

Subject: Electronic automatic transmission shift solenoid fail-safe operation

Source: Toyota and Lexus service manuals

This reference contains shift solenoid fail-safe operation charts for the following models:

- [Figure TA1241-1](#) 2000–03 Celica with the U240E transmission
- [Figure TA1241-2](#) 2000–03 Celica with the U341E transmission
- [Figure TA1241-3](#) 2000–03 Echo with the U340E transmission
- [Figure TA1241-4](#) 1998 ES300 with the A541E transmission
- [Figure TA1241-5](#) 1999–2001 ES300 with U140E transmission; 1996–03 RX300 with U140E or U140F transmission
- [Figure TA1241-6](#) 1998–2003 GS300, 1998–2000 GS400 and SC400, and 2001–03 IS300 with A650E transmission
- [Figure TA1241-7](#) 2001–03 GS430 with A650E transmission
- [Figure TA1241-8](#) 2001–03 Highlander with U140E or U140F transmission; 2001–03 RAV4 with U241E or U140F transmission
- [Figure TA1241-9](#) 1998–2000 LS400 with A650E transmission
- [Figure TA1241-10](#) 1998–2002 LX470 with A343F transmission
- [Figure TA1241-11](#) 1998–2000 SC300 with A340E transmission
- [Figure TA1241-12](#) 2002–03 ES300 with U150E transmission
- [Figure TA1241-13](#) 2003 4Runner V8, Land Cruiser, LX470, and GX470 with A750E or A750F transmission
- [Figure TA1241-14](#) 2003 Matrix with A246E, U240E, or U240F transmission

NORMAL				SHIFT SOLENOID SL1 MALFUNCTIONING								SHIFT SOLENOID SL2 MALFUNCTIONING			
				Driving in 3rd or O/D				Driving in 1st or 2nd							
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	OFF	3rd	X	ON	OFF	2nd	ON-OFF	X	OFF	3rd
OFF	ON	OFF	2nd	X	ON-OFF	OFF	3rd	X	ON	OFF	2nd	OFF	X	OFF	3rd
	OFF	OFF	3rd	X	OFF	OFF	3rd	X	OFF-ON	OFF-ON	3rd		X	OFF	3rd
	OFF	ON	O/D	X	OFF	ON	O/D	X	OFF-ON	ON	3rd		X	ON	O/D

X = Malfunctioning solenoid valve.

SHIFT SOLENOID S4 MALFUNCTIONING				SHIFT SOLENOID SL1 AND SL2 MALFUNCTIONING				SHIFT SOLENOID SL1 AND S4 MALFUNCTIONING							
								Driving in 3rd or O/D				Driving in 1st or 2nd			
SOLENOID VALVE			GEAR	SOLENOID VALVE			GEAR	SOLENOID VALVE			GEAR	SOLENOID VALVE			GEAR
SL1	SL2	S4		SL1	SL2	S4		SL1	SL2	SL4		SL1	SL2	SL4	
ON	ON	X	1st	X	X	OFF	3rd	X	ON-OFF	X	3rd	X	ON	X	2nd
OFF	ON	X	2nd	X	X	OFF	3rd	X	ON-OFF	X	3rd	X	ON	X	2nd
	OFF	x	3rd	X	X	OFF	3rd	X	OFF	X	3rd	X	OFF-ON	X	2nd
	OFF	X	3rd	X	X	ON	O/D	X	OFF	X	3rd	X	OFF-ON	X	2nd

X = Malfunctioning solenoid valve.

SHIFT SOLENOID SL2 AND S4 MALFUNCTIONING				SHIFT SOLENOID SL1, SL2, AND S4 MALFUNCTIONING			
SOLENOID VALVE			GEAR	SOLENOID VALVE			GEAR
SL1	SL2	S4		SL1	SL2	S4	
ON-OFF	X	X	3rd	X	X	X	3rd
OFF	X	X	3rd	X	X	X	3rd
	x	x	3rd	X	X	x	3rd
	X	X	3rd	X	X	X	3rd

X = Malfunctioning solenoid valve.

