Power Locks: Pinpoint Tests

Test A: A Single/More Than One Door Lock Is Inoperative

PINPOINT TEST A: A SINGLE/MORE THAN ONE DOOR LOCK IS INOPERATIVE

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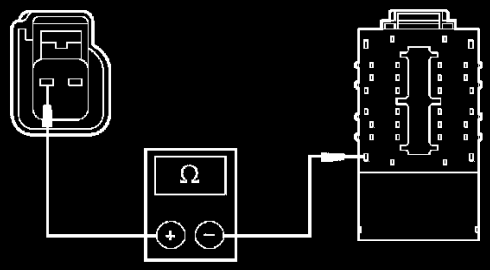
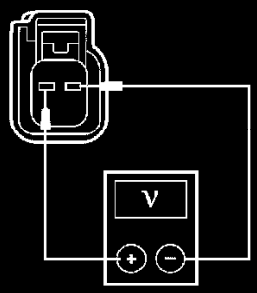
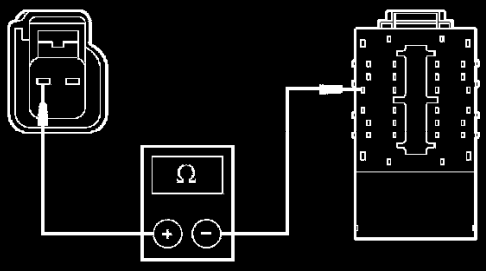
⚠ CAUTION: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

Test Step		Result / Action to Take
A1	CHECK THE PASSENGER DOOR LOCKS	
	• Check the passenger door locks. • **Are all of the passenger door locks inoperative?**	**Yes** GO to **A2**. **No** GO to **A3**.
A2	CHECK CIRCUIT CPL52 (VT/GY) FOR AN OPEN	
	• Disconnect: Right Front Door Lock Actuator C603. • Disconnect: SJB C2280a. • Measure the resistance between the right front door lock actuator C603-2, circuit CPL52 (VT/GY), harness side and the SJB C2280a-1, circuit CPL52 (VT/GY), harness side.  N0058817 • **Is the resistance less than 5 ohms?**	**Yes** GO to **A8**. **No** REPAIR the circuit. TEST the system for normal operation.
A3	CHECK THE DRIVER DOOR LOCK	
	• Check to see if the driver door lock is the inoperative lock. • **Is the driver door lock inoperative?**	**Yes** GO to **A4**. **No** GO to **A6**.
A4	CHECK THE DRIVER DOOR LOCK CIRCUITS FOR AN OPEN	
	• Disconnect: Driver Door Lock Actuator C525. • While pressing a door lock control switch to the LOCK or UNLOCK position, measure the voltage between the driver door lock actuator C525-2, circuit CPL51 (BU/GN), harness side and the driver door lock actuator C525-1, circuit CPL11 (GY/BN), harness side.  N0058902 • **Is the voltage greater than 10 volts when the door lock control switch is pressed?**	**Yes** INSTALL a new driver door lock actuator. TEST the system for normal operation. **No** GO to **A5**.
A5	CHECK CIRCUIT CPL51 (BU/GN) FOR AN OPEN	
	• Disconnect: SJB C2280a.	

(Continued)

PINPOINT TEST A: A SINGLE/MORE THAN ONE DOOR LOCK IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
A5	CHECK CIRCUIT CPL51 (BU/GN) FOR AN OPEN (Continued)	
• Measure the resistance between the driver door lock actuator C525-2, circuit CPL51 (BU/GN), harness side and the SJB C2280a-17, circuit CPL51 (BU/GN), harness side.  N0058818 • **Is the resistance less than 5 ohms?**		**Yes** GO to **A7**. **No** REPAIR the circuit. TEST the system for normal operation.
A6	CHECK CIRCUIT CPL52 (VT/GY) FOR AN OPEN	
• Disconnect: Suspect Door Latch. • Disconnect: SJB C2280a. • Measure the resistance between the suspect door lock actuator and the SJB as follows:		

Door Lock Actuator Connector-Pin	Circuit	SJB Connector-Pin
C457-2 (Liftgate)	CPL52 (VT/GY)	C2280a-1
C603-2 (RH front)	CPL52 (VT/GY)	C2280a-1
C704-2 (LH rear)	CPL52 (VT/GY)	C2280a-1
C804-2 (RH rear)	CPL52 (VT/GY)	C2280a-1

• **Are the resistances less than 5 ohms?**	**Yes** GO to **A7**. **No** REPAIR the circuit in question. TEST the system for normal operation.
A7 CHECK CIRCUIT CPL11 (GY/BN) FOR AN OPEN	
• Measure the resistance between the suspect door lock actuator and the SJB as follows:	

Door Lock Actuator Connector-Pin	Circuit	SJB Connector-Pin
C457-1 (Liftgate)	CPL11 (GY/BN)	C2280a-1
C525-1 (Driver)	CPL11 (GY/BN)	C2280a-4
C603-1 (RH front)	CPL11 (GY/BN)	C2280a-4
C704-1 (LH rear)	CPL11 (GY/BN)	C2280a-4
C804-1 (RH rear)	CPL11 (GY/BN)	C2280a-4

• **Are the resistances less than 5 ohms?**	**Yes** If the inoperative lock is the driver door lock, GO to **A8**. If the inoperative lock is the RH front door lock, the LH rear door lock, the RH rear door lock or the liftgate lock, INSTALL a new door lock actuator. TEST the system for normal operation. **No** REPAIR the circuit in question. TEST the system for normal operation.

(Continued)

A5-A7

PINPOINT TEST A: A SINGLE/MORE THAN ONE DOOR LOCK IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
A8	CHECK FOR CORRECT SJB OPERATION	
• Disconnect all the SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**		**Yes** INSTALL a new SJB. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. TEST the system for normal operation.

A8

Normal Operation

The door lock control switches provide a ground, circuit GD133 (BK) or circuit GD151 (BK/GN) for the smart junction box (SJB) lock and unlock signal circuits CPL42 (GY/YE) and CPL43 (VT/GY). The door lock actuator circuits CPL11 (GY/BN), CPL51 (BU/GN) and CPL52 (VT/GY) are at ground potential in the SJB when the lock and unlock relays are not energized.

When the SJB receives a lock request through circuit CPL42 (GY/YE), the SJB processes the lock request and energizes the all lock relay, supplying voltage to circuit CPL11 (GY/BN) to lock the doors. Circuits CPL51 (BU/GN) and CPL52 (VT/GY) are at ground potential within the SJB.

When the SJB receives an unlock request through circuit CPL43 (VT/GY), the SJB processes the unlock request and energizes the all unlock relay and driver unlock relay supplying voltage to circuits CPL52 (VT/GY) and CPL51 (BU/GN) to unlock the doors. Circuit CPL11 (GY/BN) is at ground potential within the SJB.

Possible Causes

- Circuit CPL11 (GY/BN) open
- Circuit CPL51 (BU/GN) open
- Circuit CPL52 (VT/GY) open
- Door lock actuators
- Liftgate lock actuator
- SJB

Test B: All Door Locks Are Inoperative

PINPOINT TEST B: ALL DOOR LOCKS ARE INOPERATIVE

PINPOINT TEST B: ALL DOOR LOCKS ARE INOPERATIVE

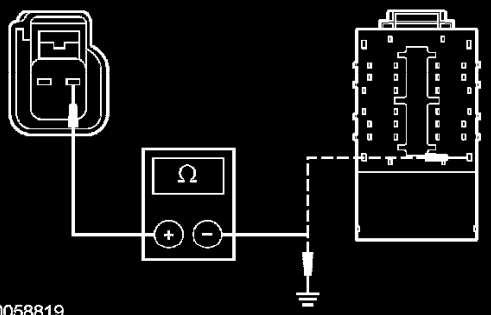
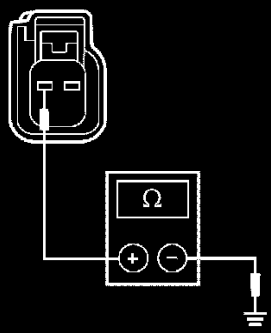
⚠ CAUTION: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

	Test Step	Result / Action to Take
B1	CHECK CIRCUIT CPL11 (GY/BN) FOR AN OPEN OR A SHORT TO GROUND • Disconnect: Right Front Door Lock Actuator C603. • Disconnect: SJB C2280a.	

