

2004 TRANSMISSION

Shift Lock Control - Corvette

SCHEMATIC AND ROUTING DIAGRAMS

AUTOMATIC TRANSMISSION SHIFT LOCK CONTROL SCHEMATICS

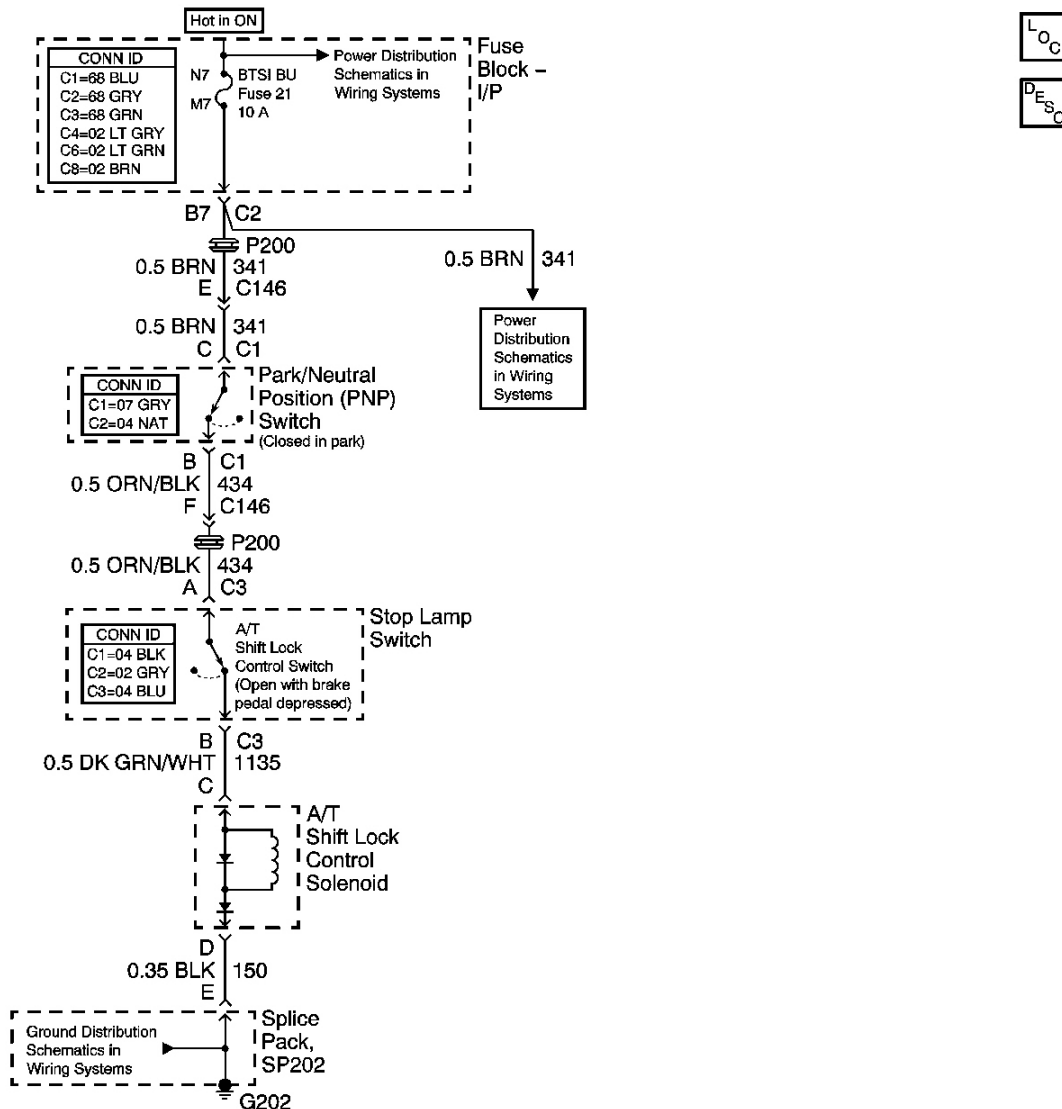


Fig. 1: Automatic Transmission Shift Lock Control Schematics
Courtesy of GENERAL MOTORS CORP.

