DI9HC–01

DTC	P0753/62	Shift Solenoid A Electrical Malfunction (No. 1 Solenoid Valve)

DTC	P0758/63	Shift Solenoid B Electrical Malfunction (No. 2 Solenoid Valve)

DTC	P0763/76	Shift Solenoid C Electrical Malfunction (No. 3 Solenoid Valve)

CIRCUIT DESCRIPTION

Shifting from 1st to 5th is performed in combination with ON and OFF of the No. 1, No. 2 and No. 3 solenoid valves controlled by Engine and ECT ECU. If an open or short circuit occurs in either of the solenoid valves, the Engine and ECT ECU controls the remaining normal solenoid valve to allow the vehicle to be operated smoothly (Fail safe function).

HINT:

Check the No. 1 solenoid valve when DTC P0753/62 is output, check the No. 2 solenoid valve when DTC P0758/63 is output and check the No. 3 solenoid valve when DTC P0763/76 is output.

DTC No.	DTC Detecting Condition	Trouble Area
P0753/62 P0758/63 P0763/76	The Engine and ECT ECU checks for an open or short circuit in the No. 1, No. 2 or No. 3 solenoid valve circuit when it changes. The Engine and ECT ECU records DTC P0753/62, P0758/63 or P0763/76 if condition (a) or (b) is detected once, but it does not light up CHK ENG. After Engine and ECT ECU detects condition (a) or (b) continuously 8 times or more in 1 trip, it causes the CHK ENG lights up until condition (a) or (b) disappears. After that, if the Engine and ECT ECU detects condition (a) or (b) once, it starts lighting up CHK ENG again. (a) Solenoid resistance is 8 Ω or less (short circuit) when the solenoid is energized. (b) Solenoid resistance is 100 kΩ or more (open circuit) when the solenoid is not energized.	• Open or short in No. 1/No. 2/No. 3 solenoid valve circuit • No. 1/No. 2/No. 3 solenoid valve • Engine and ECT ECU

Fail Safe Function:

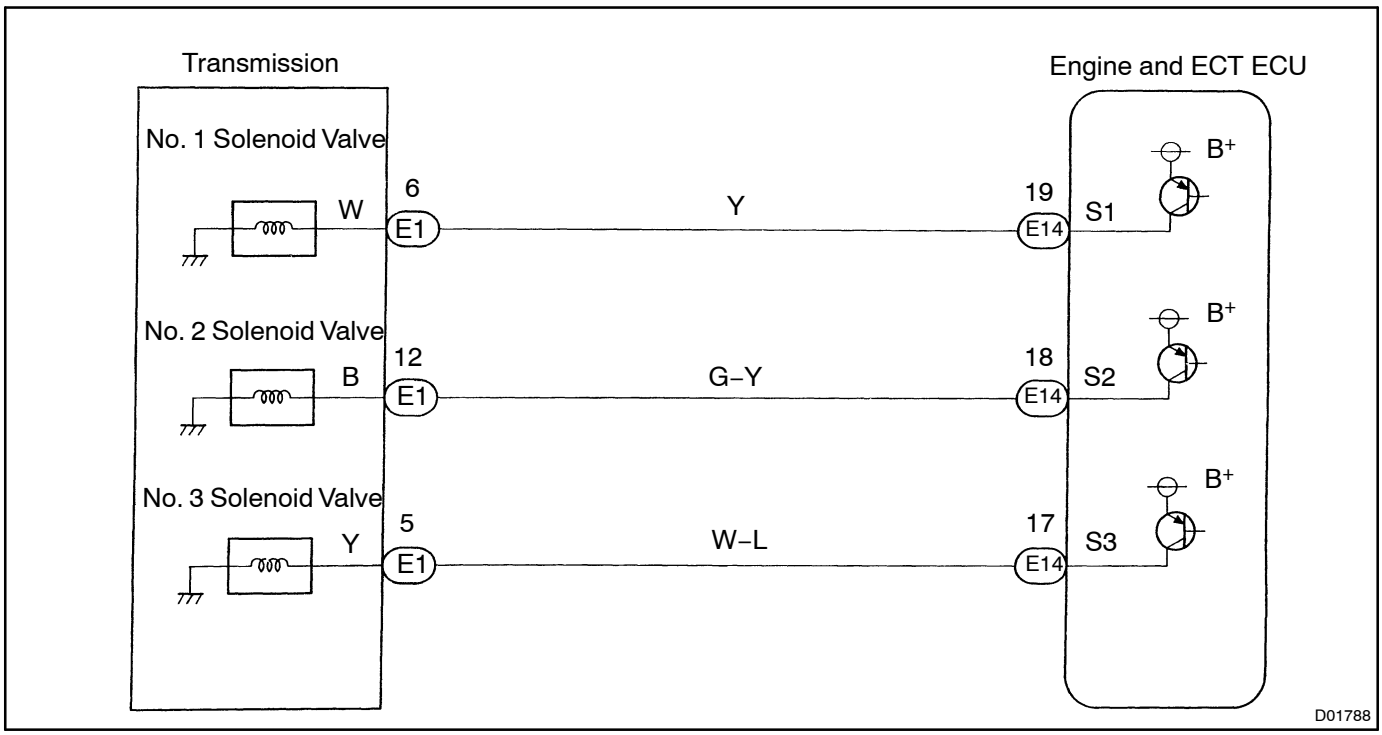
If either of the shift solenoid valve circuits develops an open or short, the Engine and ECT ECU turns the other solenoid valve ON and OFF to shift to the gear positions shown in the table below. The Engine and ECT ECU also turns the SLU solenoid valve OFF at the same time. If both solenoids are malfunctioning, hydraulic control cannot be performed electronically and must be done manually.

