

### 4. Shift Spindle Angle Sensor System Inspection

Remove the shift spindle angle sensor with the connector connected (page 11-58).

Turn the ignition switch ON (I).

While turning the shift spindle angle sensor shaft, check the shift spindle angle sensor voltage with the MCS.

**When turning clockwise:**

**Voltage increase**

**When turning counterclockwise:**

**Voltage decrease**

***Does the voltage vary properly?***

**YES** – GO TO STEP 5.

**NO** – Faulty shift spindle angle sensor

### 5. Shift Spindle Angle Sensor Installation Condition Inspection

Check that the shift spindle angle sensor is installed properly (page 11-58).

***Is the shift spindle angle sensor installed properly?***

**YES** – GO TO STEP 6.

**NO** – Install the shift spindle angle sensor properly.

### 6. DTC Recheck

Recheck the DTC with the MCS.

***Is DTC 22-1 indicated?***

**YES** – Replace the PCM with a known good one (page 4-37) and recheck.

**NO** – Intermittent failure

## DTC 23-1 (SHIFT SPINDLE ANGLE SENSOR MALFUNCTION: While operating gearshift mechanism)

See DTC 22-1 (page 11-27).

## DTC 24-1 (SHIFT CONTROL MOTOR DRIVE CIRCUIT MALFUNCTION)

- Before starting the inspection, check for loose or poor contact of the shift control motor 2P (Black) and PCM 5P (Black) connectors, and recheck the DTC.

### 1. PCM Motor Power Input Line Open Circuit Inspection

Disconnect the PCM 5P (Black) connector (page 4-37).

Measure the voltage between the wire harness side 5P (Black) connector [1] and ground.

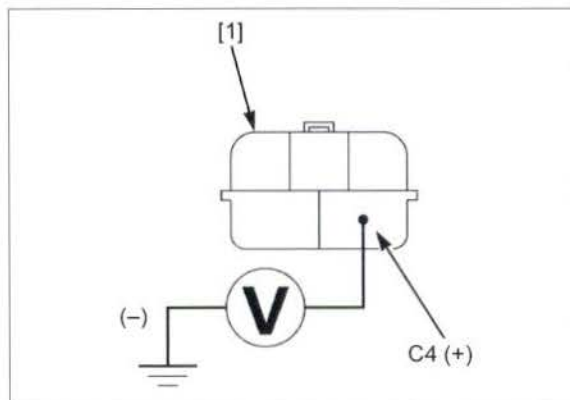
**Connection: C4 (+) – ground (–)**

***Is there battery voltage?***

**YES** – GO TO STEP 2.

**NO** –

- Brown CONT M fuse (30 A)
- Open circuit in the Red/white wire



## 2. PCM Motor Power Ground Line Open Circuit Inspection

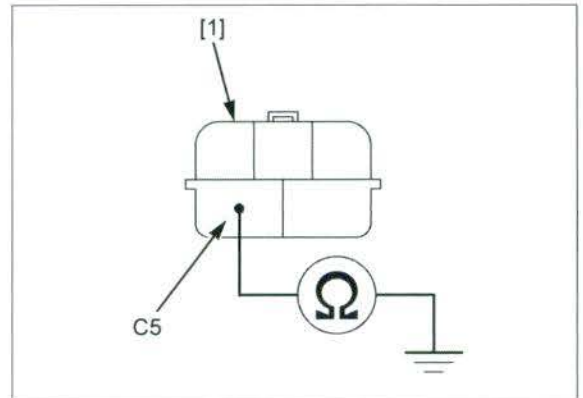
Check for continuity between the wire harness side 5P (Black) connector [1] and ground.

**Connection: C5 – ground**

*Is there continuity?*

**YES** – GO TO STEP 3.

**NO** – Open circuit in the Green wire



## 3. Shift Control Motor Line Open Circuit Inspection

Disconnect the shift control motor 2P (Black) connector (page 11-53).

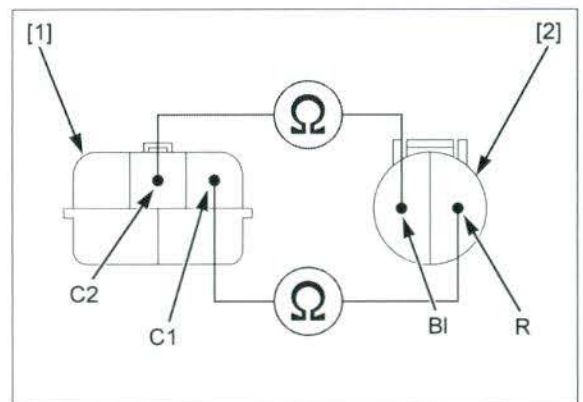
Check for continuity between the wire harness side 5P (Black) connector [1] and 2P (Black) connector [2] terminals.