COMPONENT LOCATOR

AUTOMATIC TRANSMISSION SHIFT LOCK CONTROL COMPONENT VIEWS

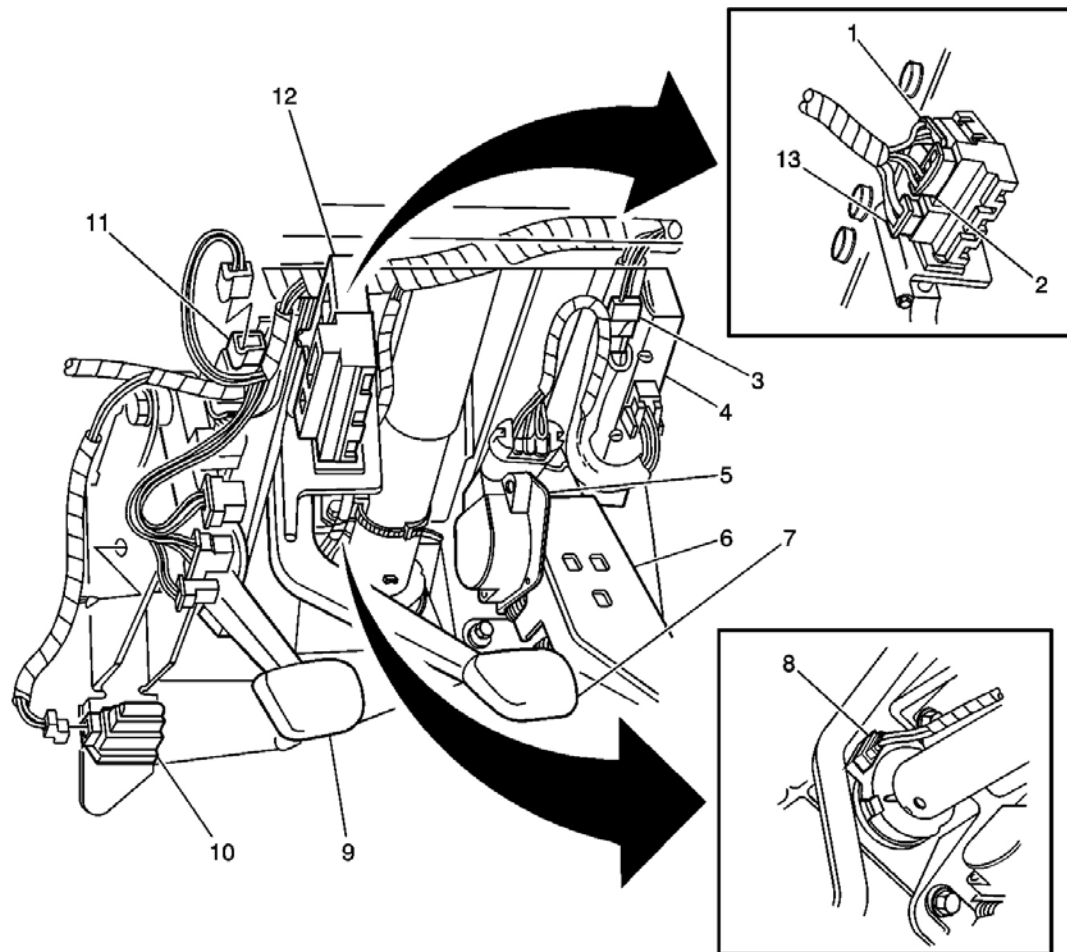


Fig. 2: Under Side Of The Dash Component View - Left
 Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 2

Callout	Component Name
1	Stop Lamp Switch C1
2	Stop Lamp Switch C3
3	C213
4	Bose Signal Processor
5	Accelerator Pedal Position (APP) Sensor
6	Accelerator Pedal
7	Brake Pedal
8	Steering Wheel Position Sensor

9	Clutch Pedal
10	Clutch Pedal Start Switch
11	Clutch Pedal Position Switch
12	Stop Lamp Switch
13	Stop Lamp Switch Connector C2

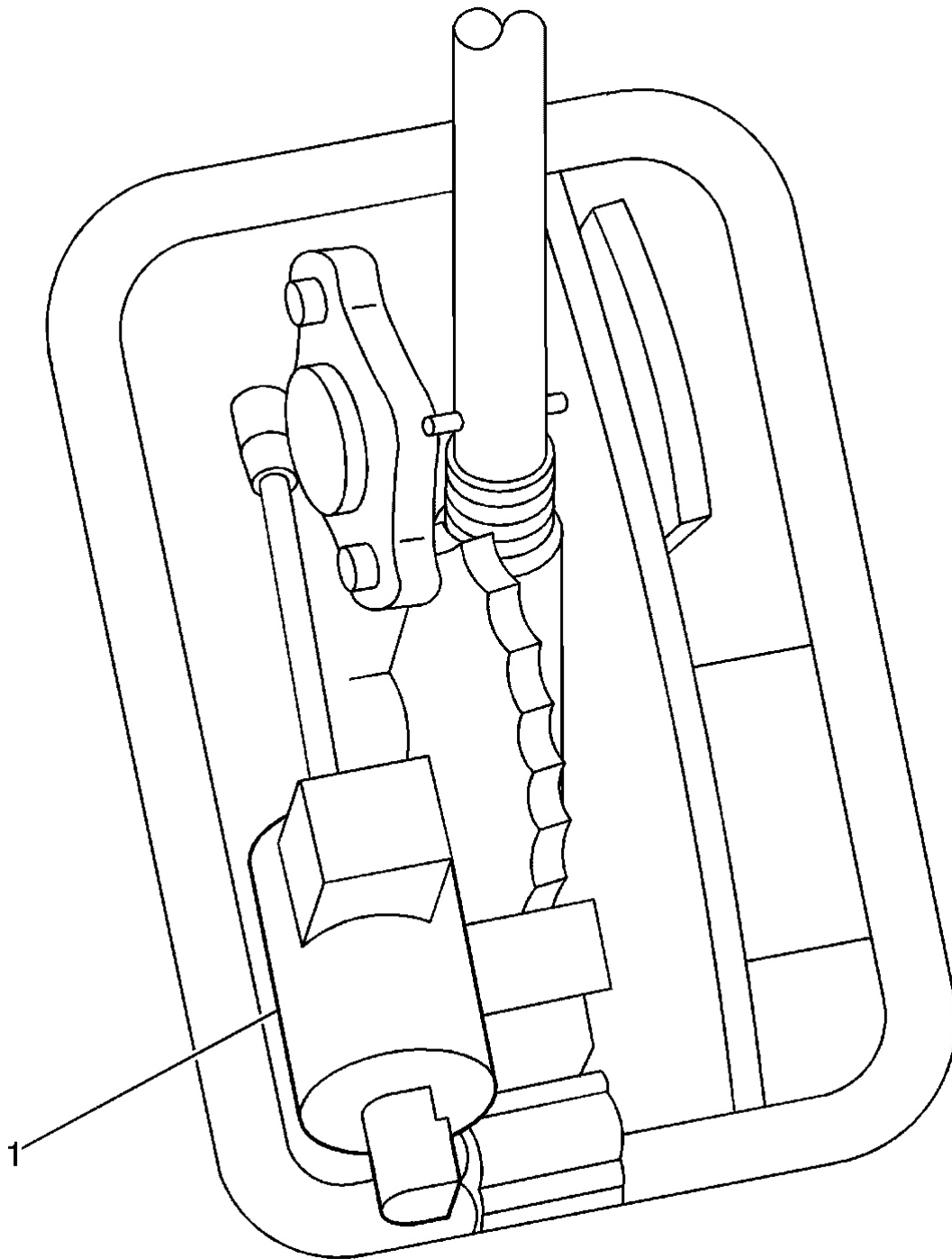


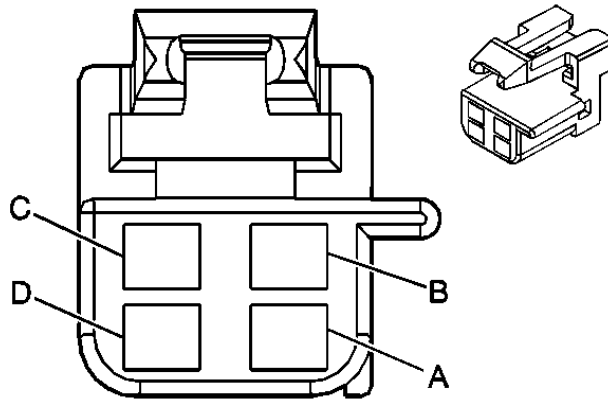
Fig. 3: A/T Shift Lock Control Solenoid Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 3

