LEXUS

Technical Service Information Bulletin

July 17, 1998

Title:

A/C BLOWER MOTOR MALFUNCTION

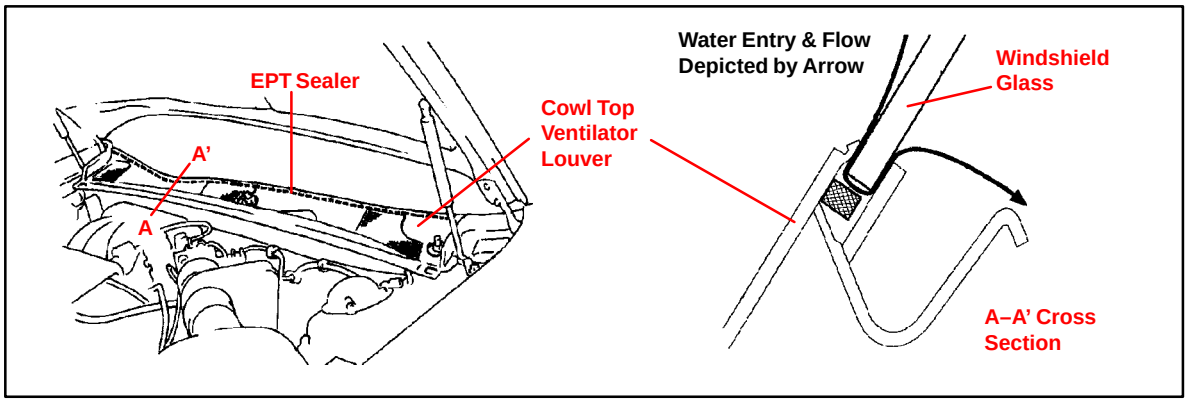
Models:

'97 ES 300

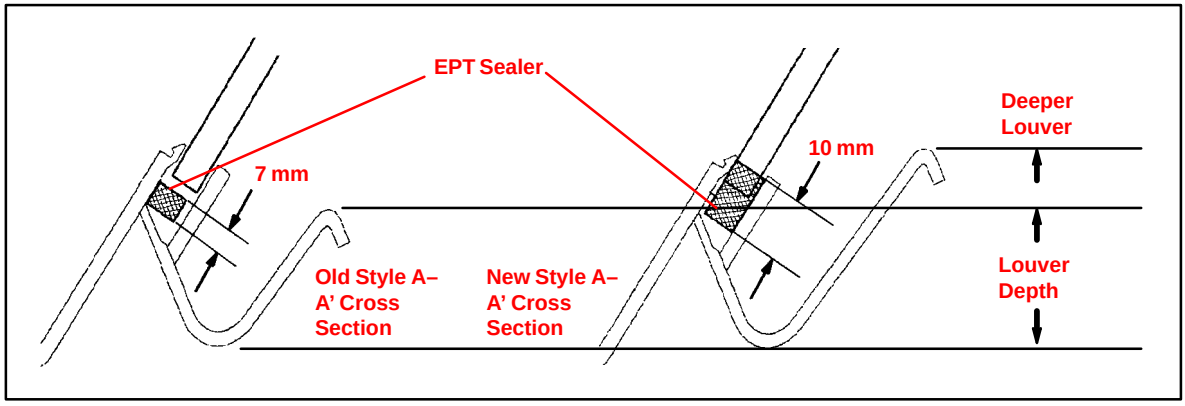
TSIB

Introduction

A Malfunction of the A/C blower motor may be caused by water intrusion into the blower unit due to a poor seal between the windshield and the cowl top ventilation louver.



To prevent this, the amount of caulking sponge sealant (EPT Sealer) applied behind the cowl top ventilation louver has been increased. In addition, the shape of the louver has been changed as shown in the illustrations below.



Affected Vehicles

- **1997** model year **ES 300s** produced **before JT8BF22G*W0096000** at Tsutsumi plant or **before JT8BF22G*W5022600** at Kyushu plant.

Parts Information

OLD PART NUMBER	NEW PART NUMBER	PART NAME
55781–33140	Same	Lower Cowl Top Ventilator, RH
55782–33140	Same	Lower Cowl Top Ventilator, LH

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
EL8001	R&R Blower Motor	0.6	87103–44020	66	83

Applicable Warranty*:

This repair is covered under the Lexus Basic Warranty. This warranty is in effect for 48 months or 50,000 miles, whichever occurs first, from the vehicle's in–service date.

* Warranty application is limited to correction of a problem based upon a customer's complaint.

Repair Procedure

If evidence of water intrusion into the blower motor housing is found such as rusting of the Blower Motor, perform the following operations:

1. Replace the Blower Motor (Refer to the Repair Manual for procedure).
2. Remove wiper arms and the hood to cowl top seal.
3. Replace the cowl top ventilator louver with new part.
4. Reinstall components in reverse order.

Technical Service Information Bulletin
December 16, 2004

Title:

SENSOR INSPECTION FOR AIR CONDITIONING SYSTEM

Models:

'90 – Current All Models

Introduction

This service bulletin contains inspection procedures to more precisely confirm proper operation of the following temperature sensors of the air conditioning system. Follow the procedures in this service bulletin when inspecting these sensors. These contents will be reflected in future repair manuals.

- Room Temperature Sensor
- Ambient Temperature Sensor
- Air Duct Sensor
- Evaporator Temperature Sensor
- Solar Sensor
- Room Humidity Sensor

Applicable Vehicles

- **All 1990 – Current** model year **Lexus** vehicles.

Warranty Information

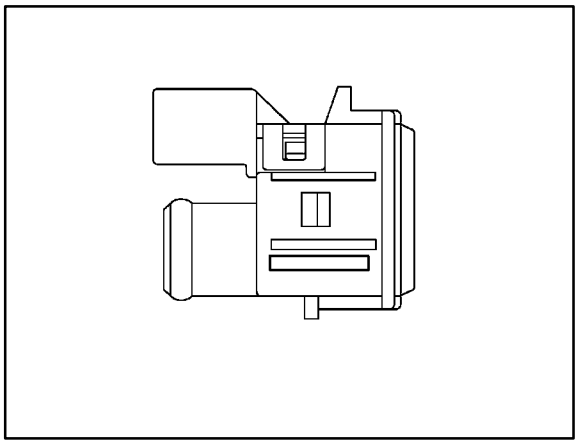
OP CODE	DESCRIPTION	TIME	OFP	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

Inspection Procedure

1. Inspect Room Temperature Sensor.

A. Measure the sensor resistance.

Resistance Value at 77°F (25°C)	1700 +/– 85Ω



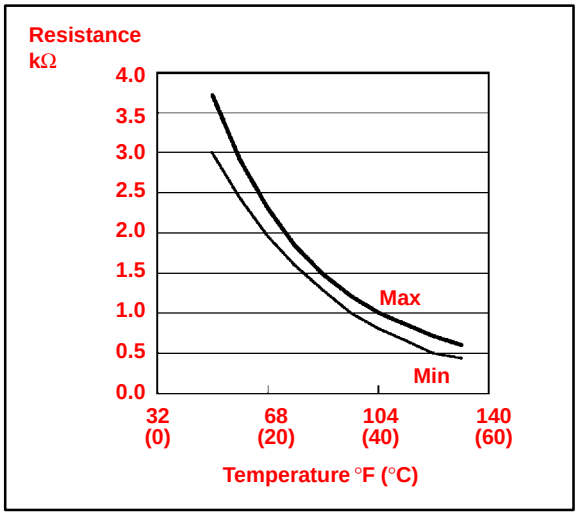
NOTE:

- **Even slightly touching the sensor may change the resistance value. Be sure to hold the connector of the sensor.**
- **When measuring, the sensor temperature must be the same as the ambient temperature.**

HINT:

As the temperature increases, the resistance decreases.

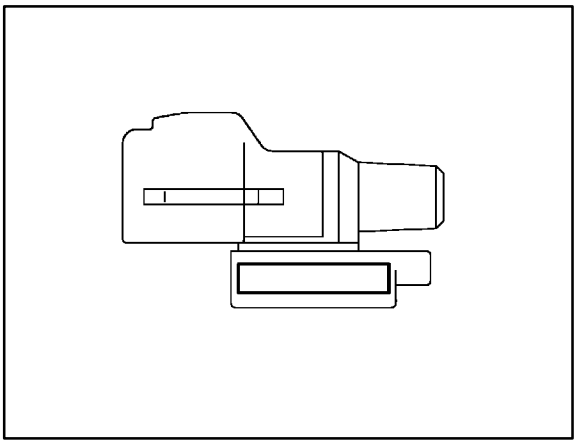
TEMPERATURE °F (°C)	SPECIFICATION kΩ
50 (10)	3.00 to 3.73
59 (15)	2.45 to 2.88
68 (20)	1.95 to 2.30
77 (25)	1.60 to 1.80
86 (30)	1.28 to 1.47
95 (35)	1.00 to 1.22
104 (40)	0.80 to 1.00
113 (45)	0.65 to 0.85
122 (50)	0.50 to 0.70
131 (55)	0.44 to 0.60
140 (60)	0.36 to 0.50



Inspection Procedure (Continued)

2. Inspect Ambient Temperature Sensor.

A. Measure the sensor resistance according to the selected graph (specification).



Resistance Value at 77°F (25°C)	1700 +/– 85Ω

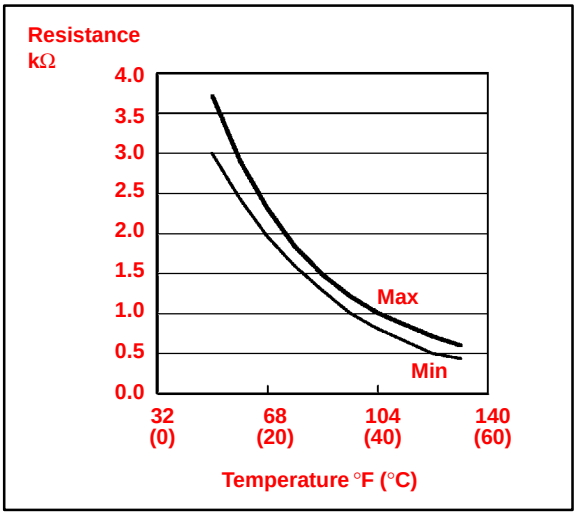
NOTE:

- **Even slightly touching the sensor may change the resistance value. Be sure to hold the connector of the sensor.**
- **When measuring, the sensor temperature must be the same as the ambient temperature.**

HINT:

As the temperature increases, the resistance decreases.

TEMPERATURE °F (°C)	SPECIFICATION kΩ
50 (10)	3.00 to 3.73
59 (15)	2.45 to 2.88
68 (20)	1.95 to 2.30
77 (25)	1.60 to 1.80
86 (30)	1.28 to 1.47
95 (35)	1.00 to 1.22
104 (40)	0.80 to 1.00
113 (45)	0.65 to 0.85
122 (50)	0.50 to 0.70
131 (55)	0.44 to 0.60
140 (60)	0.36 to 0.50



Inspection Procedure (Continued)

3. Inspect Air Duct Sensor.

A. Measure the sensor resistance according to the table and graph (specification).

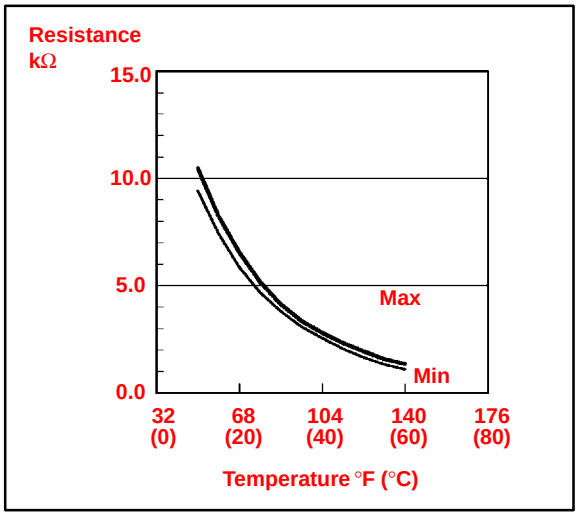
NOTE:

- **Even slightly touching the sensor may change the resistance value. Be sure to hold the connector of the sensor.**
- **When measuring, the sensor temperature must be the same as the ambient temperature.**

HINT:

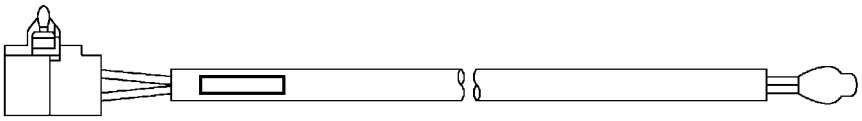
As the temperature increases, the resistance decreases.

TEMPERATURE °F (°C)	SPECIFICATION kΩ
50 (10)	9.48 to 10.49
59 (15)	7.50 to 8.28
68 (20)	5.95 to 6.57
77 (25)	4.77 to 5.25
86 (30)	3.85 to 4.21
95 (35)	3.12 to 3.40
104 (40)	2.53 to 2.79
113 (45)	2.06 to 2.30
122 (50)	1.69 to 1.91
131 (55)	1.39 to 1.59
140 (60)	1.15 to 1.33



Inspection Procedure (Continued)

4. Inspect Evaporator Temperature Sensor.



Select the appropriate graph (specification) using the following table.

NOTE:

Please inspect the sensors for model years not indicated by this bulletin, according to the instructions in the applicable repair manual.

MODEL	MODEL YEAR	COMMENTS	PART NUMBER	GRAPH
ES 300	1992 – 2001		88625–33070	2
ES 300/330	2002 – 2003		88625–17130	2
	2003		88625–33170	3
GS 300	1993 – 1997		88625–3A020	2
GS 300/400/430	1998 – 2002		88625–3A120	2
GX 470	2003 – 2005	Thermistor No. 1	88625–35050	3
		Thermistor No. 2	88625–16210	2
IS 300	2000 – 2001		88625–48010	2
LS 400	1990 – 1992		88625–32040	2
	1993 – 1994		88625–50100	2
	1995 – 2000		88625–50140	2
LS 430	2001 – 2005		88625–50160	2
LX 450	1996 – 1997		88625–60060	2
LX 470	1998 – 2000	Thermistor No. 2	88625–60140	2
	1998 – 2002	Thermistor No. 1	88625–60130	2
	2003 – 2005		88625–47011	2
RX 300	1998 – 2003		88625–48010	2
RX 330	2004	CBU	88625–48050	1
	2004 – 2005	CBU	88625–48060	3
		NAP		
SC 300/400	1991 – 2000		88625–32040	2

Inspection Procedure (Continued)

A. Measure the sensor resistance according to the selected graph (specification).

NOTE:

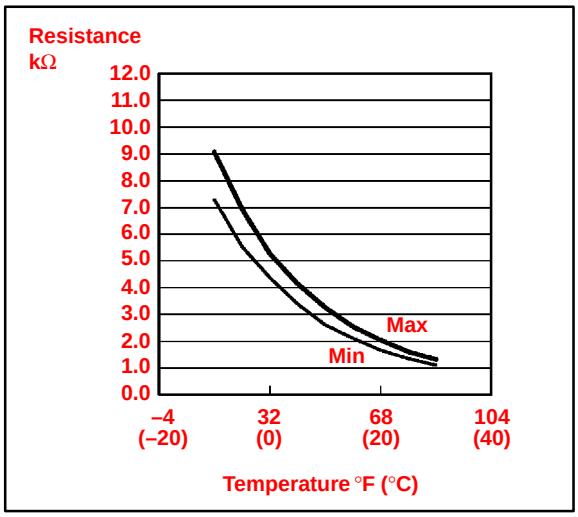
- **Even slightly touching the sensor may change the resistance value. Be sure to hold the connector of the sensor.**
- **When measuring, the sensor temperature must be the same as the ambient temperature.**

HINT:

As the temperature increases, the resistance decreases.

