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## 1.0 INTRODUCTION

The procedures contained in this manual include all the specifications, instructions, and graphics needed to diagnose 1999 300M body system problems. The diagnostics in this manual are based on the failure condition or symptom being present at the time of diagnosis.

When repairs are required, refer to the appropriate service manual for the proper removal and repair procedure.

Diagnostic procedures change every year. New diagnostic systems may be added; carryover systems may be enhanced. IT IS RECOMMENDED THAT YOU REVIEW THE ENTIRE MANUAL TO BECOME FAMILIAR WITH ALL NEW AND CHANGED DIAGNOSTIC PROCEDURES. This manual is designed to begin all diagnosis at SYMPTOM IDENTIFICATION TEST 1A which is located at Section 7.1. If there is a trouble code detected, it will direct you to a specific test. If it is a symptom problem, it will direct you to a SYSTEM TEST 1A for more specific instructions or directly to a specific test. Side headers are used to direct alphabetically to the specific Systems. All locators views are located in Section 4.0.

This book reflects many suggested changes from readers of past issues. After using this book, if you have any comments or recommendations, please fill out the form at the back of the book and mail it back to us.

### 1.1 System Coverage

This diagnostic procedures manual covers all 1999 300M models.

### 1.2 Six Step Troubleshooting Procedure

Diagnosis of the body system is done in six basic steps:

- verification of complaint
- verification of any related symptoms
- symptom analysis
- problem isolation
- repair of isolated problem
- verification of proper operation

## 2.0 IDENTIFICATION OF SYSTEM

The vehicle systems that are part of the ″body″ system are:

- Airbag system
- Audio
- Chimes
- Climate Control Systems (Automatic and Manual)
- Door Ajar
- Exterior Lighting
- Instrument Cluster
- Interior Lighting
- Memory System
- Overhead Travel Information System
- Power Door Locks
- Remote Keyless Entry
- Sentry Key Immobilizer
- Vehicle Communications
- Vehicle Theft Security System
- Wiper/Washer

## 3.0 SYSTEM DESCRIPTION AND FUNCTIONAL OPERATION

The body system on the 1999 300M consists of a combination of modules that communicate over the PCI bus (Programmable Communication Interface multiplex system). Through the PCI bus, information about the operation of vehicle components and circuits is relayed quickly to the appropriate module(s). All modules receive all the information transmitted on the bus even though a module may not require all information to perform it's function. It will only respond to messages ″addressed″ to it through a binary coding process. This method of data transmission significantly reduces the complexity of the wiring in the vehicle and the size of wiring harnesses. All of the information about the functioning of all the systems is organized, controlled, and communicated by the PCI bus, which is described in Section 3.14 (Vehicle Communication) of this general information.

## 3.1 Airbag System

The Airbag Control Module (ACM) is secured to a bracket on the floor panel transmission tunnel below the instrument panel inside the vehicle. The ACM mounting bracket also serves as the instrument panel center support. The ACM contains a microprocessor, the impact sensor, and energy storage capacitor. The microprocessor contains the airbag system logic. The ACM system logic includes On-Board Diagnostics (OBD) capability, and communicates with the instrument cluster circuitry on the Programmable Communication Interface (PCI) data bus to control the airbag indicator lamp. The microprocessor in the ACM monitors the impact sensor signal and the airbag system electrical circuits to determine the system readiness. If the ACM detects a monitored system fault, it sends messages to the instrument cluster on the PCI data bus to turn on the airbag indicator lamp. A pre-programmed decision algorithm in the ACM microprocessor determines when the deceleration rate is severe enough to require airbag system protection. When the programmed conditions are met, the ACM sends an electrical signal to deploy the airbag system components. The impact sensor is an accelerometer that senses the rate of vehicle deceleration, which provides verification of the direction and severity of an impact. The impact sensor is calibrated for the specific vehicle, and is only serviced as a unit with the ACM. The ACM also contains an energy-storage capacitor. This capacitor stores enough electrical energy to deploy the airbags, for one second following a battery disconnect or failure during an impact. The purpose of the capacitor is to provide airbag system protection in a severe secondary impact if the initial impact has damaged or disconnected the battery, but was not severe enough to deploy the airbags.

**THE AIRBAG SYSTEM IS A SENSITIVE, COMPLEX ELECTROMECHANICAL UNIT. BEFORE ATTEMPTING TO DIAGNOSE OR SERVICE ANY AIRBAG SYSTEM OR RELATED STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENTS YOU MUST FIRST DISCONNECT AND ISOLATE THE BATTERY NEGATIVE (GROUND) CABLE. WAIT TWO MINUTES FOR THE SYSTEM CAPACITOR TO DISCHARGE BEFORE FURTHER SYSTEM SERVICE. THIS IS THE ONLY SURE WAY TO DISABLE THE AIRBAG SYSTEM. FAILURE TO DO THIS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY. NEVER STRIKE OR KICK THE AIRBAG CONTROL MODULE, AS IT CAN DAMAGE THE IMPACT SENSOR OR AFFECT ITS CALIBRATION. IF AN AIRBAG CONTROL MODULE IS ACCIDENTALLY DROPPED DURING SERVICE, THE MODULE MUST BE SCRAPPED AND REPLACED WITH A NEW UNIT.**

The airbag warning lamp is the only point at which the customer can observe ″symptoms″ of a system malfunction. Whenever the ignition key is turned to the ″run″ or ″start″ position, the MIC performs a lamp check by turning the AIRBAG warning lamp on for 6-8 seconds. If the lamp remains off, it means that the ACM has checked the system and found it to be free of discernible malfunctions. If the lamp remains on, there could be an active fault in the system or the MIC lamp circuit may be internally shorted to ground. If the lamp comes on and stays on for a period longer than 6-8 seconds then goes off, there is usually an intermittent problem in the system.

Perform the WARNING LAMP BULB OR DRIVER procedure in this book to find the cause of any customer complaint regarding the AIRBAG warning lamp, such as:

- warning lamp does not illuminate
- warning lamp stays illuminated with no active DTC's

The ACM cannot be repaired or adjusted and, if damaged or faulty, it must be replaced.

**Driver Airbag Module (DAB)**

The airbag protective trim cover is the most visible part of the driver side airbag system. The module is mounted directly to the steering wheel. Located under the trim cover are the horn switch, the airbag cushion, and the airbag cushion supporting components. The airbag module includes a housing to which the cushion and inflator are attached and sealed. The airbag module cannot be repaired, and must be replaced if deployed or in any way damaged. The inflator assembly is mounted to the back of the airbag module. The inflator seals the hole in the airbag cushion so it can discharge the gas it produces directly into the cushion when supplied with the proper electrical signal. The protective trim cover is fitted to the front of the airbag module and forms a decorative cover in the center of the steering wheel. Upon airbag deployment, this cover will split at a predetermined breakout line.

**THE AIRBAG MODULE INFLATOR ASSEMBLY CONTAINS SODIUM AZIDE AND POTASSIUM NITRATE. THESE MATERIALS ARE POISONOUS AND EXTREMELY FLAMMABLE. CONTACT WITH ACID, WATER, OR HEAVY METALS MAY PRODUCE HARMFUL AND IRRITATING GASES (SODIUM HYDROXIDE IS FORMED IN THE PRESENCE OF MOISTURE) OR COMBUSTIBLE COMPOUNDS. DO NOT PUNCTURE, INCINERATE, OR BRING INTO CONTACT WITH ELECTRICITY. DO NOT STORE AT TEMPERATURE EXCEEDING 93°C (200°F).**

**Clockspring**

The clockspring is mounted on the steering column behind the steering wheel. This assembly consists of a plastic housing which contains a flat, ribbon-like, electrically conductive tape that winds and unwinds with the steering wheel rotation. The clockspring is used to maintain a continuous electrical circuit between the instrument panel wire harness and the driver side airbag module, the horn switch, and the vehicle speed control switches on vehicles that are so equipped. The clockspring must be properly centered when it is installed on the steering column following any service removal, or it will be damaged. The clockspring cannot be repaired it must be replaced.

Passenger Airbag Module (PAB)

The airbag door in the instrument panel top cover above the glove box is the most visible part of the passenger side airbag system. Located under the airbag door is the airbag cushion and it's supporting components. The airbag module includes a housing to which the cushion and inflator are attached and sealed. The airbag module cannot be repaired, and must be replaced if deployed or in any way damaged. The inflator assembly is mounted to the back of the airbag module. The inflator includes a small canister of highly compressed argon gas. The inflator seals the hole in the airbag cushion so it can discharge the compressed gas it contains directly into the cushion when supplied with the proper electrical signal. The airbag door has a living hinge at the top, which is secured to the instrument panel top cover. The door also has predetermined breakout lines concealed beneath its decorative cover. Upon airbag deployment, the airbag door will split at the breakout lines and the door will pivot out of the way.

**THE PASSENGER AIRBAG MODULE CONTAINS ARGON GAS PRESSURIZED TO OVER 2500 PSI. DO NOT ATTEMPT TO DISMANTLE AN AIRBAG MODULE OR TAMPER WITH ITS INFLATOR. DO NOT PUNCTURE, INCINERATE, OR BRING INTO CONTACT WITH ELECTRICITY. DO NOT STORE AT TEMPERATURE EXCEEDING 93°C (200°F).**

**REPLACE AIRBAG SYSTEM COMPONENTS ONLY WITH PARTS SPECIFIED IN THE CHRYSLER MOPAR PARTS CATALOG. SUBSTITUTE PARTS MAY APPEAR INTERCHANGEABLE, BUT INTERNAL DIFFERENCES MAY RESULT IN INFERIOR OCCUPANT PROTECTION. THE FASTENERS, SCREWS, AND BOLTS ORIGINALLY USED FOR THE AIRBAG SYSTEM COMPONENTS HAVE SPECIAL COATINGS AND ARE SPECIFICALLY DESIGNED FOR THE AIRBAG SYSTEM. THEY MUST NEVER BE REPLACED WITH ANY SUBSTITUTES. ANY TIME A NEW FASTENER IS NEEDED, REPLACE IT WITH THE CORRECT FASTENERS PROVIDED IN THE SERVICE PACKAGE OR SPECIFIED IN THE CHRYSLER MOPAR PARTS CATALOG.**

### 3.1.1 Airbag Diagnostic Trouble Codes

Airbag diagnostic trouble codes consist of active and stored codes. If more than one code exists, diagnostic priority should be given to the active codes.

Each diagnostic trouble code is diagnosed by following a specific testing procedure. The diagnostic test procedures contain step-by-step instructions for determining the cause of the trouble codes. It is not necessary to perform all of the tests in this book to diagnose an individual code.

Always begin by reading the diagnostic trouble codes using the DRB. The procedure begins with AIRBAG TEST 1A - Identifying Airbag System Problems. This will direct you to the specific test(s) that must be performed.

Active diagnostic trouble codes for the airbag system are not permanent and will change the moment the reason for the code is corrected. In certain test procedures within this manual, diagnostic trouble codes are used as a diagnostic tool.

### 3.1.2 Active Codes

The code becomes active as soon as the malfunction is detected or key-off, whichever occurs first. An active trouble code indicates an on-going malfunction. This means that the defect is currently there every time the airbag control module checks that circuit/function. It is impossible to erase an active code; active codes automatically erase by themselves when the reason for the code has been corrected.

With the exception of the warning lamp trouble codes or malfunctions, when a malfunction is detected, the airbag lamp remains lit for a minimum of 12 seconds or as long as the malfunction is present.

### 3.1.3 Stored Codes

Airbag codes are automatically stored in the ACM's memory as soon as the malfunction is detected. The exception is the ″Loss of Ignition Run Only″ code which is an active code only.

A ″stored″ code indicates there was an active code present at some time. However, the code currently may not be present as an active code, although another active code could be.

When a trouble code occurs, the airbag warning lamp illuminates for 12 seconds minimum (even if the problem existed for less than 12 seconds). The code is stored, along with the time in minutes it was active, and the number of times the ignition has been cycled since the problem was last detected.

The minimum time shown for any code will be one minute, even if the code was actually present for less than one minute. Thus, the time shown for a code that was present for two minutes 13 seconds, for example, would be three minutes.

If a malfunction is detected a diagnostic trouble code is stored and will remain stored as long as the malfunction exists. When and if the malfunction ceases to exist, an ignition cycle count will be initiated for that code. If the ignition cycle count reaches 100 without a reoccurrence of the same malfunction, the diagnostic trouble code is erased and that ignition cycle counter is reset to zero. If the malfunction reoccurs before the count reaches 100, then the ignition cycle counter will be reset and the diagnostic trouble code will continue to be a stored code.

If a malfunction is not active while performing a diagnostic test procedure, the active code diagnostic test will not locate the source of the problem. In this case, the stored code can indicate an area to inspect.

If no obvious problems are found, erase stored codes, and with the ignition ″on″ wiggle the wire harness and connectors, rotate the steering wheel from stop to stop. Recheck for codes periodically as you work through the system. This procedure may uncover a malfunction that is difficult to locate.

## 3.2 Audio System

There are three radio systems available that communicate on the PCI bus. They are RBR, RBN, and RAZ models. They use the bus for two reasons. First is to communicate trouble codes to the body control module, the second is for use with the driver memory selection system. The radio stores two sets of station presets and can be recalled by pressing the optional memory select button (located on the drivers door). The RBR will have 6 speakers and a 120 watt external amplifier. The RBN will have 7 speakers and a 240 watt external amplifier. The RAZ will have 9 speakers and a 320 watt external amplifier. Depending on the manufacturer, some systems have a Front/Rear channel system and others have a Left/Right channel system.

## 3.3 Auto Headlamps

The headlamps and park/tail lamps will be activated by the BCM when the headlamp switch is in the auto mode. To activate the auto headlamps the BCM requires that: (1) the headlamp switch is in the ‘‘A’’ position, (2) the engine is running, and (3) the light level sensed through the sun load sensor falls below the calibrated level.

## 3.4 Body Control Module

The body control module (BCM) supplies vehicle occupants with visual and audible information and controls various vehicle functions. To provide and receive information, the module is interfaced to the vehicle’s serial bus communications network (the Programmable Communication Interface or PCI bus). This network consists of the powertrain control module (PCM), the memory heat seat/mirror module (MHSMM), sentry key immobilizer module (SKIM), the transmission control module (TCM), the electro/mechanical instrument cluster (MIC), the radio, the optional overhead travel information system (OTIS), airbag control module (ACM), optional antilock brakes (ABS) and the optional automatic temperature control (ATC) display head. The BCM is operational when battery power is supplied to the module, ignition switch power is needed for ignition switched functions.

The body control module provides the following features:

Automatic headlamp and foglamp
A/C switch status / evaporator temperature status
BCM diagnostic support
Central lock and unlock (VTSS only)

**GENERAL INFORMATION**

Climate Control (Automatic and Manual) system support
Door ajar switch status
Door Lock Inhibit (key in ignition or headlamps/park lamps on)
Electronic Odometer Support
Fog Lamp Control
Headlamp multiplexing control
Headlamp, Park & tail lamps with battery save feature
Headlamp Time Delay
Illuminated Entry with ″fade to off″
Interior lighting with battery save feature
Mechanical Instrument Cluster (fuel level, dim data, odometer & warning chime) support
Memory system
Overhead travel information system
Power door lock multiplexing control
Rear Window Defogger Control
Remote Keyless Entry with Panic Mode
Remote power decklid release
Rolling door lock control (customer programmable)
Sentry key immobilizer
Vehicle Theft Security System
Wiper Control (speed sensitive with return to park)

The BCM receives information over the PCI Bus from the PCM in order to support certain features. The required information is as follows:

- Engine RPM
- Engine Temperature
- Injector on Time and Distance Pulses
- Vehicle Speed
- Charging System Failure, Engine Temperature Limp-In, VTSS Arming Status
- Engine Model
- ″Check Engine″ lamp status

The BCM provides the PCM with information on the A/C switch status, battery temperature which is determined by the ambient temperature sensor and the ″OK to Start″ or VTSS status.

The 1999 300M has several customer programmable features which can be disabled or enabled by the customer.

| FEATURE | DEFAULT | PROGRAMMING METHOD | FEEDBACK |
|---|---|---|---|
| Rolling Door Locks | Enabled | Close all doors<br><br>Place vehicle key in the ignition and cycle between off and run four times ending in the off position<br><br>Customer depresses the driver power door lock switch to lock the doors<br><br>Body Controller will toggle the enable/ disable state of rolling locks | BCM provides a single chime to indicate completion of the programming |
| RKE — Horn Chirp | Enabled | Continually press the lock button for a minimum of 4 seconds to a maximum of 10 seconds | None |

| FEATURE | DEFAULT | PROGRAMMING METHOD | FEEDBACK |
|---|---|---|---|
| | | Within the 4-10 second range, press the unlock button while continuing to press the lock button<br>Release both buttons<br>Body Controller will toggle on/off state of horn chirp feature | |
| RKE — Rear Release Toggle | Press Twice | Continually press the unlock button for a minimum of 4 seconds to a maximum of 10 seconds<br>Within the 4-10 second range, press the rear release button while continuing to press the unlock button<br>Release both buttons<br>RKE will toggle state of one press/two press rear release | None |
| RKE — Program New FOB (Using an already programmed FOB) | Not Applicable | Turn vehicle ignition switch on. With programmed FOB continually press the unlock button for a minimum of 4 seconds to a maximum of 10 seconds | BCM will sound the chime when programming mode is started |
| | | Within the 4-10 second range, press the panic button while continuing to press the unlock button | BCM will sound a second chime after each FOB has been learned, a 32 second time out period has elapsed, or the vehicle ignition has been turned off |
| | | Release both buttons | |
| | | Press any button of FOB(S) to be learned. (Note: RKE system erases all FOBs when program mode is entered so any existing FOBs must also be programmed. | Turn off ignition or wait for 32 seconds to exit programming mode |

## 3.5 Chime System

The chime system is comprised of an audible chime located internal to the BCM; and is dependent on various inputs to the BCM to operate. These inputs include key-in ignition switch, exterior lamps, seat belt switch, and requests from the MIC to chime when some indicators are turned on.

## 3.6 Climate Control Systems

### 3.6.1 Automatic Temperature Control (ATC)

The body control module (BCM) provides automatic temperature control support both through PCI bus communications and through processing inputs to determine control for actuators and the blower motor. The BCM interfaces with the ATC control head over the PCI bus. Information on button activation, blower setting, and temperature setting are supplied to the BCM. In turn, the BCM supplies the ATC control head with mode information and indication lamp status. The BCM controls blower motor speed by providing a varying duty cycle of a fixed frequency output (pulse width modulation). There are 14 distinct blower speeds, plus a blower off signal. The body control module also controls the HVAC mode, temperature (blend air), and recirculation doors. This system is either fully automatic or fully manual control (no semi-automatic functions); however, the temperature blend door control is always automatically controlled based on sensor reading and comfort setting. The in-car sensor and the aspirator motor are now housed in the ATC control head.

### 3.6.2 Manual Temperature Control

The body control module interfaces with the a/c-heater control head via hardwired circuits. Information for the temperature setting is supplied to the body control module via a potentiometer. The rear defogger switch, A/C switch and the mode setting is supplied via a resistive multiplexed circuit. The system on/off status is supplied by a dedicated circuit. The BCM drives the A/C and rear defogger indicator lamps via hardwire to the A/C-heater control head.

### 3.6.3 HVAC Blend, Mode, and Recirculation Door Operation

The trouble codes that indicate a stall failure or a feedback signal failure work together to show what is wrong with the HVAC system. The stall trouble codes mean that the body control module cannot force an actuator to the end of the HVAC unit door. Internal problems in the body control module will set other short- related codes. Having only stall trouble codes indicates that there is a problem with an open or short circuit in the wiring, a bad actuator, a bad HVAC unit door or connecting linkage. It is important that the operation of the HVAC door be checked if an actuator is removed. This can be checked by rotating each unit door shaft to confirm that the door will stop at both ends of travel. The actuator itself has no stops. It must have the HVAC unit door to stop travel to pass a stall test.

A feedback signal failure can occur on the blend or mode door. The body control module monitors the feedback signal to check the position of the actuator. The body control module not only checks the level of the signal but also how much the voltage changes.

A feedback failure can occur if there is a short or open circuit in the wiring, a bad actuator, a bad body control module, a bad HVAC unit door or connecting linkage. The easiest way to diagnose this is to use the DRB to actuate the blend or mode door. Note that the feedback voltage of the actuator should smoothly change as the actuator is moved. A sudden change in the feedback voltage to a 5.0-volt or a 0.0-volt level indicates the actuator is bad. A fixed feedback voltage that is less than 5.0 volts or greater than 0.0 volts without a stall failure, or a short failure indicates that the actuator, the HVAC unit door, or a connecting mechanical linkage is jammed thereby preventing movement. A feedback signal voltage that stays on 5.0 volts or 0.0 volts indicates a wiring or body control module problem. The feedback voltage should always be less than 5.0 volts and greater than 0.0 volts.

The feedback trouble code can also occur from lack of actuator travel. This can be checked by confirming that the feedback signal smoothly changes when the actuator is moved with the DRB. If the signal is OK, the door travel is not correct. The actuator must be removed and the HVAC unit door mechanically checked for proper operation. Typical problems that prevent door movement include screws dropped in the HVAC unit or warped doors. Replace any part that is found defective.

### 3.6.4 Rear Window Defogger

When the BCM receives a rear defogger request from the climate control head (either ATC or manual) the BCM will activate the rear window defogger relay for 15 minutes. If the BCM receives another rear defogger request while the relay is still activated, the relay will be de-activated. If the relay is allowed to time out (full 15 minutes), further requests during the same ignition on period will cause the BCM to activate the relay for 7.5 minutes.

## 3.7 Exterior Lighting System

### 3.7.1 Exterior Lighting Battery Saver

The BCM monitors the status of and controls the park lamp, head lamp and fog lamp relay's. If any exterior lamps are left on after the ignition is turned off, the BCM will turn the headlamps and fog lamps off after 10 minutes, the park lamps will remain on.

### 3.7.2 Headlamp Delay

The headlamp time delay operates when the ignition switch is turned off while the headlamps are still on, and the headlamps are then turned off within 45 seconds after the ignition is off. This will provide a 90-second time delay before turning off the headlamps.

### 3.7.3 Headlamp Switch

The headlight switch on 300M vehicles use a multiplexed (MUX) circuit to the BCM. The BCM will then control the park lamp, head lamp and fog lamp relay's based on this input.

### 3.7.4 Fog Lamp Control

The body control module controls the operation of the fog lamp relay which controls the fog lamps. The fog lamps can only be on if the park or low beam headlamps are on. If the high beams are turned on, the fog lamps will remain on.

## 3.8 Interior Lighting

### 3.8.1 Courtesy Lamp Control

The body controller has direct control over the majority of the vehicle's courtesy lamps. The body computer will illuminate the courtesy lamps under any of the following conditions:
1) Any door is ajar.
2) The courtesy lamp switch on the instrument panel is closed.
3) A Remote Keyless entry unlock message is received. If the interior lamps are left on after the ignition is turned off, the BCM will turn them off after 1 hour or until either the dome lamp switch or door ajar switch changes state.

### 3.8.2 Illuminated Entry

Illuminated entry will be initiated when the customer enters the vehicle by unlocking the doors with the key fob, or with the key if the vehicle is equipped with vehicle theft alarm. Upon exiting the vehicle, if the lock button is pressed with a door open, illuminated entry will cancel when the door closes. If the doors are closed and the ignition switch is turned on, the illuminated entry also cancels.

## 3.9 Mechanical Instrument Cluster

The instrument cluster displays four gauges, a vacuum fluorescent (VF) odometer, a VF PRNDL and up to (18) indicators. One reset button is used to switch the display from trip to total. Holding

the button when the display is in the trip mode will reset the trip mileage. The cluster also supplies the power for the panel illumination. Most of the information that is displayed is received over the PCI bus from several modules.

With ignition in ″lock″, the cluster will wake up and display the door ajar and odometer display when a door is opened. The cluster will also wake up to control the panel illumination. In ″off″ (unlock) the PRNDL and several indicators will be functional but all gauges will not function. On transition from ″off″ (unlock) to run, the cluster will perform a check of all micro-controlled indicators, the odometer and the PRNDL for approx. 2 seconds. Other bulb checks with longer bulb check durations will be performed based on bus messages from other modules. If the cluster receives no PCI bus messages for (20) seconds after the transition to ″run″, the cluster will display ″no bus″ in the odometer.

A self test can be initiated by holding down the odometer reset button and switching the ignition from ″lock″ to ″off″ (unlock). This test will activate the gauges, turn on the indicator lights along with the odometer and PRNDL segments.

## 3.10 Memory System

The memory system consists of power left front seat, power mirrors and radio presets. The memory heated seat/mirror module (MHSMM) also includes the heated seat function. The module is located under the left front seat and receives input from: left manual 8-way seat switch, left seat position sensors, memory switch, both heated seat switches, both heated seat negative temperature coefficients ((NTC's) thermistors), PCI bus ckt, and the power mirror sensors. The module uses these inputs to perform the following functions: position the left front seat, position drivers memory seat and mirrors, actuate the drivers and passenger heated seat heater and send the memory location over the PCI bus.

When a memory button is pressed (either #1 or #2) on the memory switch the MHSMM sends a message to the BCM which in turn sends a recall message to the MHSMM and the PCI radio. They will in turn position the left seat and both mirrors along with setting the radio presets.

### 3.10.1 Power Seat

The memory power seat provides the driver with 2 position settings for the left seat. Each power seat motor is connected to the MHSMM with two circuits. Each circuit is switched between battery and ground. By alternating the circuits the MHSMM controls the movement of the motors based on input from the seat mounted switch.

Each motor contains a potentiometer to monitor the seat position. To monitor the position of the motor, the MHSMM sends out a 5-volt reference on the sensor supply circuit. The sensor is grounded back to the module on a common ground circuit. Based on the position of the sensor, the MHSMM monitors the voltage change through the sensor on a separate signal circuit.

The MHSMM stores the input value of each of the four seat potentiometers in memory when the system is requested. The driver can initiate memory recall, using either the seat mounted memory switch or the RKE transmitter. When initiated, the MHSMM adjusts the four seat motors to match the memorized seat position data.

For safety, the memory seat recall is disabled by the MHSMM when the vehicle is out of park position. Any obstruction to seat movement over a 2 second delay will cause the seat to stop moving in which case a stalled motor would be detected by the MHSMM which would then flag a trouble code and the corresponding seat output would be deactivated. However, if the object obstructing the seat is removed, the seat will function normally again.

### 3.10.2 Memory Seat Glide

The intent of this feature is to allow for easier entry and exit to the vehicle by moving the seat rearward a short distance when the operator turns the ignition off. The seat returns to its original position when the operator returns and turns on the ignition or extends the seat belt. If any seat movement is initiated, whether manual or by memory recall, after the ignition has been turned off, that will cancel any ensuing glide to enter movement until the next ignition cycle.

This feature can be enabled/disabled by the owner by holding the memory set button and simultaneously pressing the horizontal rearward switch. To reinstate the feature, repeat the process. This can also be done using the DRB which will also inform as to which state it is in.

### 3.10.3 Guard Bands

The module provides guard bands which prevent the seat track from hitting the hard limits of the given seat axis during manual power seat operation. The guard band values for each hard limit are stored in EEPROM. The guard band can be bypassed by running the seat to the end of its travel and then releasing the switch and pressing it again. The seat will move a short distance further. Once the seat is past the guard band it can be stored in memory, but if recall is initiated the seat will move to the guard bands and no further.

### 3.10.4 Memory Mirrors

Each outside mirror has a vertical and a horizontal position sensor. The MHSMM provides a 5-volt reference to each position sensor. The sensors share a common ground circuit. The MHSMM monitors the position of the mirrors by measuring the voltage of each signal. When a memory position is set, the MHSMM monitors and stores the position of the outside mirrors. The MHSMM adjusts the mirrors to the appropriate positions when a memory recall message is received from the RKE or is requested from the memory switch.

The power mirror switch during non-memory operation operates both mirrors independently of the MHSMM.

### 3.10.5 Heated Seats

The controls for the heated seats are located on the side of each seat. The system offers two seat temperature settings of approximately 37°C (98.6°F) (LO) and approximately 42°C (107.6°F) (HI).

As the temperature in the seat rises, the Negative Temperature Coefficient (NTC) resistance decreases and the voltage reading detected by the MHSMM increases. The seat heater output is deactivated once the voltage reading reaches it's upper threshold for either setting, high or low.

As the temperature decreases, the voltage reading decreases until the lower threshold is reached for either setting high or low. At this point the seat heat output is activated once again and this cycle repeats itself as long as the seat heat request is on. The thresholds for low and high settings are pre-programmed into the MHSMM memory.

The heated seat switch contain resistors pulled up to ignition which are processed by the MHSMM as voltage readings indicating desired heat setting high or low.

## 3.11 Overhead Travel Information System (OTIS)/Homelink

The overhead travel information system (OTIS) gives the driver information that supplements the primary gauge instrumentation. OTIS displays this information on a vacuum fluorescent display (VFD). The OTIS module has four switch inputs. The buttons for these switches are integral to the OTIS housing. There are two buttons on each side of the OTIS. The buttons are labeled US/M, C/T, STEP, and RESET. The driver selects and resets display functions through the use of these four buttons. The OTIS will display these functions:

Compass/Temperature
AVE ECO Average Fuel Economy
ECO Instantaneous Fuel Economy
DTE Distance to Empty
ET Elapsed Time
ODO Trip Odometer

If the vehicle is equipped with the optional Homelink feature, the OTIS will have three buttons located in the center of the OTIS module. The OTIS module receives all of its information over the PCI bus except compass, which is internal to the OTIS module. The OTIS powers up when it recognizes vehicle voltage on the ignition input circuit. OTIS blanks the display, then illuminates all segments of the VFD. It then blanks the display again. During this time, the OTIS sends and receives information over the PCI bus to determine what to display after the two-second initialization. The OTIS displays dashes (- - -) for any of the screens for which it did not receive bus messages during the two-second initialization. These dashes will be replaced by valid information if and when it is received from the bus.

## 3.12 Power Door Lock System

The door lock switches provide a variable amount of voltage through the multiplexed (MUX) circuit to the BCM. Depending upon that input and various conditions that must be met (i.e. door lock inhibit, etc.), the BCM will determine the action to be taken and activate the proper relay for approximately 250 to 350 msec. If the vehicle is equipped with the vehicle theft security system it will have the central locking feature which locks and unlocks all doors from the door key cylinder switches. These switches are on separate multiplexed circuits to the BCM and have trouble codes relating to each of them.

RKE Remote Keyless Entry - This feature allows locking and unlocking of the vehicle door(s) by remote control using a hand-held transmitter (sometimes referred to as a fob) to activate a radio receiver (RKE module). This module now plugs into the body control module which is directly connected to the junction block. With this feature RKE can now be added to a non-equipped vehicle by installing a module. If the vehicle is equipped with the vehicle theft security system, RKE will also arm and disarm that system. A new 4-button transmitter is used this year which will provide lock, unlock, decklid release and panic features. Decklid release is only operable while the vehicle is in the park position. The module is capable of retaining up to 4 transmitter codes. Rolling code, which increases security, has been added this year. If the transmitter goes out of synchronization it is easily put back in by pressing the lock button when the transmitter is within range. An external antenna has been added which plugs into the module to provide greater range. RKE will also turn on the interior lamps when a valid unlock command is received and will extinguish the interior lamps when a lock command is received and all doors are closed.

On a vehicle equipped with the memory system, when the unlock button on a specified transmitter (either #1 or #2) is pressed the BCM will send a recall message to both the MHSMM and the PCI radio. They will in turn position the left seat and both mirrors along with setting the radio presets.

Door Lock Inhibit - When the key is in the ignition and the left front door is open, all door lock switches are disabled. The unlock switches are still functional. This protects against locking the vehicle with the keys still in the ignition.

Automatic (rolling) Door Locks - This feature can be enabled or disabled by using either the DRB or the customer programmable method. When enabled, all doors will lock when the vehicle reaches a speed of 24 KMH (15 MPH) and all doors are closed. If a door is opened and the vehicle slows to below 24 KMH (15 MPH), the locks will operate again once all doors are closed and the speed is above 24 KMH (15 MPH).

Decklid Release - Decklid release is now a function of the body control module. Trouble codes are provided to assist in the diagnosis of this system.

Customer programmable features are: Horn chirp, one or two press decklid release, programming a new transmitter (using a previously programmed transmitter) and rolling door locks.

## 3.13 Sentry Key Immobilizer System (SKIS)

The SKIS is an immobilizer system designed to prevent unauthorized vehicle operation. The system consists of a Sentry Key Immobilizer Module (SKIM) and ignition key(s) called Sentry Key(s) which are equipped with a transponder chip. The SKIM communicates over the Programmable Communication Interface multiplex system (PCI) bus network to the Body Control Module (BCM), Powertrain Control Module (PCM), and/or the DRB scan tool.

The SKIM sends messages to the Body Control Module (BCM) over the PCI bus to control the VTSS indicator lamp. The SKIM sends a message to the BCM to turn the lamp on for about three seconds when the ignition is turned to the Run/Start position as a bulb test. If the indicator lamp comes on and stays on after the bulb test, it indicates that the SKIM has detected a system malfunction and/or that the SKIS has become inoperative. If an invalid key is detected in the ignition key cylinder with the ignition switch in the Run/Start position, the SKIM will flash the VTSS indicator lamp on and off.

For additional information on the SKIS, refer to the Powertrain Diagnostic Procedures manual.

## 3.14 Vehicle Communication

The Chrysler Programmable Communication Interface multiplex system (PCI bus) consists of a single wire. The Body Control Module (BCM) acts as a splice to connect each module and the Data Link Connector (DLC) together. Each module is wired in parallel to the data bus through its PCI chip set and uses its local ground as the bus reference. The wiring is a minimum 20 gage. The PCI bus wire insulation color will be yellow with a violet tracer. An extra tracer color may be added along with the violet to help distinguish between different node connections.

The bus is designed to handle a maximum number of nodes to meet all of the bus load and timing requirements. The bus resistance and capacitance is designed to provide a maximum level of filtering without distorting the bus symbols. This is why extra capacitance and resistance should not be added to the PCI Data Bus circuitry.

In order for an electronic control module to communicate on the PCI data bus, the module must have bus interface electronics consisting of a transmitter/receiver (or transceiver) and Logic control, bus termination for loading and filtering the bus, and wiring which interconnects the system.

Because of the unique coding scheme used in the PCI bus, each module is required to have logic control. The data moving on the bus is called symbols. The interface logic performs the following functions: encode and decodes binary data into symbols, synchronizes all bus symbol timing and edges, controls the sending and receiving of messages, monitors for bus arbitration, monitors for corrupted symbols due to noise and controls the transceiver.

The bus logic control also provides the transceiver with the information it needs to transmit symbols on the bus. The transceiver controls the waveshaping of each symbol that it transmits by using internal voltage controlled current drivers. When the bus transceiver is turned on, the bus driver ramps up the voltage to the set range and maintains this voltage until the driver is turned off, at which time the voltage is ramped back down to the low voltage, ground. The transceiver is design to allow for arbitration between modules. If more than one module is trying to access the PCI bus at one time, the code determines the message that has the higher priority, and is then allowed to access the bus first.

The PCI bus requires a resistance and capacitance termination load to ground to operate. Because each bus transceiver can only source current to the bus, the resistance load is required

to sink this current and pull the bus to ground on the falling edge of the symbols. The bus resistance is minimum of 315 ohms to a maximum of 2 K ohms. The termination capacitance is required for noise filtering and to help in the symbol wave shaping. The bus capacitance shall not be greater then 12,000 pf.

Each module on the PCI bus has a small termination load of a parallel resistance and capacitor to make up part of the over all bus termination load. One or two modules on the PCI bus may have a higher load termination to provide stabilizing influence over the variations of vehicle builds. These modules, called dominant modules, may very from car line to car line. The Powertrain Control Module (PCM) is the only dominant node for this vehicle.

**NOTE:** Communication over the bus is essential to the proper operation of the vehicles on-board diagnostic systems and the DRB. Problems with the operation of the bus or DRB must be corrected before proceeding with diagnostic testing. If there is a problem, refer to the Vehicle Communications section of this manual.

### 3.14.1 Bus Failure Message

Odometer Displays ″No Bus″ - The Mechanical Instrument Cluster (MIC) cannot communicate over the bus and does not know why.

## 3.15 Vehicle Theft Security System

This passive system is designed to protect against vehicle theft. The vehicle theft security system (VTSS) is part of the body control module, which monitors vehicle doors and the ignition for unauthorized operation. The alarm activates by sounding the horn, flashing the headlamps, park and tail lamps, and the VTSS indicator lamp. Passive arming occurs upon normal vehicle exit by turning the ignition off, opening the driver's door, locking the doors with the power lock, and closing the driver's door or locking the doors with RKE. Manual arming occurs by using the key to lock the doors after closing them. The indicator lamp on the dash will flash for 15 seconds, showing that arming is in progress. If no monitored systems are activated during this period, the system will arm and the indicator will flash at a slow rate. If the indicator lamp remains steadily lit during the arming process, this can indicate a possible loss of communication with the PCM or loss of trunk knock out switch. When something triggers the alarm, the system will signal the headlamps, park lamps, and horn for about 3 minutes.

For complaints about the Theft Alarm going off on it's own use the DRB and select ″Theft Alarm″ then ″Monitor Display″ and read the ″Alarm Tripped By″ status.

Tamper Alert - The VTSS indicator lamp will flash twice quickly to indicate a tamper condition has occurred.

Manual Override - The system will not arm if the doors are locked using the manual lock control (by hand) or if the locks are actuated by an inside occupant after the door is closed.

To verify the system, proceed as follows:

1. Open the driver's door.

2. Remove the ignition key (but keep it in hand).

3. Lock the doors with the power lock switch or the RKE.

4. Close the driver's door.

**NOTE:** After the doors are closed, locking the doors with RKE will also arm the system.

**NOTE:** If the VTSS indicator lamp flashed, the system is operational and verified. If not, there may be a problem with the system.

Arming/Disarming - Active arming occurs when the remote keyless entry transmitter is used to lock the vehicle doors, whether the doors are open or closed. If one or more doors are open, the arming sequence is completed only after all doors are closed.

Passive disarming occurs upon normal vehicle entry (unlocking either front door with the key). This disarming also will halt the alarm once it has been activated.

Active disarming occurs when the remote keyless entry transmitter is used to unlock the vehicle doors. This disarming also will halt the alarm once it has been activated.

System Self-Tests - NOTE: System self-tests can be entered only with the DRB. See vehicle theft section system test 1A.

**NOTE:** A powertrain control module from a vehicle equipped with a vehicle theft security system cannot be used in a vehicle that is not equipped with a vehicle theft security system. If the VTSS indicator lamp comes on after ignition ON and stays on, the PCI bus communication with the powertrain control module possibly has been lost.

## 3.16 Wiper System

The wiper system provides the driver with the normal wiper (low and high speeds), intermittent wipe, wipe after wash, headlamp washers and pulse wipe functions. The driver selects the wiper function via the resistive multiplexed stalk switch mounted on the steering column. The BCM uses input signal from the stalk switch, wiper motor park switch and the washer switch to control the wipe system. The Body Control Module (BCM) then controls the relays and timing functions to provide the driver selected features.

### 3.16.1 System Features

Speed Sensitive Intermittent Wipe Mode
There are 6 individual delay times with a minimum delay of 1/2 second to a maximum of 18 seconds. When the vehicle speed is under 6 KMH (10 MPH), the delay time is doubled providing a range of 1 second to 36 seconds.

Pulse Wipe
The wiper is in the off position and the driver presses the wash button for more than 62 milliseconds, but less than 1/2 second, 2 wipe cycle in low speed mode will be provided.

Park after Ignition Off
Because the wiper relays are powered from the battery the BCM can run the wipers to park after the ignition is turned off.

Wipe after Wash
When the driver presses the wash button for over 1/2 second and then releases it, the wiper will continue to run for 2 additional wipe cycles.

Headlamp Washers
The BCM will actuate the headlamp washer relay output for 750ms whenever the windshield washer are activated and the headlamps are on. The headlamp washers will be activated only for 750ms and then turned off even if the wash switch remains pressed. The headlamp washers will then be disabled until the wash switch is released and inactive for 5 continuous seconds. The headlamp washers will not be activated when the wiper pulse wipe mode is used.

The wiper system utilizes the BCM to control the on/off and hi/low relays for low and hi speed wiper functions, intermittent wiper delay as the switch position changes, pulse wipe, wipe after wash mode, and wiper motor park functions. The BCM uses the vehicle speed input to double the usual delay time below 6 KMH (10 MPH) There are three diagnostic trouble codes associated with

the wiper system. Two codes are set based on the condition of the on/off relay control wire open, shorted to ground or shorted to battery. The third code will set if the wiper motor park switch fails to open and close.

## 3.17 Diagnostic Trouble Codes Information

### 3.17.1 Airbag Trouble Codes

The airbag control module may report any of the following diagnostic trouble codes.

For the following codes, replace the airbag control module (ACM) even if set intermittently:

ACM ACCELEROMETER
ACM FIRING STORED ENERGY CODE
ACM INTERNAL DIAGNOSTIC CODE #1
ACM INTERNAL DIAGNOSTIC CODE #2
ACM OUTPUT DRIVER

*For these codes, refer to the appropriate diagnostic procedure:*
Cluster Message Mismatch
Driver Squib Circuit Open
Driver Squib Circuit Shorted
Driver Squib Circuit Shorted to Battery
Driver Squib Circuit Shorted to Ground
Loss of Ignition Run Only
Loss of Ignition Run/Start
No Cluster Message
No Cluster IFR Communication
No PCI Communication
Passenger Squib Circuit Open
Passenger Squib Circuit Shorted
Passenger Squib Circuit Shorted to Battery
Passenger Squib Circuit Shorted to Ground
Power Stage Not Tested
Warning Lamp open/shorted

### 3.17.2 Audio Trouble Codes

Radio Error
CD Error
Cass Error
Shorted Front Channel
Shorted Rear Channel
Shorted Left Channel
Shorted Right Channel

### 3.17.3 Body Control Module Diagnostic Trouble Codes

ABS Bus Communication Failure
A/C Control A/C Switch Failure
A/C Control Blend Door Input Open Or Shorted to ground
A/C Control Blend Door Input Shorted to Battery
A/C Control EBL Switch Failure
A/C Control Mode Door Input Open Or Shorted to Battery
A/C Control Mode Door Input Shorted to Ground
ATC Messages Not Received
ATC Switch Failure
Airbag Bus Communication Failure
Ambient Temperature Sensor Failure

BCM Bus Communication Failure
Battery Power to Module Disconnected
Blend Door Feedback Failure
Blend Door Output Shorted to Battery
Blend Door Output Shorted to Ground
Blend Door Stall Test Failure
Bus Shorted to Battery
Bus Shorted to Ground
Common Output Shorted to Battery
Common Output Shorted to Ground
Courtesy Lamp Output Short to Battery
Decklid Release Solenoid Output Failure
Decklid Release Switch Failure
Dimming Level Switch Input Failure
Dr Door Central Lock (arm)/Unlock (disarm) Switch Failure
EATX Bus Communication Failure
EEPROM Constant Checksum Failure
Evaporator Temperature Sensor Failure
Fuel Level Sending Unit Failure
Headlamp Switch Input Failure
I/P Illumination Failure
In-Car Temperature Sensor Failure
Internal Base/Premium Select Failure
MIC Messages Not Received
Mode Door Feedback Failure
Mode Door Output Shorted to Battery
Mode Door Output Shorted to Ground
Mode Door Stall Test Failure
OTIS Messages Not Received
Pass Door Central lock(arm)/unlock (disarm) Switch Failure
Post Failure
RKE Program Mode Entered Without Program Request
RKE Unable to Enter Program Mode
Recirc Door Output Shorted to Battery
Recirc Door Output Shorted to Ground
Recirculation Door Test Failure
SBEC Bus Communication Failure
Sun Load Sensor Failure
Wiper On/Off Relay Output Short High
Wiper On/Off Relay Output Open or Short Low
Wiper Park Switch Failure

### 3.17.4 Instrument Cluster DTC's

ABS Bus Communication Failure
Airbag Bus Communication Failure
BCM Bus Communication Failure
EATX Bus Communication Failure
SBEC Bus Communication Failure

### 3.17.5 Memory Heated Seat Mirror Module

EEPROM Refresh Failure
Front Riser Sensor Out of Range High
Front Riser Sensor Out of Range Low
Front Riser Down Position Stuck

Front Riser Up Position Stuck
Horizontal Sensor Out of Range High
Horizontal Forward Position Stuck
Horizontal Sensor Out of Range Low
Horizontal Rearward Position Stuck
Ignition Status Message Not Received
Left Thermistor Out of Range High
Left Thermistor Out of Range Low
Left Heated Seat Switch Open/Shorted to Ground
Left Heated Seat Switch Stuck in High State
Left Heated Seat Switch Stuck in Low State
Left Mirror Veritcal Sensor Out of Range High
Left Mirror Vertical Sensor Out of Range Low
Left Mirror Horizontal Sensor Out of Range High
Left Mirror Horizontal Sensor Out of Range Low
Left Seat Heat Output Shorted to Ground
Left Seat Heat Output Open
Memory Set ‘‘S’’ Position Stuck
Memory Position #2 Stuck
Memory Position #1 Stuck
PRNDL Display Message Not Received
Rear Riser Down Position Stuck
Rear Riser Up Position Stuck
Rear Riser Sensor Out of Range Low
Rear Riser Sensor Out of Range High
Recliner Down Position Stuck
Recliner Up Position Stuck
Recliner Sensor Out of Range Low
Recliner Sensor Out of Range High
Right Heated Seat Switch Open/Shorted to Ground
Right Thermistor Out of Range Low
Right Thermistor Out of Range High
Right Heated Seat Switch Stuck in High State
Right Heated Seat Switch Stuck in Low State
Right Seat Heat Output Shorted to Ground
Right Seat Heat Output Open
Right Mirror Horizontal Sensor Out of Range Low
Right Mirror Horizontal Sensor Out of Range High
Right Mirror Vertical Sensor Out of Range Low
Right Mirror Vertical Sensor Out of Range High

## 3.18 Using the DRBIII®

Refer to the DRB user guide for instructions and assistance with reading trouble codes, erasing trouble codes, and other DRB functions.

## 3.19 DRBIII® Error Messages

Under normal operation, the DRB will display one of only two error messages:
- User-requested WARM Boot or User -Requested COLD Boot

This is a sample of such an error message display:

```
ver: 2.14
date: 26 Jul93
file: key_itf.cc
date: Jul 26 1993
line: 548
err: 0x1
User-Requested COLD boot

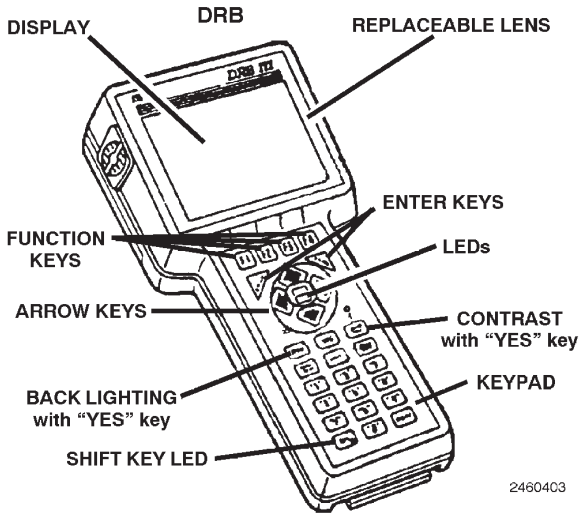
Press MORE to switch between this display
   and the application screen.
Press F4 when done noting information.
```

## 3.20 DRBIII® Does Not Power Up

If the LED's do not light or no sound is emitted at start up, check for loose cable connections or a bad cable. If all connections are proper between the DRB and the vehicle or other devices, and the vehicle battery is fully charged, see vehicle communication test 1A.

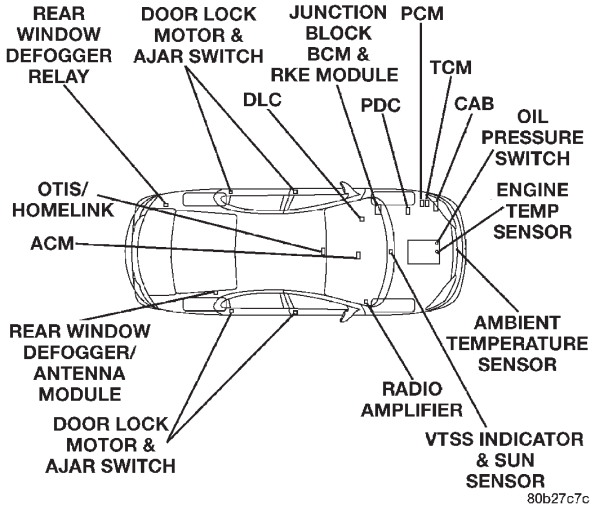
## 3.21 Display is Not Visible

Low temperatures will affect the visibility of the display. Adjust the contrast to compensate for this condition.

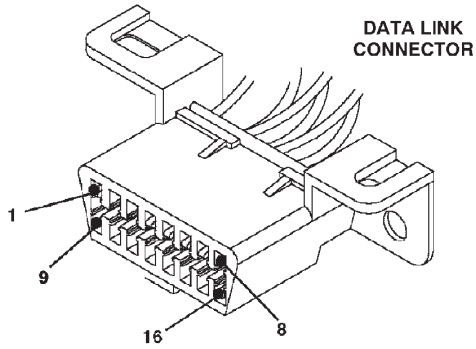


## NOTES

## 4.0 SYSTEM COMPONENT LOCATIONS



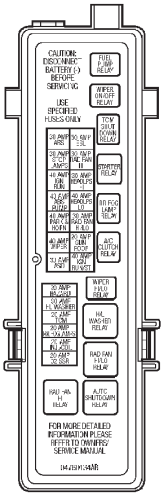

## 4.1 Data Link Connector




| CAV | COLOR | FUNCTION | CAV | COLOR | FUNCTION |
|---|---|---|---|---|---|
| 2 | YL/VT | PCI BUS | 8 | RD/WT | FUSED IGN SW OUTPUT |
| 4 | BK | GROUND | 14 | PK/BK | SCI RECEIVE (TCM) |
| 5 | BK/LG | GROUND | 16 | PK | FUSED B(+) |
| 6 | LG | SCI RECEIVE (PCM) | | | |
| 7 | DB | SCI TRANSM T (TCM) | | | |

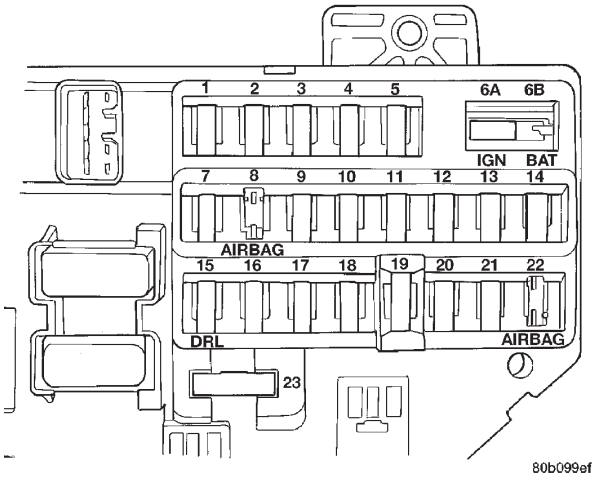
80b8eff8

## 4.2 Power Distribution Center



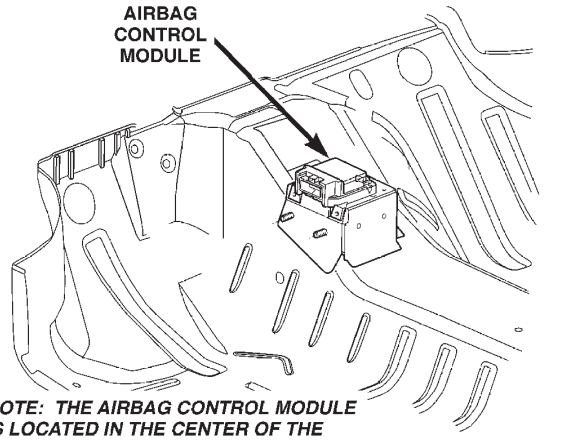
80b2b472

## 4.3 Fuse Block (Junction Block)



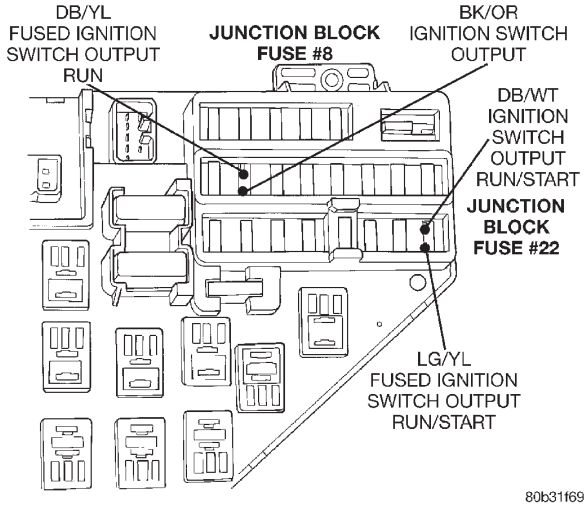

80b099ef

## 4.4 Airbag System

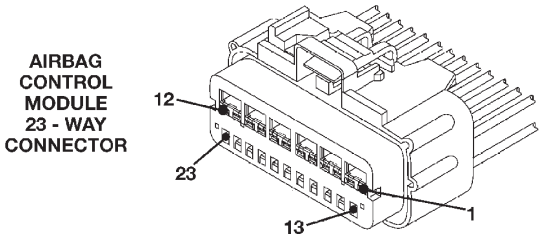



***NOTE: THE AIRBAG CONTROL MODULE IS LOCATED IN THE CENTER OF THE VEHICLE UNDER THE LOWER EDGE OF THE INSTRUMENT PANEL.***

80b308a9

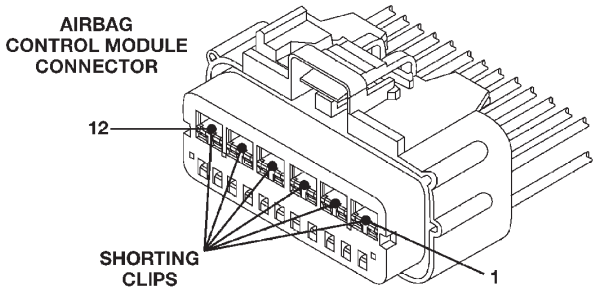



80b31f69




| CAV | COLOR | FUNCTION |
|---|---|---|
| 4 | BK/LG | GROUND |
| 5 | BK/LB | DRIVER AIRBAG LINE 1 |
| 6 | DG/LB | DRIVER AIRBAG LINE 2 |
| 7 | DG/YL | PASSENGER AIRBAG LINE 2 |
| 8 | BK/YL | PASSENGER AIRBAG LINE 1 |
| 14 | LG/YL | FUSED IGNITION SWITCH OUTPUT RUN/START |
| 15 | DB/YL | FUSED IGNITION SWITCH OUTPUT RUN (ONLY) |
| 21 | YL/VT | PCI BUS (ACM) |

80b4b73e

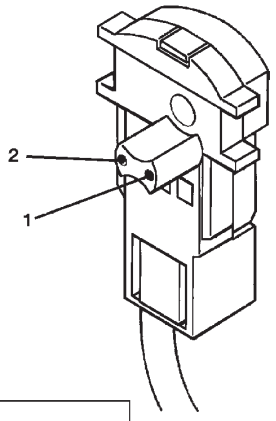



A SHORTING CLIP IS ONE SAFEGUARD BUILT INTO THE AIRBAG SYSTEM TO PREVENT ACCIDENTAL DEPLOYMENT WHEN HANDLING THE AIRBAG ASSEMBLY. STATIC CHARGES OR RADIO FREQUENCY NOISE CAN CAUSE ELECTRICAL POTENTIAL TO DEVELOP IN THE AIRBAG INITIATOR. SHORTING CLIPS PREVENT THIS WHEN THE CONNECTOR IS REMOVED FROM THE CONTROL MODULE.

**DO NOT PROBE, BEND OR REMOVE SHORTING CLIPS**

80b0d77e

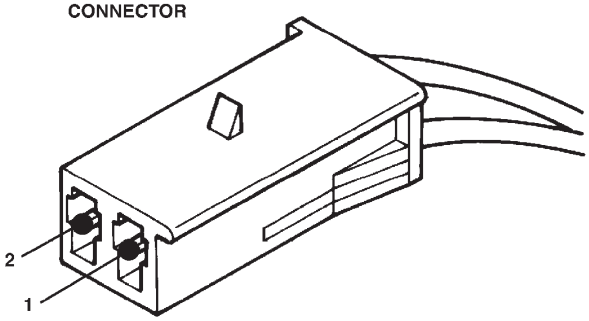
DRIVER AIRBAG MODULE SQUIB CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LB | DRIVER AIRBAG LINE 1 |
| 2 | DG/LB | DRIVER AIRBAG LINE 2 |

80b31f68

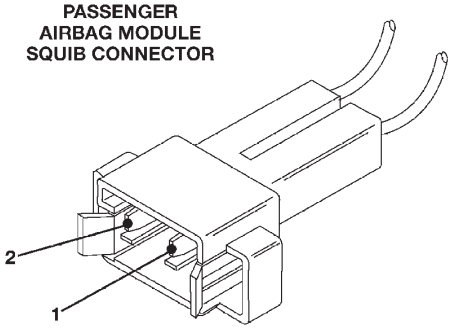
CLOCKSPRING 2-WAY AIRBAG CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LB | DRIVER AIRBAG LINE 1 |
| 2 | DG/LB | DRIVER AIRBAG LINE 2 |

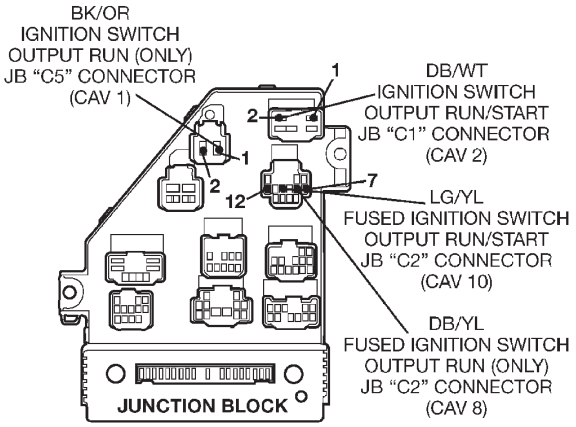
80b3111e

PASSENGER AIRBAG MODULE SQUIB CONNECTOR



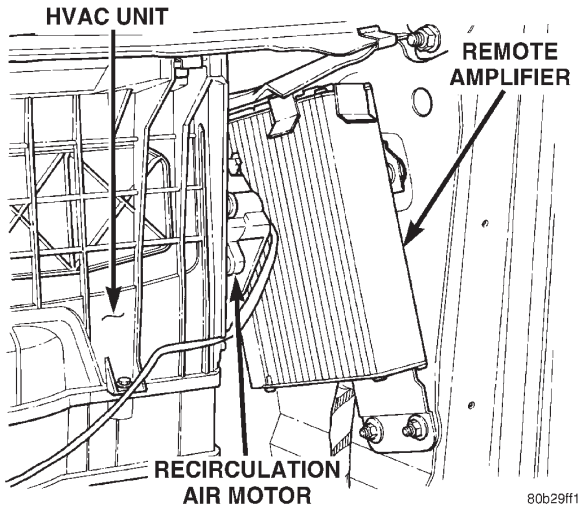

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/YL | PASSENGER AIRBAG LINE 1 |
| 2 | DG/YL | PASSENGER AIRBAG LINE 2 |

80b4b7b1



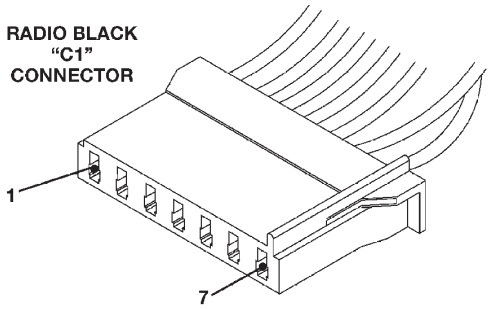

80b31f6a

## 4.5 Audio System




80b29ff1

RADIO BLACK "C1" CONNECTOR

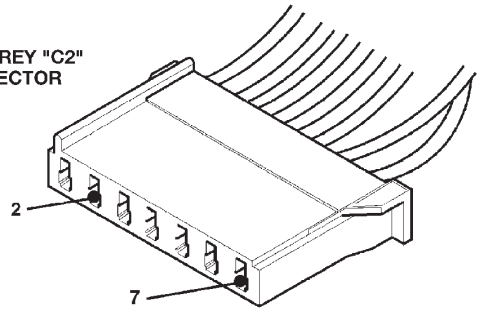



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/RD | RADIO 12-VOLT OUTPUT |
| 2 | BR/YL | LR (+) |
| 3 | DB/WT | RR (+) |
| 4 | DG | LF (+) |
| 5 | VT | RF (+) |
| 6 | BR/LB | LR (-) |
| 7 | DB/OR | RR (-) |

80b2b373

## 4.5 Audio System (continued)

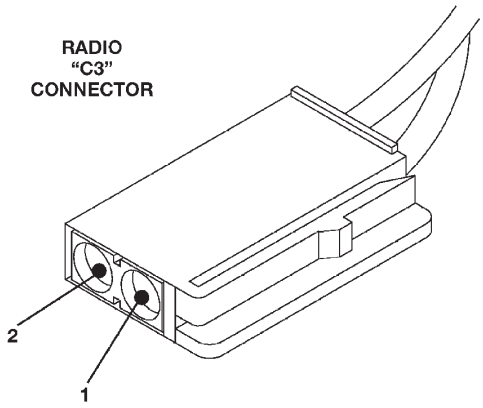
RADIO GREY "C2" CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | BR/RD | LF (-) |
| 3 | DB/RD | RF (-) |
| 4 | YL/BK | DAY BRIGHTNESS SENSE |
| 5 | OR | PANEL LAMPS DIMMER SW SIGNAL |
| 6 | RD/WT | FUSED IGNITION SWITCH OUTPUT |
| 7 | PK | FUSED B(+) |

80b5cbe1

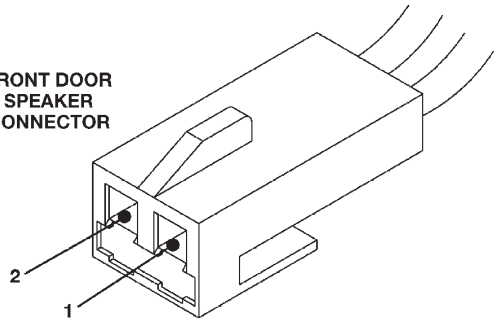
RADIO "C3" CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | YL/VT | PCI BUS |

80b2b875

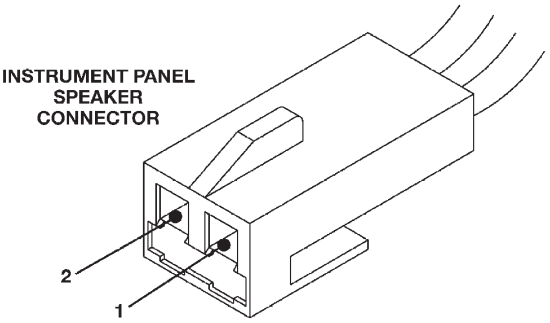
FRONT DOOR SPEAKER CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| RIGHT FRONT DOOR SPEAKER CONNECTOR | | |
| 1 | LB/BK | AMPLIFIED RIGHT SPEAKER DOOR (-) |
| 2 | LB/RD | AMPLIFIED RIGHT SPEAKER DOOR (+) |
| LEFT FRONT DOOR SPEAKER CONNECTOR | | |
| 1 | LG/BK | AMPLIFIED LEFT SPEAKER DOOR (-) |
| 2 | LG/VT | AMPLIFIED LEFT SPEAKER DOOR (+) |

80b575e1

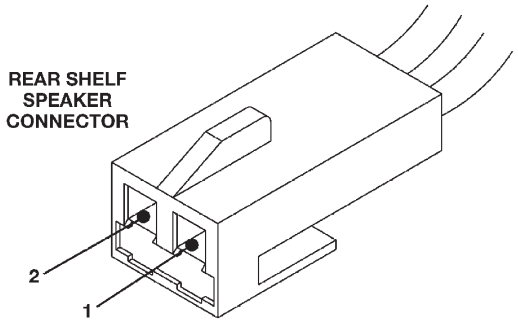
INSTRUMENT PANEL SPEAKER CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| RIGHT INSTRUMENT PANEL SPEAKER CONNECTOR | | |
| 1 | OR/BK | AMPLIFIED RIGHT IP SPEAKER (-) |
| 2 | OR/RD | AMPLIFIED RIGHT IP SPEAKER (+) |
| LEFT INSTRUMENT PANEL SPEAKER CONNECTOR | | |
| 1 | YL/BK | AMPLIFIED LEFT IP SPEAKER (-) |
| 2 | YL/RD | AMPLIFIED LEFT IP SPEAKER (+) |

80b575e2

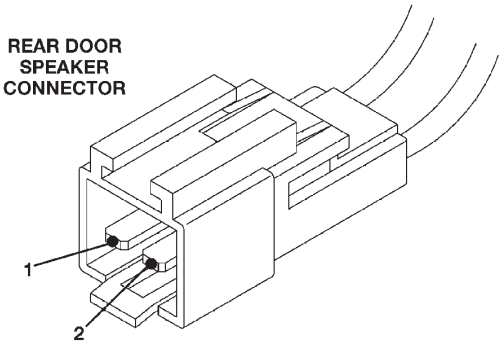
REAR SHELF SPEAKER CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| RIGHT REAR SHELF SPEAKER CONNECTOR | | |
| 1 | TN/BK | AMPLIFIED RIGHT SHELF SPEAKER (-) |
| 2 | TN/RD | AMPLIFIED RIGHT SHELF SPEAKER (+) |
| LEFT REAR SHELF SPEAKER CONNECTOR | | |
| 1 | WT/BK | AMPLIFIED LEFT SHELF SPEAKER (-) |
| 2 | WT/RD | AMPLIFIED LEFT SHELF SPEAKER (+) |

80b575e3

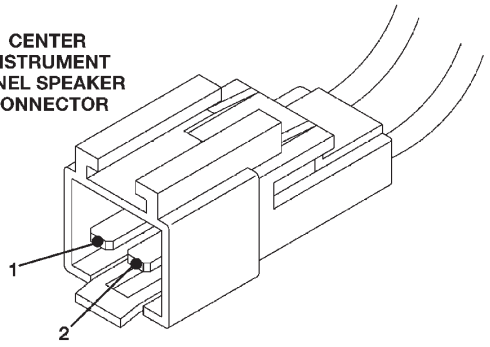
REAR DOOR SPEAKER CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/DG | REAR DOOR SPEAKER (-) |
| 2 | TN/VT | REAR DOOR SPEAKER (+) |

80b575e4

CENTER INSTRUMENT PANEL SPEAKER CONNECTOR

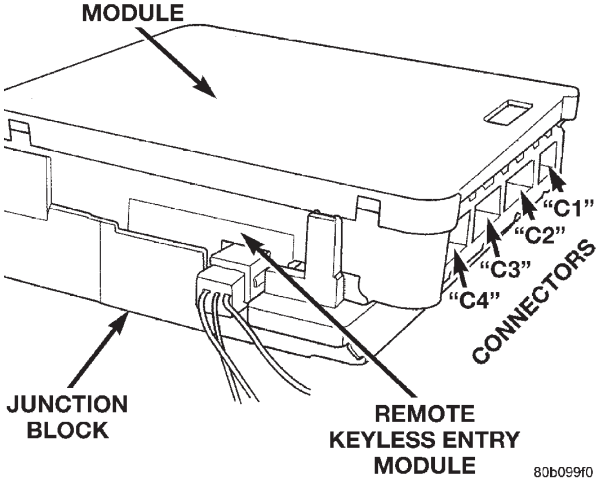



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK/BK | CENTER IP SPEAKER (-) |
| 2 | PK/RD | CENTER IP SPEAKER (+) |

80b575e5

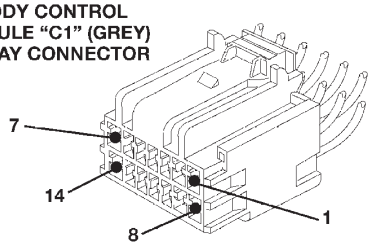
## 4.6 Body Control Module and Junction Block

BODY CONTROL MODULE




80b099f0

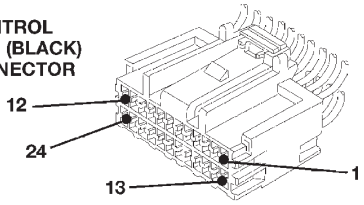
BODY CONTROL MODULE "C1" (GREY) 14-WAY CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/WT | DECKLID RELEASE SWITCH OUTPUT |
| 2 | GY/DB | RECIRCULATION DOOR DRIVER |
| 3 | DB/RD | BLEND AIR DOOR DRIVER |
| 4 | YL/VT | PCI BUS (ATC) |
| 5 | YL/VT | PCI BUS (RADIO) |
| 7 | YL/VT | PCI BUS (AIRBAG) |
| 8 | DB/GY | SENSOR GROUND |
| 9 | DG/YL | MODE DOOR DRIVER |
| 10 | BR/WT | COMMON DOOR DRIVER |
| 11 | VT/LG | FAN OFF SWITCH SIGNAL |
| 12 | YL/VT | PCI BUS (SKIM) |
| 13 | YL/VT | PCI BUS (MIC) |
| 14 | YL/VT | PCI BUS (DLC) |

80b11935

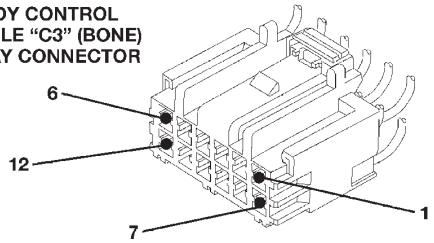
BODY CONTROL MODULE "C2" (BLACK) 24-WAY CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

80b11936

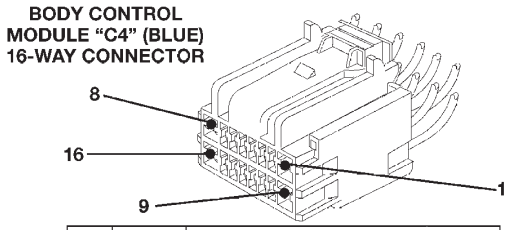
BODY CONTROL MODULE "C3" (BONE) 12-WAY CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | YL/VT | PCI BUS (PCM) |
| 2 | YL/VT | PCI BUS (ABS) |
| 3 | TN/RD | WIPER PARK SWITCH SENSE |
| 4 | RD/VT | WIPER ON OFF RELAY CONTROL |
| 5 | VT/LG | AMBIENT TEMPERATURE SENSOR SIGNAL |
| 7 | YL/VT | PCI BUS (TCM) |
| 9 | BR/YL | HEADLAMP WASHER RELAY CONTROL |
| 10 | DB/GY | SENSOR GROUND |
| 12 | VT | WIPER HIGH LOW RELAY CONTROL |

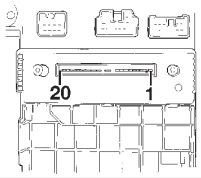
80b6f082

## 4.6 Body Control Module and Junction Block (continued)




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

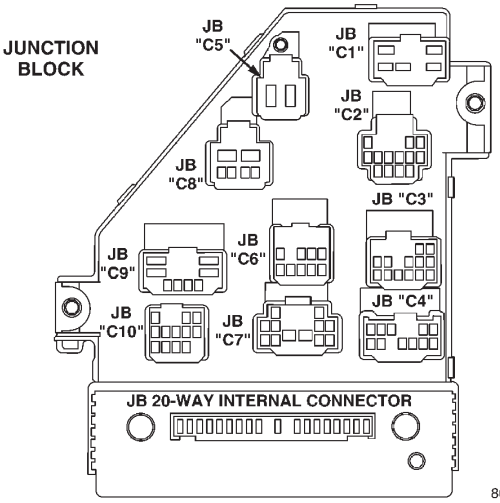
80b11939




JUNCTION BLOCK
20-WAY
INTERNAL
CONNECTOR

| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

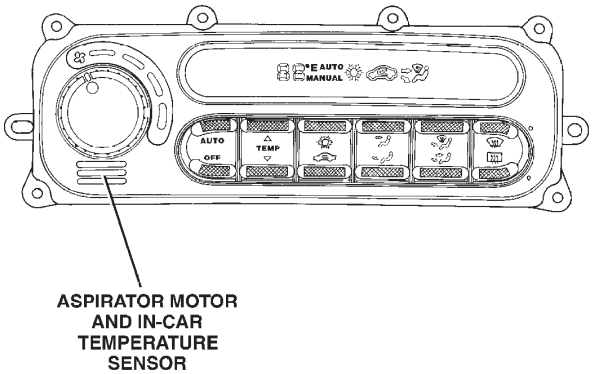
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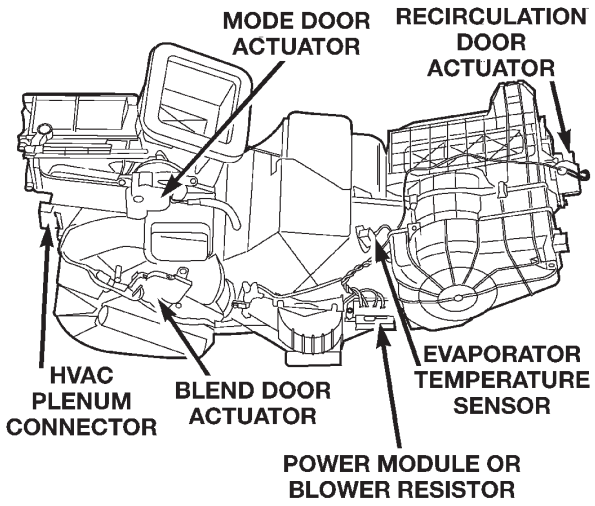

80b4fb25

## 4.7 Climate Control

### 4.7.1 Auto Temp Control

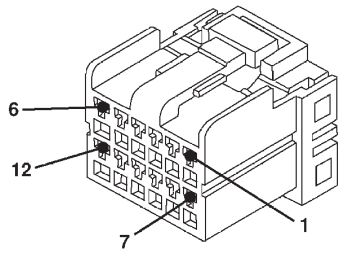



80b27c9b




80b2b46e

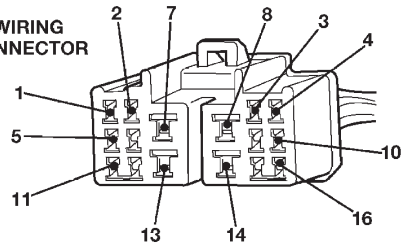
ATC MODULE CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LG | GROUND |
| 2 | YL/VT | PCI BUS |
| 3 | BK | GROUND |
| 4 | OR | PANEL LAMPS DRIVER |
| 7 | RD/TN | IN CAR TEMPERATURE SENSOR SIGNAL |
| 8 | DB/GY | SENSOR GROUND |
| 10 | WT | FUSED IGNITION SWITCH OUTPUT |
| 11 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 12 | PK | FUSED B(+) |

80b2a1fb

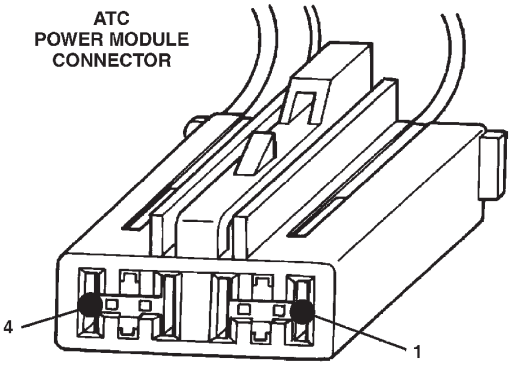
ATC HVAC WIRING (PLENUM) CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BR/WT | COMMON DOOR DRIVER |
| 2 | DG/YL | MODE DOOR DRIVER |
| 3 | DB/RD | BLEND AIR DOOR DRIVER |
| 4 | GY/DB | RECIRCULATION DOOR DRIVER |
| 5 | DB/GY | SENSOR GROUND |
| 6 | PK/DB | 5-VOLT SUPPLY |
| 8 | DG | FUSED IGNITION SWITCH OUTPUT |
| 9 | LG/BK | EVAPORATOR TEMEPRATURE SENSOR SIGNAL |
| 10 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 11 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 13 | BK | GROUND |
| 15 | RD/LG | BLOWER MOTOR CONTROL |

80b2b7fe

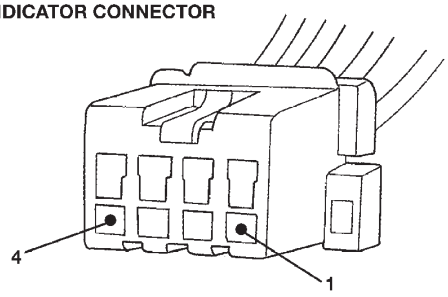
ATC POWER MODULE CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | BK | GROUND |
| 3 | RD/LG | BLOWER MOTOR CONTROL |
| 4 | DG | FUSED IGNITION SWITCH OUTPUT |

80b29fa1

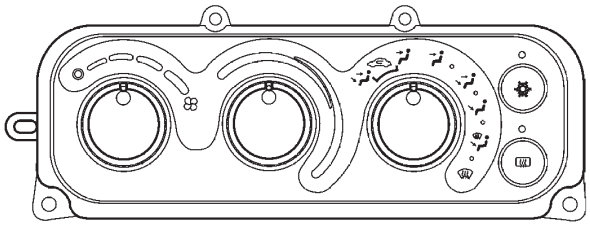
ATC SUN SENSOR/VTSS INDICATOR CONNECTOR



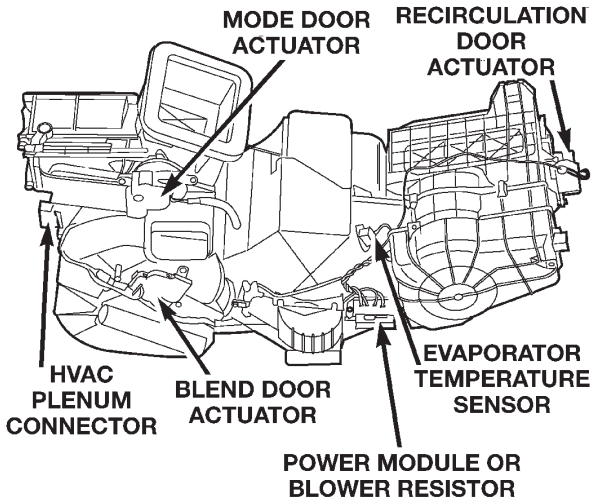

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK | FUSED B (+) |
| 2 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 3 | DB/GY | SENSOR GROUND |
| 4 | DB | SUN SENSOR SIGNAL |

80b2b603

## 4.7.2 Manual Temp Control



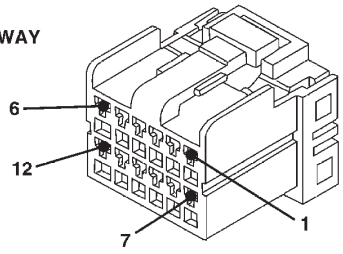
80b34db1




80b2b46e

## 4.7.2 Manual Temp Control (continued)

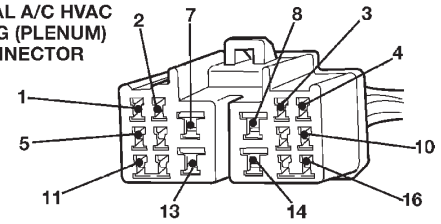
A/C-HEATER CONTROL "C1" 12-WAY CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/PK | A/C L.E.D. INDICATOR SIGNAL |
| 2 | DB/WT | REAR DEFOGGER SWITCH SENSE |
| 3 | BK | GROUND |
| 4 | DB/GY | SENSOR GROUND |
| 5 | WT | FUSED IGNITION SWITCH OUTPUT |
| 6 | BK/YL | PARK LAMP RELAY OUTPUT |
| 9 | YL/OR | TEMPERATURE SELECT |
| 10 | RD/TN | MODE SWITCH MUX |
| 12 | OR | PANEL LAMPS DRIVER |

80b2a1fa

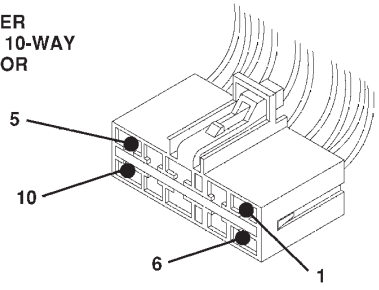
MANUAL A/C HVAC WIRING (PLENUM) CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BR/WT | COMMON DOOR DRIVER |
| 2 | DG/YL | MODE DOOR DRIVER |
| 3 | DB/RD | BLEND AIR DOOR DRIVER |
| 4 | GY/DB | RECIRCULATION DOOR DRIVER |
| 5 | DB/GY | SENSOR GROUND |
| 6 | PK/DB | 5-VOLT SUPPLY |
| 7 | BK/TN | HI BLOWER MOTOR DRIVER |
| 8 | DG | FUSED IGNTIION SWITCH OUTPUT |
| 9 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 10 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 11 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 12 | TN | LO BLOWER MOTOR DRIVER |
| 13 | LG | M1 BLOWER MOTOR DRIVER |
| 14 | LB | M2 BLOWER MOTOR DRIVER |

80b2b80a

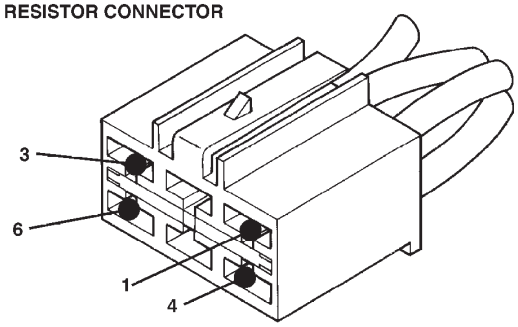
A/C-HEATER CONTROL "C2" 10-WAY CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/LG | FAN OFF SWITCH SIGNAL |
| 2 | TN | LO BLOWER MOTOR DRIVER |
| 3 | LB | M2 BLOWER MOTOR DRIVER |
| 5 | BK | GROUND |
| 7 | LG | M1 BLOWER MOTOR DRIVER |
| 10 | BK/TN | HI BLOWER MOTOR DRIVER |

80b2a1f9

BLOWER MOTOR RESISTOR CONNECTOR

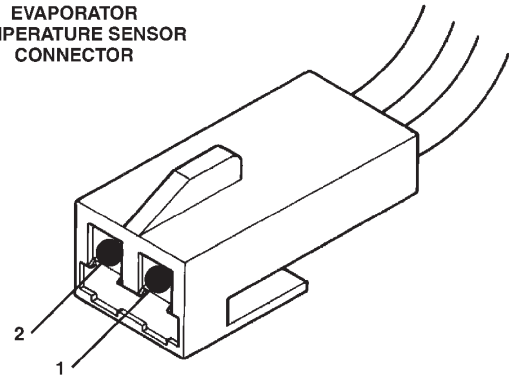



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/TN | HI BLOWER MOTOR DRIVER |
| 2 | LB | M2 BLOWER MOTOR DRIVER |
| 4 | DG | FUSED IGNITION SWITCH OUTPUT |
| 5 | TN | LO BLOWER MOTOR DRIVER |
| 6 | LG | M1 BLOWER MOTOR DRIVER |

80b2a1f4

## 4.7.3 ATC and MTC

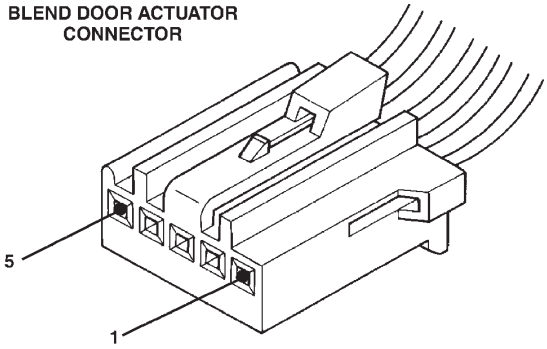
EVAPORATOR TEMPERATURE SENSOR CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | LG/BK | EVAPORATOR TEMP SENSOR SIGNAL |
| 2 | DB/GY | SENSOR GROUND |

80b29f9f

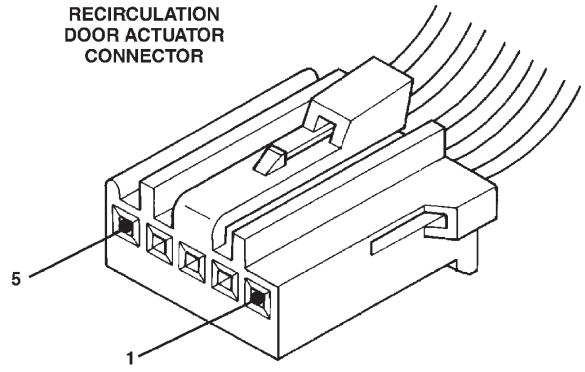
BLEND DOOR ACTUATOR CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DB/RD | BLEND AIR DOOR DRIVER |
| 2 | DB/GY | SENSOR GROUND |
| 3 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 4 | PK/DB | 5-VOLT SUPPLY |
| 5 | BR/WT | COMMON DOOR DRIVER |

80b27cf1

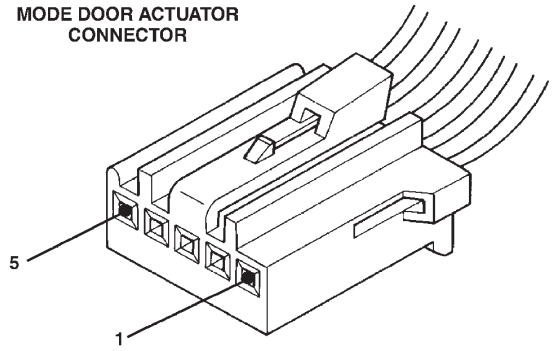
RECIRCULATION DOOR ACTUATOR CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | GY/DB | RECIRCULATION DOOR DRIVER |
| 5 | BR/WT | COMMON DOOR DRIVER |

80b27ct0

MODE DOOR ACTUATOR CONNECTOR

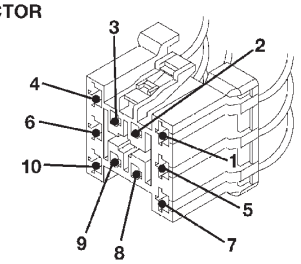



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/YL | MODE DOOR DRIVER |
| 2 | DB/GY | SENSOR GROUND |
| 3 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 4 | PK/DB | 5-VOLT SUPPLY |
| 5 | BR/WT | COMMON DOOR DRIVER |

80b27ct2

## 4.8 Chime

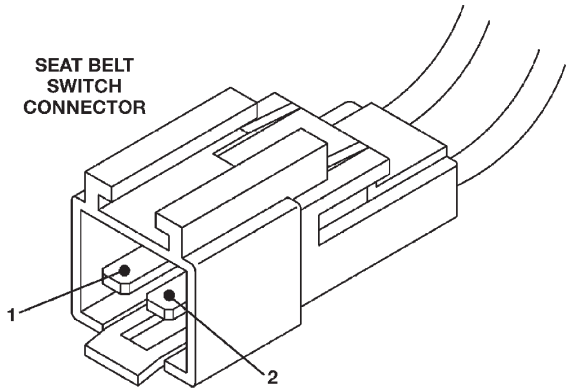
IGNITION SWITCH CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/RD | IGN SW OUTPUT (OFF/RUN/START) |
| 2 | LB | KEY-IN IGNITION SWITCH SENSE |
| 3 | BK/LG | GROUND |
| 4 | DB/WT | IGN SW OUTPUT (RUN/START) |
| 5 | RD | FUSED B(+) |
| 6 | BK/WT | IGN SW OUTPUT (ACC/RUN) |
| 7 | PK/BK | FUSED B(+) |
| 9 | YL | IGN SW OUTPUT (START) |
| 10 | BK/OR | IGN SW OUTPUT (RUN) |

80b27d43

SEAT BELT SWITCH CONNECTOR

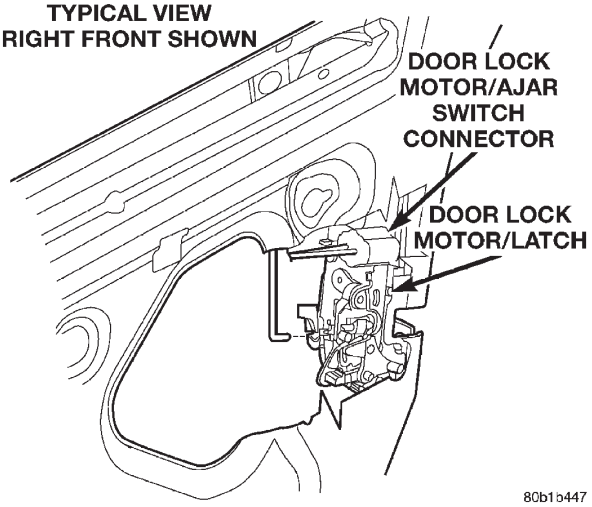



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | LG/RD | SEAT BELT SWITCH SENSE |
| 2 | BK/LG | GROUND |

80b4b844

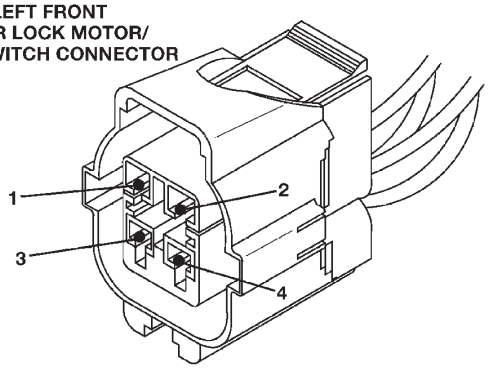
## 4.9 Door Ajar

TYPICAL VIEW RIGHT FRONT SHOWN




80b1b447

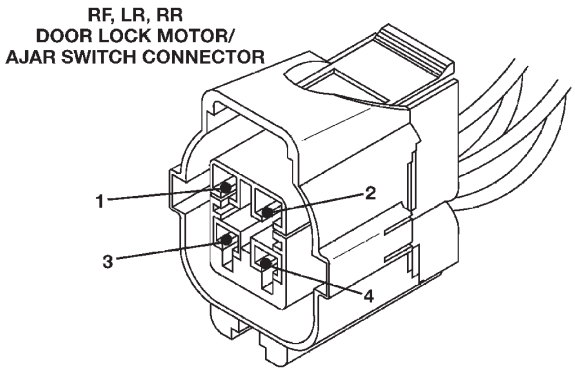
LEFT FRONT DOOR LOCK MOTOR/ AJAR SWITCH CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN | DOOR AJAR SWITCH SENSE |
| 2 | BK | GROUND |
| 3 | DB | LF DOOR UNLOCK RELAY OUTPUT |
| 4 | OR | LOCK RELAY OUTPUT |

80b1b3cc

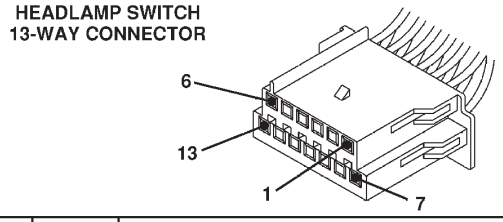
## 4.9 Door Ajar (continued)




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | DOOR AJAR SWITCH SENSE |
| 2 | BK | GROUND |
| 3 | PK/BK | UNLOCK RELAY OUTPUT |
| 4 | OR | LOCK RELAY OUTPUT |

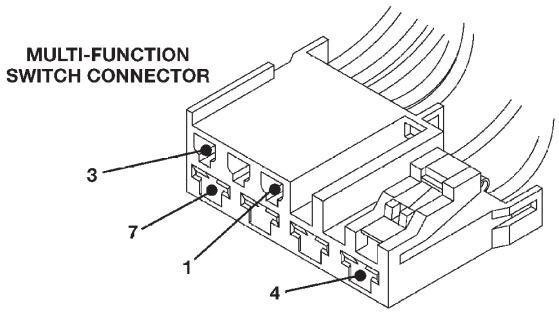
80b1b3cd

## 4.10 Exterior/Interior Lighting



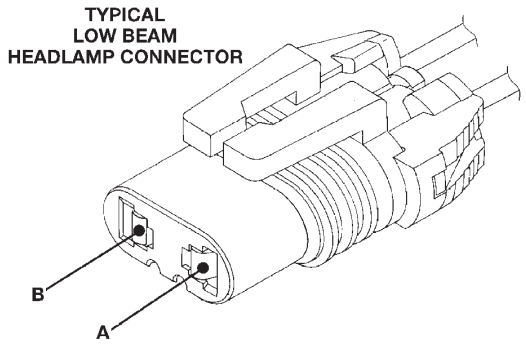

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LB | Ground (for Headlamp Level) |
| 2 | BK/YL | Park Lamp Relay Output (for Headlamp Level) |
| 3 | RD | Panel Lamps Dimmer Signal |
| 4 | BK | Ground |
| 5 | DG/YL | Fog Lamp Relay Output (Rear) |
| 6 | WT | Headlamp Switch Return |
| 8 | BR/YL | Headlamp Adjust Signal |
| 9 | OR | Panel Lamps Driver |
| 10 | LG/BK | Rear Fog Lamp Switch Ground |
| 11 | LB | Fog Lamp Relay Output (Front) |
| 12 | YL | Headlamp Switch Mux |

80b4fa47



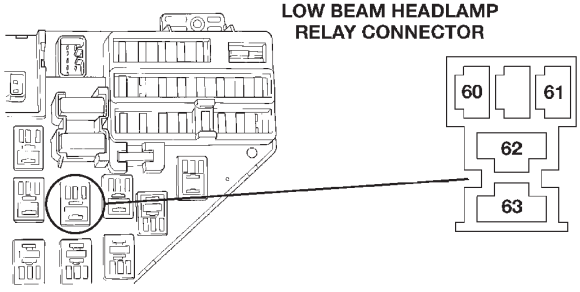

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DB | FUSED IGNITION SWITCH OUTPUT |
| 2 | BR | WASHER MOTOR CONTROL |
| 3 | DG/RD | WIPER SWITCH MUX SIGNAL |
| 4 | BR/WT | FUSED LOW BEAM RELAY OUTPUT |
| 5 | PK/RD | FUSED B(+) |
| 7 | WT/LG | SWITCHED HIGH BEAM RELAY CONTROL |

80b6b155



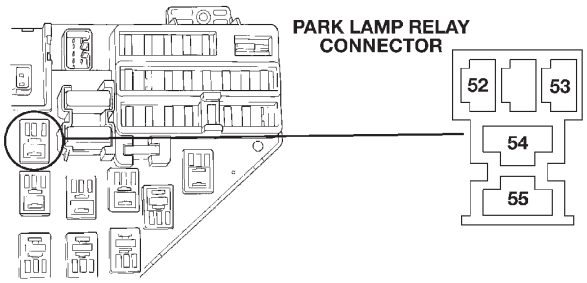

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | VT/★ | FUSED LOW BEAM RELAY OUTPUT |
| B | BK | GROUND |

80accfd9



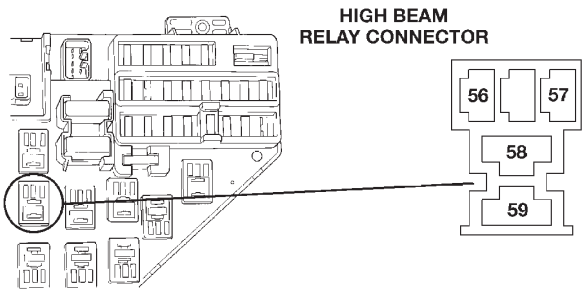

| CAV | FUNCTION |
|---|---|
| 60 (86) | LOW BEAM RELAY CONTROL |
| 61 (85) | FUSED B (+) |
| 62 (87) | FUSED B (+) |
| 63 (30) | LOW BEAM RELAY OUTPUT |

80b2b418



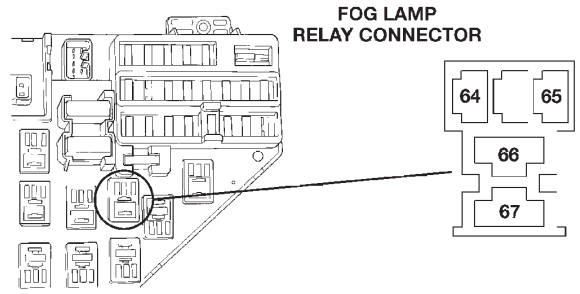

| CAV | FUNCTION |
|---|---|
| 52 (86) | PARK LAMP RELAY CONTROL |
| 53 (85) | FUSED B (+) |
| 54 (87) | FUSED B (+) |
| 55 (30) | PARK LAMP RELAY OUTPUT |

80b2b41c



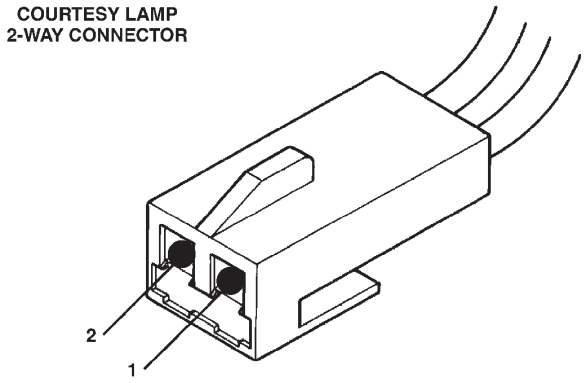

| CAV | FUNCTION |
|---|---|
| 56 (86) | GROUND |
| 57 (85) | HIGH BEAM RELAY CONTROL |
| 58 (87) | FUSED B (+) |
| 59 (30) | HIGH BEAM RELAY OUTPUT |

80b2b417



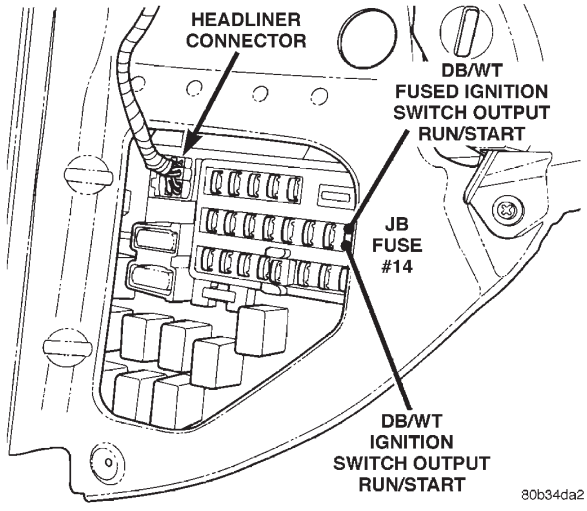

| CAV | FUNCTION |
|---|---|
| 64 (86) | FOG LAMP RELAY CONTROL |
| 65 (85) | FUSED B (+) |
| 66 (87) | FUSED B (+) |
| 67 (30) | FOG LAMP RELAY OUTPUT |

80b2b41e

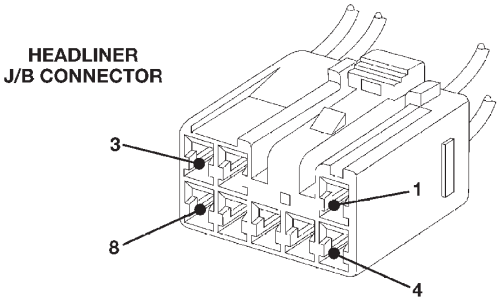



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK | FUSED B(+) |
| 2 | YL | COURTESY LAMPS DRIVER |

80b29f33



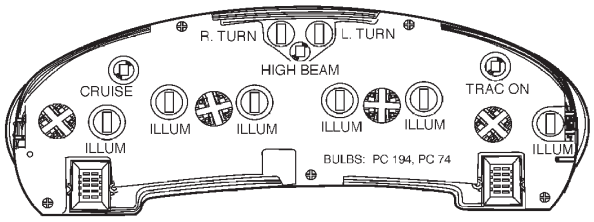

80b34da2




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LG | GROUND |
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT |
| 3 | BK | GROUND |
| 4 | YL/VT | PCI BUS (OTIS) |
| 5 | VT/BK | BACK-UP LAMP FEED |
| 6 | PK | FUSED B(+) |
| 7 | RD | FUSED B(+) (SUNROOF) |
| 8 | YL | COURTESY LAMPS DRIVER |

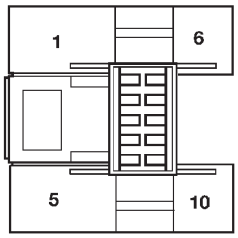
80b1b389

## 4.11 Instrument Cluster




80b242fb

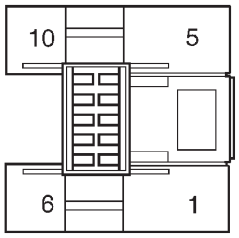
**INSTRUMENT CLUSTER "C1" (GREEN) 10 WAY CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK/RD | FUSED B(+) |
| 2 | RD/WT | FUSED IGNITION SW OUTPUT (OFF/RUN/START) |
| 3 | PK | FUSED B(+) |
| 4 | OR | PANEL LAMPS DRIVER |
| 5 | YL/VT | PCI BUS |
| 6 | BK/LG | GROUND |
| 8 | TN | RIGHT TURN SIGNAL |
| 10 | WT/LG | HIGH BEAM RELAY CONTROL |

80b4b7af

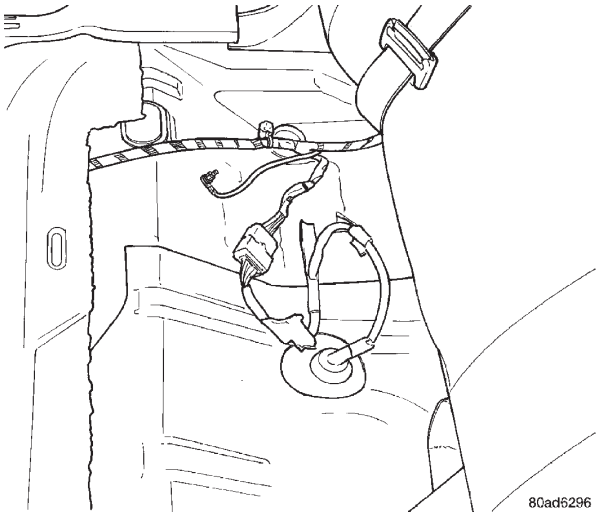
**INSTRUMENT CLUSTER "C2" (BLUE) 10 WAY CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 3 | GY/BK | RED BRAKE WARNING LAMP DRIVER |
| 4 | BK/TN | WASHER FLUID SW. SENSE |
| 5 | LG | LEFT TURN SIGNAL |
| 6 | BK | GROUND |
| 8 | RD/YL | TRACTION CONTROL SW. SENSE |
| 9 | TN/BK | DECKLID AJAR SW. SENSE |
| 10 | GY | ENGINE OIL PRESSURE SW. SENSE |

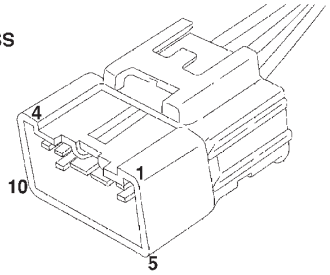
80b243cd

### FUEL TANK SENDING UNIT



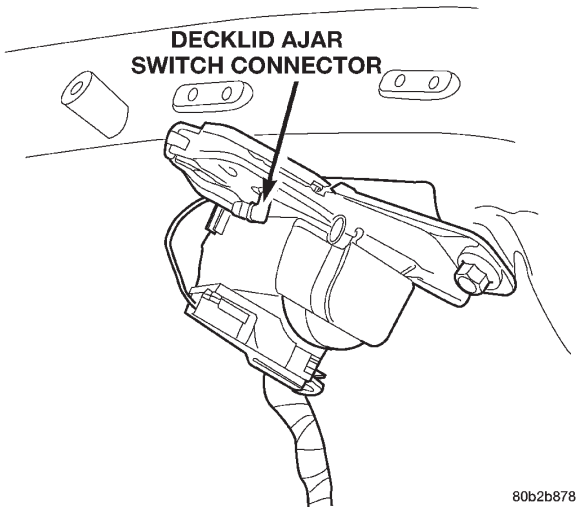
80ad6296

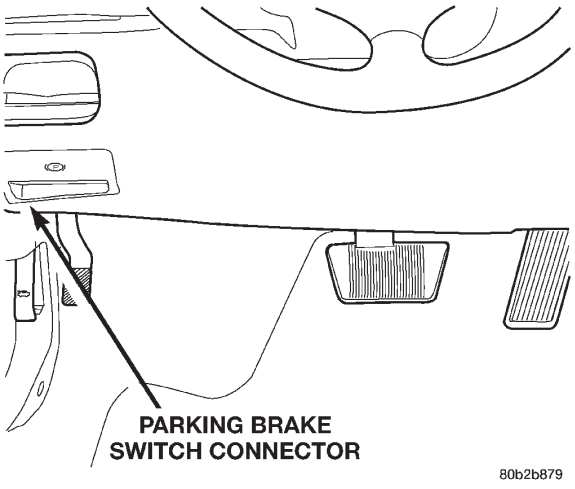
**BODY HARNESS CONNECTOR**

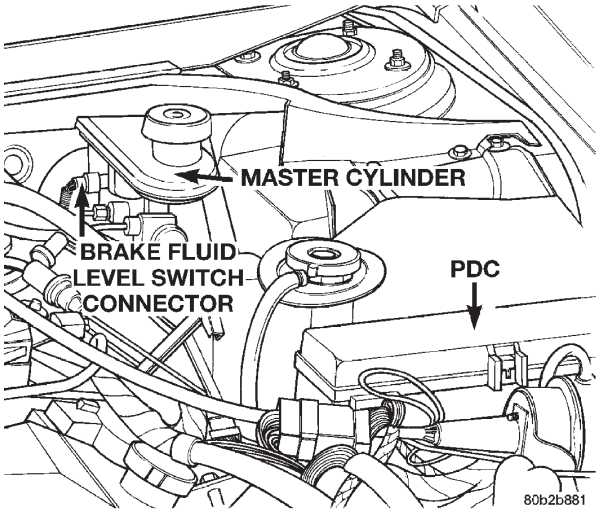


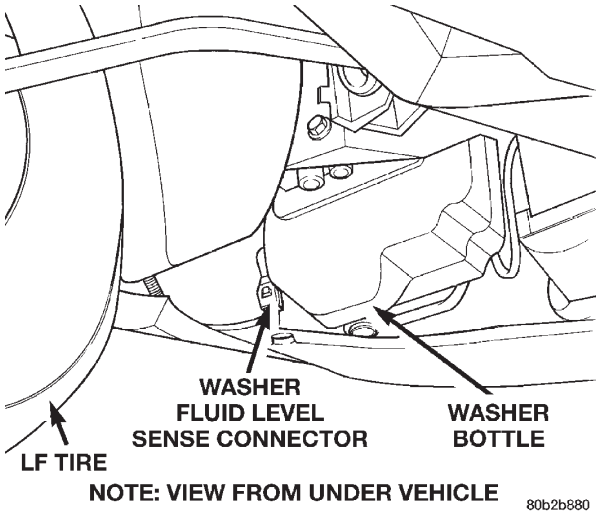

| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | DB | FUEL LEVEL SENSOR SIGNAL |
| 7 | DG/WT | FUEL PUMP RELAY OUTPUT |
| 8 | BK | GROUND (FUEL PUMP) |

80b4fb27

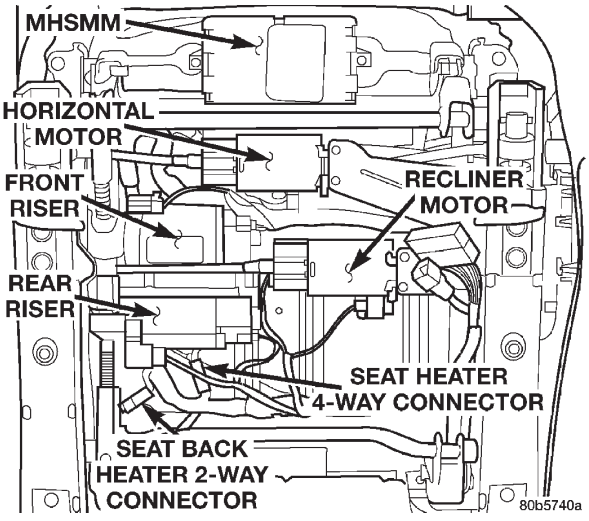


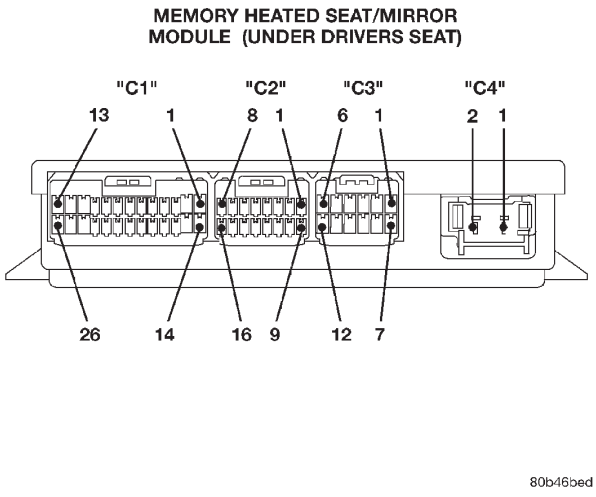



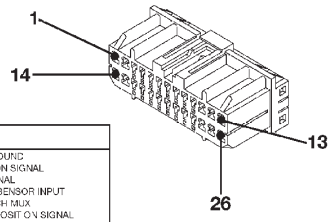

## 4.12 Memory System



## 4.12 Memory System (continued)

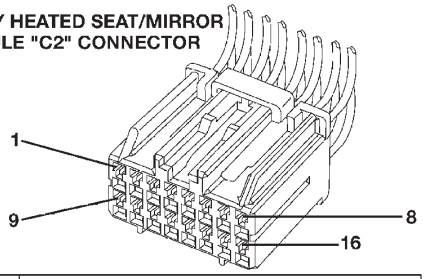
**MEMORY HEATED SEAT/MIRROR MODULE "C1" CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | WT/RD | LEFT MIRROR SENSOR GROUND |
| 2 | VT/RD | SEAT HORIZONTAL POSITION SIGNAL |
| 3 | LB/RD | REAR RISER POSITION SIGNAL |
| 4 | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| 5 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |
| 6 | YL/RD | RIGHT MIRROR VERTICAL POSITION SIGNAL |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 8 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 9 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |
| 11 | GY/LB | RECLINER UP SWITCH SENSE |
| 12 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |
| 13 | PK/BK | MEMORY SET SWITCH SENSE |
| 14 | WT/BK | RIGHT MIRROR SENSOR GROUND |
| 15 | BR | FRONT RISER POSITION SIGNAL |
| 16 | LB | RECLINER POSITION SIGNAL |
| 17 | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| 18 | TN/DG | LEFT SEAT HEATER SWITCH MUX |
| 19 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SIGNAL |
| 20 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 21 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 22 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 23 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 24 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 25 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 26 | YL/VT | PCI BUS |

80b46bd5

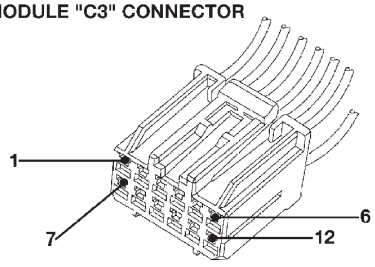
**MEMORY HEATED SEAT/MIRROR MODULE "C2" CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/WT | LEFT SEAT HIGH HEAT LED DRIVER |
| 2 | VT/BK | RIGHT SEAT HIGH HEAT LED DRIVER |
| 3 | YL/PK | LEFT MIRROR COMMON DRIVER (RIGHT/DOWN) |
| 4 | BK/WT | LEFT MIRROR LEFT DRIVER |
| 5 | YL | LEFT MIRROR UP DRIVER |
| 6 | BR/WT | SEAT SENSOR 5 VOLT SUPPLY |
| 7 | GY/LB | LEFT MIRROR SENSOR 5 VOLT SUPPLY |
| 8 | DG/WT | RIGHT MIRROR SENSOR 5 VOLT SUPPLY |
| 9 | VT/DG | LEFT SEAT LOW HEAT LED DRIVER |
| 10 | VT/LG | RIGHT SEAT LOW HEAT LED DRIVER |
| 11 | WT | RIGHT MIRROR COMMON DRIVER (RIGHT/DOWN) |
| 12 | DB | RIGHT MIRROR LEFT DRIVER |
| 13 | YL/BK | RIGHT MIRROR UP DRIVER |
| 14 | BK/LG | RIGHT SEAT TEMPERATURE 5 VOLT SUPPLY |
| 15 | BK/DG | LEFT SEAT TEMPERATURE 5 VOLT SUPPLY |
| 16 | BR/RD | SEAT POSITION SENSOR GROUND |

80b46bd6

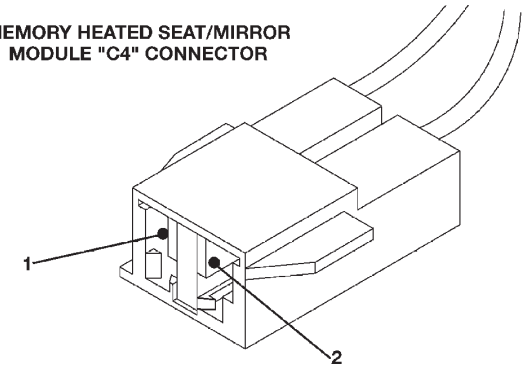
**MEMORY HEATED SEAT/MIRROR MODULE "C3" CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | YL/WT | SEAT REAR UP DRIVER |
| 2 | YL/DB | SEAT HORIZONTAL FORWARD DRIVER |
| 3 | YL/LG | SEAT FRONT UP DRIVER |
| 4 | RD/WT | SEAT REAR DOWN DRIVER |
| 5 | RD/LG | SEAT FRONT DOWN DRIVER |
| 6 | RD/TN | RIGHT SEAT HEATER B(+) DRIVER |
| 7 | GY/LB | LEFT SEAT RECLINER UP DRIVER |
| 8 | RD | SEAT SWITCH B(+) SUPPLY |
| 10 | GY/WT | LEFT SEAT RECLINER DOWN DRIVER |
| 11 | RD/LB | SEAT HORIZONTAL REARWARD DRIVER |
| 12 | RD/DG | LEFT SEAT HEATER B(+) DRIVER |

80b46bd7

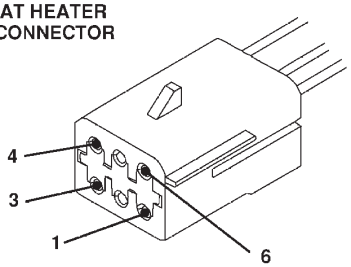
**MEMORY HEATED SEAT/MIRROR MODULE "C4" CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | RD | FUSED B(+) |

80b46bd8

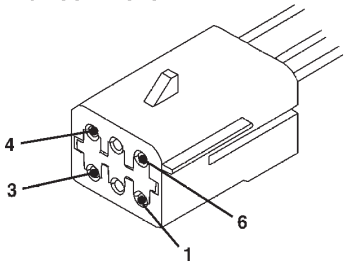
**LEFT SEAT HEATER SWITCH CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/DG | LEFT SEAT LOW HEAT LED DRIVER |
| 3 | BK | GROUND |
| 4 | DB/WT | FUSED IGNITION SWITCH OUTPUT |
| 5 | VT/WT | LEFT SEAT HIGH HEAT LED DRIVER |
| 6 | TN/DG | LEFT SEAT HEATER SWITCH MUX |

80b46bff

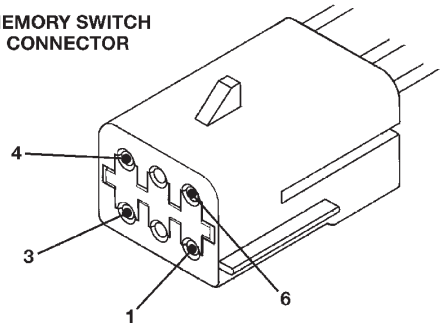
**RIGHT SEAT HEATER SWITCH CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/LG | RIGHT SEAT LOW HEAT LED DRIVER |
| 3 | BK | GROUND |
| 4 | DB/WT | FUSED IGNITION SWITCH OUTPUT |
| 5 | VT/BK | RIGHT SEAT HIGH HEAT LED DRIVER |
| 6 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |

80b46bfe

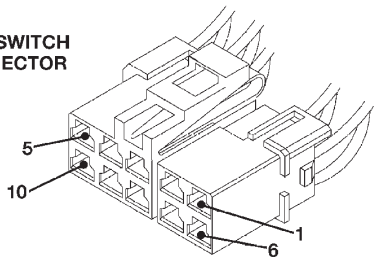
MEMORY SWITCH CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 3 | BK | GROUND |
| 4 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 5 | PK/BK | MEMORY SET SWITCH SENSE |
| 6 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |

80b46c03

POWER SEAT SWITCH 10-WAY CONNECTOR

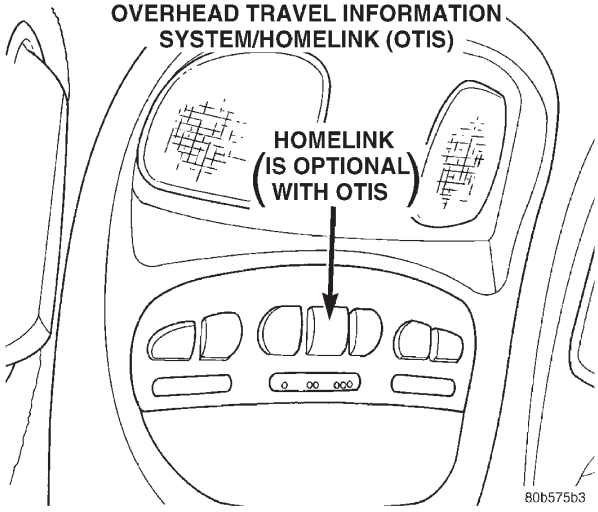



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD | SEAT SWITCH B(+) SUPPLY |
| 2 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 3 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 4 | GY/LB | RECLINER UP SWITCH SENSE |
| 5 | BK | GROUND |
| 6 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 7 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 8 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 9 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |

80b4b849

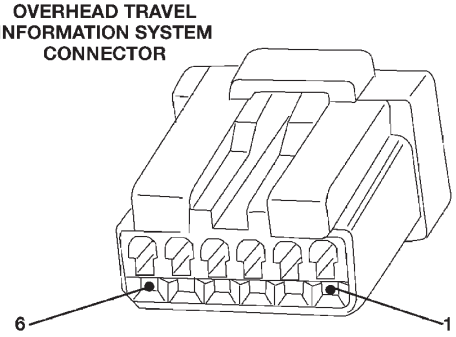
## 4.13 OTIS

OVERHEAD TRAVEL INFORMATION SYSTEM/HOMELINK (OTIS)




80b575b3

OVERHEAD TRAVEL INFORMATION SYSTEM CONNECTOR

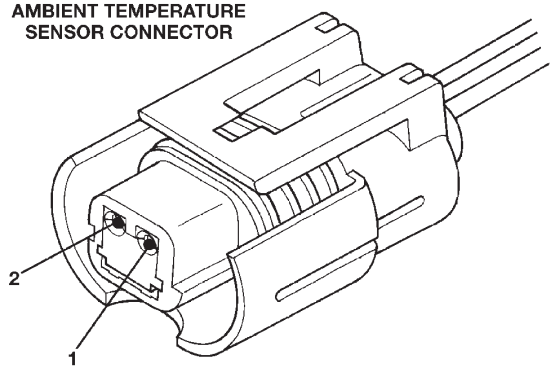



| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT RUN/START |
| 3 | BK/LG | GROUND |
| 4 | PK | FUSED B(+)* |
| 5 | YL/VT | PCI BUS (OTIS) |

* IF EQUIPPED WITH HOMELINK

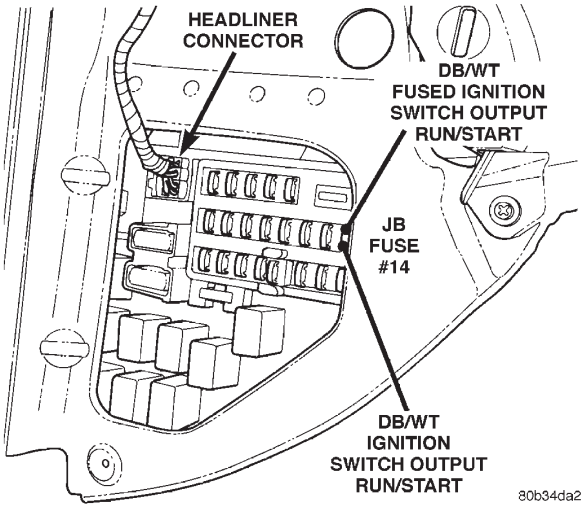
80b2437f

AMBIENT TEMPERATURE SENSOR CONNECTOR



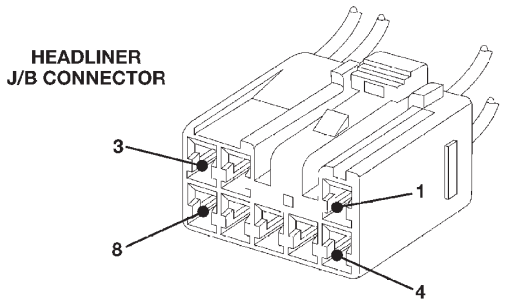

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/LG | AMBIENT TEMP SENSOR SIGNAL |
| 2 | DB/GY | SENSOR GROUND |

80b6eff6




80b34da2

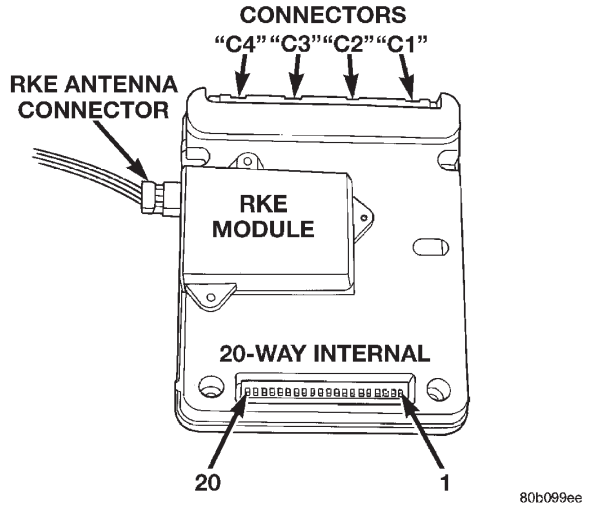
## 4.13 OTIS (continued)



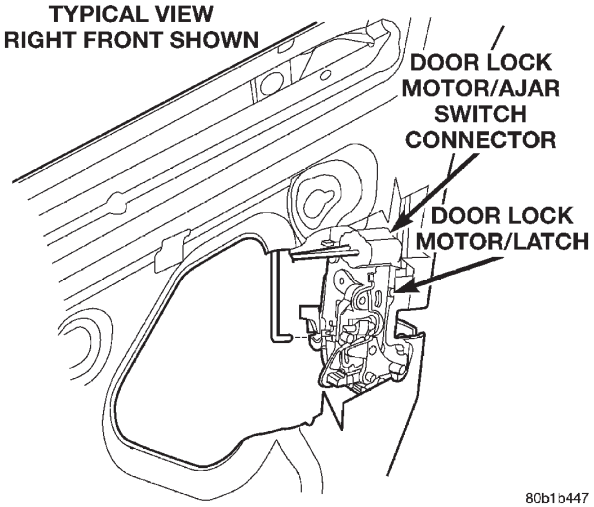

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LG | GROUND |
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT |
| 3 | BK | GROUND |
| 4 | YL/VT | PCI BUS (OTIS) |
| 5 | VT/BK | BACK-UP LAMP FEED |
| 6 | PK | FUSED B(+) |
| 7 | RD | FUSED B(+) (SUNROOF) |
| 8 | YL | COURTESY LAMPS DRIVER |

80b1b389

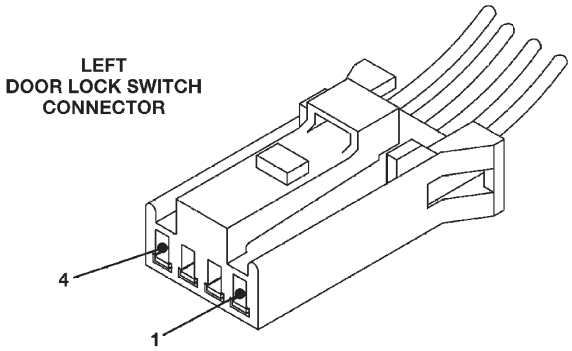
## 4.14 Power Door Locks/RKE




80b099ee

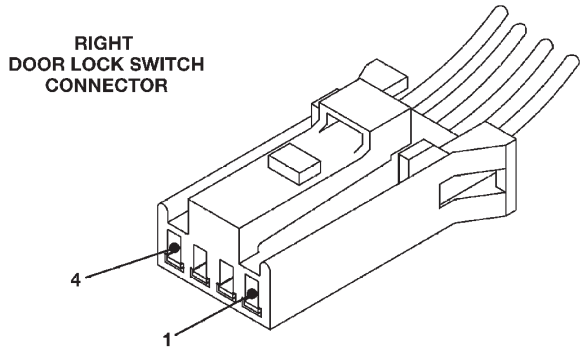



80b1b447




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK | FUSED B(+) |
| 2 | DB/WT | FUSED IGN SW OUTPUT (RUN/START) |
| 3 | BK | GROUND |
| 4 | WT/DG | LEFT FRONT DOOR SWITCH MUX |

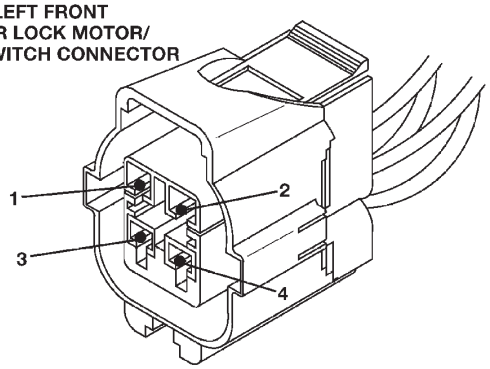
80b1b398




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK | FUSED B(+) |
| 2 | DB/WT | FUSED IGN SW OUTPUT (RUN/START) |
| 3 | BK | GROUND |
| 4 | WT/LG | RIGHT FRONT DOOR SWITCH MUX |

80b1b397

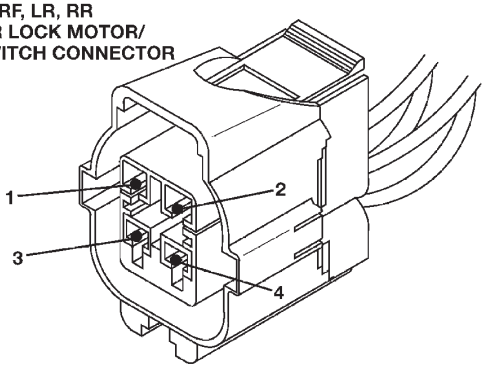
**LEFT FRONT DOOR LOCK MOTOR/ AJAR SWITCH CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN | DOOR AJAR SWITCH SENSE |
| 2 | BK | GROUND |
| 3 | DB | LF DOOR UNLOCK RELAY OUTPUT |
| 4 | OR | LOCK RELAY OUTPUT |

80b1b3cc

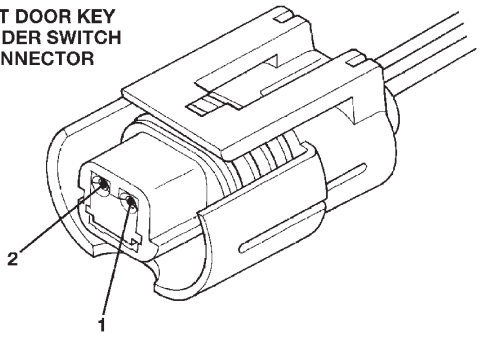
**RF, LR, RR DOOR LOCK MOTOR/ AJAR SWITCH CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | DOOR AJAR SWITCH SENSE |
| 2 | BK | GROUND |
| 3 | PK/BK | UNLOCK RELAY OUTPUT |
| 4 | OR | LOCK RELAY OUTPUT |

80b1b3cd

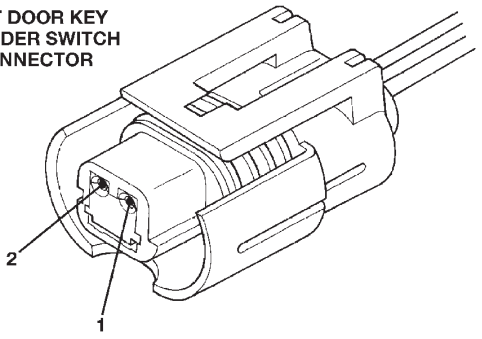
**RIGHT DOOR KEY CYLINDER SWITCH CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 2 | PK | FUSED B(+) |

80b1b3c8

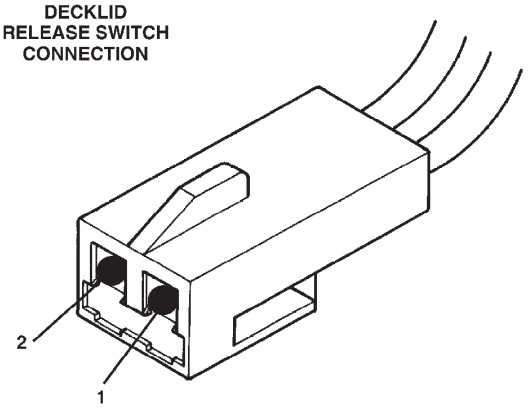
**LEFT DOOR KEY CYLINDER SWITCH CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 2 | PK | FUSED B(+) |

80b1b3c7

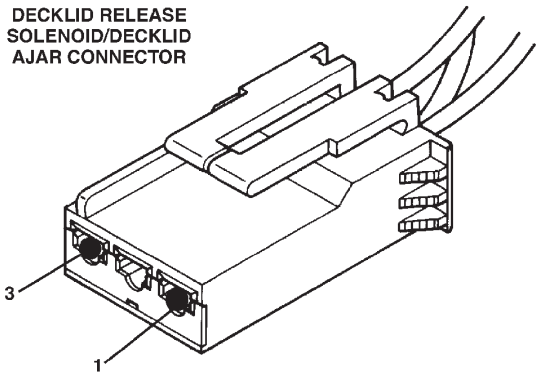
**DECKLID RELEASE SWITCH CONNECTION**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/WT | DECKLID RELEASE SWITCH OUTPUT |
| 2 | PK | FUSED B(+) |

80b2a1f3

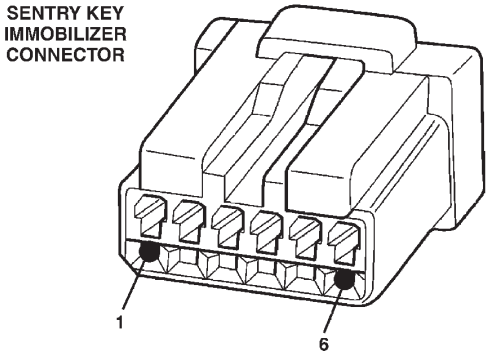
**DECKLID RELEASE SOLENOID/DECKLID AJAR CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | TN/BK | DECKLID AJAR SWITCH SENSE |
| 3 | BK/WT | DECKLID RELEASE CONTROL |

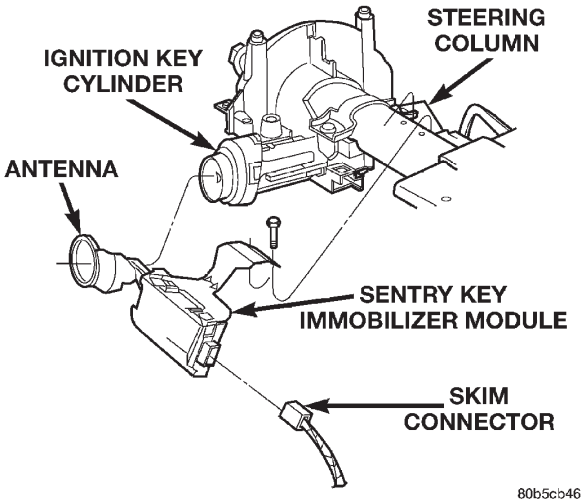
80b29f2e

## 4.15 Sentry Key Immobilizer System



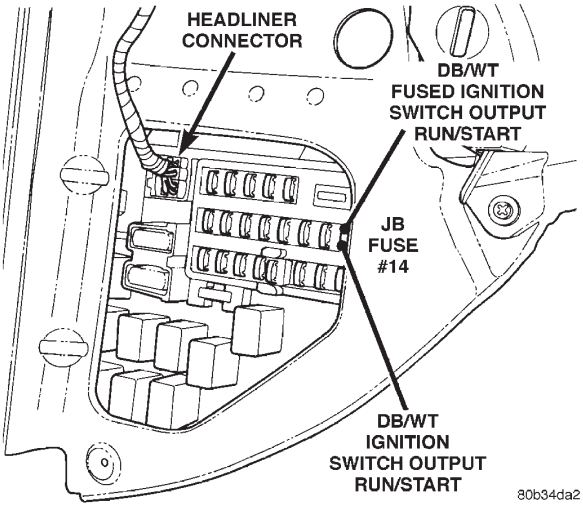

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK | FUSED B(+) |
| 2 | BK/LG | GROUND |
| 3 | DB/WT | FUSED IGNITION SWITCH OUTPUT |
| 5 | YL/VT | PCI BUS |

80b3c64f

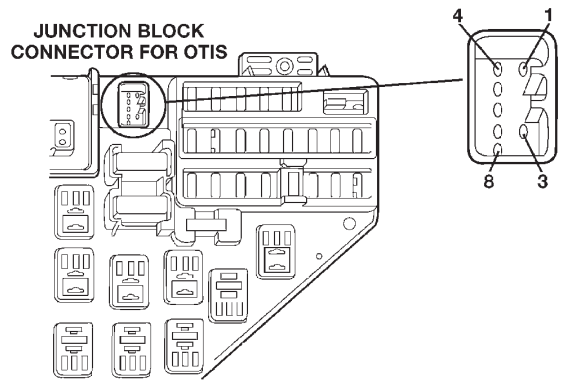



80b5cb46

## 4.16 Vehicle Communication System

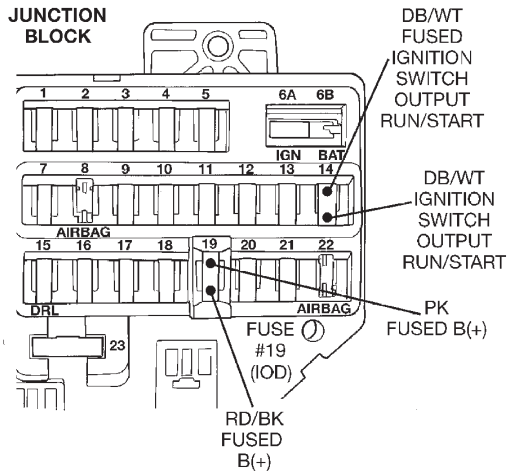



80b34da2

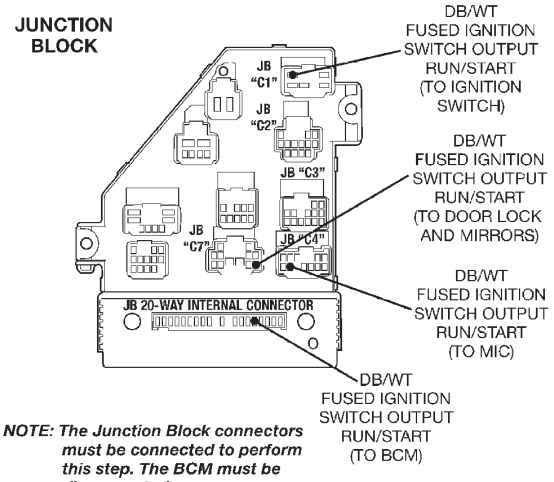



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LG | GROUND |
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT RUN/START |
| 4 | YL/VT | PCI BUS (OTIS) |

80b308b5



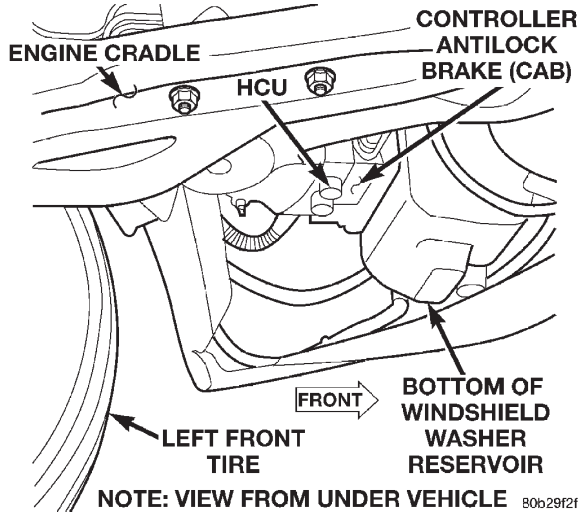

80b0d76c



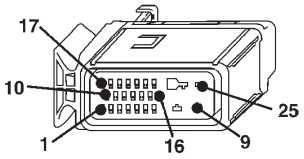

***NOTE: The Junction Block connectors must be connected to perform this step. The BCM must be disconnected.***

80b308b3

## ABS



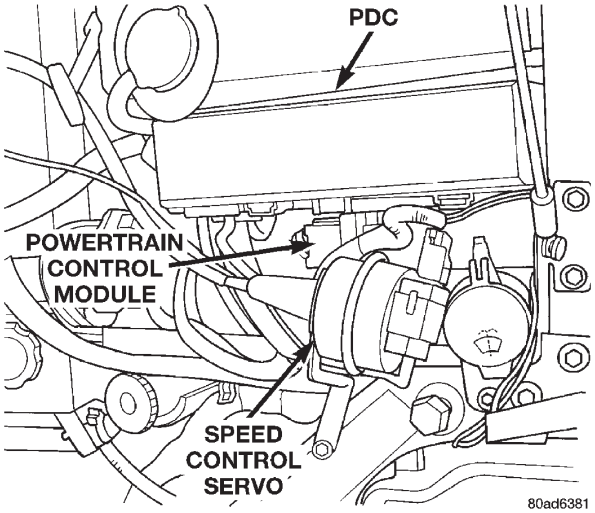

CONTROLLER-ANTILOCK BRAKE CONNECTOR



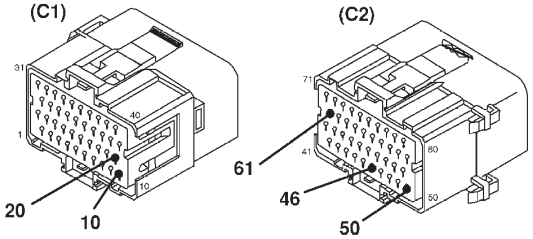

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | YL/DB | RR Wheel Speed Sensor (-) |
| 2 | LG/DB | LR Wheel Speed Sensor (-) |
| 3 | WT | RF Wheel Speed Sensor (+) |
| 4 | RD | LF Wheel Speed Sensor (+) |
| 8 | BK | Ground |
| 9 | RD/DB | Fused B(+) |
| 10 | LG | LR Wheel Speed Sensor (+) |
| 11 | RD/TN | LF Wheel Speed Sensor (-) |
| 12 | WT/TN | Brake Lamp Switch Output |
| 17 | YL | RR Wheel Speed Sensor (+) |
| 18 | WT/DB | RF Wheel Speed Sensor (-) |
| 20 | YL/VT | PCI Bus |
| 23 | WT/VT | Fused Ignition Switch Output |
| 24 | BK | Ground |
| 25 | RD/DG | Fused B(+) |

80b1b42c

## PCM



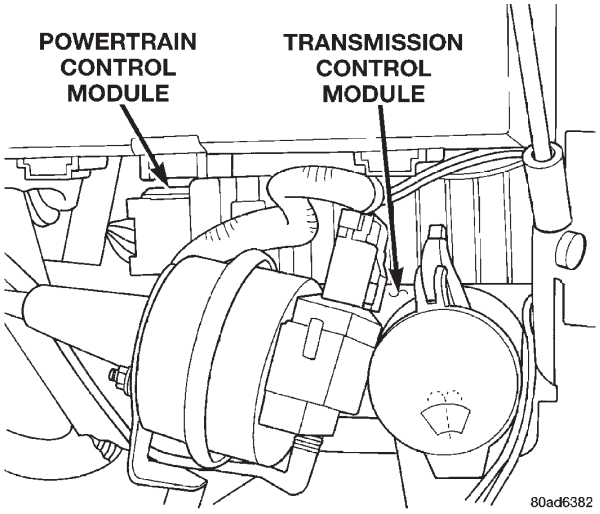

POWERTRAIN CONTROL MODULE CONNECTORS

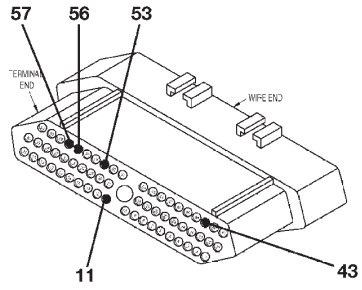



| CAV | COLOR | FUNCTION |
|---|---|---|
| 10 | BK/TN | GROUND |
| 20 | DB/WT | FUSED IGNITION SWITCH OUTPUT |
| 46 | RD/WT | FUSED B(+) |
| 47 | BK/WT | GROUND |
| 50 | BK/TN | GROUND |
| 59 | YL/VT | PCI BUS |
| 61 | VT/WT | 5-VOLT SUPPLY |

80b171aa

## TCM



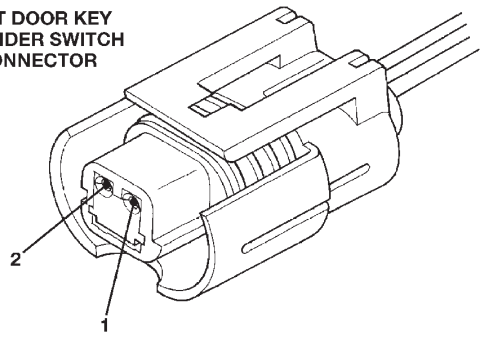




| CAV | COLOR | FUNCTION |
|---|---|---|
| 11 | RD/WT | IGNITION SWITCH OUT(RUN/ST) |
| 43 | YL/VT | PCI BUS |
| 53 | BK | TCM GROUND |
| 56 | RD/LB | FUSED B+ |
| 57 | BK/RD | TCM GROUND |

80b2b601

## 4.17 Vehicle Theft Security System

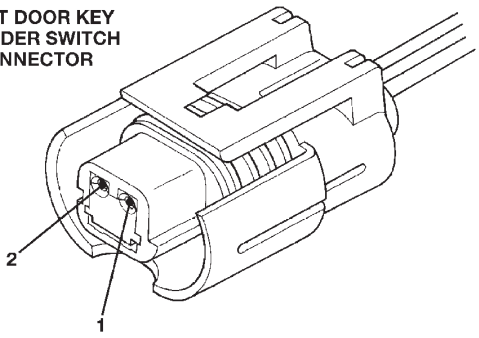
LEFT DOOR KEY CYLINDER SWITCH CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 2 | PK | FUSED B(+) |

80b1b3c7

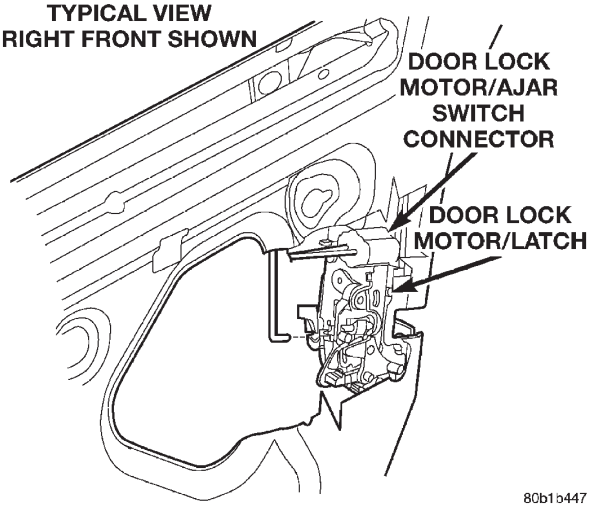
RIGHT DOOR KEY CYLINDER SWITCH CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 2 | PK | FUSED B(+) |

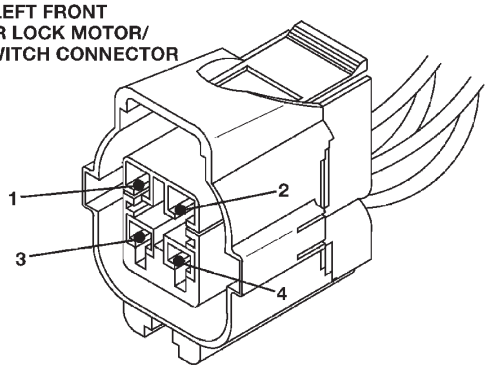
80b1b3c8

TYPICAL VIEW RIGHT FRONT SHOWN




80b1b447

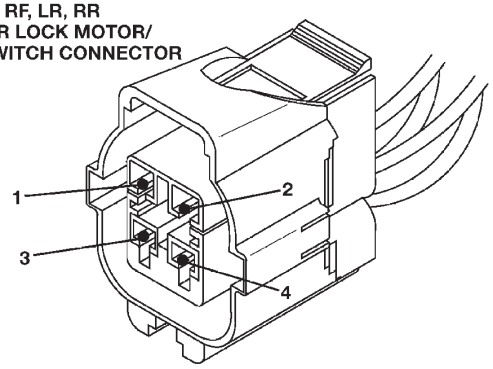
LEFT FRONT DOOR LOCK MOTOR/ AJAR SWITCH CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN | DOOR AJAR SWITCH SENSE |
| 2 | BK | GROUND |
| 3 | DB | LF DOOR UNLOCK RELAY OUTPUT |
| 4 | OR | LOCK RELAY OUTPUT |

80b1b3cc

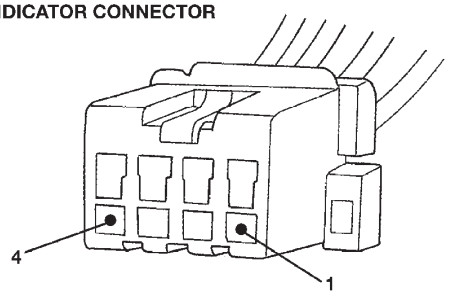
RF, LR, RR DOOR LOCK MOTOR/ AJAR SWITCH CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | DOOR AJAR SWITCH SENSE |
| 2 | BK | GROUND |
| 3 | PK/BK | UNLOCK RELAY OUTPUT |
| 4 | OR | LOCK RELAY OUTPUT |

80b1b3cd

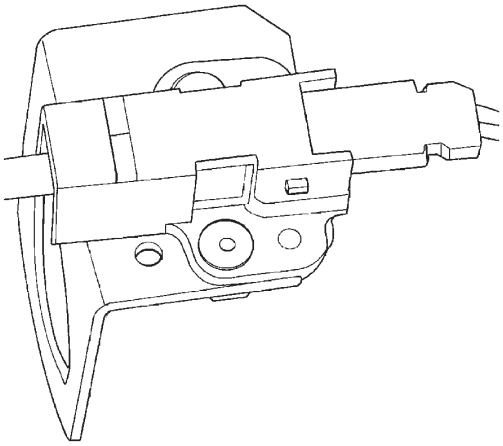
ATC SUN SENSOR/VTSS INDICATOR CONNECTOR



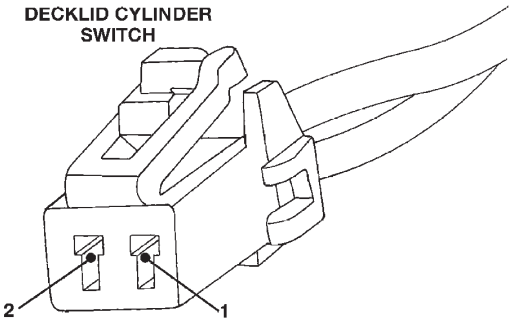

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK | FUSED B (+) |
| 2 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 3 | DB/GY | SENSOR GROUND |
| 4 | DB | SUN SENSOR SIGNAL |

80b2b603

**DECKLID CYLINDER SWITCH**



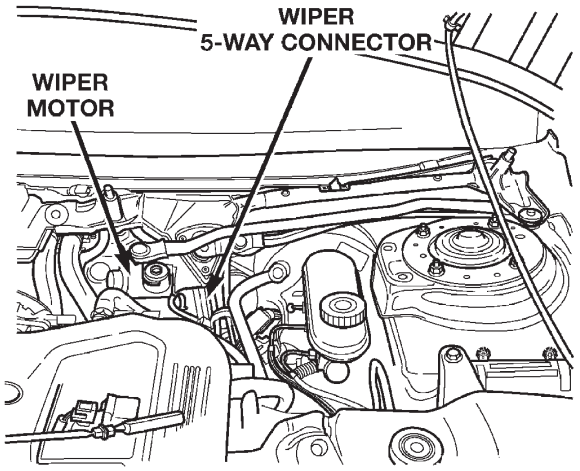
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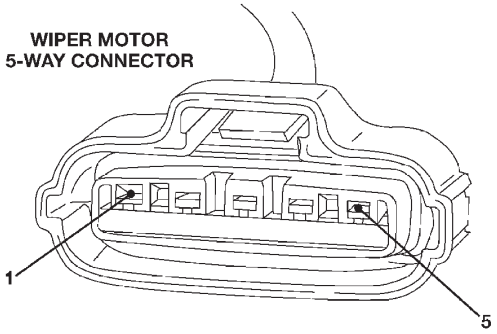

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 2 | BK | GROUND |

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## 4.18 Wiper System

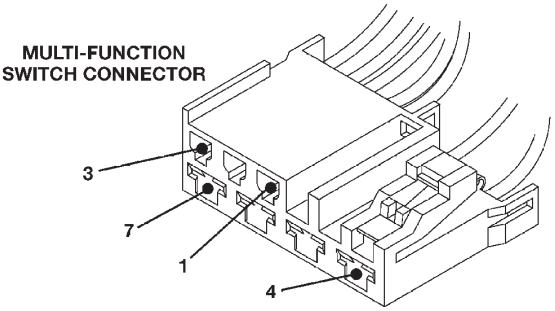



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| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/YL | WIPER SWITCH HIGH SPEED OUTPUT |
| 2 | BR/WT | WIPER SWITCH LOW SPEED OUTPUT |
| 4 | TN/RD | WIPER PARK SWITCH SENSE |
| 5 | BK | GROUND |

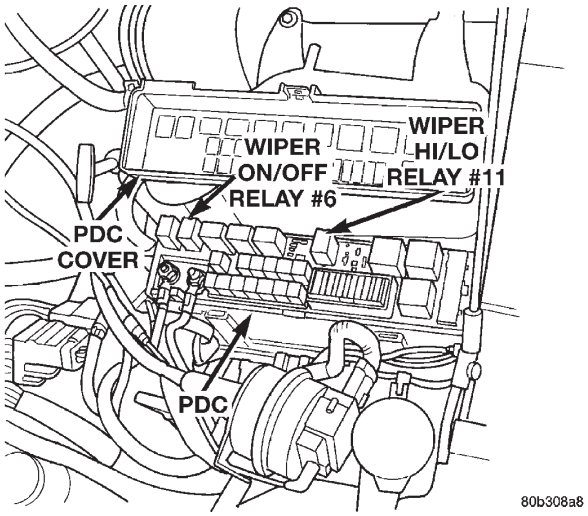
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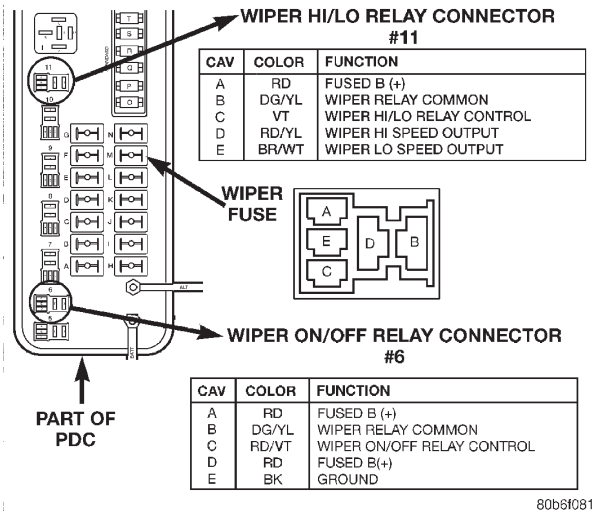

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DB | FUSED IGNITION SWITCH OUTPUT |
| 2 | BR | WASHER MOTOR CONTROL |
| 3 | DG/RD | WIPER SWITCH MUX SIGNAL |
| 4 | BR/WT | FUSED LOW BEAM RELAY OUTPUT |
| 5 | PK/RD | FUSED B(+) |
| 7 | WT/LG | SWITCHED HIGH BEAM RELAY CONTROL |

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## 4.18 Wiper System (continued)



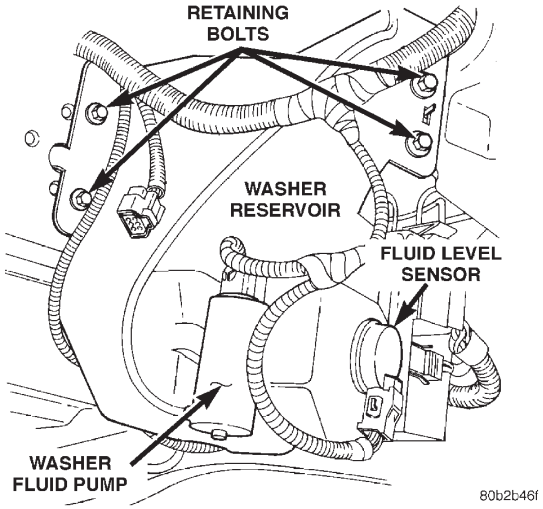

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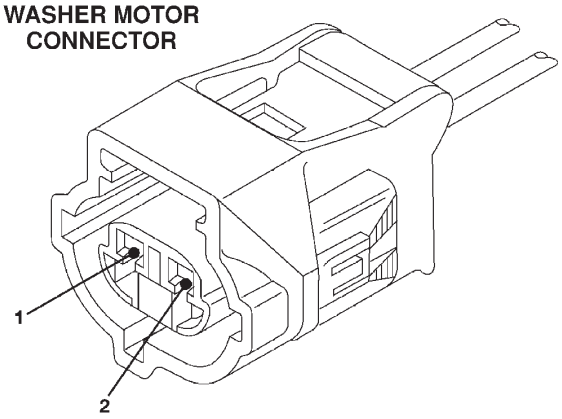

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | VT | WIPER HI/LO RELAY CONTROL |
| D | RD/YL | WIPER HI SPEED OUTPUT |
| E | BR/WT | WIPER LO SPEED OUTPUT |

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | RD/VT | WIPER ON/OFF RELAY CONTROL |
| D | RD | FUSED B(+) |
| E | BK | GROUND |

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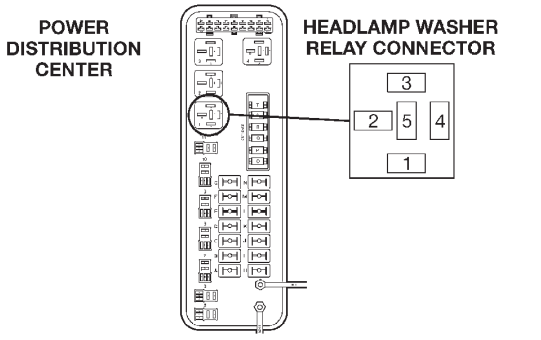



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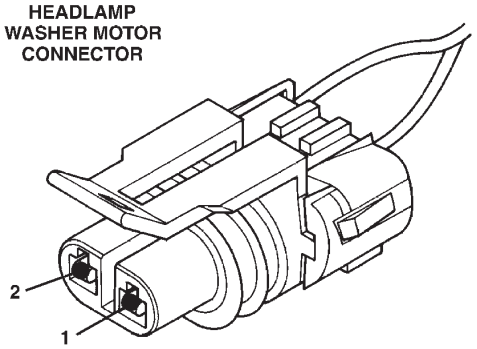

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | BR | WASHER MOTOR CONTROL |

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| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BR/YL | HEADLAMP WASHER RELAY CONTROL |
| 2 | RD/YL | FUSED B(+) |
| 3 | RD/YL | FUSED B(+) |
| 4 | RD/OR | HEADLAMP WASHER MOTOR CONTROL |

80b575e9




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | RD/OR | HEADLAMP WASHER MOTOR CONTROL |

80b575ea

# 5.0 DISCLAIMERS, SAFETY, WARNINGS

## 5.1 Disclaimers

All information, illustrations, and specifications contained in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

## 5.2 Safety

### 5.2.1 Technician Safety Information

**DANGER!!! Engines produce carbon monoxide that is odorless, causes slower reaction time, and can lead to serious injury. When the engine is operating, keep service areas WELL VENTILATED or attach the vehicle exhaust system to the shop exhaust removal system.**

Set the parking brake and block the wheels before testing or repairing the vehicle. It is especially important to block the wheels on front-wheel drive vehicles; the parking brake does not hold drive wheels.

When servicing a vehicle, always wear eye protection, and remove any metal jewelry such as watchbands or bracelets that might make an inadvertent electrical contact.

When diagnosing a body system problem, it is important to follow approved procedures where applicable. These procedures can be found in General Information Section 9.0 (Specifications) or in service manual procedures. Following these procedures is very important to the safety of individuals performing diagnostic tests.

### 5.2.2 Vehicle Preparation for Testing

Make sure the vehicle being tested has a fully charged battery. If it does not, false diagnostic codes or error messages may occur.

### 5.2.3 Servicing Sub-Assemblies

Some components of the powertrain system are intended to be serviced in assembly only. Attempting to remove or repair certain system sub-components may result in personal injury and/or improper system operation. Only those components with approved repair and installation procedures in the service manual should be serviced.

### 5.2.4 DRBIII® Safety Information

**WARNING: Exceeding the limits of the DRB multimeter is dangerous. It can expose you to serious or possibly fatal injury. Carefully read and understand the cautions and the specification limits.**

- Follow the vehicle manufacturer’s service specifications at all times.
- Do not use the DRB if it has been damaged.
- Do not use the test leads if the insulation is damaged or if metal is exposed.
- To avoid electrical shock, do not touch the test leads, tips, or the circuit being tested.
- Choose the proper range and function for the measurement. Do not try voltage or current measurements that may exceed the rated capacity.

- Do not exceed the limits shown in the table below:

| FUNCTION | INPUT LIMIT |
|---|---|
| Volts | 0 - 500 peak volts AC<br>0 - 500 volts DC |
| Ohms (resistance)* | 0 - 1.12 megaohms |
| Frequency Measured<br>Frequency Generated | 0 - 10 kHz |
| Temperature | -58 - 1100° F<br>-50 - 600° C |

*Ohms cannot be measured if voltage is present. Ohms can be measured only in a non-powered circuit.

- Voltage between any terminal and ground must not exceed 500v DC or 500v peak AC.
- Use caution when measuring voltage above 25v DC or 25v AC.
- A 10A fuse or circuit breaker must protect the circuit being tested.
- Use the low current shunt to measure circuits up to 10A. Use the high current clamp to measure circuits exceeding 10A.
- When testing for the presence of voltage or current, make sure the meter is functioning correctly. Take a reading of a known voltage or current before accepting a zero reading.
- When measuring current, connect the meter in series with the load.
- Disconnect the live test lead before disconnecting the common test lead.
- When using the meter function, keep the DRB away from spark plug or coil wires to avoid measuring error from outside interference.

## 5.3 Warnings

### 5.3.1 Vehicle Damage Warnings

Before disconnecting any control module, make sure the ignition is off. Failure to do so could damage the module.

When testing voltage or continuity at any control module, use the terminal side (not the wire end) of the connector. Do not probe a wire through the insulation; this will damage it and eventually cause it to fail because of corrosion.

Be careful when performing electrical tests so as to prevent accidental shorting of terminals. Such mistakes can damage fuses or components. Also, a second code could be set, making diagnosis of the original problem more difficult.

### 5.3.2 Road Testing A Complaint Vehicle

Some complaints will require a test drive as part of the repair verification procedure. The purpose of the test drive is to try to duplicate the diagnostic code or symptom condition.

**CAUTION: Before road testing a vehicle, be sure that all components are reassembled. During the test drive, do not try to read the DRB screen while in motion. Do not hang the DRB from the rear view mirror or operate it yourself. Have an assistant available to operate the DRB.**

## 6.0 FIELD EXPERIENCE (NOTES)

## NOTES

# 7.1 GENERAL TROUBLESHOOTING

## TEST 1A IDENTIFYING VEHICLE EQUIPMENT AND SYSTEM PROBLEMS

**Perform a visual inspection and verify the complaint before proceeding**

The Diagnostic Tests in this manual are separated by Systems. All Systems require different inputs to operate correctly. You must refer to the Symptom Identification (I.D.) test for a given System and follow the listed requirements in order to correctly diagnose any symptom. If a Diagnostic Trouble Code (DTC) is present, refer to the Symptom I.D. TEST 1B on the facing page to find which section the diagnostics will be covered in.

The following is a list of the systems covered in this manual and the Symptom I.D. test to perform.

**NOTE: Technical Service Bulletins may be published that address the systems listed below. Always refer to the most current information available relating to these items.**

| Problem With | Perform |
|---|---|
| Airbag System | Airbag Test 1A |
| Audio System | Audio Test 1A |
| Blank DRB Screen | Vehicle Communication Test 1A |
| Chime Warning System | Chime Test 1A |
| Climate Control System (automatic) | ATC Test 1A |
| Climate Control System (manual) | MTC Test 1A |
| Door Ajar Indicator System | Door Ajar Test 1A |
| Exterior Lighting System | Exterior Lighting Test 1A |
| Instrument Cluster | Instrument Cluster Test 1A |
| Interior Lighting System | Interior Lighting Test 1A |
| Memory System | Memory System Test 1A |
| Overhead Travel Information System/Homelink | OTIS Test 1A |
| PCI Bus Failures | Vehicle Communication Test 1A |
| Power Door Lock System | Power Door Lock Test 1A |
| Remote Keyless Entry System | Power Door Lock Test 1A |
| Sentry Key Immobilizer System | Refer to the Powertrain Diagnostic Procedure Manual |
| Vehicle Communication System | Vehicle Communication Test 1A |
| Vehicle Theft Security System | VTSS Test 1A |
| Windshield Wiper System | Wiper Test 1A |

## TEST 1B IDENTIFYING DIAGNOSTIC TROUBLE CODES (DTC'S)

**Perform a visual inspection and verify the complaint before proceeding**

**Airbag System Test 1A**
ACM Accelerometer (replace ACM)
ACM Output Driver (replace ACM)
ACM Internal Diagnostic Code #1 (replace ACM)
ACM Internal Diagnostic #2 (replace ACM)
ACM Firing Stored Energy Stored (replace ACM)
Cluster Message Mismatch
Driver Squib Circuit Open
Driver Squib Circuit Shorted
Driver Squib Circuit Shorted to Battery
Driver Squib Circuit Shorted to Ground
Loss of Ignition Run Only
Loss of Ignition Run/Start
No Cluster Message
No IFR Message
No PCI Communication
Passenger Squib Circuit Open
Passenger Squib Circuit Shorted
Passenger Squib Circuit Shorted to Battery
Passenger Squib Circuit Shorted to Ground
Power Stage Not Tested
Warning Lamp Open/Shorted

**Body Controller Failures**
Post Failure (Replace BCM)
EEPROM Constant Checksum Failure (Replace BCM)
Internal Base/Premium Select Failure (Replace BCM)

**Automatic Temp Control System Test 1A**
In-Car Temperature Sensor Failure
Sun Load Sensor Failure
ATC Messages Not Received
ATC Switch Failure

**Manual Temp Control System Test 1A**
A/C Control Mode Door Input Open or Shorted to Battery
A/C Control Mode Door Input Shorted to Ground
A/C Control Blend Door Input Open or Shorted to Ground
A/C Control Blend Door Input Shorted to Battery
A/C Control A/C Switch Failure
A/C Control EBL Switch Failure

**Automatic or Manual Temperature Control System Test 1A**
Evaporator Temperature Sensor Failure
Mode Door Stall Test Failure
Blend Door Stall Test Failure
Mode Door Feedback Failure
Blend Door Feedback Failure
Recirculation Door Test Failure

**Automatic or Manual Temperature Control System Test 1A**
Mode Door Output Shorted to Battery
Blend Door Output Shorted to Battery
Recirc Door Output Shorted to Battery
Common Output Shorted to Ground
Mode Door Output Shorted to Ground
Recirc Door Output Shorted to Ground
Blend Door Output Shorted to Ground
Common Output Shorted to Ground
Ambient Temperature Sensor Failure

**Exterior Lighting System Test 1A**
Headlamp Switch Input Failure

**Interior Lighting System Test 1A**
Courtesy Lamp Output Short to Battery

**Instrument Cluster Test 1A**
MIC Messages Not Received
Fuel Level Sending Unit Failure
Dimming Level Switch Input Failure
EATX Bus Communication Failure
SBEC Bus Communication Failure
Airbag Bus Communication Failure
ABS Bus Communication Failure
BCM Bus Communication Failure
I/P Illumination Failure

**Power Door Lock System Test 1A**
DR Door Central Lock (arm)/Unlock (disarm) Switch Failure
PASS Door Central Lock (arm)/Unlock (disarm) Switch Failure
RKE Unable to Enter Program Mode
RKE Program Mode Entered Without Program Request
Decklid Release Switch Failure
Decklid Release Solenoid Output Failure

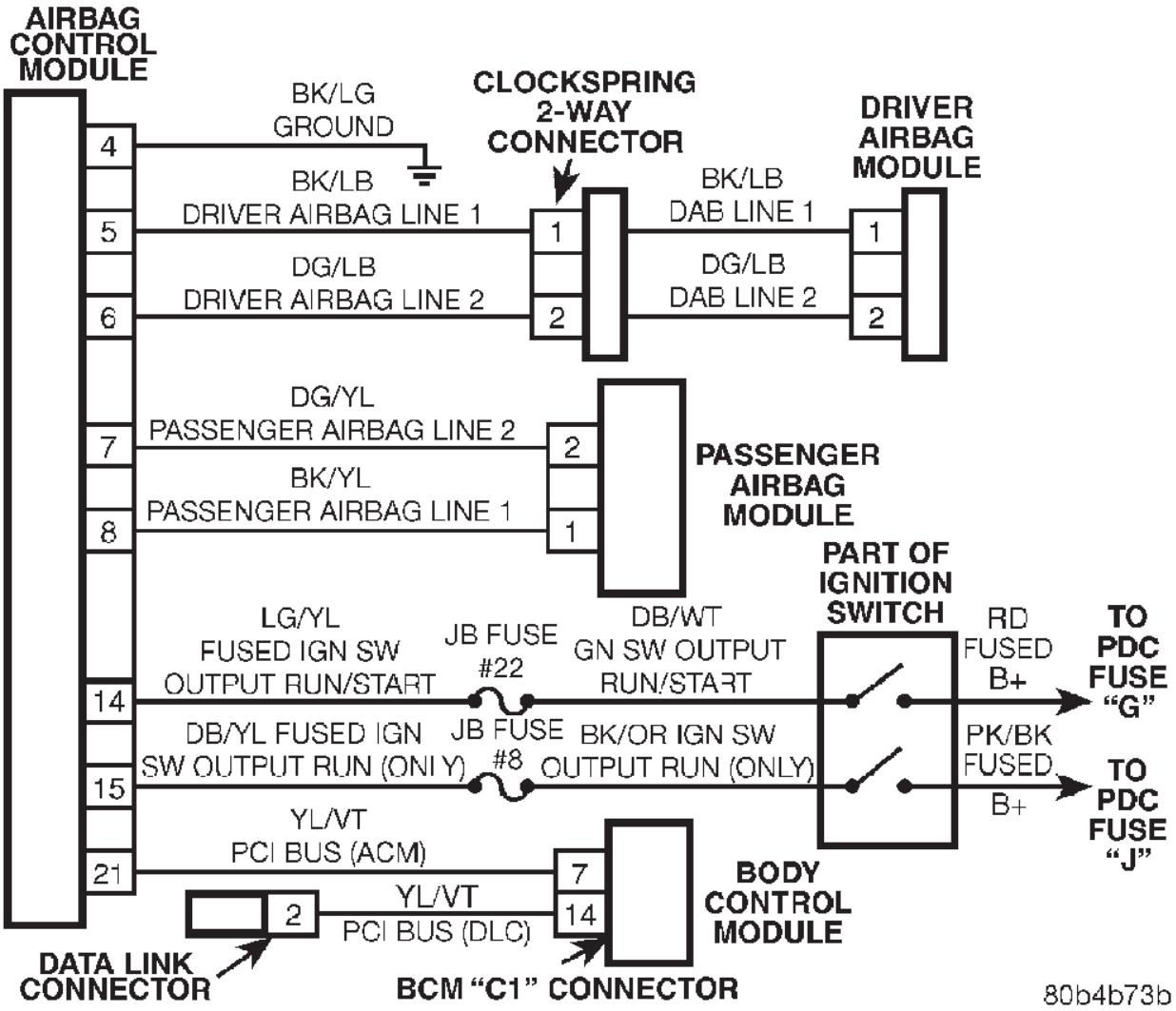
**Overhead Travel Information System/Homelink Test 1A**
Ambient Temperature Sensor Failure
OTIS Messages Not Received

**Vehicle Communication System Test 1A**
Battery Power to Module Disconnected
BUS Shorted to Battery
BUS Shorted to Ground

**Windshield Wiper System Test 1A**
Wiper On/Off Relay Output Short High
Wiper On/Off Relay Output Open or Short Low
Wiper Park Switch Failure

| TEST 1A | IDENTIFYING AIRBAG SYSTEM PROBLEMS |
|---|---|

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**



## TEST 1A IDENTIFYING AIRBAG SYSTEM PROBLEMS

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**

1. Ensure the battery is fully charged.
2. Ensure there is communication with the ‘‘Mechanical Instrument Cluster’’, “Powertrain Control Module” and the ‘‘Airbag Control Module’’ before proceeding.
   If any communication problems are found. . . . . .perform ‘‘Vehicle Communication’’ TEST 1A.
3. With the DRB, read both active and stored code(s) and record them.
   If any of the following codes are present (active or stored), . . . . . .perform TEST 19A.

   ACM ACCELEROMETER
   ACM FIRING STORED ENERGY CODE
   ACM INTERNAL DIAGNOSTIC CODE #1
   ACM INTERNAL DIAGNOSTIC CODE #2
   ACM OUTPUT DRIVER

   NOTE:
   If the ‘‘Power Stage Not Tested’’ DTC is active, stored, or it is combined with any of the marked (*) codes shown below . . . . . .perform TEST 19A

   With the DRB, erase stored codes.

   If there are no active codes present, go to Step 4.

   If any of the following active codes are present, perform the test indicated below.

| DIAGNOSTIC TROUBLE CODES (DTC) DISPLAYED | PERFORM |
|---|---|
| Cluster Message Mismatch* | TEST 2A |
| Driver Squib Circuit Open* | TEST 3A |
| Driver Squib Circuit Shorted* | TEST 4A |
| Driver Squib Circuit Shorted to Battery | TEST 5A |
| Driver Squib Circuit Shorted to Ground | TEST 6A |
| Loss of Ignition Run Only* | TEST 7A |
| Loss of Ignition Run/Start* | TEST 8A |
| No Cluster Message* | TEST 9A |
| No Cluster IFR Message* | TEST 10A |
| No PCI Communication* | TEST 11A |
| Passenger Squib Circuit Open* | TEST 12A |
| Passenger Squib Circuit Shorted* | TEST 13A |
| Passenger Squib Circuit Shorted to Battery | TEST 14A |
| Passenger Squib Circuit Shorted to Ground | TEST 15A |
| Power Stage Not Tested | TEST 16A |
| Warning Lamp Open/Shorted* | TEST 17A |

4. If any of the stored codes that were recorded in Step 3 were not also active codes . . . . . .perform TEST 18A.

| TEST 2A | REPAIRING CLUSTER MESSAGE MISMATCH |
|---|---|

Perform TEST 1A Before Proceeding

**Name of code:** Cluster Message Mismatch

**NOTE:** The code becomes active and stored as soon as the malfunction is detected.

**When monitored:** Continuously when the ignition is on.

**Set condition:** After the cluster bulb check the ACM compares the ACM and MIC lamp messages. If the ACM warning lamp request (On or Off) and the MIC warning lamp state (On or Off) messages do not match after 5 continuous seconds the code will set.

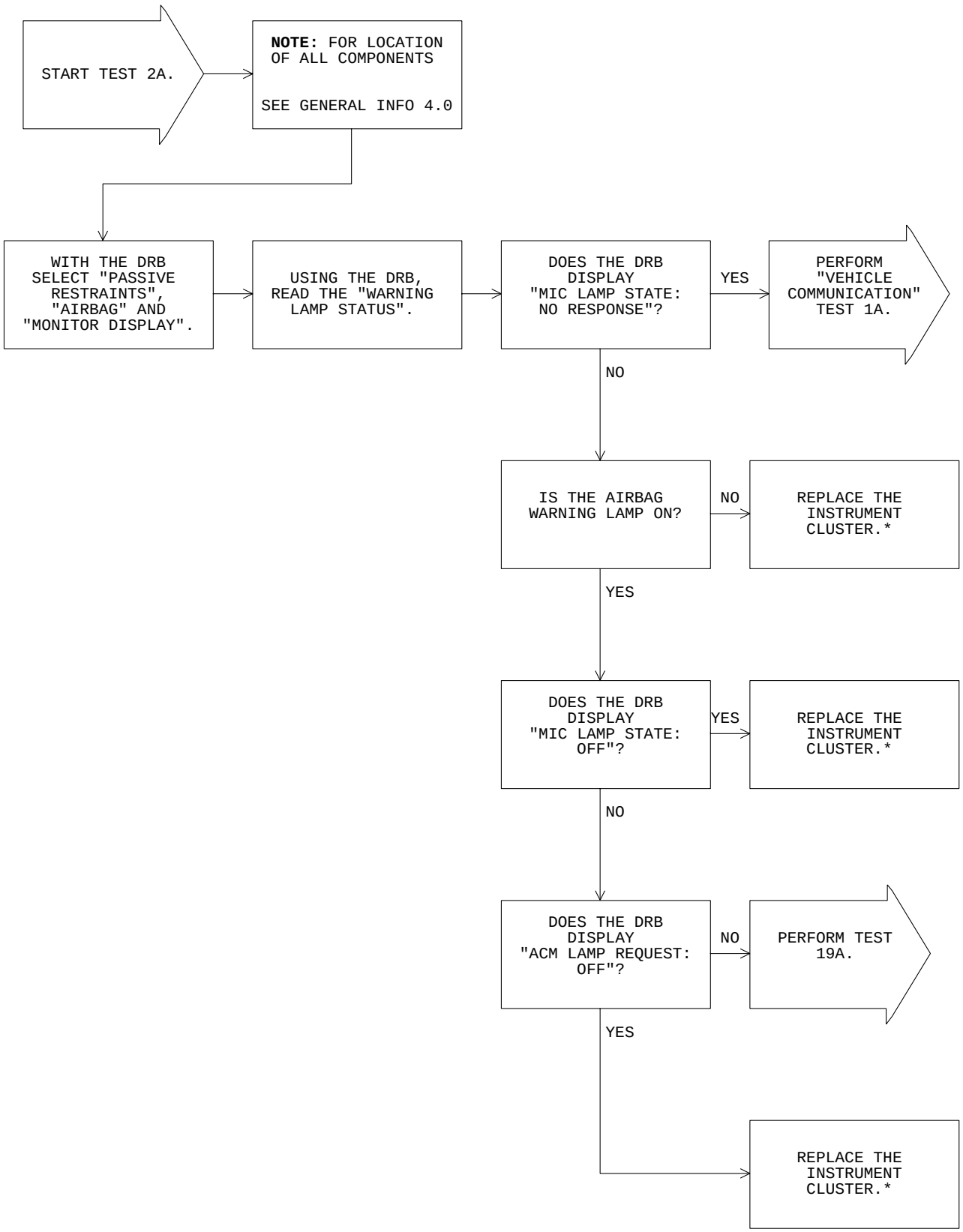
**Possible causes:**

> Faulty instrument cluster
> Faulty airbag control module
> Any PCI bus failure (may be viewed in stored codes once the bus is repaired)

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## TEST 2A REPAIRING CLUSTER MESSAGE MISMATCH

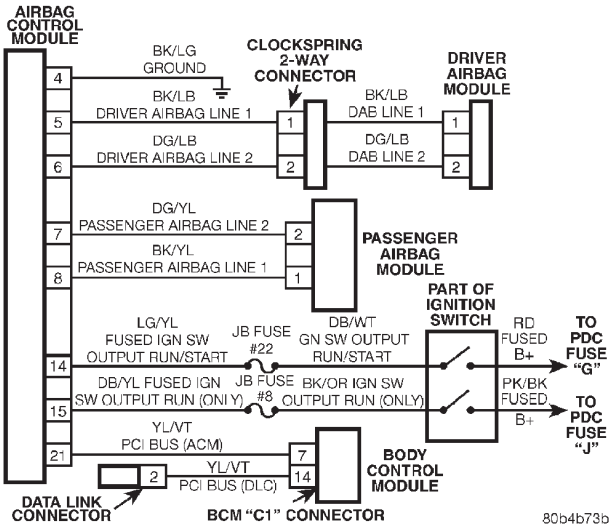
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-1A.** | ***Check connectors - Clean / repair as necessary.**

## TEST 3A REPAIRING DRIVER SQUIB CIRCUIT OPEN

**Perform TEST 1A Before Proceeding**




**Name of code:** Driver Squib Circuit Open

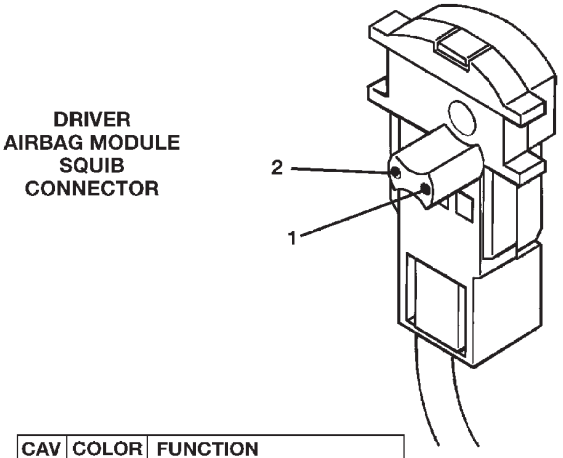
**NOTE:** This code becomes active and stored as soon as the malfunction is detected.

**When monitored:** Continuously with ignition on.

**Possible causes:**

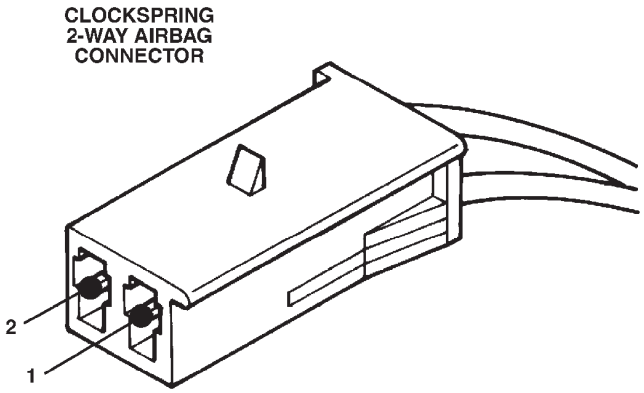
> Clockspring open
> Driver side airbag module open
> Driver side airbag line 1 or line 2 open
> Loose or poor connection at connector terminals
> Faulty airbag control module

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| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LB | DRIVER AIRBAG LINE 1 |
| 2 | DG/LB | DRIVER AIRBAG LINE 2 |

*FIG. 1*

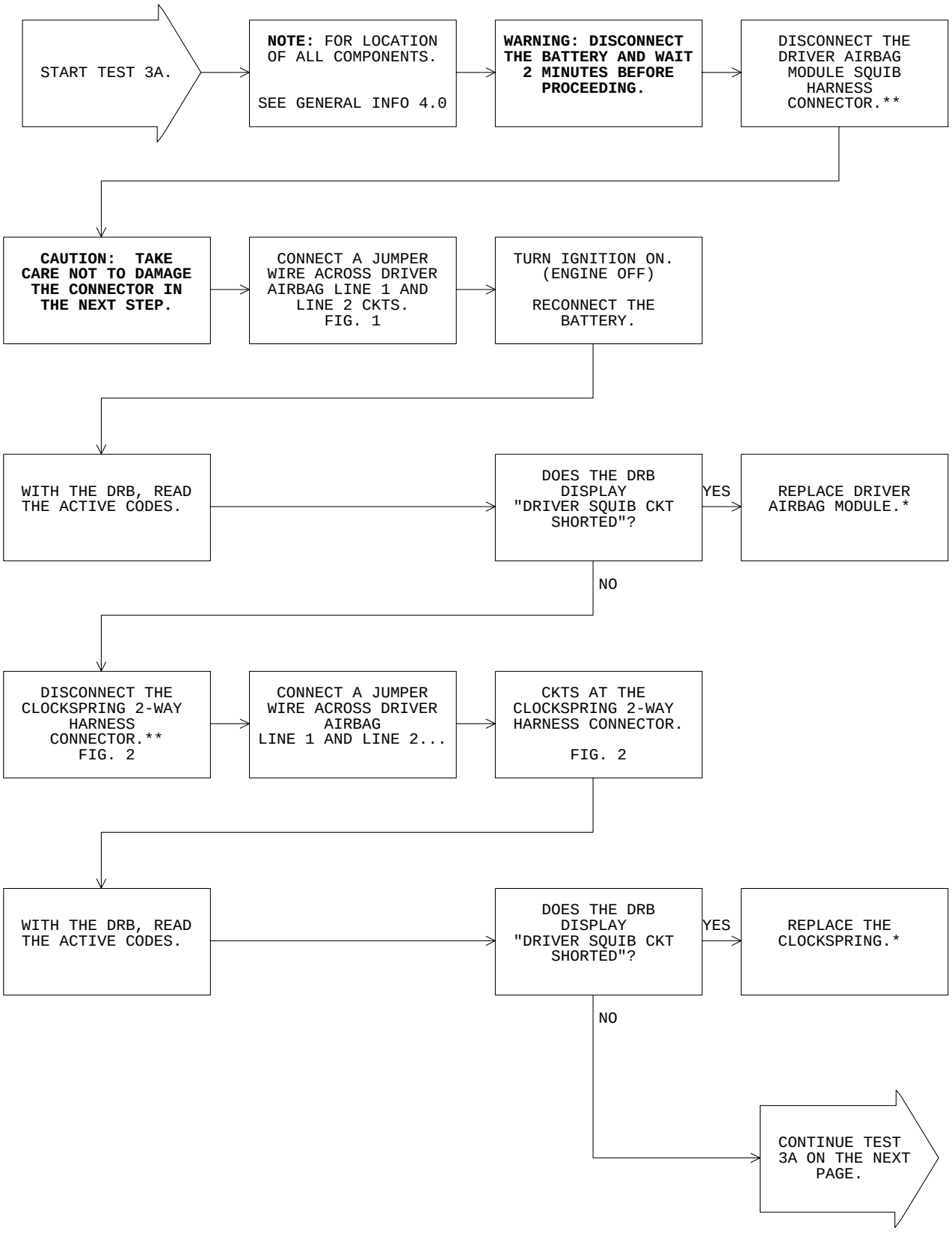



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LB | DRIVER AIRBAG LINE 1 |
| 2 | DG/LB | DRIVER AIRBAG LINE 2 |

*FIG. 2*

## TEST 3A REPAIRING DRIVER SQUIB CIRCUIT OPEN

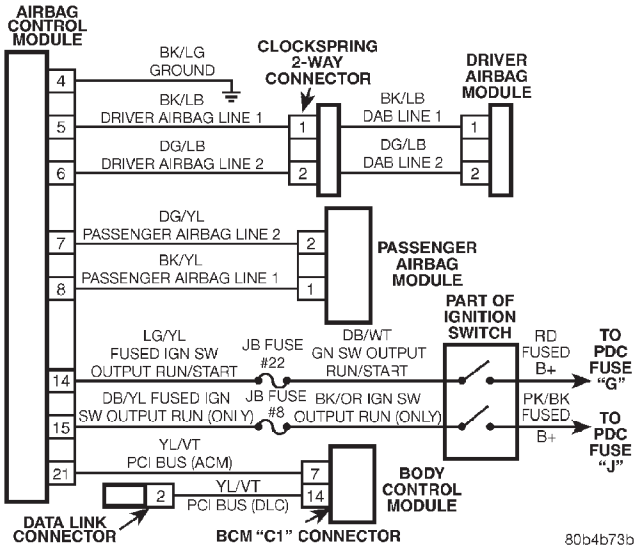
**Perform TEST 1A Before Proceeding**

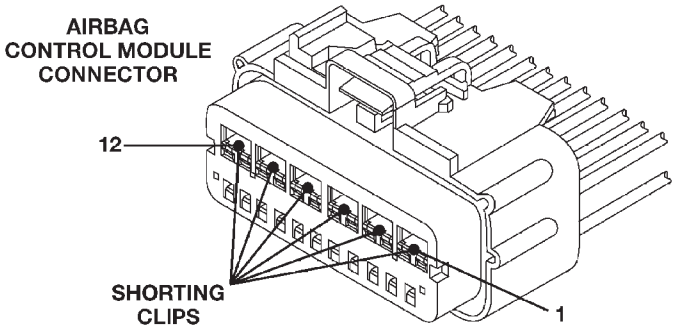



***Perform Verification TEST VER-1A.***

****Check connectors - Clean / repair as necessary.***

## TEST 3A CONTINUED - REPAIRING DRIVER SQUIB CIRCUIT OPEN



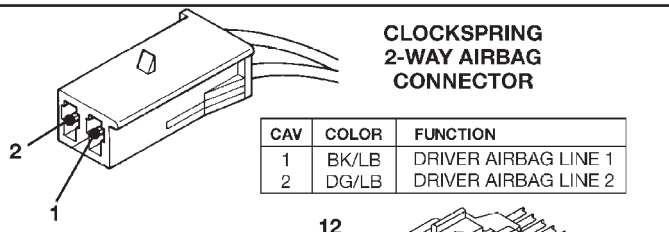




A SHORTING CLIP IS ONE SAFEGUARD BUILT INTO THE AIRBAG SYSTEM TO PREVENT ACCIDENTAL DEPLOYMENT WHEN HANDLING THE AIRBAG ASSEMBLY. STATIC CHARGES OR RADIO FREQUENCY NOISE CAN CAUSE ELECTRICAL POTENTIAL TO DEVELOP IN THE AIRBAG INITIATOR. SHORTING CLIPS PREVENT THIS WHEN THE CONNECTOR IS REMOVED FROM THE CONTROL MODULE.

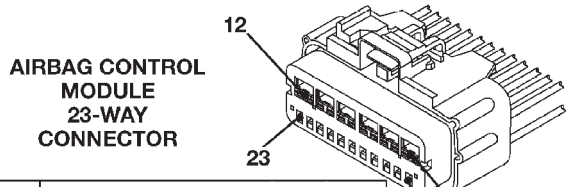
**DO NOT PROBE, BEND OR REMOVE SHORTING CLIPS**

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***FIG. 1***




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LB | DRIVER AIRBAG LINE 1 |
| 2 | DG/LB | DRIVER AIRBAG LINE 2 |

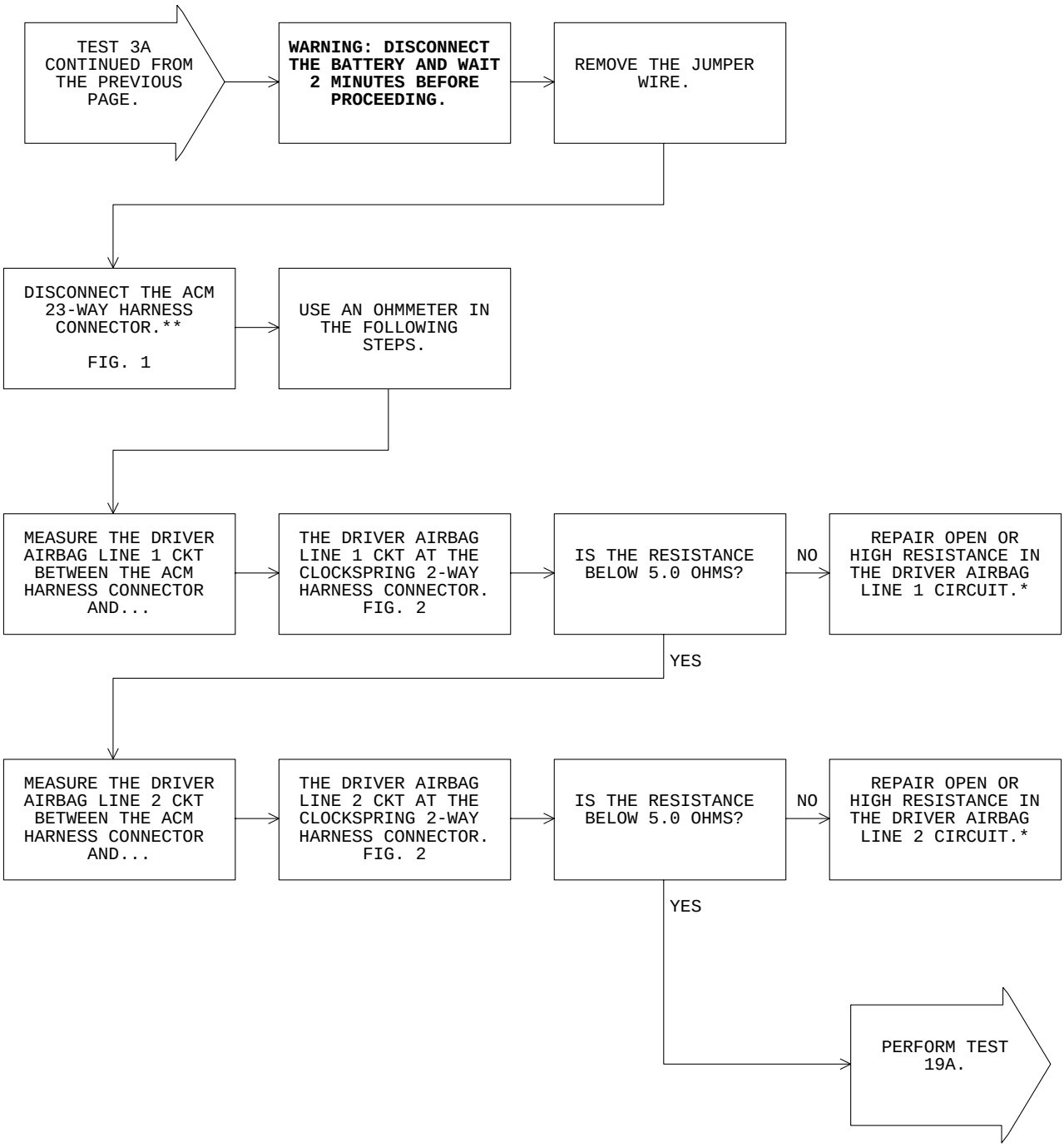



| CAV | COLOR | FUNCTION |
|---|---|---|
| 5 | BK/LB | DRIVER AIRBAG LINE 1 |
| 6 | DG/LB | DRIVER AIRBAG LINE 2 |
| 7 | DG/YL | PASSENGER AIRBAG LINE 2 |
| 8 | BK/YL | PASSENGER AIRBAG LINE 1 |
| 14 | LG/YL | FUSED IGN SW OUTPUT RUN/START |
| 15 | DB/YL | FUSED IGN SW OUTPUT RUN (ONLY) |

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***FIG. 2***

## TEST 3A CONTINUED - REPAIRING DRIVER SQUIB CIRCUIT OPEN

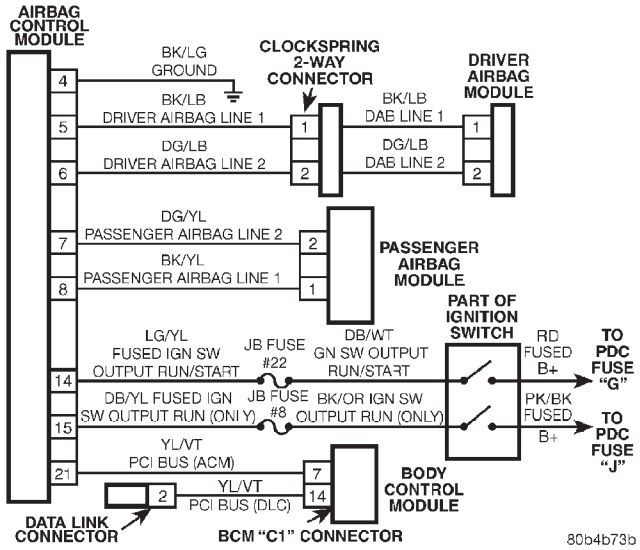



***Perform Verification TEST VER-1A.***

*****Check connectors - Clean / repair as necessary.***

## TEST 4A REPAIRING DRIVER SQUIB CIRCUIT SHORTED

**Perform TEST 1A Before Proceeding**




**Name of code:** Driver Squib Circuit Shorted

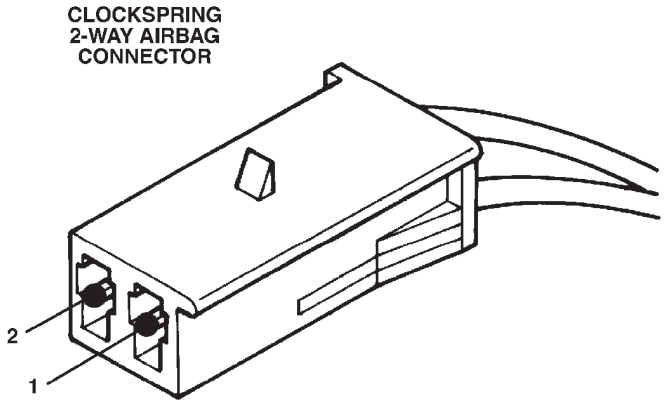
**NOTE:** This code becomes active and stored as soon as the malfunction is detected.

**When monitored:** Continuously with the ignition on.

**Possible causes:**

> Clockspring short
> Driver side airbag module short
> Driver side airbag line 1 shorted to line 2
> Faulty airbag control module

80b31f6f



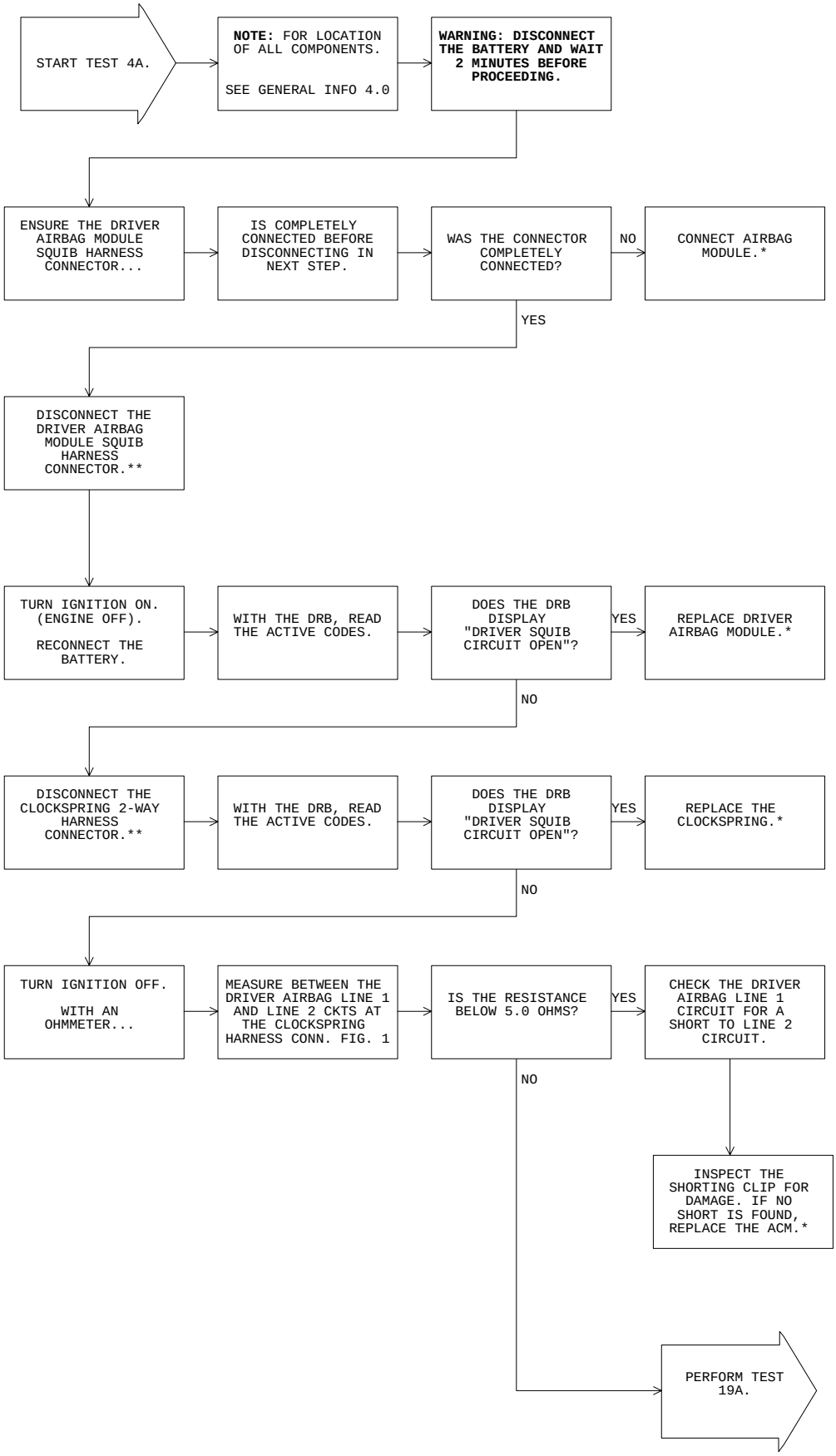

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LB | DRIVER AIRBAG LINE 1 |
| 2 | DG/LB | DRIVER AIRBAG LINE 2 |

80b31f1e

***FIG. 1***

## TEST 4A REPAIRING DRIVER SQUIB CIRCUIT SHORTED

**Perform TEST 1A Before Proceeding**

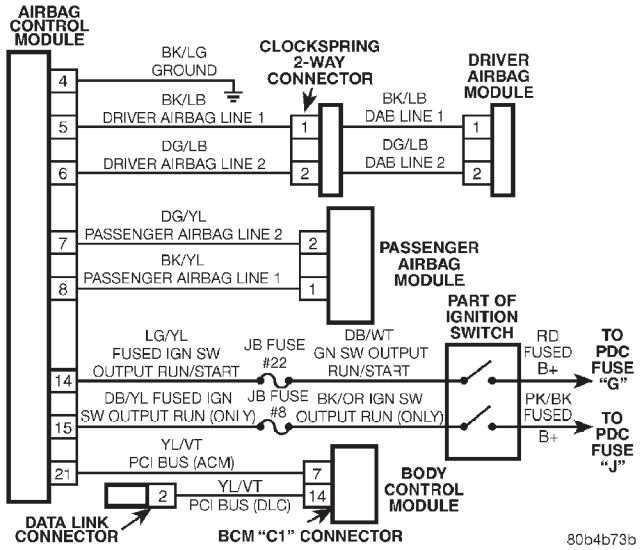



***Perform Verification TEST VER-1A.***

***Check connectors - Clean / repair as necessary.***

## TEST 5A REPAIRING DRIVER SQUIB CIRCUIT SHORTED TO BATTERY

**Perform TEST 1A Before Proceeding**




**Name of code:** Driver Squib Shorted to Battery

**NOTE:** The code becomes active and stored as soon as the malfunction is detected.

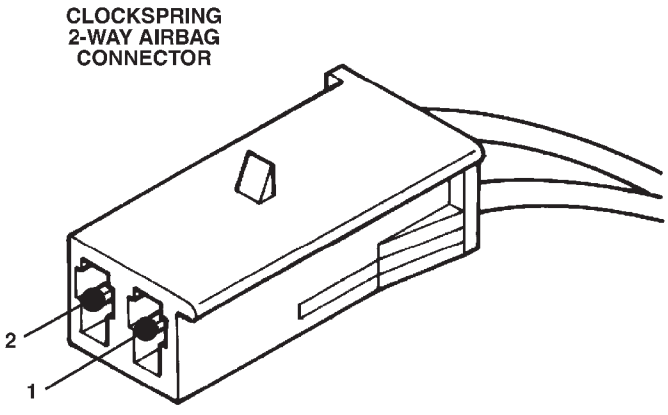
**When monitored:** Continuously with the ignition on.

**Set condition:** With voltage on, the driver airbag line 1 or line 2 circuit(s) is other than expected.

**Possible causes:**

- Driver airbag line 1 short to voltage
- Driver airbag line 2 short to voltage
- Faulty clockspring
- Faulty airbag control module

80b0d75b



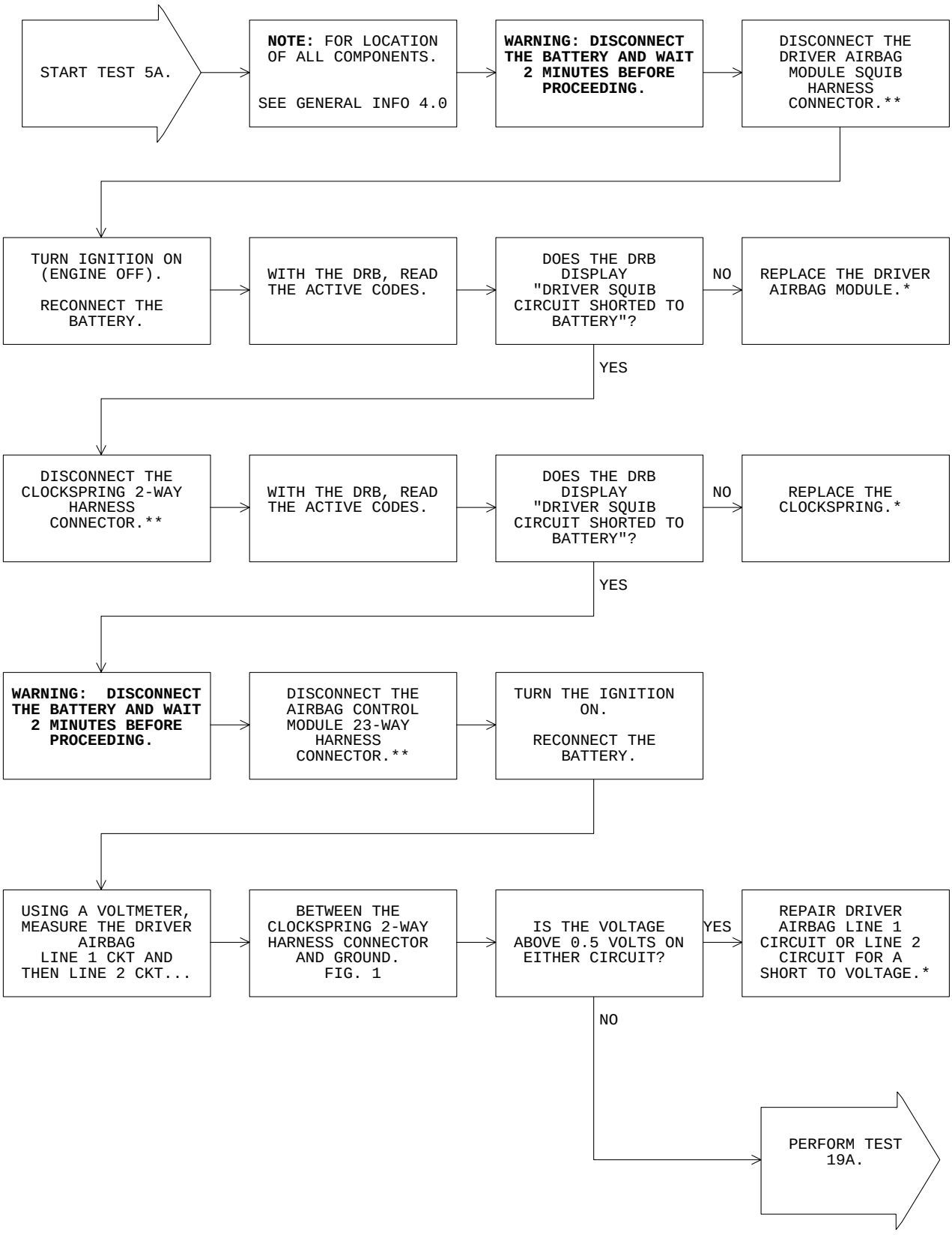

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LB | DRIVER AIRBAG LINE 1 |
| 2 | DG/LB | DRIVER AIRBAG LINE 2 |

80b3111e

*FIG. 1*

## TEST 5A REPAIRING DRIVER SQUIB CIRCUIT SHORTED TO BATTERY

**Perform TEST 1A Before Proceeding**

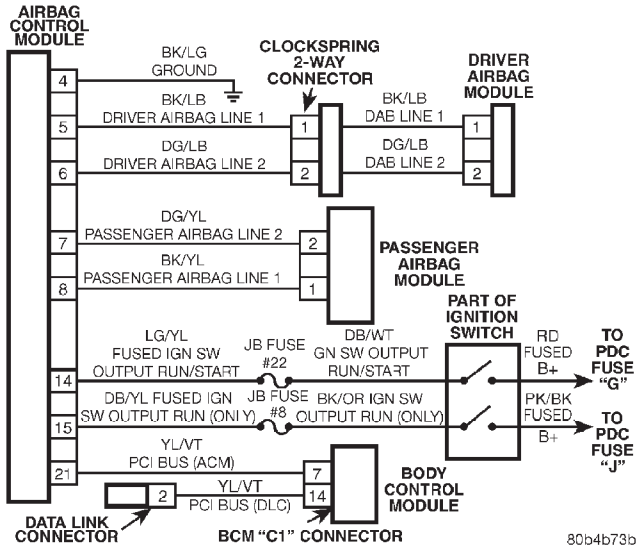



***Perform Verification TEST VER-1A.***

****Check connectors - Clean / repair as necessary.***

## TEST 6A REPAIRING DRIVER SQUIB CIRCUIT SHORTED TO GROUND

**Perform TEST 1A Before Proceeding**




**Name of code:** Driver Squib Shorted to Ground

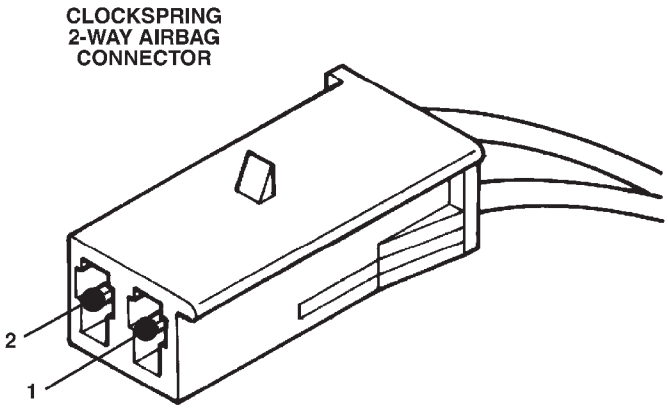
**NOTE:** This code becomes active and stored as soon as the malfunction is detected.

**When monitored:** Continuously with the ignition on.

**Set condition:** With voltage on, the driver airbag line 1 or line 2 circuit(s) is other than expected.

**Possible causes:**
> Faulty driver airbag module
> Driver airbag line 1 short to ground potential
> Driver airbag line 2 short to ground potential
> Faulty clockspring
> Faulty airbag control module

80b31f75



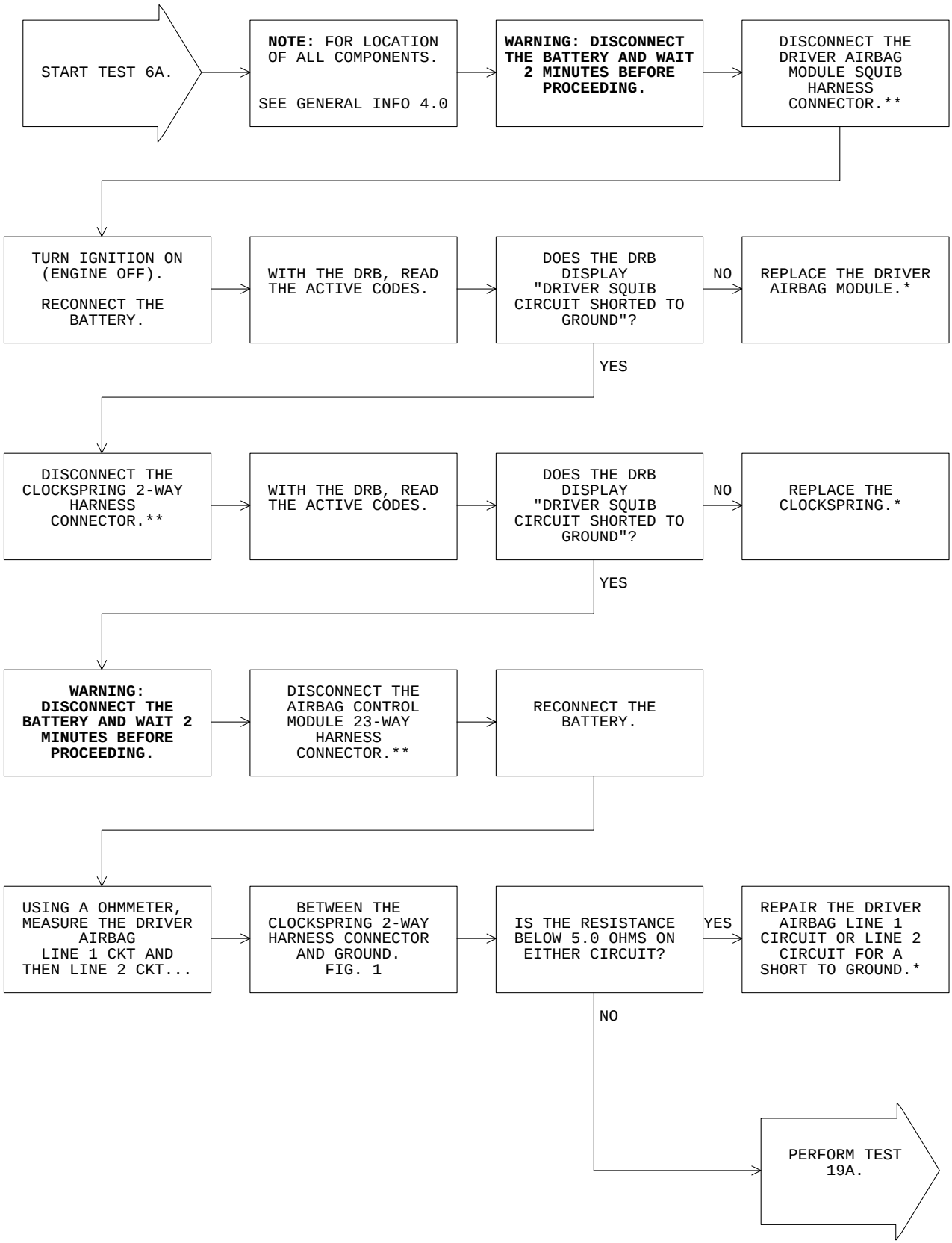

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LB | DRIVER AIRBAG LINE 1 |
| 2 | DG/LB | DRIVER AIRBAG LINE 2 |

80b311e

***FIG. 1***

## TEST 6A — REPAIRING DRIVER SQUIB CIRCUIT SHORTED TO GROUND

**Perform TEST 1A Before Proceeding**

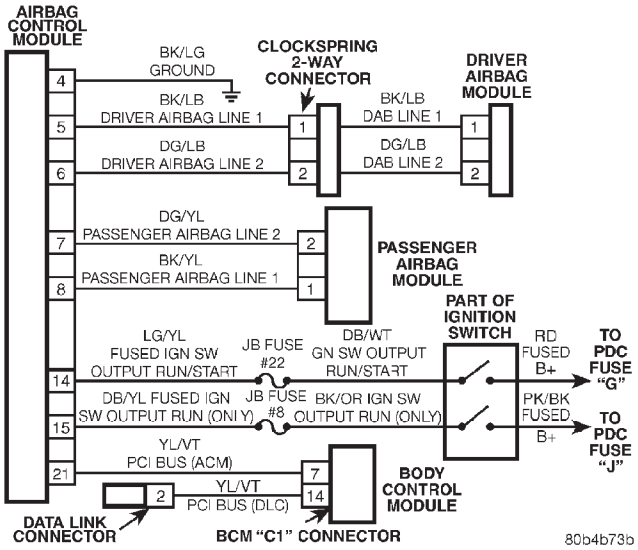



***Perform Verification TEST VER-1A.***

****Check connectors - Clean / repair as necessary.***

## TEST 7A REPAIRING LOSS OF IGNITION RUN ONLY

**Perform TEST 1A Before Proceeding**




**Name of code:** Loss of Ignition Run (Only)

**NOTE:** This is an active code only.

**When monitored:** Continuously with the ignition on.

**Possible causes:**
> Faulty fuse
> Shorted fused ignition switch output circuit
> Open fused ignition switch output circuit
> Open ignition switch output circuit
> Loose or poor connection at connector terminals
> Faulty ignition switch
> Faulty airbag control module

80b31f76

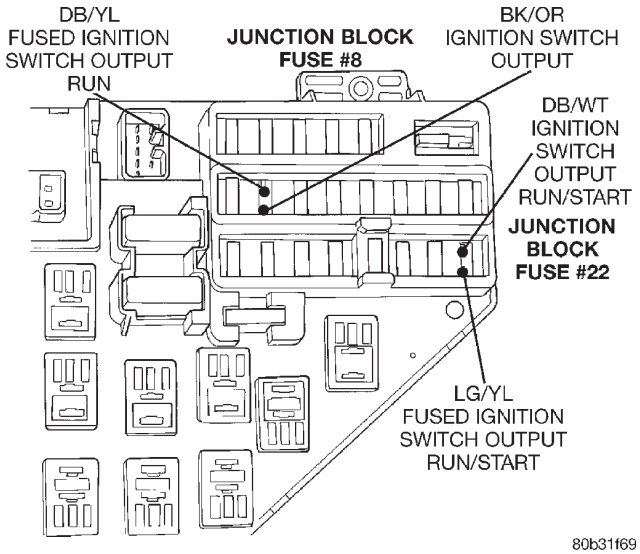
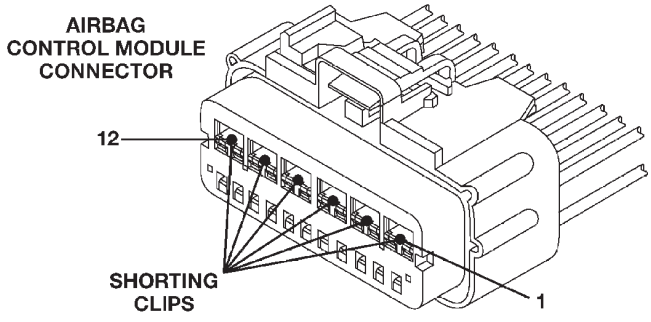



*FIG. 1*

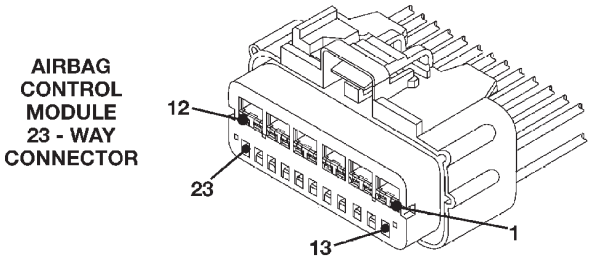



A SHORTING CLIP IS ONE SAFEGUARD BUILT INTO THE AIRBAG SYSTEM TO PREVENT ACCIDENTAL DEPLOYMENT WHEN HANDLING THE AIRBAG ASSEMBLY. STATIC CHARGES OR RADIO FREQUENCY NOISE CAN CAUSE ELECTRICAL POTENTIAL TO DEVELOP IN THE AIRBAG INITIATOR. SHORTING CLIPS PREVENT THIS WHEN THE CONNECTOR IS REMOVED FROM THE CONTROL MODULE.

**DO NOT PROBE, BEND OR REMOVE SHORTING CLIPS**

80b0d77e

*FIG. 2*



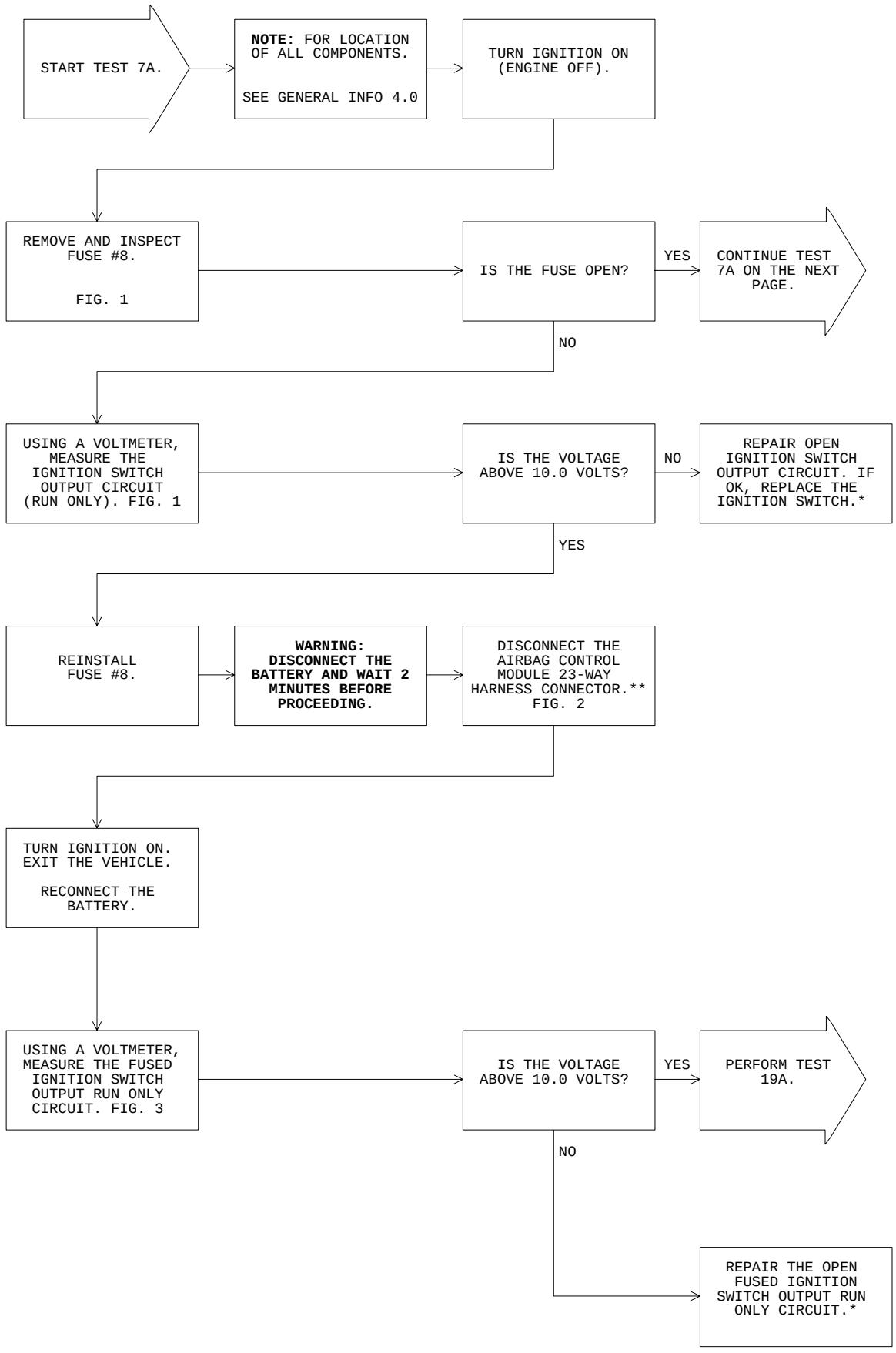

| CAV | COLOR | FUNCTION |
|---|---|---|
| 4 | BK/LG | GROUND |
| 5 | BK/LB | DRIVER AIRBAG LINE 1 |
| 6 | DG/LB | DRIVER AIRBAG LINE 2 |
| 7 | DG/YL | PASSENGER AIRBAG LINE 2 |
| 8 | BK/YL | PASSENGER AIRBAG LINE 1 |
| 14 | LG/YL | FUSED IGNITION SWITCH OUTPUT RUN/START |
| 15 | DB/YL | FUSED IGNITION SWITCH OUTPUT RUN (ONLY) |
| 21 | YL/VT | PCI BUS (ACM) |

80b4b73e

*FIG. 3*

## TEST 7A REPAIRING LOSS OF IGNITION RUN ONLY

**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-1A.***

***Check connectors - Clean / repair as necessary.**

## TEST 7A CONTINUED REPAIRING LOSS OF IGNITION RUN ONLY

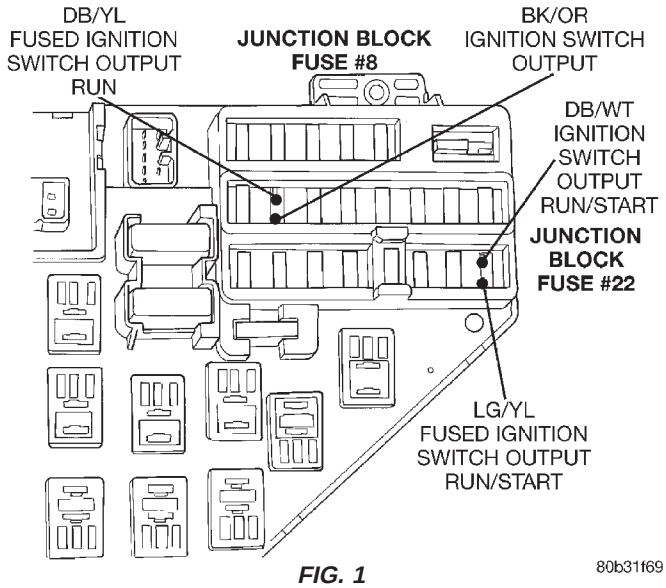
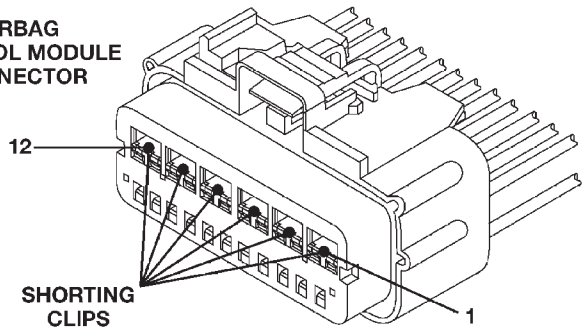



*FIG. 1*

80b31f69

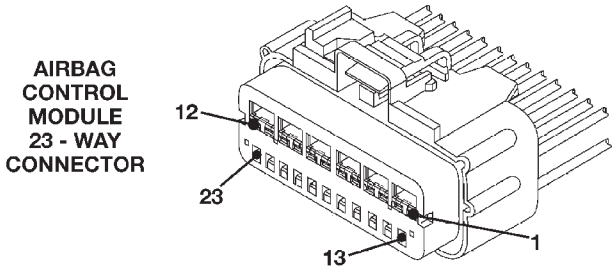



A SHORTING CLIP IS ONE SAFEGUARD BUILT INTO THE AIRBAG SYSTEM TO PREVENT ACCIDENTAL DEPLOYMENT WHEN HANDLING THE AIRBAG ASSEMBLY. STATIC CHARGES OR RADIO FREQUENCY NOISE CAN CAUSE ELECTRICAL POTENTIAL TO DEVELOP IN THE AIRBAG INITIATOR. SHORTING CLIPS PREVENT THIS WHEN THE CONNECTOR IS REMOVED FROM THE CONTROL MODULE.

**DO NOT PROBE, BEND OR REMOVE SHORTING CLIPS**

*FIG. 2*

80b0d77e

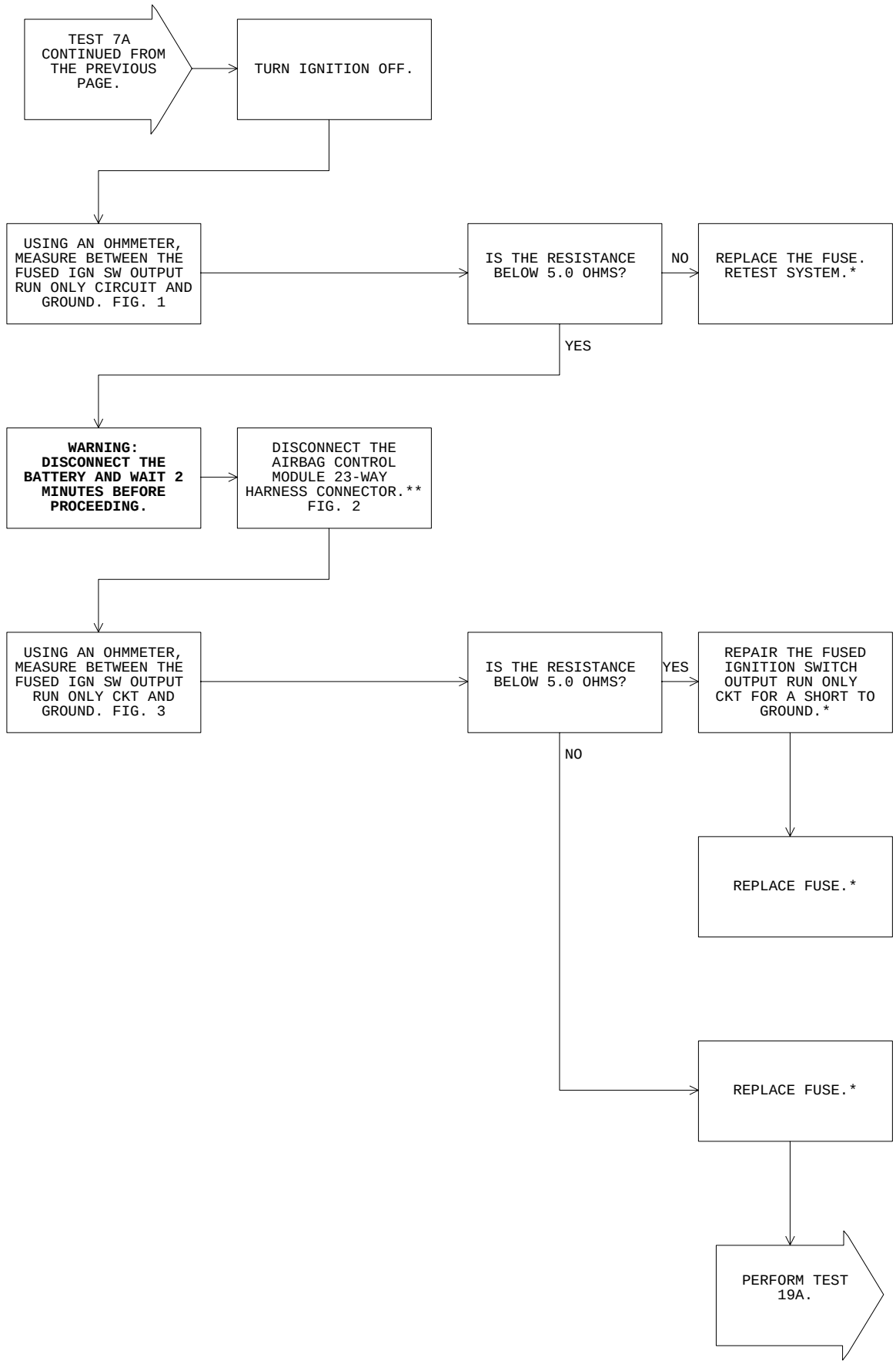



| CAV | COLOR | FUNCTION |
|---|---|---|
| 4 | BK/LG | GROUND |
| 5 | BK/LB | DRIVER AIRBAG LINE 1 |
| 6 | DG/LB | DRIVER AIRBAG LINE 2 |
| 7 | DG/YL | PASSENGER AIRBAG LINE 2 |
| 8 | BK/YL | PASSENGER AIRBAG LINE 1 |
| 14 | LG/YL | FUSED IGNITION SWITCH OUTPUT RUN/START |
| 15 | DB/YL | FUSED IGNITION SWITCH OUTPUT RUN (ONLY) |
| 21 | YL/VT | PCI BUS (ACM) |

*FIG. 3*

80b4b73e

## TEST 7A CONTINUED REPAIRING LOSS OF IGNITION RUN ONLY

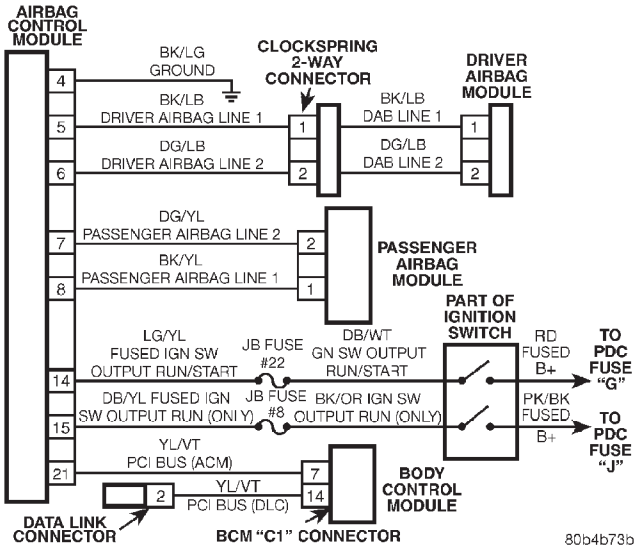



***Perform Verification TEST VER-1A.**

****Check connectors - Clean / repair as necessary.**

## TEST 8A REPAIRING LOSS OF IGNITION RUN/START

**Perform TEST 1A Before Proceeding**




**Name of code:** Loss of Ignition Run/Start

**NOTE:** This code becomes active as soon as the malfunction is detected and stored after 1 minute of occurrence, or key-off, whichever is first.

**When monitored:** Continuously with the ignition on.

**Set condition:** With ignition on, the ignition run/start circuit voltage is other than expected.

**Possible causes:**
> Open fused ignition switch output circuit (run/start)
> Open fuse
> Open ignition switch output circuit
> Shorted fused ignition switch output circuit
> Faulty airbag control module
> Loose or poor connection at connector terminals
> Faulty ignition switch

80b575ef

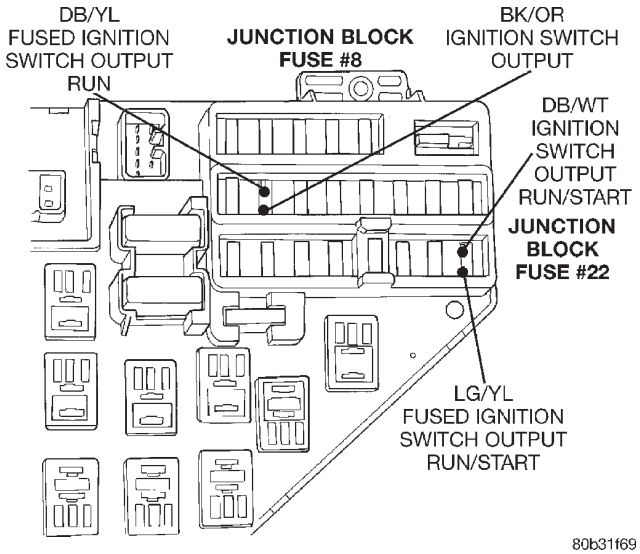
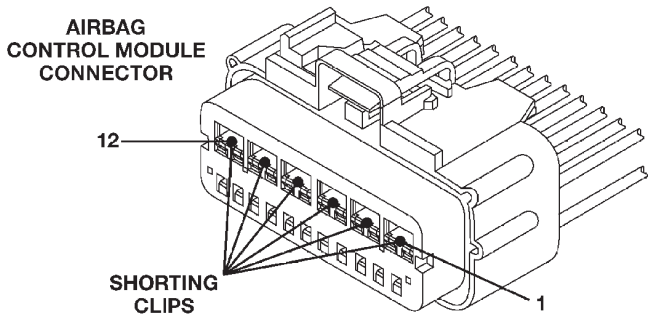



*FIG. 1*

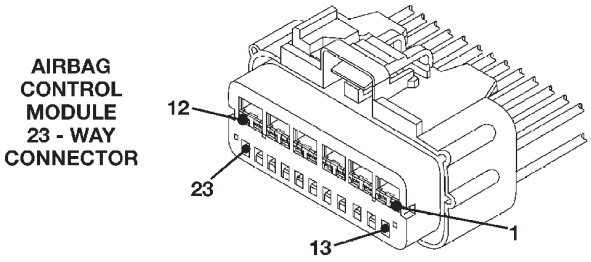



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**DO NOT PROBE, BEND OR REMOVE SHORTING CLIPS**

80b0d77e

*FIG. 2*



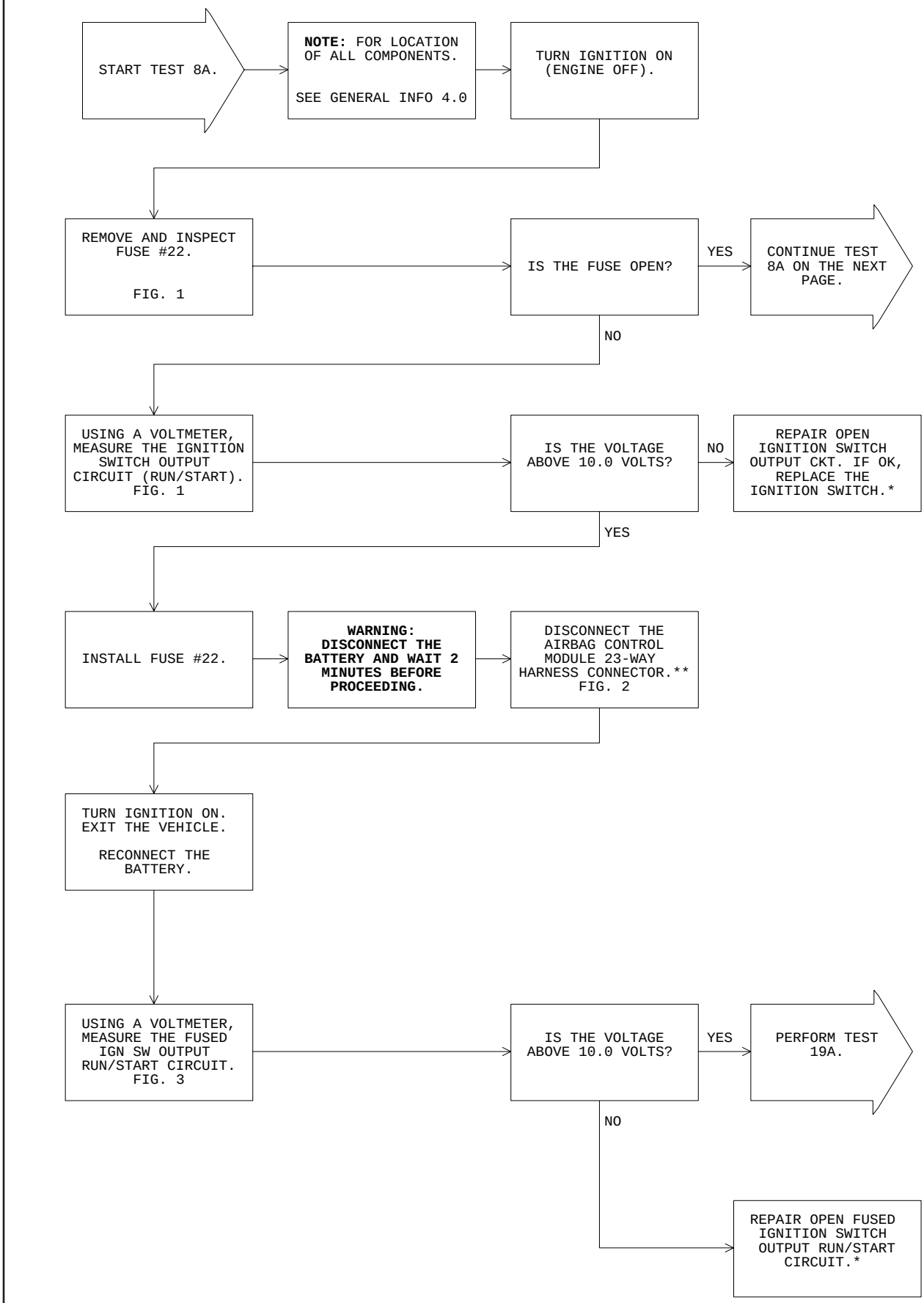

| CAV | COLOR | FUNCTION |
|---|---|---|
| 4 | BK/LG | GROUND |
| 5 | BK/LB | DRIVER AIRBAG LINE 1 |
| 6 | DG/LB | DRIVER AIRBAG LINE 2 |
| 7 | DG/YL | PASSENGER AIRBAG LINE 2 |
| 8 | BK/YL | PASSENGER AIRBAG LINE 1 |
| 14 | LG/YL | FUSED IGNITION SWITCH OUTPUT RUN/START |
| 15 | DB/YL | FUSED IGNITION SWITCH OUTPUT RUN (ONLY) |
| 21 | YL/VT | PCI BUS (ACM) |

80b4b73e

*FIG. 3*

## TEST 8A REPAIRING LOSS OF IGNITION RUN/START

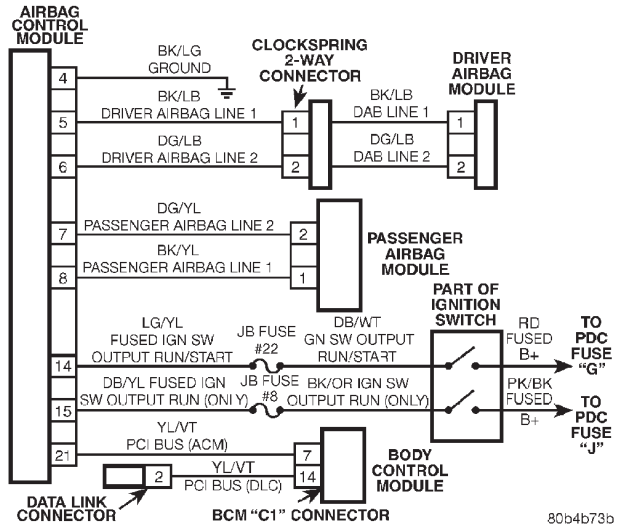
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-1A.***

***Check connectors - Clean / repair as necessary.**

## TEST 8A CONTINUED REPAIRING LOSS OF IGNITION RUN/START



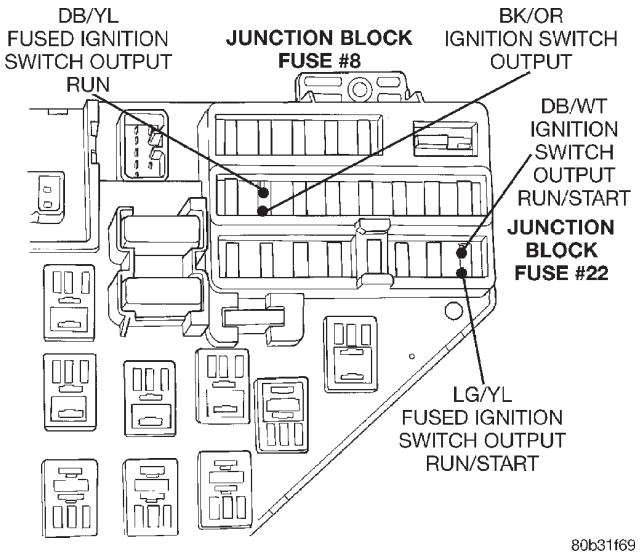
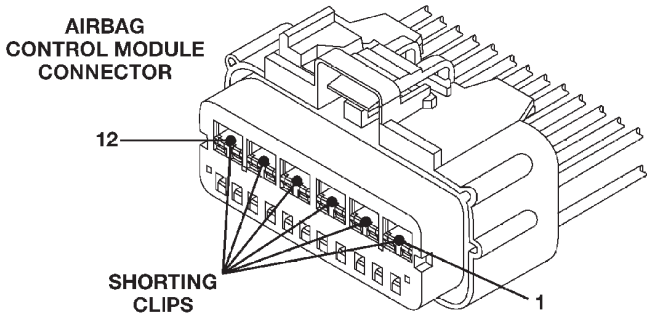




*FIG. 1*

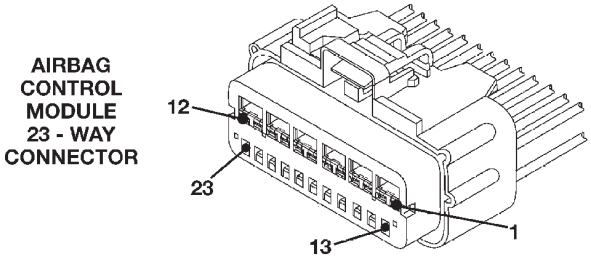



A SHORTING CLIP IS ONE SAFEGUARD BUILT INTO THE AIRBAG SYSTEM TO PREVENT ACCIDENTAL DEPLOYMENT WHEN HANDLING THE AIRBAG ASSEMBLY. STATIC CHARGES OR RADIO FREQUENCY NOISE CAN CAUSE ELECTRICAL POTENTIAL TO DEVELOP IN THE AIRBAG INITIATOR. SHORTING CLIPS PREVENT THIS WHEN THE CONNECTOR IS REMOVED FROM THE CONTROL MODULE.

**DO NOT PROBE, BEND OR REMOVE SHORTING CLIPS**

80b0d77e

*FIG. 2*

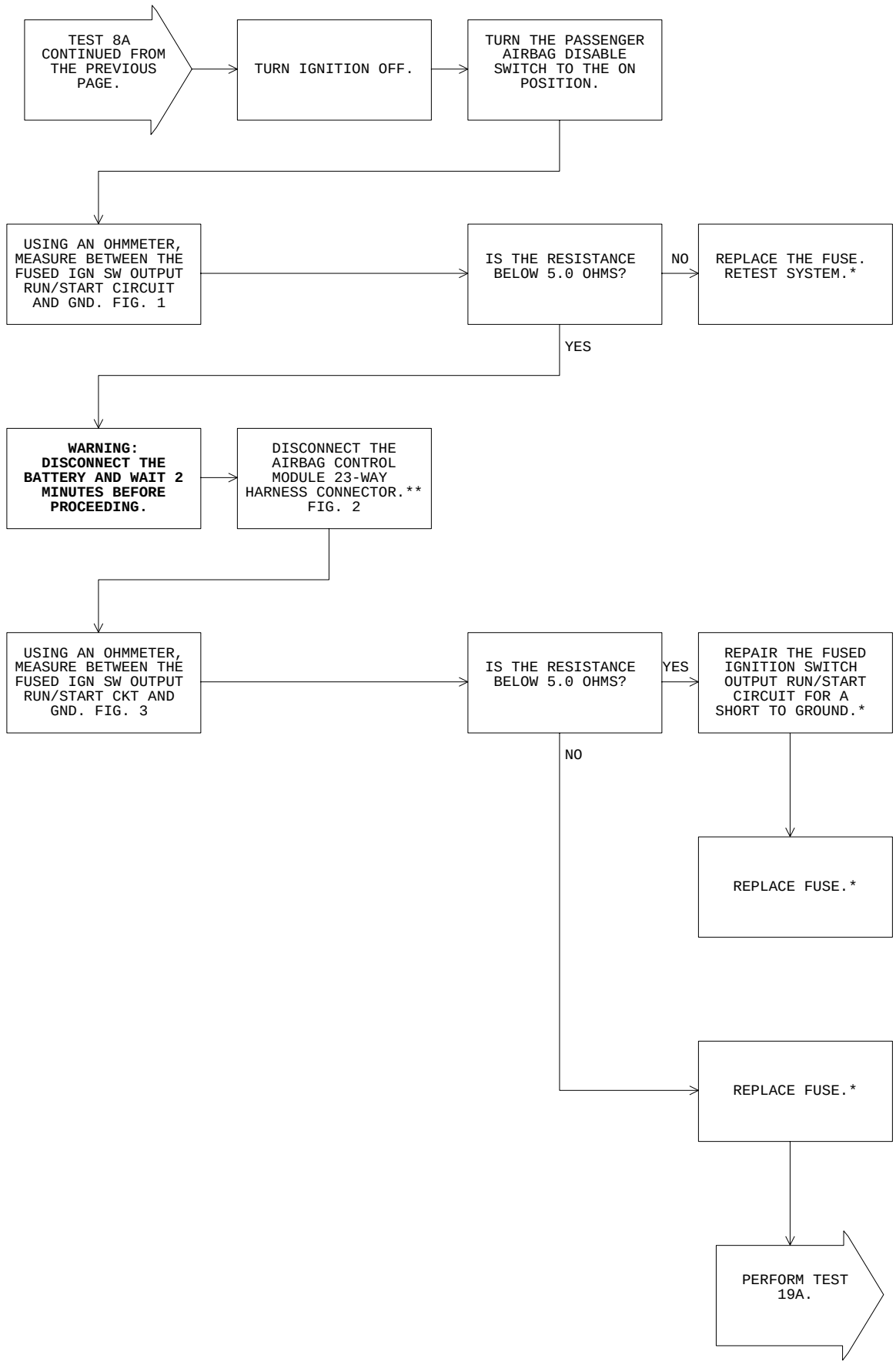



| CAV | COLOR | FUNCTION |
|---|---|---|
| 4 | BK/LG | GROUND |
| 5 | BK/LB | DRIVER AIRBAG LINE 1 |
| 6 | DG/LB | DRIVER AIRBAG LINE 2 |
| 7 | DG/YL | PASSENGER AIRBAG LINE 2 |
| 8 | BK/YL | PASSENGER AIRBAG LINE 1 |
| 14 | LG/YL | FUSED IGNITION SWITCH OUTPUT RUN/START |
| 15 | DB/YL | FUSED IGNITION SWITCH OUTPUT RUN (ONLY) |
| 21 | YL/VT | PCI BUS (ACM) |

80b4b73e

*FIG. 3*

## TEST 8A CONTINUED REPAIRING LOSS OF IGNITION RUN/START

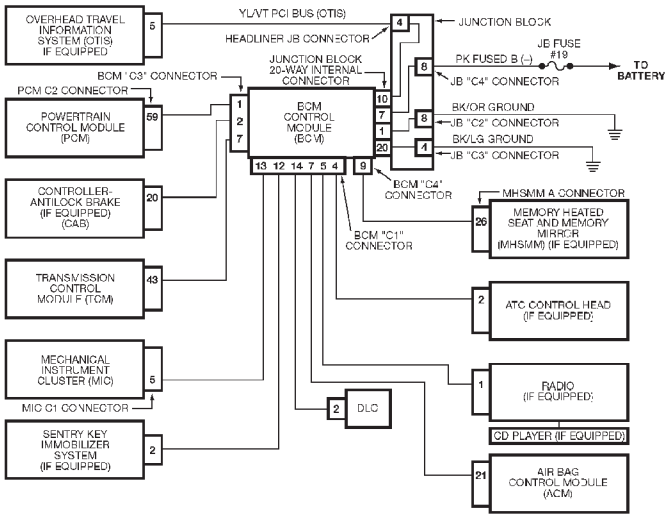



***Perform Verification TEST VER-1A.***

***Check connectors - Clean / repair as necessary.***

## TEST 9A REPAIRING NO CLUSTER MESSAGES

**Perform TEST 1A Before Proceeding**




80b4b7b0

**Name of code:** No Cluster Message

**NOTE:** This code becomes active and stored as soon as the malfunction is detected.

**When monitored:** Continuously when the ignition is on.

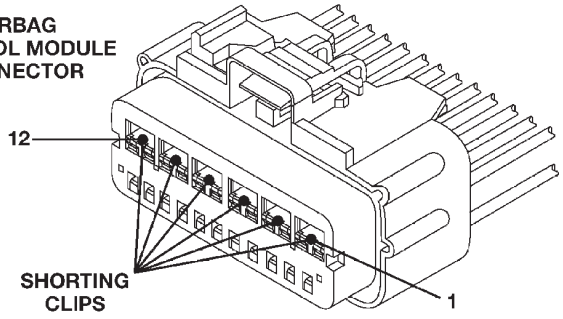
**Set condition:** If the ACM fails to see the status message from the cluster for 5 continuous seconds the code will be set.

**Theory of Operation:** The cluster transmits an airbag warning lamp message on the PCI bus one time every second. The ACM monitors the PCI bus for the airbag warning lamp message. If the ACM fails to see the status message for 5 continuous seconds the code will be set.

**Possible causes:**
- Any CCD bus failure (may be viewed in stored codes once bus is repaired)
- Faulty instrument cluster circuit board
- Faulty airbag control module

80b31f78

**AIRBAG CONTROL MODULE CONNECTOR**



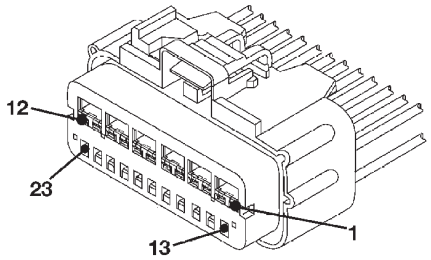

A SHORTING CLIP IS ONE SAFEGUARD BUILT INTO THE AIRBAG SYSTEM TO PREVENT ACCIDENTAL DEPLOYMENT WHEN HANDLING THE AIRBAG ASSEMBLY. STATIC CHARGES OR RADIO FREQUENCY NOISE CAN CAUSE ELECTRICAL POTENTIAL TO DEVELOP IN THE AIRBAG INITIATOR. SHORTING CLIPS PREVENT THIS WHEN THE CONNECTOR IS REMOVED FROM THE CONTROL MODULE.

**DO NOT PROBE, BEND OR REMOVE SHORTING CLIPS**

80b0d77e

***FIG. 1***

**AIRBAG CONTROL MODULE 23 - WAY CONNECTOR**

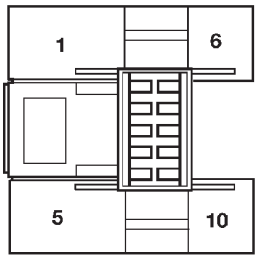



| CAV | COLOR | FUNCTION |
|---|---|---|
| 4 | BK/LG | GROUND |
| 5 | BK/LB | DRIVER AIRBAG LINE 1 |
| 6 | DG/LB | DRIVER AIRBAG LINE 2 |
| 7 | DG/YL | PASSENGER AIRBAG LINE 2 |
| 8 | BK/YL | PASSENGER AIRBAG LINE 1 |
| 14 | LG/YL | FUSED IGNITION SWITCH OUTPUT RUN/START |
| 15 | DB/YL | FUSED IGNITION SWITCH OUTPUT RUN (ONLY) |
| 21 | YL/VT | PCI BUS (ACM) |

80b4b73e

***FIG. 2***

**INSTRUMENT CLUSTER "C1" (GREEN) 10 WAY CONNECTOR**



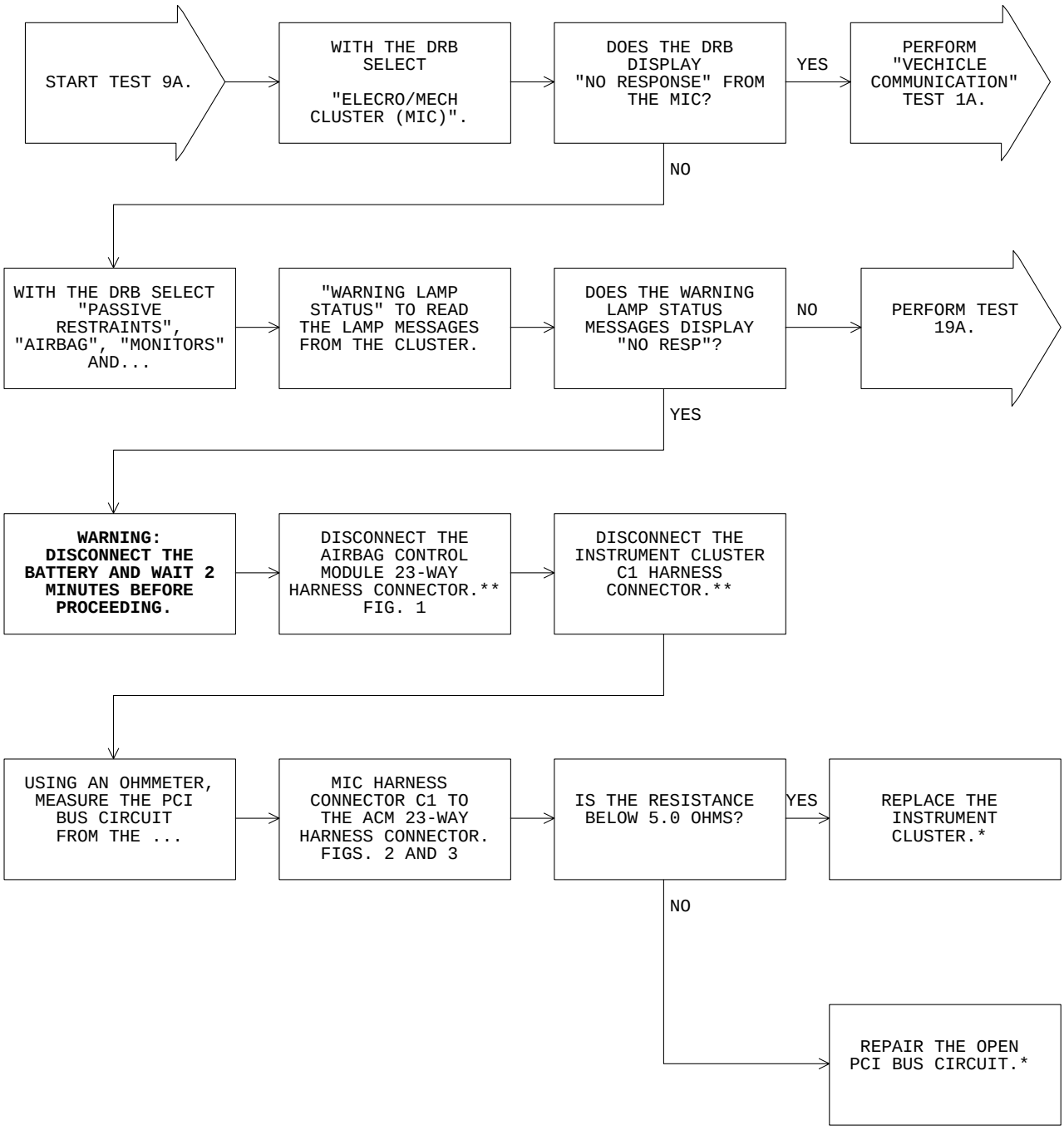

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK/RD | FUSED B(+) |
| 2 | RD/WT | FUSED IGNITION SW OUTPUT (OFF/RUN/START) |
| 3 | PK | FUSED B(+) |
| 4 | OR | PANEL LAMPS DRIVER |
| 5 | YL/VT | PCI BUS |
| 6 | BK/LG | GROUND |
| 8 | TN | RIGHT TURN SIGNAL |
| 10 | WT/LG | HIGH BEAM RELAY CONTROL |

80b4b7af

***FIG. 3***

## TEST 9A REPAIRING NO CLUSTER MESSAGES

**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-1A.***

****Check connectors - Clean / repair as necessary.***

**TEST 10A** | **REPAIRING NO CLUSTER IFR MESSAGE**

**Perform TEST 1A Before Proceeding**

**Name of code:** No Cluster IFR Message

**NOTE:** This code becomes active and stored as soon as the malfunction is detected.

**When monitored:** Continuously when the ignition is on.

**Set condition:** If the ACM fails to see the IFR message from the cluster for 5 continuous seconds the code will be set.

**Theory of Operation:** The ACM instructs the cluster to turn the warning lamp on or off one time per second. Every time the Airbag control module (ACM) sends a message to the cluster, the cluster must respond with a message acknowledging receiving the ACM message. This is called an in-frame response (IFR). The fault occurs when the cluster either does not respond to the ACM message or the response is incorrect.

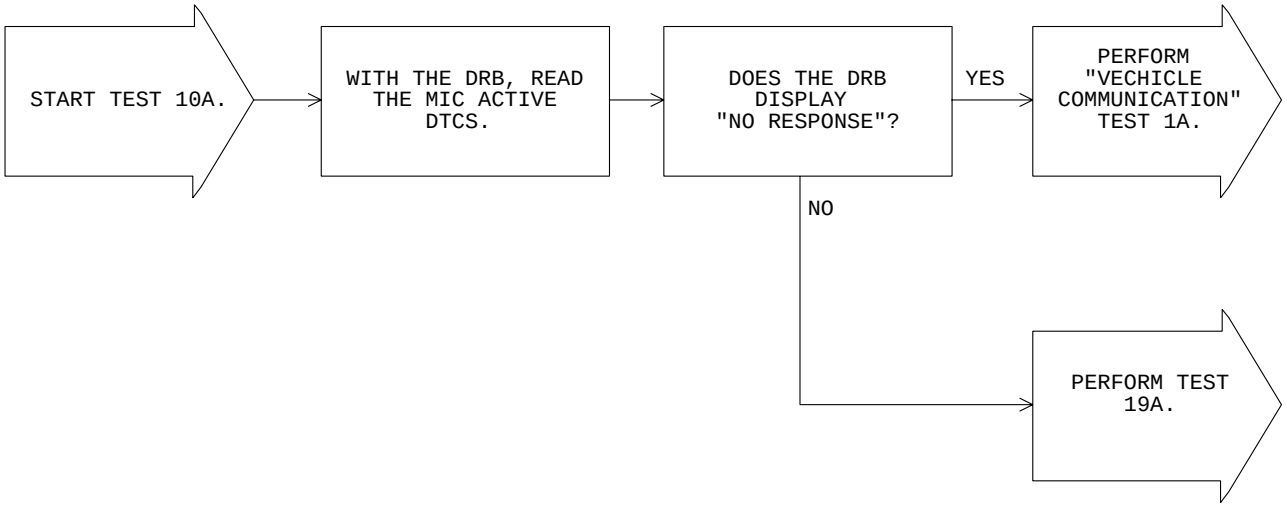
**Possible causes:**

> Faulty instrument cluster circuit board
> Faulty airbag control module
> Any PCI bus failure (may be viewed in stored codes once bus is repaired)

80b31f77

## TEST 10A REPAIRING NO CLUSTER IFR MESSAGE

**Perform TEST 1A Before Proceeding**




| | |
|---|---|
| ***Perform Verification TEST VER-1A.** | ****Check connectors - Clean / repair as necessary.** |

| TEST 11A | REPAIRING NO PCI COMMUNICATION |
|---|---|

Perform TEST 1A Before Proceeding

**Name of code:** No PCI Communication

**NOTE:** This code will appear as a stored code only.

**When monitored:** Continuously when the ignition is on.

**Set conditions:** If the ACM cannot detect the ACM to MIC warning lamp (on & off) message on the PCI bus for 5 consecutive seconds.

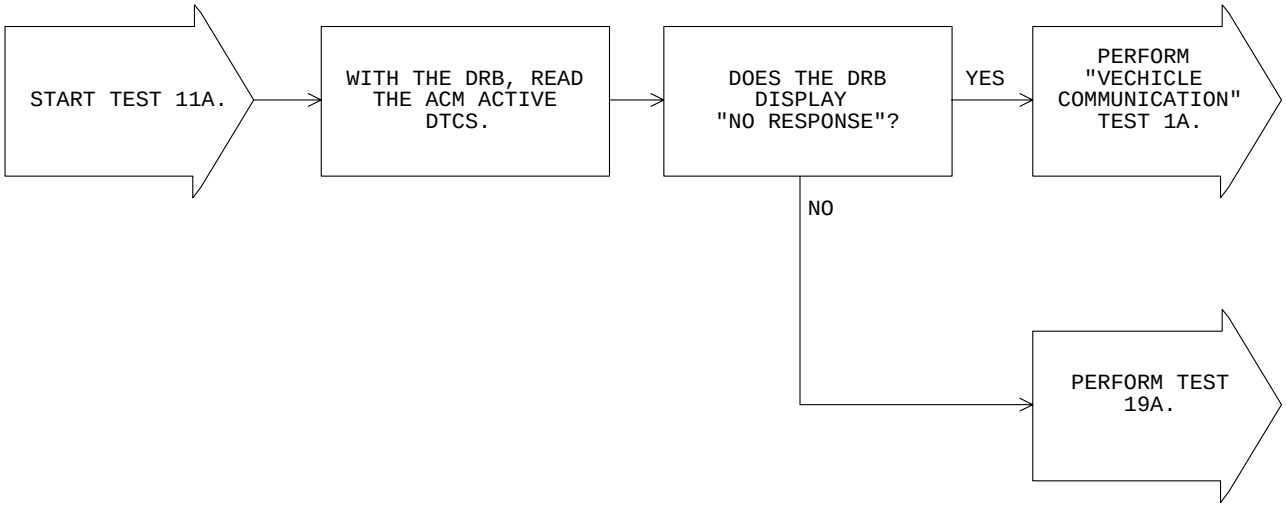
**Theory of operation:** The ACM sends a warning lamp (on & off) message to the MIC once every second. If the ACM determines it cannot communicate its warning lamp (on & off) message on the PCI bus for 5 consecutive seconds, the code will set.

**Possible causes:**
> Any CCD bus failure (may be viewed in stored codes once bus is repaired)
> Faulty airbag control module

80b31f79

## TEST 11A REPAIRING NO PCI COMMUNICATION

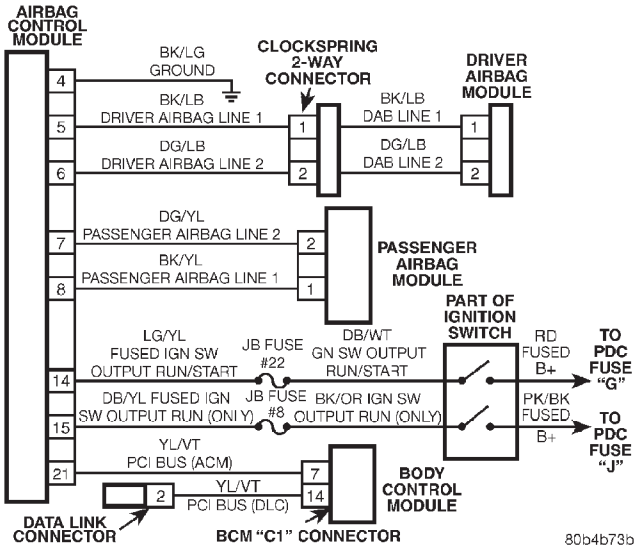
**Perform TEST 1A Before Proceeding**




| | |
|---|---|
| ***Perform Verification TEST VER-1A.** | ****Check connectors - Clean / repair as necessary.** |

## TEST 12A REPAIRING PASSENGER SQUIB CIRCUIT OPEN

**Perform TEST 1A Before Proceeding**




**Name of code:** Passenger Squib Circuit Open

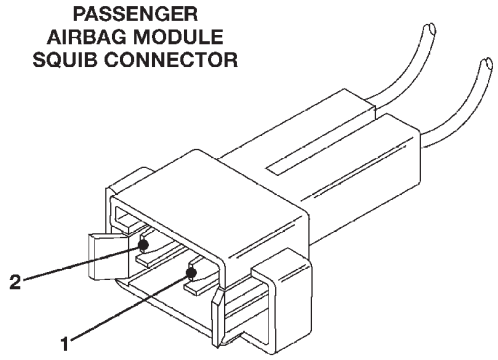
**NOTE:** This code becomes active and stored as soon as the malfunction is detected.

**When monitored:** Continuously with ignition on.

**Possible causes:**

> Passenger side airbag module open
> Passenger airbag line 1 or line 2 open
> Loose or poor connection at connector terminals
> Faulty airbag control module

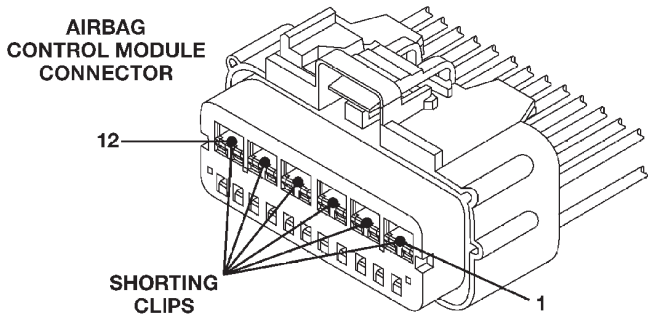
80b31f7a




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/YL | PASSENGER AIRBAG LINE 1 |
| 2 | DG/YL | PASSENGER AIRBAG LINE 2 |

80b4b7b1

*FIG. 1*

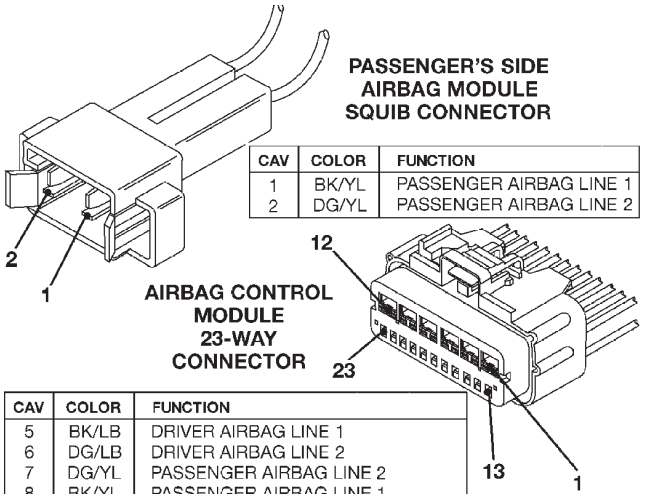



A SHORTING CLIP IS ONE SAFEGUARD BUILT INTO THE AIRBAG SYSTEM TO PREVENT ACCIDENTAL DEPLOYMENT WHEN HANDLING THE AIRBAG ASSEMBLY. STATIC CHARGES OR RADIO FREQUENCY NOISE CAN CAUSE ELECTRICAL POTENTIAL TO DEVELOP IN THE AIRBAG INITIATOR. SHORTING CLIPS PREVENT THIS WHEN THE CONNECTOR IS REMOVED FROM THE CONTROL MODULE.

**DO NOT PROBE, BEND OR REMOVE SHORTING CLIPS**

80b0d77e

*FIG. 2*




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/YL | PASSENGER AIRBAG LINE 1 |
| 2 | DG/YL | PASSENGER AIRBAG LINE 2 |

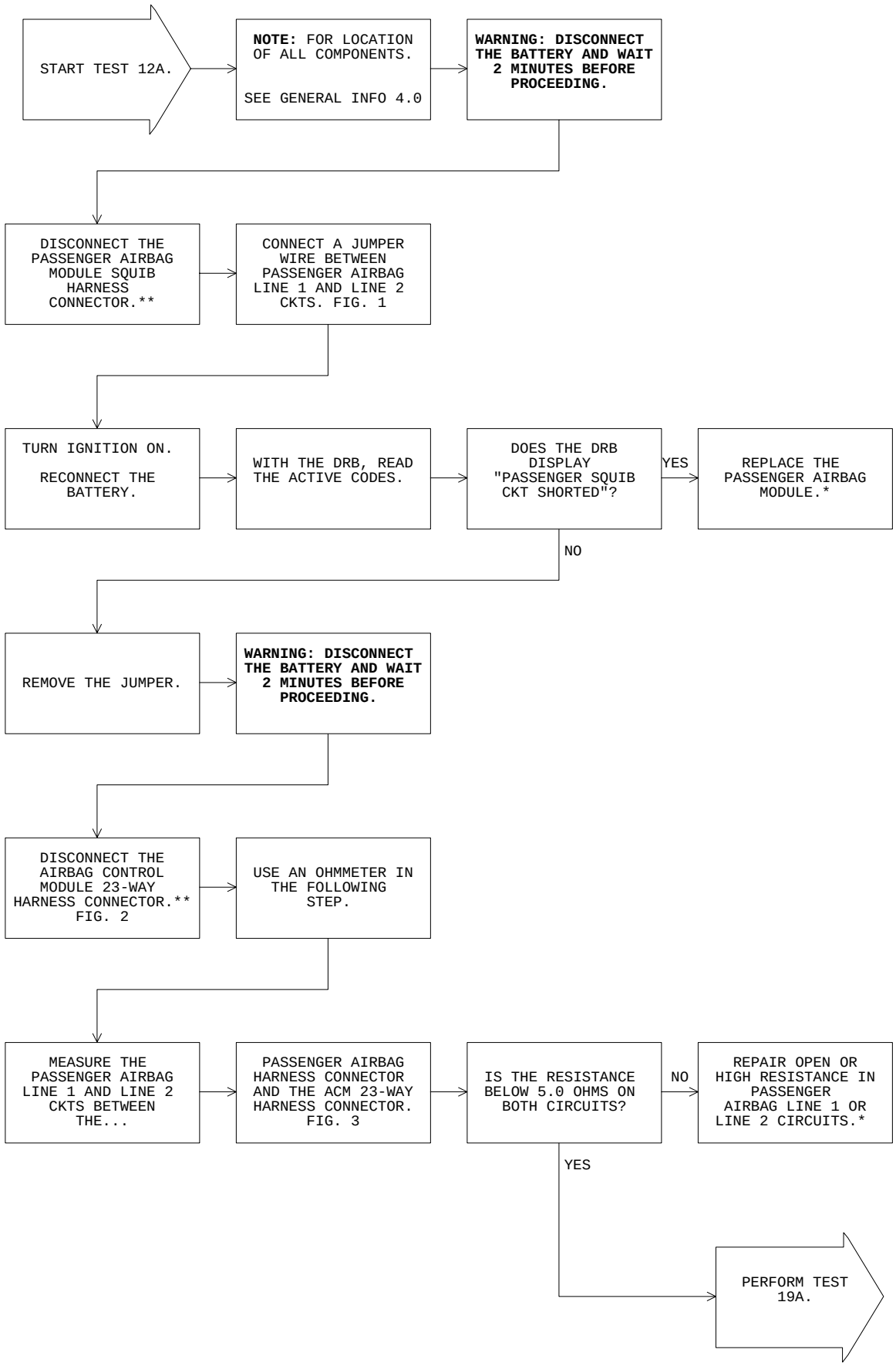
| CAV | COLOR | FUNCTION |
|---|---|---|
| 5 | BK/LB | DRIVER AIRBAG LINE 1 |
| 6 | DG/LB | DRIVER AIRBAG LINE 2 |
| 7 | DG/YL | PASSENGER AIRBAG LINE 2 |
| 8 | BK/YL | PASSENGER AIRBAG LINE 1 |
| 14 | LG/YL | FUSED IGN SW OUTPUT RUN/START |
| 15 | DB/YL | FUSED IGN SW OUTPUT RUN (ONLY) |

80b4b7b2

*FIG. 3*

## TEST 12A REPAIRING PASSENGER SQUIB CIRCUIT OPEN

**Perform TEST 1A Before Proceeding**

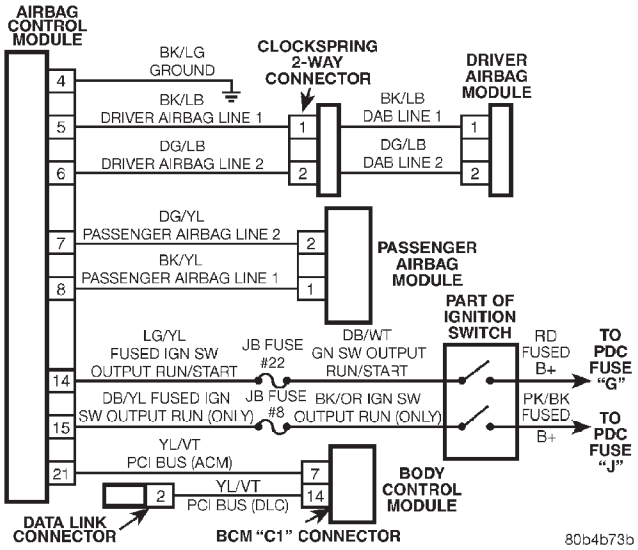



***Perform Verification TEST VER-1A.***

***Check connectors - Clean / repair as necessary.***

## TEST 13A REPAIRING PASSENGER SQUIB CIRCUIT SHORTED

**Perform TEST 1A Before Proceeding**




**Name of code:** Passenger Squib Circuit Shorted

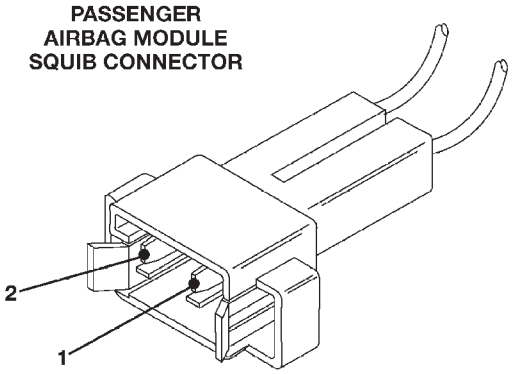
**NOTE:** This code becomes active and stored as soon as the malfunction is detected.

**When monitored:** Continuously with ignition on.

**Possible causes:**

> Passenger airbag module short
> Passenger airbag line 1 shorted to line 2
> Faulty airbag control module

80b34e11



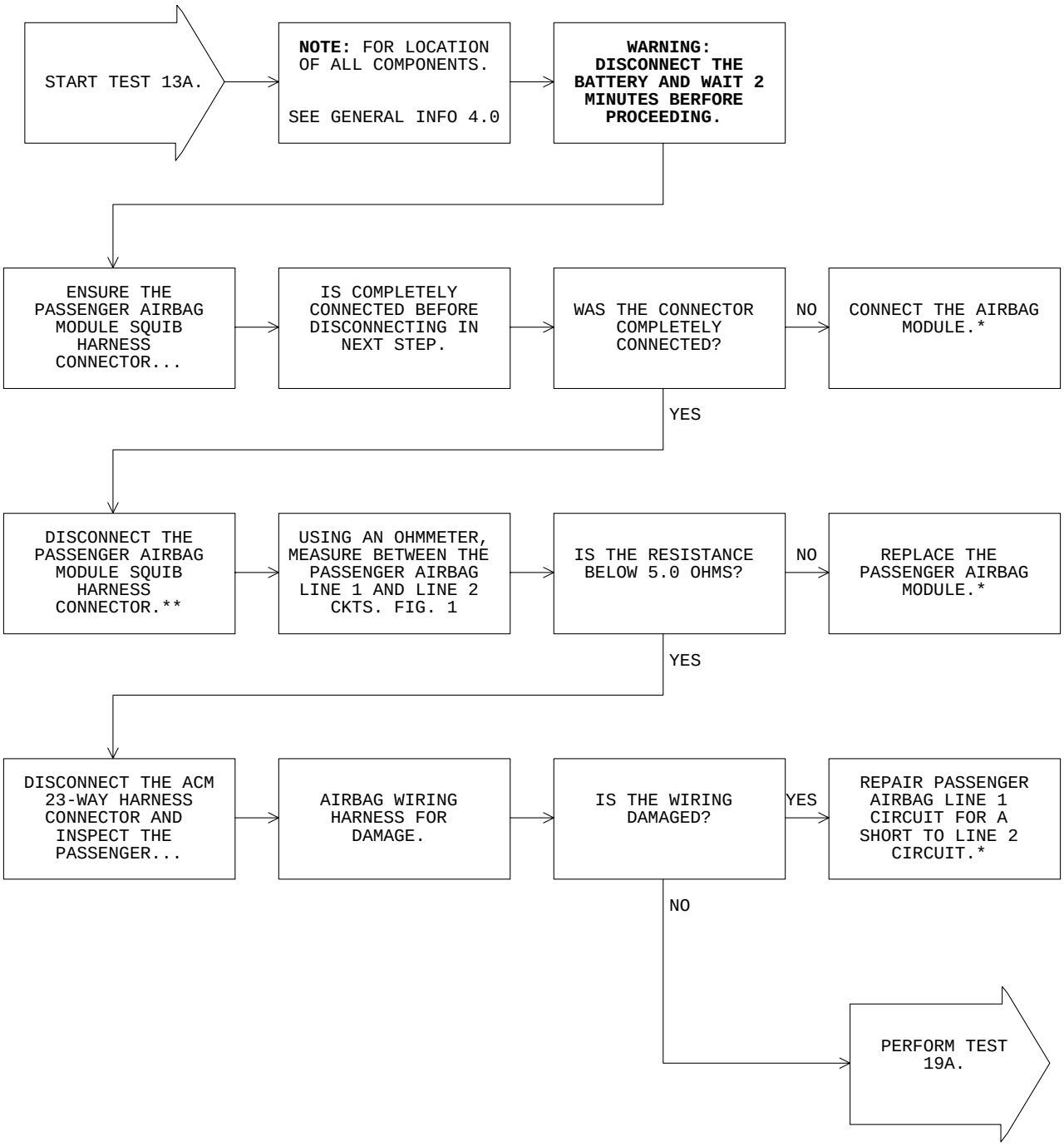

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/YL | PASSENGER AIRBAG LINE 1 |
| 2 | DG/YL | PASSENGER AIRBAG LINE 2 |

80b4b7b1

***FIG. 1***

## TEST 13A REPAIRING PASSENGER SQUIB CIRCUIT SHORTED

**Perform TEST 1A Before Proceeding**

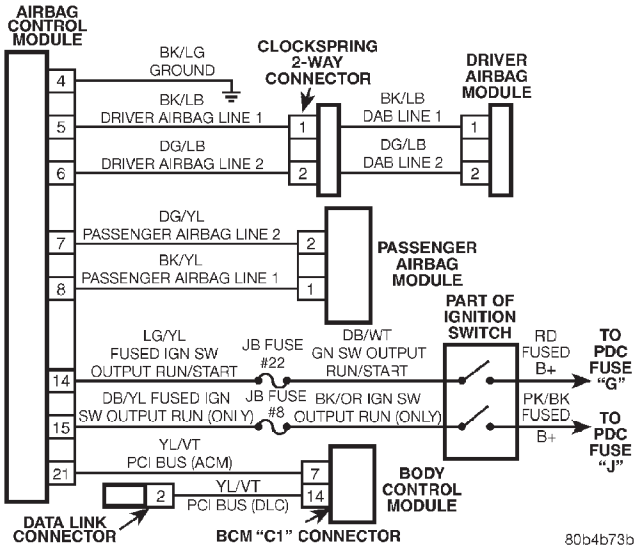



***Perform Verification TEST VER-1A.**

****Check connectors - Clean / repair as necessary.**

## TEST 14A REPAIRING PASSENGER SQUIB CIRCUIT SHORTED TO BATTERY

**Perform TEST 1A Before Proceeding**




**Name of code:** Passenger Squib Shorted to Battery

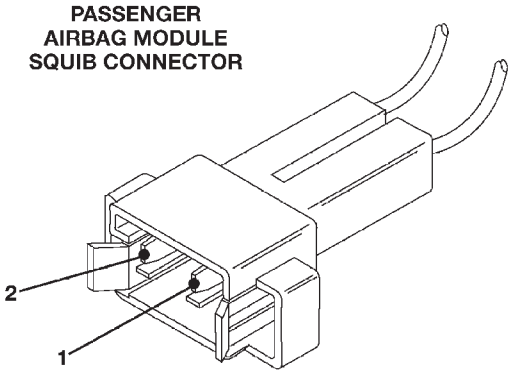
**NOTE:** The code becomes active and stored as soon as the malfunction is detected.

**When monitored:** Continuously with the ignition on.

**Set condition:** With voltage on, the passenger airbag line 1 or line 2 circuit(s) is other than expected.

**Possible causes:**
> Passenger airbag line 1 short to voltage
> Passenger airbag line 2 short to voltage
> Faulty airbag control module

80b31f7b



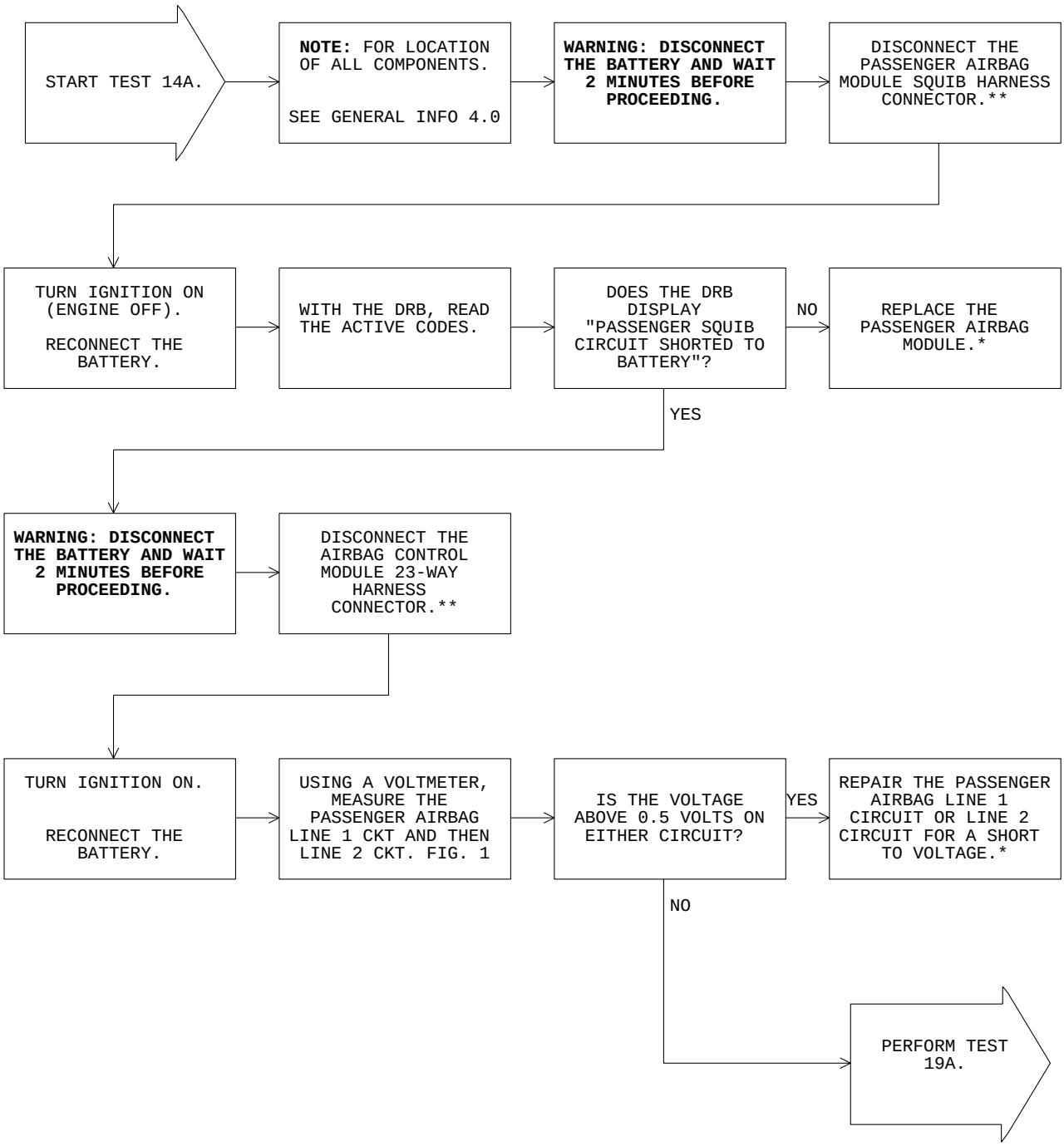

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/YL | PASSENGER AIRBAG LINE 1 |
| 2 | DG/YL | PASSENGER AIRBAG LINE 2 |

80b4b7b1

***FIG. 1***

## TEST 14A REPAIRING PASSENGER SQUIB CIRCUIT SHORTED TO BATTERY

**Perform TEST 1A Before Proceeding**

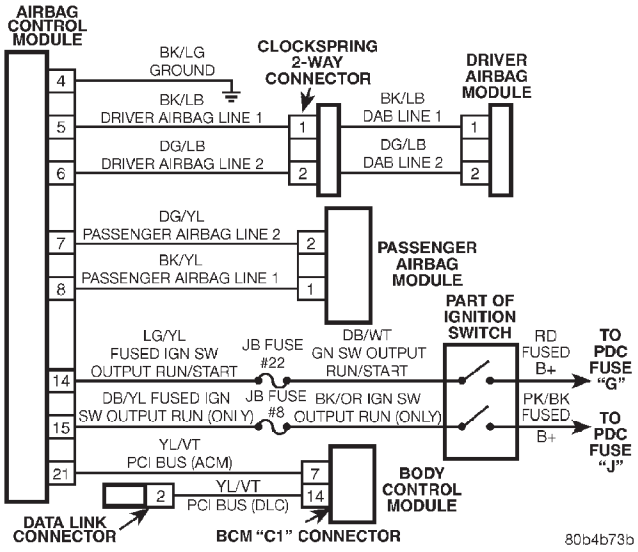



***Perform Verification TEST VER-1A.***

****Check connectors - Clean / repair as necessary.***

## TEST 15A REPAIRING PASSENGER SQUIB CIRCUIT SHORTED TO GROUND

**Perform TEST 1A Before Proceeding**




**Name of code:** Passenger Squib Shorted to Ground

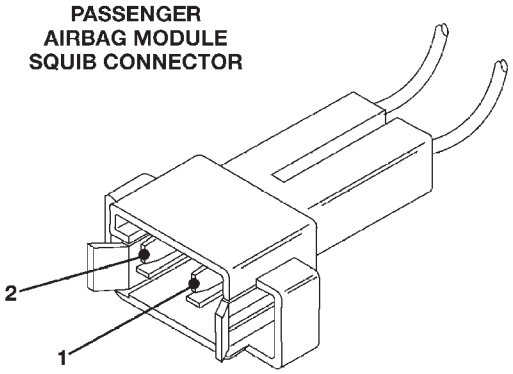
**NOTE:** The code becomes active and stored as soon as the malfunction is detected.

**When monitored:** Continuously with the ignition on.

**Set condition:** With voltage on, the passenger airbag line 1 or line 2 circuit(s) is other than expected.

**Possible causes:**
> Passenger airbag line 1 short to ground potential
> Passenger airbag line 2 short to ground potential
> Faulty airbag control module

80b31f7c



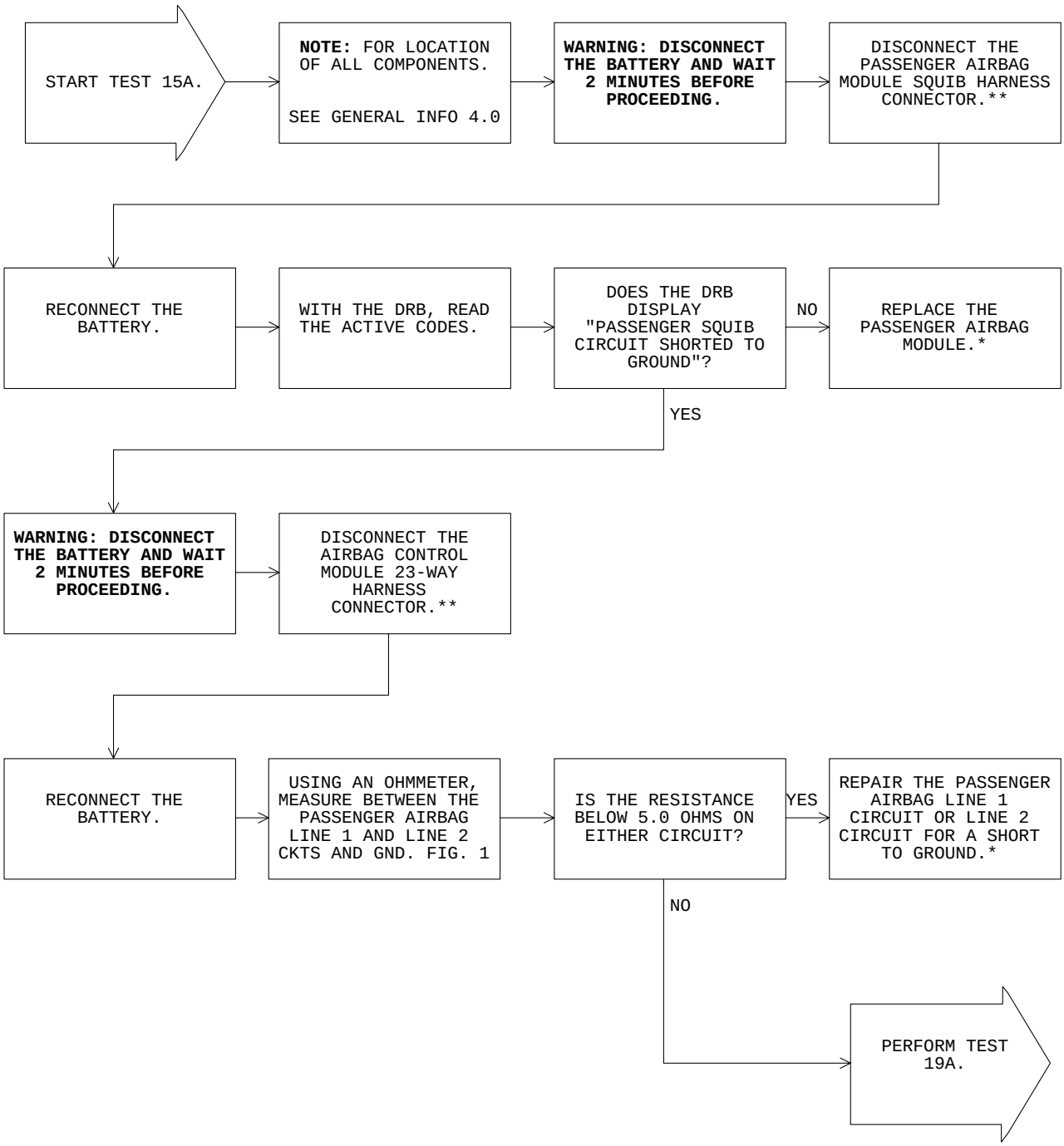

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/YL | PASSENGER AIRBAG LINE 1 |
| 2 | DG/YL | PASSENGER AIRBAG LINE 2 |

80b4b7b1

***FIG. 1***

## TEST 15A REPAIRING PASSENGER SQUIB CIRCUIT SHORTED TO GROUND

**Perform TEST 1A Before Proceeding**

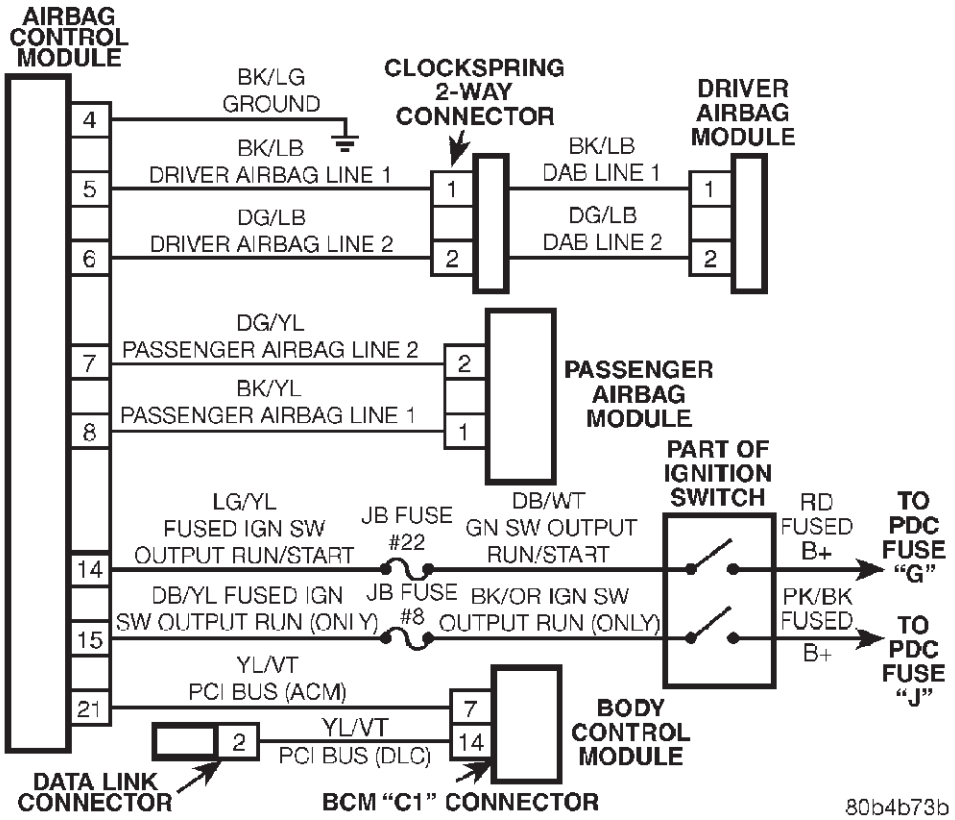



***Perform Verification TEST VER-1A.**

****Check connectors - Clean / repair as necessary.**

## TEST 16A REPAIRING POWER STAGE NOT TESTED

**Perform TEST 1A Before Proceeding**




**Name of code:** Power Stage Not Tested

**NOTE:** Fault becomes active and stored at ignition key on or module reset.

**When monitored:** The airbag control module performs this test at ignition key on or module reset.

**Set condition:** The airbag control module performs this test at ignition key or module reset. If the airbag control module detects a driver or passenger short to ground or battery, the module will not perform the power stage test. **If the power stage not tested fault occurs without a driver or passenger short to ground or battery fault the airbag control module needs to be replaced.**

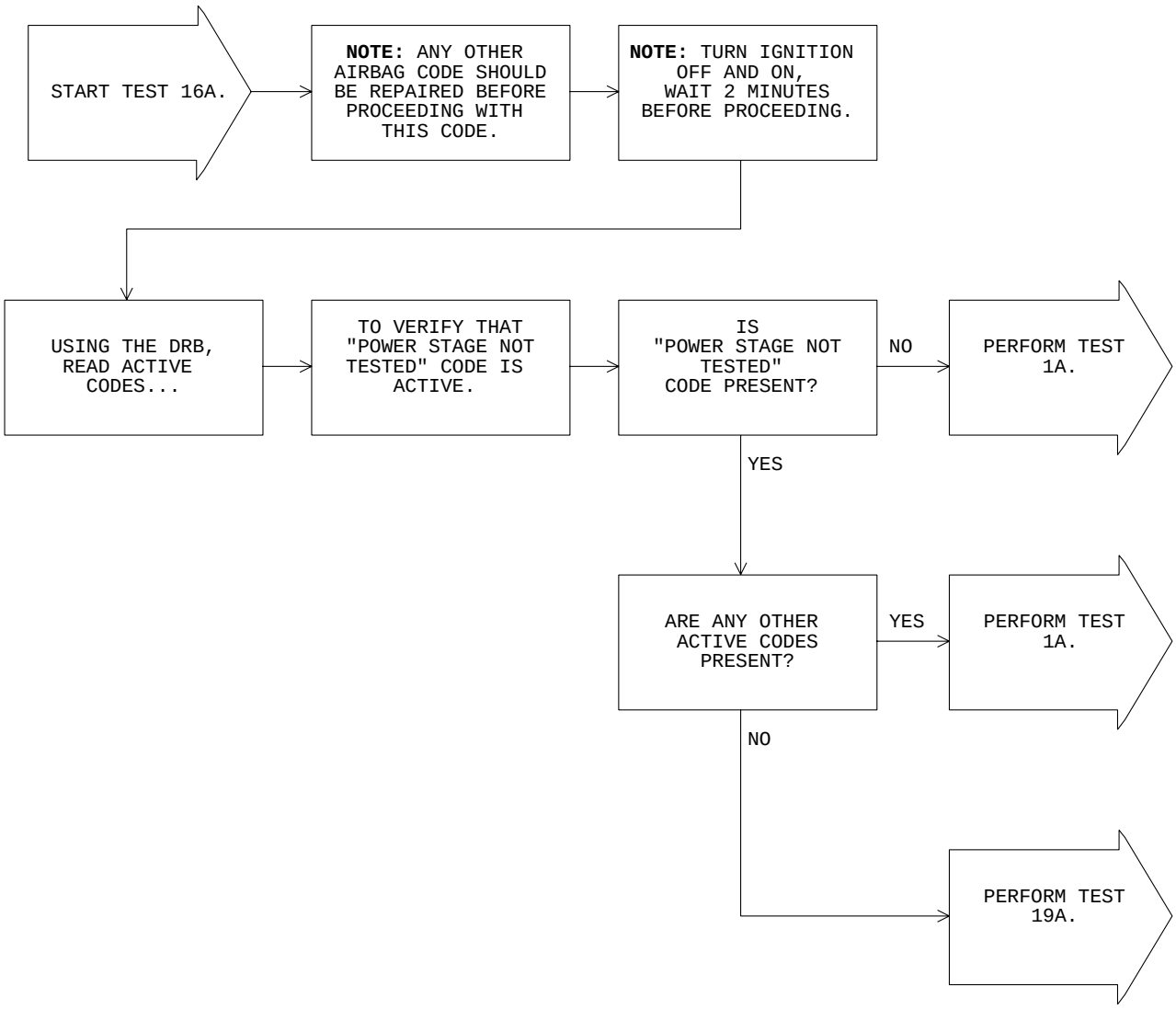
**Possible causes:**

> Driver squib lines 1 or 2 shorted to battery or ground
> Passenger squib lines 1 or 2 shorted to battery or ground
> Faulty airbag control module

80b31f7e

## TEST 16A REPAIRING POWER STAGE NOT TESTED

**Perform TEST 1A Before Proceeding**




| | |
|---|---|
| ***Perform Verification TEST VER-1A.** | ****Check connectors - Clean / repair as necessary.** |

| TEST 17A | REPAIRING WARNING LAMP OPEN/SHORTED |
|---|---|

Perform TEST 1A Before Proceeding

**Name of code:** Warning Lamp Circuit Open/Shorted

**NOTE:** This code becomes active and stored as soon as the malfunction is detected.

**When monitored:** Continuously with the ignition on.

**Set condition:** The ACM will monitor the CCD Bus for the airbag warning lamp diagnostic message from the instrument cluster. This message is transmitted once every second, and upon the change of lamp state, by the cluster. The message will contain the status of the bulb and the bulb driver. The code will set if the lamp state is open or shorted.

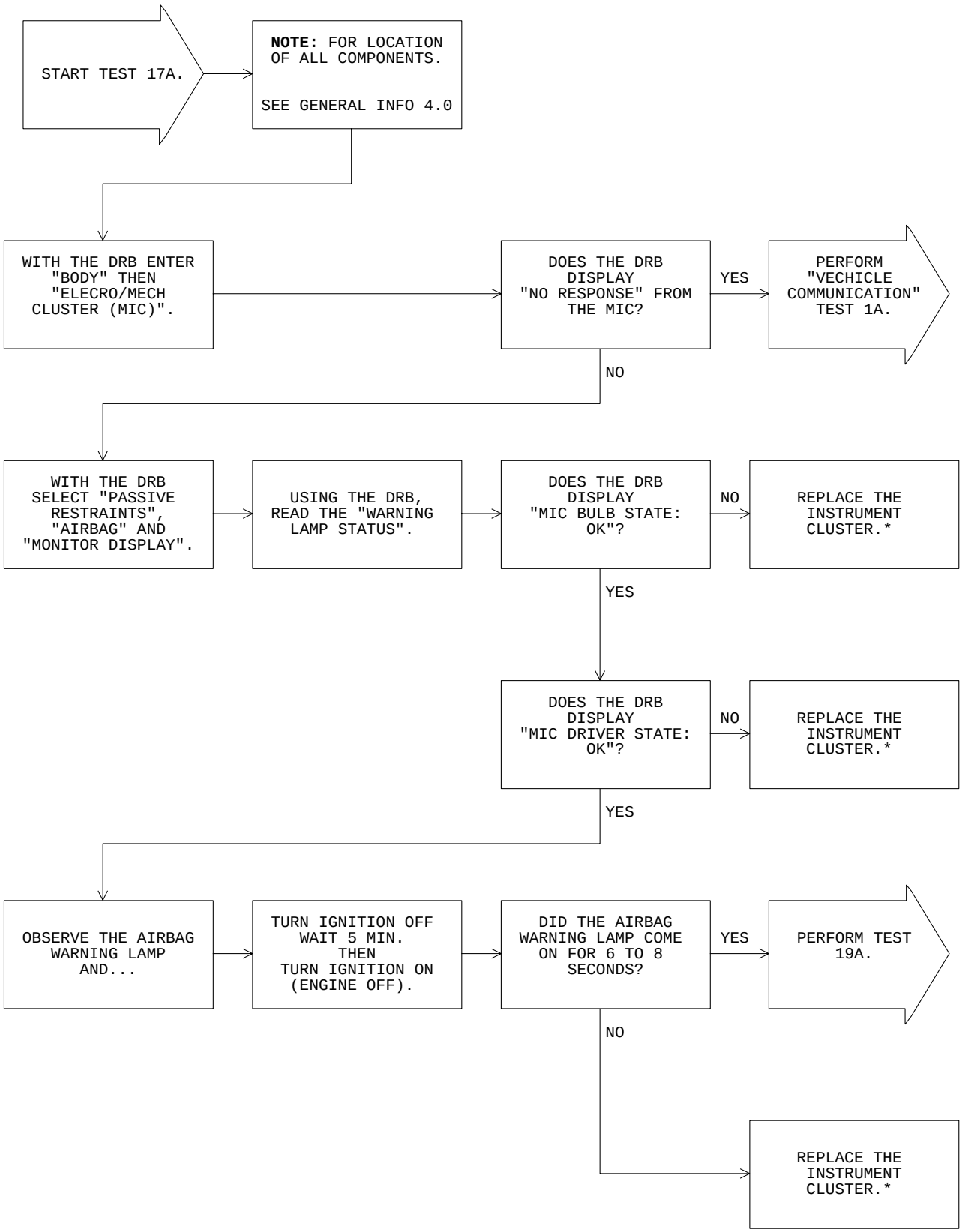
**Possible causes:**

> Faulty instrument cluster
> Faulty airbag control module

80b31f7f

## TEST 17A REPAIRING WARNING LAMP OPEN/SHORTED

**Perform TEST 1A Before Proceeding**

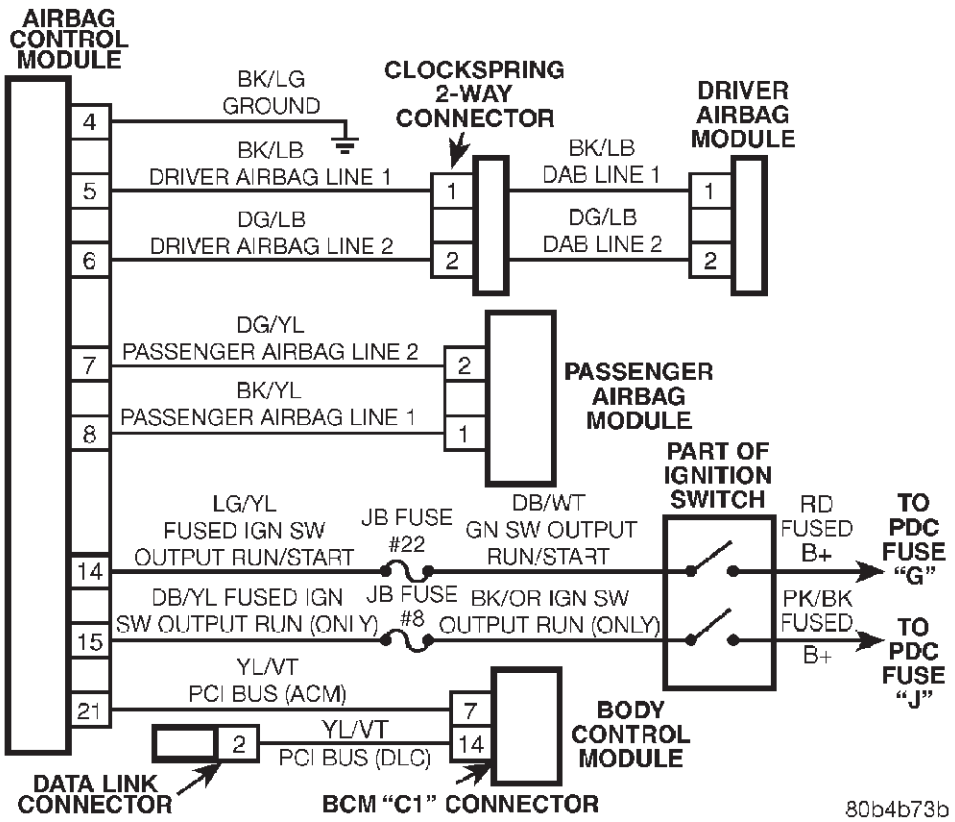



***Perform Verification TEST VER-1A.**

****Check connectors - Clean / repair as necessary.**

**TEST 18A** | **REPAIRING STORED TROUBLE CODES**

**Perform TEST 1A Before Proceeding**




## INACTIVE TROUBLE CODE CONDITION

You have just attempted to simulate the condition that initially set the trouble code message. The following additional checks may assist you in identifying a possible intermittent problem:

- Visually inspect related wire harness connectors. Look for broken, bent, pushed out, spread, corroded, or contaminated terminals.

- Visually inspect the related harnesses. Look for chafed, pierced, pinched or partially broken wire.

- Refer to any hotlines or technical service bulletins that may apply.

80b0d754

## TEST 18A REPAIRING STORED TROUBLE CODES

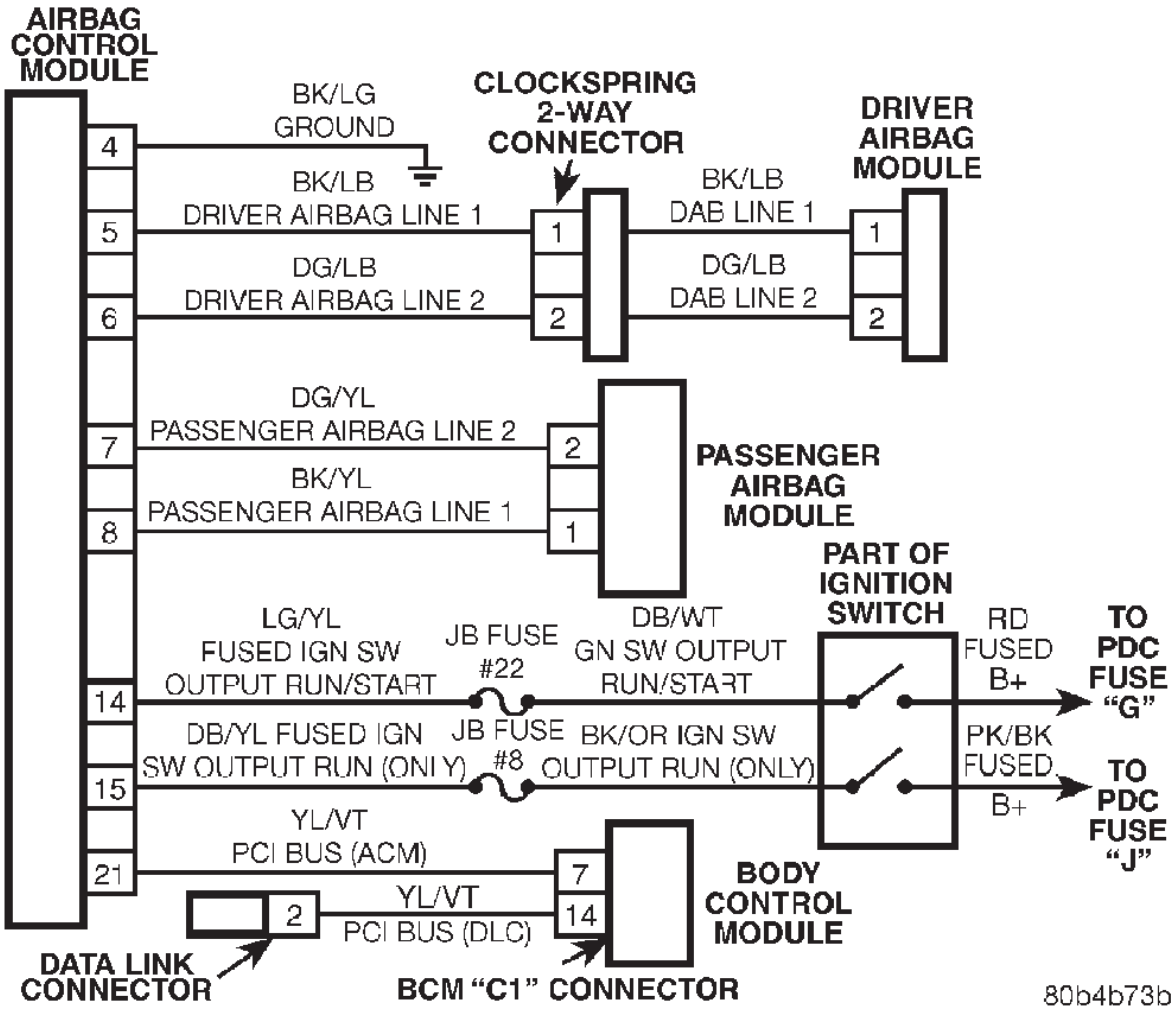
**Perform TEST 1A Before Proceeding**

1. Wiggle the wiring harness and connectors of the airbag system, and rotate the steering wheel from stop to stop. Check for trouble codes as you work through the system. Refer to General Information Section 4.0 for system component location and connector pinouts.
2. If a stored trouble code becomes active, perform TEST 1A.
3. If a stored code is reproducible:
   - Repair or replace the wiring harness
   - Repair or replace the harness connector or terminals
   - Replace the component as necessary

Refer to the specific diagnostic tests for trouble code set parameters and possible causes.

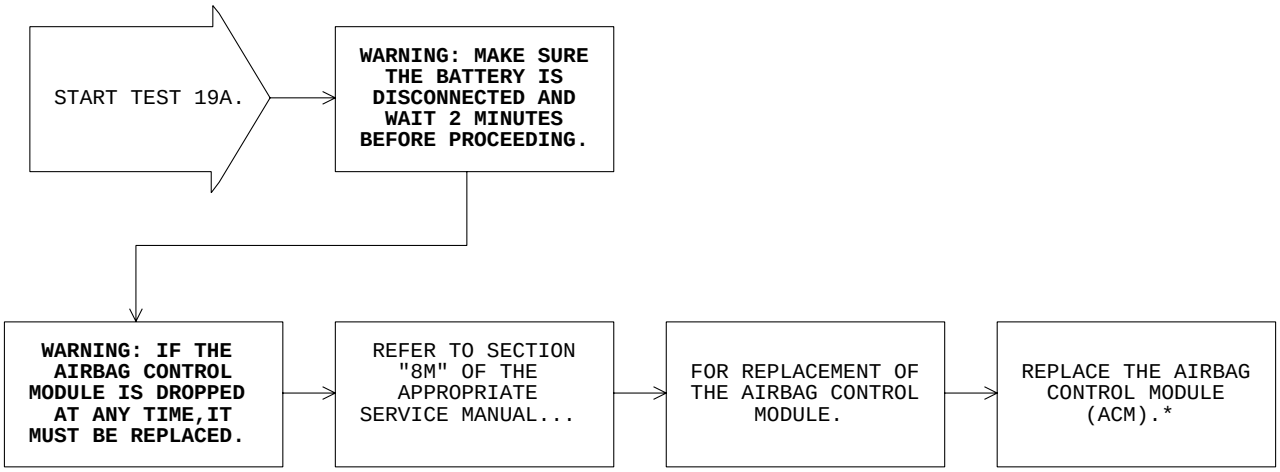
| TEST 19A | AIRBAG CONTROL MODULE REPLACEMENT PROCEDURE |
|---|---|

**Perform TEST 1A Before Proceeding**



## TEST 19A AIRBAG CONTROL MODULE REPLACEMENT PROCEDURE

**Perform TEST 1A Before Proceeding**

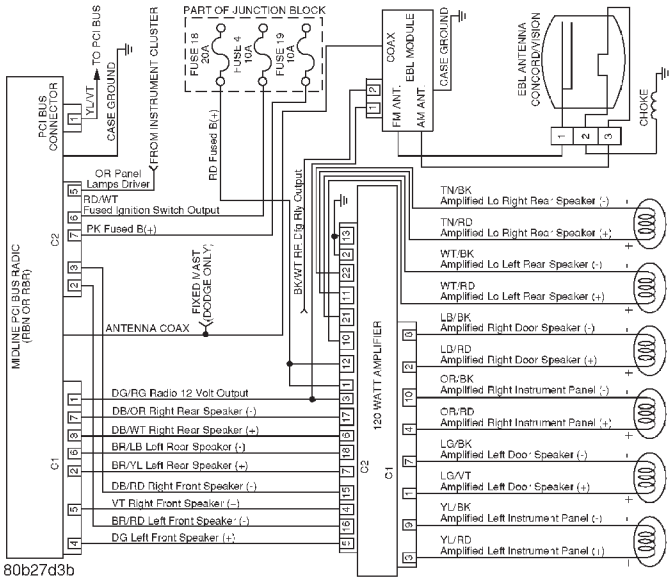



| | |
|---|---|
| ***Perform Verification TEST VER-1A.** | ****Check connectors - Clean / repair as necessary.** |

## TEST 1A IDENTIFYING RADIO (PCI BUS) PROBLEMS

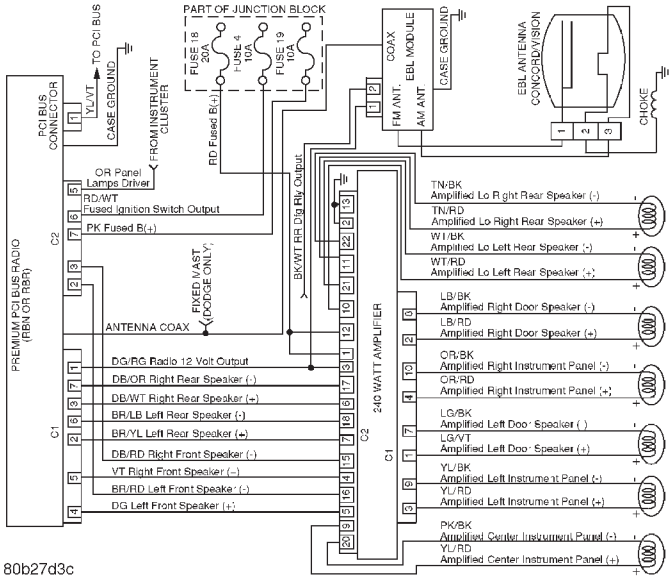
**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**

### MIDLINE SYSTEM



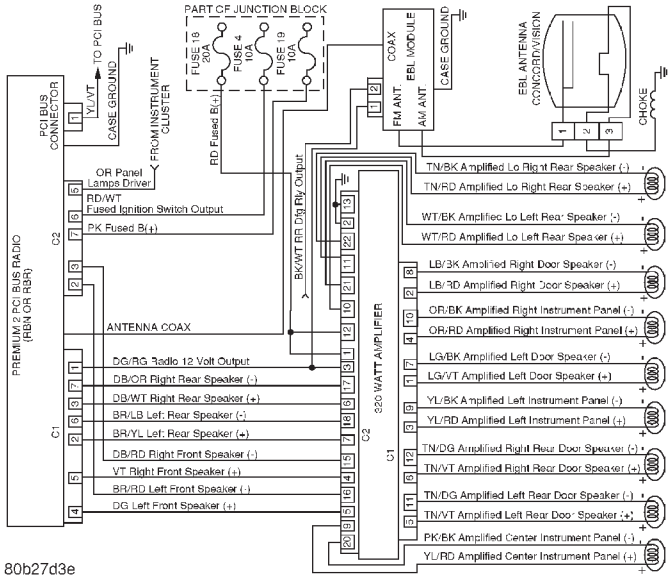

80b27d3b

### PREMIUM SYSTEM




80b27d3c

### PREMIUM 2 SYSTEM




80b27d3e

## TEST 1A IDENTIFYING RADIO (PCI BUS) PROBLEMS

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**

With the DRB, select ‘‘Body’’, ‘‘Audio Systems’’.

A. If the DRB displays ‘‘No Response’’ . . . . . .perform ‘‘Vehicle Communication’’ TEST 1A.

B. If any other communication problem exists. . .perform ‘‘Vehicle Communication’’ TEST 1A.

1. With the DRB, read DTC’s. If there are any disgnostic trouble codes . . . . .perform TEST 1B.
2. If any of the following radio failures exist, exchange the radio.