Manual shifting as shown in the following table must be done (In the case of a short circuit, the Engine and ECT ECU stops sending current to the short circuited solenoid).

Range	Normal				No. 1 Solenoid Valve Malfunction				No. 2 Solenoid Valve Malfunction				No. 3 Solenoid Valve Malfunction			
	Solenoid Valve			Gear	Solenoid Valve			Gear	Solenoid Valve			Gear	Solenoid Valve			Gear
	No. 1	No. 2	No. 3		No. 1	No. 2	No. 3		No. 1	No. 2	No. 3		No. 1	No. 2	No. 3	
D	ON	OFF	OFF	1	X	OFF→ON	OFF	5→3	ON	X	OFF	1	ON	OFF	X	1
	OFF	ON	OFF	3	X	ON	OFF	3	OFF	X	OFF→ON	5→4	OFF	ON	X	3
	OFF	OFF	ON	4	X	OFF	ON	4	OFF	X	ON	4	OFF	OFF	X	5
	OFF	OFF	OFF	5	X	OFF	OFF	5	OFF	X	OFF	5	OFF	OFF	X	5
4	ON	OFF	OFF	1	X	OFF→ON	OFF	5→3	ON	X	OFF	1	ON	OFF	X	1
	OFF	ON	OFF	3	X	ON	OFF	3	OFF	X	OFF→ON	5→4	OFF	ON	X	3
	OFF	OFF	ON	4	X	OFF	ON	4	OFF	X	ON	4	OFF	OFF	X	5
3	ON	OFF	OFF	1	X	OFF→ON	OFF→ON	4→3	ON	X	OFF	1	ON	OFF	X	1
	OFF	ON	ON	3	X	ON	ON	3	OFF	X	ON	4	OFF	ON	X	3
	OFF	OFF	ON	4	X	OFF	ON	4	OFF	X	ON	4	OFF	OFF	X	4
2	ON	OFF	ON	1	X	OFF→ON	ON	3	ON	X	ON	1	ON	OFF	X	1
	OFF	ON	ON	3	X	ON	ON	3	OFF	X	ON	3	OFF	ON	X	3
L	ON	OFF	OFF	1	X	OFF→ON	OFF→ON	3	ON	X	OFF	1	ON	OFF	X	1