(Continued)

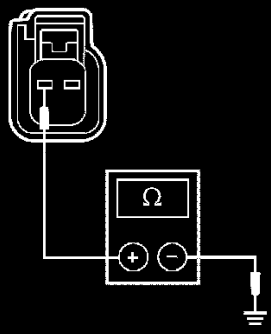
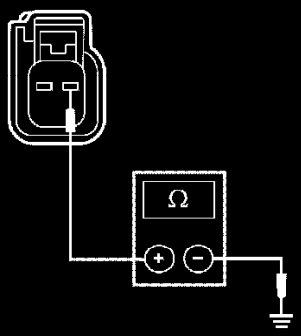
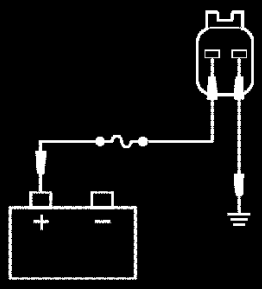
B1

PINPOINT TEST B: ALL DOOR LOCKS ARE INOPERATIVE (Continued)

Test Step		Result / Action to Take
B1	CHECK CIRCUIT CPL11 (GY/BN) FOR AN OPEN OR A SHORT TO GROUND (Continued)	
	• Measure the resistance between the right front door lock actuator C603-1, circuit CPL11 (GY/BN), harness side and the SJB C2280a-4, circuit CPL11 (GY/BN), harness side; and between the right front door lock actuator C603-1, circuit CPL11 (GY/BN), harness side and ground.  N0058819 • **Is the resistance less than 5 ohms between the right front door lock actuator and the vehicle security module, and greater than 10,000 ohms between the right front door lock actuator and ground?**	**Yes** GO to **B2**. **No** REPAIR the circuit. VERIFY the SJB fuse F6 (20A) is OK. TEST the system for normal operation.
B2	CHECK CIRCUIT CPL52 (VT/GY) FOR A SHORT TO GROUND	
	• Measure the resistance between the right front door lock actuator C603-2, circuit CPL52 (VT/GY), harness side and ground.  N0058732 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **B3**. **No** REPAIR the circuit. VERIFY the SJB fuse F6 (20A) is OK. TEST the system for normal operation.
B3	CHECK CIRCUIT CPL51 (BU/GN) FOR A SHORT TO GROUND	
	• Disconnect: Driver Door Lock Actuator C525.	

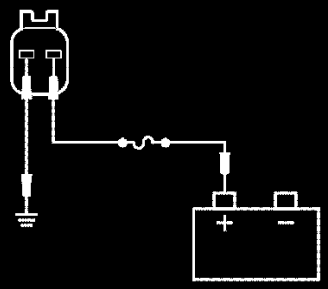
(Continued)

PINPOINT TEST B: ALL DOOR LOCKS ARE INOPERATIVE (Continued)

Test Step		Result / Action to Take
B3	**CHECK CIRCUIT CPL51 (BU/GN) FOR A SHORT TO GROUND (Continued)**	
	• Measure the resistance between the driver door lock actuator C525-2, circuit CPL51 (BU/GN), harness side and ground.  N0058732 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **B4**. **No** REPAIR the circuit. VERIFY the SJB fuse F6 (20A) is OK. TEST the system for normal operation.
B4	**CHECK CIRCUIT CPL59 (BN/BU) FOR A SHORT TO GROUND**	
	• Disconnect: Liftgate Glass Actuator C4040. • Measure the resistance between the liftgate glass actuator C4040-1, circuit CPL59 (BN/BU), harness side and ground.  N0058903 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **B5**. **No** REPAIR the circuit. VERIFY the SJB fuse F6 (20A) is OK. TEST the system for normal operation.
B5	**CHECK THE SUSPECT DOOR LOCK ACTUATOR**	
	• Connect a fused (5A) jumper wire between the suspect door lock actuator connector pin 1, component side and the battery positive terminal; and connect another jumper wire between the suspect door lock actuator connector pin 2, component side and ground.  N0058729	

(Continued)

PINPOINT TEST B: ALL DOOR LOCKS ARE INOPERATIVE (Continued)

Test Step		Result / Action to Take
B5	CHECK THE SUSPECT DOOR LOCK ACTUATOR (Continued)	
	• Connect a fused (5A) jumper wire between the suspect door lock actuator connector pin 2, component side and the battery positive terminal; and connect another jumper wire between the suspect door lock actuator connector pin 1, component side and ground.  N0058728 • **Does the door lock actuator operate correctly?**	**Yes** REMOVE the jumper wires. GO to **B6**. **No** INSTALL a new door lock actuator. VERIFY the SJB fuse F6 (20A) is OK. TEST the system for normal operation.
B6	CHECK FOR CORRECT SJB OPERATION	
	• Disconnect all the SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. TEST the system for normal operation.

B5-B6

Normal Operation

The door lock control switches provide a ground, circuit GD133 (BK) or circuit GD151 (BK/GN) for the smart junction box (SJB) lock and unlock signal circuits CPL42 (GY/YE) and CPL43 (VT/GY). The door lock actuator circuits CPL11 (GY/BN), CPL51 (BU/GN) and CPL52 (VT/GY) are at ground potential in the SJB when the lock and unlock relays are not energized.

When the SJB receives a lock request through circuit CPL42 (GY/YE), the SJB processes the lock request and energizes the all lock relay, supplying voltage to circuit CPL11 (GY/BN) to lock the doors. Circuits CPL51 (BU/GN) and CPL52 (VT/GY) are at ground potential within the SJB.

When the SJB receives an unlock request through circuit CPL43 (VT/GY), the SJB processes the unlock request and energizes the all unlock relay and driver unlock relay supplying voltage to circuits CPL52 (VT/GY) and CPL51 (BU/GN) to unlock the doors. Circuit CPL11 (GY/BN) is at ground potential within the SJB.

Possible Causes

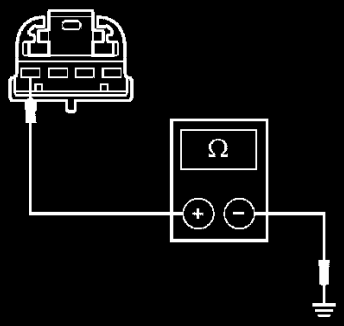
- Fuse
- Circuit CPL11 (GY/BN) open or short to ground
- Circuit CPL51 (BU/GN) short to ground
- Circuit CPL52 (VT/GY) short to ground
- Circuit CPL59 (BN/BU) short to ground
- Door lock actuator
- SJB

Test C: All Door Locks Are Inoperative From One Switch

PINPOINT TEST C: ALL DOOR LOCKS ARE INOPERATIVE FROM ONE SWITCH

PINPOINT TEST C: ALL DOOR LOCKS ARE INOPERATIVE FROM ONE SWITCH

CAUTION: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

Test Step		Result / Action to Take
C1	CHECK THE DOOR LOCK SWITCH GROUND CIRCUITS FOR AN OPEN	
	• Disconnect: Suspect Door Lock Switch. • Measure the resistance between the suspect door lock control switch pin 4, harness side and ground.  N0026458 • **Is the resistance less than 5 ohms?**	**Yes** GO to **C2**. **No** REPAIR circuit GD133 (BK) for the driver door lock switch, or circuit GD151 (BK/GN) for the passenger door lock switch. TEST the system for normal operation.
C2	CHECK THE SUSPECT DOOR LOCK SWITCH	
	• Carry out the door lock switch component test for the suspect door lock switch. Refer to Power Door Lock Switch. • **Is the suspect door lock switch OK?**	**Yes** GO to **C3**. **No** INSTALL a new door lock switch. TEST the system for normal operation.
C3	CHECK FOR CORRECT SJB OPERATION	
	• Disconnect all the SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. TEST the system for normal operation.

