

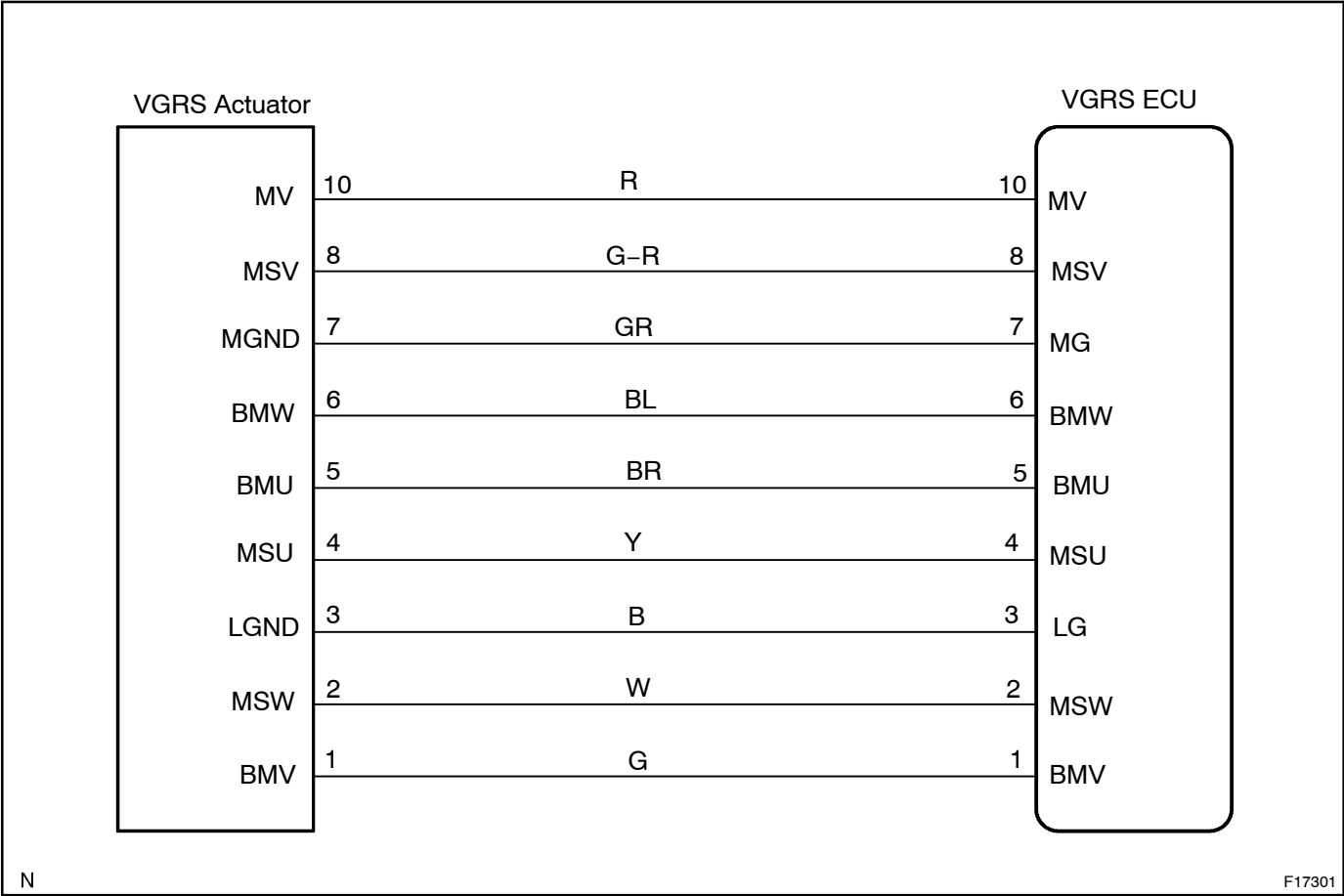
DTC	C1527/27, C 1528/28	VGRS Actuator Malfunction
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CIRCUIT DESCRIPTION

The VGRS ECU detects the actuator operation with the turning angle sensor. If a malfunction in the turning angle sensor is found, the VGRS ECU turns on the warning light and records the DTC.