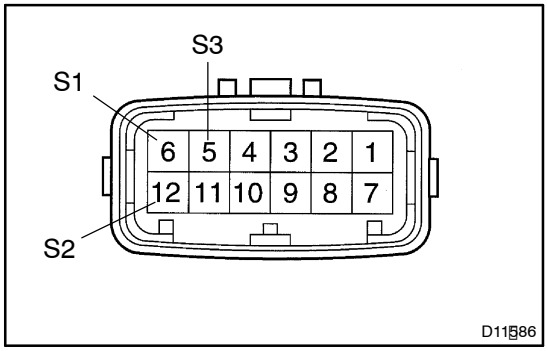
Range	No. 1 and No. 2 Solenoid Valve Malfunction				No. 1 and No. 3 Solenoid Valve Malfunction				No. 2 and No. 3 Solenoid Valve Malfunction				No. 1, No. 2 and No. 3 Solenoid Valve Malfunction			
	Solenoid Valve			Gear	Solenoid Valve			Gear	Solenoid Valve			Gear	Solenoid Valve			Gear
	No. 1	No. 2	No. 3		No. 1	No. 2	No. 3		No. 1	No. 2	No. 3		No. 1	No. 2	No. 3	
D	X	X	OFF→ON	5→4	X	OFF→ON	X	5→3	ON	X	X	1	X	X	X	5
	X	X	OFF→ON	5→4	X	ON	X	3	OFF	X	X	5	X	X	X	5
	X	X	ON	4	X	OFF	X	5	OFF	X	X	5	X	X	X	5
	X	X	OFF	5	X	OFF	X	5	OFF	X	X	5	X	X	X	5
4	X	X	OFF→ON	5→4	X	OFF→ON	X	5→3	ON	X	X	1	X	X	X	5
	X	X	OFF→ON	5→4	X	ON	X	3	OFF	X	X	5	X	X	X	5
	X	X	ON	4	X	OFF	X	5	OFF	X	X	5	X	X	X	5
3	X	X	OFF→ON	4	X	OFF→ON	X	4→3	ON	X	X	1	X	X	X	4
	X	X	ON	4	X	ON	X	3	OFF	X	X	4	X	X	X	4
	X	X	ON	4	X	OFF	X	4	OFF	X	X	4	X	X	X	4
2	X	X	OFF→ON	3	X	OFF→ON	X	3	ON	X	X	1	X	X	X	3
	X	X	ON	3	X	ON	X	3	OFF	X	X	3	X	X	X	3
L	X	X	OFF→ON	3	X	OFF→ON	X	3	ON	X	X	1	X	X	X	3

WIRING DIAGRAM



INSPECTION PROCEDURE

1	Check transmission wire.

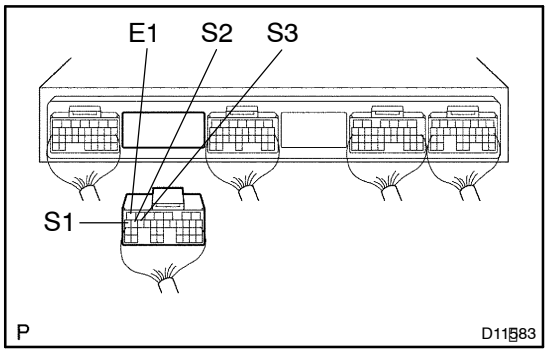


PREPARATION:
Disconnect the transmission wire connector.
CHECK:
Measure resistance between S1, S2 or S3 of transmission wire and body ground.
OK:
Resistance: 11 – 15 Ω at 20°C (68°F)

NG → Go to step 3.

OK

2	Measure resistance between terminal S1, S2 or S3 of Engine and ECT ECU and body ground.



PREPARATION:
(a) Remove the Engine and ECT ECU hood.
(b) Disconnect the connector from Engine and ECT ECU.
CHECK:
Measure resistance between terminal S1, S2 or S3 and E1 of Engine and ECT ECU.
OK:
Resistance: 11 – 15 Ω at 20°C (68°F)

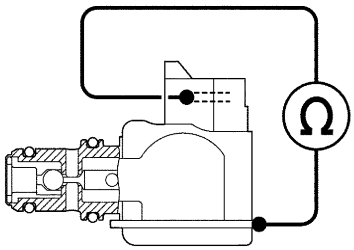
OK → Check and replace the Engine and ECT ECU (See page IN–34).

NG

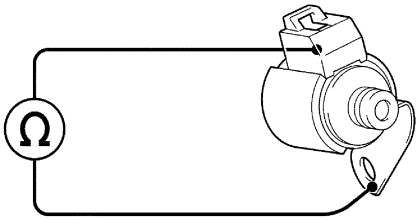
Repair or replace the harness or connector (See page IN–34).

3	Check No. 1, No. 2 or No. 3 solenoid valve.

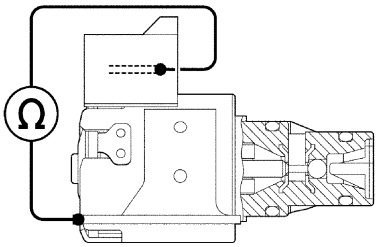
Shift Solenoid Valve No. 1



Shift Solenoid Valve No. 2



Shift Solenoid Valve No. 3



D01882
D01890
D01884

D02236

PREPARATION:

Remove the No. 1, No. 2 or No. 3 solenoid valve (See page AT–144).

CHECK:

(a) Measure resistance between solenoid connector and body ground.

(b) Connect positive ⊕ lead to terminal of solenoid connector, negative ⊖ lead to solenoid body.

OK:

(a) Resistance: 11 – 15 Ω at 20°C (68°F)

(b) The solenoid makes an operating noise.

NG → **Replace the solenoid valve (See page AT–144).**

OK

Repair or replace the transmission wire (See page AT–9).