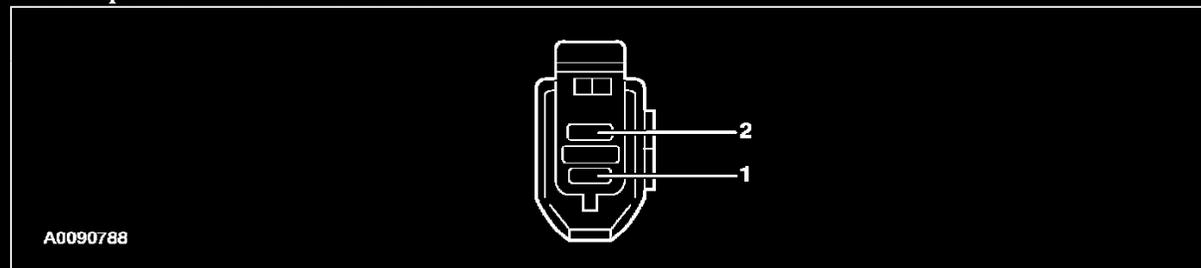


Heating and Air Conditioning: Testing and Inspection

Pinpoint Tests

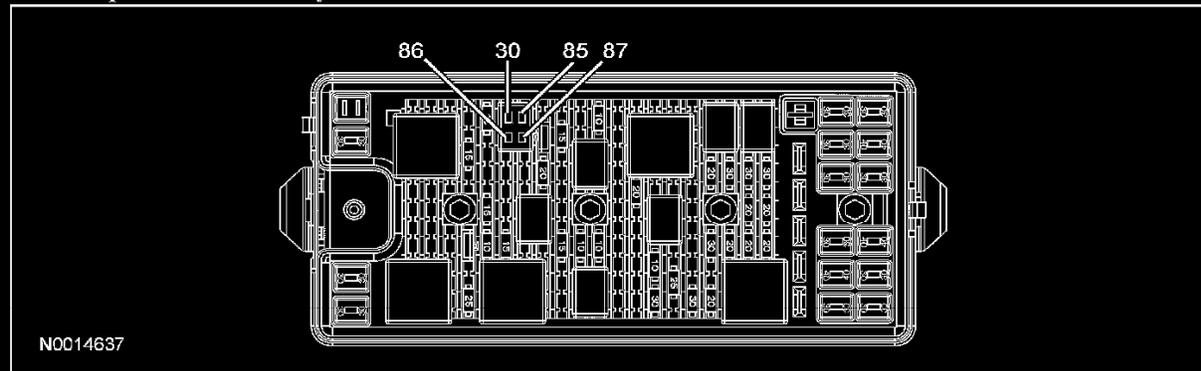
A/C Compressor Clutch Field Coil C100



| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|---|--|
| 1 | CKT 1205 (BK) ground | Resistance of 0 ohms to chassis ground. |
| 2 | CKT 883 (PK/LB) A/C compressor clutch relay switched output | Greater than 10 volts with the A/C commanded on. |

A/C Compressor Clutch Field Coil C100

A/C Compressor Clutch Relay



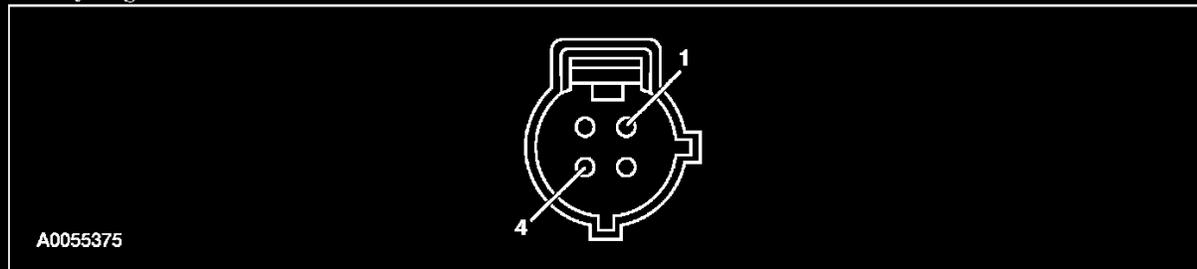
| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|--|---|
| 30 | CKT 931 (OG) voltage in run | Greater than 10 volts with the ignition on. |
| 85 | CKT 391 (RD/YE) voltage in start and run | Greater than 10 volts with the ignition on. |

A/C Compressor Clutch Relay (Part 1)

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|---|--|
| 86 | CKT 331 (PK/YE) A/C compressor clutch relay control | Resistance of 0 ohms to chassis ground when the A/C is commanded on. |
| 87 | CKT 883 (PK/LB) A/C compressor clutch relay switched output | Less than 100 ohms to chassis ground. |

A/C Compressor Clutch Relay (Part 2)

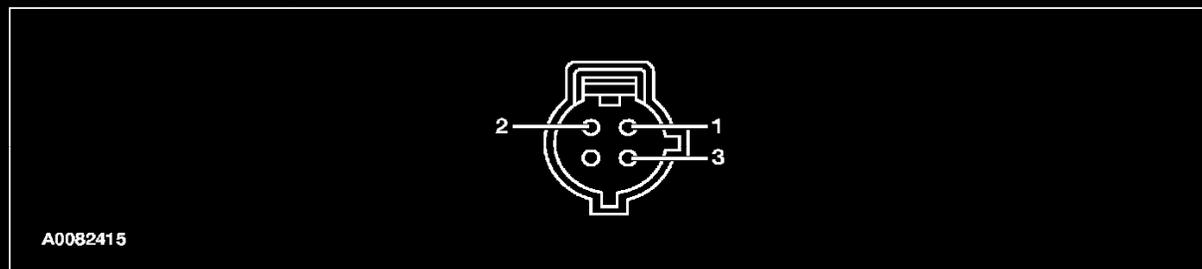
A/C Cycling Switch C130



| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|--|---|
| 4 | CKT 347 (BK/YE) input to PCM | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 1 | CKT 298 (VT/OG) A/C cycling switch voltage | Greater than 10 volts with the ignition on. |

A/C Cycling Switch C130

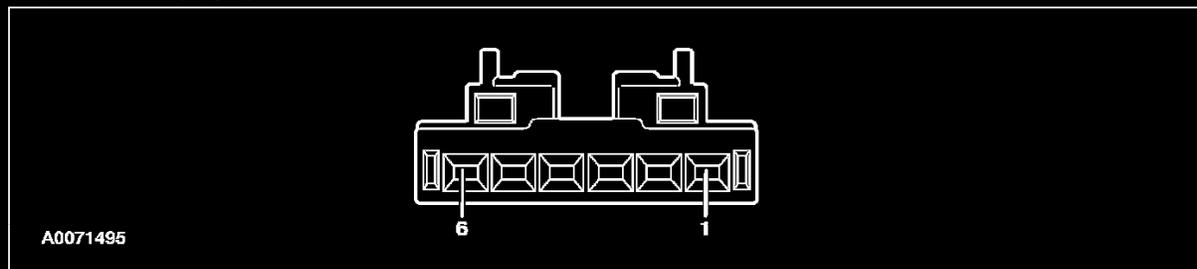
A/C Pressure Transducer C1078



| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|---|---|
| 1 | CKT 359 (GY/RD) A/C pressure transducer ground | Resistance of 0 ohms to chassis ground. |
| 2 | CKT 351 (BN/WH) A/C pressure transducer voltage | Greater than 10 volts with the ignition on. |
| 3 | CKT 439 (TN/LG) A/C pressure transducer to PCM | Greater than 10,000 ohms to chassis ground and 0 volts. |

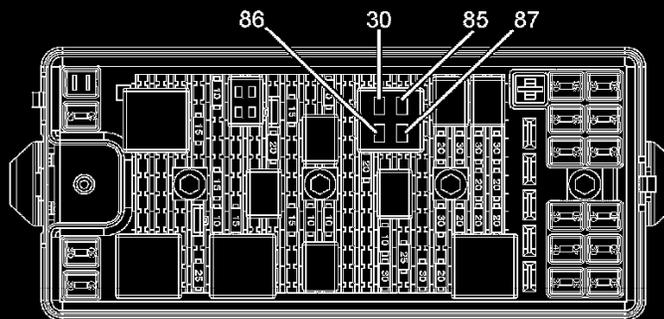
A/C Pressure Transducer C1078

Air Inlet Actuator C289



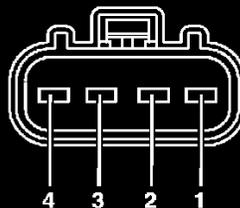
| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|--|---|
| 1 | CKT 1991 (LB/WH) air inlet door actuator motor drive A circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 6 | CKT 1990 (WH/LB) air inlet door actuator motor drive B circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |

Air Inlet Actuator C289

Auxiliary Blower Motor Relay

N0014638

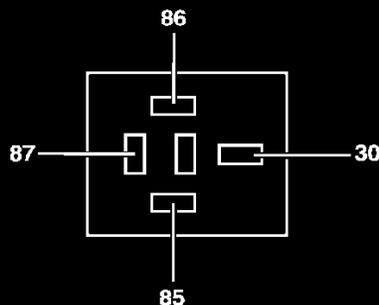
| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|---|---|
| 30 | CKT 181 (BN/OG) auxiliary blower motor relay switch voltage circuit | Greater than 10 volts at all times. |
| 85 | CKT 181 (BN/OG) auxiliary blower motor relay coil voltage circuit | Greater than 10 volts at all times. |
| 86 | CKT 1371 (TN/OG) auxiliary blower motor relay control from SJB | Less than 100 ohms to chassis ground with the blower in the lowest setting. |
| 87 | CKT 371 (PK/WH) auxiliary blower motor relay switched output | Less than 5 ohms to chassis ground with the blower in the highest setting. |

Auxiliary Blower Motor Relay**Auxiliary Blower Motor Resistor C3022**

A0052184

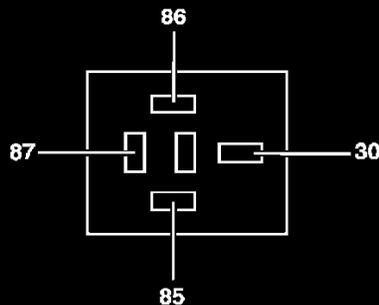
| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|--|---|
| 1 | CKT 751 (DB/WH) auxiliary blower motor resistor to auxiliary blower motor speed relay 1 and 2 | Greater than 10 volts with the auxiliary blower motor switch in HI. |
| 2 | CKT 1205 (BK) auxiliary blower resistor to ground | Resistance of 0 ohms to chassis ground. |
| 3 | CKT 752 (YE/RD) auxiliary blower motor resistor to auxiliary blower motor speed relay 2 | Greater than 10 volts with the auxiliary blower motor switch in HI. |
| 4 | CKT 515 (OG/RD) auxiliary blower motor resistor to auxiliary blower motor and auxiliary blower motor speed relay 1 | Greater than 10 volts with the auxiliary blower motor switch in HI. |

Auxiliary Blower Motor Resistor C3022

Auxiliary Blower Motor Speed Relay 1

A0052191

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|---|---|
| 30 | CKT 515 (OG/RD) auxiliary blower motor ground circuit | Greater than 10 volts with the EATC/EMTC in any position other than OFF. |
| 85 | CKT 1372 (PK/BK) auxiliary blower motor speed relay 1 control from SJB | Less than 10 ohms to chassis ground with the blower in the highest setting. |
| 86 | CKT 1460 (RD/YE) auxiliary blower motor speed relay 1 coil voltage circuit | Greater than 10 volts at all times. |
| 87 | CKT 751 (DB/WH) auxiliary blower motor speed relay 1 to auxiliary blower motor resistor | 0.2-0.4 ohms to chassis ground. |

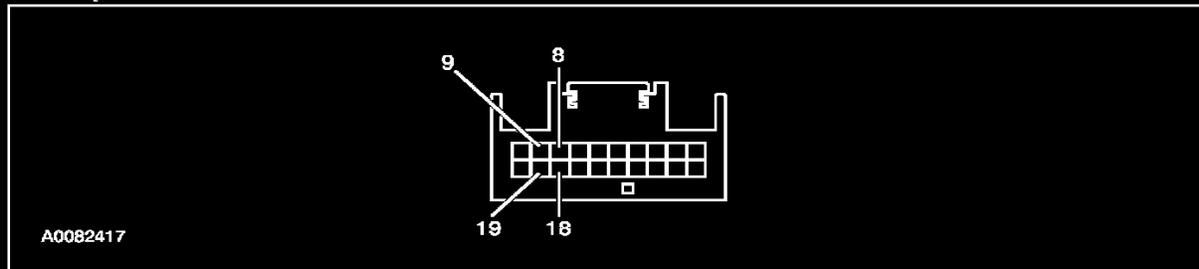
Auxiliary Blower Motor Speed Relay 1**Auxiliary Blower Motor Speed Relay 2**

A0052191

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|---|---|
| 30 | CKT 751 (DB/WH) auxiliary blower motor speed relay 2 to auxiliary blower motor resistor | 0.2-0.4 ohms to chassis ground. |
| 85 | CKT 1373 (GY/YE) auxiliary blower motor speed relay 2 control from SJB | Less than 10 ohms to chassis ground with the blower in the highest setting. |
| 86 | CKT 1460 (RD/YE) auxiliary blower motor speed relay 2 coil voltage circuit | Greater than 10 volts at all times. |
| 87 | CKT 752 (YE/RD) auxiliary blower motor speed relay 2 to auxiliary blower motor resistor | 0 ohms to chassis ground. |

Auxiliary Blower Motor Speed Relay 2

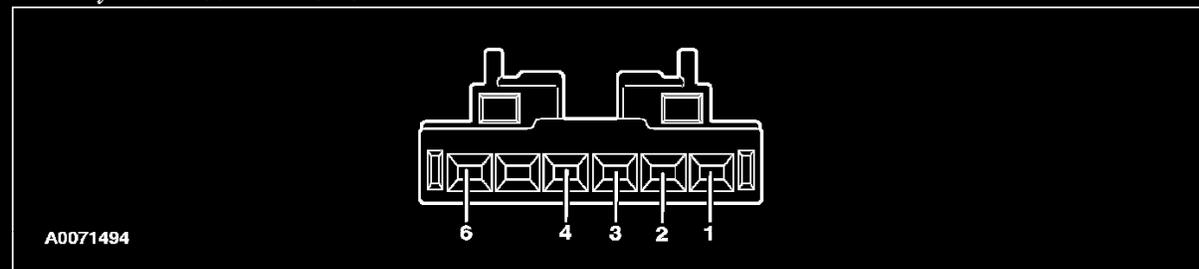
Auxiliary Climate Control C9025



| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|--|---|
| 8 | CKT 1349 (PK/LG) auxiliary blower selector potentiometer feedback circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 9 | CKT 1125 (BN) auxiliary control potentiometer ground | Less than 10 ohms to chassis ground with the auxiliary climate controls ON. |
| 18 | CKT 1121 (DG/YE) auxiliary mode/temperature potentiometer feedback circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 19 | CKT 1348 (GY/OG) auxiliary control potentiometer reference voltage | Greater than 4.5 volts with the auxiliary climate controls ON. |

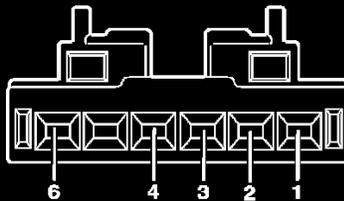
Auxiliary Climate Control C9025

Auxiliary Mode Door Actuator C3044



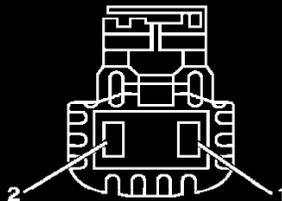
| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|--|---|
| 1 | CKT 1379 (PK/LB) auxiliary mode door actuator motor drive A circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 2 | CKT 1125 (BN) auxiliary mode door actuator potentiometer ground | Less than 5 ohms chassis ground with the auxiliary climate control ON. |
| 3 | CKT 1124 (WH) auxiliary mode door actuator potentiometer reference voltage | Greater than 4.5 volts to chassis ground with the auxiliary climate control ON. |
| 4 | CKT 1131 (LG) auxiliary mode door actuator potentiometer feedback circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 6 | CKT 1380 (TN/YE) auxiliary mode door actuator motor drive B circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |

Auxiliary Mode Door Actuator C3044

Auxiliary Temperature Blend Door Actuator C3004

A0071494

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|--|---|
| 1 | CKT 1375 (PK/YE) auxiliary temperature blend door actuator motor drive A circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 2 | CKT 1382 (BK/OG) auxiliary temperature blend door actuator potentiometer ground | Less than 5 ohms chassis ground with the auxiliary climate control ON. |
| 3 | CKT 1381 (WH/BK) auxiliary temperature blend door actuator potentiometer reference voltage | Greater than 4.5 volts to chassis ground with the auxiliary climate control ON. |
| 4 | CKT 1126 (LB) auxiliary temperature blend door actuator potentiometer feedback circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 6 | CKT 1376 (BK/LB) auxiliary temperature blend door actuator motor drive B circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |

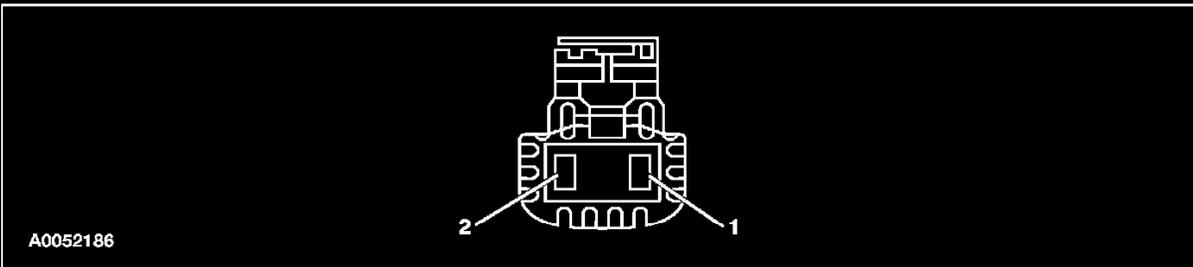
Auxiliary Temperature Blend Door Actuator C3004**Blower Motor C2004**

A0052186

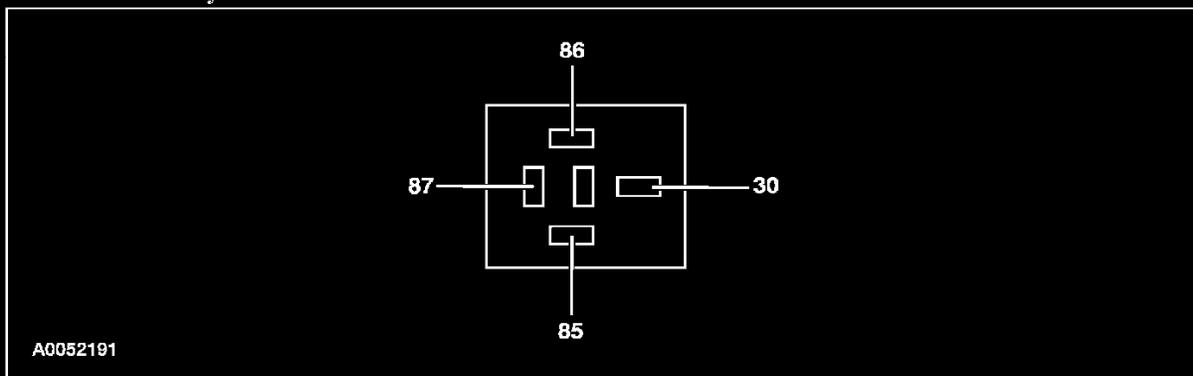
Blower Motor C2004 (Part 1)

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|---------------------------------|--|
| 1 | CKT 371 (PK/WH) | Greater than 10 volts with the climate control in any position except OFF. |
| 2 | CKT 261 (OG/BK) | Resistance of 0 ohms to chassis ground with blower in the highest setting. |

Blower Motor C2004 (Part 2)

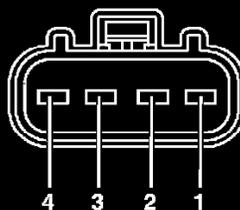
Blower Motor C3021

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|---|--|
| 1 | CKT 536 (BK/LG) voltage from auxiliary blower motor relay | Greater than 10 volts with the auxiliary climate control in any position except OFF. |
| 2 | CKT 515 (OG/RD) Ground for auxiliary blower motor | Resistance of 0 ohms to chassis ground with auxiliary blower in the highest setting. |

Blower Motor C3021**Blower Motor Relay**

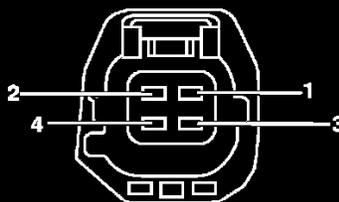
| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|---|---|
| 30 | CKT 364 (BK/LG) blower motor relay switch voltage circuit | Greater than 10 volts at all times. |
| 85 | CKT 298 (VT/OG) blower motor relay coil voltage circuit | Greater than 10 volts at all times. |
| 86 | CKT 1322 (BN/WH) blower motor relay control from SJB | Less than 100 ohms to chassis ground with the blower in the lowest setting. |
| 87 | CKT 371 (PK/WH) blower motor relay switched output | Less than 5 ohms to chassis ground with the blower in the highest setting. |

Blower Motor Relay

Blower Motor Resistor C293

A0052184

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|--|---|
| 1 | CKT 260 (RD/OG) blower resistor to blower switch (MED-LO) | Resistance of 0 ohms to chassis ground with auxiliary blower switch in MED-LO. |
| 2 | CKT 261 (OG/BK) blower resistor to blower switch (HI) and to blower motor. | Greater than 10 volts with the blower motor switch in any position except HI and the function selector switch in any position except OFF. |
| 3 | CKT 269 (LB/OG) blower resistor to blower switch (MED-HI) | Resistance of 0 ohms to chassis ground with auxiliary blower switch in MED-HI. |
| 4 | CKT 1205 (BK) blower resistor to ground | Resistance of 0 ohms to chassis ground. |

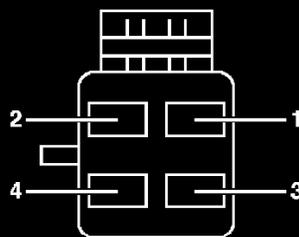
Blower Motor Resistor C293**Blower Motor Speed Control Module C271**

A0052194

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|---|--|
| 1 | CKT 261 (OG/BK) blower motor speed control module to blower motor | Greater than 10 volts with the EATC ON. |
| 2 | CKT 1205 (BK) blower motor speed control module ground | Resistance of 0 ohms to chassis ground. |
| 3 | CKT 1120 (BK/WH) EATC module to blower motor speed control module input | Less than 1 volt in the lowest blower setting to greater than 4.5 volts in the highest blower setting. |
| 4 | CKT 371 (PK/WH) voltage supply to blower motor speed control module | Greater than 10 volts with the EATC ON. |

Blower Motor Speed Control Module C271

Blower Motor Switch C294b — Manual Climate Control



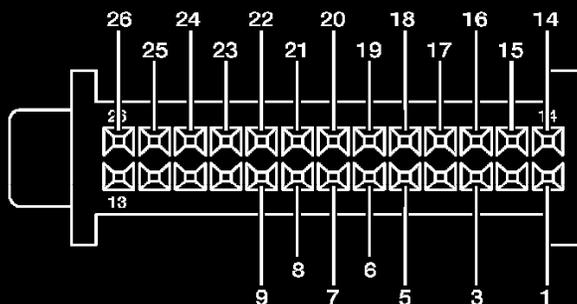
A0071491

Blower Motor Switch C294b - Manual Climate Control (Part 1)

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Masurement |
|---------------|---|---|
| 1 | CKT 1205 (BK) Ground | Resistance of 0 ohms to chassis ground. |
| 2 | CKT 261 (OG/BK) High blower motor speed | Less than 100 ohms to chassis ground. |
| 3 | CKT 269 (LB/OG) Med-high blower motor speed | Less than 3 ohms to chassis ground. |
| 4 | CKT 260 (RD/OG) Med-low blower motor speed | Less than 2 ohms to chassis ground. |

Blower Motor Switch C294b - Manual Climate Control (Part 2)

EATC Module C228a/EMTC module C294a



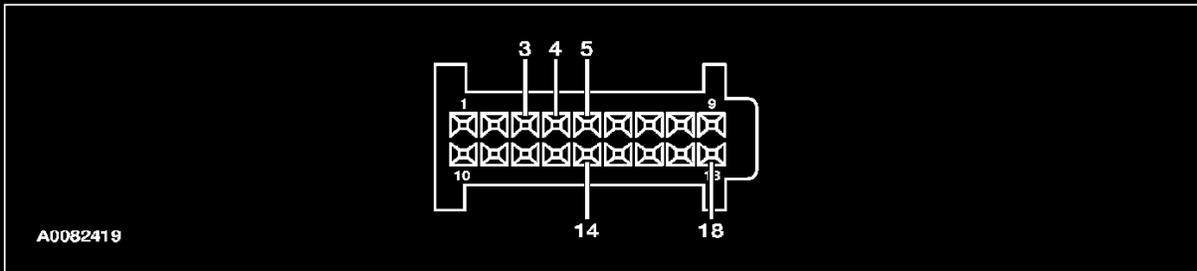
A0082418

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Masurement |
|---------------|--|---|
| 1 | CKT 1203 (BK/LB) ground | Less than 5 ohms to chassis ground. |
| 3 | (EMTC single-zone only) CKT 1397 (GY/WH) EMTC module A/C request signal to SJB | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 5 | CKT 1977 (YE/BK) EATC/EMTC module reference voltage to mode door actuator | Greater than 10,000 ohms to chassis ground and 0 volts. |

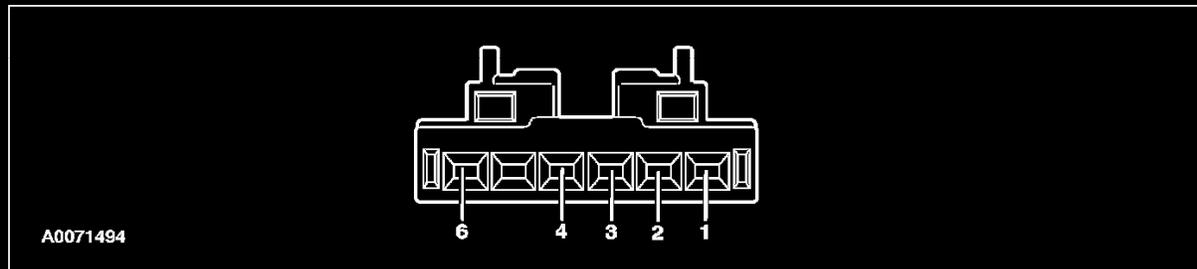
EATC Module C228a/EMTC Module C294a (Part 1)

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|---|---|
| 6 | CKT 245 (BN/LG) EATC/EMTC module to LH temperature blend door actuator motor drive A circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 7 | CKT 246 (VT) EATC/EMTC module to LH temperature blend door actuator motor drive B circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 8 | CKT 1991 (LB/WH) EATC/EMTC module to air inlet door actuator motor drive A circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 9 | CKT 1990 (WH/LB) EATC/EMTC module to air inlet door actuator motor drive B circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 14 | CKT 1003 (GY/YE) Ignition voltage | Greater than 10 volts with the ignition ON. |
| 15 | CKT 1978 (BN/LG) EATC/EMTC module return signal from mode door actuator | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 16 | CKT 1982 (LB/BK) EATC/EMTC module feedback signal from mode door actuator | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 17 | CKT 435 (TN/LB) EATC/EMTC (dual-zone) module feedback signal from RH temperature blend door actuator | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 18 | CKT 437 (YE/LG) EATC/EMTC module feedback signal from LH temperature blend door actuator | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 19 | CKT 1989 (OG/LB) EATC/EMTC module to mode door actuator motor drive A circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 20 | CKT 1988 (BN/OG) EATC/EMTC module to mode door actuator motor drive B circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 21 | CKT 436 (RD/LG) EATC/EMTC module reference voltage to temperature blend door actuator | Greater than 4.5 volts with the ignition ON and the EATC/EMTC in any position other than off. |
| 22 | CKT 438 (RD/WH) EATC/EMTC module signal ground to temperature blend door actuator | 0 ohms to chassis ground. |
| 23 | (EMTC only) CKT 1398 (PK/WH) Blower motor speed signal to SJB | Greater than 10 volts with the ignition ON. |
| 24 | CKT 1069 (OG/LB) EATC/EMTC (dual-zone) module to RH temperature blend door actuator motor drive A circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 25 | CKT 660 (YE/LG) EATC/EMTC (dual-zone) module to RH temperature blend door actuator motor drive B circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 26 | CKT 1001 (WH/YE) Battery voltage | Greater than 10 volts at all times. |

EATC Module C228a/EMTC Module C294a (Part 2)

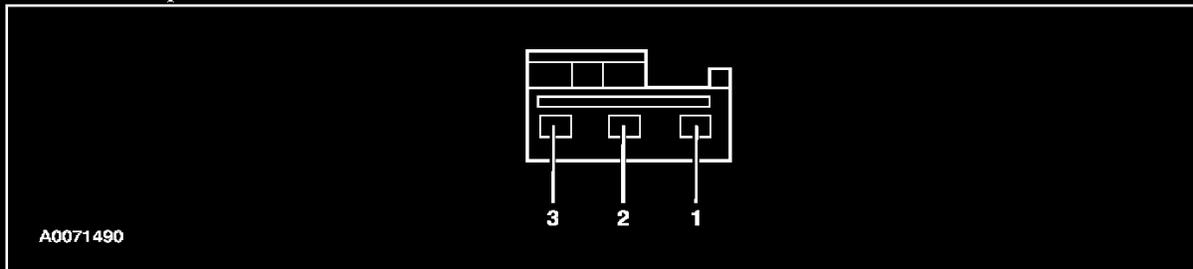
EATC Module C228b

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|---|---|
| 3 | CKT 3051 (BK/YE) In-vehicle temperature and solar radiation sensor return | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 4 | CKT 3050 (WH/OG) In-vehicle temperature sensor reference voltage | Greater than 4.5 volts with EATC on. |
| 5 | CKT 476 (PK/YE) RH solar radiation sensor input | Greater than 4.5 volts with EATC on. |
| 14 | CKT 468 (BN) LH solar radiation sensor input | Greater than 4.5 volts with EATC on. |
| 18 | CKT 1120 (BK/WH) EATC module to front blower motor speed control module | Greater than 10,000 ohms to chassis ground and 0 volts. |

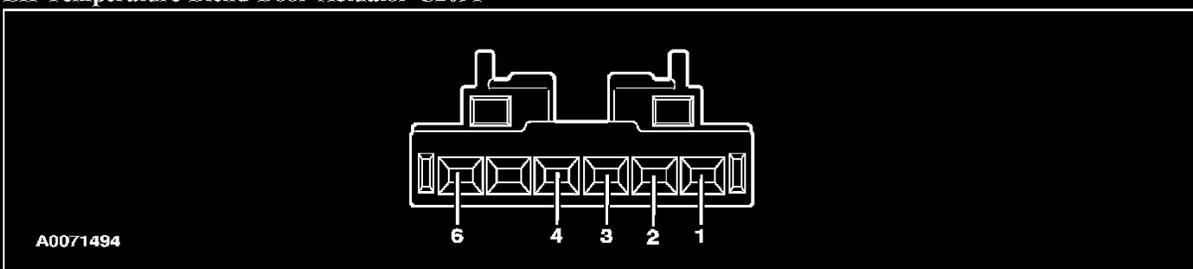
EATC Module C228b**Floor/Defrost/Panel Actuator C2278**

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|--|---|
| 1 | CKT 1989 (OG/LB) floor/defrost/panel door actuator motor drive A circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 2 | CKT 1978 (BN/LG) floor/defrost/panel door actuator potentiometer ground | Less than 5 ohms chassis ground. |
| 3 | CKT 1977 (YE/BK) floor/defrost/panel door actuator potentiometer reference voltage | Greater than 4.5 volts to chassis ground with the EATC/EMTC ON. |
| 4 | CKT 1982 (LB/BK) floor/defrost/panel actuator potentiometer feedback circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 6 | CKT 1988 (BN/OG) floor/defrost/panel actuator motor drive B circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |

Floor/Defrost/Panel Actuator C2278

In-Vehicle Temperature Sensor C233

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|--|---|
| 1 | CKT 3051 (BK/YE) sensor signal return (ground) | Resistance of 0 ohms to chassis ground. |
| 3 | CKT 3050 (WH/OG) in-vehicle air temperature sensor input | Approximately 5 volts with the EATC ON. |

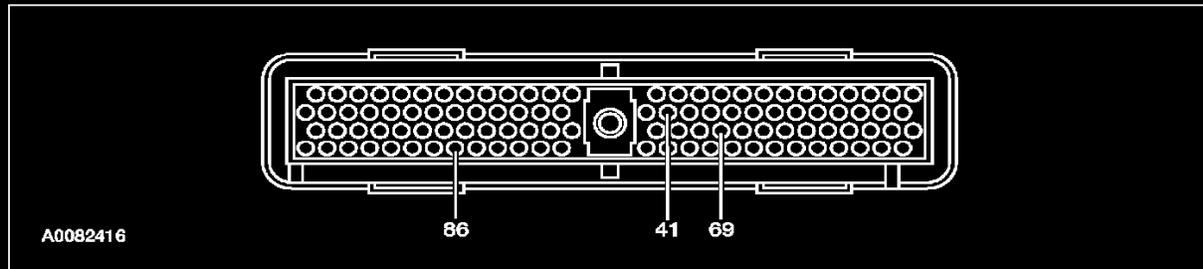
In-Vehicle Temperature Sensor C233**LH Temperature Blend Door Actuator C2091**

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|--|---|
| 1 | CKT 245 (BN/LG) LH temperature blend door actuator motor drive A circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 2 | CKT 438 (RD/WH) temperature blend door actuator potentiometer ground | Less than 5 ohms chassis ground. |

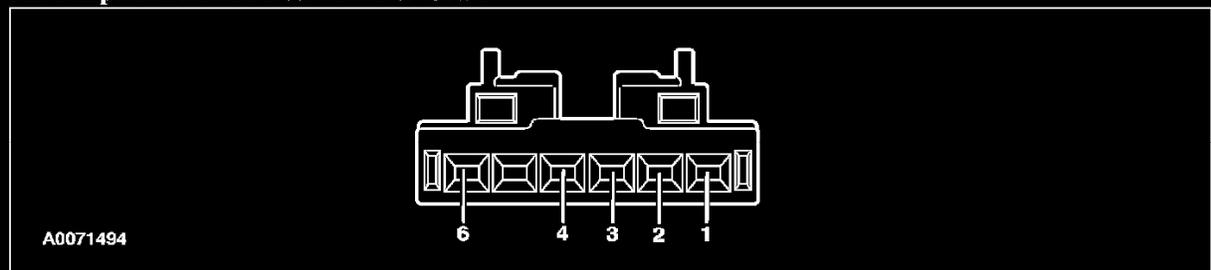
LH Temperature Blend Door Actuator C2091 (Part 1)