DTC No.	DTC Detecting Condition	Trouble Area
C1527/27	The system detects that the difference between the actuator target angle and the actuator position is approx. 30 ° or more for 1 sec.	• VGRS actuator, • VGRSECU
C1528/28	The system detects a momentary interruption of the motor rotating angle sensor signal (MSU, MSV and MSW) 10 times or an open circuit for 0.12 sec. minimum.	

WIRING DIAGRAM



## INSPECTION PROCEDURE

**1** Check MV wire for open circuit.

### PREPARATION:

Turn the ignition switch ON.

### CHECK:

Check DTC (See page DI-348).

### OK:

DTCC 1561/61 is output

OK Go to DTCC 1561/61.

NG

**2** Observe the data for MTR REV ANG U, V, W on the hand –held tester.

### HINT:

Determine the trouble area by checking the motor revolution angle sensor signal with hand –held tester.  
When not using hand –held tester, go to step 3.

### PREPARATION:

- (a) Connect the hand –held tester to DLC3.
- (b) Start the engine.
- (c) Using the hand –held tester, display the data list.

### CHECK:

Check the motor revolution angle sensor signal when slowly turning the steering wheel referring to the data list.

### OK:

MTR REV ANG U: High or Low  
MTR REV ANG V: High or Low  
MTR REV ANG W: High or Low

All OK	A
All NG	B
Others	C

A

Replace VGRS ECU.

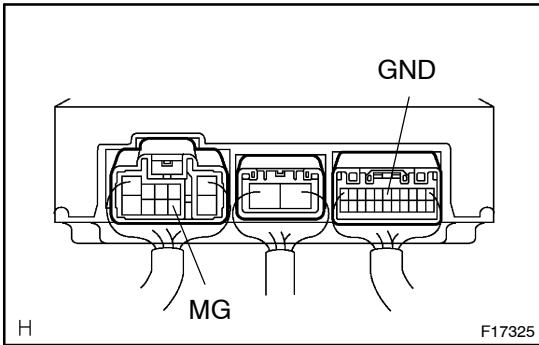
C

Go to step 4.

B

Proceed to step 3.

### 3 Check GND circuit of motor revolution angle sensor.



#### PREPARATION:

Turn the ignition switch OFF.

#### CHECK:

Check continuity between terminal MG and GND of the VGRS ECU.

#### OK:

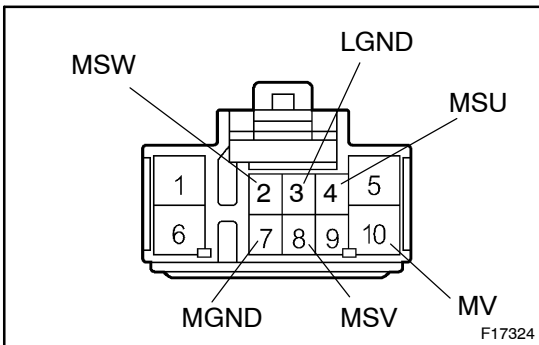
Continuity

NG

Replace VGRS ECU.

OK

### 4 Check motor revolution angle sensor signal.



#### PREPARATION:

Disconnect the VGRS actuator connector.

#### NOTICE:

Do not apply 12V to MV for more than 3 minutes.

#### CHECK:

- Connect a jumper wire from Batt (+) to MV, and another jumper wire from body ground to LGND.
- Measure the resistance between terminals while slowly turning the steering wheel. The steering wheel must be turned a maximum of  $\pm 10^\circ$  from center.

#### OK:

Symbols (Terminals)	Resistance
MSW (2) - MGND (7)	Below 1 k. $\Omega$ to above 100 k. $\Omega$
MSU (4) - MGND (7)	
MSV (8) - MGND (7)	

NG

Replace VGRS actuator.

OK

Replace the VGRS ECU.

LAND CRUISER (W/G) SUP (RM970E)