Callout	Component Name
1	A/T Shift Lock Control Solenoid

AUTOMATIC TRANSMISSION SHIFT LOCK CONTROL CONNECTOR END VIEWS

A/T Shift Lock Control Solenoid Terminal Identification



Connector Part Information		<ul style="list-style-type: none"> • 12052832 • 4-Way F Metri-Pack 150 Series (BLK) 	
Pin	Wire Color	Circuit No.	Function
A	ORN	240	Battery Positive Voltage
B	GRY	8	Instrument Panel Lamp Supply Voltage-1
C	DK GRN/WHT	1135	A/T Shift Lock Control Solenoid Supply Voltage
D	BLK	150	Ground

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**

SHIFT LEVER DOES NOT MOVE WITH BRAKE PEDAL DEPRESSED

Shift Lever Does Not Move with Brake Pedal Depressed

Step	Action	Yes	No
Schematic Reference: <u>Automatic Transmission Shift Lock Control Schematics</u> Connector End View Reference: <u>Automatic Transmission Shift Lock Control Connector End Views or Automatic Transmission Related Connector End Views</u> 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 Step 2	Go to <u>Symptoms - Automatic Transmission Shift Lock Control</u>
2	1. Turn ON the ignition, with the engine OFF. 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 <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems	Go to Step 3
	1. Turn OFF the ignition. 2. Disconnect the automatic transmission shift lock control switch.		

3	<ol style="list-style-type: none"> 3. Turn ON the ignition, with the engine OFF. 4. Press and hold the brake pedal. 5. Attempt to move the transmission shift lever out of the PARK position. <p>Does the transmission shift lever move out of the PARK position?</p>	Go to Step 5	Go to Step 4
4	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Disconnect the automatic transmission shift lock control solenoid. 3. Turn ON the ignition, with the engine OFF 4. Press and hold the brake pedal. 5. Attempt to move the transmission shift lever out of the PARK position. <p>Does the transmission shift lever move out of the PARK position?</p>	Go to Step 7	Go to Step 6
5	<ol style="list-style-type: none"> 1. Inspect for proper automatic transmission shift lock control switch adjustment. Refer to <u>Stop Lamp Switch Adjustment</u> in Lighting Systems. 2. Inspect for poor connections at the automatic transmission shift lock control switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems. <p>Did you find and correct the condition?</p>	Go to Step 10	Go to Step 8
6	<p>Inspect for poor connections at the automatic transmission shift lock control solenoid. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 10	Go to Step 9
7	<p>Repair the short to battery positive voltage in the automatic transmission shift control solenoid voltage supply circuit. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems.</p> <p>Did you complete the repair?</p>	Go to Step 10	-
8	<p>Replace the automatic transmission shift lock control switch. Refer to <u>Stop Lamp Switch Replacement</u> in Lighting Systems.</p> <p>Did you complete the repair?</p>	Go to Step 10	-

9	Replace the automatic transmission shift lock control solenoid. Refer to <u>Automatic Transmission Shift Lock Actuator Replacement</u> . Did you complete the replacement?	Go to Step 10	-
10	Operate the system in order to verify the repair. Did you find and correct the condition?	System OK	Go to Step 2

SHIFT LEVER CAN BE MOVED WITHOUT BRAKE PEDAL DEPRESSED

Shift Lever Can Be Moved without Brake Pedal Depressed

Step	Action	Yes	No
Schematic Reference: <u>Automatic Transmission Shift Lock Control Schematics</u> Connector End View Reference: <u>Automatic Transmission Shift Lock Control Connector End Views</u> or <u>Automatic Transmission Related Connector End Views</u> DEFINITION: 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 Step 2	Go to <u>Symptoms - Automatic Transmission Shift Lock Control</u>
2	<ol style="list-style-type: none"> 1. Apply the parking brake and block the wheels. 2. Turn ON the ignition, with the engine OFF. 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 3	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems
3	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Connect a test lamp between the Ignition 1 circuit at the park/neutral position switch and a good ground. 3. Turn ON the ignition, with the engine OFF. Does the test lamp illuminate?	Go to Step 4	Go to Step 12
4	<ol style="list-style-type: none"> 1. Ensure transmission shift lever is in the PARK position. 2. Connect a test lamp between the park/neutral position switch park signal circuit at the park/neutral position switch and a good ground. Does the test lamp illuminate?	Go to Step 5	Go to Step 9
5	Connect a test lamp between the park/neutral position switch park signal circuit at the automatic transmission shift lock control switch and a good ground. Does the test lamp illuminate?	Go to Step 6	Go to Step 13

6	<ol style="list-style-type: none"> 1. Connect a test lamp between the A/T shift lock control solenoid supply voltage circuit at the automatic transmission shift lock control switch and a good ground. 2. Press and release the brake pedal several times. <p>Does the test lamp turn ON and OFF with the brake pedal?</p>	Go to Step 7	Go to Step 10
7	<ol style="list-style-type: none"> 1. Connect a test lamp between the A/T shift lock control solenoid voltage supply circuit at the automatic transmission shift lock control solenoid and a good ground. 2. Press the brake pedal. <p>Does the test lamp illuminate?</p>	Go to Step 8	Go to Step 14
8	<p>Connect a test lamp between the ground circuit at the automatic transmission shift lock control solenoid and battery positive voltage.</p> <p>Does the test lamp illuminate?</p>	Go to Step 11	Go to Step 15
9	<p>Inspect for poor connections at the park/neutral position switch. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 19	Go to Step 16
10	<ol style="list-style-type: none"> 1. Inspect for proper automatic transmission shift lock control switch adjustment. Refer to Stop Lamp Switch Adjustment in Lighting Systems. 2. Inspect for poor connections at the automatic transmission shift lock control switch. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems. <p>Did you find and correct the condition?</p>	Go to Step 19	Go to Step 17
11	<p>Inspect for poor connections at the automatic transmission shift lock control solenoid. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 19	Go to Step 18
12	<p>Repair the open in the ignition 1 power feed circuit. Refer to Circuit Testing and Wiring Repairs in Wiring Systems.</p> <p>Did you complete the repair?</p>	Go to Step 19	-
13	<p>Repair the open in the park/neutral position switch park signal circuit. Refer to Circuit Testing and Wiring</p>		

