DTC	C1257/57	IG Power Source

DESCRIPTION

The motor relay (semiconductor relay) is built into the hydraulic brake booster and drives the pump motor based on a signal from the skid control ECU.

DTC No.	DTC Detecting Condition	Trouble Areas
C1257/57	Open in pump motor input circuit	• Brake booster pump assembly • Master cylinder solenoid (skid control ECU)

INSPECTION PROCEDURE

NOTICE:

When replacing the master cylinder solenoid, perform zero point calibration (See page BC-24).

1	CHECK HYDRAULIC BRAKE BOOSTER PUMP MOTOR OPERATION

(a) Turn the ignition switch off.
(b) Disconnect the skid control ECU connector (A4).
(c) Depress the brake pedal more than 20 times.
(d) Check the hydraulic brake booster pump motor operation.
OK:
Hydraulic brake booster pump operates.

NG → **REPLACE BRAKE BOOSTER PUMP ASSEMBLY**

OK ↓

2	RECONFIRM DTC

(a) Turn the ignition switch off.
(b) Reconnect the skid control ECU connector (A4).
(c) Turn the ignition switch on.
(d) Clear the DTC (See page BC-45).
(e) Check if the same DTC is recorded (See page BC-45).

Result

Result	Proceed to
DTC output	A
DTC not output	B

B → **END**

A ↓

REPLACE MASTER CYLINDER SOLENOID

DTC	C1258/58	Transfer 4WD Position Switch Circuit

DTC	C1282/82	Center Differential Lock Position Switch Malfunction (Test Mode DTC)