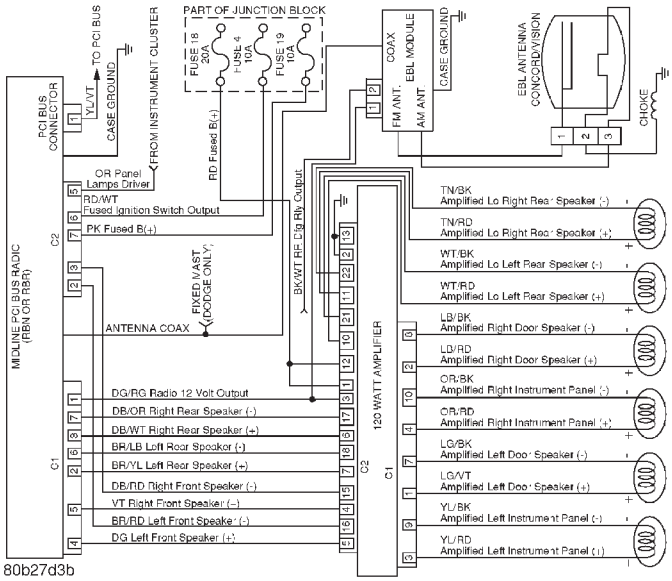
AM/FM Switch Inoperative
CD Eject Switch Inoperative*
FF/RW Switch Inoperative
PWR Switch Inoperative
Scan Switch Inoperative
Set Switch Inoperative
Tune Switch Inoperative
1-5 Presets Inoperative
Balance Dial Inoperative
Fader Dial Inoperative
Hour/Minute Switch Inoperative
Pause/Play Switch Inoperative*
Seek Switch Inoperative
Tape Eject Switch Inoperative
Vol/Time Switch Inoperative
Equalizer Inoperative

*CD Equipped Radios Only

# TEST 1B IDENTIFYING RADIO (PCI BUS) DIAGNOSTIC TROUBLE CODES (DTC's)

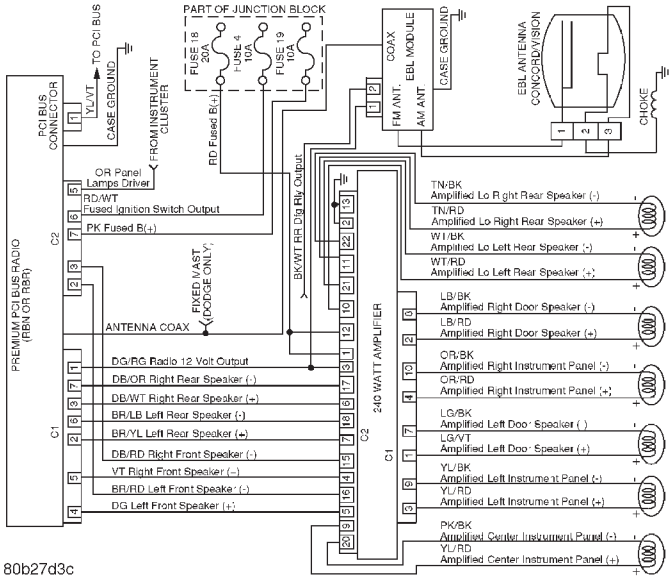
**Perform TEST 1A Before Proceeding**

## MIDLINE SYSTEM



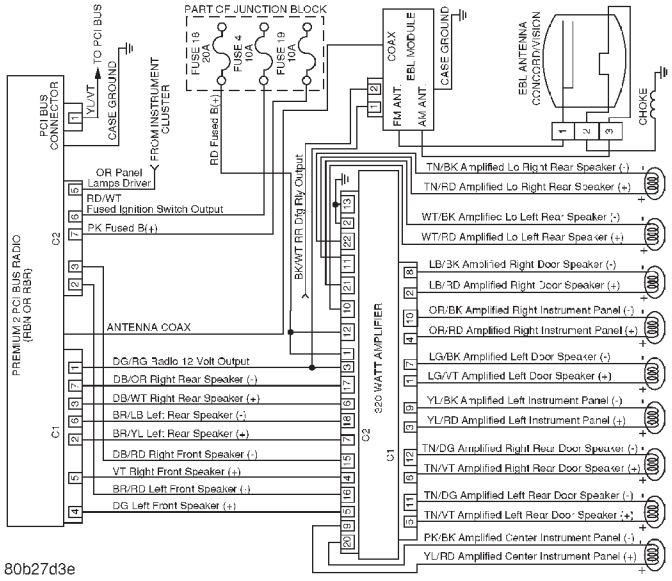

80b27d3b

## PREMIUM SYSTEM




80b27d3c

## PREMIUM 2 SYSTEM




80b27d3e

## TEST 1B — IDENTIFYING RADIO (PCI BUS) DIAGNOSTIC TROUBLE CODES (DTCs)

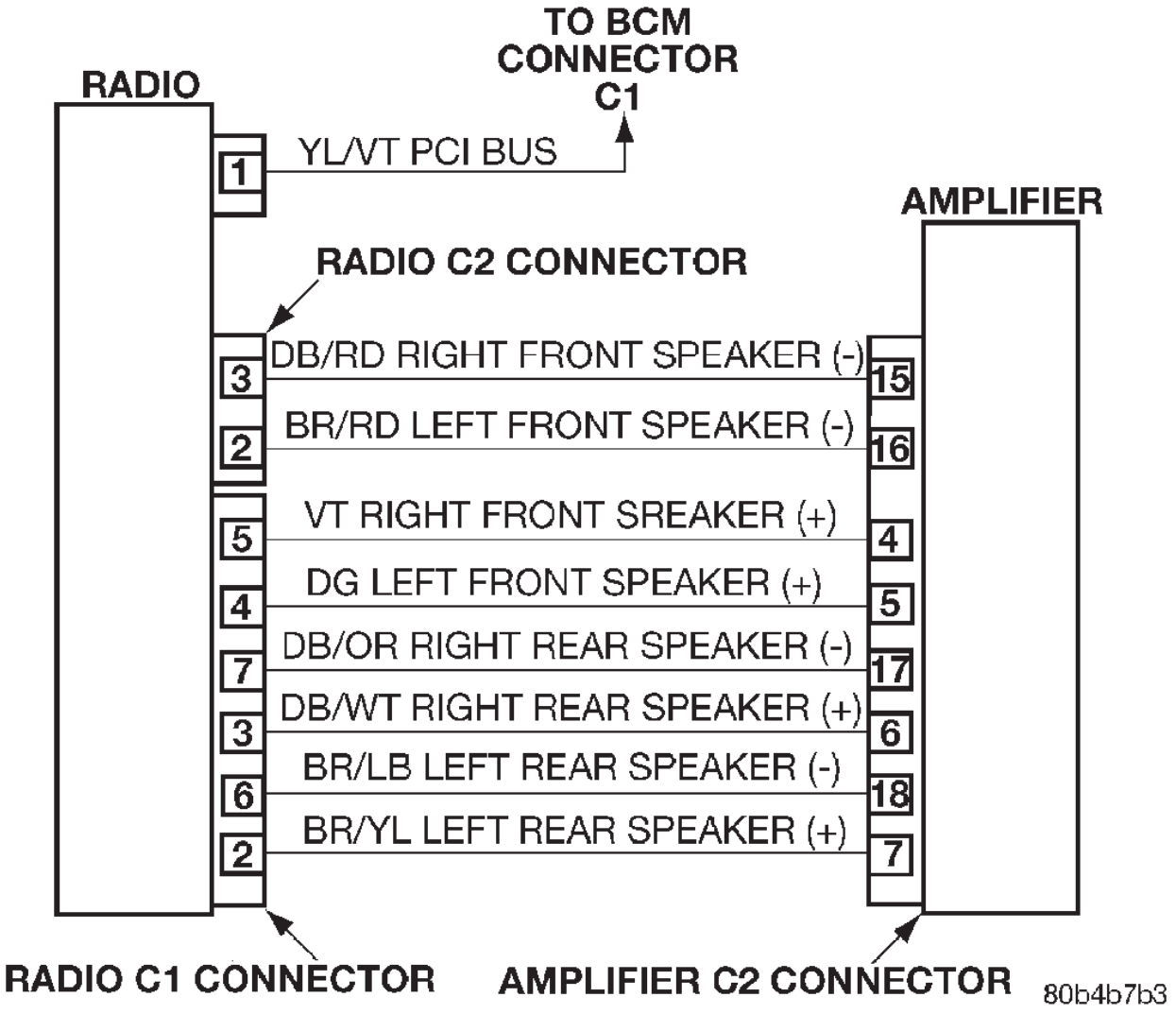
**Perform TEST 1A Before Proceeding**

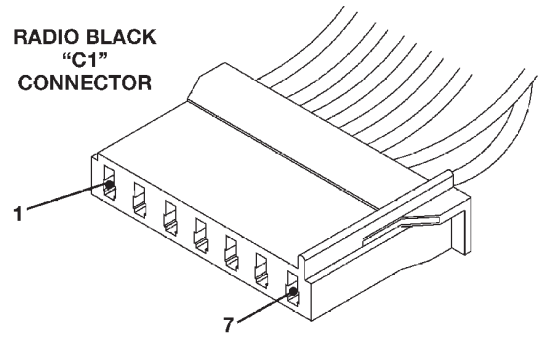
The following is a list of diagnostic trouble codes that may occur on the vehicle and that are diagnosable via the PCI Bus connector. These trouble codes may occur separately or in various combinations. When diagnosing a radio with trouble codes, perform the indicated action or test, make the required repairs, and verify that the problem has been corrected.

| DIAGNOSTIC TROUBLE CODE (DTC) DISPLAYED | PERFORM |
|---|---|
| Radio Error | Replace the Radio |
| CD Error | Replace the Radio |
| CAS Error | Replace the Radio |
| Shorted Front Channel | TEST 1C |
| Shorted Rear Channel | TEST 1D |
| Shorted Left Channel | TEST 1E |
| Shorted Right Channel | TEST 1F |

## TEST 1C REPAIRING SHORTED FRONT CHANNEL

**Perform TEST 1A Before Proceeding**

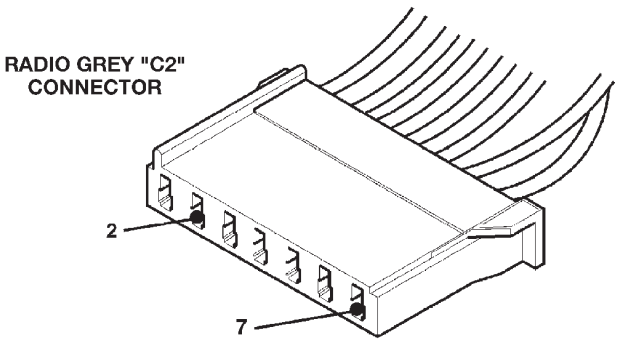



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/RD | RADIO 12-VOLT OUTPUT |
| 2 | BR/YL | LR (+) |
| 3 | DB/WT | RR (+) |
| 4 | DG | LF (+) |
| 5 | VT | RF (+) |
| 6 | BR/LB | LR (-) |
| 7 | DB/OR | RR (-) |

80b2b873

*FIG. 1*



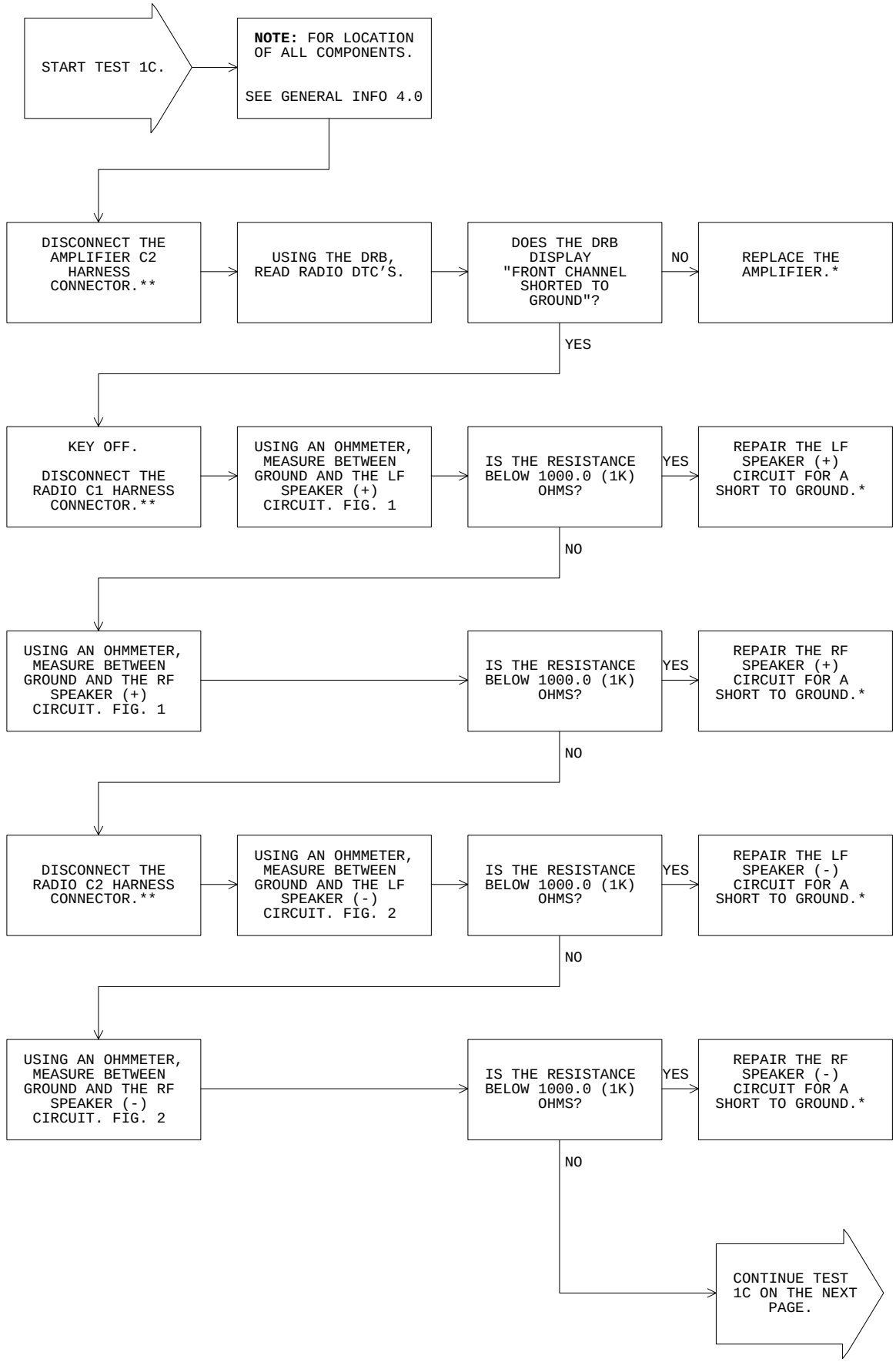

| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | BR/RD | LF (-) |
| 3 | DB/RD | RF (-) |
| 4 | YL/BK | DAY BRIGHTNESS SENSE |
| 5 | OR | PANEL LAMPS DIMMER SW SIGNAL |
| 6 | RD/WT | FUSED IGNITION SWITCH OUTPUT |
| 7 | PK | FUSED B(+) |

80b5cbe1

*FIG. 2*

## TEST 1C — REPAIRING SHORTED FRONT CHANNEL

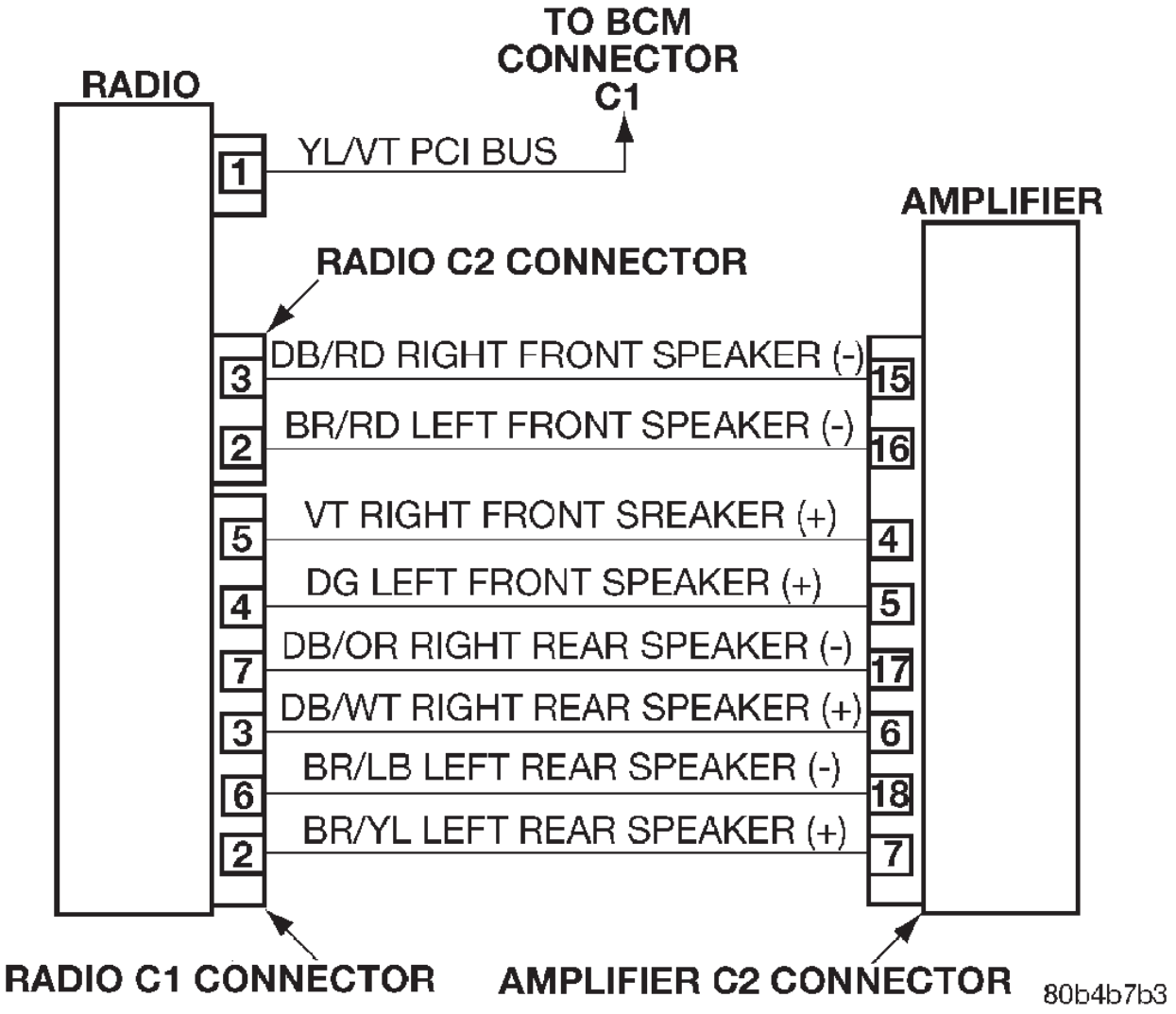
**Perform TEST 1A Before Proceeding**

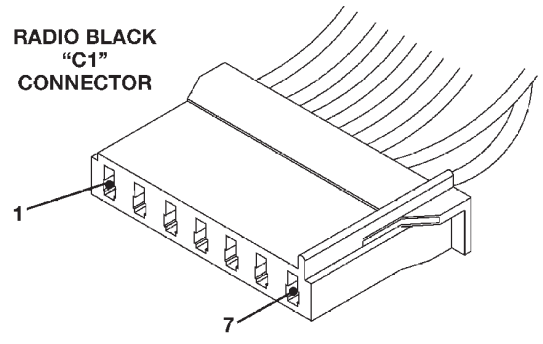



***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

**TEST 1C** CONTINUED - REPAIRING SHORTED FRONT CHANNEL

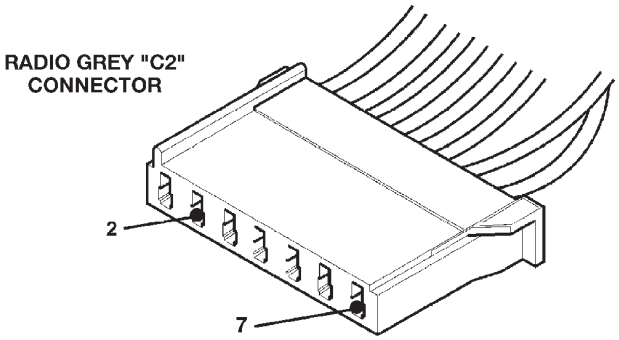



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/RD | RADIO 12-VOLT OUTPUT |
| 2 | BR/YL | LR (+) |
| 3 | DB/WT | RR (+) |
| 4 | DG | LF (+) |
| 5 | VT | RF (+) |
| 6 | BR/LB | LR (-) |
| 7 | DB/OR | RR (-) |

80b2b873

*FIG. 1*

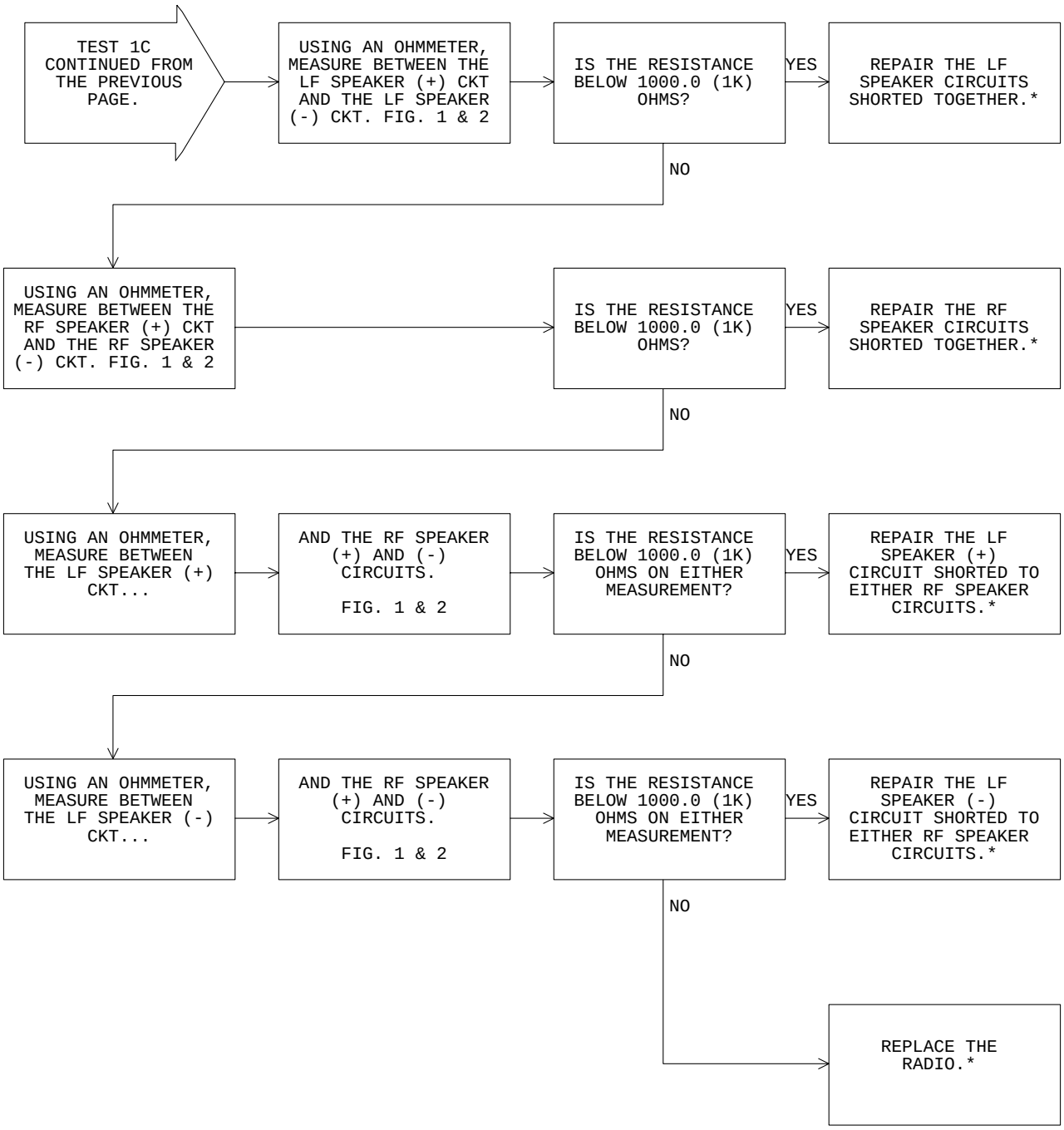



| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | BR/RD | LF (-) |
| 3 | DB/RD | RF (-) |
| 4 | YL/BK | DAY BRIGHTNESS SENSE |
| 5 | OR | PANEL LAMPS DIMMER SW SIGNAL |
| 6 | RD/WT | FUSED IGNITION SWITCH OUTPUT |
| 7 | PK | FUSED B(+) |

80b5cbe1

*FIG. 2*

## TEST 1C — CONTINUED - REPAIRING SHORTED FRONT CHANNEL

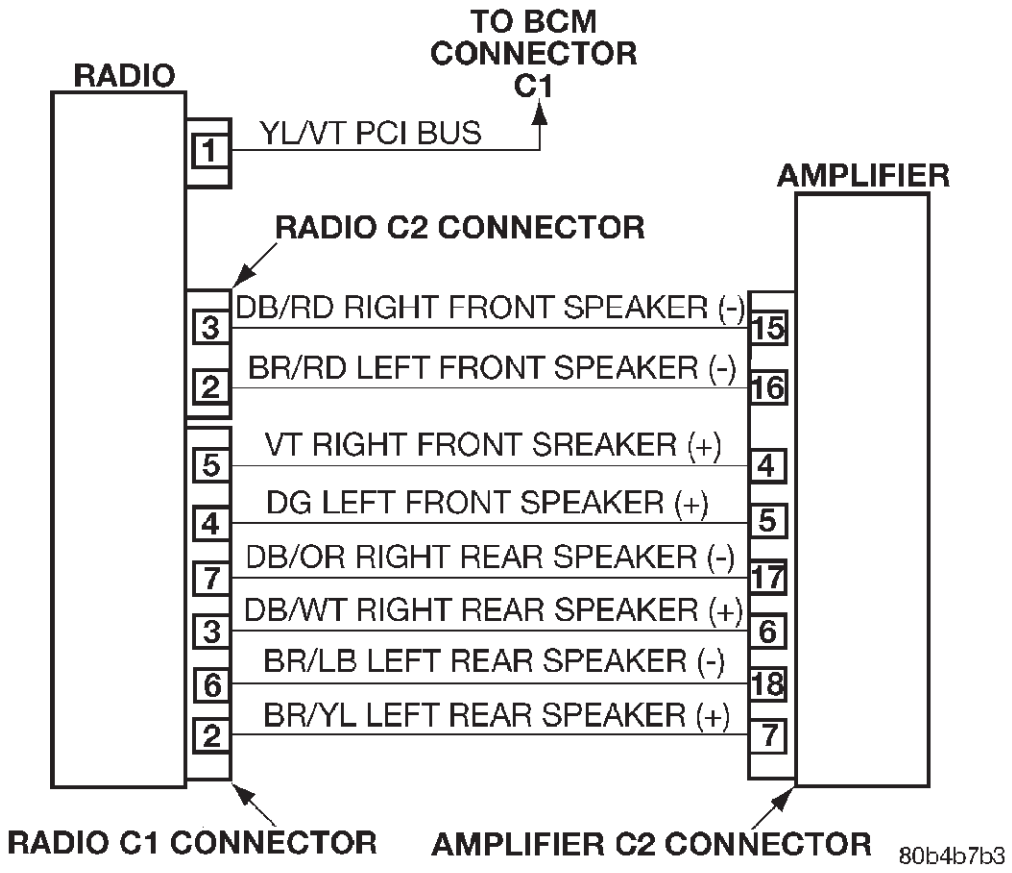


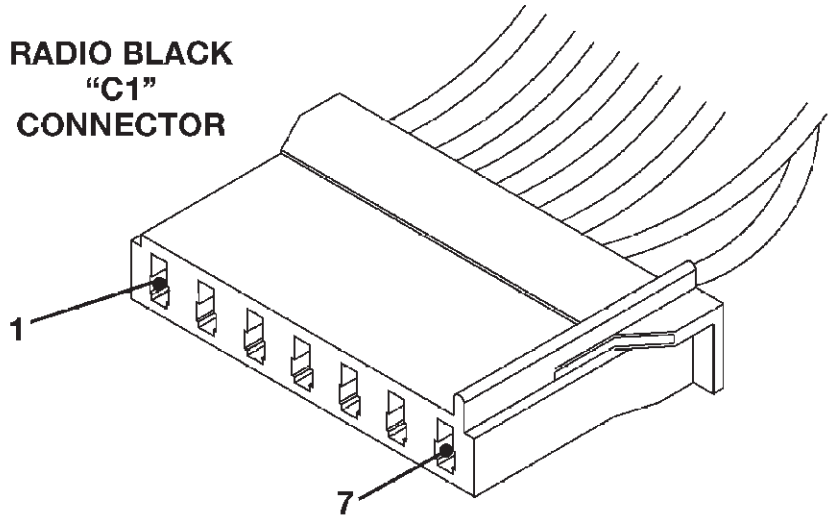

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

**TEST 1D** | **REPAIRING SHORTED REAR CHANNEL**

**Perform TEST 1A Before Proceeding**



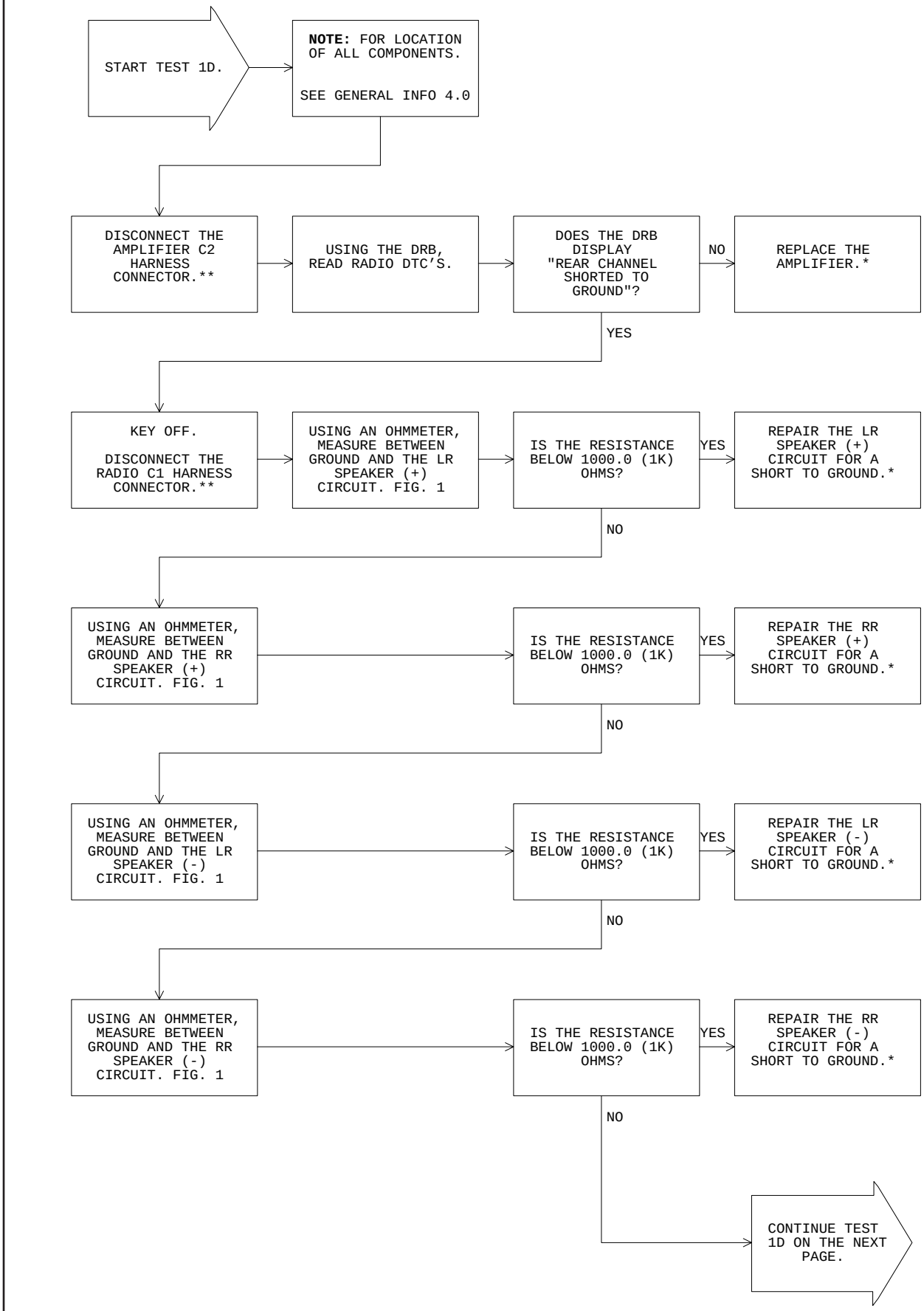

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/RD | RADIO 12-VOLT OUTPUT |
| 2 | BR/YL | LR (+) |
| 3 | DB/WT | RR (+) |
| 4 | DG | LF (+) |
| 5 | VT | RF (+) |
| 6 | BR/LB | LR (-) |
| 7 | DB/OR | RR (-) |

80b2b373

***FIG. 1***

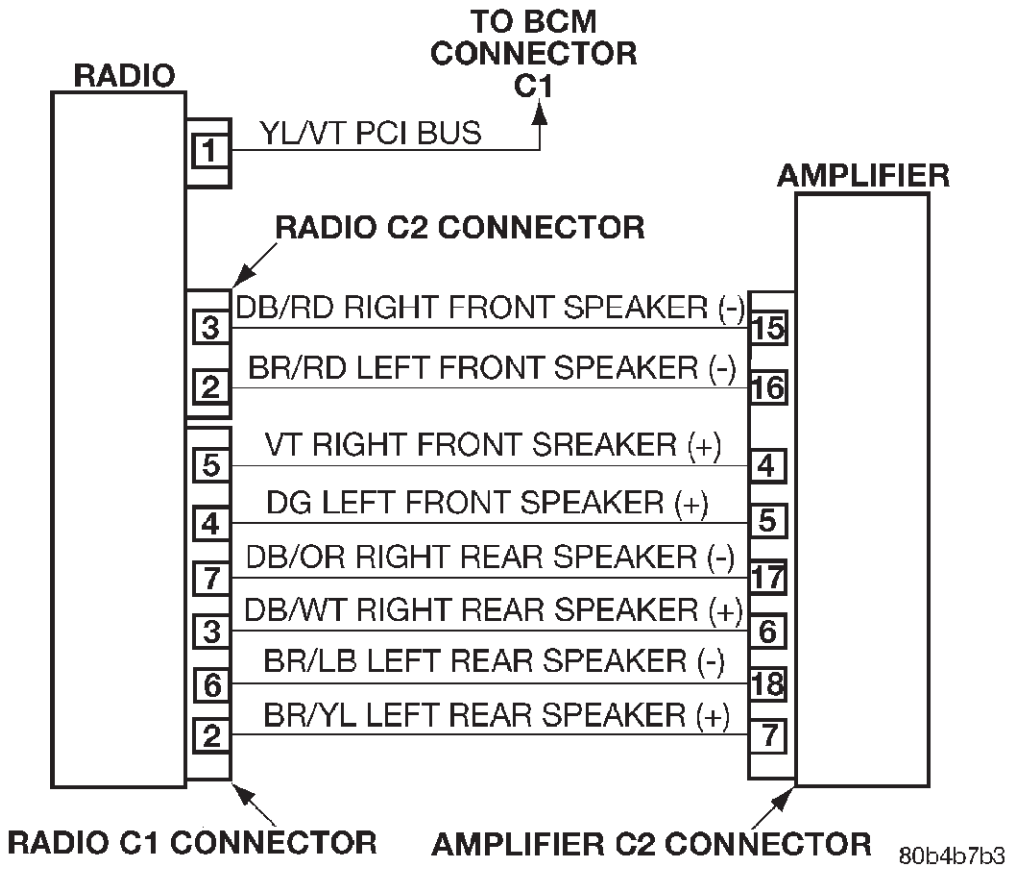
## TEST 1D — REPAIRING SHORTED REAR CHANNEL

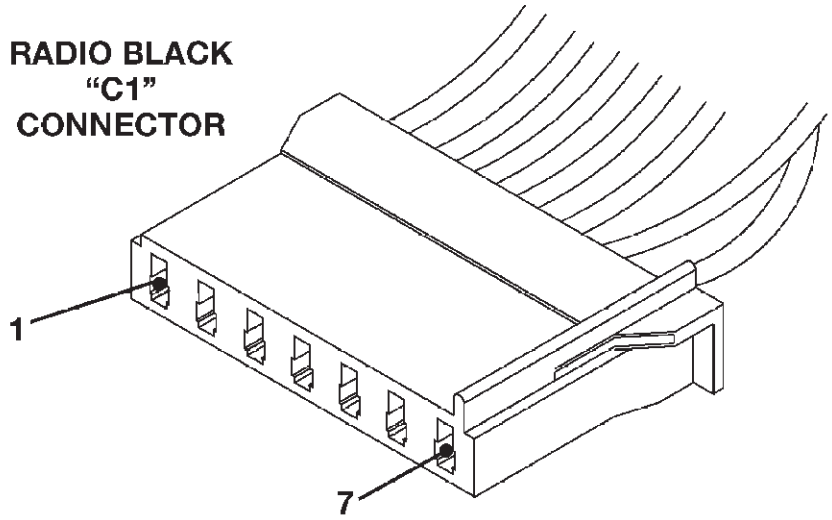
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.** | ***Check connectors - Clean / repair as necessary.**

**TEST 1D** CONTINUED - REPAIRING SHORTED REAR CHANNEL



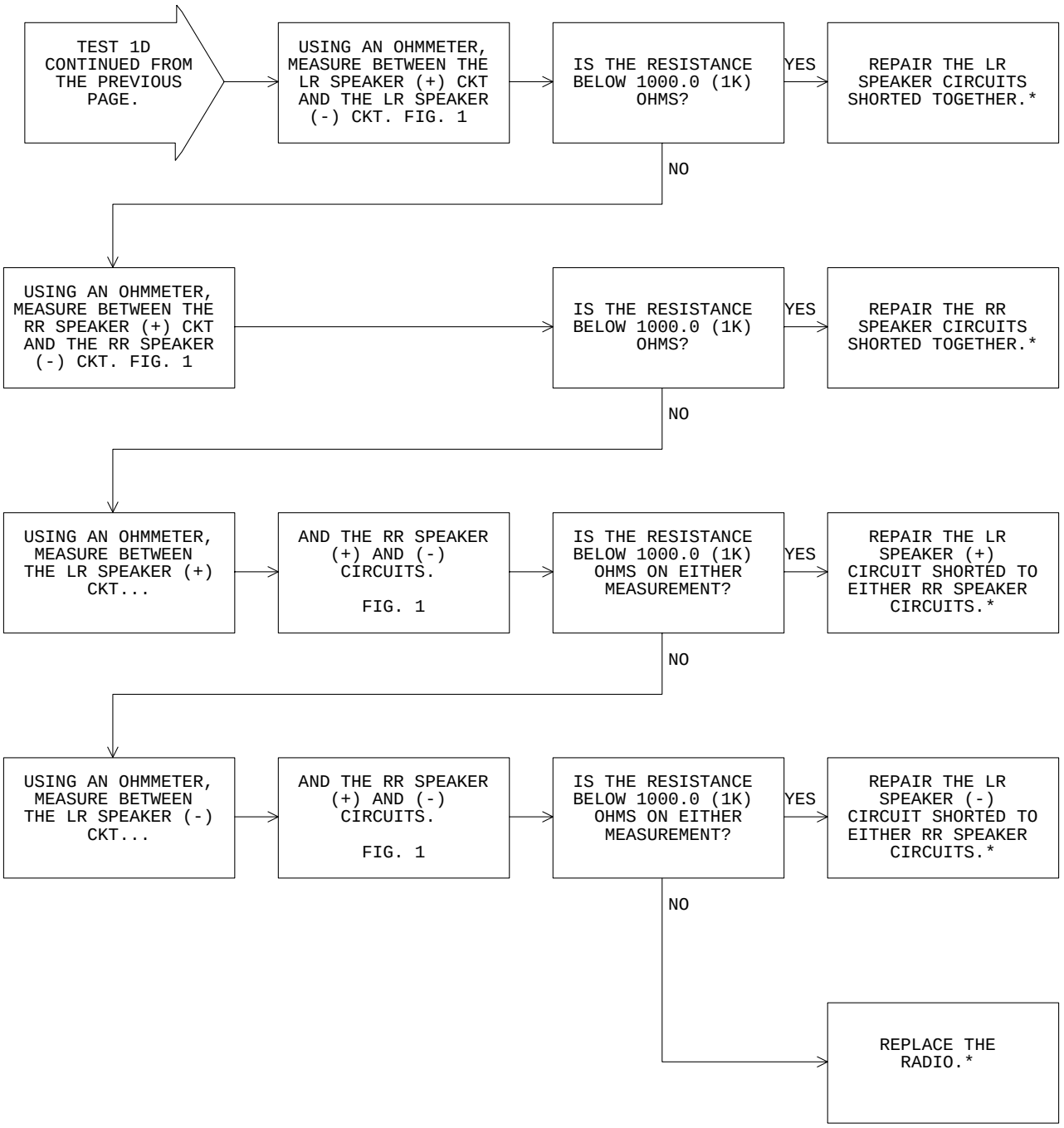




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/RD | RADIO 12-VOLT OUTPUT |
| 2 | BR/YL | LR (+) |
| 3 | DB/WT | RR (+) |
| 4 | DG | LF (+) |
| 5 | VT | RF (+) |
| 6 | BR/LB | LR (-) |
| 7 | DB/OR | RR (-) |

80b2b373

***FIG. 1***

## TEST 1D — CONTINUED - REPAIRING SHORTED REAR CHANNEL

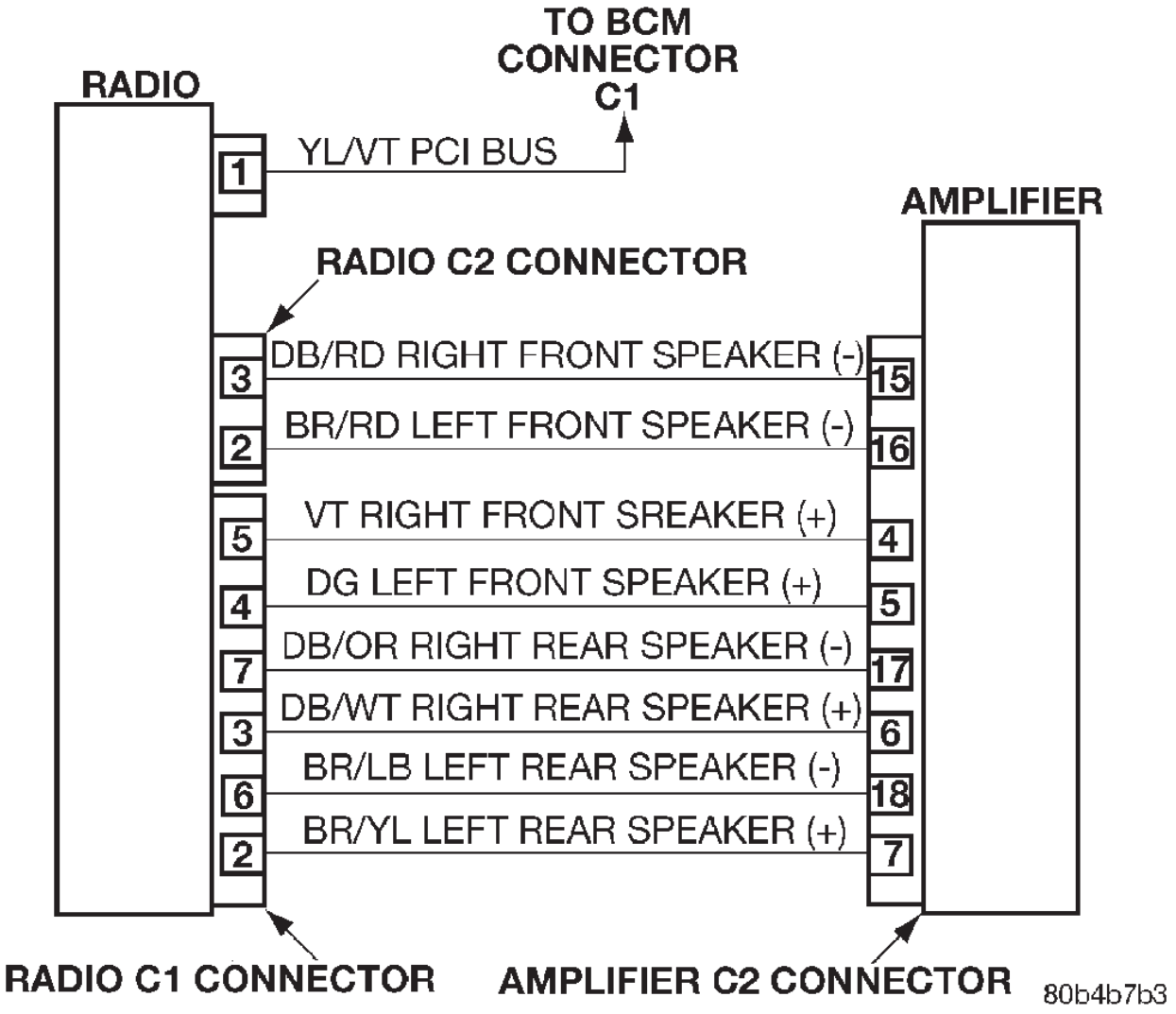


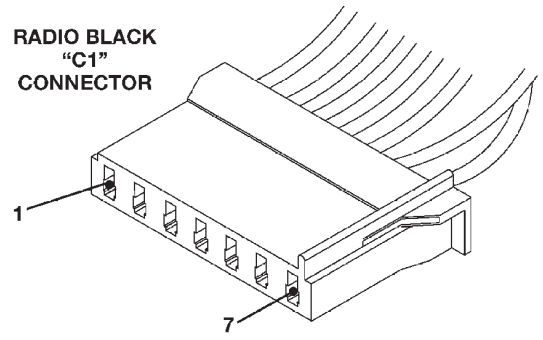

***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 1E REPAIRING SHORTED LEFT CHANNEL

**Perform TEST 1A Before Proceeding**

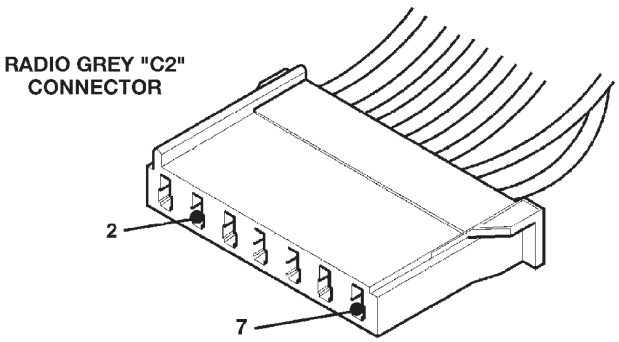



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/RD | RADIO 12-VOLT OUTPUT |
| 2 | BR/YL | LR (+) |
| 3 | DB/WT | RR (+) |
| 4 | DG | LF (+) |
| 5 | VT | RF (+) |
| 6 | BR/LB | LR (-) |
| 7 | DB/OR | RR (-) |

80b2b873

*FIG. 1*



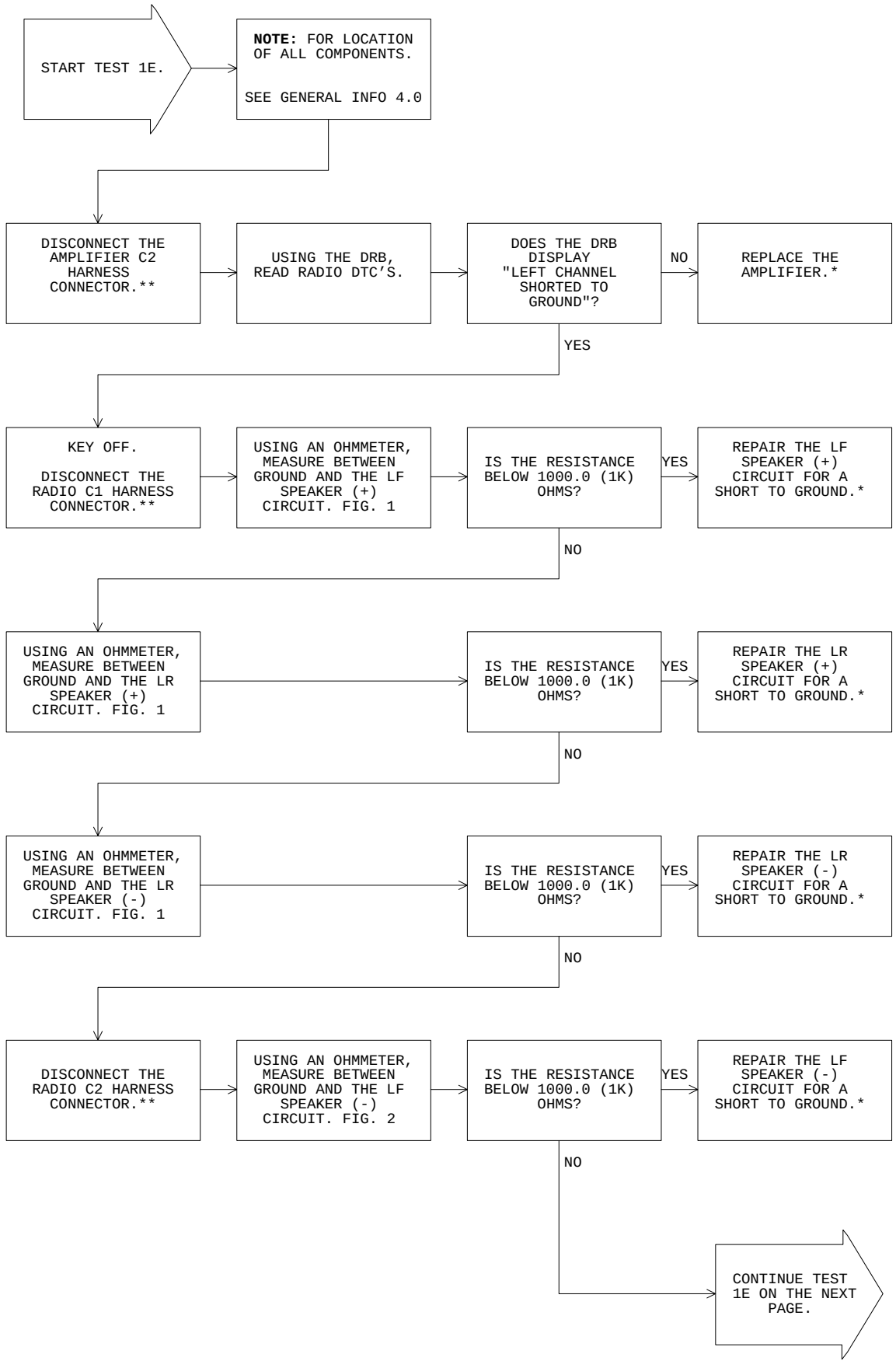

| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | BR/RD | LF (-) |
| 3 | DB/RD | RF (-) |
| 4 | YL/BK | DAY BRIGHTNESS SENSE |
| 5 | OR | PANEL LAMPS DIMMER SW SIGNAL |
| 6 | RD/WT | FUSED IGNITION SWITCH OUTPUT |
| 7 | PK | FUSED B(+) |

80b5cbe1

*FIG. 2*

## TEST 1E — REPAIRING SHORTED LEFT CHANNEL

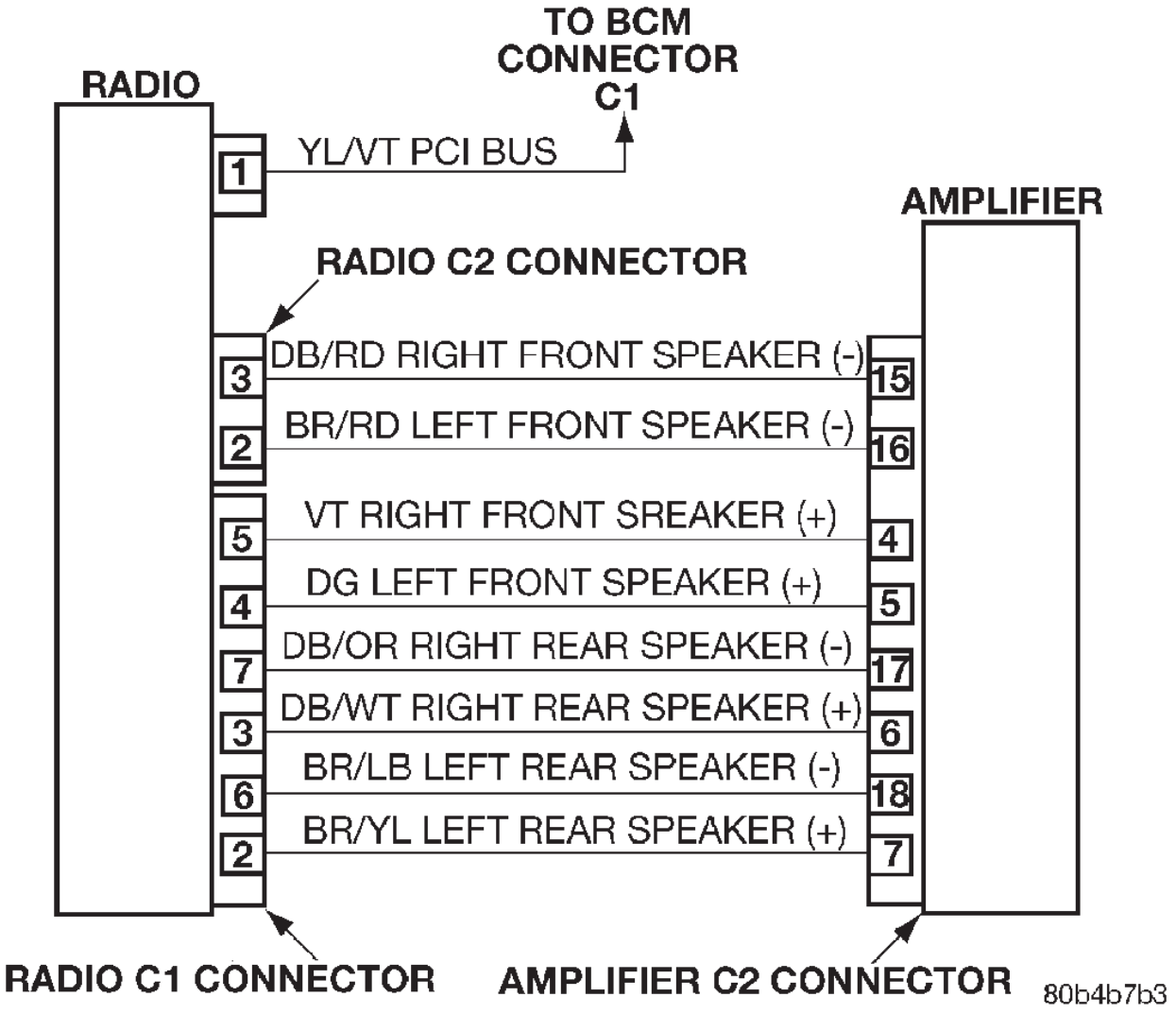
**Perform TEST 1A Before Proceeding**

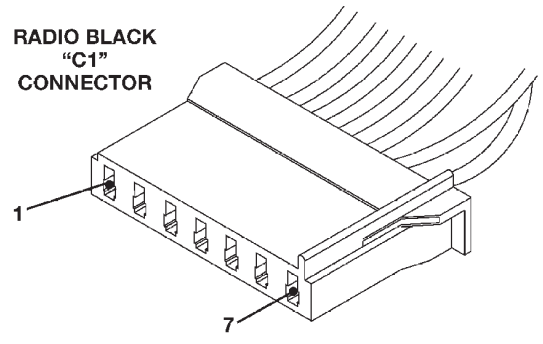



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

**TEST 1E** CONTINUED - REPAIRING SHORTED LEFT CHANNEL

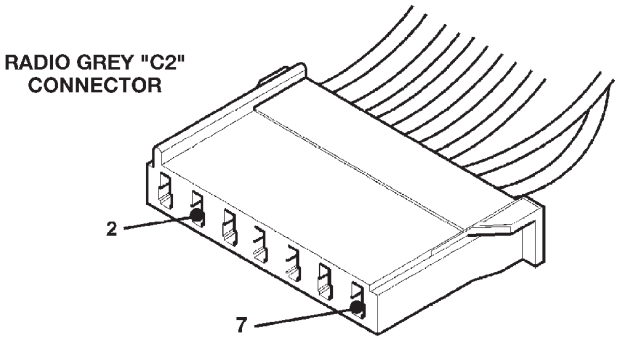



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/RD | RADIO 12-VOLT OUTPUT |
| 2 | BR/YL | LR (+) |
| 3 | DB/WT | RR (+) |
| 4 | DG | LF (+) |
| 5 | VT | RF (+) |
| 6 | BR/LB | LR (-) |
| 7 | DB/OR | RR (-) |

80b2b873

*FIG. 1*

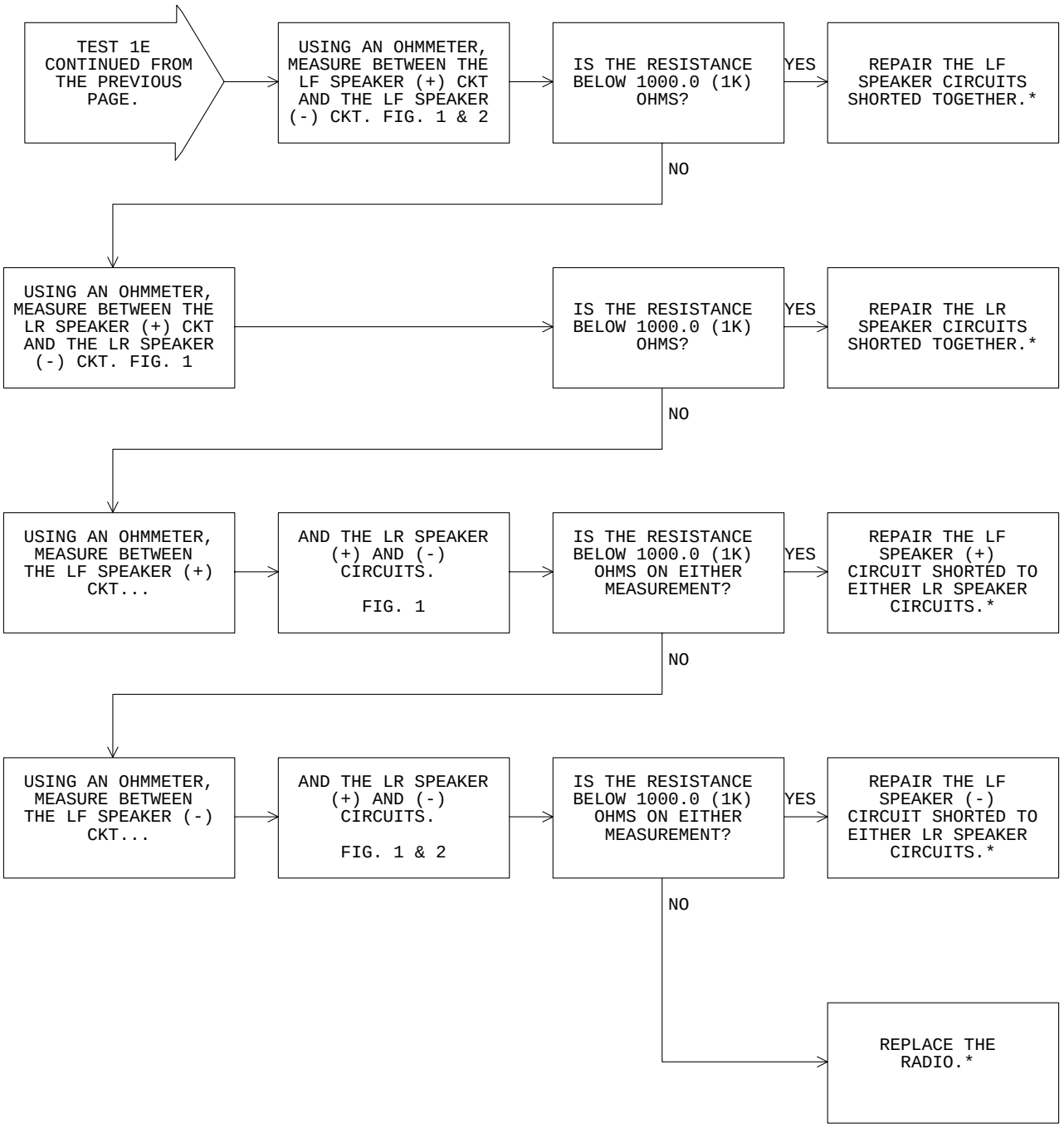



| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | BR/RD | LF (-) |
| 3 | DB/RD | RF (-) |
| 4 | YL/BK | DAY BRIGHTNESS SENSE |
| 5 | OR | PANEL LAMPS DIMMER SW SIGNAL |
| 6 | RD/WT | FUSED IGNITION SWITCH OUTPUT |
| 7 | PK | FUSED B(+) |

80b5cbe1

*FIG. 2*

## TEST 1E — CONTINUED - REPAIRING SHORTED LEFT CHANNEL

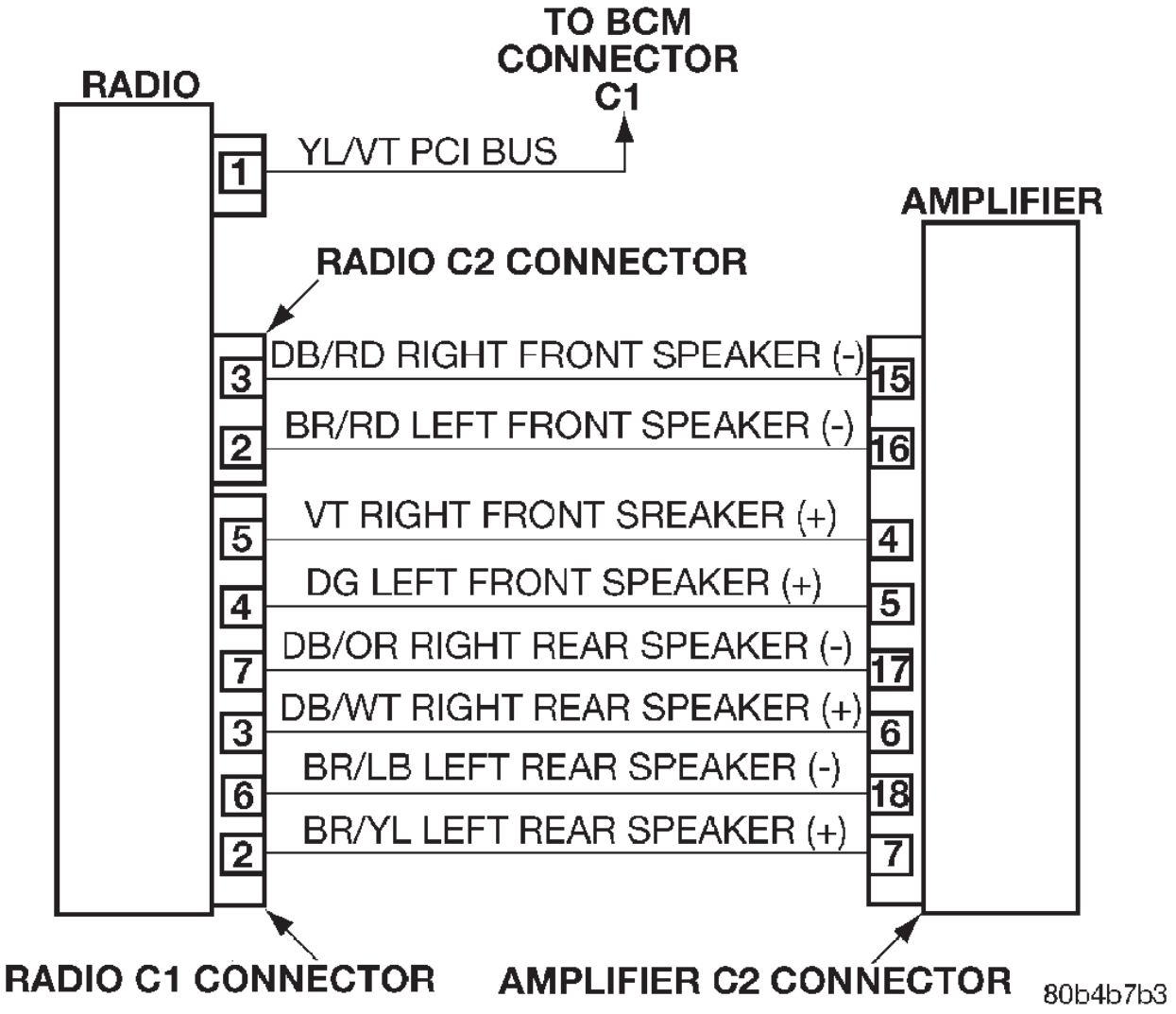


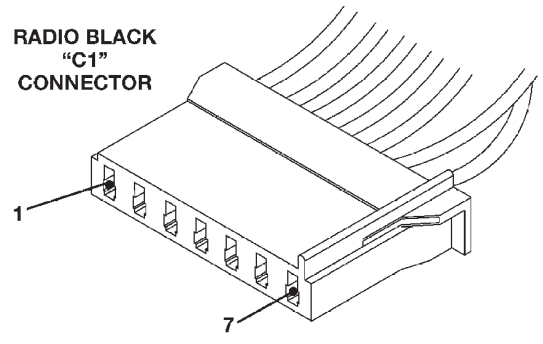

***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 1F REPAIRING SHORTED RIGHT CHANNEL

**Perform TEST 1A Before Proceeding**

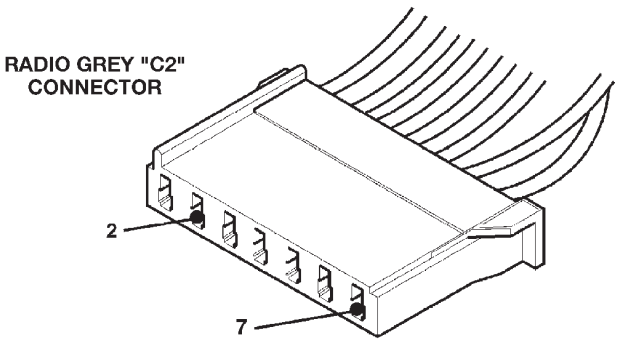



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/RD | RADIO 12-VOLT OUTPUT |
| 2 | BR/YL | LR (+) |
| 3 | DB/WT | RR (+) |
| 4 | DG | LF (+) |
| 5 | VT | RF (+) |
| 6 | BR/LB | LR (-) |
| 7 | DB/OR | RR (-) |

80b2b873

*FIG. 1*



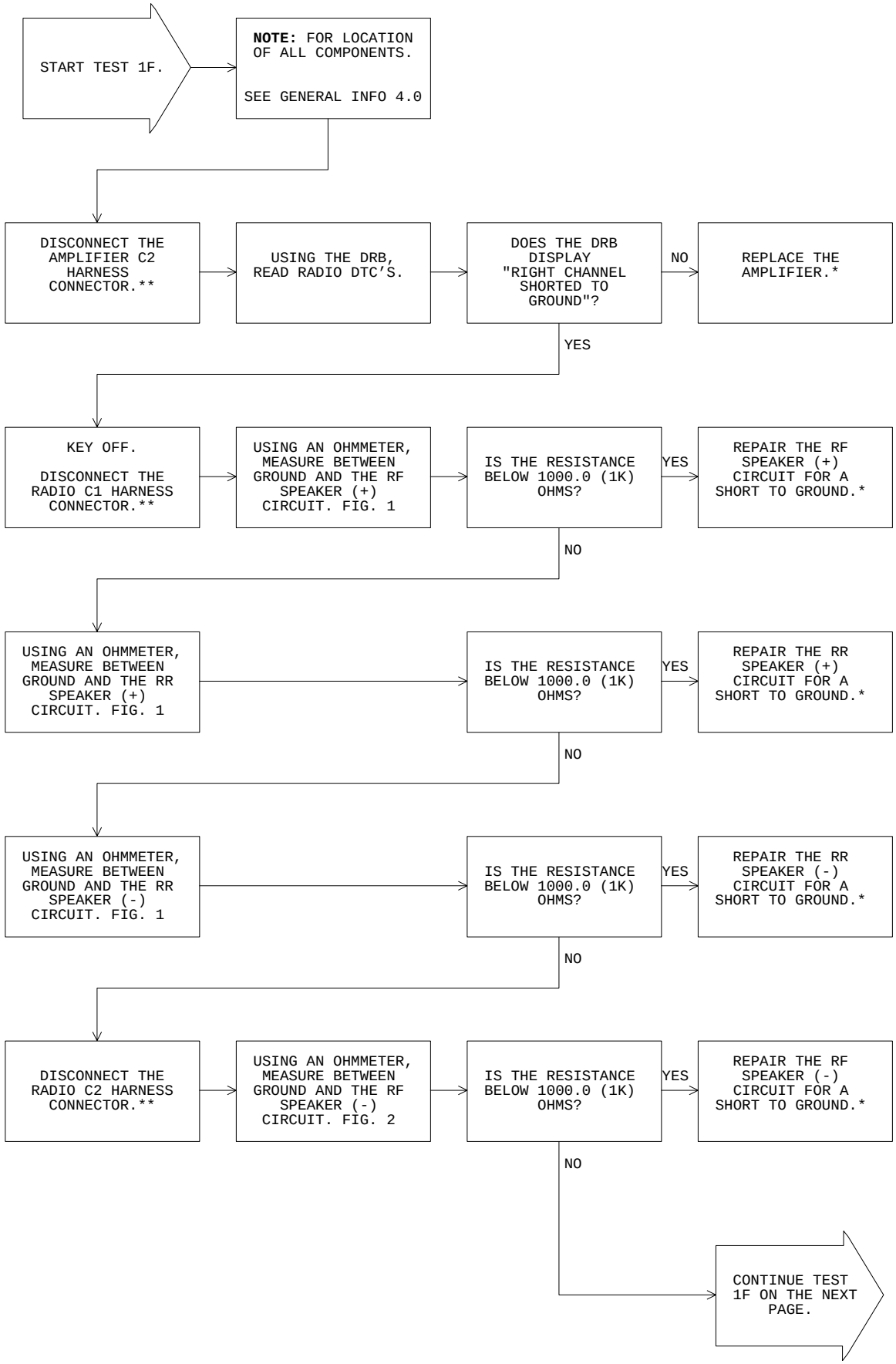

| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | BR/RD | LF (-) |
| 3 | DB/RD | RF (-) |
| 4 | YL/BK | DAY BRIGHTNESS SENSE |
| 5 | OR | PANEL LAMPS DIMMER SW SIGNAL |
| 6 | RD/WT | FUSED IGNITION SWITCH OUTPUT |
| 7 | PK | FUSED B(+) |

80b5cbe1

*FIG. 2*

# TEST 1F — REPAIRING SHORTED RIGHT CHANNEL

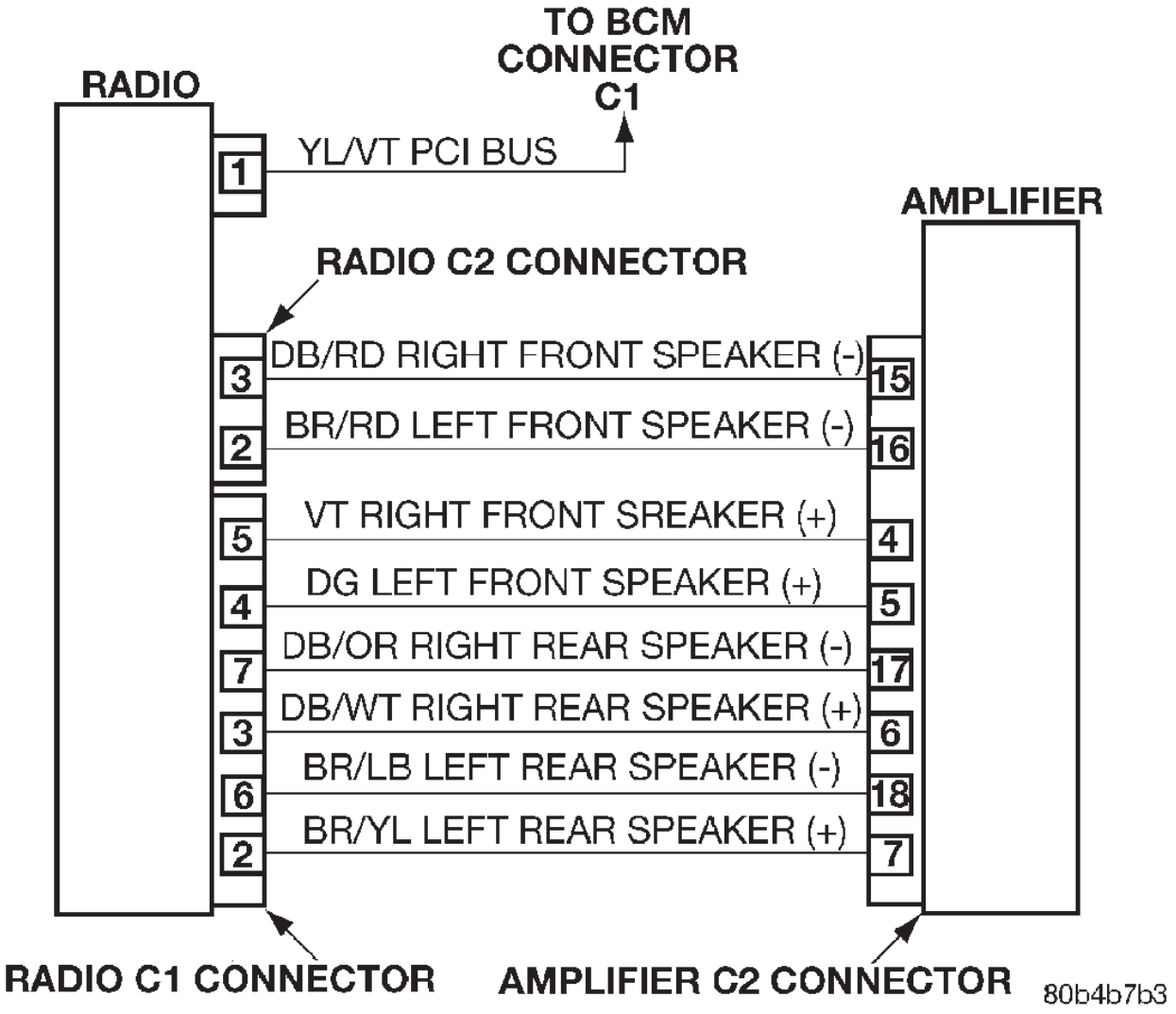
**Perform TEST 1A Before Proceeding**

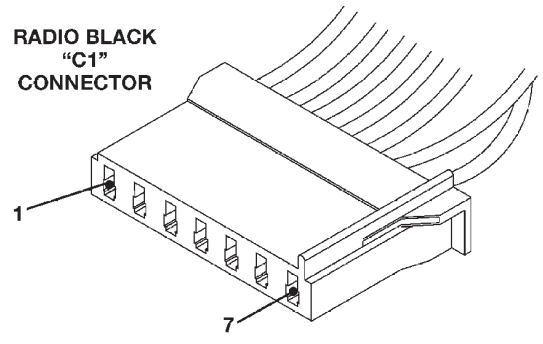



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

**TEST 1F** CONTINUED - REPAIRING SHORTED RIGHT CHANNEL

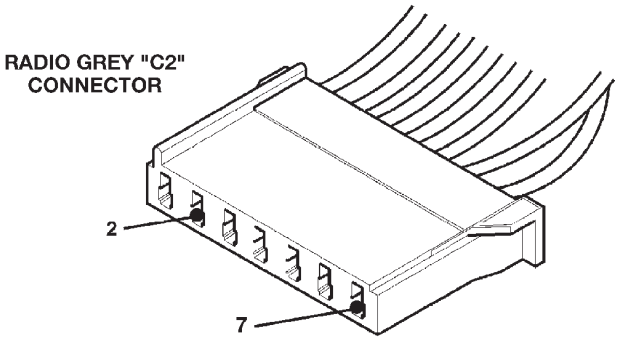



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/RD | RADIO 12-VOLT OUTPUT |
| 2 | BR/YL | LR (+) |
| 3 | DB/WT | RR (+) |
| 4 | DG | LF (+) |
| 5 | VT | RF (+) |
| 6 | BR/LB | LR (-) |
| 7 | DB/OR | RR (-) |

80b2b873

*FIG. 1*

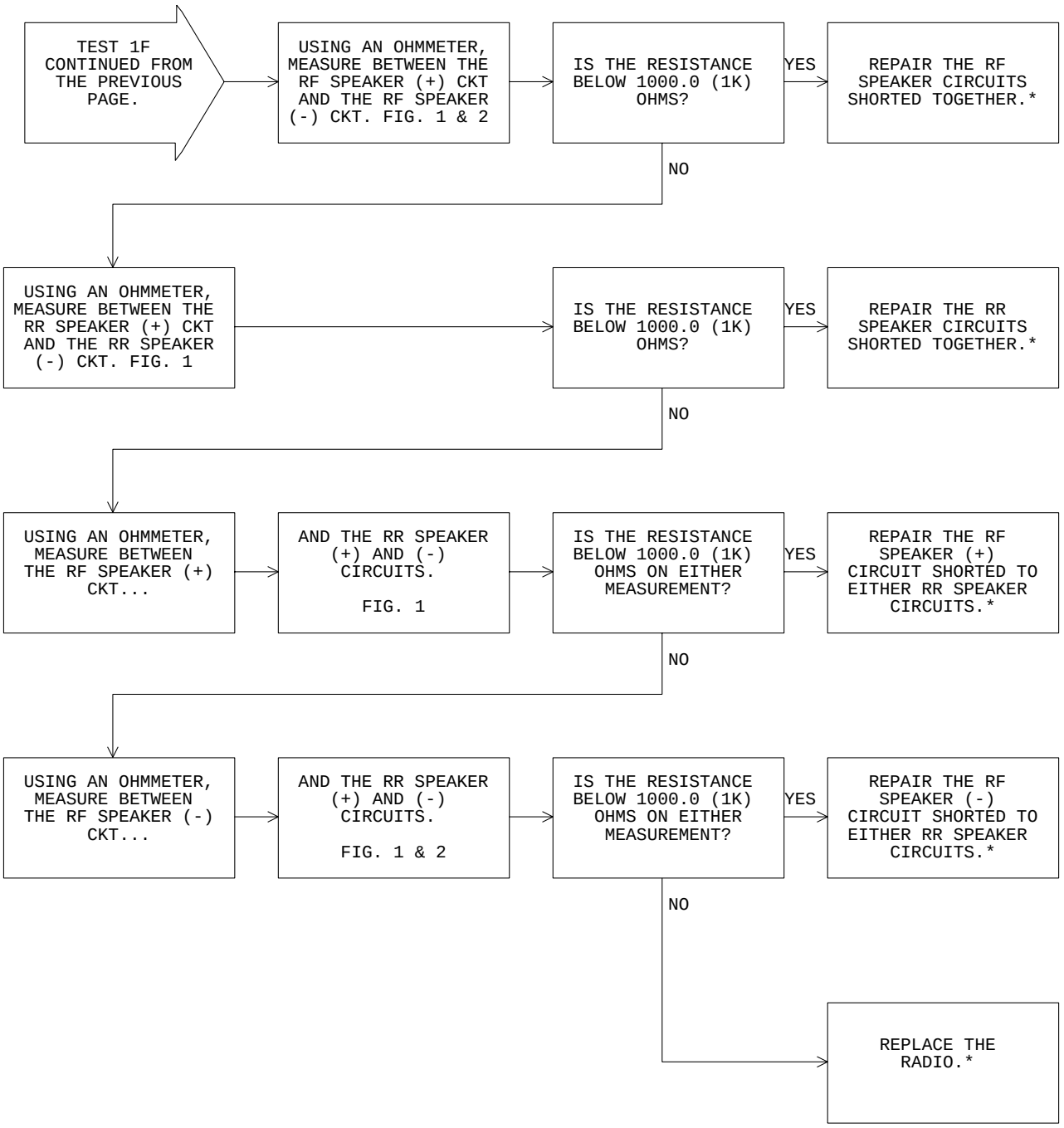



| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | BR/RD | LF (-) |
| 3 | DB/RD | RF (-) |
| 4 | YL/BK | DAY BRIGHTNESS SENSE |
| 5 | OR | PANEL LAMPS DIMMER SW SIGNAL |
| 6 | RD/WT | FUSED IGNITION SWITCH OUTPUT |
| 7 | PK | FUSED B(+) |

80b5cbe1

*FIG. 2*

## TEST 1F — CONTINUED - REPAIRING SHORTED RIGHT CHANNEL




***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

| TEST 1A | IDENTIFYING AUTOMATIC TEMPERATURE CONTROL PROBLEMS |
|---|---|

Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding

## PCM trouble codes that relate to climate control operations:

1. ECT Sensor Voltage Too Low
2. ECT Sensor Voltage Too High
3. A/C Pressure Sensor Volts Too High
4. A/C Pressure Volts Too Low
5. Low Speed Fan Control Relay Circuit
6. High Speed Fan Control Relay Circuit
7. A/C Clutch Relay Circuit
8. Engine is Cold Too Long

2870202

*FIG. 1*

## TEST 1A — IDENTIFYING AUTOMATIC TEMPERATURE CONTROL PROBLEMS

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**

Ensure there is communication with the ''Body Control Module'', and the ''Powertrain Control Module'' before proceeding.
If any communication problems:. . . . . .perform ''Vehicle Communication'' TEST 1A.

1. With the DRB, select ''Engine'', ''Read DTCs''. If any diagnostic trouble codes are present, record and compare them with Fig. 1
   If any climate-related codes are present, refer to the appropriate powertrain diagnostic manual.
2. With the DRB, select ''Body System'', ''Body Computer'', ''Sensors''. Read the ''Ignition Voltage''. If it does not show battery voltage when the ignition key is on . . . . . .perform ''Vehicle Communication'' TEST 14A.
3. With the DRB, select ''Body System'', ''Body Computer'', ''Read DTCs''
   If any climate-related codes are present . . . . . .perform TEST 1B.
4. With the DRB, select ''Body System'', ''Auto Temp Ctrl''.
   If the DRB shows ''No Response'' . . . . . .perform ''Vehicle Communication'' TEST 1A.

| **PROBLEM WITH** (No Trouble Codes) | **PERFORM** |
|---|---|
| A/C Clutch Operations | TEST 14A |
| Blend Door Inoperative | TEST 15A |
| Blower Motor Inoperative | TEST 16A |
| Blower Speeds Incorrect | TEST 17A |
| Control Head Illumination | |
| Instrument Cluster Illuminates Properly | TEST 18A |
| Instrument Cluster Does Not Illuminate Properly | ''Instrument Cluster'' TEST 9A |
| Control Head Switch | TEST 2A |
| Mode Door Inoperative | TEST 19A |
| Rear Window Defogger Inoperative | TEST 20A |
| Recirculation Door Inoperative | TEST 12A |
| Temperature Control Inoperative | TEST 15A |
| Temperature Control Incorrect in Sun or Shade | TEST 21A |

**TEST 1B** | **IDENTIFYING CLIMATE CONTROL TROUBLE CODES**

**Perform TEST 1A Before Proceeding**

## NOTES

## TEST 1B IDENTIFYING CLIMATE CONTROL TROUBLE CODES

**Perform TEST 1A Before Proceeding**

1. Record and erase the trouble code(s).
2. Set the ATC at 75°, start the engine, and using the DRB select ‘‘Body Computer’’ ‘‘Read DTCs)’’.

► If no code appears, slowly run the ATC control from 65° to 85°, then back to 65° while looking for BCM codes. If a code appears, perform the indicated test from the list below.

► If a code still does not appear, continue by running the ATC control from 60° to 90°, then back to 60°. Push each mode and temp button in turn, waiting 30 seconds between each one. Upon seeing the **first** code appear, erase the code and perform the indicated test from the list below.

3. If no codes appear following the steps above, recalibrate the doors by pressing and holding the floor, floor and defrost, and the defrost buttons at the same time until the display starts to flash. Observe the DRB for codes. When the **first** code appears, erase the code and perform the indicates test from the list below.

**NOTE:** If multiple codes appear, repair any that relate to a short circuit first. If a short to battery code is set, all 4 ‘‘Output Shorted to Battery’’ codes will appear. It will then be necessary to isolate each circuit to determine which circuit is at fault.

4. If no codes are seen, observe the climate system performance, then continue TEST 1A.

| DIAGNOSTIC TROUBLE CODE (DTC) | PERFORM |
|---|---|
| Ambient Temperature Sensor Failure | ‘‘OTIS’’ Test 2A |
| ATC Messages Not Received | ‘‘Vehicle Communication’’ Test 3A |
| ATC Switch Failure | Test 2A |
| Blend Door Feedback Failure | Test 3A |
| Blend Door Output Shorted to Ground | Test 4A |
| Blend Door Output Shorted to Battery | Test 5A |
| Blend Door Stall Test Failed | Test 3A |
| Common Output Shorted to Ground | Test 6A |
| Common Output Shorted to Battery | Test 5A |
| Evaporator Temperature Sensor Failure | Test 7A |
| In-Car Temperature Sensor Failure | Test 8A |
| Mode Door Feedback Failure | Test 9A |
| Mode Door Output Shorted to Ground | Test 10A |
| Mode Door Output Shorted to Battery | Test 5A |
| Mode Door Stall Test Failed | Test 9A |
| Recirculation Door Output Shorted to Ground | Test 11A |
| Recirculation Door Output Shorted to Battery | Test 5A |
| Recirculation Door Test Failure | Test 12A |
| **NOTE:** If this code appears along with any other codes(s), repair the other code(s) first. | |
| Sun Load Sensor Failure | Test 13A |

## TEST 2A — REPAIRING AUTOMATIC TEMPERATURE CONTROL HEAD SWITCHES

**Perform TEST 1B Before Proceeding**

**Name of code:**

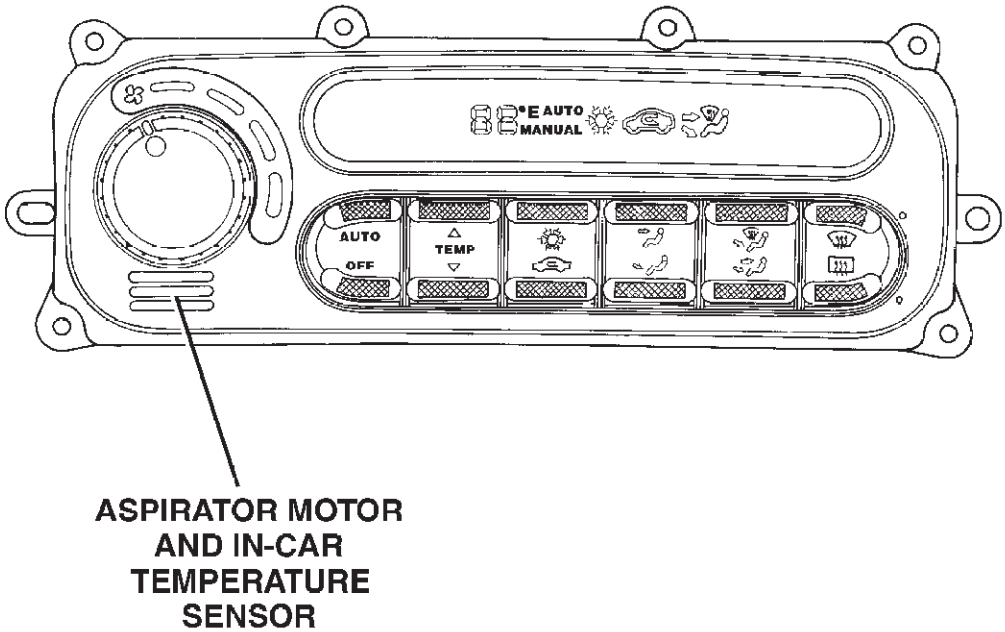
ATC A/C Switch Failed
ATC Auto Switch Failed
ATC Bilevel Switch Failed
ATC Defrost Switch Failed
ATC EBL Switch Failed
ATC Floor Switch Failed
ATC Mix Switch Failed
ATC Off Switch Failed
ATC Panel Switch Failed
ATC Recirculation Switch Failed
ATC Temperature Down Switch Failed
ATC Temperature Up Switch Failed

**When monitored:** With the ignition on and battery voltage greater than 10 volts.

**Set condition:** The BCM interfaces with the ATC control head over the PCI bus. If an ATC switch is held in the closed position for longer than 5-10 minutes, a switch failed code will be set.

**Possible causes:**
> ATC control head
> Stuck switch

80b4fa4b

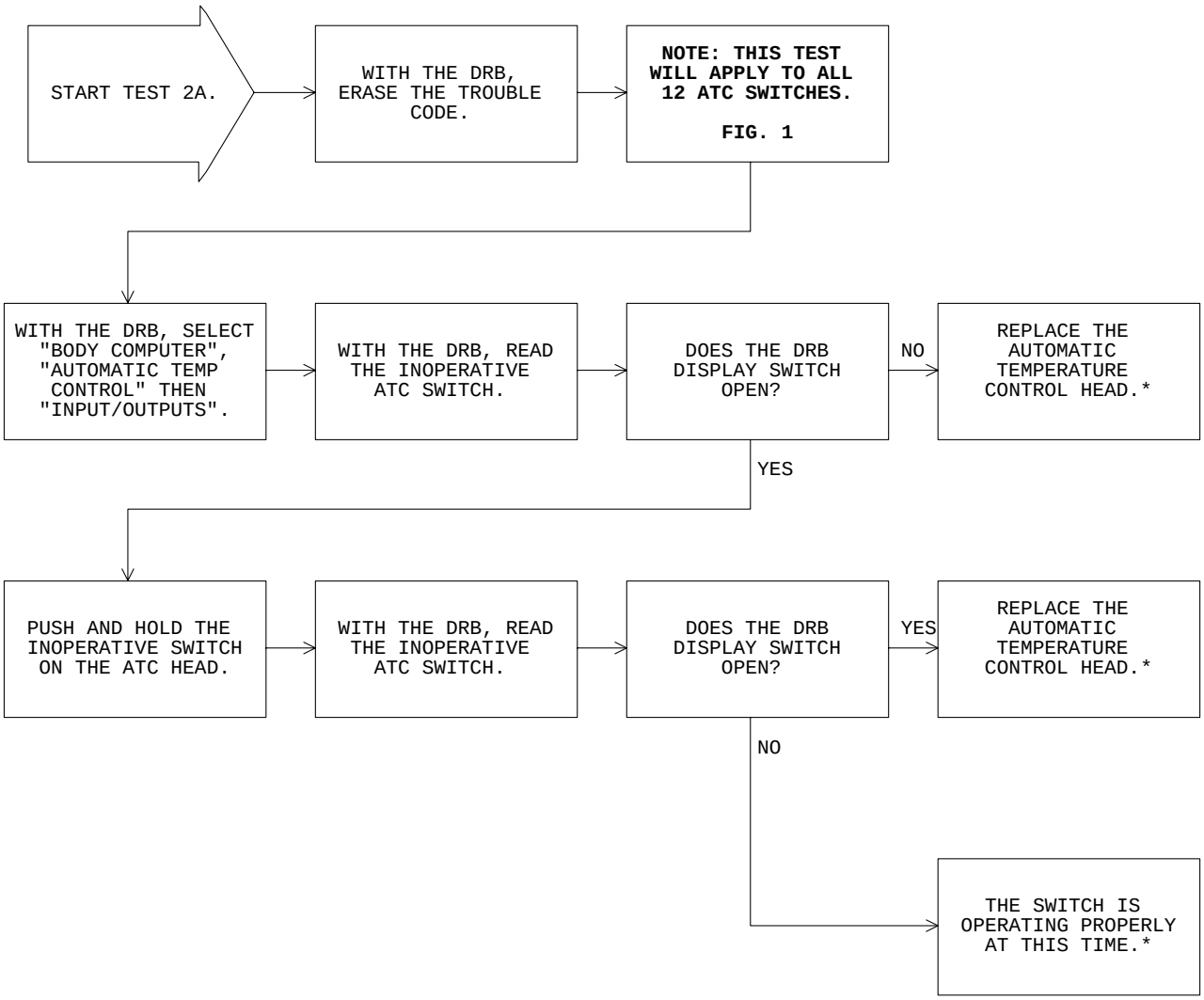



80b27c9b

*FIG. 1*

## TEST 2A REPAIRING AUTOMATIC TEMPERATURE CONTROL HEAD SWITCHES

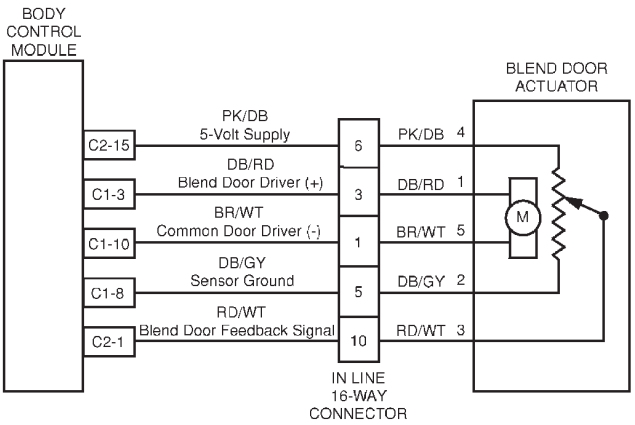
**Perform TEST 1B Before Proceeding**




***Perform Verification TEST VER-2A.** | ***Check connectors - Clean / repair as necessary.**

## TEST 3A REPAIRING "BLEND DOOR FEEDBACK/STALL TEST FAILURE" TROUBLE CODE

**Perform TEST 1B Before Proceeding**




80b4fa48

**Name of code:** Mode Door Feedback Failure, Blend Door Feedback Failure

**When monitored:** Continuously

**Set condition:** BCM detects a loss of signal on the mode feedback and/or blend feedback inputs

**Theory of operation:** At the first ignition on after a battery disconnect, and upon request from the DRB III, Manual HVAC head, or ATC head, the BCM will run each of the three HVAC actuators (mode, blend, and recirc) from end-to-end to learn their limits of travel. The mode door and the blend door each have a feedback signal, which is pulled up through the BCM to 5V, which allows the BCM to know the position of both doors so it can control them appropriatelty. If either of these signals is out of the calibrated range by more than 48mV, or if the minimum amount of travel between the endpoints is not seen during calibration, the appropriate fault will be set.

**Probable Causes:**
- > Wiring open circuit
- > Wiring short to ground
- > Wiring short to battery
- > Failed HVAC actuator
- > Failed BCM

80b242f1

**Name of code:** Mode Door Stall Test Failure, Blend Door Stall Test Failure, Recirculation Door Test Failure

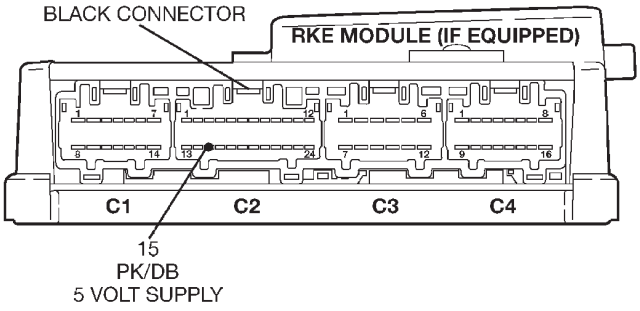
**When monitored:** During HVAC motor calibration

**Set condition:** BCM is unable to detect the end of travel for one or more of the HVAC doors

**Theory of operation:** At the first ignition on after a battery disconnect, and upon request from the DRB III, Manual HVAC head, or ATC head, the BCM will run each of the three HVAC actuators (mode, blend, and recirc) from end-to-end to learn their limits of travel. If the BCM has activated the mode door for 13 seconds, the blend door for 7.8 seconds, or the recirc door for 6 seconds and has still not detected the end of travel (by detecting the increased stall current), the appropriate fault will be set.

**Probable Causes:**
- > Wiring open circuit
- > Failed HVAC actuator
- > Failed BCM

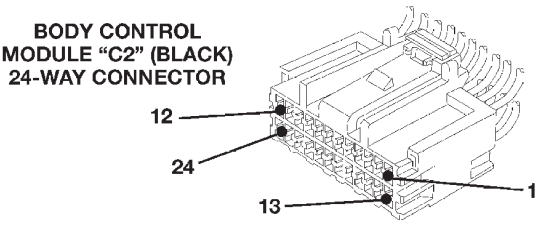
80b242f2




***NOTE: THE BODY CONTROL MODULE MUST BE FULLY CONNECTED TO PERFORM THIS STEP***

80b2b866

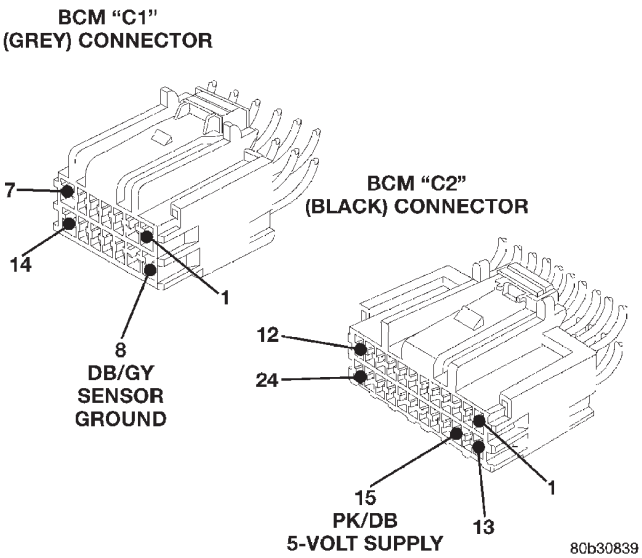
***FIG. 1***




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

80b11936

***FIG. 2***

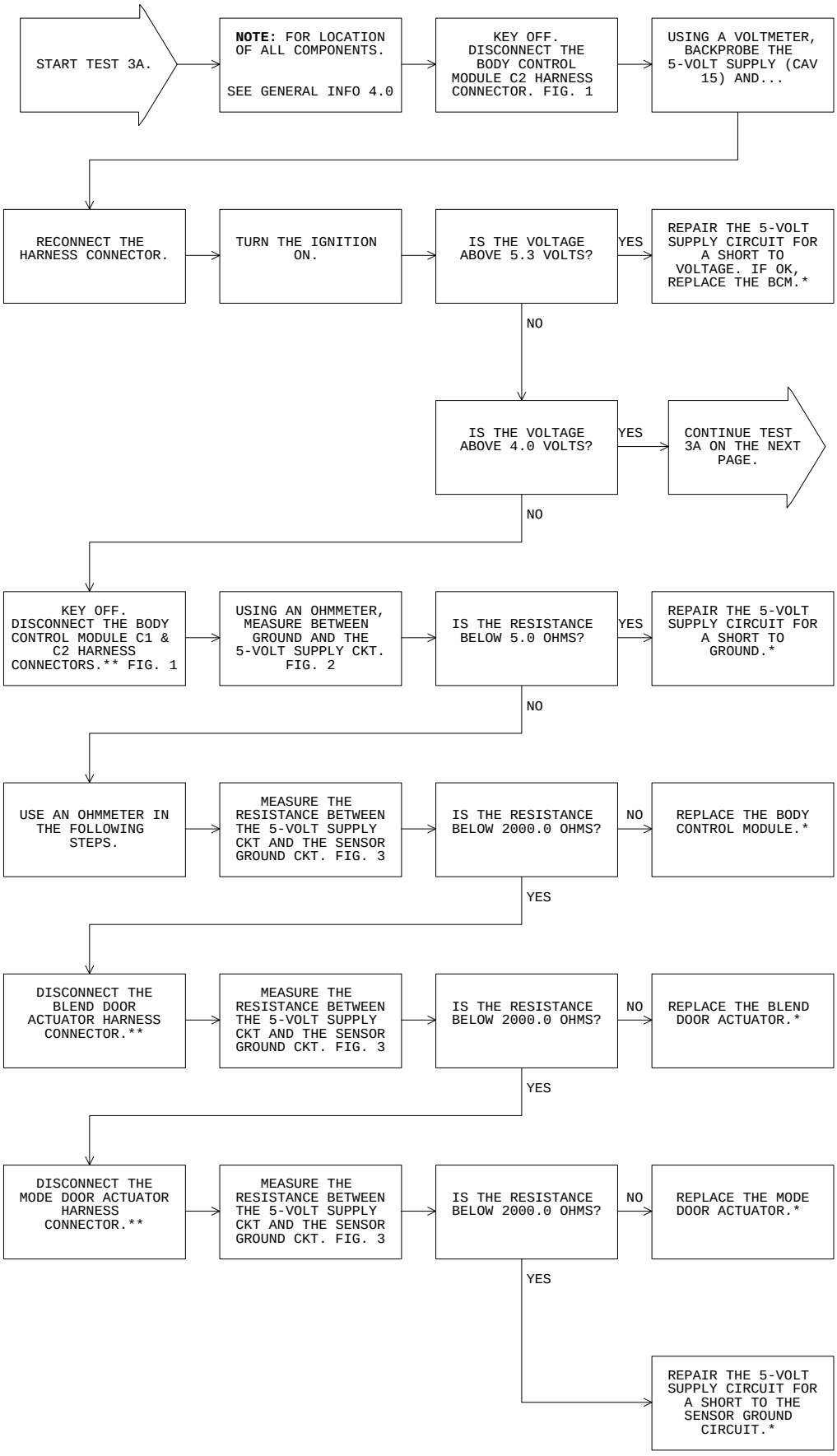



80b30839

***FIG. 3***

## TEST 3A — REPAIRING ″BLEND DOOR FEEDBACK/STALL TEST FAILURE″ TROUBLE CODE

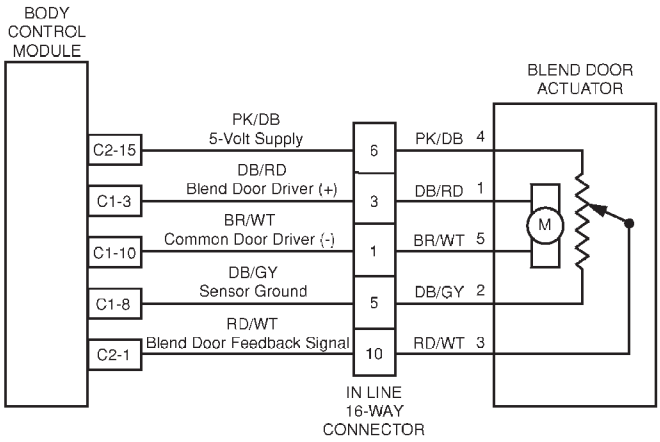
**Perform TEST 1B Before Proceeding**

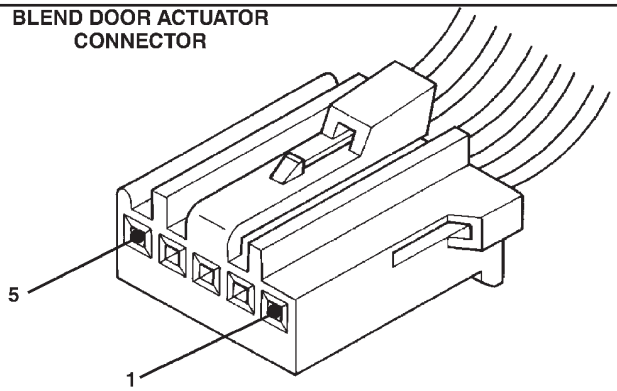



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 3A — CONTINUED - REPAIRING "BLEND DOOR FEEDBACK/STALL TEST FAILURE" TROUBLE CODE

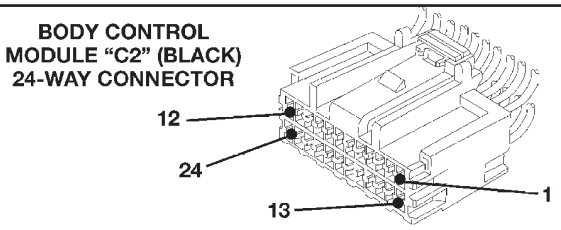



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DB/RD | BLEND AIR DOOR DRIVER |
| 2 | DB/GY | SENSOR GROUND |
| 3 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 4 | PK/DB | 5-VOLT SUPPLY |
| 5 | BR/WT | COMMON DOOR DRIVER |

80b27ct1

***FIG. 1***

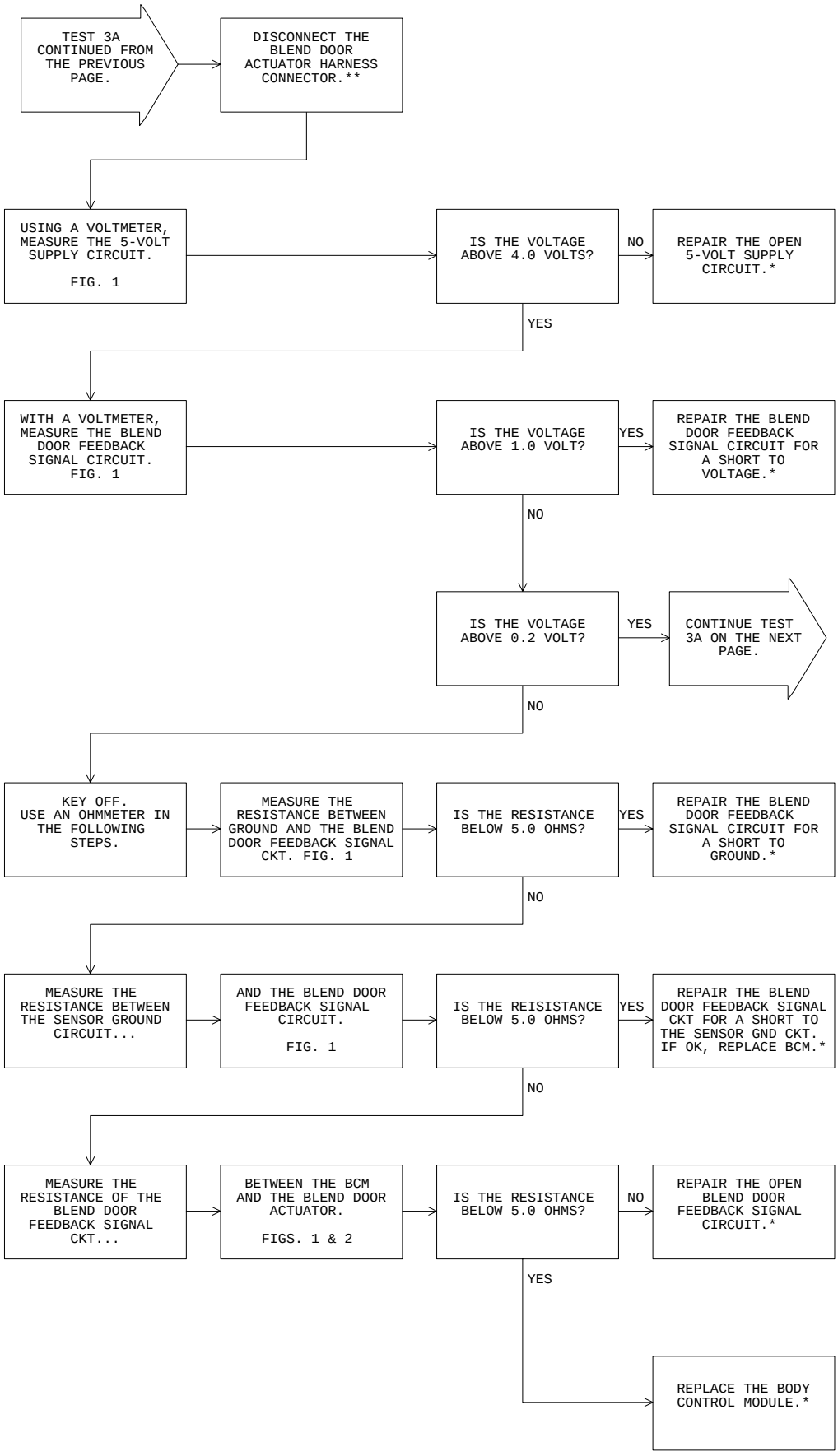



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

80b11936

***FIG. 2***

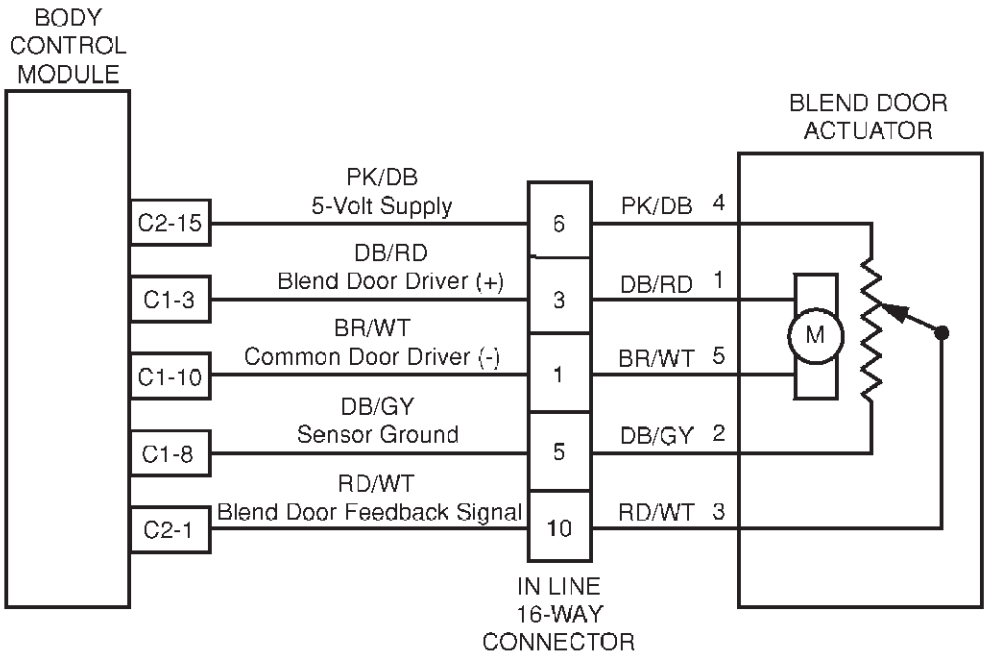
## TEST 3A — CONTINUED - REPAIRING ″BLEND DOOR FEEDBACK/STALL TEST FAILURE″ TROUBLE CODE

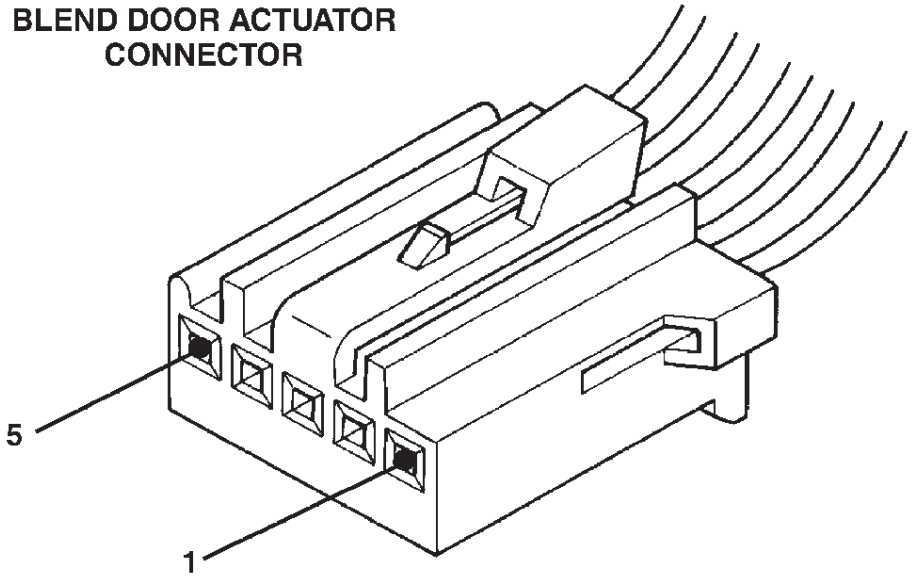



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

**TEST 3A** CONTINUED - REPAIRING "BLEND DOOR FEEDBACK/STALL TEST FAILURE" TROUBLE CODE



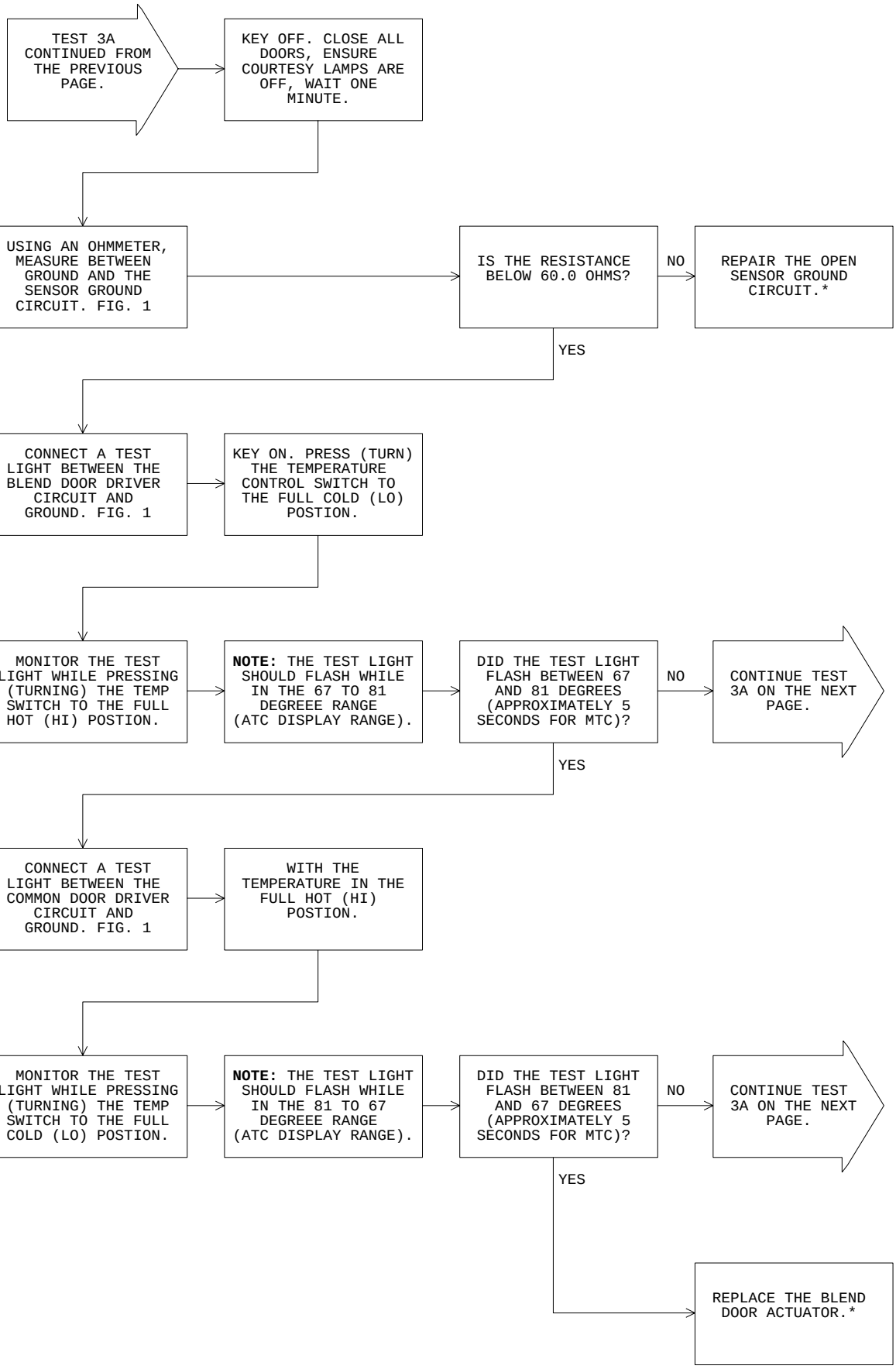




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DB/RD | BLEND AIR DOOR DRIVER |
| 2 | DB/GY | SENSOR GROUND |
| 3 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 4 | PK/DB | 5-VOLT SUPPLY |
| 5 | BR/WT | COMMON DOOR DRIVER |

80b27ct1

***FIG. 1***

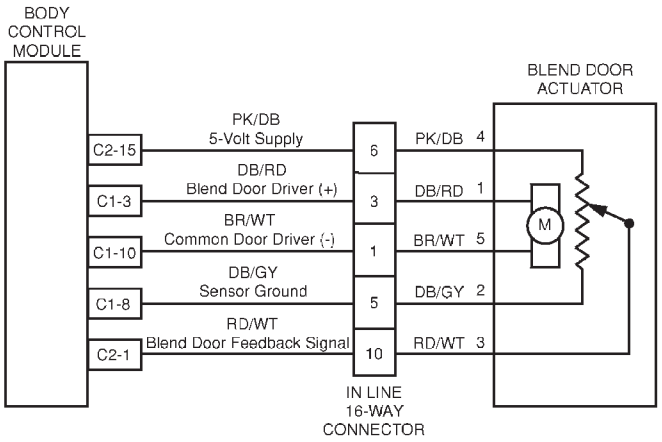
## TEST 3A — CONTINUED - REPAIRING ″BLEND DOOR FEEDBACK/STALL TEST FAILURE″ TROUBLE CODE

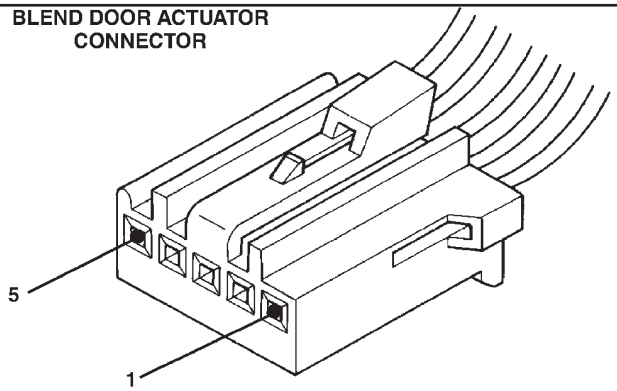



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 3A — CONTINUED - REPAIRING "BLEND DOOR FEEDBACK/STALL TEST FAILURE" TROUBLE CODE

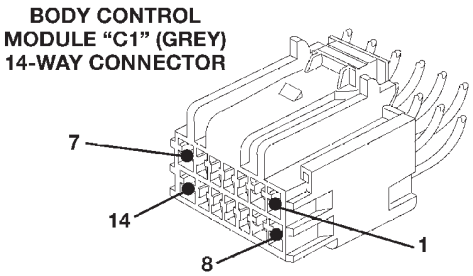



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DB/RD | BLEND AIR DOOR DRIVER |
| 2 | DB/GY | SENSOR GROUND |
| 3 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 4 | PK/DB | 5-VOLT SUPPLY |
| 5 | BR/WT | COMMON DOOR DRIVER |

80b27ct1

***FIG. 1***

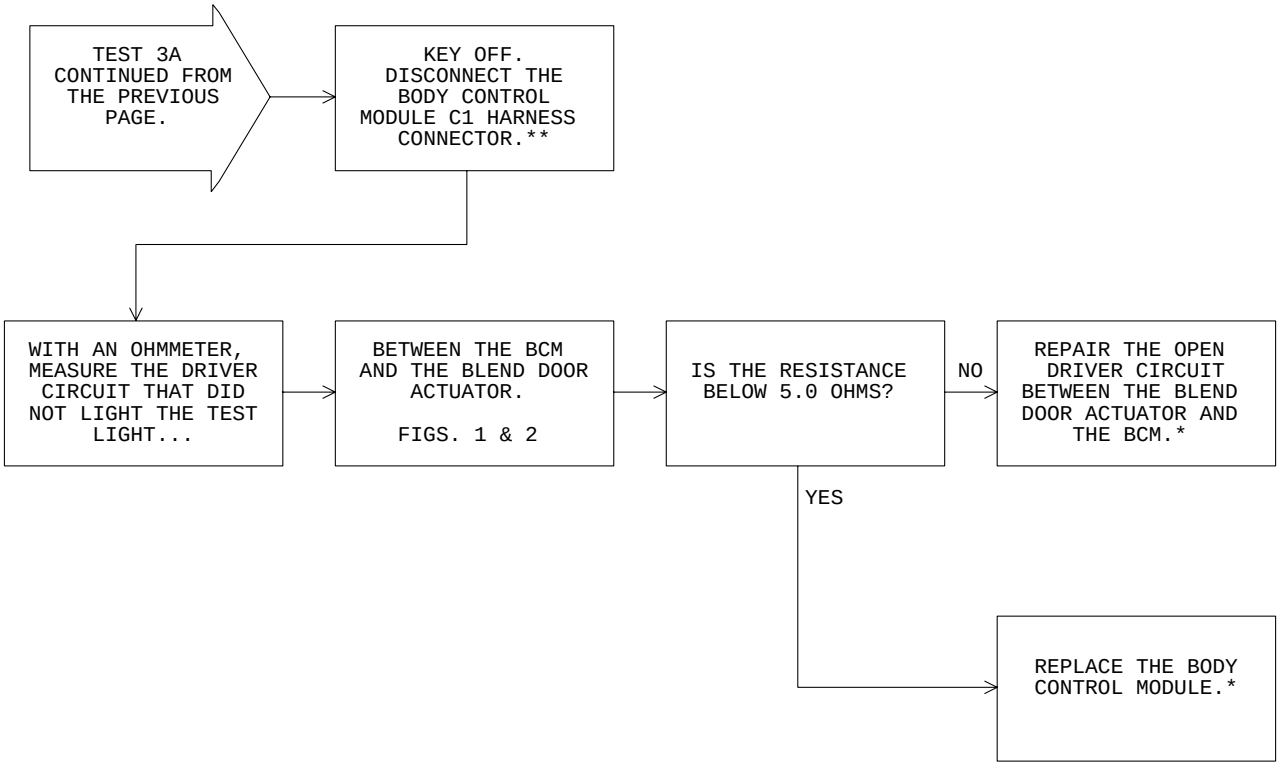



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/WT | DECKLID RELEASE SWITCH OUTPUT |
| 2 | GY/DB | RECIRCULATION DOOR DRIVER |
| 3 | DB/RD | BLEND AIR DOOR DRIVER |
| 4 | YL/VT | PCI BUS (ATC) |
| 5 | YL/VT | PCI BUS (RADIO) |
| 7 | YL/VT | PCI BUS (AIRBAG) |
| 8 | DB/GY | SENSOR GROUND |
| 9 | DG/YL | MODE DOOR DRIVER |
| 10 | BR/WT | COMMON DOOR DRIVER |
| 11 | VT/LG | FAN OFF SWITCH SIGNAL |
| 12 | YL/VT | PCI BUS (SKIM) |
| 13 | YL/VT | PCI BUS (MIC) |
| 14 | YL/VT | PCI BUS (DLC) |

80b11935

***FIG. 2***

## TEST 3A — CONTINUED - REPAIRING ″BLEND DOOR FEEDBACK/STALL TEST FAILURE″ TROUBLE CODE

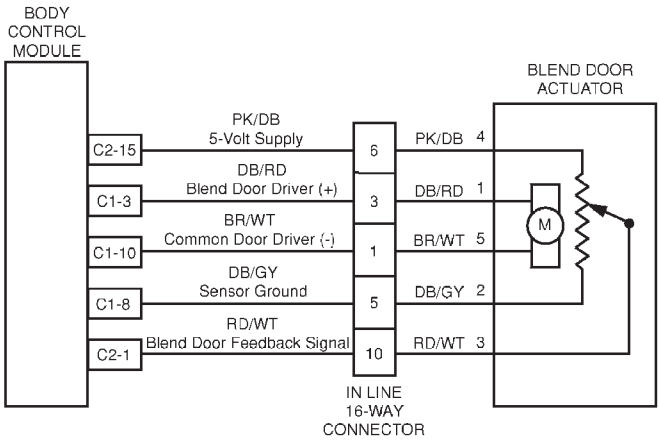



***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 4A — REPAIRING "BLEND DOOR OUTPUT SHORTED TO GROUND" TROUBLE CODE

**Perform TEST 1B Before Proceeding**




80b4fa48

**Name of code:** Mode Door Output Shorted to Ground, Blend Door Output Shorted to Ground, Recirc Door Output Shorted to Ground, Common Output Shorted to Ground

**When monitored:** Whenever the BCM attempts to move one of the HVAC actuators.

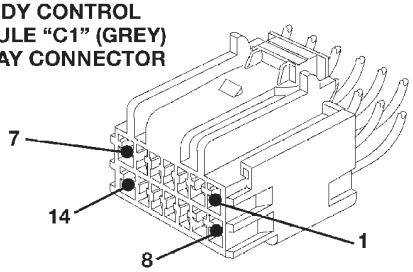
**Set condition:** BCM detects one or more of the following outputs shorted to ground: mode drive, blend drive, recirc drive, or common drive.

**Theory of operation:** When the BCM wants to actuate one of the doors (it only moves one at a time), it sets the door output to the appropriate level and sets the common output and the other two door outputs to the opposite level (ignition or ground). At this time it verifies that the output is doing what it should - if not, the fault is set

**Probable Causes:**
- > Wiring short to ground
- > Failed actuator
- > Failed BCM

80b242ef

**BODY CONTROL MODULE "C1" (GREY) 14-WAY CONNECTOR**



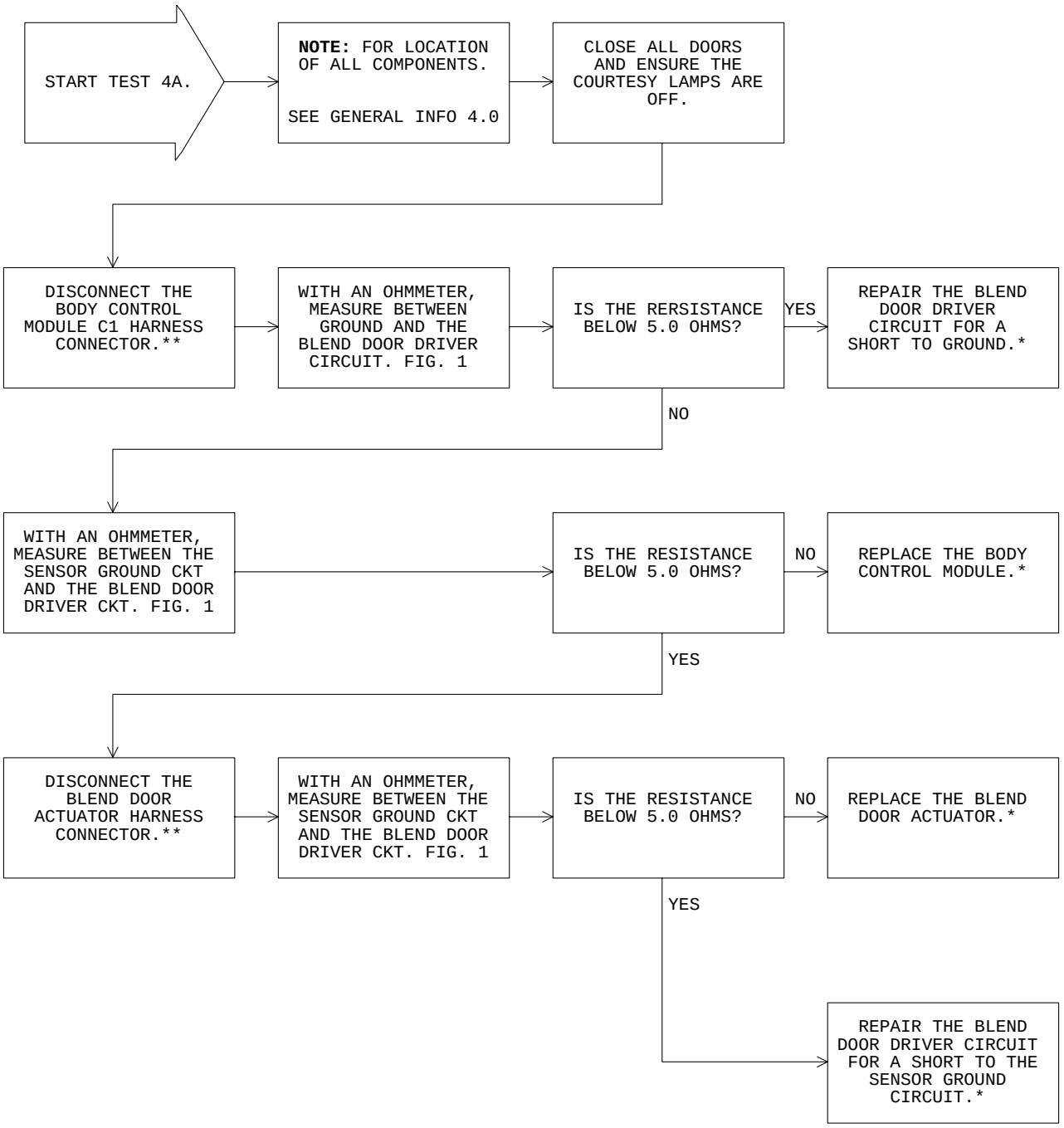

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/WT | DECKLID RELEASE SWITCH OUTPUT |
| 2 | GY/DB | RECIRCULATION DOOR DRIVER |
| 3 | DB/RD | BLEND AIR DOOR DRIVER |
| 4 | YL/VT | PCI BUS (ATC) |
| 5 | YL/VT | PCI BUS (RADIO) |
| 7 | YL/VT | PCI BUS (AIRBAG) |
| 8 | DB/GY | SENSOR GROUND |
| 9 | DG/YL | MODE DOOR DRIVER |
| 10 | BR/WT | COMMON DOOR DRIVER |
| 11 | VT/LG | FAN OFF SWITCH SIGNAL |
| 12 | YL/VT | PCI BUS (SKIM) |
| 13 | YL/VT | PCI BUS (MIC) |
| 14 | YL/VT | PCI BUS (DLC) |

80b11935

***FIG. 1***

## TEST 4A — REPAIRING "BLEND DOOR OUTPUT SHORTED TO GROUND" TROUBLE CODE

**Perform TEST 1B Before Proceeding**

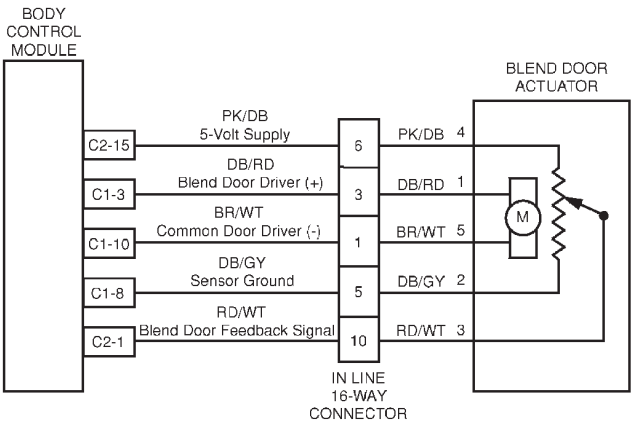



***Perform Verification TEST VER-2A.***

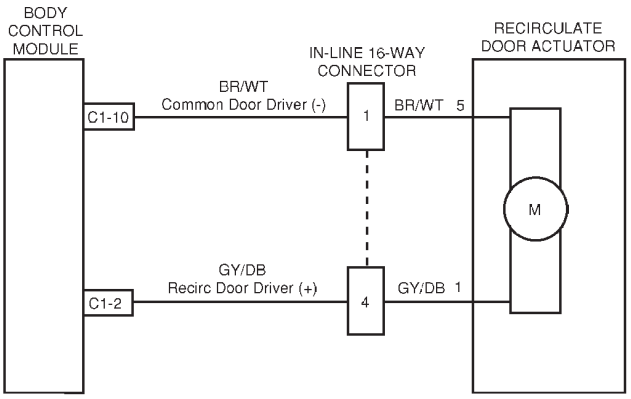
***Check connectors - Clean / repair as necessary.***

## TEST 5A — REPAIRING "BLEND, MODE, RECIRC DOOR OR COMMON OUTPUT SHORTED TO BATTERY" TROUBLE CODE

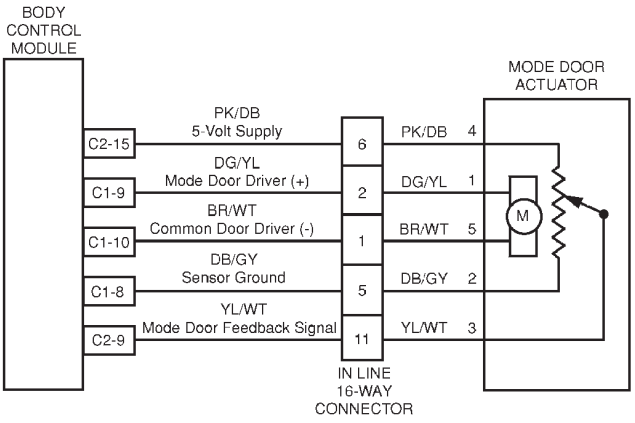
**Perform TEST 1B Before Proceeding**




80b4fa48




80b4fa49




80b4fa4a

**Name of code:** Mode Door Output Shorted to Battery, Blend Door Output Shorted to Battery, Recirc Door Output Shorted to Battery, Common Output Shorted to Battery

**When monitored:** Whenever the BCM attempts to move one of the HVAC actuators

**Set condition:** BCM detects one or more of the following outputs shorted to battery: mode drive, blend drive, recirc drive, or common drive (note: all shorted to battery faults will be set when one output is shorted).

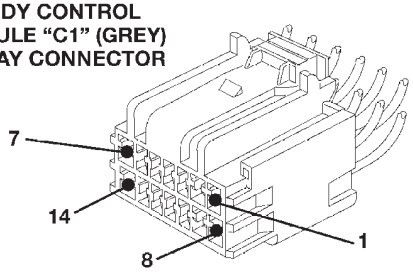
**Theory of operation:** When the BCM wants to actuate one of the doors (it only moves one at a time), it sets the door output to the appropriate level and sets the common output and the other two door outputs to the opposite level (ignition or ground). At this time it verifies that the output is doing what it should - if not, the fault is set.

**Probable Causes:**

- Wiring short to battery
- Failed actuator
- Failed BCM

80b242f0

**BODY CONTROL MODULE "C1" (GREY) 14-WAY CONNECTOR**



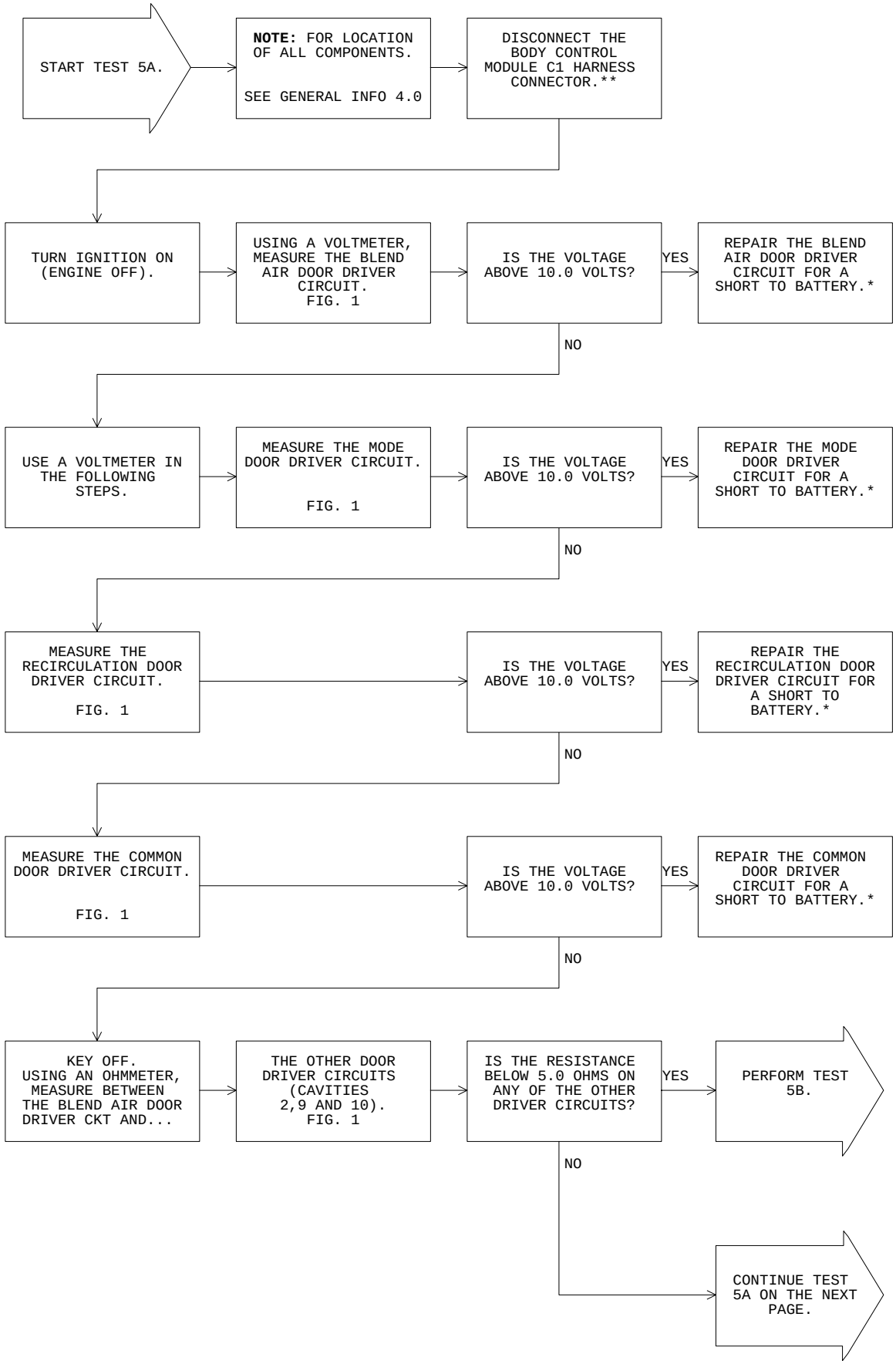

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/WT | DECKLID RELEASE SWITCH OUTPUT |
| 2 | GY/DB | RECIRCULATION DOOR DRIVER |
| 3 | DB/RD | BLEND AIR DOOR DRIVER |
| 4 | YL/VT | PCI BUS (ATC) |
| 5 | YL/VT | PCI BUS (RADIO) |
| 7 | YL/VT | PCI BUS (AIRBAG) |
| 8 | DB/GY | SENSOR GROUND |
| 9 | DG/YL | MODE DOOR DRIVER |
| 10 | BR/WT | COMMON DOOR DRIVER |
| 11 | VT/LG | FAN OFF SWITCH SIGNAL |
| 12 | YL/VT | PCI BUS (SKIM) |
| 13 | YL/VT | PCI BUS (MIC) |
| 14 | YL/VT | PCI BUS (DLC) |

80b11935

***FIG. 1***

## TEST 5A — REPAIRING "BLEND, MODE, RECIRC DOOR OR COMMON OUTPUT SHORTED TO BATTERY" TROUBLE CODE

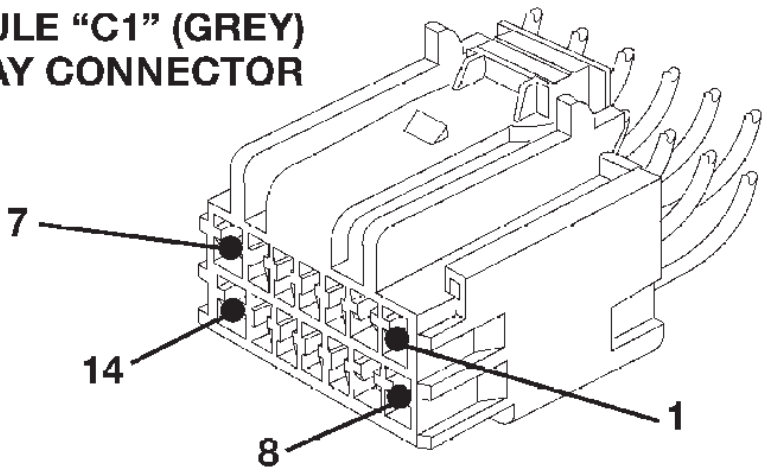
**Perform TEST 1B Before Proceeding**




***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

**BODY CONTROL MODULE "C1" (GREY) 14-WAY CONNECTOR**

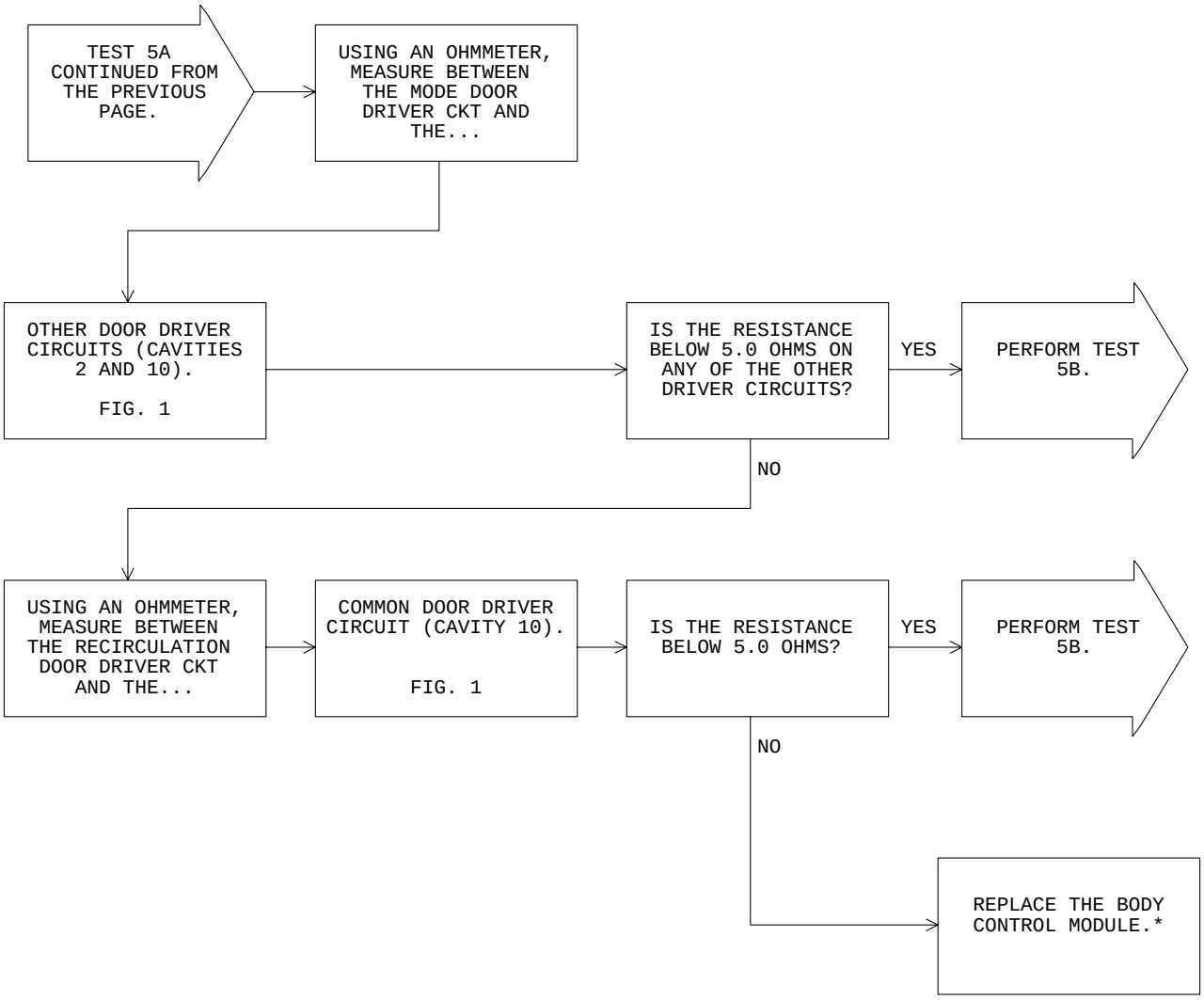



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/WT | DECKLID RELEASE SWITCH OUTPUT |
| 2 | GY/DB | RECIRCULATION DOOR DRIVER |
| 3 | DB/RD | BLEND AIR DOOR DRIVER |
| 4 | YL/VT | PCI BUS (ATC) |
| 5 | YL/VT | PCI BUS (RADIO) |
| 7 | YL/VT | PCI BUS (AIRBAG) |
| 8 | DB/GY | SENSOR GROUND |
| 9 | DG/YL | MODE DOOR DRIVER |
| 10 | BR/WT | COMMON DOOR DRIVER |
| 11 | VT/LG | FAN OFF SWITCH SIGNAL |
| 12 | YL/VT | PCI BUS (SKIM) |
| 13 | YL/VT | PCI BUS (MIC) |
| 14 | YL/VT | PCI BUS (DLC) |

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*FIG. 1*

## TEST 5A — CONTINUED - REPAIRING ″BLEND, MODE, RECIRC DOOR OR COMMON OUTPUT SHORTED TO BATTERY″ TROUBLE CODE



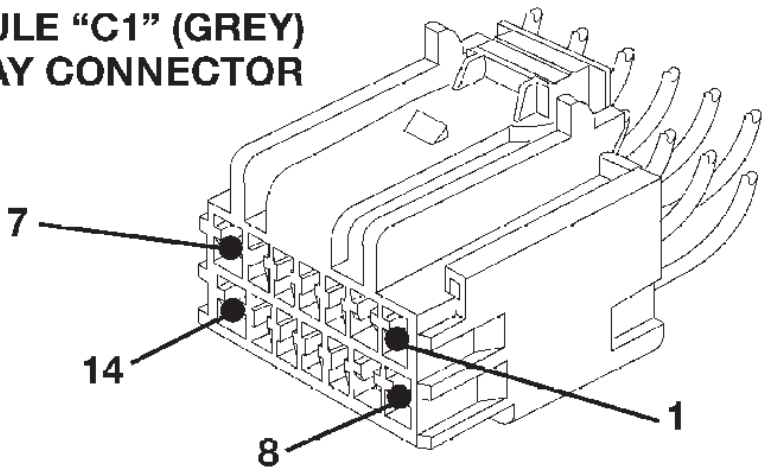

***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

| TEST 5B | REPAIRING - "BLEND, MODE, RECIRC DOOR OR COMMON OUTPUT SHORTED TO BATTERY" TROUBLE CODE |
|---|---|

**Perform TEST 5A Before Proceeding**

**BODY CONTROL MODULE "C1" (GREY) 14-WAY CONNECTOR**



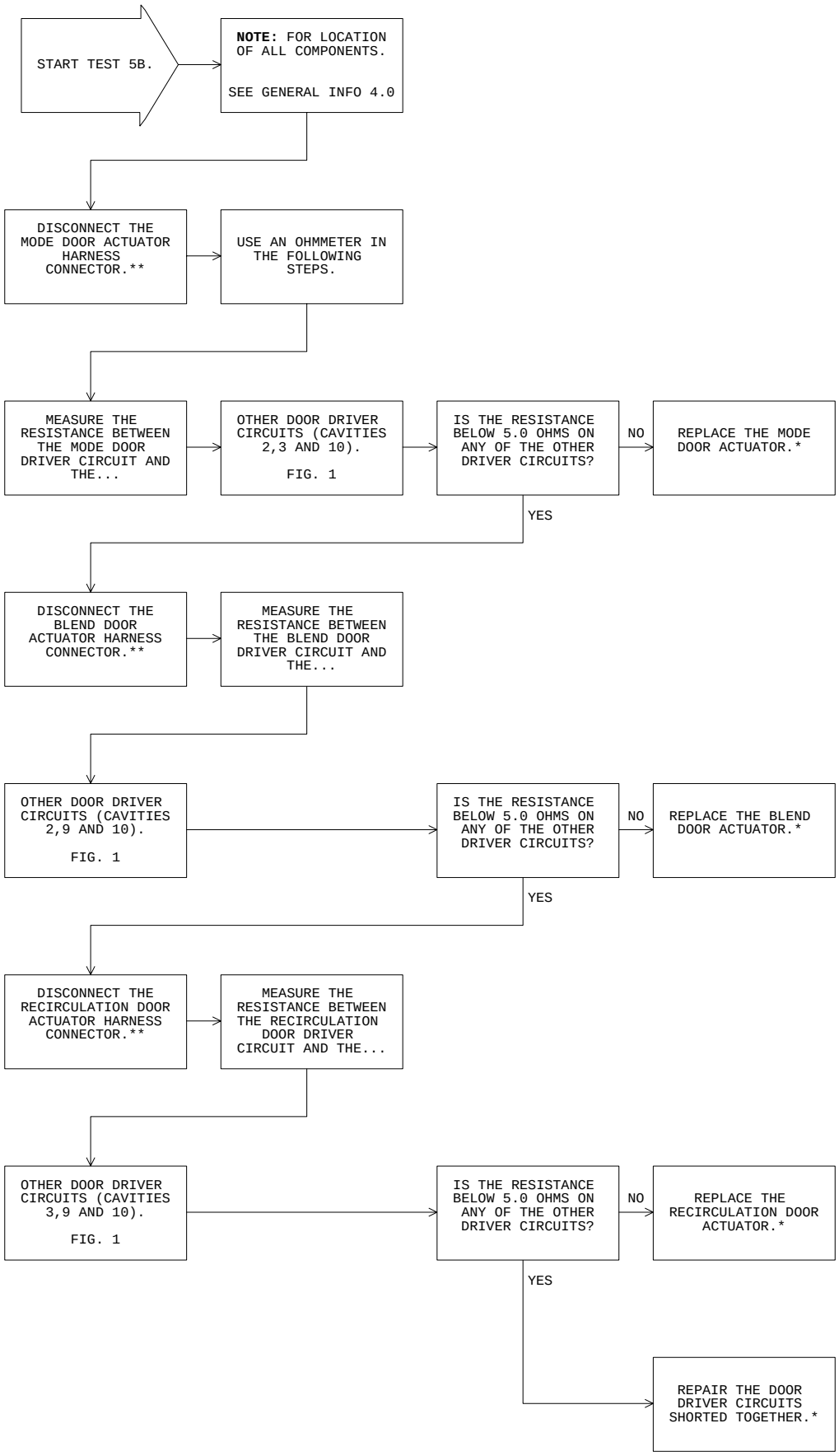

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/WT | DECKLID RELEASE SWITCH OUTPUT |
| 2 | GY/DB | RECIRCULATION DOOR DRIVER |
| 3 | DB/RD | BLEND AIR DOOR DRIVER |
| 4 | YL/VT | PCI BUS (ATC) |
| 5 | YL/VT | PCI BUS (RADIO) |
| 7 | YL/VT | PCI BUS (AIRBAG) |
| 8 | DB/GY | SENSOR GROUND |
| 9 | DG/YL | MODE DOOR DRIVER |
| 10 | BR/WT | COMMON DOOR DRIVER |
| 11 | VT/LG | FAN OFF SWITCH SIGNAL |
| 12 | YL/VT | PCI BUS (SKIM) |
| 13 | YL/VT | PCI BUS (MIC) |
| 14 | YL/VT | PCI BUS (DLC) |

80b11935

*FIG. 1*

## TEST 5B — REPAIRING - ″BLEND, MODE, RECIRC DOOR OR COMMON OUTPUT SHORTED TO BATTERY″ TROUBLE CODE

**Perform TEST 5A Before Proceeding**

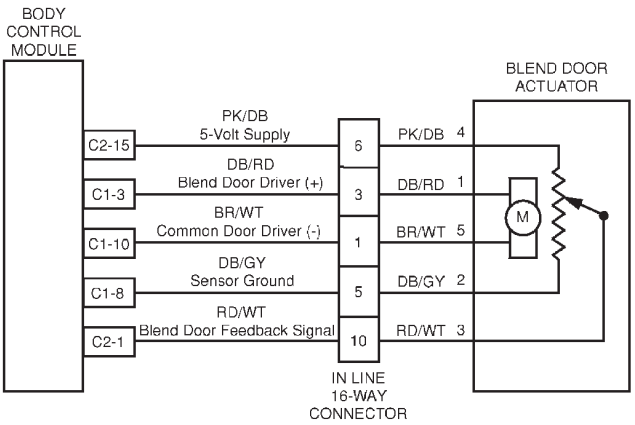


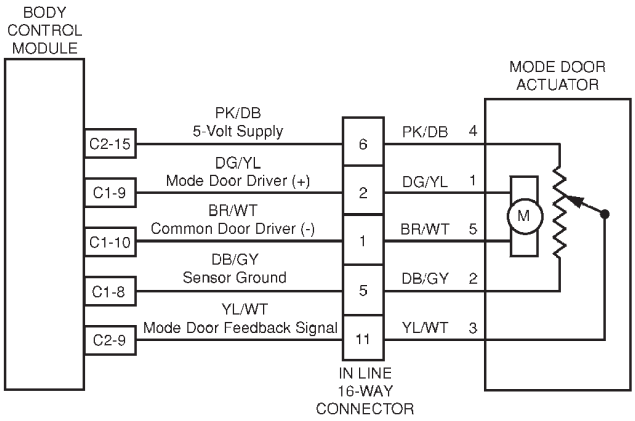

***Perform Verification TEST VER-2A.***

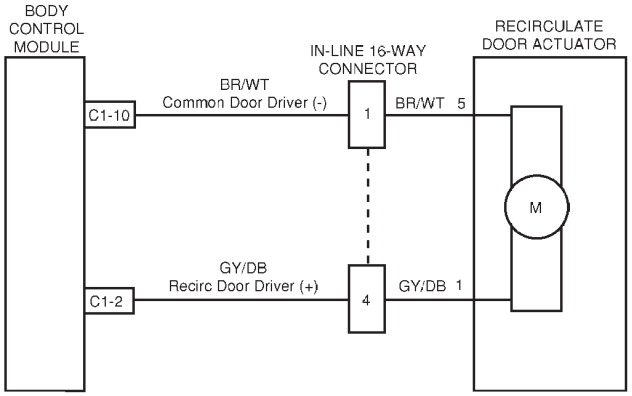
***Check connectors - Clean / repair as necessary.***

## TEST 6A REPAIRING "COMMON OUTPUT SHORTED TO GROUND" TROUBLE CODE

**Perform TEST 1B Before Proceeding**




**Name of code:** Mode Door Output Shorted to Ground, Blend Door Output Shorted to Ground, Recirc Door Output Shorted to Ground, Common Output Shorted to Ground

**When monitored:** Whenever the BCM attempts to move one of the HVAC actuators.

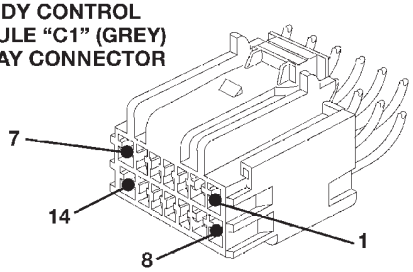
**Set condition:** BCM detects one or more of the following outputs shorted to ground: mode drive, blend drive, recirc drive, or common drive.

**Theory of operation:** When the BCM wants to actuate one of the doors (it only moves one at a time), it sets the door output to the appropriate level and sets the common output and the other two door outputs to the opposite level (ignition or ground). At this time it verifies that the output is doing what it should - if not, the fault is set

**Probable Causes:**
- > Wiring short to ground
- > Failed actuator
- > Failed BCM

80b242ef

**BODY CONTROL MODULE "C1" (GREY) 14-WAY CONNECTOR**



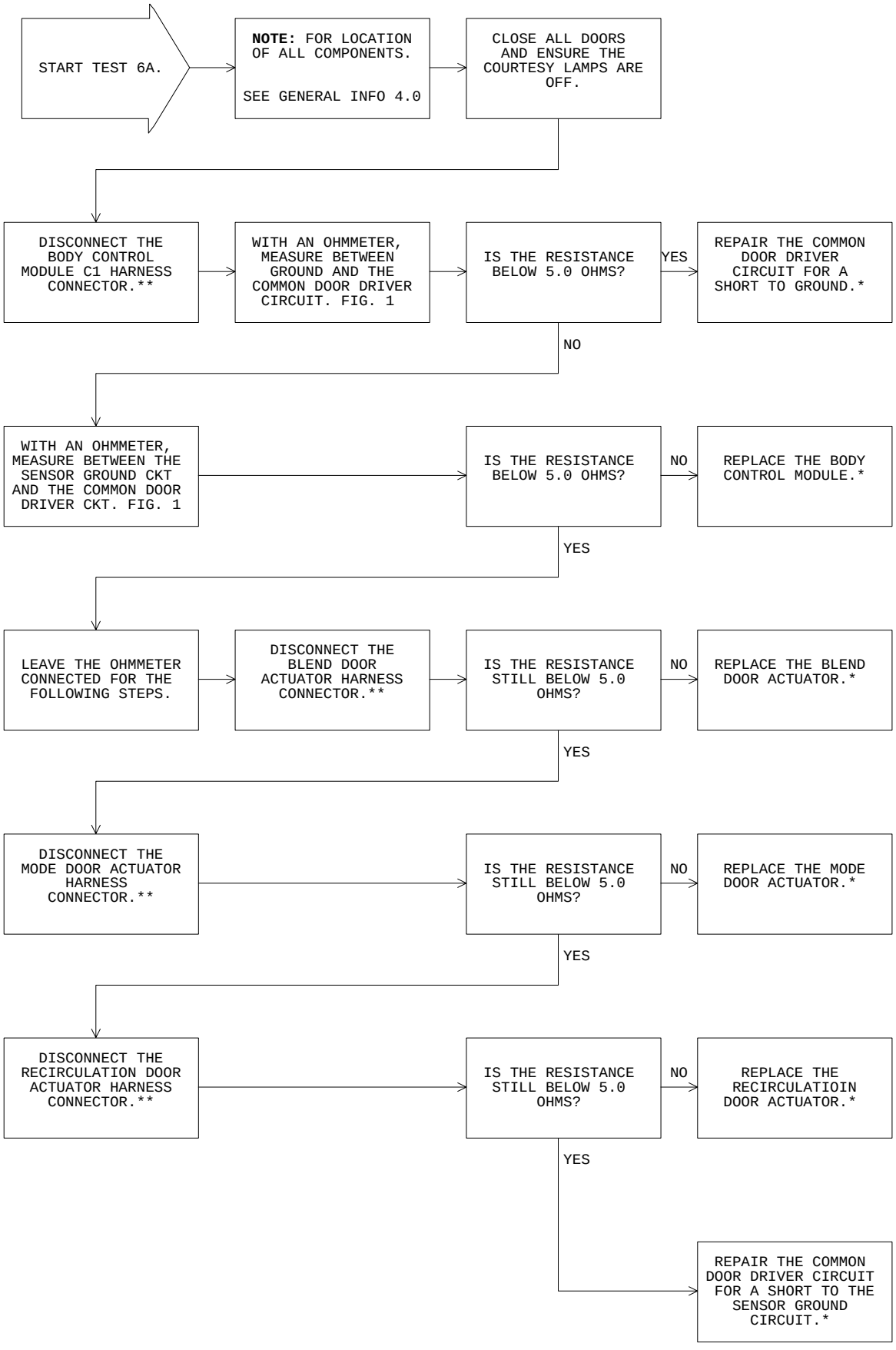

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/WT | DECKLID RELEASE SWITCH OUTPUT |
| 2 | GY/DB | RECIRCULATION DOOR DRIVER |
| 3 | DB/RD | BLEND AIR DOOR DRIVER |
| 4 | YL/VT | PCI BUS (ATC) |
| 5 | YL/VT | PCI BUS (RADIO) |
| 7 | YL/VT | PCI BUS (AIRBAG) |
| 8 | DB/GY | SENSOR GROUND |
| 9 | DG/YL | MODE DOOR DRIVER |
| 10 | BR/WT | COMMON DOOR DRIVER |
| 11 | VT/LG | FAN OFF SWITCH SIGNAL |
| 12 | YL/VT | PCI BUS (SKIM) |
| 13 | YL/VT | PCI BUS (MIC) |
| 14 | YL/VT | PCI BUS (DLC) |

80b11935

***FIG. 1***

## TEST 6A — REPAIRING ″COMMON OUTPUT SHORTED TO GROUND″ TROUBLE CODE

**Perform TEST 1B Before Proceeding**

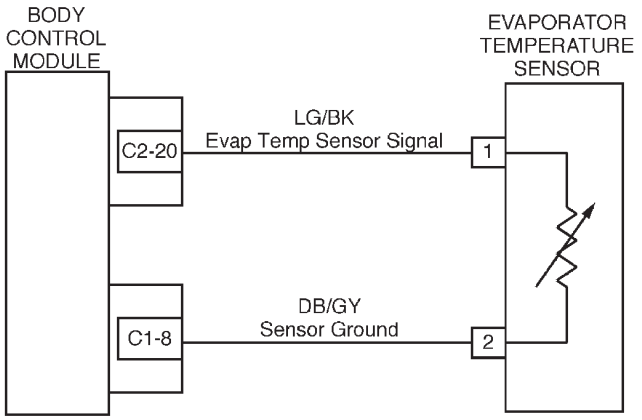



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.**

## TEST 7A REPAIRING "EVAPORATOR TEMPERATURE SENSOR FAILURE" TROUBLE CODE

**Perform TEST 1B Before Proceeding**




80b30832

**Name of code:** Evaporator Temperature Sensor Failure

**When monitored:** With ignition on

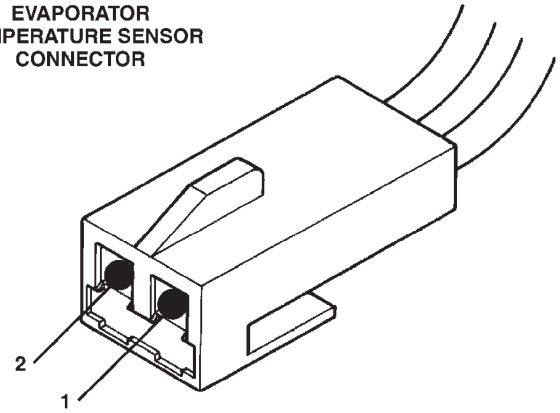
**Set condition:** BCM detects an abnormally high or low voltage on the evaporator temperature sensor.

**Theory of operation:** BCM provides a pull-up to 5V for the evaporator temp sensor, but during normal operation the voltage should be between 0.313V and 4.88V.

**Probable Causes:**
- Wiring open circuit
- Wiring short to ground
- Wiring short to battery
- Failed evaporator temperature sensor
- Failed BCM

80b242f5

**EVAPORATOR TEMPERATURE SENSOR CONNECTOR**

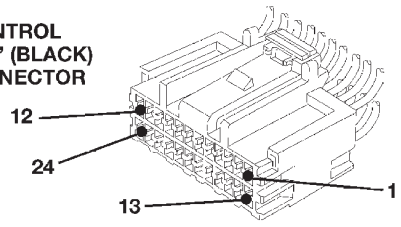



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | LG/BK | EVAPORATOR TEMP SENSOR SIGNAL |
| 2 | DB/GY | SENSOR GROUND |

80b29f9t

*FIG. 1*

**BODY CONTROL MODULE "C2" (BLACK) 24-WAY CONNECTOR**



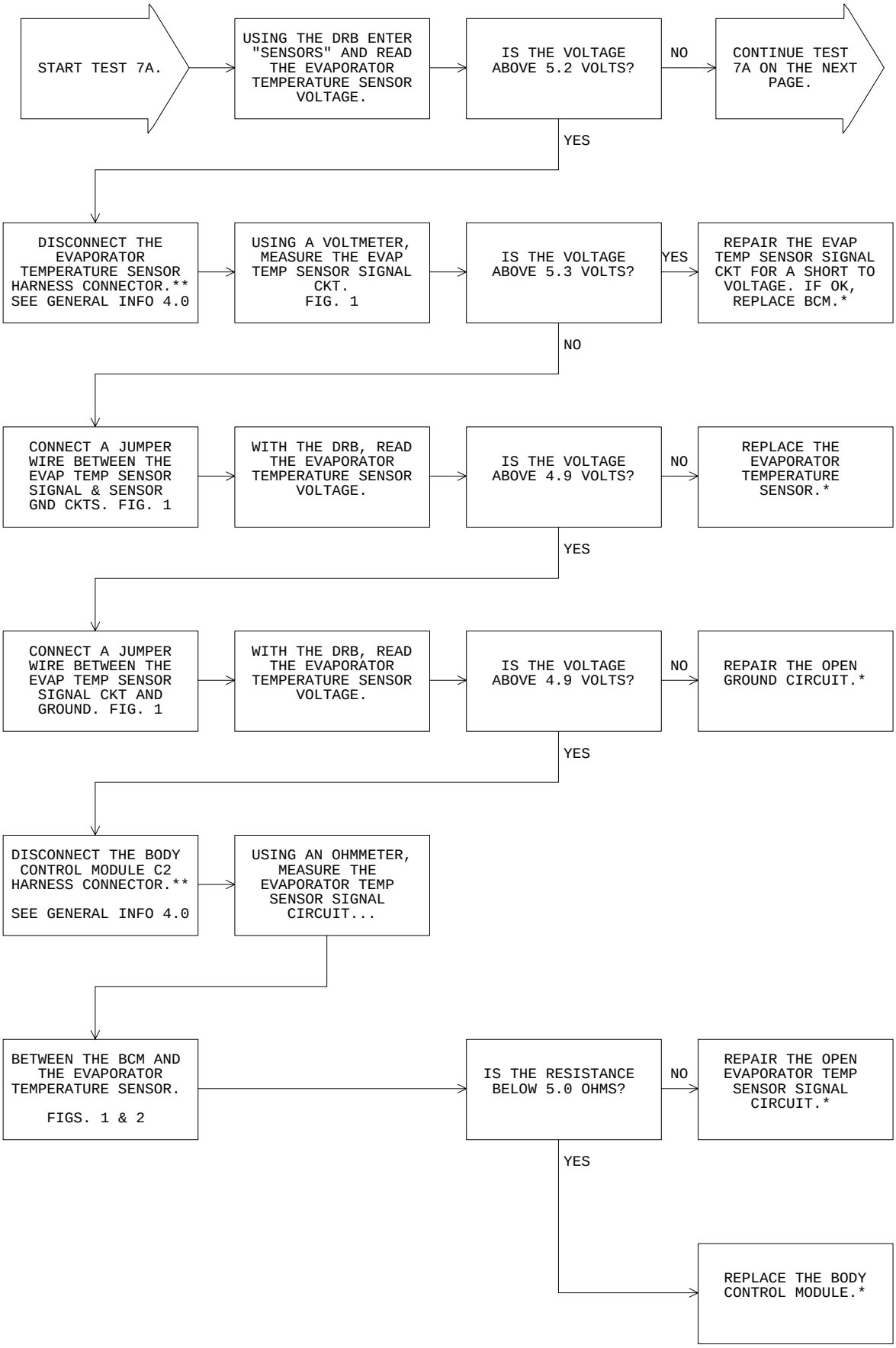

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

80b11936

*FIG. 2*

## TEST 7A — REPAIRING ″EVAPORATOR TEMPERATURE SENSOR FAILURE″ TROUBLE CODE

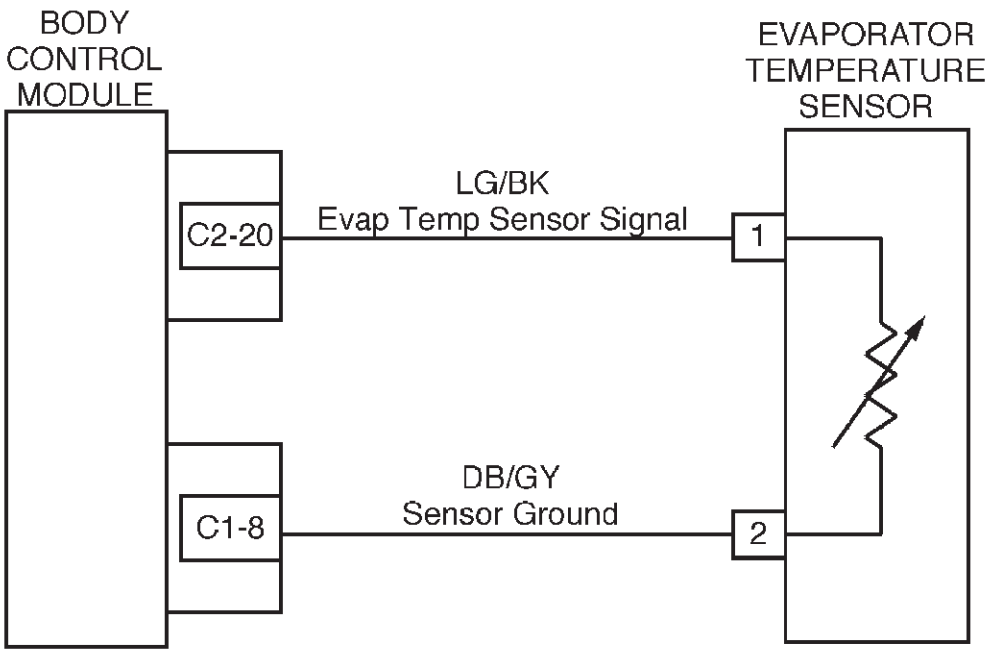
**Perform TEST 1B Before Proceeding**



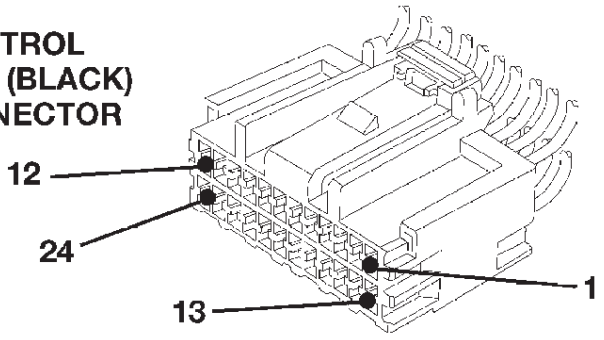

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

**TEST 7A** — **CONTINUED - REPAIRING "EVAPORATOR TEMPERATURE SENSOR FAILURE" TROUBLE CODE**




**BODY CONTROL MODULE "C2" (BLACK) 24-WAY CONNECTOR**

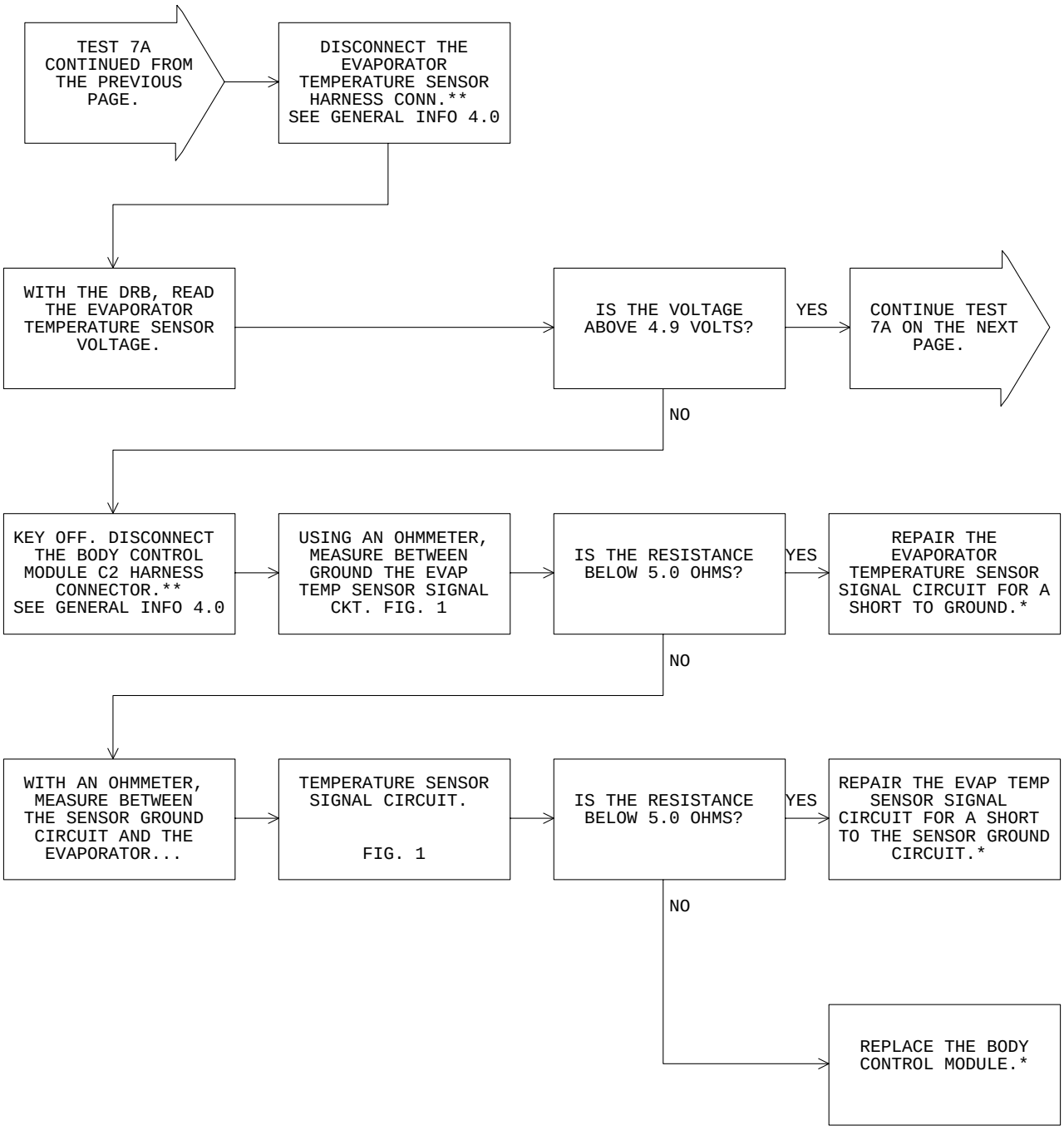



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

80b11936

***FIG. 1***

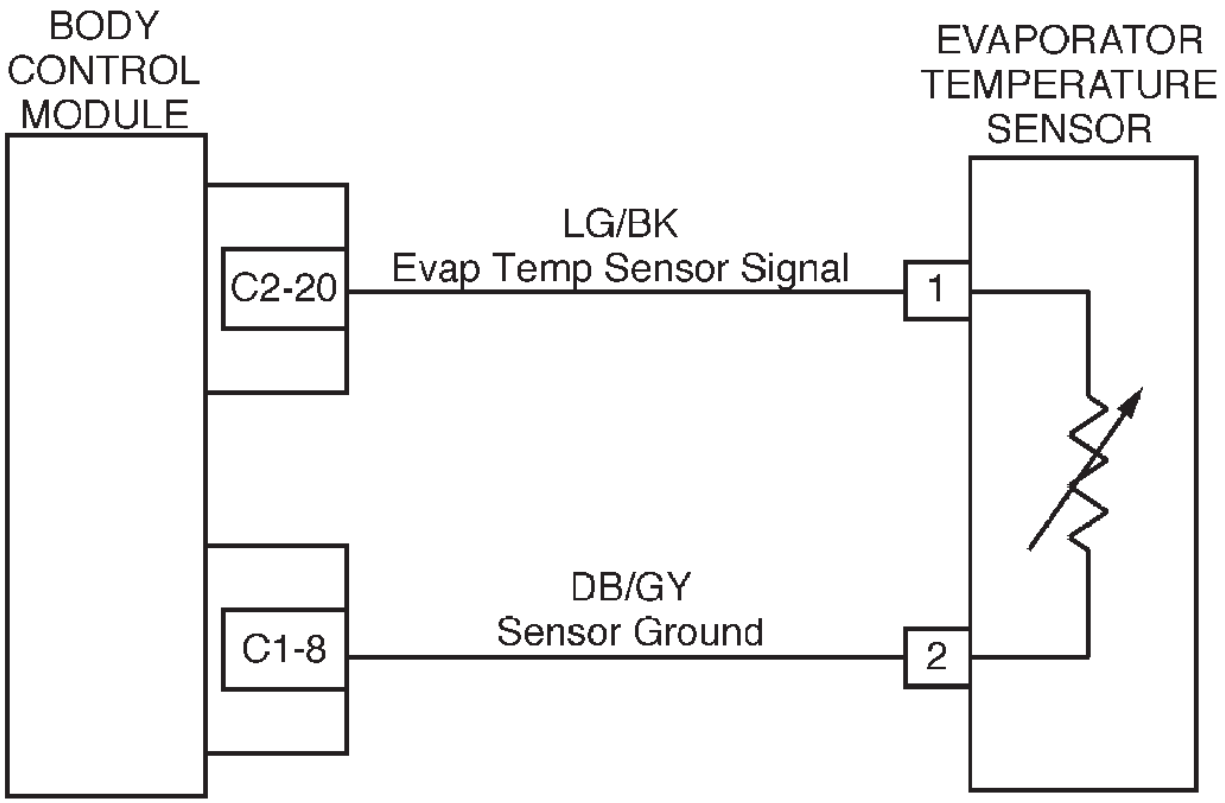
## TEST 7A — CONTINUED - REPAIRING "EVAPORATOR TEMPERATURE SENSOR FAILURE" TROUBLE CODE



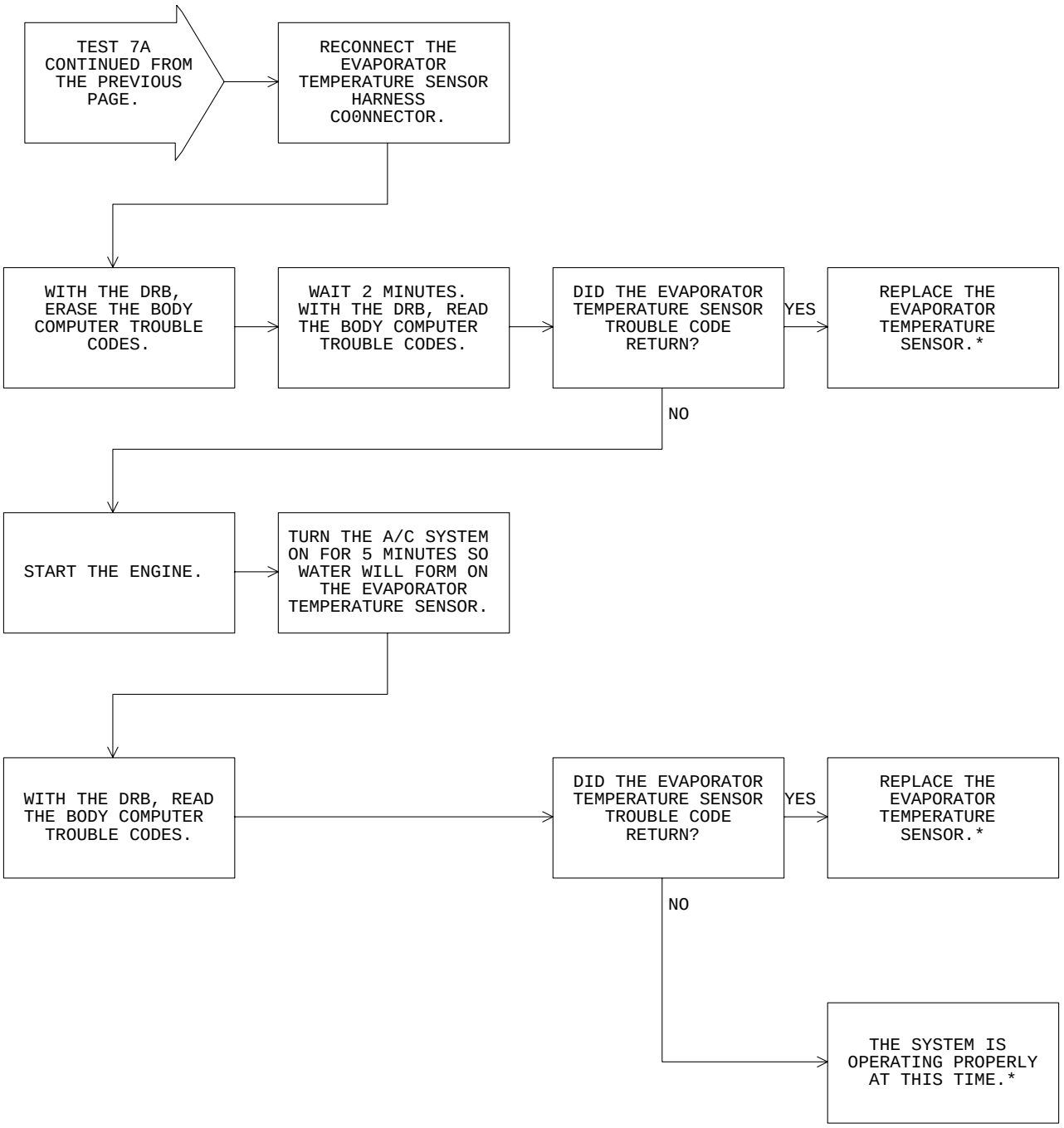

***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

| TEST 7A | CONTINUED - REPAIRING "EVAPORATOR TEMPERATURE SENSOR FAILURE" TROUBLE CODE |
|---|---|



## TEST 7A — CONTINUED - REPAIRING ″EVAPORATOR TEMPERATURE SENSOR FAILURE″ TROUBLE CODE

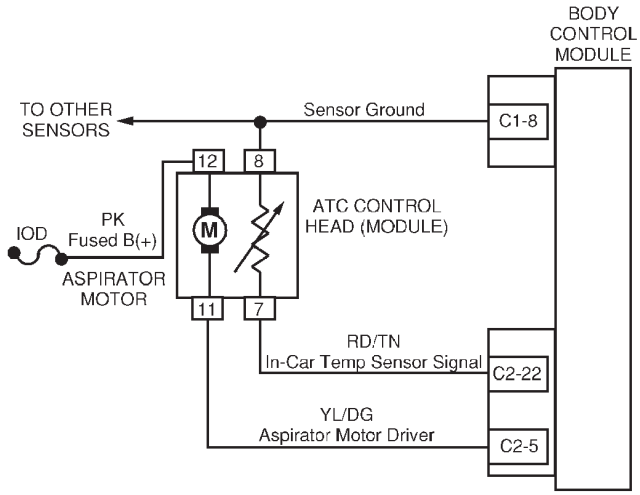



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 8A — REPAIRING ATC ASPIRATOR OR "IN-CAR TEMPERATURE SENSOR FAILURE" TROUBLE CODE

**Perform TEST 1B OR 1A Before Proceeding**




80b30836

**Name of code:** In-Car Temperature Sensor Failure

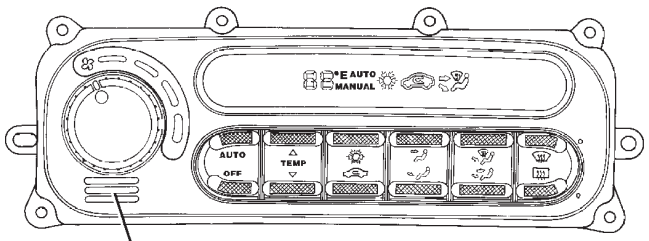
**When monitored:** With ignition on

**Set condition:** BCM senses an abnormally high or low voltage in the in-car temperature input

**Theory of operation:** The in-car temperature sensor is a thermistor for which the BCM provides a 5V pull-up. Under normal operating conditions (-40 to 85°C) this voltage should be between 0.313V and 4.88V.

**Probable Causes:**
- Wiring open circuit
- Wiring short to ground
- Wiring short to battery
- Failed sensor
- Failed BCM

80b242f3

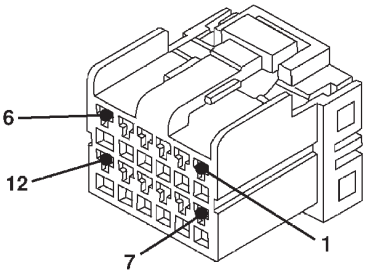



**ASPIRATOR MOTOR AND IN-CAR TEMPERATURE SENSOR**

80b27c9b

*FIG. 1*

**ATC MODULE CONNECTOR**



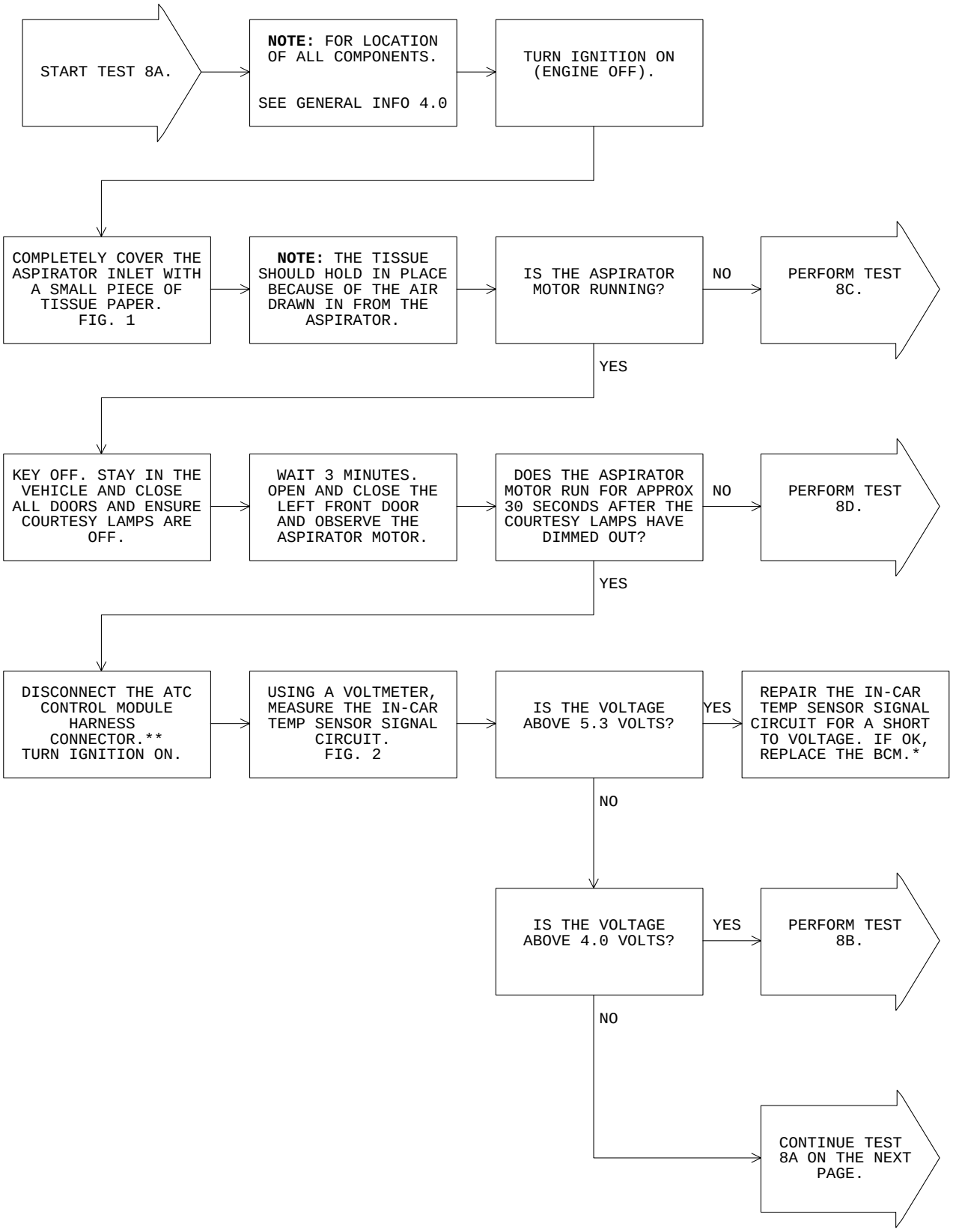

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LG | GROUND |
| 2 | YL/VT | PCI BUS |
| 3 | BK | GROUND |
| 4 | OR | PANEL LAMPS DRIVER |
| 7 | RD/TN | IN CAR TEMPERATURE SENSOR SIGNAL |
| 8 | DB/GY | SENSOR GROUND |
| 10 | WT | FUSED IGNITION SWITCH OUTPUT |
| 11 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 12 | PK | FUSED B(+) |

80b2a1fb

*FIG. 2*

## TEST 8A — REPAIRING ATC ASPIRATOR OR "IN-CAR TEMPERATURE SENSOR FAILURE" TROUBLE CODE

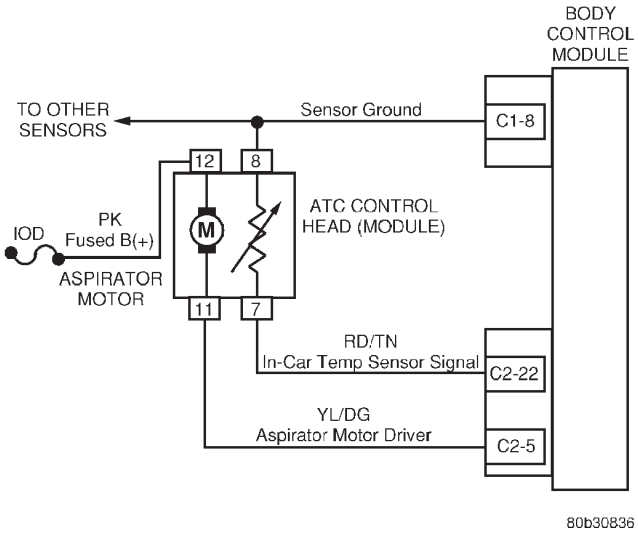
**Perform TEST 1B OR 1A Before Proceeding**



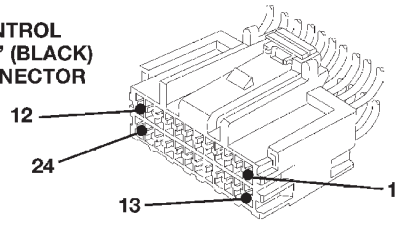

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 8A — CONTINUED - REPAIRING ATC ASPIRATOR OR "IN-CAR TEMPERATURE SENSOR FAILURE" TROUBLE CODE




**BODY CONTROL MODULE "C2" (BLACK) 24-WAY CONNECTOR**

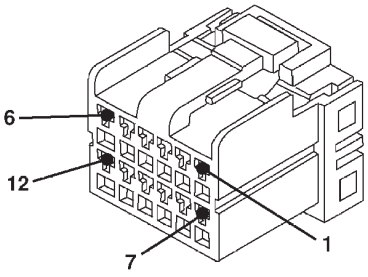



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

80b11936

***FIG. 1***

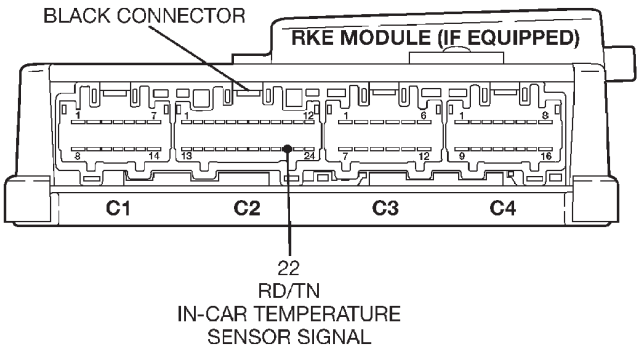
**ATC MODULE CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LG | GROUND |
| 2 | YL/VT | PCI BUS |
| 3 | BK | GROUND |
| 4 | OR | PANEL LAMPS DRIVER |
| 7 | RD/TN | IN CAR TEMPERATURE SENSOR SIGNAL |
| 8 | DB/GY | SENSOR GROUND |
| 10 | WT | FUSED IGNITION SWITCH OUTPUT |
| 11 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 12 | PK | FUSED B(+) |

80b2a1fb

***FIG. 2***

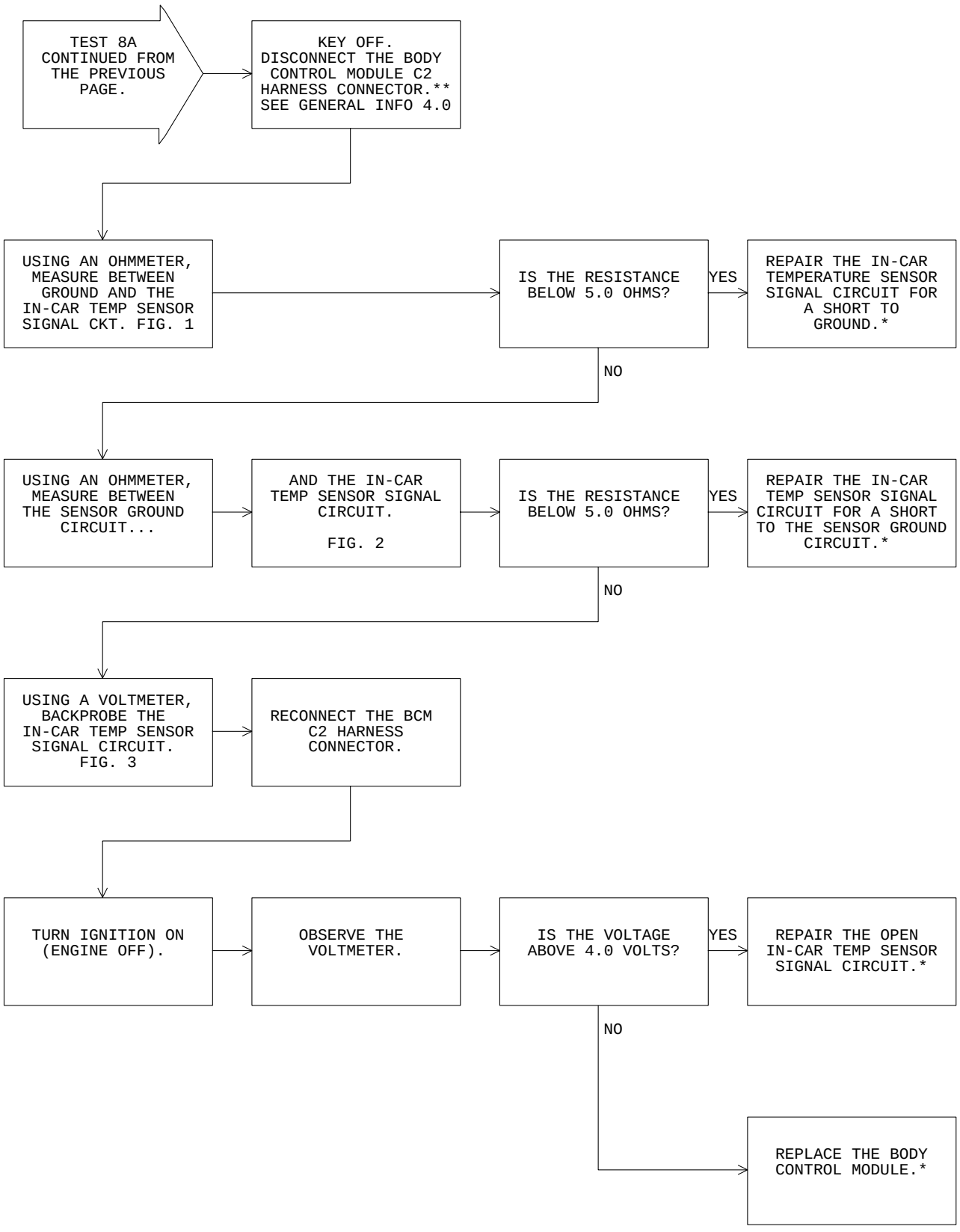



***NOTE: THE BODY CONTROL MODULE MUST BE FULLY CONNECTED TO PERFORM THIS STEP***

80b2b867

***FIG. 3***

## TEST 8A — CONTINUED - REPAIRING ATC ASPIRATOR OR ″IN-CAR TEMPERATURE SENSOR FAILURE″ TROUBLE CODE

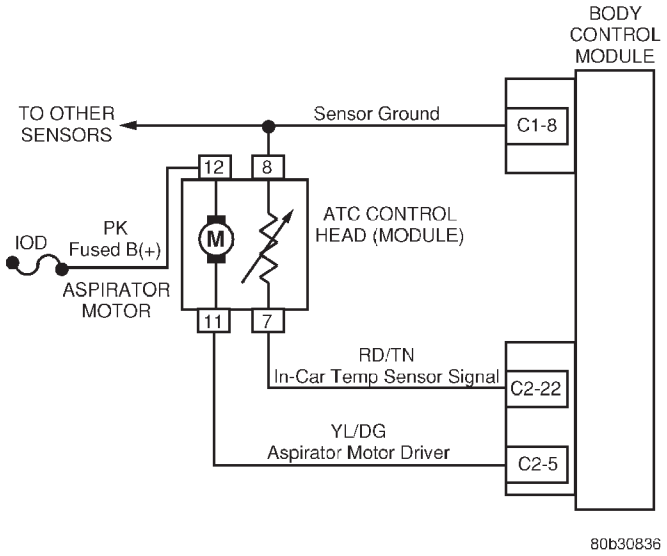


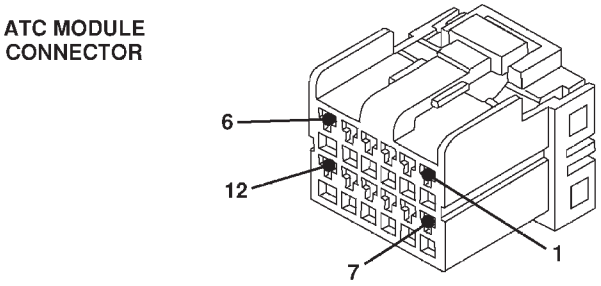

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 8B REPAIRING ATC ASPIRATOR OR "IN-CAR TEMPERATURE SENSOR FAILURE" TROUBLE CODE

**Perform TEST 8A Before Proceeding**

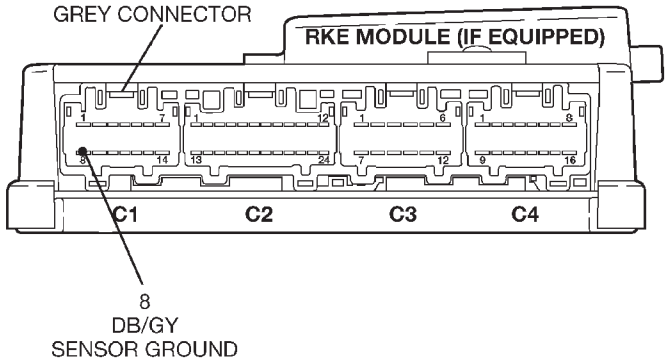



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LG | GROUND |
| 2 | YL/VT | PCI BUS |
| 3 | BK | GROUND |
| 4 | OR | PANEL LAMPS DRIVER |
| 7 | RD/TN | IN CAR TEMPERATURE SENSOR SIGNAL |
| 8 | DB/GY | SENSOR GROUND |
| 10 | WT | FUSED IGNITION SWITCH OUTPUT |
| 11 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 12 | PK | FUSED B(+) |

80b2a1fb

***FIG. 1***



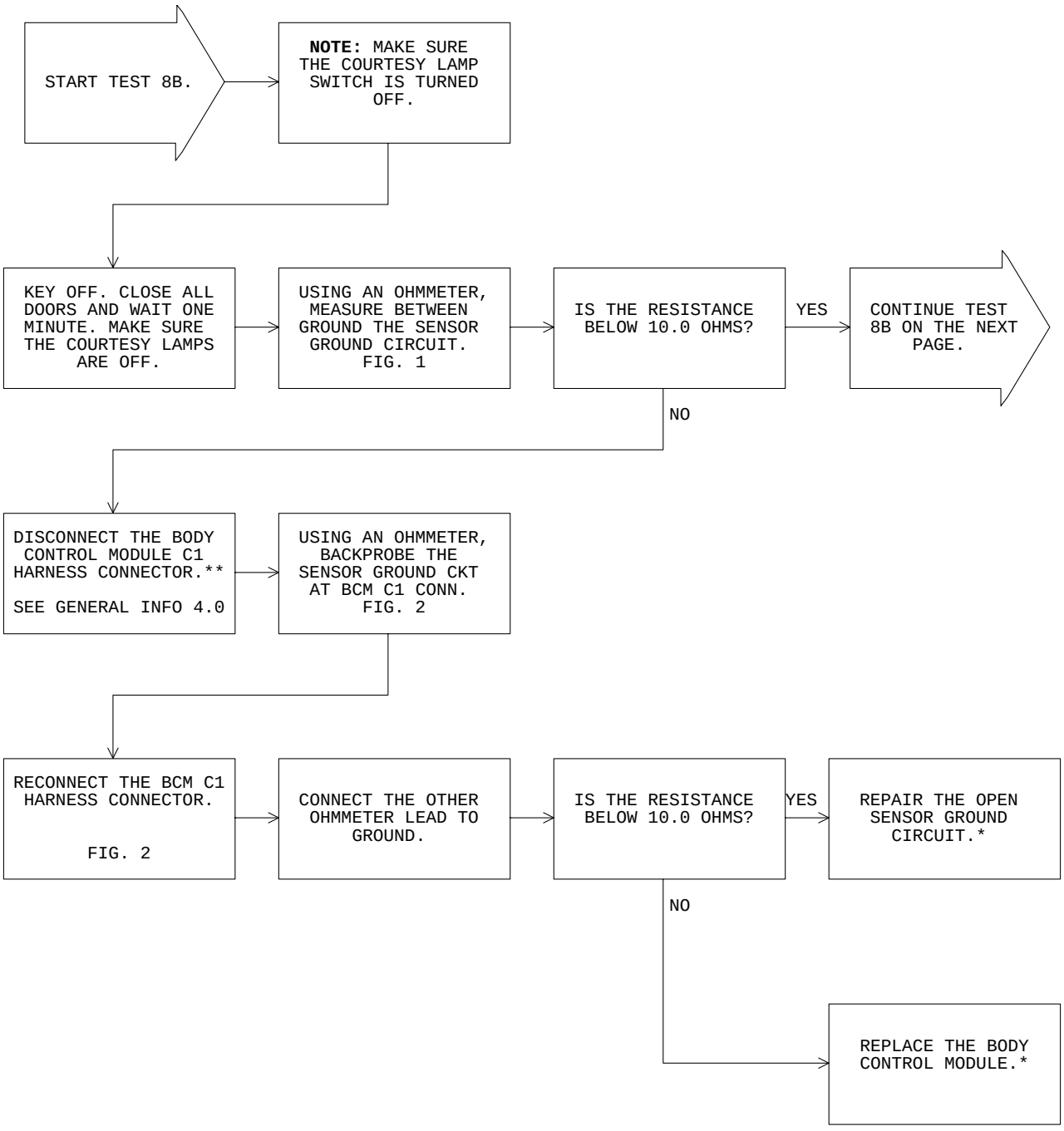

***NOTE: THE BODY CONTROL MODULE MUST BE FULLY CONNECTED TO PERFORM THIS STEP***

80b30853

***FIG. 2***

## TEST 8B — REPAIRING ATC ASPIRATOR OR "IN-CAR TEMPERATURE SENSOR FAILURE" TROUBLE CODE

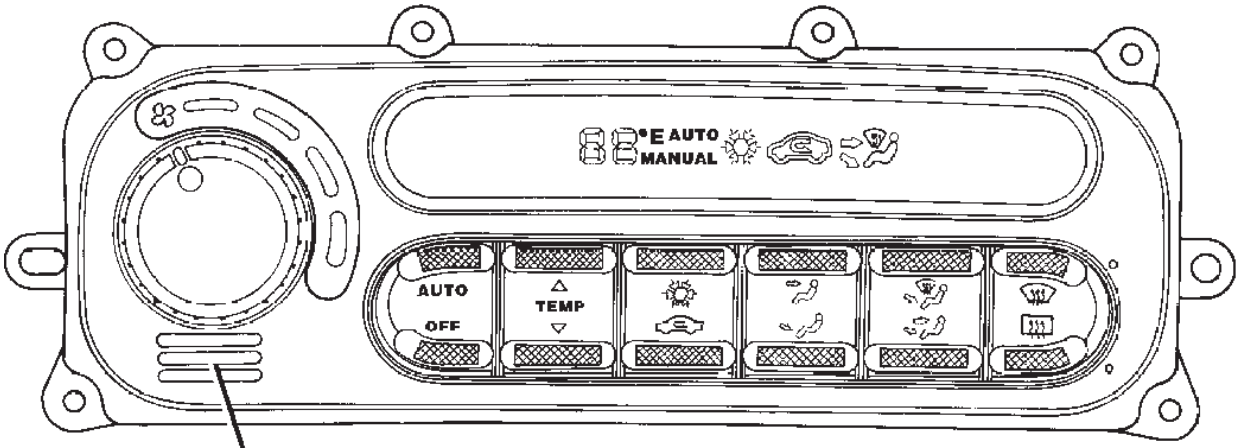
**Perform TEST 8A Before Proceeding**




***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.**

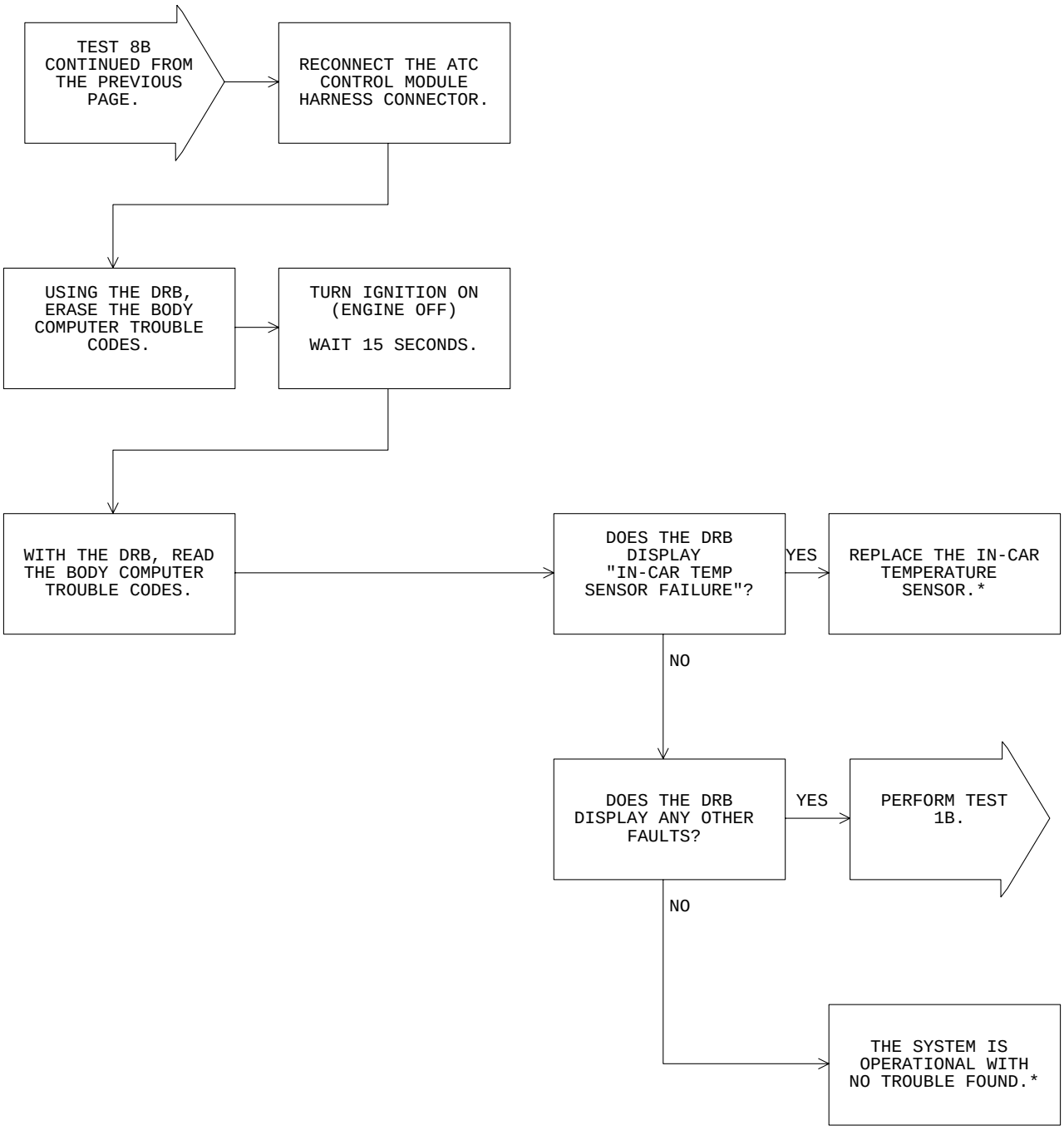
| TEST 8B | CONTINUED - REPAIRING ATC ASPIRATOR OR ″IN-CAR TEMPERATURE SENSOR FAILURE″ TROUBLE CODE |
|---|---|




ASPIRATOR MOTOR AND IN-CAR TEMPERATURE SENSOR

80b27c9b

## TEST 8B — CONTINUED - REPAIRING ATC ASPIRATOR OR ″IN-CAR TEMPERATURE SENSOR FAILURE″ TROUBLE CODE

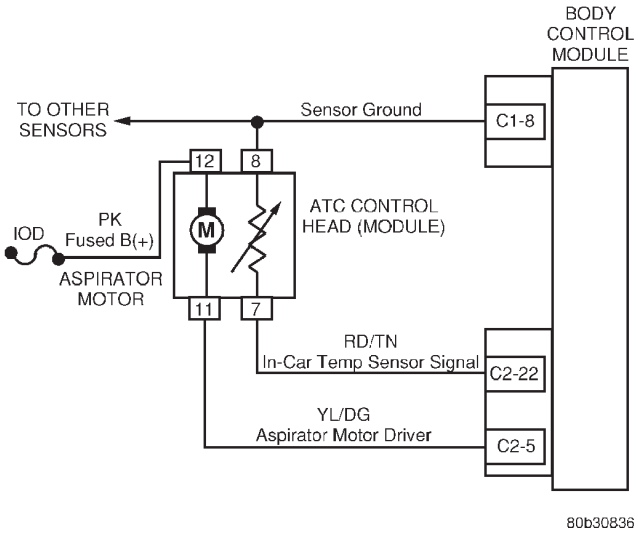


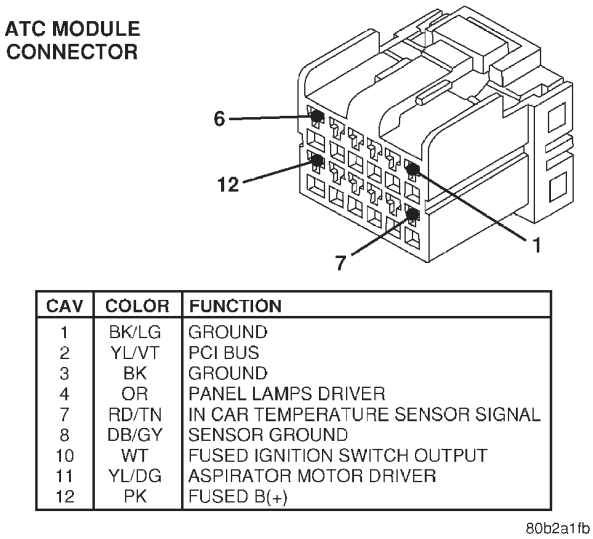

**Perform Verification TEST VER-2A.*

***Check connectors - Clean / repair as necessary.*

## TEST 8C REPAIRING ATC ASPIRATOR MOTOR

**Perform TEST 8A Before Proceeding**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LG | GROUND |
| 2 | YL/VT | PCI BUS |
| 3 | BK | GROUND |
| 4 | OR | PANEL LAMPS DRIVER |
| 7 | RD/TN | IN CAR TEMPERATURE SENSOR SIGNAL |
| 8 | DB/GY | SENSOR GROUND |
| 10 | WT | FUSED IGNITION SWITCH OUTPUT |
| 11 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 12 | PK | FUSED B(+) |

***FIG. 1***

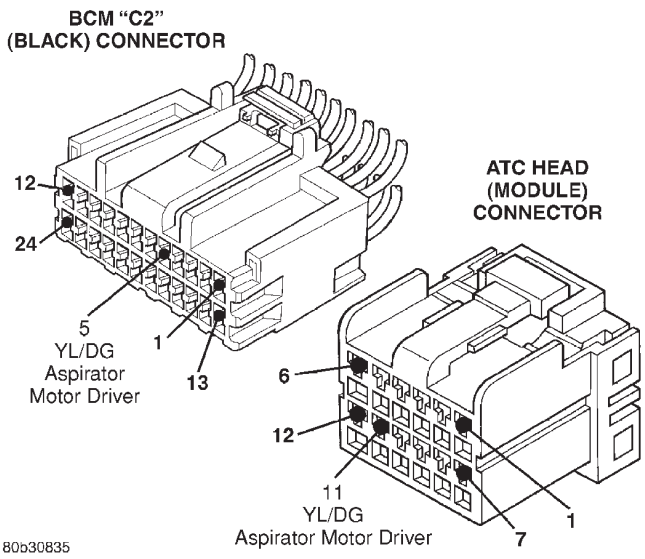
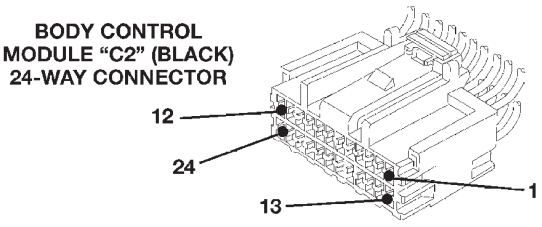



***FIG. 2***



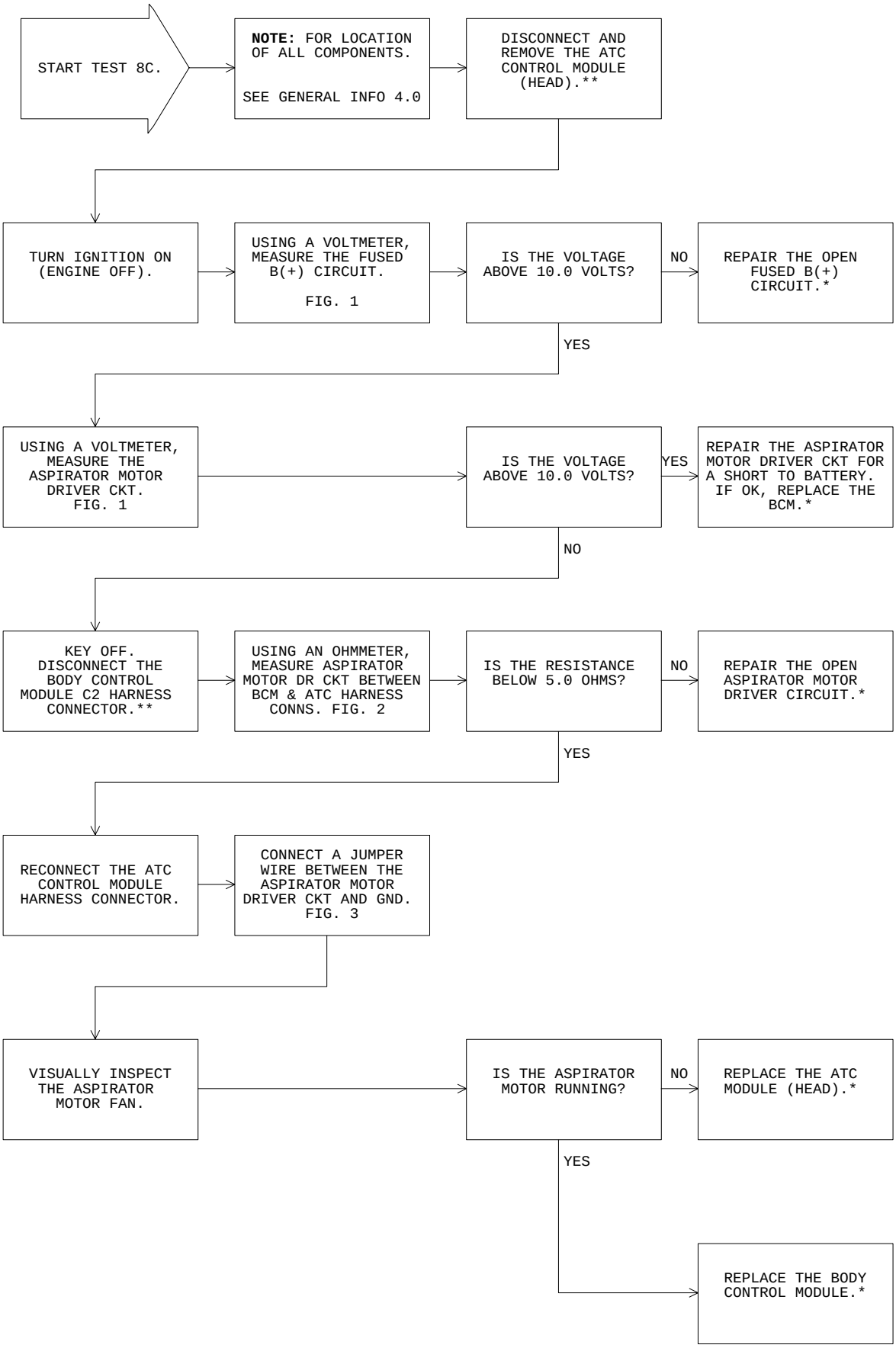

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

80b11936

***FIG. 3***

## TEST 8C REPAIRING ATC ASPIRATOR MOTOR

**Perform TEST 8A Before Proceeding**

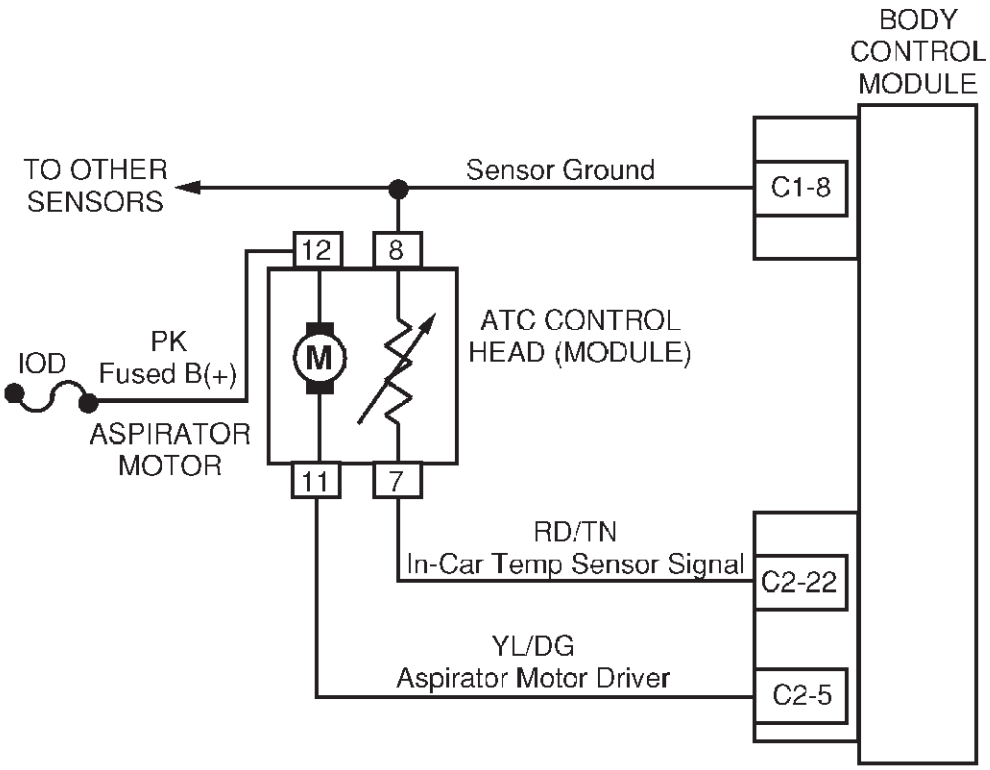



***Perform Verification TEST VER-2A.***

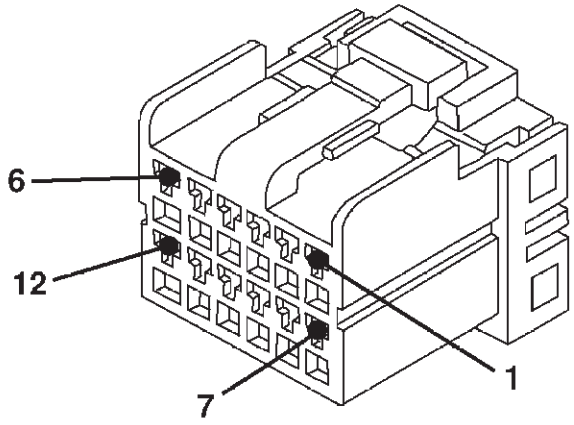
***Check connectors - Clean / repair as necessary.**

**TEST 8D** **REPAIRING ATC ASPIRATOR MOTOR**

**Perform TEST 8A Before Proceeding**




**ATC MODULE CONNECTOR**



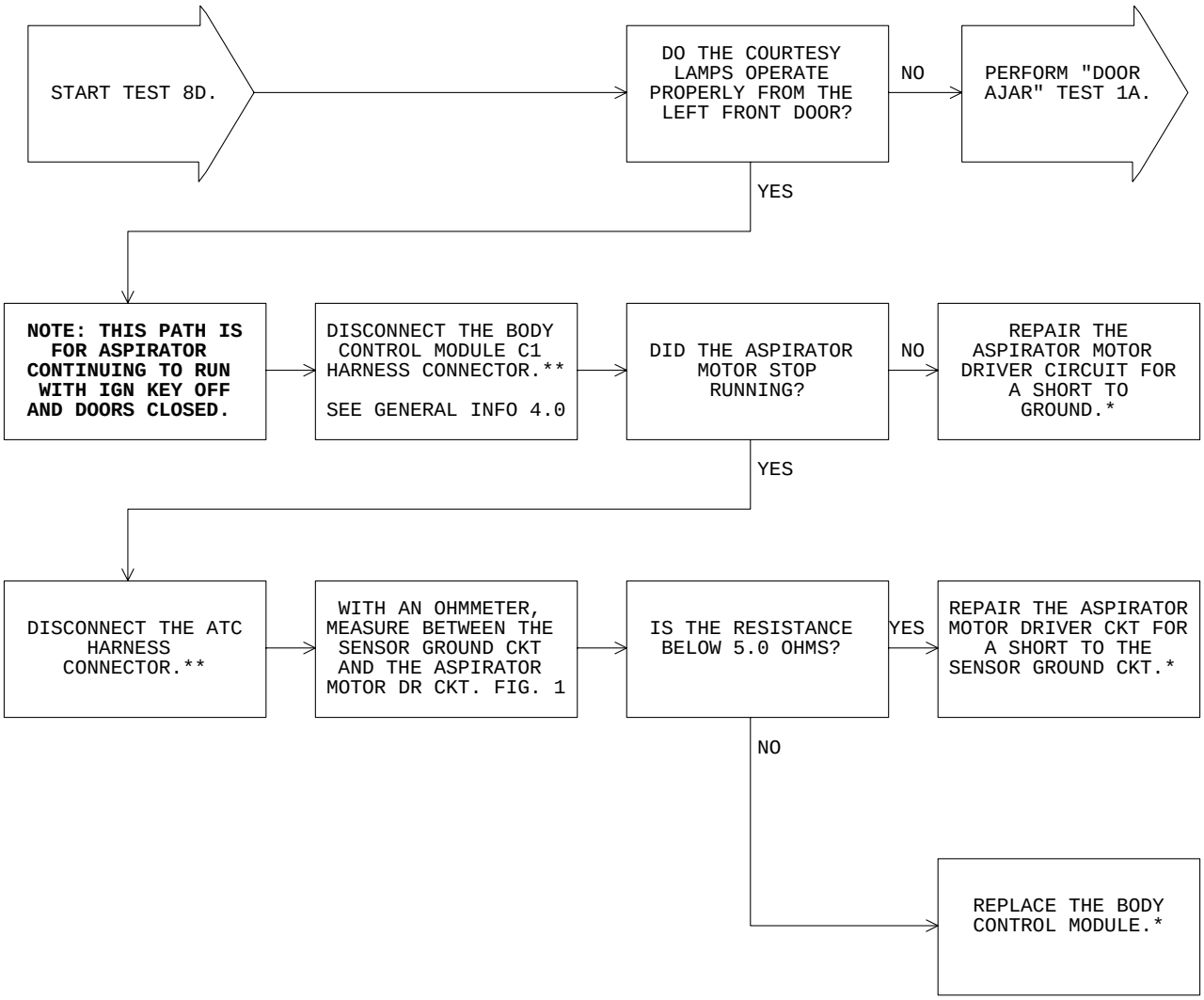

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LG | GROUND |
| 2 | YL/VT | PCI BUS |
| 3 | BK | GROUND |
| 4 | OR | PANEL LAMPS DRIVER |
| 7 | RD/TN | IN CAR TEMPERATURE SENSOR SIGNAL |
| 8 | DB/GY | SENSOR GROUND |
| 10 | WT | FUSED IGNITION SWITCH OUTPUT |
| 11 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 12 | PK | FUSED B(+) |

80b2a1fb

***FIG. 1***

## TEST 8D — REPAIRING ATC ASPIRATOR MOTOR

**Perform TEST 8A Before Proceeding**

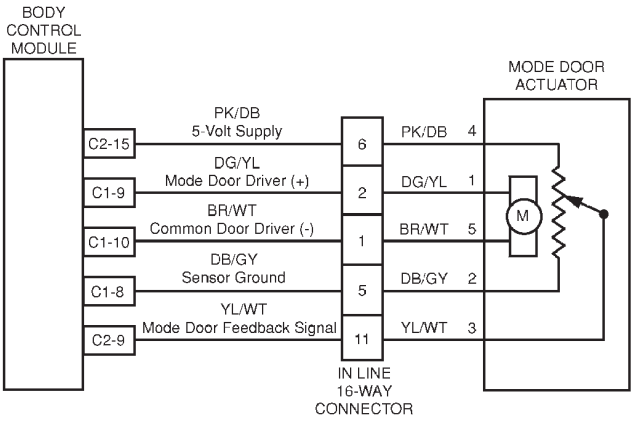



***Perform Verification TEST VER-2A.***

*****Check connectors - Clean / repair as necessary.***

## TEST 9A — REPAIRING "MODE DOOR STALL/FEEDBACK FAILURE" TROUBLE CODE

**Perform TEST 1B Before Proceeding**




80b4fa4a

**Name of code:** Mode Door Feedback Failure, Blend Door Feedback Failure

**When monitored:** Continuously

**Set condition:** BCM detects a loss of signal on the mode feedback and/or blend feedback inputs

**Theory of operation:** At the first ignition on after a battery disconnect, and upon request from the DRB III, Manual HVAC head, or ATC head, the BCM will run each of the three HVAC actuators (mode, blend, and recirc) from end-to-end to learn their limits of travel. The mode door and the blend door each have a feedback signal, which is pulled up through the BCM to 5V, which allows the BCM to know the position of both doors so it can control them appropriatelty. If either of these signals is out of the calibrated range by more than 48mV, or if the minimum amount of travel between the endpoints is not seen during calibration, the appropriate fault will be set.

**Probable Causes:**
- > Wiring open circuit
- > Wiring short to ground
- > Wiring short to battery
- > Failed HVAC actuator
- > Failed BCM

80b242f1

**Name of code:** Mode Door Stall Test Failure, Blend Door Stall Test Failure, Recirculation Door Test Failure

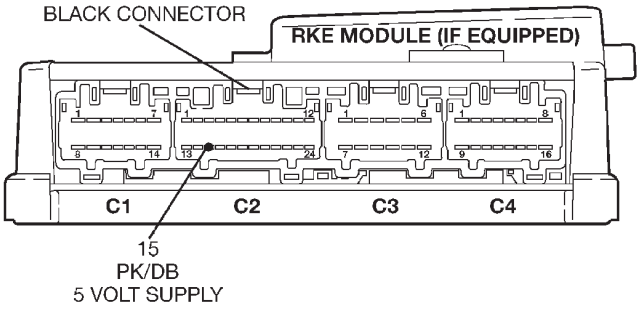
**When monitored:** During HVAC motor calibration

**Set condition:** BCM is unable to detect the end of travel for one or more of the HVAC doors

**Theory of operation:** At the first ignition on after a battery disconnect, and upon request from the DRB III, Manual HVAC head, or ATC head, the BCM will run each of the three HVAC actuators (mode, blend, and recirc) from end-to-end to learn their limits of travel. If the BCM has activated the mode door for 13 seconds, the blend door for 7.8 seconds, or the recirc door for 6 seconds and has still not detected the end of travel (by detecting the increased stall current), the appropriate fault will be set.

**Probable Causes:**
- > Wiring open circuit
- > Failed HVAC actuator
- > Failed BCM

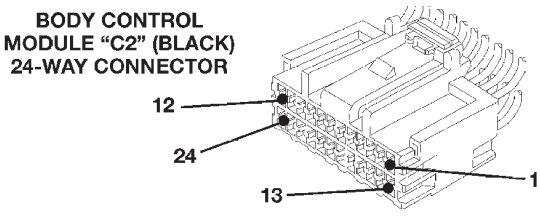
80b242f2




***NOTE: THE BODY CONTROL MODULE MUST BE FULLY CONNECTED TO PERFORM THIS STEP***

80b2b866

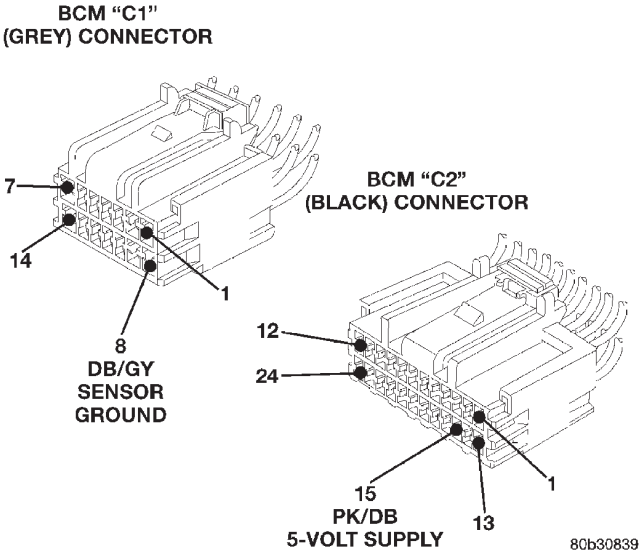
***FIG. 1***




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (W/O/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

80b11936

***FIG. 2***

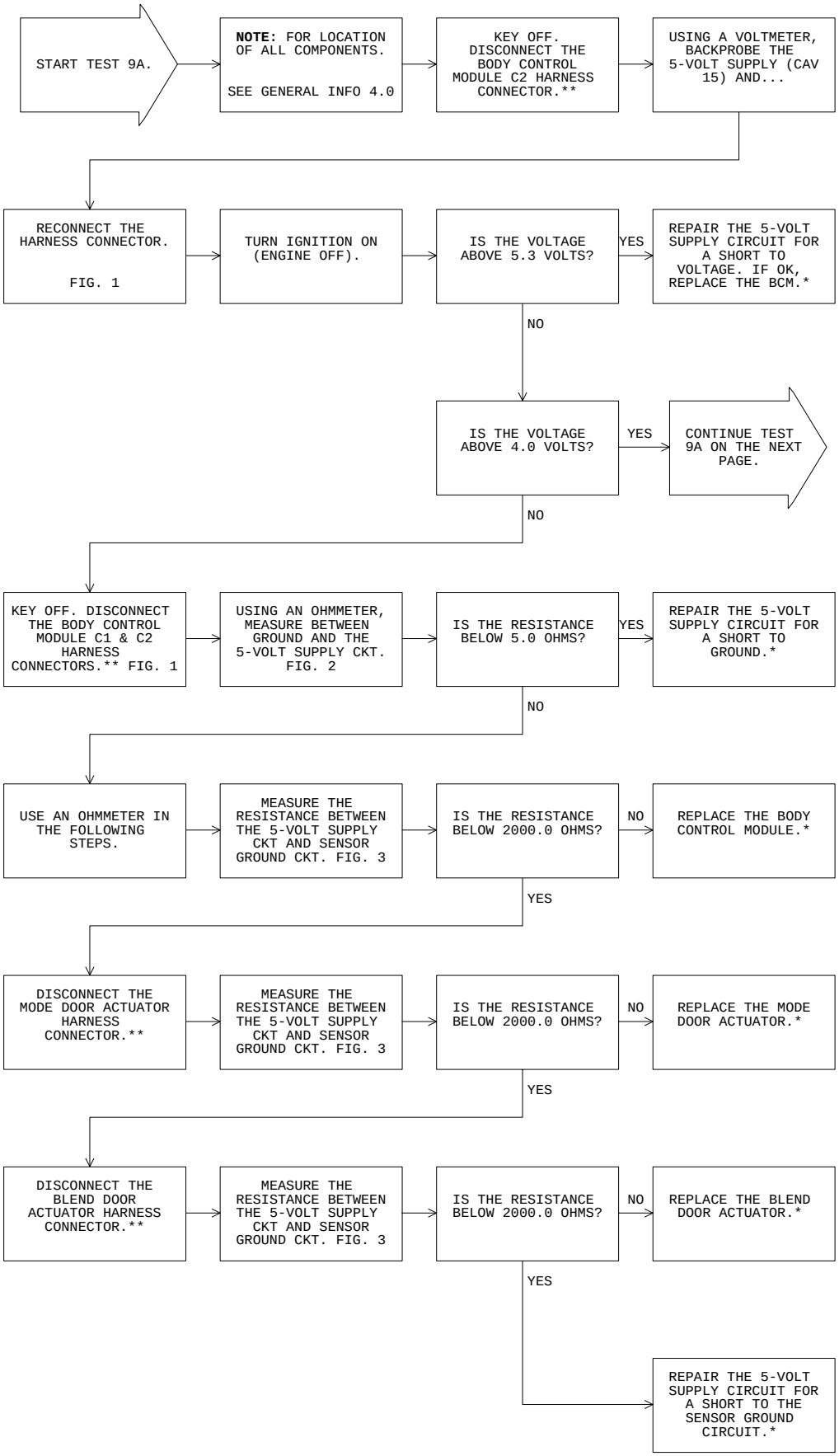



80b30839

***FIG. 3***

## TEST 9A — REPAIRING ″MODE DOOR STALL/FEEDBACK FAILURE″ TROUBLE CODE

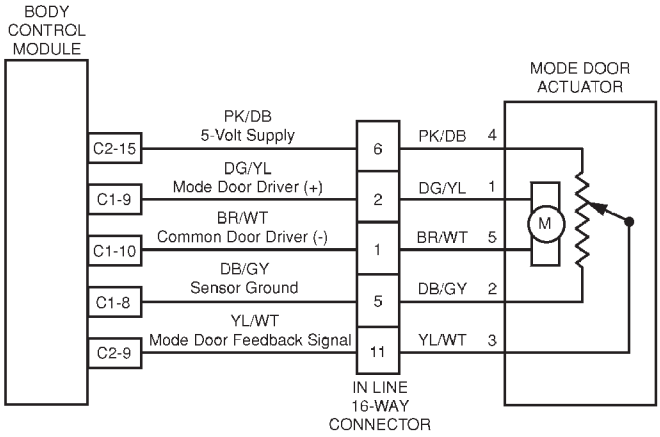
**Perform TEST 1B Before Proceeding**




***Perform Verification TEST VER-2A.***

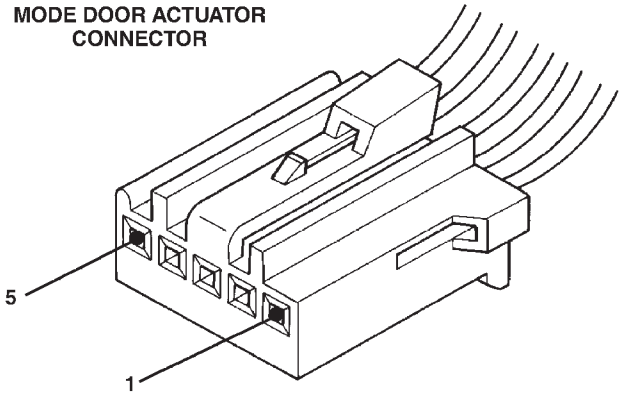
***Check connectors - Clean / repair as necessary.***

## TEST 9A — CONTINUED - REPAIRING "MODE DOOR STALL/FEEDBACK FAILURE" TROUBLE CODE




80b4fa4a

**MODE DOOR ACTUATOR CONNECTOR**

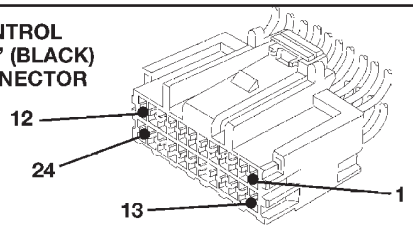



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/YL | MODE DOOR DRIVER |
| 2 | DB/GY | SENSOR GROUND |
| 3 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 4 | PK/DB | 5-VOLT SUPPLY |
| 5 | BR/WT | COMMON DOOR DRIVER |

80b27cf2

***FIG. 1***

**BODY CONTROL MODULE "C2" (BLACK) 24-WAY CONNECTOR**

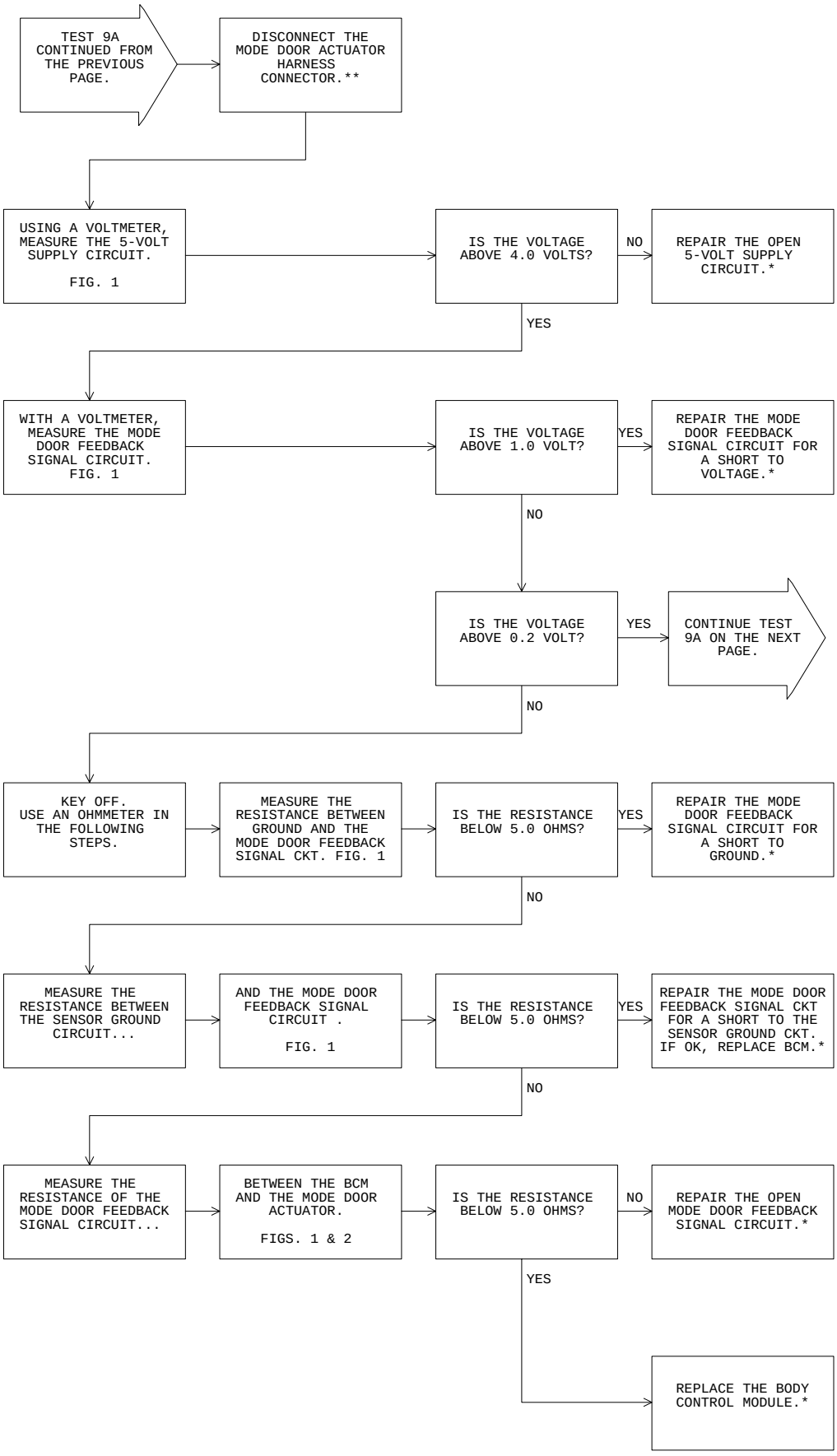



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

80b11936

***FIG. 2***

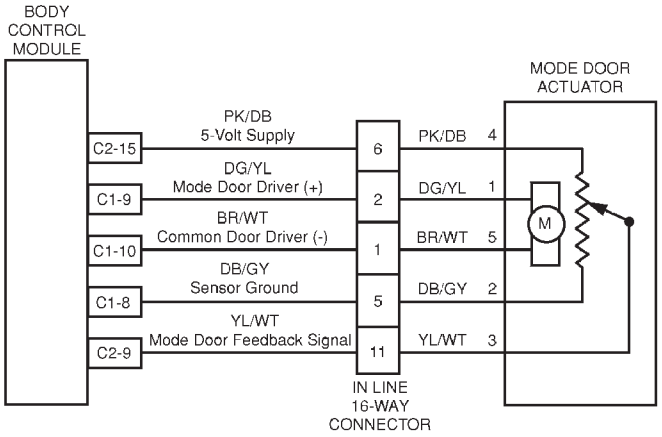
## TEST 9A — CONTINUED - REPAIRING ″MODE DOOR STALL/FEEDBACK FAILURE″ TROUBLE CODE



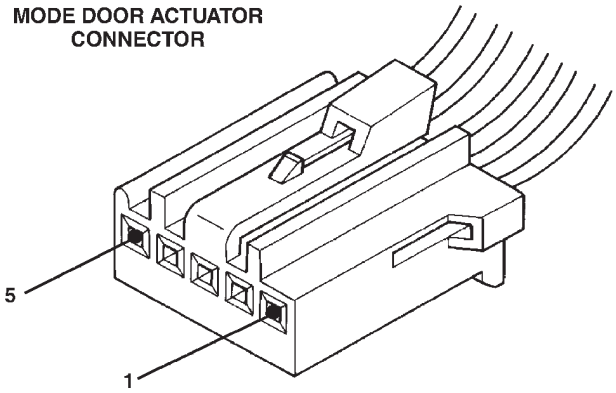

***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

## TEST 9A CONTINUED - REPAIRING "MODE DOOR STALL/FEEDBACK FAILURE" TROUBLE CODE



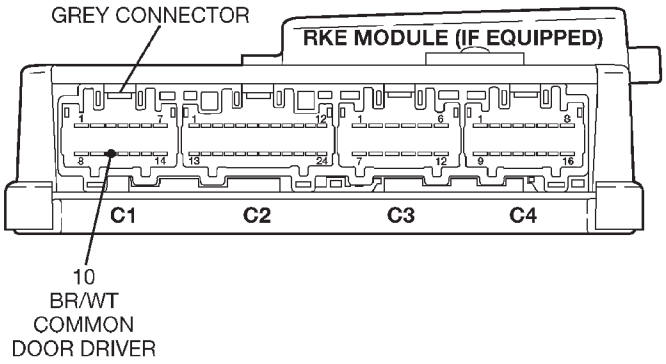

80b4fa4a




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/YL | MODE DOOR DRIVER |
| 2 | DB/GY | SENSOR GROUND |
| 3 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 4 | PK/DB | 5-VOLT SUPPLY |
| 5 | BR/WT | COMMON DOOR DRIVER |

80b27ct2

***FIG. 1***

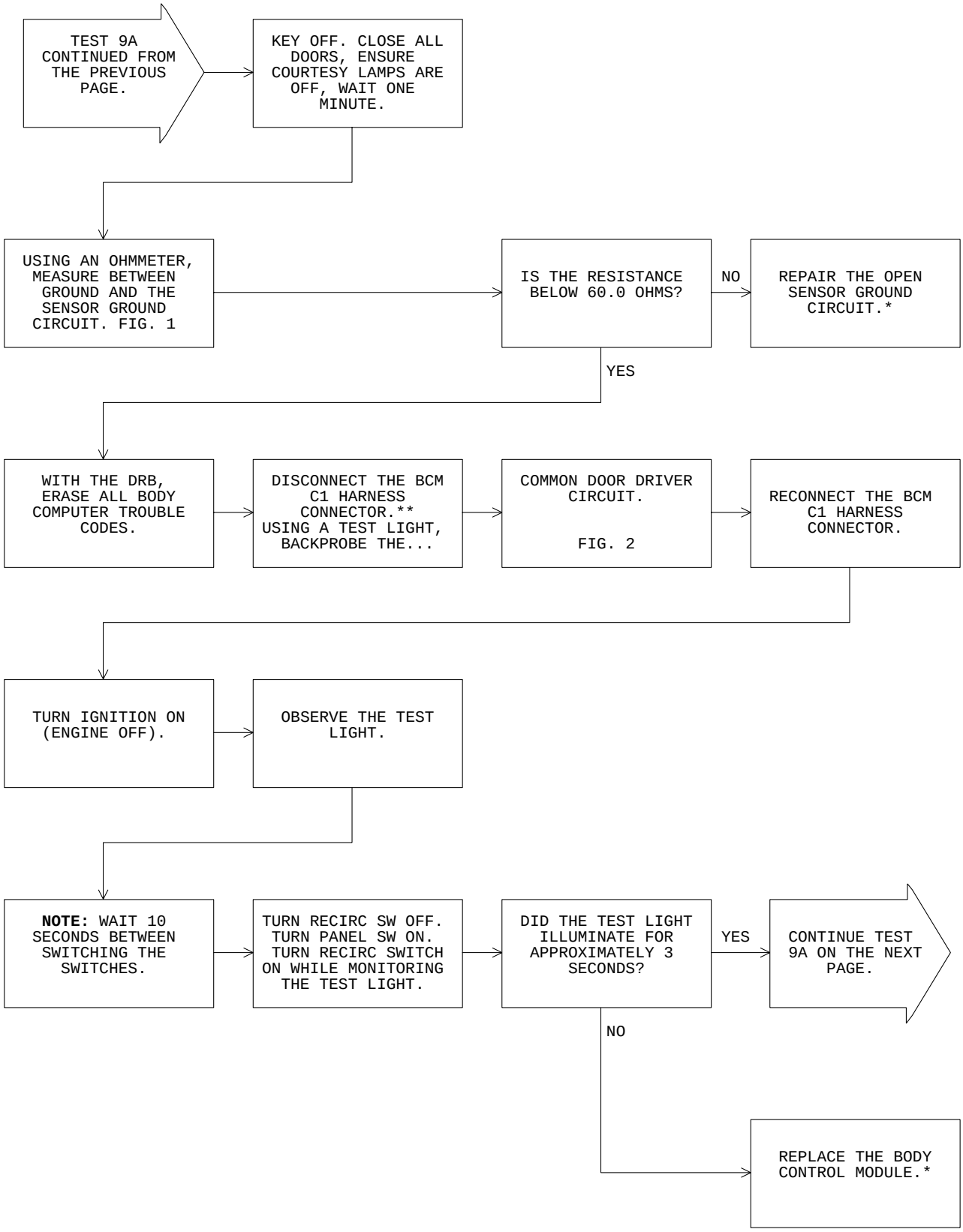



***NOTE: THE BODY CONTROL MODULE MUST BE FULLY CONNECTED TO PERFORM THIS STEP***

80b2b86a

***FIG. 2***

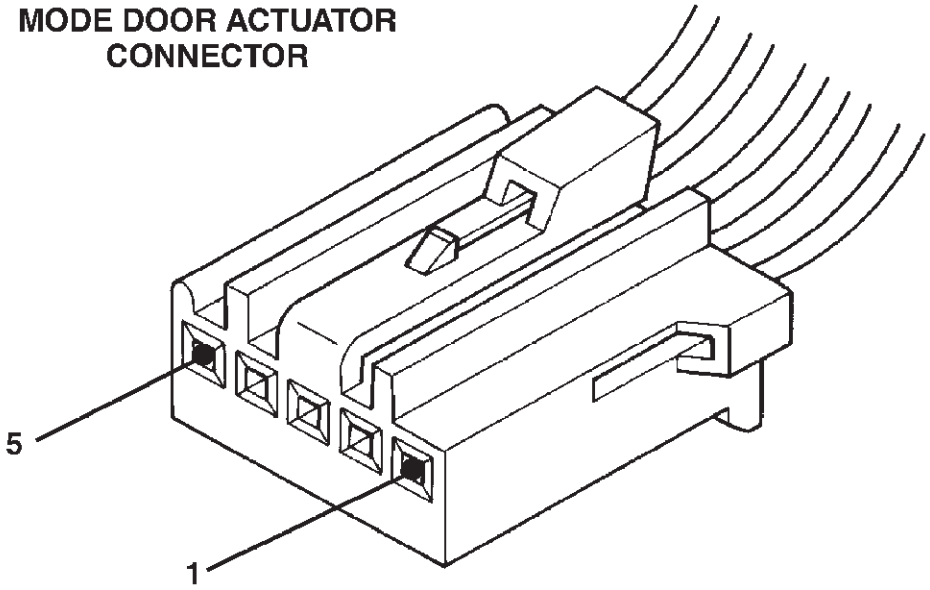
## TEST 9A — CONTINUED - REPAIRING "MODE DOOR STALL/FEEDBACK FAILURE" TROUBLE CODE




***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

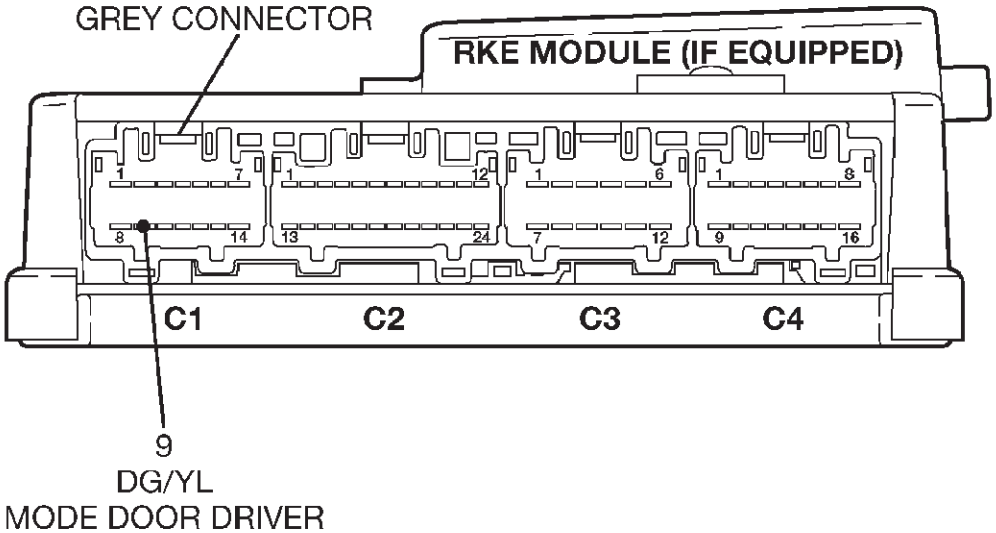
**TEST 9A** CONTINUED - REPAIRING "MODE DOOR STALL/FEEDBACK FAILURE" TROUBLE CODE




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/YL | MODE DOOR DRIVER |
| 2 | DB/GY | SENSOR GROUND |
| 3 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 4 | PK/DB | 5-VOLT SUPPLY |
| 5 | BR/WT | COMMON DOOR DRIVER |

80b27ct2

*FIG. 1*

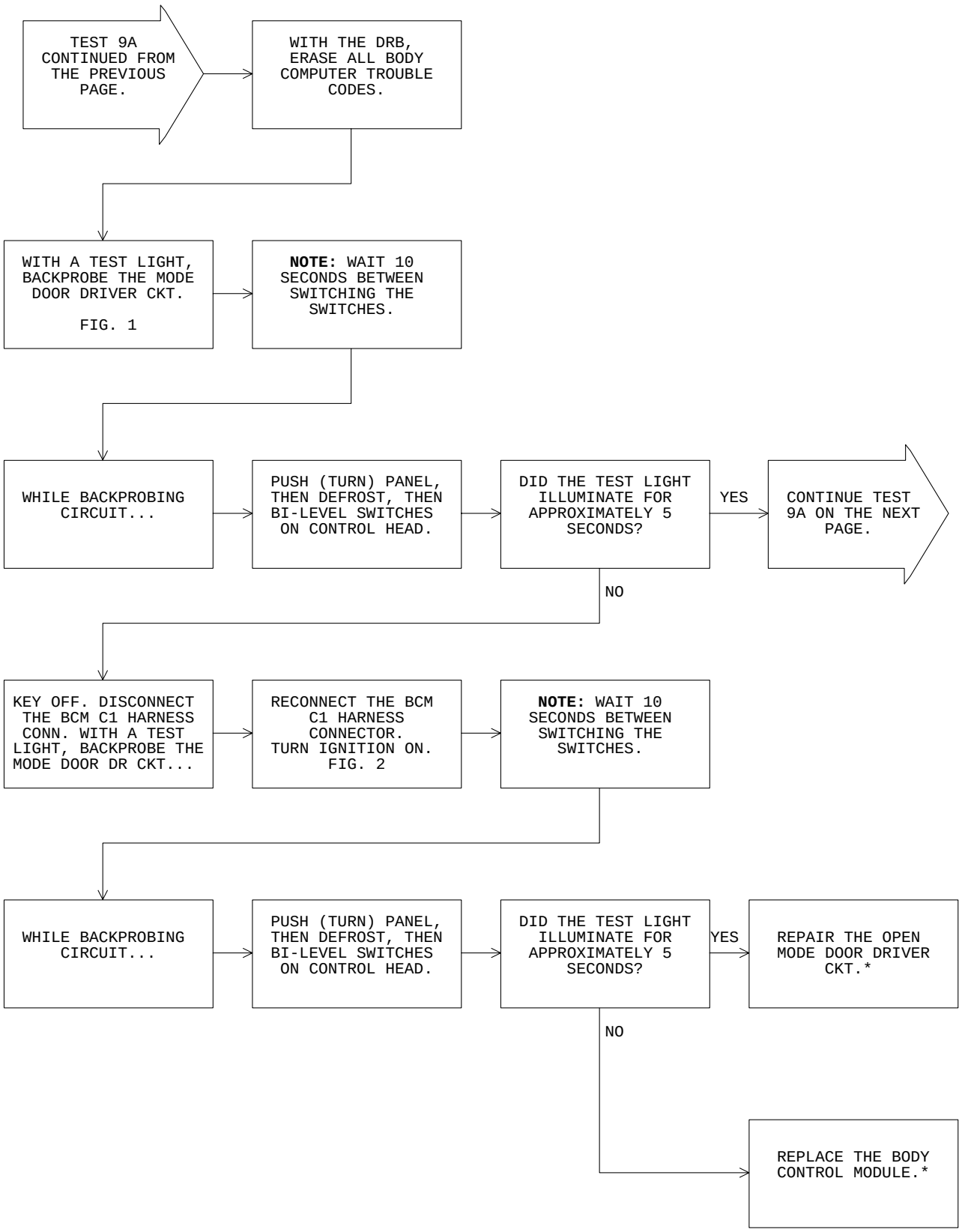



***NOTE: THE BODY CONTROL MODULE MUST BE FULLY CONNECTED TO PERFORM THIS STEP***

80b2b869

*FIG. 2*

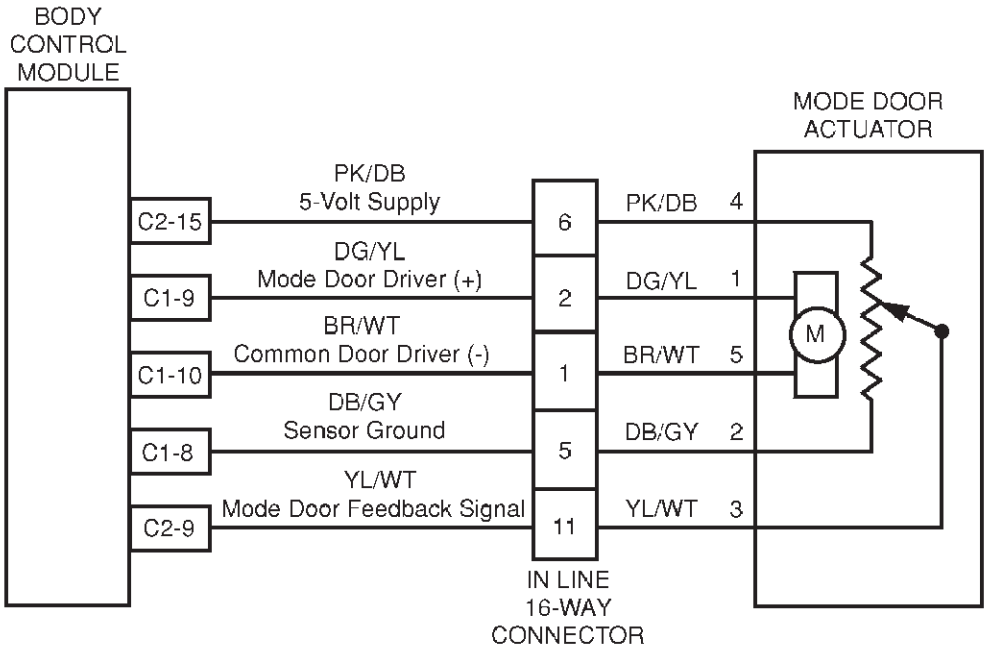
## TEST 9A — CONTINUED - REPAIRING ″MODE DOOR STALL/FEEDBACK FAILURE″ TROUBLE CODE



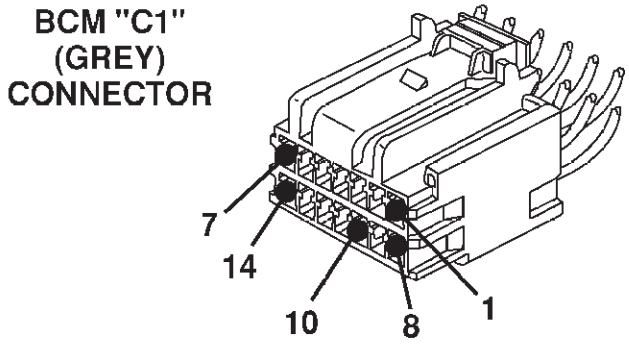

***Perform Verification TEST VER-2A.***

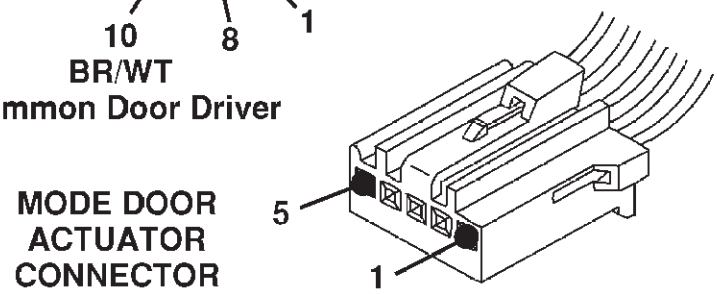
***Check connectors - Clean / repair as necessary.***

**TEST 9A** CONTINUED - REPAIRING "MODE DOOR STALL/FEEDBACK FAILURE" TROUBLE CODE




80b4fa4a



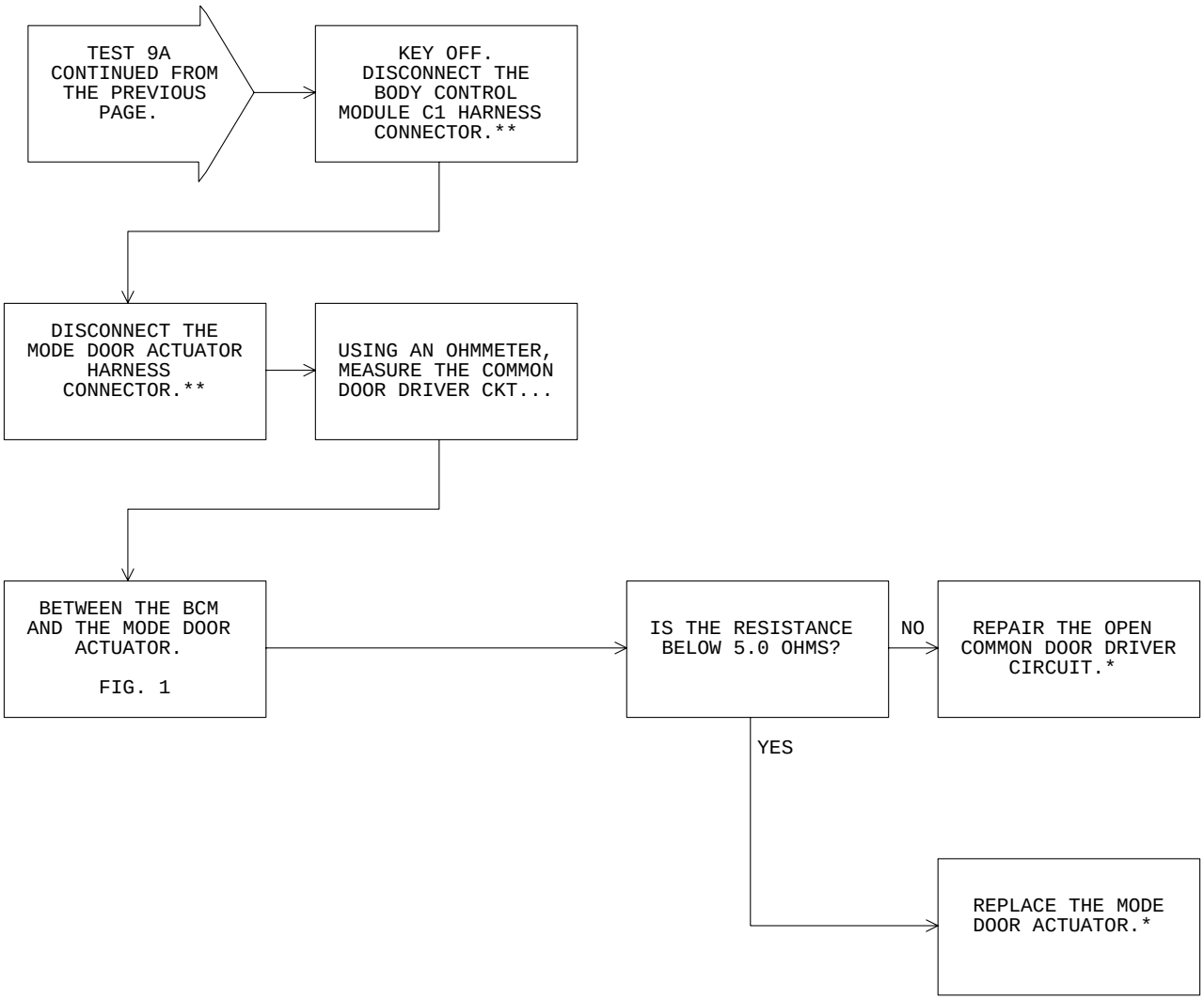




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/YL | MODE DOOR DRIVER |
| 2 | DB/GY | SENSOR GROUND |
| 3 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 4 | PK/DB | 5-VOLT SUPPLY |
| 5 | BR/WT | COMMON DOOR DRIVER |

80b4fa4c

***FIG. 1***

## TEST 9A CONTINUED - REPAIRING ″MODE DOOR STALL/FEEDBACK FAILURE″ TROUBLE CODE

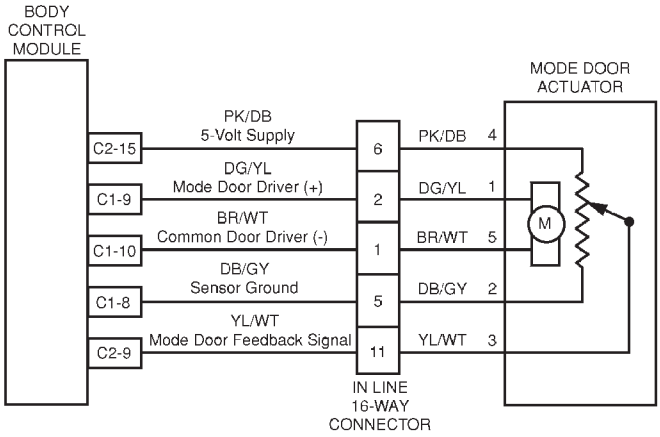



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 10A — REPAIRING "MODE DOOR OUTPUT SHORTED TO GROUND" TROUBLE CODE

**Perform TEST 1B Before Proceeding**




80b4fa4a

**Name of code:** Mode Door Output Shorted to Ground, Blend Door Output Shorted to Ground, Recirc Door Output Shorted to Ground, Common Output Shorted to Ground

**When monitored:** Whenever the BCM attempts to move one of the HVAC actuators.

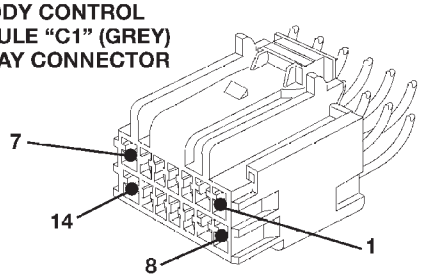
**Set condition:** BCM detects one or more of the following outputs shorted to ground: mode drive, blend drive, recirc drive, or common drive.

**Theory of operation:** When the BCM wants to actuate one of the doors (it only moves one at a time), it sets the door output to the appropriate level and sets the common output and the other two door outputs to the opposite level (ignition or ground). At this time it verifies that the output is doing what it should - if not, the fault is set

**Probable Causes:**
- Wiring short to ground
- Failed actuator
- Failed BCM

80b242ef

**BODY CONTROL MODULE "C1" (GREY) 14-WAY CONNECTOR**



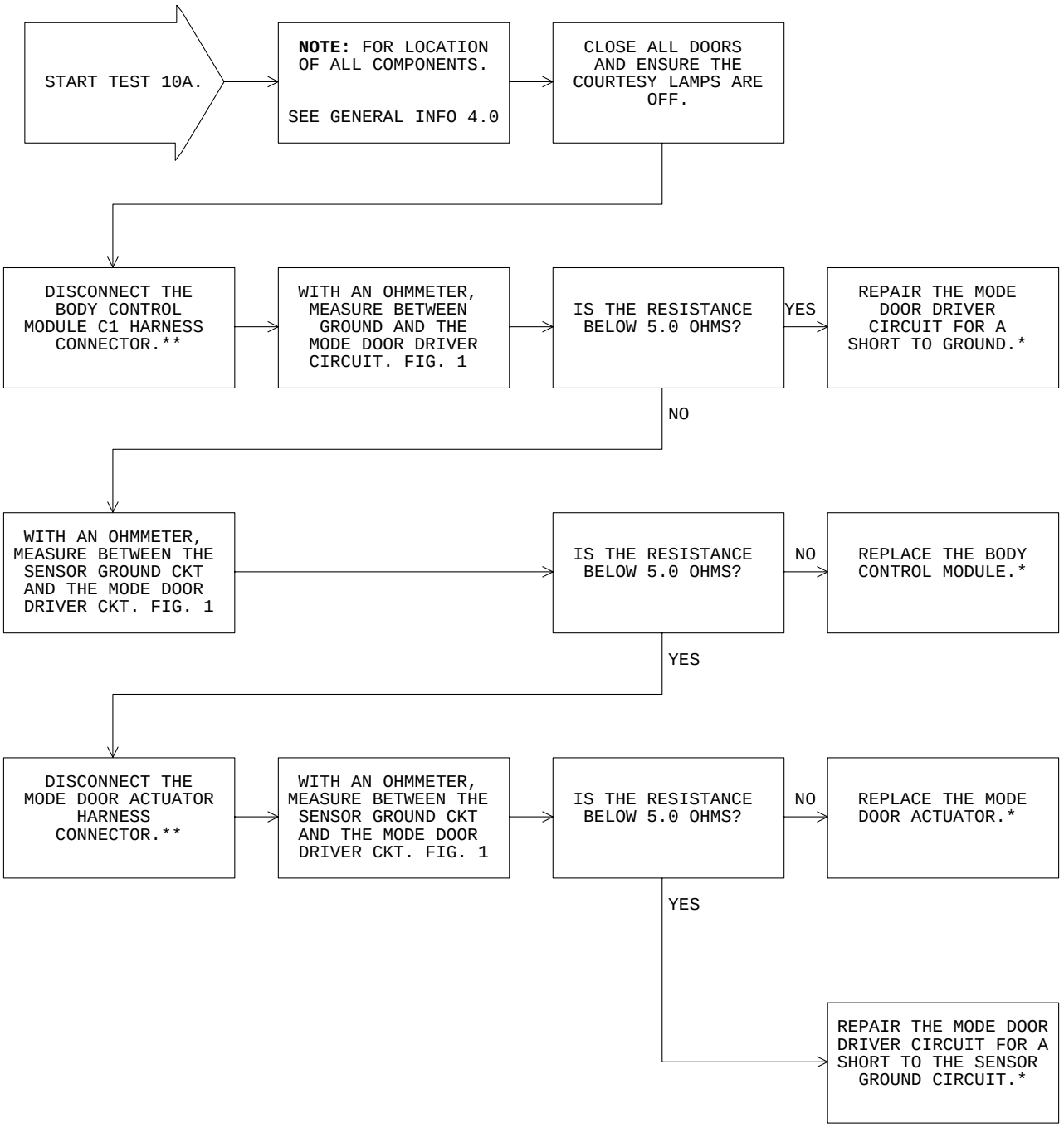

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/WT | DECKLID RELEASE SWITCH OUTPUT |
| 2 | GY/DB | RECIRCULATION DOOR DRIVER |
| 3 | DB/RD | BLEND AIR DOOR DRIVER |
| 4 | YL/VT | PCI BUS (ATC) |
| 5 | YL/VT | PCI BUS (RADIO) |
| 7 | YL/VT | PCI BUS (AIRBAG) |
| 8 | DB/GY | SENSOR GROUND |
| 9 | DG/YL | MODE DOOR DRIVER |
| 10 | BR/WT | COMMON DOOR DRIVER |
| 11 | VT/LG | FAN OFF SWITCH SIGNAL |
| 12 | YL/VT | PCI BUS (SKIM) |
| 13 | YL/VT | PCI BUS (MIC) |
| 14 | YL/VT | PCI BUS (DLC) |

80b11935

***FIG. 1***

## TEST 10A REPAIRING ″MODE DOOR OUTPUT SHORTED TO GROUND″ TROUBLE CODE

**Perform TEST 1B Before Proceeding**

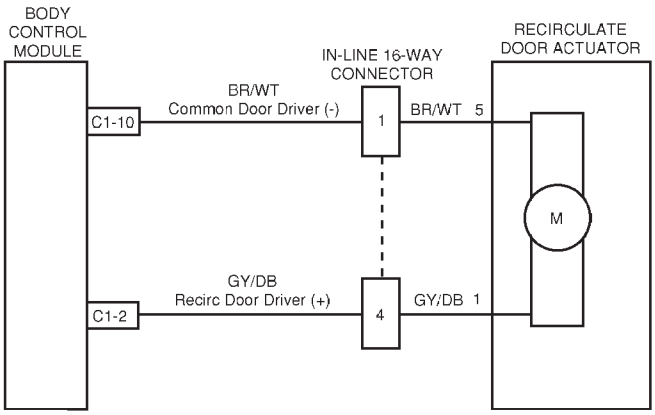



***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 11A REPAIRING "RECIRC DOOR OUTPUT SHORTED TO GROUND" TROUBLE CODE

**Perform TEST 1B Before Proceeding**




80b4fa49

**Name of code:** Mode Door Output Shorted to Ground, Blend Door Output Shorted to Ground, Recirc Door Output Shorted to Ground, Common Output Shorted to Ground

**When monitored:** Whenever the BCM attempts to move one of the HVAC actuators.

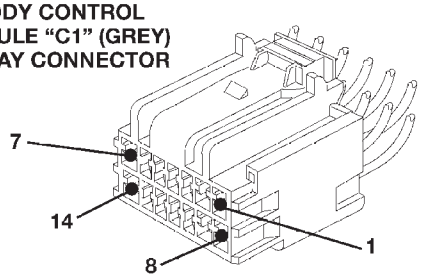
**Set condition:** BCM detects one or more of the following outputs shorted to ground: mode drive, blend drive, recirc drive, or common drive.

**Theory of operation:** When the BCM wants to actuate one of the doors (it only moves one at a time), it sets the door output to the appropriate level and sets the common output and the other two door outputs to the opposite level (ignition or ground). At this time it verifies that the output is doing what it should - if not, the fault is set

**Probable Causes:**
- Wiring short to ground
- Failed actuator
- Failed BCM

80b242ef

**BODY CONTROL MODULE "C1" (GREY) 14-WAY CONNECTOR**



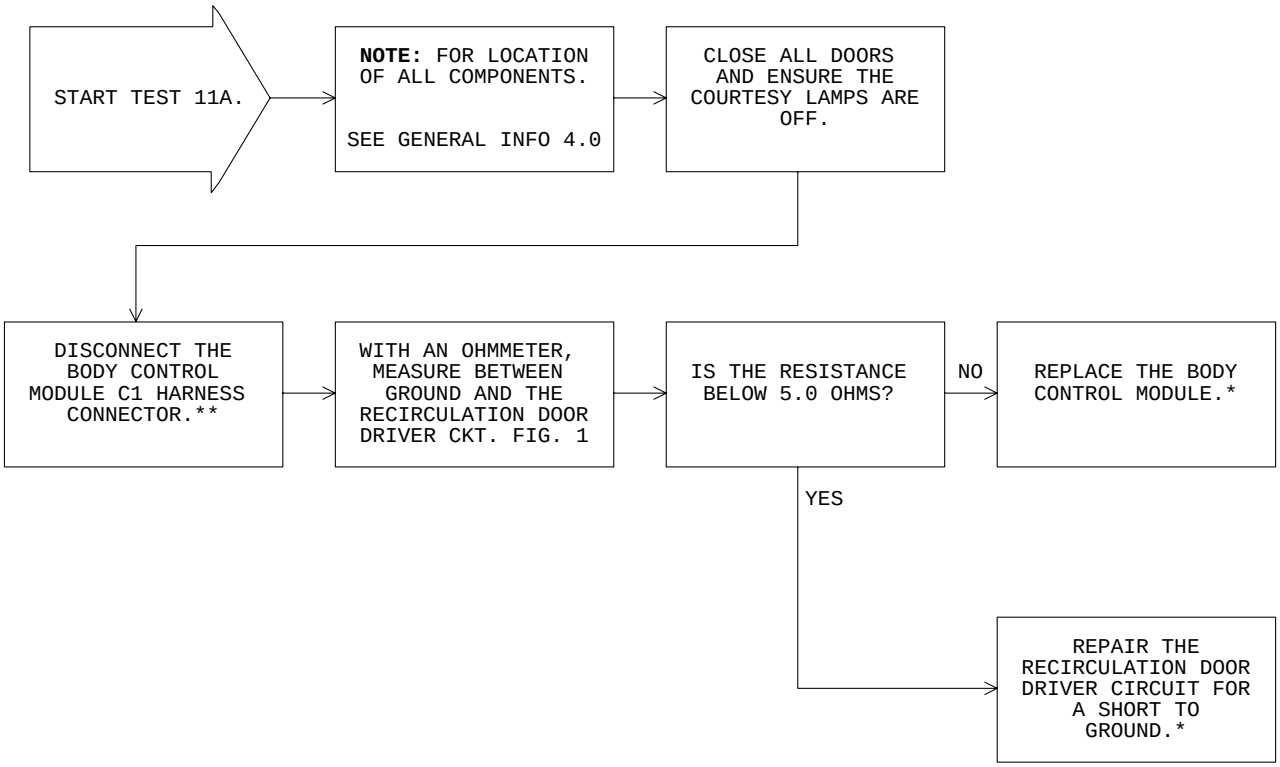

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/WT | DECKLID RELEASE SWITCH OUTPUT |
| 2 | GY/DB | RECIRCULATION DOOR DRIVER |
| 3 | DB/RD | BLEND AIR DOOR DRIVER |
| 4 | YL/VT | PCI BUS (ATC) |
| 5 | YL/VT | PCI BUS (RADIO) |
| 7 | YL/VT | PCI BUS (AIRBAG) |
| 8 | DB/GY | SENSOR GROUND |
| 9 | DG/YL | MODE DOOR DRIVER |
| 10 | BR/WT | COMMON DOOR DRIVER |
| 11 | VT/LG | FAN OFF SWITCH SIGNAL |
| 12 | YL/VT | PCI BUS (SKIM) |
| 13 | YL/VT | PCI BUS (MIC) |
| 14 | YL/VT | PCI BUS (DLC) |

80b11935

***FIG. 1***

## TEST 11A REPAIRING ″RECIRC DOOR OUTPUT SHORTED TO GROUND″ TROUBLE CODE

**Perform TEST 1B Before Proceeding**

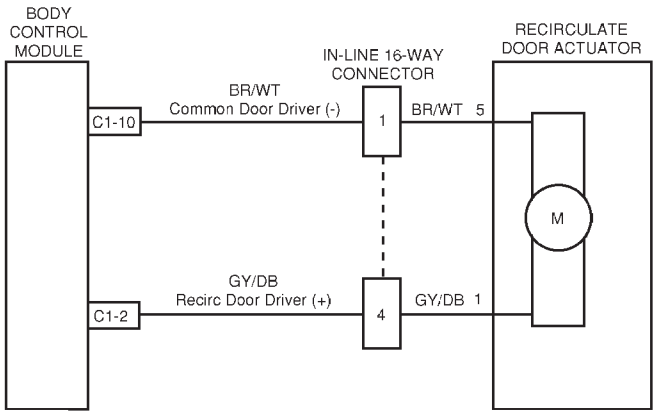



***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 12A — REPAIRING "RECIRCULATION DOOR TEST FAILURE" TROUBLE CODE (INOPERATIVE OR STALL)

**Perform TEST 1B Before Proceeding**




80b4fa49

**Name of code:** Mode Door Stall Test Failure, Blend Door Stall Test Failure, Recirculation Door Test Failure

**When monitored:** During HVAC motor calibration

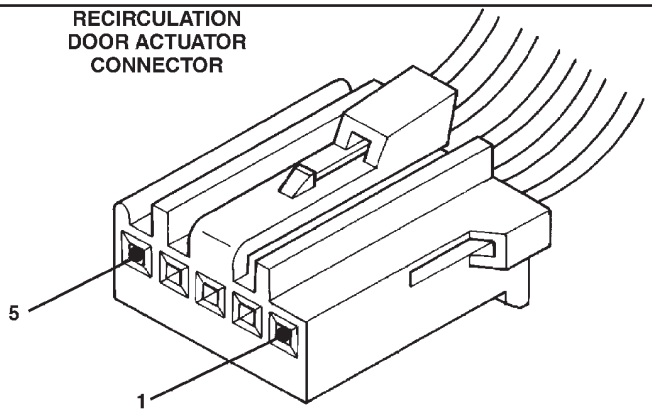
**Set condition:** BCM is unable to detect the end of travel for one or more of the HVAC doors

**Theory of operation:** At the first ignition on after a battery disconnect, and upon request from the DRB III, Manual HVAC head, or ATC head, the BCM will run each of the three HVAC actuators (mode, blend, and recirc) from end-to-end to learn their limits of travel. If the BCM has activated the mode door for 13 seconds, the blend door for 7.8 seconds, or the recirc door for 6 seconds and has still not detected the end of travel (by detecting the increased stall current), the appropriate fault will be set.

**Probable Causes:**

- Wiring open circuit
- Failed HVAC actuator
- Failed BCM

80b242f2



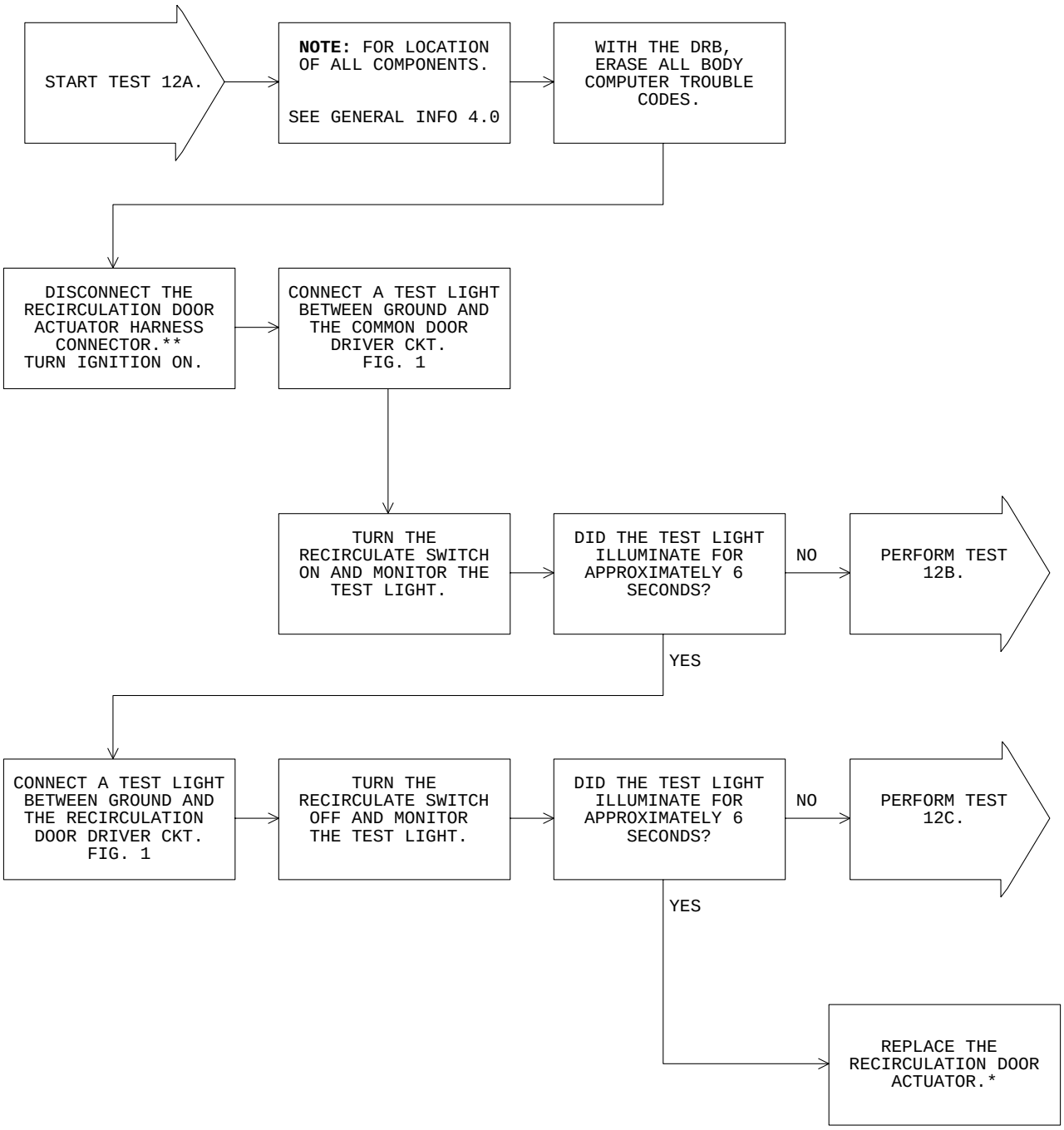

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | GY/DB | RECIRCULATION DOOR DRIVER |
| 5 | BR/WT | COMMON DOOR DRIVER |

80b27ct0

***FIG. 1***

## TEST 12A — REPAIRING "RECIRCULATION DOOR TEST FAILURE" TROUBLE CODE (INOPERATIVE OR STALL)

**Perform TEST 1B Before Proceeding**

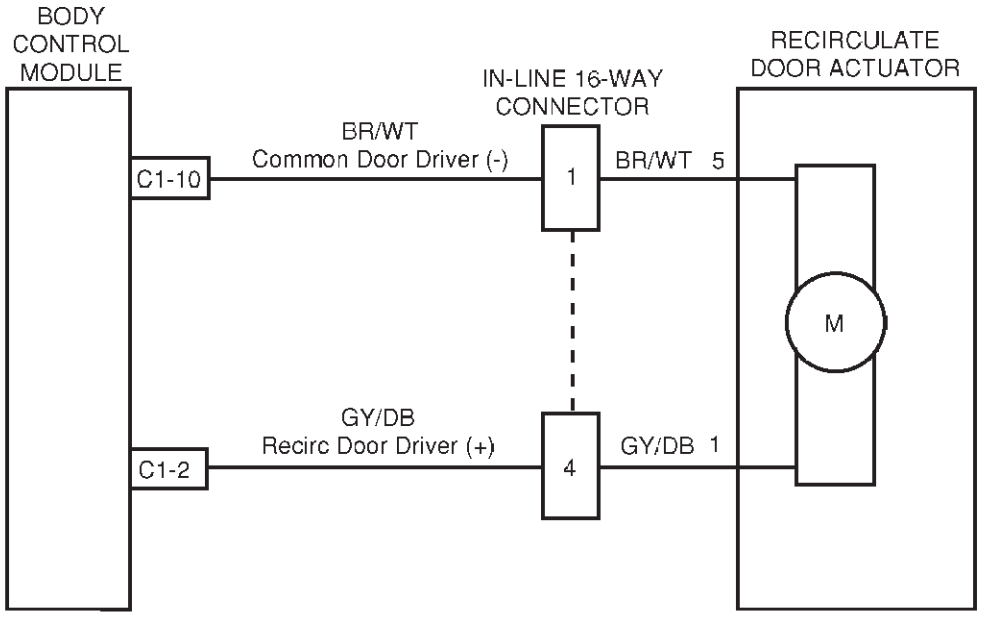


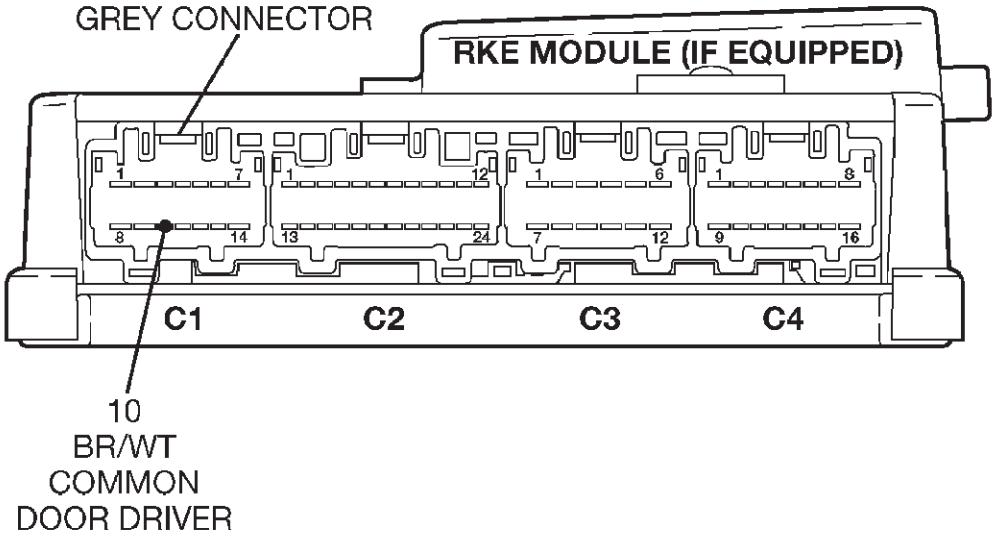

***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

**TEST 12B** REPAIRING "RECIRCULATION DOOR TEST FAILURE" TROUBLE CODE (INOPERATIVE OR STALL)

**Perform TEST 12A Before Proceeding**



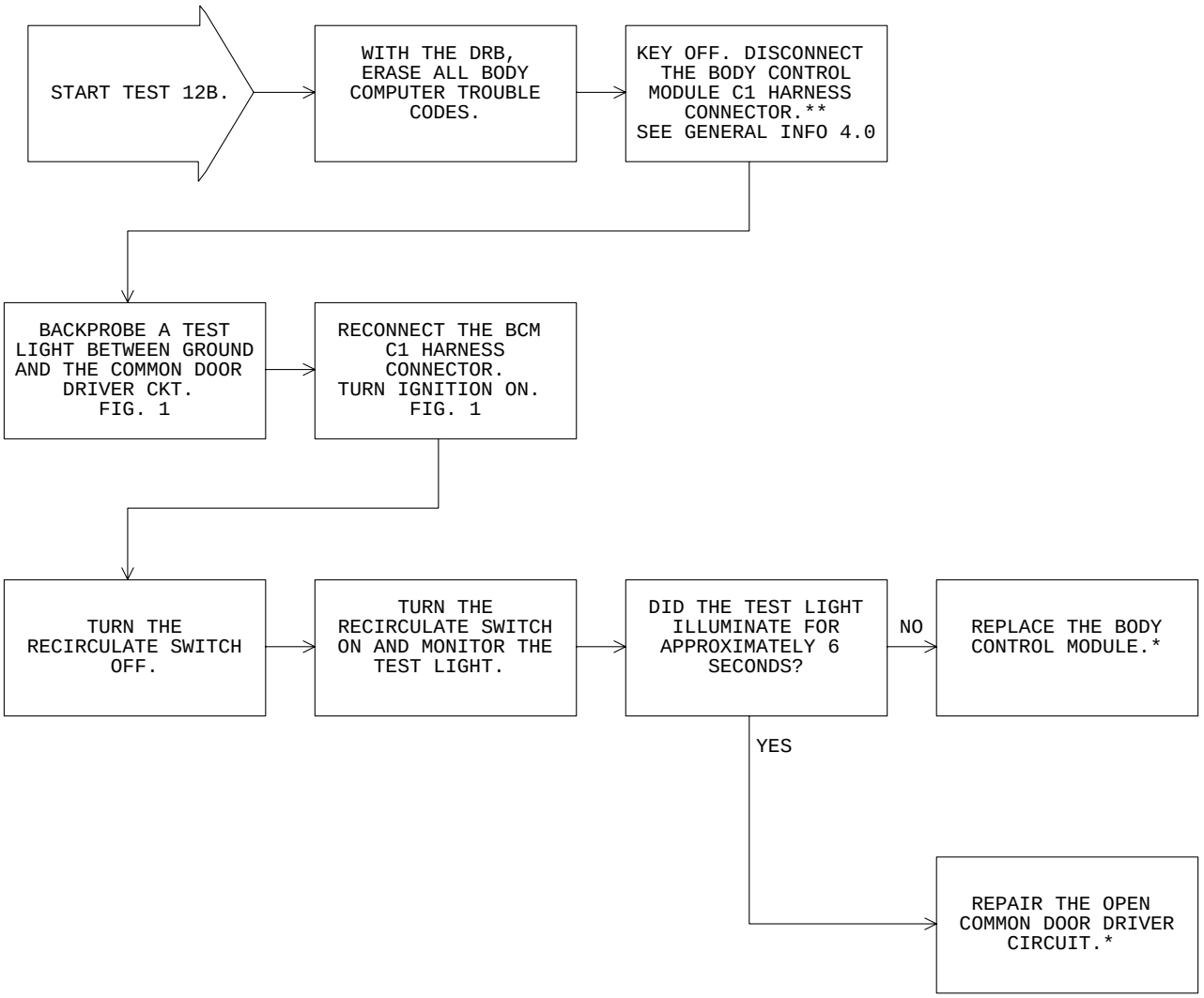

***NOTE: THE BODY CONTROL MODULE MUST BE FULLY CONNECTED TO PERFORM THIS STEP***

80b2b86a

***FIG. 1***

## TEST 12B — REPAIRING "RECIRCULATION DOOR TEST FAILURE" TROUBLE CODE (INOPERATIVE OR STALL)

**Perform TEST 12A Before Proceeding**

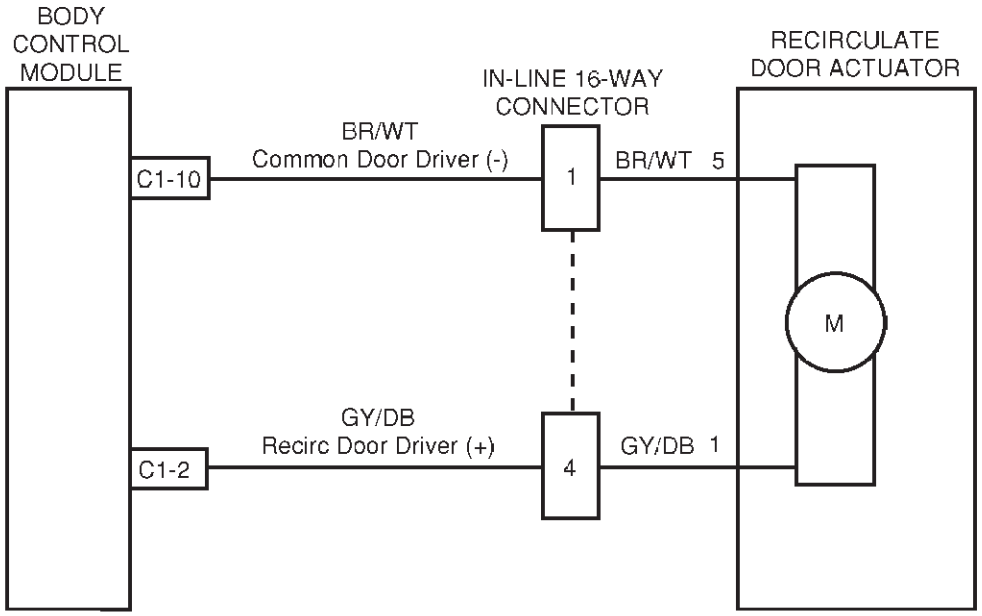


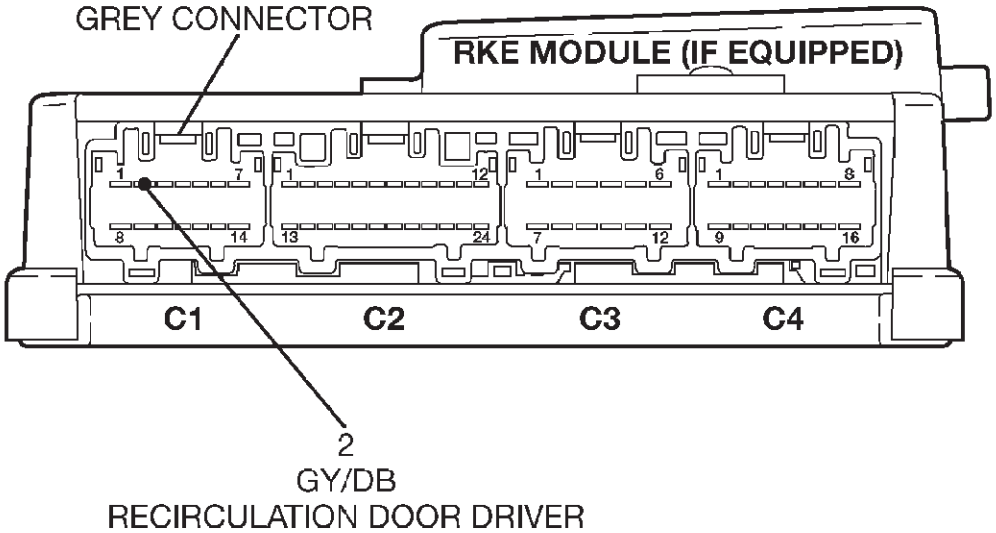

***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

**TEST 12C** REPAIRING "RECIRCULATION DOOR TEST FAILURE" TROUBLE CODE (INOPERATIVE OR STALL)

**Perform TEST 12A Before Proceeding**



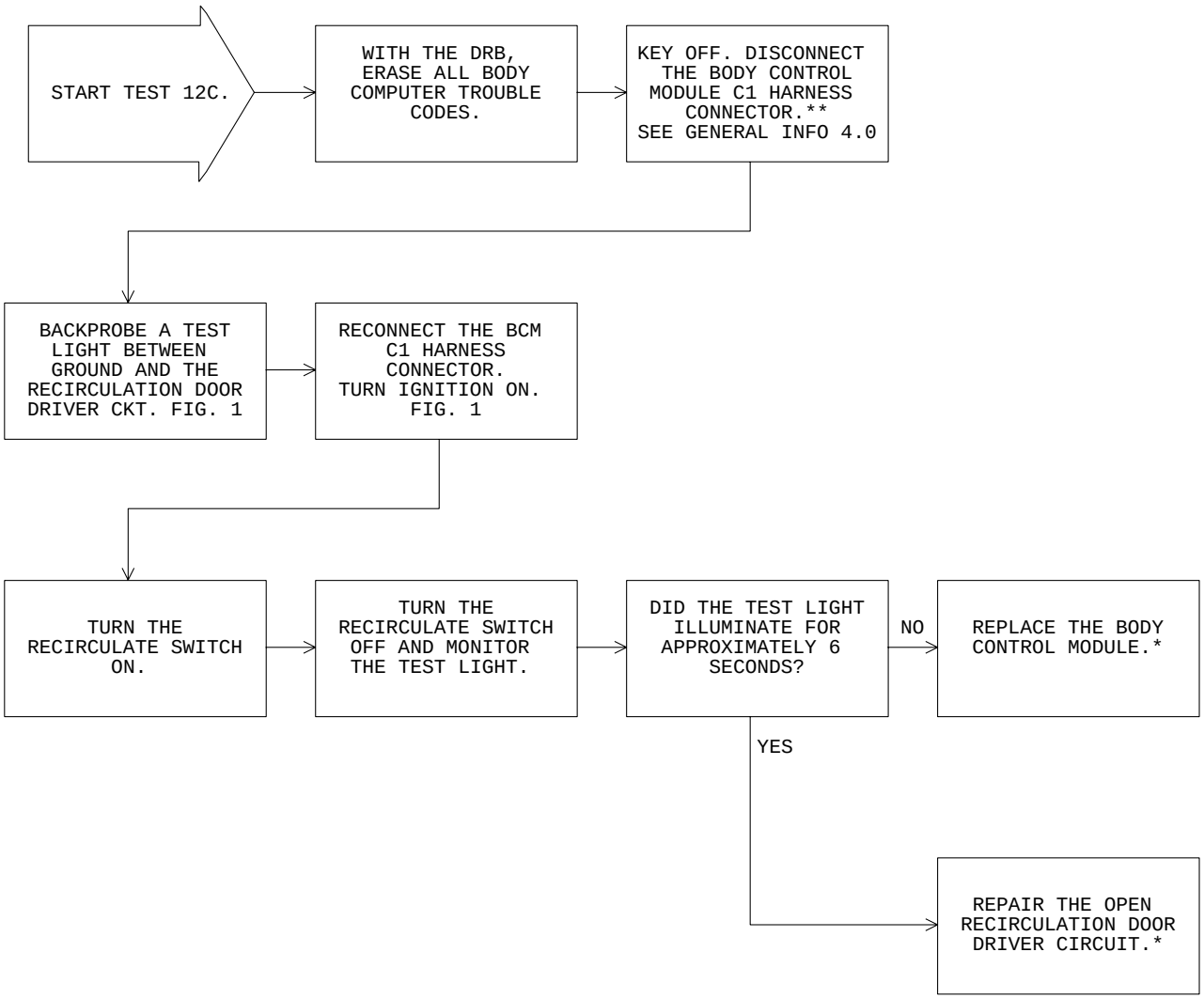

***NOTE: THE BODY CONTROL MODULE MUST BE FULLY CONNECTED TO PERFORM THIS STEP***

80b2b86c

***FIG. 1***

## TEST 12C — REPAIRING "RECIRCULATION DOOR TEST FAILURE" TROUBLE CODE (INOPERATIVE OR STALL)

**Perform TEST 12A Before Proceeding**

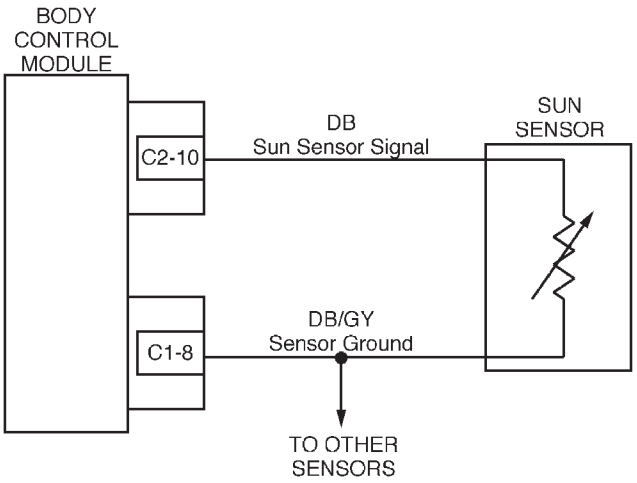



***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 13A REPAIRING "SUN LOAD SENSOR FAILURE" TROUBLE CODE

**Perform TEST 1B Before Proceeding**




80b30834

**Name of code:** Sun Load Sensor Failure

**When monitored:** With ignition on

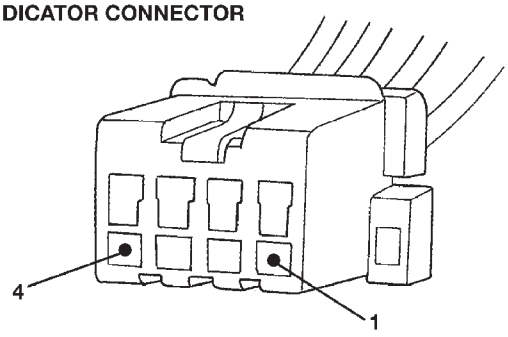
**Set condition:** BCM senses an abnormally low voltage on its input.

**Theory of operation:** The sun load sensor is a reverse-biased diode for which the BCM provides a 5V pull-up. The BCM has two different pull-up resistors which bias the diode differently for use with the Automatic Temperature Control (ATC) system and the Auto Headlamp (Ultralight) system (even if the vehicle is not equipped with Ultralight). As light shines on the diode, a current is produced in it, resulting in the voltage read by the BCM. With no current flowing (which occurs when it is dark), the BCM will read 5V. However even in the brightest light the voltage on this pin will not fall below 0.313V without a failure when it is biased for ATC, which will result in this fault.

**Probable Causes:**
- Wiring short to ground
- Failed sensor
- Failed BCM

80b24214

**ATC SUN SENSOR/VTSS INDICATOR CONNECTOR**



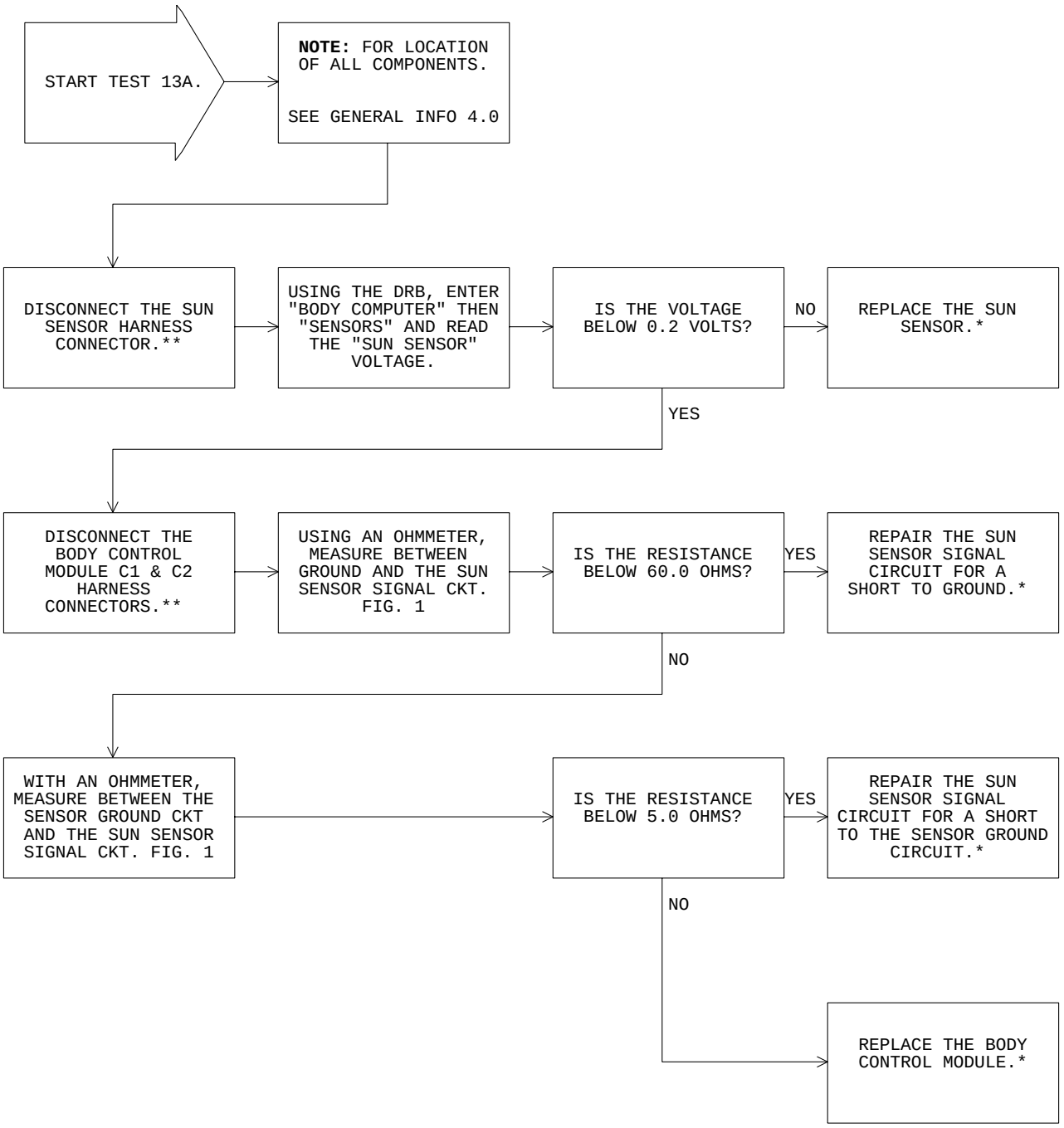

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK | FUSED B (+) |
| 2 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 3 | DB/GY | SENSOR GROUND |
| 4 | DB | SUN SENSOR SIGNAL |

80b2b603

***FIG. 1***

## TEST 13A — REPAIRING ″SUN LOAD SENSOR FAILURE″ TROUBLE CODE

**Perform TEST 1B Before Proceeding**




***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

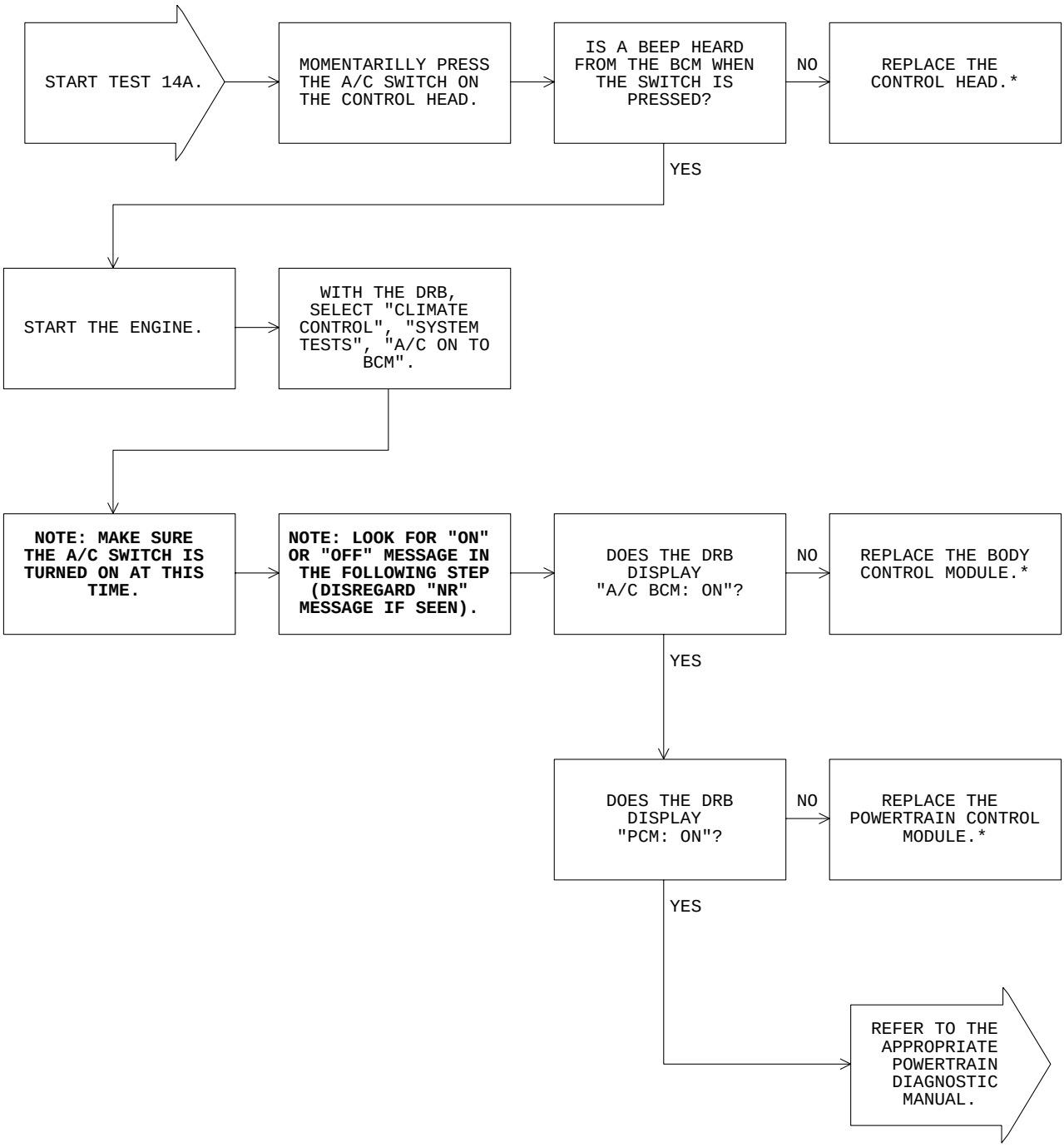
**TEST 14A** REPAIRING COMPRESSOR CLUTCH CIRCUIT

**Perform TEST 1A Before Proceeding**

## NOTES

## TEST 14A REPAIRING COMPRESSOR CLUTCH CIRCUIT

**Perform TEST 1A Before Proceeding**

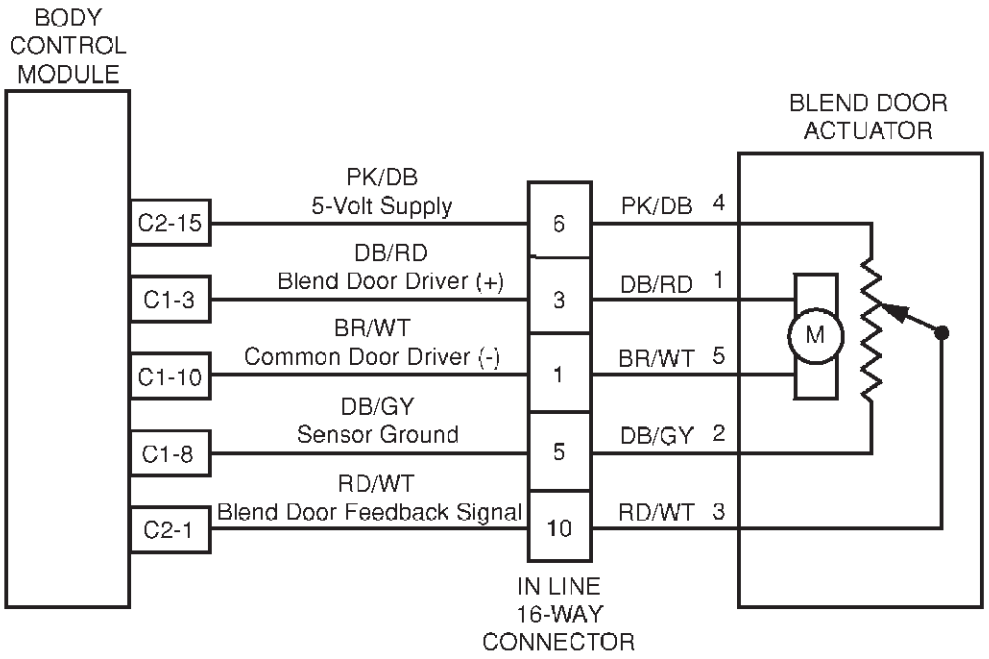


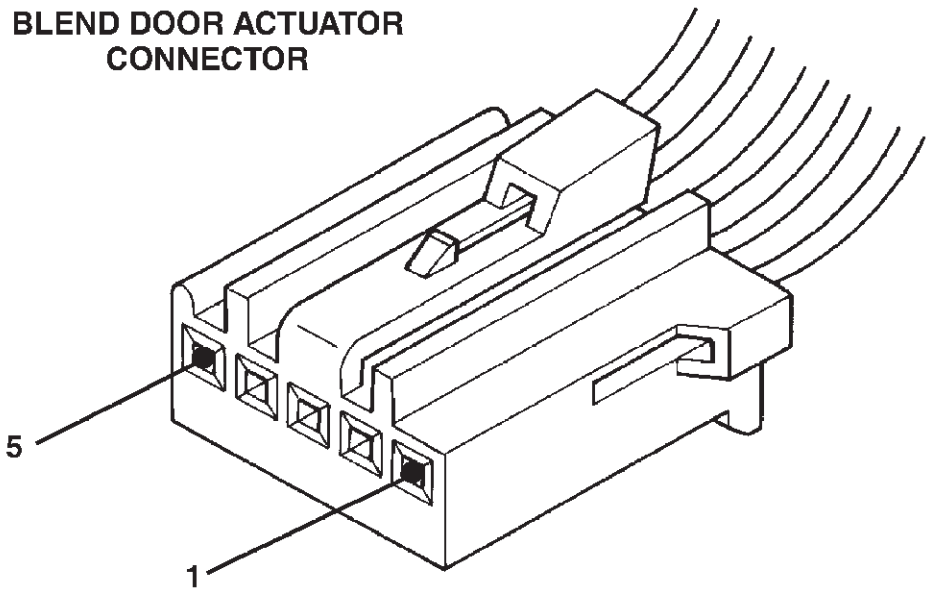

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

**TEST 15A** **REPAIRING INOPERATIVE TEMP/BLEND AIR DOOR**

**Perform TEST 1A Before Proceeding**



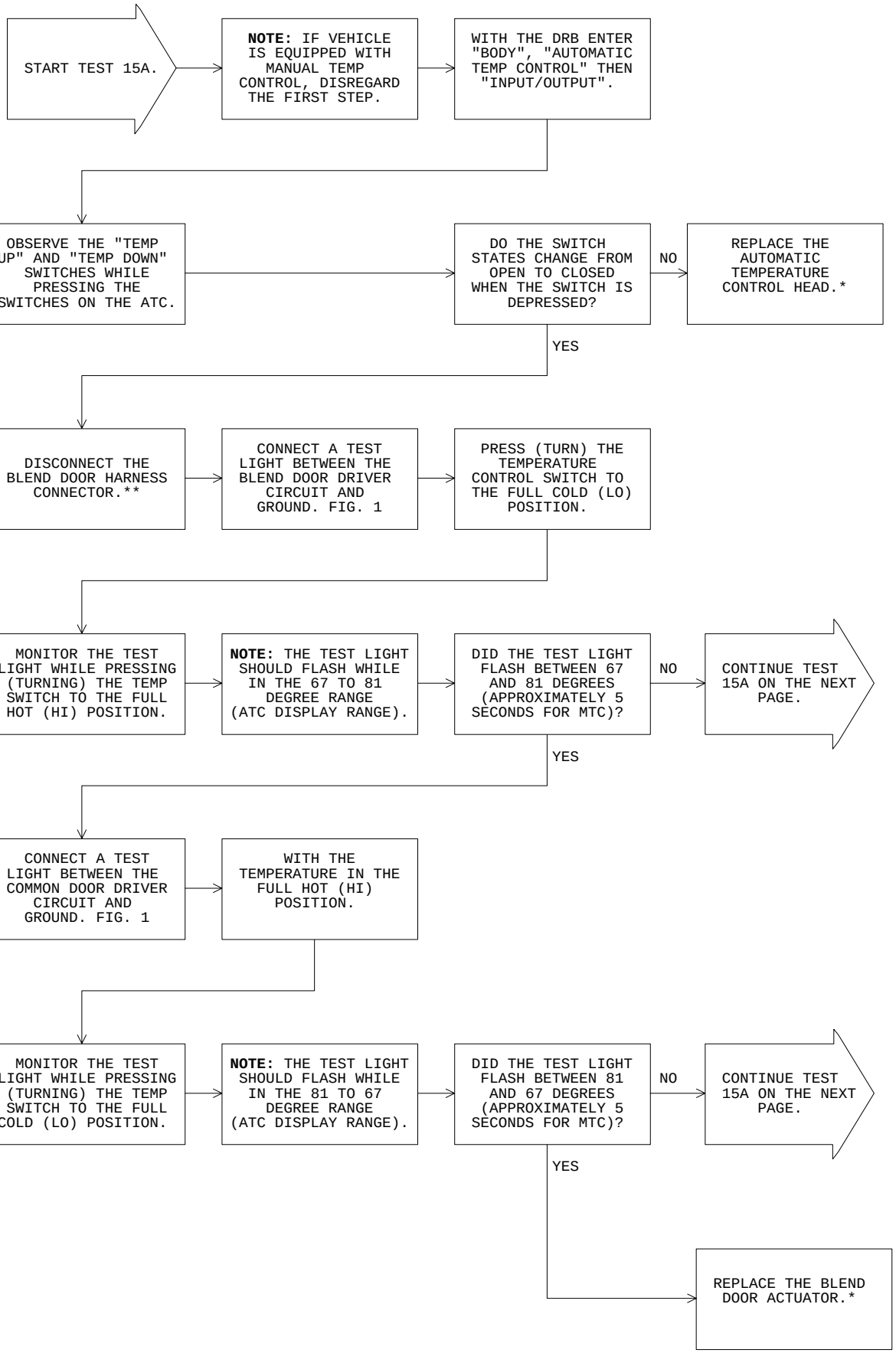

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DB/RD | BLEND AIR DOOR DRIVER |
| 2 | DB/GY | SENSOR GROUND |
| 3 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 4 | PK/DB | 5-VOLT SUPPLY |
| 5 | BR/WT | COMMON DOOR DRIVER |

80b27ct1

***FIG. 1***

## TEST 15A REPAIRING INOPERATIVE TEMP/BLEND AIR DOOR

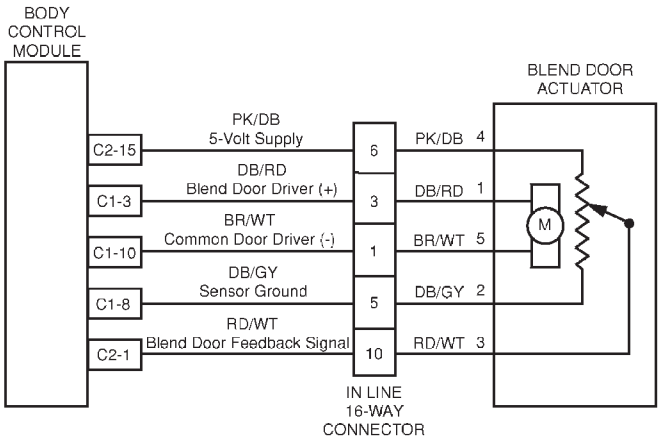
**Perform TEST 1A Before Proceeding**

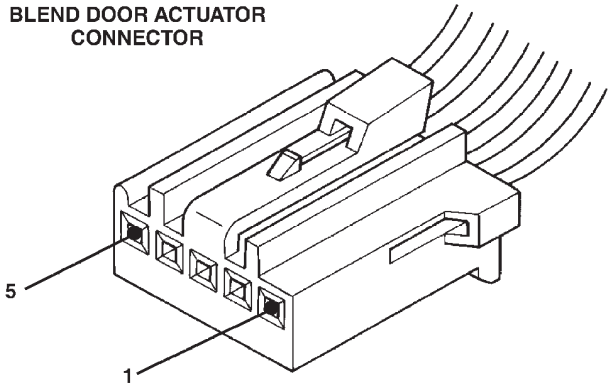



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 15A CONTINUED - REPAIRING INOPERATIVE TEMP/BLEND AIR DOOR

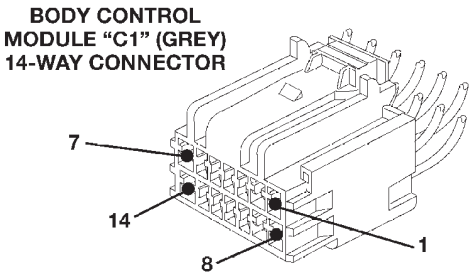



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DB/RD | BLEND AIR DOOR DRIVER |
| 2 | DB/GY | SENSOR GROUND |
| 3 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 4 | PK/DB | 5-VOLT SUPPLY |
| 5 | BR/WT | COMMON DOOR DRIVER |

80b27ct1

***FIG. 1***

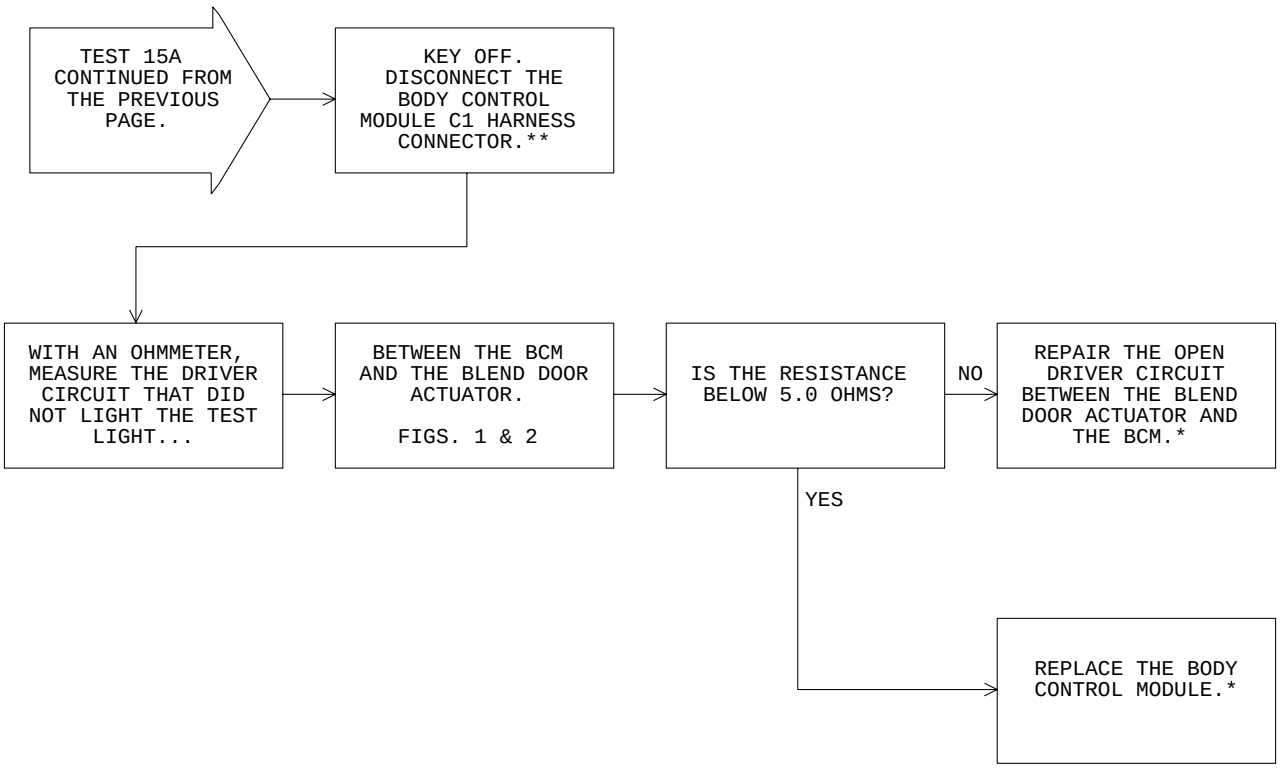



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/WT | DECKLID RELEASE SWITCH OUTPUT |
| 2 | GY/DB | RECIRCULATION DOOR DRIVER |
| 3 | DB/RD | BLEND AIR DOOR DRIVER |
| 4 | YL/VT | PCI BUS (ATC) |
| 5 | YL/VT | PCI BUS (RADIO) |
| 7 | YL/VT | PCI BUS (AIRBAG) |
| 8 | DB/GY | SENSOR GROUND |
| 9 | DG/YL | MODE DOOR DRIVER |
| 10 | BR/WT | COMMON DOOR DRIVER |
| 11 | VT/LG | FAN OFF SWITCH SIGNAL |
| 12 | YL/VT | PCI BUS (SKIM) |
| 13 | YL/VT | PCI BUS (MIC) |
| 14 | YL/VT | PCI BUS (DLC) |

80b11935

***FIG. 2***

## TEST 15A CONTINUED - REPAIRING INOPERATIVE TEMP/BLEND AIR DOOR

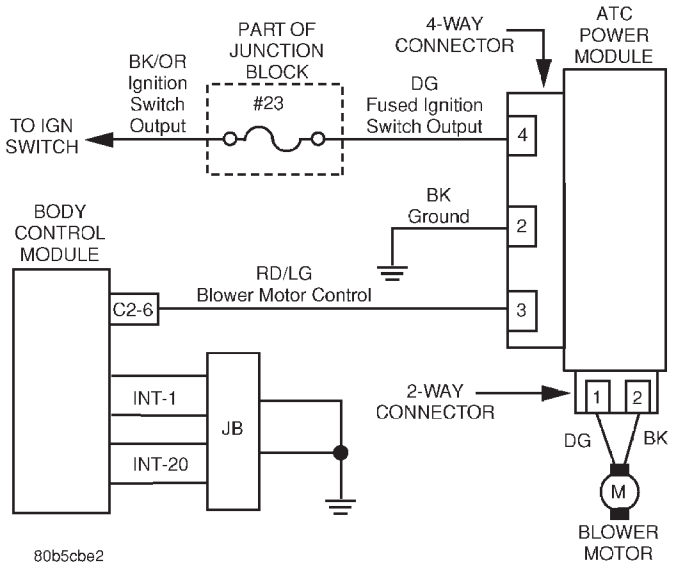



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 16A REPAIRING INOPERATIVE BLOWER MOTOR

**Perform TEST 1A Before Proceeding**



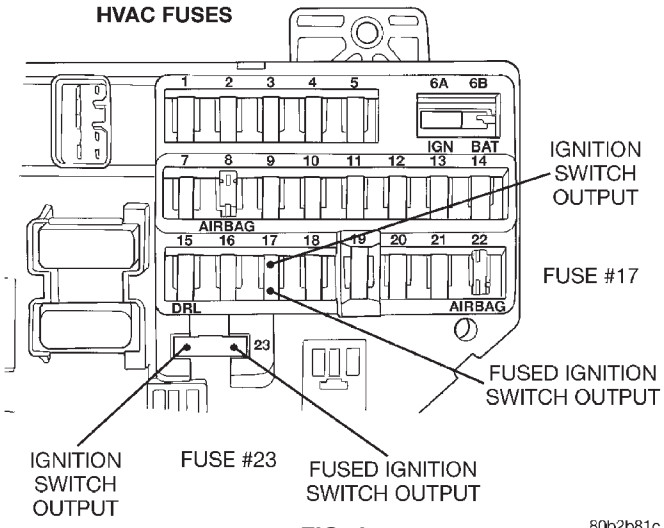
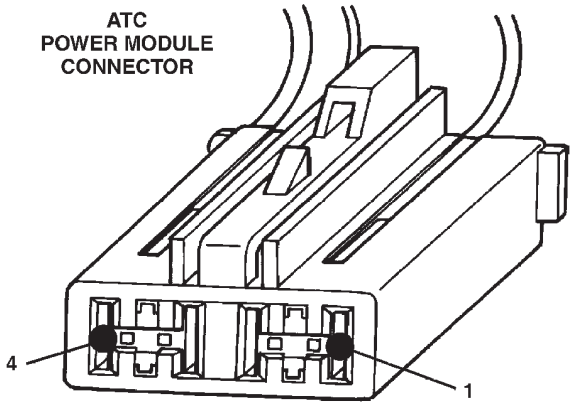




***FIG. 1***



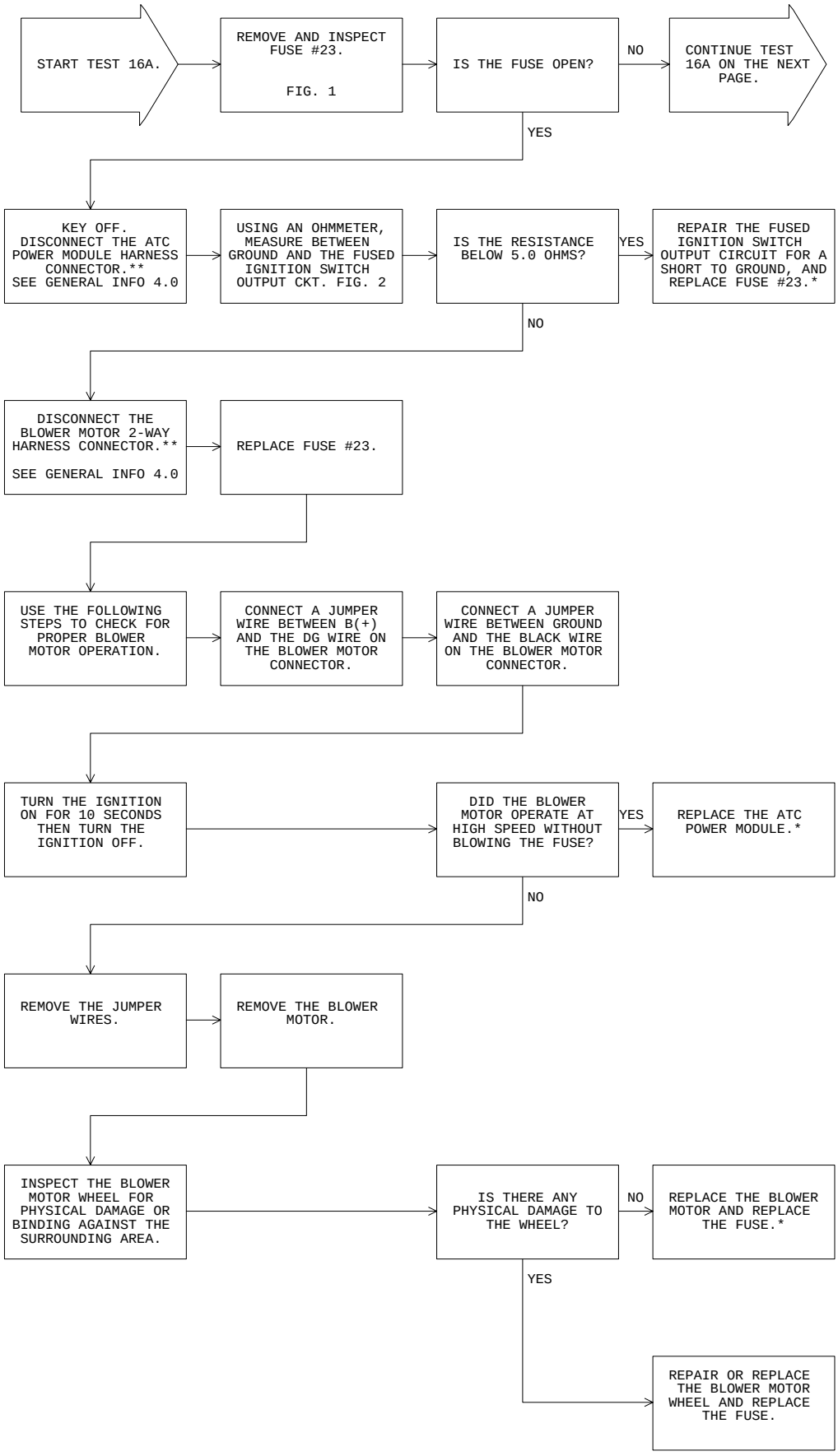

| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | BK | GROUND |
| 3 | RD/LG | BLOWER MOTOR CONTROL |
| 4 | DG | FUSED IGNITION SWITCH OUTPUT |

80b29fa1

***FIG. 2***

## TEST 16A REPAIRING INOPERATIVE BLOWER MOTOR

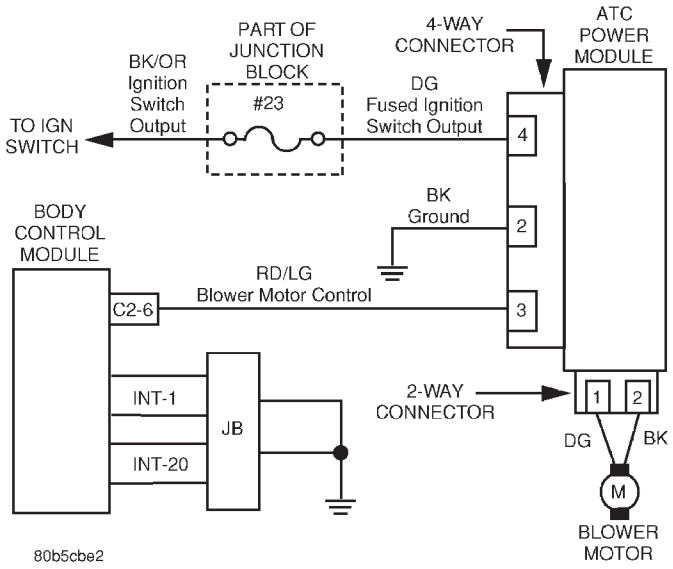
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

## TEST 16A CONTINUED - REPAIRING INOPERATIVE BLOWER MOTOR



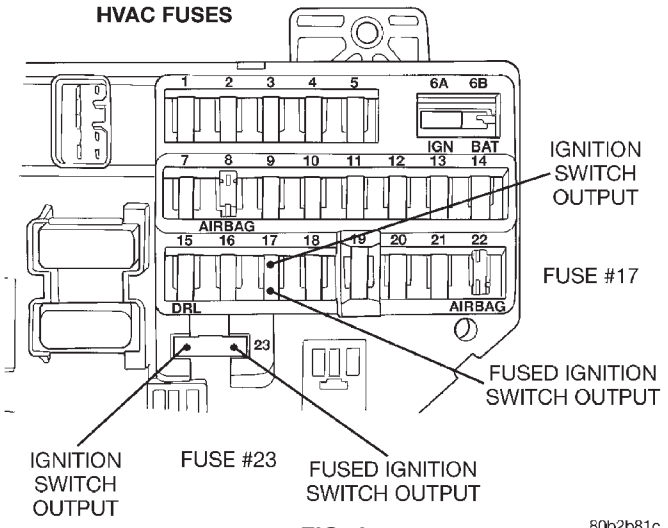
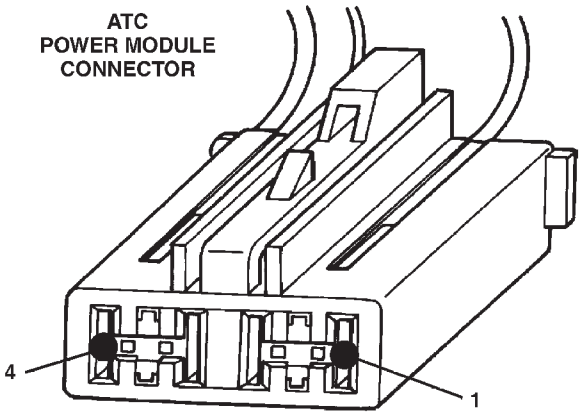




*FIG. 1*

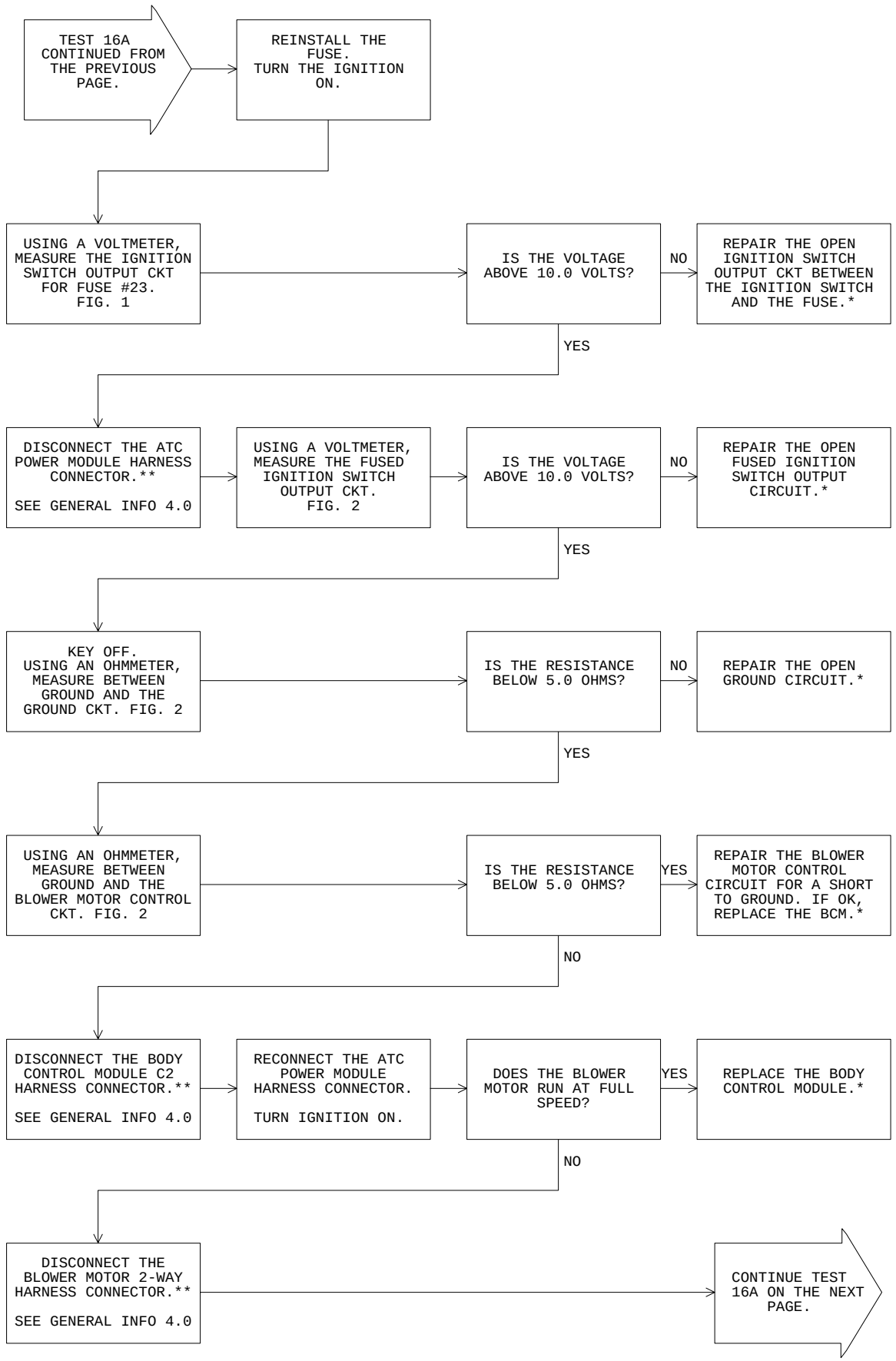



| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | BK | GROUND |
| 3 | RD/LG | BLOWER MOTOR CONTROL |
| 4 | DG | FUSED IGNITION SWITCH OUTPUT |

80b29fa1

*FIG. 2*

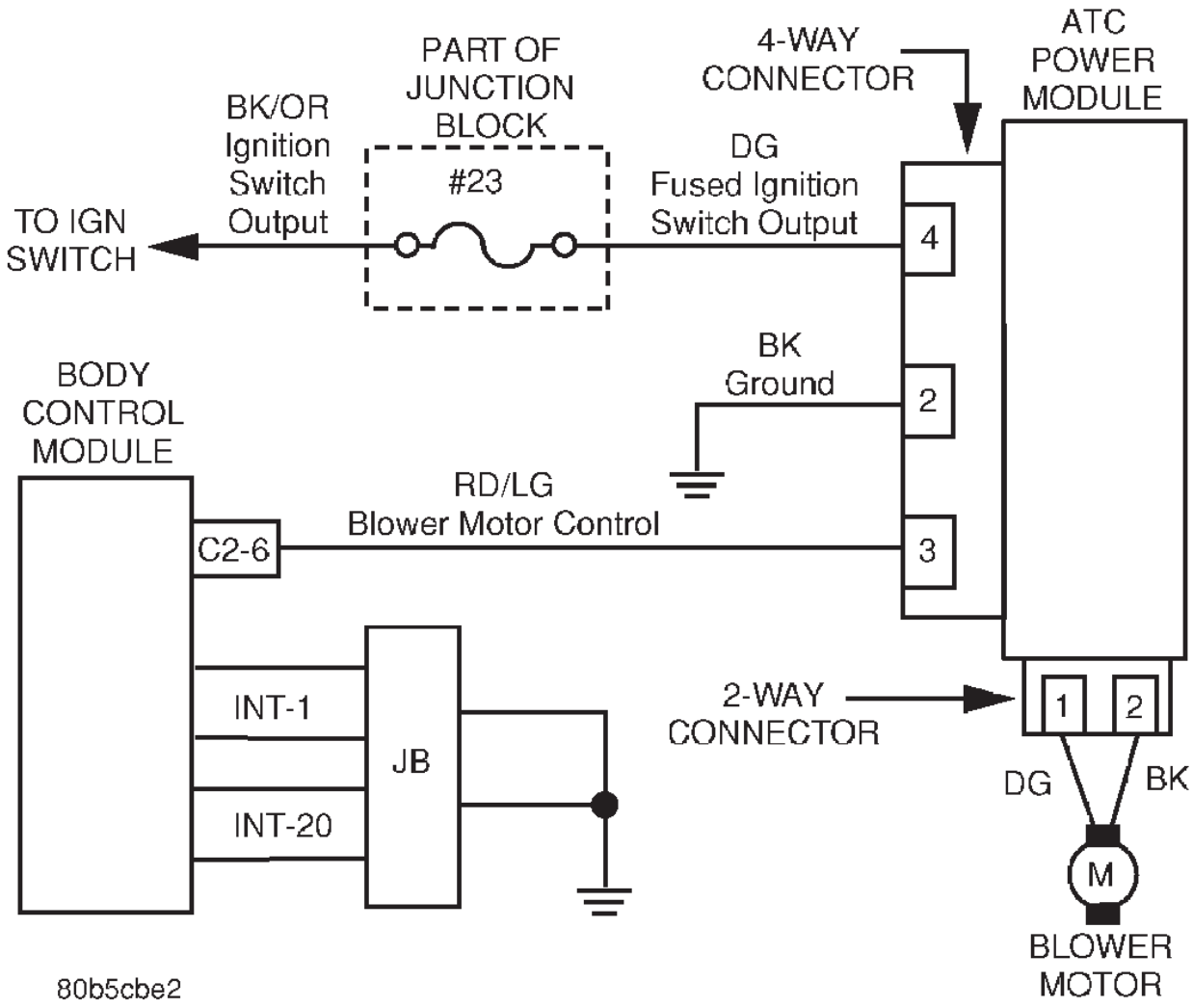
## TEST 16A CONTINUED - REPAIRING INOPERATIVE BLOWER MOTOR



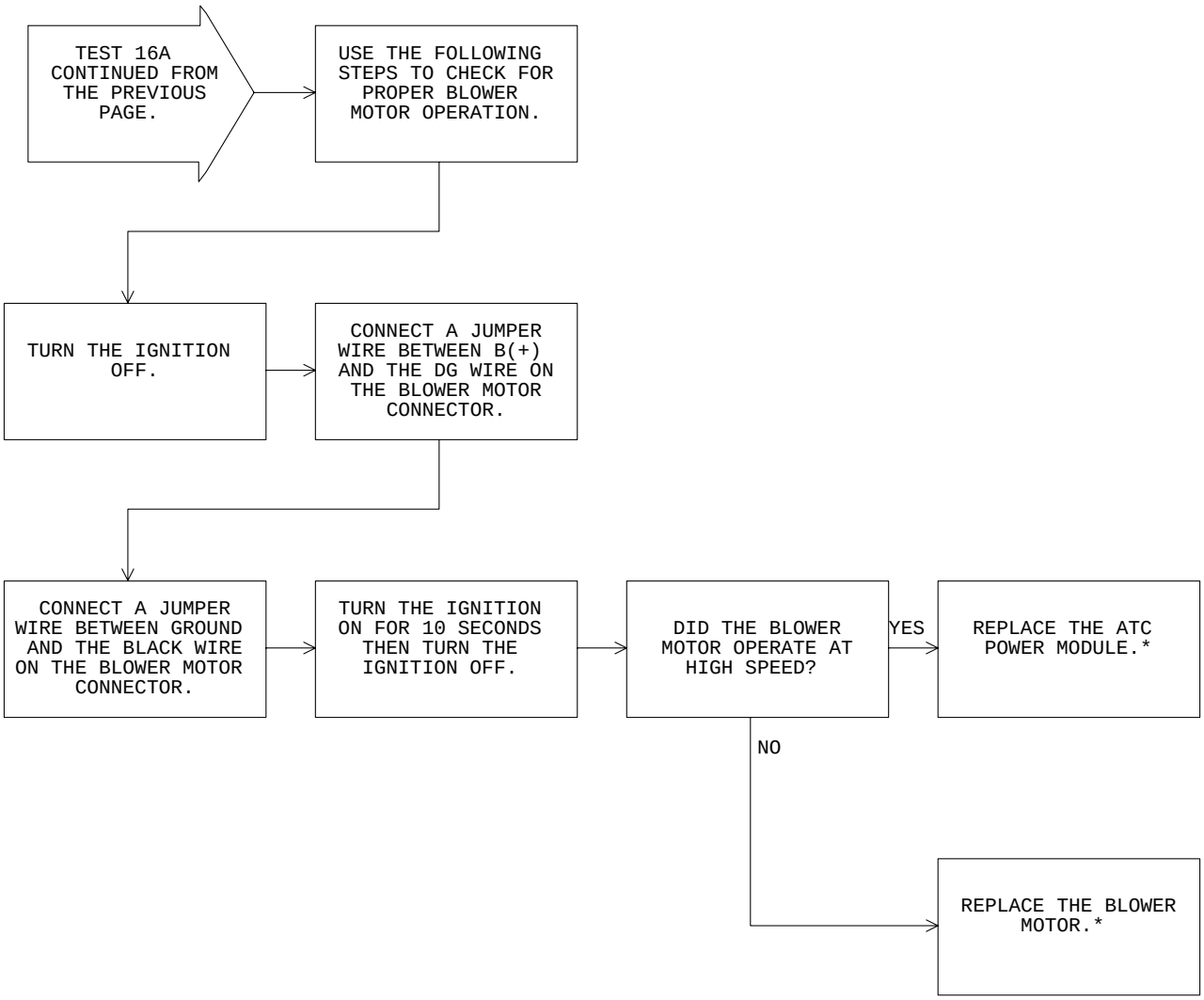

***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

**TEST 16A** CONTINUED - REPAIRING INOPERATIVE BLOWER MOTOR



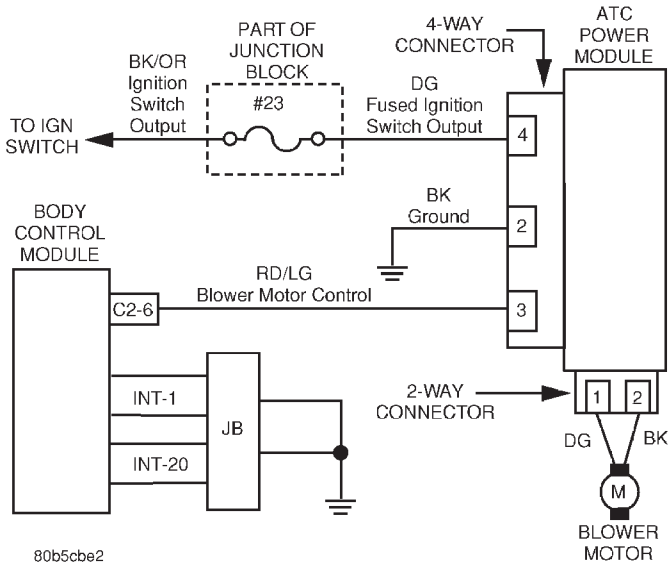
## TEST 16A CONTINUED - REPAIRING INOPERATIVE BLOWER MOTOR

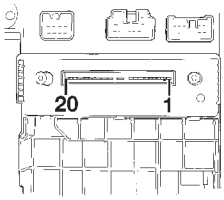



***Perform Verification TEST VER-2A.** | ***Check connectors - Clean / repair as necessary.**

## TEST 17A REPAIRING INCORRECT BLOWER MOTOR SPEEDS

**Perform TEST 1A Before Proceeding**



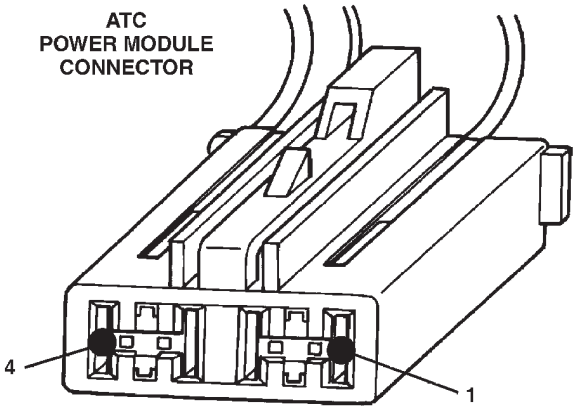




**JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR**

| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

***FIG. 1***



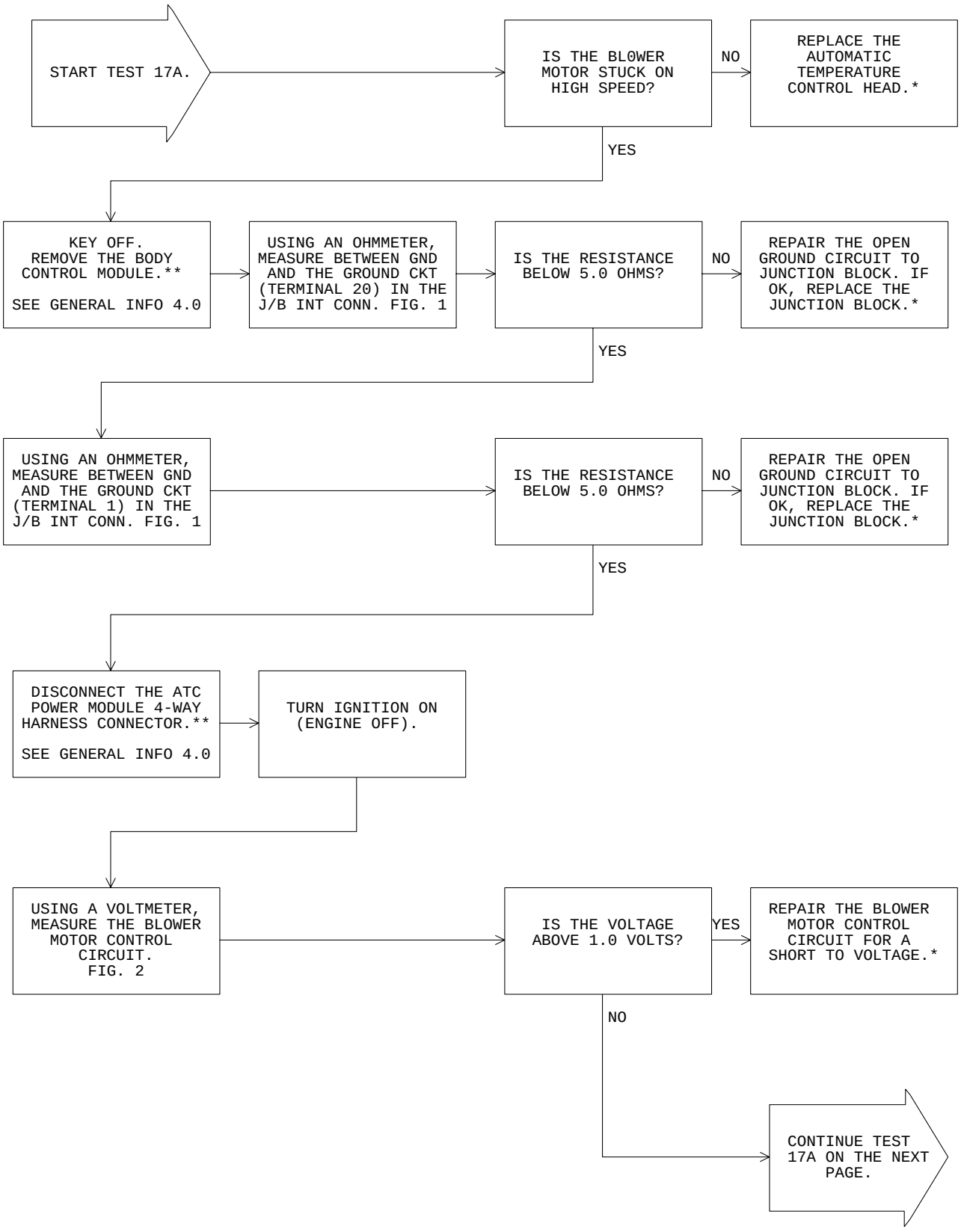

| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | BK | GROUND |
| 3 | RD/LG | BLOWER MOTOR CONTROL |
| 4 | DG | FUSED IGNITION SWITCH OUTPUT |

