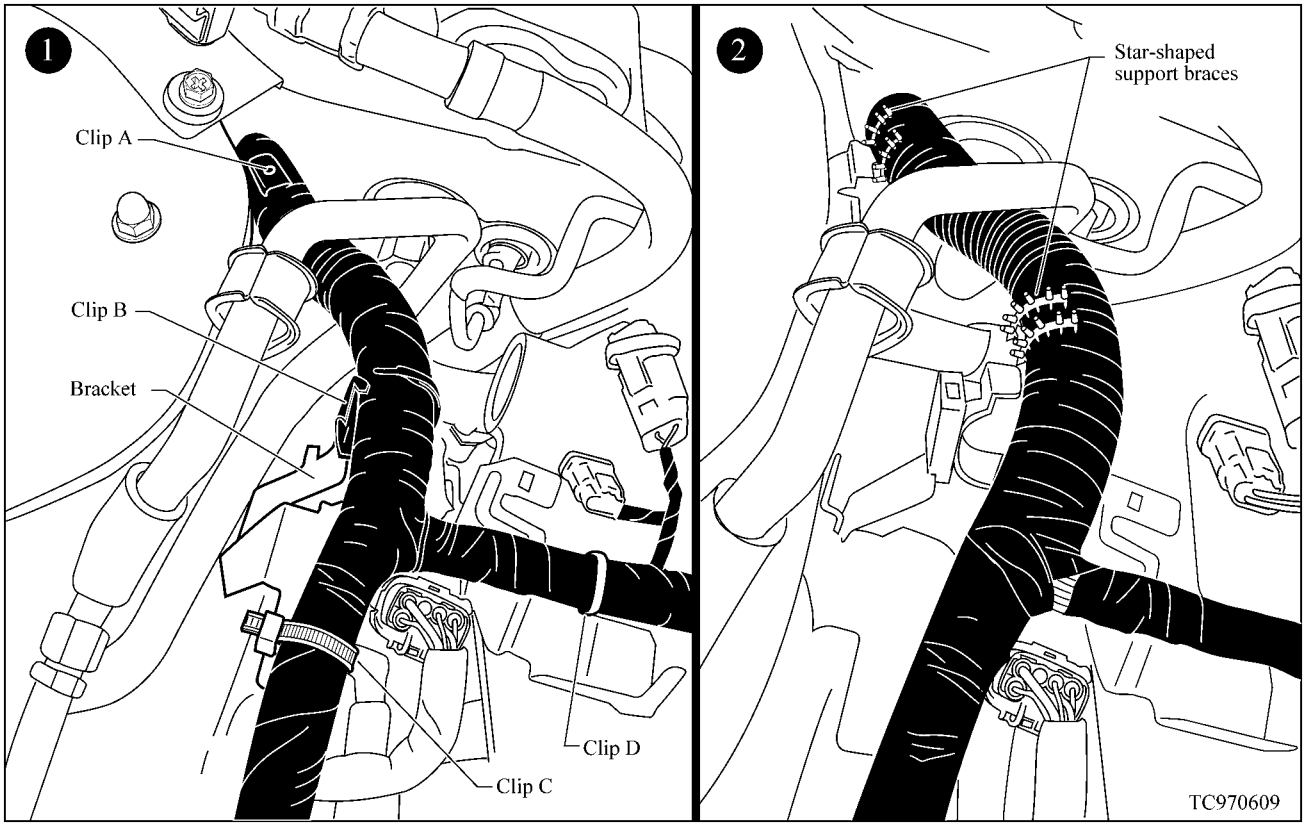

Figure 3

2. Cut away the tape and remove the star-shaped support braces from the harness (see Figure 3-2). Discard these braces.
3. Remove the bracket for clip A from the strut tower (see Figure 4).

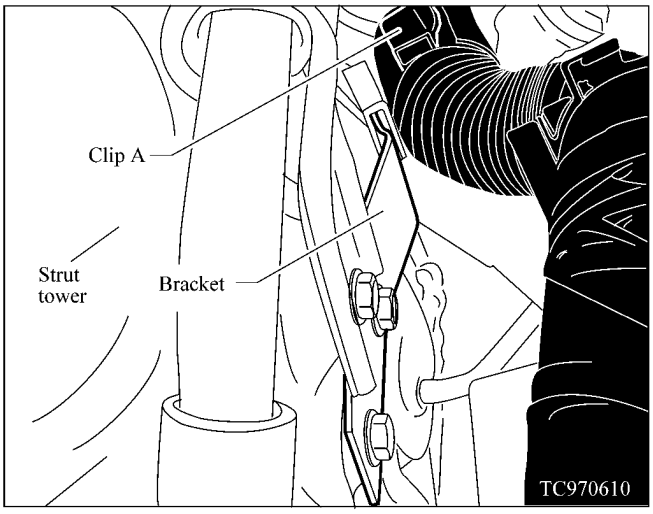

Figure 4

CAUTION: Be extremely careful not to cut into any wires within the harness.