BC

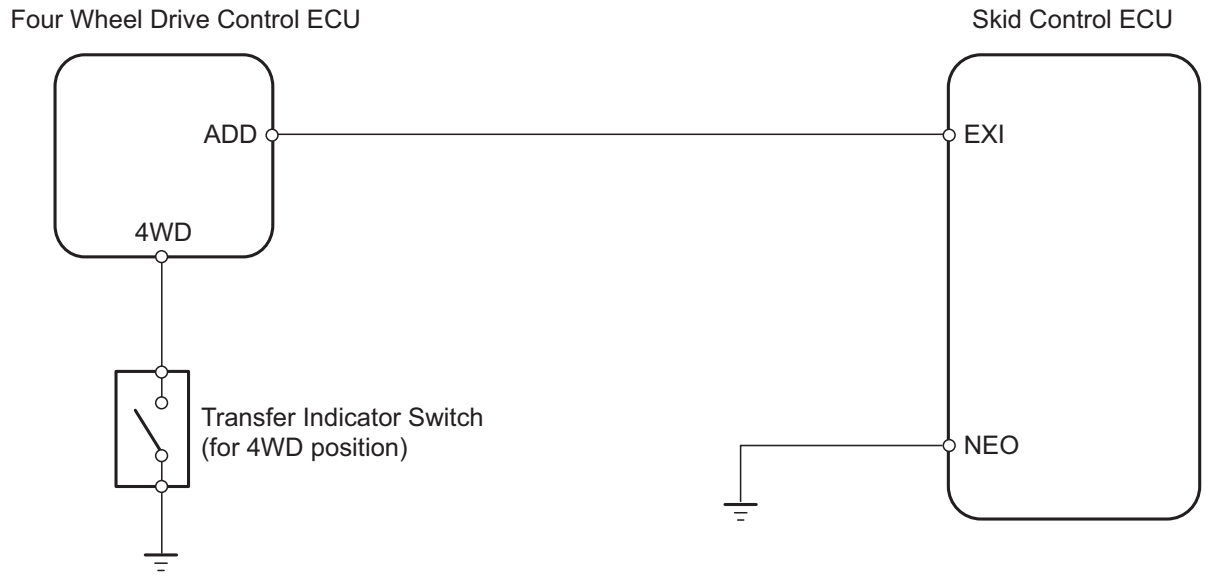
DESCRIPTION

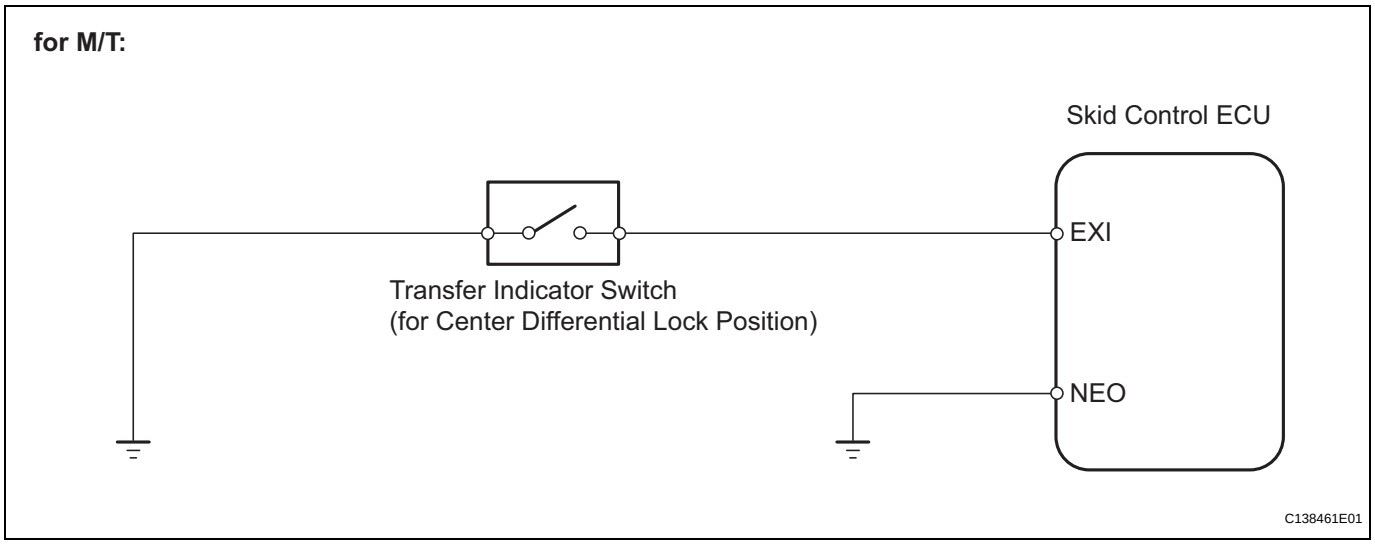
This circuit monitors whether the transfer is in 2WD or 4WD mode and inputs the signal to the skid control ECU.
In 2WD mode, TRAC is activated.
In 4WD mode, A-TRAC is activated.

DTC No.	DTC Detecting Conditions	Trouble Areas
C1258/58	• 4WD Open in 4WD detecting circuit • 2WD Terminal NEO ground short, or abnormal signals transmitted to terminal EXI	• Transfer indicator switch (4WD position) (A/T) • Transfer indicator switch (4WD position) circuit (A/T) • Transfer indicator switch (center differential lock position) (M/T) • Transfer indicator switch (center differential lock position) circuit (M/T) • Master cylinder solenoid (skid control ECU)
C1282/82	Detected only during test mode	• Transfer indicator switch (4WD position) (A/T) • Transfer indicator switch (4WD position) circuit (A/T) • Transfer indicator switch (center differential lock position) (M/T) • Transfer indicator switch (center differential lock position) circuit (M/T)

WIRING DIAGRAM

for A/T:





BC

INSPECTION PROCEDURE

NOTICE:

When replacing the master cylinder solenoid, perform zero point calibration (See page BC-24).

1	CONFIRM VEHICLE TYPE

(a) Confirm the vehicle drive train.

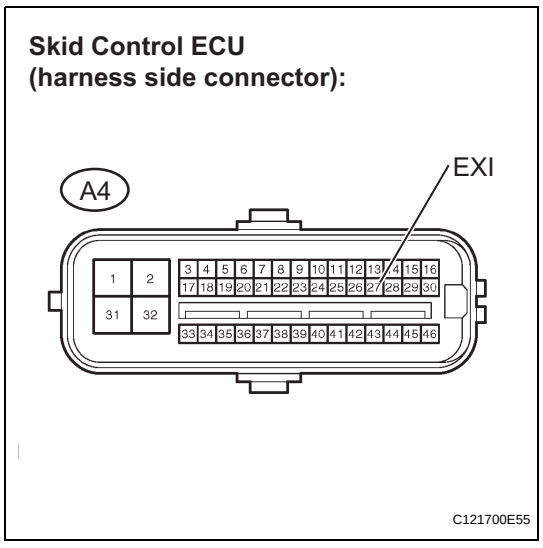
Result

Result	Proceed to
4WD	A
2WD	B

B → Go to step 3

A

2	INSPECT SKID CONTROL ECU TERMINAL VOLTAGE (EXI)



(a) Disconnect the skid control ECU connector.
(b) Turn the ignition switch on.
(c) A/T:
  (1) Move the transfer high and low shift lever to the H2, H4, and L4 ranges, and measure the voltages in each range.