80b29fa1

***FIG. 2***

## TEST 17A REPAIRING INCORRECT BLOWER MOTOR SPEEDS

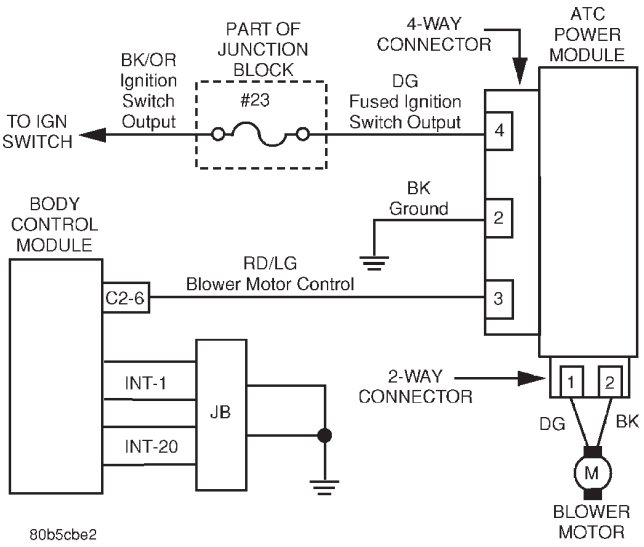
**Perform TEST 1A Before Proceeding**

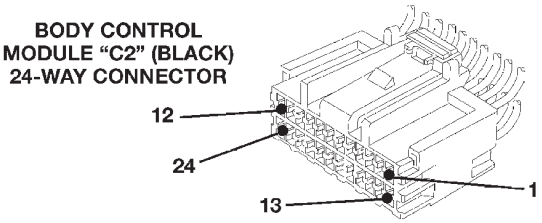



***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

## TEST 17A CONTINUED - REPAIRING INCORRECT BLOWER MOTOR SPEEDS




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

80b11936

*FIG. 1*

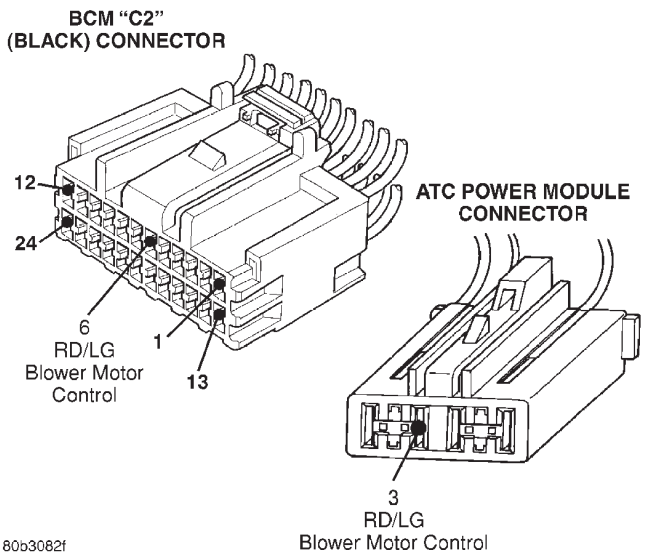
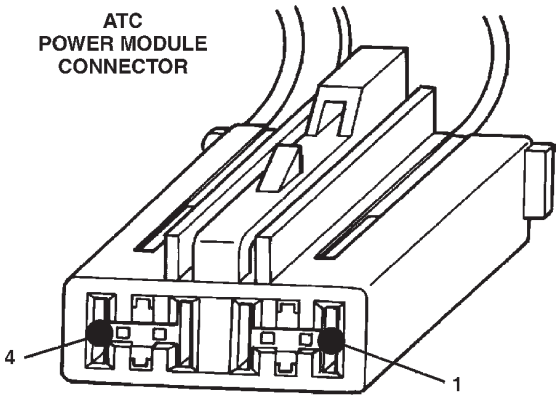



*FIG. 2*

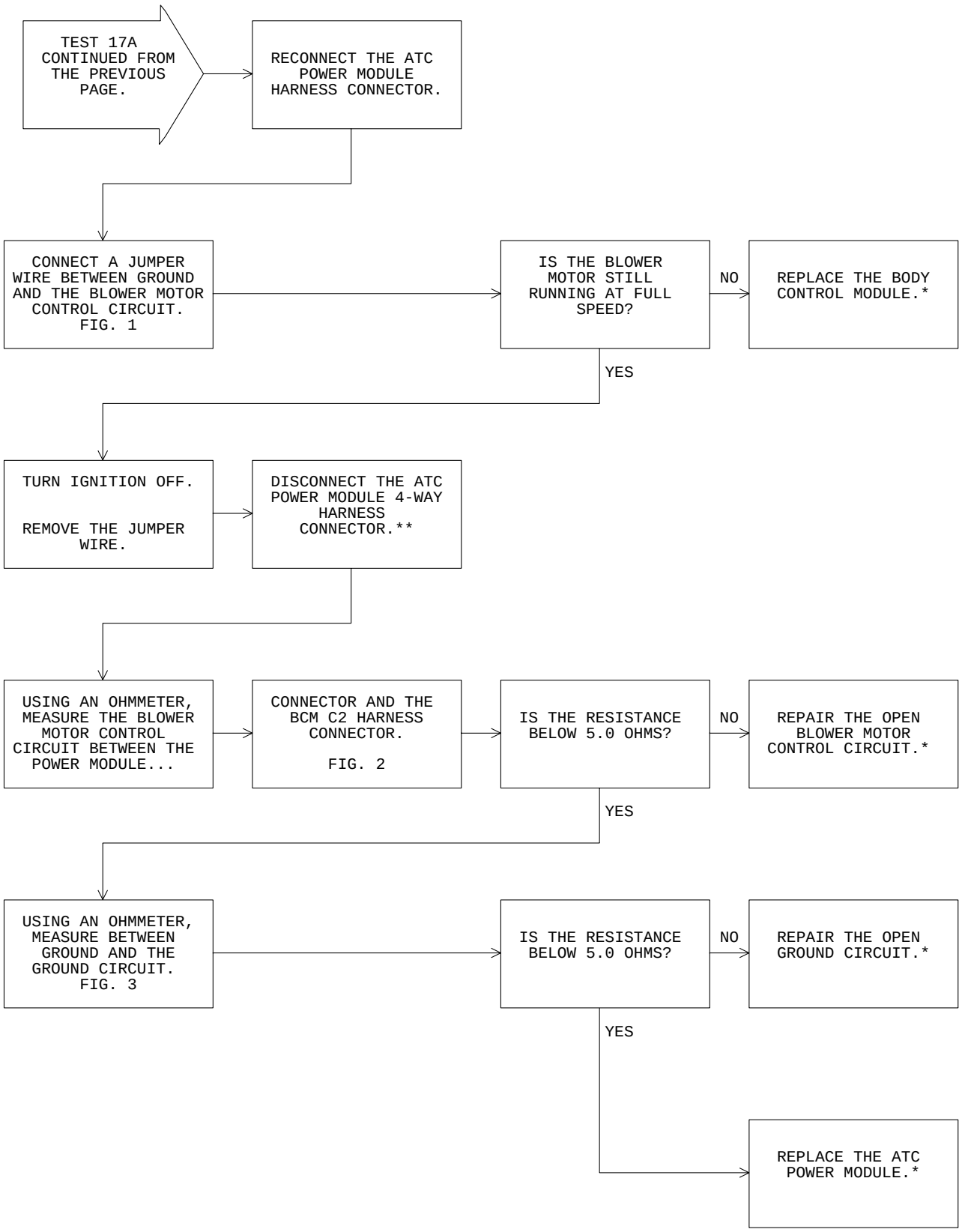



| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | BK | GROUND |
| 3 | RD/LG | BLOWER MOTOR CONTROL |
| 4 | DG | FUSED IGNITION SWITCH OUTPUT |

80b29fa1

*FIG. 3*

## TEST 17A CONTINUED - REPAIRING INCORRECT BLOWER MOTOR SPEEDS

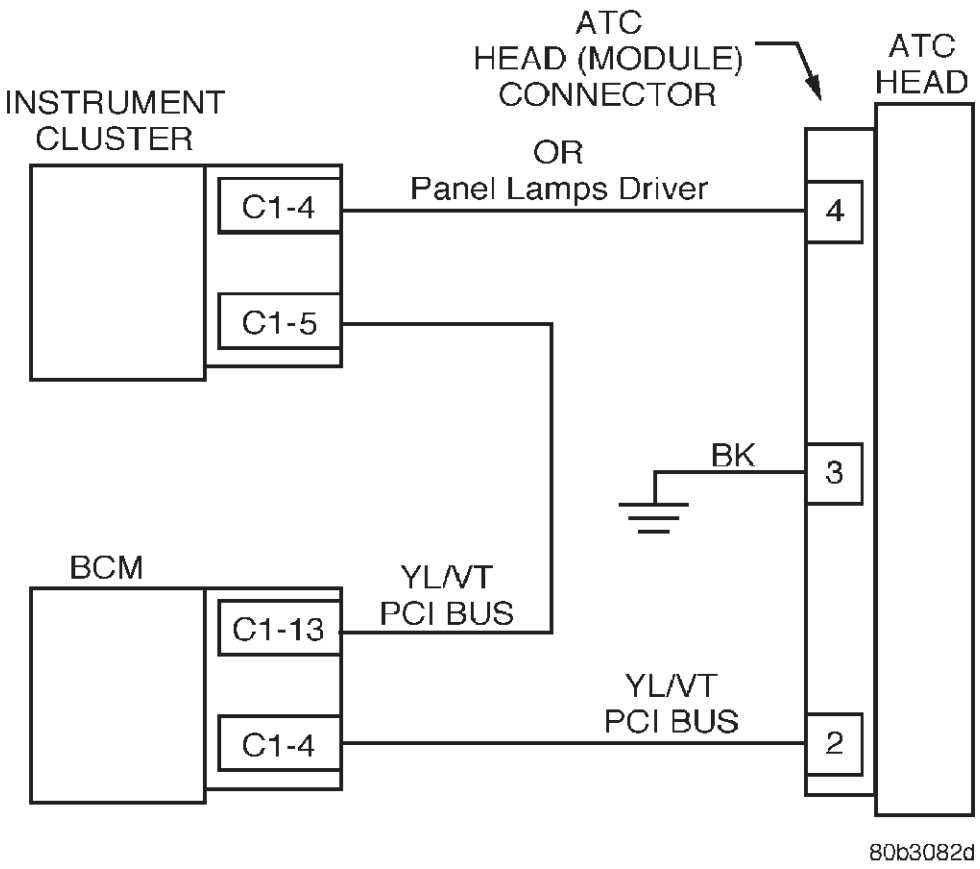



***Perform Verification TEST VER-2A.***

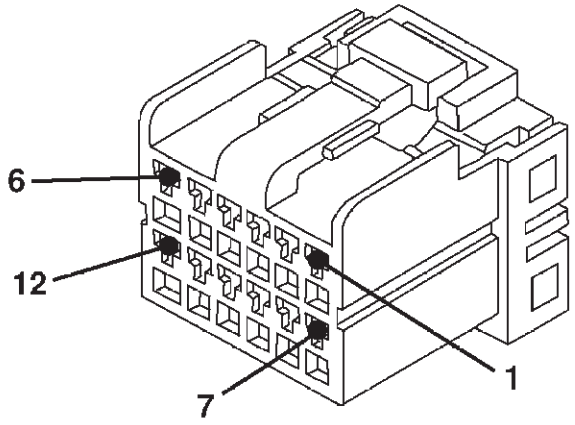
****Check connectors - Clean / repair as necessary.***

**TEST 18A** REPAIRING CONTROL MODULE (HEAD) ILLUMINATION

**Perform TEST 1A Before Proceeding**




**ATC MODULE CONNECTOR**



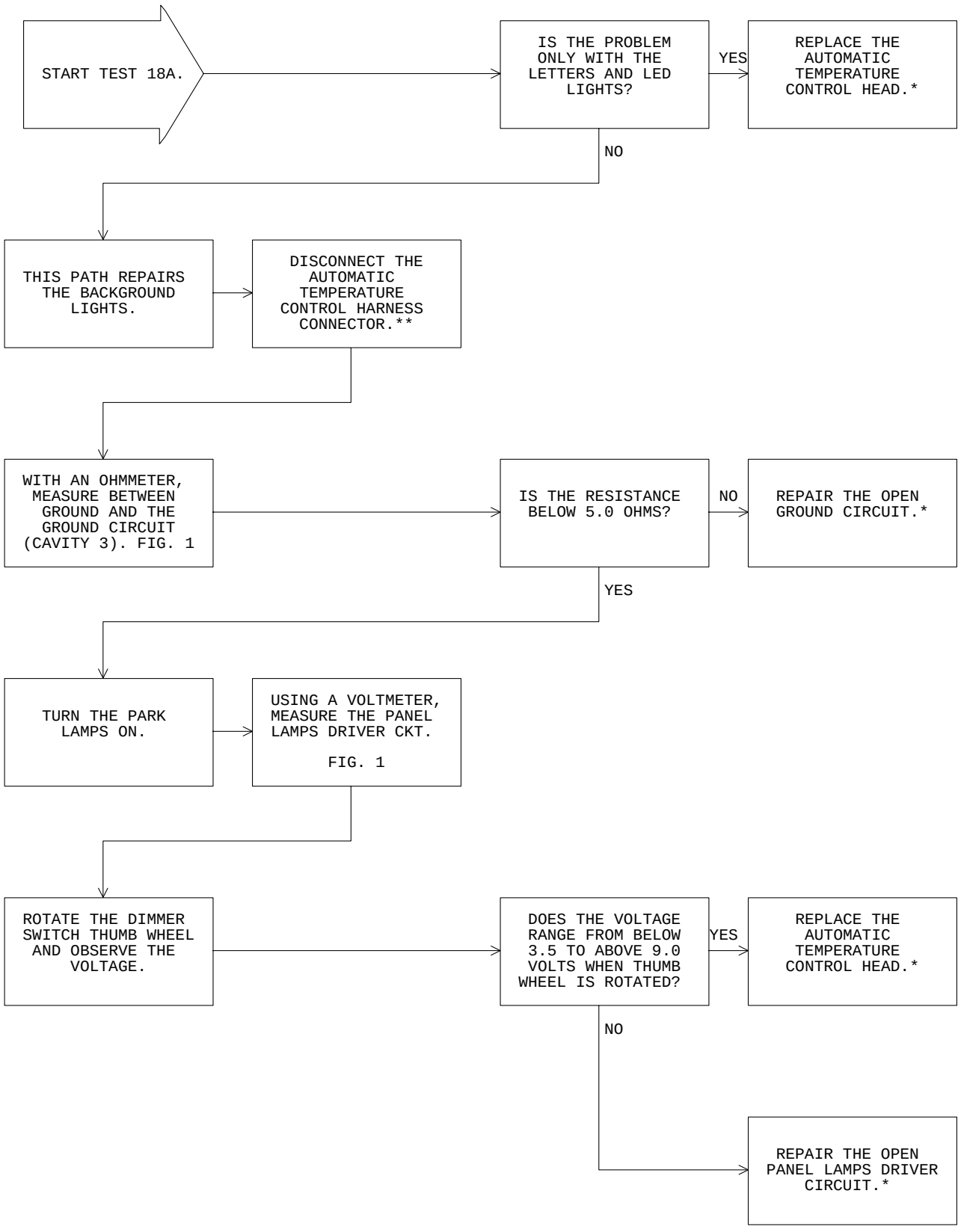

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LG | GROUND |
| 2 | YL/VT | PCI BUS |
| 3 | BK | GROUND |
| 4 | OR | PANEL LAMPS DRIVER |
| 7 | RD/TN | IN CAR TEMPERATURE SENSOR SIGNAL |
| 8 | DB/GY | SENSOR GROUND |
| 10 | WT | FUSED IGNITION SWITCH OUTPUT |
| 11 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 12 | PK | FUSED B(+) |

80b2a1fb

***FIG. 1***

## TEST 18A REPAIRING CONTROL MODULE (HEAD) ILLUMINATION

**Perform TEST 1A Before Proceeding**

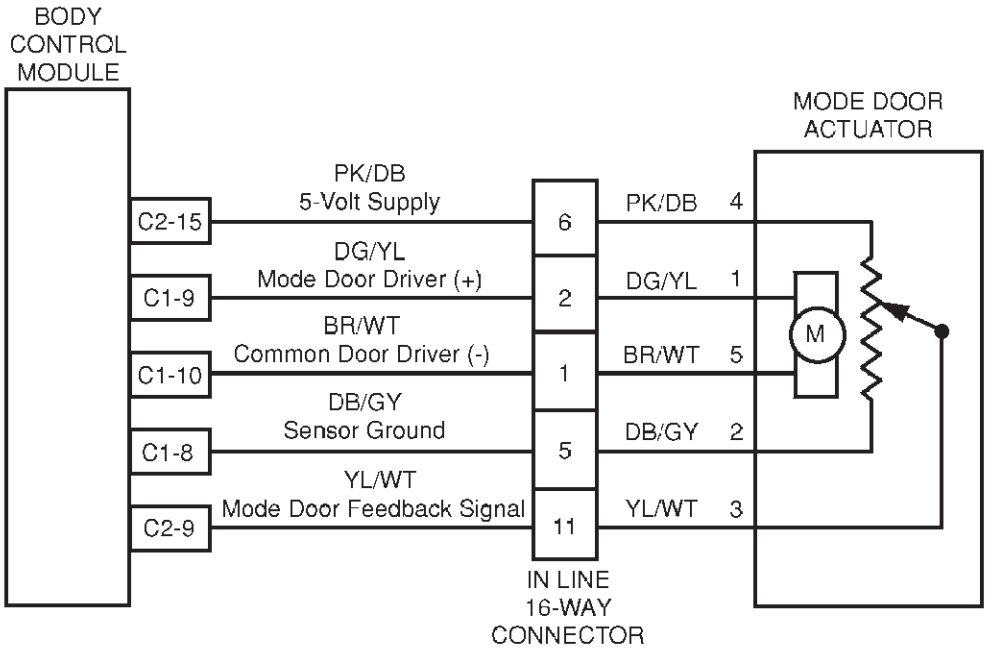



***Perform Verification TEST VER-2A.***

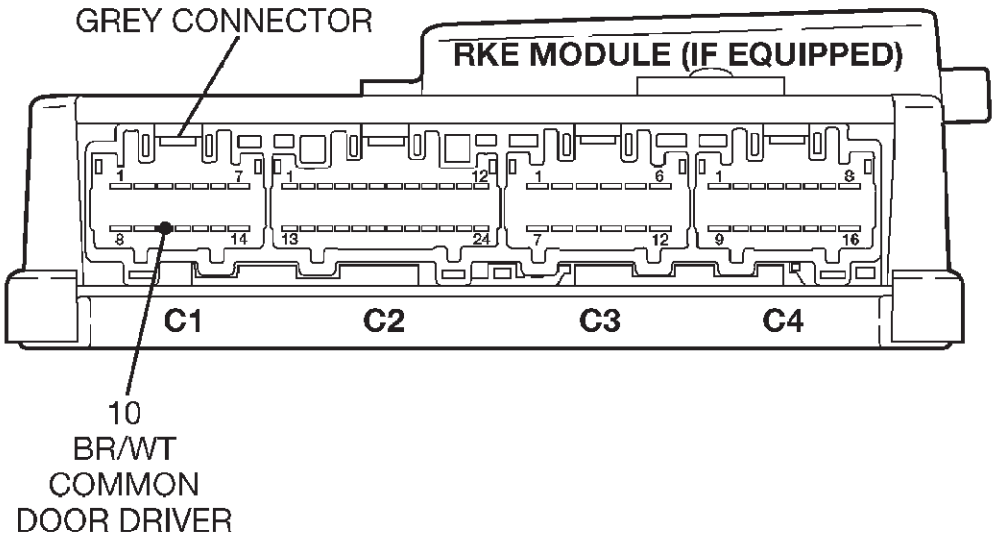
***Check connectors - Clean / repair as necessary.***

**TEST 19A** | **REPAIRING INOPERATIVE MODE DOOR**

**Perform TEST 1A Before Proceeding**




80b4fa4a



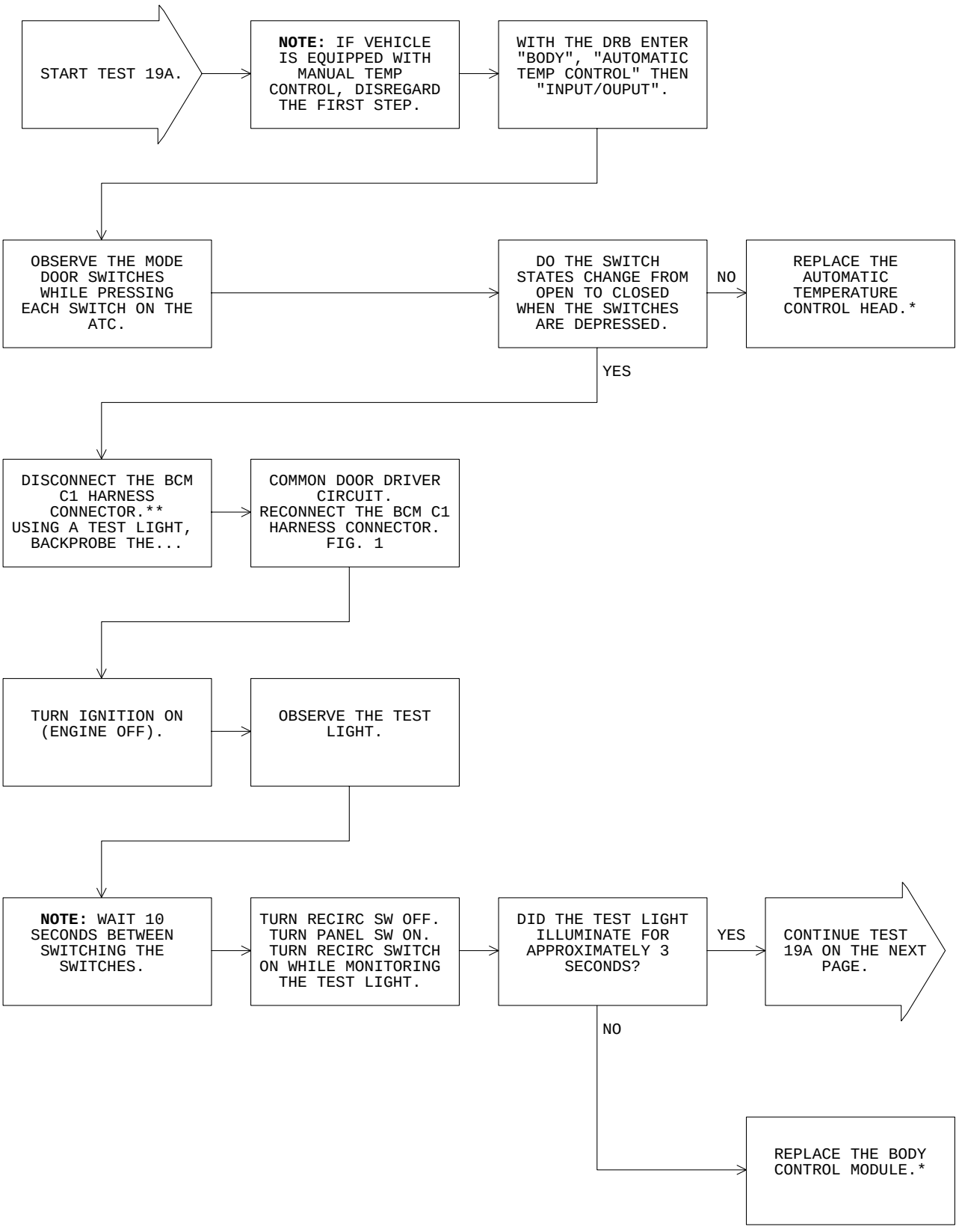

***NOTE: THE BODY CONTROL MODULE MUST BE FULLY CONNECTED TO PERFORM THIS STEP***

80b2b86a

***FIG. 1***

## TEST 19A REPAIRING INOPERATIVE MODE DOOR

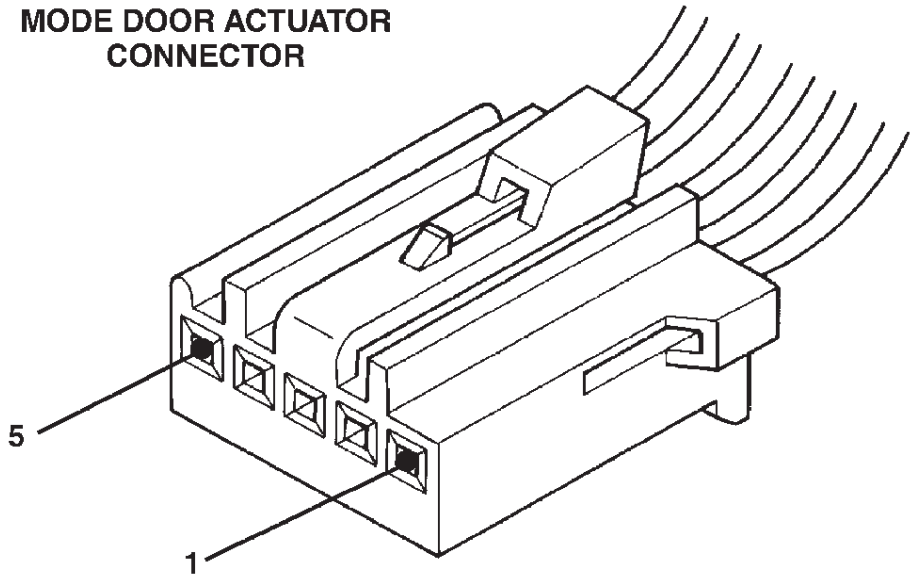
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

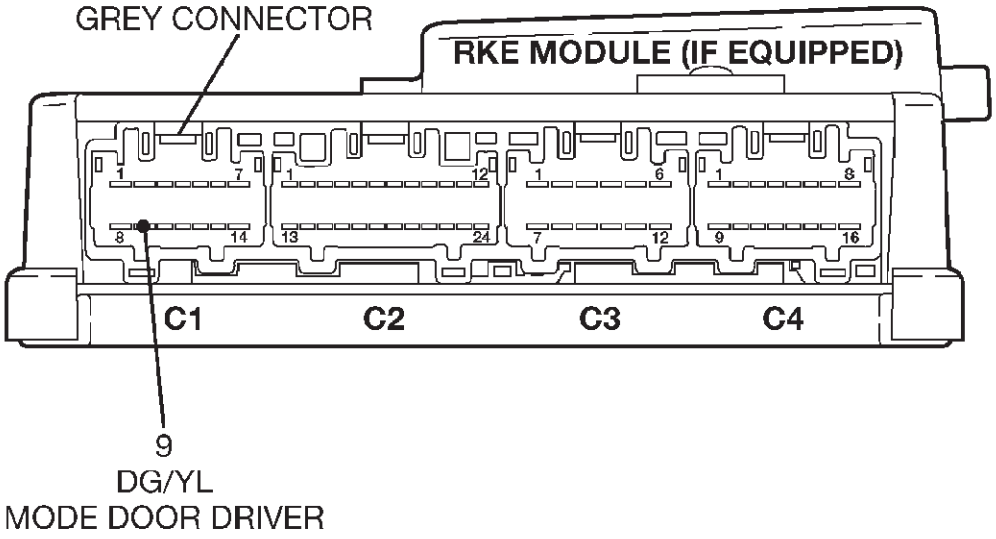
**TEST 19A** CONTINUED - REPAIRING INOPERATIVE MODE DOOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/YL | MODE DOOR DRIVER |
| 2 | DB/GY | SENSOR GROUND |
| 3 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 4 | PK/DB | 5-VOLT SUPPLY |
| 5 | BR/WT | COMMON DOOR DRIVER |

80b27ct2

*FIG. 1*

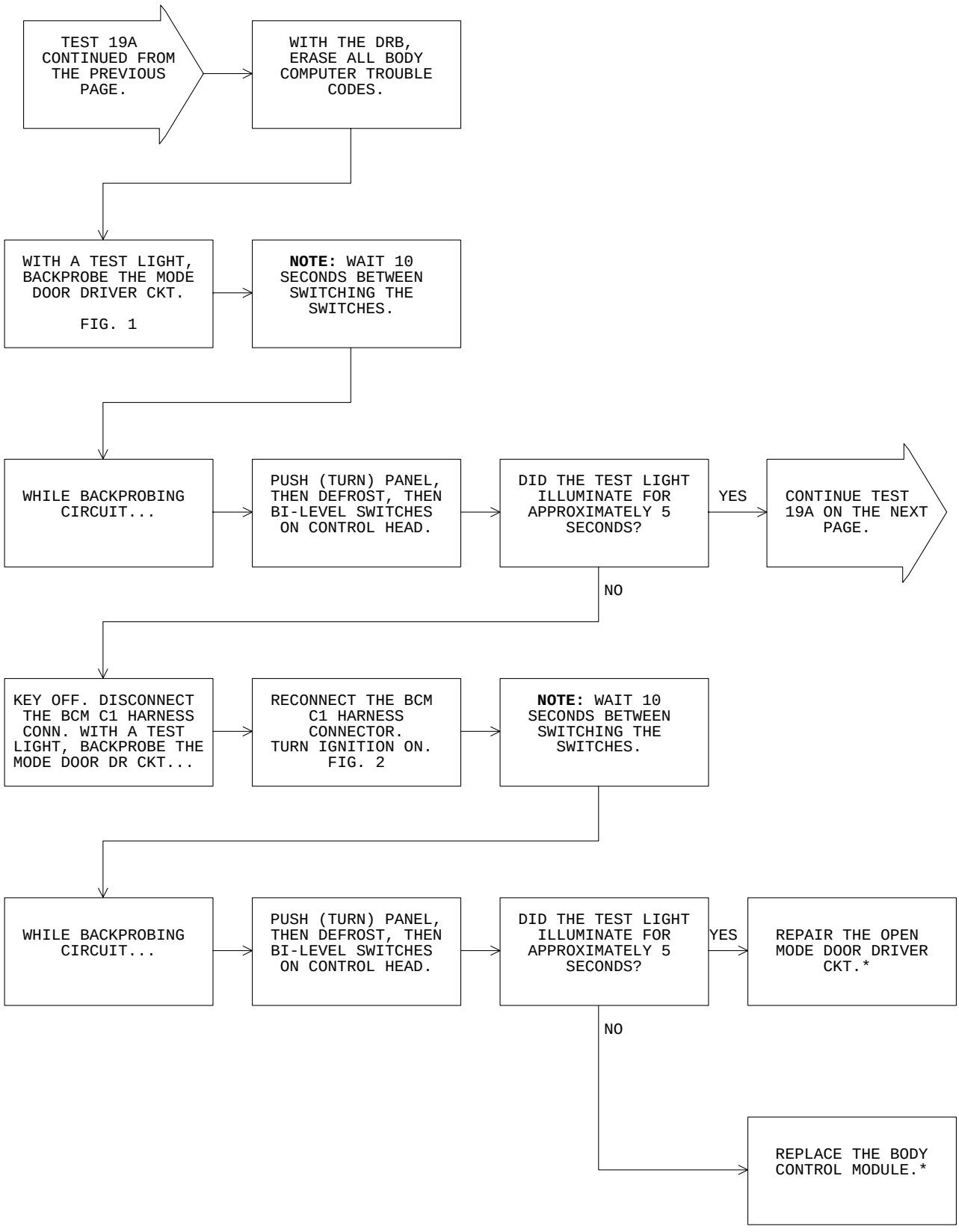



***NOTE: THE BODY CONTROL MODULE MUST BE FULLY CONNECTED TO PERFORM THIS STEP***

80b2b869

*FIG. 2*

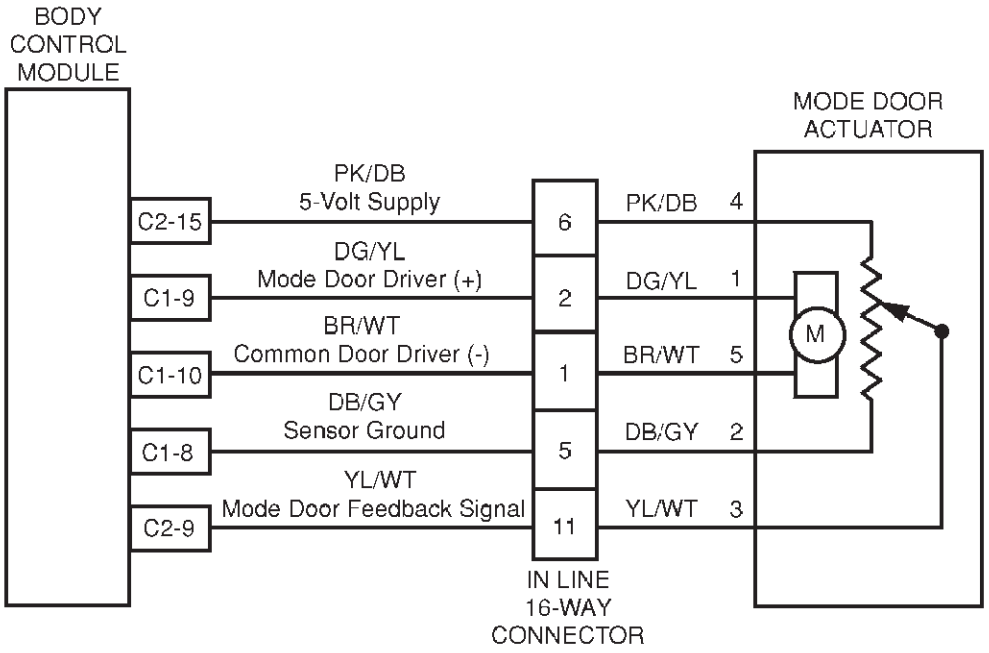
## TEST 19A CONTINUED - REPAIRING INOPERATIVE MODE DOOR



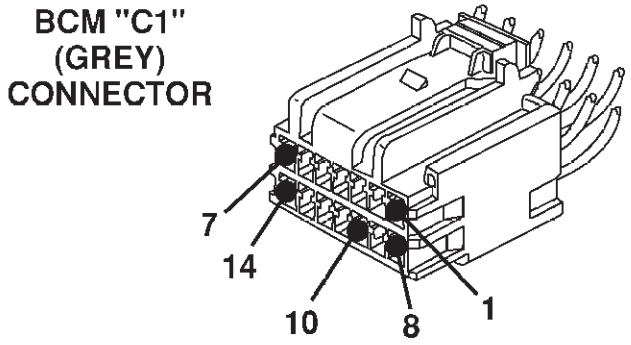

***Perform Verification TEST VER-2A.**

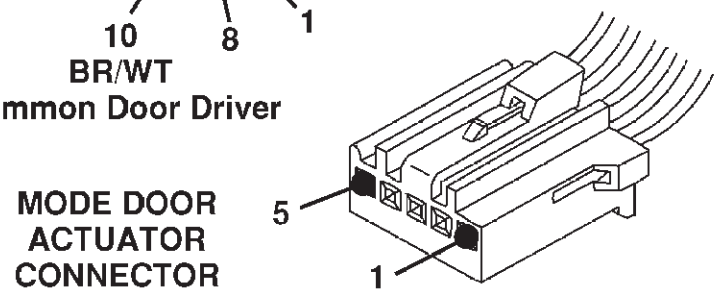
****Check connectors - Clean / repair as necessary.**

**TEST 19A** CONTINUED - REPAIRING INOPERTIVE MODE DOOR




80b4fa4a



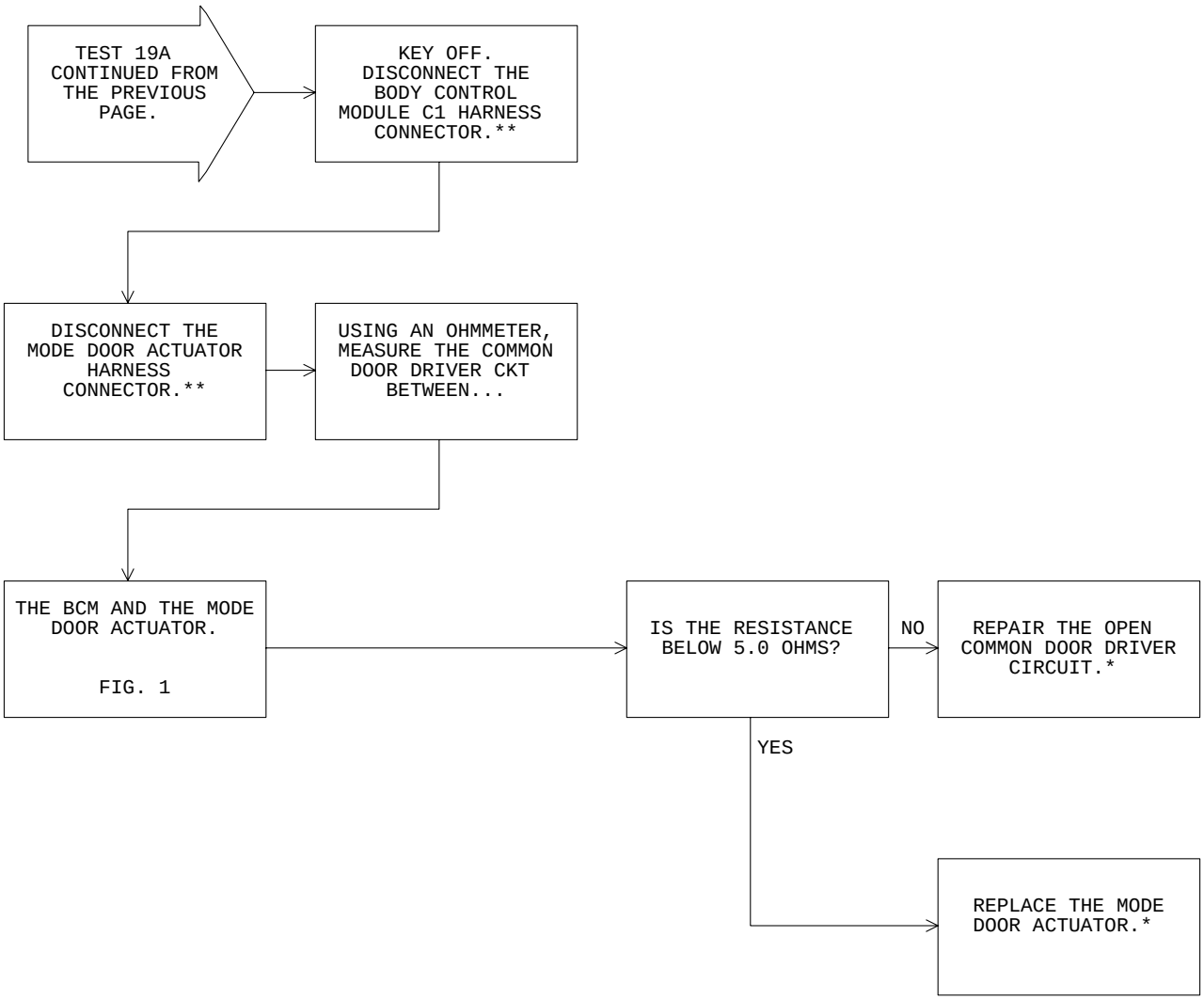




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/YL | MODE DOOR DRIVER |
| 2 | DB/GY | SENSOR GROUND |
| 3 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 4 | PK/DB | 5-VOLT SUPPLY |
| 5 | BR/WT | COMMON DOOR DRIVER |

80b4fa4c

***FIG. 1***

## TEST 19A CONTINUED - REPAIRING INOPERTIVE MODE DOOR

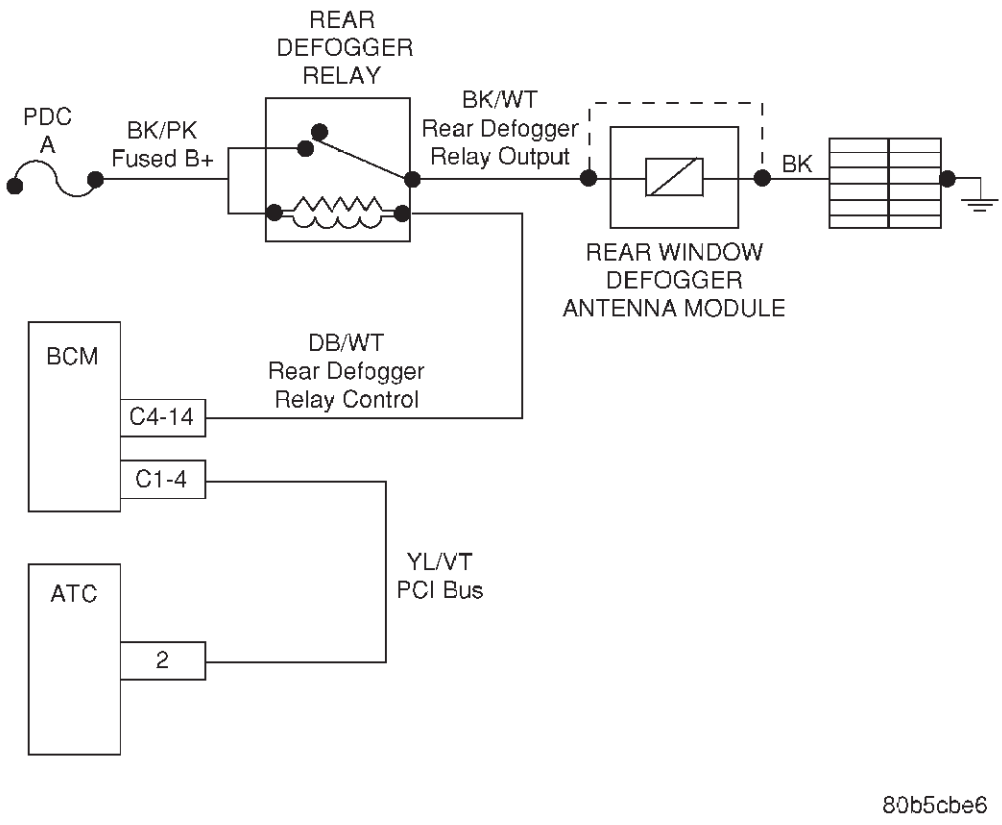


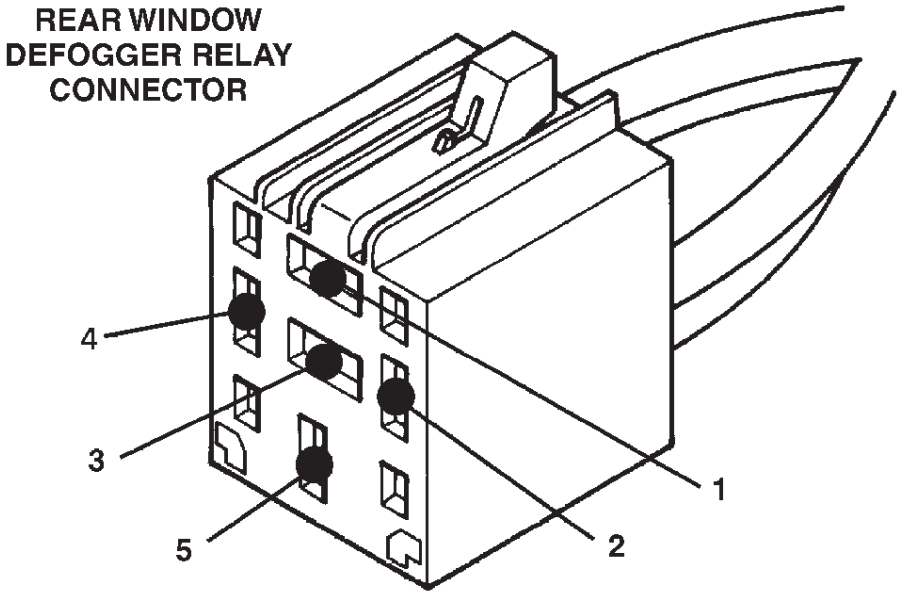

***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 20A REPAIRING REAR WINDOW DEFOGGER

**Perform TEST 1A Before Proceeding**



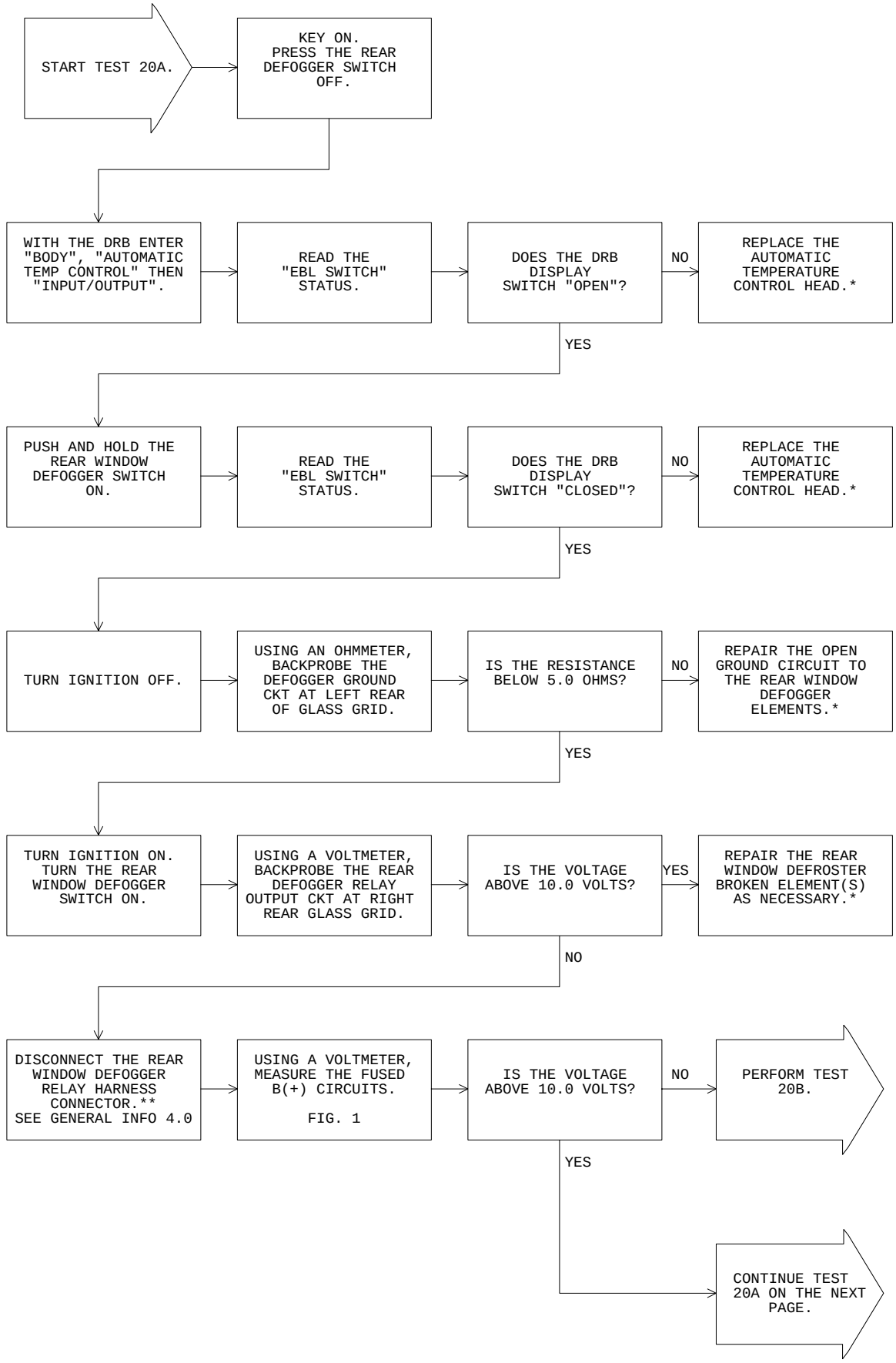

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 (87) | BK/WT | REAR DEFOGGER RELAY OUTPUT |
| 2 (86) | BK/PK | FUSED B(+) |
| 4 (85) | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 5 (30) | BK/PK | FUSED B(+) |

80b29f30

***FIG. 1***

# TEST 20A REPAIRING REAR WINDOW DEFOGGER

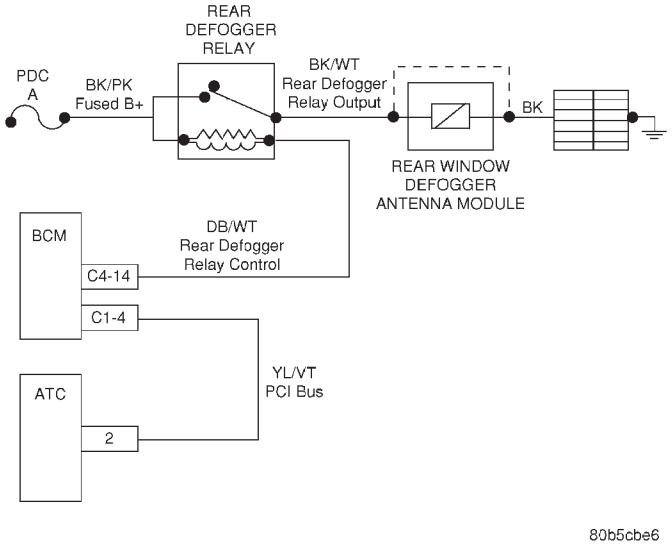
**Perform TEST 1A Before Proceeding**

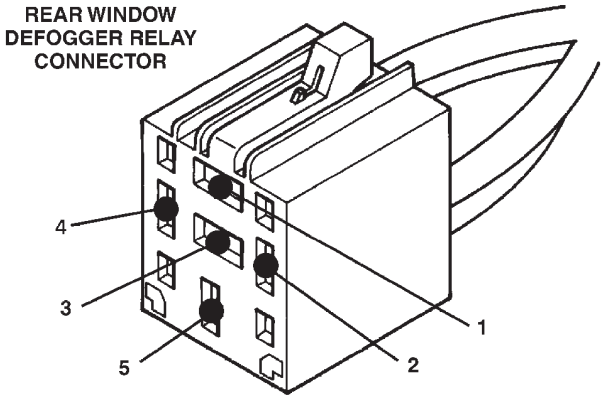



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 20A CONTINUED - REPAIRING REAR WINDOW DEFOGGER

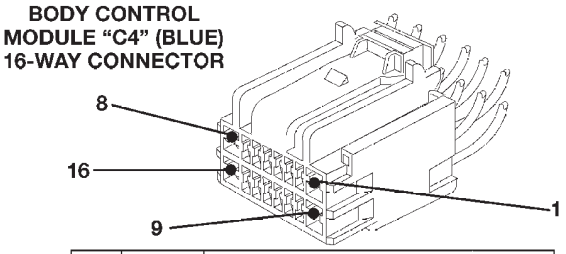



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 (87) | BK/WT | REAR DEFOGGER RELAY OUTPUT |
| 2 (86) | BK/PK | FUSED B(+) |
| 4 (85) | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 5 (30) | BK/PK | FUSED B(+) |

80b29f30

***FIG. 1***

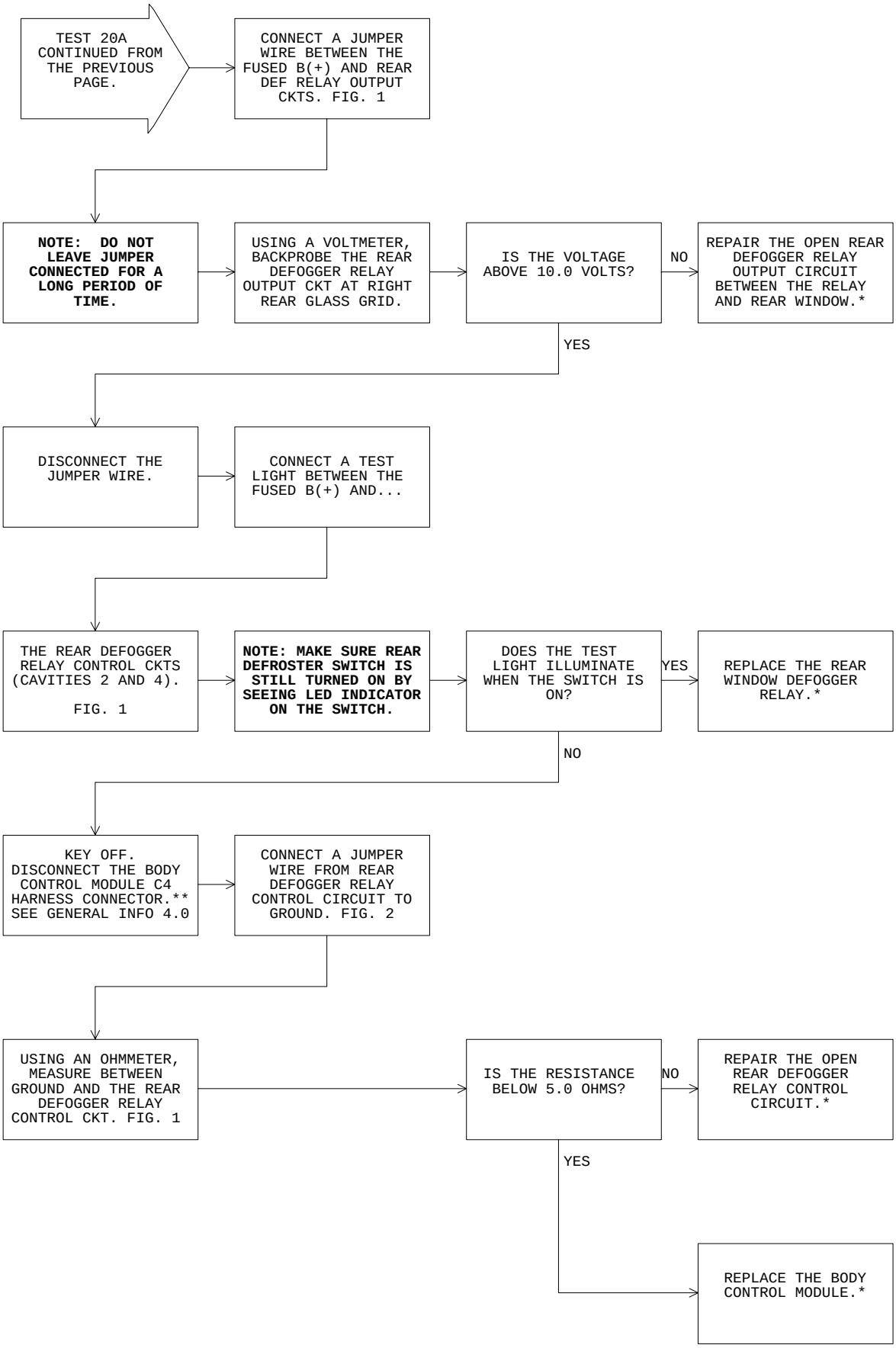



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

80b11939

***FIG. 2***

## TEST 20A CONTINUED - REPAIRING REAR WINDOW DEFOGGER

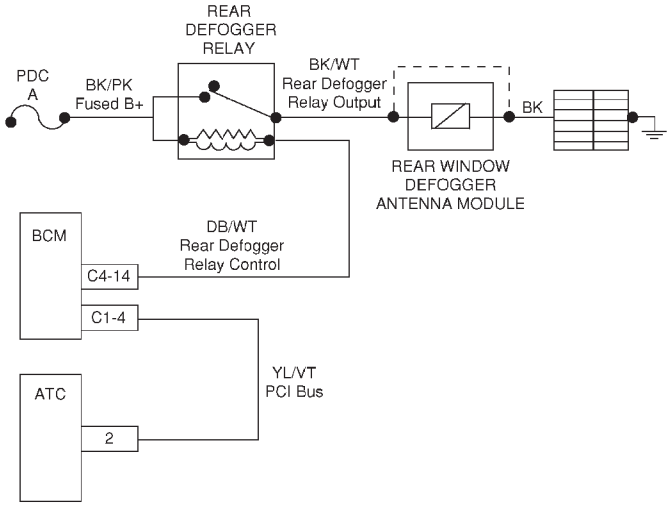



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 20B REPAIRING REAR WINDOW DEFOGGER

**Perform TEST 20A Before Proceeding**



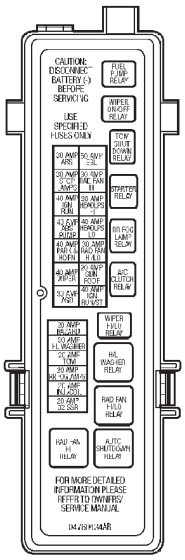
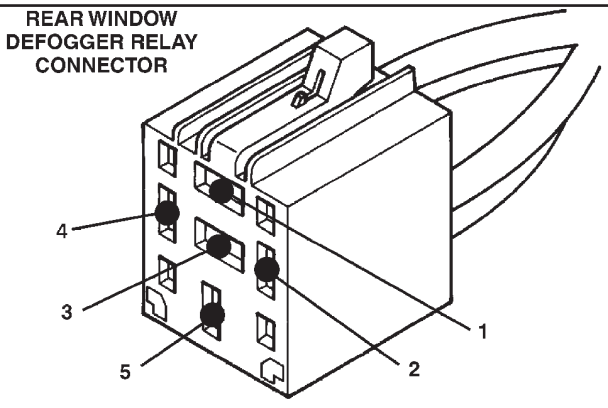




*FIG. 1*



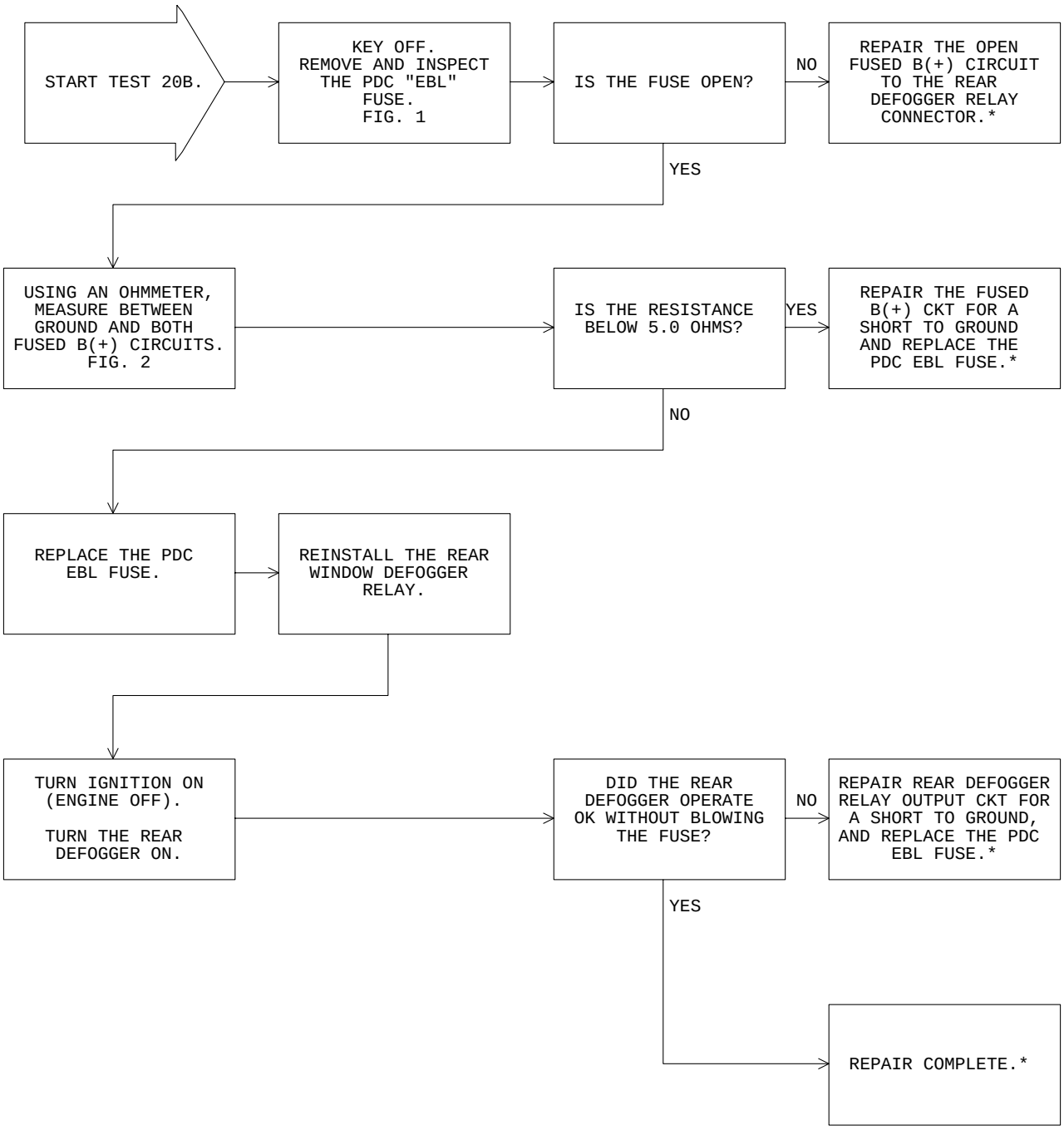

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 (87) | BK/WT | REAR DEFOGGER RELAY OUTPUT |
| 2 (86) | BK/PK | FUSED B(+) |
| 4 (85) | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 5 (30) | BK/PK | FUSED B(+) |

80b29f30

*FIG. 2*

## TEST 20B REPAIRING REAR WINDOW DEFOGGER

**Perform TEST 20A Before Proceeding**

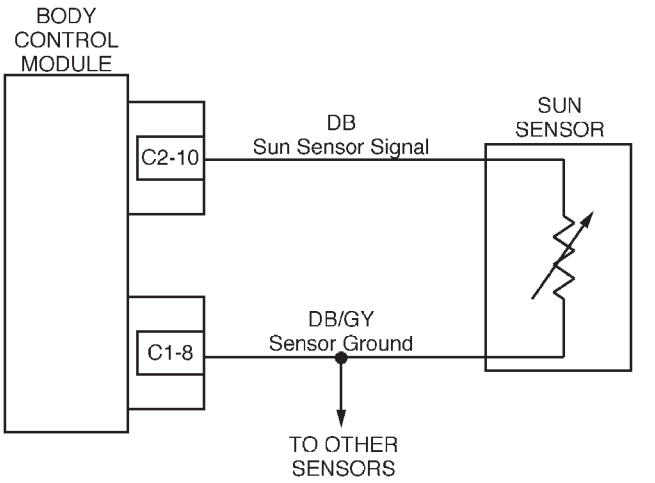



***Perform Verification TEST VER-2A.***

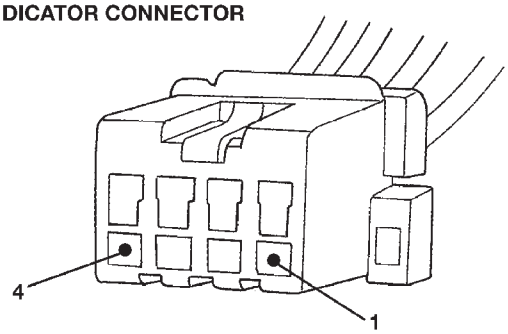
*****Check connectors - Clean / repair as necessary.***

## TEST 21A REPAIRING INCORRECT TEMPERATURE CONTROL IN SUN OR SHADE

**Perform TEST 1A Before Proceeding**




**ATC SUN SENSOR/VTSS INDICATOR CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK | FUSED B (+) |
| 2 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 3 | DB/GY | SENSOR GROUND |
| 4 | DB | SUN SENSOR SIGNAL |

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***FIG. 1***

**BCM "C2" (BLACK) CONNECTOR**

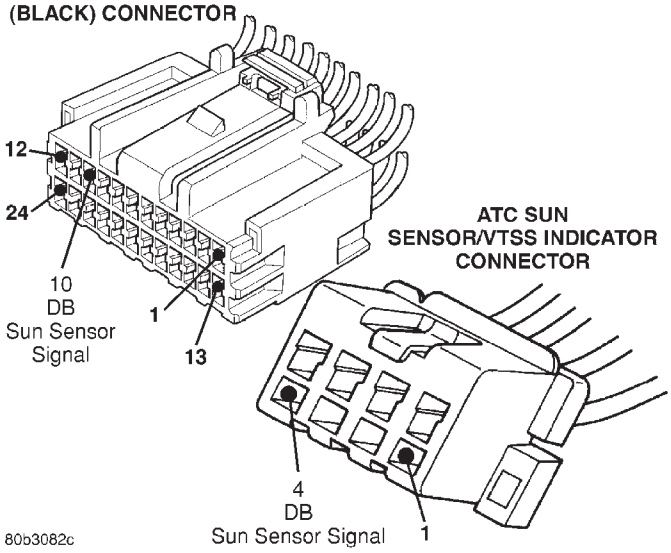
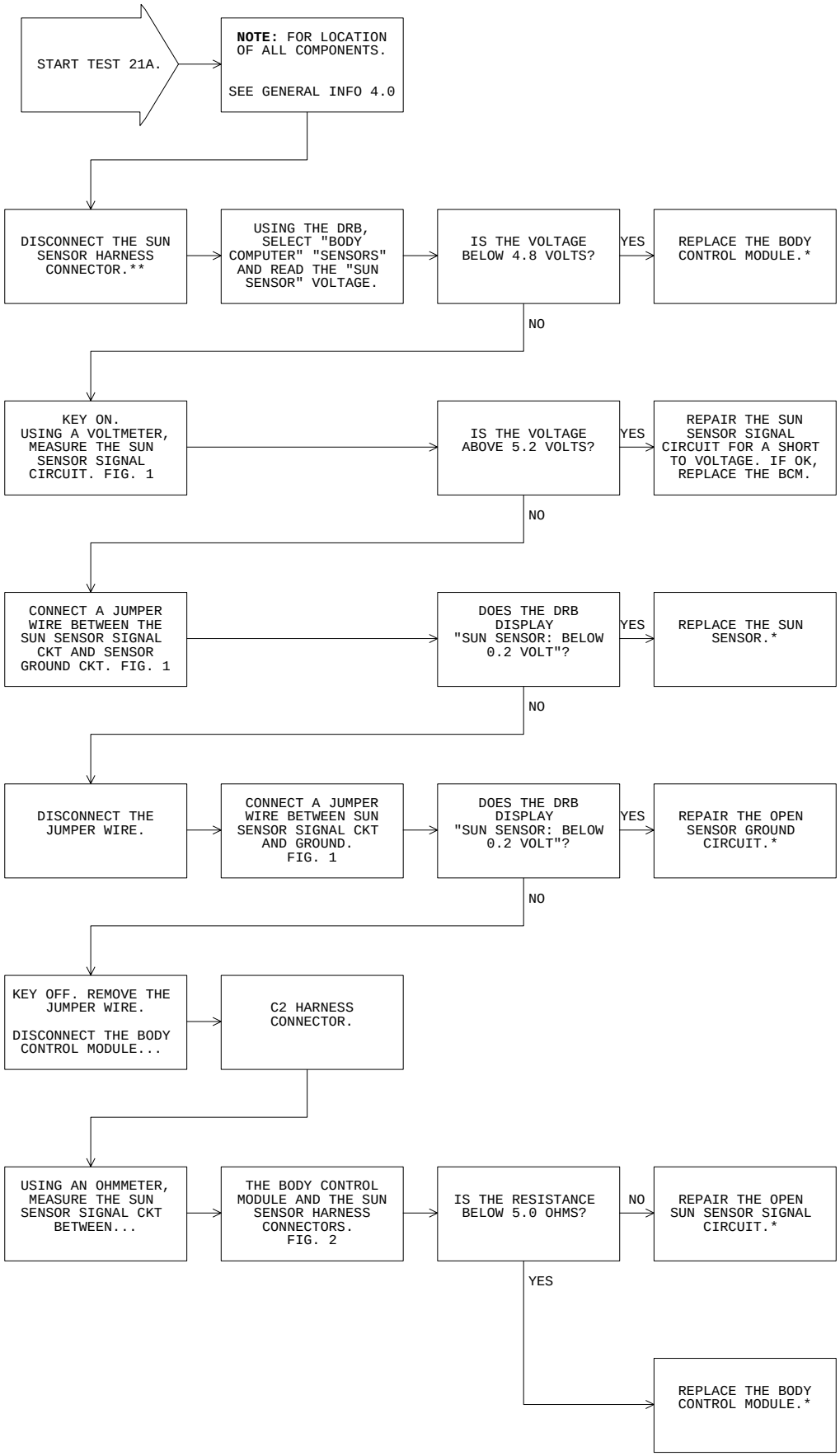



***FIG. 2***

## TEST 21A REPAIRING INCORRECT TEMPERATURE CONTROL IN SUN OR SHADE

**Perform TEST 1A Before Proceeding**

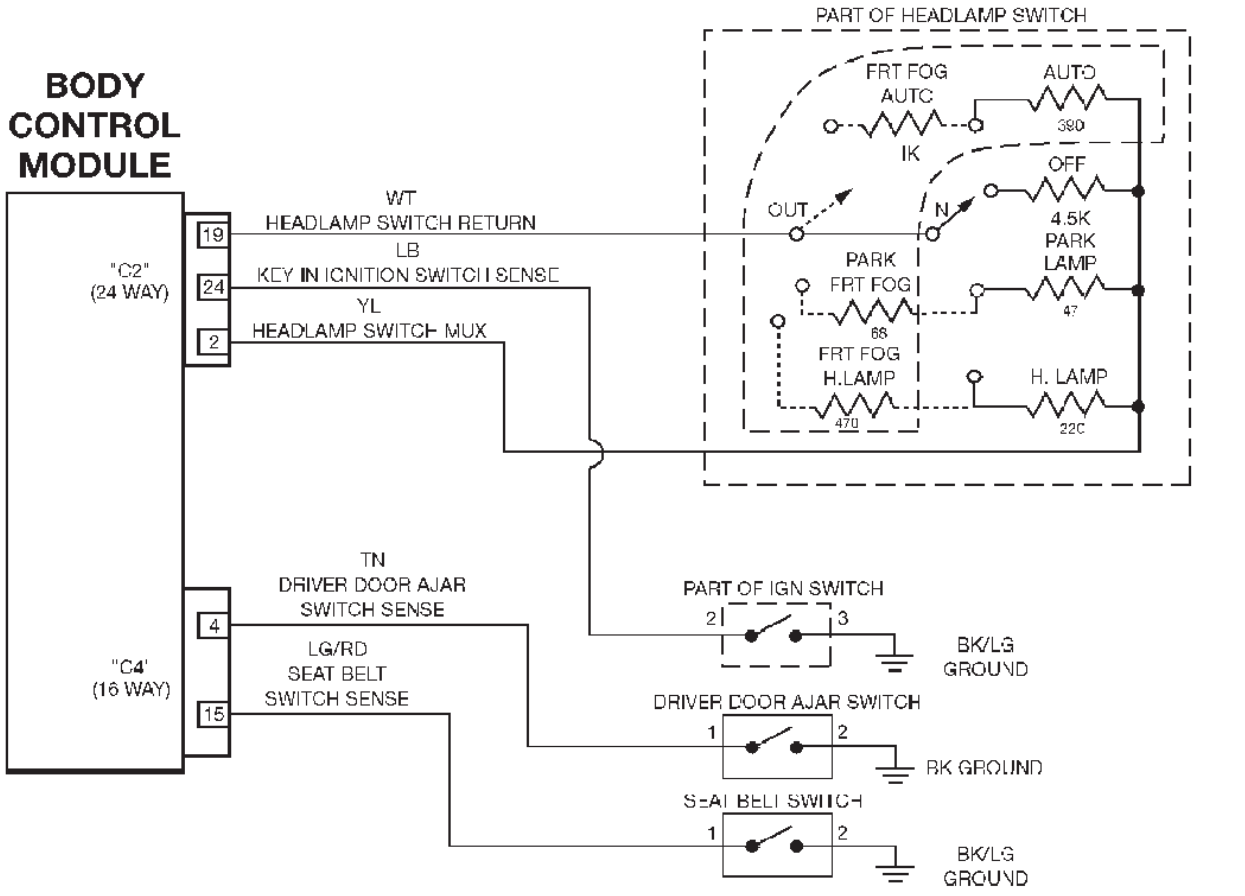



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 1A IDENTIFYING CHIME SYSTEM PROBLEMS

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**




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## TEST 1A IDENTIFYING CHIME SYSTEM PROBLEMS

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**

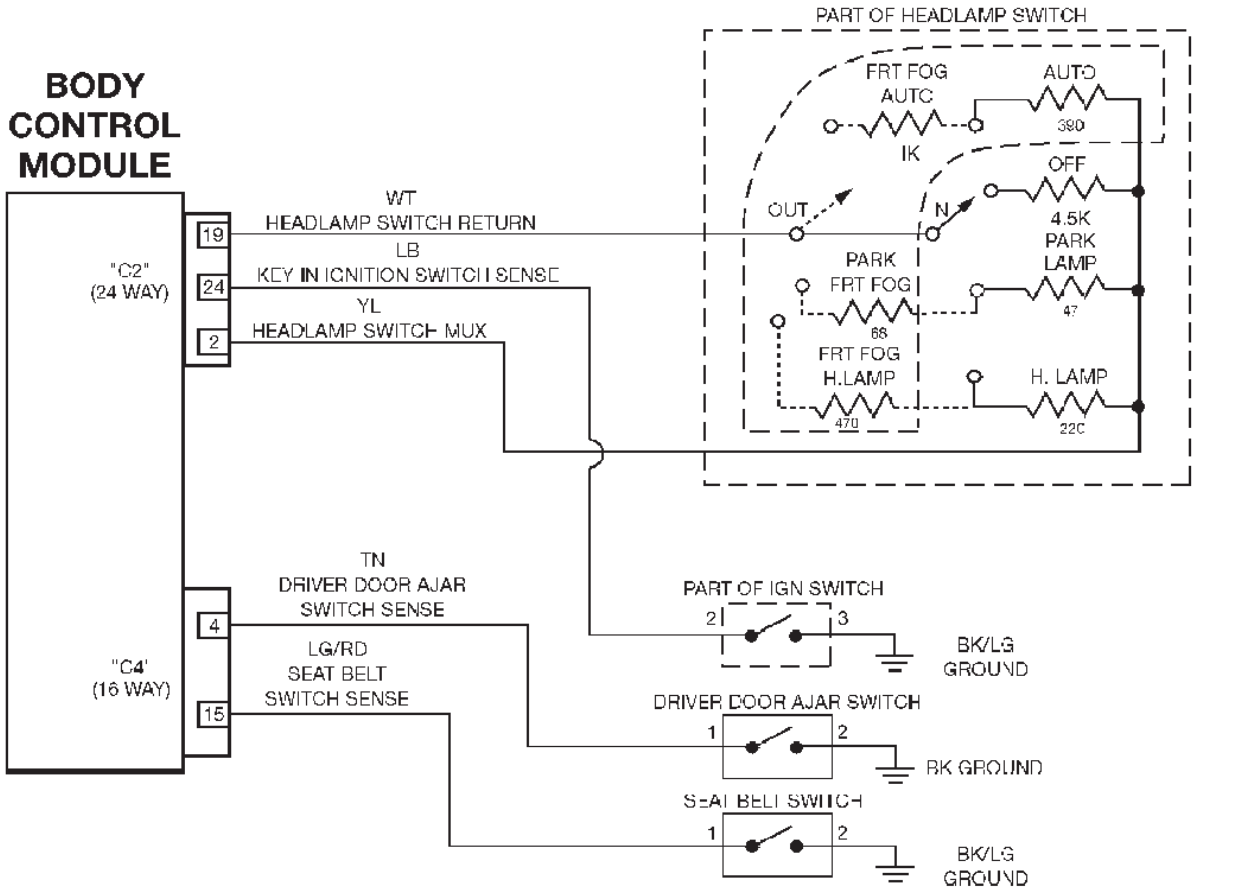
Using a DRB verify communications with the BCM, OTIS and ATC.
If any communication problems exist . . . . . .Perform ‘‘Vehicle Communication’’ TEST 1A.
Diagnostics for the chime system are separated into eight groups. Verify the failure or the customers complaint and make sure the vehicle is experiencing the problem at this time. Choose the applicable items from the list and perform the indicated tests.

| PROBLEM WITH | PERFORM |
|---|---|
| Chime Inoperative at all times | TEST 2A |
| Chime inoperative with exterior lamps on | TEST 3A |
| Chime inoperative with driver’s seat belt unfastened | TEST 4A |
| Chime inoperative with key in ignition and drivers door open | TEST 5A |
| Chime beep request inoperative* | TEST 6A |
| Chime inoperative with vehicle speed above 75 mph (120 kmh) (Gulf Coast countries only) | TEST 7A |
| Chime sounds with driver seat belt fastened | TEST 8A |
| Chime sounds with driver door open | TEST 9A |

* The chime will sound a short chime ‘‘beep’’ when a request is received from the OTIS or ATC (only on vehicles equipped with these options).

## TEST 2A REPAIRING CHIME INOPERATIVE AT ALL TIMES

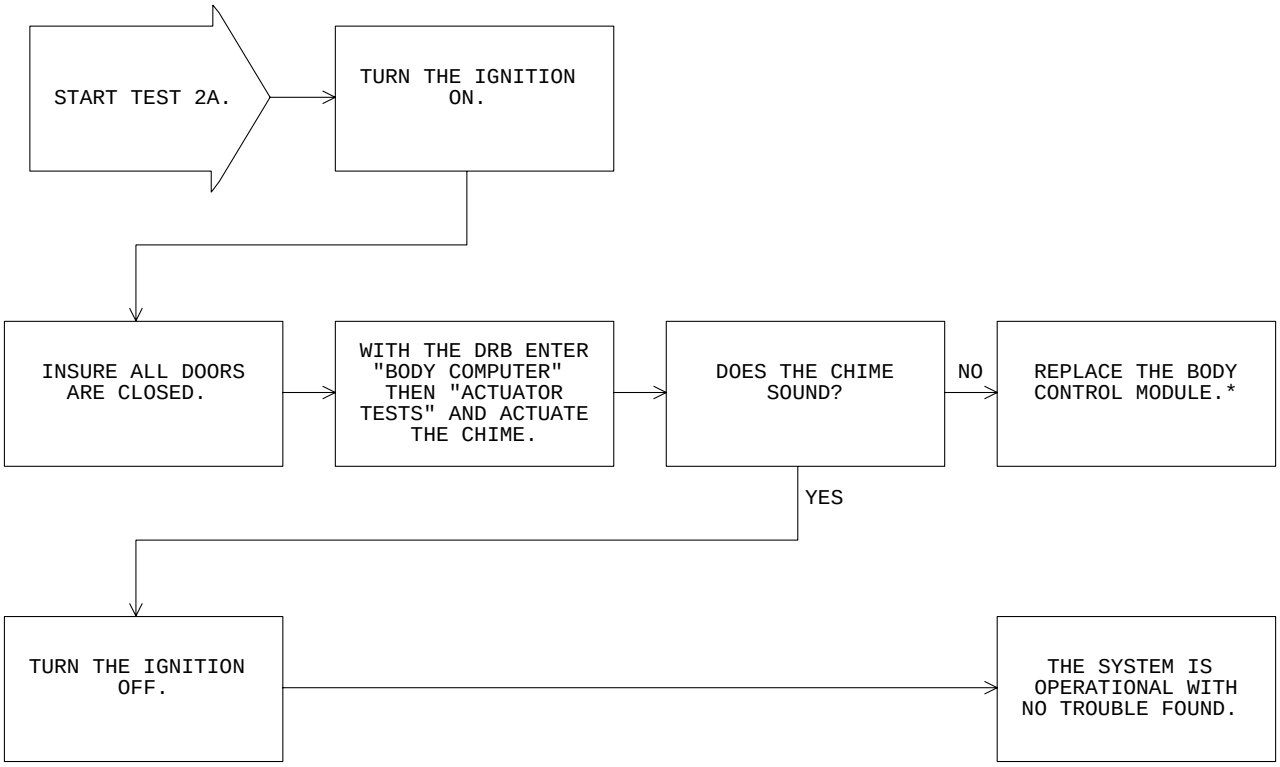
**Perform TEST 1A Before Proceeding**




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## TEST 2A REPAIRING CHIME INOPERATIVE AT ALL TIMES

**Perform TEST 1A Before Proceeding**

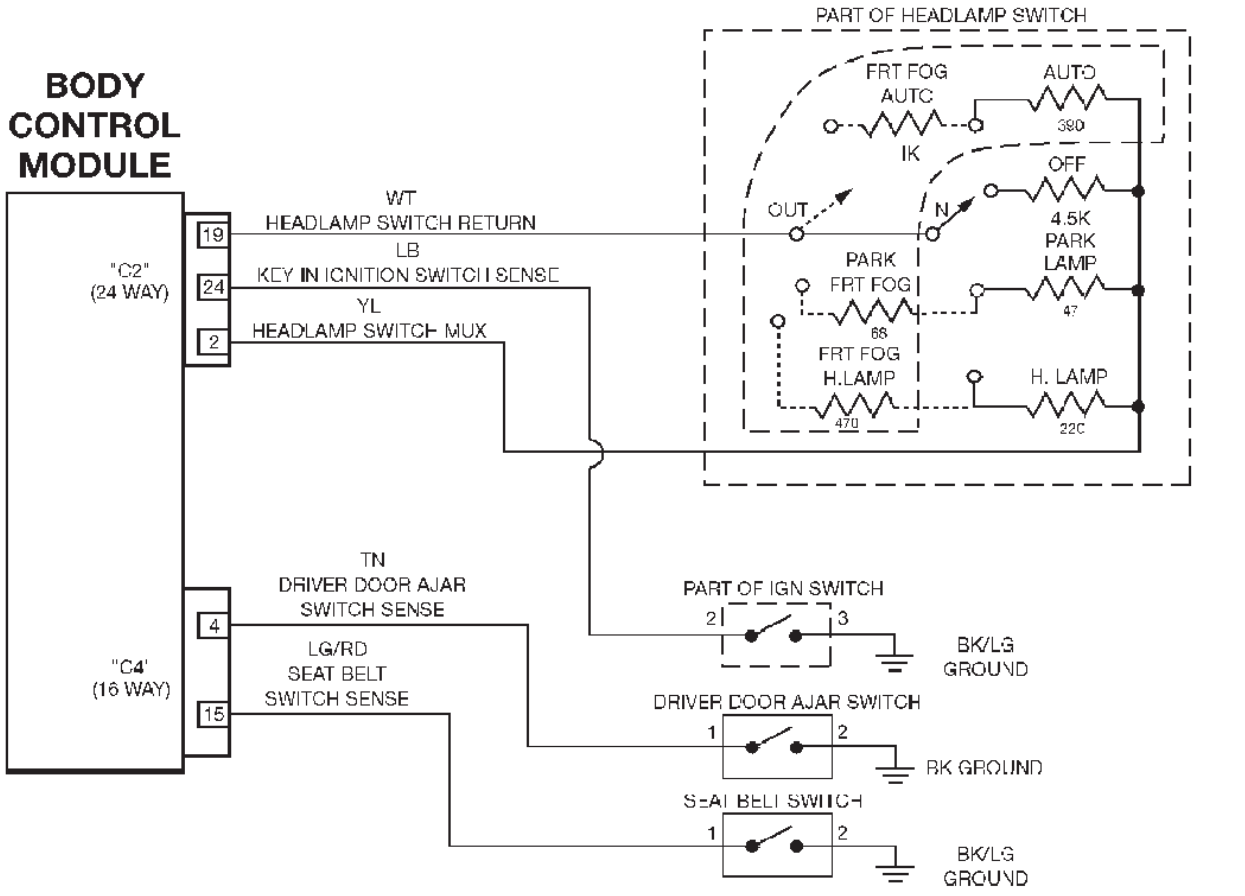



***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 3A REPAIRING CHIME INOPERATIVE WITH EXTERIOR LAMPS ON

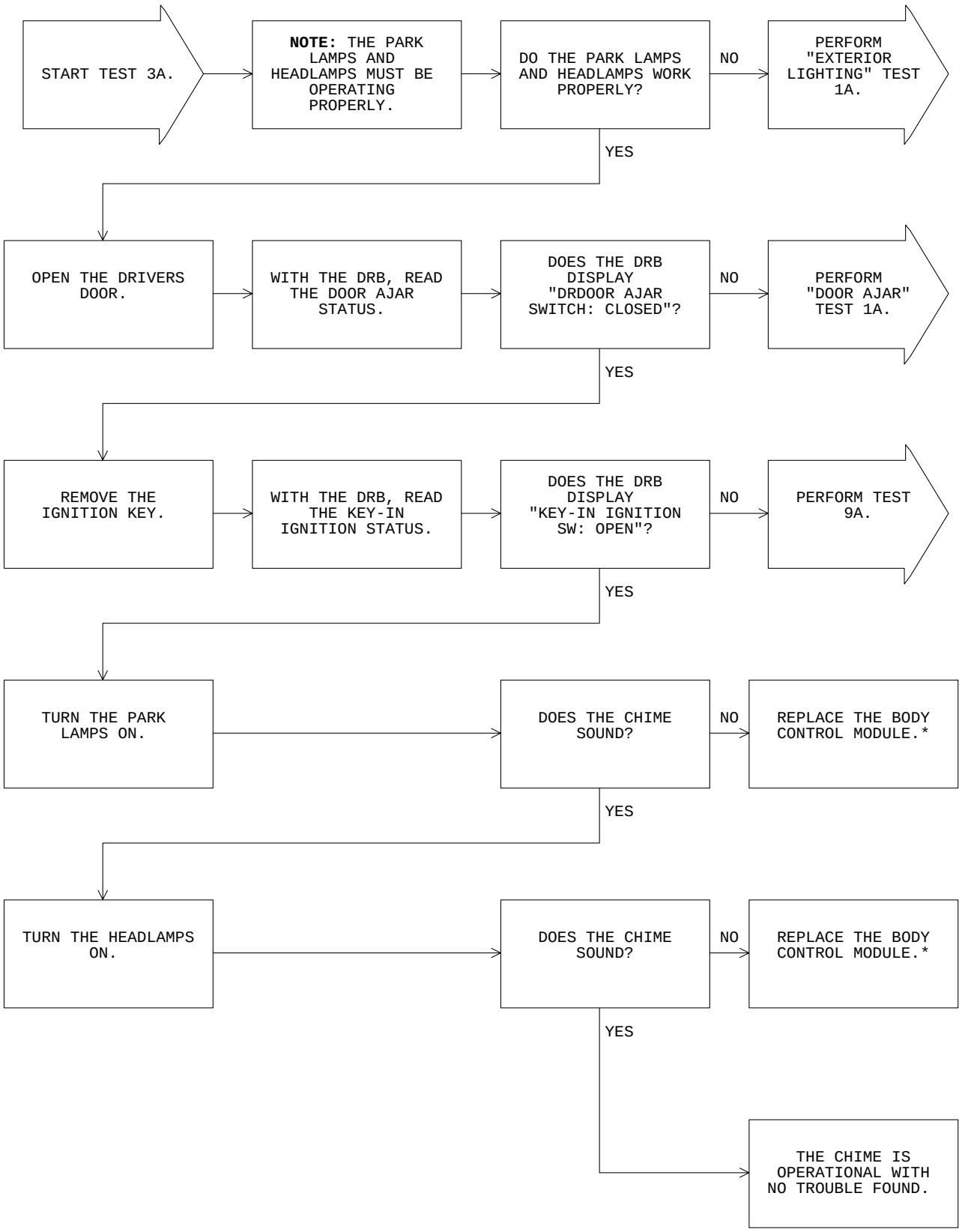
**Perform TEST 1A Before Proceeding**




80b4b843

## TEST 3A REPAIRING CHIME INOPERATIVE WITH EXTERIOR LAMPS ON

**Perform TEST 1A Before Proceeding**

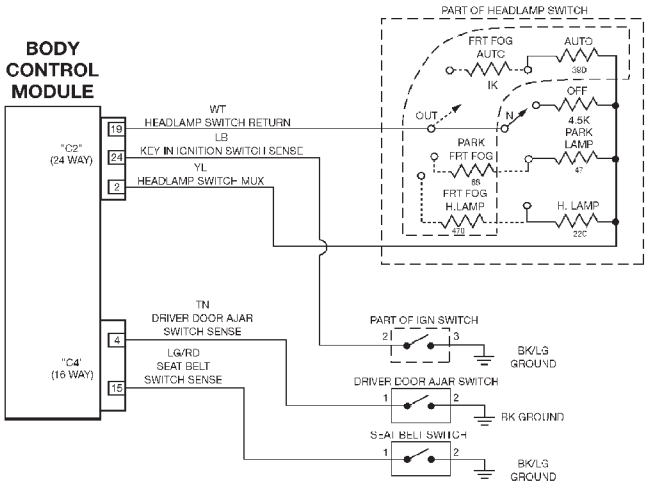



***Perform Verification TEST VER-2A.**

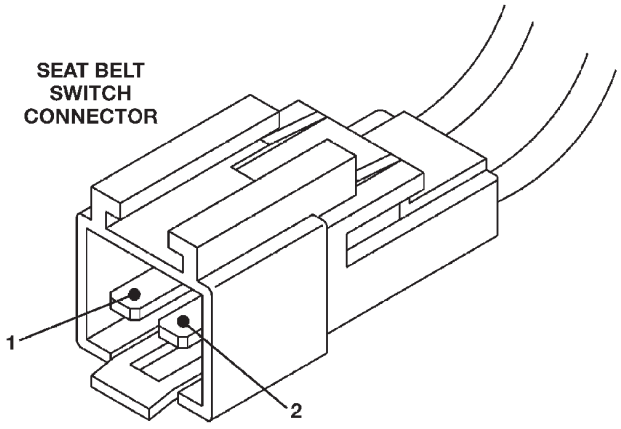
****Check connectors - Clean / repair as necessary.**

## TEST 4A REPAIRING CHIME INOPERATIVE WITH DRIVER SEAT BELT UNFASTENED

**Perform TEST 1A Before Proceeding**



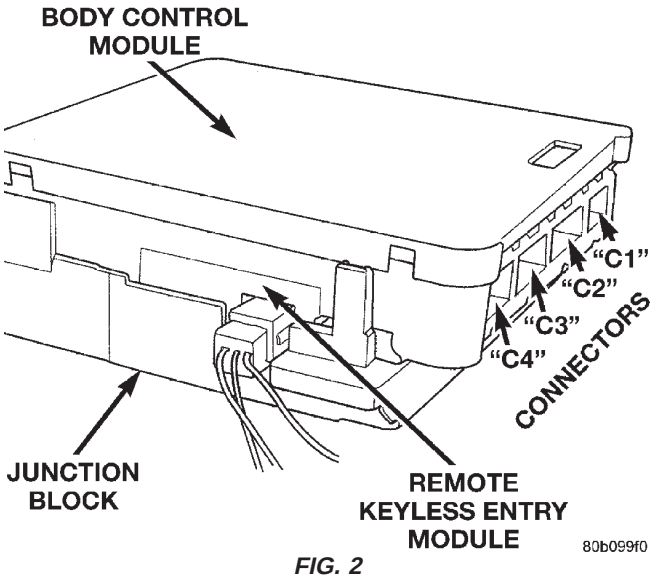

80b4b843




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | LG/RD | SEAT BELT SWITCH SENSE |
| 2 | BK/LG | GROUND |

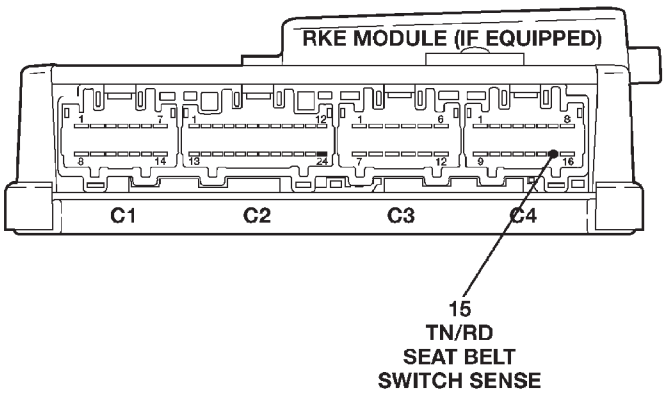
80b4b844

*FIG. 1*




80b099f0

*FIG. 2*



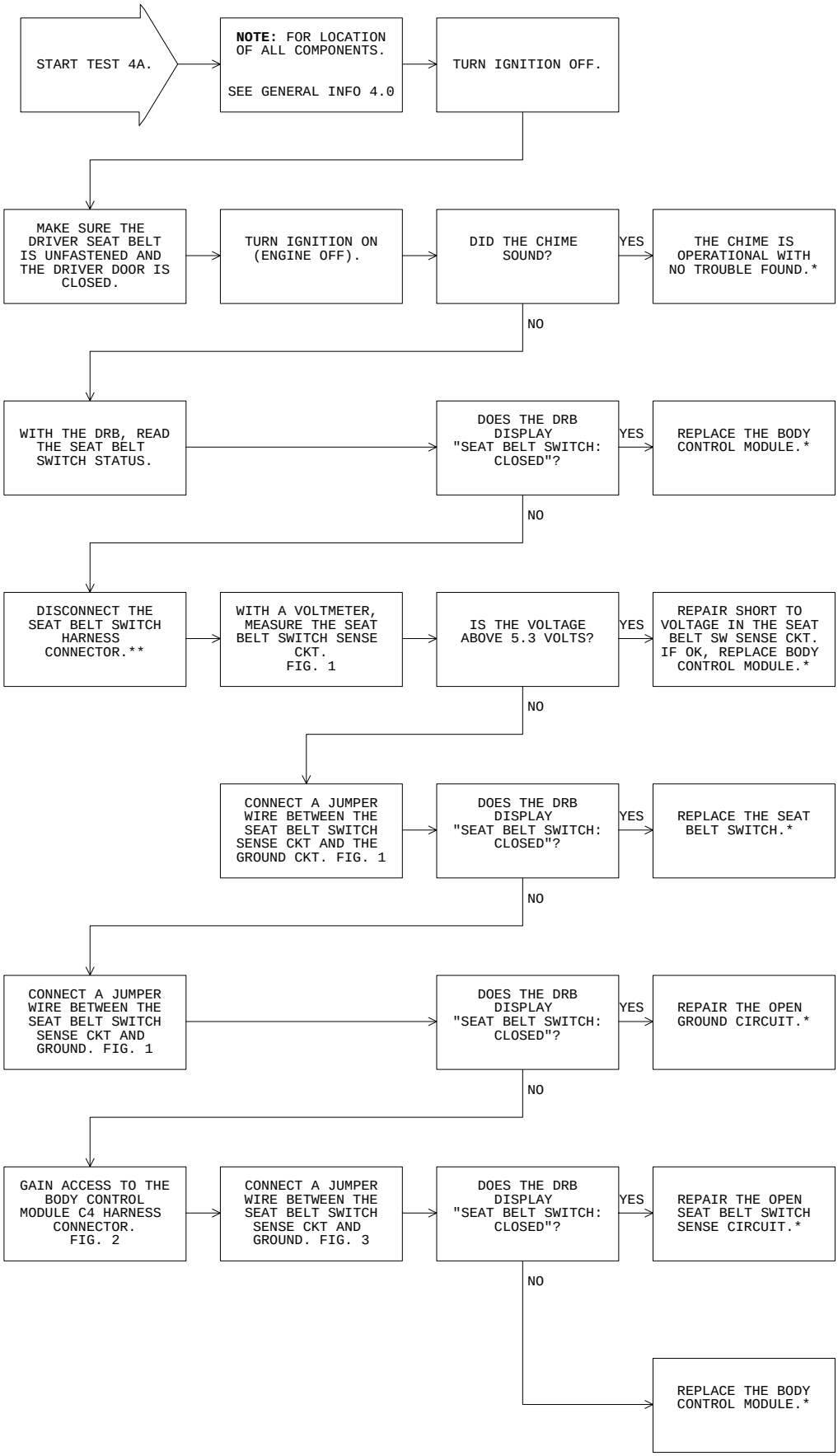

***NOTE: THE BODY CONTROL MODULE MUST BE FULLY CONNECTED TO PERFORM THIS STEP***

80b4b845

*FIG. 3*

## TEST 4A REPAIRING CHIME INOPERATIVE WITH DRIVER SEAT BELT UNFASTENED

**Perform TEST 1A Before Proceeding**

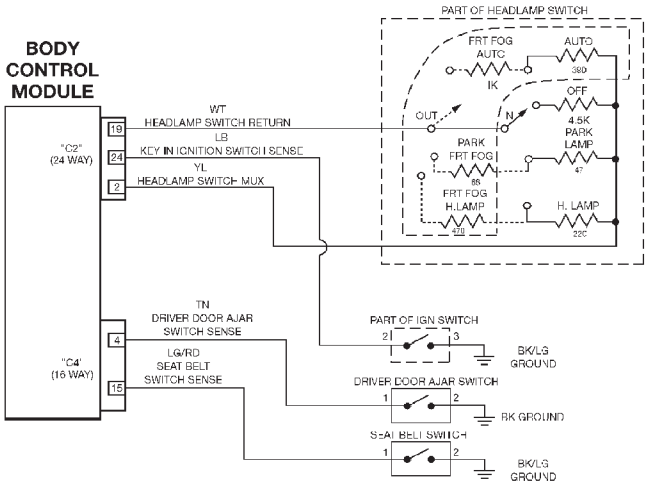



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

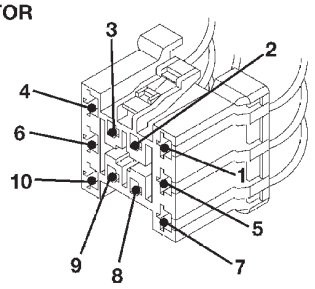
## TEST 5A REPAIRING CHIME INOPERATIVE WITH KEY IN IGNITION AND DRIVER DOOR OPEN

**Perform TEST 1A Before Proceeding**




80b4b843

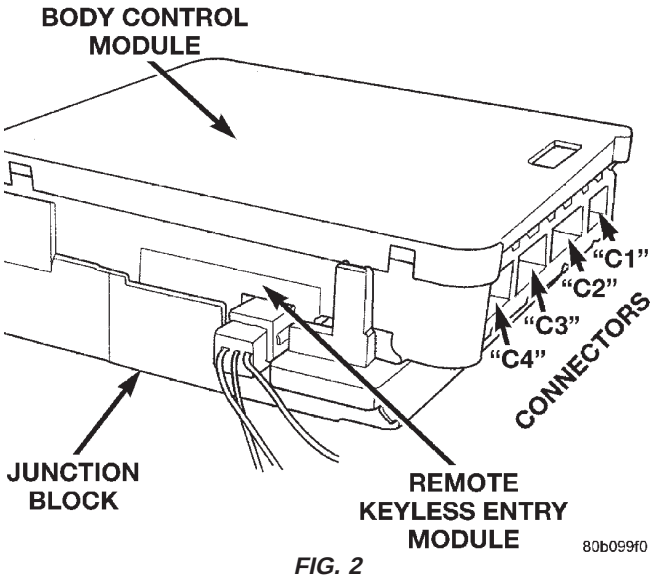
**IGNITION SWITCH CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/RD | IGN SW OUTPUT (OFF/RUN/START) |
| 2 | LB | KEY-IN IGNITION SWITCH SENSE |
| 3 | BK/LG | GROUND |
| 4 | DB/WT | IGN SW OUTPUT (RUN/START) |
| 5 | RD | FUSED B(+) |
| 6 | BK/WT | IGN SW OUTPUT (ACC/RUN) |
| 7 | PK/BK | FUSED B(+) |
| 9 | YL | IGN SW OUTPUT (START) |
| 10 | BK/OR | IGN SW OUTPUT (RUN) |

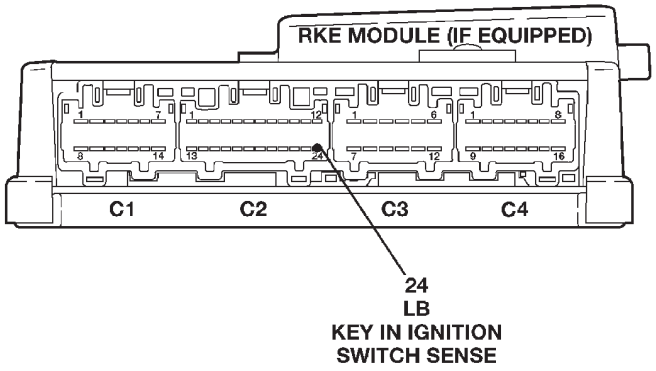
80b27d43

*FIG. 1*




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*FIG. 2*



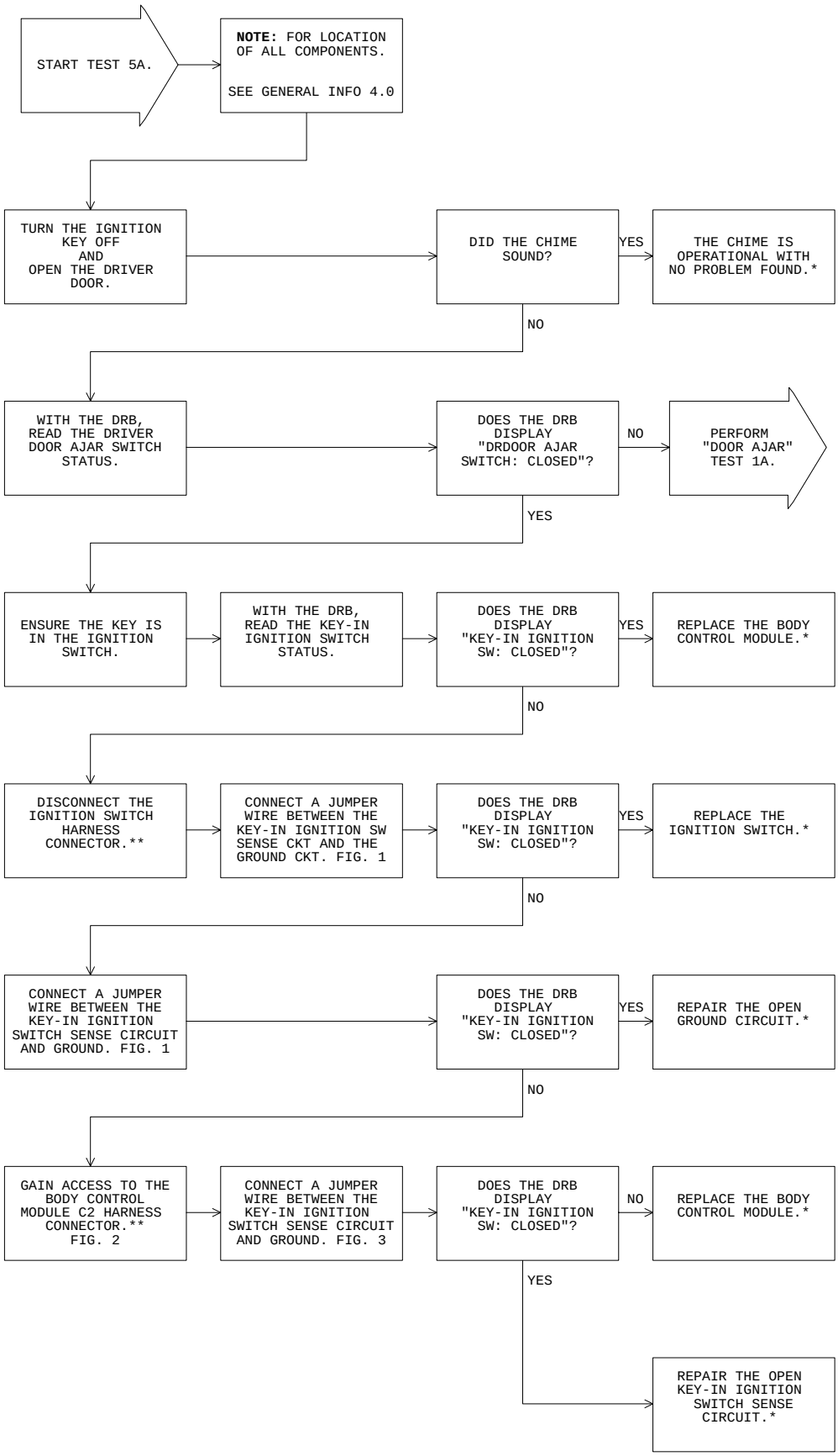

***NOTE: THE BODY CONTROL MODULE MUST BE FULLY CONNECTED TO PERFORM THIS STEP***

80b4b846

*FIG. 3*

## TEST 5A REPAIRING CHIME INOPERATIVE WITH KEY IN IGNITION AND DRIVER DOOR OPEN

**Perform TEST 1A Before Proceeding**

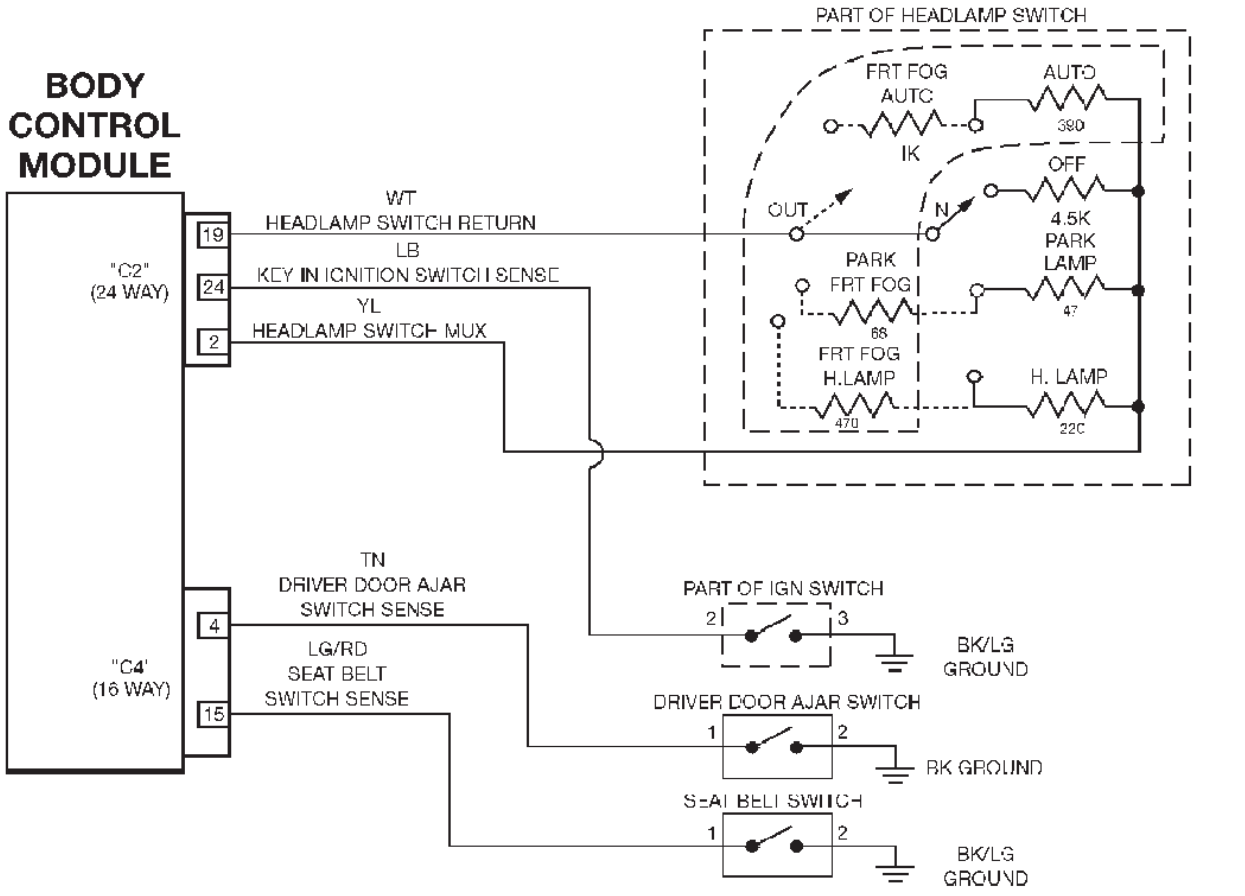



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 6A REPAIRING CHIME BEEP REQUEST INOPERATIVE

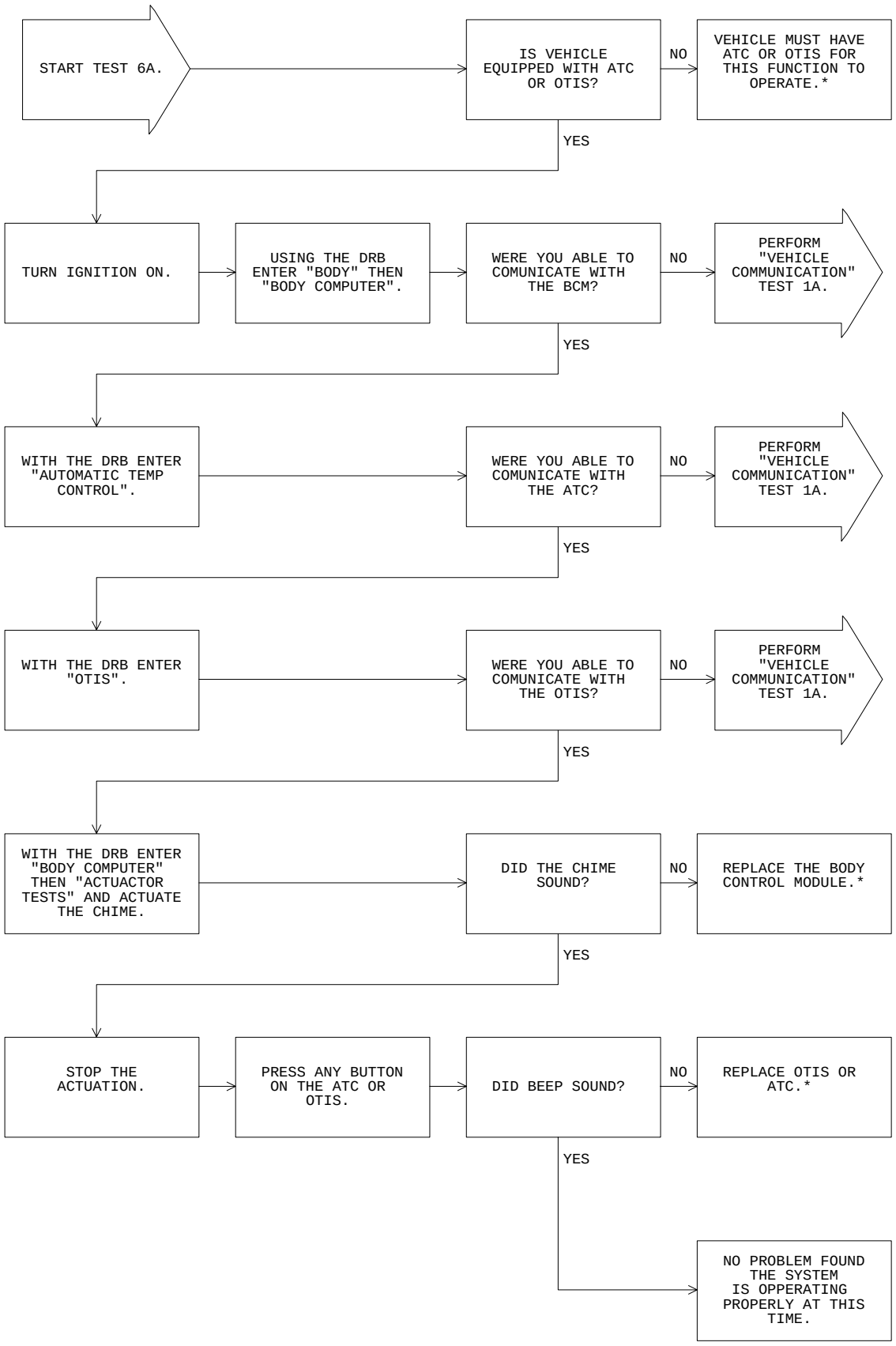
**Perform TEST 1A Before Proceeding**




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## TEST 6A REPAIRING CHIME BEEP REQUEST INOPERATIVE

**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.**

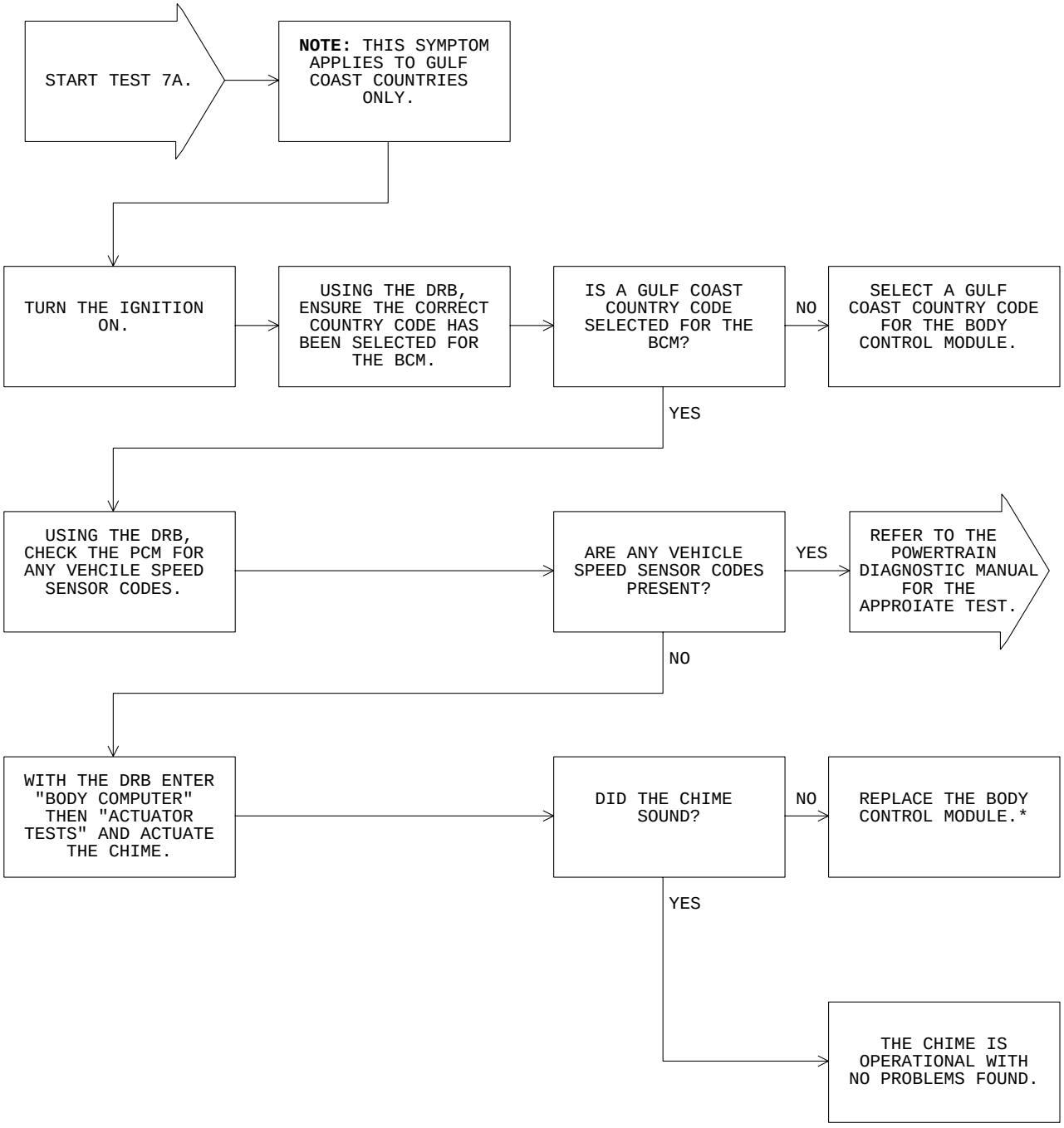
| TEST 7A | CHIME INOPERATIVE WITH VEHICLE SPEED ABOVE 75 MPH (120 KMH) (GULF COAST COUNTRIES ONLY) |
|---|---|

**Perform TEST 1A Before Proceeding**

## NOTES

## TEST 7A — CHIME INOPERATIVE WITH VEHICLE SPEED ABOVE 75 MPH (120 KMH) (GULF COAST COUNTRIES ONLY)

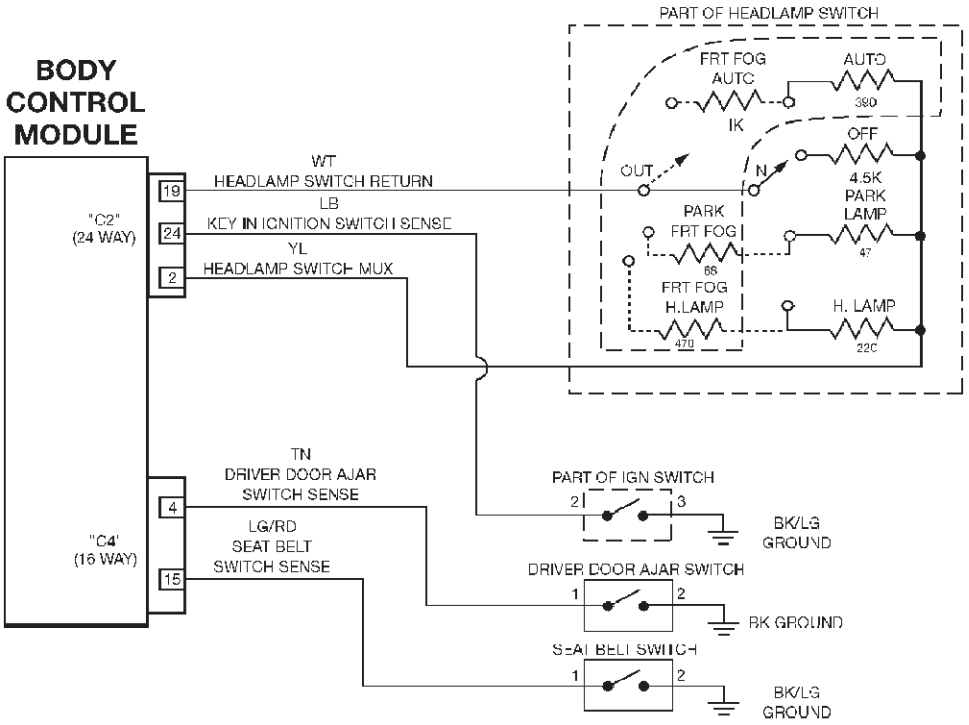
**Perform TEST 1A Before Proceeding**



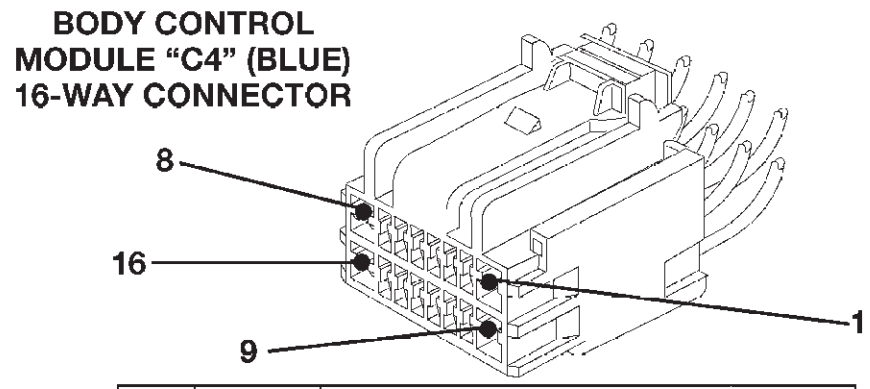

| | |
|---|---|
| ***Perform Verification TEST VER-2A.** | ****Check connectors - Clean / repair as necessary.** |

## TEST 8A REPAIRING CHIME SOUNDS WITH DRIVER SEAT BELT FASTENED

**Perform TEST 1A Before Proceeding**




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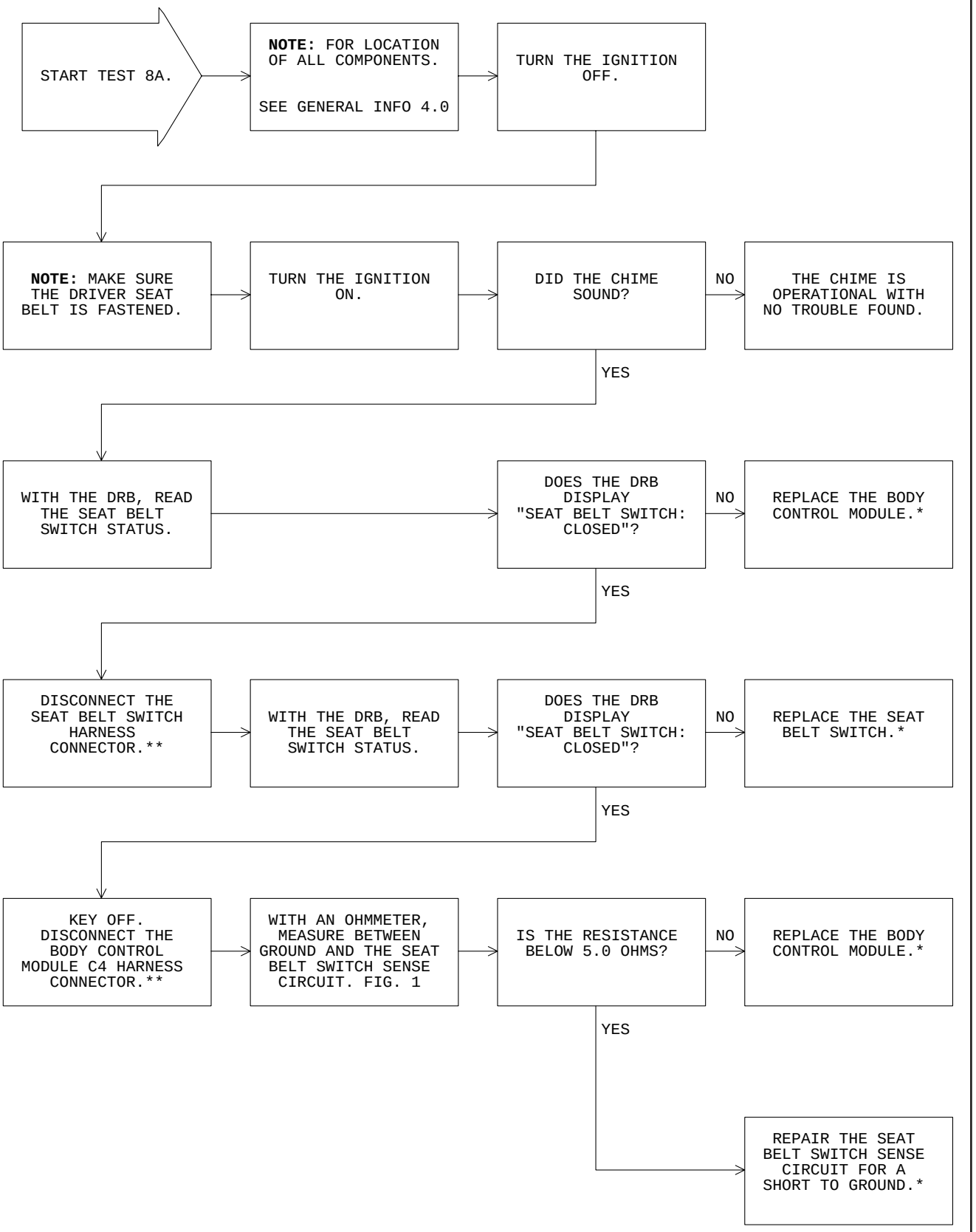

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

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***FIG. 1***

## TEST 8A REPAIRING CHIME SOUNDS WITH DRIVER SEAT BELT FASTENED

**Perform TEST 1A Before Proceeding**

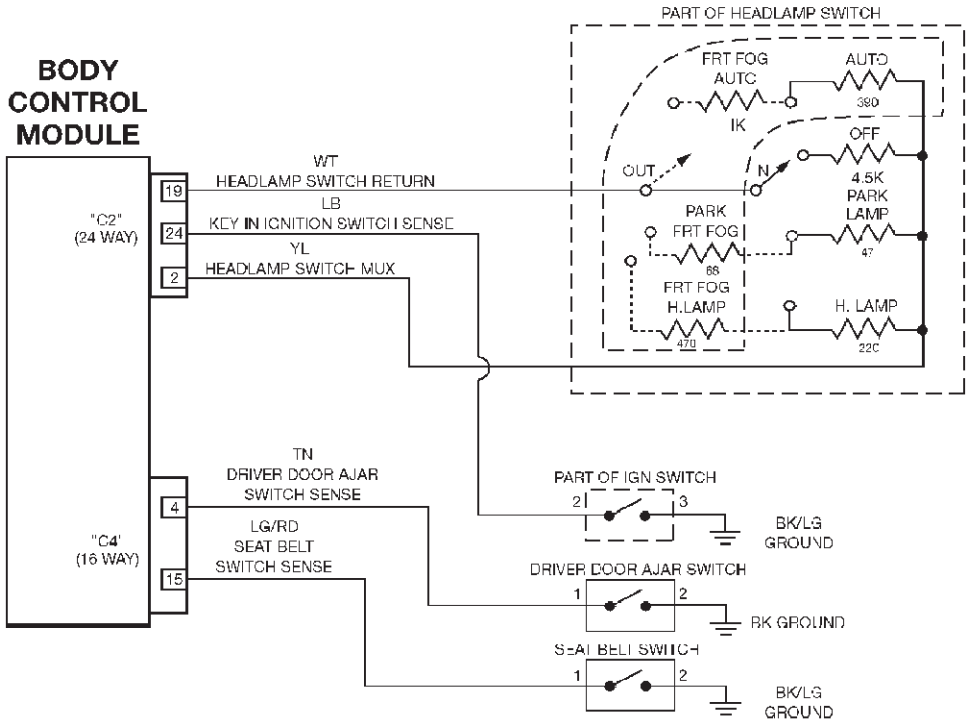



***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

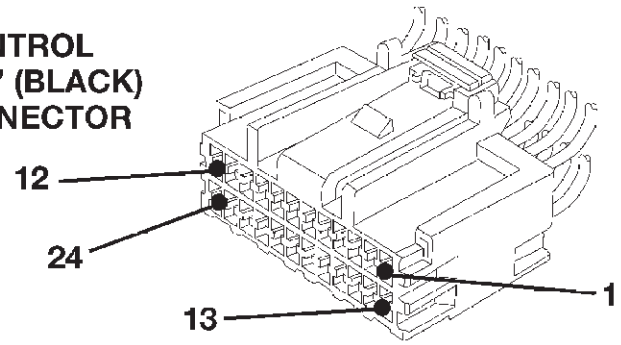
## TEST 9A REPAIRING CHIME SOUNDS WITH DRIVER DOOR OPEN

**Perform TEST 1A Before Proceeding**




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**BODY CONTROL MODULE "C2" (BLACK) 24-WAY CONNECTOR**



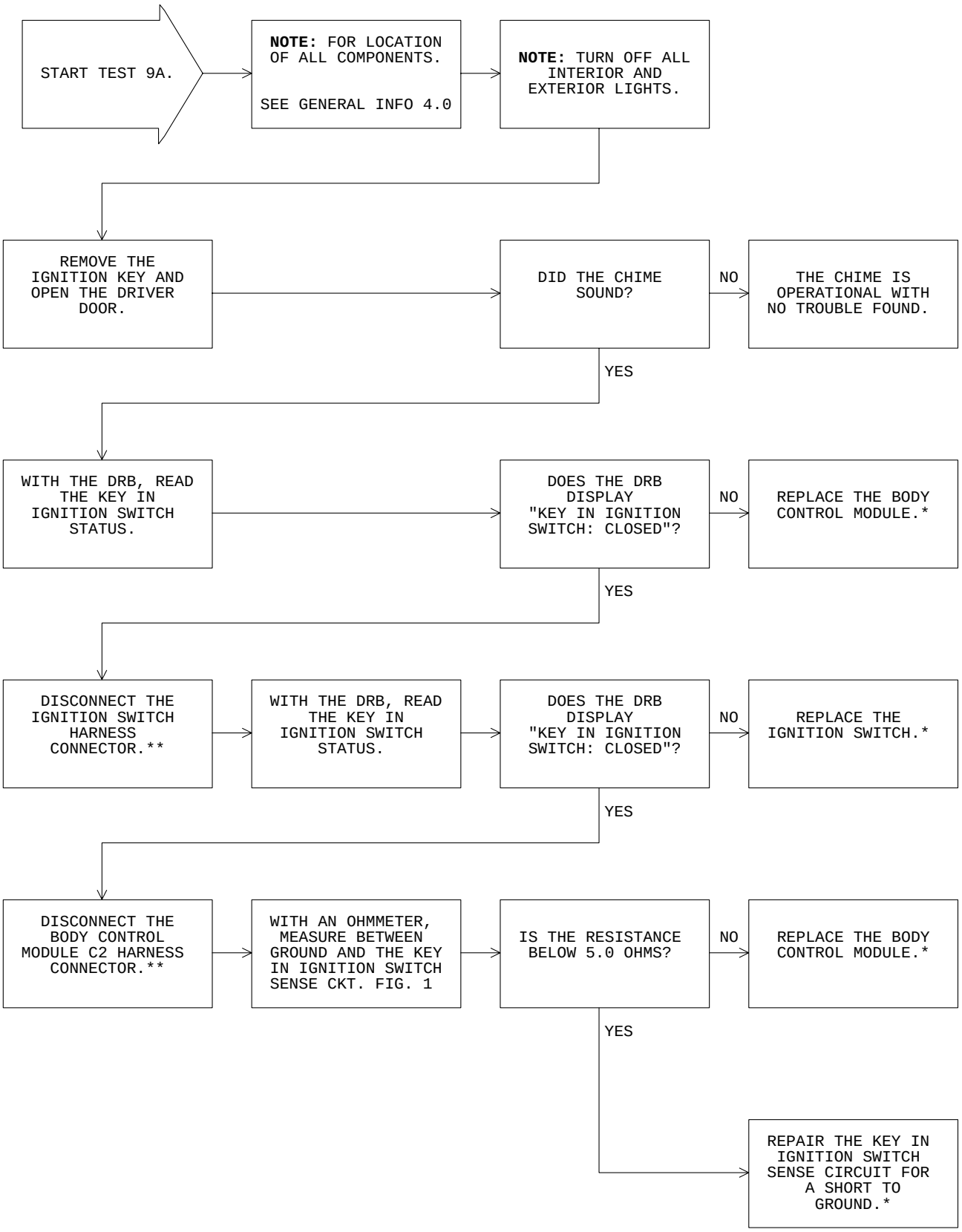

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

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***FIG. 1***

## TEST 9A REPAIRING CHIME SOUNDS WITH DRIVER DOOR OPEN

**Perform TEST 1A Before Proceeding**

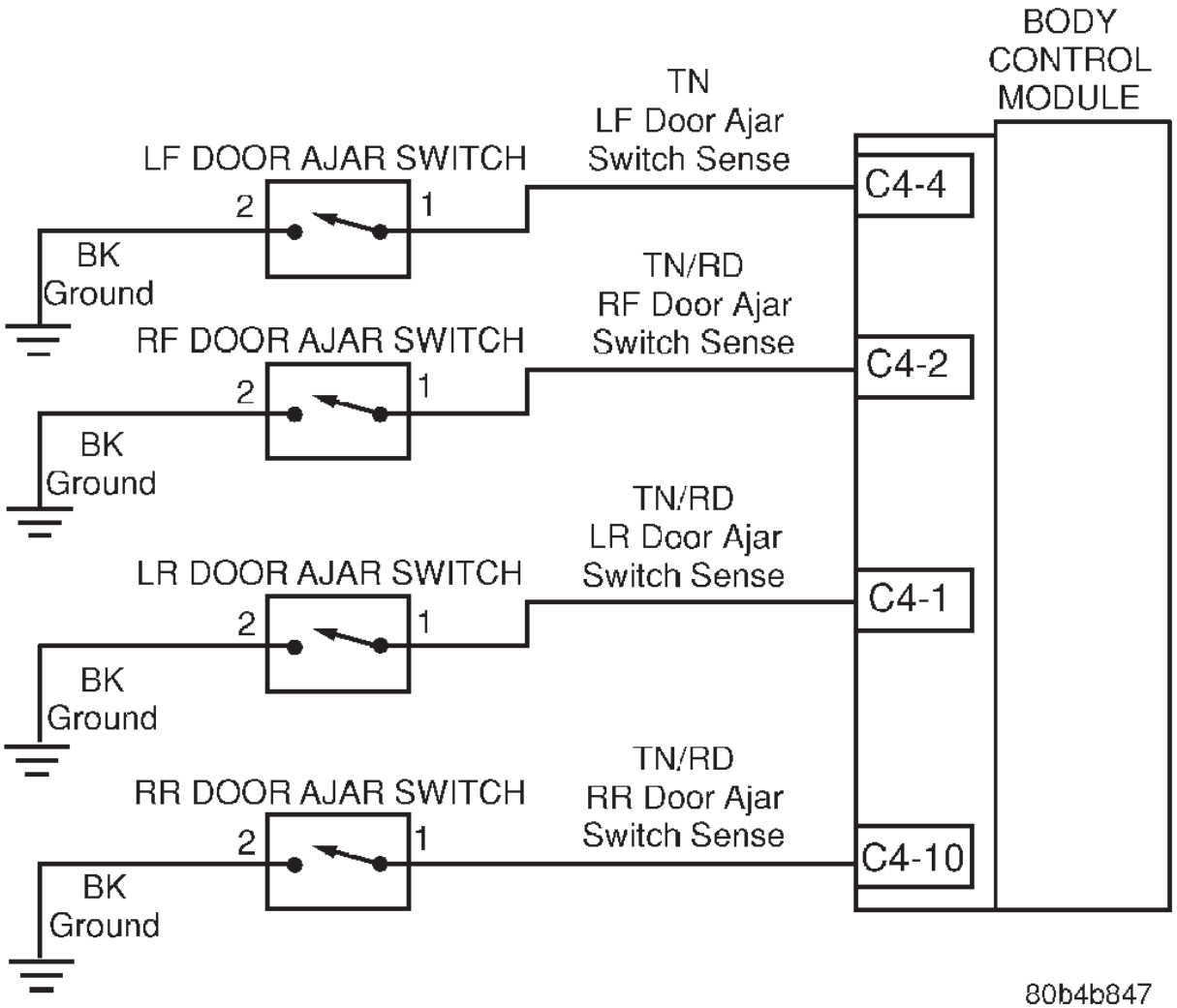



***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

**TEST 1A** **IDENTIFYING DOOR AJAR PROBLEMS**

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**



## TEST 1A IDENTIFYING DOOR AJAR PROBLEMS

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**

Verify the failure or customer's complaint and make sure the vehicle is experiencing the problem at this time.

1. With the DRB select ''Body'', ''Body Computer''. Verify Communication with Body Controller, if ''no response'' or any other communication problem . . . . . .perform "Vehicle Communication" TEST 1A.
2. Make sure all doors are aligned and close properly.
3. With the DRB in ''inputs/outputs'' read the door ajar switches.

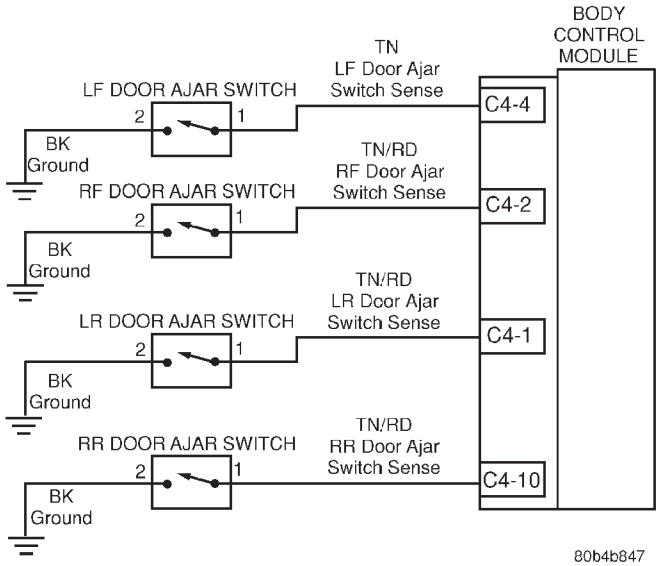
If the ajar switch state is ''Closed'' when the door is closed, perform the appropriate ''Shorted'' test.

If the ajar switch state is ''Open'' when the door is open, perform the appropriate ''Open'' test.

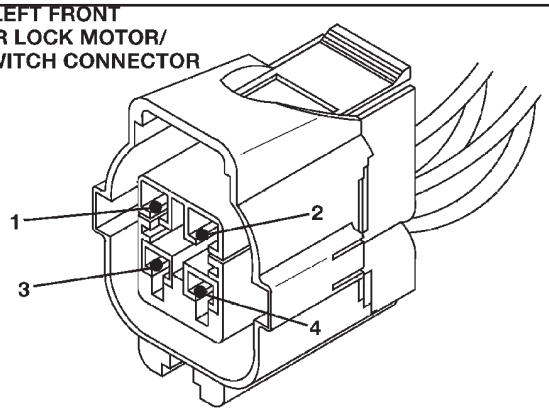
| PROBLEM WITH | PERFORM |
|---|---|
| Open Left Front Door Ajar Circuit | TEST 2A |
| Shorted Left Front Door Ajar Circuit | TEST 3A |
| Open Left Rear Door Ajar Circuit | TEST 4A |
| Shorted Door Ajar Circuit | TEST 5A |
| Open Right Front Door Ajar Circuit | TEST 6A |
| Open Right Rear Door Ajar Circuit | TEST 7A |

## TEST 2A REPAIRING - OPEN LEFT FRONT DOOR AJAR CIRCUIT

**Perform TEST 1A Before Proceeding**




**LEFT FRONT DOOR LOCK MOTOR/ AJAR SWITCH CONNECTOR**

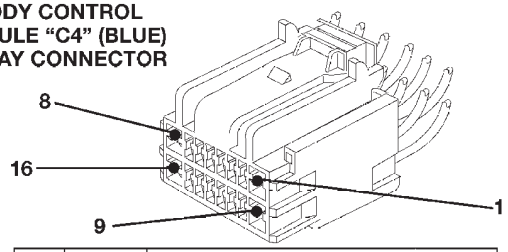



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN | DOOR AJAR SWITCH SENSE |
| 2 | BK | GROUND |
| 3 | DB | LF DOOR UNLOCK RELAY OUTPUT |
| 4 | OR | LOCK RELAY OUTPUT |

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***FIG. 1***

**BODY CONTROL MODULE "C4" (BLUE) 16-WAY CONNECTOR**



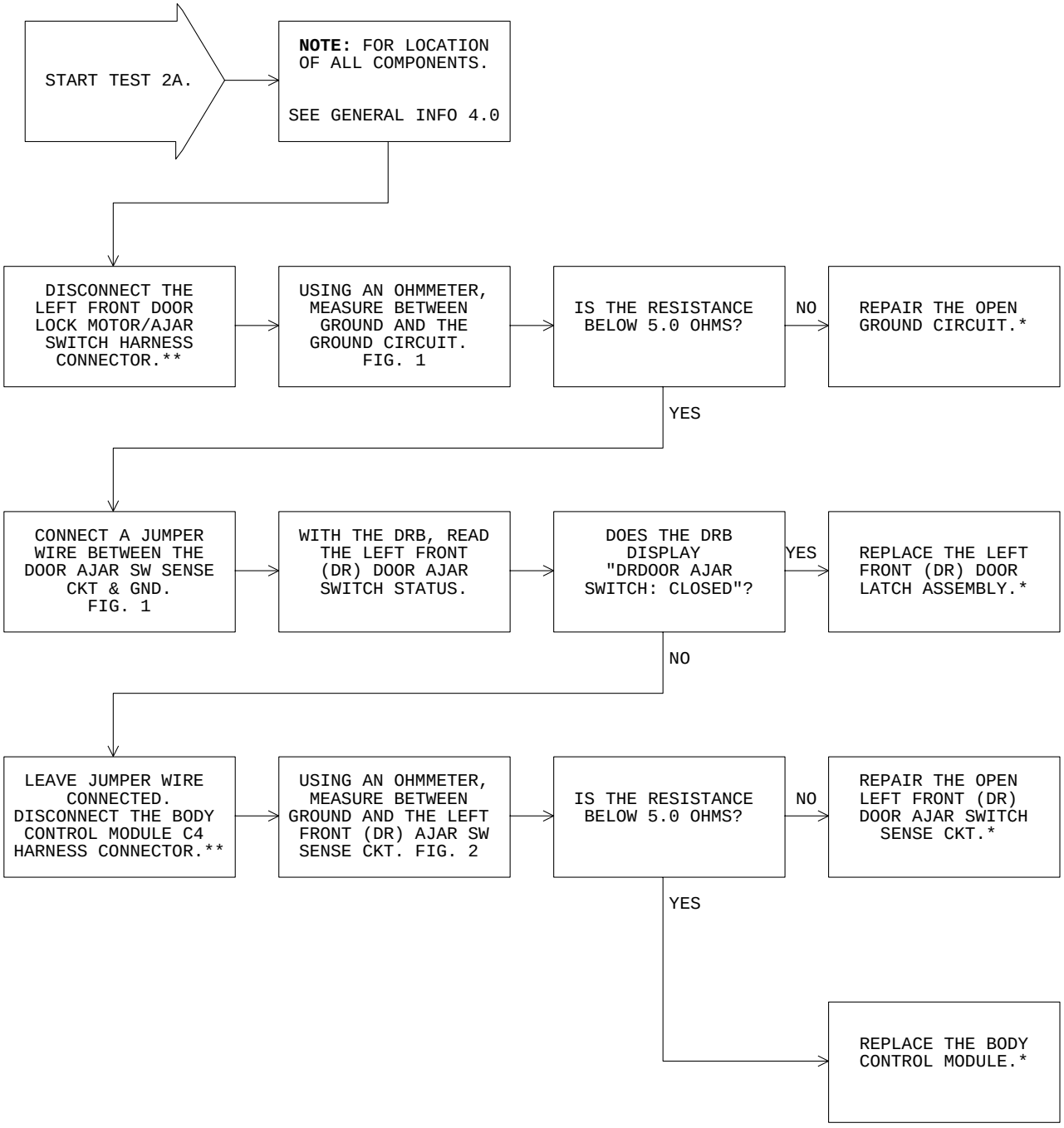

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

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***FIG. 2***

## TEST 2A — REPAIRING - OPEN LEFT FRONT DOOR AJAR CIRCUIT

**Perform TEST 1A Before Proceeding**

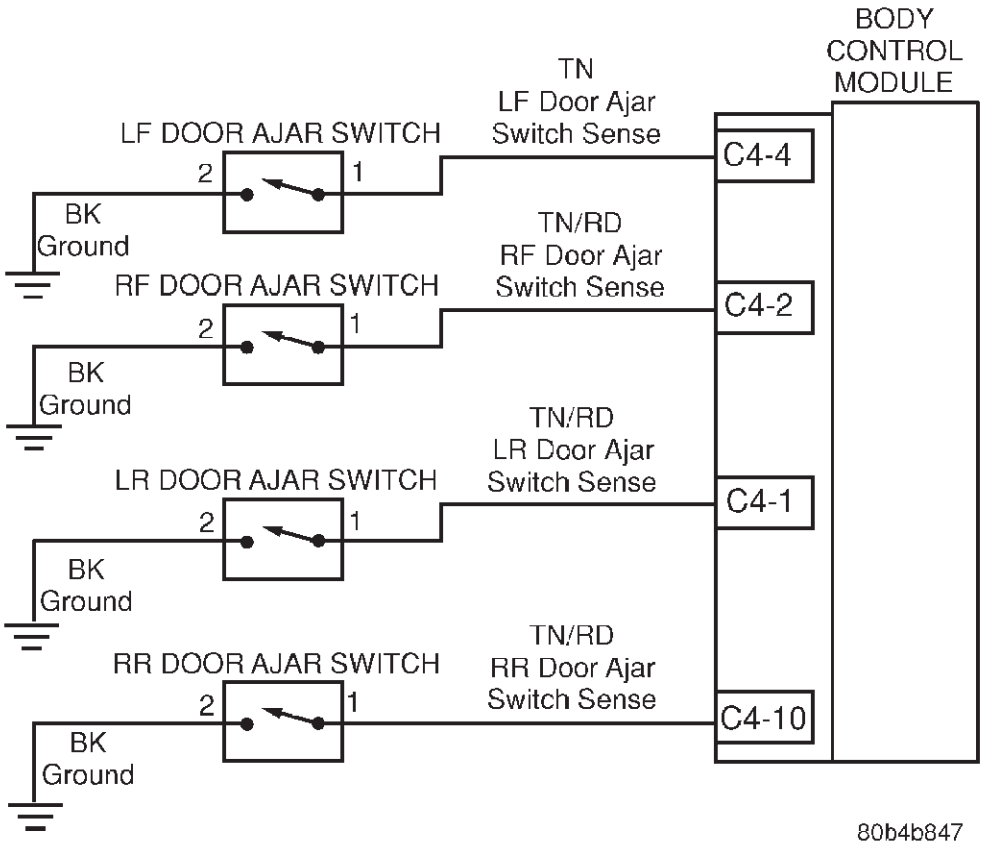



***Perform Verification TEST VER-2A.***

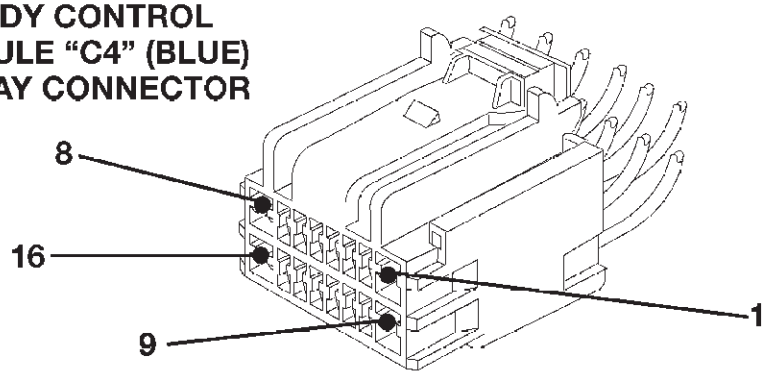
***Check connectors - Clean / repair as necessary.***

**TEST 3A** | **REPAIRING - SHORTED LEFT FRONT DOOR AJAR CIRCUIT**

**Perform TEST 1A Before Proceeding**




**BODY CONTROL MODULE "C4" (BLUE) 16-WAY CONNECTOR**



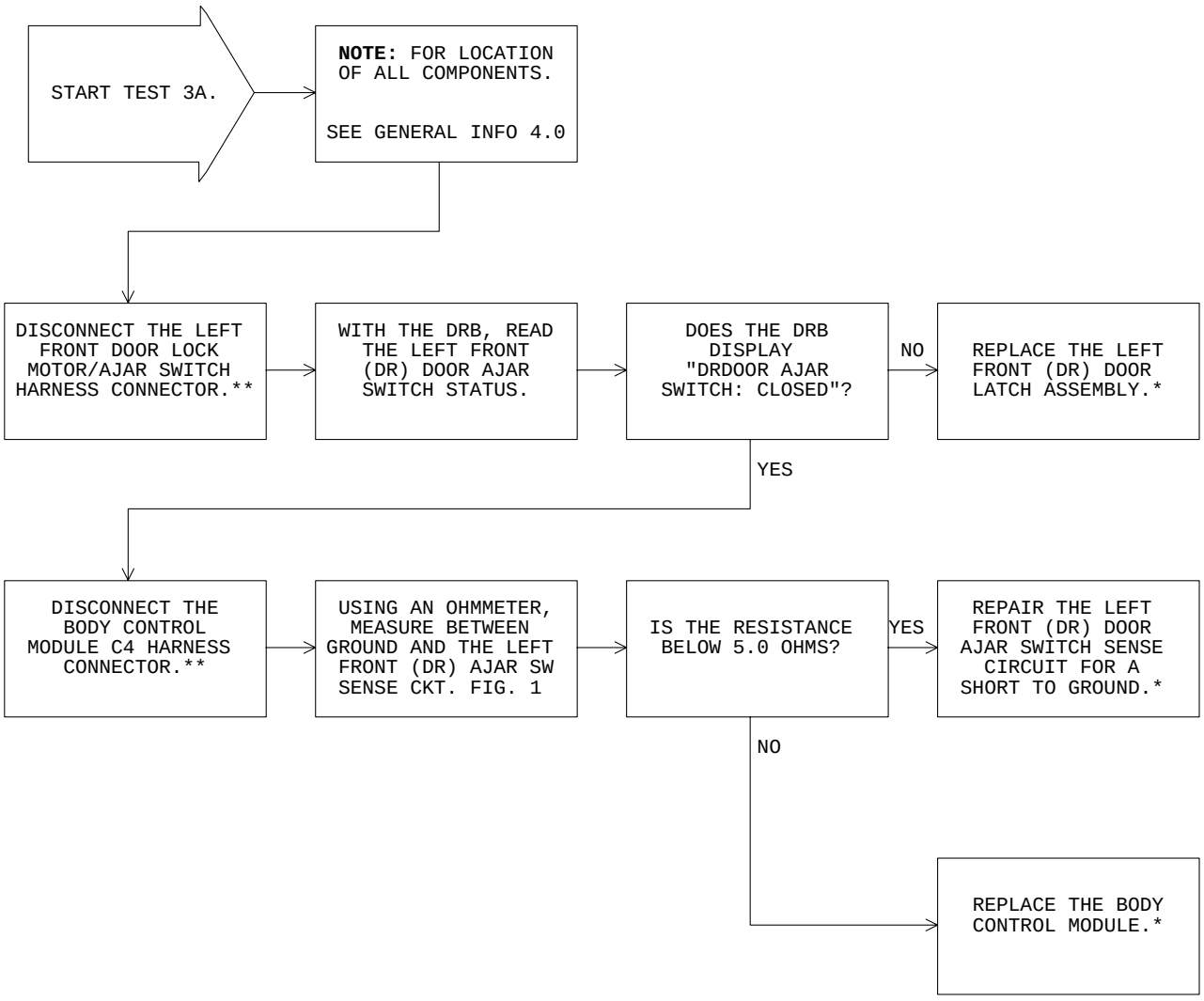

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

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***FIG. 1***

## TEST 3A REPAIRING - SHORTED LEFT FRONT DOOR AJAR CIRCUIT

**Perform TEST 1A Before Proceeding**

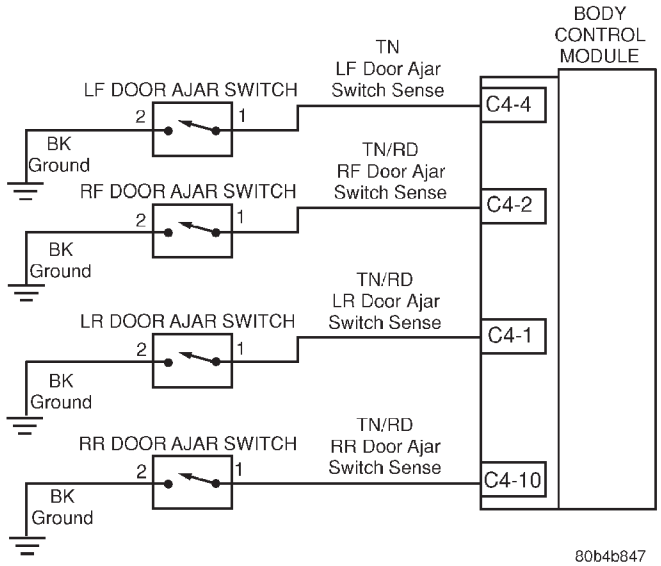



***Perform Verification TEST VER-2A.***

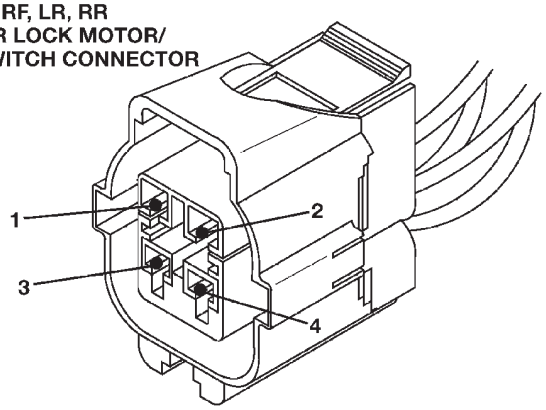
***Check connectors - Clean / repair as necessary.***

## TEST 4A REPAIRING - OPEN LEFT REAR DOOR AJAR CIRCUIT

**Perform TEST 1A Before Proceeding**




**RF, LR, RR DOOR LOCK MOTOR/ AJAR SWITCH CONNECTOR**

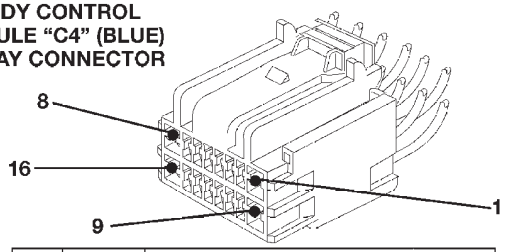



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | DOOR AJAR SWITCH SENSE |
| 2 | BK | GROUND |
| 3 | PK/BK | UNLOCK RELAY OUTPUT |
| 4 | OR | LOCK RELAY OUTPUT |

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***FIG. 1***

**BODY CONTROL MODULE "C4" (BLUE) 16-WAY CONNECTOR**



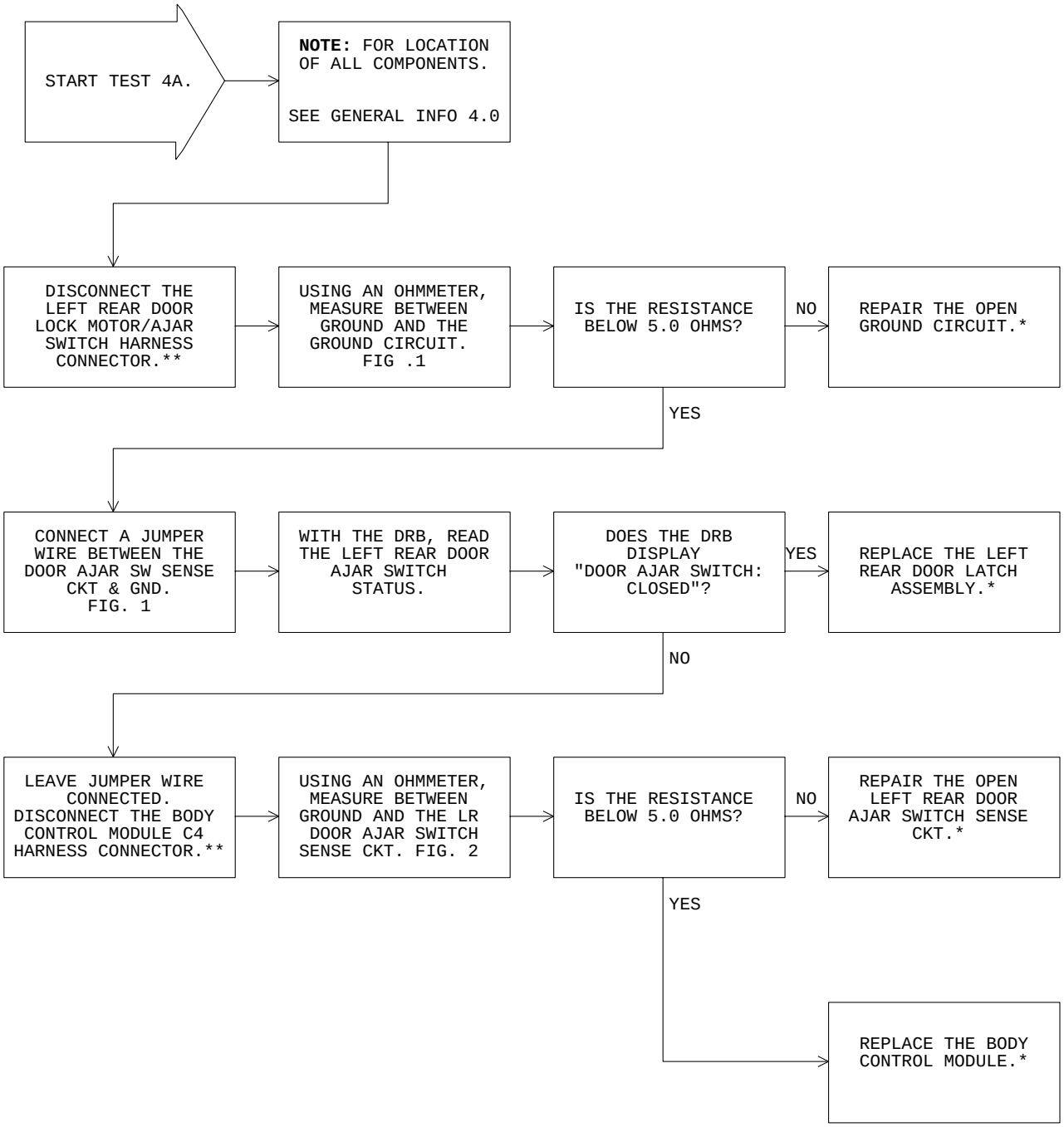

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

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***FIG. 2***

## TEST 4A — REPAIRING - OPEN LEFT REAR DOOR AJAR CIRCUIT

**Perform TEST 1A Before Proceeding**

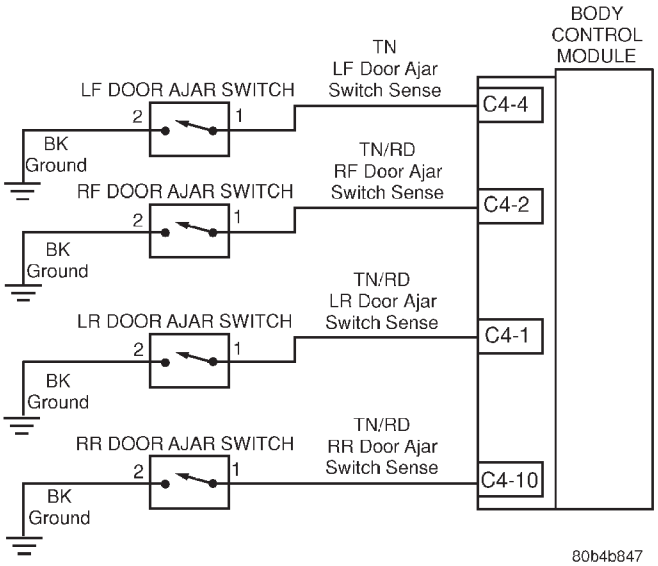



***Perform Verification TEST VER-2A.***

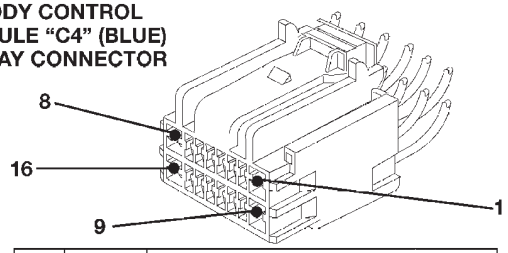
***Check connectors - Clean / repair as necessary.***

## TEST 5A REPAIRING - SHORTED DOOR AJAR CIRCUIT

**Perform TEST 1A Before Proceeding**




**BODY CONTROL MODULE "C4" (BLUE) 16-WAY CONNECTOR**

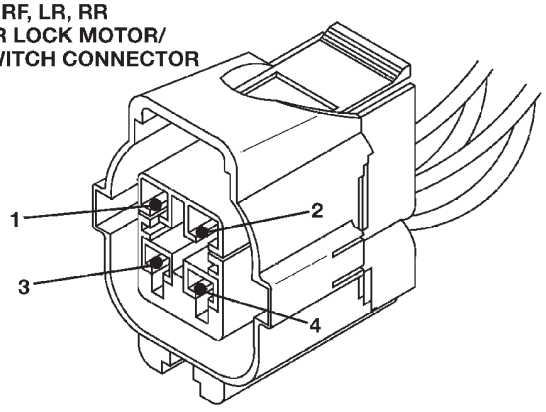



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

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***FIG. 1***

**RF, LR, RR DOOR LOCK MOTOR/ AJAR SWITCH CONNECTOR**



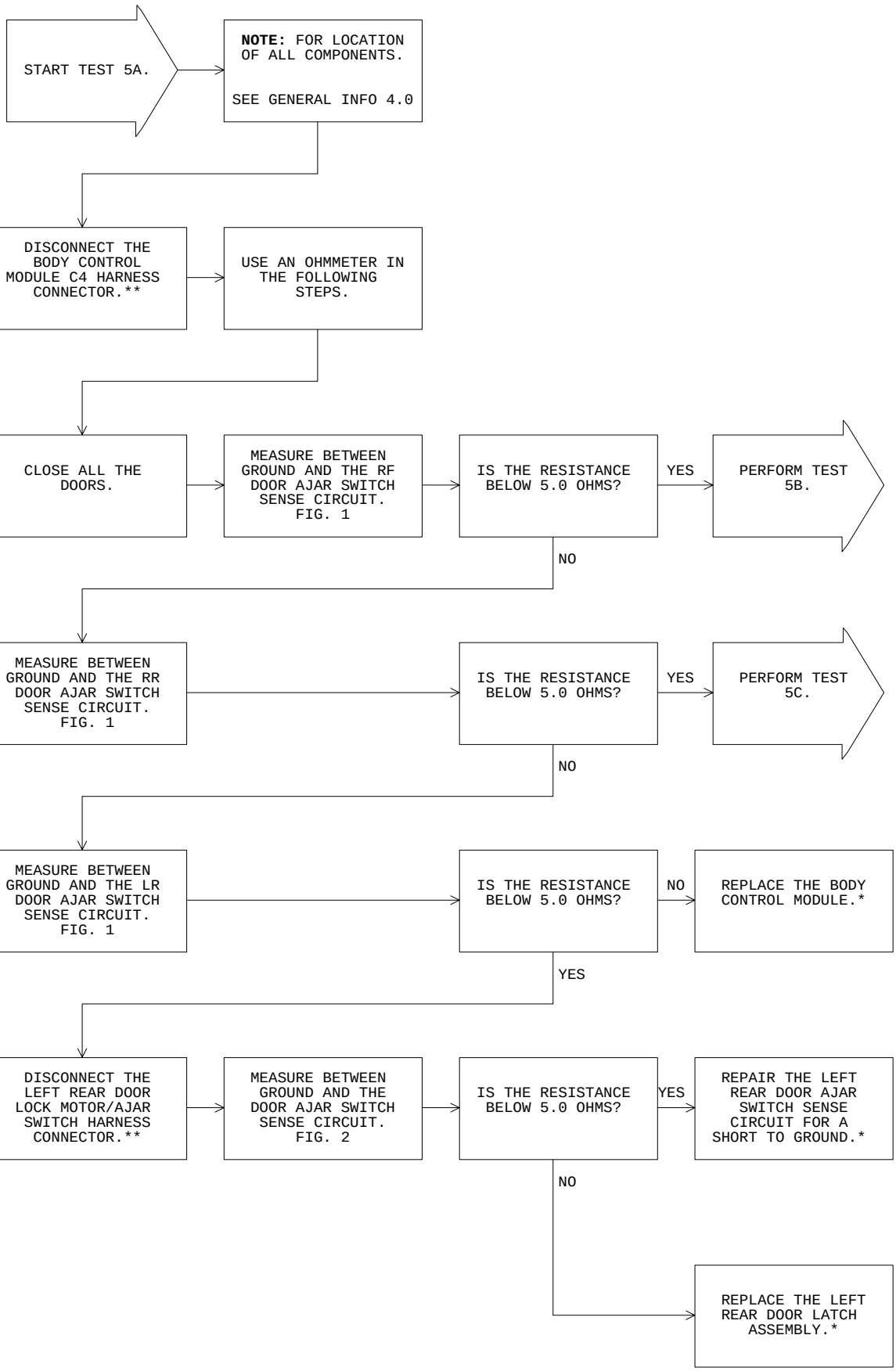

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | DOOR AJAR SWITCH SENSE |
| 2 | BK | GROUND |
| 3 | PK/BK | UNLOCK RELAY OUTPUT |
| 4 | OR | LOCK RELAY OUTPUT |

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***FIG. 2***

## TEST 5A REPAIRING - SHORTED DOOR AJAR CIRCUIT

**Perform TEST 1A Before Proceeding**

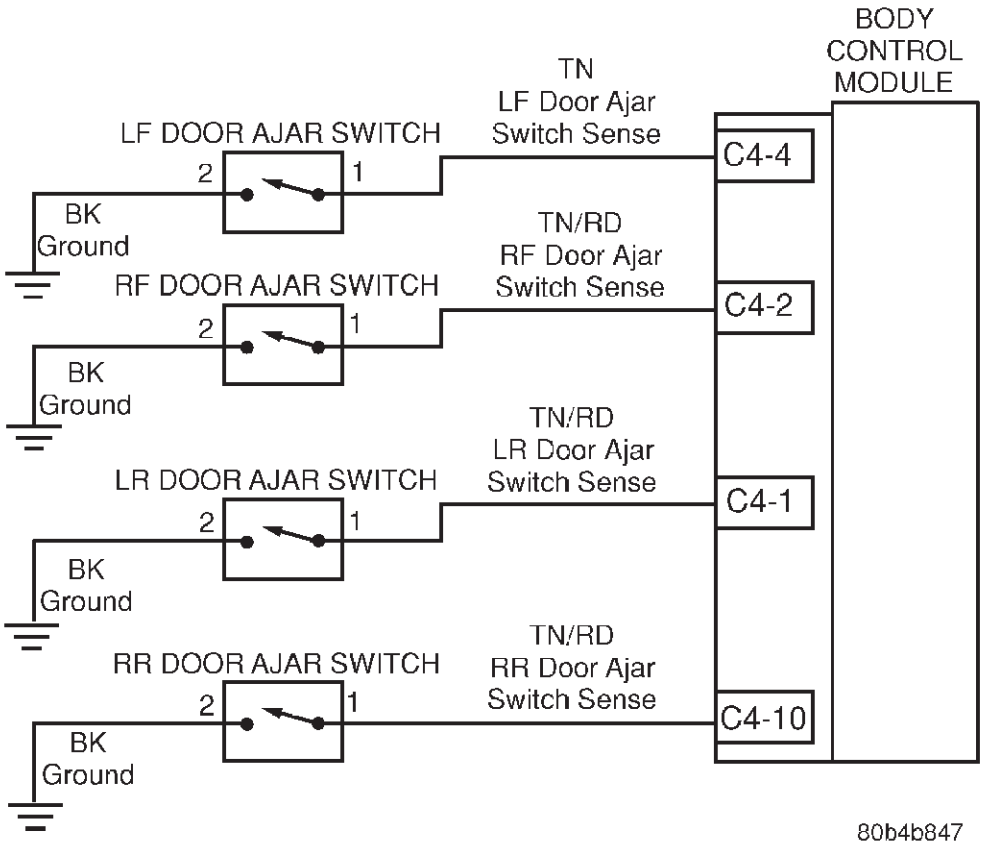


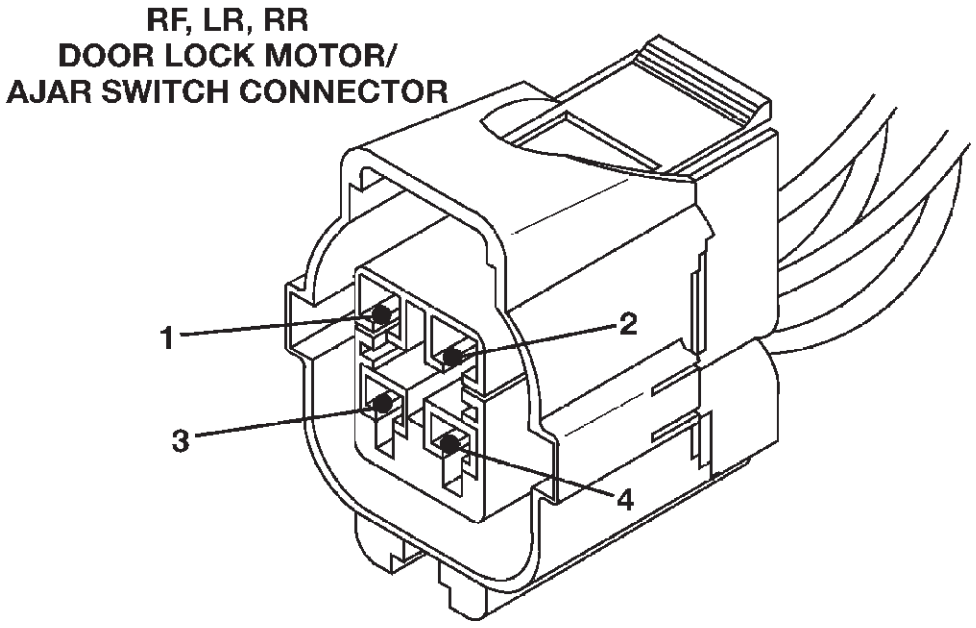

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

**TEST 5B** REPAIRING - SHORTED RIGHT FRONT DOOR AJAR CIRCUIT

**Perform TEST 5A Before Proceeding**



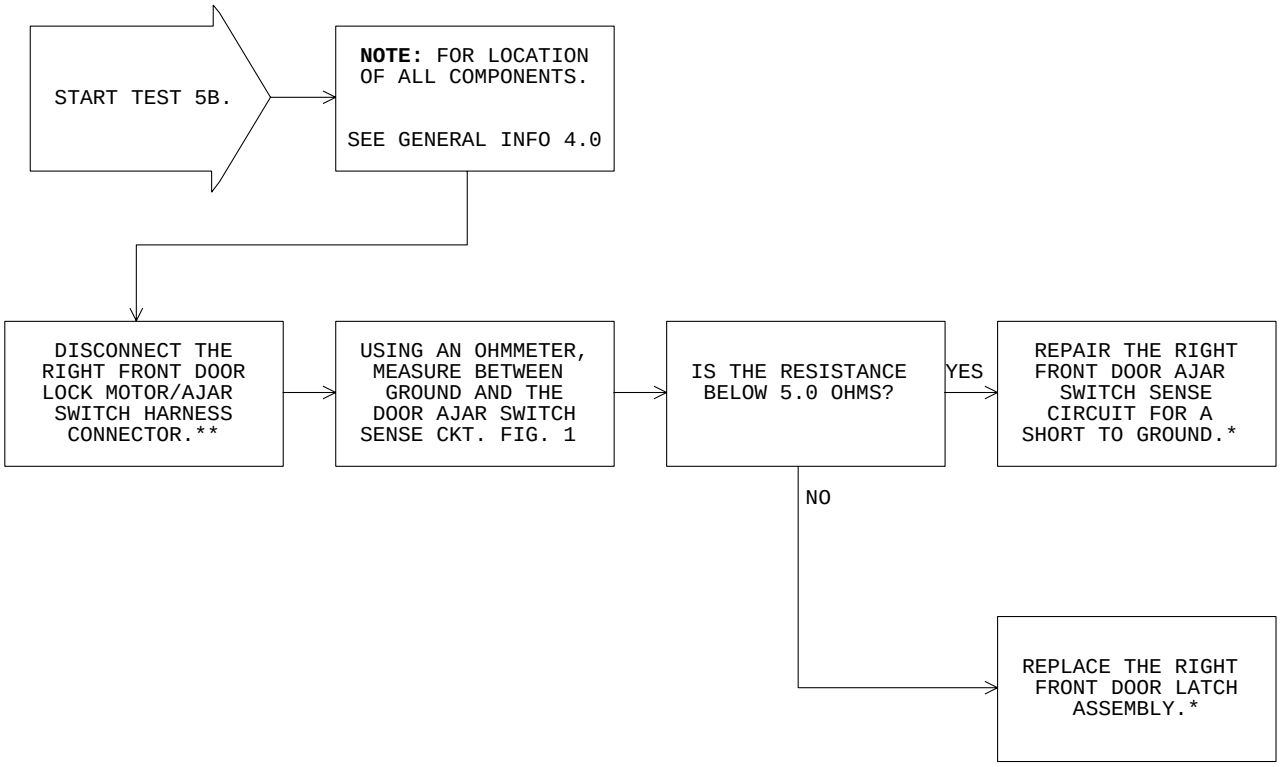

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | DOOR AJAR SWITCH SENSE |
| 2 | BK | GROUND |
| 3 | PK/BK | UNLOCK RELAY OUTPUT |
| 4 | OR | LOCK RELAY OUTPUT |

80b1b3cd

***FIG. 1***

## TEST 5B REPAIRING - SHORTED RIGHT FRONT DOOR AJAR CIRCUIT

**Perform TEST 5A Before Proceeding**

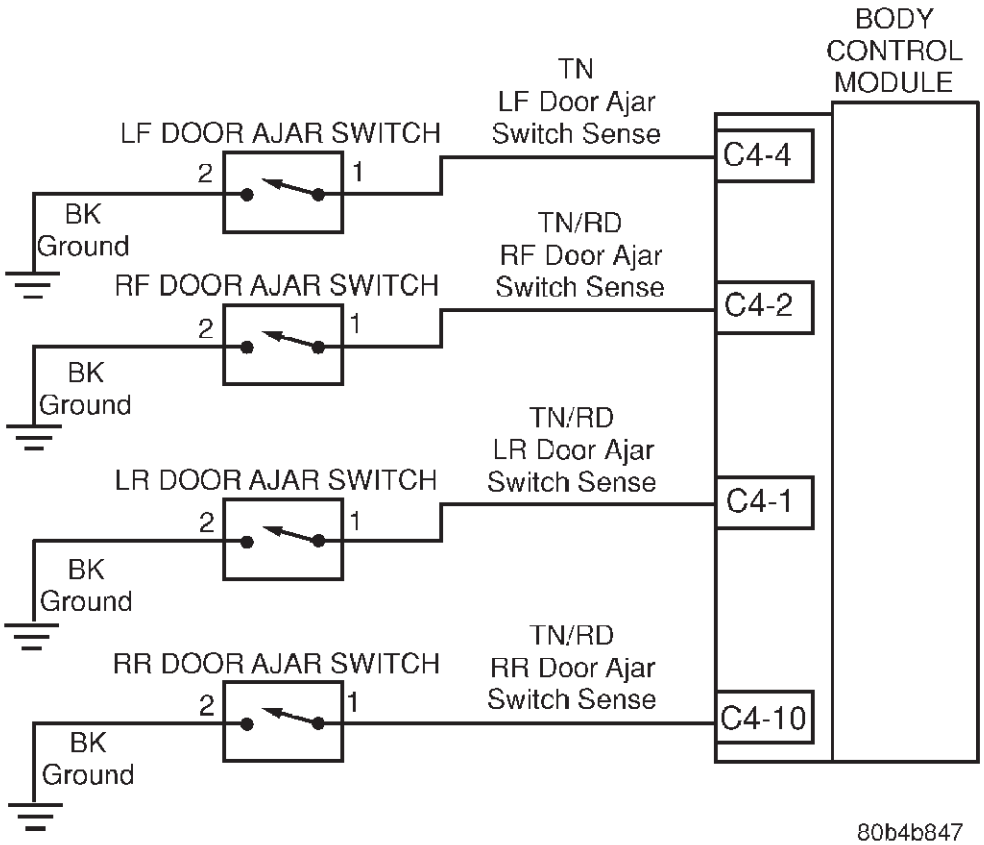


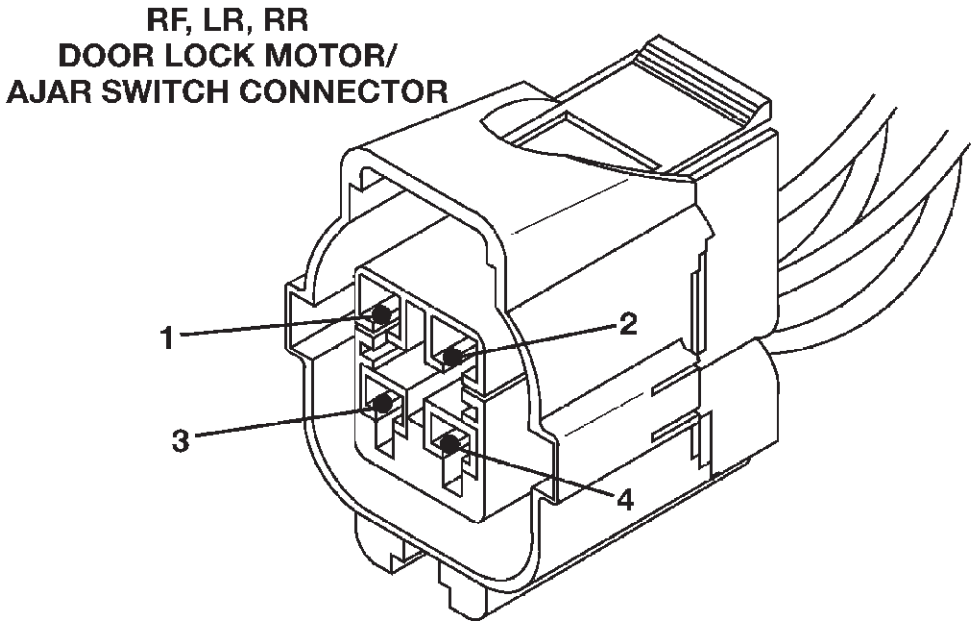

***Perform Verification TEST VER-2A.***

*****Check connectors - Clean / repair as necessary.***

**TEST 5C** REPAIRING - SHORTED RIGHT REAR DOOR AJAR CIRCUIT

**Perform TEST 5A Before Proceeding**



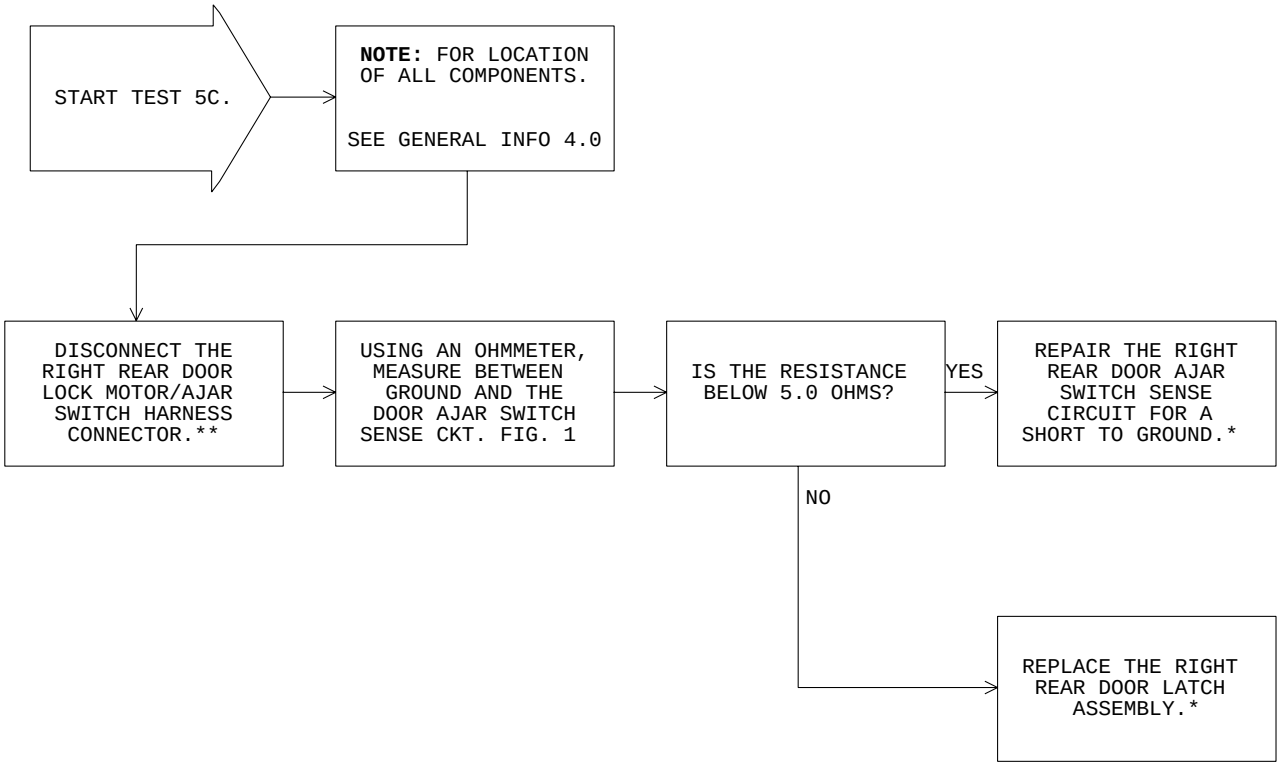

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | DOOR AJAR SWITCH SENSE |
| 2 | BK | GROUND |
| 3 | PK/BK | UNLOCK RELAY OUTPUT |
| 4 | OR | LOCK RELAY OUTPUT |

80b1b3cd

***FIG. 1***

## TEST 5C REPAIRING - SHORTED RIGHT REAR DOOR AJAR CIRCUIT

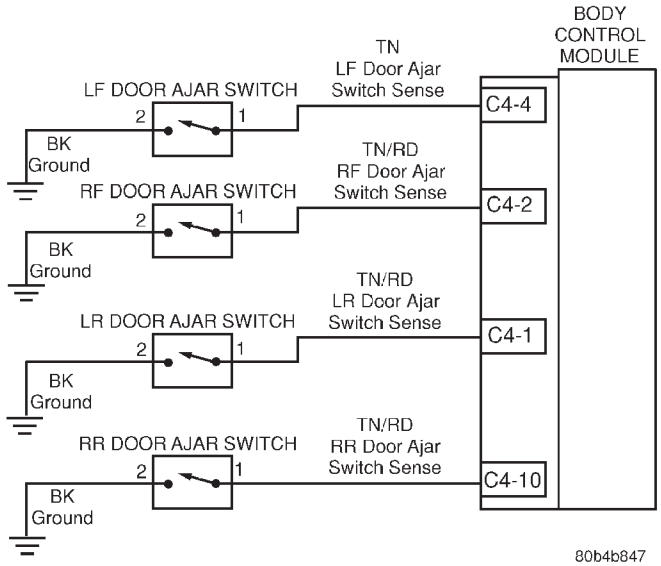
**Perform TEST 5A Before Proceeding**



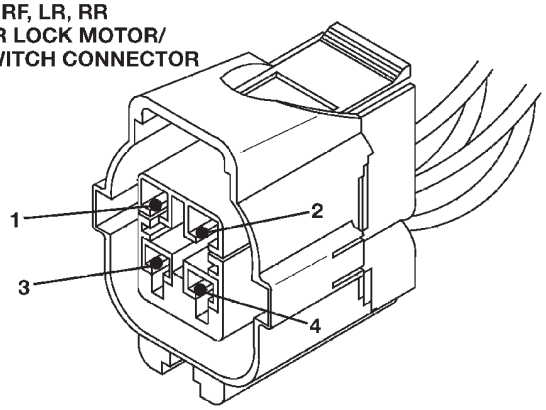

***Perform Verification TEST VER-2A.** | ***Check connectors - Clean / repair as necessary.**

## TEST 6A REPAIRING - OPEN RIGHT FRONT DOOR AJAR CIRCUIT

**Perform TEST 1A Before Proceeding**




**RF, LR, RR DOOR LOCK MOTOR/ AJAR SWITCH CONNECTOR**

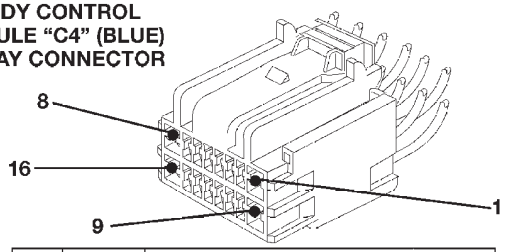



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | DOOR AJAR SWITCH SENSE |
| 2 | BK | GROUND |
| 3 | PK/BK | UNLOCK RELAY OUTPUT |
| 4 | OR | LOCK RELAY OUTPUT |

80b1b3cd

***FIG. 1***

**BODY CONTROL MODULE "C4" (BLUE) 16-WAY CONNECTOR**



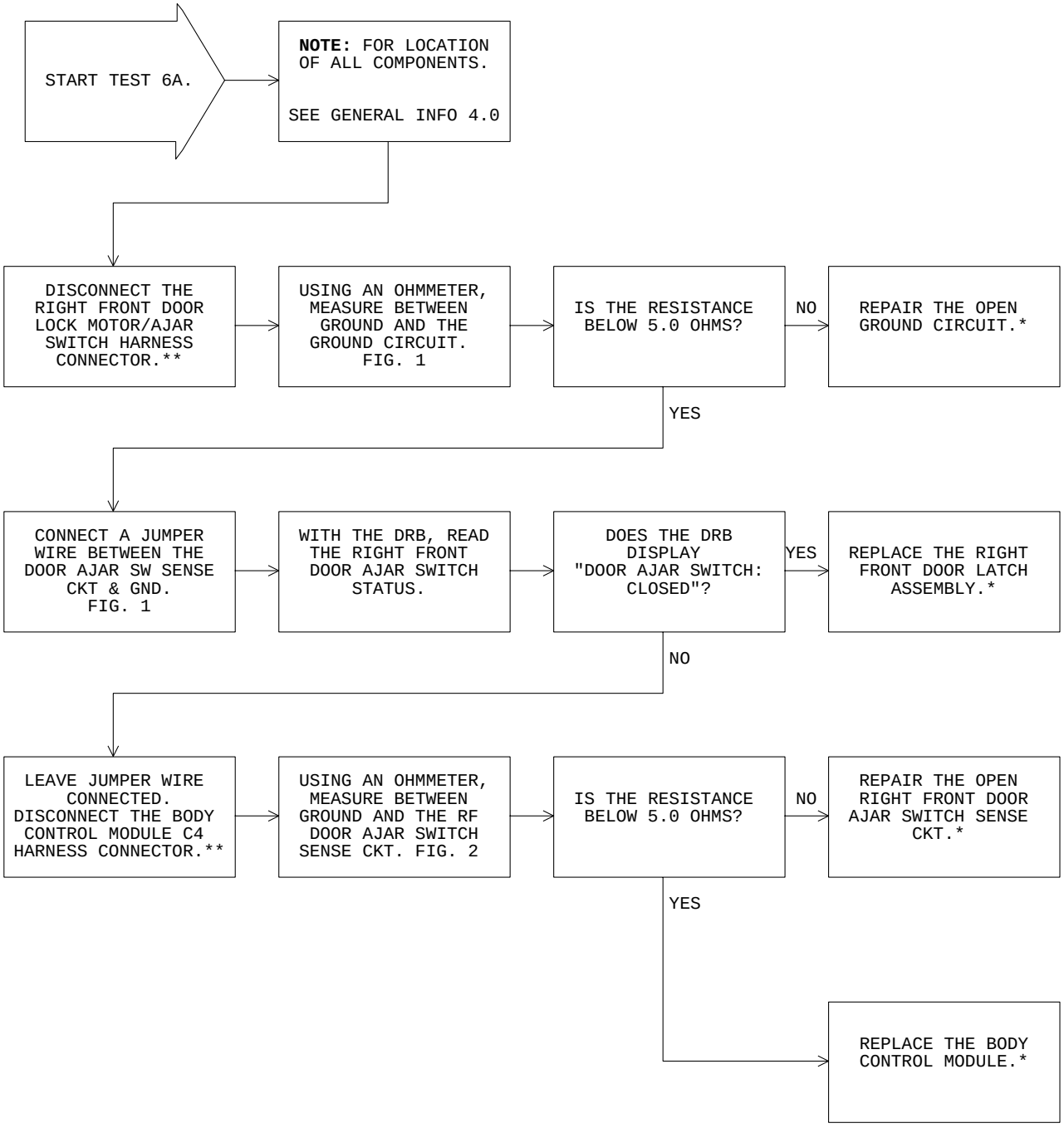

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

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***FIG. 2***

## TEST 6A — REPAIRING - OPEN RIGHT FRONT DOOR AJAR CIRCUIT

**Perform TEST 1A Before Proceeding**

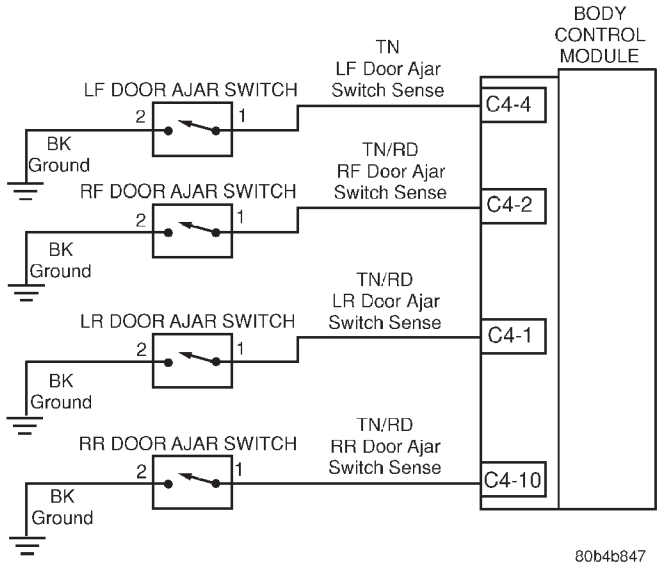



***Perform Verification TEST VER-2A.***

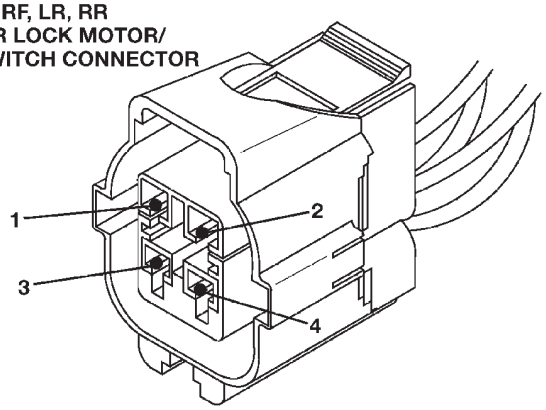
***Check connectors - Clean / repair as necessary.***

## TEST 7A REPAIRING - OPEN RIGHT REAR DOOR AJAR CIRCUIT

**Perform TEST 1A Before Proceeding**




**RF, LR, RR DOOR LOCK MOTOR/ AJAR SWITCH CONNECTOR**

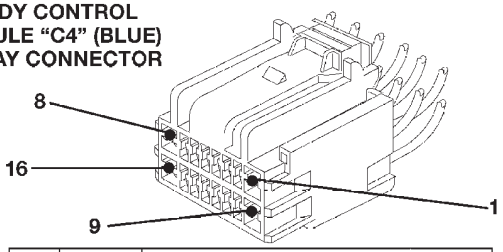



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | DOOR AJAR SWITCH SENSE |
| 2 | BK | GROUND |
| 3 | PK/BK | UNLOCK RELAY OUTPUT |
| 4 | OR | LOCK RELAY OUTPUT |

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***FIG. 1***

**BODY CONTROL MODULE "C4" (BLUE) 16-WAY CONNECTOR**



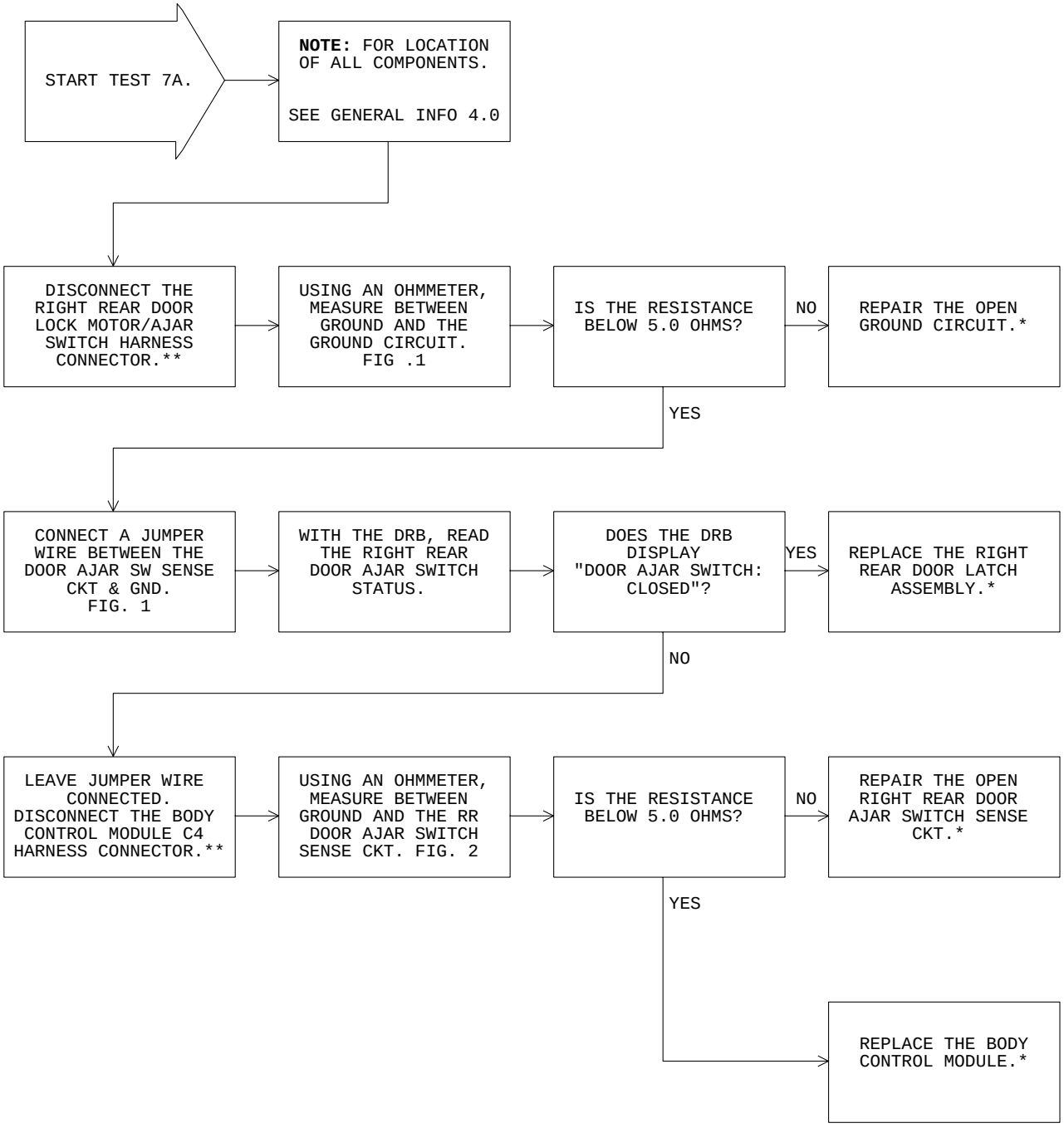

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

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***FIG. 2***

## TEST 7A REPAIRING - OPEN RIGHT REAR DOOR AJAR CIRCUIT

**Perform TEST 1A Before Proceeding**

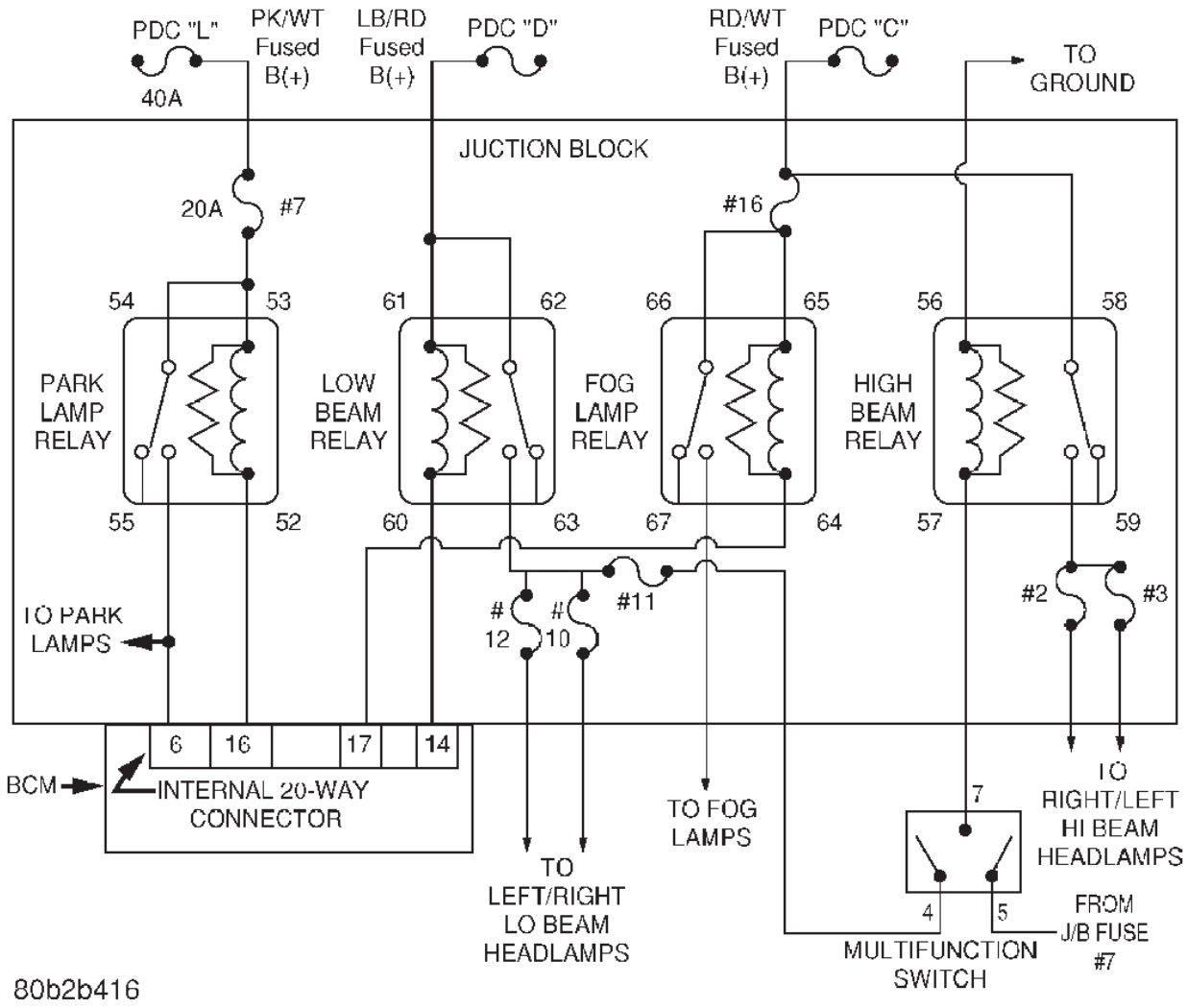



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

**TEST 1A** IDENTIFYING EXTERIOR LIGHTING SYSTEM FAILURES

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**



## TEST 1A IDENTIFYING EXTERIOR LIGHTING SYSTEM FAILURES

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**

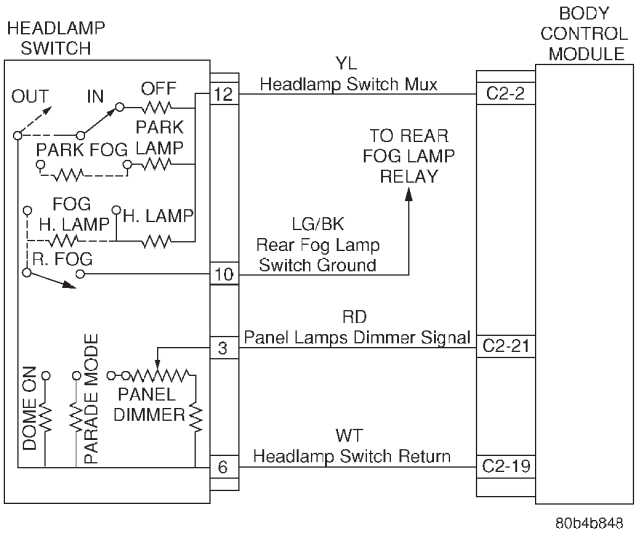
Verify the failure or customer's complaint and make sure the vehicle is experiencing the problem at this time.

1. With the DRB select ''Body'', ''Body Computer''. Verify Communication with the Body Controller, if ''No Response'' or any other communication problems are displayed . . . . . .perform "Vehicle Communication" TEST 1A.
2. With the DRB select ''Read DTCs''. If the code ''Headlamp Switch Input Failure'' is present . . . . . .perform TEST 2A.

| PROBLEM WITH | PERFORM |
|---|---|
| Low Beam Headlamps that will not turn On | TEST 3A |
| Low Beam Headlamps that will not turn Off | TEST 4A |
| Parklamps that will not turn On | TEST 5A |
| Parklamps that will not turn Off | TEST 6A |
| High Beam Headlamps that will not turn On | TEST 7A |
| High Beam Headlamps that will not turn Off | TEST 8A |
| Fog lamps that will not turn On | TEST 9A |
| Fog lamps that will not turn Off | TEST 10A |
| Headlamp Time Delay | TEST 11A |

## TEST 2A REPAIRING - HEADLAMP SWITCH INPUT FAILURE

**Perform TEST 1A Before Proceeding**




**Name of code:** Headlamp Switch Input Failure

**When monitored:** Continuously

**Set condition:** BCM detects an open or short circuit condition for 10 consecutive seconds on its headlamp switch input.

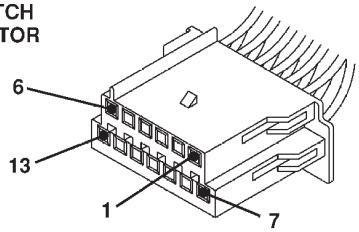
**Theory of operation:** BCM reads the low current headlamp switch and activates the park lamp, headlamp, and fog lamp (if so equipped) relays accordingly. If the BCM does not read a valid input from the switch for 10 consecutive seconds it will set this fault and will turn the headlamps and park lamps on and off with ignition until a valid signal from the switch is seen.

**Possible causes:**

- Wiring open circuit
- Wiring short to ground
- Wiring short to battery
- Failed headlamp switch
- Failed BCM

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**HEADLAMP SWITCH 13-WAY CONNECTOR**

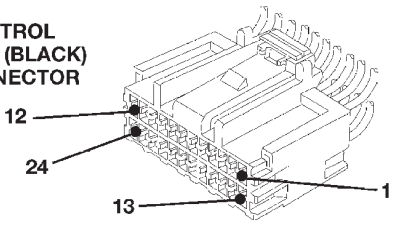



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LB | Ground (for Headlamp Level) |
| 2 | BK/YL | Park Lamp Relay Output (for Headlamp Level) |
| 3 | RD | Panel Lamps Dimmer Signal |
| 4 | BK | Ground |
| 5 | DG/YL | Fog Lamp Relay Output (Rear) |
| 6 | WT | Headlamp Switch Return |
| 8 | BR/YL | Headlamp Adjust Signal |
| 9 | OR | Panel Lamps Driver |
| 10 | LG/BK | Rear Fog Lamp Switch Ground |
| 11 | LB | Fog Lamp Relay Output (Front) |
| 12 | YL | Headlamp Switch Mux |

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*FIG. 1*

**BODY CONTROL MODULE "C2" (BLACK) 24-WAY CONNECTOR**



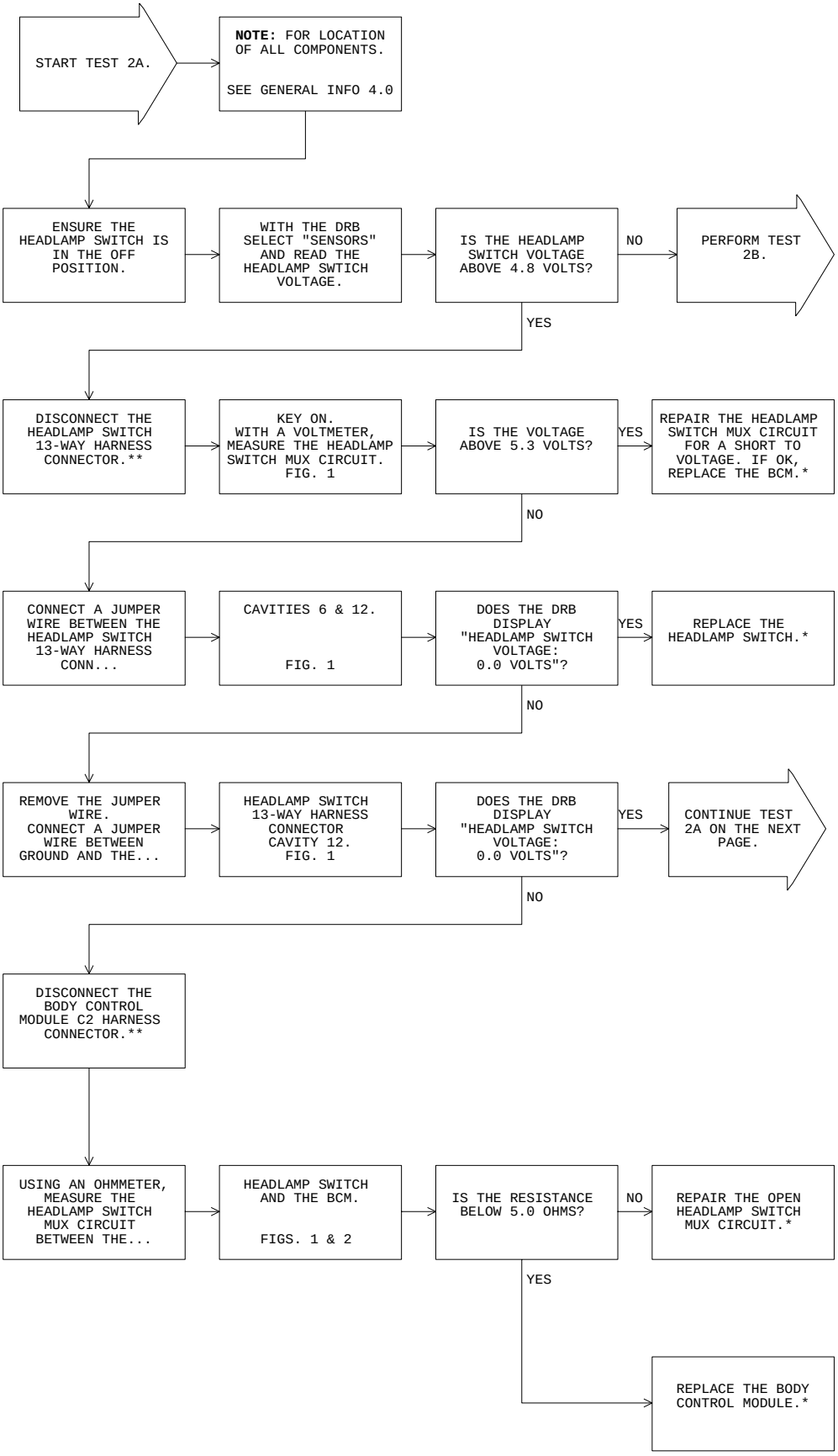

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

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*FIG. 2*

## TEST 2A REPAIRING - HEADLAMP SWITCH INPUT FAILURE

**Perform TEST 1A Before Proceeding**

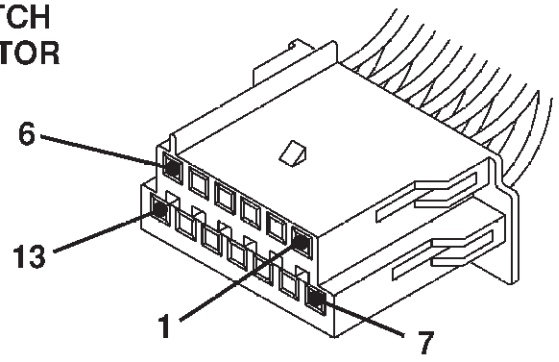



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

**TEST 2A** CONTINUED- REPAIRING HEADLAMP SWITCH INPUT FAILURE

**HEADLAMP SWITCH 13-WAY CONNECTOR**

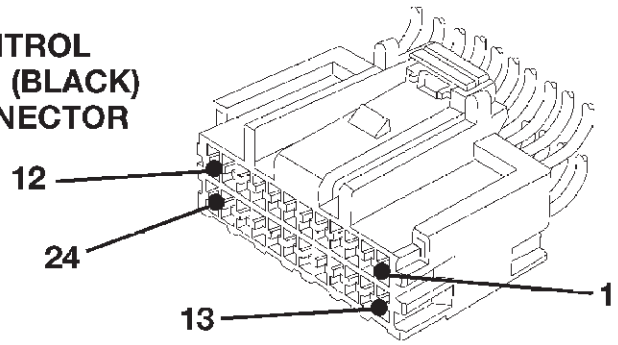



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LB | Ground (for Headlamp Level) |
| 2 | BK/YL | Park Lamp Relay Output (for Headlamp Level) |
| 3 | RD | Panel Lamps Dimmer Signal |
| 4 | BK | Ground |
| 5 | DG/YL | Fog Lamp Relay Output (Rear) |
| 6 | WT | Headlamp Switch Return |
| 8 | BR/YL | Headlamp Adjust Signal |
| 9 | OR | Panel Lamps Driver |
| 10 | LG/BK | Rear Fog Lamp Switch Ground |
| 11 | LB | Fog Lamp Relay Output (Front) |
| 12 | YL | Headlamp Switch Mux |

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*FIG. 1*

**BODY CONTROL MODULE "C2" (BLACK) 24-WAY CONNECTOR**

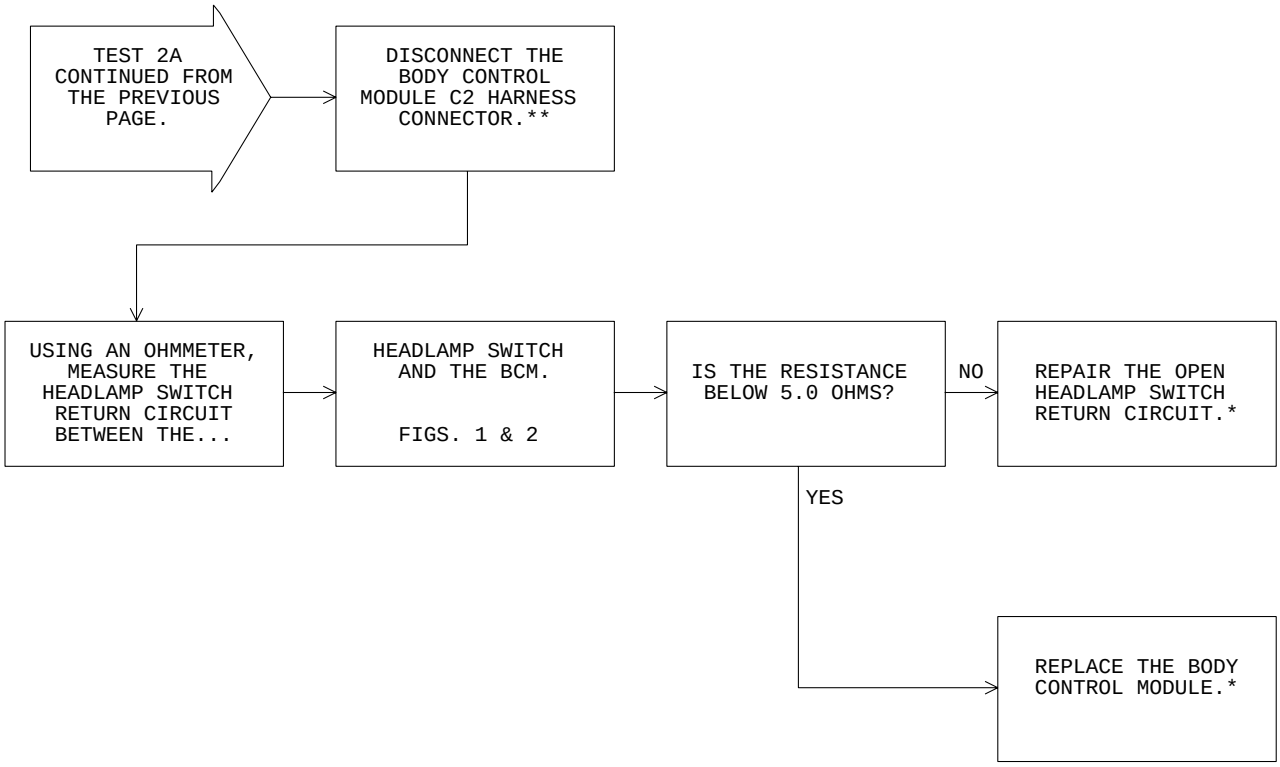



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

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*FIG. 2*

## TEST 2A CONTINUED- REPAIRING HEADLAMP SWITCH INPUT FAILURE



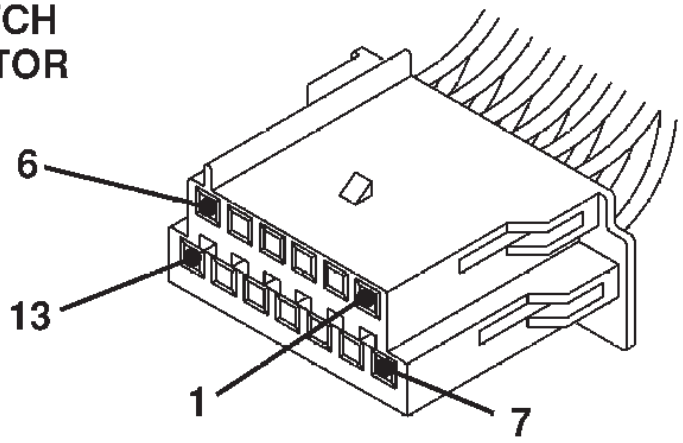

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

**TEST 2B** REPAIRING HEADLAMP SWITCH INPUT FAILURE

Perform TEST 2A Before Proceeding

**HEADLAMP SWITCH**
**13-WAY CONNECTOR**



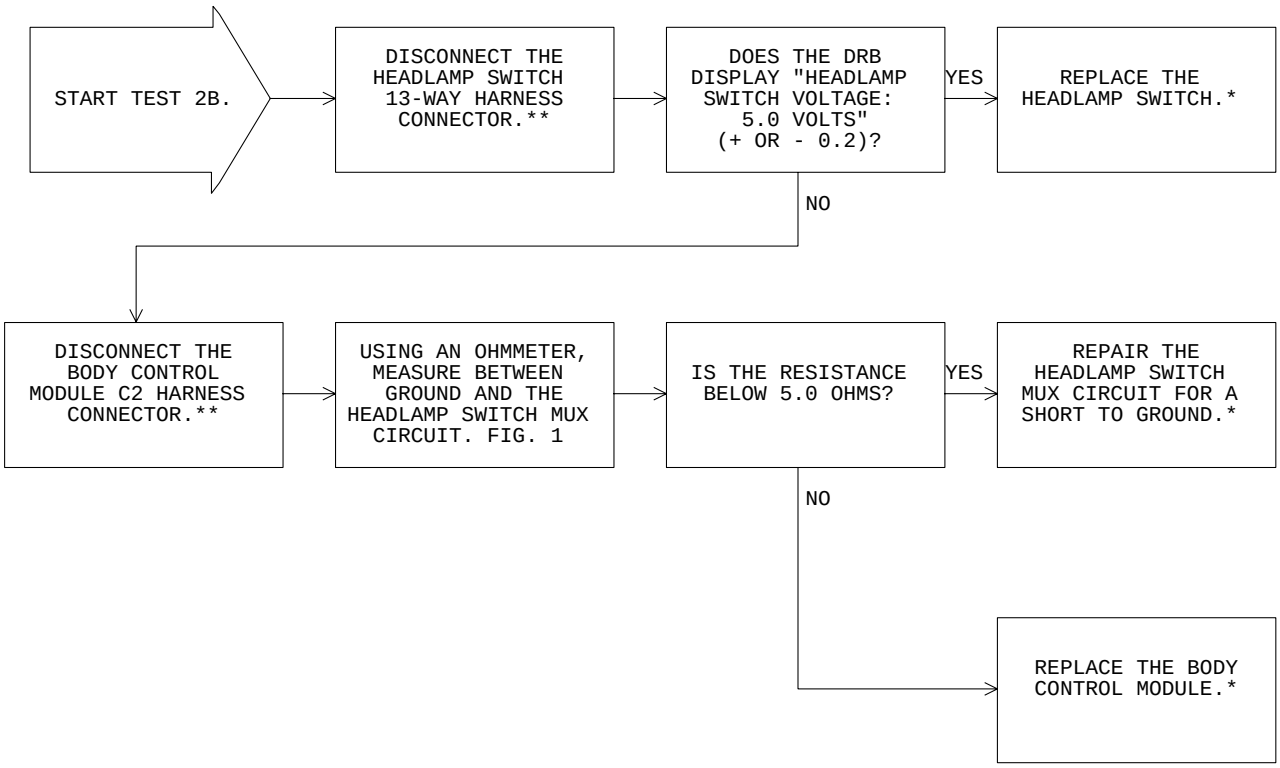

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LB | Ground (for Headlamp Level) |
| 2 | BK/YL | Park Lamp Relay Output (for Headlamp Level) |
| 3 | RD | Panel Lamps Dimmer Signal |
| 4 | BK | Ground |
| 5 | DG/YL | Fog Lamp Relay Output (Rear) |
| 6 | WT | Headlamp Switch Return |
| 8 | BR/YL | Headlamp Adjust Signal |
| 9 | OR | Panel Lamps Driver |
| 10 | LG/BK | Rear Fog Lamp Switch Ground |
| 11 | LB | Fog Lamp Relay Output (Front) |
| 12 | YL | Headlamp Switch Mux |

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*FIG. 1*

## TEST 2B REPAIRING HEADLAMP SWITCH INPUT FAILURE

**Perform TEST 2A Before Proceeding**

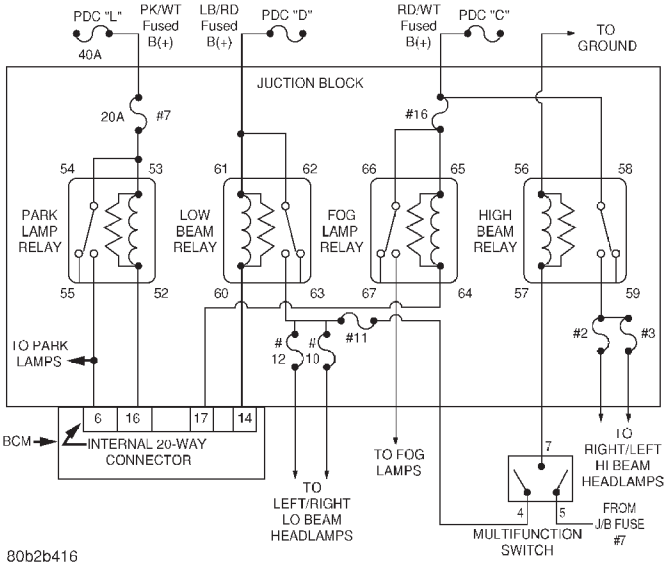



***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

## TEST 3A REPAIRING LOW BEAM HEADLAMPS THAT WILL NOT TURN ON

**Perform TEST 1A Before Proceeding**



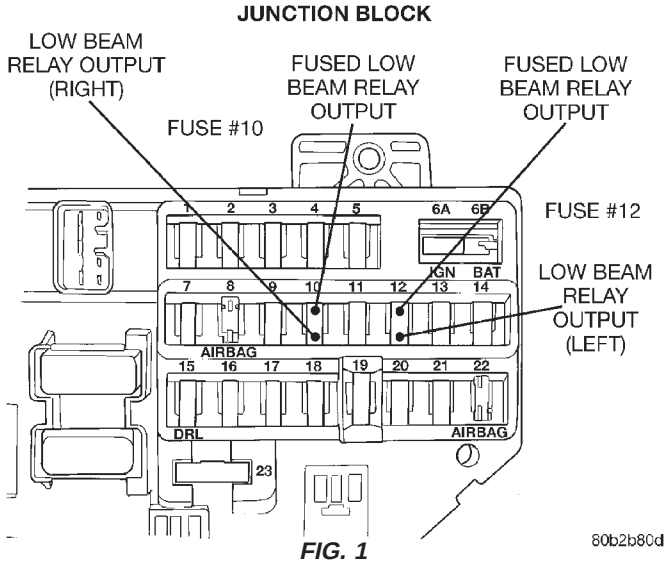
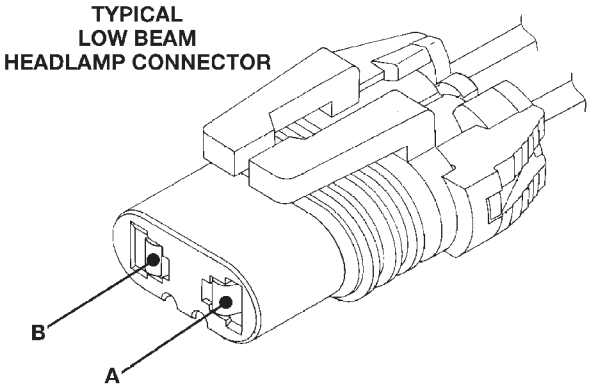




*FIG. 1*



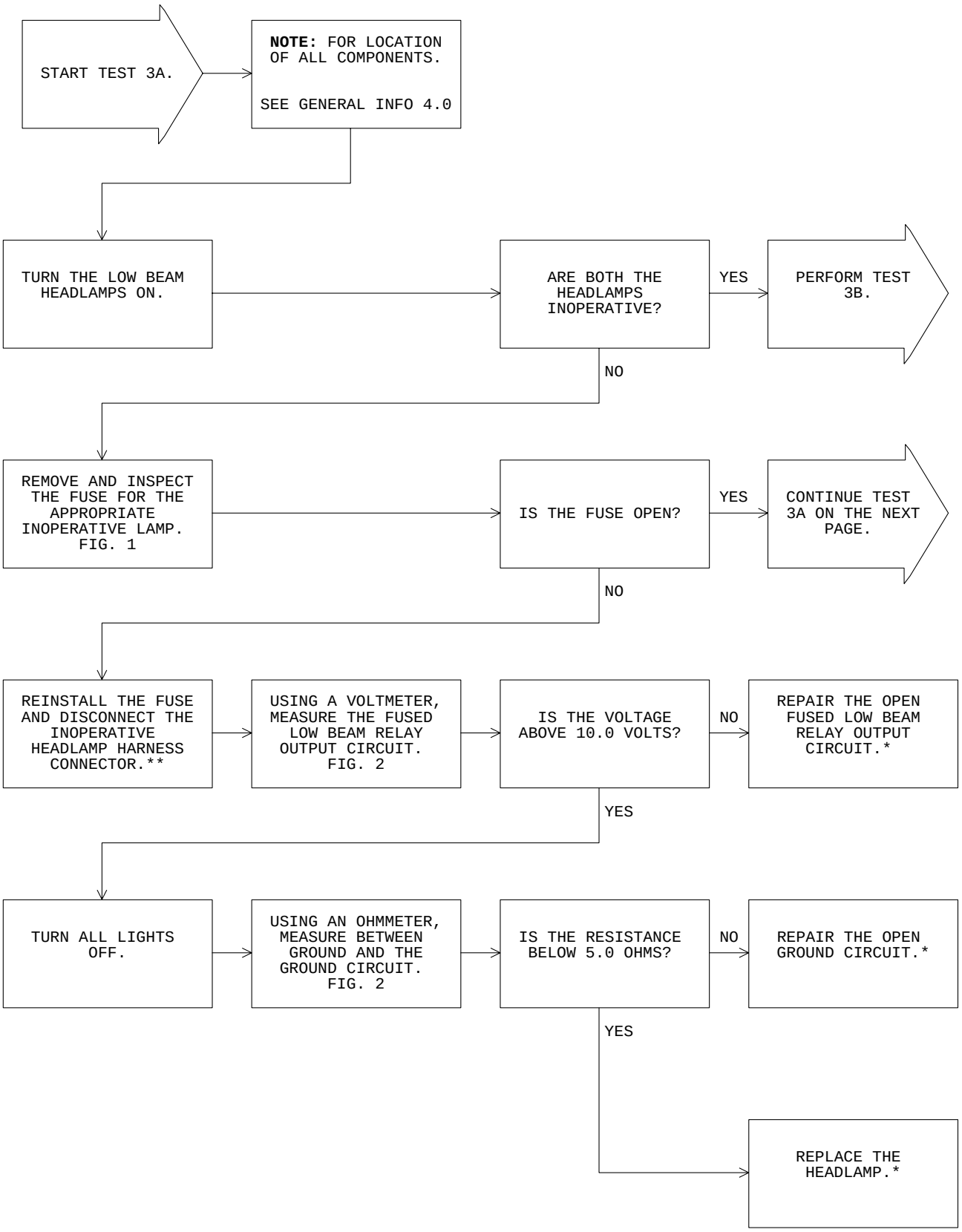

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | VT/★ | FUSED LOW BEAM RELAY OUTPUT |
| B | BK | GROUND |

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*FIG. 2*

## TEST 3A REPAIRING LOW BEAM HEADLAMPS THAT WILL NOT TURN ON

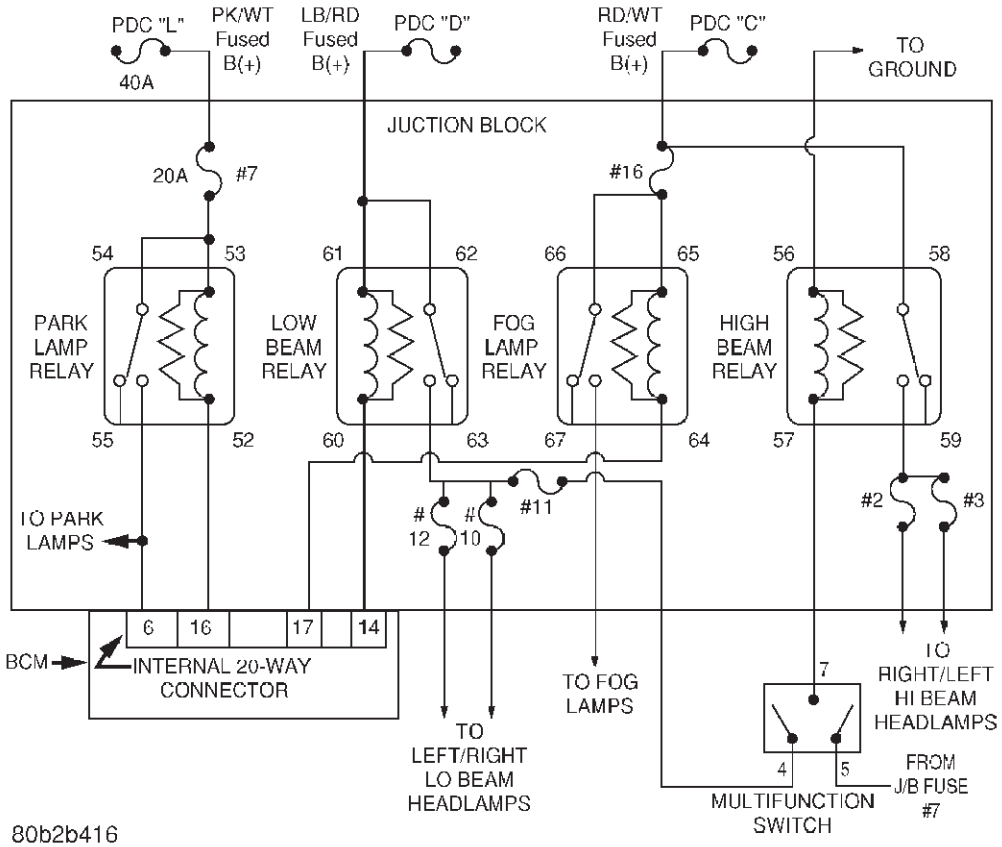
**Perform TEST 1A Before Proceeding**



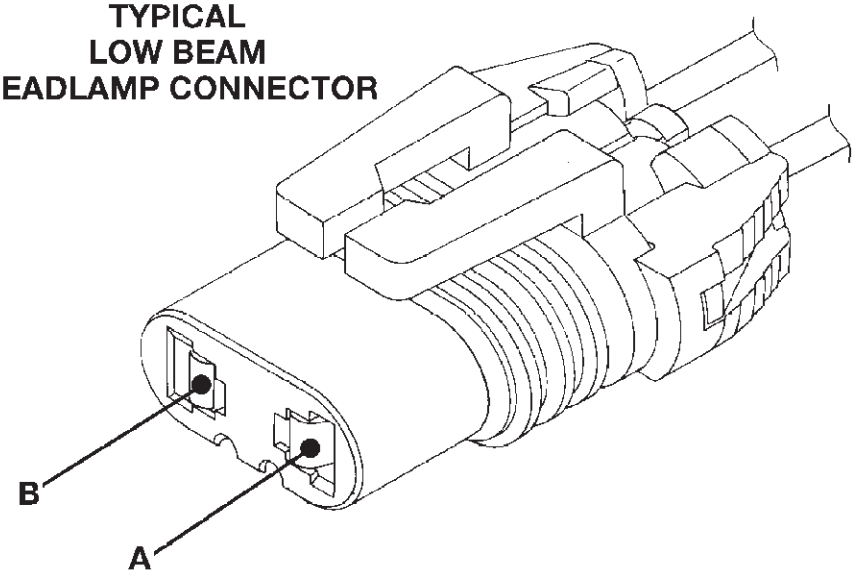

***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

**TEST 3A** CONTINUED - REPAIRING LOW BEAM HEADLAMPS THAT WILL NOT TURN ON




**TYPICAL LOW BEAM HEADLAMP CONNECTOR**

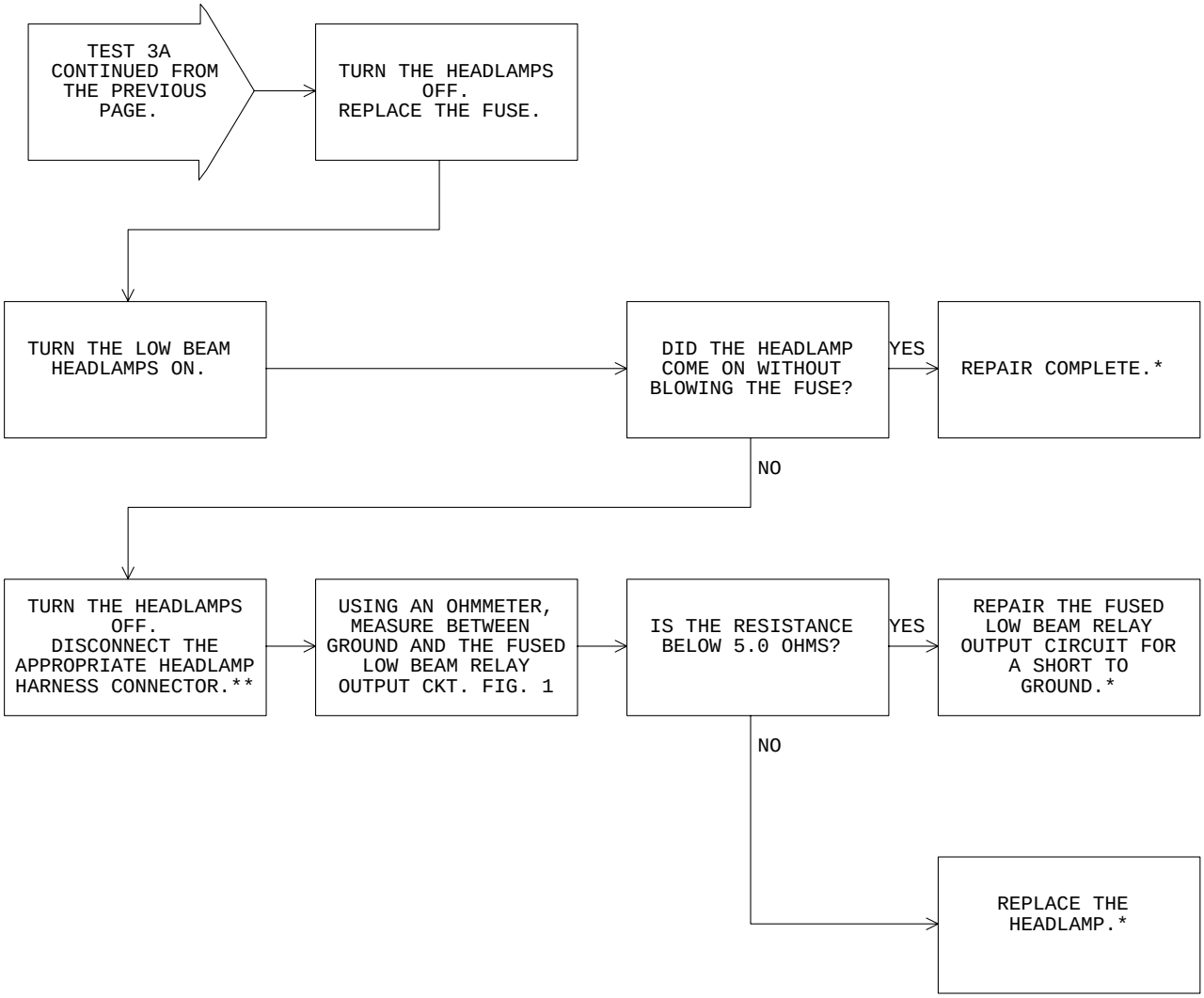



| CAV | COLOR | FUNCTION |
|---|---|---|
| A | VT/★ | FUSED LOW BEAM RELAY OUTPUT |
| B | BK | GROUND |

80accfd9

***FIG. 1***

## TEST 3A CONTINUED - REPAIRING LOW BEAM HEADLAMPS THAT WILL NOT TURN ON

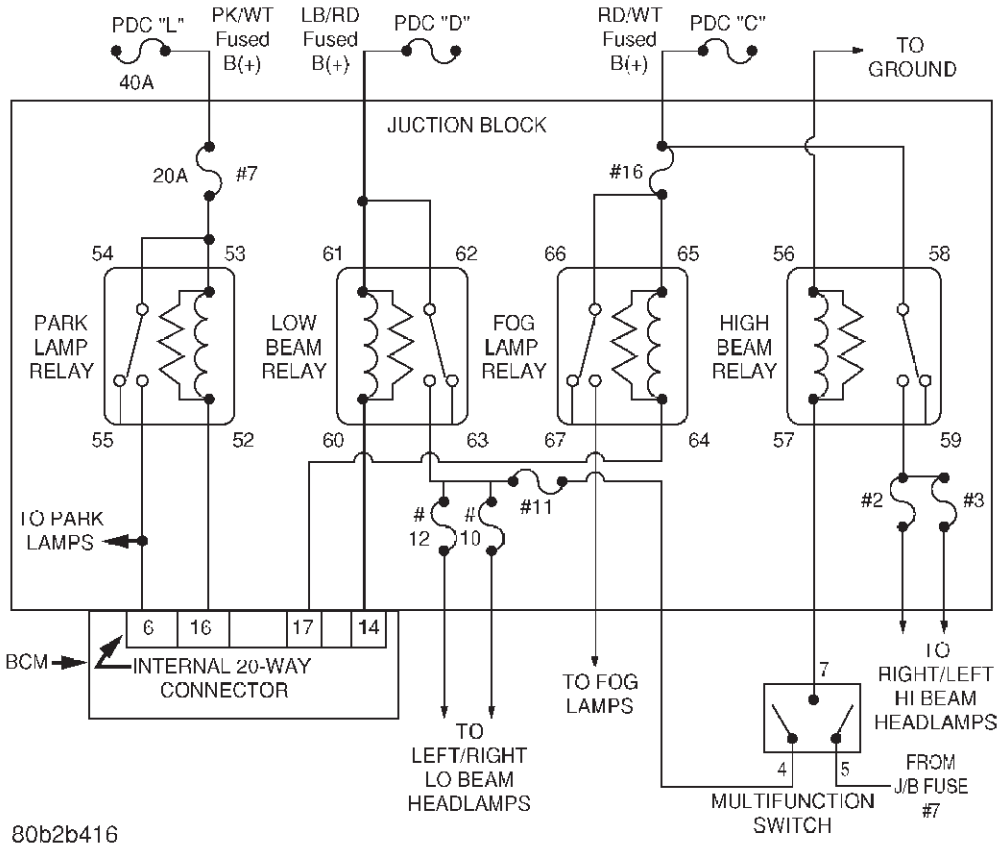



***Perform Verification TEST VER-2A.***

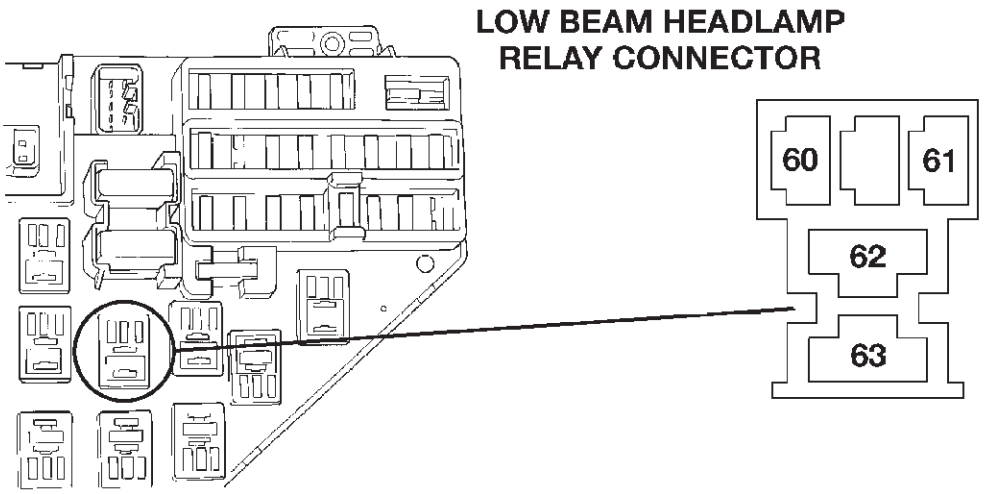
***Check connectors - Clean / repair as necessary.***

## TEST 3B REPAIRING LOW BEAM HEADLAMPS THAT WILL NOT TURN ON

**Perform TEST 3A Before Proceeding**




80b2b416



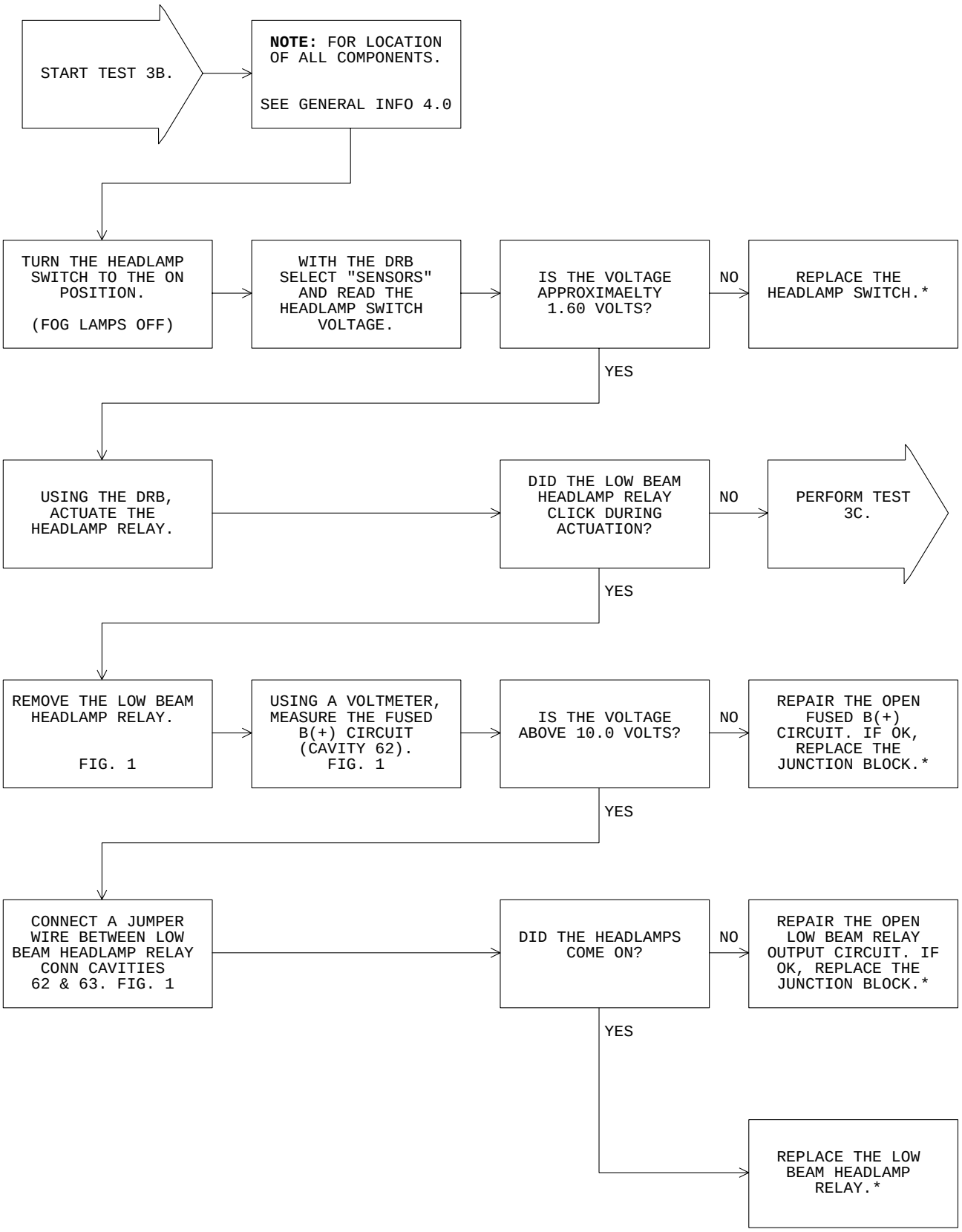

| CAV | FUNCTION |
|---|---|
| 60 (86) | LOW BEAM RELAY CONTROL |
| 61 (85) | FUSED B (+) |
| 62 (87) | FUSED B (+) |
| 63 (30) | LOW BEAM RELAY OUTPUT |

80b2b418

***FIG. 1***

## TEST 3B REPAIRING LOW BEAM HEADLAMPS THAT WILL NOT TURN ON

**Perform TEST 3A Before Proceeding**

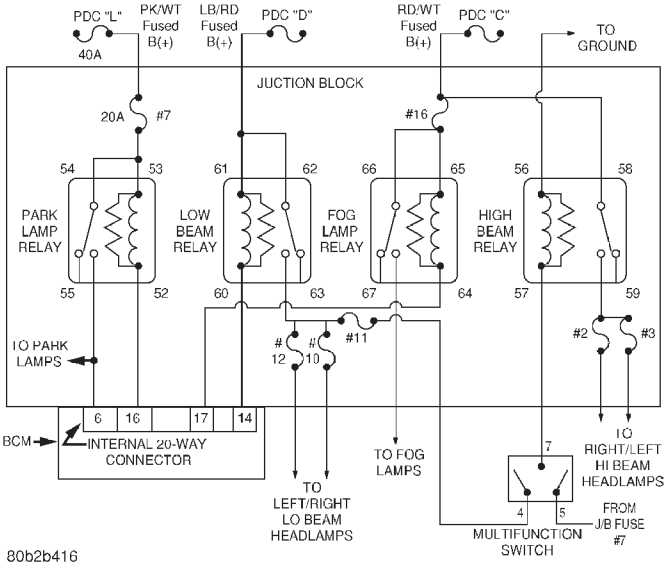


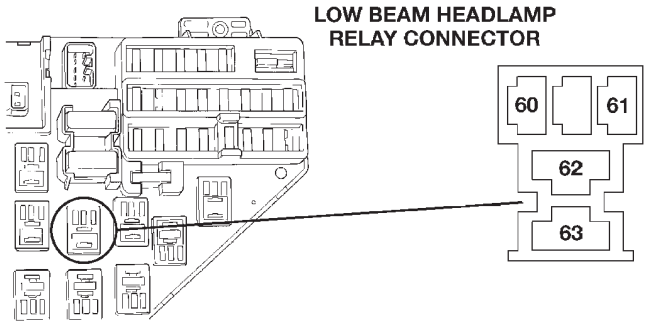

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 3C REPAIRING LOW BEAM HEADLAMPS THAT WILL NOT TURN ON

**Perform TEST 3A Before Proceeding**

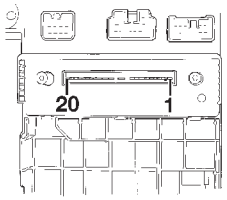



| CAV | FUNCTION |
|---|---|
| 60 (86) | LOW BEAM RELAY CONTROL |
| 61 (85) | FUSED B (+) |
| 62 (87) | FUSED B (+) |
| 63 (30) | LOW BEAM RELAY OUTPUT |

80b2b418

***FIG. 1***



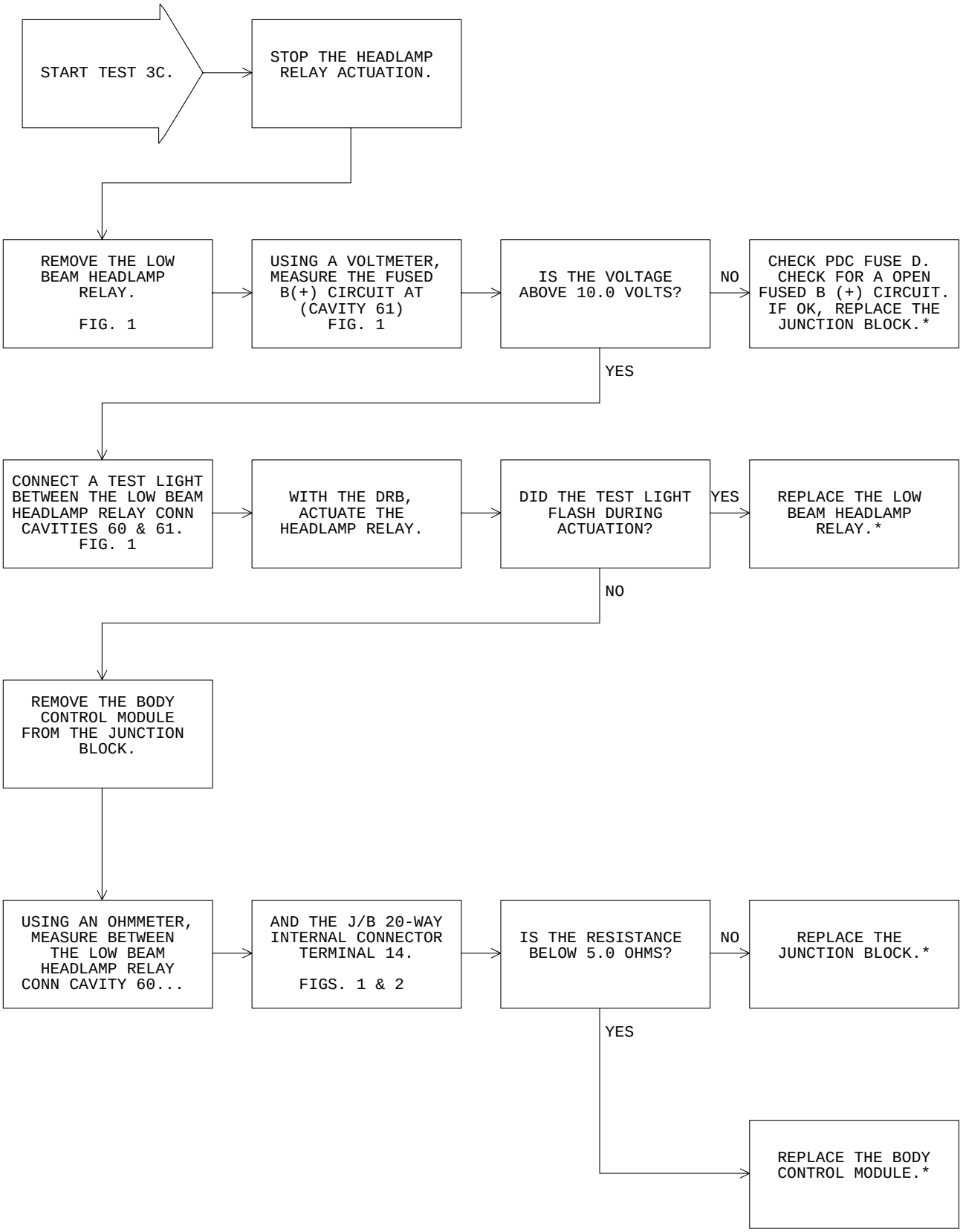

| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

***FIG. 2***

## TEST 3C REPAIRING LOW BEAM HEADLAMPS THAT WILL NOT TURN ON

**Perform TEST 3A Before Proceeding**

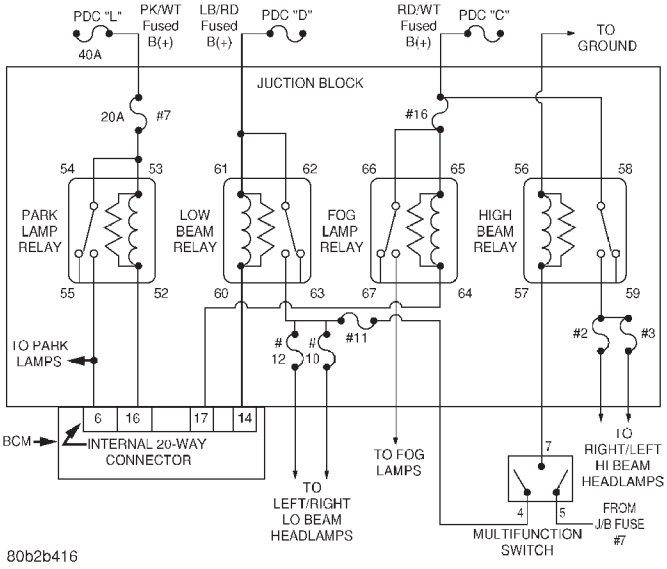


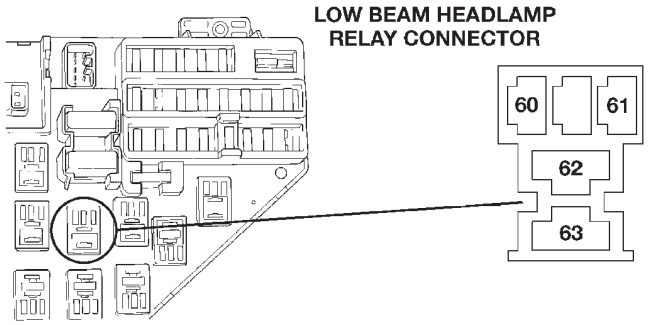

***Perform Verification TEST VER-2A.***

*****Check connectors - Clean / repair as necessary.***

## TEST 4A REPAIRING LOW BEAM HEADLAMPS THAT WILL NOT TURN OFF

**Perform TEST 1A Before Proceeding**

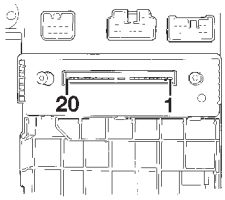



| CAV | FUNCTION |
|---|---|
| 60 (86) | LOW BEAM RELAY CONTROL |
| 61 (85) | FUSED B (+) |
| 62 (87) | FUSED B (+) |
| 63 (30) | LOW BEAM RELAY OUTPUT |

80b2b418

***FIG. 1***




**JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR**

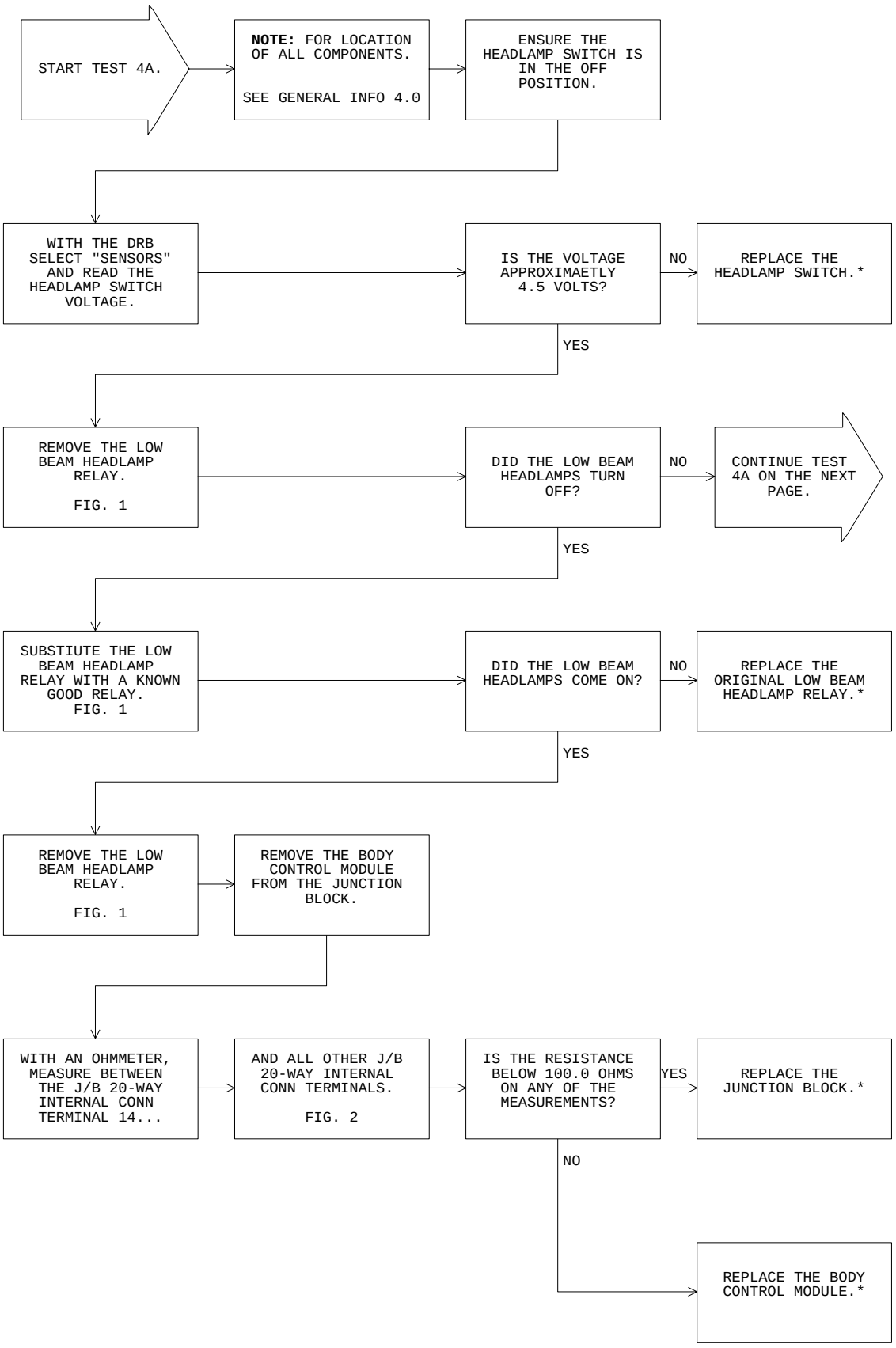
| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

***FIG. 2***

## TEST 4A REPAIRING LOW BEAM HEADLAMPS THAT WILL NOT TURN OFF

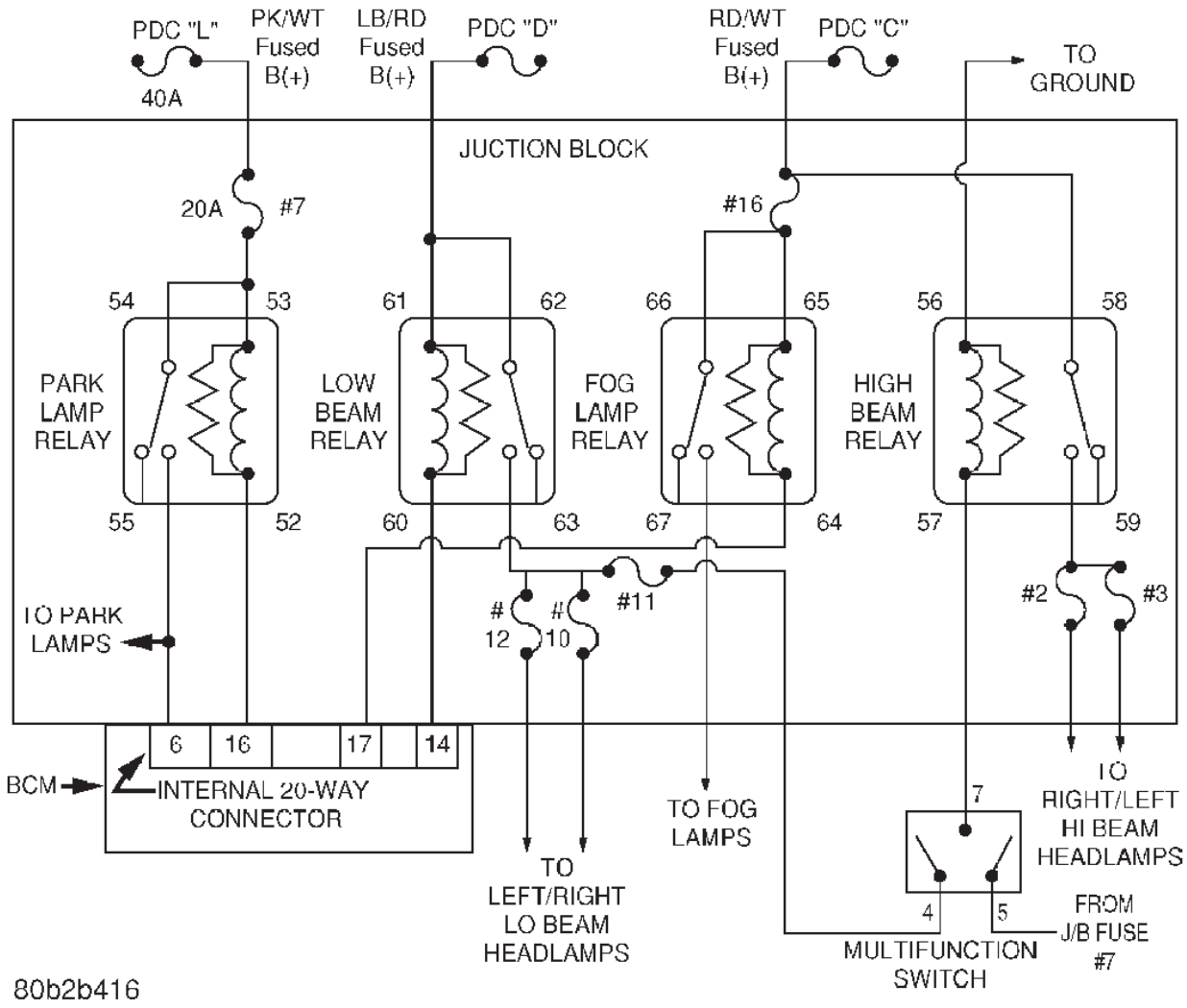
**Perform TEST 1A Before Proceeding**



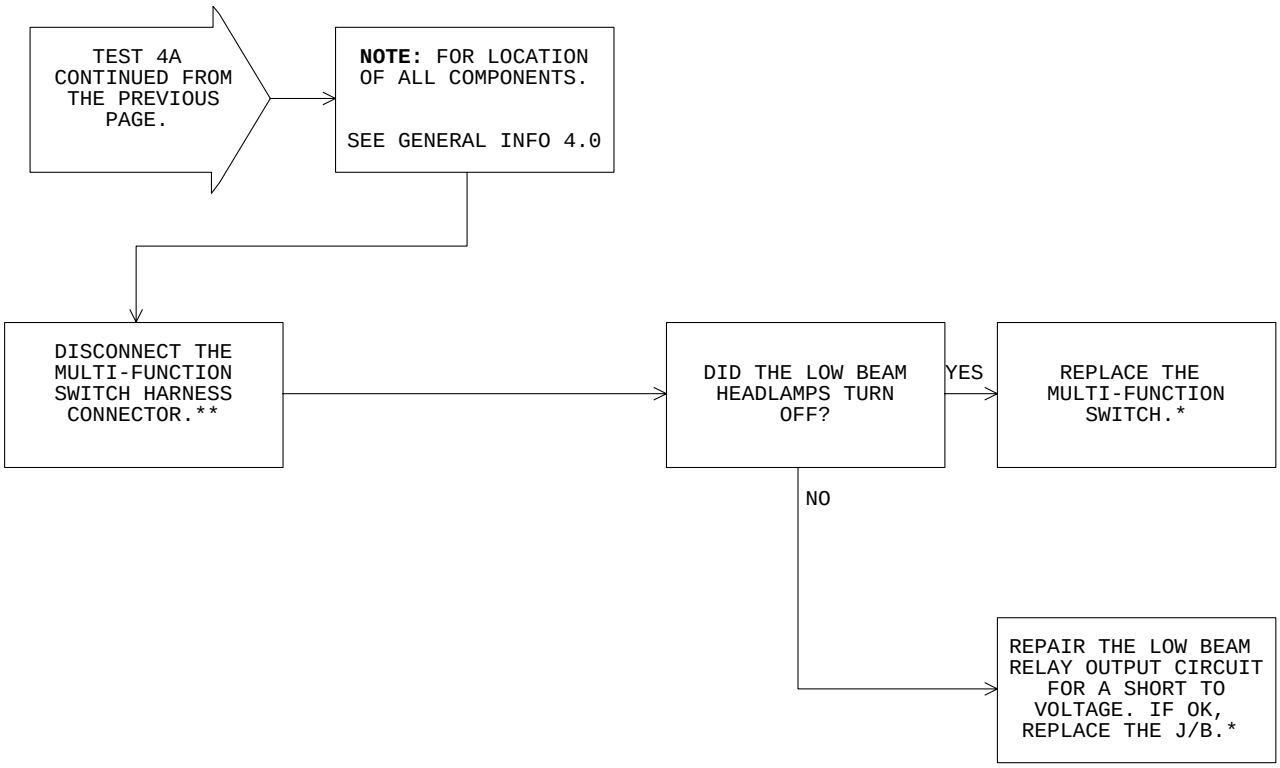

***Perform Verification TEST VER-2A.***

*****Check connectors - Clean / repair as necessary.***

**TEST 4A** CONTINUED - REPAIRING LOW BEAM HEADLAMPS THAT WILL NOT TURN OFF



## TEST 4A CONTINUED - REPAIRING LOW BEAM HEADLAMPS THAT WILL NOT TURN OFF

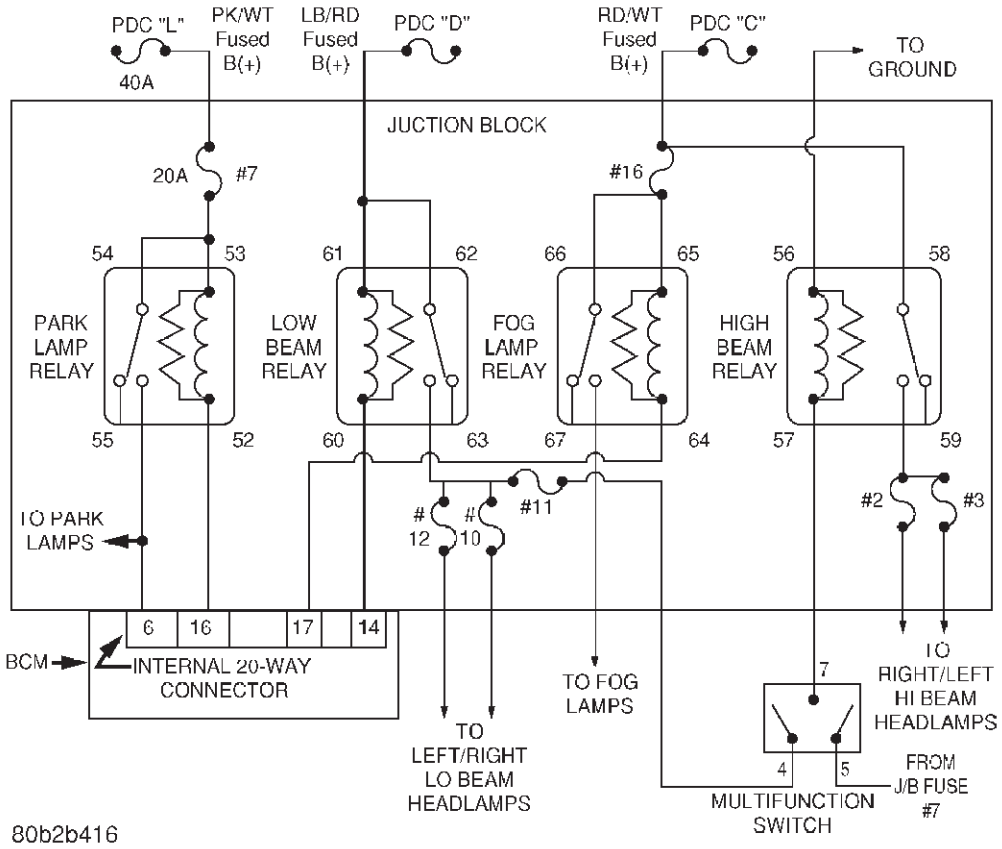


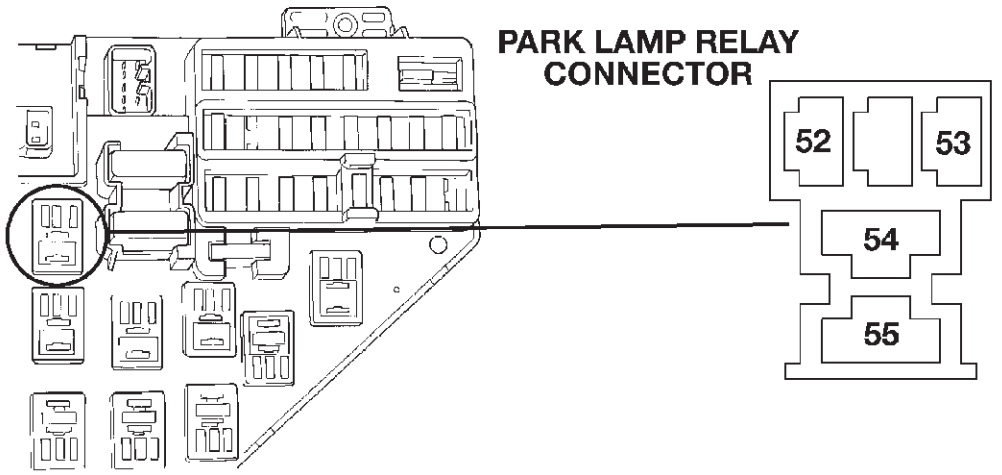

***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 5A REPAIRING PARK LAMPS THAT WILL NOT TURN ON

**Perform TEST 1A Before Proceeding**



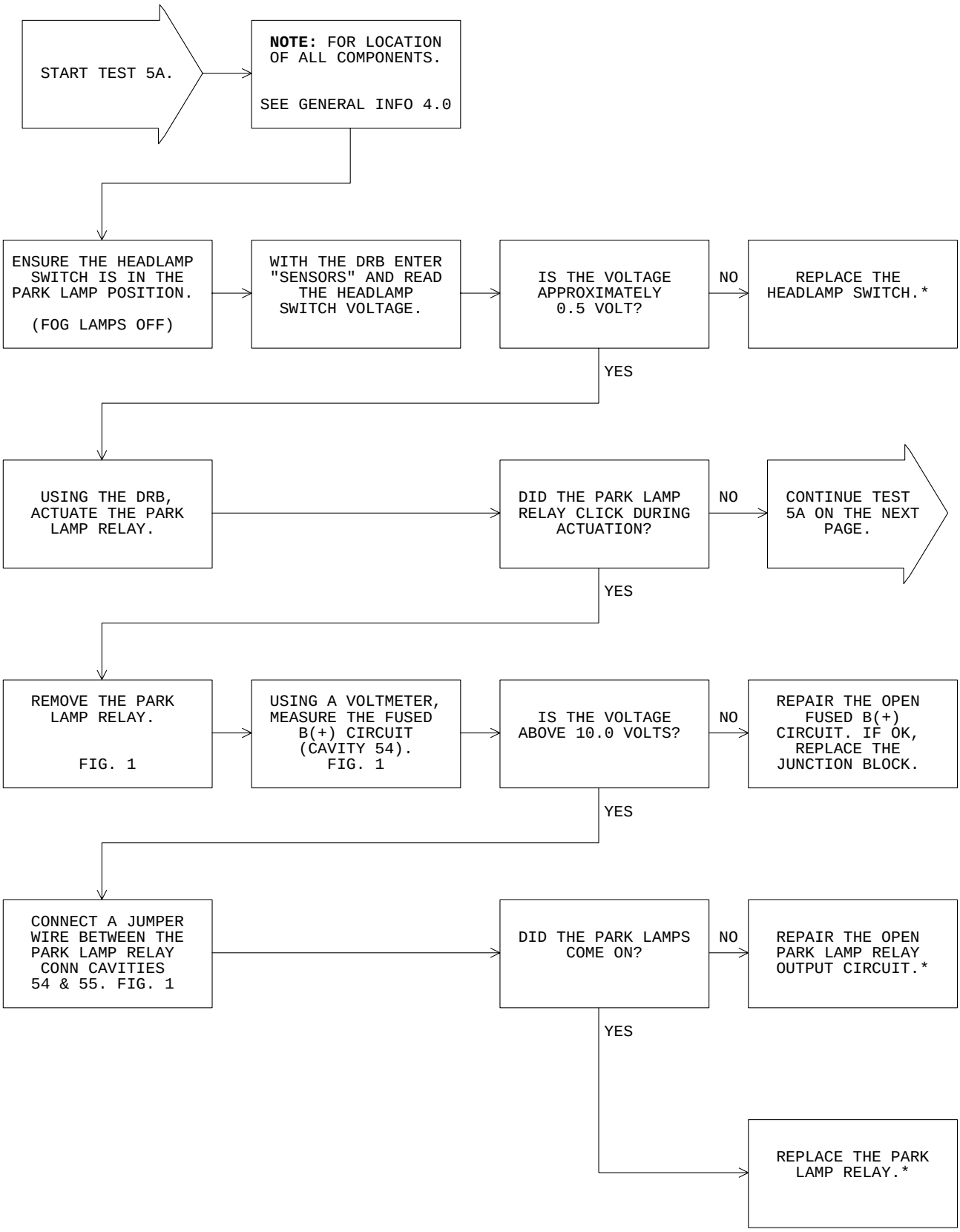

| CAV | FUNCTION |
|---|---|
| 52 (86) | PARK LAMP RELAY CONTROL |
| 53 (85) | FUSED B (+) |
| 54 (87) | FUSED B (+) |
| 55 (30) | PARK LAMP RELAY OUTPUT |

80b2b41c

***FIG. 1***

## TEST 5A REPAIRING PARK LAMPS THAT WILL NOT TURN ON

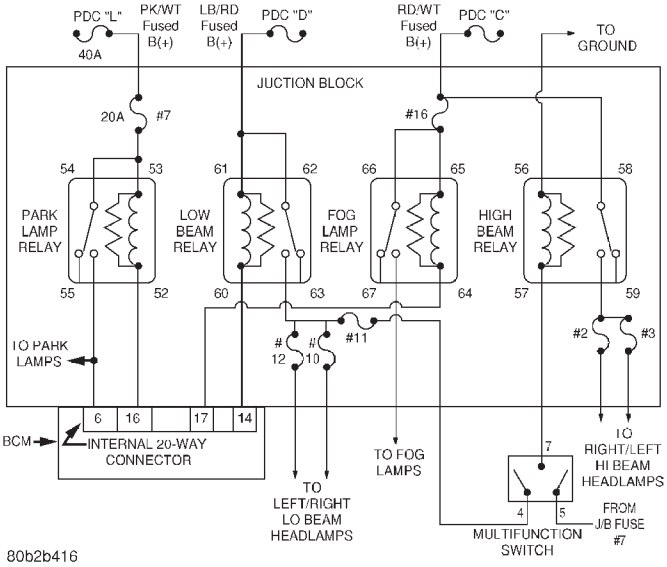
**Perform TEST 1A Before Proceeding**

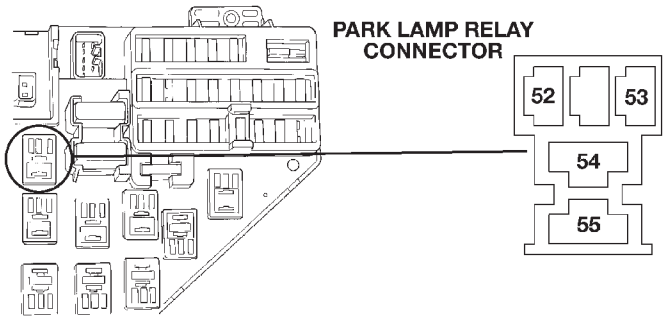



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 5A CONTINUED - REPAIRING PARK LAMPS THAT WILL NOT TURN ON

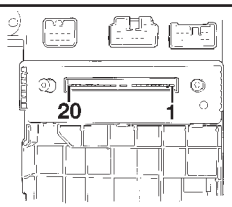



| CAV | FUNCTION |
|---|---|
| 52 (86) | PARK LAMP RELAY CONTROL |
| 53 (85) | FUSED B (+) |
| 54 (87) | FUSED B (+) |
| 55 (30) | PARK LAMP RELAY OUTPUT |

80b2b41c

***FIG. 1***



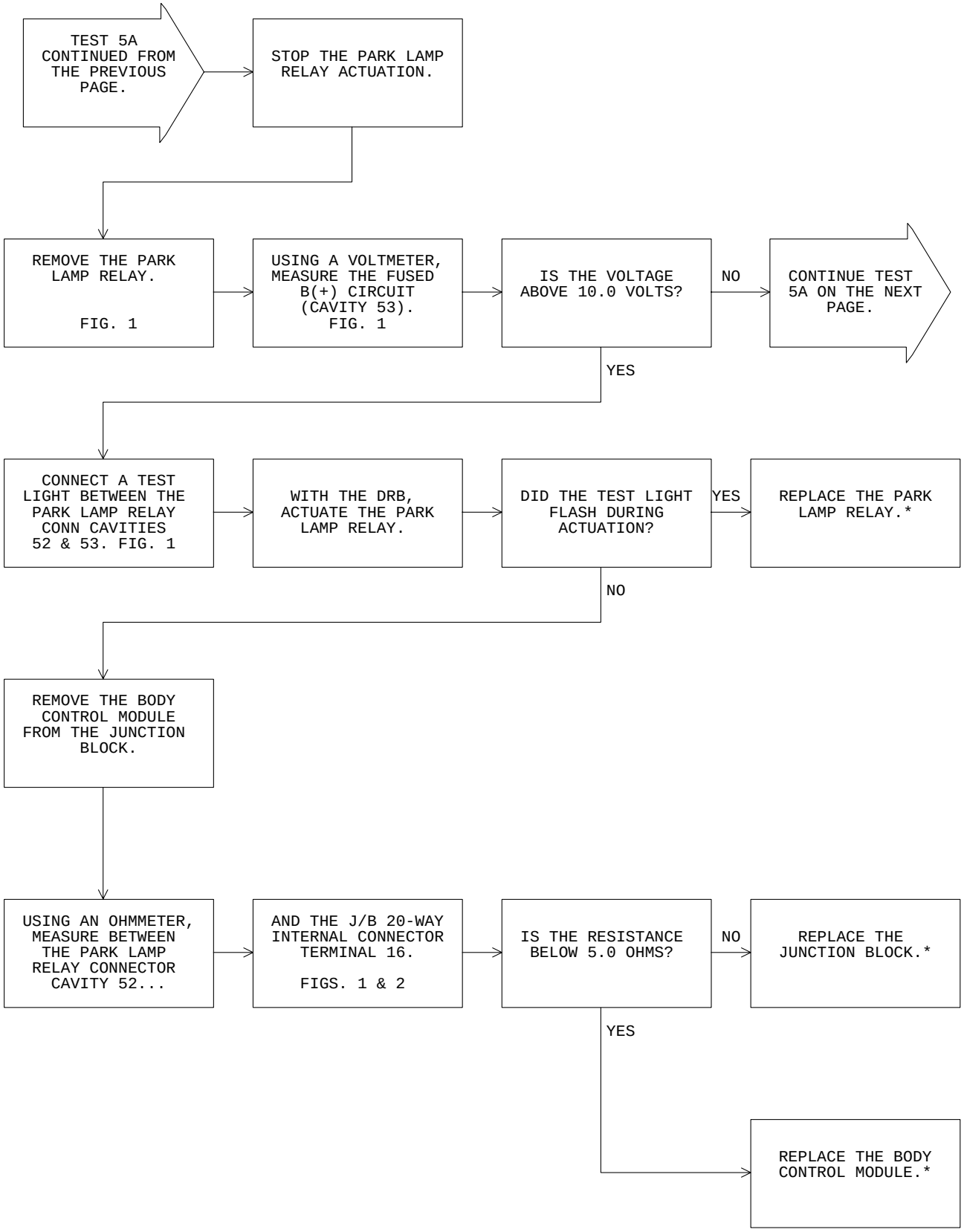

**JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR**

| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

***FIG. 2***

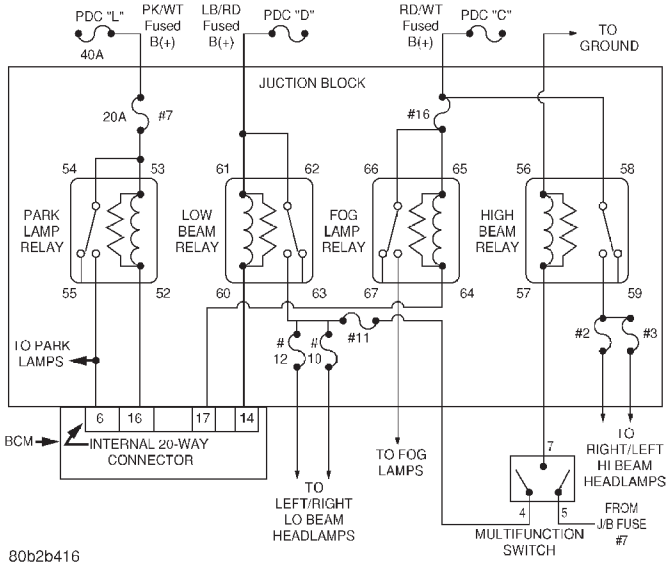
## TEST 5A CONTINUED - REPAIRING PARK LAMPS THAT WILL NOT TURN ON




***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

## TEST 5A CONTINUED - REPAIRING PARK LAMPS THAT WILL NOT TURN ON



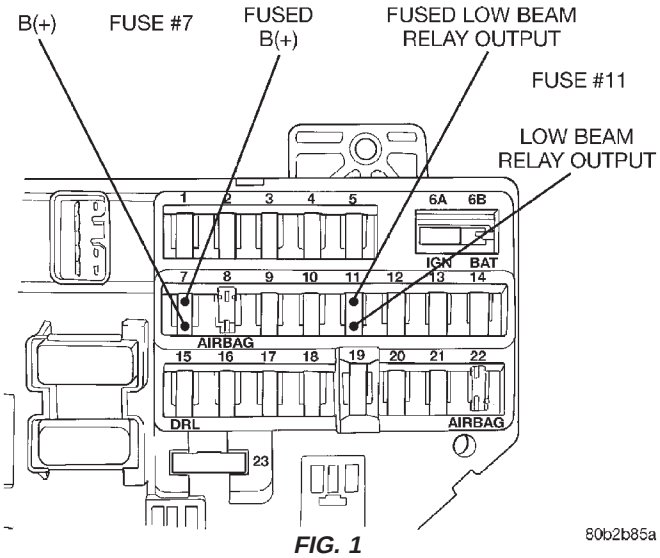
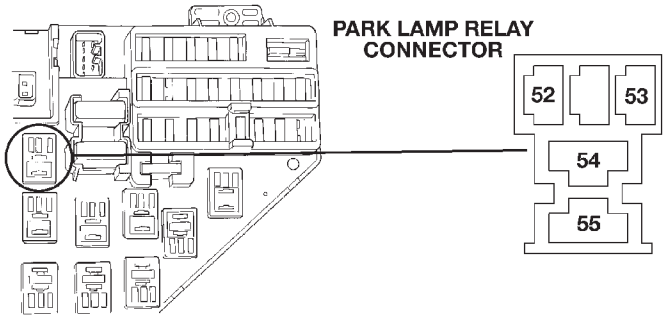




*FIG. 1*

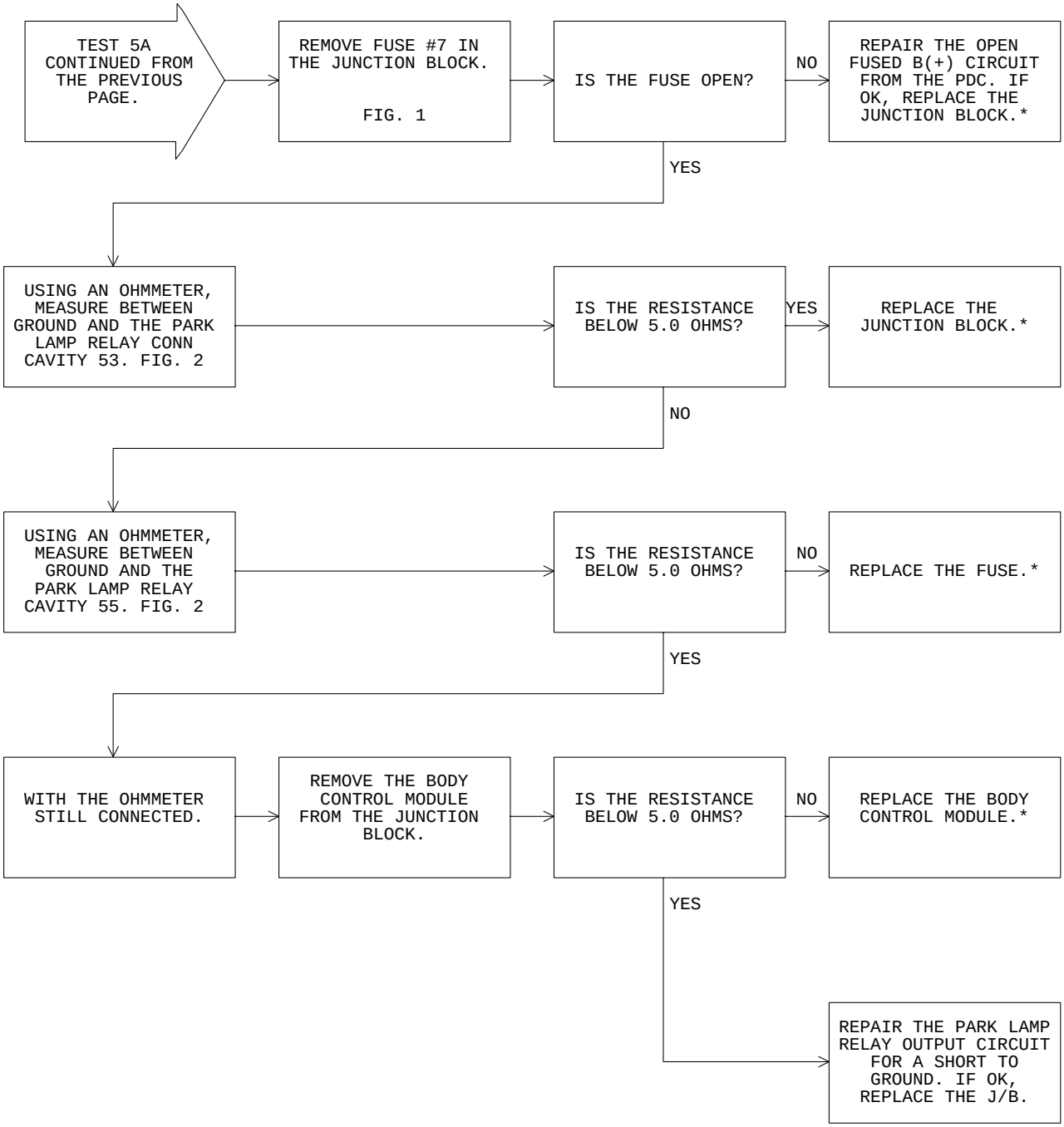



| CAV | FUNCTION |
|---|---|
| 52 (86) | PARK LAMP RELAY CONTROL |
| 53 (85) | FUSED B (+) |
| 54 (87) | FUSED B (+) |
| 55 (30) | PARK LAMP RELAY OUTPUT |

80b2b41c

*FIG. 2*

## TEST 5A CONTINUED - REPAIRING PARK LAMPS THAT WILL NOT TURN ON

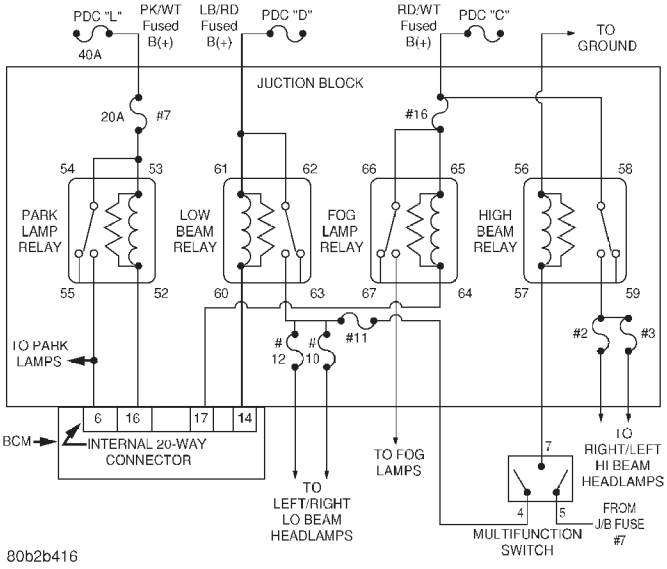


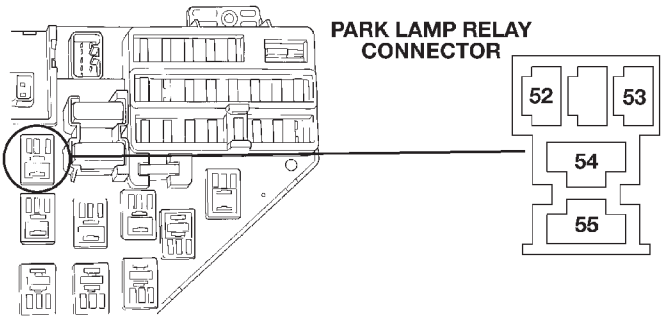

***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 6A REPAIRING PARK LAMPS THAT WILL NOT TURN OFF

**Perform TEST 1A Before Proceeding**

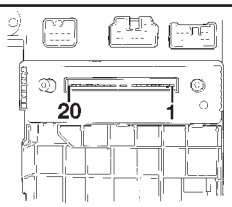



| CAV | FUNCTION |
|---|---|
| 52 (86) | PARK LAMP RELAY CONTROL |
| 53 (85) | FUSED B (+) |
| 54 (87) | FUSED B (+) |
| 55 (30) | PARK LAMP RELAY OUTPUT |

80b2b41c

***FIG. 1***



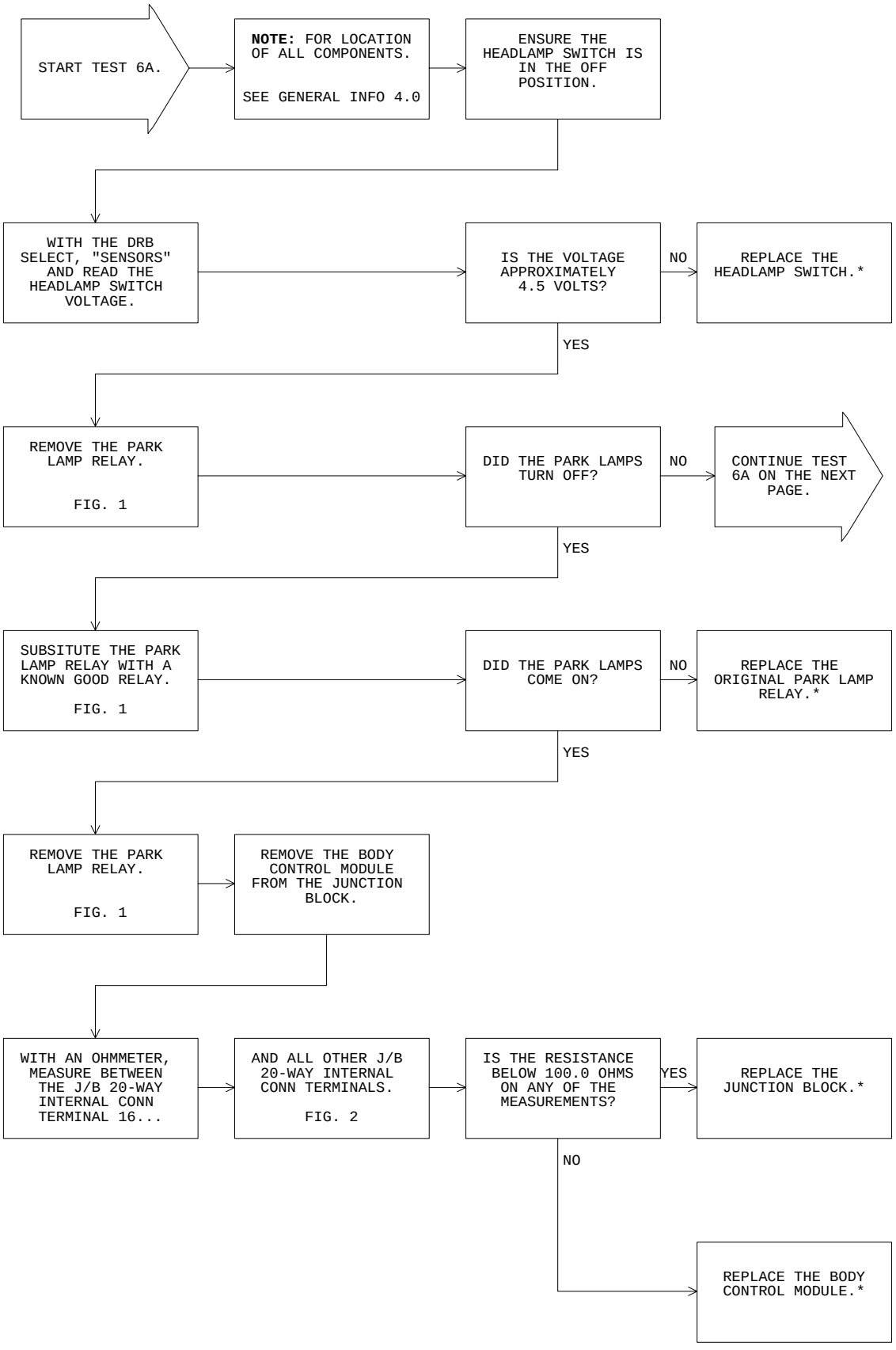

| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

***FIG. 2***

## TEST 6A REPAIRING PARK LAMPS THAT WILL NOT TURN OFF

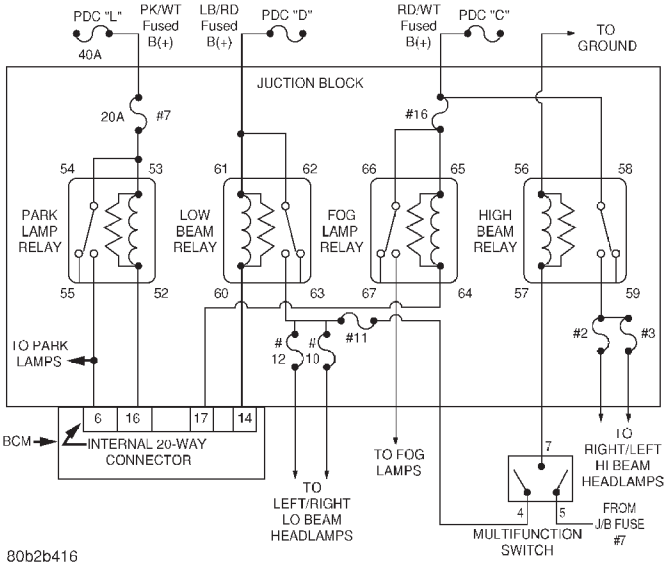
**Perform TEST 1A Before Proceeding**

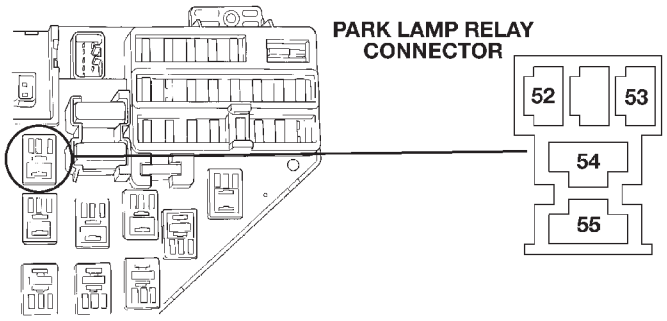



***Perform Verification TEST VER-2A.***

*****Check connectors - Clean / repair as necessary.***

## TEST 6A CONTINUED - REPAIRING PARK LAMPS THAT WILL NOT TURN OFF

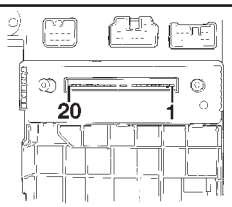



| CAV | FUNCTION |
|---|---|
| 52 (86) | PARK LAMP RELAY CONTROL |
| 53 (85) | FUSED B (+) |
| 54 (87) | FUSED B (+) |
| 55 (30) | PARK LAMP RELAY OUTPUT |

80b2b41c

***FIG. 1***



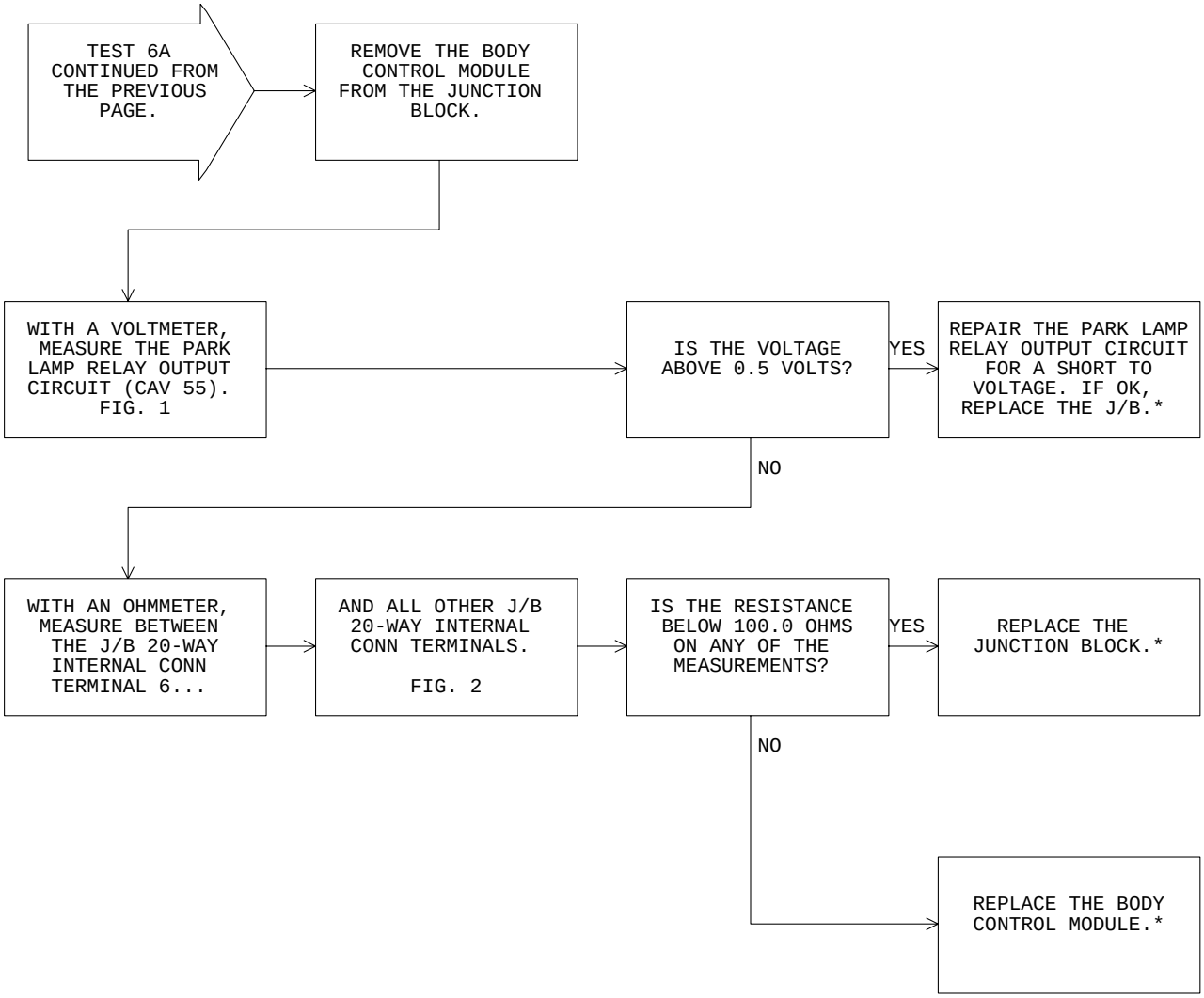

**JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR**

| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

***FIG. 2***

## TEST 6A CONTINUED - REPAIRING PARK LAMPS THAT WILL NOT TURN OFF

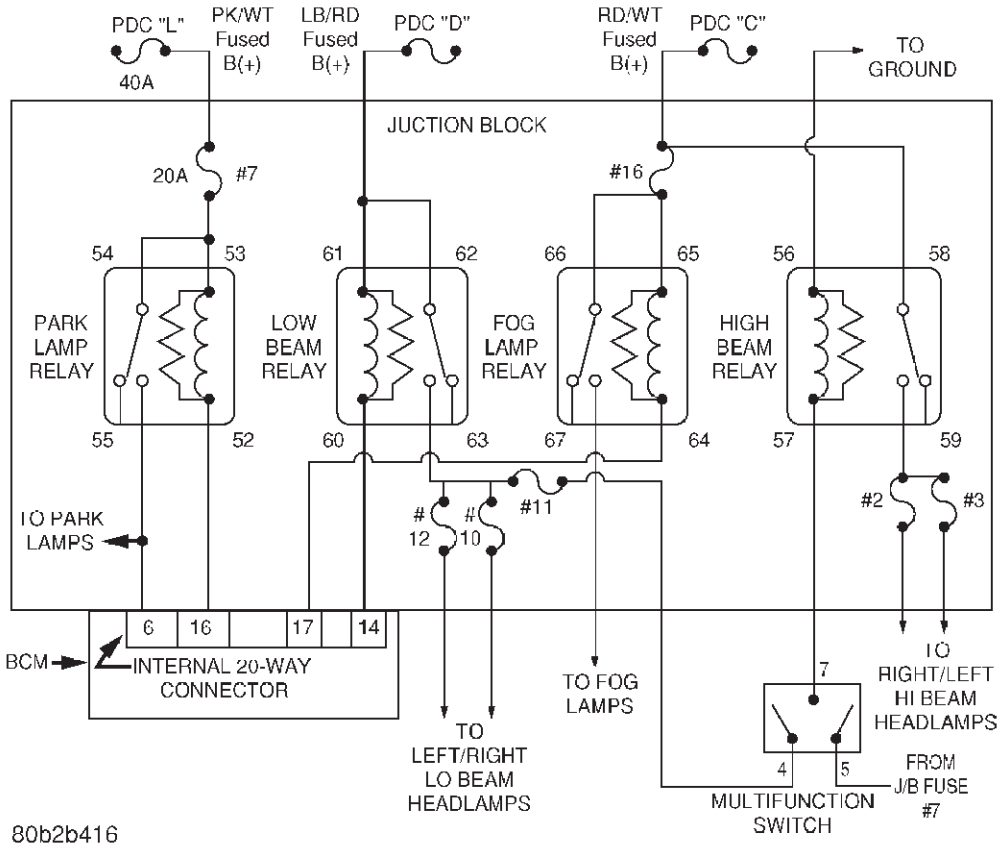



***Perform Verification TEST VER-2A.**

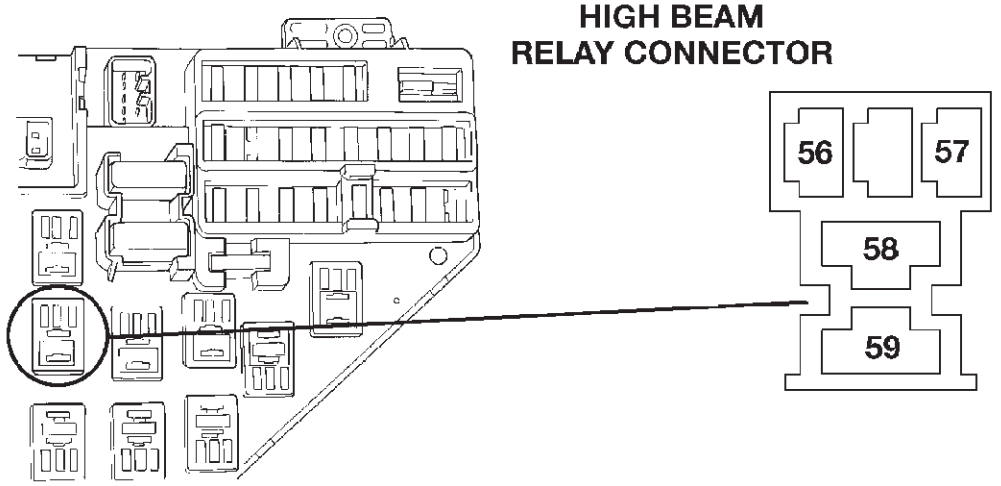
****Check connectors - Clean / repair as necessary.**

## TEST 7A REPAIRING HIGH BEAM HEADLAMPS THAT WILL NOT TURN ON

**Perform TEST 1A Before Proceeding**




80b2b416



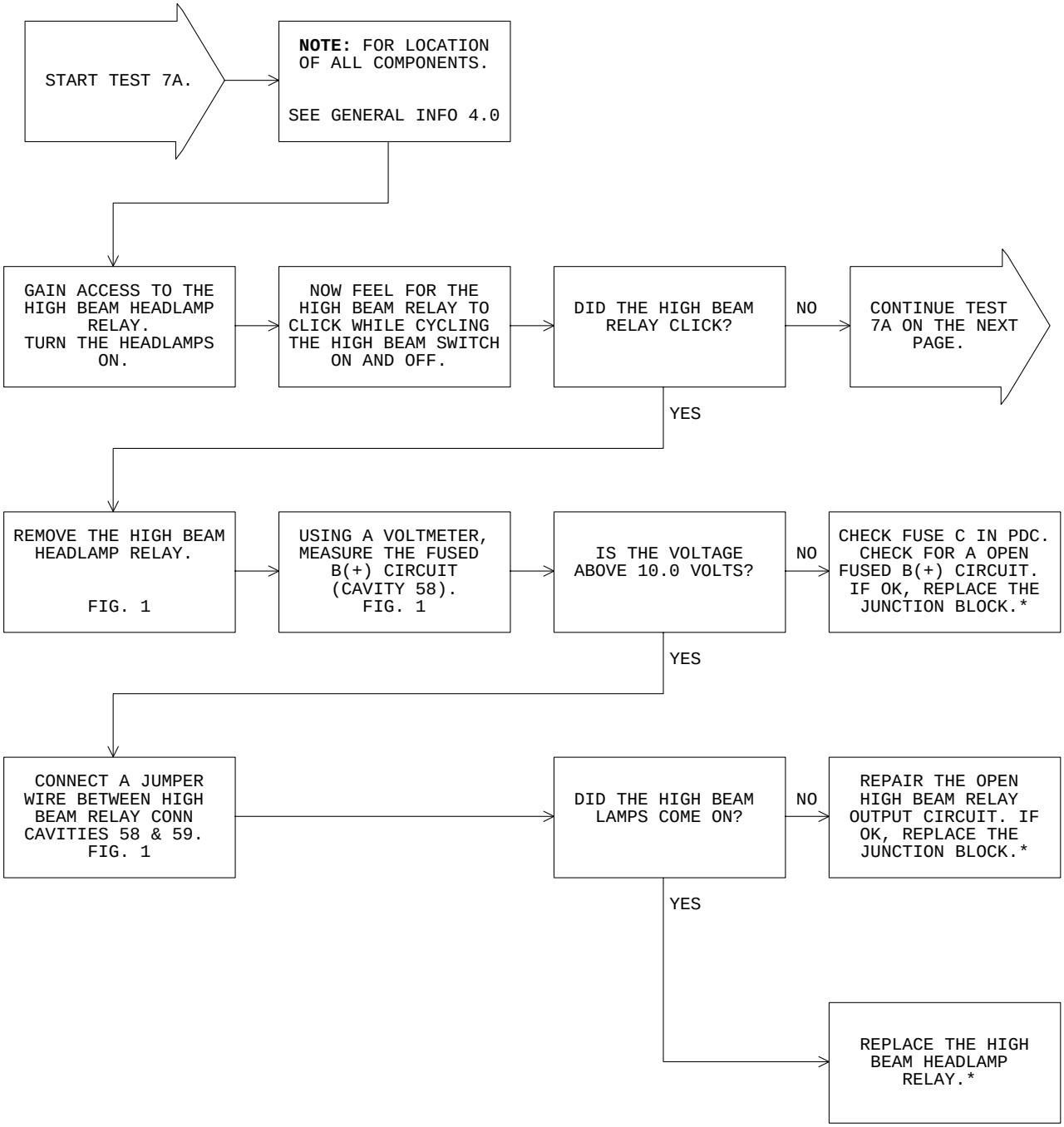

| CAV | FUNCTION |
|---|---|
| 56 (86) | GROUND |
| 57 (85) | HIGH BEAM RELAY CONTROL |
| 58 (87) | FUSED B (+) |
| 59 (30) | HIGH BEAM RELAY OUTPUT |

80b2b417

***FIG. 1***

## TEST 7A REPAIRING HIGH BEAM HEADLAMPS THAT WILL NOT TURN ON

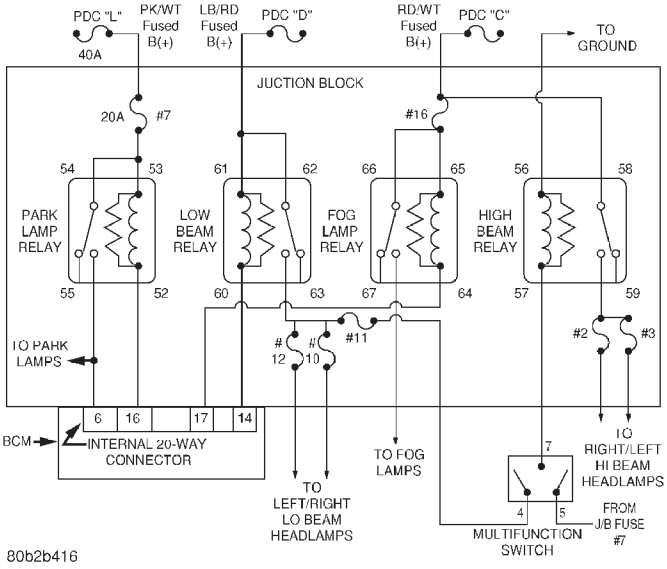
**Perform TEST 1A Before Proceeding**

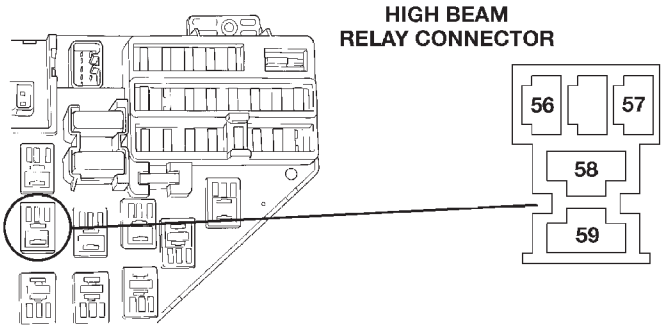



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 7A CONTINUED - REPAIRING HIGH BEAM HEADLAMPS THAT WILL NOT TURN ON

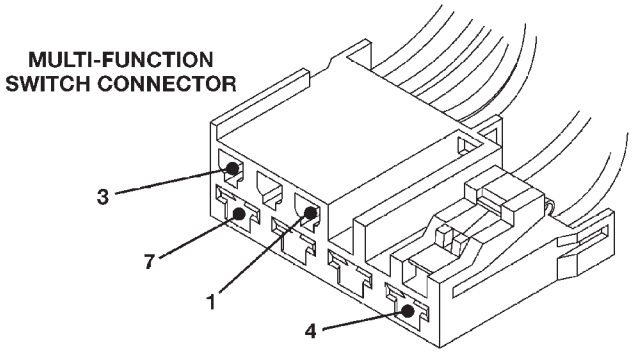



| CAV | FUNCTION |
|---|---|
| 56 (86) | GROUND |
| 57 (85) | HIGH BEAM RELAY CONTROL |
| 58 (87) | FUSED B (+) |
| 59 (30) | HIGH BEAM RELAY OUTPUT |

80b2b417

***FIG. 1***

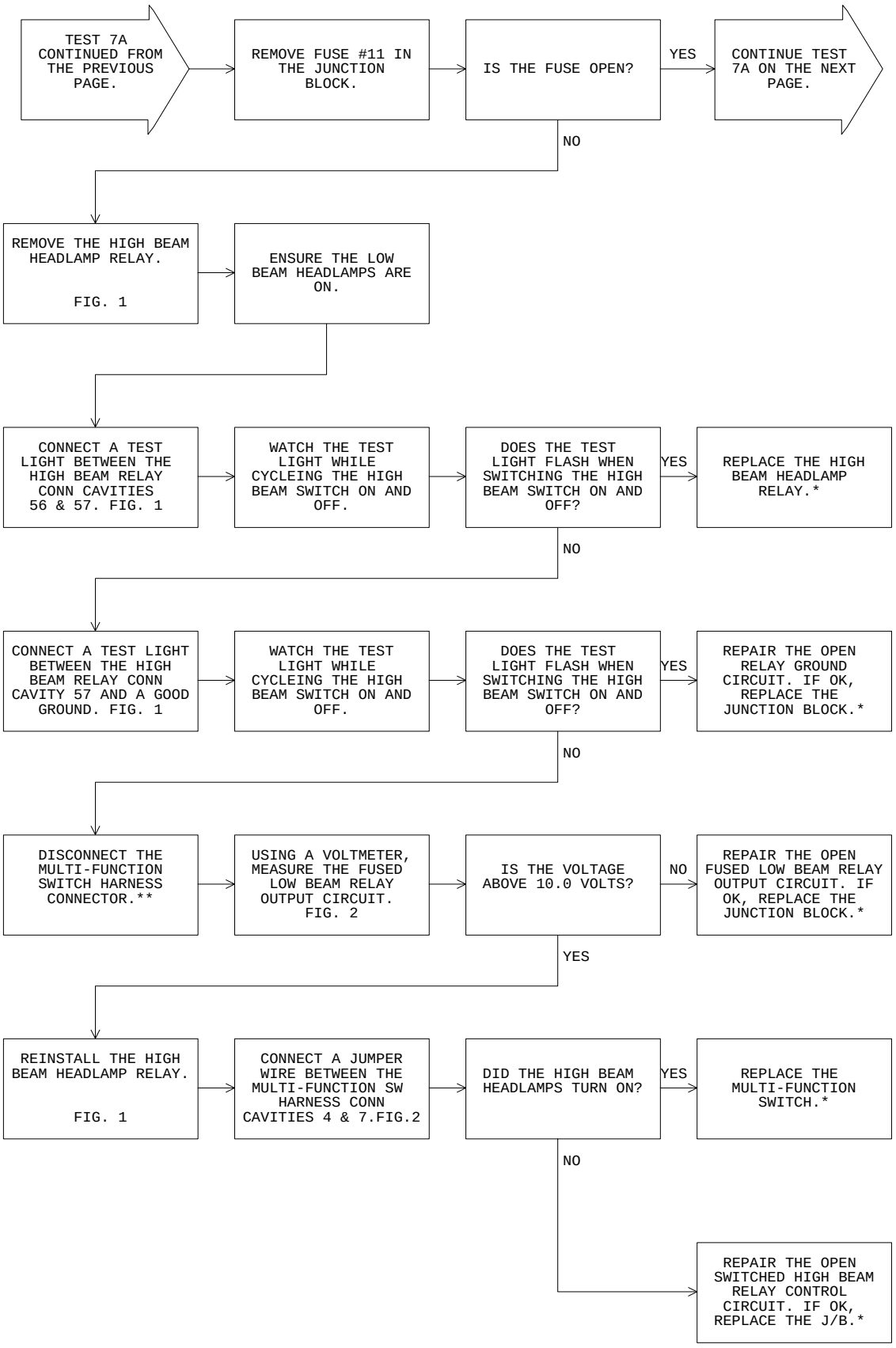



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DB | FUSED IGNITION SWITCH OUTPUT |
| 2 | BR | WASHER MOTOR CONTROL |
| 3 | DG/RD | WIPER SWITCH MUX SIGNAL |
| 4 | BR/WT | FUSED LOW BEAM RELAY OUTPUT |
| 5 | PK/RD | FUSED B(+) |
| 7 | WT/LG | SWITCHED HIGH BEAM RELAY CONTROL |

80b6b155

***FIG. 2***

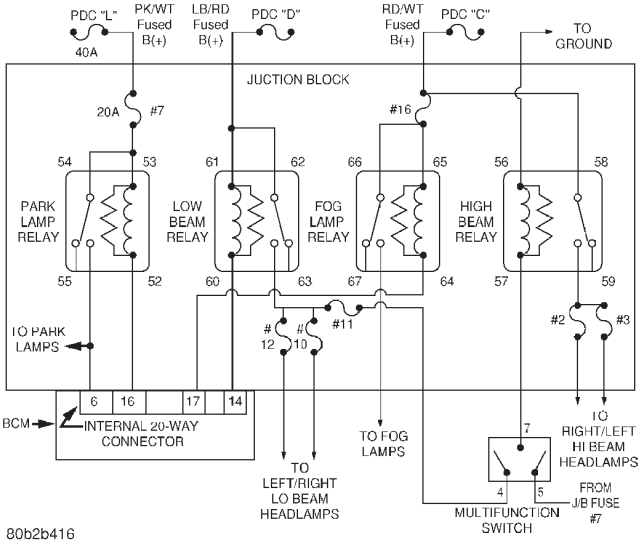
## TEST 7A CONTINUED - REPAIRING HIGH BEAM HEADLAMPS THAT WILL NOT TURN ON




***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 7A CONTINUED - REPAIRING HIGH BEAM HEADLAMPS THAT WILL NOT TURN ON



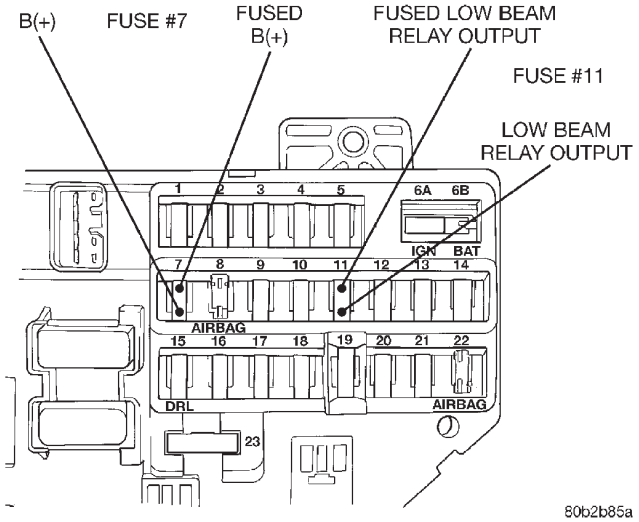
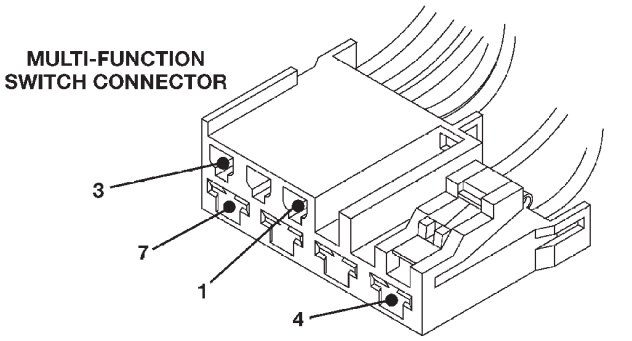
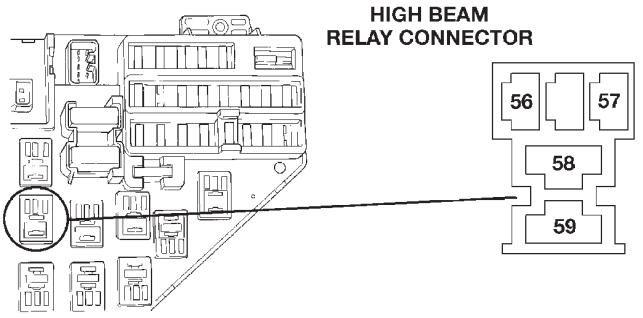




*FIG. 1*




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DB | FUSED IGNITION SWITCH OUTPUT |
| 2 | BR | WASHER MOTOR CONTROL |
| 3 | DG/RD | WIPER SWITCH MUX SIGNAL |
| 4 | BR/WT | FUSED LOW BEAM RELAY OUTPUT |
| 5 | PK/RD | FUSED B(+) |
| 7 | WT/LG | SWITCHED HIGH BEAM RELAY CONTROL |

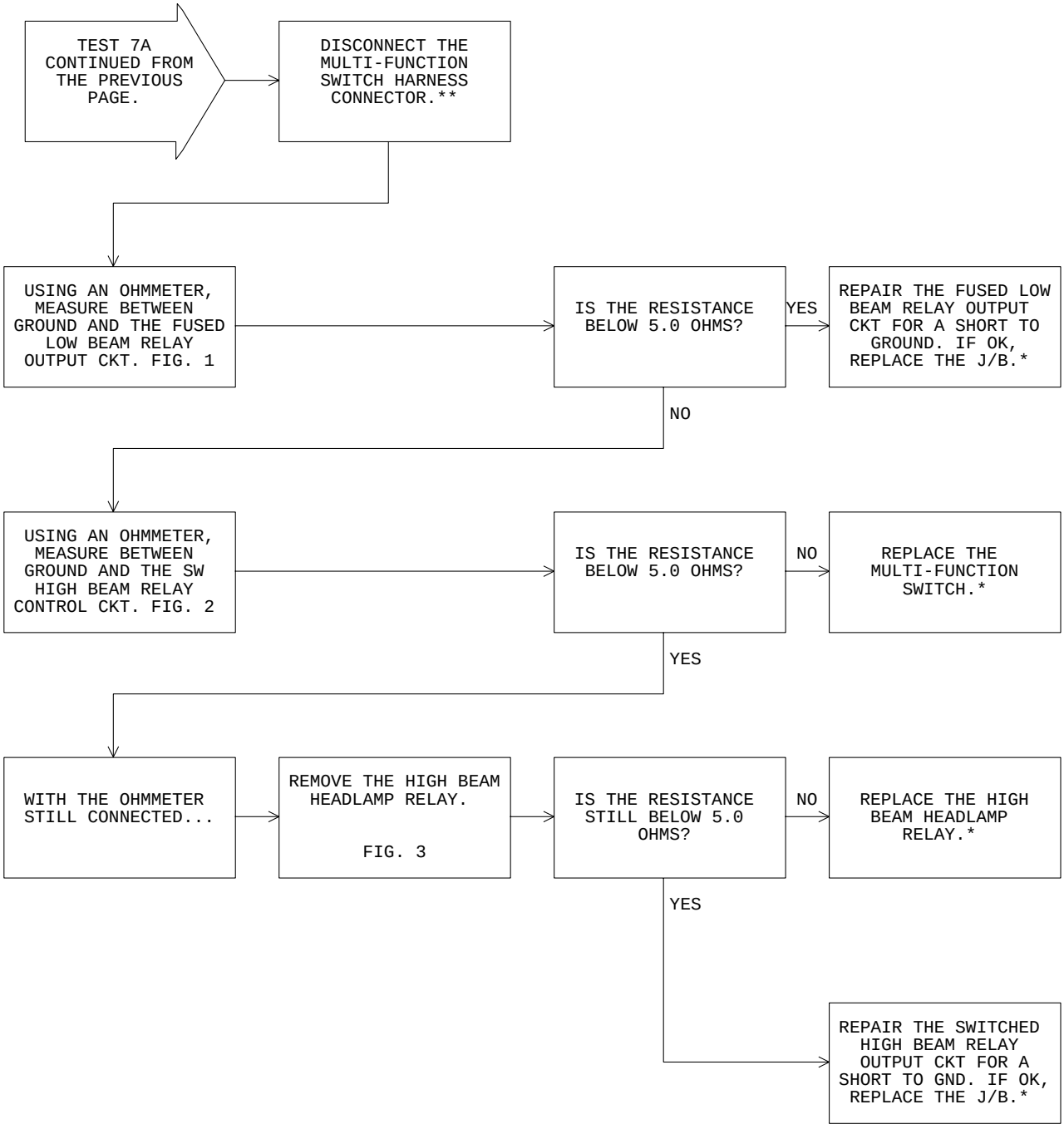
*FIG. 2*




| CAV | FUNCTION |
|---|---|
| 56 (86) | GROUND |
| 57 (85) | HIGH BEAM RELAY CONTROL |
| 58 (87) | FUSED B (+) |
| 59 (30) | HIGH BEAM RELAY OUTPUT |

*FIG. 3*

## TEST 7A CONTINUED - REPAIRING HIGH BEAM HEADLAMPS THAT WILL NOT TURN ON

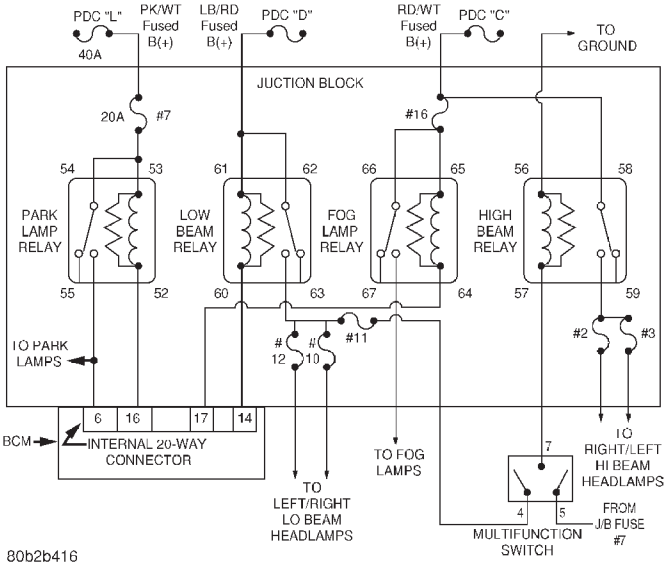


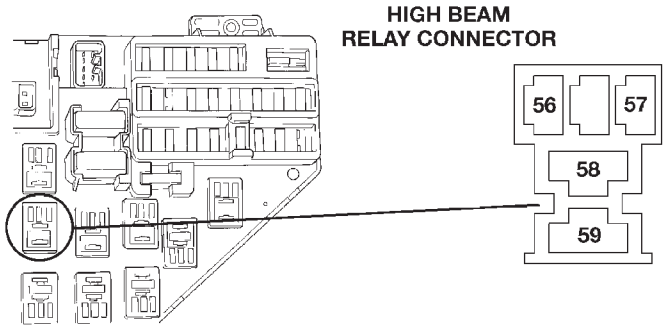

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 8A REPAIRING HIGH BEAM HEADLAMPS THAT WILL NOT TURN OFF

**Perform TEST 1A Before Proceeding**

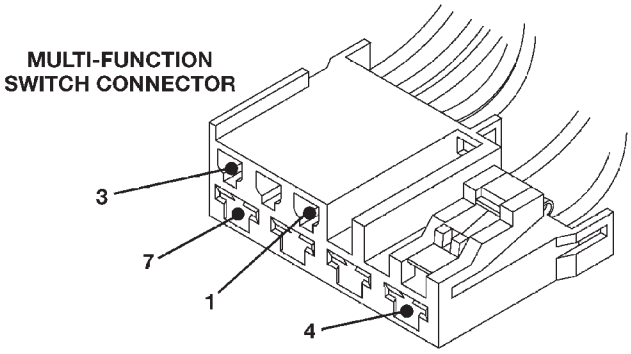



| CAV | FUNCTION |
|---|---|
| 56 (86) | GROUND |
| 57 (85) | HIGH BEAM RELAY CONTROL |
| 58 (87) | FUSED B (+) |
| 59 (30) | HIGH BEAM RELAY OUTPUT |

80b2b417

***FIG. 1***



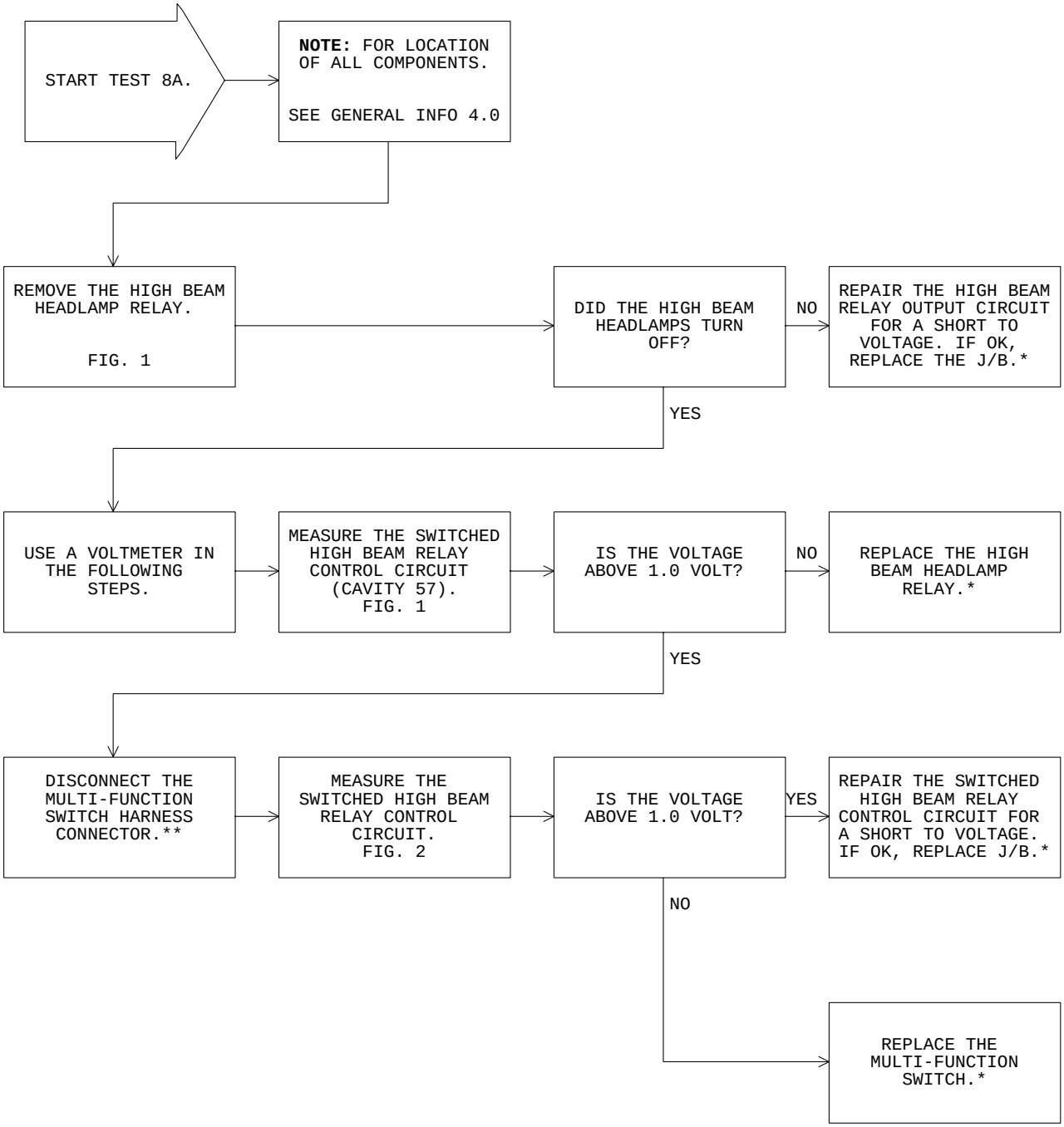

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DB | FUSED IGNITION SWITCH OUTPUT |
| 2 | BR | WASHER MOTOR CONTROL |
| 3 | DG/RD | WIPER SWITCH MUX SIGNAL |
| 4 | BR/WT | FUSED LOW BEAM RELAY OUTPUT |
| 5 | PK/RD | FUSED B(+) |
| 7 | WT/LG | SWITCHED HIGH BEAM RELAY CONTROL |

80b6b155

***FIG. 2***

## TEST 8A REPAIRING HIGH BEAM HEADLAMPS THAT WILL NOT TURN OFF

**Perform TEST 1A Before Proceeding**

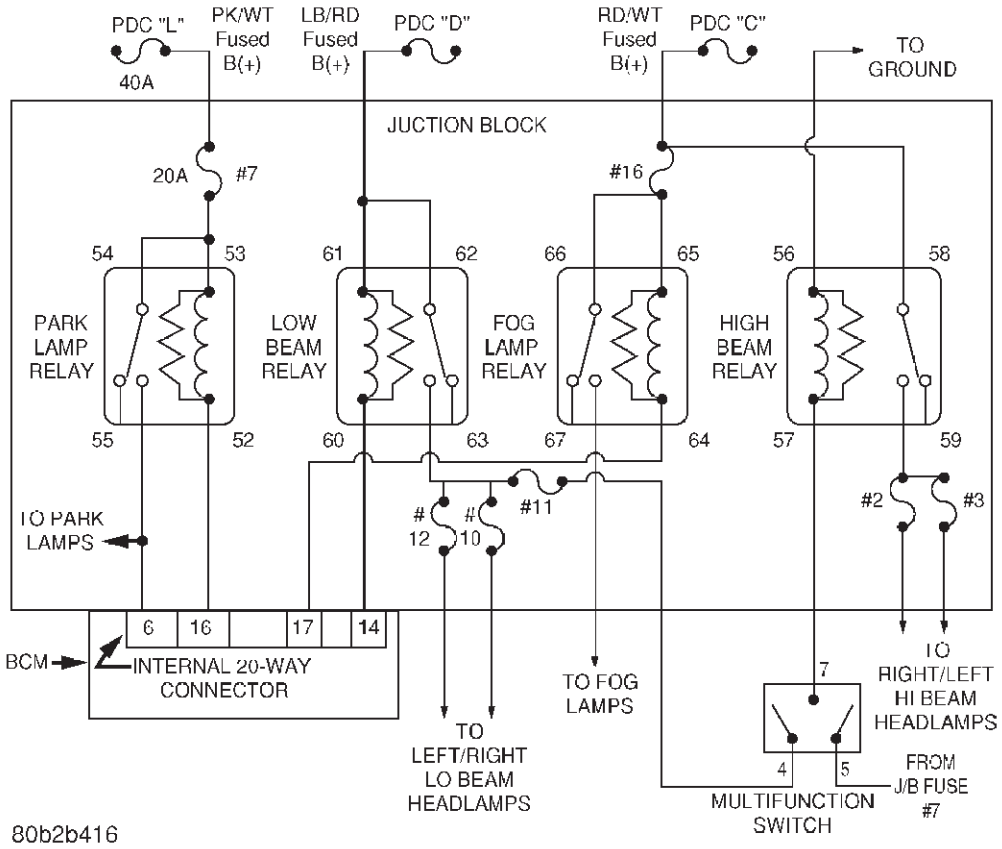



***Perform Verification TEST VER-2A.***

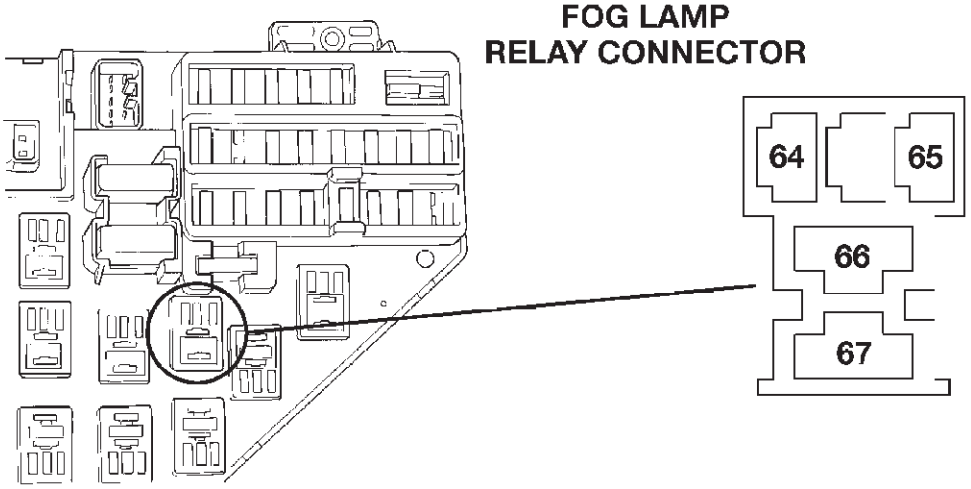
***Check connectors - Clean / repair as necessary.**

## TEST 9A REPAIRING FOG LAMPS THAT WILL NOT TURN ON

**Perform TEST 1A Before Proceeding**




80b2b416



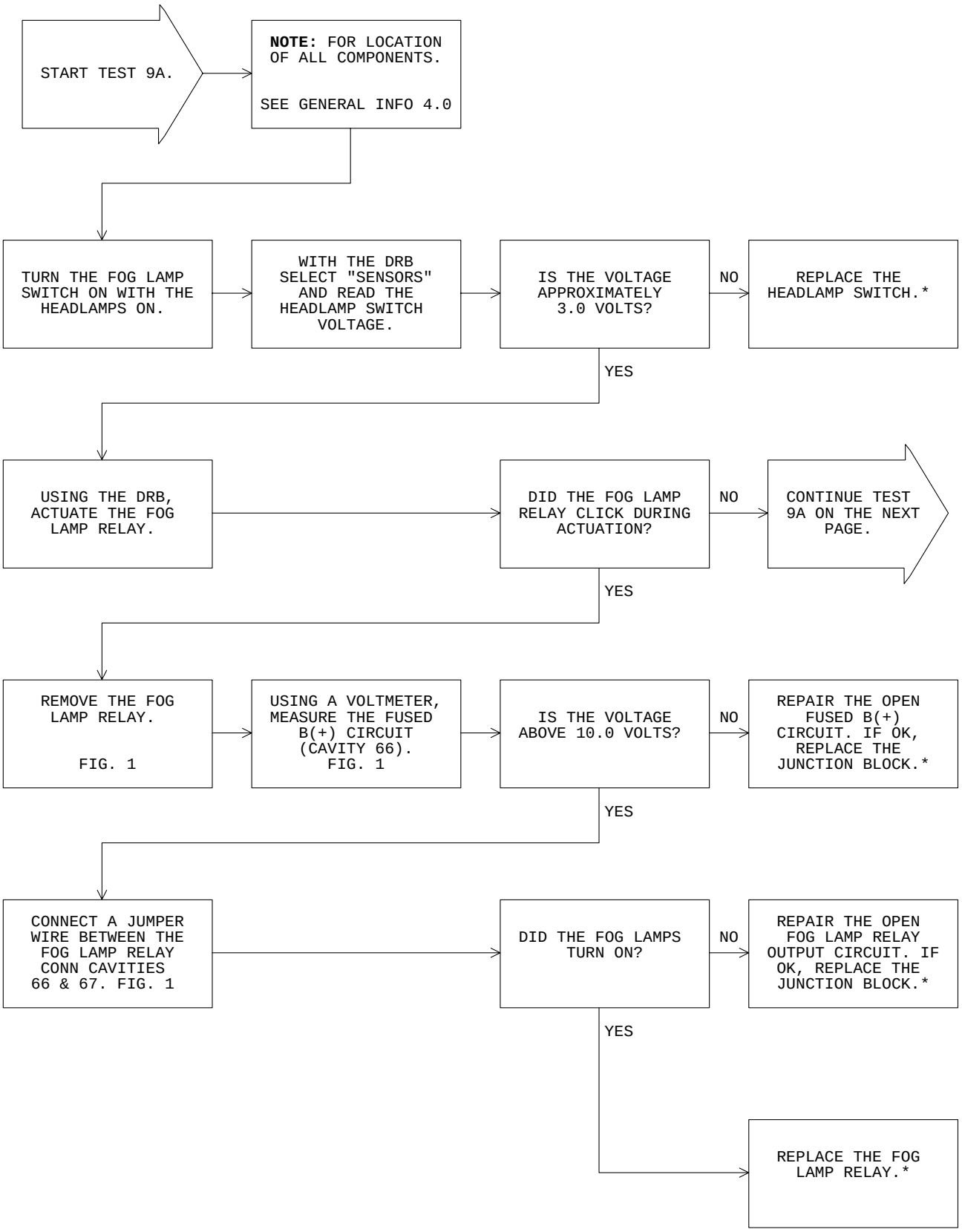

| CAV | FUNCTION |
|---|---|
| 64 (86) | FOG LAMP RELAY CONTROL |
| 65 (85) | FUSED B (+) |
| 66 (87) | FUSED B (+) |
| 67 (30) | FOG LAMP RELAY OUTPUT |

80b2b41e

***FIG. 1***

## TEST 9A REPAIRING FOG LAMPS THAT WILL NOT TURN ON

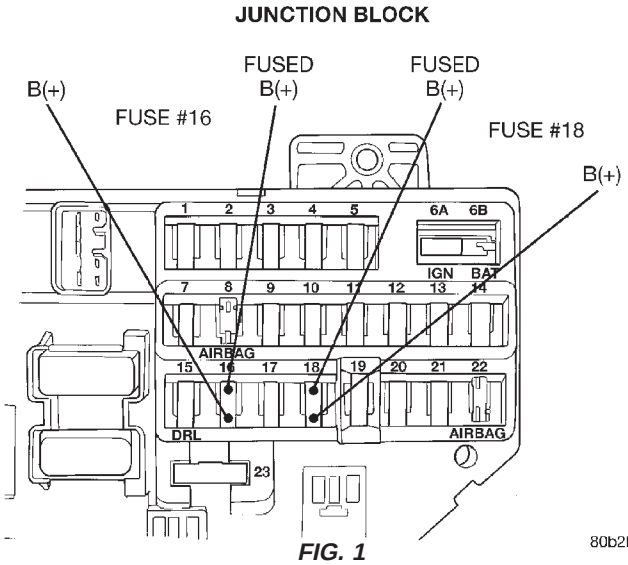
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.***

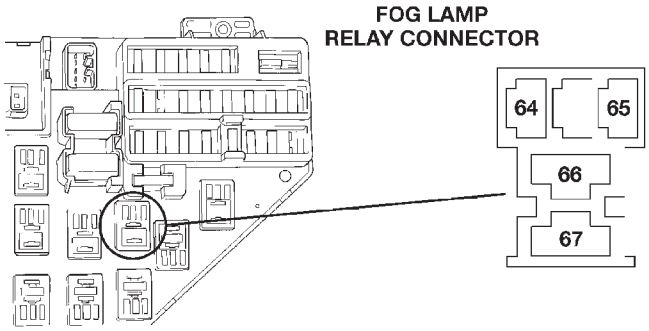
***Check connectors - Clean / repair as necessary.***

## TEST 9A CONTINUED - REPAIRING FOG LAMPS THAT WILL NOT TURN ON




80b2b81a

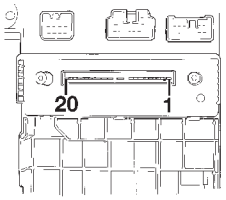
*FIG. 1*




| CAV | FUNCTION |
|---|---|
| 64 (86) | FOG LAMP RELAY CONTROL |
| 65 (85) | FUSED B (+) |
| 66 (87) | FUSED B (+) |
| 67 (30) | FOG LAMP RELAY OUTPUT |

80b2b41e

*FIG. 2*

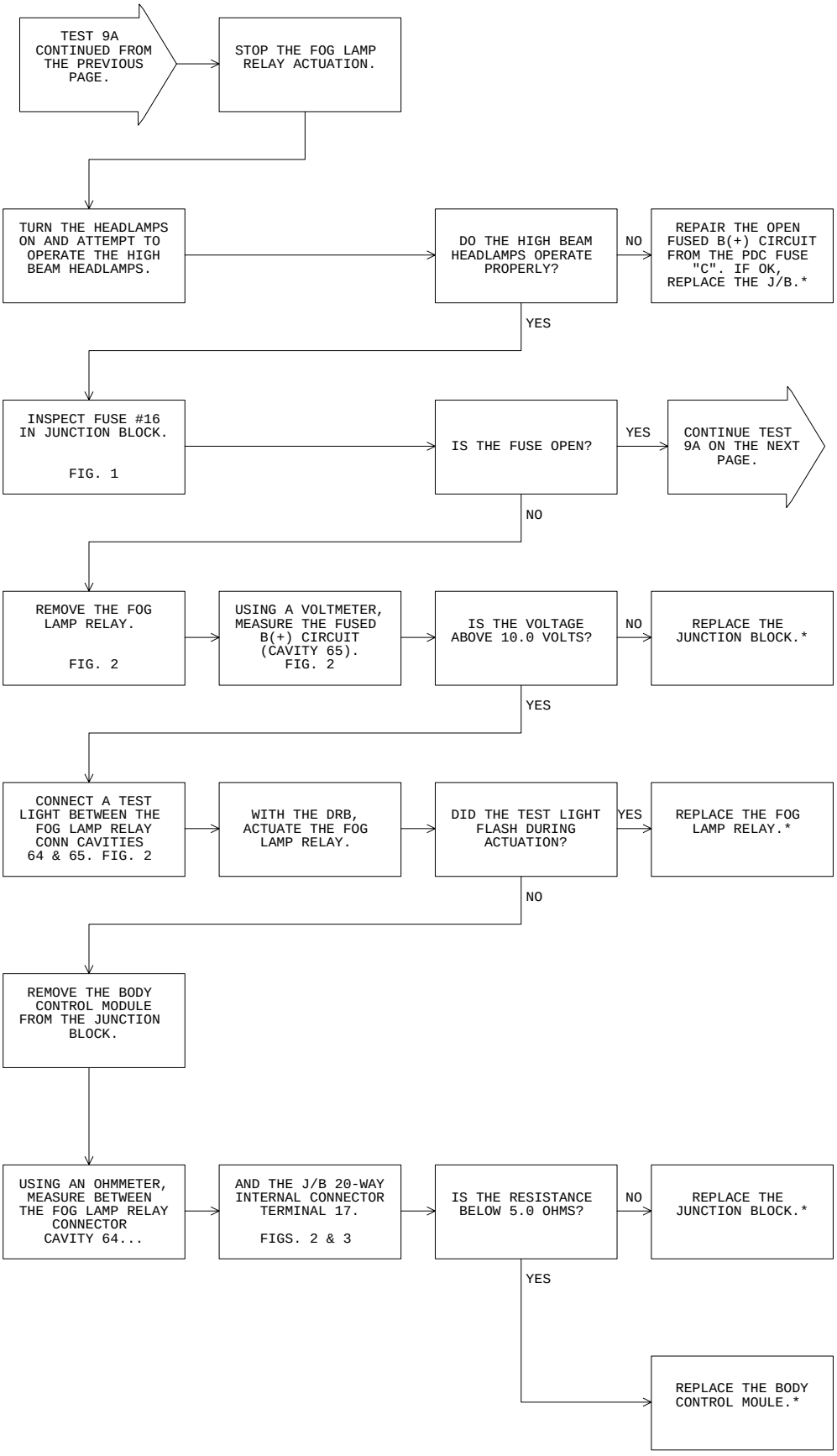



| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

*FIG. 3*

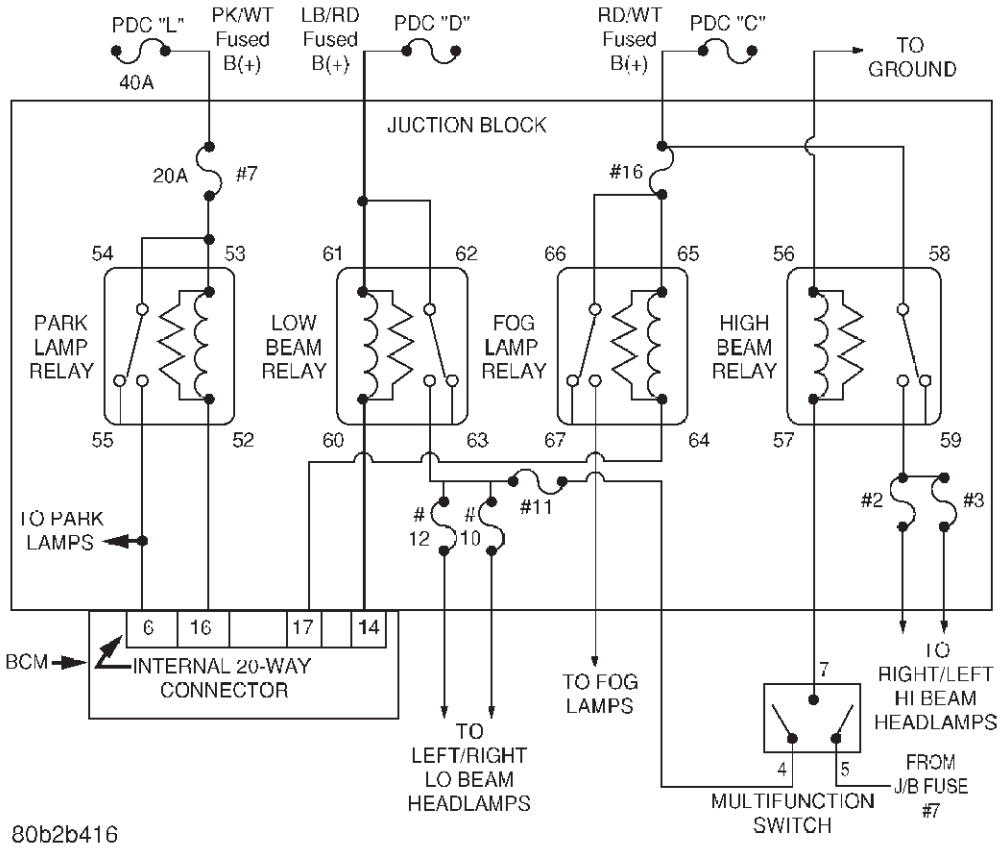
## TEST 9A CONTINUED - REPAIRING FOG LAMPS THAT WILL NOT TURN ON



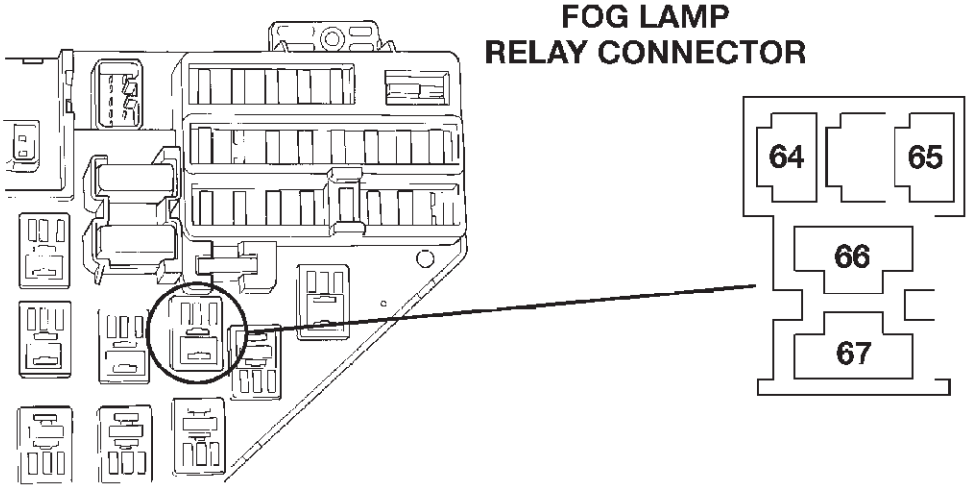

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

**TEST 9A** CONTINUED - REPAIRING FOG LAMPS THAT WILL NOT TURN ON




80b2b416

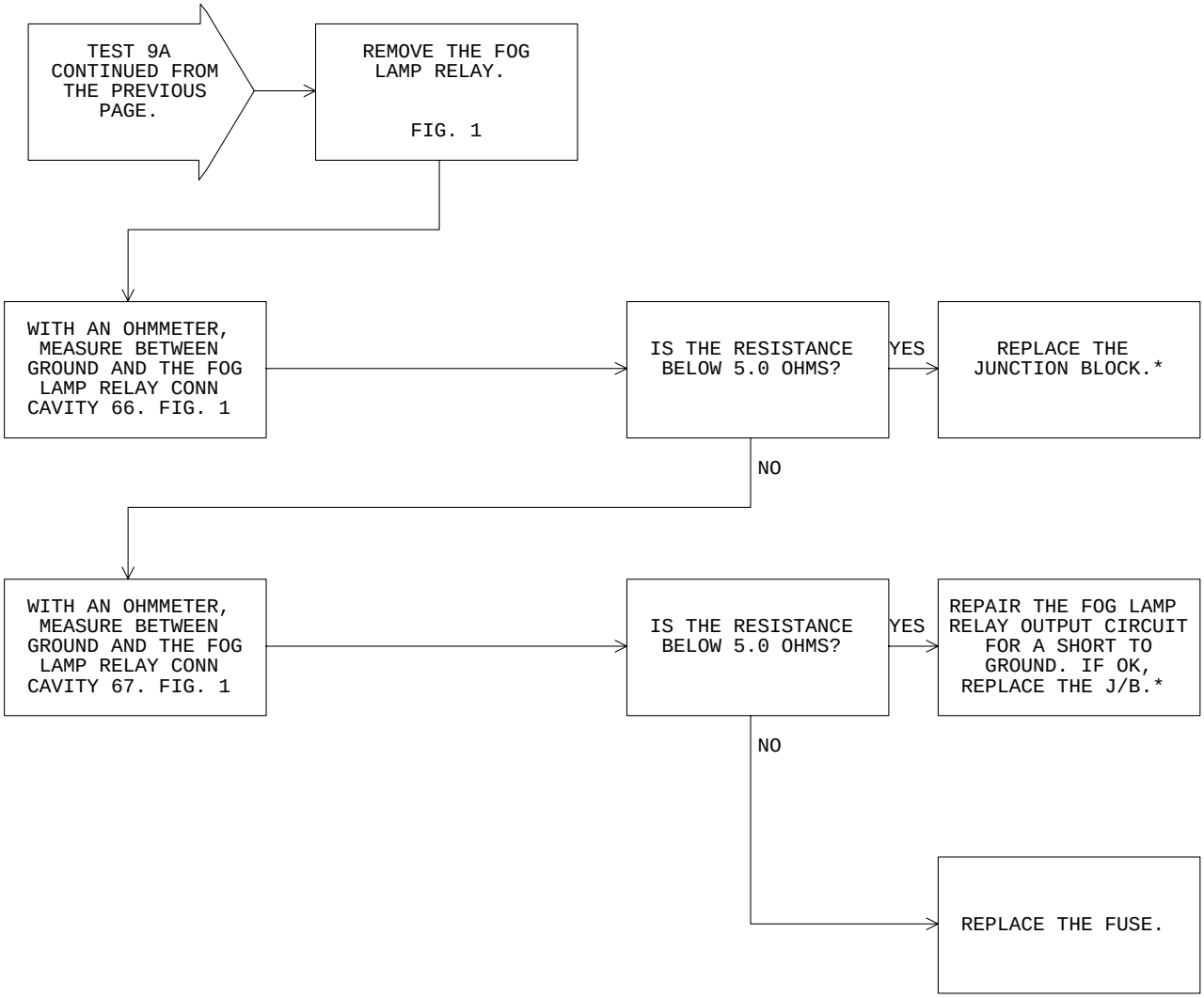



| CAV | FUNCTION |
|---|---|
| 64 (86) | FOG LAMP RELAY CONTROL |
| 65 (85) | FUSED B (+) |
| 66 (87) | FUSED B (+) |
| 67 (30) | FOG LAMP RELAY OUTPUT |

80b2b41e

***FIG. 1***

## TEST 9A CONTINUED - REPAIRING FOG LAMPS THAT WILL NOT TURN ON

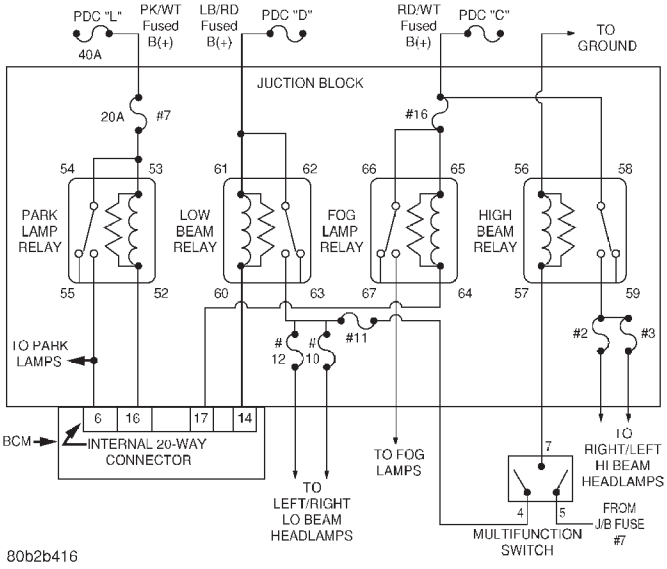


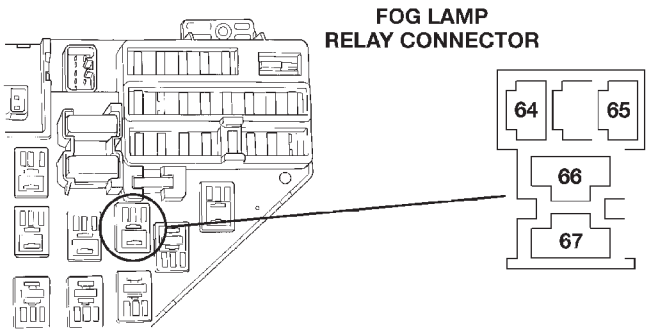

***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 10A REPAIRING FOG LAMPS THAT WILL NOT TURN OFF

**Perform TEST 1A Before Proceeding**

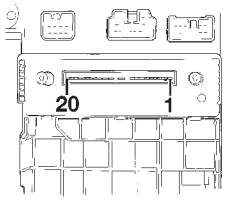



| CAV | FUNCTION |
|---|---|
| 64 (86) | FOG LAMP RELAY CONTROL |
| 65 (85) | FUSED B (+) |
| 66 (87) | FUSED B (+) |
| 67 (30) | FOG LAMP RELAY OUTPUT |

80b2b41e

***FIG. 1***




**JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR**

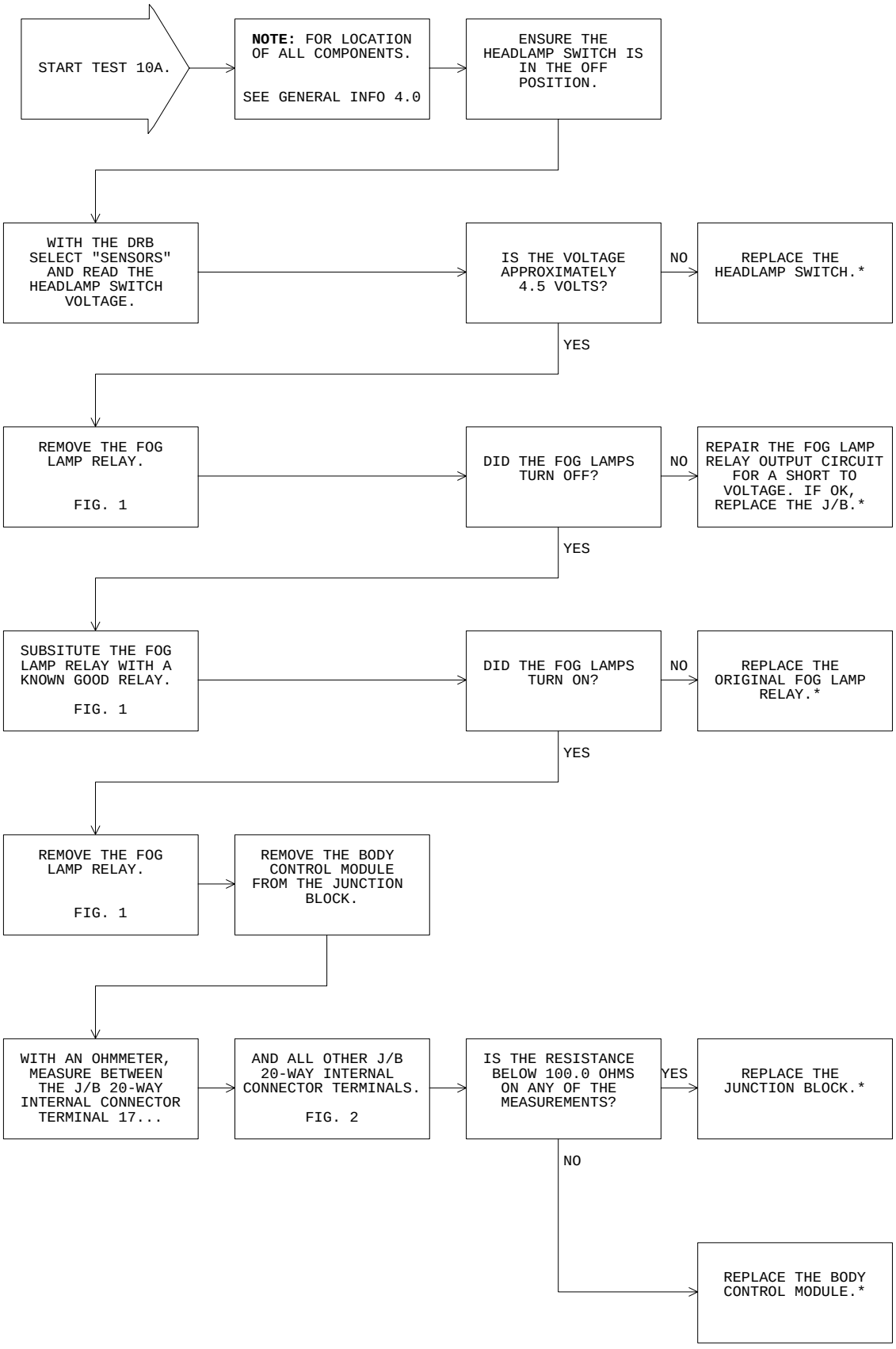
| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

***FIG. 2***

## TEST 10A REPAIRING FOG LAMPS THAT WILL NOT TURN OFF

**Perform TEST 1A Before Proceeding**

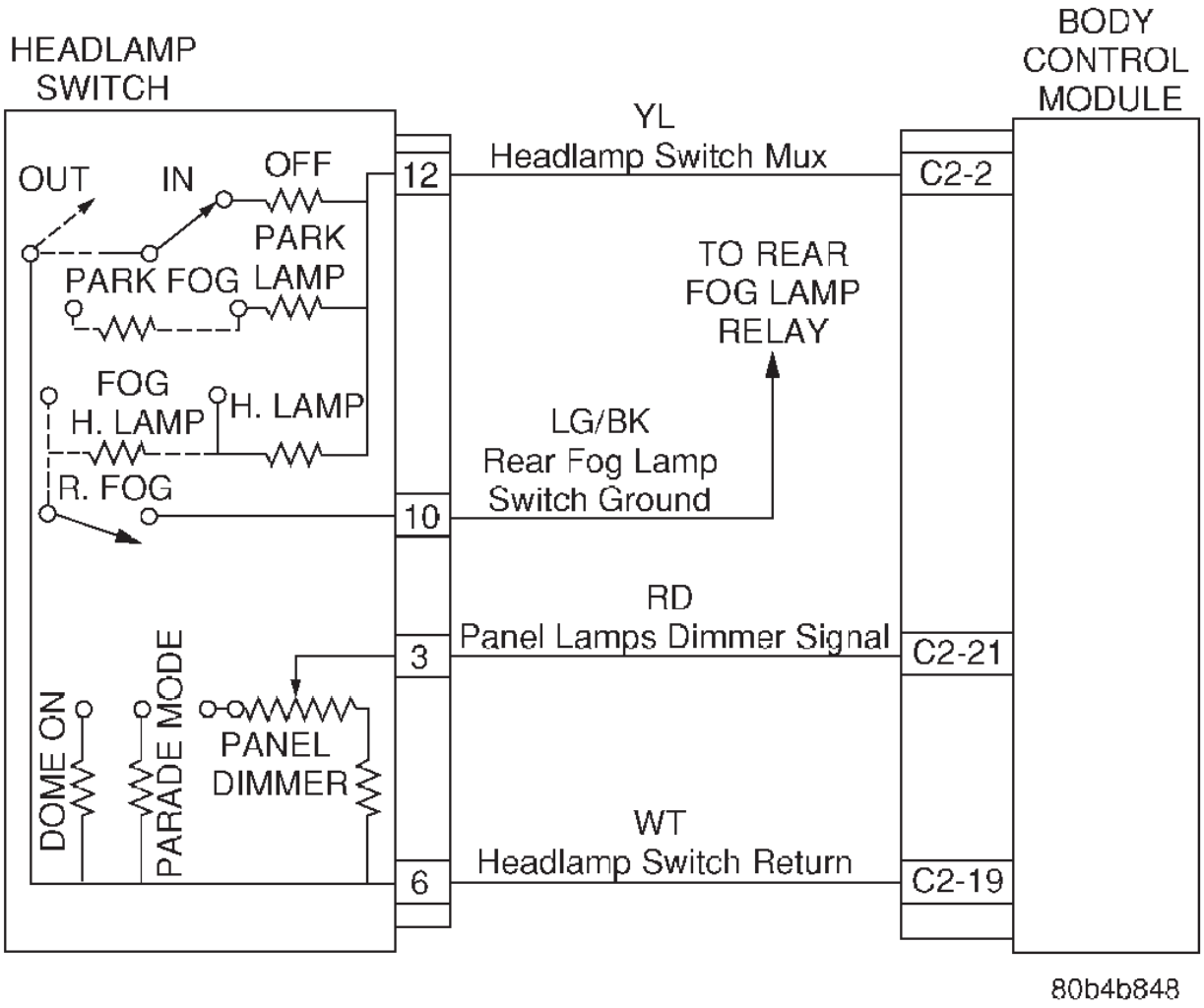



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.**

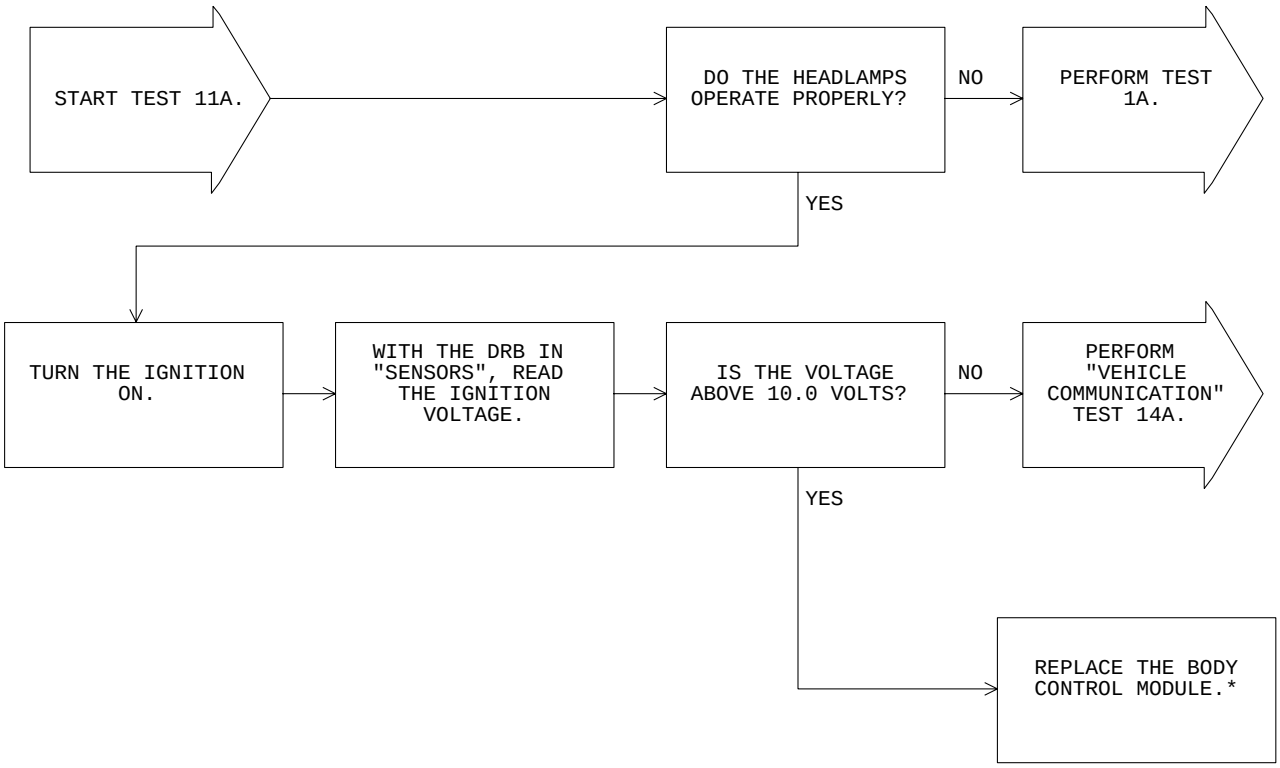
**TEST 11A** REPAIRING HEADLAMP TIME DELAY

**Perform TEST 1A Before Proceeding**



## TEST 11A REPAIRING HEADLAMP TIME DELAY

**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 1A IDENTIFYING INSTRUMENT CLUSTER PROBLEMS

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**

**Name of code:** BCM Bus Communication Failure

**When monitored:** With ignition on.

**Set condition:** No communications received from BCM module for 10 seconds.

**Theory of operation:** If no communications are received from the BCM module for 10 seconds this fault will be set the I/P and cluster lights will be illuminated in the daytime running mode, the fuel gauge will be driven low and the low fuel indicator will be illuminated.