	Repairs in Wiring Systems. Did you complete the repair?	Go to Step 19	-
14	Repair the open in the A/T shift lock control solenoid voltage supply circuit. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you complete the repair?	Go to Step 19	-
15	Repair the open in the automatic transmission shift lock control solenoid ground circuit. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you complete the repair?	Go to Step 19	-
16	Replace the park/neutral position switch. Refer to Park/Neutral Position Switch Replacement in Automatic Transmission-4L60-E/4L65-E. Did you complete the replacement?	Go to Step 19	-
17	Replace the automatic transmission shift lock control switch. Refer to Stop Lamp Switch Replacement in Lighting Systems. Did you complete the replacement?	Go to Step 19	-
18	Replace the automatic transmission shift lock control solenoid. Refer to Automatic Transmission Shift Lock Actuator Replacement . Did you complete the replacement?	Go to Step 19	-
19	Operate the system in order to verify the repair. Did you find and correct the condition?	System OK	Go to Step 2

REPAIR INSTRUCTIONS

AUTOMATIC TRANSMISSION SHIFT LOCK ACTUATOR REPLACEMENT

Removal Procedure

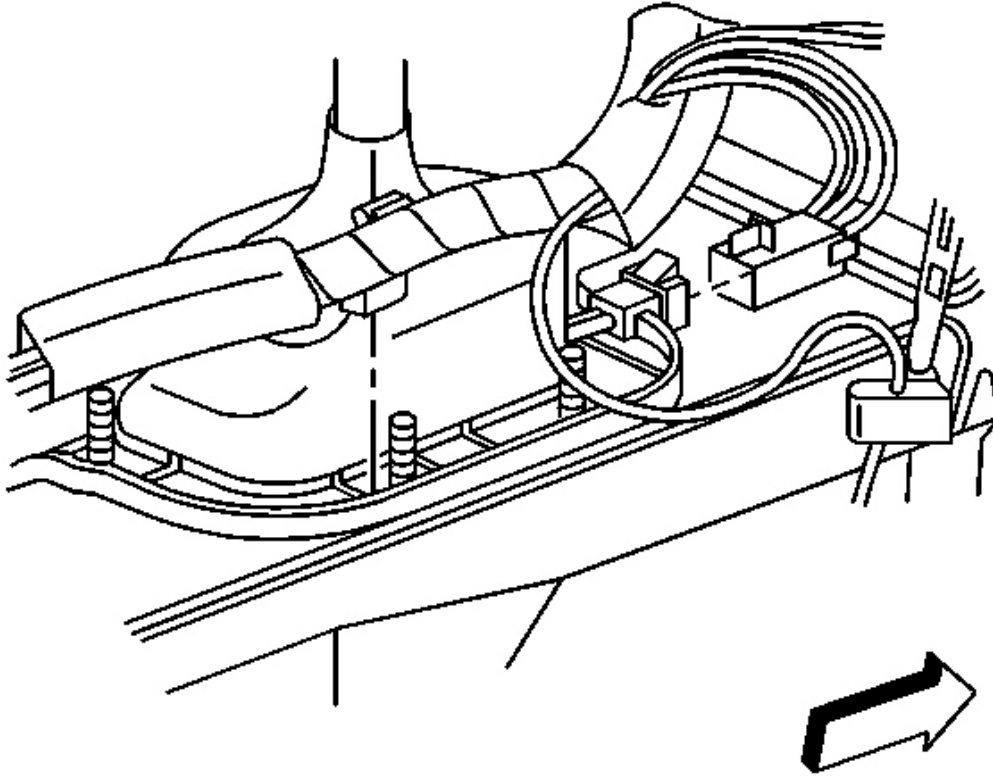


Fig. 4: I/P Wiring Harness Clip & Floor Shift Control
Courtesy of GENERAL MOTORS CORP.

1. Remove the console. Refer to **Console Replacement** in Instrument Panel, Gages and Console.
2. Remove the I/P accessory trim plate. Refer to **Trim Plate Replacement - Instrument Panel (I/P) Accessory** in Instrument Panel, Gages and Console.
3. Disconnect the floor shift control electrical connector.
4. Disconnect the I/P wiring harness clip from the floor shift control and reposition the harness.
5. Remove the shift control boot. Refer to **Floor Shift Control Boot Replacement** .