Figure TA1241-1 2000–03 Celica with the U240E transmission

RANGE	NORMAL			SHIFT SOLENOID VALVE NO. 1 MALFUNCTIONING			SHIFT SOLENOID VALVE NO. 2 MALFUNCTIONING			BOTH VALVES MALFUNCTIONING
	SOLENOID VALVE		GEAR	SOLENOID VALVE		GEAR	SOLENOID VALVE		GEAR	GEAR WHEN SHIFT SELECTOR IS MANUALLY OPERATED
	NO. 1	NO. 2		NO. 1	NO. 2		NO. 1	NO. 2		
D	ON	ON	1st	X	OFF	3rd	ON	X	2nd	
	ON	OFF	2nd	X	OFF	3rd	ON	X	2nd	3rd
	OFF	OFF	3rd	X	OFF	3rd	OFF	X	3rd	3rd
	OFF	ON	O/D	X	ON	O/D	OFF	X	3rd	3rd
2	ON	ON	1st	X	OFF	3rd	ON	X	2nd	3rd
	ON	OFF	2nd	X	OFF	3rd	ON	X	2nd	3rd
	OFF	OFF	3rd	X	OFF	3rd	OFF	X	3rd	3rd
L	ON	ON	1st	X	OFF	1st	ON	X	2nd	3rd
	ON	OFF	2nd	X	OFF	3rd	ON	X	2nd	3rd

X = Malfunctioning solenoid valve.

Figure TA1241-2 2000–03 Celica with the U341E transmission

RANGE	NORMAL			SHIFT SOLENOID VALVE NO. 1 MALFUNCTIONING			SHIFT SOLENOID VALVE NO. 2 MALFUNCTIONING			BOTH VALVES MALFUNCTIONING
	SOLENOID VALVE		GEAR	SOLENOID VALVE		GEAR	SOLENOID VALVE		GEAR	GEAR WHEN SHIFT SELECTOR IS MANUALLY OPERATED
	NO. 1	NO. 2		NO. 1	NO. 2		NO. 1	NO. 2		
D	ON	ON	1st	X	OFF	3rd	ON	X	2nd	
	ON	OFF	2nd	X	OFF	3rd	ON	X	2nd	3rd
	OFF	OFF	3rd	X	OFF	3rd	OFF	X	3rd	3rd
	OFF	ON	O/D	X	ON	O/D	OFF	X	3rd	3rd
2	ON	ON	1st	X	OFF	3rd	ON	X	2nd	3rd
	ON	OFF	2nd	X	OFF	3rd	ON	X	2nd	3rd
	OFF	OFF	3rd	X	OFF	3rd	OFF	X	3rd	3rd
L	ON	ON	1st	X	OFF	3rd	ON	X	2nd	3rd
	ON	OFF	2nd	X	OFF	3rd	ON	X	2nd	3rd

X = Malfunctioning solenoid valve.

Figure TA1241-3 2000–03 Echo with the U340E transmission

RANGE	NORMAL		SHIFT SOLENOID VALVE NO. 1 MALFUNCTIONING				SHIFT SOLENOID VALVE NO. 2 MALFUNCTIONING			BOTH VALVES MALFUNCTIONING
	SOLENOID VALVE		GEAR	SOLENOID VALVE		GEAR	SOLENOID VALVE		GEAR	GEAR WHEN SHIFT SELECTOR IS MANUALLY OPERATED
	NO. 1	NO. 2		NO. 1	NO. 2		NO. 1	NO. 2		
D	ON	OFF	1st	X	ON	3rd	ON	X	1st	O/D
	ON	ON	2nd	X	ON	3rd	OFF	X	O/D	O/D
	OFF	ON	3rd	X	ON	3rd	OFF	X	O/D	O/D
	OFF	OFF	O/D	X	OFF	O/D	OFF	X	O/D	O/D
2	ON	OFF	1st	X	ON	3rd	ON	X	1st	O/D
	ON	ON	2nd	X	ON	3rd	OFF	X	O/D	O/D
	OFF	ON	3rd	X	ON	3rd	OFF	X	O/D	O/D
L	ON	OFF	1st	X	OFF	1st	ON	X	1st	1st
	ON	ON	2nd	X	ON	2nd	ON	X	1st	1st

X = Malfunctioning solenoid valve.

Figure TA1241-4 1998 ES300 with the A541E transmission

NORMAL				SHIFT SOLENOID SL1 MALFUNCTIONING								SHIFT SOLENOID SL2 MALFUNCTIONING			
				Driving in 3rd or O/D				Driving in 1st or 2nd							
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	OFF	3rd	X	ON	OFF	2nd	ON-OFF	X	OFF	3rd
OFF	ON	OFF	2nd	X	ON-OFF	OFF	3rd	X	ON	OFF	2nd	OFF	X	OFF	3rd
	OFF	OFF	3rd	X	OFF	OFF	3rd	X	OFF-ON	OFF-ON	3rd		X	OFF	3rd
	OFF	ON	O/D	X	OFF	ON	O/D	X	OFF-ON	ON	3rd		X	ON	O/D

X = Malfunctioning solenoid valve.