**Possible causes:**
> PCI bus wiring open
> PCI bus wiring short to ground
> PCI bus wiring short to battery
> BCM not communicating on the bus
> MIC not communicating on the bus

80b31f70

**Name of code:** ABS Bus Communication Failure

**When monitored:** With ignition on.

**Set condition:** No communications received from ABS module for 10 seconds.

**Theory of operation:** If no communications are received from the ABS module for 10 seconds this fault will be set and the ABS and BRAKE indicators will be illuminated.

**Possible causes:**
> PCI bus wiring open
> PCI bus wiring short to ground
> PCI bus wiring short to battery
> ABS not communicating on the bus
> MIC not communicating on the bus

80b31f71

**Name of code:** AECM Bus Communication Failure

**When monitored:** With ignition on.

**Set condition:** No communications received from AECM module for 10 seconds.

**Theory of operation:** If no communications are received from the AECM module for 10 seconds this fault will be set and the Airbag indicator will be illuminated.

**Possible causes:**
> PCI bus wiring open
> PCI bus wiring short to ground
> PCI bus wiring short to battery
> AECM not communicating on the bus
> MIC not communicating on the bus

80b31f72

**Name of code:** SBEC Bus Communication Failure

**When monitored:** With ignition on.

**Set condition:** No communications received from SBEC module for 10 seconds.

**Theory of operation:** If no communications are received from the SBEC module for 10 seconds this fault will be set and all gauges will be driven to low scale.

**Possible causes:**
> PCI bus wiring open
> PCI bus wiring short to ground
> PCI bus wiring short to battery
> SBEC not communicating on the bus
> MIC not communicating on the bus

80b31f73

**Name of code:** Fuel Level Sending Unit Failure

**When monitored:** With ignition on

**Set condition:** BCM detects an abnormally high voltage on the fuel level input.

**Theory of operation:** The BCM provides a pull-up to ignition voltage for the fuel level sensor, but the resulting voltage on the pin should be below 5 volts no matter what the fuel level is when the sensor is connected. This fault will not be set if the sensor is shorted to ground.

**Possible causes:**
> Wiring open circuit
> Wiring short to battery
> Failed fuel level sensor
> Failed BCM

80b4fb28

**Name of code:** Dimming Level Switch Failure

**When monitored:** Continuously

**Set condition:** BCM detects an open or short circuit condition for 10 consecutive seconds on the dimming level switch input.

**Theory of operation:** BCM reads the low current dimmer switch and sends the dimming level status over the PCI bus and activates the courtesy lamps as appropriate. If the BCM does not read a valid input from the switch for 10 consecutive seconds, it will set this fault and will send a dimming level of full night time brightness over the bus whenever the park lamps are on.

**Possible causes:**
> Wiring open circuit
> Wiring short to ground
> Wiring short to battery
> Failed dimmer switch
> Failed BCM

80b243d0

## TEST 1A IDENTIFYING INSTRUMENT CLUSTER PROBLEMS

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**

Ensure there is communication with the body control module before proceeding. If any communication problems. . . . . .perform ''Vehicle Communication'' TEST 1A.

1. With the DRB, select ''Body System'', ''Body Computer'', ''Sensors''. Read the ''Ignition Voltage''. If it does not show battery voltage when the ignition key is on. . . .perform ''Vehicle Communication'' TEST 14A.
2. Turn the ignition on. With the DRB select ''Electro/Mech Cluster''. If the DRB shows ''No Response''. . . . . .perform ''Vehicle Communication'' TEST 6A.
3. With the DRB, select ''Monitor Display'', then ''PCI Bus Engine Info.''. If the DRB shows ''No Response''. . . . . .perform ''Vehicle Communication'' TEST 8A.
4. With the DRB, select ''Electro/Mech Cluster'', then ''Read DTCs.''
   − If the DRB displays ''EATX Bus Communication Failure''. . . . . .perform ''Vehicle Communication'' TEST 10A.
   − If DRB displays ''SBEC Bus Communication Failure'' . . . . . .perform ''Vehicle Communication'' TEST 8A.
   − If DRB displays ''Airbag Bus Communication Failure'' . . . . . .perform ''Vehicle Communication'' TEST 2A.
   − If DRB displays ''ABS Bus Communication Failure''. . . . . .perform ''Vehicle Communication'' TEST 5A.
   − If DRB displays ''BCM Bus Communication Failure'' . . . . . .perform ''Vehicle Communication'' TEST 4A.
5. With the DRB, select ''Body Computer'', then ''Read DTCs.''
   − If the DRB displays ''Fuel Level Sending Unit Failure'' . . . . . .perform TEST 2A.
   − If DRB displays ''Dimming Level Switch Failure'' . . . . . .perform TEST 3A.

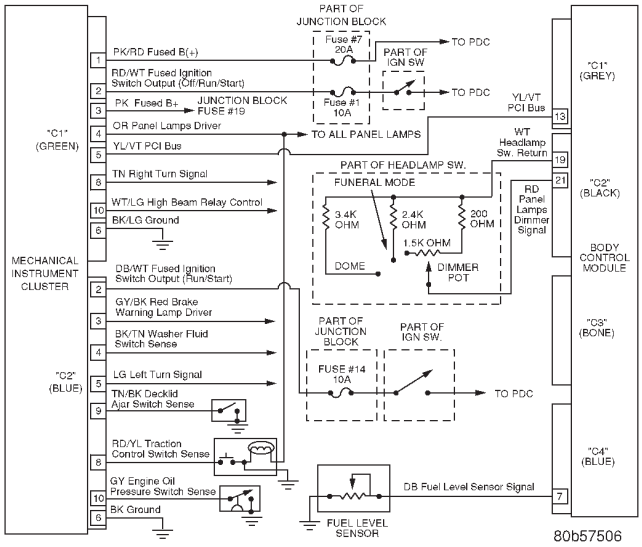
Diagnostics for the instrument cluster are separated into six groups. Verify the failure or the customer's complaint and make sure the vehicle is experiencing the problem at this time. Choose the applicable item from the list below and perform the indicated test.

| PROBLEM WITH | PERFORM |
|---|---|
| All Gauges Not Operating | TEST 4A |
| Any One Gauge Operating Improperly | TEST 5A |
| Odometer | TEST 6A |
| Any or All Cluster Warning Lamps | TEST 7A |
| PRNDL not operating properly | TEST 8A |
| Cluster and Panel Illumination | TEST 9A |

**NOTE:** If the problem is with the speedometer, tachometer, or temperature gauges intermittently going to zero or to the lowest point, use the DRB and select ''Monitor Display'', then ''Engine Info''. While wiggling the wire harness and connectors between the cluster and BCM, if the DRB says ''No Response'', disconnect the appropriate connectors (refer to the service manual for connector locations containing the PCI bus circuits) and inspect the terminals for corrosion and for spread or pushed out terminals.

## TEST 2A REPAIRING "FUEL LEVEL SENDING UNIT FAILURE"

**Perform TEST 1A Before Proceeding**




**Name of code:** Fuel Level Sending Unit Failure

**When monitored:** With ignition on

**Set condition:** BCM detects an abnormally high voltage on the fuel level input.

**Theory of operation:** The BCM provides a pull-up to ignition voltage for the fuel level sensor, but the resulting voltage on the pin should be below 5 volts no matter what the fuel level is when the sensor is connected. This fault will not be set if the sensor is shorted to ground.

**Possible causes:**
- > Wiring open circuit
- > Wiring short to battery
- > Failed fuel level sensor
- > Failed BCM

80b4fb28

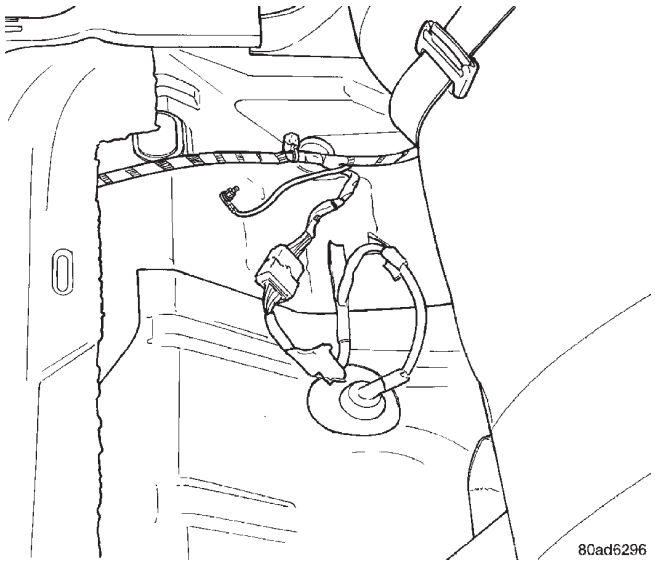
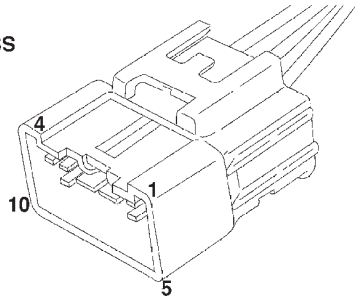



*FIG. 1*

**BODY HARNESS CONNECTOR**



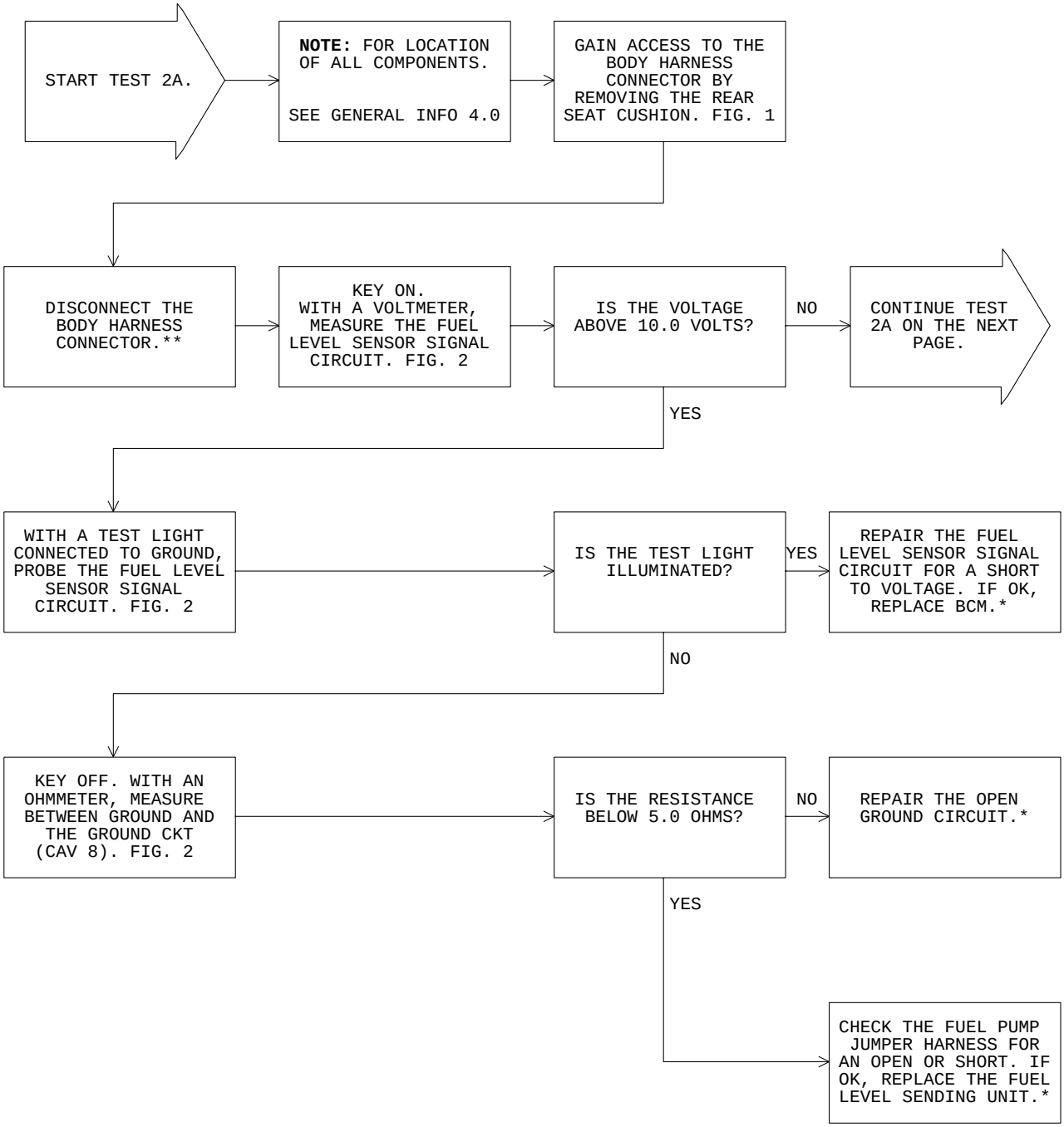

| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | DB | FUEL LEVEL SENSOR SIGNAL |
| 7 | DG/WT | FUEL PUMP RELAY OUTPUT |
| 8 | BK | GROUND (FUEL PUMP) |

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*FIG. 2*

## TEST 2A — REPAIRING "FUEL LEVEL SENDING UNIT FAILURE"

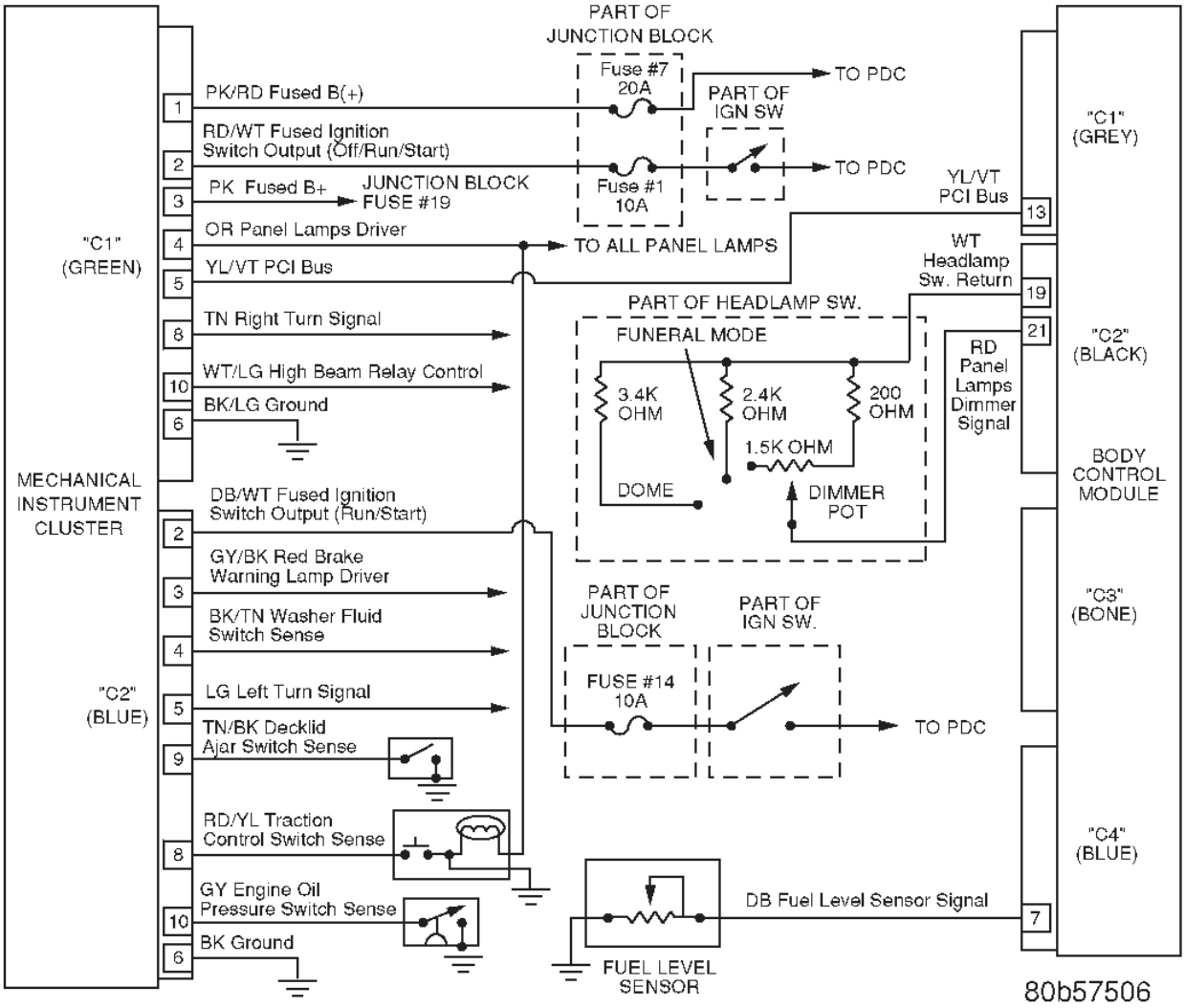
**Perform TEST 1A Before Proceeding**



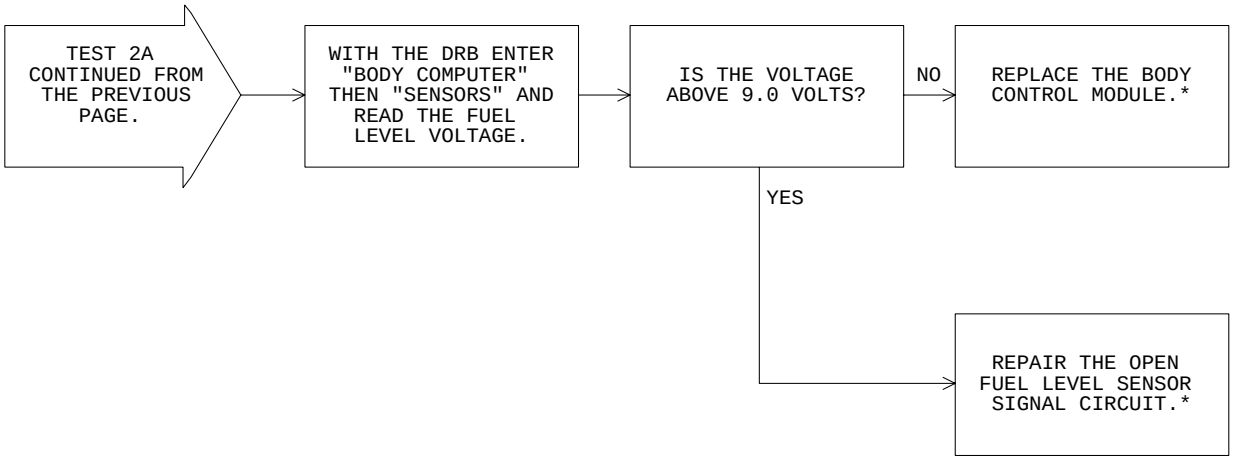

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.**

## TEST 2A CONTINUED - REPAIRING "FUEL LEVEL SENDING UNIT FAILURE"



## TEST 2A — CONTINUED - REPAIRING ″FUEL LEVEL SENDING UNIT FAILURE″

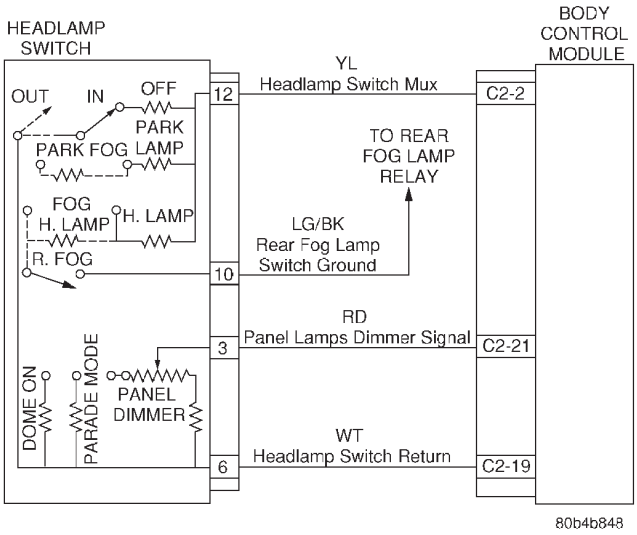



***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 3A REPAIRING "DIMMING LEVEL SWITCH FAILURE"

**Perform TEST 1A Before Proceeding**




**Name of code:** Dimming Level Switch Failure

**When monitored:** Continuously

**Set condition:** BCM detects an open or short circuit condition for 10 consecutive seconds on the dimming level switch input.

**Theory of operation:** BCM reads the low current dimmer switch and sends the dimming level status over the PCI bus and activates the courtesy lamps as appropriate. If the BCM does not read a valid input from the switch for 10 consecutive seconds, it will set this fault and will send a dimming level of full night time brightness over the bus whenever the park lamps are on.

**Possible causes:**
- > Wiring open circuit
- > Wiring short to ground
- > Wiring short to battery
- > Failed dimmer switch
- > Failed BCM

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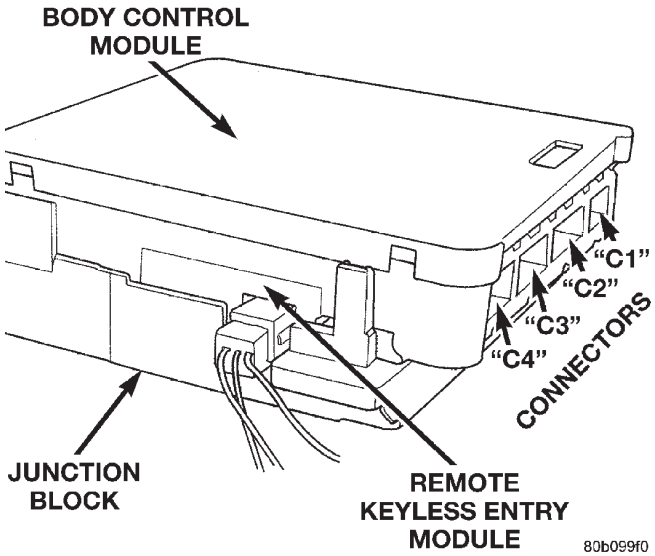
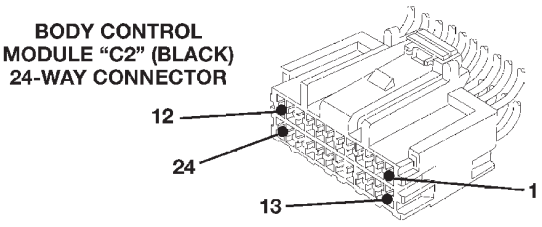



*FIG. 1*



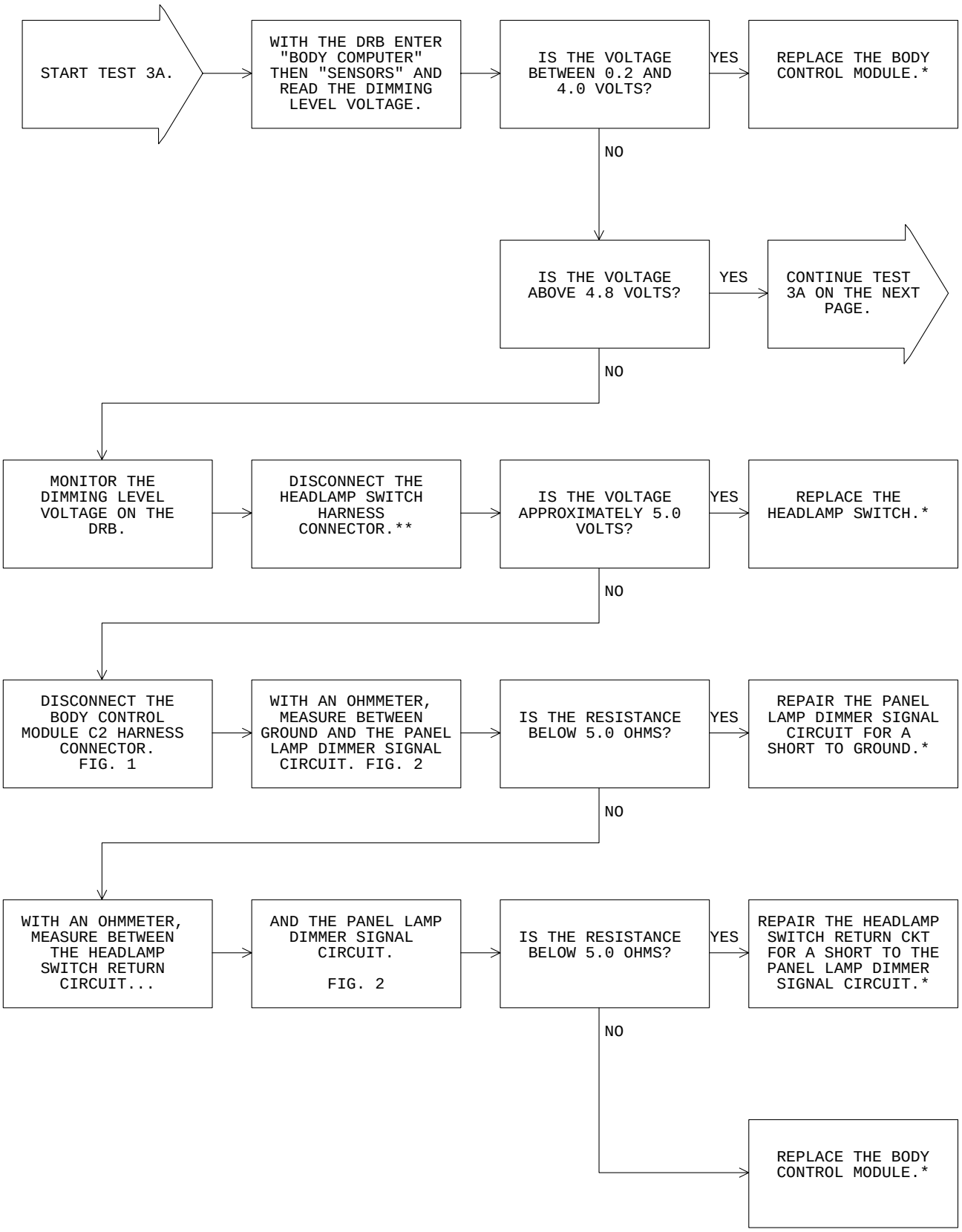

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

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*FIG. 2*

## TEST 3A REPAIRING "DIMMING LEVEL SWITCH FAILURE"

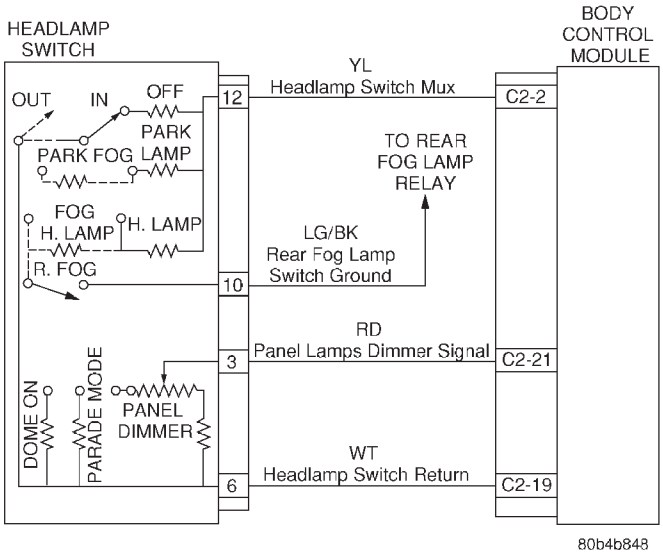
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

## TEST 3A — CONTINUED - REPAIRING "DIMMING LEVEL SWITCH FAILURE"




**Name of code:** Dimming Level Switch Failure

**When monitored:** Continuously

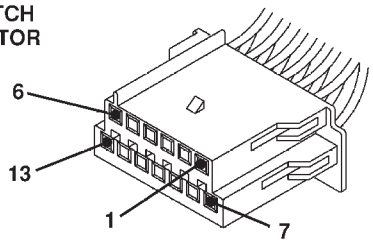
**Set condition:** BCM detects an open or short circuit condition for 10 consecutive seconds on the dimming level switch input.

**Theory of operation:** BCM reads the low current dimmer switch and sends the dimming level status over the PCI bus and activates the courtesy lamps as appropriate. If the BCM does not read a valid input from the switch for 10 consecutive seconds, it will set this fault and will send a dimming level of full night time brightness over the bus whenever the park lamps are on.

**Possible causes:**
> Wiring open circuit
> Wiring short to ground
> Wiring short to battery
> Failed dimmer switch
> Failed BCM

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**HEADLAMP SWITCH 13-WAY CONNECTOR**

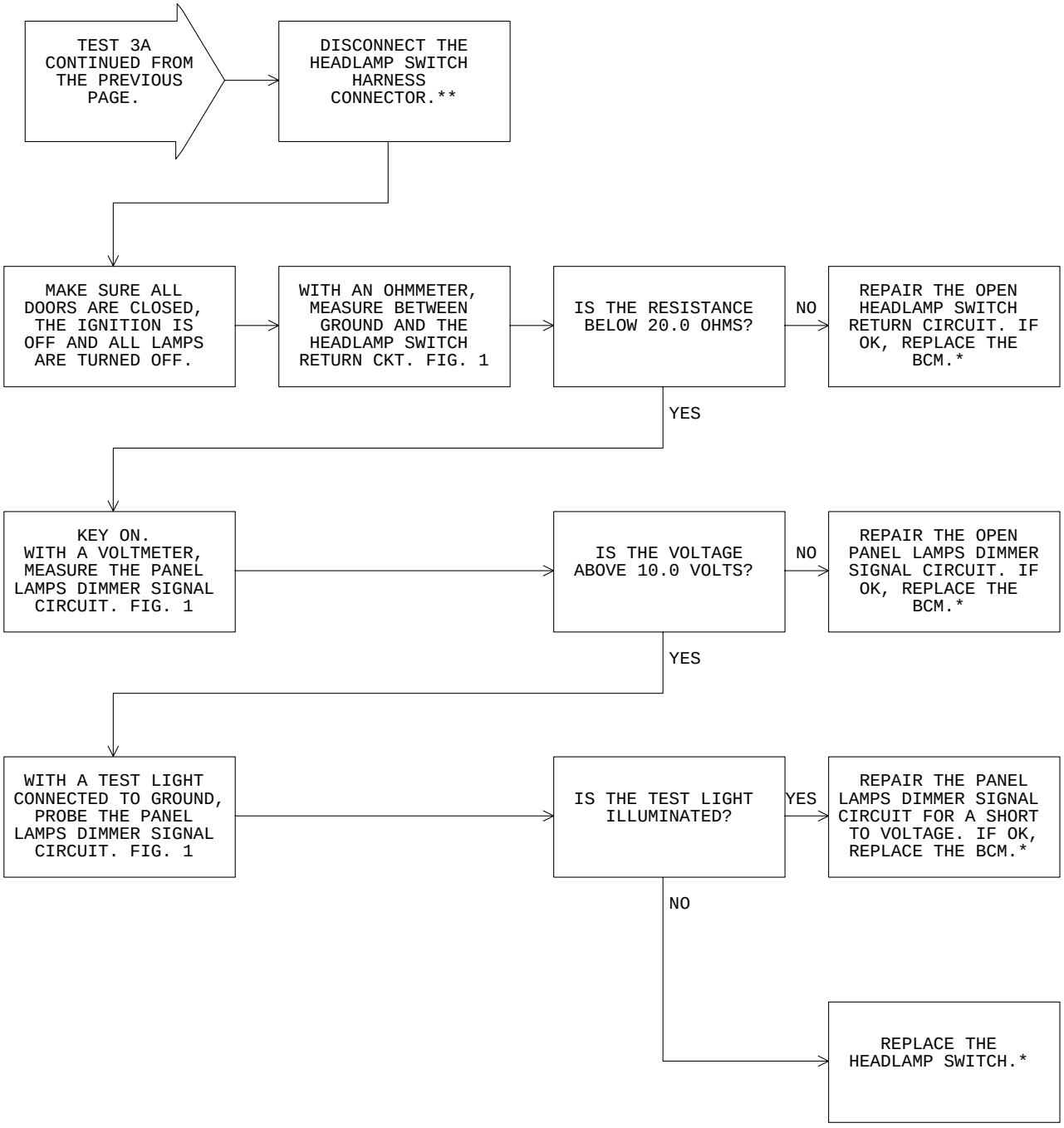



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LB | Ground (for Headlamp Level) |
| 2 | BK/YL | Park Lamp Relay Output (for Headlamp Level) |
| 3 | RD | Panel Lamps Dimmer Signal |
| 4 | BK | Ground |
| 5 | DG/YL | Fog Lamp Relay Output (Rear) |
| 6 | WT | Headlamp Switch Return |
| 8 | BR/YL | Headlamp Adjust Signal |
| 9 | OR | Panel Lamps Driver |
| 10 | LG/BK | Rear Fog Lamp Switch Ground |
| 11 | LB | Fog Lamp Relay Output (Front) |
| 12 | YL | Headlamp Switch Mux |

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***FIG. 1***

## TEST 3A CONTINUED - REPAIRING "DIMMING LEVEL SWITCH FAILURE"

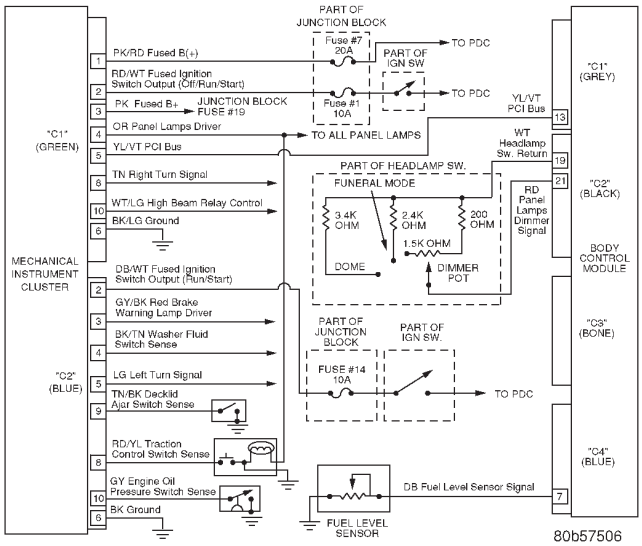



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 4A REPAIRING ALL GAUGES NOT OPERATING PROPERLY

**Perform TEST 1A Before Proceeding**



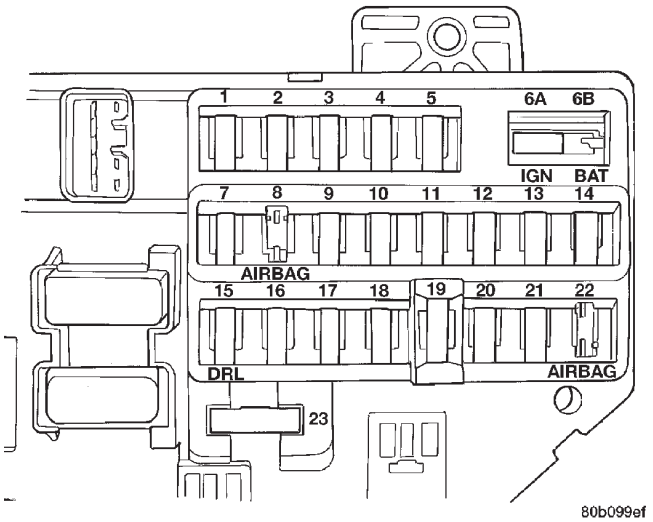
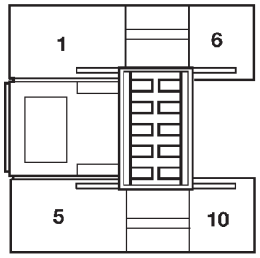




*FIG. 1*

**INSTRUMENT CLUSTER "C1" (GREEN) 10 WAY CONNECTOR**

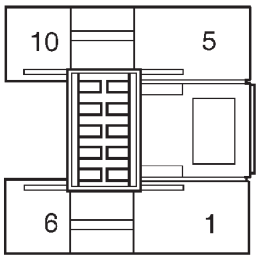



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK/RD | FUSED B(+) |
| 2 | RD/WT | FUSED IGNITION SW OUTPUT (OFF/RUN/START) |
| 3 | PK | FUSED B(+) |
| 4 | OR | PANEL LAMPS DRIVER |
| 5 | YL/VT | PCI BUS |
| 6 | BK/LG | GROUND |
| 8 | TN | RIGHT TURN SIGNAL |
| 10 | WT/LG | HIGH BEAM RELAY CONTROL |

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*FIG. 2*

**INSTRUMENT CLUSTER "C2" (BLUE) 10 WAY CONNECTOR**



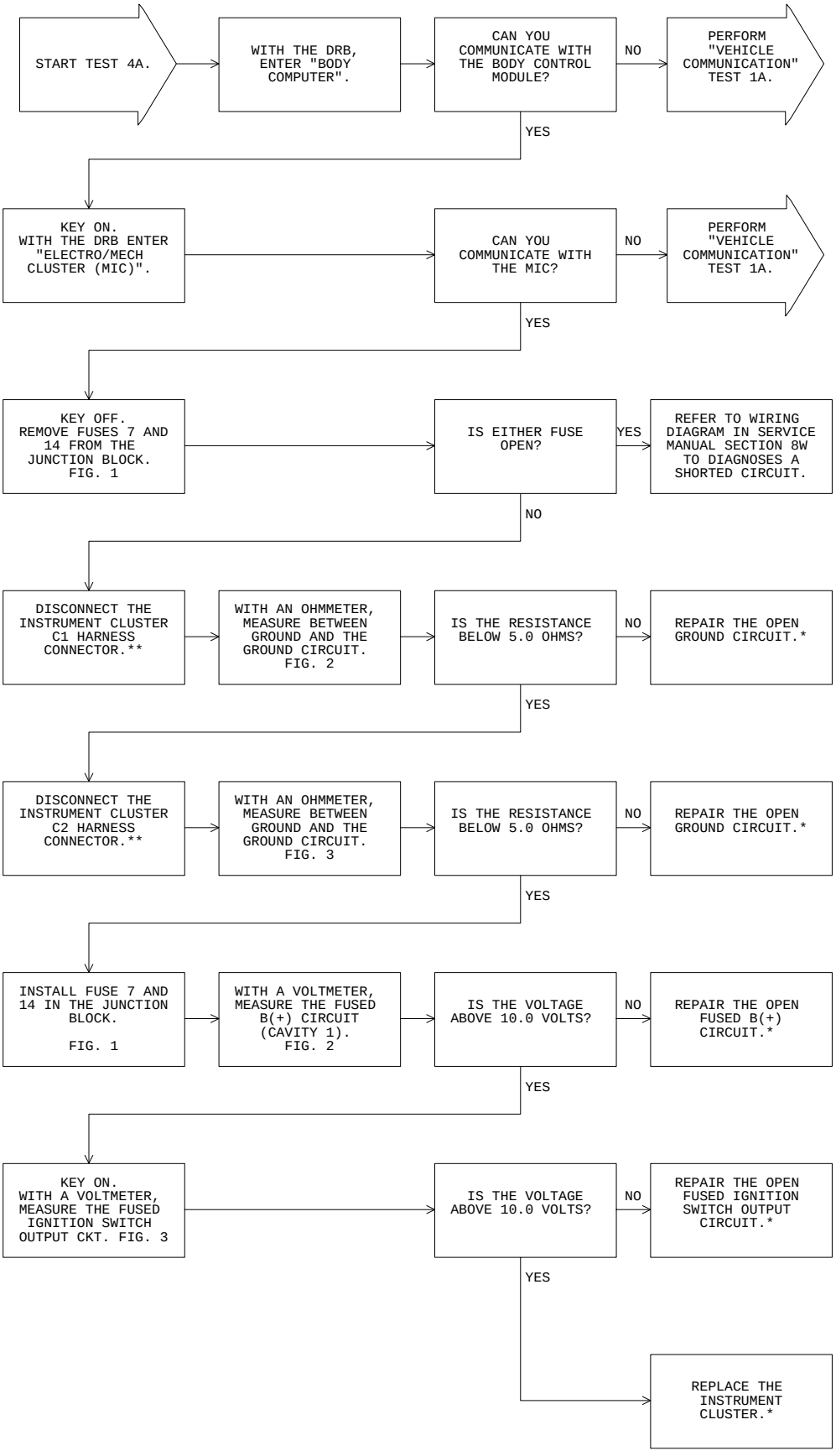

| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 3 | GY/BK | RED BRAKE WARNING LAMP DRIVER |
| 4 | BK/TN | WASHER FLUID SW. SENSE |
| 5 | LG | LEFT TURN SIGNAL |
| 6 | BK | GROUND |
| 8 | RD/YL | TRACTION CONTROL SW. SENSE |
| 9 | TN/BK | DECKLID AJAR SW. SENSE |
| 10 | GY | ENGINE OIL PRESSURE SW. SENSE |

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*FIG. 3*

## TEST 4A REPAIRING ALL GAUGES NOT OPERATING PROPERLY

**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.***

*****Check connectors - Clean / repair as necessary.***

**TEST 5A** | **IDENTIFYING THE INOPERATIVE GAUGE**

**Perform TEST 1A Before Proceeding**

## CLUSTER SYSTEM TEST CALIBRATION POINTS

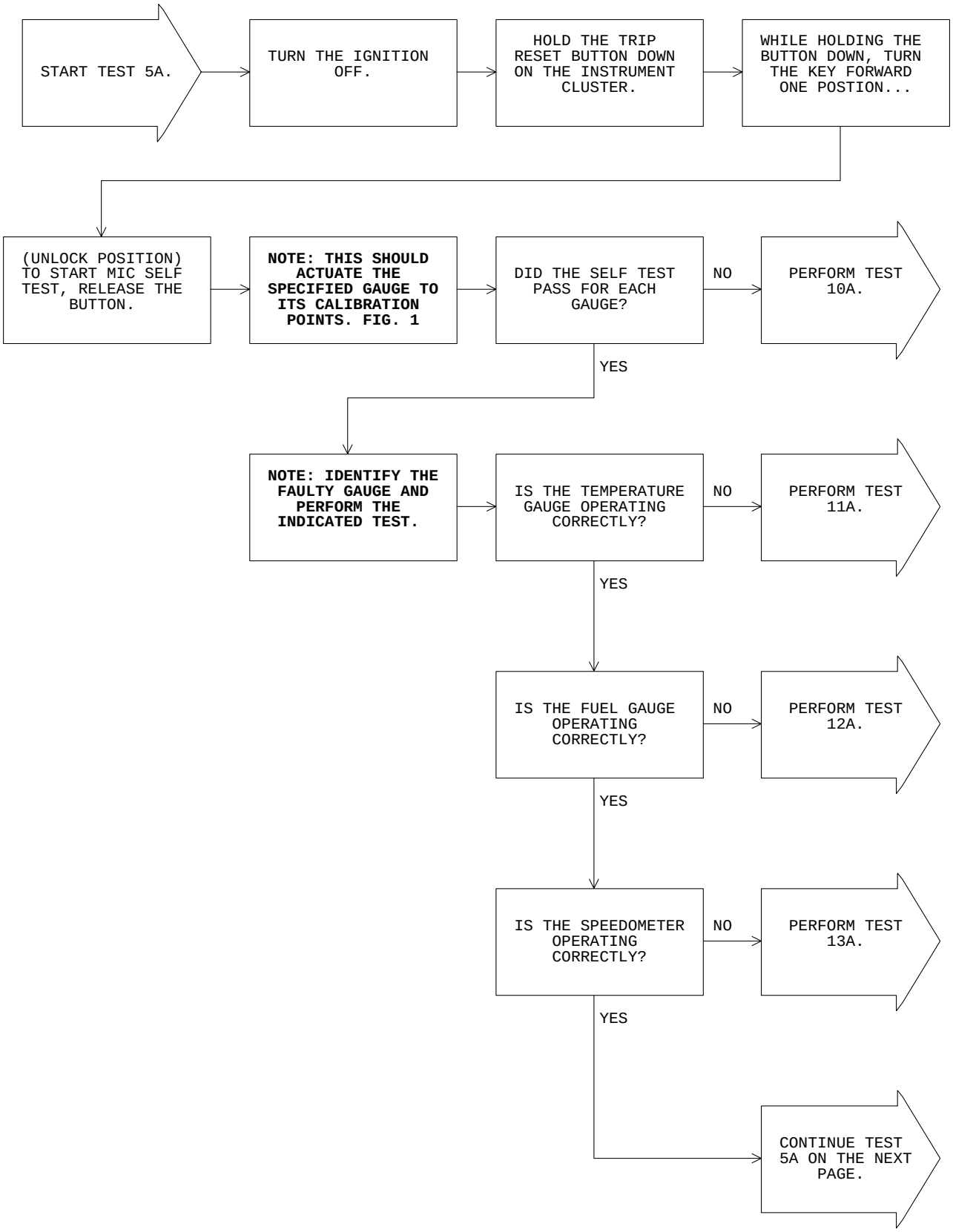
| Gauge | Cal. Point #1 | Cal. Point #2 | Cal. Point #3 | Cal. Point #4 | Cal. Point #5 | Cal. Point #6 | Cal. Point #7 |
|---|---|---|---|---|---|---|---|
| Speedometer | 0 MPH<br>0 KM/H | 20 MPH<br>40 KM/H | 60 MPH<br>100 KM/H | 120 MPH<br>210 KM/H | 60 MPH<br>100 KM/H | 20 MPH<br>40 KM/H | 0 MPH<br>0 KM/H |
| Tachometer | 0 RPM | 500 RPM | 2000 RPM | 6000 RPM | 2000 RPM | 500 RPM | 0 RPM |
| Fuel Gauge | "E" | 1/4 | 1/2 | "F" | 1/2 | 1/4 | "E" |
| Temperature Gauge | "C" | Mid. | H Norm. | "H" | H Norm. | Mid. | "C" |

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***FIG. 1***

## TEST 5A IDENTIFYING THE INOPERATIVE GAUGE

**Perform TEST 1A Before Proceeding**

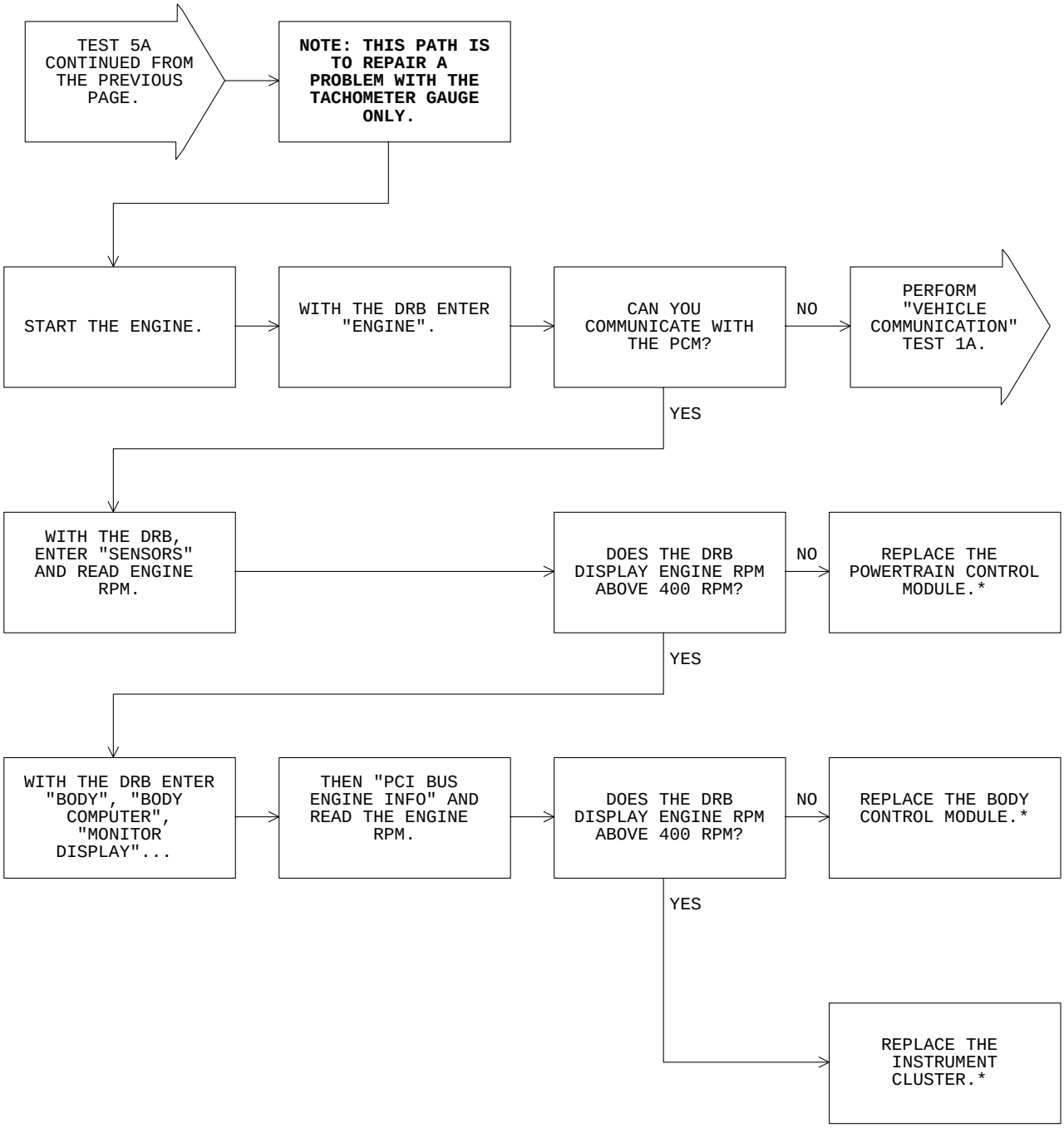



| | |
|---|---|
| ***Perform Verification TEST VER-2A.** | ***Check connectors - Clean / repair as necessary.** |

**TEST 5A** CONTINUED - IDENTIFYING THE INOPERATIVE GAUGE

## NOTES

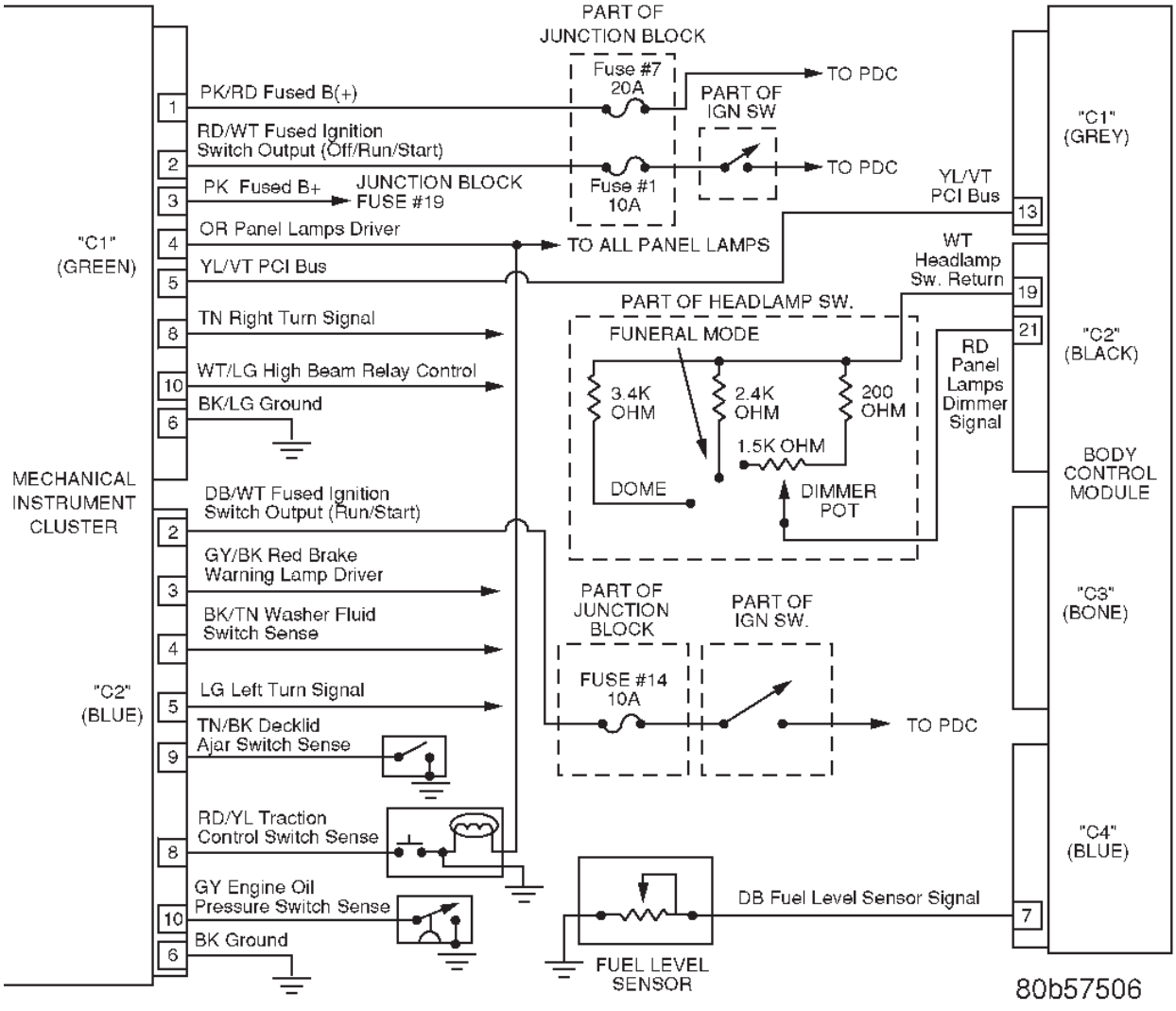
## TEST 5A CONTINUED - IDENTIFYING THE INOPERATIVE GAUGE




**Perform Verification TEST VER-2A.* | ***Check connectors - Clean / repair as necessary.*

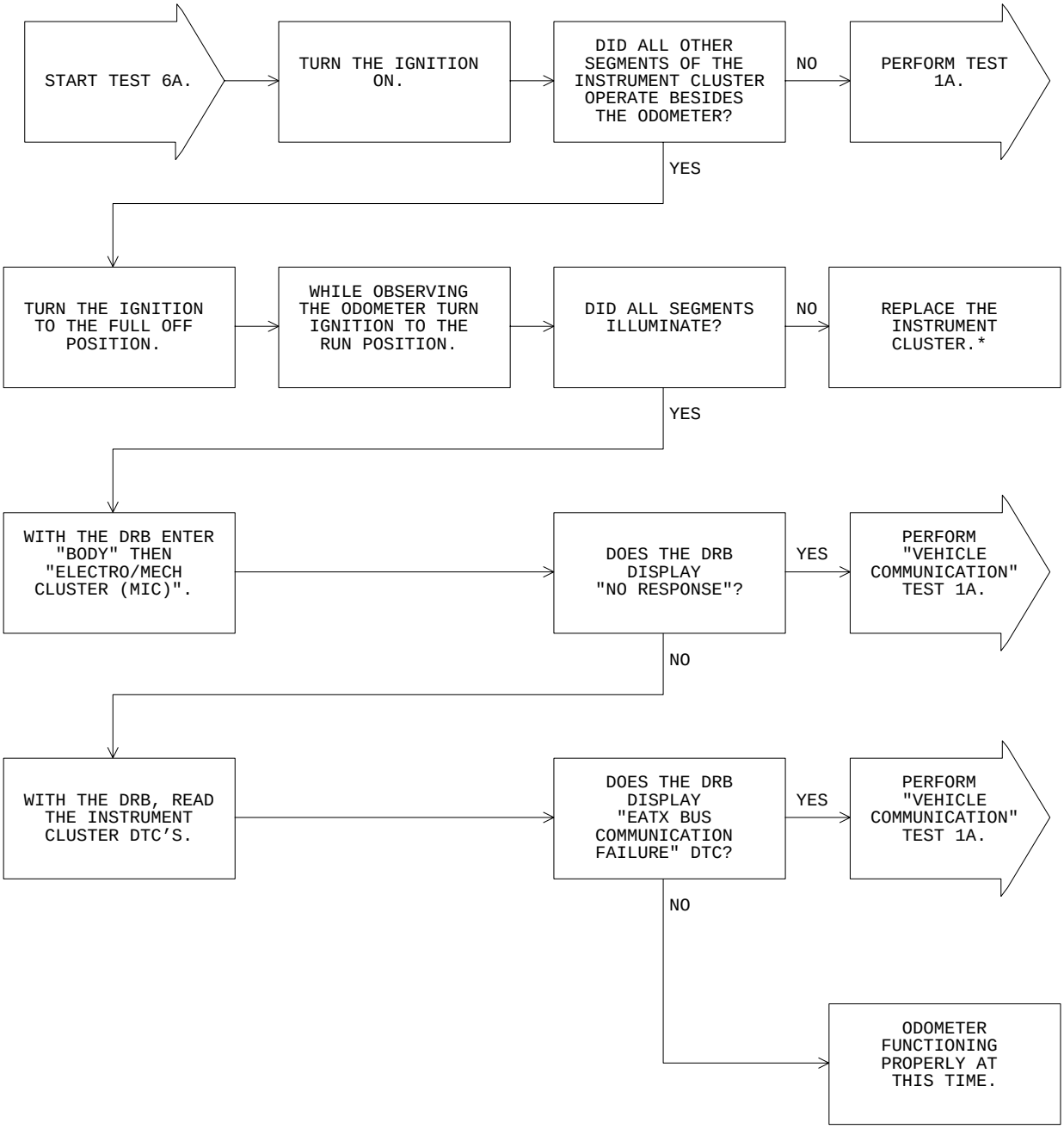
## TEST 6A REPAIRING ODOMETER NOT OPERATING PROPERLY

**Perform TEST 1A Before Proceeding**



## TEST 6A REPAIRING ODOMETER NOT OPERATING PROPERLY

**Perform TEST 1A Before Proceeding**




| | |
|---|---|
| ***Perform Verification TEST VER-2A.** | ****Check connectors - Clean / repair as necessary.** |

**TEST 7A** **IDENTIFYING WARNING LAMP PROBLEMS**

**Perform TEST 1A Before Proceeding**

## NOTES

## TEST 7A IDENTIFYING WARNING LAMP PROBLEMS

Perform an indicator self test by turning the ignition to the full ‘‘off’’ position, then turn the ignition to the ‘‘run’’ position and observe each and every lamp in the instrument cluster.

**NOTE:** The oil warning lamp, high beam, trunk ajar, and turn signals can not be actuated with the self test.

Verify the failure or customers complaint and make sure the vehicle is experiencing the problem at this time.

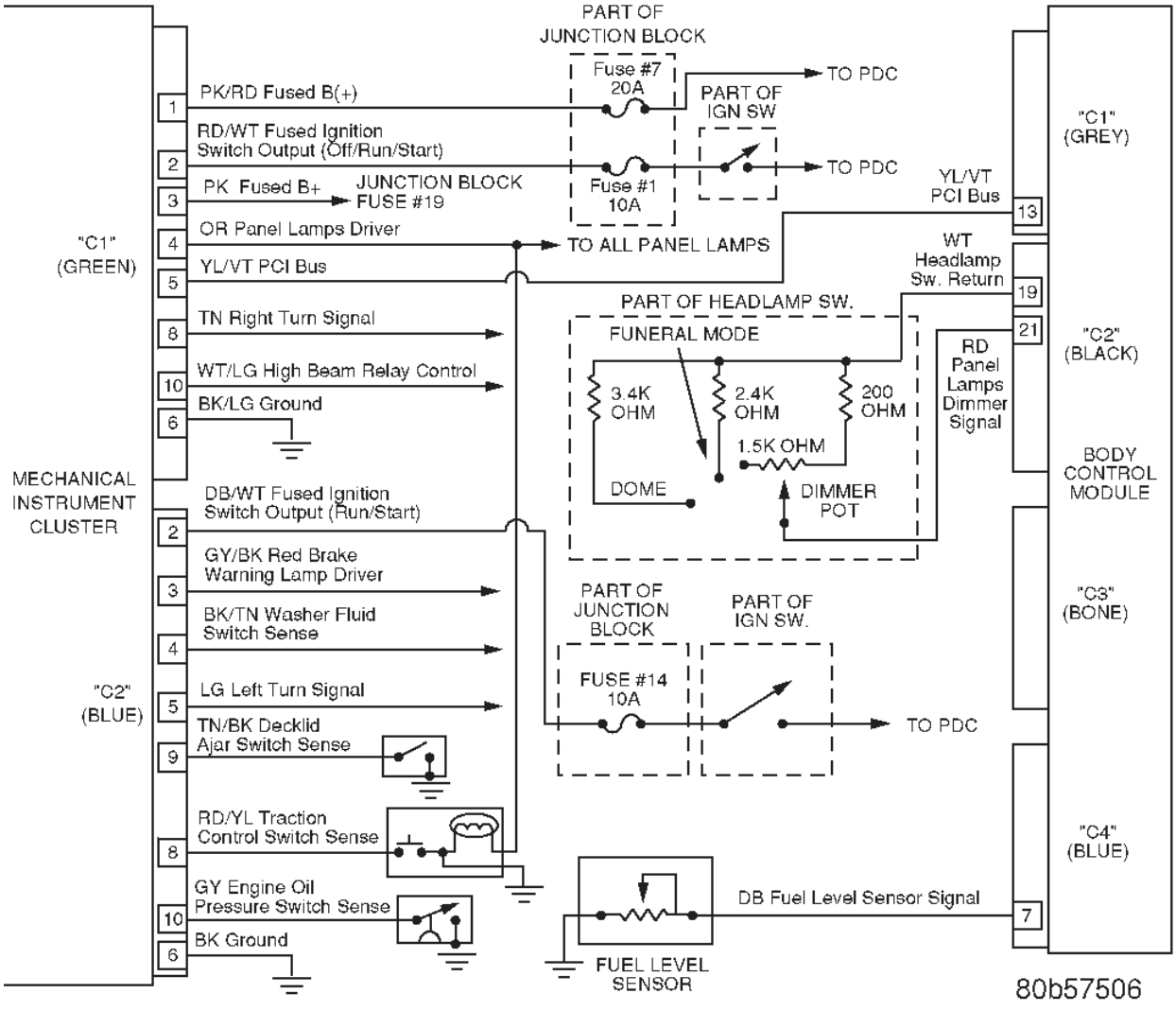
| **PROBLEM WITH:** | **PERFORM** |
|---|---|
| PRND3L Lamp | TEST 14A |
| Coolant Temperature LED | TEST 11A |
| Low Fuel LED | TEST 12A |
| Oil Warning LED | TEST 15A |
| Seat Belt LED | TEST 16A |
| Park Brake Warning LED | TEST 17A |
| Airbag Warning LED | Perform Airbag TEST 1A |
| Washer Fluid LED | TEST 18A |
| Door Ajar LED | TEST 19A |
| ABS LED | Refer to ABS Diagnostic Manual |
| Traction Control Active Bulb | Refer to ABS Diagnostic Manaul |
| Traction Control Off LED | Refer to ABS Diagnostic Manual |
| Trunk Ajar LED | TEST 20A |

For problems with the following warning lamps, refer to the appropriate powertrain diagnostic manual for repair:

- Malfunction Indicator Lamp (Check Engine)
- Charging Lamp (Battery Symbol)
- Cruise Control Lamp

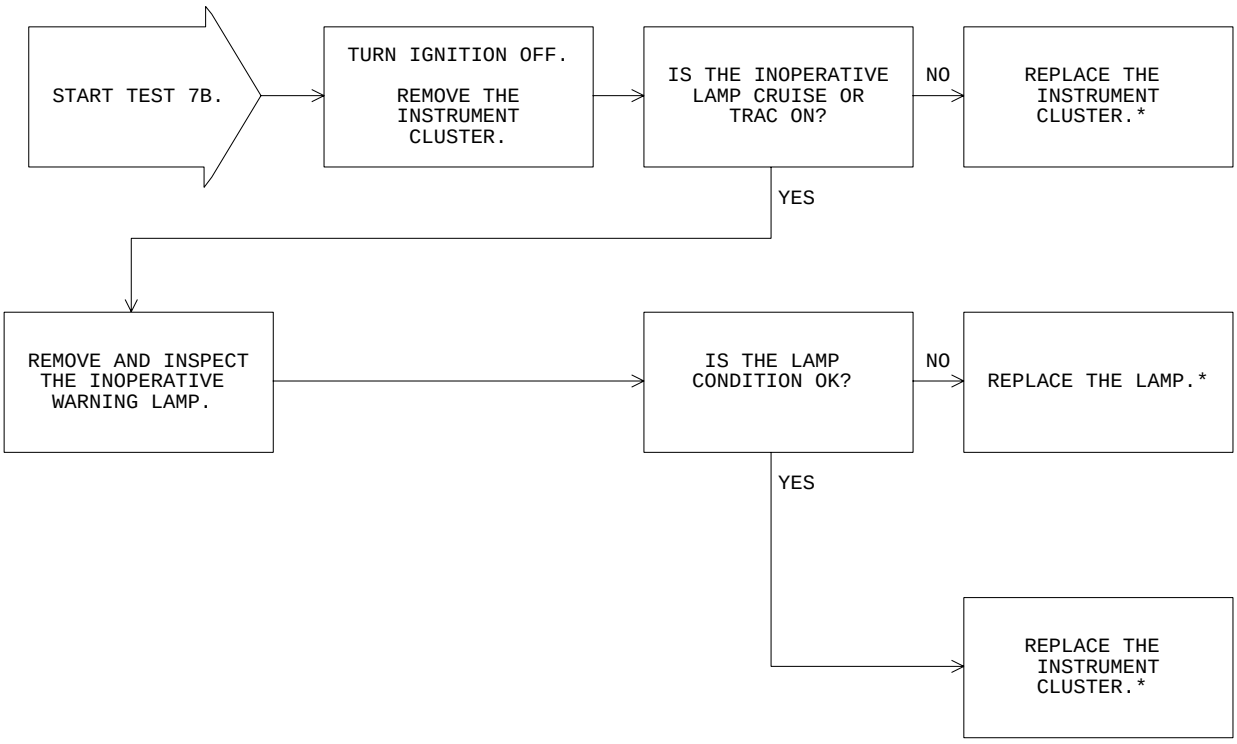
## TEST 7B REPAIRING INSTRUMENT CLUSTER PRINTED CIRCUIT BOARD WARNING LAMP

**Perform TEST 7A Before Proceeding**



## TEST 7B REPAIRING INSTRUMENT CLUSTER PRINTED CIRCUIT BOARD WARNING LAMP

**Perform TEST 7A Before Proceeding**

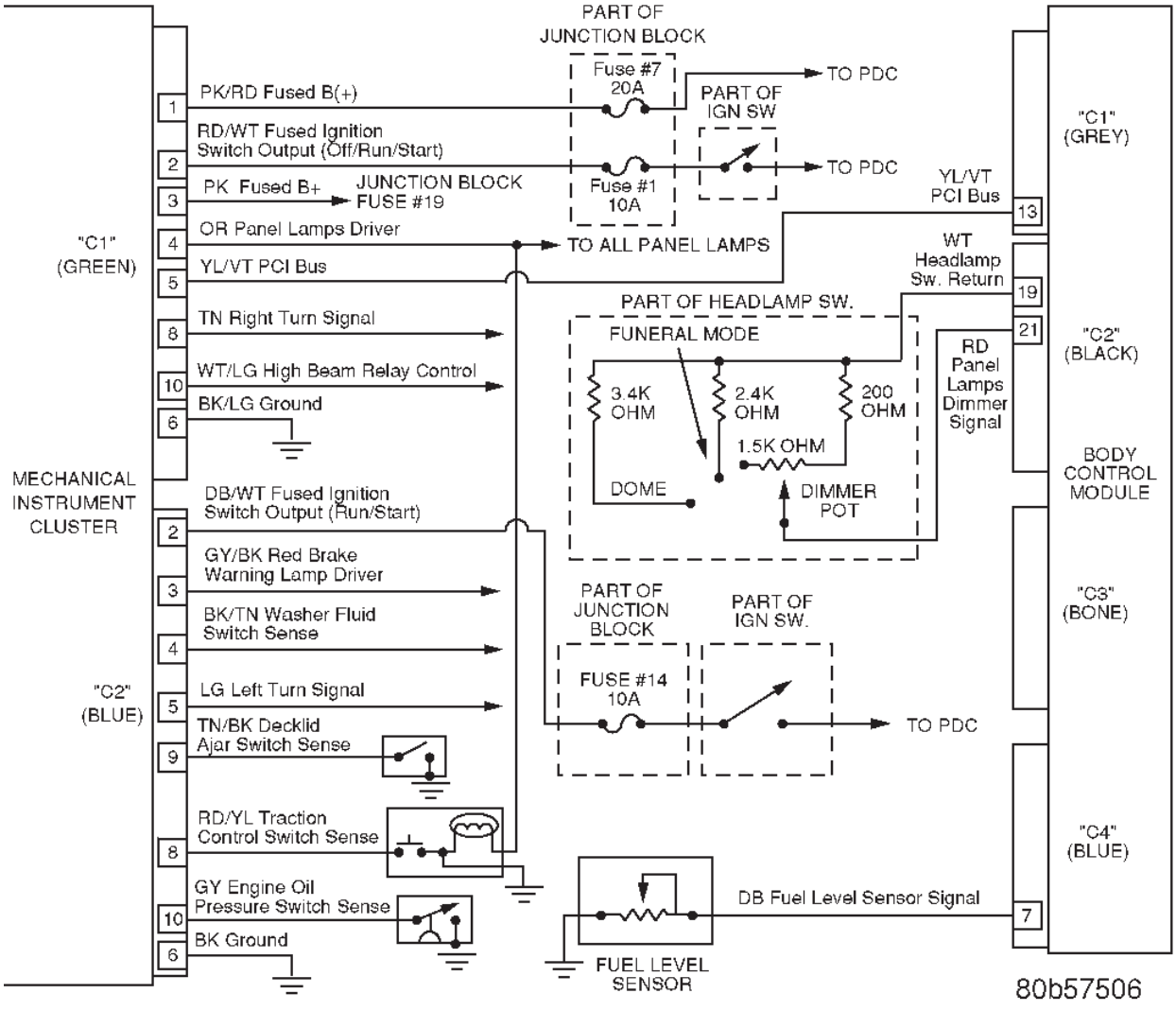



***Perform Verification TEST VER-2A.***

*****Check connectors - Clean / repair as necessary.***

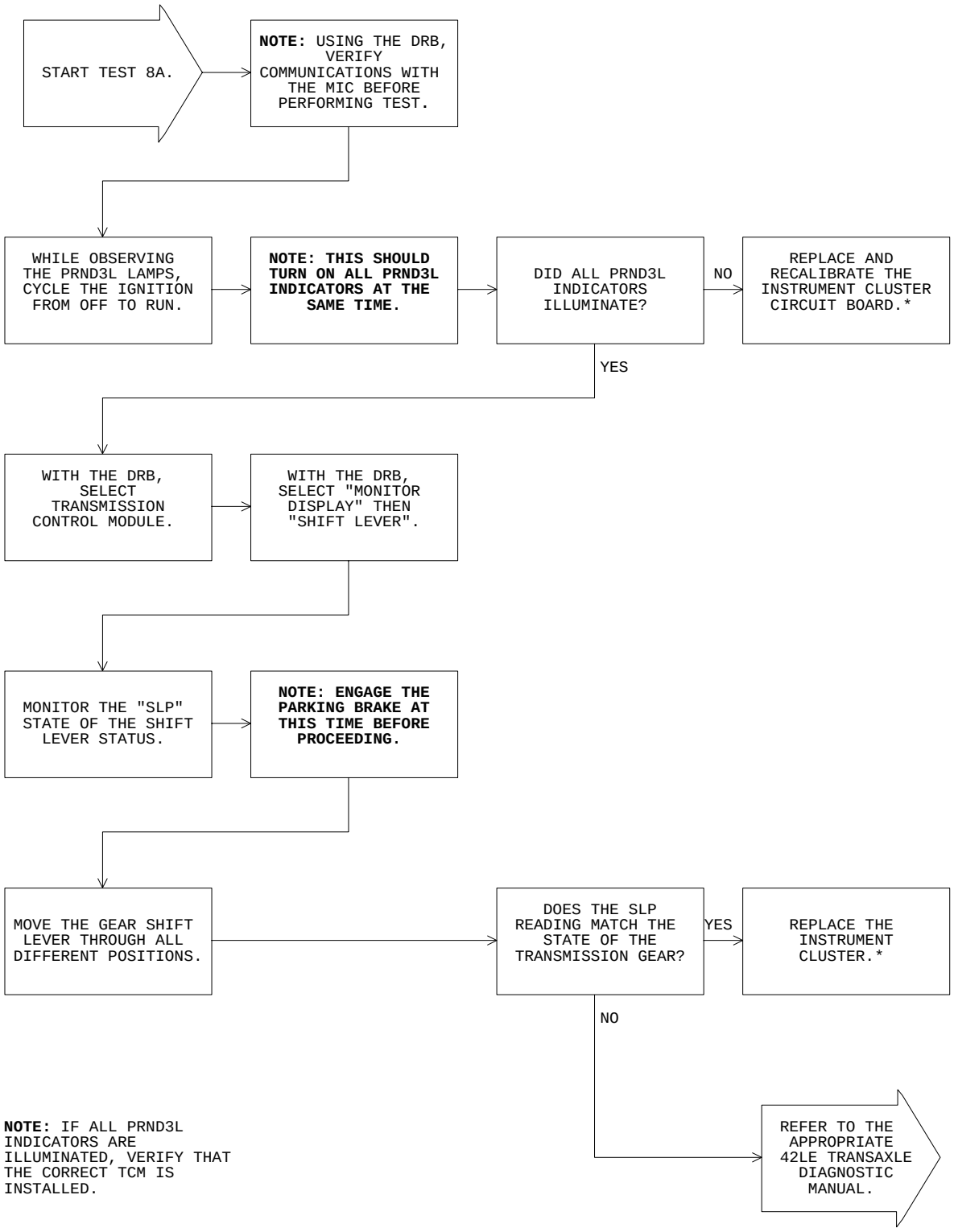
## TEST 8A REPAIRING PRND3L INDICATOR MALFUNCTIONS

**Perform TEST 1A Before Proceeding**



## TEST 8A REPAIRING PRND3L INDICATOR MALFUNCTIONS

**Perform TEST 1A Before Proceeding**

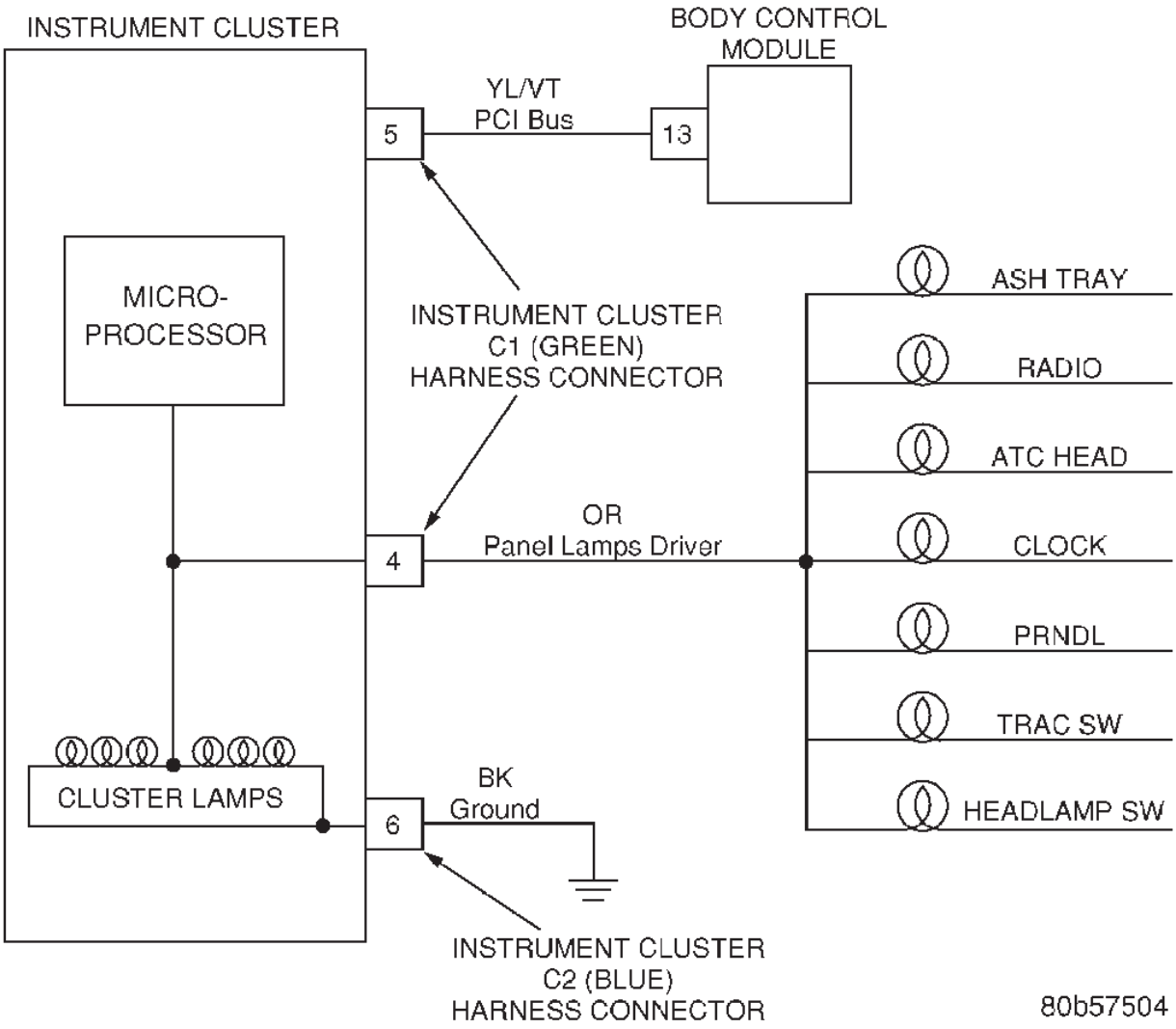



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

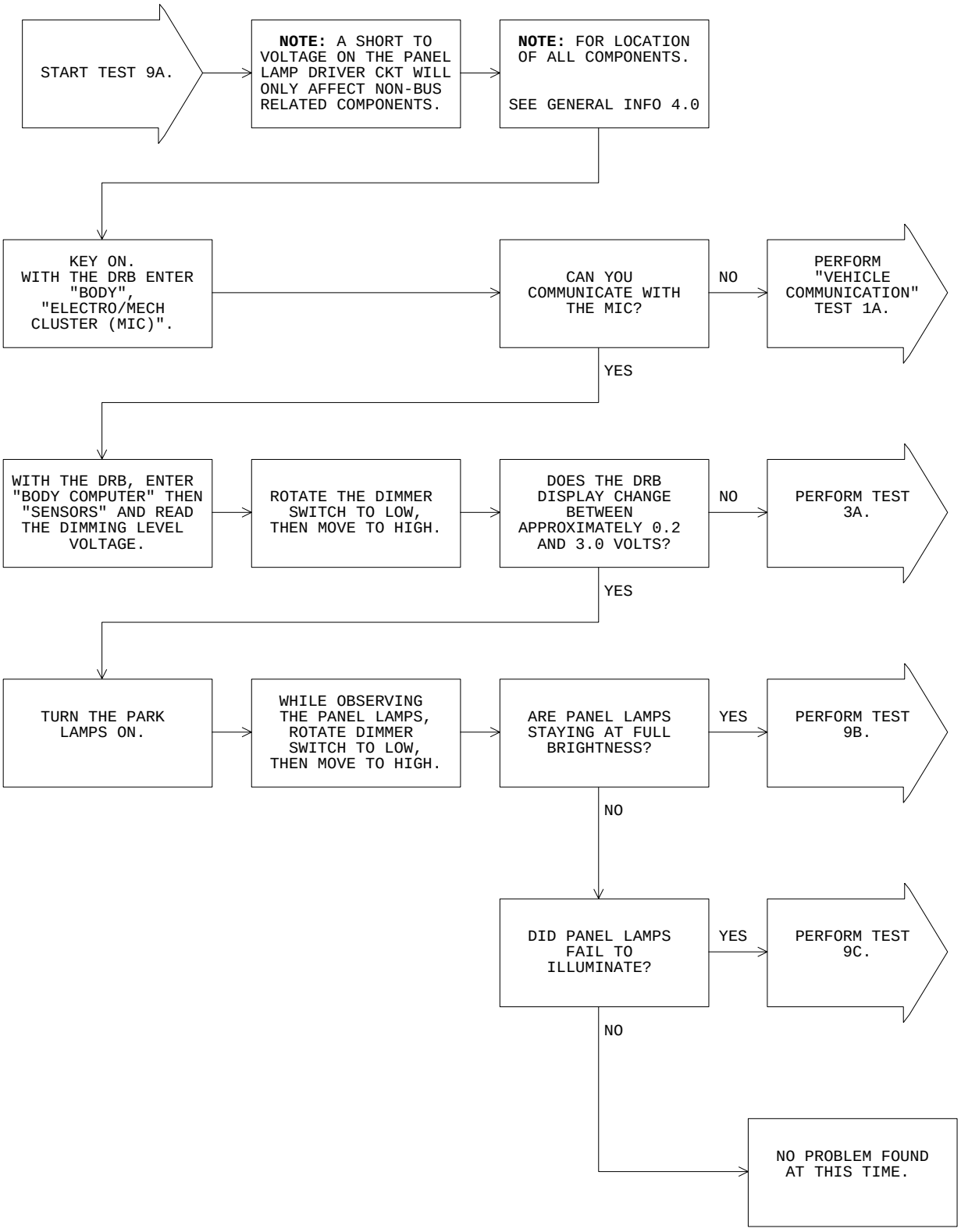
**TEST 9A** REPAIRING CLUSTER AND PANEL ILLUMINATION PROBLEMS

**Perform TEST 1A Before Proceeding**



## TEST 9A REPAIRING CLUSTER AND PANEL ILLUMINATION PROBLEMS

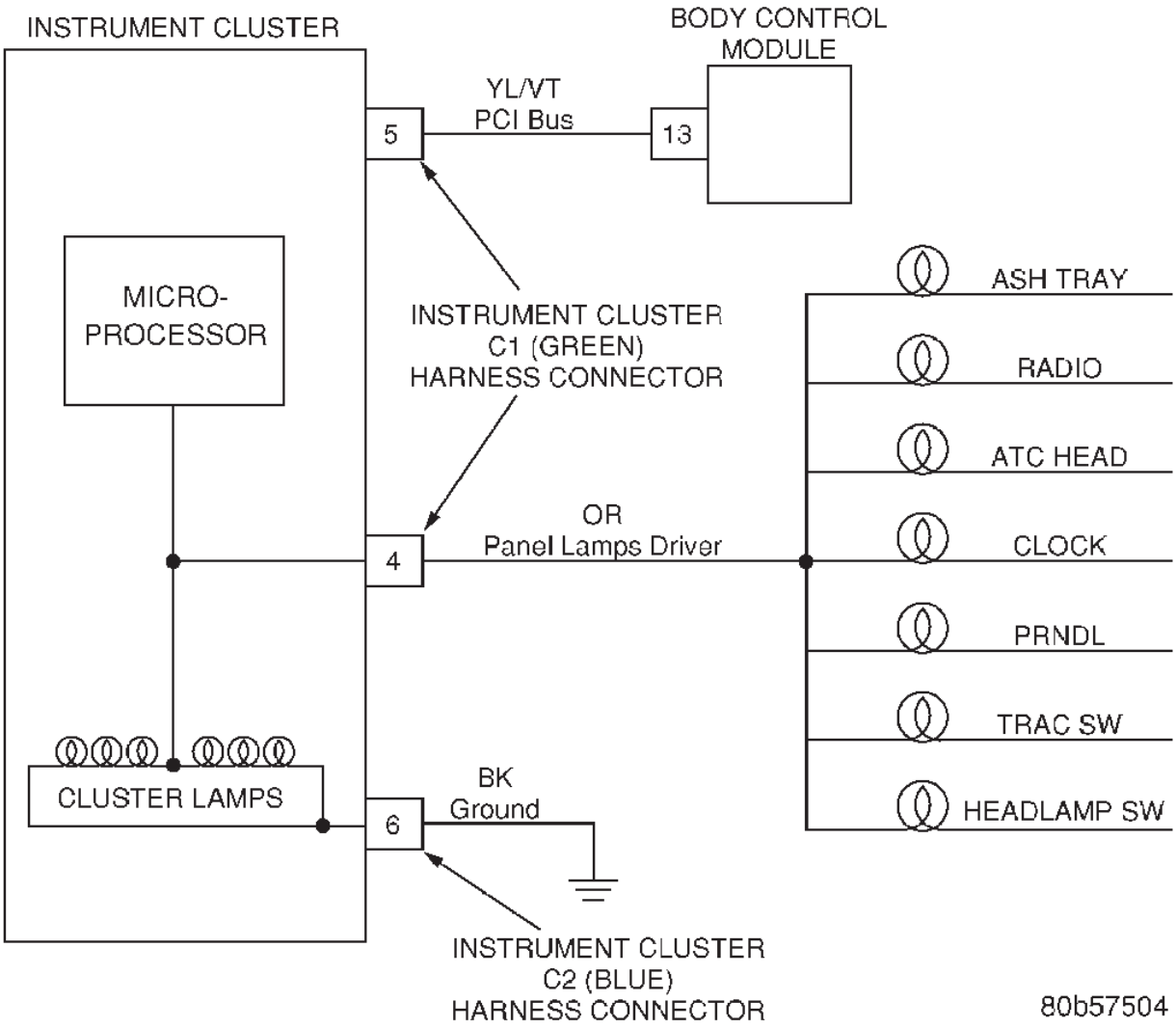
**Perform TEST 1A Before Proceeding**




| | |
|---|---|
| ***Perform Verification TEST VER-2A.** | ****Check connectors - Clean / repair as necessary.** |

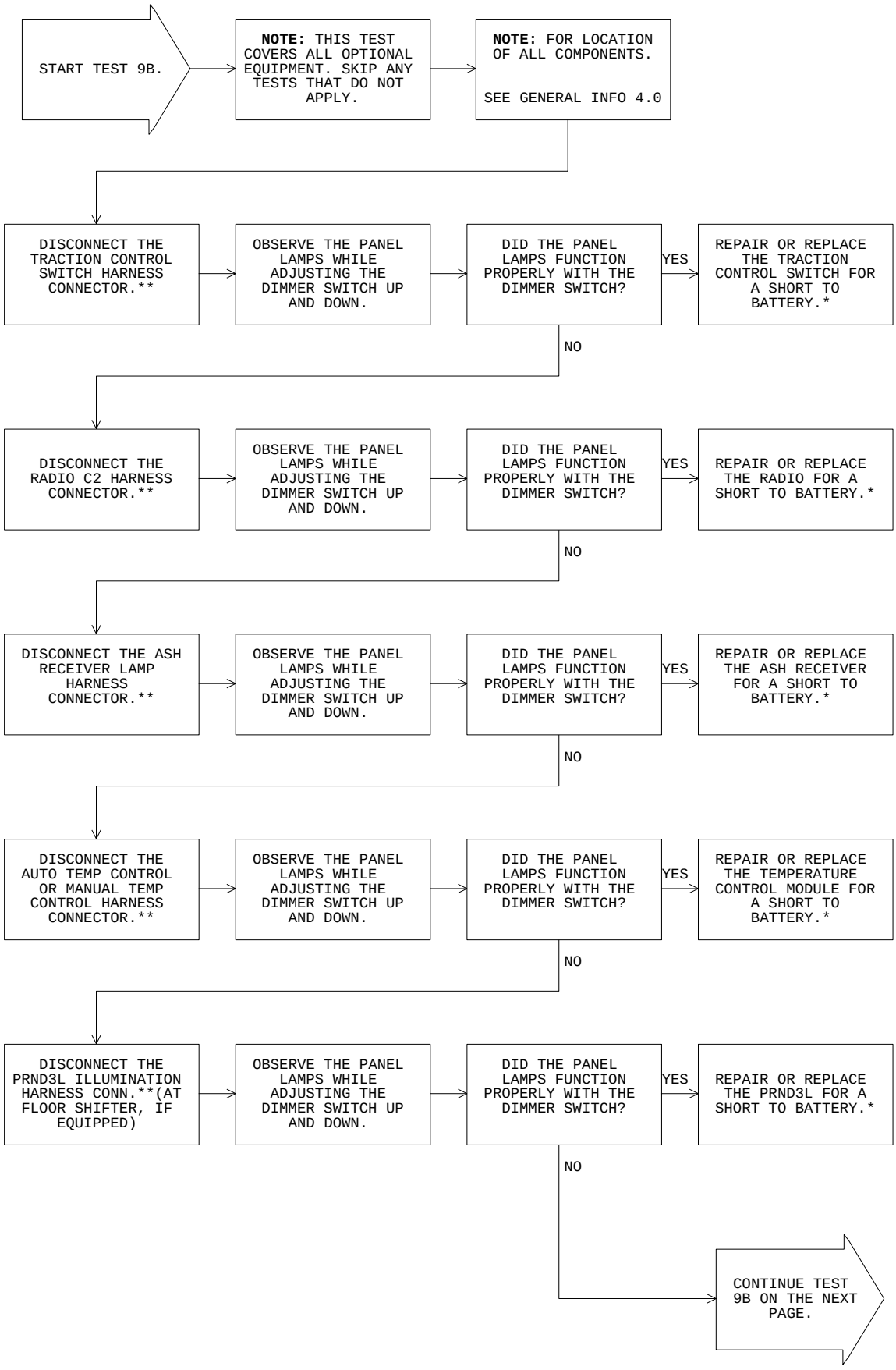
**TEST 9B** REPAIRING PANEL ILLUMINATION SHORTED TO BATTERY

**Perform TEST 9A Before Proceeding**



## TEST 9B REPAIRING PANEL ILLUMINATION SHORTED TO BATTERY

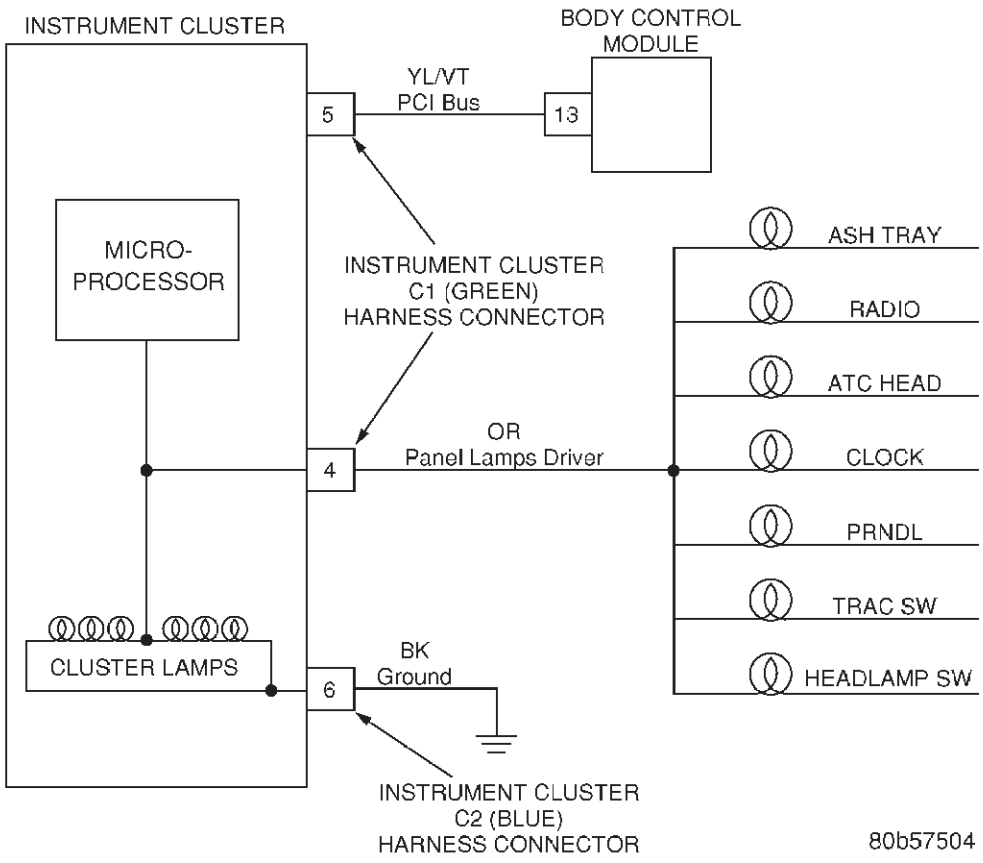
**Perform TEST 9A Before Proceeding**



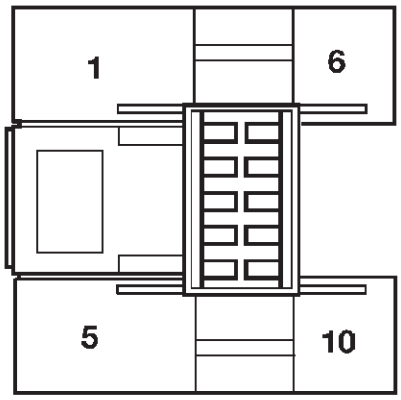

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

**TEST 9B** CONTINUED - REPAIRING PANEL ILLUMINATION SHORTED TO BATTERY




**INSTRUMENT CLUSTER "C1" (GREEN) 10 WAY CONNECTOR**

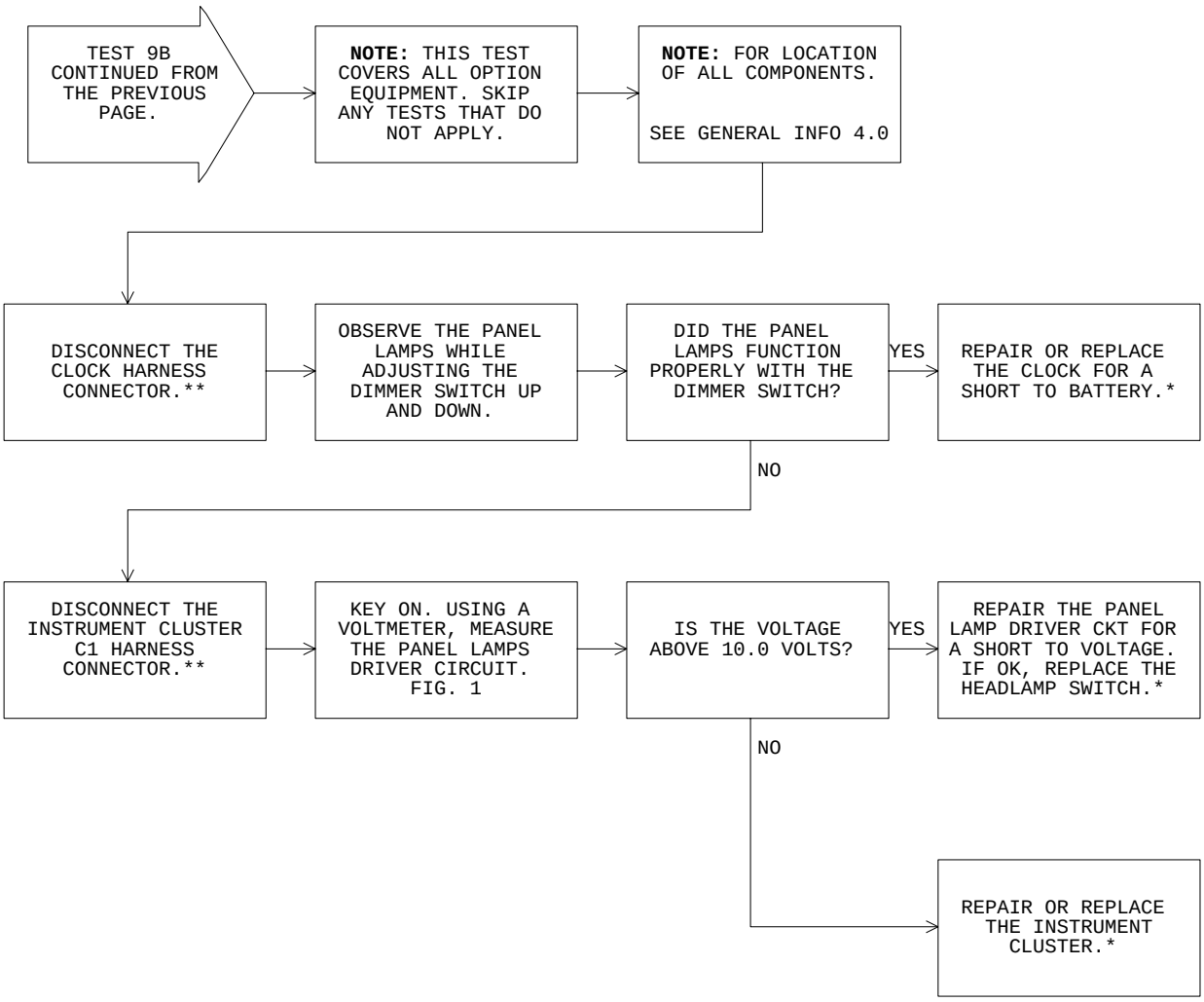



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK/RD | FUSED B(+) |
| 2 | RD/WT | FUSED IGNITION SW OUTPUT (OFF/RUN/START) |
| 3 | PK | FUSED B(+) |
| 4 | OR | PANEL LAMPS DRIVER |
| 5 | YL/VT | PCI BUS |
| 6 | BK/LG | GROUND |
| 8 | TN | RIGHT TURN SIGNAL |
| 10 | WT/LG | HIGH BEAM RELAY CONTROL |

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*FIG. 1*

## TEST 9B CONTINUED - REPAIRING PANEL ILLUMINATION SHORTED TO BATTERY

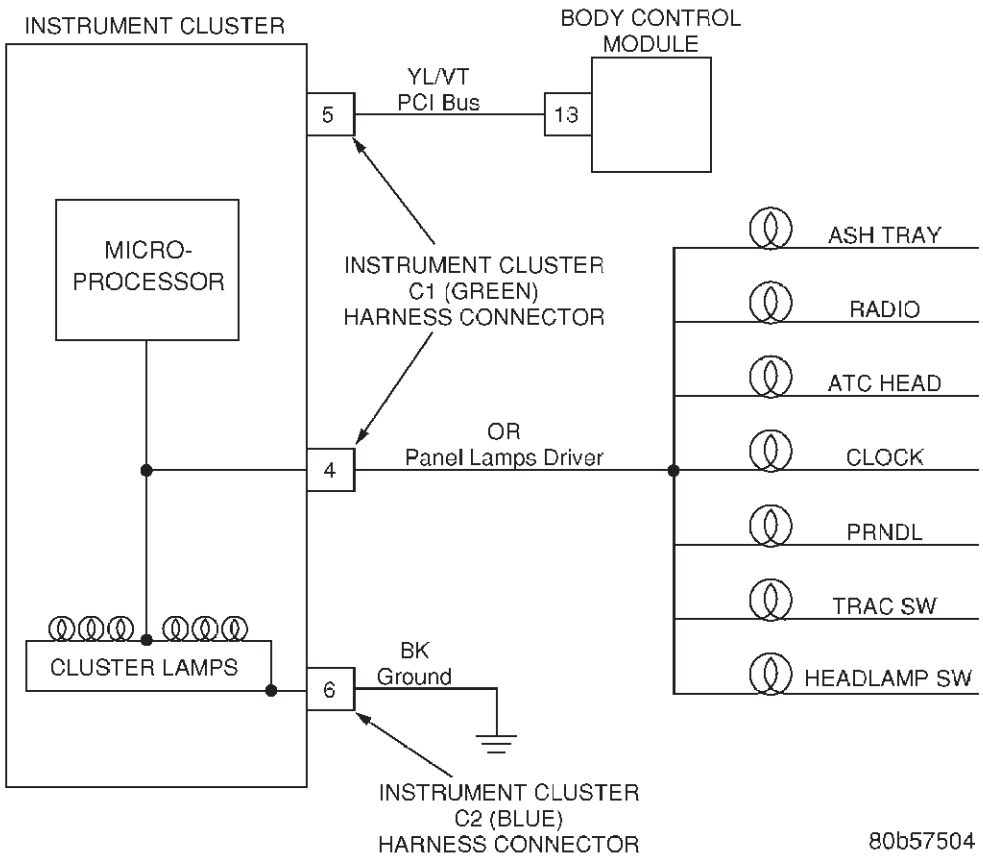



***Perform Verification TEST VER-2A.***

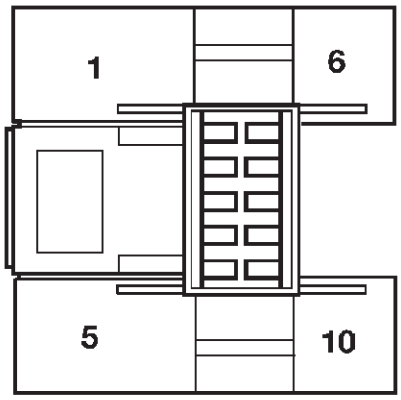
***Check connectors - Clean / repair as necessary.***

## TEST 9C REPAIRING PANEL ILLUMINATION SHORTED TO GROUND

**Perform TEST 9A Before Proceeding**




**INSTRUMENT CLUSTER "C1" (GREEN) 10 WAY CONNECTOR**



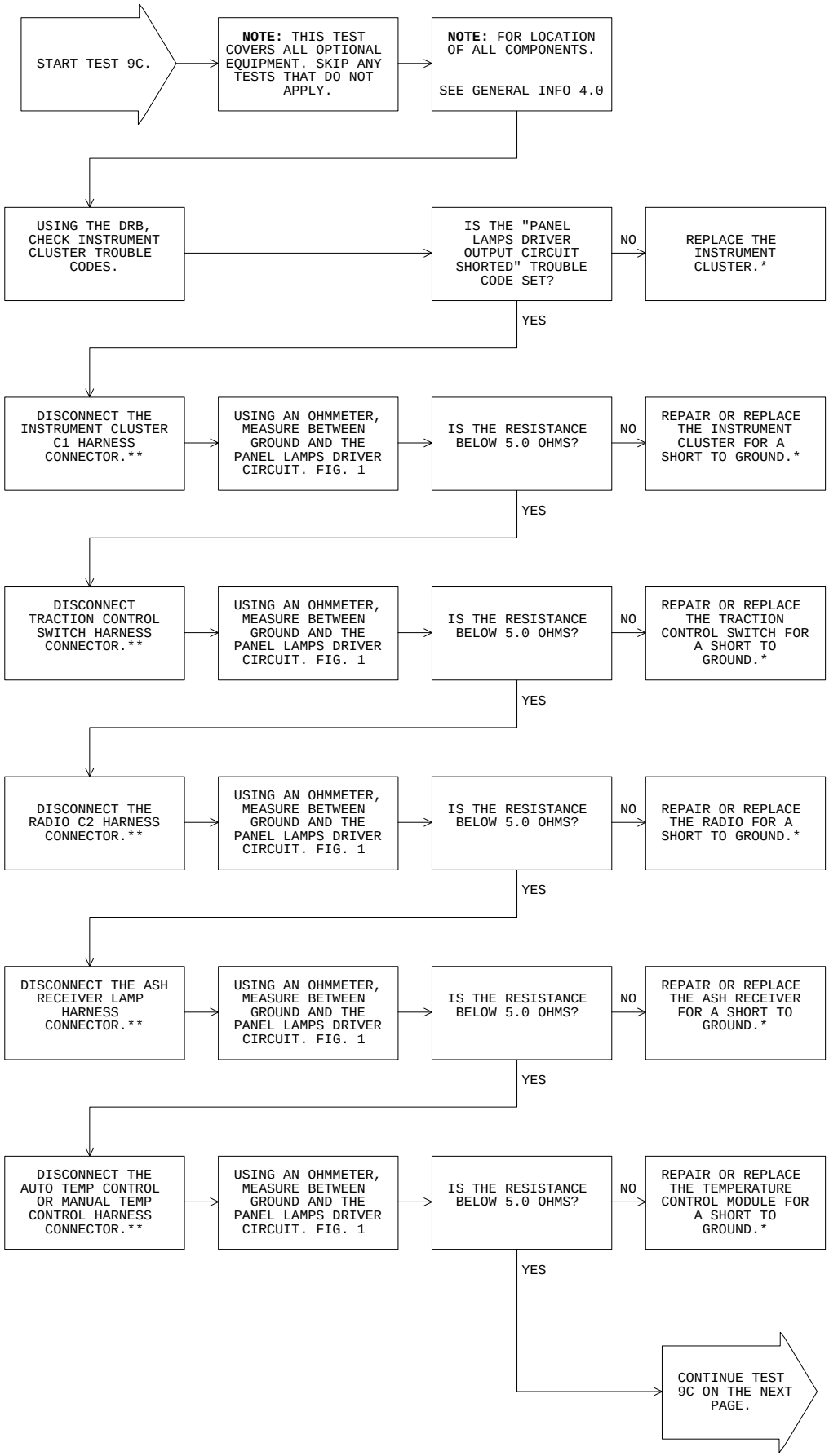

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK/RD | FUSED B(+) |
| 2 | RD/WT | FUSED IGNITION SW OUTPUT (OFF/RUN/START) |
| 3 | PK | FUSED B(+) |
| 4 | OR | PANEL LAMPS DRIVER |
| 5 | YL/VT | PCI BUS |
| 6 | BK/LG | GROUND |
| 8 | TN | RIGHT TURN SIGNAL |
| 10 | WT/LG | HIGH BEAM RELAY CONTROL |

80b4b7af

***FIG. 1***

## TEST 9C REPAIRING PANEL ILLUMINATION SHORTED TO GROUND

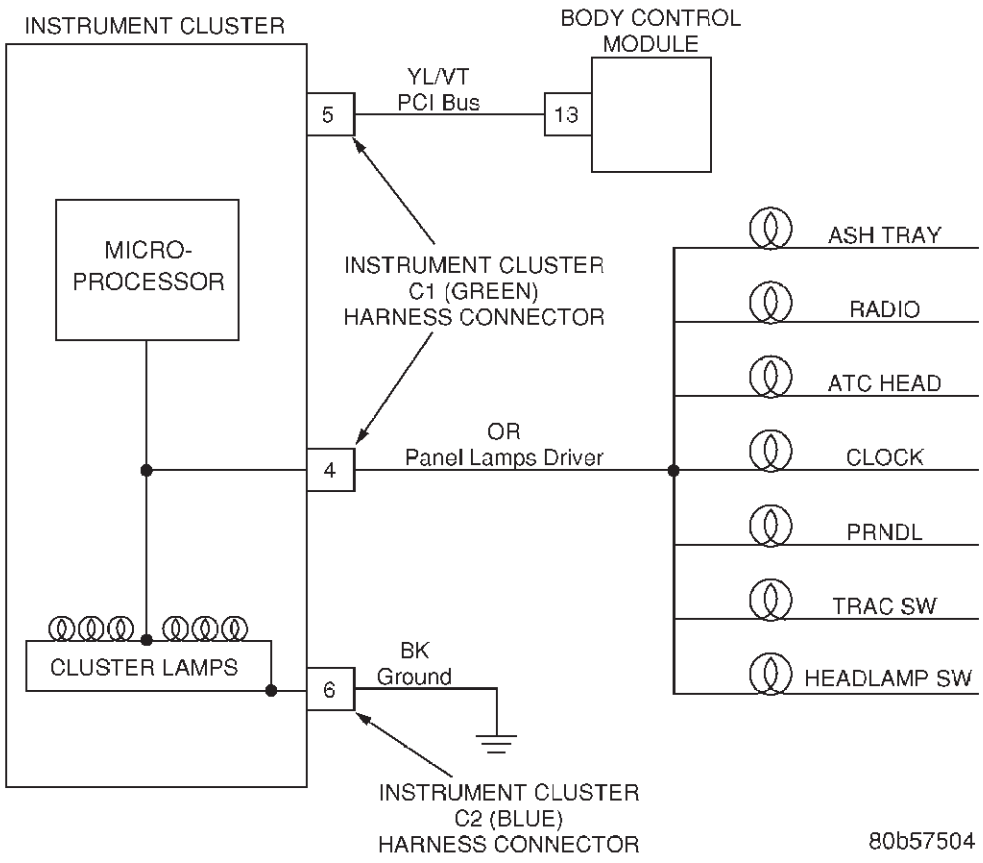
**Perform TEST 9A Before Proceeding**



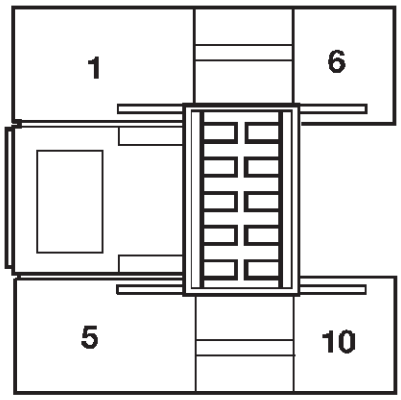

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

**TEST 9C** CONTINUED - REPAIRING PANEL ILLUMINATION SHORTED TO GROUND




**INSTRUMENT CLUSTER "C1" (GREEN) 10 WAY CONNECTOR**

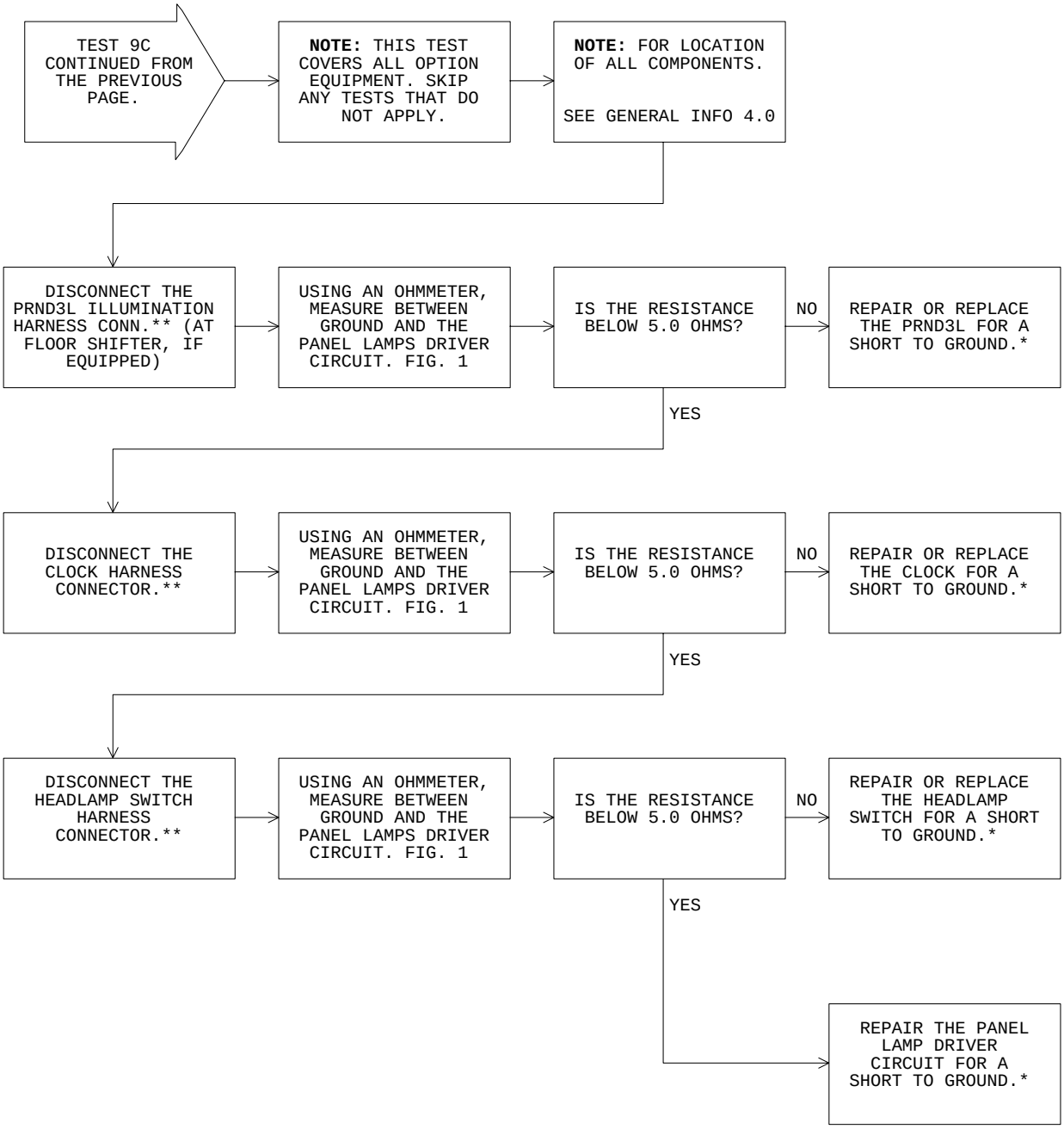



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK/RD | FUSED B(+) |
| 2 | RD/WT | FUSED IGNITION SW OUTPUT (OFF/RUN/START) |
| 3 | PK | FUSED B(+) |
| 4 | OR | PANEL LAMPS DRIVER |
| 5 | YL/VT | PCI BUS |
| 6 | BK/LG | GROUND |
| 8 | TN | RIGHT TURN SIGNAL |
| 10 | WT/LG | HIGH BEAM RELAY CONTROL |

80b4b7af

*FIG. 1*

## TEST 9C — CONTINUED - REPAIRING PANEL ILLUMINATION SHORTED TO GROUND




***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

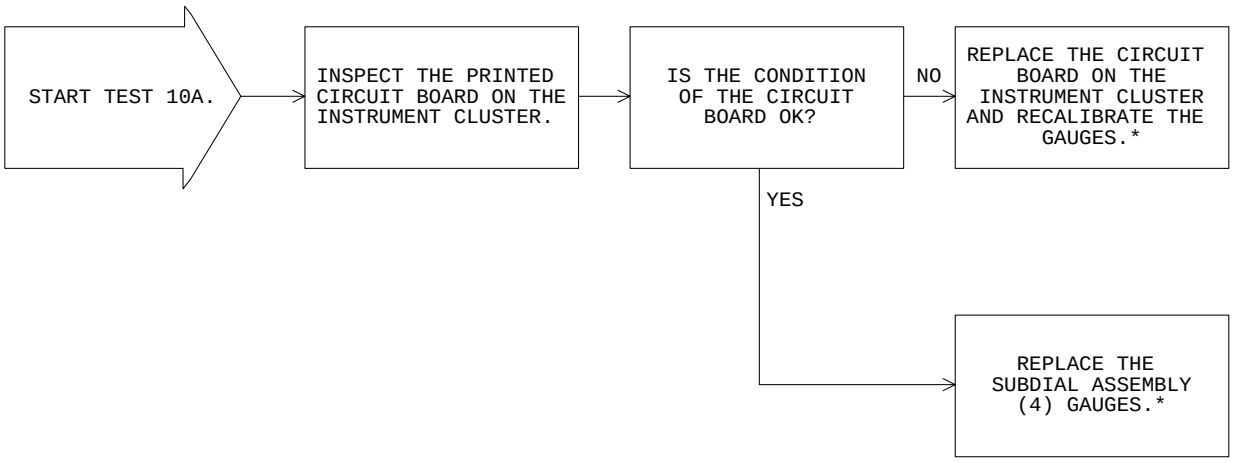
**TEST 10A** **REPAIRING FAULTY GAUGE**

**Perform TEST 5A Before Proceeding**

## NOTES

## TEST 10A REPAIRING FAULTY GAUGE

**Perform TEST 5A Before Proceeding**




***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

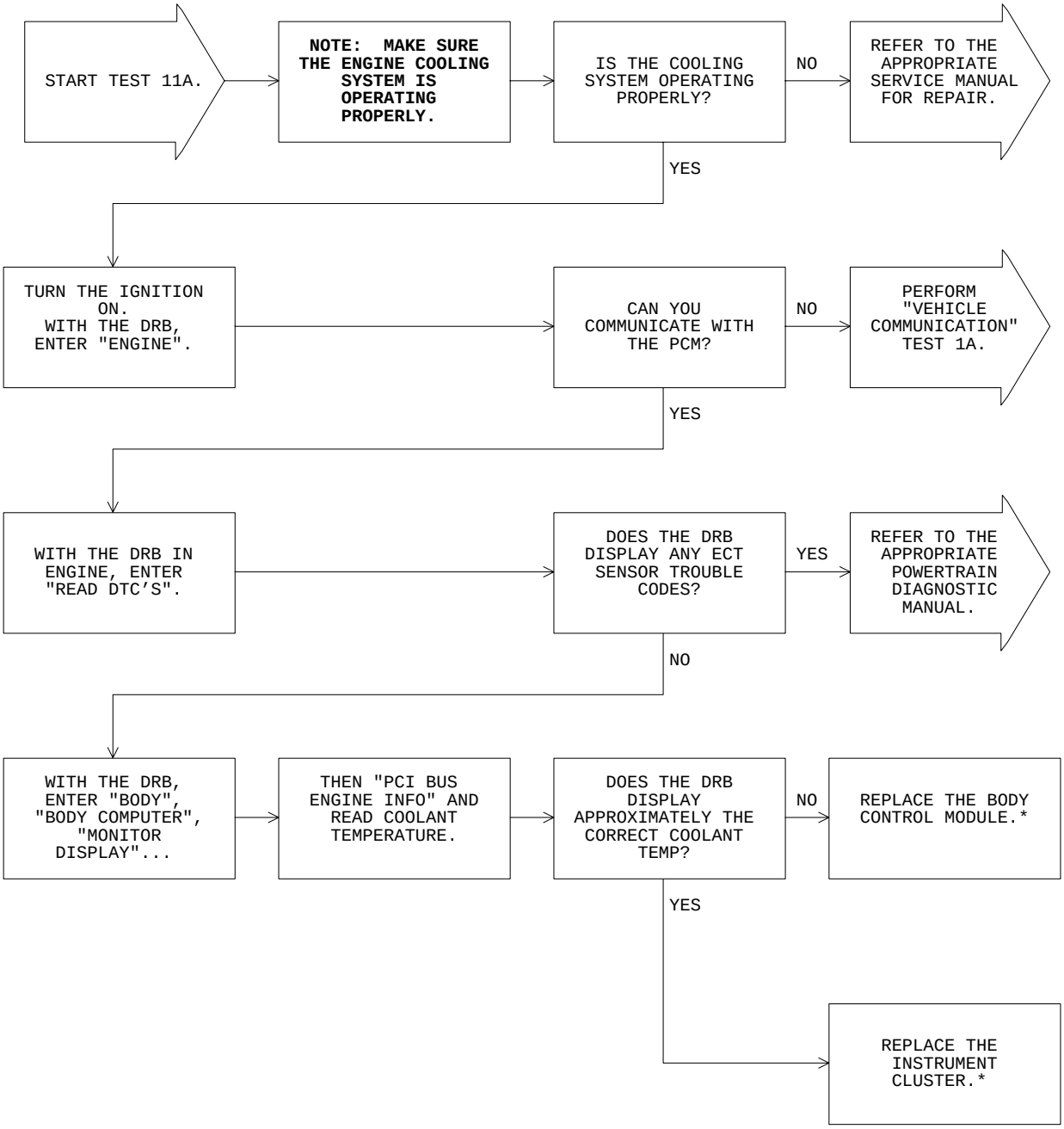
**TEST 11A** **REPAIRING TEMPERATURE GAUGE/LED OPERATION**

**Perform TEST 5A Before Proceeding**

## NOTES

## TEST 11A REPAIRING TEMPERATURE GAUGE/LED OPERATION

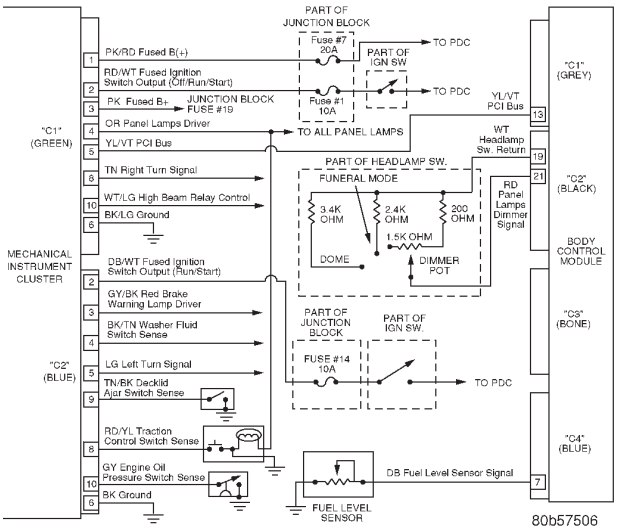
**Perform TEST 5A Before Proceeding**




***Perform Verification TEST VER-2A.** | ***Check connectors - Clean / repair as necessary.**

## TEST 12A REPAIRING FUEL GAUGE/LED OPERATION

**Perform TEST 5A Before Proceeding**



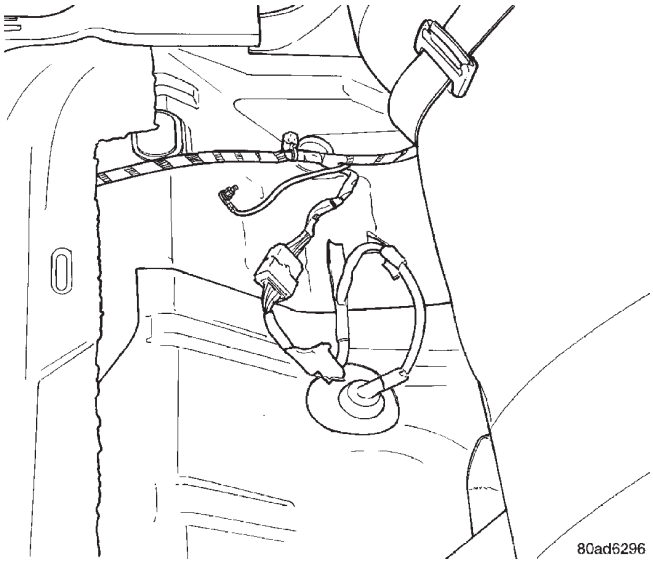




*FIG. 1*

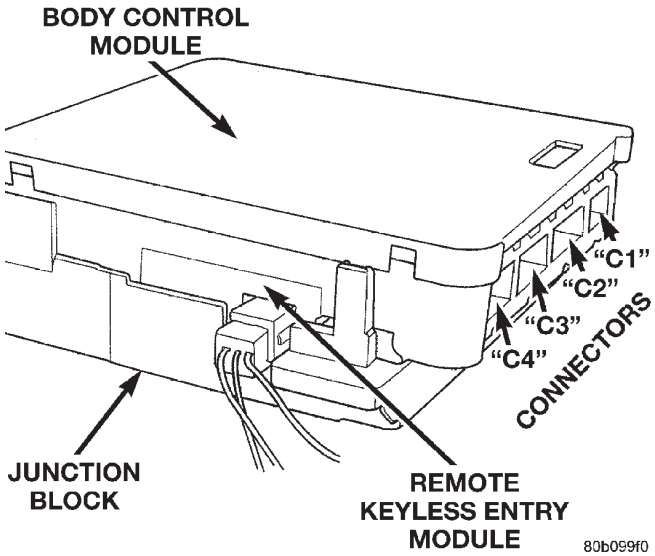
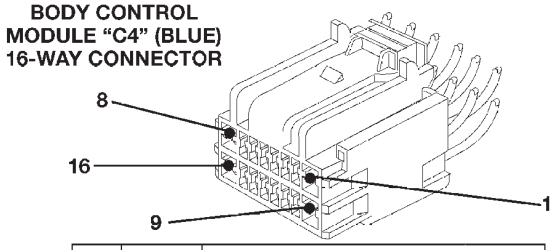



*FIG. 2*



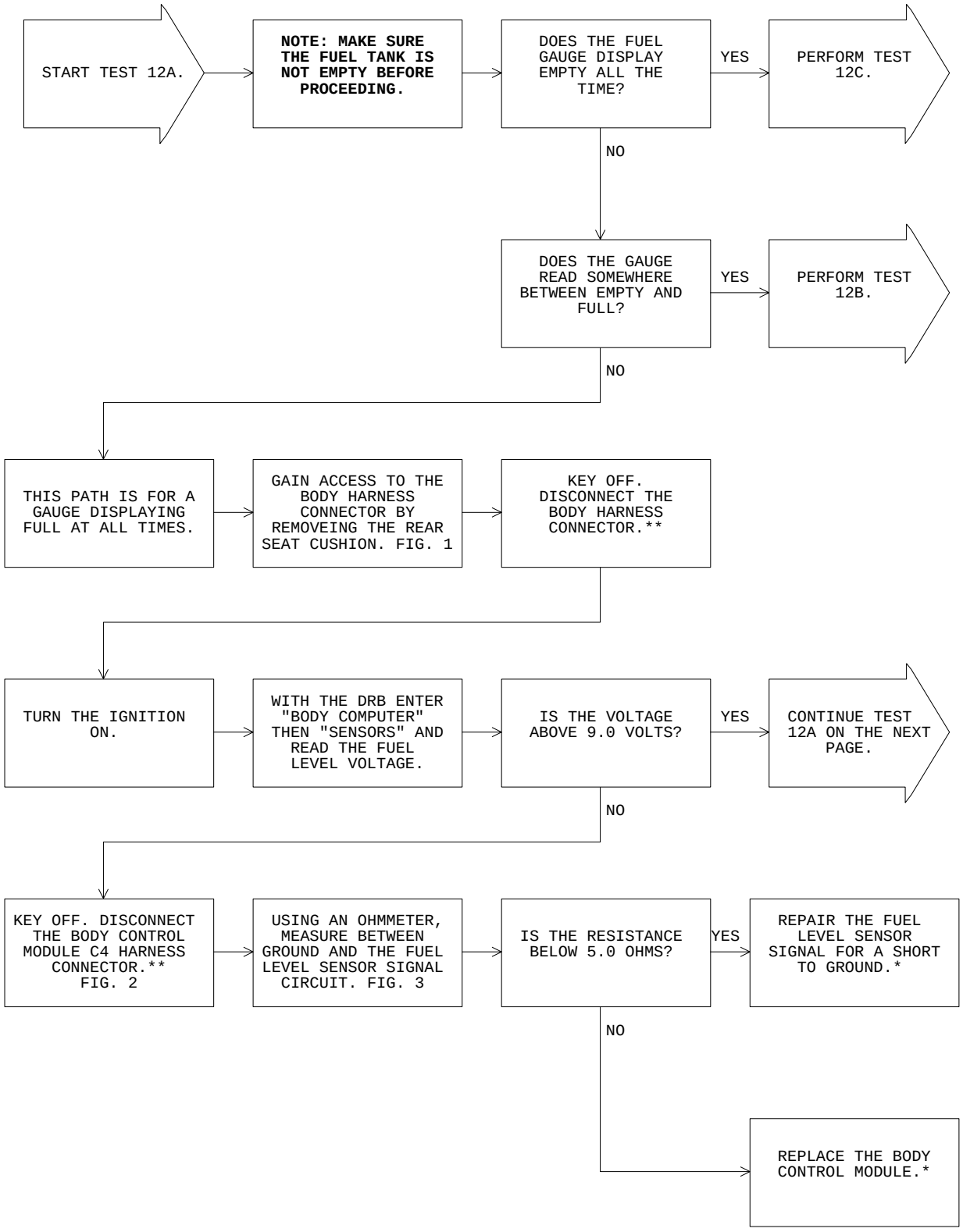

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

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*FIG. 3*

## TEST 12A REPAIRING FUEL GAUGE/LED OPERATION

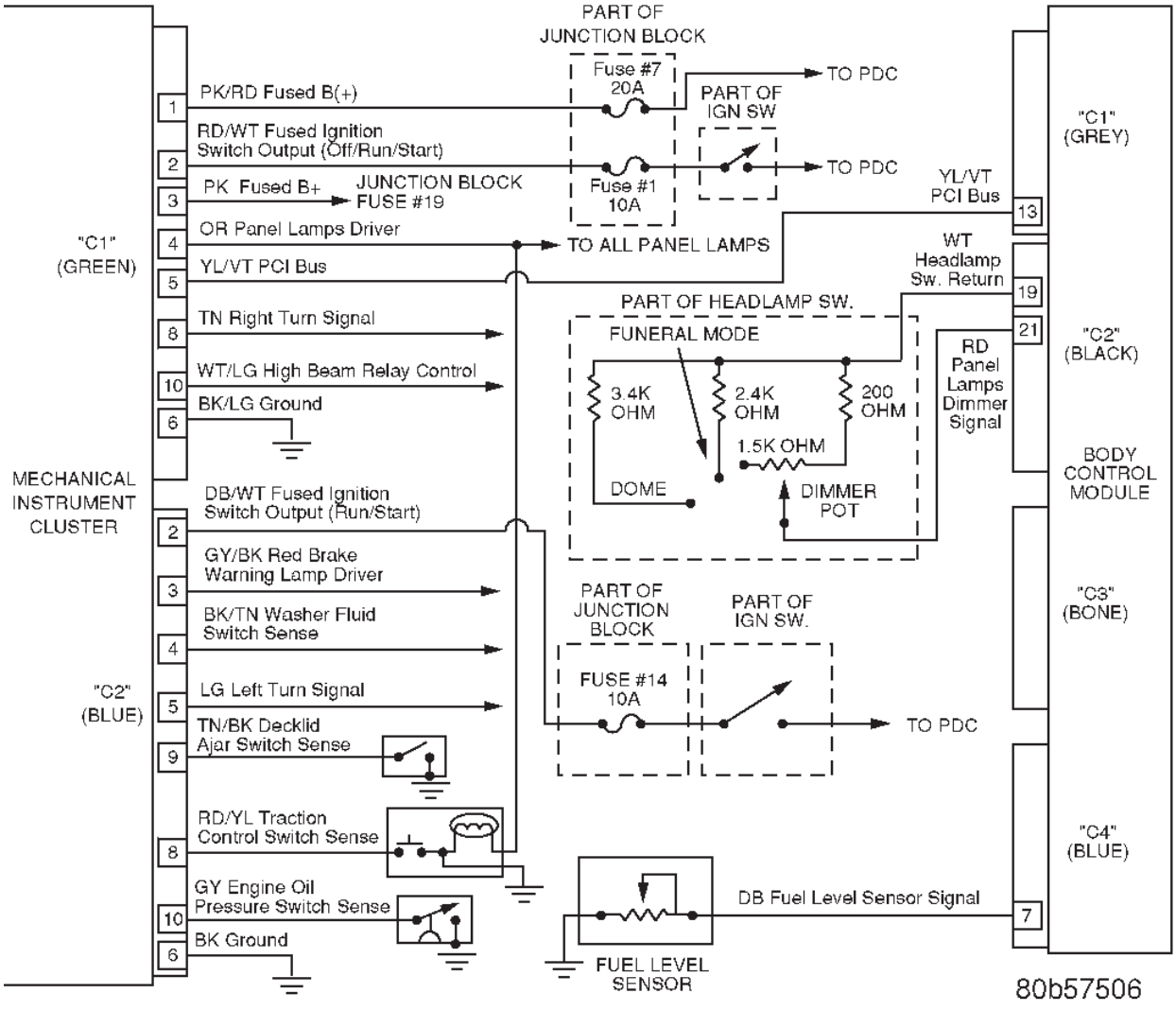
**Perform TEST 5A Before Proceeding**



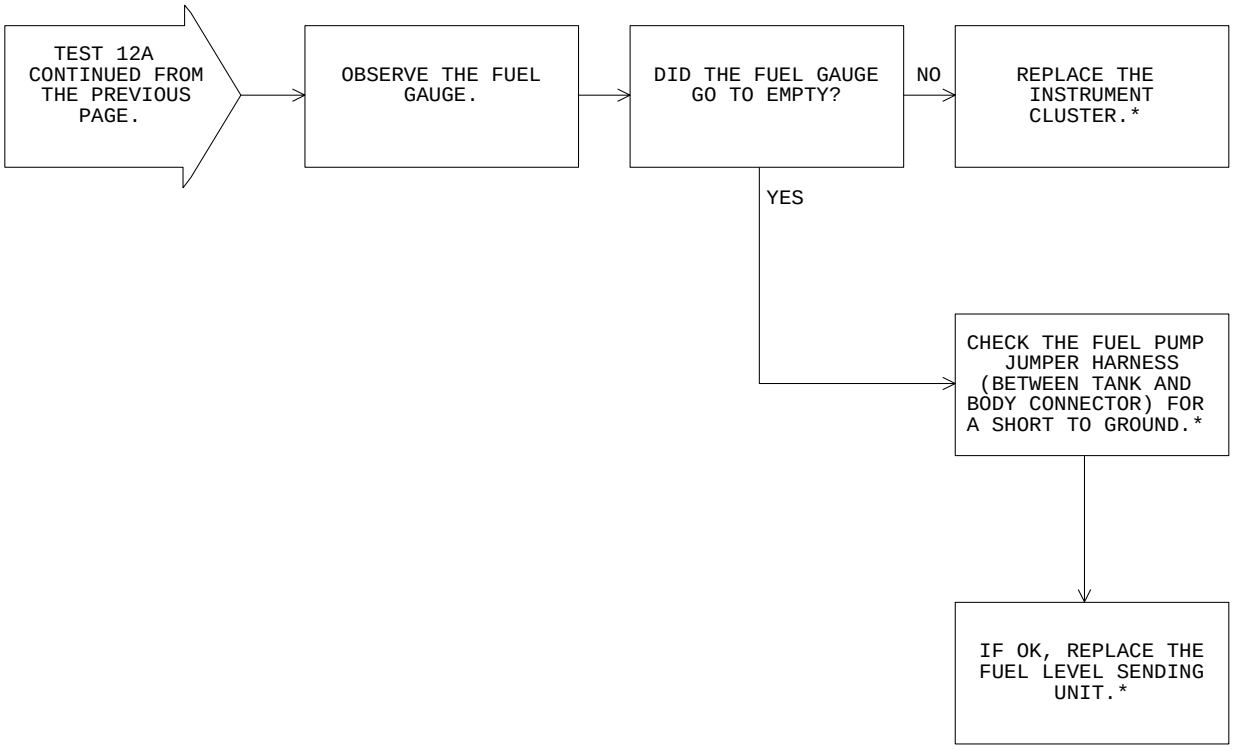

***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

## TEST 12A CONTINUED - REPAIRING FUEL GAUGE/LED OPERATION



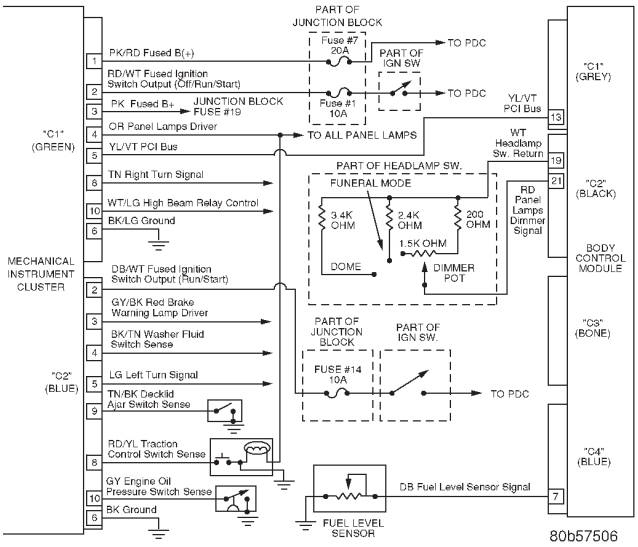
## TEST 12A CONTINUED - REPAIRING FUEL GAUGE/LED OPERATION




***Perform Verification TEST VER-2A.** | ***Check connectors - Clean / repair as necessary.**

## TEST 12B REPAIRING INACCURATE FUEL GAUGE

**Perform TEST 12A Before Proceeding**



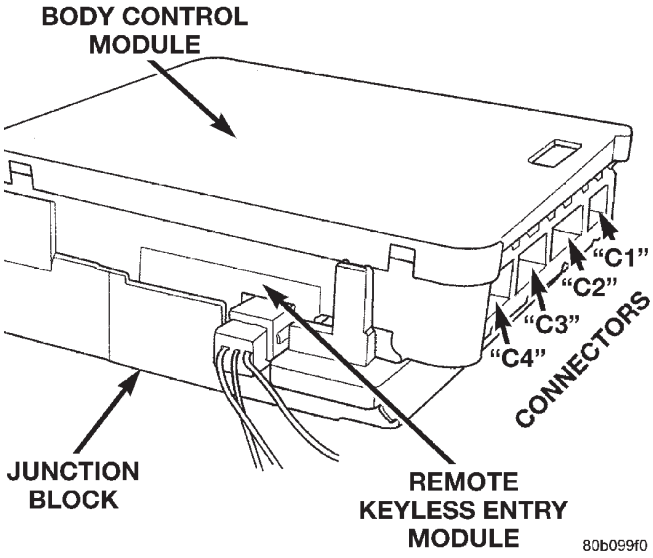
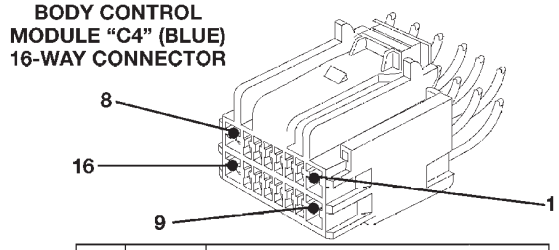



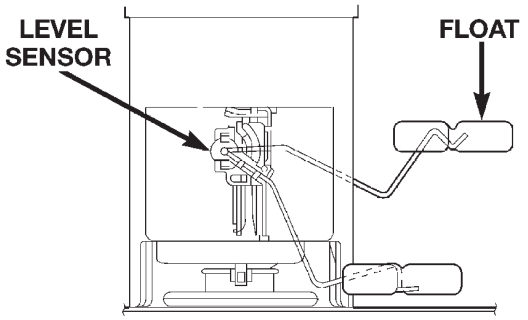

*FIG. 1*




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

80b11939

*FIG. 2*



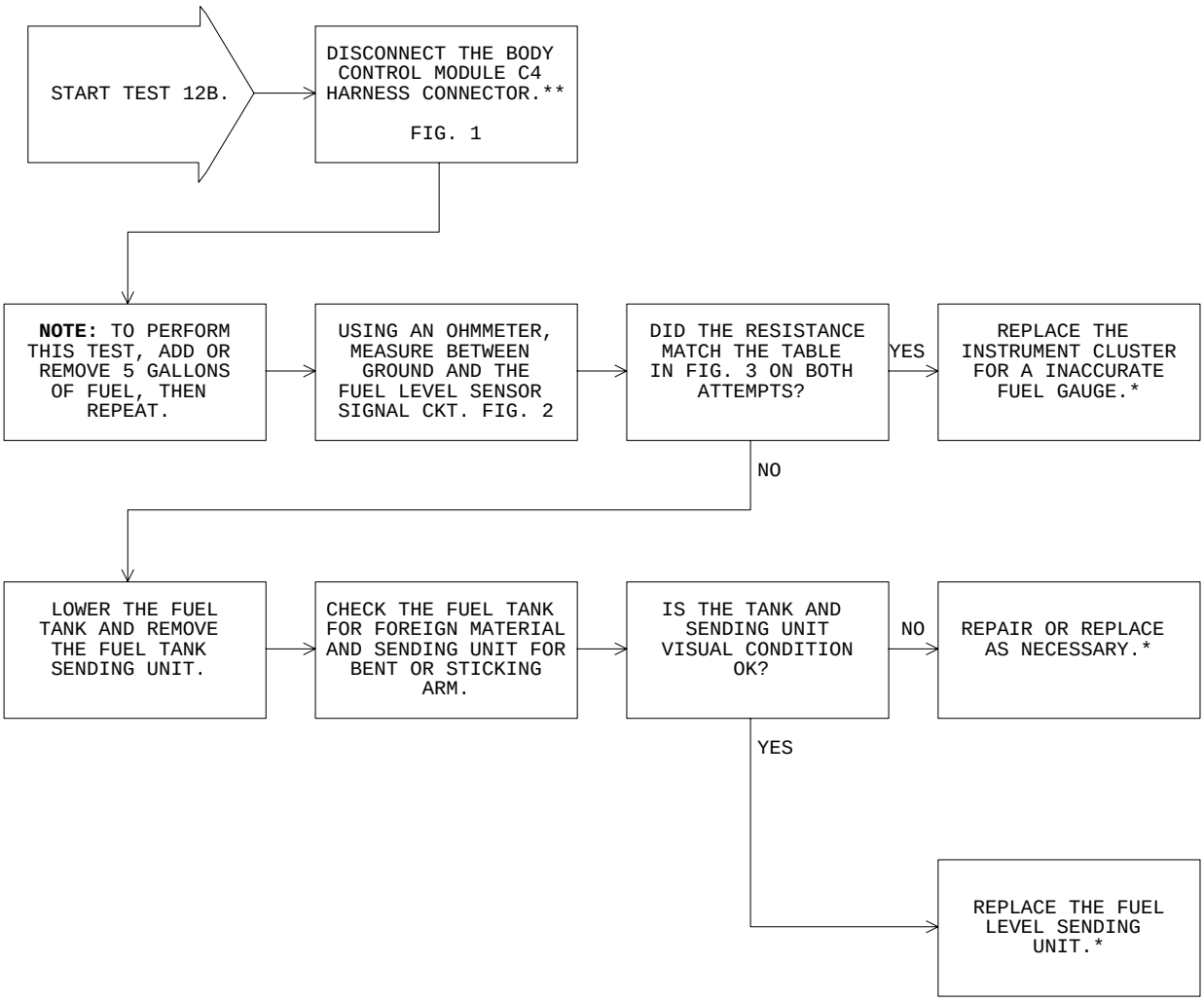

| FLOAT POSITION (HEIGHT) | RESISTANCE |
|---|---|
| 151.4 mm (Sensor Full Stop) | 60 ± 10 Ohms |
| 141.0 mm (Stop on Gauge) | 130 ± 15 Ohms |
| 105.8 mm (3/4 position) | 340 ± 30 Ohms |
| 74.5 mm (1/2 position) | 550 ± 30 Ohms |
| 43.0 mm (1/4 position) | 760 ± 30 Ohms |
| 11.1 mm (Empty on Gauge) | 920 ± 30 Ohms |
| 1.4 mm (Sensor Empty Stop) | 1050 ± 10 Ohms |

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*FIG. 3*

## TEST 12B REPAIRING INACCURATE FUEL GAUGE

**Perform TEST 12A Before Proceeding**

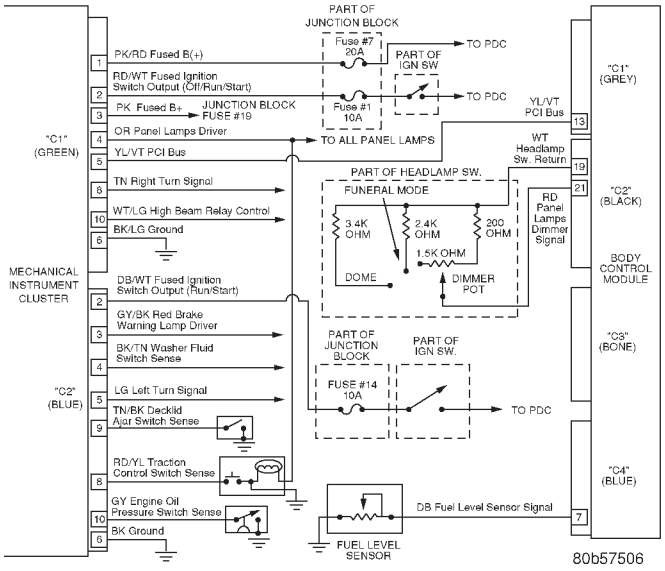



***Perform Verification TEST VER-2A.***

*****Check connectors - Clean / repair as necessary.***

## TEST 12C REPAIRING FUEL GAUGE/LAMP OPERATION - EMPTY AT ALL TIMES

**Perform TEST 12A Before Proceeding**



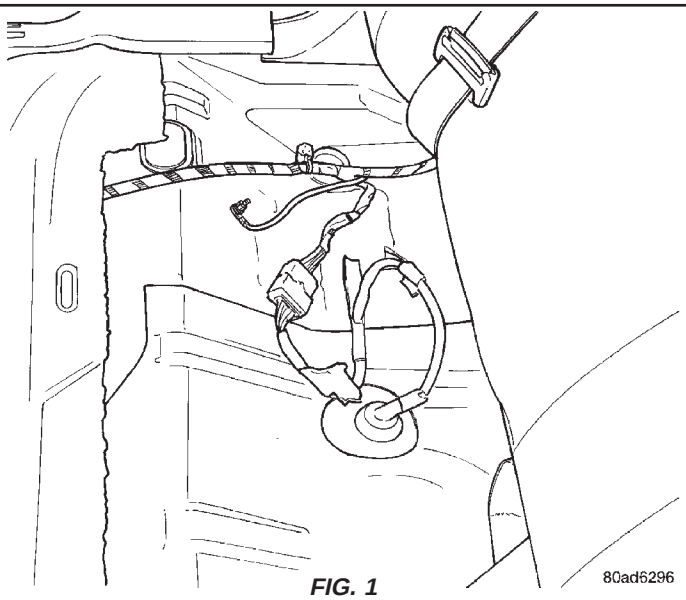
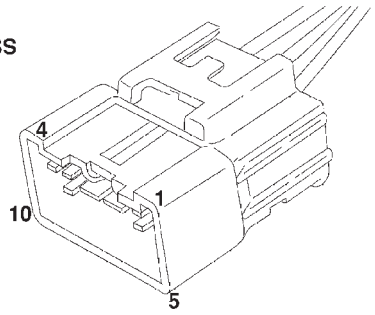




*FIG. 1*

**BODY HARNESS CONNECTOR**



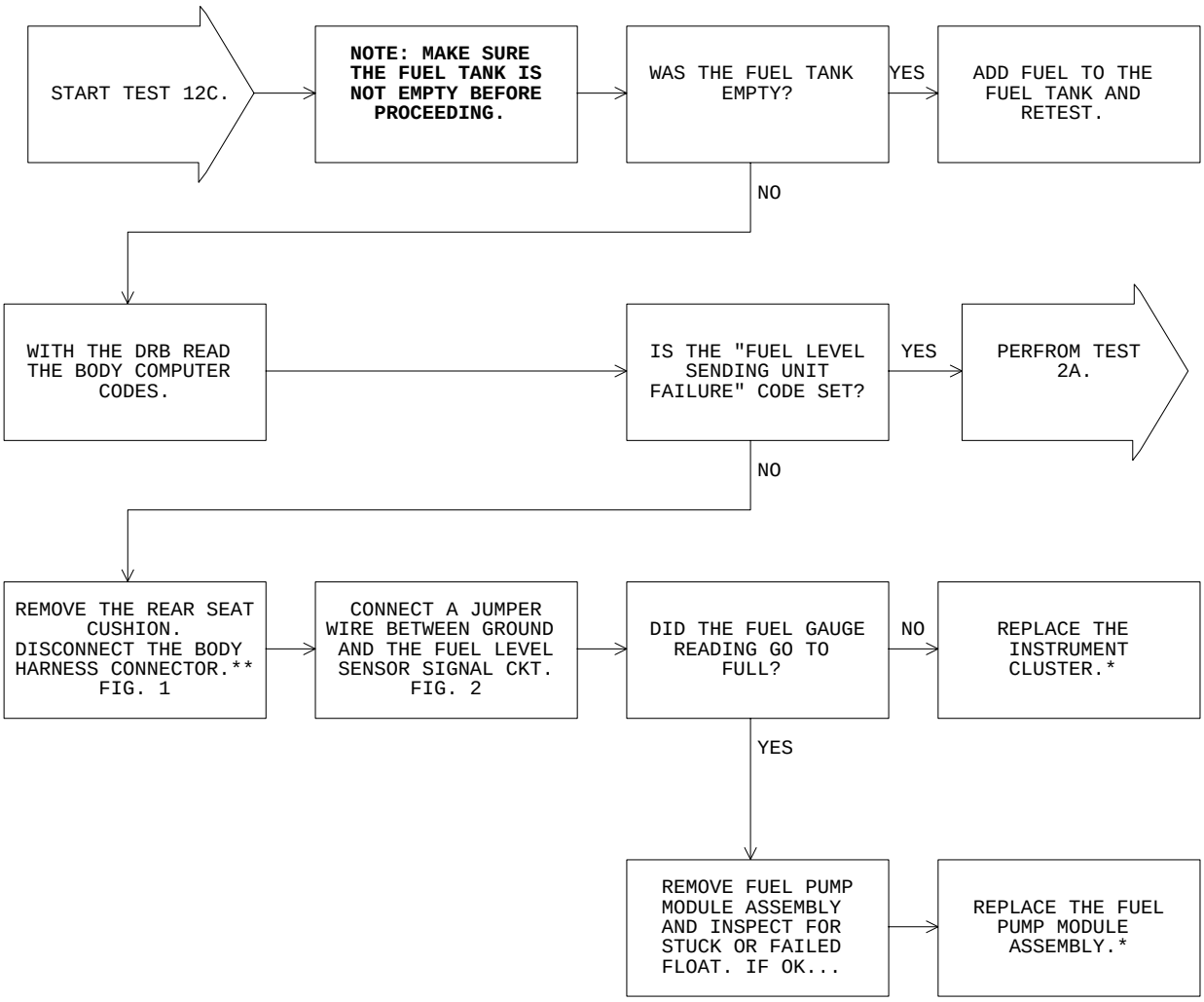

| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | DB | FUEL LEVEL SENSOR SIGNAL |
| 7 | DG/WT | FUEL PUMP RELAY OUTPUT |
| 8 | BK | GROUND (FUEL PUMP) |

80b4fb27

*FIG. 2*

## TEST 12C REPAIRING FUEL GAUGE/LAMP OPERATION - EMPTY AT ALL TIMES

**Perform TEST 12A Before Proceeding**




***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

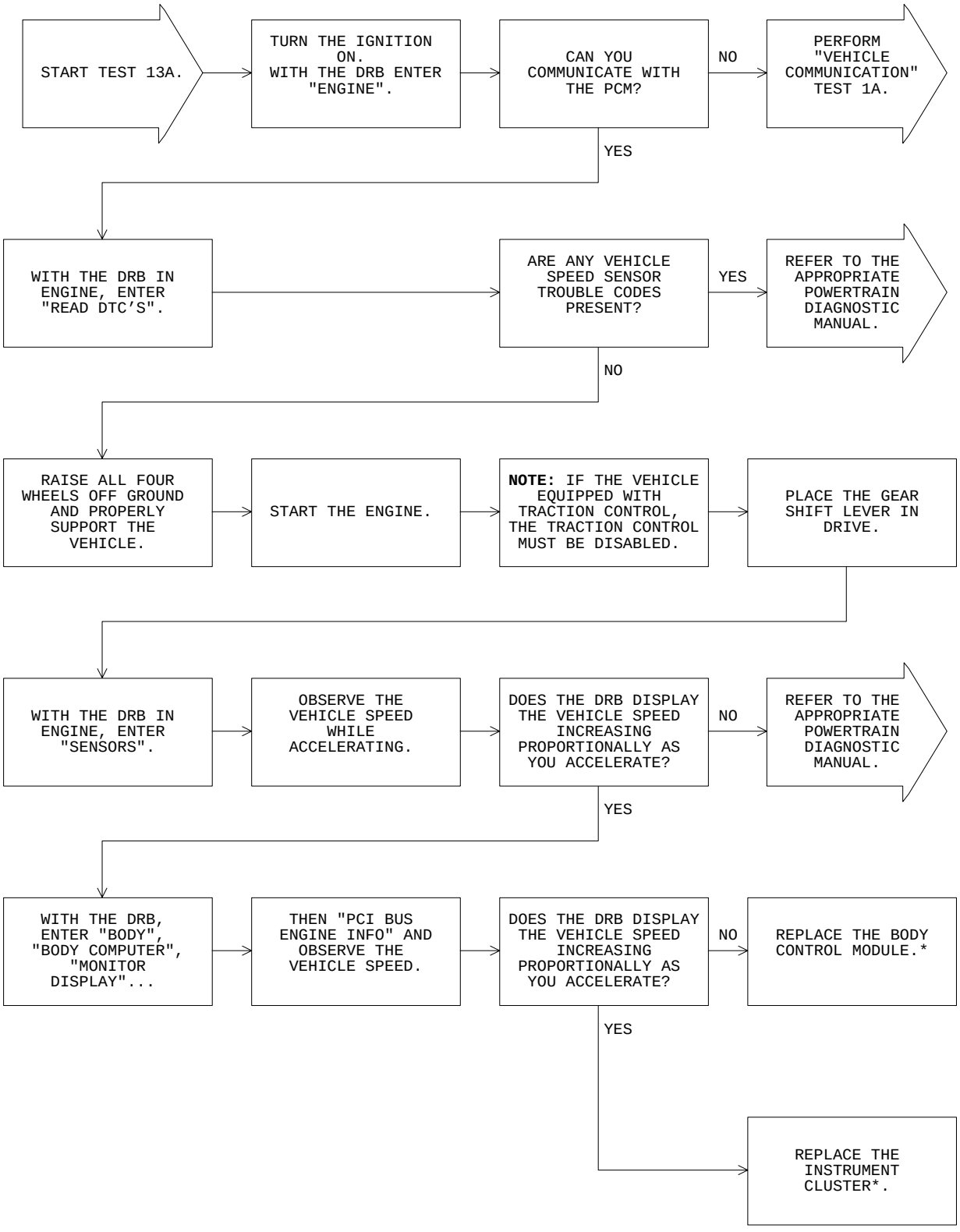
**TEST 13A** **REPAIRING SPEEDOMETER OPERATION**

**Perform TEST 5A Before Proceeding**

## NOTES

## TEST 13A REPAIRING SPEEDOMETER OPERATION

**Perform TEST 5A Before Proceeding**

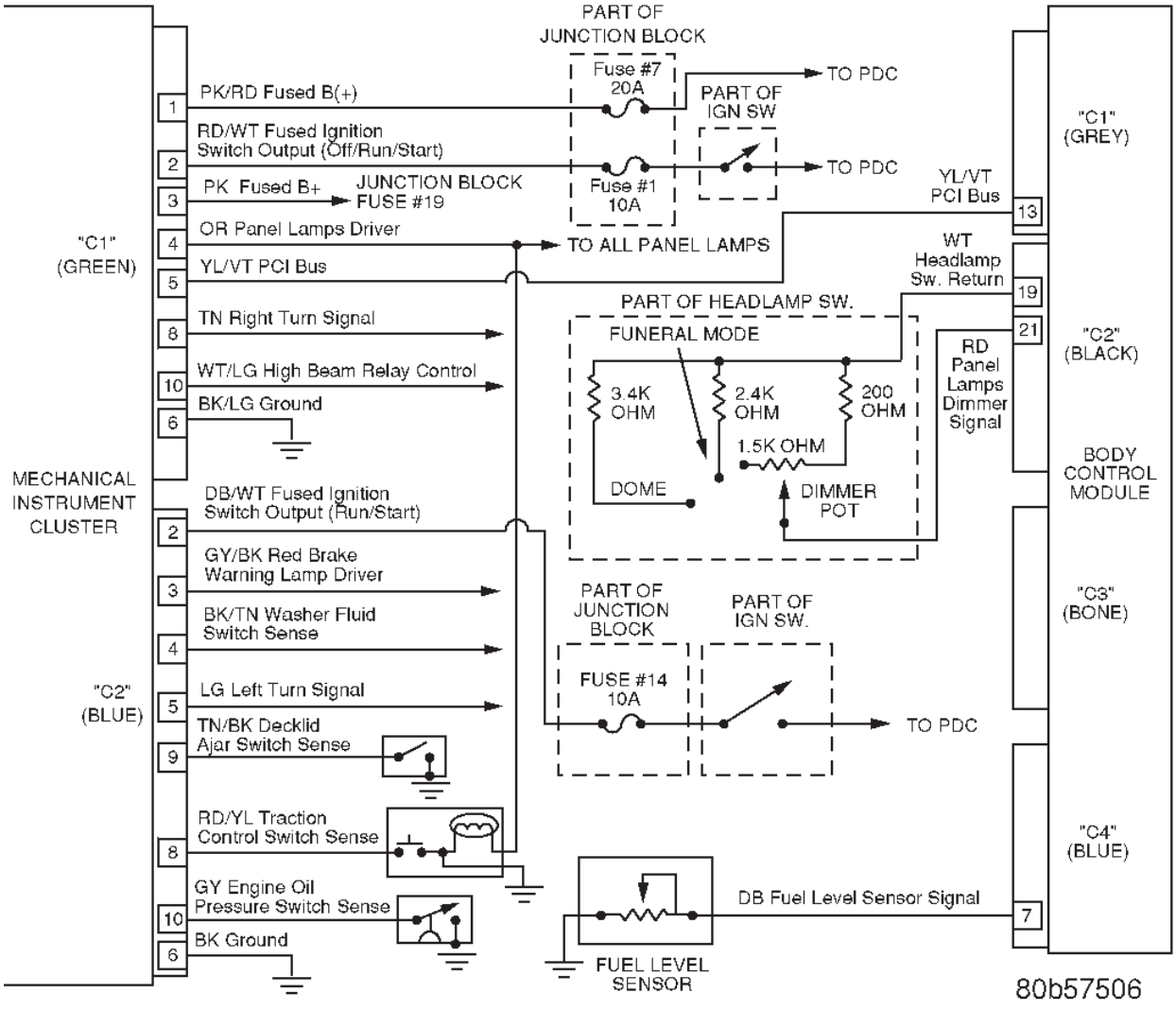



***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

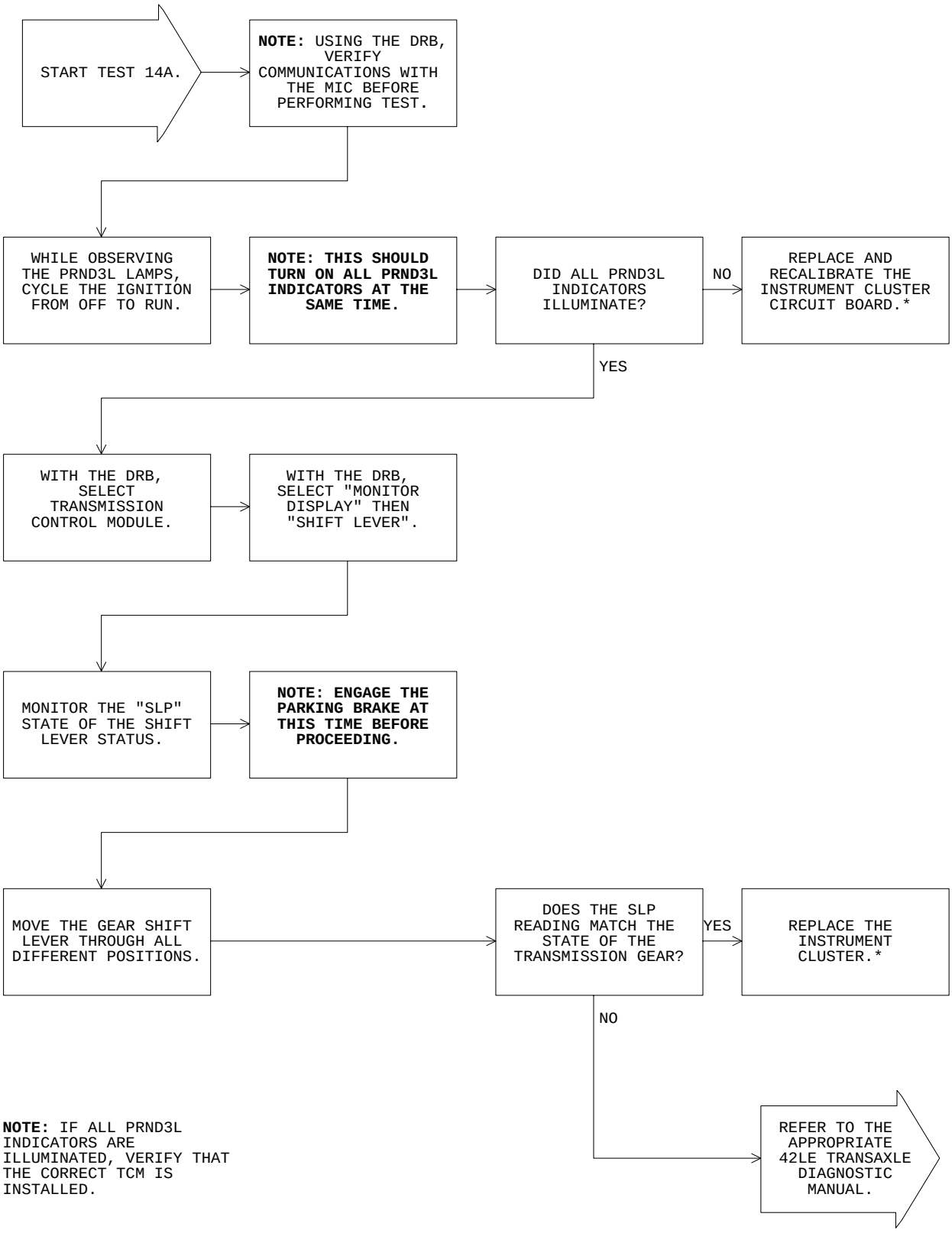
## TEST 14A REPAIRING COMMUNICATION WITH TRANSMISSION CONTROL MODULE

**Perform TEST 1A Before Proceeding**



## TEST 14A REPAIRING COMMUNICATION WITH TRANSMISSION CONTROL MODULE

**Perform TEST 1A Before Proceeding**

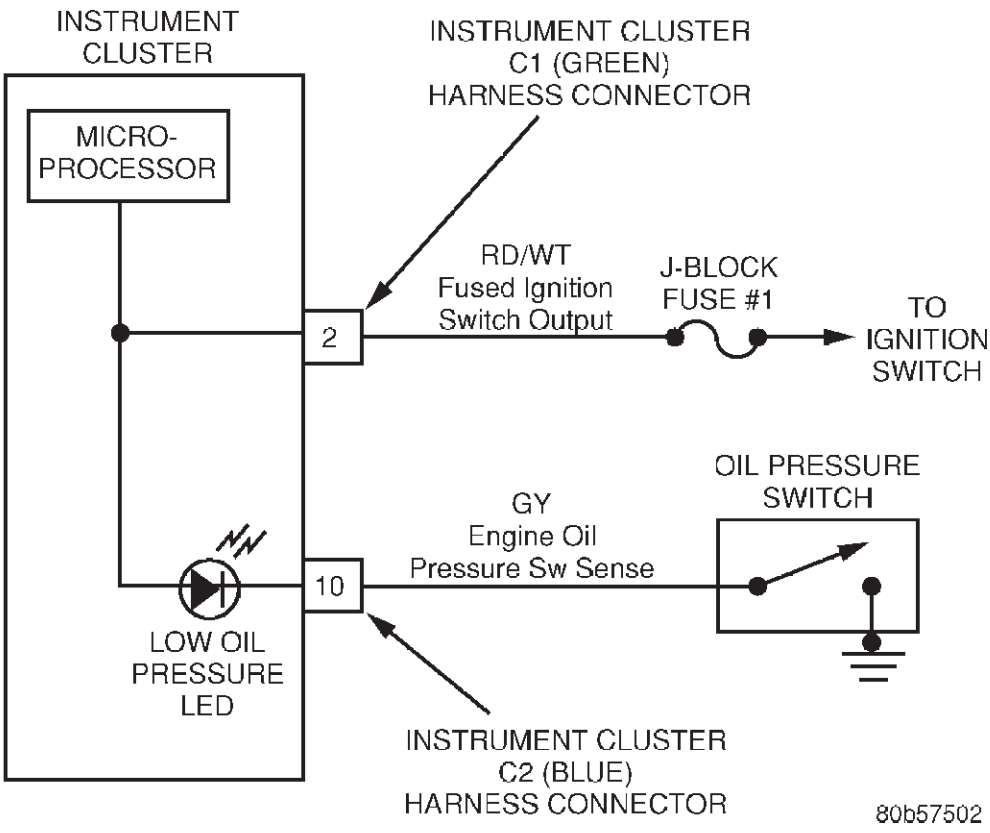


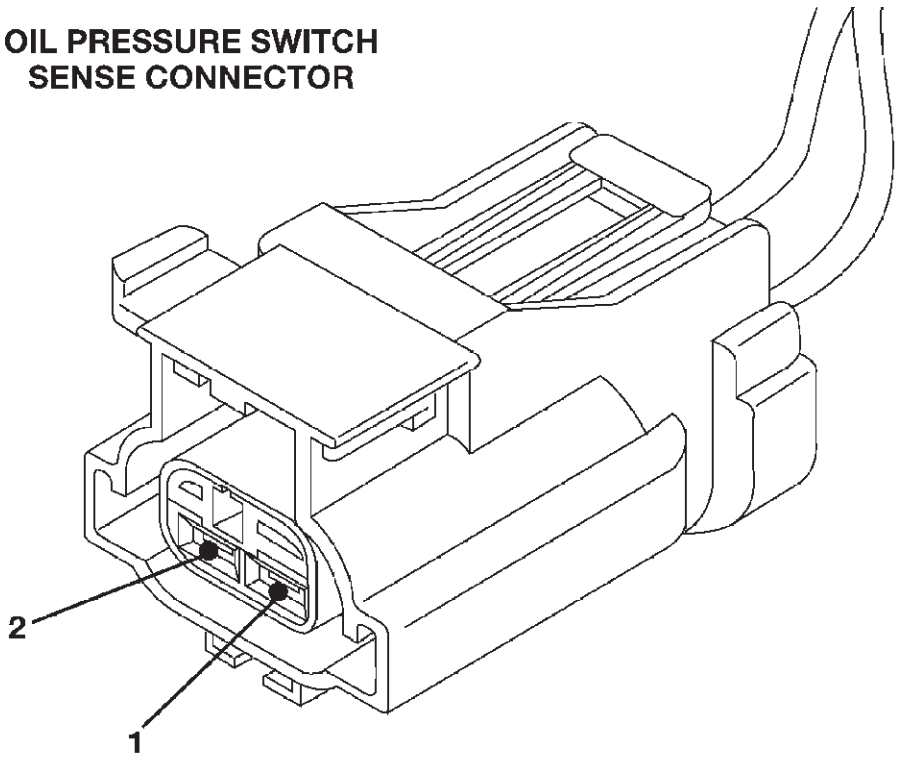

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 15A REPAIRING OIL PRESSURE WARNING LAMP OPERATING IMPROPERLY

**Perform TEST 1A Before Proceeding**



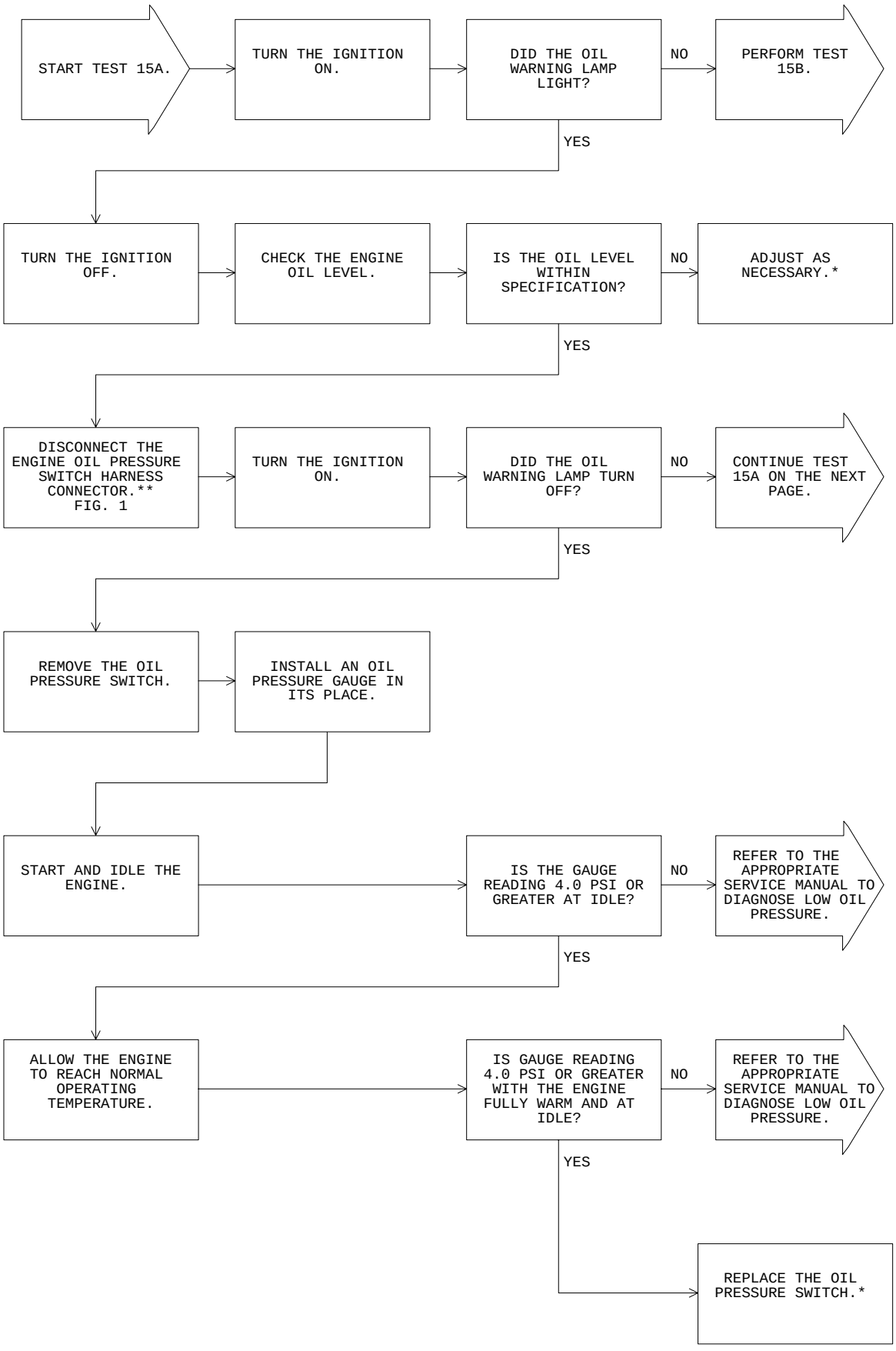

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | GY | ENGINE OIL PRESSURE SW SENSE |

80b27d40

*FIG. 1*

## TEST 15A REPAIRING OIL PRESSURE WARNING LAMP OPERATING IMPROPERLY

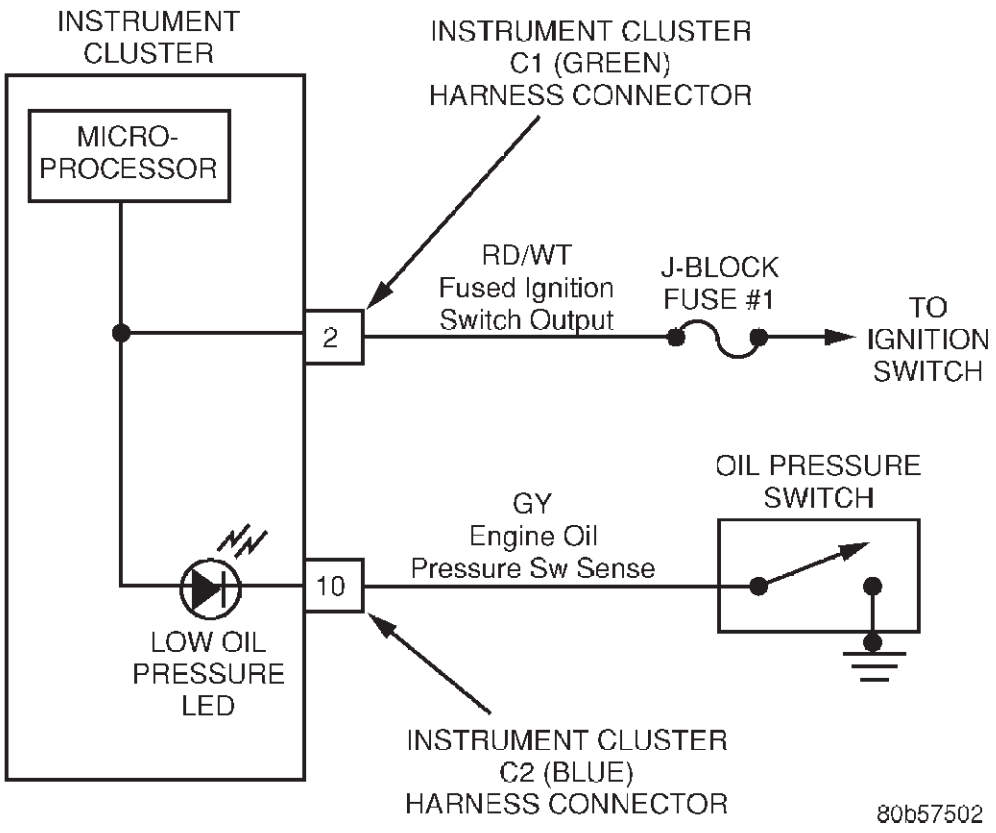
**Perform TEST 1A Before Proceeding**



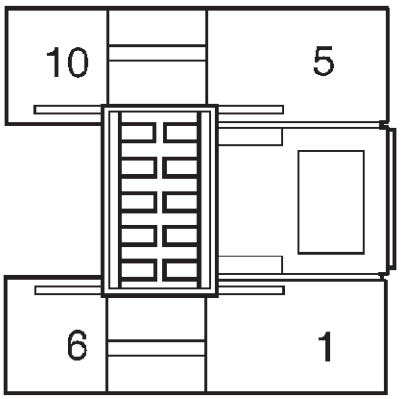

***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

**TEST 15A** CONTINUED - REPAIRING OIL PRESSURE WARNING LAMP OPERATING IMPROPERLY




**INSTRUMENT CLUSTER "C2" (BLUE) 10 WAY CONNECTOR**

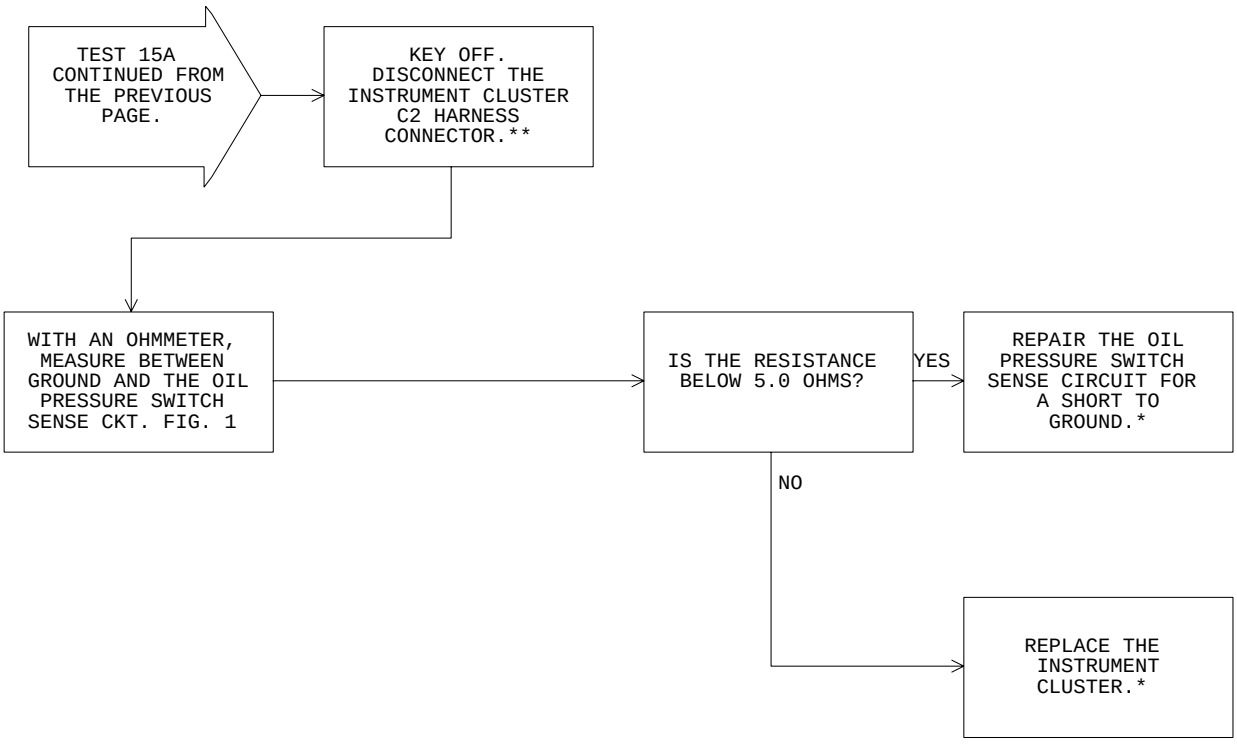



| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 3 | GY/BK | RED BRAKE WARNING LAMP DRIVER |
| 4 | BK/TN | WASHER FLUID SW. SENSE |
| 5 | LG | LEFT TURN SIGNAL |
| 6 | BK | GROUND |
| 8 | RD/YL | TRACTION CONTROL SW. SENSE |
| 9 | TN/BK | DECKLID AJAR SW. SENSE |
| 10 | GY | ENGINE OIL PRESSURE SW. SENSE |

80b243cd

*FIG. 1*

## TEST 15A CONTINUED - REPAIRING OIL PRESSURE WARNING LAMP OPERATING IMPROPERLY

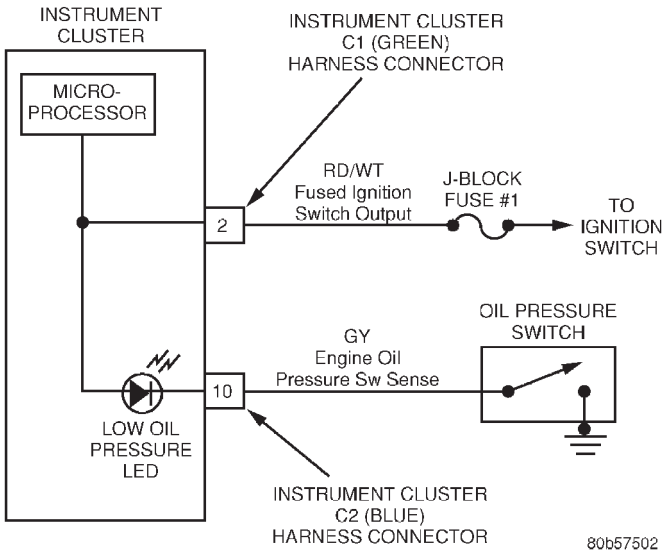


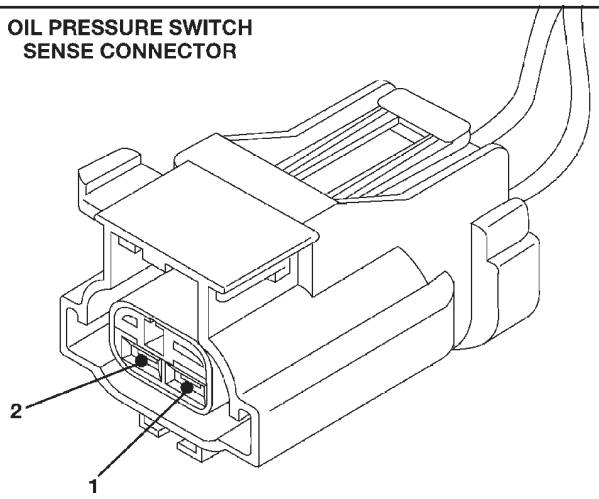

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 15B REPAIRING OIL PRESSURE WARNING LAMP OPERATING IMPROPERLY

**Perform TEST 15A Before Proceeding**

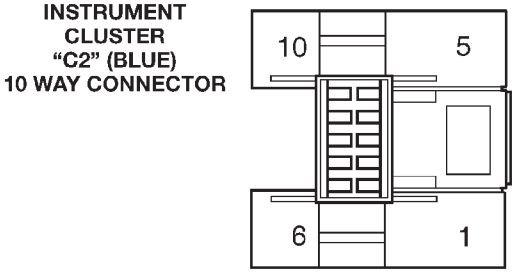



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | GY | ENGINE OIL PRESSURE SW SENSE |

80b27d40

***FIG. 1***



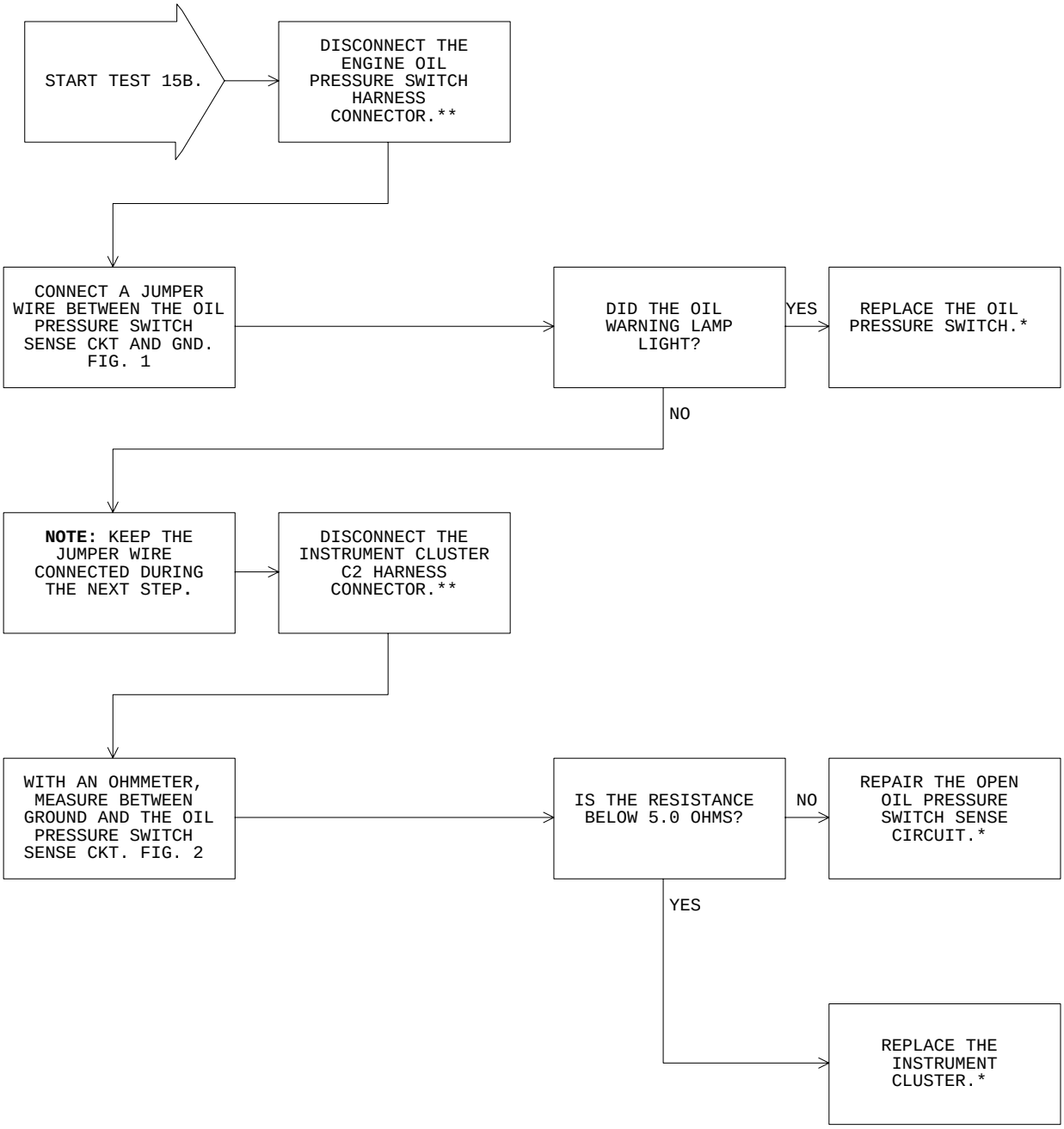

| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 3 | GY/BK | RED BRAKE WARNING LAMP DRIVER |
| 4 | BK/TN | WASHER FLUID SW. SENSE |
| 5 | LG | LEFT TURN SIGNAL |
| 6 | BK | GROUND |
| 8 | RD/YL | TRACTION CONTROL SW. SENSE |
| 9 | TN/BK | DECKLID AJAR SW. SENSE |
| 10 | GY | ENGINE OIL PRESSURE SW. SENSE |

80b243cd

***FIG. 2***

## TEST 15B REPAIRING OIL PRESSURE WARNING LAMP OPERATING IMPROPERLY

**Perform TEST 15A Before Proceeding**




***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.**

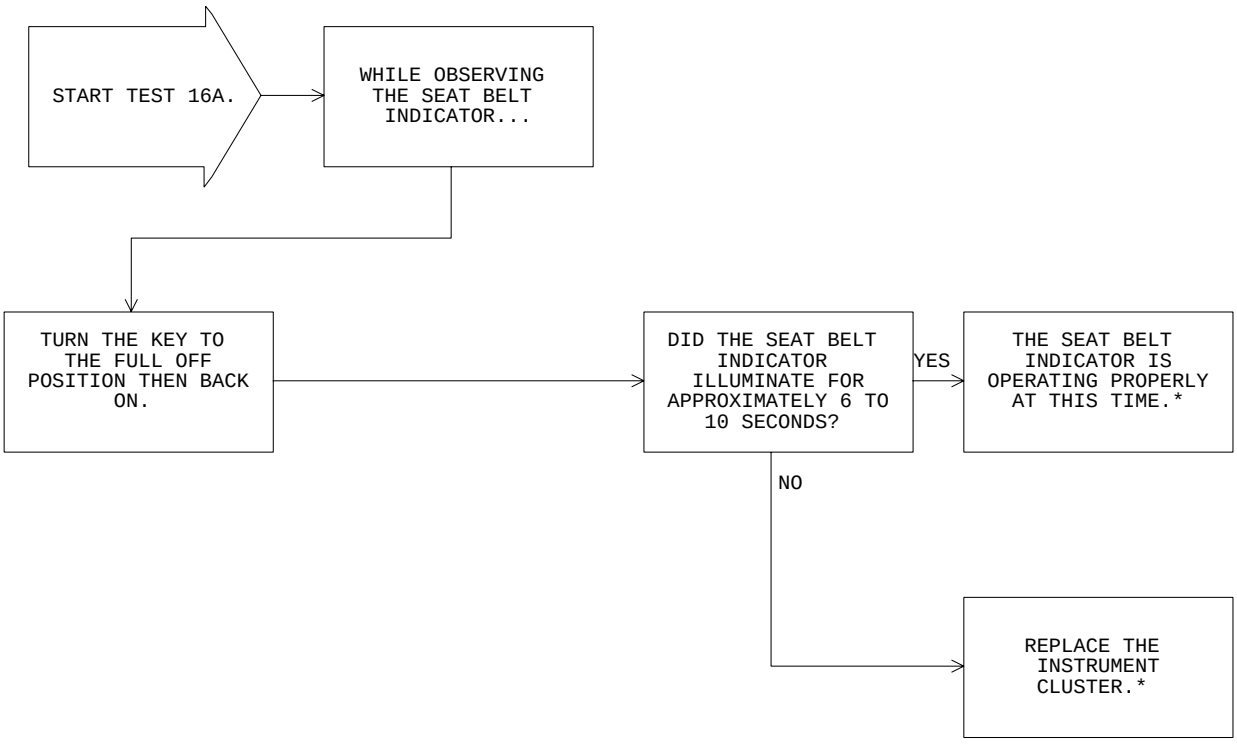
**TEST 16A** REPAIRING SEAT BELT LED

**Perform TEST 1A Before Proceeding**

## NOTES

## TEST 16A REPAIRING SEAT BELT LED

**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

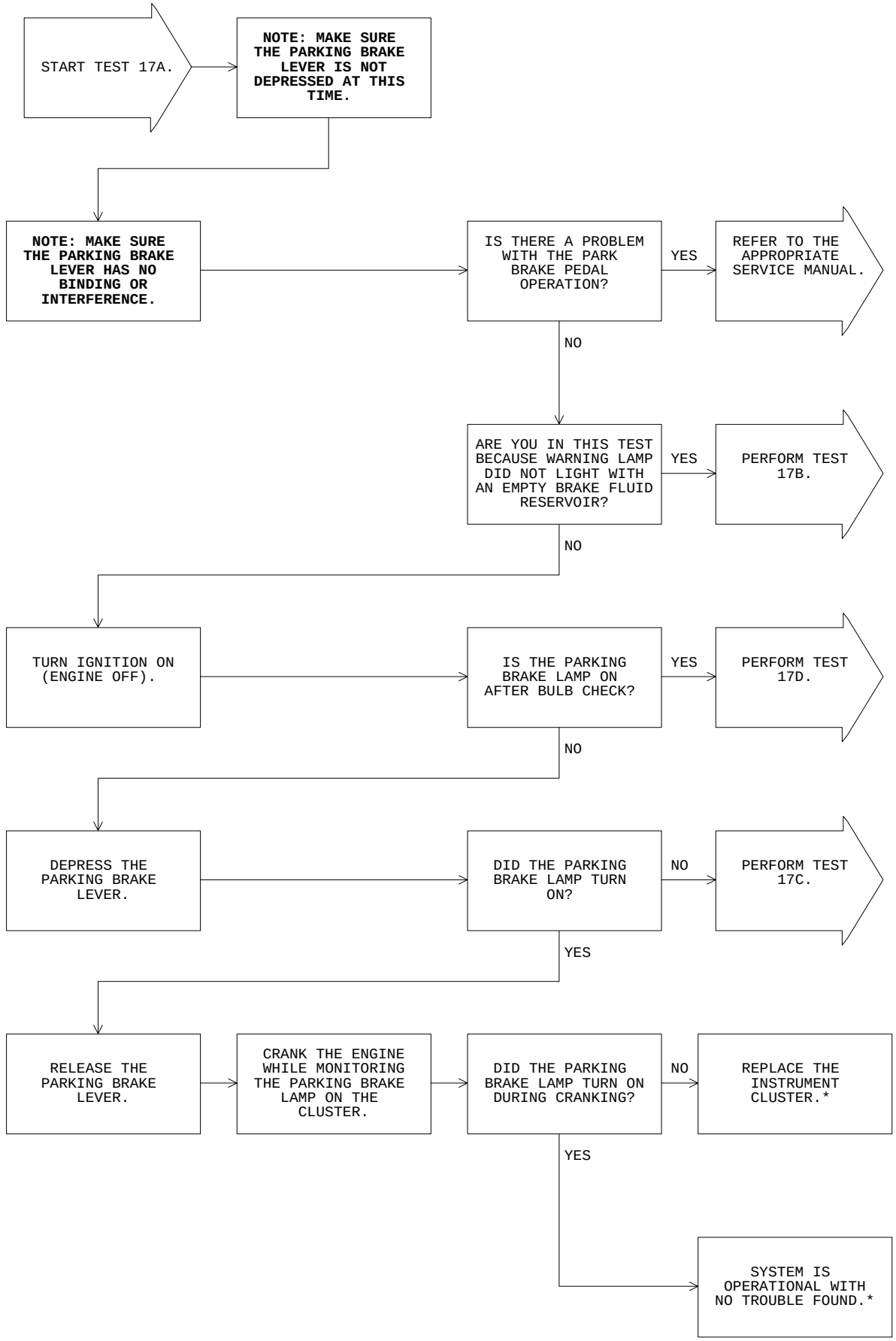
**TEST 17A** REPAIRING PARK BRAKE WARNING LAMP OPERATING IMPROPERLY

**Perform TEST 1A Before Proceeding**

## NOTES

## TEST 17A REPAIRING PARK BRAKE WARNING LAMP OPERATING IMPROPERLY

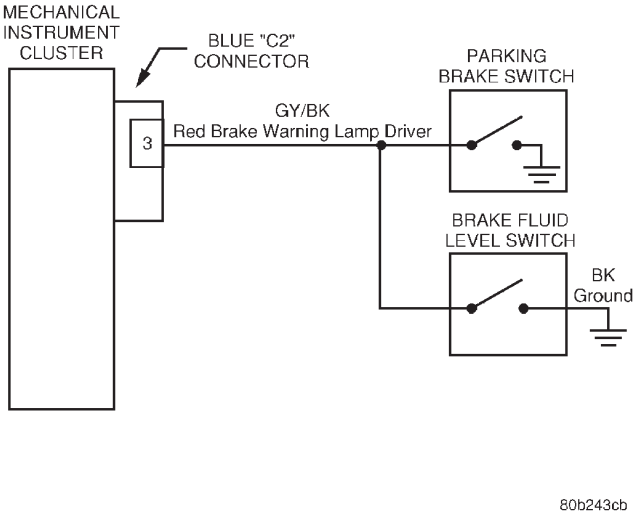
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.** | ***Check connectors - Clean / repair as necessary.**

## TEST 17B REPAIRING PARK BRAKE WARNING LAMP OPERATING IMPROPERLY

**Perform TEST 17A Before Proceeding**



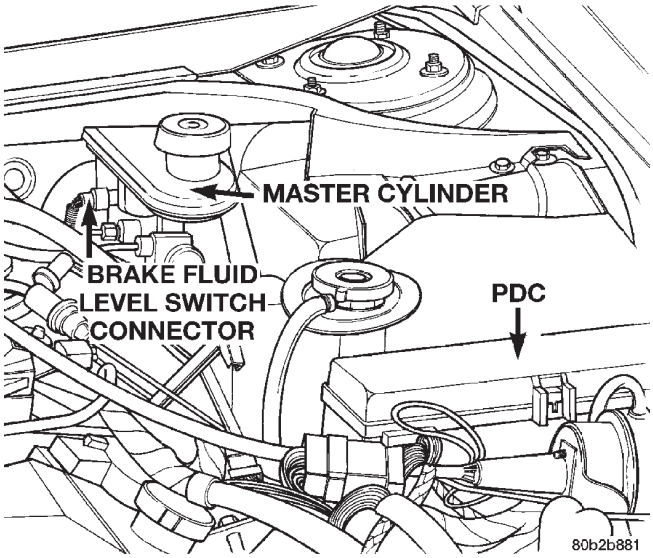
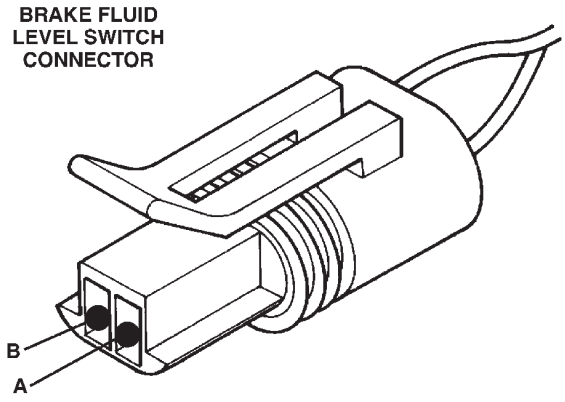
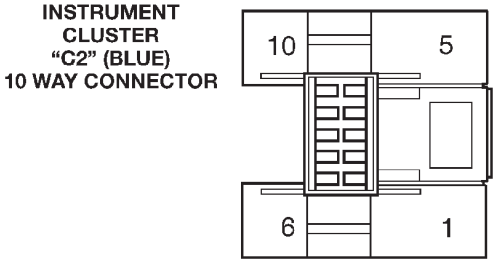




*FIG. 1*




| CAV | COLOR | FUNCTION |
|---|---|---|
| A | BK | GROUND |
| B | GY/BK | RED BRAKE WARNING LAMP DRIVER |

*FIG. 2*

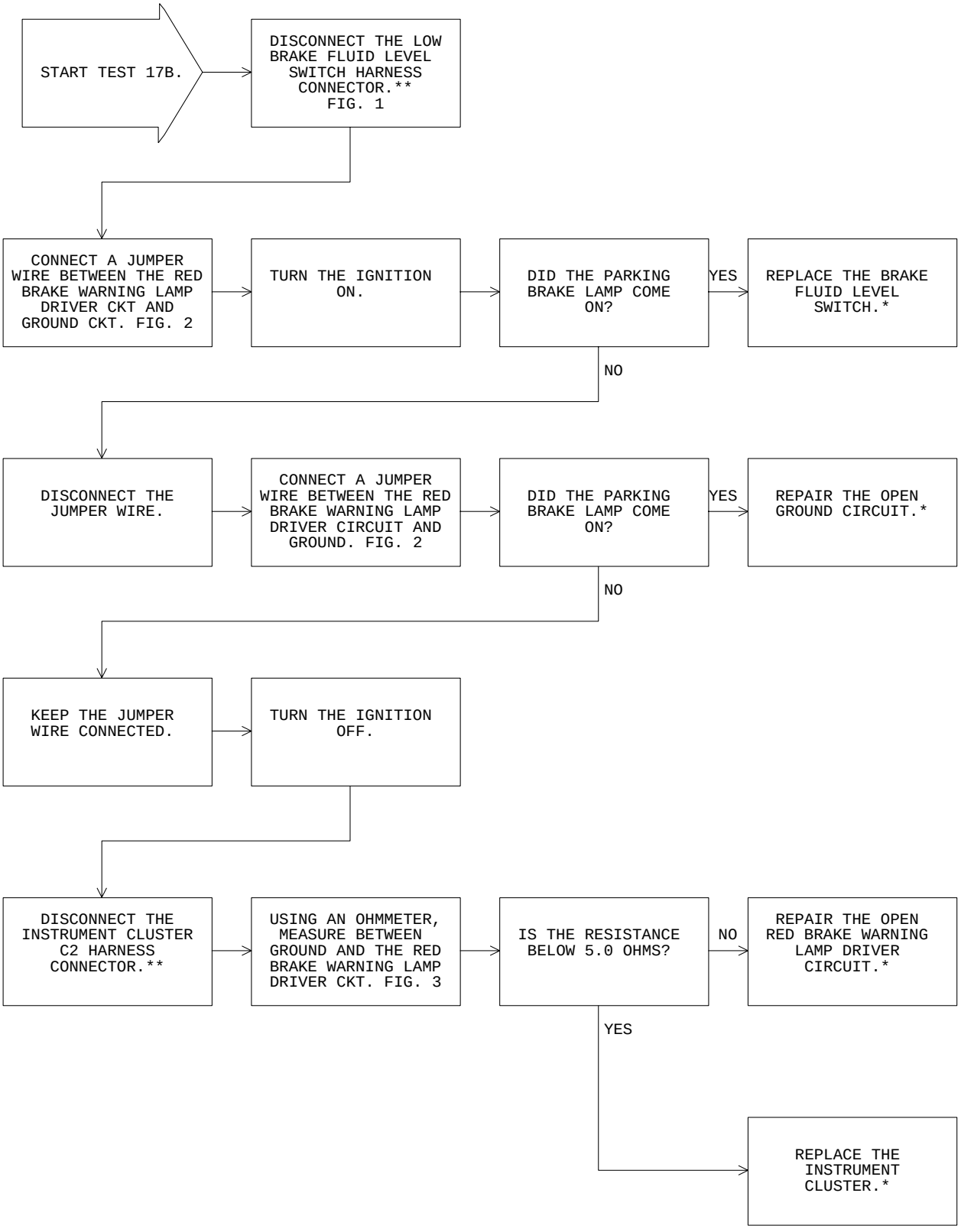



| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 3 | GY/BK | RED BRAKE WARNING LAMP DRIVER |
| 4 | BK/TN | WASHER FLUID SW. SENSE |
| 5 | LG | LEFT TURN SIGNAL |
| 6 | BK | GROUND |
| 8 | RD/YL | TRACTION CONTROL SW. SENSE |
| 9 | TN/BK | DECKLID AJAR SW. SENSE |
| 10 | GY | ENGINE OIL PRESSURE SW. SENSE |

*FIG. 3*

## TEST 17B REPAIRING PARK BRAKE WARNING LAMP OPERATING IMPROPERLY

**Perform TEST 17A Before Proceeding**

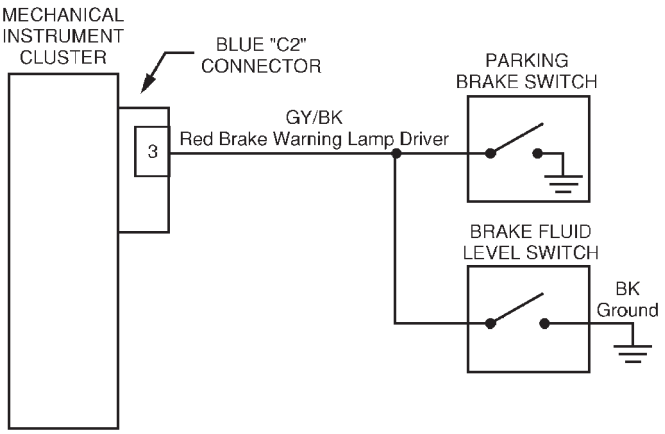



***Perform Verification TEST VER-2A.***

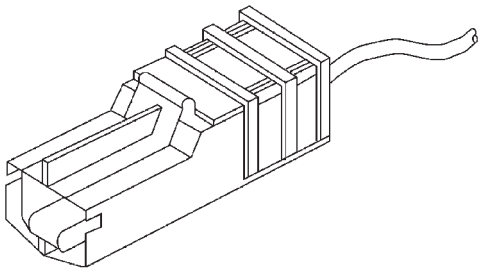
****Check connectors - Clean / repair as necessary.***

## TEST 17C REPAIRING PARK BRAKE WARNING LAMP OPERATING IMPROPERLY

**Perform TEST 17A Before Proceeding**




**PARKING BRAKE SWITCH CONNECTOR**

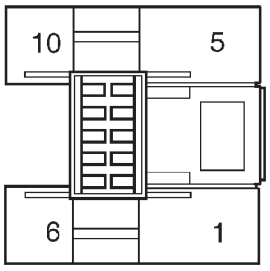


| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | GY/BK | RED BRAKE WARNING LAMP DRIVER |

80b57507

***FIG. 1***

**INSTRUMENT CLUSTER "C2" (BLUE) 10 WAY CONNECTOR**



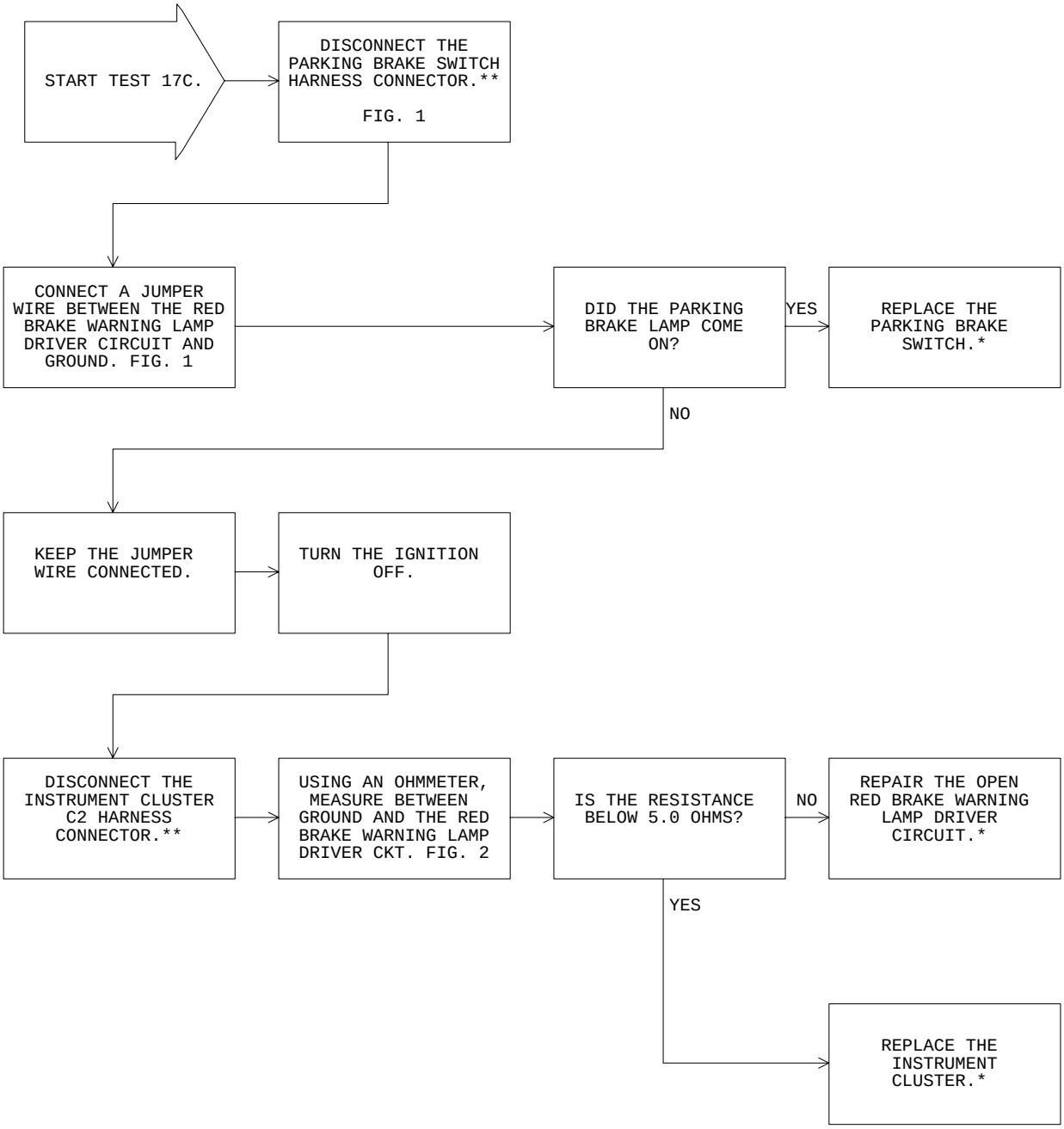

| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 3 | GY/BK | RED BRAKE WARNING LAMP DRIVER |
| 4 | BK/TN | WASHER FLUID SW. SENSE |
| 5 | LG | LEFT TURN SIGNAL |
| 6 | BK | GROUND |
| 8 | RD/YL | TRACTION CONTROL SW. SENSE |
| 9 | TN/BK | DECKLID AJAR SW. SENSE |
| 10 | GY | ENGINE OIL PRESSURE SW. SENSE |

80b243cd

***FIG. 2***

## TEST 17C REPAIRING PARK BRAKE WARNING LAMP OPERATING IMPROPERLY

**Perform TEST 17A Before Proceeding**

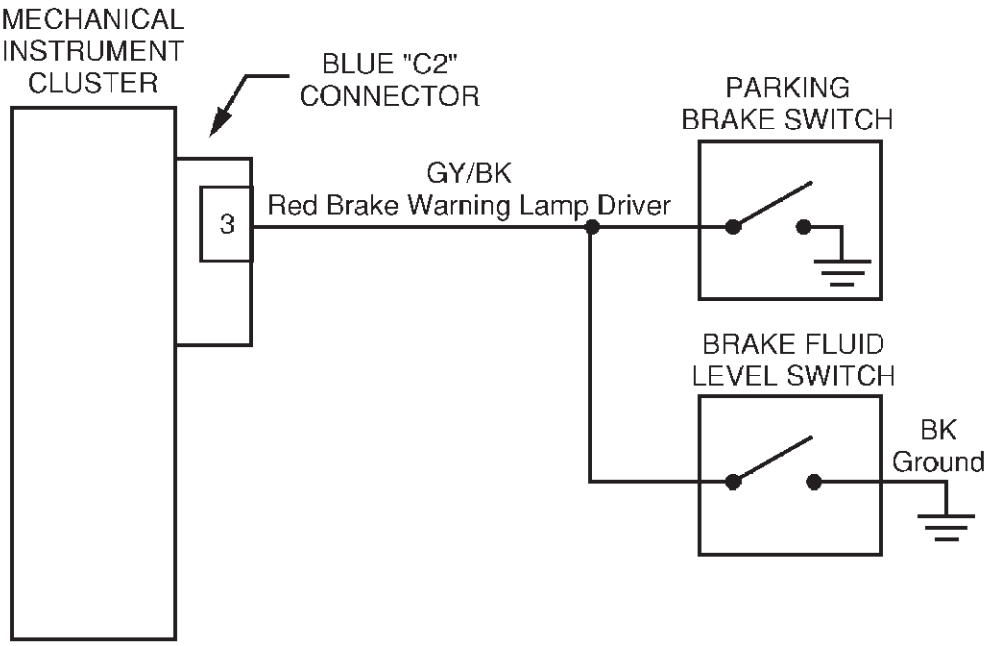



***Perform Verification TEST VER-2A.***

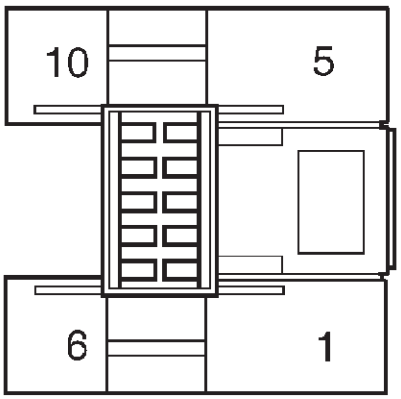
***Check connectors - Clean / repair as necessary.***

**TEST 17D** | **REPAIRING PARK BRAKE WARNING LAMP OPERATING IMPROPERLY**

**Perform TEST 17A Before Proceeding**




**INSTRUMENT CLUSTER "C2" (BLUE) 10 WAY CONNECTOR**



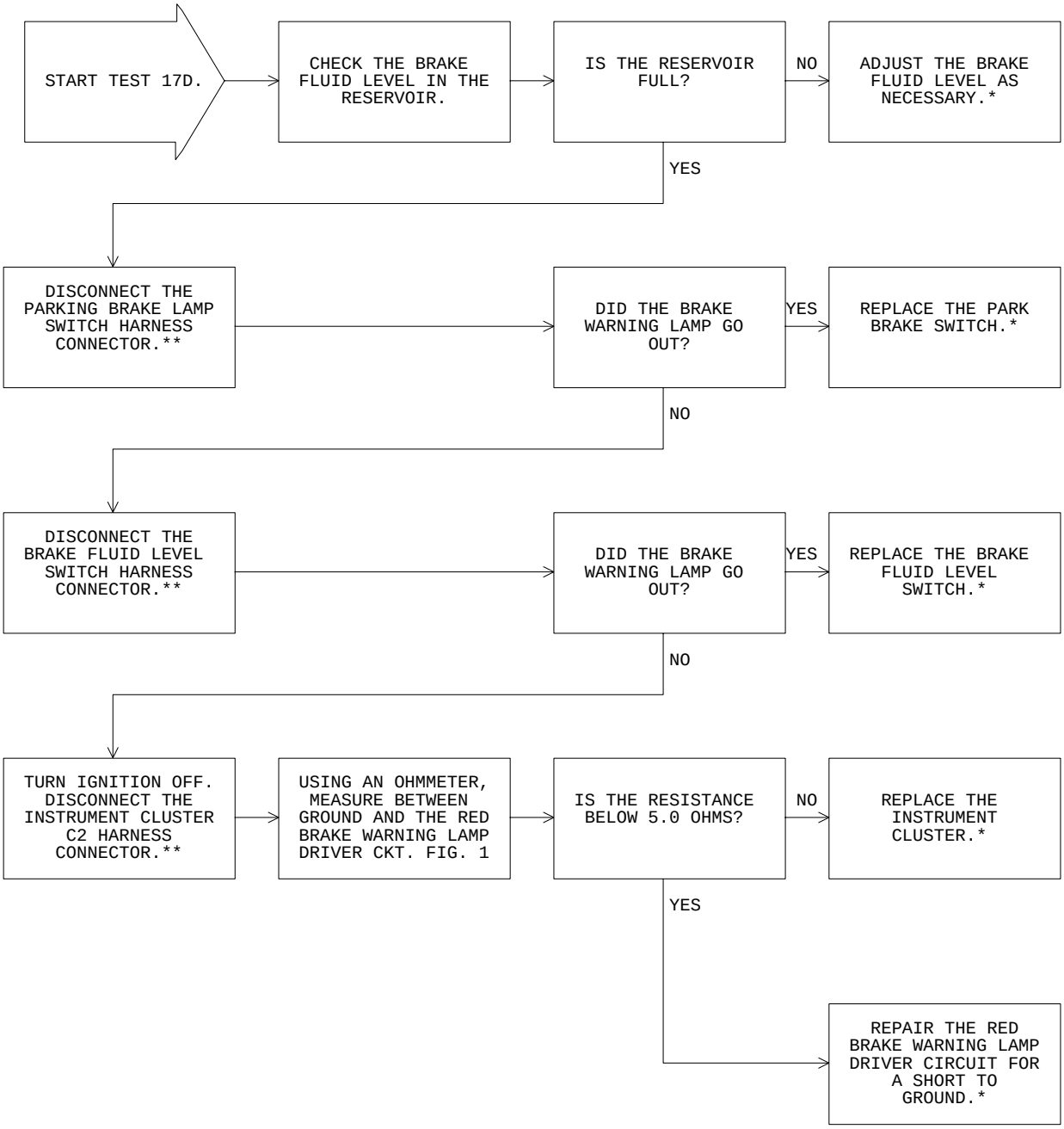

| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 3 | GY/BK | RED BRAKE WARNING LAMP DRIVER |
| 4 | BK/TN | WASHER FLUID SW. SENSE |
| 5 | LG | LEFT TURN SIGNAL |
| 6 | BK | GROUND |
| 8 | RD/YL | TRACTION CONTROL SW. SENSE |
| 9 | TN/BK | DECKLID AJAR SW. SENSE |
| 10 | GY | ENGINE OIL PRESSURE SW. SENSE |

80b243cd

***FIG. 1***

## TEST 17D REPAIRING PARK BRAKE WARNING LAMP OPERATING IMPROPERLY

**Perform TEST 17A Before Proceeding**

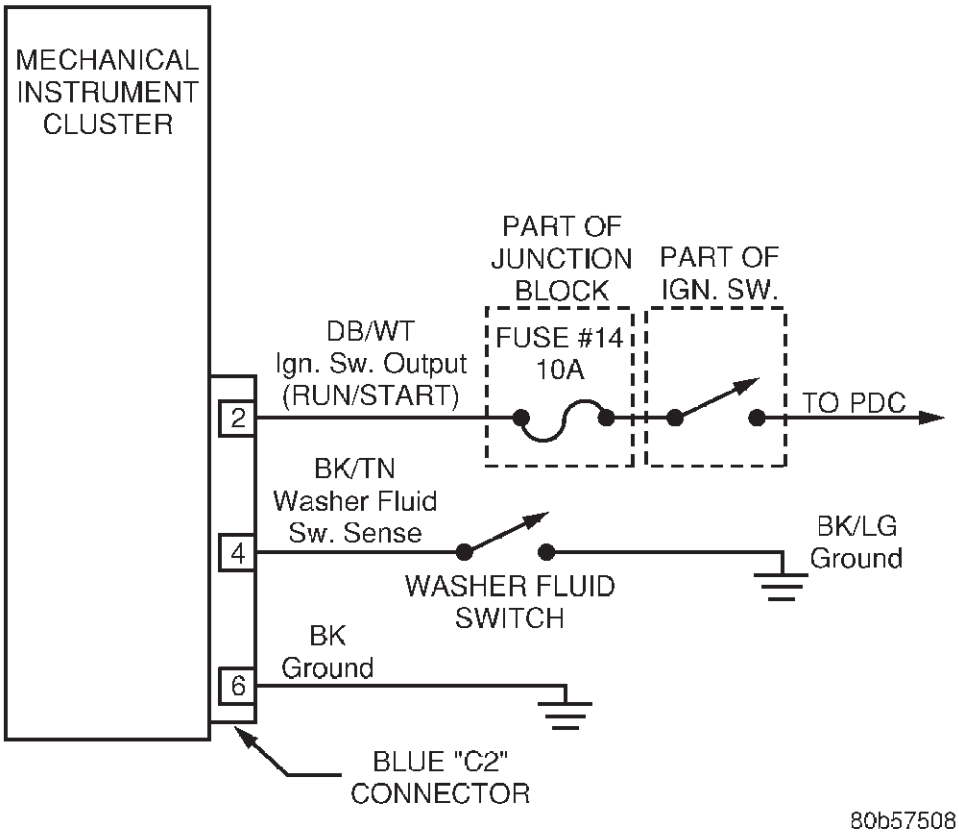



***Perform Verification TEST VER-2A.**

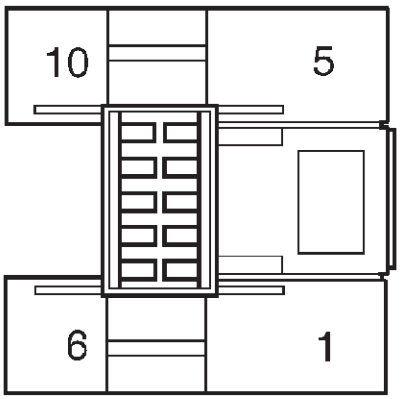
****Check connectors - Clean / repair as necessary.**

## TEST 18A REPAIRING LOW WASHER FLUID INDICATOR OPERATING IMPROPERLY

**Perform TEST 1A Before Proceeding**




**INSTRUMENT CLUSTER "C2" (BLUE) 10 WAY CONNECTOR**



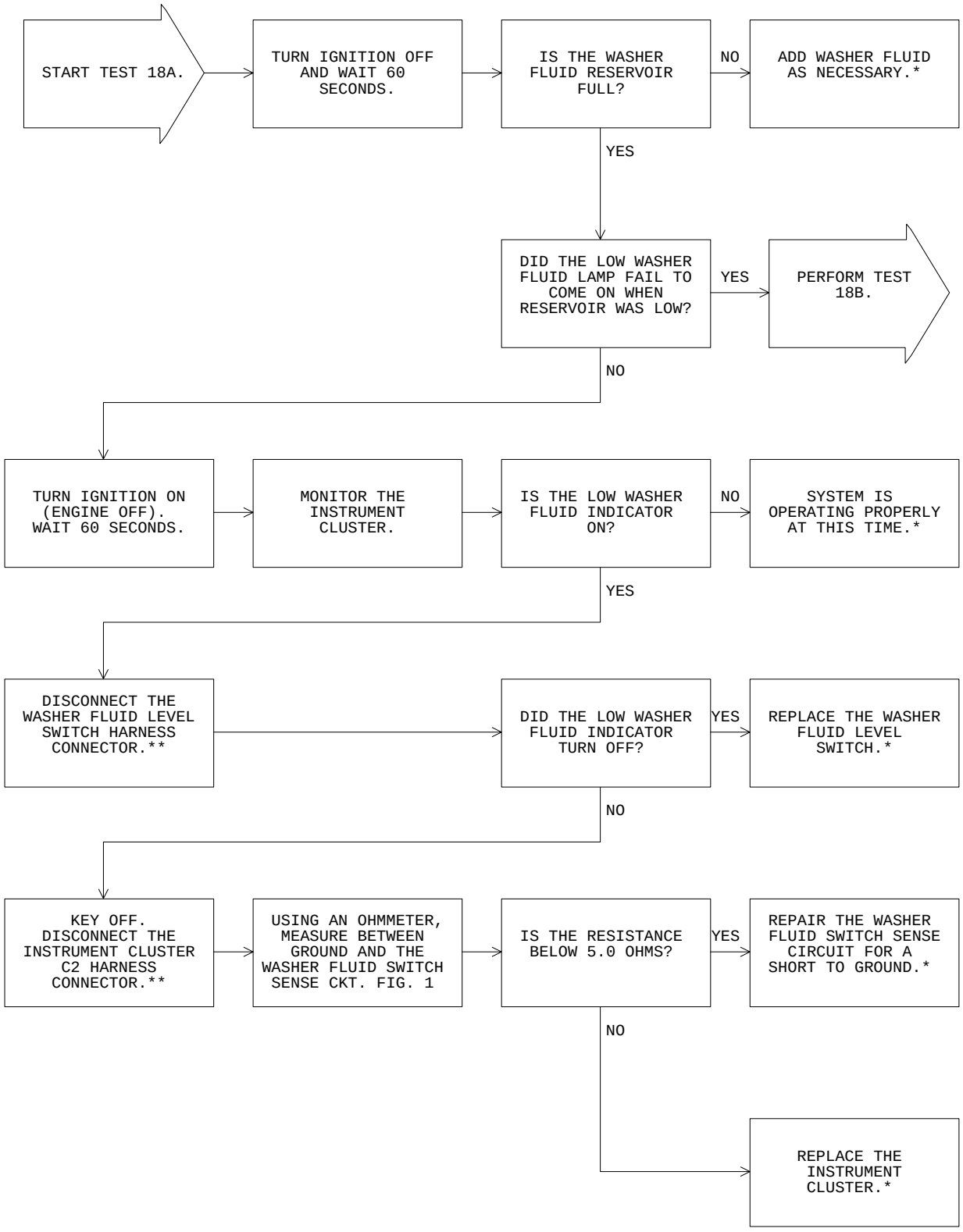

| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 3 | GY/BK | RED BRAKE WARNING LAMP DRIVER |
| 4 | BK/TN | WASHER FLUID SW. SENSE |
| 5 | LG | LEFT TURN SIGNAL |
| 6 | BK | GROUND |
| 8 | RD/YL | TRACTION CONTROL SW. SENSE |
| 9 | TN/BK | DECKLID AJAR SW. SENSE |
| 10 | GY | ENGINE OIL PRESSURE SW. SENSE |

80b243cd

*FIG. 1*

## TEST 18A REPAIRING LOW WASHER FLUID INDICATOR OPERATING IMPROPERLY

**Perform TEST 1A Before Proceeding**

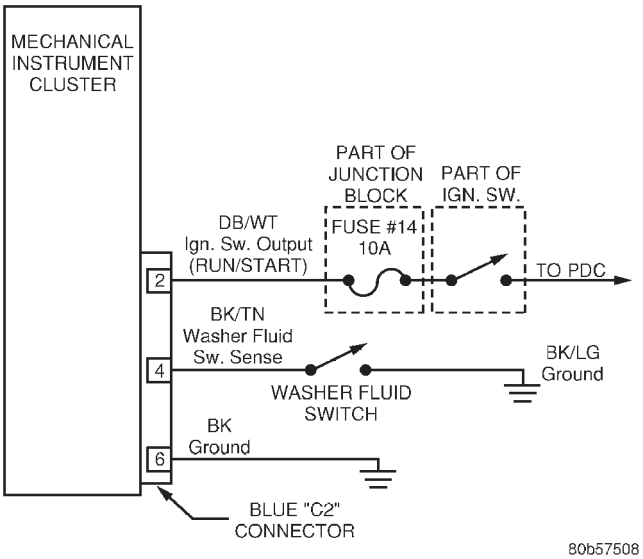



***Perform Verification TEST VER-2A.***

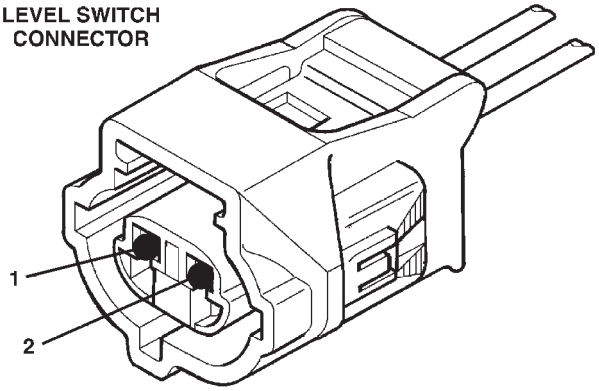
***Check connectors - Clean / repair as necessary.***

## TEST 18B REPAIRING LOW WASHER FLUID INDICATOR OPERATING IMPROPERLY

**Perform TEST 18A Before Proceeding**




**WASHER FLUID LEVEL SWITCH CONNECTOR**

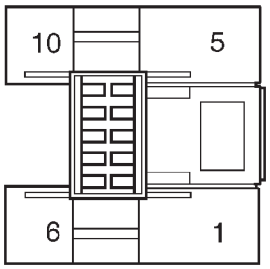



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | BK/TN | WASHER FLUID SWITCH SENSE |

80b5cbe4

***FIG. 1***

**INSTRUMENT CLUSTER "C2" (BLUE) 10 WAY CONNECTOR**



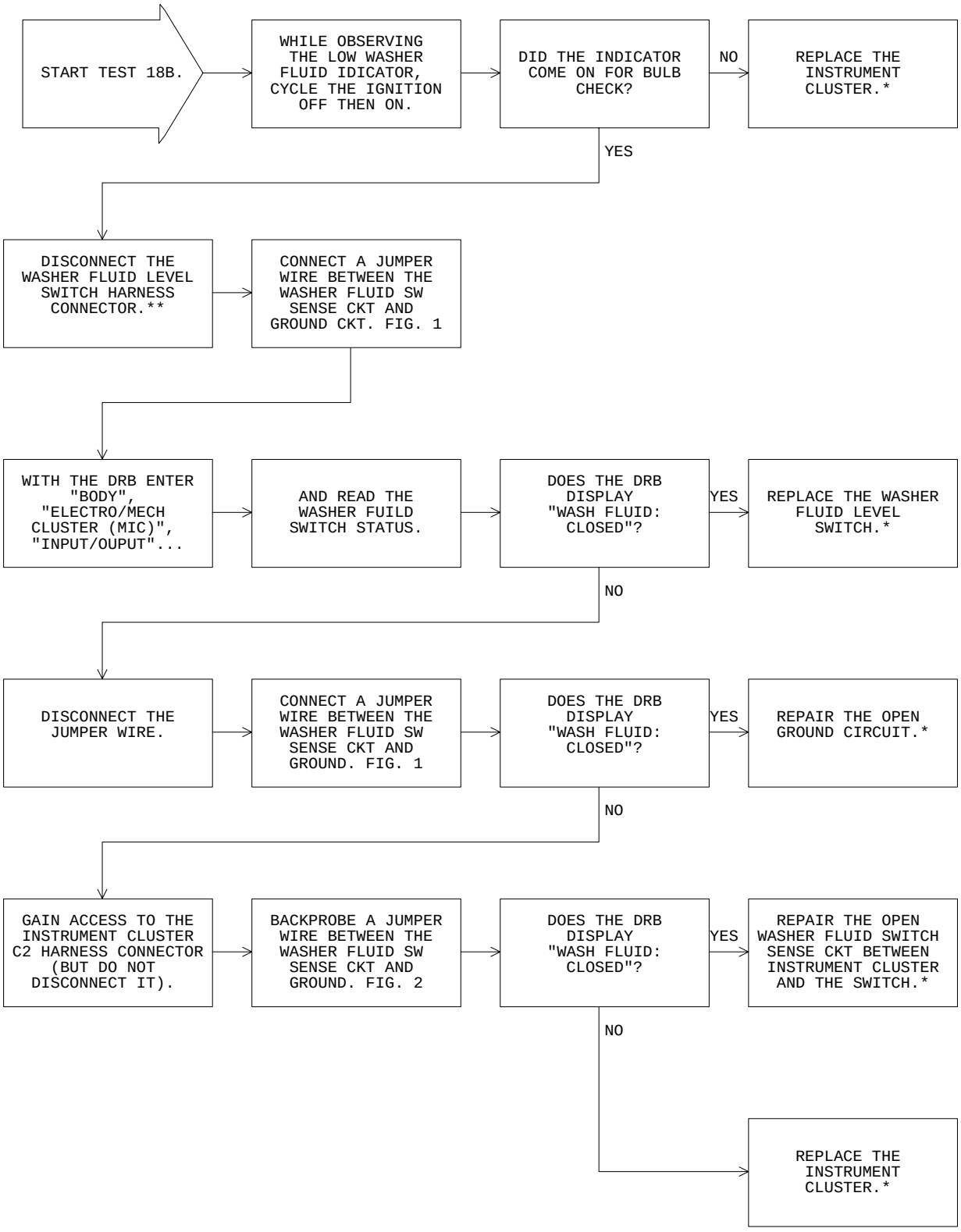

| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 3 | GY/BK | RED BRAKE WARNING LAMP DRIVER |
| 4 | BK/TN | WASHER FLUID SW. SENSE |
| 5 | LG | LEFT TURN SIGNAL |
| 6 | BK | GROUND |
| 8 | RD/YL | TRACTION CONTROL SW. SENSE |
| 9 | TN/BK | DECKLID AJAR SW. SENSE |
| 10 | GY | ENGINE OIL PRESSURE SW. SENSE |

80b243cd

***FIG. 2***

## TEST 18B REPAIRING LOW WASHER FLUID INDICATOR OPERATING IMPROPERLY

**Perform TEST 18A Before Proceeding**

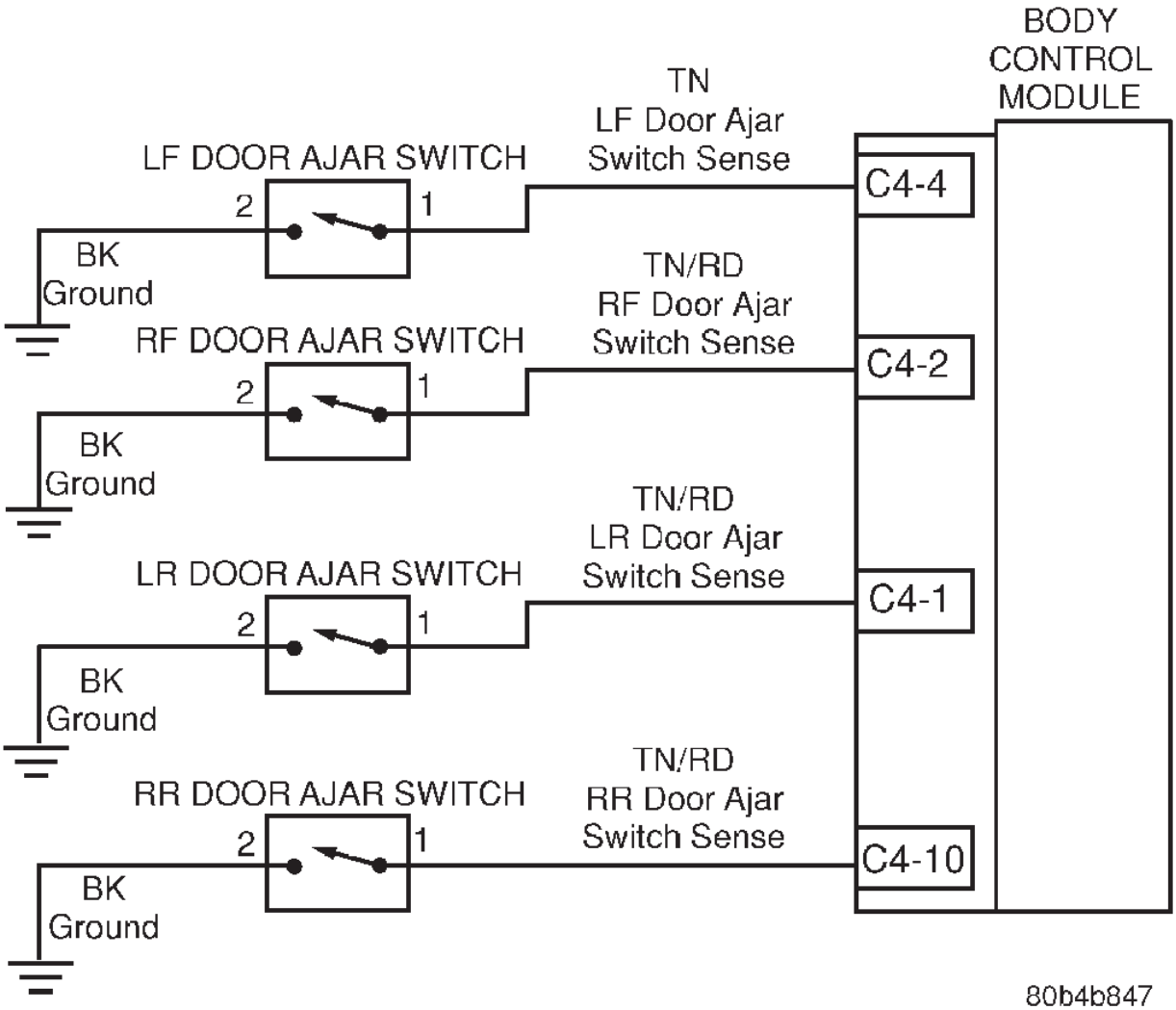



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

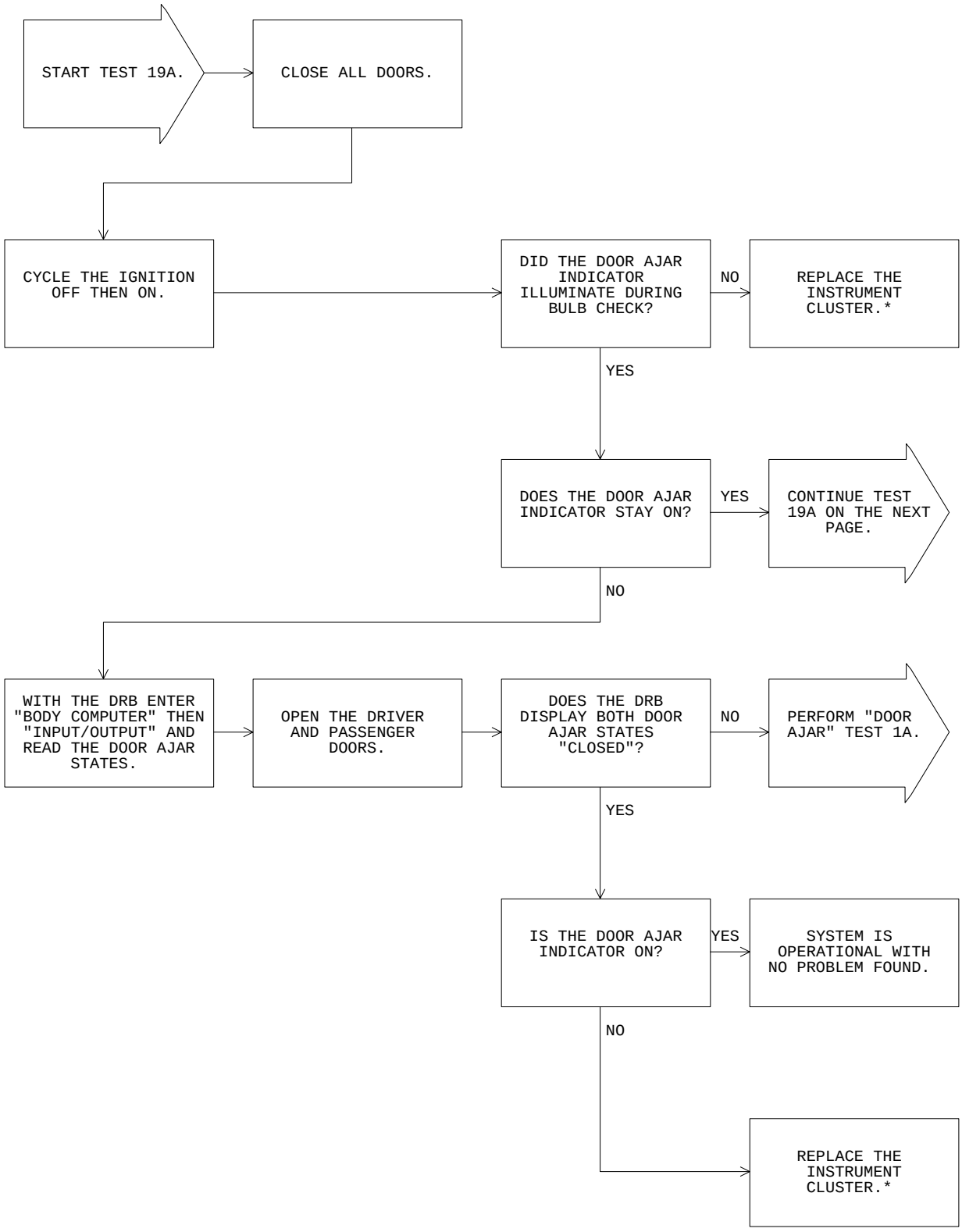
**TEST 19A** REPAIRING DOOR AJAR INDICATOR

**Perform TEST 1A Before Proceeding**



## TEST 19A REPAIRING DOOR AJAR INDICATOR

**Perform TEST 1A Before Proceeding**

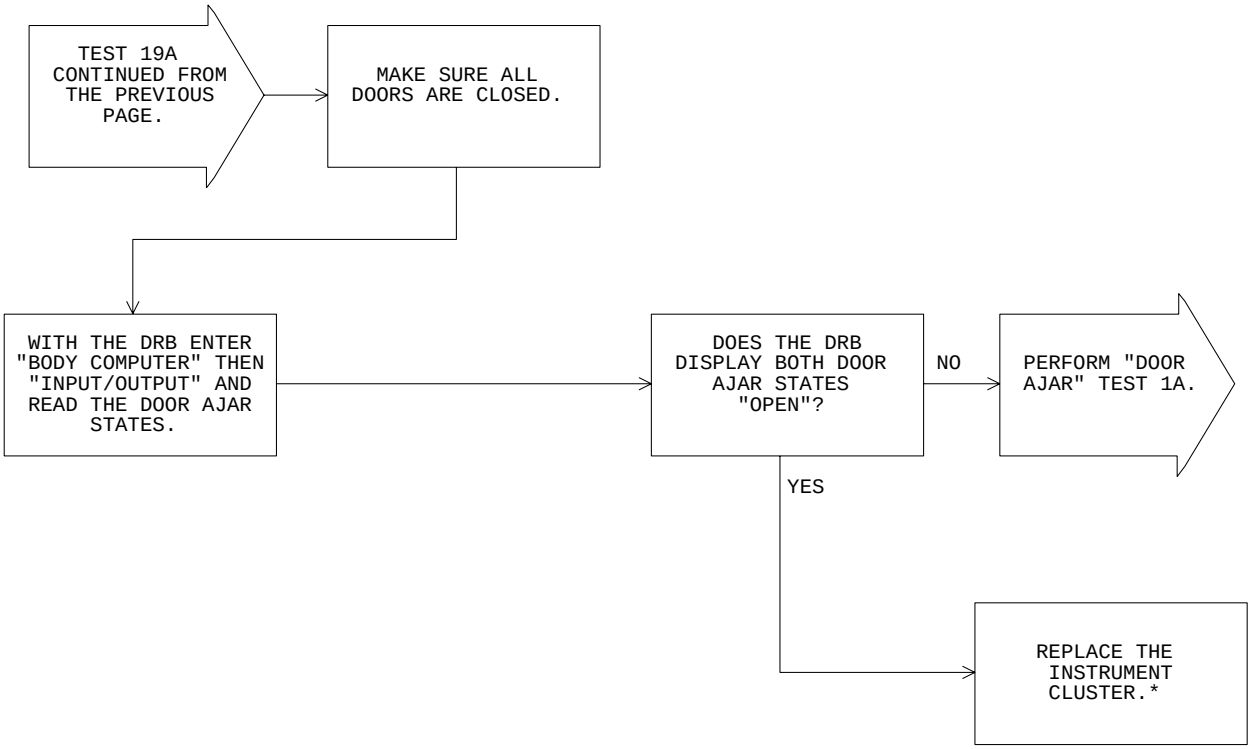



***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## NOTES

## TEST 19A CONTINUED - REPAIRING DOOR AJAR INDICATOR

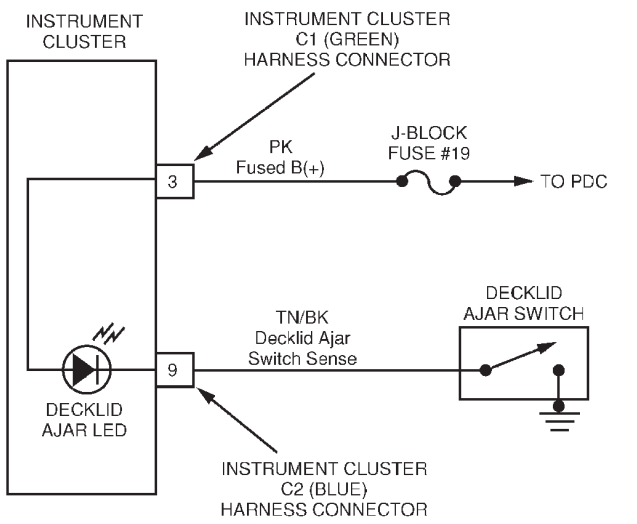


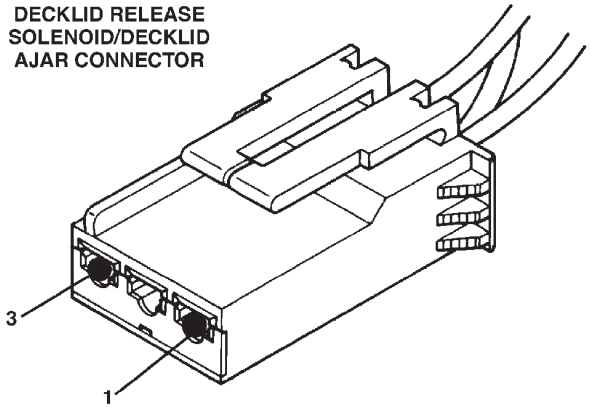

***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 20A REPAIRING TRUNK AJAR INDICATOR

**Perform TEST 1A Before Proceeding**

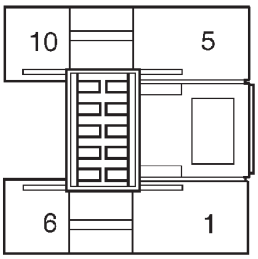



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | TN/BK | DECKLID AJAR SWITCH SENSE |
| 3 | BK/WT | DECKLID RELEASE CONTROL |

*FIG. 1*

**INSTRUMENT CLUSTER "C2" (BLUE) 10 WAY CONNECTOR**

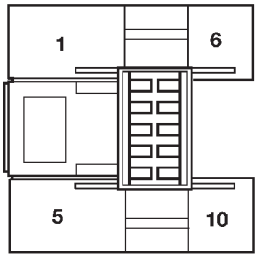



| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 3 | GY/BK | RED BRAKE WARNING LAMP DRIVER |
| 4 | BK/TN | WASHER FLUID SW. SENSE |
| 5 | LG | LEFT TURN SIGNAL |
| 6 | BK | GROUND |
| 8 | RD/YL | TRACTION CONTROL SW. SENSE |
| 9 | TN/BK | DECKLID AJAR SW. SENSE |
| 10 | GY | ENGINE OIL PRESSURE SW. SENSE |

80b243cd

*FIG. 2*

**INSTRUMENT CLUSTER "C1" (GREEN) 10 WAY CONNECTOR**



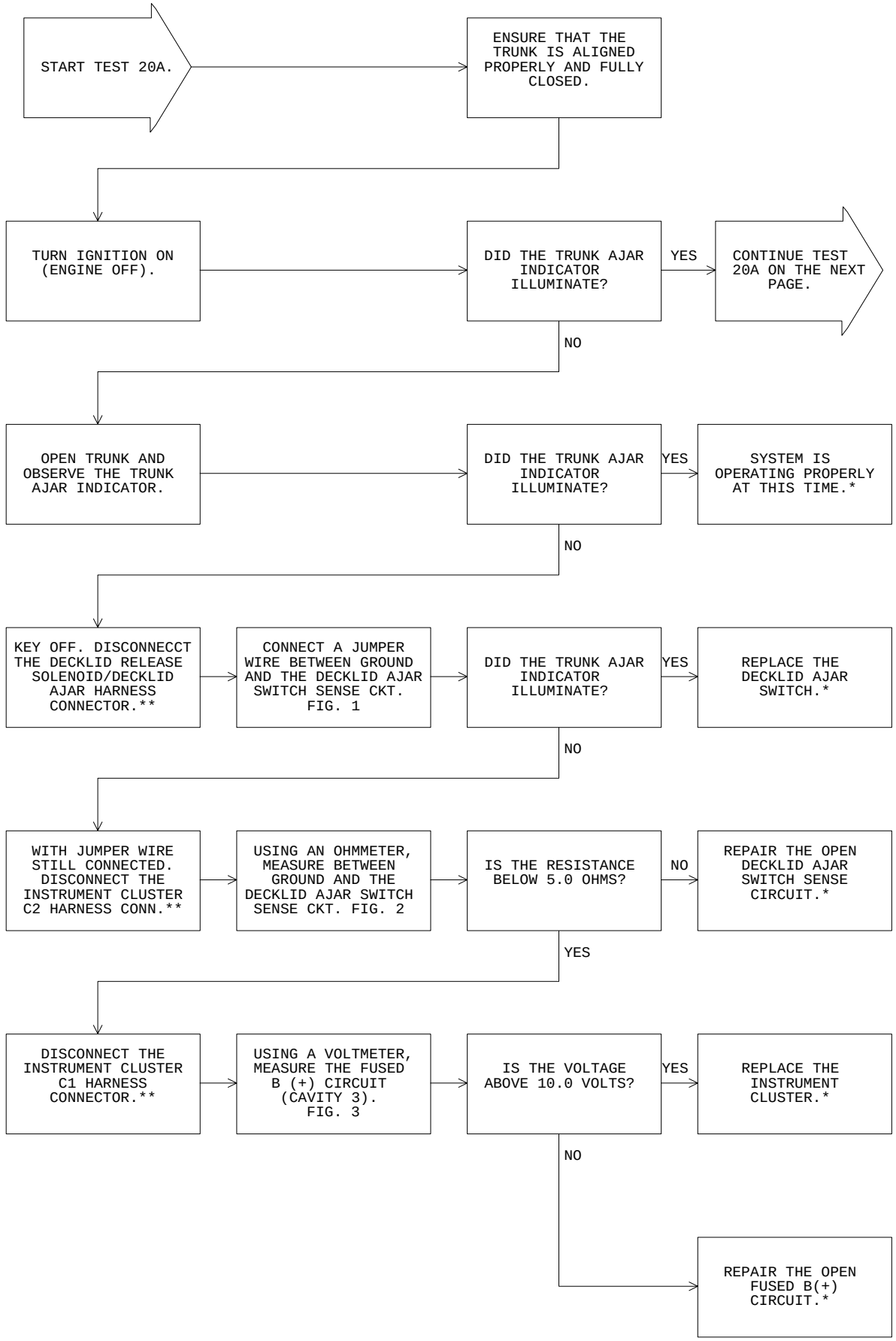

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK/RD | FUSED B(+) |
| 2 | RD/WT | FUSED IGNITION SW OUTPUT (OFF/RUN/START) |
| 3 | PK | FUSED B(+) |
| 4 | OR | PANEL LAMPS DRIVER |
| 5 | YL/VT | PCI BUS |
| 6 | BK/LG | GROUND |
| 8 | TN | RIGHT TURN SIGNAL |
| 10 | WT/LG | HIGH BEAM RELAY CONTROL |

80b4b7af

*FIG. 3*

## TEST 20A REPAIRING TRUNK AJAR INDICATOR

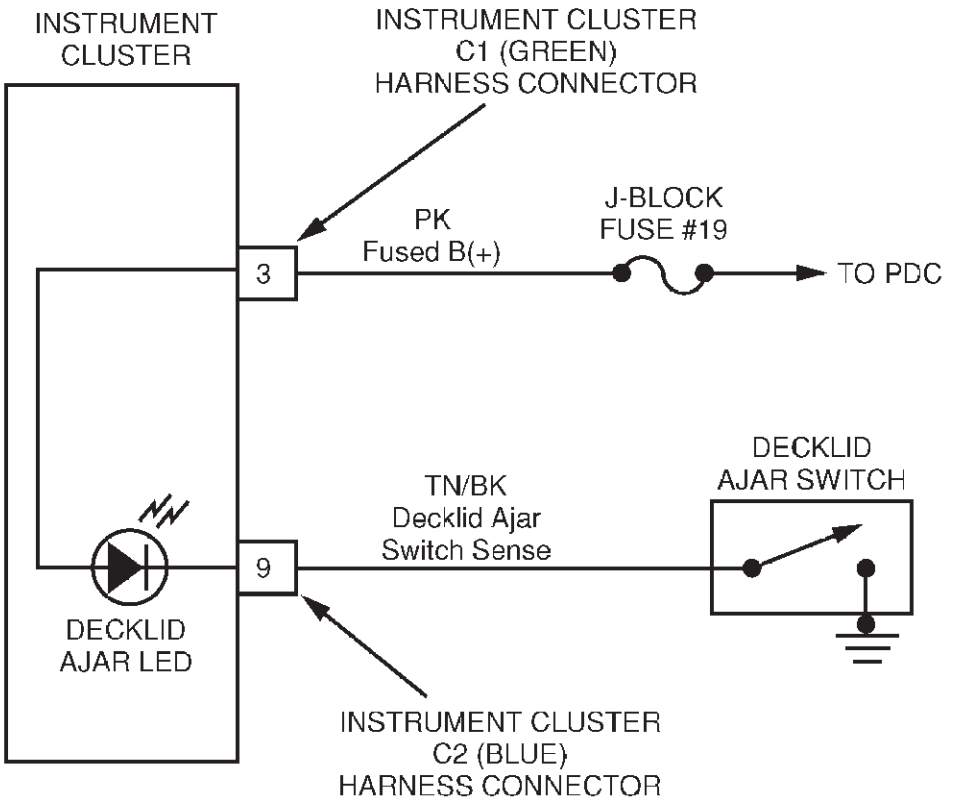
**Perform TEST 1A Before Proceeding**



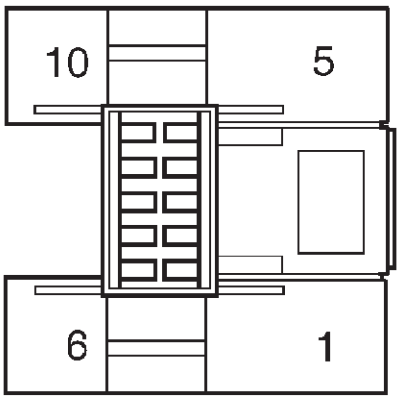

***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

**TEST 20A** CONTINUED - REPAIRING TRUNK AJAR INDICATOR




**INSTRUMENT CLUSTER "C2" (BLUE) 10 WAY CONNECTOR**

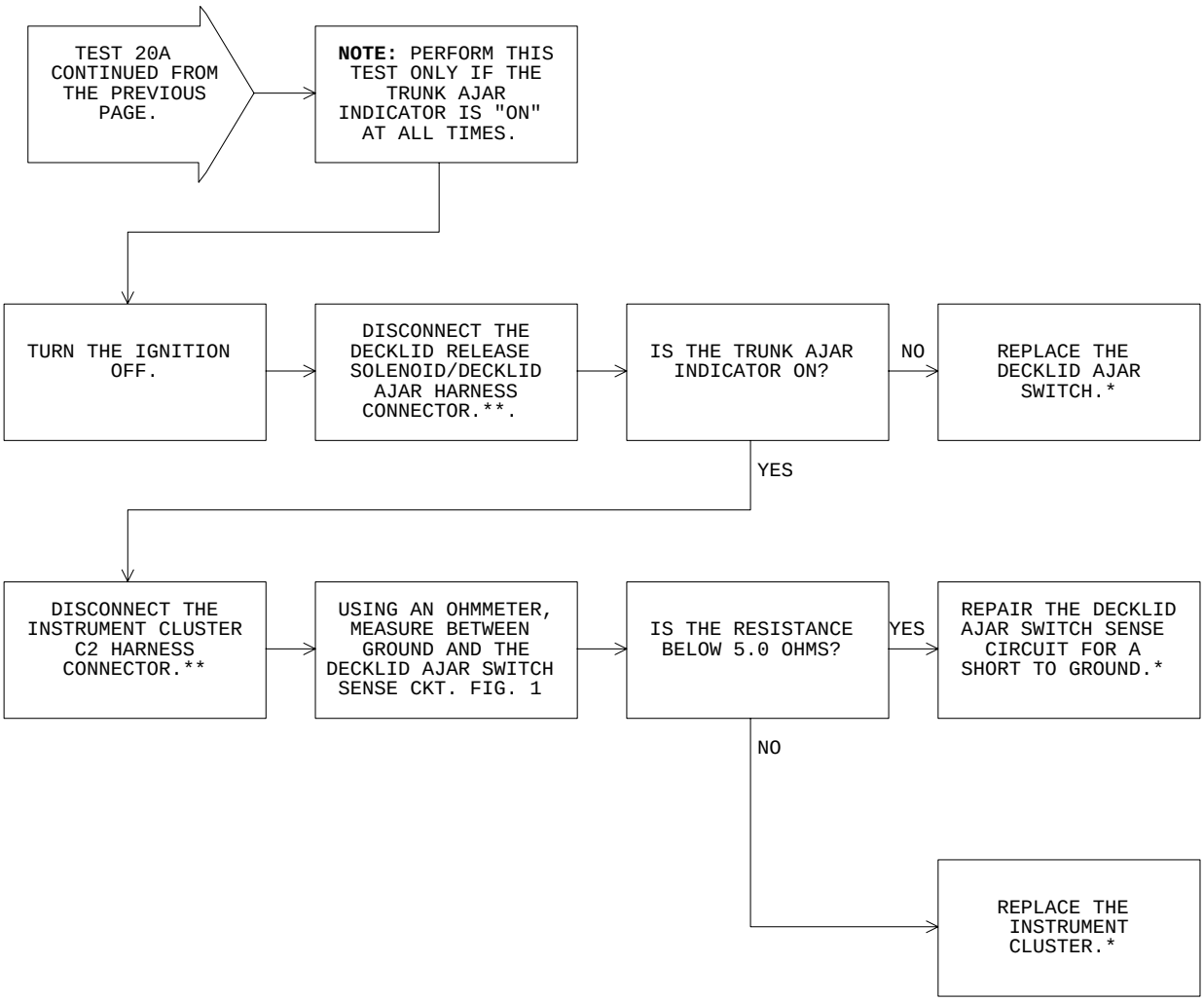



| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 3 | GY/BK | RED BRAKE WARNING LAMP DRIVER |
| 4 | BK/TN | WASHER FLUID SW. SENSE |
| 5 | LG | LEFT TURN SIGNAL |
| 6 | BK | GROUND |
| 8 | RD/YL | TRACTION CONTROL SW. SENSE |
| 9 | TN/BK | DECKLID AJAR SW. SENSE |
| 10 | GY | ENGINE OIL PRESSURE SW. SENSE |

80b243cd

*FIG. 1*

## TEST 20A CONTINUED - REPAIRING TRUNK AJAR INDICATOR

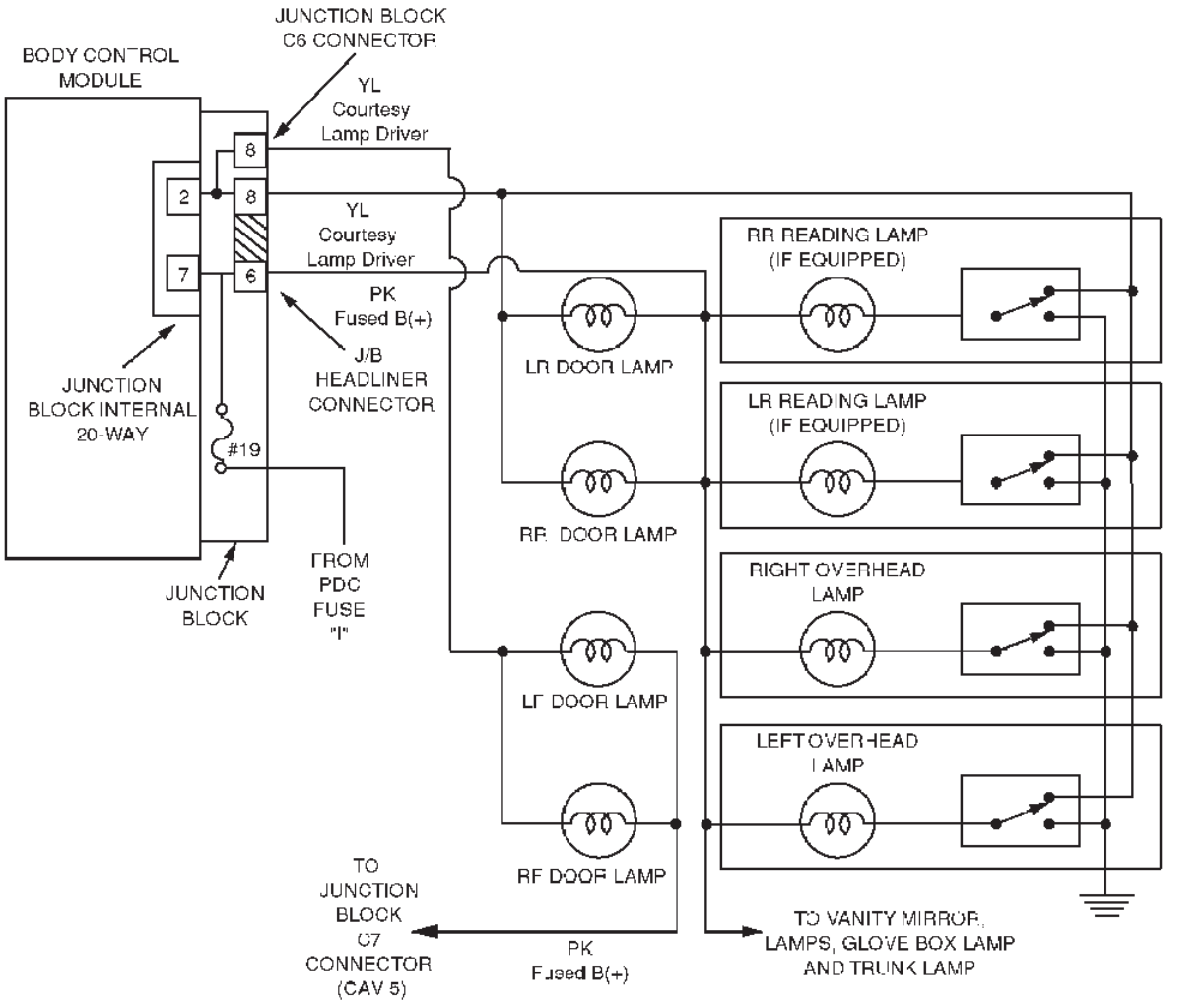



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

**TEST 1A** | **INDENTIFYING INTERIOR LIGHTING SYSTEM FAILURES**

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**



**TEST 1A** **INTERIOR LIGHTING SYSTEM**

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**

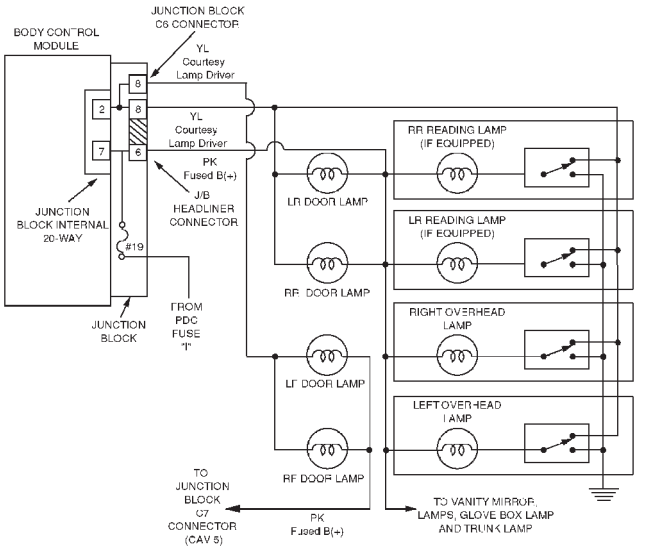
Verify the failure or customer's complaint and make sure the vehicle is experiencing the problem at this time.

1. With the DRB select ''Body'', ''Body Computer''. Verify Communication with the Body Controller, if ''No Response'' (or if any other communication problems are displayed). . . . . .perform "Vehicle Communication" TEST 1A.
2. With the DRB select ''Read DTCs''. If the code ''Headlamp Switch Input Failure'' is present . . . . . .perform "Exterior Lighting" TEST 1A.

| PROBLEM WITH | PERFORM |
|---|---|
| Courtesy Lamp output to short to battery | TEST 2A |
| Courtesy Lamps inoperative from all Doors and Courtesy Lamp Switch | TEST 3A |
| One inoperative Courtesy Lamp | TEST 4A |
| Courtesy Lamps remain on | TEST 5A |
| Courtesy Lamp Switch inoperative | TEST 6A |
| Illuminated Entry Inoperative (Courtesy lamps and door locks operate properly) | Replace BCM |

## TEST 2A REPAIRING COURTESY LAMP OUTPUT SHORT TO BATTERY

**Perform TEST 1A Before Proceeding**




**Name of code:** Courtesy Lamp Output Short to Battery

**When monitored:** Any time courtesy lamps should be on - door ajar, illuminated entry, or dimmer switch placed in dome lamp position.

**Set condition:** BCM detects an overvoltage condition on its courtesy lamp output.

**Theory of operation:** BCM monitors the voltage of its courtesy lamp output. It should be high (near battery) with the lamps off and low (<0.168 V) with the lamps on. If it is low with the lamps off, the output is probably open circuited. If it is high when the BCM attenpts to turn it on, it is probably shorted to battery.

**Possible causes:**
> Wiring short to battery
> BCM failure

80b27c45

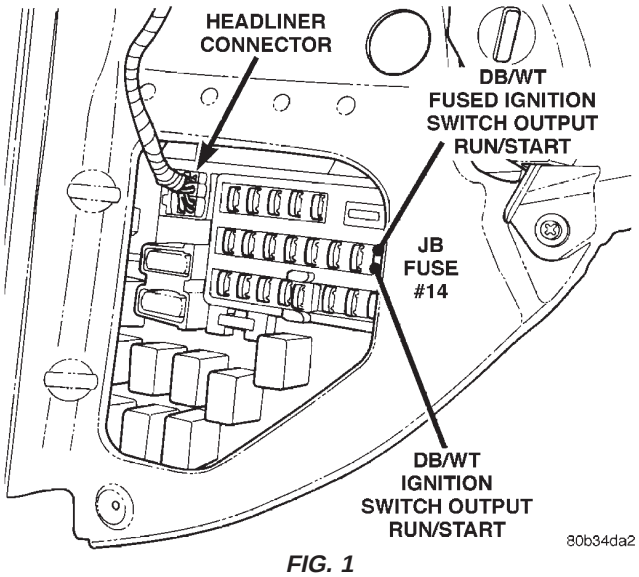
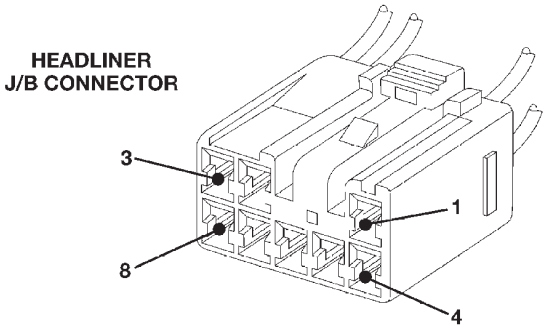


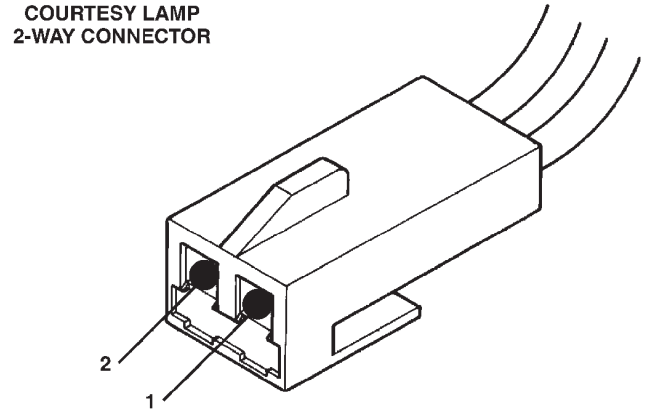

*FIG. 1*




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LG | GROUND |
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT |
| 3 | BK | GROUND |
| 4 | YL/VT | PCI BUS (OTIS) |
| 5 | VT/BK | BACK-UP LAMP FEED |
| 6 | PK | FUSED B(+) |
| 7 | RD | FUSED B(+) (SUNROOF) |
| 8 | YL | COURTESY LAMPS DRIVER |

80b1b389

*FIG. 2*



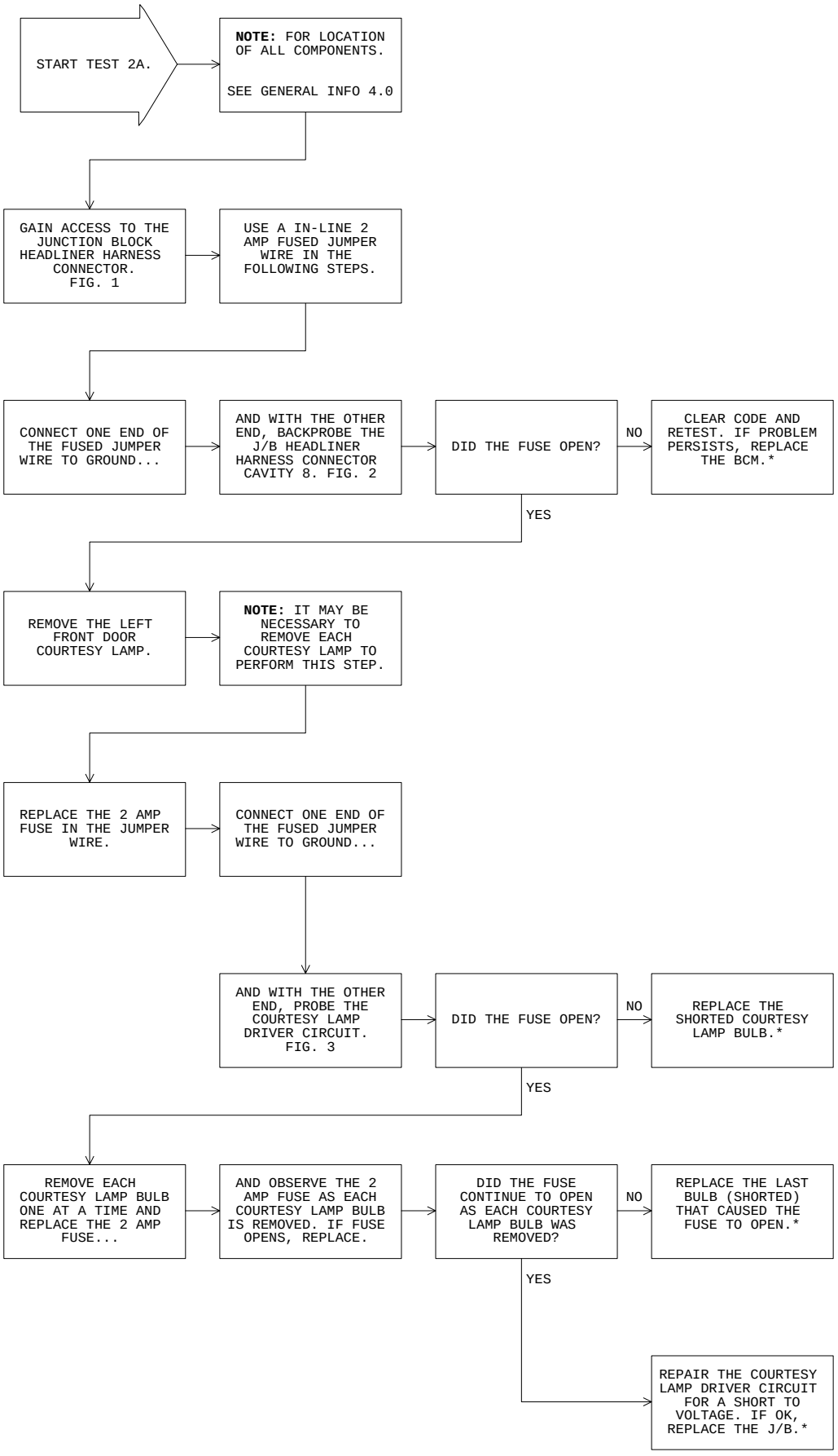

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK | FUSED B(+) |
| 2 | YL | COURTESY LAMPS DRIVER |

80b29f33

*FIG. 3*

## TEST 2A REPAIRING COURTESY LAMP OUTPUT SHORT TO BATTERY

**Perform TEST 1A Before Proceeding**

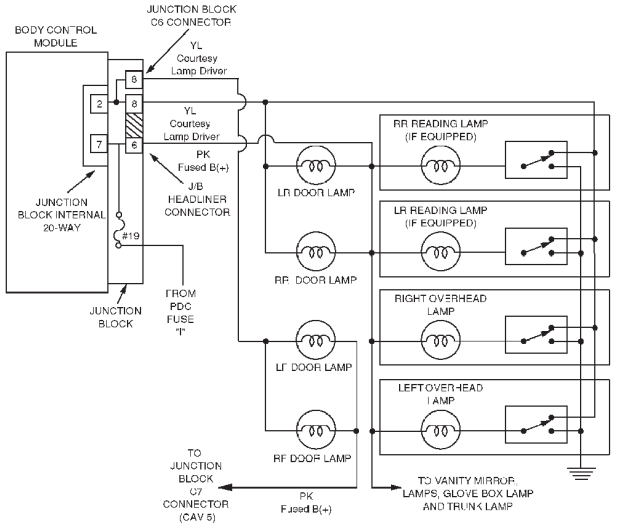



***Perform Verification TEST VER-2A.***

*****Check connectors - Clean / repair as necessary.***

## TEST 3A REPAIRING COURTESY LAMPS INOPERATIVE FROM ALL DOORS AND COURTESY LAMP SWITCH

**Perform TEST 1A Before Proceeding**



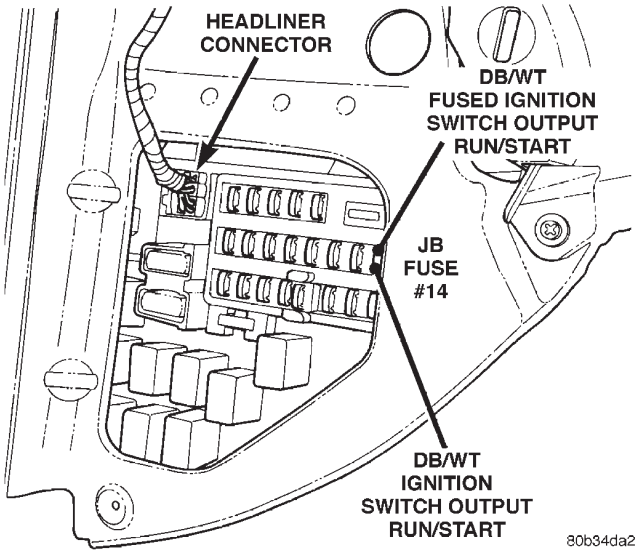
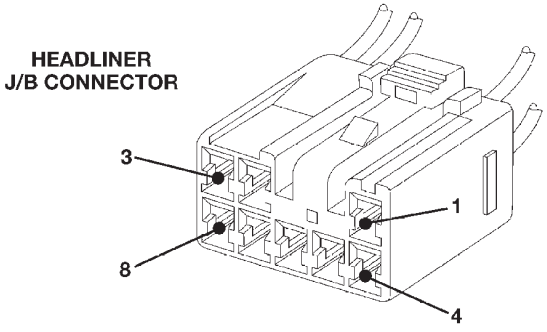




*FIG. 1*




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LG | GROUND |
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT |
| 3 | BK | GROUND |
| 4 | YL/VT | PCI BUS (OTIS) |
| 5 | VT/BK | BACK-UP LAMP FEED |
| 6 | PK | FUSED B(+) |
| 7 | RD | FUSED B(+) (SUNROOF) |
| 8 | YL | COURTESY LAMPS DRIVER |

80b1b389

*FIG. 2*

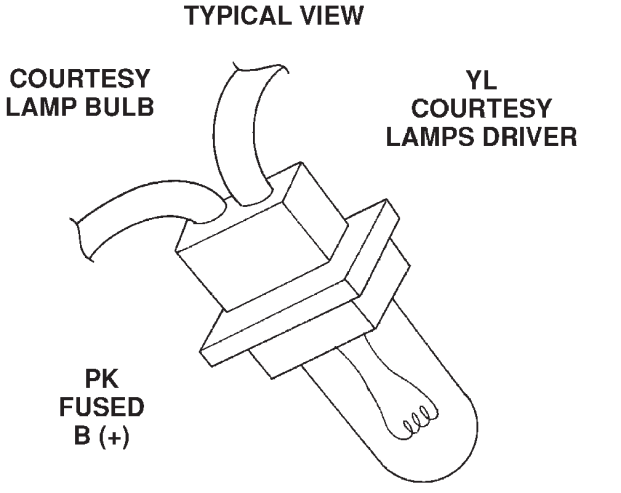
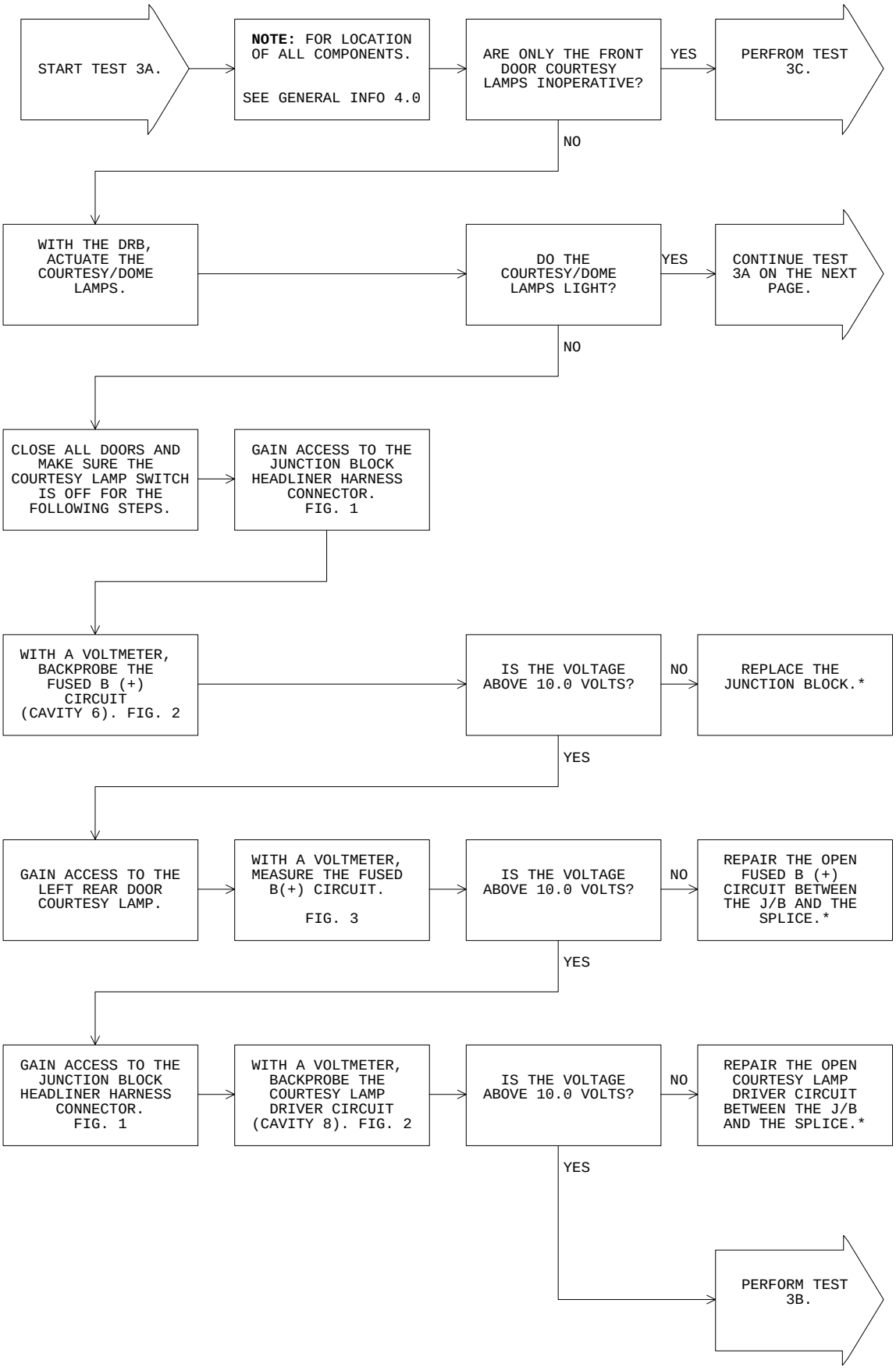



*FIG. 3*

## TEST 3A — REPAIRING COURTESY LAMPS INOPERATIVE FROM ALL DOORS AND COURTESY LAMP SWITCH

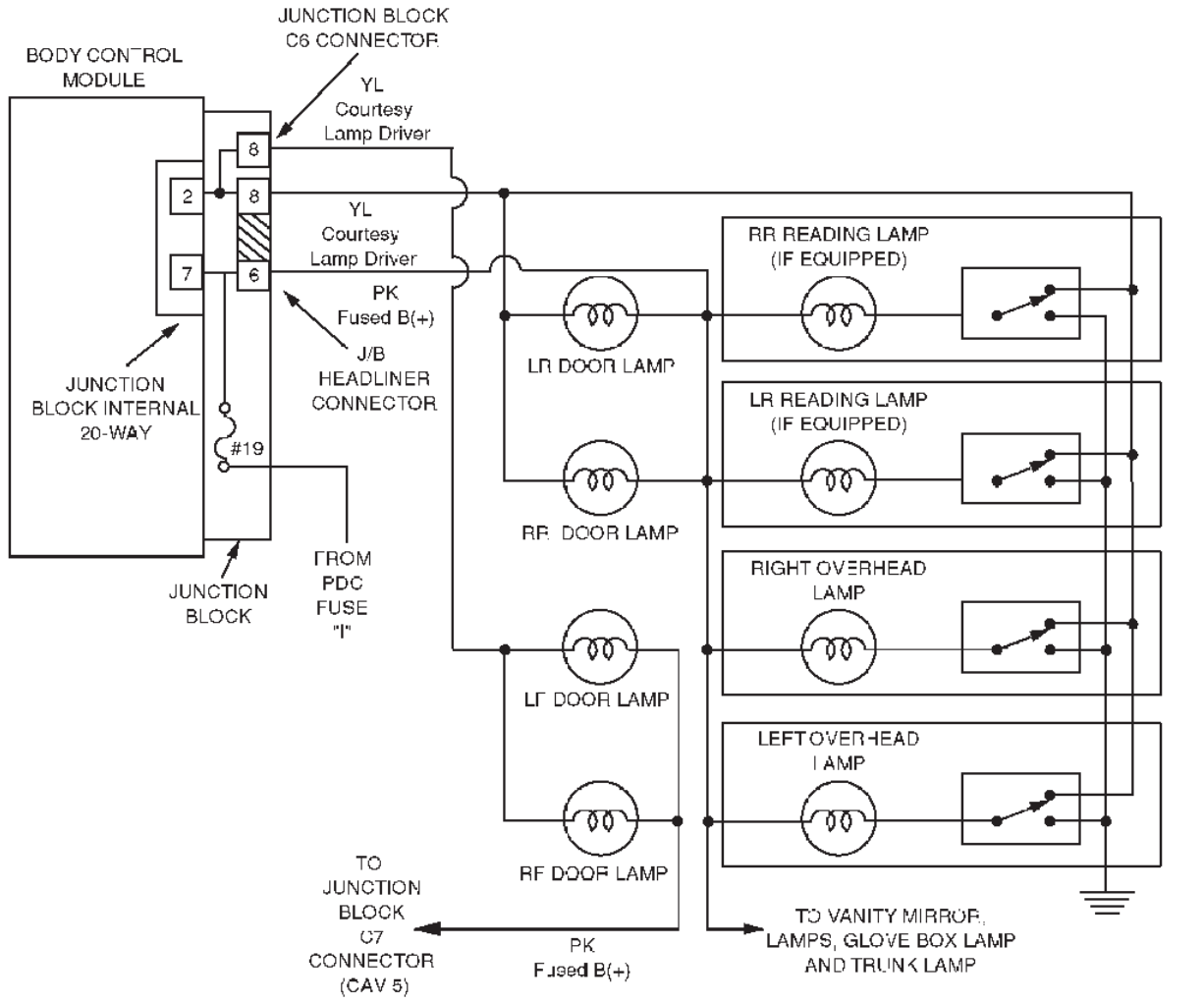
**Perform TEST 1A Before Proceeding**



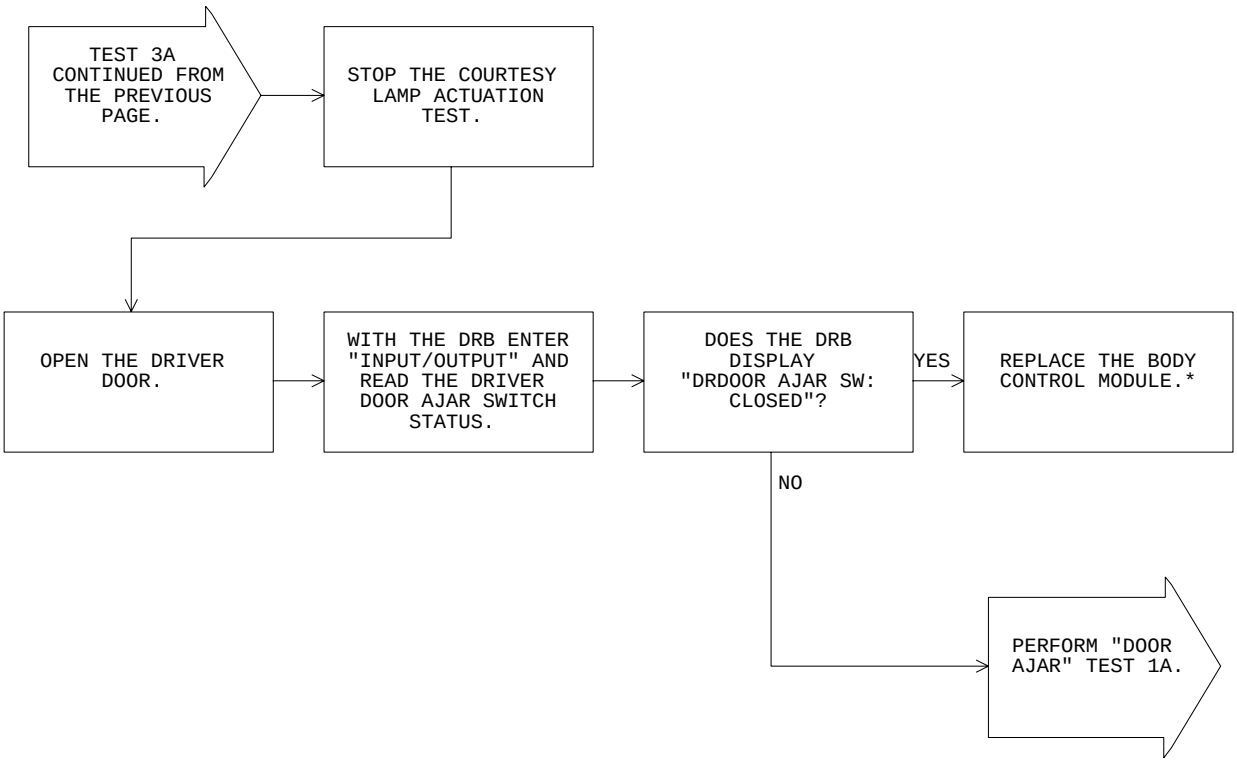

***Perform Verification TEST VER-2A.***

*****Check connectors - Clean / repair as necessary.***

**TEST 3A** CONTINUED - REPAIRING COURTESY LAMPS INOPERATIVE FROM ALL DOORS AND COURTESY LAMPS SWITCH



## TEST 3A — CONTINUED - REPAIRING COURTESY LAMPS INOPERATIVE FROM ALL DOORS AND COURTESY LAMPS SWITCH

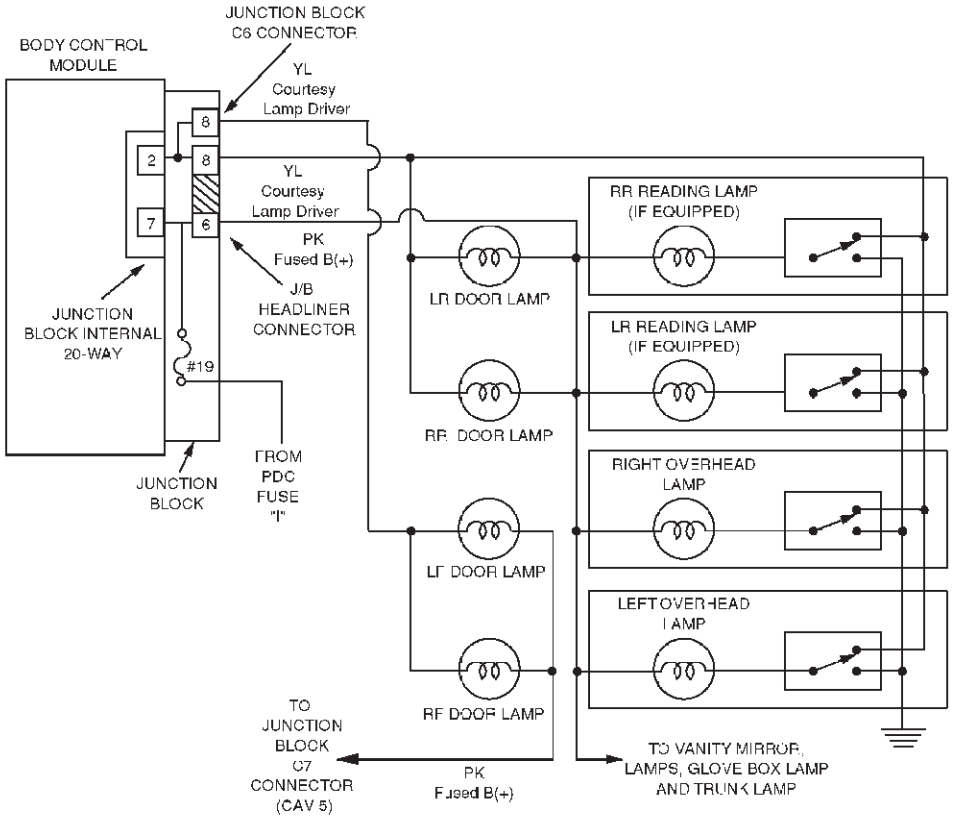



**Perform Verification TEST VER-2A.*

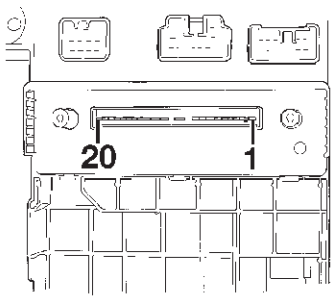
***Check connectors - Clean / repair as necessary.*

**TEST 3B** | **REPAIRING COURTESY LAMPS INOPERATIVE FROM ALL DOORS AND COURTESY LAMPS SWITCH**

**Perform TEST 3A Before Proceeding**




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**JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR**

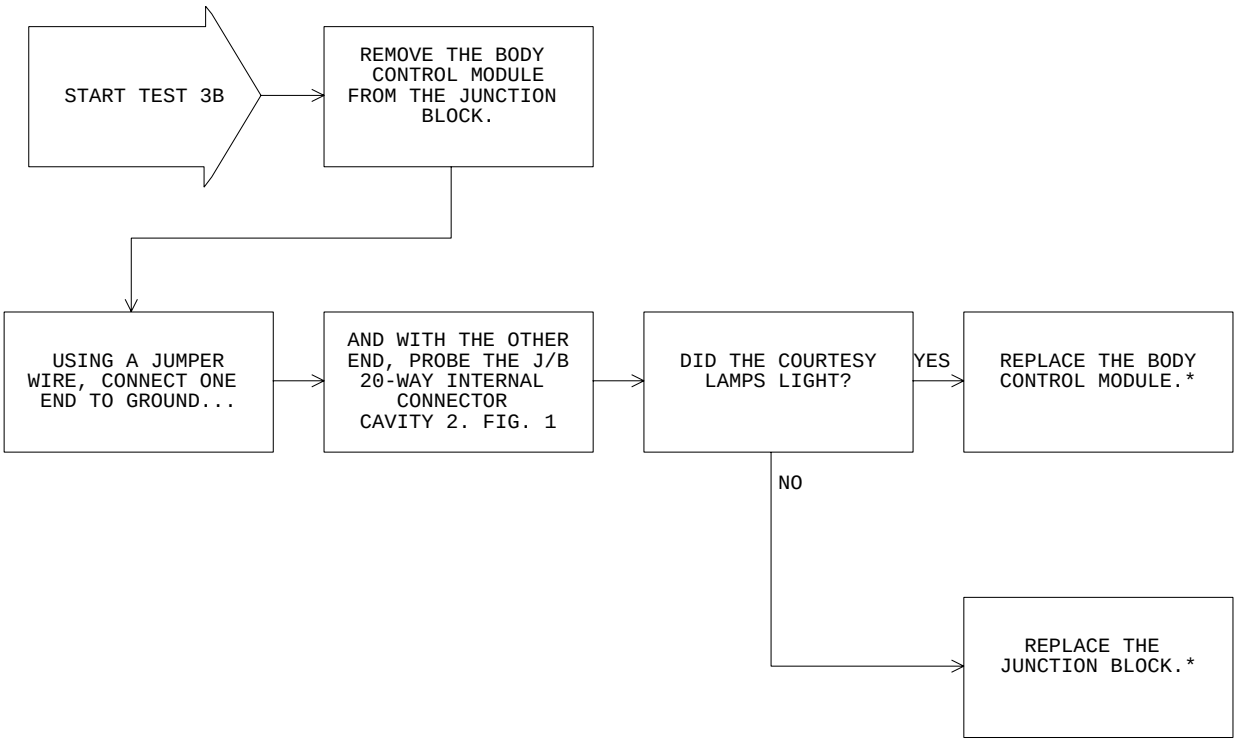
| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

***FIG. 1***

## TEST 3B REPAIRING COURTESY LAMPS INOPERATIVE FROM ALL DOORS AND COURTESY LAMPS SWITCH

**Perform TEST 3A Before Proceeding**

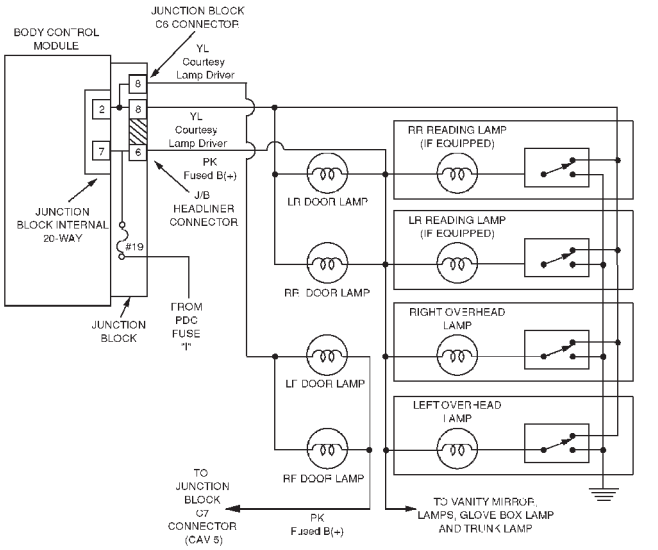



***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 3C REPAIRING - INOPERATIVE FRONT DOOR COURTESY LAMPS

**Perform TEST 3A Before Proceeding**



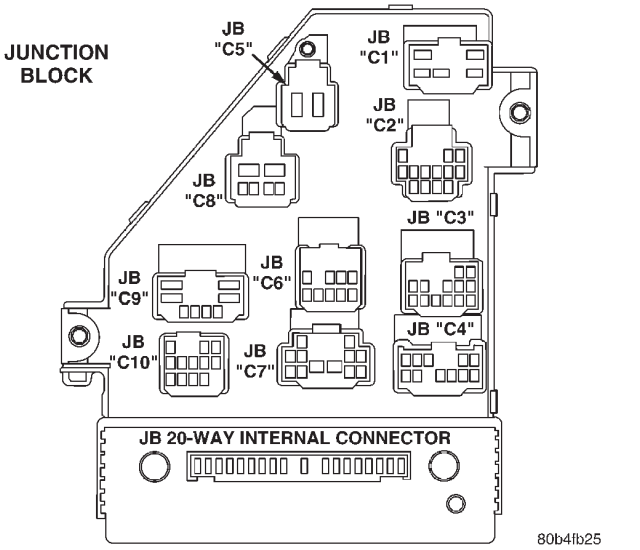




*FIG. 1*

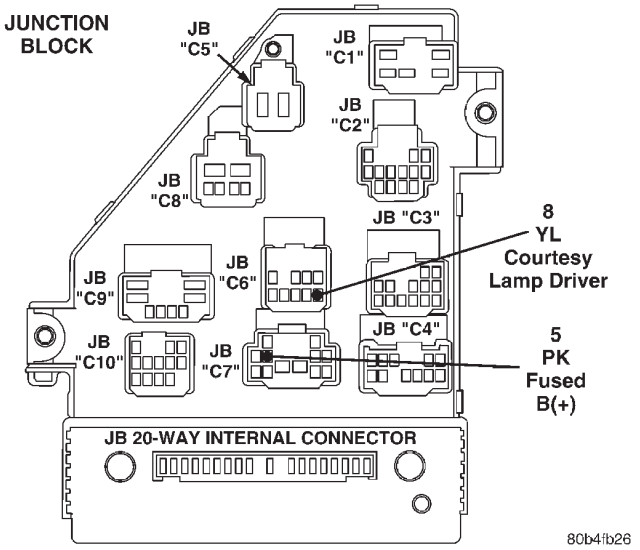



*FIG. 2*

**TYPICAL VIEW**

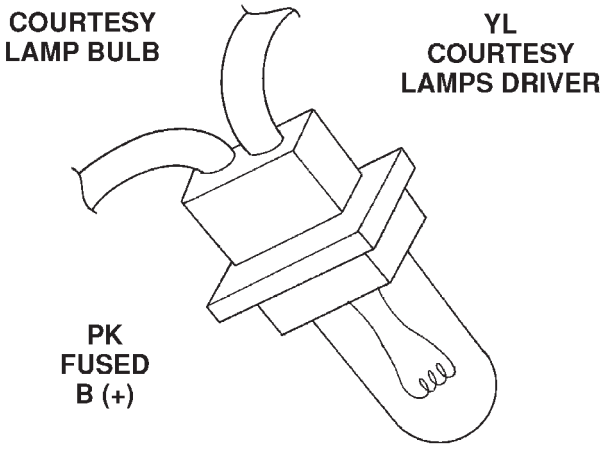
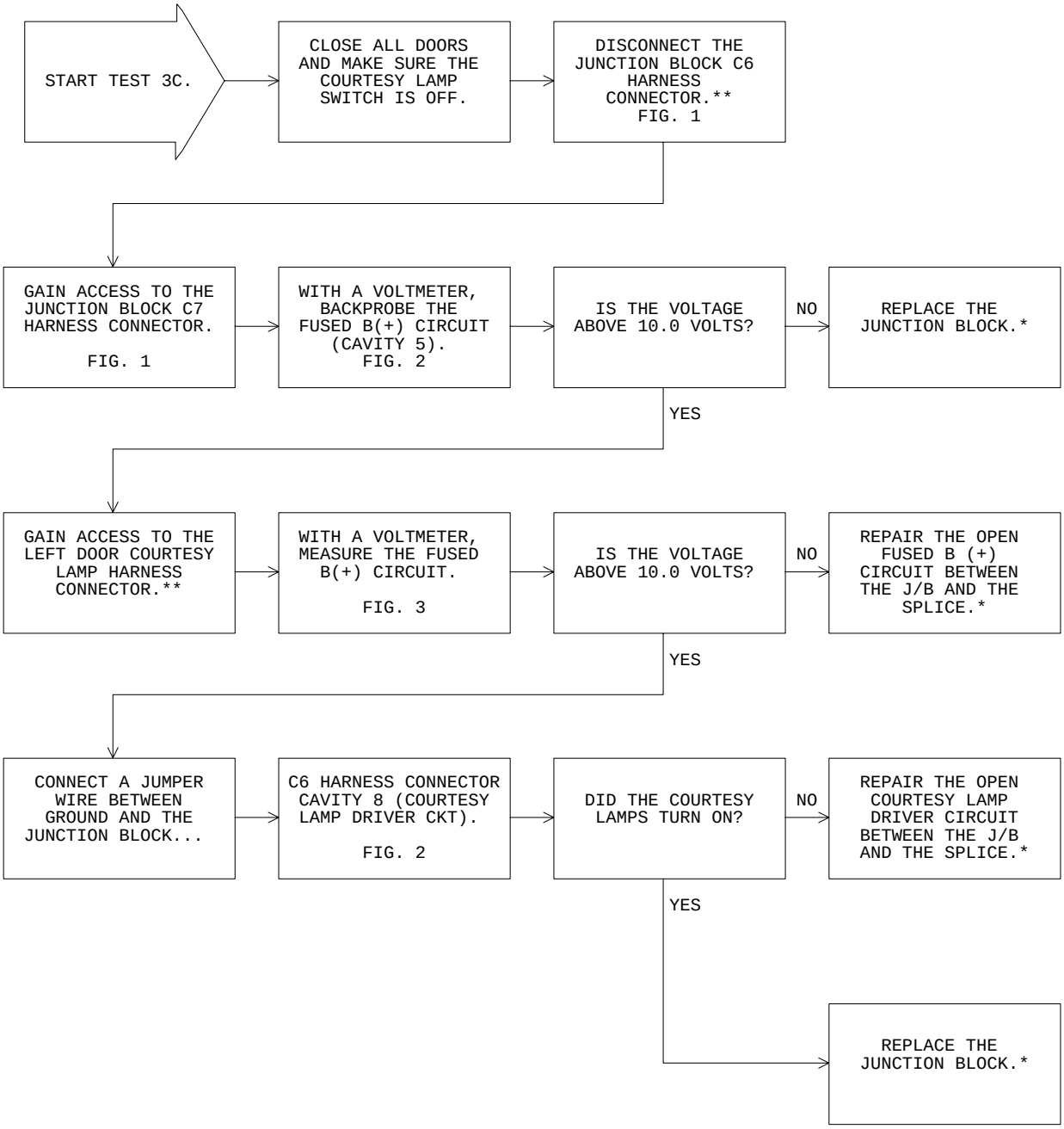



*FIG. 3*

## TEST 3C REPAIRING - INOPERATIVE FRONT DOOR COURTESY LAMPS

**Perform TEST 3A Before Proceeding**

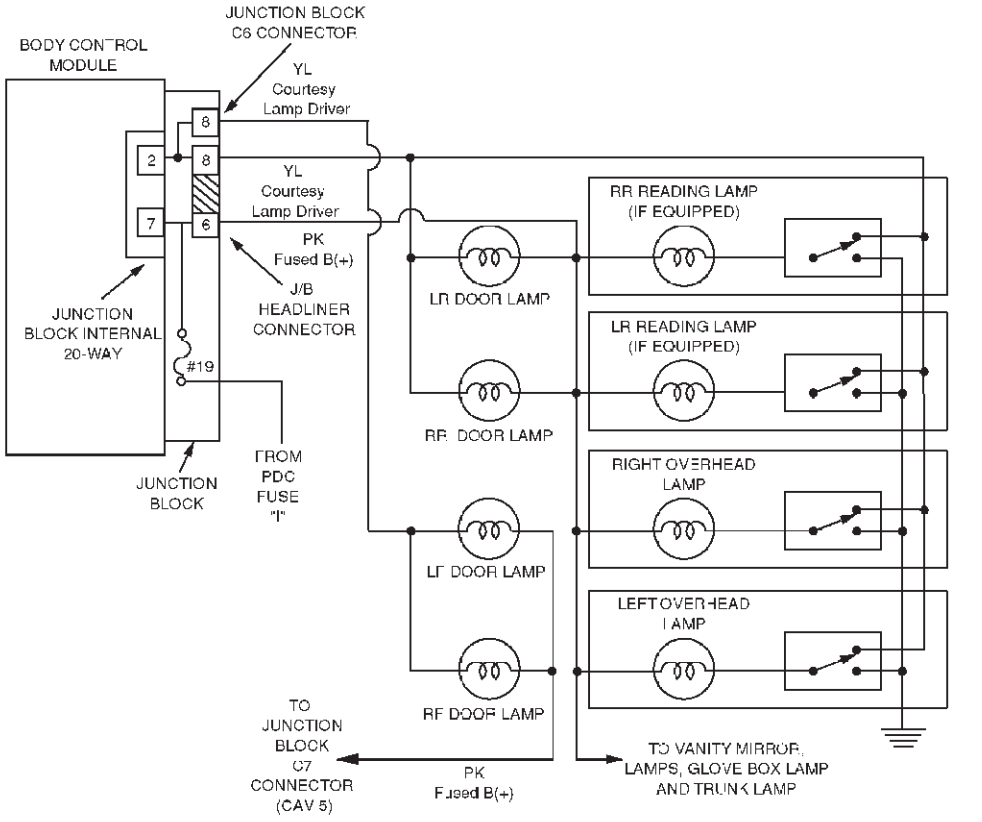



***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

## TEST 4A REPAIRING - ONE INOPERATIVE COURTESY LAMP

**Perform TEST 1A Before Proceeding**




## TYPICAL VIEW

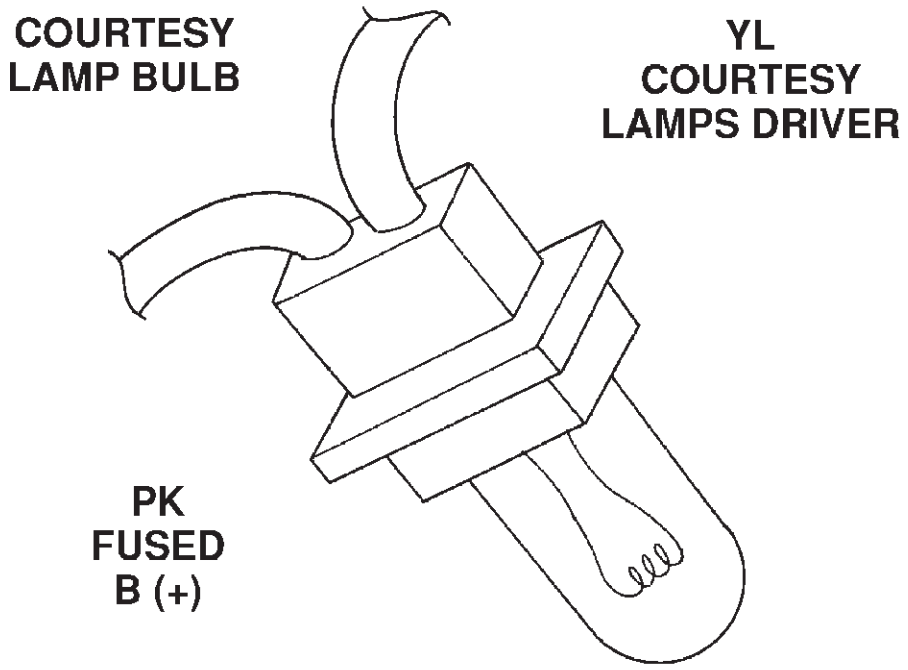
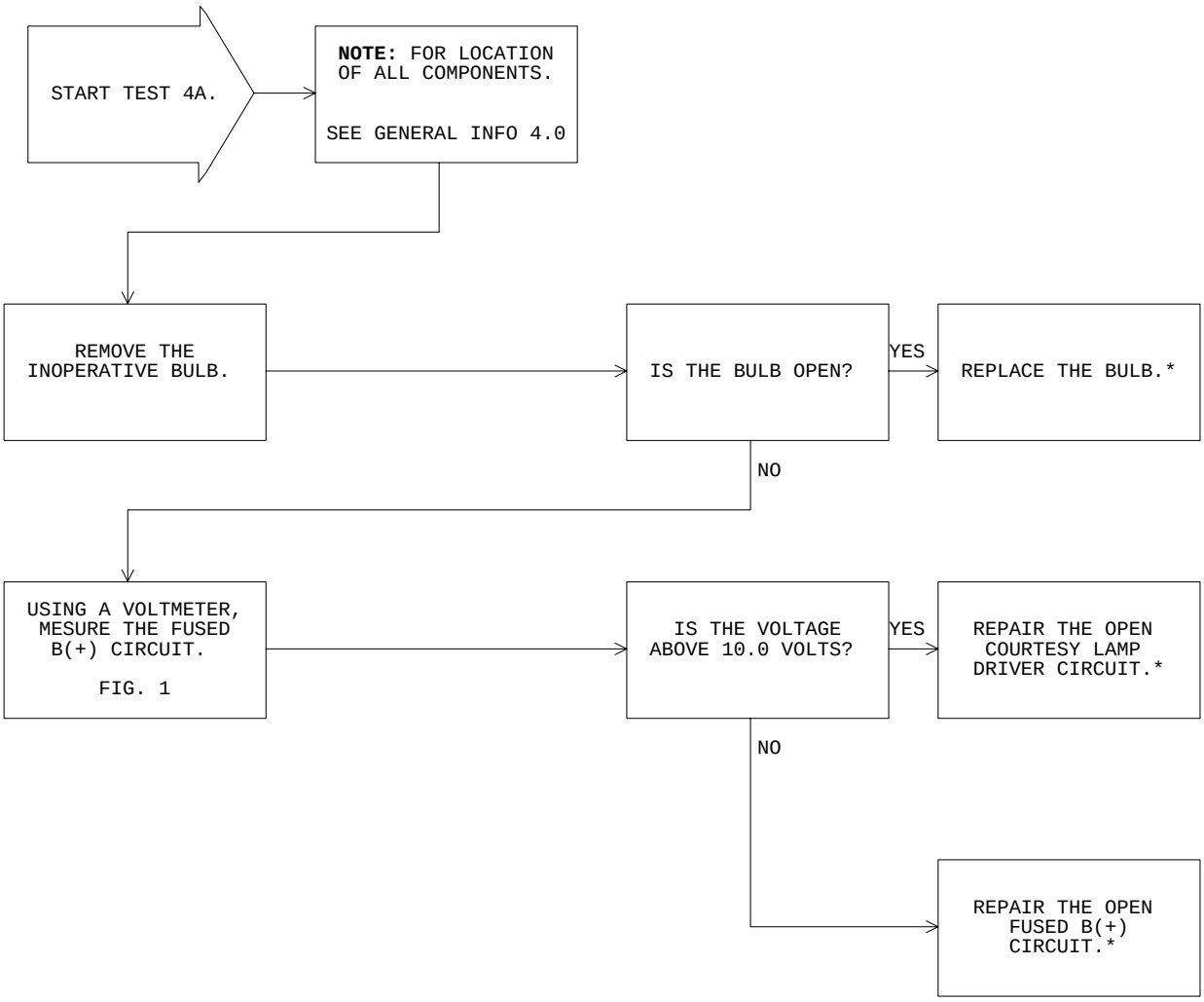



*FIG. 1*

## TEST 4A REPAIRING - ONE INOPERATIVE COURTESY LAMP

**Perform TEST 1A Before Proceeding**

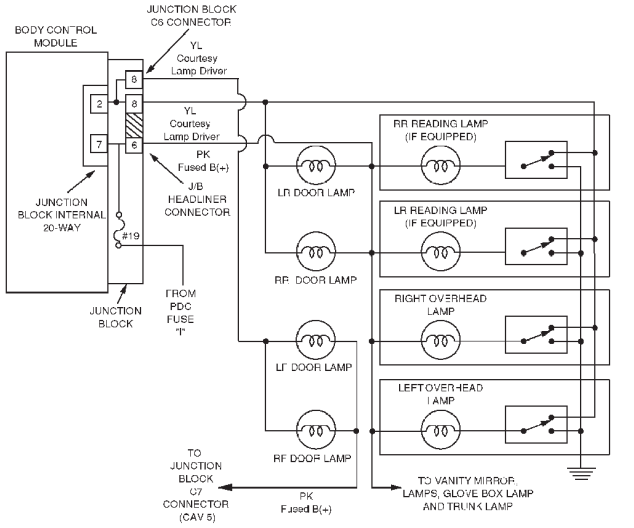



***Perform Verification TEST VER-2A.**

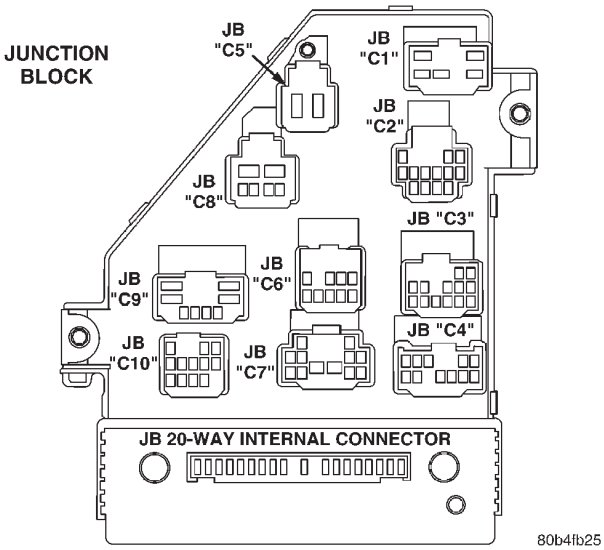
****Check connectors - Clean / repair as necessary.**

## TEST 5A REPAIRING COURTESY LAMPS ON AT ALL TIMES

**Perform TEST 1A Before Proceeding**

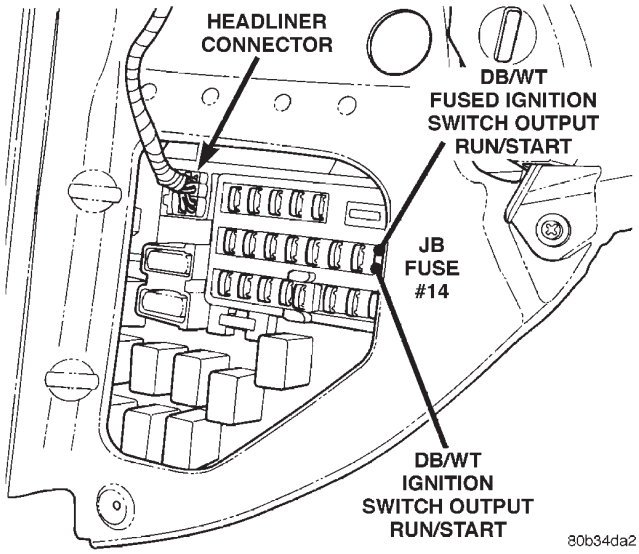



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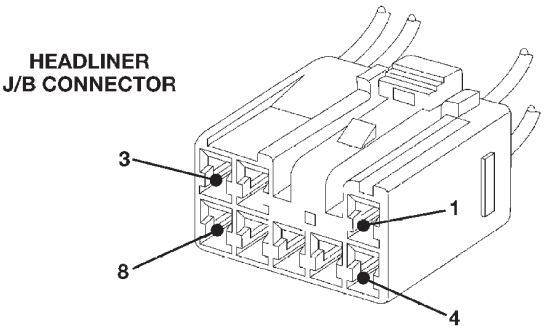

80b4fb25

***FIG. 1***




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***FIG. 2***



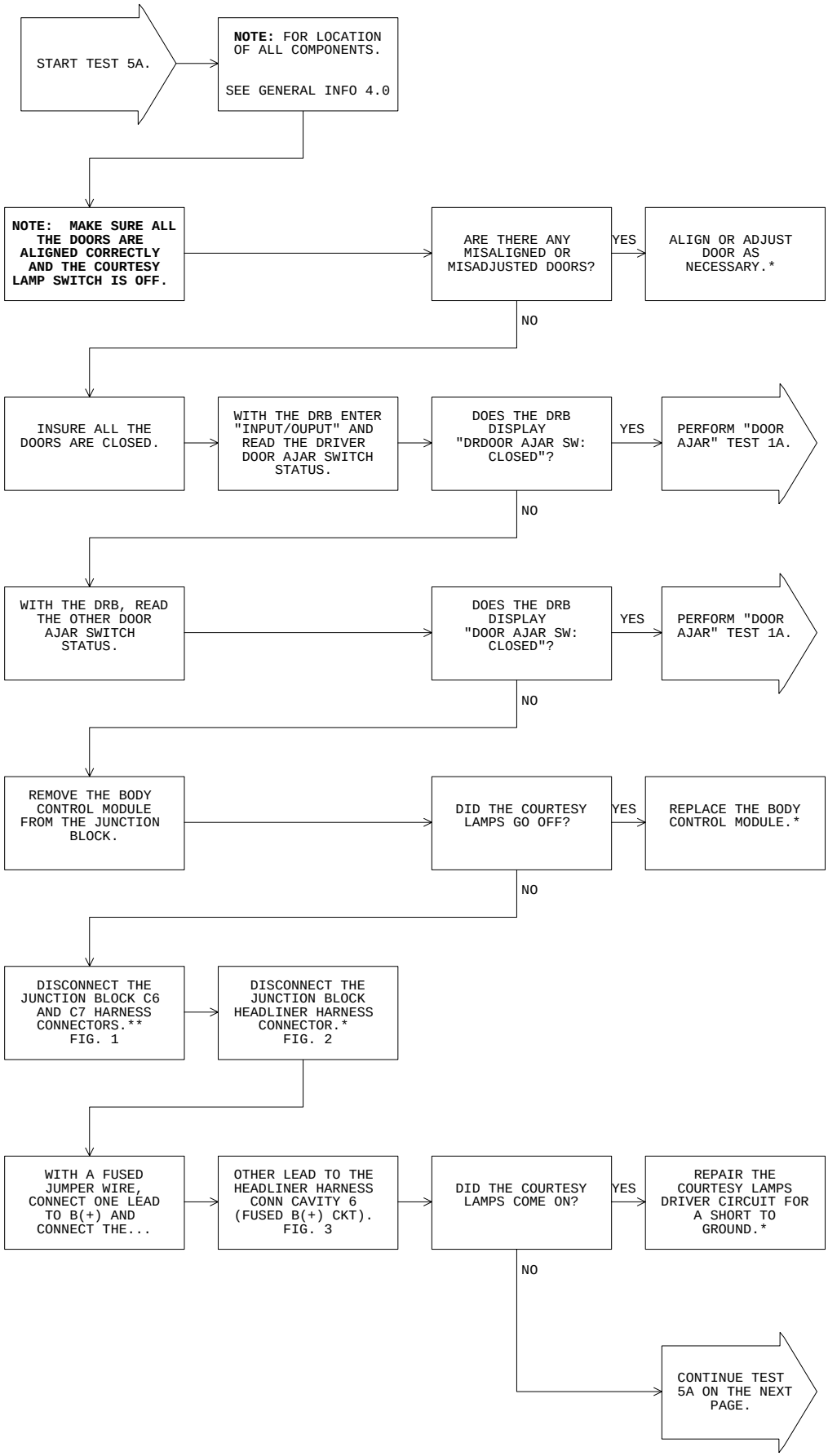

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LG | GROUND |
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT |
| 3 | BK | GROUND |
| 4 | YL/VT | PCI BUS (OTIS) |
| 5 | VT/BK | BACK-UP LAMP FEED |
| 6 | PK | FUSED B(+) |
| 7 | RD | FUSED B(+) (SUNROOF) |
| 8 | YL | COURTESY LAMPS DRIVER |

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***FIG. 3***

# TEST 5A REPAIRING COURTESY LAMPS ON AT ALL TIMES

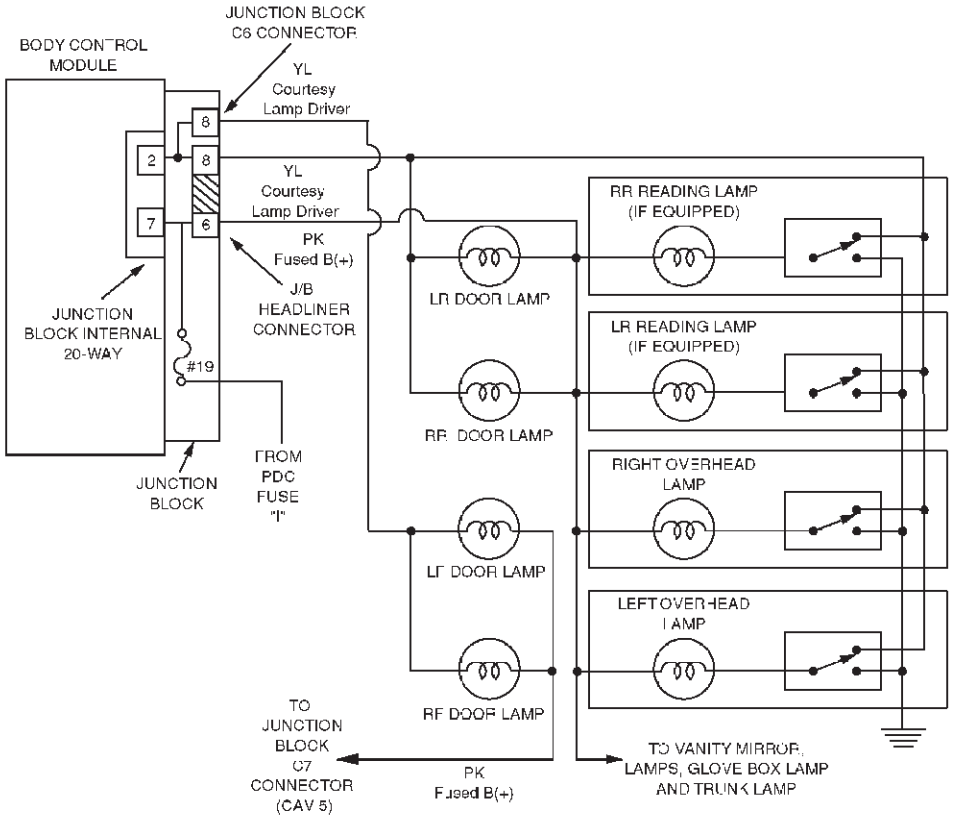
**Perform TEST 1A Before Proceeding**

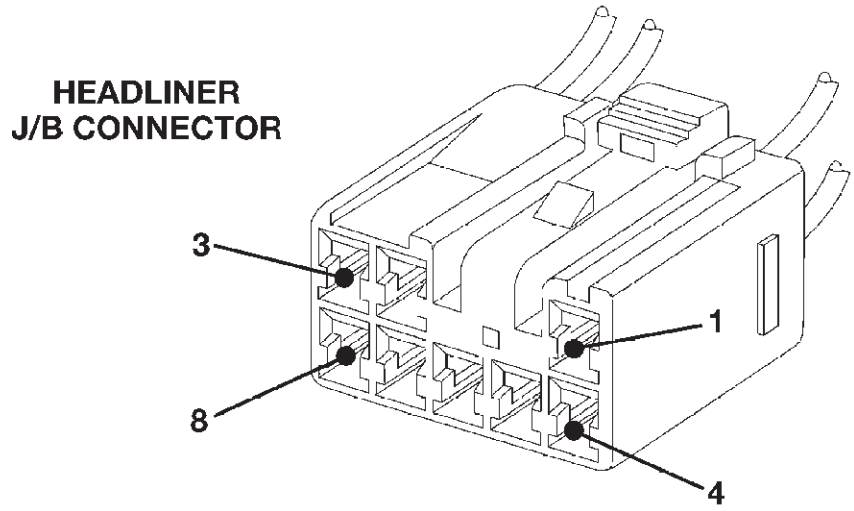



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

**TEST 5A** CONTINUED - REPAIRING COURTESY LAMPS ON AT ALL TIMES



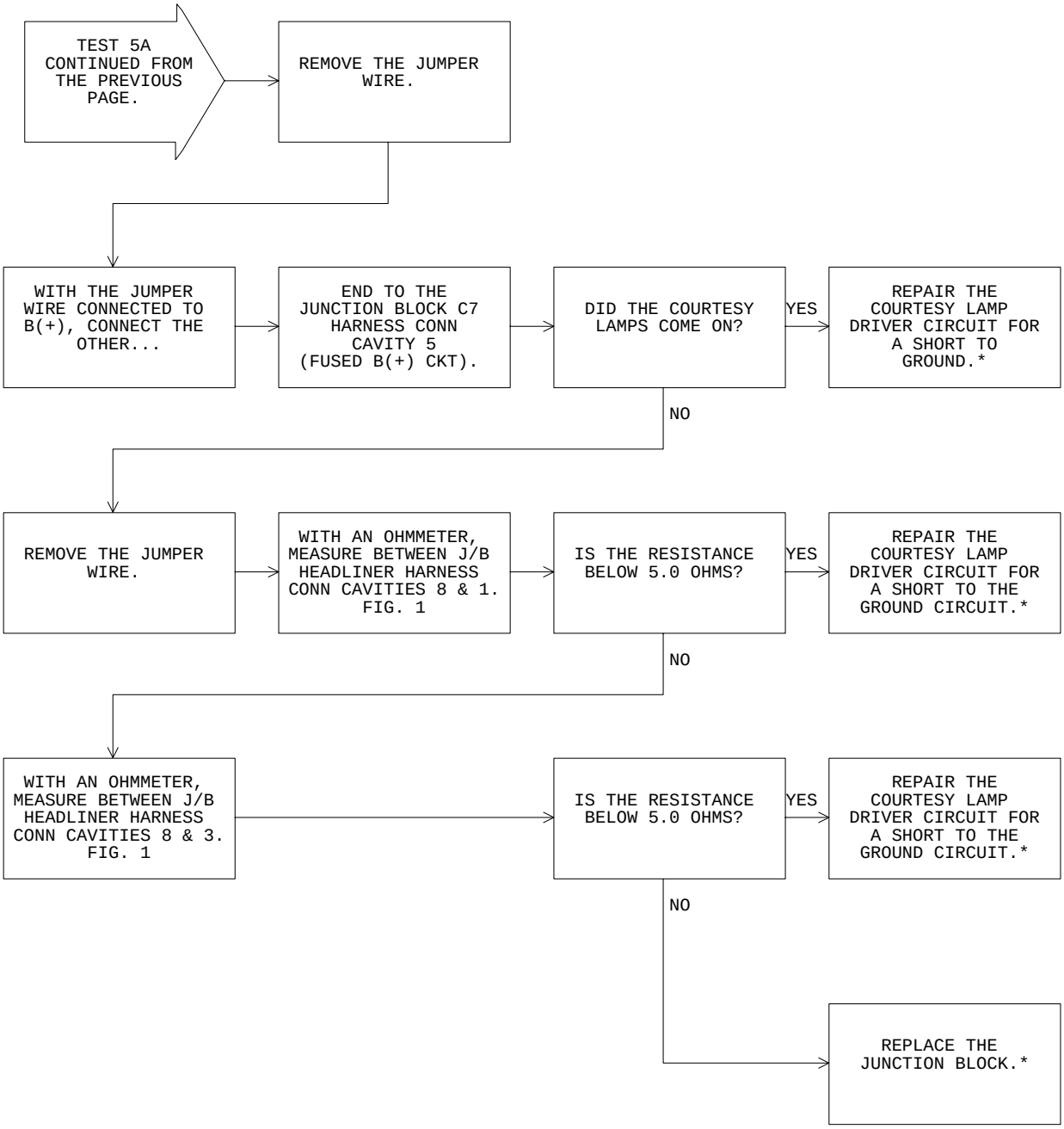




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LG | GROUND |
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT |
| 3 | BK | GROUND |
| 4 | YL/VT | PCI BUS (OTIS) |
| 5 | VT/BK | BACK-UP LAMP FEED |
| 6 | PK | FUSED B(+) |
| 7 | RD | FUSED B(+) (SUNROOF) |
| 8 | YL | COURTESY LAMPS DRIVER |

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***FIG. 1***

## TEST 5A CONTINUED - REPAIRING COURTESY LAMPS ON AT ALL TIMES

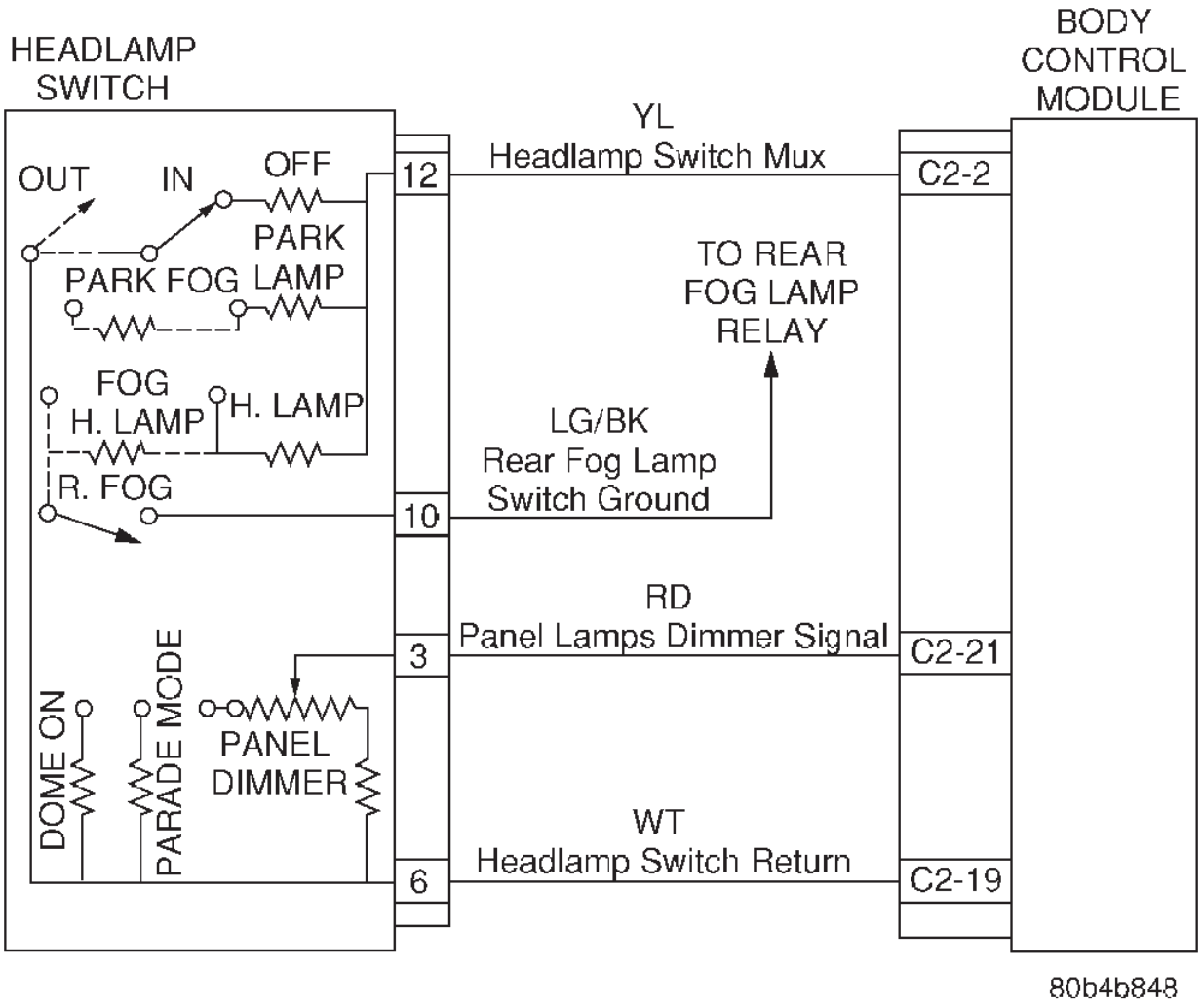



***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

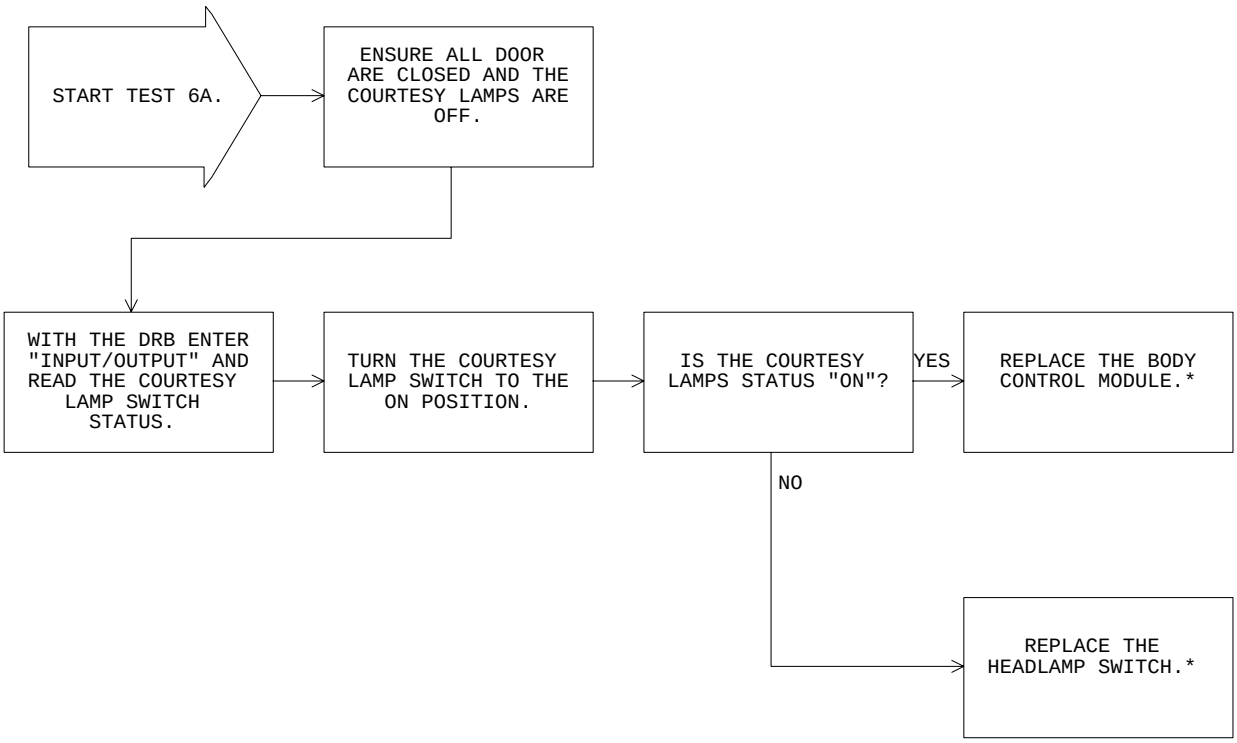
**TEST 6A** REPAIRING COURTESY LAMP SWITCH INOPERATIVE

**Perform TEST 1A Before Proceeding**



## TEST 6A REPAIRING COURTESY LAMP SWITCH INOPERATIVE

**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

| TEST 1A | IDENTIFYING MANUAL TEMPERATURE CONTROL PROBLEMS |
|---|---|

Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding

## PCM trouble codes that relate to climate control operations:

1. ECT Sensor Voltage Too Low
2. ECT Sensor Voltage Too High
3. A/C Pressure Sensor Volts Too High
4. A/C Pressure Volts Too Low
5. Low Speed Fan Control Relay Circuit
6. High Speed Fan Control Relay Circuit
7. A/C Clutch Relay Circuit
8. Engine is Cold Too Long

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*FIG. 1*

## TEST 1A IDENTIFYING MANUAL TEMPERATURE CONTROL PROBLEMS

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**

Ensure there is communication with the ''Body Control Module'', and the ''Powertrain Control Module'' before proceeding. If any communication problems . . .perform ''Vehicle Communication'' TEST 1A.

