CHRYSLER

January 2010

Dealer Service Instructions for:

Safety Recall J28
TIPM - Windshield Wiper Relays

Models

2007 (KA) Dodge Nitro

*NOTE: This recall applies only to the above vehicles built through June 29, 2007 **(MDH 062909)**.*

IMPORTANT: Some of the involved vehicles may be in dealer used vehicle inventory. Dealers should complete this recall service on these vehicles before retail delivery. Dealers should also perform this recall on vehicles in for service. Involved vehicles can be determined by using the VIP inquiry process.

Subject

The windshield wipers on about 83,000 of the above vehicles may become inoperative under certain operating conditions. This can impair the driver's vision and cause a cause a crash without warning.

Repair

The Totally Integrated Power Module (TIPM) part number must be inspected. Vehicles found with a TIPM part number that ends in "AA" through "AL" must have two external wiper relays installed and the TIPM software must be reprogrammed (flashed).

Parts Information

Part Number	Description
CBL3J280AA	**Wiring Harness Overlay Package**

Each package contains the following components:

Quantity	Description
1	Harness, Wiring
1	Relays with bracket
1	Screw, Relay Attaching
1	Splice Band Kit

Each dealer to whom vehicles in the recall were assigned will receive enough Wiring Harness Overlay Packages to service about 20% of those vehicles.

Special Tools

The following special tools are required to perform this repair:

➢ NPN	wiTECH VCI Pod Kit
➢ NPN	Laptop Computer
➢ NPN	wiTECH Software
➢ CH9401*	StarSCAN Tool
➢ CH9404D*	StarSCAN Vehicle Cable
➢ CH9409*	StarSCAN Documentation Kit
➢ CH9410*	StarSCAN Ethernet Cable 12 ft.
➢ CH9412*	StarSCAN Software Update Device Kit
➢ CH9801	StarMOBILE Tool
➢ CH9804	StarMOBILE Vehicle Cable
➢ 10042**	Wire splice crimp tool

* Part of CH9400 kit.

** **NOTE: One wire splice crimp tool was mailed to each Chrysler/Jeep/Dodge dealer free of charge in June, 2007. For warranty issues regarding the wire splice crimping tool sent in June, contact Wright Tool Company at 1-800-783-9826. Additional wire splice crimp tools can be purchased, at dealer expense, by calling Miller Special Tools at 1-800-801-5420 during regular business hours. Contact Miller Special Tools regarding warranty issues on any purchased tools.**

Service Procedure

A. Inspect TIPM Part Number Label

1. Open the hood.
2. Inspect the TIPM part number tag located on the side of the TIPM (Figure 1):

   - If the last two digits of the part number **ends with "AM" or "AN**," the TIPM does not require repair. Close the hood and return the vehicle to the customer. No further action is required.
   - If the last two digits of the part number **ends with "AA" through"AL**," continue with **Section B. Install TIPM Wiper Relay and Overlay Wiring Harness.**
   - If the part number on the TIPM part number tag is missing or not readable, connect a wiTECH, StarSCAN, or StarMOBILE scan tool to the vehicle and read the TIPM software part number. Use the chart below to determine if Wiper Relay and Overlay Wiring Harness installation is required.

NOTE: The TIPM software part number is different than the module part number.

TIPM Software Part Number	Repair Action Required
04692173AD	TIPM Wiper Relay and Overlay Wiring Harness installation is required
04692173AF	
04692173AG	
04692173AH	
04692173AI	
04692287AA	
04692287AB	
04692287AC	
04692173AJ	TIPM does not require repair. No further action is required
04692173AK	
04692173AL	

Service Procedure (Continued)

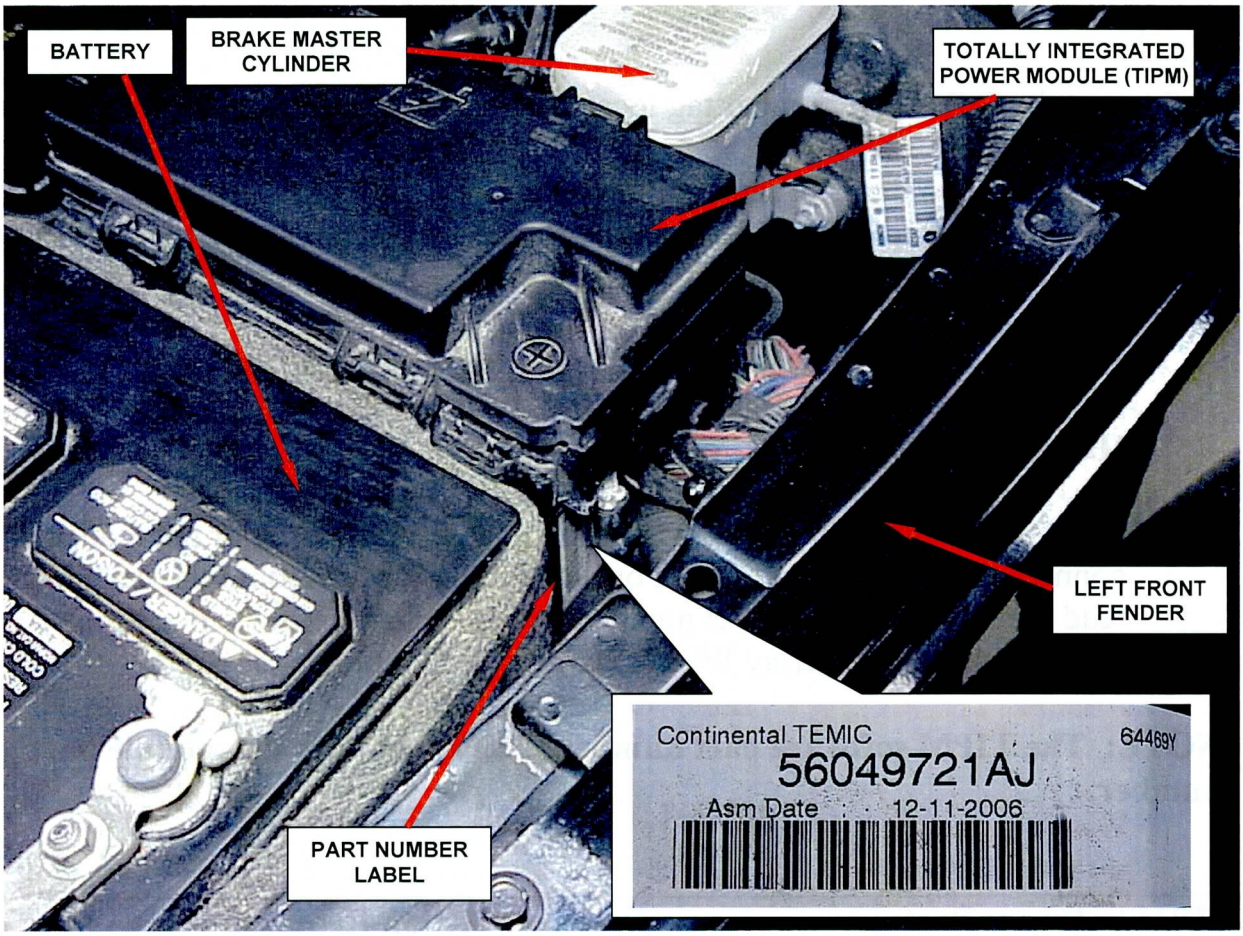

Figure 1 – Part Number Label Location

Service Procedure (Continued)

B. Install TIPM Wiper Relay and Overlay Wiring Harness

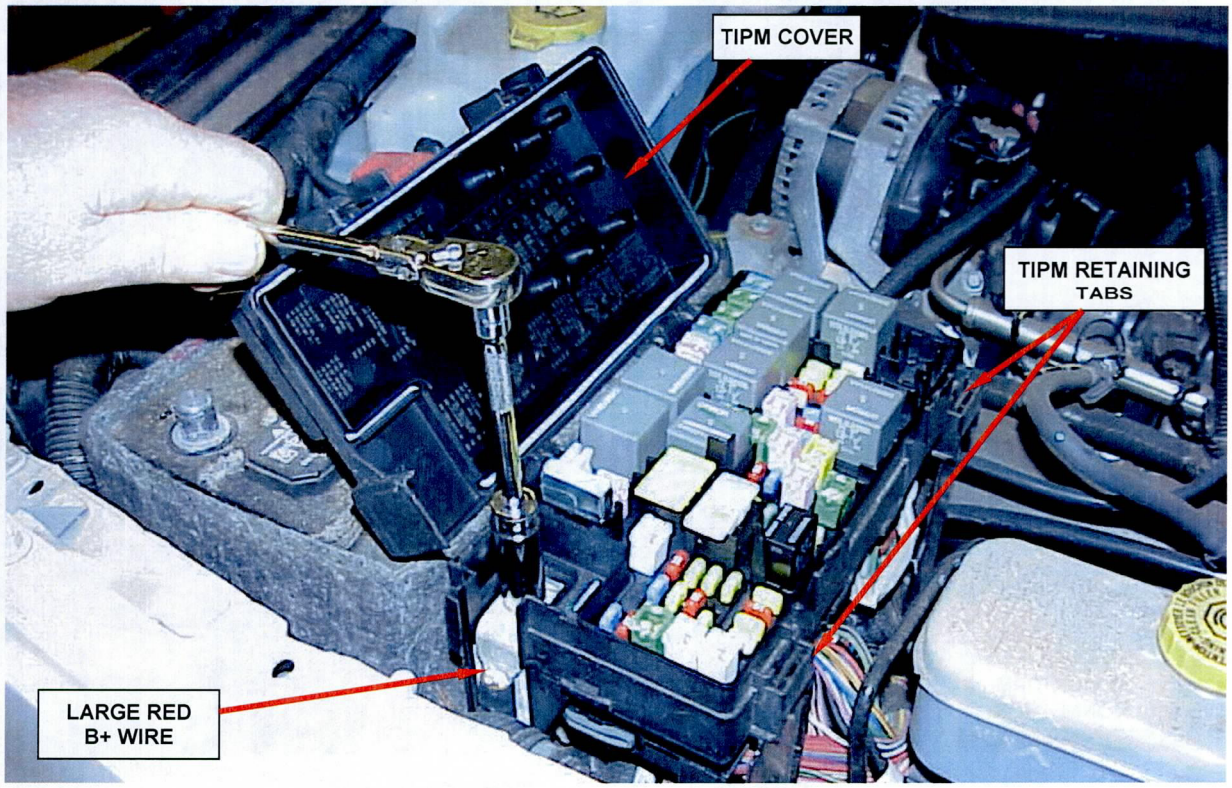

Figure 2 – TIPM Red B+ Wire

1. Disconnect the negative battery cable.

2. Open the Totally Integrated Power Module (TIPM) cover and disconnect the large red B+ wire from the TIPM (Figure 2).

3. Disconnect the TIPM assembly from its mounting bracket by compressing the four retaining tabs and pulling straight upward. This will allow access to the wiring connectors located on the bottom side of the TIPM (Figure 2 and 3).