SHIFT SOLENOID S4 MALFUNCTIONING				SHIFT SOLENOID SL1 AND SL2 MALFUNCTIONING				SHIFT SOLENOID SL1 AND S4 MALFUNCTIONING							
								Driving in 3rd or O/D				Driving in 1st or 2nd			
SOLENOID VALVE			GEAR	SOLENOID VALVE			GEAR	SOLENOID VALVE			GEAR	SOLENOID VALVE			GEAR
SL1	SL2	S4		SL1	SL2	S4		SL1	SL2	SL4		SL1	SL2	SL4	
ON	ON	X	1st	X	X	OFF	3rd	X	ON-OFF	X	3rd	X	ON	X	2nd
OFF	ON	X	2nd	X	X	OFF	3rd	X	ON-OFF	X	3rd	X	ON	X	2nd
	OFF	x	3rd	X	X	OFF	3rd	X	OFF	X	3rd	X	OFF-ON	X	2nd
	OFF	X	3rd	X	X	ON	O/D	X	OFF	X	3rd	X	OFF-ON	X	2nd

X = Malfunctioning solenoid valve.

SHIFT SOLENOID SL2 AND S4 MALFUNCTIONING				SHIFT SOLENOID SL1, SL2, AND S4 MALFUNCTIONING			
SOLENOID VALVE			GEAR	SOLENOID VALVE			GEAR
SL1	SL2	S4		SL1	SL2	S4	
ON-OFF	X	X	3rd	X	X	X	3rd
OFF	X	X	3rd	X	X	X	3rd
	x	x	3rd	X	X	x	3rd
	X	X	3rd	X	X	X	3rd

X = Malfunctioning solenoid valve.

Figure TA1241-5 1999–2001 ES300 with U140E transmission; 1996–03 RX300 with U140E or U140F transmission

RANGE	NORMAL				SHIFT SOLENOID 1 MALFUNCTIONING				SHIFT SOLENOID 2 MALFUNCTIONING				SHIFT SOLENOID 3 MALFUNCTIONING			
	SOLENOID			GEAR	SOLENOID			GEAR	SOLENOID			GEAR	SOLENOID			GEAR
	1	2	3		1	2	3		1	2	3		1	2	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	OFF	X	3
	OFF	OFF	ON	4	X	OFF	ON	4	OFF	X	ON	4	ON	OFF	X	4
2	ON	OFF	ON	1	X	OFF	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	OFF	3	ON	X	OFF	1	ON	OFF	X	1

X = Malfunctioning solenoid valve.

RANGE	SHIFT SOLENOID 1 AND 2 MALFUNCTIONING				SHIFT SOLENOID 1 AND 3 MALFUNCTIONING				SHIFT SOLENOID 2 AND 3 MALFUNCTIONING				SHIFT SOLENOID 1, 2, AND 3 MALFUNCTIONING			
	SHIFT SOLENOID			GEAR	SHIFT SOLENOID			GEAR	SHIFT SOLENOID			GEAR	SHIFT SOLENOID			GEAR
	1	2	3		1	2	3		1	2	3		1	2	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	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	3	X	OFF	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	3	X	OFF	X	3	ON	X	X	1	X	X	X	3

X = Malfunctioning solenoid valve.

Figure TA1241-6 1998–2003 GS300, 1998–2000 GS400 and SC400, and 2001–03 IS300 with A650E transmission

RANGE	NORMAL				SHIFT SOLENOID 1 MALFUNCTIONING				SHIFT SOLENOID 2 MALFUNCTIONING				SHIFT SOLENOID 3 MALFUNCTIONING			
	SOLENOID			GEAR	SOLENOID			GEAR	SOLENOID			GEAR	SOLENOID			GEAR
	1	2	3		1	2	3		1	2	3		1	2	3	
D	ON	OFF	ON	1	X	OFF-ON	ON-OFF	4-3	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	ON	1	X	OFF-ON	ON-OFF	4-3	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	ON	1	X	OFF-ON	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

X = Malfunctioning solenoid valve.

RANGE	SHIFT SOLENOID 1 AND 2 MALFUNCTIONING				SHIFT SOLENOID 1 AND 3 MALFUNCTIONING				SHIFT SOLENOID 2 AND 3 MALFUNCTIONING				SHIFT SOLENOID 1, 2, AND 3 MALFUNCTIONING			
	SHIFT SOLENOID			GEAR	SHIFT SOLENOID			GEAR	SHIFT SOLENOID			GEAR	SHIFT SOLENOID			GEAR
	1	2	3		1	2	3		1	2	3		1	2	3	
D	X	X	ON	4-4	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	ON	4-4	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	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	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

X = Malfunctioning solenoid valve.