1. With the DRB, select ''Engine'', ''Read DTCs''. If any diagnostic trouble Codes are present, record and compare them with Fig. 1.

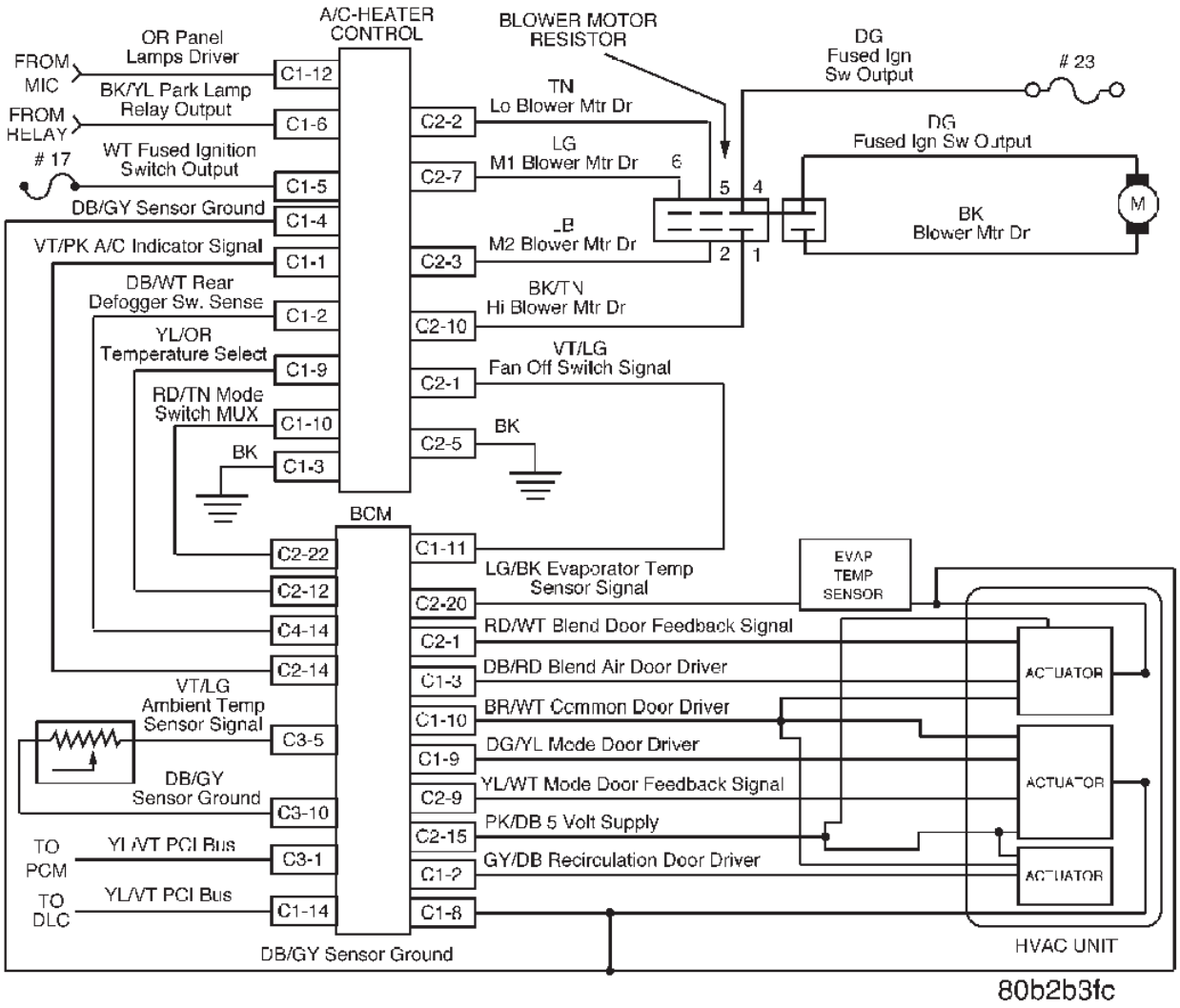
If any climate-related codes are present, refer to the appropriate powertrain diagnostic manual.

2. With the DRB, select ''Body System'', ''Body Computer'', ''Sensors''. Read the ''Ignition Voltage''. If it does not show battery voltage when the ignition key is on . . . .perform ''Vehicle Communication'' TEST 14A.
3. With the DRB, select ''Body System'', ''Body Computer'', ''Read DTCs''. If any climate-related codes are present . . . . . .perform TEST 1B.

| **PROBLEM WITH** (No Trouble Codes) | **PERFORM** |
|---|---|
| A/C Clutch Operations | ''ATC'' TEST 14A |
| Blend Door Inoperative | ''ATC'' TEST 15A |
| Blower Motor Inoperative | TEST 8A |
| Blower Speeds Incorrect | TEST 9A |
| Control Head Illumination | |
| Instrument Cluster Properly | TEST 10A |
| Instrument Cluster Does Not Illuminate Properly | ''Instrument Cluster'' TEST 9A |
| Control Head Switch Inoperative (A/C or EBL) | TEST 11A |
| Mode Door Inoperative | ''ATC'' TEST 19A |
| Rear Window Defogger Inoperative | TEST 12A |
| Recirculation Door Inoperative | ''ATC'' TEST 12A |
| Temperature Control Inoperative | ''ATC'' TEST 15A |

## TEST 1B IDENTIFYING CLIMATE CONTROL TROUBLE CODES

**Perform TEST 1A Before Proceeding**



## TEST 1B IDENTIFYING CLIMATE CONTROL TROUBLE CODES

**Perform TEST 1A Before Proceeding**

1. Record and erase the trouble code(s).
2. Turn the blower on, set the temperature control at mid position, start the engine, then using the DRB select ‘‘Body Computer’’ ‘‘Read DTCs’’.

► If no code appears, slowly run the control from cold to hot, then back to cold while looking for BCM codes. If a code appears, perform the indicated test from the list below.

► If a code still does not appear, continue by turning the temperature control from cold to hot, then back to cold. Turn the mode switch to each position, waiting 30 seconds between each one. Momentarily press the A/C and Rear Defog buttons. Upon seeing the **first** code appear, erase the code and perform the indicated test from the list below.

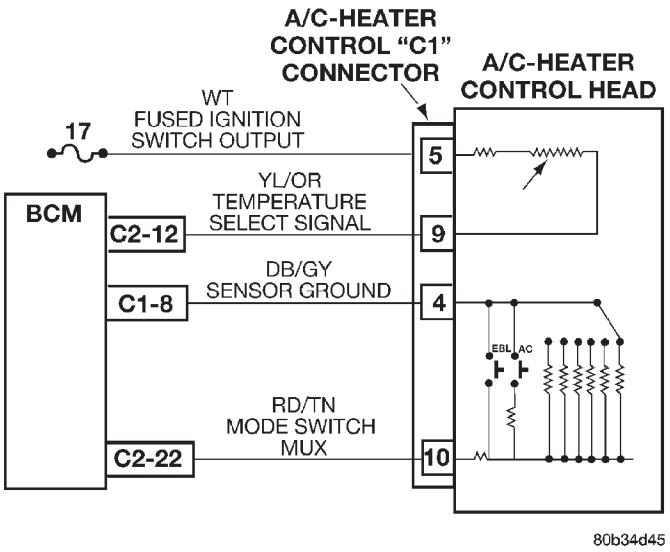
**NOTE:** If multiple codes appear, repair any that relate to a short circuit first. If a short to battery code is set, all 4 ‘‘Output Shorted to Battery’’ codes will appear. It will then be necessary to isolate each circuit to determine which circuit is at fault.

3. If no codes are seen, observe the climate system performance, then continue TEST 1A.

| DIAGNOSTIC TROUBLE CODE (DTC) | PERFORM |
|---|---|
| Ambient Temperature Sensor Failure | ‘‘OTIS’’ TEST 2A |
| A/C Control A/C Switch Failure | TEST 2A |
| A/C Control EBL Switch Failure | TEST 3A |
| A/C Control Blend Input Open or Shorted to Ground | TEST 4A |
| A/C Control Blend Door Input Shorted to Battery | TEST 5A |
| A/C Control Mode Door Input Open or Shorted to Battery | TEST 6A |
| A/C Control Mode Door Input Shorted to Ground | TEST 7A |
| Blend Door Feedback Failure | ‘‘ATC’’ TEST 3A |
| Blend Door Output Shorted to Ground | ‘‘ATC’’ TEST 4A |
| Blend Door Output Shorted to Battery | ‘‘ATC’’ TEST 5A |
| Blend Door Stall Test Failed | ‘‘ATC’’ TEST 3A |
| Common Output Shorted to Ground | ‘‘ATC’’ TEST 6A |
| Common Output Shorted to Battery | ‘‘ATC’’ TEST 5A |
| Evaporator Temperature Sensor Failure | ‘‘ATC’’ TEST 7A |
| Mode Door Feedback Failure | ‘‘ATC’’ TEST 9A |
| Mode Door Output Shorted to Ground | ‘‘ATC’’ TEST 10A |
| Mode Door Output Shorted to Battery | ‘‘ATC’’ TEST 5A |
| Mode Door Stall Test Failed | ‘‘ATC’’ TEST 9A |
| Recirculation Door Output Shorted to Ground | ‘‘ATC’’ TEST 11A |
| Recirculation Door Output Shorted to Battery | ‘‘ATC’’ TEST 5A |
| Recirculation Door Test Failed | ‘‘ATC’’ TEST 12A |

## TEST 2A — REPAIRING "A/C CONTROL A/C SWITCH FAILURE" TROUBLE CODE

**Perform TEST 1B Before Proceeding**




**Name of code:** A/C Control A/C Switch Failure, A/C Control EBL Switch Failure (manual HVAC only)

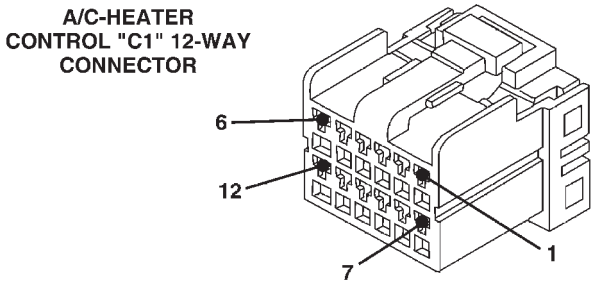
**When monitored:** With ignition on

**Set condition:** BCM detects either the A/C switch or the EBL switch stuck in the depressed position for at least 30 seconds.

**Theory of operation:** The A/C and EBL switches are momentary contact switches that share the mode request line. Normal usage of these switches constitute only a brief press. If one of the switches is stuck, the BCM cannot read the mode request selector and will set the appropriate fault and will position the mode door in a default position.

**Probable Causes:**
- Manual HVAC head switch failure
- BCM failure

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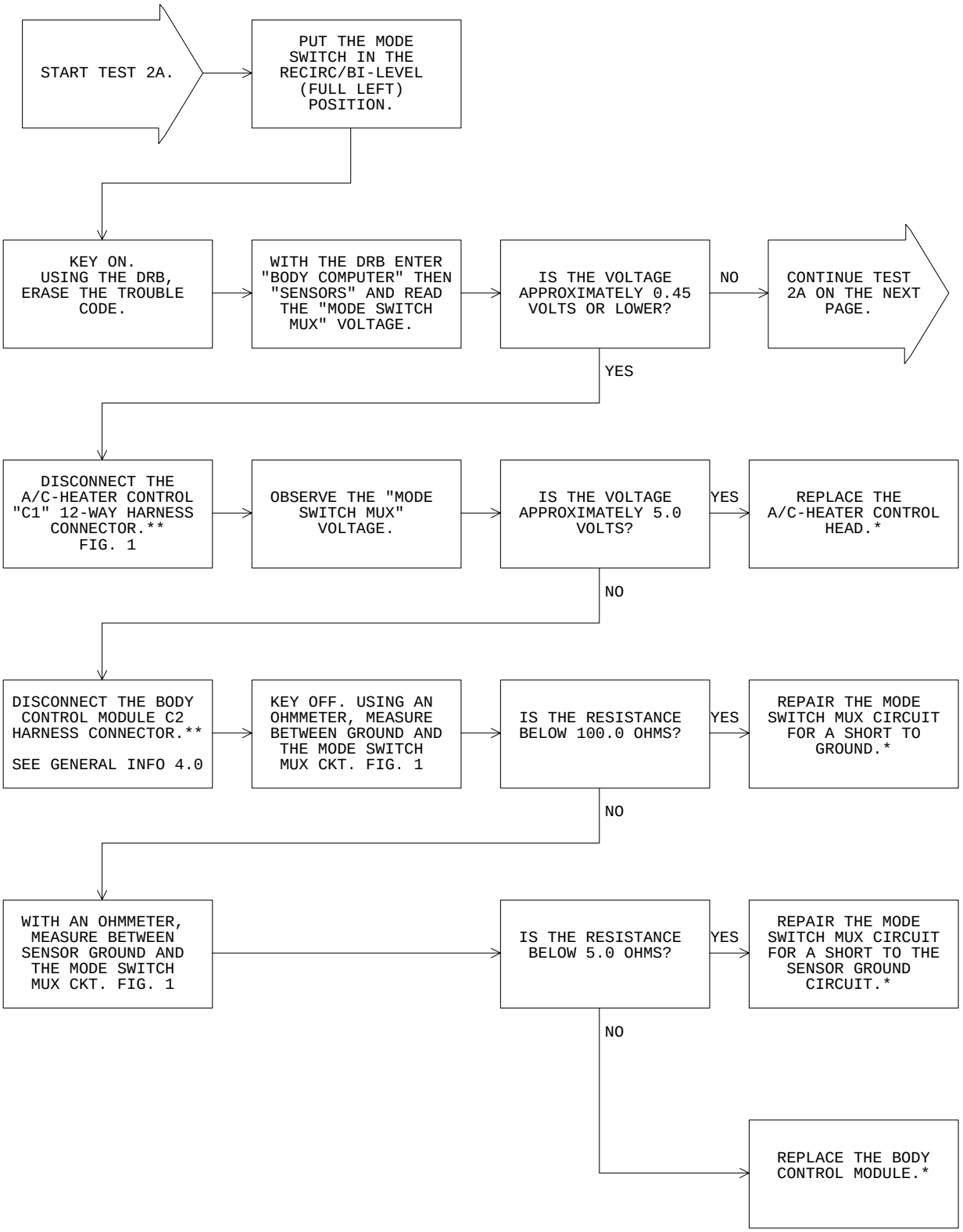

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/PK | A/C L.E.D. INDICATOR SIGNAL |
| 2 | DB/WT | REAR DEFOGGER SWITCH SENSE |
| 3 | BK | GROUND |
| 4 | DB/GY | SENSOR GROUND |
| 5 | WT | FUSED IGNITION SWITCH OUTPUT |
| 6 | BK/YL | PARK LAMP RELAY OUTPUT |
| 9 | YL/OR | TEMPERATURE SELECT |
| 10 | RD/TN | MODE SWITCH MUX |
| 12 | OR | PANEL LAMPS DRIVER |

80b2a1fa

***FIG. 1***

## TEST 2A — REPAIRING ″A/C CONTROL A/C SWITCH FAILURE″ TROUBLE CODE

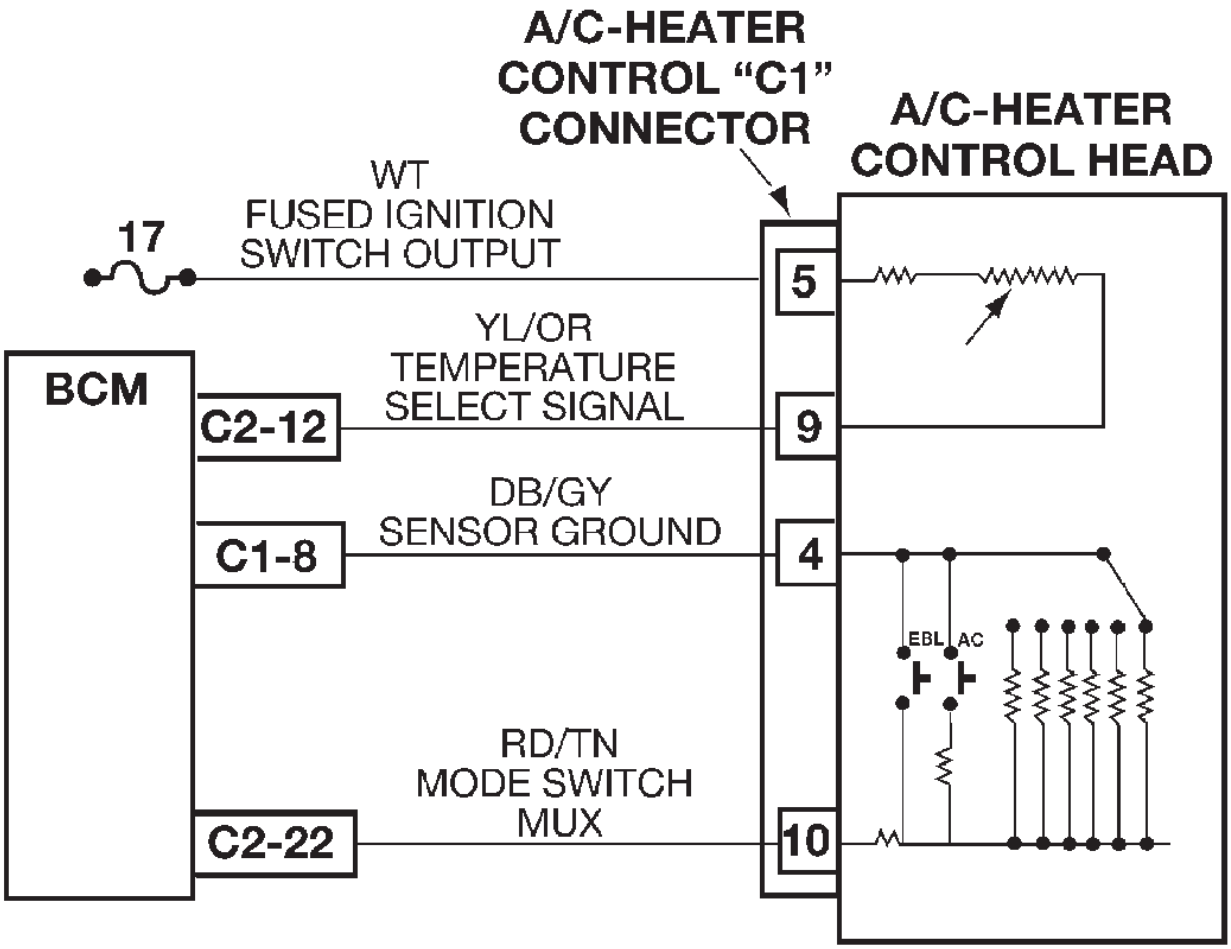
**Perform TEST 1B Before Proceeding**



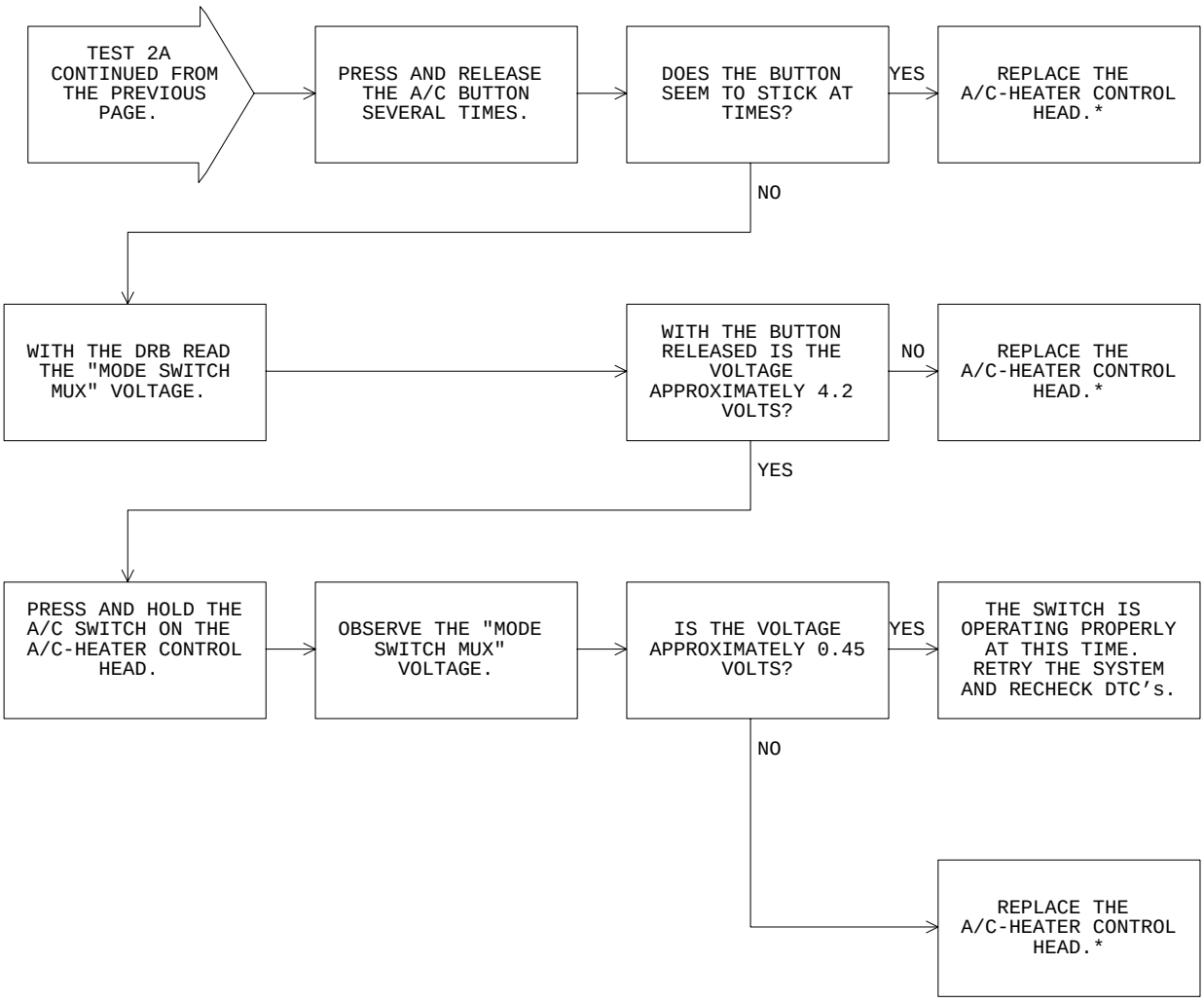

***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

| TEST 2A | CONTINUED - REPAIRING "A/C CONTROL A/C SWITCH FAILURE" TROUBLE CODE |
|---|---|



## TEST 2A — CONTINUED - REPAIRING ″A/C CONTROL A/C SWITCH FAILURE″ TROUBLE CODE

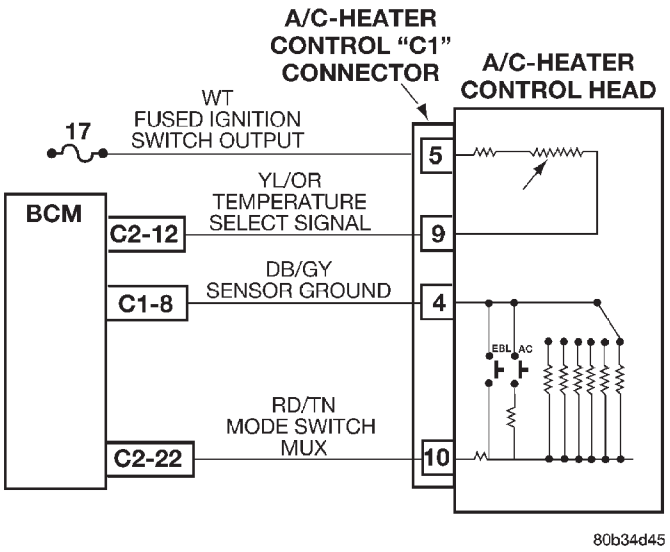



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 3A — REPAIRING "A/C CONTROL EBL SWITCH FAILURE" TROUBLE CODE

**Perform TEST 1B Before Proceeding**




80b34d45

**Name of code:** A/C Control A/C Switch Failure, A/C Control EBL Switch Failure (manual HVAC only)

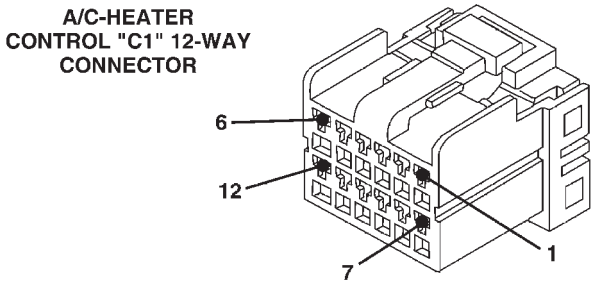
**When monitored:** With ignition on

**Set condition:** BCM detects either the A/C switch or the EBL switch stuck in the depressed position for at least 30 seconds.

**Theory of operation:** The A/C and EBL switches are momentary contact switches that share the mode request line. Normal usage of these switches constitute only a brief press. If one of the switches is stuck, the BCM cannot read the mode request selector and will set the appropriate fault and will position the mode door in a default position.

**Probable Causes:**
- Manual HVAC head switch failure
- BCM failure

80b242ea



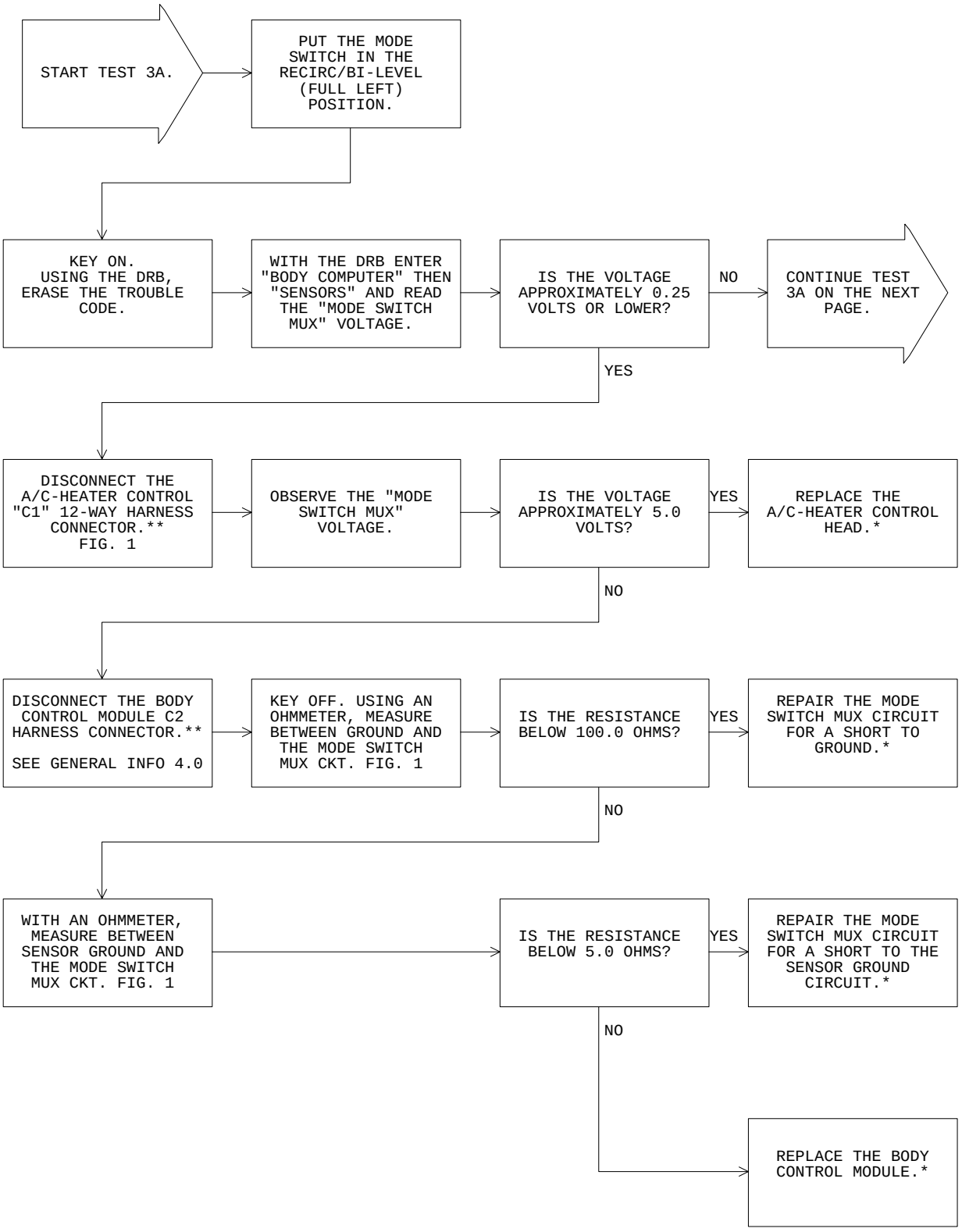

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/PK | A/C L.E.D. INDICATOR SIGNAL |
| 2 | DB/WT | REAR DEFOGGER SWITCH SENSE |
| 3 | BK | GROUND |
| 4 | DB/GY | SENSOR GROUND |
| 5 | WT | FUSED IGNITION SWITCH OUTPUT |
| 6 | BK/YL | PARK LAMP RELAY OUTPUT |
| 9 | YL/OR | TEMPERATURE SELECT |
| 10 | RD/TN | MODE SWITCH MUX |
| 12 | OR | PANEL LAMPS DRIVER |

80b2a1fa

***FIG. 1***

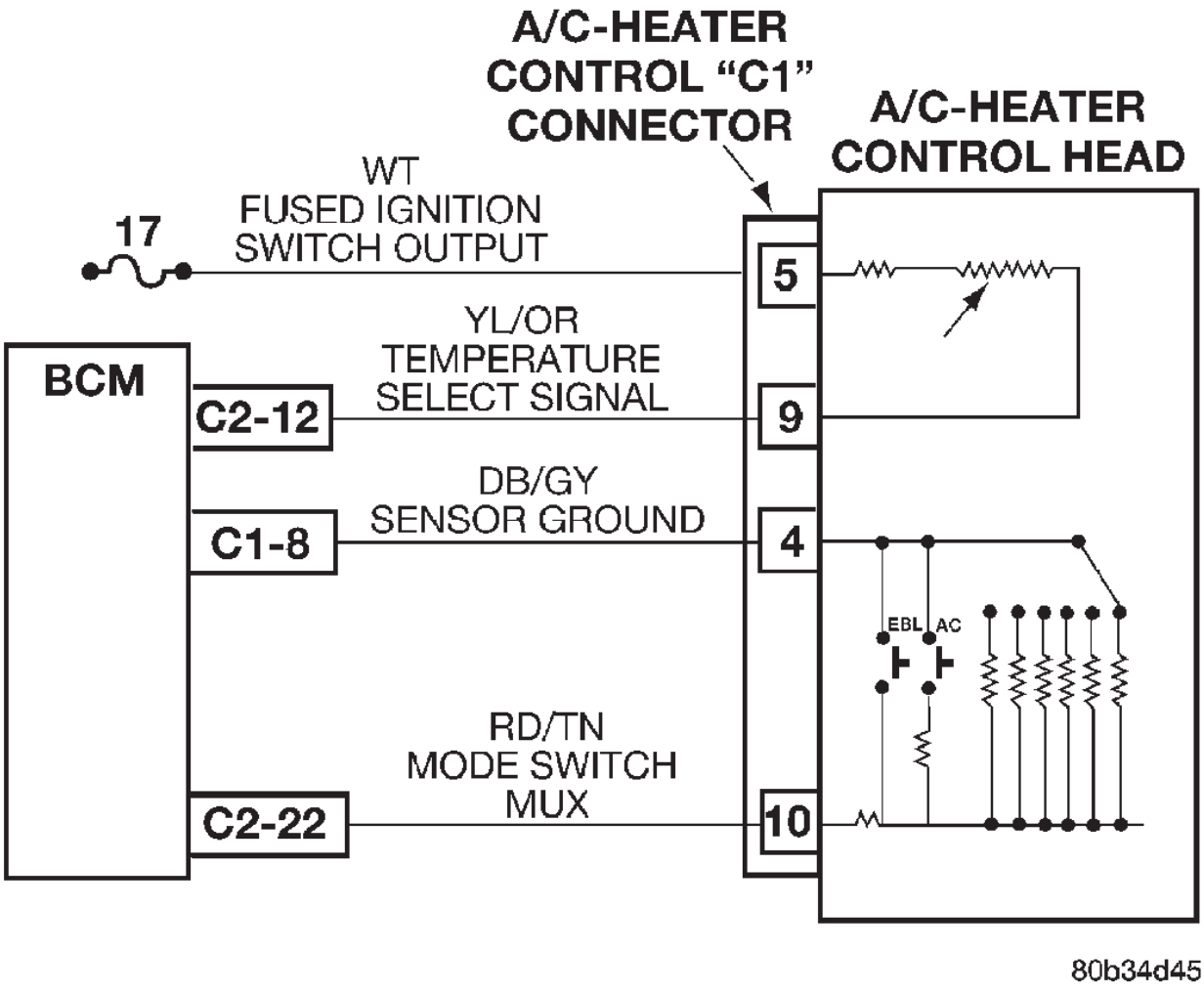
## TEST 3A — REPAIRING ″A/C CONTROL EBL SWITCH FAILURE″ TROUBLE CODE

**Perform TEST 1B Before Proceeding**

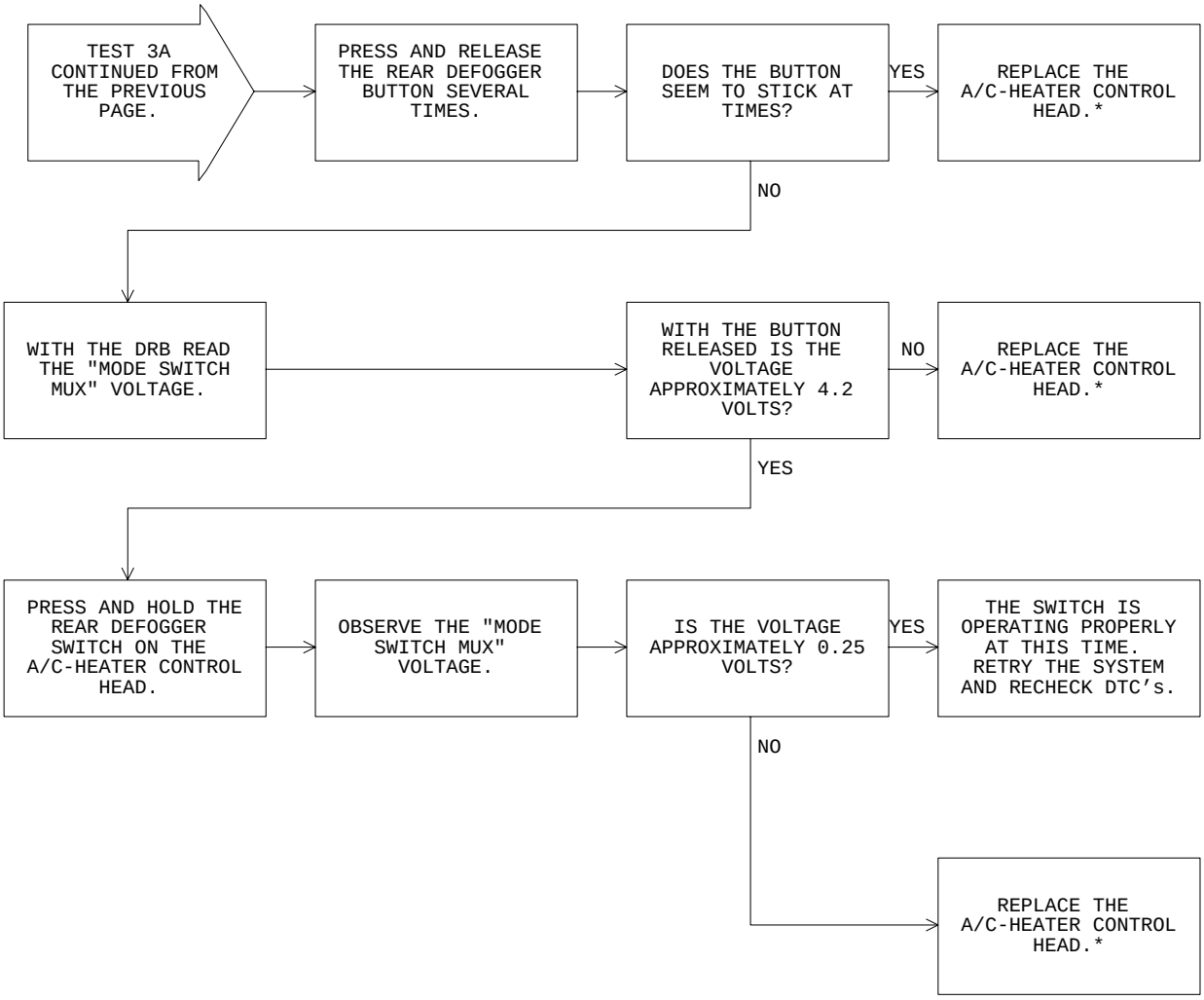



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***


A/C-HEATER
CONTROL “C1”
CONNECTOR
A/C-HEATER
CONTROL HEAD
WT
FUSED IGNITION
SWITCH OUTPUT
17
5
YL/OR
TEMPERATURE
SELECT SIGNAL
BCM
C2-12
9
DB/GY
SENSOR GROUND
C1-8
4
EBL
AC
RD/TN
MODE SWITCH
MUX
C2-22
10
80b34d45

## TEST 3A — CONTINUED - REPAIRING “A/C CONTROL EBL SWITCH FAILURE” TROUBLE CODE

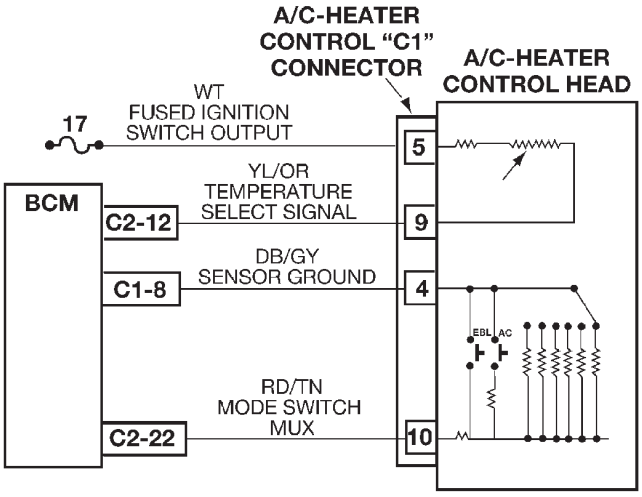



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 4A — REPAIRING "A/C CONTROL BLEND DOOR INPUT OPEN OR SHORTED TO GROUND" TROUBLE CODE

**Perform TEST 1B Before Proceeding**




80b34d45

**Name of code:** A/C Control Blend Door Input Open or Shorted to Ground (manual HVAC only)

**When monitored:** With ignition on

**Set condition:** BCM detects an abnormally low voltage on its blend request input

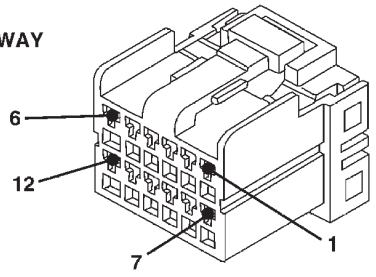
**Theory of operation:** The BCM reads the signal from the manual HVAC head blend request and positions the blend door accordingly. If the voltage on this pin is too low (below 0.1V), this fault will be set and the BCM will place the blend door in a default position.

**Probable Causes:**

- Temperature select circuit open
- Temperature select circuit shorted to ground
- Manual HVAC head failure
- BCM failure

80b242ec

A/C-HEATER CONTROL "C1" 12-WAY CONNECTOR

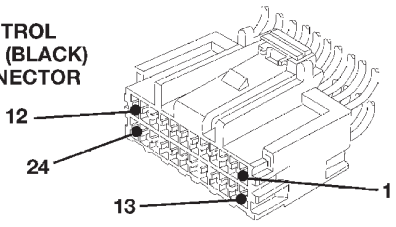



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/PK | A/C L.E.D. INDICATOR SIGNAL |
| 2 | DB/WT | REAR DEFOGGER SWITCH SENSE |
| 3 | BK | GROUND |
| 4 | DB/GY | SENSOR GROUND |
| 5 | WT | FUSED IGNITION SWITCH OUTPUT |
| 6 | BK/YL | PARK LAMP RELAY OUTPUT |
| 9 | YL/OR | TEMPERATURE SELECT |
| 10 | RD/TN | MODE SWITCH MUX |
| 12 | OR | PANEL LAMPS DRIVER |

80b2a1fa

*FIG. 1*

BODY CONTROL MODULE "C2" (BLACK) 24-WAY CONNECTOR



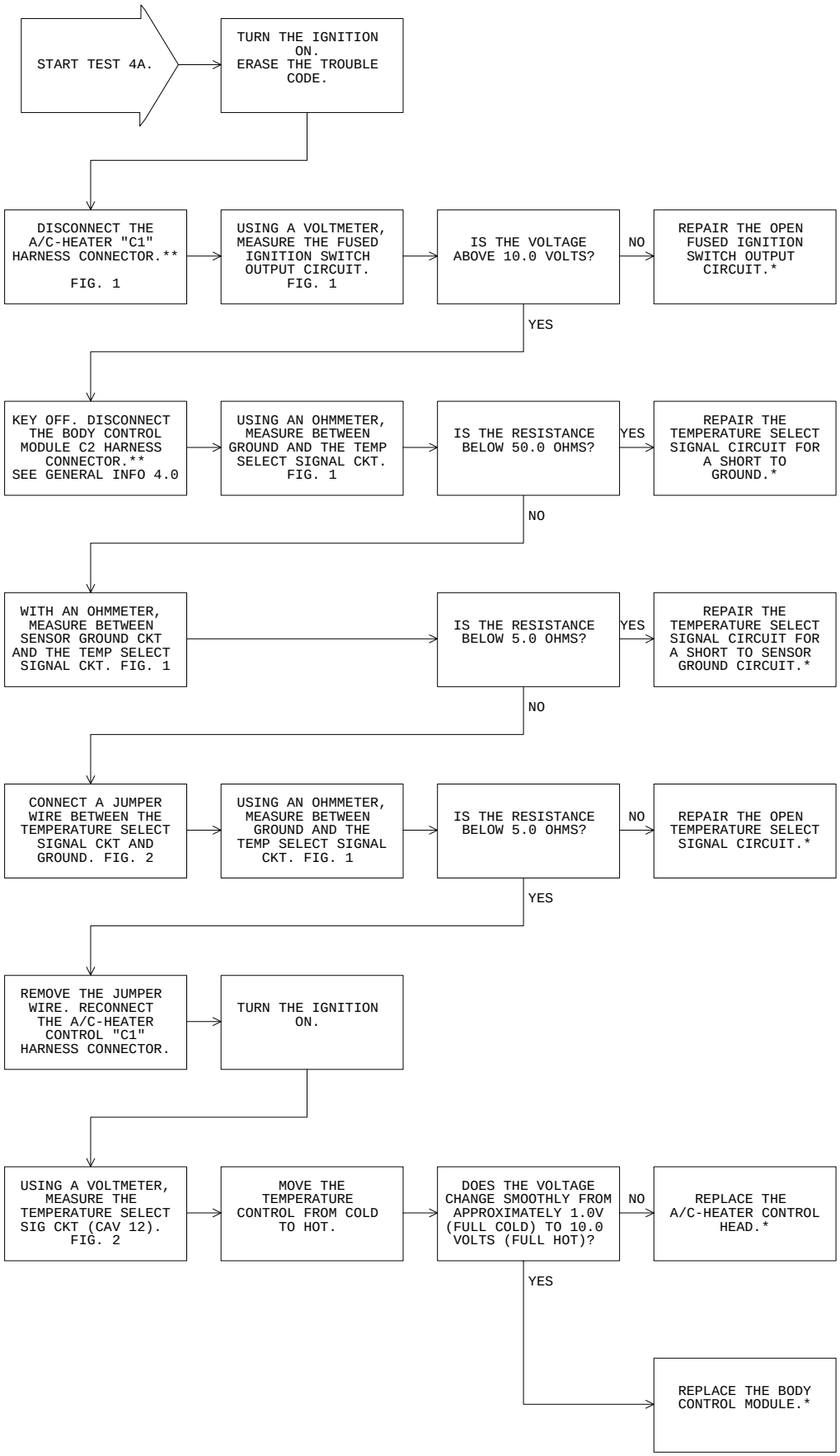

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

80b11936

*FIG. 2*

## TEST 4A — REPAIRING "A/C CONTROL BLEND DOOR INPUT OPEN OR SHORTED TO GROUND" TROUBLE CODE

**Perform TEST 1B Before Proceeding**

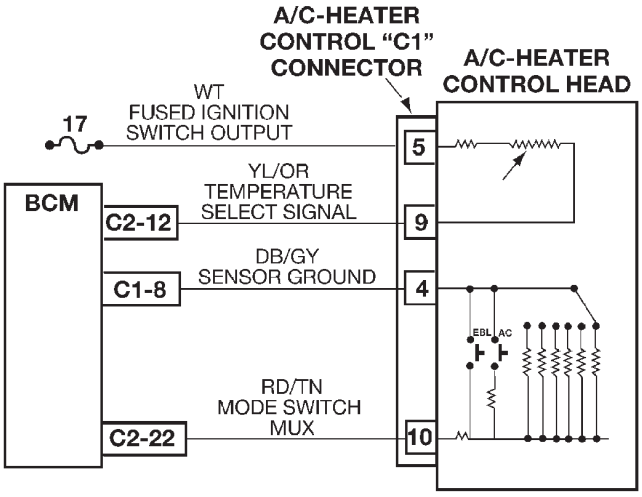



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 5A — REPAIRING "A/C CONTROL BLEND DOOR INPUT SHORTED TO BATTERY" TROUBLE CODE

**Perform TEST 1B Before Proceeding**




80b34d45

**Name of code:** A/C Control Blend Door Input Shorted to Battery (manual HVAC only)

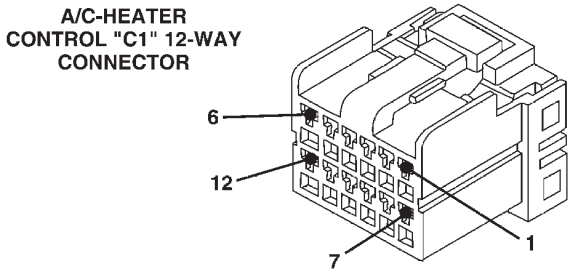
**When monitored:** With ignition on

**Set condition:** BCM detects an abnormally high voltage on its blend request input

**Theory of operation:** The BCM reads the signal from the manual HVAC blend request and positions the blend door accordingly. If the voltage on this pin is too high (greater than 95% of ignition voltage), this fault will be set and the BCM will place the blend door in a default position.

**Probable Causes:**
- Temperature select circuit shorted to battery
- Manual HVAC head failure
- BCM failure

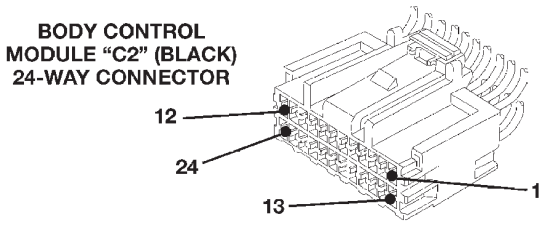
80b242eb




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/PK | A/C L.E.D. INDICATOR SIGNAL |
| 2 | DB/WT | REAR DEFOGGER SWITCH SENSE |
| 3 | BK | GROUND |
| 4 | DB/GY | SENSOR GROUND |
| 5 | WT | FUSED IGNITION SWITCH OUTPUT |
| 6 | BK/YL | PARK LAMP RELAY OUTPUT |
| 9 | YL/OR | TEMPERATURE SELECT |
| 10 | RD/TN | MODE SWITCH MUX |
| 12 | OR | PANEL LAMPS DRIVER |

80b2a1fa

*FIG. 1*



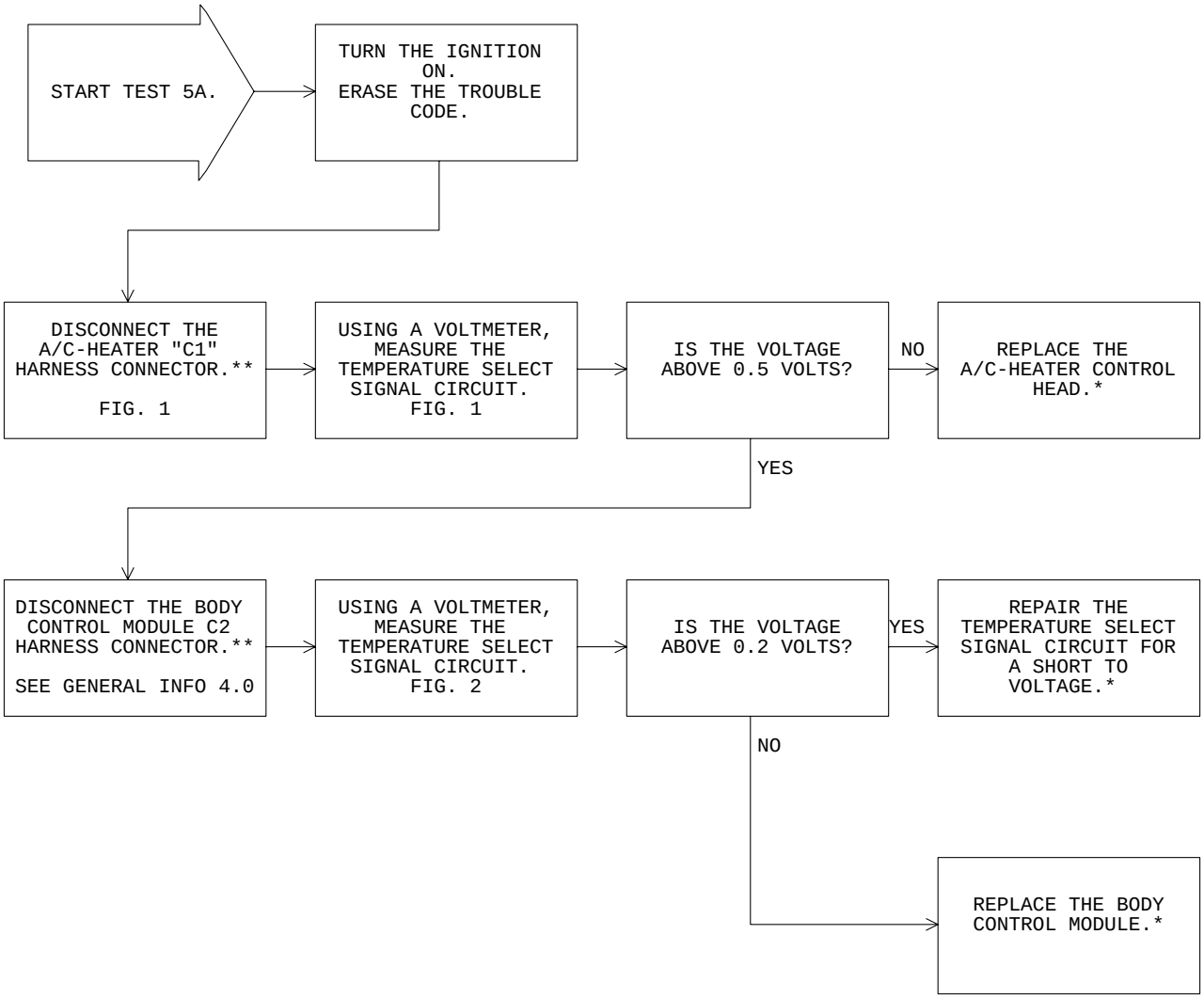

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

80b11936

*FIG. 2*

## TEST 5A — REPAIRING ″A/C CONTROL BLEND DOOR INPUT SHORTED TO BATTERY″ TROUBLE CODE

**Perform TEST 1B Before Proceeding**

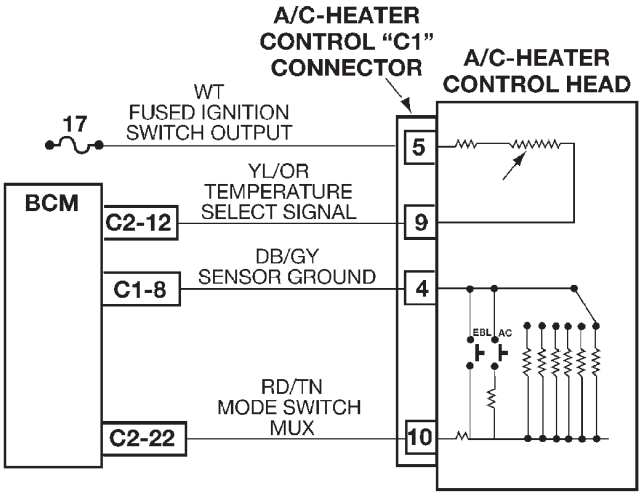



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 6A — REPAIRING "A/C CONTROL MODE DOOR INPUT OPEN OR SHORTED TO BATTERY" TROUBLE CODE

**Perform TEST 1B Before Proceeding**




**Name of code:** A/C Control Mode Door Input Open or Shorted to Battery (manual HVAC only)

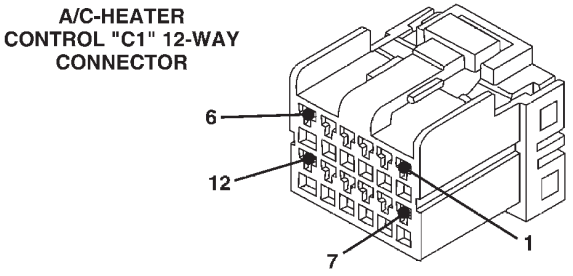
**When monitored:** With ignition on

**Set condition:** BCM detects an abnormally high voltage on its mode request input

**Theory of operation:** The BCM provides a 5V pull-up to the mode request selector (located on the manual HVAC head), and positions the mode door accordingly. If the voltage on this pin is too high (above 4.59V), this fault will be set and the BCM will place the mode door in a default position.

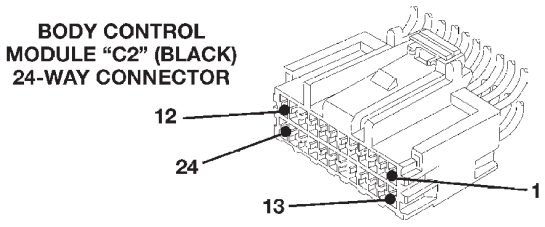
**Probable Causes:**
- Mode switch MUX circuit shorted to battery
- Mode switch MUX circuit open
- Manual HVAC head failure
- BCM failure

80b242ee




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/PK | A/C L.E.D. INDICATOR SIGNAL |
| 2 | DB/WT | REAR DEFOGGER SWITCH SENSE |
| 3 | BK | GROUND |
| 4 | DB/GY | SENSOR GROUND |
| 5 | WT | FUSED IGNITION SWITCH OUTPUT |
| 6 | BK/YL | PARK LAMP RELAY OUTPUT |
| 9 | YL/OR | TEMPERATURE SELECT |
| 10 | RD/TN | MODE SWITCH MUX |
| 12 | OR | PANEL LAMPS DRIVER |

*FIG. 1*

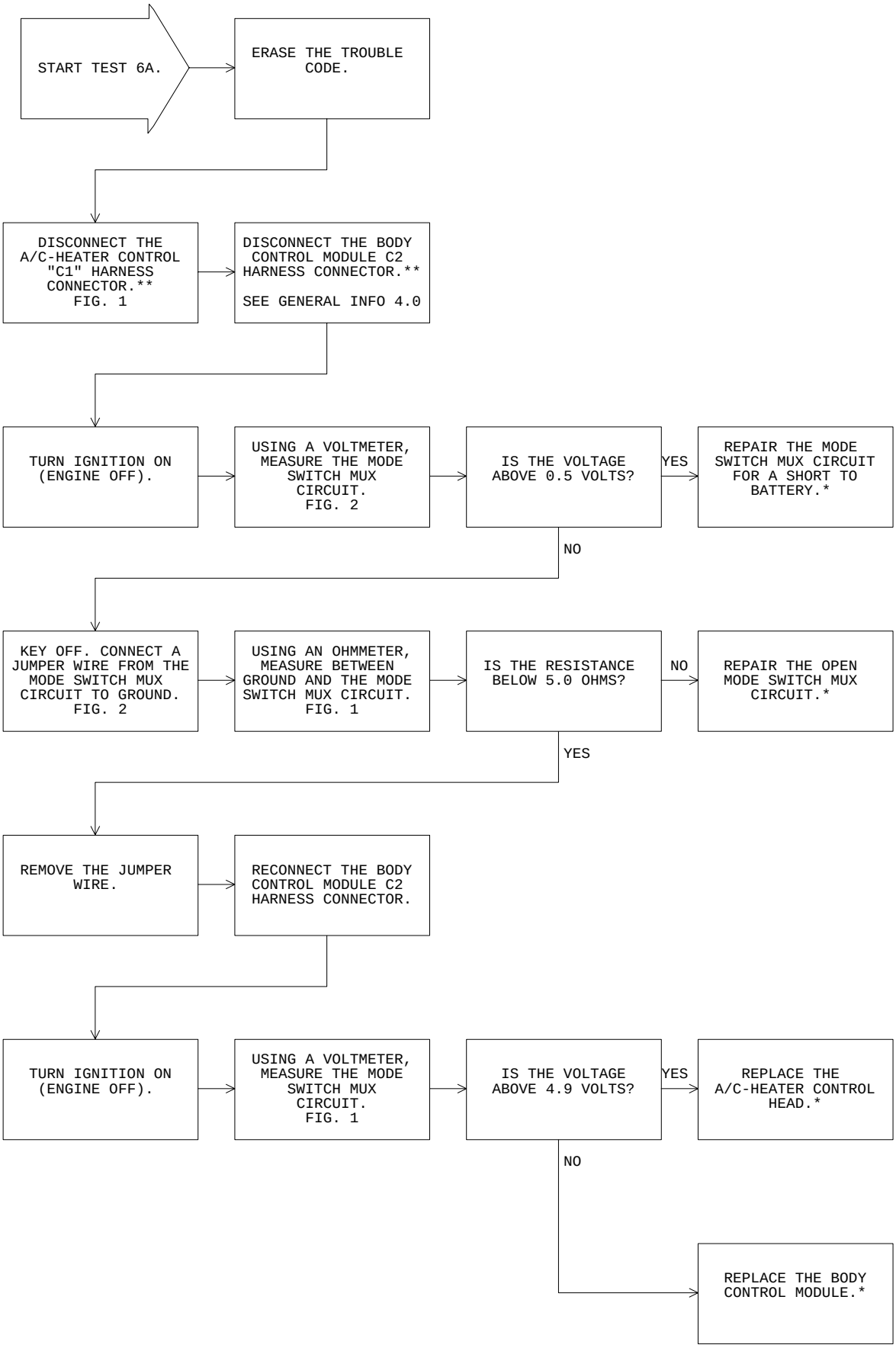



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

*FIG. 2*

## TEST 6A — REPAIRING "A/C CONTROL MODE DOOR INPUT OPEN OR SHORTED TO BATTERY" TROUBLE CODE

**Perform TEST 1B Before Proceeding**

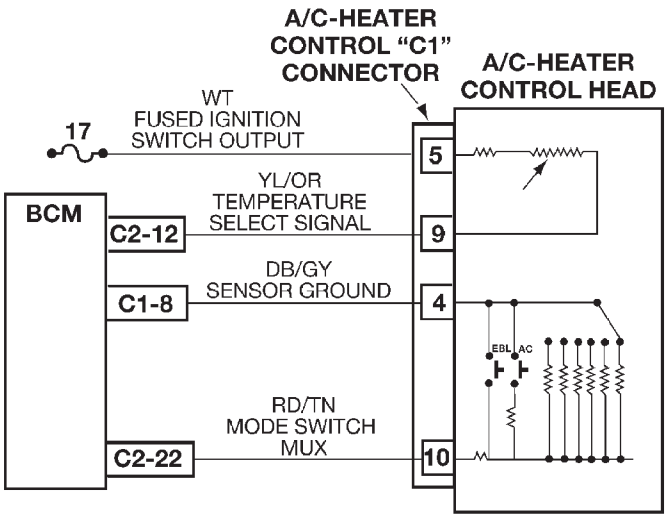



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 7A — REPAIRING "A/C CONTROL MODE DOOR INPUT SHORTED TO GROUND" TROUBLE CODE

**Perform TEST 1B Before Proceeding**




80b34d45

**Name of code:** A/C Control Mode Door Input Shorted to Ground (manual HVAC only)

**When monitored:** With ignition on

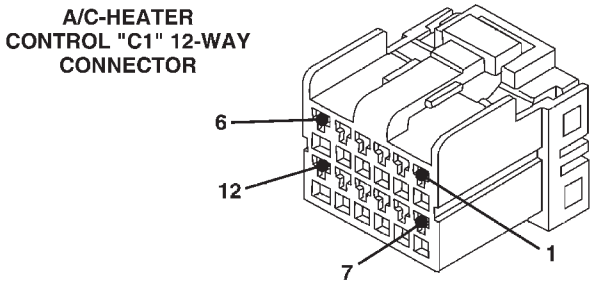
**Set condition:** BCM detects an abnormally low voltage on its mode request input

**Theory of operation:** The BCM provides a 5V pull-up to the mode request selector (located on the manual HVAC head), and positions the mode door accordingly. If the voltage on this pin is too low (below 0.1V), this fault will be set and the BCM will place the mode door in a default position.

**Probable Causes:**

- Mode switch MUX circuit short to ground
- Manual HVAC head failure
- BCM failure

80b242ed



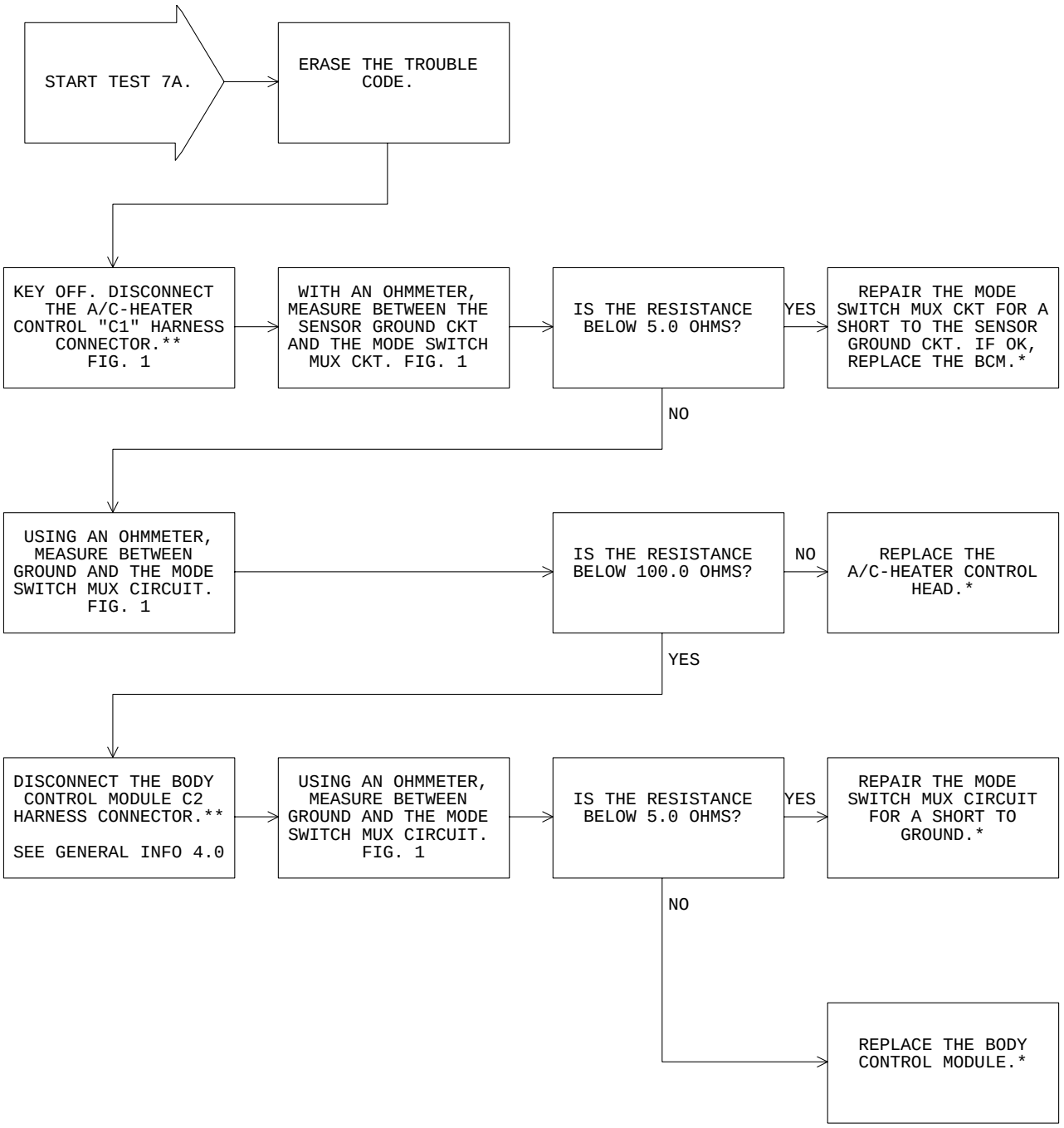

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/PK | A/C L.E.D. INDICATOR SIGNAL |
| 2 | DB/WT | REAR DEFOGGER SWITCH SENSE |
| 3 | BK | GROUND |
| 4 | DB/GY | SENSOR GROUND |
| 5 | WT | FUSED IGNITION SWITCH OUTPUT |
| 6 | BK/YL | PARK LAMP RELAY OUTPUT |
| 9 | YL/OR | TEMPERATURE SELECT |
| 10 | RD/TN | MODE SWITCH MUX |
| 12 | OR | PANEL LAMPS DRIVER |

80b2a1fa

***FIG. 1***

## TEST 7A — REPAIRING ″A/C CONTROL MODE DOOR INPUT SHORTED TO GROUND″ TROUBLE CODE

**Perform TEST 1B Before Proceeding**

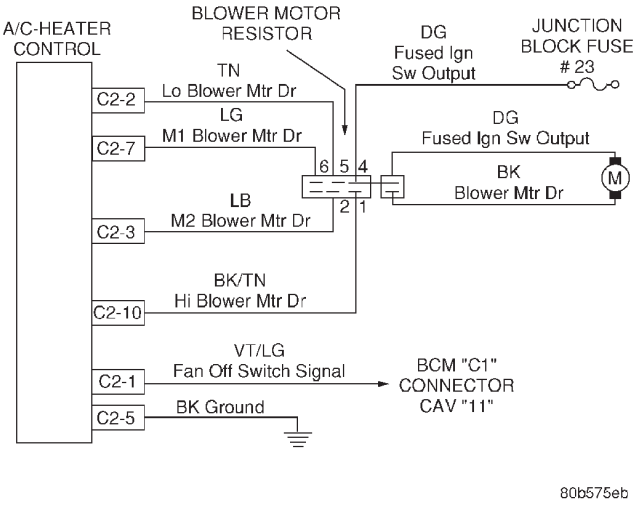



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 8A REPAIRING INOPERATIVE BLOWER MOTOR

**Perform TEST 1A Before Proceeding**



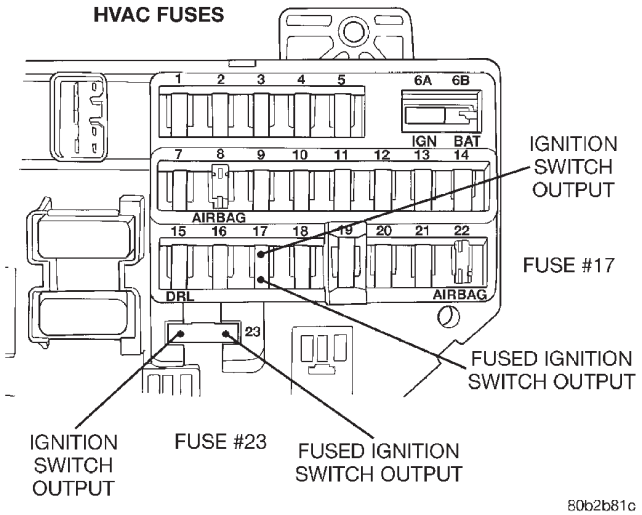
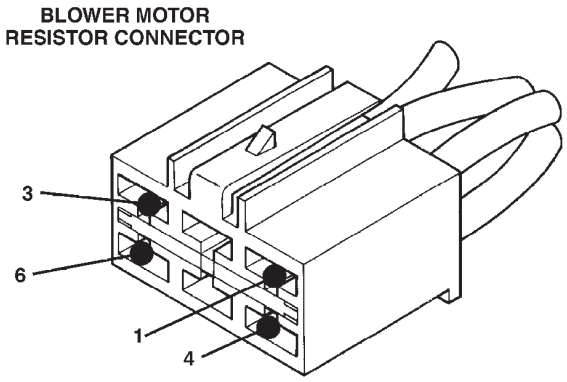



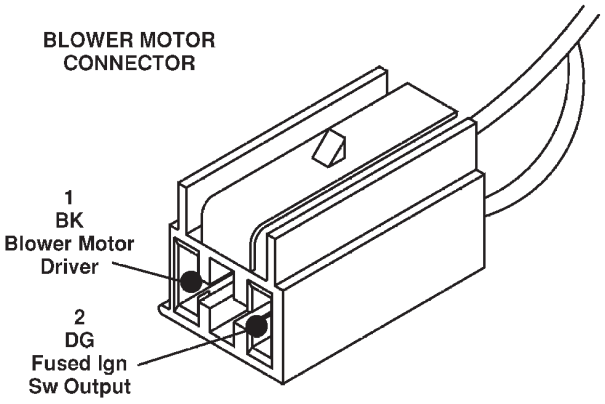

*FIG. 1*




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/TN | HI BLOWER MOTOR DRIVER |
| 2 | LB | M2 BLOWER MOTOR DRIVER |
| 4 | DG | FUSED IGNITION SWITCH OUTPUT |
| 5 | TN | LO BLOWER MOTOR DRIVER |
| 6 | LG | M1 BLOWER MOTOR DRIVER |

80b2a1f4

*FIG. 2*



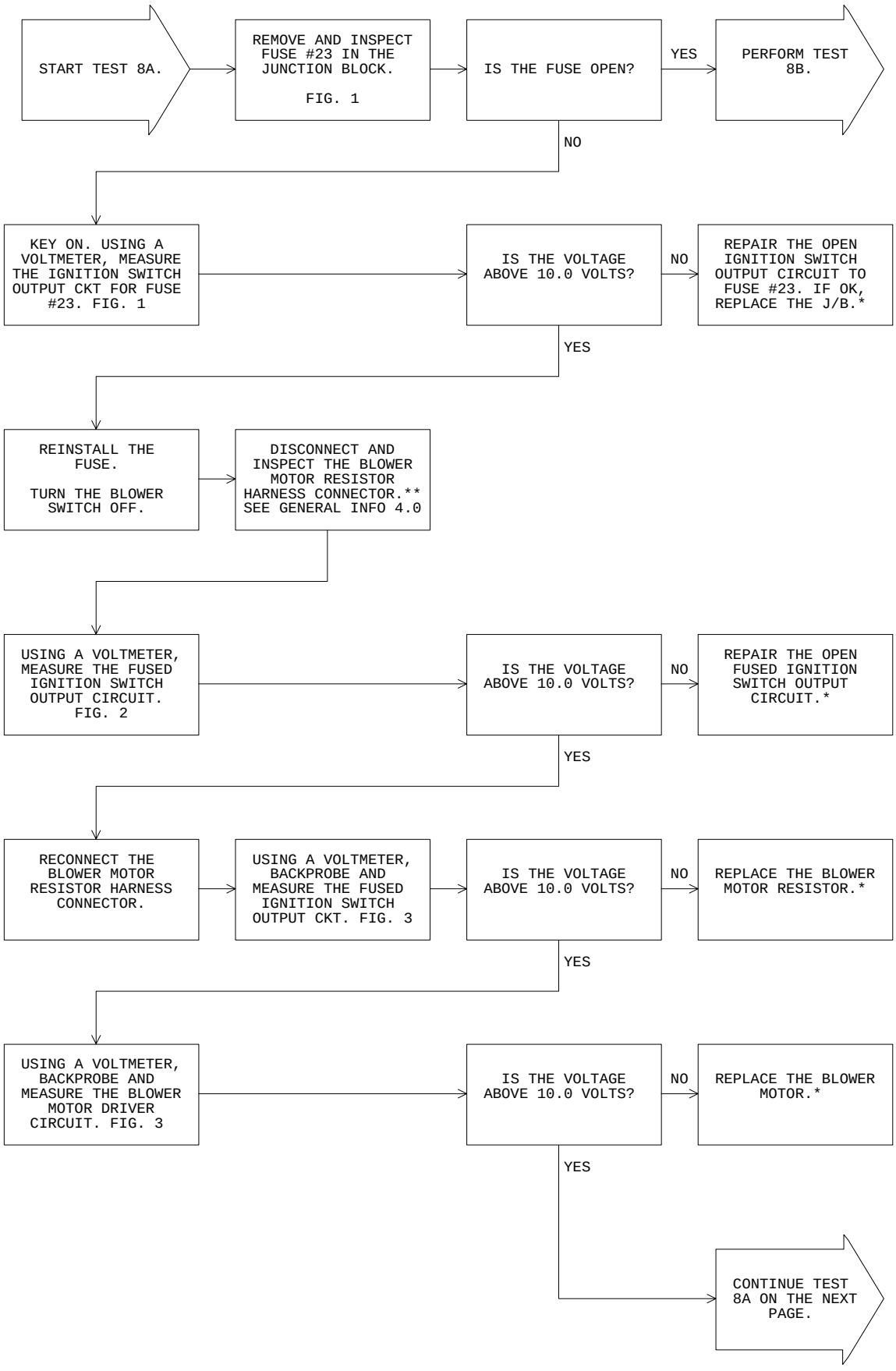

**NOTE: THE CONNECTOR MUST BE CONNECTED TO PERFORM THIS STEP.**

80b575ec

*FIG. 3*

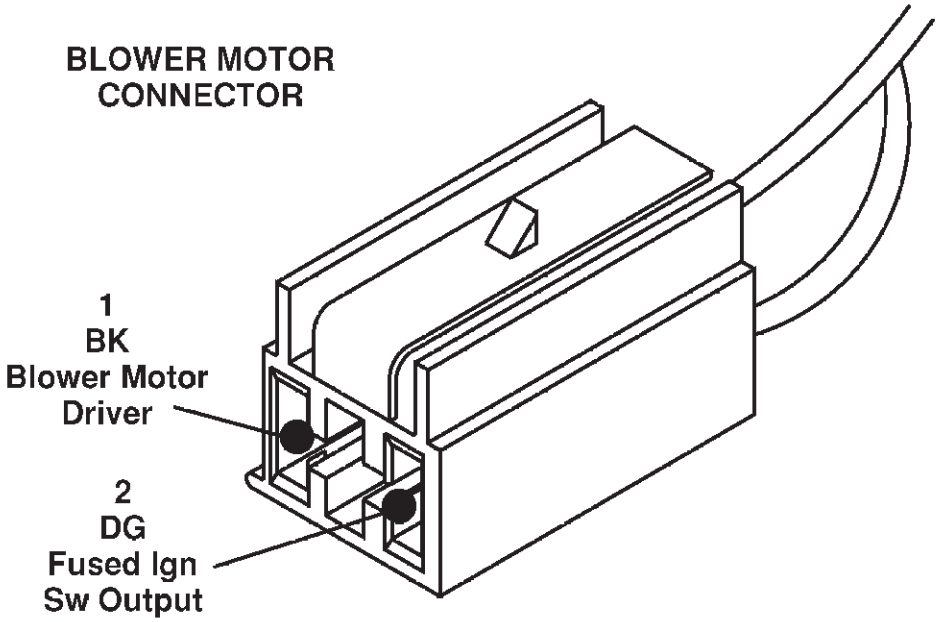
## TEST 8A REPAIRING INOPERATIVE BLOWER MOTOR

**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.***

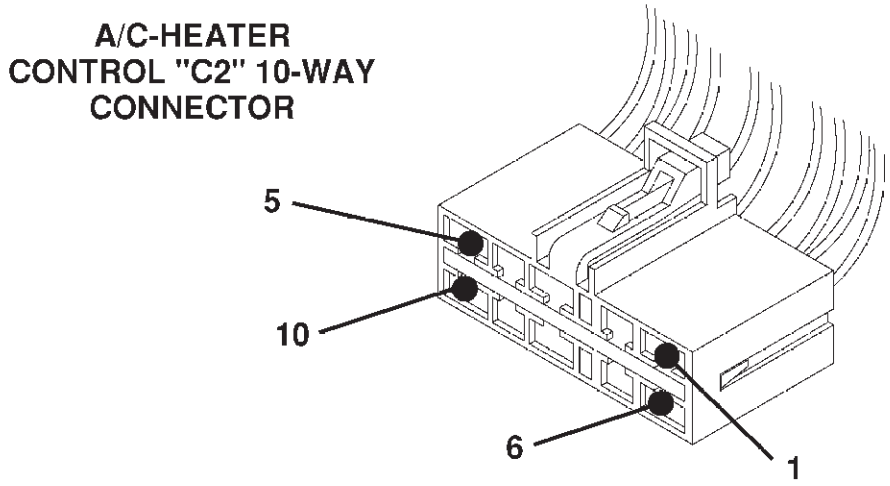
***Check connectors - Clean / repair as necessary.**




NOTE: THE CONNECTOR MUST BE CONNECTED TO PERFORM THIS STEP.

80b575ec

*FIG. 1*

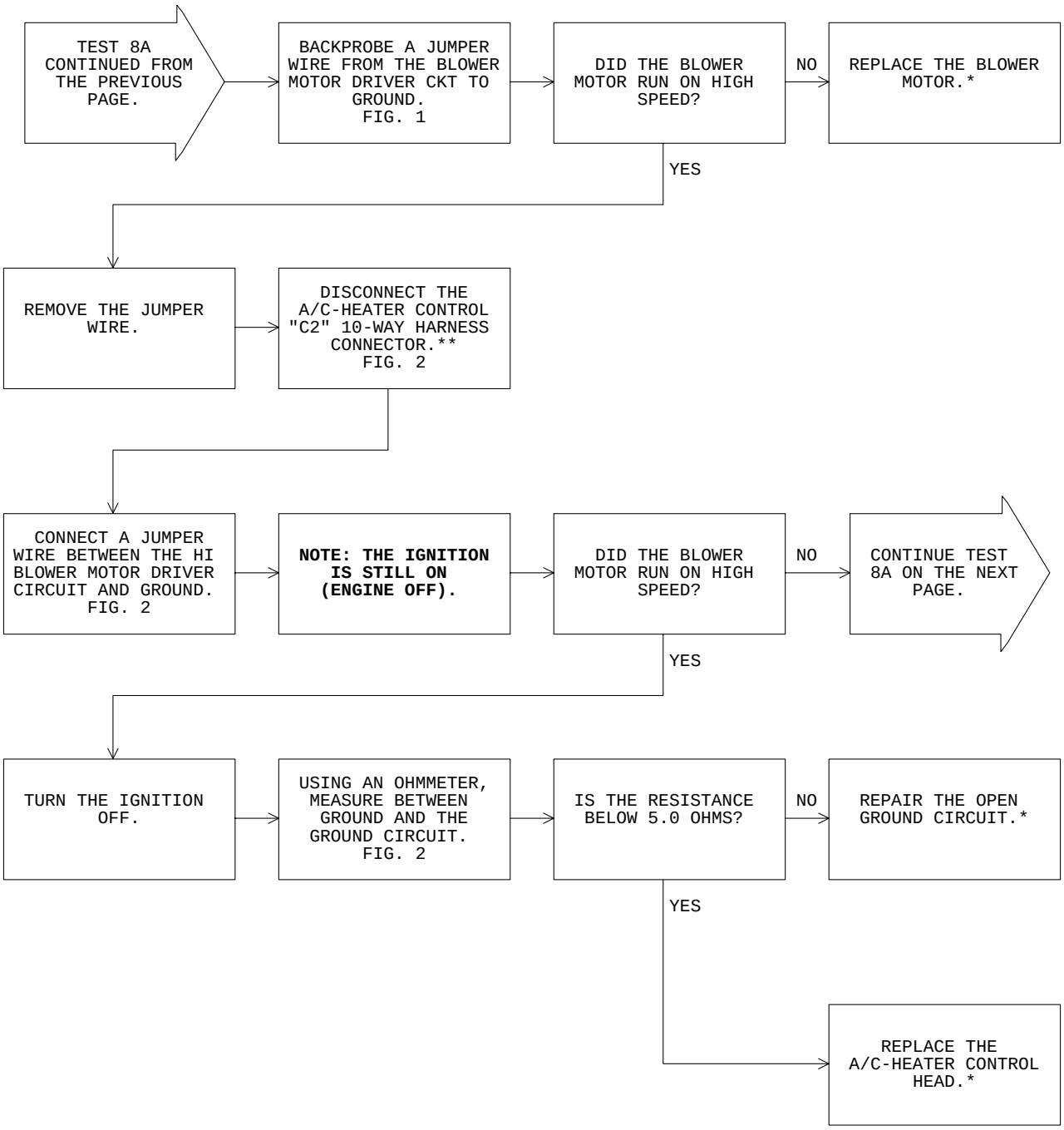



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/LG | FAN OFF SWITCH SIGNAL |
| 2 | TN | LO BLOWER MOTOR DRIVER |
| 3 | LB | M2 BLOWER MOTOR DRIVER |
| 5 | BK | GROUND |
| 7 | LG | M1 BLOWER MOTOR DRIVER |
| 10 | BK/TN | HI BLOWER MOTOR DRIVER |

80b2a1f9

*FIG. 2*

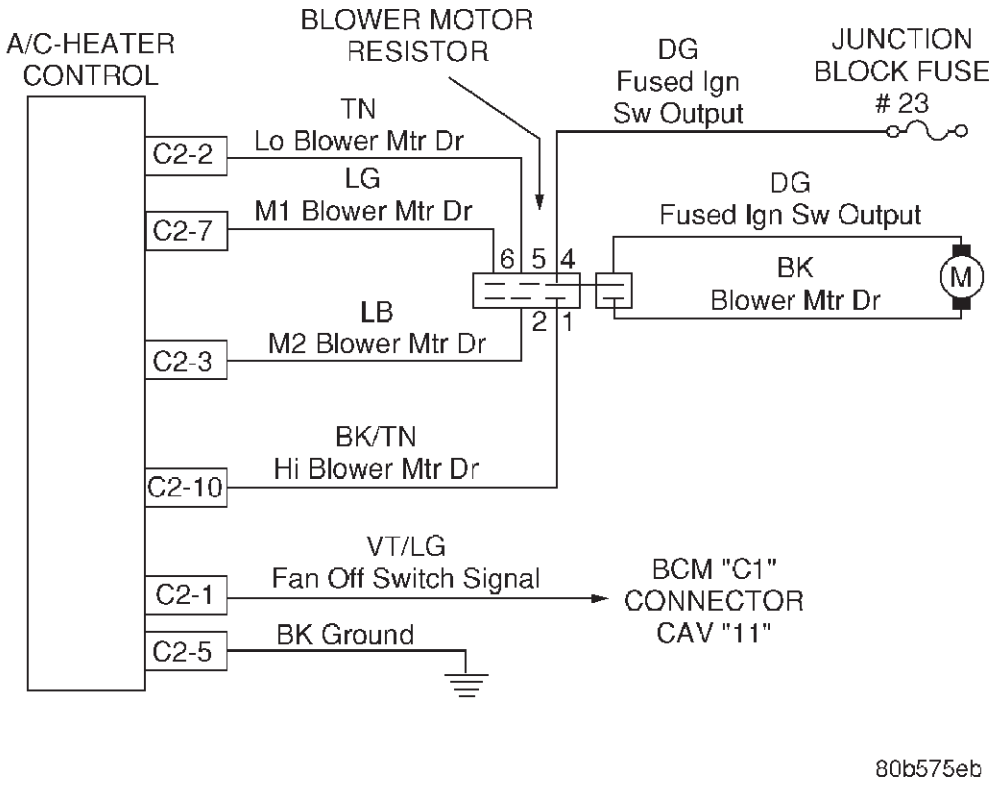
## TEST 8A CONTINUED - REPAIRING INOPERATIVE BLOWER MOTOR




***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

**TEST 8A** CONTINUED - REPAIRING INOPERATIVE BLOWER MOTOR



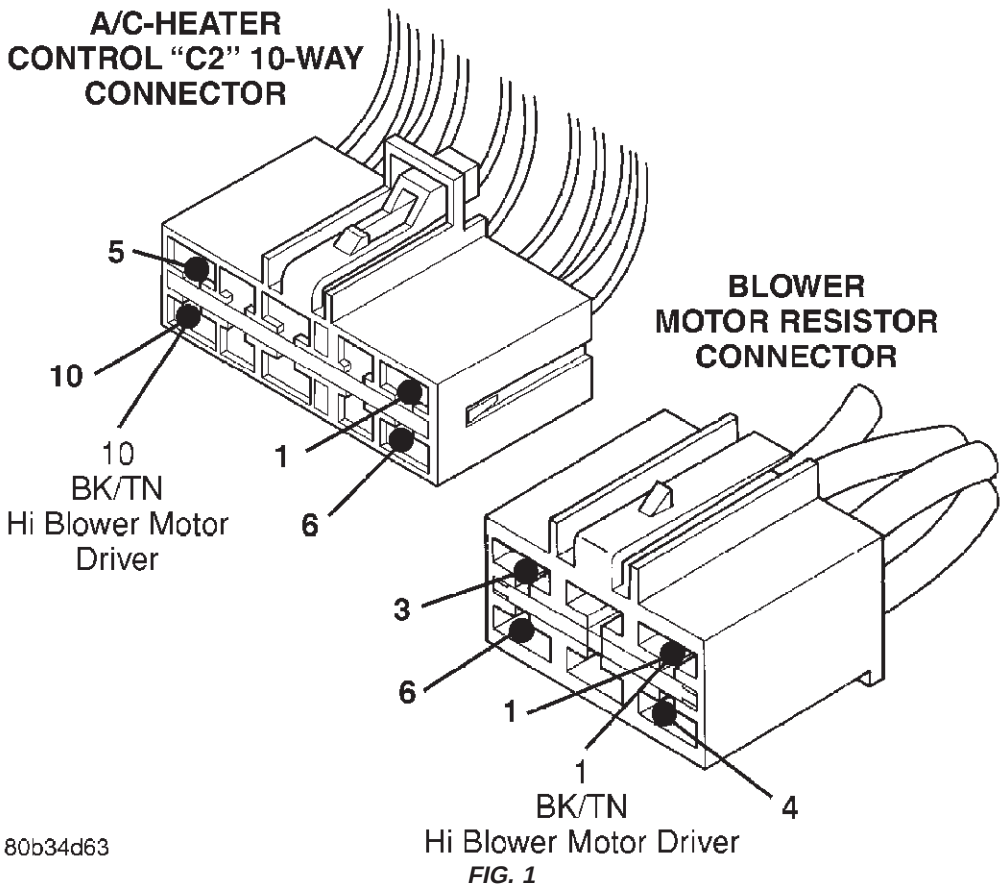
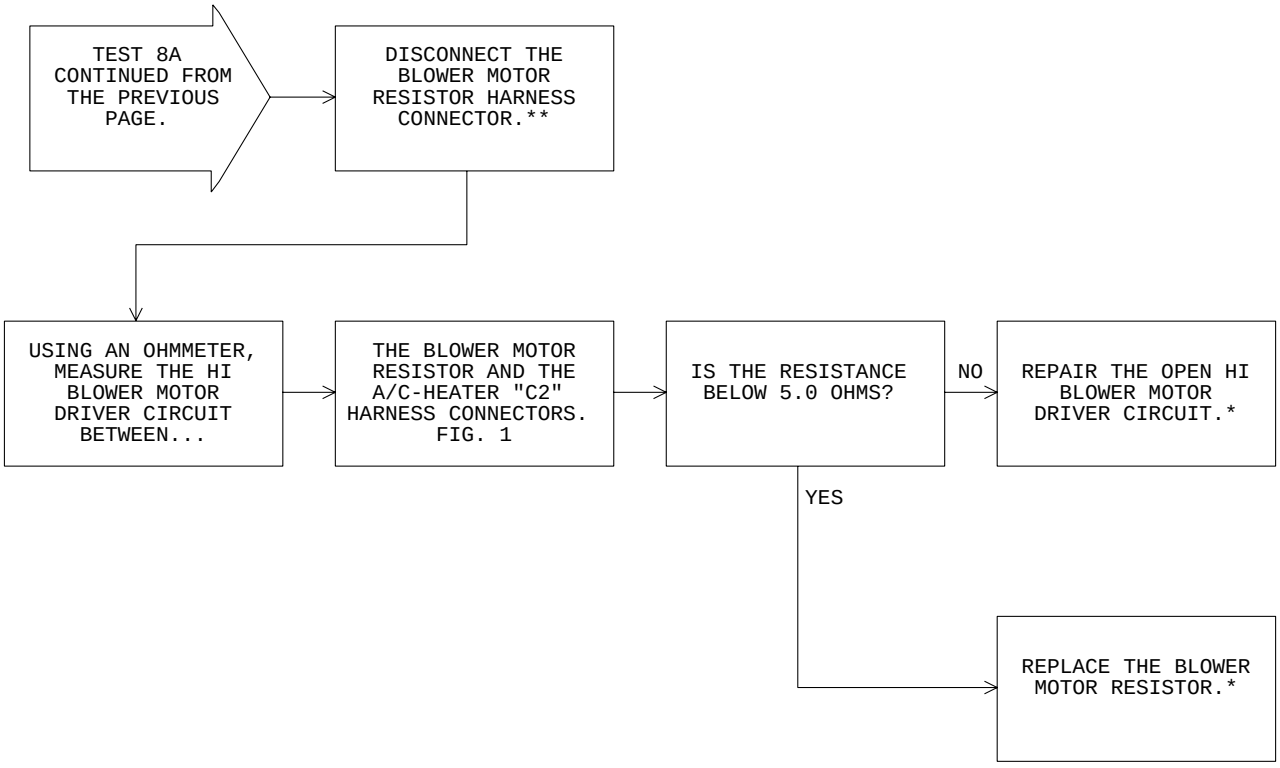




*FIG. 1*

## TEST 8A CONTINUED - REPAIRING INOPERATIVE BLOWER MOTOR

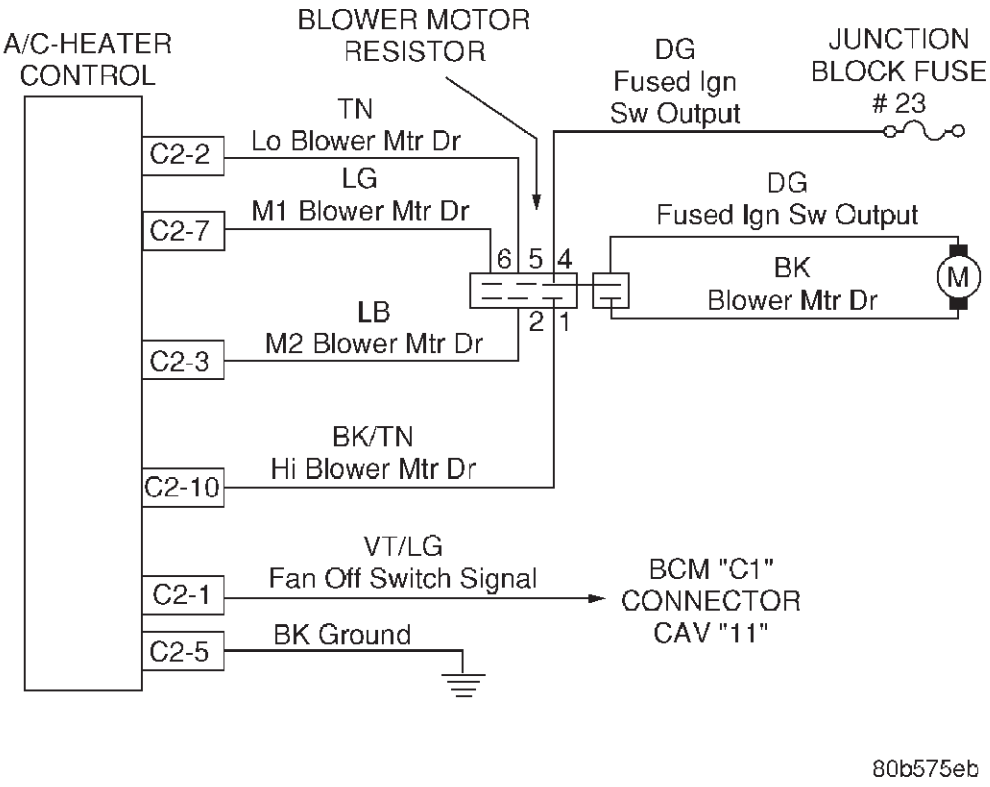


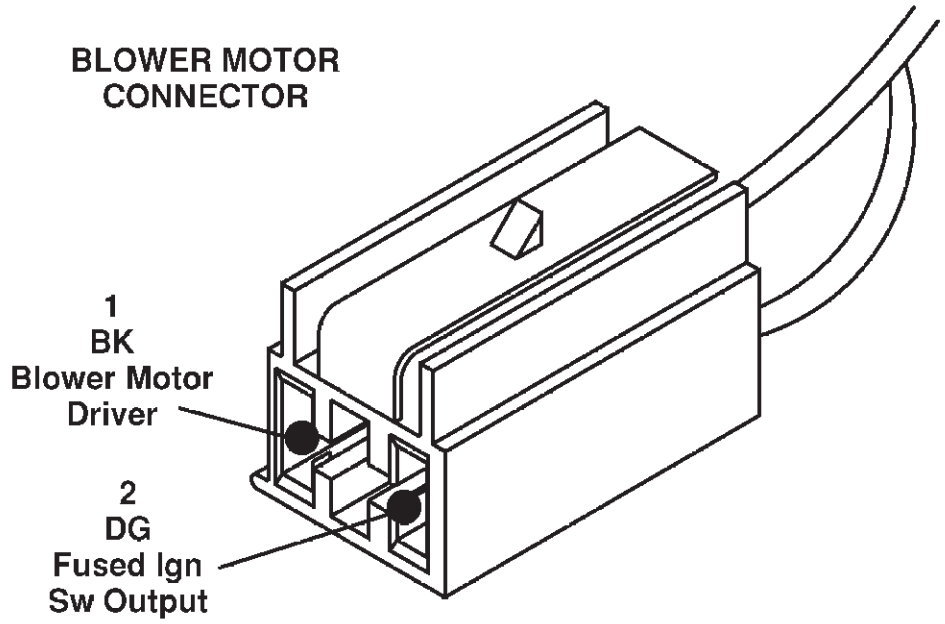

***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

**TEST 8B** REPAIRING SHORTED BLOWER MOTOR CIRCUIT

**Perform TEST 8A Before Proceeding**



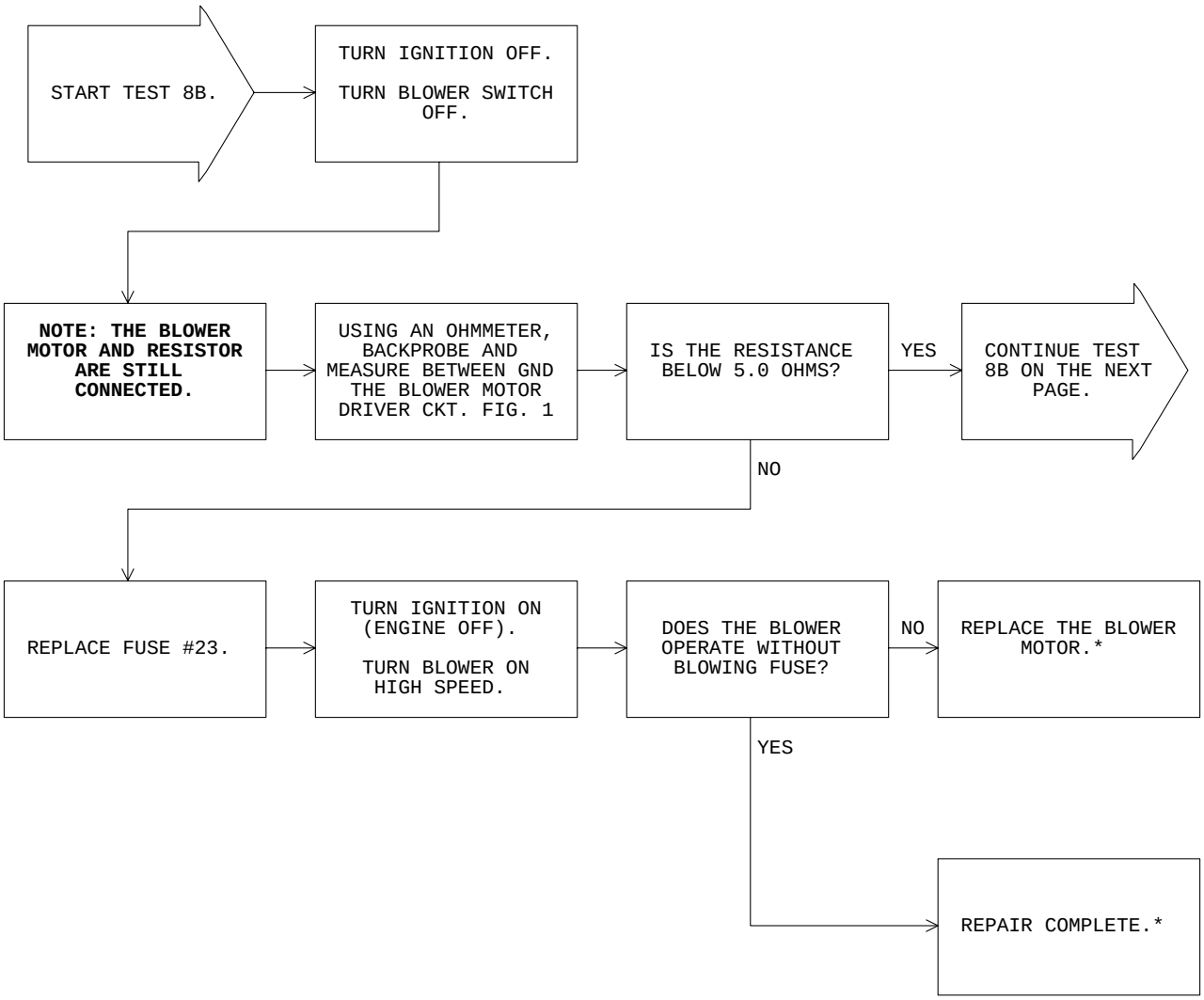

**NOTE: THE CONNECTOR MUST BE CONNECTED TO PERFORM THIS STEP.**

80b575ec

***FIG. 1***

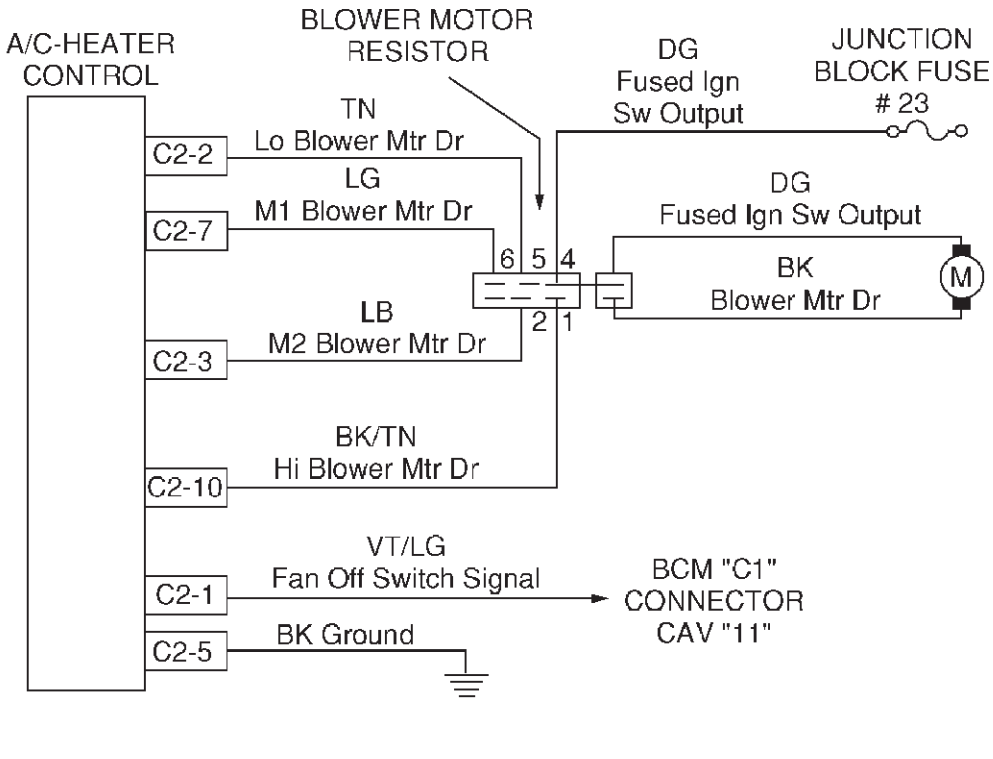
## TEST 8B REPAIRING SHORTED BLOWER MOTOR CIRCUIT

**Perform TEST 8A Before Proceeding**

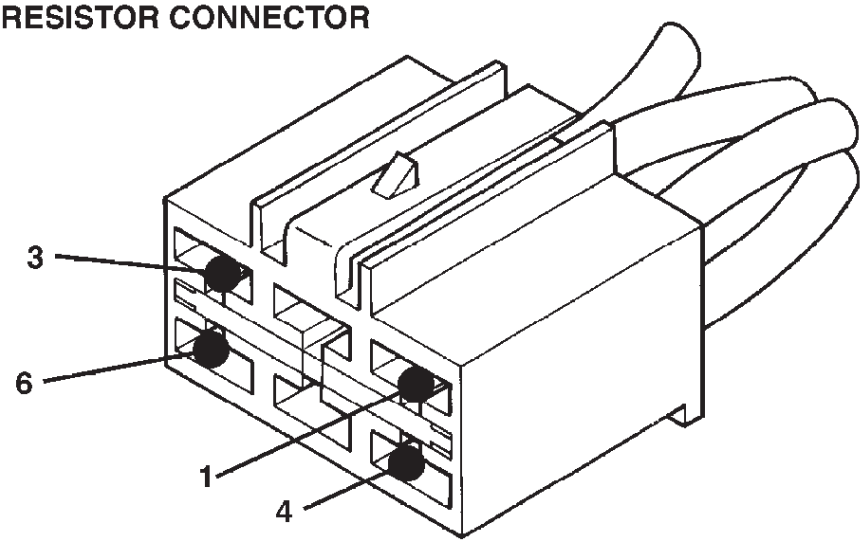



| | |
|---|---|
| ***Perform Verification TEST VER-2A.** | ****Check connectors - Clean / repair as necessary.** |

**TEST 8B** CONTINUED - REPAIRING SHORTED BLOWER MOTOR CIRCUIT




**BLOWER MOTOR RESISTOR CONNECTOR**

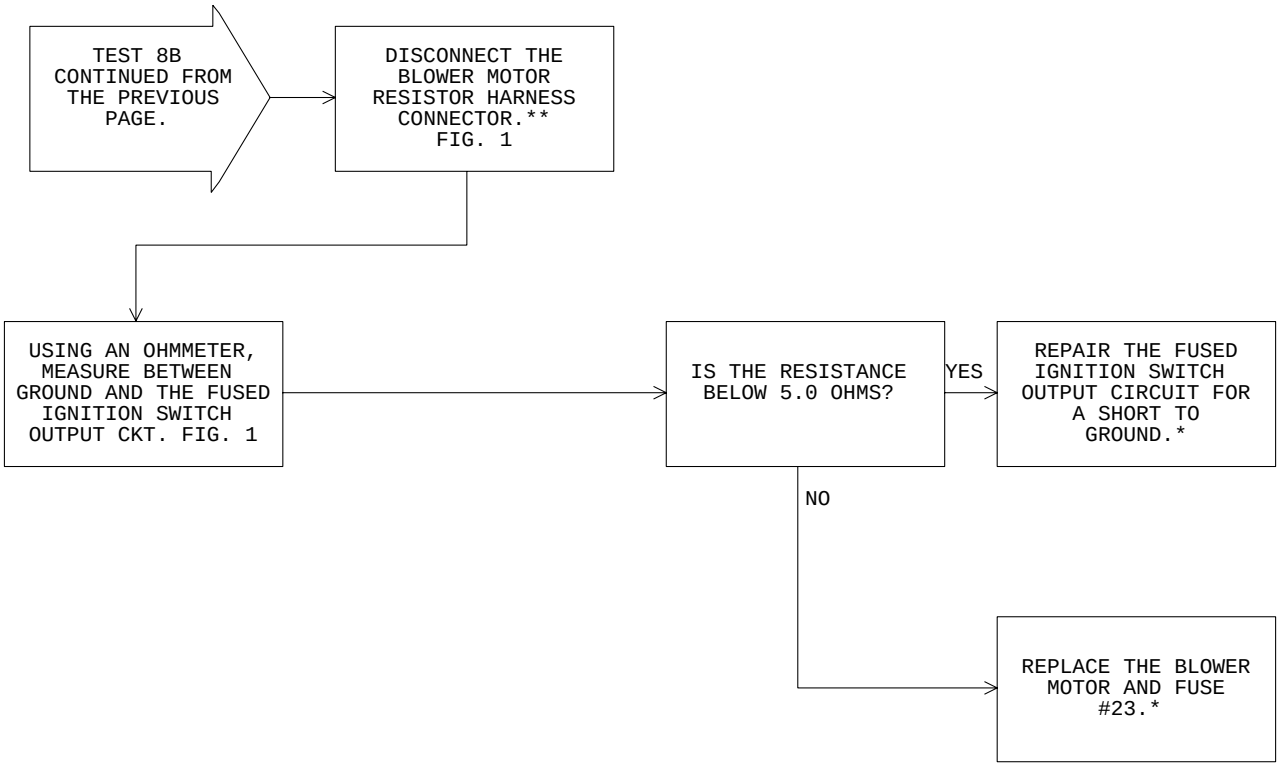



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/TN | HI BLOWER MOTOR DRIVER |
| 2 | LB | M2 BLOWER MOTOR DRIVER |
| 4 | DG | FUSED IGNITION SWITCH OUTPUT |
| 5 | TN | LO BLOWER MOTOR DRIVER |
| 6 | LG | M1 BLOWER MOTOR DRIVER |

80b2a1f4

***FIG. 1***

## TEST 8B CONTINUED - REPAIRING SHORTED BLOWER MOTOR CIRCUIT

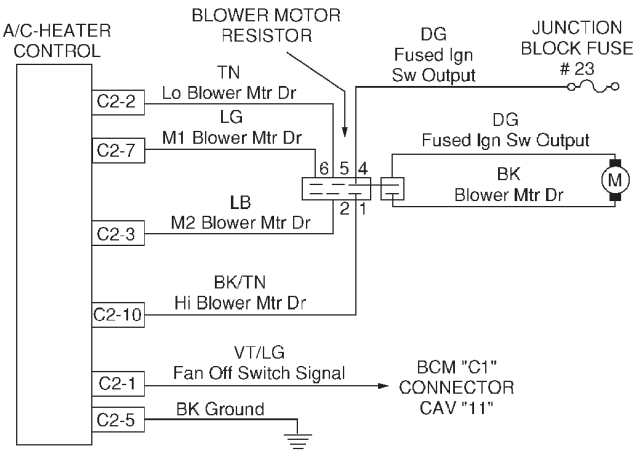


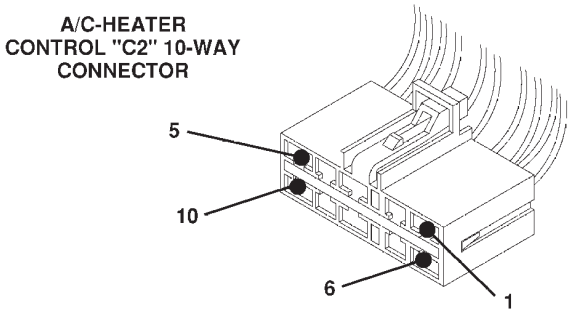

***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 9A REPAIRING INCORRECT BLOWER MOTOR SPEEDS

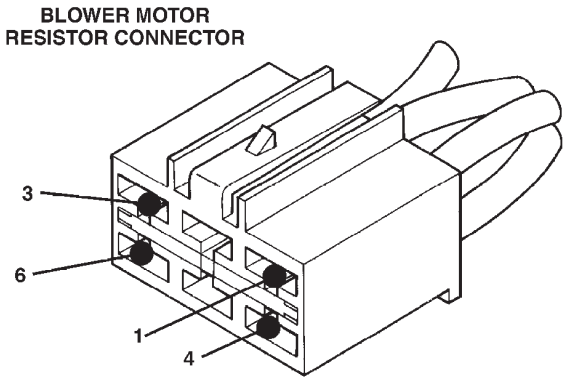
**Perform TEST 1A Before Proceeding**



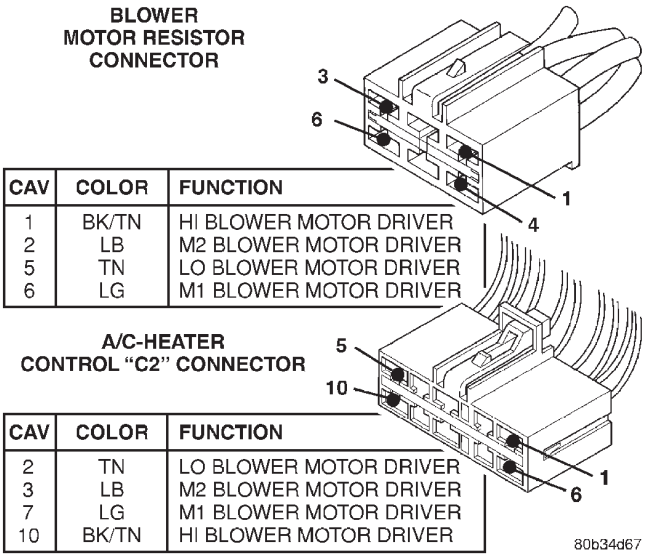

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/LG | FAN OFF SWITCH SIGNAL |
| 2 | TN | LO BLOWER MOTOR DRIVER |
| 3 | LB | M2 BLOWER MOTOR DRIVER |
| 5 | BK | GROUND |
| 7 | LG | M1 BLOWER MOTOR DRIVER |
| 10 | BK/TN | HI BLOWER MOTOR DRIVER |

***FIG. 1***




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/TN | HI BLOWER MOTOR DRIVER |
| 2 | LB | M2 BLOWER MOTOR DRIVER |
| 4 | DG | FUSED IGNITION SWITCH OUTPUT |
| 5 | TN | LO BLOWER MOTOR DRIVER |
| 6 | LG | M1 BLOWER MOTOR DRIVER |

***FIG. 2***



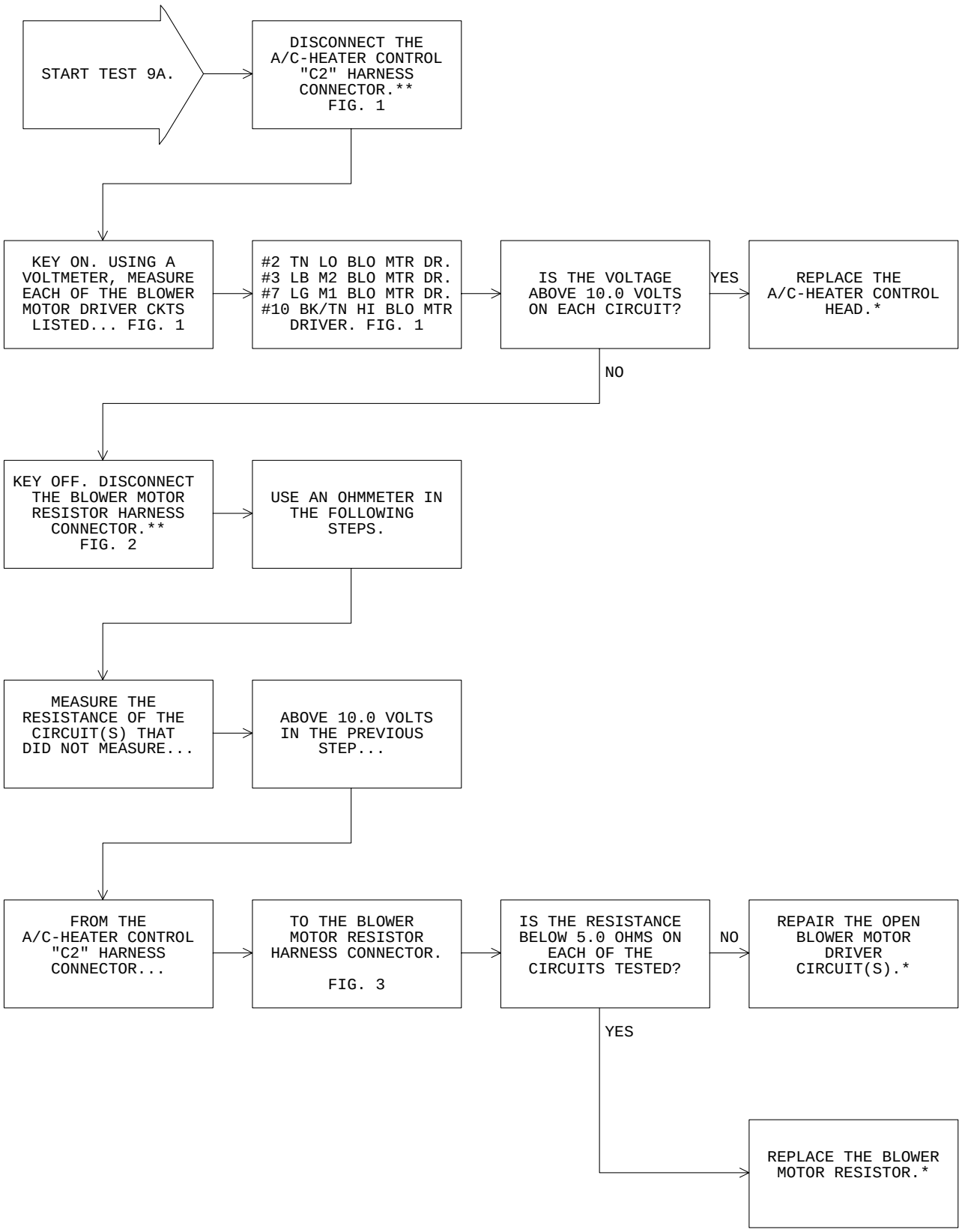

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/TN | HI BLOWER MOTOR DRIVER |
| 2 | LB | M2 BLOWER MOTOR DRIVER |
| 5 | TN | LO BLOWER MOTOR DRIVER |
| 6 | LG | M1 BLOWER MOTOR DRIVER |

| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | TN | LO BLOWER MOTOR DRIVER |
| 3 | LB | M2 BLOWER MOTOR DRIVER |
| 7 | LG | M1 BLOWER MOTOR DRIVER |
| 10 | BK/TN | HI BLOWER MOTOR DRIVER |

***FIG. 3***

## TEST 9A — REPAIRING INCORRECT BLOWER MOTOR SPEEDS

**Perform TEST 1A Before Proceeding**

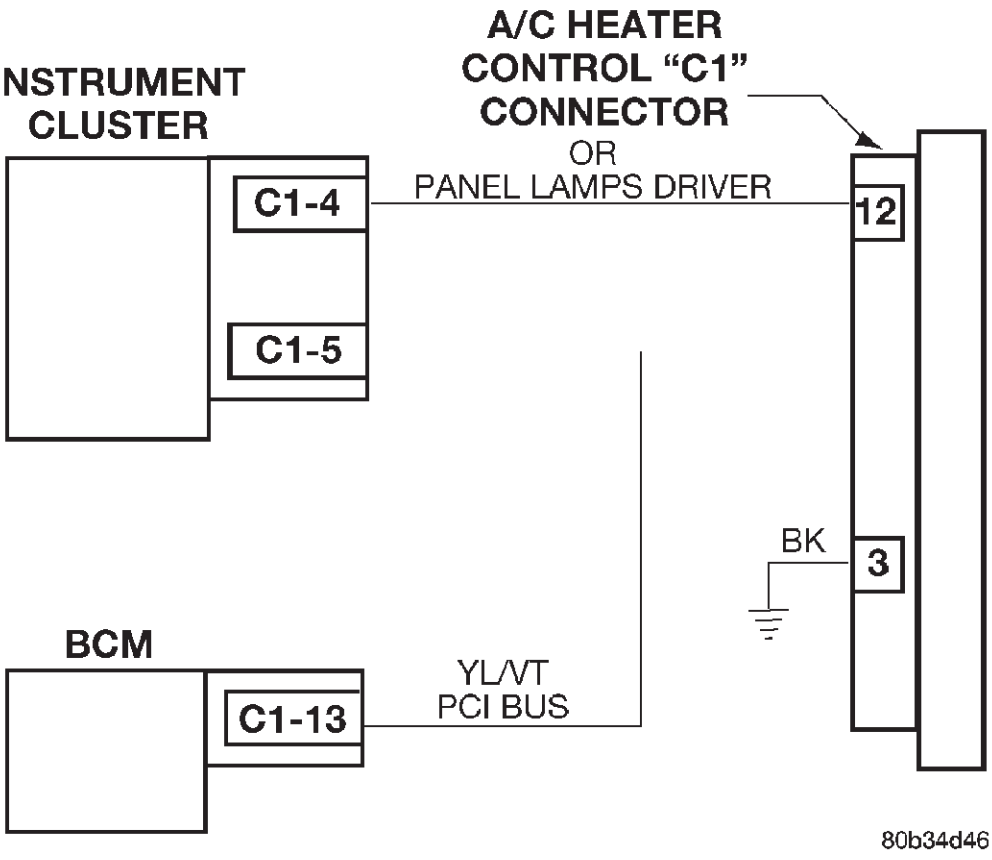


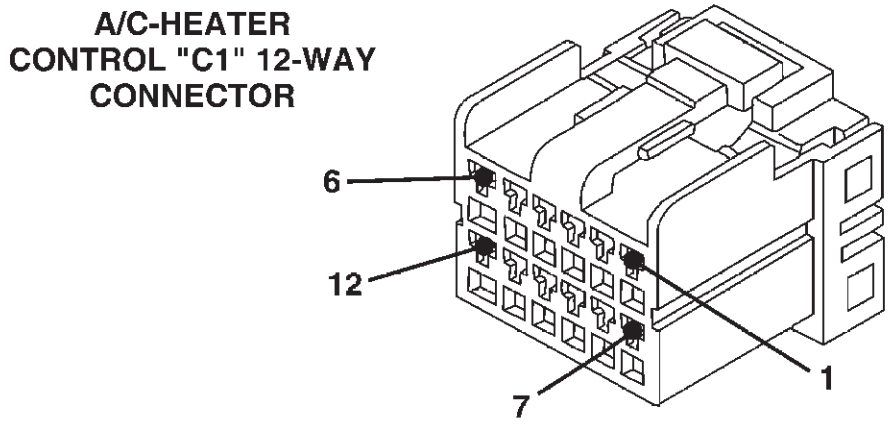

***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

**TEST 10A** REPAIRING CONTROL HEAD ILLUMINATION

**Perform TEST 1A Before Proceeding**



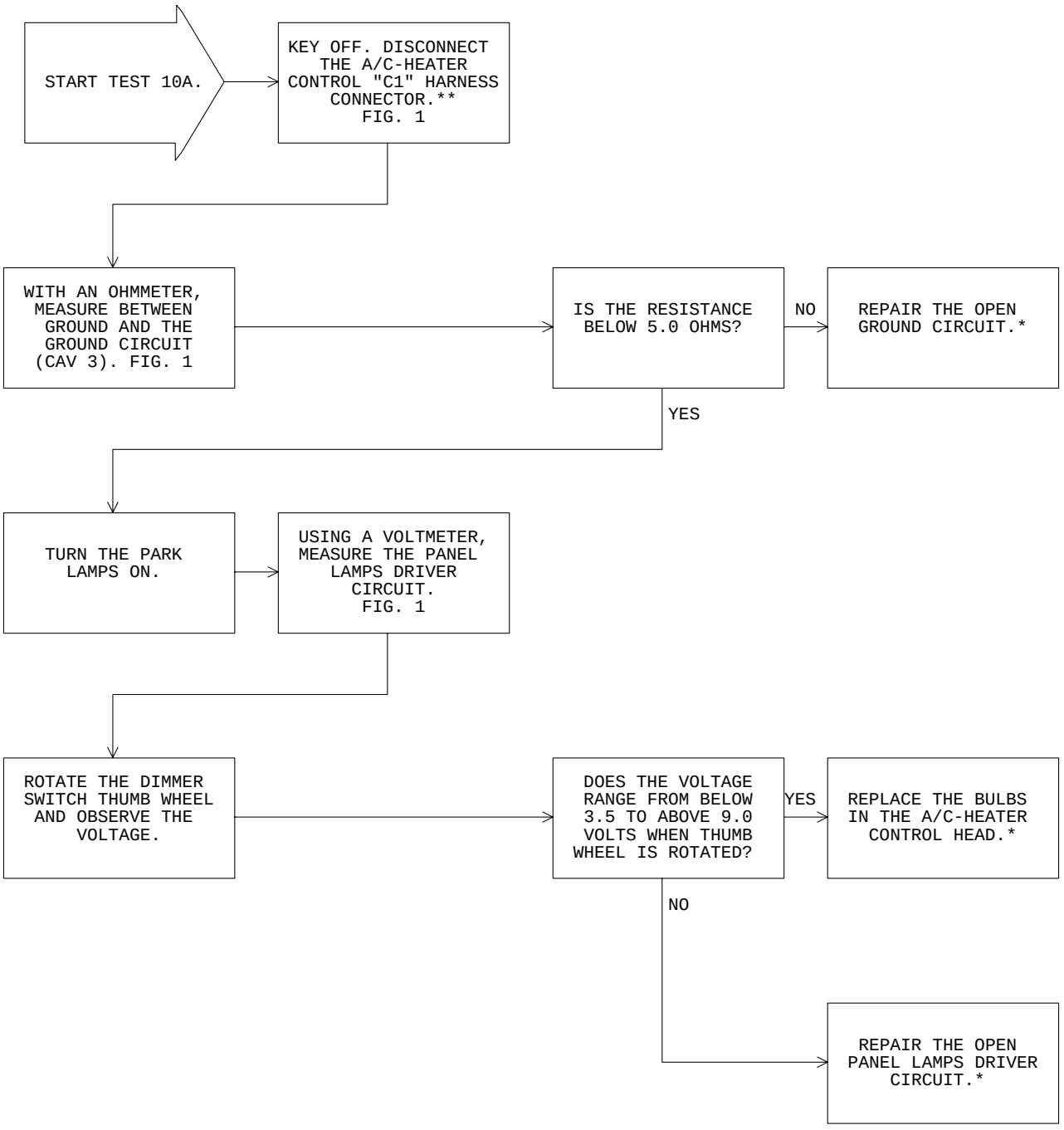

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/PK | A/C L.E.D. INDICATOR SIGNAL |
| 2 | DB/WT | REAR DEFOGGER SWITCH SENSE |
| 3 | BK | GROUND |
| 4 | DB/GY | SENSOR GROUND |
| 5 | WT | FUSED IGNITION SWITCH OUTPUT |
| 6 | BK/YL | PARK LAMP RELAY OUTPUT |
| 9 | YL/OR | TEMPERATURE SELECT |
| 10 | RD/TN | MODE SWITCH MUX |
| 12 | OR | PANEL LAMPS DRIVER |

80b2a1fa

*FIG. 1*

## TEST 10A REPAIRING CONTROL HEAD ILLUMINATION

**Perform TEST 1A Before Proceeding**

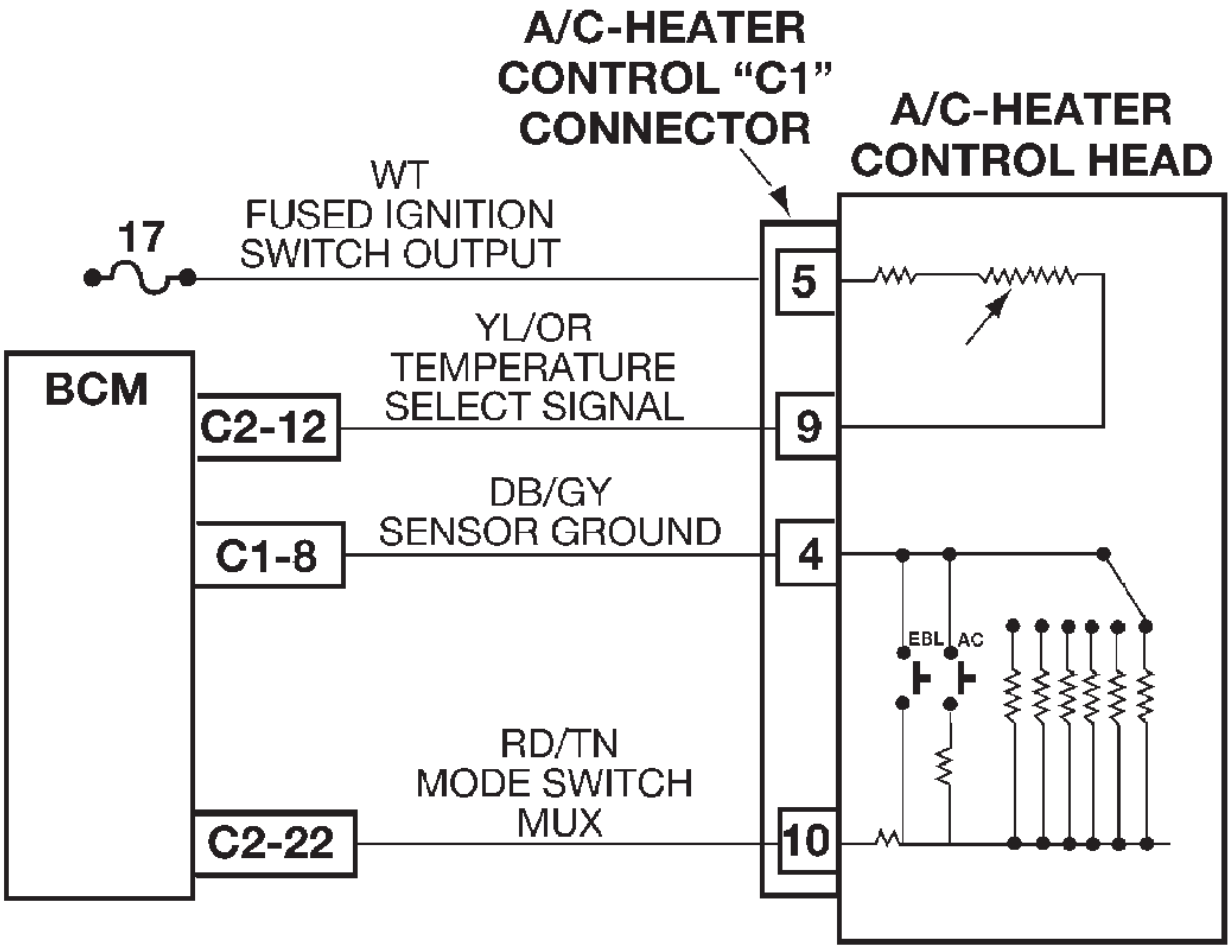



***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

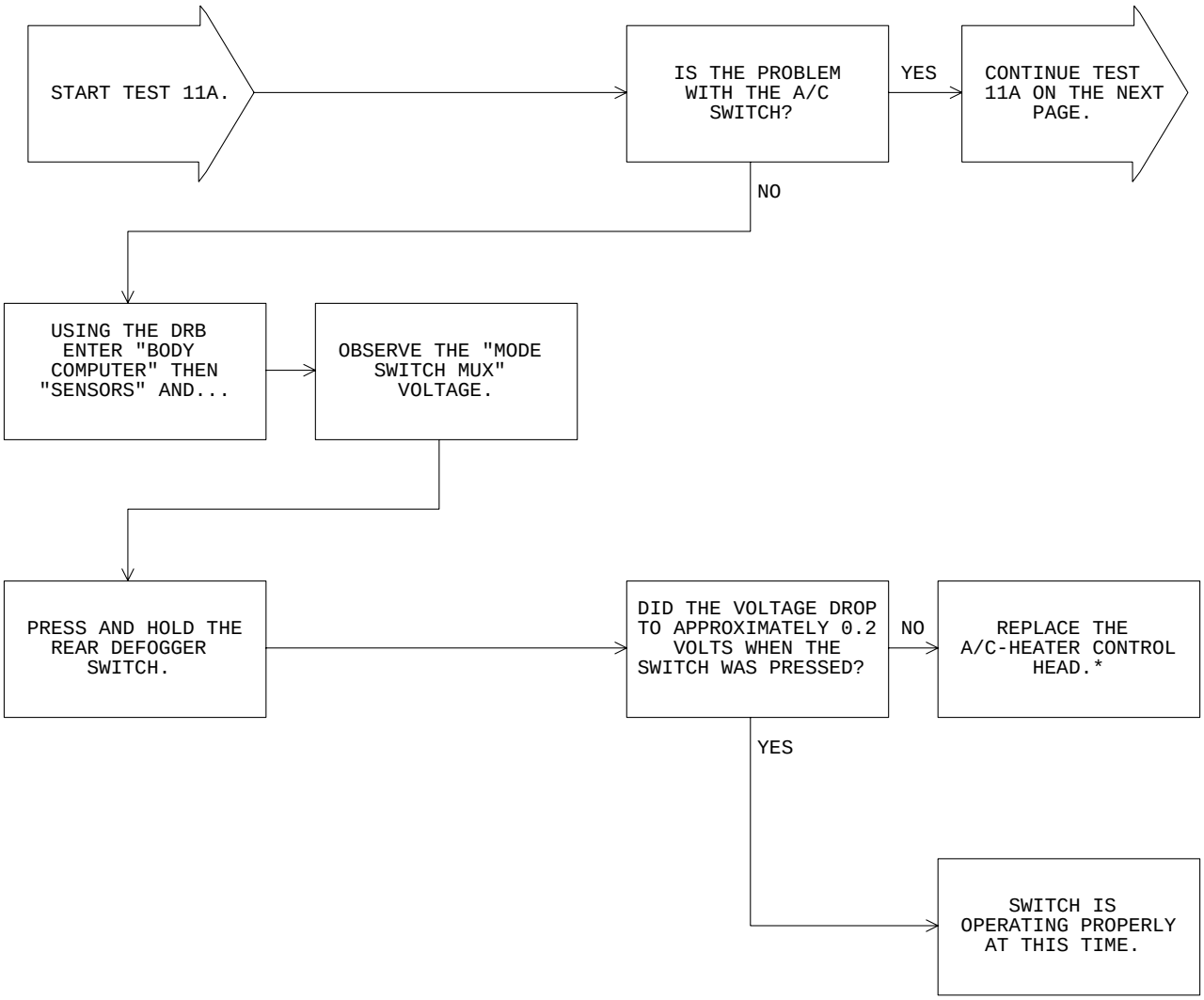
| TEST 11A | REPAIRING INOPERATIVE CONTROL HEAD SWITCH |
|---|---|

Perform TEST 1A Before Proceeding



## TEST 11A REPAIRING INOPERATIVE CONTROL HEAD SWITCH

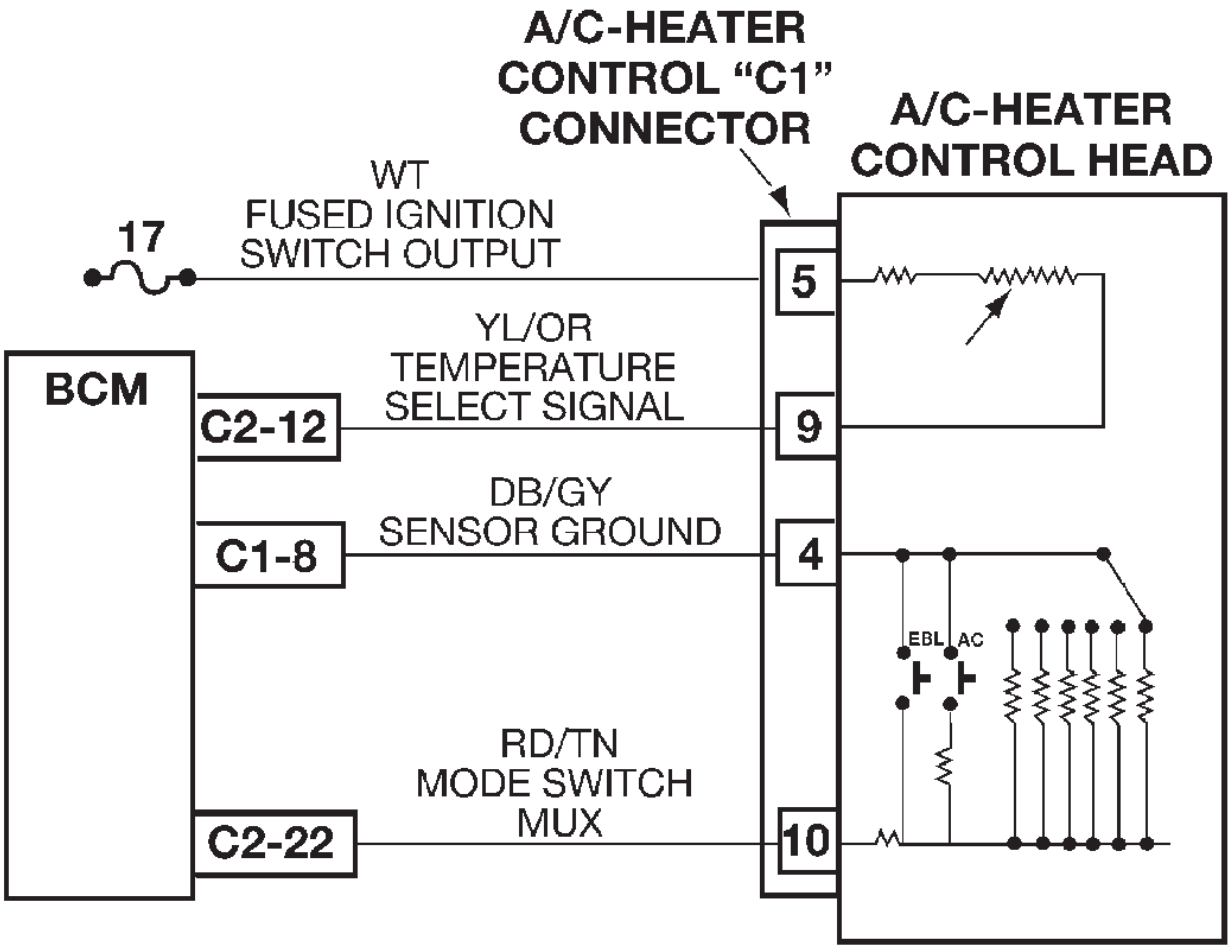
**Perform TEST 1A Before Proceeding**



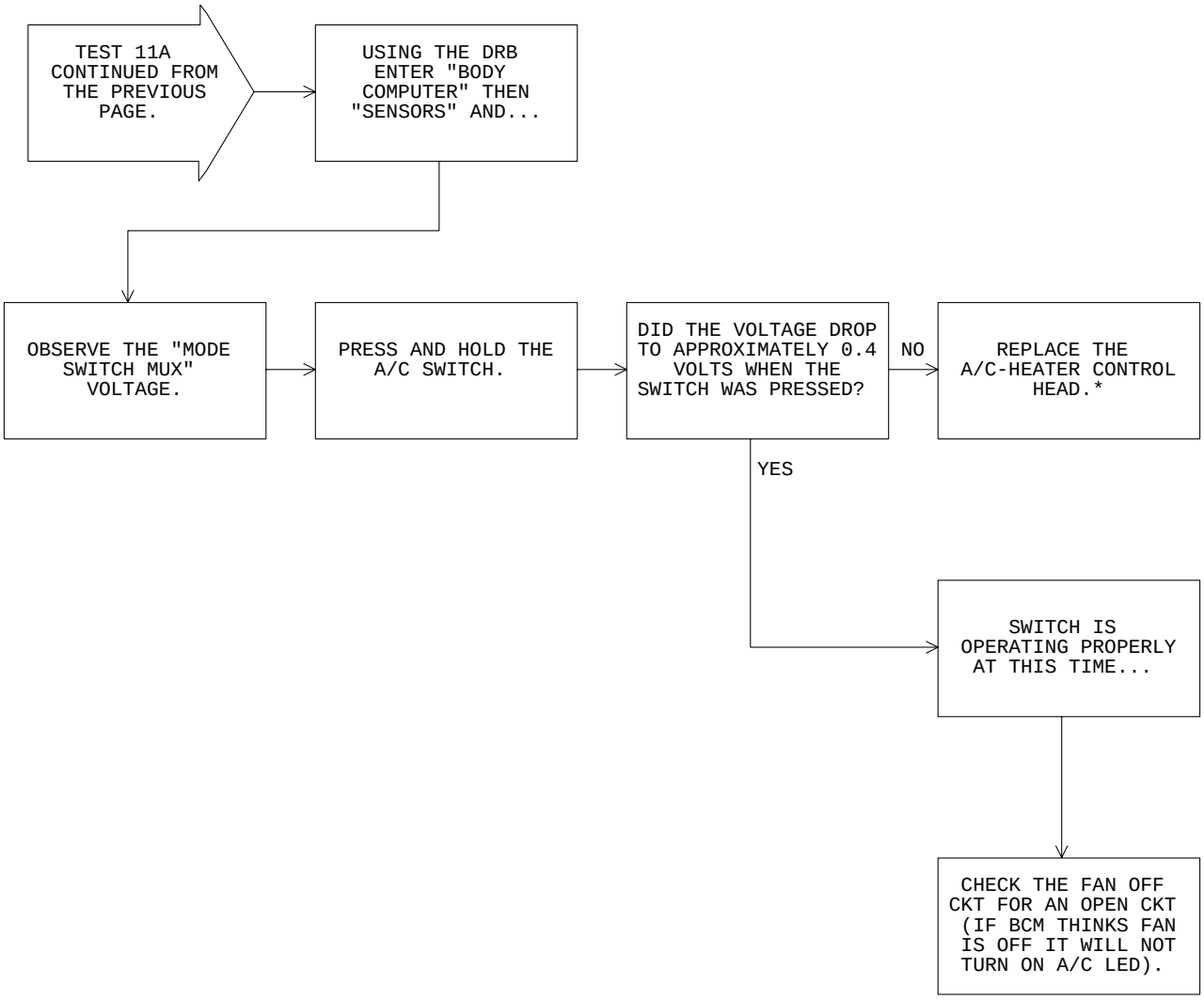

***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

**TEST 11A** CONTINUED - REPAIRING INOPERATIVE CONTROL HEAD SWITCH



## TEST 11A CONTINUED - REPAIRING INOPERATIVE CONTROL HEAD SWITCH

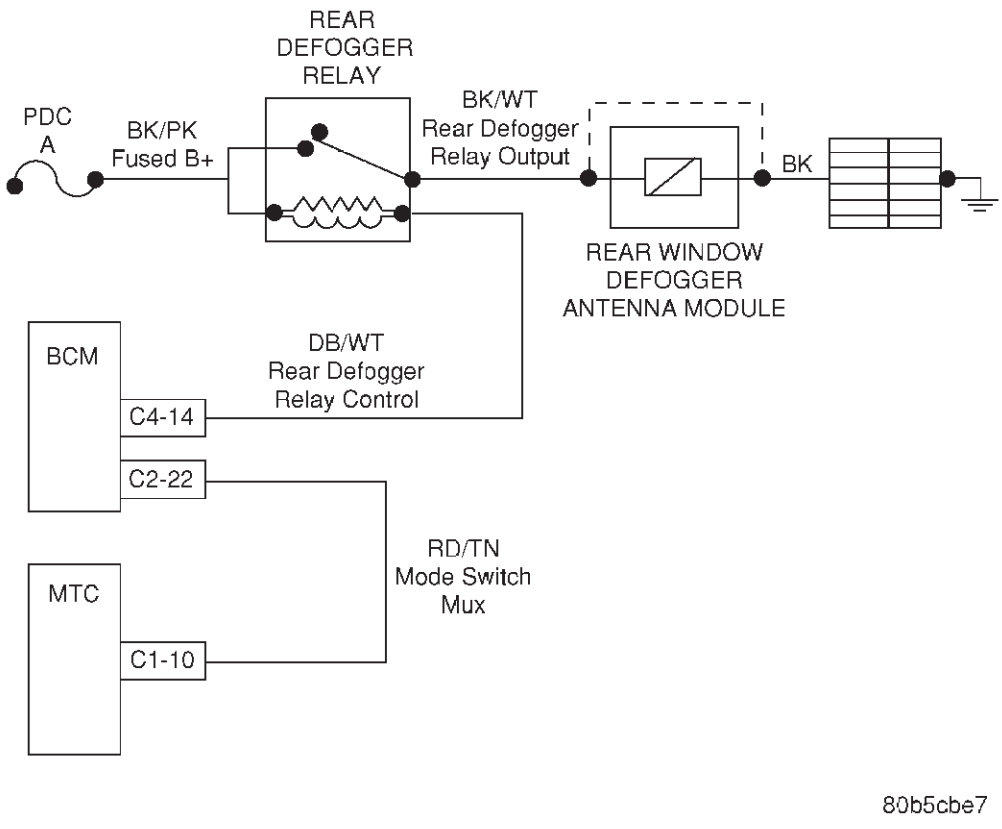


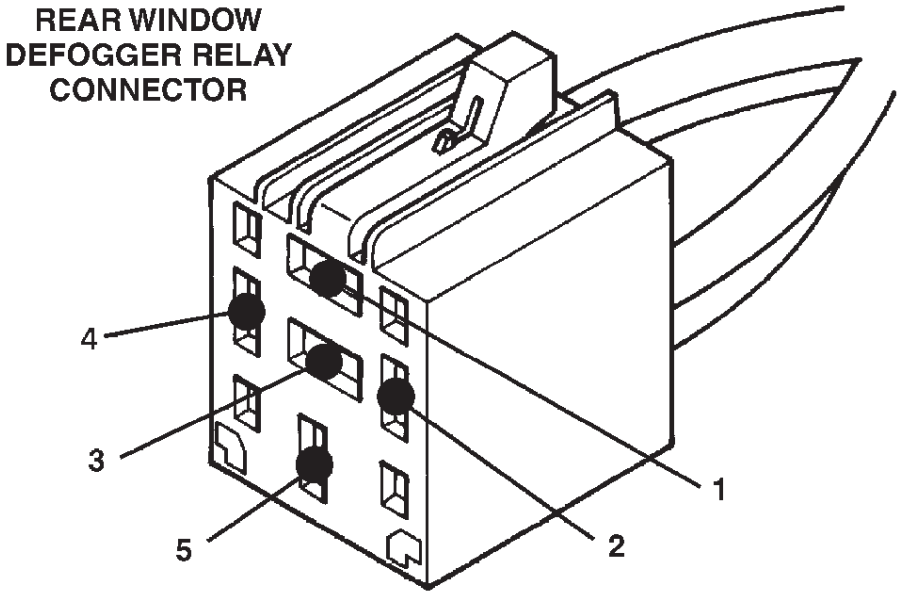

***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 12A REPAIRING REAR WINDOW DEFOGGER

**Perform TEST 1A Before Proceeding**



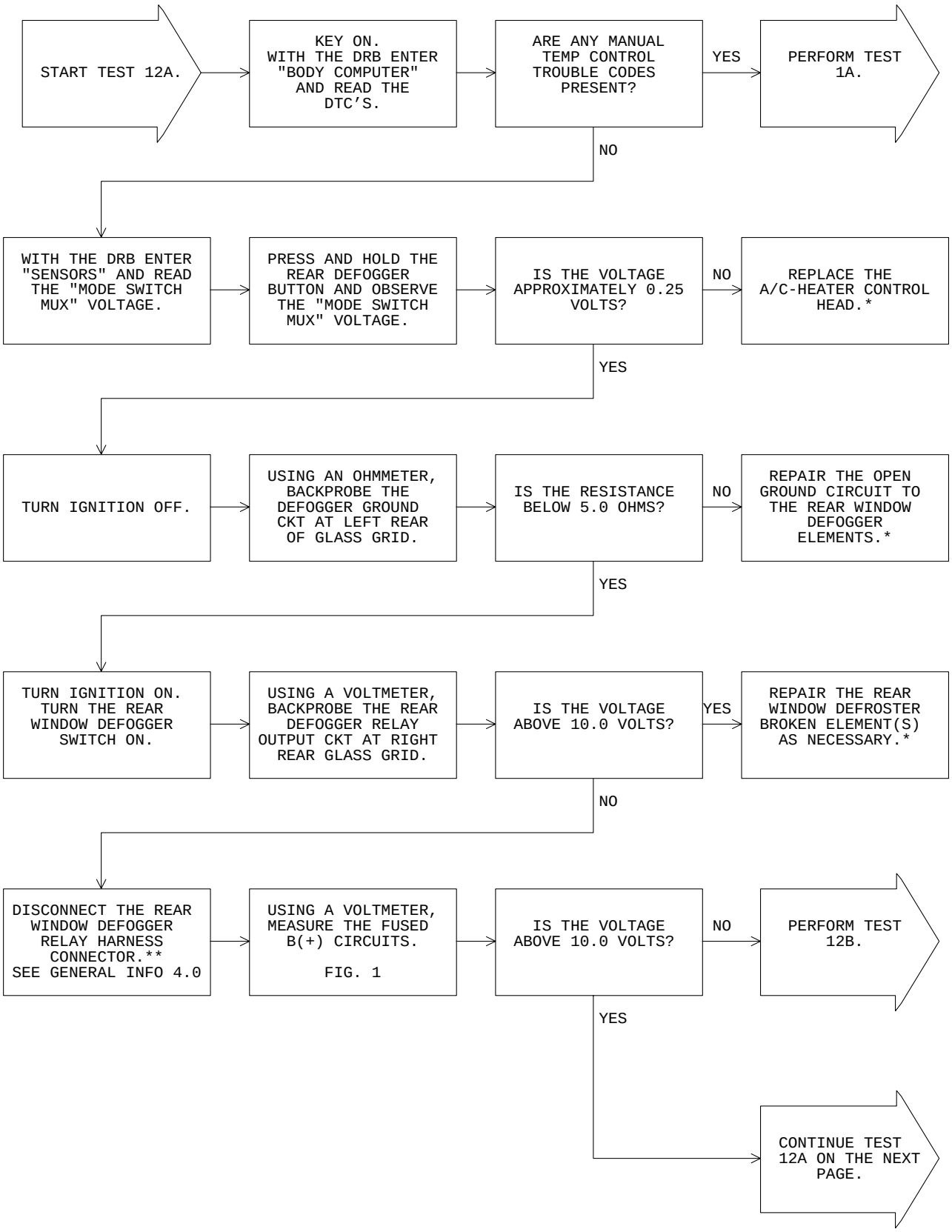

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 (87) | BK/WT | REAR DEFOGGER RELAY OUTPUT |
| 2 (86) | BK/PK | FUSED B(+) |
| 4 (85) | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 5 (30) | BK/PK | FUSED B(+) |

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***FIG. 1***

## TEST 12A REPAIRING REAR WINDOW DEFOGGER

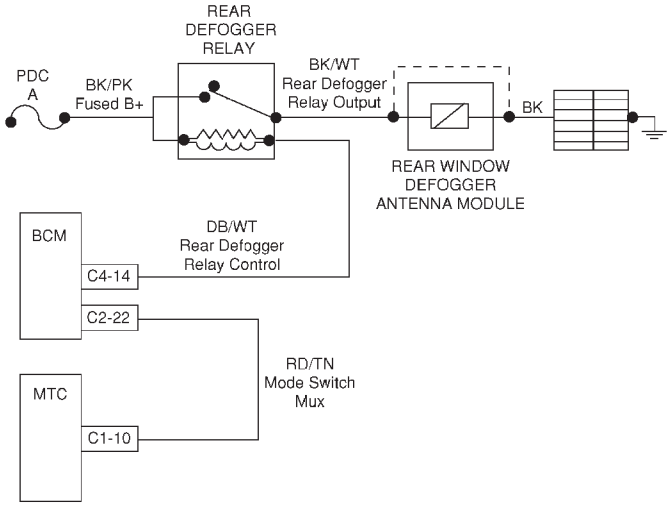
**Perform TEST 1A Before Proceeding**

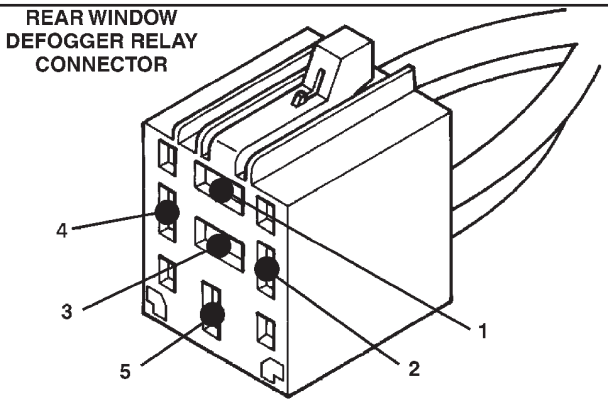



***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

## TEST 12A CONTINUED - REPAIRING REAR WINDOW DEFOGGER

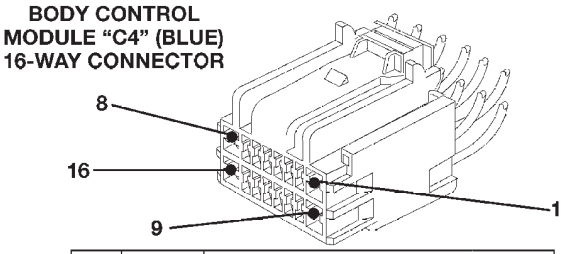



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 (87) | BK/WT | REAR DEFOGGER RELAY OUTPUT |
| 2 (86) | BK/PK | FUSED B(+) |
| 4 (85) | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 5 (30) | BK/PK | FUSED B(+) |

80b29f30

***FIG. 1***

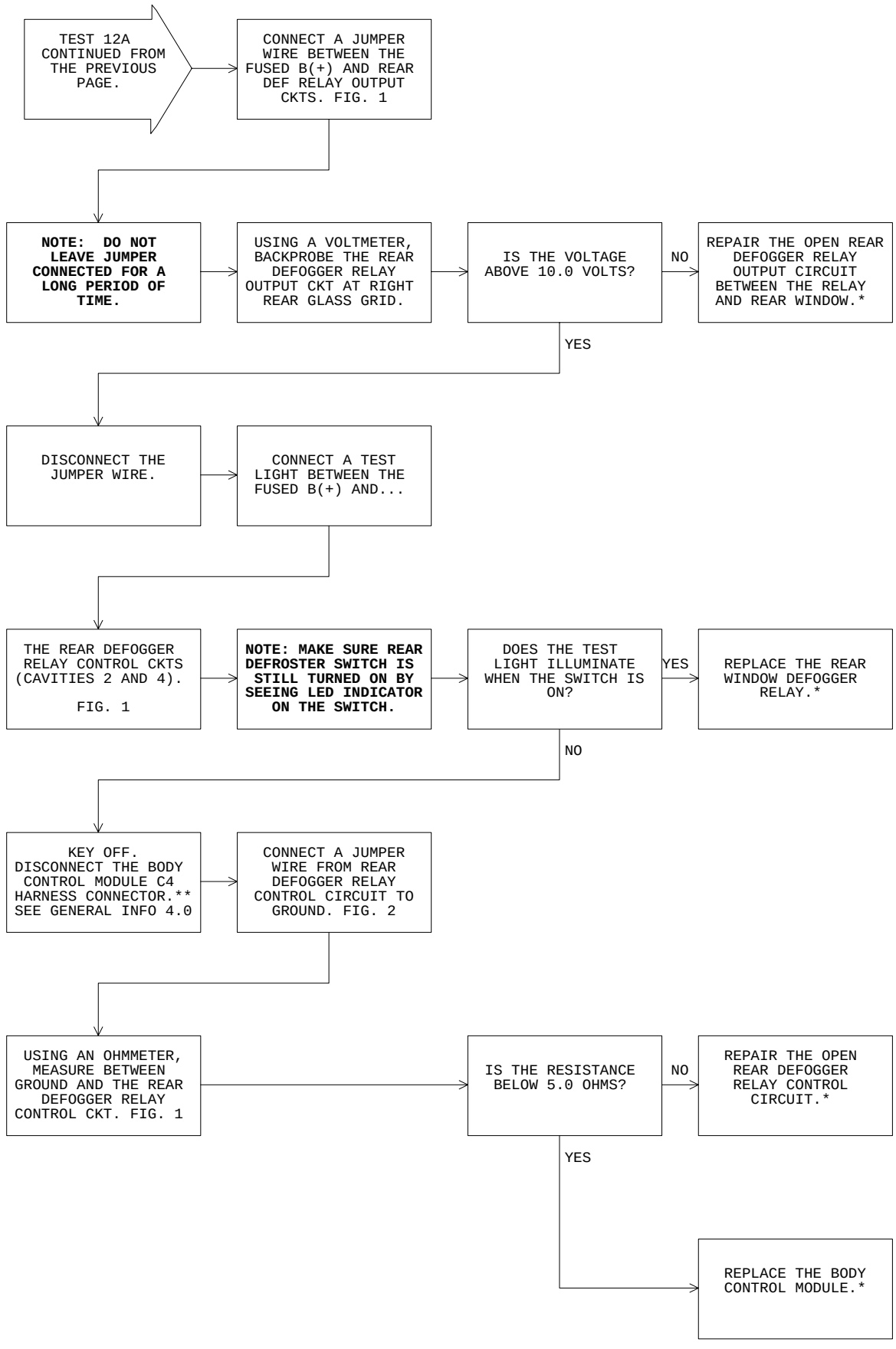



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

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***FIG. 2***

## TEST 12A CONTINUED - REPAIRING REAR WINDOW DEFOGGER

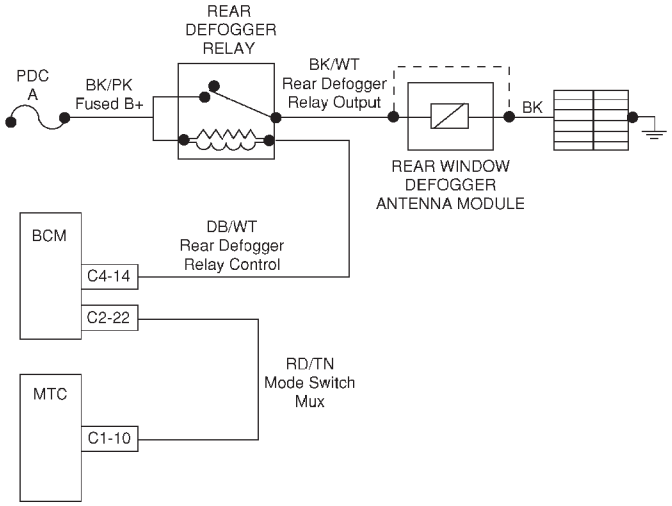



***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 12B REPAIRING REAR WINDOW DEFOGGER

**Perform TEST 12A Before Proceeding**



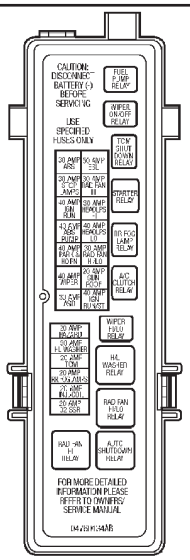
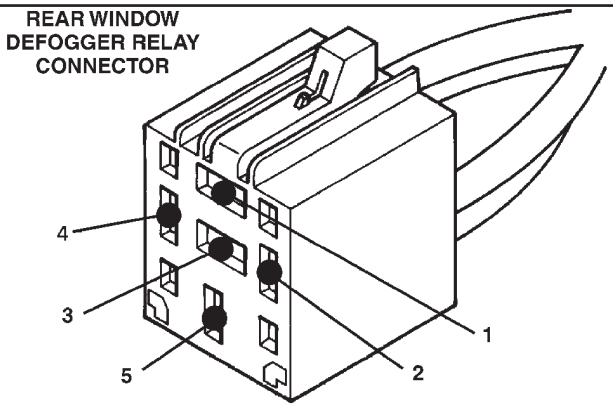




*FIG. 1*



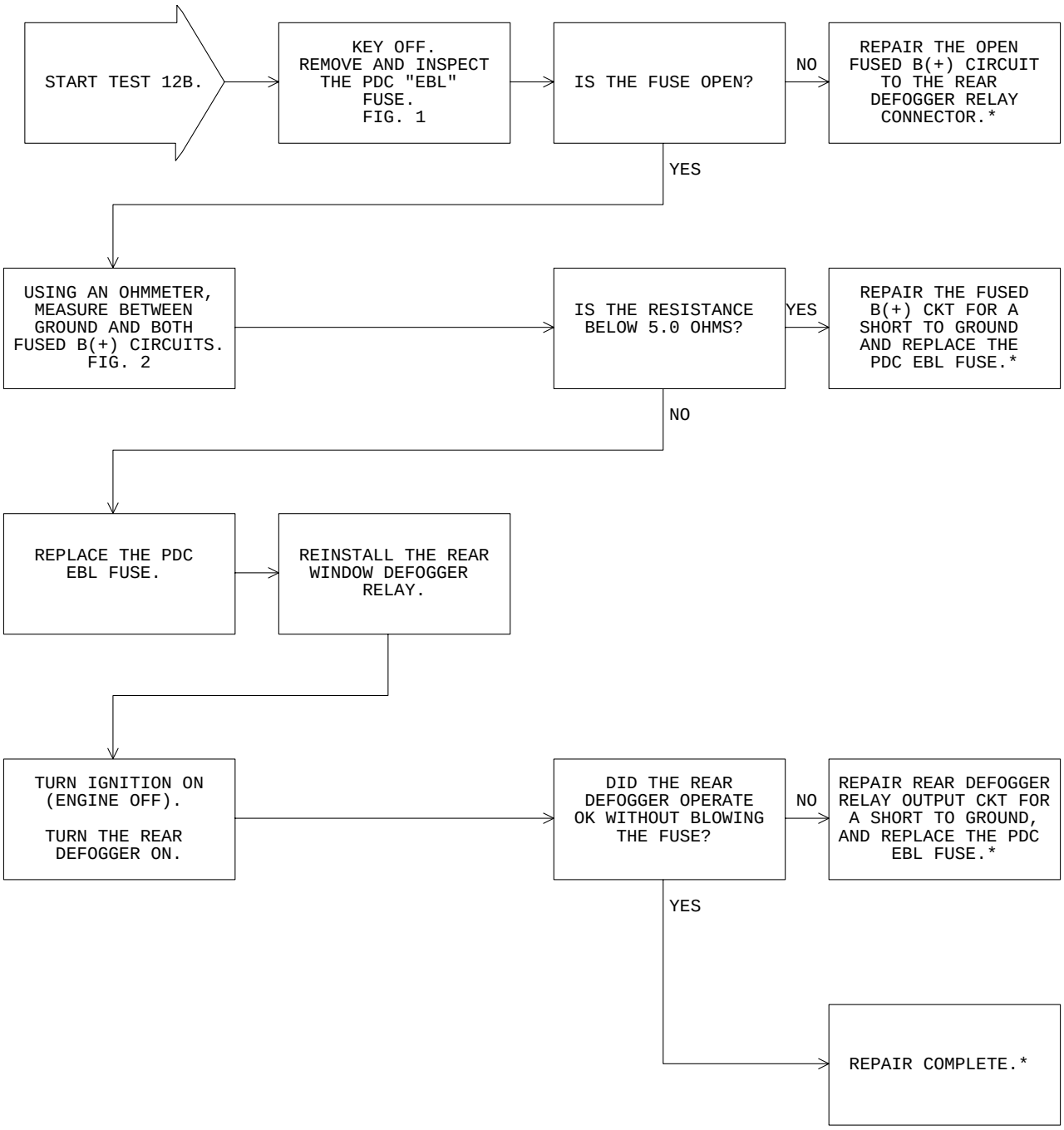

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 (87) | BK/WT | REAR DEFOGGER RELAY OUTPUT |
| 2 (86) | BK/PK | FUSED B(+) |
| 4 (85) | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 5 (30) | BK/PK | FUSED B(+) |

80b29f30

*FIG. 2*

## TEST 12B REPAIRING REAR WINDOW DEFOGGER

**Perform TEST 12A Before Proceeding**




***Perform Verification TEST VER-2A.** | ***Check connectors - Clean / repair as necessary.**

**TEST 1A** **IDENTIFYING MEMORY SYSTEM PROBLEMS**

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**

TEST 1A IDENTIFYING MEMORY HEATED SEAT/MIRROR PROBLEMS

Diagnostics for the memory system are trouble code (DTC) driven. Almost all problems will have a code to aide in diagnosis. Most codes will remain in memory for 20 ignition starts which can help in diagnosing intermittent problems.

1. Ensure there is communication with the DRB, the Body Control Module (BCM), the Powertrain Control Module (PCM) and the Memory Heated Seat/Mirror Module (MHSMM). If any communication problems, perform . . . . . .“Vehicle Communication” TEST 1A.

2. Using the DRB select ‘‘Body Computer’’, ‘‘Memory Seat Module’’ and ‘‘Read DTC’s’’
   - If no codes are present - monitor the DRB for ‘‘DTC’s’’ and operate all movements from the switches and the RKE, reset both memory positions and operate the seat heaters. If there are still no codes present yet a problem exists, using the DRB perform the ‘‘Switch Self Test’’ and refer to the appropriate service manual for diagnostic procedures.
   - If codes are present - record the codes then erase them. Monitor the DRB for ‘‘DTC’s’’ and operate all movements from the switches and the RKE, reset both memory positions and operate the seat heaters. When the first code appears, stop and perform the respected repair procedure from the list below.
   - If there are no codes present, proceed to step 3.

| TROUBLE CODE | PERFORM |
|---|---|
| • EEPROM Refresh Failure | Replace MHSMM |
| • Ignition Status Message Not Received | “Vehicle Communication” TEST 14A |
| • PRNDL Display Message Not Received | “Vehicle Communication” TEST 10A |
| • Front Riser Down Position Stuck | TEST 2A |
| • Front Riser Up Position Stuck | TEST 3A |
| • Front Riser Sensor Out of Range Low | TEST 4A |
| • Front Riser Sensor Out of Range High | TEST 5A |
| • Rear Riser Down Position Stuck | TEST 6A |
| • Rear Riser Up Position Stuck | TEST 7A |
| • Rear Riser Sensor Out of Range Low | TEST 8A |
| • Rear Riser Sensor Out of Range High | TEST 9A |
| • Horizontal Forward Position Stuck | TEST 10A |
| • Horizontal Rearward Position Stuck | TEST 11A |
| • Horizontal Sensor Out of Range Low | TEST 12A |
| • Horizontal Sensor Out of Range High | TEST 13A |
| • Recliner Down Position Stuck | TEST 14A |
| • Recliner Up Position Stuck | TEST 15A |
| • Recliner Sensor Out of Range Low | TEST 16A |
| • Recliner Sensor Out of Range High | TEST 17A |

**TEST 1A** **CONTINUED - IDENTIFYING MEMORY SYSTEM PROBLEMS**

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**

TEST 1A Continued

| TROUBLE CODE | PERFORM |
|---|---|
| • Memory Position #1 Stuck | TEST 18A |
| • Memory Position #2 Stuck | TEST 19A |
| • Memory Set "S" Position Stuck | TEST 20A |
| • Left Seat Heat Output Open | TEST 21A |
| • Left Seat Heat Output Shorted to Ground | TEST 22A |
| • Left Heated Seat Switch Stuck in Low State | TEST 23A |
| • Left Heated Seat Switch Stuck in High State | TEST 24A |
| • Left Heated Seat Switch Open/Shorted to Ground | TEST 25A |
| • Left Thermistor Out of Range Low | TEST 26A |
| • Left Thermistor Out of Range High | TEST 27A |
| • Right Seat Heat Output Open | TEST 28A |
| • Right Seat Heat Output Shorted to Ground | TEST 29A |
| • Right Heated Seat Switch Stuck in Low State | TEST 30A |
| • Right Heated Seat Switch Stuck in High State | TEST 31A |
| • Right Heated Seat Switch Open/Shorted to Ground | TEST 32A |
| • Right Thermistor Out of Range Low | TEST 33A |
| • Right Thermistor Out of Range High | TEST 34A |
| • Left Mirror Horizontal Sensor Out of Range Low | TEST 35A |
| • Left Mirror Horizontal Sensor Out of Range High | TEST 36A |
| • Left Mirror Vertical Sensor Out of Range Low | TEST 37A |
| • Left Mirror Vertical Sensor Out of Range High | TEST 38A |
| • Right Mirror Horizontal Sensor Out of Range Low | TEST 39A |
| • Right Mirror Horizontal Sensor Out of Range High | TEST 40A |
| • Right Mirror Vertical Sensor Out of Range Low | TEST 41A |
| • Right Mirror Vertical Sensor Out of Range High | TEST 42A |

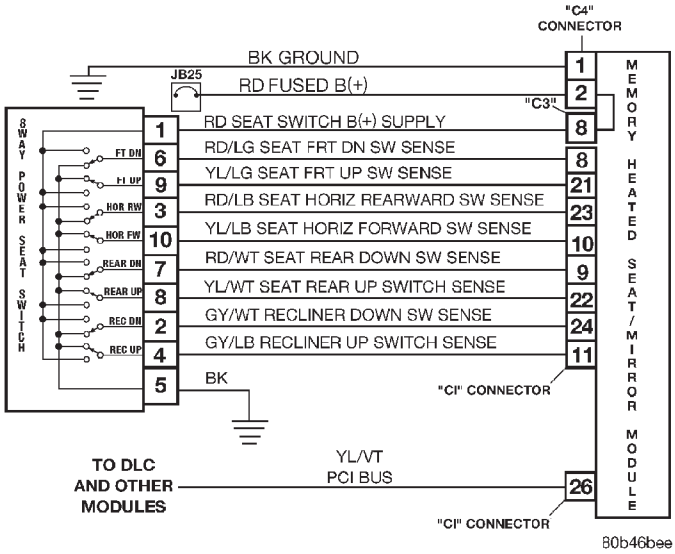
**NOTE: If the seat is unbolted for accessibility during testing, connect a jumper wire from the seat frame to a known good body ground.**

**3. SYMPTOMS (No Trouble Codes)**

| | |
|---|---|
| • Memory Switch Inoperative | TEST 43A |
| • Left Mirror Inoperative From Memory | TEST 44A |
| • Right Mirror Inoperative From Memory | TEST 45A |

## TEST 2A — REPAIRING "FRONT RISER DOWN POSITION STUCK" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bee

**Name of code:** Front Riser Down Position Stuck

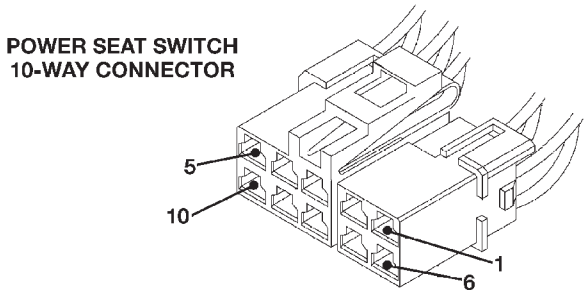
**When monitored:** Ignition on.

**Set condition:** Switch stuck active for 30 seconds.

**Theory of operation:** If a power seat switch is active for 30 seconds the MHSMM will ignore the input until its state has changed. Once the stuck condition is removed for 3 seconds the power seat switch will return to normal operation. The code will remain in the module for 20 ignition cycles.

**Probable cause:**
- Switch failure
- Seat front down switch sense ckt shorted to battery
- MHSMM failure

80b46cf7



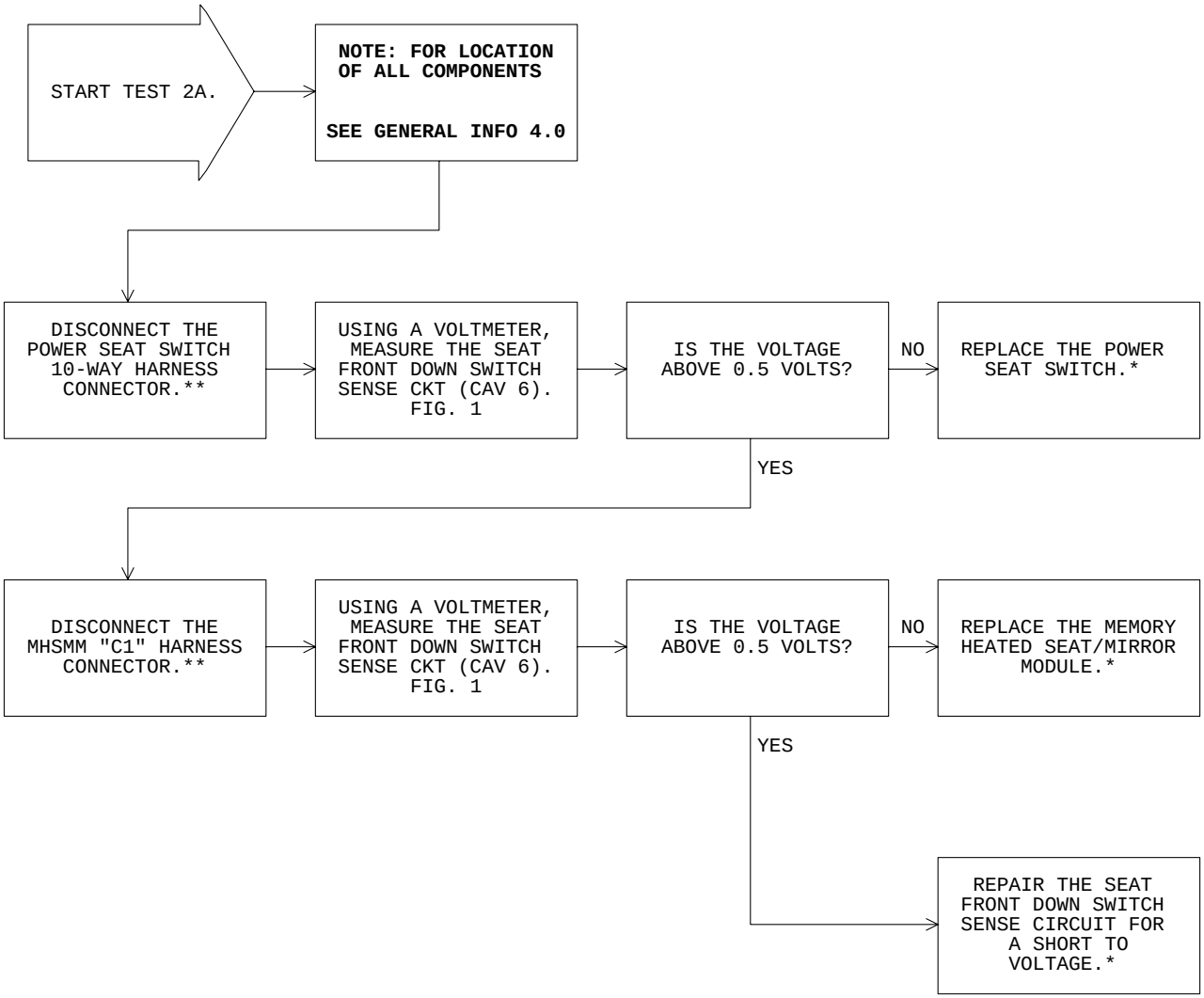

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD | SEAT SWITCH B(+) SUPPLY |
| 2 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 3 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 4 | GY/LB | RECLINER UP SWITCH SENSE |
| 5 | BK | GROUND |
| 6 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 7 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 8 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 9 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |

***FIG. 1***

80b4b849

## TEST 2A — REPAIRING ″FRONT RISER DOWN POSITION STUCK″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

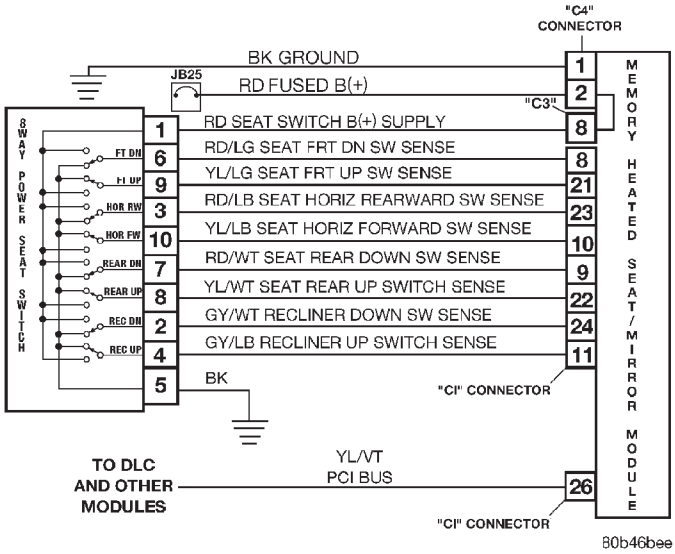



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.***

## TEST 3A — REPAIRING "FRONT RISER UP POSITION STUCK" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bee

**Name of code:** Front Riser Up Position Stuck

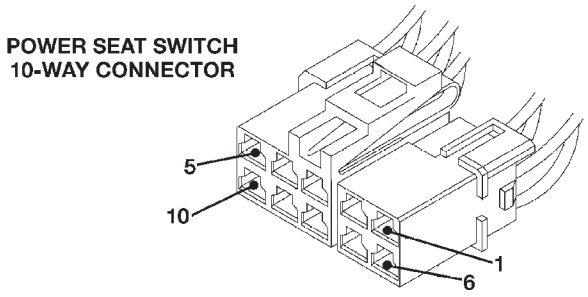
**When monitored:** Ignition on.

**Set condition:** Switch stuck active for 30 seconds.

**Theory of operation:** If a power seat switch is active for 30 seconds the MHSMM will ignore the input until its state has changed. Once the stuck condition is removed for 3 seconds the power seat switch will return to normal operation. The code will remain in the module for 20 ignition cycles.

**Probable cause:**
- Switch failure
- Seat front up switch sense ckt shorted to battery
- MHSMM failure

80b46cf6



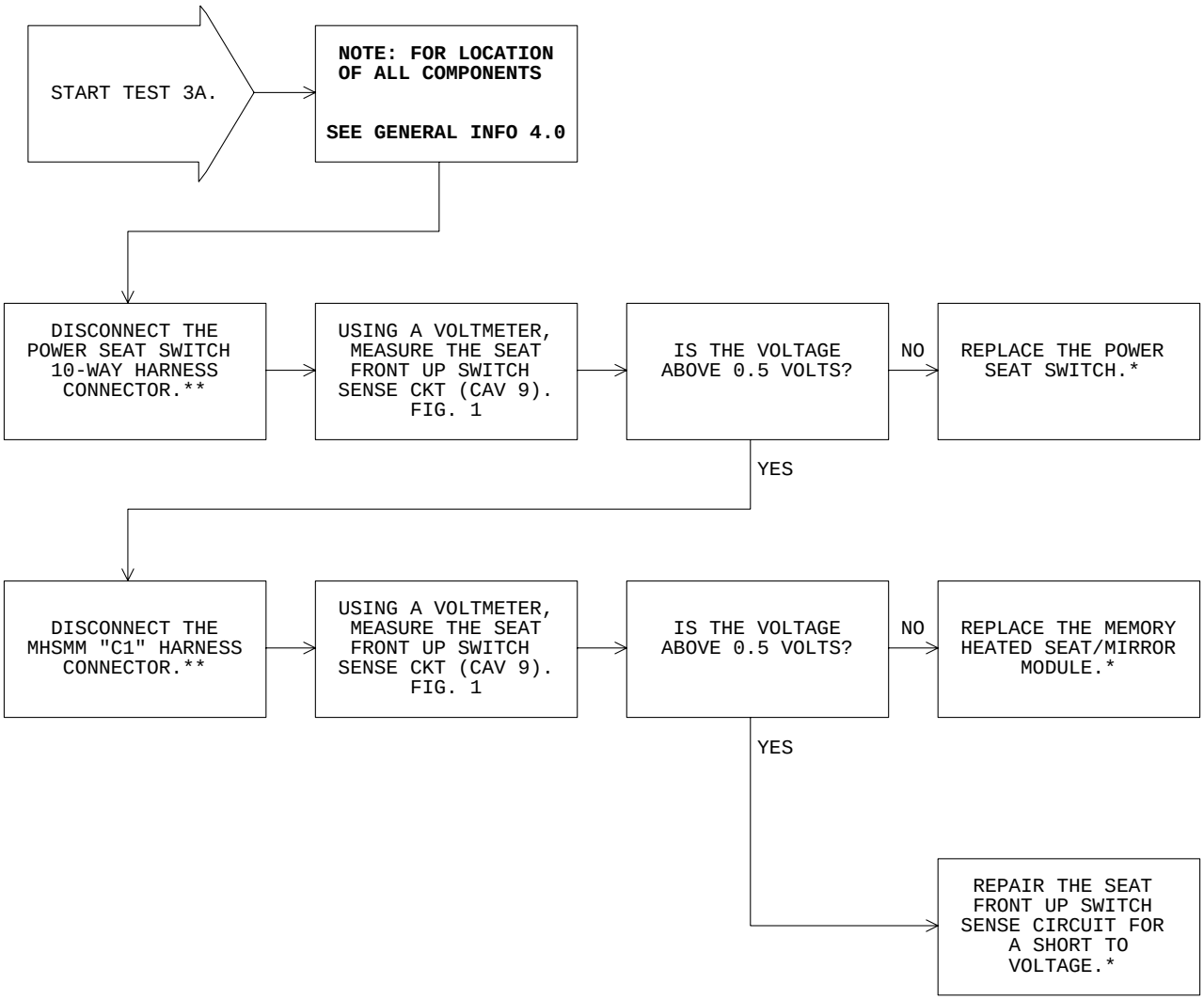

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD | SEAT SWITCH B(+) SUPPLY |
| 2 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 3 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 4 | GY/LB | RECLINER UP SWITCH SENSE |
| 5 | BK | GROUND |
| 6 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 7 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 8 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 9 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |

***FIG. 1***

80b4b849

## TEST 3A — REPAIRING ″FRONT RISER UP POSITION STUCK″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

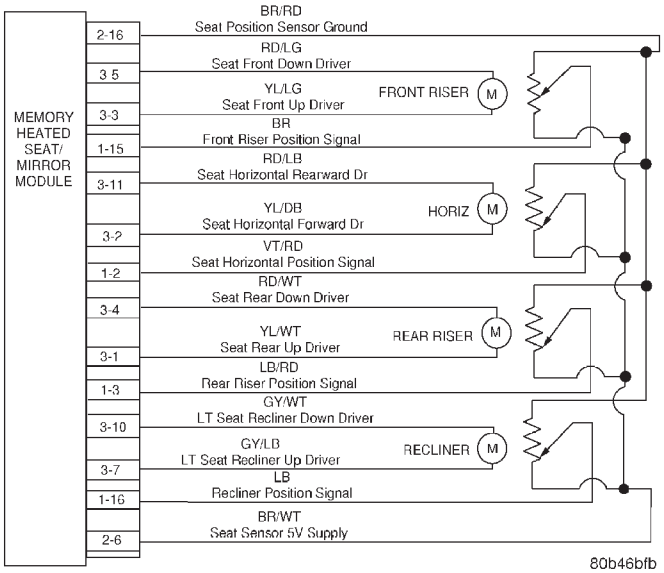



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.**

## TEST 4A — REPAIRING "FRONT RISER SENSOR OUT OF RANGE LOW" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bfb

**Name of code:** Front Riser Sensor Out of Range Low

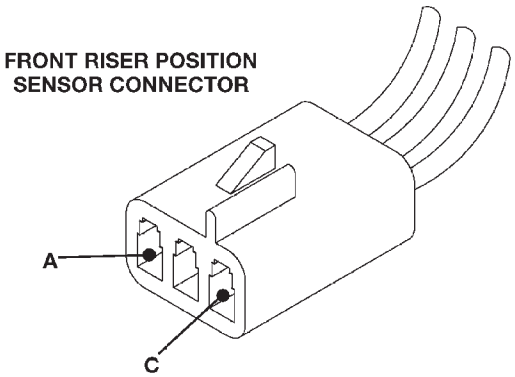
**When monitored:** Ignition on.

**Set condition:** Immediately set.

**Theory of operation:** The seat motors have potentiometers/ sensors attached to them. When the seat moves a potentiometer value changes. The potentiometers are designed to operate within a window of values. Any values outside of the normal will cause a code to be set. Therefore, when the seat sensor feed back to the MHSMM is less than the seat sensor out of range low value stored in EEPROM, a code will be set.

**Probable cause:**
- Seat motor failure (value)
- Front riser position signal ckt shorted to ground
- MHSMM failure

80b46d03



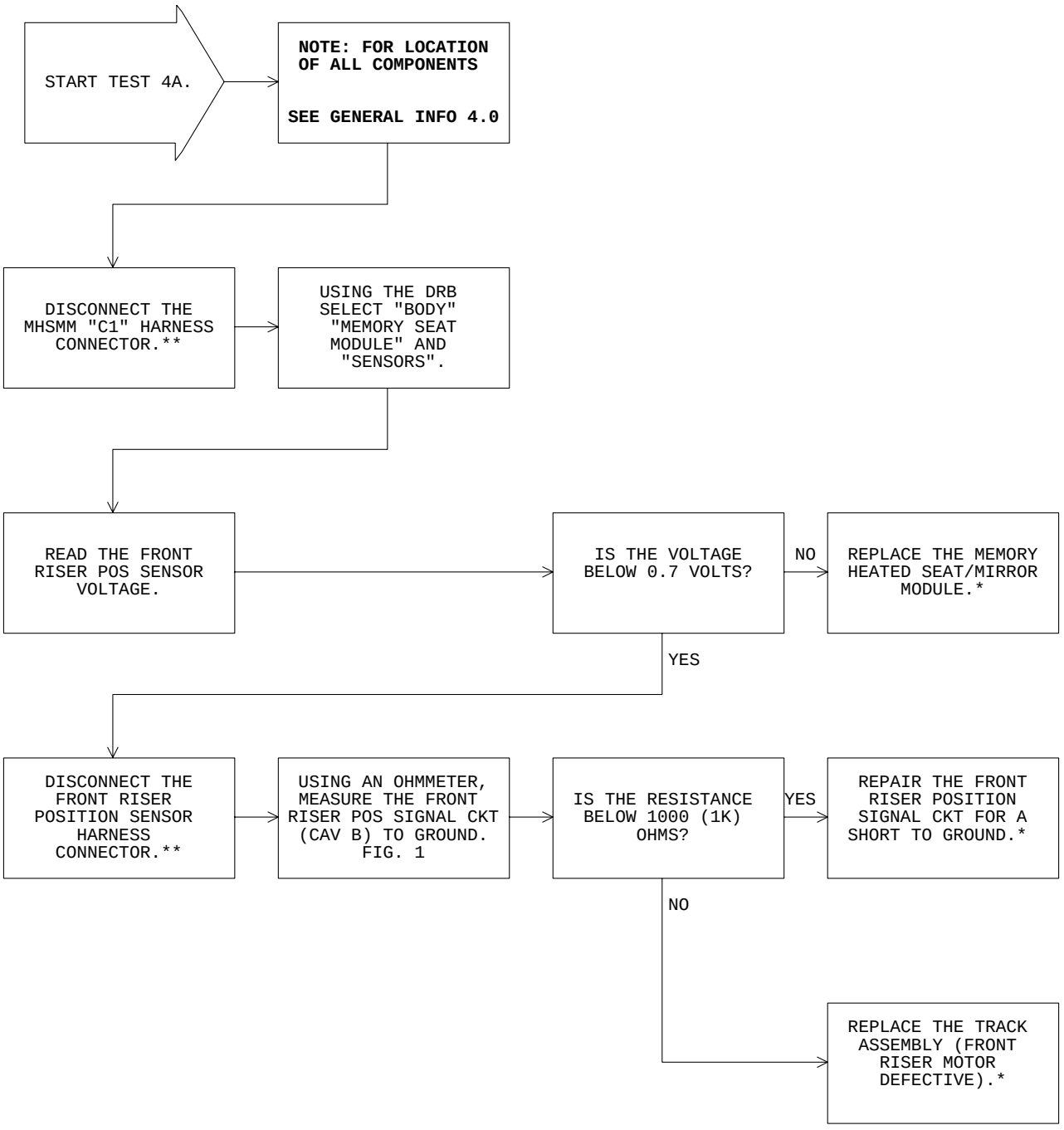

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | BR/RD | SEAT POSITION SENSOR GROUND |
| B | BR | FRONT RISER POSITION SIGNAL |
| C | BR/WT | SEAT SENSOR 5 VOLT SUPPLY |

80b4b738

***FIG. 1***

## TEST 4A — REPAIRING ″FRONT RISER SENSOR OUT OF RANGE LOW″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

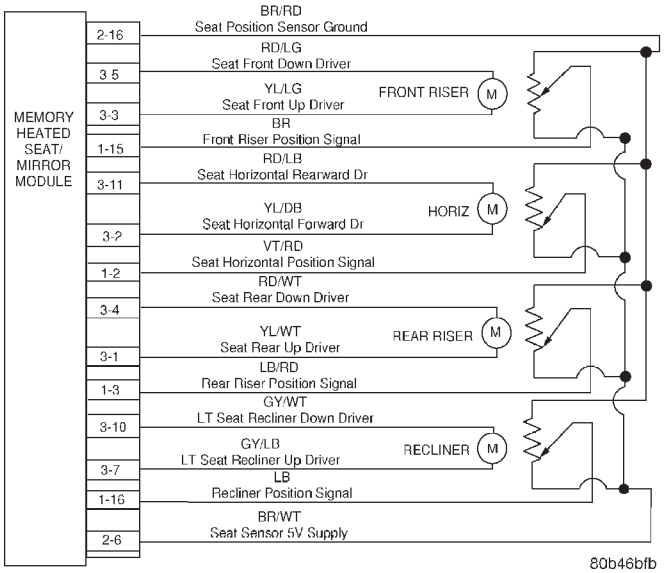



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.***

## TEST 5A — REPAIRING "FRONT RISER SENSOR OUT OF RANGE HIGH" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




**Name of code:** Front Riser Sensor Out of Range High

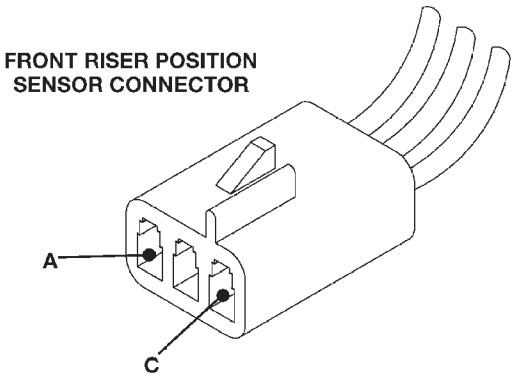
**When monitored:** Ignition on.

**Set condition:** Immediately set.

**Theory of operation:** The seat motors have potentiometers/ sensors attached to them. When the seat moves a potentiometer value changes. The potentiometers are designed to operate within a window of values. Any values outside of the normal will cause a code to be set. Therefore, when the seat sensor feed back to the MHSMM is greater than the seat sensor out of range high value stored in EEPROM, a code will be set.

**Probable cause:**
- Seat motor failure (value)
- Front riser position signal ckt shorted to battery
- MHSMM failure

80b46d02



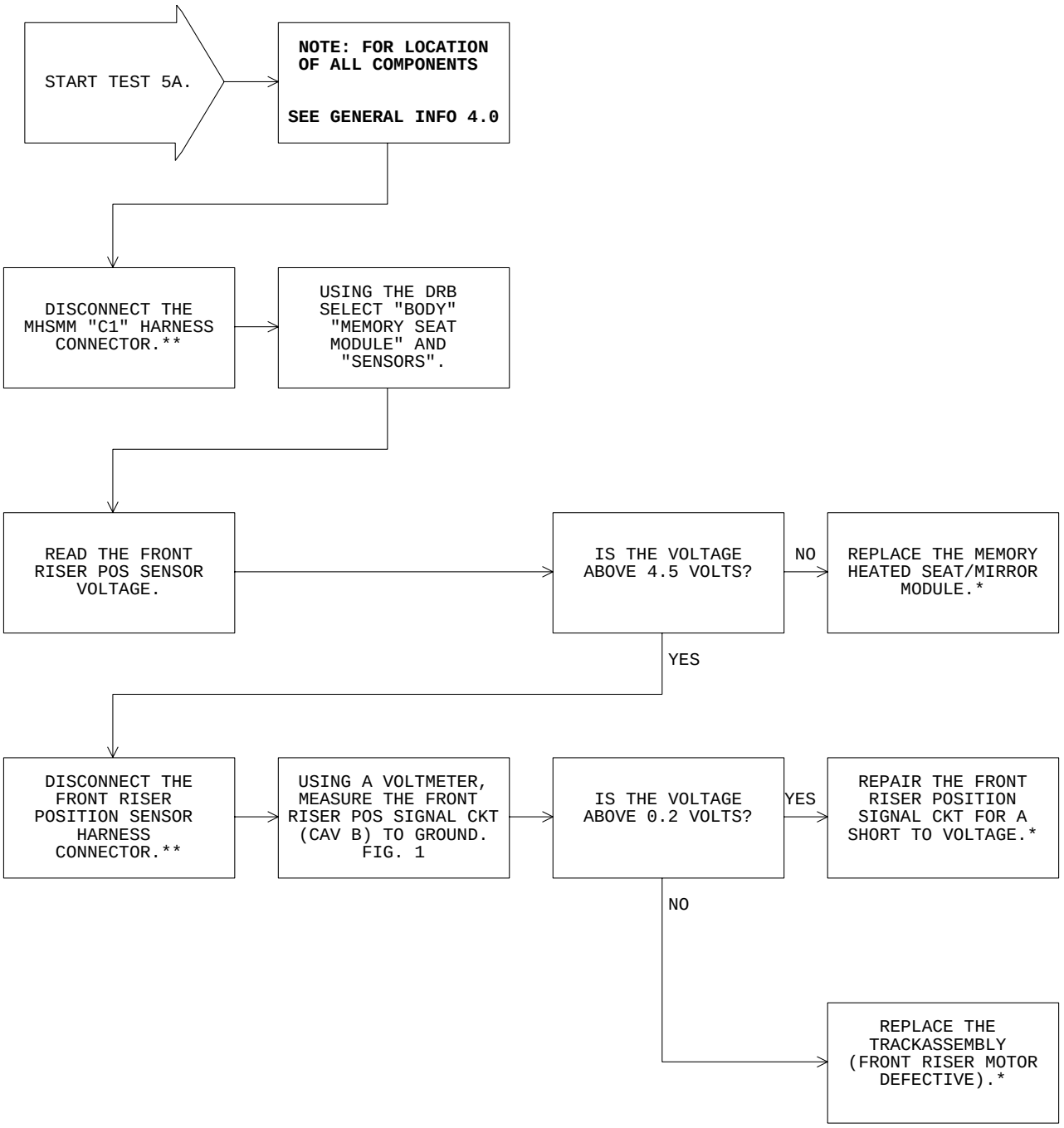

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | BR/RD | SEAT POSITION SENSOR GROUND |
| B | BR | FRONT RISER POSITION SIGNAL |
| C | BR/WT | SEAT SENSOR 5 VOLT SUPPLY |

80b4b738

***FIG. 1***

## TEST 5A — REPAIRING ″FRONT RISER SENSOR OUT OF RANGE HIGH″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

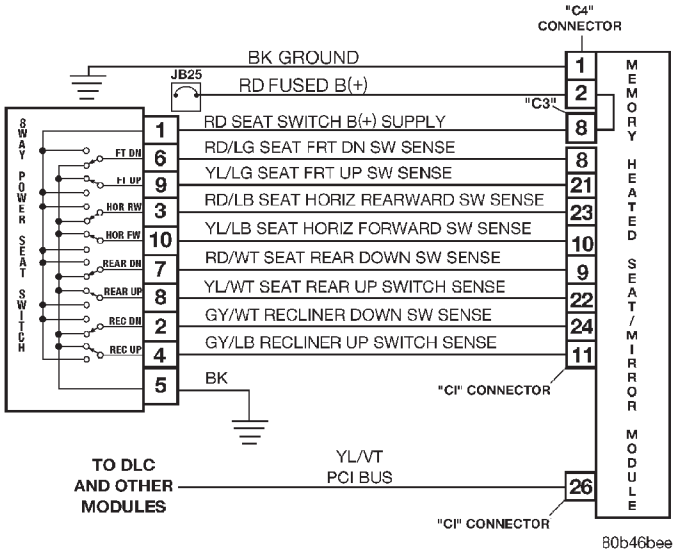



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.**

## TEST 6A — REPAIRING "REAR RISER DOWN POSITION STUCK" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bee

**Name of code:** Rear Riser Down Position Stuck

**When monitored:** Ignition on.

**Set condition:** Switch stuck active for 30 seconds.

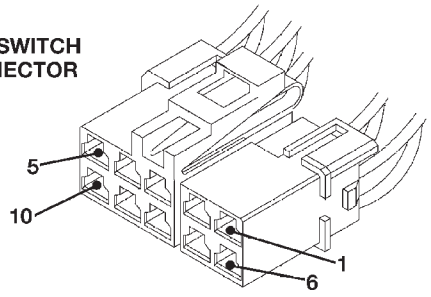
**Theory of operation:** If a power seat switch is active for 30 seconds the MHSMM will ignore the input until its state has changed. Once the stuck condition is removed for 3 seconds the power seat switch will return to normal operation. The code will remain in the module for 20 ignition cycles.

**Probable cause:**

- Switch failure
- Seat rear down switch sense ckt shorted to battery
- MHSMM failure

80b46cf9

**POWER SEAT SWITCH 10-WAY CONNECTOR**



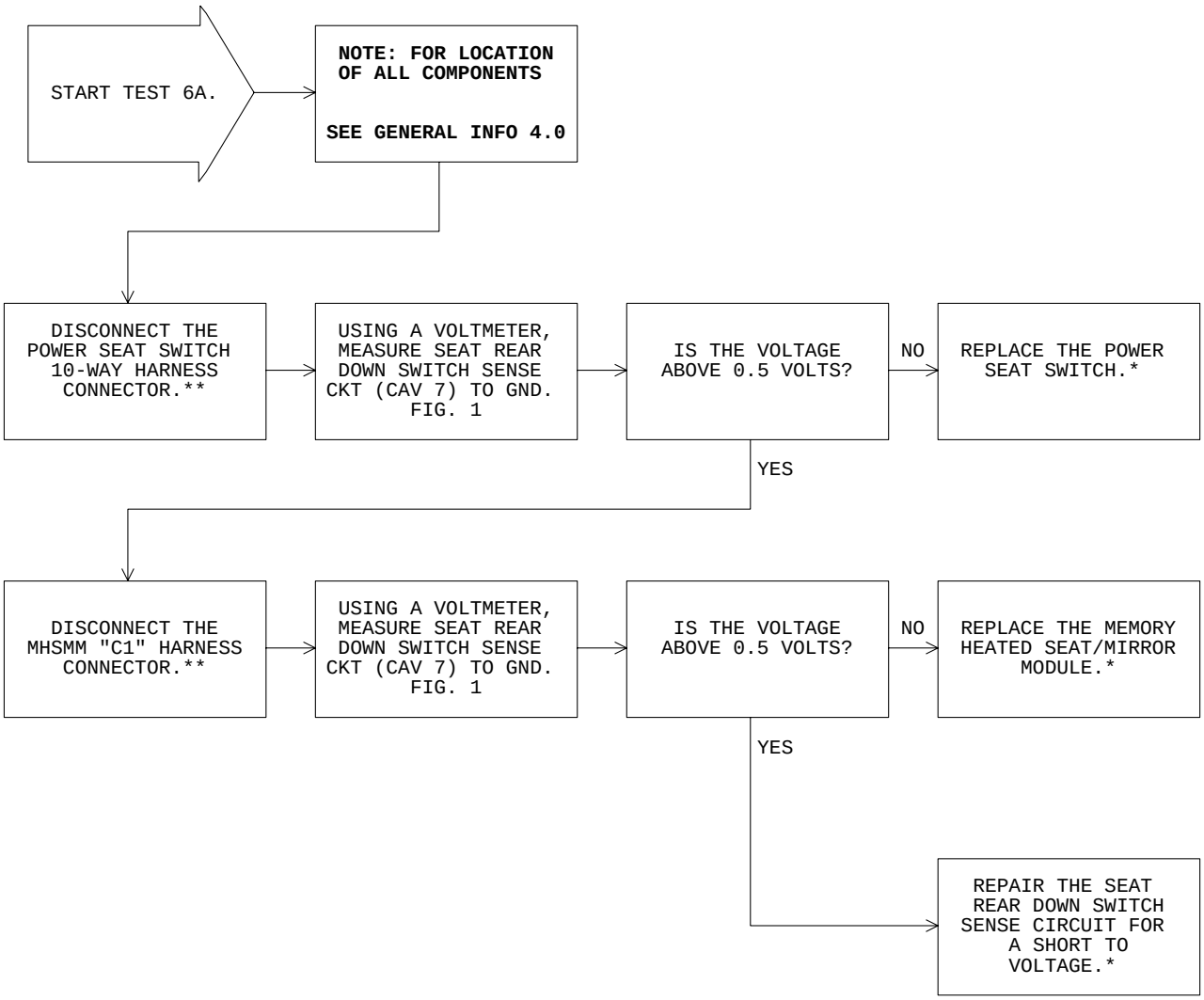

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD | SEAT SWITCH B(+) SUPPLY |
| 2 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 3 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 4 | GY/LB | RECLINER UP SWITCH SENSE |
| 5 | BK | GROUND |
| 6 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 7 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 8 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 9 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |

80b4b849

***FIG. 1***

## TEST 6A REPAIRING ″REAR RISER DOWN POSITION STUCK″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

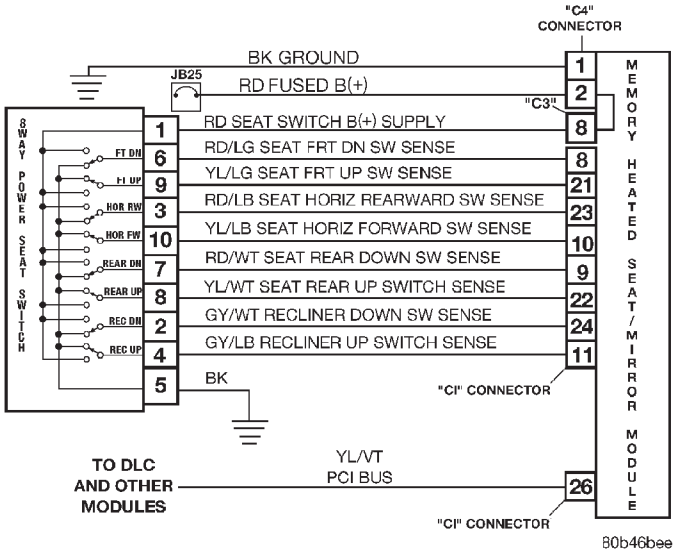



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.***

## TEST 7A — REPAIRING "REAR RISER UP POSITION STUCK" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bee

**Name of code:** Rear Riser Up Position Stuck

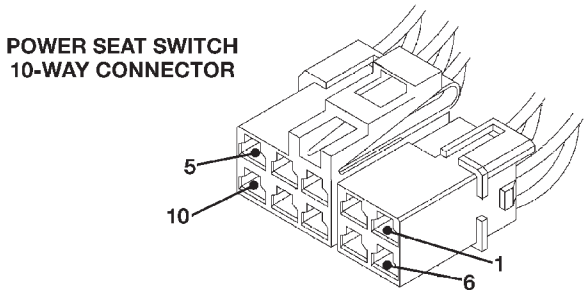
**When monitored:** Ignition on.

**Set condition:** Switch stuck active for 30 seconds.

**Theory of operation:** If a power seat switch is active for 30 seconds the MHSMM will ignore the input until its state has changed. Once the stuck condition is removed for 3 seconds the power seat switch will return to normal operation. The code will remain in the module for 20 ignition cycles.

**Probable cause:**
- Switch failure
- Seat rear up switch sense ckt shorted to battery
- MHSMM failure

80b46ef8



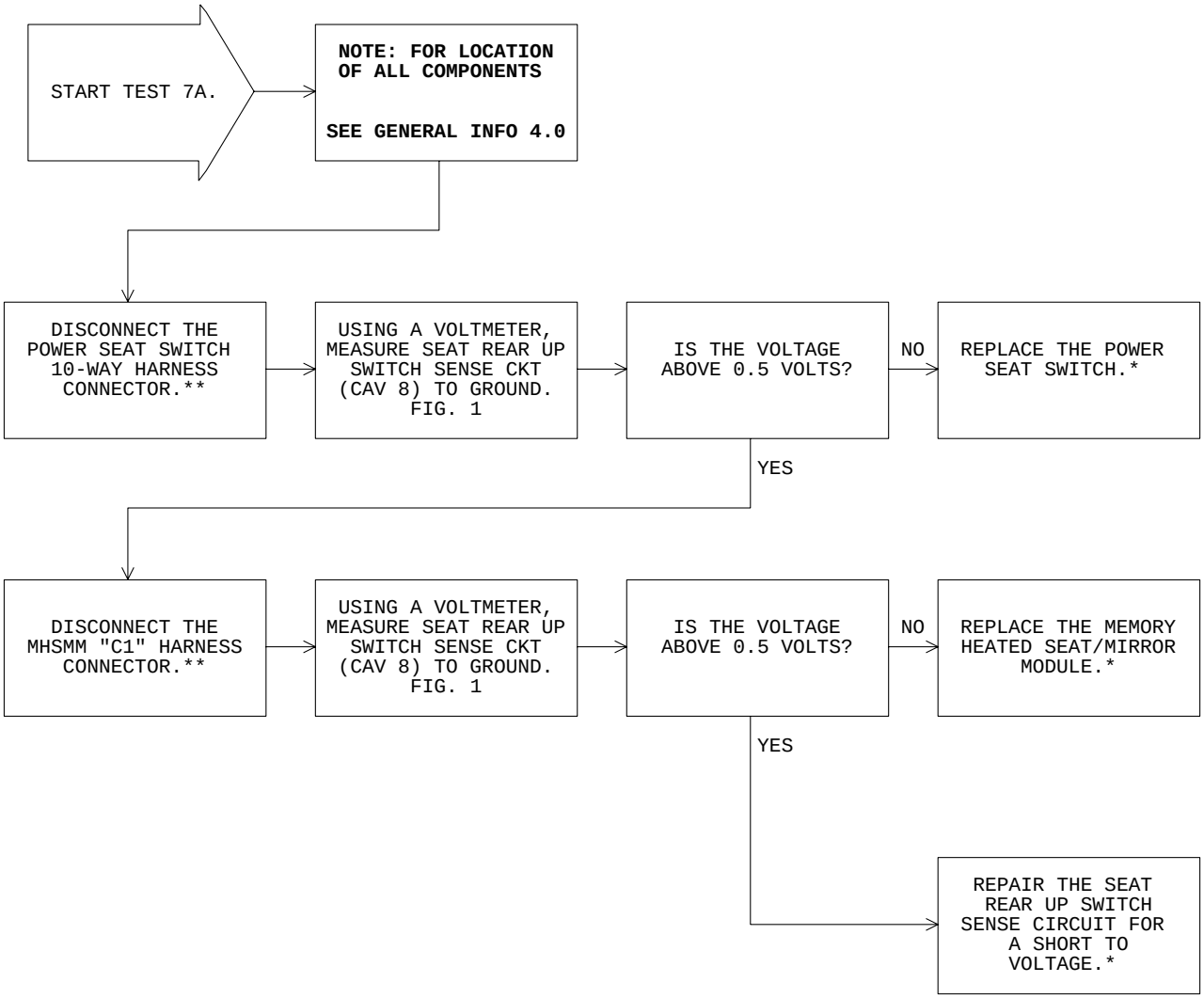

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD | SEAT SWITCH B(+) SUPPLY |
| 2 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 3 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 4 | GY/LB | RECLINER UP SWITCH SENSE |
| 5 | BK | GROUND |
| 6 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 7 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 8 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 9 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |

***FIG. 1***

80b4b849

## TEST 7A — REPAIRING ″REAR RISER UP POSITION STUCK″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

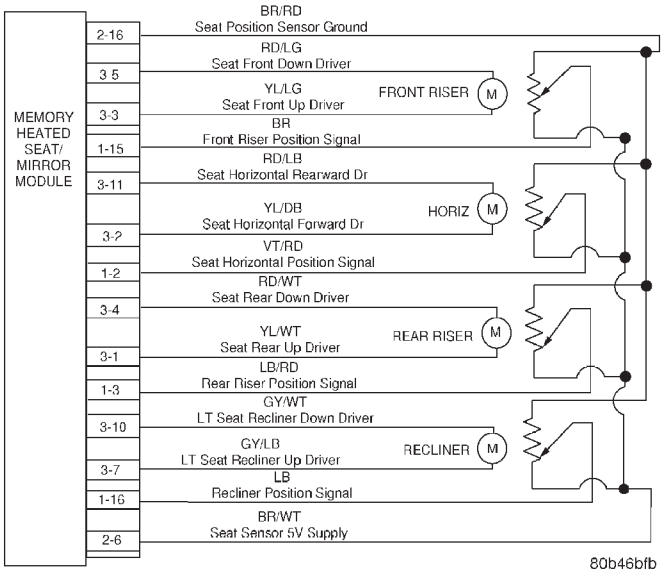



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.***

## TEST 8A — REPAIRING "REAR RISER SENSOR OUT OF RANGE LOW" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bfb

**Name of code:** Rear Riser Sensor Out of Range Low

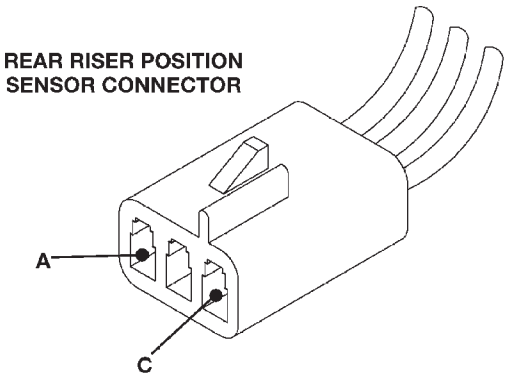
**When monitored:** Ignition on.

**Set condition:** Immediately set.

**Theory of operation:** The seat motors have potentiometers/ sensors attached to them. When the seat moves a potentiometer value changes. The potentiometers are designed to operate within a window of values. Any values outside of the normal will cause a code to be set. Therefore, when the seat sensor feed back to the MHSMM is less than the seat sensor out of range low value stored in EEPROM, a code will be set.

**Probable cause:**
- Seat motor failure (value)
- Rear riser position signal ckt shorted to ground
- MHSMM failure

80b46d05



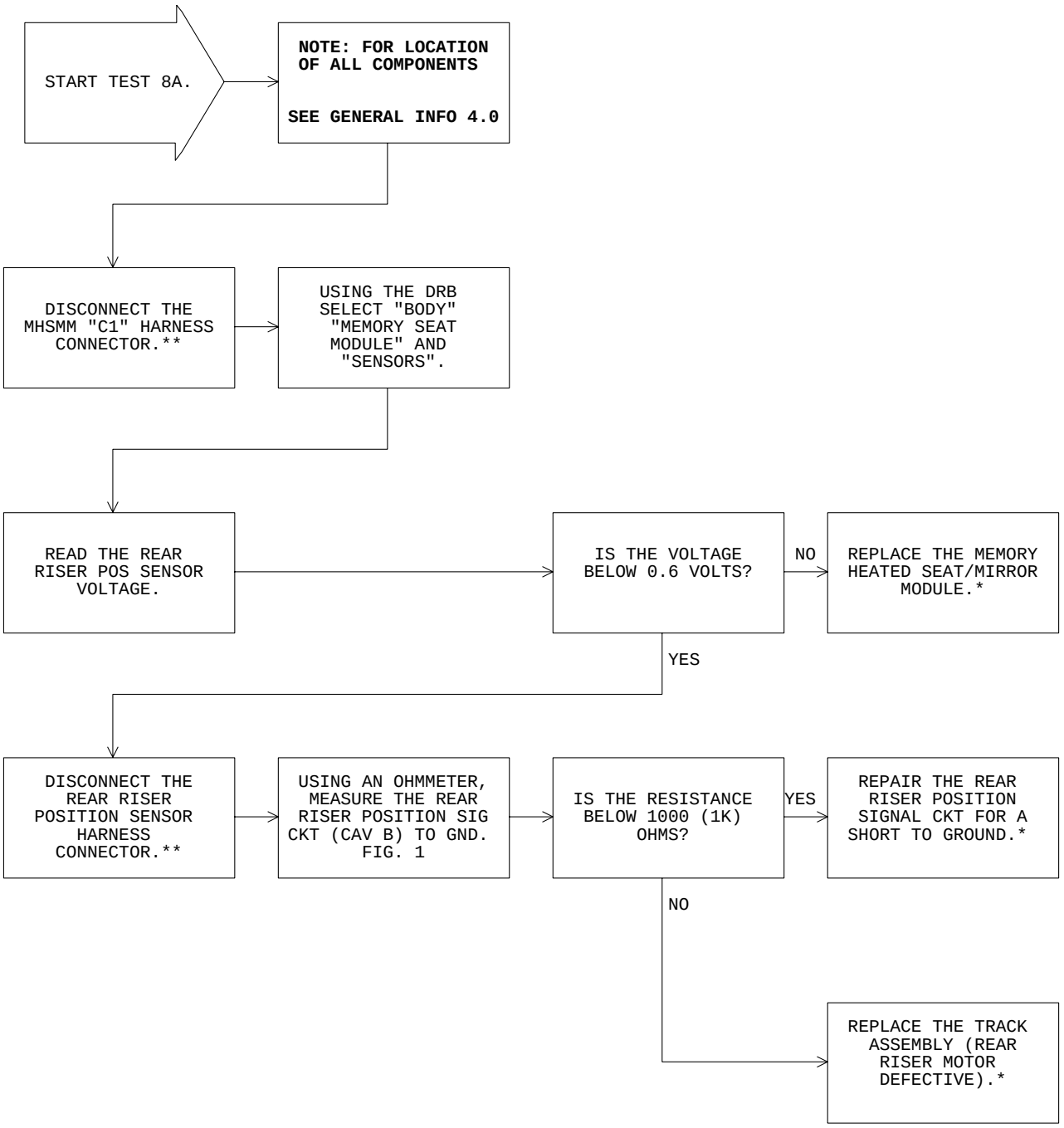

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | BR/RD | SEAT POSITION SENSOR GROUND |
| B | LB/RD | REAR RISER POSITION SIGNAL |
| C | BR/WT | SEAT SENSOR 5 VOLT SUPPLY |

80b4b6bc

***FIG. 1***

## TEST 8A — REPAIRING ″REAR RISER SENSOR OUT OF RANGE LOW″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

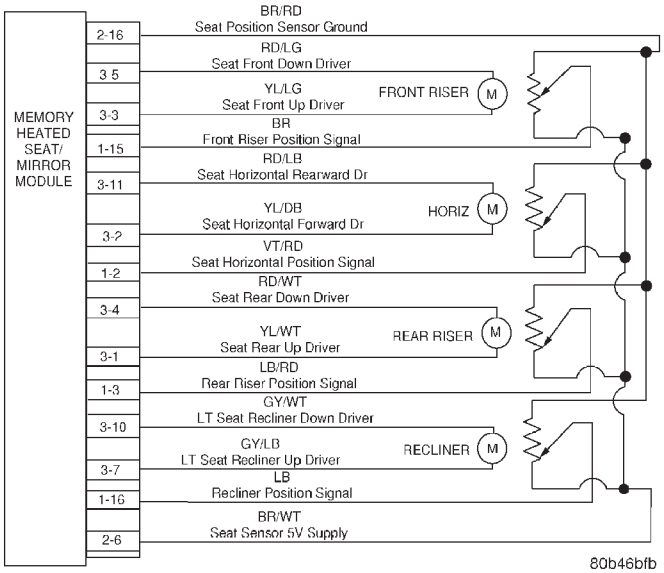



***Perform Verification TEST VER-4A.**

****Check connectors - Clean / repair as necessary.**

## TEST 9A — REPAIRING "REAR RISER SENSOR OUT OF RANGE HIGH" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bfb

**Name of code:** Rear Riser Sensor Out of Range High

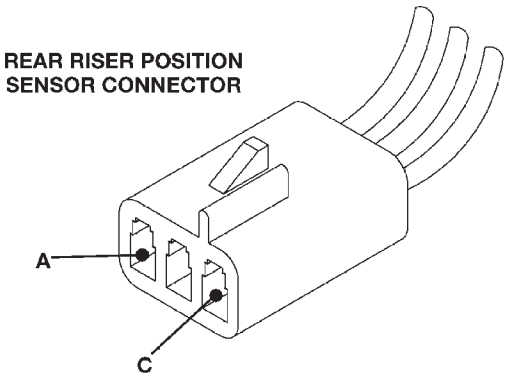
**When monitored:** Ignition on.

**Set condition:** Immediately set.

**Theory of operation:** The seat motors have potentiometers/ sensors attached to them. When the seat moves a potentiometer value changes. The potentiometers are designed to operate within a window of values. Any values outside of the normal will cause a code to be set. Therefore, when the seat sensor feed back to the MHSMM is greater than the seat sensor out of range high value stored in EEPROM, a code will be set.

**Probable cause:**
- Seat motor failure (value)
- Rear riser position signal ckt shorted to battery
- MHSMM failure

80b46d04



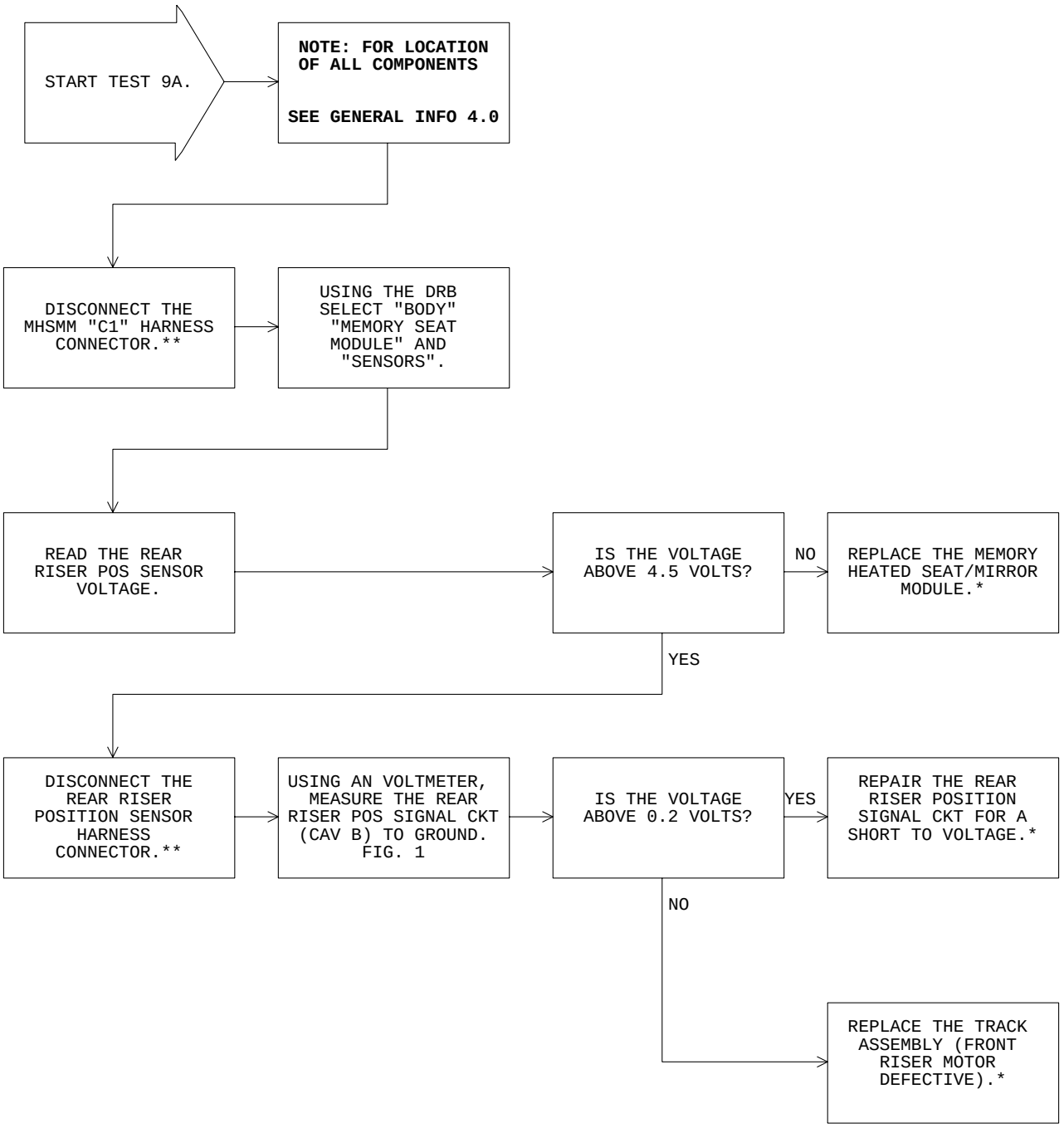

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | BR/RD | SEAT POSITION SENSOR GROUND |
| B | LB/RD | REAR RISER POSITION SIGNAL |
| C | BR/WT | SEAT SENSOR 5 VOLT SUPPLY |

80b4b6bc

***FIG. 1***

## TEST 9A — REPAIRING "REAR RISER SENSOR OUT OF RANGE HIGH" TROUBLE CODE

**Perform TEST 1A Before Proceeding**

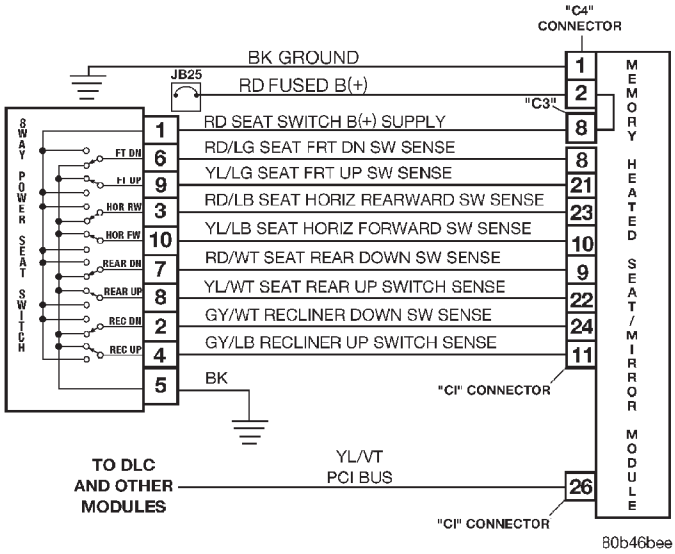



***Perform Verification TEST VER-4A.**

****Check connectors - Clean / repair as necessary.**

## TEST 10A REPAIRING "HORIZONTAL FORWARD POSITION STUCK" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bee

**Name of code:** Horizontal Forward Position Stuck

**When monitored:** Ignition on.

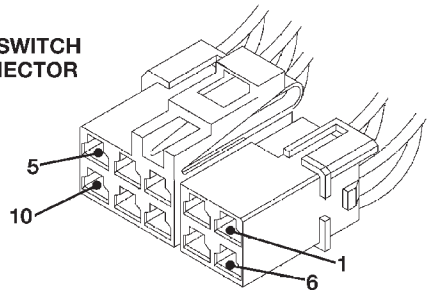
**Set condition:** Switch stuck active for 30 seconds.

**Theory of operation:** If a power seat switch is active for 30 seconds the MHSMM will ignore the input until its state has changed. Once the stuck condition is removed for 3 seconds the power seat switch will return to normal operation. The code will remain in the module for 20 ignition cycles.

**Probable cause:**
- Switch failure
- Seat horizontal forward switch sense ckt shorted to battery
- MHSMM failure

80b46cfa

**POWER SEAT SWITCH 10-WAY CONNECTOR**



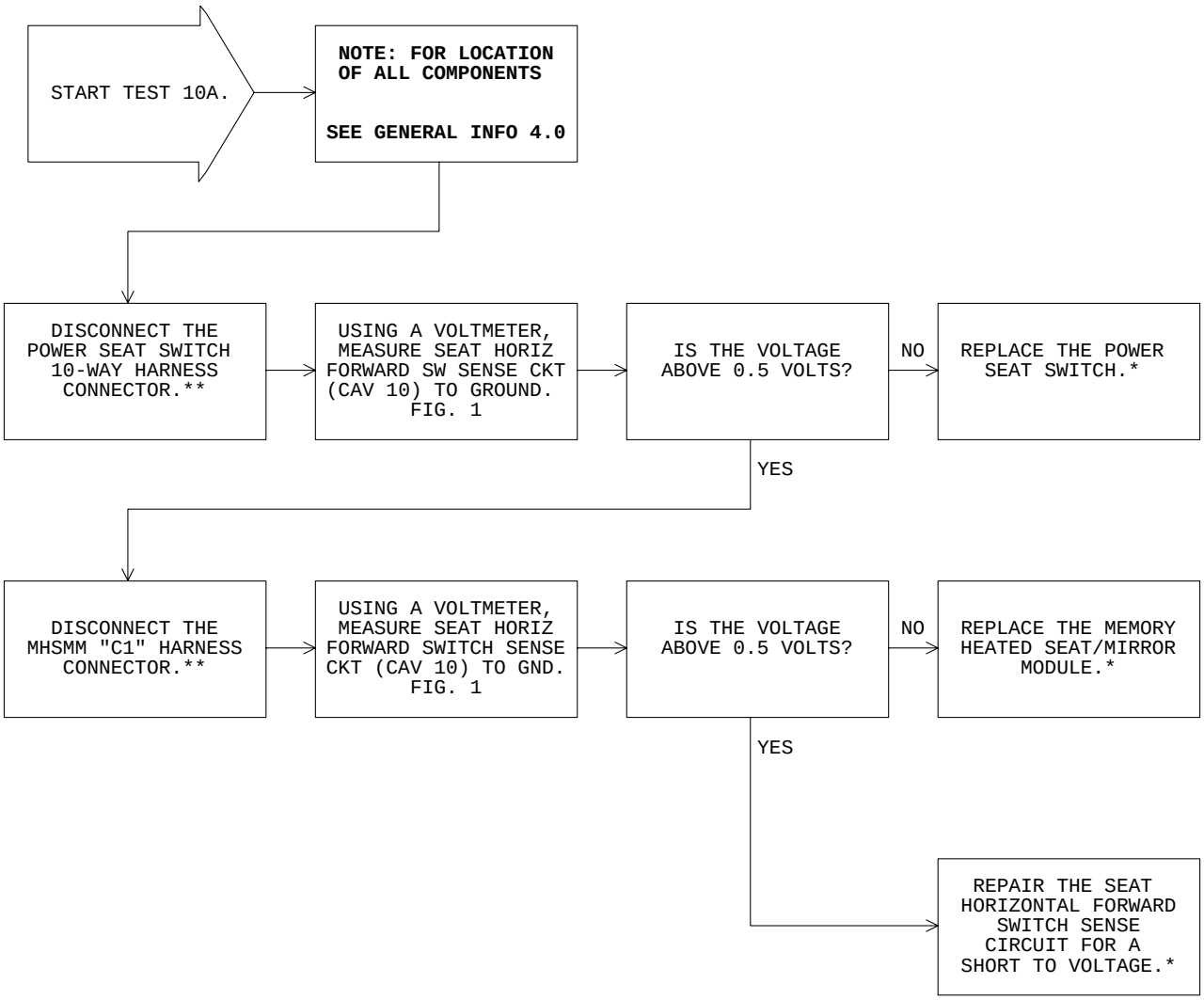

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD | SEAT SWITCH B(+) SUPPLY |
| 2 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 3 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 4 | GY/LB | RECLINER UP SWITCH SENSE |
| 5 | BK | GROUND |
| 6 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 7 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 8 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 9 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |

***FIG. 1***

80b4b849

## TEST 10A REPAIRING ″HORIZONTAL FORWARD POSITION STUCK″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

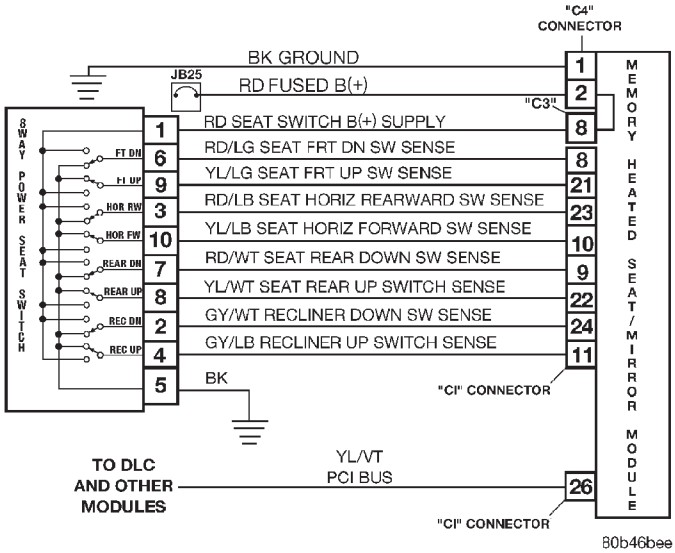



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.***

## TEST 11A — REPAIRING "HORIZONTAL REARWARD POSITION STUCK" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bee

**Name of code:** Horizontal Rearward Position Stuck

**When monitored:** Ignition on.

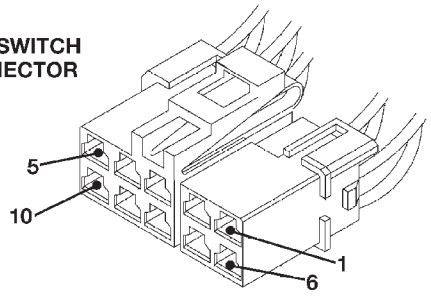
**Set condition:** Switch stuck active for 30 seconds.

**Theory of operation:** If a power seat switch is active for 30 seconds the MHSMM will ignore the input until its state has changed. Once the stuck condition is removed for 3 seconds the power seat switch will return to normal operation. The code will remain in the module for 20 ignition cycles.

**Probable cause:**
- Switch failure
- Seat horizontal rearward switch sense ckt shorted to battery
- MHSMM failure

80b46cfb

**POWER SEAT SWITCH 10-WAY CONNECTOR**



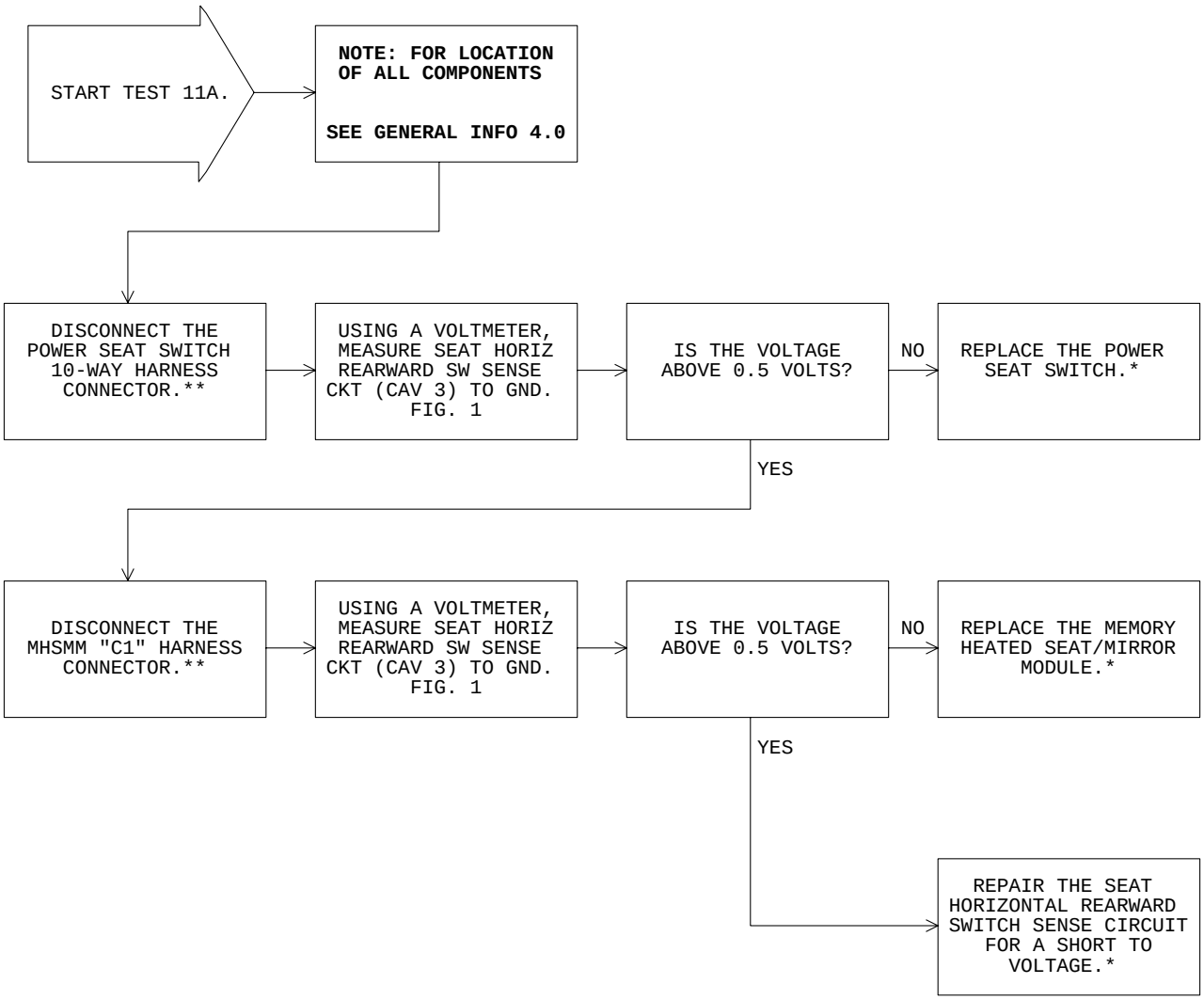

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD | SEAT SWITCH B(+) SUPPLY |
| 2 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 3 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 4 | GY/LB | RECLINER UP SWITCH SENSE |
| 5 | BK | GROUND |
| 6 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 7 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 8 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 9 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |

***FIG. 1***

80b4b849

## TEST 11A — REPAIRING ″HORIZONTAL REARWARD POSITION STUCK″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

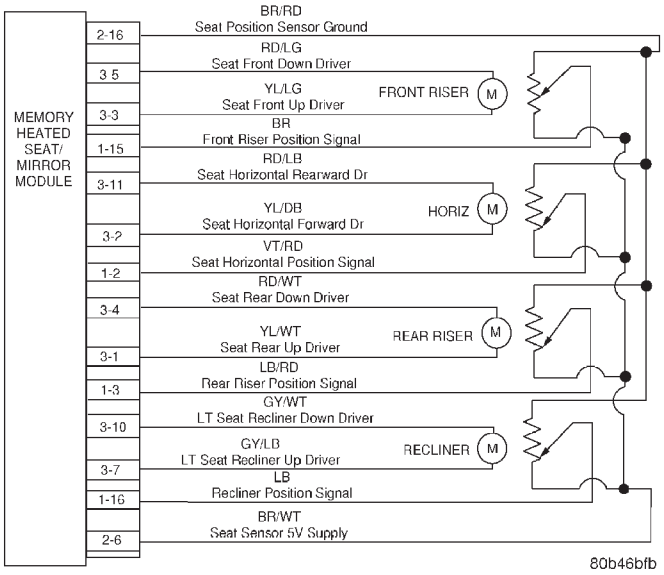



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.***

## TEST 12A — REPAIRING "HORIZONTAL SENSOR OUT OF RANGE LOW" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bfb

**Name of code:** Horizontal Sensor Out of Range Low

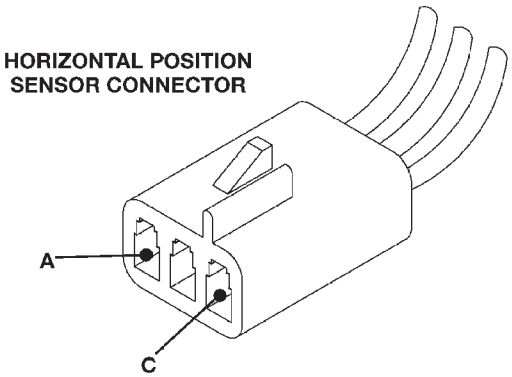
**When monitored:** Ignition on.

**Set condition:** Immediately set.

**Theory of operation:** The seat motors have potentiometers/ sensors attached to them. When the seat moves a potentiometer value changes. The potentiometers are designed to operate within a window of values. Any values outside of the normal will cause a code to be set. Therefore, when the seat sensor feed back to the MHSMM is less than the seat sensor out of range low value stored in EEPROM, a code will be set.

**Probable cause:**
- Seat motor failure (value)
- Seat horizontal position signal ckt shorted to ground
- MHSMM failure

80b46d07



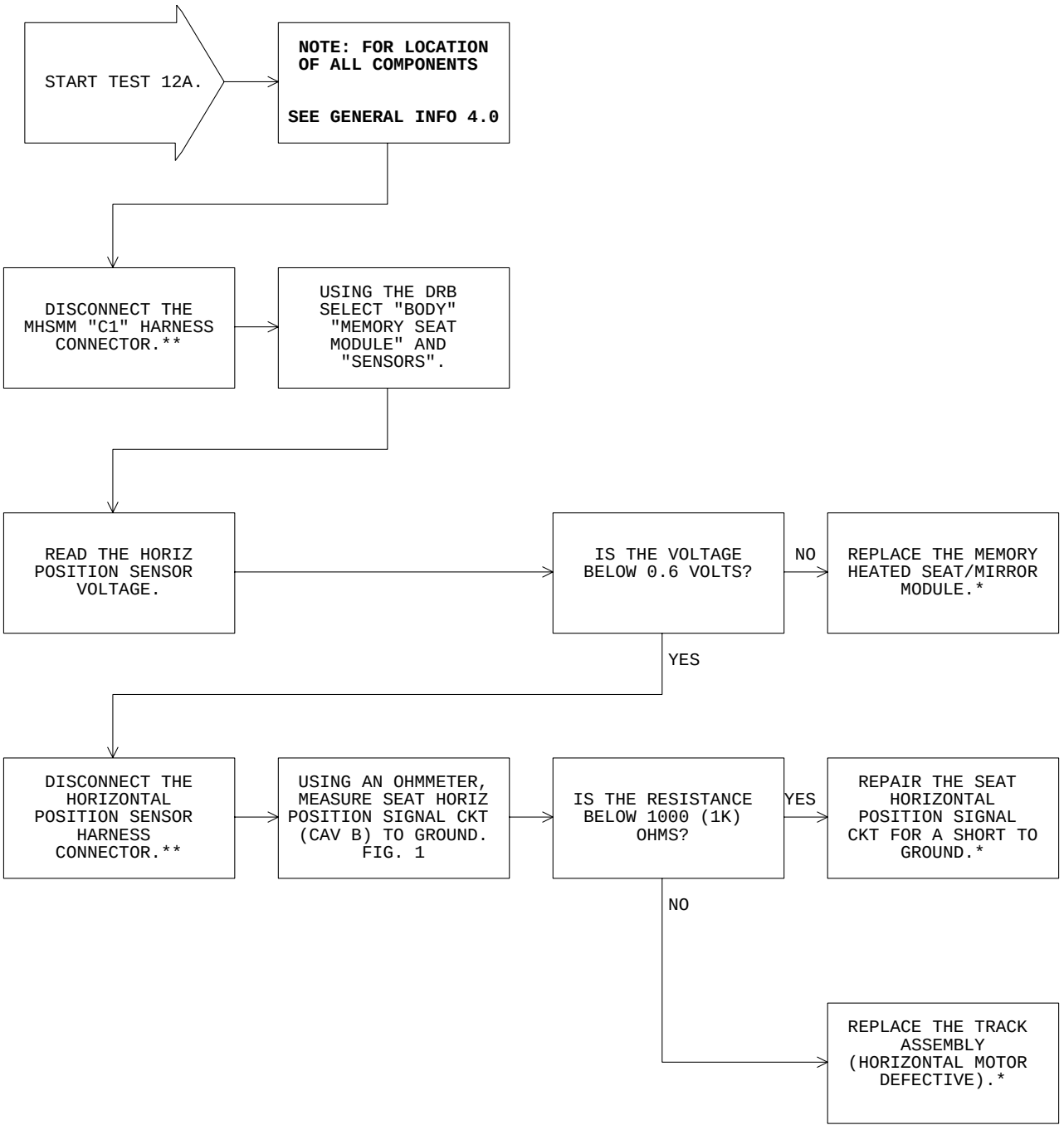

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | BR/RD | SEAT POSITION SENSOR GROUND |
| B | VT/RD | SEAT HORIZONTAL POSITION SIGNAL |
| C | BR/WT | SEAT SENSOR 5 VOLT SUPPLY |

80b4b6bb

***FIG. 1***

## TEST 12A REPAIRING ″HORIZONTAL SENSOR OUT OF RANGE LOW″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

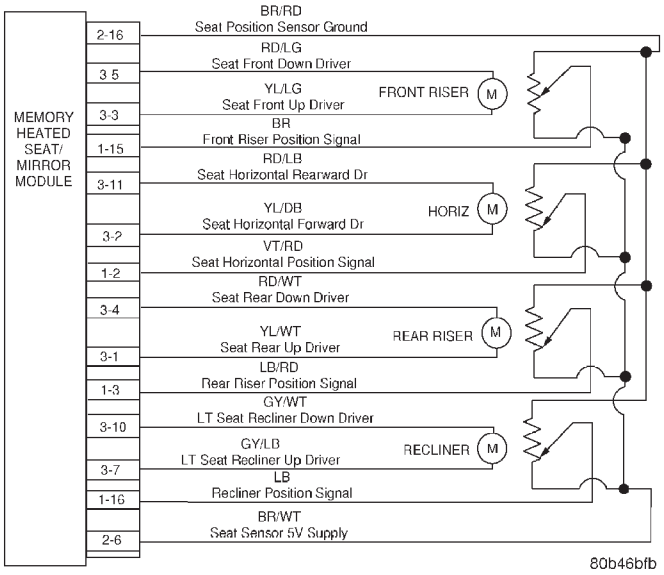



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.***

## TEST 13A — REPAIRING "HORIZONTAL SENSOR OUT OF RANGE HIGH" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bfb

**Name of code:** Horizontal Sensor Out of Range High

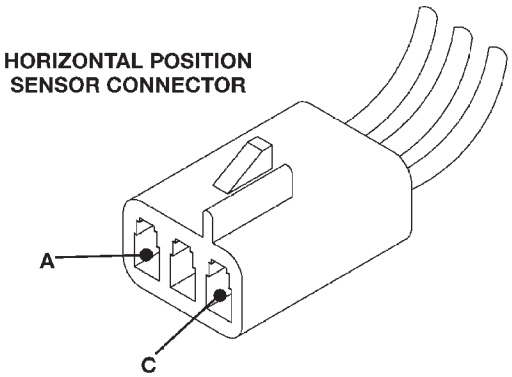
**When monitored:** Ignition on.

**Set condition:** Immediately set.

**Theory of operation:** The seat motors have potentiometers/ sensors attached to them. When the seat moves a potentiometer value changes. The potentiometers are designed to operate within a window of values. Any values outside of the normal will cause a code to be set. Therefore, when the seat sensor feed back to the MHSMM is greater than the seat sensor out of range high value stored in EEPROM, a code will be set.

**Probable cause:**
- Seat motor failure (value)
- Seat horizontal position signal ckt shorted to battery
- MHSMM failure

80b46d06



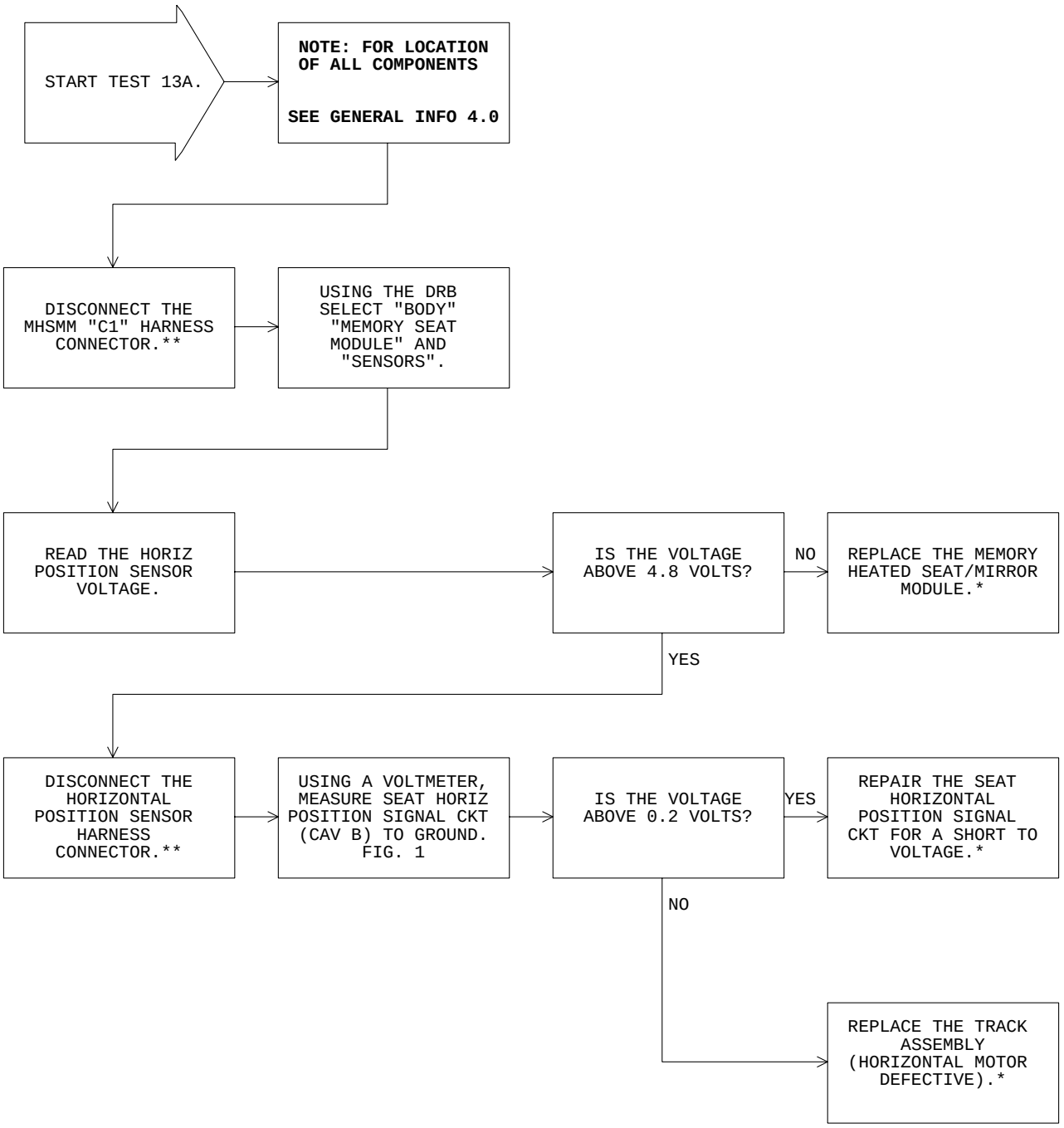

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | BR/RD | SEAT POSITION SENSOR GROUND |
| B | VT/RD | SEAT HORIZONTAL POSITION SIGNAL |
| C | BR/WT | SEAT SENSOR 5 VOLT SUPPLY |

80b4b6bb

***FIG. 1***

## TEST 13A REPAIRING ″HORIZONTAL SENSOR OUT OF RANGE HIGH″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

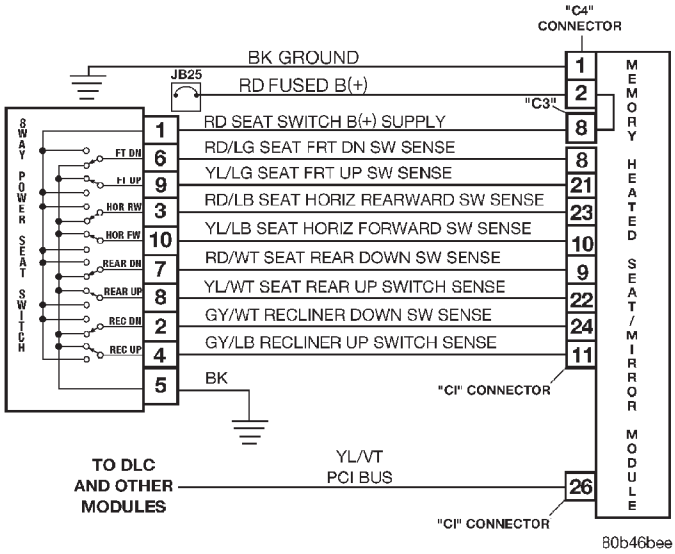



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.***

## TEST 14A REPAIRING "RECLINER DOWN POSITION STUCK" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bee

**Name of code:** Recliner Down Position Stuck

**When monitored:** Ignition on.

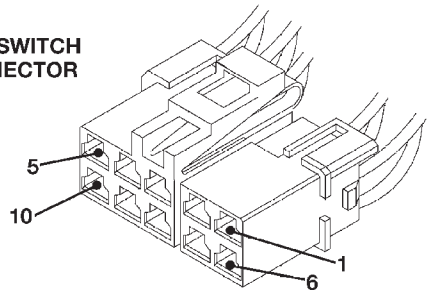
**Set condition:** Switch stuck active for 30 seconds.

**Theory of operation:** If a power seat switch is active for 30 seconds the MHSMM will ignore the input until its state has changed. Once the stuck condition is removed for 3 seconds the power seat switch will return to normal operation. The code will remain in the module for 20 ignition cycles.

**Probable cause:**
- Switch failure
- Recliner down switch sense ckt shorted to battery
- MHSMM failure

80b46cfe

**POWER SEAT SWITCH 10-WAY CONNECTOR**



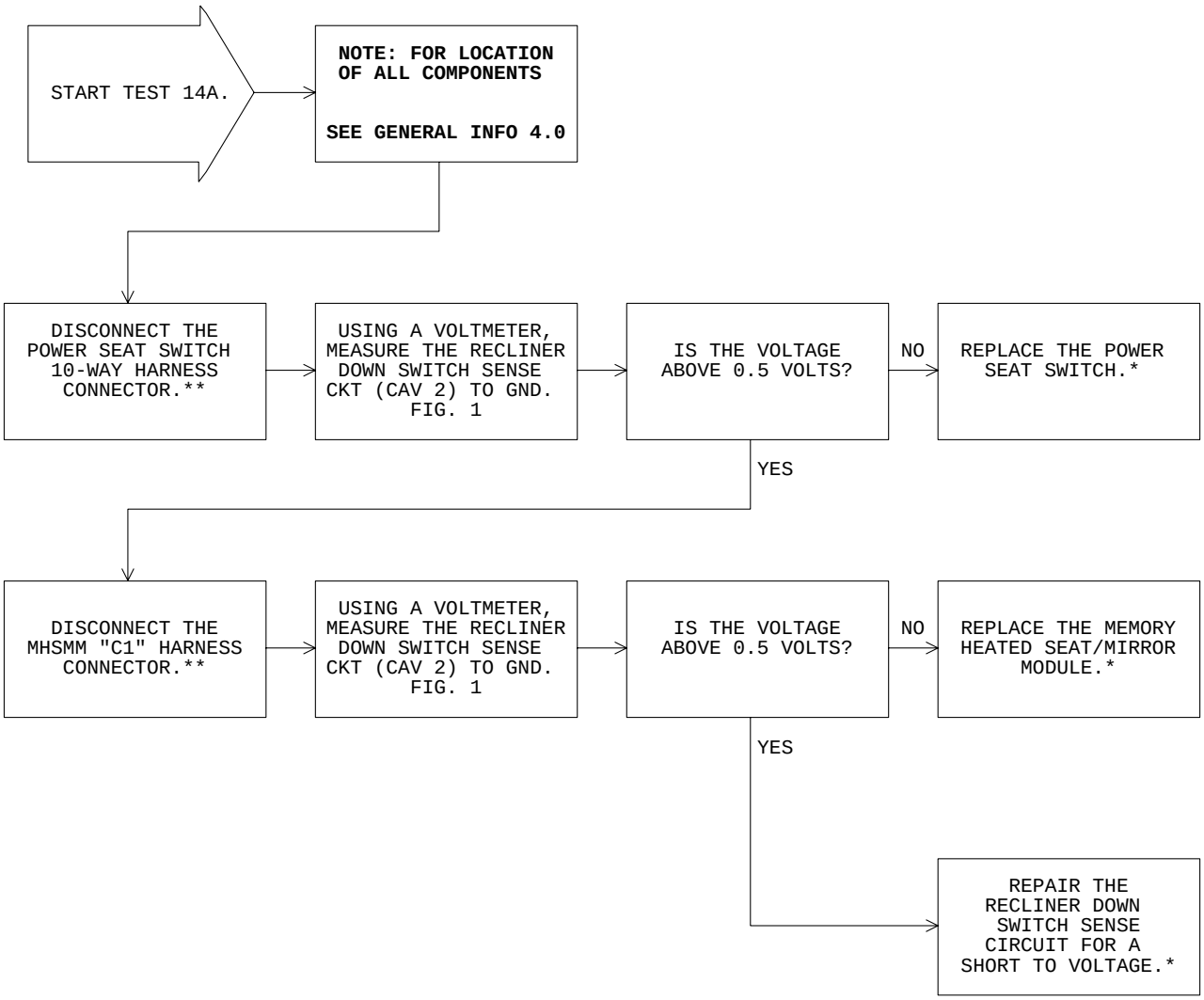

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD | SEAT SWITCH B(+) SUPPLY |
| 2 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 3 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 4 | GY/LB | RECLINER UP SWITCH SENSE |
| 5 | BK | GROUND |
| 6 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 7 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 8 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 9 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |

***FIG. 1***

80b4b849

## TEST 14A — REPAIRING ″RECLINER DOWN POSITION STUCK″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

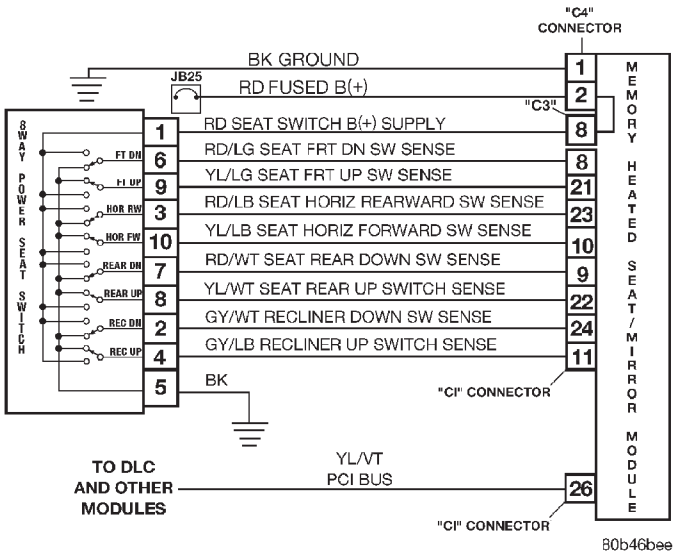



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.***

## TEST 15A REPAIRING "RECLINER UP POSITION STUCK" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bee

**Name of code:** Recliner Up Position Stuck

**When monitored:** Ignition on.

**Set condition:** Switch stuck active for 30 seconds.

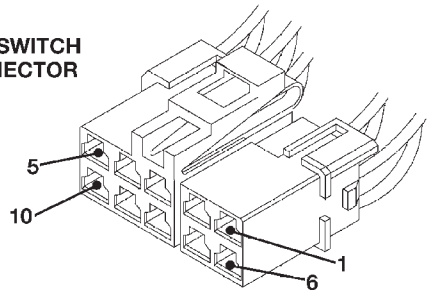
**Theory of operation:** If a power seat switch is active for 30 seconds the MHSMM will ignore the input until its state has changed. Once the stuck condition is removed for 3 seconds the power seat switch will return to normal operation. The code will remain in the module for 20 ignition cycles.

**Probable cause:**

- Switch failure
- Recliner up switch sense ckt shorted to battery
- MHSMM failure

80b46cfc

**POWER SEAT SWITCH 10-WAY CONNECTOR**



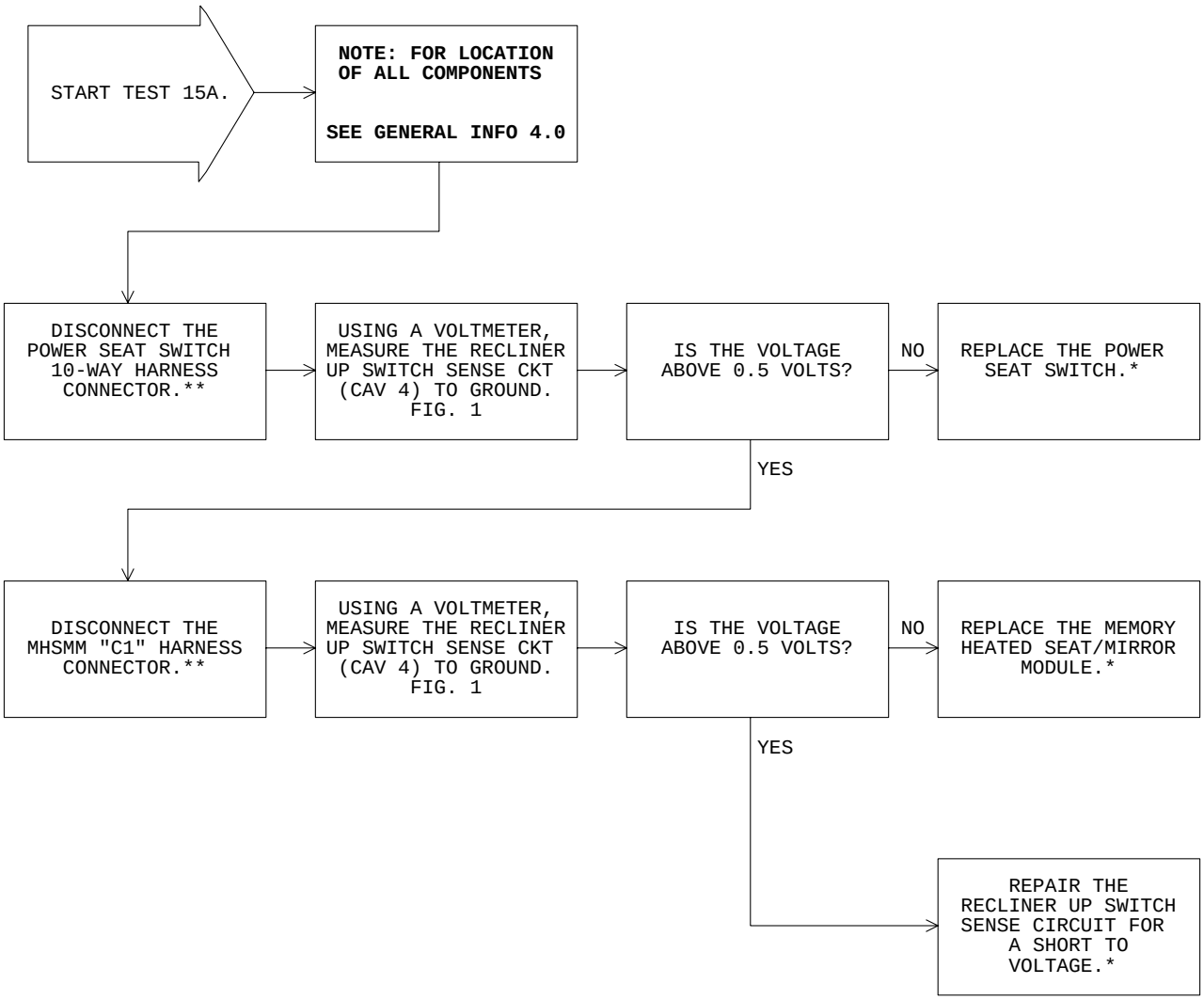

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD | SEAT SWITCH B(+) SUPPLY |
| 2 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 3 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 4 | GY/LB | RECLINER UP SWITCH SENSE |
| 5 | BK | GROUND |
| 6 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 7 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 8 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 9 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |

***FIG. 1***

80b4b849

## TEST 15A — REPAIRING ″RECLINER UP POSITION STUCK″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

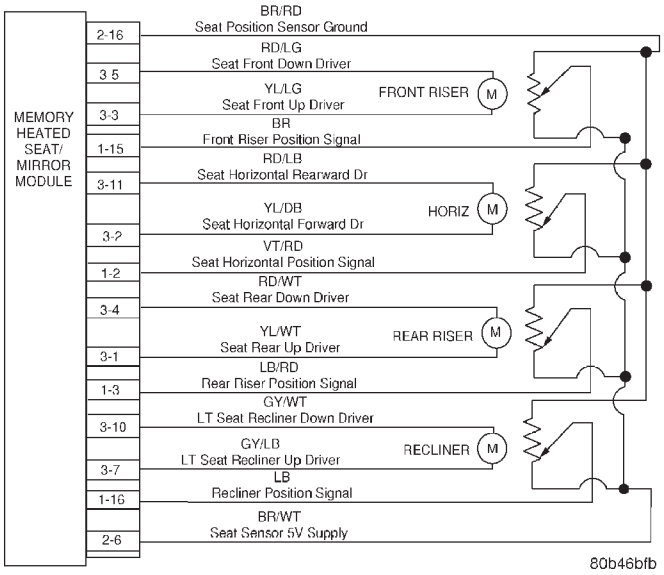



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.**

## TEST 16A — REPAIRING "RECLINER SENSOR OUT OF RANGE LOW" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bfb

**Name of code:** Recliner Sensor Out of Range Low

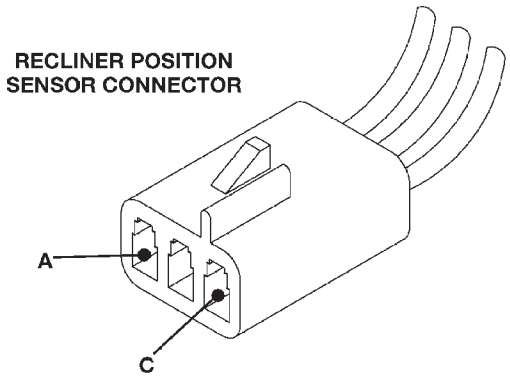
**When monitored:** Ignition on.

**Set condition:** Immediately set.

**Theory of operation:** The seat motors have potentiometers/ sensors attached to them. When the seat moves a potentiometer value changes. The potentiometers are designed to operate within a window of values. Any values outside of the normal will cause a code to be set. Therefore, when the seat sensor feed back to the MHSMM is less than the seat sensor out of range low value stored in EEPROM, a code will be set.

**Probable cause:**
- Seat motor failure (value)
- Recliner position signal ckt shorted to ground
- MHSMM failure

80b46d09



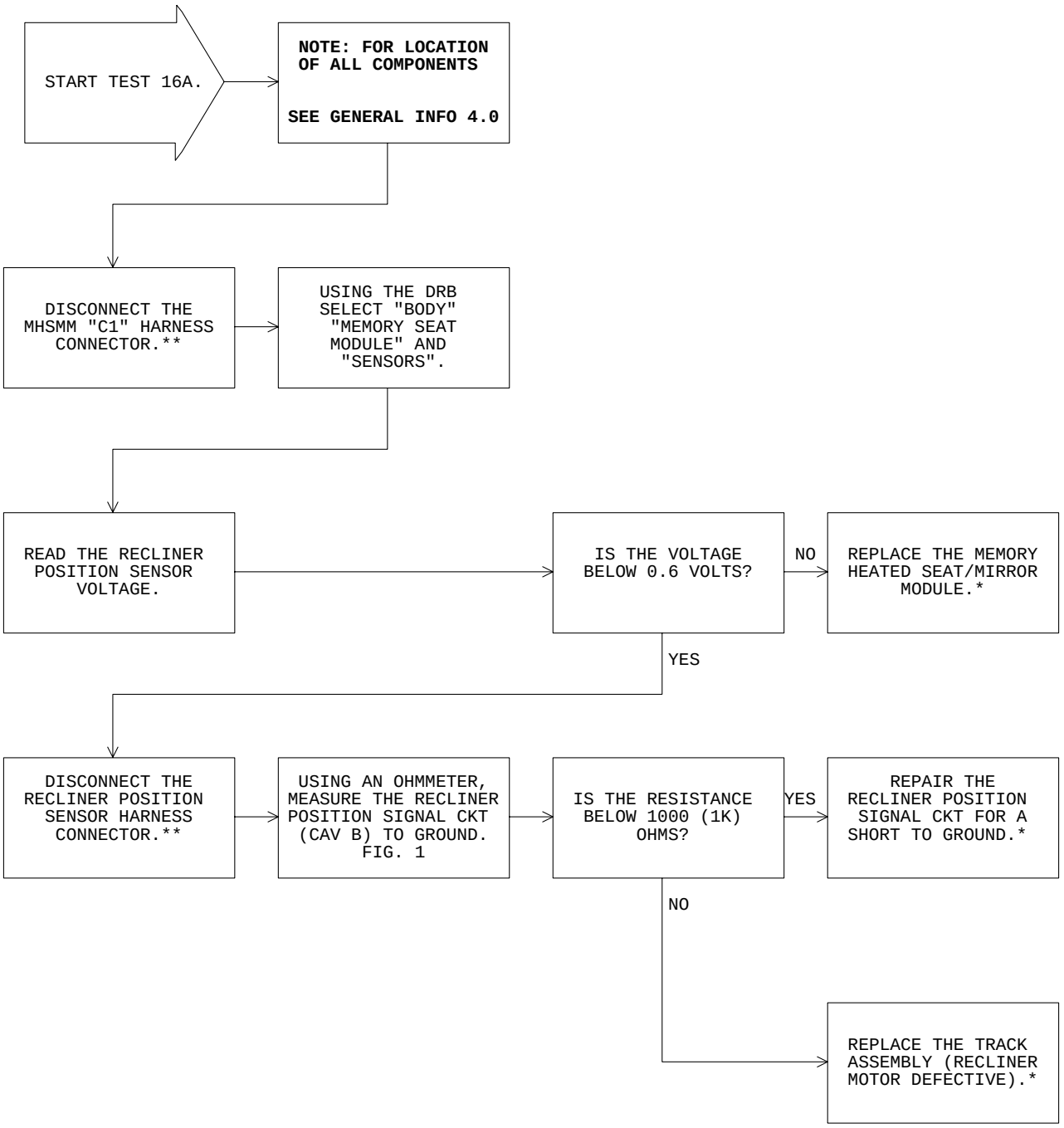

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | BR/WT | SEAT SENSOR 5 VOLT SUPPLY |
| B | LB | RECLINER POSITION SIGNAL |
| C | BR/RD | SEAT POSITION SENSOR GROUND |

***FIG. 1***

80b4b6ba

## TEST 16A REPAIRING ″RECLINER SENSOR OUT OF RANGE LOW″ TROUBLE CODE

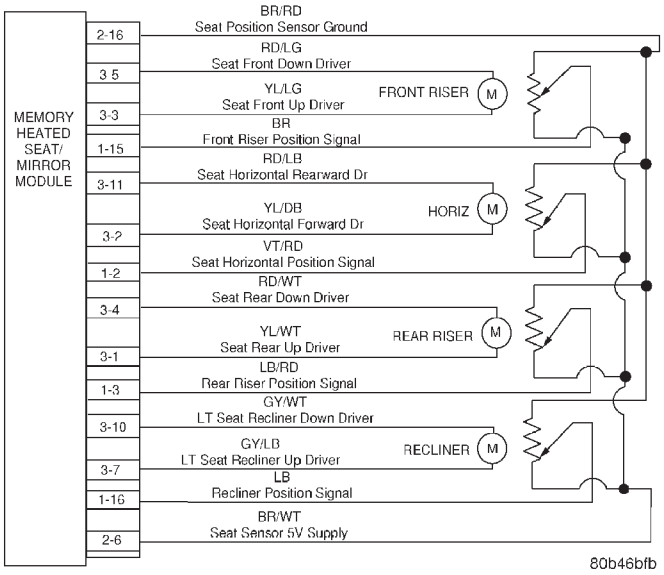
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-4A.** | ***Check connectors - Clean / repair as necessary.**

## TEST 17A — REPAIRING "RECLINER SENSOR OUT OF RANGE HIGH" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bfb

**Name of code:** Recliner Sensor Out of Range High

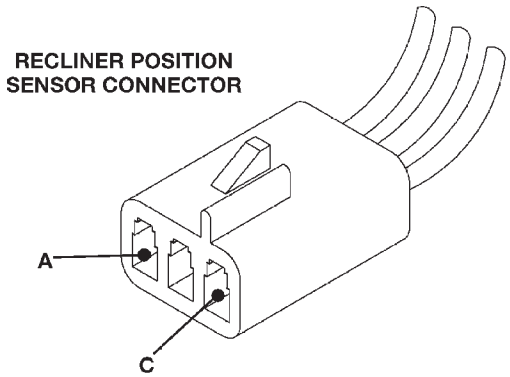
**When monitored:** Ignition on.

**Set condition:** Immediately set.

**Theory of operation:** The seat motors have potentiometers/ sensors attached to them. When the seat moves a potentiometer value changes. The potentiometers are designed to operate within a window of values. Any values outside of the normal will cause a code to be set. Therefore, when the seat sensor feed back to the MHSMM is greater than the seat sensor out of range high value stored in EEPROM, a code will be set.

**Probable cause:**
- Seat motor failure (value)
- Recliner position signal ckt shorted to battery
- MHSMM failure

80b46d08



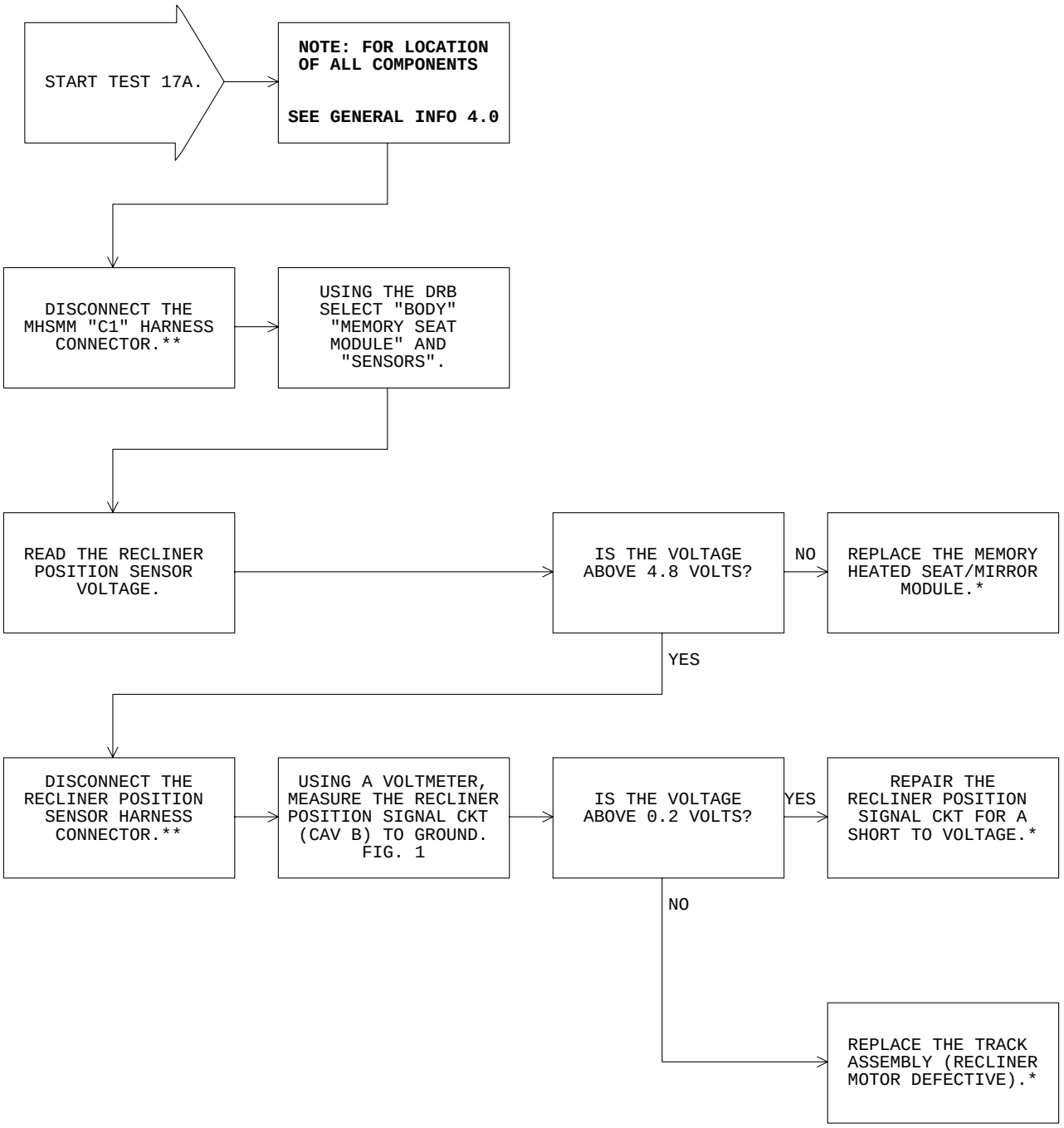

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | BR/WT | SEAT SENSOR 5 VOLT SUPPLY |
| B | LB | RECLINER POSITION SIGNAL |
| C | BR/RD | SEAT POSITION SENSOR GROUND |

80b4b6ba

***FIG. 1***

## TEST 17A REPAIRING ″RECLINER SENSOR OUT OF RANGE HIGH″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

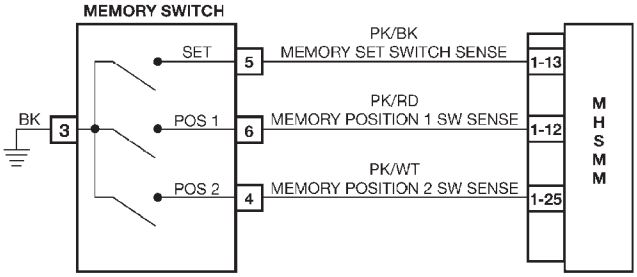



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.***

## TEST 18A REPAIRING "MEMORY POSITION #1 STUCK" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46c02

**Name of code:** Memory Position #1 Stuck

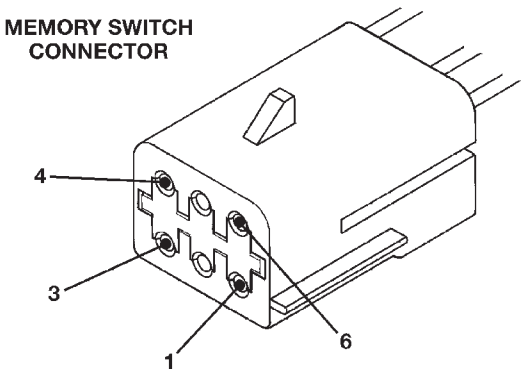
**When monitored:** Ignition on.

**Set condition:** Switch stuck active for 30 seconds.

**Theory of operation:** If a power seat switch is active for 30 seconds the MHSMM will ignore the input until its state has changed. Once the stuck condition is removed for 3 seconds the power seat switch will return to normal operation. The code will remain in the module for 20 ignition cycles.

**Probable cause:**
- Switch failure
- Memory position #1 switch sense ckt shorted to ground
- MHSMM failure

80b46cff



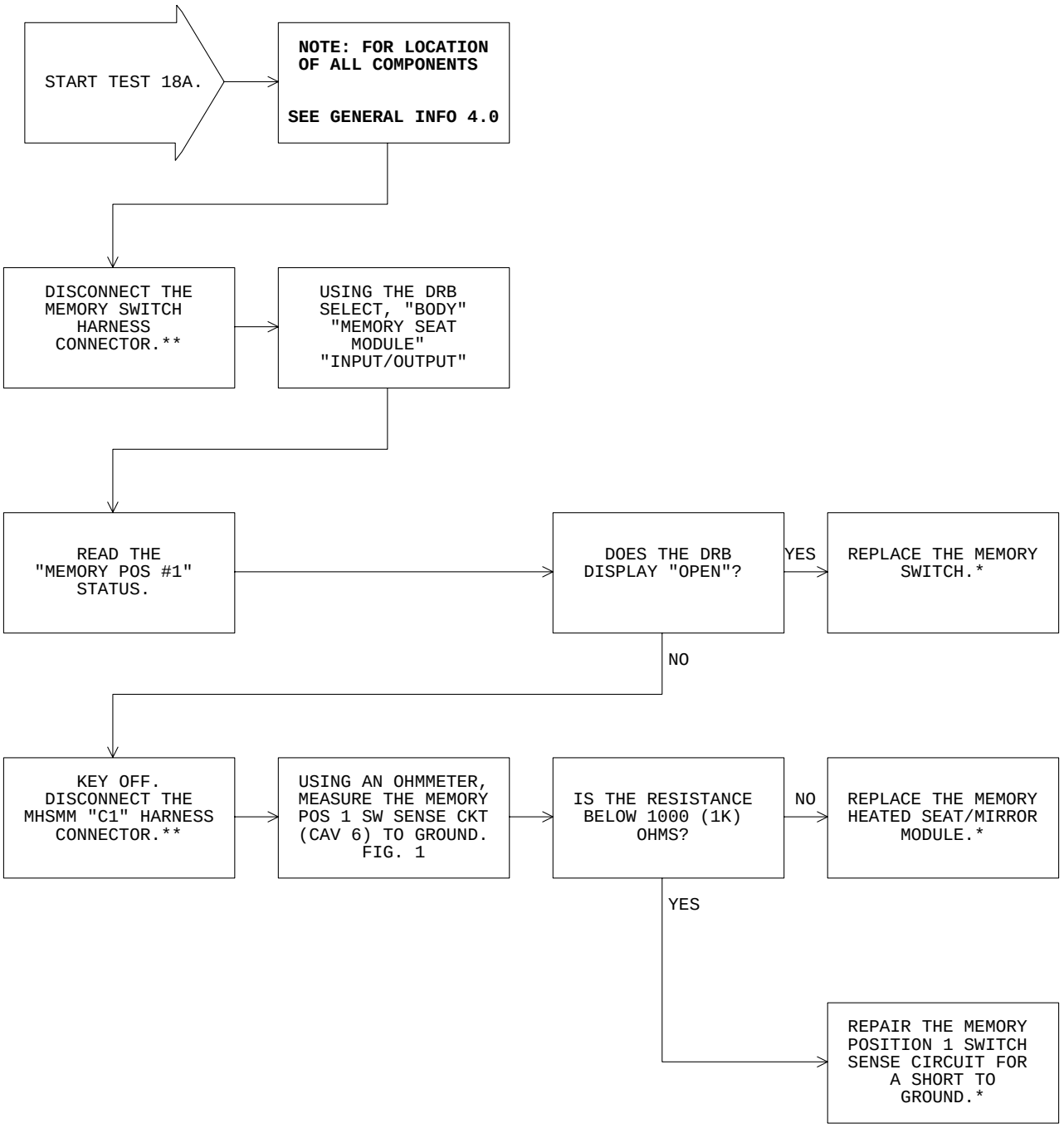

| CAV | COLOR | FUNCTION |
|---|---|---|
| 3 | BK | GROUND |
| 4 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 5 | PK/BK | MEMORY SET SWITCH SENSE |
| 6 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |

***FIG. 1***

80b46c03

## TEST 18A REPAIRING ″MEMORY POSITION #1 STUCK″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

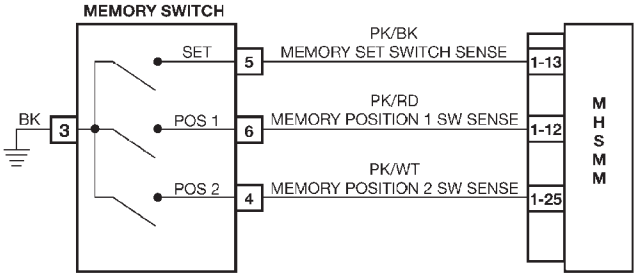



***Perform Verification TEST VER-4A.**

****Check connectors - Clean / repair as necessary.**

## TEST 19A REPAIRING "MEMORY POSITION #2 STUCK" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46c02

**Name of code:** Memory Position #2 Stuck

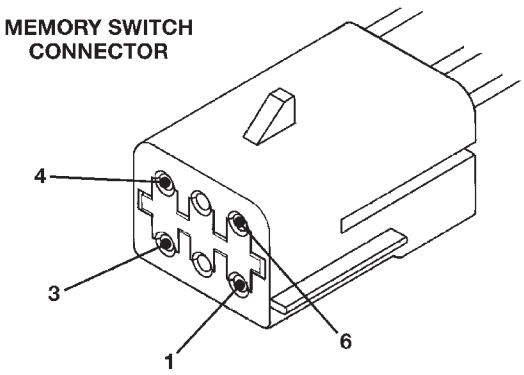
**When monitored:** Ignition on.

**Set condition:** Switch stuck active for 30 seconds.

**Theory of operation:** If a power seat switch is active for 30 seconds the MHSMM will ignore the input until its state has changed. Once the stuck condition is removed for 3 seconds the power seat switch will return to normal operation. The code will remain in the module for 20 ignition cycles.

**Probable cause:**
- Switch failure
- Memory position #2 switch sense ckt shorted to ground
- MHSMM failure

80b46d00



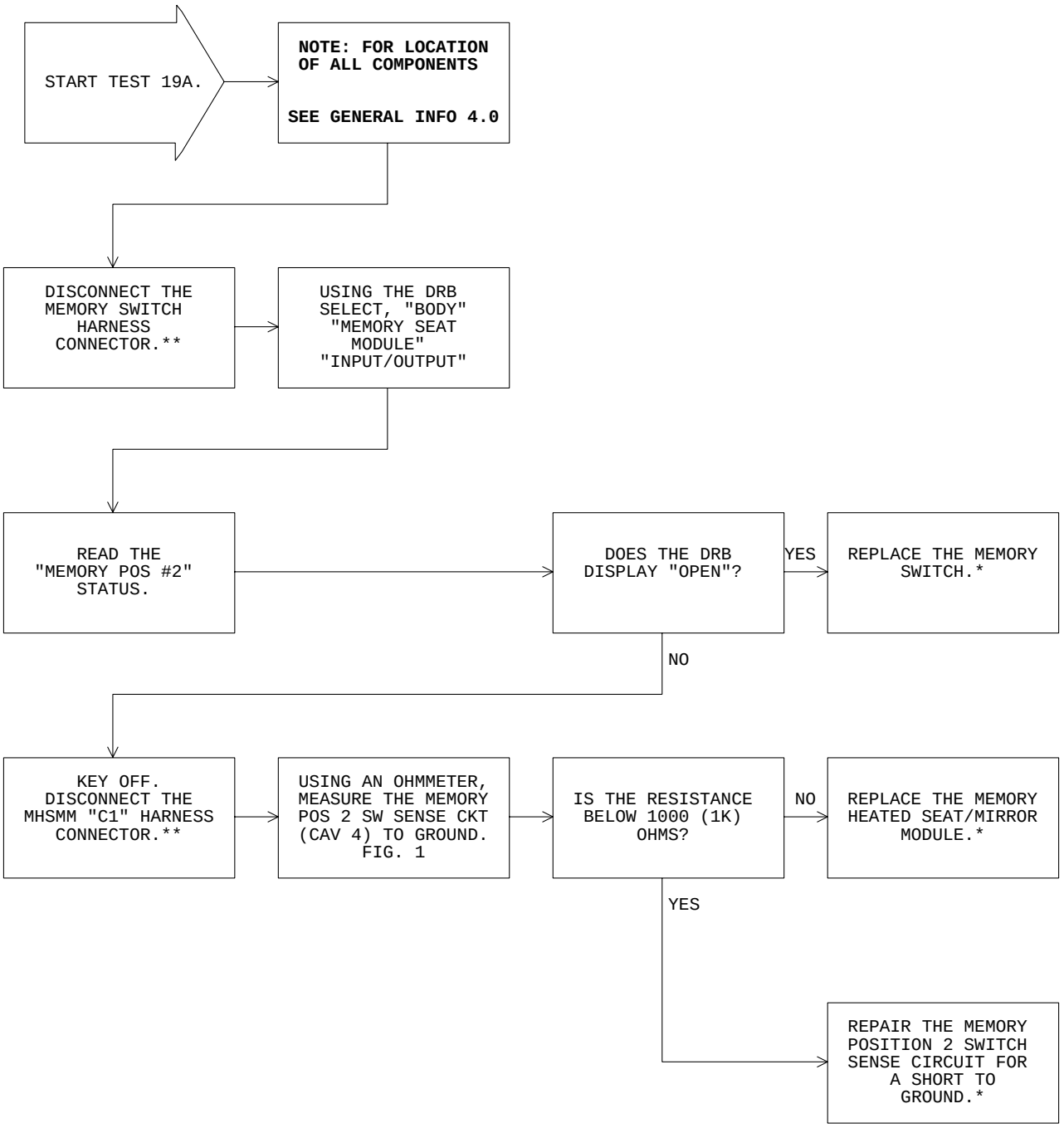

| CAV | COLOR | FUNCTION |
|---|---|---|
| 3 | BK | GROUND |
| 4 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 5 | PK/BK | MEMORY SET SWITCH SENSE |
| 6 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |

***FIG. 1***

80b46c03

## TEST 19A — REPAIRING ″MEMORY POSITION #2 STUCK″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

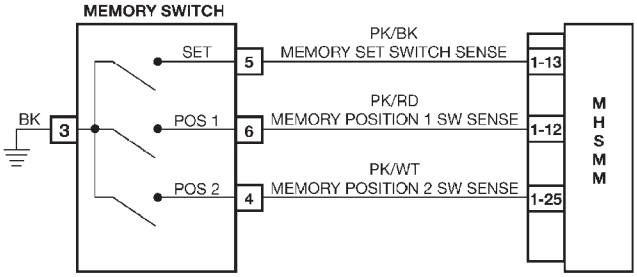



***Perform Verification TEST VER-4A.**

****Check connectors - Clean / repair as necessary.**

## TEST 20A — REPAIRING "MEMORY SET "S" POSITION STUCK" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46c02

**Name of code:** Memory Set "S" Position Stuck

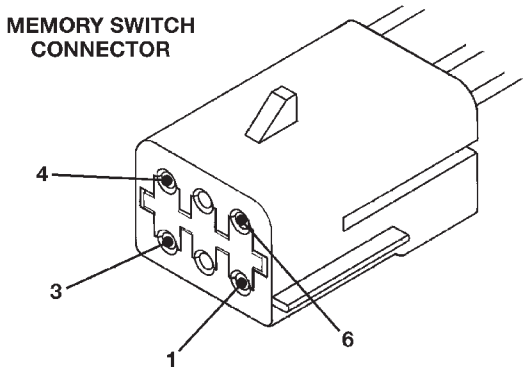
**When monitored:** Ignition on.

**Set condition:** Switch stuck active for 30 seconds.

**Theory of operation:** If a power seat switch is active for 30 seconds the MHSMM will ignore the input until its state has changed. Once the stuck condition is removed for 3 seconds the power seat switch will return to normal operation. The code will remain in the module for 20 ignition cycles.

**Probable cause:**
- Switch failure
- Memory set switch sense ckt shorted to ground
- MHSMM failure

80b46d01



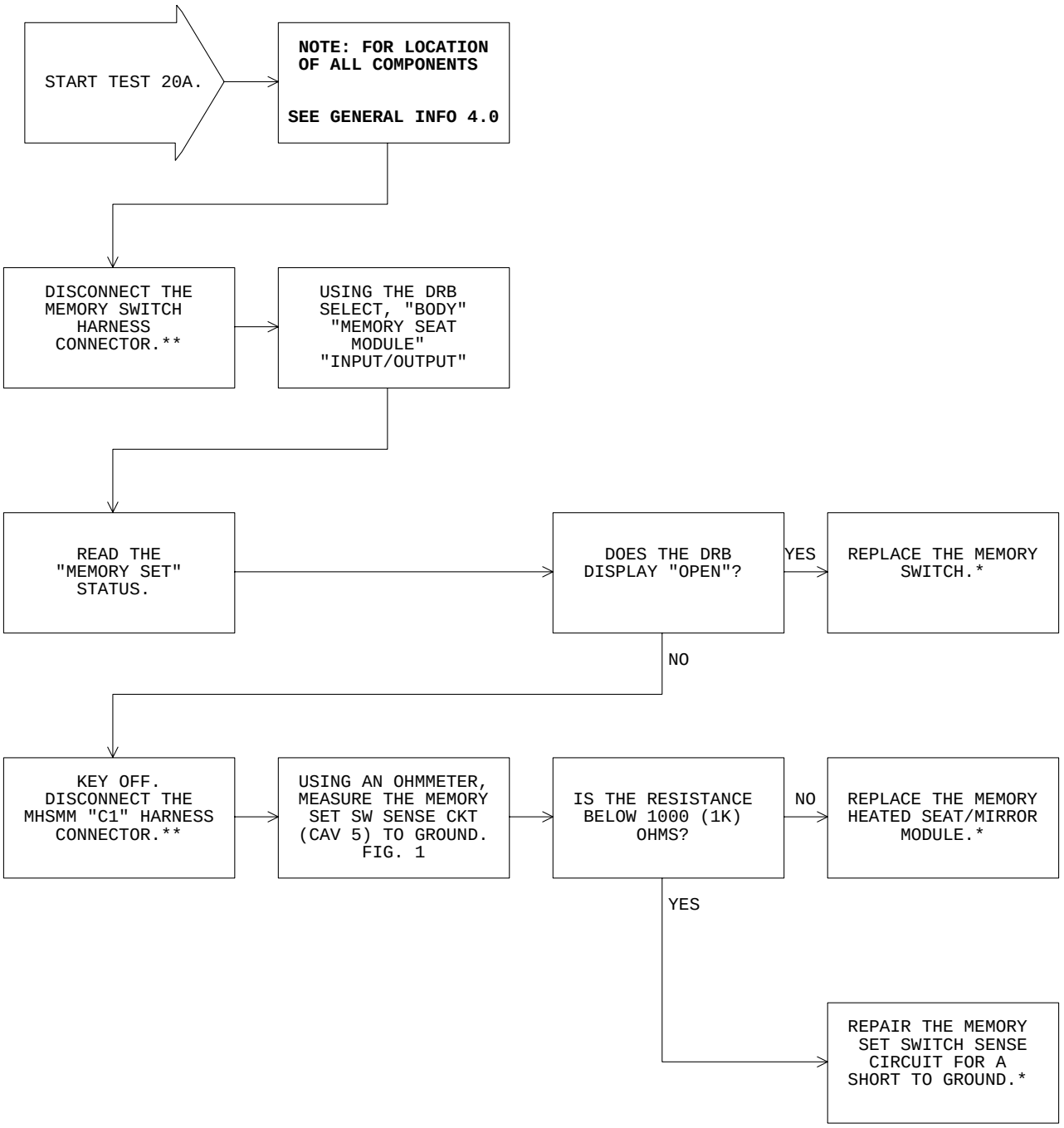

| CAV | COLOR | FUNCTION |
|---|---|---|
| 3 | BK | GROUND |
| 4 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 5 | PK/BK | MEMORY SET SWITCH SENSE |
| 6 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |

***FIG. 1***

80b46c03

## TEST 20A REPAIRING ″MEMORY SET ″S″ POSITION STUCK″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

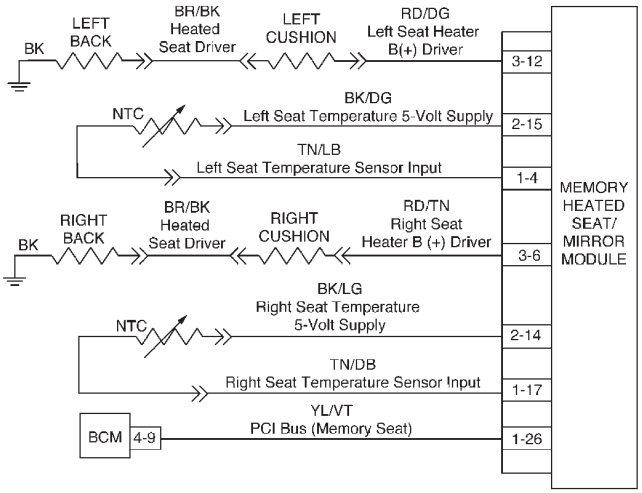



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.***

## TEST 21A — REPAIRING "LEFT SEAT HEAT OUTPUT OPEN" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bfc

**Name of code:** Left Seat Heat Output Open

**When monitored:** Ignition on.

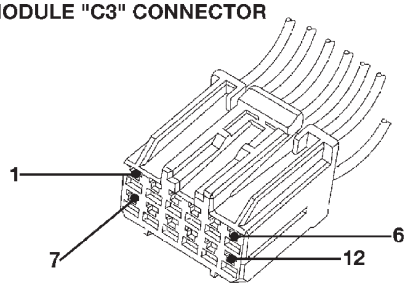
**Set condition:** Immediately after losing the seat heat element.

**Theory of operation:** The MHSMM monitors its output for a loss of heater element. If the element is missing the module will set this code.

**Probable cause:**
- Heated seat element failure
- Left seat heater B (+) driver ckt open
- MHSMM failure

80b6b158

**MEMORY HEATED SEAT/MIRROR MODULE "C3" CONNECTOR**

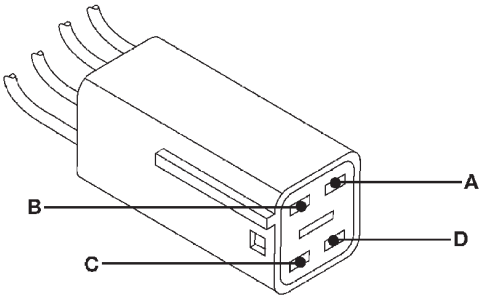



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | YL/WT | SEAT REAR UP DRIVER |
| 2 | YL/DB | SEAT HORIZONTAL FORWARD DRIVER |
| 3 | YL/LG | SEAT FRONT UP DRIVER |
| 4 | RD/WT | SEAT REAR DOWN DRIVER |
| 5 | RD/LG | SEAT FRONT DOWN DRIVER |
| 6 | RD/TN | RIGHT SEAT HEATER B(+) DRIVER |
| 7 | GY/LB | LEFT SEAT RECLINER UP DRIVER |
| 8 | RD | SEAT SWITCH B(+) SUPPLY |
| 10 | GY/WT | LEFT SEAT RECLINER DOWN DRIVER |
| 11 | RD/LB | SEAT HORIZONTAL REARWARD DRIVER |
| 12 | RD/DG | LEFT SEAT HEATER B(+) DRIVER |

80b46bd7

*FIG. 1*

**SEAT CUSHION HEATER 4-WAY CONNECTOR (CUSHION SIDE)**

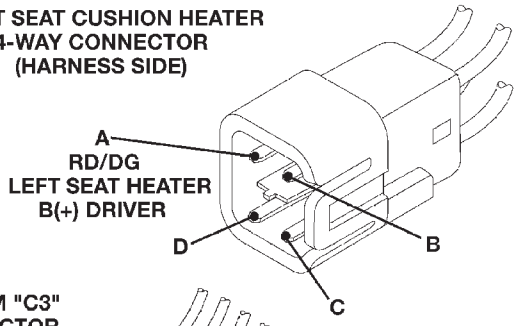



| CAV | COLOR | FUNCTION |
|---|---|---|
| A | BL | SEAT HEATER B(+) DRIVER |
| B | GN | HEATED SEAT DRIVER |
| C | BK/RD | SEAT TEMP SENSOR INPUT |
| D | BK/RD | SEAT TEMP 5 VOLT SUPPLY |

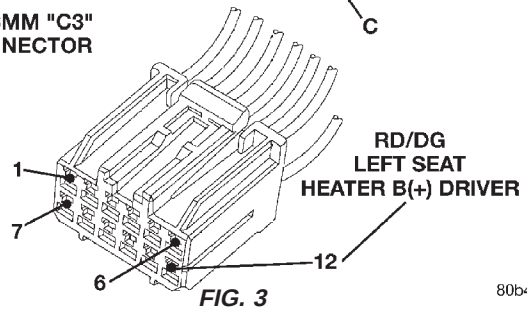
80b4f9cd

*FIG. 2*

**LEFT SEAT CUSHION HEATER 4-WAY CONNECTOR (HARNESS SIDE)**




**MHSMM "C3" CONNECTOR**

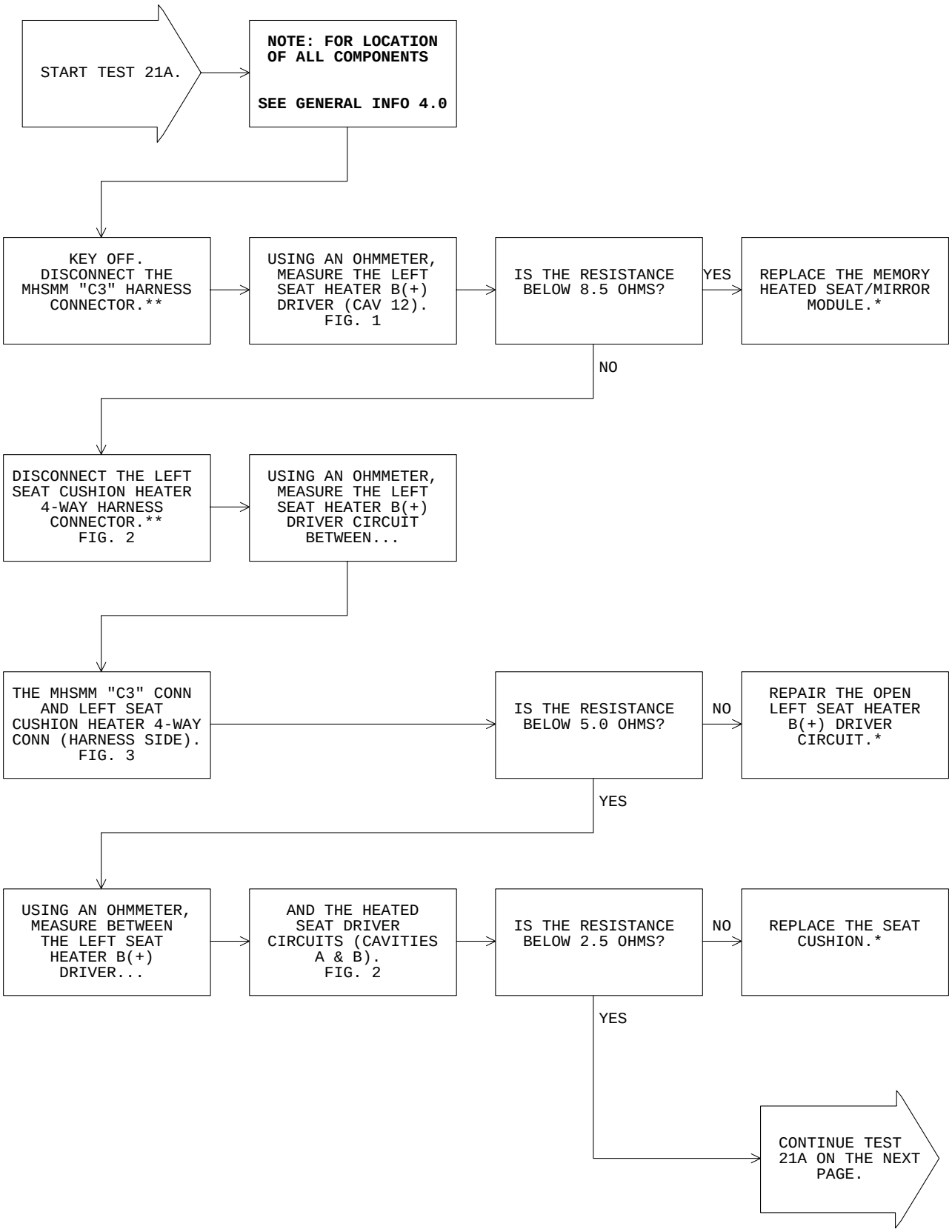



80b4fa42

*FIG. 3*

## TEST 21A — REPAIRING ″LEFT SEAT HEAT OUTPUT OPEN″ TROUBLE CODE

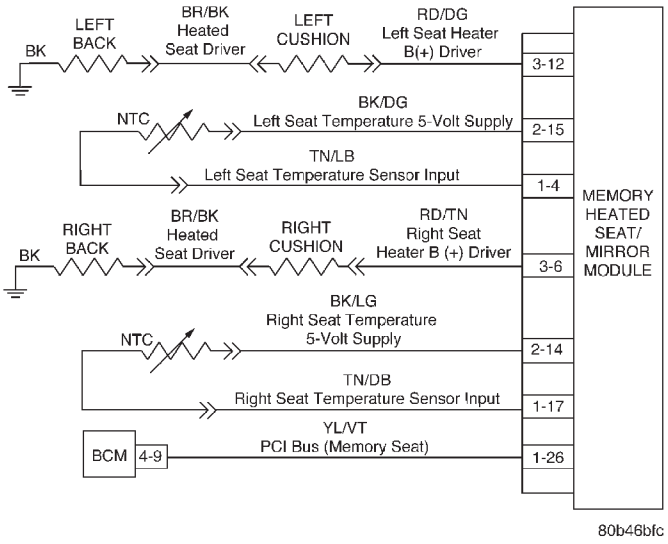
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-4A.***

****Check connectors - Clean / repair as necessary.***

## TEST 21A CONTINUED - REPAIRING "LEFT SEAT HEAT OUTPUT OPEN" TROUBLE CODE



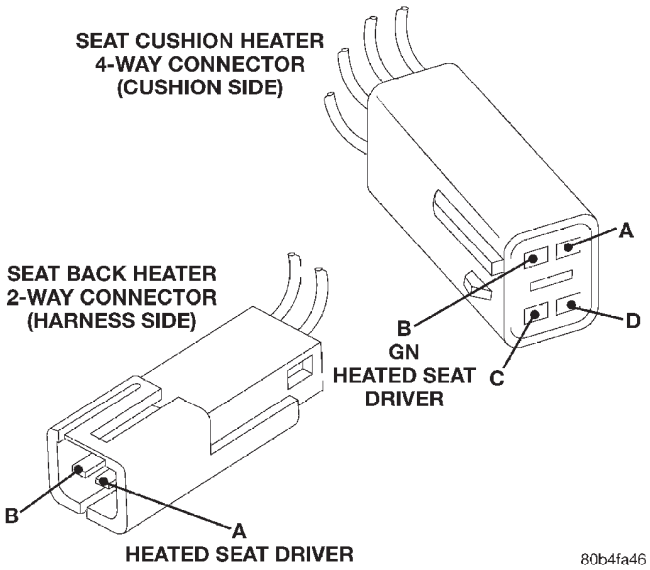
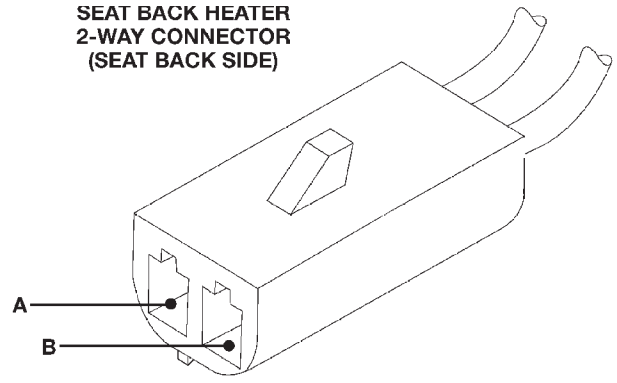




*FIG. 1*

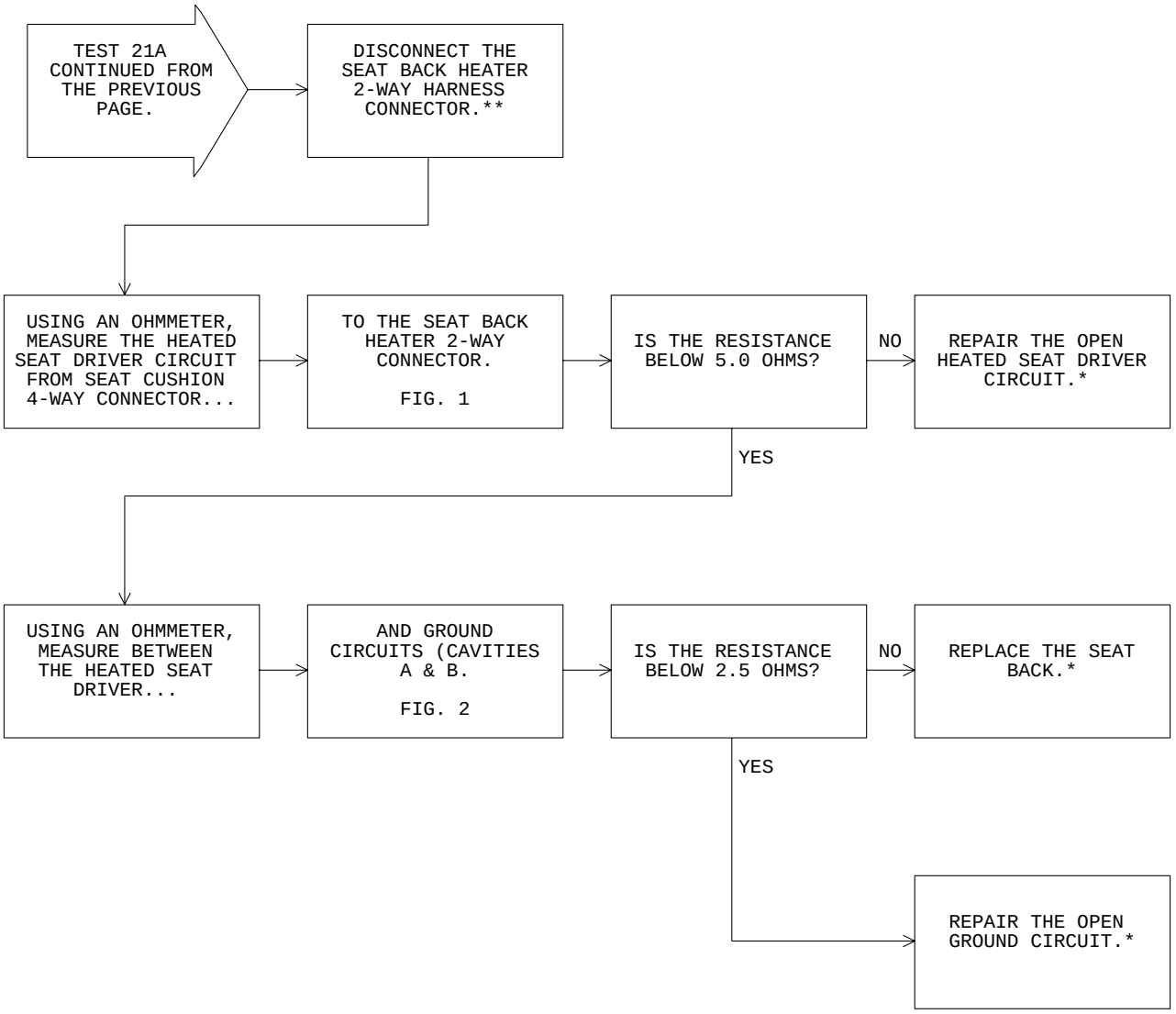



| CAV | COLOR | FUNCTION |
|---|---|---|
| A | BR | HEATER SEAT DRIVER |
| B | BR | GROUND |

80b4f9cc

*FIG. 2*

## TEST 21A CONTINUED - REPAIRING ″LEFT SEAT HEAT OUTPUT OPEN″ TROUBLE CODE

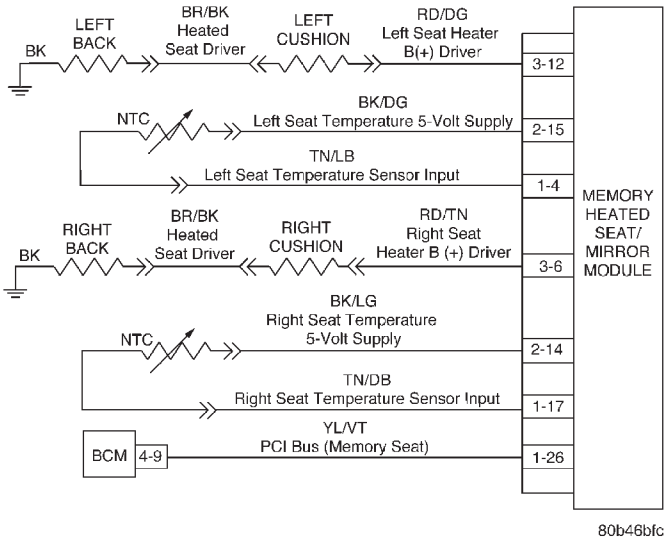



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.***

## TEST 22A — REPAIRING "LEFT SEAT HEAT OUTPUT SHORTED TO GROUND" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bfc

**Name of code:** Left Seat Heat Output Shorted to Ground

**When monitored:** Ignition on, during the heated seat operation.

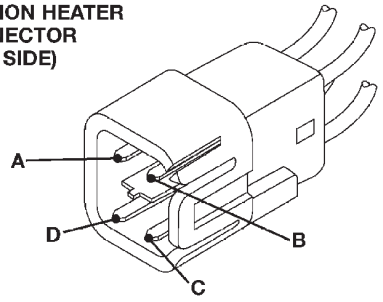
**Set condition:** Immediately after the first drivers heated seat request of a given ignition cycle.

**Theory of operation:** The MHSMM has short circuit protection for the heated seat output. If the output is shorted to ground the module will shut off the output and set a code. The seat heat request will be ignored for 30 seconds. If the short condition is removed the module will function as designed.