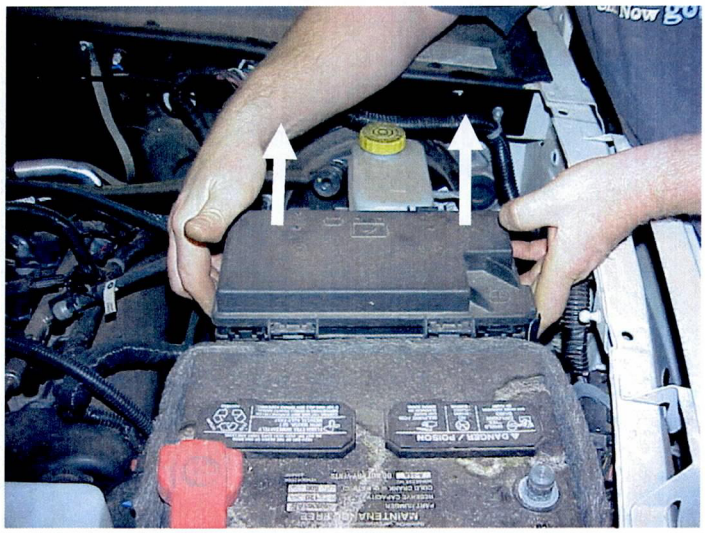

Figure 3 – Four TIPM Retaining Tabs

Service Procedure (Continued)

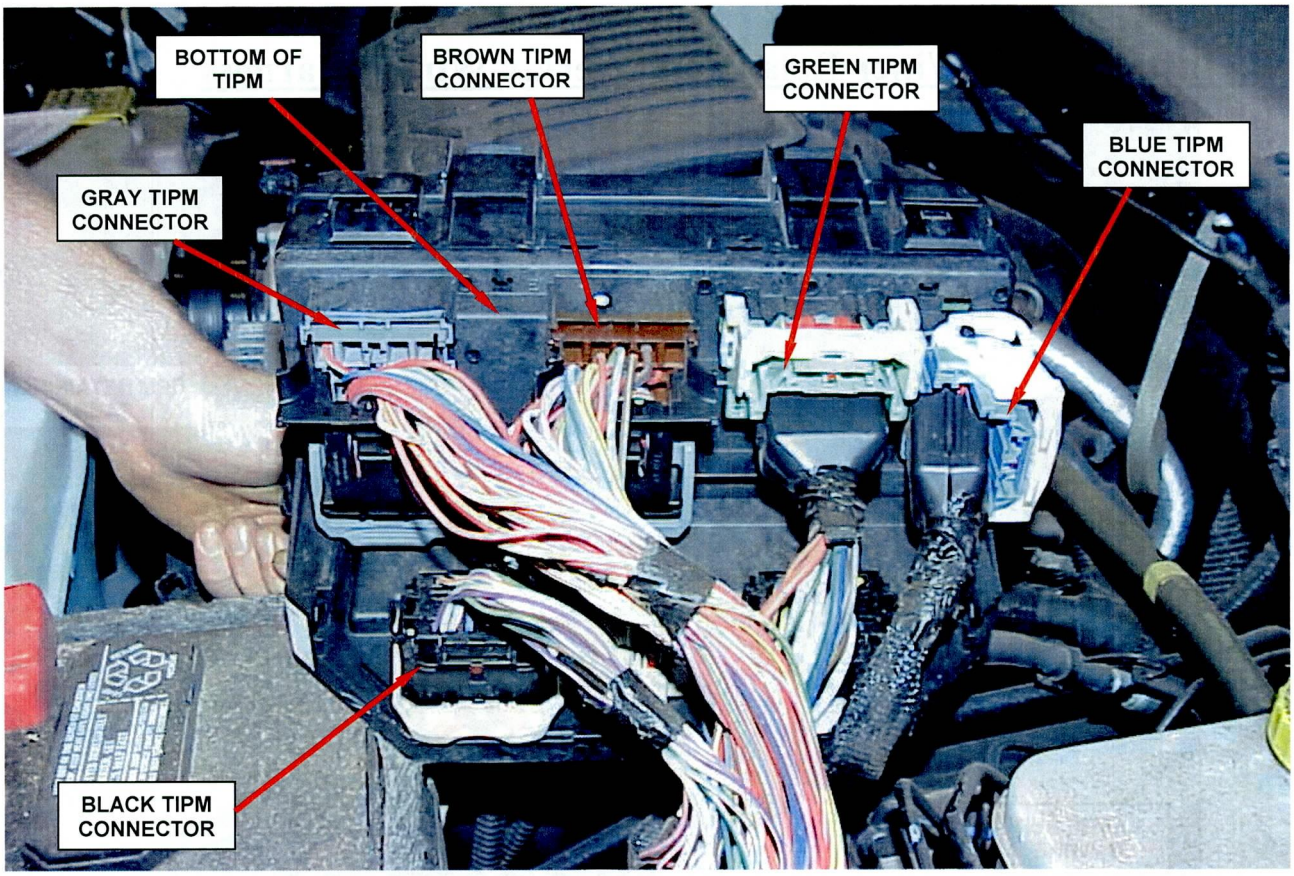

Figure 4 – Brown TIPM Connector

4. Connect the brown with white tracer wire and brown with orange tracer wire from the overlay wiring harness to the **brown TIPM connector** wiring harness using the following procedure:

   a. Disconnect the brown TIPM electrical connector from the TIPM by first pressing down the center lock tab, and at the same time lifting the gray lock handle and then pulling on the connector body (Figure 4).

   b. Remove the electrical tape from the brown connector wiring harness.

   c. Remove the black plastic cover from the backside of the brown connector (Figure 5).

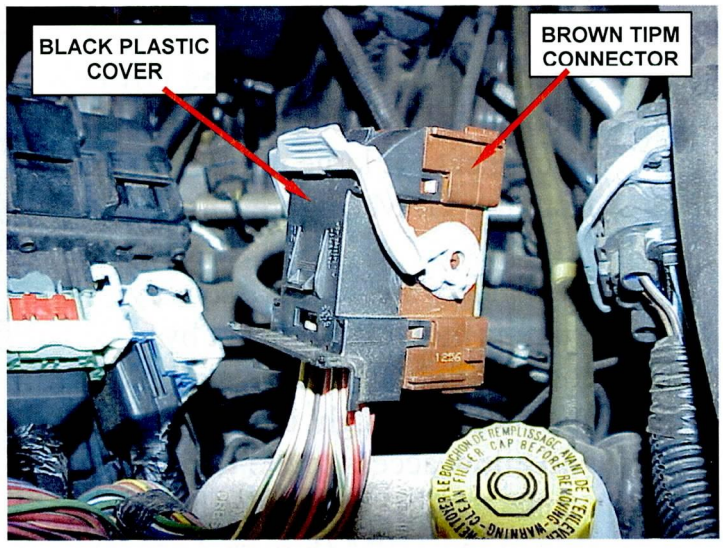

Figure 5 – Black Plastic Cover

Service Procedure (Continued)