C1-C3

Normal Operation

The door lock control switches provide a ground, circuit GD133 (BK) or circuit GD151 (BK/GN) for the smart junction box (SJB) lock and unlock signal circuits CPL42 (GY/YE) and CPL43 (VT/GY). The door lock actuator circuits CPL11 (GY/BN), CPL51 (BU/GN) and CPL52 (VT/GY) are at ground potential in the SJB when the lock and unlock relays are not energized.

When the SJB receives a lock request through circuit CPL42 (GY/YE), the SJB processes the lock request and energizes the all lock relay, supplying voltage to circuit CPL11 (GY/BN) to lock the doors. Circuits CPL51 (BU/GN) and CPL52 (VT/GY) are at ground potential within the SJB.

When the SJB receives an unlock request through circuit CPL43 (VT/GY), the SJB processes the unlock request and energizes the all unlock relay and driver unlock relay supplying voltage to circuits CPL52 (VT/GY) and CPL51 (BU/GN) to unlock the doors. Circuit CPL11 (GY/BN) is at ground potential within the SJB.

Possible Causes

- Circuit GD133 (BK) open
- Circuit GD151 (BK/GN) open
- Door lock control switch
- SJB

Test D: Panic Feature Is Inoperative/Does Not Operate Correctly

PINPOINT TEST D: PANIC FEATURE IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

PINPOINT TEST D: PANIC FEATURE IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

Test Step		Result / Action to Take
D1	VERIFY OPERATION OF THE HORN	
	• Operate the horn through the steering wheel switch. • **Does the horn operate correctly?**	**Yes** GO to **D2**. **No** REFER to Horn.
D2	VERIFY THE PARKING LAMP OPERATION	
	• Turn on the parking lamps with the headlamp switch. • **Do the parking lamps operate correctly?**	**Yes** GO to **D3**. **No** REFER to Lighting and Horns.
D3	CHECK THE RKE TRANSMITTER OPERATION	
	• Unlock and lock the doors using the RKE transmitter buttons. • **Do the doors lock and unlock correctly?**	**Yes** GO to **D4**. **No** GO to Symptom Chart.
D4	CHECK THE RKE TRANSMITTER SIGNAL TO THE SJB	
	• Key in ON position. • Enter the following diagnostic mode on the scan tool: SJB PIDs. • Observe the SJB TNSMT_ CMD PID while pressing the panic button on the RKE transmitter. • **Does the PID value agree with the button press?**	**Yes** GO to **D5**. **No** REPLACE the RKE transmitter. PROGRAM all the RKE transmitters. REFER to Remote Keyless Entry Transmitter Programming. TEST the system for normal operation.
D5	CHECK FOR CORRECT SJB OPERATION	
	• Disconnect all the SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. TEST the system for normal operation.

D1-D5

Normal Operation

When the panic feature is activated, the smart junction box (SJB) provides an on then off ground to the horn and parking lamp relays. The relays close and then open, supplying an on then off again voltage to the horns and the parking lamps. The horn and the parking lamps provide a visual and an audible alert.

Possible Causes

- Remote keyless entry (RKE) transmitter
- SJB

Test E: The Autolock Does Not Operate Correctly

PINPOINT TEST E: THE AUTOLOCK DOES NOT OPERATE CORRECTLY

PINPOINT TEST E: THE AUTOLOCK DOES NOT OPERATE CORRECTLY

	Test Step	Result / Action to Take
E1	VERIFY THE AUTOLOCK FEATURE IS ENABLED • Verify the autolock feature is enabled. Refer to Autolock and Horn Chirp Programming. • **Is the autolock feature enabled?**	**Yes** GO to E2. **No** PROGRAM the autolock feature. REFER to Autolock and Horn Chirp Programming.
E2	CHECK THE INTERIOR LAMP OPERATION • Open and close each door, liftgate and liftgate window glass while checking the interior lamp operation. • **Do the interior lamps operate correctly?**	**Yes** GO to E3. **No** REFER to Lighting and Horns.
E3	CHECK THE SJB IGNITION SWITCH PID • Key in ON position. • Enter the following diagnostic mode on the scan tool: SJB PIDs. • Monitor the SJB GEM_ IGN PID. • **Is the correct value received?**	**Yes** GO to E4. **No** REFER to Ignition Switch.
E4	CHECK THE SJB DIGITAL TR SENSOR AND VSS PIDs • Enter the following diagnostic mode on the scan tool: SJB PIDs. • Monitor the SJB TRANSGEAR and VSS_ GEM PIDs. • **Are the correct values received?**	**Yes** GO to E5. **No** REFER to Instrument Panel, Gauges and Warning Indicators.
E5	CHECK FOR CORRECT SJB OPERATION • Disconnect all the SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. TEST the system for normal operation.

E1-E5

Normal Operation

The smart junction box (SJB) energizes the lock relay based on input from the ajar switches, the ignition switch, the transmission range (TR) sensor and the vehicle speed signal (VSS). The SJB locks the doors when the following conditions are met:

- all the doors are closed,
- the ignition switch is in the ON position,
- the vehicle is shifted into any gear, putting the vehicle in motion, and
- the vehicle attains a speed **greater than 20 km/h (12 mph)**.

Possible Causes

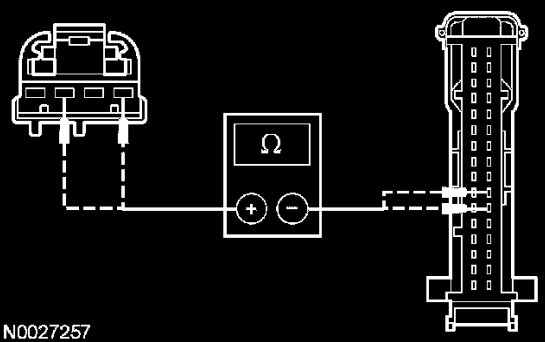
- Programming
- Door ajar switches
- SJB

Test F: The Door Locks Operate Only One Way

PINPOINT TEST F: THE DOOR LOCKS OPERATE ONLY ONE WAY

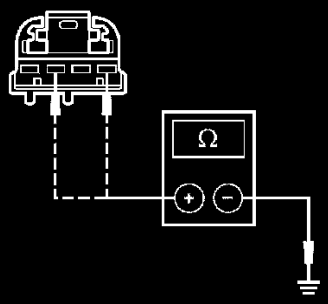
PINPOINT TEST F: THE DOOR LOCKS OPERATE ONLY ONE WAY

CAUTION: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

Test Step		Result / Action to Take
F1	**RETRIEVE THE RECORDED SJB DTCs FROM THE ON-DEMAND SELF-TEST**	
	• Check for recorded SJB DTCs from the on-demand self-test. • **Are any DTCs recorded?**	**Yes** For DTC B2574 or B2575, GO to **F2**. For all other SJB DTCs, REFER to Smart Junction Box (SJB) Diagnostic Trouble Code (DTC) Chart. **No** GO to **F3**.
F2	**REPEAT THE SJB ON-DEMAND SELF-TEST**	
	• Key in OFF position. • Disconnect: Suspect Door Lock Switch. • Key in ON position. • Clear the DTCs, then repeat the SJB on-demand self-test. • **Is DTC B2574 or B2575 recorded?**	**Yes** GO to **F4**. **No** INSTALL a new door lock switch for the switch in question. CLEAR the DTCs. REPEAT the self-test.
F3	**CHECK CIRCUITS CPL42 (GY/YE) AND CPL43 (VT/GY) FOR AN OPEN**	
	• Key in OFF position. • Disconnect: Suspect Door Lock Switch. • Disconnect: SJB C2280b. • Measure the resistance between the suspect door lock switch C505-1 (driver) or C605-1 (passenger), circuit CPL42 (GY/YE), harness side and SJB C2280b-27, circuit CPL42 (GY/YE), harness side; and between the suspect door lock switch C505-3 (driver) or C605-3 (passenger), circuit CPL43 (VT/GY), harness side and the SJB C2280b-26, circuit CPL43 (VT/GY), harness side.  N0027257 • **Are the resistances less than 5 ohms?**	**Yes** GO to **F5**. **No** REPAIR the circuit in question. TEST the system for normal operation.