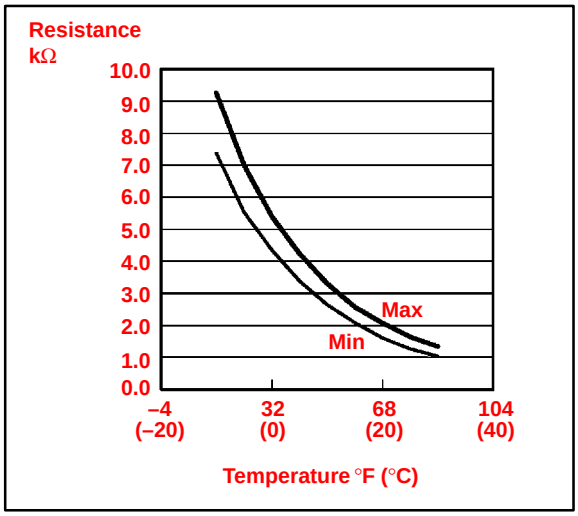
Graph 1:

TEMPERATURE °F (°C)	SPECIFICATION kΩ
14 (–10)	7.30 to 9.10
23 (–5)	5.65 to 6.95
32 (0)	4.40 to 5.35
41 (5)	3.40 to 4.15
50 (10)	2.70 to 3.25
59 (15)	2.14 to 2.58
68 (20)	1.71 to 2.05
77 (25)	1.38 to 1.64
86 (30)	1.11 to 1.32



Graph 2:

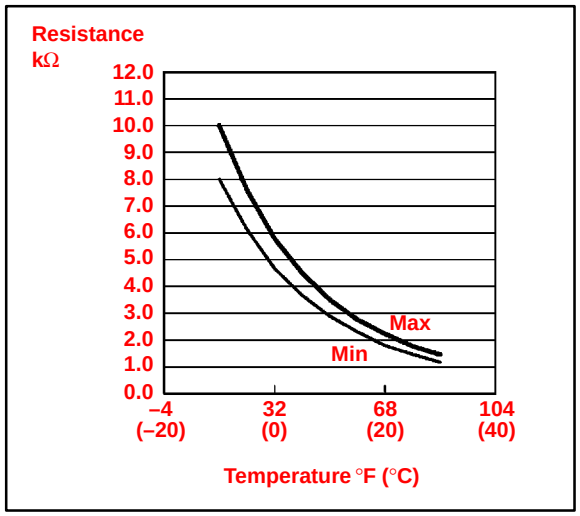
TEMPERATURE °F (°C)	SPECIFICATION kΩ
14 (–10)	7.40 to 9.20
23 (–5)	5.65 to 7.00
32 (0)	4.35 to 5.40
41 (5)	3.40 to 4.20
50 (10)	2.68 to 3.30
59 (15)	2.10 to 2.60
68 (20)	1.66 to 2.10
77 (25)	1.32 to 1.66
86 (30)	1.05 to 1.35



Inspection Procedure (Continued)

Graph 3:

TEMPERATURE °F (°C)	SPECIFICATION kΩ
14 (–10)	8.00 to 10.00
23 (–5)	6.15 to 7.65
32 (0)	4.75 to 5.85
41 (5)	3.70 to 4.55
50 (10)	2.91 to 3.55
59 (15)	2.32 to 2.80
68 (20)	1.85 to 2.22
77 (25)	1.48 to 1.77
86 (30)	1.20 to 1.43



Inspection Procedure (Continued)

5. Inspect Solar Sensor.

Four types of solar sensors are used on Lexus vehicles depending on the vehicle specifications. The inspection procedure for each type of sensor differs from the others. Select the appropriate inspection procedure from the table below according to vehicle specifications and perform the inspection.

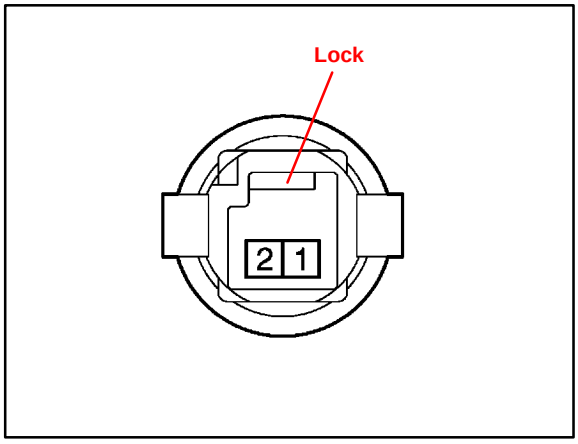
EQUIPPED WITH AUTOMATIC LIGHT CONTROL SYSTEM	A/C SYSTEM WITH RIGHT/LEFT INDEPENDENT TEMPERATURE CONTROL	INSPECTION PROCEDURE
No	No	A
No	Yes	B
Yes	Yes	C
Yes	No	D

Procedure A:

a. Disconnect the solar sensor connector.

b. Measure the resistance between terminals 1 and 2 of the solar sensor under the following conditions:

- Cover the sensor with a cloth to avoid direct light.
- Expose the sensor to light from a distance of 300 mm (11.81 in.) or less with an inspection light.



NOTE:

- **Terminal 1 of the sensor is always on the right, when the lock is facing up.**
- **When using an analog tester, connect the positive (+) lead to terminal 2 and negative (–) lead to terminal 1 of the solar sensor.**

HINT:

If the light is weak, the sensor may not react. Be sure to use an incandescent light for an inspection light.

Standard:

CONDITION	SPECIFICATION
When the sensor is covered with a cloth (to avoid direct light)	Infinite ohms
When the sensor is exposed to light	Less than infinite resistance

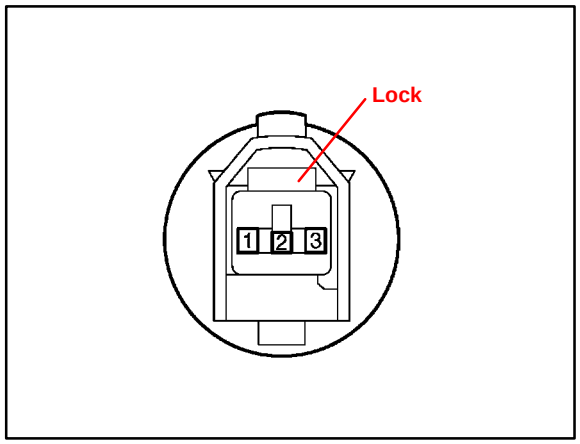
Inspection Procedure (Continued)

Procedure B:

a. Disconnect the solar sensor connector.

b. Measure the resistance between terminals 2 and 3 of the solar sensor under the following conditions:

- Cover the sensor with a cloth to avoid direct light.
- Expose the sensor to light from a distance of 300 mm (11.81 in.) or less with an inspection light.



NOTE:

When using an analog tester, connect the positive (+) lead to terminal 3 and negative (–) lead to terminal 2 of the solar sensor.

HINT:

If the light is weak, the sensor may not react. Be sure to use an incandescent light for an inspection light.

Standard:

CONDITION	SPECIFICATION
When the sensor is covered with a cloth (to avoid direct light)	Infinite ohms
When the sensor is exposed to light	Less than infinite resistance

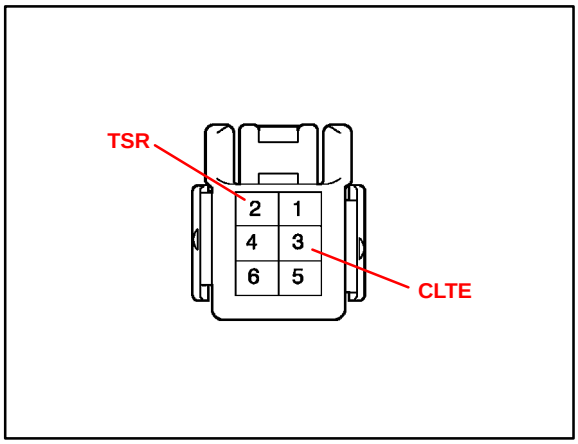
Inspection Procedure (Continued)

Procedure C:

a. Turn the ignition switch ON.

b. Measure the voltage between terminals TSR (+) and CLTE (–) of the connector under the following conditions:

- Cover the sensor with a cloth to avoid direct light.
- Expose the sensor to light from a distance of 300 mm (11.81 in.) or less with an inspection light.



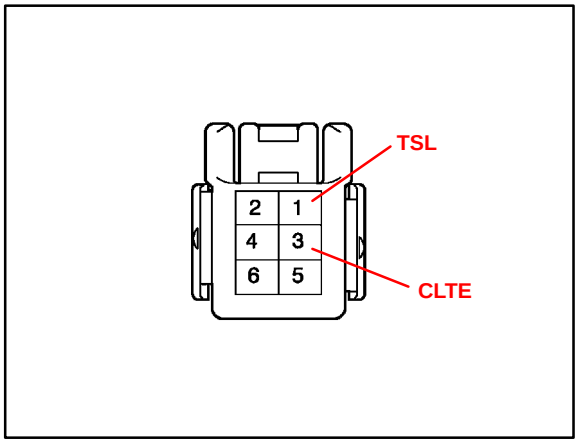
HINT:
- **If the light is weak, the sensor may not react. Be sure to use an incandescent light for an inspection light.**
- **Do not disconnect the solar sensor connector.**

Standard:

CONDITION	SPECIFICATION
When the sensor is covered with a cloth (to avoid direct light)	Below 0.8 V
When the sensor is exposed to light	4.3 +/– 0.3 V

c. Measure the voltage between terminals TSL (+) and CLTE (–) of the connector under the following conditions:

- Cover the sensor with a cloth to avoid direct light.
- Expose the sensor to light from a distance of 300 mm (11.81 in.) or less with an inspection light.



HINT:
- **If the light is weak, the sensor may not react. Be sure to use an incandescent light for an inspection light.**
- **Do not disconnect the solar sensor connector.**

Standard:

CONDITION	SPECIFICATION
When the sensor is covered with a cloth (to avoid direct light)	Below 0.8 V
When the sensor is exposed to light	4.3 +/– 0.3 V

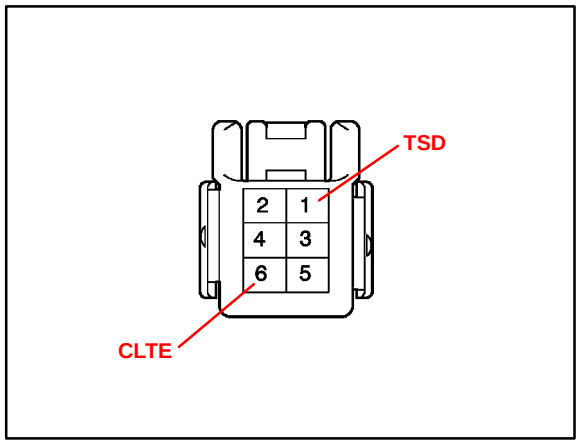
Inspection Procedure (Continued)

Procedure D:

a. Turn the ignition switch ON.

b. Using the tester, measure the voltage between terminals TSD (+) and CLTE (–) of the connector under the following conditions:

- Cover the sensor with a cloth to avoid direct light.
- Expose the sensor to light from a distance of 300 mm (11.81 in.) or less with an inspection light.



HINT:

- **If the light is weak, the sensor may not react. Be sure to use an incandescent light for an inspection light.**
- **Do not disconnect the solar sensor connector.**

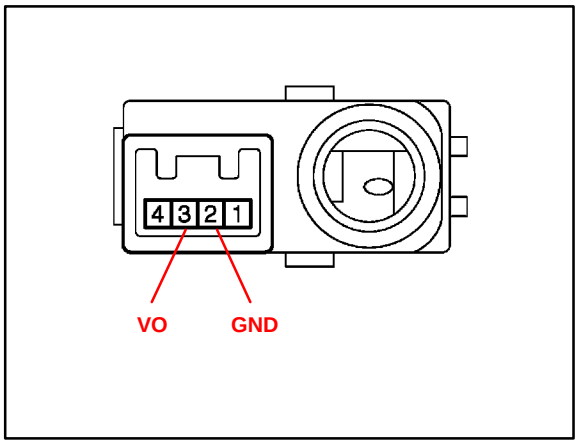
Standard:

CONDITION	SPECIFICATION
When the sensor is covered with a cloth (to avoid direct light)	Below 0.8 V
When the sensor is exposed to light	4.3 +/– 0.3 V

Inspection Procedure (Continued)

6. Inspect Room Humidity Sensor.

Measure the humidity and output voltage of the humidity sensor when the sensor is installed on the vehicle and the temperature at the humidity sensor position (room temperature sensor position) is 77°F (25°C).
If the output voltage is within the specifications according to the graph and table below, the sensor is normal.



HINT:

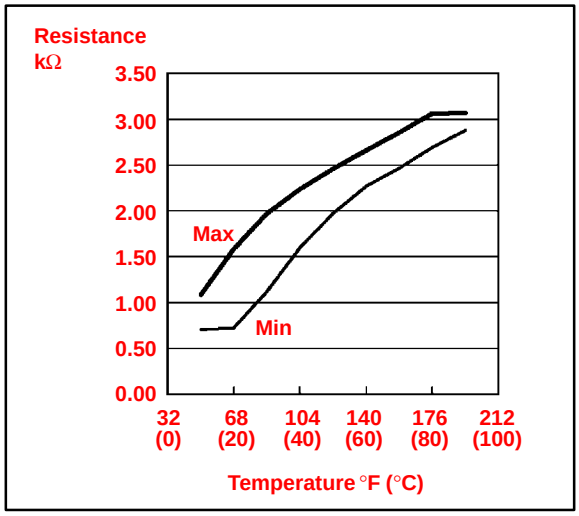
For the inspection procedure of the room temperature sensor, refer to "Room Temperature Sensor Inspection Procedure" in this bulletin.

A. Turn the ignition switch to the ON position.

B. Measure the voltage between terminal VO (3) and GND (2) of the room humidity sensor.

C. Measure the humidity and voltage when the room temperature (humidity sensor position) is 77°F (25°C). According to the result, determine whether the sensor is normal or not.

HUMIDITY (% RH)	OUTPUT VOLTAGE AT 77°F (25°C)
10	0.70 to 1.08 V
20	0.72 to 1.57 V
30	1.13 to 1.95 V
40	1.61 to 2.24 V
50	1.99 to 2.46 V
60	2.26 to 2.66 V
70	2.48 to 2.85 V
80	2.68 to 3.04 V
90	2.87 to 3.05 V



LEXUS

Technical Service Information Bulletin

March 17, 2000

Title:

LEXUS "DINGHY" TOWING GUIDE

Models:

All Models

TSIB

ACCESSORIES

AX001–00

Introduction

The following chart indicates which Lexus vehicles can be Dinghy towed (towed with four wheels on the ground) behind a Motorhome.

CAUTION:

Dinghy towing a vehicle behind a Motorhome requires special towing equipment and accessories. Please see your Motorhome Manufacturer / Service Outlet for recommended towing equipment.

Applicable Vehicles

- **All Models**

YEAR	MODEL	DINGHY TOWABLE		SPEED/DISTANCE LIMITS
		M/T	A/T	
1990–2000	LS 400	Not Towable		–
1992–2000	SC 400/300	Not Towable	Not Towable	–
1993–2000	GS 400/300	Not Towable		–
1992–1998	ES 300	Not Towable		–
1999–2000	ES 300	Yes		55 mph / 200 miles
1999–2000	RX 300 2WD	Yes		55 mph / 200 miles
1999–2000	RX 300 4WD	Yes		55 mph / 200 miles
1996–1997	LX 450	Not Towable		–
1998–2000	LX 470	Not Towable		–

NOTE:

After "Dinghy" Towing, or at the recommended distance limits, let the Engine idle for more than 3 minutes before operating the vehicle or resuming towing.

NOTE:

Vehicles that are Dinghy towable will not sustain internal damage to the transmission or transfer components, as long as speed/distance limits are observed. The transmission must be placed in the "neutral" position when Dinghy towing. Dinghy towing these vehicles does not eliminate the possibility of damage to other vehicle systems (Body, Chassis, Electrical Systems, etc.).

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

Technical Service Information Bulletin
May 25, 2001

Title:

RETRO-FIT INTERNAL TRUNK RELEASE KITS

Models:

ES 300, GS 400/300, LS 400 & SC 400/300

ACCESSORIES
REVISED
AX001-01

TSIB REVISION NOTICE:
The parts information updated in this TSIB is red and underlined.

Introduction

In order to respond to requests of our valued customers, we are offering Retro–Fit Internal Trunk Release Kits. These kits allow the trunk to be opened from the inside in case of entrapment.

Applicable Vehicles

MODEL	MODEL CODE	MODEL YEAR	# CLAMPS
ES 300	VCV10, MCV10	1992 – 1996	4
	MCV20	1997 – 2000	4
GS 300	JZS147	1994 – 1997	4
GS 400/300	UZS160, JZS160	1998 – 2000	4
LS 400	UCF10	1993 – 1994	4
	UCF20	1995 – 2000	4
SC 400/300	UZZ30, JZZ31	1992 – 2000	4

Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME
–	64640–33030	Trunk Release
–	90464–00551	Clamp
–	MDC 00237–LUTRI–01	Installation Instructions

Installation Procedure

Order the appropriate trunk release, at least as many clamps as listed above, and a set of installation instructions. Follow the installation procedure detailed in the installation instructions. Installation time is 0.7 hours.

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

LEXUS

Technical Service Information Bulletin

March 19, 1999

Title:

LEXUS "DINGHY" TOWING GUIDE

Models:

All Models

TSIB

ACCESSORIES

AX003–99

Introduction

The following chart indicates which Lexus vehicles can be Dinghy towed (towed with four wheels on the ground) behind a Motorhome.

CAUTION:

Dinghy towing a vehicle behind a Motorhome requires special towing equipment and accessories. Please see your Motorhome Manufacturer / Service Outlet for recommended towing equipment.

Affected Vehicles

- **All Models**

YEAR	MODEL	DINGHY TOWABLE		SPEED/DISTANCE LIMITS
		M/T	A/T	
1990 – 1999	LS 400	Not Towable		–
1992 – 1999	SC 300	Not Towable		–
1992 – 1999	SC 400	Not Towable		–
1993 – 1999	GS 300	Not Towable		–
1992 – 1998	ES 300	Not Towable		–
1999	ES 300	N/A	Yes	55 mph / 200 miles
1996 – 1997	LX 450	Not Towable		–
1998 – 1999	LX 470	Not Towable		–
1999	RX 300 2WD	N/A	Yes	55 mph / 200 miles
1999	RX 300 4WD	N/A	Yes	55 mph / 200 miles

NOTE:

After "Dinghy" Towing, let the Engine idle for more than 3 minutes.

