

# EPS Components

## DTC Troubleshooting Index

# 17- 68

DTC	Detection Item	Note
DTC: 12	A problem with voltage for torque sensor T/SIG	(see page <a href="#">17-74</a> )
DTC: 16	A problem with average of voltage for torque sensor VT3 and VT6	(see page <a href="#">17-76</a> )
DTC: 17	A problem with the voltage for torque sensor 12 V power source Vcc 1	(see page <a href="#">17-78</a> )
DTC: 18	A problem with the voltage for torque sensor 5 V power source Vcc 2	(see page <a href="#">17-78</a> )
DTC: 22	A problem with the average for vehicle speed and engine speed	(see page <a href="#">17-80</a> )
	Excessive change of the vehicle speed sensor signal	(see page <a href="#">17-80</a> )
DTC: 23	A problem with the engine speed signal circuit	(see page <a href="#">17-80</a> )
DTC: 37	A problem with the circuit for input motor voltage in the EPS control unit	(see page <a href="#">17-81</a> )
DTC: 41	A problem with the motor voltage	(see page <a href="#">17-82</a> )
DTC: 42	A problem with the motor driven current	(see page <a href="#">17-84</a> )
DTC: 43	A problem with the motor driven current	(see page <a href="#">17-87</a> )
DTC: 45	A problem with the motor driven current	(see page <a href="#">17-84</a> )
DTC: 47	A problem with the motor relay in the EPS control unit	(see page <a href="#">17-88</a> )
DTC: 50	A problem with the CPU in the EPS control unit	(see page <a href="#">17-89</a> )
DTC: 51	A problem with E2PROM in the EPS control unit	(see page <a href="#">17-89</a> )
DTC: 62	Fail-safe relay stuck ON	(see page <a href="#">17-90</a> )
DTC: 64	A problem with low battery voltage	(see page <a href="#">17-90</a> )
	Fail-safe relay contact failure	(see page <a href="#">17-90</a> )
DTC: 66	A problem with the motor driven voltage	(see page <a href="#">17-91</a> )
DTC: 67	A problem with the torque sensor I/F circuit	(see page <a href="#">17-91</a> )
DTC: 68	A problem with the interlock circuit	(see page <a href="#">17-91</a> )
DTC: 69	A problem with the interlock circuit	(see page <a href="#">17-92</a> )

## EPS Components

### DTC Troubleshooting (cont'd)

# 17-76

11. Substitute a known-good EPS control unit, and connect the all disconnected connectors.
12. Start the engine.
 

*Does the EPS indicator come on?*

YES - Go to step 13.

NO - Check for loose EPS control unit connectors. If necessary, replace the EPS control unit and retest. ■
13. Stop the engine, and verify the DTC.
 

*Is DTC12 indicated?*

YES - Check for loose torque sensor connectors. If necessary, substitute a known-good steering gearbox and recheck. ■

NO - Perform the appropriate troubleshooting for the code indicated. ■

### DTC 16: Torque Sensor VT3 and VT6

NOTE: Information marked with an asterisk (\*) applies to KU model.

1. Clear the DTC.
2. Start the engine.
3. Wait at least 10 seconds.
 

*Does the EPS indicator come on?*

YES - Go to step 4.

NO - The system is OK at this time. ■
4. Stop the engine, and verify the DTC.
 

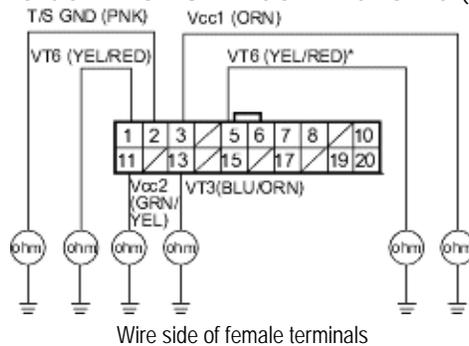
*Is DTC16 indicated?*

YES - Go to step 5.

NO - Perform the appropriate troubleshooting for the code indicated. ■
5. Make sure the ignition switch is OFF, then disconnect the EPS control unit connector C (20P) and the torque sensor 6P connector.
6. Check for continuity between the appropriate EPS control unit connector C (20P) terminal and body ground (see table).

Terminal name	EPS control unit connector C terminal No.
Vcc1	3
Vcc2	11
VT3	13
VT6	1 (5)*
T/S GND	2

### EPS CONTROL UNIT CONNECTOR C (20P)



### *Is there continuity?*

- YES - Repair short to body ground in the appropriate sensor circuit between the torque sensor and EPS control unit. ■
- NO - Go to step 7.

## EPS Components

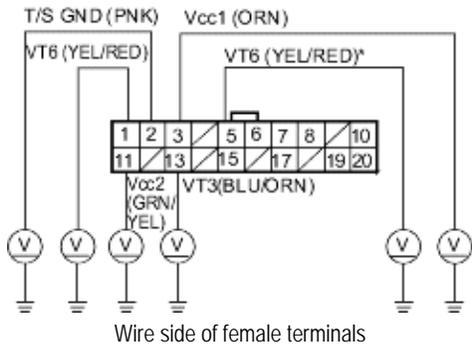
### DTC Troubleshooting (cont'd)

# 17- 77

7. Turn the ignition switch ON (II).
8. Measure the voltage between the appropriate EPS control unit connector C (20P) terminal and body ground (see table).