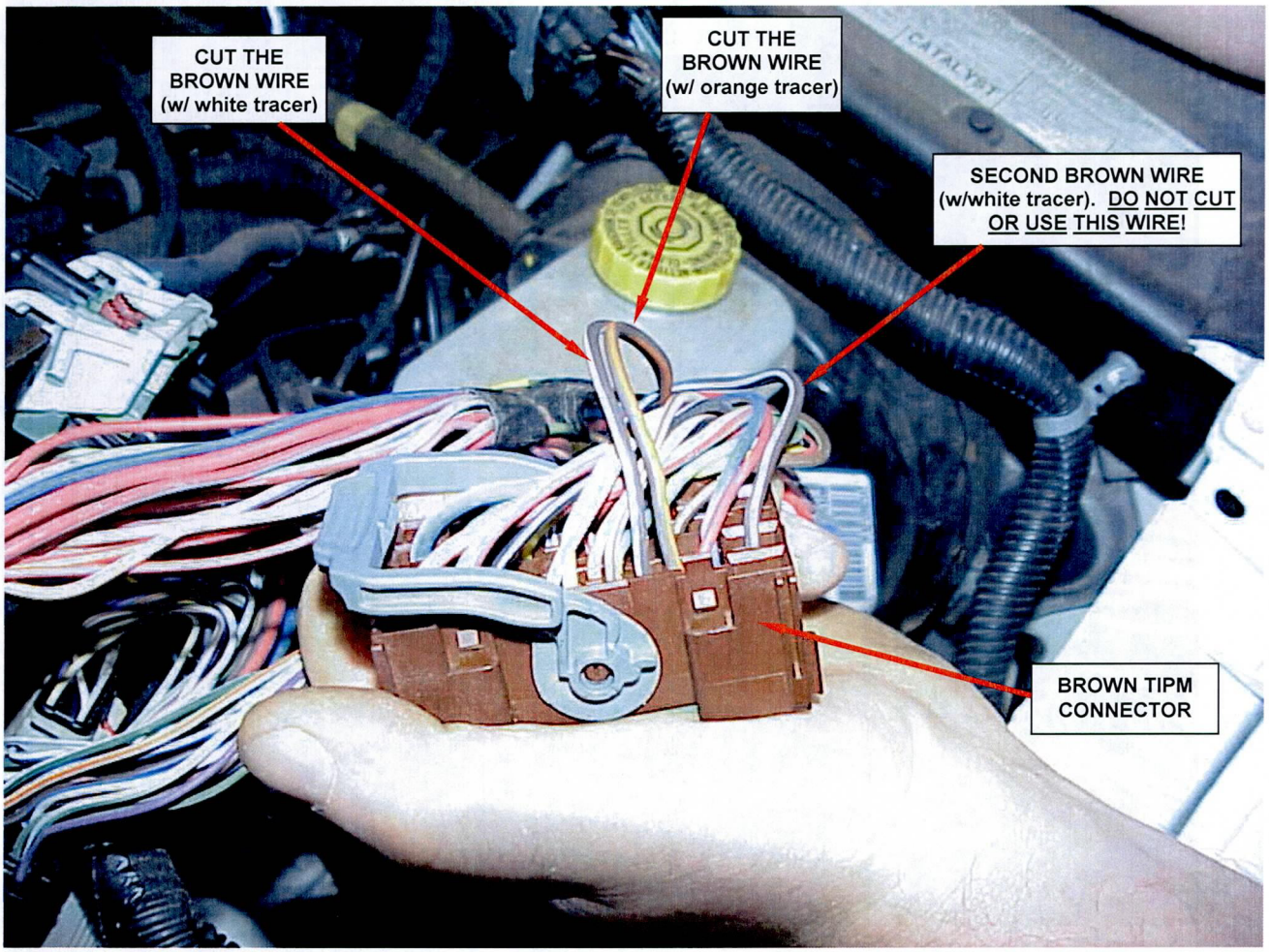

Figure 6 - Brown Wire (w/white tracer) & Brown Wire (w/orange tracer)

d. Locate the brown wire (with white tracer) and the brown wire (with orange tracer). These wires are located next to each other in the connector (Figure 6).

CAUTION: There are two brown wires (with white tracer) located in this connector. Be sure to find the brown (with white tracer) wire that is located next to the brown (with orange tracer) wire (Figure 6).

e. Cut the brown (with white tracer) wire and the brown (with orange tracer) wire approximately 2 inches down from the brown connector (Figure 6).

Service Procedure (Continued)

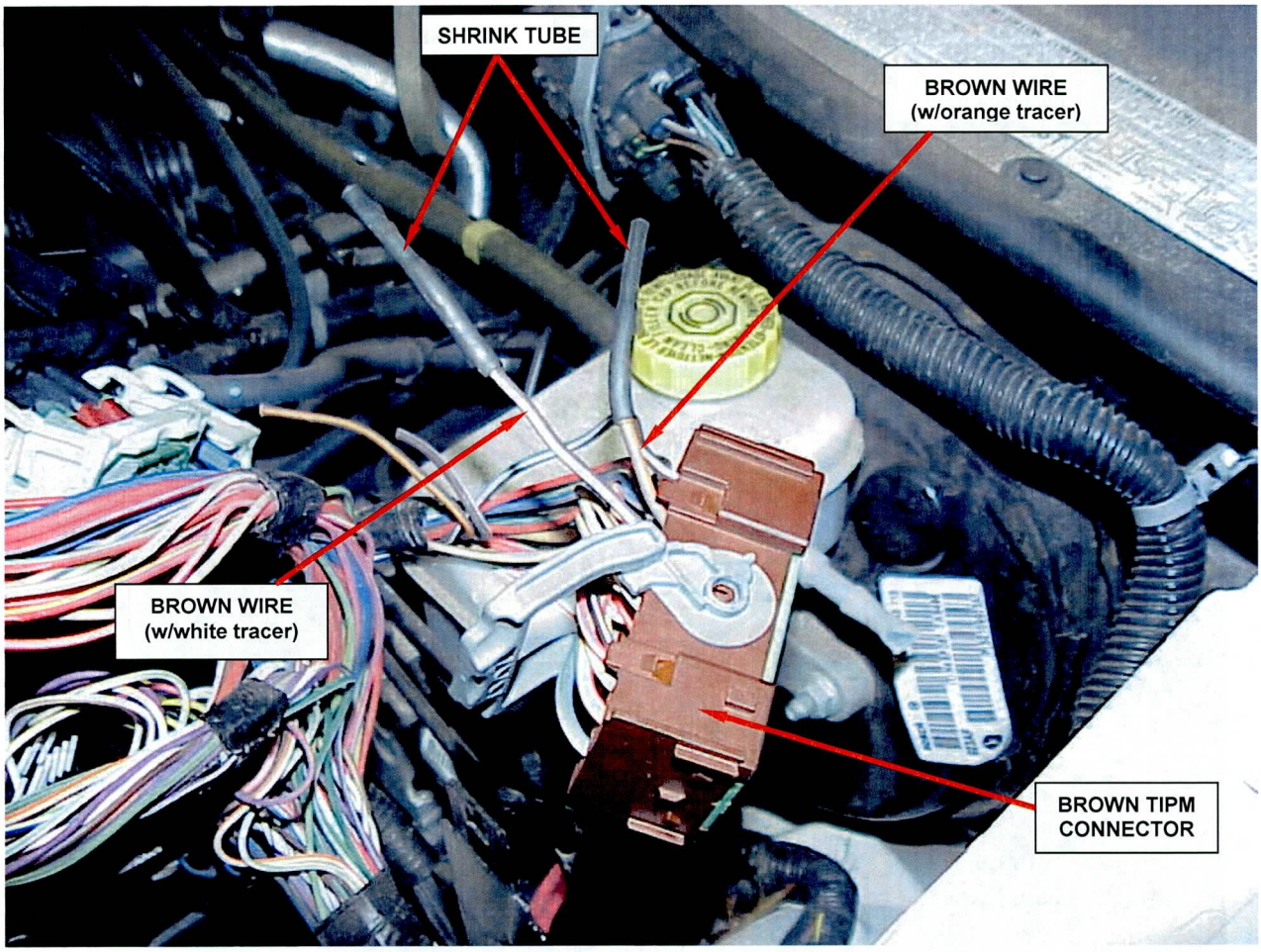

Figure 7 – Seal Wires

f. Place a piece of shrink tube over each of the wire ends (connector side) so that the wire is halfway into the shrink tube (Figure 7).

g. Using a heat gun, heat the shrink tube until it fits tight against the wire and glue comes out of the end of the shrink tube (Figure 7).

h. Install the black plastic cover onto the backside of the brown connector (Figure 5).

i. Using electrical tape, tape the two wires that were sealed with shrink tube to the brown connector wiring harness. These two wires from the brown connector will no longer be used.

Service Procedure (Continued)

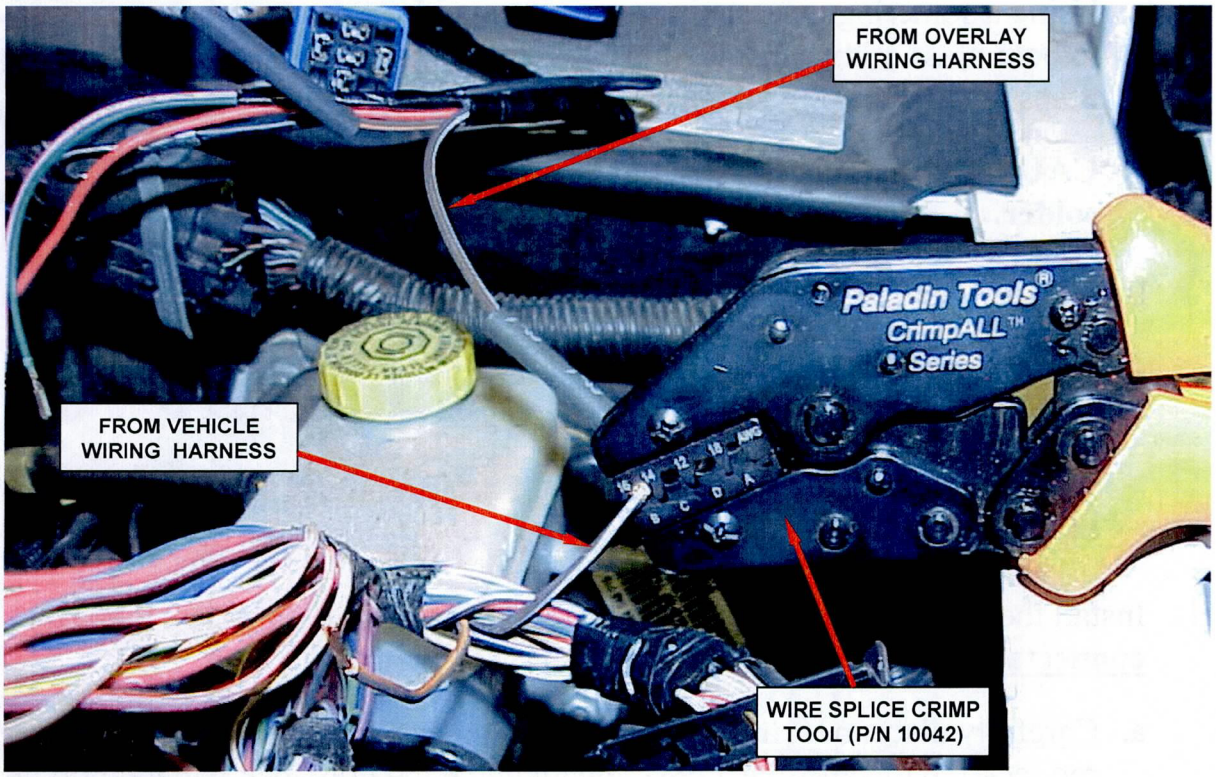

Figure 8 – Overlay Wiring Harness Splices

j. Remove approximately ½ inch of insulation from the end of the brown wire (with white tracer) and brown wire (with orange tracer) (wiring harness side) that were cut in Step 4e.

k. Remove the pre-stripped insulation from the overlay wiring harness brown wire (with white tracer) and brown wire (with orange tracer).

l. Slide one piece of heat shrink tube onto the brown (with white tracer) wire and one piece of heat shrink tube onto the brown (with orange tracer) wire.

m. Using wire splice crimp tool (P/N 10042) and a brass crimp, crimp the brown wire (with white tracer) from the vehicle wiring harness to the brown wire (with white tracer) from the overlay wiring harness (Figure 8).

n. Using wire splice crimp tool (P/N 10042) and a brass crimp, crimp the brown wire (with orange tracer) from the vehicle wiring harness to the brown wire (with orange tracer) from the overlay wiring harness (Figure 8).