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|---|---|
| 3 | CKT 436 (RD/LG) temperature blend door actuator potentiometer reference voltage | Greater than 4.5 volts to chassis ground with the EATC/EMTC ON. |
| 4 | CKT 437 (YE/LG) LH temperature blend door actuator potentiometer feedback circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 6 | CKT 246 (VT) LH temperature blend door actuator motor drive B circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |

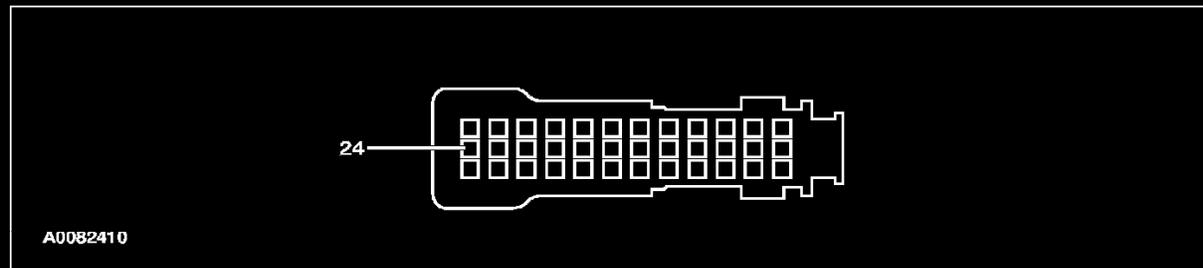
LH Temperature Blend Door Actuator C2091 (Part 2)

Powertrain Control Module C175

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|--|--|
| 41 | CKT 347 (BK/YE) A/C cycling switch input to PCM | Greater than 10 volts with the ignition on and engine running. |
| 69 | CKT 331 (PK/YE) A/C compressor clutch relay control | Greater than 10 volts with the ignition on. |
| 86 | CKT 349 (TN/LG) A/C pressure transducer input to PCM | Greater than 10,000 ohms to chassis ground and 0 volts. |

Powertrain Control Module C175**RH Temperature Blend Door Actuator C2092**

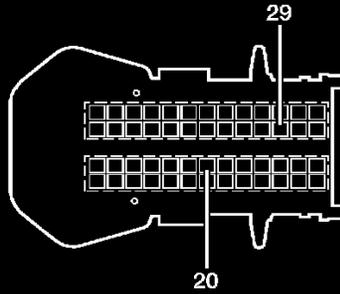
| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|---|---|
| 1 | CKT 1069 (OG/LB) RH temperature blend door actuator motor drive A circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 2 | CKT 438 (RD/WH) temperature blend door actuator potentiometer ground | Less than 5 ohms chassis ground. |
| 3 | CKT 436 (RD/LG) temperature blend door actuator potentiometer reference voltage | Greater than 4.5 volts to chassis ground with the EATC/EMTC ON. |
| 4 | CKT 435 (TN/LB) RH temperature blend door actuator potentiometer feedback circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 6 | CKT 660 (YE/LG) RH temperature blend door actuator motor drive B circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |

RH Temperature Blend Door Actuator C2092**Smart Junction Box C2280a**

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|-----------------------------------|---|
| 24 | CKT 1717 (VT/OG) ignition voltage | Greater than 10 volts with the ignition on. |

Smart Junction Box C2280a

Smart Junction Box C2280b



A0082411

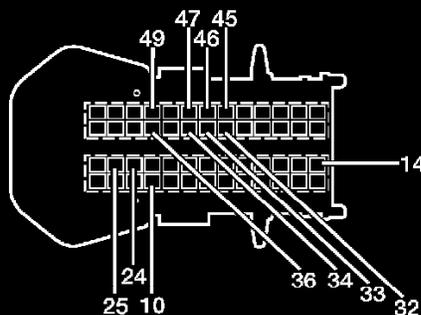
| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|---|---|
| 20 | CKT 1398 (PK/WH) blower motor request from EMTC | Less than 10 ohms with the EMTC in any position other than OFF. |

Smart Junction Box C2280b (Part 1)

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|--|---|
| 29 | CKT 1397 (GY/WH) A/C request from EMTC | Less than 10 ohms with the A/C button ON. |

Smart Junction Box C2280b (Part 2)

Smart Junction Box C2280c

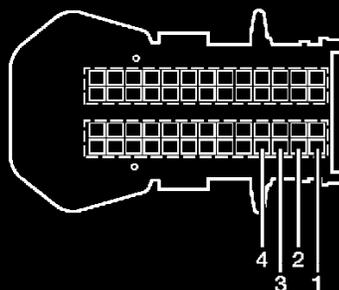


A0082412

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|--|---|
| 10 | CKT 1371 (TN/OG) auxiliary blower motor relay switched ground | Greater than 10 volts at all times. |
| 14 | CKT 1322 (BN/WH) blower motor relay switched ground | Greater than 10 volts with the ignition on. |
| 24 | CKT 1372 (PK/BK) auxiliary blower motor speed relay 1 switched ground | Greater than 10 volts at all times. |
| 25 | CKT 1373 (GY/YE) auxiliary blower motor speed relay 2 switched ground | Greater than 10 volts at all times. |
| 32 | CKT 1382 (BK/OG) auxiliary temperature blend door actuator potentiometer ground | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 33 | CKT 1125 (BN) auxiliary mode door actuator potentiometer ground | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 34 | CKT 3060 (GY/RD) ambient air temperature sensor ground | Less than 10 ohms to chassis ground with the ignition on. |
| 36 | CKT 1124 (WH) auxiliary mode door actuator potentiometer reference voltage | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 45 | CKT 1126 (LB) auxiliary temperature blend door actuator potentiometer feedback circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 46 | CKT 1131 (LG) auxiliary mode door actuator potentiometer feedback circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 47 | CKT 3061 (LB/OG) ambient air temperature sensor reference circuit | Greater than 10 volts with the ignition on. |
| 49 | CKT 1381 (WH/LB) auxiliary temperature blend door actuator potentiometer reference voltage | Greater than 10,000 ohms to chassis ground and 0 volts. |

Smart Junction Box C2280c

Smart Junction Box C2280d

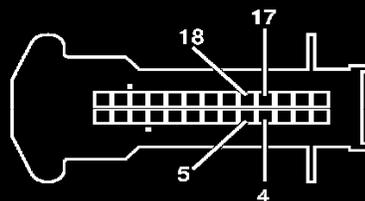


A0082413

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|--|---|
| 1 | CKT 1375 (PK/YE) auxiliary temperature blend door actuator motor drive A circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 2 | CKT 1376 (BK/LB) auxiliary temperature blend door actuator motor drive B circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 3 | CKT 1379 (PK/LB) auxiliary mode door actuator motor drive A circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 4 | CKT 1380 (TN/YE) auxiliary mode door actuator motor drive B circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |

Smart Junction Box C2280d

Smart Junction Box C2280f

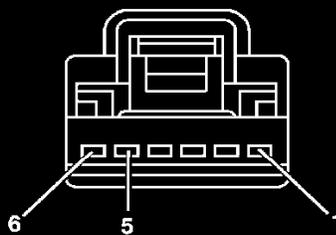


A0082414

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|--|---|
| 4 | CKT 1349 (PK/LG) auxiliary blower selector potentiometer feedback circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 5 | CKT 1348 (GY/OG) auxiliary control potentiometer reference voltage | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 17 | CKT 1125 (BN) auxiliary control potentiometer ground | Greater than 10,000 ohms to chassis ground and 0 volts. |
| 18 | CKT 1121 (DG/YE) auxiliary mode/temperature potentiometer feedback circuit | Greater than 10,000 ohms to chassis ground and 0 volts. |

Smart Junction Box C2280f

Solar Radiation Sensor C286



A0052181

| Pin Number(s) | Circuit Designation/Description | Normal Condition/Measurement |
|---------------|---|---|
| 1 | CKT 468 (BN) solar radiation sensor input (LH) | Approximately 5 volts with the EATC ON. |
| 5 | CKT 1203 (BK/LB) ground | Resistance of 0 ohms to chassis ground. |
| 6 | CKT 476 (PK/YE) solar radiation sensor input (RH) | Approximately 5 volts with the EATC ON. |

Solar Radiation Sensor C286

Test A: DTC B1251 or DTC B1253 - A/C In-Vehicle Temperature Sensor Open Circuit or Short to Ground

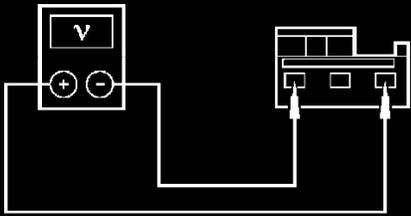
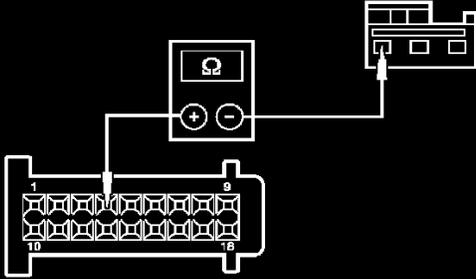
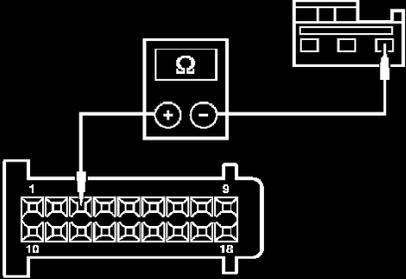
PINPOINT TEST A: DTC B1251 OR DTC B1253 - A/C IN-VEHICLE TEMPERATURE SENSOR OPEN CIRCUIT OR SHORT TO GROUND

| PINPOINT TEST A: DTC B1251 OR DTC B1253 — A/C IN-VEHICLE TEMPERATURE SENSOR OPEN CIRCUIT OR SHORT TO GROUND | | Result / Action to Take |
|---|--|---|
| Test Step | | |
| A1 | CHECK THE SENSOR RESISTANCE | |
| | <ul style="list-style-type: none"> Key in OFF position. Disconnect: In-Vehicle Temperature Sensor C233. Measure the resistance between the in-vehicle temperature sensor terminals. <p>A0013635</p> <ul style="list-style-type: none"> Is the resistance within the specified values for these temperature ranges: 10-20°C (50-68°F), 37,000-58,000 ohms; 20-30°C (68-86°F), 24,000-37,000 ohms; 30-40°C (86-104°F), 16,000-24,000 ohms? | <p>Yes GO to A2.</p> <p>No INSTALL a new in-vehicle temperature sensor. TEST the system for normal operation.</p> |
| A2 | CHECK THE EATC SENSOR OUTPUT VOLTAGE | |
| | <ul style="list-style-type: none"> Key in ON position. Press the AUTOMATIC button. | |

(Continued)

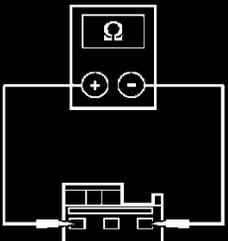
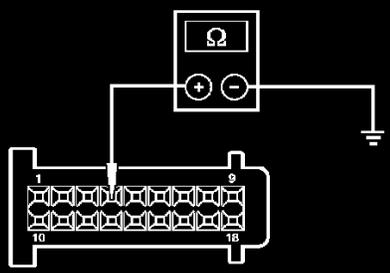
A1-A2

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST A: DTC B1251 OR DTC B1253 — A/C IN-VEHICLE TEMPERATURE SENSOR OPEN CIRCUIT OR SHORT TO GROUND (Continued)**

| Test Step | Result / Action to Take |
|---|---|
| <p>A2 CHECK THE EATC SENSOR OUTPUT VOLTAGE (Continued)</p> <ul style="list-style-type: none"> Measure the voltage between the in-vehicle temperature sensor C233-1, circuit 3050 (WH/OG) and C233-3, circuit 3051 (BK/YE).  <p>A0013636</p> <ul style="list-style-type: none"> Is the voltage between 4.7 and 5.1 volts? | <p>Yes INSTALL a new in-vehicle temperature sensor. TEST the system for normal operation. If code returns, INSTALL a new EATC module. TEST the system for normal operation.</p> <p>No If diagnosing DTC B1251, GO to A3. If diagnosing DTC B1253, GO to A5.</p> |
| <p>A3 CHECK CIRCUIT 3050 (WH/OG) FOR AN OPEN</p> <ul style="list-style-type: none"> Key in OFF position. Disconnect: EATC Module C228b. Measure the resistance between the EATC module C228b-4, circuit 3050 (WH/OG) and the in-vehicle temperature sensor C233-1, circuit 3050 (WH/OG).  <p>A0090789</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes GO to A4.</p> <p>No REPAIR circuit 3050 (WH/OG) for an open. TEST the system for normal operation.</p> |
| <p>A4 CHECK CIRCUIT 3051 (BK/YE) FOR AN OPEN</p> <ul style="list-style-type: none"> Measure the resistance between the EATC module C228b-3, circuit 3051 (BK/YE) and the in-vehicle temperature sensor C233-3, circuit 3051 (BK/YE).  <p>A0090790</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSTALL a new EATC module. TEST the system for normal operation.</p> <p>No REPAIR circuit 3051 (BK/YE) for an open. TEST the system for normal operation.</p> |

(Continued)

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST A: DTC B1251 OR DTC B1253 — A/C IN-VEHICLE TEMPERATURE SENSOR OPEN CIRCUIT OR SHORT TO GROUND (Continued)**

| Test Step | | Result / Action to Take |
|-----------|---|--|
| A5 | CHECK CIRCUIT 3050 (WH/OG) FOR A SHORT TO CIRCUIT 3051 (BK/YE) <ul style="list-style-type: none"> Key in OFF position. Disconnect: EATC Module C228b. Measure the resistance between the in-vehicle temperature sensor C233-1, circuit 3050 (WH/OG) and C233-3, circuit 3051 (BK/YE).  <p>A0040090</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes GO to A6.</p> <p>No REPAIR circuit 3050 (WH/OG) for a short to circuit 3051 (BK/YE). TEST the system for normal operation.</p> |
| A6 | CHECK CIRCUIT 3050 (WH/OG) FOR A SHORT TO GROUND <ul style="list-style-type: none"> Measure the resistance between the EATC module C228b-4, circuit 3050 (WH/OG) and ground.  <p>A0071485</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes INSTALL a new EATC module. TEST the system for normal operation.</p> <p>No REPAIR circuit 3050 (WH/OG) for a short to ground. TEST the system for normal operation.</p> |

A5-A6

Normal Operation

Under normal operation, the in-vehicle air temperature sensor receives a ground from the electronic automatic temperature control (EATC) module through circuit 3051 (BK/YE). A 5-volt reference voltage is supplied to the in-vehicle air temperature sensor from the EATC module through circuit 3050 (WH/OG).

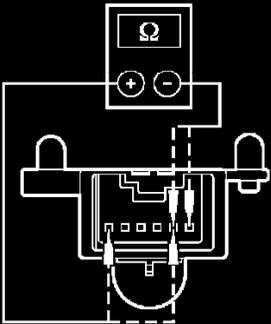
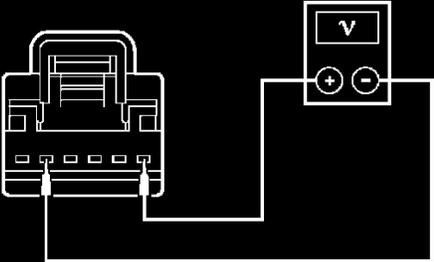
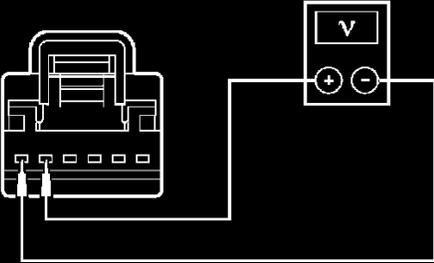
Possible Causes

- An open in circuit 3051 (BK/YE) or 3050 (WH/OG).
- A short to voltage in circuit 3051 (BK/YE).
- A short to ground in circuit 3050 (WH/OG).
- In-vehicle air temperature sensor.
- EATC module.

Test B: DTC B2796, DTC B2795, DTC B2426 or DTC B2427 - Solar Radiation Sensor Open Circuit or Short to Ground

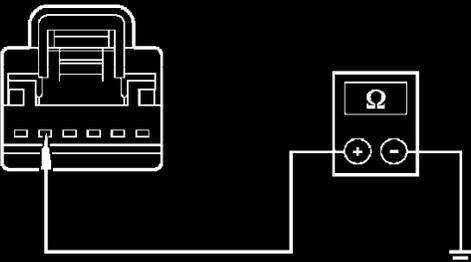
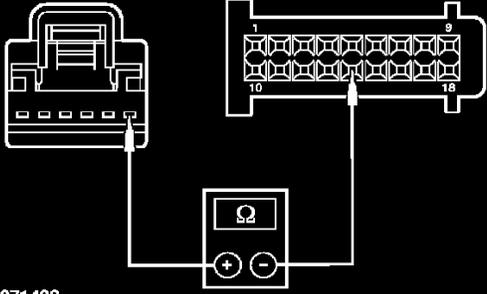
PINPOINT TEST B: DTC B2796, DTC B2795, DTC B2426 OR DTC B2427 - SOLAR RADIATION SENSOR OPEN CIRCUIT OR SHORT TO GROUND

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST B: DTC B2796, DTC B2795, DTC B2426 or DTC B2427 — SOLAR RADIATION SENSOR OPEN CIRCUIT OR SHORT TO GROUND**

| Test Step | | Result / Action to Take |
|-----------|---|---|
| B1 | CHECK THE SOLAR RADIATION SENSOR RESISTANCE <ul style="list-style-type: none"> Key in OFF position. Disconnect: Solar Radiation Sensor C286. Measure the resistance between the solar radiation sensor terminals 1 and 5 and between 5 and 6, component side.  <p>A0032464</p> <ul style="list-style-type: none"> Is continuity present and the resistance greater than 0 ohms? | <p>Yes GO to B2.</p> <p>No INSTALL a new solar radiation sensor. TEST the system for normal operation.</p> |
| B2 | CHECK THE SOLAR RADIATION SENSOR REFERENCE VOLTAGE <ul style="list-style-type: none"> Key in ON position. Press the AUTOMATIC button. Measure the voltage between the solar radiation sensor C286-1, circuit 468 (BN) and C286-5, circuit 3051 (BK/YE).  <p>A0015935</p> <ul style="list-style-type: none"> Measure the voltage between the solar radiation sensor C286-5, circuit 3051 (BK/YE) and C286-6, circuit 476 (BN/YE).  <p>A0038234</p> <ul style="list-style-type: none"> Are the voltages between 4.7 and 5.1 volts? | <p>Yes INSTALL a new EATC module. TEST the system for normal operation.</p> <p>No If diagnosing DTC B2796 or DTC B2426, GO to B3. If diagnosing DTC B2795 or DTC B2427, GO to B5.</p> |

(Continued)

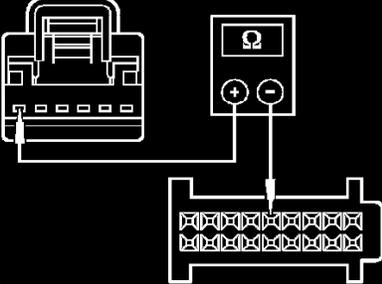
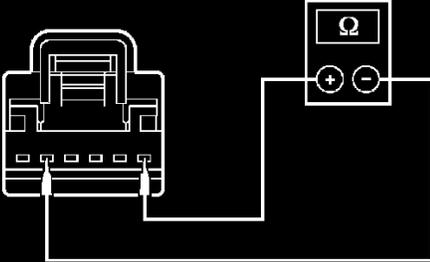
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST B: DTC B2796, DTC B2795, DTC B2426 or DTC B2427 — SOLAR RADIATION SENSOR OPEN CIRCUIT OR SHORT TO GROUND (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|---|
| B3 | CHECK CIRCUIT 3051 (BK/YE) FOR AN OPEN <ul style="list-style-type: none"> Key in OFF position. Measure the resistance between the solar radiation sensor C286-5, circuit 3051 (BK/YE) and ground.  <p>A0015937</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes GO to B4.</p> <p>No REPAIR circuit 3051 (BK/YE) for an open. TEST the system for normal operation.</p> |
| B4 | CHECK CIRCUIT 468 (BR) OR CIRCUIT 476 (BN/YE) FOR AN OPEN <ul style="list-style-type: none"> Disconnect: EATC Module C228b. NOTE: DTC B2796 only. <p>Measure the resistance between the EATC module C228b-20, circuit 468 (BR) and the solar radiation sensor C286-1, circuit 468 (BR).</p>  <p>A0071482</p> | |

(Continued)

B3-B4

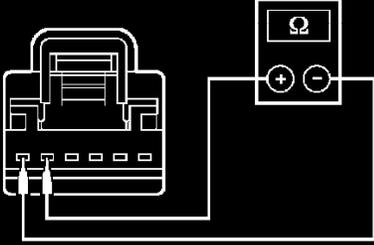
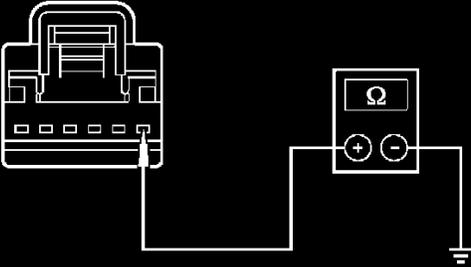
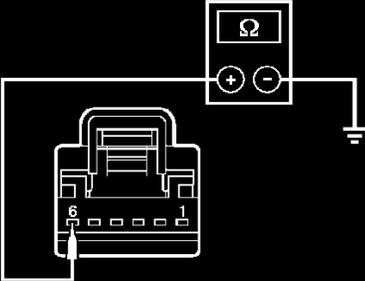
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST B: DTC B2796, DTC B2795, DTC B2426 or DTC B2427 — SOLAR RADIATION SENSOR OPEN CIRCUIT OR SHORT TO GROUND (Continued)**

| Test Step | | Result / Action to Take |
|-----------|---|---|
| B4 | CHECK CIRCUIT 468 (BR) OR CIRCUIT 476 (BN/YE) FOR AN OPEN (Continued) <ul style="list-style-type: none"> NOTE: DTC B2426 only. Measure the resistance between the EATC module C228b-6, circuit 476 (BN/YE) and the solar radiation sensor C286-6, circuit 476 (BN/YE).  <p>A0082142</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSTALL a new EATC module. TEST the system for normal operation.</p> <p>No REPAIR the circuit for an open. TEST the system for normal operation.</p> |
| B5 | CHECK CIRCUIT 468 (BR) OR 476 (BN/YE) FOR A SHORT TO CIRCUIT 3051 (BK/YE) <ul style="list-style-type: none"> Key in OFF position. Disconnect: EATC Module C228b. NOTE: DTC B2795 only. Measure the resistance between the solar radiation sensor C286-1, circuit 468 (BR) and circuit C286-5, 3051 (BK/YE).  <p>A0047078</p> | |

(Continued)

B4-B5

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST B: DTC B2796, DTC B2795, DTC B2426 or DTC B2427 — SOLAR RADIATION SENSOR OPEN CIRCUIT OR SHORT TO GROUND (Continued)**

| Test Step | | Result / Action to Take |
|-----------|---|---|
| B5 | CHECK CIRCUIT 468 (BR) OR 476 (BN/YE) FOR A SHORT TO CIRCUIT 3051 (BK/YE) (Continued) <ul style="list-style-type: none"> NOTE: DTC B2427 only. Measure the resistance between the solar radiation sensor C286-6, circuit 476 (BN/YE) and circuit C286-5, 3051 (BK/YE).  <p>A0047079</p> <ul style="list-style-type: none"> Are the resistances greater than 10,000 ohms? | <p>Yes GO to B6.</p> <p>No REPAIR circuit 468 (BR) and 476 (BN/YE) for a short to circuit 3051 (BK/YE). TEST the system for normal operation.</p> |
| B6 | CHECK CIRCUIT 468 (BR) OR CIRCUIT 476 (BN/YE) FOR A SHORT TO GROUND <ul style="list-style-type: none"> NOTE: DTC B2795 only. Measure the resistance between the solar radiation sensor C286-1, circuit 468 (BR) and ground.  <p>A0015938</p> <ul style="list-style-type: none"> NOTE: DTC B2427 only. Measure the resistance between the solar radiation sensor C286-6, circuit 476 (BN/YE) and ground.  <p>A0032467</p> <ul style="list-style-type: none"> Are the resistances greater than 10,000 ohms? | <p>Yes INSTALL a new EATC module. TEST the system for normal operation.</p> <p>No REPAIR circuit 468 (BR) or 476 (BN/YE) for a short to ground. TEST the system for normal operation.</p> |

B5-B6**Normal Operation**

Under normal operation, the solar radiation sensor receives a ground through circuit 3051 (BK/YE). A **5-volt** reference voltage is supplied to the solar radiation sensor from the EATC module through circuit 468 (BN) (LH) and circuit 476 (BN/YE) (RH).

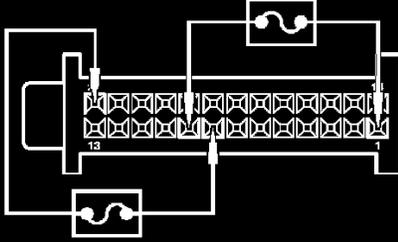
Possible Causes

- An open in circuit 3051 (BK/YE), 476 (BN/YE) or 468 (BN).
- A short to ground in circuit 468 (BN) or 476 (BN/YE).
- Solar radiation sensor.

- EATC module.

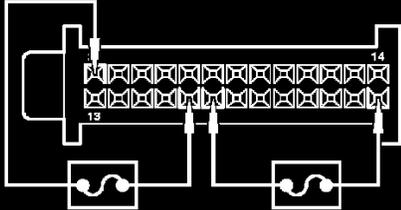
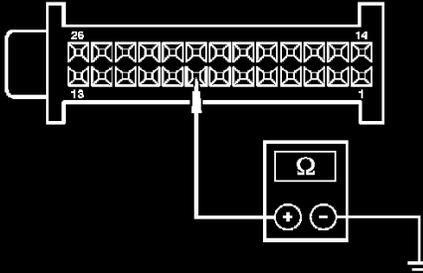
Test C: DTC B1242 Air Inlet Door Failure

PINPOINT TEST C: DTC B1242 AIR INLET DOOR FAILURE

| PINPOINT TEST C: DTC B1242 AIR INLET DOOR FAILURE | | Result / Action to Take |
|---|---|--|
| Test Step | | |
| C1 | <p>CHECK THE AIR INLET DOOR ACTUATOR CLOCKWISE OPERATION</p> <ul style="list-style-type: none"> • Disconnect: EMTC Module C294a or EATC C228a. • Remove the door actuator and disengage the actuator driveshaft from the actuator door. • Mark the door actuator driveshaft position. • Connect a fused jumper wire between EMTC module C294a-8 or EATC module C228a-8, circuit 1991 (LB/WH) and EMTC module C294a-26 or EATC module C228a-26, circuit 1001 (WH/YE). Connect a second fused jumper wire between EMTC module C294a-9 or EATC module C228a-9, circuit 1990 (WH/LB) and EMTC module C294a-1 or EATC module C228a-1, circuit 1203 (BK/LB). <div style="text-align: center;">  </div> <p>A0072895</p> <ul style="list-style-type: none"> • Does the actuator motor move in the clockwise direction? | <p>Yes GO to C2.</p> <p>No GO to C3.</p> |

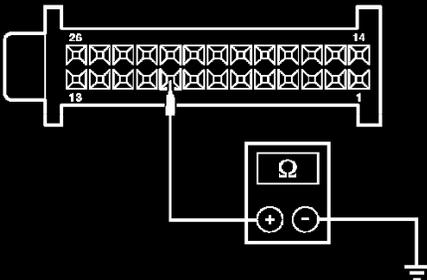
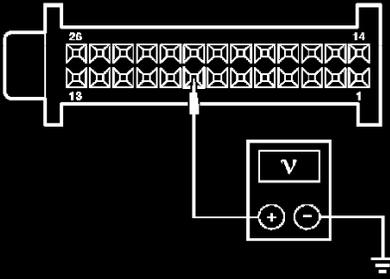
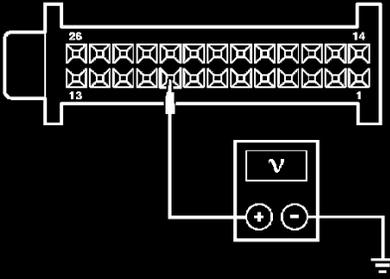
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DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST C: DTC B1242 AIR INLET DOOR FAILURE (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|--|
| C2 | CHECK THE AIR INLET DOOR ACTUATOR COUNTERCLOCKWISE OPERATION | |
| | <ul style="list-style-type: none"> Connect a fused Jumper wire between EMTC module C294a-8 or EATC module C228a-8, circuit 1991 (LB/WH) and EMTC module C294a-1 or EATC module C228a-1, circuit 1203 (BK/LB). Connect a second fused jumper wire between EMTC module C294a-9 or EATC module C228a-9, circuit 1990 (WH/LB) and EMTC module C294a-26 or EATC module C228a-26, circuit 1001 (WH/YE).  <p>A0072894</p> <ul style="list-style-type: none"> Does the actuator motor move in the counterclockwise direction? | <p>Yes INSPECT for binding or broken door and linkage. If no condition is found, INSTALL a new EMTC module or EATC module. TEST the system for normal operation.</p> <p>No GO to C3.</p> |
| C3 | CHECK CIRCUIT 1991 (LB/WH) FOR A SHORT TO GROUND | |
| | <ul style="list-style-type: none"> Disconnect: Recirc Door Actuator C289. Measure the resistance between ground and EMTC module C294a-8 or EATC module C228a-8, circuit 1991 (LB/WH).  <p>A0072896</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes GO to C4.</p> <p>No REPAIR circuit 1991 (LB/WH) for a short to ground. TEST the system for normal operation.</p> |

(Continued)

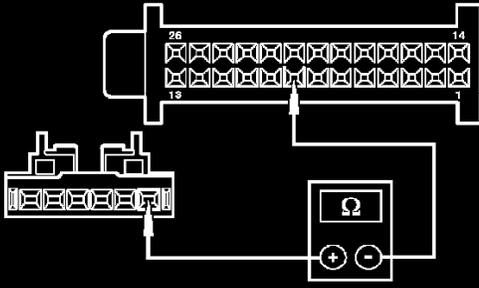
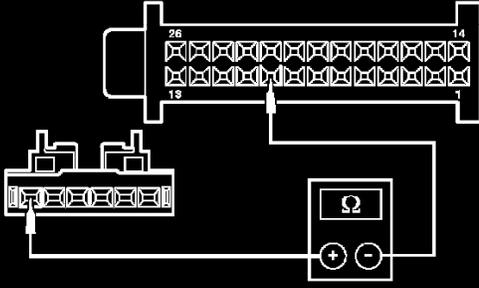
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST C: DTC B1242 AIR INLET DOOR FAILURE (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|---|
| C4 | CHECK CIRCUIT 1990 (WH/LB) FOR A SHORT TO GROUND | |
| | <ul style="list-style-type: none"> Measure the resistance between ground and EMTC module C228a-9 or EATC module C228a-9, circuit 1990 (WH/LB).  <p>A0072897</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes GO to C5.</p> <p>No REPAIR circuit 1990 (WH/LB) for a short to ground. TEST the system for normal operation.</p> |
| C5 | CHECK CIRCUIT 1991 (LB/WH) FOR A SHORT TO POWER | |
| | <ul style="list-style-type: none"> Key in ON position. Measure the voltage between ground and EMTC module C228a-8 or EATC module C228a-8, circuit 1991 (LB/WH).  <p>A0072898</p> <ul style="list-style-type: none"> Is voltage present? | <p>Yes REPAIR circuit 1991 (LB/WH) for a short to power. TEST the system for normal operation.</p> <p>No GO to C6.</p> |
| C6 | CHECK CIRCUIT 1990 (WH/LB) FOR A SHORT TO POWER | |
| | <ul style="list-style-type: none"> Measure the voltage between ground and EMTC module C294a-9 or EATC module C228a-9, circuit 1990 (WH/LB).  <p>A0072899</p> <ul style="list-style-type: none"> Is voltage present? | <p>Yes REPAIR circuit 1990 (WH/LB) for a short to power. TEST the system for normal operation.</p> <p>No GO to C7.</p> |
| C7 | CHECK CIRCUIT 1991 (LB/WH) FOR AN OPEN | |
| | <ul style="list-style-type: none"> Key in OFF position. | |

(Continued)

C4-C7

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST C: DTC B1242 AIR INLET DOOR FAILURE (Continued)**

| Test Step | | Result / Action to Take |
|-----------|---|---|
| C7 | CHECK CIRCUIT 1991 (LB/WH) FOR AN OPEN (Continued) | |
| | <ul style="list-style-type: none"> Measure the resistance between EMTC module C294a-8 or EATC module C228a-8, circuit 1991 (LB/WH) and the recirc door actuator C289-1, circuit 1991 (LB/WH).  <p>A0072900</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes GO to C8.</p> <p>No REPAIR circuit 1991 (LB/WH) for an open. TEST the system for normal operation.</p> |
| C8 | CHECK CIRCUIT 1990 (WH/LB) FOR AN OPEN | |
| | <ul style="list-style-type: none"> Measure the resistance between EMTC module C294a-9 or EATC module C228a-9, circuit 1990 (WH/LB) and the recirc door actuator C289-6, circuit 1990 (WH/LB).  <p>A0072901</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSPECT for binding or broken linkage. If no condition is found, INSTALL a new door actuator. TEST the system for normal operation.</p> <p>No REPAIR circuit 1990 (WH/LB) for an open. TEST the system for normal operation.</p> |

C7-C8**Normal Operation**

Under normal operation, the air inlet door actuator motor is supplied voltage or ground on circuit 1991 (LB/WH), depending on desired actuator rotation, by the EMTC module or EATC module. The EMTC module or EATC module then supplies the appropriate voltage or ground to the other side of the actuator motor on circuit 1990 (WH/LB).

