

FAIL-SAFE CHART

1. FAIL-SAFE

This function minimizes the loss of the ECT functions when any malfunction occurs in each sensor or solenoid.

- (a) ATF (Automatic Transmission Fluid) temperature sensor:
When the ATF temperature sensor has a malfunction, O/D upshift is prohibited.
- (b) Counter gear speed sensor NC (Speed sensor NC):
When the counter gear speed sensor has a malfunction, O/D upshift is prohibited.
- (c) Shift solenoid valve DSL:
When the solenoid valve DSL has a malfunction, the current to the solenoid valve is stopped.
This stops lock-up control, then fuel economy decreases.

(d) Shift solenoid valve SL1, SL2 and S4:

Fail safe function:

If either of the shift solenoid valve circuits develops an open or short, the ECM turns the other shift solenoid "ON" and "OFF" in order to shift into the gear positions shown in the table below.

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

Even if starting the engine in the fail-safe mode, the gear position remain in the same position.

NORMAL				SHIFT SOLENOID SL1 MALFUNCTIONING				SHIFT SOLENOID SL2 MALFUNCTIONING				SHIFT SOLENOID S4 MALFUNCTIONING			
Solenoid Valve			Gear	Solenoid Valve			Gear	Solenoid Valve			Gear	Solenoid Valve			Gear
SL1	SL2	S4		SL1	SL2	S4		SL1	SL2	S4		SL1	SL2	S4	
ON	ON	OFF	1st	X	ON	OFF	2nd	ON ↓ OFF	X	OFF	3rd	ON	ON	X	1st
OFF	ON	OFF	2nd	X	ON	OFF	2nd	OFF	X	OFF	3rd	OFF	ON	X	2nd
OFF	OFF	OFF	3rd	X	OFF ↓ ON	OFF ↓ ON	3rd	OFF	X	OFF	3rd	OFF	OFF	X	3rd
OFF	OFF	ON	O/D	X	OFF ↓ ON	ON	3rd	OFF	X	ON	O/D	OFF	OFF	X	3rd

SHIFT SOLENOID SL1 AND SL2 MALFUNCTIONING				SHIFT SOLENOID SL1 AND S4 MALFUNCTIONING				SHIFT SOLENOID SL2 AND S4 MALFUNCTIONING				SHIFT SOLENOID SL1, SL2 AND S4 MALFUNCTIONING			
Solenoid Valve			Gear	Solenoid Valve			Gear	Solenoid Valve			Gear	Solenoid Valve			Gear
SL1	SL2	S4		SL1	SL2	S4		SL1	SL2	S4		SL1	SL2	S4	
X	X	OFF	3rd	X	ON	X	2nd	ON ↓ OFF	X	X	3rd	X	X	X	3rd
X	X	OFF	3rd	X	ON	X	2nd	OFF	X	X	3rd	X	X	X	3rd
X	X	OFF	3rd	X	OFF ↓ ON	X	2nd	OFF	X	X	3rd	X	X	X	3rd
X	X	ON	O/D	X	OFF ↓ ON	X	2nd	OFF	X	X	3rd	X	X	X	3rd

↓ : Condition in the normal operation is shown on the up of "↓".
Condition in the fail-safe mode is shown on the down of "↓".