NOTE:

Vehicles that are Dinghy towable will not sustain internal damage to the transmission or transfer components. The transmission must be placed in the "neutral" position when Dinghy towing. Dinghy towing these vehicles does not eliminate the possibility of damage to other vehicle systems (Body, Chassis, Electrical Systems, etc.).

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

LEXUS

Technical Service Information Bulletin

April 24, 1998

Title:

SEAT BELT EXTENDERS

Models:

All '94 through '98 models, and '99 RX 300

TSIB

BODY

BO001–98

TSB Update Notice:

The information contained in this TSB updates BO007–97 dated October 24, 1997.

Introduction

Lexus customers who find it necessary to increase the length of their seat belts may obtain Seat Belt Extenders at **no cost** through their local Lexus dealer.

- The extender is available in 6 inch, 9 inch, 12 inch, 15 inch and 18 inch lengths.
- The extender is available **only in black.**
- Owners are informed of the seat belt extender availability through the Lexus Owner's Manual included in each vehicle.

The customer *(individual requiring the extender)* must visit a Lexus dealership to have the required measurements made and to complete the seat belt extender worksheet. The worksheet will allow the proper fitting and selection of a seat belt extender for the customer. The dealership personnel should then determine the applicable part number and place a ***Critical Order*** through the ***TDN Parts Network.***

The dealership service department should complete the affixed Seat Belt Extender Label and review the "owner instruction sheet" with the customer. The dealership should give a copy of the completed worksheet to the customer and keep the original in the customer's file.

To assure utmost owner satisfaction, it is recommended that a dealership designate one person to coordinate all activities related to the seat belt extender issue.

From past sales history, it is recommended that dealerships **do not stock** Seat belt extenders due to low demand and the need for customer fitting.

This bulletin contains the following information:

Affected Vehicles

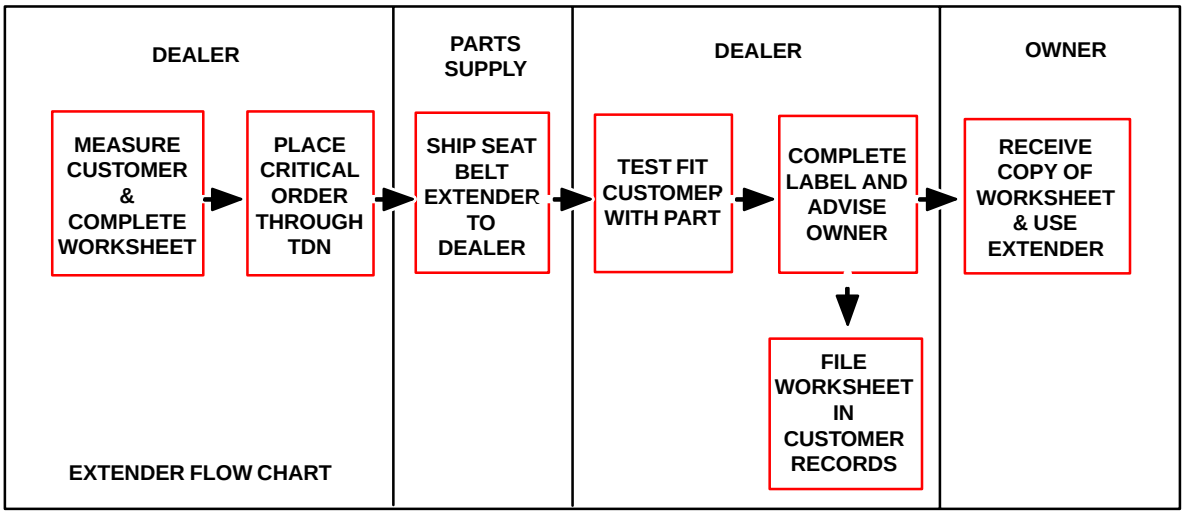
- All **Lexus** models, **1994** through **1998** model years, and **1999 RX 300**.

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not applicable to warranty	–	–	–	–

Procedure

1. Owner requests a seat belt extender from dealer.
2. Dealer verifies the need for a seat belt extender and obtains a current copy of this TSB and copies the worksheet.
3. Dealer measures the customer and completes the worksheet. Dealer determines the correct part number and places a Critical Order for the part through the TDN Parts Network.
4. Dealer receives seat belt extender and calls the customer in to check fit of the part.
5. If the seat belt extender fit is good, dealership personnel completes the customer information label on the part, explains usage of the part, and gives the customer a copy of the completed worksheet.
6. Dealer places a copy of the completed worksheet in the customer's records.



Sample Seat Belt Extender Label

CAUTION

THIS SEAT BELT EXTENDER IS TO BE USED ONLY BY: _____

ON VEHICLE: _____

VIN: _____

SEATING POSITION: _____ Driver _____ Passenger _____ Front _____ Rear

USE BY OTHERS, OR IN ANOTHER SEATING POSITION, OR IN ANOTHER VEHICLE COULD REDUCE SEAT BELT RESTRAINT IN AN ACCIDENT AND RESULT IN PERSONAL INJURY.

Front Seat Belt Extender Applications

FRONT SEAT – EXTENDER APPLICATION					
MODEL	**'98**	**'97**	**'96**	**'95**	**'94**
LS 400	R–3	R–3	R–3	R–3	R–3
GS 400	R–5	N/A	N/A	N/A	N/A
GS 300		N–3	N–3	N–3	N–3
SC 400/300	R–3	R–3	R–3	R–3	R–3
ES 300	R–5	R–5	K–4	K–4	K–4
LX 450	N/A	R–3	R–3	N/A	N/A
LX 470	K–5	N/A	N/A	N/A	N/A
RX 300 ('99 MY)	R–5	N/A	N/A	N/A	N/A

Rear Seat Belt Extender Applications

REAR SEAT – EXTENDER APPLICATION					
MODEL	**'98**	**'97**	**'96**	**'95**	**'94**
LS 400	R–3	R–3	R–3	R–3	R–3
GS 400	K–5	N/A	N/A	N/A	N/A
GS 300		K–4	K–4	K–4	K–4
SC 400/300	R–3	R–3	R–3	R–3	R–3
ES 300 (Right & Left)	R–5	R–5	R–3	R–3	R–3
ES 300 (Center)	R–3	R–3*	N/A	N/A	N/A
LX 450	N/A	K–4**	K–4**	N/A	N/A
LX 470	K–5	N/A	N/A	N/A	N/A
RX 300 ('99 MY)	R–5	N/A	N/A	N/A	N/A

NOTICE:

*** The extender must NOT be used for the center rear seat belt (except on '97 and '98 model ES 300s as noted in the chart).**

**** Includes third seat application.**

Parts Information

PART NUMBER PREFIX: 73399–					
SERIES	**LENGTH**				
	6 INCH	**9 INCH**	**12 INCH**	**15 INCH**	**18 INCH**
K–4	–33010	–33020	–33030	–33040	–33050
K–5	–35010	–35020	–35030	–35040	–35050
N–3	–20011	–20021	–20031	–20041	–20051
R–3	–50010	–50020	–50030	–50040	–50050
R–5	–16060	–16070	–16080	–16090	–16100

Owner Instructions

Failure to follow the recommendations indicated below could result in less effectiveness of the seat belt restraint system in case of vehicle collision, causing personal injury.

The seat belt extender must not be used:

a. By anyone other than for whom it was provided (name recorded on seat belt extender).

b. In any vehicle and/or seat position other than the one for which it was provided.

c. When the seat belt extender is provided for rear seat positions (with automatic locking retractor), make sure the retractor is locked when in use.

If your seat belt cannot be fastened securely because it is not long enough, a personalized seat belt extender is available from your Lexus dealer free of charge.

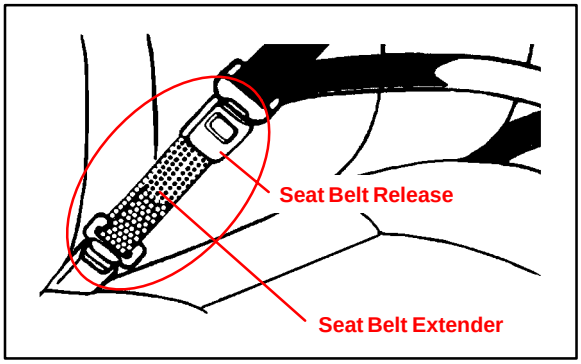
Please contact your local Lexus dealer so that the dealer can order the proper required length for the extender. Bring the heaviest coat you expect to wear for proper measurement and selection of length. Additional ordering information is available at your Lexus dealer.

CAUTION:

When using the seat belt extender, observe the following. Failure to follow these instructions could result in reduced effectiveness of the seat belt restraint system in case of vehicle accident, increasing the chance of personal injury.

- **Never use the seat belt extender if you can COMFORTABLY fasten the seat belt without it.**
- **Remember that the extender provided for you may not be safe when used on a different vehicle, or for another person or at a different seating position than the one originally intended for.**

To connect the extender to the seat belt, insert the tab into the seat belt buckle so that the “PRESS” signs on the buckle–release buttons of the extender and the seat belt are both facing outward as shown.



You will hear a click when the tab locks into the buckle.

When releasing the seat belt, press on the buckle–release button on the extender, not on the seat belt. This helps prevent damage to the vehicle interior and extender itself.

When not in use, remove the extender and store in the vehicle for future use.

SEAT BELT EXTENDER WORKSHEET

PLEASE COPY THIS ORIGINAL WORKSHEET FOR EACH EXTENDER NEEDED

CAUTIONS:

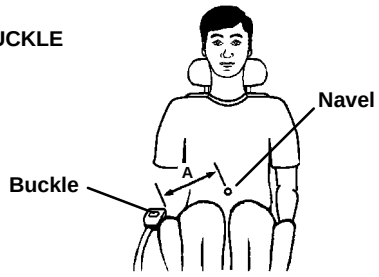
- **To minimize the chance and/or severity of injury in an accident, the seat belt extender must only be used:**
  1. **By the person for whom it was provided**
  2. **In the seat position for which it was provided**
- **The seat belt extender must never be used with any child safety seats.**
- **When the seat belt extender is provided for rear seat positions (with automatic locking retractor), make sure the retractor is locked when extender belt is in use.**

DEALER			SEAT BELT EXTENDER APPLICATION		APPLICANT		
DEALER CODE	DEALER NAME		APPLICANT NAME				
ADDRESS			ADDRESS				
CITY & STATE		ZIP	CITY & STATE		ZIP	PHONE	
EMPLOYEE NAME	MODEL YEAR	BODY TYPE	SEATING POSITION	VEHICLE IDENTIFICATION NUMBER			

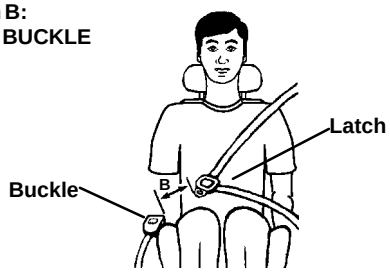
DIRECTIONS FOR DETERMINING PROPER EXTENDER LENGTH

1. **Place the seat in the position the applicant normally uses**
2. **With applicant in the seat, wearing thickest coat expected to be worn, pull belt all the way out and try to buckle belt**
   - **If the belt latches into buckle and feels comfortable against upper chest area, an extender is not needed.**
   - **If belt does not buckle continue with step 3**
   - **If buckle latches but belt has no slack remaining, continue with step 3**
3. **Measure distance between applicant's navel and seat belt buckle (dimension A) and enter on worksheet**
4. **With belt all the way out, measure distance between latch tip and buckle tip (dimension B) and enter on worksheet**
   NOTE: If belt latches but there is no slack enter zero as dimension B
5. **Subtract dimension B from dimension A and record number in check number box on worksheet**
6. **Seat belt extender length is dimension B rounded up to next extender length (without exceeding check number)**
   NOTE: If extender length exceeds check number, an extender can not be provided to the customer

Dimension A:
NAVEL TO BUCKLE



Dimension B:
LATCH TO BUCKLE



SEAT BELT EXTENDER CALCULATION		
DIMENSION A:	DIMENSION B:	CHECK NUMBER:

SEAT BELT EXTENDER AUTHORIZATION

- ***The same seat belt extender can be used for right and left seating applications.*** **Each seat belt extender will have a label identifying the owner, VIN and seating position. Seat belt extenders are available only in black.**
- **Applicant's Signature:** _____ **Date:** _____
  (Actual user of seat belt extender)

LEXUS

Technical Service Information Bulletin

June 9, 2000

Title:

SHOULDER BELT ANCHOR TAPE SET

Models:

'97 – '00 ES 300 & '99 – '00 RX 300

TSIB

Introduction

To improve the appearance of the shoulder belt anchor, the following procedure has been developed.

Applicable Vehicles

- **1999 – 2000** model year **ES 300**
- **1999 – 2000** model year **RX 300**

Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
N/A	73205–48010	Tape Set, Shoulder Belt Anchor	1

NOTE: The above tape set contains the fluorocarbon resin tape (2 pieces) and wire (diameter 0.3–0.5 mm).

Warranty Information

OPCODE	MODEL	DESCRIPTION	TIME	OPN	T1	T2
BD0013	ES 300	Clean the RH & LH Shoulder Belt Anchor	0.3	73220–331**–**	61	99
BD0013	RX 300		0.3	73220–480**–**		

Applicable Warranty*:

This repair is covered under the Lexus Basic Warranty. This warranty is in effect for 48 months or 50,000 miles, whichever occurs first, from the vehicle's in–service date.

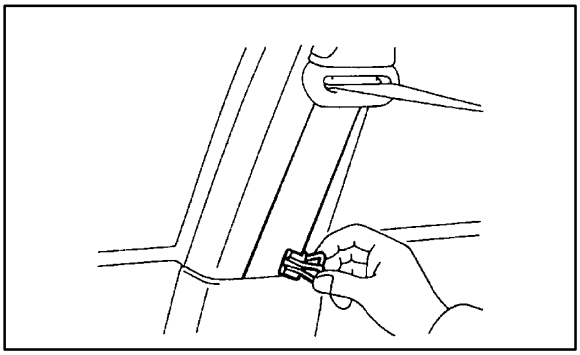
* Warranty application is limited to correction of a problem based upon a customer's specific complaint.

Installation Procedure

1. Clean the shoulder belt anchor.
   A. Pull out the seat belt about 300 mm and attach a clip as shown in the illustration.

HINT:

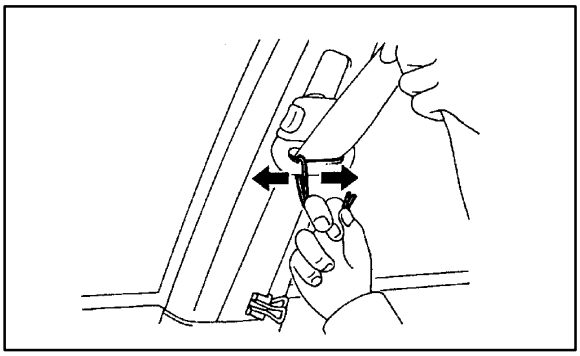
Preventing the seat belt from retraction with a clip will make the following work easier.



Installation Procedure (Continued)

B. Put the wire (from the kit) through the hole of the shoulder belt anchor.

C. Pull both ends of the wire with your hand. Shave off the dirt on the shoulder belt anchor by moving the wire several times as shown in the illustration.



CAUTION:

Wrap the wire ends around a pencil or other common item to prevent the wire from hurting your hand.

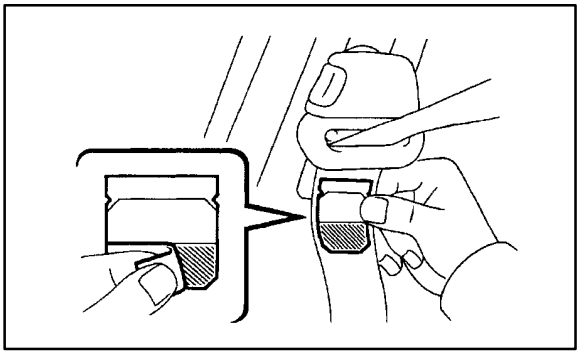
NOTE:

Remove the dirt completely. Otherwise, the fluorocarbon resin tape may not adhere properly.

2. Install the fluorocarbon resin tape.

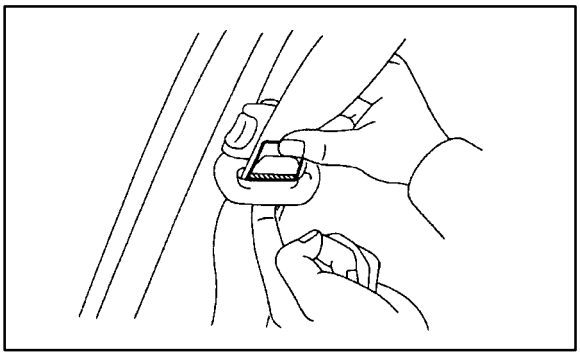
A. Remove the smaller clear film backing from the fluorocarbon resin tape.