**Connection: C1 – Red  
C2 – Black**

*Is there continuity?*

**YES** – GO TO STEP 4.

**NO** – • Open circuit in the Red wire  
• Open circuit in the Black wire



## 4. Shift Control Motor Line Short Circuit Inspection

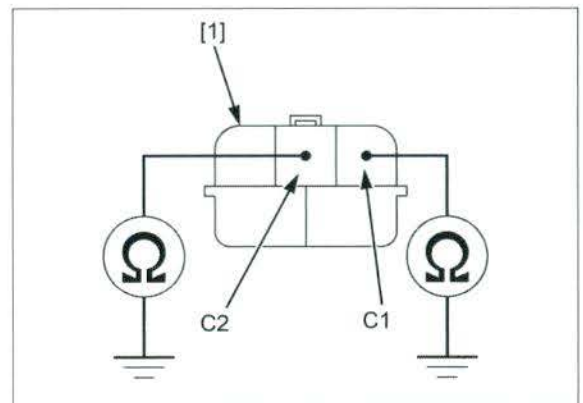
Check for continuity between the wire harness side 5P (Black) connector [1] terminals and ground.

**Connection: C1 – ground  
C2 – ground**

*Is there continuity?*

**YES** – • Short circuit in the Red wire  
• Short circuit in the Black wire

**NO** – GO TO STEP 5.



## 5. Shift Control Motor Inspection

Remove the shift control motor (page 11-53).

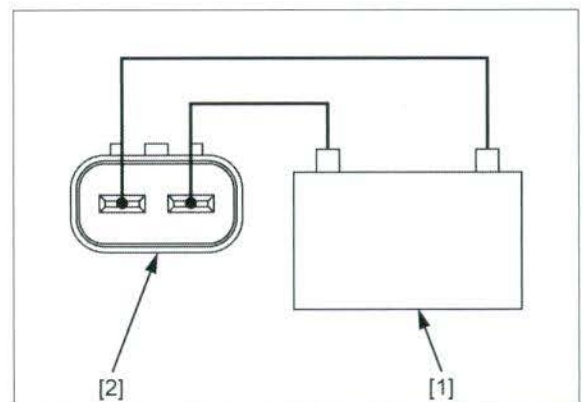
Connect a fully charged 12 V battery [1] to the motor side 2P connector [2] terminals to check the motor operation.

Change the battery connection to check the reverse operation.

*Does the shift control motor turn in both directions?*

**YES** – GO TO STEP 6.

**NO** – Faulty shift control motor



### 6. Recheck DTC

Connect the 5P (Black) connector and 2P (Black) connector.

Recheck the current DTC with the MCS.

**Is DTC 24-1 indicated?**

**YES** – Replace the PCM with a known good one (page 4-37) and recheck. If DTC 24-1 is indicated again, replace the control motor.

**NO** – Intermittent failure

## DTC 27-1 (SHIFT DRUM POSITION MALFUNCTION)

### 1. TR Sensor System Inspection

Check the TR sensor with the MCS.

**Is Low voltage (about 0 V) or High voltage (about 5 V) indicated?**

**YES** – • About 0 V: See DTC 51-1 (page 11-38).  
• About 5 V: See DTC 51-2 (page 11-40).

**NO** – GO TO STEP 2.

### 2. Shift Control Motor/Reduction gear condition

Check that the shift control motor and reduction gears are installed properly and are not damaged.

**Are the shift control motor and reduction gears in normal condition?**

**YES** – GO TO STEP 3.

**NO** – Install the shift control motor and reduction gears properly or replace faulty parts.

### 3. Shift Control Motor Condition Inspection

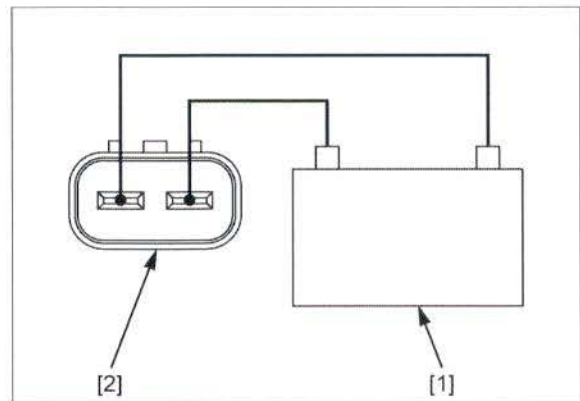
Remove the shift control motor (page 11-53).  
Connect a fully charged 12 V battery [1] to the motor 2P connector [2] terminals to check the motor operation.

Change the battery connection to check the reverse operation.

**Does the shift control motor turn in both directions?**

**YES** – GO TO STEP 4.

**NO** – Faulty shift control motor



### 4. TR Sensor System Inspection

Remove the TR sensor with the connector connected.

Turn the ignition switch ON (I).

While turning the TR sensor shaft, check the TR sensor voltage with the MCS.

**When turning the shaft clockwise:**

**Voltage increase**

**When turning the shaft counterclockwise:**

**Voltage decrease**

**Does the voltage vary properly?**

**YES** – GO TO STEP 5.

**NO** – Faulty TR sensor