



Steering Column Switches  [Printable View \(152 KB\)](#)

Refer to Wiring Diagrams Cell [13](#) for schematic and connector information.

Special Tool(s)

 <p>ST1137-A</p>	<p>73III Automotive Meter 105-R0057 or equivalent</p>
 <p>ST2574-A</p>	<p>Flex Probe Kit 105-R025C or equivalent</p>

Inspection and Verification

1. Verify the customer concern.
2. Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection Chart

Mechanical	Electrical
<ul style="list-style-type: none"> • Multi-function switches • Ignition switch 	<ul style="list-style-type: none"> • Battery junction box (BJB) fuse 8 (30A) • Circuitry

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. If the concern is not visually evident, verify the symptom and refer to the Symptom Chart.

Symptom Chart

Symptom Chart

Condition	Possible Sources	Action
<ul style="list-style-type: none"> • The ignition switch is inoperative 	<ul style="list-style-type: none"> • Circuitry • Ignition switch 	<ul style="list-style-type: none"> • GO to Pinpoint Test A.
<ul style="list-style-type: none"> • No power in ACC 	<ul style="list-style-type: none"> • Circuitry • Ignition switch 	<ul style="list-style-type: none"> • GO to Pinpoint Test B.
<ul style="list-style-type: none"> • No power in RUN 	<ul style="list-style-type: none"> • Circuitry • Ignition relay • Ignition switch 	<ul style="list-style-type: none"> • GO to Pinpoint Test C.
<ul style="list-style-type: none"> • No power in START 	<ul style="list-style-type: none"> • Circuitry • Starter relay • Ignition switch 	<ul style="list-style-type: none"> • GO to Pinpoint Test D.
<ul style="list-style-type: none"> • The ignition key is hard to turn 	<ul style="list-style-type: none"> • Key • Ignition lock cylinder • Ignition switch 	<ul style="list-style-type: none"> • GO to Pinpoint Test E.
<ul style="list-style-type: none"> • Unable to remove the key from the ignition 	<ul style="list-style-type: none"> • Circuitry • Ignition lock cylinder • Ignition switch • Transmission selector lever 	<ul style="list-style-type: none"> • GO to Pinpoint Test F.

Pinpoint Tests

Pinpoint Test A: The Ignition Switch Is Inoperative

Normal Operation

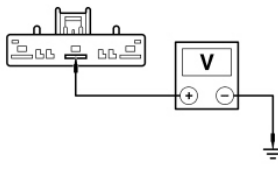
The ignition receives overload protected battery voltage from the battery junction box (BJB) fuse 8 (30A) through circuit 30-BB9 (RD).

Possible Causes

- Circuit 30-BB9 open
- Ignition switch

PINPOINT TEST A: THE IGNITION SWITCH IS INOPERATIVE

Test Step	Result / Action to Take
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<p>A1 CHECK CIRCUIT 30-BB9A (RD) FOR AN OPEN</p> <ul style="list-style-type: none"> Disconnect: Ignition Switch C250. Measure the voltage between the ignition switch C250-4, circuit 30-BB9 (RD), and ground.  <p>N0039337</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? 	<p>Yes GO to A2.</p> <p>No VERIFY the battery junction box (BJB) fuse 8 (30A) is OK. If OK, REPAIR the circuit. TEST the system for normal operation.</p>
<p>A2 CHECK THE IGNITION SWITCH</p> <ul style="list-style-type: none"> Carry out the ignition switch component test. <p>Refer to Wiring Diagrams Cell 149 for component testing.</p> <ul style="list-style-type: none"> Is the ignition switch OK? 	<p>Yes VERIFY the customer concern.</p> <p>No INSTALL a new ignition switch. REFER to Ignition Switch in this section. TEST the system for normal operation.</p>

Pinpoint Test B: No Power in ACC

Normal Operation

The ignition receives overload protected battery voltage from the battery junction box (BJB) fuse 8 (30A) through circuit 30-BB9 (RD).