**Probable cause:**
- Left seat heater B (+) driver ckt shorted to ground
- MHSMM failure

80b46d0a

**LEFT SEAT CUSHION HEATER 4-WAY CONNECTOR (HARNESS SIDE)**

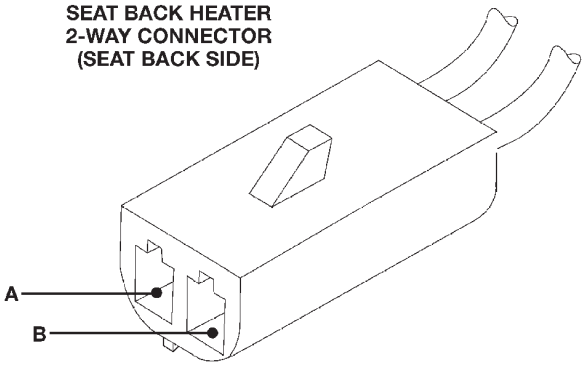



| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD/DG | LEFT SEAT HEATER B(+) DRIVER |
| B | BR/BK | HEATED SEAT DRIVER |
| C | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| D | BK/DG | LEFT SEAT TEMPERATURE 5 VOLT SUPPLY |

80b46c04

***FIG. 1***

**SEAT BACK HEATER 2-WAY CONNECTOR (SEAT BACK SIDE)**

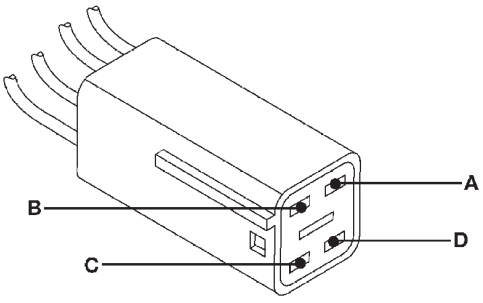



| CAV | COLOR | FUNCTION |
|---|---|---|
| A | BR | HEATER SEAT DRIVER |
| B | BR | GROUND |

80b4f9cc

***FIG. 2***

**SEAT CUSHION HEATER 4-WAY CONNECTOR (CUSHION SIDE)**



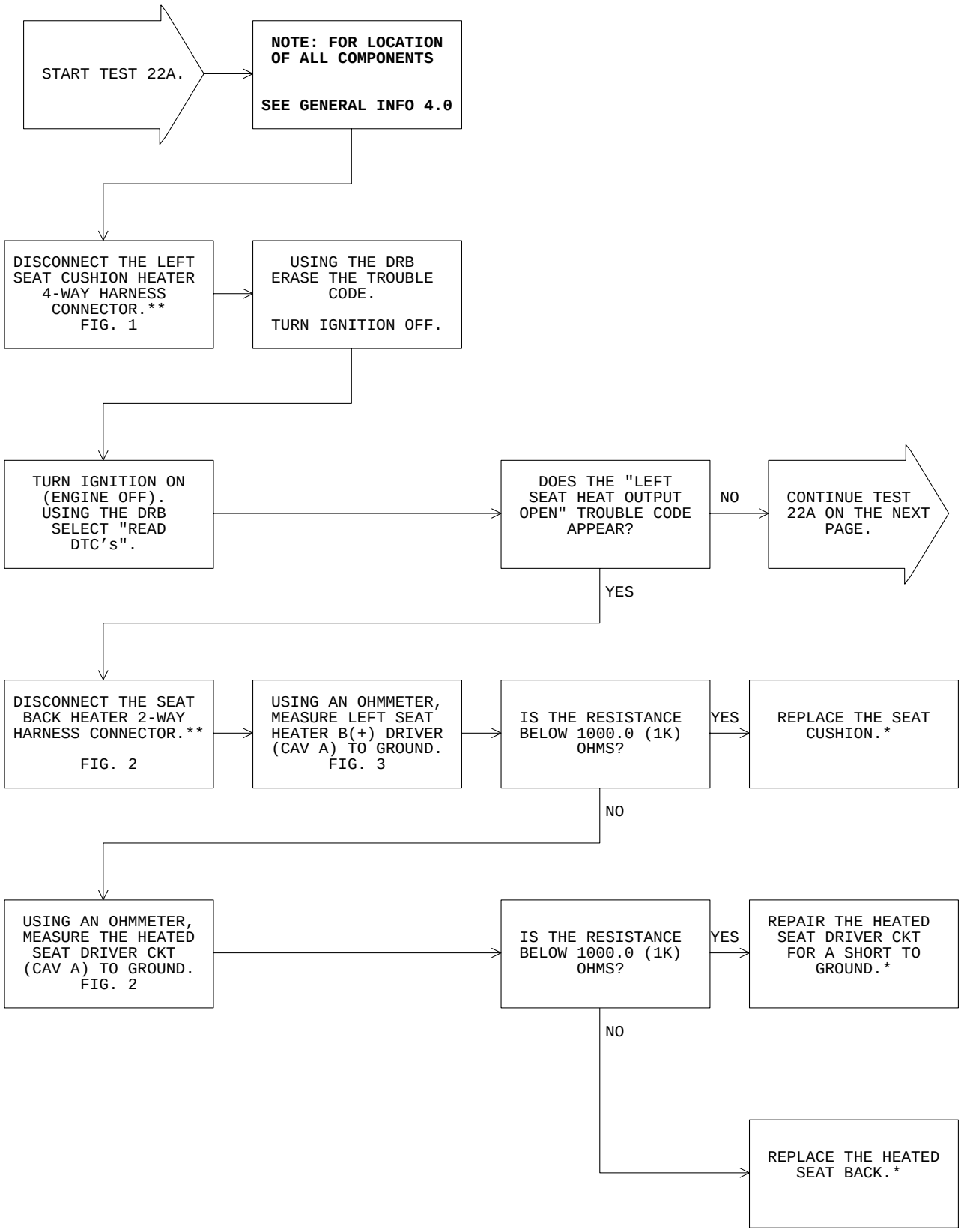

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | BL | SEAT HEATER B(+) DRIVER |
| B | GN | HEATED SEAT DRIVER |
| C | BK/RD | SEAT TEMP SENSOR INPUT |
| D | BK/RD | SEAT TEMP 5 VOLT SUPPLY |

80b4f9cd

***FIG. 3***

## TEST 22A — REPAIRING ″LEFT SEAT HEAT OUTPUT SHORTED TO GROUND″ TROUBLE CODE

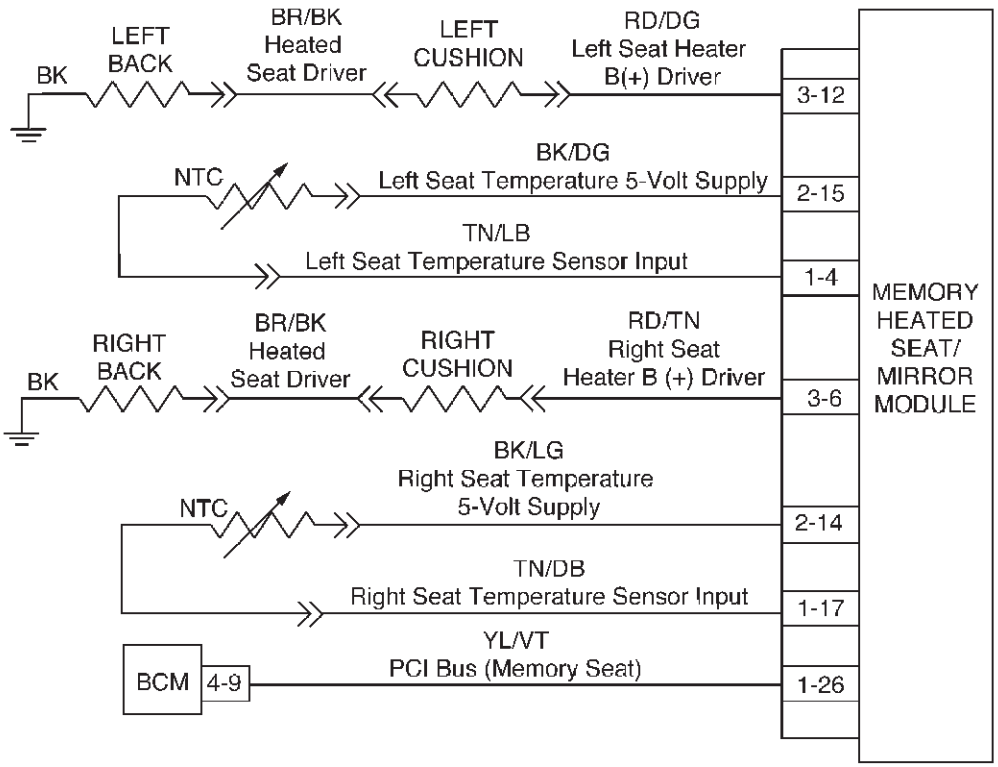
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-4A.**

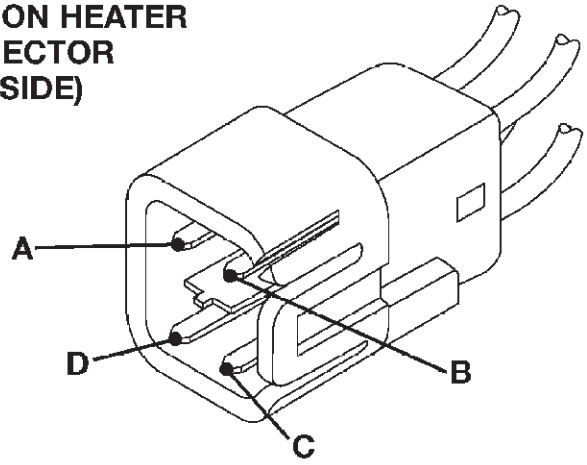
****Check connectors - Clean / repair as necessary.**

**TEST 22A** CONTINUED - REPAIRING "LEFT SEAT HEAT OUTPUT SHORTED TO GROUND" TROUBLE CODE




80b46bfc

**LEFT SEAT CUSHION HEATER 4-WAY CONNECTOR (HARNESS SIDE)**

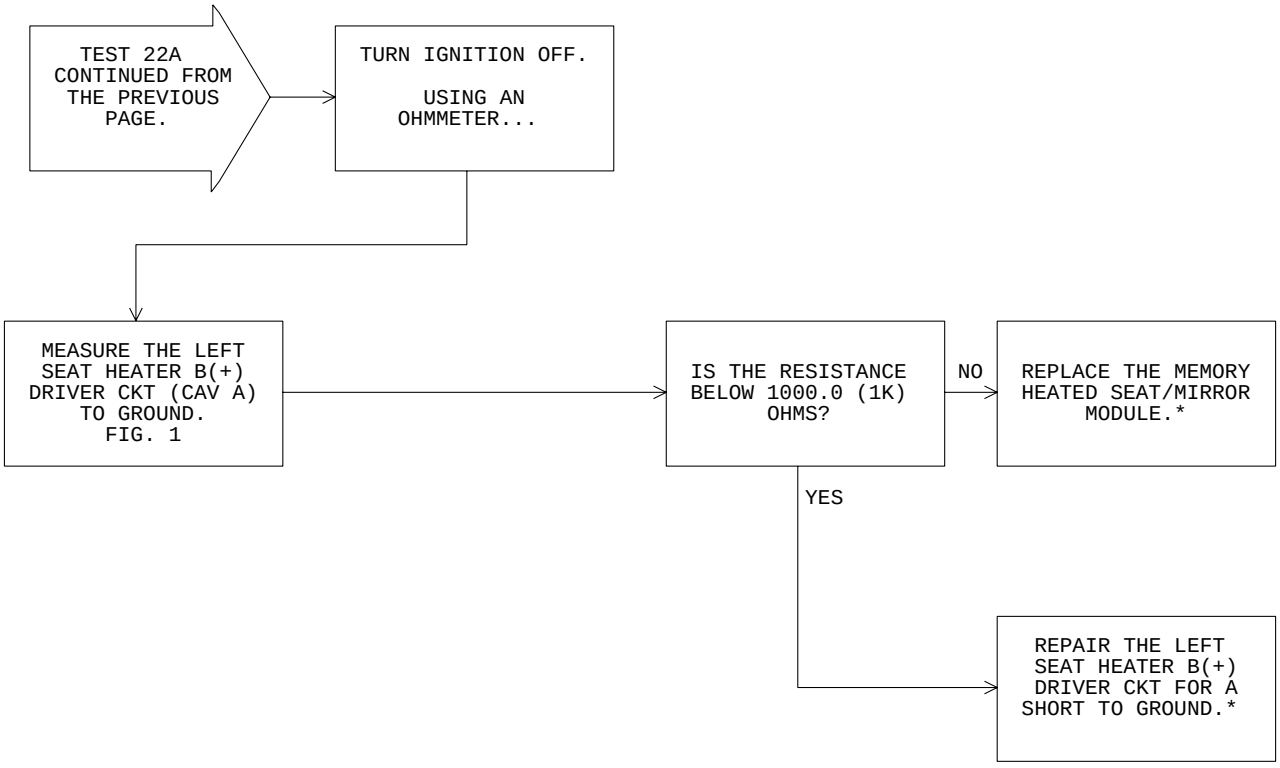



| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD/DG | LEFT SEAT HEATER B(+) DRIVER |
| B | BR/BK | HEATED SEAT DRIVER |
| C | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| D | BK/DG | LEFT SEAT TEMPERATURE 5 VOLT SUPPLY |

80b46c04

*FIG. 1*

## TEST 22A — CONTINUED - REPAIRING ″LEFT SEAT HEAT OUTPUT SHORTED TO GROUND″ TROUBLE CODE

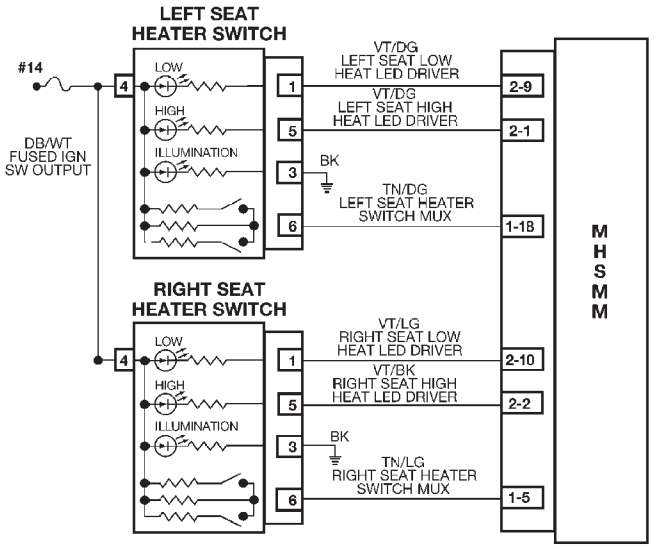



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.***

## TEST 23A — REPAIRING "LEFT HEATED SEAT SWITCH STUCK IN LOW STATE" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b6b15a

**Name of code:** Left Heated Seat Switch Stuck in Low State

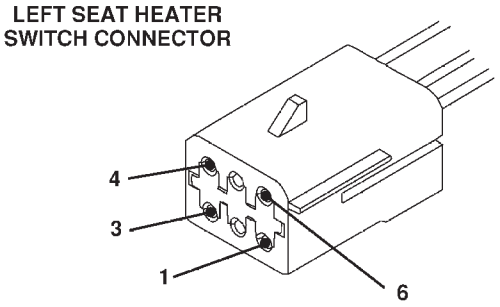
**When monitored:** Ignition on.

**Set condition:** Switch stuck active for 30 seconds.

**Theory of operation:** If the left heated seat switch is active for 30 seconds the MHSMM will ignore the input until its state has changed. Once the stuck condition is removed for 3 seconds the seat switch will return to normal operation. The code will remain in the module for 20 ignition cycles.

**Probable cause:**
- Switch failure
- Left seat heater switch MUX CKT shorted to 5 volts
- MHSMM failure

80b46d0f



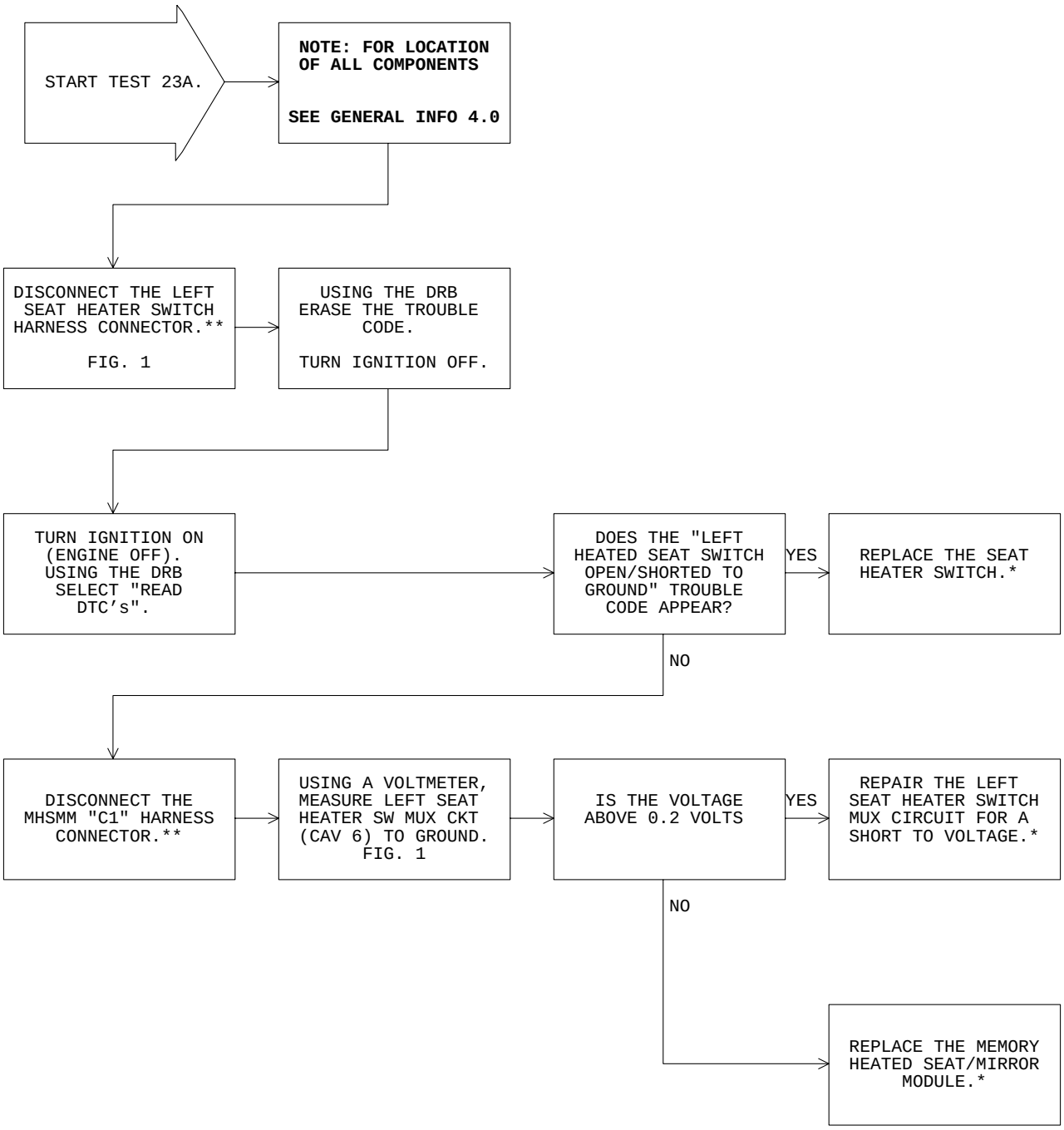

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/DG | LEFT SEAT LOW HEAT LED DRIVER |
| 3 | BK | GROUND |
| 4 | DB/WT | FUSED IGNITION SWITCH OUTPUT |
| 5 | VT/WT | LEFT SEAT HIGH HEAT LED DRIVER |
| 6 | TN/DG | LEFT SEAT HEATER SWITCH MUX |

80b46bff

***FIG. 1***

## TEST 23A — REPAIRING ″LEFT HEATED SEAT SWITCH STUCK IN LOW STATE″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

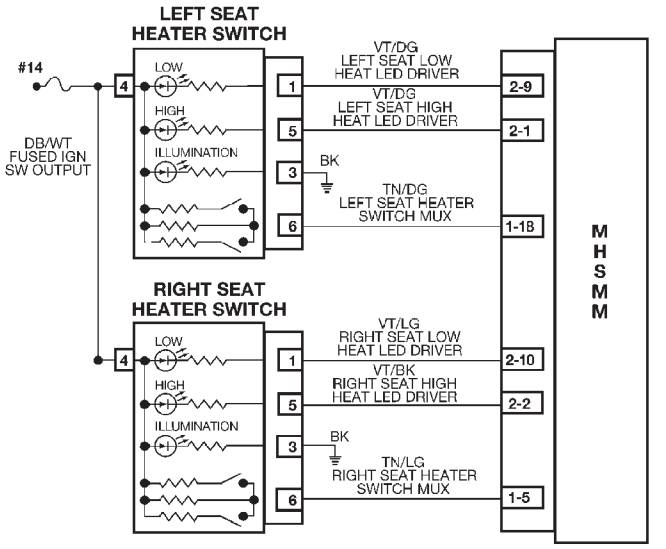



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.***

## TEST 24A — REPAIRING "LEFT HEATED SEAT SWITCH STUCK IN HIGH STATE" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b6b15a

**Name of code:** Left Heated Seat Switch Stuck in High State

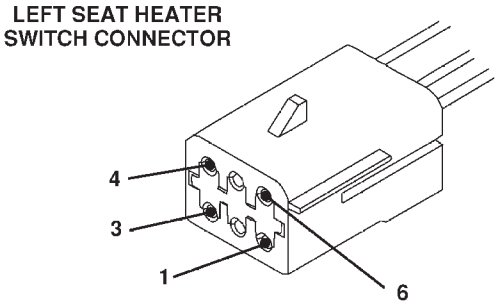
**When monitored:** Ignition on.

**Set condition:** Switch stuck active for 30 seconds.

**Theory of operation**: If the left heated seat switch is active for 30 seconds the MHSMM will ignore the input until its state has changed. Once the stuck condition is removed for 3 seconds the seat switch will return to normal operation. The code will remain in the module for 20 ignition cycles.

**Probable cause:**
- Switch failure (Resistance value for high heat request)
- Left seat heater switch MUX CKT shorted to battery
- MHSMM failure

80b46d0e



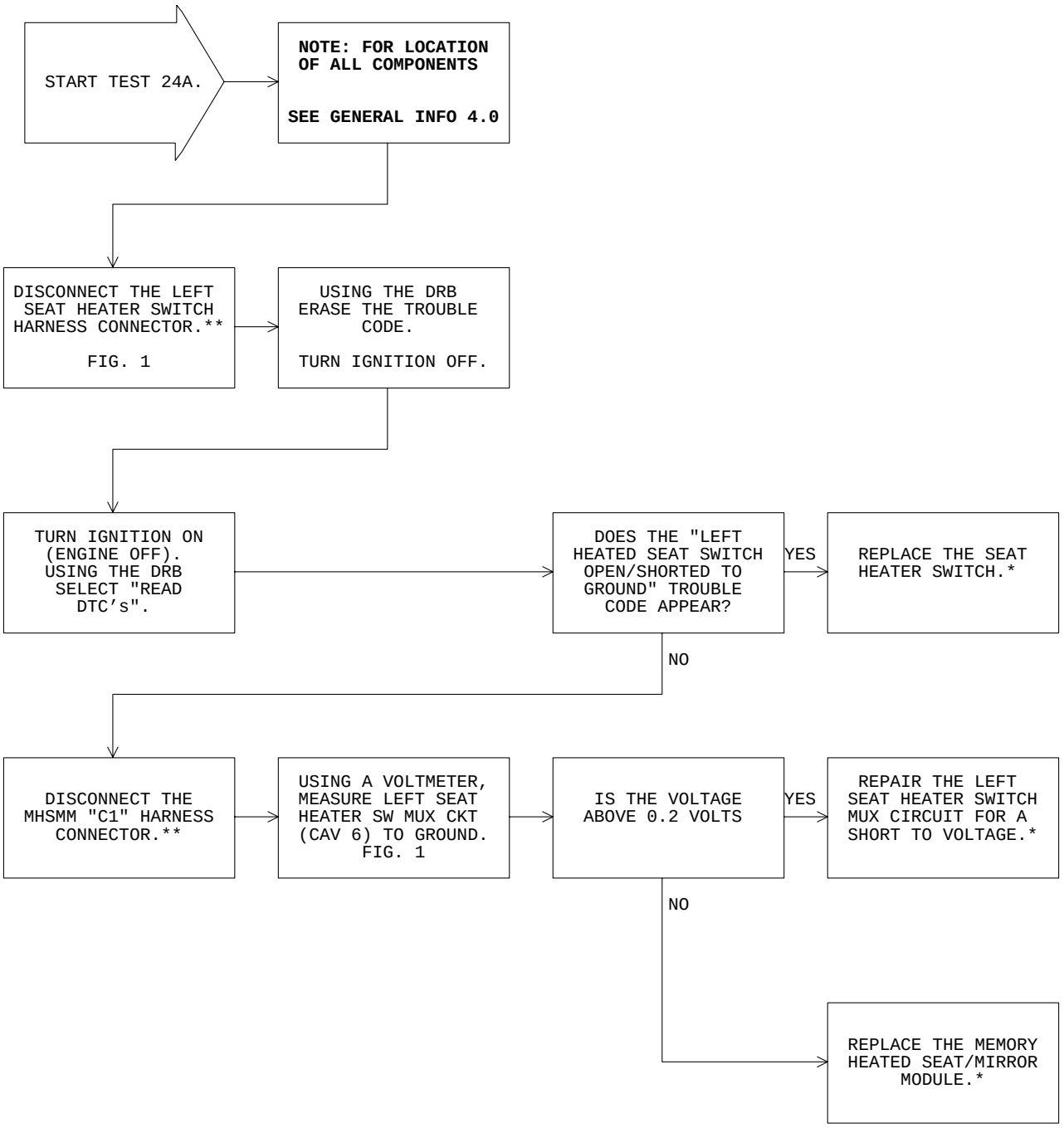

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/DG | LEFT SEAT LOW HEAT LED DRIVER |
| 3 | BK | GROUND |
| 4 | DB/WT | FUSED IGNITION SWITCH OUTPUT |
| 5 | VT/WT | LEFT SEAT HIGH HEAT LED DRIVER |
| 6 | TN/DG | LEFT SEAT HEATER SWITCH MUX |

80b46bff

***FIG. 1***

## TEST 24A — REPAIRING ″LEFT HEATED SEAT SWITCH STUCK IN HIGH STATE″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

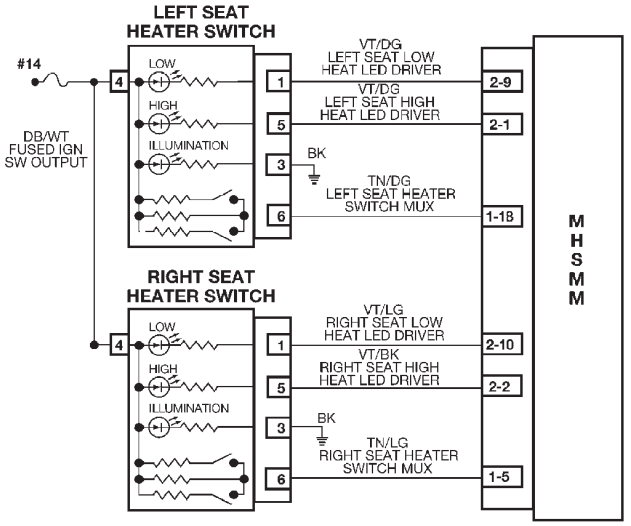



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.***

## TEST 25A — REPAIRING "LEFT HEATED SEAT SWITCH OPEN/SHORTED TO GROUND" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b6b15a

**Name of code:** Left Heated Seat Switch Open/Shorted to Ground

**When monitored:** Ignition on.

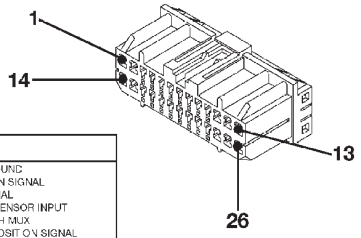
**Set condition:** Immediately upon loss of switch feed back.

**Theory of operation:** If the left heated seat switch is open/grounded the MHSMM will set this code. Once the condition is resolved the switch will return to normal operation. The code will remain in the module for 20 ignition cycles.

**Probable cause:**
- Switch failure
- Left seat heater switch mux ckt open
- Left seat heater switch mux ckt shorted to ground
- MHSMM failure

80b46d13

**MEMORY HEATED SEAT/MIRROR MODULE "C1" CONNECTOR**

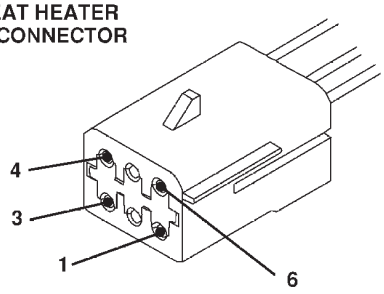



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | WT/RD | LEFT MIRROR SENSOR GROUND |
| 2 | VT/RD | SEAT HORIZONTAL POSITION SIGNAL |
| 3 | LB/RD | REAR RISER POSITION SIGNAL |
| 4 | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| 5 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |
| 6 | YL/RD | RIGHT MIRROR VERTICAL POSITION SIGNAL |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 8 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 9 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |
| 11 | GY/LB | RECLINER UP SWITCH SENSE |
| 12 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |
| 13 | PK/BK | MEMORY SET SWITCH SENSE |
| 14 | WT/RK | RIGHT MIRROR SENSOR GROUND |
| 15 | BR | FRONT RISER POSITION SIGNAL |
| 16 | LB | RECLINER POSITION SIGNAL |
| 17 | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| 18 | TN/DG | LEFT SEAT HEATER SWITCH MUX |
| 19 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SIGNAL |
| 20 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 21 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 22 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 23 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 24 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 25 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 26 | YL/VT | PCI BUS |

80b46bd5

*FIG. 1*

**LEFT SEAT HEATER SWITCH CONNECTOR**



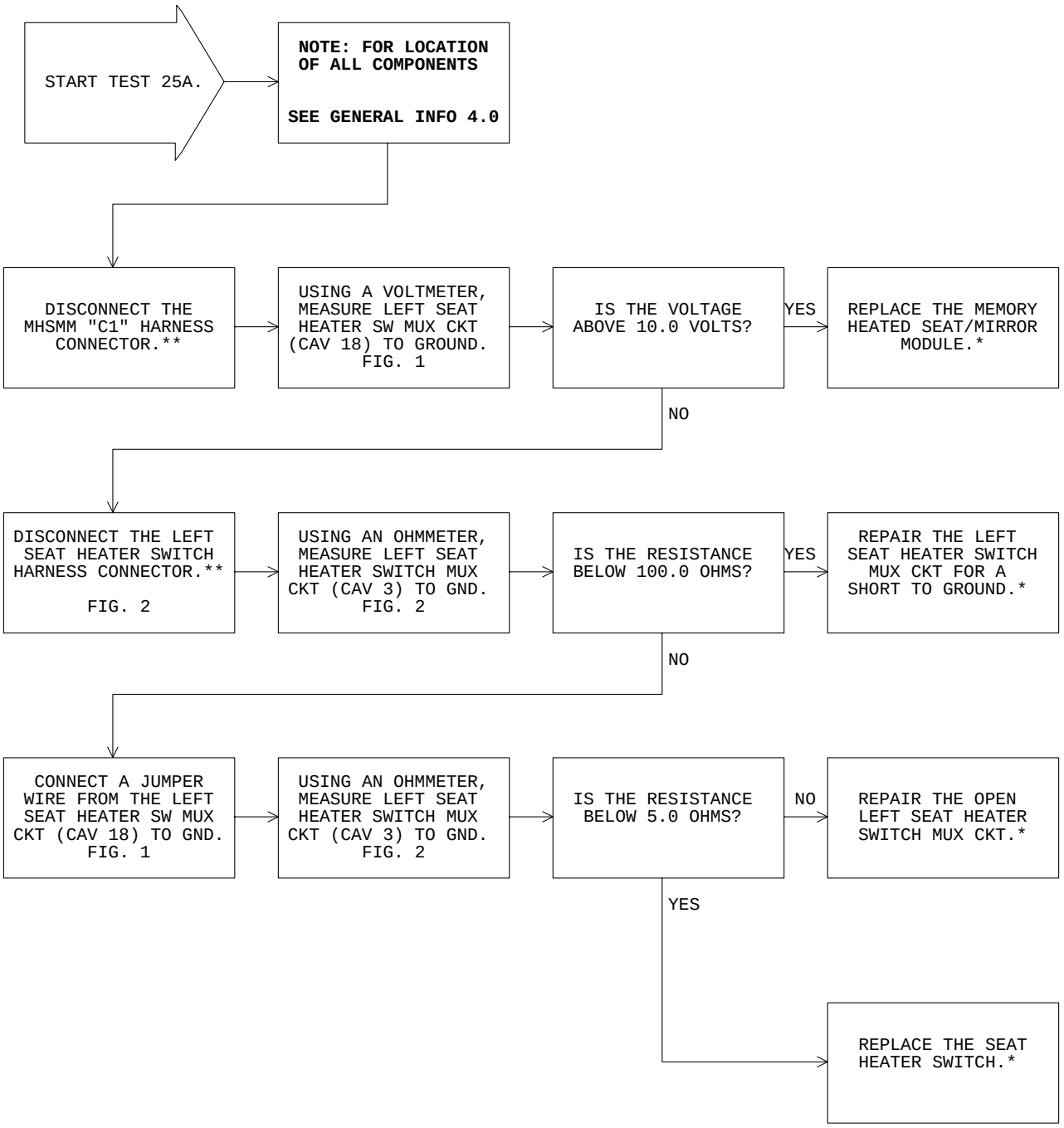

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/DG | LEFT SEAT LOW HEAT LED DRIVER |
| 3 | BK | GROUND |
| 4 | DB/WT | FUSED IGNITION SWITCH OUTPUT |
| 5 | VT/WT | LEFT SEAT HIGH HEAT LED DRIVER |
| 6 | TN/DG | LEFT SEAT HEATER SWITCH MUX |

80b46bff

*FIG. 2*

## TEST 25A — REPAIRING ″LEFT HEATED SEAT SWITCH OPEN/SHORTED TO GROUND″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

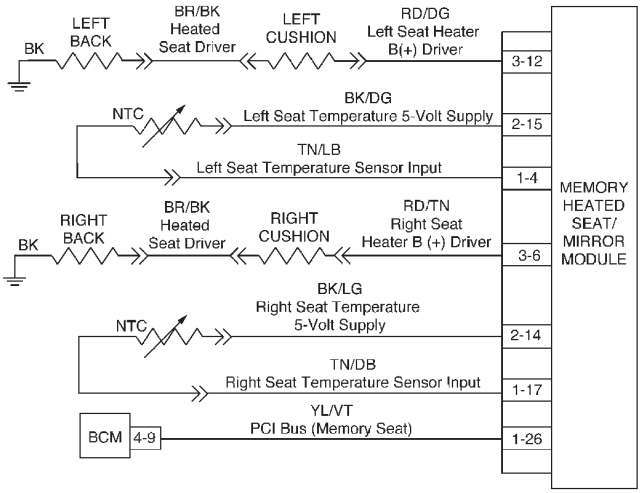



***Perform Verification TEST VER-4A.**

****Check connectors - Clean / repair as necessary.**

## TEST 26A — REPAIRING "LEFT THERMISTOR OUT OF RANGE LOW" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bfc

**Name of code:** Left Thermistor Out of Range Low

**When monitored:** Ignition on, during the heated seat operation.

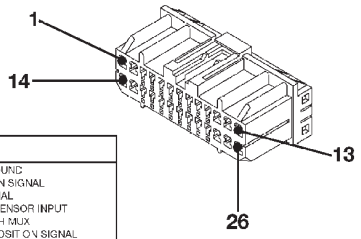
**Set condition:** Immediately set when the value is out of range.

**Theory of operation:** When the heated seat thermistor feed back to the MHSMM is less than the heated seat thermistor out of range low value stored in EEPROM. The value has been predetermined through the development of the memory system.

**Probable cause:**
- Thermistor failure (Low limit)
- Left seat temperature sensor input ckt shorted to ground
- MHSMM failure

80b46d0d

**MEMORY HEATED SEAT/MIRROR MODULE "C1" CONNECTOR**

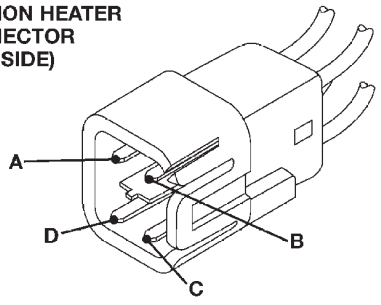



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | WT/RD | LEFT MIRROR SENSOR GROUND |
| 2 | VT/RD | SEAT HORIZONTAL POSITION SIGNAL |
| 3 | LB/RD | REAR RISER POSITION SIGNAL |
| 4 | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| 5 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |
| 6 | YL/RD | RIGHT MIRROR VERTICAL POSITION SIGNAL |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 8 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 9 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |
| 11 | GY/LB | RECLINER UP SWITCH SENSE |
| 12 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |
| 13 | PK/BK | MEMORY SET SWITCH SENSE |
| 14 | WT/BK | RIGHT MIRROR SENSOR GROUND |
| 15 | BR | FRONT RISER POSITION SIGNAL |
| 16 | LB | RECLINER POSITION SIGNAL |
| 17 | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| 18 | TN/DG | LEFT SEAT HEATER SWITCH MUX |
| 19 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SIGNAL |
| 20 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 21 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 22 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 23 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 24 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 25 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 26 | YL/VT | PCI BUS |

80b46bd5

*FIG. 1*

**LEFT SEAT CUSHION HEATER 4-WAY CONNECTOR (HARNESS SIDE)**



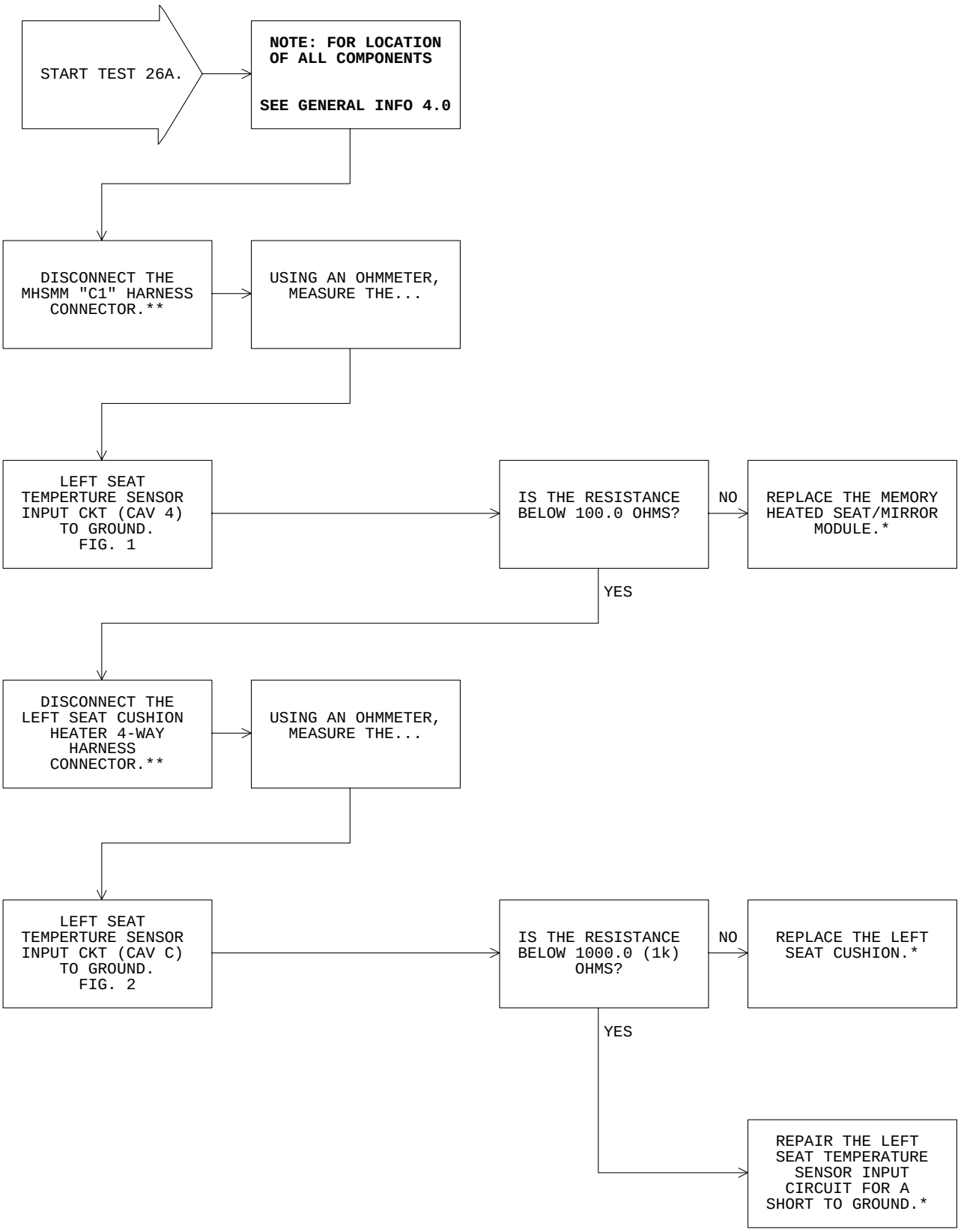

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD/DG | LEFT SEAT HEATER B(+) DRIVER |
| B | BR/BK | HEATED SEAT DRIVER |
| C | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| D | BK/DG | LEFT SEAT TEMPERATURE 5 VOLT SUPPLY |

80b46c04

*FIG. 2*

## TEST 26A — REPAIRING ″LEFT THERMISTOR OUT OF RANGE LOW″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

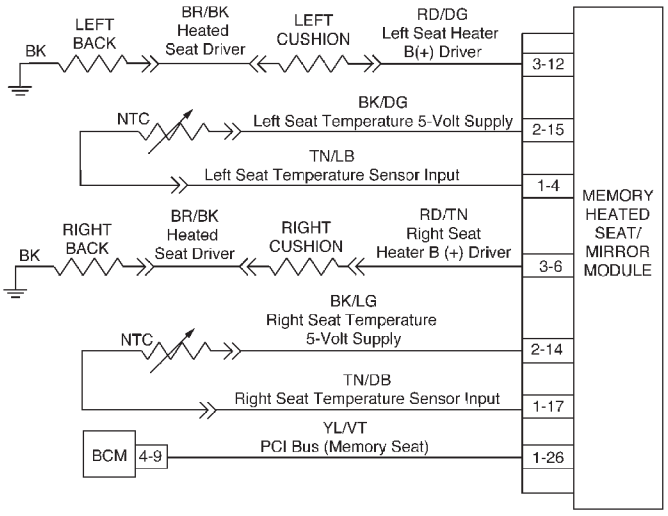



***Perform Verification TEST VER-4A.**

****Check connectors - Clean / repair as necessary.**

## TEST 27A REPAIRING "LEFT THERMISTOR OUT OF RANGE HIGH" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bfc

**Name of code:** Left Thermistor Out of Range High

**When monitored:** Ignition on, during the heated seat operation.

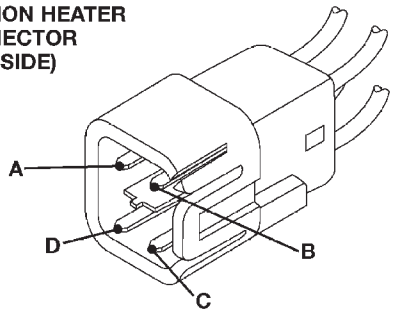
**Set condition:** Immediately set when the value is out of range.

**Theory of operation:** When the heated seat thermistor feed back to the MHSMM is greater than the heated seat thermistor out of range high value stored in EEPROM. The value has been predetermined through the development of the memory system.

**Probable cause:**
- Thermistor failure (High limit)
- Left seat temperature sensor input ckt shorted to battery
- MHSMM failure

80b46d0c

**LEFT SEAT CUSHION HEATER 4-WAY CONNECTOR (HARNESS SIDE)**



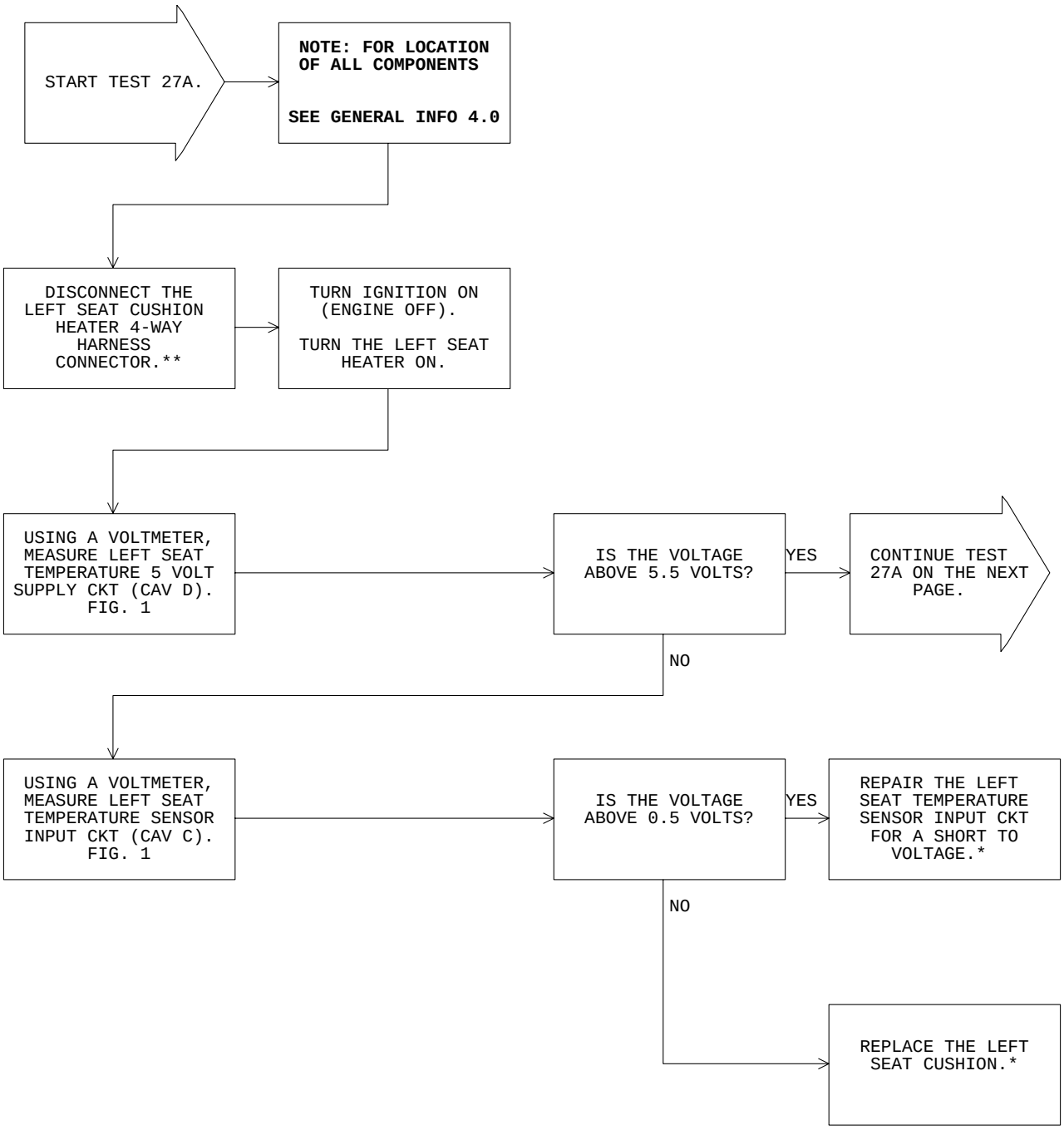

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD/DG | LEFT SEAT HEATER B(+) DRIVER |
| B | BR/BK | HEATED SEAT DRIVER |
| C | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| D | BK/DG | LEFT SEAT TEMPERATURE 5 VOLT SUPPLY |

***FIG. 1***

80b46c04

## TEST 27A — REPAIRING ″LEFT THERMISTOR OUT OF RANGE HIGH″ TROUBLE CODE

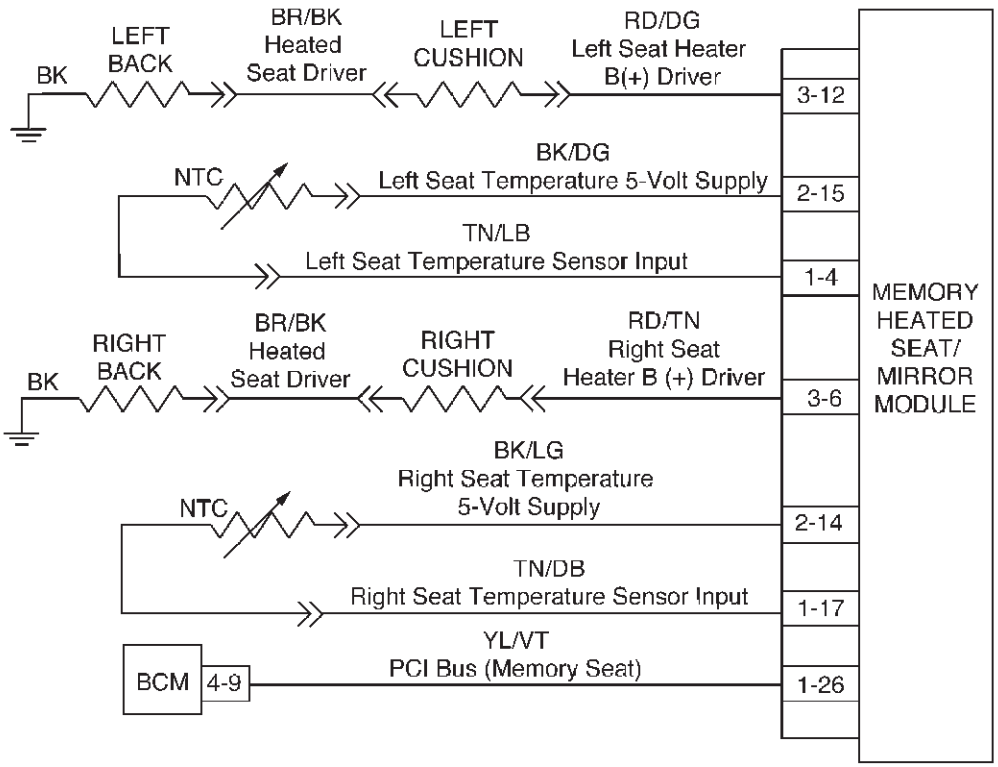
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-4A.**

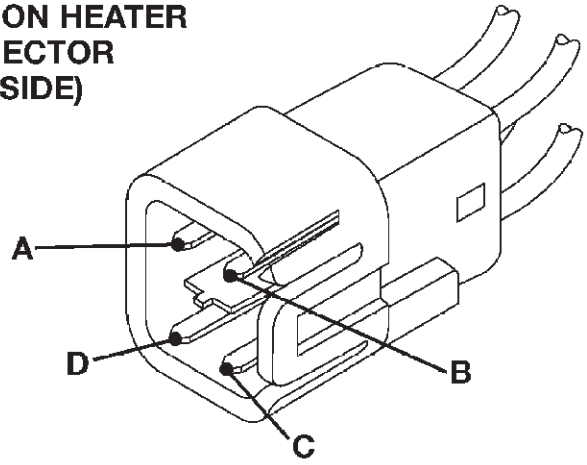
****Check connectors - Clean / repair as necessary.**

**TEST 27A** CONTINUED - REPAIRING "LEFT THERMISTOR OUT OF RANGE HIGH" TROUBLE CODE




80b46bfc

**LEFT SEAT CUSHION HEATER 4-WAY CONNECTOR (HARNESS SIDE)**

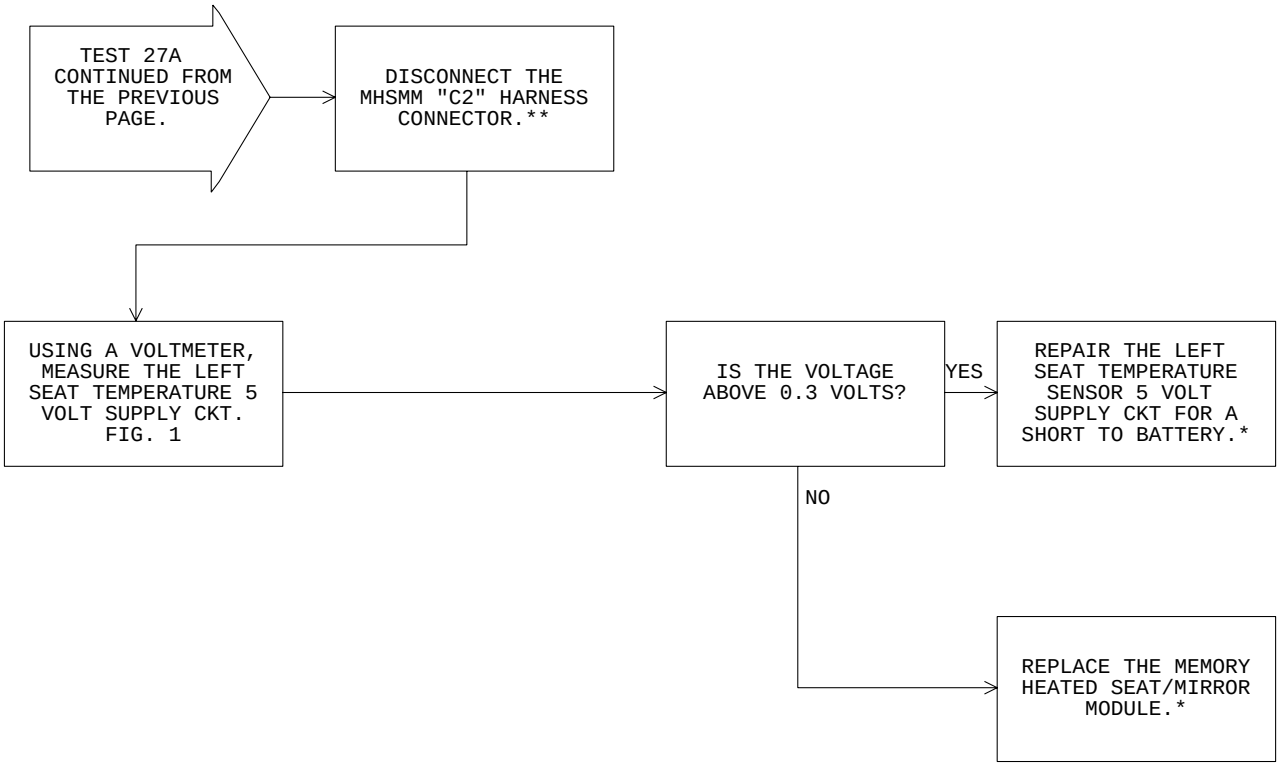



| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD/DG | LEFT SEAT HEATER B(+) DRIVER |
| B | BR/BK | HEATED SEAT DRIVER |
| C | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| D | BK/DG | LEFT SEAT TEMPERATURE 5 VOLT SUPPLY |

80b46c04

*FIG. 1*

## TEST 27A CONTINUED - REPAIRING ″LEFT THERMISTOR OUT OF RANGE HIGH″ TROUBLE CODE

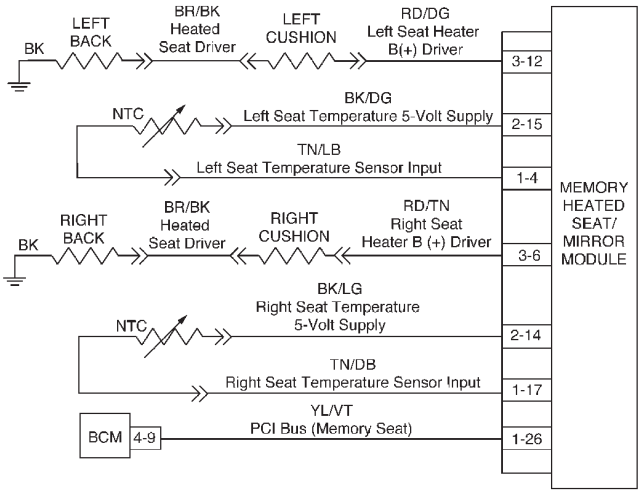



**Perform Verification TEST VER-4A.*

***Check connectors - Clean / repair as necessary.*

## TEST 28A REPAIRING "RIGHT SEAT HEAT OUTPUT OPEN" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bfc

**Name of code:** Right Seat Heat Output Open

**When monitored:** Ignition on.

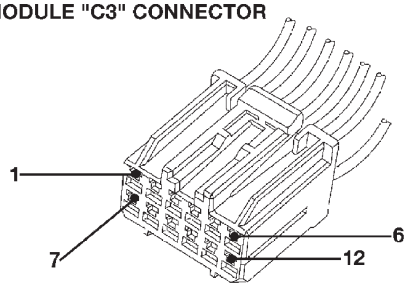
**Set condition:** Immediately after losing the seat heat element.

**Theory of operation:** The MHSMM monitors its output for a loss of heater element. If the element is missing the module will set this code.

**Probable cause:**
- Heated seat element failure
- Right seat heater B (+) driver ckt open
- MHSMM failure

80b46d16

**MEMORY HEATED SEAT/MIRROR MODULE "C3" CONNECTOR**

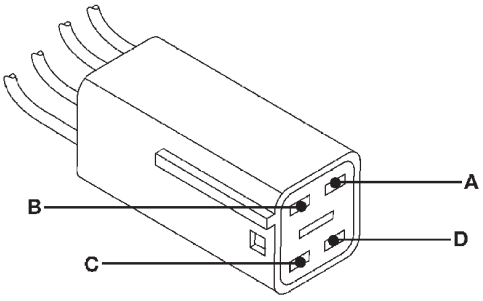



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | YL/WT | SEAT REAR UP DRIVER |
| 2 | YL/DB | SEAT HORIZONTAL FORWARD DRIVER |
| 3 | YL/LG | SEAT FRONT UP DRIVER |
| 4 | RD/WT | SEAT REAR DOWN DRIVER |
| 5 | RD/LG | SEAT FRONT DOWN DRIVER |
| 6 | RD/TN | RIGHT SEAT HEATER B(+) DRIVER |
| 7 | GY/LB | LEFT SEAT RECLINER UP DRIVER |
| 8 | RD | SEAT SWITCH B(+) SUPPLY |
| 10 | GY/WT | LEFT SEAT RECLINER DOWN DRIVER |
| 11 | RD/LB | SEAT HORIZONTAL REARWARD DRIVER |
| 12 | RD/DG | LEFT SEAT HEATER B(+) DRIVER |

80b46bd7

*FIG. 1*

**SEAT CUSHION HEATER 4-WAY CONNECTOR (CUSHION SIDE)**

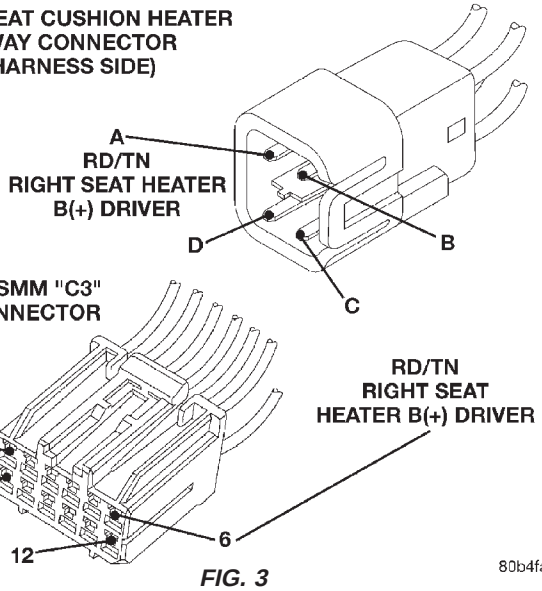



| CAV | COLOR | FUNCTION |
|---|---|---|
| A | BL | SEAT HEATER B(+) DRIVER |
| B | GN | HEATED SEAT DRIVER |
| C | BK/RD | SEAT TEMP SENSOR INPUT |
| D | BK/RD | SEAT TEMP 5 VOLT SUPPLY |

80b4f9cd

*FIG. 2*

**RIGHT SEAT CUSHION HEATER 4-WAY CONNECTOR (HARNESS SIDE)**

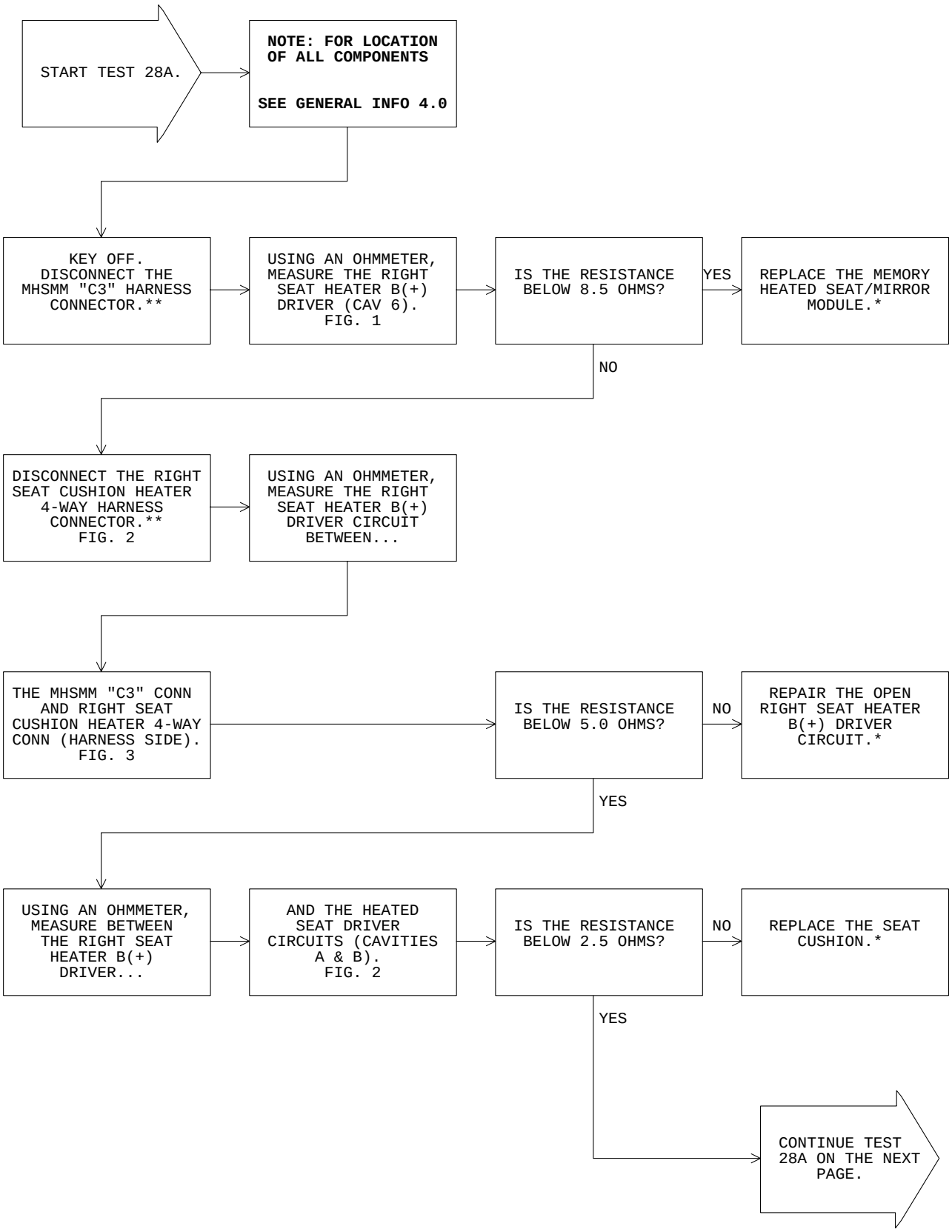



80b4fa41

*FIG. 3*

## TEST 28A — REPAIRING ″RIGHT SEAT HEAT OUTPUT OPEN″ TROUBLE CODE

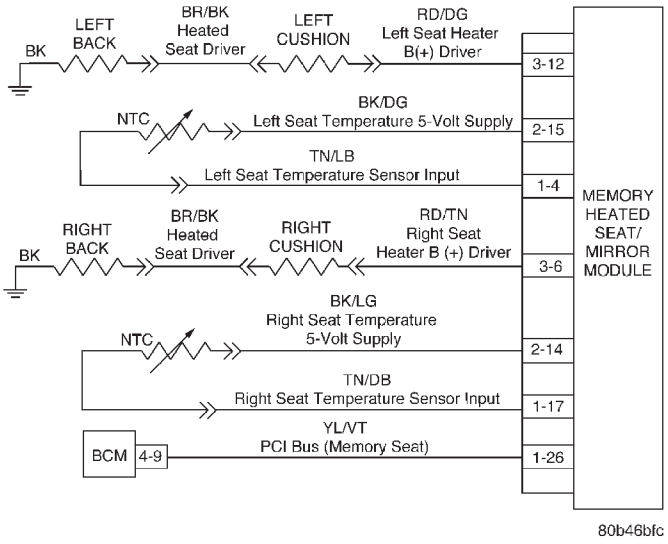
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-4A.**

****Check connectors - Clean / repair as necessary.**

## TEST 28A CONTINUED - REPAIRING "RIGHT SEAT HEAT OUTPUT OPEN" TROUBLE CODE



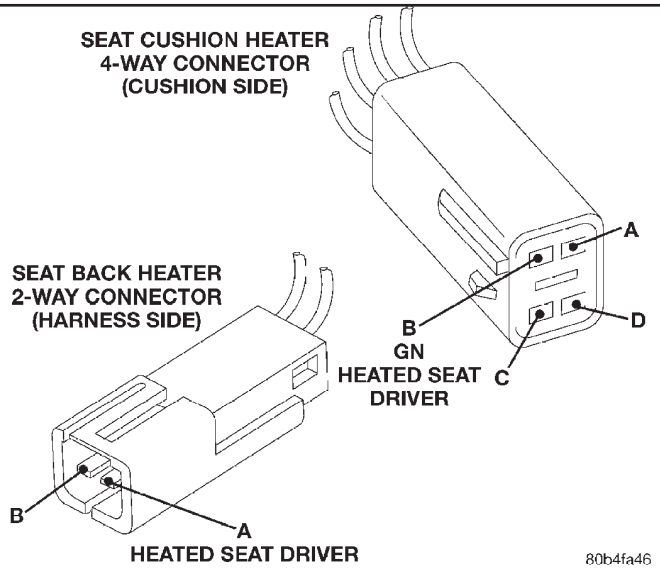
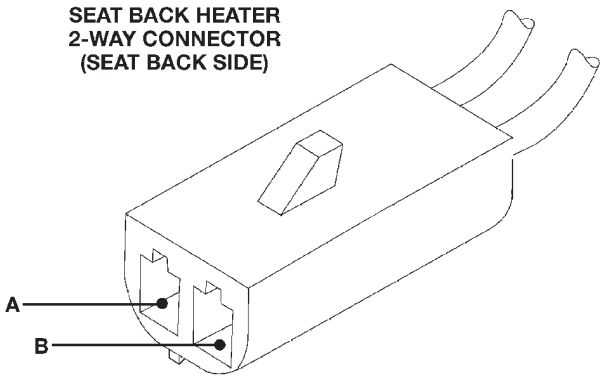




*FIG. 1*

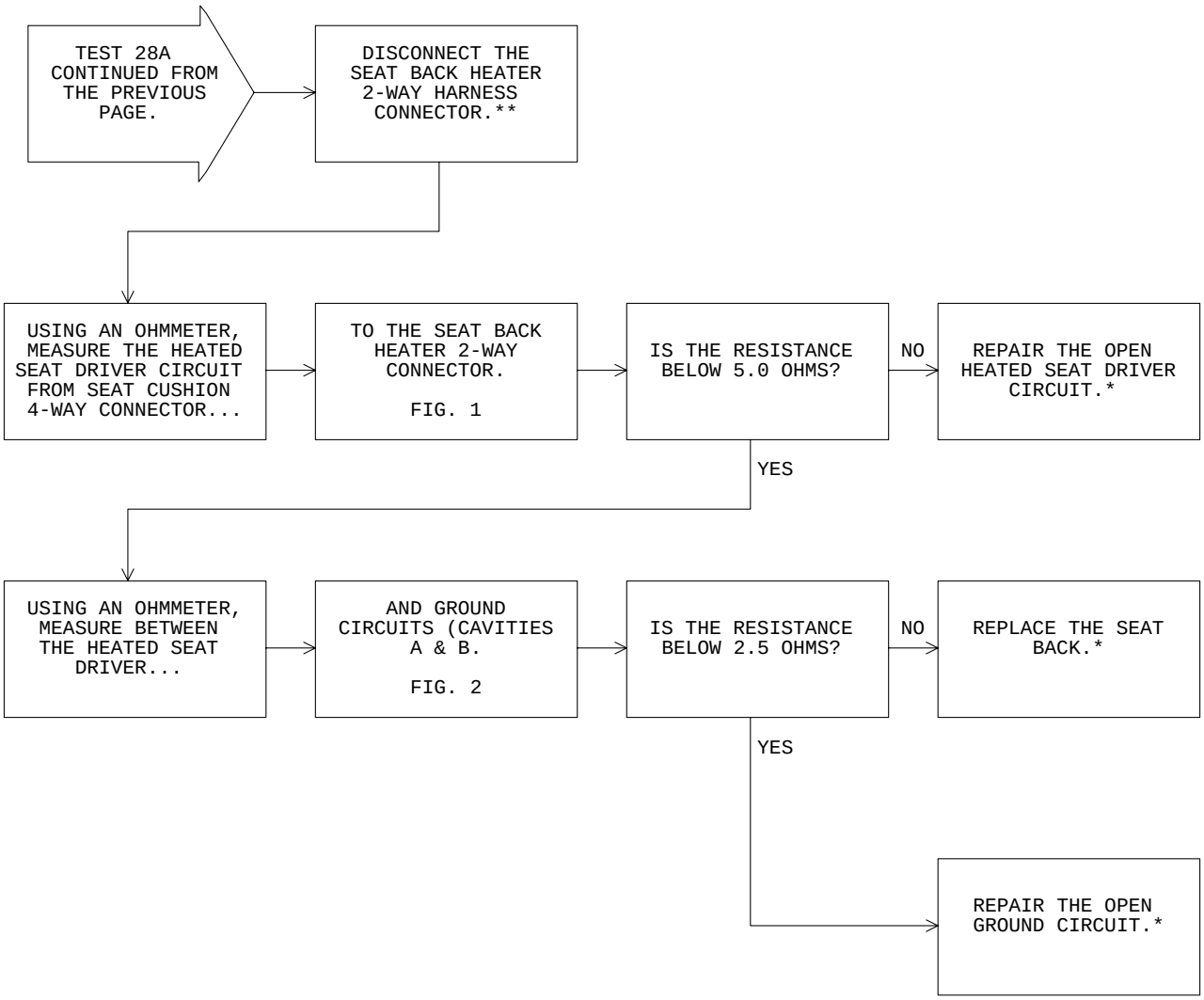



| CAV | COLOR | FUNCTION |
|---|---|---|
| A | BR | HEATER SEAT DRIVER |
| B | BR | GROUND |

80b4f9cc

*FIG. 2*

## TEST 28A — CONTINUED - REPAIRING ″RIGHT SEAT HEAT OUTPUT OPEN″ TROUBLE CODE

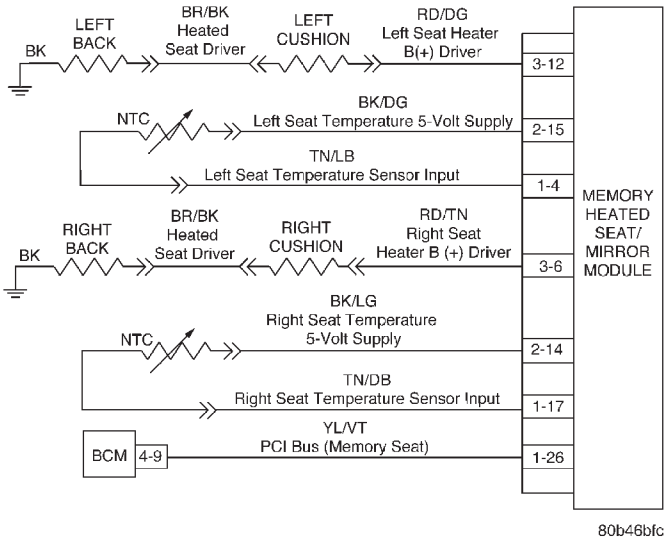



***Perform Verification TEST VER-4A.***

****Check connectors - Clean / repair as necessary.***

## TEST 29A — REPAIRING "RIGHT SEAT HEAT OUTPUT SHORTED TO GROUND" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bfc

**Name of code:** Right Seat Heat Output Shorted to Ground

**When monitored:** Ignition on.

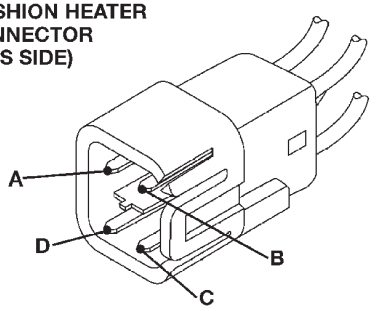
**Set condition:** Immediately set during the right heated seat operation.

**Theory of operation:** The MHSMM has short circuit protection for the heated seat output. If the output is shorted to ground the module will shut off the output and set this code. The seat heat request will be ignored for 30 seconds. If the short condition is removed the module will function as designed.

**Probable cause:**
> Heated seat element failure (resistance value)
> Right seat heater B (+) driver ckt shorted to ground
> MHSMM failure

80b46d14

**RIGHT SEAT CUSHION HEATER 4-WAY CONNECTOR (HARNESS SIDE)**

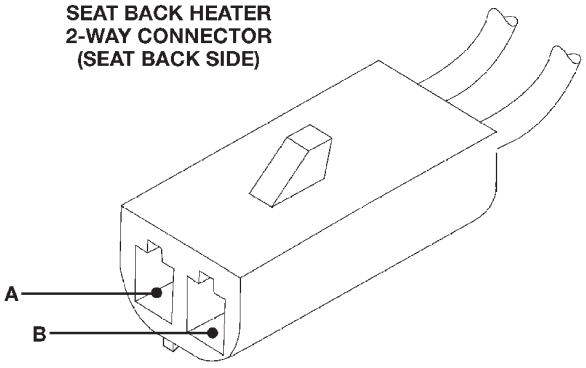



| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD/TN | RIGHT SEAT HEATER B(+) DRIVER |
| B | BR/BK | HEATED SEAT DRIVER |
| C | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| D | BK/LG | RIGHT SEAT TEMPERATURE 5 VOLT SUPPLY |

80b46cd3

***FIG. 1***

**SEAT BACK HEATER 2-WAY CONNECTOR (SEAT BACK SIDE)**

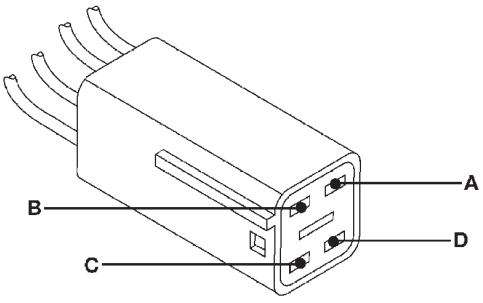



| CAV | COLOR | FUNCTION |
|---|---|---|
| A | BR | HEATER SEAT DRIVER |
| B | BR | GROUND |

80b4f9cc

***FIG. 2***

**SEAT CUSHION HEATER 4-WAY CONNECTOR (CUSHION SIDE)**




| CAV | COLOR | FUNCTION |
|---|---|---|
| A | BL | SEAT HEATER B(+) DRIVER |
| B | GN | HEATED SEAT DRIVER |
| C | BK/RD | SEAT TEMP SENSOR INPUT |
| D | BK/RD | SEAT TEMP 5 VOLT SUPPLY |

80b4f9cd

***FIG. 3***

## TEST 29A — REPAIRING ″RIGHT SEAT HEAT OUTPUT SHORTED TO GROUND″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

START TEST 29A.

**NOTE: FOR LOCATION OF ALL COMPONENTS**

**SEE GENERAL INFO 4.0**

DISCONNECT THE RIGHT SEAT CUSHION HEATER 4-WAY HARNESS CONNECTOR.** FIG. 1

USING THE DRB ERASE THE TROUBLE CODE.

TURN IGNITION OFF.

TURN IGNITION ON (ENGINE OFF). USING THE DRB SELECT "READ DTC's".

DOES THE "RIGHT SEAT HEAT OUTPUT OPEN" TROUBLE CODE APPEAR?

NO → CONTINUE TEST 29A ON THE NEXT PAGE.

YES

DISCONNECT THE SEAT BACK HEATER 2-WAY HARNESS CONNECTOR.** FIG. 2

USING AN OHMMETER, MEASURE RIGHT SEAT HEATER B(+) DRIVER (CAV A) TO GROUND. FIG. 3

IS THE RESISTANCE BELOW 1000.0 (1K) OHMS?

YES → REPLACE THE SEAT CUSHION.*

NO

USING AN OHMMETER, MEASURE THE HEATED SEAT DRIVER CKT (CAV A) TO GROUND. FIG. 2

IS THE RESISTANCE BELOW 1000.0 (1K) OHMS?

YES → REPAIR THE HEATED SEAT DRIVER CKT FOR A SHORT TO GROUND.*

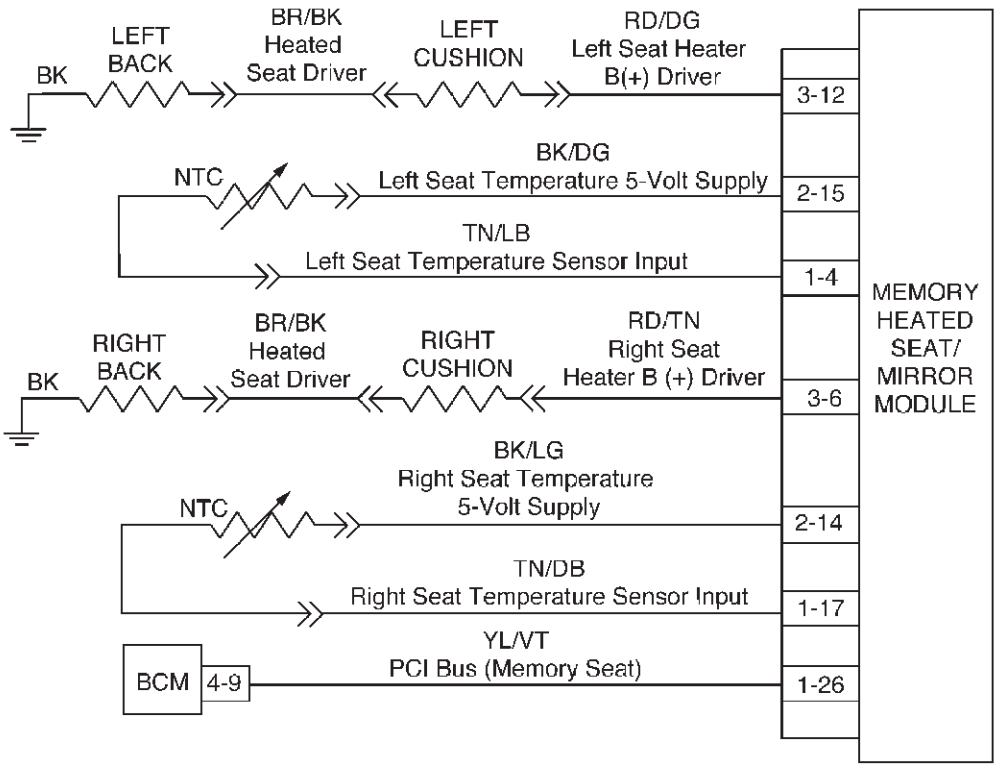
NO

REPLACE THE HEATED SEAT BACK.*

***Perform Verification TEST VER-4A.**

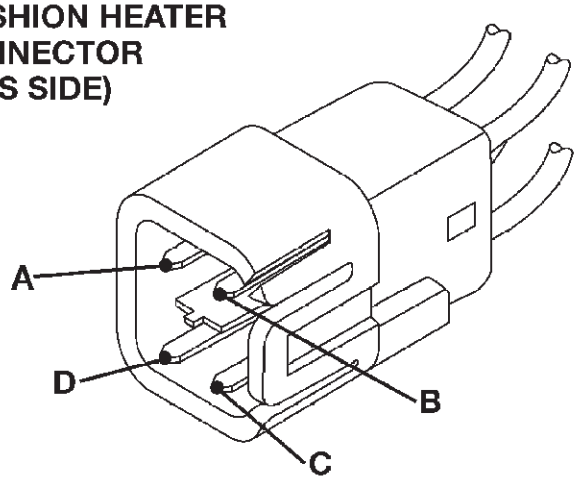
****Check connectors - Clean / repair as necessary.**

**TEST 29A** CONTINUED - REPAIRING "RIGHT SEAT HEAT OUTPUT SHORTED TO GROUND" TROUBLE CODE




80b46bfc

**RIGHT SEAT CUSHION HEATER 4-WAY CONNECTOR (HARNESS SIDE)**

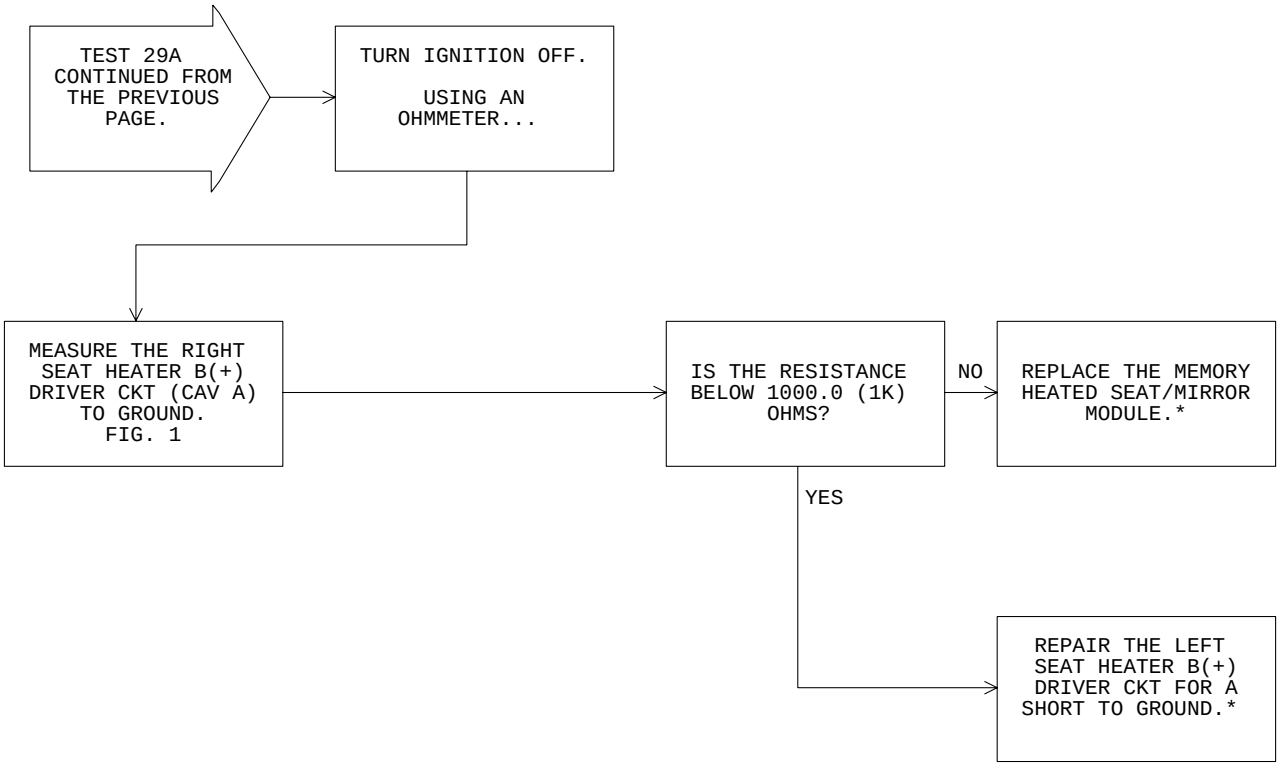



| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD/TN | RIGHT SEAT HEATER B(+) DRIVER |
| B | BR/BK | HEATED SEAT DRIVER |
| C | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| D | BK/LG | RIGHT SEAT TEMPERATURE 5 VOLT SUPPLY |

80b46cd3

*FIG. 1*

## TEST 29A — CONTINUED - REPAIRING "RIGHT SEAT HEAT OUTPUT SHORTED TO GROUND" TROUBLE CODE

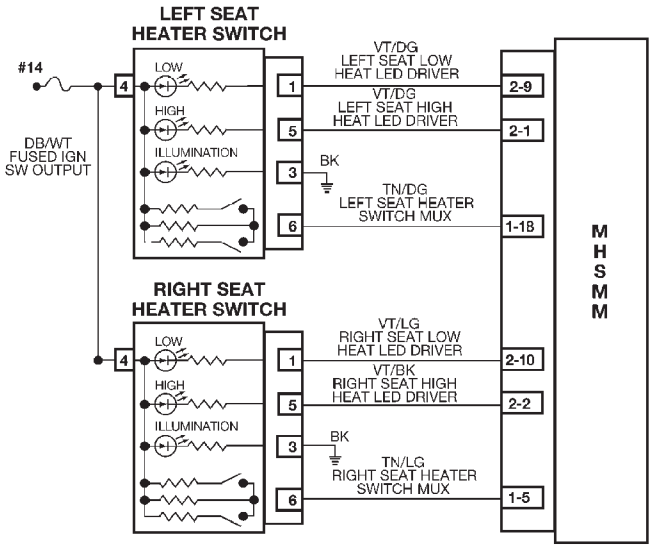



***Perform Verification TEST VER-4A.**

****Check connectors - Clean / repair as necessary.**

## TEST 30A — REPAIRING "RIGHT HEATED SEAT HEAT SWITCH STUCK IN LOW STATE" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b6b15a

**Name of code:** Right Heated Seat Switch Stuck in Low State

**When monitored:** Ignition on.

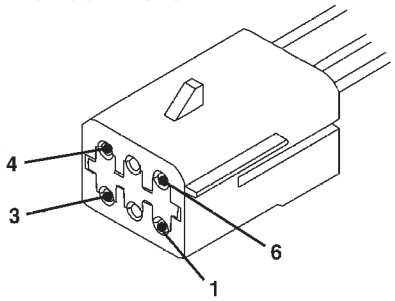
**Set condition:** Switch stuck active for 30 seconds.

**Theory of operation:** If the passenger heated seat switch is active for 30 seconds the MHSMM will ignore the input until its state has changed. Once the stuck condition is removed for 3 seconds the passenger heated seat switch will return to normal operation. The code will remain in the module for 20 ignition cycles.

**Probable cause:**
> Switch failure (value)
> Right seat heater switch MUX ckt shorted to 5 volts
> MHSMM failure

80b46d1a

**RIGHT SEAT HEATER SWITCH CONNECTOR**



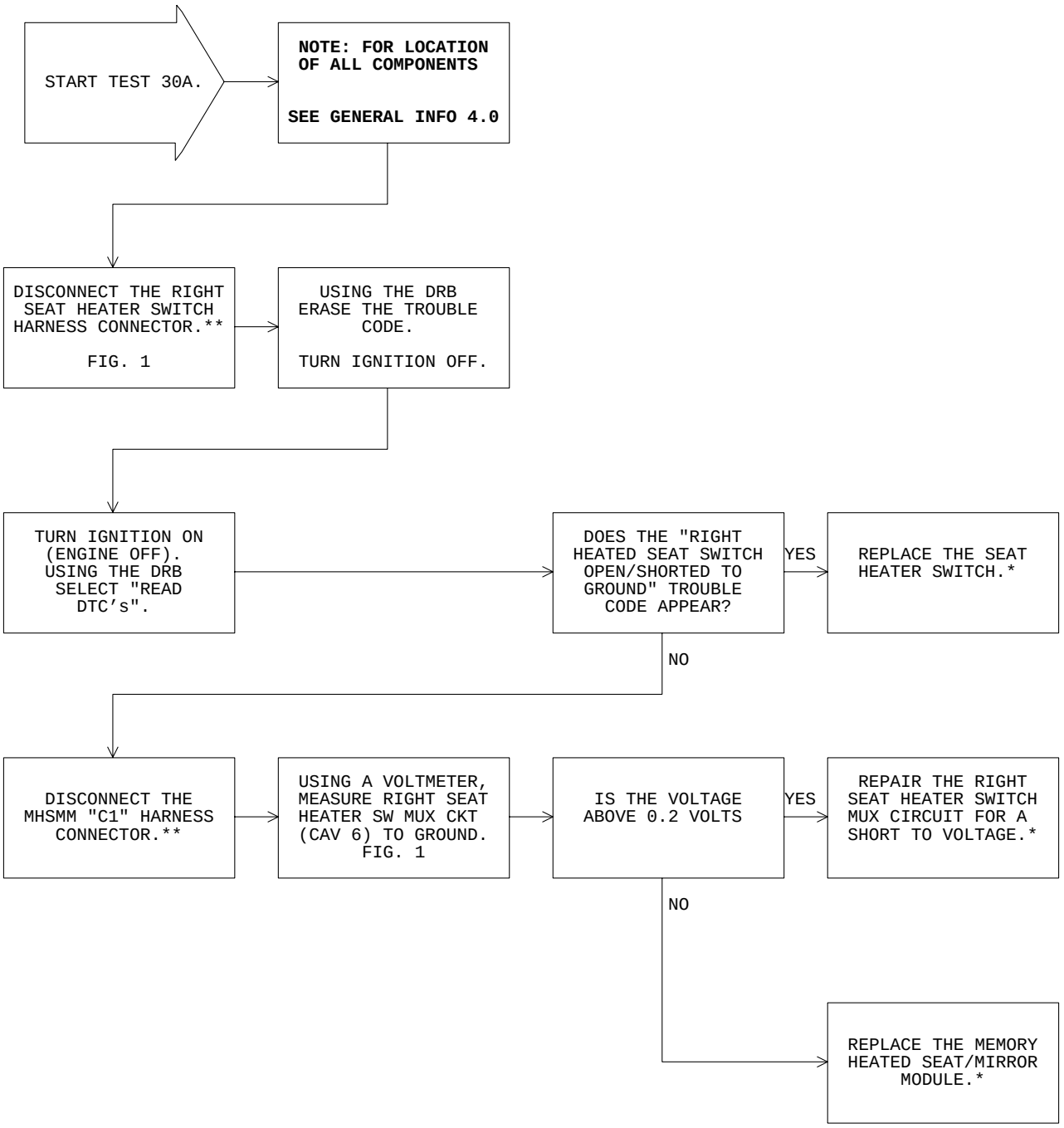

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/LG | RIGHT SEAT LOW HEAT LED DRIVER |
| 3 | BK | GROUND |
| 4 | DB/WT | FUSED IGNITION SWITCH OUTPUT |
| 5 | VT/BK | RIGHT SEAT HIGH HEAT LED DRIVER |
| 6 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |

80b46bfe

***FIG. 1***

## TEST 30A — REPAIRING ″RIGHT HEATED SEAT HEAT SWITCH STUCK IN LOW STATE″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

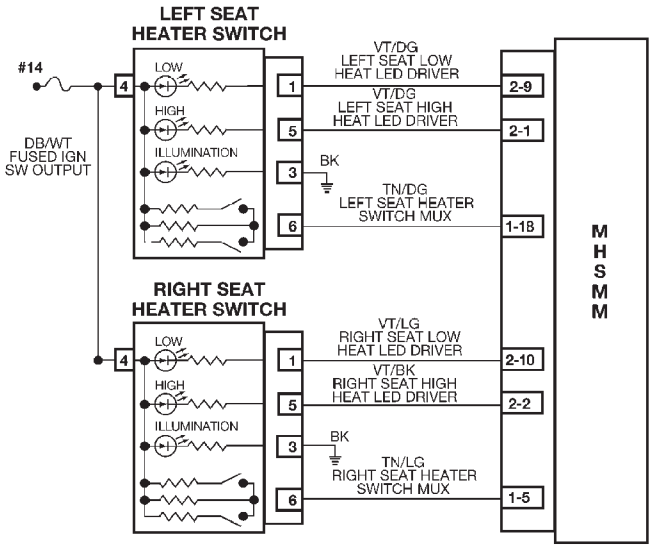



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.***

## TEST 31A — REPAIRING "RIGHT HEATED SEAT HEAT SWITCH STUCK IN HIGH STATE" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b6b15a

**Name of code:** Right Heated Seat Switch Stuck in High State

**When monitored:** Ignition on.

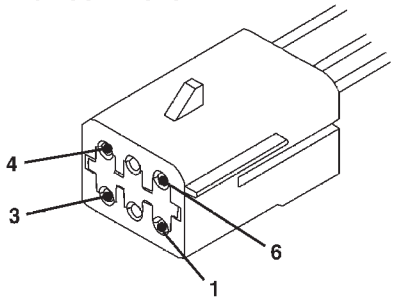
**Set condition:** Switch stuck active for 30 seconds.

**Theory of operation:** If the right heated seat switch is active for 30 seconds the MHSMM will ignore the input until its state has changed. Once the stuck condition is removed for 3 seconds the passenger heated seat switch will return to normal operation. The code will remain in the module for 20 ignition cycles.

**Probable cause:**
> Switch failure (value)
> Right seat heater switch MUX ckt shorted to battery
> MHSMM failure

80b46d19

**RIGHT SEAT HEATER SWITCH CONNECTOR**



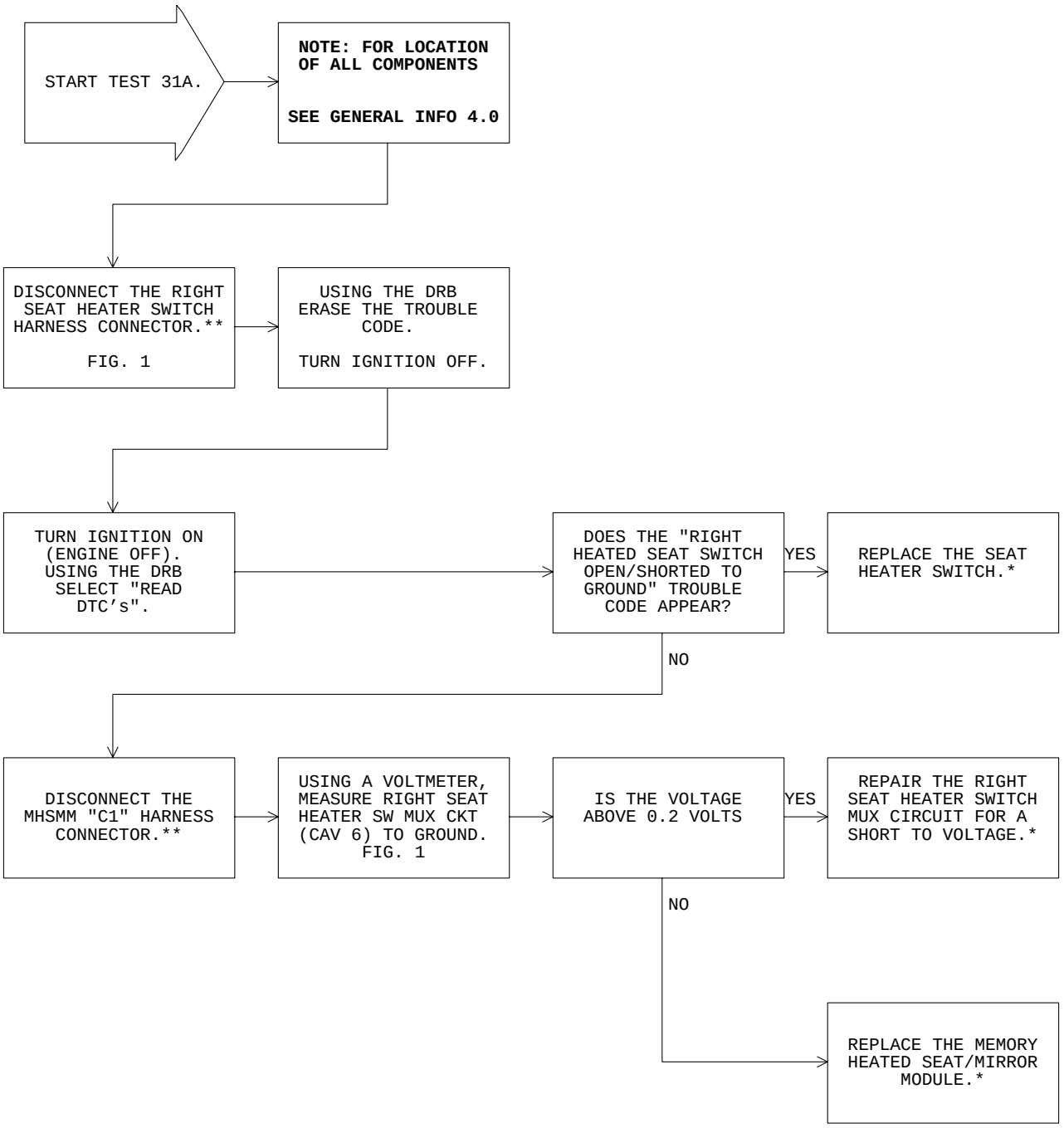

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/LG | RIGHT SEAT LOW HEAT LED DRIVER |
| 3 | BK | GROUND |
| 4 | DB/WT | FUSED IGNITION SWITCH OUTPUT |
| 5 | VT/BK | RIGHT SEAT HIGH HEAT LED DRIVER |
| 6 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |

80b46bfe

***FIG. 1***

## TEST 31A — REPAIRING ″RIGHT HEATED SEAT HEAT SWITCH STUCK IN HIGH STATE″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

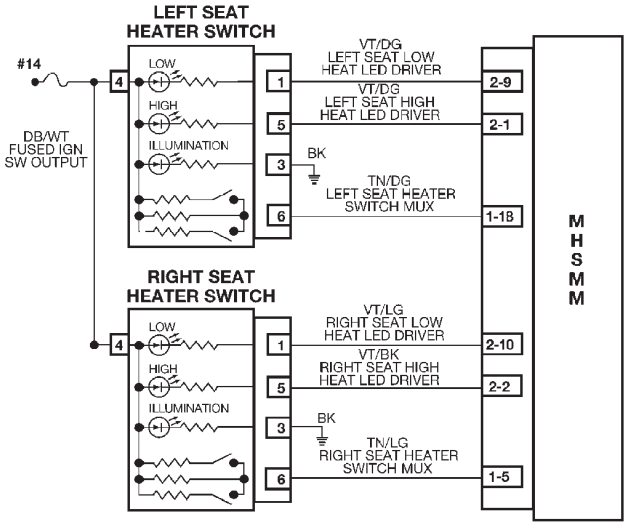



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.***

## TEST 32A — REPAIRING "RIGHT HEATED SEAT SWITCH OPEN/SHORTED TO GROUND" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b6b15a

**Name of code:** Right Heated Seat Switch Open/Shorted to Ground

**When monitored:** Ignition on.

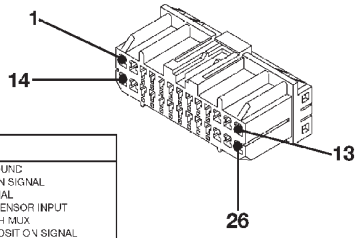
**Set condition:** Immediately upon loss of switch feed back

**Theory of operation:** If the passenger heated seat switch is missing/grounded the MHSMM will set this code. Once the condition is resolved the switch will return to normal operation. The code will remain in the module for 20 ignition cycles.

**Probable cause:**
- Switch failure
- Right seat heater switch mux ckt shorted to ground
- Right seat heater switch mux ckt open
- MHSMM failure

80b46d1b

**MEMORY HEATED SEAT/MIRROR MODULE "C1" CONNECTOR**

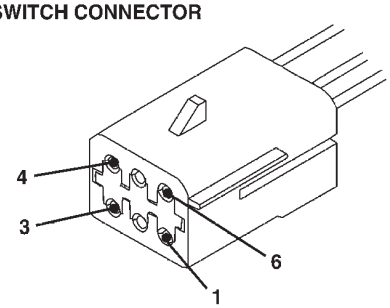



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | WT/RD | LEFT MIRROR SENSOR GROUND |
| 2 | VT/RD | SEAT HORIZONTAL POSITION SIGNAL |
| 3 | LB/RD | REAR RISER POSITION SIGNAL |
| 4 | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| 5 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |
| 6 | YL/RD | RIGHT MIRROR VERTICAL POSITION SIGNAL |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 8 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 9 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |
| 11 | GY/LB | RECLINER UP SWITCH SENSE |
| 12 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |
| 13 | PK/BK | MEMORY SET SWITCH SENSE |
| 14 | WT/RK | RIGHT MIRROR SENSOR GROUND |
| 15 | BR | FRONT RISER POSITION SIGNAL |
| 16 | LB | RECLINER POSITION SIGNAL |
| 17 | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| 18 | TN/DG | LEFT SEAT HEATER SWITCH MUX |
| 19 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SIGNAL |
| 20 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 21 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 22 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 23 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 24 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 25 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 26 | YL/VT | PCI BUS |

80b46bd5

*FIG. 1*

**RIGHT SEAT HEATER SWITCH CONNECTOR**



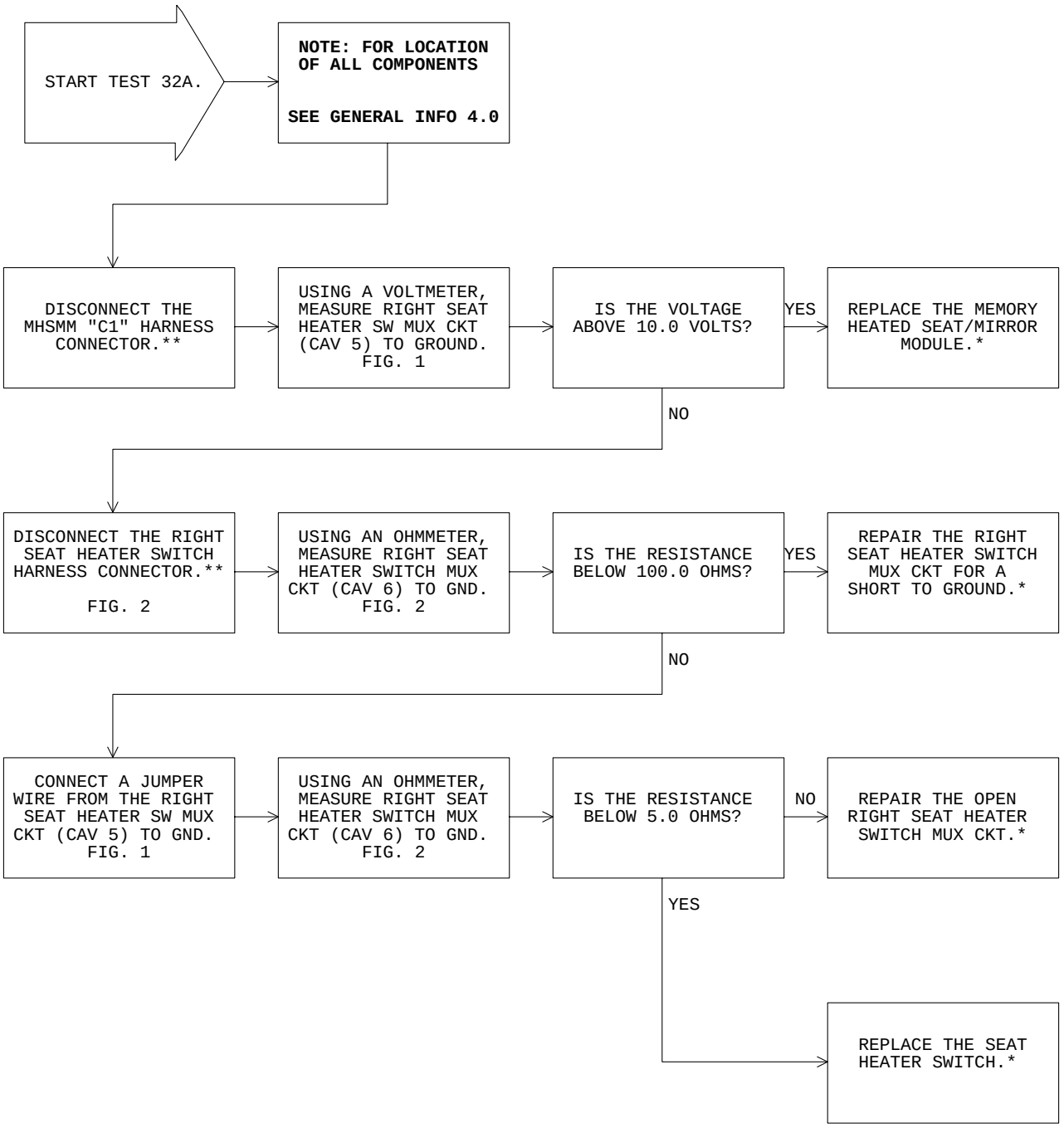

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/LG | RIGHT SEAT LOW HEAT LED DRIVER |
| 3 | BK | GROUND |
| 4 | DB/WT | FUSED IGNITION SWITCH OUTPUT |
| 5 | VT/BK | RIGHT SEAT HIGH HEAT LED DRIVER |
| 6 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |

80b46bfe

*FIG. 2*

## TEST 32A — REPAIRING "RIGHT HEATED SEAT SWITCH OPEN/SHORTED TO GROUND" TROUBLE CODE

**Perform TEST 1A Before Proceeding**

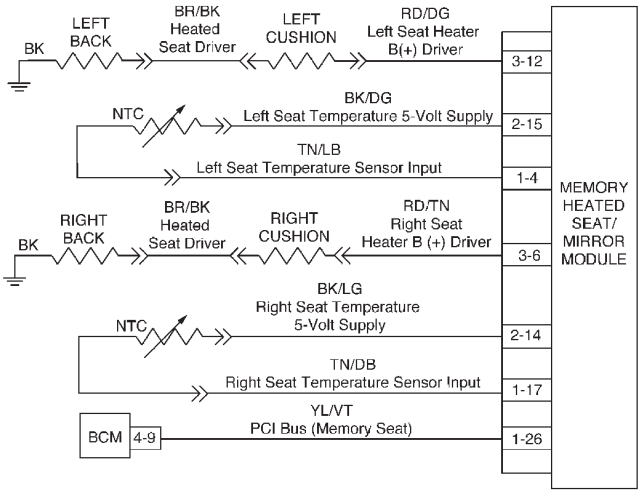



***Perform Verification TEST VER-4A.**

****Check connectors - Clean / repair as necessary.**

## TEST 33A — REPAIRING "RIGHT THERMISTOR OUT OF RANGE LOW" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bfc

**Name of code:** Right Thermistor Out of Range Low

**When monitored:** Ignition on.

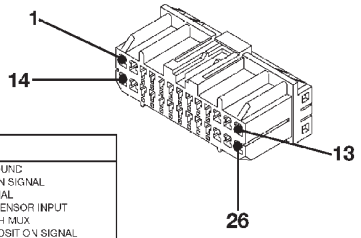
**Set condition:** Immediately set when the value is out of range.

**Theory of operation:** When the heated seat thermistor feed back to the MHSMM is less than the heated seat thermistor out of range low value stored in EEPROM. The value has been predetermined through the development of the memory system.

**Probable cause:**
- Thermistor failure (value)
- Right seat temperature sensor input shorted to ground
- MHSMM failure

80b46d18

**MEMORY HEATED SEAT/MIRROR MODULE "C1" CONNECTOR**

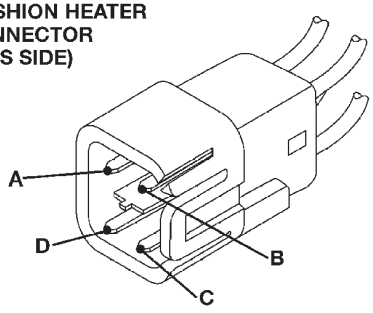



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | WT/RD | LEFT MIRROR SENSOR GROUND |
| 2 | VT/RD | SEAT HORIZONTAL POSITION SIGNAL |
| 3 | LB/RD | REAR RISER POSITION SIGNAL |
| 4 | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| 5 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |
| 6 | YL/RD | RIGHT MIRROR VERTICAL POSITION SIGNAL |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 8 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 9 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |
| 11 | GY/LB | RECLINER UP SWITCH SENSE |
| 12 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |
| 13 | PK/BK | MEMORY SET SWITCH SENSE |
| 14 | WT/RK | RIGHT MIRROR SENSOR GROUND |
| 15 | BR | FRONT RISER POSITION SIGNAL |
| 16 | LB | RECLINER POSITION SIGNAL |
| 17 | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| 18 | TN/DG | LEFT SEAT HEATER SWITCH MUX |
| 19 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SIGNAL |
| 20 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 21 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 22 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 23 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 24 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 25 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 26 | YL/VT | PCI BUS |

80b46bd5

*FIG. 1*

**RIGHT SEAT CUSHION HEATER 4-WAY CONNECTOR (HARNESS SIDE)**



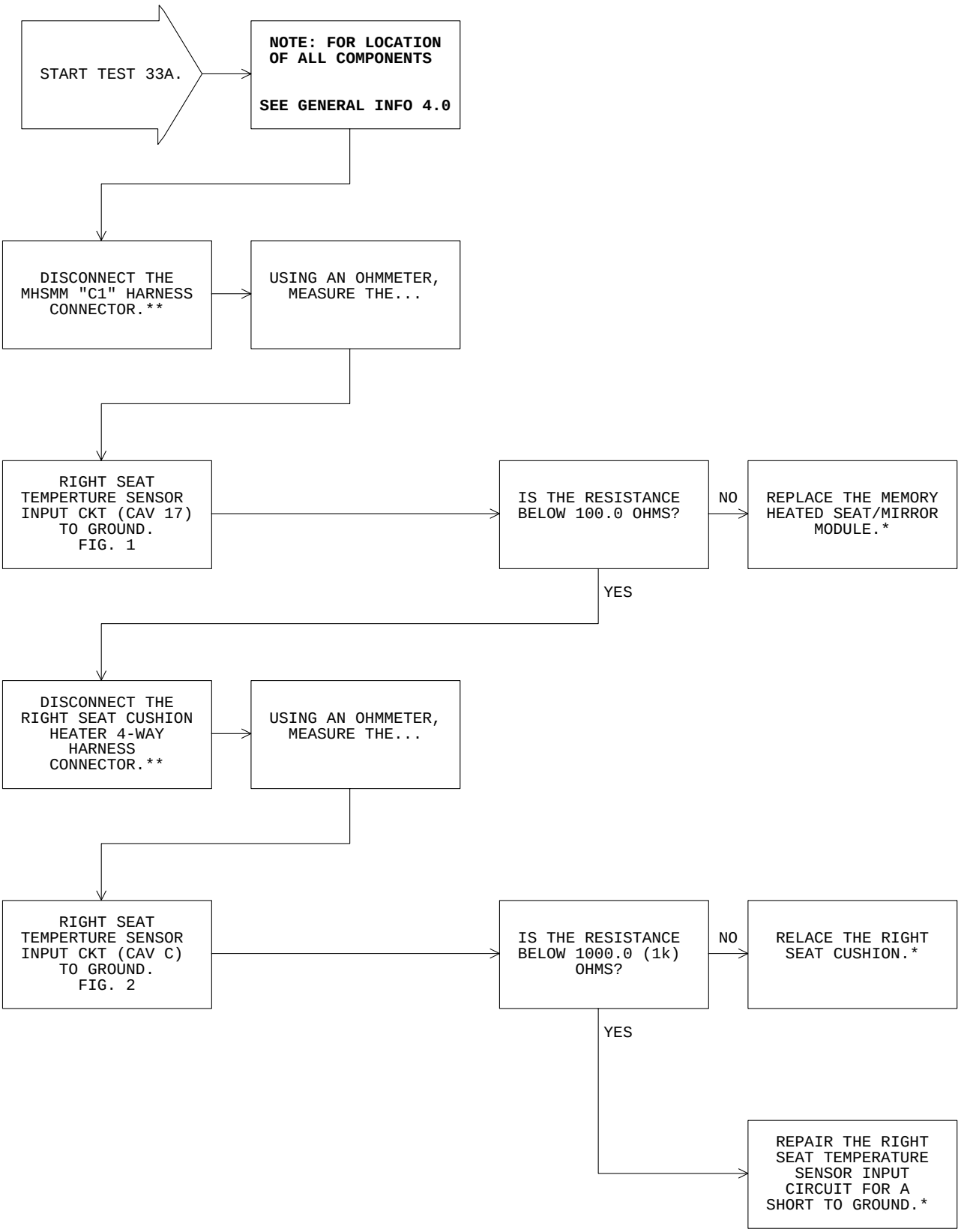

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD/TN | RIGHT SEAT HEATER B(+) DRIVER |
| B | BR/BK | HEATED SEAT DRIVER |
| C | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| D | BK/LG | RIGHT SEAT TEMPERATURE 5 VOLT SUPPLY |

80b46cd3

*FIG. 2*

## TEST 33A — REPAIRING ″RIGHT THERMISTOR OUT OF RANGE LOW″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

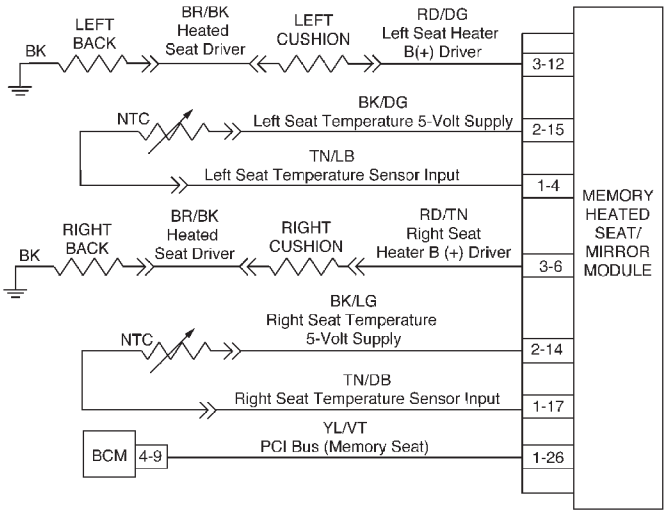



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.**

## TEST 34A — REPAIRING "RIGHT THERMISTOR OUT OF RANGE HIGH" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bfc

**Name of code:** Right Thermistor Out of Range High

**When monitored:** Ignition on.

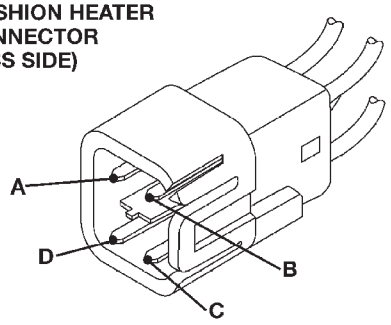
**Set condition:** Immediately set when the value is out of range.

**Theory of operation:** When the heated seat thermistor feed back to the MHSMM is greater than the heated seat thermistor out of range high value stored in EEPROM. The value has been predetermined through the development of the memory system.

**Probable cause:**
- Thermistor failure (value)
- Right seat temperature sensor input shorted to battery
- MHSMM failure

80b46d17

**RIGHT SEAT CUSHION HEATER 4-WAY CONNECTOR (HARNESS SIDE)**



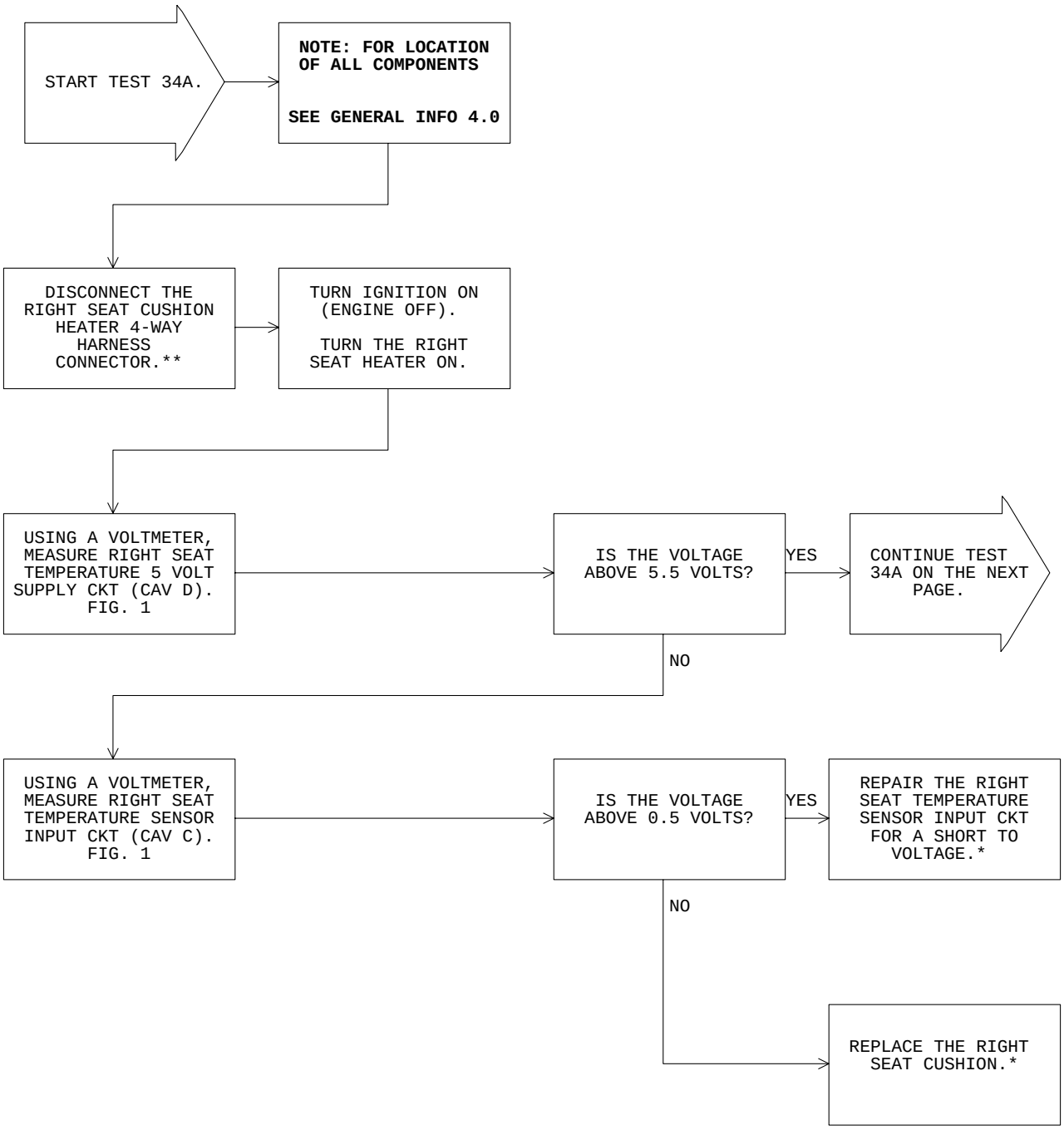

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD/TN | RIGHT SEAT HEATER B(+) DRIVER |
| B | BR/BK | HEATED SEAT DRIVER |
| C | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| D | BK/LG | RIGHT SEAT TEMPERATURE 5 VOLT SUPPLY |

***FIG. 1***

80b46cd3

## TEST 34A — REPAIRING ″RIGHT THERMISTOR OUT OF RANGE HIGH″ TROUBLE CODE

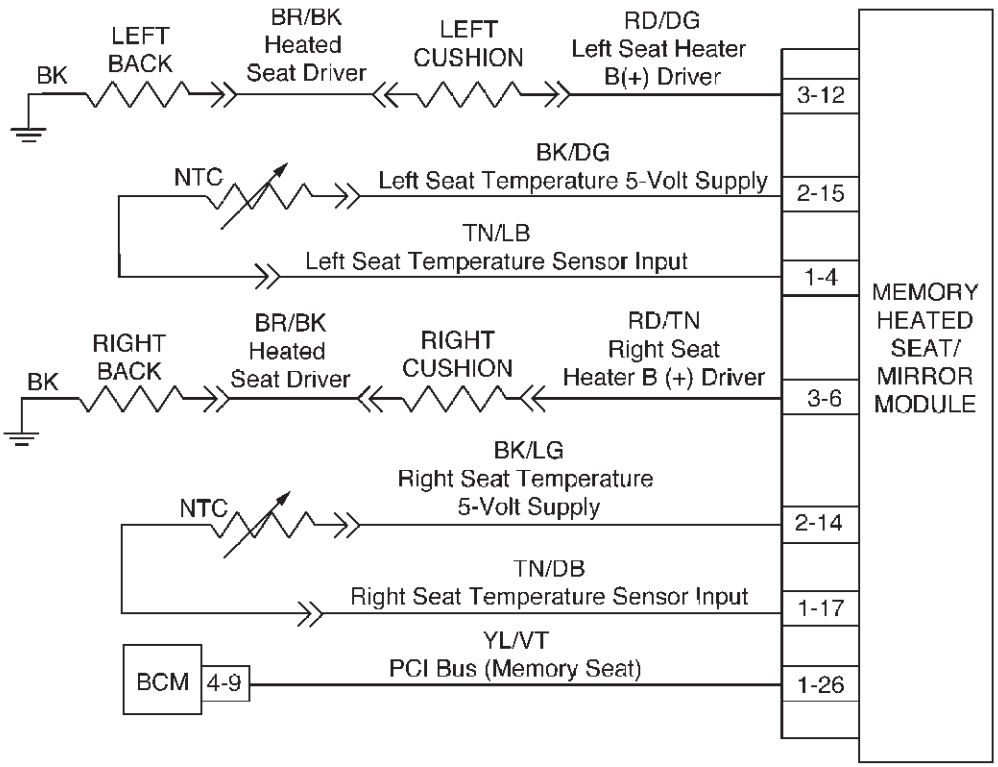
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-4A.***

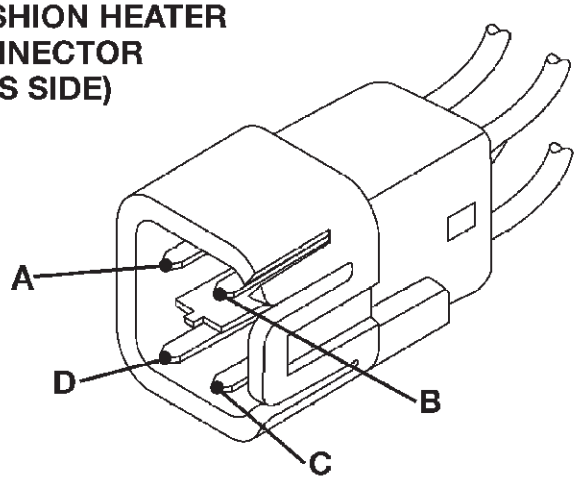
***Check connectors - Clean / repair as necessary.***

**TEST 34A** CONTINUED - REPAIRING "RIGHT THERMISTOR OUT OF RANGE HIGH" TROUBLE CODE




80b46bfc

**RIGHT SEAT CUSHION HEATER 4-WAY CONNECTOR (HARNESS SIDE)**

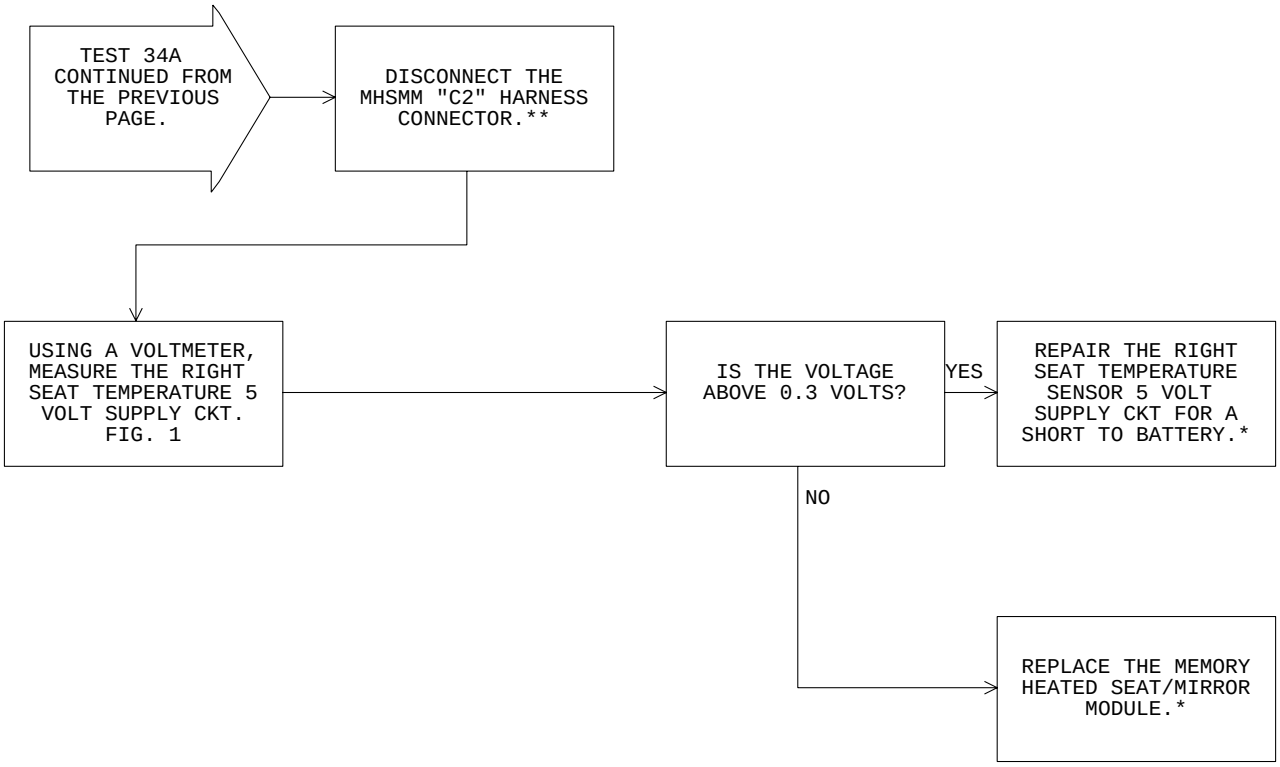



| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD/TN | RIGHT SEAT HEATER B(+) DRIVER |
| B | BR/BK | HEATED SEAT DRIVER |
| C | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| D | BK/LG | RIGHT SEAT TEMPERATURE 5 VOLT SUPPLY |

80b46cd3

*FIG. 1*

## TEST 34A CONTINUED - REPAIRING ″RIGHT THERMISTOR OUT OF RANGE HIGH″ TROUBLE CODE

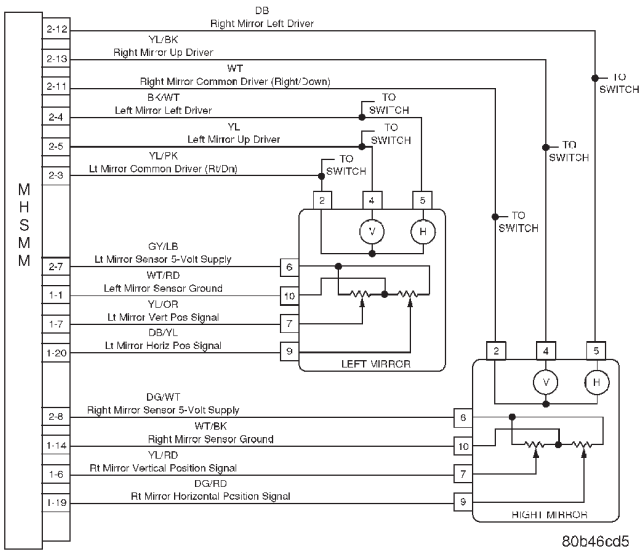



***Perform Verification TEST VER-4A.**

****Check connectors - Clean / repair as necessary.**

# TEST 35A — REPAIRING "LEFT MIRROR HORIZONTAL SENSOR OUT OF RANGE LOW" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46cd5

**Name of code:** Left Mirror Horizontal Sensor Out of Range Low

**When monitored:** Ignition on.

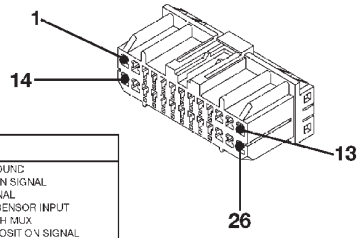
**Set condition:** Immediately set when the value is out of range.

**Theory of operation:** The mirror motors have potentiometer/ sensors attached to them. When the mirror moves a potentiometer value changes. The potentiometers are designed to operate within a window of values. Any values outside of the normal will cause a code to be set. Therefore, when the mirror sensor feed back to the MHSMM is less than the mirror sensor out of range low value stored in EEPROM, a code will be set.

**Probable cause:**
- Mirror motor failure (value)
- Left mirror horizontal position signal ckt shorted to ground
- MHSMM failure

80b46d2a

**MEMORY HEATED SEAT/MIRROR MODULE "C1" CONNECTOR**

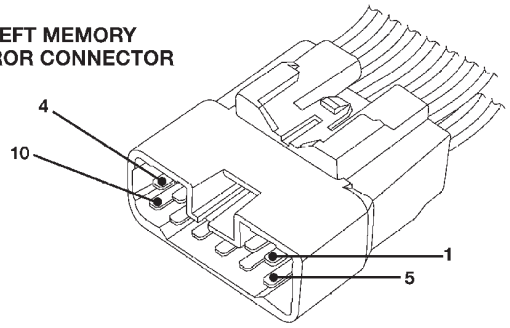



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | WT/RD | LEFT MIRROR SENSOR GROUND |
| 2 | VT/RD | SEAT HORIZONTAL POSITION SIGNAL |
| 3 | LB/RD | REAR RISER POSITION SIGNAL |
| 4 | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| 5 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |
| 6 | YL/RD | RIGHT MIRROR VERTICAL POSITION SIGNAL |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 8 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 9 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |
| 11 | GY/LB | RECLINER UP SWITCH SENSE |
| 12 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |
| 13 | PK/BK | MEMORY SET SWITCH SENSE |
| 14 | WT/BK | RIGHT MIRROR SENSOR GROUND |
| 15 | BR | FRONT RISER POSITION SIGNAL |
| 16 | LB | RECLINER POSITION SIGNAL |
| 17 | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| 18 | TN/DG | LEFT SEAT HEATER SWITCH MUX |
| 19 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SIGNAL |
| 20 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 21 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 22 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 23 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 24 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 25 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 26 | YL/VT | PCI BUS |

80b46bd5

*FIG. 1*

**LEFT MEMORY MIRROR CONNECTOR**



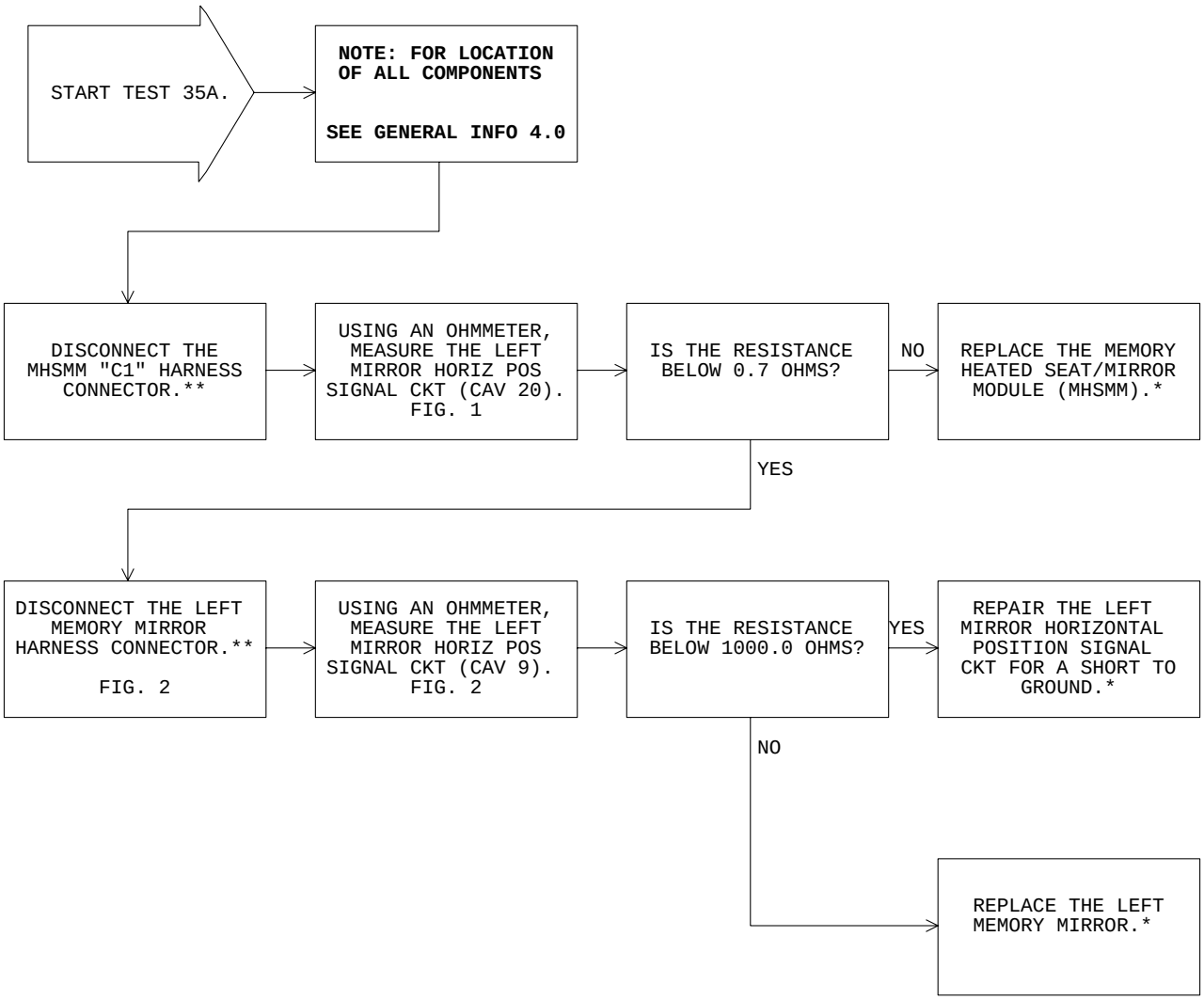

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | YL/PK | LEFT MIRROR COMMON DRIVER (RIGHT/DOWN) |
| 3 | LB/YL | FUSED REAR DEFOGGER RELAY OUTPUT |
| 4 | YL | LEFT MIRROR UP DRIVER |
| 5 | BK/WT | LEFT MIRROR LEFT DRIVER |
| 6 | GY/LB | LEFT MIRROR SENSOR 5 VOLT SUPPLY |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 9 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 10 | WT/RD | LEFT MIRROR SENSOR GROUND |

80b4b6b8

*FIG. 2*

## TEST 35A — REPAIRING ″LEFT MIRROR HORIZONTAL SENSOR OUT OF RANGE LOW″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

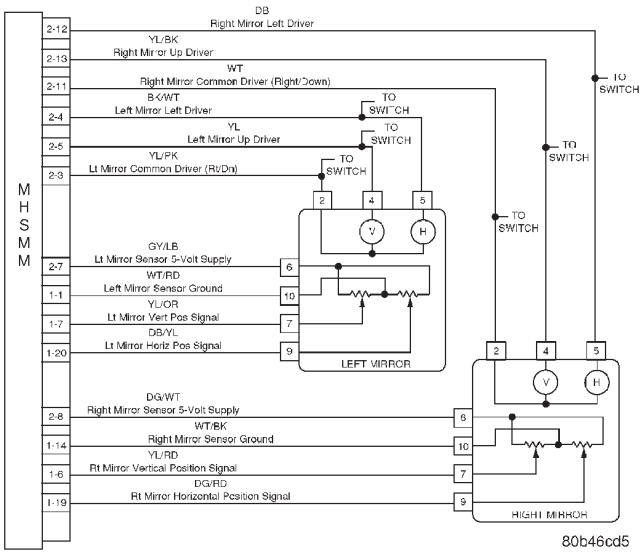



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.***

# TEST 36A — REPAIRING "LEFT MIRROR HORIZONTAL SENSOR OUT OF RANGE HIGH" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46cd5

**Name of code:** Left Mirror Horizontal Sensor Out of Range High

**When monitored:** Ignition on.

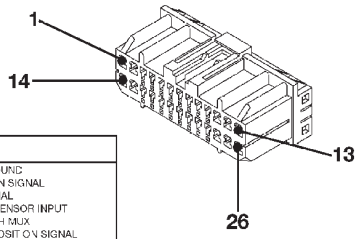
**Set condition:** Immediately set when the value is out of range.

**Theory of operation:** The mirror motors have potentiometers/ sensors attached to them. When the mirror moves a potentiometer value changes. The potentiometers are designed to operate within a window of values. Any values outside of the normal will cause a code to be set. Therefore, when the mirror sensor feed back to the MHSMM is greater than the mirror sensor out of range high value stored in EEPROM, a code will be set.

**Probable causes:**
- Mirror motor failure (value)
- Left mirror horizontal position signal ckt shorted to battery
- MHSMM failure

80b46d1f

**MEMORY HEATED SEAT/MIRROR MODULE "C1" CONNECTOR**

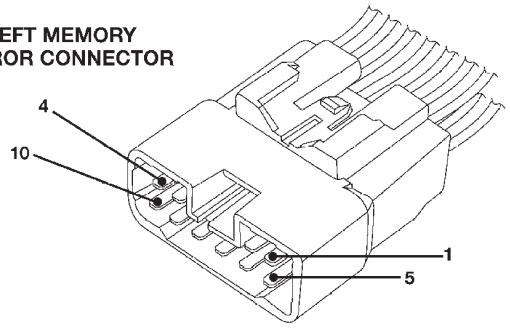



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | WT/RD | LEFT MIRROR SENSOR GROUND |
| 2 | VT/RD | SEAT HORIZONTAL POSITION SIGNAL |
| 3 | LB/RD | REAR RISER POSITION SIGNAL |
| 4 | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| 5 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |
| 6 | YL/RD | RIGHT MIRROR VERTICAL POSITION SIGNAL |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 8 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 9 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |
| 11 | GY/LB | RECLINER UP SWITCH SENSE |
| 12 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |
| 13 | PK/BK | MEMORY SET SWITCH SENSE |
| 14 | WT/BK | RIGHT MIRROR SENSOR GROUND |
| 15 | BR | FRONT RISER POSITION SIGNAL |
| 16 | LB | RECLINER POSITION SIGNAL |
| 17 | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| 18 | TN/DG | LEFT SEAT HEATER SWITCH MUX |
| 19 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SIGNAL |
| 20 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 21 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 22 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 23 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 24 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 25 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 26 | YL/VT | PCI BUS |

80b46bd5

*FIG. 1*

**LEFT MEMORY MIRROR CONNECTOR**



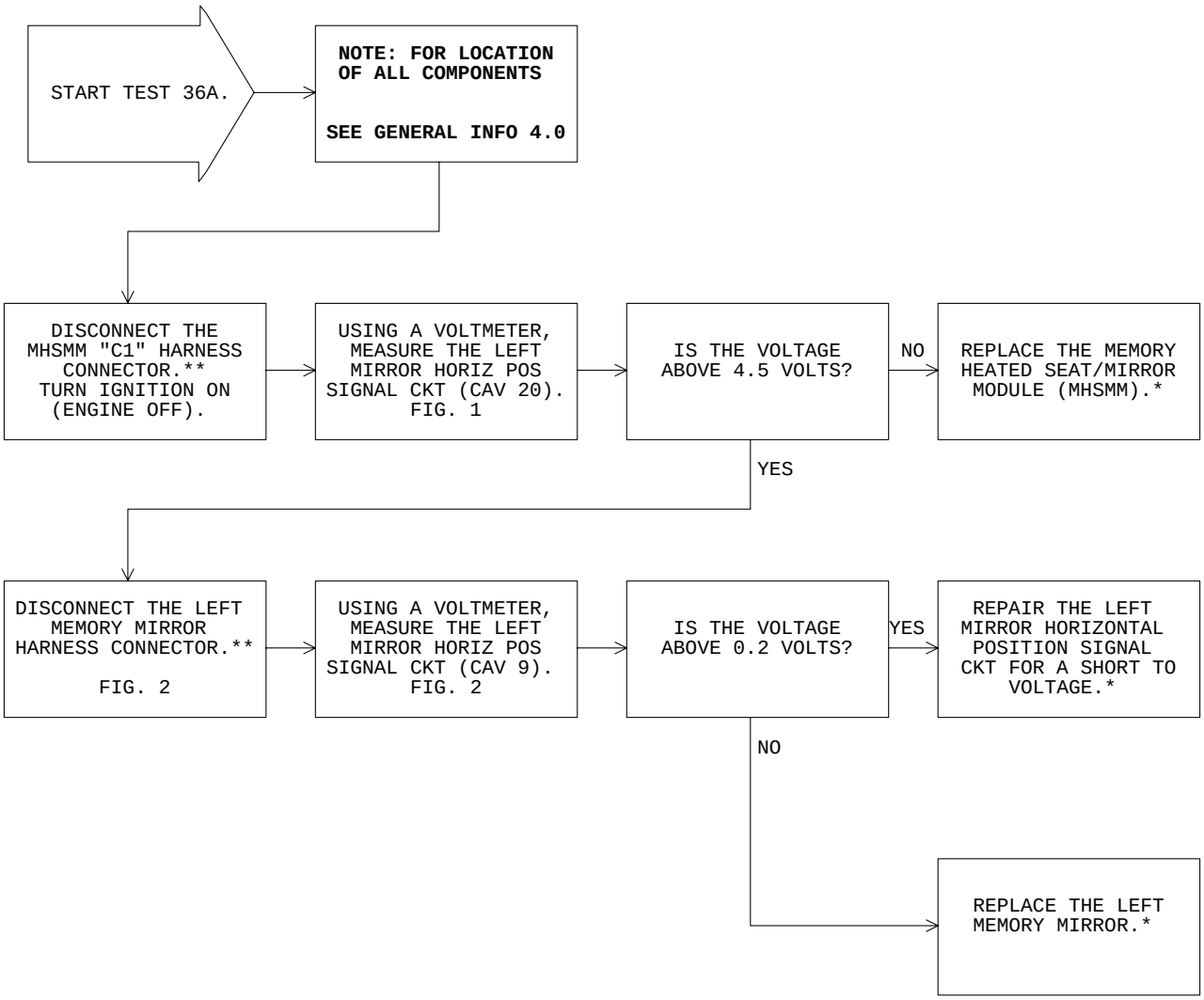

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | YL/PK | LEFT MIRROR COMMON DRIVER (RIGHT/DOWN) |
| 3 | LB/YL | FUSED REAR DEFOGGER RELAY OUTPUT |
| 4 | YL | LEFT MIRROR UP DRIVER |
| 5 | BK/WT | LEFT MIRROR LEFT DRIVER |
| 6 | GY/LB | LEFT MIRROR SENSOR 5 VOLT SUPPLY |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 9 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 10 | WT/RD | LEFT MIRROR SENSOR GROUND |

80b4b6b8

*FIG. 2*

## TEST 36A — REPAIRING ″LEFT MIRROR HORIZONTAL SENSOR OUT OF RANGE HIGH″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

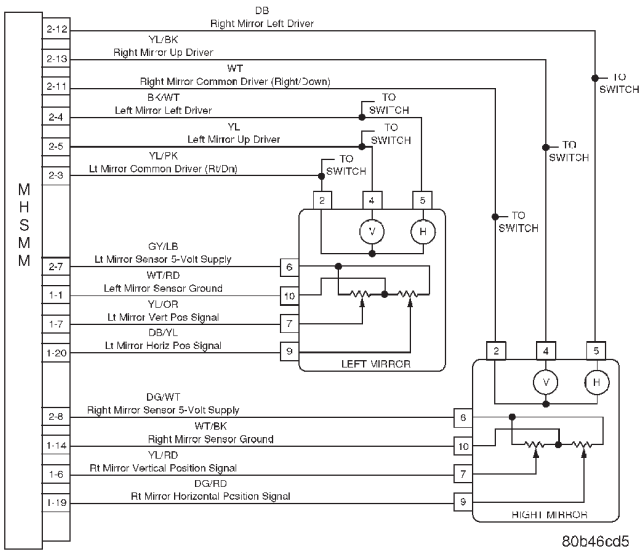



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.**

# TEST 37A — REPAIRING "LEFT MIRROR VERTICAL SENSOR OUT OF RANGE LOW" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46cd5

**Name of code:** Left Mirror Vertical Sensor Out of Range Low

**When monitored:** Ignition on.

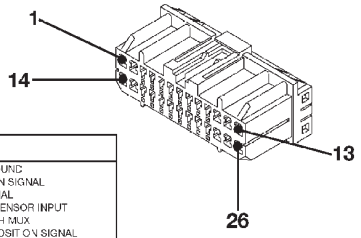
**Set condition:** Immediately set when the value is out of range.

**Theory of operation:** The mirror motors have potentiometers/ sensors attached to them. When the mirror moves a potentiometer value changes. The potentiometers are designed to operate within a window of values. Any values outside of the normal will cause a fault to be set. Therefore, when the mirror sensor feed back to the MHSMM is less than the mirror sensor out of range low value stored in EEPROM, a code will be set.

**Probable cause:**
> Mirror motor failure (value)
> Left mirror vertical position signal ckt shorted to ground
> MHSMM failure

80b46d1e

**MEMORY HEATED SEAT/MIRROR MODULE "C1" CONNECTOR**

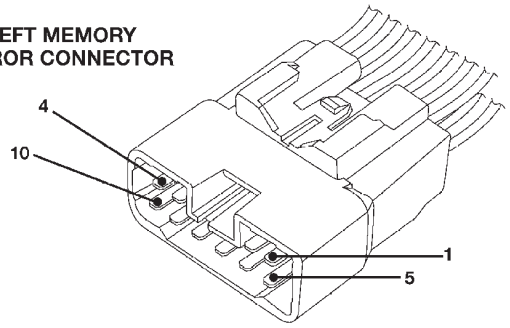



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | WT/RD | LEFT MIRROR SENSOR GROUND |
| 2 | VT/RD | SEAT HORIZONTAL POSITION SIGNAL |
| 3 | LB/RD | REAR RISER POSITION SIGNAL |
| 4 | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| 5 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |
| 6 | YL/RD | RIGHT MIRROR VERTICAL POSITION SIGNAL |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 8 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 9 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |
| 11 | GY/LB | RECLINER UP SWITCH SENSE |
| 12 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |
| 13 | PK/BK | MEMORY SET SWITCH SENSE |
| 14 | WT/RK | RIGHT MIRROR SENSOR GROUND |
| 15 | BR | FRONT RISER POSITION SIGNAL |
| 16 | LB | RECLINER POSITION SIGNAL |
| 17 | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| 18 | TN/DG | LEFT SEAT HEATER SWITCH MUX |
| 19 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SIGNAL |
| 20 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 21 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 22 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 23 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 24 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 25 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 26 | YL/VT | PCI BUS |

80b46bd5

*FIG. 1*

**LEFT MEMORY MIRROR CONNECTOR**



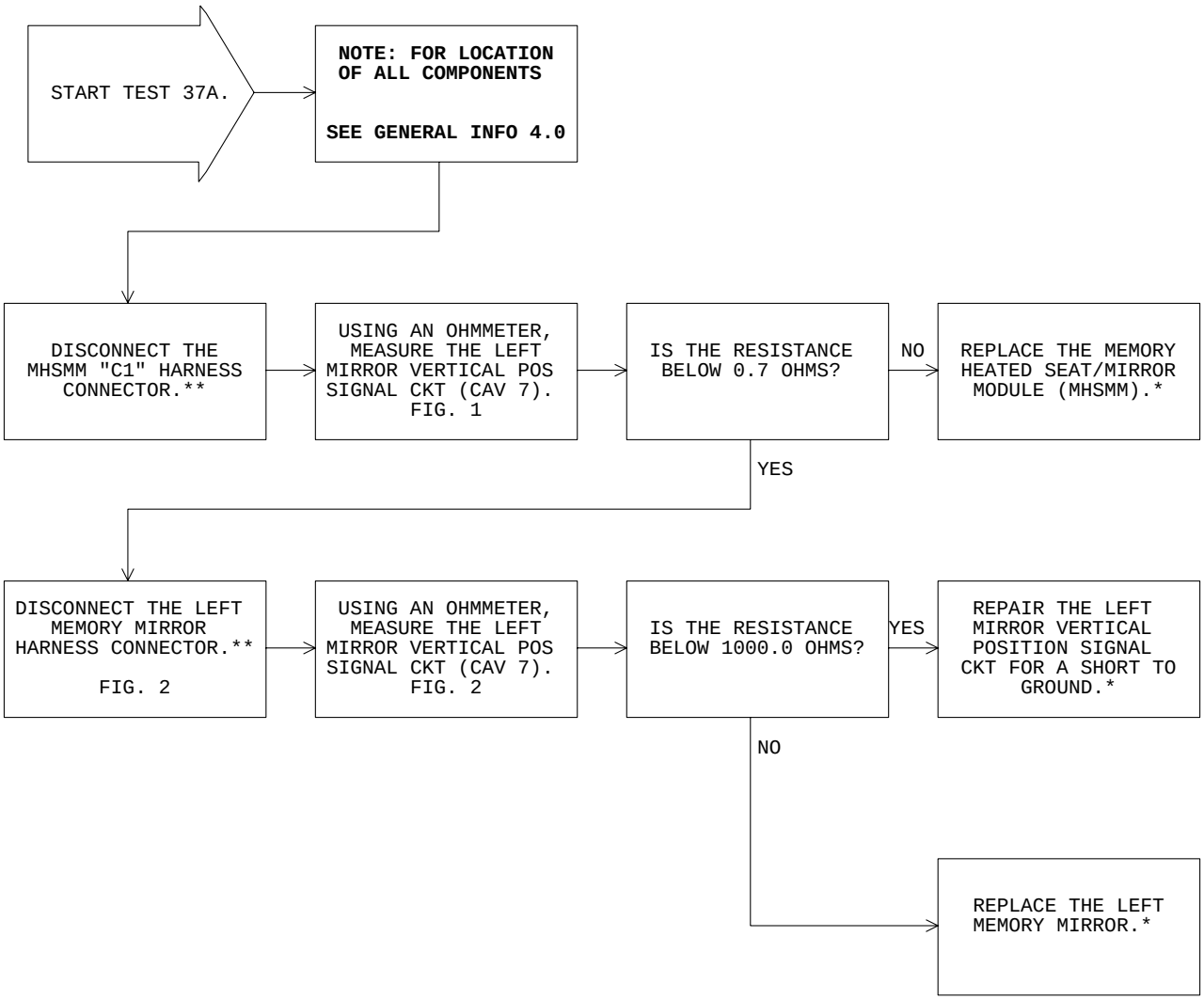

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | YL/PK | LEFT MIRROR COMMON DRIVER (RIGHT/DOWN) |
| 3 | LB/YL | FUSED REAR DEFOGGER RELAY OUTPUT |
| 4 | YL | LEFT MIRROR UP DRIVER |
| 5 | BK/WT | LEFT MIRROR LEFT DRIVER |
| 6 | GY/LB | LEFT MIRROR SENSOR 5 VOLT SUPPLY |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 9 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 10 | WT/RD | LEFT MIRROR SENSOR GROUND |

80b4b6b8

*FIG. 2*

## TEST 37A — REPAIRING ″LEFT MIRROR VERTICAL SENSOR OUT OF RANGE LOW″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

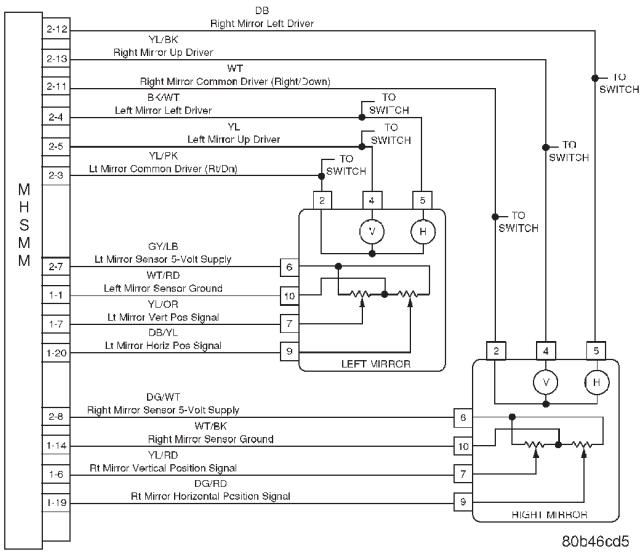



***Perform Verification TEST VER-4A.**

****Check connectors - Clean / repair as necessary.**

# TEST 38A — REPAIRING "LEFT MIRROR VERTICAL SENSOR OUT OF RANGE HIGH" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46cd5

**Name of code:** Left Mirror Vertical Sensor Out of Range High

**When monitored:** Ignition on.

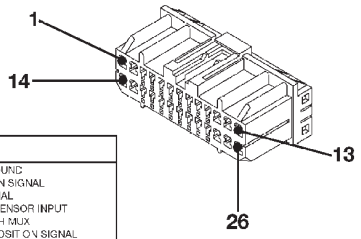
**Set condition:** Immediately set when the value is out of range.

**Theory of operation:** The mirror motors have potentiometers/ sensors attached to them. When the mirror moves a potentiometer value changes. The potentiometers are designed to operate within a window of values. Any values outside of the normal will cause a code to be set. Therefore, when the mirror sensor feed back to the MHSMM is greater than the mirror sensor out of range high value stored in EEPROM, a code will be set.

**Probable cause:**
> Mirror motor failure (value)
> Left mirror vertical position signal ckt shorted to battery
> MHSMM failure

80b46d1c

**MEMORY HEATED SEAT/MIRROR MODULE "C1" CONNECTOR**

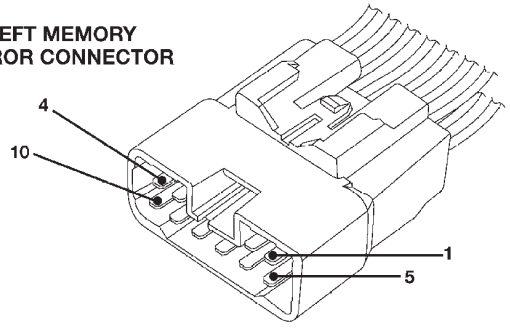



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | WT/RD | LEFT MIRROR SENSOR GROUND |
| 2 | VT/RD | SEAT HORIZONTAL POSITION SIGNAL |
| 3 | LB/RD | REAR RISER POSITION SIGNAL |
| 4 | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| 5 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |
| 6 | YL/RD | RIGHT MIRROR VERTICAL POSITION SIGNAL |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 8 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 9 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |
| 11 | GY/LB | RECLINER UP SWITCH SENSE |
| 12 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |
| 13 | PK/BK | MEMORY SET SWITCH SENSE |
| 14 | WT/BK | RIGHT MIRROR SENSOR GROUND |
| 15 | BR | FRONT RISER POSITION SIGNAL |
| 16 | LB | RECLINER POSITION SIGNAL |
| 17 | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| 18 | TN/DG | LEFT SEAT HEATER SWITCH MUX |
| 19 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SIGNAL |
| 20 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 21 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 22 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 23 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 24 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 25 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 26 | YL/VT | PCI BUS |

80b46bd5

*FIG. 1*

**LEFT MEMORY MIRROR CONNECTOR**



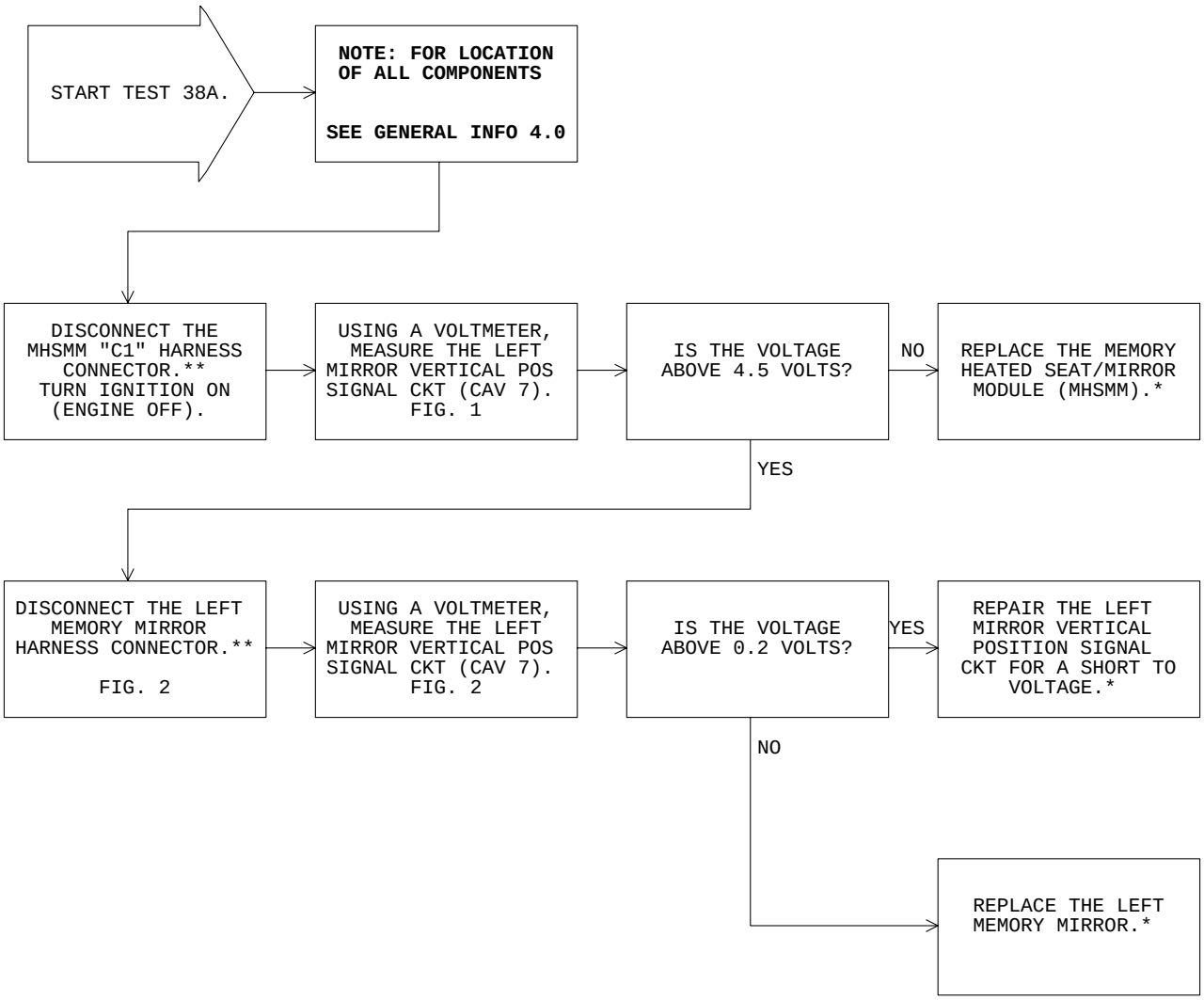

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | YL/PK | LEFT MIRROR COMMON DRIVER (RIGHT/DOWN) |
| 3 | LB/YL | FUSED REAR DEFOGGER RELAY OUTPUT |
| 4 | YL | LEFT MIRROR UP DRIVER |
| 5 | BK/WT | LEFT MIRROR LEFT DRIVER |
| 6 | GY/LB | LEFT MIRROR SENSOR 5 VOLT SUPPLY |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 9 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 10 | WT/RD | LEFT MIRROR SENSOR GROUND |

80b4b6b8

*FIG. 2*

## TEST 38A — REPAIRING ″LEFT MIRROR VERTICAL SENSOR OUT OF RANGE HIGH″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

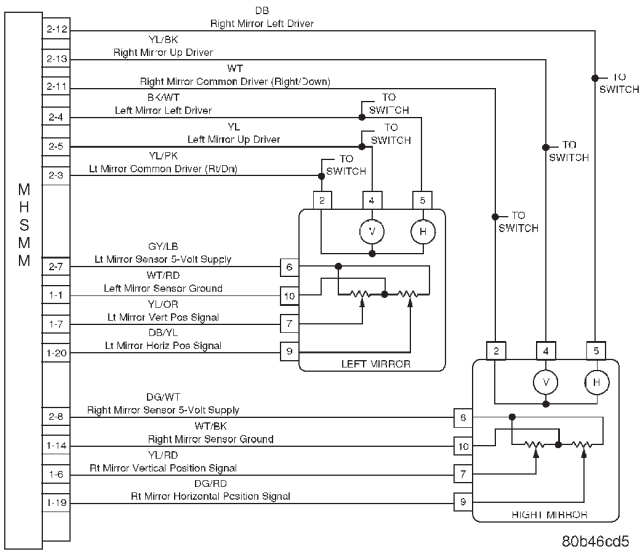



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.***

# TEST 39A — REPAIRING "RIGHT MIRROR HORIZONTAL SENSOR OUT OF RANGE LOW" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46cd5

**Name of code:** Right Mirror Horizontal Sensor Out of Range Low

**When monitored:** Ignition on.

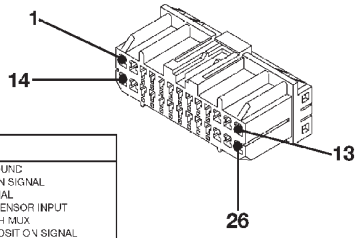
**Set condition:** Immediately set when the value is out of range.

**Theory of operation:** The mirror motors have potentiometers/ sensors attached to them. When the mirror moves a potentiometer value changes. The potentiometers are designed to operate within a window of values. Any values outside of the normal will cause a code to be set. Therefore, when the mirror sensor feed back to the MHSMM is greater than the mirror sensor out of range high value stored in EEPROM, a code will be set.

**Probable cause:**
- Mirror motor failure (value)
- Right mirror horizontal position signal ckt shorted to ground
- MHSMM failure

80b46d2e

**MEMORY HEATED SEAT/MIRROR MODULE "C1" CONNECTOR**

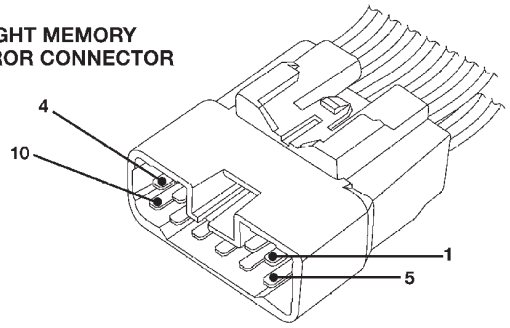



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | WT/RD | LEFT MIRROR SENSOR GROUND |
| 2 | VT/RD | SEAT HORIZONTAL POSITION SIGNAL |
| 3 | LB/RD | REAR RISER POSITION SIGNAL |
| 4 | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| 5 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |
| 6 | YL/RD | RIGHT MIRROR VERTICAL POSITION SIGNAL |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 8 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 9 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |
| 11 | GY/LB | RECLINER UP SWITCH SENSE |
| 12 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |
| 13 | PK/BK | MEMORY SET SWITCH SENSE |
| 14 | WT/BK | RIGHT MIRROR SENSOR GROUND |
| 15 | BR | FRONT RISER POSITION SIGNAL |
| 16 | LB | RECLINER POSITION SIGNAL |
| 17 | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| 18 | TN/DG | LEFT SEAT HEATER SWITCH MUX |
| 19 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SIGNAL |
| 20 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 21 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 22 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 23 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 24 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 25 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 26 | YL/VT | PCI BUS |

80b46bd5

*FIG. 1*

**RIGHT MEMORY MIRROR CONNECTOR**



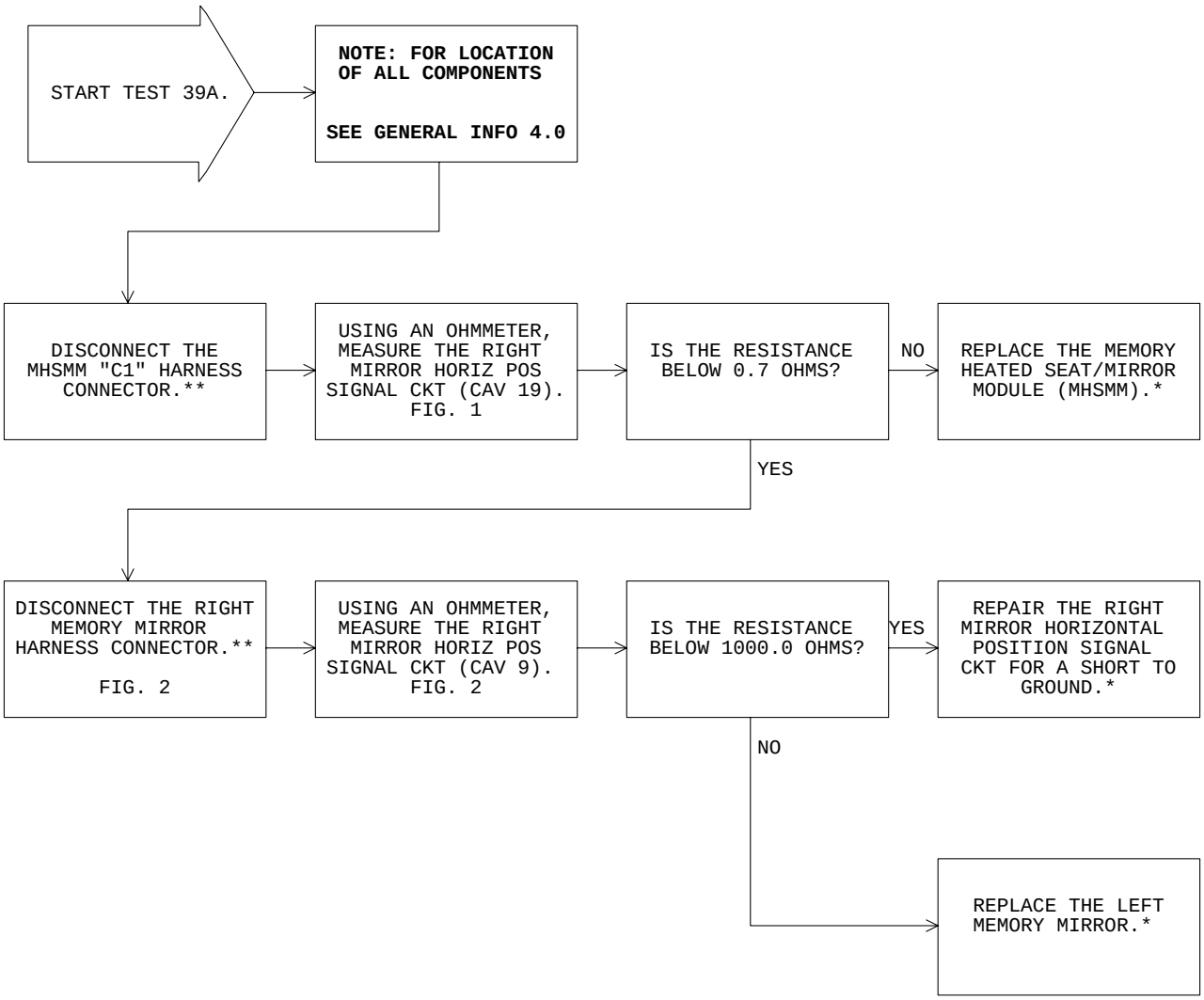

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | WT | RIGHT MIRROR COMMON DRIVER (RIGHT/DOWN) |
| 3 | LB/YL | FUSED REAR DEFOGGER RELAY OUTPUT |
| 4 | YL/BK | RIGHT MIRROR UP DRIVER |
| 5 | DB | RIGHT MIRROR LEFT DRIVER |
| 6 | DG/WT | RIGHT MIRROR SENSOR 5 VOLT SUPPLY |
| 7 | YL/RD | RIGHT MIRROR VERTICAL POSITION SENSOR |
| 9 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SENSOR |
| 10 | WT/BK | RIGHT MIRROR SENSOR GROUND |

80b4b6b9

*FIG. 2*

## TEST 39A — REPAIRING "RIGHT MIRROR HORIZONTAL SENSOR OUT OF RANGE LOW" TROUBLE CODE

**Perform TEST 1A Before Proceeding**

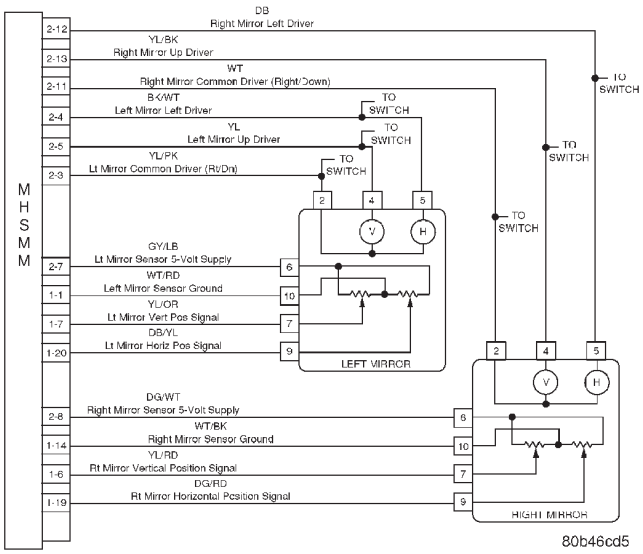



***Perform Verification TEST VER-4A.***

***Check connectors - Clean / repair as necessary.**

# TEST 40A — REPAIRING "RIGHT MIRROR HORIZONTAL SENSOR OUT OF RANGE HIGH" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46cd5

**Name of code:** Right Mirror Horizontal Sensor Out of Range High

**When monitored:** Ignition on.

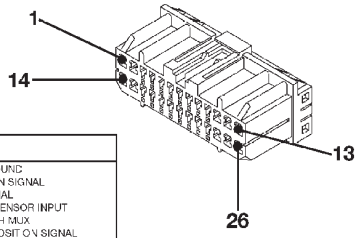
**Set condition:** Immediately set when the value is out of range.

**Theory of operation:** The mirror motors have potentiometers/ sensors attached to them. When the mirror moves a potentiometer value changes. The potentiometers are designed to operate within a window of values. Any values outside of the normal will cause a code to be set. Therefore, when the mirror sensor feed back to the MHSMM is greater than the mirror sensor out of range high value stored in EEPROM, a code will be set.

**Probable cause:**
- Mirror motor failure (value)
- Right mirror horizontal position signal ckt shorted to battery
- MHSMM failure

80b46d2d

**MEMORY HEATED SEAT/MIRROR MODULE "C1" CONNECTOR**

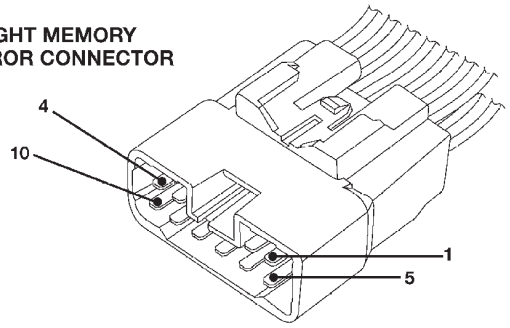



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | WT/RD | LEFT MIRROR SENSOR GROUND |
| 2 | VT/RD | SEAT HORIZONTAL POSITION SIGNAL |
| 3 | LB/RD | REAR RISER POSITION SIGNAL |
| 4 | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| 5 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |
| 6 | YL/RD | RIGHT MIRROR VERTICAL POSITION SIGNAL |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 8 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 9 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |
| 11 | GY/LB | RECLINER UP SWITCH SENSE |
| 12 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |
| 13 | PK/BK | MEMORY SET SWITCH SENSE |
| 14 | WT/BK | RIGHT MIRROR SENSOR GROUND |
| 15 | BR | FRONT RISER POSITION SIGNAL |
| 16 | LB | RECLINER POSITION SIGNAL |
| 17 | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| 18 | TN/DG | LEFT SEAT HEATER SWITCH MUX |
| 19 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SIGNAL |
| 20 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 21 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 22 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 23 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 24 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 25 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 26 | YL/VT | PCI BUS |

80b46bd5

*FIG. 1*

**RIGHT MEMORY MIRROR CONNECTOR**



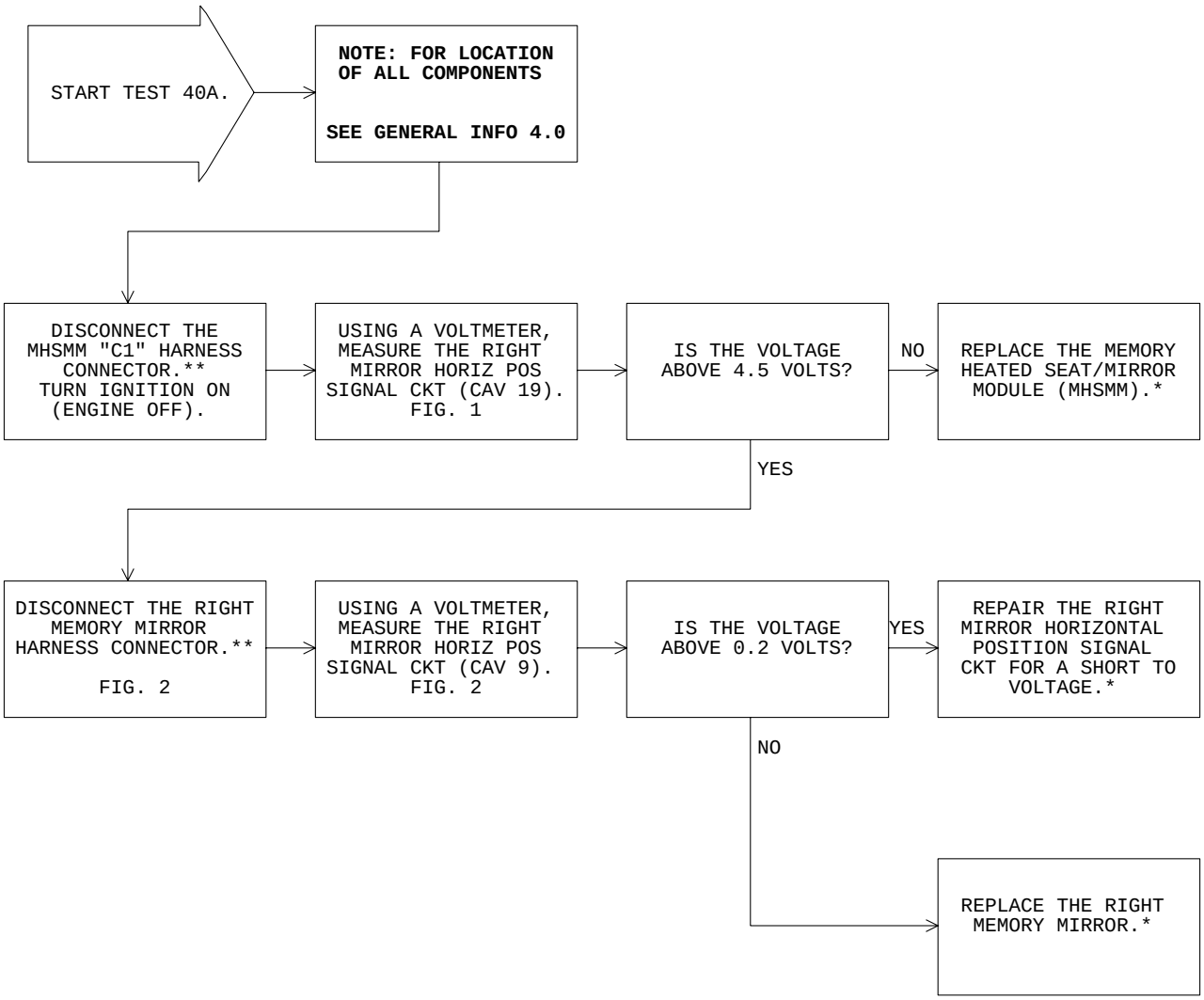

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | WT | RIGHT MIRROR COMMON DRIVER (RIGHT/DOWN) |
| 3 | LB/YL | FUSED REAR DEFOGGER RELAY OUTPUT |
| 4 | YL/BK | RIGHT MIRROR UP DRIVER |
| 5 | DB | RIGHT MIRROR LEFT DRIVER |
| 6 | DG/WT | RIGHT MIRROR SENSOR 5 VOLT SUPPLY |
| 7 | YL/RD | RIGHT MIRROR VERTICAL POSITION SENSOR |
| 9 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SENSOR |
| 10 | WT/BK | RIGHT MIRROR SENSOR GROUND |

80b4b6b9

*FIG. 2*

## TEST 40A — REPAIRING "RIGHT MIRROR HORIZONTAL SENSOR OUT OF RANGE HIGH" TROUBLE CODE

**Perform TEST 1A Before Proceeding**

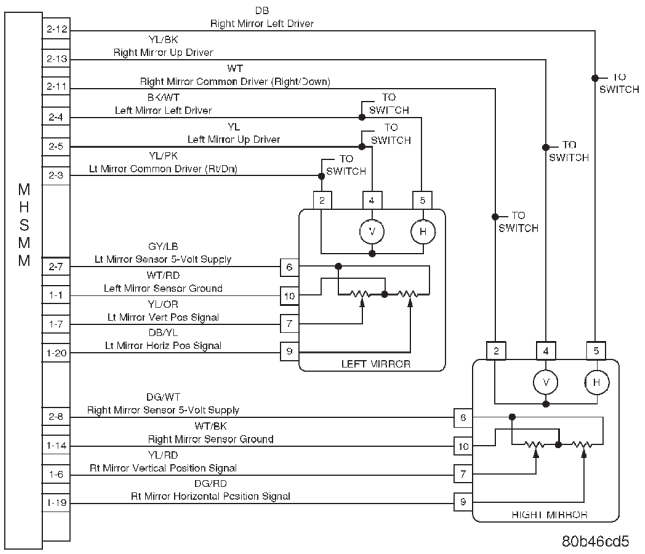



***Perform Verification TEST VER-4A.**

****Check connectors - Clean / repair as necessary.**

# TEST 41A — REPAIRING "RIGHT MIRROR VERTICAL SENSOR OUT OF RANGE LOW" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46cd5

**Name of code:** Right Mirror Vertical Sensor Out of Range Low

**When monitored:** Ignition on.

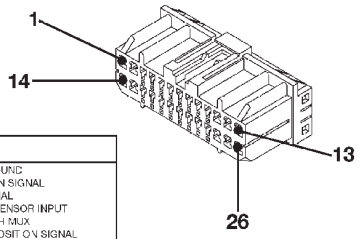
**Set condition:** Immediately set.

**Theory of operation:** The mirror motors have potentiometers/ sensors attached to them, when the mirror moves a potentiometer value changes. The potentiometers are designed to operate within a window of values. Any values outside of the normal will cause a code to be set. Therefore, when the mirror sensor feed back to the MHSMM is greater than the mirror sensor out of range low value stored in EEPROM, a code will be set.

**Probable cause:**
- Mirror motor failure (value)
- Right mirror vertical position signal ckt shorted to ground
- MHSMM failure

80b46d2c

**MEMORY HEATED SEAT/MIRROR MODULE "C1" CONNECTOR**

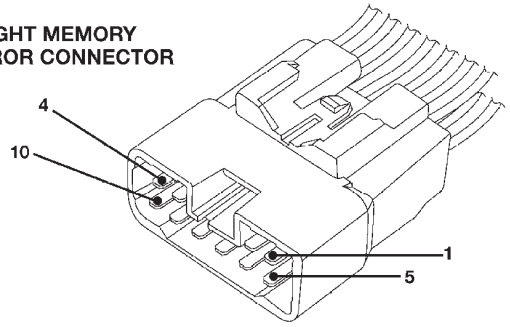



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | WT/RD | LEFT MIRROR SENSOR GROUND |
| 2 | VT/RD | SEAT HORIZONTAL POSITION SIGNAL |
| 3 | LB/RD | REAR RISER POSITION SIGNAL |
| 4 | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| 5 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |
| 6 | YL/RD | RIGHT MIRROR VERTICAL POSITION SIGNAL |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 8 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 9 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |
| 11 | GY/LB | RECLINER UP SWITCH SENSE |
| 12 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |
| 13 | PK/BK | MEMORY SET SWITCH SENSE |
| 14 | WT/BK | RIGHT MIRROR SENSOR GROUND |
| 15 | BR | FRONT RISER POSITION SIGNAL |
| 16 | LB | RECLINER POSITION SIGNAL |
| 17 | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| 18 | TN/DG | LEFT SEAT HEATER SWITCH MUX |
| 19 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SIGNAL |
| 20 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 21 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 22 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 23 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 24 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 25 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 26 | YL/VT | PCI BUS |

80b46bd5

*FIG. 1*

**RIGHT MEMORY MIRROR CONNECTOR**



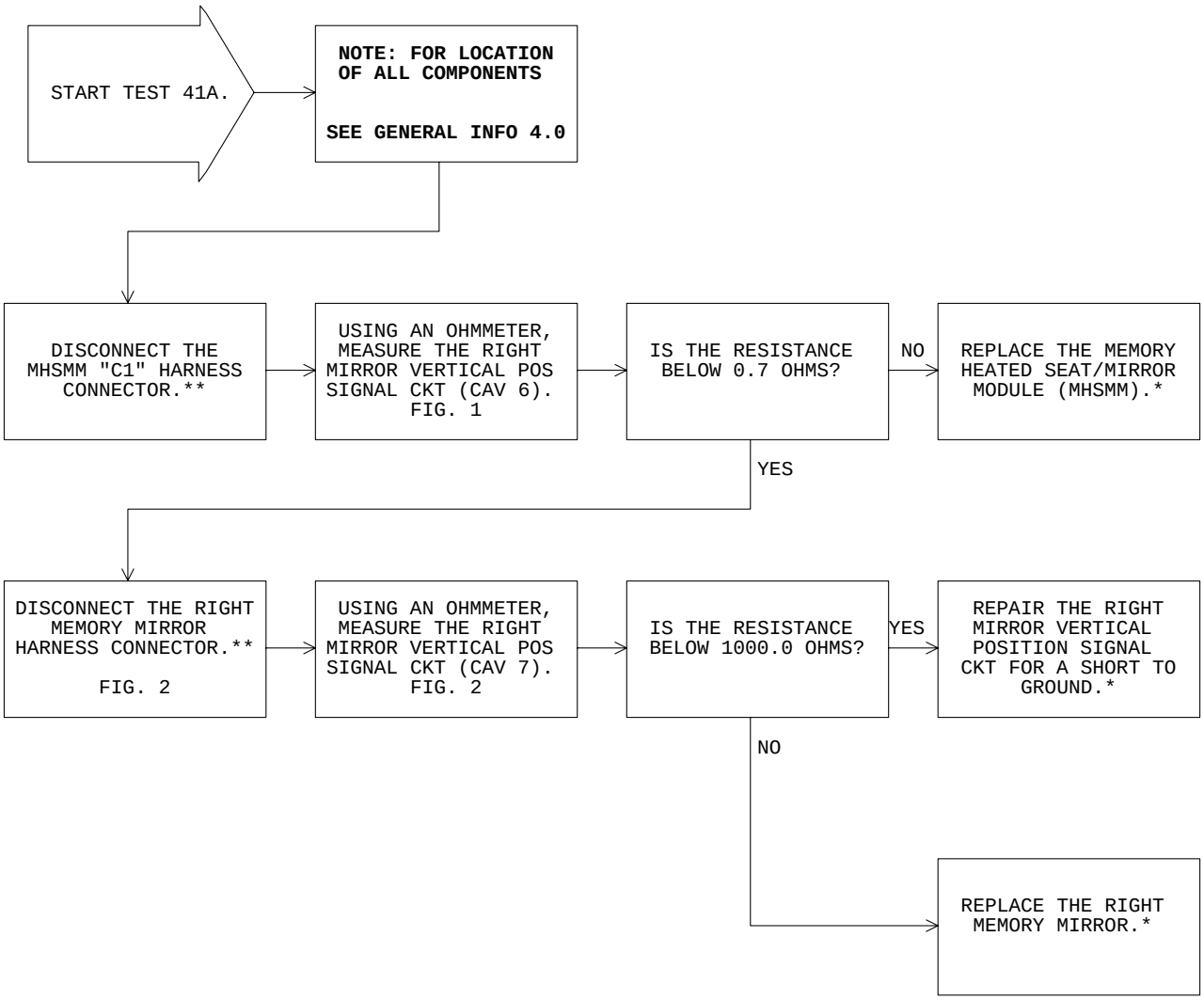

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | WT | RIGHT MIRROR COMMON DRIVER (RIGHT/DOWN) |
| 3 | LB/YL | FUSED REAR DEFOGGER RELAY OUTPUT |
| 4 | YL/BK | RIGHT MIRROR UP DRIVER |
| 5 | DB | RIGHT MIRROR LEFT DRIVER |
| 6 | DG/WT | RIGHT MIRROR SENSOR 5 VOLT SUPPLY |
| 7 | YL/RD | RIGHT MIRROR VERTICAL POSITION SENSOR |
| 9 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SENSOR |
| 10 | WT/BK | RIGHT MIRROR SENSOR GROUND |

80b4b6b9

*FIG. 2*

## TEST 41A — REPAIRING "RIGHT MIRROR VERTICAL SENSOR OUT OF RANGE LOW" TROUBLE CODE

**Perform TEST 1A Before Proceeding**

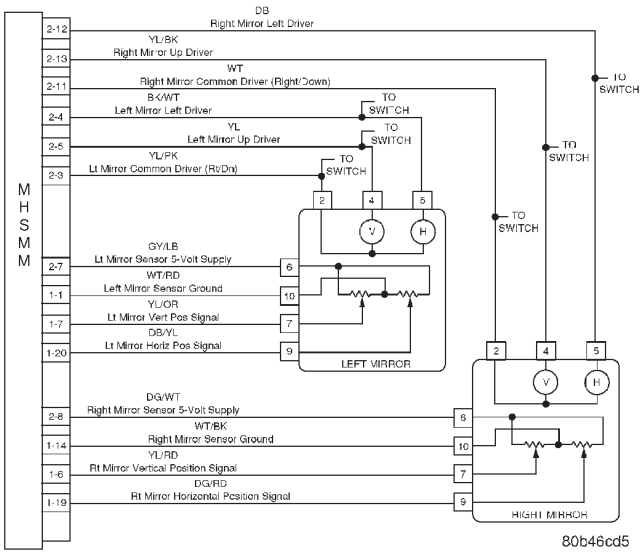



***Perform Verification TEST VER-4A.**

****Check connectors - Clean / repair as necessary.**

# TEST 42A — REPAIRING "RIGHT MIRROR VERTICAL SENSOR OUT OF RANGE HIGH" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46cd5

**Name of code:** Right Mirror Vertical Sensor Out of Range High

**When monitored:** Ignition on.

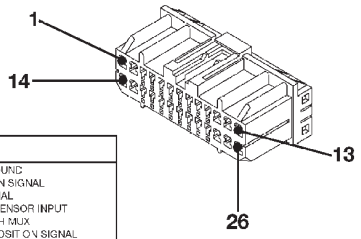
**Set condition:** Immediately set when the value is out of range.

**Theory of operation:** The mirror motors have potentiometers/ sensors attached to them. When the mirror moves a potentiometer value changes. The potentiometers are designed to operate within a window of values. Any values outside of the normal will cause a code to be set. Therefore, when the mirror sensor feed back to the MHSMM is greater than the mirror sensor out of range high value stored in EEPROM, a code will be set.

**Probable cause:**
- Mirror motor failure (value)
- Right mirror vertical position signal ckt shorted to battery
- MHSMM failure

80b46d2b

**MEMORY HEATED SEAT/MIRROR MODULE "C1" CONNECTOR**

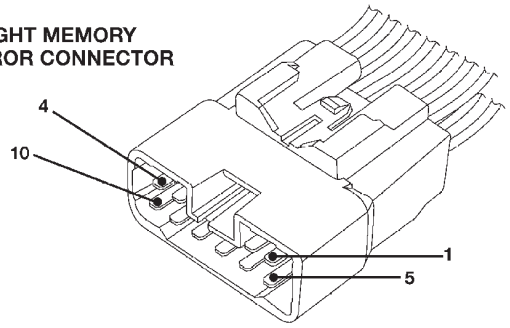



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | WT/RD | LEFT MIRROR SENSOR GROUND |
| 2 | VT/RD | SEAT HORIZONTAL POSITION SIGNAL |
| 3 | LB/RD | REAR RISER POSITION SIGNAL |
| 4 | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| 5 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |
| 6 | YL/RD | RIGHT MIRROR VERTICAL POSITION SIGNAL |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 8 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 9 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |
| 11 | GY/LB | RECLINER UP SWITCH SENSE |
| 12 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |
| 13 | PK/BK | MEMORY SET SWITCH SENSE |
| 14 | WT/BK | RIGHT MIRROR SENSOR GROUND |
| 15 | BR | FRONT RISER POSITION SIGNAL |
| 16 | LB | RECLINER POSITION SIGNAL |
| 17 | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| 18 | TN/DG | LEFT SEAT HEATER SWITCH MUX |
| 19 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SIGNAL |
| 20 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 21 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 22 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 23 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 24 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 25 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 26 | YL/VT | PCI BUS |

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*FIG. 1*

**RIGHT MEMORY MIRROR CONNECTOR**



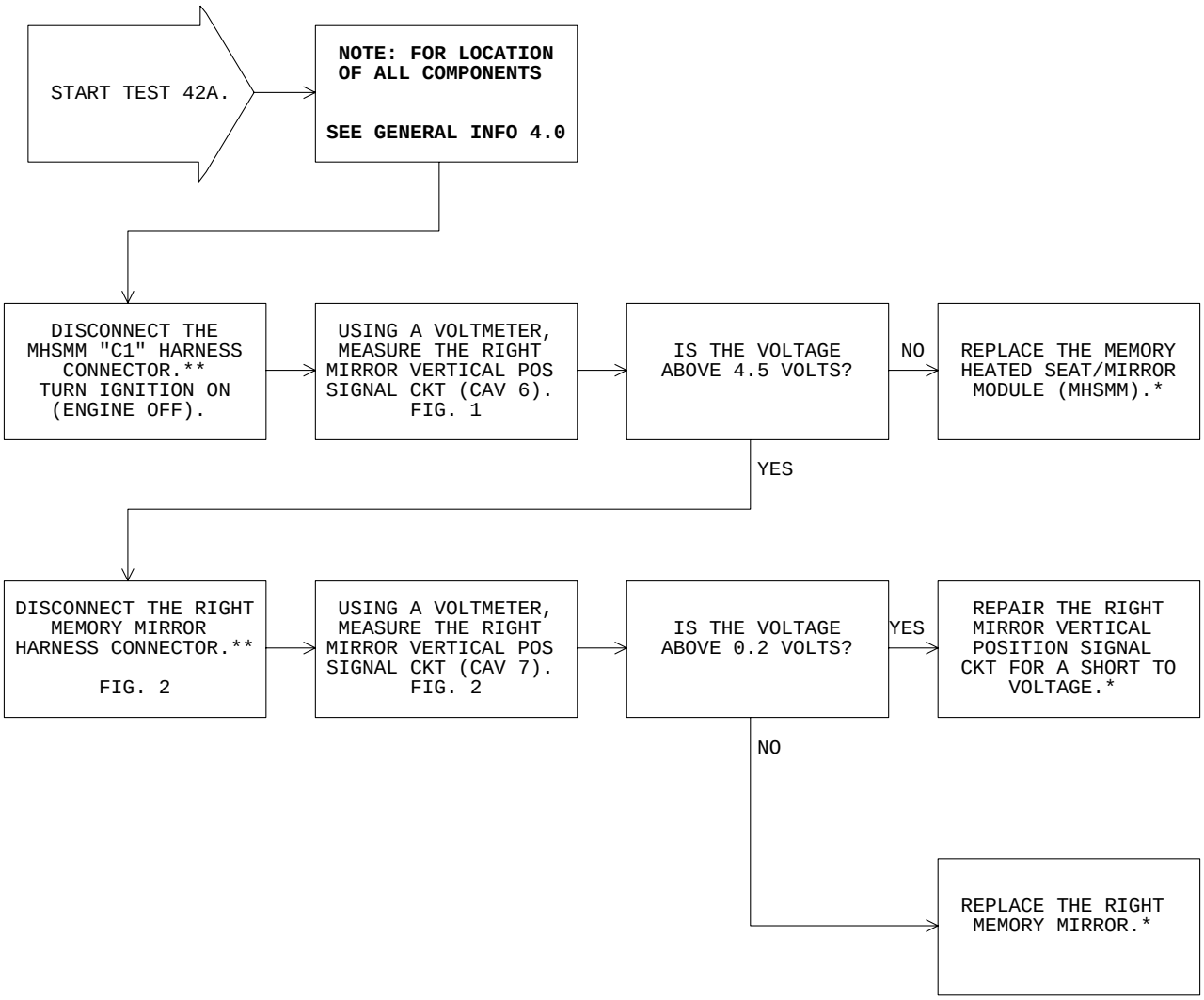

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | WT | RIGHT MIRROR COMMON DRIVER (RIGHT/DOWN) |
| 3 | LB/YL | FUSED REAR DEFOGGER RELAY OUTPUT |
| 4 | YL/BK | RIGHT MIRROR UP DRIVER |
| 5 | DB | RIGHT MIRROR LEFT DRIVER |
| 6 | DG/WT | RIGHT MIRROR SENSOR 5 VOLT SUPPLY |
| 7 | YL/RD | RIGHT MIRROR VERTICAL POSITION SENSOR |
| 9 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SENSOR |
| 10 | WT/BK | RIGHT MIRROR SENSOR GROUND |

80b4b6b9

*FIG. 2*

## TEST 42A — REPAIRING ″RIGHT MIRROR VERTICAL SENSOR OUT OF RANGE HIGH″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

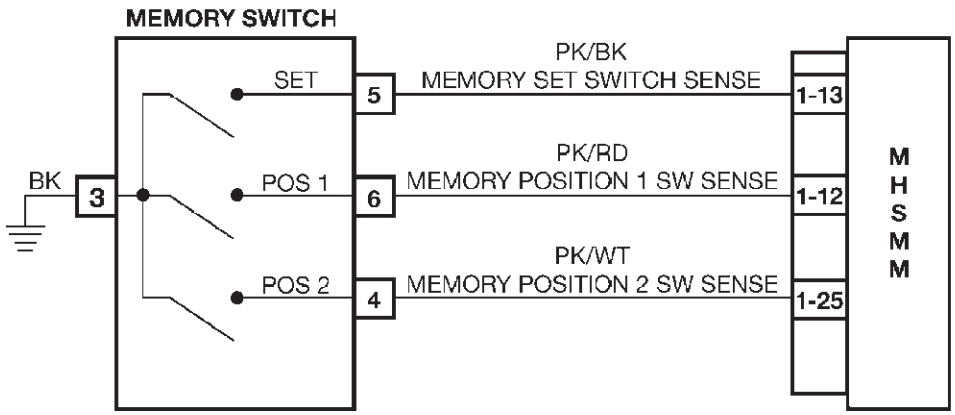



***Perform Verification TEST VER-4A.***

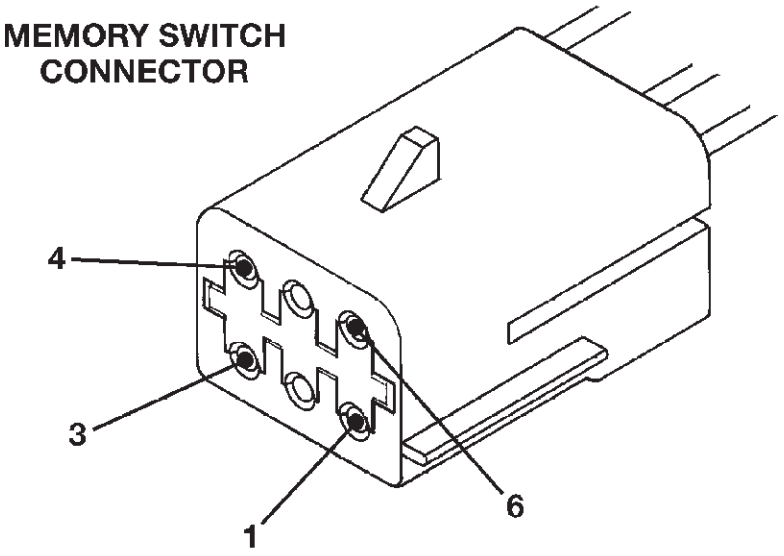
***Check connectors - Clean / repair as necessary.***

## TEST 43A REPAIRING INOPERATIVE MEMORY SWITCH

**Perform TEST 1A Before Proceeding**




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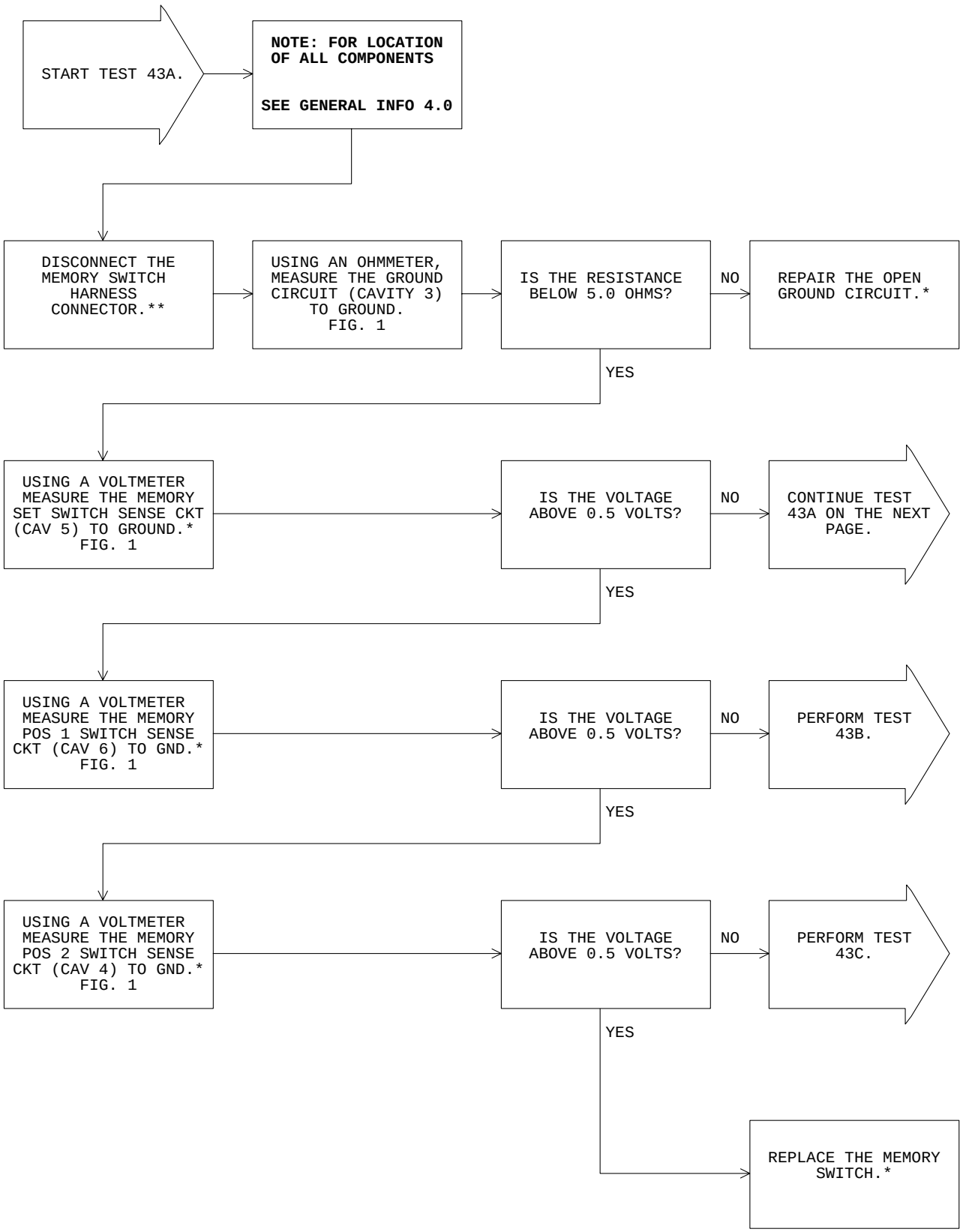

| CAV | COLOR | FUNCTION |
|---|---|---|
| 3 | BK | GROUND |
| 4 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 5 | PK/BK | MEMORY SET SWITCH SENSE |
| 6 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |

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***FIG. 1***

## TEST 43A REPAIRING INOPERATIVE MEMORY SWITCH

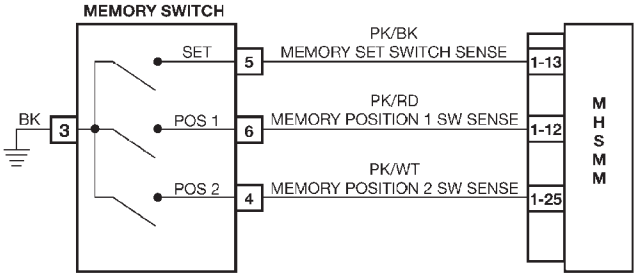
**Perform TEST 1A Before Proceeding**



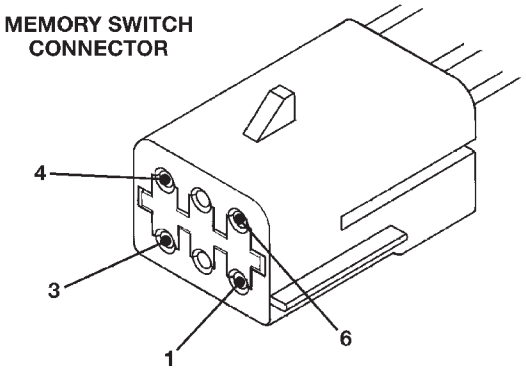

***Perform Verification TEST VER-4A.***

****Check connectors - Clean / repair as necessary.***

## TEST 43A CONTINUED - REPAIRING INOPERATIVE MEMORY SWITCH



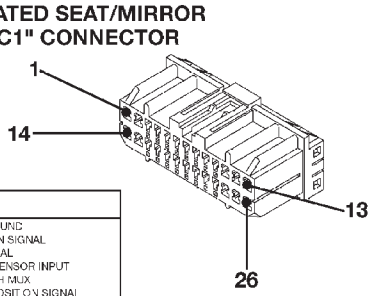

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| CAV | COLOR | FUNCTION |
|---|---|---|
| 3 | BK | GROUND |
| 4 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 5 | PK/BK | MEMORY SET SWITCH SENSE |
| 6 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |

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***FIG. 1***

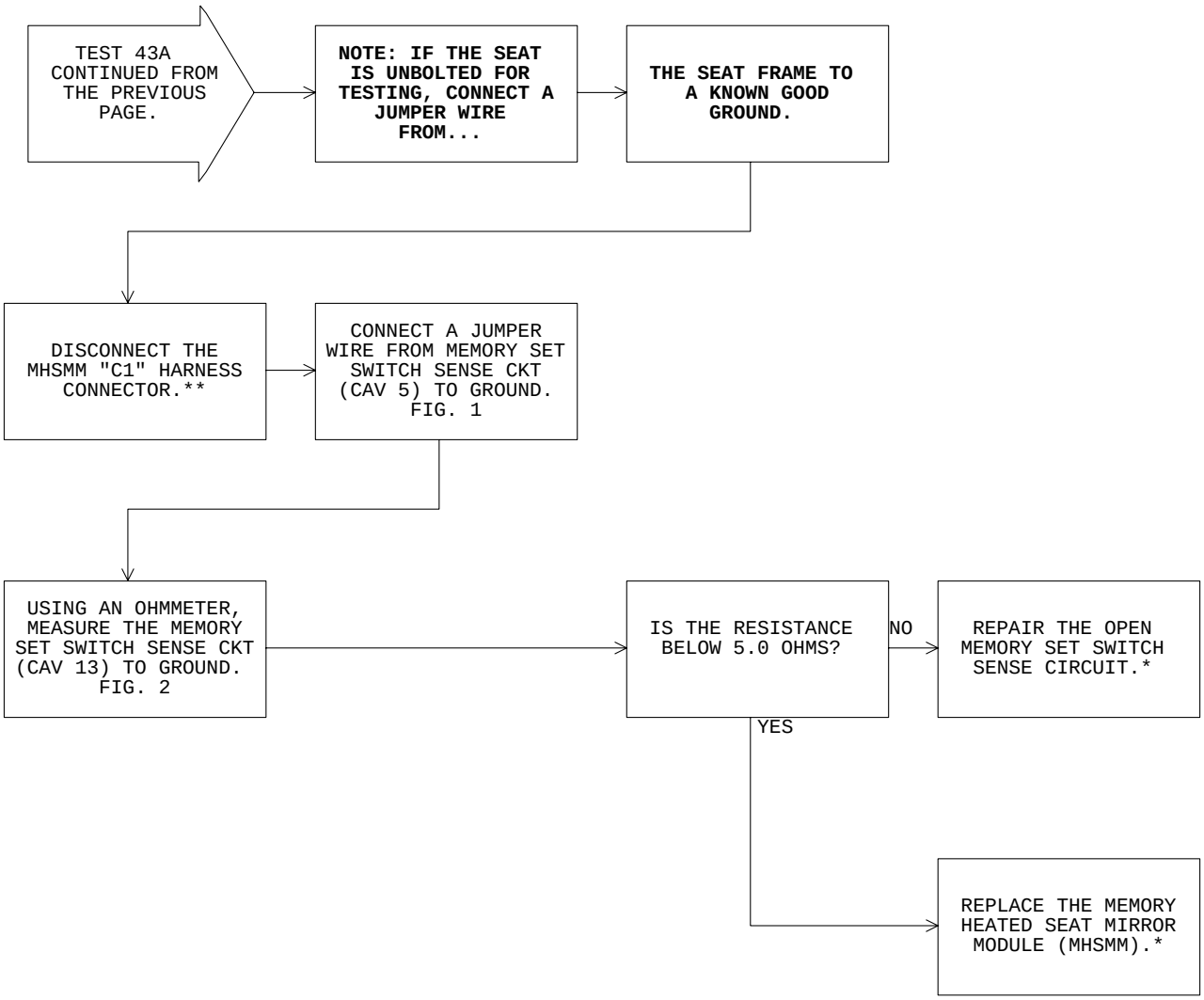



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | WT/RD | LEFT MIRROR SENSOR GROUND |
| 2 | VT/RD | SEAT HORIZONTAL POSITION SIGNAL |
| 3 | LB/RD | REAR RISER POSITION SIGNAL |
| 4 | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| 5 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |
| 6 | YL/RD | RIGHT MIRROR VERTICAL POSITION SIGNAL |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 8 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 9 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |
| 11 | GY/LB | RECLINER UP SWITCH SENSE |
| 12 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |
| 13 | PK/BK | MEMORY SET SWITCH SENSE |
| 14 | WT/BK | RIGHT MIRROR SENSOR GROUND |
| 15 | BR | FRONT RISER POSITION SIGNAL |
| 16 | LB | RECLINER POSITION SIGNAL |
| 17 | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| 18 | TN/DG | LEFT SEAT HEATER SWITCH MUX |
| 19 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SIGNAL |
| 20 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 21 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 22 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 23 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 24 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 25 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 26 | YL/VT | PCI BUS |

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***FIG. 2***

## TEST 43A CONTINUED - REPAIRING INOPERATIVE MEMORY SWITCH

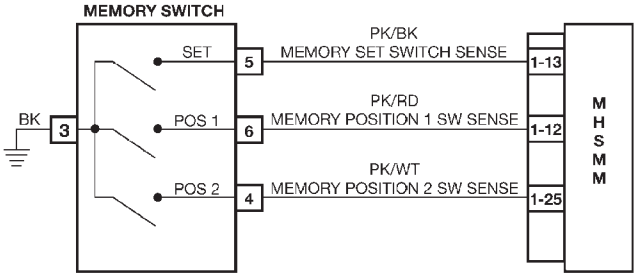



***Perform Verification TEST VER-4A.***

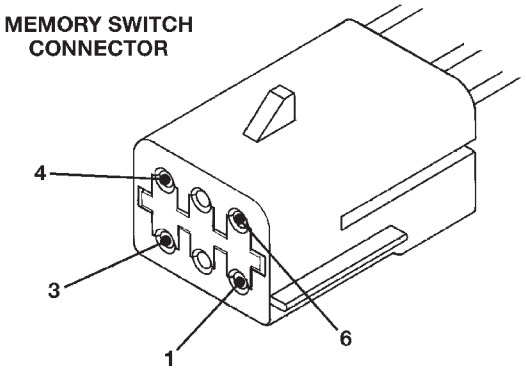
***Check connectors - Clean / repair as necessary.***

## TEST 43B REPAIRING INOPERATIVE MEMORY SWITCH

**Perform TEST 43A Before Proceeding**




80b46c02

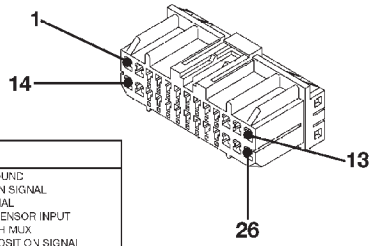



| CAV | COLOR | FUNCTION |
|---|---|---|
| 3 | BK | GROUND |
| 4 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 5 | PK/BK | MEMORY SET SWITCH SENSE |
| 6 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |

***FIG. 1***

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**MEMORY HEATED SEAT/MIRROR MODULE "C1" CONNECTOR**



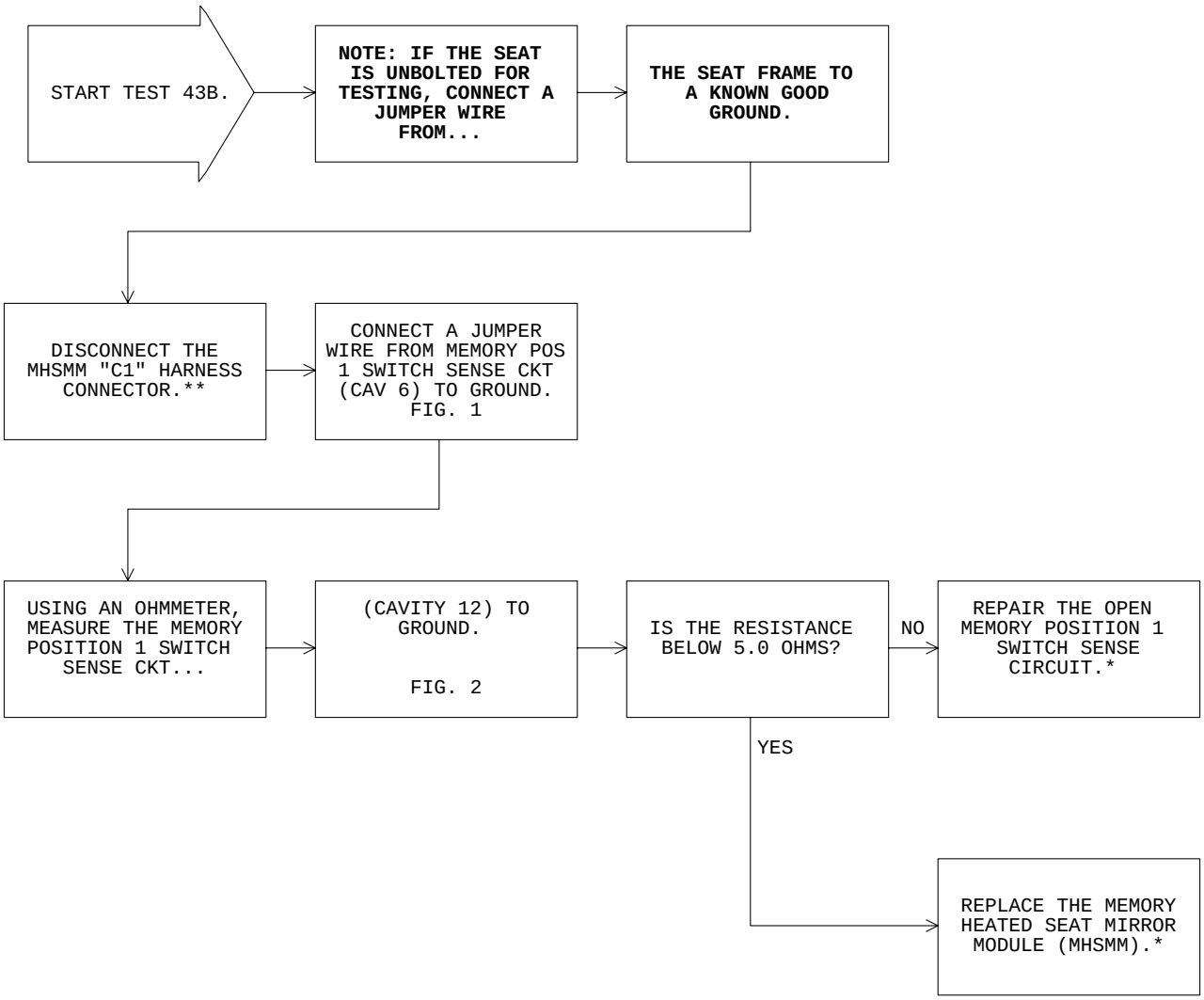

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | WT/RD | LEFT MIRROR SENSOR GROUND |
| 2 | VT/RD | SEAT HORIZONTAL POSITION SIGNAL |
| 3 | LB/RD | REAR RISER POSITION SIGNAL |
| 4 | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| 5 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |
| 6 | YL/RD | RIGHT MIRROR VERTICAL POSITION SIGNAL |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 8 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 9 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |
| 11 | GY/LB | RECLINER UP SWITCH SENSE |
| 12 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |
| 13 | PK/BK | MEMORY SET SWITCH SENSE |
| 14 | WT/BK | RIGHT MIRROR SENSOR GROUND |
| 15 | BR | FRONT RISER POSITION SIGNAL |
| 16 | LB | RECLINER POSITION SIGNAL |
| 17 | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| 18 | TN/DG | LEFT SEAT HEATER SWITCH MUX |
| 19 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SIGNAL |
| 20 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 21 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 22 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 23 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 24 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 25 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 26 | YL/VT | PCI BUS |

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***FIG. 2***

## TEST 43B REPAIRING INOPERATIVE MEMORY SWITCH

**Perform TEST 43A Before Proceeding**

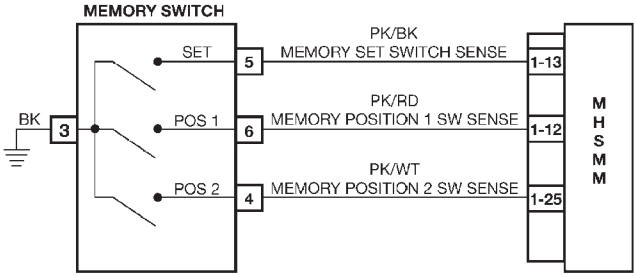



***Perform Verification TEST VER-4A.***

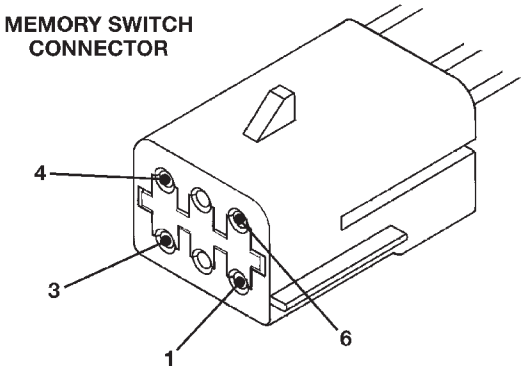
***Check connectors - Clean / repair as necessary.**

## TEST 43C REPAIRING INOPERATIVE MEMORY SWITCH

**Perform TEST 43A Before Proceeding**



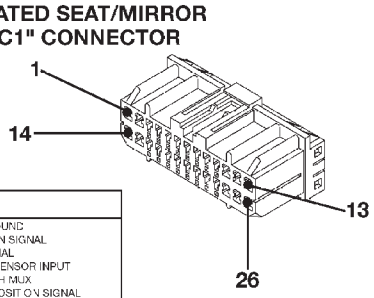

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| CAV | COLOR | FUNCTION |
|---|---|---|
| 3 | BK | GROUND |
| 4 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 5 | PK/BK | MEMORY SET SWITCH SENSE |
| 6 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |

***FIG. 1***

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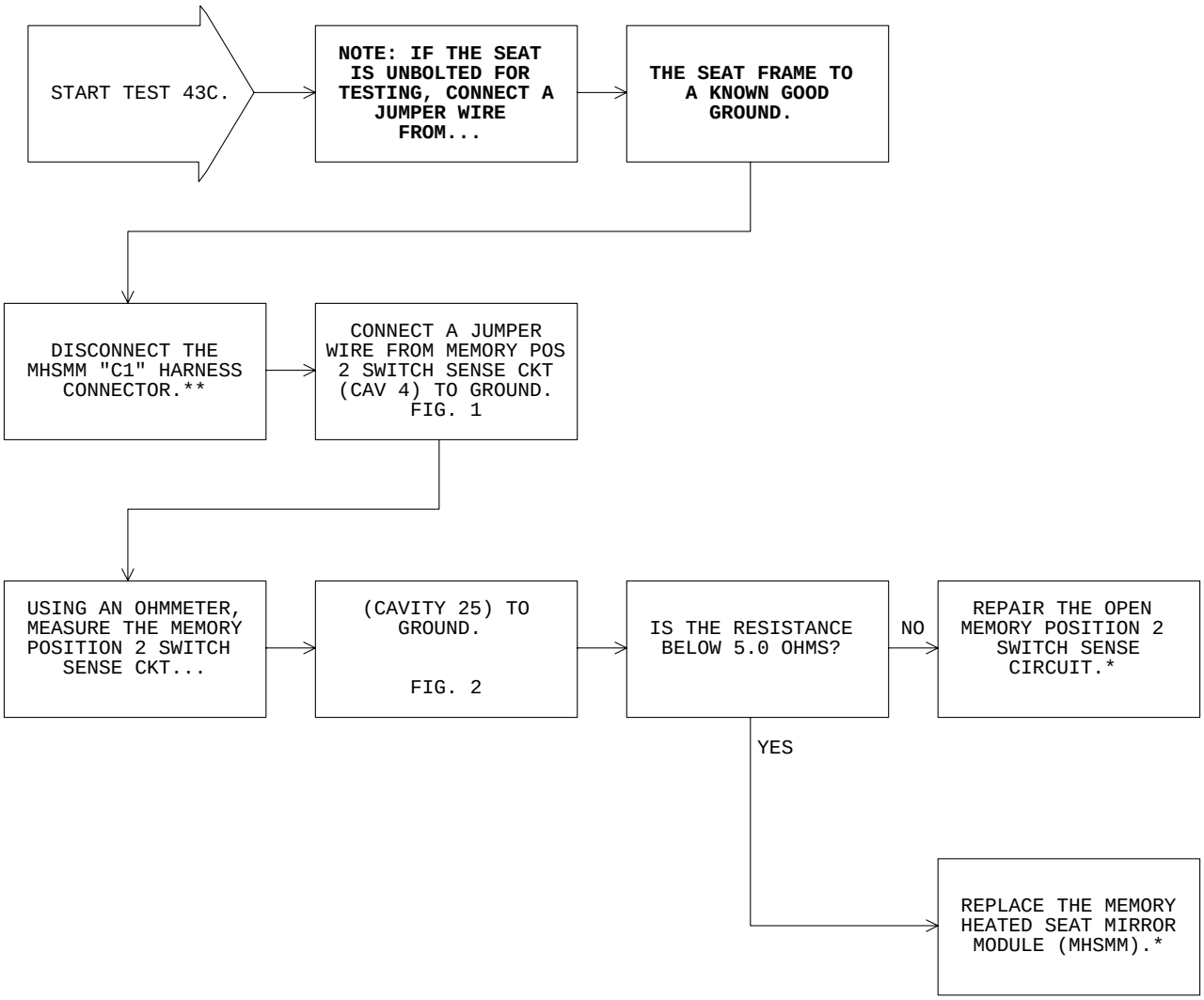

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | WT/RD | LEFT MIRROR SENSOR GROUND |
| 2 | VT/RD | SEAT HORIZONTAL POSITION SIGNAL |
| 3 | LB/RD | REAR RISER POSITION SIGNAL |
| 4 | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| 5 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |
| 6 | YL/RD | RIGHT MIRROR VERTICAL POSITION SIGNAL |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 8 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 9 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |
| 11 | GY/LB | RECLINER UP SWITCH SENSE |
| 12 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |
| 13 | PK/BK | MEMORY SET SWITCH SENSE |
| 14 | WT/BK | RIGHT MIRROR SENSOR GROUND |
| 15 | BR | FRONT RISER POSITION SIGNAL |
| 16 | LB | RECLINER POSITION SIGNAL |
| 17 | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| 18 | TN/DG | LEFT SEAT HEATER SWITCH MUX |
| 19 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SIGNAL |
| 20 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 21 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 22 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 23 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 24 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 25 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 26 | YL/VT | PCI BUS |

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***FIG. 2***

## TEST 43C REPAIRING INOPERATIVE MEMORY SWITCH

**Perform TEST 43A Before Proceeding**

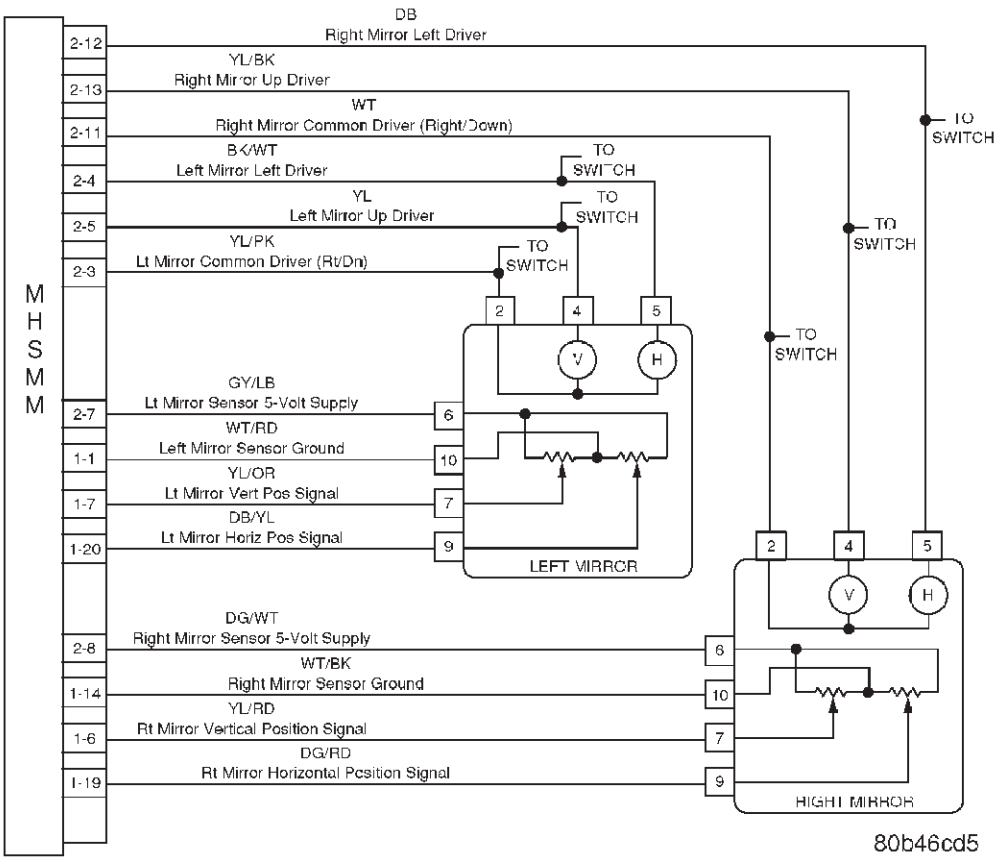



***Perform Verification TEST VER-4A.***

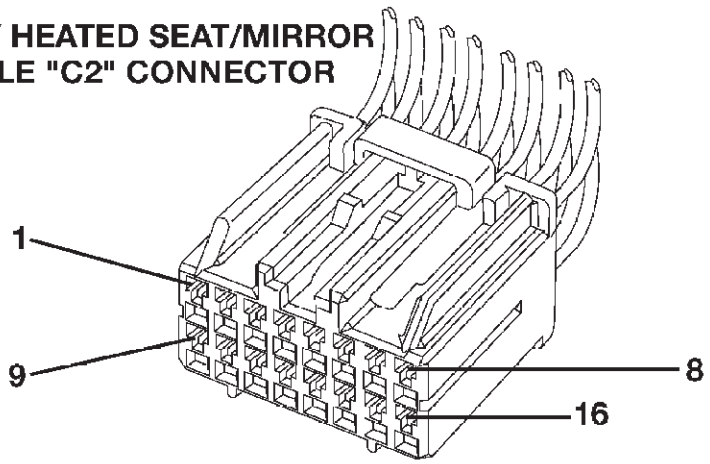
***Check connectors - Clean / repair as necessary.**

## TEST 44A REPAIRING LEFT MIRROR INOPERATIVE FROM MEMORY

**Perform TEST 1A Before Proceeding**




## MEMORY HEATED SEAT/MIRROR MODULE "C2" CONNECTOR



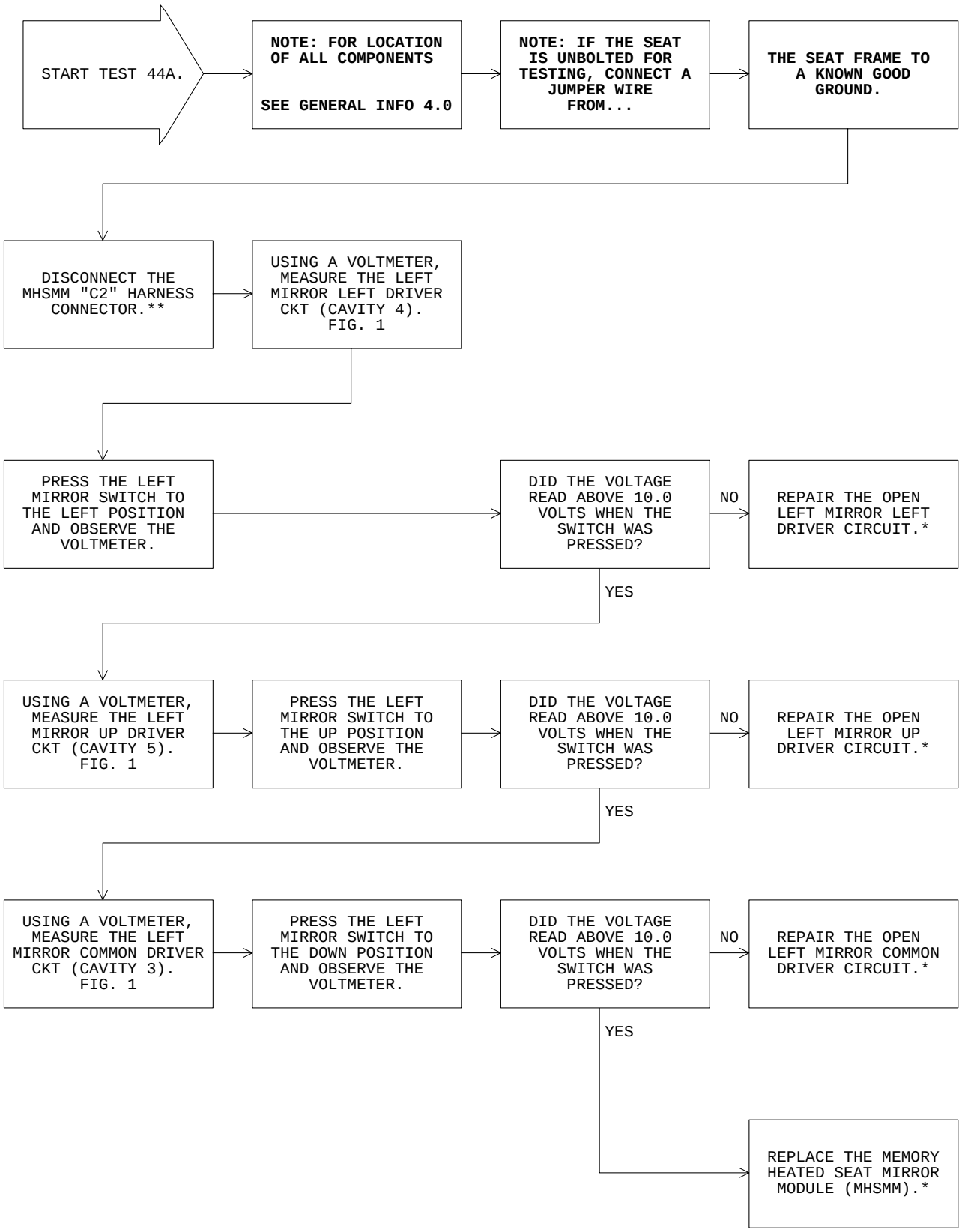

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/WT | LEFT SEAT HIGH HEAT LED DRIVER |
| 2 | VT/BK | RIGHT SEAT HIGH HEAT LED DRIVER |
| 3 | YL/PK | LEFT MIRROR COMMON DRIVER (RIGHT/DOWN) |
| 4 | BK/WT | LEFT MIRROR LEFT DRIVER |
| 5 | YL | LEFT MIRROR UP DRIVER |
| 6 | BR/WT | SEAT SENSOR 5 VOLT SUPPLY |
| 7 | GY/LB | LEFT MIRROR SENSOR 5 VOLT SUPPLY |
| 8 | DG/WT | RIGHT MIRROR SENSOR 5 VOLT SUPPLY |
| 9 | VT/DG | LEFT SEAT LOW HEAT LED DRIVER |
| 10 | VT/LG | RIGHT SEAT LOW HEAT LED DRIVER |
| 11 | WT | RIGHT MIRROR COMMON DRIVER (RIGHT/DOWN) |
| 12 | DB | RIGHT MIRROR LEFT DRIVER |
| 13 | YL/BK | RIGHT MIRROR UP DRIVER |
| 14 | BK/LG | RIGHT SEAT TEMPERATURE 5 VOLT SUPPLY |
| 15 | BK/DG | LEFT SEAT TEMPERATURE 5 VOLT SUPPLY |
| 16 | BR/RD | SEAT POSITION SENSOR GROUND |

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***FIG. 1***

## TEST 44A REPAIRING LEFT MIRROR INOPERATIVE FROM MEMORY

**Perform TEST 1A Before Proceeding**

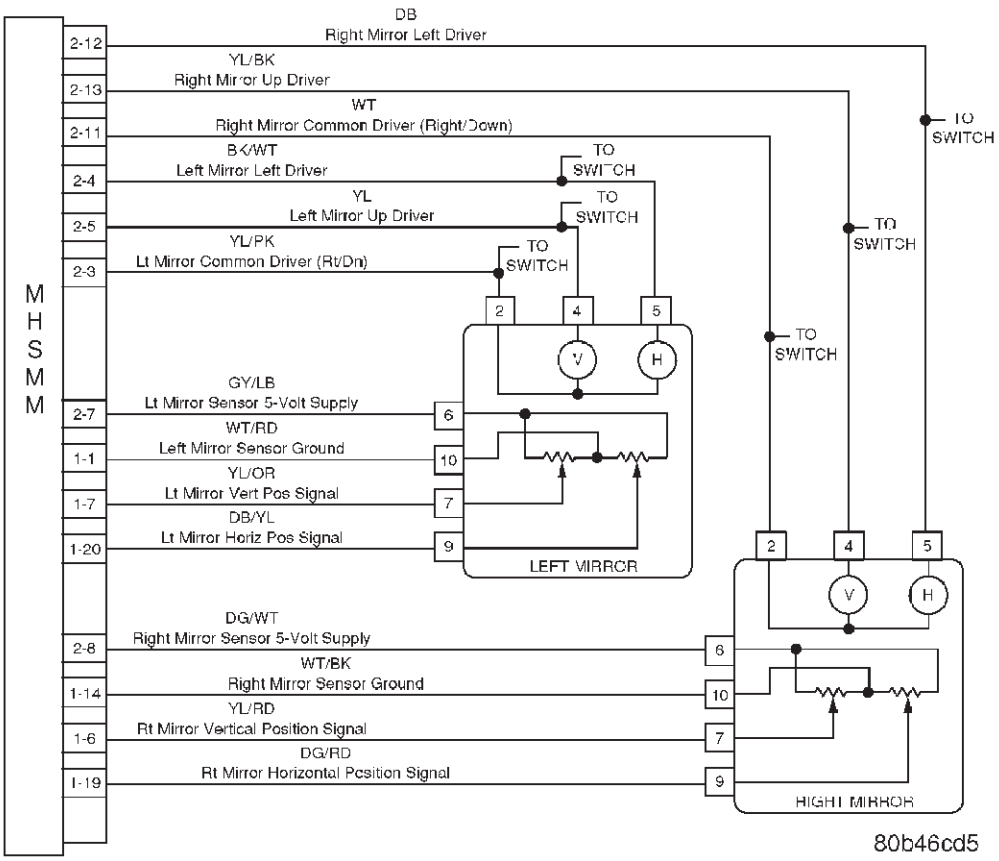



***Perform Verification TEST VER-4A.**

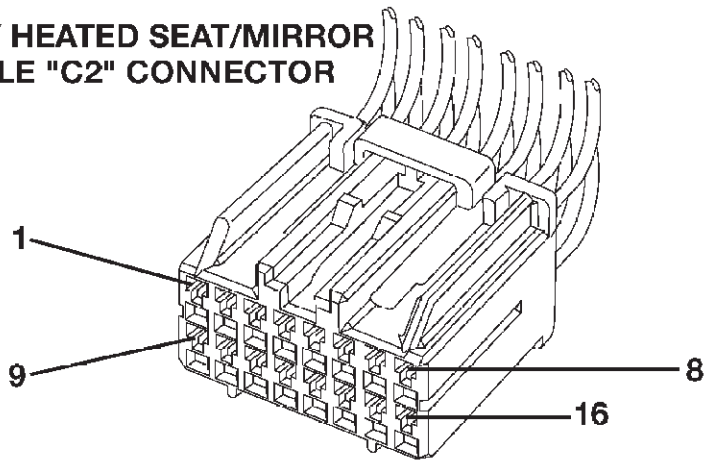
****Check connectors - Clean / repair as necessary.**

## TEST 45A — REPAIRING RIGHT MIRROR INOPERATIVE FROM MEMORY

**Perform TEST 1A Before Proceeding**




## MEMORY HEATED SEAT/MIRROR MODULE "C2" CONNECTOR



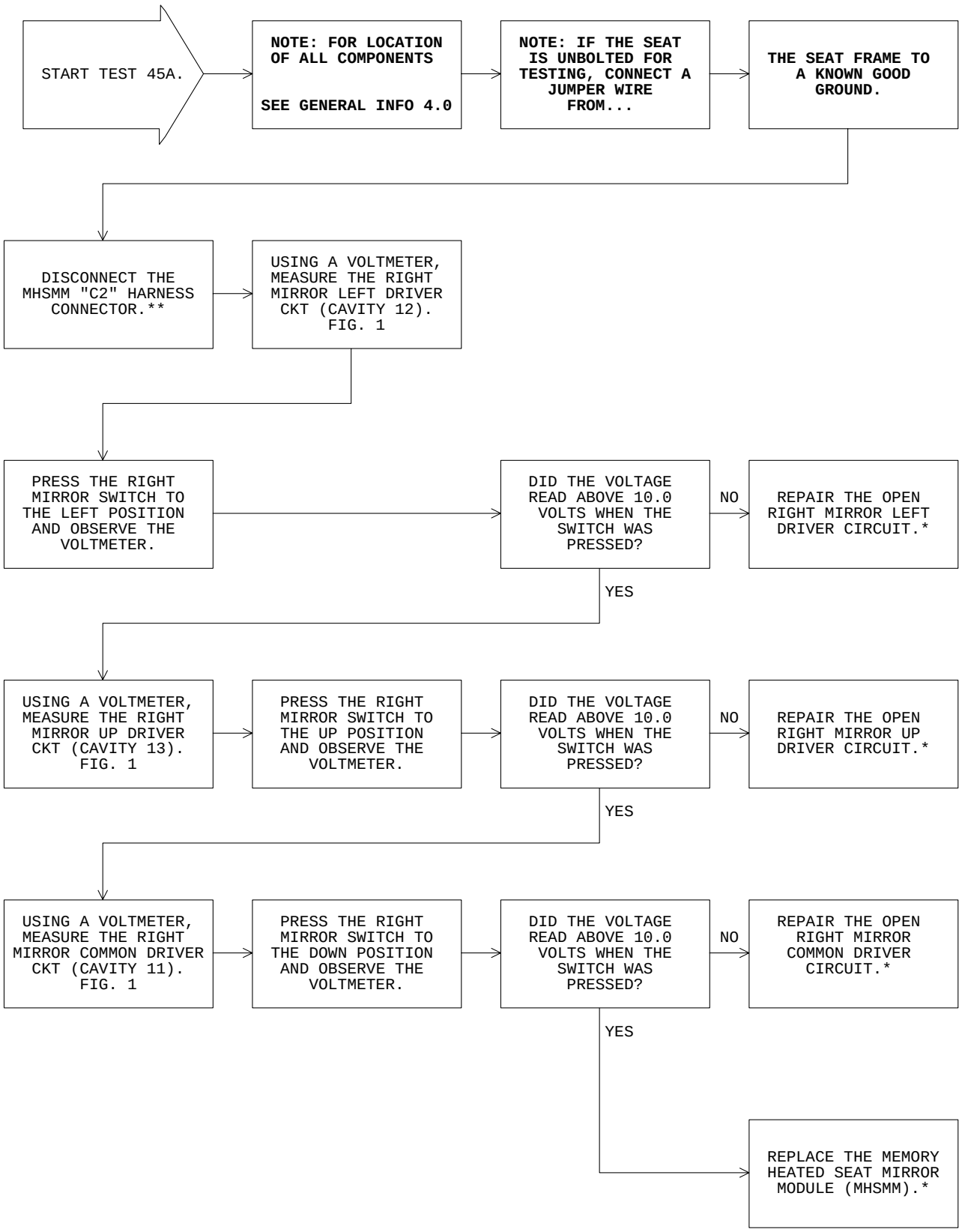

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/WT | LEFT SEAT HIGH HEAT LED DRIVER |
| 2 | VT/BK | RIGHT SEAT HIGH HEAT LED DRIVER |
| 3 | YL/PK | LEFT MIRROR COMMON DRIVER (RIGHT/DOWN) |
| 4 | BK/WT | LEFT MIRROR LEFT DRIVER |
| 5 | YL | LEFT MIRROR UP DRIVER |
| 6 | BR/WT | SEAT SENSOR 5 VOLT SUPPLY |
| 7 | GY/LB | LEFT MIRROR SENSOR 5 VOLT SUPPLY |
| 8 | DG/WT | RIGHT MIRROR SENSOR 5 VOLT SUPPLY |
| 9 | VT/DG | LEFT SEAT LOW HEAT LED DRIVER |
| 10 | VT/LG | RIGHT SEAT LOW HEAT LED DRIVER |
| 11 | WT | RIGHT MIRROR COMMON DRIVER (RIGHT/DOWN) |
| 12 | DB | RIGHT MIRROR LEFT DRIVER |
| 13 | YL/BK | RIGHT MIRROR UP DRIVER |
| 14 | BK/LG | RIGHT SEAT TEMPERATURE 5 VOLT SUPPLY |
| 15 | BK/DG | LEFT SEAT TEMPERATURE 5 VOLT SUPPLY |
| 16 | BR/RD | SEAT POSITION SENSOR GROUND |

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***FIG. 1***

## TEST 45A REPAIRING RIGHT MIRROR INOPERATIVE FROM MEMORY

**Perform TEST 1A Before Proceeding**

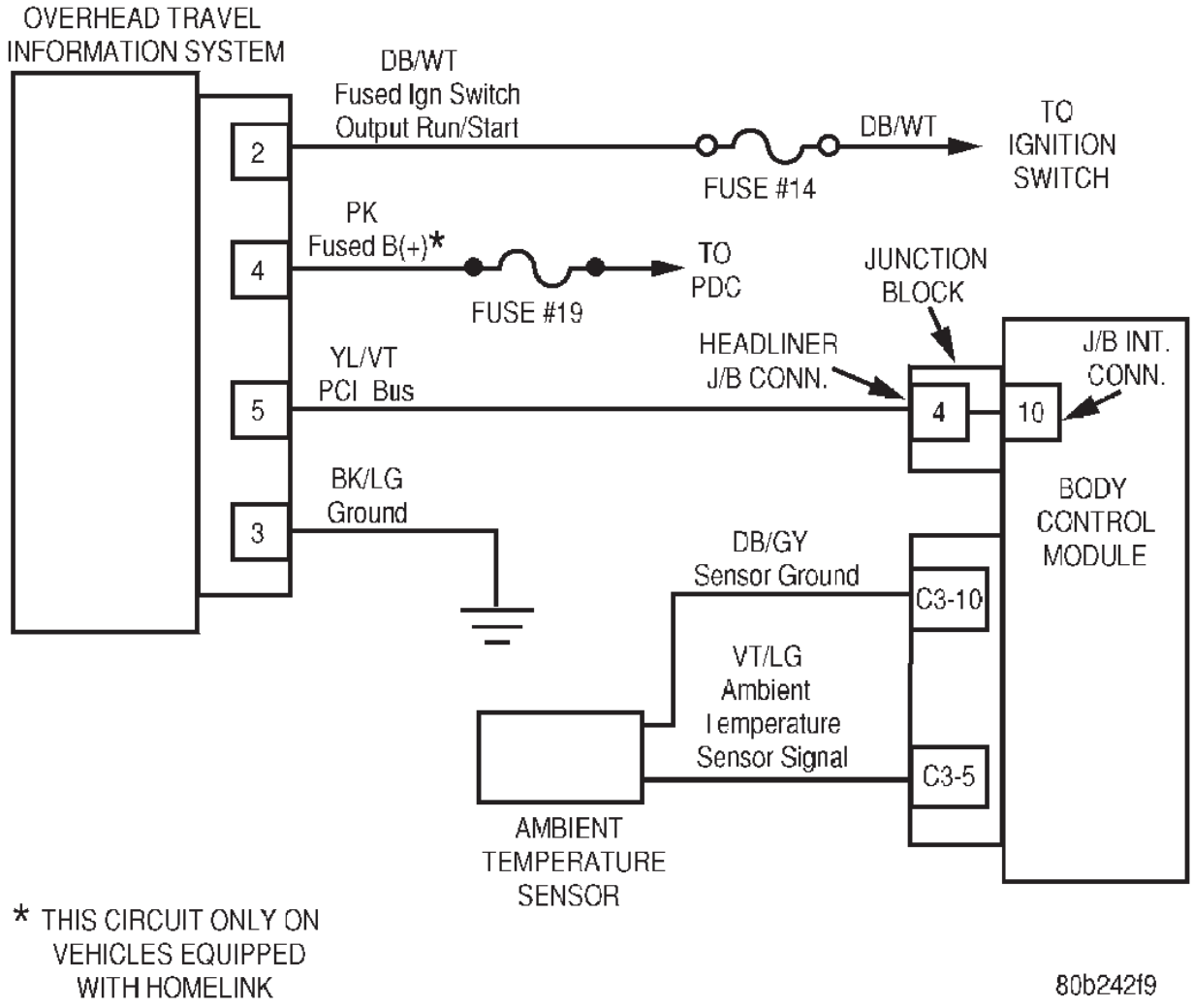



***Perform Verification TEST VER-4A.**

****Check connectors - Clean / repair as necessary.**

**TEST 1A** **IDENTIFYING OVERHEAD TRAVEL INFORMATION SYSTEM PROBLEM**

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**



## TEST 1A IDENTIFYING OVERHEAD TRAVEL INFORMATION SYSTEM PROBLEM

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**

Verify the failure or customer's complaint and make sure the vehicle is experiencing the problem at this time.

1. With the DRB, select ''Body'', then select ''OTIS''.

   A. If the DRB shows ''No Response'', or the OTIS screen is blank; . . . . . .perform ''Vehicle Communication'' TEST 1A.

   B. If any other type of communication problem does exist; . . . . . .perform ''Vehicle Communication'' TEST 1A.

2. With the DRB, select ''Auto Self Test'' and observe the OTIS screen.

   A. If any of the segments fail to light up . . . . . .replace the OTIS Module.

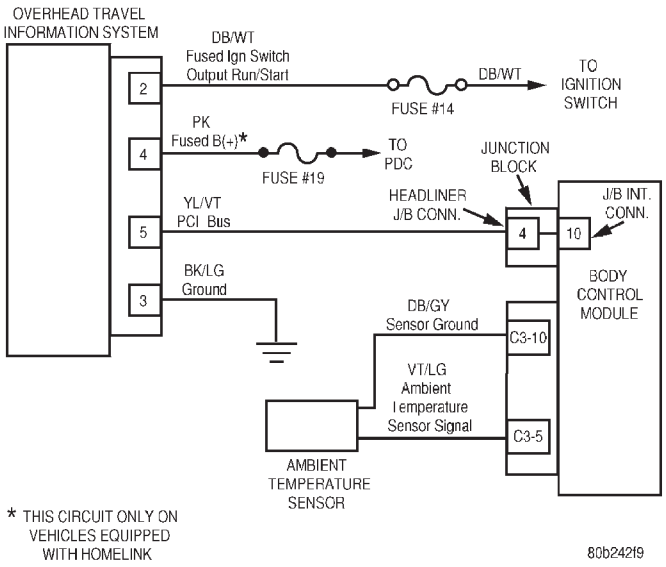
   B. If the OTIS screen show ''FAIL''. . . . . .replace the OTIS Module.

   C. If the OTIS screen does not show any communication (numbered values); . . . . . .replace the BCM.

| PROBLEM WITH | PERFORM |
|---|---|
| OTIS Outside Temperature Shows ''SC'' or shows ''OC'' | TEST 2A |
| Ambient Temperature Sensor Failure | TEST 2A |
| Incorrect Ambient Temperature Reading | TEST 3A |
| OTIS Mileage and Distance Functions | TEST 4A |
| OTIS Switches | TEST 5A |
| ''Distance to Empty'', inoperative or wrong (MPG calculations are only accurate to +/- 10% | ''Instrument Cluster'' TEST 1A |
| ''Elapsed Time'' inoperative or wrong | Replace BCM |
| ''Compass'' | see Section 9.0 |

## TEST 2A REPAIRING AMBIENT TEMPERATURE SENSOR FAILURE

**Perform TEST 1A Before Proceeding**




**Name of code:** Ambient Temperature Sensor Failure

**When monitored:** With ignition on

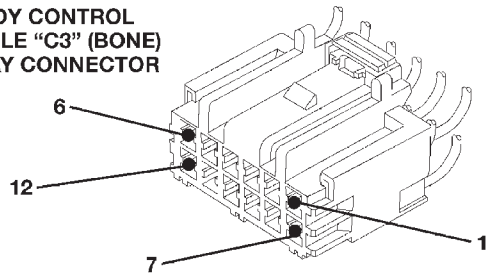
**Set condition:** BCM senses an abnormally high or low voltage on its input

**Theory of operation:** The ambient temperature sensor is a thermistor for which the BCM provides a 5V pull-up. Under normal operating conditions (-40 to 85° C) this voltage should be between 0.313 V and 4.88 V.

**Probable causes:**
- Wiring open circuit
- Wiring short to ground
- Wiring short to battery
- Failed ambient temp sensor
- Failed BCM

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**BODY CONTROL MODULE "C3" (BONE) 12-WAY CONNECTOR**



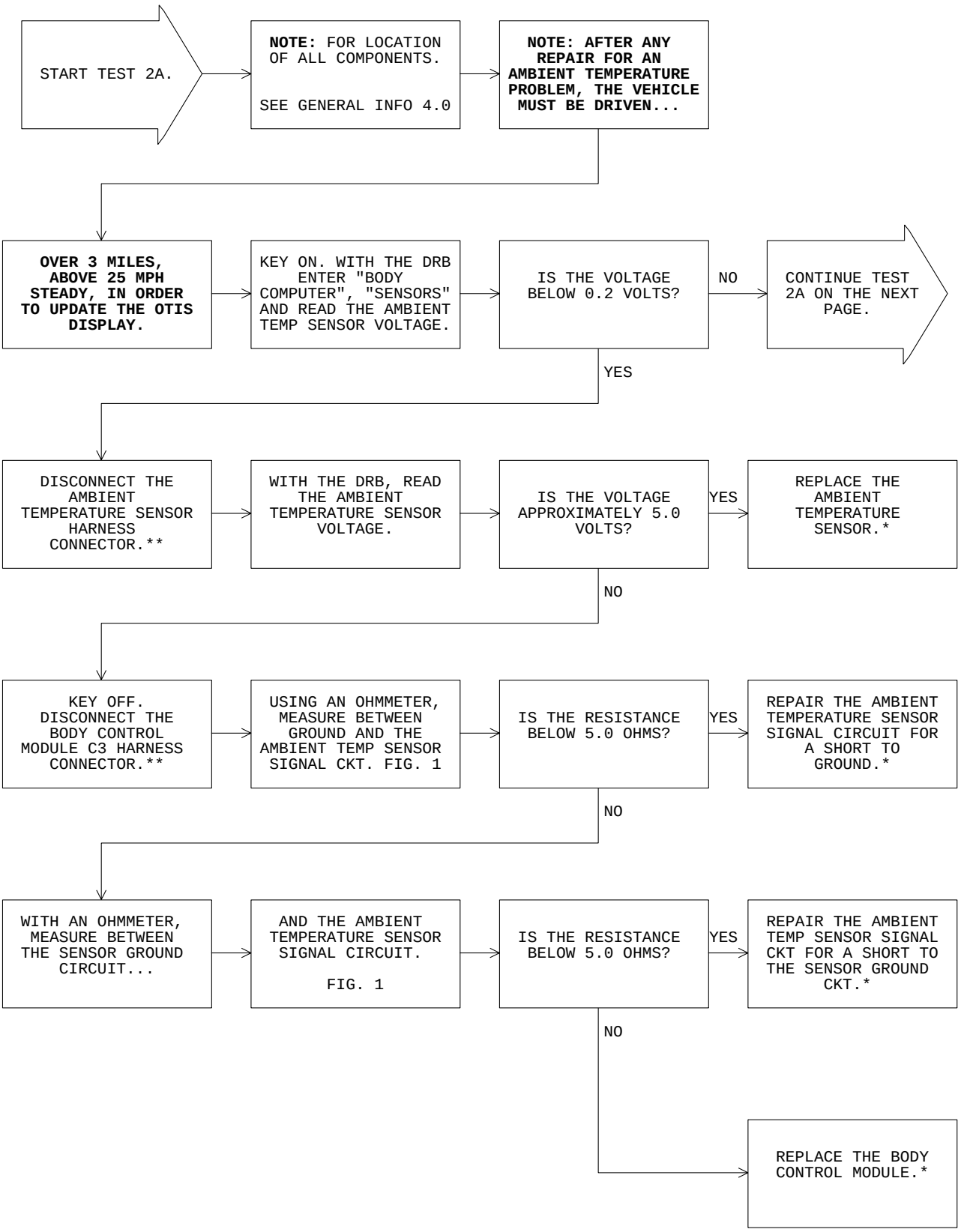

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | YL/VT | PCI BUS (PCM) |
| 2 | YL/VT | PCI BUS (ABS) |
| 3 | TN/RD | WIPER PARK SWITCH SENSE |
| 4 | RD/VT | WIPER ON OFF RELAY CONTROL |
| 5 | VT/LG | AMBIENT TEMPERATURE SENSOR SIGNAL |
| 7 | YL/VT | PCI BUS (TCM) |
| 9 | BR/YL | HEADLAMP WASHER RELAY CONTROL |
| 10 | DB/GY | SENSOR GROUND |
| 12 | VT | WIPER HIGH LOW RELAY CONTROL |

80b6f082

***FIG. 1***

## TEST 2A — REPAIRING AMBIENT TEMPERATURE SENSOR FAILURE

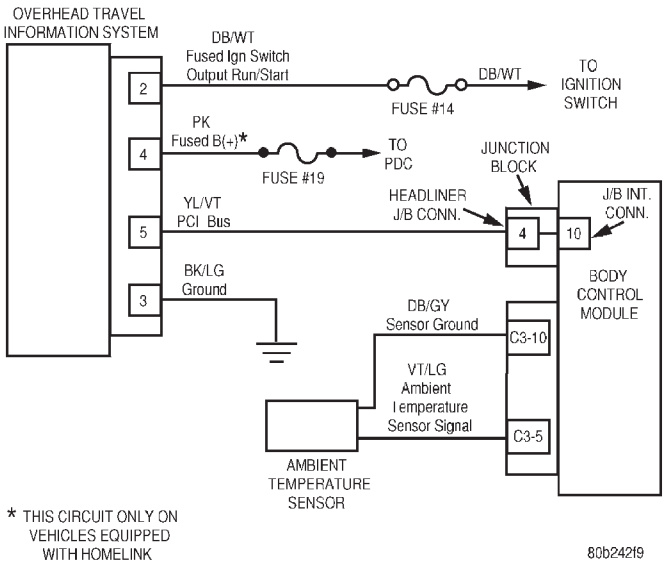
**Perform TEST 1A Before Proceeding**



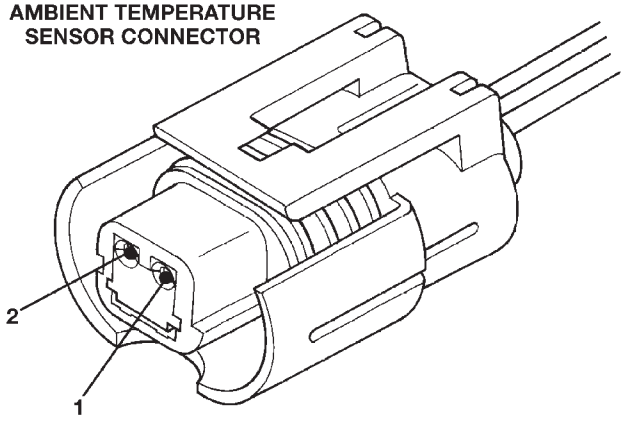

***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

## TEST 2A CONTINUED - REPAIRING AMBIENT TEMPERATURE SENSOR FAILURE




**AMBIENT TEMPERATURE SENSOR CONNECTOR**

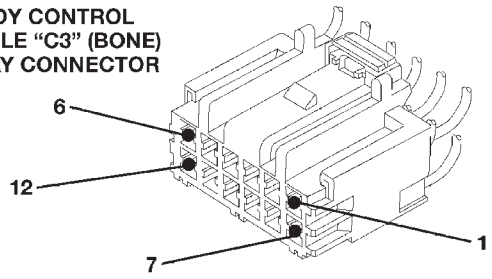



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/LG | AMBIENT TEMP SENSOR SIGNAL |
| 2 | DB/GY | SENSOR GROUND |

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***FIG. 1***

**BODY CONTROL MODULE "C3" (BONE) 12-WAY CONNECTOR**

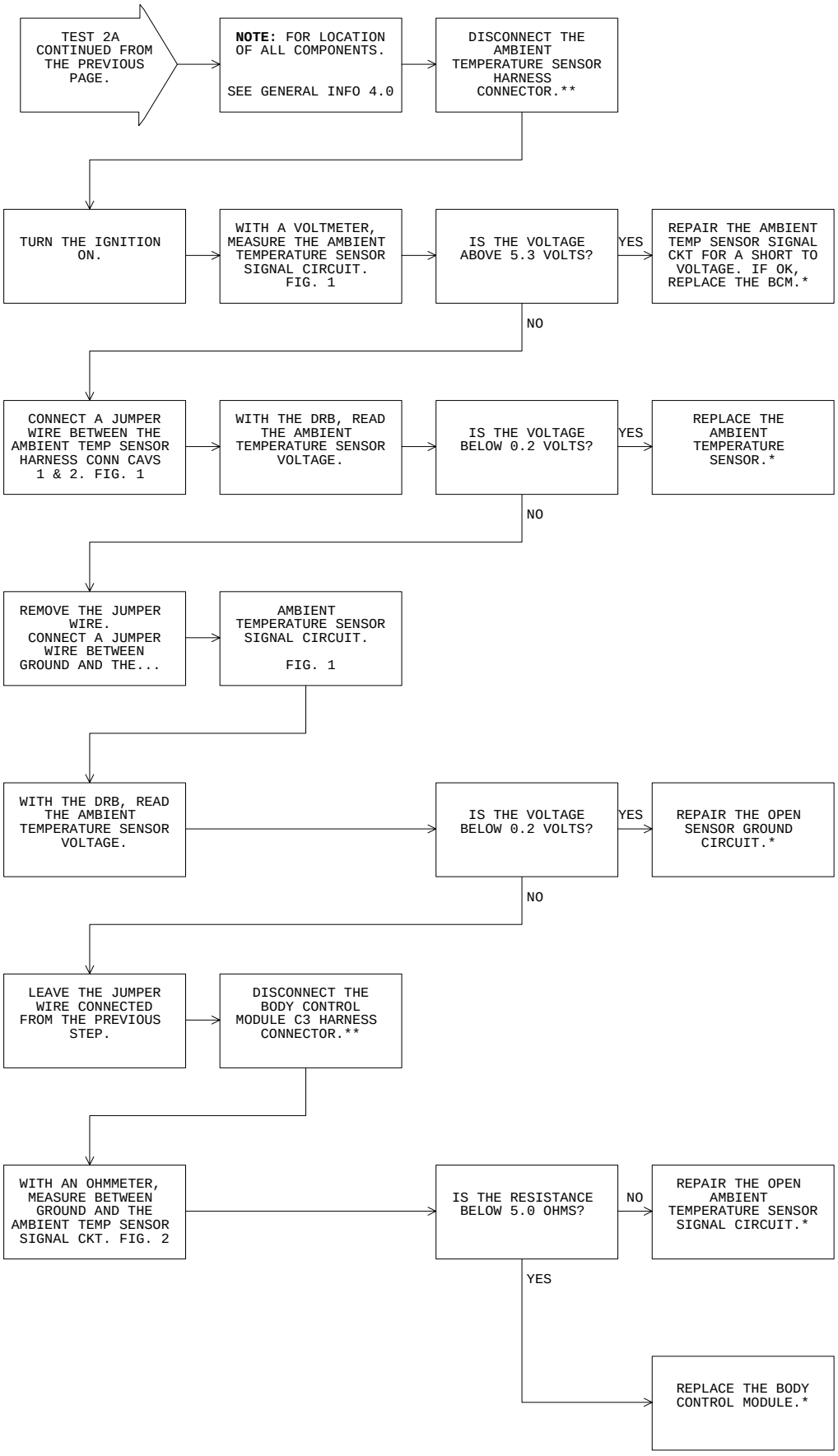



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | YL/VT | PCI BUS (PCM) |
| 2 | YL/VT | PCI BUS (ABS) |
| 3 | TN/RD | WIPER PARK SWITCH SENSE |
| 4 | RD/VT | WIPER ON OFF RELAY CONTROL |
| 5 | VT/LG | AMBIENT TEMPERATURE SENSOR SIGNAL |
| 7 | YL/VT | PCI BUS (TCM) |
| 9 | BR/YL | HEADLAMP WASHER RELAY CONTROL |
| 10 | DB/GY | SENSOR GROUND |
| 12 | VT | WIPER HIGH LOW RELAY CONTROL |

80b6f082

***FIG. 2***

## TEST 2A CONTINUED - REPAIRING AMBIENT TEMPERATURE SENSOR FAILURE

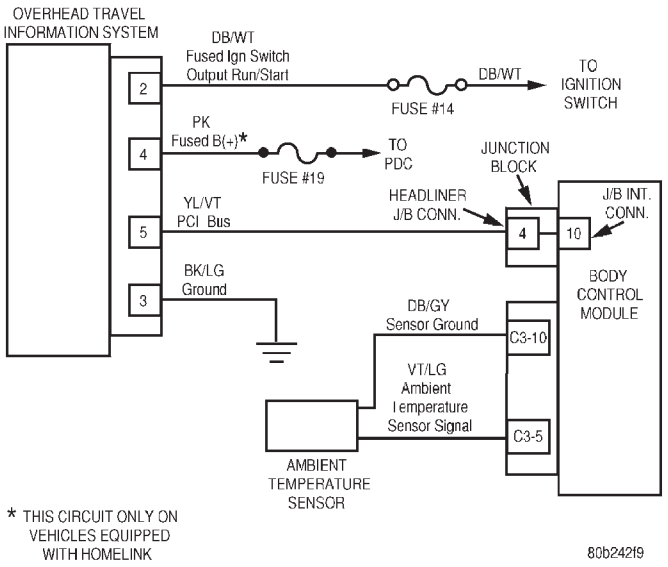



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

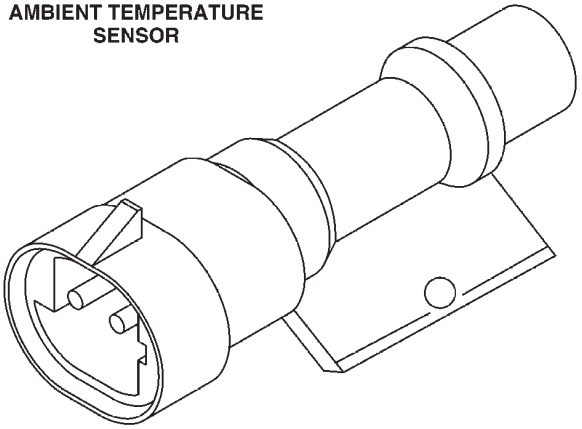
## TEST 3A REPAIRING INCORRECT AMBIENT TEMPERATURE READING

**Perform TEST 1A Before Proceeding**




**TYPICAL**

**AMBIENT TEMPERATURE SENSOR**



80a0754a

*FIG. 1*

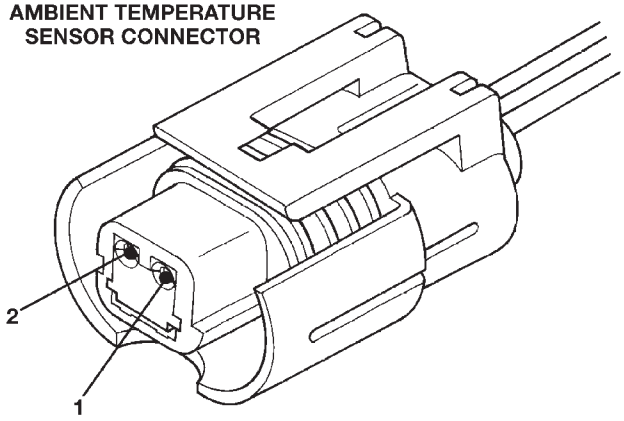
### AMBIENT TEMP SENSOR VALUES TEMPERATURE RESISTANCE (K-OHMS)

| °C | °F | MIN | MAX |
|---|---|---|---|
| 0 | 32 | 29.3 | 36 |
| 10 | 50 | 18 | 22 |
| 20 | 68 | 11.4 | 13.6 |
| 25 | 77 | 9.1 | 10.8 |
| 30 | 86 | 7.4 | 8.7 |
| 40 | 104 | 4.9 | 5.7 |
| 50 | 122 | 3.3 | 3.8 |

2880102

*FIG. 2*

**AMBIENT TEMPERATURE SENSOR CONNECTOR**



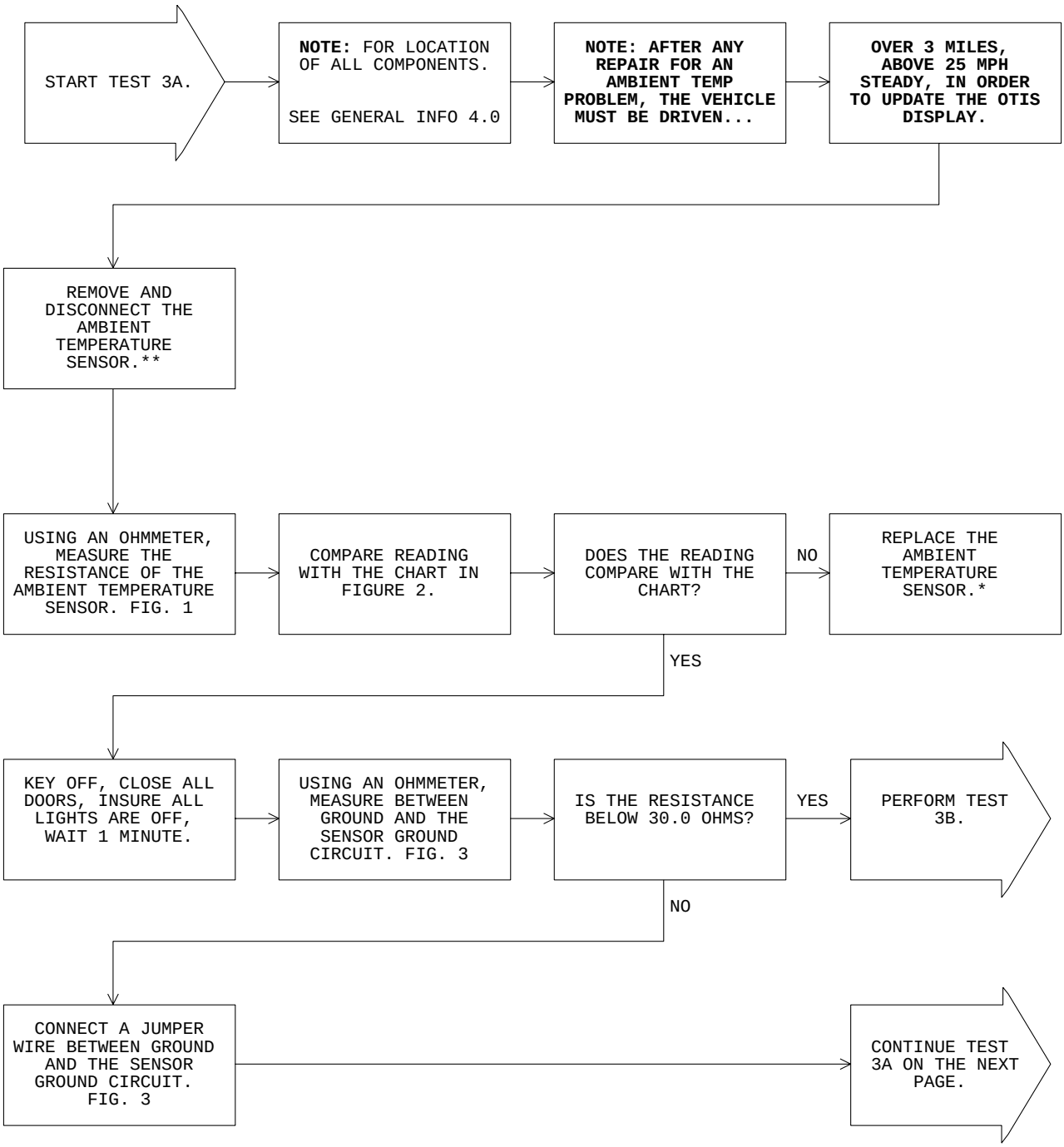

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/LG | AMBIENT TEMP SENSOR SIGNAL |
| 2 | DB/GY | SENSOR GROUND |

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*FIG. 3*

## TEST 3A — REPAIRING INCORRECT AMBIENT TEMPERATURE READING

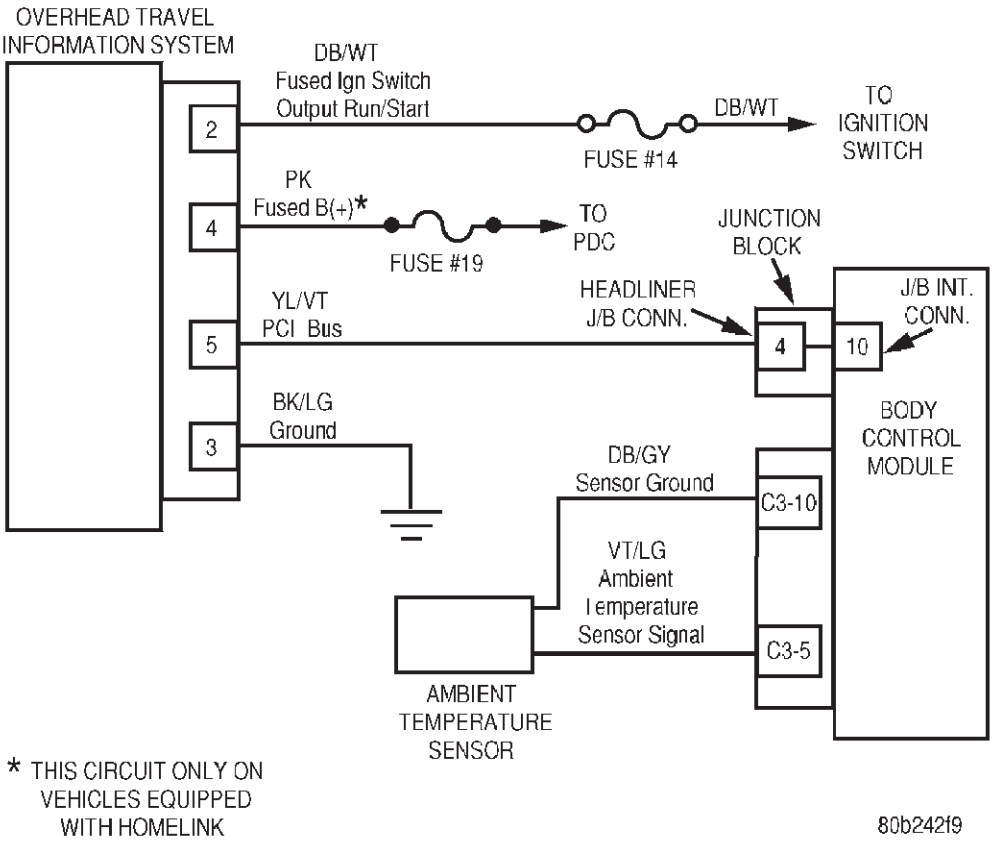
**Perform TEST 1A Before Proceeding**



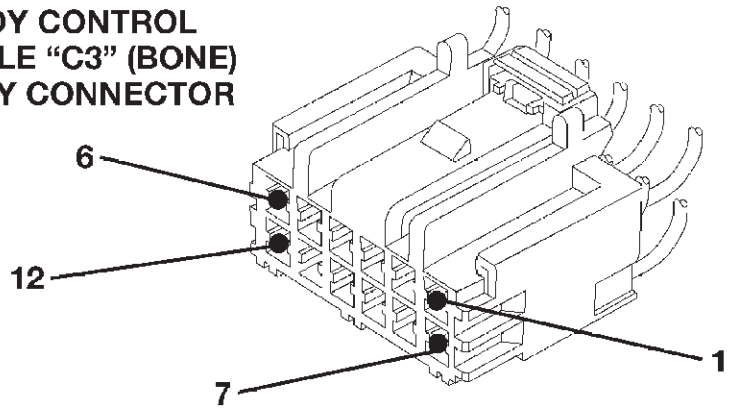

***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

**TEST 3A** CONTINUED - REPAIRING INCORRECT AMBIENT TEMPERATURE READING




**BODY CONTROL MODULE "C3" (BONE) 12-WAY CONNECTOR**

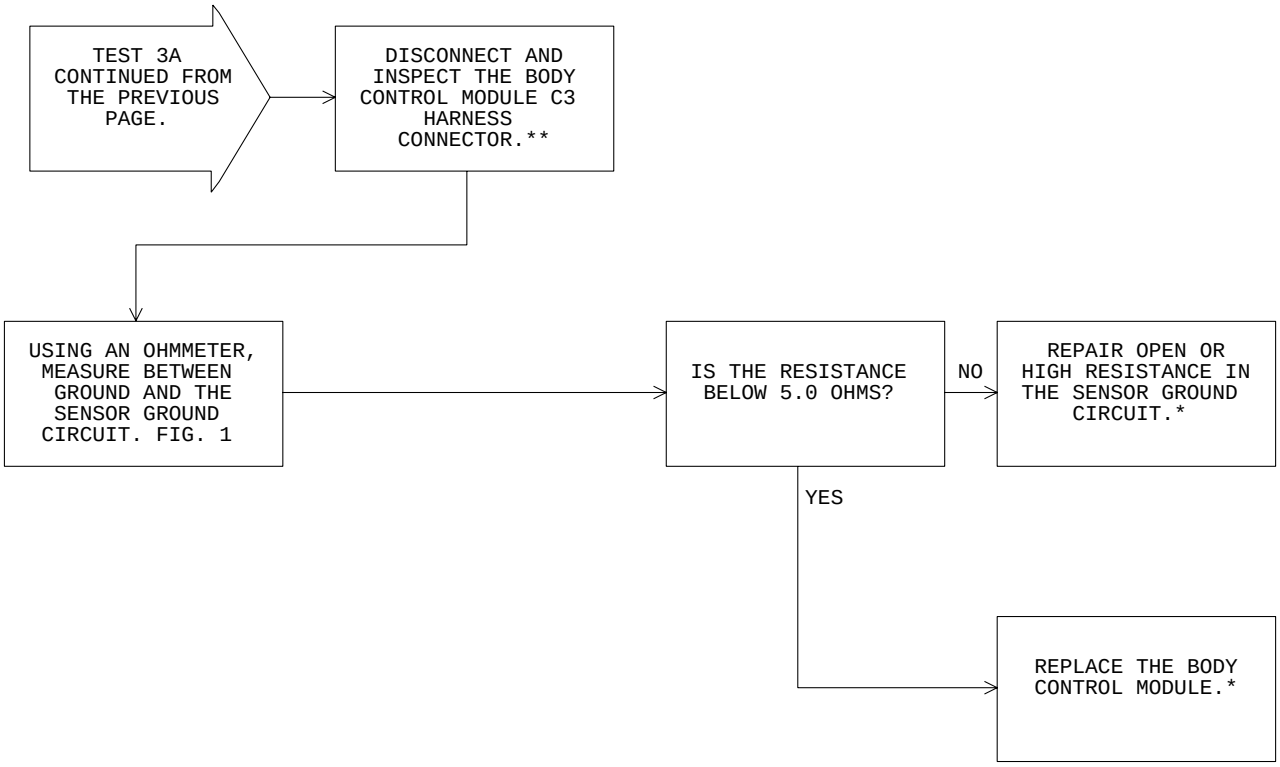



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | YL/VT | PCI BUS (PCM) |
| 2 | YL/VT | PCI BUS (ABS) |
| 3 | TN/RD | WIPER PARK SWITCH SENSE |
| 4 | RD/VT | WIPER ON OFF RELAY CONTROL |
| 5 | VT/LG | AMBIENT TEMPERATURE SENSOR SIGNAL |
| 7 | YL/VT | PCI BUS (TCM) |
| 9 | BR/YL | HEADLAMP WASHER RELAY CONTROL |
| 10 | DB/GY | SENSOR GROUND |
| 12 | VT | WIPER HIGH LOW RELAY CONTROL |

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*FIG. 1*

## TEST 3A CONTINUED - REPAIRING INCORRECT AMBIENT TEMPERATURE READING

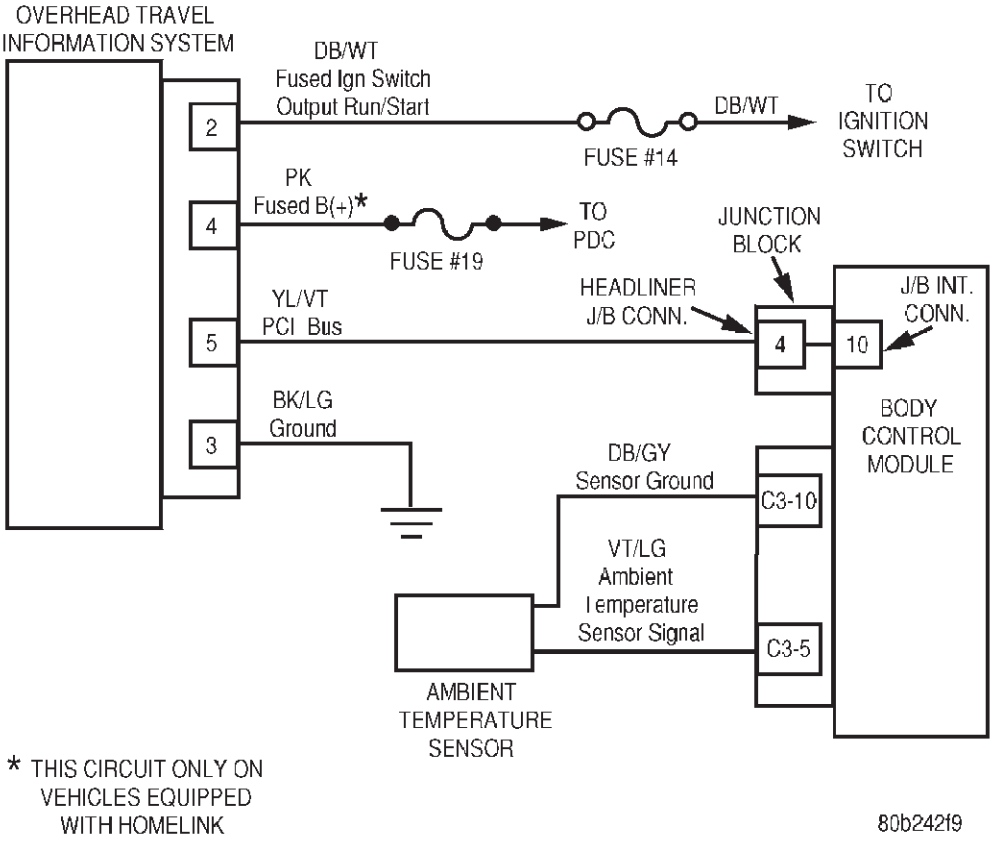



***Perform Verification TEST VER-2A.**

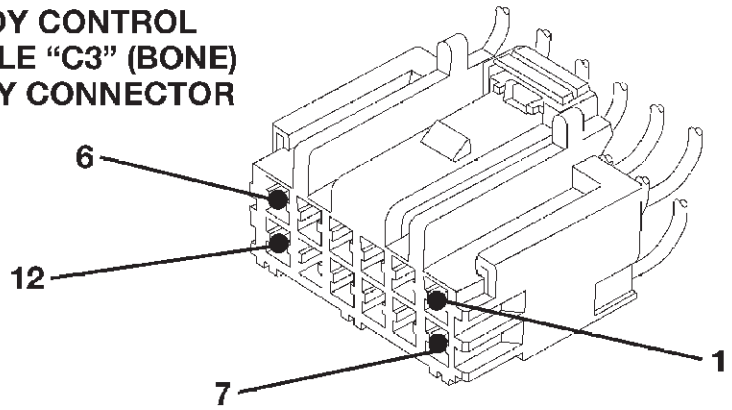
****Check connectors - Clean / repair as necessary.**

**TEST 3B** REPAIRING INCORRECT AMBIENT TEMPERATURE READING

**Perform TEST 3A Before Proceeding**




**BODY CONTROL MODULE "C3" (BONE) 12-WAY CONNECTOR**



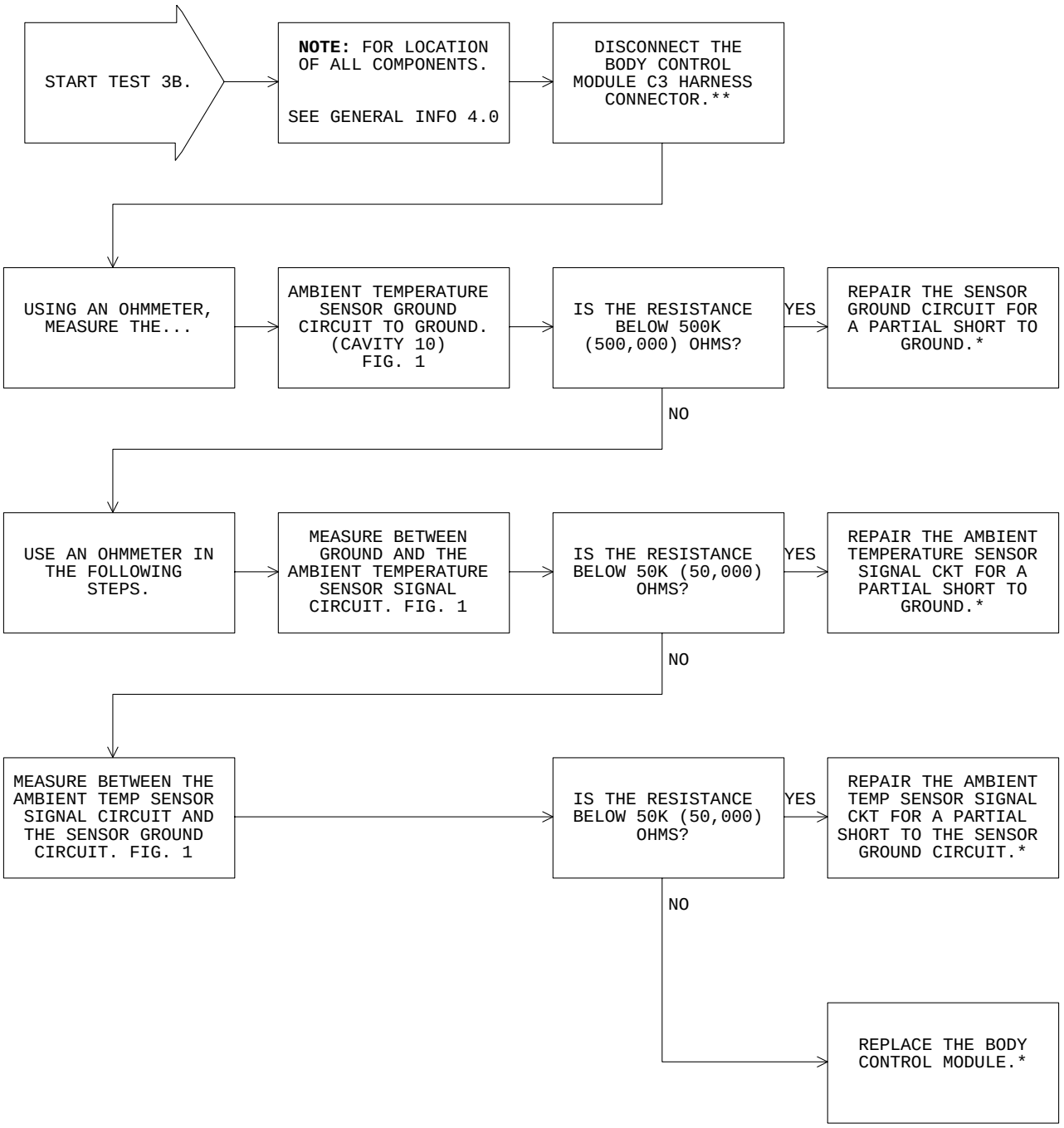

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | YL/VT | PCI BUS (PCM) |
| 2 | YL/VT | PCI BUS (ABS) |
| 3 | TN/RD | WIPER PARK SWITCH SENSE |
| 4 | RD/VT | WIPER ON OFF RELAY CONTROL |
| 5 | VT/LG | AMBIENT TEMPERATURE SENSOR SIGNAL |
| 7 | YL/VT | PCI BUS (TCM) |
| 9 | BR/YL | HEADLAMP WASHER RELAY CONTROL |
| 10 | DB/GY | SENSOR GROUND |
| 12 | VT | WIPER HIGH LOW RELAY CONTROL |

80b6f082

*FIG. 1*

## TEST 3B REPAIRING INCORRECT AMBIENT TEMPERATURE READING

**Perform TEST 3A Before Proceeding**




***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

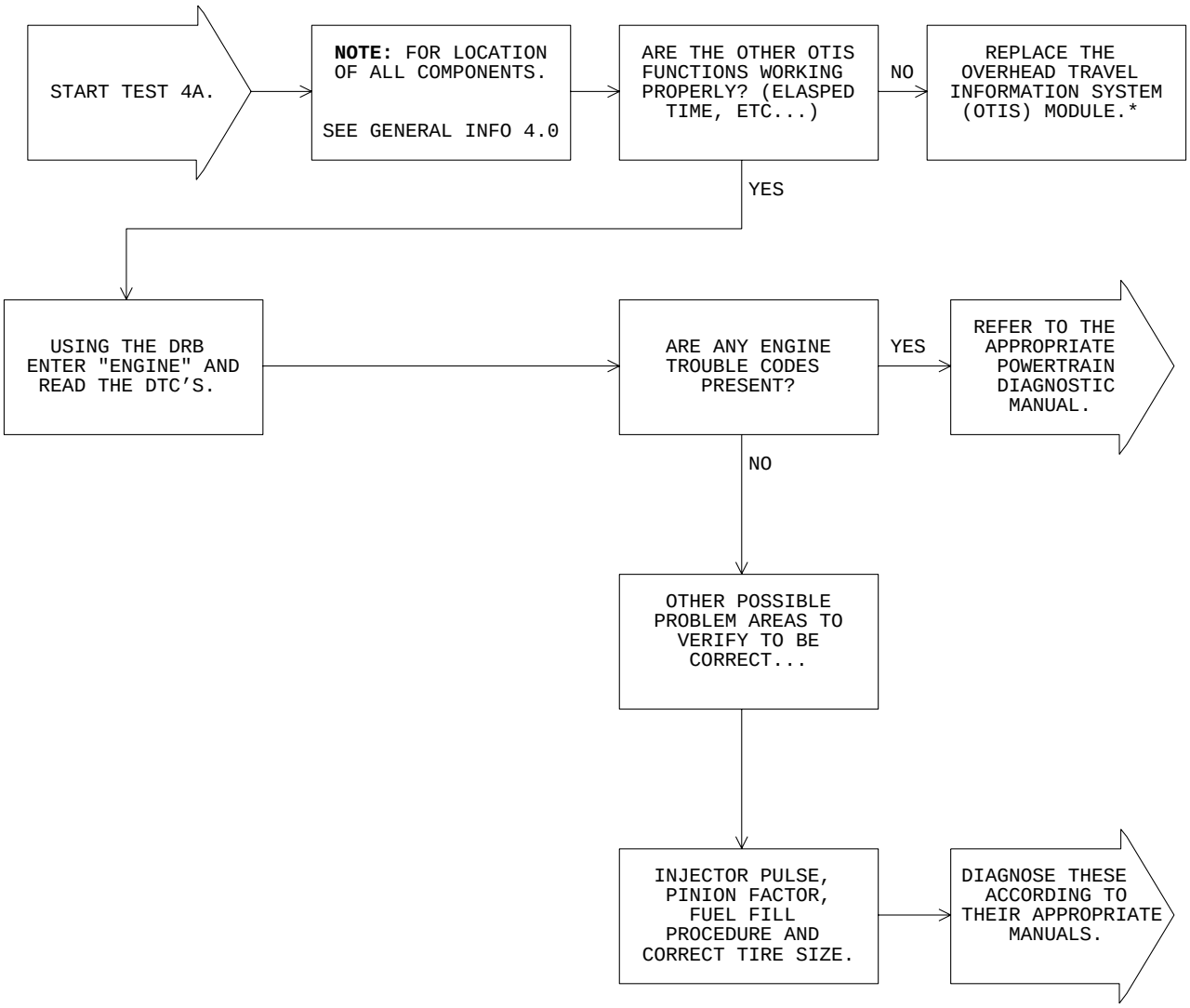
**TEST 4A** | **REPAIRING OTIS MILEAGE AND DISTANCE FUNCTIONS**

**Perform TEST 1A Before Proceeding**

## NOTES

## TEST 4A — REPAIRING OTIS MILEAGE AND DISTANCE FUNCTIONS

**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

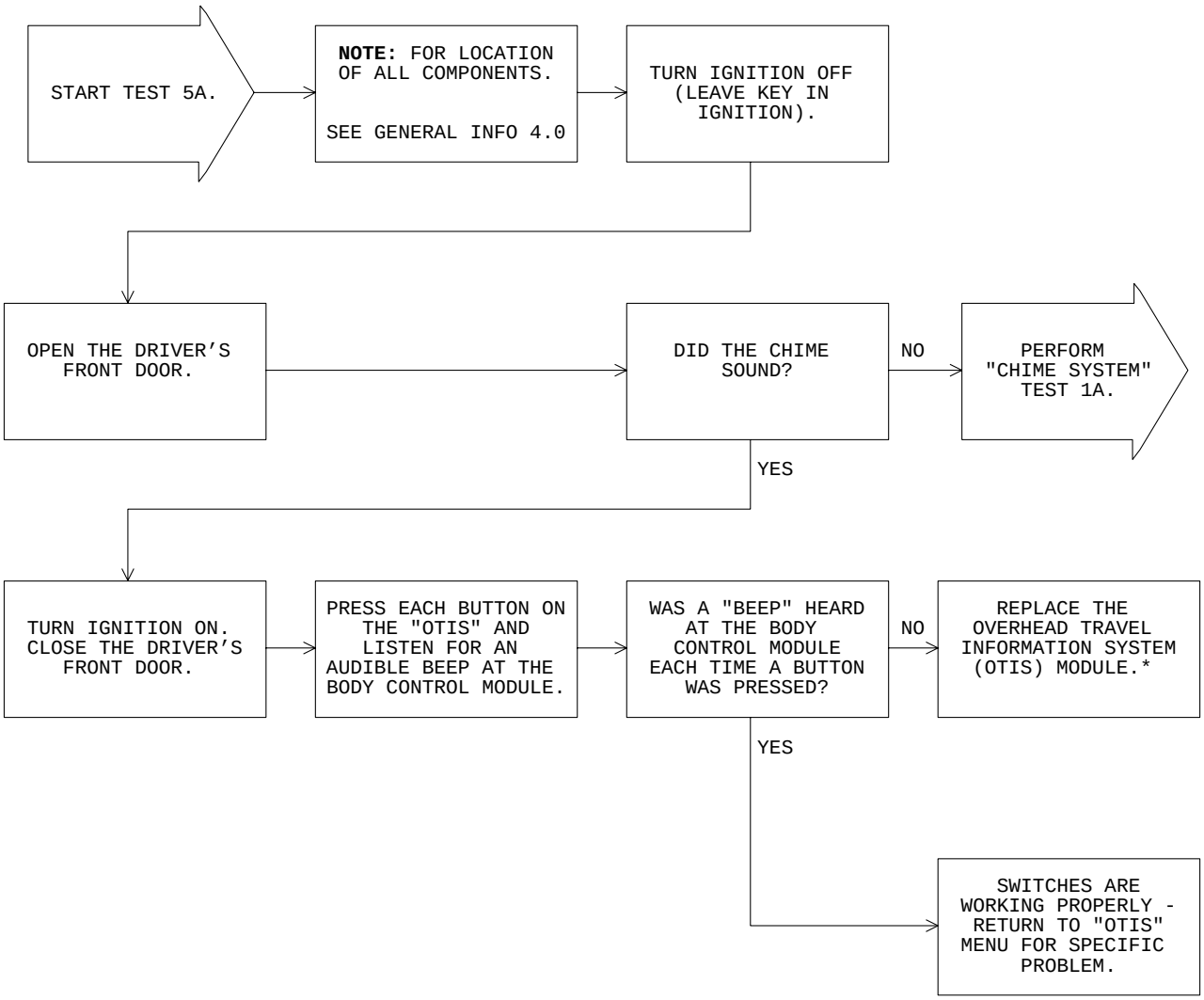
**TEST 5A** | **REPAIRING OTIS SWITCHES**

**Perform TEST 1A Before Proceeding**

## NOTES

## TEST 5A REPAIRING OTIS SWITCHES

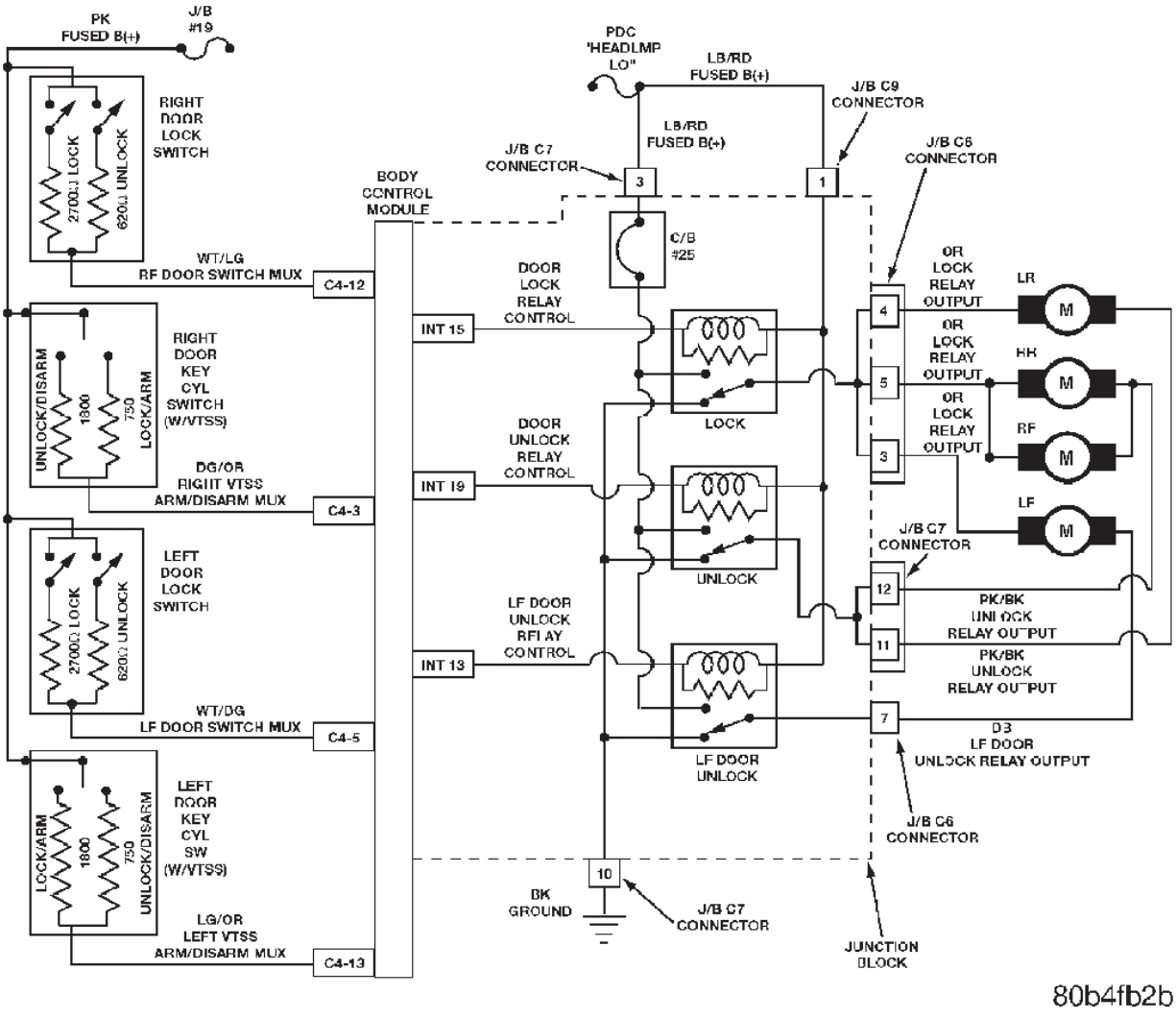
**Perform TEST 1A Before Proceeding**




| | |
|---|---|
| ***Perform Verification TEST VER-2A.** | ****Check connectors - Clean / repair as necessary.** |

## TEST 1A IDENTIFYING POWER DOOR LOCK PROBLEMS

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**



## TEST 1A IDENTIFYING POWER DOOR LOCK PROBLEMS

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**

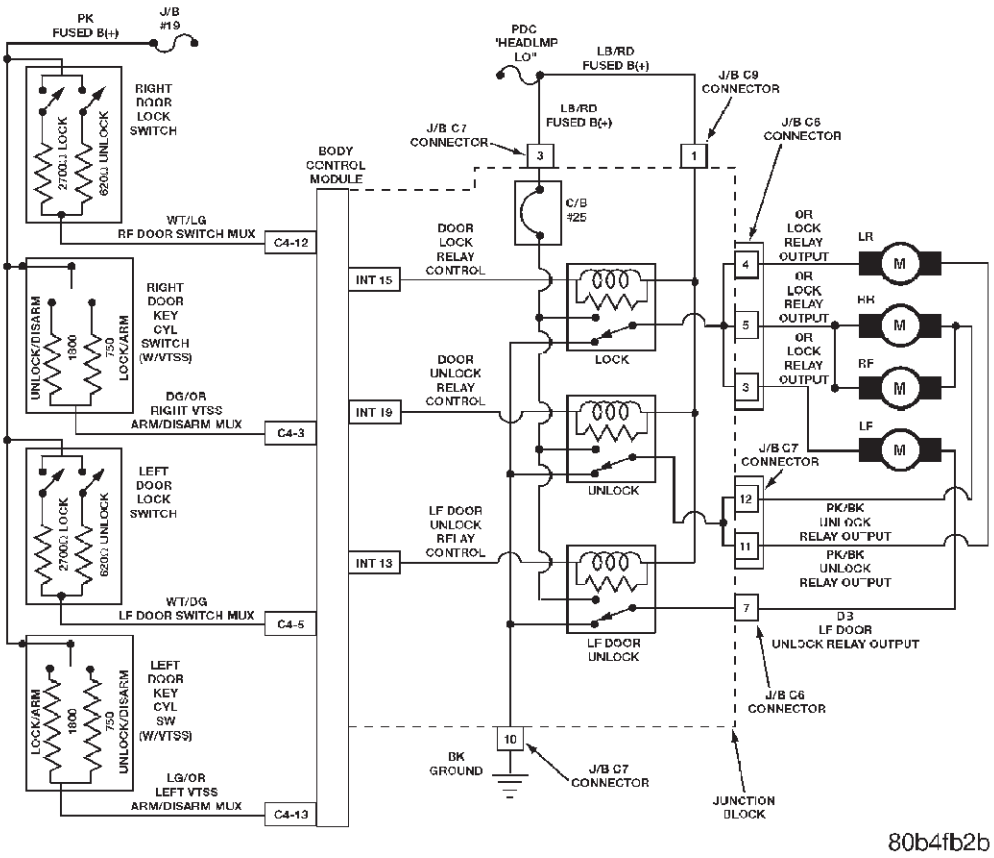
1. To diagnose the power door lock system fully it is necessary to have communication between the BCM, the PCM and the TCM. If there is a ''No Response'' from any of these modules or any other communication problem . . . . . .perform ''Vehicle Communication'' TEST 1A.
2. Using the DRB, select ''Body'' ''Body Computer'' ''Read DTCs''. If any of the following codes appear and are relevant to the customers complaint perform the appropriate test.

| TROUBLE CODE | PERFORM |
|---|---|
| * DR Door Central Lock (Arm)/Unlock (Disarm) Switch Failure | TEST 13A |
| * PASS Door Central Lock (Arm)/Unlock (Disarm) Switch Failure | TEST 14A |
| * RKE Unable to enter Program Mode | TEST 15A |
| * RKE Program Mode Entered W/O Program Request | TEST 16A |
| * Decklid Release Switch Failure | TEST 17A |
| * Decklid Release Solenoid Output Failure | TEST 18A |

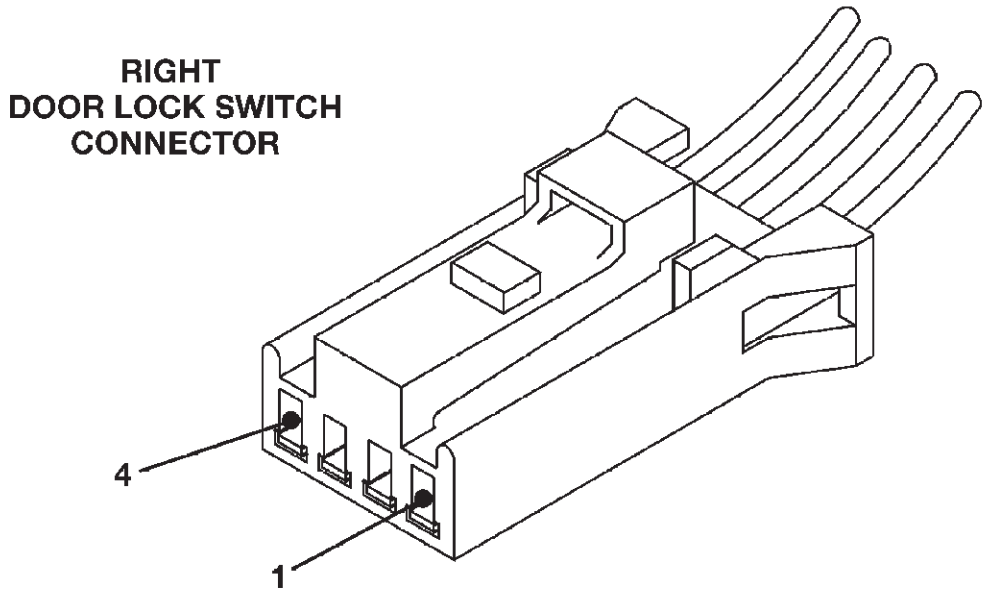
| PROBLEM WITH | PERFORM |
|---|---|
| All doors failing to lock and unlock from any switch | TEST 2A |
| One door failing to lock and unlock from any switch | TEST 3A |
| All doors failing to lock and unlock from one switch | TEST 4A |
| All doors failing to lock from any switch | TEST 5A |
| Left front door failing to lock from any switch | TEST 6A |
| All doors failing to lock from one switch | Replace defective switch |
| All doors failing to unlock from any switch | TEST 7A |
| Left front door failing to unlock from any switch | TEST 8A |
| All doors failing to unlock from one switch | Replace defective switch |
| Door lock inhibit inoperative | TEST 9A |
| Test automatic (rolling) door locks | TEST 10A |
| Remote keyless entry problems and options | TEST 11A |
| Decklid release inoperative | TEST 12A |

## TEST 2A — REPAIRING ALL DOORS FAILING TO LOCK AND UNLOCK FROM ANY SWITCH

**Perform TEST 1A Before Proceeding**




80b4fb2b



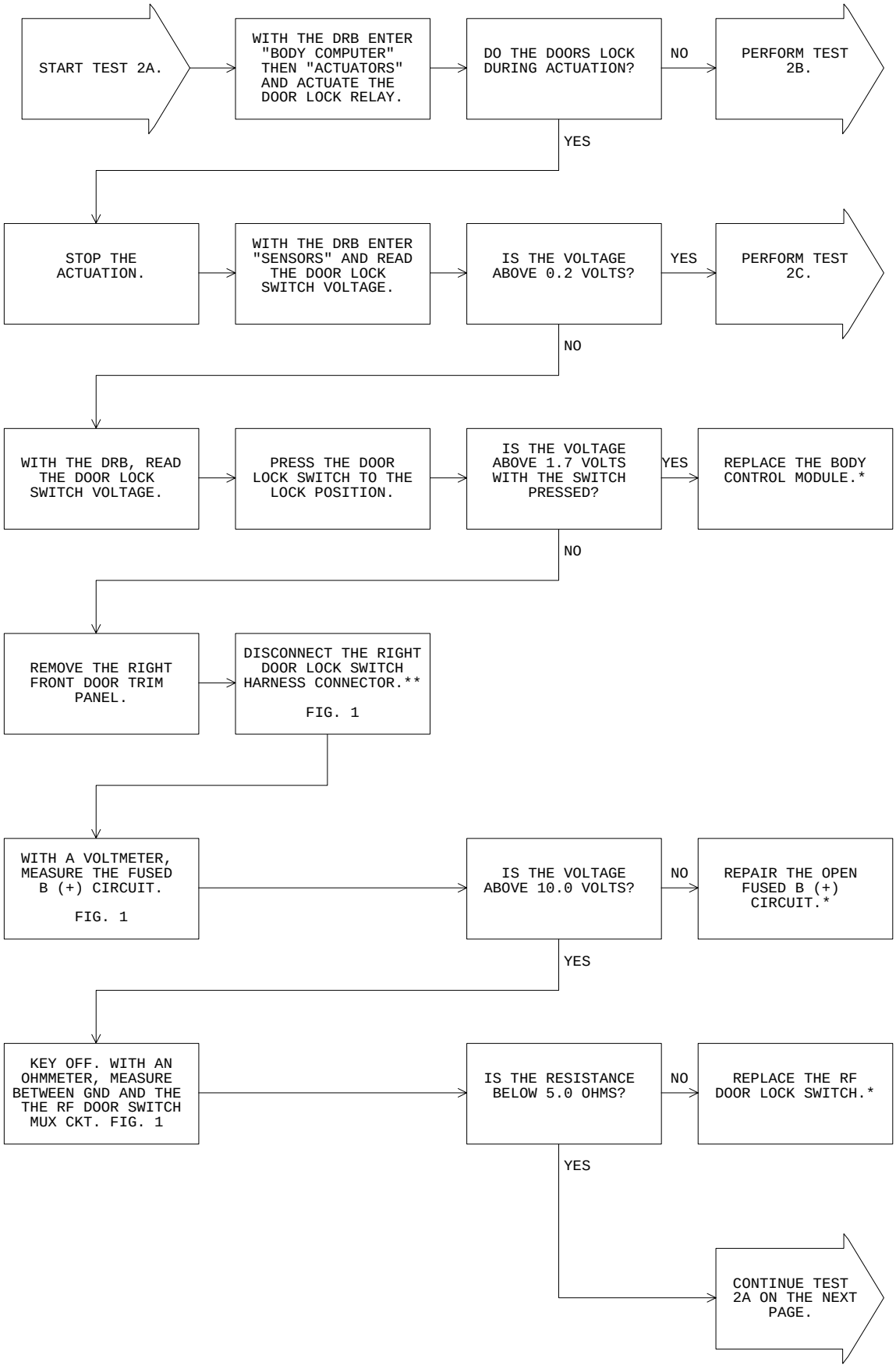

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK | FUSED B(+) |
| 2 | DB/WT | FUSED IGN SW OUTPUT (RUN/START) |
| 3 | BK | GROUND |
| 4 | WT/LG | RIGHT FRONT DOOR SWITCH MUX |

80b1b397

***FIG. 1***

## TEST 2A REPAIRING ALL DOORS FAILING TO LOCK AND UNLOCK FROM ANY SWITCH

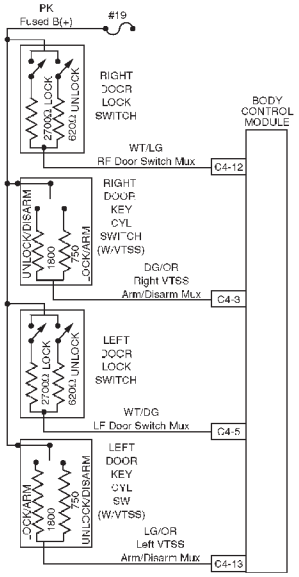
**Perform TEST 1A Before Proceeding**



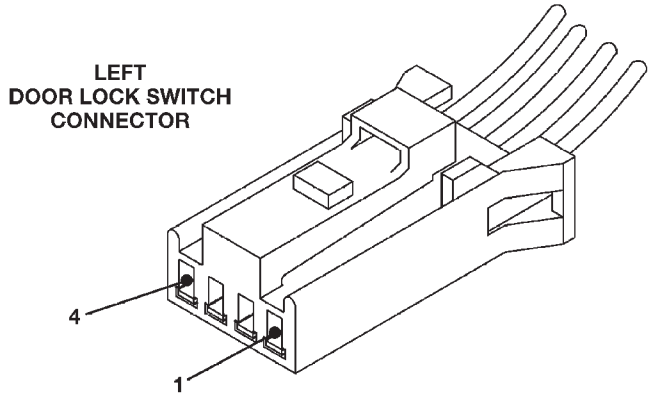

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 2A — CONTINUED - REPAIRING ALL DOORS FAILING TO LOCK AND UNLOCK FROM ANY SWITCH



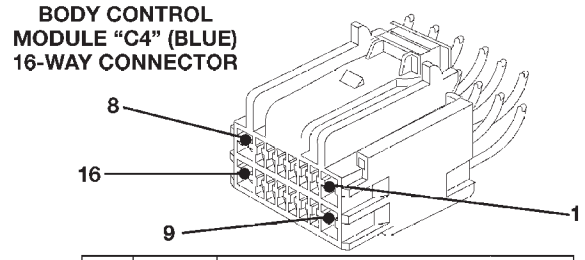

80b2b34a




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK | FUSED B(+) |
| 2 | DB/WT | FUSED IGN SW OUTPUT (RUN/START) |
| 3 | BK | GROUND |
| 4 | WT/DG | LEFT FRONT DOOR SWITCH MUX |

80b1b398

***FIG. 1***

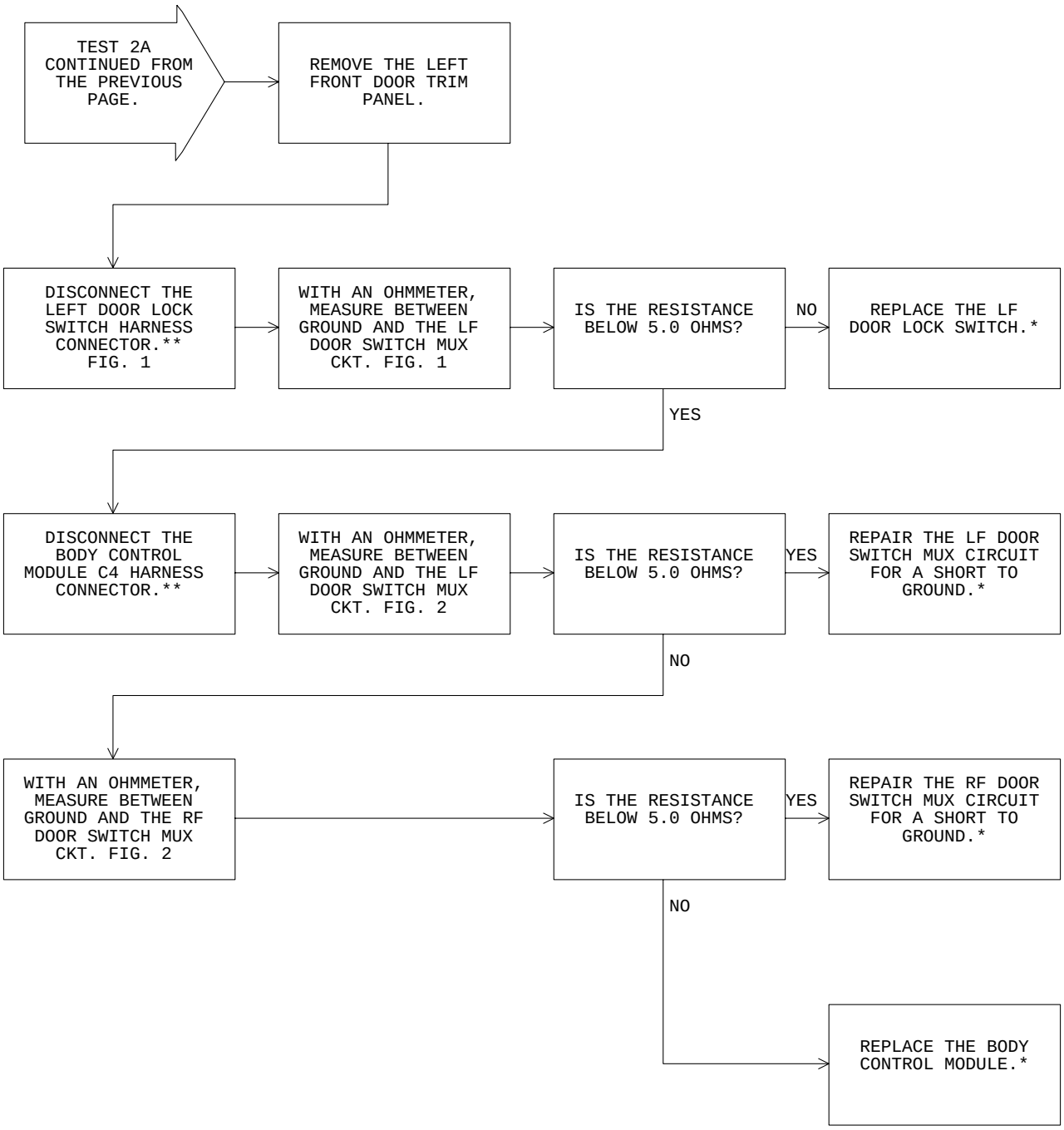



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

80b11939

***FIG. 2***

## TEST 2A CONTINUED - REPAIRING ALL DOORS FAILING TO LOCK AND UNLOCK FROM ANY SWITCH

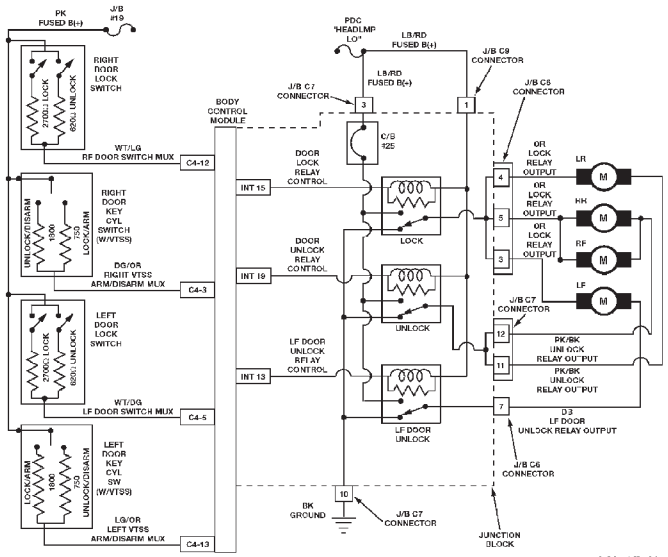



***Perform Verification TEST VER-2A.***

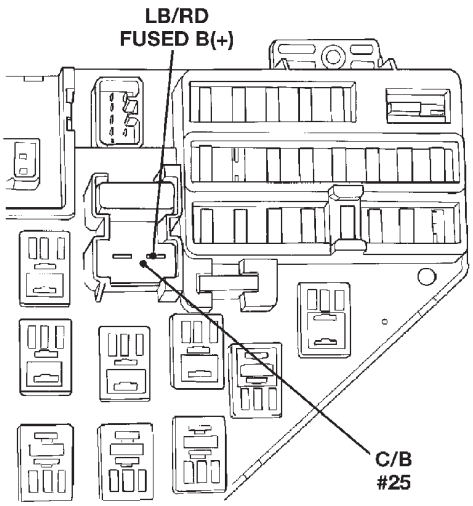
***Check connectors - Clean / repair as necessary.***

## TEST 2B REPAIRING ALL DOORS FAILING TO LOCK AND UNLOCK FROM ANY SWITCH

**Perform TEST 2A Before Proceeding**

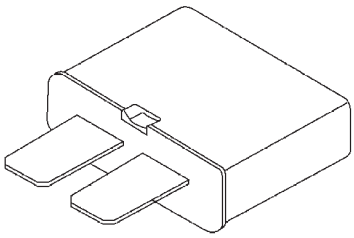



80b4fb2b



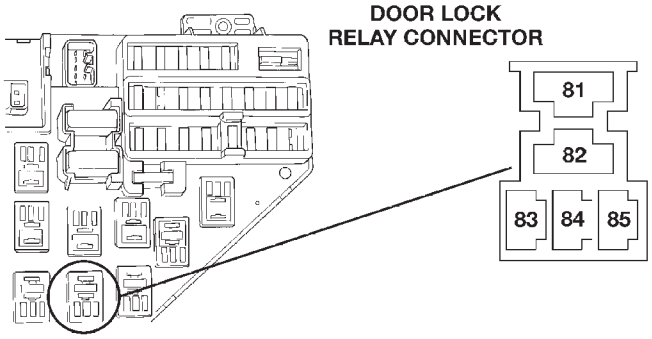

80b4fb2c

*FIG. 1*



80b57500

*FIG. 2*



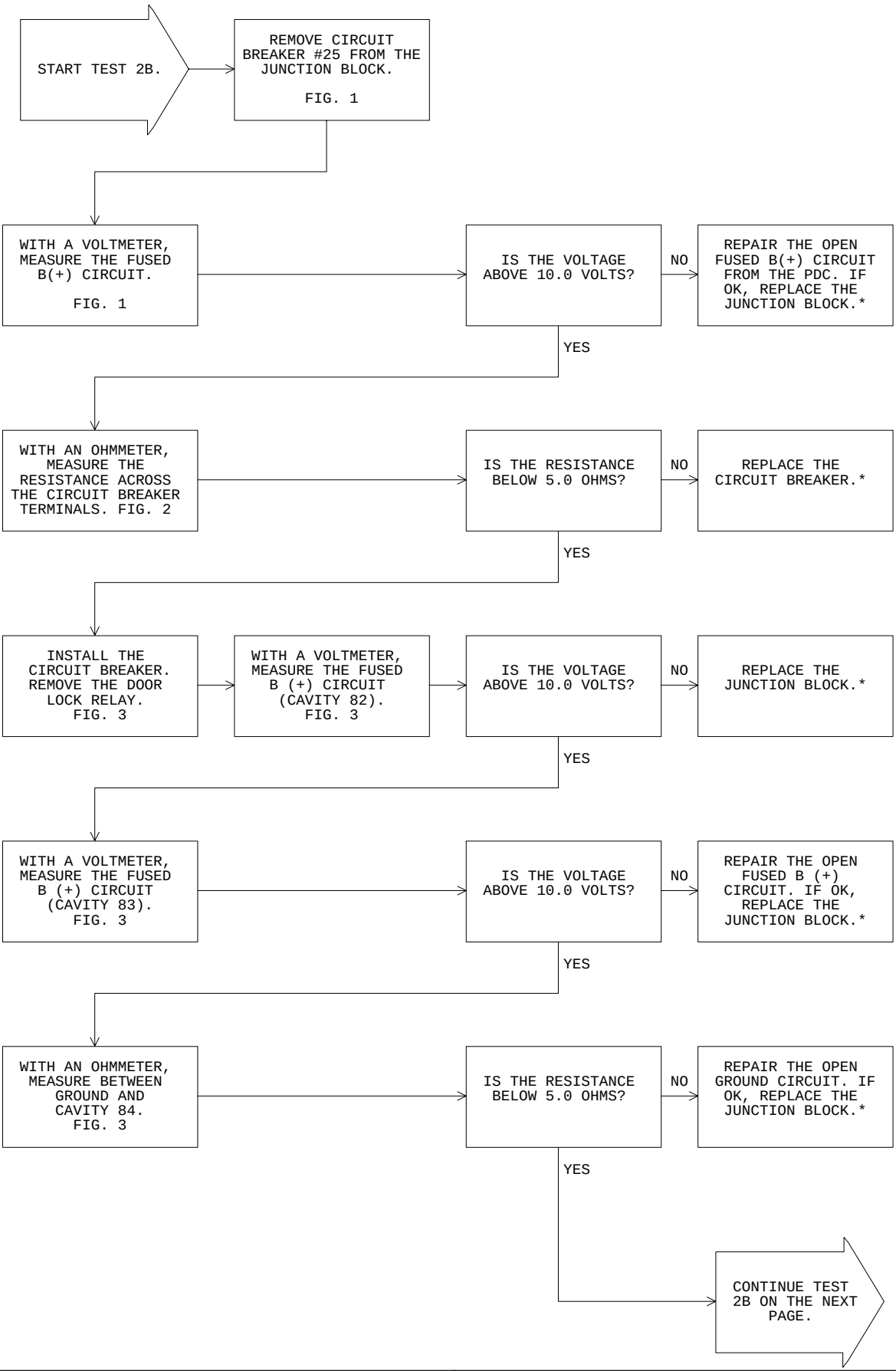

| CAV | FUNCTION |
|---|---|
| 81 (30) | LOCK RELAY OUTPUT |
| 82 (87) | FUSED B (+) |
| 83 (85) | FUSED B (+) |
| 84 (87A) | GROUND |
| 85 (86) | DOOR LOCK RELAY CONTROL |

80b2b3f0

*FIG. 3*

## TEST 2B REPAIRING ALL DOORS FAILING TO LOCK AND UNLOCK FROM ANY SWITCH

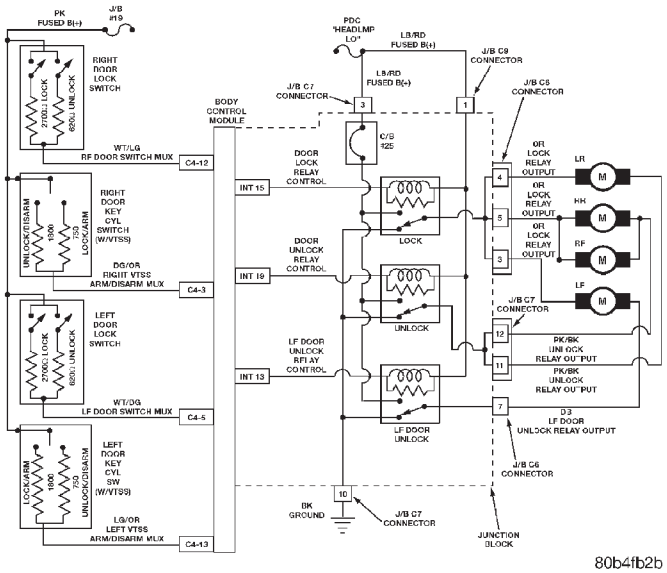
**Perform TEST 2A Before Proceeding**



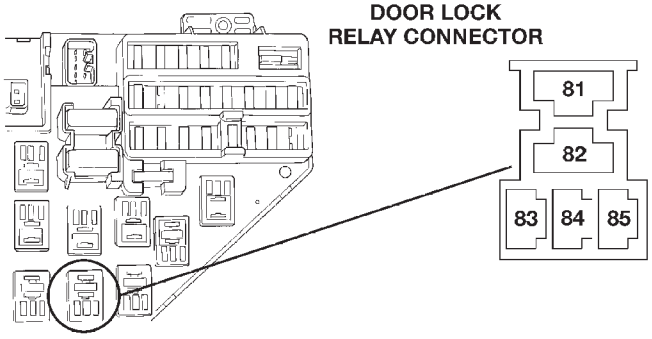

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.**

## TEST 2B — CONTINUED - REPAIRING ALL DOORS FAILING TO LOCK AND UNLOCK FROM ANY SWITCH



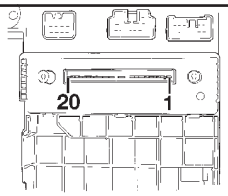

80b4fb2b




| CAV | FUNCTION |
|---|---|
| 81 (30) | LOCK RELAY OUTPUT |
| 82 (87) | FUSED B (+) |
| 83 (85) | FUSED B (+) |
| 84 (87A) | GROUND |
| 85 (86) | DOOR LOCK RELAY CONTROL |

80b2b3f0

***FIG. 1***

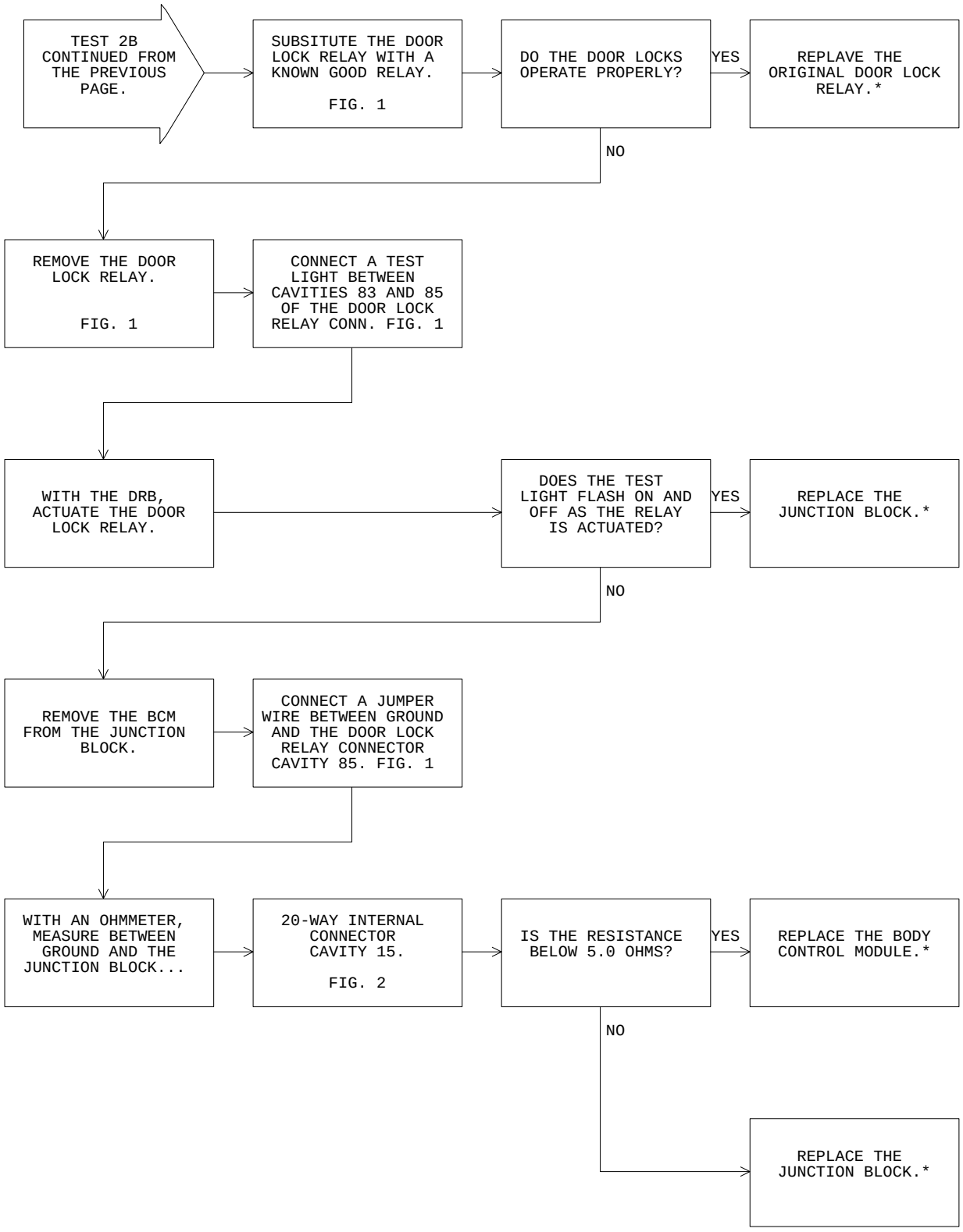



| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

***FIG. 2***

## TEST 2B CONTINUED - REPAIRING ALL DOORS FAILING TO LOCK AND UNLOCK FROM ANY SWITCH

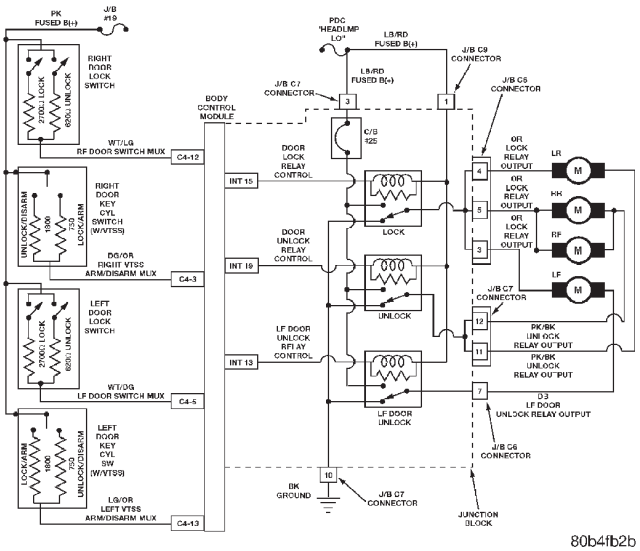



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

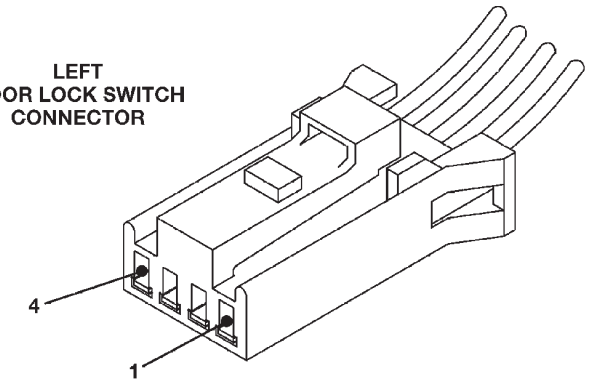
## TEST 2C — REPAIRING ALL DOORS FAILING TO LOCK AND UNLOCK FROM ANY SWITCH

**Perform TEST 2A Before Proceeding**




80b4fb2b

### LEFT DOOR LOCK SWITCH CONNECTOR

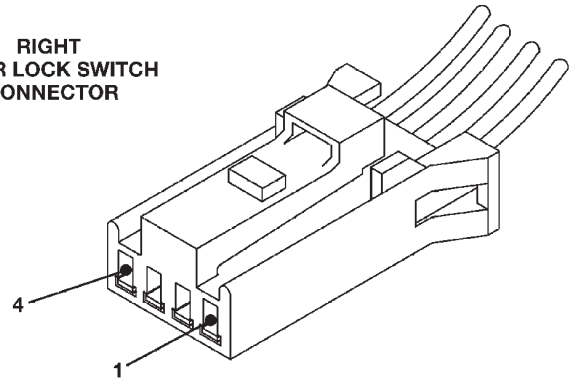



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK | FUSED B(+) |
| 2 | DB/WT | FUSED IGN SW OUTPUT (RUN/START) |
| 3 | BK | GROUND |
| 4 | WT/DG | LEFT FRONT DOOR SWITCH MUX |

80b1b398

***FIG. 1***

### RIGHT DOOR LOCK SWITCH CONNECTOR

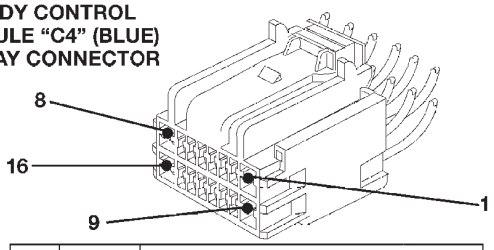



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK | FUSED B(+) |
| 2 | DB/WT | FUSED IGN SW OUTPUT (RUN/START) |
| 3 | BK | GROUND |
| 4 | WT/LG | RIGHT FRONT DOOR SWITCH MUX |

80b1b397

***FIG. 2***

### BODY CONTROL MODULE "C4" (BLUE) 16-WAY CONNECTOR



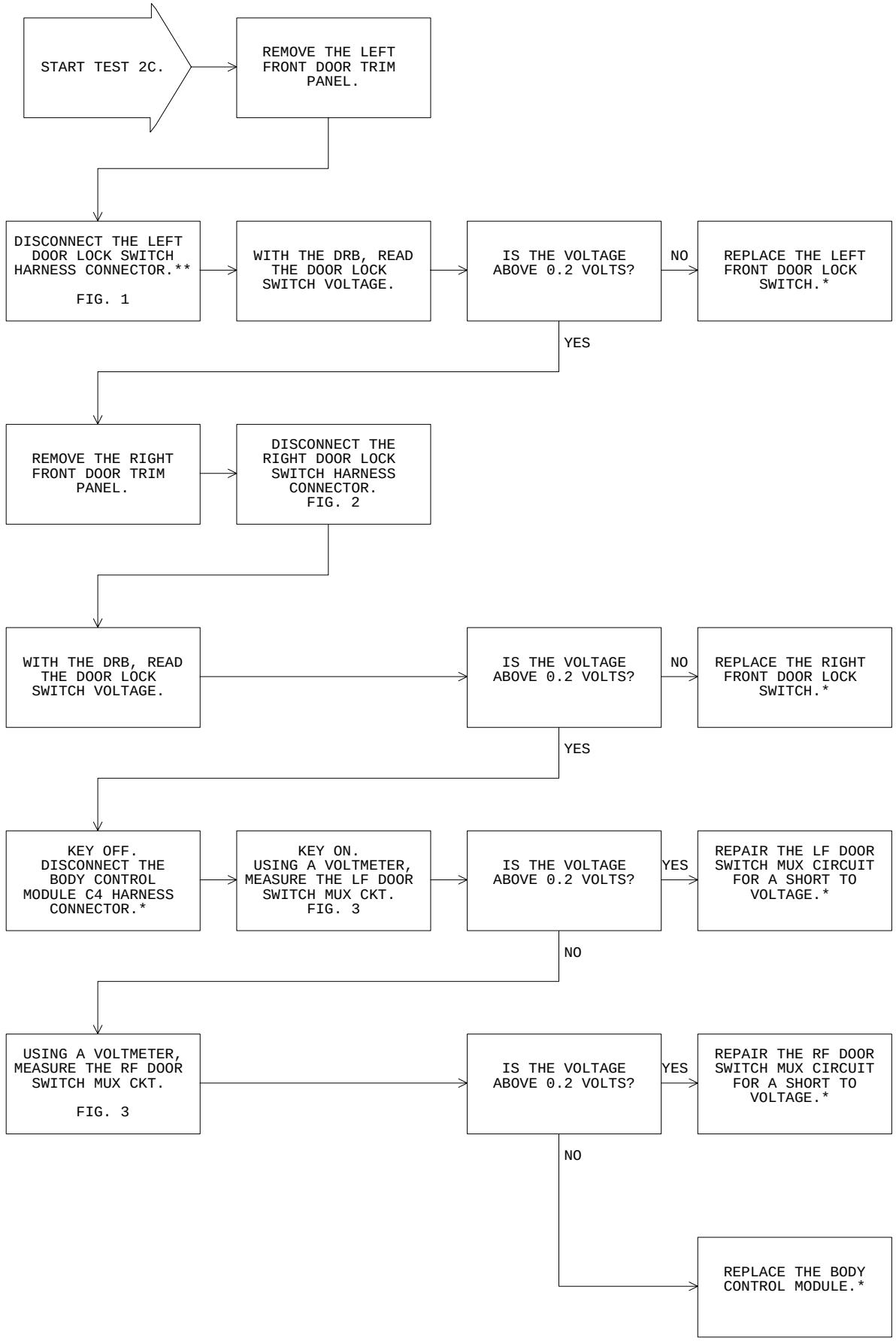

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

80b11939

***FIG. 3***

## TEST 2C REPAIRING ALL DOORS FAILING TO LOCK AND UNLOCK FROM ANY SWITCH

**Perform TEST 2A Before Proceeding**

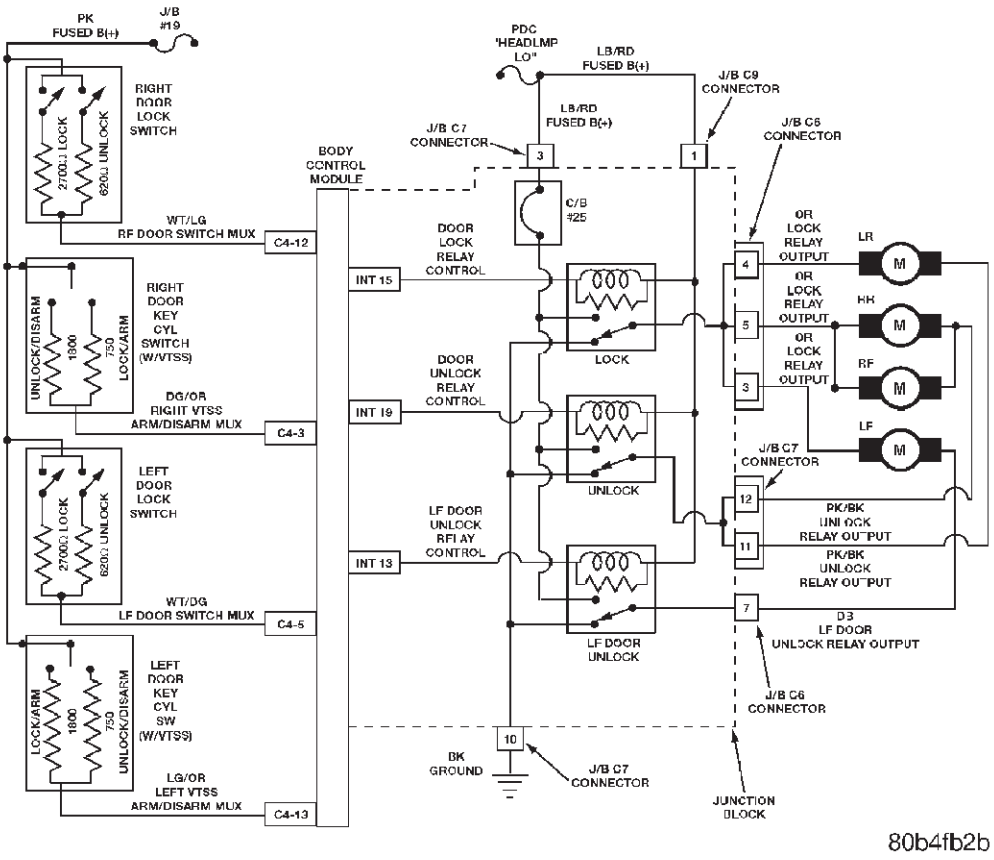



***Perform Verification TEST VER-2A.***

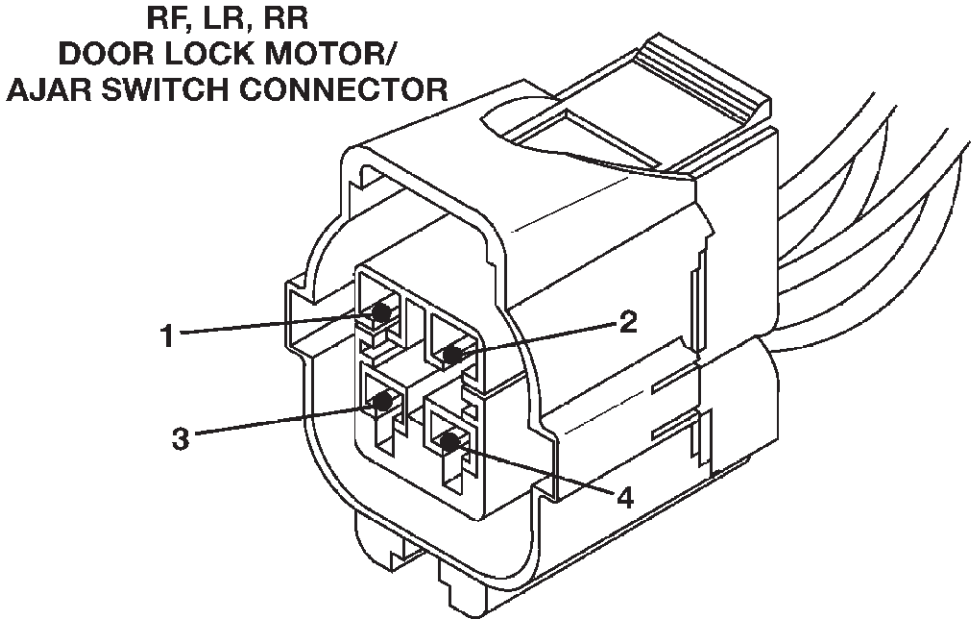
***Check connectors - Clean / repair as necessary.**