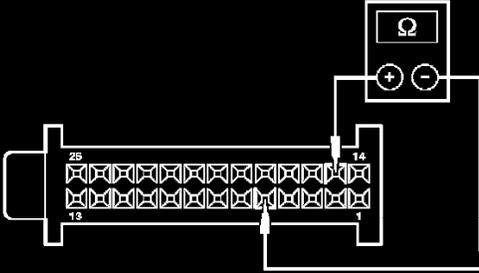
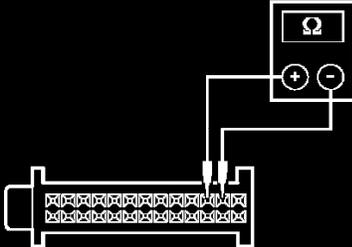
Possible Causes

- An open, short to voltage, ground or together in circuits 1991 (LB/WH) or 1990 (WH/LB).
- Air inlet door actuator.
- EATC module.
- EMTC module.
- Stuck or bound linkage or door.

Test D: DTC B1263 Mode Door Failure/Incorrect/Erratic Direction of Airflow From Outlet(s)

PINPOINT TEST D: DTC B1263 MODE DOOR FAILURE/INCORRECT/ERRATIC DIRECTION OF AIRFLOW FROM OUTLET(S)

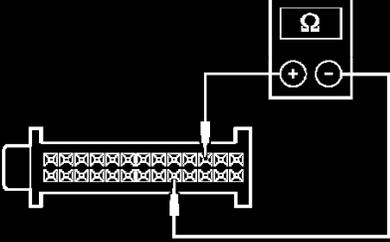
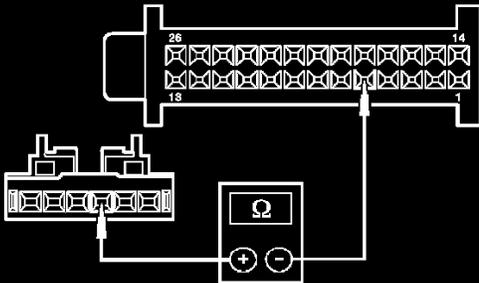
PINPOINT TEST D: DTC B1263 MODE DOOR FAILURE/INCORRECT/ERRATIC DIRECTION OF AIRFLOW FROM OUTLET(S)

| Test Step | | Result / Action to Take |
|-----------|--|--|
| D1 | CHECK THE AIRFLOW | <p>Yes The system is operating normally.</p> <p>No GO to D2.</p> <p>If the RECIRC button does not change the air inlet door position, GO to Pinpoint Test C.</p> |
| | <ul style="list-style-type: none"> Key in ON position. Check the airflow in the PANEL, RECIRC, DEFROST and FLOOR modes. Is the airflow correct in each setting? | |
| D2 | CHECK THE FEEDBACK POTENTIOMETER TOTAL RESISTANCE | <p>Yes GO to D3.</p> <p>No If the resistance is greater than 6,000 ohms, GO to D5. If the resistance is less than 5,000 ohms, GO to D7.</p> |
| | <ul style="list-style-type: none"> Disconnect: EATC Module C228a or EMTC Module C294a. Remove the door actuator and disengage the actuator driveshaft from the actuator door. Mark the door actuator driveshaft position. Measure the resistance between EATC Module C228a-5 or EMTC Module C294a-5, circuit 1977 (YE/BK) and EATC module C228a-15 or EMTC Module C294a-15, circuit 1978 (BN/LG). <div style="text-align: center;">  <p>A0072902</p> </div> <ul style="list-style-type: none"> Is the resistance between 5,000 and 6,000 ohms? | |
| D3 | CHECK POTENTIOMETER LOW SIDE RESISTANCE | <p>Yes GO to D4.</p> <p>No If the resistance is greater than 5,500 ohms, GO to D8. If the resistance is less than 250 ohms, GO to D9.</p> |
| | <ul style="list-style-type: none"> Measure the resistance between EATC Module C228a-15 or EMTC Module C294a-15, circuit 1978 (BN/LG) and EATC Module C228a-16 or EMTC Module C294a-16, circuit 1982 (LB/BK). <div style="text-align: center;">  <p>A0081809</p> </div> <ul style="list-style-type: none"> Is the resistance between 250 and 5,500 ohms? | |

(Continued)

D1-D3

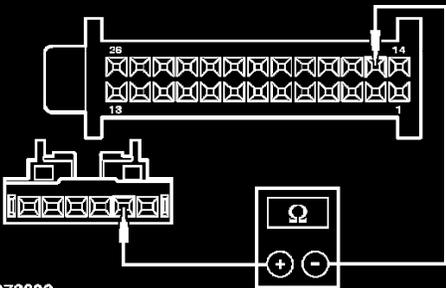
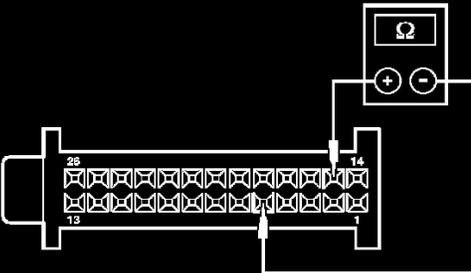
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST D: DTC B1263 MODE DOOR FAILURE/INCORRECT/ERRATIC DIRECTION OF AIRFLOW FROM OUTLET(S) (Continued)**

| Test Step | | Result / Action to Take |
|-----------|---|--|
| D4 | CHECK POTENTIOMETER HIGH SIDE RESISTANCE <ul style="list-style-type: none"> Measure the resistance between EATC Module C228a-5 or EMTC Module C294a-5, circuit 1977 (YE/BK) and EATC Module C228a-16 or EMTC Module C294a-16, circuit 1982 (LB/BK).  <p>A0081810</p> <ul style="list-style-type: none"> Is the resistance between 250 and 5,500 ohms? | <p>Yes GO to D11.</p> <p>No If the resistance is greater than 5,500 ohms, INSTALL a new door actuator. TEST the system for normal operation. If the resistance is less than 250 ohms, GO to D10.</p> |
| D5 | CHECK CIRCUIT 1977 (YE/BK) FOR AN OPEN <ul style="list-style-type: none"> Disconnect: Floor/Defrost/Panel Door Actuator C2278. Measure the resistance between EATC Module C228a-5 or EMTC Module C294a-5, circuit 1977 (YE/BK) and floor/defrost/panel door actuator C2278-3, circuit 1977 (YE/BK).  <p>A0072905</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes GO to D6.</p> <p>No REPAIR circuit 1977 (YE/BK) for an open. TEST the system for normal operation.</p> |

(Continued)

D4-D5

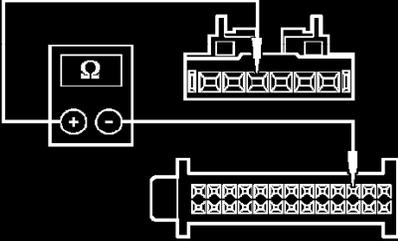
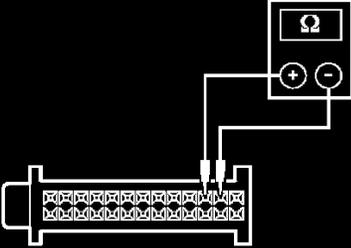
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST D: DTC B1263 MODE DOOR FAILURE/INCORRECT/ERRATIC DIRECTION OF AIRFLOW FROM OUTLET(S) (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|---|
| D6 | CHECK THE ACTUATOR RETURN CIRCUIT 1978 (BN/LG) FOR AN OPEN <ul style="list-style-type: none"> Measure the resistance between EATC Module C228a-15 or EMTC Module C294a-15, circuit 1978 (BN/LG) and floor/defrost/panel door actuator C2278-2, circuit 1978 (BN/LG).  <p>A0072906</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSTALL a new door actuator. TEST the system for normal operation.</p> <p>No REPAIR circuit 1978 (BN/LG) for an open. TEST the system for normal operation.</p> |
| D7 | CHECK CIRCUIT 1978 (BN/LG) AND CIRCUIT 1977 (YE/BK) FOR A SHORT TOGETHER <ul style="list-style-type: none"> Disconnect: Floor/Defrost/Panel Door Actuator C2278. Measure the resistance between EATC Module C228a-5 or EMTC Module C294a-5, circuit 1977 (YE/BK) and EATC Module C228a-15 or EMTC Module C294a-15, circuit 1978 (BN/LG).  <p>A0072902</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes INSTALL a new door actuator. TEST the system for normal operation.</p> <p>No REPAIR circuits 1978 (BN/LG) and circuit 1977 (YE/BK) for a short together. TEST the system for normal operation.</p> |
| D8 | CHECK CIRCUIT 1982 (LB/BK) FOR AN OPEN <ul style="list-style-type: none"> Disconnect: Floor/Defrost/Panel Door Actuator C2278. | |

(Continued)

D6-D8

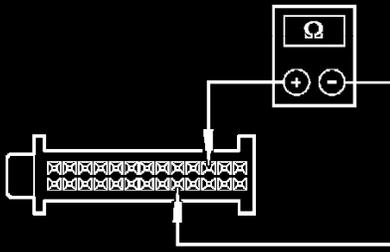
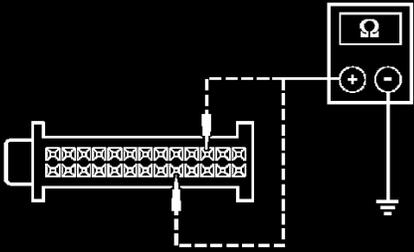
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST D: DTC B1263 MODE DOOR FAILURE/INCORRECT/ERRATIC DIRECTION OF AIRFLOW FROM OUTLET(S) (Continued)**

| Test Step | | Result / Action to Take |
|------------|--|---|
| D8 | CHECK CIRCUIT 1982 (LB/BK) FOR AN OPEN (Continued) <ul style="list-style-type: none"> Measure the resistance between EATC Module C228a-16 or EMTC Module C294a-16, circuit 1982 (LB/BK) and floor/defrost/panel door actuator C2278-4, circuit 1982 (LB/BK).  <p>A0081811</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSTALL a new door actuator. TEST the system for normal operation.</p> <p>No REPAIR circuit 1982 (LB/BK) for an open. TEST the system for normal operation.</p> |
| D9 | CHECK CIRCUIT 1978 (BN/LG) FOR A SHORT TO CIRCUIT 1982 (LB/BK) <ul style="list-style-type: none"> Disconnect: Floor/Defrost/Panel Door Actuator C2278. Measure the resistance between EATC Module C228a-15 or EMTC Module C294a-15, circuit 1978 (BN/LG) and EATC Module C228a-16 or EMTC Module C294a-16, circuit 1982 (LB/BK).  <p>A0081809</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes INSTALL a new door actuator. TEST the system for normal operation.</p> <p>No REPAIR circuits 1978 (BN/LG) and circuit 1982 (LB/BK) for a short together. TEST the system for normal operation.</p> |
| D10 | CHECK CIRCUIT 1977 (YE/BK) FOR A SHORT TO CIRCUIT 1982 (LB/BK) <ul style="list-style-type: none"> Disconnect: Floor/Defrost/Panel Door Actuator C2278. | |

(Continued)

D8-D10

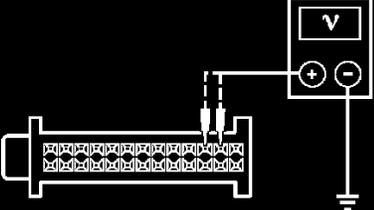
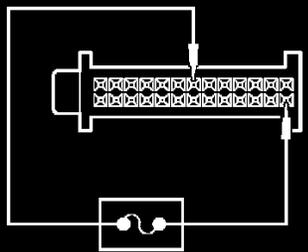
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST D: DTC B1263 MODE DOOR FAILURE/INCORRECT/ERRATIC DIRECTION OF AIRFLOW FROM OUTLET(S) (Continued)**

| Test Step | | Result / Action to Take |
|------------|---|---|
| D10 | CHECK CIRCUIT 1977 (YE/BK) FOR A SHORT TO CIRCUIT 1982 (LB/BK) (Continued) <ul style="list-style-type: none"> Measure the resistance between EATC Module C228a-5 or EMTC Module C294a-5, circuit 1977 (YE/BK) and EATC Module C228a-16 or EMTC Module C294a-16, circuit 1982 (LB/BK).  <p>A0081810</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes INSTALL a new door actuator. TEST the system for normal operation.</p> <p>No REPAIR circuits 1977 (YE/BK) and circuit 1982 (LB/BK) for a short together. TEST the system for normal operation.</p> |
| D11 | CHECK CIRCUIT 1977 (YE/BK) OR 1982 (LB/BK) FOR A SHORT TO GROUND <ul style="list-style-type: none"> Disconnect: Floor/Defrost/Panel Door Actuator C2278. Measure the resistance between ground and the following: <ul style="list-style-type: none"> EATC Module C228a-5 or EMTC Module C294a-5, circuit 1977 (YE/BK). EATC Module C228a-16 or EMTC Module C294a-16, circuit 1982 (LB/BK).  <p>A0081812</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes GO to D12.</p> <p>No REPAIR circuit(s) for a short to ground. TEST the system for normal operation.</p> |
| D12 | CHECK CIRCUIT 1978 (BN/LG) OR 1982 (LB/BK) FOR A SHORT TO POWER <ul style="list-style-type: none"> Key in ON position. | |

(Continued)

D10-D12

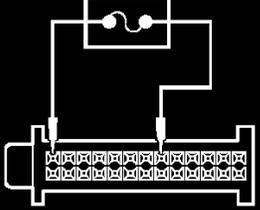
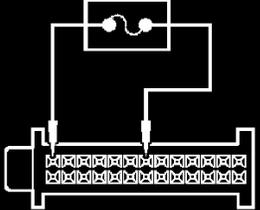
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST D: DTC B1263 MODE DOOR FAILURE/INCORRECT/ERRATIC DIRECTION OF AIRFLOW FROM OUTLET(S) (Continued)**

| Test Step | | Result / Action to Take |
|------------|---|---|
| D12 | CHECK CIRCUIT 1978 (BN/LG) OR 1982 (LB/BK) FOR A SHORT TO POWER (Continued) <ul style="list-style-type: none"> Measure the voltage between ground and the following: <ul style="list-style-type: none"> — EATC Module C228a-15 or EMTC Module C294a-15, circuit 1978 (BN/LG). — EATC Module C228a-16 or EMTC Module C294a-16, circuit 1982 (LB/BK).  <p>A0081813</p> <ul style="list-style-type: none"> Is voltage present? | <p>Yes REPAIR circuit(s) for a short to power. TEST the system for normal operation.</p> <p>No GO to D13.</p> |
| D13 | CHECK DOOR ACTUATOR CLOCKWISE OPERATION <ul style="list-style-type: none"> Connect a fused jumper wire between EATC Module C228a-1 or EMTC Module C294a-1, circuit 1203 (BK/LB) and EATC Module C228a-20 or EMTC Module C294a-20, circuit 1988 (BN/OG).  <p>A0081814</p> | |

(Continued)

D12-D13

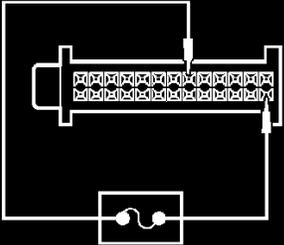
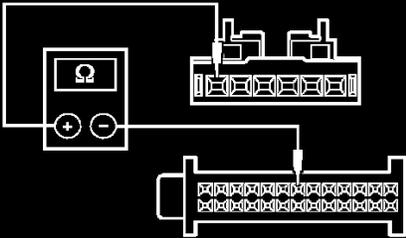
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST D: DTC B1263 MODE DOOR FAILURE/INCORRECT/ERRATIC DIRECTION OF AIRFLOW FROM OUTLET(S) (Continued)**

| Test Step | | Result / Action to Take |
|------------|---|---|
| D13 | CHECK DOOR ACTUATOR CLOCKWISE OPERATION (Continued) <ul style="list-style-type: none"> Connect a second fused jumper wire between EATC Module C228a-26 or EMTC Module C294a-26, circuit 1001 (WH/YE) and EATC Module C228a-19 or EMTC Module C294a-19, circuit 1989 (OG/LB).  <p>A0081815</p> <ul style="list-style-type: none"> Does the actuator motor move in the clockwise direction? | Yes GO to D14. No GO to D15. |
| D14 | CHECK DOOR ACTUATOR COUNTERCLOCKWISE OPERATION <ul style="list-style-type: none"> Connect a fused jumper wire between EATC Module C228a-26 or EMTC Module C294a-26, circuit 1001 (WH/YE) and EATC Module C228a-20 or EMTC Module C294a-20, circuit 1988 (BN/OG).  <p>A0081816</p> | |

(Continued)

D13-D14

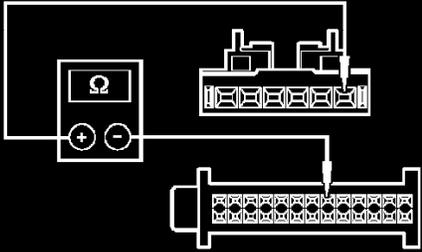
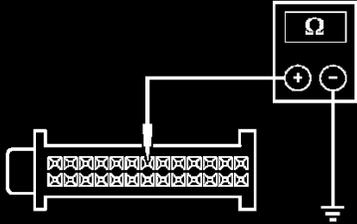
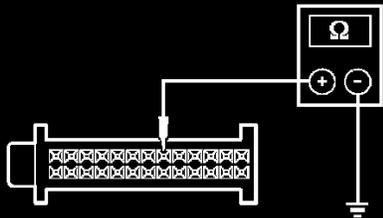
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST D: DTC B1263 MODE DOOR FAILURE/INCORRECT/ERRATIC DIRECTION OF AIRFLOW FROM OUTLET(S) (Continued)**

| Test Step | | Result / Action to Take |
|------------|---|--|
| D14 | CHECK DOOR ACTUATOR COUNTERCLOCKWISE OPERATION (Continued) <ul style="list-style-type: none"> Connect a second fused jumper wire between EATC Module C228a-1 or EMTC Module C294a-1, circuit 1203 (BK/LB) and EATC Module C228a-19 or EMTC Module C294a-19, circuit 1989 (OG/LB).  <p>A0081817</p> <ul style="list-style-type: none"> Does the actuator motor move in the counterclockwise direction? | <p>Yes INSPECT for binding or broken door and linkage. If no condition is found, INSTALL a new EATC or EMTC module. TEST the system for normal operation.</p> <p>No GO to D15.</p> |
| D15 | CHECK THE ACTUATOR MOTOR DRIVE CIRCUITS FOR AN OPEN <ul style="list-style-type: none"> Disconnect: Floor/Defrost/Panel Door Actuator C2278. Measure the resistance between EATC Module C228a-20 or EMTC Module C294a-20, circuit 1988 (BN/OG) and floor/defrost/panel door actuator C2278-6, circuit 1988 (BN/OG).  <p>A0081818</p> | |

(Continued)

D14-D15

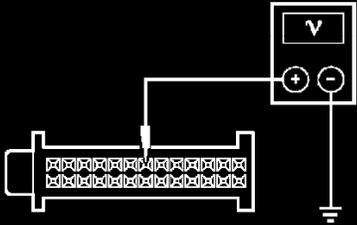
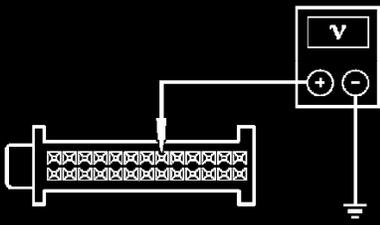
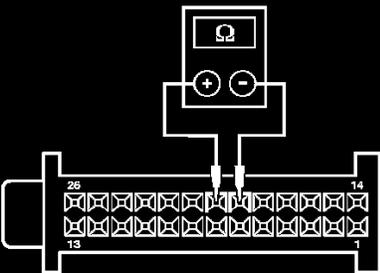
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST D: DTC B1263 MODE DOOR FAILURE/INCORRECT/ERRATIC DIRECTION OF AIRFLOW FROM OUTLET(S) (Continued)**

| Test Step | | Result / Action to Take | |
|------------|---|--|--|
| D15 | CHECK THE ACTUATOR MOTOR DRIVE CIRCUITS FOR AN OPEN (Continued) <ul style="list-style-type: none"> Measure the resistance between EATC Module C228a-19 or EMTC Module C294a-19, circuit 1989 (OG/LB) and floor/defrost/panel door actuator C2278-1, circuit 1989 (OG/LB).  <p>A0081819</p> <ul style="list-style-type: none"> Are the resistances less than 5 ohms? | <p>Yes GO to D16.</p> <p>No REPAIR the circuit(s) for an open. TEST the system for normal operation.</p> | |
| D16 | CHECK THE ACTUATOR MOTOR DRIVE CIRCUITS FOR A SHORT TO GROUND <ul style="list-style-type: none"> Measure the resistance between ground and EATC Module C228a-20 or EMTC Module C294a-20, circuit 1988 (BN/OG).  <p>A0081820</p> <ul style="list-style-type: none"> Measure the resistance between ground and EATC Module C228a-19 or EMTC Module C294a-19, circuit 1989 (OG/LB).  <p>A0081821</p> <ul style="list-style-type: none"> Are the resistances greater than 10,000 ohms? | | <p>Yes GO to D17.</p> <p>No REPAIR the circuit(s) for a short to ground. TEST the system for normal operation.</p> |
| D17 | CHECK THE ACTUATOR MOTOR DRIVE CIRCUITS FOR A SHORT TO POWER <ul style="list-style-type: none"> Key in ON position. | | |
| | | | |

(Continued)

D15-D17

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST D: DTC B1263 MODE DOOR FAILURE/INCORRECT/ERRATIC DIRECTION OF AIRFLOW FROM OUTLET(S) (Continued)**

| Test Step | | Result / Action to Take |
|------------|---|--|
| D17 | CHECK THE ACTUATOR MOTOR DRIVE CIRCUITS FOR A SHORT TO POWER (Continued) | |
| | <ul style="list-style-type: none"> Measure the voltage between ground and EATC Module C228a-20 or EMTC Module C294a-20, circuit 1988 (BN/OG).  <p>A0081822</p> <ul style="list-style-type: none"> Measure the voltage between ground and EATC Module C228a-19 or EMTC Module C294a-19, circuit 1989 (OG/LB).  <p>A0081823</p> <ul style="list-style-type: none"> Is voltage present? | <p>Yes REPAIR the circuit(s) for a short to power. TEST the system for normal operation.</p> <p>No GO to D18.</p> |
| D18 | CHECK THE ACTUATOR MOTOR DRIVE CIRCUITS FOR A SHORT TOGETHER | |
| | <ul style="list-style-type: none"> Key in OFF position. Measure the resistance between EATC Module C228a-19 or EMTC Module C294a-19, circuit 1989 (OG/LB) and EATC Module C228a-20 or EMTC Module C294a-20, circuit 1988 (BN/OG).  <p>A0072918</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes INSPECT for binding or broken linkage. If no condition is found, INSTALL a new door actuator. TEST the system for normal operation.</p> <p>No REPAIR circuit(s) for a short together. TEST the system for normal operation.</p> |

D17-D18**Normal Operation**

Under normal operation, to rotate the mode door actuator clockwise, the EMTC module or EATC module supplies voltage to the Floor/Defrost/Panel mode door actuator motors through the circuit 1989 (OG/LB), and supplies ground through circuit 1988 (BN/OG). To rotate the mode door actuator counterclockwise, the EMTC module or EATC module reverses the voltage and ground circuits.

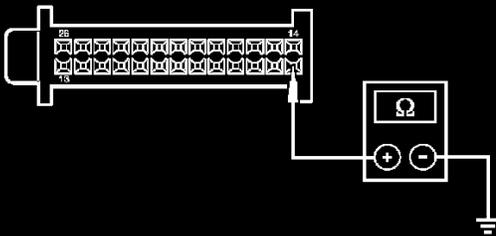
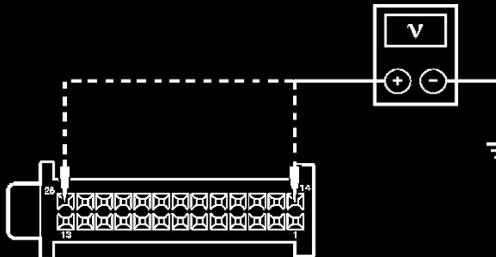
The mode door actuator feedback resistor is supplied a ground from the EMTC module or EATC module through circuit 1978 (BN/LG) and a **5-volt** reference voltage on circuit 1977 (YE/BK). The EMTC module or EATC module reads the voltage on the mode door actuator feedback circuit 1982 (LB/BK) to determine the mode door actuator position by the position of the actuator feedback resistor wiper arm.

Possible Causes

- An open, short to voltage, ground or together in circuits 1988 (BN/OG), 1989 (OG/LB), 1982 (LB/BK), 1978 (BN/LG), 1977 (YE/BK) and 1982 (LB/BK).
- Floor/defrost/panel mode door actuator motor.
- EATC module.
- EMTC module.
- Stuck or bound linkage or door.

Test E: No Communication With The Electronic Automatic Temperature Control (EATC) Module

PINPOINT TEST E: NO COMMUNICATION WITH THE ELECTRONIC AUTOMATIC TEMPERATURE CONTROL (EATC) MODULE

| PINPOINT TEST E: NO COMMUNICATION WITH THE ELECTRONIC AUTOMATIC TEMPERATURE CONTROL (EATC) MODULE | | Result / Action to Take |
|---|---|--|
| Test Step | | |
| E1 | <p>CHECK CIRCUIT 1203 (BK/LB) FOR AN OPEN</p> <ul style="list-style-type: none"> • Key in OFF position. • Disconnect EATC Module C228a. • Measure the resistance between the EATC module C228a-1, circuit 1203 (BK/LB) and ground.  <p>A0071481</p> <ul style="list-style-type: none"> • Is the resistance less than 5 ohms? | <p>Yes GO to E2.</p> <p>No REPAIR circuit 1203 (BK/LB). TEST the system for normal operation.</p> |
| E2 | <p>CHECK CIRCUITS 1001 (WH/YE) AND 1003 (GY/YE) FOR AN OPEN</p> <ul style="list-style-type: none"> • Key in ON position. • Measure the voltage between the EATC module C228a-26, circuit 1001 (WH/YE), C228a-14, circuit 1003 (GY/YE) and ground.  <p>A0071480</p> <ul style="list-style-type: none"> • Is the voltage greater than 10 volts? | <p>Yes GO to Information Bus (Module Communications Network) to diagnose the network concern.</p> <p>No REPAIR circuit 1001 (WH/YE) or 1003 (GY/YE) for an open. TEST the system for normal operation.</p> |

E1-E2

Normal Operation

Under normal operation, the EATC module receives a ground through circuit 1203 (BK/LB). The EATC module is supplied constant battery voltage through circuit 1001 (WH/YE) and ignition switched voltage through circuit 1003 (GY/YE).

Possible Causes

- An open in circuit 1203 (BK/LB), 1001 (WH/YE) or 1003 (GY/YE).
- EATC module.

Test F: The EATC System is Inoperative, Intermittent or Incorrect Operation

PINPOINT TEST F: THE EATC SYSTEM IS INOPERATIVE, INTERMITTENT OR INCORRECT OPERATION

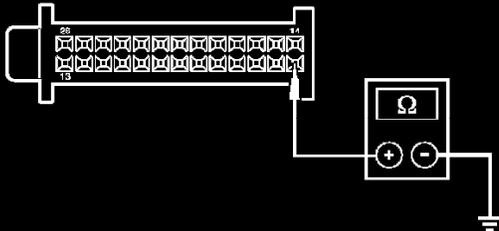
PINPOINT TEST F: THE EATC SYSTEM IS INOPERATIVE, INTERMITTENT OR INCORRECT OPERATION

| Test Step | | Result / Action to Take |
|-----------|---|--|
| F1 | VERIFY AUTOMATIC OPERATION | |
| | <ul style="list-style-type: none"> Key in START position. Press the AUTOMATIC button. Does the indicator above the AUTO button illuminate and the selected temperature for both the driver and passenger appear in the display window? | Yes GO to F2. No GO to F11. |
| F2 | PERFORM THE EATC MODULE SELF-TEST | |
| | <ul style="list-style-type: none"> Key in ON position. CARRY OUT the EATC module self-test. Refer to the Electronic Automatic Temperature Control Module Self-Test. Record the DTCs displayed, if any. Were any DTCs displayed as a result of the EATC self-test? | Yes REFER to the EATC Module Diagnostic Trouble Code (DTC) Index. CARRY OUT the necessary diagnosis and REPAIR as required. No GO to F3. |
| F3 | CHECK THE VACUUM FLUORESCENT DISPLAY | |
| | <ul style="list-style-type: none"> Exit self-test by pressing the DEFROST button. Observe the button indicators and function symbols displayed on the vacuum fluorescent display while changing the temperature, blower speed and functions. Are the display and indicators correct and complete without any missing elements? | Yes GO to F4. No INSTALL a new EATC module. TEST the system for normal operation. |
| F4 | CHECK THE BLOWER MANUAL OVERRIDE OPERATION | |
| | <ul style="list-style-type: none"> Press the blower motor speed override control fully up and fully down. Does the blower motor speed increase from low speed to high and high speed to low? | Yes GO to F5. No If the blower motor is inoperative, GO to Pinpoint Test M. If the blower motor does not operate correctly, GO to Pinpoint Test N. |
| F5 | VERIFY THE DEFROST OVERRIDE OPERATION | |
| | <ul style="list-style-type: none"> Press the override button for DEFROST operation. Is outside air being discharged from the windshield defroster nozzle and the side window demisters? | Yes GO to F6. No GO to Pinpoint Test D. |
| F6 | VERIFY THE FLOOR OVERRIDE OPERATION | |
| | <ul style="list-style-type: none"> Press the override button for FLOOR operation. Is outside air being discharged from the floor duct? | Yes GO to F7. No GO to Pinpoint Test D. |

(Continued)

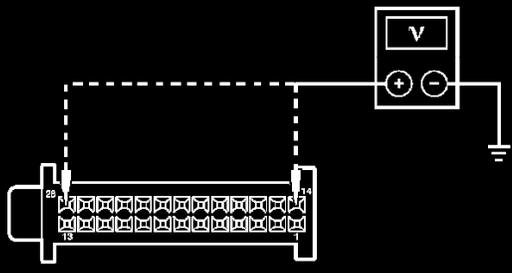
F1-F6

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST F: THE EATC SYSTEM IS INOPERATIVE, INTERMITTENT OR INCORRECT OPERATION
(Continued)**

| Test Step | | Result / Action to Take |
|------------|---|--|
| F7 | VERIFY THE PANEL OVERRIDE OPERATION | Yes GO to F8. No GO to Pinpoint Test D. |
| | <ul style="list-style-type: none"> Press the override button for PANEL operation. Is outside air being discharged from the instrument panel registers? | |
| F8 | VERIFY THE A/C CLUTCH DOES NOT ENGAGE IN THE PANEL MODE | Yes GO to Pinpoint Test J. No GO to F9. |
| | <ul style="list-style-type: none"> In PANEL operation and the A/C OFF, listen for the compressor clutch to engage. Does the A/C clutch engage with the PANEL override button pressed? | |
| F9 | VERIFY A/C CLUTCH ENGAGEMENT IN THE A/C MODE | Yes GO to F10. No GO to Pinpoint Test I. |
| | <ul style="list-style-type: none"> Make sure the ambient air temperature is above 6°C (43°F). Press the override button for A/C operation. Does the A/C clutch engage when the A/C override button is pressed? | |
| F10 | VERIFY THE RECIRC OVERRIDE OPERATION | Yes The test is complete. The system is functioning normally. No GO to Pinpoint Test C. |
| | <ul style="list-style-type: none"> Press the PANEL and RECIRC override buttons. Is recirculated air being discharged from the instrument panel registers? | |
| F11 | CHECK THE EATC MODULE FUNCTIONS | Yes INSTALL a new EATC module. TEST the system for normal operation. No GO to F12. |
| | <ul style="list-style-type: none"> Press each function button and observe the display. Does the EATC perform and display any functions? | |
| F12 | CHECK CIRCUIT 1203 (BK/LB) FOR AN OPEN | Yes GO to F13. No REPAIR circuit 1203 (BK/LB). TEST the system for normal operation. |
| | <ul style="list-style-type: none"> Key in OFF position. Disconnect EATC Module C228a. Measure the resistance between the EATC module C228a-1, circuit 1203 (BK/LB) and ground.  <p>A0071481</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | |
| F13 | CHECK CIRCUITS 1001 (WH/YE) AND 1003 (GY/YE) FOR AN OPEN | |
| | <ul style="list-style-type: none"> Key in ON position. | |

(Continued)

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST F: THE EATC SYSTEM IS INOPERATIVE, INTERMITTENT OR INCORRECT OPERATION
(Continued)**

| Test Step | | Result / Action to Take |
|------------|--|--|
| F13 | CHECK CIRCUITS 1001 (WH/YE) AND 1003 (GY/YE) FOR AN OPEN (Continued) | |
| | <ul style="list-style-type: none"> Measure the voltage between the EATC module C228a-26, circuit 1001 (WH/YE), C228a-14, circuit 1003 (GY/YE) and ground.  <p>A0071480</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | <p>Yes INSTALL a new EATC module. TEST the system for normal operation.</p> <p>No REPAIR circuit 1001 (WH/YE) or 1003 (GY/YE) for an open. TEST the system for normal operation.</p> |

F13 Continued

NOTE: For a complete explanation of the EATC system functions, REFER to Description and Operation.

Normal Operation

Under normal operation, the EATC module receives a ground through circuit 1203 (BK/LB). The EATC module is supplied constant battery voltage through circuit 1001 (WH/YE) and ignition switched voltage through circuit 1003 (GY/YE).

Possible Causes

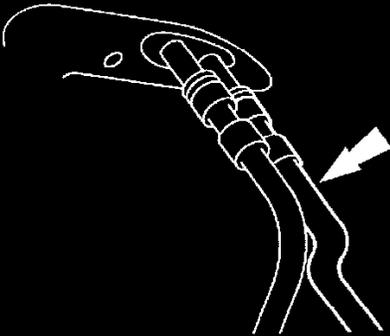
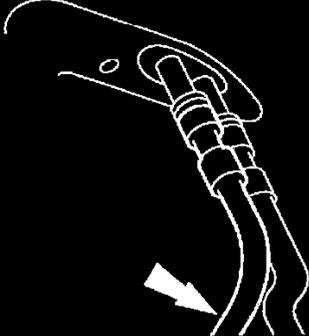
- An open in circuit 1203 (BK/LB), 1001 (WH/YE) or 1003 (GY/YE).
- EATC module.