Figure TA1241-7 2001-03 GS430 with A650E transmission

NORMAL				SHIFT SOLENOID SL1 MALFUNCTIONING								SHIFT SOLENOID SL2 MALFUNCTIONING			
				Driving in 3rd or O/D				Driving in 1st or 2nd							
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	OFF	3rd	X	ON	OFF	2nd	ON-OFF	X	OFF	3rd
OFF	ON	OFF	2nd	X	ON-OFF	OFF	3rd	X	ON	OFF	2nd	OFF	X	OFF	3rd
OFF	OFF	OFF	3rd	X	OFF	OFF	3rd	X	OFF-ON	OFF-ON	3rd	OFF	X	OFF	3rd
OFF	OFF	ON	O/D	X	OFF	ON	O/D	X	OFF-ON	ON	3rd	OFF	X	ON	O/D

X = Malfunctioning solenoid valve.

SHIFT SOLENOID S4 MALFUNCTIONING				SHIFT SOLENOID SL1 AND SL2 MALFUNCTIONING				SHIFT SOLENOID SL1 AND S4 MALFUNCTIONING							
								Driving in 3rd or O/D				Driving in 1st or 2nd			
SOLENOID VALVE			GEAR	SOLENOID VALVE			GEAR	SOLENOID VALVE			GEAR	SOLENOID VALVE			GEAR
SL1	SL2	S4		SL1	SL2	S4		SL1	SL2	SL4		SL1	SL2	SL4	
ON	ON	X	1st	X	X	OFF	3rd	X	ON-OFF	X	3rd	X	ON	X	2nd
OFF	ON	X	2nd	X	X	OFF	3rd	X	ON-OFF	X	3rd	X	ON	X	2nd
OFF	OFF	x	3rd	X	X	OFF	3rd	X	OFF	X	3rd	X	OFF-ON	X	3rd
OFF	OFF	X	3rd	X	X	ON	O/D	X	OFF	X	3rd	X	OFF-ON	X	3rd

X = Malfunctioning solenoid valve.

SHIFT SOLENOID SL2 AND S4 MALFUNCTIONING				SHIFT SOLENOID SL1, SL2, AND S4 MALFUNCTIONING			
SOLENOID VALVE			GEAR	SOLENOID VALVE			GEAR
SL1	SL2	S4		SL1	SL2	S4	
ON-OFF	X	X	3rd	X	X	X	3rd
OFF	X	X	3rd	X	X	X	3rd
OFF	x	x	3rd	X	X	x	3rd
OFF	X	X	3rd	X	X	X	3rd

X = Malfunctioning solenoid valve.

Figure TA1241-8 2001–03 Highlander with U140E or U140F transmission; 2001–03 RAV4 with U241E or U140F transmission

RANGE	NORMAL				SHIFT SOLENOID 1 MALFUNCTIONING				SHIFT SOLENOID 2 MALFUNCTIONING				SHIFT SOLENOID 3 MALFUNCTIONING			
	SOLENOID			GEAR	SOLENOID			GEAR	SOLENOID			GEAR	SOLENOID			GEAR
	1	2	3		1	2	3		1	2	3		1	2	3	
D	ON	OFF	OFF	1	X	OFF-ON	OFF	O/D-3	ON	X	OFF	1	ON	OFF	X	1
	OFF	ON	OFF	3	X	ON	OFF	3	OFF	X	OFF-ON	O/D-4	OFF	ON	X	3
	OFF	OFF	ON	4	X	OFF	ON	4	OFF	X	ON	4	OFF	OFF	X	O/D
	OFF	OFF	OFF	O/D	X	OFF	OFF	O/D	OFF	X	OFF	O/D	OFF	OFF	X	O/D
4	ON	OFF	OFF	1	X	OFF-ON	OFF	O/D-3	ON	X	OFF	1	ON	OFF	X	1
	OFF	ON	OFF	3	X	ON	OFF	3	OFF	X	OFF-ON	O/D-4	OFF	ON	X	3
	OFF	OFF	ON	4	X	OFF	ON	4	OFF	X	ON	4	OFF	OFF	X	O/D
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	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	OFF	3	ON	X	OFF	1	ON	OFF	X	1

X = Malfunctioning solenoid valve.