Service Procedure (Continued)

o. Using a soldering gun, apply solder to both brass crimps installed in Steps 4m and 4n (Figure 9).

CAUTION: Use only rosin core solder.

p. Slide the heat shrink tube over the soldered brass crimp on each wire.

q. Using a heat gun, heat the shrink tube until it fits tight against the wire and glue comes out of the end of the shrink tube.

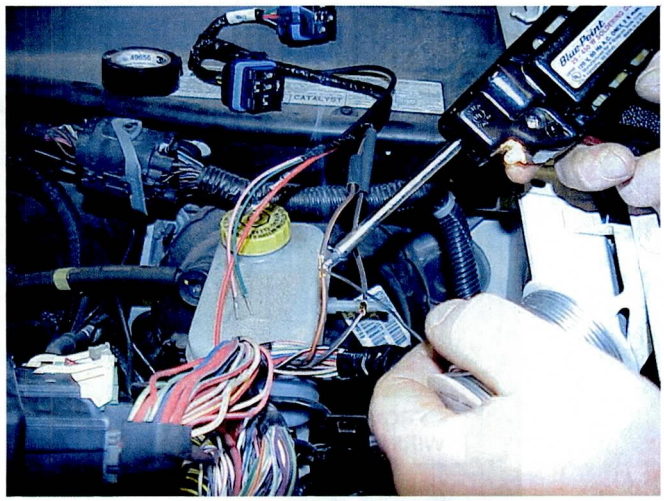

Figure 9 – Solder Brass Crimps

5. Install the red wire from the overlay wiring harness into the **green TIPM connector** using the following procedure:

a. Carefully disconnect the green TIPM connector from the TIPM by sliding the red lock tab towards the TIPM, then unlatch the gray lock bar and pull on the connector body (Figure 10).

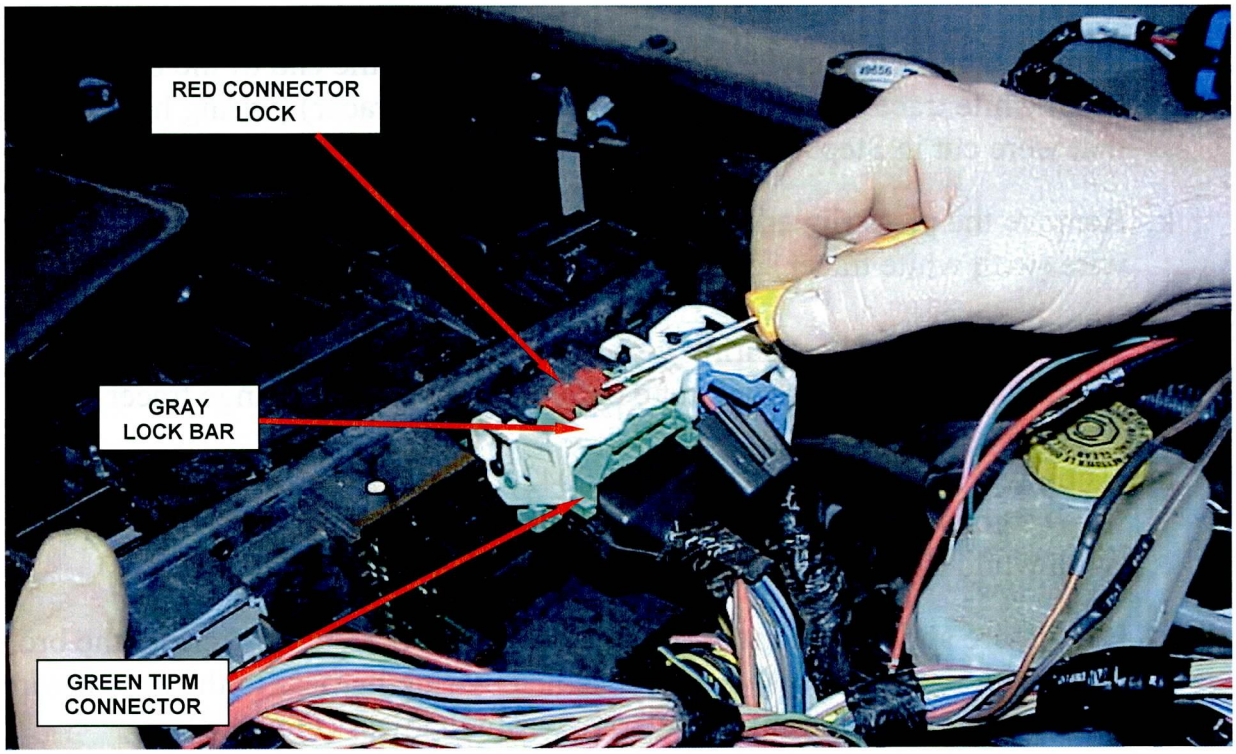

Figure 10 – Green TIPM Connector and Red Connector Lock

Service Procedure (Continued)

b. Remove the electrical tape from the vehicle wiring harness leading up to the green TIPM connector.

c. Remove the black plastic wire cover from the back of the green TIPM connector (Figure 11).

d. Pull out the red terminal lock, located in the green TIPM connector, approximately ¼ inch to disengage the terminal lock feature (Figure 11).

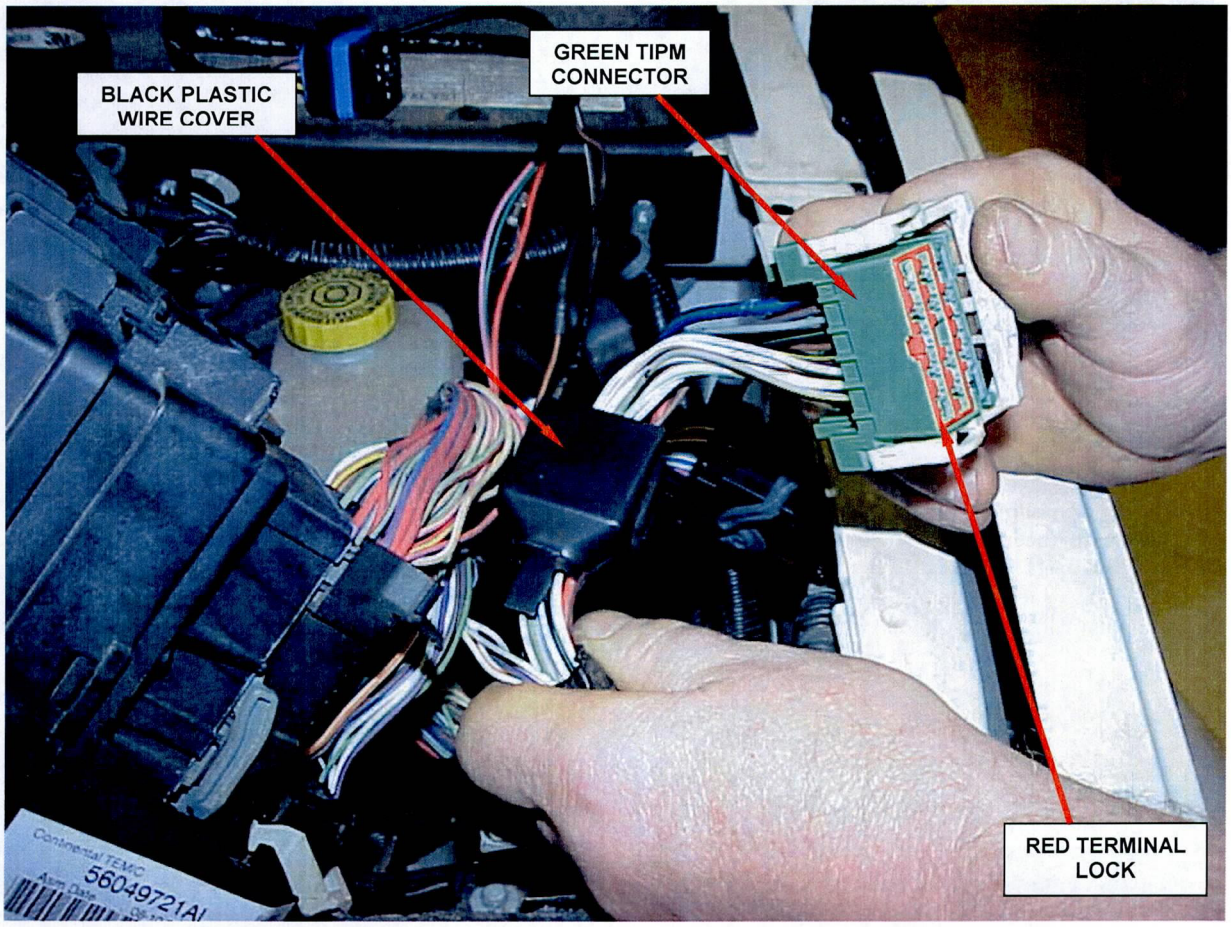

Figure 11 – Back Cover and Red Terminal Lock

Service Procedure (Continued)

e. Install the red wire terminal from the overlay wiring harness into cavity 26 of the green TIPM connector (Figure 12).

CAUTION: Do not force the terminal into the connector. It is keyed and will only install in one direction.

f. Snap the red connector lock back into the green TIPM connector (Figure 11).

g. Install the black plastic wire cover onto the back of the green TIPM connector and apply electrical tape to the harness as required.