B. Place the fluorocarbon resin tape with its adhesive side away from the seat belt as shown in the illustration.



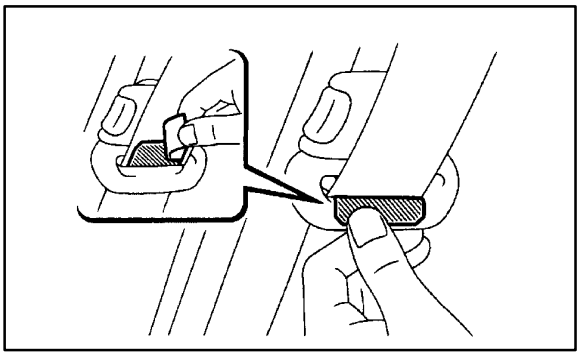
C. While pulling up on the seat belt, pull the fluorocarbon resin tape through the hole of the shoulder belt anchor. Match the center of the tape with the top of the shoulder belt anchor.

D. Secure the lower half of the fluorocarbon resin tape to the back side of the shoulder belt anchor.



Installation Procedure (Continued)

E. Remove the remaining half of the clear film from the fluorocarbon resin tape and secure the tape on the outside of the shoulder belt anchor.

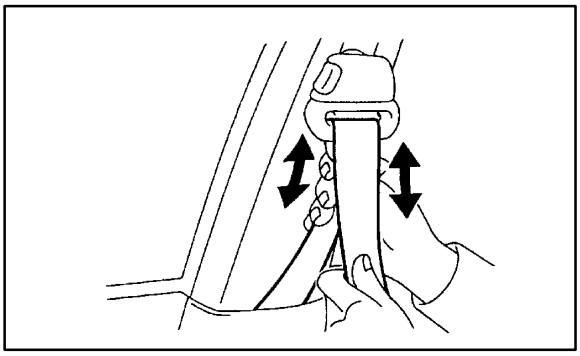


NOTE:

- **Be sure to secure the fluorocarbon resin tape along all edges.**
- **Pay attention not to make any wrinkle or slack in the fluorocarbon resin tape.**
- **Do not reuse removed fluorocarbon resin tape.**

F. Remove the clip from the seat belt.

G. By pulling the seat belt up and down several times as shown in the illustration, securely affix the fluorocarbon resin tape.



3. Affix the fluorocarbon resin tape on the shoulder belt anchor on the other side following the same procedure.

NOTE:

If the seat belt requires cleaning to remove dirt, only use a neutral detergent or lukewarm water to clean. Use the seat belt only after it is completely dried.

LEXUS

Technical Service Information Bulletin

July 3, 1998

Title:

1999 LEXUS SEAT BELT EXTENDERS

Models:

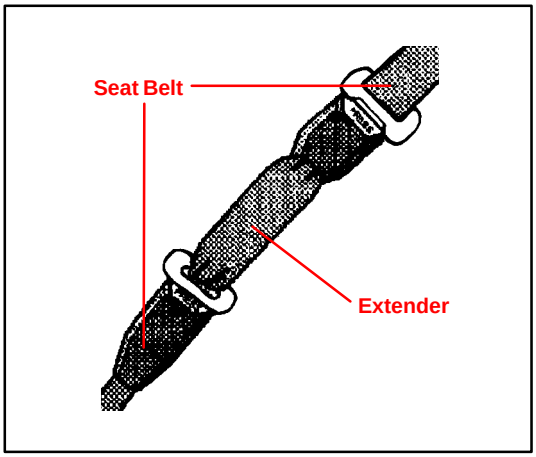
All '95 through '99 models

TSIB

Introduction

Lexus customers who find it necessary to increase the length of their seat belts may obtain Seat Belt Extenders at **no cost** through their local Lexus dealer.

- The extender is available in 6 inch, 9 inch, 12 inch, 15 inch and 18 inch lengths.
- The extender is available **only in black**.
- Owners are informed of the seat belt extender availability through the Lexus Owner's Manual included in each vehicle.



The customer *(individual requiring the extender)* must visit a Lexus dealership to have the required measurements made and to complete the seat belt extender worksheet. The worksheet will allow the proper fitting and selection of a seat belt extender for the customer. The dealership personnel should then determine the applicable part number and place a ***Critical Order*** through the ***TDN Parts Network.***

The dealership service department should complete the affixed Seat Belt Extender Label and review the "owner instruction sheet" with the customer. The dealership should give a copy of the completed worksheet to the customer and keep the original in the customer's file.

To assure utmost owner satisfaction, it is recommended that a dealership designate one person to coordinate all activities related to the seat belt extender issue.

From past sales history, it is recommended that dealerships **do not stock** Seat belt extenders due to low demand and the need for customer fitting.

This bulletin contains the following information:

Affected Vehicles

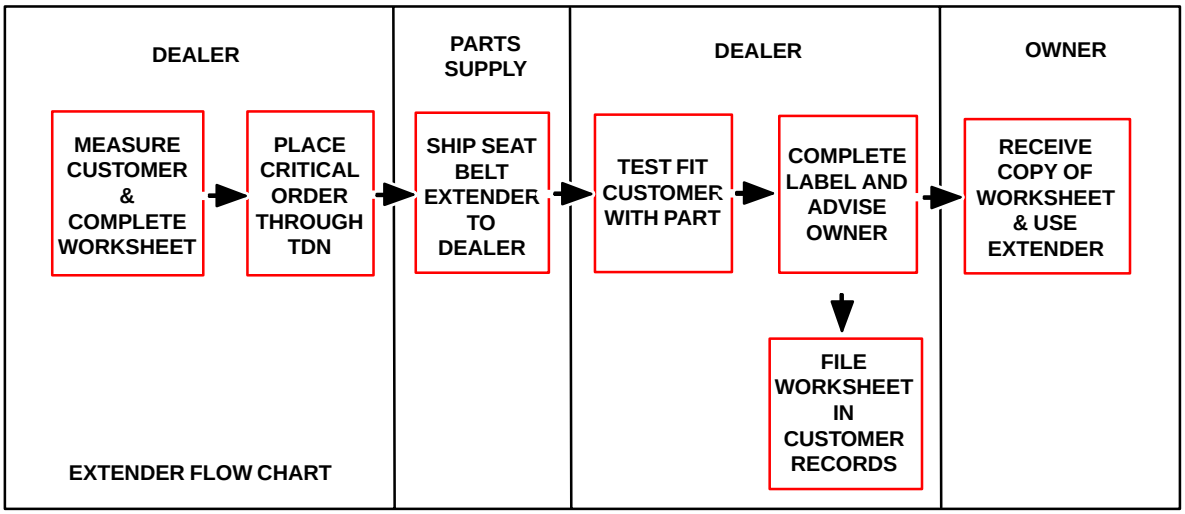
- All **1995** through **1999** model year **Lexus** vehicles.

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

Procedure

1. Owner requests a seat belt extender from dealer.
2. Dealer verifies the need for a seat belt extender and obtains a current copy of this TSB and copies the worksheet.
3. Dealer measures the customer and completes the worksheet. Dealer determines the correct part number and places a Critical Order for the part through the TDN Parts Network.
4. Dealer receives seat belt extender and calls the customer in to check fit of the part.
5. If the seat belt extender fit is good, dealership personnel completes the customer information label on the part, explains usage of the part, and gives the customer a copy of the completed worksheet.
6. Dealer places a copy of the completed worksheet in the customer's records.



Sample Seat Belt Extender Label

CAUTION

THIS SEAT BELT EXTENDER IS TO BE USED ONLY BY: _____

ON VEHICLE: _____

VIN: _____

SEATING POSITION: _____ Driver _____ Passenger _____ Front _____ Rear

USE BY OTHERS, OR IN ANOTHER SEATING POSITION, OR IN ANOTHER VEHICLE COULD REDUCE SEAT BELT RESTRAINT IN AN ACCIDENT AND RESULT IN PERSONAL INJURY.

Front Seat Belt Extender Applications

FRONT SEAT – EXTENDER APPLICATION					
MODEL	**'99**	**'98**	**'97**	**'96**	**'95**
LS 400	R–3	R–3	R–3	R–3	R–3
GS 400/300	R–5	R–5	N–3	N–3	N–3
SC 400/300	R–3	R–3	R–3	R–3	R–3
ES 300	R–5	R–5	R–5	K–4	K–4
LX 470/450	K–5	K–5	R–3	R–3	N/A
RX 300	R–5	N/A	N/A	N/A	N/A

Rear Seat Belt Extender Applications

REAR SEAT – EXTENDER APPLICATION					
MODEL	**'99**	**'98**	**'97**	**'96**	**'95**
LS 400	R–3	R–3	R–3	R–3	R–3
GS 400/300	K–5	K–5	K–4	K–4	K–4
SC 400/300	R–3	R–3	R–3	R–3	R–3
ES 300 (Right & Left)	R–5	R–5	R–5	R–3	R–3
ES 300 (Center)	R–3	R–3	R–3*	N/A	N/A
LX 470/450	K–5	K–5	K–4**	K–4**	N/A
RX 300	R–5	N/A	N/A	N/A	N/A

NOTICE:

*** The extender must NOT be used for the center rear seat belt (except on 1997 through 1999 model ES 300s as noted in the chart).**

**** Includes third seat application.**

Parts Information

PART NUMBER PREFIX: 73399–					
SERIES	**LENGTH**				
	6 INCH	**9 INCH**	**12 INCH**	**15 INCH**	**18 INCH**
K–4	–33010	–33020	–33030	–33040	–33050
K–5	–35010	–35020	–35030	–35040	–35050
N–3	–20011	–20021	–20031	–20041	–20051
R–3	–50010	–50020	–50030	–50040	–50050
R–5	–16060	–16070	–16080	–16090	–16100

Owner Instructions

Failure to follow the recommendations indicated below could result in less effectiveness of the seat belt restraint system in case of vehicle collision, causing personal injury.

The seat belt extender must not be used:

a. By anyone other than for whom it was provided (name recorded on seat belt extender).

b. In any vehicle and/or seat position other than the one for which it was provided.

c. When the seat belt extender is provided for rear seat positions (with automatic locking retractor), make sure the retractor is locked when in use.

If your seat belt cannot be fastened securely because it is not long enough, a personalized seat belt extender is available from your Lexus dealer free of charge.

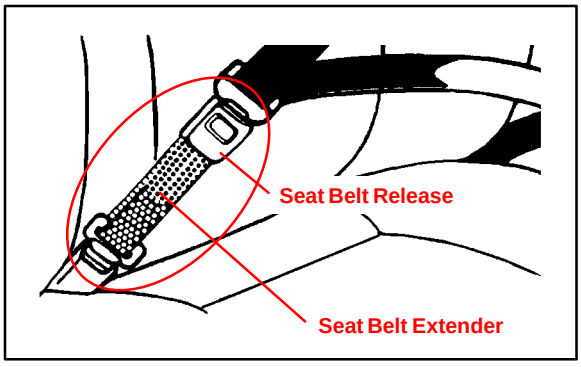
Please contact your local Lexus dealer so that the dealer can order the proper required length for the extender. Bring the heaviest coat you expect to wear for proper measurement and selection of length. Additional ordering information is available at your Lexus dealer.

CAUTION:

When using the seat belt extender, observe the following. Failure to follow these instructions could result in reduced effectiveness of the seat belt restraint system in case of vehicle accident, increasing the chance of personal injury.

- **Never use the seat belt extender if you can COMFORTABLY fasten the seat belt without it.**
- **Remember that the extender provided for you may not be safe when used on a different vehicle, or for another person or at a different seating position than the one originally intended for.**
- **The seat belt extender must never be used with any child safety seats.**

To connect the extender to the seat belt, insert the tab into the seat belt buckle so that the "PRESS" signs on the buckle–release buttons of the extender and the seat belt are both facing outward as shown.



You will hear a click when the tab locks into the buckle.

When releasing the seat belt, press on the buckle–release button on the extender, not on the seat belt. This helps prevent damage to the vehicle interior and extender itself.

When not in use, remove the extender and store in the vehicle for future use.

SEAT BELT EXTENDER WORKSHEET

PLEASE COPY THIS ORIGINAL WORKSHEET FOR EACH EXTENDER NEEDED

CAUTIONS:

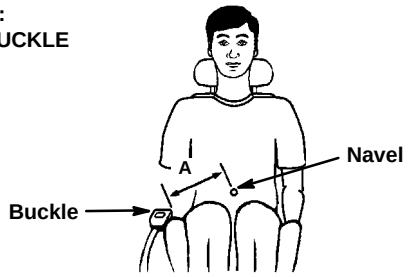
- **To minimize the chance and/or severity of injury in an accident, the seat belt extender must only be used:**
  1 By the person for whom it was provided
  2 In the seat position for which it was provided
- **The seat belt extender must never be used with any child safety seats.**
- **When the seat belt extender is provided for rear seat positions (with automatic locking retractor), make sure the retractor is locked when extender belt is in use.**

DEALER			SEAT BELT EXTENDER APPLICATION		APPLICANT		
DEALER CODE	DEALER NAME		APPLICANT NAME				
ADDRESS			ADDRESS				
CITY & STATE		ZIP	CITY & STATE		ZIP	PHONE	
EMPLOYEE NAME	MODEL YEAR	BODY TYPE	SEATING POSITION	VEHICLE IDENTIFICATION NUMBER			

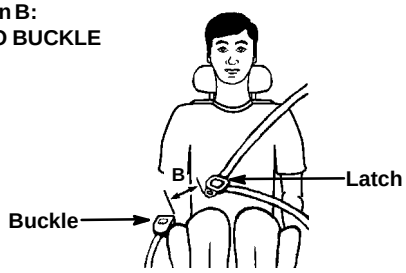
DIRECTIONS FOR DETERMINING PROPER EXTENDER LENGTH

1. **Place the seat in the position the applicant normally uses**
2. **With applicant in the seat, wearing thickest coat expected to be worn, pull belt all the way out and try to buckle belt**
   - **If the belt latches into buckle and feels comfortable against upper chest area, an extender is not needed.**
   - **If belt does not buckle continue with step 3**
   - **If buckle latches but belt has no slack remaining, continue with step 3**
3. **Measure distance between applicant's navel and seat belt buckle (dimension A) and enter on worksheet**
4. **With belt all the way out, measure distance between latch tip and buckle tip (dimension B) and enter on worksheet**
   NOTE: If belt latches but there is no slack enter zero as dimension B
5. **Subtract dimension B from dimension A and record number in check number box on worksheet**
6. **Seat belt extender length is dimension B rounded up to next extender length (without exceeding check number)**
   NOTE: If extender length exceeds check number, an extender can not be provided to the customer

Dimension A:
NAVEL TO BUCKLE



Dimension B:
LATCH TO BUCKLE



SEAT BELT EXTENDER CALCULATION		
DIMENSION A:	DIMENSION B:	CHECK NUMBER:

SEAT BELT EXTENDER AUTHORIZATION

- ***The same seat belt extender can be used for right and left seating applications.*** **Each seat belt extender will have a label identifying the owner, VIN and seating position. Seat belt extenders are available only in black.**
- **Applicant's Signature:** _____ **Date:** _____
  (Actual user of seat belt extender)

Technical Service Information Bulletin
July 29, 2002

Title:

CHILD RESTRAINT SEAT TOP STRAP BRACKET INSTALLATION

Models:

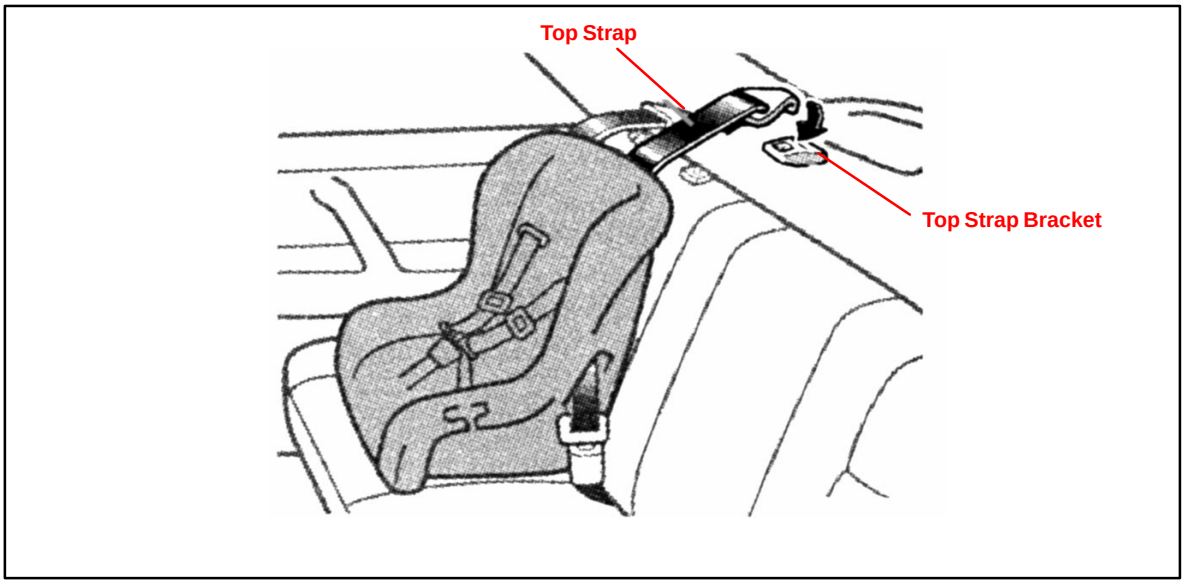
’90 – ’00 All Models

Introduction

Child restraint seat top strap bracket installation procedures are provided to supplement the Owner’s Manual. Beginning with 2001 models, the top strap brackets are factory installed.