RANGE	SHIFT SOLENOID 1 AND 2 MALFUNCTIONING				SHIFT SOLENOID 1 AND 3 MALFUNCTIONING				SHIFT SOLENOID 2 AND 3 MALFUNCTIONING				SHIFT SOLENOID 1, 2, AND 3 MALFUNCTIONING			
	SHIFT SOLENOID			GEAR	SHIFT SOLENOID			GEAR	SHIFT SOLENOID			GEAR	SHIFT SOLENOID			GEAR
	1	2	3		1	2	3		1	2	3		1	2	3	
D	X	X	OFF-ON	O/D-4	X	OFF-ON	X	O/D-3	ON	X	X	1	X	X	X	O/D
	X	X	OFF-ON	O/D-4	X	ON	X	3	OFF	X	X	O/D	X	X	X	O/D
	X	X	ON	4	X	OFF	X	O/D	OFF	X	X	O/D	X	X	X	O/D
	X	X	OFF	O/D	X	OFF	X	O/D	OFF	X	X	O/D	X	X	X	O/D
4	X	X	OFF-ON	O/D-4	X	OFF-ON	X	O/D-3	ON	X	X	1	X	X	X	O/D
	X	X	OFF-ON	O/D-4	X	ON	X	3	OFF	X	X	O/D	X	X	X	O/D
	X	X	ON	4	X	OFF	X	O/D	OFF	X	X	O/D	X	X	X	O/D
3	X	X	OFF	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	3	X	OFF	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	3	X	OFF	X	3	ON	X	X	1	X	X	X	3

X = Malfunctioning solenoid valve.

Figure TA1241-9 1998–2000 LS400 with A650E transmission

RANGE	NORMAL		GEAR	SHIFT SOLENOID VALVE NO. 1 MALFUNCTIONING		GEAR	SHIFT SOLENOID VALVE NO. 2 MALFUNCTIONING		GEAR	BOTH VALVES MALFUNCTIONING GEAR WHEN SHIFT SELECTOR IS MANUALLY OPERATED
	SOLENOID VALVE			SOLENOID VALVE			SOLENOID VALVE			
	NO. 1	NO. 2		NO. 1	NO. 2		NO. 1	NO. 2		
D	ON	OFF	1st	X	ON	3rd	ON	X	1st	O/D
	ON	ON	2nd	X	ON	3rd	OFF	X	O/D	O/D
	OFF	ON	3rd	X	ON	3rd	OFF	X	O/D	O/D
	OFF	OFF	O/D	X	OFF	O/D	OFF	X	O/D	O/D
2	ON	OFF	1st	X	ON	3rd	ON	X	1st	3rd
	ON	ON	2nd	X	ON	3rd	OFF	X	3rd	3rd
	OFF	ON	3rd	X	ON	3rd	OFF	X	3rd	3rd
L	ON	OFF	1st	X	OFF	1st	ON	X	1st	1st
	ON	ON	2nd	X	ON	2nd	ON	X	1st	1st

X = Malfunctioning solenoid valve.

Figure TA1241-10 1998–2002 LX470 with A343F transmission

RANGE	NORMAL		GEAR	SHIFT SOLENOID VALVE NO. 1 MALFUNCTIONING		GEAR	SHIFT SOLENOID VALVE NO. 2 MALFUNCTIONING		GEAR	BOTH VALVES MALFUNCTIONING GEAR WHEN SHIFT SELECTOR IS MANUALLY OPERATED
	SOLENOID VALVE			SOLENOID VALVE			SOLENOID VALVE			
	NO. 1	NO. 2		NO. 1	NO. 2		NO. 1	NO. 2		
D	ON	OFF	1st	X	ON	3rd	ON	X	1st	O/D
	ON	ON	2nd	X	ON	3rd	OFF	X	O/D	O/D
	OFF	ON	3rd	X	ON	3rd	OFF	X	O/D	O/D
	OFF	OFF	O/D	X	OFF	O/D	OFF	X	O/D	O/D
2	ON	OFF	1st	X	ON	3rd	ON	X	1st	3rd
	ON	ON	2nd	X	ON	3rd	OFF	X	3rd	3rd
	OFF	ON	3rd	X	ON	3rd	OFF	X	3rd	3rd
L	ON	OFF	1st	X	OFF	1st	ON	X	1st	1st
	ON	ON	2nd	X	ON	2nd	ON	X	1st	1st

X = Malfunctioning solenoid valve.