Test G: Insufficient, Erratic or No Heat**PINPOINT TEST G: INSUFFICIENT, ERRATIC OR NO HEAT**

| PINPOINT TEST G: INSUFFICIENT, ERRATIC OR NO HEAT | | |
|---|--|--|
| Test Step | | Result / Action to Take |
| G1 | CHECK FOR PROPER ENGINE COOLANT LEVEL | |
| | <ul style="list-style-type: none"> Key in OFF position. Check the engine coolant level when hot and cold. Is the engine coolant at the correct level (hot/cold) as indicated on the engine coolant recovery reservoir? | <p>Yes GO to G3.</p> <p>No GO to G2.</p> |
| G2 | CHECK THE ENGINE COOLING SYSTEM FOR LEAKS | |
| | <ul style="list-style-type: none"> Pressure test the cooling system for leaks. Refer to Cooling System Does the engine cooling system leak? | <p>Yes REPAIR the engine coolant leak. TEST the system for normal operation.</p> <p>No GO to G3.</p> |
| G3 | CHECK FOR COOLANT FLOW TO THE HEATER CORE | |
| | <p> WARNING: The heater core inlet hose will become too hot to handle and may cause serious burns if the system is working correctly.</p> <ul style="list-style-type: none"> Key in START position. Run the engine until it reaches normal operation temperature. Select the FLOOR position on the control assembly. Set the temperature control to full WARM. | |

(Continued)

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST G: INSUFFICIENT, ERRATIC OR NO HEAT (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|---|
| G3 | CHECK FOR COOLANT FLOW TO THE HEATER CORE (Continued) <ul style="list-style-type: none"> Feel the heater core inlet hose to see if it is hot.  <p style="text-align: right;">GL1024-A</p> <ul style="list-style-type: none"> Is the heater core inlet hose hot? | <p>Yes GO to G4.</p> <p>No REFER to Cooling System to check cooling system function.</p> |
| G4 | <p> WARNING: The heater core outlet hose will become too hot to handle and may cause serious burns if the system is operating correctly.</p> <ul style="list-style-type: none"> Feel the heater core outlet hose to see if it is hot.  <p style="text-align: right;">GL1025-A</p> <ul style="list-style-type: none"> Is the heater core outlet hose hot? | <p>Yes GO to Pinpoint Test D and diagnose for a blend door actuator.</p> <p>No INSTALL a new heater core (18476). TEST the system for normal operation.</p> |

G3-G4**Normal Operation**

Under normal operation, warm coolant flows from the engine through the heater core and back to the engine.

Possible Causes

- Plugged heater core.
- Coolant level.
- Temperature blend door.

Test H: The A/C Does Not Operate/Does Not Operate Correctly**PINPOINT TEST H: THE A/C DOES NOT OPERATE/DOES NOT OPERATE CORRECTLY**

PINPOINT TEST H: THE AIR CONDITIONING (A/C) IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

NOTE: Before carrying out the following test, diagnose any PCM DTCs.

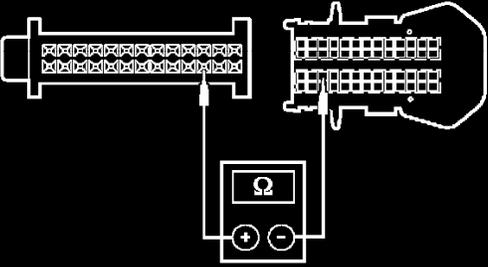
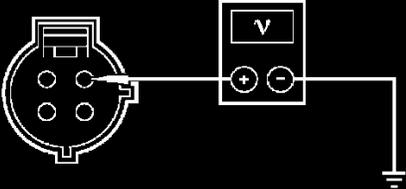
NOTE: Before carrying out the following test, check that the A/C system pressure is above 290 kPa (42 psi). If the pressure is below 290 kPa (42 psi), refer to Fluorescent Dye Leak Detection.

| Test Step | | Result / Action to Take |
|-----------|--|--|
| H1 | CHECK A/C REQUEST PID WITH THE A/C OFF | Yes INSTALL a new EATC or EMTC module. TEST the system for normal operation. No GO to H2. |
| | <ul style="list-style-type: none"> • Key in START position. • Press the OFF manual override button on the EATC module or select the OFF position on the EMTC module. • Enter the following diagnostic mode on the diagnostic tool: PCM A/C REQUEST PID. • Does the PCM A/C REQUEST PID read ON? | |
| H2 | CHECK A/C CLUTCH RELAY PID WITH THE A/C OFF | Yes REFER to Computers and Control Systems. No GO to H3. |
| | <ul style="list-style-type: none"> • Enter the following diagnostic mode on the diagnostic tool: PCM A/C CLUTCH RELAY PID. • Does the PCM A/C CLUTCH RELAY PID read ON? | |
| H3 | CHECK THE A/C SWITCH PID WITH THE A/C ON | Yes GO to H4. No INSTALL a new EATC or EMTC module. TEST the system for normal operation. |
| | <ul style="list-style-type: none"> • Enter the following diagnostic mode on the diagnostic tool: PCM A/C SWITCH PID. • Press the PANEL and A/C manual override buttons on the EATC module or select MAX A/C on the EMTC module. • Does the PCM A/C SWITCH PID read ON? | |
| H4 | CHECK THE A/C REQUEST PID WITH THE A/C ON | Yes GO to H5. No Single-zone EMTC, GO to H6. Dual-zone EMTC and EATC, INSTALL a new SJB. TEST the system for normal operation. |
| | <ul style="list-style-type: none"> • Enter the following diagnostic mode on the diagnostic tool: PCM A/C REQUEST PID. • Press the PANEL and A/C manual override buttons on the EATC module or select MAX A/C on the EMTC module. • Does the PCM A/C REQUEST PID read ON? | |
| H5 | CHECK THE A/C CLUTCH RELAY PID WITH THE A/C ON | Yes GO to H10. No GO to H7. |
| | <ul style="list-style-type: none"> • Enter the following diagnostic mode on the diagnostic tool: PCM A/C CLUTCH RELAY PID. • Does the PCM A/C CLUTCH RELAY PID read ON? | |
| H6 | CHECK CIRCUIT 1397 (GY/WH) FOR AN OPEN | |
| | <ul style="list-style-type: none"> • Key in OFF position. • Disconnect: EATC Module C228a or EMTC Module C294a. • Disconnect: SJB C2280b. | |

(Continued)

H1-H6

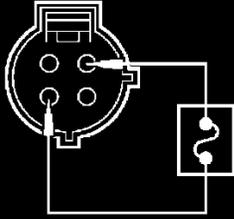
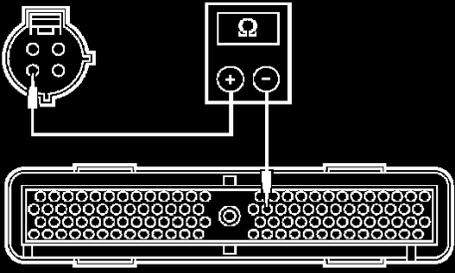
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST H: THE AIR CONDITIONING (A/C) IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|--|
| H6 | CHECK CIRCUIT 1397 (GY/WH) FOR AN OPEN (Continued) <ul style="list-style-type: none"> Measure the resistance between EATC module C228a-3 or EMTC module C294a-3, circuit 1397 (GY/WH) and SJB C2280b-29, circuit 1397 (GY/WH).  <p>A0081824</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSTALL a new SJB. TEST the system for normal operation.</p> <p>No REPAIR circuit 1397 (GY/WH) for an open. TEST the system for normal operation.</p> |
| H7 | CHECK A/C CYCLING SWITCH VOLTAGE <ul style="list-style-type: none"> Key in OFF position. Disconnect: A/C Cycling Switch C130. Key in ON position. Measure the voltage between the A/C cycling switch C130-1, circuit 298 (VT/OG) and ground.  <p>A0013801</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | <p>Yes GO to H8.</p> <p>No REPAIR circuit 298 (VT/OG) for an open. TEST the system for normal operation.</p> |
| H8 | CHECK A/C CYCLING SWITCH <ul style="list-style-type: none"> Key in OFF position. | |

(Continued)

H6-H8

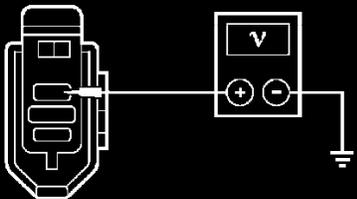
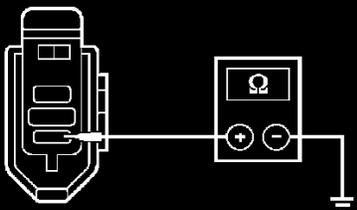
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST H: THE AIR CONDITIONING (A/C) IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|------------|---|---|
| H8 | CHECK A/C CYCLING SWITCH (Continued) <ul style="list-style-type: none"> Connect a fused jumper between the A/C cycling switch C130-1, circuit 298 (VT/OG) and C130-4, circuit 347 (BK/YE).  <p>A0008126</p> <ul style="list-style-type: none"> Key in ON position. Does the A/C operate correctly? | <p>Yes INSTALL a new A/C cycling switch. TEST the system for normal operation.</p> <p>No GO to H9.</p> |
| H9 | CHECK CIRCUIT 347 (BK/YE) FOR AN OPEN <ul style="list-style-type: none"> Key in OFF position. Disconnect: PCM C175. Measure the resistance between the A/C cycling switch C130-4, circuit 347 (BK/YE) and the PCM C175-41, circuit 347 (BK/YE).  <p>A0081825</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSTALL a new PCM. TEST the system for normal operation.</p> <p>No REPAIR circuit 347 (BK/YE) for an open. TEST the system for normal operation.</p> |
| H10 | CHECK THE VOLTAGE AT THE A/C COMPRESSOR CLUTCH FIELD COIL <ul style="list-style-type: none"> Key in OFF position. Disconnect: A/C Compressor Clutch Field Coil C100. Key in ON position. | |

(Continued)

H8-H10

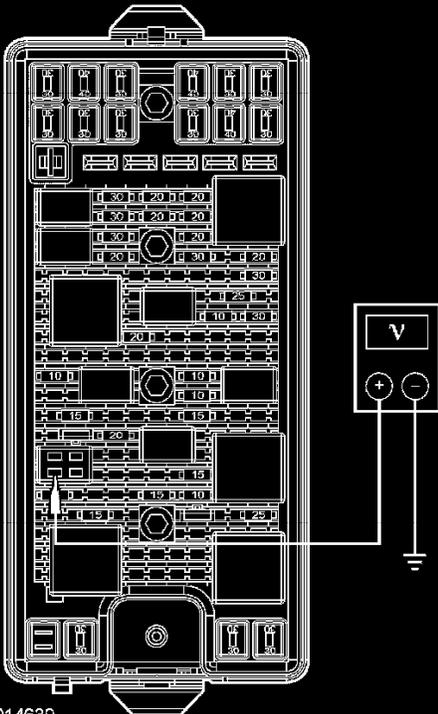
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST H: THE AIR CONDITIONING (A/C) IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|------------|--|---|
| H10 | CHECK THE VOLTAGE AT THE A/C COMPRESSOR CLUTCH FIELD COIL (Continued) <ul style="list-style-type: none"> Measure the voltage between the A/C compressor clutch field coil C100-2, circuit 883 (PK/LB) and ground.  <p>A0013807</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | <p>Yes GO to H11.</p> <p>No GO to H12.</p> |
| H11 | CHECK THE GROUND AT THE A/C COMPRESSOR CLUTCH FIELD COIL <ul style="list-style-type: none"> Key in OFF position. Measure the resistance between the A/C compressor clutch field coil C100-1, circuit 1205 (BK) and ground.  <p>A0013808</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes GO to H14.</p> <p>No REPAIR circuit 1205 (BK) for an open. TEST the system for normal operation.</p> |
| H12 | CHECK CIRCUIT 931 (OG) <ul style="list-style-type: none"> Key in OFF position. Disconnect: A/C Clutch Relay. Key in ON position. | |

(Continued)

H10-H12

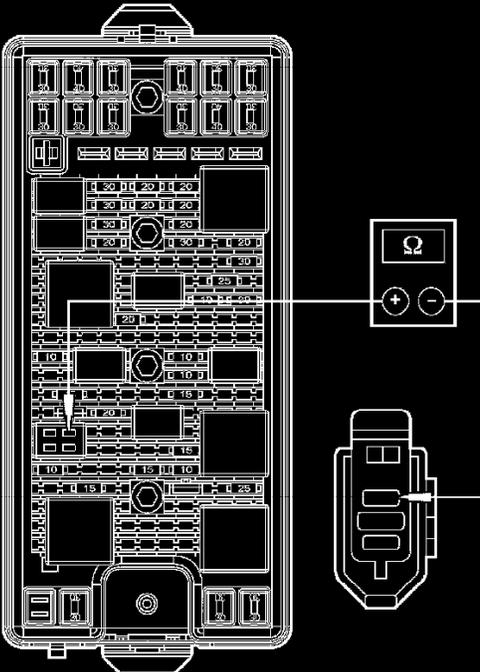
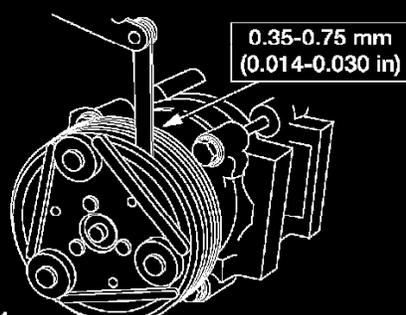
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST H: THE AIR CONDITIONING (A/C) IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|---|---|--|
| H12 | CHECK CIRCUIT 931 (OG) (Continued) | |
| <ul style="list-style-type: none"> Measure the voltage between the A/C control relay socket pin 30, circuit 931 (OG) and ground. | | |
|  <p>The diagram shows a top-down view of the A/C control relay socket. A voltmeter is connected to pin 30 and ground. The voltmeter symbol is a square with a 'V' inside, and two terminals labeled '+' and '-'. A line connects the '-' terminal to a ground symbol. Another line connects the '+' terminal to pin 30 of the relay socket.</p> | | |
| <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | | <p>Yes GO to H13.</p> <p>No REPAIR circuit 931 (OG) for an open. TEST the system for normal operation.</p> |

(Continued)

H12 Continued

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST H: THE AIR CONDITIONING (A/C) IS INOPERATIVE/DOES NOT OPERATE CORRECTLY
(Continued)**

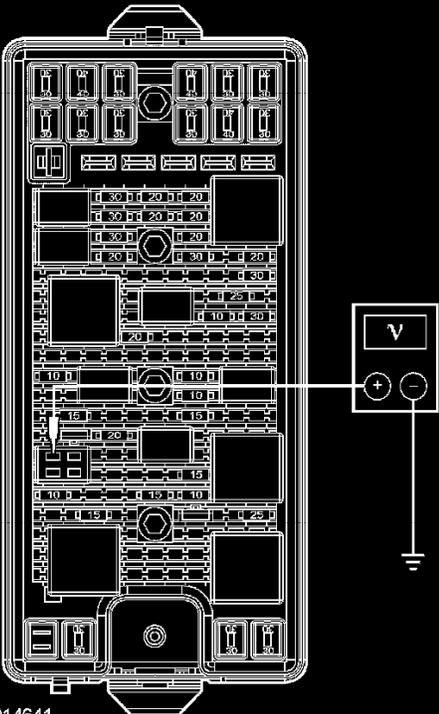
| Test Step | | Result / Action to Take |
|------------|---|--|
| H13 | CHECK CIRCUIT 883 (PK/LB) <ul style="list-style-type: none"> Measure the resistance between the A/C control relay socket pin 87, circuit 883 (PK/LB) and the A/C compressor clutch field coil C100-2, circuit 883 (PK/LB).  <p>N0014640</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes GO to H15.</p> <p>No REPAIR circuit 883 (PK/LB) for an open. TEST the system for normal operation.</p> |
| H14 | CHECK THE A/C COMPRESSOR CLUTCH AIR GAP <ul style="list-style-type: none"> Measure the A/C compressor clutch air gap at three equally spaced locations between the clutch hub and the A/C compressor clutch pulley.  <p>A0031504</p> <ul style="list-style-type: none"> Is the A/C compressor clutch air gap greater than 0.030 in (0.75 mm)? | <p>Yes ADJUST the A/C compressor clutch gap. REFER to A/C Clutch Air Gap Adjustment. TEST the system for normal operation.</p> <p>No INSTALL a new A/C compressor clutch field coil. TEST the system for normal operation.</p> |
| H15 | CHECK CIRCUIT 391 (RD/YE) <ul style="list-style-type: none"> Disconnect: PCM C175. Key in ON position. | |

(Continued)

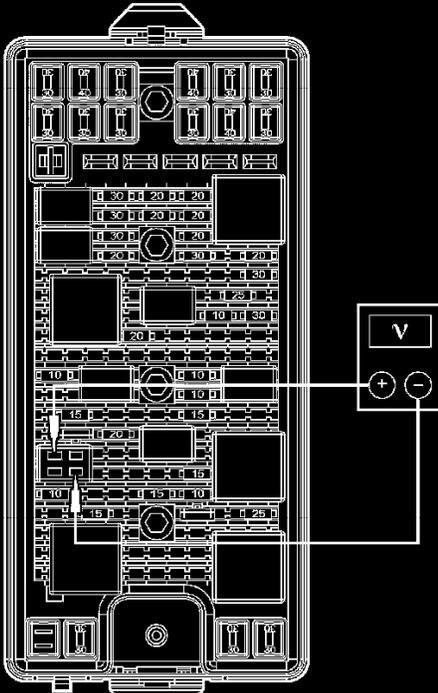
H13-H15

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST H: THE AIR CONDITIONING (A/C) IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)

| Test Step | Result / Action to Take |
|---|--|
| <p>H15 CHECK CIRCUIT 391 (RD/YE) (Continued)</p> <ul style="list-style-type: none"> Measure the voltage between the A/C control relay socket pin 85, circuit 391 (RD/YE) and ground.  <p>N0014641</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | <p>Yes GO to H16.</p> <p>No REPAIR circuit 391 (RD/YE) for a open. TEST the system for normal operation.</p> |
| <p>H16 CHECK THE WAC OUTPUT FROM THE PCM</p> <ul style="list-style-type: none"> Key in START position. | <p>(Continued)</p> |

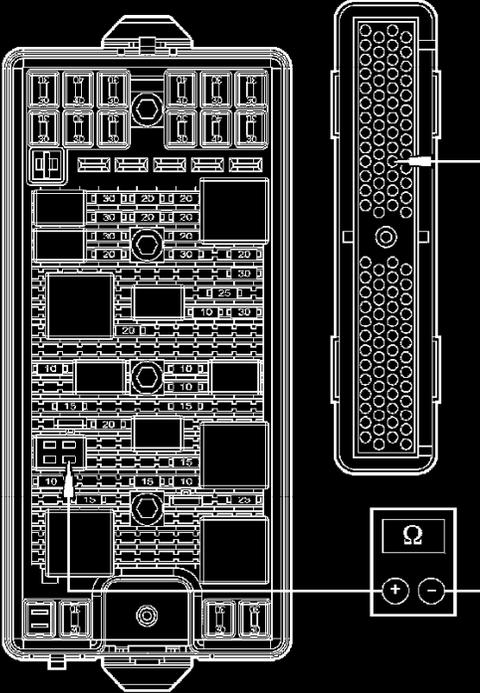
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST H: THE AIR CONDITIONING (A/C) IS INOPERATIVE/DOES NOT OPERATE CORRECTLY
(Continued)**

| Test Step | | Result / Action to Take |
|------------|--|--|
| H16 | CHECK THE WAC OUTPUT FROM THE PCM (Continued) <ul style="list-style-type: none"> Measure the voltage between the A/C control relay socket pin 85, circuit 331 (PK/YE) and pin 86, circuit 391 (RD/YE).  <p>N0014642</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | <p>Yes INSTALL a new A/C control relay. TEST the system for normal operation.</p> <p>No GO to H17.</p> |
| H17 | CHECK CIRCUIT 331 (PK/YE) <ul style="list-style-type: none"> Key in OFF position. Disconnect: PCM C175. | |

(Continued)

H16-H17

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST H: THE AIR CONDITIONING (A/C) IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|-----------|---|---|
| H17 | CHECK CIRCUIT 331 (PK/YE) (Continued) | |
| | <ul style="list-style-type: none"> Measure the resistance between the A/C control relay socket pin 86, circuit 331 (PK/YE) and the PCM C175-69, circuit 331 (PK/YE). | |
| |  <p>N0014643</p> | <p>Yes INSTALL a new PCM. TEST the system for normal operation.</p> <p>No REPAIR circuit 331 (PK/YE) for an open. CLEAR the DTCs. TEST the system for normal operation.</p> |
| | <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | |

H17 Continued**Normal Operation**

Under normal operation, when A/C is requested a signal is sent from the control module to the Smart Junction Box (SJB) through circuit 1397 (GY/WH) (Single-zone EMTC only) or over the SCP BUS (Dual-zone EATC and EMTC only). The SJB sends a message over the SCP bus to the PCM. Voltage is supplied to the A/C cycling switch by circuit 298 (VT/OG) and to the PCM through circuit 347 (BK/YE).

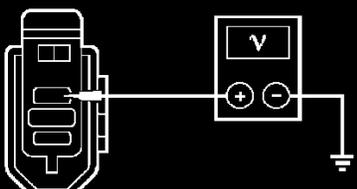
The PCM provides a ground for the A/C clutch relay coil through circuit 331 (PK/YE). The A/C clutch relay coil receives ignition voltage through circuit 391 (RD/YE). Ignition voltage for the A/C clutch relay switch is provided through circuit 931 (OG). When the relay is activated, ignition voltage is supplied to the A/C clutch solenoid through circuit 883 (PK/LB). Ground is supplied for the A/C clutch through circuit 1205 (BK).

Possible Causes

- An open in circuits 1397 (GY/WH), 351 (BN/WH), 439 (TN/LB), 298 (VT/OG), 347 (BK/YE), 391 (RD/YE), 883 (PK/LB) or 331 (PK/YE).
- PCM.
- EATC module.
- EMTC module.
- A/C cycling switch.
- A/C pressure transducer.
- A/C compressor clutch field coil.
- A/C control relay.
- A/C clutch air gap.

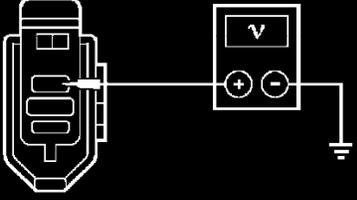
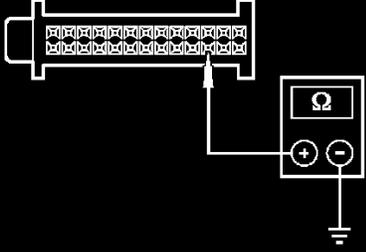
Test I: The Air Conditioning (A/C) Is Always On**PINPOINT TEST I: THE AIR CONDITIONING (A/C) IS ALWAYS ON**

PINPOINT TEST I: THE AIR CONDITIONING (A/C) IS ALWAYS ON

| Test Step | | Result / Action to Take |
|-----------|---|---|
| I1 | CHECK SMART JUNCTION BOX (SJB) DTCS | |
| | <ul style="list-style-type: none"> Key in ON position. Check the SJB for DTCS. Is DTC B2175 present? | Yes GO to I7. No GO to I2. |
| I2 | CHECK A/C CLUTCH RELAY FAULT PID WITH THE A/C OFF | |
| | <ul style="list-style-type: none"> Key in ON position. Press the OFF manual override button on the EATC module or select the OFF position on the EMTC module. Enter the following diagnostic mode on the diagnostic tool: PCM A/C CLUTCH RELAY FAULT PID. Does the PCM A/C CLUTCH RELAY FAULT PID read YES? | Yes REPAIR circuit 331 (PK/YE). TEST the system for normal operation. No GO to I3. |
| I3 | CHECK A/C SWITCH PID WITH THE A/C OFF | |
| | <ul style="list-style-type: none"> Enter the following diagnostic mode on the diagnostic tool: PCM A/C SWITCH PID. Does the PCM A/C SWITCH PID read ON? | Yes INSTALL a new EATC or EMTC module. TEST the system for normal operation. No GO to I4. |
| I4 | CHECK A/C REQUEST PID WITH THE A/C OFF | |
| | <ul style="list-style-type: none"> Enter the following diagnostic mode on the diagnostic tool: PCM A/C REQUEST PID. Does the PCM A/C REQUEST PID read ON? | Yes INSTALL a new PCM. TEST the system for normal operation. No GO to I5. |
| I5 | CHECK FOR VOLTAGE TO THE A/C COMPRESSOR CLUTCH FIELD COIL | |
| | <ul style="list-style-type: none"> Key in OFF position. Disconnect: A/C Compressor Clutch Field Coil C100. Key in ON position. Measure the voltage between the A/C compressor clutch field coil C100-2, circuit 883 (PK/LB) and ground. | |
| |  <p>A0013807</p> | |
| | <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | Yes GO to I6. No ADJUST the A/C compressor clutch gap. REFER to A/C Clutch Air Gap Adjustment. TEST the system for normal operation. |
| I6 | CHECK CIRCUIT 883 (PK/LB) FOR A SHORT TO VOLTAGE | |
| | <ul style="list-style-type: none"> Key in OFF position. Disconnect: A/C Control Relay. Key in ON position. | |

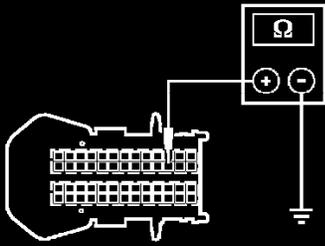
(Continued)

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST I: THE AIR CONDITIONING (A/C) IS ALWAYS ON (Continued)**

| Test Step | | Result / Action to Take |
|-----------|---|---|
| I6 | CHECK CIRCUIT 883 (PK/LB) FOR A SHORT TO VOLTAGE (Continued) | |
| | <ul style="list-style-type: none"> Measure the voltage between the A/C compressor clutch field coil C100-2, circuit 883 (PK/LB) and ground.  <p>A0013807</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | <p>Yes REPAIR circuit 883 (PK/LB) for a short to voltage. TEST the system for normal operation.</p> <p>No INSTALL a new A/C control relay. TEST A/C clutch diode. INSTALL a new diode if necessary. TEST the system for normal operation.</p> |
| I7 | CHECK CIRCUIT 1397 (GY/WH) FOR A SHORT TO GROUND | |
| | <ul style="list-style-type: none"> Key in OFF position. Disconnect: EMTC Module C294a. Disconnect: SJB C2280b. Measure the resistance between the EMTC module C294a-3, circuit 1397 (GY/WH) and ground.  <p>A0081865</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes GO to I8.</p> <p>No REPAIR circuit 1397 (GY/WH) for a short to voltage. TEST the system for normal operation.</p> |
| I8 | CHECK EMTC A/C REQUEST OUTPUT | |
| | <ul style="list-style-type: none"> Key in OFF position. Connect: EMTC Module C294a. Key in ON position. | |

(Continued)

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST I: THE AIR CONDITIONING (A/C) IS ALWAYS ON (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|---|
| I8 | CHECK EMTC A/C REQUEST OUTPUT (Continued) | |
| | <ul style="list-style-type: none"> Measure the resistance between SJB C2280B-29, circuit 1397 (GY/WH) and ground. | |
| |  <p>A0081866</p> | |
| | <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSTALL a new EMTC. TEST the system for normal operation.</p> <p>No INSTALL a new SJB. TEST the system for normal operation.</p> |

I8 Continued**Normal Operation**

Under normal operation, when A/C is requested a signal is sent from the control module to the Smart Junction Box (SJB) through circuit 1397 (GY/WH) (Single-zone EMTC only) or over the SCP BUS (Dual-zone EATC and EMTC only). The SJB sends a message over the SCP bus to the PCM. Voltage is supplied to the A/C cycling switch by circuit 298 (VT/OG) and to the PCM through circuit 347 (BK/YE).

The PCM provides a ground for the A/C clutch relay coil through circuit 331 (PK/YE). The A/C clutch relay coil receives ignition voltage through circuit 391 (RD/YE). Ignition voltage for the A/C clutch relay switch is provided through circuit 931 (OG). When the relay is activated, ignition voltage is supplied to the A/C clutch solenoid through circuit 883 (PK/LB). Ground is supplied for the A/C clutch through circuit 1205 (BK).

Possible Causes

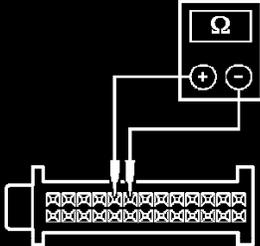
- An open in circuit or 331 (PK/YE).
- A short to voltage in circuit 883 (PK/LB), 1397 (GY/WH) or 331 (PK/YE).
- A short to ground in circuit 331 (PK/YE).
- PCM.
- EATC module.
- EMTC module.
- A/C control relay.
- A/C clutch air gap.

Test J: DTC B2266 or B2267: Temperature Blend Door Open/Short to Ground/Temperature Control Is Inoperative/Does Not

PINPOINT TEST J: DTC B2266 OR B2267: TEMPERATURE BLEND DOOR OPEN/SHORT TO GROUND/TEMPERATURE CONTROL IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST J: DTC B2266 or B2267: TEMPERATURE BLEND DOOR OPEN/SHORT TO GROUND/TEMPERATURE CONTROL IS INOPERATIVE/DOES NOT OPERATE CORRECTLY**

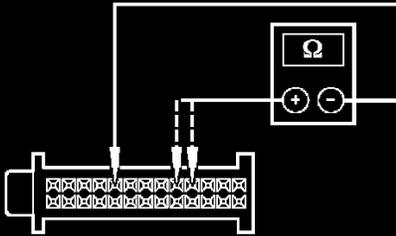
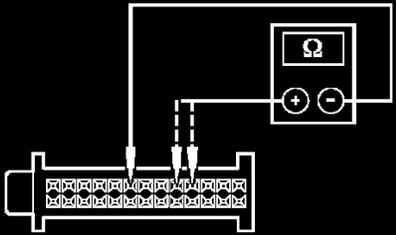
NOTE: Before carrying out the following test, check that the A/C system pressure is above 290 kPa (42 psi). If the pressure is below 290 kPa (42 psi), refer to Fluorescent Dye Leak Detection.

| Test Step | | Result / Action to Take |
|-----------|---|--|
| J1 | CHECK THE AIRFLOW TEMPERATURE | <p>Yes The system is operating normally.</p> <p>No For electronic automatic temperature control (EATC) systems: DTC B2266 or B2267, GO to J2.</p> <p>For EMTC systems: If the LH temperature control is inoperative/does not operate correctly, follow diagnostics for the LH blend door actuator. GO to J2.</p> <p>If the RH temperature control is inoperative/does not operate correctly, follow diagnostics for the RH blend door actuator. GO to J2.</p> |
| | <ul style="list-style-type: none"> • Key in ON position. • Check the air discharge temperature in full COOL and full WARM. • Is the air discharge temperature correct ? | |
| J2 | CHECK THE FEEDBACK POTENTIOMETER TOTAL RESISTANCE | <p>Yes GO to J3.</p> <p>No If the resistance is greater than 6,000 ohms, GO to J5.</p> <p>If the resistance is less than 5,000 ohms, GO to J7.</p> |
| | <ul style="list-style-type: none"> • Disconnect: EATC Module C228a or EMTC Module C294a. • Disconnect: For DTC B2266 or LH Temperature Blend Door Actuator, RH Temperature Blend Door Actuator C2092. • Disconnect: For DTC B2267 or RH Temperature Blend Door Actuator, LH Temperature Blend Door Actuator C2091. • Remove the door actuator and disengage the actuator driveshaft from the actuator door. • Mark the door actuator driveshaft position. • Measure the resistance between EATC Module C228a-21 or EMTC Module C294a-21, circuit 436 (RD/LG) and EATC Module C228a-22 or EMTC Module C294a-22, circuit 438 (RD/WH). <div style="text-align: center;">  </div> <p>A0081796</p> <ul style="list-style-type: none"> • Is the resistance between 5,000 and 6,000 ohms? | |

(Continued)

J1-J2

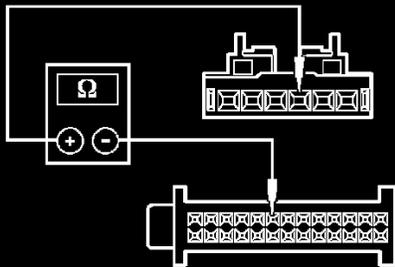
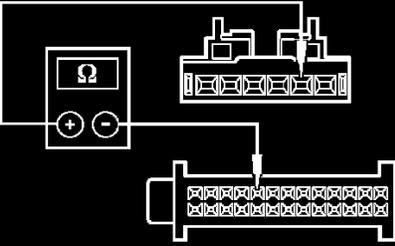
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST J: DTC B2266 or B2267: TEMPERATURE BLEND DOOR OPEN/SHORT TO GROUND/TEMPERATURE CONTROL IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|-----------|---|--|
| J3 | CHECK POTENTIOMETER LOW SIDE RESISTANCE | |
| | <ul style="list-style-type: none"> Measure the resistance between EATC Module C228a-22 or EMTC Module C294a-22, circuit 438 (RD/WH) and the following: <ul style="list-style-type: none"> For DTC B2266 or LH blend door actuator, EATC Module C228a-18 or EMTC Module C294a-18, circuit 437 (YE/LG). For DTC B2267 or RH blend door actuator, EATC Module C228a-17 or EMTC Module C294a-17, circuit 435 (YE/LB). | |
| |  <p>A0081792</p> | |
| | <ul style="list-style-type: none"> Is the resistance between 250 and 5,500 ohms? | <p>Yes GO to J4.</p> <p>No If the resistance is greater than 5,500 ohms, GO to J8. If the resistance is less than 250 ohms, GO to J9.</p> |
| J4 | CHECK POTENTIOMETER HIGH SIDE RESISTANCE | |
| | <ul style="list-style-type: none"> Measure the resistance between EATC Module C228a-21 or EMTC Module C294a-21, circuit 436 (RD/LG) and the following: <ul style="list-style-type: none"> For DTC B2266 or LH blend door actuator, EATC Module C228a-18 or EMTC Module C294a-18, circuit 437 (YE/LG). For DTC B2267 or RH blend door actuator, EATC Module C228a-17 or EMTC Module C294a-17, circuit 435 (YE/LB). | |
| |  <p>A0081793</p> | |
| | <ul style="list-style-type: none"> Is the resistance between 250 and 5,500 ohms? | <p>Yes GO to J11.</p> <p>No If the resistance is greater than 5,500 ohms, INSTALL a new door actuator. TEST the system for normal operation. If the resistance is less than 250 ohms, GO to J10.</p> |
| J5 | CHECK CIRCUIT 436 (RD/LG) FOR AN OPEN | |
| | <ul style="list-style-type: none"> Disconnect: For DTC B2266, LH Blend Door Actuator C2091. Disconnect: For DTC B2267, RH Blend Door Actuator C2092. | |

