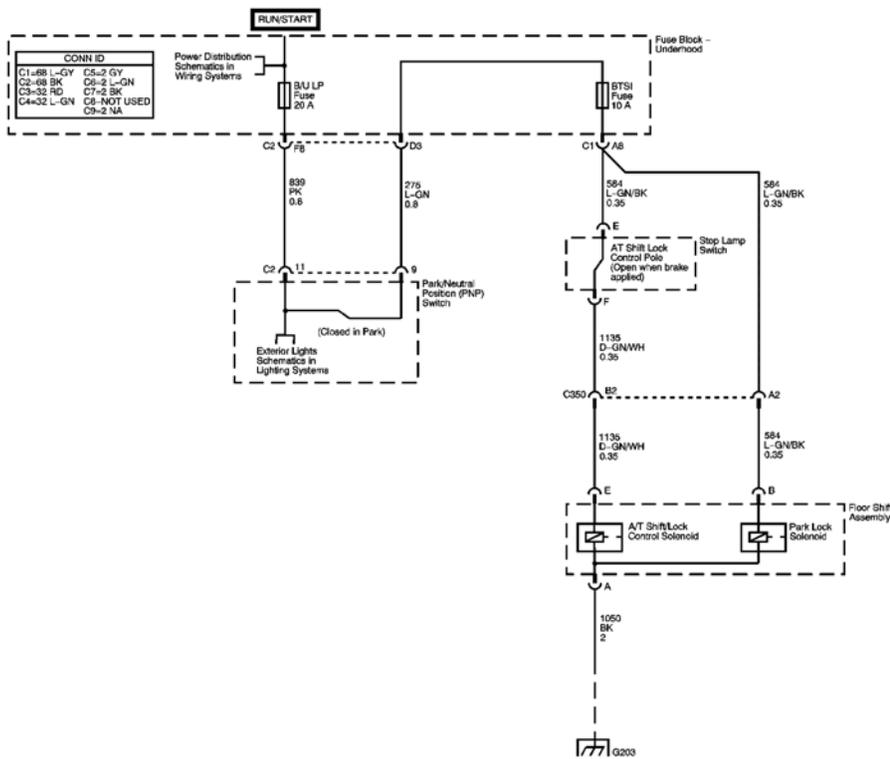


# 2004 TRANSMISSION

## Shift Lock Control - Hummer H2

### SCHEMATIC AND ROUTING DIAGRAMS

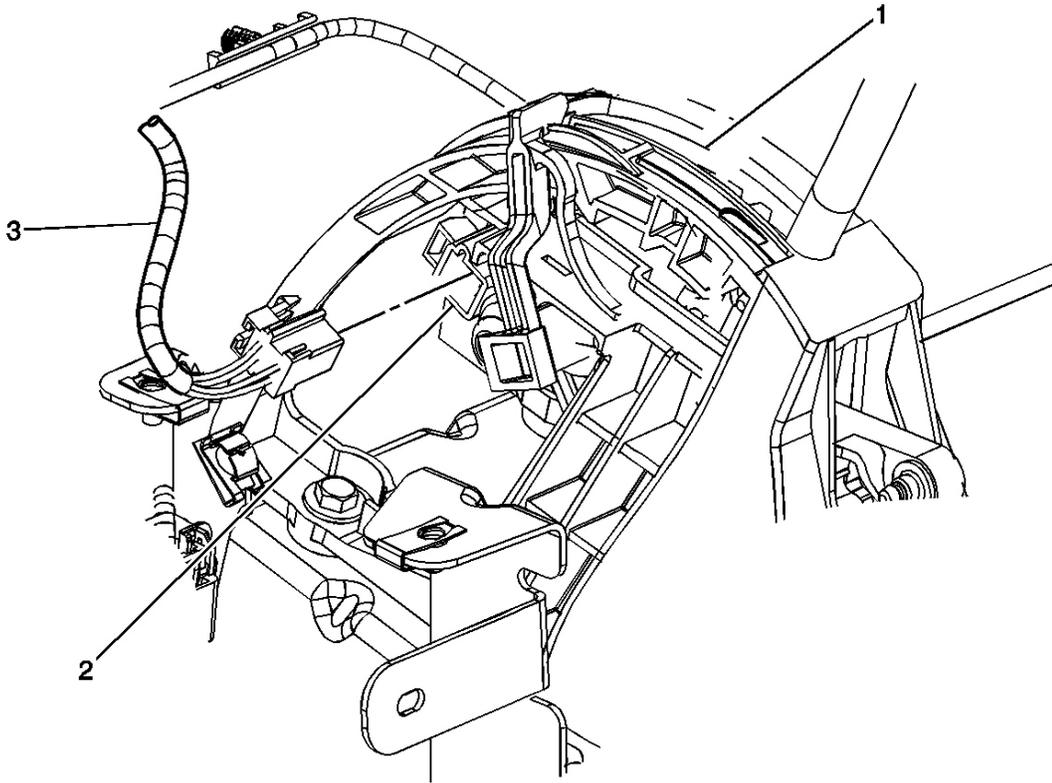
#### AUTOMATIC TRANSMISSION SHIFT LOCK CONTROL SCHEMATICS



**Fig. 1: Automatic Transmission Shift Lock Control**  
Courtesy of GENERAL MOTORS CORP.

### COMPONENT LOCATOR

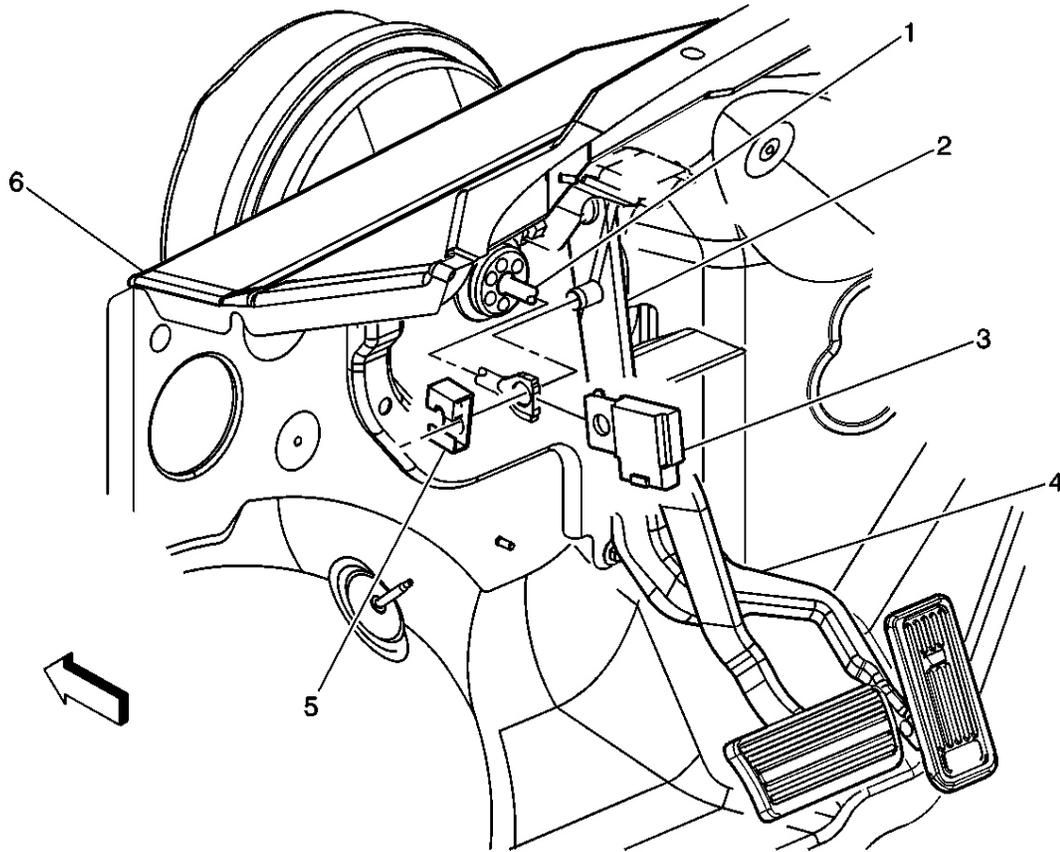
#### AUTOMATIC TRANSMISSION SHIFT LOCK CONTROL COMPONENT VIEWS



**Fig. 2: Floor Shift Assembly Component Views**  
 Courtesy of GENERAL MOTORS CORP.