4. Cut and unwrap the tape from around the corrugated tube surrounding the harness (see Figure 5). Remove and discard the corrugated tube.

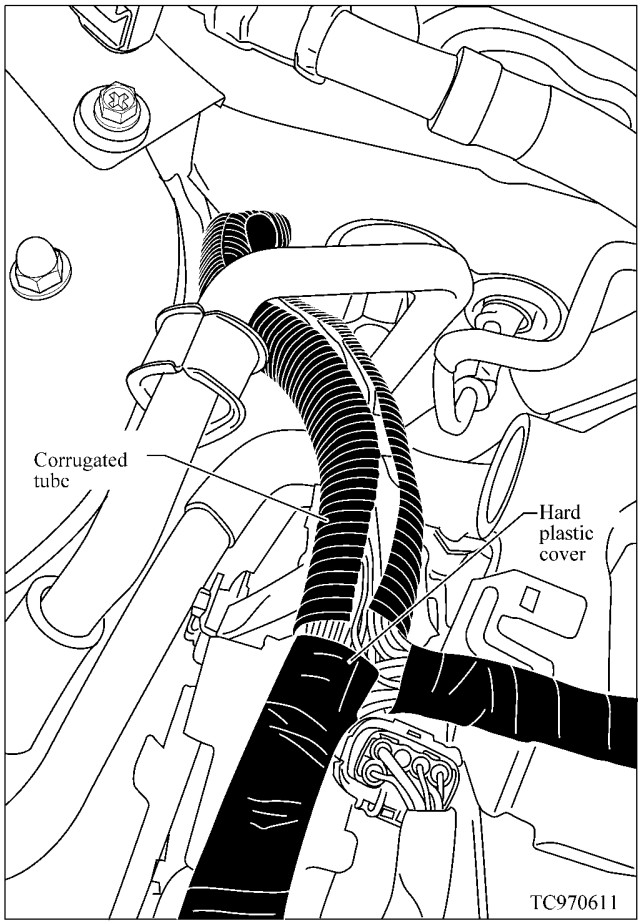

Figure 5

5. If a wire is accidentally cut, you must repair it (perform steps 10-12 on pages 11-12).
6. Unwrap the tape from around the harness that was covered by the corrugated tube.

7. Push the zipper tube (near the bulkhead) down at least 2 inches to gain access to the wires (see Figure 6).

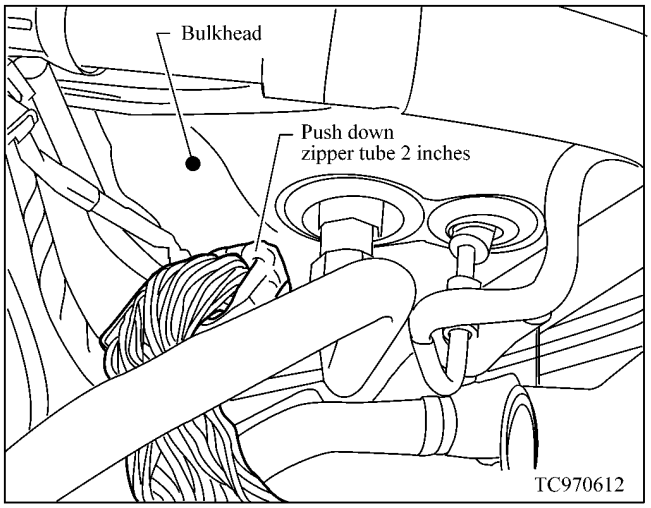

Figure 6

8. Remove the tape to expose the hard plastic cover at the harness intersection (see Figure 5).
9. Visually inspect each wire for breakage within the harness bend that is the color identified in the Diagnosis Procedure on page 2. Typically it is a wire that is near the outside which has been stressed against a larger wire. It may be broken inside the insulation.

   A. If the broken wire cannot be identified, then wiggle each wire of this color in the harness bend while checking the continuity of the identified incident circuit.

10. Cut the broken wire 1-1/2 inches rearward from the hard plastic cover at the intersection of the harness (see Figure 7).