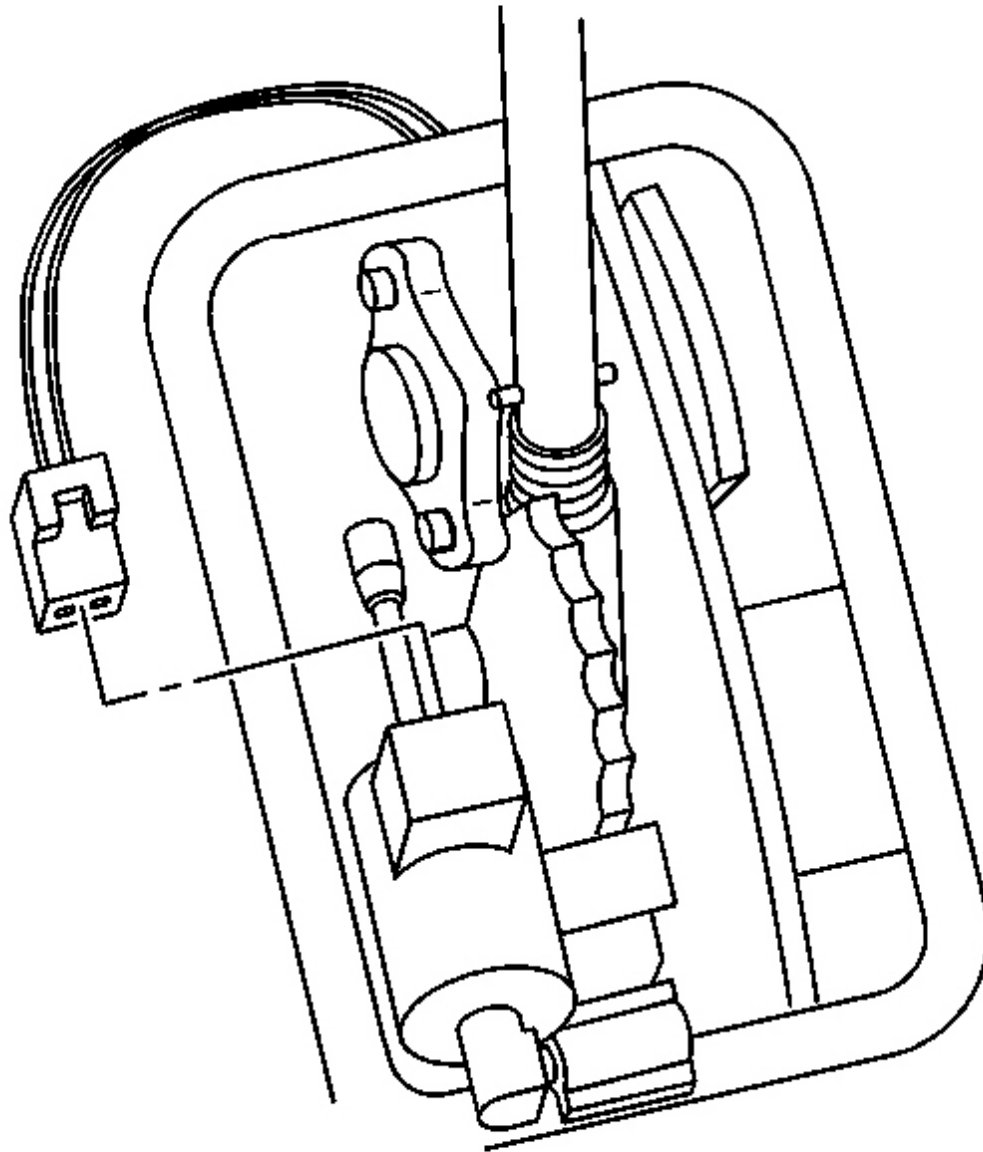


Fig. 5: Automatic Transmission Shift Lock Control Actuator Electrical Connector
Courtesy of GENERAL MOTORS CORP.

6. Disconnect the automatic transmission shift lock control actuator electrical connector.

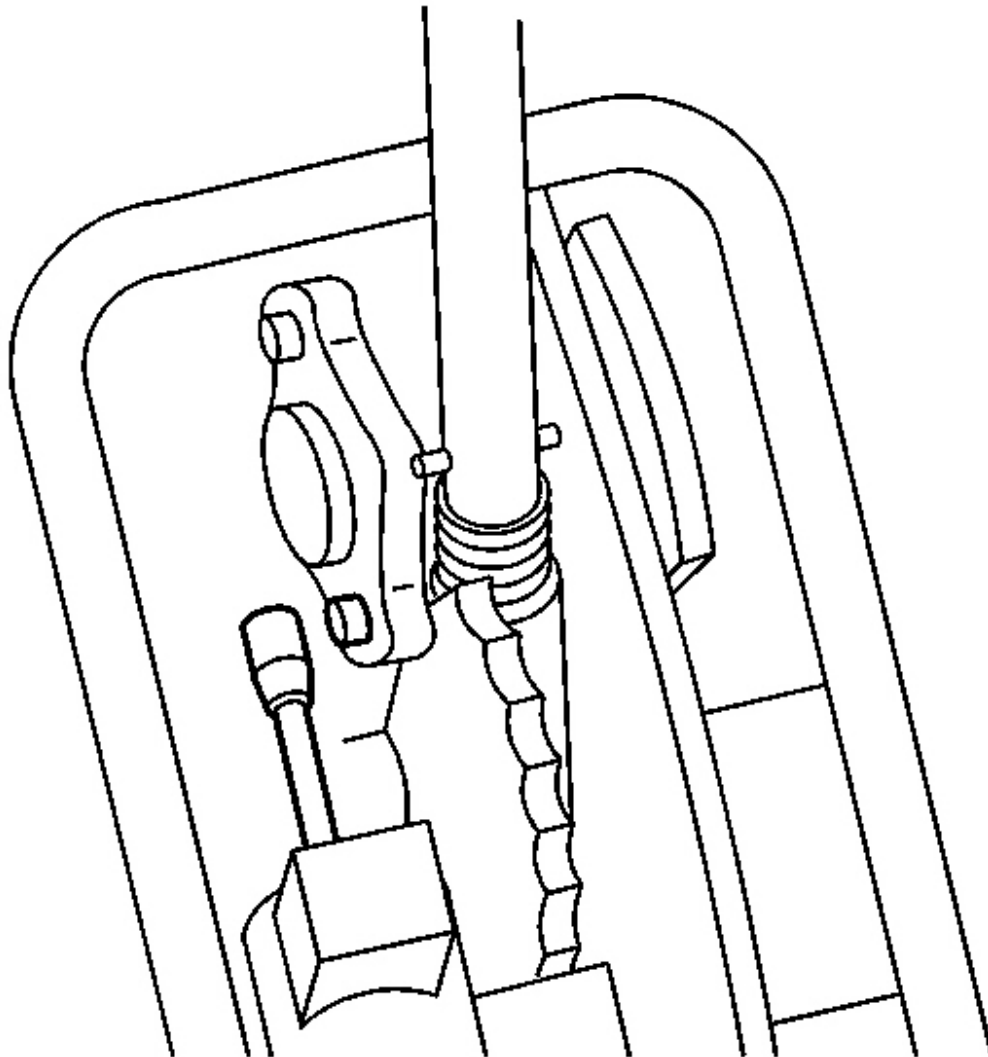


Fig. 6: Automatic Transmission Shift Lock Actuator Lower Clip
Courtesy of GENERAL MOTORS CORP.

7. Using a flat-bladed screwdriver, carefully unsnap the automatic transmission shift lock actuator lower clip attachment from the shift control pivot arm stud.