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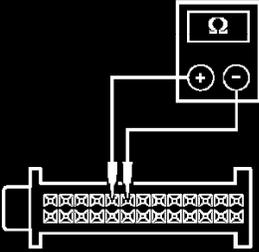
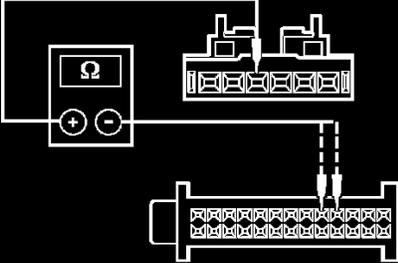
J3-J5

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST J: DTC B2266 or B2267: TEMPERATURE BLEND DOOR OPEN/SHORT TO GROUND/TEMPERATURE CONTROL IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|-----------|---|---|
| J5 | CHECK CIRCUIT 436 (RD/LG) FOR AN OPEN (Continued) | |
| | <ul style="list-style-type: none"> Measure the resistance between EATC Module C228a-21 or EMTC Module C294a-21, circuit 436 (RD/LG) and the following: <ul style="list-style-type: none"> For DTC B2266 or LH blend door actuator C2091-3, circuit 436 (RD/LG). For DTC B2267 or RH blend door actuator C2092-3, circuit 436 (RD/LG).  <p>A0081794</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes GO to J6.</p> <p>No REPAIR circuit 436 (RD/LG) for an open. TEST the system for normal operation.</p> |
| J6 | CHECK THE ACTUATOR RETURN CIRCUIT 438 (RD/WH) FOR AN OPEN | |
| | <ul style="list-style-type: none"> Measure the resistance between EATC Module C228a-22 or EMTC Module C294a-22, circuit 438 (RD/WH) and the following: <ul style="list-style-type: none"> For DTC B2266 or LH blend door actuator C2091-2, circuit 438 (RD/WH). For DTC B2267 or RH blend door actuator C2092-2, circuit 438 (RD/WH).  <p>A0081795</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSTALL a new door actuator. TEST the system for normal operation.</p> <p>No REPAIR circuit 438 (RD/WH) for an open. TEST the system for normal operation.</p> |
| J7 | CHECK CIRCUIT 438 (RD/WH) AND CIRCUIT 436 (RD/LG) FOR A SHORT TOGETHER | |
| | <ul style="list-style-type: none"> Disconnect: For DTC B2266, LH Blend Door Actuator C2091. Disconnect: For DTC B2267, RH Blend Door Actuator C2092. | |

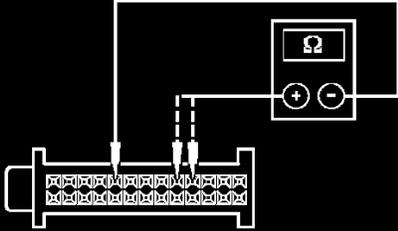
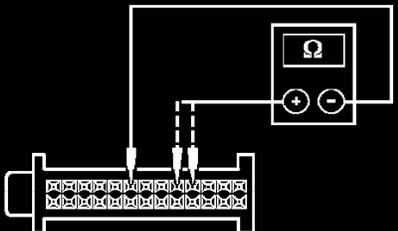
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DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST J: DTC B2266 or B2267: TEMPERATURE BLEND DOOR OPEN/SHORT TO GROUND/TEMPERATURE CONTROL IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|---|
| J7 | CHECK CIRCUIT 438 (RD/WH) AND CIRCUIT 436 (RD/LG) FOR A SHORT TOGETHER (Continued) <ul style="list-style-type: none"> Measure the resistance between EATC Module C228a-21 or EMTC Module C294a-21, circuit 436 (RD/LG) and EATC Module C228a-22 or EMTC Module C294a-22, circuit 438 (RD/WH).  <p>A0081796</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes INSTALL a new door actuator. TEST the system for normal operation.</p> <p>No REPAIR circuits 438 (RD/WH) and circuit 436 (RD/LG) for a short together. TEST the system for normal operation.</p> |
| J8 | CHECK CIRCUIT 435 (YE/LB) OR CIRCUIT 437 (YE/LG) FOR AN OPEN <ul style="list-style-type: none"> Disconnect: For DTC B2266, LH Blend Door Actuator C2091. Disconnect: For DTC B2267, RH Blend Door Actuator C2092. Measure the resistance between the following: <ul style="list-style-type: none"> For DTC B2266 or LH blend door actuator, EATC Module C228a-18 or EMTC Module C294a-18, circuit 437 (YE/LG) and floor door actuator C2091-4, circuit 437 (YE/LG). For DTC B2267 or RH blend door actuator, EATC Module C228a-17 or EMTC Module C294a-17, circuit 435 (YE/LB) and RH blend door actuator C2092-4, circuit 435 (YE/LB).  <p>A0081797</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSTALL a new door actuator. TEST the system for normal operation.</p> <p>No REPAIR circuit 435 (YE/LB) or circuit 437 (YE/LG) for an open. TEST the system for normal operation.</p> |
| J9 | CHECK CIRCUIT 438 (RD/WH) FOR A SHORT TO CIRCUIT 435 (YE/LB) OR CIRCUIT 437 (YE/LG) <ul style="list-style-type: none"> Disconnect: For DTC B2266, LH Blend Door Actuator C2091. Disconnect: For DTC B2267, RH Blend Door Actuator C2092. | |

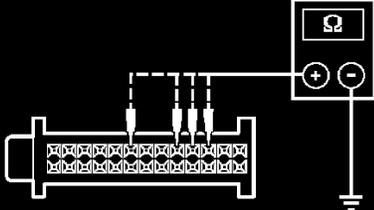
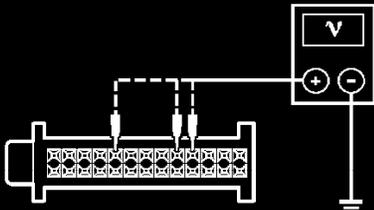
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DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST J: DTC B2266 or B2267: TEMPERATURE BLEND DOOR OPEN/SHORT TO GROUND/TEMPERATURE CONTROL IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|------------|---|--|
| J9 | CHECK CIRCUIT 438 (RD/WH) FOR A SHORT TO CIRCUIT 435 (YE/LB) OR CIRCUIT 437 (YE/LG) (Continued) | |
| | <ul style="list-style-type: none"> Measure the resistance between EATC Module C228a-22 or EMTC Module C294a-22, circuit 438 (RD/WH) and the following: <ul style="list-style-type: none"> For DTC B2266 or LH blend door actuator, EATC Module C228a-18 or EMTC Module C294a-18, circuit 437 (YE/LG). For DTC B2267 or RH blend door actuator, EATC Module C228a-17 or EMTC Module C294a-17, circuit 435 (YE/LB).  <p>A0081792</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes INSTALL a new door actuator. TEST the system for normal operation.</p> <p>No REPAIR circuits 438 (RD/WH) and circuit 435 (YE/LB) or circuit 437 (YE/LG) for a short together. TEST the system for normal operation.</p> |
| J10 | CHECK CIRCUIT 436 (RD/LG) FOR A SHORT TO CIRCUIT 435 (YE/LB) OR CIRCUIT 437 (YE/LG) | |
| | <ul style="list-style-type: none"> Disconnect: For DTC B2266, LH Blend Door Actuator C2091. Disconnect: For DTC B2267, RH Blend Door Actuator C2092. Measure the resistance between EATC Module C228a-21 or EMTC Module C294a-21, circuit 436 (RD/LG) and the following: <ul style="list-style-type: none"> For DTC B2266 or LH blend door actuator, EATC Module C228a-18 or EMTC Module C294a-18, circuit 437 (YE/LG). For DTC B2267 or RH blend door actuator, EATC Module C228a-17 or EMTC Module C294a-17, circuit 435 (YE/LB).  <p>A0081793</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes INSTALL a new door actuator. TEST the system for normal operation.</p> <p>No REPAIR circuits 436 (RD/LG) and circuit 435 (YE/LB) or circuit 437 (YE/LG) for a short together. TEST the system for normal operation.</p> |
| J11 | CHECK CIRCUIT 436 (RD/LG), 437 (YE/LG), OR 435 (YE/LB) FOR A SHORT TO GROUND | |
| | <ul style="list-style-type: none"> Disconnect: For DTC B2266, LH Blend Door Actuator C2091. Disconnect: For DTC B2267, RH Blend Door Actuator C2092. | |

(Continued)

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST J: DTC B2266 or B2267: TEMPERATURE BLEND DOOR OPEN/SHORT TO GROUND/TEMPERATURE CONTROL IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

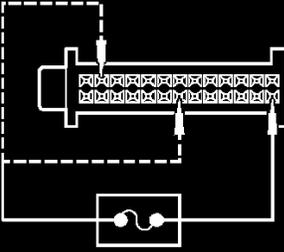
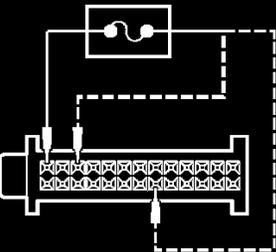
| Test Step | | Result / Action to Take |
|------------|--|--|
| J11 | CHECK CIRCUIT 436 (RD/LG), 437 (YE/LG), OR 435 (YE/LB) FOR A SHORT TO GROUND (Continued) | |
| | <ul style="list-style-type: none"> Measure the resistance between ground and the following: <ul style="list-style-type: none"> EATC Module C228a-21 or EMTC Module C294a-21, circuit 436 (RD/LG). For DTC B2266 or LH blend door actuator, EATC Module C228a-18 or EMTC Module C294a-18, circuit 437 (YE/LG). For DTC B2267 or RH blend door actuator, EATC Module C228a-17 or EMTC Module C294a-17, circuit 435 (YE/LB). | |
| |  <p>A0081798</p> | |
| | <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes GO to J12.</p> <p>No REPAIR circuit(s) for a short to ground. TEST the system for normal operation.</p> |
| J12 | CHECK CIRCUIT 438 (RD/WH), 437 (YE/LG) OR 435 (YE/LB) FOR A SHORT TO POWER | |
| | <ul style="list-style-type: none"> Key in ON position. Measure the voltage between ground and the following: <ul style="list-style-type: none"> EATC Module C228a-22 or EMTC Module C294a-22, circuit 438 (RD/WH). For DTC B2266 or LH blend door actuator, EATC Module C228a-18 or EMTC Module C294a-18, circuit 437 (YE/LG). For DTC B2267 or RH blend door actuator, EATC Module C228a-17 or EMTC Module C294a-17, circuit 435 (YE/LB). | |
| |  <p>A0081799</p> | |
| | <ul style="list-style-type: none"> Is voltage present? | <p>Yes REPAIR circuit(s) for a short to power. TEST the system for normal operation.</p> <p>No GO to J13.</p> |

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J11-J12

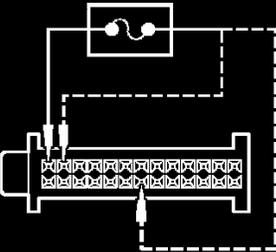
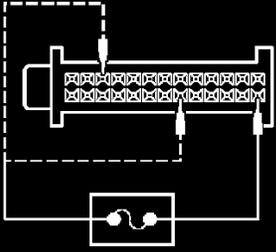
DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST J: DTC B2266 or B2267: TEMPERATURE BLEND DOOR OPEN/SHORT TO GROUND/TEMPERATURE CONTROL IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)

| Test Step | | Result / Action to Take |
|------------|---|--|
| J13 | CHECK DOOR ACTUATOR CLOCKWISE OPERATION | |
| | <ul style="list-style-type: none"> Connect a fused jumper wire between EATC Module C228a-1 or EMTC Module C294a-1, circuit 1203 (BK/LB) and : <ul style="list-style-type: none"> For DTC B2266 or LH blend door actuator, EATC Module C228a-7 or EMTC Module C294a-7, circuit 246 (VT). For DTC B2267 or RH blend door actuator, EATC Module C228a-25 or EMTC Module C294a-25, circuit 660 (YE/LG).  <p>A0081800</p> <ul style="list-style-type: none"> Connect a second fused jumper wire between EATC Module C228a-26 or EMTC Module C294a-26, circuit 1001 (WH/YE) and: <ul style="list-style-type: none"> For DTC B2266 or LH blend door actuator, EATC Module C228a-6 or EMTC Module C294a-6, circuit 245 (BN/LG). For DTC B2267 or RH blend door actuator, EATC Module C228a-24 or EMTC Module C294a-24, circuit 1069 (OG/LB).  <p>A0081801</p> <ul style="list-style-type: none"> Does the actuator motor move in the clockwise direction? | <p>Yes GO to J14.</p> <p>No GO to J15.</p> |

(Continued)

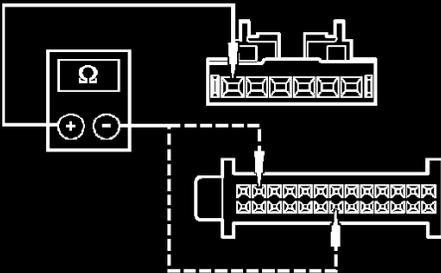
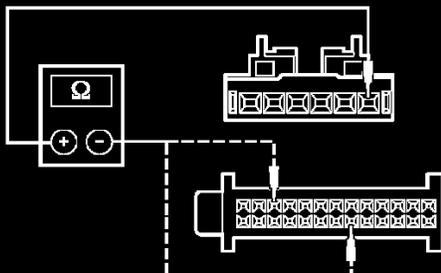
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST J: DTC B2266 or B2267: TEMPERATURE BLEND DOOR OPEN/SHORT TO GROUND/TEMPERATURE CONTROL IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | Result / Action to Take |
|--|---|
| <p>J14 CHECK DOOR ACTUATOR COUNTERCLOCKWISE OPERATION</p> <ul style="list-style-type: none"> • Connect a fused jumper wire between EATC Module C228a-26 or EMTC Module C294a-26, circuit 1001 (WH/YE) and : <ul style="list-style-type: none"> — For DTC B2266 or LH blend door actuator, EATC Module C228a-7 or EMTC Module C294a-7, circuit 246 (VT). — For DTC B2267 or RH blend door actuator, EATC Module C228a-25 or EMTC Module C294a-25, circuit 660 (YE/LG).  <p>A0081802</p> <ul style="list-style-type: none"> • Connect a second fused jumper wire between EATC Module C228a-1 or EMTC Module C294a-1, circuit 1203 (BK/LB) and: <ul style="list-style-type: none"> — For DTC B2266 or LH blend door actuator, EATC Module C228a-6 or EMTC Module C294a-6, circuit 245 (BN/LG). — For DTC B2267 or RH blend door actuator, EATC Module C228a-24 or EMTC Module C294a-24, circuit 1069 (OG/LB).  <p>A0081803</p> <ul style="list-style-type: none"> • Does the actuator motor move in the counterclockwise direction? | <p>Yes INSPECT for binding or broken door and linkage. If no condition is found, INSTALL a new EATC or EMTC module. TEST the system for normal operation.</p> <p>No GO to J15.</p> |
| <p>J15 CHECK THE ACTUATOR MOTOR DRIVE CIRCUITS FOR AN OPEN</p> <ul style="list-style-type: none"> • Disconnect: For DTC B2266, LH Blend Door Actuator C2091. • Disconnect: For DTC B2267, RH Blend Door Actuator C2092. | |

(Continued)

J14-J15

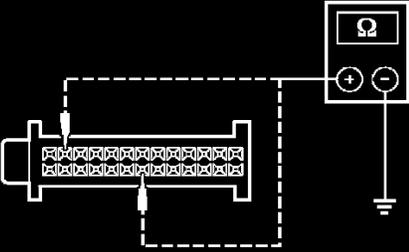
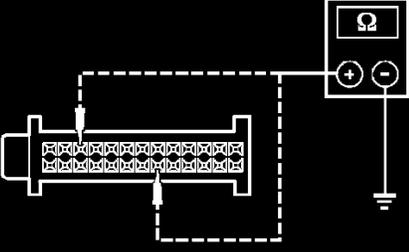
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST J: DTC B2266 or B2267: TEMPERATURE BLEND DOOR OPEN/SHORT TO GROUND/TEMPERATURE CONTROL IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | Result / Action to Take |
|--|--|
| J15 CHECK THE ACTUATOR MOTOR DRIVE CIRCUITS FOR AN OPEN (Continued) | |
| <ul style="list-style-type: none"> • Measure the resistance between: <ul style="list-style-type: none"> — For DTC B2266 or LH blend door actuator, EATC Module C228a-7 or EMTC Module C294a-7, circuit 246 (VT) and LH blend door actuator C2091-6, circuit 246 (VT). — For DTC B2267 or RH blend door actuator, EATC Module C228a-25 or EMTC Module C294a-25, circuit 660 (YE/LG) and RH blend door actuator C2092-6, circuit 660 (YE/LG).  <p>A0081804</p> | |
| <ul style="list-style-type: none"> • Measure the resistance between: <ul style="list-style-type: none"> — For DTC B2266 or LH blend door actuator, EATC Module C228a-6 or EMTC Module C294a-6, circuit 245 (BN/LG) and LH blend door actuator C2091-1, circuit 245 (BN/LG). — For DTC B2267 or RH blend door actuator, EATC Module C228a-24 or EMTC Module C294a-24, circuit 1069 (OG/LB) and RH blend door actuator C2092-1, circuit 1069 (OG/LB).  <p>A0081805</p> | |
| <ul style="list-style-type: none"> • Are the resistances less than 5 ohms? | <p>Yes GO to J16.</p> <p>No REPAIR the circuit(s) for an open. TEST the system for normal operation.</p> |

(Continued)

J15 Continued

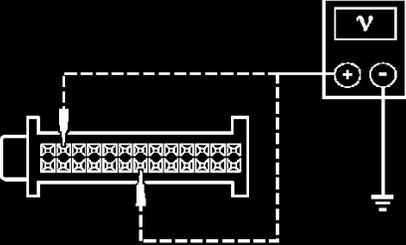
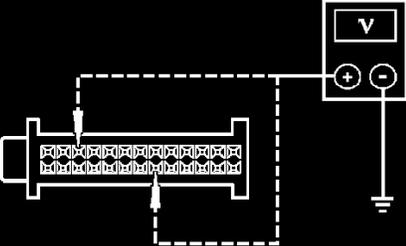
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST J: DTC B2266 or B2267: TEMPERATURE BLEND DOOR OPEN/SHORT TO GROUND/TEMPERATURE CONTROL IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|--|
| J16 | CHECK THE ACTUATOR MOTOR DRIVE CIRCUITS FOR A SHORT TO GROUND <ul style="list-style-type: none"> Measure the resistance between ground and : <ul style="list-style-type: none"> For DTC B2266 or LH blend door actuator, EATC Module C228a-7 or EMTC Module C294a-7, circuit 246 (VT). For DTC B2267 or RH blend door actuator, EATC Module C228a-25 or EMTC Module C294a-25, circuit 660 (YE/LG).  <p>A0081846</p> <ul style="list-style-type: none"> Measure the resistance between ground and: <ul style="list-style-type: none"> For DTC B2266 or LH blend door actuator, EATC Module C228a-6 or EMTC Module C294a-6, circuit 245 (BN/LG). For DTC C2267 or RH blend door actuator, EATC Module C228a-24 or EMTC Module C294a-24, circuit 1069 (OG/LB).  <p>A0081806</p> <ul style="list-style-type: none"> Are the resistances greater than 10,000 ohms? | <p>Yes GO to J17.</p> <p>No REPAIR the circuit(s) for a short to ground. TEST the system for normal operation.</p> |
| J17 | CHECK THE ACTUATOR MOTOR DRIVE CIRCUITS FOR A SHORT TO POWER <ul style="list-style-type: none"> Key in ON position. | |

(Continued)

J16-J17

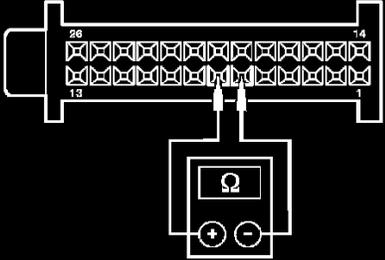
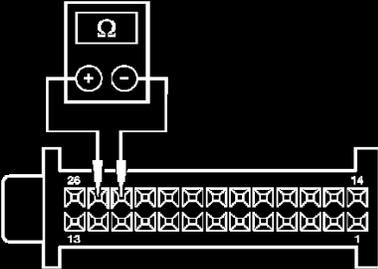
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST J: DTC B2266 or B2267: TEMPERATURE BLEND DOOR OPEN/SHORT TO GROUND/TEMPERATURE CONTROL IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | Result / Action to Take |
|--|---|
| J17 CHECK THE ACTUATOR MOTOR DRIVE CIRCUITS FOR A SHORT TO POWER (Continued) | <p>Yes REPAIR the circuit(s) for a short to power. TEST the system for normal operation.</p> <p>No GO to J18.</p> |
| <ul style="list-style-type: none"> • Measure the voltage between ground and: <ul style="list-style-type: none"> — For DTC B2266 or LH blend door actuator, EATC Module C228a-7 or EMTC Module C294a-7, circuit 246 (VT). — For DTC C2267 or RH blend door actuator, EATC Module C228a-25 or EMTC Module C294a-25, circuit 660 (YE/LG).  <p>A0081807</p> <ul style="list-style-type: none"> • Measure the voltage between ground and: <ul style="list-style-type: none"> — For DTC B2266 or LH blend door actuator, EATC Module C228a-6 or EMTC Module C294a-6, circuit 245 (BN/LG). — For DTC C2267 or RH blend door actuator, EATC Module C228a-24 or EMTC Module C294a-24, circuit 1069 (OG/LB).  <p>A0081808</p> <ul style="list-style-type: none"> • Is voltage present? | |
| J18 CHECK THE ACTUATOR MOTOR DRIVE CIRCUITS FOR A SHORT TOGETHER | |
| <ul style="list-style-type: none"> • Key In OFF position. | |

(Continued)

J17-J18

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST J: DTC B2266 or B2267: TEMPERATURE BLEND DOOR OPEN/SHORT TO GROUND/TEMPERATURE CONTROL IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | Result / Action to Take |
|---|--|
| J18 CHECK THE ACTUATOR MOTOR DRIVE CIRCUITS FOR A SHORT TOGETHER (Continued) | |
| <ul style="list-style-type: none"> NOTE: For DTC B2266 or LH blend door actuator. Measure the resistance between EATC Module C228a-6 or EMTC Module C228a-6, circuit 245 (BN/LG) and EATC Module C228a-7 or EMTC Module C228a-7, circuit 246 (VT).  <p>A0072920</p> <ul style="list-style-type: none"> NOTE: For DTC C2267 or RH blend door actuator. Measure the resistance between EATC Module C228a-24 or EMTC Module C294a-24, circuit 1069 (OG/LB) and EATC Module C228a-25 or EMTC Module C294a-25, circuit 660 (YE/LG).  <p>A0072919</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes INSPECT for binding or broken linkage. If no condition is found, INSTALL a new door actuator. TEST the system for normal operation.</p> <p>No REPAIR circuit(s) for a short together. TEST the system for normal operation.</p> |

J18 Continued**Normal Operation**

Under normal operation, to rotate the blend door actuator clockwise, the EMTC module or EATC module supplies voltage to the Blend door actuator motors through the door actuator feed A circuits, and supplies ground through the door actuator feed B circuits. To rotate the blend door actuator counterclockwise, the EMTC module or EATC module reverses the voltage and ground circuits.

The blend door actuator feedback resistors are supplied a ground from the EMTC module or EATC module by the blend door actuator return circuits and a **5-volt** reference voltage on the blend door actuator reference circuits. The EMTC module or EATC module reads the voltage on the blend door actuator feedback circuits to determine the blend door actuator position by the position of the actuator feedback resistor wiper arm.

Door actuator feed A circuits

- LH Blend - 245 (BN/LG)
- RH Blend - 1069 (OG/LB)

Door actuator feed B circuits

- LH Blend - 246 (VT)
- RH Blend - 660 (YE/LG)

Door actuator return circuits

- LH Blend - 438 (RD/WH)
- RH Blend - 438 (RD/WH)

Door actuator reference circuits

- LH Blend - 436 (RD/LG)

- RH Blend - 436 (RD/LG)

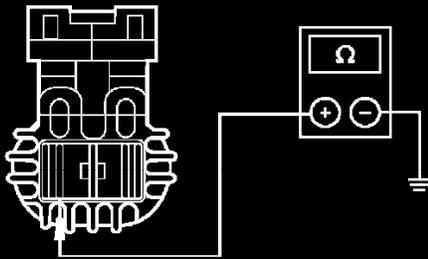
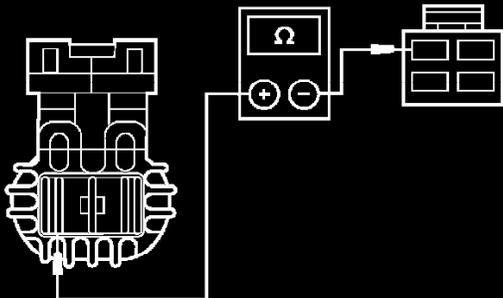
Door actuator feedback circuits

- LH Blend - 437 (YE/LG)
- RH Blend - 435 (YE/LB)

Possible Causes

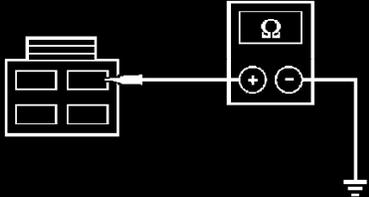
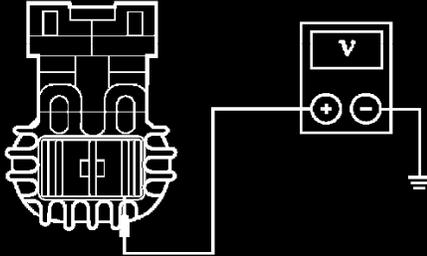
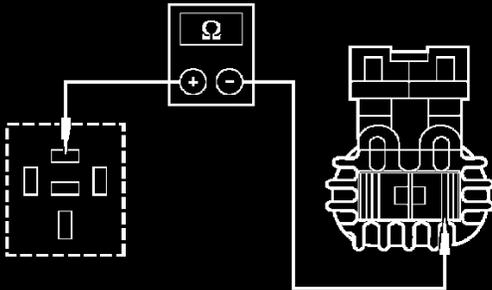
- An open, short to voltage, ground or together in door actuator open, close, return, reference or feedback circuits.
- Blend door actuator motor.
- EATC module.
- EMTC module.
- Stuck or bound linkage or door.

Test K: The Blower Motor Is Inoperative - EMTC
PINPOINT TEST K: THE BLOWER MOTOR IS INOPERATIVE - EMTC

| PINPOINT TEST K: THE BLOWER MOTOR IS INOPERATIVE — EMTC | |
|---|--|
| Test Step | Result / Action to Take |
| <p>K1 CHECK SMART JUNCTION BOX (SJB) DTCs</p> <ul style="list-style-type: none"> • Key in ON position. • Check the SJB for DTCs. • Is DTC B2513 or B2514 present? | <p>Yes DTC B2513, GO to K10. DTC B2514, GO to K13.</p> <p>No GO to K2.</p> |
| <p>K2 CHECK CIRCUIT 261 (OG/BK) FOR GROUND</p> <ul style="list-style-type: none"> • Key in OFF position. • Disconnect: Blower Motor C2004. • Turn the function selector switch to the vent position. • Turn the blower motor switch to the HIGH position. • Measure the resistance between the A/C blower motor connector C2004-2, circuit 261 (OG/BK) and ground.  <p style="text-align: center;">AM0420-A</p> <ul style="list-style-type: none"> • Is the resistance less than 5 ohms? | <p>Yes GO to K5.</p> <p>No GO to K3.</p> |
| <p>K3 CHECK CIRCUIT 261 (OG/BK) FOR AN OPEN</p> <ul style="list-style-type: none"> • Disconnect: Blower Motor Switch C294b. • Measure the resistance between the blower motor switch C294b-2, circuit 261 (OG/BK) and blower motor C2004-2, circuit 261 (OG/BK).  <p style="text-align: center;">AM0415-A</p> <ul style="list-style-type: none"> • Is the resistance less than 5 ohms? | <p>Yes GO to K4.</p> <p>No REPAIR circuit 261 (OG/BK) for an open. TEST the system for normal operation.</p> |

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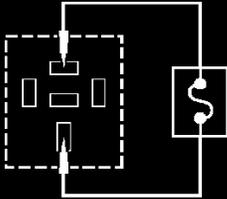
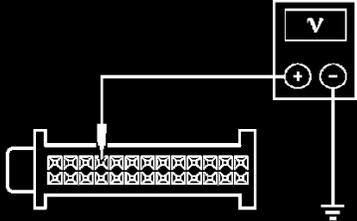
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST K: THE BLOWER MOTOR IS INOPERATIVE — EMTC (Continued)**

| Test Step | | Result / Action to Take |
|-----------|---|---|
| K4 | CHECK CIRCUIT 1205 (BK) FOR AN OPEN | |
| | <ul style="list-style-type: none"> Measure the resistance between the blower motor switch C294b-1, circuit 1205 (BK) and ground.  <p>A0040182</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSTALL a new blower motor switch. TEST the system for normal operation.</p> <p>No REPAIR circuit 1205 (BK) for an open. TEST the system for normal operation.</p> |
| K5 | CHECK A/C BLOWER MOTOR CIRCUIT 371 (PK/WH) FOR VOLTAGE | |
| | <ul style="list-style-type: none"> Key in ON position. Measure the voltage between the A/C blower motor connector C2004-1, circuit 371 (PK/WH) and ground.  <p>AM0416-A</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | <p>Yes INSTALL a new blower motor. TEST the system for normal operation.</p> <p>No GO to K6.</p> |
| K6 | CHECK CIRCUIT 371 (PK/WH) FOR AN OPEN | |
| | <ul style="list-style-type: none"> Key in OFF position. Disconnect: Blower Motor Relay. Measure the resistance between the blower motor relay connector pin 87, circuit 371 (PK/WH) and the blower motor C2004-1, circuit 371 (PK/WH).  <p>A0032572</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes GO to K7.</p> <p>No REPAIR circuit 371 (PK/WH) for an open. TEST the system for normal operation.</p> |

(Continued)

K4-K6

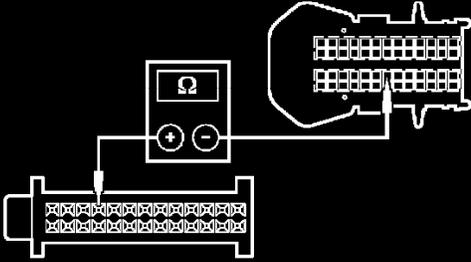
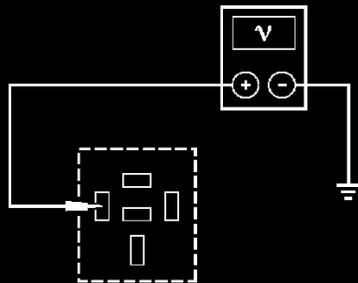
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST K: THE BLOWER MOTOR IS INOPERATIVE — EMTC (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|---|
| K7 | CHECK THE BLOWER MOTOR RELAY <ul style="list-style-type: none"> Connect: Blower Motor C2004. Key in ON position. Connect a fused jumper lead between the blower motor relay socket pin 30, circuit 364 (BK/LG) and pin 87, circuit 371 (PK/WH).  <p>A0032587</p> <ul style="list-style-type: none"> Does the blower motor operate? | <p>Yes Single-zone EMTC only, carry out the relay component test on the blower motor relay. If OK, GO to K8.</p> <p>Dual-zone EMTC only, INSTALL a new blower motor relay. TEST the system for normal operation.</p> <p>No REPAIR circuit 364 (BK/LG) for an open. TEST the system for normal operation.</p> |
| K8 | CHECK CIRCUIT 1398 (PK/WH) FOR SHORT TO VOLTAGE <ul style="list-style-type: none"> Key in OFF position. Disconnect: SJB C2280b. Key in ON position. Measure the voltage between EMTC module C294a-23, circuit 1398 (PK/WH) and ground.  <p>A0081830</p> <ul style="list-style-type: none"> Is voltage present? | <p>Yes REPAIR circuit 1398 (PK/WH). TEST the system for normal operation.</p> <p>No GO to K9.</p> |
| K9 | CHECK CIRCUIT 1398 (PK/WH) FOR AN OPEN <ul style="list-style-type: none"> Key in OFF position. | |

(Continued)

K7-K9

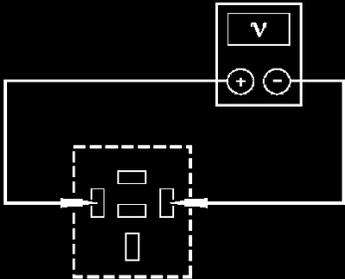
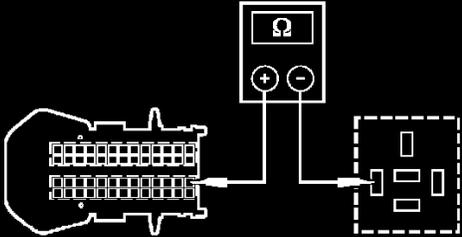
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST K: THE BLOWER MOTOR IS INOPERATIVE — EMTC (Continued)**

| Test Step | | Result / Action to Take |
|------------|---|--|
| K9 | CHECK CIRCUIT 1398 (PK/WH) FOR AN OPEN (Continued) | |
| | <ul style="list-style-type: none"> Measure the resistance between EMTC module C294a-23, circuit 1398 (PK/WH) and the Smart Junction Box (SJB) C2280b-20, circuit 1398 (PK/WH).  <p>A0081829</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSTALL a new SJB. TEST the system for normal operation.</p> <p>No REPAIR circuit 1398 (PK/WH) for an open. TEST the system for normal operation.</p> |
| K10 | CHECK THE RELAY COIL SUPPLY VOLTAGE | |
| | <ul style="list-style-type: none"> Key in OFF position. Disconnect Blower Motor Relay. Key in ON position. Measure the voltage between the blower motor relay socket pin 85, circuit 298 (VT/OG) and ground.  <p>A0013862</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | <p>Yes GO to K11.</p> <p>No REPAIR the circuit. TEST the system for normal operation.</p> |
| K11 | CHECK THE BLOWER MOTOR RELAY | |
| | <ul style="list-style-type: none"> Key in ON position. | |

(Continued)

K9-K11

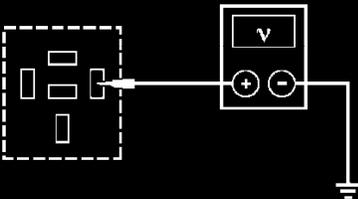
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST K: THE BLOWER MOTOR IS INOPERATIVE — EMTc (Continued)**

| Test Step | | Result / Action to Take |
|------------|---|--|
| K11 | CHECK THE BLOWER MOTOR RELAY (Continued) | |
| | <ul style="list-style-type: none"> Measure the voltage between the blower motor relay socket pin 85, circuit 298 (VT/OG) and socket pin 86, circuit 1322 (BN/WH).  <p>A0038291</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | <p>Yes INSTALL a new blower motor relay. TEST the system for normal operation.</p> <p>No GO to K12.</p> |
| K12 | CHECK CIRCUIT 1322 (BN/WH) FOR AN OPEN | |
| | <ul style="list-style-type: none"> Key in OFF position. Disconnect: SJB C2280c. Measure the resistance between the blower motor relay connector pin 86, circuit 1322 (BN/WH) and the Smart Junction Box (SJB) C2280-14, circuit 1322 (BN/WH).  <p>A0081827</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSTALL a new SJB. TEST the system for normal operation.</p> <p>No REPAIR circuit 1322 (BN/WH) for an open. TEST the system for normal operation.</p> |
| K13 | CHECK CIRCUIT 1322 (BN/WH) FOR SHORT TO VOLTAGE | |
| | <ul style="list-style-type: none"> Key in OFF position. Disconnect: SJB C2280c. Disconnect: Blower Motor Relay. Key in ON position. | |

(Continued)

K11-K13

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST K: THE BLOWER MOTOR IS INOPERATIVE — EMTC (Continued)**

| Test Step | | Result / Action to Take |
|------------|--|---|
| K13 | CHECK CIRCUIT 1322 (BN/WH) FOR SHORT TO VOLTAGE (Continued) | |
| | <ul style="list-style-type: none"> Measure the voltage between the blower motor relay socket pin 86, circuit 1322 (BN/WH) and ground.  <p>A0020210</p> <ul style="list-style-type: none"> Is voltage present? | <p>Yes REPAIR circuit 1322 (BN/WH). TEST the system for normal operation.</p> <p>No CARRY OUT the relay component test on the blower motor relay. If OK, INSTALL a new SJB. TEST the system for normal operation.</p> |

K13 Continued**Normal Operation**

Under normal operation, when blower operation is requested a signal is sent from the control module to the Smart Junction Box (SJB) through circuit 1398 (PK/WH) (Single-zone EMTC only) or over the SCP BUS (Dual-zone EMTC only). The SJB sends a message over the SCP bus to the PCM.