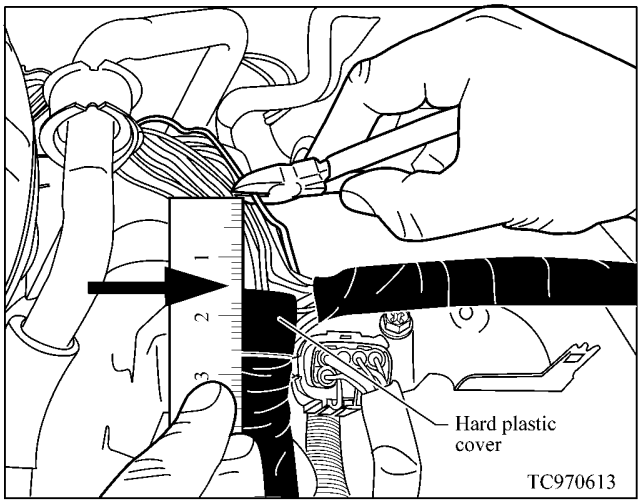

Figure 7

11. Cut the broken wire 1-1/2 inches up from the top of the zipper tube (see Figure 8).

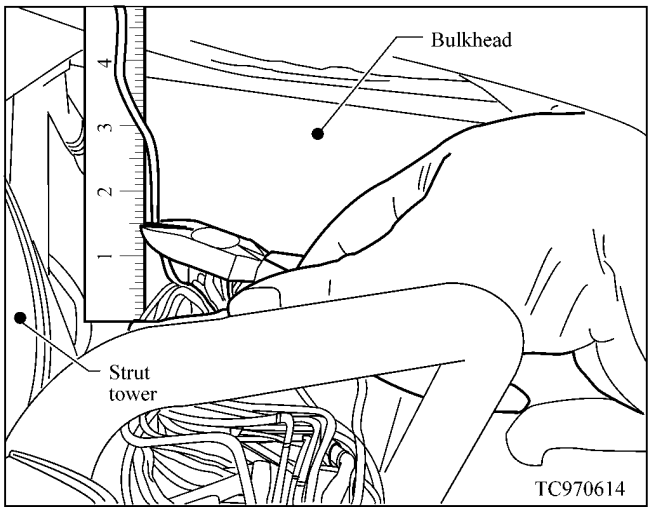

Figure 8

12. Replace the broken wire with an equivalent gauge wire. Splice the bulkhead side of the wire first. Then lay the wire along the harness up to the harness intersection to determine the correct length for the replacement wire (see Figure 9).

    IMPORTANT: Make sure the replacement wire finished length is 1 inch longer than the section you cut out of the harness. If it is too short or too long, it may stress and break again after installation.