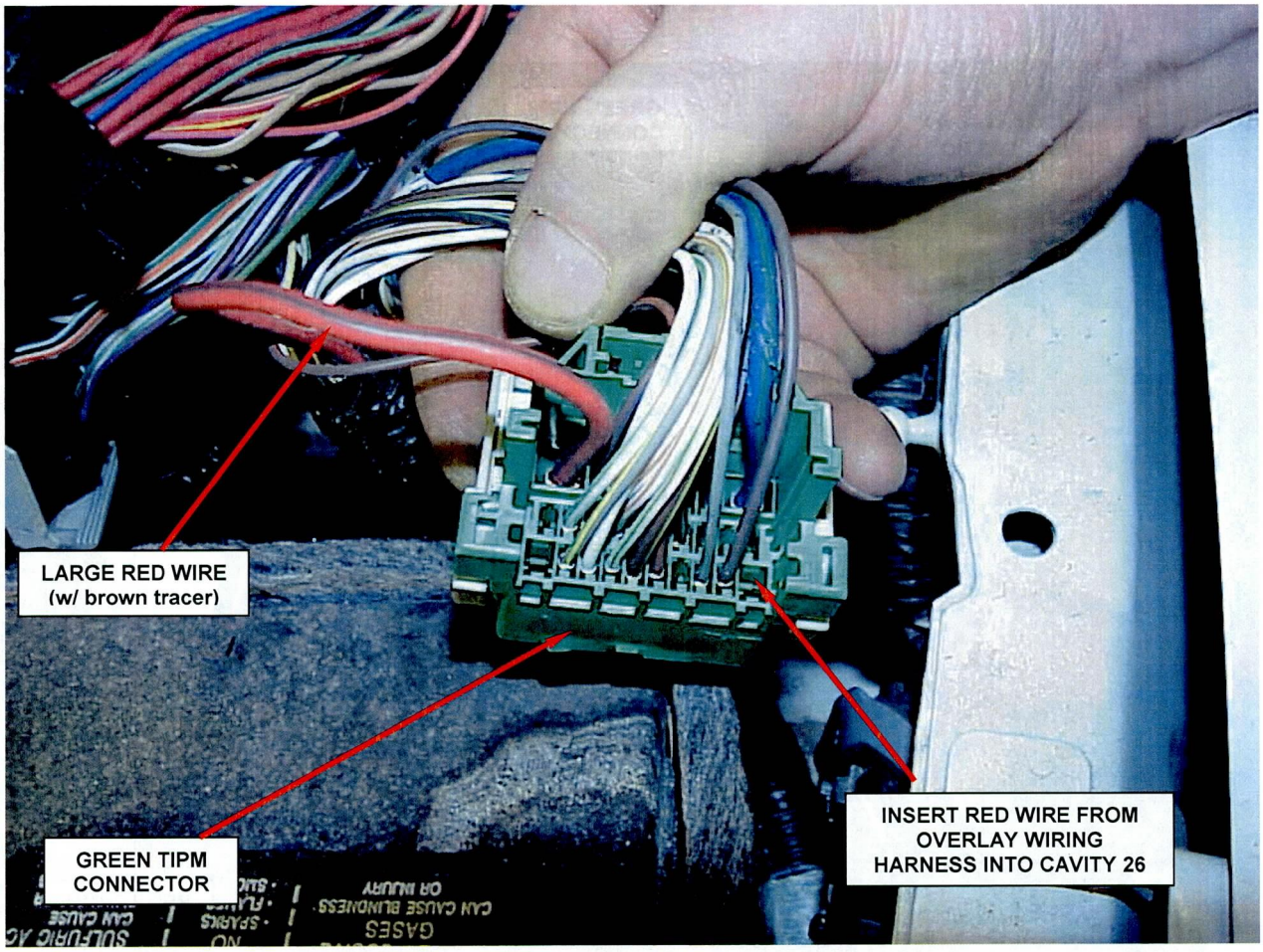

Figure 12 - Red Wire Terminal From Overlay Wiring Harness into Cavity 26

Service Procedure (Continued)

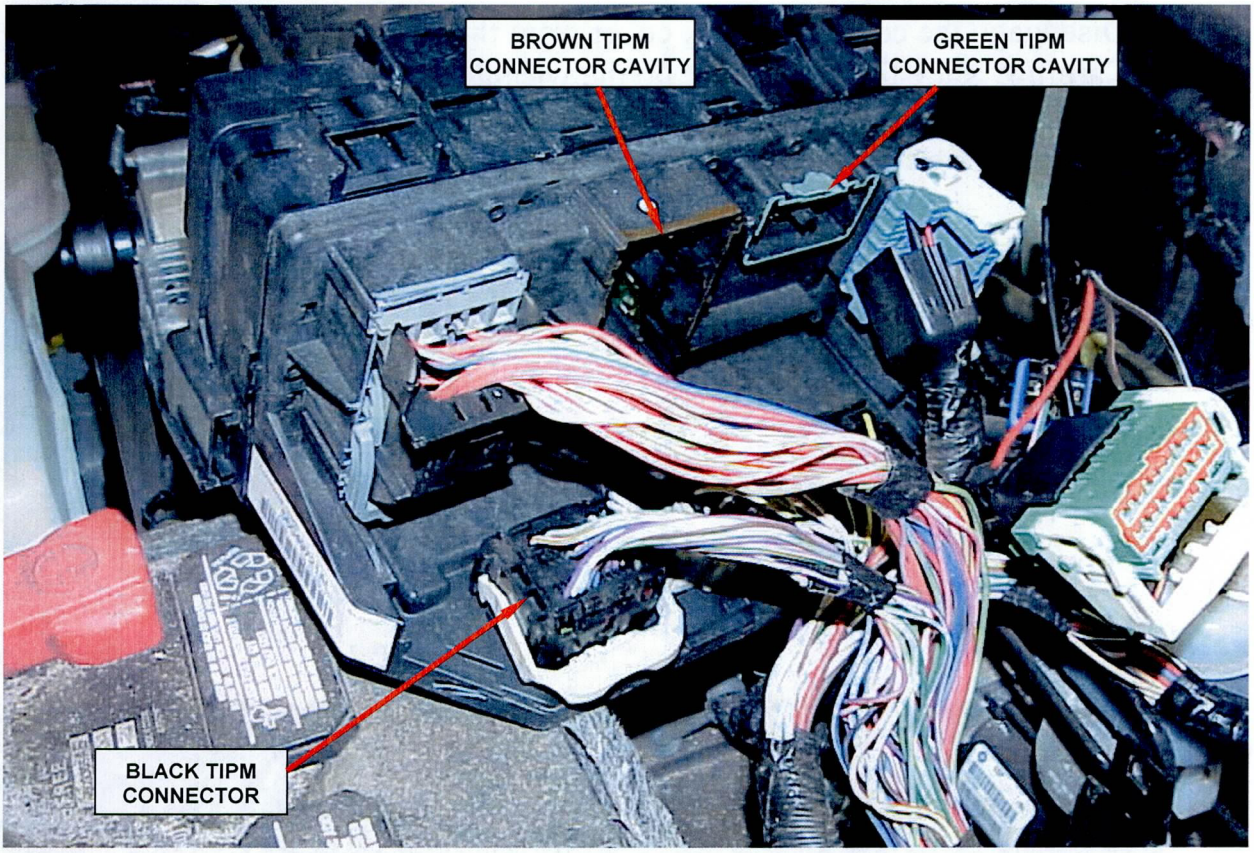

Figure 13 – Black TIPM Connector

6. Install the pink wire and dark green wire from the overlay wiring harness into the **black TIPM connector** using the following procedure:

   a. Carefully disconnect the black connector by unlatching the gray lock bar and pulling on the connector body (Figure 13).

   b. Remove the electrical tape from the black TIPM connector wiring harness.

   c. Push the edges of the lock bar outward slightly and close the lock bar to gain access to the back cover retaining tabs (Figure 14).

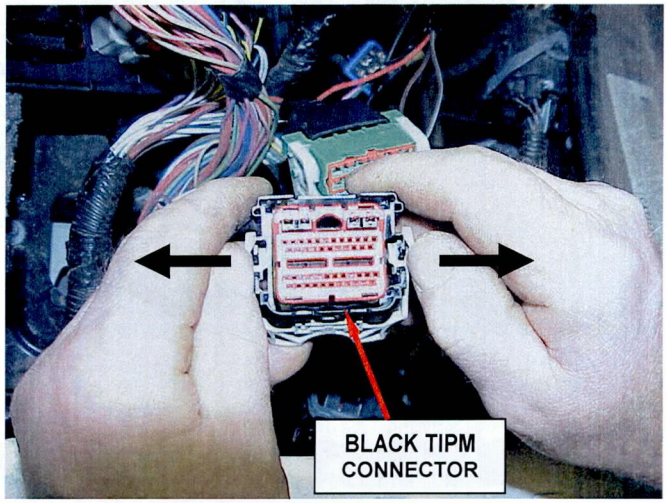

Figure 14 – Close the Lock Bar

Service Procedure (Continued)

d. Disengage the connector back cover from the black TIPM connector. Carefully slide the back cover up the wiring harness about two inches to gain access to the break out plugs located on the backside of the connector back cover (Figure 15).