(Continued)

PINPOINT TEST F: THE DOOR LOCKS OPERATE ONLY ONE WAY (Continued)

Test Step		Result / Action to Take
F4	**CHECK CIRCUITS CPL42 (GY/YE) AND CPL43 (VT/GY) FOR SHORT TO GROUND**	
	• Measure the resistance between the suspect door lock switch C505-1 (driver) or C605-1 (passenger), circuit CPL42 (GY/YE), harness side and ground; and between the suspect door lock switch C505-3 (driver) or C605-3 (passenger), circuit CPL43 (VT/GY), harness side and ground.  N0057307 • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to **F6**. **No** REPAIR the circuit in question. CLEAR the DTCs. REPEAT the self-test.
F5	**CHECK THE SUSPECT DOOR LOCK SWITCH**	
	• Carry out the door lock switch component test for the suspect door lock switch. Refer to Power Door Lock Switch. • **Is the suspect door lock switch OK?**	**Yes** GO to **F6**. **No** INSTALL a new door lock switch as necessary. TEST the system for normal operation.
F6	**CHECK FOR CORRECT SJB OPERATION**	
	• Disconnect all the SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. CLEAR the DTCs. REPEAT the self-test. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

F4-F6

Normal Operation

The door lock control switches provide a ground, circuit GD133 (BK) or circuit GD151 (BK/GN) for the smart junction box (SJB) lock and unlock signal circuits CPL42 (GY/YE) and CPL43 (VT/GY). The door lock actuator circuits CPL11 (GY/BN), CPL51 (BU/GN) and CPL52 (VT/GY) are at ground potential in the SJB when the lock and unlock relays are not energized.

When the SJB receives a lock request through circuit CPL42 (GY/YE), the SJB processes the lock request and energizes the all lock relay, supplying voltage to circuit CPL11 (GY/BN) to lock the doors. Circuits CPL51 (BU/GN) and CPL52 (VT/GY) are at ground potential within the SJB.

When the SJB receives an unlock request through circuit CPL43 (VT/GY), the SJB processes the unlock request and energizes the all unlock relay and driver unlock relay supplying voltage to circuits CPL52 (VT/GY) and CPL51 (BU/GN) to unlock the doors. Circuit CPL11 (GY/BN) is at ground potential within the SJB.

DTC B2574 - is an on-demand DTC that sets if the SJB detects a short to ground on the driver door lock switch circuit CPL42 (GY/YE).

DTC B2575 - is an on-demand DTC that sets if the SJB detects a short to ground on the driver door unlock switch circuit CPL43 (VT/GY).

Possible Causes

- Circuit CPL42 (GY/YE) open or short to ground
- Circuit CPL43 (VT/GY) open or short to ground
- Door lock switch
- SJB

Test G: The Doors Do Not Lock/Unlock Using the Keyless Entry Keypad

PINPOINT TEST G: THE DOORS DO NOT LOCK/UNLOCK USING THE KEYLESS ENTRY KEYPAD

PINPOINT TEST G: THE DOORS DO NOT LOCK/UNLOCK USING THE KEYLESS ENTRY KEYPAD

⚠ CAUTION: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

Test Step		Result / Action to Take
G1	RETRIEVE THE RECORDED SJB DTCs FROM THE ON-DEMAND SELF-TEST	
	• Check for recorded SJB DTCs from the on-demand self-test. • **Are any DTCs recorded?**	**Yes** For DTC B2695, B2696 or B2697, GO to **G2**. For all other SJB DTCs, REFER to Smart Junction Box (SJB) Diagnostic Trouble Code (DTC) Chart. **No** GO to **G3**.
G2	REPEAT THE SJB ON-DEMAND SELF-TEST	
	• Key in OFF position. • Disconnect: Keyless Entry Keypad C500. • Key in ON position. • Clear the DTCs, then repeat the SJB on-demand self-test. • **Is DTC B2695, B2696 or B2697 recorded?**	**Yes** GO to **G5**. **No** INSTALL a new keyless entry keypad. CLEAR the DTCs. REPEAT the self-test.
G3	CHECK THE SJB KEYPAD SWITCH PIDs	
	• Enter the following diagnostic mode on the scan tool: SJB PIDs. • Observe the KEY_ PAD PID while pressing each keyless entry keypad button. • **Do the PID values agree with the keyless entry keypad button positions?**	**Yes** GO to **G6**. **No** GO to **G4**.
G4	CHECK THE KEYLESS ENTRY KEYPAD SIGNAL CIRCUITS FOR AN OPEN	
	• Disconnect: SJB C2280b. • Disconnect: Keyless Entry Keypad C500. • Measure the resistance between the SJB C2280b, harness side and the keyless entry keypad C500, harness side as follows:	

SJB Connector-Pin	Circuit	Keyless Entry Keypad Connector-Pin
C2280b-23	CPK29 (GY/BU)	C500-1
C2280b-24	CPK30 (VT/GN)	C500-3
C2280b-25	CPK31 (YE/GN)	C500-7
C2280b-22	RPK27 (BU)	C500-6

	• **Are the resistances less than 5 ohms?**	**Yes** INSTALL a new keyless entry keypad. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
G5	CHECK THE KEYLESS ENTRY KEYPAD SIGNAL CIRCUITS FOR A SHORT TO GROUND	
	• Key in OFF position. • Disconnect: SJB C2280b. • Measure the resistance between the SJB C2280b harness side and ground as follows:	

(Continued)

PINPOINT TEST G: THE DOORS DO NOT LOCK/UNLOCK USING THE KEYLESS ENTRY KEYPAD (Continued)

Test Step		Result / Action to Take
G5	CHECK THE KEYLESS ENTRY KEYPAD SIGNAL CIRCUITS FOR A SHORT TO GROUND (Continued)	
	SJB Connector-Pin: C2280b-23 — Circuit: CPK29 (GY/BU) SJB Connector-Pin: C2280b-24 — Circuit: CPK30 (VT/GN) SJB Connector-Pin: C2280b-25 — Circuit: CPK31 (YE/GN) • **Are the resistances greater than 10,000 ohms?**	**Yes** GO to **G6**. **No** REPAIR the circuit in question. CLEAR the DTCs. REPEAT the self-test.
G6	CHECK FOR CORRECT SJB OPERATION	
	• Disconnect all the SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. CLEAR the DTCs. REPEAT the self-test. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

G5-G6

Normal Operation

The smart junction box (SJB) energizes the lock or unlock relays based upon input from the keyless entry keypad. The keyless entry keypad uses circuits CPK29 (GY/BU), CPK29 (GY/BU) and CPK31 (YE/GN) to send signals to the SJB by grounding the selected circuit through the keyless entry keypad on circuit RPK27 (BU). The SJB locks or unlocks the doors based on keyless entry keypad input.

DTC B2695 - is an on-demand DTC that sets if the SJB detects a short to ground on the keyless entry keypad switch input circuit CPK29 (GY/BU).

DTC B2696 - is an on-demand DTC that sets if the SJB detects a short to ground on the keyless entry keypad switch input circuit CPK30 (VT/GN).

DTC B2697 - is an on-demand DTC that sets if the SJB detects a short to ground on the keyless entry keypad switch input circuit CPK31 (YE/GN).

Possible Causes

- Circuit CPK29 (GY/BU) open or short to ground
- Circuit CPK30 (VT/GN) open or short to ground
- Circuit CPK31 (YE/GN) open or short to ground
- Circuit RPK27 (BU) open
- Keyless entry keypad
- SJB

Test H: The Doors Do Not Lock/Unlock Using The Remote Keyless Entry (RKE) Transmitter

PINPOINT TEST H: THE DOORS DO NOT LOCK/UNLOCK USING THE REMOTE KEYLESS ENTRY (RKE) TRANSMITTER

PINPOINT TEST H: THE DOORS DO NOT LOCK/UNLOCK USING THE REMOTE KEYLESS ENTRY (RKE) TRANSMITTER

NOTE: All RKE transmitters must be present to begin diagnosis of the RKE system.