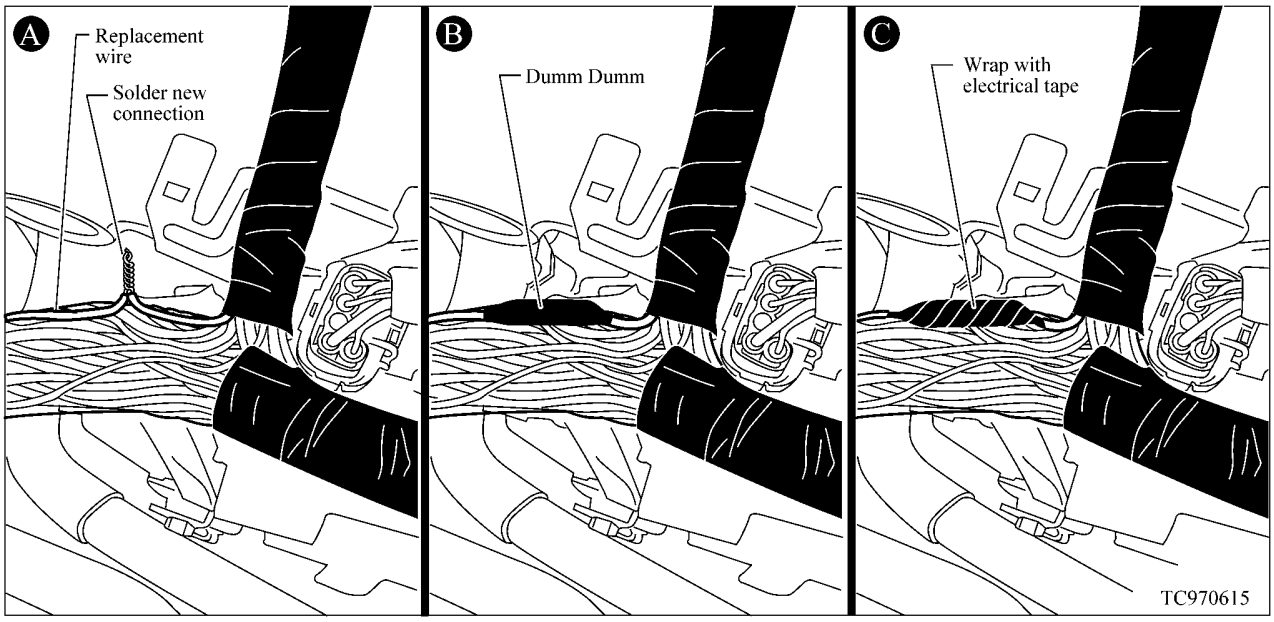

Figure 9

A. Solder the bare wire connection.

B. Wrap the solder connection with mechanic's Dumm Dumm to make it watertight.
C. Wrap with electrical tape.

NOTE: Perform this procedure to both ends of the replacement wire. Only the top splice is illustrated in Figure 9.

13. After completing the wire repair, tape the exposed harness wire bundle at two intermediate points with electrical tape (see Figure 10).

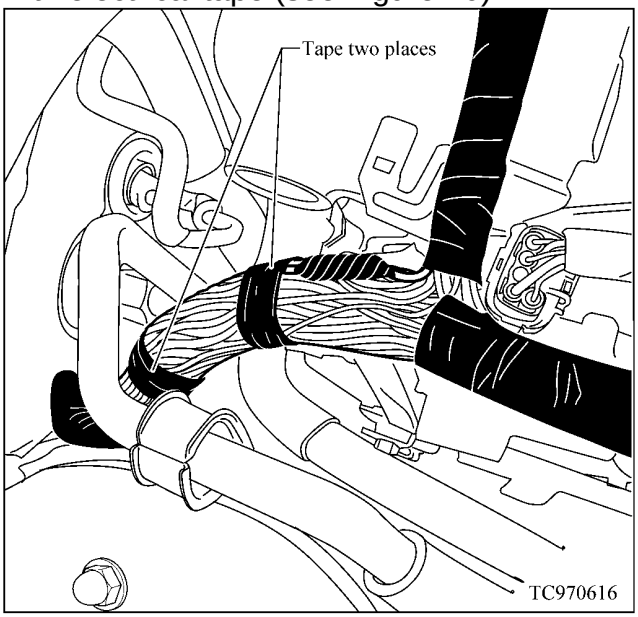

Figure 10

14. Install the countermeasure corrugated tube around the wire bundle (see Figure 11). Tape the ends of the corrugated tube securely to the harness at either side of the bend with electrical tape.

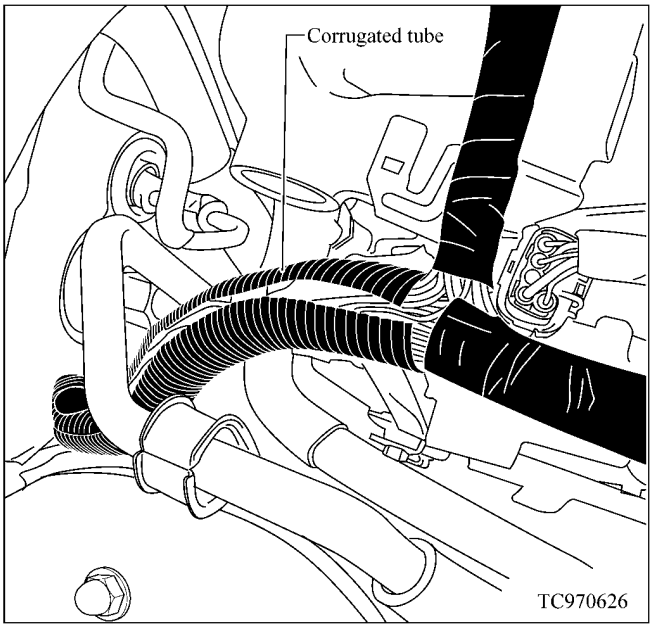

Figure 11

15. Re-tape the hard plastic cover at the harness intersection.
16. Tape loosely a few turns around the length of the corrugated tube prior to installation of the clips.
17. Install the bracket for clip A back on to the strut tower (see Figure 3, page 9).
18. Install countermeasure clip A and clip B to their respective metal brackets.
19. Attach clips A and B around the harness.
20. Securely tape the clips and the harness.
21. Install countermeasure clips C and D to the engine, then secure them to the harness (see Figure 3, page 9).

PARTS INFORMATION

DESCRIPTION	PART NUMBER	QUANTITY
Harness Service Kit - containing:	24299-0L725	1
Harness protector (corrugated tube)		1
Clip - A		1
Clip - B		1
Clip - C		1
Clip - D		1

NOTE: You can order the kit only; not individual components.

CLAIMS INFORMATION

When applicable, standard claims coding applies.