**Callouts For Fig. 2**

Callout	Component Name
1	Floor Shift Assembly
2	Floor Shift Assembly Connector
3	Console Harness



**Fig. 3: Stop Lamp Switch Component Views**  
 Courtesy of GENERAL MOTORS CORP.

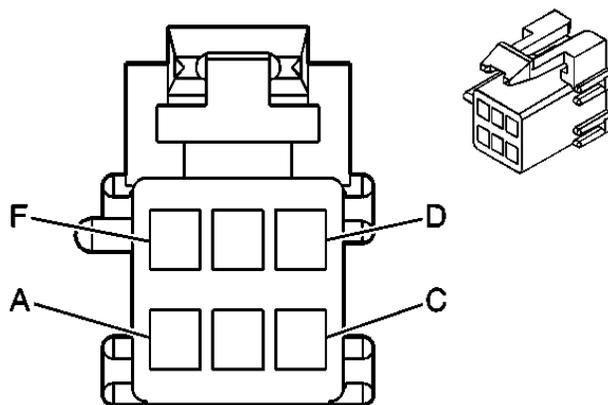
**Callouts For Fig. 3**

Callout	Component Name
1	Vacuum Booster
2	Brake Pedal
3	Stop Lamp Switch
4	Accelerator Pedal
5	Stop Lamp Switch Retainer
6	Dash Panel