NOTE:

- **The child restraint seat top strap assembly is not available as a service part. Contact the child restraint seat manufacturer for recommended top strap information, top strap to child restraint seat installation instructions, and top strap retailers.**
- **The top strap brackets can only be installed on vehicles that have nuts welded in place by the factory. The locations of these nuts can be found in the Owner’s Manual (for most 1990 and newer models). Lexus does not recommend modifying vehicles that do not have nuts welded in place by the factory. All LX 450 and LX 470 vehicles, prior to 2001 model year, may not have these nuts welded in by the factory.**



Applicable Vehicles

- **1990 – 2000** model year vehicles, **all models.**

Parts Information

PART NUMBER	PART NAME
73709–12010	Bracket Sub–Assembly (Bracket, Bolt, 10 mm Spacer, and Washers)
04731–22012	CRS Kit (two Bolts [15 mm, 30 mm], three Spacers [5 mm, 10 mm, 15 mm], and Locking Clip)

Warranty Information

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

Installation Procedure

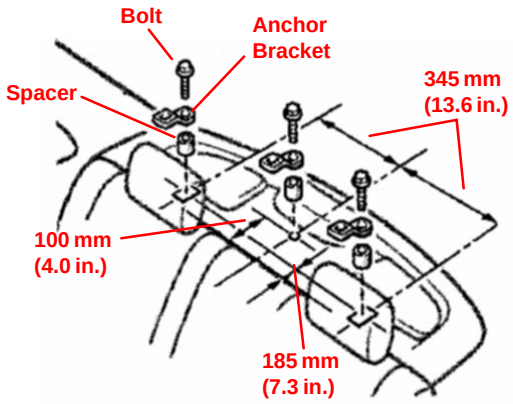
Child Restraint Seat Top Strap Bracket Installation

Obtain the exact year and vehicle model Lexus Owner's Manual before beginning installation.

1. Confirm with the customer which seat location(s) they will be installing the child restraint seat. The Owner's Manual seat section provides an illustration showing available top strap bracket location(s). The illustration page in the Owner's Manual is provided on page 4 of this bulletin.

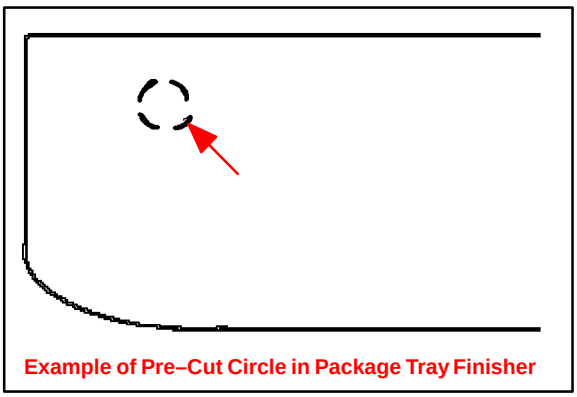
NOTE:

Determine which kit parts are needed for each specific child seat location, by referring to page 4 of this bulletin.



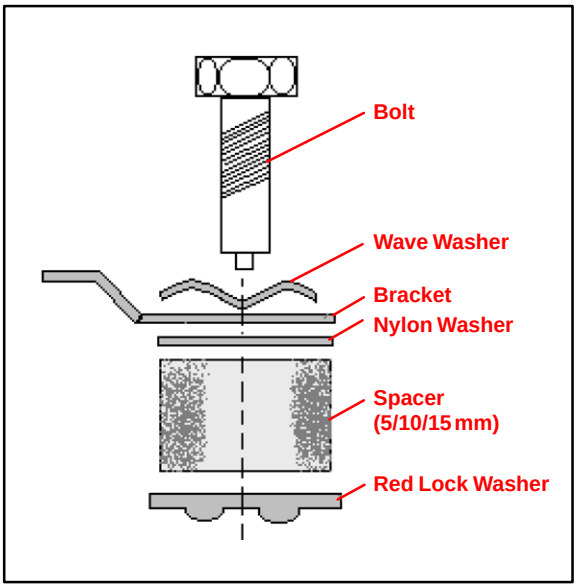
Example of 1999 ES 300 Showing Three (3) Available Bracket Locations

2. Remove a 20 mm diameter area of the carpet or trim material above the bracket mounting location. In some vehicles, a 20 mm circle is already pre–cut into the interior trim material. Once the interior trim material is removed, the nuts welded in by the factory should be visible.



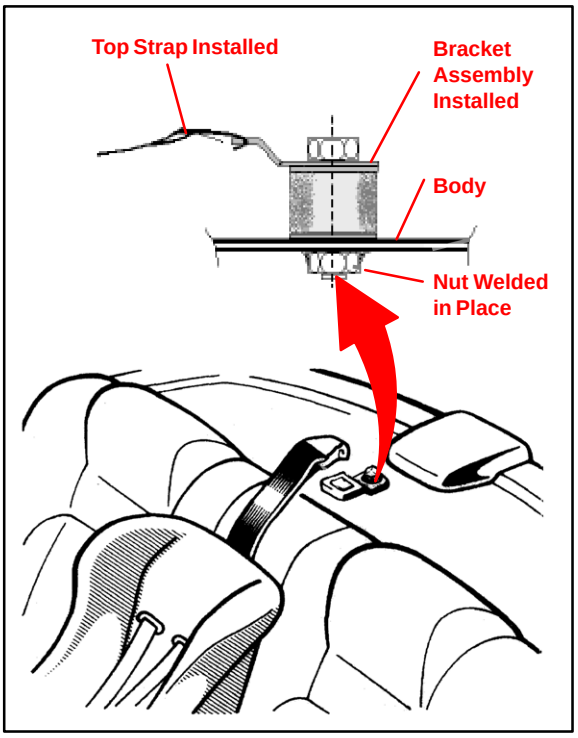
Example of Pre–Cut Circle in Package Tray Finisher

3. If a 5 mm or 15 mm spacer is specified, remove the red lock washer from the Bracket Sub–Assembly (P/N 73709–12010) and remove the 10 mm spacer. Assure the red lock washer is re–installed onto the bolt. If a 5 mm spacer is needed, use the 15 mm bolt from the CRS Kit (P/N 04731–22012).



Installation Procedure (Continued)

4. Install the bracket assembly, according to the directions in the Owner's Manual. Tighten the bolt to 16.5 – 24.7 N–m, (1.68 – 2.52 kgf–m, 12.2 – 18.2 ft–lbf).
   - Assure the top strap is attached to the child seat, according to the child seat manufacturer's instructions.
   - Assure the child seat is installed in the vehicle according to the Lexus Owner's Manual (seat section).



Installation Reference Information

Owner's Manual Installation Reference Information

Page 4 of this bulletin is a reference chart containing:

- Owner's Manual page(s) that provide the illustration showing available top strap bracket location(s). The information goes back to 1990 model year. 2001 models and newer already had the bracket installed by the factory.
- Installation notes, such as bracket spacer sizes for each specific child seat location.

EXAMPLE:

OWNER'S MANUAL	ES 300
1997	pg 89–90 a

This cell contains information on the 1997 ES300

Refer to this page in the Owner's Manual to find the illustration showing available top strap bracket locations.

Installation Note. In this case, all bracket positions on the 1997 ES 300 will require a 15 mm spacer.

INSTALLATION NOTE	COMMENT
a	Spacer – 15 mm for all anchors
b	Spacer – 10 mm for outer, 15 mm for center
c	Spacer – 15 mm for outer, 10 mm for center
d	Spacer – 5 mm for all anchors
N/A	Top strap anchor bracket mounting not available
Standard	No installation necessary, anchor already installed by factory

Installation Reference Information (Continued)

OWNER'S MANUAL	LS 400	ES 300	ES 250	SC 400	SC 300
2000	pg 117–118 Standard	pg 114–115 Standard		N/A	N/A
1999	pg 112–114 a	pg 105–106 a		N/A	N/A
1998	pg 111–113 a	pg 99–100 a		N/A	N/A
1997	pg 98–100 a	pg 89–90 a		pg 91–92 a	pg 91–92 a
1996	pg 79–82 a	pg 67–68 c		pg 72–73 a	pg 72–73 a
1995	pg 77–80 a	pg 67–68 c		pg 70–71 a	pg 70–71 a
1994	pg 74–75 b	pg 68–69 c		pg 67–68 a	pg 67–68 a
1993	pg 74–75 b	pg 60–61 c		pg 67–68 a	pg 67–68 a
1992	pg 62 b	pg 61–62 c		pg 61–62 a	pg 61–62 a
1991	pg 61–62 b		pg 59–60 a		
1990	pg 61 b		pg 55–56 a		

OWNER'S MANUAL	GS 400	GS 300	LX 470	LX 450	RX 300
2000	pg 112–113 Standard	pg 112–113 Standard	N/A		pg 126–127 d
1999	pg 108–109 a	pg 108–109 a	N/A		pg 123–124 d*
1998	pg 107–108 a	pg 107–108 a	N/A		
1997		pg 97–98 a		N/A	
1996		pg 70–72 a		N/A	
1995		pg 69–70 a			
1994		pg 69–70 a			
1993		pg 69–70 a			
1992					
1991					
1990					

* 1999 RX 300 Owner's Manual OM48403U refer to pages 126–127.

LEXUS

Technical Service Information Bulletin

August 11, 2000

Title:

SEAT HEATER REPLACEMENT PROCEDURE

Models:

'97 – '99 & '00 ES 300

TSB

BODY

REVISED

BO005–00

TSB Revision Notice:

The information updated in this TSB is red and underlined.

Introduction

This is to inform you of the seat heater replacement procedure. A change has been made to allow separate installation of the seat heater element.

Applicable Vehicles

- **1997 – 1999,** and **2000** model year **ES 300** vehicles.

'97–'99 ES 300 Parts Information

CURRENT PART NUMBER	PART NAME	QTY
87510–33090*1 87510–0W091*2	Heater Assembly, Front Seat Cushion, RH	1
	Heater Assembly, Front Seat Cushion, LH	1
87510–33100*1 87510–0W101*2	Heater Assembly, Front Seatback, RH	1
	Heater Assembly, Front Seatback, LH	1
71517–33010	Pad, Front Seat Cushion Cover	2

*1 Made by Natsushita (3–pin type)

*2 Made by Scandmec (2–pin type)

'00 MY ES 300 Parts Information

PART NUMBER	PART NAME	QTY
87510–33110	Heater Assembly, Front Seat Cushion, RH	1
	Heater Assembly, Front Seat Cushion, LH	1
87510–33120	Heater Assembly, Front Seatback, RH	1
	Heater Assembly, Front Seatback, LH	1

Warranty Information

OPCODE	DESCRIPTION	TIME	OPN	T1	T2
BD9009	Remove and Replace Seat Heater	2.0	87510–33##0	87	71

Applicable Warranty*:

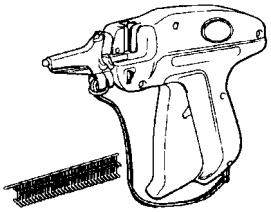
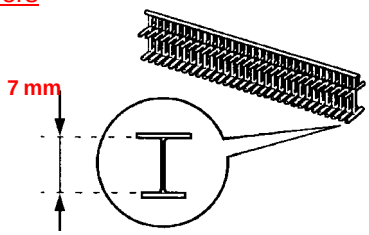
This repair is covered under the Lexus Basic Warranty. This warranty is in effect for 48 months or 50,000 miles, whichever occurs first, from the vehicle's in–service date.

* Warranty application is limited to correction of a problem based upon a customer's specific complaint.

Required Tools and Material

- Tacker
- Tacks
- Hog Ring Pliers
- Adhesive Tape

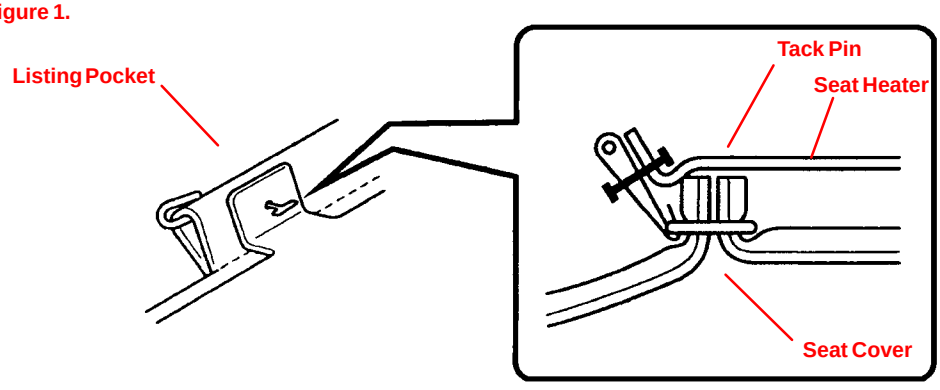
NOTE:
Special Service Tools can be ordered through the Lexus SST program by calling 1–800–933–8335.

ESSENTIAL SPECIAL SERVICE TOOLS			
TOOL NUMBER	**TOOL NAME**	**SUPPLIER**	**QTY**
00002–17750	Seat Heater Attachment Tool 	OTC	1
00002–16500	Fasteners 	OTC	10,000 pieces
00002–01775	Seat Heater Attachment Kit	OTC	1 Set
00002–01780	Seat Heater Tool Replacement Needles	OTC	3

How to use the Tacker:

As shown below, drive in a tack pin with the tacker and fix the seat heater to the seat cover.

Figure 1.



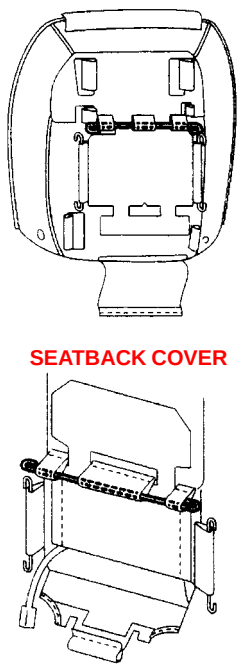
Repair Information

- For the installation/removal of the seat and the disassembly/assembly of the seat cushion assembly, refer to the 2000 model year ES 300 Repair Manual (pages BO–97 through 105).
- Care should be taken during the operation to protect the seat cover from scratches, dirt or accidental cuts.

'97 – '99 ES 300 Repair Procedure

1. **Turn seat cover inside out.**
2. **Remove seat wire.**
   A. Remove the 2 seat wires that are routed from the seat cushion cover and seatback cover. (See Figure 2.)
3. **Remove seat heater.**
   A. Seat cushion cover:
   Cut the 7 tack pins that are fastened to the seat heater, then remove the seat heater.
   B. Seatback cover:
   Cut the 8 tack pins that are fastened to the seat heater, then remove the seat heater.

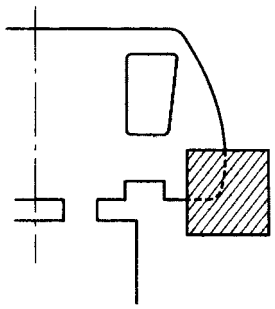
Figure 2.



   C. Using a cutter, cut the piece of felt along the heater's outline as shown in Figure 3.

NOTE:
Do not cause any damage to the seat cushion pad while cutting the felt.

Figure 3.



4. **Seat cushion cover:**
   Install new seat heater.
   Refer to Figure 4 on the following page.
   A. Align the new seat heater by placing the marked side (part number) against the seat cushion cover.