NOTE: Aftermarket or dealer-installed systems may adversely affect the RKE system operation. These systems should be disconnected before diagnosing any RKE concerns.

NOTE: Make sure the RKE transmitters are those provided with the original equipment manufacturer (OEM) system and not from an aftermarket or a dealer-installed system that may have been installed on the vehicle.

Test Step		Result / Action to Take
H1	CHECK FOR THE CORRECT RKE TRANSMITTERS	
	• Check that the correct RKE transmitters are used with the vehicle and all the transmitters are present. • **Are all the correct RKE transmitters present?**	**Yes** GO to **H2**. **No** The system cannot be tested without the correct RKE transmitters. INFORM the customer that all the correct RKE transmitters must be present to proceed with diagnosis of the system.

(Continued)

H1

PINPOINT TEST H: THE DOORS DO NOT LOCK/UNLOCK USING THE REMOTE KEYLESS ENTRY (RKE) TRANSMITTER (Continued)

Test Step		Result / Action to Take
H2	**CHECK THE OPERATION OF ALL RKE TRANSMITTERS**	
	• Check the operation of all RKE transmitters. • **Does the system operate correctly now?**	**Yes** The system is operating as designed. INFORM the customer of the correct vehicle behavior. **No** GO to **H3**.
H3	**CHECK THE POWER DOOR LOCK SYSTEM FOR CORRECT OPERATION**	
	• Verify the door lock/unlock operation by actuating the driver door lock control switch. • **Do all the doors lock and unlock correctly?**	**Yes** GO to **H4**. **No** GO to Symptom Chart.
H4	**CHECK FOR COMPLETE FUNCTIONALITY OF THE RKE TRANSMITTER(S)**	
	• Check all the RKE transmitter buttons for correct operation. • **Does any button operate correctly?**	**Yes** GO to **H5**. **No** GO to **H7**.
H5	**MAKE SURE THE RKE TRANSMITTER SIGNAL IS BEING RECEIVED**	
	• Connect the scan tool. • Enter the following diagnostic mode on the scan tool: SJB PIDs. • **NOTE:** The vehicle must be electronically unlocked prior to using any scan tools (using the RKE transmitter or the door lock control switch). Observe the TNSMTR_ ID PID while pressing any button on the RKE transmitter. • **Is the transmitter ID code (TIC) displayed when a button is pressed?**	**Yes** GO to **H6**. **No** GO to **H7**.
H6	**CHECK IF THE RKE TRANSMITTERS ARE PROGRAMMED**	
	• Observe the TNSMTR_ ID PID displayed in the previous step. • **Does the TIC displayed match any of the TICs stored in memory?**	**Yes** GO to **H8**. **No** PROGRAM all of the RKE transmitters. REFER to Remote Keyless Entry Transmitter Programming. INFORM the customer that any RKE transmitters not present need to be programmed. CLEAR the DTCs. REPEAT the self-test.
H7	**CHECK THE RKE TRANSMITTER BATTERY**	
	• Open the RKE transmitter. • Do not clean off any grease from the battery terminal on the back surface of the circuit board. • Verify the correct battery is being used (CR2032). • Remove the RKE transmitter battery and measure the voltage. • **Is the voltage greater than 2.5 volts?**	**Yes** GO to **H9**. **No** INSTALL a new battery. Make sure the battery is seated correctly. DO NOT program the RKE transmitters. Faulty or dead batteries do not erase TICs from memory. TEST the system for normal operation.
H8	**CHECK IF THE RKE TRANSMITTER IS OUT OF SYNCHRONIZATION WITH THE SJB**	
	NOTE: The vehicle must be electronically unlocked using the RKE transmitter or the door lock control switch prior to using any service tools. • Enter the following diagnostic mode on the scan tool: Retrieve continuous DTCs. • **Is continuous DTC B2425 stored in the SJB?**	**Yes** GO to Pinpoint Test G. **No** GO to **H9**.

(Continued)

PINPOINT TEST H: THE DOORS DO NOT LOCK/UNLOCK USING THE REMOTE KEYLESS ENTRY (RKE) TRANSMITTER (Continued)

Test Step		Result / Action to Take
H9	CHECK FOR NORMAL OPERATION WITH A KNOWN GOOD RKE TRANSMITTER	
	• Enter the following diagnostic mode on the scan tool: SJB PIDs. • Using the customer's second RKE transmitter or a known good RKE transmitter that is correct for the vehicle, observe the TNSMTR_ ID PID while pressing any button on the RKE transmitter. • **Does the TIC show up when a button is pressed?**	**Yes** REPLACE the inoperative RKE transmitter. PROGRAM all RKE transmitter(s). REFER to Remote Keyless Entry Transmitter Programming. INFORM the customer that any RKE transmitters not present need to be programmed. TEST the system for normal operation. **No** GO to **H10**.
H10	CHECK THE SJB FOR CORRECT OPERATION	
	• Disconnect all the SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. PROGRAM all the RKE ransmitters. REFER to Remote Keyless Entry Transmitter Programming. INFORM the customer that any RKE transmitters not present need to be programmed. CLEAR the DTCs. REPEAT the self-test. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

H9-H10

Normal Operation

Remote locking and unlocking of the doors is accomplished by the smart junction box (SJB) when it receives a command message from the RKE transmitter. The SJB processes the command message and energizes the appropriate lock/unlock relay to lock or unlock the doors.

DTC B2276 - is a continuous DTC that sets when the SJB detects that less than 2 transmitters are programmed.

Possible Causes

- RKE transmitter battery
- RKE transmitter programming
- RKE transmitter
- Aftermarket systems
- SJB

Test I: The Keyless Entry Keypad Illumination Is Inoperative

PINPOINT TEST I: THE KEYLESS ENTRY KEYPAD ILLUMINATION IS INOPERATIVE

PINPOINT TEST I: THE KEYLESS ENTRY KEYPAD ILLUMINATION IS INOPERATIVE

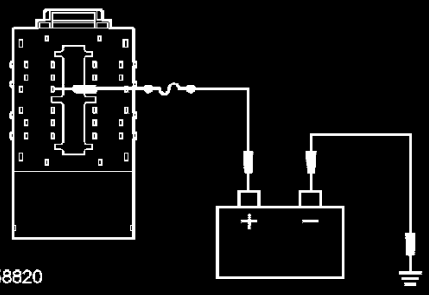
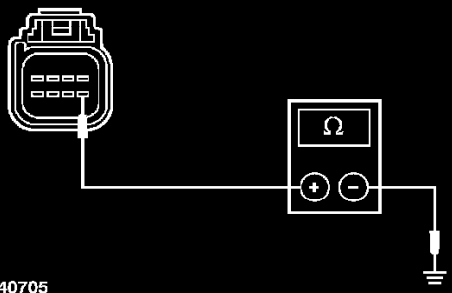
⚠ CAUTION: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

Test Step		Result / Action to Take
I1	CHECK THE SJB KEYPAD SWITCH PIDs	
	• Enter the following diagnostic mode on the scan tool: SJB PIDs. • Observe the SJB KEY_ PAD PID while pressing each keyless entry keypad button. • **Do the PID values agree with the keypad button positions?**	**Yes** GO to **I2**. **No** GO to Pinpoint Test G.
I2	CHECK THE KEYLESS ENTRY KEYPAD ILLUMINATION	
	• Key in OFF position. • Disconnect: SJB C2280a.	