**AUTOMATIC TRANSMISSION SHIFT LOCK CONTROL CONNECTOR END VIEWS**

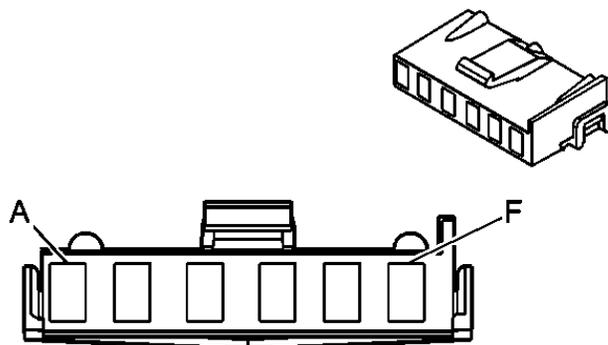
**A/T Shift Lock/Park Lock Control Terminal Identification**

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<b>Connector Part Information</b>		<ul style="list-style-type: none"> <li>• 12064762</li> <li>• 6-Way F Metri-Pack 150 Series (GY)</li> </ul>	
Pin	Wire Color	Circuit No.	Function
A	BK	1050	Ground
B	L-GN/BK	584	Park Lock Control Solenoid Supply Voltage
C	YE	1996	Remote Shift Selector Signal
D	-	-	Not Used
E	D-GN/WH	1135	A/T Shift Lock Control Solenoid Supply Voltage
F	PK	1020	Ignition 0 Voltage

### Stop Lamp Terminal Identification Switch



<b>Connector Part Information</b>		<ul style="list-style-type: none"> <li>• 12040551</li> <li>• 6-Way F Metri-Pack 480 Series (BK)</li> </ul>	
Pin	Wire Color	Circuit No.	Function

A	WH	17	Stop Lamp Switch Signal
B	OR	1540	Battery Positive Voltage
C	BN	441	Ignition 3 Voltage
D	PU	420	TCC Brake Switch/Cruise Control Release Signal
E	L-GN/BK	584	A/T Shift Lock Control Switch Supply Voltage
F	D-GN/WH	1135	A/T Shift Lock Control Solenoid Supply Voltage

## DIAGNOSTIC INFORMATION AND PROCEDURES

### DIAGNOSTIC STARTING POINT - AUTOMATIC TRANSMISSION SHIFT LOCK CONTROL

Begin the system diagnosis by reviewing the **Automatic Transmission Shift Lock Control Description and Operation** . Reviewing the description and operation information will help you determine the correct symptom diagnostic procedure when a malfunction exists. Reviewing the description and operation information will also help you determine if the condition described by the customer is normal operation.

Refer to **Symptoms - Automatic Transmission Shift Lock Control** in order to identify the correct procedure for diagnosing the system and where the procedure is located.

### SYMPTOMS - AUTOMATIC TRANSMISSION SHIFT LOCK CONTROL

**IMPORTANT:** Review the system operation in order to familiarize yourself with the system functions. Refer to **Automatic Transmission Shift Lock Control Description and Operation** .

#### Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the automatic transmission shift lock control system. Refer to **Checking Aftermarket Accessories** in Wiring Systems.
- Inspect the easily accessible or visible system components for obvious damage or conditions which could cause the symptom.

#### Intermittent

Faulty electrical connections or wiring may be the cause of intermittent conditions. Refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

#### Symptom List

Refer to a symptom diagnostic procedure from the following list in order to diagnose the symptom:

- **Shift Lever Does Not Move with Brake Pedal Depressed**
- **Shift Lever Can Be Moved without Brake Pedal Depressed**

### PARK LOCK SOLENOID INOPERATIVE

## Park Lock Solenoid Inoperative

Step	Action	Yes	No
<b>Schematic Reference: Automatic Transmission Shift Lock Control Schematics</b> <b>Connector End View Reference: Automatic Transmission Shift Lock Control Connector End Views or Automatic Transmission Related Connector End Views</b> DEFINITION: Transmission shift lever does not lock in the PARK position with the ignition OFF.			
1	Did you perform the Symptoms - Automatic Transmission Shift Lock Control tests and perform all the necessary inspections?	Go to Step 2	Go to <b>Symptoms - Automatic Transmission Shift Lock Control</b>
2	1. Move the shift lever to the PARK position. 2. Turn OFF the ignition. 3. Press and hold the brake pedal. 4. Attempt to move the shift lever out of the PARK position.  Does the shift lever move out of the park position?	Go to Step 3	Go to <b>Testing for Intermittent Conditions and Poor Connections</b> in Wiring Systems
3	1. Disconnect the park lock solenoid. 2. Press and hold the brake pedal. 3. Attempt to move the shift lever out of the PARK position.  Does the shift lever move out of the park position?	Go to Step 4	Go to Step 5
4	Inspect for poor connections at park lock solenoid. Refer to <b>Testing for Intermittent Conditions and Poor Connections</b> and <b>Connector Repairs</b> in Wiring Systems. Did you find and correct the condition?	Go to Step 7	Go to Step 6
5	Repair the short to battery voltage in the A/T shift lock control switch supply voltage circuit. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems. Did you complete the repair?	Go to Step 7	-
6	Replace the park lock solenoid. Refer to <b>Automatic Transmission Shift Lock Actuator Replacement</b> . Did you complete the repair?	Go to Step 7	-
7	Operate the system in order to verify the repair. Did you find and correct the condition?	System OK	Go to Step 2