'97 – '99 ES 300 Repair Procedure (Continued)

B. For part A, position the seat heater by aligning the end of the fin with the fold line of the listing pocket.

C. For part B, position the seat heater by aligning the heater's center line with the cover's V slit.

D. Using a tacker, attach the seat heater to the seat cushion cover.

NOTE:

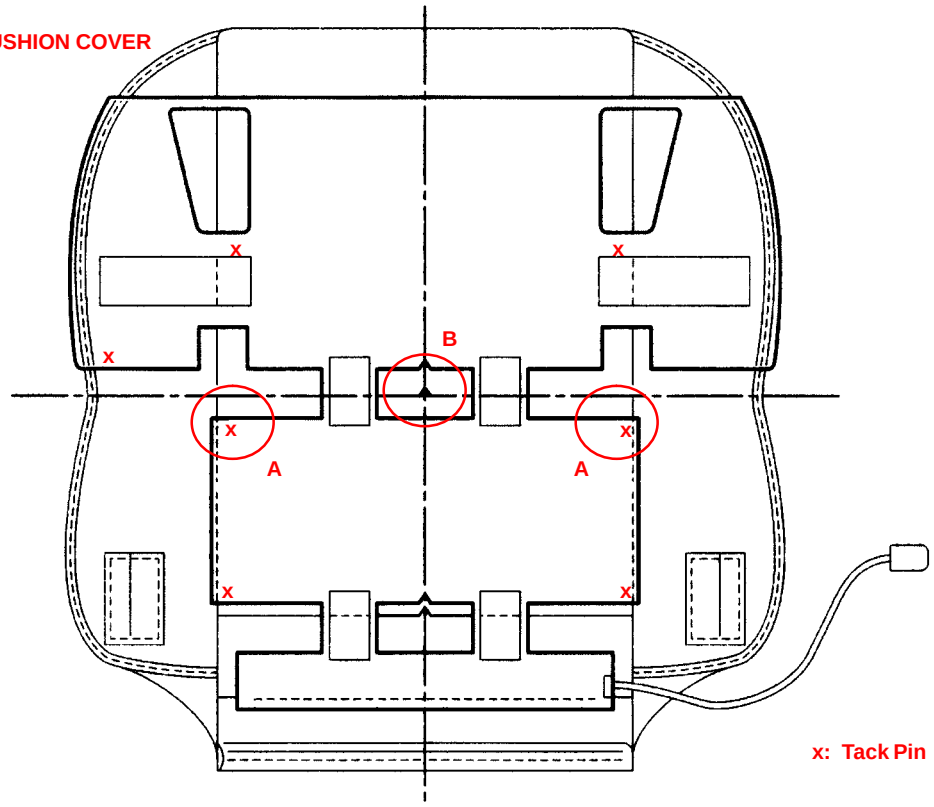
- **Do not substitute other metal parts in place of tack pins.**
- **Insufficient distance between the heater and cover may result in damage to the heater.**

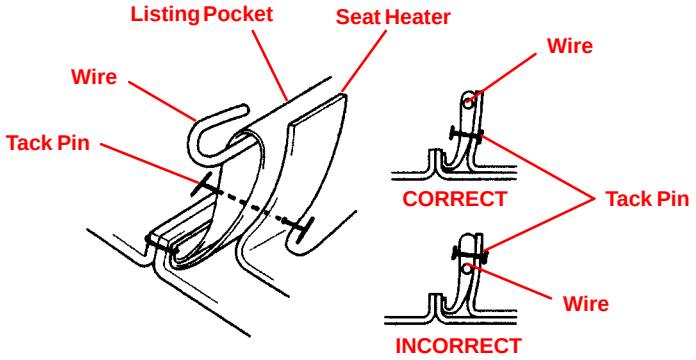
HINT:

- **Attach tack pins on the seam side so that the wire can be passed through the hole from the fold side.**
- **Sewing thread can be substituted for tack pins. However, allow a distance of 6–7 mm (0.24–0.28 in.) between both sewn parts of the heater and cover.**

Figure 4.

SEAT CUSHION COVER





'97 – '99 ES 300 Repair Procedure (Continued)

5. **Seatback cover: Install new seat heater.**

Refer to Figure 5 below.

A. Face the marked side (part number) to the seat cushion pad.

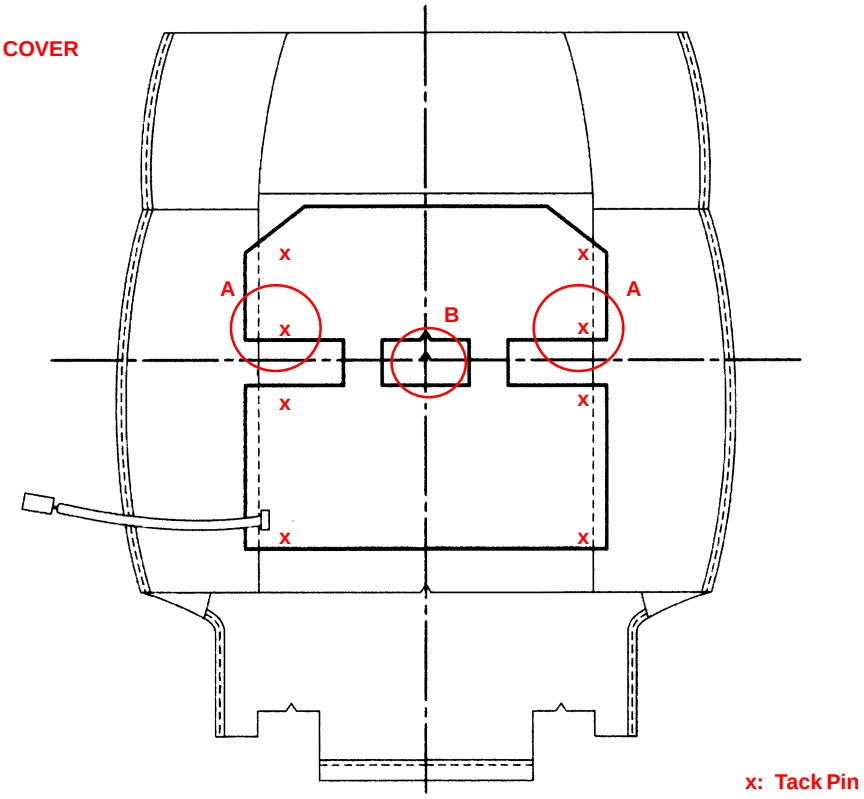
B. For part A, position the seat heater by aligning the end of the fin with the fold line of the listing pocket.

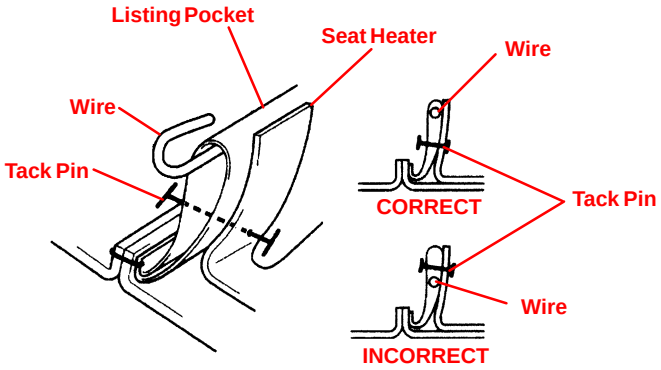
C. For part B, position the seat heater by aligning the heater's center line with the cover's center line.

D. Using a tacker, attach the seat heater to the seatback cover.

NOTE:
- **Do not substitute other metal parts in place of tack pins.**
- **Insufficient distance between the heater and cover may result in damage to the heater.**

Figure 5.
SEATBACK COVER





'97 – '99 ES 300 Repair Procedure (Continued)

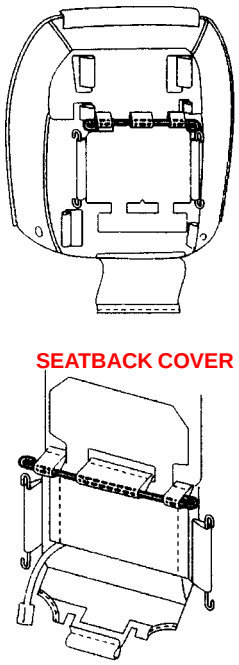
HINT:

- **Attach tack pins on the seam side so that the wire can be threaded through the hole from the fold side.**
- **Sewing thread can be substituted for tack pins. However, allow a distance of 6–7 mm (0.24–0.28 in.) between both sewn parts of the heater and cover.**

6. **Install seat wire.**

   Install the 2 seat wires to the seat cushion cover and seatback cover, as shown in Figure 6.

Figure 6.

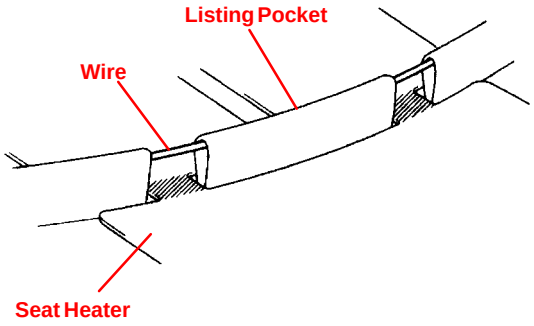


HINT:

Pass the wire over the seat heater as shown in Figure 7.

7. **Reverse seat cover back to its original position.**

Figure 7.



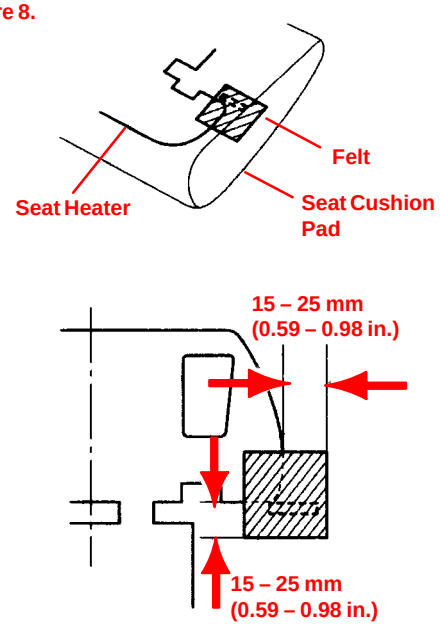
8. **Seat cushion cover: Install seat heater to seat cushion pad.**

   Attach a piece of felt to the seat heater and the pad as illustrated in Figure 8.

9. **Install seat cover.**

   Install the seat covers with new hog rings to the seat cushion pad and the seatback pad.

Figure 8.



'00 MY ES 300 Repair Procedure

Refer to Figure 9 at right.

1. **Turn seat cover inside out.**
2. **Remove seat wire.**

   Remove the seat wires that are passed over the seat heater from the seat cushion cover and the seatback cover.
3. **Remove seat heater.**

   A. Seat cushion cover:
   Cut the 24 tack pins that are fastened to the seat heater, then remove the seat heater.

   B. Seatback cover:
   Cut the 8 tack pins that are fastened to the seat heater, then remove the seat heater.

4. **Seat cushion cover:**
   Install new seat heater.

   Install a new front seat heater as shown in Figure 10 on the following page.

   A. Set the seat heater, marked side (part number) to the seat cushion pad.

   B. For part A, attach the fin of the heater to the cover and fasten them at the margin with a tack pin.

   C. For part B, position the seat heater by aligning the seat heater's center line with the seat cushion cover's V slit.

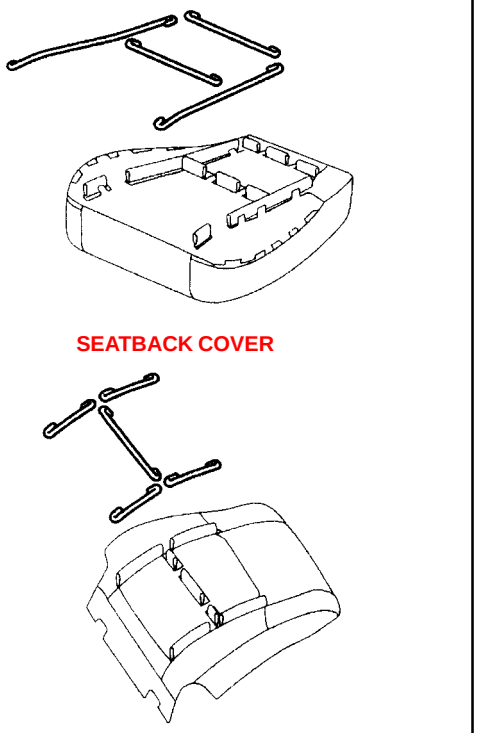
   D. For part C, position the heater by aligning the end of the fin with the fold line of the listing pocket.

   E. Align the V points of 4 and 6 with the seat cover's V cuts and fasten them with tack pins.

   F. Using a tacker, attach tack pins to the side of the seat heater in order from 1 to 12.

NOTE:
- **Do not substitute other metal parts for tack pins.**
- **Insufficient distance between the heater and cover may result in damage to the heater.**

Figure 9.

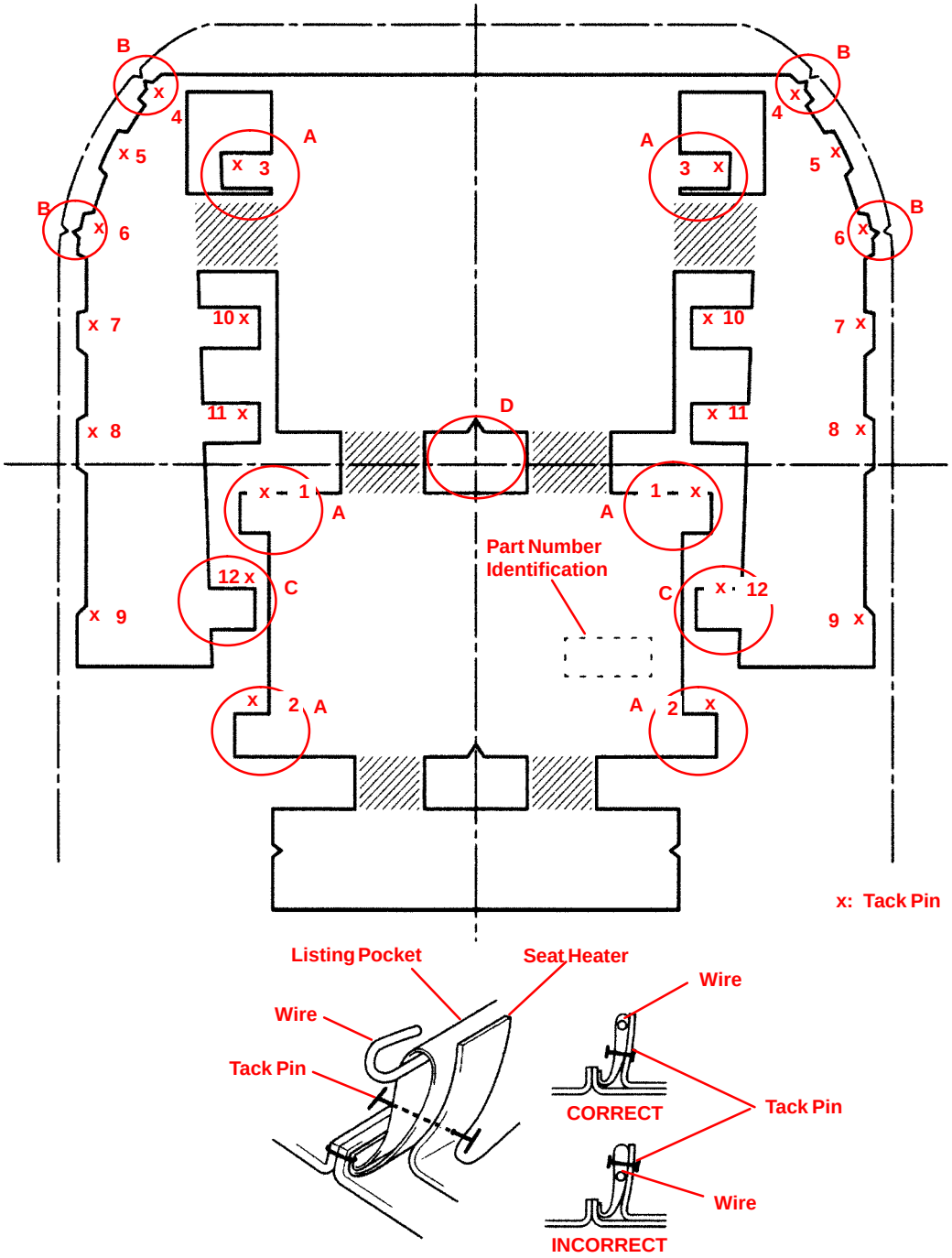


'00 MY ES 300 Repair Procedure (Continued)

HINT:

- **Attach tack pins on the seam side so that the wire can be threaded through the hole from the fold side.**
- **Sewing thread can be substituted for tack pins. However, allow a distance of 6–7 mm (0.24–0.28 in.) between both sewn parts of the heater and cover.**

Figure 10.
SEAT CUSHION COVER



'00 MY ES 300 Repair Procedure (Continued)

