

# AUTO TRANS DIAGNOSIS - A-340E/F/H & A-341E

## Selected Block

1990 Lexus LS 400

For Lextreme Powertrain 2020 S. Hacienda Blvd. # D Hacienda Heights California 91745

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## TESTING

### DIAGNOSTIC PROCEDURE

1) Before testing transmission, ensure fluid level is correct, shift linkage, throttle cable, neutral switch and idle speed are correctly adjusted. Ensure transfer case linkage and transfer switch (if equipped) are correctly adjusted. Battery must be fully charged for accurate testing.

2) To aid in fault diagnosis, determine if fault is hydraulic, electronic or a combination of both.

3) The electronic control is capable of storing self-diagnostic codes. To determine if a fault is electrical, read any stored diagnostic codes. Repair electrical fault associated with the code. See DIAGNOSTIC CODES.

NOTE: Not all electrical faults will cause a diagnostic code to be stored (i.e. throttle position sensor and brake signal). Farther circuit tests may be required See ELECTRICAL COMPONENTS & CIRCUIT.

4) After repairing electrical faults, or if no codes are stored, proceed to MANUAL SHIFTING TEST. During this test the ECT ECU is disconnected to eliminate the electronic control of shifting.

5) If the transmission passes the MANUAL SHIFTING TEST, an electrical fault remains in the system. Repair as necessary.

6) If the transmission fails the MANUAL SHIFTING TEST, perform a stall test, time lag test and hydraulic pressure test. See TESTING under appropriate transmission article in this section.

### DIAGNOSTIC CODES

CAUTION: Ensure battery is fully charged prior to testing. Low battery voltage will cause faulty diagnostic system operation.

Reading Diagnostic Codes (W/O Super Monitor Display)

1) Turn ignition on with engine off. Ensure overdrive switch is in the ON position. Diagnostic codes can only be read if overdrive switch is in the ON position.

2) Determine terminal connector location. See Fig. 1. Using a jumper wire, connect terminals as specified. See TERMINAL USAGE table.

3) Diagnostic codes are read by counting the number of times the "OD OFF" light flashes on the instrument panel.

### TERMINAL USAGE TABLE

Application	Terminal Used
Pickup & 4Runner (1988)	DG-To-Ground

All Others ..... E1-To-T1 or E1-To-ECU  
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4) If transmission electrical system is operating normally the light will blink. See NORMAL OPERATION CODE SIGNAL table.

5) If there is a malfunction in the system, the light will blink. See MALFUNCTION CODE SIGNAL table. The number of blinks will equal the first number of the diagnostic code. After a 1.5 second pause, the second number of the diagnostic code will flash. If there are 2 or more codes, there is a 2.5 second pause between codes.

6) Remove jumper wire. If codes are stored, note code number and repair appropriate circuit. See appropriate DIAGNOSTIC CODES table.

#### NORMAL OPERATION CODE SIGNAL TABLE

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Application (1)	Flash Time
1988	
Cressida & Supra A-340E .....	Once Every .25 Sec.
Pickup & 4Runner A-340H .....	Once Every .25 Sec.
1989	
Cressida & Supra A-340E .....	2 Times Per Sec.
Pickup A-340E & A-340H .....	2 Times Per Sec.
4Runner A-340H .....	2 Times Per Sec.
1990	
Cressida & Supra A-340E .....	2 Times Per Sec.
Lexus LS400 A-341E .....	2 Times Per Sec.
Pickup & 4Runner A-340E, A-340F & A-340H .....	2 Times Per Sec.

(1) - Normal operation indicates no codes are stored.  
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NOTE: If several diagnostic codes are stored, the lowest number code will flash first. Other codes will flash from lowest to highest number.

#### MALFUNCTION CODE SIGNAL TABLE

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Application	Flash Time
1988	
Cressida & Supra A-340E .....	Once Every .5 Sec.
Pickup & 4Runner A-340H .....	Once Every .5 Sec.
1989	
Cressida & Supra A-340E .....	1 Time Per Sec.
Pickup A-340E & A-340H .....	1 Time Per Sec.
4Runner A-340H .....	1 Time Per Sec.

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Cressida & Supra A-340E ..... 1 Time Per Sec.  
Lexus LS400 A-341E ..... Once Every .5 Sec.  
Pickup & 4Runner  
A-340E, A-340F & A-340H ..... 1 Time Per Sec.

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7) If diagnostic codes 62, 63, 64, 65, 73 or 74 occur an electrical failure in the solenoid is indicated. Mechanical failures such as sticking switches will not appear as diagnostic codes.