The blower motor relay coil receives ignition voltage through circuit 298 (VT/OG). The coil receives ground from the Smart Junction Box (SJB) through circuit 1322 (BN/WH) if any position but OFF is selected. Voltage is supplied to the relay switch contact through circuit 364 (BK/LG). When the relay coil is energized, voltage is delivered to the blower motor through circuit 371 (PK/WH). Ground for the blower motor is provided through circuit 261 (OG/BK) from the blower resistor or the blower switch (HI). The blower resistor and blower switch is grounded through circuit 1205 (BK).

Possible Causes

- An open in circuit 1322 (BN/WH), 261 (OG/BK), 1205 (BK), 371 (PK/WH), 1398 (PK/WH), 364 (BK/LG) or 298 (VT/OG).
- Blower motor.
- Blower motor relay.
- Blower motor switch.
- Blower motor resistor.
- SJB.

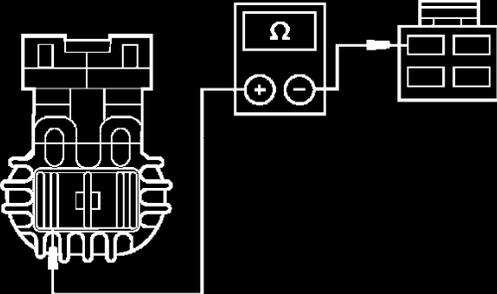
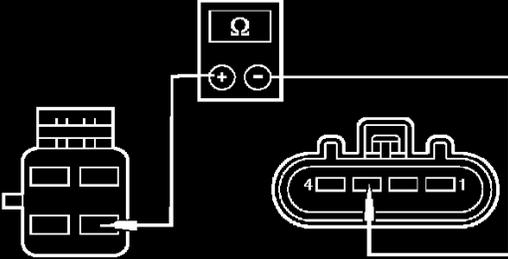
Test L: The Blower Motor Does Not Operate Correctly - EMTC**PINPOINT TEST L: THE BLOWER MOTOR DOES NOT OPERATE CORRECTLY - EMTC**

| Test Step | | Result / Action to Take |
|-----------|--|--|
| L1 | CHECK SMART JUNCTION BOX (SJB) DTCS | |
| | <ul style="list-style-type: none"> Key in ON position. Check the SJB for DTCS. Is DTC B2513 or C1779 present? | <p>Yes DTC B2513, GO to L13. DTC C1779, GO to L14.</p> <p>No GO to L2.</p> |

(Continued)

L1

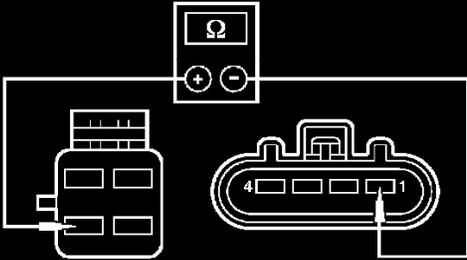
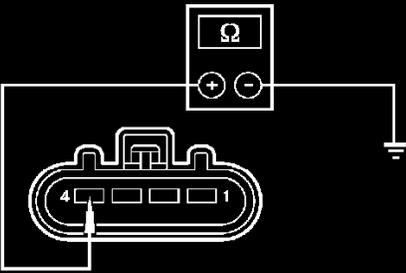
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST L: THE BLOWER MOTOR DOES NOT OPERATE CORRECTLY — EMTC (Continued)**

| Test Step | | Result / Action to Take |
|-----------|---|---|
| L2 | CHECK THE BLOWER MOTOR OPERATION | <p>Yes If the blower motor does not operate in HI, GO to L3. If the blower motor does not operate in MED-HI, GO to L4. If the blower motor does not operate in MED-LO, GO to L5. If the blower motor does not operate in LO, GO to L6. For all other symptoms, GO to L10.</p> <p>No GO to Pinpoint Test K.</p> |
| | <ul style="list-style-type: none"> • Key in ON position. • Turn the function selector switch to the FLOOR position. • Select all blower speed positions. • Does the blower motor operate in any position? | |
| L3 | CHECK CIRCUIT 261 (OG/BK) FOR AN OPEN | |
| | <ul style="list-style-type: none"> • Key in OFF position. • Disconnect: Blower Motor Switch C294b. • Disconnect: Blower Motor C2004. • Measure the resistance between the blower motor switch C294b-2, circuit 261 (OG/BK) and the blower motor C2004-2, circuit 261 (OG/BK).  <p style="text-align: right;">AM0415-A</p> | |
| | <ul style="list-style-type: none"> • Is the resistance less than 5 ohms? | |
| L4 | CHECK CIRCUIT 269 (LB/OG) FOR AN OPEN | <p>Yes GO to L7.</p> <p>No REPAIR circuit 261 (OG/BK) for an open. TEST the system for normal operation.</p> |
| | <ul style="list-style-type: none"> • Key in OFF position. • Disconnect: Blower Motor Switch C294b. • Disconnect: Blower Motor Resistor C293. • Measure the resistance between the blower motor switch C294b-3, circuit 269 (LB/OG) and the blower motor resistor C293-3, circuit 269 (LB/OG).  <p style="text-align: left;">A0071487</p> | |
| | <ul style="list-style-type: none"> • Is the resistance less than 5 ohms? | |
| L5 | CHECK CIRCUIT 260 (RD/OG) FOR AN OPEN | |
| | <ul style="list-style-type: none"> • Key in OFF position. • Disconnect: Blower Motor Switch C294b. | |

(Continued)

L2-L5

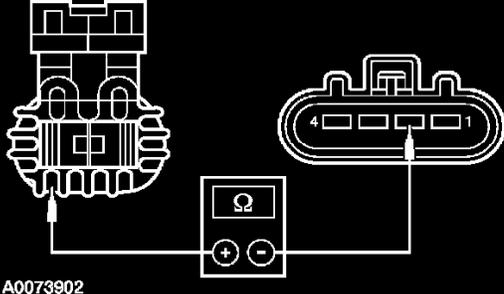
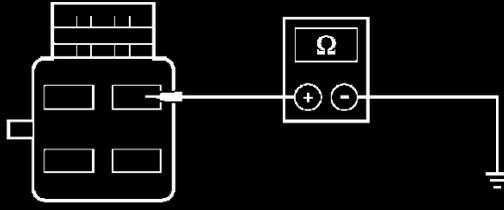
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST L: THE BLOWER MOTOR DOES NOT OPERATE CORRECTLY — EMTC (Continued)**

| Test Step | | Result / Action to Take |
|-----------|---|--|
| L5 | CHECK CIRCUIT 260 (RD/OG) FOR AN OPEN (Continued) | |
| | <ul style="list-style-type: none"> Disconnect: Blower Motor Resistor C293. Measure the resistance between the blower motor switch C294b-4, circuit 260 (RD/OG) and the blower motor resistor C293-1, circuit 260 (RD/OG).  <p>A0071488</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes GO to L7.</p> <p>No REPAIR circuit 260 (RD/OG) for an open. TEST the system for normal operation.</p> |
| L6 | CHECK BLOWER MOTOR RESISTOR GROUND CIRCUIT 1205 (BK) FOR AN OPEN | |
| | <ul style="list-style-type: none"> Measure the resistance between the blower motor resistor C293-4, circuit 1205 (BK) and ground.  <p>A0035320</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes GO to L7.</p> <p>No REPAIR circuit 1205 (BK) for an open. TEST the system for normal operation.</p> |
| L7 | CHECK THE BLOWER MOTOR RESISTOR CIRCUIT 261 (OG/BK) FOR AN OPEN | |
| | <ul style="list-style-type: none"> Connect: Blower Motor C2004. | |

(Continued)

L5-L7

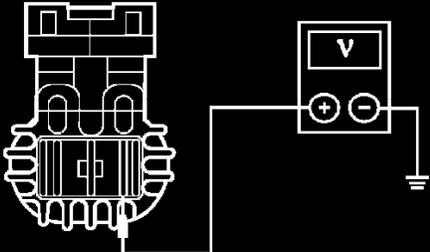
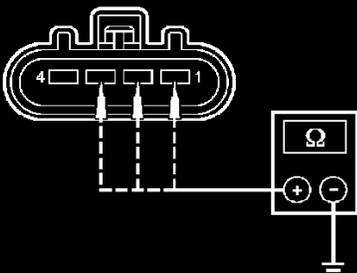
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST L: THE BLOWER MOTOR DOES NOT OPERATE CORRECTLY — EMTC (Continued)**

| Test Step | | Result / Action to Take |
|------------|---|---|
| L7 | CHECK THE BLOWER MOTOR RESISTOR CIRCUIT 261 (OG/BK) FOR AN OPEN (Continued) <ul style="list-style-type: none"> Measure the resistance between the blower motor resistor C293-2, circuit 261 (OG/BK) and blower motor C2004-2, circuit 261 (OG/BK).  <p>A0073902</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes GO to L8.</p> <p>No REPAIR circuit 261 (OG/BK) for an open. TEST the system for normal operation.</p> |
| L8 | CHECK THE BLOWER MOTOR RESISTOR <ul style="list-style-type: none"> CARRY OUT the blower motor resistor component test. Does the blower motor resistor test good? | <p>Yes GO to L9.</p> <p>No INSTALL a new blower motor resistor. TEST the system for normal operation.</p> |
| L9 | CHECK THE BLOWER MOTOR SWITCH CIRCUIT 1205 (BK) FOR AN OPEN <ul style="list-style-type: none"> Measure the resistance between the blower motor switch C294b-1, circuit 1205 (BK) and ground.  <p>A0020414</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSTALL a new blower motor switch. TEST the system for normal operation.</p> <p>No REPAIR circuit 1205 (BK) for an open. TEST the system for normal operation.</p> |
| L10 | CHECK CIRCUIT 371 (PK/WH) FOR A SHORT TO VOLTAGE <ul style="list-style-type: none"> Key in OFF position. Disconnect: Blower Motor C2004. Key in ON position. | |

(Continued)

L7-L10

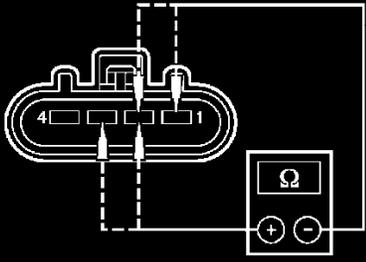
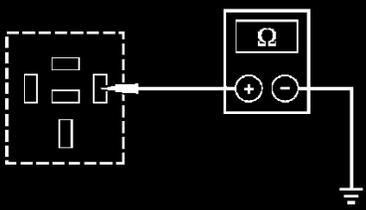
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST L: THE BLOWER MOTOR DOES NOT OPERATE CORRECTLY — EMTC (Continued)**

| Test Step | Result / Action to Take |
|--|--|
| <p>L10 CHECK CIRCUIT 371 (PK/WH) FOR A SHORT TO VOLTAGE (Continued)</p> <ul style="list-style-type: none"> Measure the voltage between the blower motor C2004-1, circuit 371 (PK/WH) and ground.  <p style="text-align: center;">AM0416-A</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | <p>Yes REPAIR circuit 371 (PK/WH) for a short to voltage. TEST the system for normal operation.</p> <p>No GO to L11.</p> |
| <p>L11 CHECK CIRCUITS 261 (OG/BK), 260 (RD/OG) AND 269 (LB/OG) FOR A SHORT TO GROUND</p> <ul style="list-style-type: none"> Key in OFF position. Disconnect: Blower Motor C2004. Disconnect: Blower Motor Resistor C293. Place the blower switch in the lowest setting. Measure the resistance between ground and the blower motor resistor C293, circuit: <ul style="list-style-type: none"> 260 (RD/OG) pin 1 261 (OG/BK) pin 2 269 (LB/OG) pin 3  <p style="text-align: center;">A0051664</p> <ul style="list-style-type: none"> Are the resistances less than 5 ohms? | <p>Yes GO to L12.</p> <p>No REPAIR the affected circuit. TEST the system for normal operation.</p> |

(Continued)

L10-L11

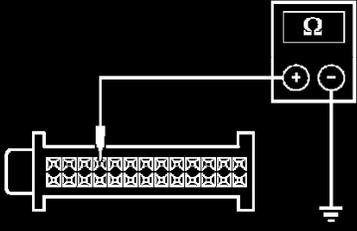
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST L: THE BLOWER MOTOR DOES NOT OPERATE CORRECTLY — EMTC (Continued)**

| Test Step | | Result / Action to Take |
|------------|---|--|
| L12 | CHECK THE BLOWER MOTOR CIRCUITS FOR SHORTS TOGETHER <ul style="list-style-type: none"> Measure the resistance between the blower motor resistor C293: <ul style="list-style-type: none"> pin 1, circuit 260 (RD/OG) and pin 2, circuit 261 (OG/BK). pin 1, circuit 260 (RD/OG) and pin 3, circuit 269 (LB/OG). pin 2, circuit 261 (OG/BK) and pin 3, circuit 269 (LB/OG).  <p>A0051665</p> <ul style="list-style-type: none"> Are the resistances greater than 10,000 ohms? | <p>Yes INSTALL a new blower motor switch. TEST the system for normal operation.</p> <p>No REPAIR the affected circuits. TEST the system for normal operation.</p> |
| L13 | CHECK CIRCUIT 1322 (BN/WH) FOR A SHORT TO GROUND <ul style="list-style-type: none"> Key in OFF position. Disconnect: Blower Motor Relay. Disconnect: SJB C2280c. Measure the resistance between the blower motor relay socket pin 86, circuit 1322 (BN/WH) and ground.  <p>A0013858</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes INSTALL a new SJB. TEST the system for normal operation.</p> <p>No REPAIR circuit 1322 (BN/WH) for a short to ground. TEST the system for normal operation.</p> |
| L14 | CHECK CIRCUIT 1398 (PK/WH) FOR A SHORT TO GROUND <ul style="list-style-type: none"> Key in OFF position. Disconnect: EMTC Module C294a. Disconnect: SJB C2280b. | |

(Continued)

L12-L14

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST L: THE BLOWER MOTOR DOES NOT OPERATE CORRECTLY — EMTC (Continued)**

| Test Step | | Result / Action to Take |
|------------|---|---|
| L14 | CHECK CIRCUIT 1398 (PK/WH) FOR A SHORT TO GROUND (Continued) | |
| | <ul style="list-style-type: none"> Measure the resistance between EMTC module C294a-23, circuit 1398 (PK/WH) and ground. | |
| |  <p>A0081828</p> | |
| | <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes INSTALL a new SJB module. TEST the system for normal operation.</p> <p>No REPAIR circuit 1398 (PK/WH) for a short to ground. TEST the system for normal operation.</p> |

L14 Continued**Normal Operation**

Under normal operation, the blower motor is provided a ground from the blower resistor through circuit 261 (OG/BK). The blower motor resistor gets a ground from circuit 1205 (BK) in the lowest blower setting. In MED-LO and MED-HI the resistor gets a ground through circuit 269 (LB/OG) or 260 (RD/OG), depending on selected speed. In HI, the blower motor is grounded directly through the blower motor switch from circuit 261 (OG/BK) to circuit 1205 (BK). The blower switch receives its ground from circuit 1205 (BK).

Possible Causes

- An open in circuit 1205 (BK), 261 (OG/BK), 269 (LB/OG) or 260 (RD/OG).
- A short to ground in circuit 261 (OG/BK), 269 (LB/OG) or 260 (RD/OG).
- A short together circuits 261 (OG/BK), 269 (LB/OG) or 260 (RD/OG).
- Blower motor resistor.
- Blower motor switch.

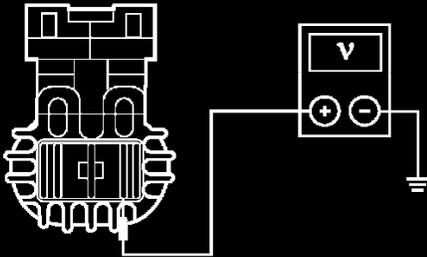
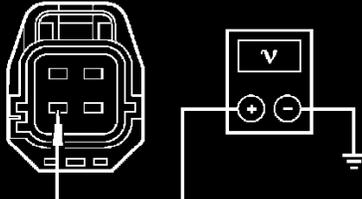
Test M: The Blower Motor Is Inoperative - EATC**PINPOINT TEST M: THE BLOWER MOTOR IS INOPERATIVE - EATC**

| PINPOINT TEST M: THE BLOWER MOTOR IS INOPERATIVE — EATC | | |
|---|--|--|
| Test Step | | Result / Action to Take |
| M1 | CHECK SMART JUNCTION BOX (SJB) DTCS | |
| | <ul style="list-style-type: none"> Key in ON position. Check the SJB for DTCS. Is DTC B2513 or B2514 present? | <p>Yes DTC B2513, GO to M11. DTC B2514, GO to M14.</p> <p>No GO to M2.</p> |

(Continued)

M1

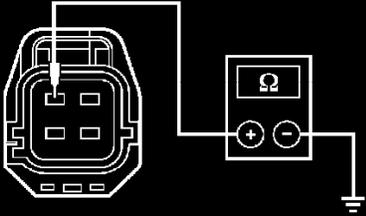
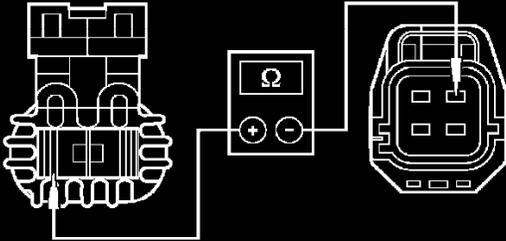
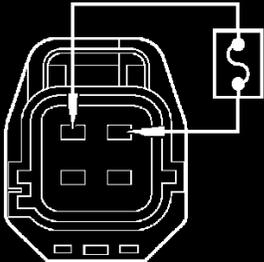
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST M: THE BLOWER MOTOR IS INOPERATIVE — EATC (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|--|
| M2 | CHECK FOR VOLTAGE TO THE BLOWER MOTOR <ul style="list-style-type: none"> Key in OFF position. Disconnect: Blower Motor C2004. Key in ON position. Measure the voltage between the blower motor C2004-1, circuit 371 (PK/WH) and ground.  <p style="text-align: center;">AM0416-A</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | <p>Yes GO to M3.</p> <p>No GO to M9.</p> |
| M3 | CHECK FOR VOLTAGE TO THE BLOWER MOTOR CONTROLLER <ul style="list-style-type: none"> Key in OFF position. Disconnect: Blower Motor Speed Control C271. Key in ON position. Measure the voltage between the blower motor speed control C271-4, circuit 371 (PK/WH) and ground.  <p style="text-align: center;">A0052329</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | <p>Yes GO to M4.</p> <p>No REPAIR circuit 371 (PK/WH) for an open. TEST the system for normal operation.</p> |
| M4 | CHECK CIRCUIT 1205 (BK) FOR AN OPEN <ul style="list-style-type: none"> Key in OFF position. | |

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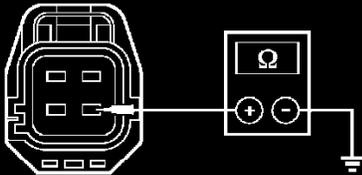
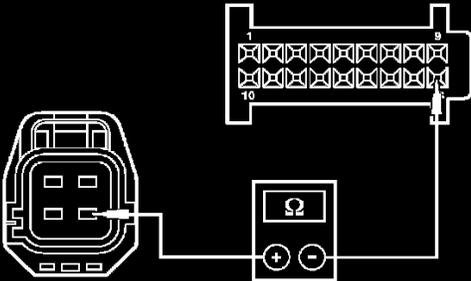
M2-M4

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST M: THE BLOWER MOTOR IS INOPERATIVE — EATC (Continued)**

| Test Step | | Result / Action to Take |
|-----------|---|--|
| M4 | CHECK CIRCUIT 1205 (BK) FOR AN OPEN (Continued) | |
| | <ul style="list-style-type: none"> Measure the resistance between the blower motor speed control C271-2, circuit 1205 (BK) and ground.  <p>A0056181</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes GO to M5.</p> <p>No REPAIR circuit 1205 (BK) for an open. TEST the system for normal operation.</p> |
| M5 | CHECK CIRCUIT 261 (OG/BK) FOR AN OPEN | |
| | <ul style="list-style-type: none"> Measure the resistance between the blower motor C2004-2, circuit 261 (OG/BK) and the blower motor speed control C271-1, circuit 261 (OG/BK).  <p>A0056182</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes GO to M6.</p> <p>No REPAIR circuit 261 (OG/BK) for an open. TEST the system for normal operation.</p> |
| M6 | CHECK THE BLOWER MOTOR | |
| | <ul style="list-style-type: none"> Connect: Blower Motor C2004. Connect a fused jumper lead between the blower motor speed control C271-1, circuit 261 (OG/BK) and C271-2, circuit 1205 (BK).  <p>A0056183</p> <ul style="list-style-type: none"> Key in ON position. Does the blower motor operate? | <p>Yes GO to M7.</p> <p>No INSTALL a new blower motor. TEST the system for normal operation.</p> |

(Continued)

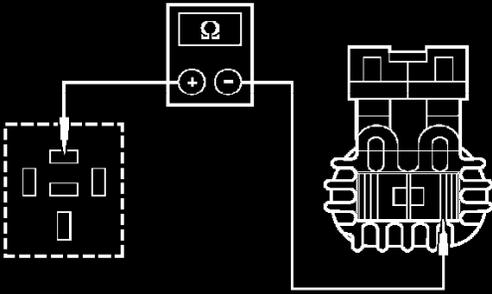
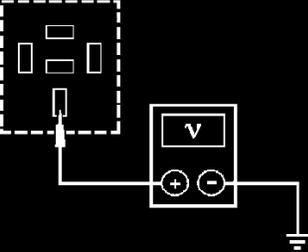
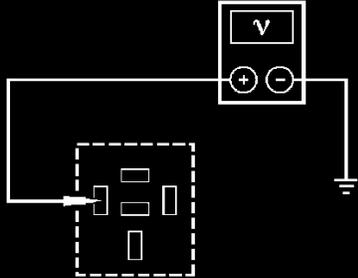
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST M: THE BLOWER MOTOR IS INOPERATIVE — EATC (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|--|
| M7 | CHECK CIRCUIT 1120 (BK/WH) FOR A SHORT TO GROUND <ul style="list-style-type: none"> • Key in OFF position. • Removed the fused jumper lead from the blower motor speed control C271. • Disconnect: EATC Module C228b. • Measure the resistance between the blower motor speed control C271-3, circuit 1120 (BK/WH) and ground.  <p>A0052330</p> <ul style="list-style-type: none"> • Is the resistance greater than 10,000 ohms? | <p>Yes GO to M8.</p> <p>No REPAIR circuit 1120 (BK/WH) for a short to ground. TEST the system for normal operation.</p> |
| M8 | CHECK CIRCUIT 1120 (BK/WH) FOR AN OPEN <ul style="list-style-type: none"> • Key in OFF position. • Measure the resistance between blower speed control C271-3, circuit 1120 (BK/WH) and EATC module C228b-18 circuit 1120 (BK/WH).  <p>A0072945</p> <ul style="list-style-type: none"> • Is the resistance less than 5 ohms? | <p>Yes INSTALL a new blower motor speed control. TEST the system for normal operation. If the blower is still inoperative, INSTALL a new EATC module. TEST the system for normal operation.</p> <p>No REPAIR circuit 1120 (BK/WH) for an open. TEST the system for normal operation.</p> |
| M9 | CHECK CIRCUIT 371 (PK/WH) FOR AN OPEN <ul style="list-style-type: none"> • Key in OFF position. • Disconnect: Blower Motor Relay. | |

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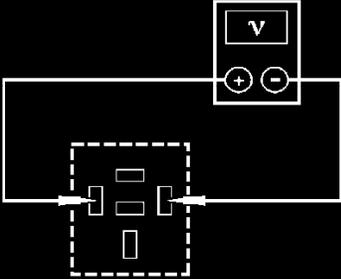
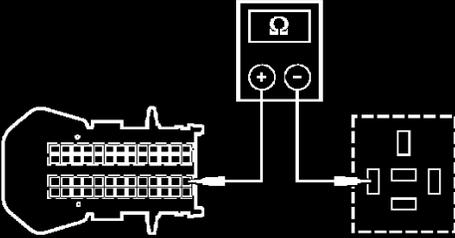
M7-M9

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST M: THE BLOWER MOTOR IS INOPERATIVE — EATC (Continued)**

| Test Step | | Result / Action to Take |
|------------|--|--|
| M9 | CHECK CIRCUIT 371 (PK/WH) FOR AN OPEN (Continued) | |
| | <ul style="list-style-type: none"> Measure the resistance between the blower motor relay socket pin 87, circuit 371 (PK/WH) and the blower motor C2004-1, circuit 371 (PK/WH).  <p>A0032572</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes GO to M10.</p> <p>No REPAIR circuit 371 (PK/WH) for an open. TEST the system for normal operation.</p> |
| M10 | CHECK CIRCUIT 364 (BK/LG) FOR VOLTAGE | |
| | <ul style="list-style-type: none"> Measure the voltage between the blower motor relay socket pin 30, circuit 364 (BK/LG) and ground.  <p>A0032581</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | <p>Yes INSTALL a new blower relay. TEST the system for normal operation.</p> <p>No REPAIR circuit 364 (BK/LG) for an open. TEST the system for normal operation.</p> |
| M11 | CHECK THE RELAY COIL SUPPLY VOLTAGE | |
| | <ul style="list-style-type: none"> Key in OFF position. Disconnect: Blower Motor Relay. Key in ON position. Measure the voltage between the blower motor relay socket pin 85, circuit 298 (VT/OG) and ground.  <p>A0013862</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | <p>Yes GO to M12.</p> <p>No REPAIR circuit 298 (VT/OG) for an open. TEST the system for normal operation.</p> |

(Continued)

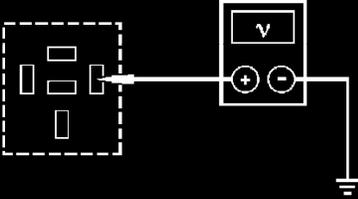
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST M: THE BLOWER MOTOR IS INOPERATIVE — EATC (Continued)**

| Test Step | | Result / Action to Take |
|------------|--|--|
| M12 | CHECK THE BLOWER MOTOR RELAY | |
| | <ul style="list-style-type: none"> Measure the voltage between the blower motor relay socket pin 86, circuit 1322 (BN/WH) and socket pin 85, circuit 298 (VT/OG).  <p>A0038291</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | <p>Yes INSTALL a new blower motor relay. TEST the system for normal operation.</p> <p>No GO to M13.</p> |
| M13 | CHECK CIRCUIT 1322 (BN/WH) FOR AN OPEN | |
| | <ul style="list-style-type: none"> Key in OFF position. Disconnect: SJB C2280c. Measure the resistance between the SJB C2280c-14, circuit 1322 (BN/WH) and the blower motor relay socket pin 86, circuit 1322 (BN/WH).  <p>A0081827</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSTALL a new SJB. TEST the system for normal operation.</p> <p>No REPAIR circuit 1322 (BN/WH) for an open. TEST the system for normal operation.</p> |
| M14 | CHECK CIRCUIT 1322 (BN/WH) FOR SHORT TO VOLTAGE | |
| | <ul style="list-style-type: none"> Key in OFF position. Disconnect: Blower Motor Relay. Disconnect: SJB C2280c. Key in ON position. | |

(Continued)

M12-M14

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST M: THE BLOWER MOTOR IS INOPERATIVE — EATC (Continued)**

| Test Step | | Result / Action to Take |
|------------|--|---|
| M14 | CHECK CIRCUIT 1322 (BN/WH) FOR SHORT TO VOLTAGE (Continued) | |
| | <ul style="list-style-type: none"> Measure the voltage between the blower motor relay socket pin 86, circuit 1322 (BN/WH) and ground.  <p>A0020210</p> <ul style="list-style-type: none"> Is voltage present? | <p>Yes REPAIR circuit 1322 (BN/WH) for a short to voltage. TEST the system for normal operation.</p> <p>No INSTALL a new SJB. TEST the system for normal operation.</p> |

M14 Continued**Normal Operation**

Under normal operation, when blower operation is requested a signal is sent from the control module to the Smart Junction Box (SJB) over the SCP BUS. The SJB sends a message over the SCP bus to the PCM.

The blower motor relay coil receives a ground from the Smart Junction Box (SJB) through circuit 1322 (BN/WH). The coil receives voltage through circuit 298 (VT/OG). Voltage is supplied to the relay switch contact through circuit 364 (BK/LG). When the relay coil is energized, voltage is delivered to the blower motor and the blower motor control module through circuit 371 (PK/WH). Ground for the motor is provided through circuit 261 (OG/BK) from the blower control module. Ground for the blower control module is provided by circuit 1205 (BK). The EATC module sends pulse width modulated signal to the blower control module through circuit 1120 (BK/WH) to control the blower speed.

Possible Causes

- An open in circuit 1205 (BK), 364 (BK/LG), 261 (OG/BK), 371 (PK/WH), 298 (VT/OG) or 1322 (BN/WH).
- A short to ground in circuit 1120 (BK/WH).
- A short to voltage in circuit 1322 (BN/WH).
- A/C blower relay.
- Blower motor control module.
- EATC module.
- SJB.

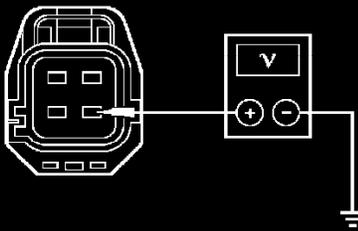
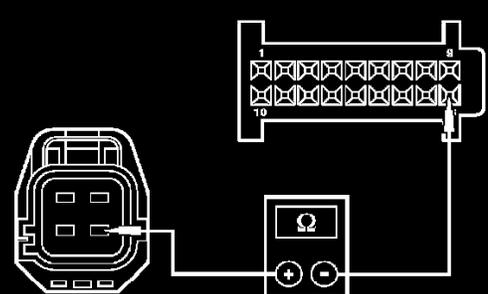
Test N: The Blower Motor Does Not Operate Correctly - EATC**PINPOINT TEST N: THE BLOWER MOTOR DOES NOT OPERATE CORRECTLY - EATC**

| Test Step | | Result / Action to Take |
|-----------|---|--|
| N1 | CHECK SMART JUNCTION BOX (SJB) DTCS | |
| | <ul style="list-style-type: none"> Key in ON position. Check the SJB for DTCS. Is DTC B2513 present? | <p>Yes GO to N8.</p> <p>No GO to N2.</p> |

(Continued)

N1

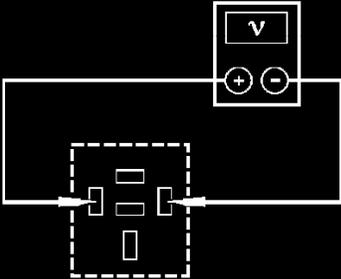
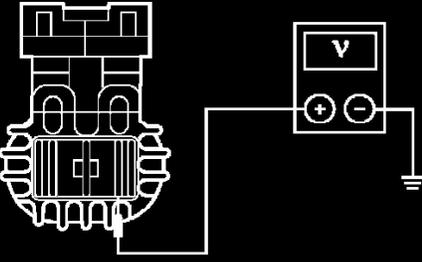
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST N: THE BLOWER MOTOR DOES NOT OPERATE CORRECTLY — EATC (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|---|
| N2 | VERIFY THE BLOWER MOTOR OPERATION | |
| | <ul style="list-style-type: none"> • Key in ON position. • Press the PANEL button on the EATC module. Adjust the blower motor setting to LO and then to HI. • Press the OFF button on the EATC module. • Does the blower motor operate at any setting? | <p>Yes If the blower motor operates always in HIGH, GO to N3.</p> <p>If the blower motor is always ON, GO to N6.</p> <p>No GO to Pinpoint Test M.</p> |
| N3 | CHECK CIRCUIT 261 (OG/BK) FOR A SHORT TO GROUND | |
| | <ul style="list-style-type: none"> • Key in OFF position. • Disconnect: Blower Motor Speed Control C271. • Key in ON position. • Does the blower motor operate? | <p>Yes REPAIR circuit 261 (OG/BK) for a short to ground. TEST the system for normal operation.</p> <p>No GO to N4.</p> |
| N4 | CHECK CIRCUIT 1120 (BK/WH) FOR A SHORT TO VOLTAGE | |
| | <ul style="list-style-type: none"> • Key in OFF position. • Disconnect: EATC Module C228b. • Key in ON position. • Measure the voltage between the blower motor speed control C271-3, circuit 1120 (BK/WH) and ground.  <p>A0056184</p> <ul style="list-style-type: none"> • Is voltage present? | <p>Yes REPAIR circuit 1120 (BK/WH) for a short to voltage. TEST the system for normal operation.</p> <p>No GO to N5.</p> |
| N5 | CHECK CIRCUIT 1120 (BK/WH) FOR AN OPEN | |
| | <ul style="list-style-type: none"> • Key in OFF position. • Measure the resistance between the blower motor speed control C271-3, circuit 1120 (BK/WH) and EATC module C228b-18, circuit 1120 (BK/WH).  <p>A0072945</p> <ul style="list-style-type: none"> • Is the resistance less than 5 ohms? | <p>Yes INSTALL a new blower motor speed control. TEST the system for normal operation.</p> <p>No REPAIR circuit 1120 (BK/WH) for an open. TEST the system for normal operation.</p> |
| N6 | CHECK THE SJB MODULE OUTPUT | |
| | <ul style="list-style-type: none"> • Key in OFF position. • Disconnect: Blower Motor Relay. | |

(Continued)

N2-N6

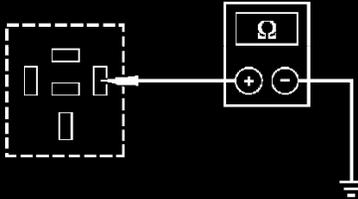
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST N: THE BLOWER MOTOR DOES NOT OPERATE CORRECTLY — EATC (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|--|
| N6 | CHECK THE SJB MODULE OUTPUT (Continued) <ul style="list-style-type: none"> Key in ON position. Press the EATC OFF button. Measure the voltage between the blower motor relay socket pin 86, circuit 1322 (BN/WH) and socket pin 85, circuit 298 (VT/OG).  <p>A0038291</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | <p>Yes GO to N7.</p> <p>No CARRY OUT the relay component test on the blower motor relay. If OK, INSTALL a new SJB. TEST the system for normal operation.</p> |
| N7 | CHECK CIRCUIT 371 (PK/WH) FOR A SHORT TO VOLTAGE <ul style="list-style-type: none"> Key in OFF position. Disconnect: Blower Motor C2004. Key in ON position. Measure the voltage between the blower motor C2004-1, circuit 371 (PK/WH) and ground.  <p>AM0416-A</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | <p>Yes REPAIR circuit 371 (PK/WH) for a short to voltage. TEST the system for normal operation.</p> <p>No INSTALL a new blower motor speed control. TEST the system for normal operation. If the blower still does not operate correctly, INSTALL a new EATC module. TEST the system for normal operation.</p> |
| N8 | CHECK CIRCUIT 1322 (BN/WH) FOR A SHORT TO GROUND <ul style="list-style-type: none"> Key in OFF position. Disconnect: SJB C2280c. | |

(Continued)

N6-N8

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST N: THE BLOWER MOTOR DOES NOT OPERATE CORRECTLY — EATC (Continued)**

| Test Step | | Result / Action to Take |
|-----------|---|---|
| N8 | CHECK CIRCUIT 1322 (BN/WH) FOR A SHORT TO GROUND (Continued) | |
| | <ul style="list-style-type: none"> Measure the resistance between the blower motor relay socket pin 86, circuit 1322 (BN/WH) and ground.  <p>A0013858</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes CARRY OUT the relay component test on the blower motor relay. If OK, INSTALL a new SJB. TEST the system for normal operation.</p> <p>No REPAIR circuit 1322 (BN/WH) for a short to ground. TEST the system for normal operation.</p> |

N8 Continued**Normal Operation**

Under normal operation, when blower operation is requested a signal is sent from the control module to the Smart Junction Box (SJB) over the SCP BUS. The SJB sends a message over the SCP bus to the PCM.