Possible Causes

- Ignition switch
- Circuitry

PINPOINT TEST B: NO POWER IN ACC

Test Step	Result / Action to Take
<p>B1 CHECK THE WIPERS AND THE RADIO FOR NORMAL OPERATION WITH KEY IN THE RUN POSITION</p> <ul style="list-style-type: none"> Ignition ON. Test the wipers and the radio for normal operation. Do the wipers and the radio operate correctly? 	<p>Yes INSTALL a new ignition switch. REFER to Ignition Switch in this section.</p> <p>No GO to Pinpoint Test C.</p>

Pinpoint Test C: No Power In Run

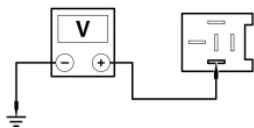
Normal Operation

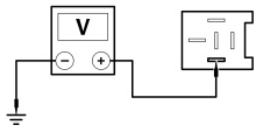
The ignition receives overload protected battery voltage from the battery junction box (BJB) fuse 8 (30A) through circuit 30-BB9 (RD).

Possible Causes

- Circuit 30-BB9 open
- Ignition switch

PINPOINT TEST C: NO POWER IN RUN

Test Step	Result / Action to Take
<p>C1 CHECK IGNITION RELAY CIRCUITS FOR VOLTAGE</p> <ul style="list-style-type: none"> Disconnect: Ignition Relay C1054. Ignition ON. For vehicles with anti-lock brakes (ABS), measure the voltage between the ignition relay C1054-1, circuit 15-BB7 (GN/OG), harness side and ground.  <p>TIE0002630</p> <ul style="list-style-type: none"> For vehicles without anti-lock brakes (ABS), measure the voltage between the ignition relay C1054-1, circuit 15-DA2 (GN/BU), harness side and ground. 	<p>Yes VERIFY the customer concern.</p> <p>No GO to C2.</p>

 <p>TIE0002630</p> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? 	
<p>C2 CHECK THE IGNITION SWITCH</p> <ul style="list-style-type: none"> Carry out the ignition switch component test. <p>Refer to Wiring Diagrams Cell 149 for component testing.</p> <ul style="list-style-type: none"> Is the ignition switch OK? 	<p>Yes REPAIR the circuit.</p> <p>No INSTALL a new ignition switch. REFER to Ignition Switch in this section. TEST the system for normal operation.</p>

Pinpoint Test D: No Power In Start

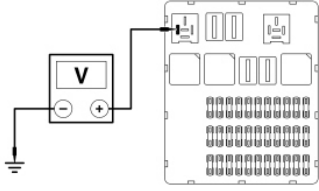
Normal Operation

The ignition receives overload protected battery voltage from the battery junction box (BJB) fuse 8 (30A) through circuit 30-BB9 (RD).

Possible Causes

- Circuit 30-BB9 open
- Ignition switch

PINPOINT TEST D: NO POWER IN START

Test Step	Result / Action to Take
<p>D1 VERIFY THE STARTER RELAY OPERATION</p> <ul style="list-style-type: none"> Turn the key to the START position. Does the starter relay click? 	<p>Yes VERIFY the customer concern.</p> <p>No GO to D2.</p>
<p>D2 CHECK CIRCUIT 50-BB16 (GY/BK) FOR AN OPEN</p> <ul style="list-style-type: none"> Disconnect: Starter Relay C2163. With the key in the START position, measure the voltage between the starter relay C2163-85, circuit 50-BB16 (GY/BK), harness side and ground. <div style="text-align: center;">  <p>TIE0002636</p> </div> <ul style="list-style-type: none"> Is the voltage greater than 10 volts? 	<p>Yes REPAIR the engine starting system. REFER to Section 303-06.</p> <p>No GO to D3.</p>
<p>D3 CHECK THE IGNITION SWITCH</p> <ul style="list-style-type: none"> Carry out the ignition switch component test. <p>Refer to Wiring Diagrams Cell 149 for component testing.</p> <ul style="list-style-type: none"> Is the ignition switch OK? 	<p>Yes REPAIR circuit 50-BB16 (GY/BK). TEST the system for normal operation.</p> <p>No INSTALL a new ignition switch. REFER to Ignition Switch in this section. TEST the system for normal operation.</p>

Pinpoint Test E: The Ignition Key Is Hard To Turn

Normal Operation

The lock cylinder should rotate to all position without sticking or binding. The lock cylinder should return from the START position back to the ON position without assistance (spring return).