## SHIFT LEVER DOES NOT MOVE WITH BRAKE PEDAL DEPRESSED

### Shift Lever Does Not Move with Brake Pedal Depressed

Step	Action	Yes	No
<b>Schematic Reference: Automatic Transmission Shift Lock Control Schematics</b> <b>Connector End View Reference: Automatic Transmission Shift Lock Control Connector End</b>			

## **Views or Automatic Transmission Related Connector End Views**

DEFINITION: Transmission shift lever will not move out of the PARK position with the ignition ON and the brake pedal pressed.

1	Did you perform the Symptoms - Automatic Transmission Shift Lock Control tests and all the necessary inspection?	Go to <b>Step 2</b>	Go to <b>Symptoms - Automatic Transmission Shift Lock Control</b>
2	<ol style="list-style-type: none"><li>1. Turn ON the ignition, with the engine OFF.</li><li>2. Press and hold the brake pedal.</li><li>3. Attempt to move the shift lever out of the PARK position.</li></ol> Does the shift lever move out of the PARK position?	Go to <b>Testing for Intermittent Conditions and Poor Connections</b> in Wiring Systems	Go to <b>Step 3</b>
3	<ol style="list-style-type: none"><li>1. Turn OFF the ignition.</li><li>2. Disconnect the automatic transmission shift lock control switch.</li><li>3. Turn ON the ignition, with the engine OFF.</li><li>4. Press and hold the brake pedal.</li><li>5. Attempt to move the transmission shift lever out of the PARK position.</li></ol> Does the transmission shift lever move out of the PARK position?	Go to <b>Step 6</b>	Go to <b>Step 4</b>
4	<ol style="list-style-type: none"><li>1. Turn OFF the ignition.</li><li>2. Disconnect the automatic transmission shift lock control solenoid.</li><li>3. Turn ON the ignition, with the engine OFF</li><li>4. Press and hold the brake pedal.</li><li>5. Attempt to move the transmission shift lever out of the PARK position.</li></ol> Does the transmission shift lever move out of the PARK position?	Go to <b>Step 7</b>	Go to <b>Step 5</b>
5	Inspect for poor connections at the harness connector of the automatic transmission shift lock control solenoid. Refer to <b>Testing for Intermittent Conditions and Poor Connections</b> and <b>Connector Repairs</b> in Wiring Systems. Did you find and correct the condition?	Go to <b>Step 10</b>	Go to <b>Step 9</b>
	Inspect for poor connections at the harness connector of the automatic transmission shift lock		

6	control switch. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems. Did you find and correct the condition?	Go to <b>Step 10</b>	Go to <b>Step 8</b>
7	Repair the short to battery positive voltage in the A/T shift lock control solenoid supply voltage circuit. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems. Did you complete the repair?	Go to <b>Step 10</b>	-
8	Replace the automatic transmission shift lock control switch. Refer to <b><u>Stop Lamp Switch Replacement</u></b> in Lighting Systems. Did you complete the replacement?	Go to <b>Step 10</b>	-
9	Replace the automatic transmission shift lock control solenoid. Refer to <b><u>Automatic Transmission Shift Lock Actuator Replacement</u></b> . Did you complete the replacement?	Go to <b>Step 10</b>	-
10	Operate the system in order to verify the repair. Did you find and correct the condition?	System OK	Go to <b>Step 2</b>

## SHIFT LEVER CAN BE MOVED WITHOUT BRAKE PEDAL DEPRESSED

### Shift Lever Can Be Moved without Brake Pedal Depressed

Step	Action	Yes	No
<b>Schematic Reference:</b> <u>Automatic Transmission Shift Lock Control Schematics</u> <b>Connector End View Reference:</b> <u>Automatic Transmission Shift Lock Control Connector End Views or Automatic Transmission Related Connector End Views</u> <b>DEFINITION:</b> Transmission shift lever does not lock in the PARK position with the ignition ON and the brake pedal not pressed.			
1	Did you perform the Symptoms - Automatic Transmission Shift Lock Control tests and all the necessary inspections?	Go to <b>Step 2</b>	Go to <b><u>Symptoms - Automatic Transmission Shift Lock Control</u></b>
2	<ol style="list-style-type: none"> <li>1. Apply the parking brake and block the wheels.</li> <li>2. Turn ON, the ignition, with the engine OFF.</li> <li>3. Attempt to move the shift lever out of the PARK position.</li> </ol> Does the shift lever move out of the PARK position?	Go to <b>Step 3</b>	Go to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> in Wiring Systems
3	<ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Ensure transmission shift lever is in the PARK position.</li> <li>3. Connect a test lamp between the A/T shift lock switch supply voltage circuit at the BTSI fuse and a good</li> </ol>		