(Continued)

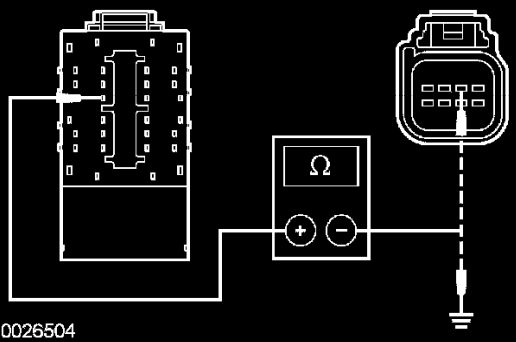
I1-I2

PINPOINT TEST I: THE KEYLESS ENTRY KEYPAD ILLUMINATION IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
I2	**CHECK THE KEYLESS ENTRY KEYPAD ILLUMINATION (Continued)**	
	• Connect a fused (5A) jumper wire between the SJB C2880a-18, circuit CPK28 (WH), harness side and the battery positive terminal.  N0058820 • **Does the keyless entry keypad illuminate?**	**Yes** REMOVE the jumper wire. GO to **I5**. **No** REMOVE the jumper wire. GO to **I3**.
I3	**CHECK CIRCUIT GD133 (BK) FOR AN OPEN**	
	• Disconnect: Keyless Entry Keypad C500. • Measure the resistance between the keyless entry keypad C500-5, circuit GD133 (BK), harness side and ground.  A0040705 • **Is the resistance less than 5 ohms?**	**Yes** GO to **I4**. **No** REPAIR the circuit. TEST the system for normal operation.

(Continued)

PINPOINT TEST I: THE KEYLESS ENTRY KEYPAD ILLUMINATION IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
I4	**CHECK CIRCUITS CPK28 (GN/BK) (KEYLESS ENTRY KEYPAD) AND CPK28 (WH) (SJB) FOR AN OPEN OR SHORT TO GROUND**	
	• Measure the resistance between the SJB C2880a-18, circuit CPK28 (WH), harness side and the keyless entry keypad C500-2, circuit CPK28 (GN/BK), harness side; and between the SJB C2880a-18, circuit CPK28 (WH), harness side and ground.  N0026504 • **Is the resistance less than 5 ohms between the SJB and the keyless entry keypad, and greater than 10,000 ohms between the SJB and ground?**	**Yes** INSTALL a new keyless entry keypad. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
I5	**CHECK FOR CORRECT SJB OPERATION**	
	• Disconnect all the SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. TEST the system for normal operation.

I4-I5

Normal Operation

When any keypad button is pressed the smart junction box (SJB) sends power for the keyless entry keypad illumination on circuit CPK28 (WH/GN) to assist the driver in entering an access code at night. The keyless entry keypad illumination is grounded on circuit GD133 (BK).

Possible Causes

- Circuit CPK28 (GN/BK) (keyless entry keypad) open or short to ground
- Circuit CPK28 (WH) (SJB) open or short to ground
- Circuit GD133 (BK) open
- Keyless entry keypad
- SJB

Test J: The Remote Keyless Entry (RKE) Transmitter Has Poor Range Performance

PINPOINT TEST J: THE REMOTE KEYLESS ENTRY (RKE) TRANSMITTER HAS POOR RANGE PERFORMANCE

PINPOINT TEST J: THE REMOTE KEYLESS ENTRY (RKE) TRANSMITTER HAS POOR RANGE PERFORMANCE

NOTE: All RKE transmitters must be present to begin diagnosis of the RKE system.

NOTE: Aftermarket or dealer-installed systems may adversely affect the RKE system operation. These systems should be disconnected before diagnosing any RKE concerns.

NOTE: Make sure the RKE transmitters are those provided with the original equipment manufacturer (OEM) system and not from an aftermarket or a dealer-installed system that may have been installed on the vehicle.

Test Step		Result / Action to Take
J1	CHECK FOR THE CORRECT RKE TRANSMITTERS	
	• Check that the correct RKE transmitters are used with the vehicle. • **Are all the correct RKE transmitters present?**	**Yes** GO to **J2**. **No** The system cannot be tested without the correct RKE transmitters. INFORM the customer that all the correct RKE transmitters must be present to proceed with diagnosis of the system.
J2	CHECK ALL THE RKE TRANSMITTERS FOR POOR RANGE PERFORMANCE	
	NOTE: The 3 m (10 ft) measurement of range is not the standard but is a guideline that clearly indicates a vehicle is experiencing poor range performance. • Check all RKE transmitters for poor range performance (less than 3 m [10 ft]). • **Do all RKE transmitters experience poor range?**	**Yes** GO to **J3**. **No** REPLACE the inoperative RKE transmitter and PROGRAM all the RKE transmitters. REFER to Remote Keyless Entry Transmitter Programming. INFORM the customer that any RKE transmitters not present need to be programmed. TEST the system for normal operation.
J3	CHECK THE LOCATION OF THE VEHICLE AND APPROACH ANGLES AROUND VEHICLE	
	• Make sure the poor performance is consistent in nature and is not from one approaching angle. • RKE transmitter range performance may be degraded in certain locations. For example, if the vehicle is within 0.8 km (0.5 mile) of high power devices or radio/TV towers, the operating distance of the transmitters may be reduced. • **Is the poor range performance consistent around the vehicle?**	**Yes** GO to **J4**. **No** The system is operating correctly at this time. TEST the system for normal operation.
J4	CHECK THE SJB FOR CORRECT OPERATION	
	• Disconnect all the SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. PROGRAM all the RKE transmitters. REFER to Remote Keyless Entry Transmitter Programming. INFORM the customer that any RKE transmitters not present will need to be programmed. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. TEST the system for normal operation.

J1-J4

Normal Operation

Remote locking and unlocking of the doors is accomplished by the smart junction box (SJB) when it receives a command message from the RKE transmitter. The SJB processes the command message and energizes the appropriate lock/unlock relay to lock or unlock the doors. The RKE transmitter has a maximum operating range of up to **10 m (33 ft)**.

Possible Causes

- Aftermarket systems
- High power devices
- TV/radio transmission towers
- RKE transmitter
- SJB

Test K: The Remote Keyless Entry (RKE) Transmitter Is Out of Synchronization

PINPOINT TEST K: THE REMOTE KEYLESS ENTRY (RKE) TRANSMITTER IS OUT OF SYNCHRONIZATION

PINPOINT TEST K: THE REMOTE KEYLESS ENTRY (RKE) TRANSMITTER IS OUT OF SYNCHRONIZATION

NOTE: All RKE transmitters must be present to begin diagnosis of the RKE system.

NOTE: Aftermarket or dealer-installed systems may adversely affect the RKE system operation. These systems should be disconnected before diagnosing any RKE concerns.

NOTE: Make sure the RKE transmitters are those provided with the original equipment manufacturer (OEM) system and not from an aftermarket or a dealer-installed system that may have been installed on the vehicle.

Test Step		Result / Action to Take
K1	**RESYNCHRONIZE THE INOPERATIVE RKE TRANSMITTER**	
	• Key in OFF position. • Press any button on the inoperative remote transmitter 4 times consecutively within 30 seconds. • **Does the RKE transmitter operate correctly now?**	**Yes** The system is OK. CLEAR the DTCs. REPEAT the self-test. **No** GO to **K2**.
K2	**CHECK FOR A SECOND RKE TRANSMITTER**	
	• Check for another RKE transmitter that operates with the vehicle. • **Is there an RKE remote transmitter that operates with the vehicle?**	**Yes** GO to **K3**. **No** GO to **K4**.
K3	**RESYNCHRONIZE THE INOPERATIVE RKE TRANSMITTER USING THE SECOND RKE TRANSMITTER**	
	• Press any button on the operational RKE transmitter. • Within 30 seconds, press a button on the inoperative RKE transmitter. • Check the inoperative RKE transmitter for correct operation. • **Does the inoperative RKE transmitter operate now?**	**Yes** The system is OK. CLEAR the DTCs. REPEAT the self-test. **No** GO to **K4**.
K4	**PROGRAM ALL RKE TRANSMITTERS**	
	• Program the inoperative RKE transmitter individually using a scan tool or program all RKE transmitters using the manual key cycle method. Refer to Remote Keyless Entry Transmitter Programming. • **Does the RKE transmitter operate now?**	**Yes** The system is OK. INFORM the customer any RKE transmitters not present need to be programmed. CLEAR the DTCs. REPEAT the self-test. **No** GO to Pinpoint Test H.

K1-K4

Normal Operation

The remote keyless entry (RKE) transmitters and the smart junction box (SJB) use a rolling code to prevent the codes from being "captured" by a code grabber. The system advances the counter in the RKE transmitter and in the SJB every time an RKE transmitter button is pressed.