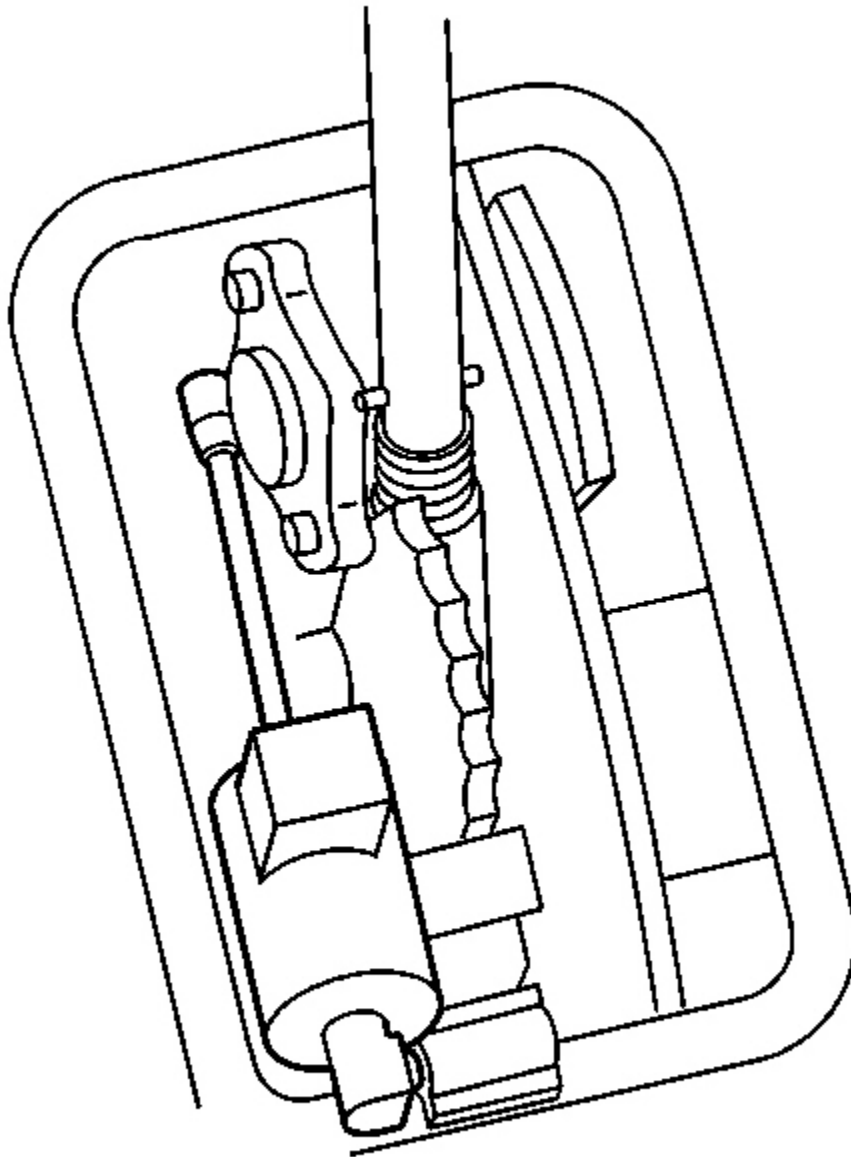


Fig. 7: Solenoid Plunger & Shift Control Pivot Arm Stud
Courtesy of GENERAL MOTORS CORP.

8. Allow the solenoid plunger to extend while positioning the plunger (with lower attachment) above the shift control pivot arm stud.
9. Carefully unsnap the remaining automatic transmission shift lock actuator clip attachment.

Rotate the solenoid body clockwise slightly while unsnapping the clip from the bottom with a flat-bladed screwdriver.

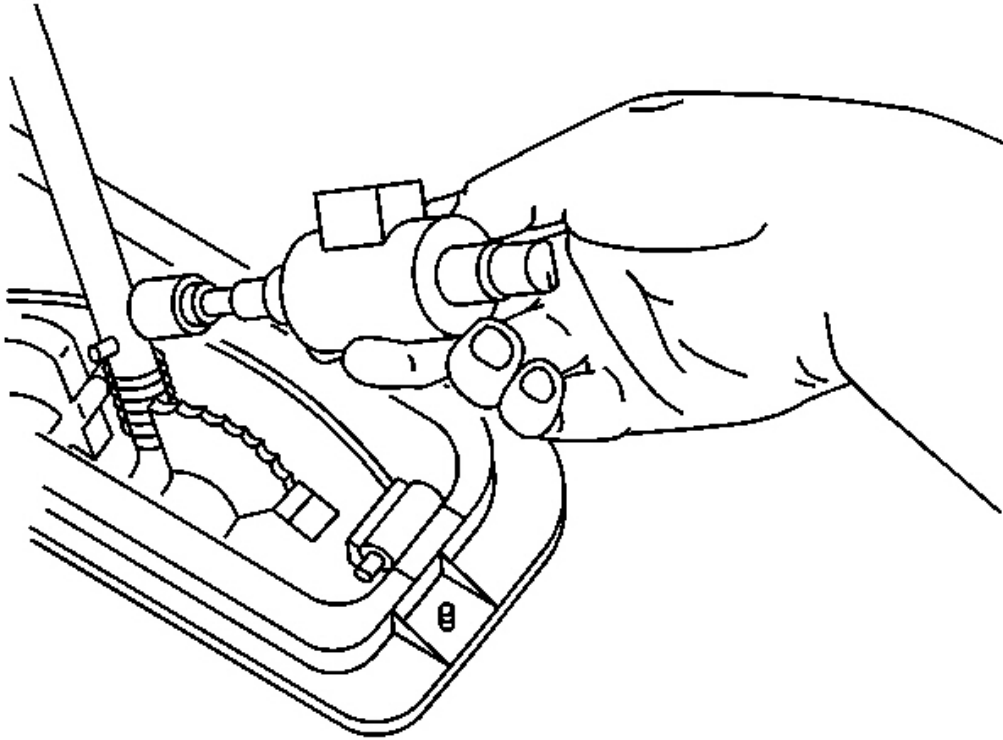


Fig. 8: Automatic Transmission Shift Lock Actuator & Floor Shift Control
Courtesy of GENERAL MOTORS CORP.