## TEST 3A — REPAIRING ONE DOOR FAILING TO LOCK AND UNLOCK FROM ANY SWITCH

**Perform TEST 1A Before Proceeding**




80b4fb2b



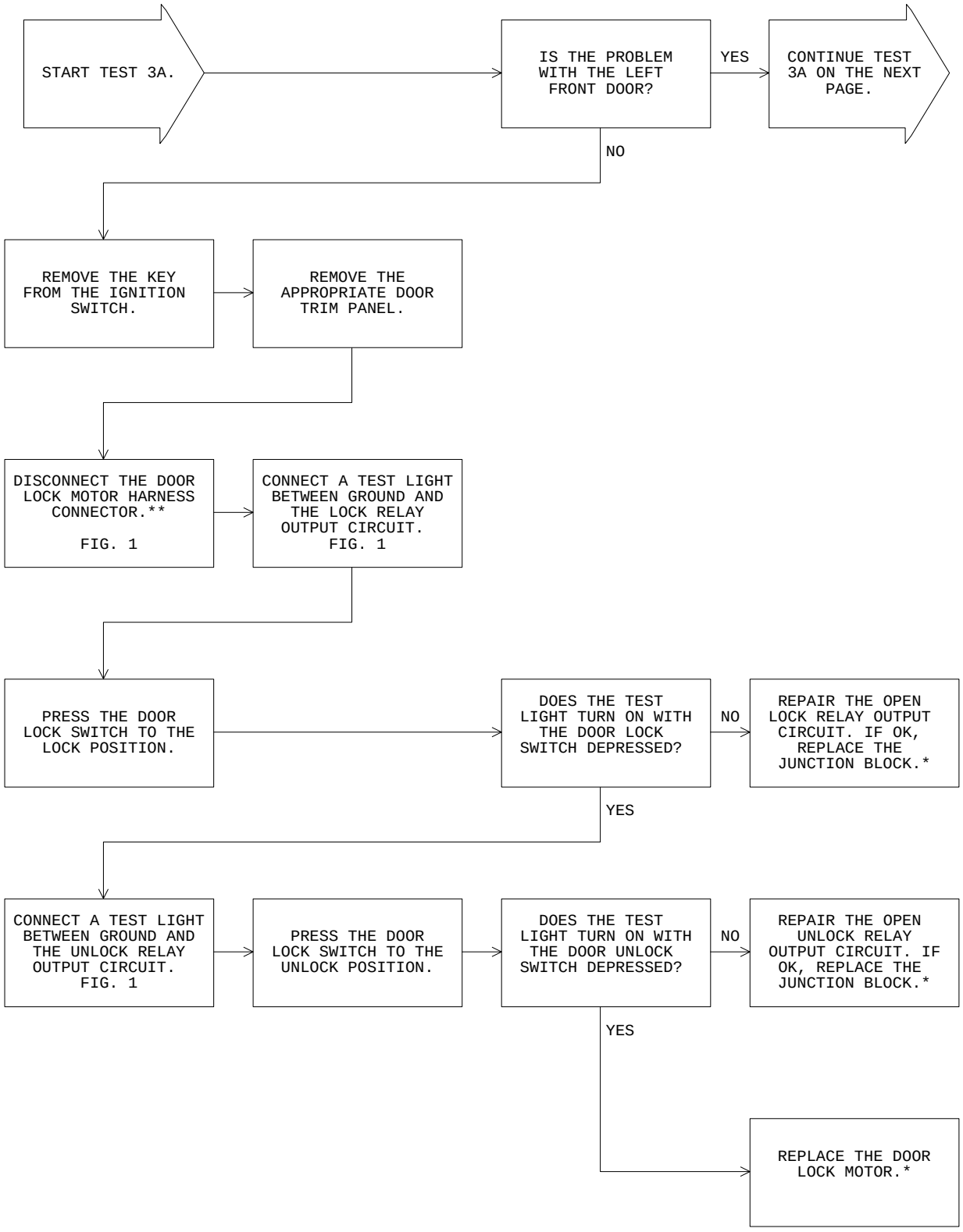

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | DOOR AJAR SWITCH SENSE |
| 2 | BK | GROUND |
| 3 | PK/BK | UNLOCK RELAY OUTPUT |
| 4 | OR | LOCK RELAY OUTPUT |

80b1b3cd

***FIG. 1***

## TEST 3A REPAIRING ONE DOOR FAILING TO LOCK AND UNLOCK FROM ANY SWITCH

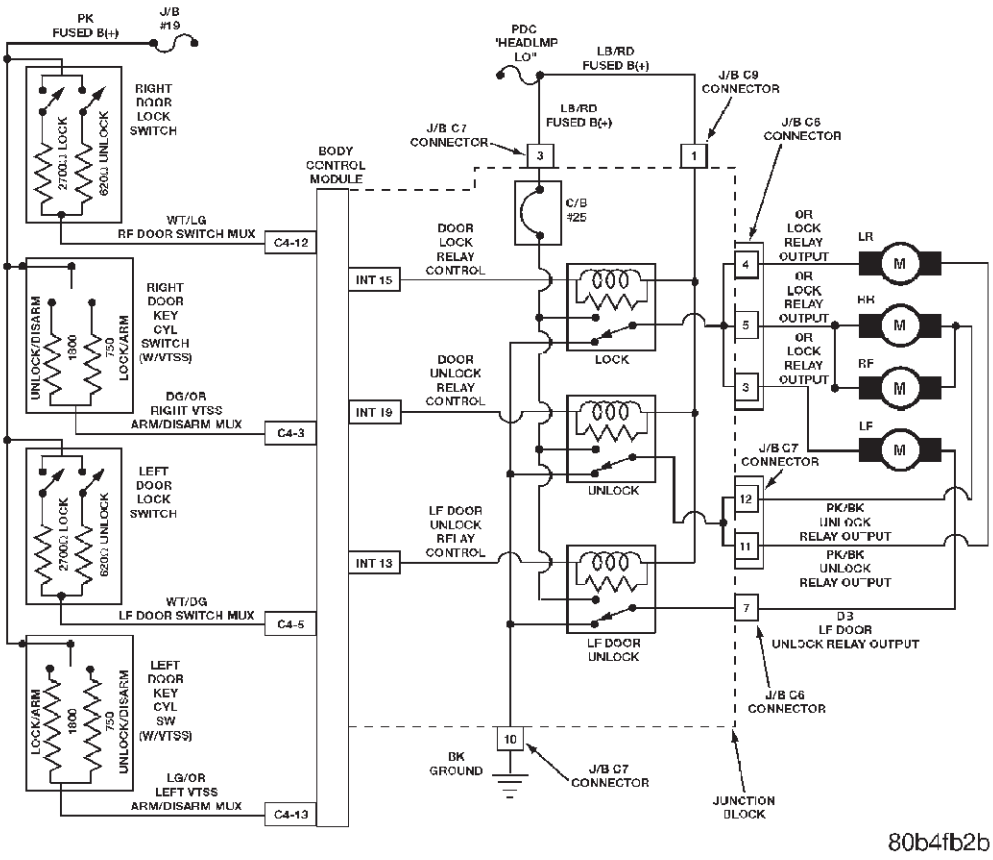
**Perform TEST 1A Before Proceeding**



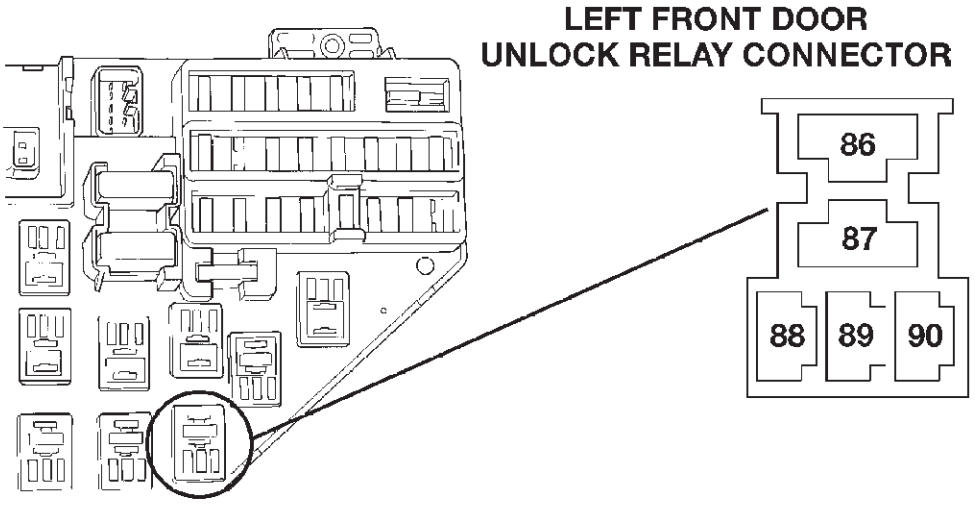

***Perform Verification TEST VER-2A.***

*****Check connectors - Clean / repair as necessary.***

| TEST 3A | CONTINUED - REPAIRING ONE DOOR FAILING TO LOCK AND UNLOCK FROM ANY SWITCH |
|---|---|




80b4fb2b

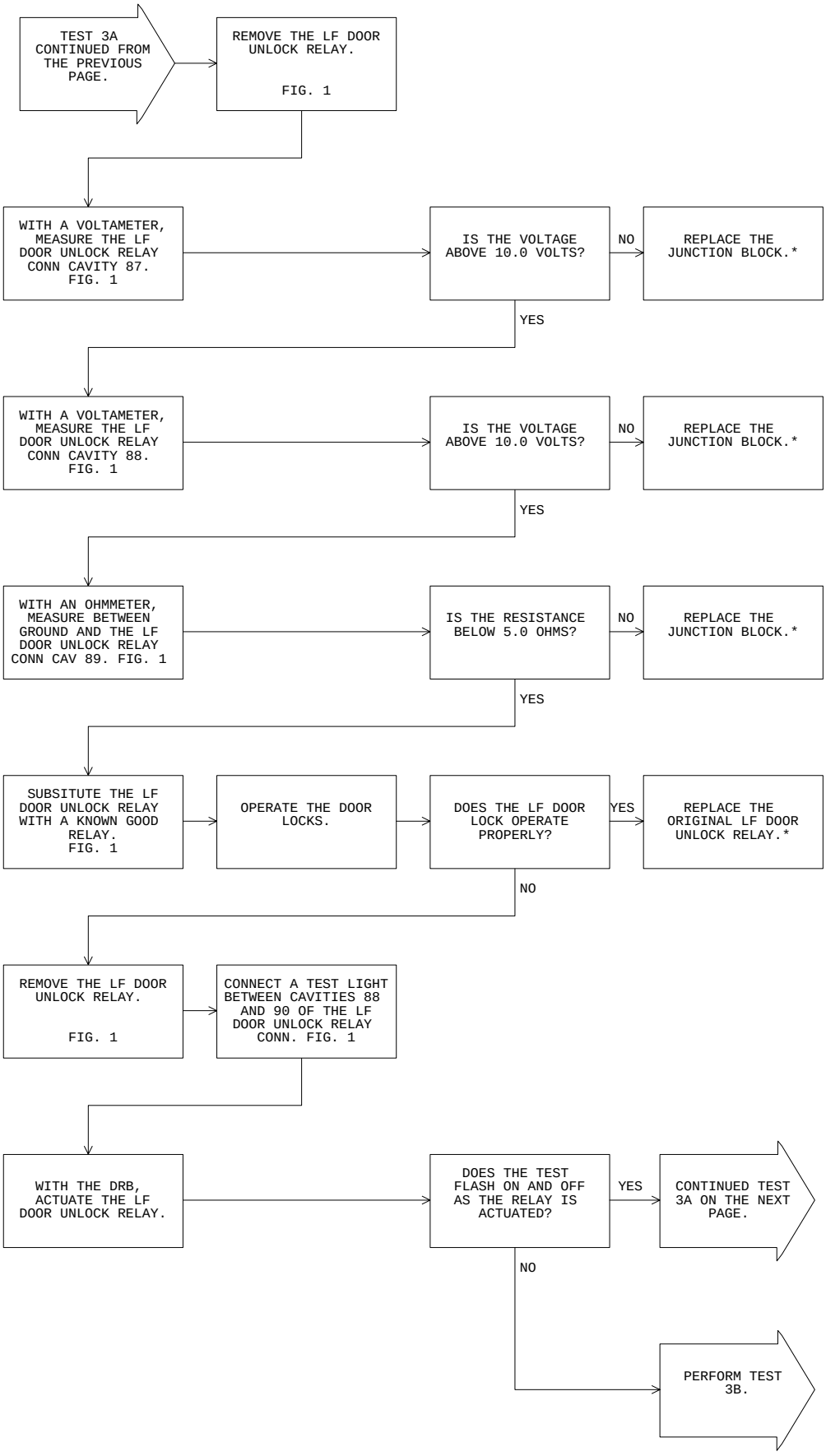



| CAV | FUNCTION |
|---|---|
| 86 (30) | LF DOOR UNLOCK RELAY OUTPUT |
| 87 (87) | FUSED B (+) |
| 88 (85) | FUSED B (+) |
| 89 (87A) | GROUND |
| 90 (86) | LF DOOR UNLOCK RELAY CONTROL |

80b2b3f2

***FIG. 1***

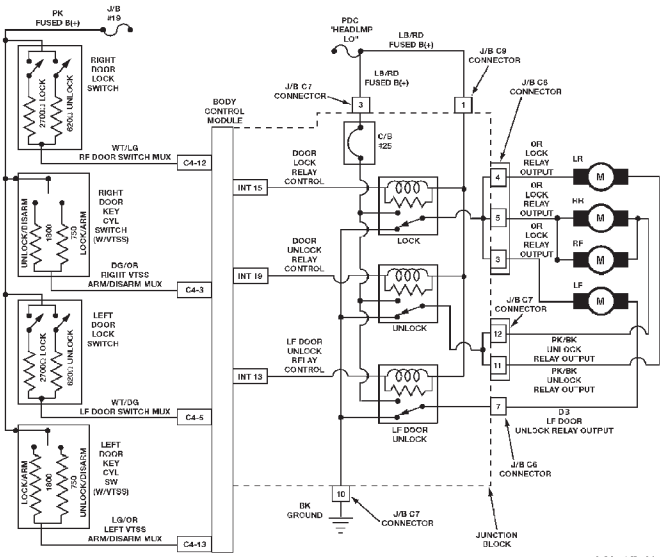
## TEST 3A CONTINUED - REPAIRING ONE DOOR FAILING TO LOCK AND UNLOCK FROM ANY SWITCH



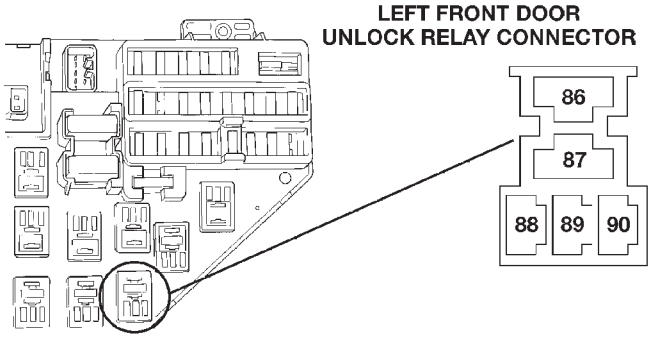

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 3A CONTINUED - REPAIRING ONE DOOR FAILING TO LOCK AND UNLOCK FROM ANY SWITCH



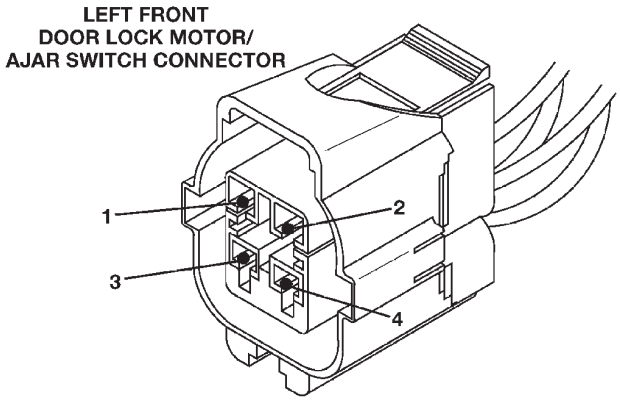

80b4fb2b




| CAV | FUNCTION |
|---|---|
| 86 (30) | LF DOOR UNLOCK RELAY OUTPUT |
| 87 (87) | FUSED B (+) |
| 88 (85) | FUSED B (+) |
| 89 (87A) | GROUND |
| 90 (86) | LF DOOR UNLOCK RELAY CONTROL |

80b2b3f2

***FIG. 1***

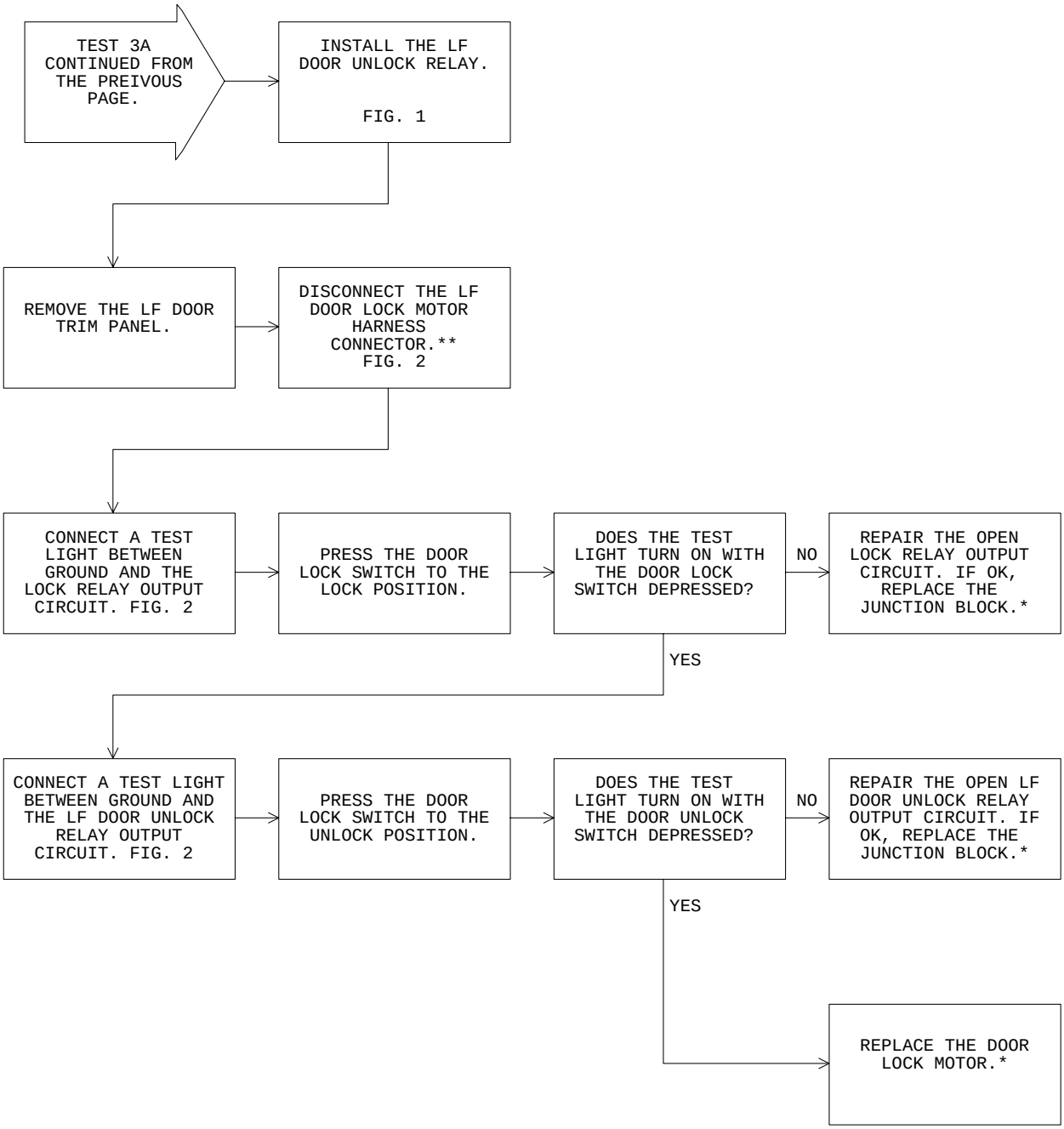



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN | DOOR AJAR SWITCH SENSE |
| 2 | BK | GROUND |
| 3 | DB | LF DOOR UNLOCK RELAY OUTPUT |
| 4 | OR | LOCK RELAY OUTPUT |

80b1b3cc

***FIG. 2***

## TEST 3A CONTINUED - REPAIRING ONE DOOR FAILING TO LOCK AND UNLOCK FROM ANY SWITCH

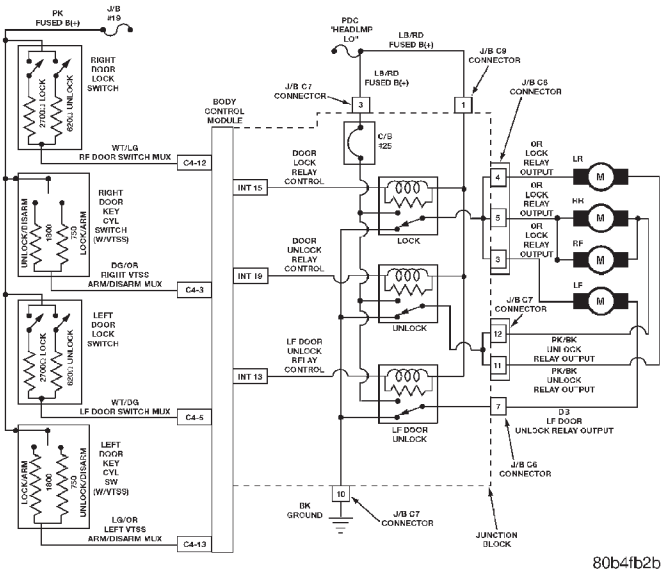



***Perform Verification TEST VER-2A.***

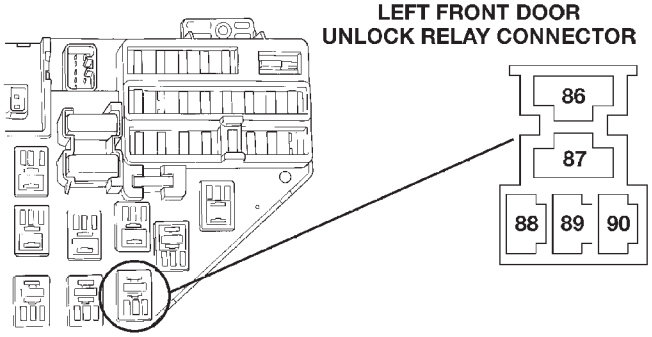
****Check connectors - Clean / repair as necessary.***

## TEST 3B REPAIRING ONE DOOR FAILING TO LOCK AND UNLOCK FROM ANY SWITCH

**Perform TEST 3A Before Proceeding**



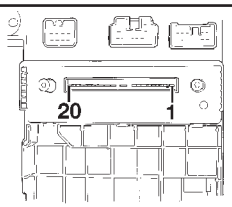

80b4fb2b




| CAV | FUNCTION |
|---|---|
| 86 (30) | LF DOOR UNLOCK RELAY OUTPUT |
| 87 (87) | FUSED B (+) |
| 88 (85) | FUSED B (+) |
| 89 (87A) | GROUND |
| 90 (86) | LF DOOR UNLOCK RELAY CONTROL |

80b2b3f2

***FIG. 1***




**JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR**

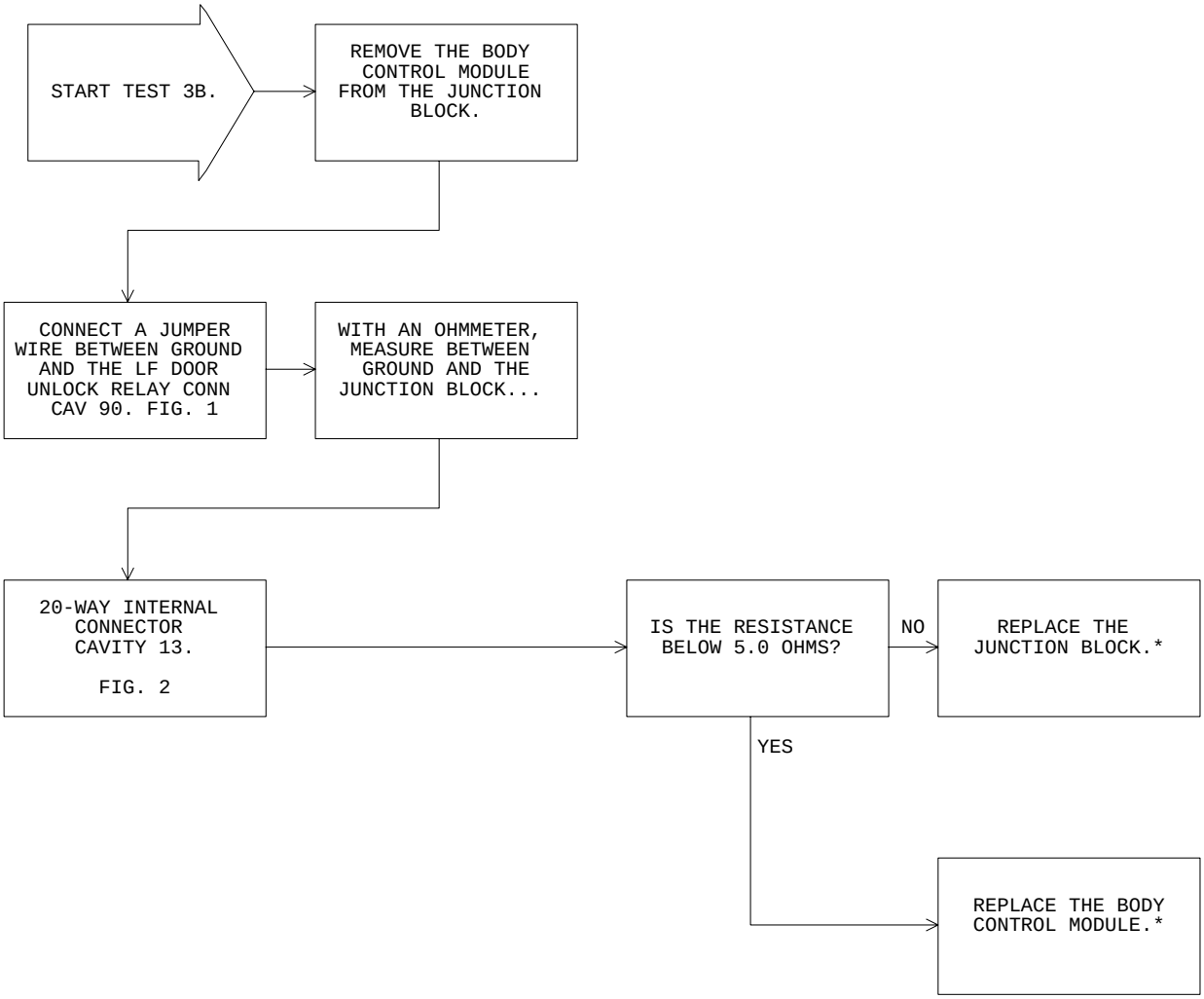
| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

***FIG. 2***

## TEST 3B REPAIRING ONE DOOR FAILING TO LOCK AND UNLOCK FROM ANY SWITCH

**Perform TEST 3A Before Proceeding**

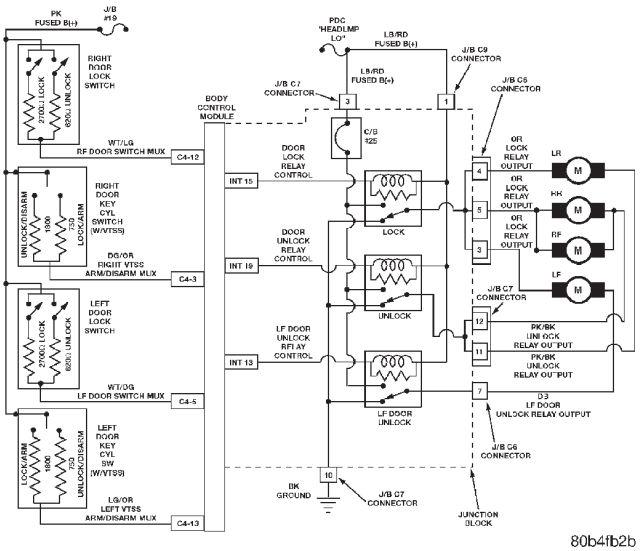



***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 4A REPAIRING ALL DOORS FAILING TO LOCK AND UNLOCK FROM ONE SWITCH

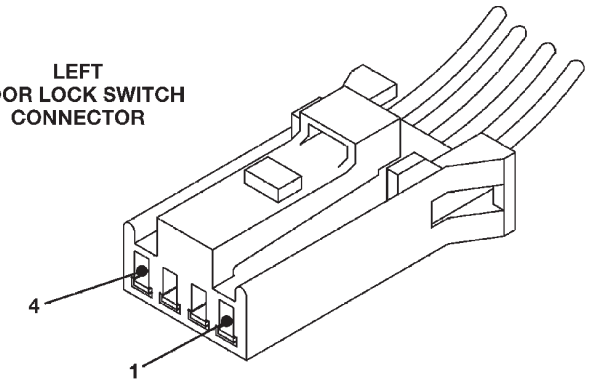
**Perform TEST 1A Before Proceeding**




80b4fb2b

**FIG. 1**

**LEFT DOOR LOCK SWITCH CONNECTOR**

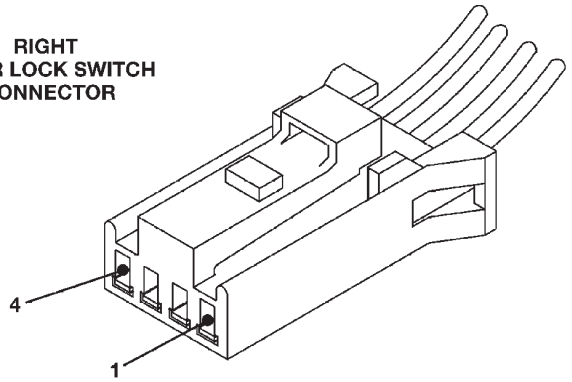



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK | FUSED B(+) |
| 2 | DB/WT | FUSED IGN SW OUTPUT (RUN/START) |
| 3 | BK | GROUND |
| 4 | WT/DG | LEFT FRONT DOOR SWITCH MUX |

80b1b398

**FIG. 2**

**RIGHT DOOR LOCK SWITCH CONNECTOR**

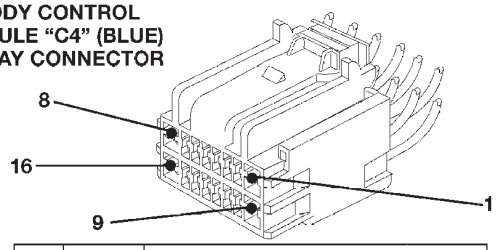



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK | FUSED B(+) |
| 2 | DB/WT | FUSED IGN SW OUTPUT (RUN/START) |
| 3 | BK | GROUND |
| 4 | WT/LG | RIGHT FRONT DOOR SWITCH MUX |

80b1b397

**FIG. 3**

**BODY CONTROL MODULE "C4" (BLUE) 16-WAY CONNECTOR**

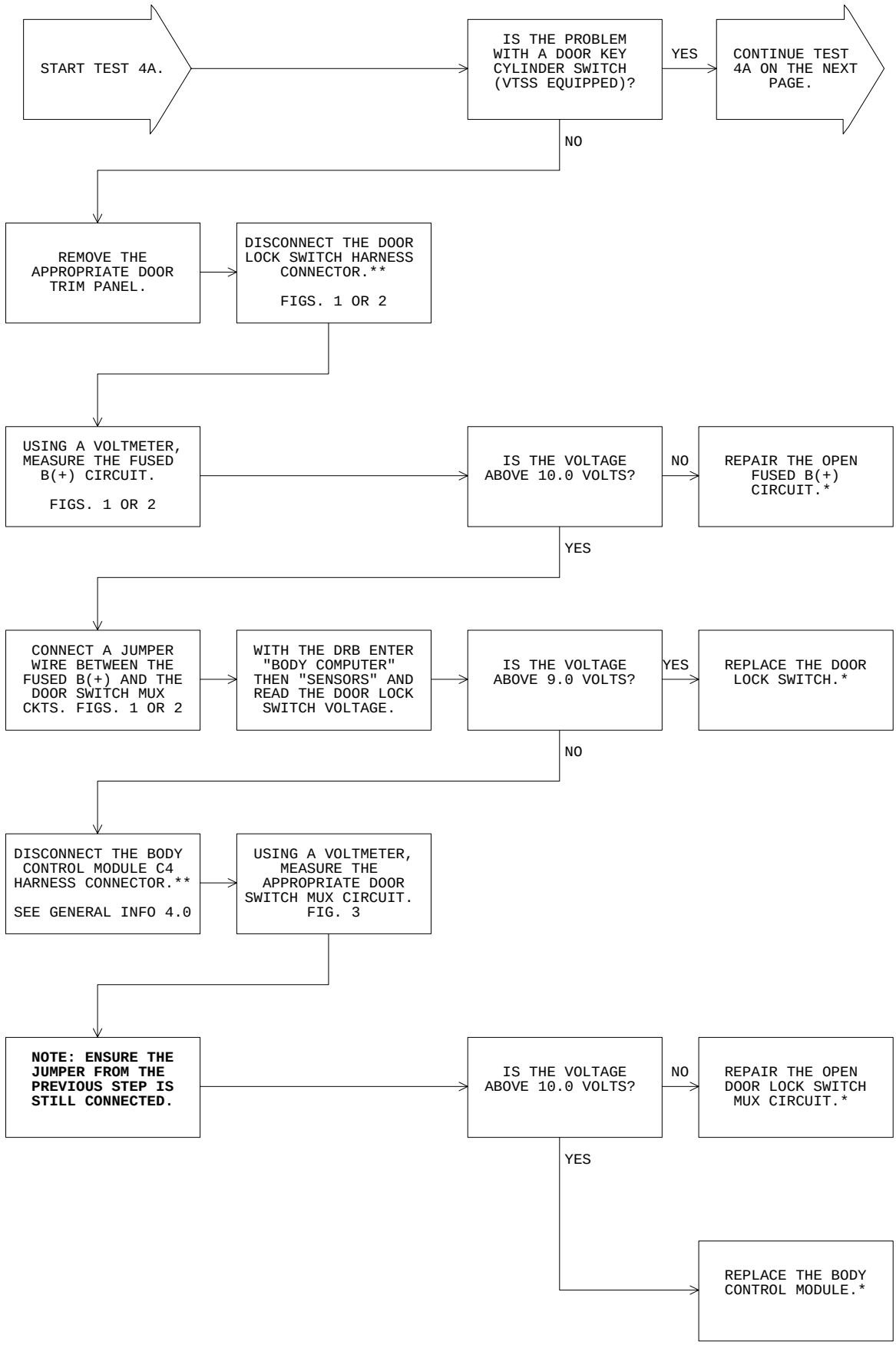



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

80b11939

## TEST 4A REPAIRING ALL DOORS FAILING TO LOCK AND UNLOCK FROM ONE SWITCH

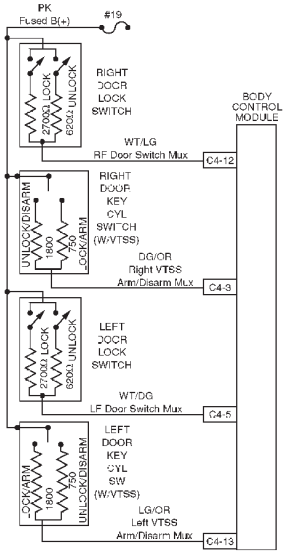
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.***

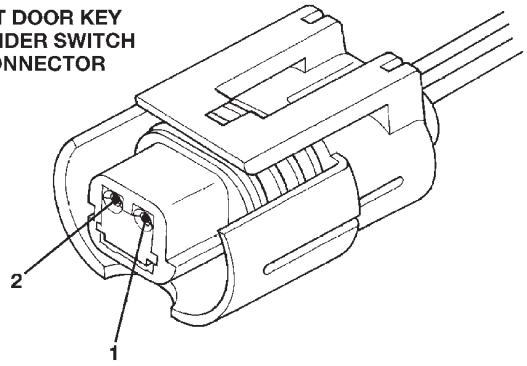
***Check connectors - Clean / repair as necessary.***

## TEST 4A — CONTINUED - REPAIRING ALL DOORS FAILING TO LOCK AND UNLOCK FROM ONE SWITCH




80b2b34a

**LEFT DOOR KEY CYLINDER SWITCH CONNECTOR**

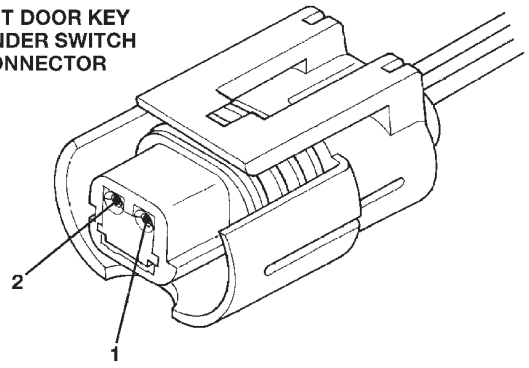



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 2 | PK | FUSED B(+) |

80b1b3c7

***FIG. 1***

**RIGHT DOOR KEY CYLINDER SWITCH CONNECTOR**

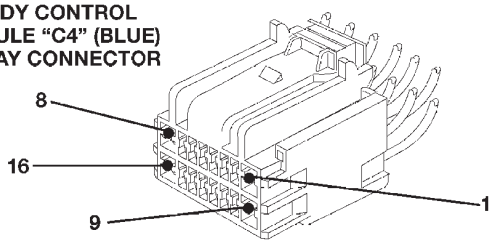



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 2 | PK | FUSED B(+) |

80b1b3c8

***FIG. 2***

**BODY CONTROL MODULE "C4" (BLUE) 16-WAY CONNECTOR**

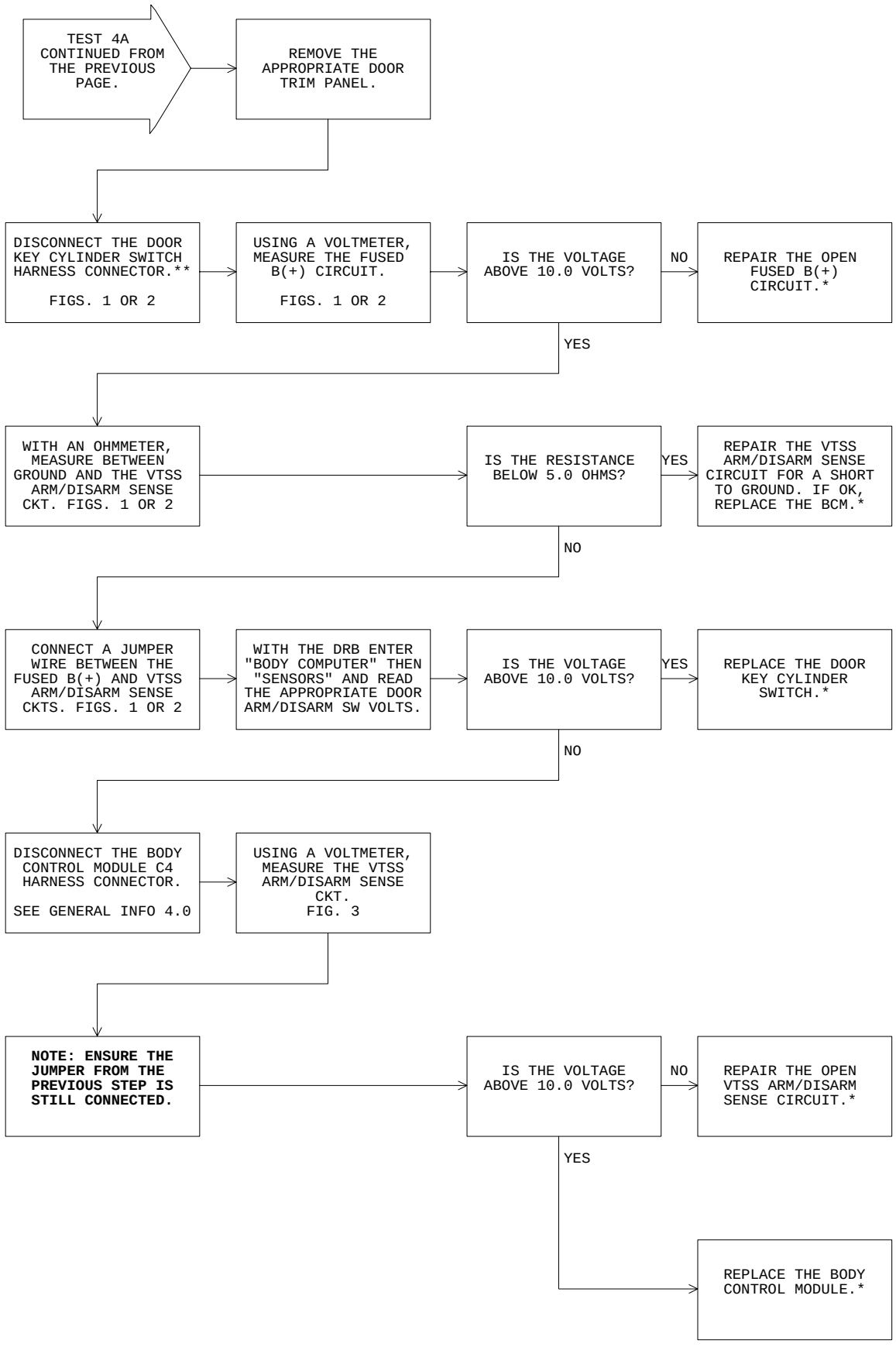



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

80b11939

***FIG. 3***

## TEST 4A CONTINUED - REPAIRING ALL DOORS FAILING TO LOCK AND UNLOCK FROM ONE SWITCH

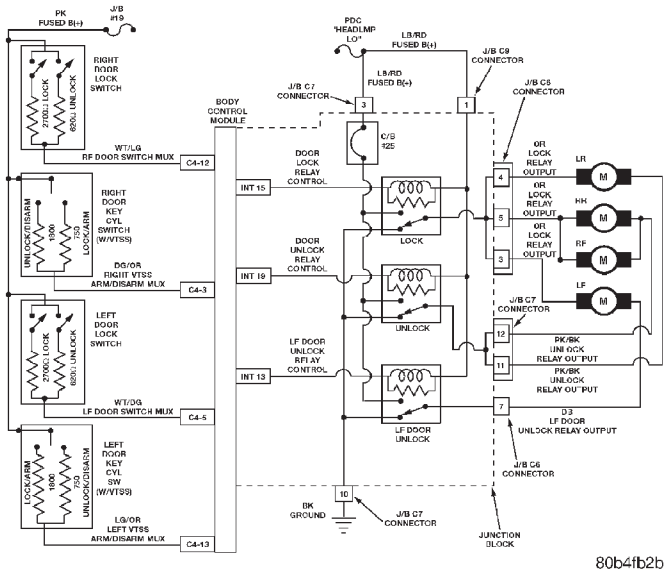



***Perform Verification TEST VER-2A.***

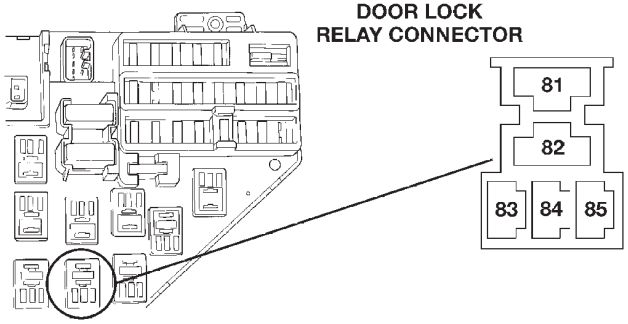
***Check connectors - Clean / repair as necessary.***

## TEST 5A REPAIRING ALL DOORS FAILING TO LOCK FROM ANY SWITCH

**Perform TEST 1A Before Proceeding**



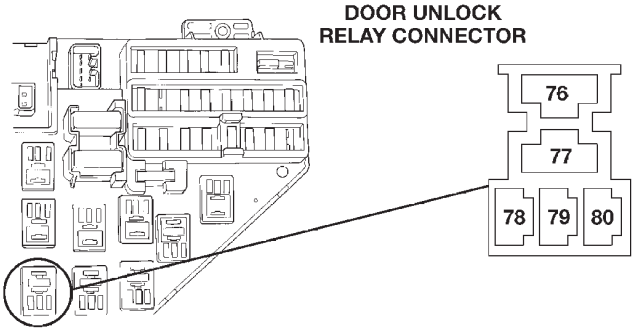

80b4fb2b




| CAV | FUNCTION |
|---|---|
| 81 (30) | LOCK RELAY OUTPUT |
| 82 (87) | FUSED B (+) |
| 83 (85) | FUSED B (+) |
| 84 (87A) | GROUND |
| 85 (86) | DOOR LOCK RELAY CONTROL |

80b2b3f0

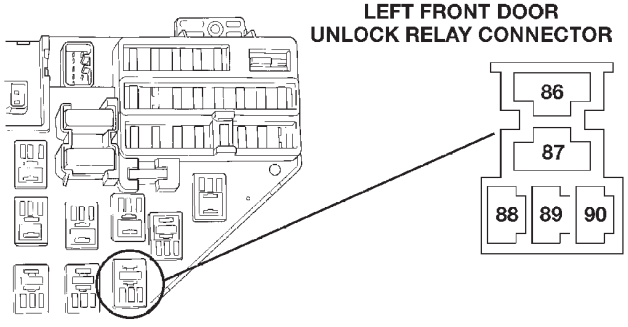
***FIG. 1***




| CAV | FUNCTION |
|---|---|
| 76 (30) | UNLOCK RELAY OUTPUT |
| 77 (87) | FUSED B (+) |
| 78 (85) | FUSED B (+) |
| 79 (87A) | GROUND |
| 80 (86) | DOOR UNLOCK RELAY CONTROL |

80b2b3f1

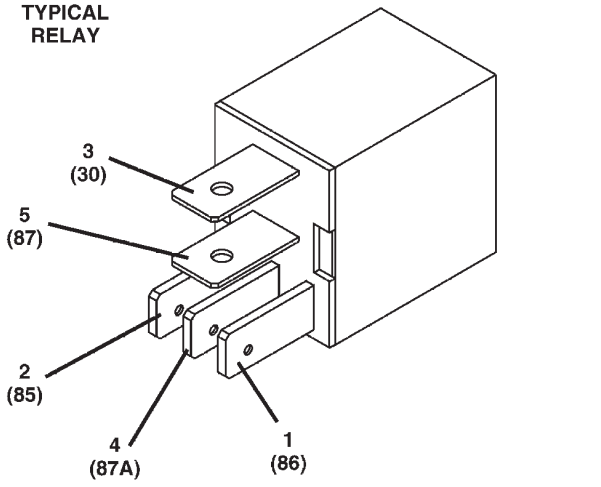
***FIG. 2***




| CAV | FUNCTION |
|---|---|
| 86 (30) | LF DOOR UNLOCK RELAY OUTPUT |
| 87 (87) | FUSED B (+) |
| 88 (85) | FUSED B (+) |
| 89 (87A) | GROUND |
| 90 (86) | LF DOOR UNLOCK RELAY CONTROL |

80b2b3f2

***FIG. 3***

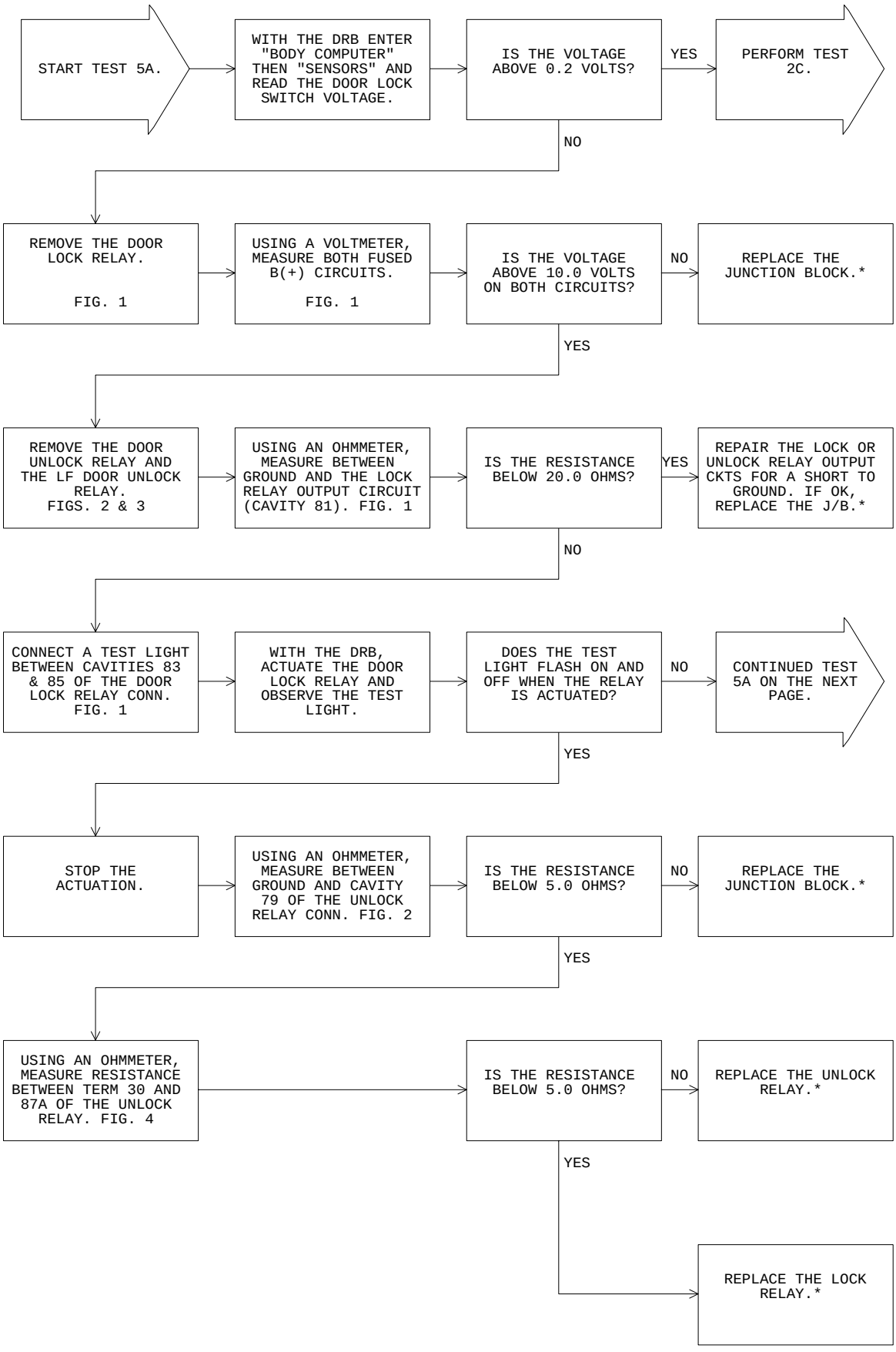



80a328da

***FIG. 4***

## TEST 5A REPAIRING ALL DOORS FAILING TO LOCK FROM ANY SWITCH

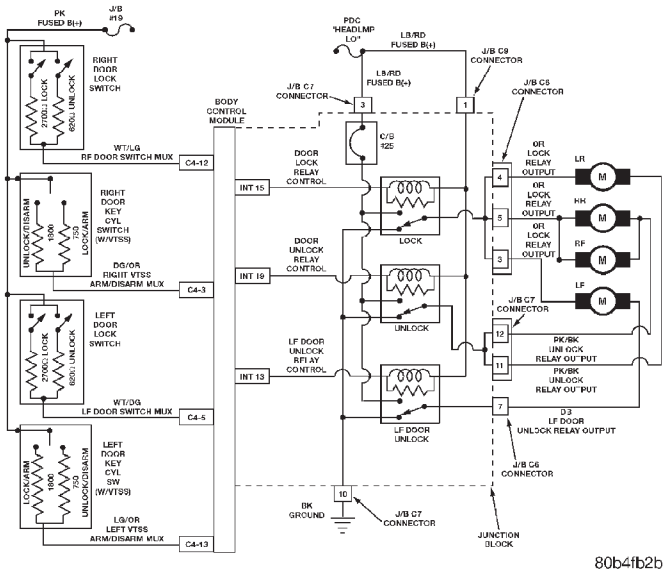
**Perform TEST 1A Before Proceeding**



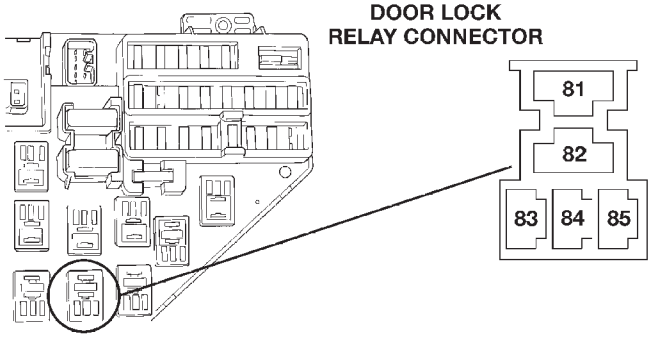

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 5A — CONTINUED - REPAIRING ALL DOORS FAILING TO LOCK FROM ANY SWITCH



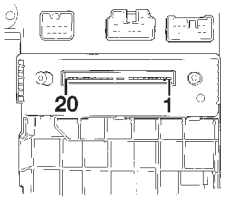

80b4fb2b




| CAV | FUNCTION |
|---|---|
| 81 (30) | LOCK RELAY OUTPUT |
| 82 (87) | FUSED B (+) |
| 83 (85) | FUSED B (+) |
| 84 (87A) | GROUND |
| 85 (86) | DOOR LOCK RELAY CONTROL |

80b2b3f0

***FIG. 1***



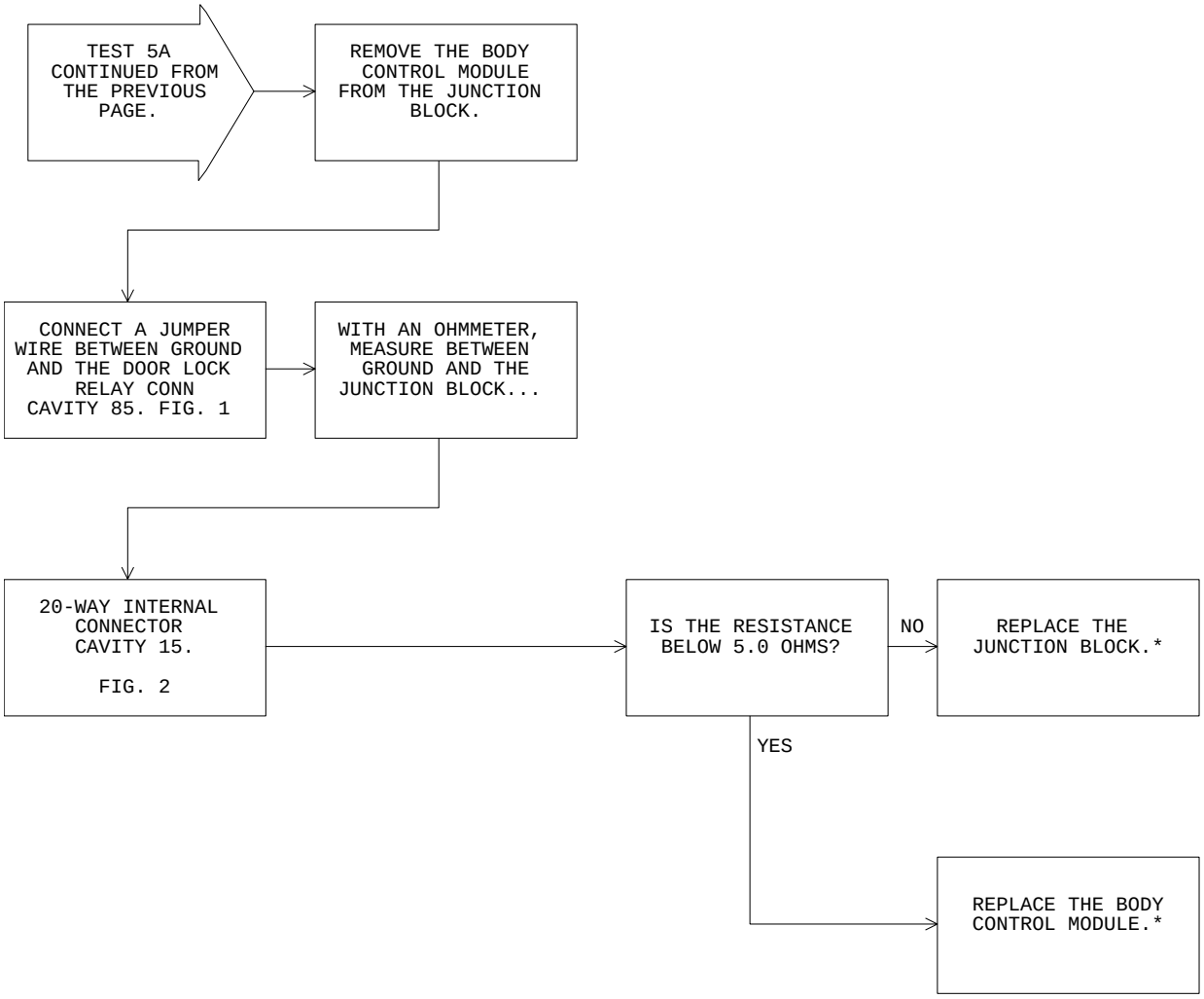

**JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR**

| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

***FIG. 2***

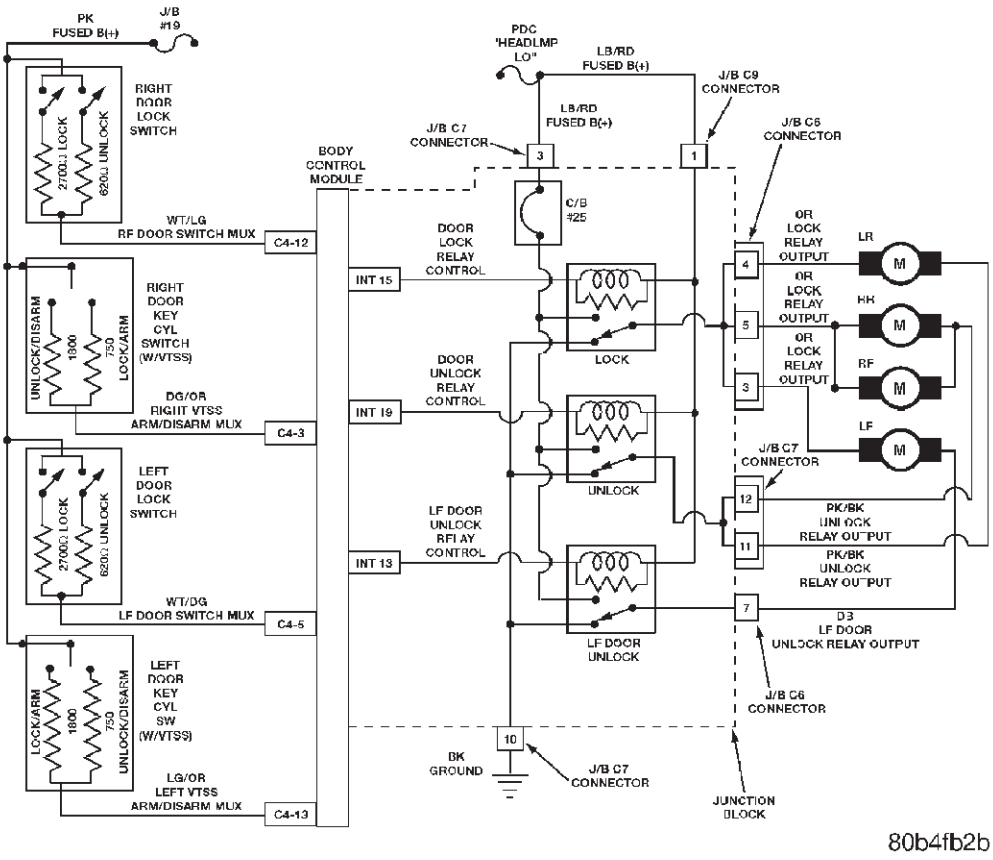
## TEST 5A CONTINUED - REPAIRING ALL DOORS FAILING TO LOCK FROM ANY SWITCH

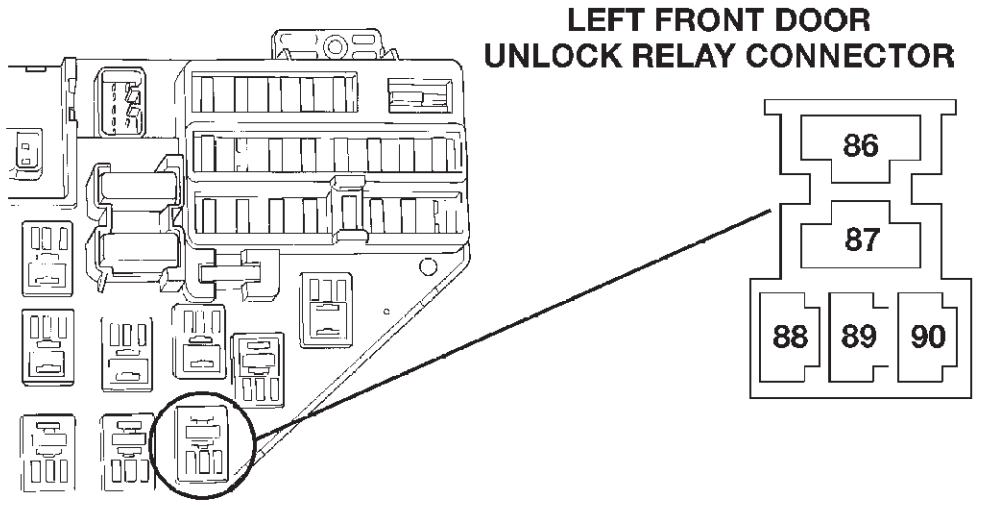



***Perform Verification TEST VER-2A.** | ***Check connectors - Clean / repair as necessary.**

## TEST 6A — REPAIRING LEFT FRONT DOOR FAILING TO LOCK FROM ANY SWITCH

**Perform TEST 1A Before Proceeding**



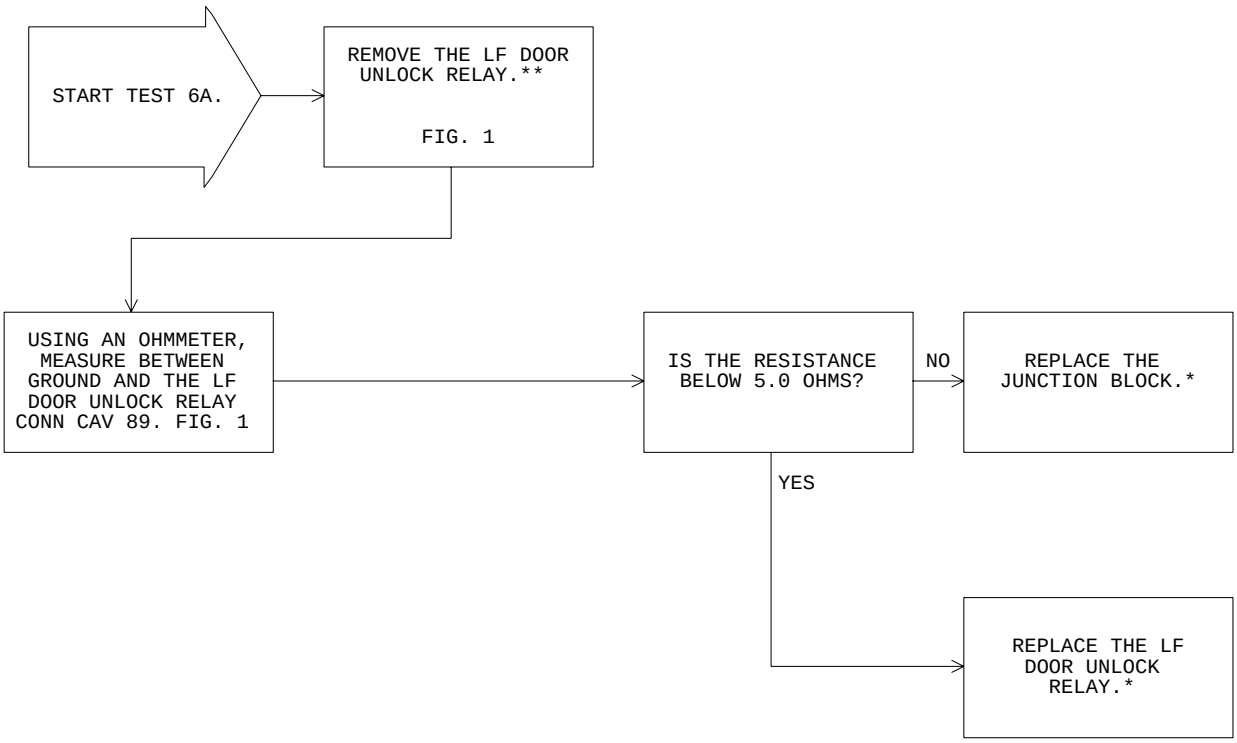

| CAV | FUNCTION |
|---|---|
| 86 (30) | LF DOOR UNLOCK RELAY OUTPUT |
| 87 (87) | FUSED B (+) |
| 88 (85) | FUSED B (+) |
| 89 (87A) | GROUND |
| 90 (86) | LF DOOR UNLOCK RELAY CONTROL |

80b2b3f2

***FIG. 1***

## TEST 6A REPAIRING LEFT FRONT DOOR FAILING TO LOCK FROM ANY SWITCH

**Perform TEST 1A Before Proceeding**

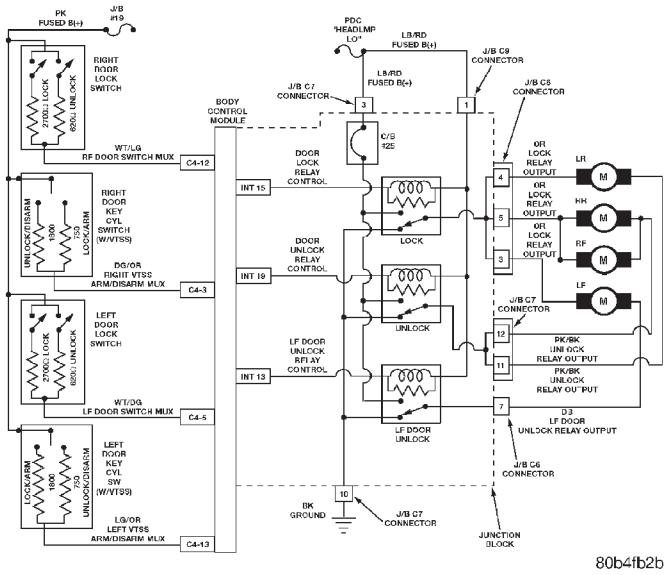



***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

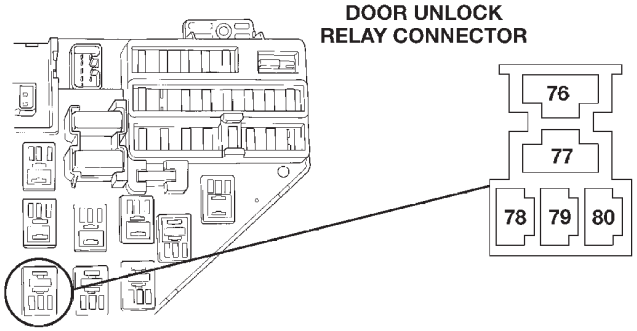
## TEST 7A — REPAIRING ALL DOORS FAILING TO UNLOCK FROM ANY SWITCH

**Perform TEST 1A Before Proceeding**




80b4fb2b

### DOOR UNLOCK RELAY CONNECTOR

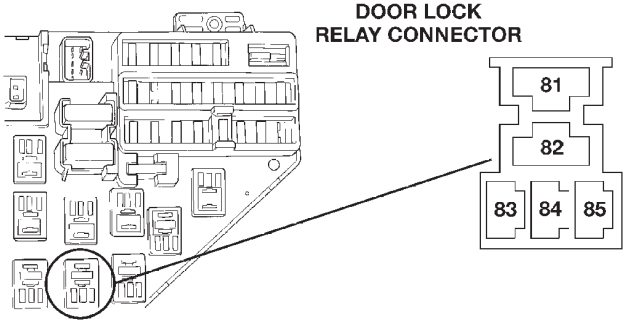



| CAV | FUNCTION |
|---|---|
| 76 (30) | UNLOCK RELAY OUTPUT |
| 77 (87) | FUSED B (+) |
| 78 (85) | FUSED B (+) |
| 79 (87A) | GROUND |
| 80 (86) | DOOR UNLOCK RELAY CONTROL |

80b2b3f1

*FIG. 1*

### DOOR LOCK RELAY CONNECTOR

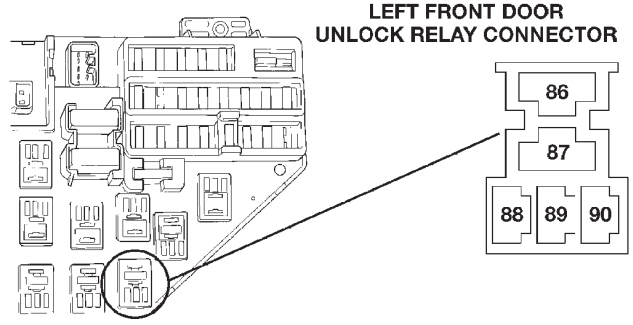



| CAV | FUNCTION |
|---|---|
| 81 (30) | LOCK RELAY OUTPUT |
| 82 (87) | FUSED B (+) |
| 83 (85) | FUSED B (+) |
| 84 (87A) | GROUND |
| 85 (86) | DOOR LOCK RELAY CONTROL |

80b2b3f0

*FIG. 2*

### LEFT FRONT DOOR UNLOCK RELAY CONNECTOR

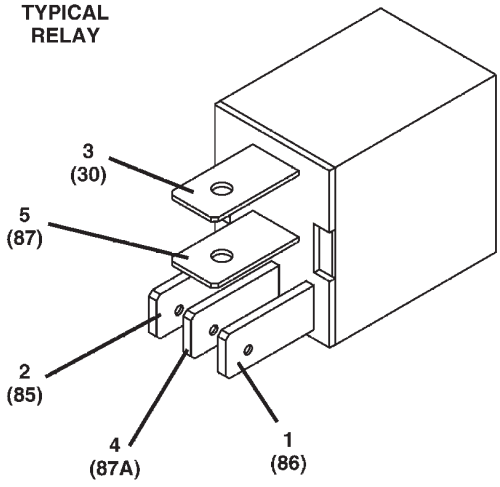



| CAV | FUNCTION |
|---|---|
| 86 (30) | LF DOOR UNLOCK RELAY OUTPUT |
| 87 (87) | FUSED B (+) |
| 88 (85) | FUSED B (+) |
| 89 (87A) | GROUND |
| 90 (86) | LF DOOR UNLOCK RELAY CONTROL |

80b2b3f2

*FIG. 3*

### TYPICAL RELAY

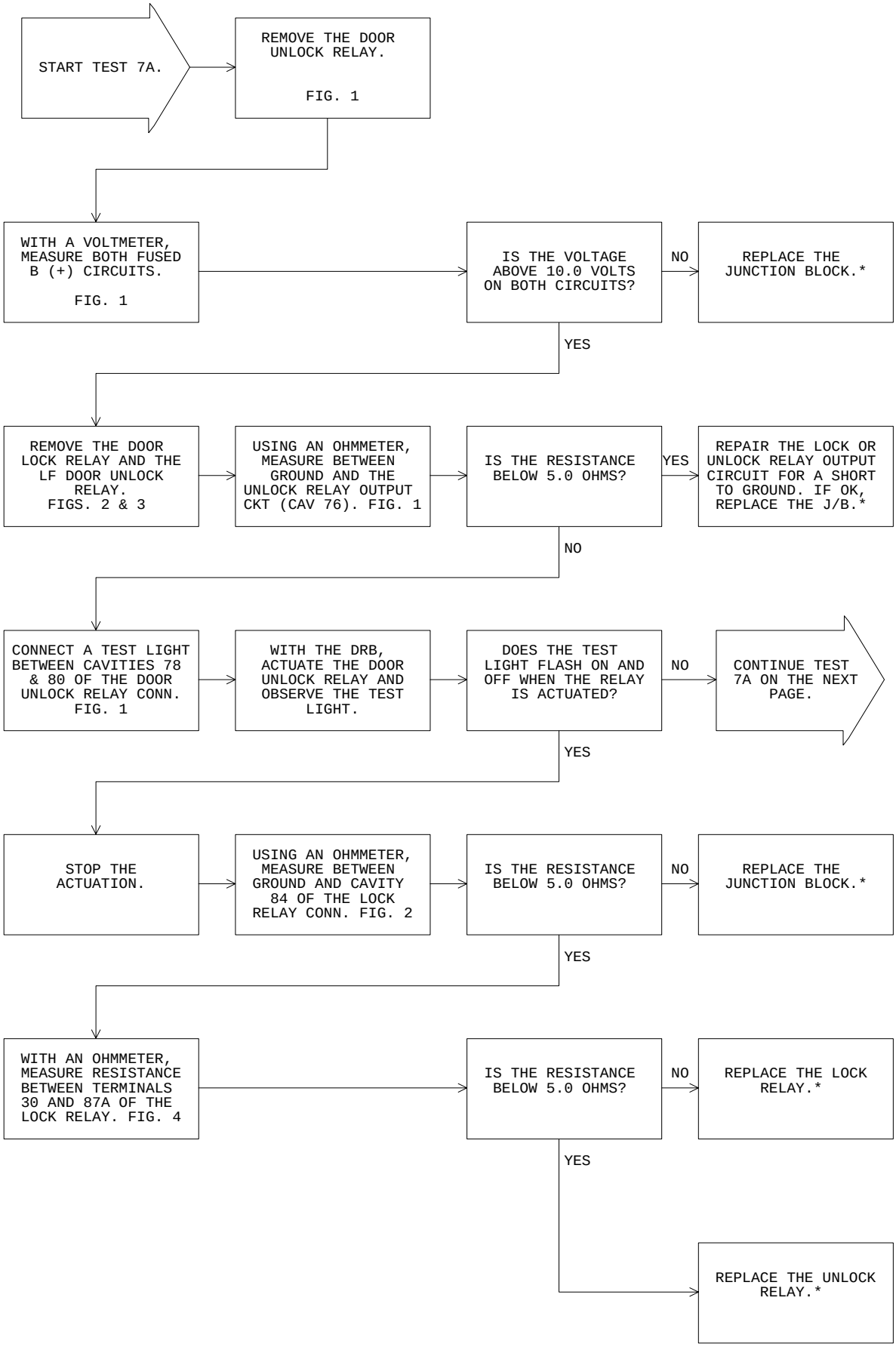



80a328da

*FIG. 4*

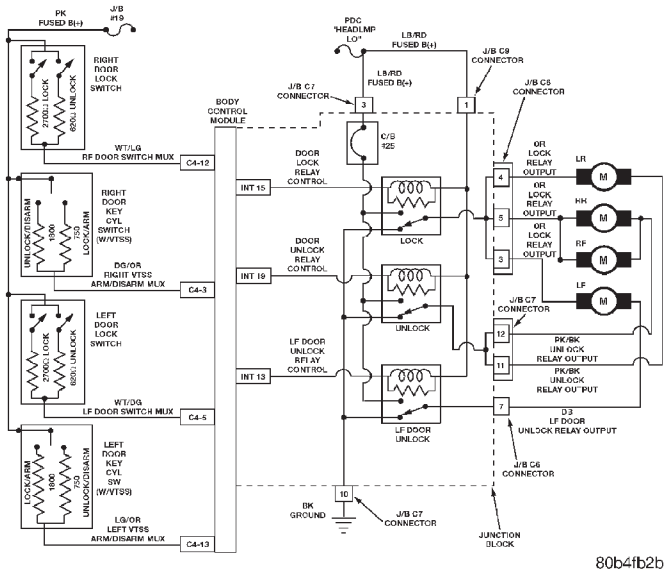
## TEST 7A REPAIRING ALL DOORS FAILING TO UNLOCK FROM ANY SWITCH

**Perform TEST 1A Before Proceeding**

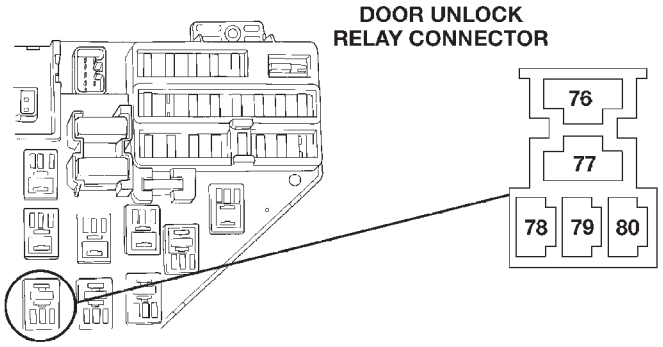



***Perform Verification TEST VER-2A.** | ***Check connectors - Clean / repair as necessary.**

## TEST 7A — CONTINUED - REPAIRING ALL DOORS FAILING TO UNLOCK FROM ANY SWITCH



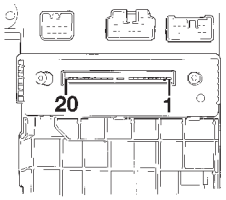

80b4fb2b




| CAV | FUNCTION |
|---|---|
| 76 (30) | UNLOCK RELAY OUTPUT |
| 77 (87) | FUSED B (+) |
| 78 (85) | FUSED B (+) |
| 79 (87A) | GROUND |
| 80 (86) | DOOR UNLOCK RELAY CONTROL |

80b2b3f1

***FIG. 1***

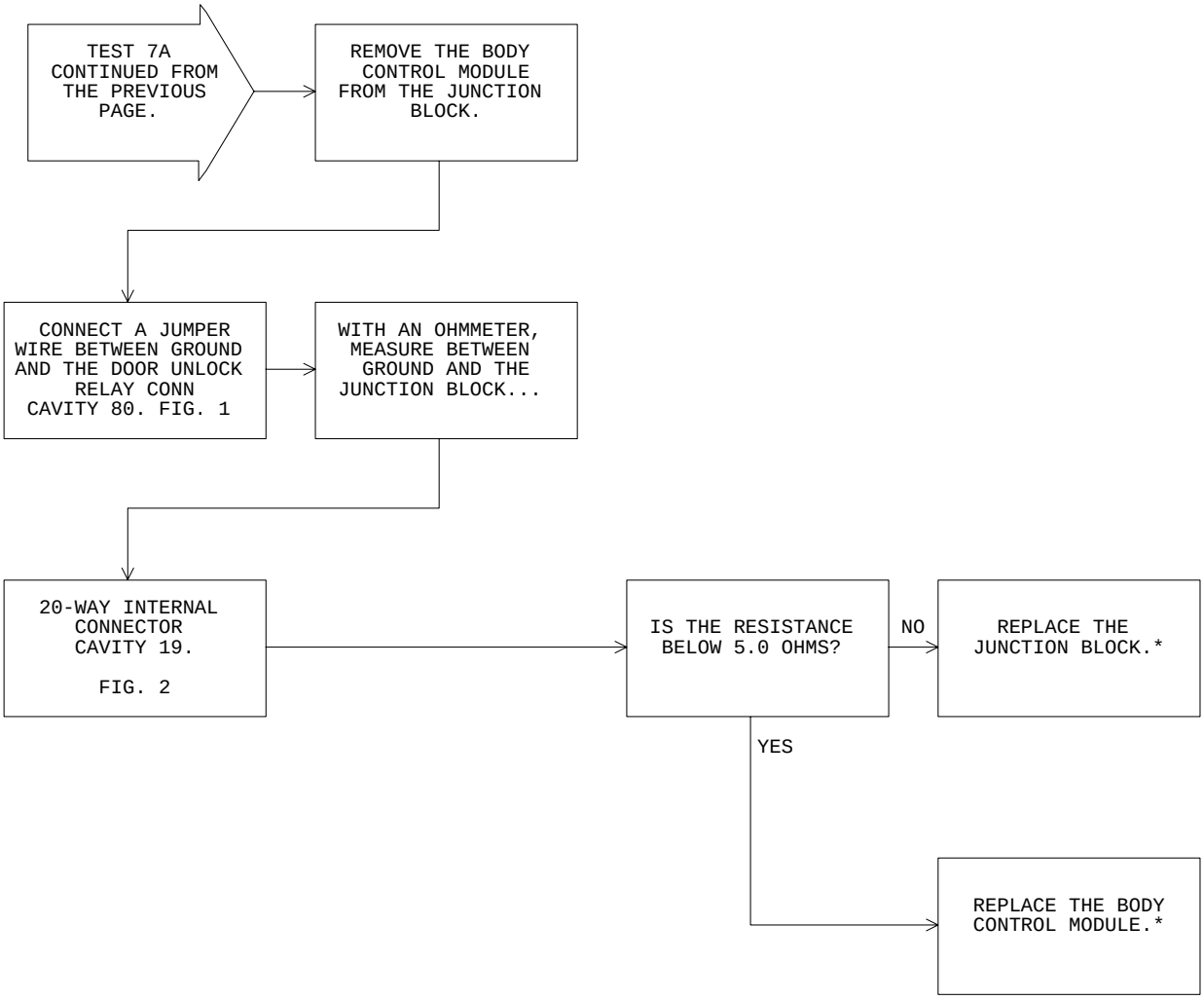



| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

***FIG. 2***

## TEST 7A CONTINUED - REPAIRING ALL DOORS FAILING TO UNLOCK FROM ANY SWITCH

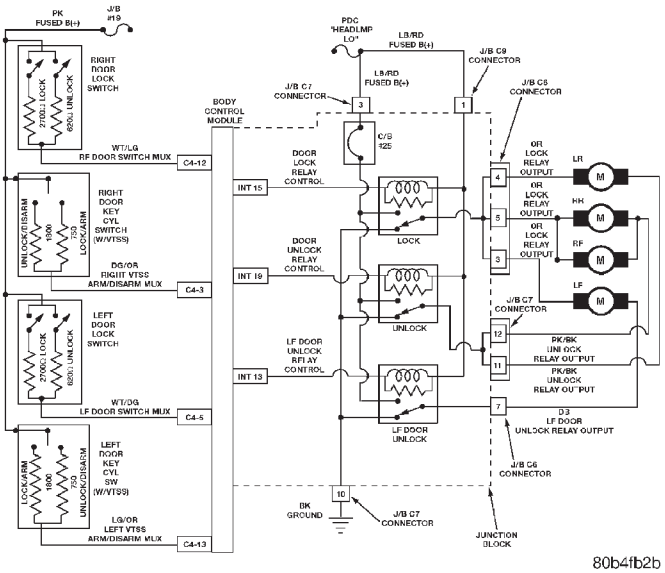



***Perform Verification TEST VER-2A.***

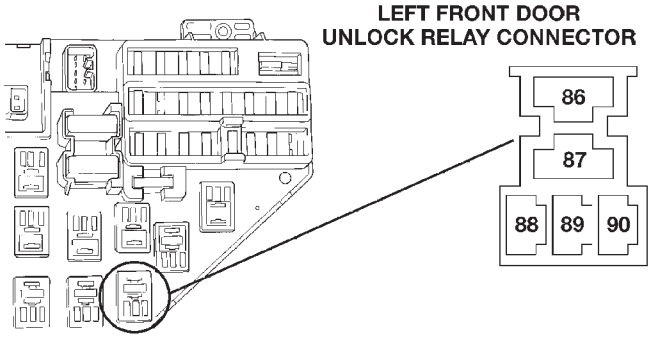
*****Check connectors - Clean / repair as necessary.***

## TEST 8A REPAIRING LEFT FRONT DOOR FAILING TO UNLOCK FROM ANY SWITCH

**Perform TEST 1A Before Proceeding**



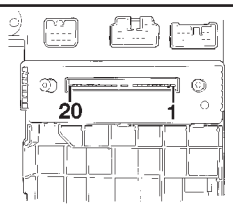

80b4fb2b




| CAV | FUNCTION |
|---|---|
| 86 (30) | LF DOOR UNLOCK RELAY OUTPUT |
| 87 (87) | FUSED B (+) |
| 88 (85) | FUSED B (+) |
| 89 (87A) | GROUND |
| 90 (86) | LF DOOR UNLOCK RELAY CONTROL |

80b2b3f2

***FIG. 1***




**JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR**

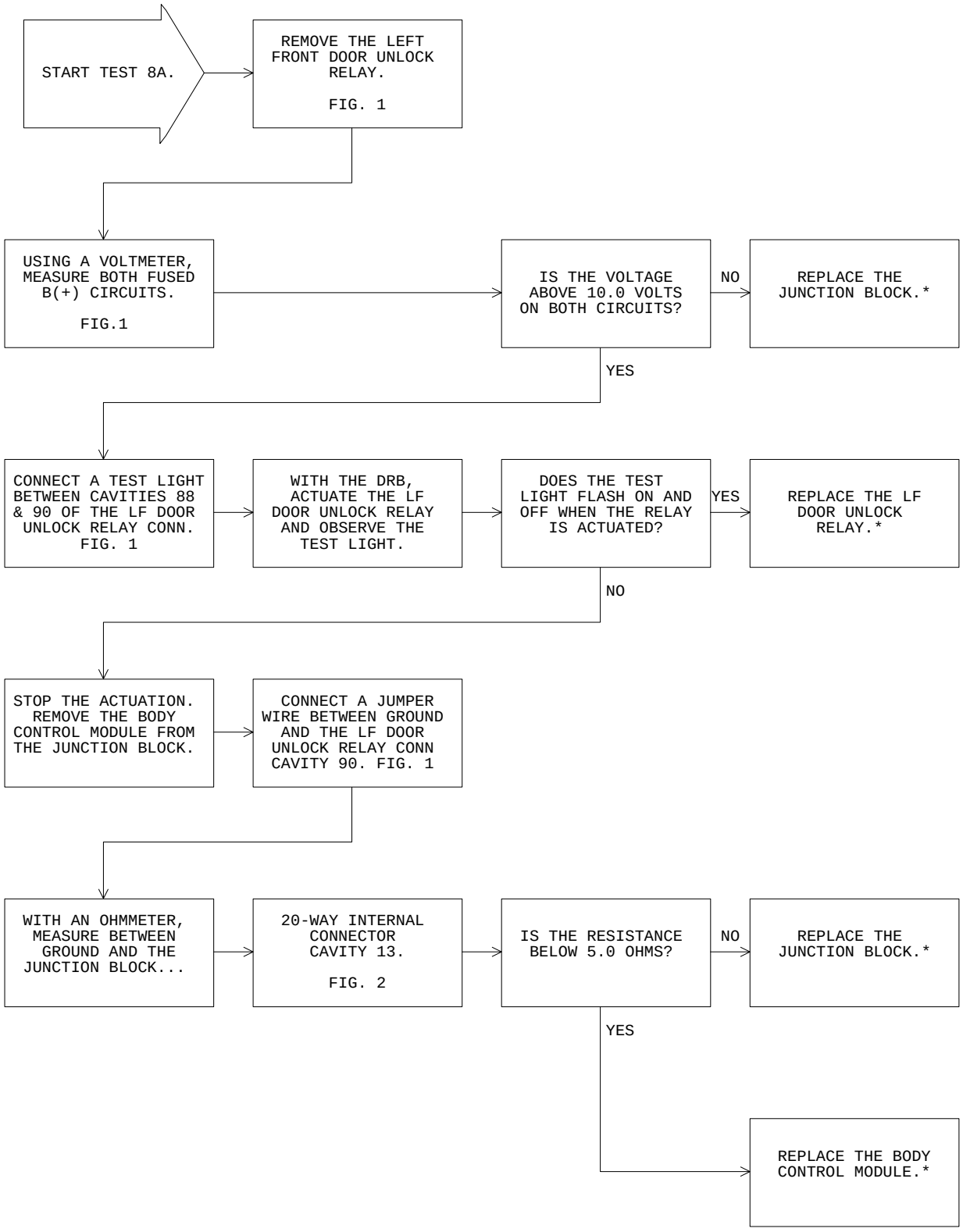
| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

***FIG. 2***

## TEST 8A REPAIRING LEFT FRONT DOOR FAILING TO UNLOCK FROM ANY SWITCH

**Perform TEST 1A Before Proceeding**

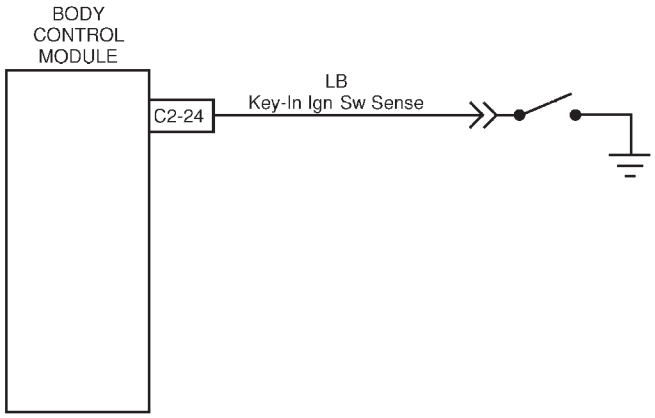



***Perform Verification TEST VER-2A.***

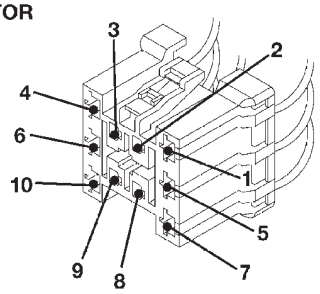
*****Check connectors - Clean / repair as necessary.***

## TEST 9A REPAIRING DOOR LOCK INHIBIT

**Perform TEST 1A Before Proceeding**




**IGNITION SWITCH CONNECTOR**

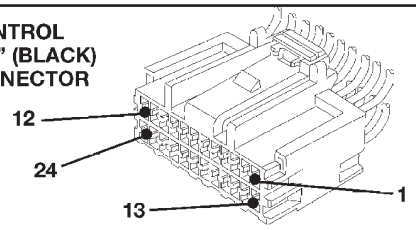



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/RD | IGN SW OUTPUT (OFF/RUN/START) |
| 2 | LB | KEY-IN IGNITION SWITCH SENSE |
| 3 | BK/LG | GROUND |
| 4 | DB/WT | IGN SW OUTPUT (RUN/START) |
| 5 | RD | FUSED B(+) |
| 6 | BK/WT | IGN SW OUTPUT (ACC/RUN) |
| 7 | PK/BK | FUSED B(+) |
| 9 | YL | IGN SW OUTPUT (START) |
| 10 | BK/OR | IGN SW OUTPUT (RUN) |

80b27d43

***FIG. 1***

**BODY CONTROL MODULE "C2" (BLACK) 24-WAY CONNECTOR**



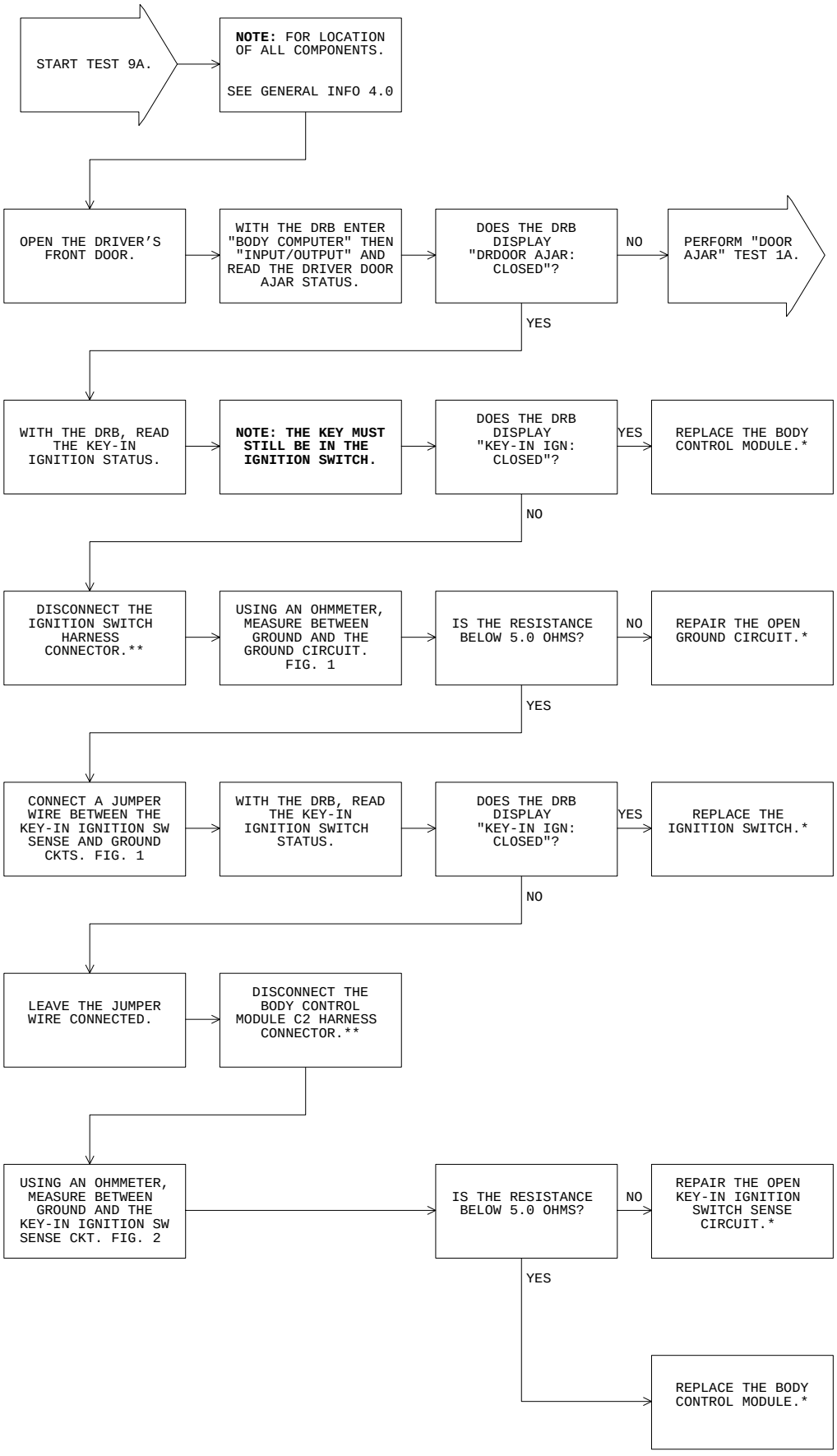

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

80b11936

***FIG. 2***

## TEST 9A REPAIRING DOOR LOCK INHIBIT

**Perform TEST 1A Before Proceeding**

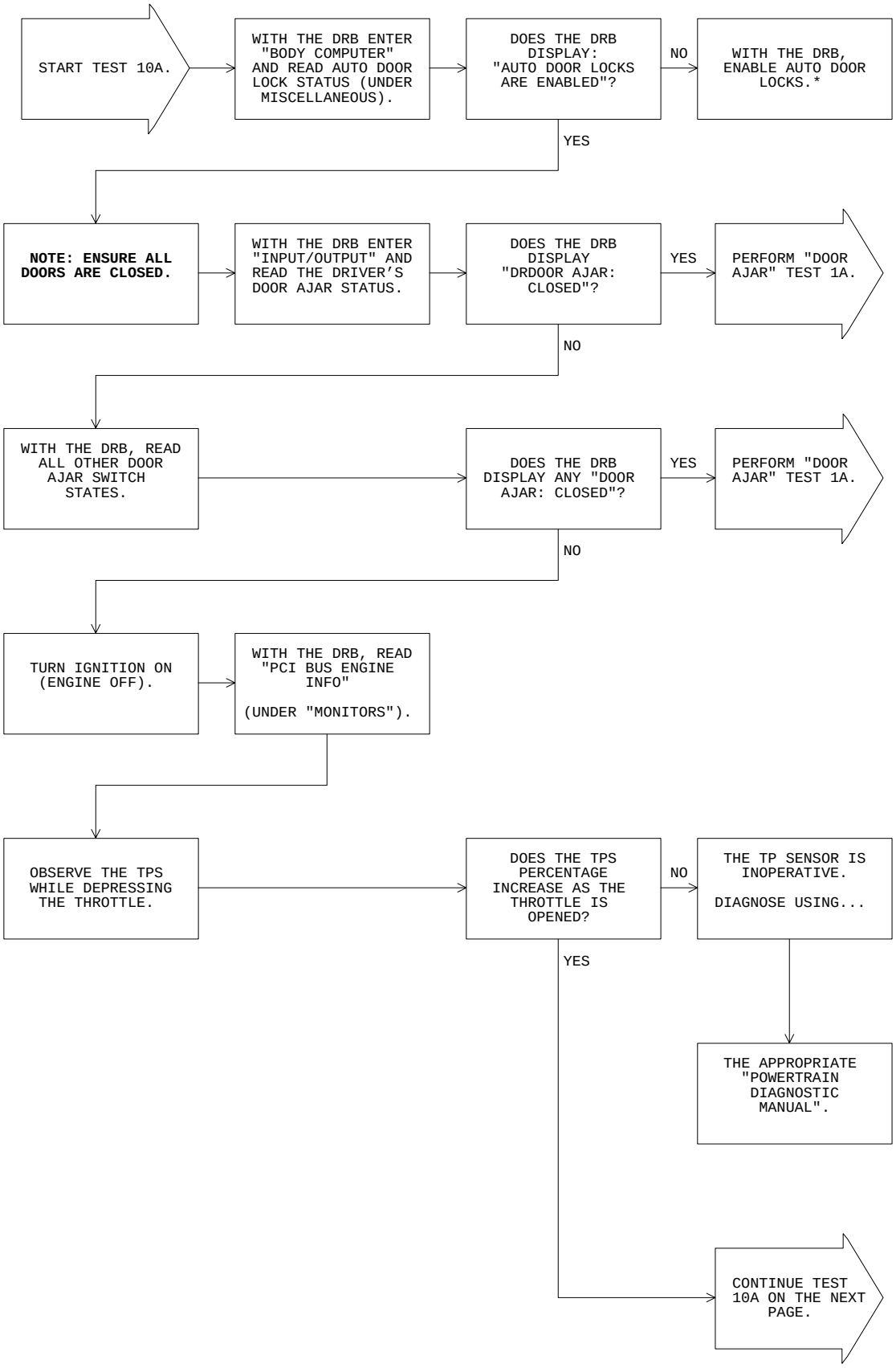



***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

## TEST 10A REPAIRING AUTOMATIC (ROLLING) DOOR LOCKS

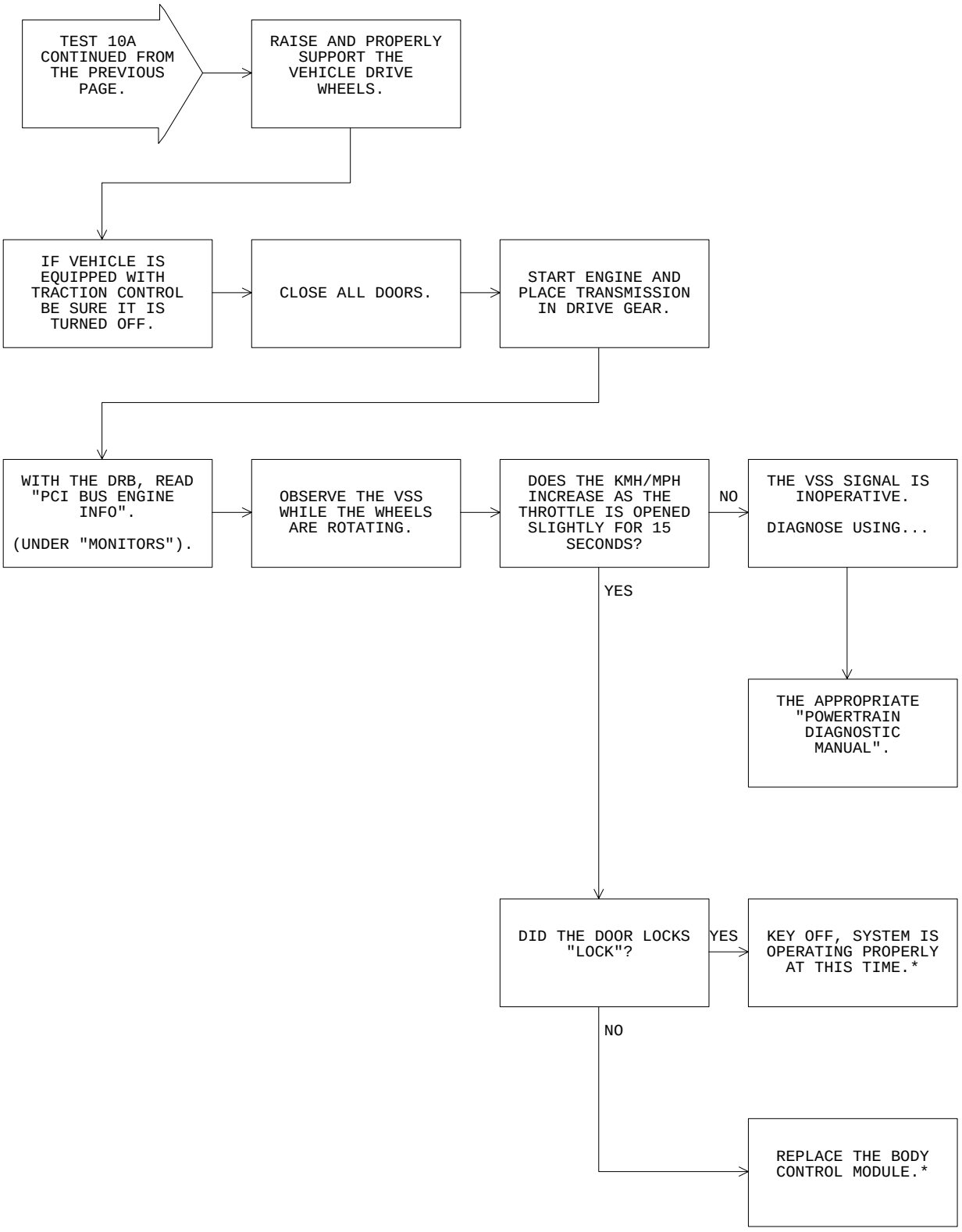
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 10A CONTINUED - REPAIRING AUTOMATIC (ROLLING) DOOR LOCKS




***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 11A REPAIRING REMOTE KEYLESS ENTRY

**Perform TEST 1A Before Proceeding**

**PROBLEM WITH:** **Perform TEST**

Testing a transmitter -

1. Secure a known good transmitter.
2. Using the DRB select, “Body”, “Body Computer”, “Miscellaneous”, “RKE FOB Test”
3. Press the lock or unlock button on the transmitter.

If the RKE responded correctly, replace and program a new transmitter.

If the RKE is inoperative or operates improperly: replace RKE module and program all the vehicles transmitters.

Programming a transmitter . . . . . .11B

Horn chirp inoperative. . . . . .11C

Cancel horn chirp . . . . . .(Customer Programmable or use DRB)

Change decklid to single button depression . . . . . .(Customer Programmable Only)

## TEST 11B PROGRAMMING A TRANSMITTER

**Perform TEST 11A Before Proceeding**

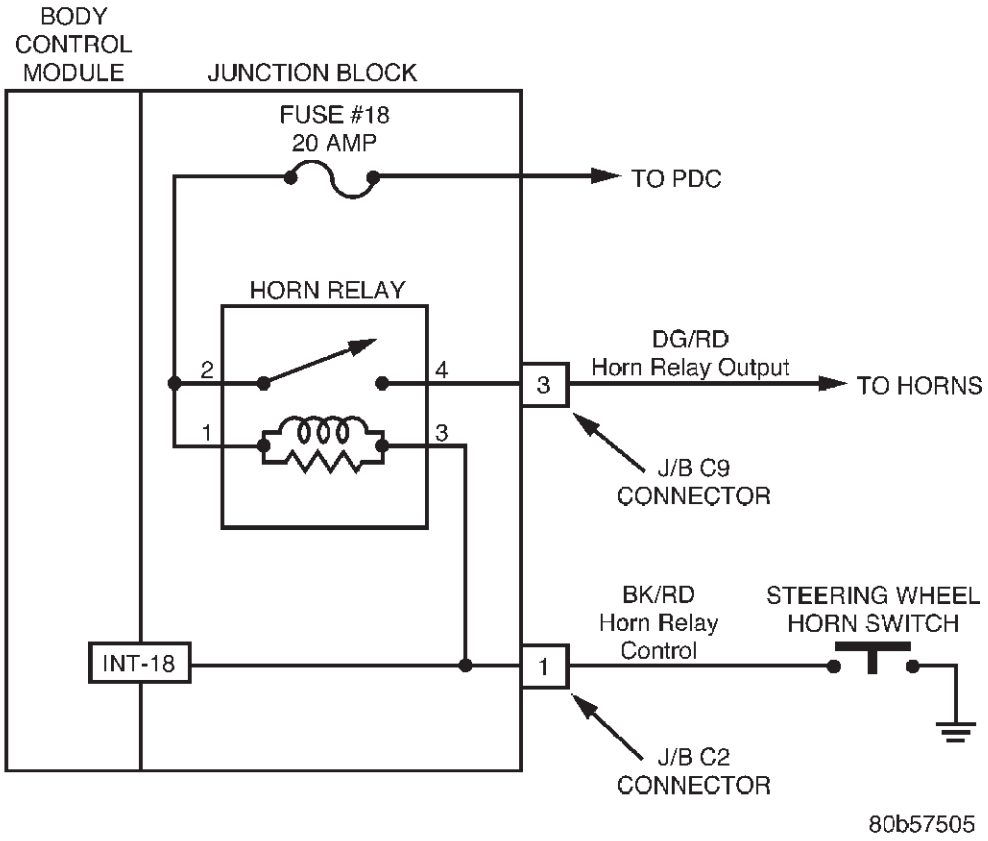
**NOTE:** Anytime the RKE is in programming mode, all transmitters that will be used on that vehicle should be programmed at that time. If not, the others will have to be programmed later by using the customer programmable method.

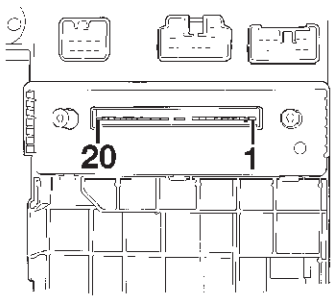
1. Ensure transmitter batteries are approximately 3.2 volts each.
2. Turn the ignition on (engine off) and ensure the vehicle is in the park position.
3. Using the DRB select “Miscellaneous”, “Program RKE”. The BCM will chime.
4. Press any button on the transmitter. The BCM will chime.
5. Press any button on the next transmitter. The BCM will chime.

   A. Repeat for all other transmitters that will be used (up to a total of 4 per vehicle).
6. Exit “Program RKE” and turn ignition off. The BCM will chime.

## TEST 11C REPAIRING INOPERATIVE HORN CHIRP

**Perform TEST 11A Before Proceeding**




**JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR**

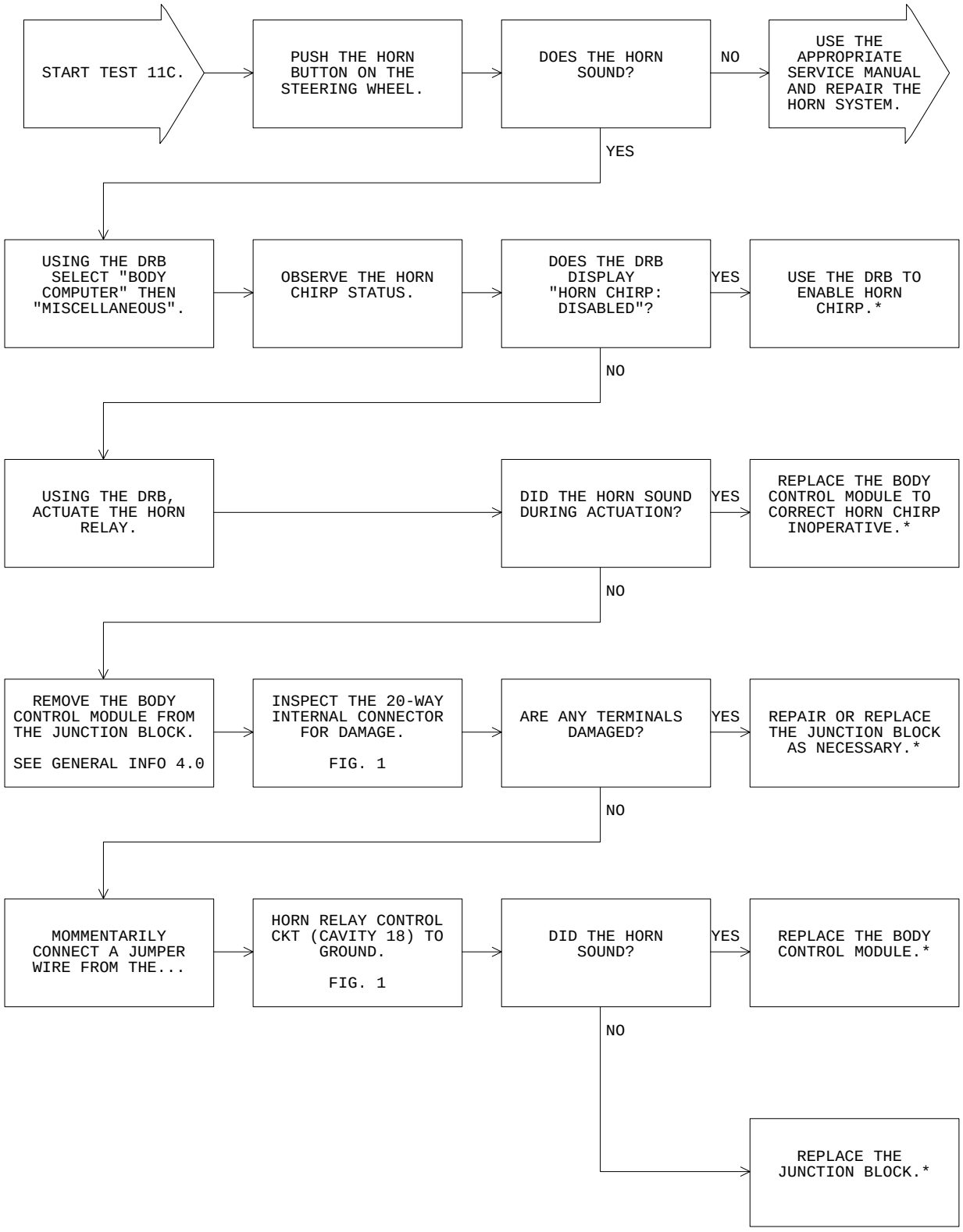
| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

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*FIG. 1*

## TEST 11C REPAIRING INOPERATIVE HORN CHIRP

**Perform TEST 11A Before Proceeding**

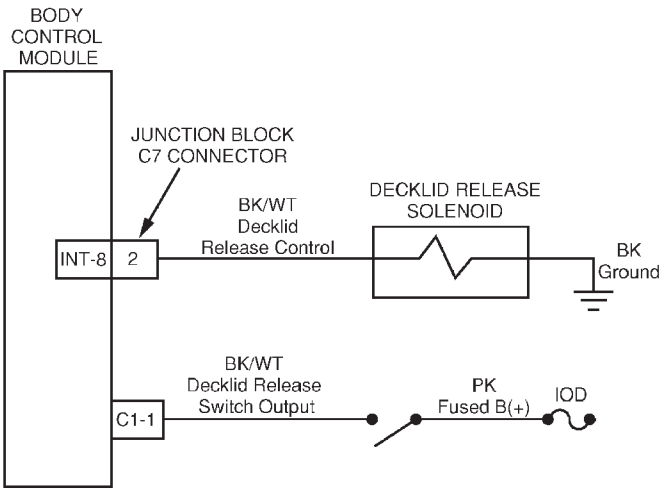



***Perform Verification TEST VER-2A.***

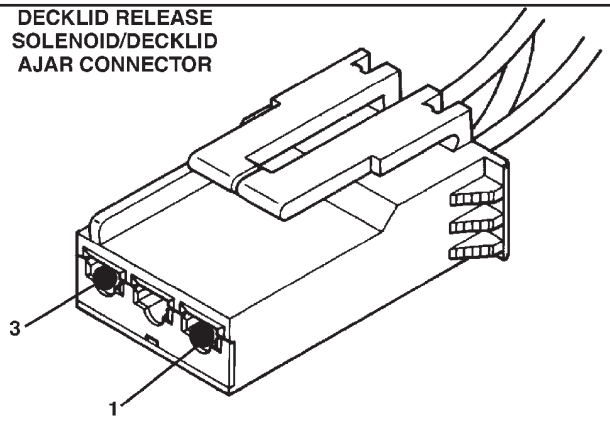
*****Check connectors - Clean / repair as necessary.***

## TEST 12A REPAIRING INOPERATIVE DECKLID RELEASE

**Perform TEST 1A Before Proceeding**




**DECKLID RELEASE SOLENOID/DECKLID AJAR CONNECTOR**

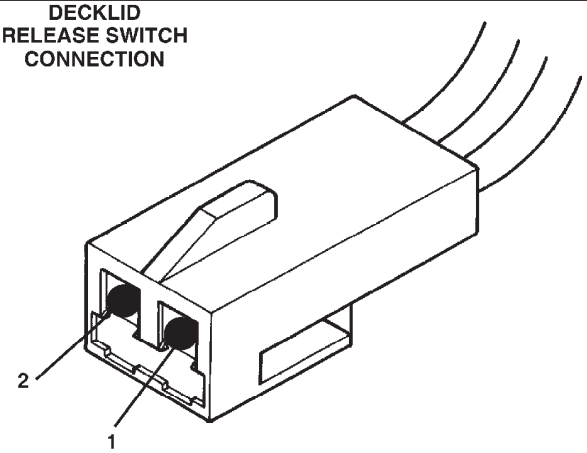



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | TN/BK | DECKLID AJAR SWITCH SENSE |
| 3 | BK/WT | DECKLID RELEASE CONTROL |

80b2912e

***FIG. 1***

**DECKLID RELEASE SWITCH CONNECTION**



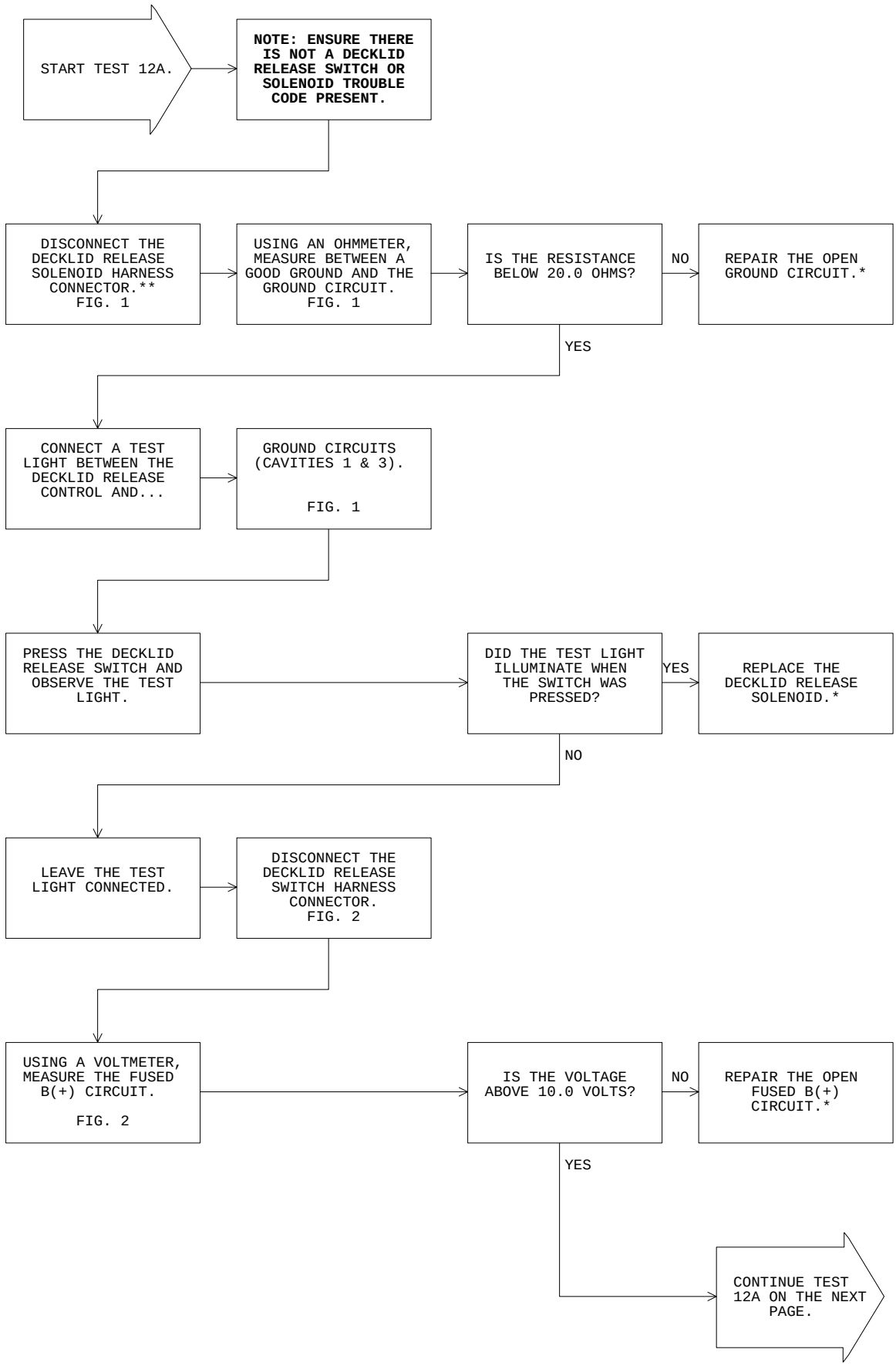

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/WT | DECKLID RELEASE SWITCH OUTPUT |
| 2 | PK | FUSED B(+) |

80b2a1f3

***FIG. 2***

## TEST 12A REPAIRING INOPERATIVE DECKLID RELEASE

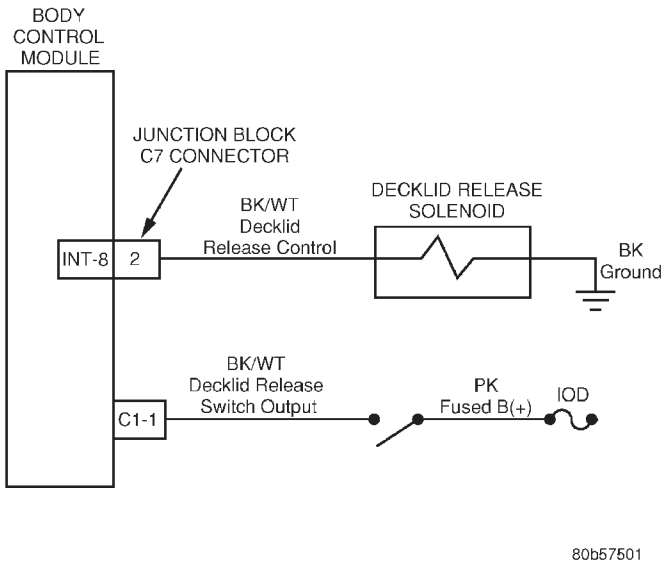
**Perform TEST 1A Before Proceeding**



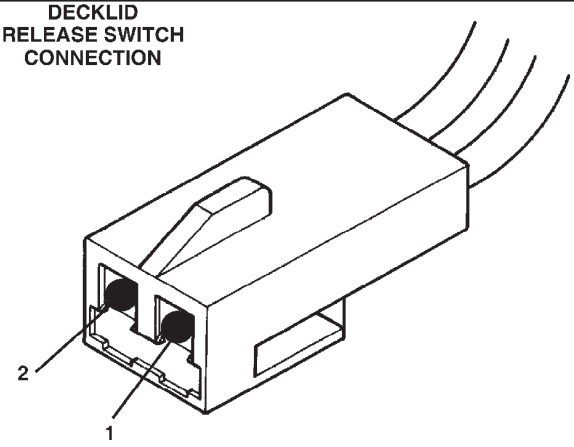

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 12A CONTINUED - REPAIRING INOPERATIVE DECKLID RELEASE




### DECKLID RELEASE SWITCH CONNECTION

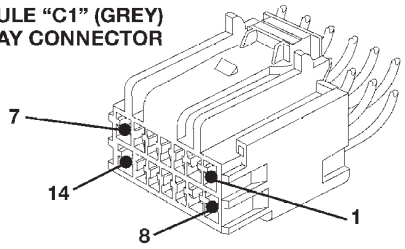



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/WT | DECKLID RELEASE SWITCH OUTPUT |
| 2 | PK | FUSED B(+) |

80b2a1f3

*FIG. 1*

### BODY CONTROL MODULE "C1" (GREY) 14-WAY CONNECTOR

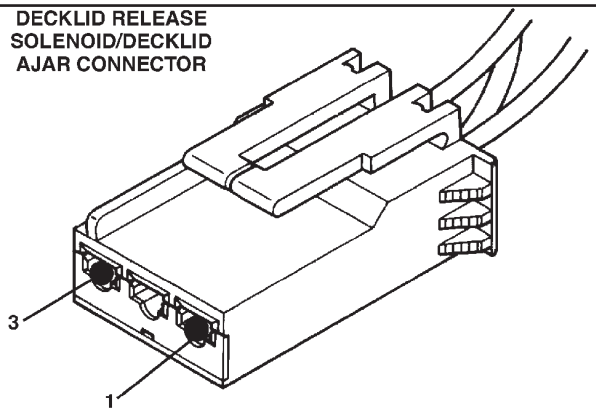



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/WT | DECKLID RELEASE SWITCH OUTPUT |
| 2 | GY/DB | RECIRCULATION DOOR DRIVER |
| 3 | DB/RD | BLEND AIR DOOR DRIVER |
| 4 | YL/VT | PCI BUS (ATC) |
| 5 | YL/VT | PCI BUS (RADIO) |
| 7 | YL/VT | PCI BUS (AIRBAG) |
| 8 | DB/GY | SENSOR GROUND |
| 9 | DG/YL | MODE DOOR DRIVER |
| 10 | BR/WT | COMMON DOOR DRIVER |
| 11 | VT/LG | FAN OFF SWITCH SIGNAL |
| 12 | YL/VT | PCI BUS (SKIM) |
| 13 | YL/VT | PCI BUS (MIC) |
| 14 | YL/VT | PCI BUS (DLC) |

80b11935

*FIG. 2*

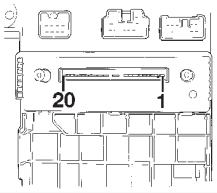
### DECKLID RELEASE SOLENOID/DECKLID AJAR CONNECTOR




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | TN/BK | DECKLID AJAR SWITCH SENSE |
| 3 | BK/WT | DECKLID RELEASE CONTROL |

80b29f2e

*FIG. 3*



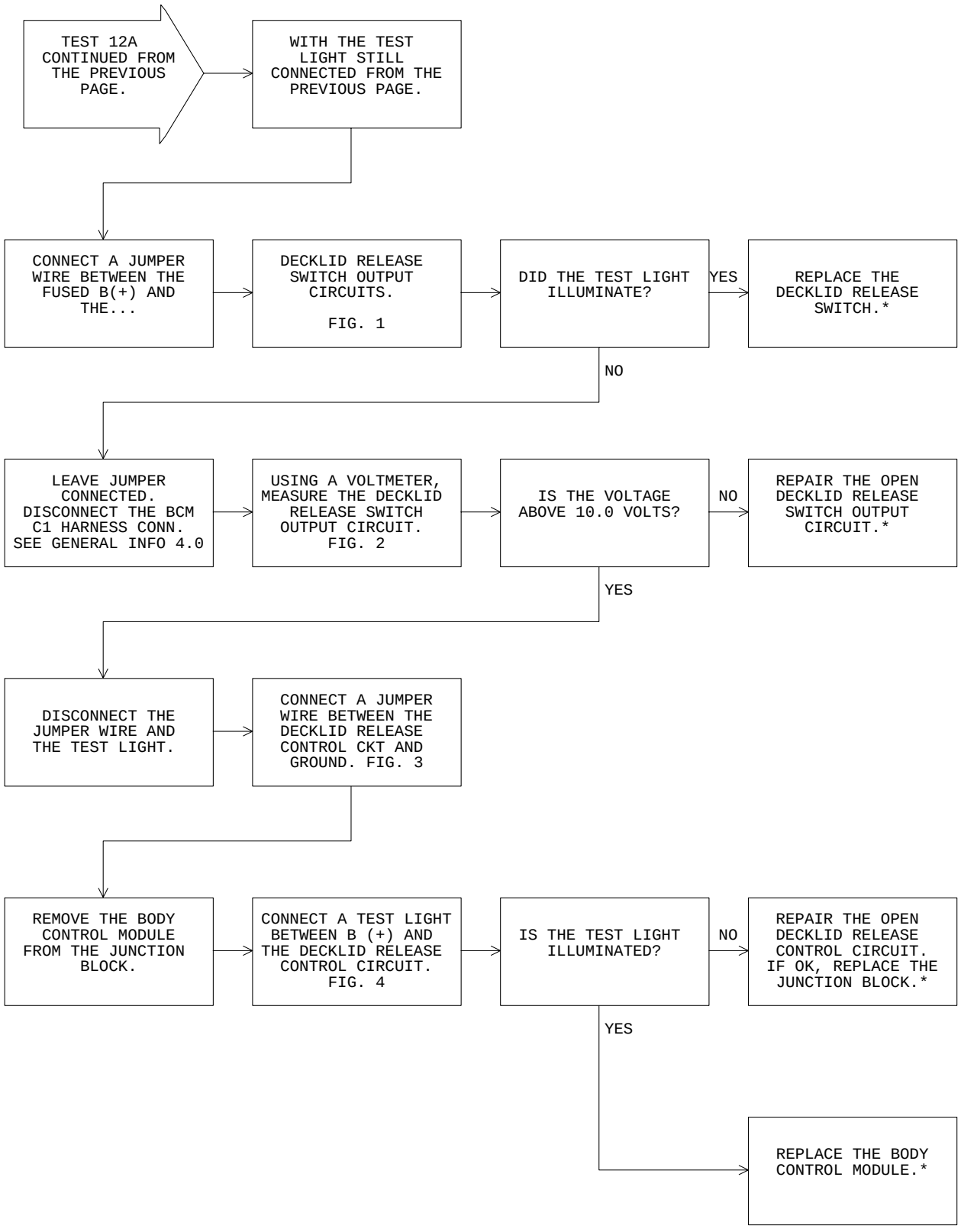

### JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR

| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

*FIG. 4*

## TEST 12A CONTINUED - REPAIRING INOPERATIVE DECKLID RELEASE

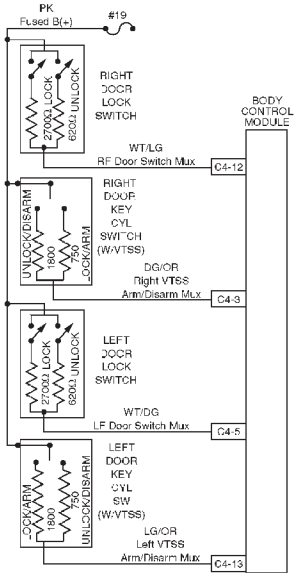



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 13A — REPAIRING "DR DOOR CENTRAL LOCK (ARM)/UNLOCK (DISARM) SWITCH FAILURE" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b2b34a

**Name of code:** (Dr or Pass) Central Lock (Arm)/Unlock (Disarm) Switch Failure (VTSS only)

**When monitored:** Continuously

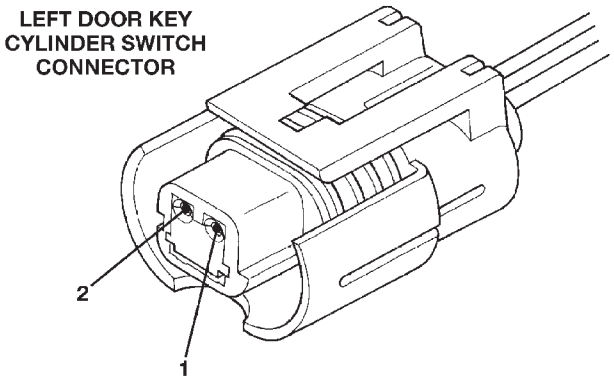
**Set condition:** BCM detects a signal on this input for over 10 seconds.

**Theory of operation:** The central lock/unlock switches are used to lock or unlock all doors and arm or disarm VTSS using the exterior key cylinder. Typical operation of these switches is to activate them for only a short period of time. If the BCM detects a signal for over 10 seconds on either input, it will set the fault and ignore the offending input until it goes away.

**Probable Causes:**

- Wiring short to battery
- Failed door key cylinder switch
- Failed BCM

80b5cbe8



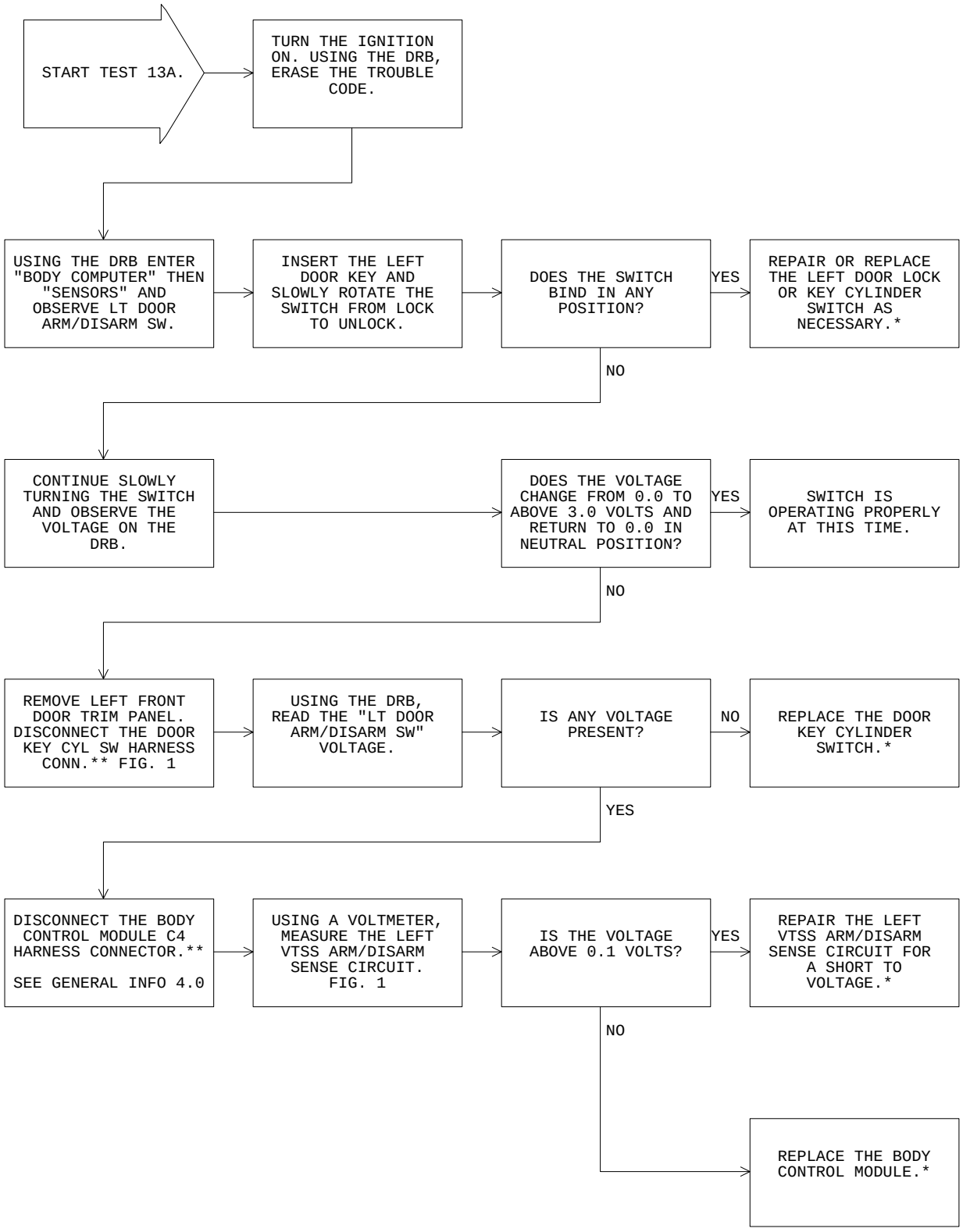

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 2 | PK | FUSED B(+) |

80b1b3c7

***FIG. 1***

## TEST 13A — REPAIRING ″DR DOOR CENTRAL LOCK (ARM)/UNLOCK (DISARM) SWITCH FAILURE″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

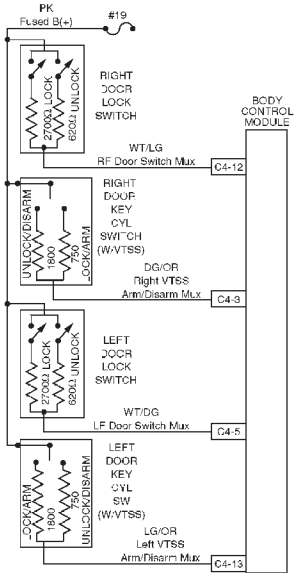



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 14A — REPAIRING "PASS DOOR CENTRAL LOCK (ARM)/UNLOCK (DISARM) SWITCH FAILURE" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b2b34a

**Name of code:** (Dr or Pass) Central Lock (Arm)/Unlock (Disarm) Switch Failure (VTSS only)

**When monitored:** Continuously

**Set condition:** BCM detects a signal on this input for over 10 seconds.

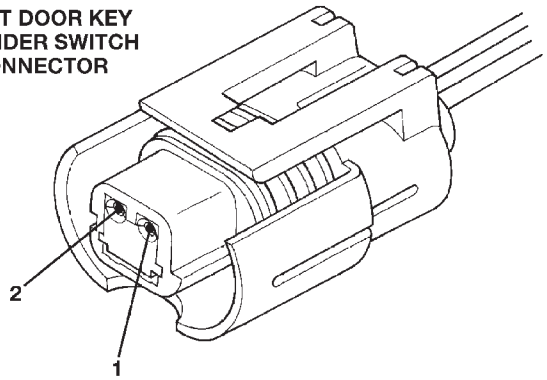
**Theory of operation:** The central lock/unlock switches are used to lock or unlock all doors and arm or disarm VTSS using the exterior key cylinder. Typical operation of these switches is to activate them for only a short period of time. If the BCM detects a signal for over 10 seconds on either input, it will set the fault and ignore the offending input until it goes away.

**Probable Causes:**

- Wiring short to battery
- Failed door key cylinder switch
- Failed BCM

80b5cbe8

**RIGHT DOOR KEY CYLINDER SWITCH CONNECTOR**



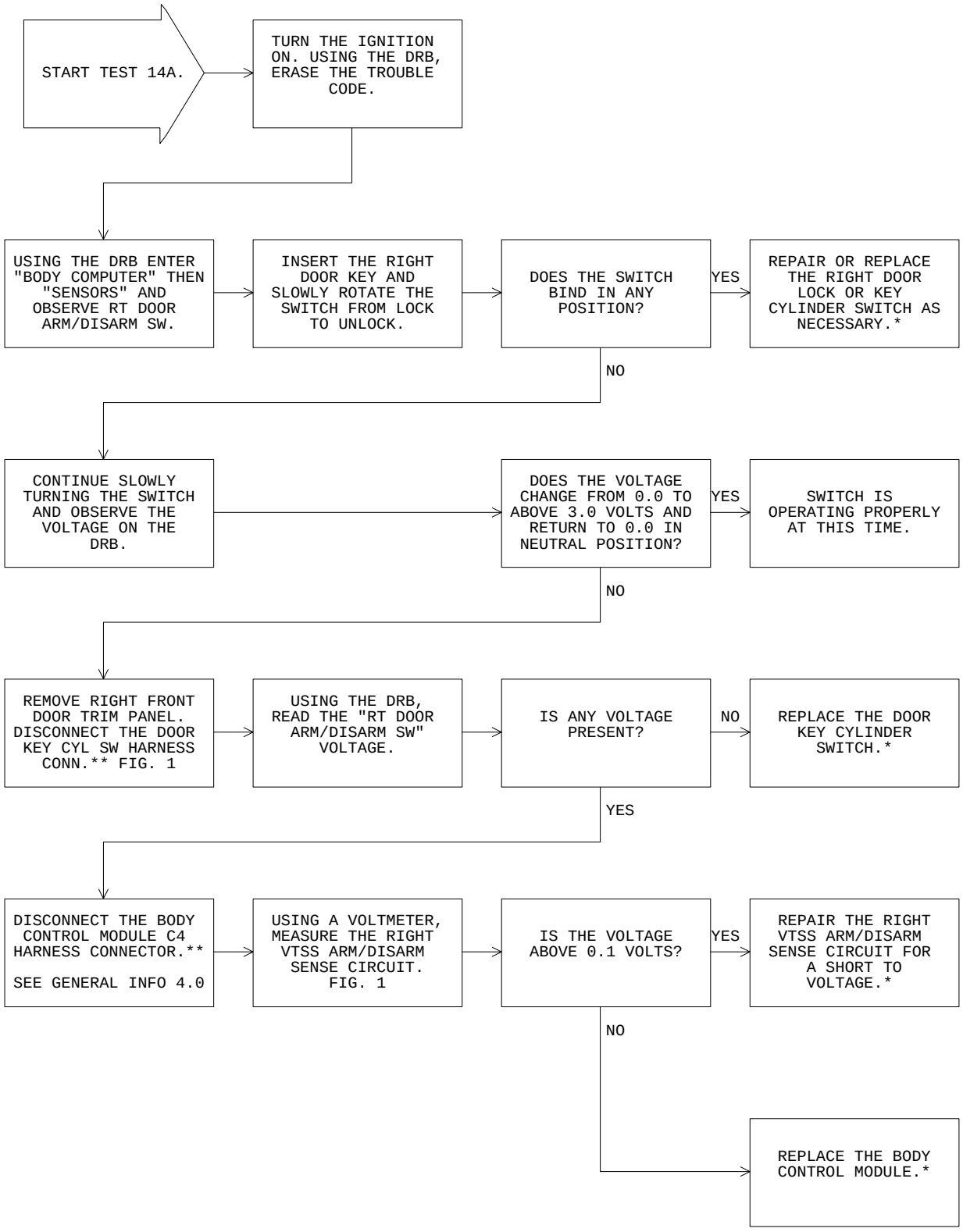

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 2 | PK | FUSED B(+) |

80b1b3c8

***FIG. 1***

## TEST 14A — REPAIRING ″PASS DOOR CENTRAL LOCK (ARM)/UNLOCK (DISARM) SWITCH FAILURE″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

| TEST 15A | REPAIRING "RKE UNABLE TO ENTER PROGRAM MODE" TROUBLE CODE |
|---|---|

Perform TEST 1A Before Proceeding

**Name of code:** RKE Unable to Enter Program Mode

**When monitored:** While attempting to program RKE

**Set condition:** Lack of response from RKE module when attempting to put it in program mode

**Theory of operation:** There are two communication lines between the BCM and the plug-on RKE module: a data line, from the RKE to the BCM, and a program line, from the BCM to the RKE module. When operating properly, the BCM will receive an acknowledgement from the RKE, through the data line, that it recognized the request to enter program mode. If this acknowledgement is not received, the fault is set.

**Probable Causes:**

> Failed RKE module

> Failed BCM

(There are no wires to be cut or shorted; the two connectors connect directly to each other)

80b2438e

| TEST 16A | REPAIRING "RKE PROGRAM MODE ENTERED WITHOUT PROGRAM REQUEST" TROUBLE CODE |
|---|---|

**Perform TEST 1A Before Proceeding**

**Name of code:** RKE Program Mode Entered Without Program Request

**When monitored:** Continuously

**Set condition:** BCM receives an indication from the RKE module that it has entered program mode without the BCM requesting so.

**Theory of operation:** There are two communication lines between the BCM and the plug-on RKE module: a data line, from the RKE to the BCM, and a program line, from the BCM to the RKE module. The normal operation is for the BCM to pull down on the program line and the RKE will respond that it has entered program mode. This fault is set if the RKE indicates that it has entered program mode without the BCM pulling down on the program line.

**Probable Causes:**

> Failed RKE module
> Failed BCM

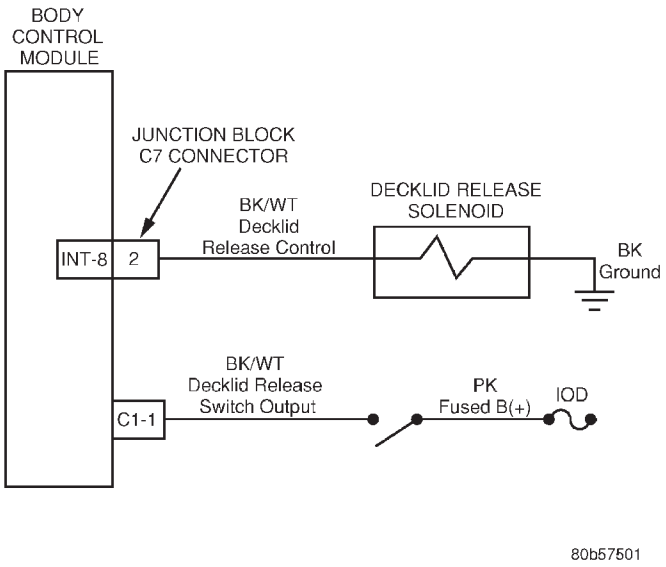
(There are no wires to be cut or shorted; the two connectors connect directly to each other)

80b2438d

| **Perform Verification TEST VER-2A.* | ***Check connectors - Clean / repair as necessary.* |
|---|---|

## TEST 17A REPAIRING "DECKLID RELEASE SWITCH FAILURE" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




**Name of code:** Decklid Release Switch Failure

**When monitored:** Continuously

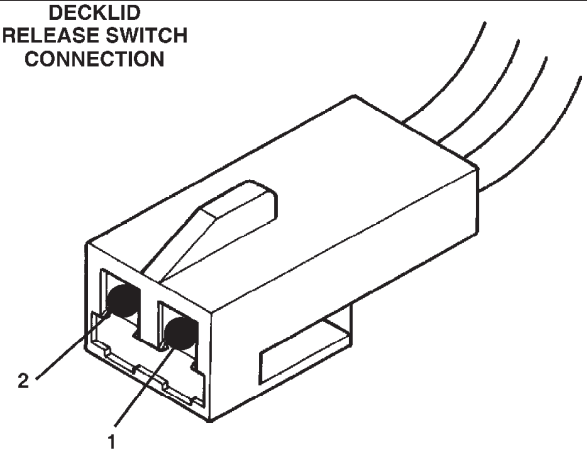
**Set condition:** BCM detects the decklid release switch stuck in a depressed position.

**Theory of operation:** The decklid release switch is a momentary contact switch which connects battery to the BCM. Normal operation of this switch consists of a brief press. If the BCM detects the switch stuck in depressed position for more than 30 seconds, this fault will be set and the BCM will ignore the input.

**Probable Causes:**
> Wiring short to battery
> Failed decklid release switch
> Failed BCM

80b2438c

**DECKLID RELEASE SWITCH CONNECTION**



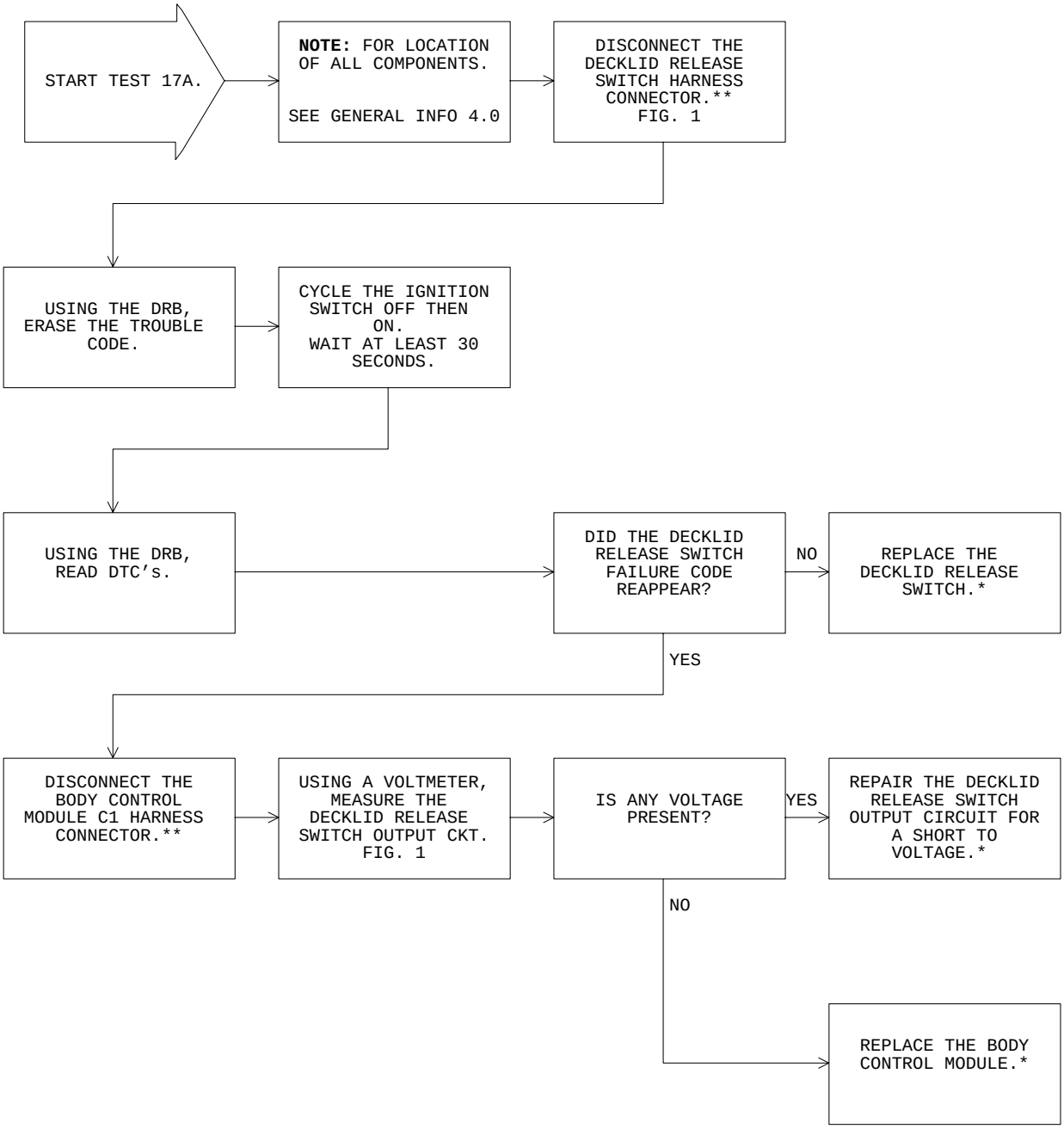

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/WT | DECKLID RELEASE SWITCH OUTPUT |
| 2 | PK | FUSED B(+) |

80b2a1f3

***FIG. 1***

## TEST 17A — REPAIRING ″DECKLID RELEASE SWITCH FAILURE″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

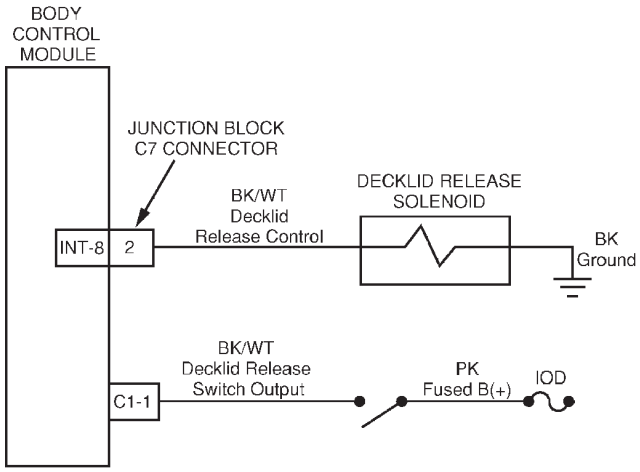



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 18A REPAIRING "DECKLID RELEASE SOLENOID OUTPUT FAILURE" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




**Name of code:** Decklid Release Solenoid Output Failure

**When monitored:** During Decklid release solenoid actuation

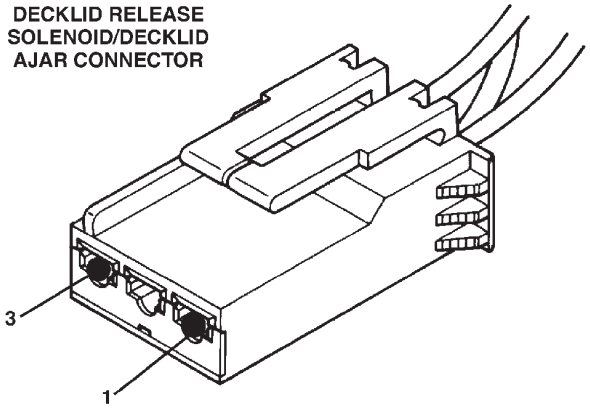
**Set condition:** BCM detects a short or open on its decklid release control.

**Theory of operation:** The BCM provides a high-side drive through a power driver to the decklid release solenoid.

**Probable Causes:**
- > Wiring short to ground
- > Wiring short to voltage
- > Wiring open circuit
- > Failed decklid release solenoid
- > Failed BCM

80b5cbe9

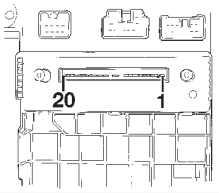
**DECKLID RELEASE SOLENOID/DECKLID AJAR CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | TN/BK | DECKLID AJAR SWITCH SENSE |
| 3 | BK/WT | DECKLID RELEASE CONTROL |

80b29f2e

*FIG. 1*




**JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR**

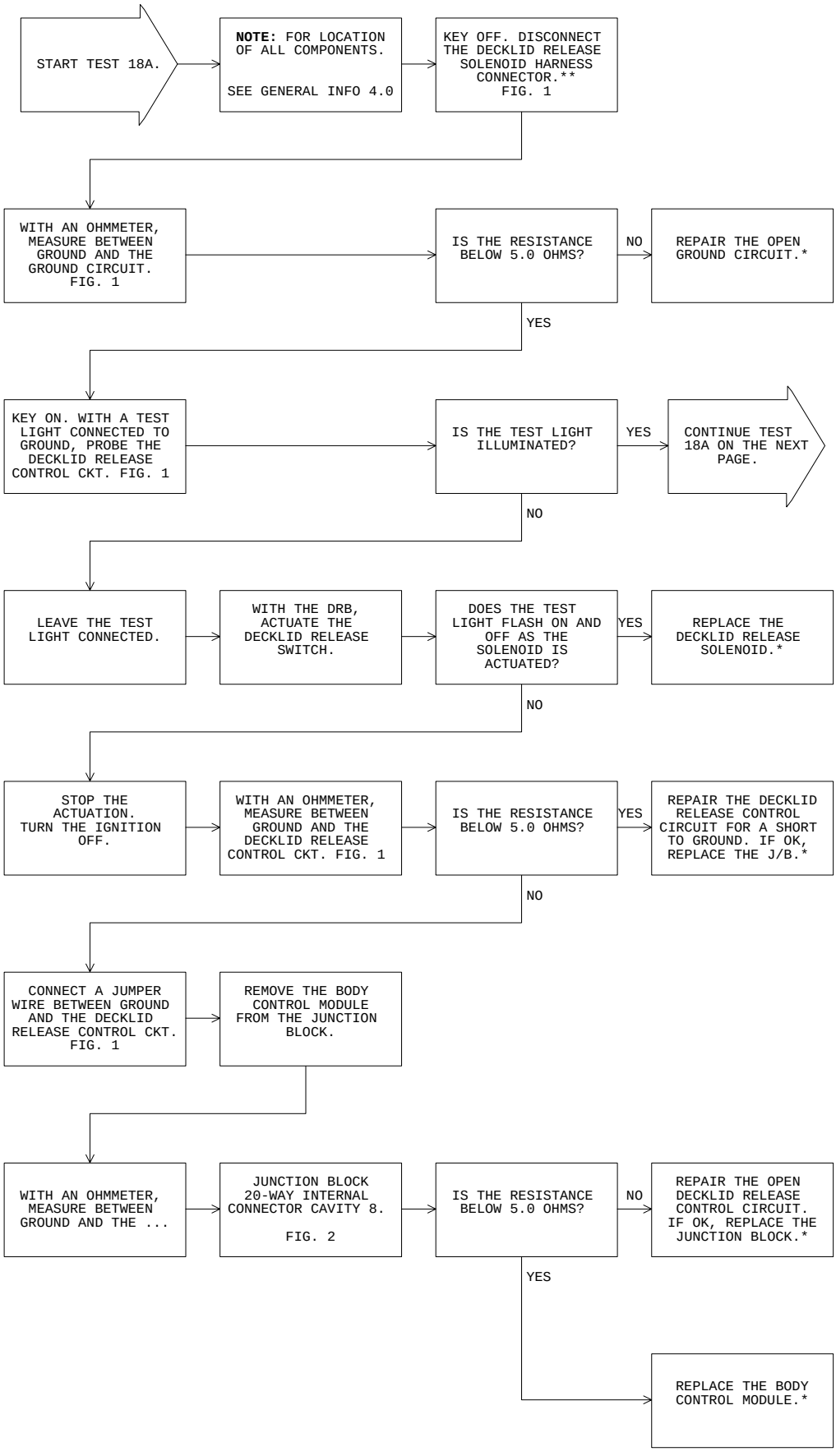
| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

*FIG. 2*

## TEST 18A REPAIRING ″DECKLID RELEASE SOLENOID OUTPUT FAILURE″ TROUBLE CODE

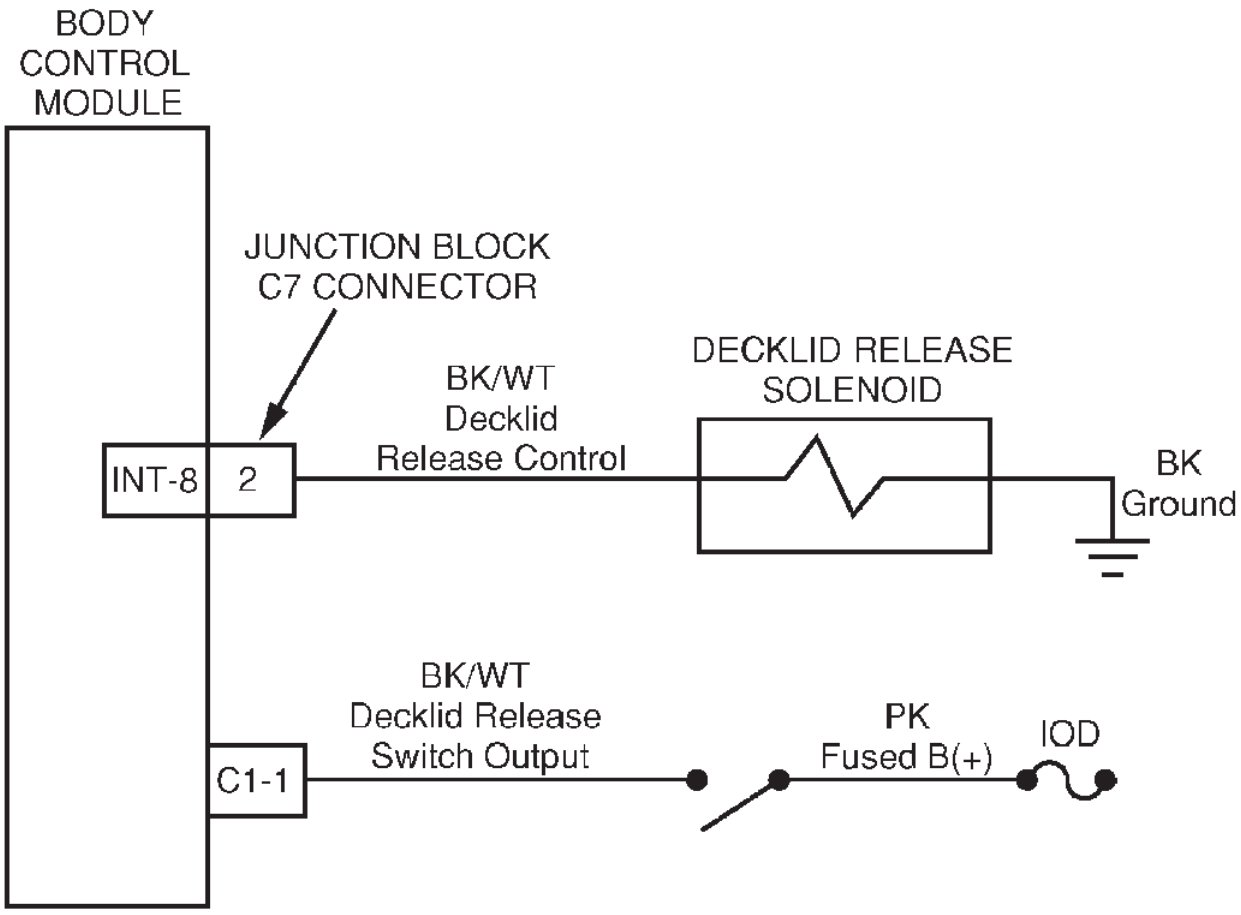
**Perform TEST 1A Before Proceeding**



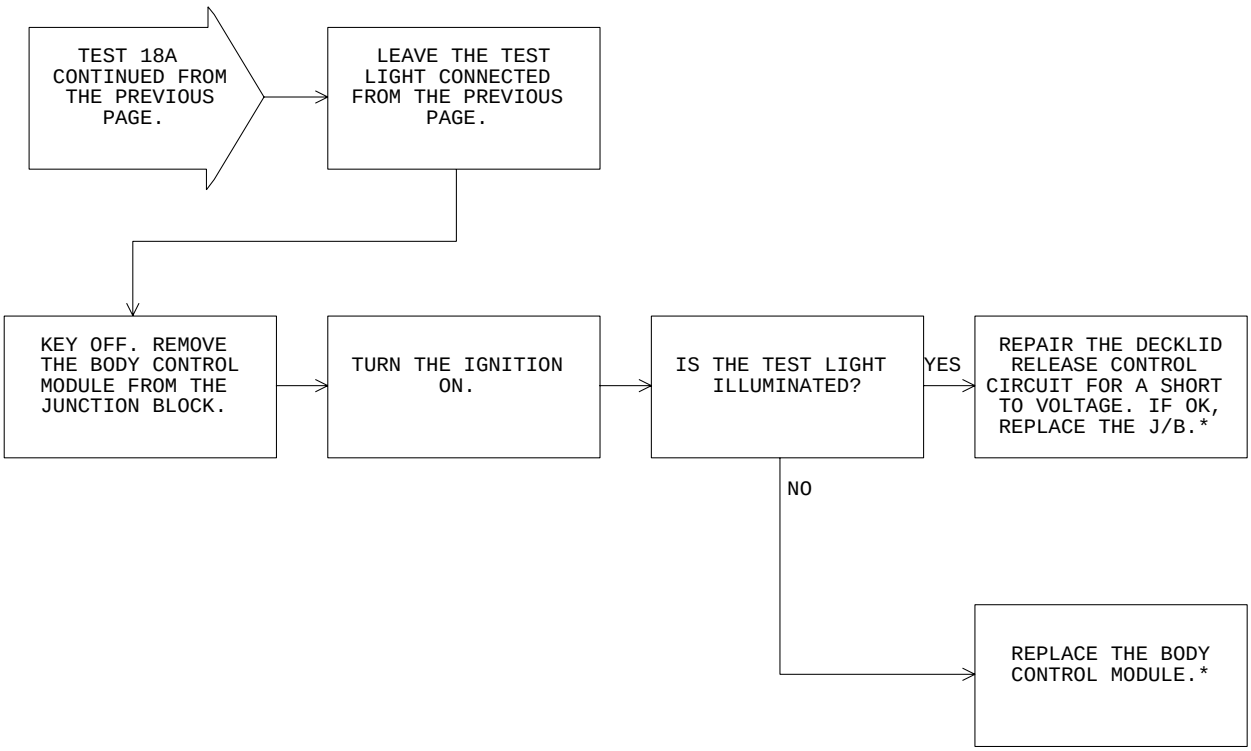

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

| TEST 18A | CONTINUED - REPAIRING "DECKLID RELEASE SOLENOID OUTPUT FAILURE" TROUBLE CODE |
|---|---|



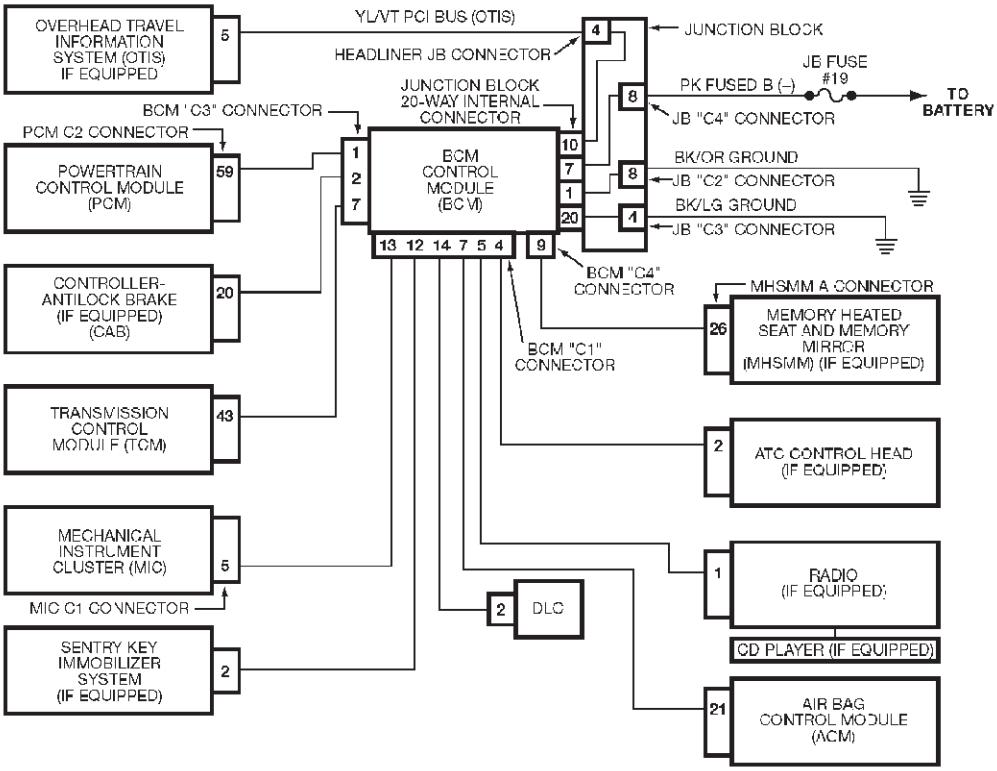
## TEST 18A — CONTINUED - REPAIRING ″DECKLID RELEASE SOLENOID OUTPUT FAILURE″ TROUBLE CODE



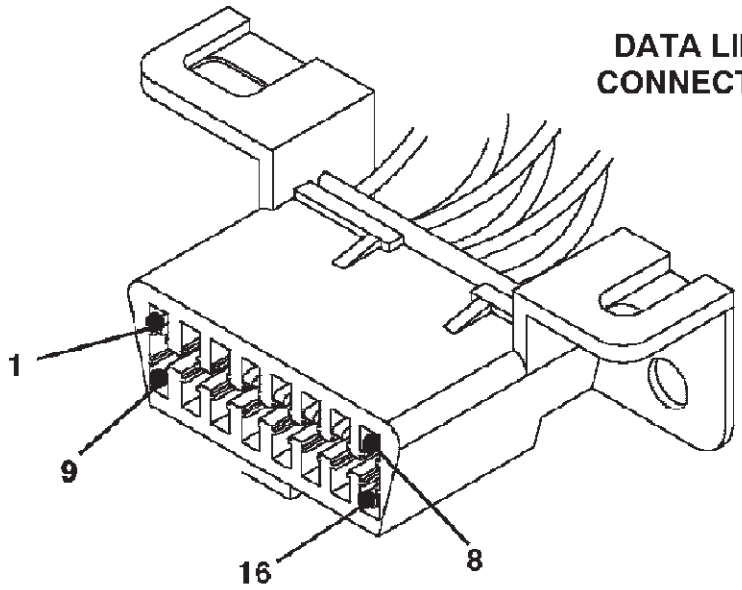

***Perform Verification TEST VER-2A.** | ***Check connectors - Clean / repair as necessary.**

## TEST 1A IDENTIFYING VEHICLE COMMUNICATION PROBLEMS

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**




80b4b7b0




| CAV | COLOR | FUNCTION | CAV | COLOR | FUNCTION |
|---|---|---|---|---|---|
| 2 | YL/VT | PCI BUS | 8 | RD/WT | FUSED IGN SW OUTPUT |
| 4 | BK | GROUND | 14 | PK/BK | SCI RECEIVE (TCM) |
| 5 | BK/LG | GROUND | 16 | PK | FUSED B(+) |
| 6 | LG | SCI RECEIVE (PCM) | | | |
| 7 | DB | SCI TRANSM T (TCM) | | | |

80b6eff8

***FIG. 1***

## TEST 1A IDENTIFYING VEHICLE COMMUNICATION PROBLEMS

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**

Use a DRB with the latest software to interrogate the suspect module(s) for diagnostic trouble codes (DTCs) and DRB bus failure messages.

Choose the applicable failure/no response from the list below and perform the indicated test.

If the DRB has a blank screen:

1. Disconnect the DRB from the data link connector.
2. Ensure that there is a good ground at cavities 4 & 5 (see Fig. 1)
3. Ensure that there is a 12-volt supply at cavity 16 (see Fig. 1). If there is not, inspect the IOD fuse in the junction block.
4. Try a different DRB cable.
5. Try a different DRB.

NOTE: If the odometer is displaying “NO BUS” attempt to communicate with the instrument cluster and follow the appropriate test listed below.

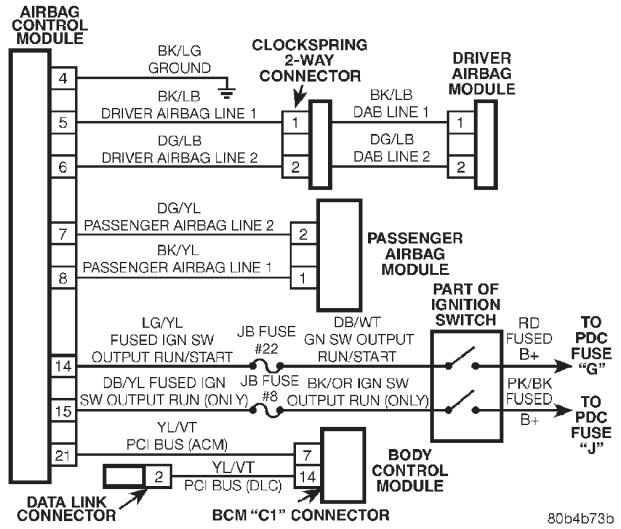
| NO RESPONSE FROM | PERFORM |
|---|---|
| Airbag Control Module (ACM) | TEST 2A |
| Automatic Temperature Control (ATC) | TEST 3A |
| Body Control Module (BCM) (Also: diagnostic trouble code ‘‘Battery Power to Module Disconnected’’) | TEST 4A |
| Controller Anti-Lock Brakes (CAB) | TEST 5A |
| Mechanical Instrument Cluster (MIC) | TEST 6A |
| Overhead Traveler Information System (OTIS) | TEST 7A |
| Powertrain Control Module (PCM) | TEST 8A |
| Radio (PCI) | TEST 9A |
| Transmission Control Module (TCM) | TEST 10A |
| Sentry Key Immobilizer Module (SKIM) | refer to the Powertrain Diagnostic Manual. |
| Memory Heated Seat and Memory Mirror (MHSMM) | TEST 11A |

| BUS FAILURE MESSAGES | PERFORM |
|---|---|
| Shorted to Battery | TEST 12A |
| Shorted to Ground | TEST 13A |

| BUS SYMPTOMS | PERFORM |
|---|---|
| No Fused Ignition Switch Output to BCM | TEST 14A |

## TEST 2A REPAIRING AIRBAG CONTROL MODULE "NO RESPONSE"

**Perform TEST 1A Before Proceeding**



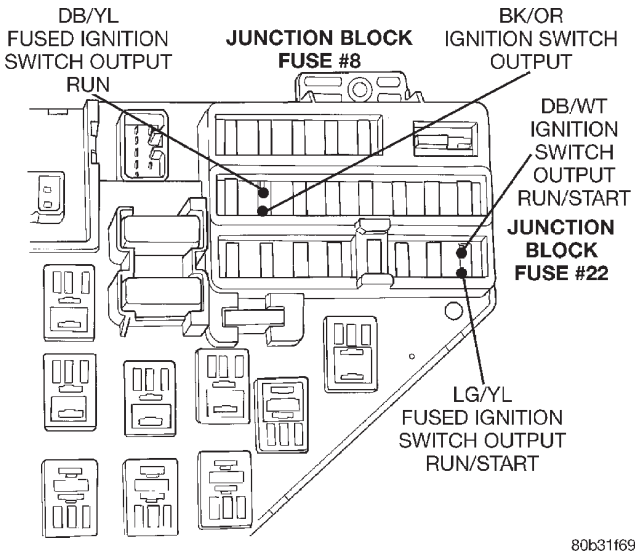
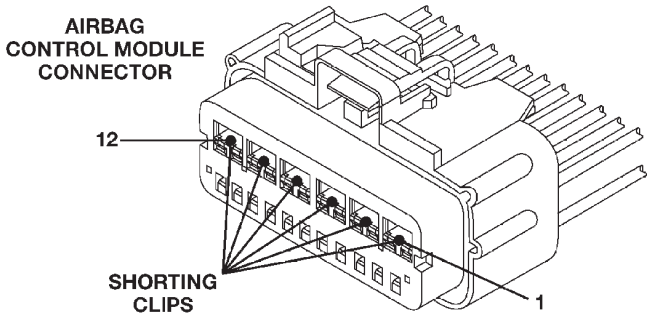




*FIG. 1*

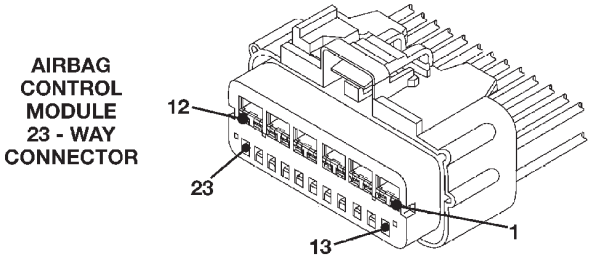



A SHORTING CLIP IS ONE SAFEGUARD BUILT INTO THE AIRBAG SYSTEM TO PREVENT ACCIDENTAL DEPLOYMENT WHEN HANDLING THE AIRBAG ASSEMBLY. STATIC CHARGES OR RADIO FREQUENCY NOISE CAN CAUSE ELECTRICAL POTENTIAL TO DEVELOP IN THE AIRBAG INITIATOR. SHORTING CLIPS PREVENT THIS WHEN THE CONNECTOR IS REMOVED FROM THE CONTROL MODULE.

**DO NOT PROBE, BEND OR REMOVE SHORTING CLIPS**

80b0d77e

*FIG. 2*



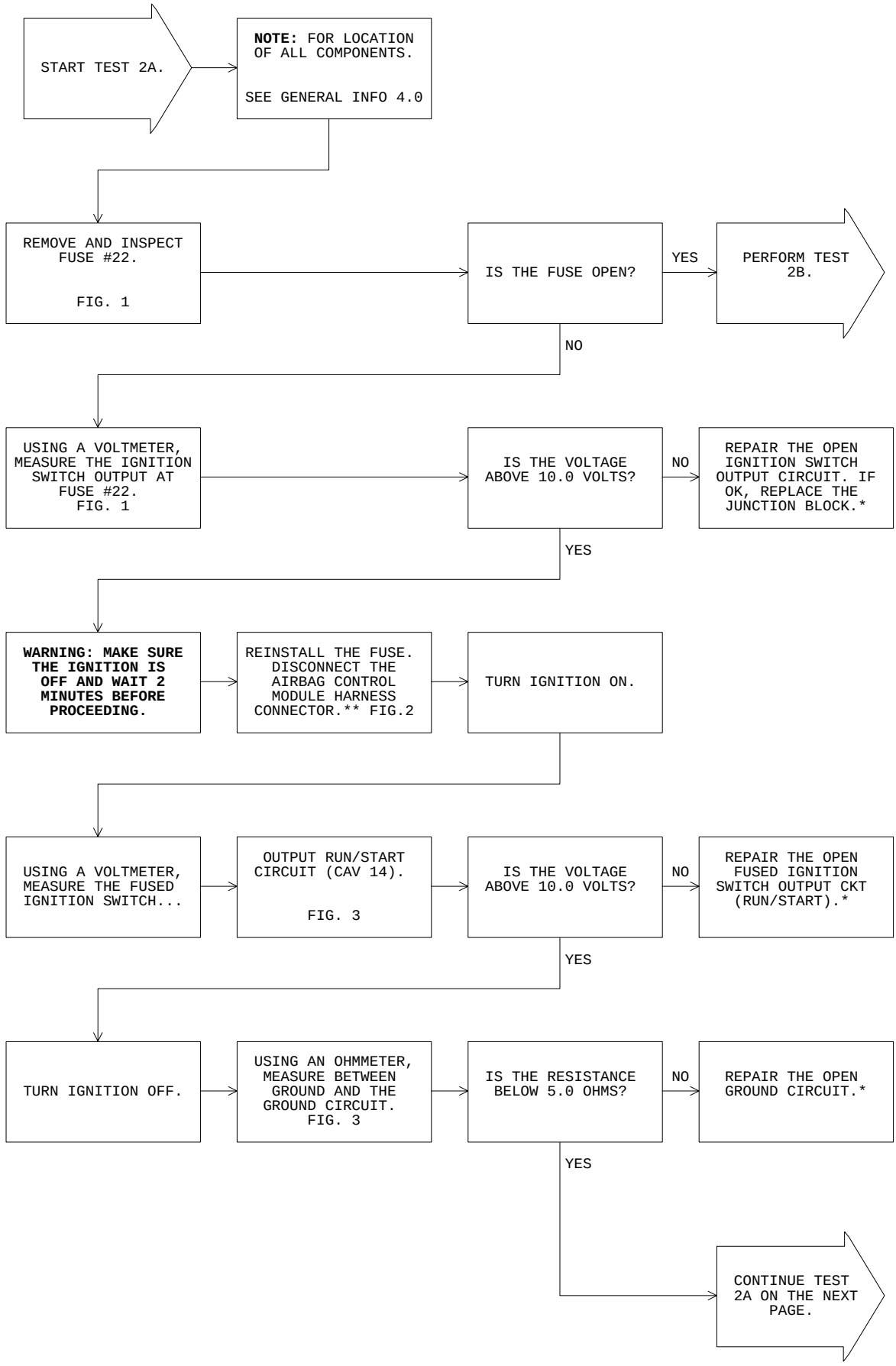

| CAV | COLOR | FUNCTION |
|---|---|---|
| 4 | BK/LG | GROUND |
| 5 | BK/LB | DRIVER AIRBAG LINE 1 |
| 6 | DG/LB | DRIVER AIRBAG LINE 2 |
| 7 | DG/YL | PASSENGER AIRBAG LINE 2 |
| 8 | BK/YL | PASSENGER AIRBAG LINE 1 |
| 14 | LG/YL | FUSED IGNITION SWITCH OUTPUT RUN/START |
| 15 | DB/YL | FUSED IGNITION SWITCH OUTPUT RUN (ONLY) |
| 21 | YL/VT | PCI BUS (ACM) |

80b4b73e

*FIG. 3*

## TEST 2A REPAIRING AIRBAG CONTROL MODULE ″NO RESPONSE″

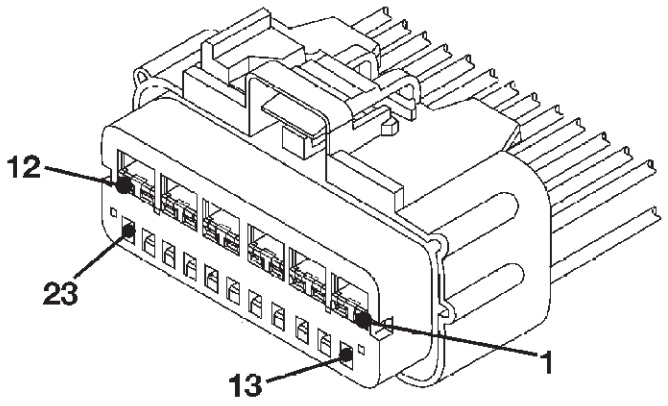
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-1A.***

***Check connectors - Clean / repair as necessary.**

**AIRBAG CONTROL MODULE 23 - WAY CONNECTOR**

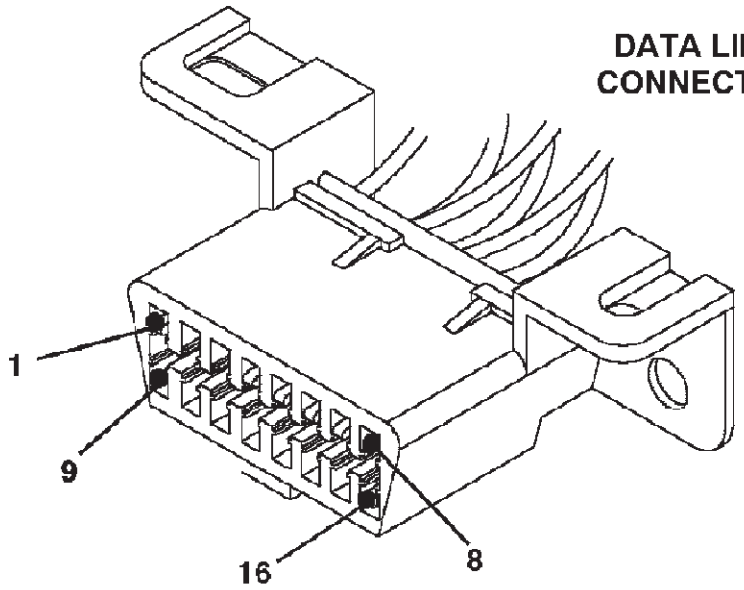



| CAV | COLOR | FUNCTION |
|---|---|---|
| 4 | BK/LG | GROUND |
| 5 | BK/LB | DRIVER AIRBAG LINE 1 |
| 6 | DG/LB | DRIVER AIRBAG LINE 2 |
| 7 | DG/YL | PASSENGER AIRBAG LINE 2 |
| 8 | BK/YL | PASSENGER AIRBAG LINE 1 |
| 14 | LG/YL | FUSED IGNITION SWITCH OUTPUT RUN/START |
| 15 | DB/YL | FUSED IGNITION SWITCH OUTPUT RUN (ONLY) |
| 21 | YL/VT | PCI BUS (ACM) |

80b4b73e

*FIG. 1*

**DATA LINK CONNECTOR**

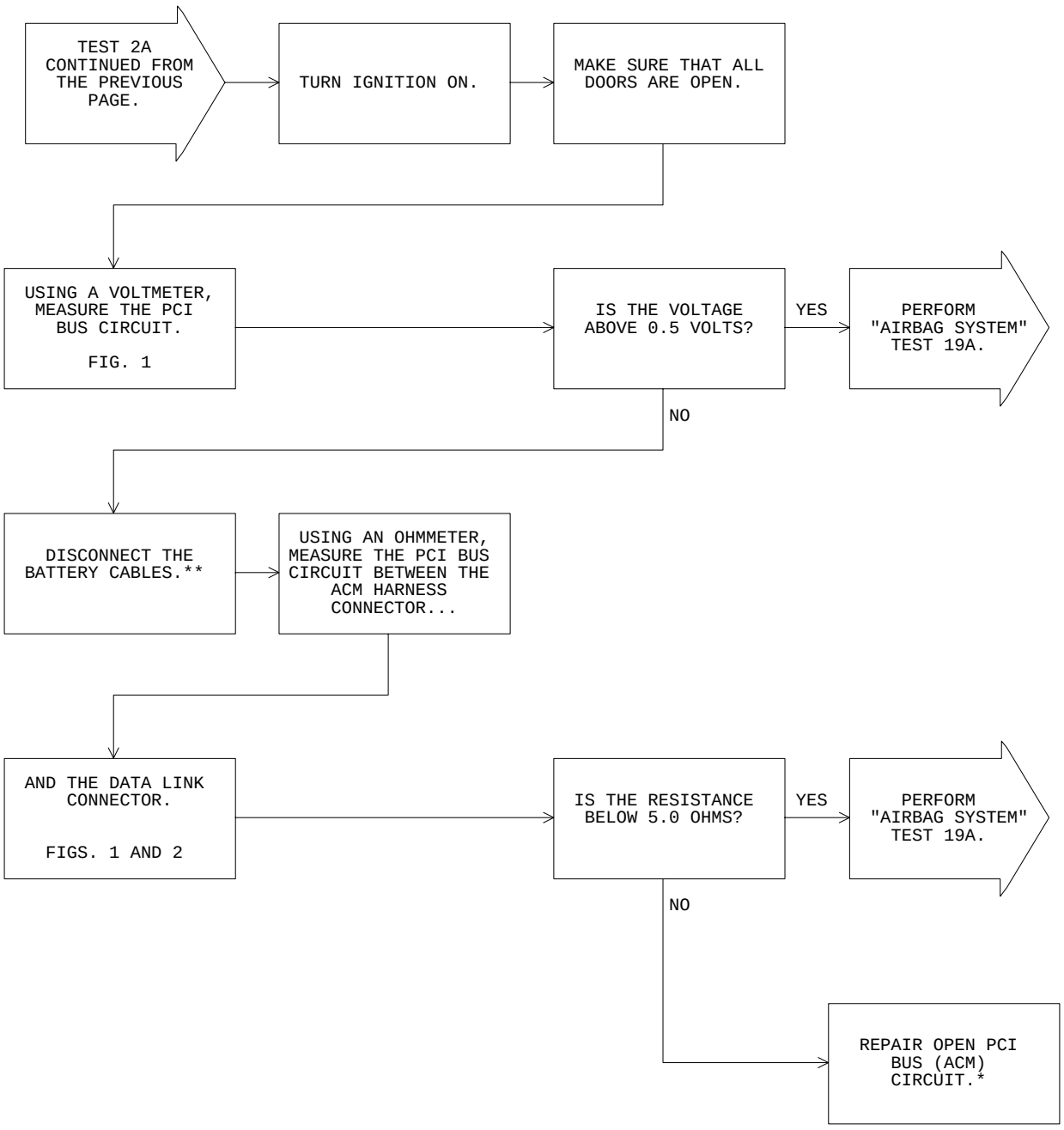



| CAV | COLOR | FUNCTION | CAV | COLOR | FUNCTION |
|---|---|---|---|---|---|
| 2 | YL/VT | PCI BUS | 8 | RD/WT | FUSED IGN SW OUTPUT |
| 4 | BK | GROUND | 14 | PK/BK | SCI RECEIVE (TCM) |
| 5 | BK/LG | GROUND | 16 | PK | FUSED B(+) |
| 6 | LG | SCI RECEIVE (PCM) | | | |
| 7 | DB | SCI TRANSM T (TCM) | | | |

80b6eff8

*FIG. 2*

## TEST 2A CONTINUED-REPAIRING AIRBAG CONTROL MODULE ″NO RESPONSE″

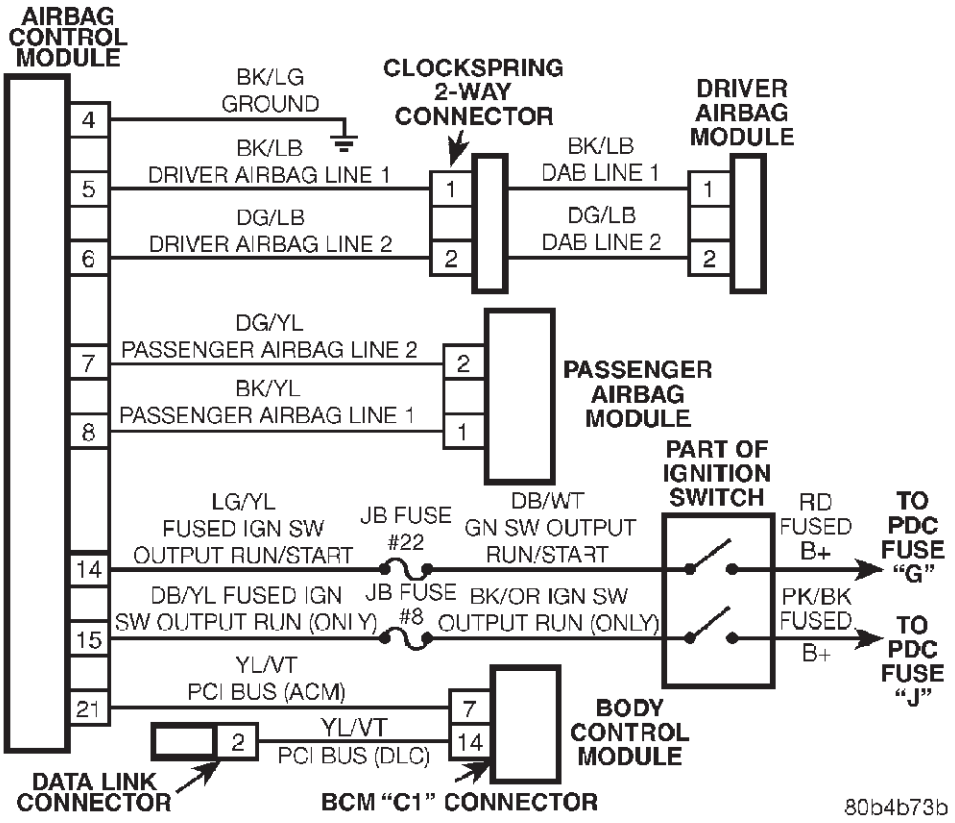



***Perform Verification TEST VER-1A.***

****Check connectors - Clean / repair as necessary.***

**TEST 2B** | **REPAIRING AIRBAG CONTROL MODULE "NO RESPONSE"**

**Perform TEST 2A Before Proceeding**



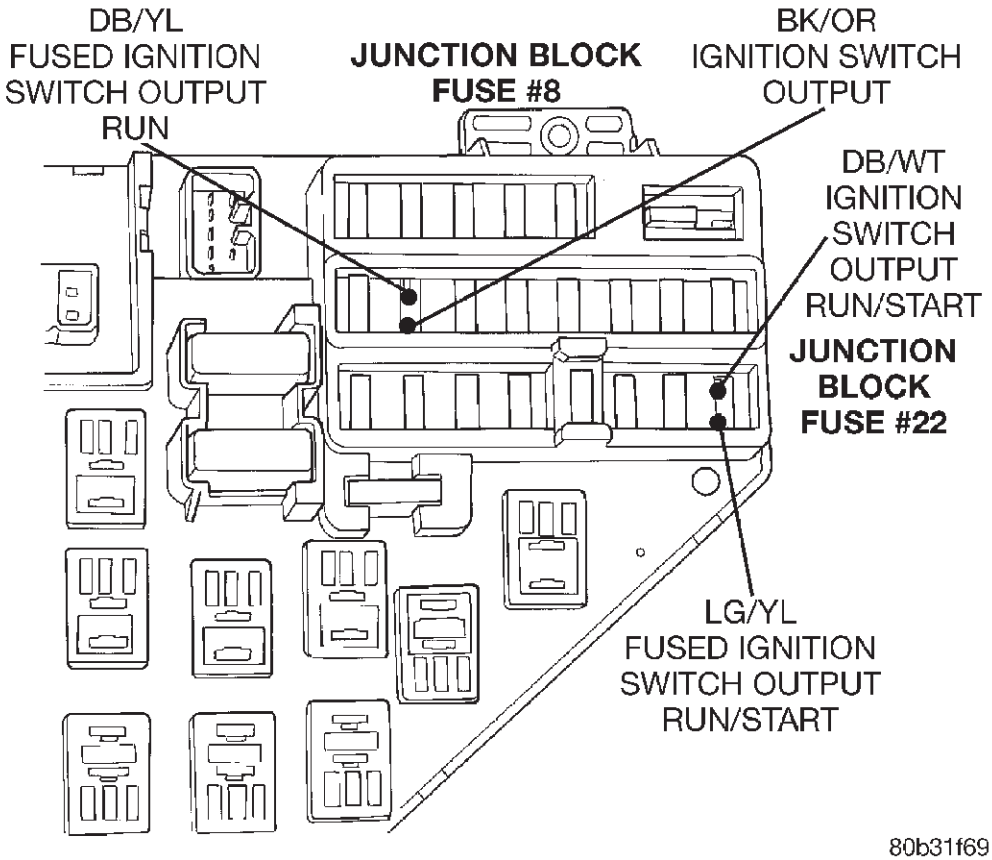
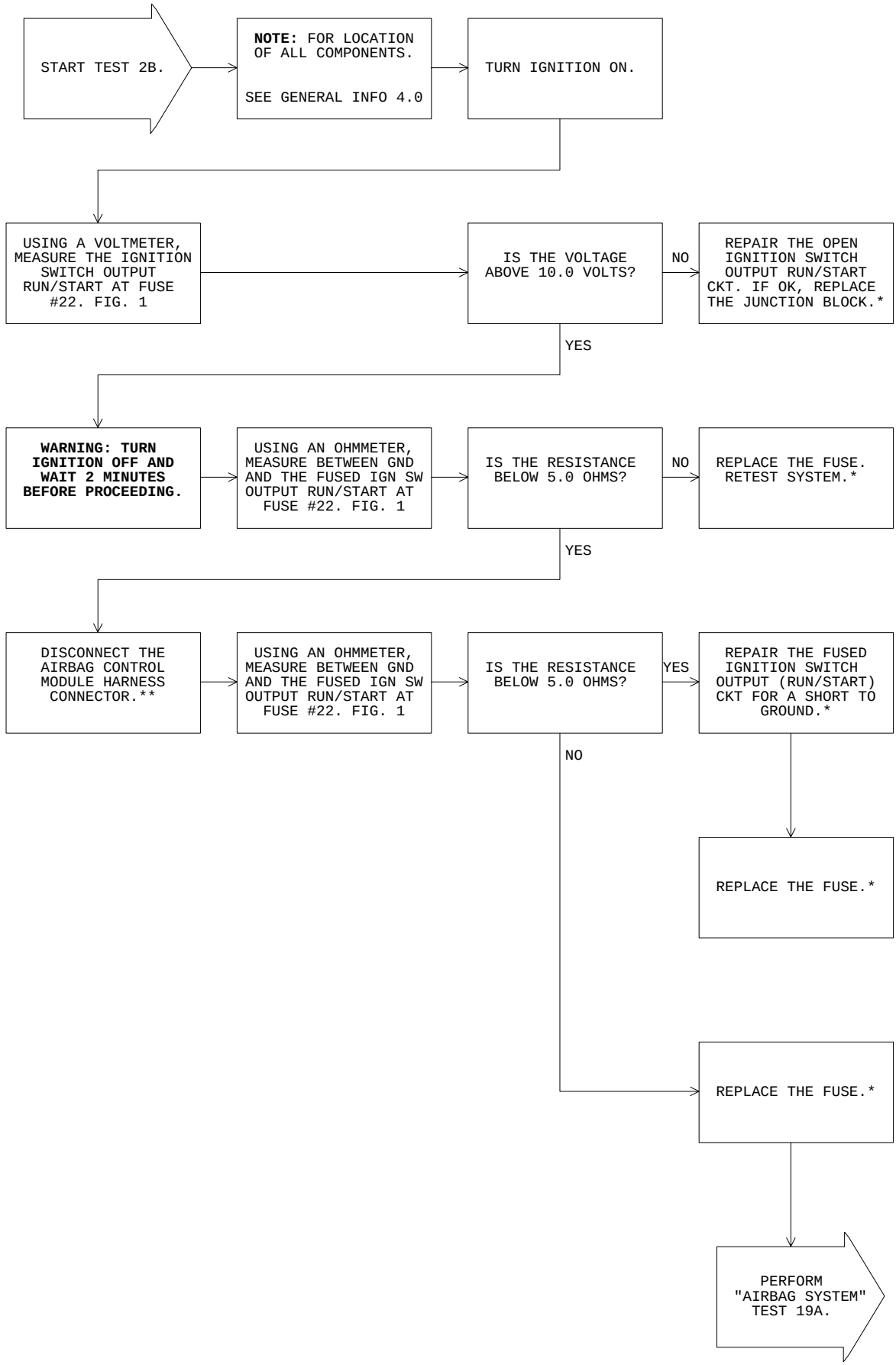




*FIG. 1*

## TEST 2B REPAIRING AIRBAG CONTROL MODULE ″NO RESPONSE″

**Perform TEST 2A Before Proceeding**

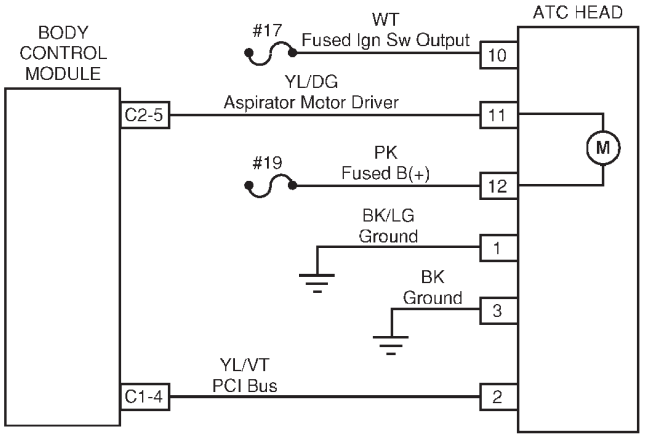



***Perform Verification TEST VER-1A.***

***Check connectors - Clean / repair as necessary.***

## TEST 3A — REPAIRING AUTOMATIC TEMPERATURE CONTROL MODULE "NO RESPONSE" OR "ATC MESSAGES NOT RECEIVED" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b27cf4

**Name of code:** ATC Messages Not Received

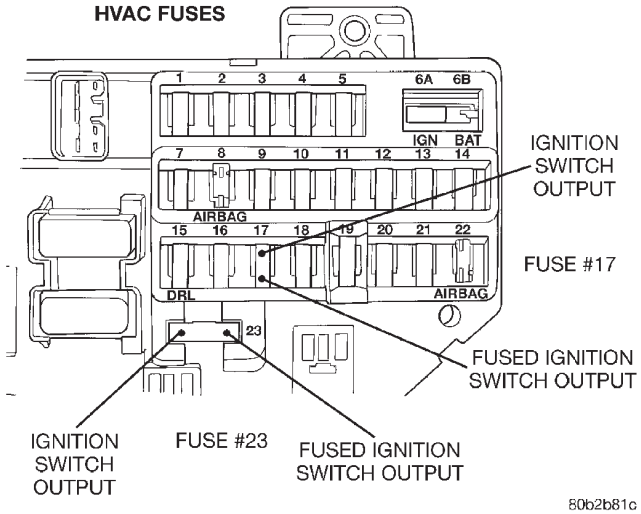
**When monitored:** With ignition on

**Set condition:** BCM has not received any PCI bus messages from the Automatic Temperature Control (ATC) head for at least 18 seconds.

**Theory of operation:** BCM receives a variety of information from the ATC over the PCI bus. If the flow of information is stopped for over 18 seconds, the BCM will set this fault.

**Probable Causes:**
- Wiring open circuit
- Wiring short to ground
- Wiring short to battery
- Failed ATC
- Failed BCM

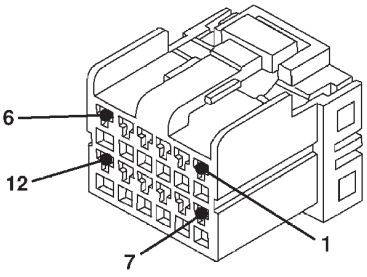
80b242f6




80b2b81c

***FIG. 1***

**ATC MODULE CONNECTOR**



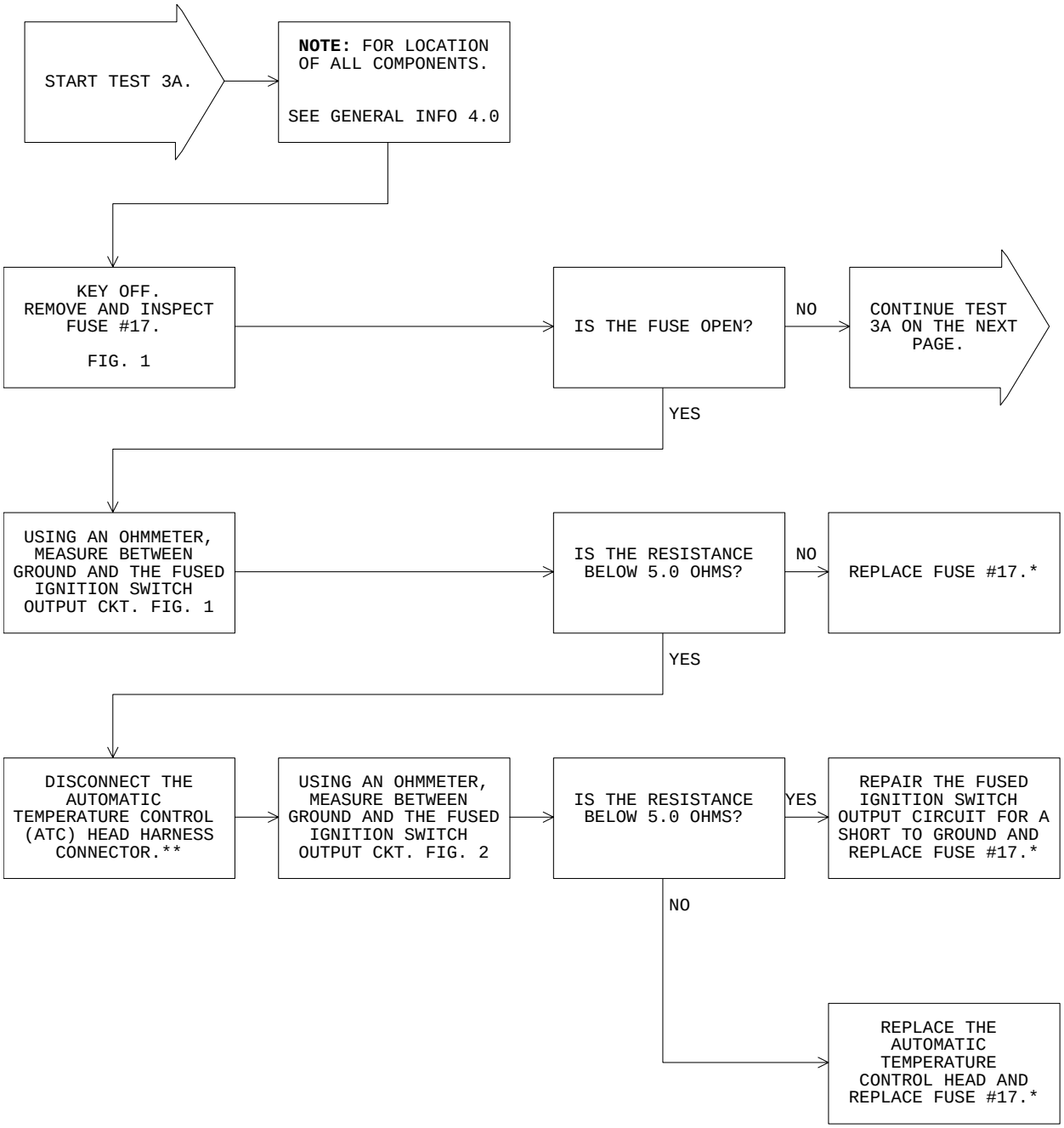

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LG | GROUND |
| 2 | YL/VT | PCI BUS |
| 3 | BK | GROUND |
| 4 | OR | PANEL LAMPS DRIVER |
| 7 | RD/TN | IN CAR TEMPERATURE SENSOR SIGNAL |
| 8 | DB/GY | SENSOR GROUND |
| 10 | WT | FUSED IGNITION SWITCH OUTPUT |
| 11 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 12 | PK | FUSED B(+) |

80b2a1fb

***FIG. 2***

## TEST 3A — REPAIRING AUTOMATIC TEMPERATURE CONTROL MODULE ″NO RESPONSE″ OR ″ATC MESSAGES NOT RECEIVED″ TROUBLE CODE

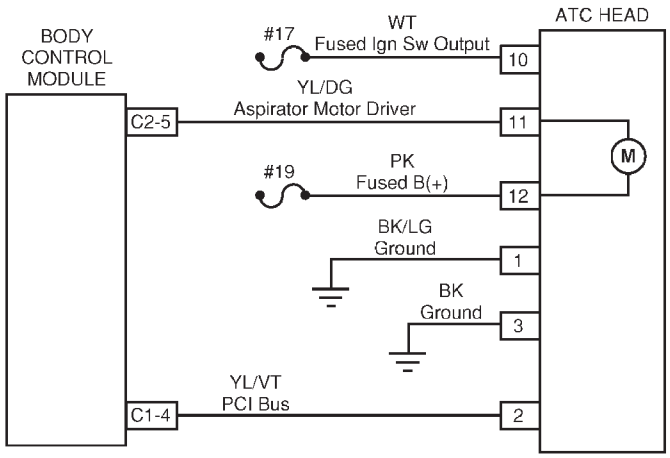
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 3A — CONTINUED - REPAIRING AUTOMATIC TEMPERATURE CONTROL MODULE "NO RESPONSE" OR "ATC MESSAGES NOT RECEIVED" TROUBLE CODE



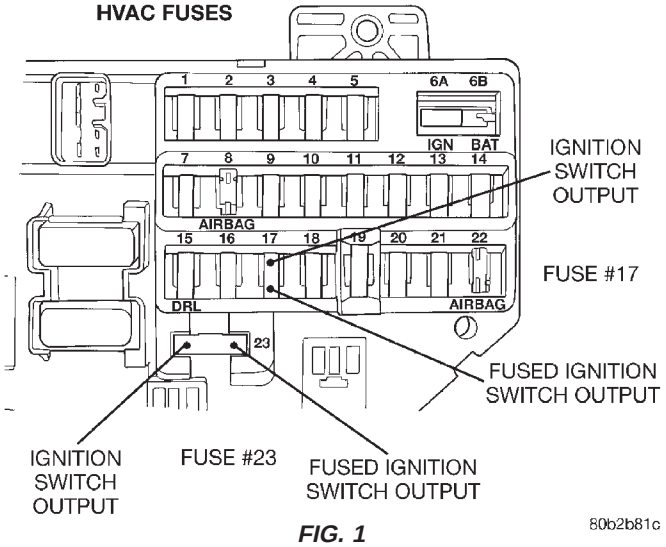
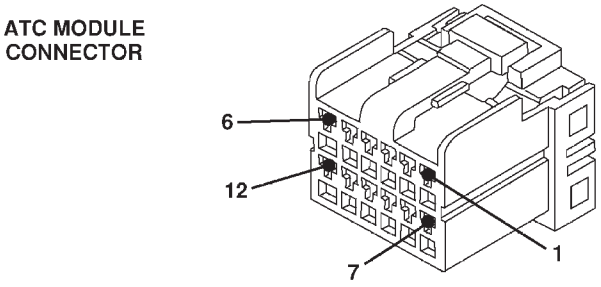




*FIG. 1*

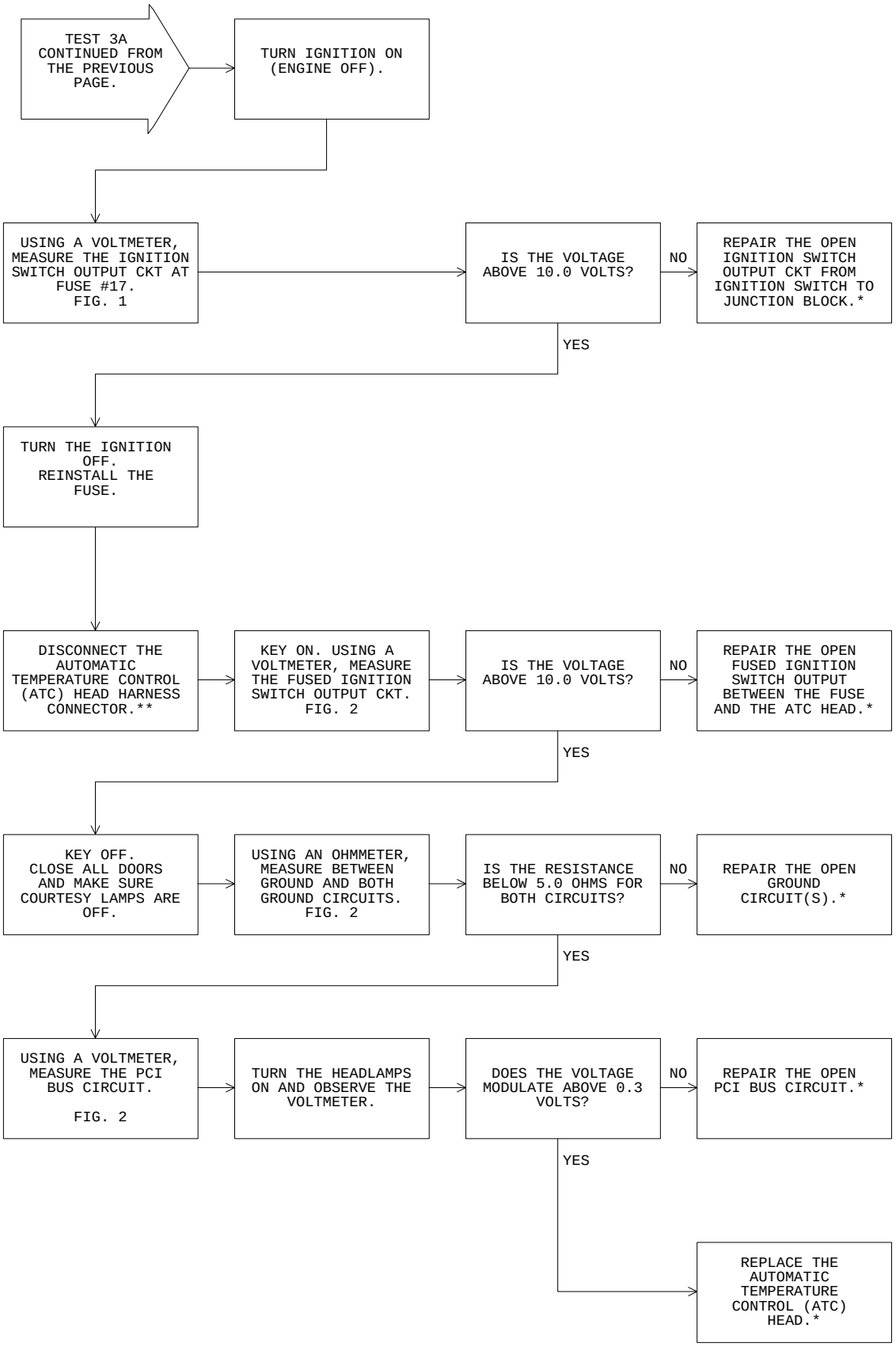



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/LG | GROUND |
| 2 | YL/VT | PCI BUS |
| 3 | BK | GROUND |
| 4 | OR | PANEL LAMPS DRIVER |
| 7 | RD/TN | IN CAR TEMPERATURE SENSOR SIGNAL |
| 8 | DB/GY | SENSOR GROUND |
| 10 | WT | FUSED IGNITION SWITCH OUTPUT |
| 11 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 12 | PK | FUSED B(+) |

80b2a1fb

*FIG. 2*

## TEST 3A CONTINUED - REPAIRING AUTOMATIC TEMPERATURE CONTROL MODULE ″NO RESPONSE″ OR ″ATC MESSAGES NOT RECEIVED″ TROUBLE CODE

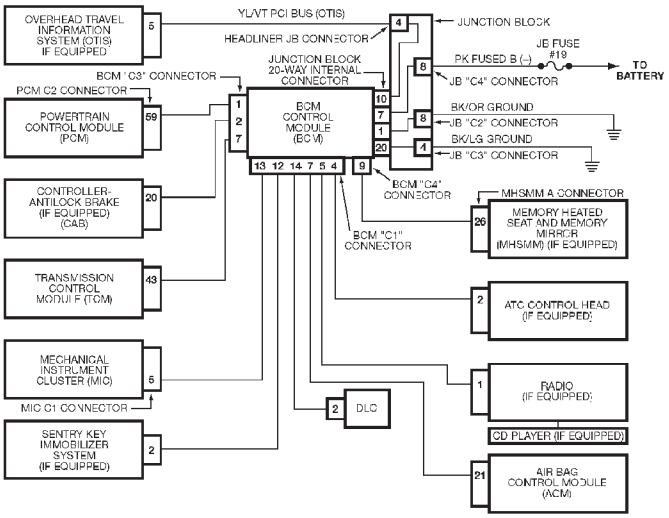



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 4A — REPAIRING BODY CONTROL MODULE "NO RESPONSE" OR "BATTERY POWER TO MODULE DISCONNECTED" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b4b7b0

**Name of code:** Battery Power To Module Disconnected

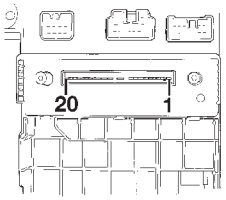
**When monitored:** With ignition on.

**Set condition:** BCM sees ignition on but no battery power feed.

**Theory of operation:** BCM requires both battery and ignition to operate properly (key-in ignition chime, seat belt chime, door lock inhibit, etc.). BCM will function properly with ignition on but will be completely powered down when ignition is off.

**Probable Causes:**
- > Open IOD Fuse
- > Open fused ignition switch output ACC/RUN
- > Failed Junctin Block

80b308ad




**JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR**

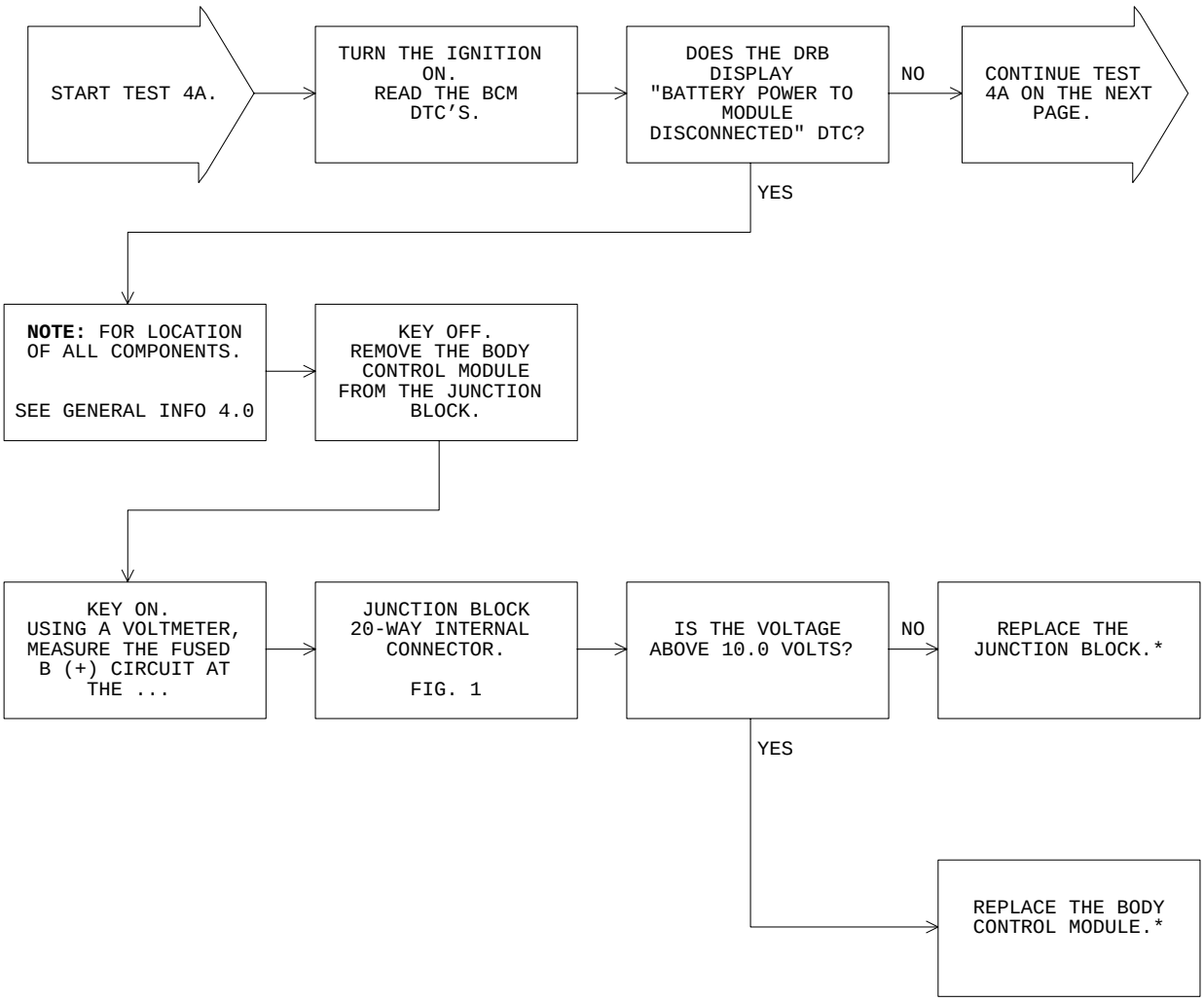
| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

***FIG. 1***

80b1194a

## TEST 4A — REPAIRING BODY CONTROL MODULE ″NO RESPONSE″ OR ″BATTERY POWER TO MODULE DISCONNECTED″ TROUBLE CODE

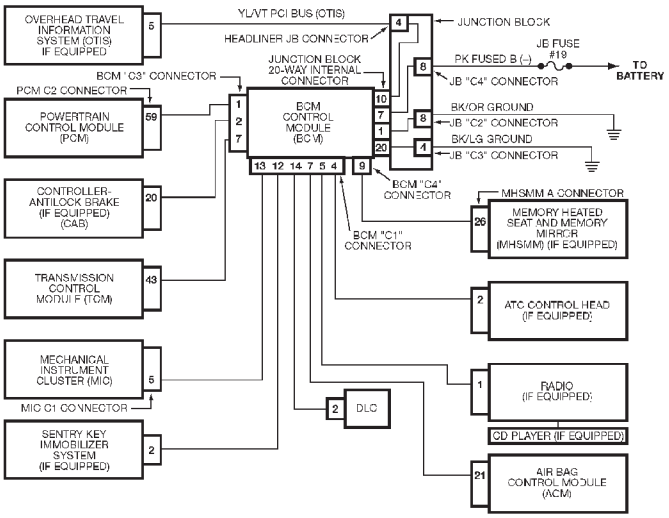
**Perform TEST 1A Before Proceeding**



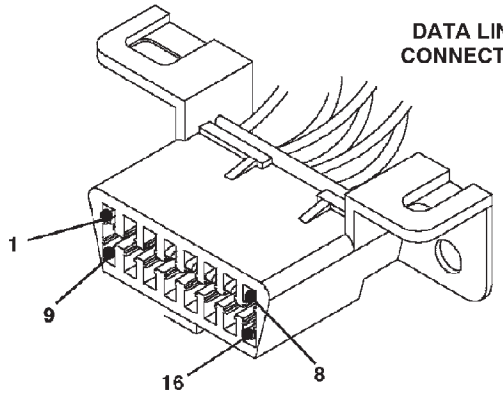

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 4A — CONTINUED- REPAIRING BODY CONTROL MODULE "NO RESPONSE"



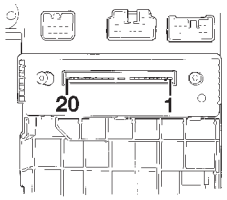

80b4b7b0




| CAV | COLOR | FUNCTION | CAV | COLOR | FUNCTION |
|---|---|---|---|---|---|
| 2 | YL/VT | PCI BUS | 8 | RD/WT | FUSED IGN SW OUTPUT |
| 4 | BK | GROUND | 14 | PK/BK | SCI RECEIVE (TCM) |
| 5 | BK/LG | GROUND | 16 | PK | FUSED B(+) |
| 6 | LG | SCI RECEIVE (PCM) | | | |
| 7 | DB | SCI TRANSM T (TCM) | | | |

***FIG. 1***

80b6eff8

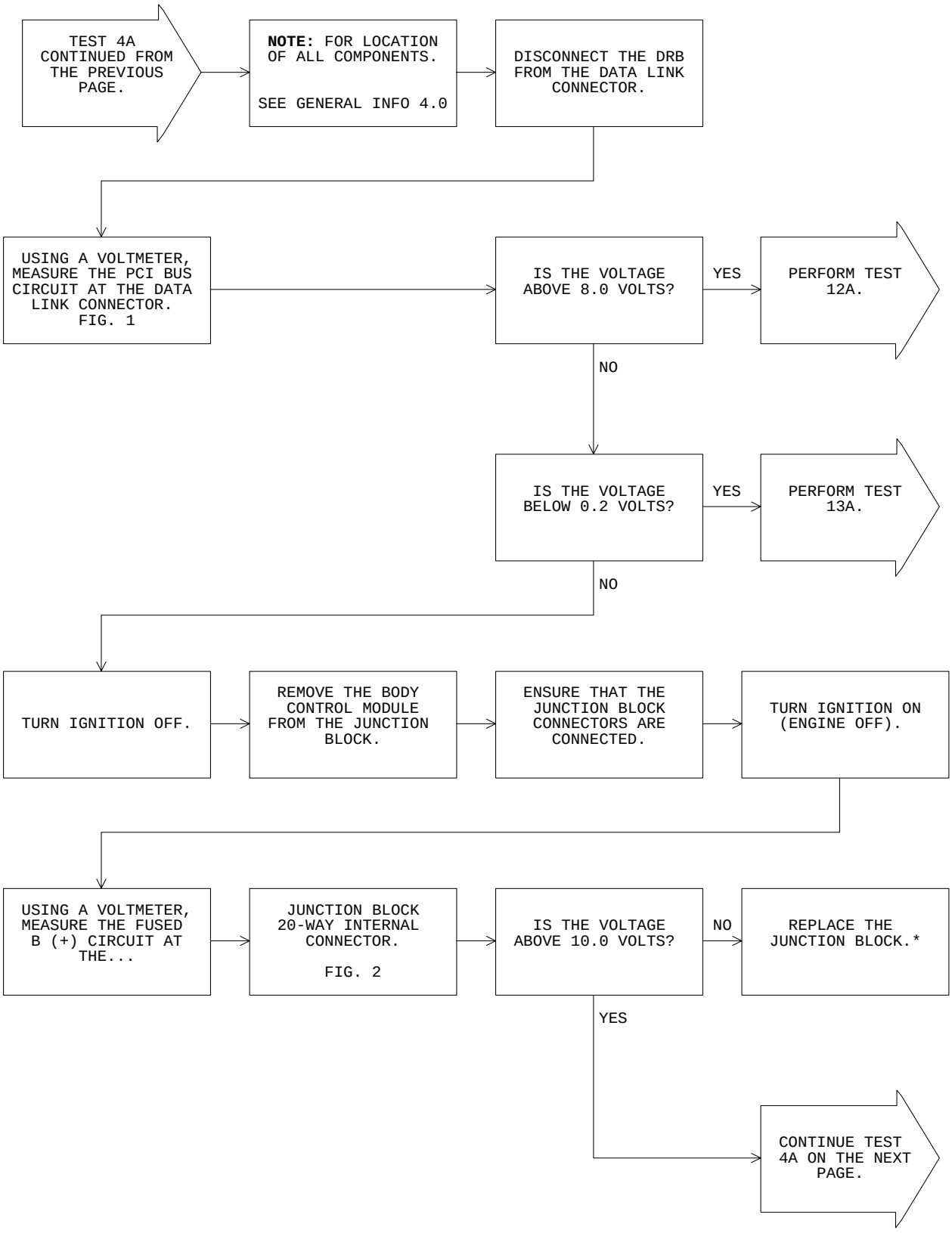



| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

***FIG. 2***

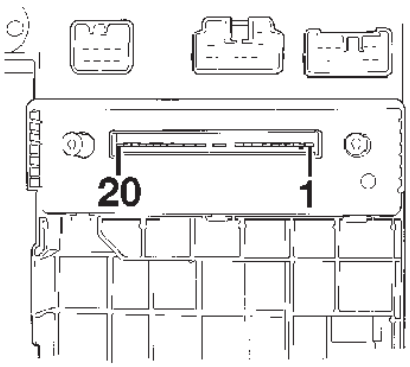
80b1194a

## TEST 4A CONTINUED- REPAIRING BODY CONTROL MODULE ″NO RESPONSE″




***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***



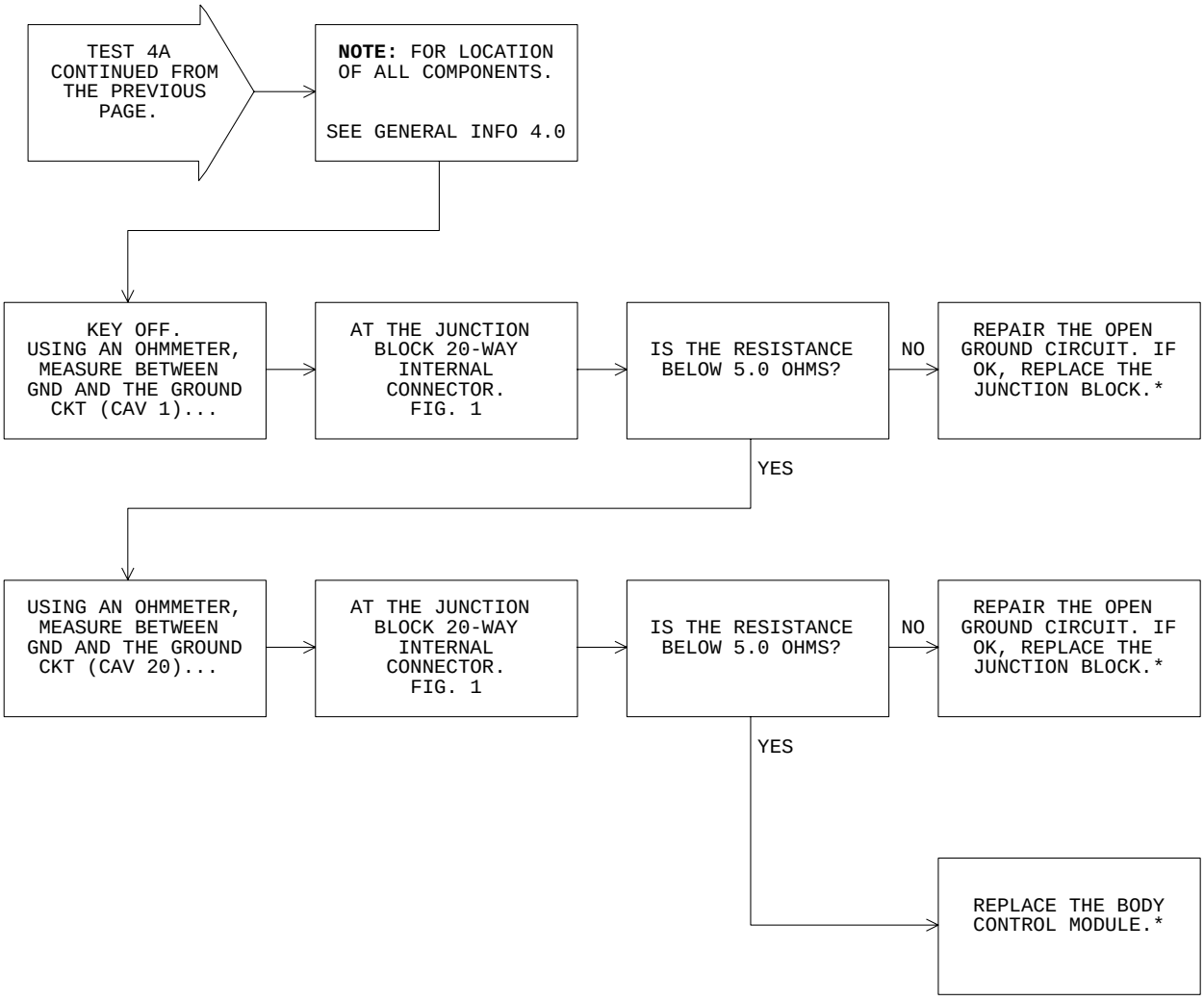

**JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR**

| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

*FIG. 1*

## TEST 4A CONTINUED- REPAIRING BODY CONTROL MODULE ″NO RESPONSE″

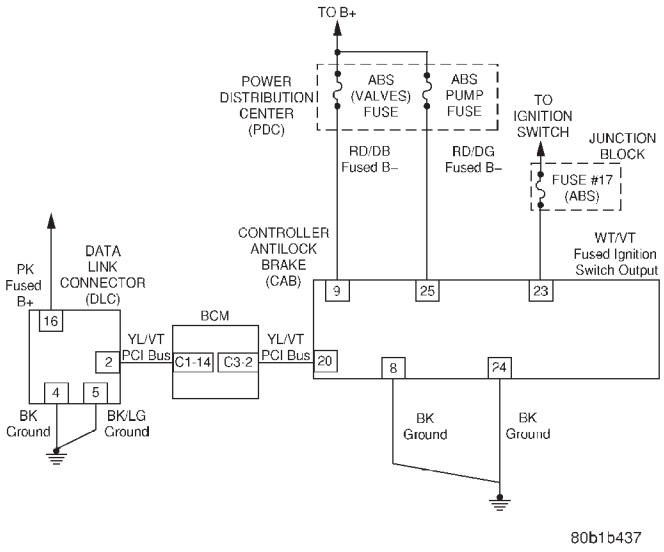



***Perform Verification TEST VER-2A.***

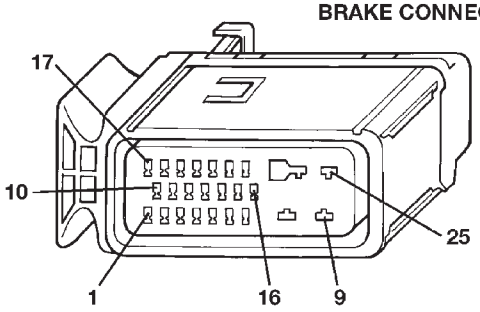
***Check connectors - Clean / repair as necessary.***

## TEST 5A REPAIRING CONTROLLER ANTI-LOCK BRAKES MODULE "NO RESPONSE"

**Perform TEST 1A Before Proceeding**



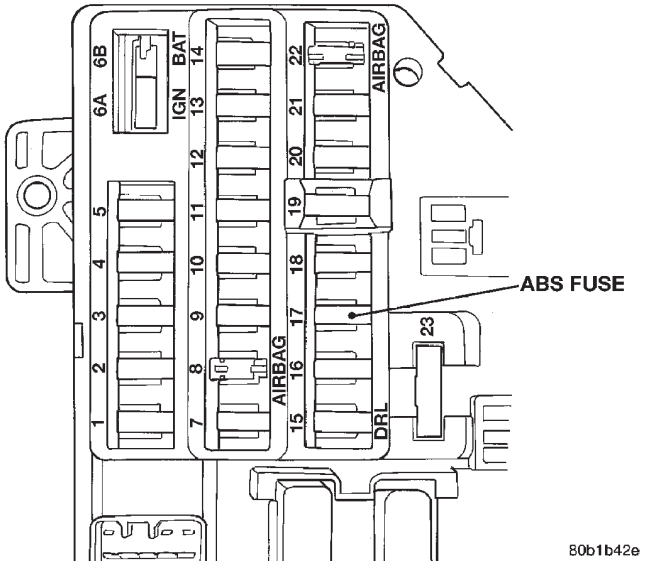

**CONTROLLER-ANTILOCK BRAKE CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 8 | BK | GROUND |
| 9 | RD/DB | FUSED B+ |
| 20 | YL/VT | PCI BUS |
| 23 | WT/VT | FUSED IGN SWITCH OUTPUT |
| 24 | BK | GROUND |
| 25 | RD/DG | FUSED B+ |

80b1b439

***FIG. 1***

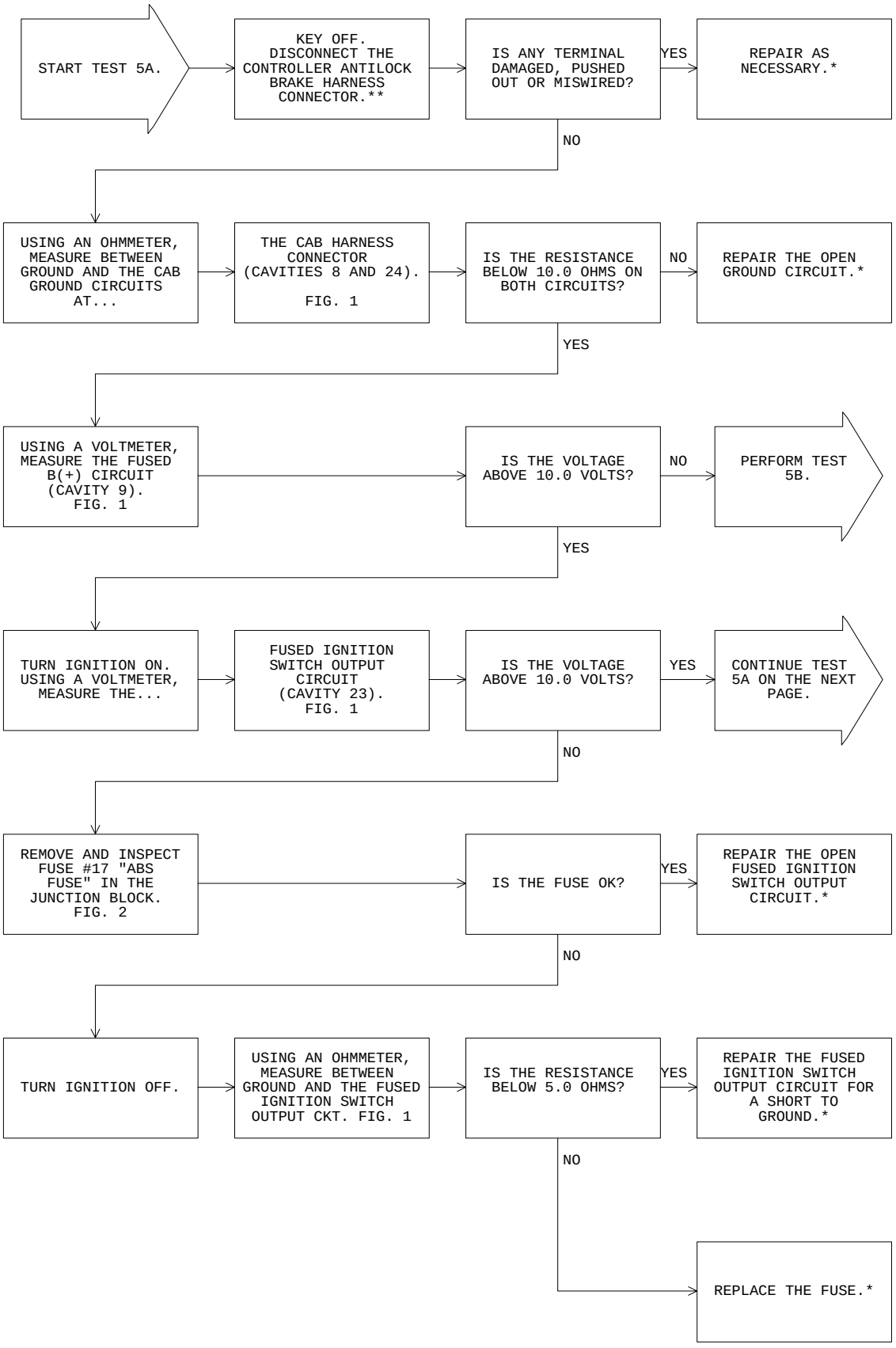



80b1b42e

***FIG. 2***

## TEST 5A REPAIRING CONTROLLER ANTI-LOCK BRAKES MODULE ″NO RESPONSE″

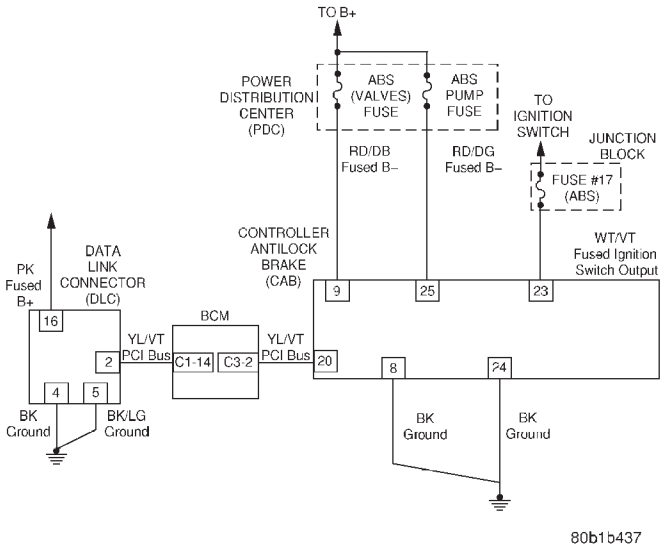
**Perform TEST 1A Before Proceeding**



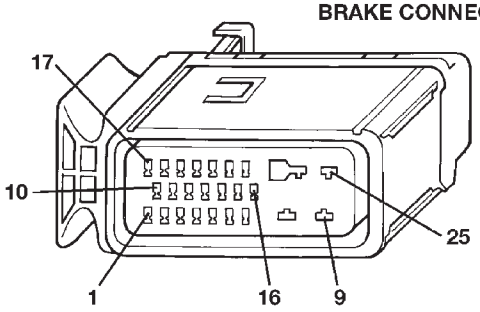

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 5A — CONTINUED - REPAIRING CONTROLLER ANTI-LOCK BRAKES MODULE "NO RESPONSE"




**CONTROLLER-ANTILOCK BRAKE CONNECTOR**

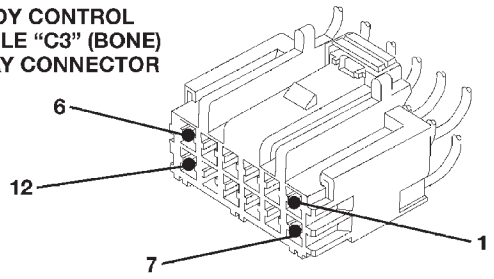



| CAV | COLOR | FUNCTION |
|---|---|---|
| 8 | BK | GROUND |
| 9 | RD/DB | FUSED B+ |
| 20 | YL/VT | PCI BUS |
| 23 | WT/VT | FUSED IGN SWITCH OUTPUT |
| 24 | BK | GROUND |
| 25 | RD/DG | FUSED B+ |

80b1b439

***FIG. 1***

**BODY CONTROL MODULE "C3" (BONE) 12-WAY CONNECTOR**

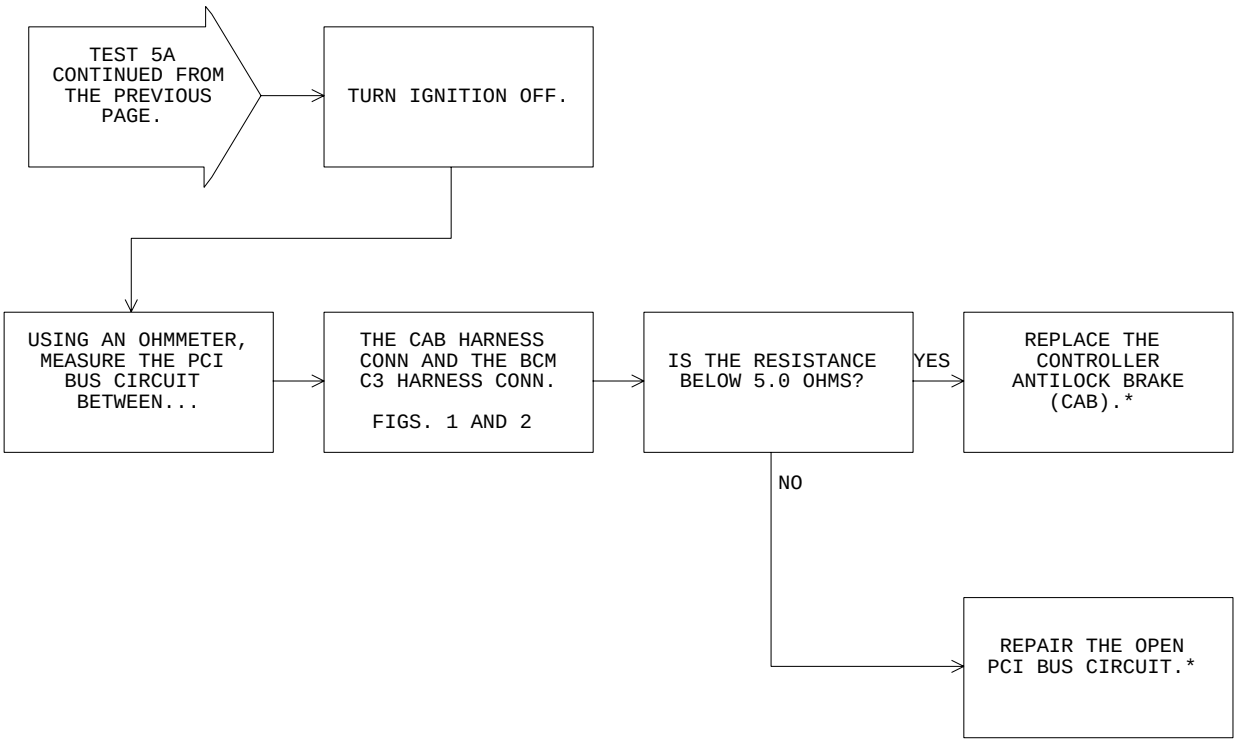



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | YL/VT | PCI BUS (PCM) |
| 2 | YL/VT | PCI BUS (ABS) |
| 3 | TN/RD | WIPER PARK SWITCH SENSE |
| 4 | RD/VT | WIPER ON OFF RELAY CONTROL |
| 5 | VT/LG | AMBIENT TEMPERATURE SENSOR SIGNAL |
| 7 | YL/VT | PCI BUS (TCM) |
| 9 | BR/YL | HEADLAMP WASHER RELAY CONTROL |
| 10 | DB/GY | SENSOR GROUND |
| 12 | VT | WIPER HIGH LOW RELAY CONTROL |

80b6f082

***FIG. 2***

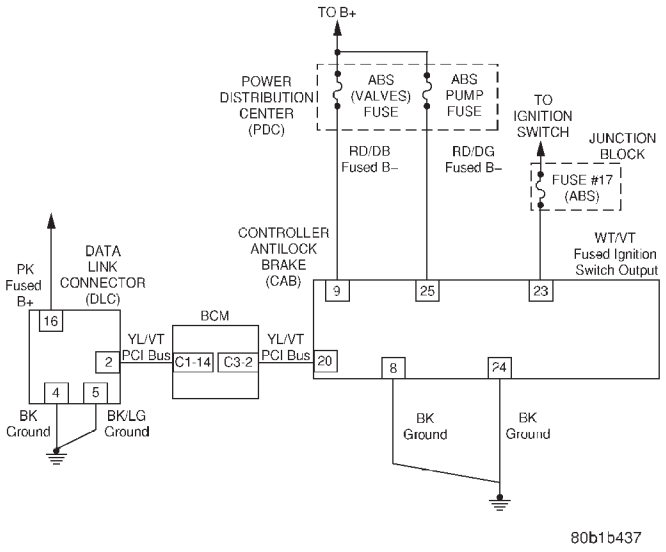
## TEST 5A CONTINUED - REPAIRING CONTROLLER ANTI-LOCK BRAKES MODULE ″NO RESPONSE″




***Perform Verification TEST VER-2A.** | ***Check connectors - Clean / repair as necessary.**

## TEST 5B REPAIRING CONTROLLER ANTI-LOCK BRAKES MODULE "NO RESPONSE"

**Perform TEST 5A Before Proceeding**



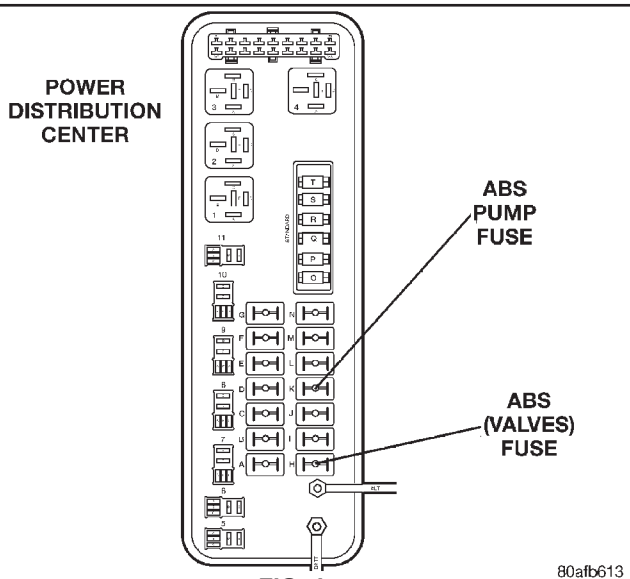
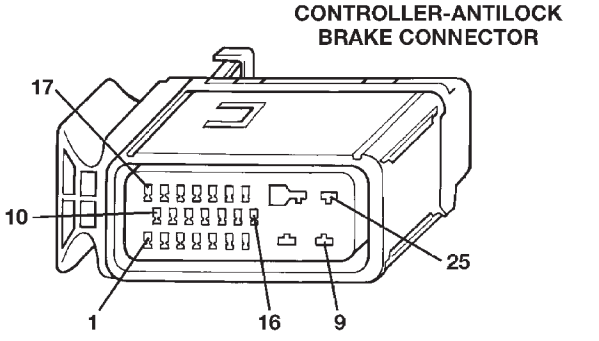




*FIG. 1*

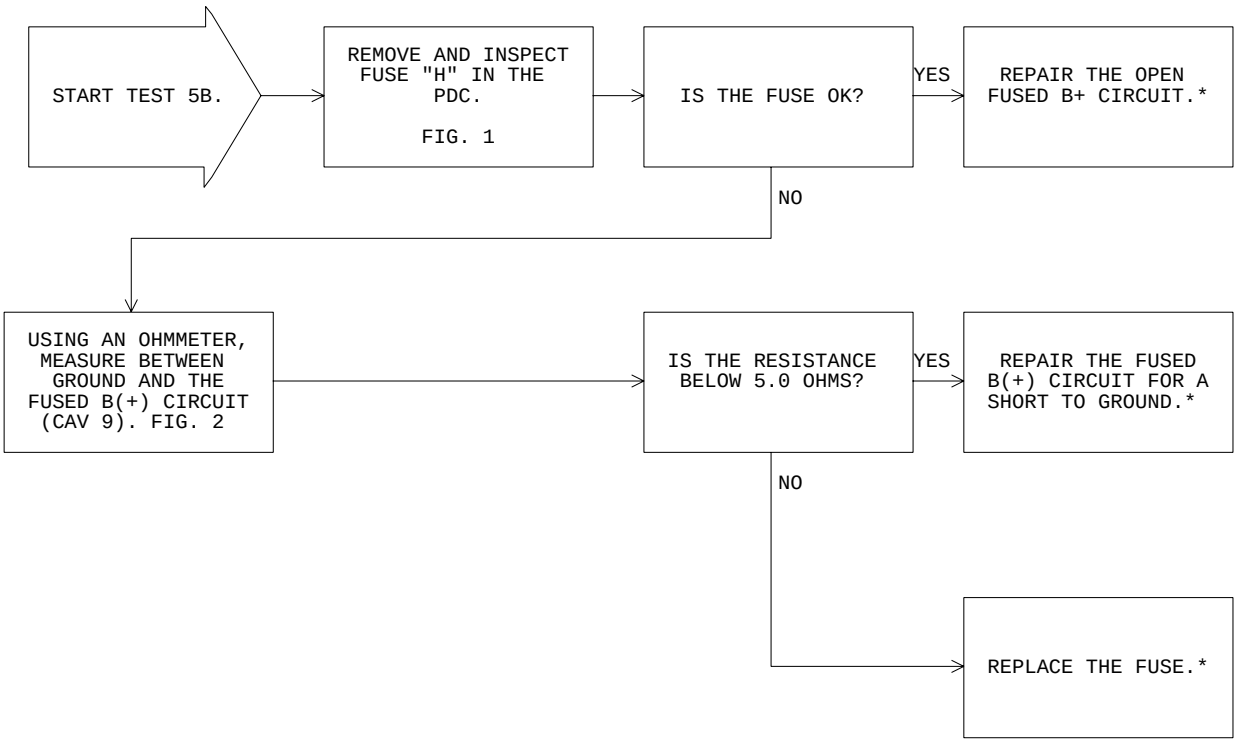



| CAV | COLOR | FUNCTION |
|---|---|---|
| 8 | BK | GROUND |
| 9 | RD/DB | FUSED B+ |
| 20 | YL/VT | PCI BUS |
| 23 | WT/VT | FUSED IGN SWITCH OUTPUT |
| 24 | BK | GROUND |
| 25 | RD/DG | FUSED B+ |

*FIG. 2*

## TEST 5B REPAIRING CONTROLLER ANTI-LOCK BRAKES MODULE ″NO RESPONSE″

**Perform TEST 5A Before Proceeding**

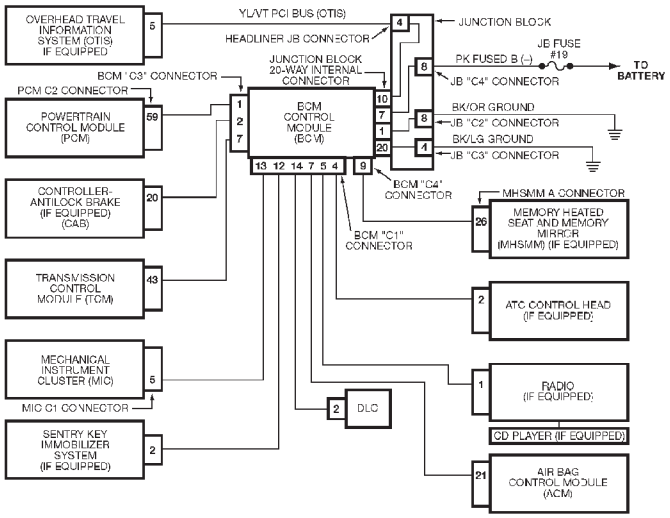



***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

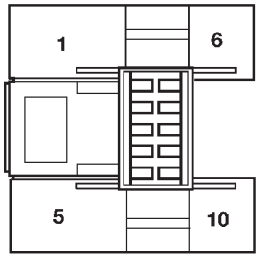
## TEST 6A REPAIRING INSTRUMENT CLUSTER MODULE "NO RESPONSE"

**Perform TEST 1A Before Proceeding**




80b4b7b0

**INSTRUMENT CLUSTER "C1" (GREEN) 10 WAY CONNECTOR**

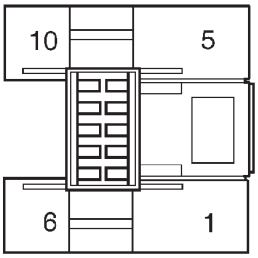



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK/RD | FUSED B(+) |
| 2 | RD/WT | FUSED IGNITION SW OUTPUT (OFF/RUN/START) |
| 3 | PK | FUSED B(+) |
| 4 | OR | PANEL LAMPS DRIVER |
| 5 | YL/VT | PCI BUS |
| 6 | BK/LG | GROUND |
| 8 | TN | RIGHT TURN SIGNAL |
| 10 | WT/LG | HIGH BEAM RELAY CONTROL |

80b4b7af

***FIG. 1***

**INSTRUMENT CLUSTER "C2" (BLUE) 10 WAY CONNECTOR**

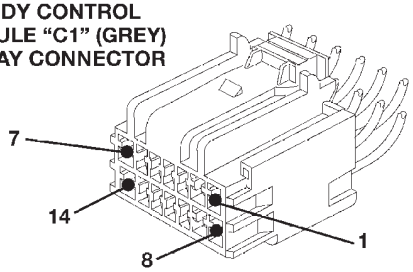



| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 3 | GY/BK | RED BRAKE WARNING LAMP DRIVER |
| 4 | BK/TN | WASHER FLUID SW. SENSE |
| 5 | LG | LEFT TURN SIGNAL |
| 6 | BK | GROUND |
| 8 | RD/YL | TRACTION CONTROL SW. SENSE |
| 9 | TN/BK | DECKLID AJAR SW. SENSE |
| 10 | GY | ENGINE OIL PRESSURE SW. SENSE |

80b243cd

***FIG. 2***

**BODY CONTROL MODULE "C1" (GREY) 14-WAY CONNECTOR**



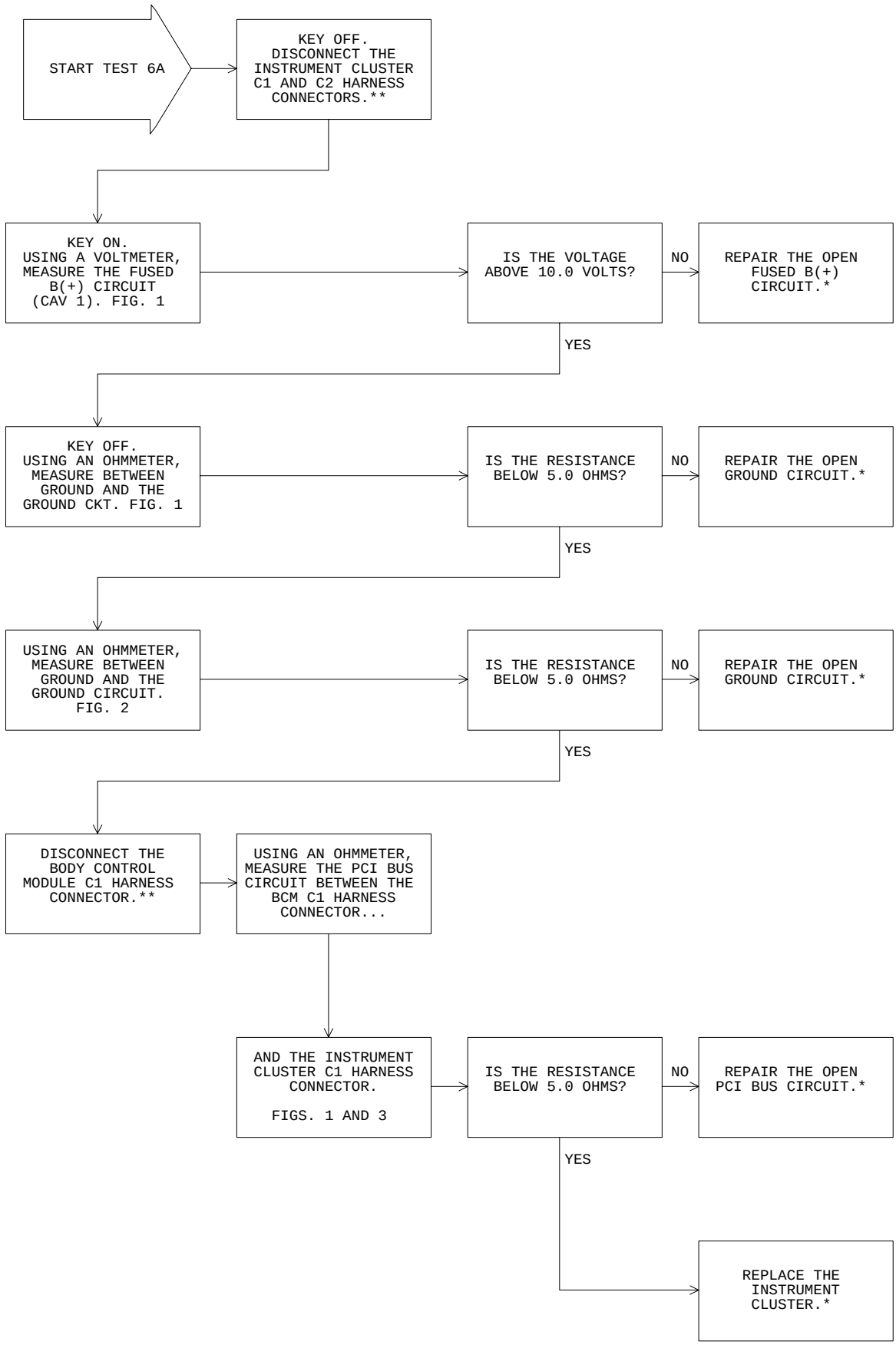

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/WT | DECKLID RELEASE SWITCH OUTPUT |
| 2 | GY/DB | RECIRCULATION DOOR DRIVER |
| 3 | DB/RD | BLEND AIR DOOR DRIVER |
| 4 | YL/VT | PCI BUS (ATC) |
| 5 | YL/VT | PCI BUS (RADIO) |
| 7 | YL/VT | PCI BUS (AIRBAG) |
| 8 | DB/GY | SENSOR GROUND |
| 9 | DG/YL | MODE DOOR DRIVER |
| 10 | BR/WT | COMMON DOOR DRIVER |
| 11 | VT/LG | FAN OFF SWITCH SIGNAL |
| 12 | YL/VT | PCI BUS (SKIM) |
| 13 | YL/VT | PCI BUS (MIC) |
| 14 | YL/VT | PCI BUS (DLC) |

80b11935

***FIG. 3***

## TEST 6A REPAIRING INSTRUMENT CLUSTER MODULE ″NO RESPONSE″

**Perform TEST 1A Before Proceeding**

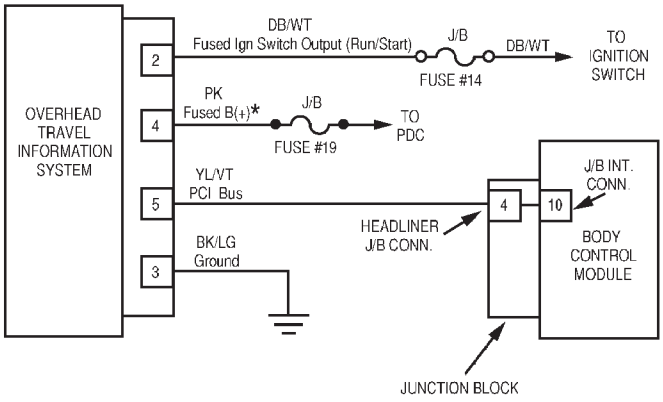



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 7A REPAIRING BLANK SCREEN OR "NO RESPONSE" CONDITION ON OTIS

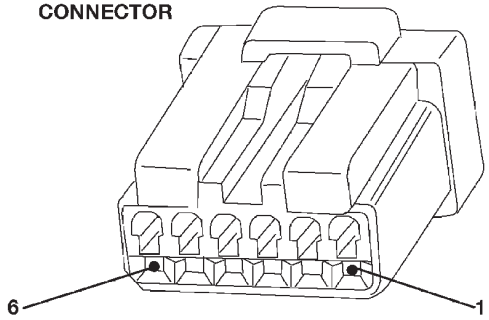
**Perform TEST 1A Before Proceeding**




* THIS CIRCUIT ONLY ON VEHICLES EQUIPPED WITH HOMELINK

80b242fa

**OVERHEAD TRAVEL INFORMATION SYSTEM CONNECTOR**



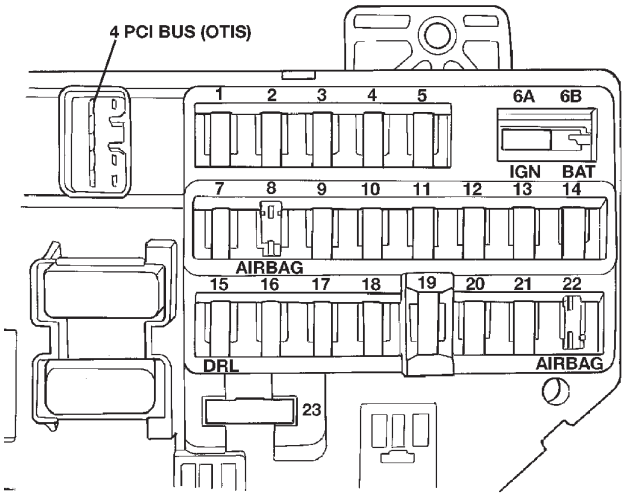

| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | DB/WT | FUSED IGNITION SWITCH OUTPUT RUN/START |
| 3 | BK/LG | GROUND |
| 4 | PK | FUSED B(+)* |
| 5 | YL/VT | PCI BUS (OTIS) |

* IF EQUIPPED WITH HOMELINK

80b2437f

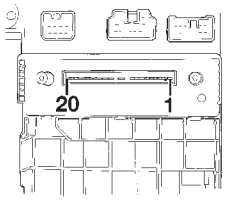
***FIG. 1***

**JUNCTION BLOCK**




80b2b47b

***FIG. 2***




**JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR**

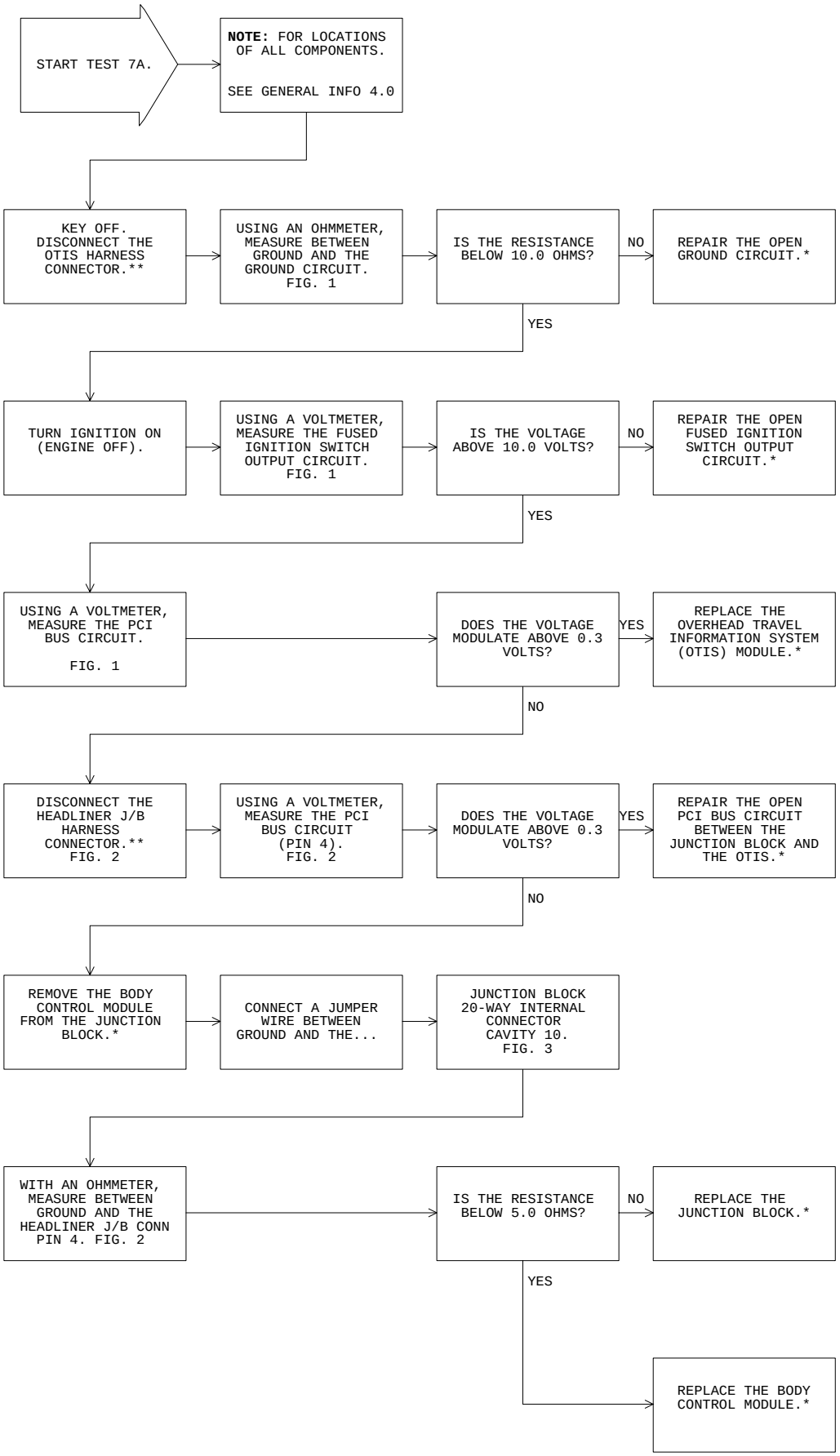
| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

***FIG. 3***

## TEST 7A — REPAIRING BLANK SCREEN OR ″NO RESPONSE″ CONDITION ON OTIS

**Perform TEST 1A Before Proceeding**

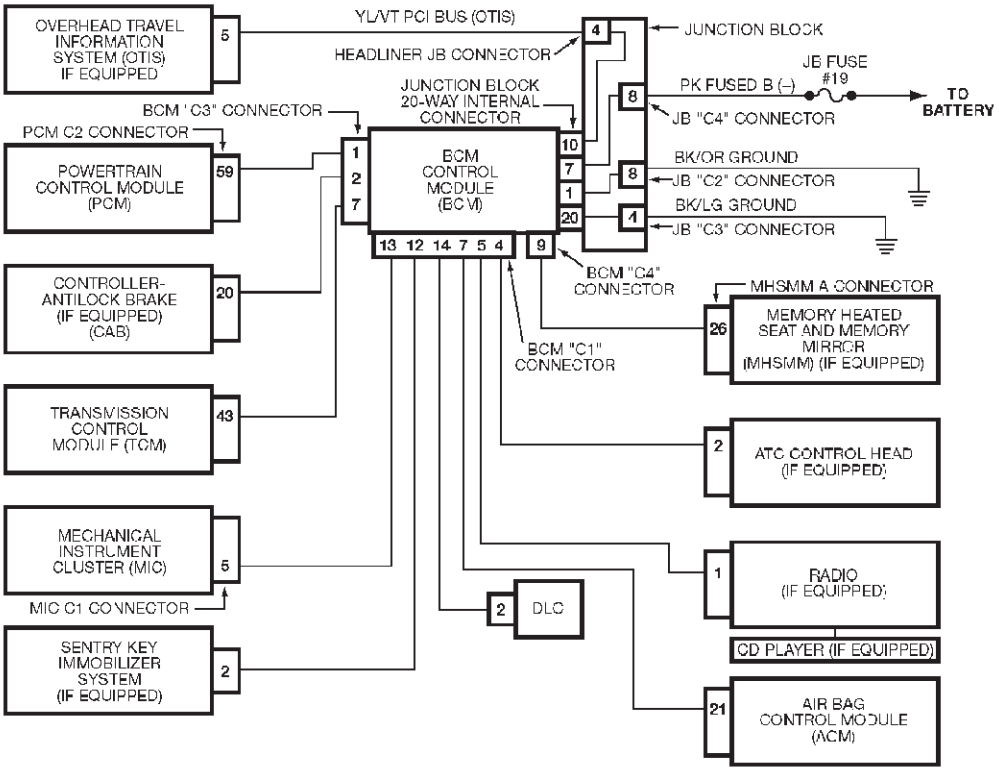



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.**

## TEST 8A REPAIRING POWERTRAIN CONTROL MODULE "NO RESPONSE" CONDITION

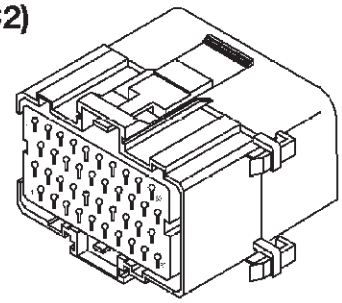
**Perform TEST 1A Before Proceeding**




80b4b7b0

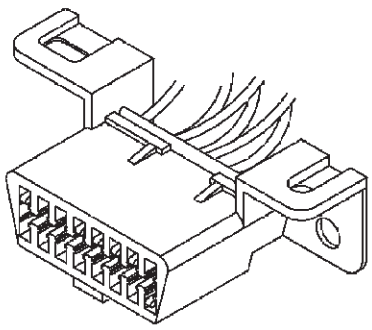
### POWERTRAIN CONTROL MODULE CONNECTOR (C2)

| CAV | COLOR | FUNCTION |
|---|---|---|
| 59 | YL/VT | PCI BUS |
| 65 | DB | SCI TRANSMIT |
| 75 | LG | SCI RECEIVE |



### DATA LINK CONNECTOR

| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | YL/VT | PCI BUS |
| 6 | LG | SCI RECEIVE |
| 7 | DB | SCI TRANSMIT |

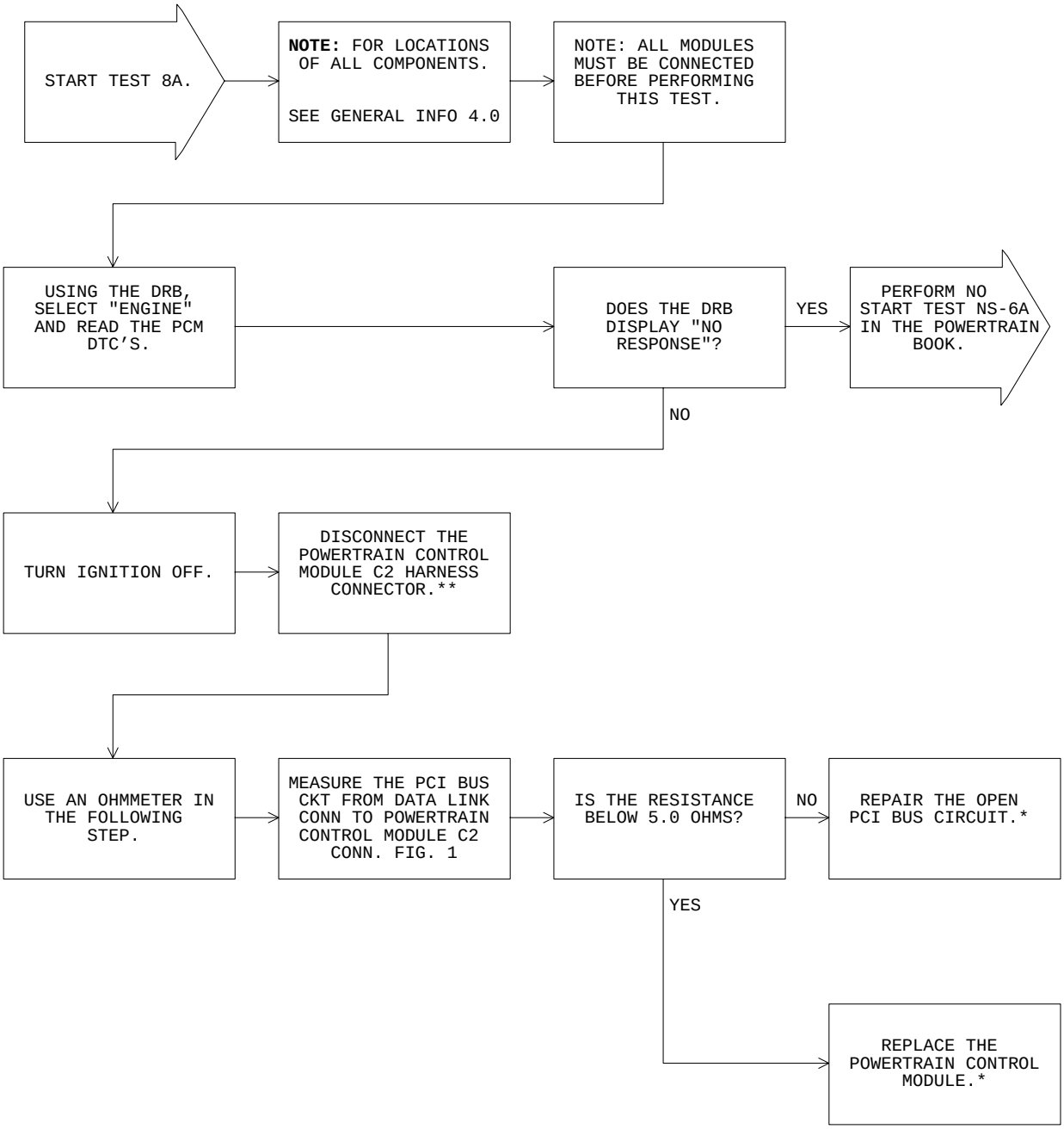


80b27c80

***FIG. 1***

## TEST 8A REPAIRING POWERTRAIN CONTROL MODULE ″NO RESPONSE″ CONDITION

**Perform TEST 1A Before Proceeding**

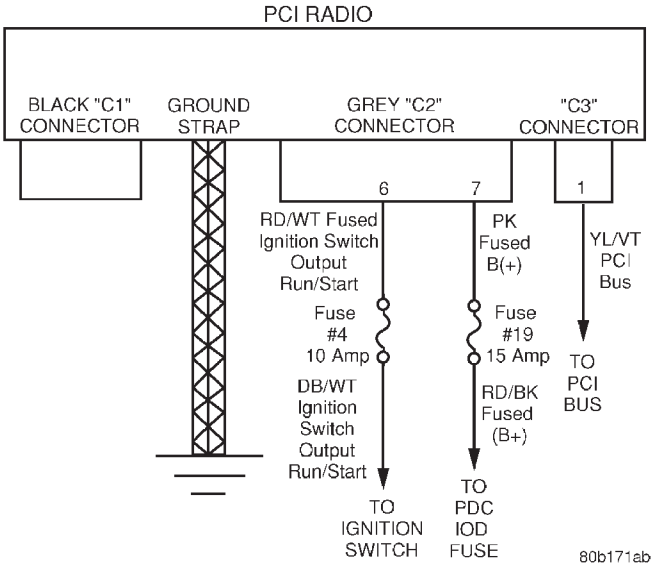



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 9A REPAIRING RADIO "NO RESPONSE" CONDITION

**Perform TEST 1A Before Proceeding**



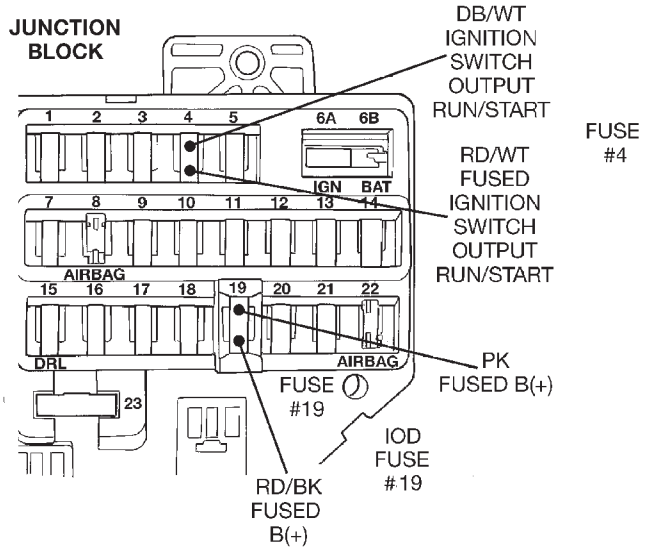
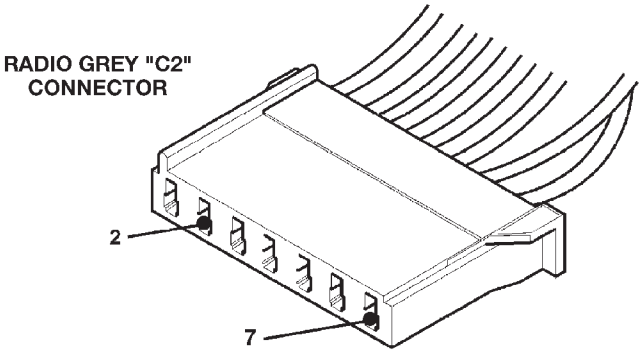




***FIG. 1***

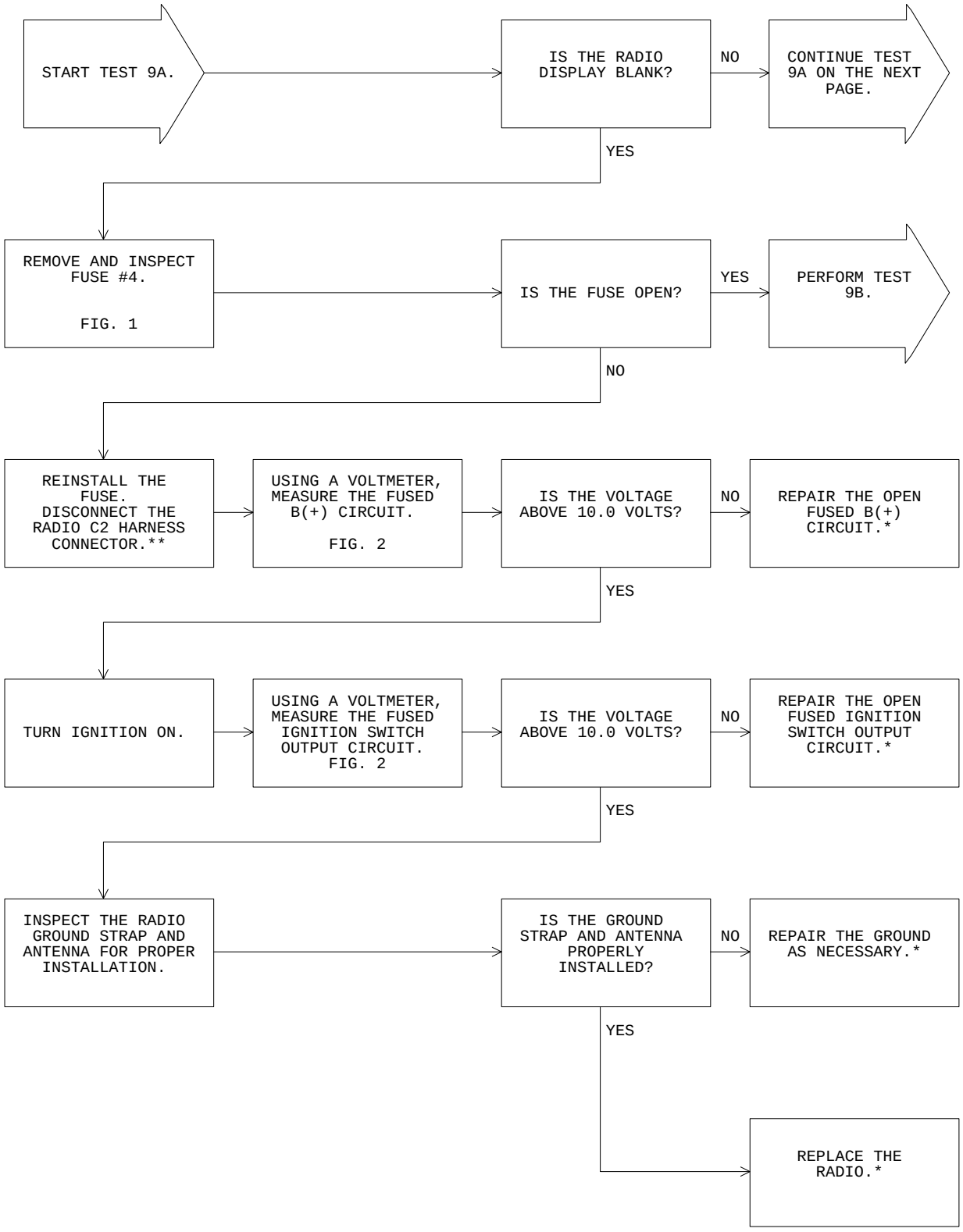



| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | BR/RD | LF (-) |
| 3 | DB/RD | RF (-) |
| 4 | YL/BK | DAY BRIGHTNESS SENSE |
| 5 | OR | PANEL LAMPS DIMMER SW SIGNAL |
| 6 | RD/WT | FUSED IGNITION SWITCH OUTPUT |
| 7 | PK | FUSED B(+) |

***FIG. 2***

## TEST 9A REPAIRING RADIO "NO RESPONSE" CONDITION

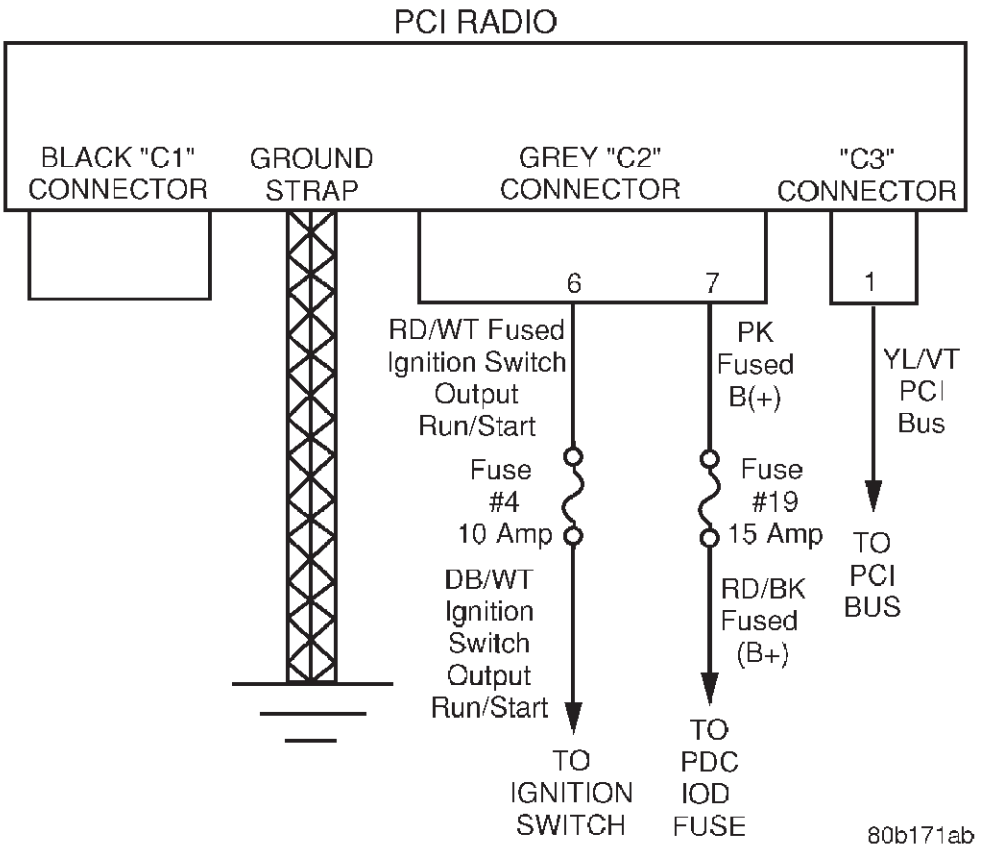
**Perform TEST 1A Before Proceeding**

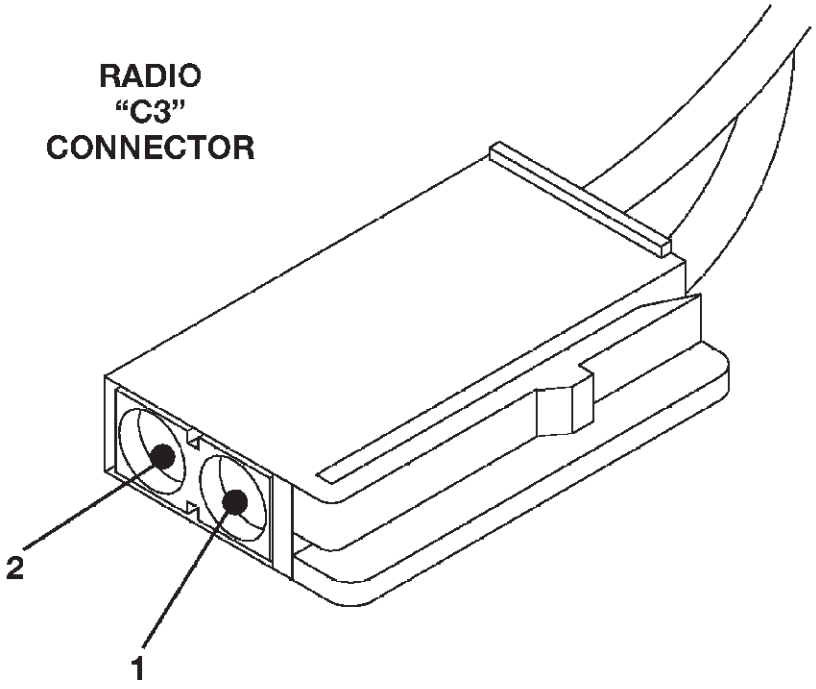



***Perform Verification TEST VER-2A.***

*****Check connectors - Clean / repair as necessary.***

**TEST 9A** CONTINUED - REPAIRING RADIO "NO RESPONSE" CONDITION



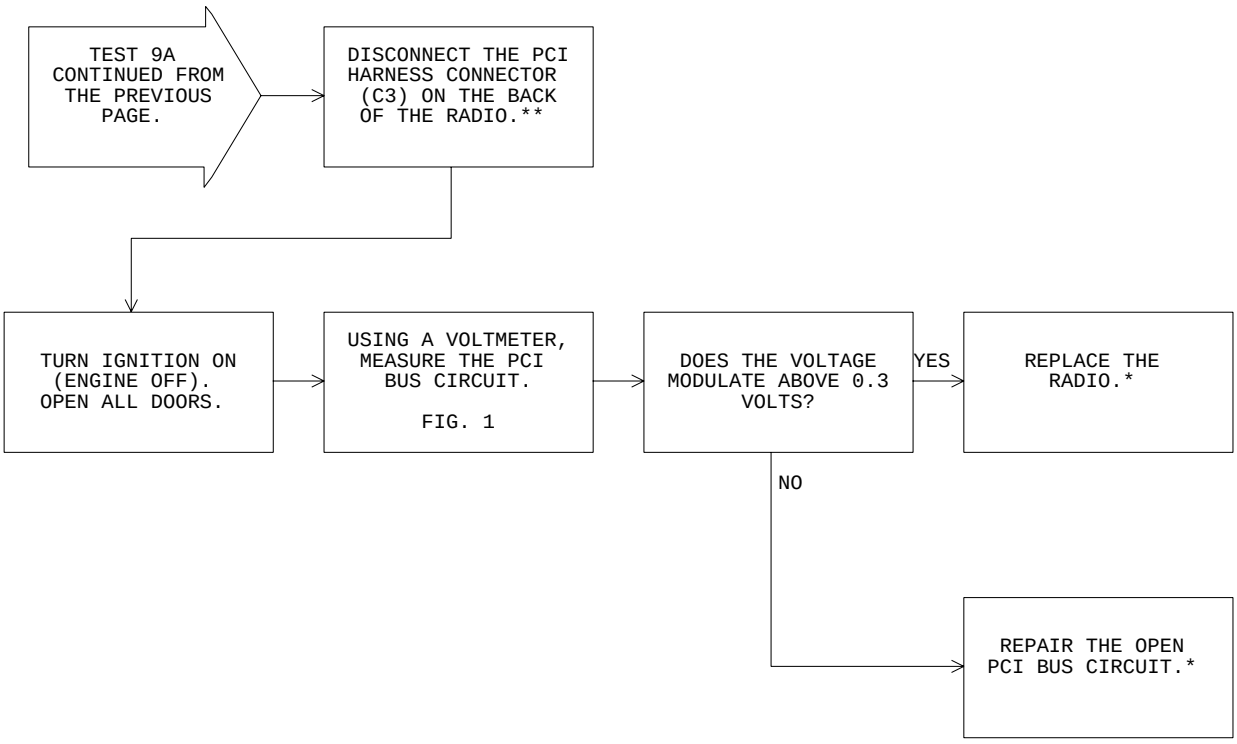




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | YL/VT | PCI BUS |

80b2b375

*FIG. 1*

## TEST 9A CONTINUED - REPAIRING RADIO ″NO RESPONSE″ CONDITION

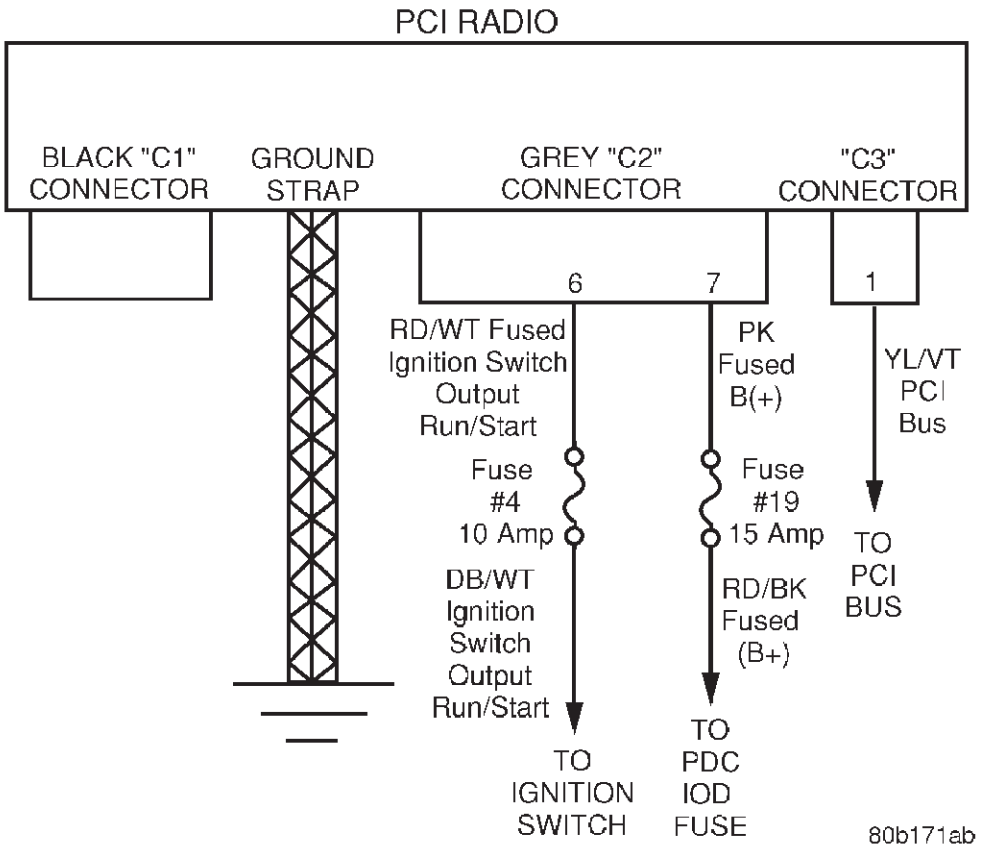


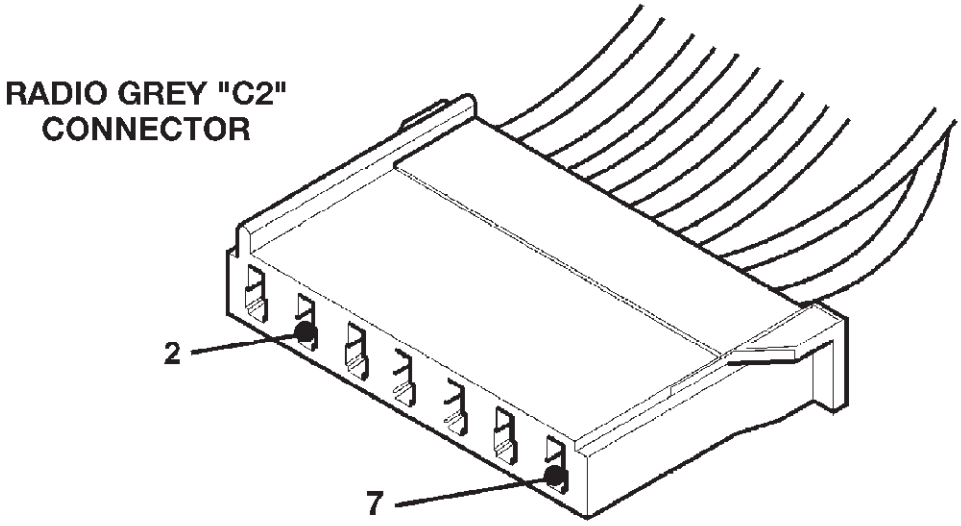

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

**TEST 9B** **REPAIRING RADIO "NO RESPONSE" CONDITION**

**Perform TEST 9A Before Proceeding**



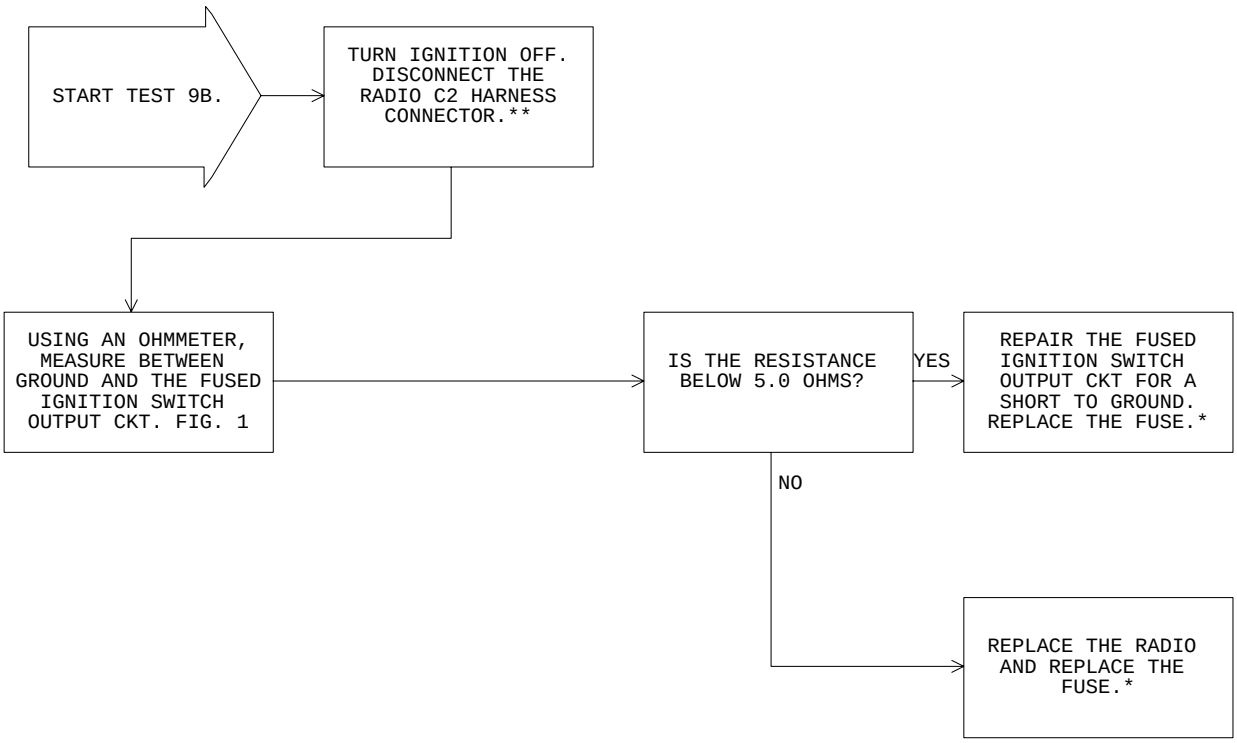

| CAV | COLOR | FUNCTION |
|---|---|---|
| 2 | BR/RD | LF (-) |
| 3 | DB/RD | RF (-) |
| 4 | YL/BK | DAY BRIGHTNESS SENSE |
| 5 | OR | PANEL LAMPS DIMMER SW SIGNAL |
| 6 | RD/WT | FUSED IGNITION SWITCH OUTPUT |
| 7 | PK | FUSED B(+) |

80b5cbe1

***FIG. 1***

## TEST 9B REPAIRING RADIO ″NO RESPONSE″ CONDITION

**Perform TEST 9A Before Proceeding**

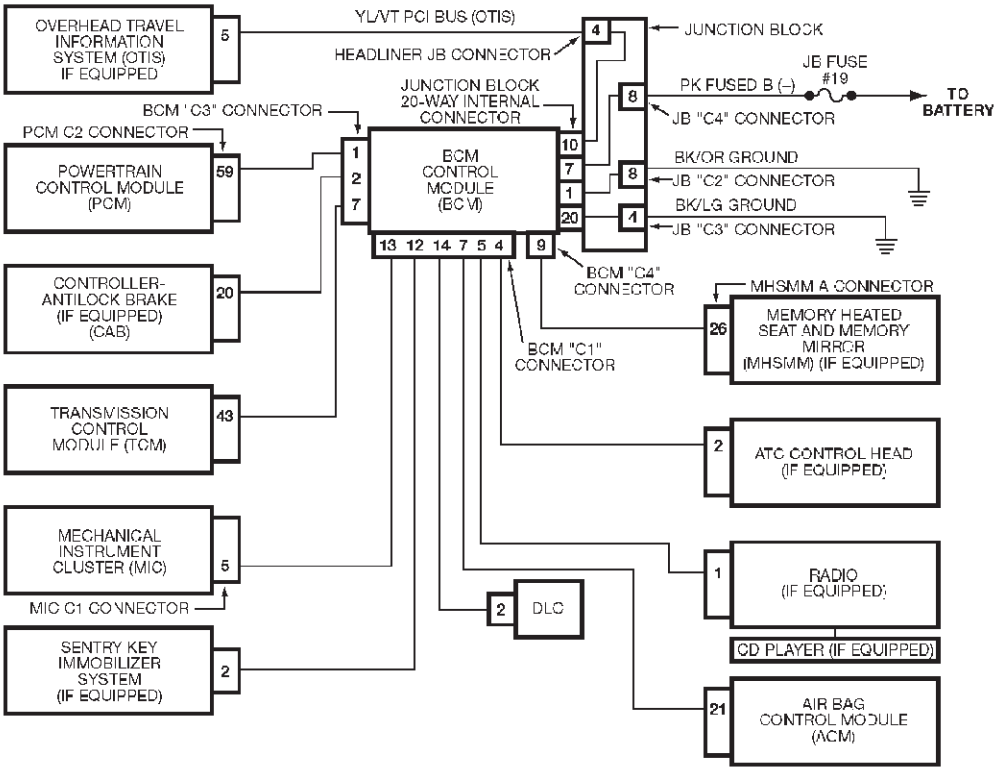



***Perform Verification TEST VER-2A.***

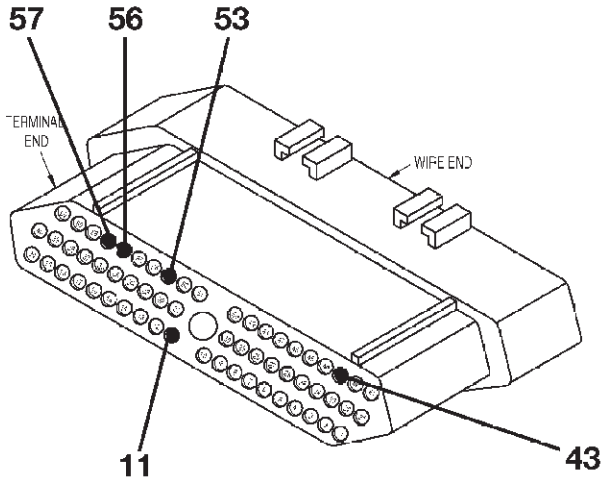
***Check connectors - Clean / repair as necessary.***

## TEST 10A REPAIRING TRANSMISSION CONTROL MODULE "NO RESPONSE" CONDITION

**Perform TEST 1A Before Proceeding**




80b4b7b0



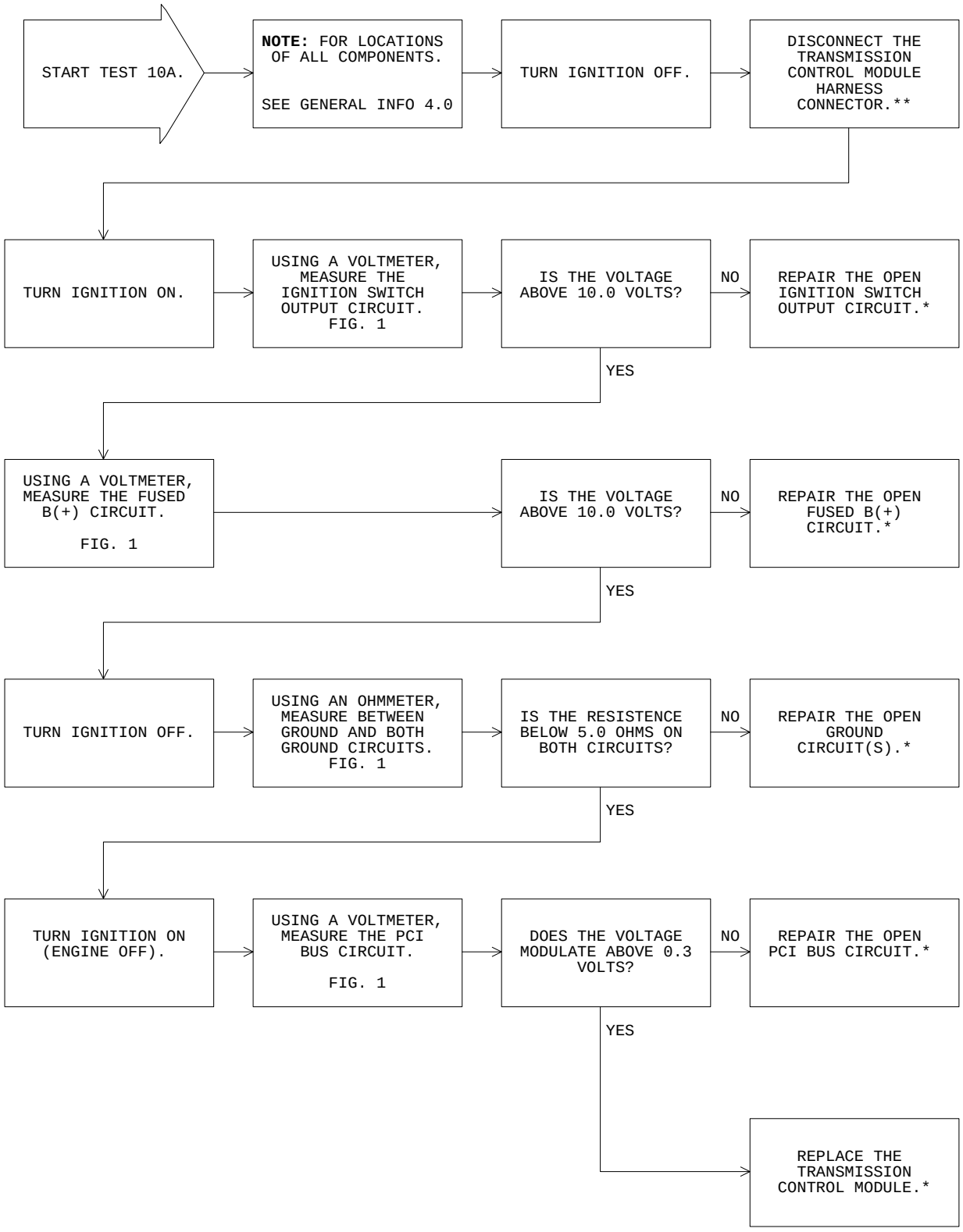

| CAV | COLOR | FUNCTION |
|---|---|---|
| 11 | RD/WT | IGNITION SWITCH OUT(RUN/ST) |
| 43 | YL/VT | PCI BUS |
| 53 | BK | TCM GROUND |
| 56 | RD/LB | FUSED B+ |
| 57 | BK/RD | TCM GROUND |

80b2b601

***FIG. 1***

## TEST 10A REPAIRING TRANSMISSION CONTROL MODULE ″NO RESPONSE″ CONDITION

**Perform TEST 1A Before Proceeding**

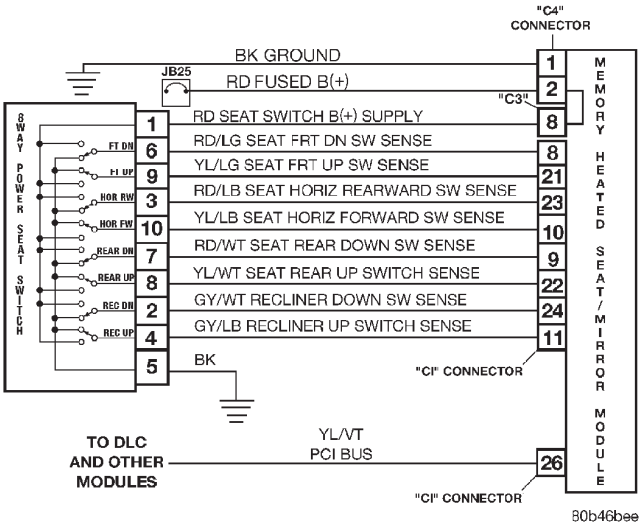



***Perform Verification TEST VER-2A.***

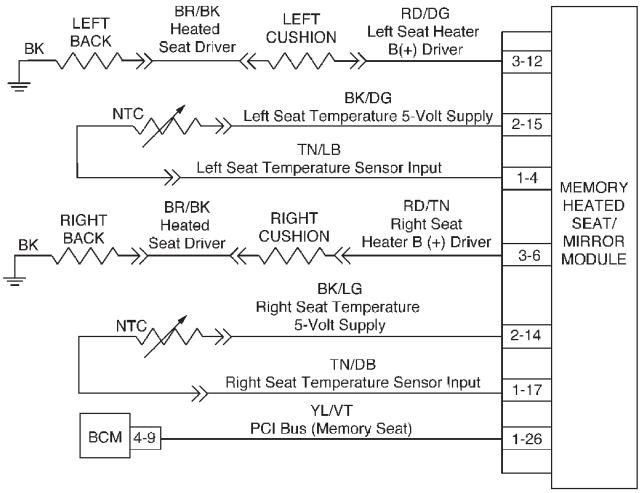
***Check connectors - Clean / repair as necessary.***

# TEST 11A — REPAIRING MEMORY HEATED SEAT/MIRROR MODULE "NO RESPONSE" OR "MHSMM MESSAGES NOT RECEIVED" TROUBLE CODE

**Perform TEST 1A Before Proceeding**




80b46bee




80b46bfc

**Name of code:** MHSMM Messages Not Received

**When monitored:** With ignition on

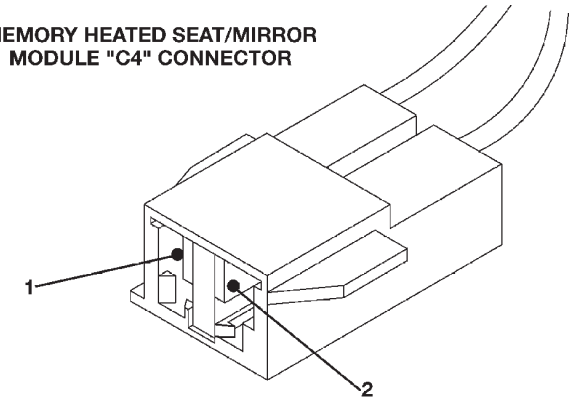
**Set condition:** BCM has not received any J1850 bus messages from the Memory Heated Seat and Mirror Module (MHSMM) for at least 18 seconds.

**Theory of operation:** BCM receives a variety of information from the MHSMM over the J1850 bus. If the flow of information is stopped for over 18 seconds, the BCM will set this code.

**Probable Causes:**
- > Wiring open circuit
- > Wiring short to ground
- > Wiring short to battery
- > Failed MHSMM
- > Failed BCM

80b46b6b

**MEMORY HEATED SEAT/MIRROR MODULE "C4" CONNECTOR**

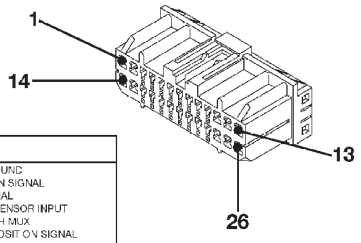



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | RD | FUSED B(+) |

80b46bd8

***FIG. 1***

**MEMORY HEATED SEAT/MIRROR MODULE "C1" CONNECTOR**

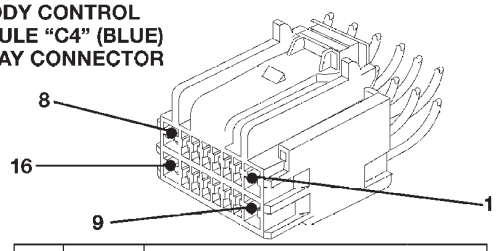



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | WT/RD | LEFT MIRROR SENSOR GROUND |
| 2 | VT/RD | SEAT HORIZONTAL POSITION SIGNAL |
| 3 | LB/RD | REAR RISER POSITION SIGNAL |
| 4 | TN/LB | LEFT SEAT TEMPERATURE SENSOR INPUT |
| 5 | TN/LG | RIGHT SEAT HEATER SWITCH MUX |
| 6 | YL/RD | RIGHT MIRROR VERTICAL POSITION SIGNAL |
| 7 | YL/OR | LEFT MIRROR VERTICAL POSITION SIGNAL |
| 8 | RD/LG | SEAT FRONT DOWN SWITCH SENSE |
| 9 | RD/WT | SEAT REAR DOWN SWITCH SENSE |
| 10 | YL/LB | SEAT HORIZONTAL FORWARD SWITCH SENSE |
| 11 | GY/LB | RECLINER UP SWITCH SENSE |
| 12 | PK/RD | MEMORY POSITION 1 SWITCH SENSE |
| 13 | PK/BK | MEMORY SET SWITCH SENSE |
| 14 | WT/RK | RIGHT MIRROR SENSOR GROUND |
| 15 | BR | FRONT RISER POSITION SIGNAL |
| 16 | LB | RECLINER POSITION SIGNAL |
| 17 | TN/DB | RIGHT SEAT TEMPERATURE SENSOR INPUT |
| 18 | TN/DG | LEFT SEAT HEATER SWITCH MUX |
| 19 | DG/RD | RIGHT MIRROR HORIZONTAL POSITION SIGNAL |
| 20 | DB/YL | LEFT MIRROR HORIZONTAL POSITION SIGNAL |
| 21 | YL/LG | SEAT FRONT UP SWITCH SENSE |
| 22 | YL/WT | SEAT REAR UP SWITCH SENSE |
| 23 | RD/LB | SEAT HORIZONTAL REARWARD SWITCH SENSE |
| 24 | GY/WT | RECLINER DOWN SWITCH SENSE |
| 25 | PK/WT | MEMORY POSITION 2 SWITCH SENSE |
| 26 | YL/VT | PCI BUS |

80b46bd5

***FIG. 2***

**BODY CONTROL MODULE "C4" (BLUE) 16-WAY CONNECTOR**



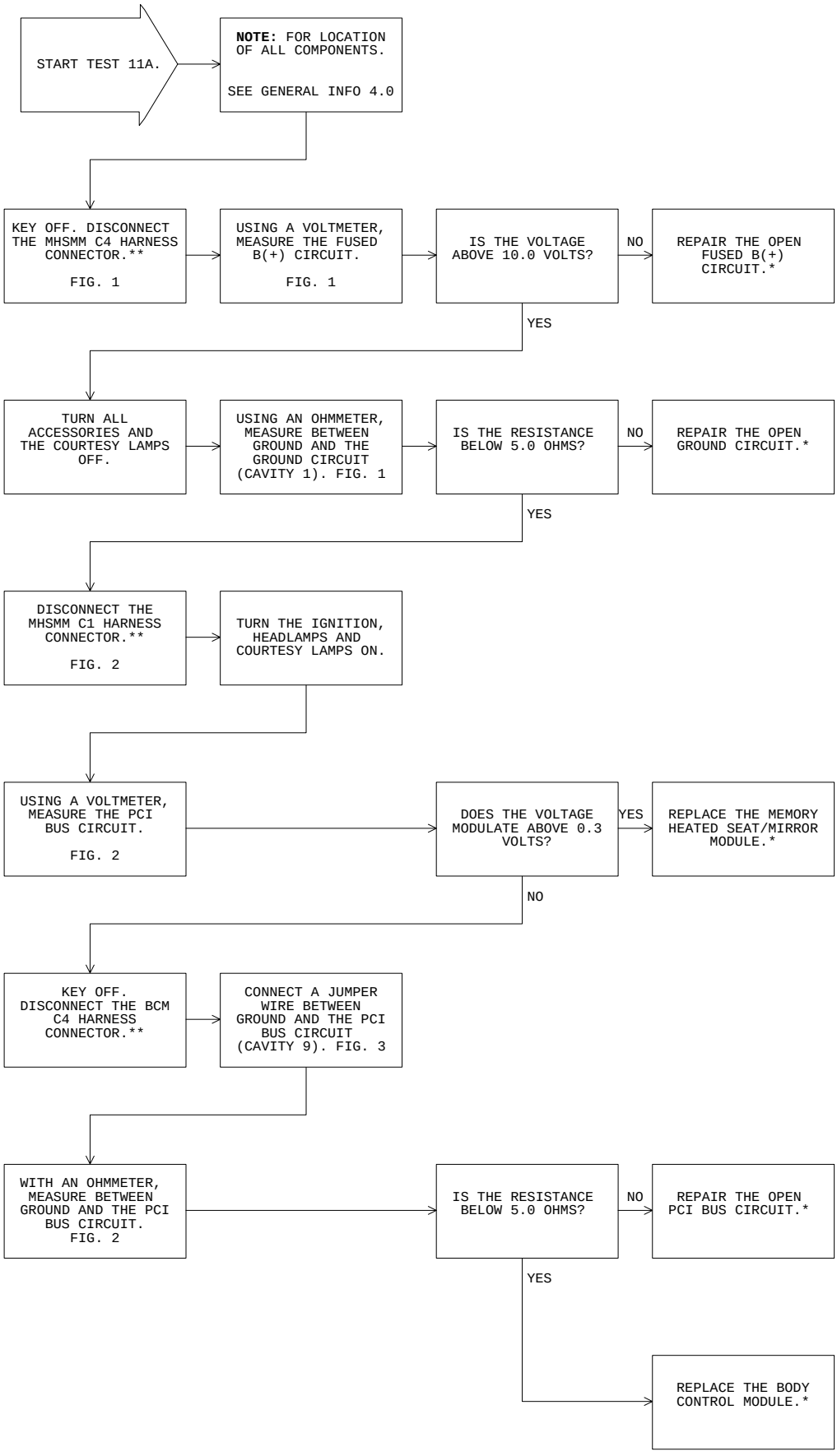

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM MUX |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM MUX |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

80b575cd

***FIG. 3***

## TEST 11A — REPAIRING MEMORY HEATED SEAT/MIRROR MODULE ″NO RESPONSE″ OR ″MHSMM MESSAGES NOT RECEIVED″ TROUBLE CODE

**Perform TEST 1A Before Proceeding**

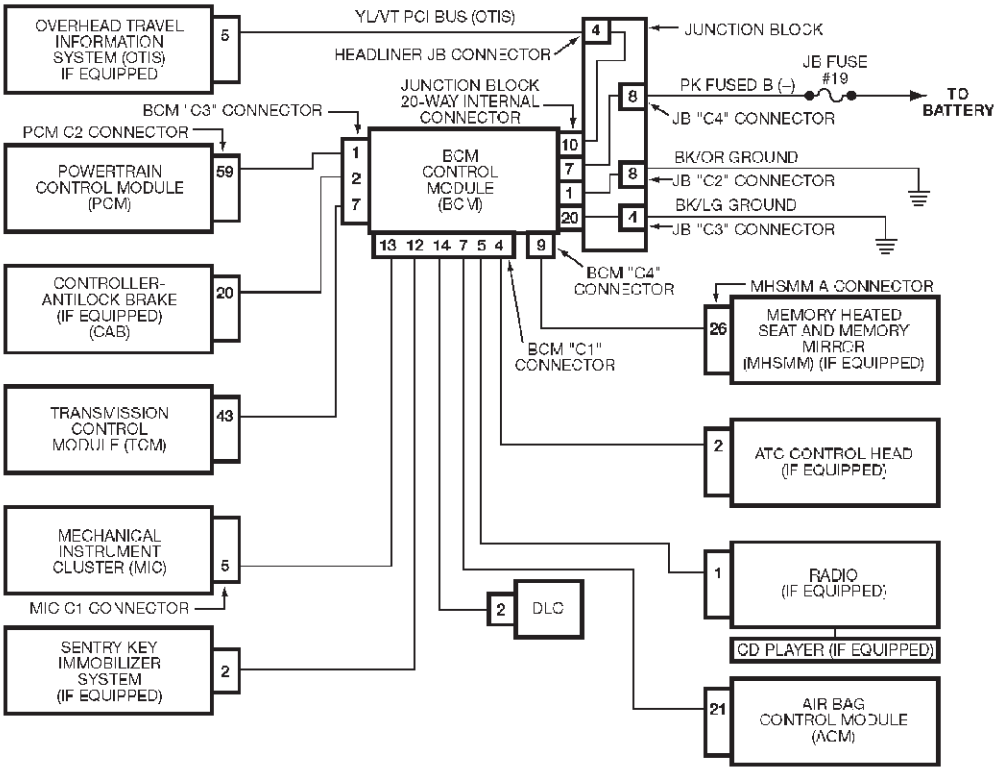



***Perform Verification TEST VER-5A.***

***Check connectors - Clean / repair as necessary.***

## TEST 12A REPAIRING PCI BUS CIRCUIT SHORTED TO BATTERY

**Perform TEST 1A Before Proceeding**




80b4b7b0

**Name of code:** Bus Short to Battery

**When monitored:** Continuously

**Set condition:** BCM detected a short to battery on the PCI bus for at least one second.

**Theory of operation:** BCM continuously monitors communications on the PCI bus. If the PCI bus remains high for over one second, it must be shorted to battery.

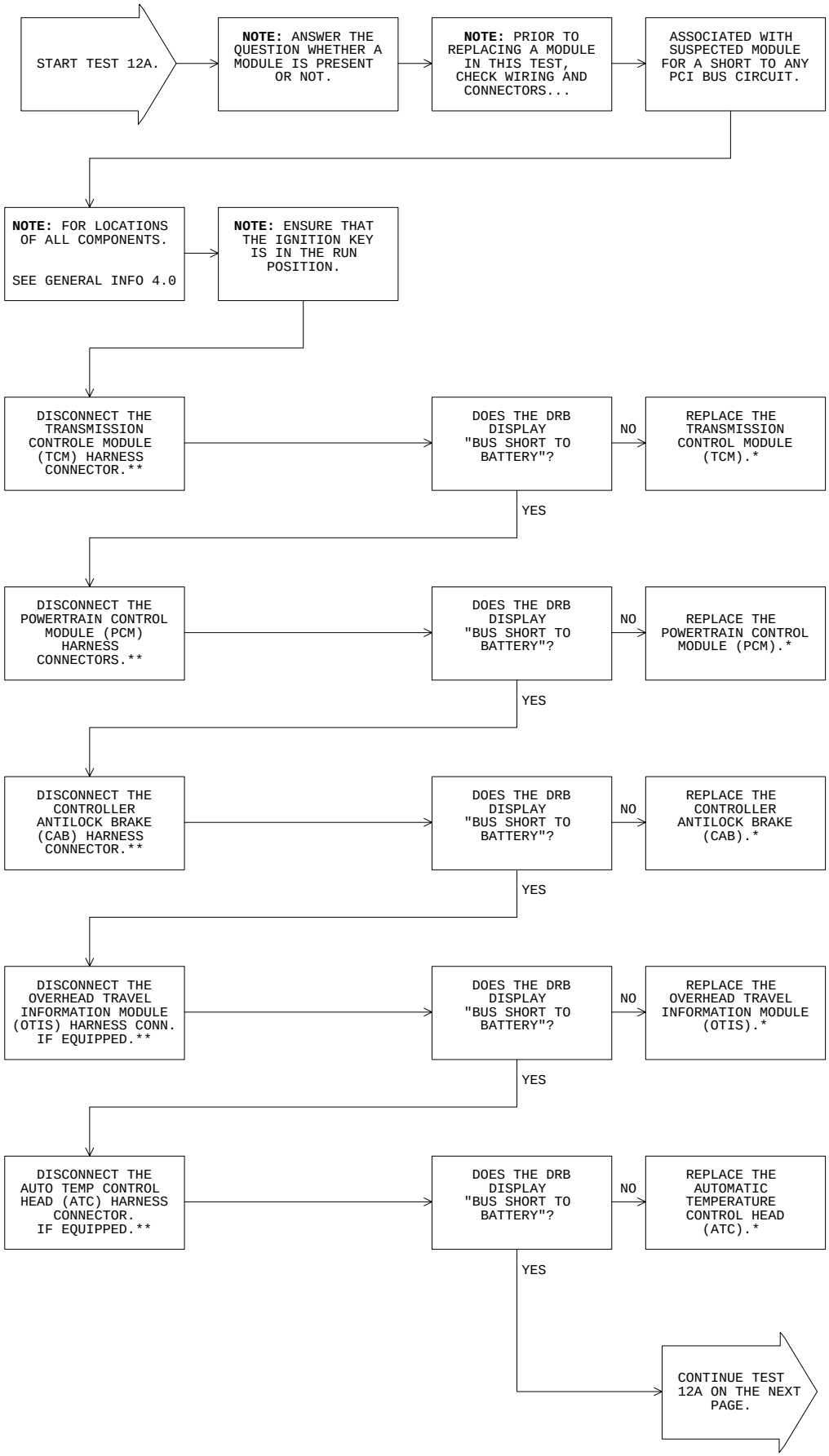
**Probable Causes:**

> Intermittent wiring short to battery
> Another module has failed
> Failed BCM

80b308b1

## TEST 12A REPAIRING PCI BUS CIRCUIT SHORTED TO BATTERY

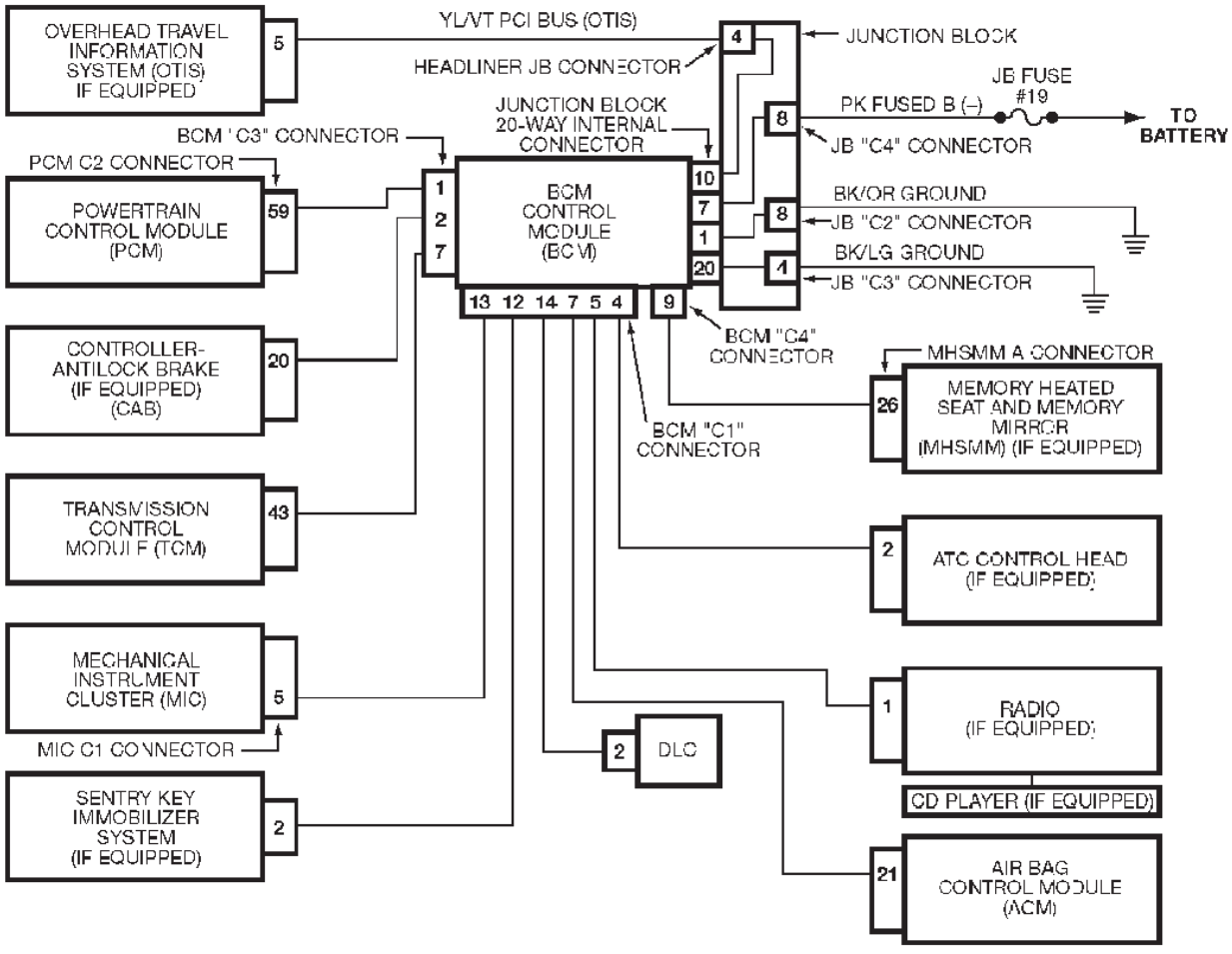
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.***

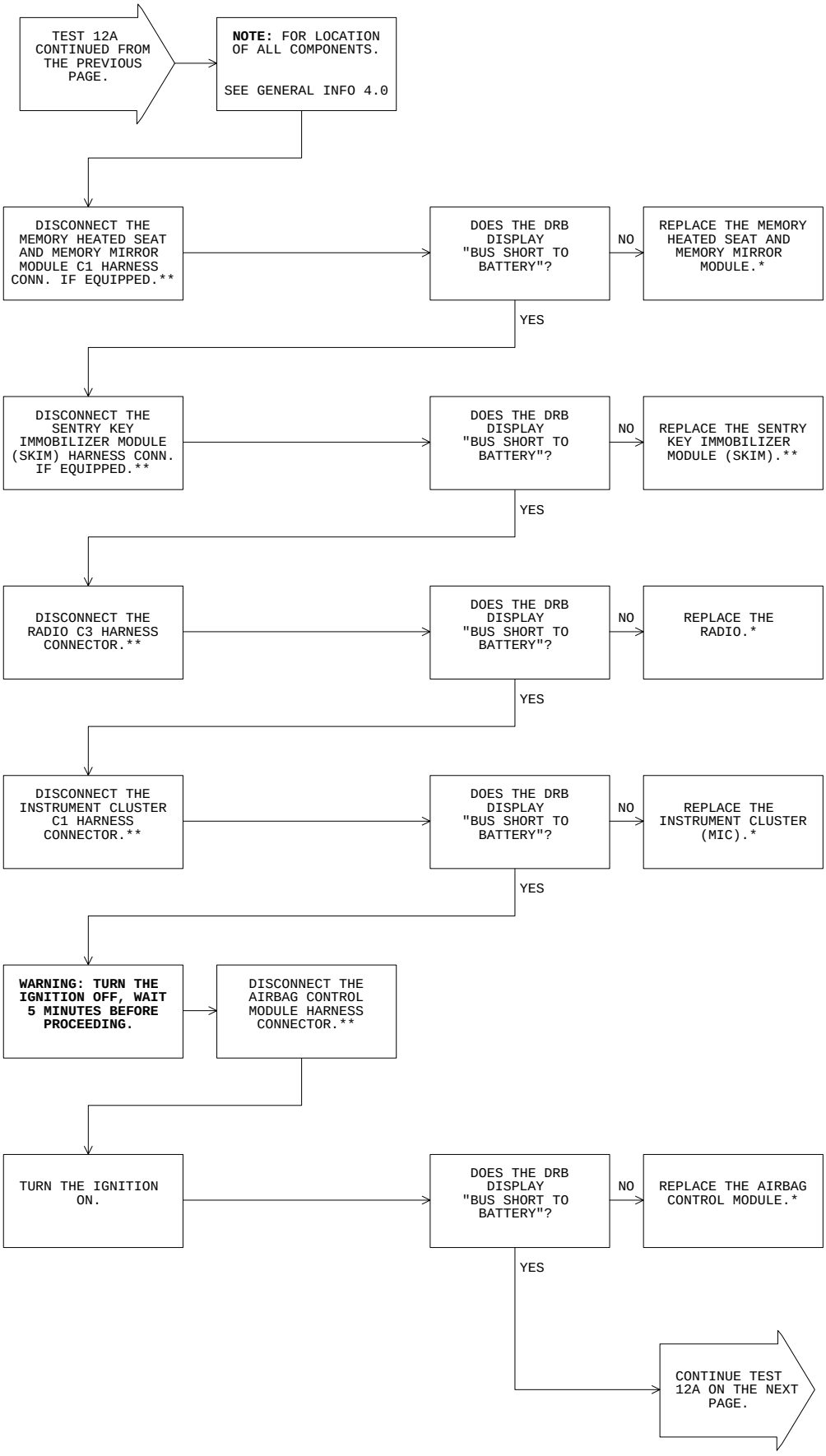
***Check connectors - Clean / repair as necessary.***

## TEST 12A CONTINUED - REPAIRING PCI BUS CIRCUIT SHORTED TO BATTERY




80b4b7b0

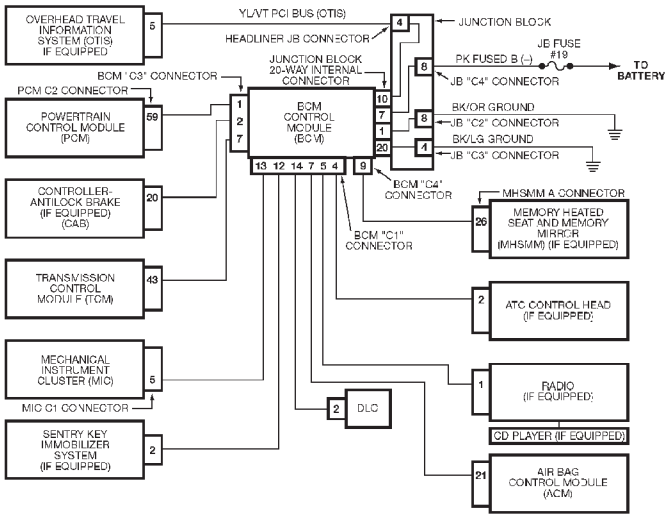
## TEST 12A CONTINUED - REPAIRING PCI BUS CIRCUIT SHORTED TO BATTERY




***Perform Verification TEST VER-2A.***

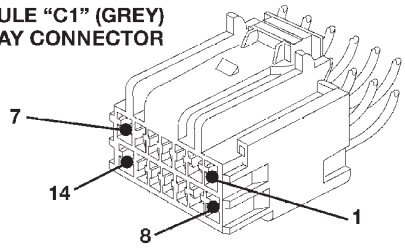
***Check connectors - Clean / repair as necessary.***

## TEST 12A CONTINUED - REPAIRING PCI BUS CIRCUIT SHORTED TO BATTERY




80b4b7b0

**BODY CONTROL MODULE "C1" (GREY) 14-WAY CONNECTOR**

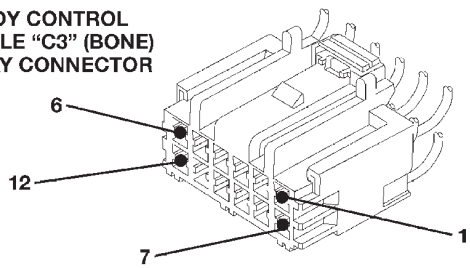



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/WT | DECKLID RELEASE SWITCH OUTPUT |
| 2 | GY/DB | RECIRCULATION DOOR DRIVER |
| 3 | DB/RD | BLEND AIR DOOR DRIVER |
| 4 | YL/VT | PCI BUS (ATC) |
| 5 | YL/VT | PCI BUS (RADIO) |
| 7 | YL/VT | PCI BUS (AIRBAG) |
| 8 | DB/GY | SENSOR GROUND |
| 9 | DG/YL | MODE DOOR DRIVER |
| 10 | BR/WT | COMMON DOOR DRIVER |
| 11 | VT/LG | FAN OFF SWITCH SIGNAL |
| 12 | YL/VT | PCI BUS (SKIM) |
| 13 | YL/VT | PCI BUS (MIC) |
| 14 | YL/VT | PCI BUS (DLC) |

80b11935

*FIG. 1*

**BODY CONTROL MODULE "C3" (BONE) 12-WAY CONNECTOR**

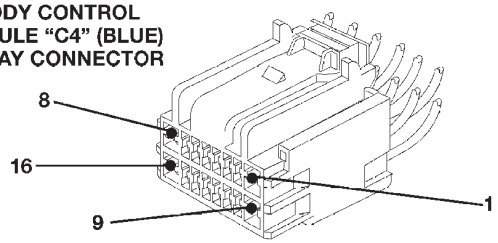



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | YL/VT | PCI BUS (PCM) |
| 2 | YL/VT | PCI BUS (ABS) |
| 3 | TN/RD | WIPER PARK SWITCH SENSE |
| 4 | RD/VT | WIPER ON OFF RELAY CONTROL |
| 5 | VT/LG | AMBIENT TEMPERATURE SENSOR SIGNAL |
| 7 | YL/VT | PCI BUS (TCM) |
| 9 | BR/YL | HEADLAMP WASHER RELAY CONTROL |
| 10 | DB/GY | SENSOR GROUND |
| 12 | VT | WIPER HIGH LOW RELAY CONTROL |

80b6f082

*FIG. 2*

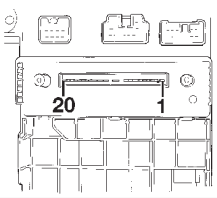
**BODY CONTROL MODULE "C4" (BLUE) 16-WAY CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

80b11939

*FIG. 3*



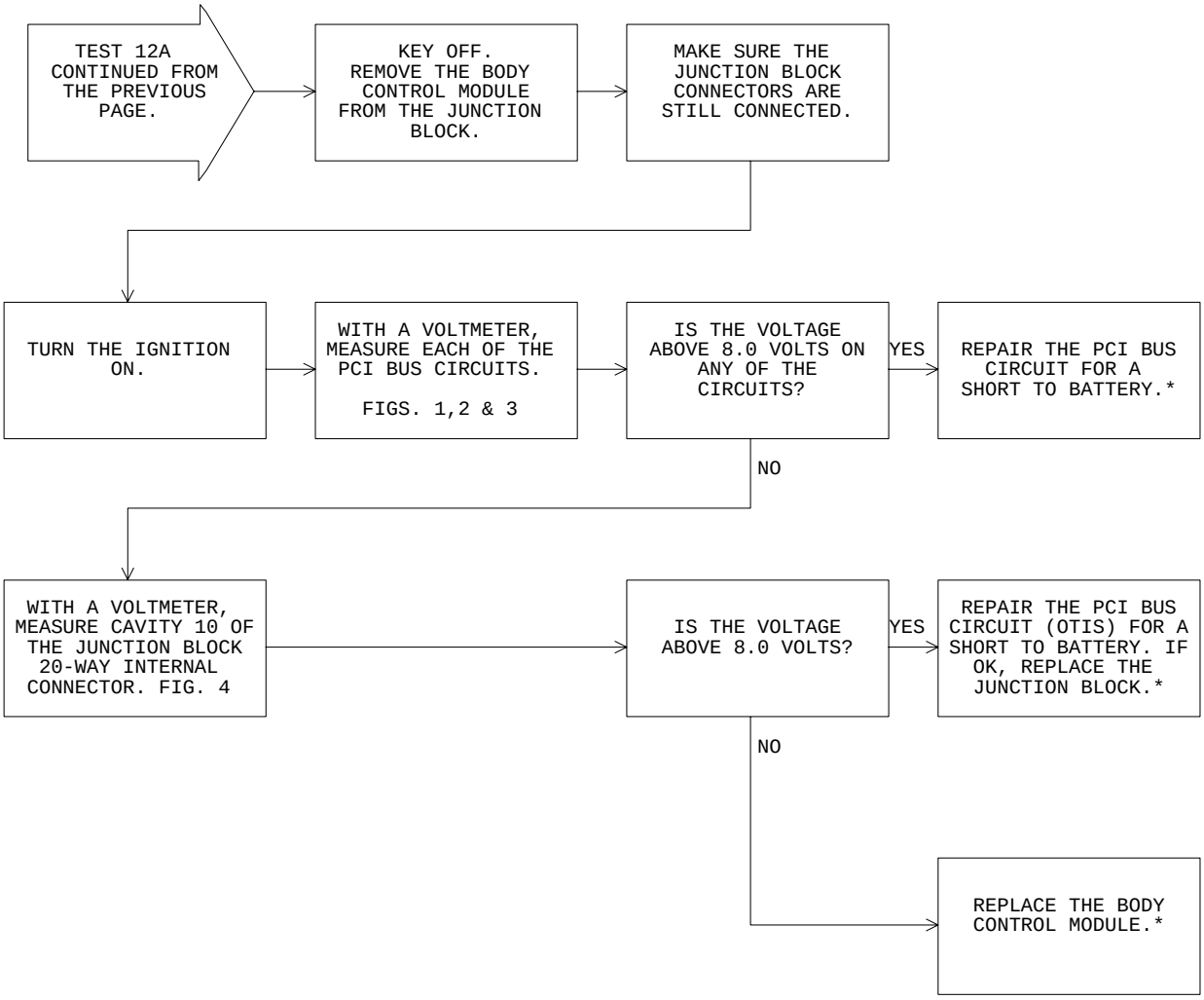

**JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR**

| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

*FIG. 4*

## TEST 12A CONTINUED - REPAIRING PCI BUS CIRCUIT SHORTED TO BATTERY

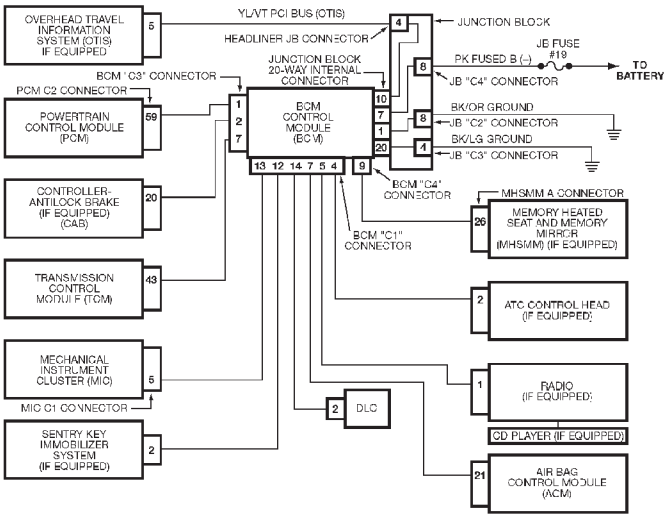



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 13A REPAIRING PCI BUS CIRCUIT SHORTED TO GROUND

**Perform TEST 1A Before Proceeding**




80b4b7b0

**Name of code:** Bus Short to Ground

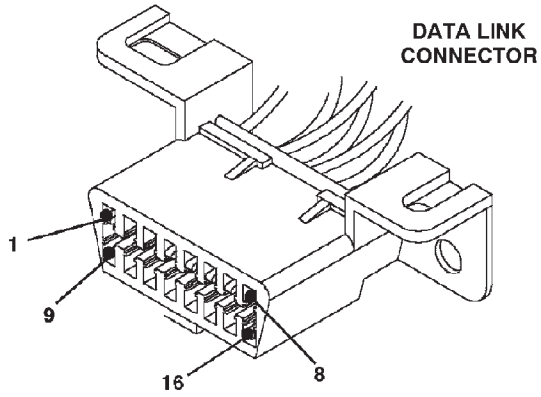
**When monitored:** Continuously

**Set condition:** BCM detected a short to ground on the PCI data bus

**Theory of operation:** BCM continuously monitors its transmissions onto the PCI bus. If it is unable to transmit and yet the bus is idle, it must be shorted to ground.