DTC B2425 - is a continuous DTC that sets when the SJB detects the rolling counter received from an RKE transmitter is 1024 times greater than the rolling counter stored in the module.

Possible Causes

- RKE transmitter button pressed a substantial amount of times outside the range of the vehicle
- RKE transmitter
- SJB

Test L: The Smart Lock Does Not Operate Correctly

PINPOINT TEST L: THE SMART LOCK DOES NOT OPERATE CORRECTLY

PINPOINT TEST L: THE SMART LOCK DOES NOT OPERATE CORRECTLY

	Test Step	Result / Action to Take
L1	CHECK THE INTERIOR LAMP OPERATION	
	• Open and close the driver door while checking the interior lamp operation. • **Do the interior lamps operate correctly?**	**Yes** GO to L2. **No** REFER to Lighting and Horns.
L2	CHECK THE SJB IGNITION SWITCH PID	
	• Enter the following diagnostic mode on the scan tool: SJB PIDs. • Monitor the SJB GEM_ IGN PID. • **Are the correct values received?**	**Yes** GO to L3. **No** REFER to Ignition Switch.
L3	CHECK FOR CORRECT SJB OPERATION	
	• Disconnect all SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. TEST the system for normal operation.

L1-L3

Normal Operation

The smart lock feature is controlled by the smart junction box (SJB). The SJB unlocks the driver door after **1 second** if the key is in the ignition and the driver door is open when the vehicle is locked with the driver door lock control switch.

Possible Causes

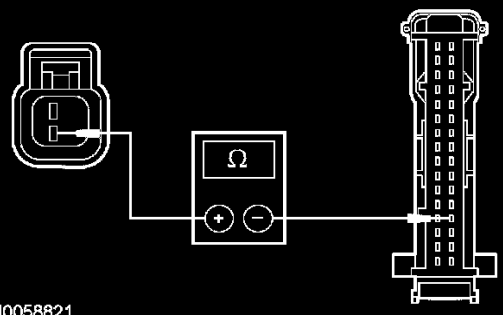
- Driver door ajar switch
- SJB

Test M: The Liftgate Glass Actuator Is Inoperative

PINPOINT TEST M: THE LIFTGATE GLASS ACTUATOR IS INOPERATIVE

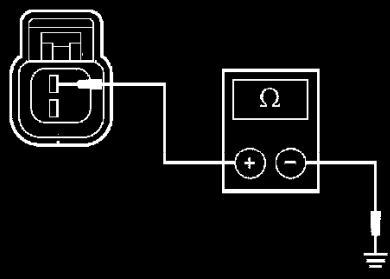
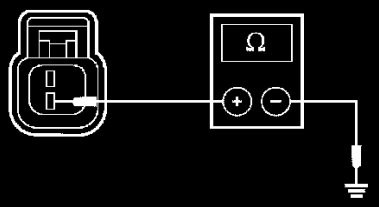
PINPOINT TEST M: THE LIFTGATE GLASS ACTUATOR IS INOPERATIVE

CAUTION: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

Test Step		Result / Action to Take
M1	RETRIEVE THE RECORDED SJB DTCs FROM THE ON-DEMAND SELF-TEST	
	• Check for recorded SJB DTCs from the on-demand self-test. • **Are any DTCs recorded?**	**Yes** For DTC B2667, GO to **M2**. For all other SJB DTCs, REFER to Smart Junction Box (SJB) Diagnostic Trouble Code (DTC) Chart. **No** GO to **M3**.
M2	REPEAT THE SJB ON-DEMAND SELF-TEST	
	• Key in OFF position. • Disconnect: Liftgate Glass Release Switch C4039. • Key in ON position. • Clear the DTCs, then repeat the SJB on-demand self-test. • **Is DTC B2667 recorded?**	**Yes** GO to **M6**. **No** INSTALL a new liftgate glass release switch. CLEAR the DTCs. REPEAT the self-test.
M3	CHECK THE LIFTGATE GLASS RELEASE OPERATION WITH THE RKE TRANSMITTER	
	• Press the liftgate glass release button on the RKE transmitter. • **Does the liftgate glass release?**	**Yes** GO to **M4**. **No** GO to **M7**.
M4	CHECK CIRCUITS CPL45 (BN) (SJB) AND CPL45 (GN) (LIFTGATE GLASS RELEASE SWITCH) FOR AN OPEN	
	• Disconnect: Liftgate Glass Release Switch C4039. • Disconnect: SJB C2280b. • Measure the resistance between the liftgate glass release switch C4039-2, circuit CPL45 (GN), harness side and the SJB C2280b-29, circuit CPL45 (BN), harness side.  N0058821 • **Is the resistance less than 5 ohms?**	**Yes** GO to **M5**. **No** REPAIR the circuit. TEST the system for normal operation.

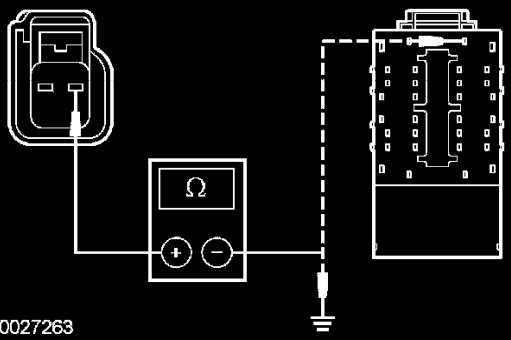
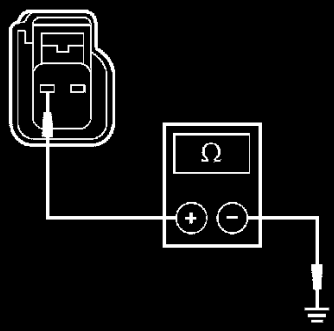
(Continued)

PINPOINT TEST M: THE LIFTGATE GLASS ACTUATOR IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
M5	**CHECK GD143 (GN) FOR AN OPEN**	
	• Measure the resistance between the liftgate glass release switch C4039-1, circuit GD143 (GN), harness side and ground.  N0026505 • **Is the resistance less than 5 ohms?**	**Yes** GO to **M9**. **No** REPAIR the circuit. TEST the system for normal operation.
M6	**CHECK CIRCUITS CPL45 (BN) (SJB) AND CPL45 (GN) (LIFTGATE GLASS RELEASE SWITCH) FOR A SHORT TO GROUND**	
	• Disconnect: SJB C2280b. • Measure the resistance between the liftgate glass release switch C4039-2, circuit CPL45 (GN), harness side and ground.  N0058822 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **M11**. **No** REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.
M7	**CHECK CIRCUIT CPL59 (BN/BU) FOR AN OPEN OR SHORT TO GROUND**	
	• Disconnect: Liftgate Glass Actuator C4040. • Disconnect: SJB C2280a.	

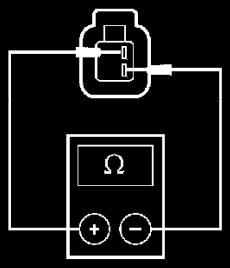
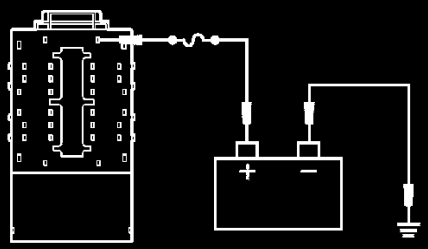
(Continued)

PINPOINT TEST M: THE LIFTGATE GLASS ACTUATOR IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
M7	**CHECK CIRCUIT CPL59 (BN/BU) FOR AN OPEN OR SHORT TO GROUND (Continued)**	
	• Measure the resistance between the liftgate glass actuator C4040-1, circuit CPL59 (BN/BU), harness side and the SJB C2280a-31, circuit CPL59 (BN/BU), harness side; and between the liftgate glass actuator C4040-1, circuit CPL59 (BN/BU), harness side and ground.  N0027263 • **Is the resistance less than 5 ohms between the liftgate glass actuator and the SJB, and greater than 10,000 ohms between the liftgate glass actuator and ground?**	**Yes** GO to **M8**. **No** REPAIR the circuit. TEST the system for normal operation.
M8	**CHECK CIRCUIT GD149 (BK/GY) FOR AN OPEN**	
	• Measure the resistance between the liftgate glass actuator C4040-2, circuit GD149 (BK/GY), harness side and ground.  N0026508 • **Is the resistance less than 5 ohms?**	**Yes** GO to **M10**. **No** REPAIR the circuit. TEST the system for normal operation.
M9	**CHECK THE LIFTGATE GLASS RELEASE SWITCH**	
	• Key in OFF position. • Disconnect: Liftgate Glass Release Switch C4039.	