Standard voltage

Tester Connection	Transfer Range	Specified Condition
A4-27 (EXI) - Body ground	H2	8 to 14 V
A4-27 (EXI) - Body ground	H4, L4	Below 1.5 V

(d) M/T:
  (1) Move the transfer high and low shift lever to the H, HL, and LL ranges, and measure the voltages in each range.

BC

Standard voltage

Tester Connection	Transfer Range	Specified Condition
A4-27 (EXI) - Body ground	H	8 to 14 V
A4-27 (EXI) - Body ground	HL, LL	Below 1.5 V

Result

Result	Proceed to
OK	A
NG (A/T)	B
NG (M/T)	C

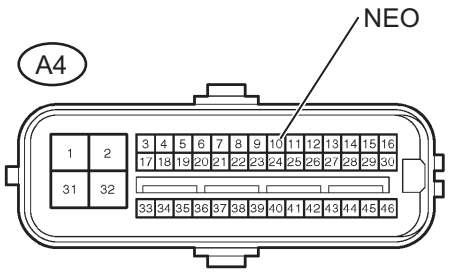
B → Go to step 5

C → Go to step 10

A

3 CHECK HARNESS AND CONNECTOR (NEO TERMINAL - BODY GROUND)

Skid Control ECU (harness side connector):



C121700E56

(a) Disconnect the skid control ECU connector.
(b) Measure the resistance.

Standard resistance

Tester Connection	Vehicle Drive Train	Specified Condition
A4-10 (NEO) - Body ground	2WD	10 kΩ or higher
A4-10 (NEO) - Body ground	4WD	Below 1 Ω

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4 RECONFIRM DTC

(a) Clear the DTC (See page BC-45).
(b) Check if the same DTC is recorded (See page BC-45).

Result

Result	Proceed to
DTC output	A
DTC not output	B

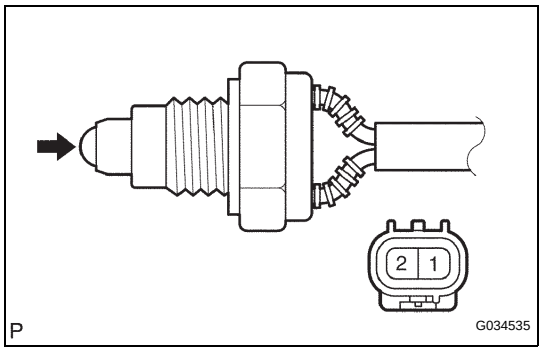
B → END

A

REPLACE MASTER CYLINDER SOLENOID

BC

5 INSPECT TRANSFER INDICATOR SWITCH (for 4WD position)



(a) Disconnect the transfer indicator switch (4WD position) connector.
(b) Remove the transfer indicator switch (4WD position).
(c) Measure the resistance.

Standard resistance

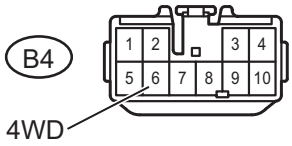
Tester Connection	Switch Position	Specified Condition
1 - 2	Pushed	Below 1 Ω
1 - 2	Released	10 kΩ or higher

NG → **REPLACE TRANSFER INDICATOR SWITCH (for 4WD POSITION)**

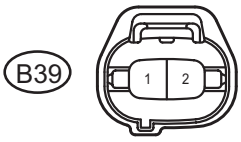
OK

6 CHECK HARNESS AND CONNECTOR (FOUR WHEEL DRIVE CONTROL ECU - TRANSFER INDICATOR SWITCH)

Four Wheel Drive Control ECU (harness side connector):



Transfer Indicator Switch (for 4WD position) (harness side connector):



C138463E01

(a) Disconnect the four wheel drive control ECU connector.
(b) Disconnect the transfer indicator switch (for 4WD position) connector.
(c) Measure the resistance.