The blower motor relay coil receives a ground from the Smart Junction Box (SJB) through circuit 1322 (BN/WH). The coil receives voltage through circuit 298 (VT/OG). Voltage is supplied to the relay switch contact through circuit 364 (BK/LG). When the relay coil is energized, voltage is delivered to the blower motor and the blower motor control module through circuit 371 (PK/WH). Ground for the motor is provided through circuit 261 (OG/BK) from the blower control module. Ground for the blower control module is provided by circuit 1205 (BK). The EATC module sends pulse width modulated signal to the blower control module through circuit 1120 (BK/WH) to control the blower speed.

Possible Causes

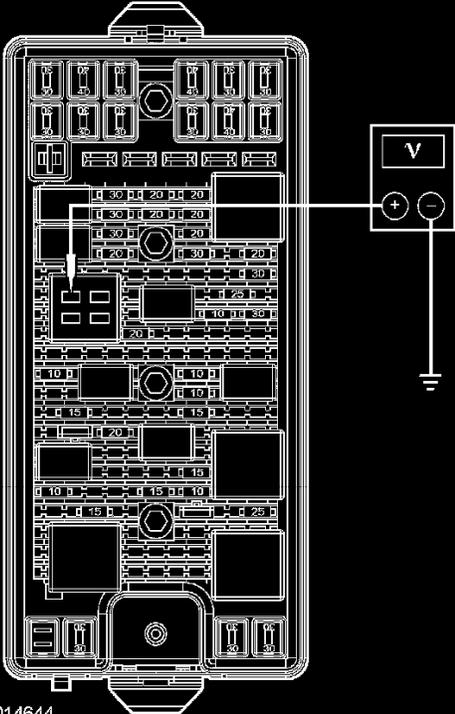
- An open in circuit 1120 (BK/WH).
- A short to ground in circuit 261 (OG/BK) or 1322 (BN/WH).
- A short to voltage in circuit 1120 (BK/WH) or 371 (PK/WH).
- Blower motor control module.
- EATC module.

Test O: The Auxiliary Blower Motor Is Inoperative**PINPOINT TEST O: THE AUXILIARY BLOWER MOTOR IS INOPERATIVE**

| PINPOINT TEST O: THE AUXILIARY BLOWER MOTOR IS INOPERATIVE | |
|---|---|
| Test Step | Result / Action to Take |
| O1 | CHECK SMART JUNCTION BOX (SJB) DTCS |
| <ul style="list-style-type: none"> Key in ON position. Check the SJB for DTCs. Is DTC B2543, B2559 or B2688 present? | <p>Yes DTC B2543, REPAIR circuit 1348 (GY/OG) for a short to ground. TEST the system for normal operation.</p> <p>DTC B2559, CARRY OUT the relay component test on the auxiliary blower motor relay. If OK, REPAIR circuit 1371 (TN/OG) for a short to voltage. TEST the system for normal operation.</p> <p>DTC B2688, GO to O2.</p> <p>No GO to O3.</p> |

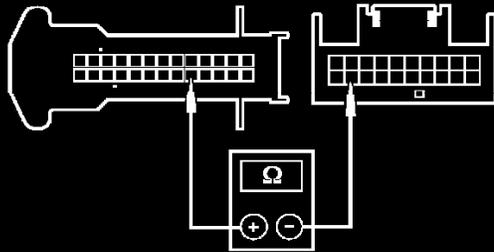
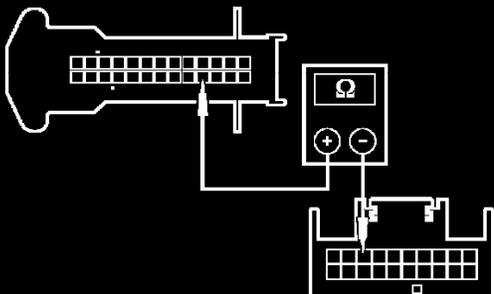
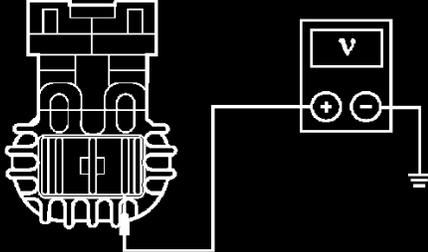
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DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST O: THE AUXILIARY BLOWER MOTOR IS INOPERATIVE (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|--|
| O2 | CHECK CIRCUIT 181 (BN/OG) FOR VOLTAGE <ul style="list-style-type: none"> • Key in OFF position. • Disconnect: Auxiliary Blower Motor Relay. • Key in ON position. • Measure the voltage between the auxiliary blower motor relay socket pin 85, circuit 181 (BN/OG) and ground.  <p>N0014644</p> <ul style="list-style-type: none"> • Is the voltage greater than 10 volts? | <p>Yes CARRY OUT the relay component test on the auxiliary blower motor relay. If OK, REPAIR circuit 1371 (TN/OG) for an open. TEST the system for normal operation.</p> <p>No REPAIR circuit 181 (BN/OG) for an open. TEST the system for normal operation.</p> |
| O3 | CHECK AUXILIARY BLOWER SWITCH PID <ul style="list-style-type: none"> • Turn the auxiliary blower motor switch to the HIGH position. • Check the auxiliary blower switch SJB PID. • Is the voltage greater than 3 volts? | <p>Yes GO to O6.</p> <p>No If the voltage is 0.5-2.9 volts, INSTALL a new rear auxiliary control. TEST the system for normal operation.</p> <p>If the voltage is less than 0.5 volts, GO to O4.</p> |
| O4 | CHECK CIRCUIT 1348 (GY/OG) FOR AN OPEN <ul style="list-style-type: none"> • Key in OFF position. • Disconnect: SJB C2280f. • Disconnect: Rear Auxiliary Control C9025. | |

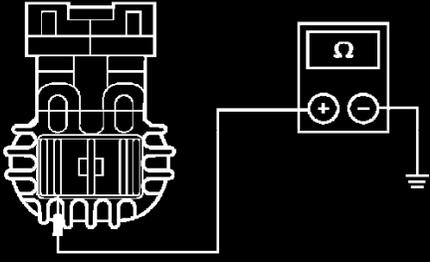
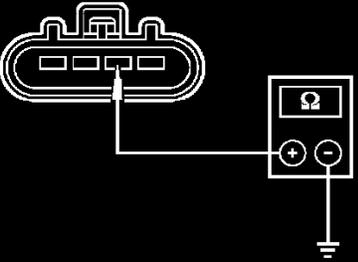
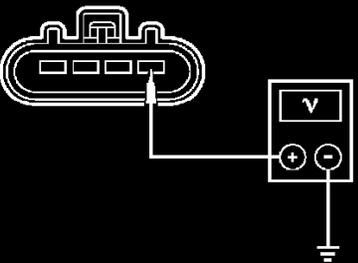
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DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST O: THE AUXILIARY BLOWER MOTOR IS INOPERATIVE (Continued)**

| Test Step | | Result / Action to Take |
|---|---|---|
| O4 | CHECK CIRCUIT 1348 (GY/OG) FOR AN OPEN (Continued) | |
| <ul style="list-style-type: none"> Measure the resistance between rear auxiliary control C9025-19, circuit 1348 (GY/OG) and SJB C2280f-5, circuit 1348 (GY/OG).  <p>A0082084</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | | <p>Yes GO to O5.</p> <p>No REPAIR circuit 1348 (GY/OG) for an open. TEST the system for normal operation.</p> |
| O5 | CHECK CIRCUIT 1349 (PK/LG) FOR AN OPEN | |
| <ul style="list-style-type: none"> Measure the resistance between rear auxiliary control C9025-8, circuit 1349 (PK/LG) and SJB C2280f-4, circuit 1349 (PK/LG).  <p>A0082085</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | | <p>Yes CARRY OUT the component test on the rear auxiliary control. If OK, INSTALL a new SJB. TEST the system for normal operation.</p> <p>No REPAIR circuit 1349 (PK/LG) for an open. TEST the system for normal operation.</p> |
| O6 | CHECK CIRCUIT 536 (BK/LG) FOR VOLTAGE | |
| <ul style="list-style-type: none"> Key in OFF position. Disconnect: Auxiliary Blower Motor C3021. Key in ON position. Measure the voltage between auxiliary blower motor C3021-1, circuit 536 (BK/LG) and ground.  <p>AM0416-A</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | | <p>Yes GO to O7.</p> <p>No GO to O12.</p> |

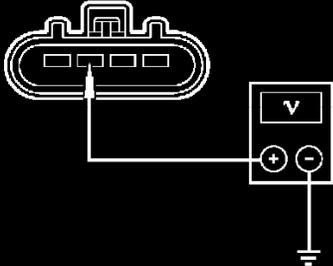
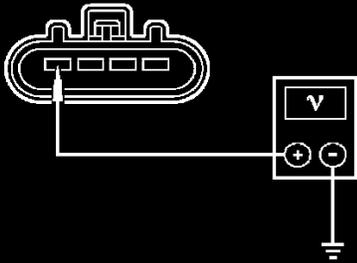
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DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST O: THE AUXILIARY BLOWER MOTOR IS INOPERATIVE (Continued)**

| Test Step | | Result / Action to Take |
|-----------|---|--|
| O7 | CHECK CIRCUIT 515 (OG/RD) FOR GROUND <ul style="list-style-type: none"> Measure the resistance between auxiliary blower motor C3021-2, circuit 515 (OG/RD) and ground.  <p style="text-align: right;">AM0420-A</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSTALL a new auxiliary blower motor. TEST the system for normal operation.</p> <p>No GO to O8.</p> |
| O8 | CHECK CIRCUIT 1205 (BK) FOR GROUND <ul style="list-style-type: none"> Key in OFF position. Disconnect: Auxiliary Blower Motor Resistor C3022. Measure the resistance between auxiliary blower motor resistor C3022-2, circuit 1205 (BK) and ground.  <p style="text-align: right;">A0082086</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes CARRY OUT the component test on the auxiliary blower motor resistor. If OK, GO to O9.</p> <p>No REPAIR circuit 1205 (BK) for an open. TEST the system for normal operation.</p> |
| O9 | CHECK CIRCUIT 751 (DB/WH) FOR A SHORT TO VOLTAGE <ul style="list-style-type: none"> Key in ON position. Turn the auxiliary blower motor switch to the OFF position. Measure the voltage between auxiliary blower motor resistor C3022-1, circuit 751 (DB/WH) and ground.  <p style="text-align: right;">A0082087</p> <ul style="list-style-type: none"> Is voltage present? | <p>Yes GO to O10.</p> <p>No REPAIR circuit 751 (DB/WH) for a short to voltage. TEST the system for normal operation.</p> |

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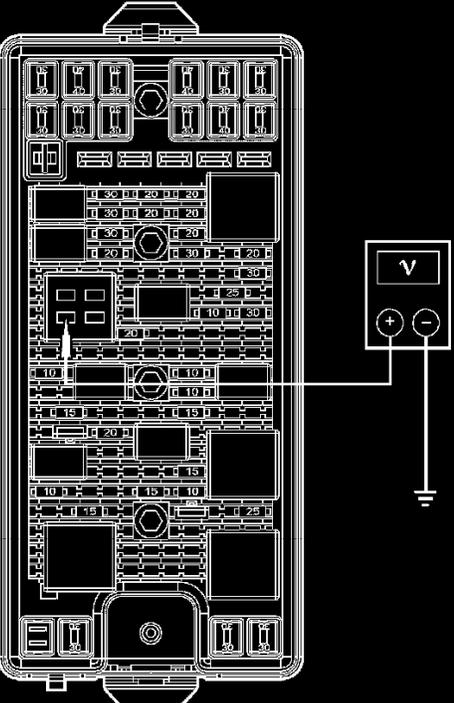
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST O: THE AUXILIARY BLOWER MOTOR IS INOPERATIVE (Continued)**

| Test Step | | Result / Action to Take |
|------------|--|---|
| O10 | CHECK CIRCUIT 752 (YE/RD) FOR A SHORT TO VOLTAGE <ul style="list-style-type: none"> Measure the voltage between auxiliary blower motor resistor C3022-3, circuit 752 (YE/RD) and ground.  <p>A0082825</p> <ul style="list-style-type: none"> Is voltage present? | <p>Yes GO to O11.</p> <p>No REPAIR circuit 752 (YE/RD) for a short to voltage. TEST the system for normal operation.</p> |
| O11 | CHECK CIRCUIT 515 (OG/RD) FOR A SHORT TO VOLTAGE <ul style="list-style-type: none"> Measure the voltage between auxiliary blower motor resistor C3022-4, circuit 515 (OG/RD) and ground.  <p>A0082115</p> <ul style="list-style-type: none"> Is voltage present? | <p>Yes REPAIR circuit 515 (OG/RD) for an open. TEST the system for normal operation.</p> <p>No REPAIR circuit 515 (OG/RD) for a short to voltage. TEST the system for normal operation.</p> |
| O12 | CHECK CIRCUIT 181 (BN/OG) FOR VOLTAGE <ul style="list-style-type: none"> Key in OFF position. Disconnect: Auxiliary Blower Motor Relay. Key in ON position. | |

(Continued)

O10-O12

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST O: THE AUXILIARY BLOWER MOTOR IS INOPERATIVE (Continued)**

| | Test Step | Result / Action to Take |
|------------|---|---|
| O12 | CHECK CIRCUIT 181 (BN/OG) FOR VOLTAGE (Continued) | |
| | <ul style="list-style-type: none"> Measure the voltage between the auxiliary blower motor relay socket pin 30, circuit 181 (BN/OG) and ground.  <p>The diagram shows a top-down view of the auxiliary blower motor relay socket. A voltmeter is connected to pin 30 and ground. The socket contains various components including relays, fuses, and terminals, with circuit numbers like 181, 536, 1371, and 515 labeled.</p> | |
| | <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | <p>Yes CARRY OUT the relay component test on the auxiliary blower motor relay. If OK, REPAIR circuit 536 (BK/LG) for an open. TEST the system for normal operation.</p> <p>No REPAIR circuit 181 (BN/OG) for an open. TEST the system for normal operation.</p> |

O12 Continued**Normal Operation**

Under normal operation, the auxiliary blower motor relay coil receives ignition voltage through circuit 181 (BN/OG). The coil receives ground from the Smart Junction Box (SJB) through circuit 1371 (TN/OG) if any blower switch position but OFF is selected. Voltage is supplied to the relay switch contact through circuit 181 (BN/OG). When the relay coil is energized, voltage is delivered to the blower motor through circuit 536 (BK/LG). Ground for the blower motor is provided through circuit 515 (OG/RD) from the blower motor resistor (LO and MED-LO) and the blower motor speed relay 1 (MED-HI and HI). The blower resistor is grounded through circuit 1205 (BK).

Possible Causes

- An open in circuit 181 (BN/OG), 1371 (TN/OG), 1205 (BK), 536 (BK/LG) or 515 (OG/RD).
- Blower motor.
- Blower motor relay.
- Blower motor resistor.

Test P: The Auxiliary Blower Motor Does Not Operate Correctly**PINPOINT TEST P: THE AUXILIARY BLOWER MOTOR DOES NOT OPERATE CORRECTLY**

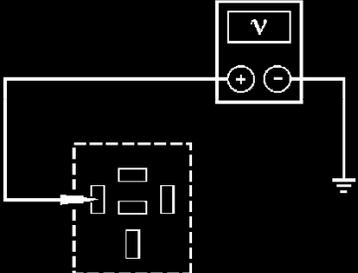
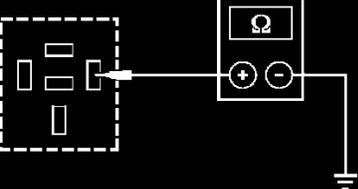
PINPOINT TEST P: THE AUXILIARY BLOWER MOTOR DOES NOT OPERATE CORRECTLY

| Test Step | | Result / Action to Take |
|-----------|--|---|
| P1 | CHECK SMART JUNCTION BOX (SJB) DTCS <ul style="list-style-type: none"> • Key in ON position. • Check the SJB for DTCs. • Is DTC B2544, B2688, B2561, B2562, B2563, B2564 or B2919 present? | <p>Yes</p> <p>DTC B2544, REPAIR circuit 1348 (GY/OG) for a short to voltage. TEST the system for normal operation.</p> <p>DTC B2688, REPAIR circuit 1371 (TN/OG) for a short to ground. TEST the system for normal operation.</p> <p>DTC B2561, CARRY OUT the relay component test on the auxiliary blower motor speed relay 1. If OK, REPAIR circuit 1372 (PK/BK) for a short to voltage. TEST the system for normal operation.</p> <p>DTC B2562, GO to P2.</p> <p>DTC B2563, CARRY OUT the relay component test on the auxiliary blower motor speed relay 2. If OK, REPAIR circuit 1373 (GY/YE) for a short to voltage. TEST the system for normal operation.</p> <p>DTC B2564, GO to P2.</p> <p>DTC B2919, CARRY OUT the relay component test on the rear auxiliary control. If OK, REPAIR circuit 1349 (PK/LG) for a short to voltage. TEST the system for normal operation.</p> <p>No</p> <p>If incorrect operation from rear auxiliary control only, GO to P12.</p> <p>If incorrect operation from both auxiliary controls, GO to P5.</p> |
| P2 | CHECK CIRCUIT 1460 (RD/YE) FOR VOLTAGE <ul style="list-style-type: none"> • Key in OFF position. • Disconnect: Auxiliary Blower Motor Speed Relays 1 and 2. • Key in ON position. | |

(Continued)

P1-P2

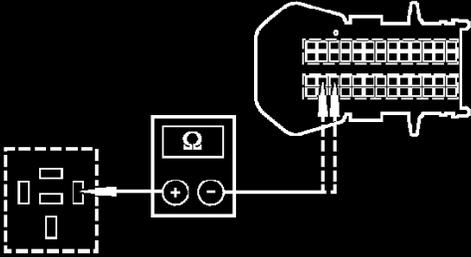
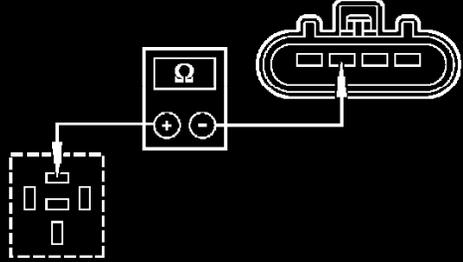
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST P: THE AUXILIARY BLOWER MOTOR DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|---|
| P2 | CHECK CIRCUIT 1460 (RD/YE) FOR VOLTAGE (Continued) <ul style="list-style-type: none"> Measure the voltage between the auxiliary blower motor speed relays 1 and 2 socket pin 85, circuit 1460 (RD/YE) and ground.  <p>A0013862</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? | <p>Yes CARRY OUT the relay component test on the auxiliary blower motor speed relays 1 and 2. If OK, GO to P3.</p> <p>No REPAIR circuit 1460 (RD/YE) for an open. TEST the system for normal operation.</p> |
| P3 | CHECK CIRCUITS 1372 (PK/BK) AND 1373 (GY/YE) FOR A SHORT TO GROUND <ul style="list-style-type: none"> Key in OFF position. Disconnect: SJB C2280c. Measure the resistance between ground and: <ul style="list-style-type: none"> auxiliary blower motor speed relay 1 socket pin 86, circuit 1372 (PK/BK). auxiliary blower motor speed relay 2 socket pin 86, circuit 1373 (GY/YE).  <p>A0013858</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes GO to P4.</p> <p>No REPAIR circuit 1372 (PK/BK) or 1373 (GY/YE) for a short to ground. TEST the system for normal operation.</p> |

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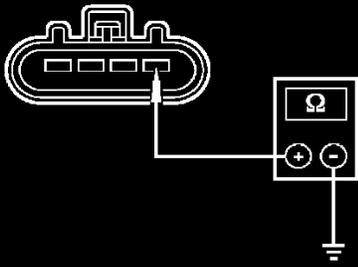
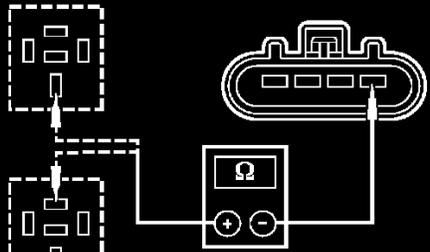
P2-P3

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST P: THE AUXILIARY BLOWER MOTOR DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|-----------|---|--|
| P4 | CHECK CIRCUITS 1372 (PK/BK) AND 1373 (GY/YE) FOR AN OPEN <ul style="list-style-type: none"> Measure the resistance between: <ul style="list-style-type: none"> SJB C2280c-24, circuit 1372 (PK/BK) and auxiliary blower motor speed relay 1 socket pin 86, circuit 1372 (PK/BK). SJB C2280c-25, circuit 1373 (GY/YE) and auxiliary blower motor speed relay 2 socket pin 86, circuit 1373 (GY/YE).  <p>A0082090</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSTALL a new SJB. TEST the system for normal operation.</p> <p>No REPAIR circuit 1372 (PK/BK) or 1373 (GY/YE) for an open. TEST the system for normal operation.</p> |
| P5 | CHECK AUXILIARY BLOWER MOTOR OPERATION <ul style="list-style-type: none"> Turn the auxiliary blower motor switch to the OFF position. Is the auxiliary blower motor running? | <p>Yes CARRY OUT the component test on the auxiliary blower motor relay. If OK, REPAIR circuit 536 (BK/LG) for a short to voltage. TEST the system for normal operation.</p> <p>No GO to P6.</p> |
| P6 | CHECK CIRCUIT 752 (YE/RD) FOR AN OPEN <ul style="list-style-type: none"> Key in OFF position. Disconnect: Auxiliary Blower Motor Resistor C3022. Disconnect: Auxiliary Blower Motor Speed Relay 2. Measure the resistance between auxiliary blower motor resistor C3022-3, circuit 752 (YE/RD) and auxiliary blower motor speed relay 2 socket pin 87, circuit 752 (YE/RD).  <p>A0082091</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes GO to P7.</p> <p>No REPAIR circuit 752 (YE/RD) for an open. TEST the system for normal operation.</p> |
| P7 | CHECK CIRCUIT 751 (DB/WH) FOR A SHORT TO GROUND <ul style="list-style-type: none"> Disconnect: Auxiliary Blower Motor Speed Relay 1. | |

(Continued)

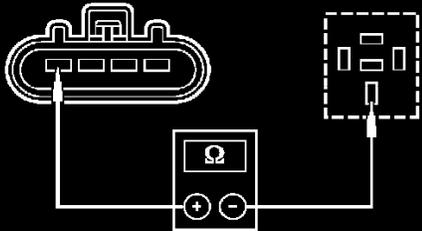
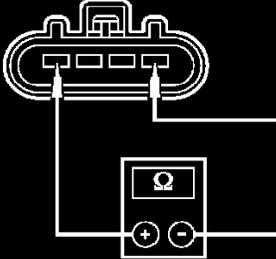
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST P: THE AUXILIARY BLOWER MOTOR DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|--|
| P7 | CHECK CIRCUIT 751 (DB/WH) FOR A SHORT TO GROUND (Continued) <ul style="list-style-type: none"> Measure the resistance between auxiliary blower motor resistor C3022-1, circuit 751 (DB/WH) and ground.  <p>A0082092</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes GO to P8.</p> <p>No REPAIR circuit 751 (DB/WH) for a short to ground. TEST the system for normal operation.</p> |
| P8 | CHECK CIRCUIT 751 (DB/WH) FOR AN OPEN <ul style="list-style-type: none"> Measure the resistance between auxiliary blower motor resistor C3022-1, circuit 751 (DB/WH) and: <ul style="list-style-type: none"> auxiliary blower motor speed relay 1 socket pin 87, circuit 751 (DB/WH). auxiliary blower motor speed relay 2 socket pin 30, circuit 751 (DB/WH).  <p>A0082093</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes GO to P9.</p> <p>No REPAIR circuit 751 (DB/WH) for an open. TEST the system for normal operation.</p> |

(Continued)

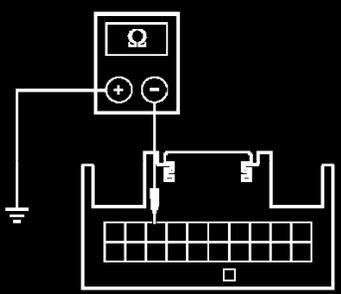
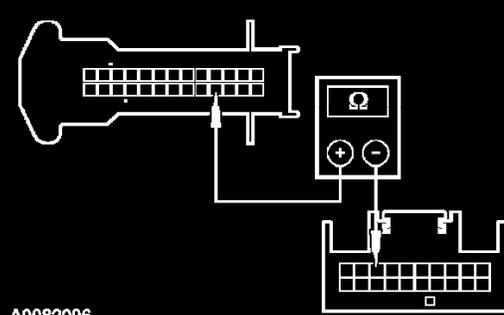
P7-P8

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST P: THE AUXILIARY BLOWER MOTOR DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|------------|--|--|
| P9 | CHECK CIRCUIT 515 (OG/RD) FOR AN OPEN <ul style="list-style-type: none"> Measure the resistance between auxiliary blower motor resistor C3022-4, circuit 515 (OG/RD) and auxiliary blower motor speed relay 1 socket pin 30, circuit 515 (OG/RD).  <p>A0082094</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes GO to P10.</p> <p>No REPAIR circuit 515 (OG/RD) for an open. TEST the system for normal operation.</p> |
| P10 | CHECK CIRCUITS 751 (DB/WH) AND 515 (OG/RD) FOR A SHORT TOGETHER <ul style="list-style-type: none"> Measure the resistance between auxiliary blower motor resistor C3022-4, circuit 515 (OG/RD) and auxiliary blower motor resistor C3022-1, circuit 751 (DB/WH).  <p>A0082089</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes GO to P11.</p> <p>No REPAIR circuit 751 (DB/WH) or 515 (OG/RD) for a short together. TEST the system for normal operation.</p> |
| P11 | CHECK AUXILIARY BLOWER MOTOR SPEED RELAYS <ul style="list-style-type: none"> CARRY OUT the component test on the auxiliary blower motor speed relays 1 and 2. Do the relays test good? | <p>Yes CARRY OUT the component test on the auxiliary blower motor resistor. If OK, INSTALL a new SJB. TEST the system for normal operation.</p> <p>No INSTALL a new relay. TEST the system for normal operation.</p> |
| P12 | CHECK AUXILIARY BLOWER SWITCH PID <ul style="list-style-type: none"> Check the auxiliary blower switch SJB PID. Turn the rear auxiliary blower motor switch to the LOW, MED-LOW, MED-HI and HI positions and refer to the voltages below: | |

(Continued)

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST P: THE AUXILIARY BLOWER MOTOR DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take | | | | | | | | | | | |
|--------------------|--|--|--------------------|---------|-----|---------|-----|-----------|---------|-----------|--------|-----------|----|
| P12 | CHECK AUXILIARY BLOWER SWITCH PID (Continued) | <p>Yes INSTALL a new SJB. TEST the system for normal operation.</p> <p>No GO to P13.</p> | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th>Blower Motor Speed</th> <th>Voltage</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>0 volts</td> </tr> <tr> <td>LOW</td> <td>0.9 volts</td> </tr> <tr> <td>MED-LOW</td> <td>1.7 volts</td> </tr> <tr> <td>MED-HI</td> <td>2.5 volts</td> </tr> <tr> <td>HI</td> <td>3.3 volts</td> </tr> </tbody> </table> <p>• Are the voltages correct?</p> | | Blower Motor Speed | Voltage | OFF | 0 volts | LOW | 0.9 volts | MED-LOW | 1.7 volts | MED-HI | 2.5 volts | HI |
| Blower Motor Speed | Voltage | | | | | | | | | | | | |
| OFF | 0 volts | | | | | | | | | | | | |
| LOW | 0.9 volts | | | | | | | | | | | | |
| MED-LOW | 1.7 volts | | | | | | | | | | | | |
| MED-HI | 2.5 volts | | | | | | | | | | | | |
| HI | 3.3 volts | | | | | | | | | | | | |
| P13 | CHECK CIRCUIT 1349 (PK/LG) FOR A SHORT TO GROUND | <p>Yes GO to P14.</p> <p>No REPAIR circuit 1349 (PK/LG) for a short to ground. TEST the system for normal operation.</p> | | | | | | | | | | | |
| | <ul style="list-style-type: none"> • Key in OFF position. • Disconnect: Rear Auxiliary Control C9025. • Disconnect: SJB C2280f. • Measure the resistance between the rear auxiliary control C9025-8, circuit 1349 (PK/LG) and ground.  <p>A0082095</p> <p>• Is the resistance greater than 10,000 ohms?</p> | | | | | | | | | | | | |
| P14 | CHECK CIRCUIT 1349 (PK/LG) FOR AN OPEN | <p>Yes CARRY OUT the rear auxiliary control test. If OK, INSTALL a new SJB. TEST the system for normal operation.</p> <p>No REPAIR circuit 1349 (PK/LG) for an open. TEST the system for normal operation.</p> | | | | | | | | | | | |
| | <ul style="list-style-type: none"> • Measure the resistance between the rear auxiliary control C9025-8, circuit 1349 (PK/LG) and SJB 2280f-4, circuit 1349 (PK/LG).  <p>A0082096</p> <p>• Is the resistance less than 5 ohms?</p> | | | | | | | | | | | | |

P12-P14**Normal Operation**

Under normal operation, ground for the blower motor is provided through circuit 515 (OG/RD) from the blower motor resistor (LO and MED-LO) and the blower motor speed relay 1 (MED-HI and HI). The blower resistor is grounded through circuit 1205 (BK). The blower motor speed relay coils are supplied through circuit 1460 (RD/YE). Blower motor speed is received by the SJB from the rear auxiliary control through circuit 1349 (PK/LG). Reference voltage for the blower speed selector resistor is provided by the SJB through circuit 536 (BK/LG). The auxiliary blower motor relay coil receives ground from the Smart Junction Box (SJB) through circuit 1371 (TN/OG) if any blower switch position but OFF is selected.

In LO, ground for the blower motor is provided through the blower motor resistor.

In MED-LO, blower motor speed relay 2 is grounded by the SJB through circuit 1373 (GY/YE). Blower motor ground circuit 515 (OG/RD) is connected through one half of the blower motor resistor to circuit 751 (DB/WH). Circuit 751 (DB/WH) is connected through blower motor speed relay 2 to the blower motor resistor ground circuit 1205 (BK) by circuit 752 (YE/RD).

In MED-HI, blower motor speed relay 1 is grounded by the SJB through circuit 1372 (PK/BK). Blower motor ground circuit 515 (OG/RD) is connected through blower motor speed relay 2 to circuit 751 (DB/WH). Circuit 751 (DB/WH) is connected through one half of the blower motor resistor to the blower motor resistor ground circuit 1205 (BK).

In HI, blower motor speed relays 1 and 2 are grounded by the SJB through circuit 1372 (PK/BK) and 1373 (GY/YE). Blower motor ground circuit 515 (OG/RD) is connected through blower motor speed relay 1 to circuit 751 (DB/WH). Circuit 751 (DB/WH) is connected through blower motor speed relay 2 to the blower motor resistor ground circuit 1205 (BK) by circuit 752 (YE/RD).