10. Remove the automatic transmission shift lock actuator from the floor shift control.

Installation Procedure

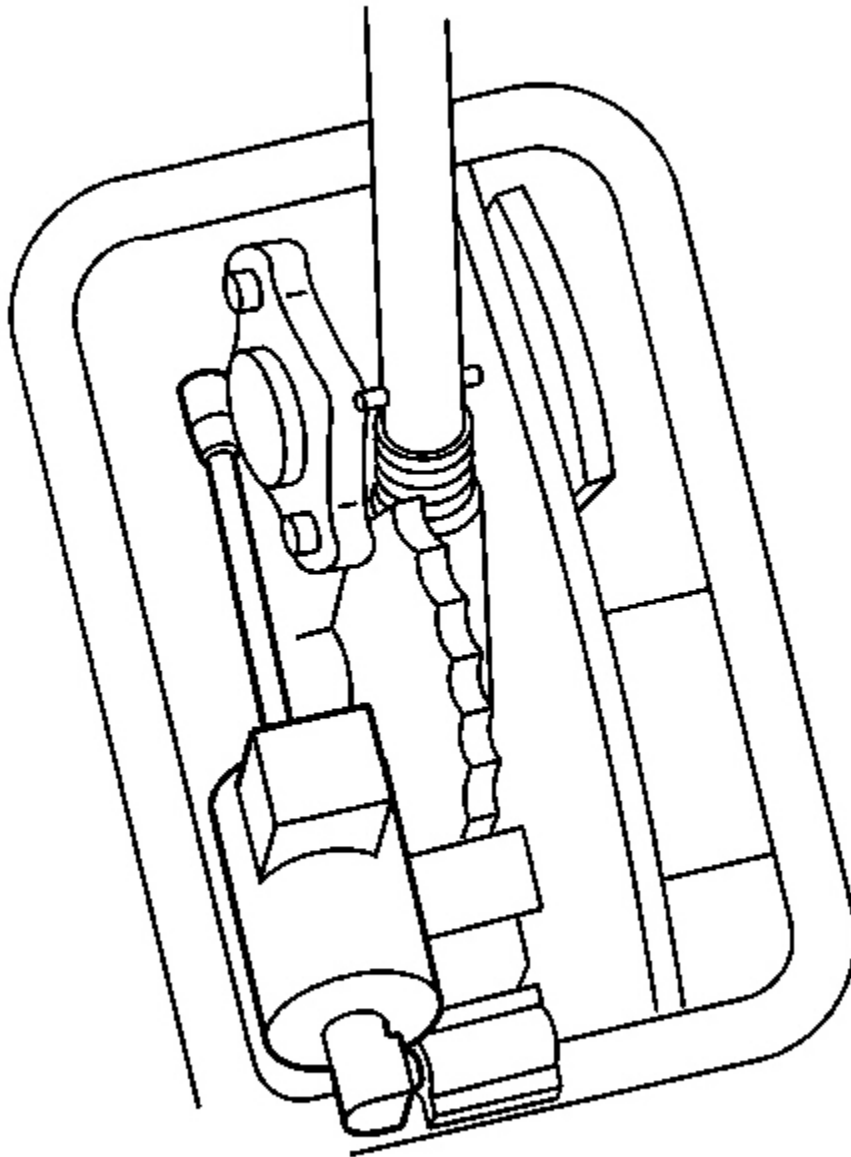


Fig. 9: Solenoid Plunger & Shift Control Pivot Arm Stud
Courtesy of GENERAL MOTORS CORP.

1. Insert the automatic transmission shift lock actuator lower clip attachment just above the installed position on the shift control pivot arm.
2. Twist and press the automatic transmission shift lock actuator upper clip attachment onto the pivot point.

Begin to install the top of the upper clip attachment, then pivot the attachment downward while pressing to secure.

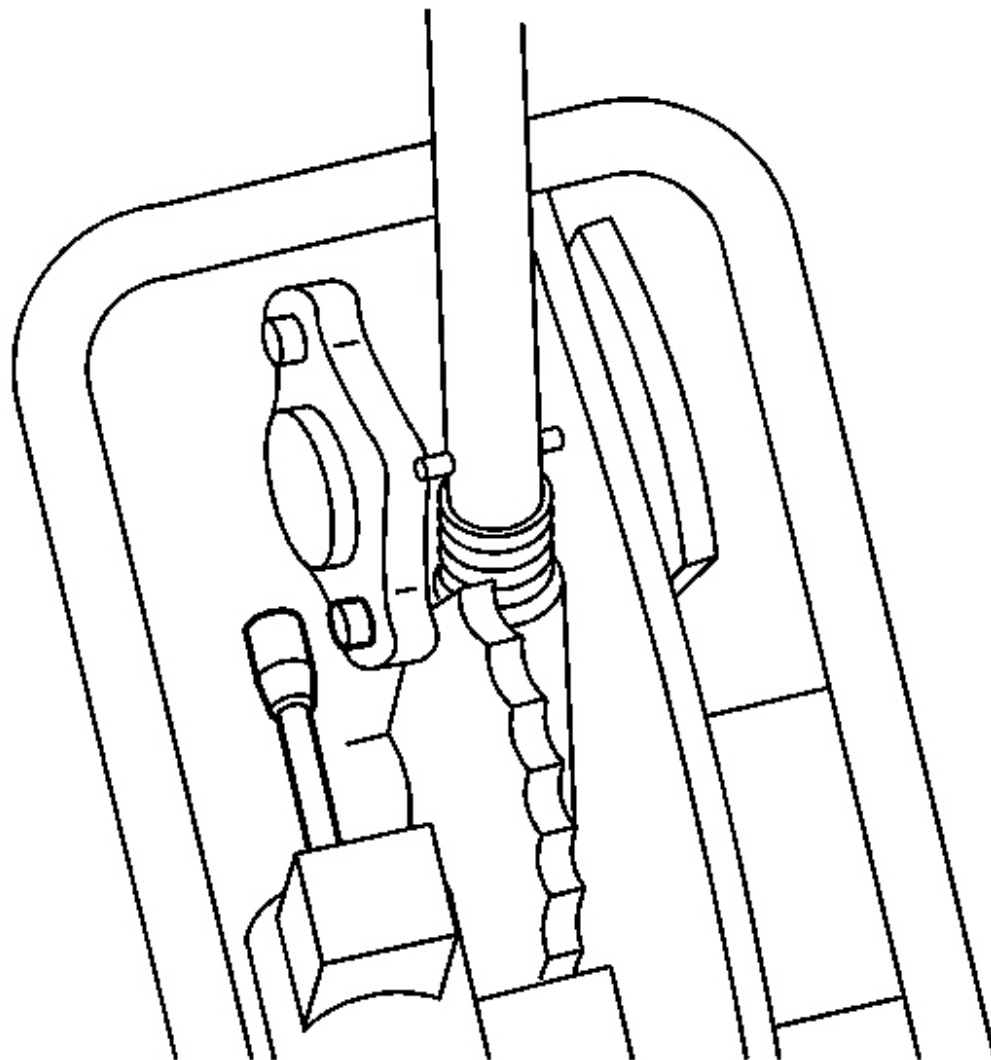


Fig. 10: Automatic Transmission Shift Lock Actuator Lower Clip
Courtesy of GENERAL MOTORS CORP.

3. Position the automatic transmission shift lock actuator lower clip attachment onto the shift control pivot arm stud and push to secure.