	<p>ground.</p> <p>4. Turn ON the ignition, with the engine OFF.</p> <p>Does the test lamp illuminate?</p>	<p>Go to <b>Step 4</b></p>	<p>Go to <b>Step 8</b></p>
4	<p>Connect a test lamp between the A/T shift lock switch supply voltage circuit at the automatic transmission shift lock control switch and a good ground.</p> <p>Does the test lamp illuminate?</p>	<p>Go to <b>Step 5</b></p>	<p>Go to <b>Step 14</b></p>
5	<p>1. Connect a test lamp between the A/T shift lock solenoid control circuit at the automatic transmission shift lock control switch and a good ground.</p> <p>2. Press and release the brake pedal several times.</p> <p>Does the test lamp turn ON and OFF with the brake pedal?</p>	<p>Go to <b>Step 6</b></p>	<p>Go to <b>Step 11</b></p>
6	<p>Connect a test lamp between the automatic transmission shift lock control solenoid supply voltage circuit at the automatic transmission shift lock control solenoid and a good ground.</p> <p>Does the test lamp illuminate?</p>	<p>Go to <b>Step 7</b></p>	<p>Go to <b>Step 15</b></p>
7	<p>Test the automatic transmission shift lock control solenoid ground circuit for an open or high resistance. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	<p>Go to <b>Step 20</b></p>	<p>Go to <b>Step 12</b></p>
8	<p>1. Turn OFF the ignition</p> <p>2. Disconnect the park/neutral position switch connector.</p> <p>3. Connect a test lamp between the ignition 1 voltage circuit of the park/neutral position switch and a good ground.</p> <p>4. Turn ON the ignition, with the engine OFF.</p> <p>Does the test lamp illuminate?</p>	<p>Go to <b>Step 9</b></p>	<p>Go to <b>Step 13</b></p>
9	<p>1. Turn OFF the ignition</p> <p>2. Connect a 10 amp fused jumper between the ignition 1 voltage circuit of the park/neutral position switch and the park/neutral position switch park signal circuit at the park/neutral position switch connector.</p> <p>3. Connect a test lamp between the A/T shift lock switch supply circuit at the BTSI fuse and a good ground.</p> <p>4. Turn ON the ignition, with the engine OFF.</p> <p>Does the test lamp illuminate?</p>	<p>Go to <b>Step 10</b></p>	<p>Go to <b>Step 16</b></p>
	<p>1. Inspect for proper park/neutral position switch</p>		