(Continued)

PINPOINT TEST M: THE LIFTGATE GLASS ACTUATOR IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
M9	CHECK THE LIFTGATE GLASS RELEASE SWITCH (Continued)	
	• Measure the resistance between the liftgate glass release switch pin 1, component side and the liftgate glass release switch pin 2, component side while pressing and releasing the liftgate glass release switch.  A0060590 • **Is the resistance less than 5 ohms with the switch pressed, and greater than 10,000 ohms with the switch released?**	**Yes** GO to **M11**. **No** INSTALL a new liftgate glass release switch. TEST the system for normal operation.
M10	CHECK THE LIFTGATE GLASS ACTUATOR OPERATION	
	• Connect: Liftgate Glass Actuator C4040. • Connect a fused (5A) jumper wire between the SJB C2280a-31, circuit CPL59 (BN/BU), harness side and the battery positive terminal.  N0058904 • **Does the liftgate glass release?**	**Yes** GO to **M11**. **No** INSTALL a new liftgate window latch. TEST the system for normal operation.
M11	CHECK FOR CORRECT SJB OPERATION	
	• Disconnect all the SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. CLEAR the DTCs. REPEAT the self-test. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

M9-M11

Normal Operation

The liftgate glass release switch provides a ground, circuit GD143 (GN) for the smart junction box (SJB) liftgate glass release switch signal circuit CPL45 (BN) (SJB) or CPL45 (GN) (liftgate glass release switch). When the SJB receives a release request through circuit CPL45 (GN), the SJB processes the release request and energizes the liftgate release relay, supplying voltage to circuit CPL59 (BN/BU) and the liftgate glass actuator, to open the liftgate glass. Circuit GD149 (BK/GY) provides ground for the liftgate glass actuator.

DTC B2667 - is an on-demand DTC that sets if the SJB detects a short to ground on the liftgate glass release switch circuit CPL45 (BN).

Possible Causes

- Circuit CPL45 (GN) (liftgate glass release switch) open or short to ground
- Circuit CPL45 (BN) (SJB) open or short to ground
- Circuit CPL59 (BN/BU) open
- Circuit GD143 (GN) open
- Circuit GD149 (BK/GY) open
- Liftgate glass release switch
- Liftgate glass actuator

- SJB

Test N: The Liftgate Glass Actuator Does Not Release Using The Remote Keyless Entry (RKE) Transmitter

PINPOINT TEST N: THE LIFTGATE GLASS ACTUATOR DOES NOT RELEASE USING THE REMOTE KEYLESS ENTRY (RKE) TRANSMITTER

PINPOINT TEST N: THE LIFTGATE GLASS ACTUATOR DOES NOT RELEASE USING THE REMOTE KEYLESS ENTRY (RKE) TRANSMITTER

Test Step		Result / Action to Take
N1	VERIFY CORRECT OPERATION OF THE LIFTGATE GLASS RELEASE FUNCTION	
	• Operate the liftgate glass release using the liftgate glass release switch. • **Does the liftgate glass release correctly?**	**Yes** GO to **N2**. **No** GO to Pinpoint Test M.
N2	CHECK THE RKE TRANSMITTER INPUT TO THE SJB	
	• Enter the following diagnostic mode on the scan tool: SJB PIDs. • Observe the SJB TNSMT_ CMD PID while pressing the RKE transmitter liftgate glass release button. • **Does the PID value agree with the button press?**	**Yes** GO to **N5**. **No** GO to **N3**.
N3	CHECK THE RKE TRANSMITTER BATTERY	
	• Open the RKE transmitter. • Do not clean off any grease from the battery terminal on the back of the circuit board. • Verify the correct battery is being used (CR2032). • Remove the RKE transmitter battery and measure the voltage. • **Is the voltage greater than 2.5 volts?**	**Yes** GO to **N4**. **No** INSTALL a new RKE transmitter battery. TEST the system for normal operation.
N4	CHECK THE TRANSMITTER IDENTIFICATION CODE (TIC)/DATA FOR A TIC MATCH	
	• Enter the following diagnostic mode on the scan tool: SJB PIDs. • Observe the SJB TNSMT_ ID PID while pressing and releasing the RKE transmitter lock and unlock buttons. • **Does the transmitter ID code (TIC) under last tic received match TIC 1, TIC 2, TIC 3, or TIC 4?**	**Yes** GO to **N5**. **No** PROGRAM all the RKE transmitters. REFER to Remote Keyless Entry Transmitter Programming. CLEAR the DTCs. REPEAT the self-test. If the RKE transmitter is still not working, REPLACE the RKE transmitter. TEST the system for normal operation.
N5	CHECK FOR CORRECT SJB OPERATION	
	• Disconnect all the SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. TEST the system for normal operation.

N1-N5

Normal Operation

Remote release of the liftgate glass is accomplished by the smart junction box (SJB) when it receives a command message from the RKE transmitter. The SJB processes the command message and energizes the liftgate release relay to open the liftgate glass.

Possible Causes

- RKE transmitter battery
- RKE transmitter
- SJB

Test O: The Auto-Unlock Does Not Operate Correctly

PINPOINT TEST O: THE AUTO-UNLOCK DOES NOT OPERATE CORRECTLY

PINPOINT TEST O: THE AUTO-UNLOCK DOES NOT OPERATE CORRECTLY		
	Test Step	Result / Action to Take
O1	VERIFY THE AUTO-UNLOCK FEATURE IS ENABLED • Verify the auto-unlock feature is enabled. Refer to Autolock and Horn Chirp Programming. • **Is the auto-unlock feature enabled?**	**Yes** GO to **O2**. **No** PROGRAM the auto-unlock feature. REFER to Autolock and Horn Chirp Programming.
O2	CHECK THE INTERIOR LAMP OPERATION • Open and close each door, liftgate and liftgate glass while checking the interior lamp operation. • **Do the interior lamps operate correctly?**	**Yes** GO to **O3**. **No** REFER to Lighting and Horns.
O3	CHECK THE SJB IGNITION SWITCH PID • Enter the following diagnostic mode on the scan tool: SJB PIDs. • Monitor the SJB GEM_ IGN PID. • **Is the correct value received?**	**Yes** GO to **O4**. **No** REFER to Ignition Switch.
O4	CHECK THE SJB VSS PID • Enter the following diagnostic mode on the scan tool: SJB PIDs. • Monitor the SJB VSS_ GEM PID. • **Is the correct value received?**	**Yes** GO to **O5**. **No** REFER to Instrument Panel, Gauges and Warning Indicators.
O5	CHECK FOR CORRECT SJB OPERATION • Disconnect all SJB connectors. • Check for: — corrosion — damaged pins — pushed-out pins • Connect all SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • **Is the concern still present?**	**Yes** INSTALL a new SJB. TEST the system for normal operation. **No** The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

O1-O5

Normal Operation

The smart junction box (SJB) energizes the unlock relays based on input from the ajar switches and the vehicle speed signal. The SJB unlocks the doors when the following conditions are met:

- The ignition switch is in the ON position, all doors are closed, and the vehicle has been in motion at a speed **greater than 20 km/h (12 mph)**.
- The vehicle has then come to a stop and the ignition switch is turned to the OFF or ACCY position.
- The driver door is opened within **10 minutes** of the ignition switch being turned to the OFF or ACCY position.

The auto-unlock feature is cancelled if the doors are locked with the door lock control switch or the remote keyless entry (RKE) transmitter before the driver door is opened.

Possible Causes

- Programming
- Door ajar switches
- SJB