Standard resistance

Tester Connection	Specified Condition
B4-6 (4WD) - B39-2	Below 1 Ω
B4-6 (4WD) - Body ground	10 kΩ or higher

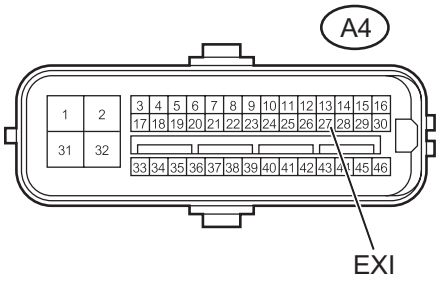
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

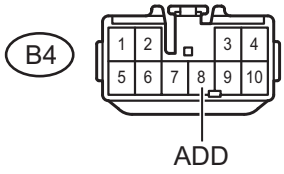
7	CHECK HARNESS AND CONNECTOR (SKID CONTROL ECU - FOUR WHEEL DRIVE CONTROL ECU)

BC

Skid Control ECU (harness side connector):



Four Wheel Drive Control ECU (harness side connector):



C138464E01

(a) Disconnect the skid control ECU connector.
(b) Disconnect the 4WD control ECU connector.
(c) Measure the resistance.

Standard resistance

Tester Connection	Specified Condition
A4-27 (EXI) - B4-8 (ADD)	Below 1 Ω
A4-27 (EXI) - Body ground	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

8	REPLACE FOUR WHEEL DRIVE CONTROL ECU

(a) Replace the four wheel drive control ECU.

NEXT

9	RECONFIRM DTC

(a) Clear the DTC (See page BC-45).
(b) Check if the same DTC is recorded (See page BC-45).

Result

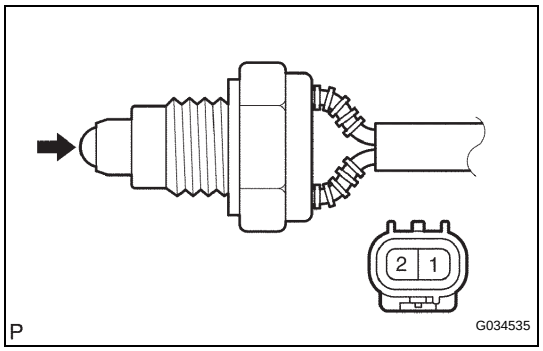
Result	Proceed to
DTC output	A
DTC not output	B

B → **END**

A

REPLACE MASTER CYLINDER SOLENOID

10 **INSPECT TRANSFER INDICATOR SWITCH (for CENTER DIFFERENTIAL LOCK POSITION)**



(a) Disconnect the transfer indicator switch (center differential lock position) connector.
(b) Remove the transfer indicator switch (center differential lock position).
(c) Measure the resistance.

Standard resistance

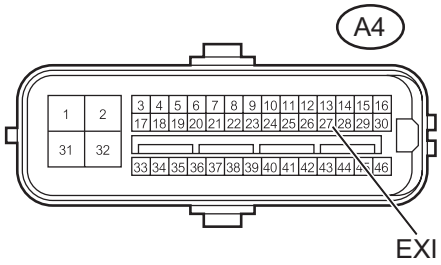
Tester Connection	Switch Position	Specified Condition
1 - 2	Pushed	Below 1 Ω
1 - 2	Released	10 kΩ or higher

NG → **REPLACE TRANSFER INDICATOR SWITCH (for CENTER DIFFERENTIAL LOCK POSITION)**

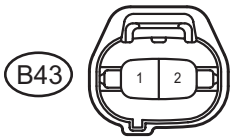
OK

11 **CHECK HARNESS AND CONNECTOR (SKID CONTROL ECU - TRANSFER INDICATOR SWITCH)**

Skid Control ECU (harness side connector):



Transfer Indicator Switch (for center differential lock position) (harness side connector):



C138465E01

(a) Disconnect the skid control ECU connector.
(b) Disconnect the transfer indicator switch (center differential lock position) connector.
(c) Measure the resistance.

Standard resistance

Tester Connection	Specified Condition
A4-27 (EXI) - B43-2	Below 1 Ω
A4-27 (EXI) - Body ground	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

12 **RECONFIRM DTC**

(a) Clear the DTC (See page BC-45).
(b) Check if the same DTC is recorded (See page BC-45).

Result

Result	Proceed to
DTC output	A
DTC not output	B

BC

B → END

A

REPLACE MASTER CYLINDER SOLENOID