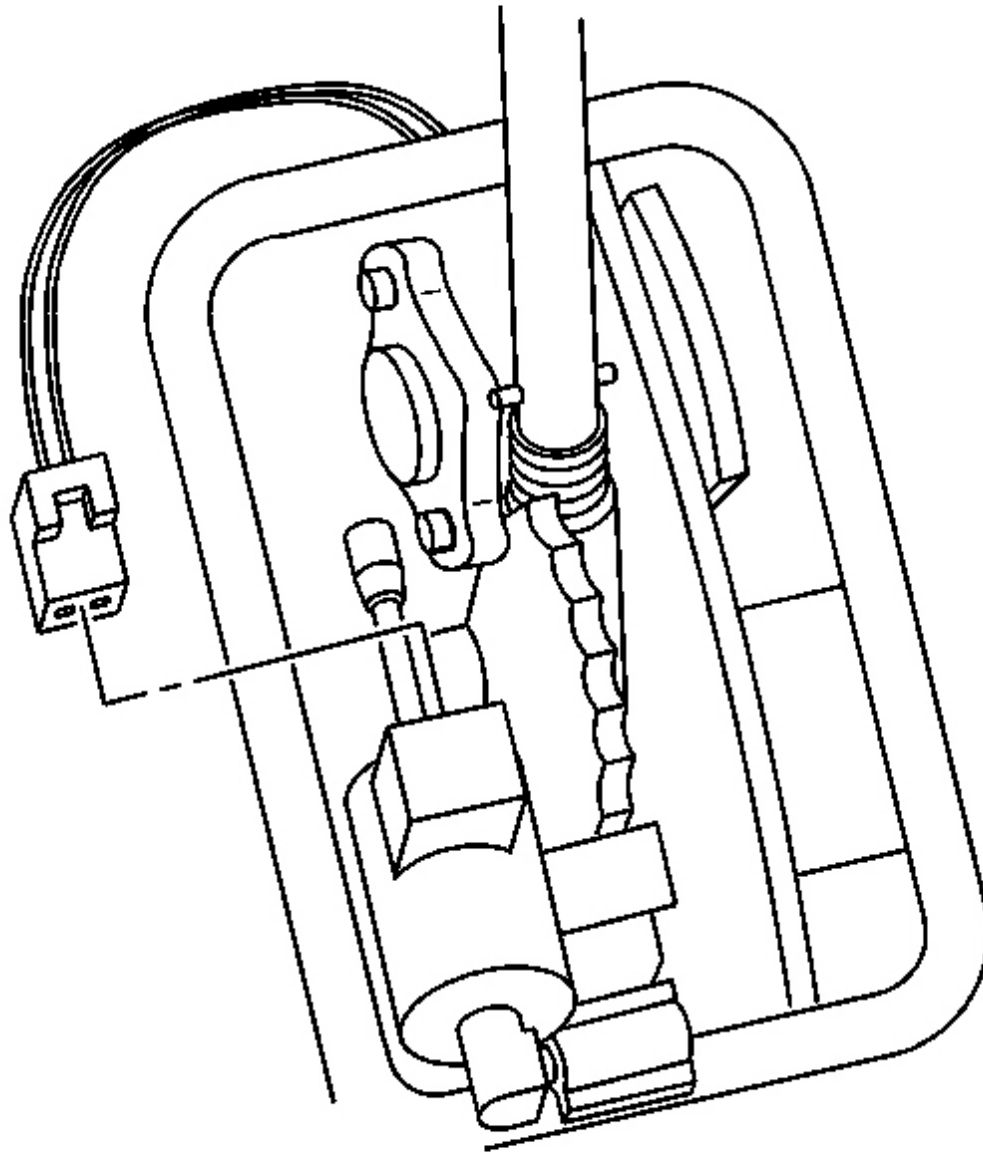


Fig. 11: Automatic Transmission Shift Lock Control Actuator Electrical Connector
Courtesy of GENERAL MOTORS CORP.

4. Connect the automatic transmission shift lock actuator electrical connector.

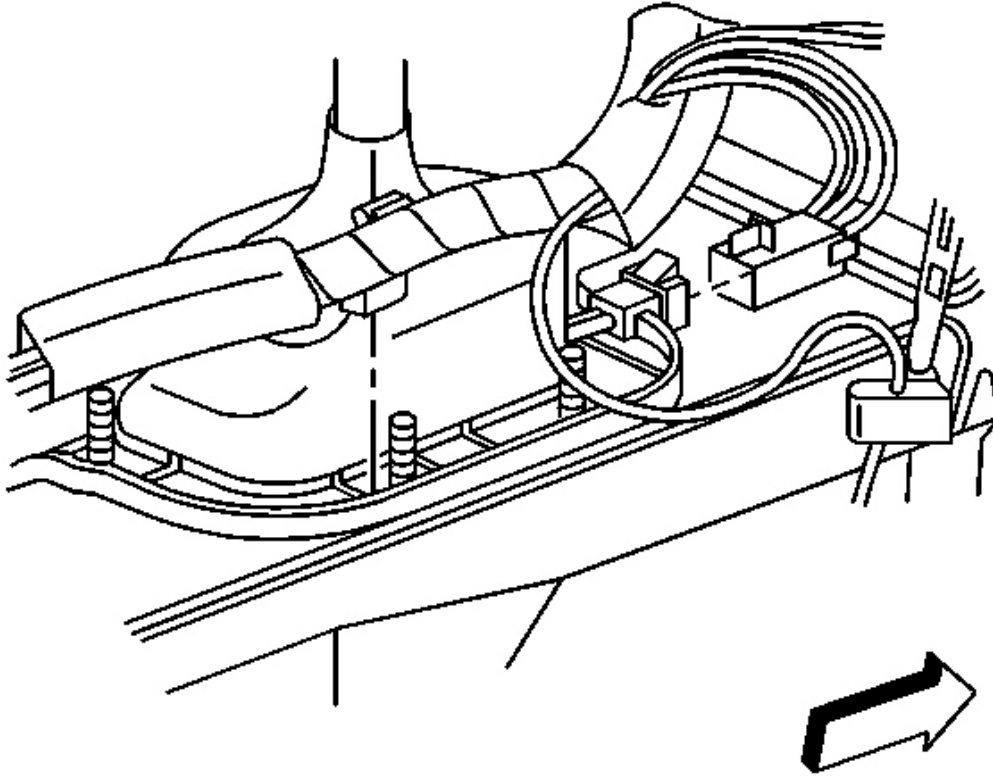


Fig. 12: I/P Wiring Harness Clip & Floor Shift Control
Courtesy of GENERAL MOTORS CORP.

5. Install the shift control boot. Refer to **Floor Shift Control Boot Replacement** .
6. Connect the I/P wiring harness clip to the shift control.
7. Connect the floor shift control electrical connector.
8. Install the I/P accessory trim plate. Refer to **Trim Plate Replacement - Instrument Panel (I/P) Accessory** in Instrument Panel, Gages and Console.
9. Install the console. Refer to **Console Replacement** in Instrument Panel, Gages and Console.

DESCRIPTION AND OPERATION

AUTOMATIC TRANSMISSION SHIFT LOCK CONTROL DESCRIPTION AND OPERATION

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, mechanically locking the shift lever in the PARK position. When the driver presses the brake pedal the contacts in the automatic transmission shift lock control switch open, de-energizing the automatic transmission shift lock control solenoid. This allows the shift lever to move from the PARK position.