Figure TA1241-11 1998–2000 SC300 with A340E transmission

○ : ON △ : Lock-up ON × : OFF

Normal	Solenoid Valve	SL1	○	×	○	×	×
		SL2	○	○	△	△	△
		SL3	×	×	×	○	○
		S4	×	×	×	×	○
	Gear Position		1st	2nd	3rd	4th	5th
SL1 Malfunction (During driving at 1st or 2nd)	Solenoid Valve	SL1	×				
		SL2	○	○	△→○	△→○	△→○
		SL3	×	×	×	○→×	○→×
		S4	×	×	×	×	○→×
	Gear Position		1st → 2nd	2nd	3rd → 2nd	4th → 2nd	5th → 2nd
SL1 Malfunction (During driving at 3rd)	Solenoid Valve	SL1	×				
		SL2	○→△	○→△	△	△	△
		SL3	×	×	×	○→×	○→×
		S4	×	×	×	×	○
	Gear Position		1st → 4th	2nd → 4th	3rd → 4th	4th	5th → 4th
SL1 Malfunction (During driving at 4th or 5th)	Solenoid Valve	SL1	×				
		SL2	○→△	○→△	△	△	△
		SL3	×	×	×	○	○
		S4	×	×	×	×	○
	Gear Position		1st → 4th	2nd → 4th	3rd → 4th	4th	5th → 4th
SL2 Malfunction	Solenoid Valve	SL1	○	×	○	×	×
		SL2	×				
		SL3	×	×	×	○→×	○→×
		S4	×	×	×	×	○
	Gear Position		1st → 4th	2nd → 4th	3rd → 4th	4th	5th → 4th
SL3 Malfunction	Solenoid Valve	SL1	○	×	○	×	×
		SL2	○	○	△	△	△
		SL3	×				
		S4	×	×	×	×	○
	Gear Position		1st	2nd	3rd	4th	5th → 4th
SL4 Malfunction	Solenoid Valve	SL1	○	×	○	×	×
		SL2	○	○	△	△	△
		SL3	×	×	×	○	○
		S4	×				
	Gear Position		1st	2nd	3rd	4th	5th → 4th
SL1, SL2, SL3, and S4 Malfunction	Solenoid Valve	SL1	×				
		SL2	×				
		SL3	×				
		S4	×				
	Gear Position		1st → 4th	2nd → 4th	3rd → 4th	4th	5th → 4th

Figure TA1241-12 2002-03 ES300 with U150E transmission

○: ON X: OFF

Position	NORMAL						S1 OFF						S2 OFF						SR OFF					
	Gear	S1	S2	SR	SL1	SL2	Gear	S1	S2	SR	SL1	SL2	Gear	S1	S2	SR	SL1	SL2	Gear	S1	S2	SR	SL1	SL2
"R"	R	○	×	×	×	○	R	×	×	×	×	○	R	○	×	×	×	○	R	○	×	×	×	○
"D"	1 st	○	×	×	×	○	4 th ↓ 3 rd	×	×	○	×	○	1 st	○	×	×	×	○	1 st	○	×	×	×	○
	2 nd	○	○	×	×	○	3 rd	×	○	×	×	○	1 st ↓ 4 th	○	×	×	×	○	2 nd	○	○	×	×	○
	3 rd	×	○	×	×	○	3 rd	×	○	×	×	○	4 th	×	×	×	×	○	3 rd	×	○	×	×	○
	4 th	×	×	×	×	○	4 th	×	×	×	×	○	4 th	×	×	×	×	○	4 th	×	×	×	×	○
	5 th	×	×	○	○	×	5 th	×	×	○	○	×	5 th	×	×	○	○	×	4 th	×	×	×	○	×
"3"	1 st	○	×	×	×	○	3 rd ↓ 3 rd E/B	×	×	○	×	○	1 st	○	×	×	×	○	1 st	○	×	×	×	○
	2 nd	○	○	×	×	○	3 rd ↓ 3 rd E/B	×	○	×	×	○	1 st ↓ 3 rd E/B	○	×	×	×	○	2 nd	○	○	×	×	○
	3 rd E/B	×	○	×	×	×	3 rd E/B	×	○	×	×	×	3 rd E/B	×	×	×	×	×	3 rd E/B ↓ 3 rd	×	○	×	×	○
	4 th	×	×	○	×	○	4 th	×	×	○	×	○	4 th	×	×	○	×	○	3 rd	×	×	×	×	○
	5 th	×	×	○	○	×	5 th	×	×	○	○	×	5 th	×	×	○	○	×	3 rd E/B ↓ 3 rd	×	×	×	○	×
"2"	1 st	○	×	×	×	○	1 st	×	×	×	×	○	1 st	○	×	×	×	○	1 st	○	×	×	×	○
	2 nd E/B	○	○	○	×	×	3 rd E/B	×	○	○	×	×	2 nd E/B ↓ 4 th	○	×	○	×	○	2 nd	○	○	×	×	×
	3 rd E/B	×	○	○	×	×	3 rd E/B	×	○	○	×	×	Fail 4th	×	×	○	×	○	2 nd	×	○	×	×	×
	4 th	×	×	○	×	○	4 th	×	×	○	×	○	4 th	×	×	○	×	○	1 st ↓ 2 nd	×	×	×	×	○
	5 th	×	×	○	○	×	5 th	×	×	○	○	×	5 th	×	×	○	○	×	1 st E/B ↓ 2 nd	×	○	×	○	×
"L"	1 st E/B	○	×	×	×	×	1 st E/B	×	×	×	×	×	1 st E/B	○	×	×	×	×	1 st E/B	○	×	×	×	×
	2 nd E/B	○	○	○	×	×	3 rd E/B	×	○	○	×	×	2 nd E/B ↓ 4 th	○	×	○	×	○	2 nd	○	○	×	×	×
	3 rd E/B	×	○	○	×	×	3 rd E/B	×	○	○	×	×	Fail 4 th	×	×	○	×	○	2 nd	×	○	×	×	×
	4 th	×	×	○	×	○	4 th	×	×	○	×	○	4 th	×	×	○	×	○	1 st ↓ 2 nd	×	×	×	×	○
	5 th	×	×	○	○	×	5 th	×	×	○	○	×	5 th	×	×	○	○	×	1 st E/B ↓ 2 nd	×	×	×	○	×