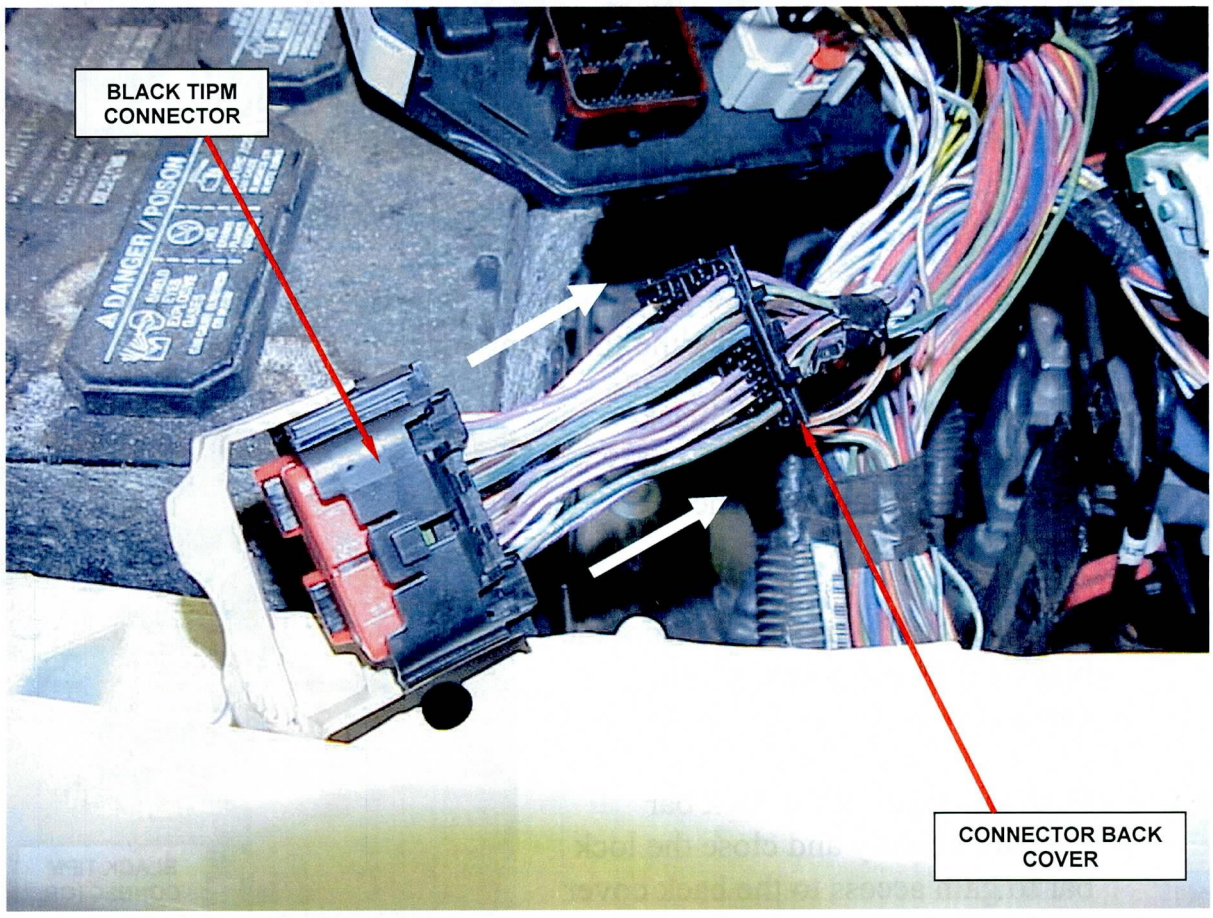

Figure 15 – Slide Connector Back Cover Down Wire Harness

Service Procedure (Continued)

e. Using a small pair of needle nose pliers, carefully break out the plugs in location 35 and 42 (Figure 16).

f. Slide the connector back cover down the wires and snap it into place on the backside of the black TIPM connector (Figure 15).

CAUTION: Be sure not to kink or fold over any of the wires when sliding the connector back cover into place.

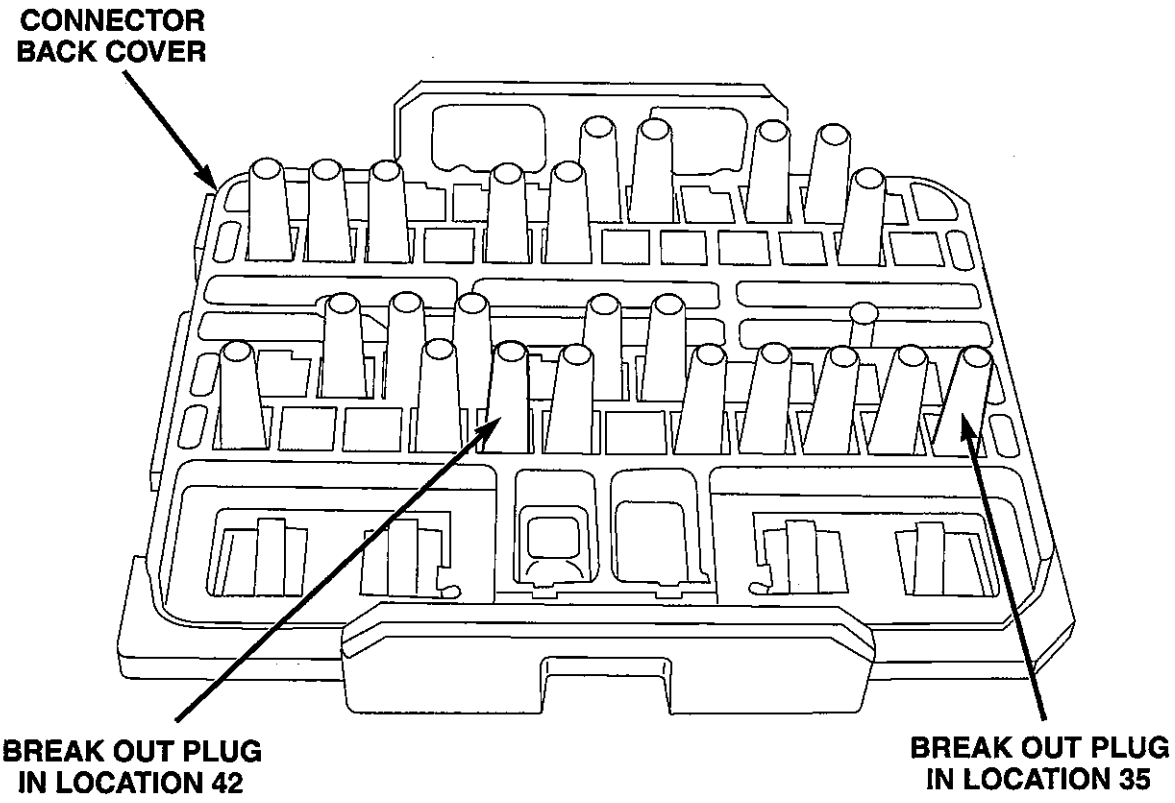

Figure 16 – Connector Back Cover Break Out Plugs (Wires Removed for Clarity)

Service Procedure (Continued)

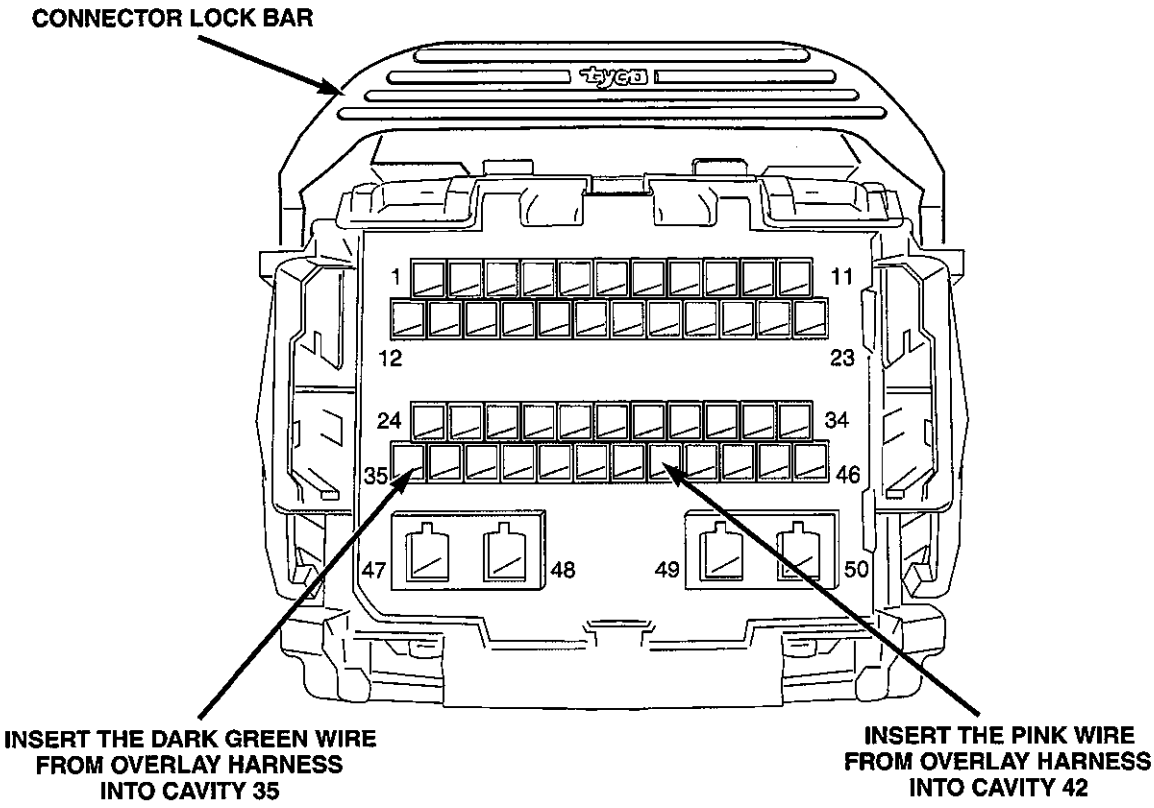

Figure 17 – Viewed from Wire Side (Wires Removed for Clarity)

g. Partially pull out the red terminal lock in the black TIPM connector about ¼ inch.

h. Carefully insert the dark green wire from the overlay wiring harness into cavity 35 (Figure 17).

CAUTION: Do not force the terminal into the connector. It is keyed and will only install in one direction.

i. Carefully insert the pink wire from the overlay wiring harness into cavity 42 (Figure 17).

CAUTION: Do not force the terminal into the connector. It is keyed and will only install in one direction.

j. Push the red terminal lock into the connector to lock the terminals.

k. Apply electrical tape around the black TIPM connector wiring.

Service Procedure (Continued)

7. Install and lock all removed electrical connectors into the TIPM.

8. Install the TIPM into its mounting bracket.

9. Open the TIPM cover and connect the B+ terminal (Figure 18). Tighten the B+ nut to 210 in. lbs. (23 N·m).

10. Remove and discard fuse J20 (pink 30 amp) from the TIPM (Figure 18). Refer to the inside of the TIPM cover to verify fuse location.