Possible Causes

- An open in circuit 1372 (PK/BK), 1373 (GY/YE), 1349 (PK/LG), 1460 (RD/YE), 751 (DB/WH), 752 (YE/RD) or 515 (OG/RD).
- A short to ground in circuit 1371 (TN/OG), 1372 (PK/BK), 1373 (GY/YE), 1349 (PK/LG) or 751 (DB/WH).- A short to voltage in circuit 1348 (GY/OG), 1372 (PK/BK), 1373 (GY/YE), 1349 (PK/LG) or 536 (BK/LG).
- A short together circuits 751 (DB/WH) and 515 (OG/RD)
- Blower motor relay.
- Blower motor speed relay 1.
- Blower motor speed relay 2.
- Rear auxiliary control.
- Auxiliary blower motor resistor.
- SJB.

Test Q: The Auxiliary Temperature Control Only Is Inoperative/Does Not Operate Correctly

PINPOINT TEST Q: THE AUXILIARY TEMPERATURE CONTROL ONLY IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

PINPOINT TEST Q: THE AUXILIARY TEMPERATURE CONTROL ONLY IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

NOTE: If the condition is only present when using the front auxiliary controls, be sure the dual-zone EMTC or EATC drivers side temperature is not set to full COOL or full WARM.

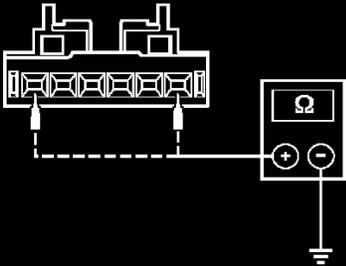
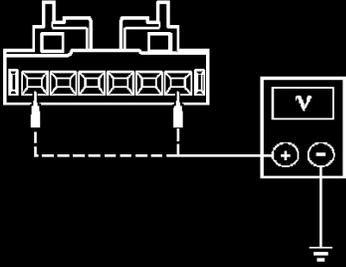
NOTE: If the auxiliary blower motor is inoperative/does not operate correctly, diagnose the blower motor first.

| Test Step | | Result / Action to Take |
|-----------|---|--|
| Q1 | CHECK SMART JUNCTION BOX (SJB) DTCS | |
| | <ul style="list-style-type: none"> • Key in ON position. • Check the SJB for DTCs. • Is DTC B2543, B2544, B2916 or B2921 present? | <p>Yes DTC B2543, REPAIR circuit 1381 (WH/LB) for a short to ground. TEST the system for normal operation. DTC B2544, REPAIR circuit 1381 (WH/LB) for a short to voltage. TEST the system for normal operation. DTC B2916, GO to Q2. DTC B2921, GO to Q4.</p> <p>No GO to Q9.</p> |
| Q2 | CHECK CIRCUITS 1375 (PK/YE) AND 1376 (BK/LB) FOR A SHORT TO GROUND | |
| | <ul style="list-style-type: none"> • Key in OFF position. • Disconnect: Auxiliary Temperature Blend Door Actuator C3004. • Disconnect: SJB C2280d. | |

(Continued)

Q1-Q2

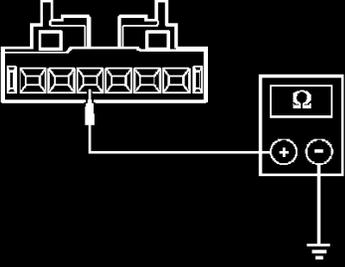
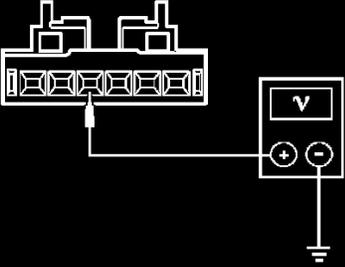
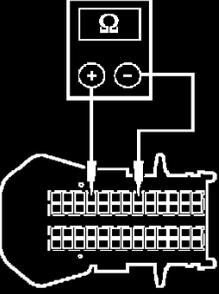
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST Q: THE AUXILIARY TEMPERATURE CONTROL ONLY IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|--|
| Q2 | CHECK CIRCUITS 1375 (PK/YE) AND 1376 (BK/LB) FOR A SHORT TO GROUND (Continued) | |
| | <ul style="list-style-type: none"> Measure the resistance between ground and: <ul style="list-style-type: none"> auxiliary temperature blend door actuator C3004-1, circuit 1375 (PK/YE). auxiliary temperature blend door actuator C3004-6, circuit 1376 (BK/LB).  <p>A0082097</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes GO to Q3.</p> <p>No REPAIR circuit 1375 (PK/YE) or 1376 (BK/LB) for a short to ground. TEST the system for normal operation.</p> |
| Q3 | CHECK CIRCUITS 1375 (PK/YE) AND 1376 (BK/LB) FOR A SHORT TO VOLTAGE | |
| | <ul style="list-style-type: none"> Key in ON position. Measure the voltage between ground and: <ul style="list-style-type: none"> auxiliary temperature blend door actuator C3004-1, circuit 1375 (PK/YE). auxiliary temperature blend door actuator C3004-6, circuit 1376 (BK/LB).  <p>A0082098</p> <ul style="list-style-type: none"> Is voltage present? | <p>Yes REPAIR circuit 1375 (PK/YE) or 1376 (BK/LB) for a short together. TEST the system for normal operation.</p> <p>No REPAIR circuit 1375 (PK/YE) or 1376 (BK/LB) for a short to voltage. TEST the system for normal operation.</p> |
| Q4 | CHECK CIRCUITS 1126 (LB) FOR A SHORT TO GROUND | |
| | <ul style="list-style-type: none"> Key in OFF position. Disconnect: Auxiliary Temperature Blend Door Actuator C3004. Disconnect: SJB C2280c. | |

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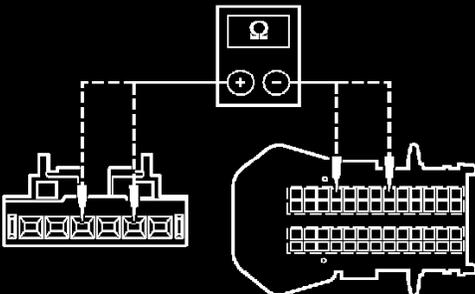
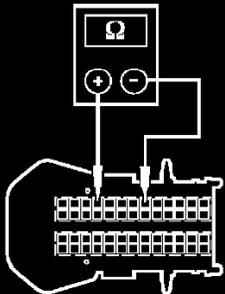
Q2-Q4

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST Q: THE AUXILIARY TEMPERATURE CONTROL ONLY IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|-----------|---|--|
| Q4 | CHECK CIRCUITS 1126 (LB) FOR A SHORT TO GROUND (Continued) <ul style="list-style-type: none"> Measure the resistance between ground and auxiliary temperature blend door actuator C3004-4, circuit 1126 (LB).  <p>A0082099</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes GO to Q5.</p> <p>No REPAIR circuit 1126 (LB) for a short to ground. TEST the system for normal operation.</p> |
| Q5 | CHECK CIRCUITS 1126 (LB) FOR A SHORT TO VOLTAGE <ul style="list-style-type: none"> Key in ON position. Measure the voltage between ground and auxiliary temperature blend door actuator C3004-4, circuit 1126 (LB).  <p>A0082100</p> <ul style="list-style-type: none"> Is voltage present? | <p>Yes GO to Q6.</p> <p>No REPAIR circuit 1126 (LB) for a short to voltage. TEST the system for normal operation.</p> |
| Q6 | CHECK POTENTIOMETER HIGH SIDE RESISTANCE <ul style="list-style-type: none"> Key in OFF position. Connect: Auxiliary Temperature Blend Door Actuator C3004. Measure the resistance between SJB C2280c-49, circuit 1381 (WH/LB) and SJB C2280c-45, circuit 1126 (LB).  <p>A0082101</p> <ul style="list-style-type: none"> Is the resistance between 250 and 5,500 ohms? | <p>Yes GO to Q8.</p> <p>No If the resistance is less than 250 ohms, REPAIR circuit 1381 (WH/LB) for a short to circuit 1126 (LB). TEST the system for normal operation.</p> <p>If the resistance is greater than 5,500 ohms, GO to Q7.</p> |

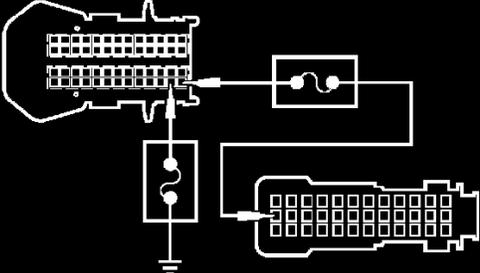
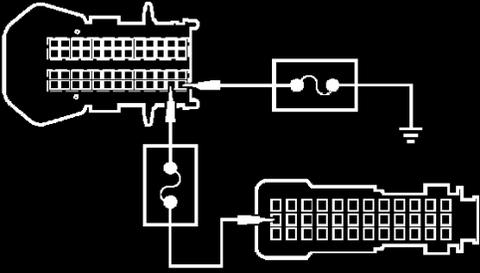
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DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST Q: THE AUXILIARY TEMPERATURE CONTROL ONLY IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|--|
| Q7 | CHECK CIRCUITS 1381 (WH/LB) AND 1126 (LB) FOR AN OPEN <ul style="list-style-type: none"> Disconnect: Auxiliary Temperature Blend Door Actuator C3004. Measure the resistance between: <ul style="list-style-type: none"> SJB C2280c-49, circuit 1381 (WH/LB) and auxiliary temperature blend door actuator C3004-2, circuit 1381 (WH/LB). SJB C2280c-45, circuit 1126 (LB) and auxiliary temperature blend door actuator C3004-4, circuit 1126 (LB).  <p>A0082102</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSTALL a new auxiliary temperature blend door actuator. TEST the system for normal operation.</p> <p>No REPAIR circuit 1381 (WH/LB) or 1126 (LB) for an open. TEST the system for normal operation.</p> |
| Q8 | CHECK CIRCUITS 1381 (WH/LB) AND 1126 (LB) FOR A SHORT TOGETHER <ul style="list-style-type: none"> Disconnect: Auxiliary Temperature Blend Door Actuator C3004. Measure the resistance between SJB C2280c-49, circuit 1381 (WH/LB) and SJB C2280c-45, circuit 1126 (LB).  <p>A0082101</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes INSTALL a new auxiliary temperature blend door actuator. TEST the system for normal operation.</p> <p>No REPAIR circuit 1381 (WH/LB) or 1126 (LB) for a short together. TEST the system for normal operation.</p> |
| Q9 | CHECK THE DOOR ACTUATOR CLOCKWISE OPERATION <ul style="list-style-type: none"> Disconnect: SJB C2280d. Disconnect: SJB C2280a. Remove the door actuator and disengage the actuator driveshaft from the actuator door. Mark the door actuator driveshaft position. | |

(Continued)

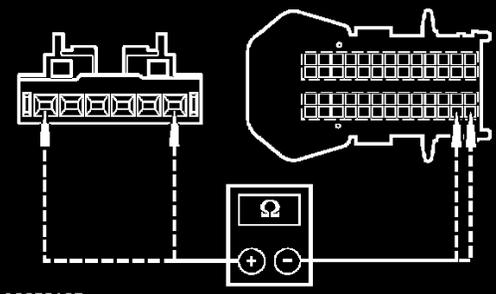
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST Q: THE AUXILIARY TEMPERATURE CONTROL ONLY IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|------------|--|--|
| Q9 | CHECK THE DOOR ACTUATOR CLOCKWISE OPERATION (Continued) <ul style="list-style-type: none"> Connect a fused jumper wire between SJB C2280d-1, circuit 1375 (PK/YE) and SJB C2280a-24, circuit 1717 (VT/OG). Connect a second fused jumper wire between SJB C2280d-2, circuit 1376 (BK/LB) and ground.  <p>A0082103</p> <ul style="list-style-type: none"> Does the actuator motor move in the clockwise direction? | <p>Yes GO to Q10.</p> <p>No GO to Q11.</p> |
| Q10 | CHECK THE DOOR ACTUATOR COUNTERCLOCKWISE OPERATION <ul style="list-style-type: none"> Connect a fused jumper wire between SJB C2280d-1, circuit 1375 (PK/YE) and ground. Connect a second fused jumper wire between SJB C2280d-2, circuit 1376 (BK/LB) and SJB C2280a-24, circuit 1717 (VT/OG).  <p>A0082104</p> <ul style="list-style-type: none"> Does the actuator motor move in the counterclockwise direction? | <p>Yes INSPECT for binding or broken door and linkage. If no condition is found, INSTALL a new SJB. TEST the system for normal operation.</p> <p>No GO to Q11.</p> |
| Q11 | CHECK CIRCUITS 1375 (PK/YE) AND 1376 (BK/LB) FOR AN OPEN <ul style="list-style-type: none"> Disconnect: Auxiliary Temperature Blend Door Actuator C3004. | |

(Continued)

Q9-Q11

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST Q: THE AUXILIARY TEMPERATURE CONTROL ONLY IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|---|---|--|
| Q11 | CHECK CIRCUITS 1375 (PK/YE) AND 1376 (BK/LB) FOR AN OPEN (Continued) | |
| <ul style="list-style-type: none"> • Measure the resistance between: <ul style="list-style-type: none"> — SJB C2280d-1, circuit 1375 (PK/YE) and auxiliary temperature blend door actuator C3004-1, circuit 1375 (PK/YE). — SJB C2280d-2, circuit 1376 (BK/LB) and auxiliary temperature blend door actuator C3004-6, circuit 1376 (BK/LB). | | |
|  <p>A0082105</p> | | <p>Yes INSTALL a new auxiliary temperature blend door actuator. TEST the system for normal operation.</p> <p>No REPAIR circuit 1375 (PK/YE) or 1376 (BK/LB) for an open. TEST the system for normal operation.</p> |
| <ul style="list-style-type: none"> • Is the resistance less than 5 ohms? | | |

Q11 Continued**Normal Operation**

Under normal operation, to rotate the auxiliary temperature blend door actuator clockwise, the SJB supplies voltage to the auxiliary temperature blend door actuator motors through the circuit 1375 (PK/YE), and supplies ground through circuit 1376 (BK/LB). To rotate the auxiliary temperature blend door actuator counterclockwise, the SJB reverses the voltage and ground circuits.

The auxiliary temperature blend door actuator feedback resistor is supplied a ground from the SJB through circuit 1382 (BK/OG) and a **5-volt** reference voltage on circuit 1381 (WH/LB). The SJB reads the voltage on the auxiliary temperature blend door actuator feedback circuit 1126 (LB) to determine the auxiliary temperature blend door actuator position by the position of the actuator feedback resistor wiper arm.

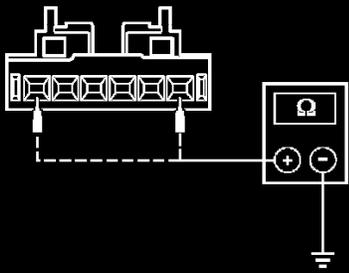
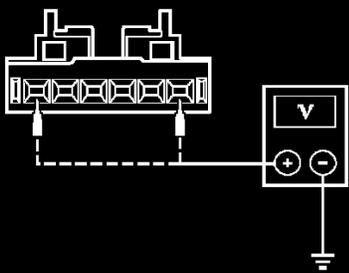
Possible Causes

- An open in circuit 1381 (WH/LB), 1375 (PK/YE), 1376 (BK/LB) or 1126 (LB).
- A short to ground circuit 1381 (WH/LB), 1375 (PK/YE), 1376 (BK/LB) or 1126 (LB).
- A short to voltage circuit 1381 (WH/LB), 1375 (PK/YE), 1376 (BK/LB) or 1126 (LB).
- A short together circuits 1375 (PK/YE) and 1376 (BK/LB) or 1126 (LB) and 1381 (WH/LB).
- Auxiliary temperature blend door actuator.
- SJB.

Test R: The Auxiliary Panel/Floor Control Only Is Inoperative/Does Not Operate Correctly**PINPOINT TEST R: THE AUXILIARY PANEL/FLOOR CONTROL ONLY IS INOPERATIVE/DOES NOT OPERATE CORRECTLY**

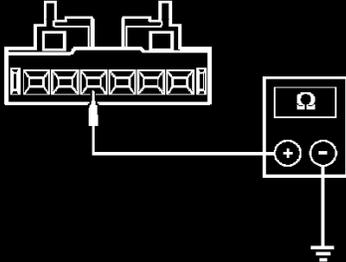
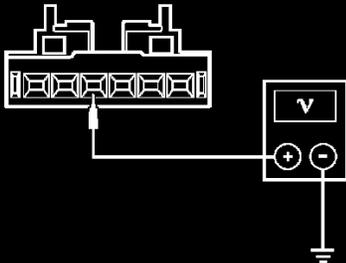
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST R: THE AUXILIARY PANEL/FLOOR CONTROL ONLY IS INOPERATIVE/DOES NOT OPERATE CORRECTLY**

NOTE: If the auxiliary blower motor is inoperative/does not operate correctly, diagnose the blower motor first.

| Test Step | | Result / Action to Take |
|-----------|---|--|
| R1 | CHECK SMART JUNCTION BOX (SJB) DTCS <ul style="list-style-type: none"> • Key in ON position. • Check the SJB for DTCs. • Is DTC B2543, B2544, B2917 or B2920 present? | <p>Yes DTC B2543, REPAIR circuit 1124 (WH) for a short to ground. TEST the system for normal operation.</p> <p>DTC B2544, REPAIR circuit 1124 (WH) for a short to voltage. TEST the system for normal operation.</p> <p>DTC B2917, GO to R2.</p> <p>DTC B2920, GO to R4.</p> <p>No GO to R9.</p> |
| R2 | CHECK CIRCUITS 1379 (PK/LB) AND 1380 (TN/YE) FOR A SHORT TO GROUND <ul style="list-style-type: none"> • Key in OFF position. • Disconnect: Auxiliary Mode Door Actuator C3044. • Disconnect: SJB C2280d. • Measure the resistance between ground and: <ul style="list-style-type: none"> — auxiliary mode door actuator C3044-1, circuit 1379 (PK/LB). — auxiliary mode door actuator C3044-6, circuit 1380 (TN/YE).  <p>A0082097</p> <ul style="list-style-type: none"> • Is the resistance greater than 10,000 ohms? | <p>Yes GO to R3.</p> <p>No REPAIR circuit 1379 (PK/LB) or 1380 (TN/YE) for a short to ground. TEST the system for normal operation.</p> |
| R3 | CHECK CIRCUITS 1379 (PK/LB) AND 1380 (TN/YE) FOR A SHORT TO VOLTAGE <ul style="list-style-type: none"> • Key in ON position. • Measure the voltage between ground and: <ul style="list-style-type: none"> — auxiliary mode door actuator C3044-1, circuit 1379 (PK/LB). — auxiliary mode door actuator C3044-6, circuit 1380 (TN/YE).  <p>A0082098</p> <ul style="list-style-type: none"> • Is voltage present? | <p>Yes REPAIR circuit 1379 (PK/LB) or 1380 (TN/YE) for a short together. TEST the system for normal operation.</p> <p>No REPAIR circuit 1379 (PK/LB) or 1380 (TN/YE) for a short to voltage. TEST the system for normal operation.</p> |

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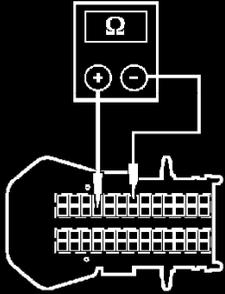
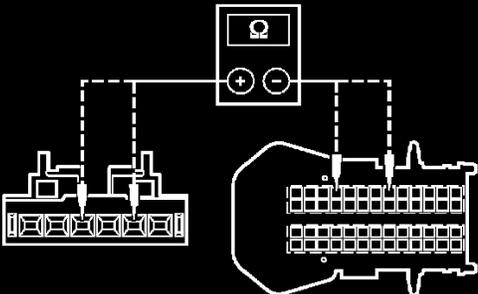
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST R: THE AUXILIARY PANEL/FLOOR CONTROL ONLY IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|-----------|---|---|
| R4 | CHECK CIRCUITS 1131 (LG) FOR A SHORT TO GROUND <ul style="list-style-type: none"> • Key in OFF position. • Disconnect: Auxiliary Mode Door Actuator C3044. • Disconnect: SJB C2280c. • Measure the resistance between ground and auxiliary mode door actuator C3044-4, circuit 1131 (LG).  <p>A0082099</p> <ul style="list-style-type: none"> • Is the resistance greater than 10,000 ohms? | <p>Yes GO to R5.</p> <p>No REPAIR circuit 1131 (LG) for a short to ground. TEST the system for normal operation.</p> |
| R5 | CHECK CIRCUITS 1131 (LG) FOR A SHORT TO VOLTAGE <ul style="list-style-type: none"> • Key in ON position. • Measure the voltage between ground and auxiliary mode door actuator C3044-4, circuit 1131 (LG).  <p>A0082100</p> <ul style="list-style-type: none"> • Is voltage present? | <p>Yes GO to R6.</p> <p>No REPAIR circuit 1131 (LG) for a short to voltage. TEST the system for normal operation.</p> |
| R6 | CHECK POTENTIOMETER HIGH SIDE RESISTANCE <ul style="list-style-type: none"> • Key in OFF position. • Connect: Auxiliary Mode Door Actuator C3044. | |

(Continued)

R4-R6

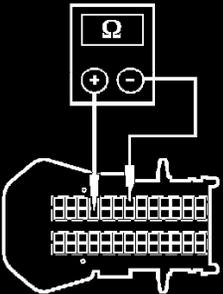
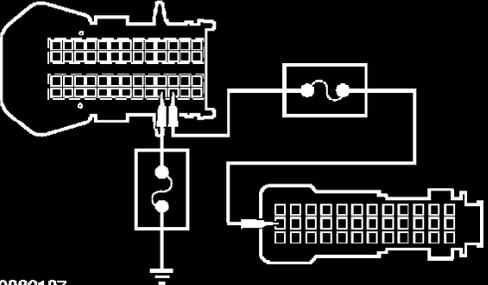
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST R: THE AUXILIARY PANEL/FLOOR CONTROL ONLY IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|---|
| R6 | CHECK POTENTIOMETER HIGH SIDE RESISTANCE (Continued) <ul style="list-style-type: none"> Measure the resistance between SJB C2280c-36, circuit 1124 (WH) and SJB C2280c-46, circuit 1131 (LG).  <p>A0082106</p> <ul style="list-style-type: none"> Is the resistance between 250 and 5,500 ohms? | <p>Yes GO to R8.</p> <p>No If the resistance is less than 250 ohms, REPAIR circuit 1124 (WH) for a short to circuit 1131 (LG). TEST the system for normal operation.</p> <p>If the resistance is greater than 5,500 ohms, GO to R7.</p> |
| R7 | CHECK CIRCUITS 1124 (WH) AND 1131 (LG) FOR AN OPEN <ul style="list-style-type: none"> Disconnect: Auxiliary Mode Door Actuator C3044. Measure the resistance between: <ul style="list-style-type: none"> SJB C2280c-36, circuit 1124 (WH) and auxiliary mode door actuator C3044-2, circuit 1124 (WH). SJB C2280c-46, circuit 1131 (LG) and auxiliary mode door actuator C3044-4, circuit 1131 (LG).  <p>A0082102</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSTALL a new auxiliary mode door actuator. TEST the system for normal operation.</p> <p>No REPAIR circuit 1124 (WH) or 1131 (LG) for an open. TEST the system for normal operation.</p> |
| R8 | CHECK CIRCUITS 1124 (WH) AND 1131 (LG) FOR A SHORT TOGETHER <ul style="list-style-type: none"> Disconnect: Auxiliary Mode Door Actuator C3044. | |

(Continued)

R6-R8

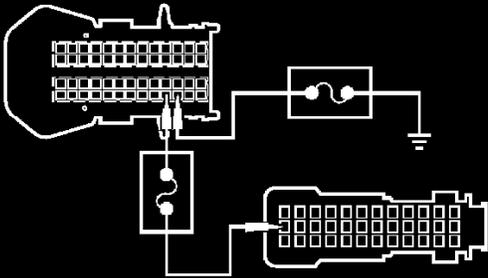
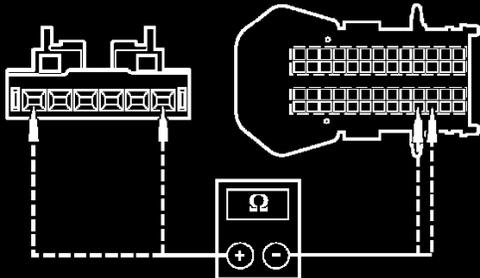
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST R: THE AUXILIARY PANEL/FLOOR CONTROL ONLY IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|-----------|---|--|
| R8 | CHECK CIRCUITS 1124 (WH) AND 1131 (LG) FOR A SHORT TOGETHER (Continued) <ul style="list-style-type: none"> Measure the resistance between SJB C2280c-36, circuit 1124 (WH) and SJB C2280c-46, circuit 1131 (LG).  <p>A0082106</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes INSTALL a new auxiliary mode door actuator. TEST the system for normal operation.</p> <p>No REPAIR circuit 1124 (WH) or 1131 (LG) for a short together. TEST the system for normal operation.</p> |
| R9 | CHECK THE DOOR ACTUATOR CLOCKWISE OPERATION <ul style="list-style-type: none"> Disconnect: SJB C2280d. Disconnect: SJB C2280a. Remove the door actuator and disengage the actuator driveshaft from the actuator door. Mark the door actuator driveshaft position. Connect a fused jumper wire between SJB C2280d-3, circuit 1379 (PK/LB) and SJB C2280a-24, circuit 1717 (VT/OG). Connect a second fused jumper wire between SJB C2280d-4, circuit 1380 (TN/YE) and ground.  <p>A0082107</p> <ul style="list-style-type: none"> Does the actuator motor move in the clockwise direction? | <p>Yes GO to R10.</p> <p>No GO to R11.</p> |

(Continued)

R8-R9

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST R: THE AUXILIARY PANEL/FLOOR CONTROL ONLY IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|------------|---|---|
| R10 | CHECK THE DOOR ACTUATOR COUNTERCLOCKWISE OPERATION <ul style="list-style-type: none"> Connect a fused jumper wire between SJB C2280d-3, circuit 1379 (PK/LB) and ground. Connect a second fused jumper wire between SJB C2280d-4, circuit 1380 (TN/YE) and SJB C2280a-24, circuit 1717 (VT/OG).  <p>A0082108</p> <ul style="list-style-type: none"> Does the actuator motor move in the counterclockwise direction? | <p>Yes INSPECT for binding or broken door and linkage. If no condition is found, INSTALL a new SJB. TEST the system for normal operation.</p> <p>No GO to R11.</p> |
| R11 | CHECK CIRCUITS 1379 (PK/LB) AND 1380 (TN/YE) FOR AN OPEN <ul style="list-style-type: none"> Disconnect: Auxiliary Mode Door Actuator C3044. Measure the resistance between: <ul style="list-style-type: none"> SJB C2280d-3, circuit 1379 (PK/LB) and auxiliary mode door actuator C3044-1, circuit 1379 (PK/LB). SJB C2280d-4, circuit 1380 (TN/YE) and auxiliary mode door actuator C3044-6, circuit 1380 (TN/YE).  <p>A0082109</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes INSTALL a new auxiliary mode door actuator. TEST the system for normal operation.</p> <p>No REPAIR circuit 1379 (PK/LB) or 1380 (TN/YE) for an open. TEST the system for normal operation.</p> |

R10-R11**Normal Operation**

Under normal operation, to rotate the auxiliary temperature blend door actuator clockwise, the SJB supplies voltage to the auxiliary temperature blend door actuator motors through the circuit 1379 (PK/LB), and supplies ground through circuit 1380 (TN/YE). To rotate the auxiliary temperature blend door actuator counterclockwise, the SJB reverses the voltage and ground circuits.

The auxiliary temperature blend door actuator feedback resistor is supplied a ground from the SJB through circuit 1125 (BN) and a **5-volt** reference voltage on circuit 1124 (WH). The SJB reads the voltage on the auxiliary temperature blend door actuator feedback circuit 1131 (LG) to determine the auxiliary temperature blend door actuator position by the position of the actuator feedback resistor wiper arm.

Possible Causes

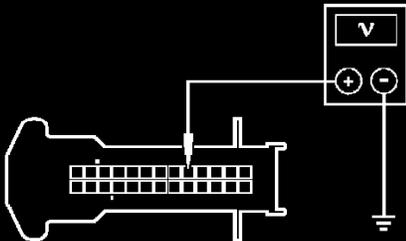
- An open in circuit 1379 (PK/LB), 1380 (TN/YE), 1124 (WH) or 1131 (LG).
- A short to ground circuit 1379 (PK/LB), 1380 (TN/YE), 1124 (WH) or 1131 (LG).
- A short to voltage circuit 1379 (PK/LB), 1380 (TN/YE), 1124 (WH) or 1131 (LG).
- A short together circuits 1379 (PK/LB) and 1380 (TN/YE) or 1124 (WH) and 1131 (LG).
- Auxiliary temperature blend door actuator.
- SJB.

Test S: The Auxiliary Temperature and Panel/Floor Control Is Inoperative/Does Not Operate Correctly

PINPOINT TEST S: THE AUXILIARY TEMPERATURE AND PANEL/FLOOR CONTROL IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

PINPOINT TEST S: THE AUXILIARY TEMPERATURE AND PANEL/FLOOR CONTROL IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

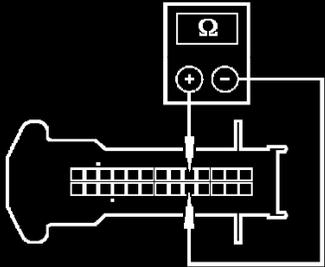
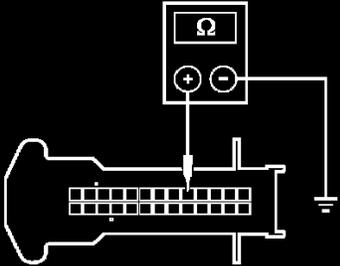
NOTE: If the auxiliary blower motor is inoperative/does not operate correctly, diagnose the blower motor first.

| Test Step | | Result / Action to Take |
|-----------|--|--|
| S1 | CHECK SJB PID TEMP/MODE <ul style="list-style-type: none"> • Key in ON position. • Check the SJB PID Temp/Mode. • Is the voltage between 0.5 and 4.5 volts? | <p>Yes INSTALL a new SJB. TEST the system for normal operation.</p> <p>No Less than 0.5 volts, GO to S2. Greater than 4.5 volts, GO to S4.</p> |
| S2 | CHECK CIRCUIT 1121 (DG/YE) FOR A SHORT TO VOLTAGE <ul style="list-style-type: none"> • Key in OFF position. • Disconnect: Rear Auxiliary Control C9025. • Disconnect: SJB C2280f. • Key in ON position. • Measure the voltage between ground and SJB C9025-18, circuit 1121 (DG/YE). <div style="text-align: center;">  <p>A0082110</p> </div> <ul style="list-style-type: none"> • Is voltage present? | <p>Yes GO to S3.</p> <p>No REPAIR circuit 1121 (DG/YE) for a short to voltage. TEST the system for normal operation.</p> |
| S3 | CHECK CIRCUITS 1121 (DG/YE) AND 1348 (GY/OG) FOR A SHORT TOGETHER <ul style="list-style-type: none"> • Key in OFF position. | |

(Continued)

S1-S3

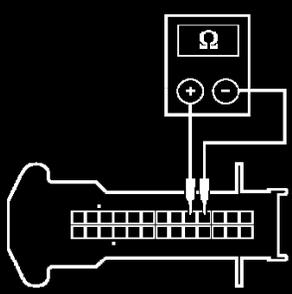
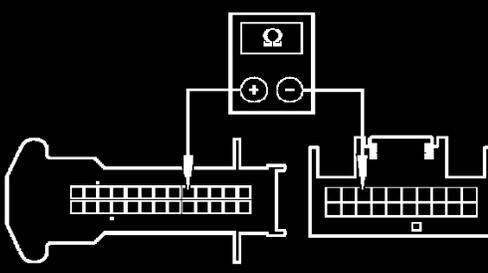
DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST S: THE AUXILIARY TEMPERATURE AND PANEL/FLOOR CONTROL IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|---|
| S3 | CHECK CIRCUITS 1121 (DG/YE) AND 1348 (GY/OG) FOR A SHORT TOGETHER (Continued) <ul style="list-style-type: none"> Measure the resistance between SJB C2280f-18, circuit 1121 (DG/YE) and SJB C2280f-5, circuit 1348 (GY/OG).  <p>A0082111</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes INSTALL a new SJB. TEST the system for normal operation.</p> <p>No REPAIR circuits 1121 (DG/YE) and 1348 (GY/OG) for a short together. TEST the system for normal operation.</p> |
| S4 | CHECK CIRCUITS 1121 (DG/YE) FOR A SHORT TO GROUND <ul style="list-style-type: none"> Key in OFF position. Disconnect: Rear Auxiliary Control C9025. Disconnect: SJB C2280f. Measure the resistance between ground SJB C2280f-18, circuit 1121 (DG/YE).  <p>A0082112</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes GO to S5.</p> <p>No REPAIR circuit 1121 (DG/YE) for a short to ground. TEST the system for normal operation.</p> |

(Continued)

S3-S4

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST S: THE AUXILIARY TEMPERATURE AND PANEL/FLOOR CONTROL IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)**

| Test Step | | Result / Action to Take |
|-----------|--|--|
| S5 | CHECK CIRCUITS 1121 (DG/YE) AND 1125 (BN) FOR A SHORT TOGETHER <ul style="list-style-type: none"> Measure the resistance between SJB C2280f-18, circuit 1121 (DG/YE) and SJB C2280f-17, circuit 1125 (BN).  <p>A0082113</p> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? | <p>Yes GO to S6.</p> <p>No REPAIR circuits 1121 (DG/YE) and 1125 (BN) for a short together. TEST the system for normal operation.</p> |
| S6 | CHECK CIRCUIT 1121 (DG/YE) FOR AN OPEN <ul style="list-style-type: none"> Measure the resistance between SJB C2280f-18, circuit 1121 (DG/YE) and auxiliary mode door actuator C9025-18, circuit 1121 (DG/YE).  <p>A0082114</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? | <p>Yes CARRY OUT the rear auxiliary control component test. If OK, INSTALL a new SJB. TEST the system for normal operation.</p> <p>No REPAIR circuit 1121 (DG/YE) for an open. TEST the system for normal operation.</p> |

S5-S6**Normal Operation**

Under normal operation, the panel/floor and cool/warm signal is received by the SJB from the rear auxiliary control through circuit 1121 (DG/YE). Reference voltage for the panel/floor and cool/warm signal resistor is provided by the SJB through circuit 1348 (GY/OG). Ground for the panel/floor and cool/warm signal resistor is provided by the SJB through circuit 1125 (BN).

Possible Causes

- An open, short to ground or voltage in circuit 1121 (DG/YE).
- A short together circuits 1121 (DG/YE) and 1348 (GY/OG) or 1121 (DG/YE) and 1125 (BN).
- Rear auxiliary control.
- SJB.