Figure TA1241-13 2003 4Runner V8, Land Cruiser, LX470, and GX470 with A750E or A750F transmission (sheet 1 of 2)

○: ON X: OFF

Position	S1 S2 OFF						S2 SR OFF						S1 SR OFF						S1 S2 SR OFF					
	Gear	S1	S2	SR	SL1	SL2	Gear	S1	S2	SR	SL1	SL2	Gear	S1	S2	SR	SL1	SL2	Gear	S1	S2	SR	SL1	SL2
"R"	R	X	X	X	X	○	R	○	X	X	X	○	R	X	X	X	X	○	R	X	X	X	X	○
"D"	4 th	X	X	X	X	○	1 st	○	X	X	X	○	4 th ↓ 3 rd	X	○	X	X	○	4 th	X	X	X	X	○
	4 th	X	X	X	X	○	1 st ↓ 4 th	○	X	X	X	○	3 rd	X	○	X	X	○	4 th	X	X	X	X	○
	4 th	X	X	X	X	○	4 th	X	X	X	X	○	3 rd	X	○	X	X	○	4 th	X	X	X	X	○
	4 th	X	X	X	X	○	4 th	X	X	X	X	○	4 th	X	X	X	X	○	4 th	X	X	X	X	○
	5 th	X	X	○	○	X	4 th	X	X	X	○	X	○	4 th	X	X	X	○	X	X	X	○	X	○
"3"	3 rd ↓ 3 rd E/B	X	X	X	X	○	1 st	○	X	X	X	○	3 rd	X	○	X	X	○	3 rd	X	X	X	X	○
	3 rd ↓ 3 rd E/B	X	X	X	X	○	1 st ↓ 3 rd	○	X	X	X	○	3 rd	X	○	X	X	○	3 rd	X	X	X	X	○
	3 rd E/B	X	X	X	X	○	3 rd E/B ↓ 3 rd	X	X	X	X	○	3 rd E/B ↓ 3 rd	X	○	X	X	○	3 rd E/B ↓ 3 rd	X	X	X	X	○
	4 th	X	X	○	○	○	3 rd	X	X	X	X	○	3 rd	X	○	X	X	○	3 rd	X	X	X	X	○
	5 th	X	X	○	○	X	1 st E/B ↓ 3 rd	X	X	X	○	X	○	3 rd E/B ↓ 3 rd	X	○	X	○	X	3 rd E/B ↓ 3 rd	X	X	X	○
"2"	1 st	X	X	X	X	○	1 st	○	X	X	X	○	1 st	X	X	X	X	○	1 st	X	X	X	X	○
	Fail 4 th	X	X	○	X	○	1 st E/B ↓ 1 st	○	X	X	X	○	2 nd	X	○	X	X	○	1 st E/B ↓ 1 st	X	X	X	X	○
	Fail 4 th	X	X	○	X	○	1 st E/B ↓ 1 st	○	X	X	X	○	2 nd	X	○	X	X	○	1 st E/B ↓ 1 st	X	X	X	X	○
	4 th	X	X	○	○	○	1 st	X	X	X	X	○	1 st ↓ 2nd	X	○	X	X	○	1 st	X	X	X	X	○
	5 th	X	X	○	○	X	1 st E/B ↓ 1 st	X	X	X	○	X	○	1 st E/B ↓ 2nd	X	○	X	○	X	1 st E/B ↓ 1 st	X	X	X	○
"L"	1 st E/B	X	X	X	X	X	1 st E/B	○	X	X	X	X	1 st E/B	X	X	X	X	X	1 st E/B	X	X	X	X	X
	Fail 4 th	X	X	○	X	○	1 st E/B ↓ 1 st	○	X	X	X	○	2 nd	X	○	X	X	○	1 st E/B ↓ 1 st	X	X	X	X	○
	Fail 4 th	X	X	○	X	○	1 st E/B ↓ 1 st	○	X	X	X	○	2 nd	X	○	X	X	○	1 st E/B ↓ 1 st	X	X	X	X	○
	4 th	X	X	○	○	○	1 st	X	X	X	X	○	1 st ↓ 2nd	X	○	X	X	○	1 st	X	X	X	X	○
	5 th	X	X	○	○	X	1 st E/B ↓ 1 st	X	X	X	○	X	○	1 st E/B ↓ 2nd	X	○	X	○	X	1 st E/B ↓ 1 st	X	X	X	○