11. Close the TIPM cover.

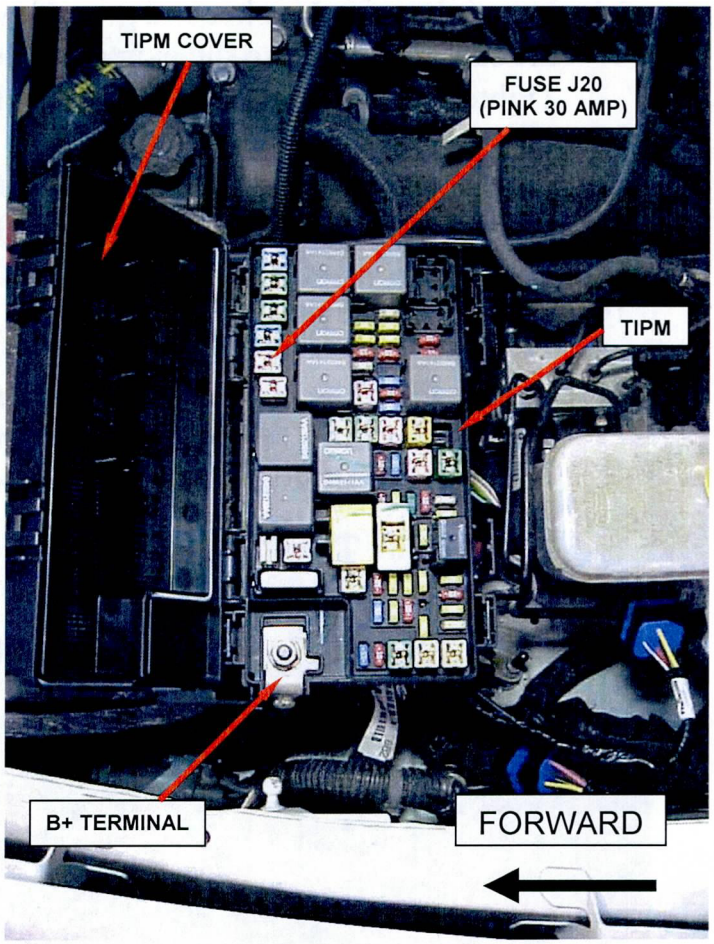

Figure 18 – B+ Terminal and Fuse Location

12. Install the "J" nut onto the relay bracket (Figure 19).

13. Connect the new relays and bracket assembly to the overlay wiring harness connectors.

    NOTE: Both relays are the same and can be plugged into either overlay wiring harness connector.

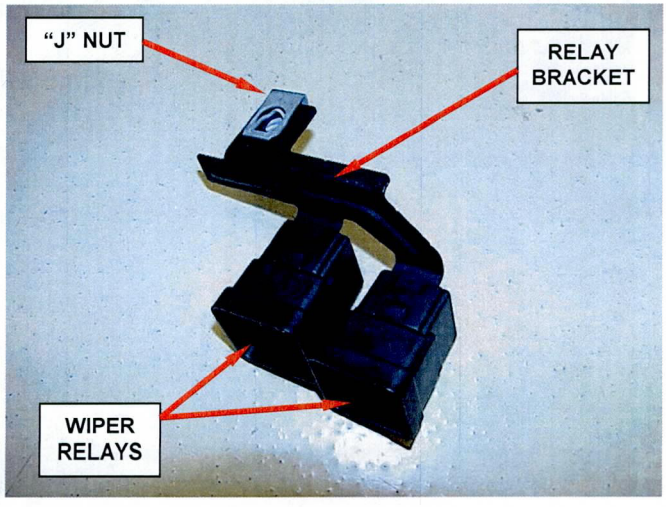

Figure 19 – "J" Nut

Service Procedure (Continued)

14. Install the relay bracket and ground wire from the overlay wiring harness using the supplied bolt into the existing hole on the left fender apron (Figure 20). Tighten the bolt to 195 in. lbs. (22 N·m).

15. Carefully bend the relay bracket so that the relays are point downward approximately 45 degrees (Figure 20).

16. Connect the negative battery cable.

17. Continue with **Section B to reprogram the TIPM with wiTECH, Section C to reprogram the TIPM with StarSCAN or Section D to reprogram the TIPM with StarMOBILE.**

    NOTE: The TIPM must be reprogrammed before the windshield wipers will operate.

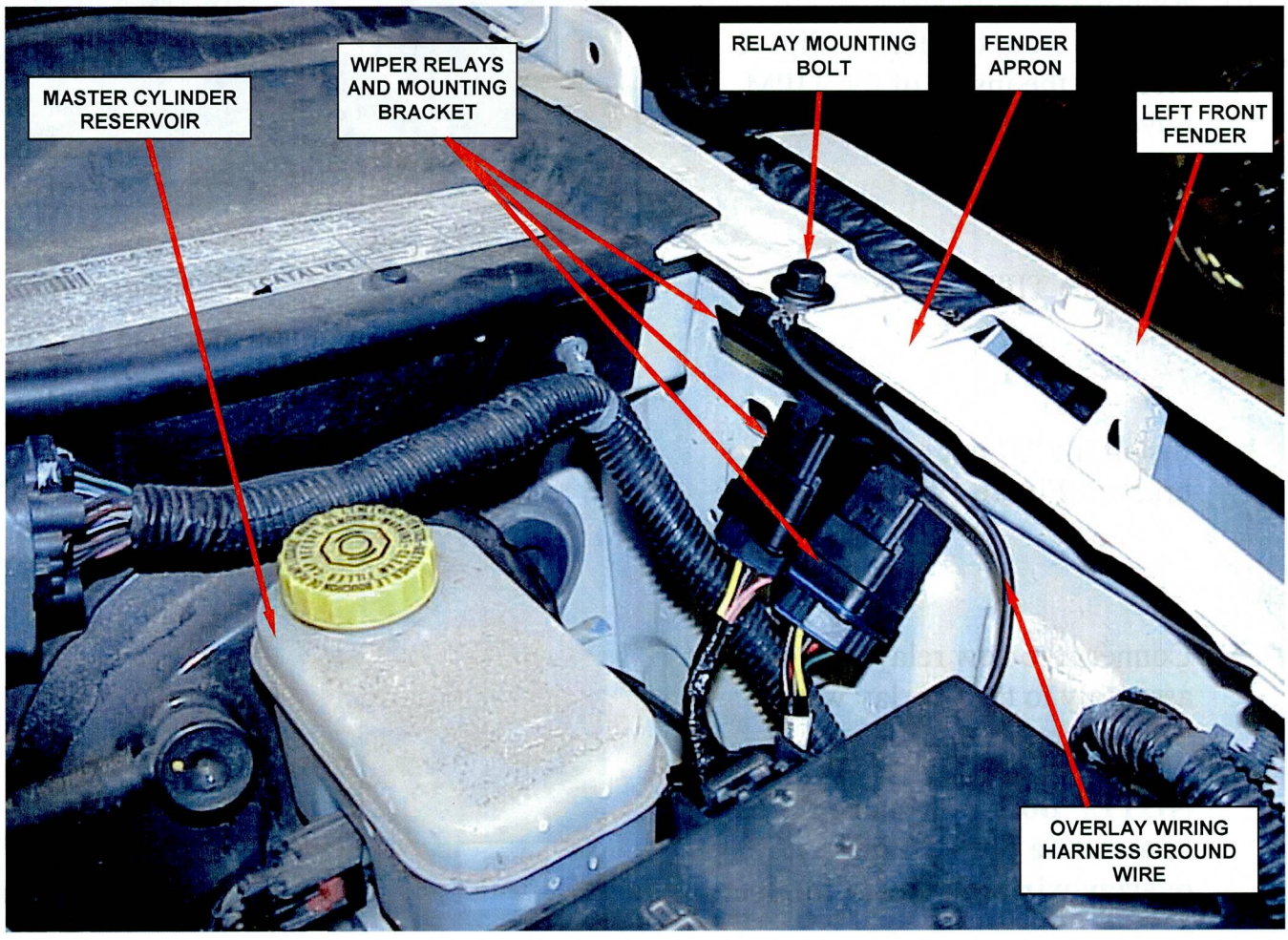

Figure 20 – Relay Mounting Location

Service Procedure (Continued)

B. Reprogram the TIPM using wiTECH

CAUTION: The TIPM may not support "abort - recovery" mode. If this flash process is interrupted/aborted and you are unable to read the TIPM Flash Part Number, the TIPM may be damaged beyond repair and may require replacement. Always verify if the module has truly been damaged beyond repair by attempting to restart the flash process.

1. Open the hood. Install a battery charger and verify that the charging rate provides 13.2 to 13.5 volts. Do not allow the charger to time out during the flash process. Set the battery charger timer (if so equipped) to continuous charge.

   NOTE: Use an accurate stand-alone voltmeter. The battery charger voltmeter may not be sufficiently accurate. Voltages outside of the specified range will cause an unsuccessful flash. If voltage reading is too high, apply an electrical load by activating the park or headlamps and/or HVAC blower motor to lower the voltage.

2. Connect the wiPOD to the vehicle data link connector.
3. Place the ignition key in the "**RUN**" position.
4. Launch the wiTECH diagnostic application.
5. Select "**TIPMCGW**" from the vehicle view screen.
6. Select the "**FLASH**" tab.
7. Select the flash file from the list.
8. Select the "**UPDATE**" button and follow the screen prompts.
9. Clear all DTC's.

   NOTE: Due to the CCN programming procedure, DTC(s) may be set in other modules (PCM, TCM, ABS, BCM, MIC, WCM, etc.) within the vehicle, if so equipped. Some DTC's may cause the MIL to illuminate.

10. Verify windshield wiper operation.
11. Continue with **Section E. Calibrate "Auto-Up" Front Windows.**

Service Procedure (Continued)

C. Reprogram the TIPM using StarSCAN

CAUTION: The TIPM may not support "abort - recovery" mode. If this flash process is interrupted/aborted and you are unable to read the TIPM Flash Part Number, the TIPM may be damaged beyond repair and may require replacement. Always verify if the module has truly been damaged beyond repair by attempting to restart the flash process.