5. **Seatback cover: Install new seat heater.**

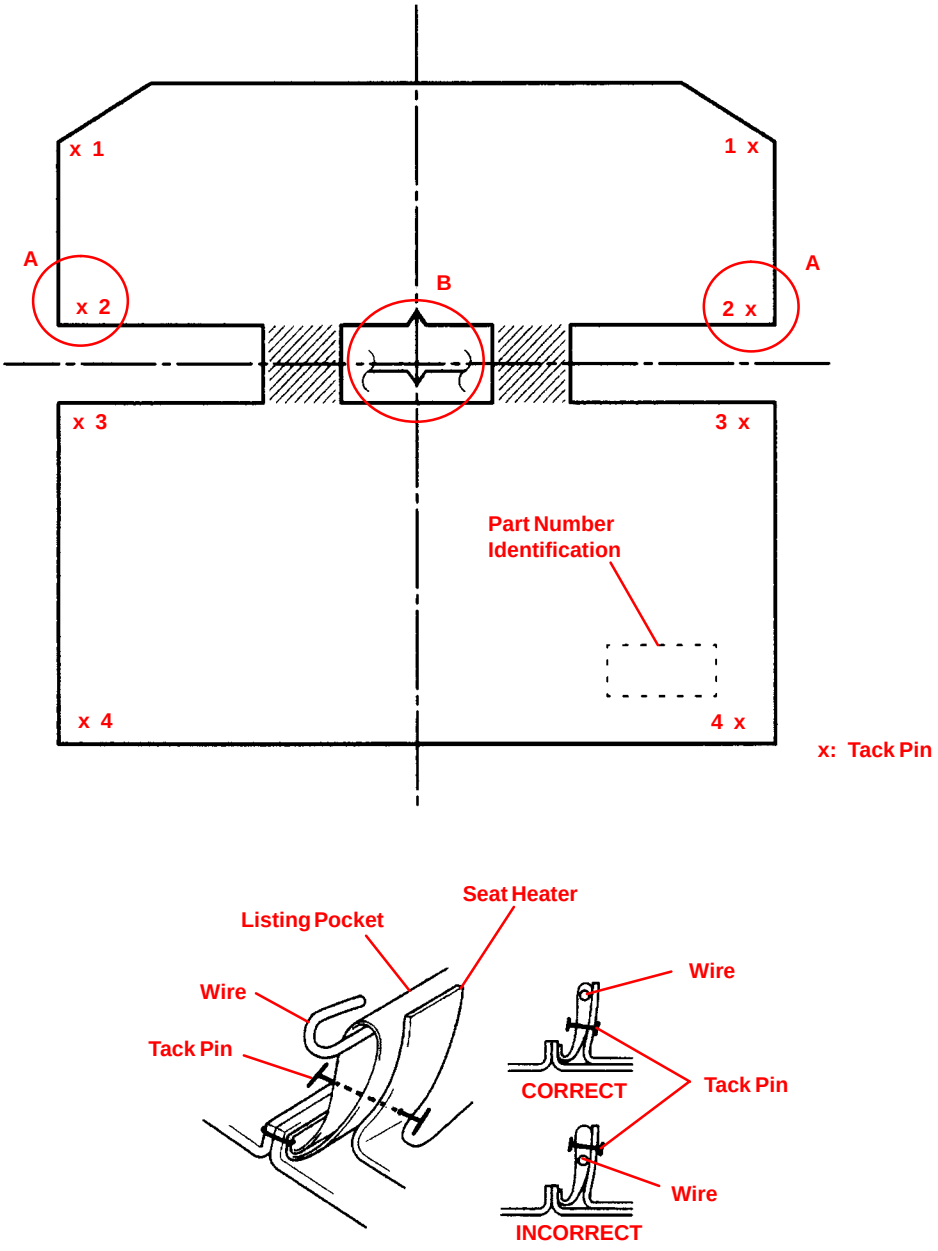
Install a new front seat heater as shown in Figure 11 below.

A. For part A, attach the fin of the seat heater to the cover and fasten them at the margin with a tack pin.

B. For part B, position the seat heater by aligning the seat heater's center line with the seat cushion cover's V slit.

C. Using a tacker, attach tack pins to the side of the seat heater in order from 1 to 4.

Figure 11.
SEATBACK COVER



'00 MY ES 300 Repair Procedure (Continued)

NOTE:

- **Do not substitute other metal parts for tack pins.**
- **Insufficient distance between the heater and cover may result in damage to the heater.**

HINT:

- **Attach tack pins on the seam side so that the wire can be passed through the hole from the fold side.**
- **Sewing thread can be substituted for tack pins. However, allow a distance of 6–7 mm (0.24–0.28 in.) between both sewn parts of the heater and cover.**

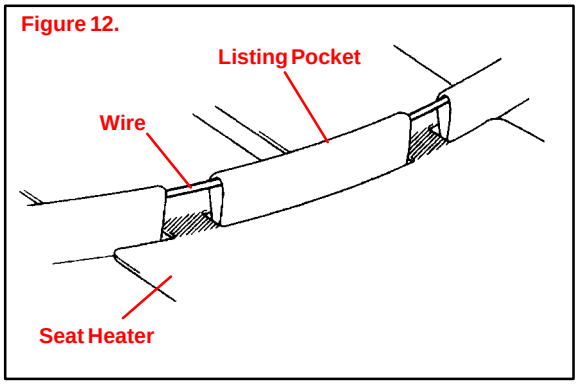
6. **Install seat wires.**

   Install the removed wires to the seat cushion cover and the seatback cover.

HINT:

Pass the wire over the seat heater as shown in Figure 12.

Figure 12.



7. **Reverse seat cover back to its original position.**

LEXUS

Technical Service Information Bulletin

March 23, 2001

Title:

NEW SEAT BELT TONGUE PLATE STOPPER SERVICE PARTS

Models:

All Applicable Models

TSIB

Introduction

A new service part for seat belt tongue plate stoppers has been introduced. Installation procedures are provided to supplement the Repair Manual.

Applicable Vehicles

MODEL	YEAR
LS 400	1990 – 2001
ES 250	1990 – 1991
ES 300	1992 – 2001
SC 400	1992 – 2001
SC 300	1992 – 2001
GS 400	1993 – 2001
GS 300	1993 – 2001
LX 450	1996 – 1998
LX 470	1998 – 2001
RX 300	2000 – 2001

Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME
N/A	73219–02010	Stopper, Tongue Plate (Black)*
N/A	73219–02020	Stopper, Tongue Plate (Gray)*
N/A	73219–02030	Stopper, Tongue Plate (Beige)*

* Use a stopper color that is closest to the seat belt webbing color.

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
BD0046	Install Seat Belt Tongue Plate Stopper	0.1	73219–020#0	62	12

Applicable Warranty*:

This repair is covered under the Lexus Comprehensive Warranty. This warranty is in effect for 48 months or 50,000 miles, whichever occurs first, from the vehicle's in–service date.

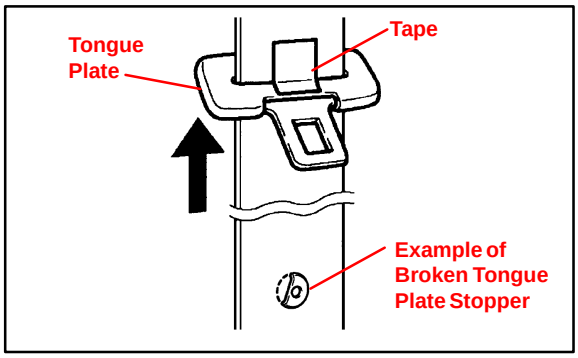
* Warranty application is limited to correction of a problem based upon a customer's specific complaint.

Installation Procedure

1. Preparation

A. Shift the Tongue Plate to the upper portion of the Tongue Plate Stopper, and temporarily hold it with a clip or tape.

B. Remove any pieces of the original Tongue Plate Stopper in the webbing with a pair of pliers.



CAUTION:

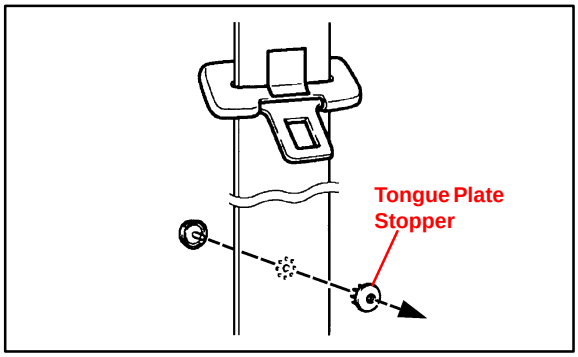
Damaged or weakened seat belts may break in an accident and injure the occupant. The seat belt assembly must be replaced if:

- **The webbing is cut, frayed, worn, or damaged.**
- **It has been used in a severe impact.**

Inspect the entire length of webbing for damage and replace the assembly if needed. Be careful not to damage the webbing during repair.

2. Install the Tongue Plate Stopper

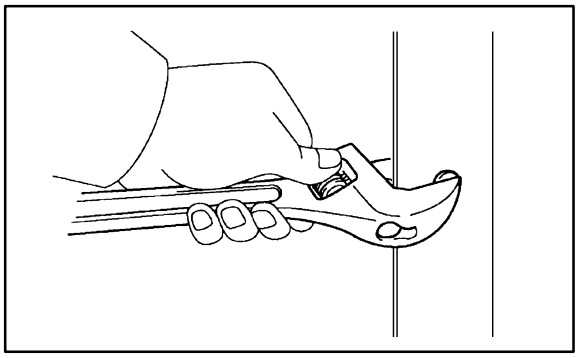
A. Install a new Tongue Plate Stopper in the hole of the webbing.



NOTE:

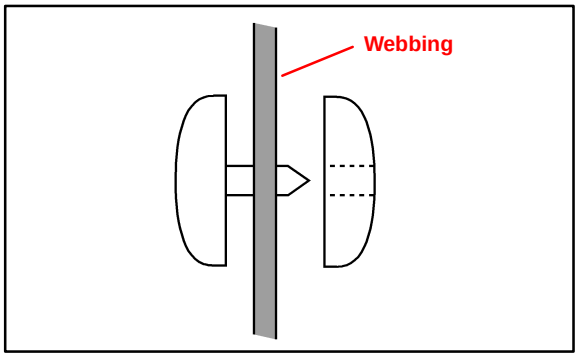
Be aware of the installation direction of the Tongue Plate Stopper as shown in the illustration.

B. Pinch the Tongue Plate Stopper into the webbing using an adjustable wrench, and turn and push the adjustment screw by hand.



HINT:

Press the adjustment screw in order to position the male and female parts of the Tongue Plate Stopper parallel to each other, as shown in illustration.

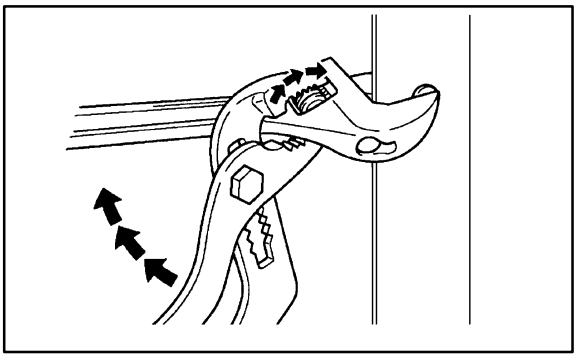


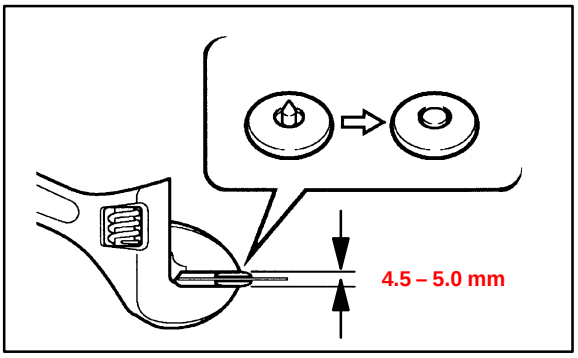
CAUTION:

DO NOT use pliers. They may damage the webbing.

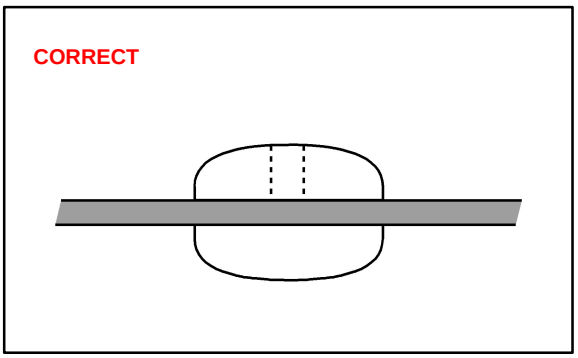
Installation Procedure (Continued)

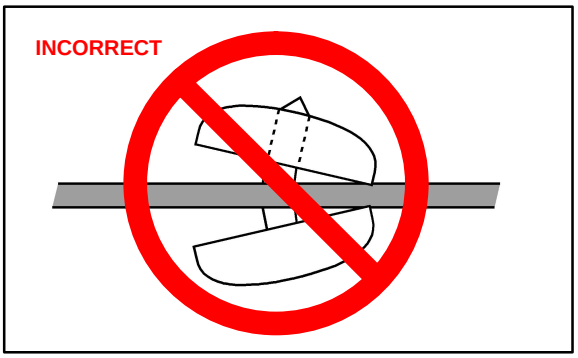
C. When the adjustment screw for the adjustable wrench can't be turned by hand, tighten the adjustment screw using a pair of adjustable joint pliers until the space between jaws of the adjustable wrench is 4.5 – 5.0 mm. (See illustrations.)





D. Check to be sure that the male pin of the Tongue Plate Stopper has become deformed evenly in the hole of the female part and is firmly held to the belt webbing. (See illustrations.)





Technical Service Information Bulletin

September 12, 2003

Title:

TRIM GARNISH LOOSE

Models:

All Models

TSIB

Introduction

Customers may experience an interior trim panel either loose or fitting poorly due to a deformed or missing clip. When a trim garnish (A, B, C or D pillar garnishes, door trim panel, etc.) is removed and reinstalled using the old clips, it may cause the garnish to exhibit a loose condition. To prevent this condition from occurring, ensure that new clips are utilized for all attachment points every time a garnish is reinstalled. When installing new parts, use either the new clips supplied with the part, or order new clips. Refer to the parts catalog for specific part numbers.

Applicable Vehicles

- **All models.**

Warranty Information

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

LEXUS

Technical Service Information Bulletin

August 10, 2001

Title:

SHOULDER BELT ANCHOR TAPE SET

Models:

All Applicable ES 300, IS 300, LX 450, LX 470 & RX 300

TSIB

BODY

BO009-01

Introduction

To assist customers in preventing particle buildup and preserve the appearance of the shoulder belt anchor, the following procedure has been developed.

Applicable Vehicles

- **1997 – 2001** model year **ES 300** vehicles.
- **2000 – 2001** model year **IS 300** vehicles.
- **1996 – 1997** model year **LX 450** vehicles.
- **1998 – 2001** model year **LX 470** vehicles.
- **1999 – 2001** model year **RX 300** vehicles.

Parts Information

CURRENT PART NUMBER	PART NAME
73205–48011	Tape Set, Shoulder Belt Anchor

NOTE:

The above tape set contains the fluorocarbon resin tape (2 pieces) and Velcro tape (1 piece).

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
BD1011	Clean the Shoulder Belt Anchor	0.3	73210–#####–##*1 73220–#####–##*1	61	99

*1 OPN should be part number of whichever belt assembly that the procedure is performed on.

Applicable Warranty*:

This repair is covered under the Lexus Comprehensive Warranty. This warranty is in effect for 48 months or 50,000 miles, whichever occurs first, from the vehicle's in-service date.

* Warranty application is limited to correction of a problem based upon a customer's specific complaint.

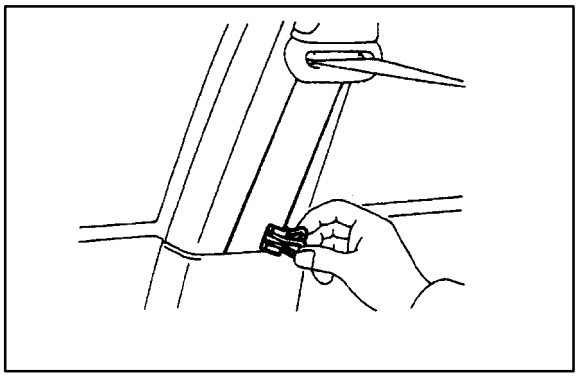
Installation Procedure

1. CLEAN SHOULDER BELT ANCHOR

NOTE:

- **Do not install the tape when the vehicle temperature is below the freezing point.**
- **Do not re–use removed fluorocarbon resin tape.**

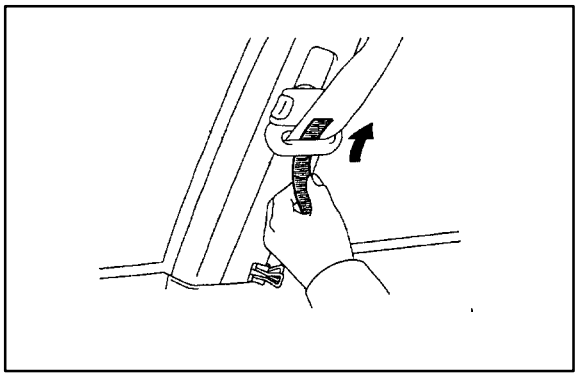
A. Pull out the seat belt about 300 mm and attach a clip as shown in the illustration.



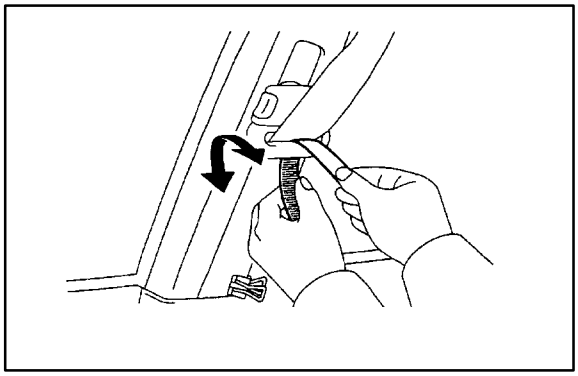
HINT:

Preventing the seat belt from retraction with a clip will make the following work easier.