Possible Causes

- Burrs on lock cylinder key
- Binding lock cylinder
- Insufficient lube on the lock cylinder
- Binding actuating rod or burrs in the cylinder housing

PINPOINT TEST E: THE IGNITION KEY IS HARD TO TURN

Test Step	Result / Action to Take
E1 CHECK THE STEERING WHEEL POSITION <ul style="list-style-type: none"> Check to see if the steering wheel is turned and locked full left or full right. Is the steering wheel locked full left or full right? 	Yes APPLY turning effort to the steering wheel in the direction of lock while turning the key to the ON position. TEST the system for normal operation. No GO to E2 .
E2 CHECK THE IGNITION LOCK CYLINDER KEY <ul style="list-style-type: none"> Check the ignition lock cylinder key for burrs, damage or an incorrect key cut. Is the key OK? 	Yes GO to E3 . No REPLACE the ignition key. TEST the system for normal operation.
E3 CHECK THE IGNITION LOCK CYLINDER <ul style="list-style-type: none"> Remove the ignition lock cylinder. Refer to Section 501-14. Check the ignition lock cylinder by rotating the ignition lock cylinder through all of the switch positions. Does the ignition lock cylinder stick or bind in any of the positions? 	Yes INSTALL a new ignition lock cylinder. REFER to Section 501-14 . No GO to E4 .
E4 CHECK THE IGNITION LOCK CYLINDER HOUSING <ul style="list-style-type: none"> Check for a binding or sticking ignition switch actuating rod, burrs around the rack and pinion actuator in the ignition lock cylinder housing, or insufficient lubrication. Are the ignition switch actuating rod, rack and pinion actuator and lubrication OK? 	Yes INSTALL a new ignition switch. REFER to Ignition Switch in this section. TEST the system for normal operation. No REPAIR or LUBRICATE as necessary. TEST the system for normal operation.

Pinpoint Test F: Unable to Remove the Key from the Ignition

Normal Operation

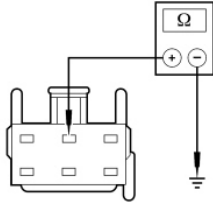
The ignition switch contains a key removal inhibit solenoid that will prevent the ignition key from being removed unless the transmission selector lever is in the PARK position. The inhibit solenoid (and the ignition switch) receives fused battery voltage from Battery Junction Box (BJB) fuse 1 (30A) and is grounded through the transmission selector lever assembly. When the selector lever is placed in any position other than PARK, the inhibit solenoid is grounded and energizes to lock the key in the ignition lock cylinder. A short to ground along circuit 31S-TA34 (BK/YE) will keep the solenoid energized and prevent the key from being removed. A damaged ignition lock cylinder may also prevent the ignition key from being removed.

Possible Causes

- Circuit 31S-TA34 (BK/YE) shorted to ground
- Ignition lock cylinder
- Ignition switch
- Transmission selector lever

PINPOINT TEST F: UNABLE TO REMOVE THE KEY FROM THE IGNITION

NOTICE: Use the Flex Probe Kit for all test connections to prevent damage to the wiring terminals. Do not use standard multi-meter probes.

Test Step	Result / Action to Take
F1 CHECK THE IGNITION LOCK CYLINDER <ul style="list-style-type: none"> Refer to Diagnosis and Testing in Section 501-14 and test the ignition lock cylinder. Is the lock cylinder OK? 	Yes GO to F2 . No INSTALL a new ignition lock cylinder. REFER to Section 501-14 . TEST the system for normal operation.
F2 ISOLATE THE TRANSMISSION SELECTOR LEVER ASSEMBLY <ul style="list-style-type: none"> Connect: Ignition Switch C250. Disconnect: Gearshift Lever Unit C3233. Attempt to remove the key from the ignition lock cylinder. Can the key be removed from the ignition? 	Yes INSTALL a new transmission selector lever. REFER to Transmission Selector Lever Removal and Installation in Section 307-05 . TEST the system for normal operation. No GO to F3 .
F3 CHECK THE INHIBIT SOLENOID CONTROL CIRCUIT FOR A SHORT TO GROUND <ul style="list-style-type: none"> Measure the resistance between gearshift lever unit C3233-2, circuit 31S-TA34 (BK/YE), harness side and ground. <div style="text-align: center;">  <p>N0095829</p> </div> <ul style="list-style-type: none"> Is the resistance greater than 10,000 ohms? 	Yes INSTALL a new ignition switch. REFER to Ignition Switch in this section. TEST the system for normal operation. No REPAIR circuit 31S-TA34 (BK/YE). TEST the system for normal operation.