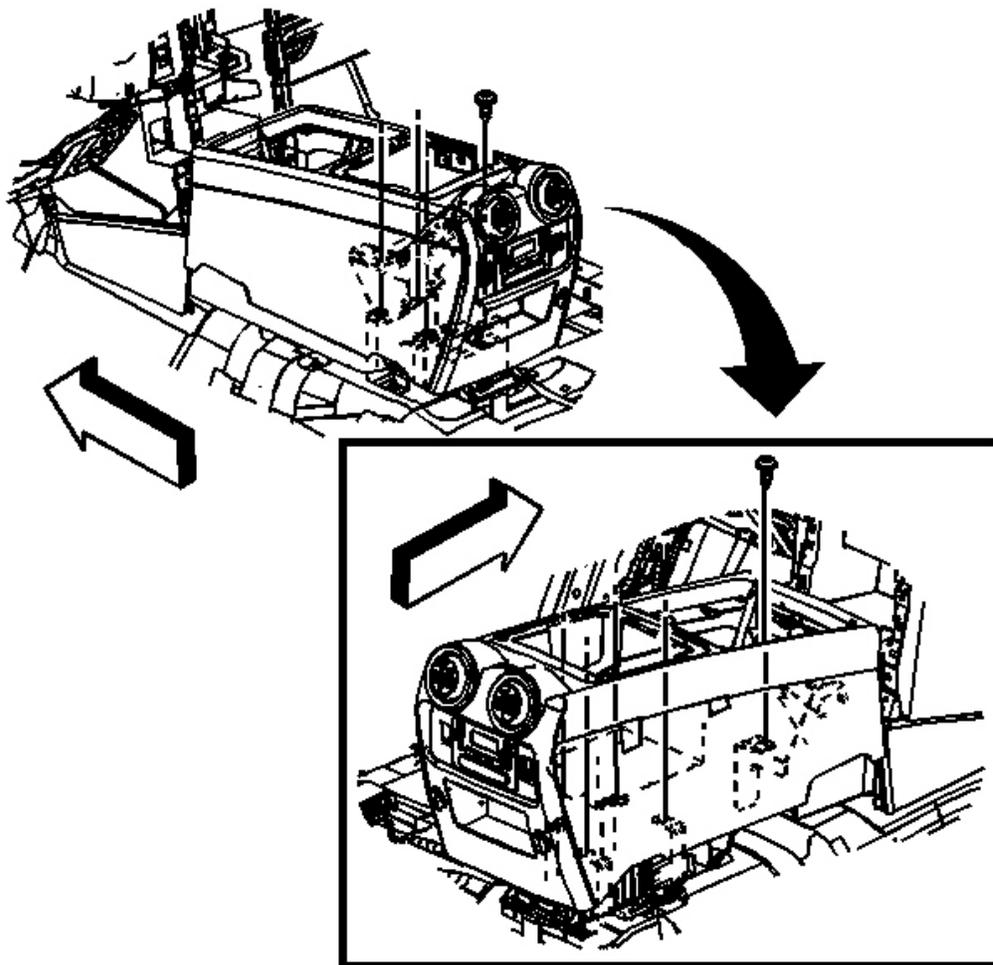
10	<p>adjustment. Refer to <b><u>Park/Neutral Position Switch Adjustment</u></b> in Automatic Transmission 4L60-E.</p> <p>2. Inspect for poor connections at the harness connector of the park/neutral position switch. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to <b>Step 20</b>	Go to <b>Step 17</b>
11	<p>Inspect for poor connections at the harness connector of the automatic transmission shift lock control switch. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to <b>Step 20</b>	Go to <b>Step 18</b>
12	<p>Inspect for poor connections at the harness connector automatic transmission shift lock control solenoid. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to <b>Step 20</b>	Go to <b>Step 19</b>
13	<p>Repair the open or short in the ignition 1 voltage circuit of the park/neutral position switch. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</p> <p>Did you complete the repair?</p>	Go to <b>Step 20</b>	-
14	<p>Repair the open or short in the A/T shift lock switch supply voltage circuit. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</p> <p>Did you complete the repair?</p>	Go to <b>Step 20</b>	-
15	<p>Repair the open in the A/T shift lock control solenoid supply voltage circuit. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</p> <p>Did you complete the repair?</p>	Go to <b>Step 20</b>	-
16	<p>Repair the open or short in the park/neutral position switch park signal circuit. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</p> <p>Did you complete the repair?</p>	Go to <b>Step 20</b>	-
17	<p>Replace the park/neutral position switch. Refer to <b><u>Park/Neutral Position Switch Replacement</u></b> in Automatic Transmission 4L60-E.</p> <p>Did you complete the replacement?</p>	Go to <b>Step 20</b>	-
18	<p>Replace the automatic transmission shift lock control switch. Refer to <b><u>Stop Lamp Switch Replacement</u></b> in Lighting Systems.</p> <p>Did you complete the replacement?</p>	Go to <b>Step 20</b>	-
19	<p>Replace the automatic transmission shift lock control solenoid. Refer to <b><u>Automatic Transmission Shift Lock Actuator Replacement</u></b> .</p>	Go to	

	Did you complete the replacement?	<b>Step 20</b>	-
20	Operate the system in order to verify the repair. Did you find and correct the condition?	System OK	Go to <b>Step 2</b>