Reading Diagnostic Codes  
(Cressida & Supra W/Super Monitor Display)

CAUTION: DO NOT depress accelerator pedal while checking codes with Super Monitor Display. Depressing of accelerator pedal will cancel the display.

1) Turn ignition on with engine off. Simultaneously push and hold the SELECT and INPUT M keys for at least 3 seconds. See Fig. 8. The letters DIAG will appear on the screen.

2) After a short time, hold the SET key for at least 3 seconds. If system is operating correctly, ECT OK will appear on the screen. If a malfunction exists, the code number will be displayed on the screen.

3) If 2 or more codes are stored, a 5 second pause will occur between the codes. If codes are stored, note code number and repair appropriate circuit. See appropriate DIAGNOSTIC CODES table. If diagnostic codes 62, 63, 64 or 65 occur, an electrical failure in the solenoids is indicated. Mechanical failures such as sticking switches will not appear as diagnostic codes.

4) Once diagnostic code is confirmed, turn ignition off or push DISPLAY key to obtain time reading on the screen.

DIAGNOSTIC CODES (EXCEPT A-341E) TABLE

Diagnostic Codes	Trouble Areas
42	Defective No. 1 speed sensor. Severed wire harness or short circuit. Fault ECU.
44	Defective rear wheel speed sensor (in transfer left case). Severed wire harness or short circuit.
61	Defective No. 2 speed sensor. Severed wire harness or short

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	circuit. Faulty ECU.
62	Defective No. 1 solenoid. Severed wire harness or short circuit. Faulty ECU.
63	Defective No. 2 solenoid. Severed wire harness or short circuit. Faulty ECU.
64	Defective lock-up solenoid. Severed wire harness or short circuit.
65	Defective No. 4 solenoid. Severed wire harness or short circuit.

#### DIAGNOSTIC CODES (A-341E MODELS)

CAUTION: Ensure battery is fully charged prior to testing. Low battery voltage will cause faulty diagnostic system operation.

##### Reading Diagnostic Codes (A-341E)

- 1) Turn ignition on. DO NOT start engine. Ensure overdrive switch is in the ON position. Diagnostic codes can only be read if overdrive switch is in the ON position.
- 2) Using a jumper wire, connect terminals TE1 and E1 of Total Diagnostic Communication Link (TDCL). See Fig. 1.
- 3) Diagnostic codes are read by counting the number of times OD OFF light flashes on the instrument panel.
- 4) If transmission electrical system is operating normally the light will blink. See NORMAL OPERATION CODE SIGNAL table.

#### DIAGNOSTIC CODES (A-341E) TABLE

Diag Code	Diagnosis	Trouble Area
42	The No. 2 speed sensor signal is input, but No. 1 speed sensor signal is not input while vehicle is being driven in a shift range other than the N range.	* No. 1 speed sensor. * Combination meter. * Harness or connector between No. 1 speed sensor and ECU. * ECU.
46	Current does not flow to the No. 4 solenoid circuit for a	* No. 4 solenoid valve. * Harness or connector

	set period of time or longer when the ECU output duty ratio to the No. 4 solenoid is 90% or higher.	between No. 4 solenoid valve and ECU. * ECU.
61	The No.1 speed sensor signal is input, but No. 2 speed sensor signal is not input while vehicle is being driven in a shift range other than the N range.	* No. 2 speed sensor. * Harness or connector between No. 2 speed sensor and ECU. * ECU.
62, 63	Solenoid resistance is 8 ohms or lower when solenoid is energized. Solenoid resistance is 100k ohms or higher when solenoid is not energized.	* Solenoid valve. * Harness or connector between solenoid and ECU. * ECU.
64	Current does not flow to the No. 3 solenoid circuit for a set period of time or longer when the ECU output duty ratio to the No. 3 solenoid is 90% or higher.	* No. 3 solenoid valve. * Harness or connector between No. 3 solenoid valve and ECU. * ECU.
67	When NO signal (output shaft RPM) is above 1000 RPM. NCO signal (input shaft RPM) is below 500 RPM.	* OD direct clutch speed sensor. * Harness or connector between OD direct driven clutch speed sensor and ECU. * ECU.
68	The kickdown switch is turned on before the accelerator pedal starts pushing in the switch.	* Kickdown switch (Remains ON). * Harness or connector between kickdown switch and ECU. * Harness or connector between kickdown switch and body ground. * ECU.