Terminal name	EPS control unit connector C terminal No.
Vcc1	3
Vcc2	11
VT3	13
VT6	1 (5)*
T/S GND	2

#### EPS CONTROL UNIT CONNECTOR C (20P)



#### Is there battery voltage?

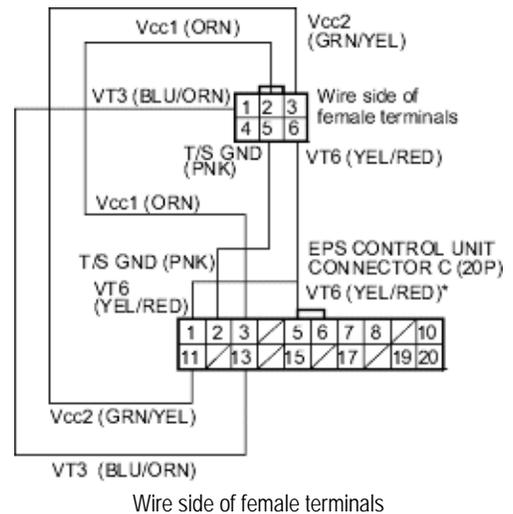
YES - Repair short to power in the + circuit wire between the EPS control unit and torque sensor. ■

NO - Go to step 9.

9. Turn the ignition switch OFF.
10. Check for continuity between the appropriate EPS control unit connector C (20P) terminal and the torque sensor terminal (see table).

Terminal name	Torque Sensor Terminal No.	EPS control unit connector C terminal No.
Vcc1	2	3
Vcc2	3	11
VT3	1	13
VT6	6	1 (5)*
T/S GND	5	2

#### TORQUE SENSOR 6P CONNECTOR



#### Is there continuity?

YES - Go to step 11.

NO - Repair open in the appropriate torque sensor wire circuit between the EPS control unit and the torque sensor. ■

## EPS Components

### DTC Troubleshooting (cont'd)

# 17- 78

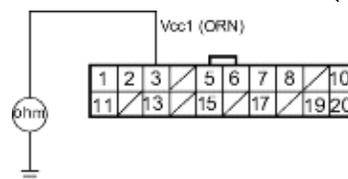
11. Substitute a know-good EPS control unit, and connect the all disconnected connectors.
12. Start the engine.
  - Does the EPS indicator come on?*
  - YES - Go to step 13.
  - NO - Check for loose EPS control unit connectors. If necessary, replace the EPS control unit and retest. ■
13. Stop the engine, and verify the DTC.
  - Is DTC16 indicated?*
  - YES - Check for loose torque sensor connectors. If necessary, substitute a know-good steering gearbox and recheck. ■
  - NO - Perform the appropriate troubleshooting for the code indicated ■

DTC 17: Torque Sensor Vcc1

DTC 18: Torque Sensor Vcc2

1. Clear the DTC.
2. Start the engine.
3. Wait at least 10 seconds.
  - Does the EPS indicator come on?*
  - YES - Go to step 4.
  - NO - The system is OK at this time. ■
4. Stop the engine, and verify the DTC.
  - Is DTC17 or DTC18 indicated?*
  - YES - Go to step 5.
  - NO - The system is OK at this time. ■
5. Make sure the ignition switch is OFF, then disconnect the EPS control unit connector C (20P) and torque sensor 6P connector.
6. Check for continuity between the EPS control unit connector C (20P) terminal No. 3 and body ground.

EPS CONTROL UNIT CONNECTOR C (20)



Wire side of female terminals

*Is there continuity?*

- YES - Repair short to body ground in the wire between the torque sensor and EPS control unit. ■
- NO - Go to step 7.

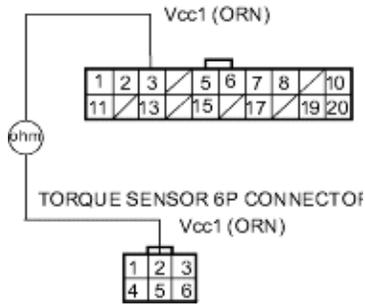
## EPS Components

### DTC Troubleshooting (cont'd)

# 17-79

7. Check for continuity between the EPS control unit connector C (20P) terminal No. 3 and the torque sensor 6P connector terminal No. 2.

#### EPS CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

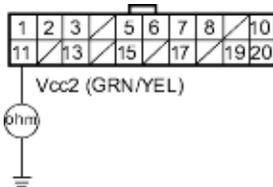
#### Is there continuity?

YES - Go to step 8.

NO - Repair open in the wire between the torque sensor and EPS control unit. ■

8. Check for continuity between the EPS control unit connector C (20P) terminal No. 11 and body ground.

#### EPS CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

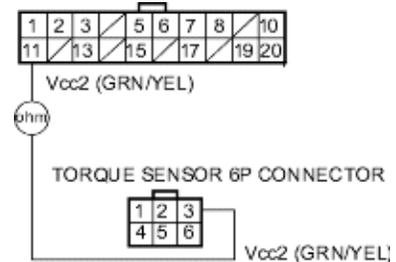
#### Is there continuity?

YES - Repair short to body ground in the wire between the torque sensor and EPS control unit. ■

NO - Go to step 9.

9. Check for continuity between the EPS control unit connector C (20P) terminal No. 11 and the torque sensor 6P connector terminal No. 3.

#### EPS CONTROL UNIT CONNECTOR C (20P)



Wire side of female terminals

#### Is there continuity?

YES - Go to step 10.

NO - Repair open in the wire between the torque sensor and EPS control unit. ■

10. Substitute a known-good EPS control unit, and connect the all disconnected connectors.

11. Start the engine.

#### Does the EPS indicator come on?

YES - Go to step 12.

NO - Check for loose EPS control unit connectors. If necessary, replace the EPS control unit and retest. ■

12. Stop the engine, and verify the DTC.

#### Is DTC17 or DTC18 indicated?

YES - Check for loose torque sensor connectors. If necessary, substitute a known-good steering gearbox and recheck. ■

NO - Perform the appropriate troubleshooting for the code indicated. ■