1. Open the hood. Install a battery charger and verify that the charging rate provides 13.2 to 13.5 volts. Do not allow the charger to time out during the flash process. Set the battery charger timer (if so equipped) to continuous charge.

   NOTE: Use an accurate stand-alone voltmeter. The battery charger voltmeter may not be sufficiently accurate. Voltages outside of the specified range will cause an unsuccessful flash. If voltage reading is too high, apply an electrical load by activating the park or headlamps and/or HVAC blower motor to lower the voltage.

2. Connect the CH9410 StarSCAN ethernet cable to the StarSCAN and the dealer's network drop.

3. Connect the CH9404D StarSCAN vehicle cable to the StarSCAN and the vehicle data link connector.

4. Place the Ignition in the "**RUN**" position, then Power "**ON**" the StarSCAN.

5. Retrieve the old TIPM software part number. With the StarSCAN on the "**Home**" screen, follow the procedure below:

   a. Select "**ECU View**".

   b. Touch the screen to highlight "**TIPMCGW Central Gateway**" in the list of modules.

   c. Select "**More Options**".

   d. Select "**ECU Flash**".

   e. Record the "**Software Part Number**" displayed at the end of the "Resident flash file for" statement near the top of "**Flash TIPM**" screen for later reference.

Service Procedure (Continued)

6. Download the flash file from the internet to the StarSCAN. With the StarSCAN on the "**Flash TIPM**" screen, follow the procedure below:
   a. Select "**Browse for New File**". Follow the on screen instructions.
   b. If the newly downloaded flash file "Software Part Number" description:
      - is the **same** as the number recorded in Step 5e, then the TIPM is up to date. Continue with Step 9.
      - is **different** than the number recorded in Step 7e, require TIPM update continue with Step 6c.
   c. Highlight the listed calibration on the StarSCAN screen.
   d. Select "**Download to Scantool**".
   e. Select "**Close**" after the download is complete, then select "**Back**".
   f. Highlight the listed calibration.
   g. Select "**Update Controller**" and follow the on screen instructions.
   h. When the update is completed, select "**OK**".

7. Retrieve the TIPM software part number. With the StarSCAN on the "**Home**" screen, follow the procedure below:
   a. Select "**ECU View**".
   b. Touch the screen to highlight "**TIPMCGW Central Gateway**" in the list of modules.
   c. Select "**More Options**".
   d. Select "**ECU Flash**".
   e. Verify the "**Software Part Number**" (displayed at the end of the "Resident flash file for" statement) has been updated to the new part number. If it has updated, then the flash has been completed successfully.

Service Procedure (Continued)

8. Clear any Diagnostic Trouble Codes (DTCs) as follows:

   NOTE: Due to the TIPM programming procedure, DTC(s) may be set in other modules (PCM, TCM, ABS, BCM, MIC, WCM, etc.) within the vehicle, if so equipped. Some DTC's may cause the MIL to illuminate.

   a. From the "**Home**" screen select "**System View**".

   b. Select "**All DTCs**".

   c. Press "**Clear All Stored DTCs**" if there are any DTCs shown on the list.

9. Turn the ignition key to the "**OFF**" position and remove the StarSCAN unit, StarSCAN cable, and battery charger from the vehicle.

10. Verify windshield wiper operation.

11. Continue with **Section E. Calibrate "Auto-Up" Front Windows.**

D. Reprogram the TIPM Using StarMOBILE

CAUTION: The TIPM may not support "abort - recovery" mode. If this flash process is interrupted/aborted and you are unable to read the TIPM Flash Part Number, the TIPM may be damaged beyond repair and may require replacement. Always verify if the module has truly been damaged beyond repair by attempting to restart the flash process.

1. Open the hood. Install a battery charger and verify that the charging rate provides 13.2 to 13.5 volts. Do not allow the charger to time out during the flash process. Set the battery charger timer (if so equipped) to continuous charge.

   NOTE: Use an accurate stand-alone voltmeter. The battery charger voltmeter may not be sufficiently accurate. Voltages outside of the specified range will cause an unsuccessful flash. If voltage reading is too high, apply an electrical load by activating the park or headlamps and/or HVAC blower motor to lower the voltage.

2. Connect the StarMOBILE scan tool to the vehicle data link connector located under the steering column and turn the ignition key to the "**RUN**" position.

3. Power ON the StarMOBILE scan tool.

4. Connect the CH9410 StarMOBILE scan tool ethernet cable to the StarMOBILE and the dealer's network drop.

Service Procedure (Continued)

5. From the desktop, launch the "StarMOBILE Desktop Client" software.

6. Establish a connection with the StarMOBILE scan tool.

7. Retrieve the old TIPM software part number. With the StarMOBILE on the "**Home**" screen, follow the procedure below:
   a. Select "**ECU View**".
   b. Select "**TIPM Central Gateway**" in the list of modules.
   c. Select "**More Options**".
   d. Select "**ECU Flash**".
   e. Record the "**Part Number**" displayed at the end of the "Resident flash file for" statement near the top of "**Flash TIPM**" screen for later reference.

8. Download the flash file from the internet to the StarMOBILE. With the StarMOBILE on the "**Flash TIPMCGW**" screen, follow the procedure below:
   a. Select "**Browse for New File**". Follow the on screen instructions.
   b. Enter your "**User id**" and "**Password**", then select "**OK**".
   c. If the newly downloaded flash file "Part Number" description:
      - is the **same** as the number recorded in Step 7e, then the TIPM is up to date. Continue with Step 11.
      - is **different** than the number recorded in Step 7e, require TIPM update. Continue with Step 8d.
   d. Highlight the listed calibration on the StarMOBILE screen.
   e. Select "**Download to Client**".
   f. Select "**Close**" after the download is complete, then select the "**Back**" arrow.
   g. Highlight the listed calibration.
   h. Select "**Update Controller**" and follow the on screen instructions.
   i. When the update is completed, select "**OK**".

Service Procedure (Continued)

9. Retrieve the TIPM software part number. With the StarMOBILE on the "**Home**" screen, follow the procedure below:
   a. Select "**ECU View**".
   b. Select "**TIPM Central Gateway**" in the list of modules.
   c. Select "**More Options**".
   d. Select "**ECU Flash**".
   e. Verify the "**Part Number**" (displayed at the end of the "Resident flash file for" statement) has been updated to the new part number. If it has updated, then the flash has been completed successfully.
10. Clear any Diagnostic Trouble Codes (DTCs) as follows:

    NOTE: Due to the TIPM programming procedure, DTC(s) may be set in other modules (TCM, ABS, BCM, MIC, WCM, etc.) within the vehicle, if so equipped. Some DTC's may cause the MIL to illuminate.

    a. From the "**Home**" screen select "**System View**".
    b. Select "**All DTCs**".
    c. Press "**Clear All Stored DTCs**" if there are any DTCs shown on the list.
11. Turn the ignition key to the "**OFF**" position and remove the StarMOBILE unit, StarMOBILE vehicle cable, and battery charger from the vehicle.
12. Verify windshield wiper operation.
13. Continue with **Section E. Calibrate "Auto-Up" Front Windows**.

Service Procedure (Continued)

E. Calibrate "Auto-Up" Front Windows

1. Turn the ignition to the "**Run**" position.

2. Regardless of current window position, move the driver side front window upward until the window stalls in the full up position. Allow the window motor to stall for at least 2 seconds before releasing the window switch.

3. Move the driver side front window downward until the window stalls in the full down position. Allow the window motor to stall for at least 2 seconds before releasing the window switch.

4. Move the driver side front window upward until the window stalls in the full up position. Allow the window motor to stall for at least 2 second before releasing the window switch.

5. Repeat steps 1 through 4 to calibrate the module for the passenger side front window.

6. Verify the windows are properly calibrated by operating the "Auto-Up" feature on the windows. Repeat this procedure if the calibration failed.

Completion Reporting and Reimbursement

Claims for vehicles that have been serviced must be submitted on the DealerCONNECT Claim Entry Screen located on the Service tab. Claims submitted will be used by Chrysler to record recall service completions and provide dealer payments.

Use one of the following labor operation numbers and time allowances:

	Labor Operation Number	Time Allowance
Inspect TIPM part number	08-J2-81-81	0.2 hours
Inspect TIPM part number, install TIPM wiper relays, reprogram the TIPM and calibrate "Auto-Up" front windows	08-J2-81-82	1.1 hours

Add the cost of the recall parts package plus applicable dealer allowance to your claim.

NOTE: See the Warranty Administration Manual, Recall Claim Processing Section, for complete recall claim processing instructions.

Dealer Notification

All dealers will receive one copy of this dealer recall notification letter by mail. To view this notification on DealerCONNECT, select "Global Recall System" on the Service tab, then click on the description of this notification.

Owner Notification and Service Scheduling

All involved vehicle owners known to Chrysler are being notified of the service requirement by first class mail. They are requested to schedule appointments for this service with their dealers. A generic copy of the owner letter is attached.

Enclosed with each owner letter is an Owner Notification postcard to allow owners to update our records if applicable.

Vehicle Lists, Global Recall System, VIP and Dealer Follow Up

All involved vehicles have been entered into the DealerCONNECT Global Recall System (GRS) and Vehicle Information Plus (VIP) for dealer inquiry as needed.

GRS provides involved dealers with an updated VIN list of their incomplete vehicles. The owner's name, address and phone number are listed if known. Completed vehicles are removed from GRS within several days of repair claim submission.

To use this system, click on the **"Service"** tab and then click on **"Global Recall System."** Your dealer's VIN list for each recall displayed can be sorted by: those vehicles that were unsold at recall launch, those with a phone number, city, zip code, or VIN sequence.

Dealers must perform this repair on all unsold vehicles *before* retail delivery. Dealers should also use the VIN list to follow up with all owners to schedule appointments for this repair.

Recall VIN lists may contain confidential, restricted owner name and address information that was obtained from the Department of Motor Vehicles of various states. Use of this information is permitted for this recall only and is strictly prohibited from all other use.

Additional Information

If you have any questions or need assistance in completing this action, please contact your Service and Parts District Manager.

Customer Services Field Operations
Chrysler Group LLC