## REPAIR INSTRUCTIONS

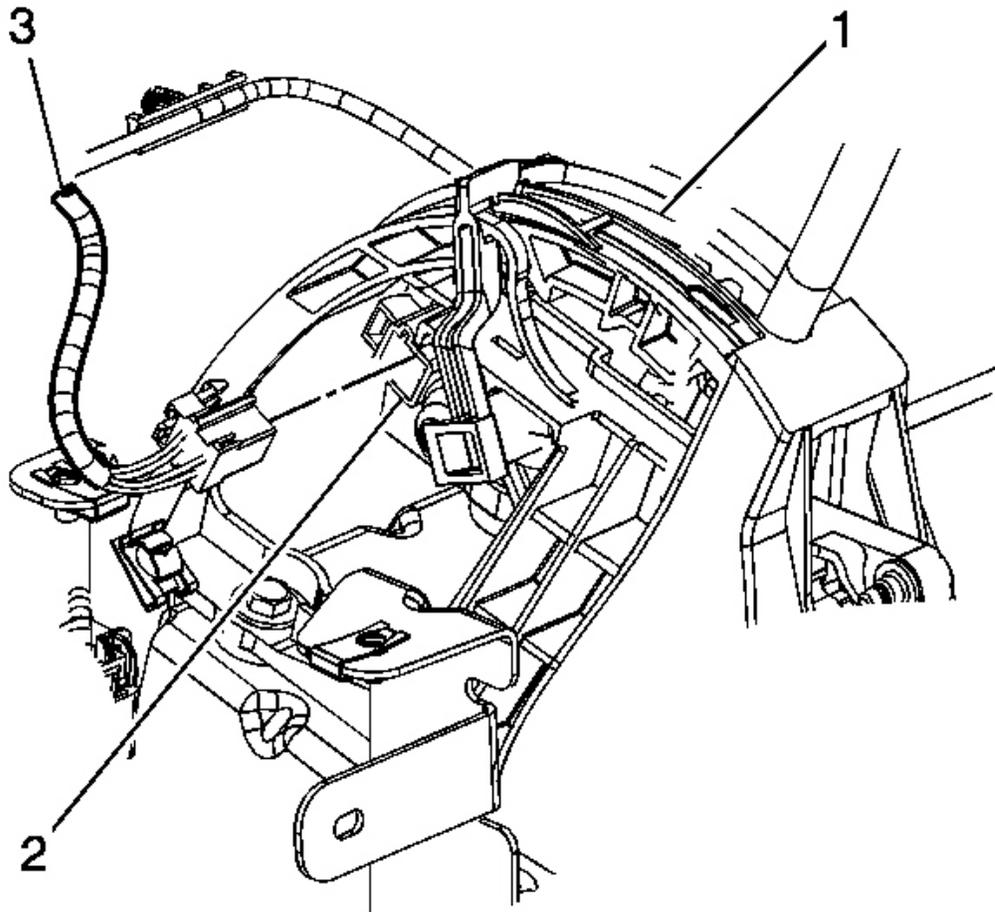
### AUTOMATIC TRANSMISSION SHIFT LOCK ACTUATOR REPLACEMENT

#### Removal Procedure



**Fig. 4: Removing & Installing Console**  
 Courtesy of GENERAL MOTORS CORP.

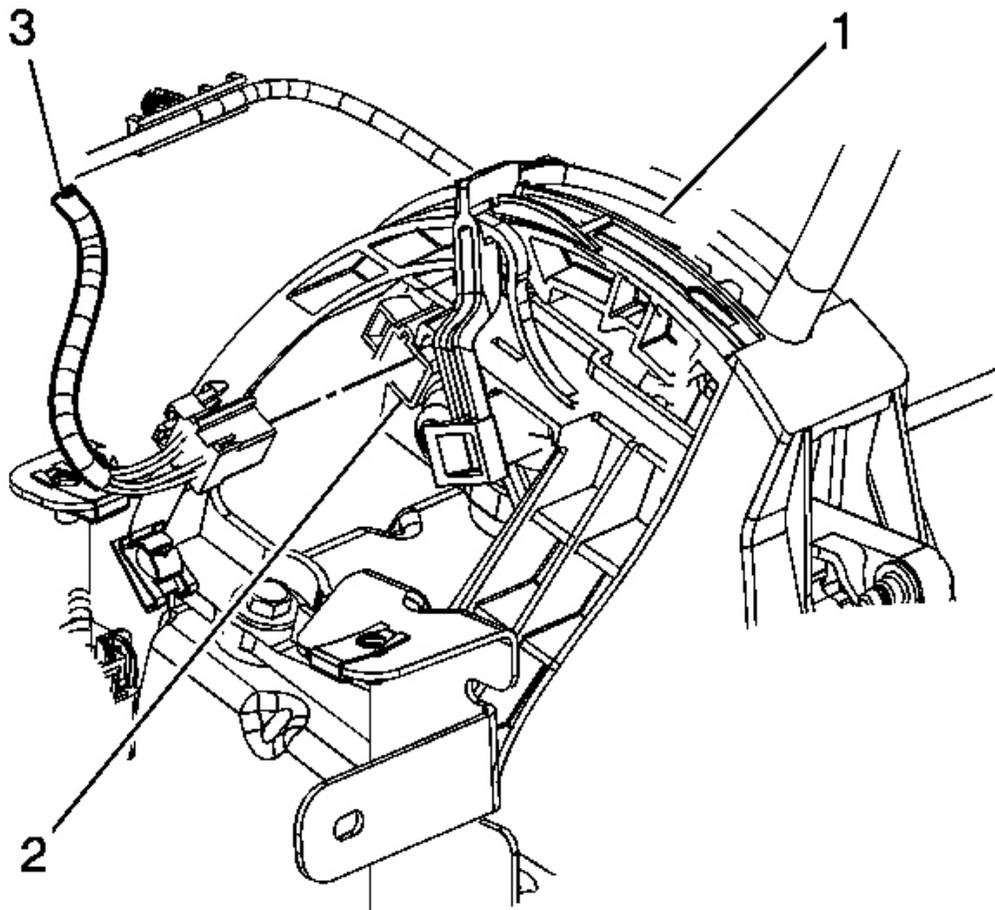
1. Remove the console. Refer to **Console Replacement** in Instrument Panel, Gauges and Console.



**Fig. 5: Shift Lock Actuator & Electrical Connector**  
Courtesy of GENERAL MOTORS CORP.

2. Disconnect the Shift Lock Actuator electrical connector (3).
3. Remove the Shift Lock Actuator fasteners and remove Actuator (2).