Figure TA1241-13 2003 4Runner V8, Land Cruiser, LX470, and GX470 with A750E or A750F transmission (sheet 2 of 2)

Range	NORMAL			SHIFT SOLENOID VALVE S1 MALFUNCTIONING			SHIFT SOLENOID VALVE S2 MALFUNCTIONING			BOTH SHIFT SOLENOID VALVES MALFUNCTIONING
	Solenoid valve		Gear	Solenoid valve		Gear	Solenoid valve		Gear	Gear when shift selector is manually operated
	S1	S2		S1	S2		S1	S2		
D	ON	ON	1st	X	ON→OFF	3rd	ON	X	2nd	3rd
	ON	OFF	2nd	X	OFF	3rd	ON	X	2nd	3rd
	OFF	OFF	3rd	X	OFF	3rd	OFF	X	3rd	3rd
	OFF	ON	O/D	X	ON	O/D	OFF	X	3rd	3rd
2	ON	ON	1st	X	ON→OFF	3rd	ON	X	2nd	3rd
	ON	OFF	2nd	X	OFF	3rd	ON	X	2nd	3rd
	OFF	OFF	3rd	X	OFF	3rd	OFF	X	3rd	3rd
L	ON	ON	1st	X	ON→OFF	3rd	ON	X	2nd	3rd
	ON	OFF	2nd	X	OFF	3rd	ON	X	2nd	3rd
	OFF	OFF	3rd	X	OFF	3rd	OFF	X	3rd	3rd

X: Malfunctions

NORMAL				SHIFT SOLENOID SL1 MALFUNCTIONING								SHIFT SOLENOID SL2 MALFUNCTIONING			
				Driving at 3rd or O/D				Driving at 1st or 2nd							
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	OFF	3rd	X	ON	OFF	2nd	ON ↓ OFF	X	OFF	3rd
OFF	ON	OFF	2nd	X	ON ↓ OFF	OFF	3rd	X	ON	OFF	2nd	OFF	X	OFF	3rd
	OFF	OFF	3rd	X	OFF	OFF	3rd	X	OFF ↓ ON	OFF ↓ ON	3rd		X	OFF	3rd
	OFF	ON	O/D	X	OFF	ON	O/D	X	OFF ↓ ON	ON	3rd		X	ON	O/D

SHIFT SOLENOID S4 MALFUNCTIONING				SHIFT SOLENOID SL1 AND SL2 MALFUNCTIONING				SHIFT SOLENOID SL1 AND S4 MALFUNCTIONING							
								Driving at 3rd or O/D				Driving at 1st or 2nd			
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	X	1st	X	X	OFF	3rd	X	ON ↓ OFF	X	3rd	X	ON	X	2nd
OFF	ON	X	2nd	X	X	OFF	3rd	X	ON ↓ OFF	X	3rd	X	ON	X	2nd
	OFF	X	3rd	X	X	OFF	3rd	X	OFF	X	3rd	X	OFF ↓ ON	X	2nd
	OFF	X	3rd	X	X	ON	O/D	X	OFF	X	3rd	X	OFF ↓ ON	X	2nd

SHIFT SOLENOID SL2 AND S4 MALFUNCTIONING				SHIFT SOLENOID SL1, SL2 AND S4 MALFUNCTIONING			
Solenoid Valve			Gear	Solenoid Valve			Gear
SL1	SL2	S4		SL1	SL2	S4	
ON ↓ OFF	X	X	3rd	X	X	X	3rd
OFF	X	X	3rd	X	X	X	3rd
	X	X	3rd	X	X	X	3rd
	X	X	3rd	X	X	X	3rd

Figure TA1241-14 2003 Matrix with A246E, U240E, or U240F transmission