**Probable Causes:**
- Intermittent PCI bus circuit short to ground
- Another module has failed
- Failed BCM

80b308b2



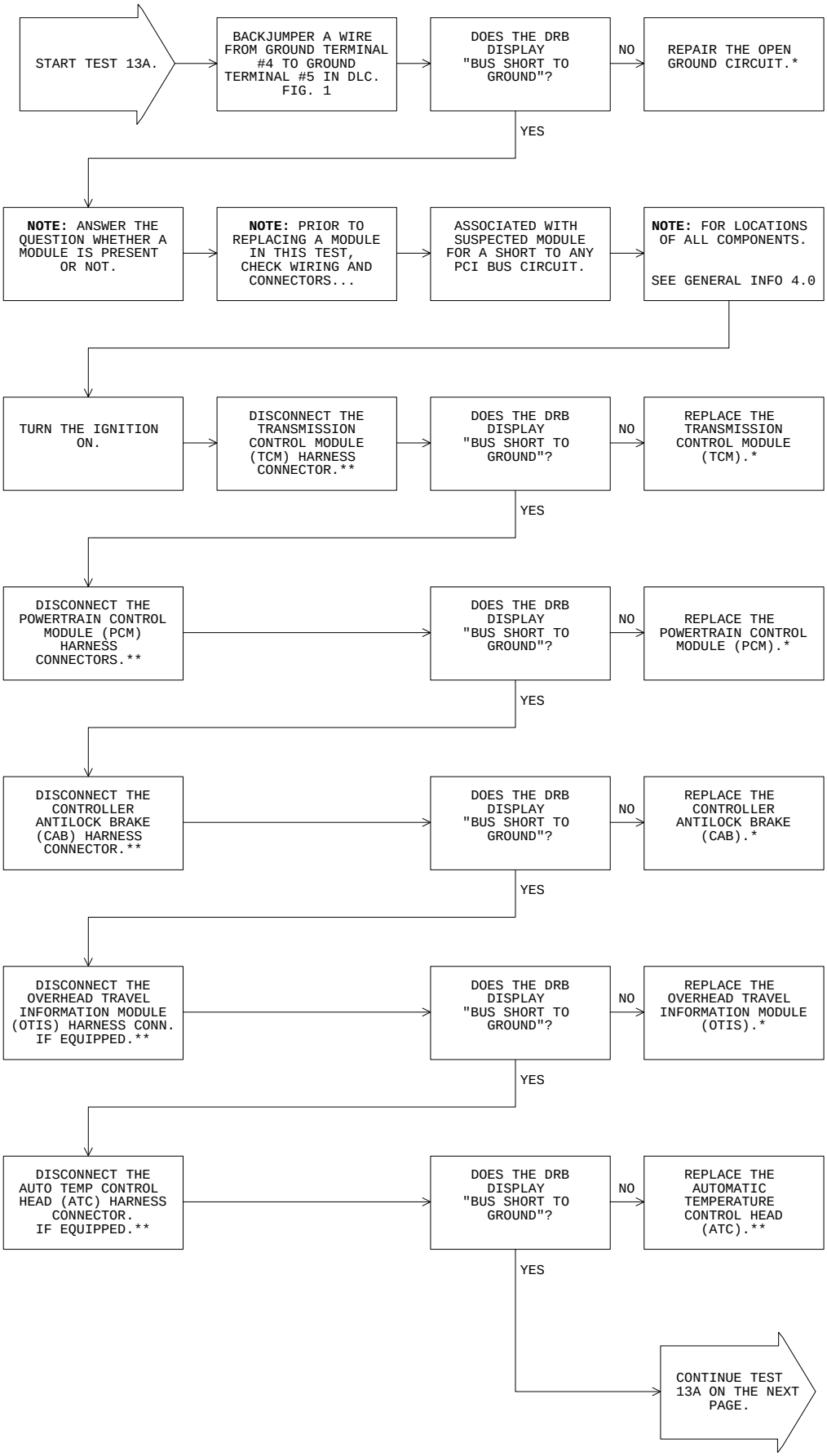

| CAV | COLOR | FUNCTION | CAV | COLOR | FUNCTION |
|---|---|---|---|---|---|
| 2 | YL/VT | PCI BUS | 8 | RD/WT | FUSED IGN SW OUTPUT |
| 4 | BK | GROUND | 14 | PK/BK | SCI RECEIVE (TCM) |
| 5 | BK/LG | GROUND | 16 | PK | FUSED B(+) |
| 6 | LG | SCI RECEIVE (PCM) | | | |
| 7 | DB | SCI TRANSM T (TCM) | | | |

80b8eff8

***FIG. 1***

## TEST 13A REPAIRING PCI BUS CIRCUIT SHORTED TO GROUND

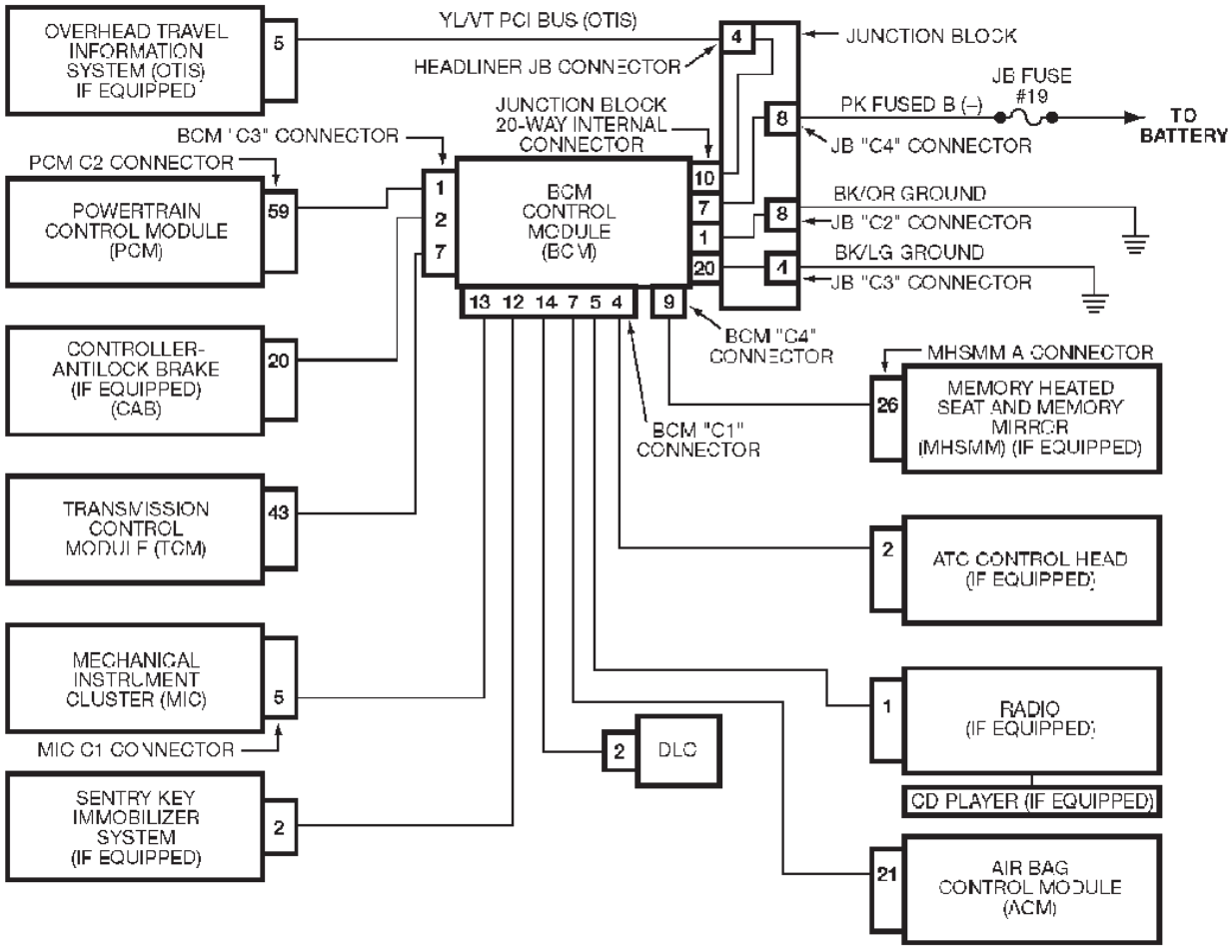
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.***

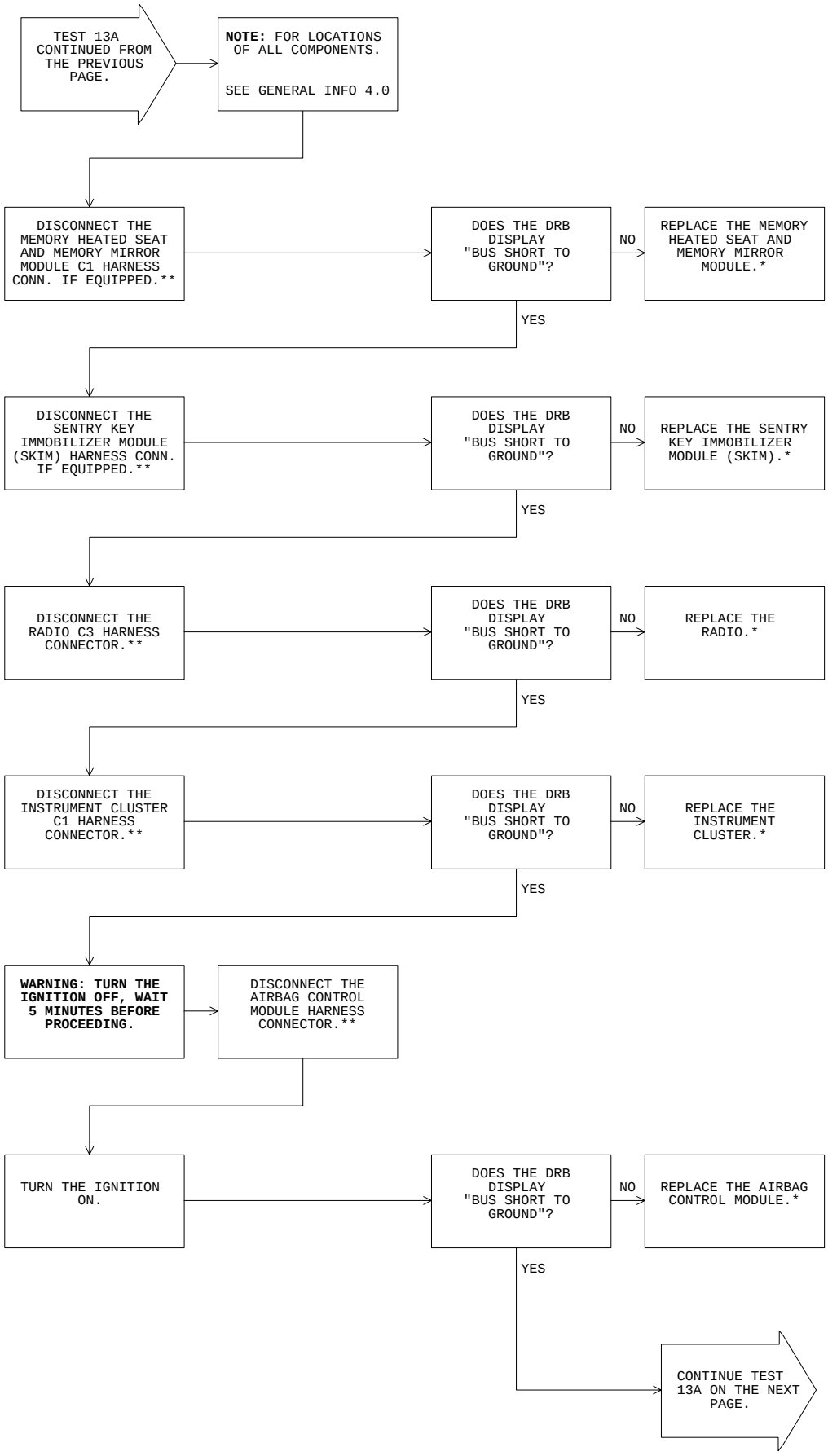
***Check connectors - Clean / repair as necessary.***

**TEST 13A** CONTINUED - REPAIRING PCI BUS CIRCUT SHORTED TO GROUND




80b4b7b0

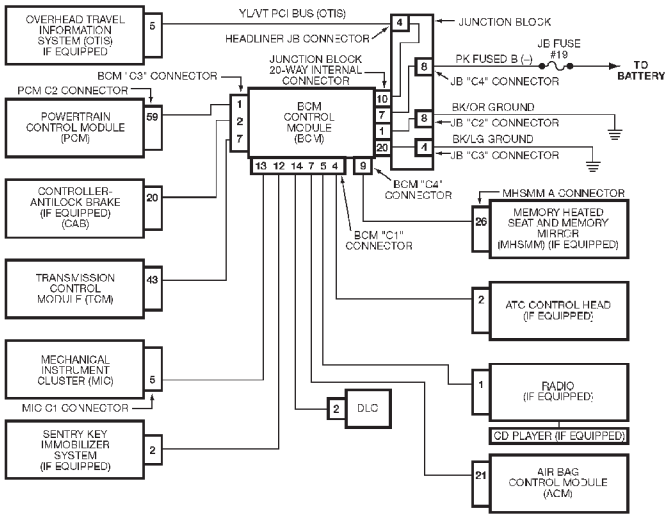
## TEST 13A CONTINUED - REPAIRING PCI BUS CIRCUT SHORTED TO GROUND




***Perform Verification TEST VER-2A.***

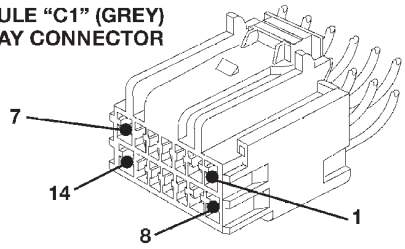
***Check connectors - Clean / repair as necessary.***

## TEST 13A CONTINUED - REPAIRING PCI BUS CIRCUIT SHORTED TO GROUND




80b4b7b0

**BODY CONTROL MODULE "C1" (GREY) 14-WAY CONNECTOR**

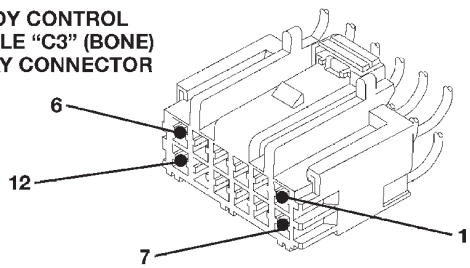



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK/WT | DECKLID RELEASE SWITCH OUTPUT |
| 2 | GY/DB | RECIRCULATION DOOR DRIVER |
| 3 | DB/RD | BLEND AIR DOOR DRIVER |
| 4 | YL/VT | PCI BUS (ATC) |
| 5 | YL/VT | PCI BUS (RADIO) |
| 7 | YL/VT | PCI BUS (AIRBAG) |
| 8 | DB/GY | SENSOR GROUND |
| 9 | DG/YL | MODE DOOR DRIVER |
| 10 | BR/WT | COMMON DOOR DRIVER |
| 11 | VT/LG | FAN OFF SWITCH SIGNAL |
| 12 | YL/VT | PCI BUS (SKIM) |
| 13 | YL/VT | PCI BUS (MIC) |
| 14 | YL/VT | PCI BUS (DLC) |

80b11935

*FIG. 1*

**BODY CONTROL MODULE "C3" (BONE) 12-WAY CONNECTOR**

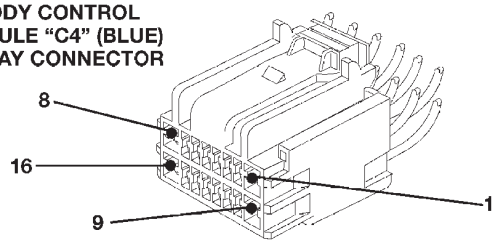



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | YL/VT | PCI BUS (PCM) |
| 2 | YL/VT | PCI BUS (ABS) |
| 3 | TN/RD | WIPER PARK SWITCH SENSE |
| 4 | RD/VT | WIPER ON OFF RELAY CONTROL |
| 5 | VT/LG | AMBIENT TEMPERATURE SENSOR SIGNAL |
| 7 | YL/VT | PCI BUS (TCM) |
| 9 | BR/YL | HEADLAMP WASHER RELAY CONTROL |
| 10 | DB/GY | SENSOR GROUND |
| 12 | VT | WIPER HIGH LOW RELAY CONTROL |

80b6f082

*FIG. 2*

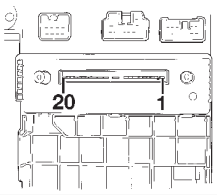
**BODY CONTROL MODULE "C4" (BLUE) 16-WAY CONNECTOR**




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

80b11939

*FIG. 3*



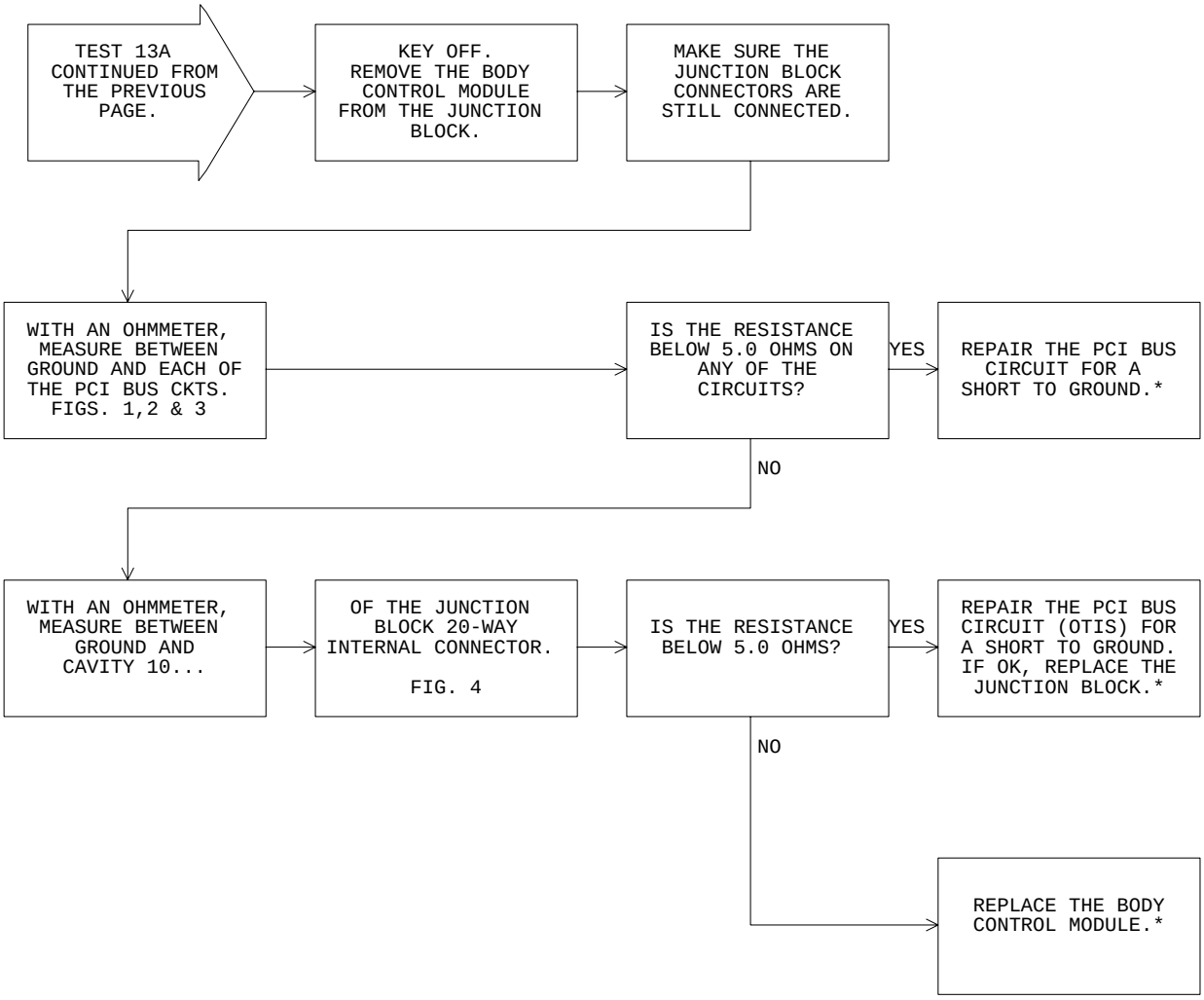

**JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR**

| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

*FIG. 4*

## TEST 13A CONTINUED - REPAIRING PCI BUS CIRCUIT SHORTED TO GROUND

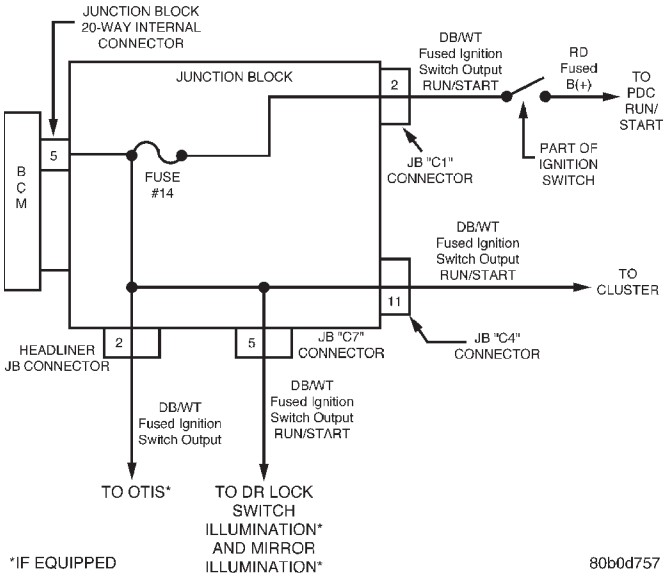



***Perform Verification TEST VER-2A.***

*****Check connectors - Clean / repair as necessary.***

## TEST 14A REPAIRING FUSED IGNITION SWITCH OUTPUT TO BCM

**Perform TEST 1A Before Proceeding**



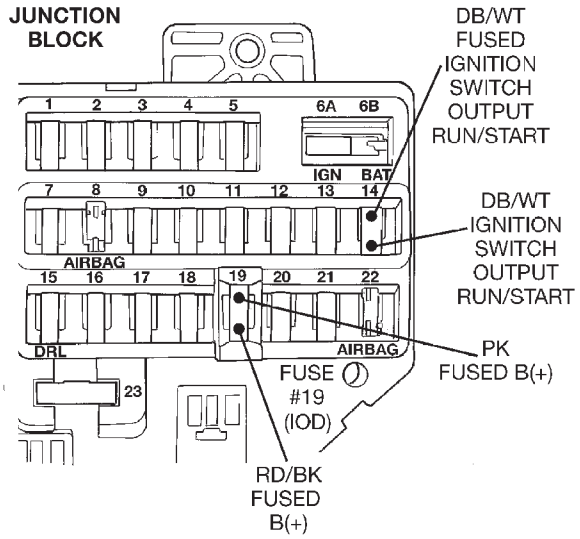
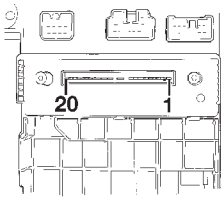




***FIG. 1***




**JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR**

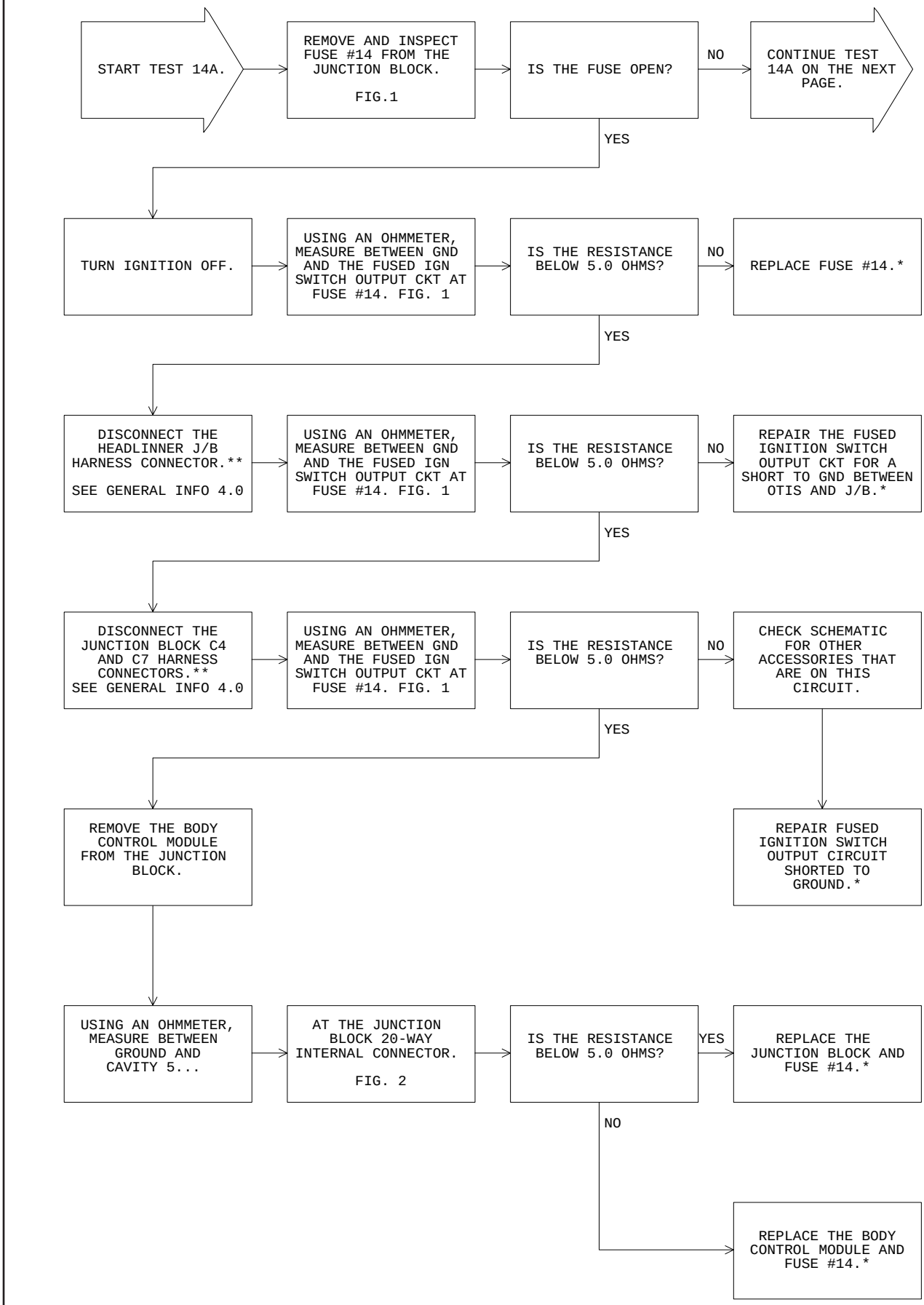
| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

80b1194a

***FIG. 2***

## TEST 14A REPAIRING FUSED IGNITION SWITCH OUTPUT TO BCM

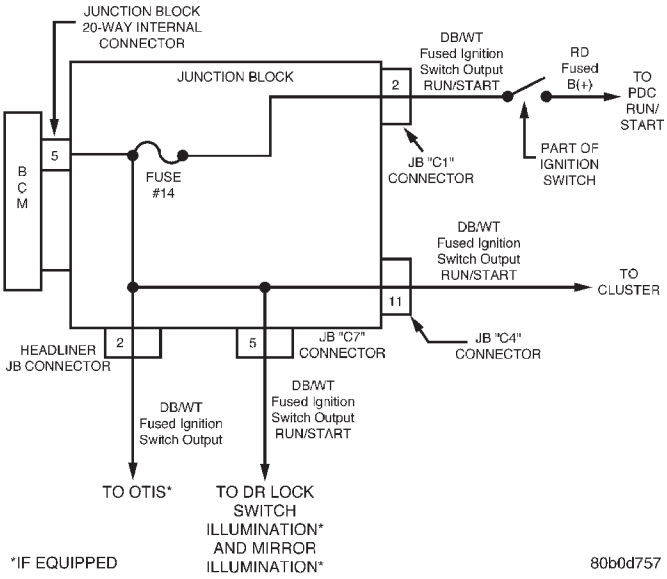
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

## TEST 14A CONTINUED - REPAIRING FUSED IGNITION SWITCH OUTPUT TO BCM



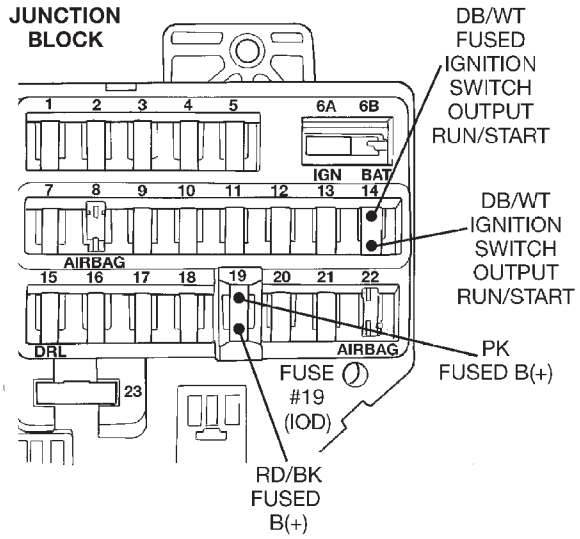
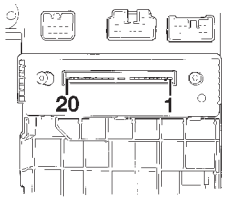




***FIG. 1***



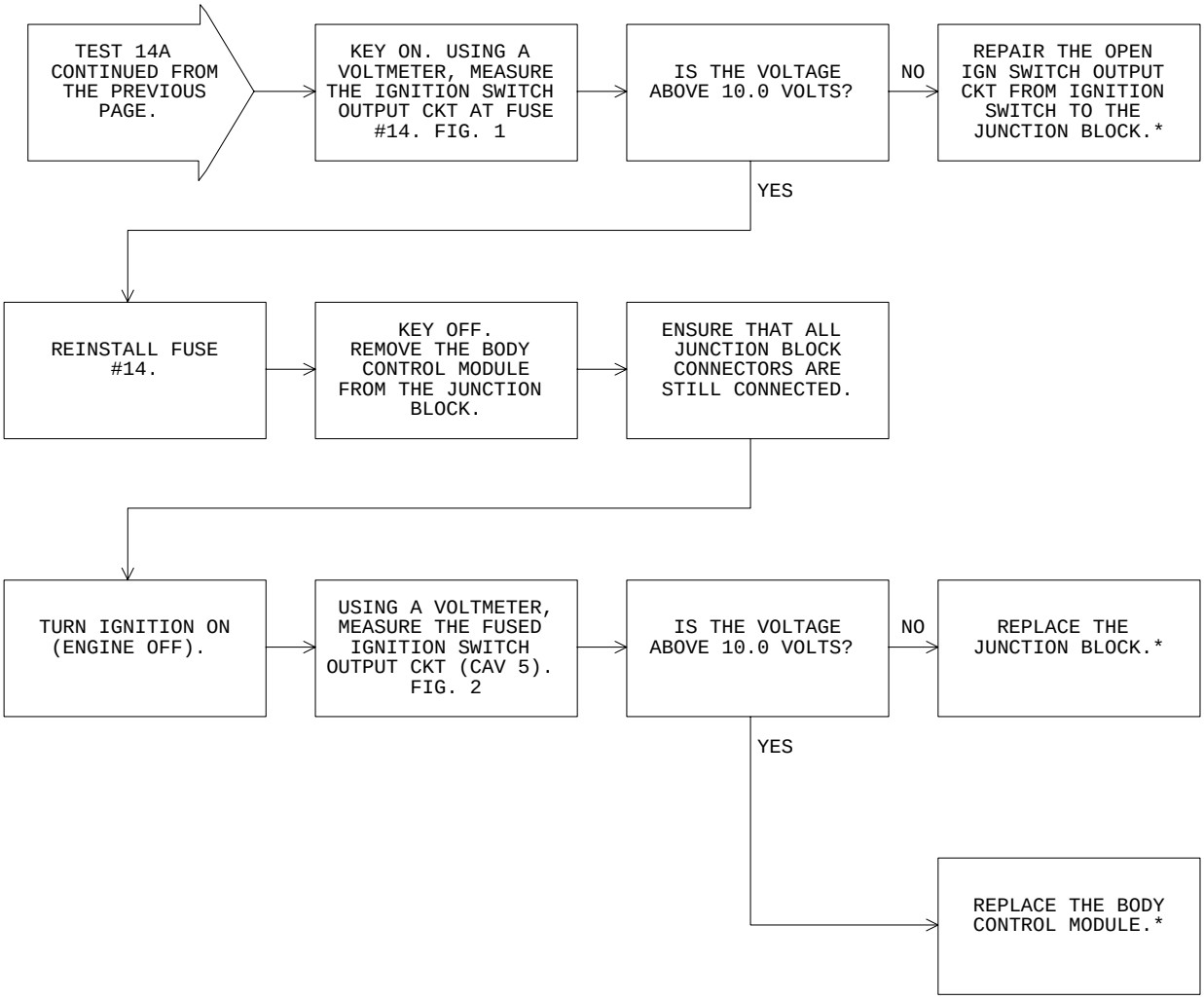

**JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR**

| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

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***FIG. 2***

## TEST 14A CONTINUED - REPAIRING FUSED IGNITION SWITCH OUTPUT TO BCM

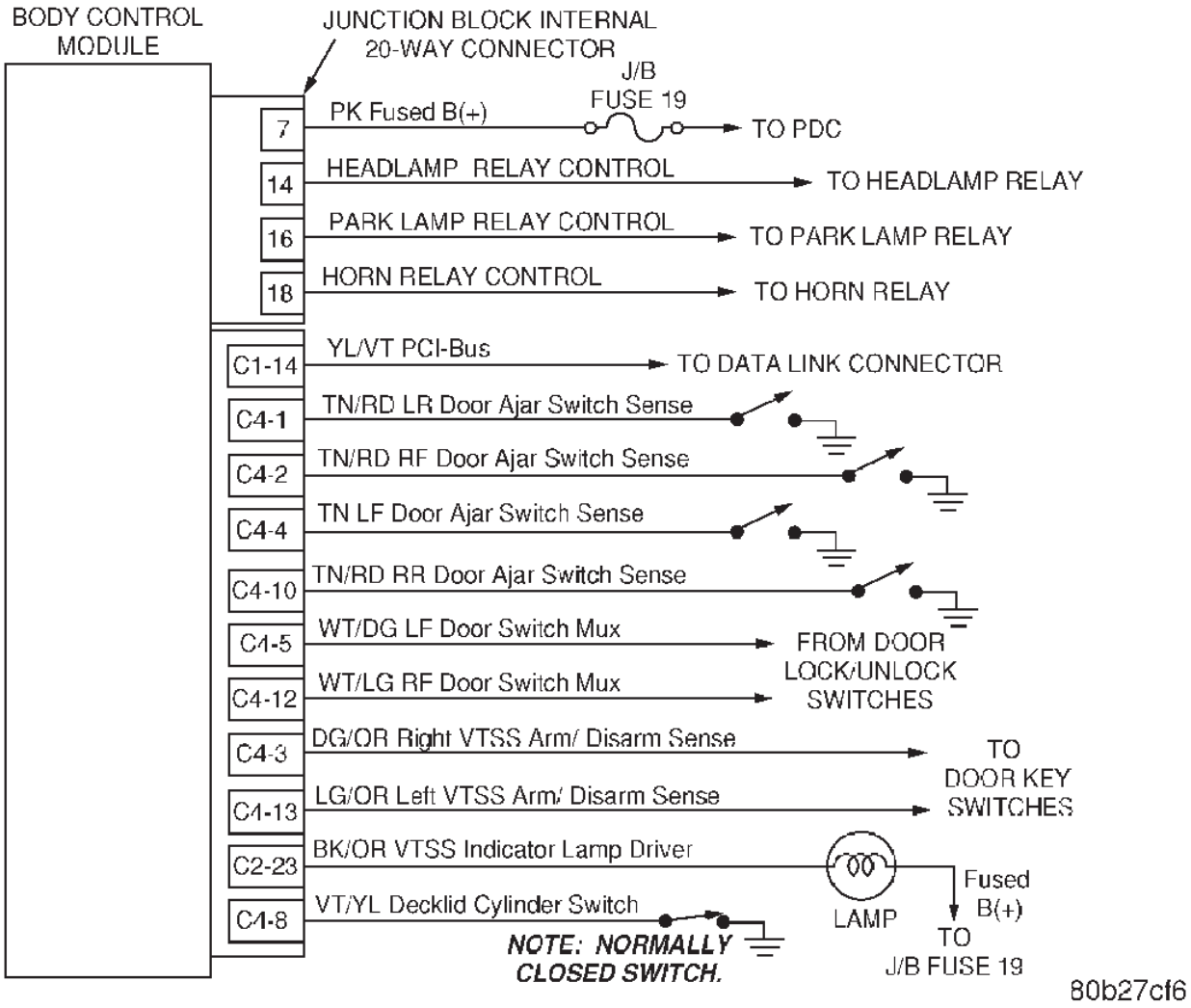



***Perform Verification TEST VER-2A.***

*****Check connectors - Clean / repair as necessary.***

**TEST 1A** **IDENTIFYING VEHICLE THEFT SECURITY SYSTEM PROBLEMS**

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**



## TEST 1A IDENTIFYING VEHICLE THEFT SECURITY SYSTEM PROBLEMS

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**

For complaints about the Theft Alarm going off on its own use the DRB and select ‘‘Theft Alarm’’ then ‘‘Monitor Display’’ and read the ‘‘Alarmed Tripped By’’ status.

Verify the failure or customer’s complaint and make sure the vehicle is experiencing the problem at this time.

**NOTE:** If the VTSS indicator lamp stays on constantly, 30 seconds after the key is turned on, or while driving . . . . . .perform TEST 3A.

1. With the DRB, select ‘‘Body’’, ‘‘Body Computer’’. Verify Communication with the Body Controller, if ‘‘No Response’’ . . . . . .perform ‘‘Vehicle Communication’’ TEST 1A.
2. With the DRB, select ‘‘Monitor Display’’ to read the vehicle theft security status. If the VTSS mode is not ‘‘Disarmed’’ . . . . . .perform TEST 2A.
3. With the DRB, select ‘‘Sensors’’ and read the ‘‘Ignition Voltage’’. If it does not show battery voltage with the key on. . . . . .perform ‘‘Vehicle Communication’’ TEST 14A.
4. With the DRB, verify the ‘‘Key in Ignition Switch’’ state is closed with the key in the ignition, if it is not . . . . . .perform ‘‘Power Door Locks’’ TEST 9A.
5. With the DRB, select ‘‘Miscellaneous’’, ‘‘Change Mode’’, and ‘‘Diagnostics’’ to put the theft alarm in diagnostic mode, then follow the directions on the DRB screen.

   When entering the diagnostic mode with the key in the ignition, the horn should sound twice and the headlights and VTSS indicator should flash.

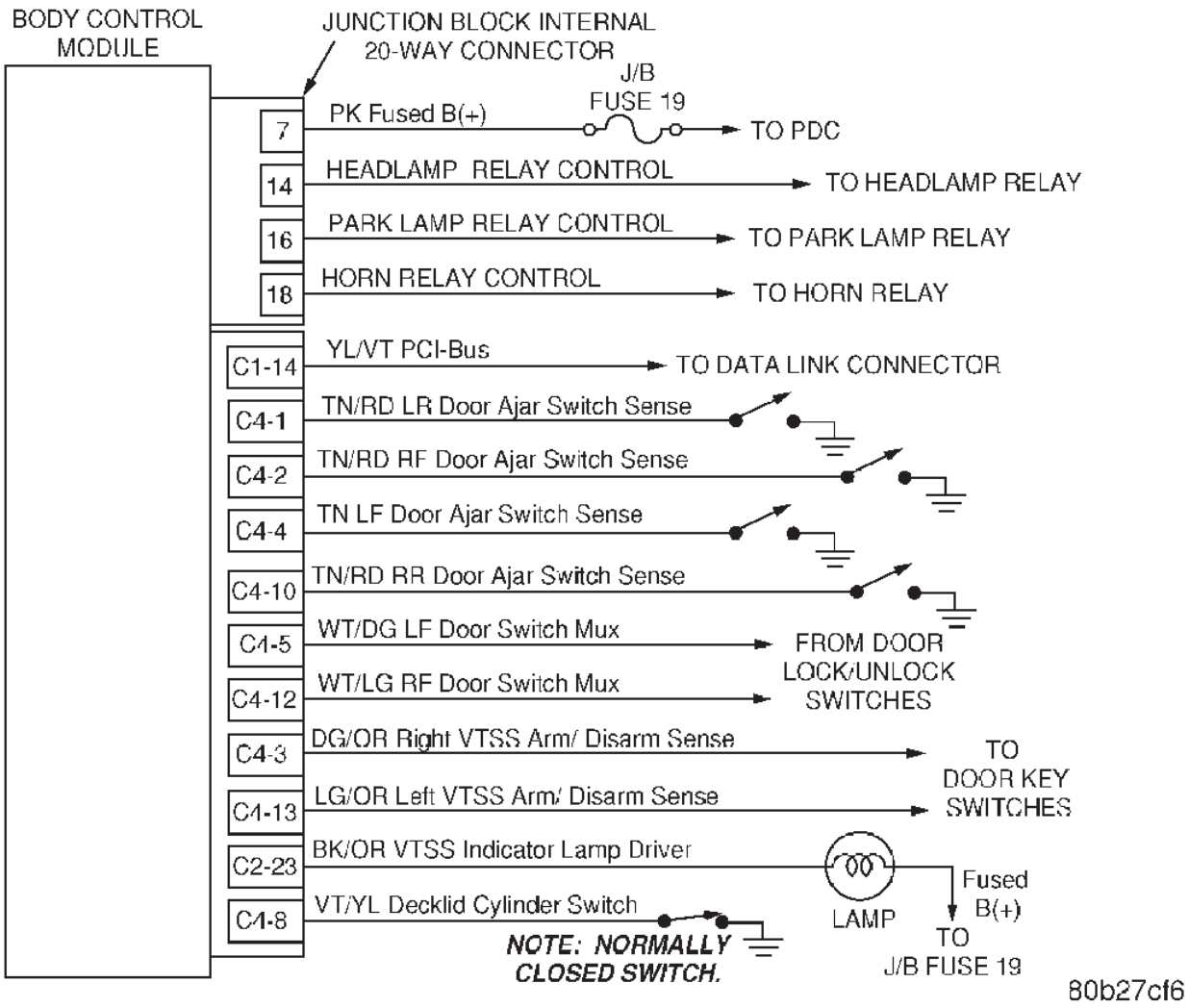
   − If the horn fails to sound . . . . . .perform TEST 4A.
   − If the VTSS indicator lamp fails to flash . . . . . .perform TEST 5A.
   − If the headlamps/park lamps fail to flash . . . . . .perform “Exterior Lighting” TEST 1A.
6. Remove the key from the ignition switch. Perform each action and if the horn doesn’t sound after each action, perform the test indicated below.

   Open and close the left front door . . . . . .perform “Door Ajar” TEST 1A
   Open and close the right front door . . . . . .perform “Door Ajar” TEST 1A
   Open and close the right rear door. . . . . .perform “Door Ajar” TEST 1A
   Open and close the left rear door. . . . . .perform “Door Ajar” TEST 1A
   Rotate the key in the left front door key cylinder . . . . .perform “Power Door Locks” TEST 1A
   Rotate the key in the right front door key cylinder . . . .perform “Power Door Locks” TEST 1A
7. Turn the ignition to the ‘‘On’’ position. If the horn fails to sound. . . . . .perform ‘‘Vehicle Communication’’ TEST 1A.
8. With the DRB, select ‘‘Monitor Display’’ to read the VTSS status. If the VTSS mode is not ‘‘Disarmed’’, or engine controller is not ‘‘OK to arm/OK to run engine’’, perform the test indicated below.

   − If the VTSS mode is other than disarmed . . . . . .TEST 2A
   − If engine controller is ‘‘1 No Response/ 2 No Response’’ . . . . . .perform “Vehicle Communication” TEST 8A
   − If engine controller is ‘‘1 Not OK to Arm VTSS/2 OK to run Engine’’ . . . . .replace the PCM.
9. If there is a problem with the remote keyless entry arm/disarm function.perform “Power Door Locks” TEST 11A.

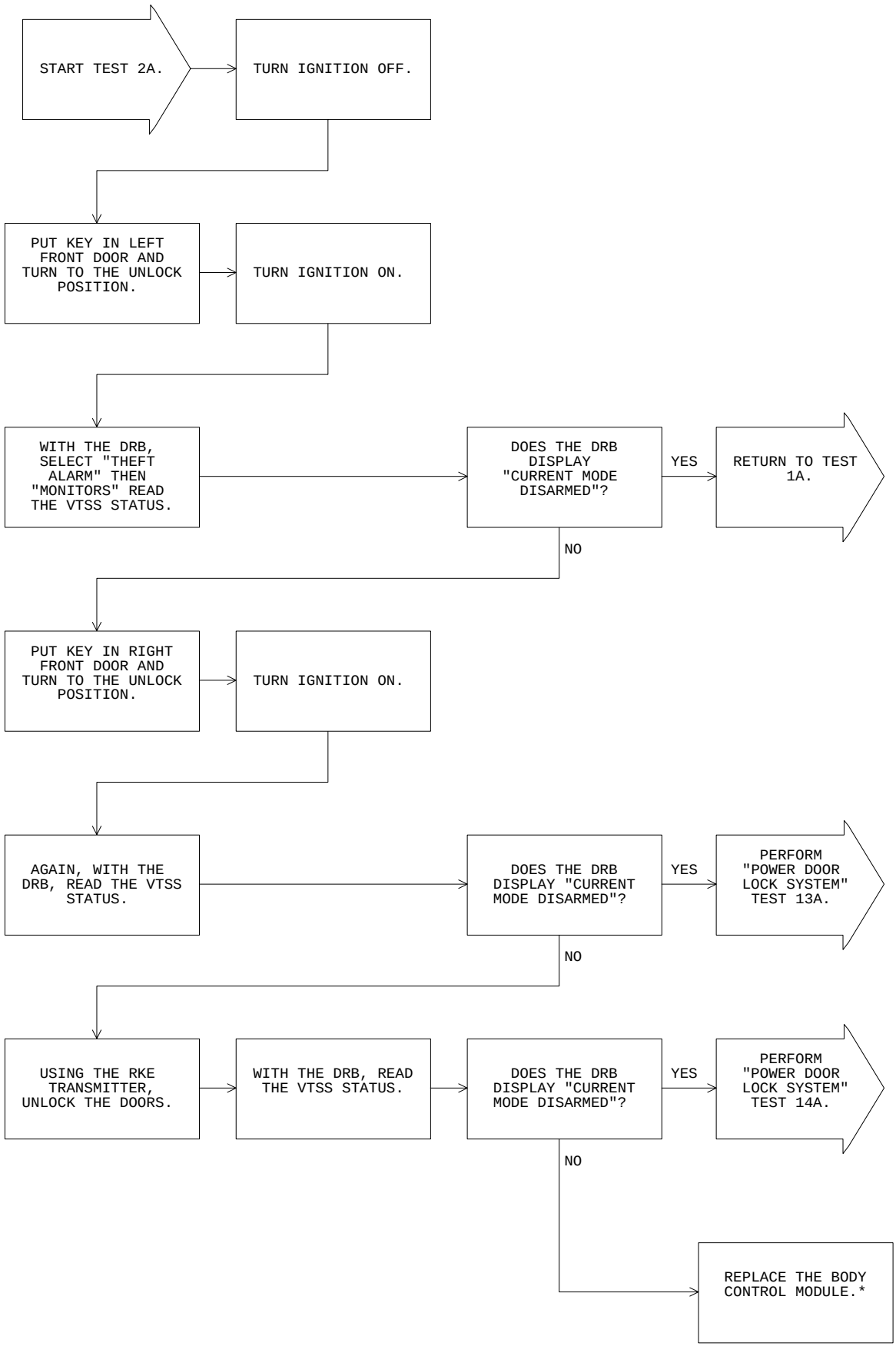
**TEST 2A** **DISARMING THE SYSTEM**

**Perform TEST 1A Before Proceeding**



## TEST 2A DISARMING THE SYSTEM

**Perform TEST 1A Before Proceeding**

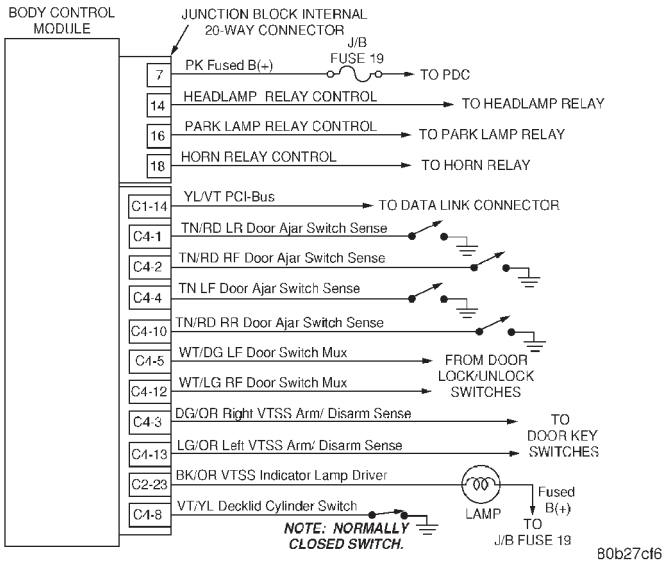


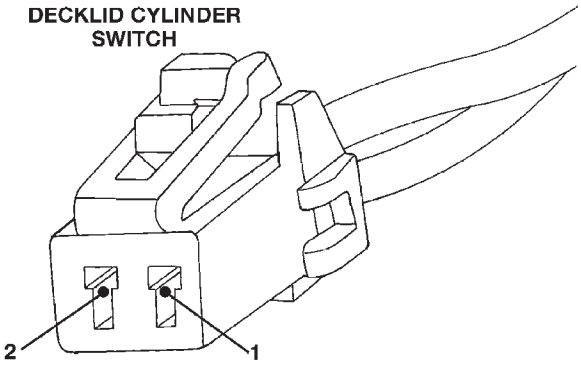

***Perform Verification TEST VER-3A.***

***Check connectors - Clean / repair as necessary.***

## TEST 3A REPAIRING VTSS INDICATOR LAMP STAYS ON

**Perform TEST 1A Before Proceeding**

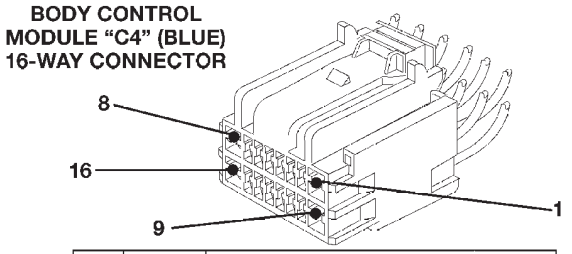



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 2 | BK | GROUND |

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***FIG. 1***



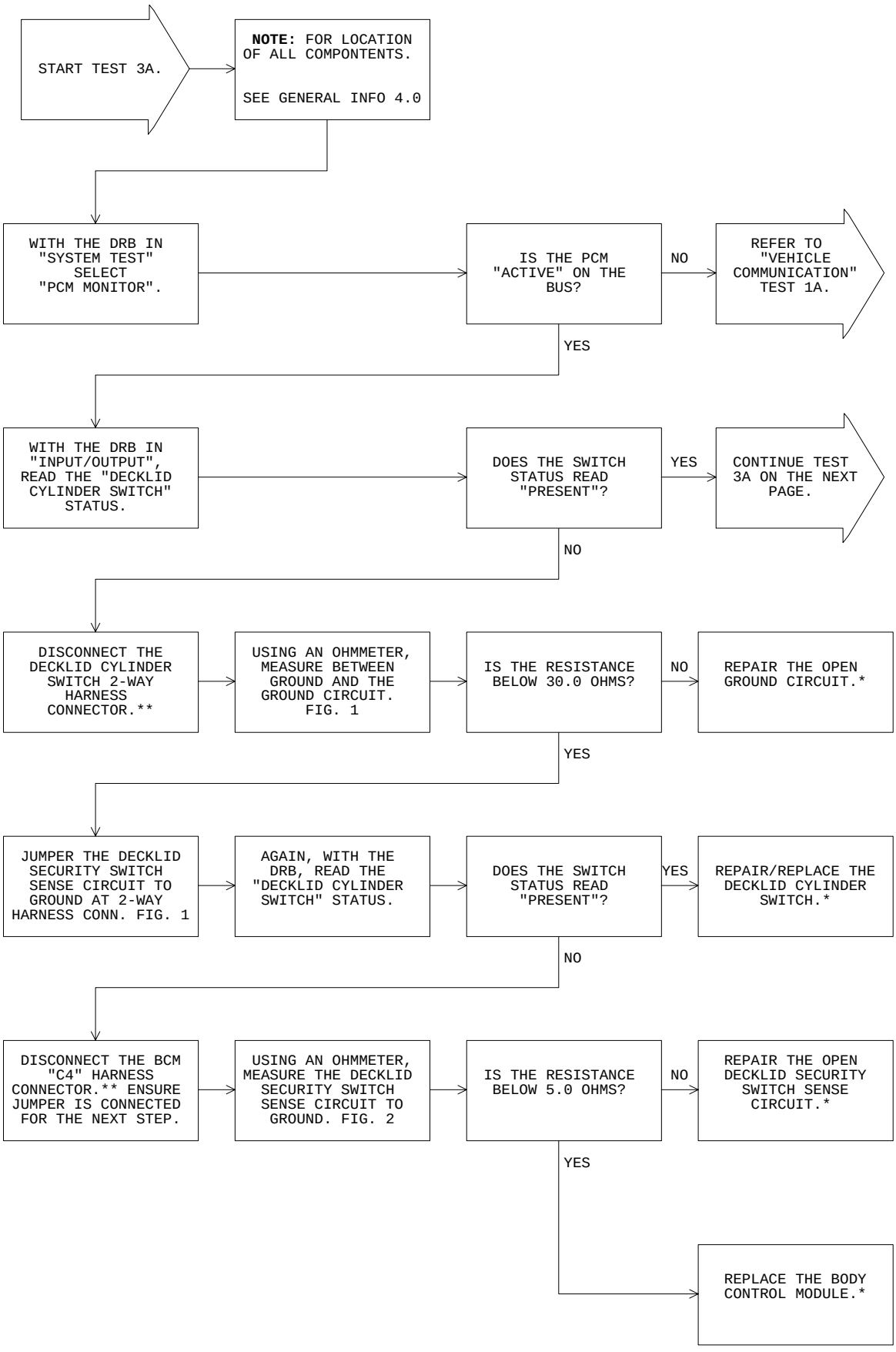

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | TN/RD | LR DOOR AJAR SWITCH SENSE |
| 2 | TN/RD | RF DOOR AJAR SWITCH SENSE |
| 3 | DG/OR | RIGHT VTSS ARM/DISARM SENSE |
| 4 | TN | LF DOOR AJAR SWITCH SENSE |
| 5 | WT/DG | LF DOOR SWITCH MUX |
| 7 | DB | FUEL LEVEL SENSOR SIGNAL |
| 8 | VT/YL | DECKLID SECURITY SWITCH SENSE |
| 9 | YL/VT | PCI BUS (MEMORY SEAT) |
| 10 | TN/RD | RR DOOR AJAR SWITCH SENSE |
| 12 | WT/LG | RF DOOR SWITCH MUX |
| 13 | LG/OR | LEFT VTSS ARM/DISARM SENSE |
| 14 | DB/WT | REAR DEFOGGER RELAY CONTROL |
| 15 | LG/RD | SEAT BELT SWITCH SENSE |

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***FIG. 2***

## TEST 3A REPAIRING VTSS INDICATOR LAMP STAYS ON

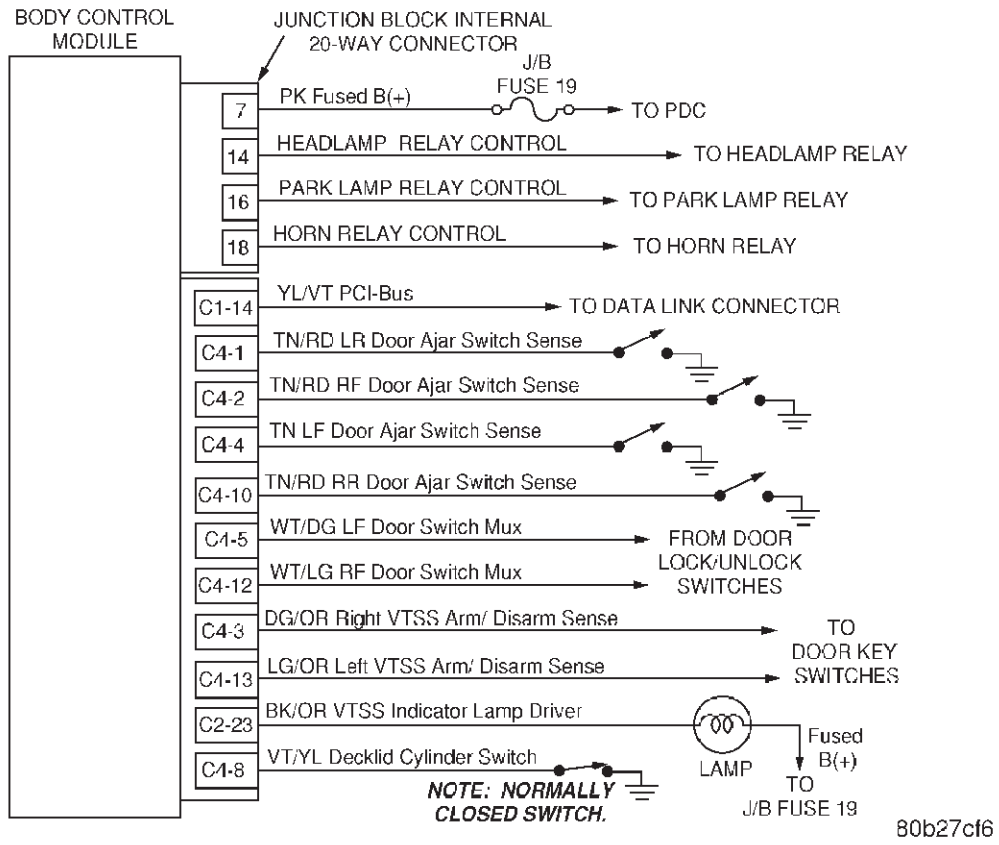
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-3A.***

***Check connectors - Clean / repair as necessary.***

**TEST 3A** CONTINUED - REPAIRING VTSS INDICATOR LAMP STAYS ON



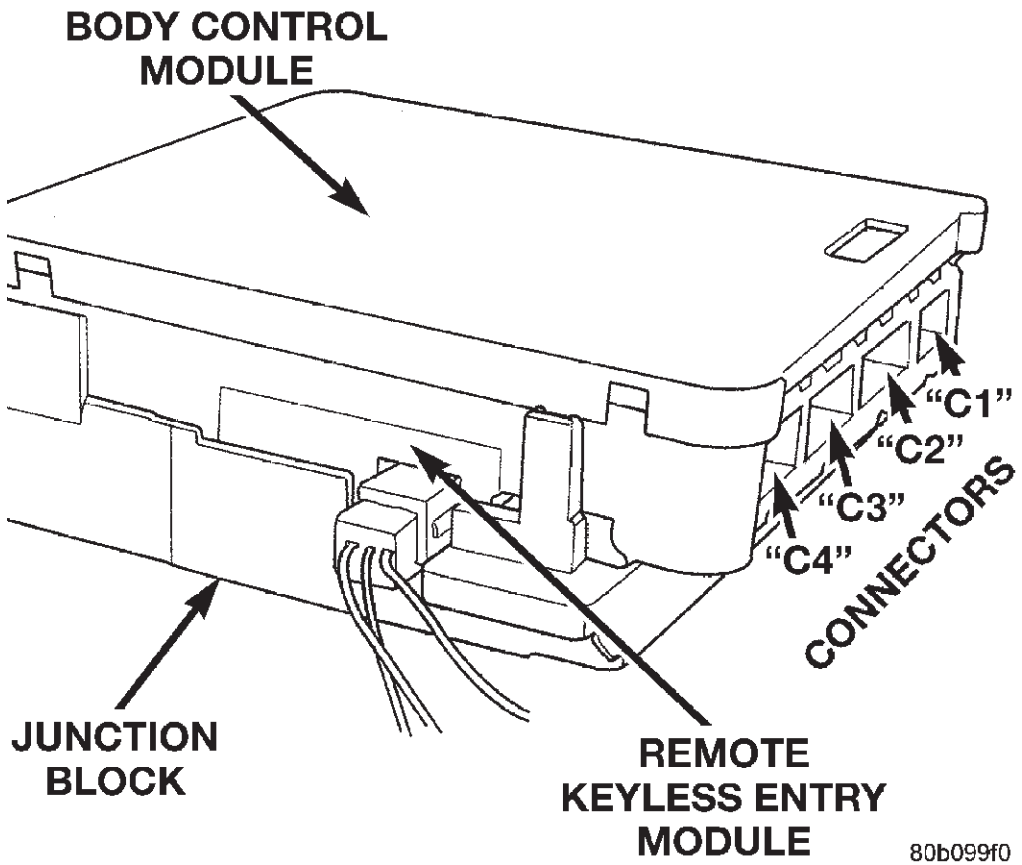
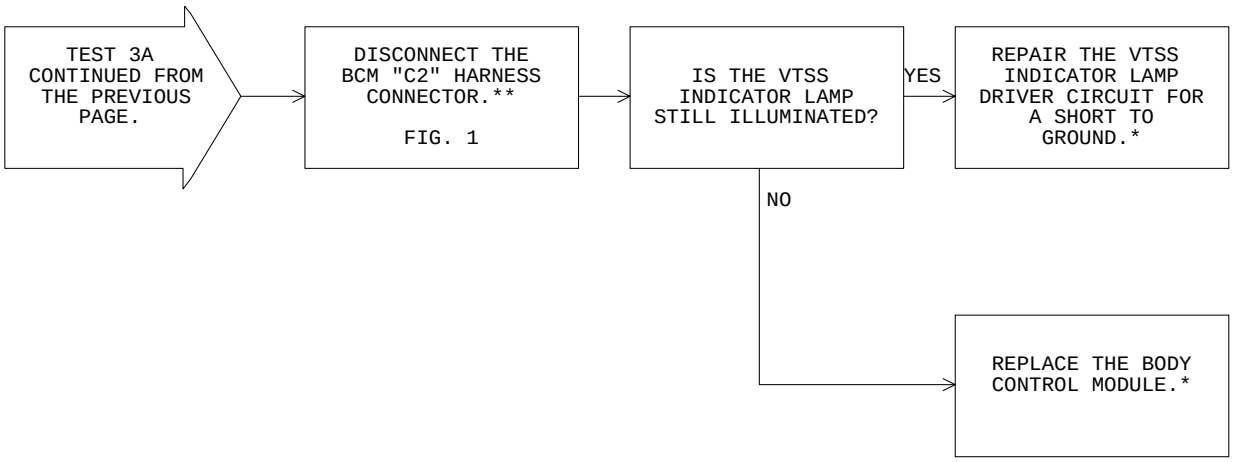




*FIG. 1*

## TEST 3A CONTINUED - REPAIRING VTSS INDICATOR LAMP STAYS ON

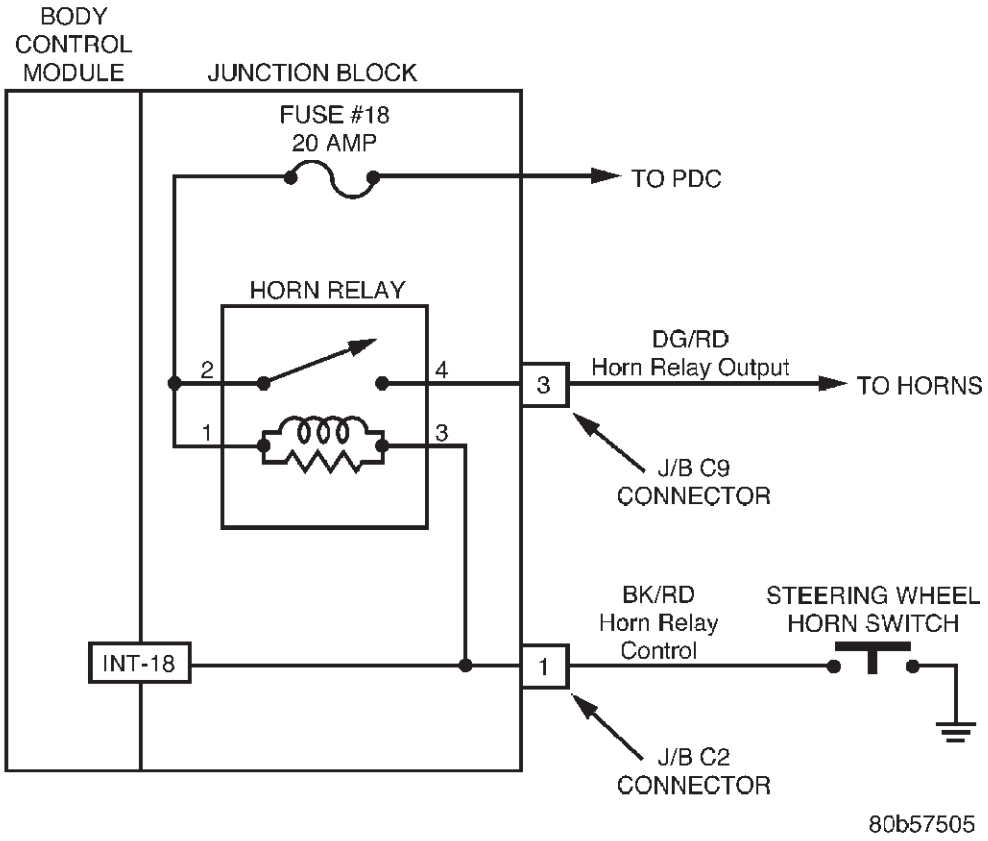


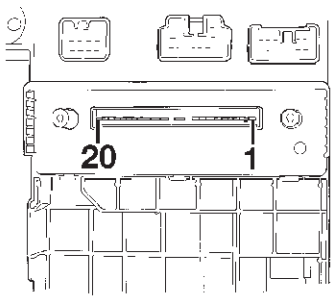

***Perform Verification TEST VER-3A.***

****Check connectors - Clean / repair as necessary.***

**TEST 4A** **REPAIRING HORN CIRCUIT**

**Perform TEST 1A Before Proceeding**




**JUNCTION BLOCK 20-WAY INTERNAL CONNECTOR**

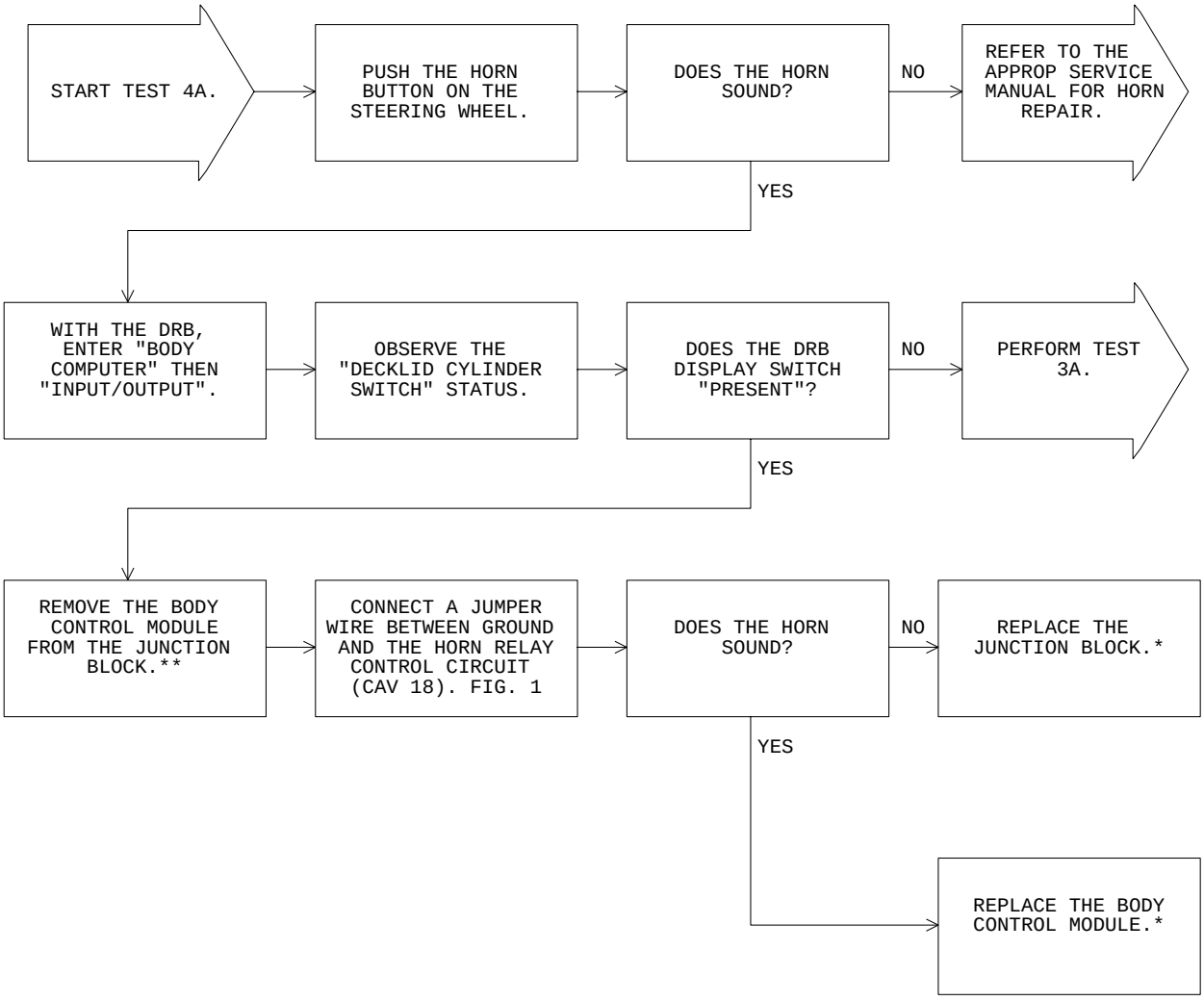
| TERMINAL | FUNCTION |
|---|---|
| 1 | GROUND |
| 2 | COURTESY LAMP DRIVER |
| 3 | SPEED PROPORTIONAL STEERING SOLENOID (-) |
| 4 | SPEED PROPORTIONAL STEERING SOLENOID (+) |
| 5 | FUSED IGNITION SWITCH OUTPUT (RUN/START) |
| 6 | PARK LAMP RELAY OUTPUT |
| 7 | FUSED B(+) |
| 8 | DECKLID RELEASE CONTROL |
| 10 | PCI BUS (OTIS) |
| 13 | LF DOOR UNLOCK RELAY CONTROL |
| 14 | LOW BEAM RELAY CONTROL |
| 15 | DOOR LOCK RELAY CONTROL |
| 16 | PARK LAMP RELAY CONTROL |
| 17 | FOG LAMP RELAY CONTROL |
| 18 | HORN RELAY CONTROL |
| 19 | DOOR UNLOCK RELAY CONTROL |
| 20 | GROUND |

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*FIG. 1*

## TEST 4A REPAIRING HORN CIRCUIT

**Perform TEST 1A Before Proceeding**

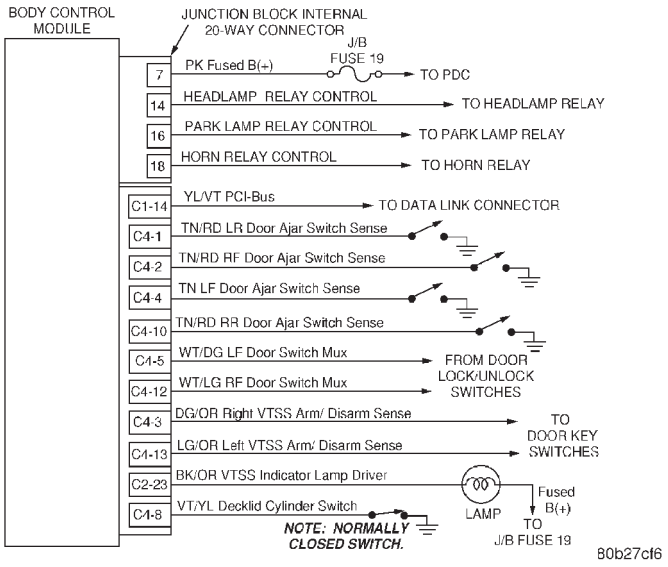



***Perform Verification TEST VER-3A.***

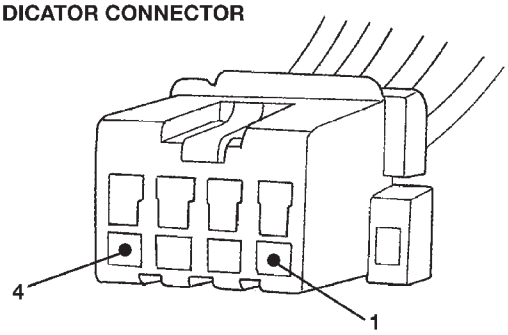
****Check connectors - Clean / repair as necessary.***

## TEST 5A REPAIRING VTSS INDICATOR LAMP DRIVER CIRCUIT

**Perform TEST 1A Before Proceeding**




**ATC SUN SENSOR/VTSS INDICATOR CONNECTOR**

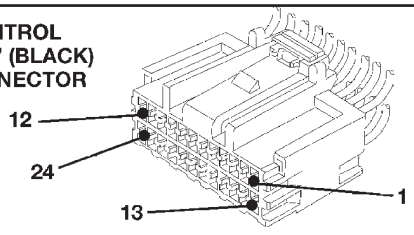



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | PK | FUSED B (+) |
| 2 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 3 | DB/GY | SENSOR GROUND |
| 4 | DB | SUN SENSOR SIGNAL |

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***FIG. 1***

**BODY CONTROL MODULE "C2" (BLACK) 24-WAY CONNECTOR**



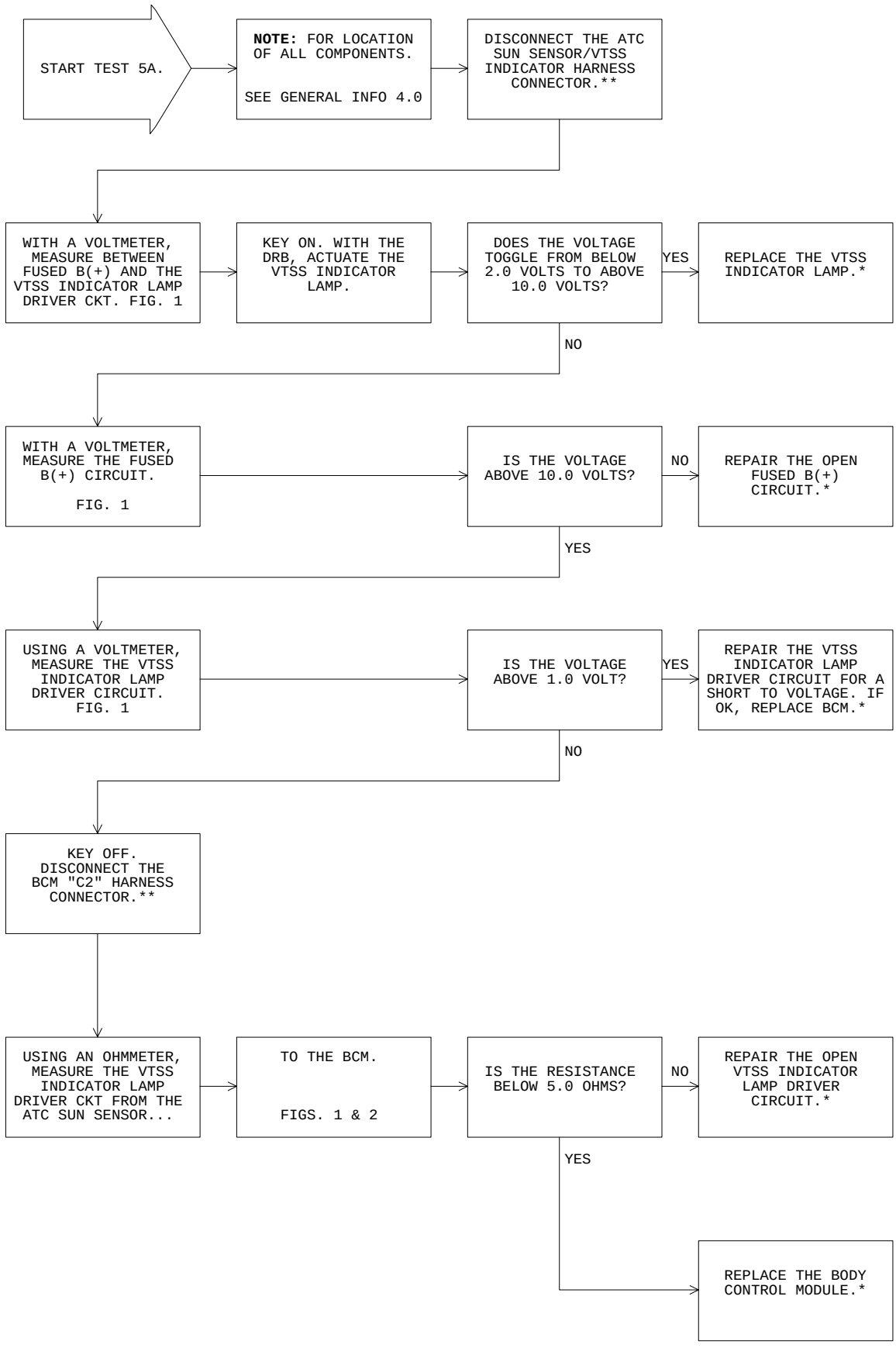

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

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***FIG. 2***

## TEST 5A REPAIRING VTSS INDICATOR LAMP DRIVER CIRCUIT

**Perform TEST 1A Before Proceeding**

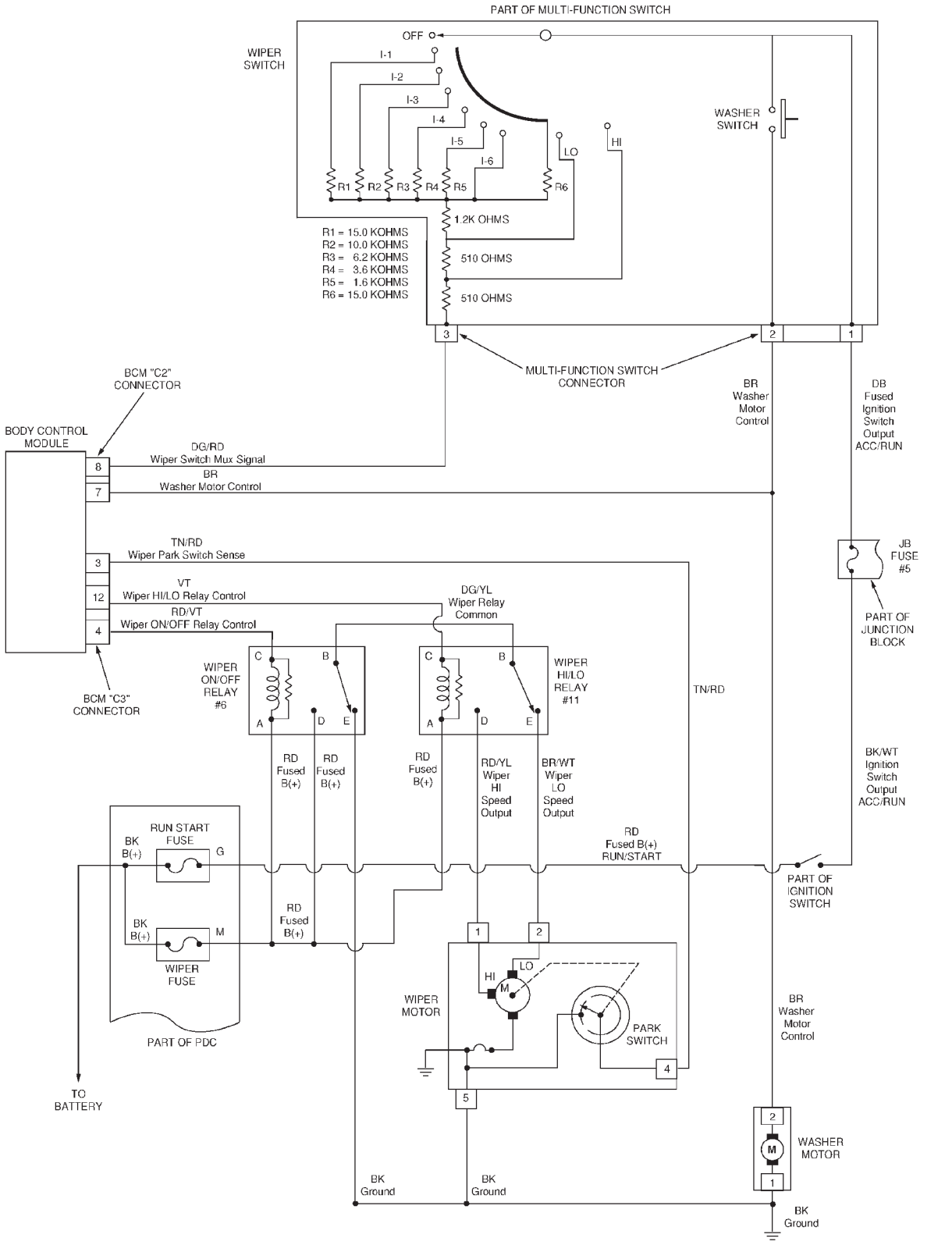



***Perform Verification TEST VER-3A.***

****Check connectors - Clean / repair as necessary.***

## TEST 1A IDENTIFYING WINDSHIELD WIPER SYSTEM PROBLEMS

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**



## TEST 1A IDENTIFYING WINDSHIELD WIPER SYSTEM PROBLEMS

**Perform TEST SYMPTOM IDENTIFICATION 1A Before Proceeding**

Ensure there is communication with the ‘‘Body Control Module’’ (BCM), and the ‘‘Powertrain Control Module’’ (PCM) before proceeding. If any communication problems are found . . .perform ‘‘Vehicle Communication’’ TEST 1A.

Diagnostics for the wiper system are divided into two groups, diagnostic trouble codes and wiper symptoms. With the ignition on, operate the wiper system in all of the following modes.

- High Speed Operation
- Low Speed Operation
- All Intermittent Switch Positions
- Turn wiper switch to the off position
- Wash Mode (with wiper off)

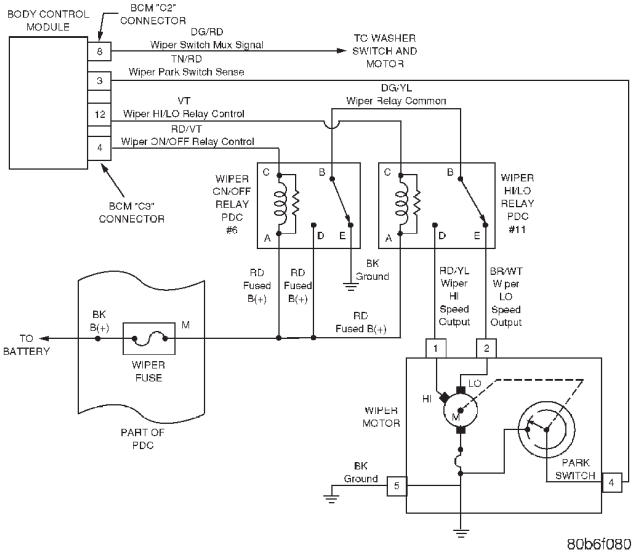
Verify the failure or the customer’s complaint and make sure the vehicle is experiencing the problem at this time. Check for DTC’s first, if no codes are present proceed to the following symptoms listed below.

| DIAGNOSTIC TROUBLE CODES | PERFORM |
|---|---|
| Wiper On/Off Relay Control Circuit Open or Short Low | TEST 2A |
| Wiper Park Switch Failure/Wipers Run Continuously | TEST 3A |
| Wiper On/Off Relay Control Circuit Short High | TEST 4A |

| WIPER/WASHER SYMPTOMS | PERFORM |
|---|---|
| Wipers Not Working At All | TEST 5A |
| Wipers Not Working in the High Speed Mode | TEST 6A |
| Wipers Not Working in the Low Speed Mode | TEST 7A |
| Wipers Not Working in the Intermittent Mode | TEST 8A |
| Wiper Wash Function Not Working Properly | TEST 9A |
| Wipers Operate in High Speed Only | TEST 10A |
| Wipers Run Constantly With Ignition Off | TEST 3A |
| Headlamp Washers Not Working Properly | TEST 11A |

## TEST 2A REPAIRING WIPER ON/OFF RELAY CONTROL CIRCUIT OPEN OR SHORTED LOW

**Perform TEST 1A Before Proceeding**




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**Name of code:** Wiper On/Off Relay Control Circuit Open or Short Low

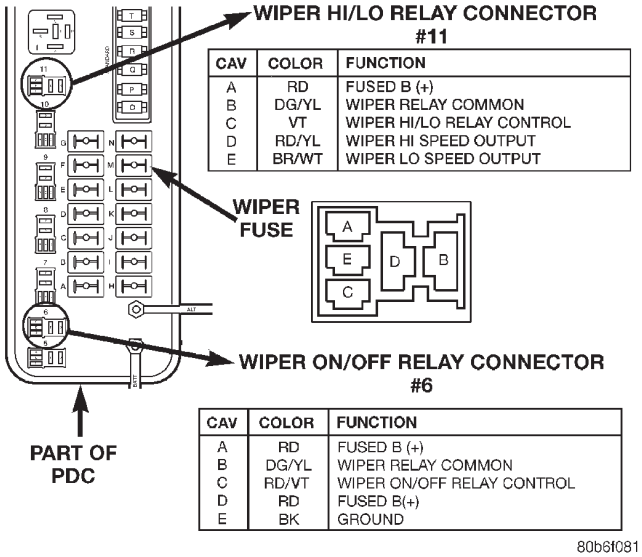
**When monitored:** Continuously

**Set condition:** BCM detects a low (ground) signal on the wiper on/off relay control circuit even though it is not attempting to drive the output.

**Theory of operation:** One side of the wiper on/off relay coil is wired to battery, the other side is wired to the BCM. When the BCM wants to turn on the wipers, it grounds its side of the coil. If the BCM is not grounding its side of the coil, the output should be high (voltage supplied by the relay coil). If it is not high, the fault is set because the BCM knows it will be unable to control the wipers.

**Probable Causes:**
- Open wiper on/off relay control circuit
- Wiper on/off relay control circuit shorted to ground
- Failed relay
- Failed BCM

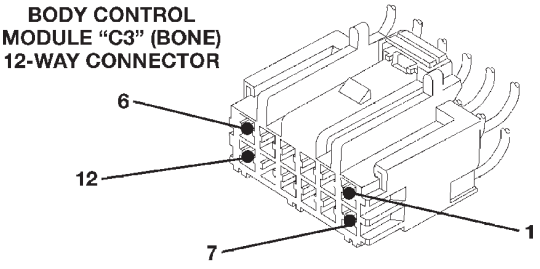
80b308ac




| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | VT | WIPER HI/LO RELAY CONTROL |
| D | RD/YL | WIPER HI SPEED OUTPUT |
| E | BR/WT | WIPER LO SPEED OUTPUT |

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | RD/VT | WIPER ON/OFF RELAY CONTROL |
| D | RD | FUSED B(+) |
| E | BK | GROUND |

80b6f081




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | YL/VT | PCI BUS (PCM) |
| 2 | YL/VT | PCI BUS (ABS) |
| 3 | TN/RD | WIPER PARK SWITCH SENSE |
| 4 | RD/VT | WIPER ON OFF RELAY CONTROL |
| 5 | VT/LG | AMBIENT TEMPERATURE SENSOR SIGNAL |
| 7 | YL/VT | PCI BUS (TCM) |
| 9 | BR/YL | HEADLAMP WASHER RELAY CONTROL |
| 10 | DB/GY | SENSOR GROUND |
| 12 | VT | WIPER HIGH LOW RELAY CONTROL |

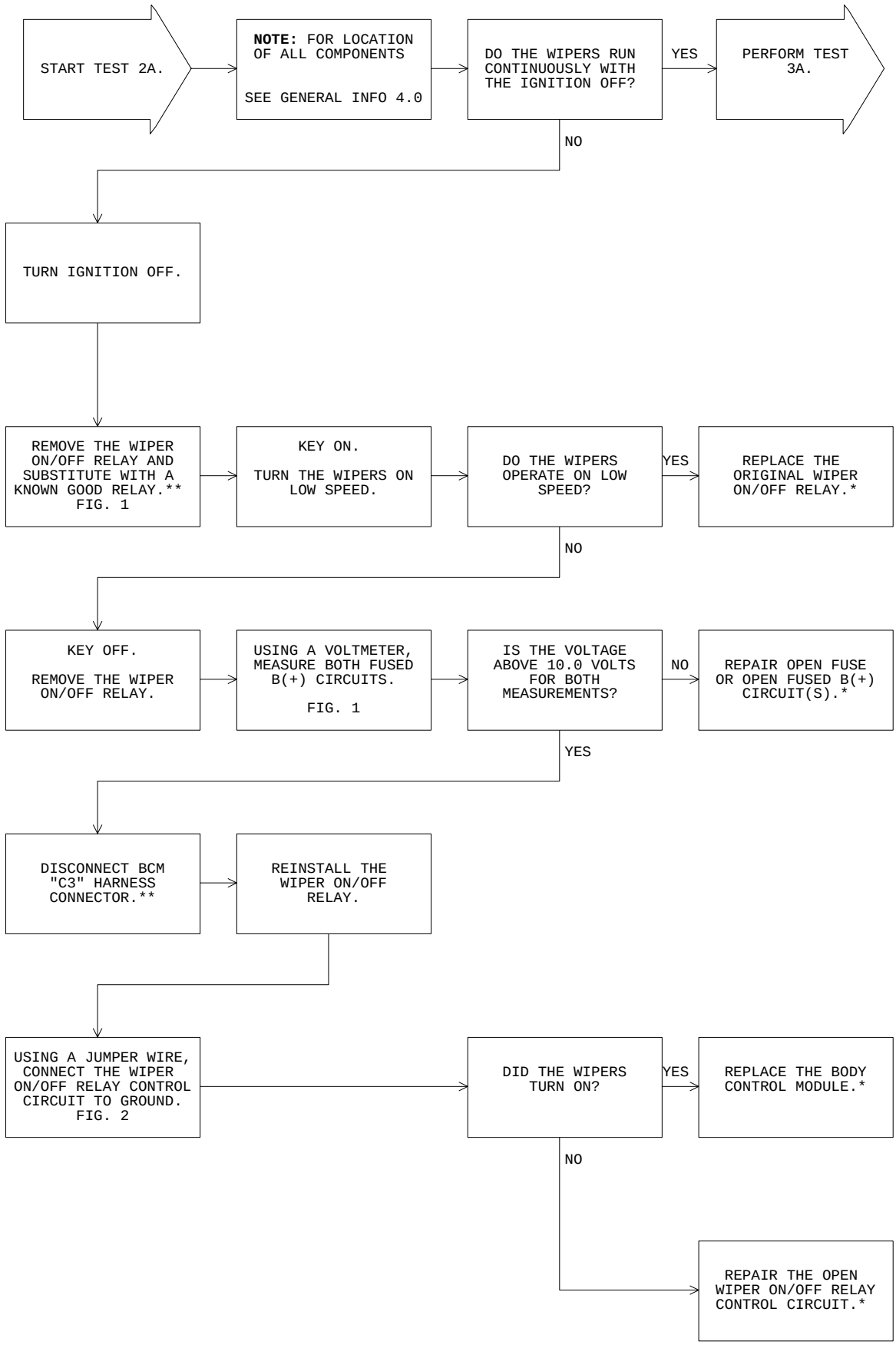
80b6f082

*FIG. 1*

*FIG. 2*

## TEST 2A REPAIRING WIPER ON/OFF RELAY CONTROL CIRCUIT OPEN OR SHORTED LOW

**Perform TEST 1A Before Proceeding**

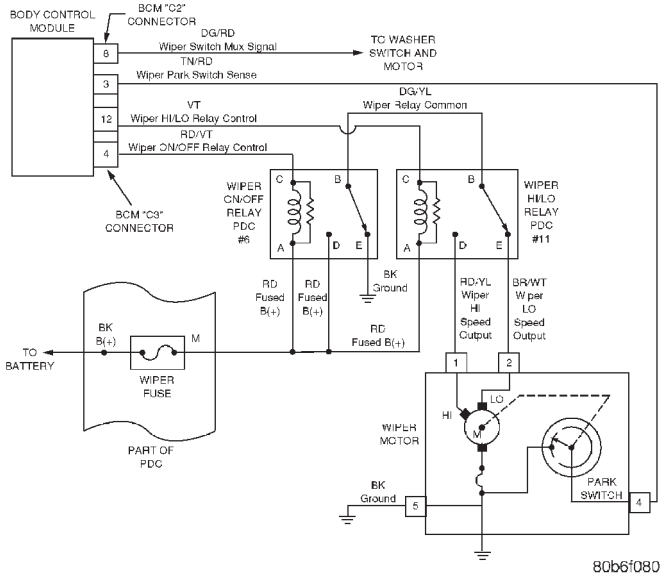



***Perform Verification TEST VER-2A.***

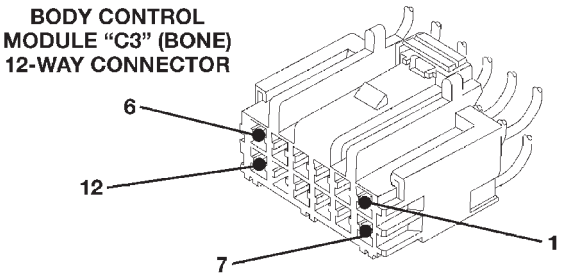
***Check connectors - Clean / repair as necessary.***

## TEST 3A REPAIRING WIPER PARK SWITCH FAILURE/WIPERS RUN CONTINUOUSLY

**Perform TEST 1A Before Proceeding**



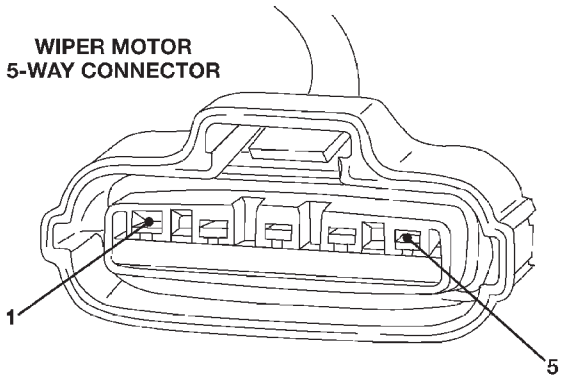

80b6f080




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | YL/VT | PCI BUS (PCM) |
| 2 | YL/VT | PCI BUS (ABS) |
| 3 | TN/RD | WIPER PARK SWITCH SENSE |
| 4 | RD/VT | WIPER ON OFF RELAY CONTROL |
| 5 | VT/LG | AMBIENT TEMPERATURE SENSOR SIGNAL |
| 7 | YL/VT | PCI BUS (TCM) |
| 9 | BR/YL | HEADLAMP WASHER RELAY CONTROL |
| 10 | DB/GY | SENSOR GROUND |
| 12 | VT | WIPER HIGH LOW RELAY CONTROL |

80b6f082

***FIG.1***



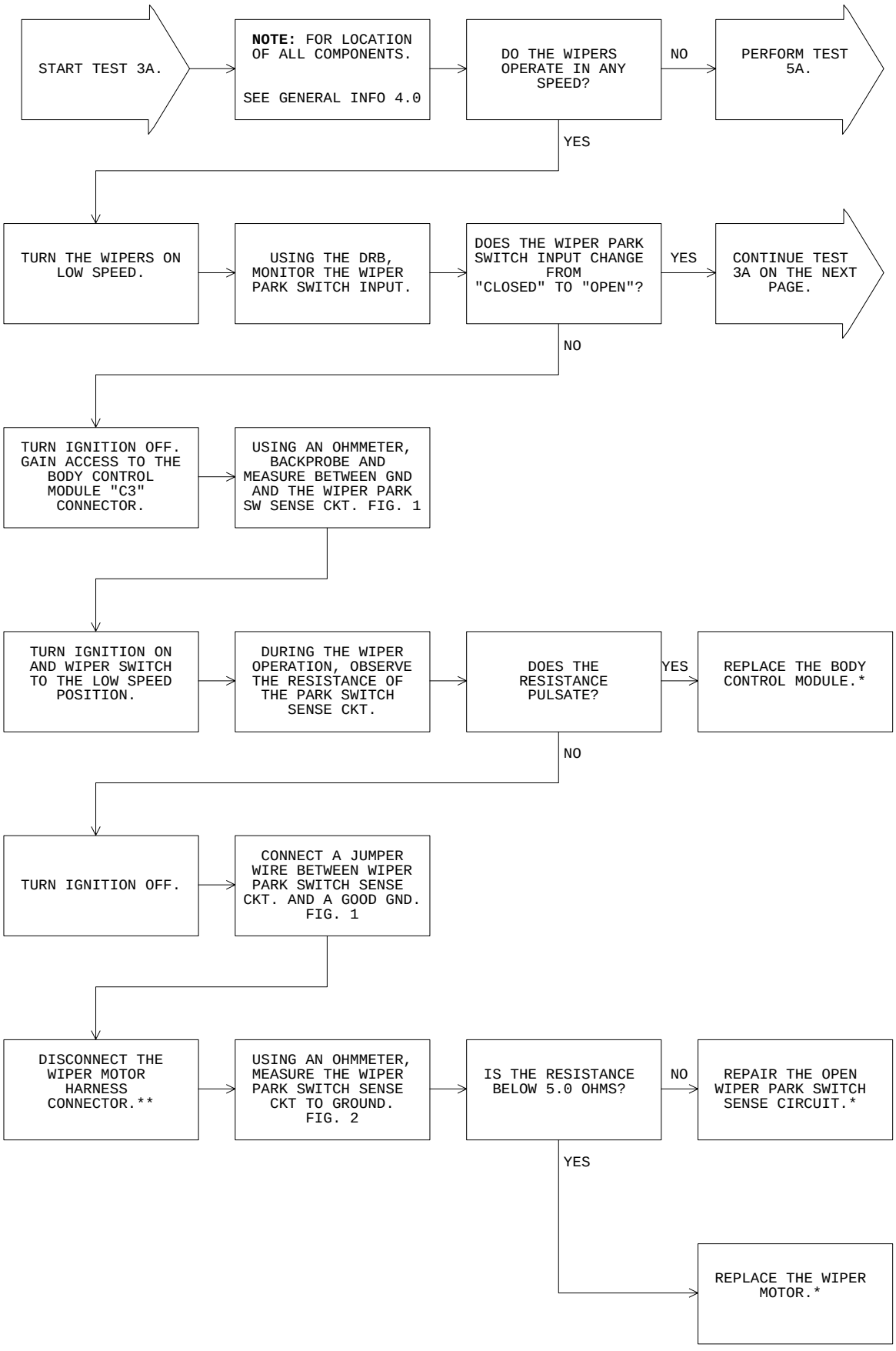

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/YL | WIPER SWITCH HIGH SPEED OUTPUT |
| 2 | BR/WT | WIPER SWITCH LOW SPEED OUTPUT |
| 4 | TN/RD | WIPER PARK SWITCH SENSE |
| 5 | BK | GROUND |

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***FIG. 2***

## TEST 3A REPAIRING WIPER PARK SWITCH FAILURE/WIPERS RUN CONTINUOUSLY

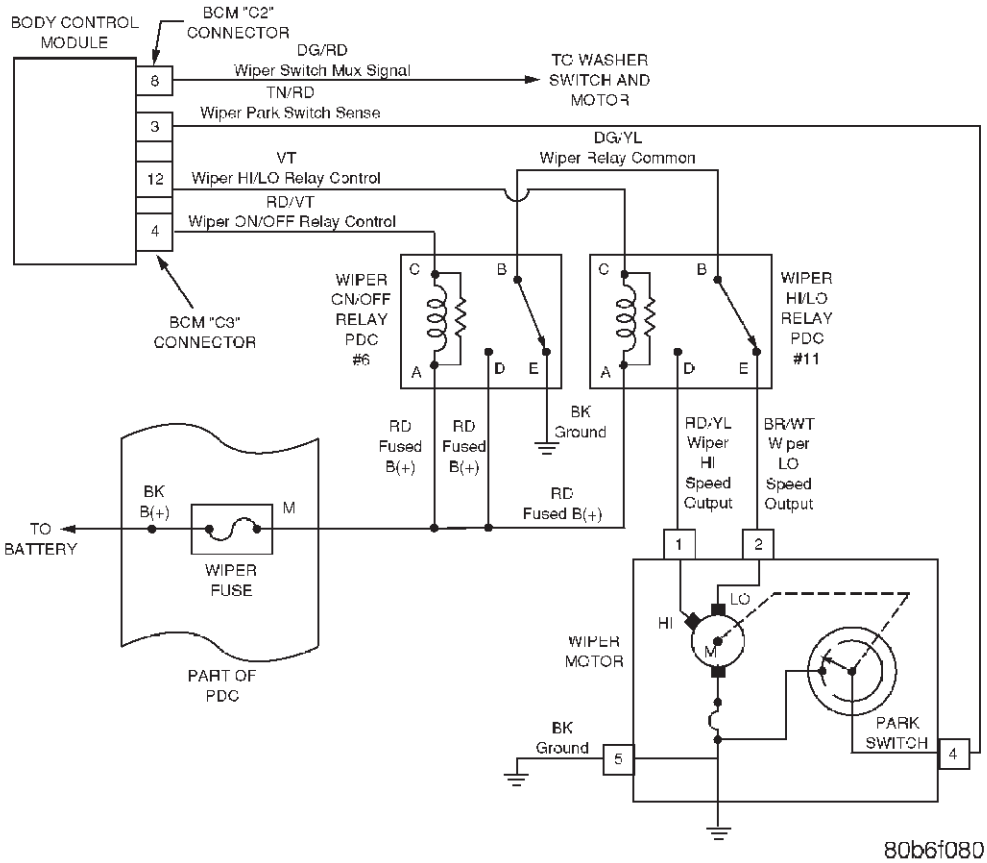
**Perform TEST 1A Before Proceeding**

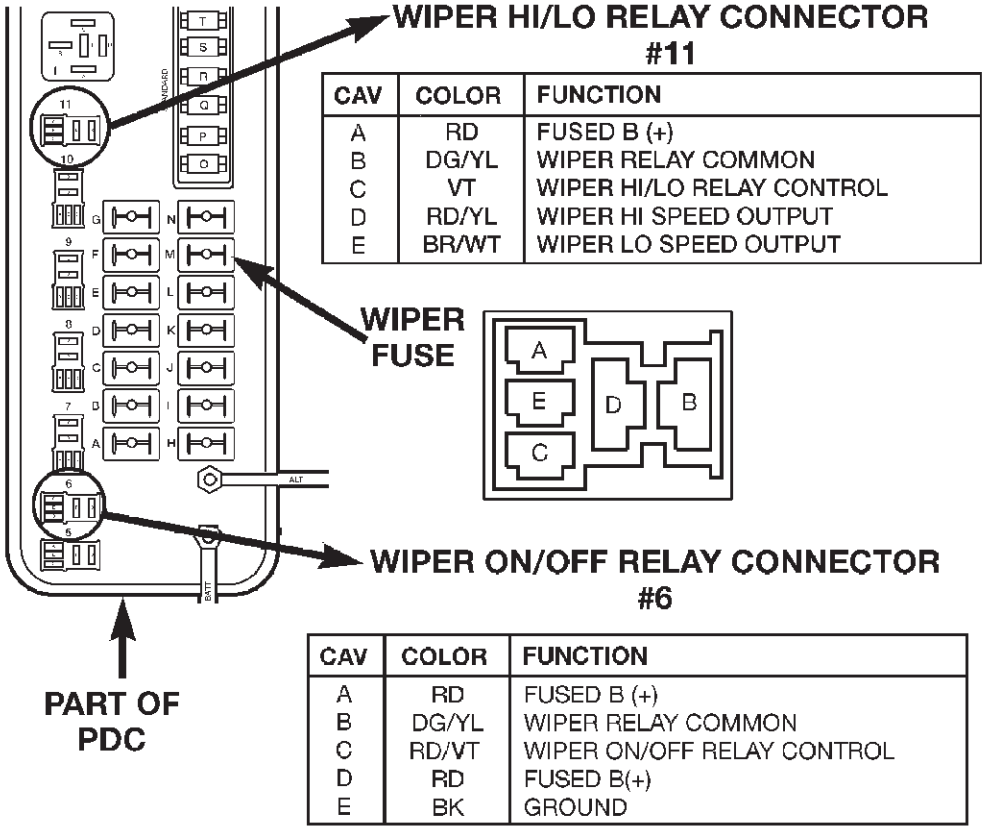



***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

**TEST 3A** CONTINUED - REPAIRING WIPER PARK SWITCH FAILURE/WIPERS RUN CONTINUOUSLY



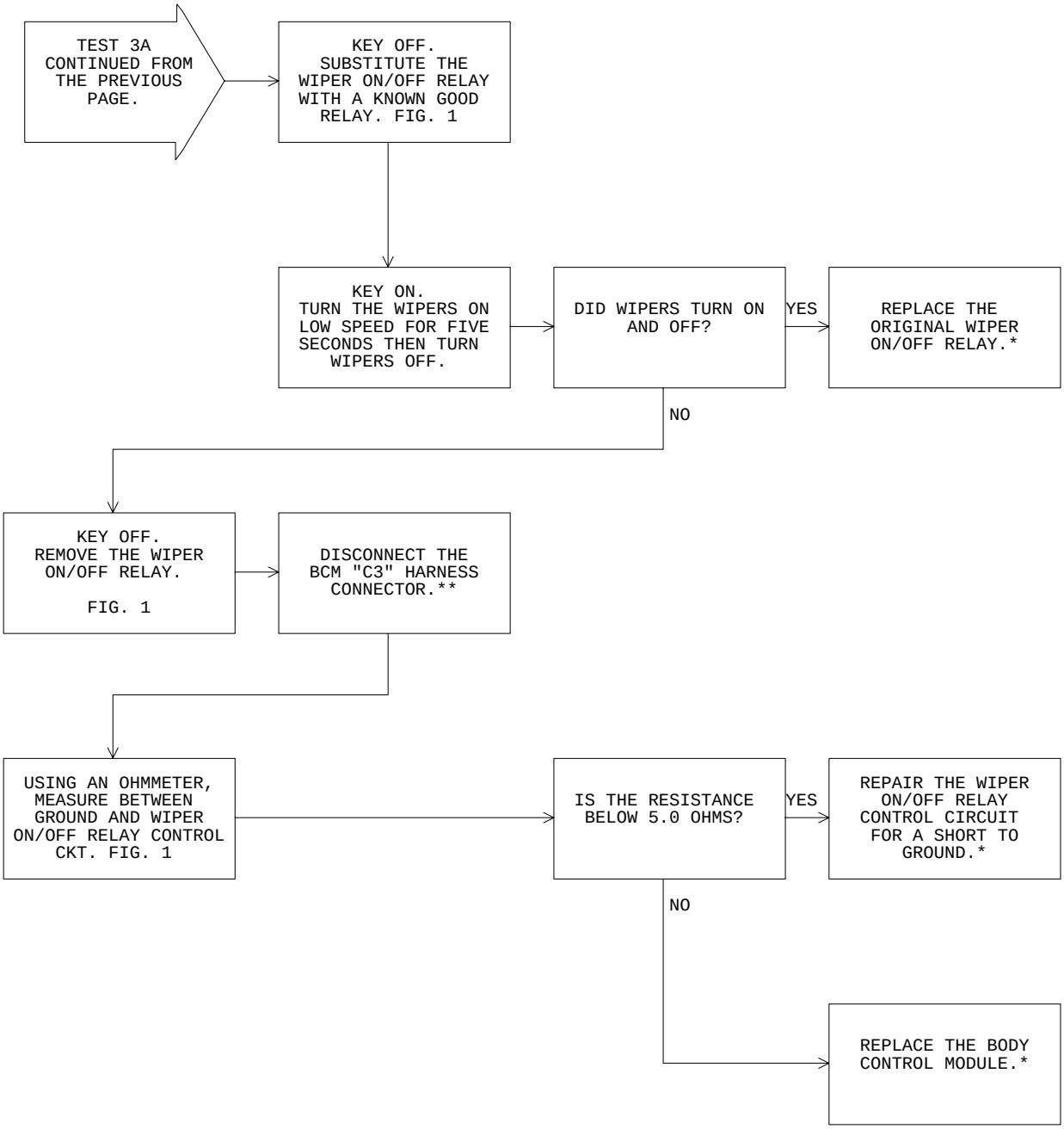




| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | VT | WIPER HI/LO RELAY CONTROL |
| D | RD/YL | WIPER HI SPEED OUTPUT |
| E | BR/WT | WIPER LO SPEED OUTPUT |

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | RD/VT | WIPER ON/OFF RELAY CONTROL |
| D | RD | FUSED B(+) |
| E | BK | GROUND |

***FIG. 1***

## TEST 3A CONTINUED - REPAIRING WIPER PARK SWITCH FAILURE/WIPERS RUN CONTINUOUSLY

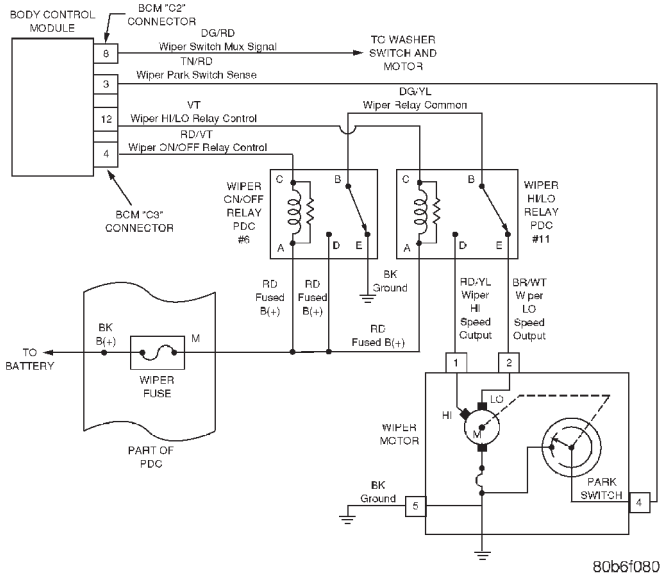



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 4A REPAIRING WIPER ON/OFF RELAY CONTROL CIRCUIT SHORTED HIGH

**Perform TEST 1A Before Proceeding**




**Name of code:** Wiper On/Off Relay Control Circuit Short High

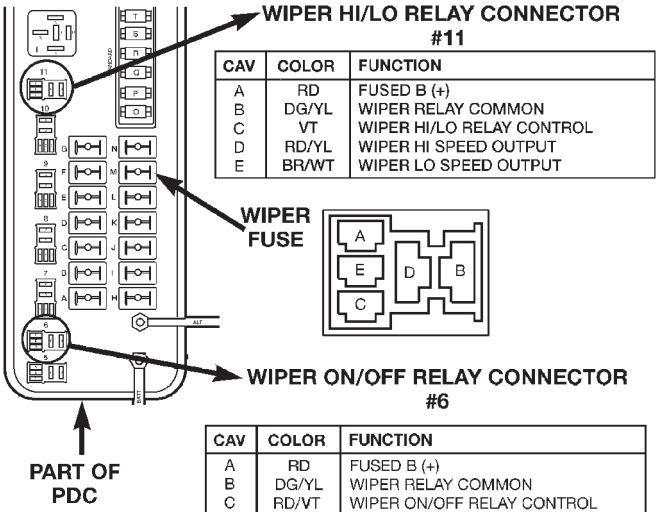
**When monitored:** Continuously

**Set condition:** BCM detects a high level on the wiper on/off relay control circuit when it is attempting to turn on the wipers.

**Theory of operation:** One side of the wiper on/off relay coil is wired to the battery, the other side is wired to the BCM. When the BCM wants to turn on the wipers, it grounds its side of the coil. This signal should go low when the BCM turns it on; if not, the fault will be set and the output will be deactivated to protect the BCM from damage.

**Probable Causes:**
> Wiper on/off relay control shorted to Battery
> Failed relay
> Failed BCM

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| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | VT | WIPER HI/LO RELAY CONTROL |
| D | RD/YL | WIPER HI SPEED OUTPUT |
| E | BR/WT | WIPER LO SPEED OUTPUT |

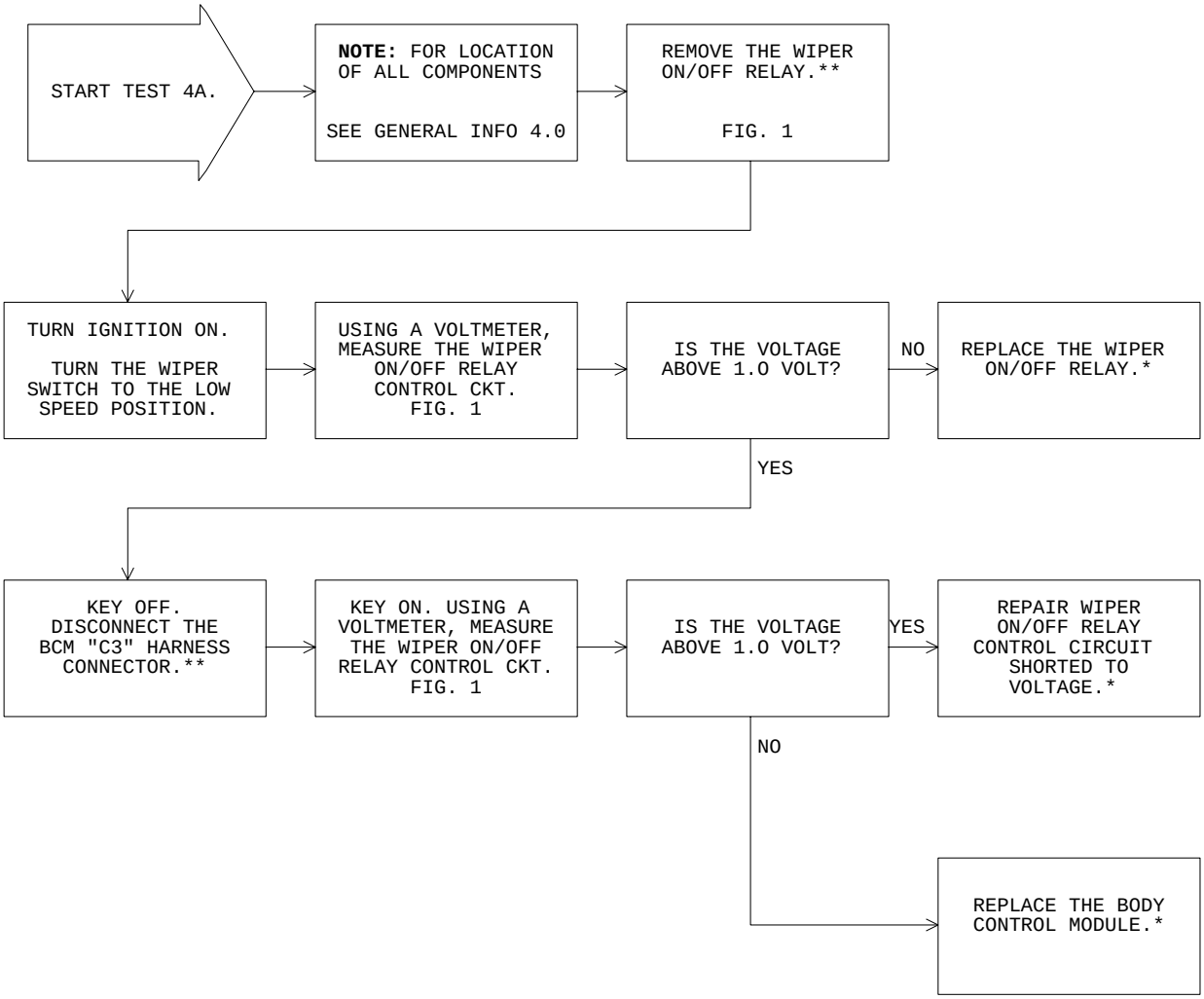
| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | RD/VT | WIPER ON/OFF RELAY CONTROL |
| D | RD | FUSED B(+) |
| E | BK | GROUND |

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***FIG. 1***

## TEST 4A REPAIRING WIPER ON/OFF RELAY CONTROL CIRCUIT SHORTED HIGH

**Perform TEST 1A Before Proceeding**

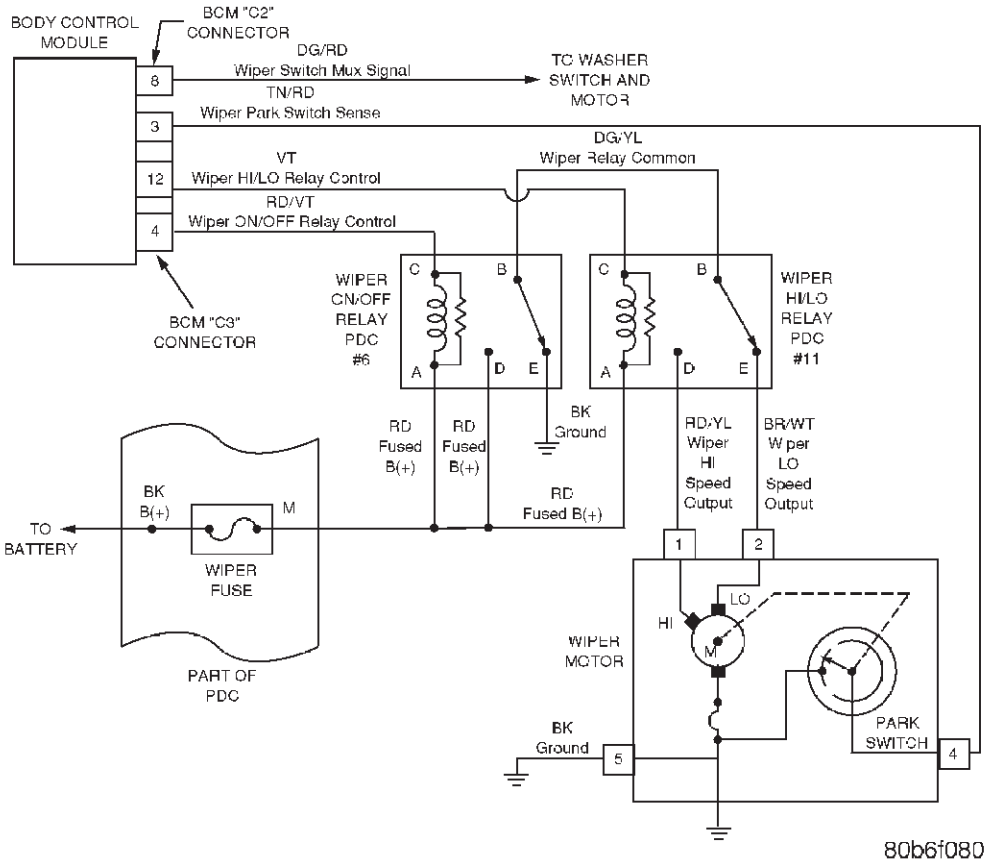



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 5A REPAIRING WIPERS NOT WORKING AT ALL

**Perform TEST 1A Before Proceeding**



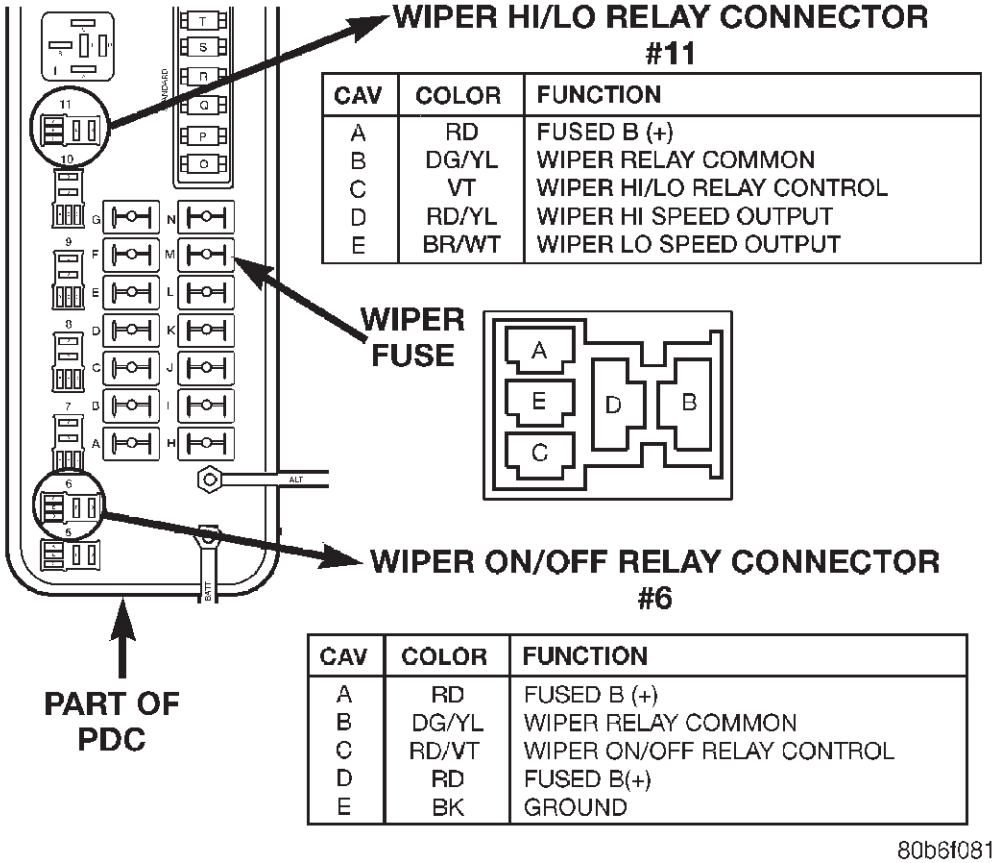
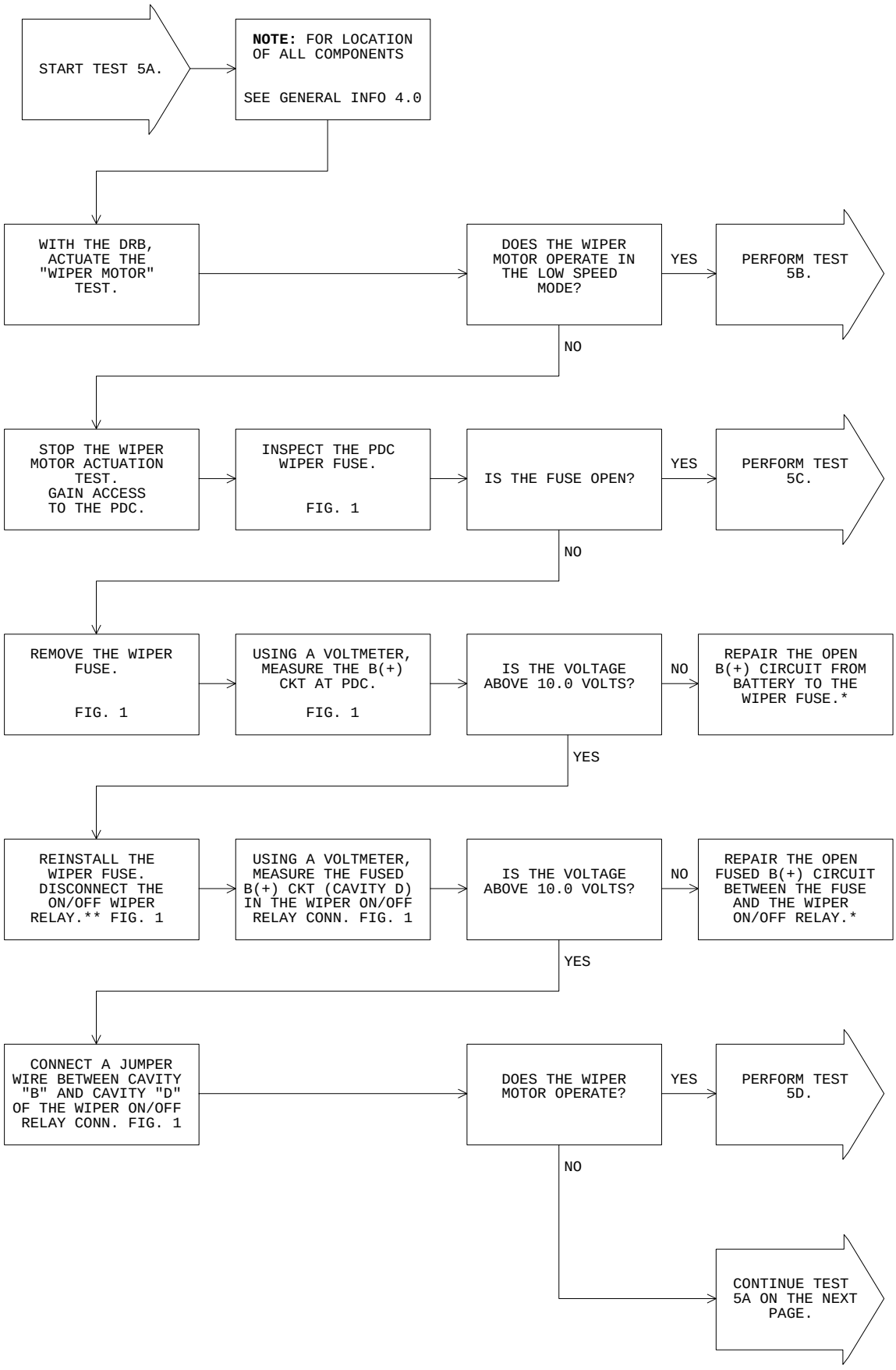




*FIG. 1*

## TEST 5A REPAIRING WIPERS NOT WORKING AT ALL

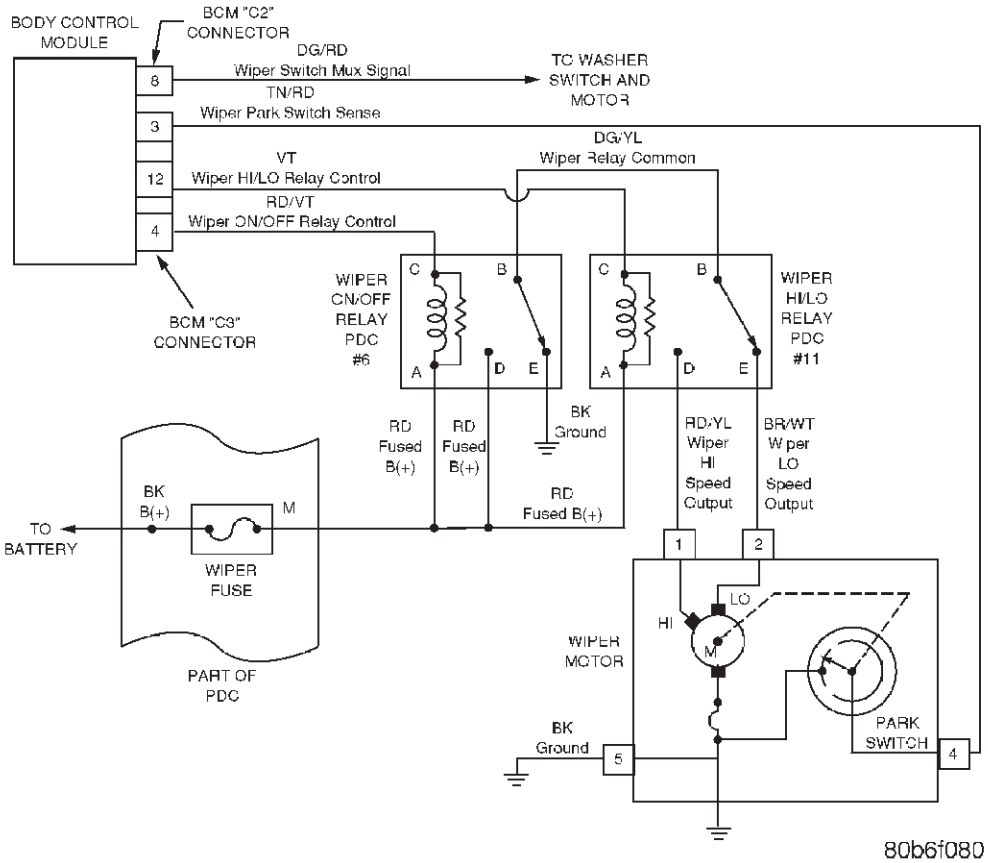
**Perform TEST 1A Before Proceeding**

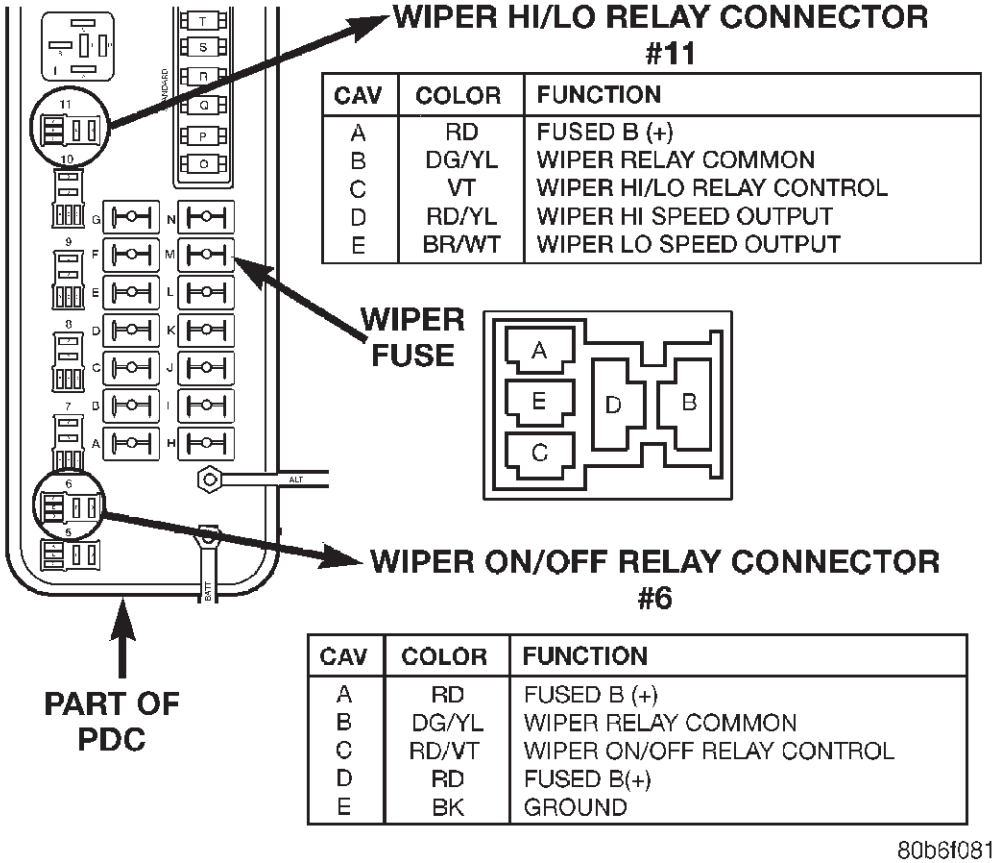



***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

**TEST 5A** CONTINUED - REPAIRING WIPERS NOT WORKING AT ALL



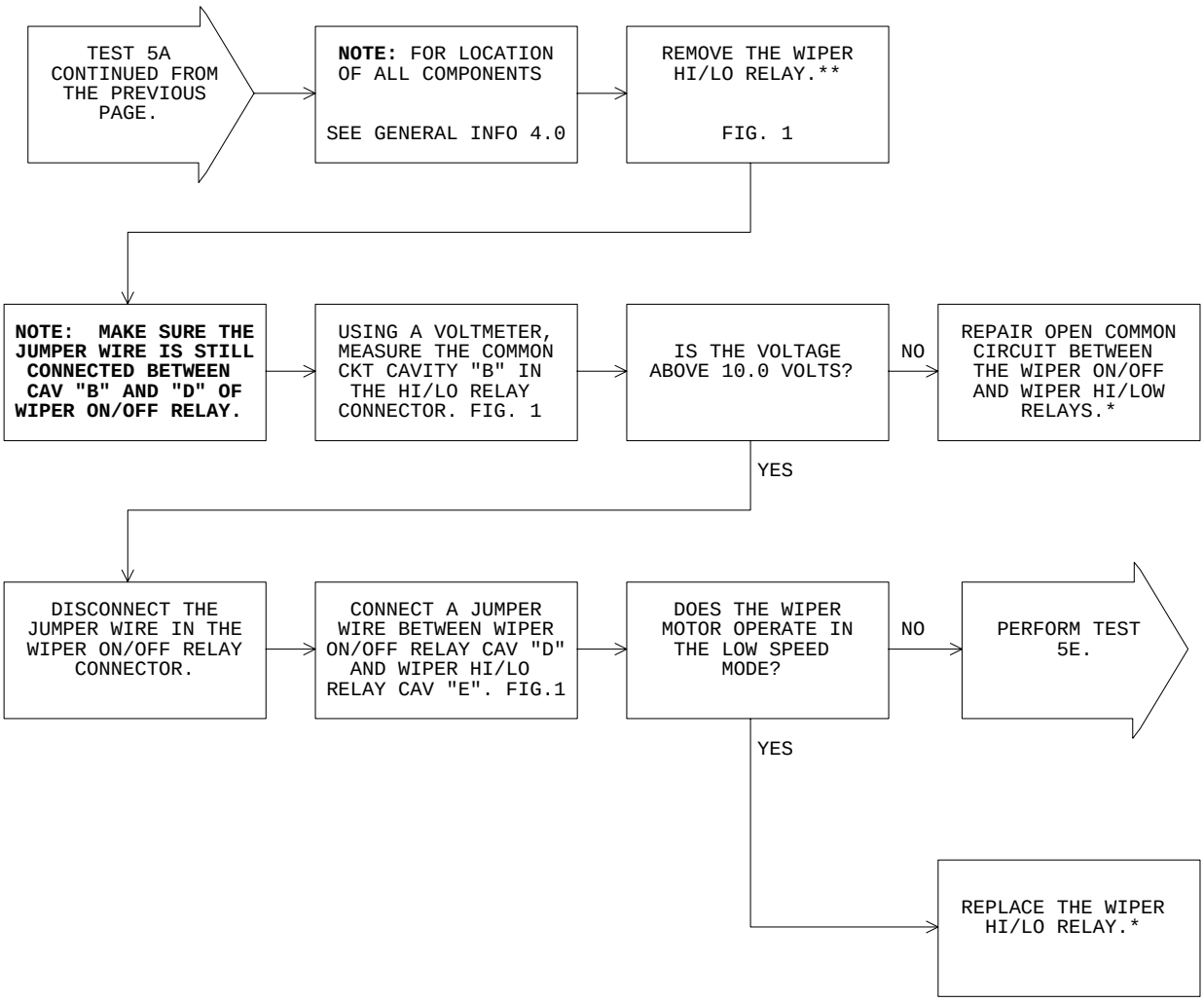




| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | VT | WIPER HI/LO RELAY CONTROL |
| D | RD/YL | WIPER HI SPEED OUTPUT |
| E | BR/WT | WIPER LO SPEED OUTPUT |

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | RD/VT | WIPER ON/OFF RELAY CONTROL |
| D | RD | FUSED B(+) |
| E | BK | GROUND |

***FIG. 1***

## TEST 5A CONTINUED - REPAIRING WIPERS NOT WORKING AT ALL

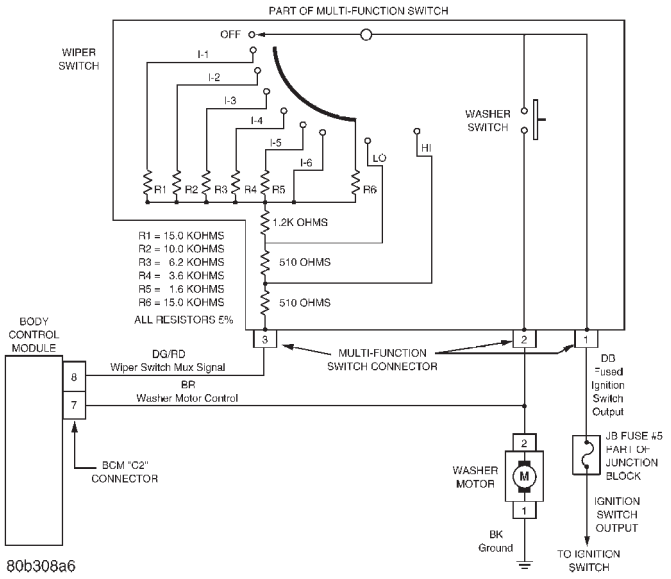


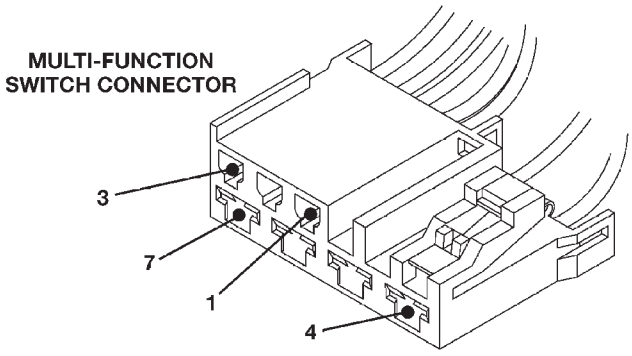

**Perform Verification TEST VER-2A.*

***Check connectors - Clean / repair as necessary.*

## TEST 5B REPAIRING WIPERS NOT WORKING AT ALL

**Perform TEST 5A Before Proceeding**

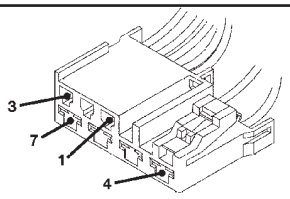



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DB | FUSED IGNITION SWITCH OUTPUT |
| 2 | BR | WASHER MOTOR CONTROL |
| 3 | DG/RD | WIPER SWITCH MUX SIGNAL |
| 4 | BR/WT | FUSED LOW BEAM RELAY OUTPUT |
| 5 | PK/RD | FUSED B(+) |
| 7 | WT/LG | SWITCHED HIGH BEAM RELAY CONTROL |

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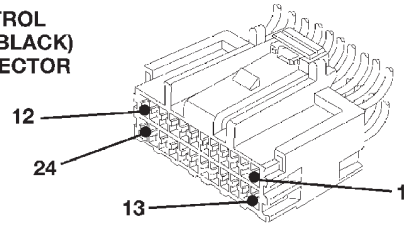
***FIG. 1***




**MULTI-FUNCTION SWITCH CONNECTOR**

| CAV | COLOR | FUNCTION |
|---|---|---|
| 3 | DG/RD | WIPER SWITCH MUX SIGNAL |

**BODY CONTROL MODULE "C2" (BLACK) 24-WAY CONNECTOR**



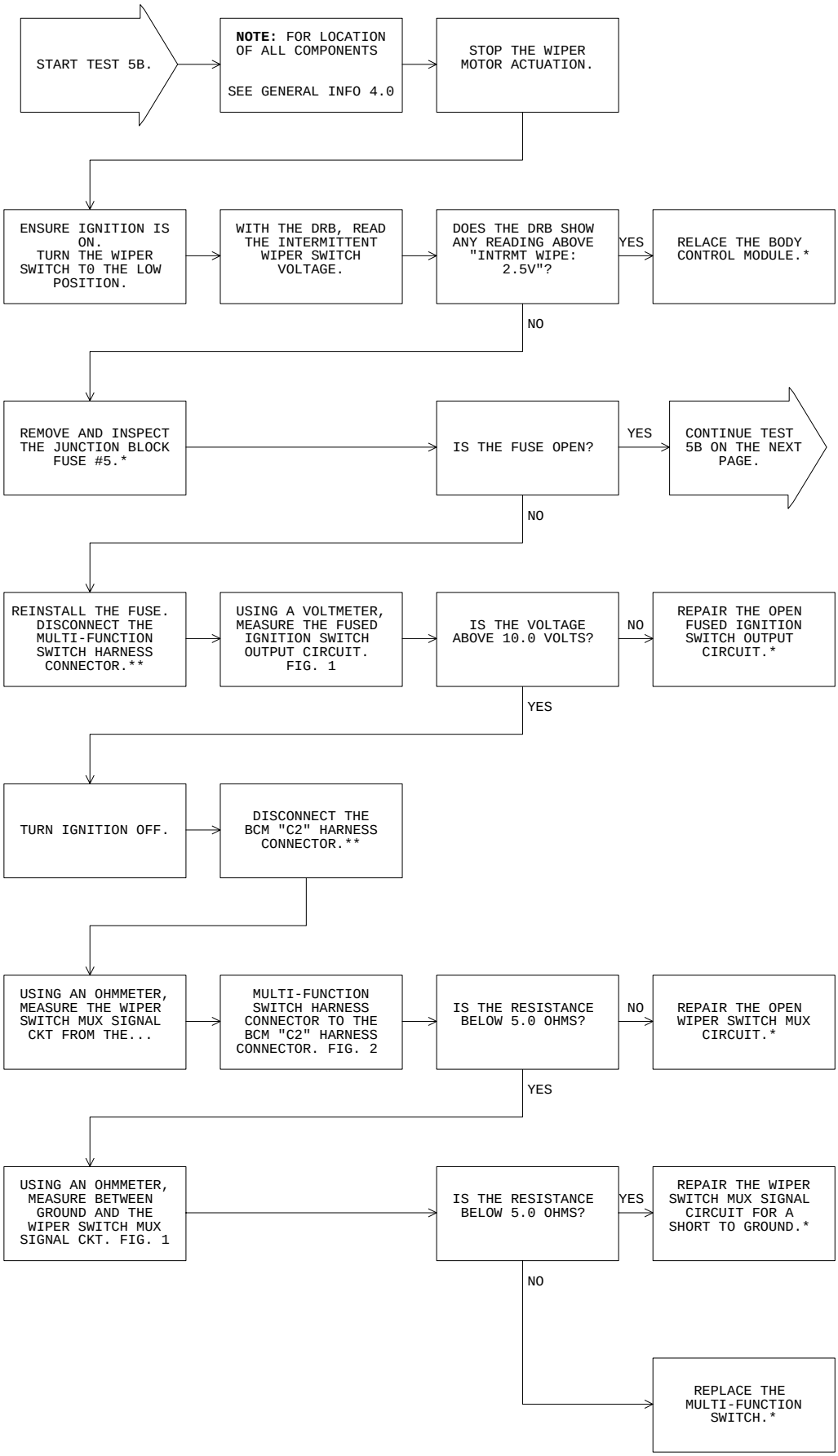

| CAV | COLOR | FUNCTION |
|---|---|---|
| 8 | DG/RD | WIPER SWITCH MUX SIGNAL |

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***FIG. 2***

## TEST 5B REPAIRING WIPERS NOT WORKING AT ALL

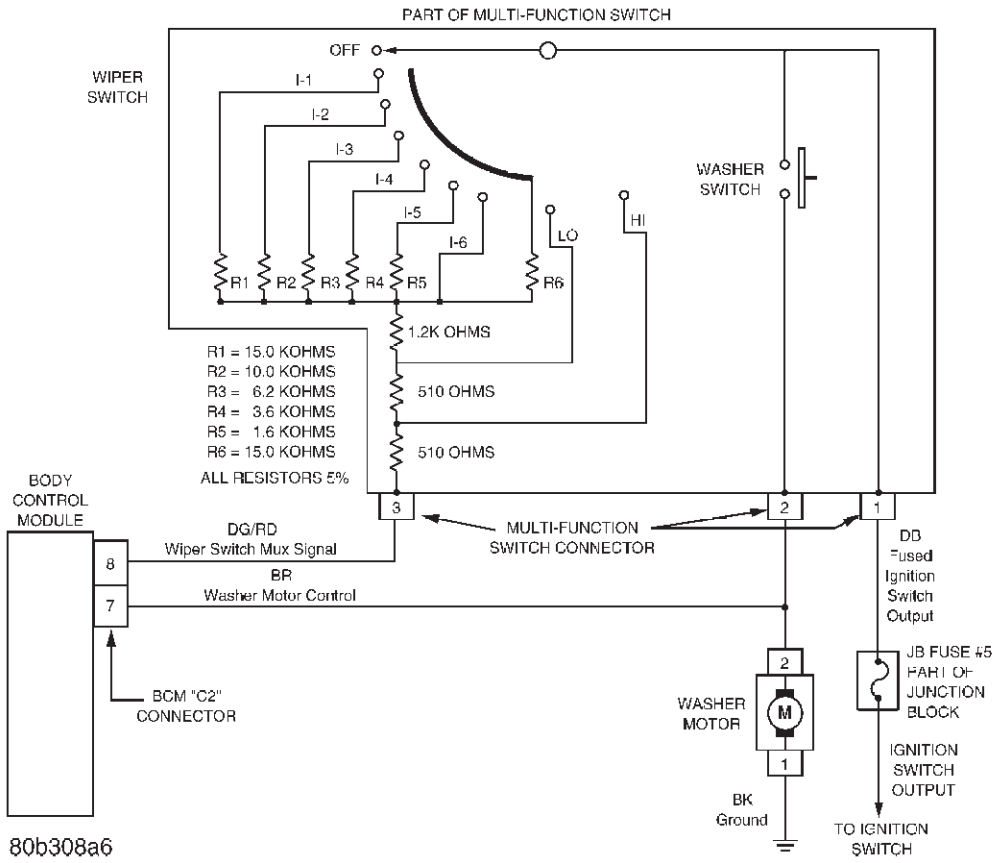
**Perform TEST 5A Before Proceeding**

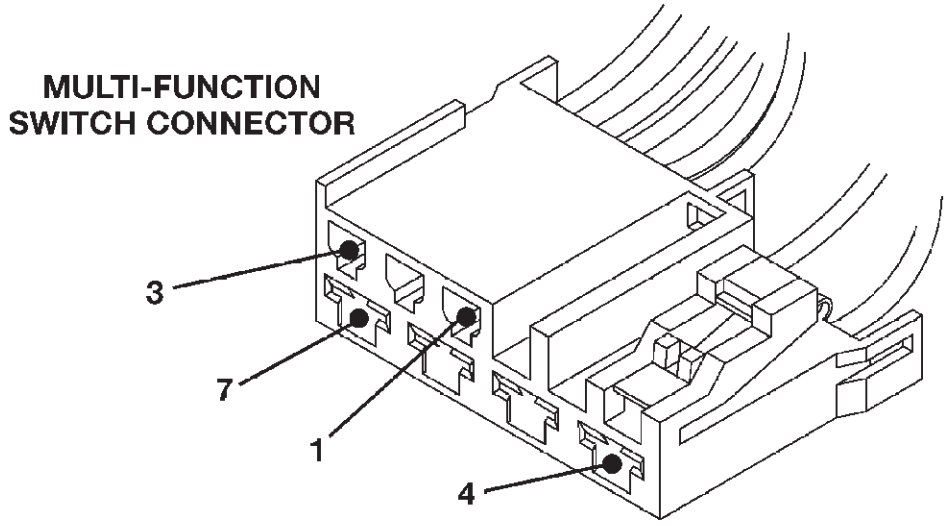



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.**

**TEST 5B** CONTINUED - REPAIRING WIPERS NOT WORKING AT ALL



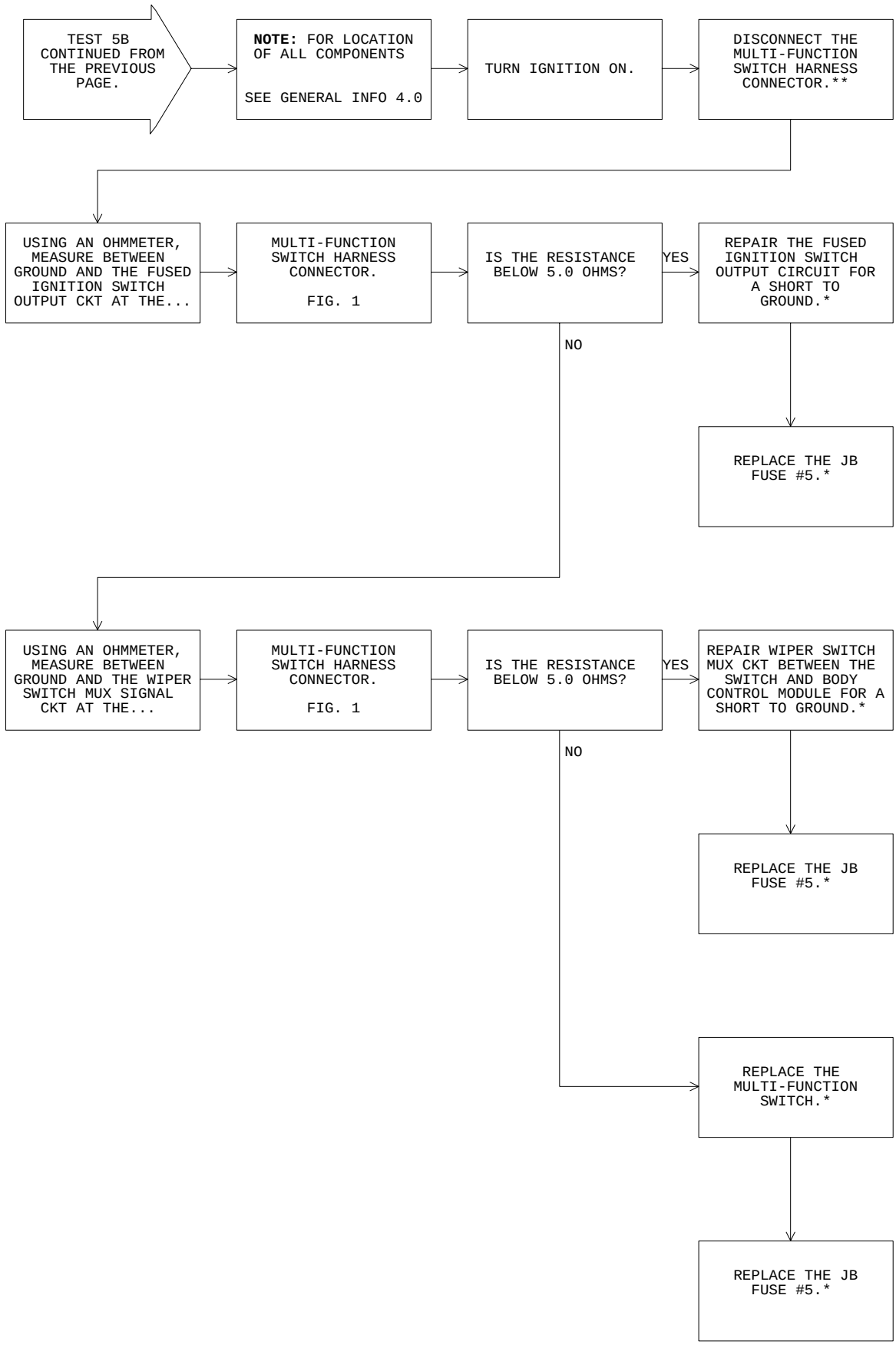




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DB | FUSED IGNITION SWITCH OUTPUT |
| 2 | BR | WASHER MOTOR CONTROL |
| 3 | DG/RD | WIPER SWITCH MUX SIGNAL |
| 4 | BR/WT | FUSED LOW BEAM RELAY OUTPUT |
| 5 | PK/RD | FUSED B(+) |
| 7 | WT/LG | SWITCHED HIGH BEAM RELAY CONTROL |

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***FIG. 1***

## TEST 5B CONTINUED - REPAIRING WIPERS NOT WORKING AT ALL

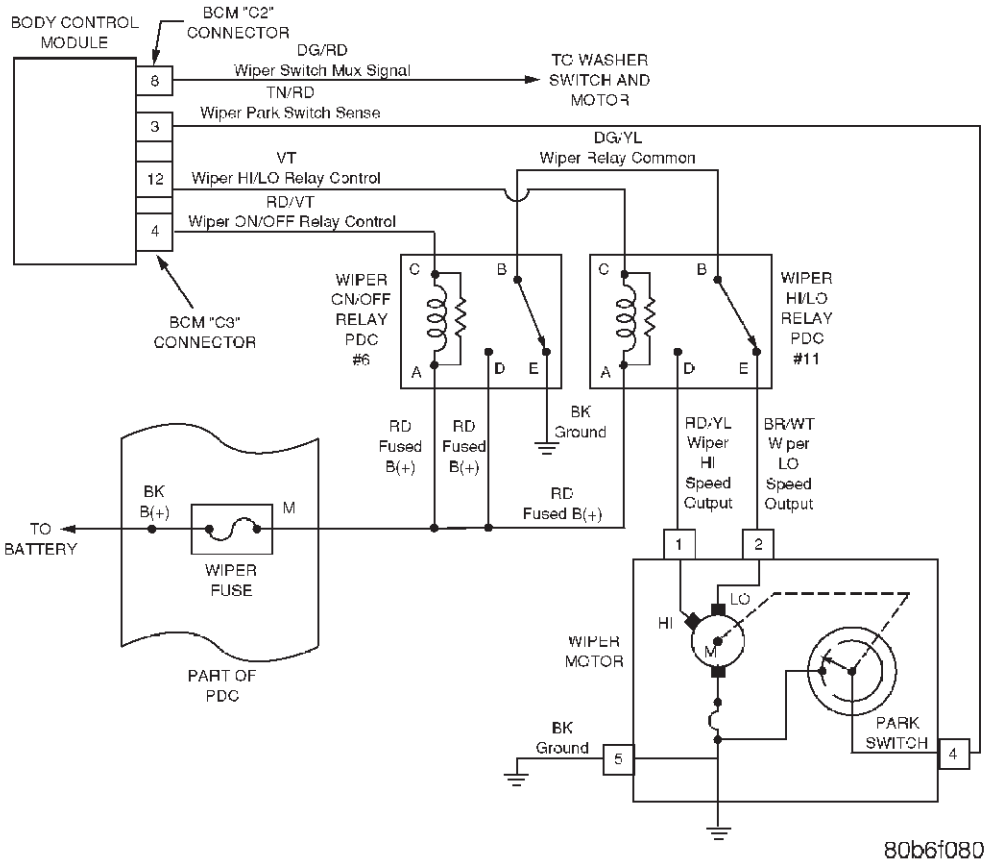


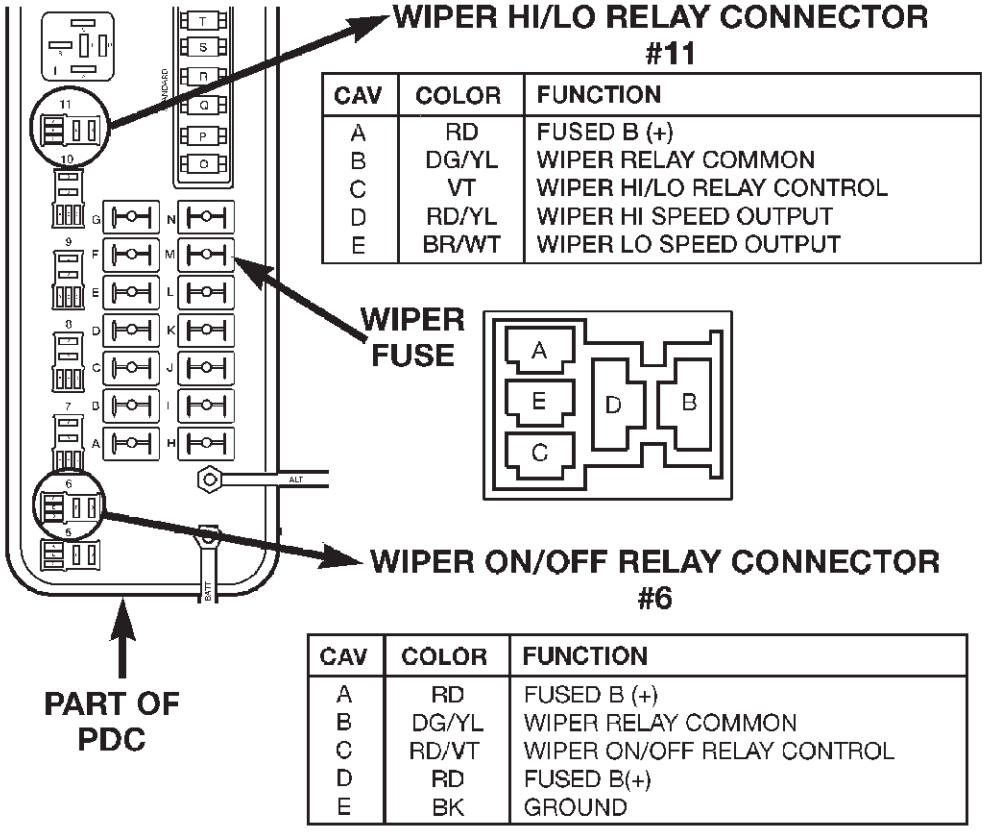

***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 5C REPAIRING WIPERS NOT WORKING AT ALL

**Perform TEST 5A Before Proceeding**



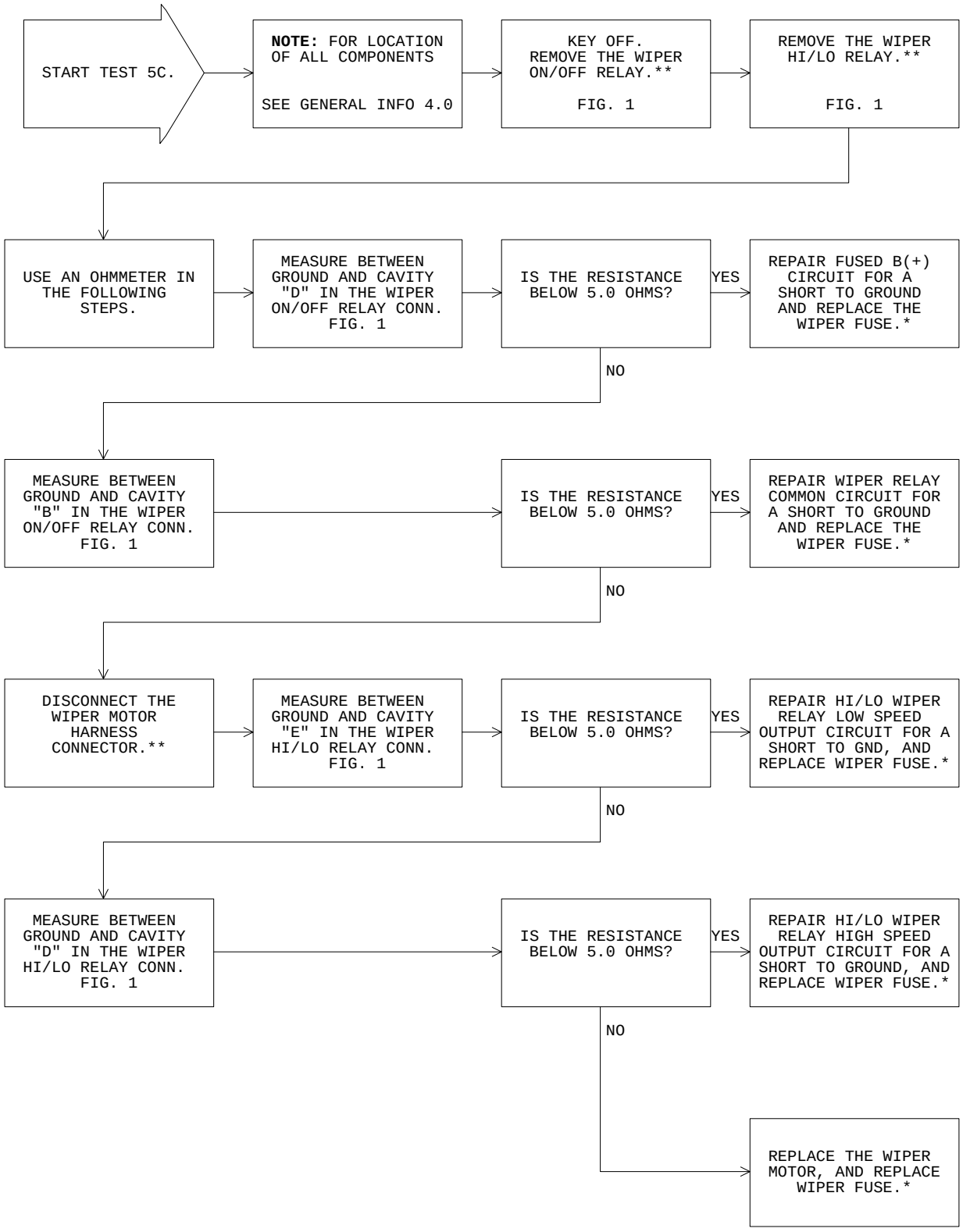

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | VT | WIPER HI/LO RELAY CONTROL |
| D | RD/YL | WIPER HI SPEED OUTPUT |
| E | BR/WT | WIPER LO SPEED OUTPUT |

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | RD/VT | WIPER ON/OFF RELAY CONTROL |
| D | RD | FUSED B(+) |
| E | BK | GROUND |

***FIG. 1***

## TEST 5C REPAIRING WIPERS NOT WORKING AT ALL

**Perform TEST 5A Before Proceeding**

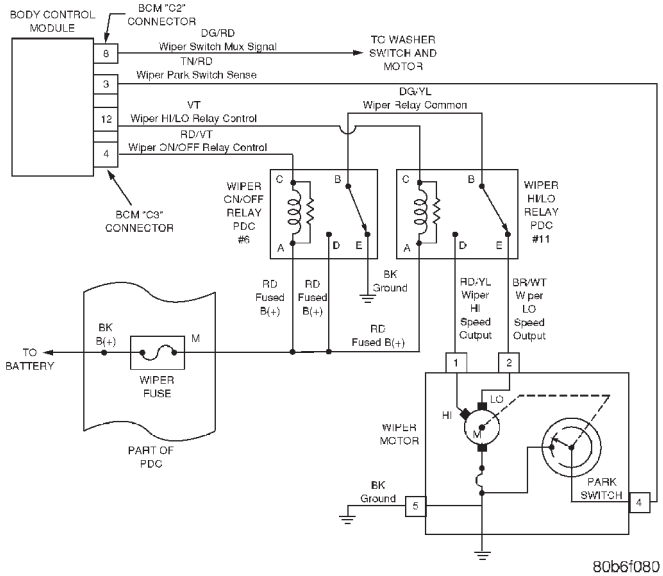


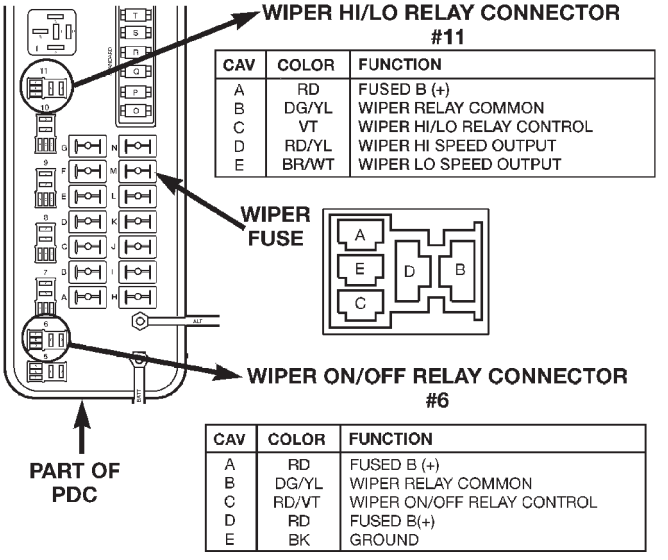

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 5D REPAIRING WIPERS NOT WORKING AT ALL

**Perform TEST 5A Before Proceeding**



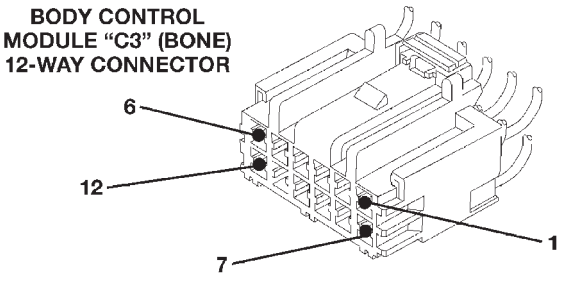




| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | VT | WIPER HI/LO RELAY CONTROL |
| D | RD/YL | WIPER HI SPEED OUTPUT |
| E | BR/WT | WIPER LO SPEED OUTPUT |

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | RD/VT | WIPER ON/OFF RELAY CONTROL |
| D | RD | FUSED B(+) |
| E | BK | GROUND |

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***FIG. 1***



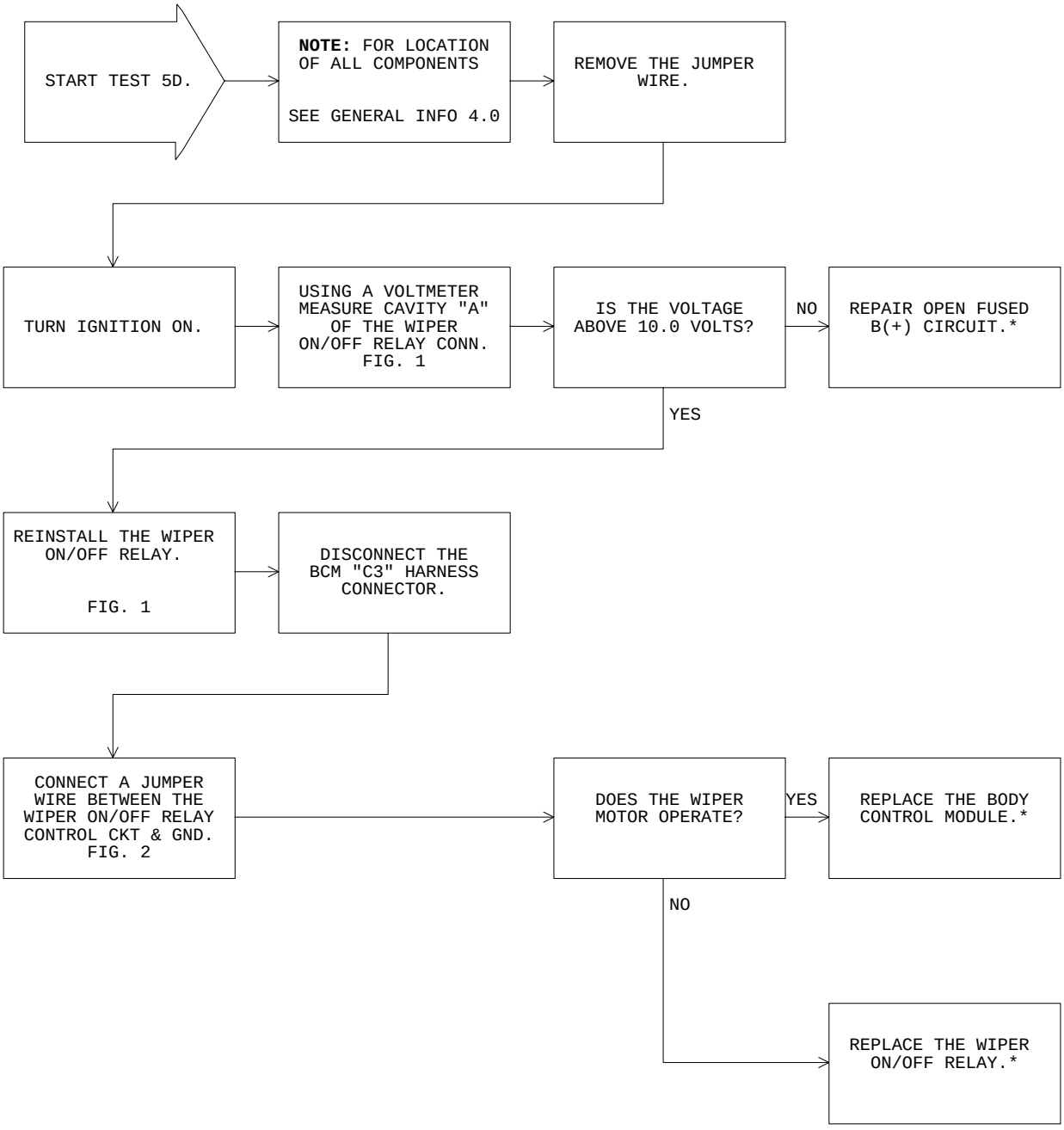

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | YL/VT | PCI BUS (PCM) |
| 2 | YL/VT | PCI BUS (ABS) |
| 3 | TN/RD | WIPER PARK SWITCH SENSE |
| 4 | RD/VT | WIPER ON OFF RELAY CONTROL |
| 5 | VT/LG | AMBIENT TEMPERATURE SENSOR SIGNAL |
| 7 | YL/VT | PCI BUS (TCM) |
| 9 | BR/YL | HEADLAMP WASHER RELAY CONTROL |
| 10 | DB/GY | SENSOR GROUND |
| 12 | VT | WIPER HIGH LOW RELAY CONTROL |

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***FIG. 2***

## TEST 5D REPAIRING WIPERS NOT WORKING AT ALL

**Perform TEST 5A Before Proceeding**

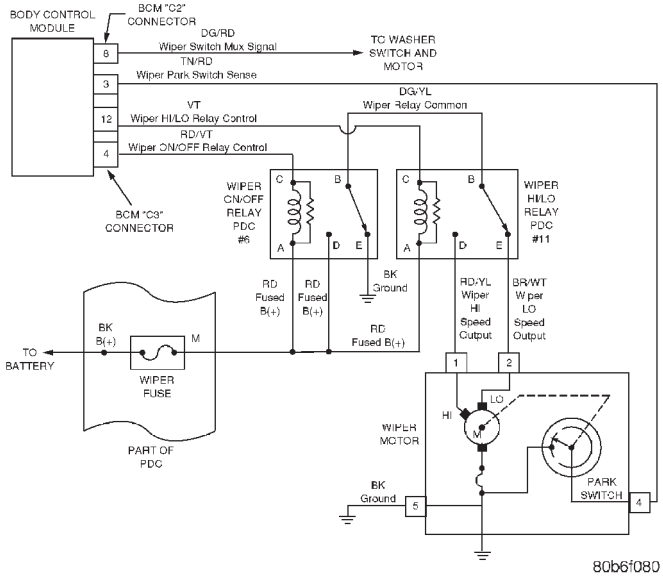


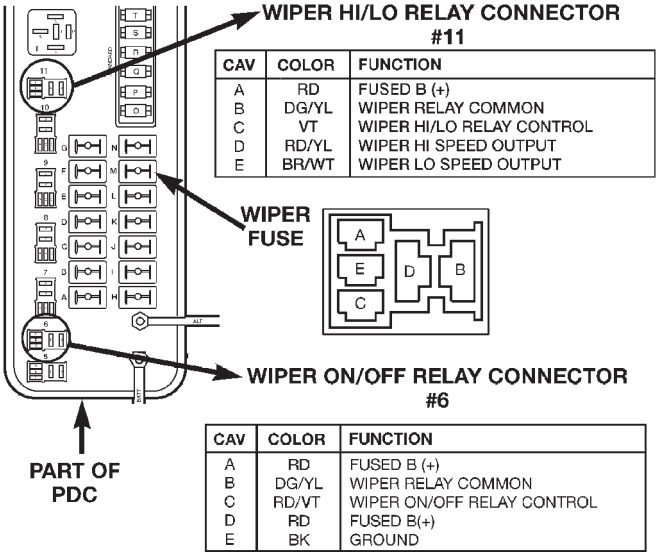

***Perform Verification TEST VER-2A.***

*****Check connectors - Clean / repair as necessary.***

## TEST 5E REPAIRING WIPERS NOT WORKING AT ALL

**Perform TEST 5A Before Proceeding**

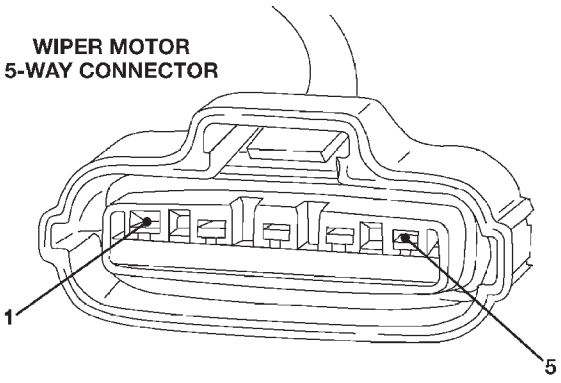



| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | VT | WIPER HI/LO RELAY CONTROL |
| D | RD/YL | WIPER HI SPEED OUTPUT |
| E | BR/WT | WIPER LO SPEED OUTPUT |

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | RD/VT | WIPER ON/OFF RELAY CONTROL |
| D | RD | FUSED B(+) |
| E | BK | GROUND |

***FIG. 1***

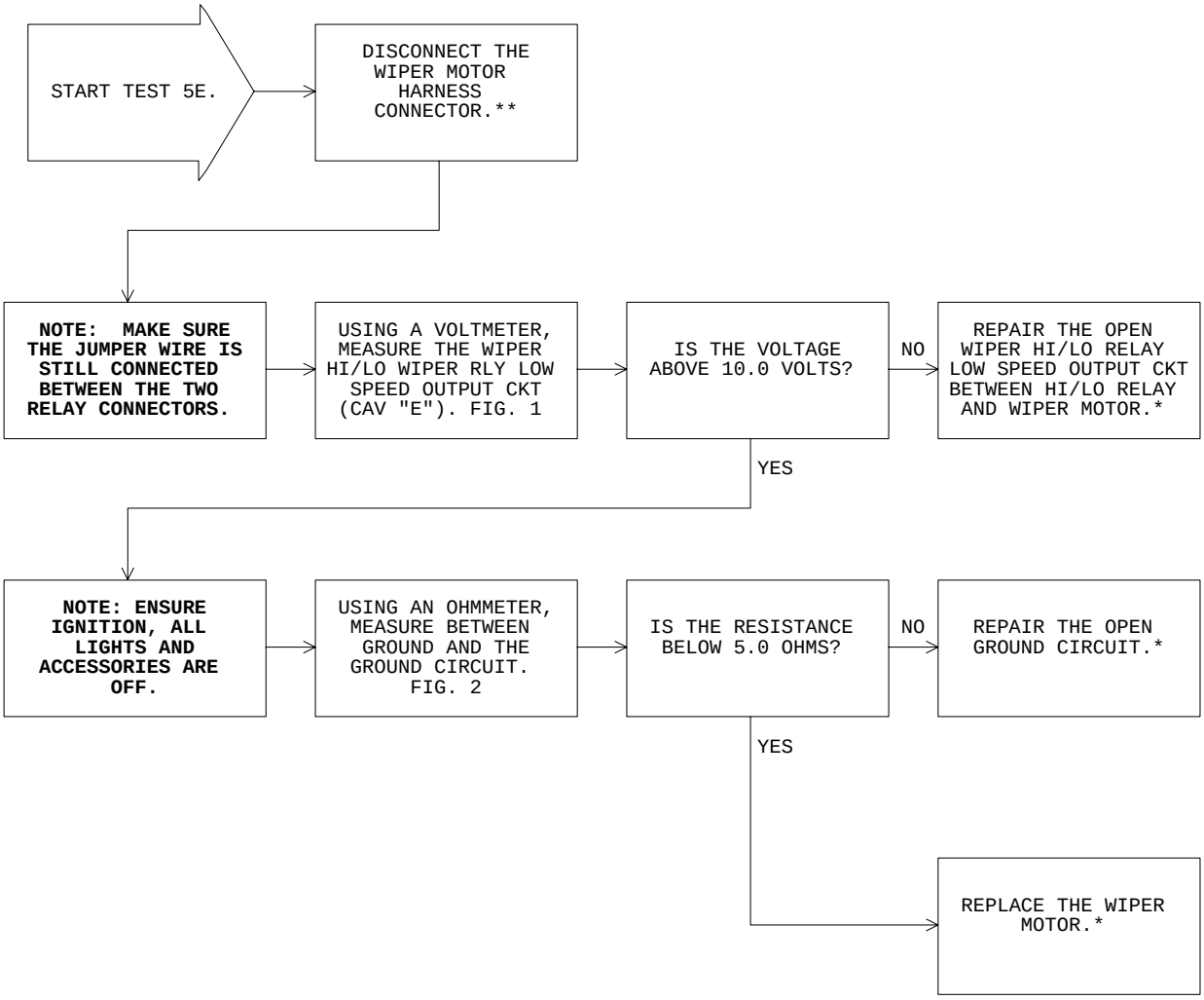



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/YL | WIPER SWITCH HIGH SPEED OUTPUT |
| 2 | BR/WT | WIPER SWITCH LOW SPEED OUTPUT |
| 4 | TN/RD | WIPER PARK SWITCH SENSE |
| 5 | BK | GROUND |

***FIG. 2***

## TEST 5E REPAIRING WIPERS NOT WORKING AT ALL

**Perform TEST 5A Before Proceeding**

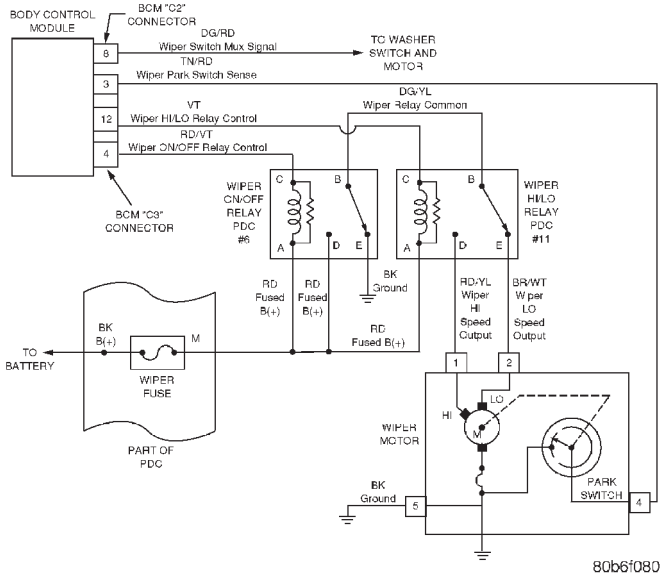


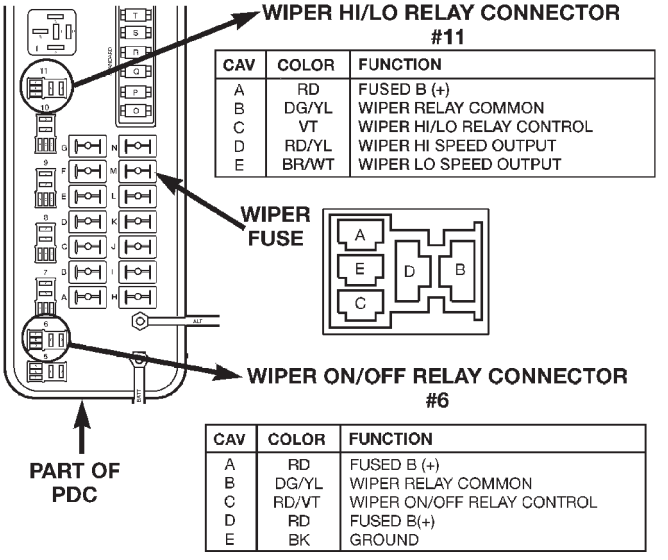

***Perform Verification TEST VER-2A.**

****Check connectors - Clean / repair as necessary.**

## TEST 6A REPAIRING WIPERS NOT WORKING IN THE HIGH SPEED MODE

**Perform TEST 1A Before Proceeding**



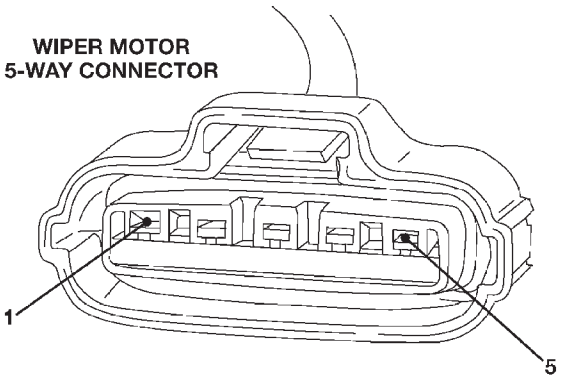




| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | VT | WIPER HI/LO RELAY CONTROL |
| D | RD/YL | WIPER HI SPEED OUTPUT |
| E | BR/WT | WIPER LO SPEED OUTPUT |

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | RD/VT | WIPER ON/OFF RELAY CONTROL |
| D | RD | FUSED B(+) |
| E | BK | GROUND |

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***FIG. 1***



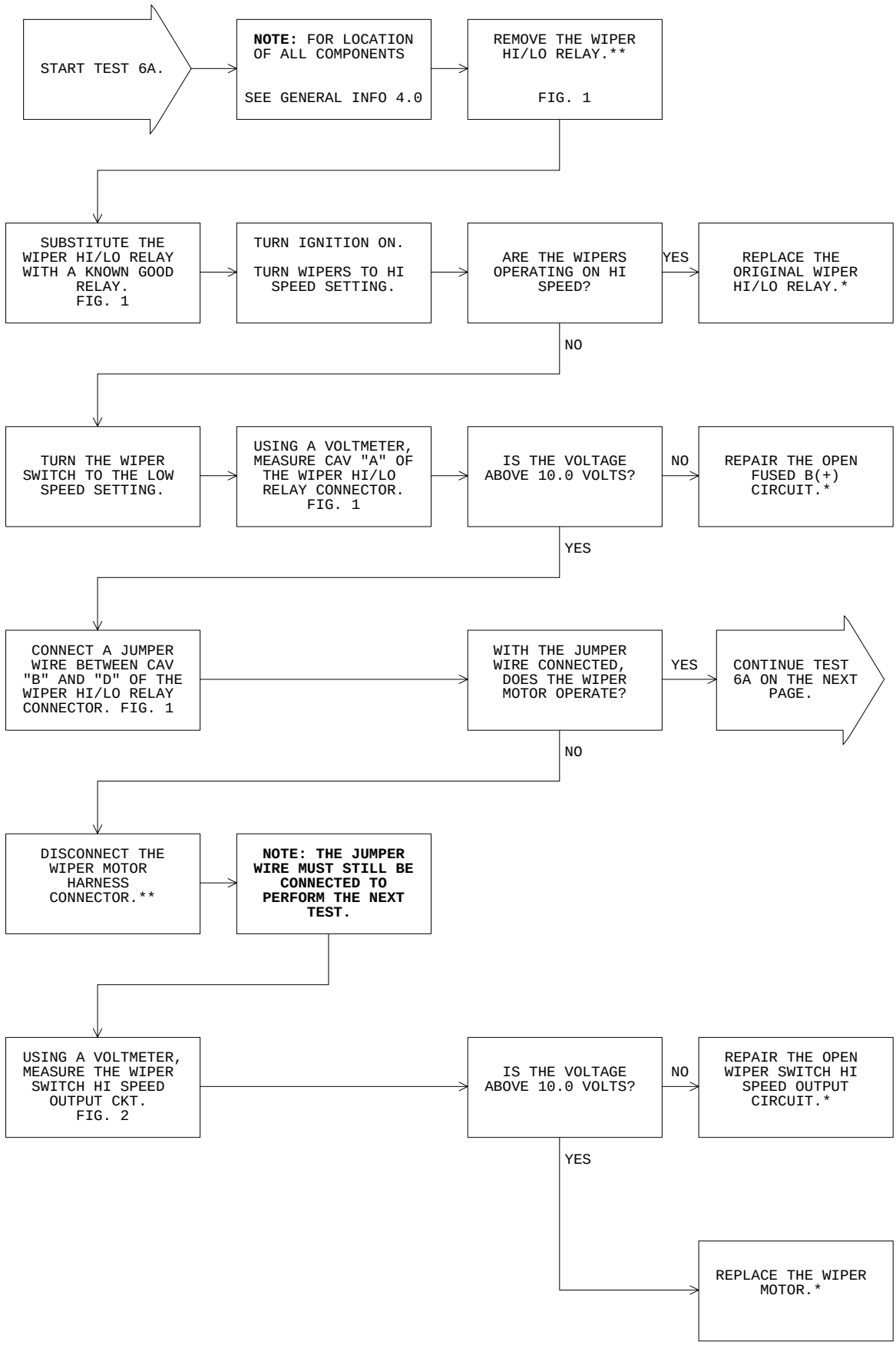

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/YL | WIPER SWITCH HIGH SPEED OUTPUT |
| 2 | BR/WT | WIPER SWITCH LOW SPEED OUTPUT |
| 4 | TN/RD | WIPER PARK SWITCH SENSE |
| 5 | BK | GROUND |

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***FIG. 2***

## TEST 6A REPAIRING WIPERS NOT WORKING IN THE HIGH SPEED MODE

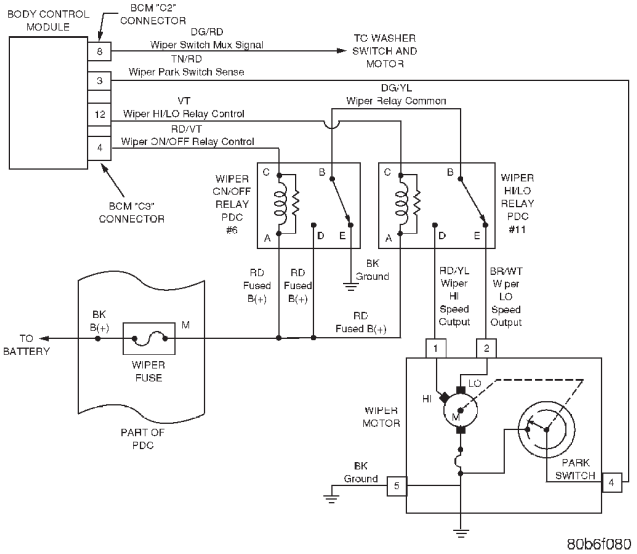
**Perform TEST 1A Before Proceeding**



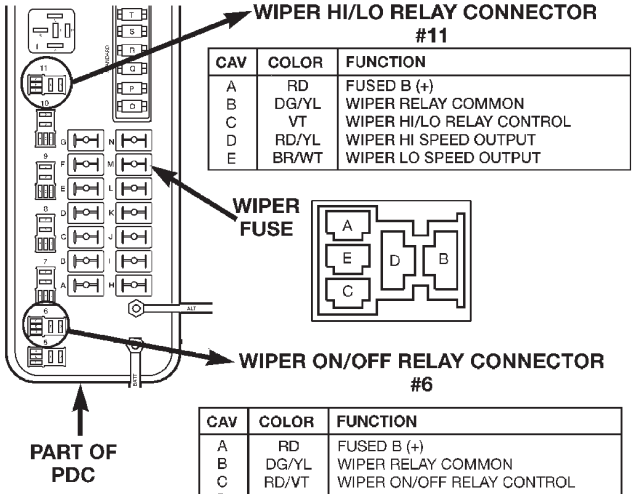

***Perform Verification TEST VER-1A.***

****Check connectors - Clean / repair as necessary.***

## TEST 6A — CONTINUED - REPAIRING WIPERS NOT WORKING IN THE HIGH SPEED MODE




80b6f080



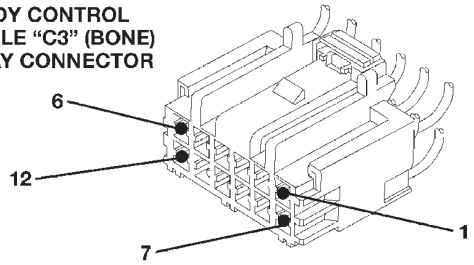

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | VT | WIPER HI/LO RELAY CONTROL |
| D | RD/YL | WIPER HI SPEED OUTPUT |
| E | BR/WT | WIPER LO SPEED OUTPUT |

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | RD/VT | WIPER ON/OFF RELAY CONTROL |
| D | RD | FUSED B(+) |
| E | BK | GROUND |

80b6f081

*FIG. 1*

**BODY CONTROL MODULE "C3" (BONE) 12-WAY CONNECTOR**

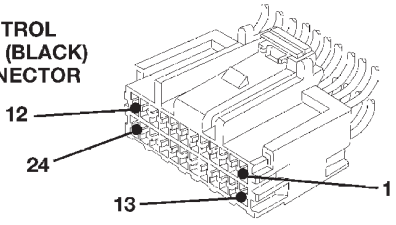



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | YL/VT | PCI BUS (PCM) |
| 2 | YL/VT | PCI BUS (ABS) |
| 3 | TN/RD | WIPER PARK SWITCH SENSE |
| 4 | RD/VT | WIPER ON OFF RELAY CONTROL |
| 5 | VT/LG | AMBIENT TEMPERATURE SENSOR SIGNAL |
| 7 | YL/VT | PCI BUS (TCM) |
| 9 | BR/YL | HEADLAMP WASHER RELAY CONTROL |
| 10 | DB/GY | SENSOR GROUND |
| 12 | VT | WIPER HIGH LOW RELAY CONTROL |

80b6f082

*FIG. 2*

**BODY CONTROL MODULE "C2" (BLACK) 24-WAY CONNECTOR**

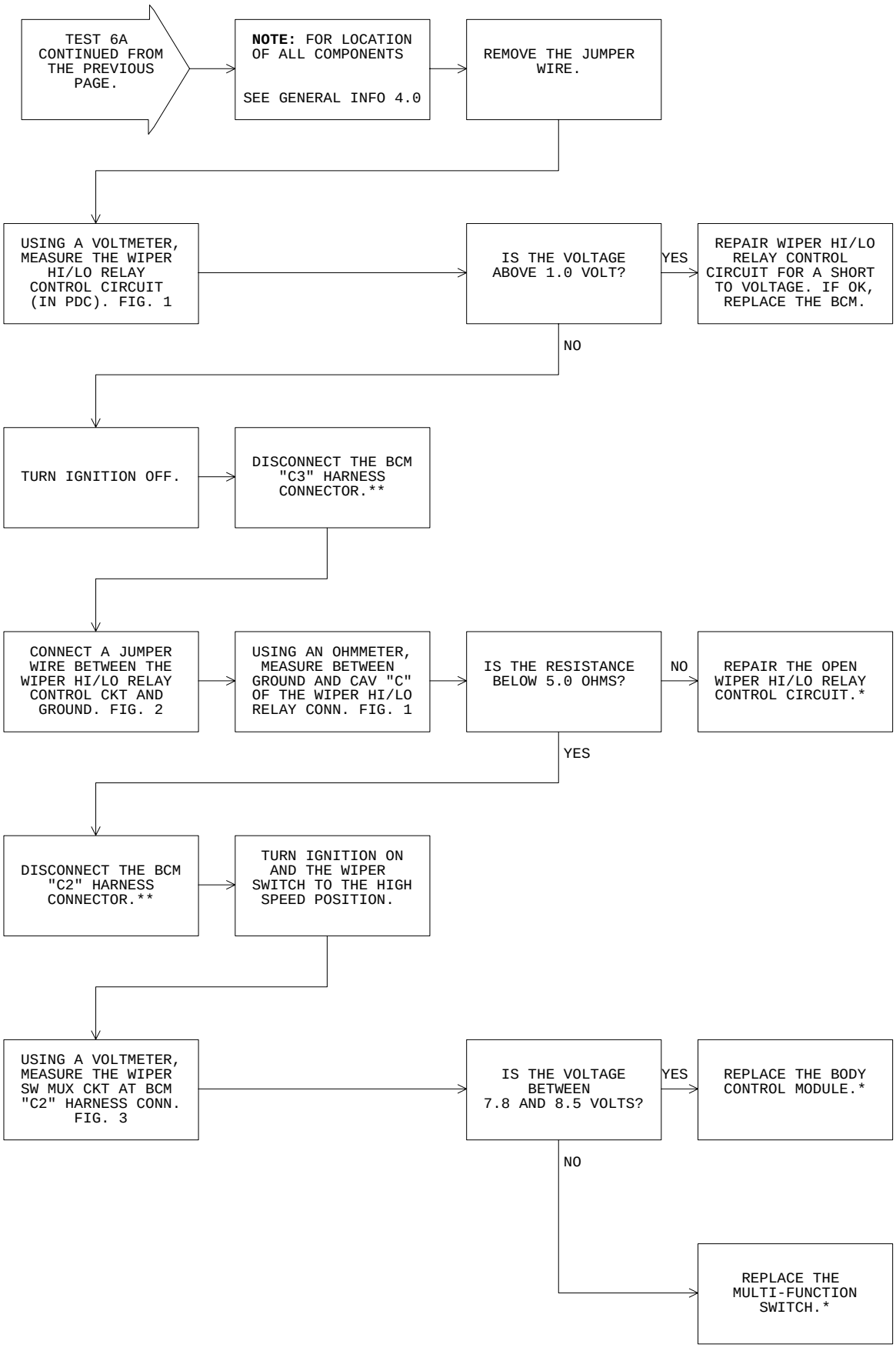



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

80b11936

*FIG. 3*

## TEST 6A CONTINUED - REPAIRING WIPERS NOT WORKING IN THE HIGH SPEED MODE

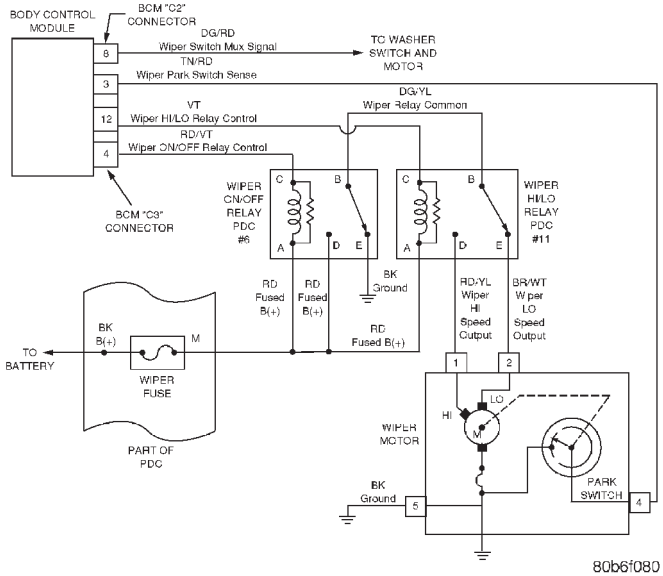


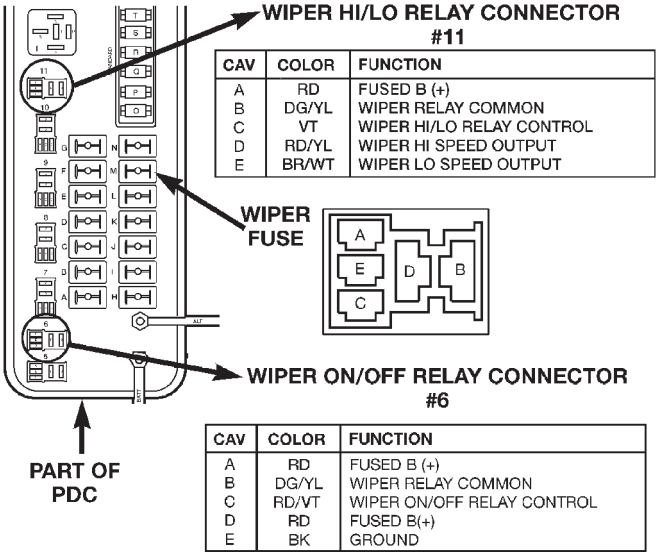

***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

## TEST 7A REPAIRING WIPERS NOT WORKING IN THE LOW SPEED MODE

**Perform TEST 1A Before Proceeding**

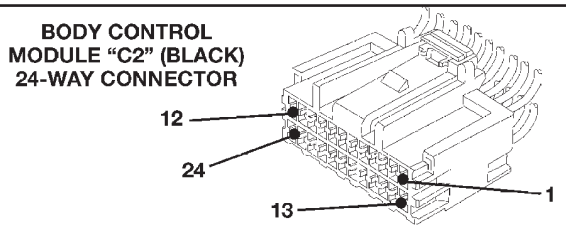



| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | VT | WIPER HI/LO RELAY CONTROL |
| D | RD/YL | WIPER HI SPEED OUTPUT |
| E | BR/WT | WIPER LO SPEED OUTPUT |

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | RD/VT | WIPER ON/OFF RELAY CONTROL |
| D | RD | FUSED B(+) |
| E | BK | GROUND |

***FIG. 1***

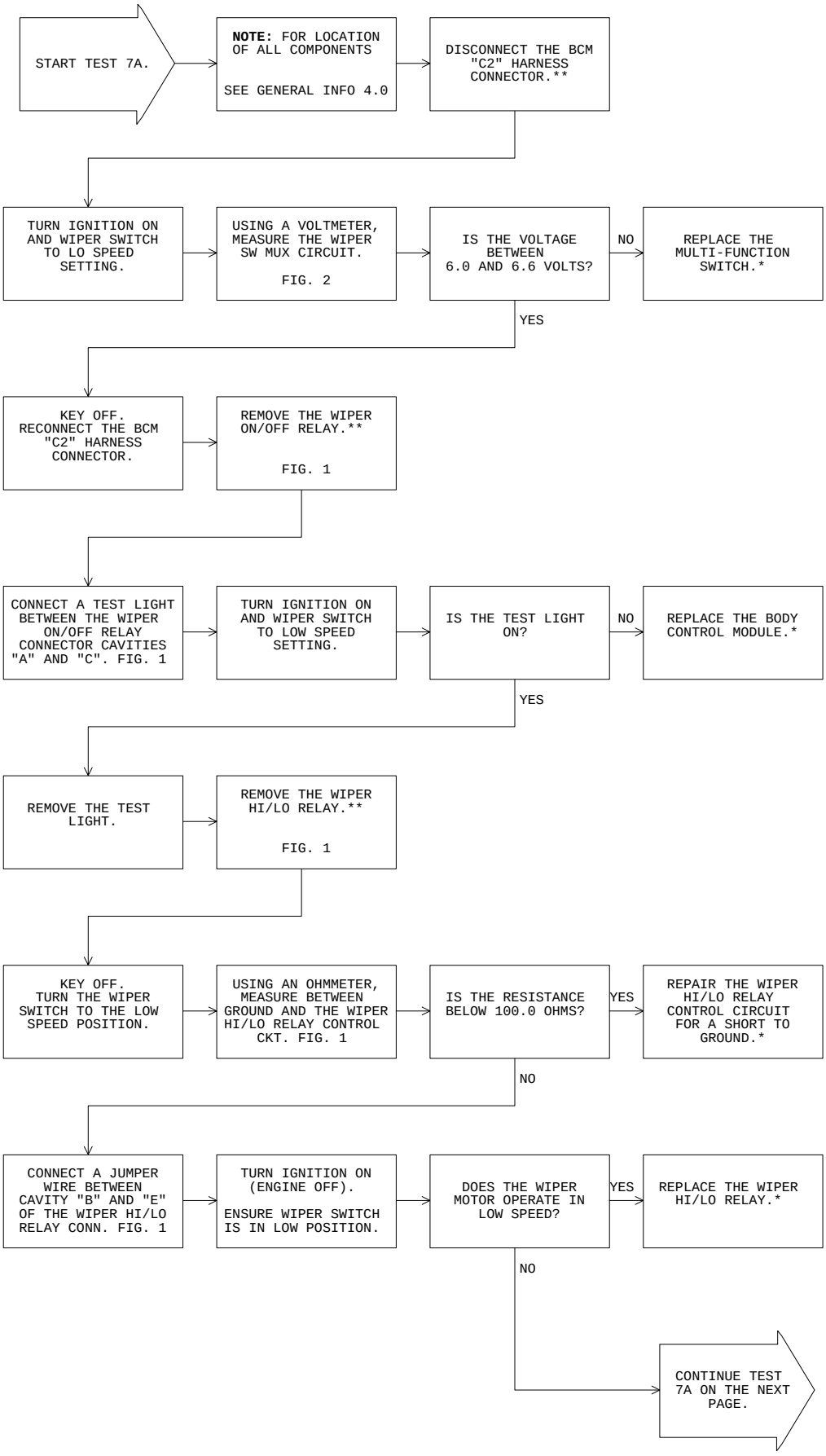



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/WT | BLEND DOOR FEEDBACK SIGNAL |
| 2 | YL | HEADLAMP SWITCH MUX |
| 5 | YL/DG | ASPIRATOR MOTOR DRIVER |
| 6 | RD/LG | BLOWER MOTOR CONTROL |
| 7 | BR | WASHER PUMP CONTROL SWITCH OUTPUT |
| 8 | DG/RD | WINDSHIELD WIPER SWITCH MUX |
| 9 | YL/WT | MODE DOOR FEEDBACK SIGNAL |
| 10 | DB | SUN SENSOR SIGNAL |
| 12 | YL/OR | TEMPERATURE SELECT SIGNAL |
| 13 | YL/BK | DAY BRIGHTNESS SENSE |
| 14 | VT/PK | A/C INDICATOR SIGNAL |
| 15 | PK/DB | 5 VOLT SUPPLY |
| 19 | WT | HEADLAMP SWITCH RETURN |
| 20 | LG/BK | EVAPORATOR TEMPERATURE SENSOR SIGNAL |
| 21 | RD | PANEL LAMPS DIMMER SIGNAL |
| 22 | RD/TN | IN-CAR TEMPERATURE SENSOR SIGNAL (ATC) |
| 22 | RD/TN | MODE SWITCH MUX (WO/ATC) |
| 23 | BK/OR | VTSS INDICATOR LAMP DRIVER |
| 24 | LB | KEY-IN IGNITION SWITCH SENSE |

***FIG. 2***

## TEST 7A — REPAIRING WIPERS NOT WORKING IN THE LOW SPEED MODE

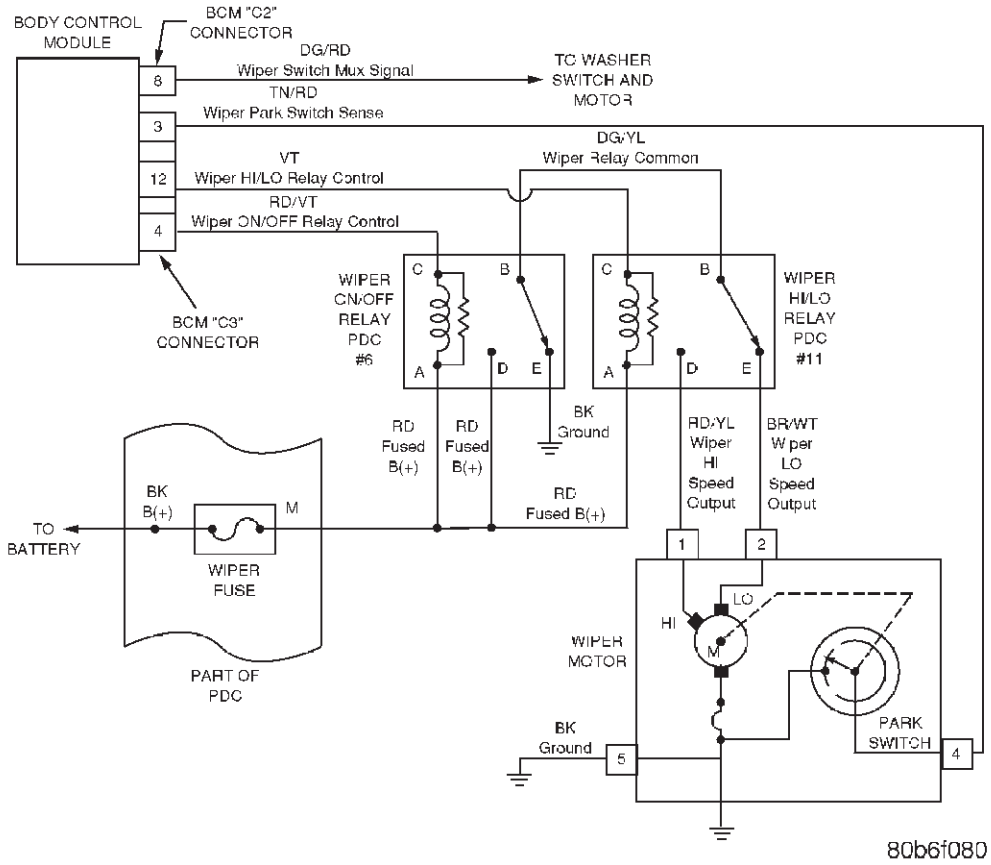
**Perform TEST 1A Before Proceeding**

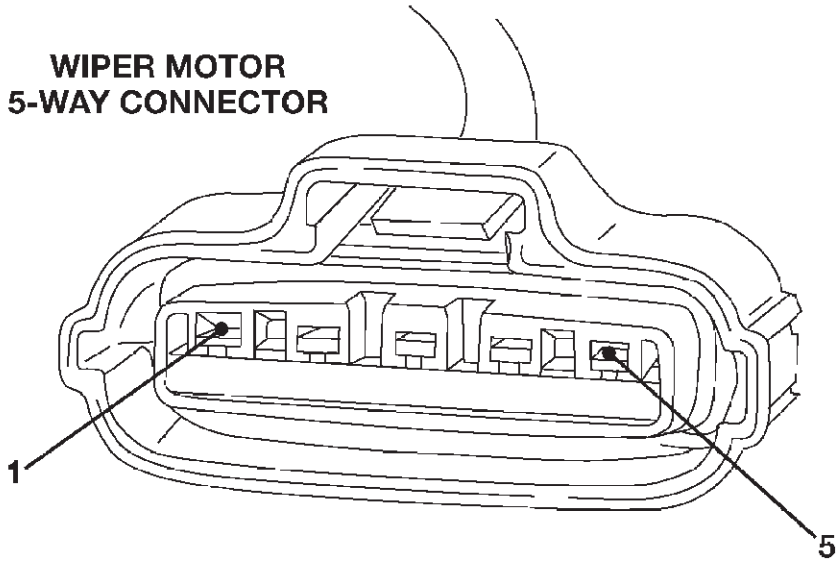



***Perform Verification TEST VER-2A.***

*****Check connectors - Clean / repair as necessary.***

**TEST 7A** **CONTINUED - REPAIRING WIPERS NOT WORKING IN THE LOW SPEED MODE**



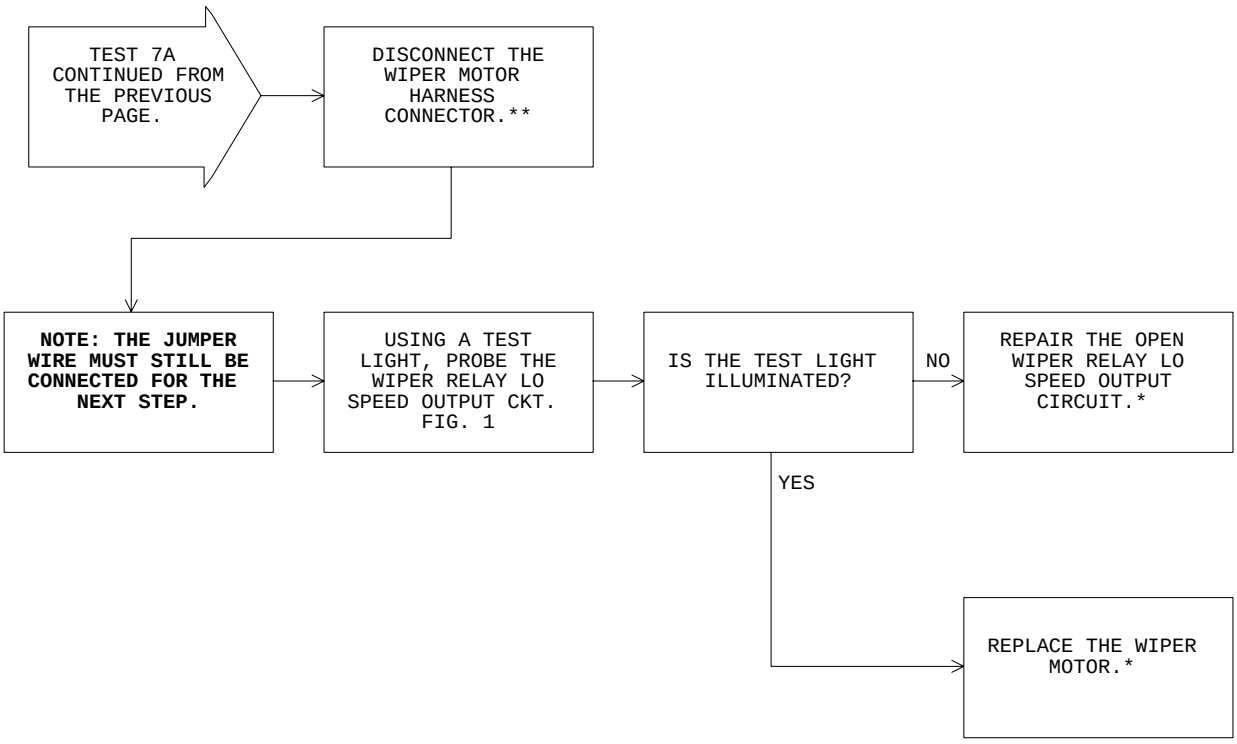




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/YL | WIPER SWITCH HIGH SPEED OUTPUT |
| 2 | BR/WT | WIPER SWITCH LOW SPEED OUTPUT |
| 4 | TN/RD | WIPER PARK SWITCH SENSE |
| 5 | BK | GROUND |

80b57509

***FIG. 1***

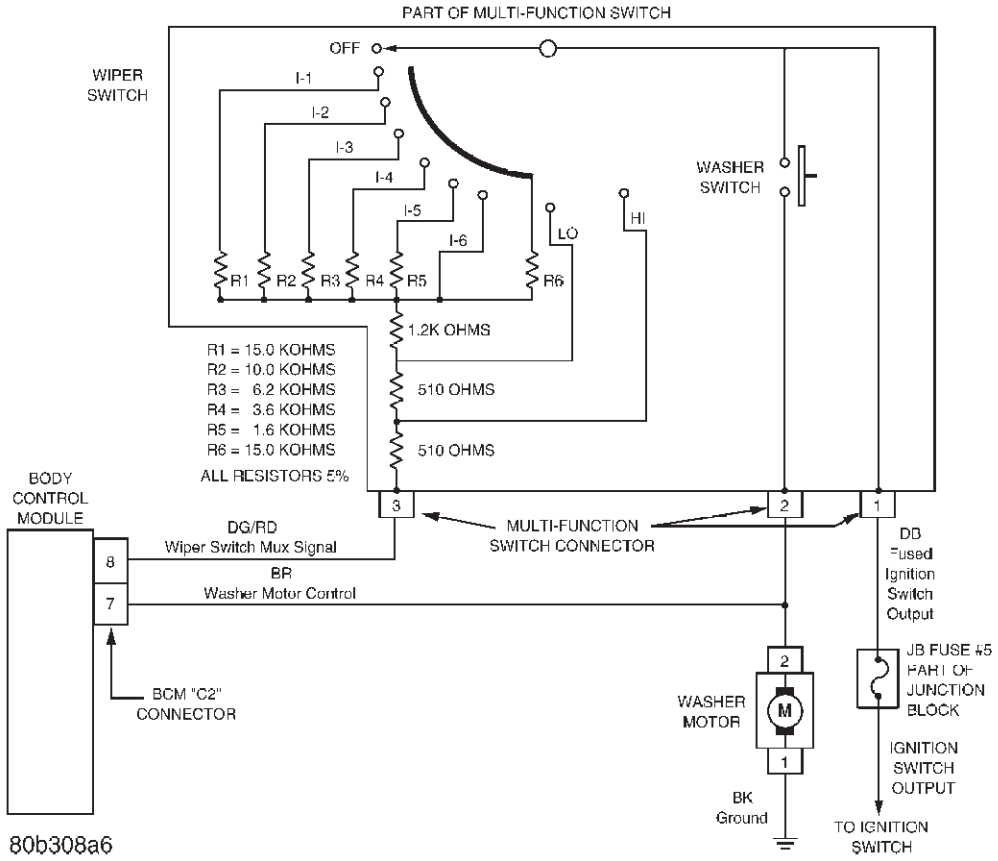
## TEST 7A CONTINUED - REPAIRING WIPERS NOT WORKING IN THE LOW SPEED MODE

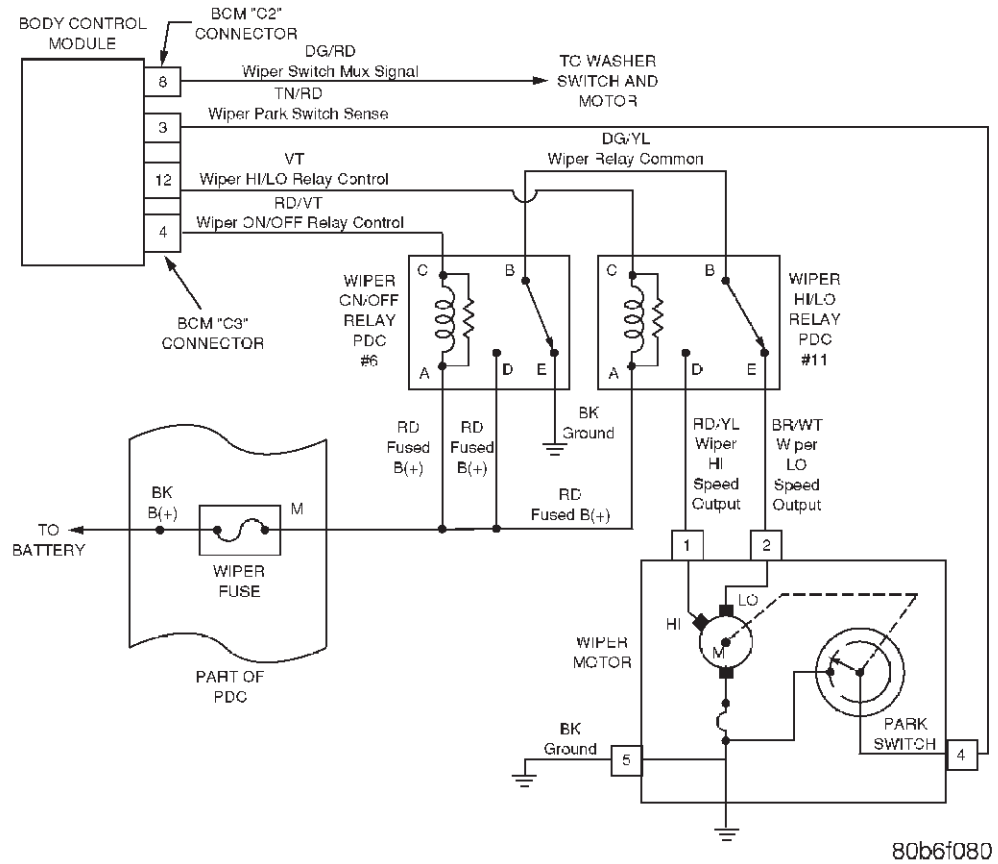



**Perform Verification TEST VER-2A.* | ***Check connectors - Clean / repair as necessary.*

## TEST 8A REPAIRING WIPERS NOT WORKING IN THE INTERMITTENT MODE

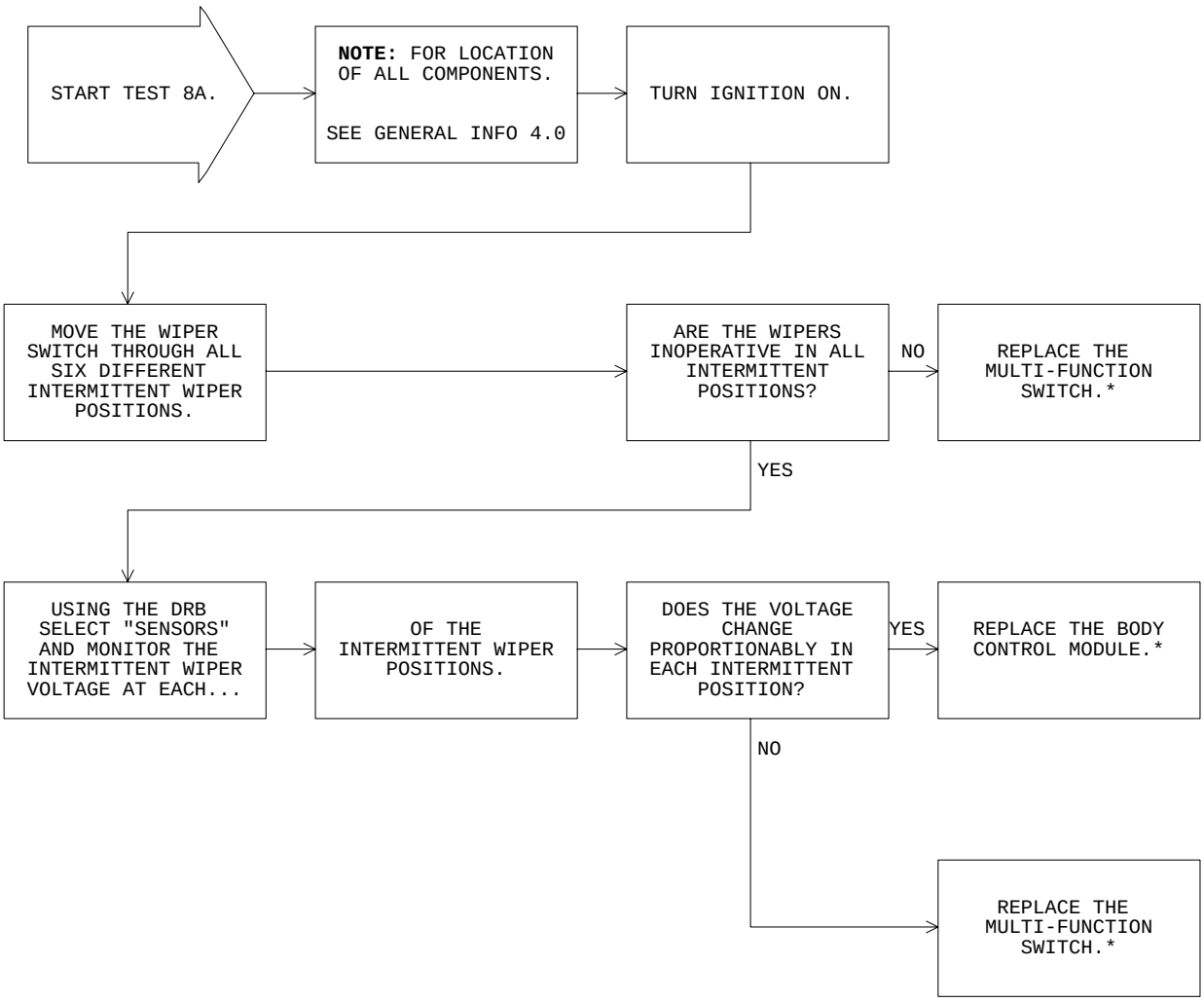
**Perform TEST 1A Before Proceeding**



## TEST 8A REPAIRING WIPERS NOT WORKING IN THE INTERMITTENT MODE

**Perform TEST 1A Before Proceeding**

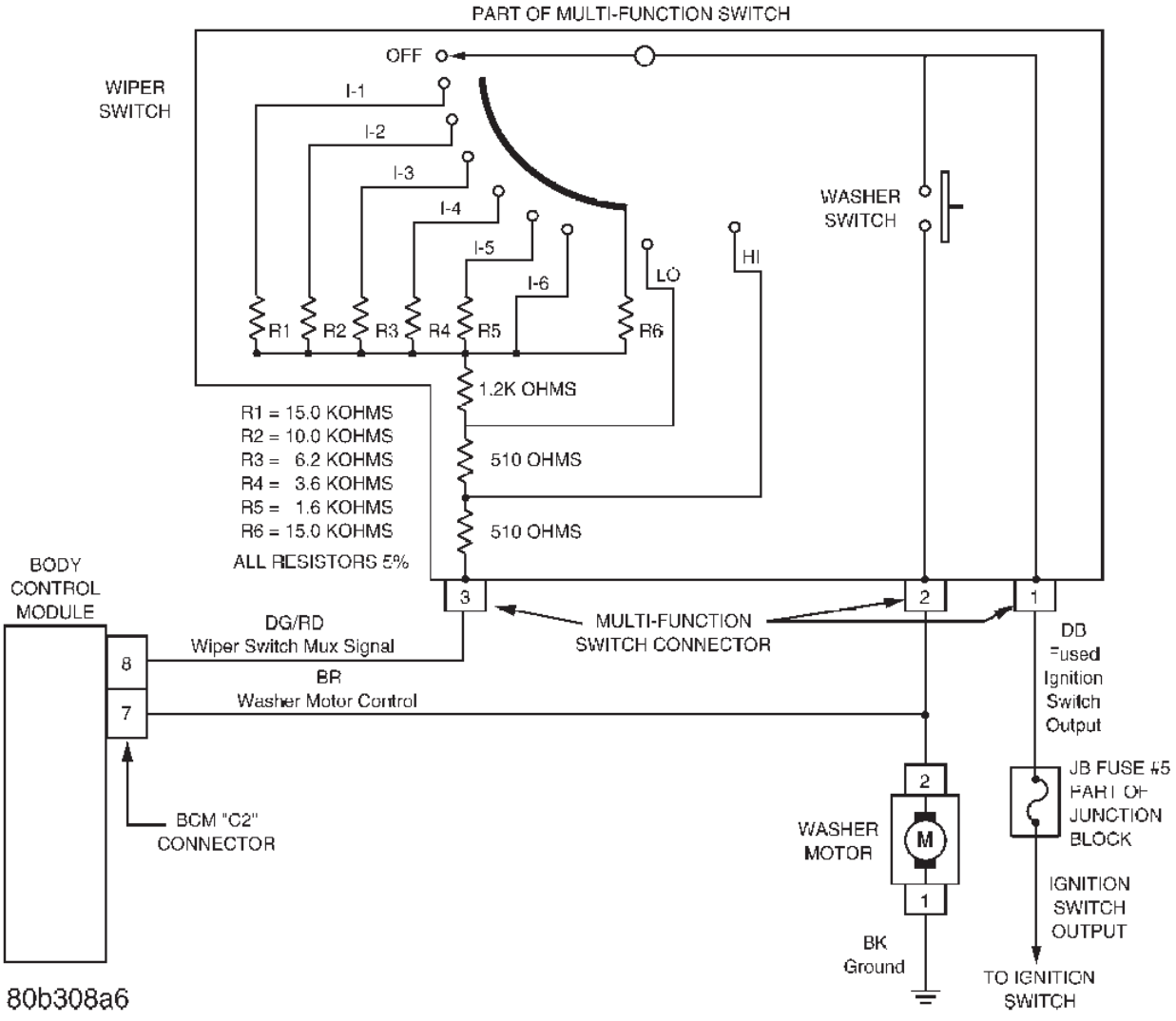



***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.**

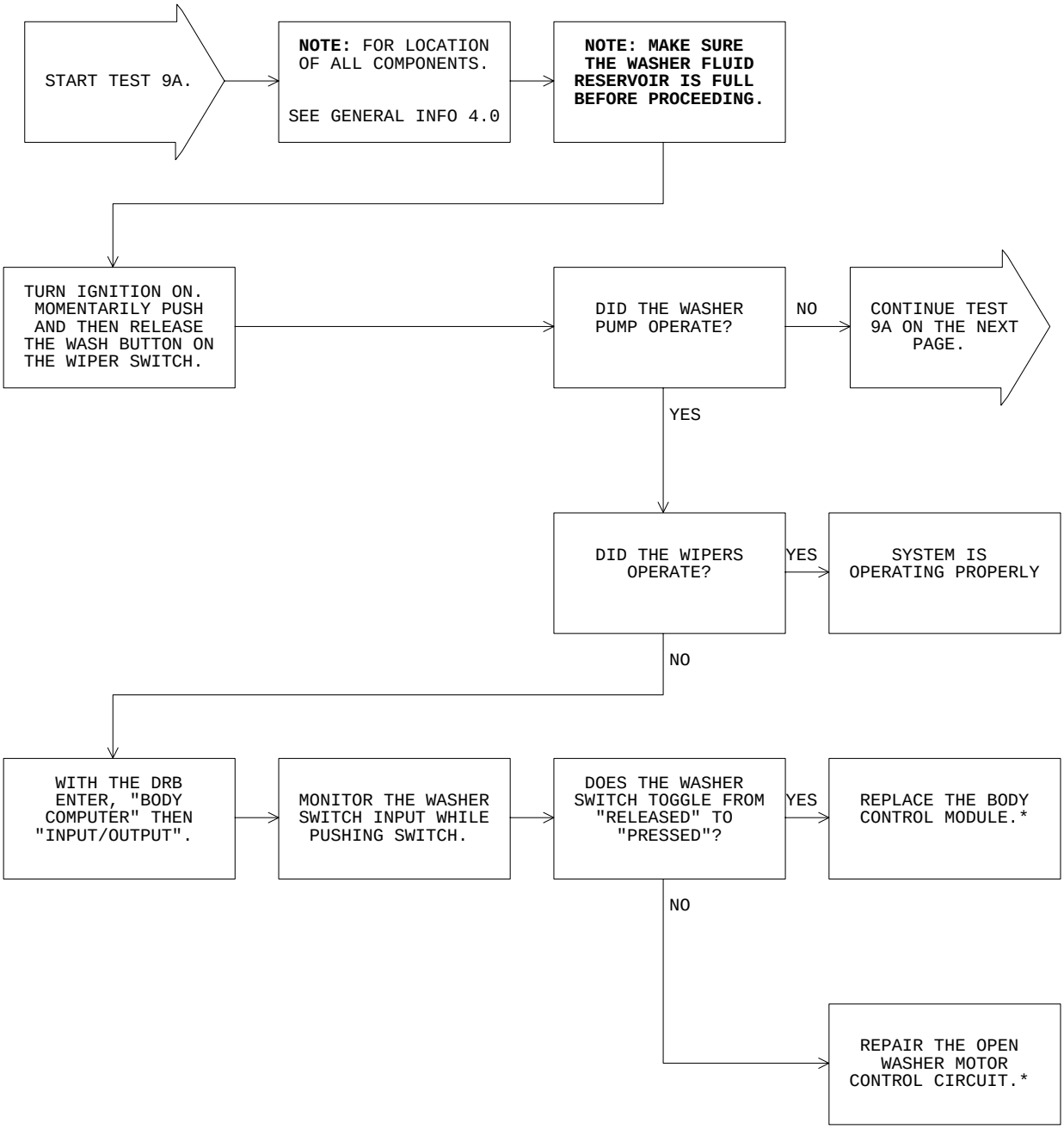
## TEST 9A REPAIRING WIPER WASH FUNCTION NOT WORKING PROPERLY

**Perform TEST 1A Before Proceeding**



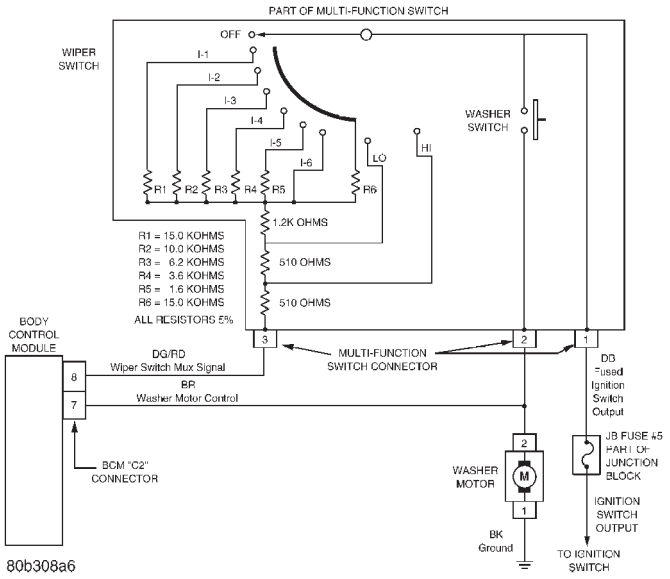
## TEST 9A REPAIRING WIPER WASH FUNCTION NOT WORKING PROPERLY

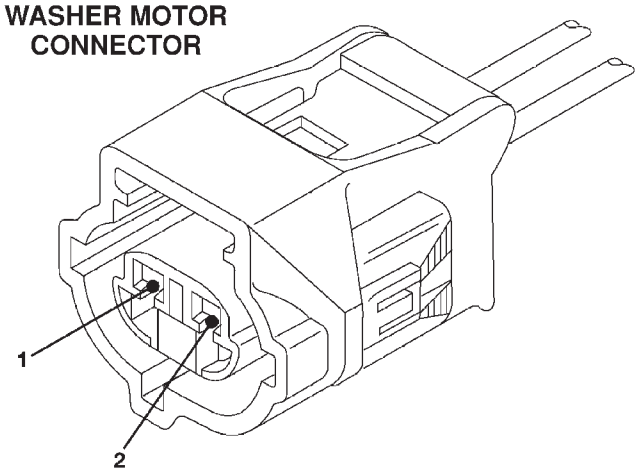
**Perform TEST 1A Before Proceeding**




***Perform Verification TEST VER-2A.** | ***Check connectors - Clean / repair as necessary.**

## TEST 9A CONTINUED - REPAIRING WIPERS WASH FUNCTION NOT WORKING PROPERLY

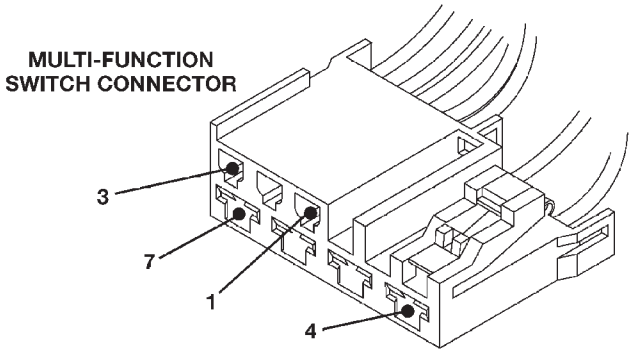



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | BR | WASHER MOTOR CONTROL |

80b34e16

***FIG. 1***

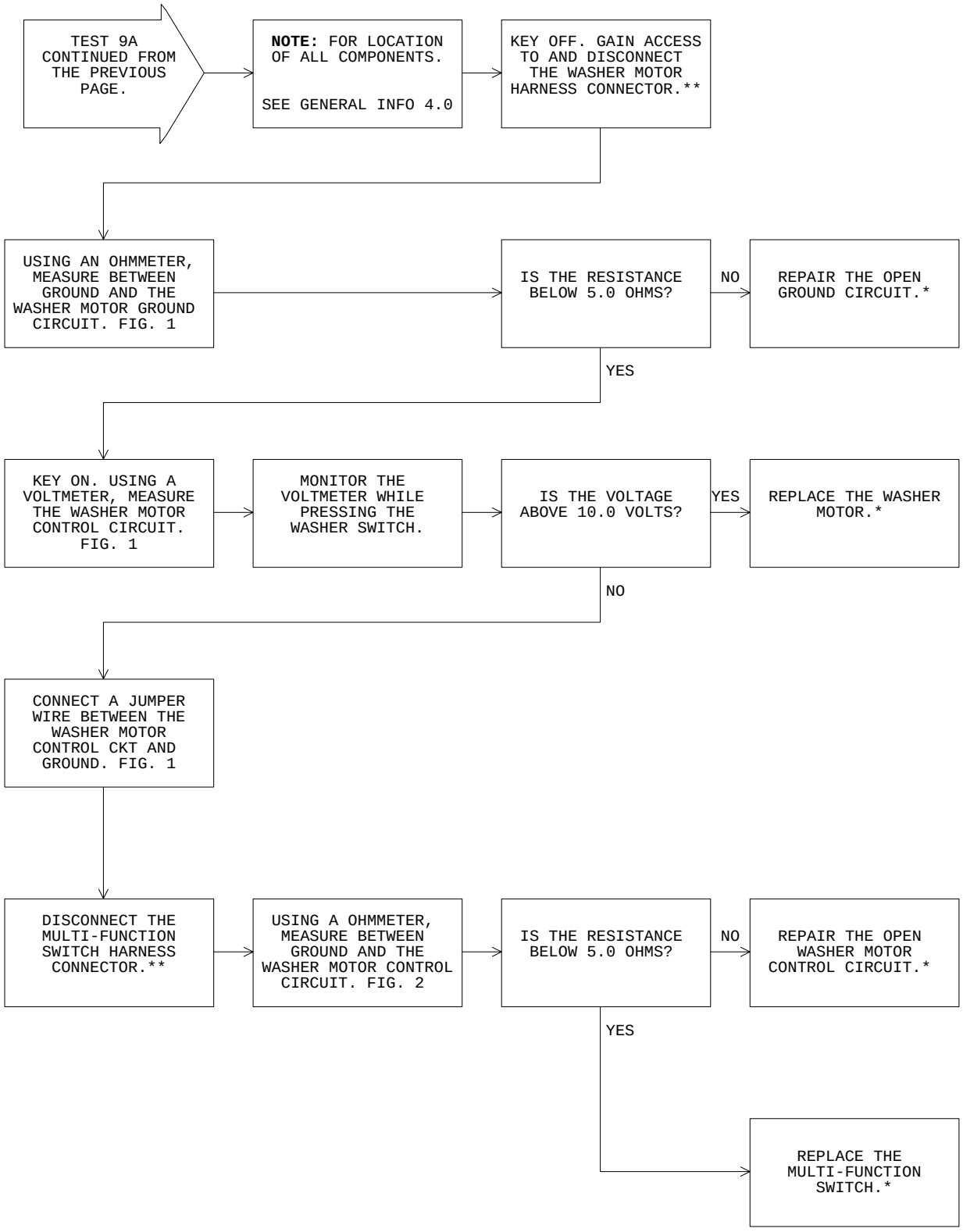



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | DB | FUSED IGNITION SWITCH OUTPUT |
| 2 | BR | WASHER MOTOR CONTROL |
| 3 | DG/RD | WIPER SWITCH MUX SIGNAL |
| 4 | BR/WT | FUSED LOW BEAM RELAY OUTPUT |
| 5 | PK/RD | FUSED B(+) |
| 7 | WT/LG | SWITCHED HIGH BEAM RELAY CONTROL |

80b6b155

***FIG. 2***

## TEST 9A CONTINUED - REPAIRING WIPERS WASH FUNCTION NOT WORKING PROPERLY

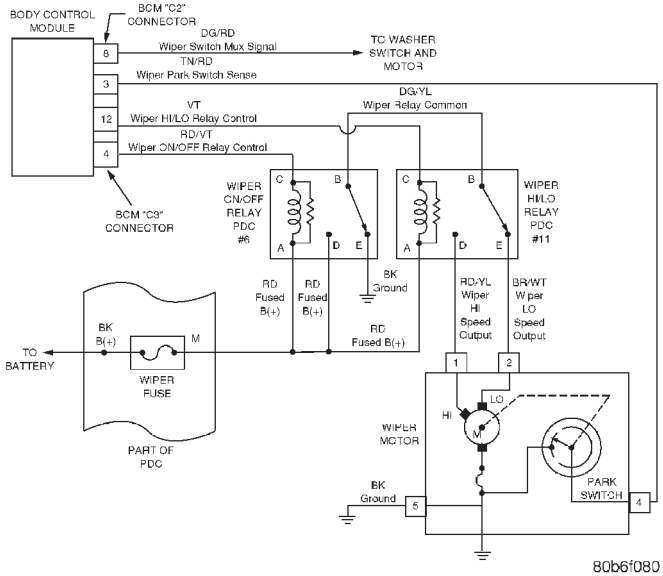


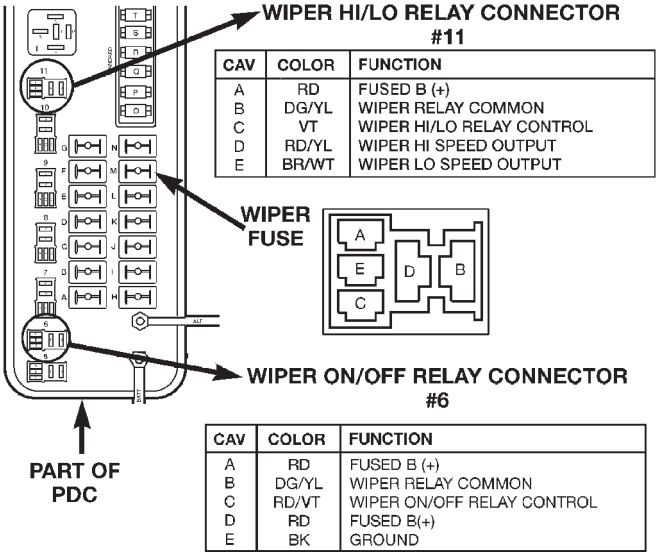

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 10A REPAIRING WIPERS OPERATE IN HIGH SPEED ONLY

**Perform TEST 1A Before Proceeding**



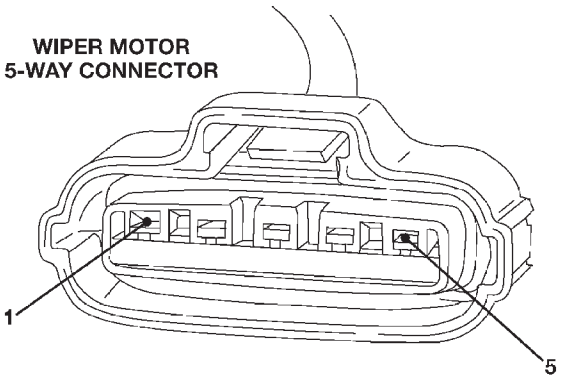




| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | VT | WIPER HI/LO RELAY CONTROL |
| D | RD/YL | WIPER HI SPEED OUTPUT |
| E | BR/WT | WIPER LO SPEED OUTPUT |

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | RD/VT | WIPER ON/OFF RELAY CONTROL |
| D | RD | FUSED B(+) |
| E | BK | GROUND |

80b6f081

***FIG. 1***



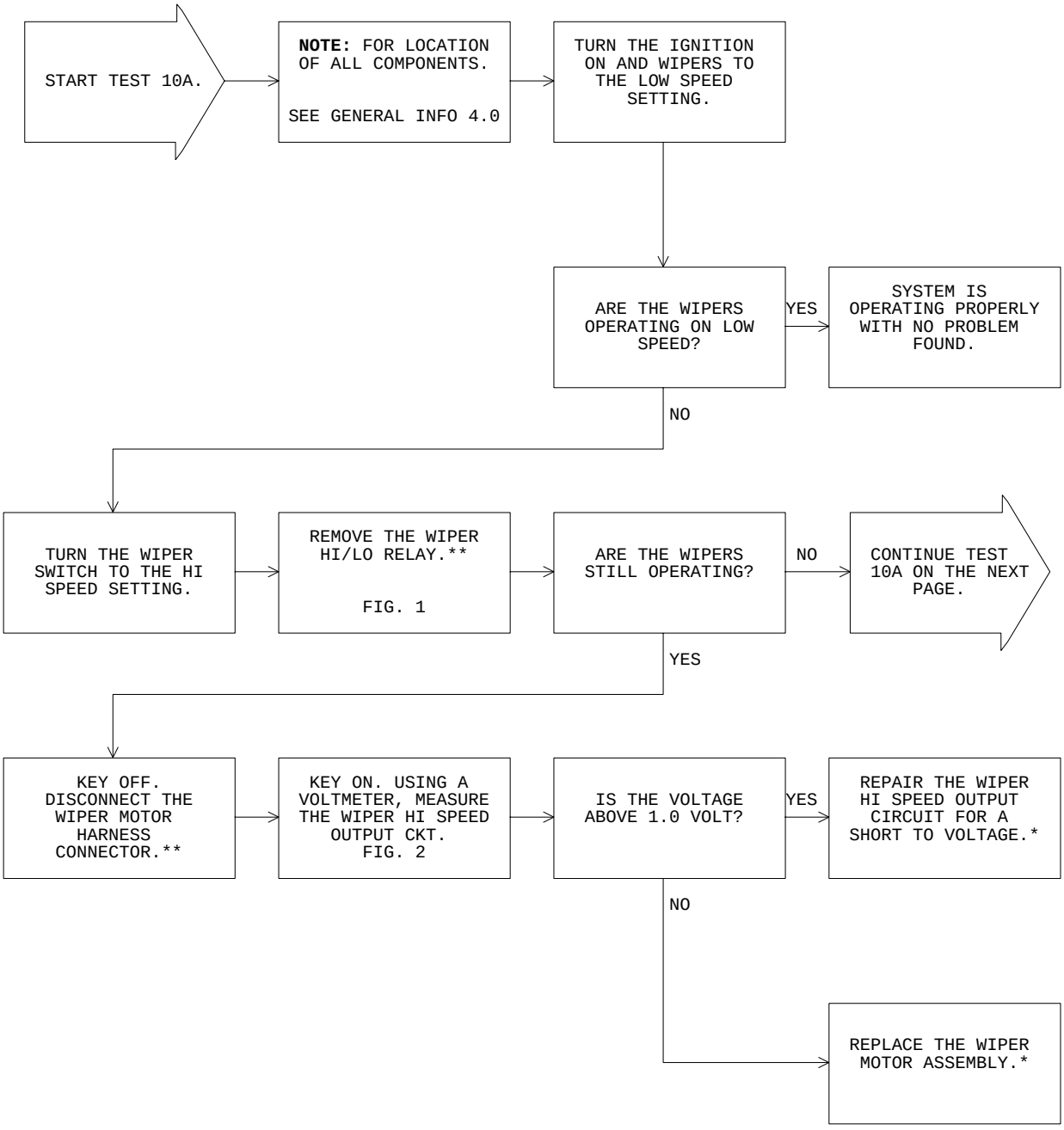

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/YL | WIPER SWITCH HIGH SPEED OUTPUT |
| 2 | BR/WT | WIPER SWITCH LOW SPEED OUTPUT |
| 4 | TN/RD | WIPER PARK SWITCH SENSE |
| 5 | BK | GROUND |

80b57509

***FIG. 2***

## TEST 10A REPAIRING WIPERS OPERATE IN HIGH SPEED ONLY

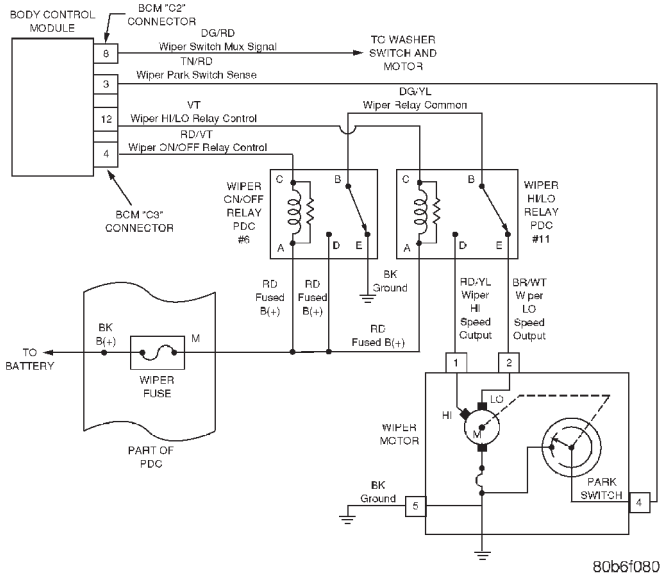
**Perform TEST 1A Before Proceeding**

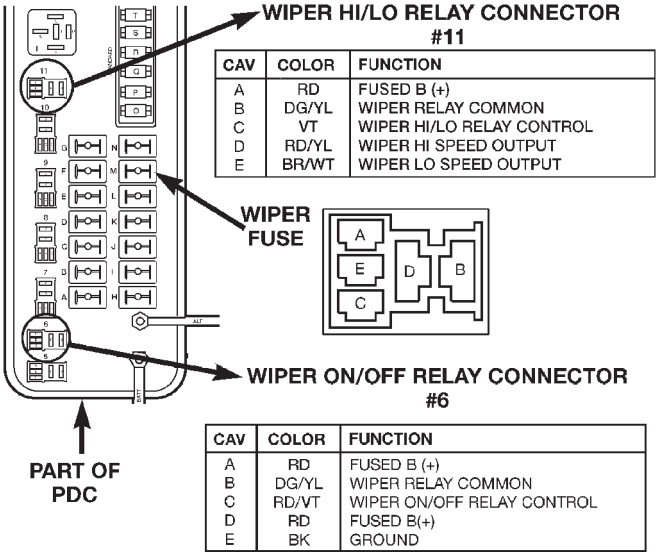



***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

## TEST 10A — CONTINUED - REPAIRING WIPERS OPERATE IN HIGH SPEED ONLY

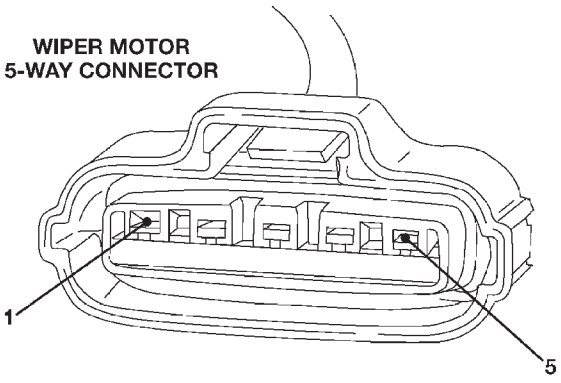



| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | VT | WIPER HI/LO RELAY CONTROL |
| D | RD/YL | WIPER HI SPEED OUTPUT |
| E | BR/WT | WIPER LO SPEED OUTPUT |

| CAV | COLOR | FUNCTION |
|---|---|---|
| A | RD | FUSED B (+) |
| B | DG/YL | WIPER RELAY COMMON |
| C | RD/VT | WIPER ON/OFF RELAY CONTROL |
| D | RD | FUSED B(+) |
| E | BK | GROUND |

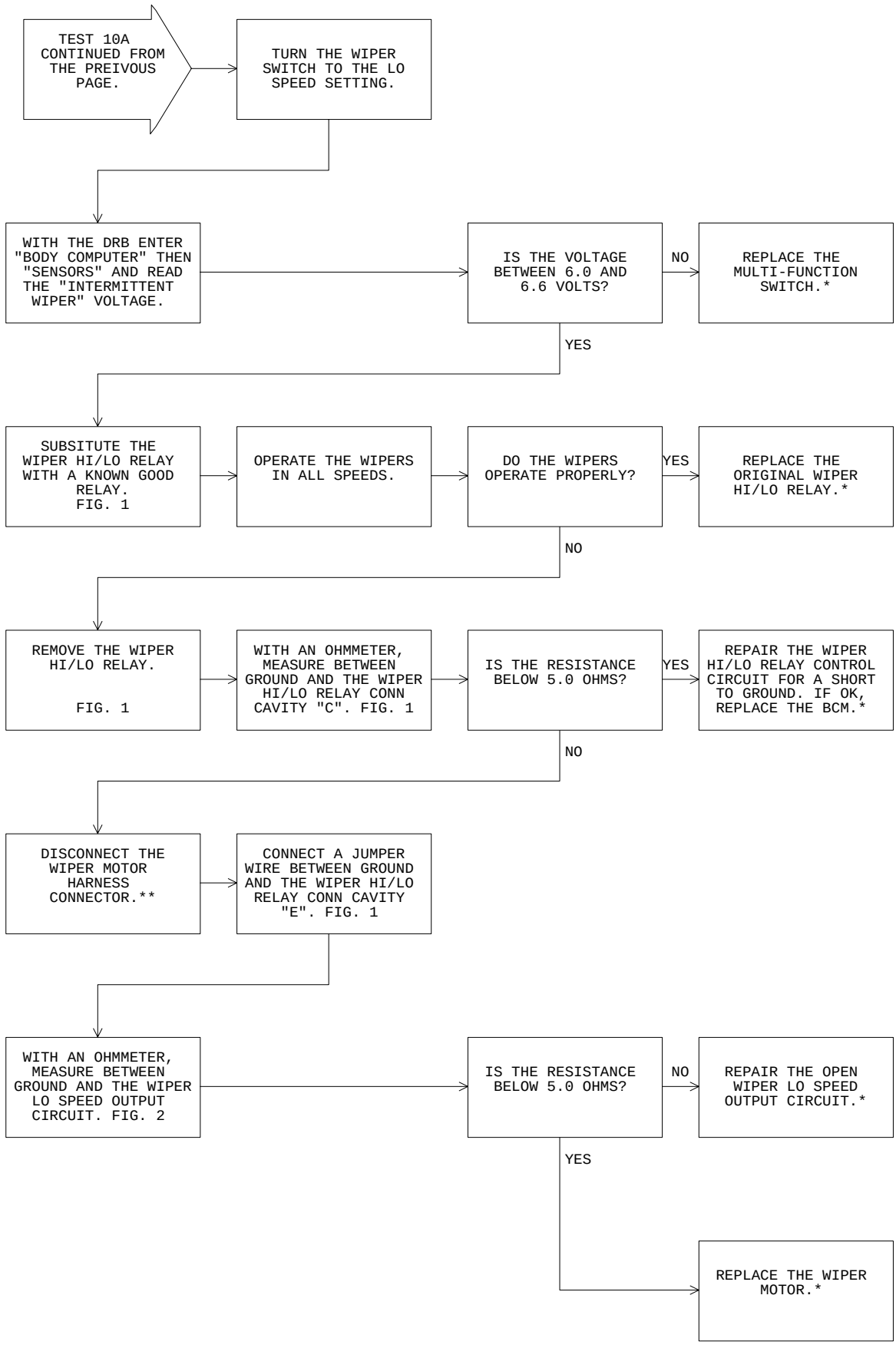
***FIG. 1***




| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | RD/YL | WIPER SWITCH HIGH SPEED OUTPUT |
| 2 | BR/WT | WIPER SWITCH LOW SPEED OUTPUT |
| 4 | TN/RD | WIPER PARK SWITCH SENSE |
| 5 | BK | GROUND |

***FIG. 2***

## TEST 10A CONTINUED - REPAIRING WIPERS OPERATE IN HIGH SPEED ONLY

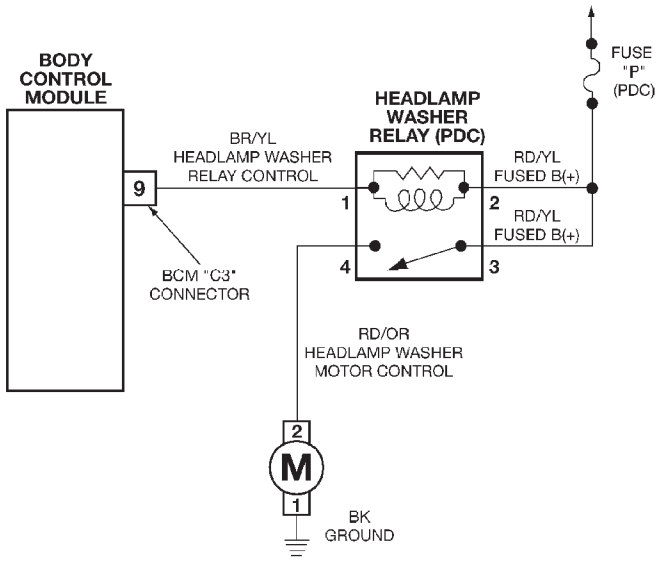


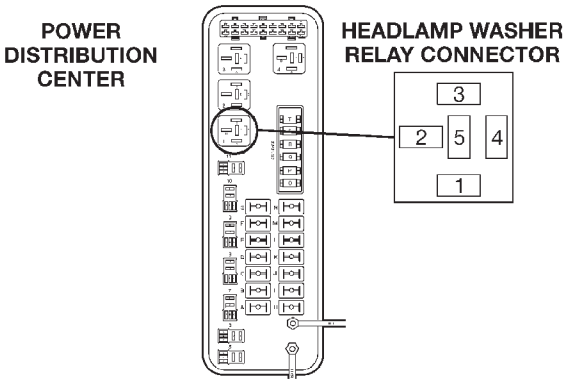

***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST 11A REPAIRING - HEADLAMP WASHERS NOT WORKING PROPERLY

**Perform TEST 1A Before Proceeding**

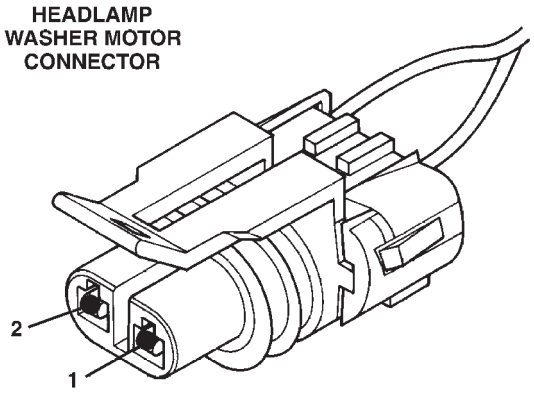



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BR/YL | HEADLAMP WASHER RELAY CONTROL |
| 2 | RD/YL | FUSED B(+) |
| 3 | RD/YL | FUSED B(+) |
| 4 | RD/OR | HEADLAMP WASHER MOTOR CONTROL |

80b575e9

***FIG. 1***



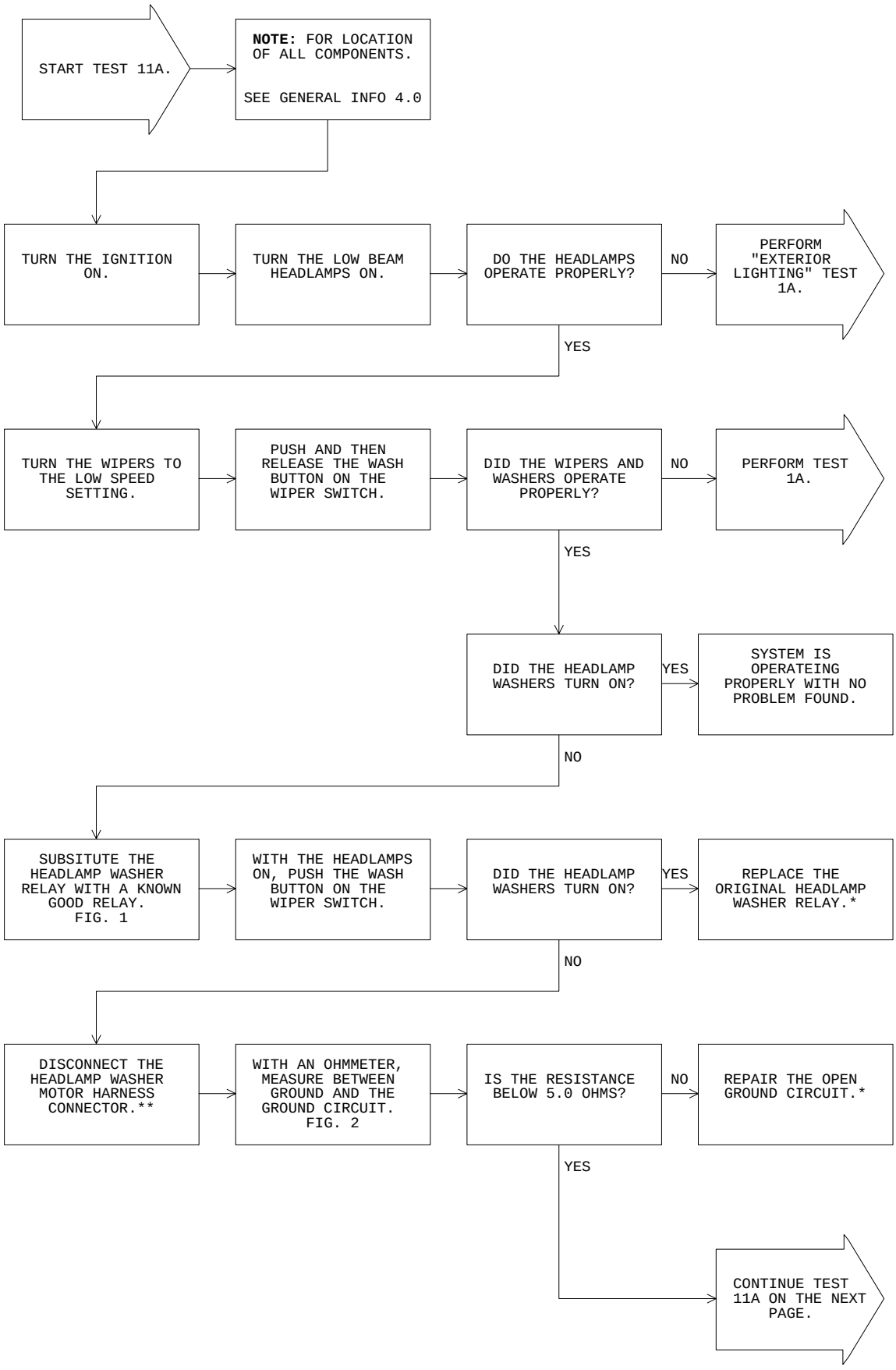

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | RD/OR | HEADLAMP WASHER MOTOR CONTROL |

80b575ea

***FIG. 2***

## TEST 11A REPAIRING - HEADLAMP WASHERS NOT WORKING PROPERLY

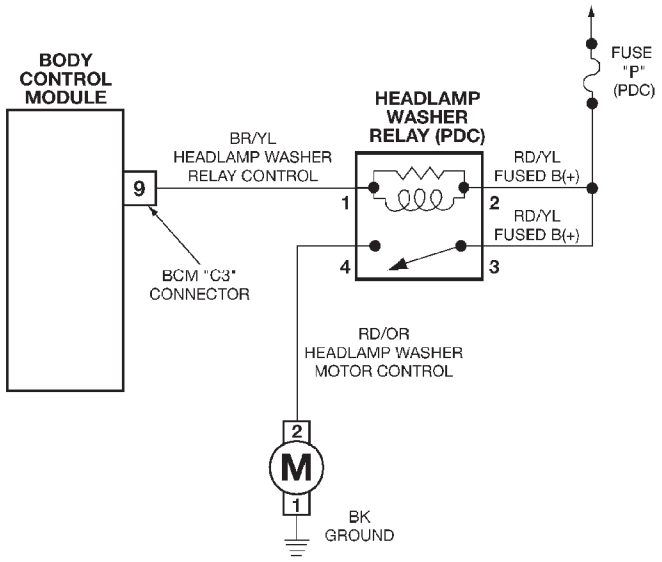
**Perform TEST 1A Before Proceeding**



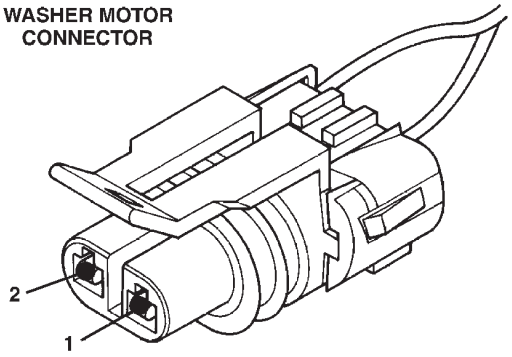

***Perform Verification TEST VER-2A.***

****Check connectors - Clean / repair as necessary.***

## TEST 11A CONTINUED - REPAIRING HEADLAMP WASHERS NOT WORKING PROPERLY




HEADLAMP WASHER MOTOR CONNECTOR



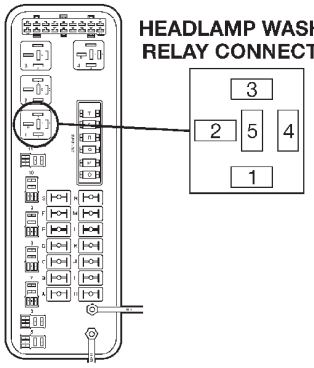

| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BK | GROUND |
| 2 | RD/OR | HEADLAMP WASHER MOTOR CONTROL |

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*FIG. 1*

POWER DISTRIBUTION CENTER

HEADLAMP WASHER RELAY CONNECTOR

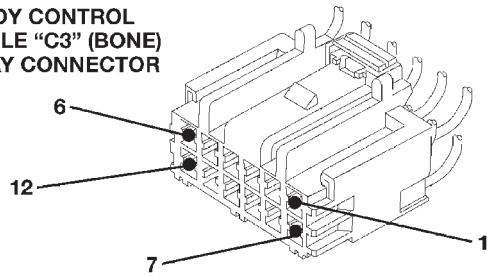



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | BR/YL | HEADLAMP WASHER RELAY CONTROL |
| 2 | RD/YL | FUSED B(+) |
| 3 | RD/YL | FUSED B(+) |
| 4 | RD/OR | HEADLAMP WASHER MOTOR CONTROL |

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*FIG. 2*

BODY CONTROL MODULE "C3" (BONE) 12-WAY CONNECTOR

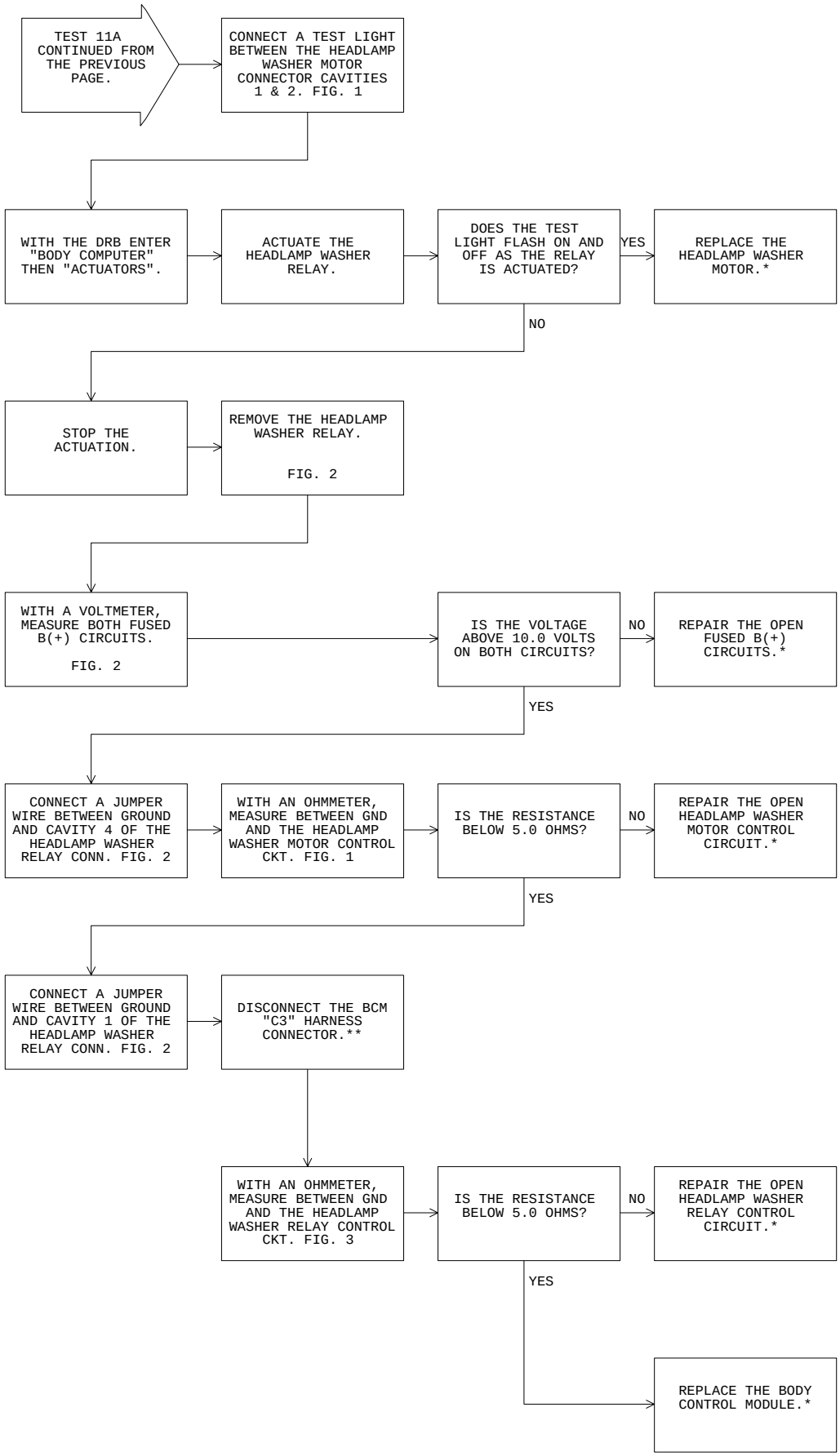



| CAV | COLOR | FUNCTION |
|---|---|---|
| 1 | YL/VT | PCI BUS (PCM) |
| 2 | YL/VT | PCI BUS (ABS) |
| 3 | TN/RD | WIPER PARK SWITCH SENSE |
| 4 | RD/VT | WIPER ON OFF RELAY CONTROL |
| 5 | VT/LG | AMBIENT TEMPERATURE SENSOR SIGNAL |
| 7 | YL/VT | PCI BUS (TCM) |
| 9 | BR/YL | HEADLAMP WASHER RELAY CONTROL |
| 10 | DB/GY | SENSOR GROUND |
| 12 | VT | WIPER HIGH LOW RELAY CONTROL |

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*FIG. 3*

## TEST 11A CONTINUED - REPAIRING HEADLAMP WASHERS NOT WORKING PROPERLY




***Perform Verification TEST VER-2A.***

***Check connectors - Clean / repair as necessary.***

## TEST VER 1A VERIFICATION TEST - AIRBAG

1. Remove all jumper wires and reconnect all previously disconnected components (except the battery).
2. Turn the ignition key on and reconnect the battery.
3. Connect the DRB to the data link connector (use the most current software available).
4. Use the DRB to erase the stored codes.
5. Turn the ignition off and wait 15 seconds before turning the ignition on.
6. Wait one minute, and read the active codes.
7. Does the DRB display any active codes?

   YES - Perform Airbag Test 1A.
   NO - Perform step number 8.

8. With the DRB read the stored codes.
9. Does the DRB display any stored codes?

   YES - Perform Airbag Test 1A.
   NO − System operating properly at this time.

## TEST VER 2A VERIFICATION TEST - BODY

1. Reconnect all previously disconnected components and connectors.
2. Was the body control module replaced?

   NO − Continue to step 3.
   YES - Use the DRB and:

   1. Program all RKE transmitters used with this vehicle.
   2. Recalibrate HVAC doors.
   3. Program other options as necessary.

3. If any repairs were made to the HVAC system or the battery was disconnected:
   Start the engine and, using the DRB, recalibrate the HVAC doors.
4. Ensure that the ignition is on, and with the DRB, erase all diagnostic trouble codes.
5. Turn ignition off and wait 5 seconds.
6. Turn ignition on and fully operate the system that was malfunctioning.

   − If the system is operating properly, continue to step 7.

   − If the system is not operating properly, repeat ‘‘Symptom ID’’ TEST 1A.

7. With the DRB, read body control module trouble codes.

   − If no codes are present and the customer’s complaint cannot be duplicated, the repair is complete.

   − If any codes are present, perform ‘‘Symptom ID’’ TEST 1B.

## TEST VER 3A VERIFICATION TEST - VEHICLE THEFT SECURITY SYSTEM

To verify the system, proceed as follows:

> Make sure all doors, trunk and hood are closed.

> Open driver's door.

> Remove the ignition key (but keep it in hand).

> Lock the doors with the power door lock switch.

> Close the driver's door.

> If the instrument panel VTSS indicator lamp flashed, the system is operational and verified. If not, perform VTSS TEST 1A.

## TEST VER 4A VERIFICATION TEST - MEMORY SYSTEM

1. Reconnect all previously disconnected components and connectors.
2. Ensure the ignition is on and using the DRB, erase the memory system trouble codes.
3. Operate the power seat in all positions.
4. Reset the seat and mirrors in both memory positions.
5. Operate both seat heaters low and high.
6. Using the DRB read DTC's.
   No DTC's - repair complete
   DTC's present - perform "Memory System" TEST 1A

**TEST VER 4A** VERIFICATION TEST - MEMORY SYSTEM

## NOTES

## 8.0 MAINTENANCE AND SERVICE INFORMATION

### 8.1 Replacing Bulbs and Fuses

When replacing a blown fuse, it is important to use only a fuse having the correct amperage rating. The use of a fuse with a rating other than indicated may result in a dangerous electrical system overload. If a properly rated fuse continues to blow, it indicates a problem in the circuit that must be corrected.

When replacing any bulbs, do not touch the new bulb with your fingers. Oil contamination will severely shorten bulb life. If the new bulb comes in contact with an oily surface, clean the bulb with rubbing alcohol.

**Important Note:**

If the Powertrain Control Module has been changed and the correct VIN and mileage have not been programmed, a DTC will be set in the Airbag module. In addition, if the vehicle is equipped with a Sentry Key Immobilizer Module (SKIM), Secret Key data must be updated to enable starting. Refer to the Powertrain Diagnostic Procedures Manual for additional information.

**For Airbag system:**

ACTION:

1. Enter correct VIN and Mileage in PCM.
2. Erase codes in Airbag module.

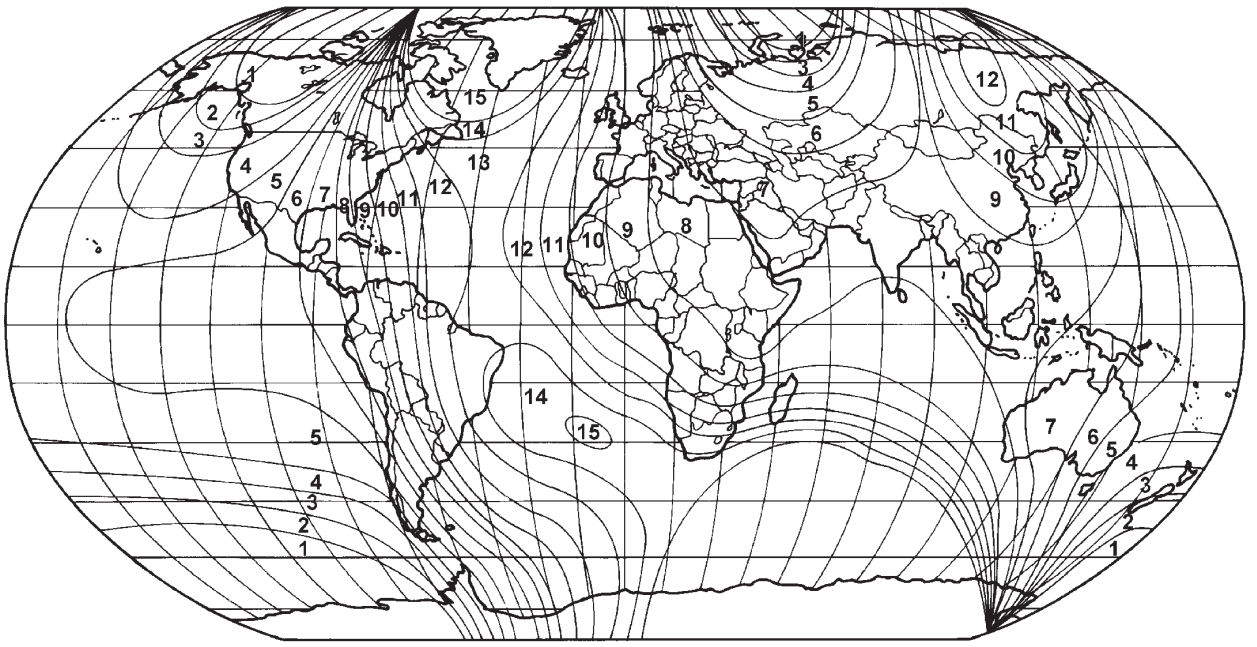
## 9.0 SPECIFICATIONS

### 9.1 Setting the Compass

The compass in the OTIS module is self-calibrating and requires no manual adjustment. If calibration is required, the word CAL will be displayed to indicate that the compass is in the fast calibrating mode. ‘‘CAL’’ will turn off after the calibration is completed, only if the OTIS/HOMELINK System is not located within a high strength magnetic field.

### 9.2 Setting the Compass Variance

Variance is the difference between north and geographic north. To determine the variance for the area you are in, refer to the zone map below and follow the instructions provided on the this page. The number shown for your area is the variance number for your area.

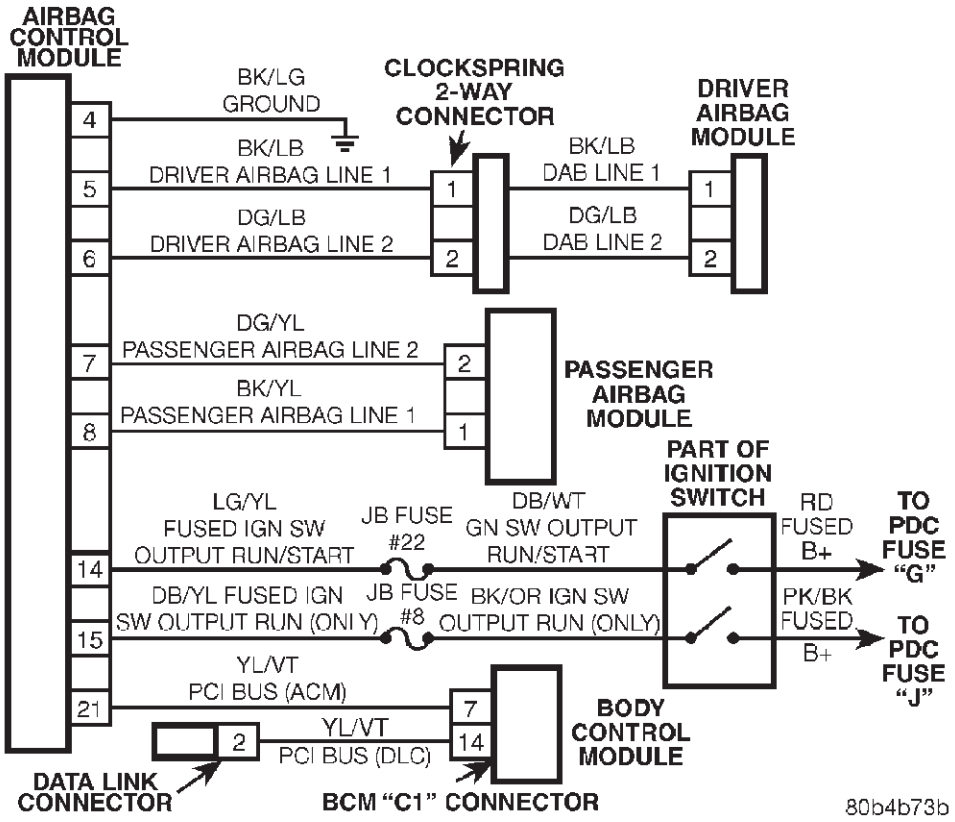



1. With ignition on, use the C/T button to select the Compass/Temperature display.
2. Press and hold the RESET button for 5 seconds (but less than 10 seconds). OTIS displays the last variance zone and the word VAR. All other display segments are off.
3. Use the STEP button to select the proper variance zone number (1-15). Each variance zone represents a 4-degree shift in magnetic variation from central zone 8, which has no variation from true north.
4. After selecting the proper variance zone number, press the RESET switch. The new variance zone is then set and the OTIS will resume normal operation.

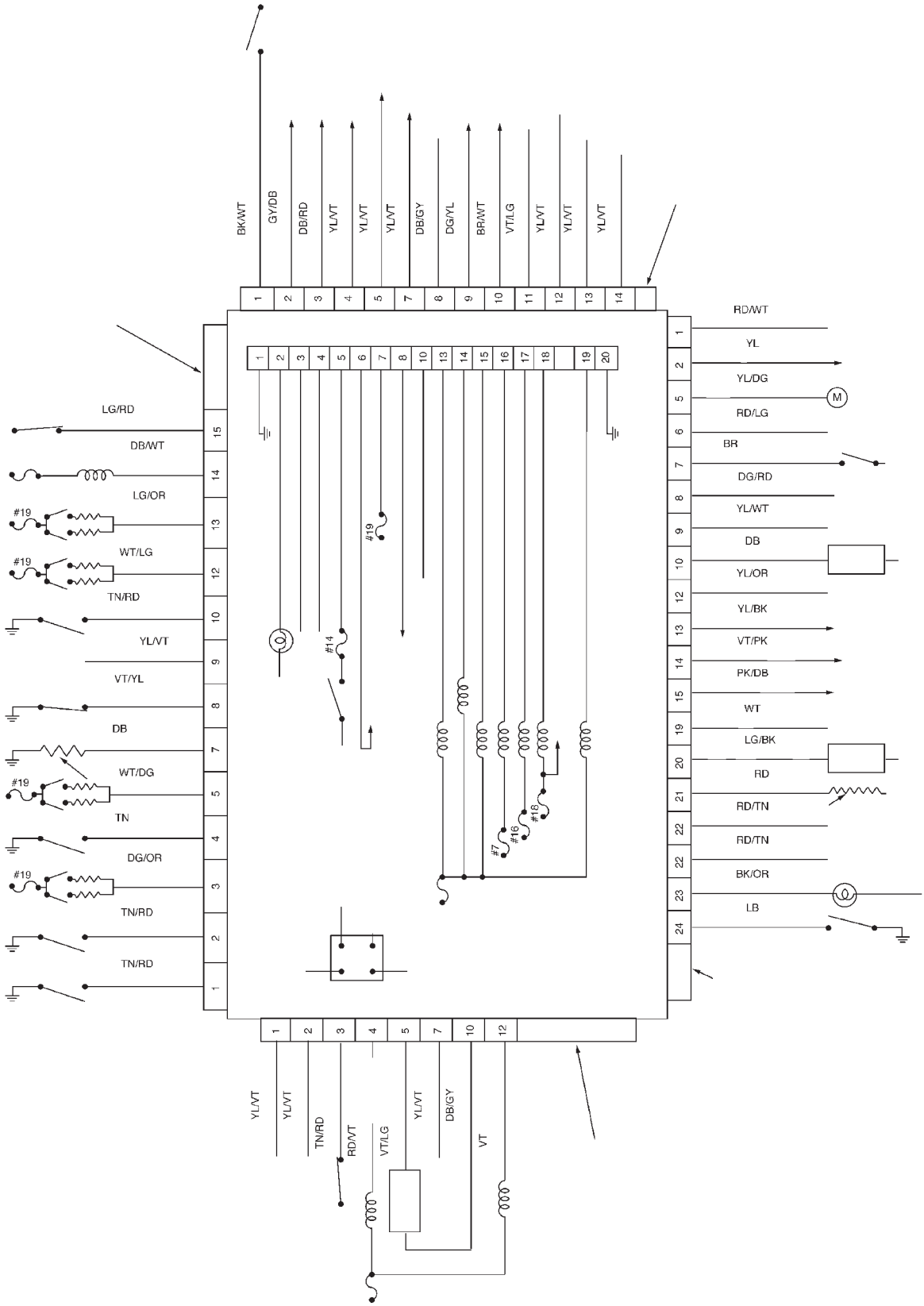
If further problems with the compass are encountered, see the appropriate service manual.

## 10.0 SCHEMATIC DIAGRAMS

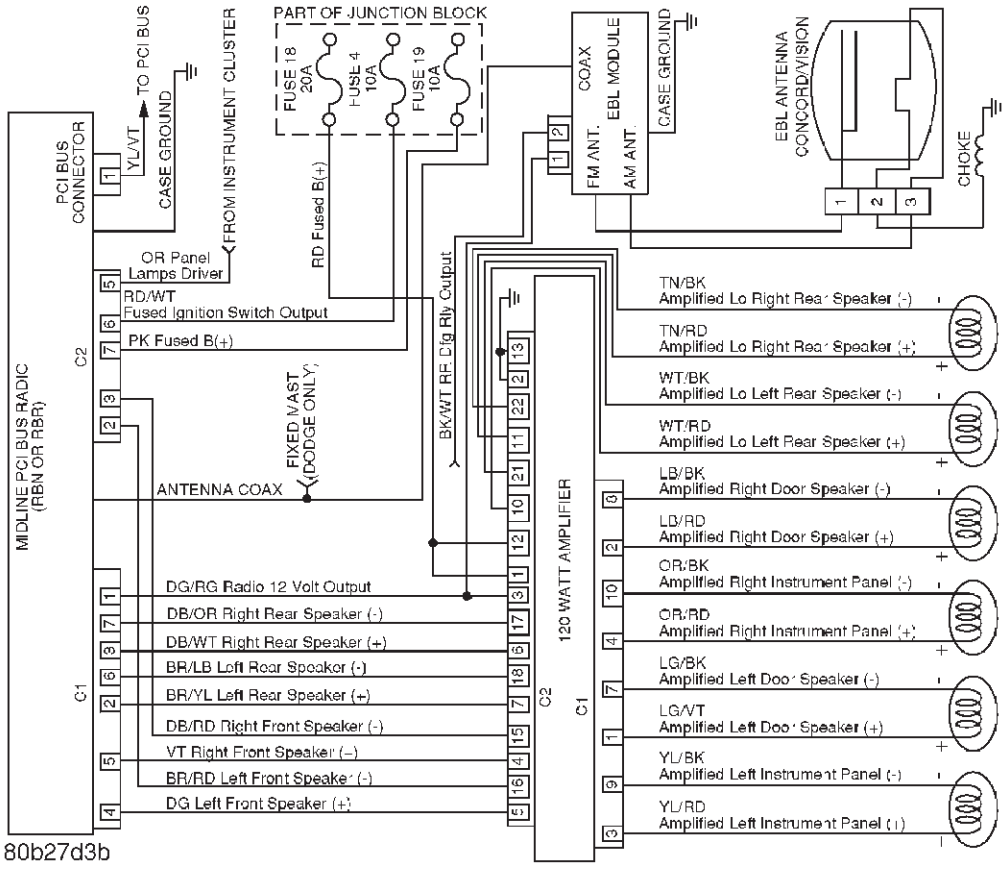
### 10.1 Airbag System



## 10.2 Body Control Module

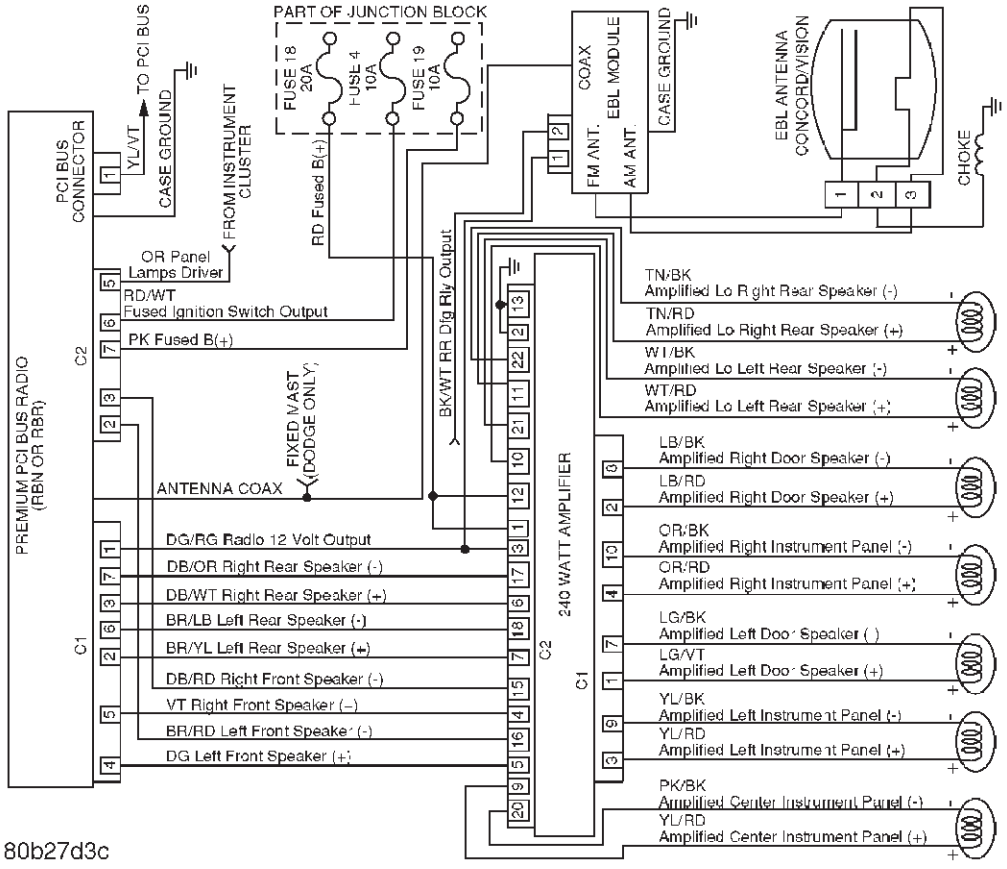


## 10.3 Audio Systems - Midline



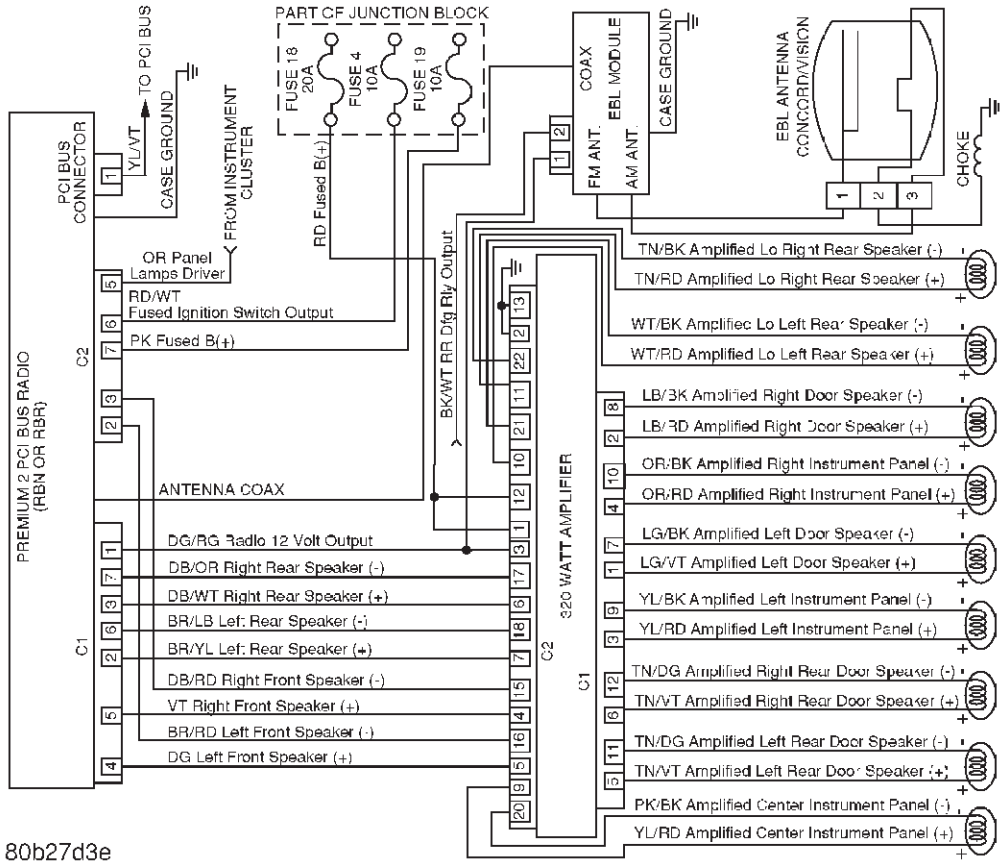

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## Premium



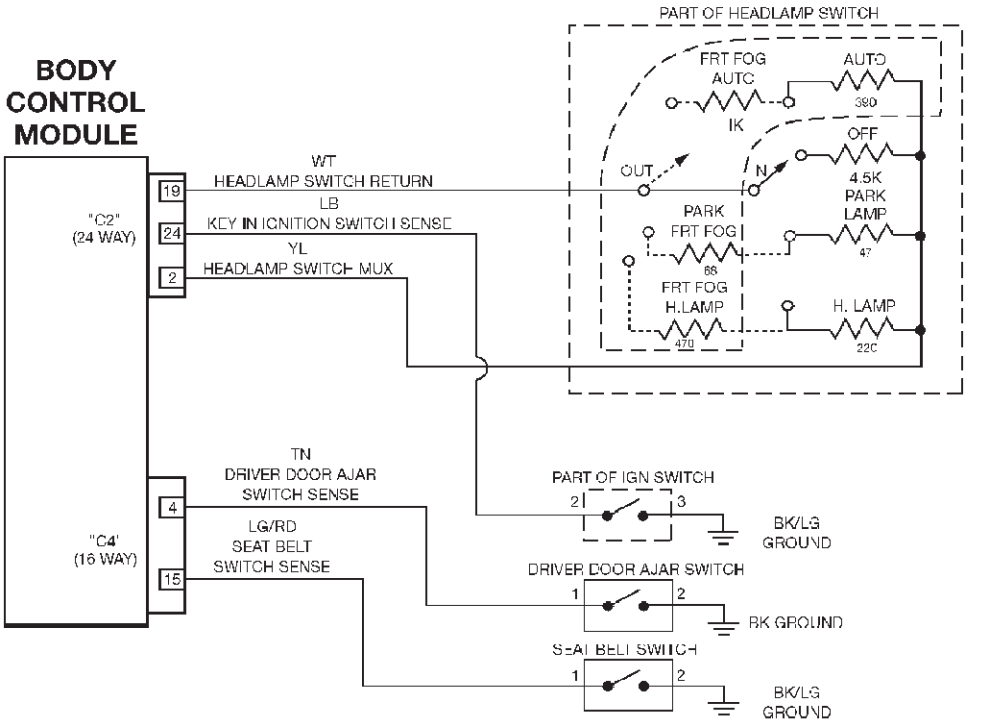

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## 10.3 Audio Systems - Premium 2

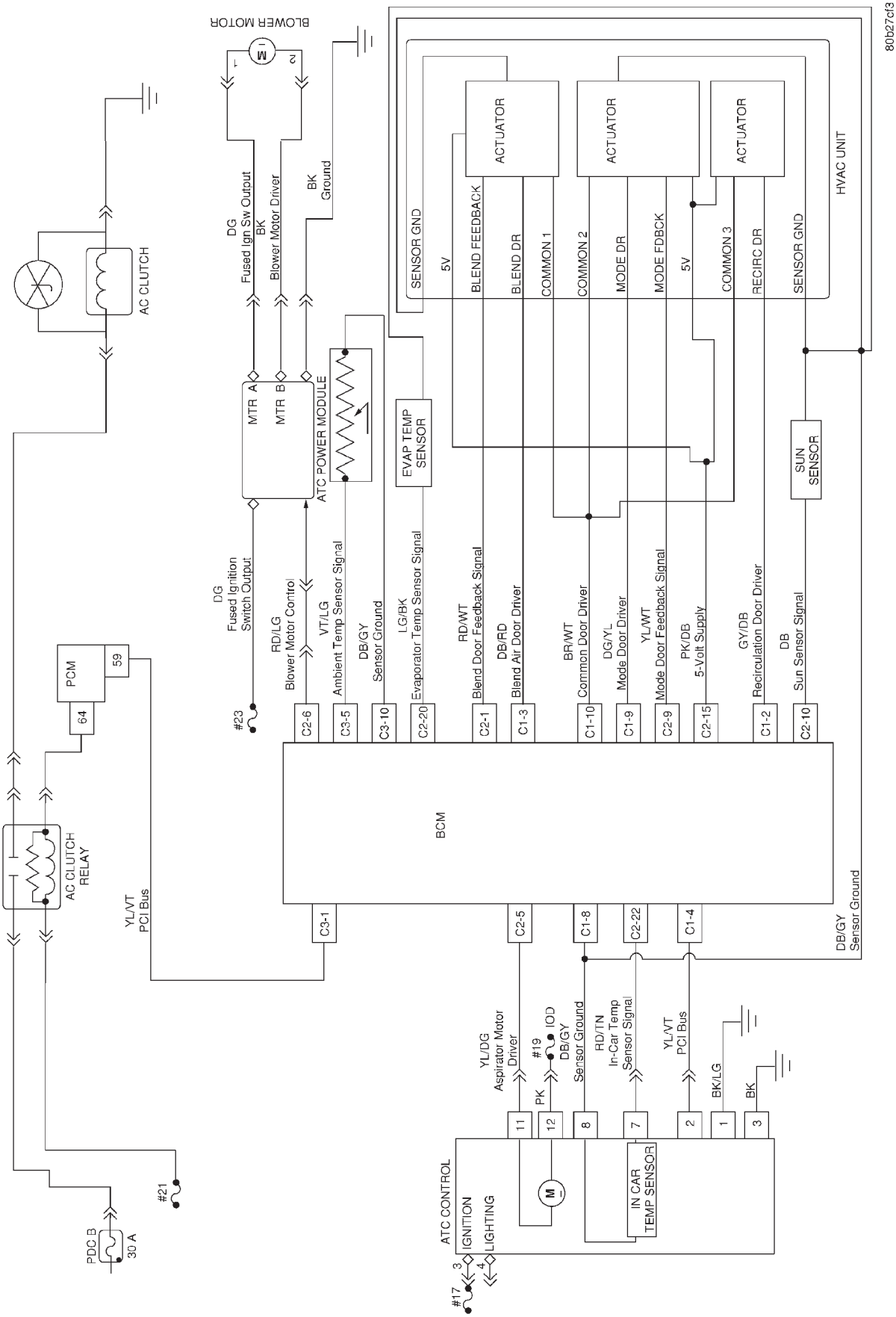



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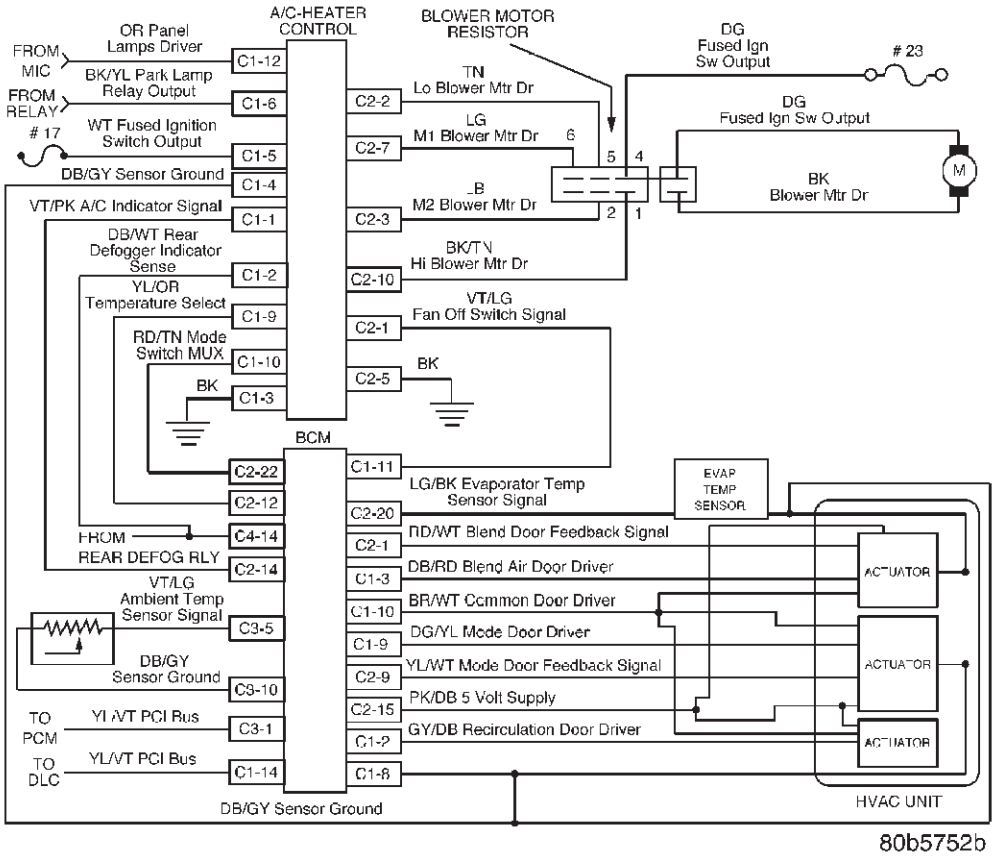
## 10.4 Chime Warning System




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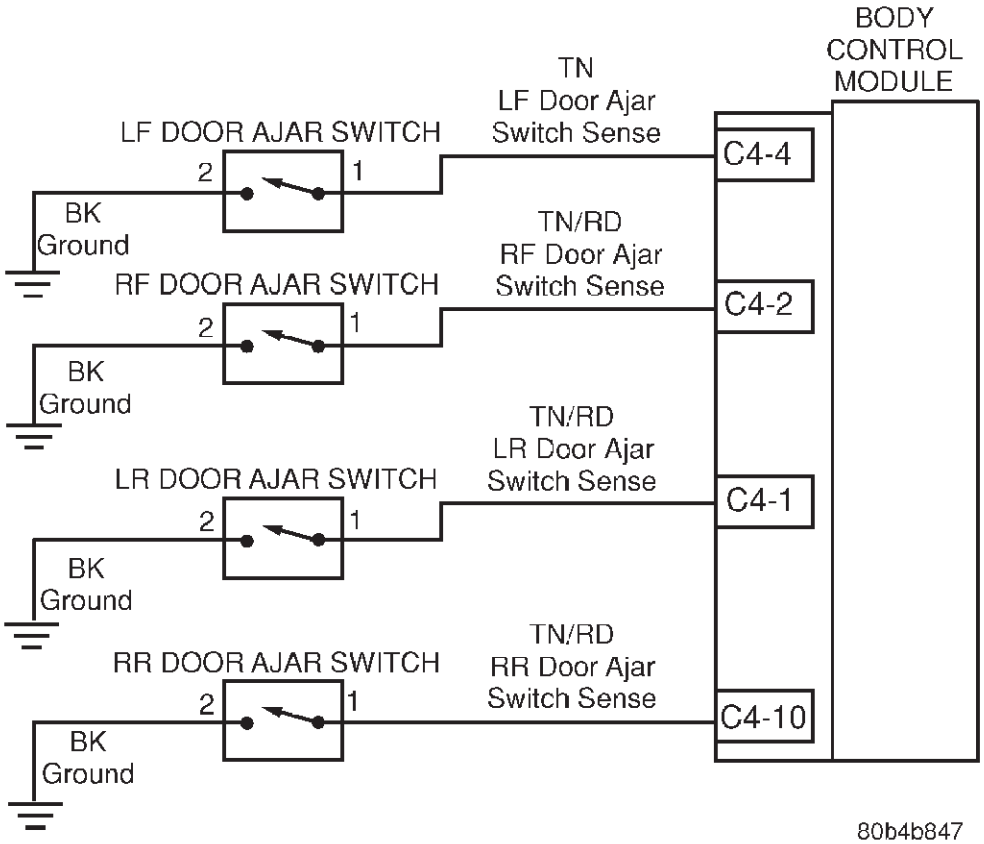

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BLOWER MOTOR
M
1
2
DG
Fused Ign Sw Output
BK
Blower Motor Driver
BK
Ground
AC CLUTCH
MTR A
MTR B
ATC POWER MODULE
EVAP TEMP SENSOR
SENSOR GND
5V
BLEND FEEDBACK
BLEND DR
COMMON 1
COMMON 2
MODE DR
MODE FDBCK
5V
COMMON 3
RECIRC DR
SENSOR GND
ACTUATOR
ACTUATOR
ACTUATOR
HVAC UNIT
SUN SENSOR
DG
Fused Ignition Switch Output
RD/LG
Blower Motor Control
VT/LG
Ambient Temp Sensor Signal
DB/GY
Sensor Ground
LG/BK
Evaporator Temp Sensor Signal
RD/WT
Blend Door Feedback Signal
DB/RD
Blend Air Door Driver
BR/WT
Common Door Driver
DG/YL
Mode Door Driver
YL/WT
Mode Door Feedback Signal
PK/DB
5-Volt Supply
GY/DB
Recirculation Door Driver
DB
Sun Sensor Signal
#23
C2-6
C3-5
C3-10
C2-20
C2-1
C1-3
C1-10
C1-9
C2-9
C2-15
C1-2
C2-10
PCM
59
64
BCM
C3-1
C2-5
C1-8
C2-22
C1-4
DB/GY
Sensor Ground
AC CLUTCH
RELAY
YL/VT
PCI Bus
YL/DG
Aspirator Motor
Driver
#19
IOD
PK
DB/GY
Sensor Ground
RD/TN
In-Car Temp
Sensor Signal
YL/VT
PCI Bus
BK/LG
BK
11
12
8
7
2
1
3
M
IN CAR
TEMP SENSOR
ATC CONTROL
IGNITION
LIGHTING
3
4
#17
#21
PDC B
30 A

## 10.5 Climate Control - Manual Temperature Control



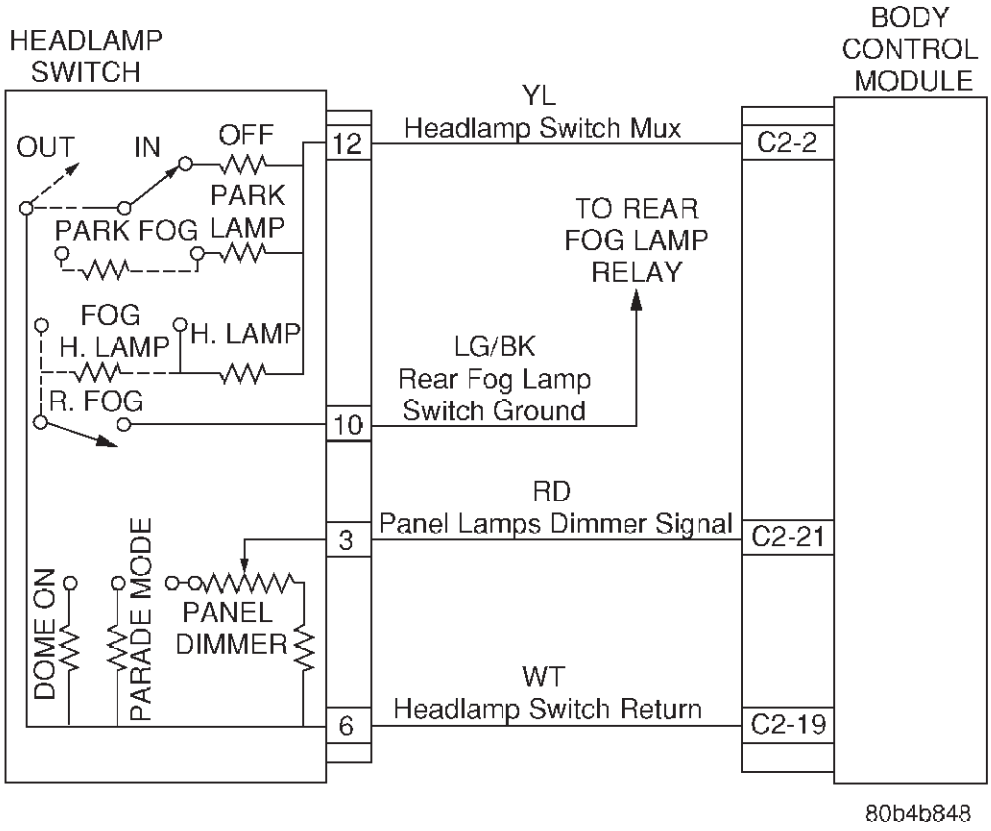

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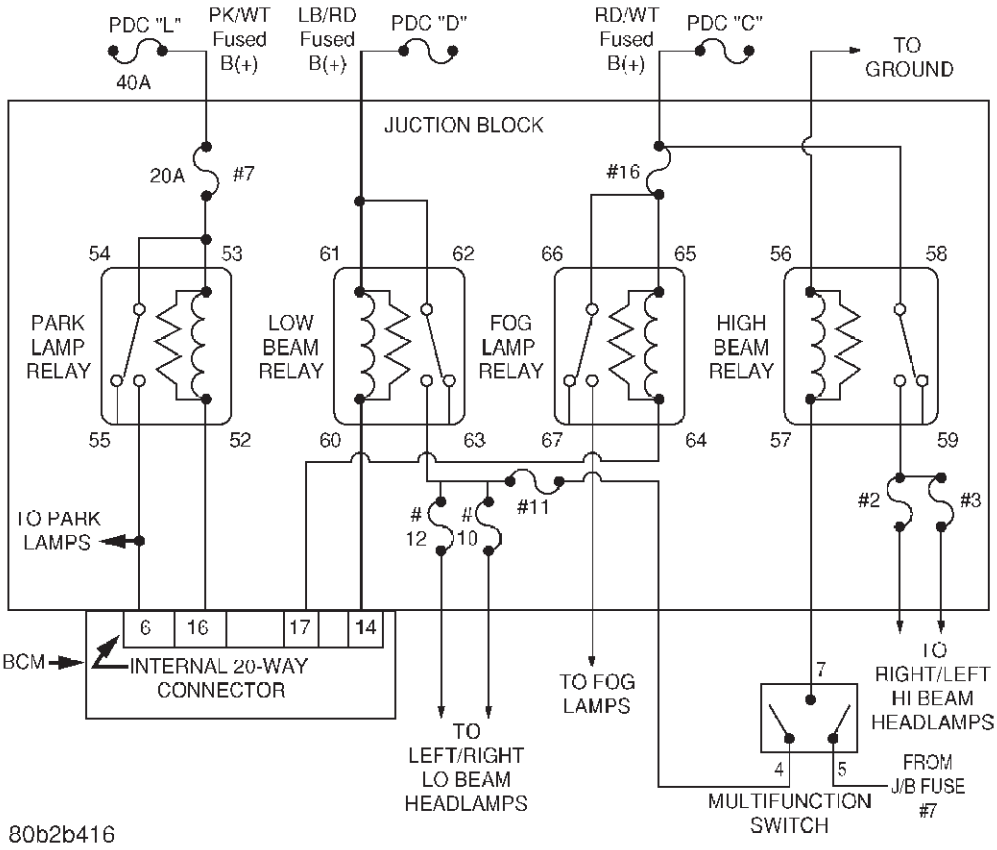
## 10.6 Door Ajar



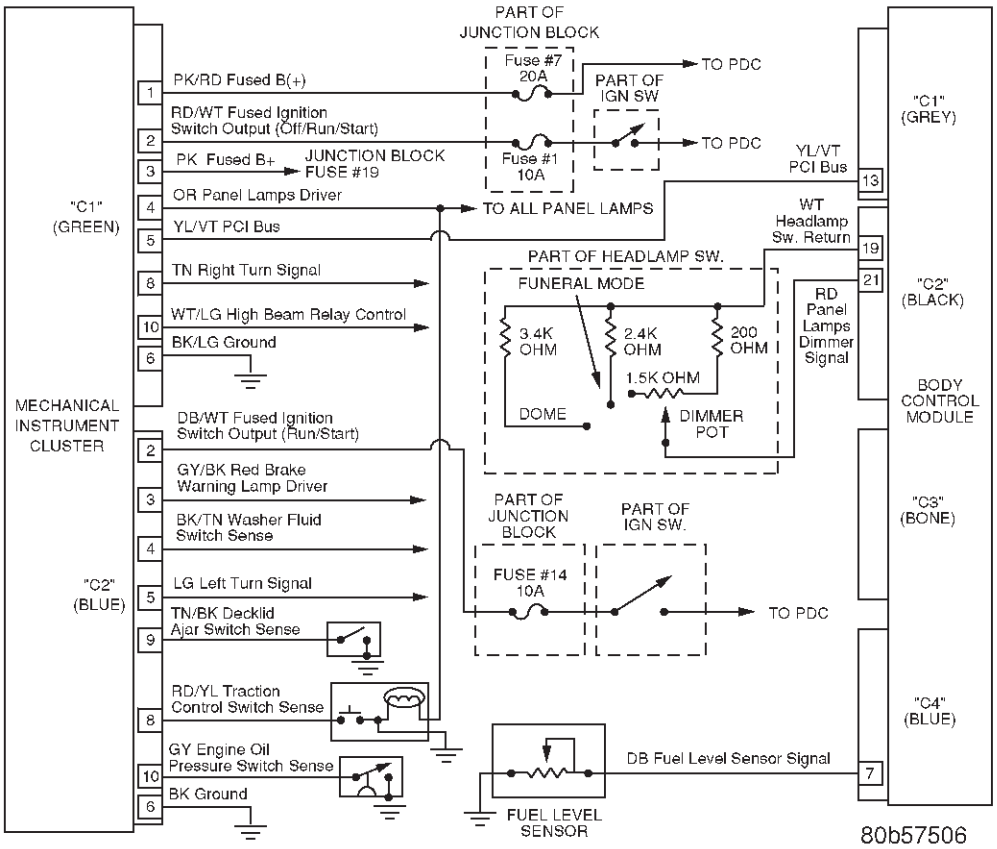

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## 10.7 Exterior Lighting

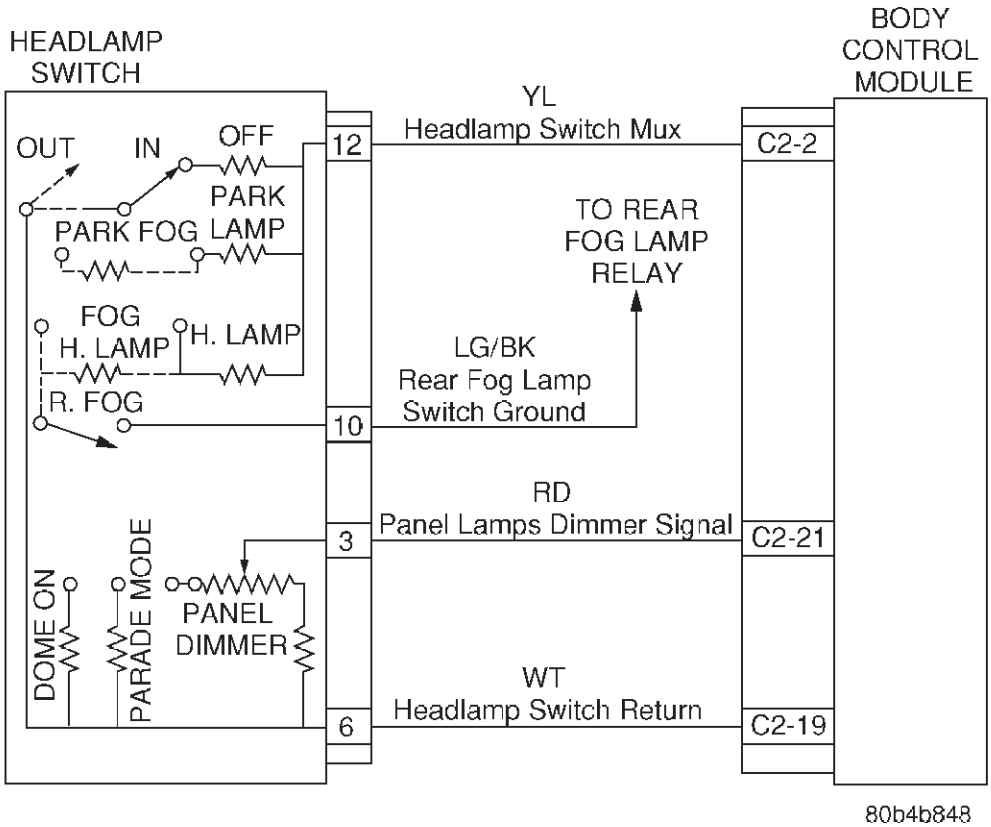


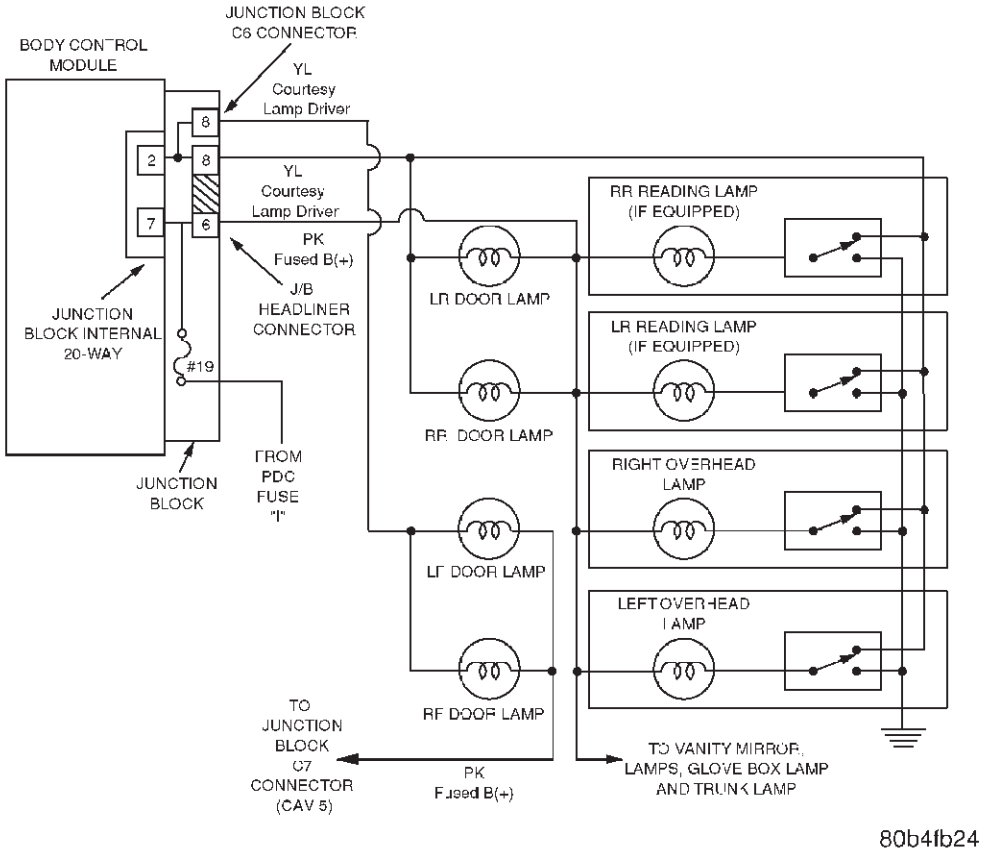
## 10.8 Instrument Cluster



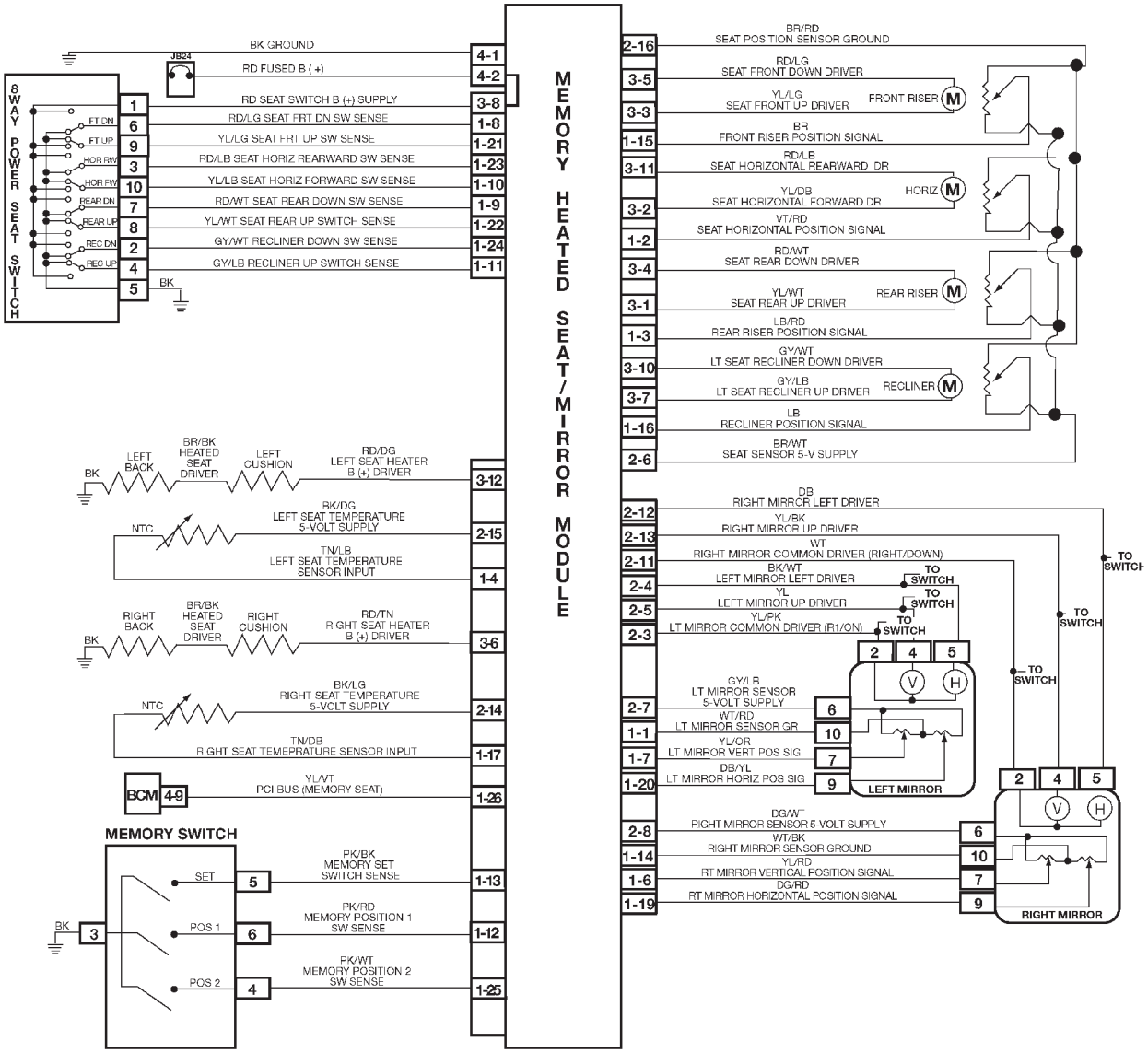

## 10.9 Interior Lighting



## 10.9 Interior Lighting

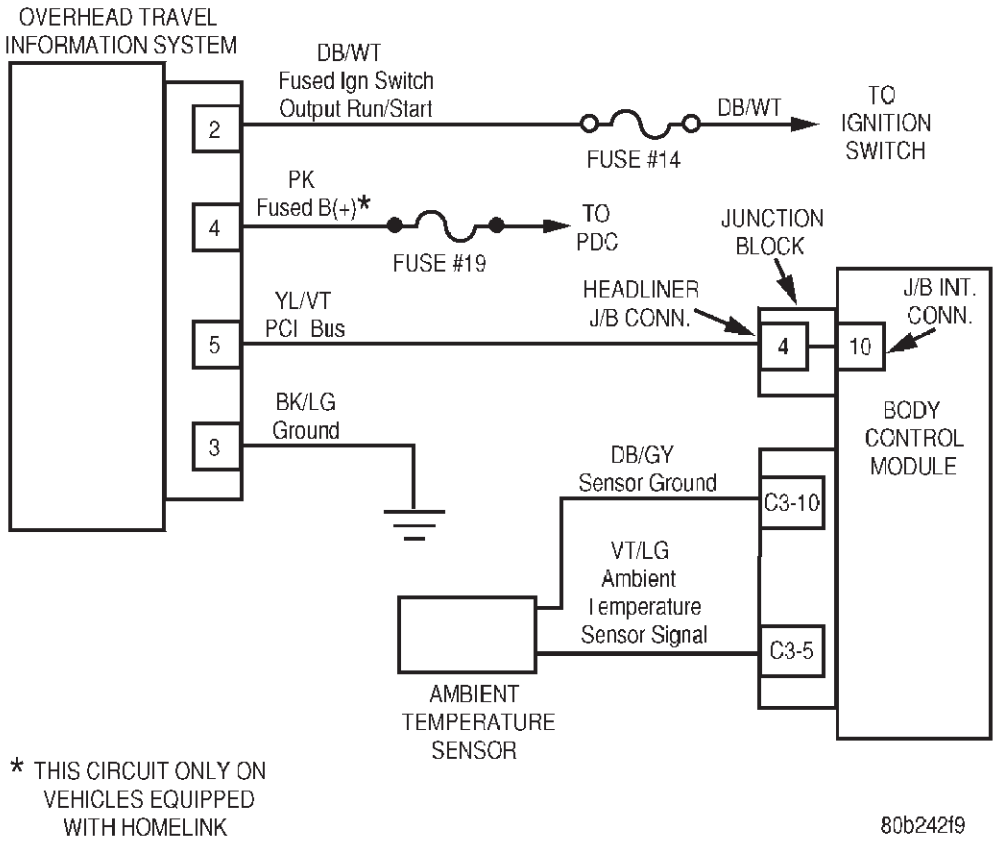


## 10.10 Memory System

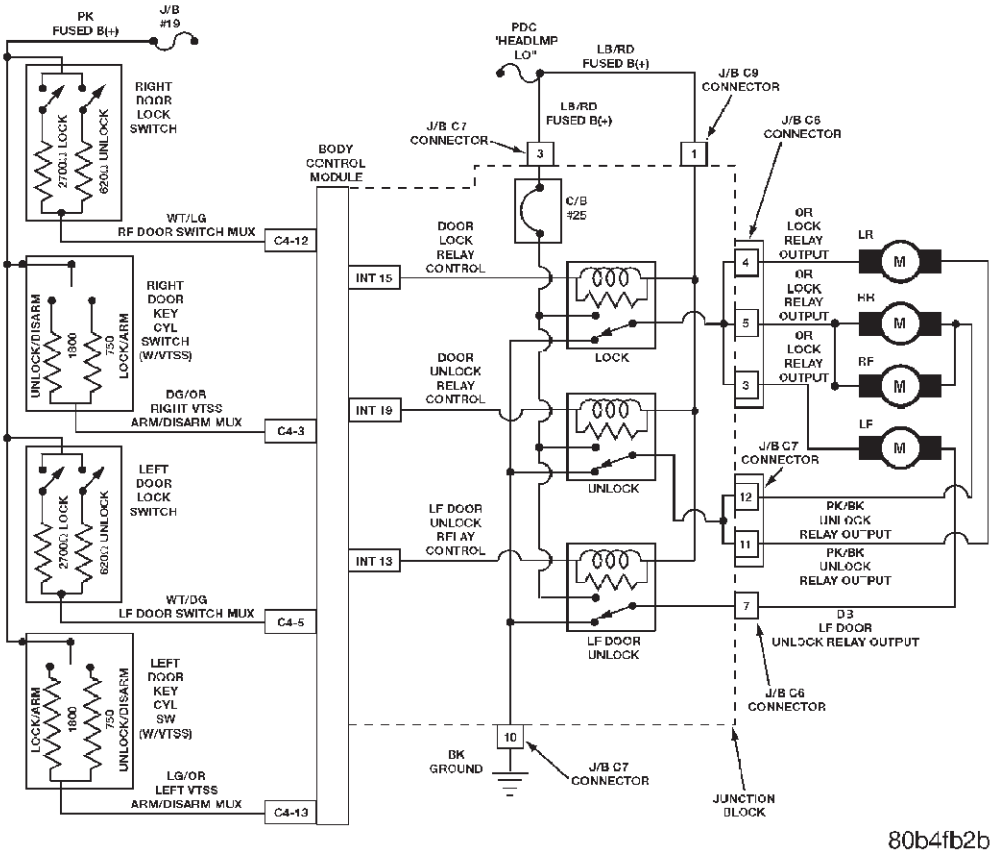



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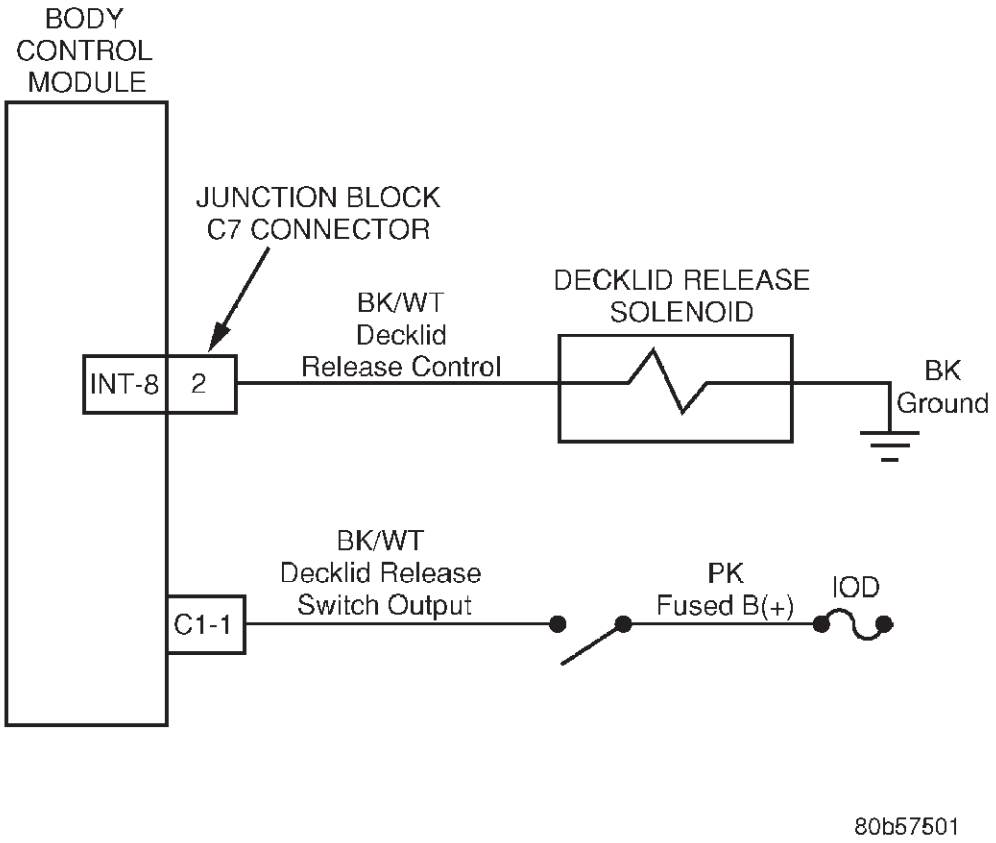
## 10.11 OTIS


OVERHEAD TRAVEL INFORMATION SYSTEM
DB/WT
Fused Ign Switch
Output Run/Start
2
FUSE #14
DB/WT
TO
IGNITION
SWITCH
PK
Fused B(+)*
4
FUSE #19
TO
PDC
JUNCTION
BLOCK
HEADLINER
J/B CONN.
J/B INT.
CONN.
YL/VT
PCI Bus
5
4
10
BK/LG
Ground
3
BODY
CONTROL
MODULE
DB/GY
Sensor Ground
C3-10
VT/LG
Ambient
Temperature
Sensor Signal
C3-5
AMBIENT
TEMPERATURE
SENSOR
* THIS CIRCUIT ONLY ON VEHICLES EQUIPPED WITH HOMELINK
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## 10.12 Power Door Locks/RKE

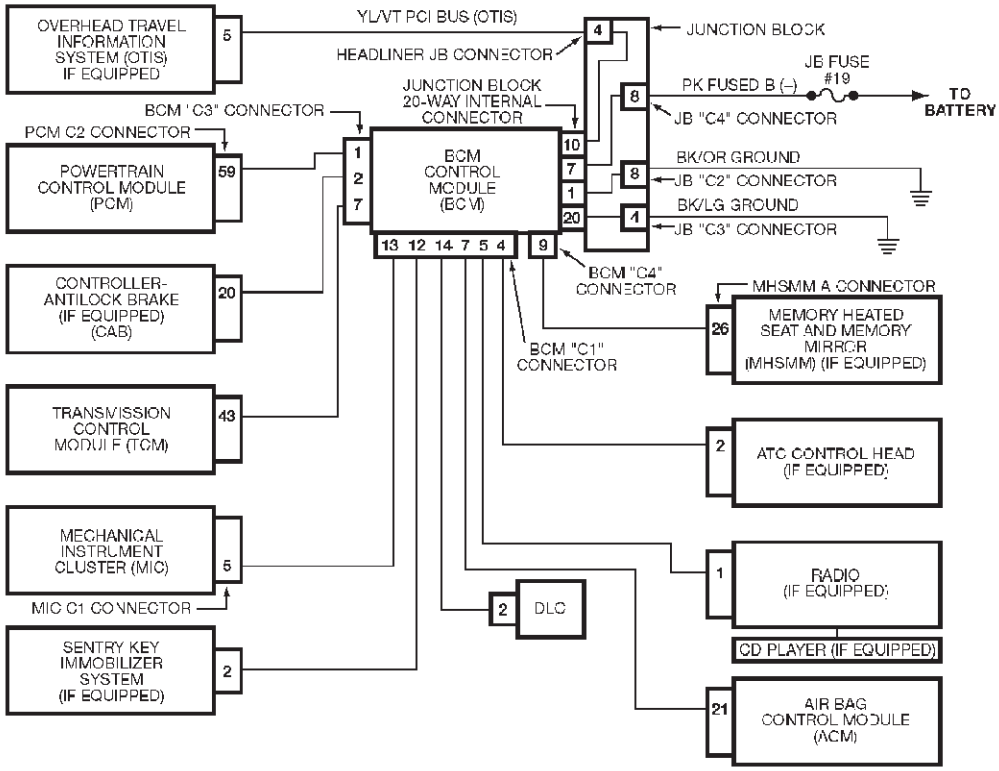



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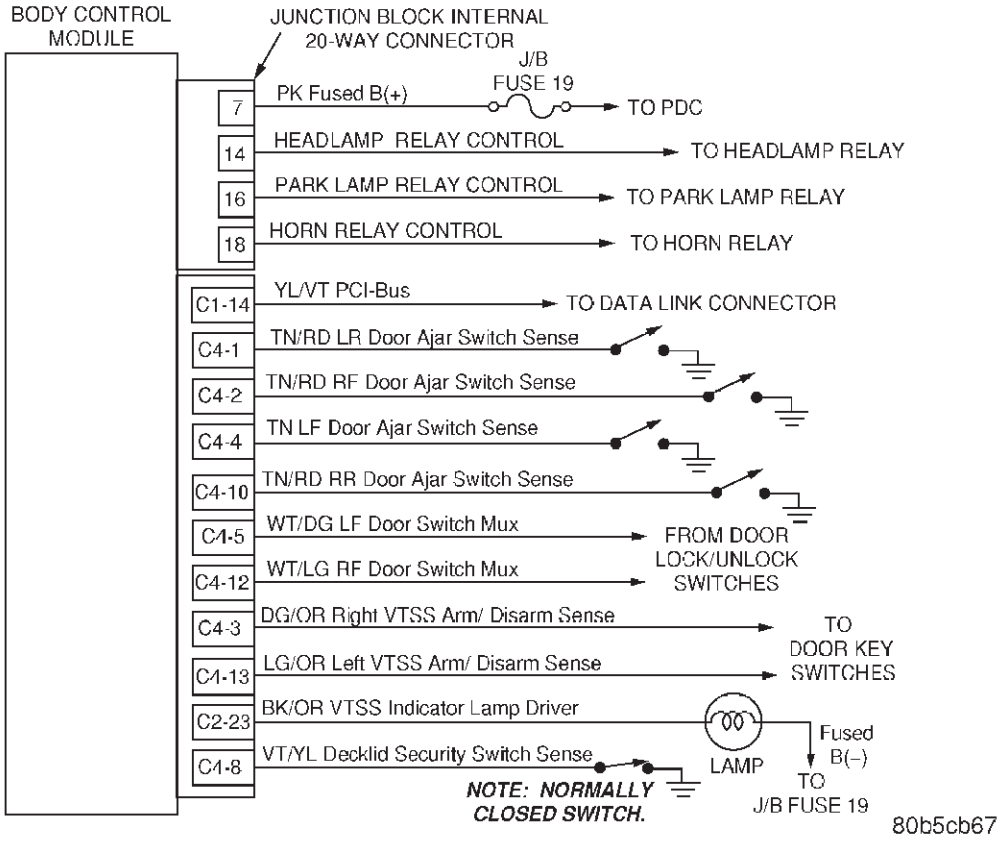

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## 10.13 Vehicle Communications



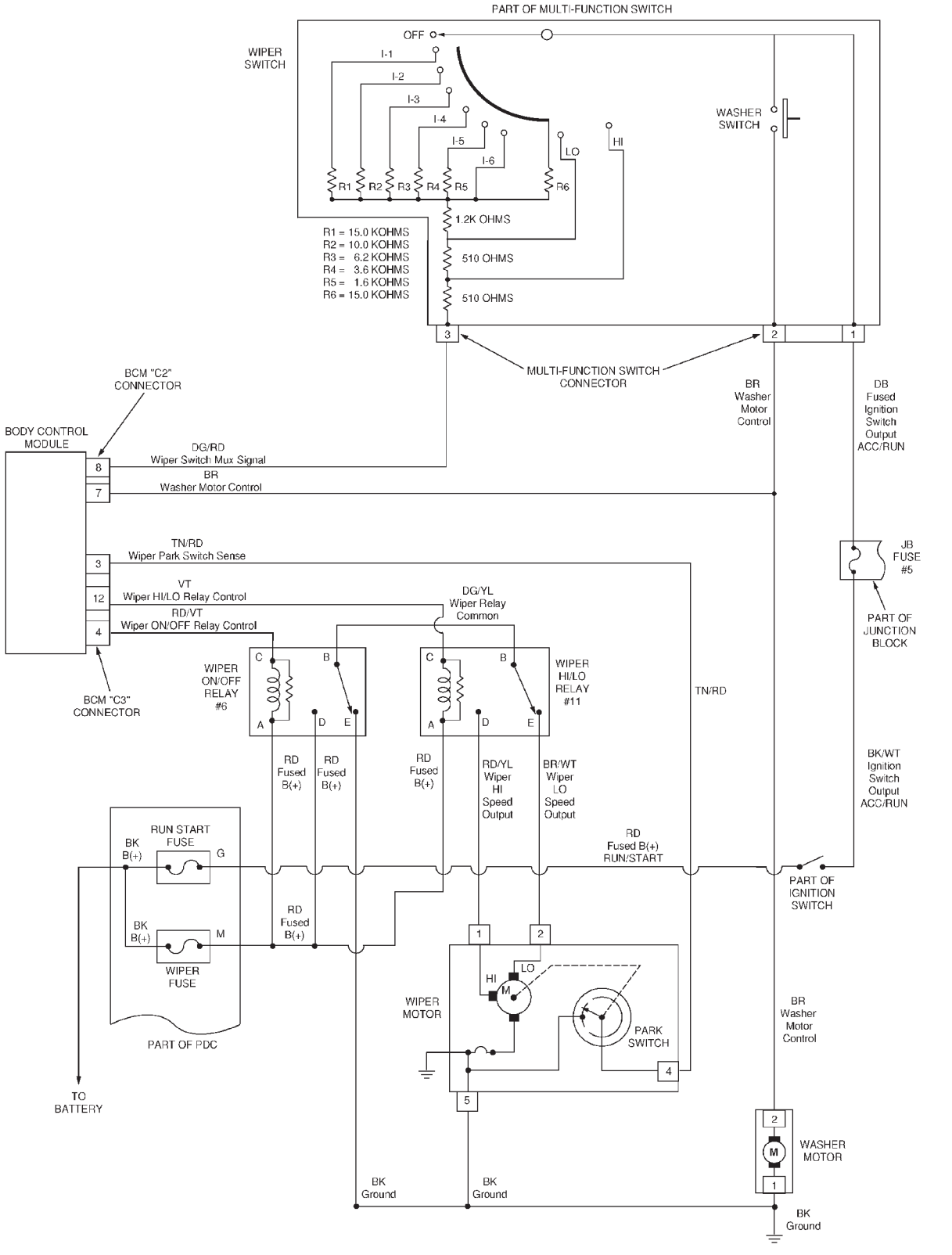

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## 10.14 Vehicle Theft Security System




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## 10.15 Wiper System




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## 11.0 REQUIRED TOOLS AND EQUIPMENT

DRB III® (diagnostic read-out box)
Jumper Wires
Ohmmeter
Voltmeter

## 12.0 GLOSSARY OF ACRONYMS

**ABS-** antilock brake system

**ACM-** airbag control module

**AECM-** airbag electronic control module (ACM)

**ASDM-** airbag system diagnostic module (ACM)

**ATC-** automatic temperature control

**BCM-** body control module

**CAB-** controller antilock brake

**DAB-** driver airbag

**DLC-** data link connector

**EBL-** electric back lite (rear window defogger)

**HVAC-** heater ventilation, air conditioning

**MIC -** mechanical instrument cluster

**MTC-** manual temperature control

**OTIS-** overhead travel information system

**ODO-** odometer

**PAB-** passenger airbag

**PCI-** Programmable Communication Interface (vehicle communication bus)

**PCM-** powertrain control module

**PDC-** power distribution center

**PWM-** pulse width modulated

**RKE-** remote keyless entry

**SKIM-** sentry key immobilizer module

**SKIS-** sentry key immobilizer system

**SQUIB-** also called initiator (located in rear of airbag module)

**TCM-** transmission control module

**VFD-** vacuum fluorescent display

**VTSS-** vehicle theft security system