#### **Installation Procedure**



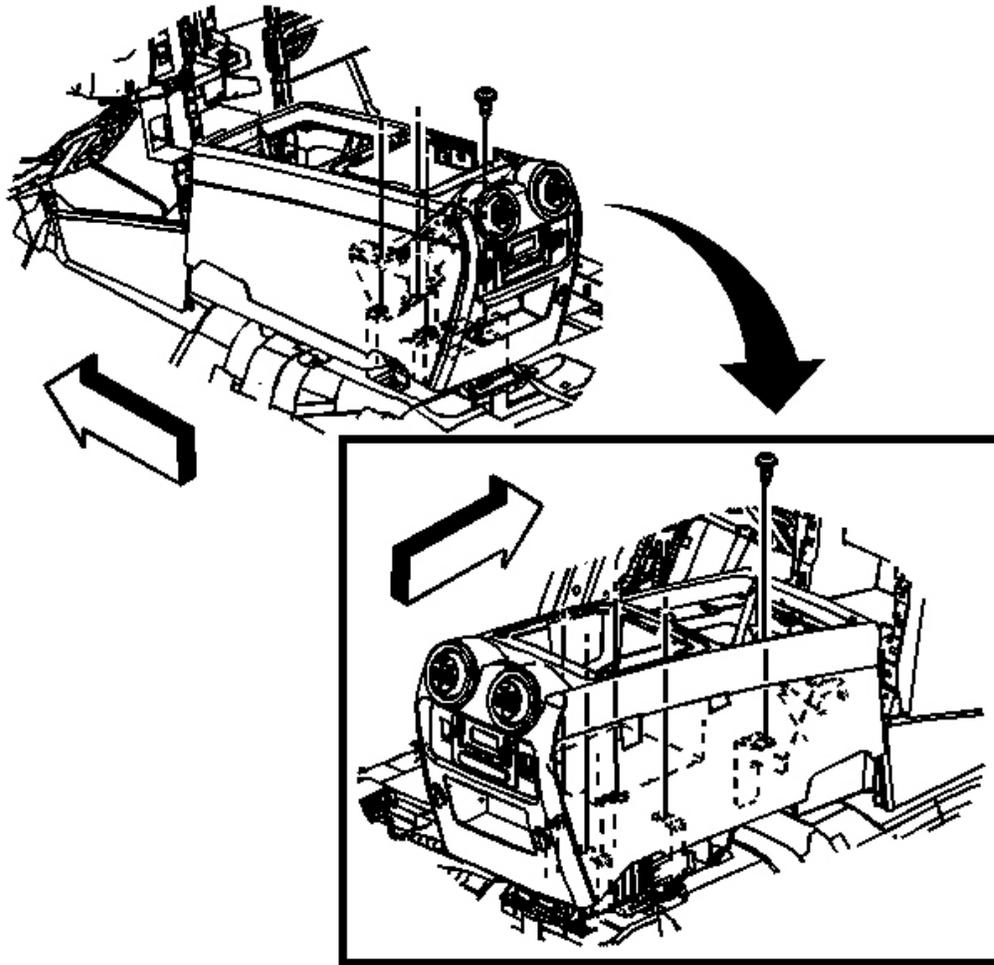
**Fig. 6: Shift Lock Actuator & Electrical Connector**  
Courtesy of GENERAL MOTORS CORP.

**NOTE:** Refer to Fastener Notice in **Cautions and Notices**

1. Install the Shift Lock Actuator onto the shift selector and install fasteners (2).

**Tighten:** Tighten the shift lock actuator fasteners to 2 N.m (18 lb in).

2. Connect the electrical connector (3).



**Fig. 7: Removing & Installing Console**  
Courtesy of GENERAL MOTORS CORP.

3. Install the console. Refer to **Console Replacement** in Instrument Panel, Gauges and Console.

## **DESCRIPTION AND OPERATION**

### **AUTOMATIC TRANSMISSION SHIFT LOCK CONTROL DESCRIPTION AND OPERATION**

#### **Automatic Transmission Shift Lock Control System**

The automatic transmission shift lock control is a safety device that prevents an inadvertent shift out of PARK when the ignition is ON. The driver must press the brake pedal before moving the shift lever out of the PARK

position. The system consists of the following components:

- The automatic transmission shift lock control solenoid.
- The automatic transmission shift lock control switch.
- The park/neutral position switch.

With the ignition in the ON position, battery positive voltage is supplied to the park/neutral position switch. When the transmission is in the PARK position the contacts in the park/neutral position switch are closed. This allows current to flow through the switch to the automatic transmission shift lock control switch. The circuit continues through the normally-closed switch to the automatic transmission shift lock control solenoid. The automatic transmission shift lock control solenoid is permanently grounded. This energizes the automatic transmission shift lock control solenoid, locking the shift linkage in the PARK position. When the driver presses the brake pedal the contacts in the automatic transmission shift lock control switch open, causing the automatic transmission shift lock control solenoid to release. This allows the shift lever to move from the PARK position.

### **Park Lock Solenoid**

The park lock solenoid is a safety device that prevents an inadvertent shift out of PARK when the key is in the OFF position. The key must be in the RUN position to release the park lock solenoid. The system consists of the park lock solenoid. With the ignition in the ON position, voltage is supplied to the park lock solenoid. The park lock solenoid energizes through a permanent ground unlocking the shift lever. With the ignition in the OFF or ACCY position the park lock solenoid de-energizes and locks the shift lever in the park position.