B. Put the Velcro tape (in the parts kit) through the hole of the shoulder belt anchor, brush–shaped side to the anchor.



C. Pull both ends of the Velcro tape with your hand and shave off the dirt on the shoulder belt anchor by moving the Velcro tape several times as shown in the illustration.



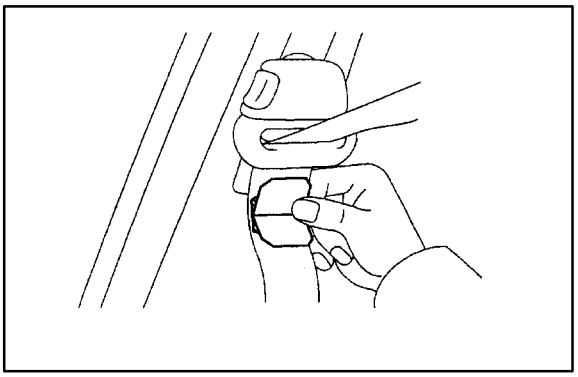
NOTE:

Remove the dirt completely. Otherwise, the fluorocarbon resin tape may not adhere properly.

Installation Procedure (Continued)

2. INSTALL FLUOROCARBON RESIN TAPE

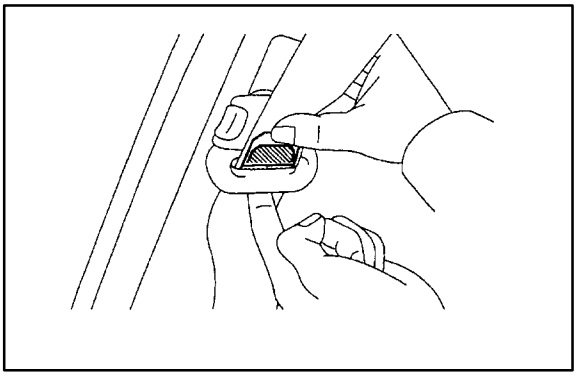
A. Place the fluorocarbon resin tape onto the seat belt as shown in the illustration.



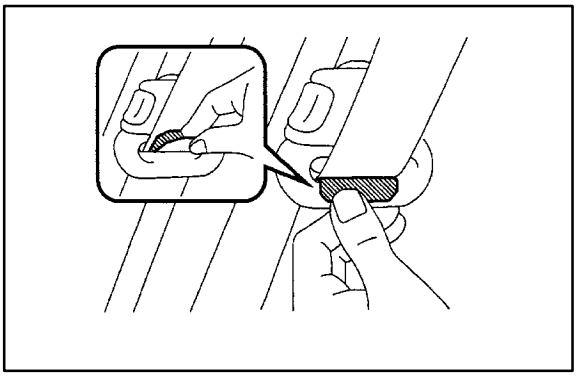
NOTE:

Before installation of the fluorocarbon resin tape, it is necessary to pre–release the colored film about 5 mm for each side. (Not fully released.)

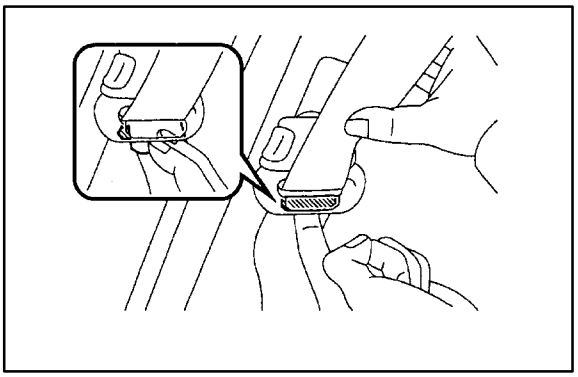
B. By pulling up the seat belt, put the fluorocarbon resin tape through the hole of the shoulder belt anchor. Match the shoulder belt anchor to the center of the tape.



C. Remove the upper side colored film from the fluorocarbon resin tape, and securely affix the tape to the outside of the shoulder belt anchor.



D. Remove the lower side colored film from the fluorocarbon resin tape, and securely affix the tape to the outside of the shoulder belt anchor.



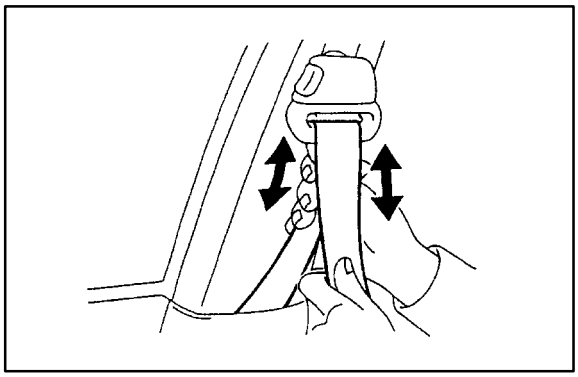
NOTE:

- **Be sure to affix the fluorocarbon tape securely along all edges.**
- **Pay attention not to make any wrinkles or slack in the fluorocarbon resin tape.**

E. Remove the clip.

Installation Procedure (Continued)

F. By pulling the seat belt up and down several times, as shown in the illustration, securely affix the fluorocarbon resin tape and confirm the smoothness of the belt movement.



NOTE:

Affix the fluorocarbon resin tape on the shoulder belt anchor to the other side following the same procedure.

NOTE:

If the seat belt requires cleaning to remove dirt, only use a neutral detergent or lukewarm water to clean. Use the seat belt after it is completely dried, to confirm proper operation.

LEXUS

Technical Service Information Bulletin

November 10, 2005

Title:

SEAT COVER REPLACEMENT FOR SIDE AIRBAG EQUIPPED VEHICLES

Models:

'97 – '06 All Lexus Models

TSIB UPDATE NOTICE:

The information contained in this TSIB supercedes TSIB No. BO004-98. TSIB No. BO004-98 is now obsolete and should be discarded.

Introduction

Beginning in 1997, Lexus introduced side airbags for the LS 400. Starting with 1998, all Lexus vehicles are equipped with side airbags as standard equipment.

Lexus does **NOT** recommend replacement of original seat covers* with non-Lexus leather or other seat cover materials due to the following:

- Seat covers NOT recommended by Lexus may affect side airbag performance, in general or in part, during an accident.
- Modifications that negatively affect side airbag performance can result in severe occupant injuries.
- Seat covers are an integral part of this safety system. Replacing original seat covers* with non-Lexus leather or other seat cover materials may compromise the effectiveness of this safety system.
- The design of the seat is complex, integrating safety and strength with comfort and luxury.

***NOTE:**

Lexus original seat covers that were NOT designed for side airbag equipped seats cannot be used due to the effect on proper airbag performance.

Lexus strongly discourages modifying original equipment seats that have side airbags.

Additionally, Lexus strongly advises against the installation or use of aftermarket seat covers, which could impair the performance of the side airbags in the event of an accident.

Applicable Vehicles

- All **1997 – 2006** model year **Lexus** vehicles.

Warranty Information

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

LEXUS

Technical Service Information Bulletin

January 2, 1998

TSIB

Title:

ABS & TRAC ACTUATOR RESISTANCE VALUE CORRECTIONS

Models:

'97 & '98 ES 300

Introduction

Corrections have been made to the resistance value inside of the ABS & TRAC actuator on the pages of the following Repair Manuals

PUBLICATION NUMBER	PUBLICATION NAME	AFFECTED PAGES
RM511U	'97 ES 300 Repair Manual	DI–280, DI–283
RM577U	'98 ES 300 Repair Manual	DI–316, DI–319

Affected Vehicles

- **1997 & 1998 ES 300s.**

Warranty Information

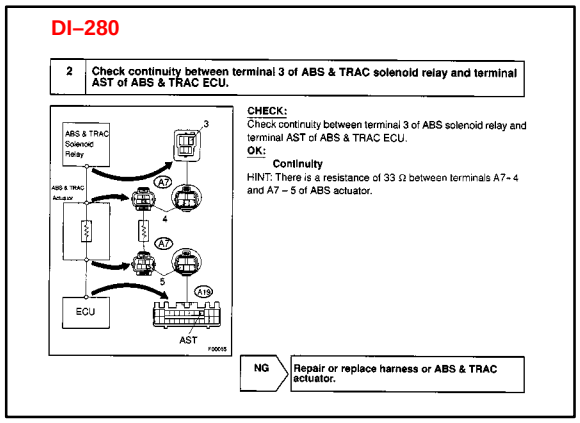
OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not applicable to warranty	–	–	–	–

Correction Information

'97 ES 300 Repair Manual RM511U, Page DI–280

Under INSPECTION PROCEDURE, Item #2 (Diagnostics – ABS & Traction Control System) the resistance value has been corrected to 33 Ohms when measuring between terminals A7–4 and A7–5 of the ABS and TRAC Actuator.

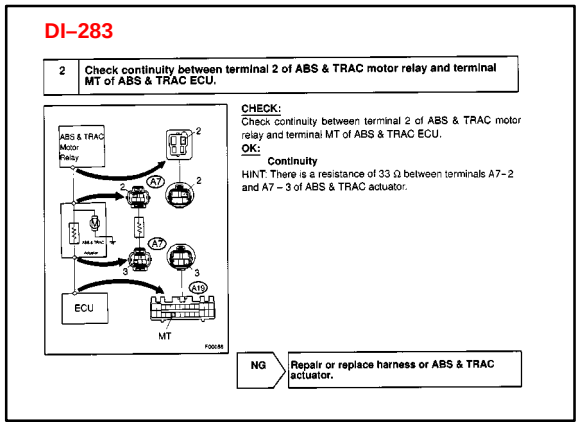
The previous resistance value was 4 – 6 Ohms.



'97 ES 300 Repair Manual RM511U, Page DI–283

Under INSPECTION PROCEDURE, Item #2 (Diagnostics – ABS & Traction Control System) the resistance value has been corrected to 33 Ohms when measuring between terminals A7–2 and A7–3 of the ABS and TRAC Actuator.

The previous resistance value was 4 – 6 Ohms.

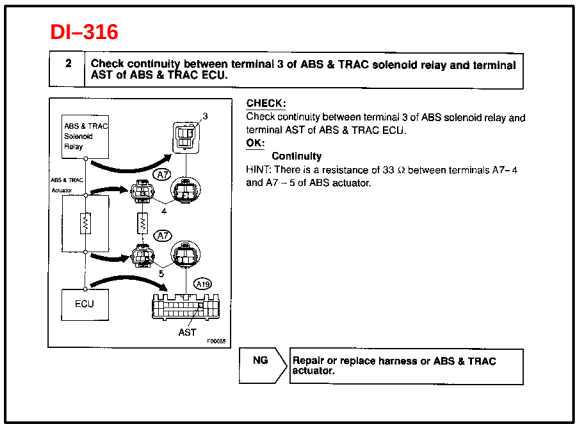


Correction Information (Continued)

’98 ES 300 Repair Manual RM577U, Page DI–316

Under INSPECTION PROCEDURE, Item #2 (Diagnostics – ABS & Traction Control System) the resistance value has been corrected to 33 Ohms when measuring between terminals A7–4 and A7–5 of the ABS and TRAC Actuator.

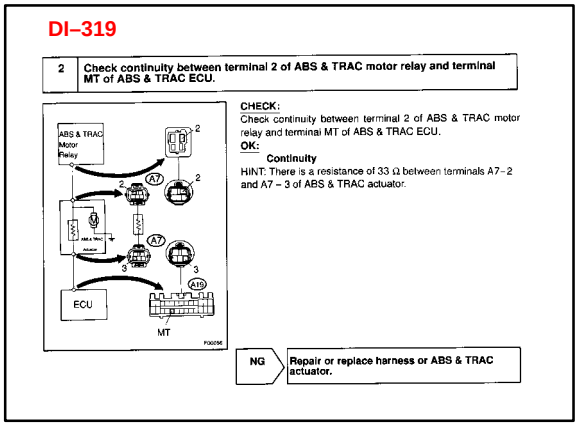
The previous resistance value was 4 – 6 Ohms.



’98 ES 300 Repair Manual RM577U, Page DI–319

Under INSPECTION PROCEDURE, Item #2 (Diagnostics – ABS & Traction Control System) the resistance value has been corrected to 33 Ohms when measuring between terminals A7–2 and A7–3 of the ABS and TRAC Actuator.

The previous resistance value was 4 – 6 Ohms.



LEXUS

Technical Service Information Bulletin

March 26, 1999

Title:

FRONT BRAKE NOISE

Models:

'97–'99 ES 300

TSIB

Introduction

New Front Brake Pads are available to reduce front brake groan or grinding noise on 1997–1999 ES 300.

- **1997 to 1999 ES 300s built before VIN:**

  Tsutsumi: JT8BF28G * * –0179640

  TMK: JT8BF28G * * –5064736

Parts Information

PART NUMBER	PART NAME
04465–33121	Front Brake Pads
04945–33040	Shim Kit (If Needed*)

* Visually inspect Shims for heat discoloration. If discolored, then replace.

Repair Procedure

1. Surface the disc rotors with the "On–Car Brake Lathe" to within serviceable limits.
2. If the rotors are unserviceable or below minimum thickness, replace the rotors.
3. Check any new disc rotors for runout.
4. If the disc rotor runout is over 0.03 mm (0.0012 in), perform phase matching procedure.
5. Replace the front brake pads.
6. Road test.

Warranty Information

OP CODE	COMB	DESCRIPTION	TIME	OPN	T1	T2
473025	A	Grind Front Discs and Replace Pads, Shims (if needed) for Squeak (both sides)	2.1	04465–33121	36	99
		Grind Front Discs and Replace Pads, Shims (if needed) for Vibration (both sides)			21	99
		Grind Front Discs and Replace Pads, Shims (if needed) for Groan/Grinding (both sides)			91	99

Applicable Warranty*:

This repair is covered under the Lexus Basic Warranty. This warranty is in effect for 48 months or 50,000 miles, whichever occurs first, from the vehicle's in–service date.

* Warranty application is limited to correction of a problem based upon a customer's specific complaint.

LEXUS

Technical Service Information Bulletin

October 20, 2000

Title:

BRAKE PAD CLICKING NOISE

Models:

'90 – '00 All Models

TSIB

Introduction

A clicking type noise may be noticed when first applying the brakes after changing vehicle travel direction (*Drive/Forward* to *Reverse, Reverse* to *Drive/Forward*). This is a normal noise caused by the required brake pad–to–caliper clearances. When the direction of travel is changed, the brake pads may "shift" towards the new direction of travel. When the brake pad contacts the caliper, a clicking noise may be heard.

To minimize this clicking noise, a disc brake caliper grease has been made available for use during brake service/maintenance operations. Under normal usage conditions this grease should be effective for a period of 6 months to 1 year.

Applicable Vehicles

- **1990 – 2000** model year **Lexus vehicles, all models.**

Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME
N/A	08887–80609	Disc Brake Caliper Grease (50 g tube)

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

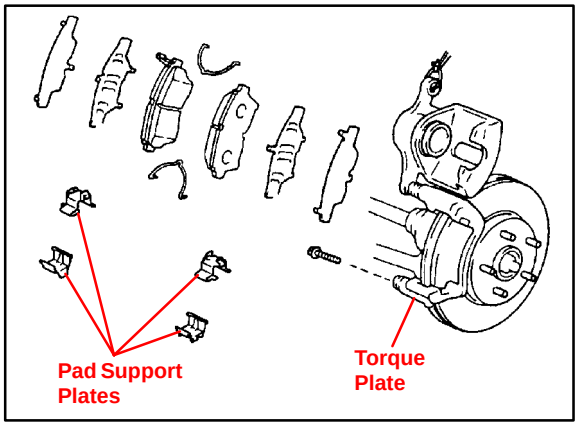
Application Procedure

There are two types of brake calipers: floating and fixed. Check the type of brake caliper installed on the vehicle by removing the wheel assembly.

1. Floating Type Brake Caliper

A. Lift up or remove the brake caliper and suspend it securely.

HINT:
Do not disconnect the flexible hose from the brake caliper.



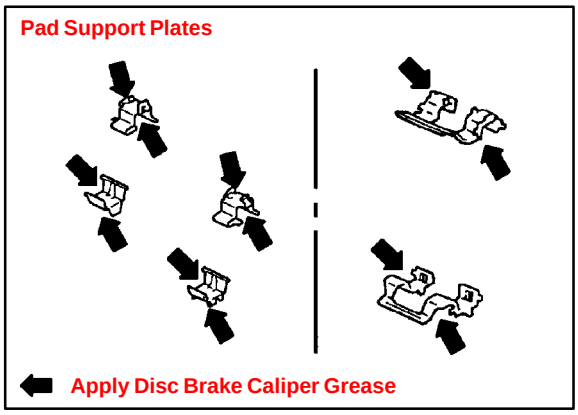
B. If equipped with anti–squeal spring: Remove the anti–squeal springs.

C. Remove the brake pads with anti–squeal shims.

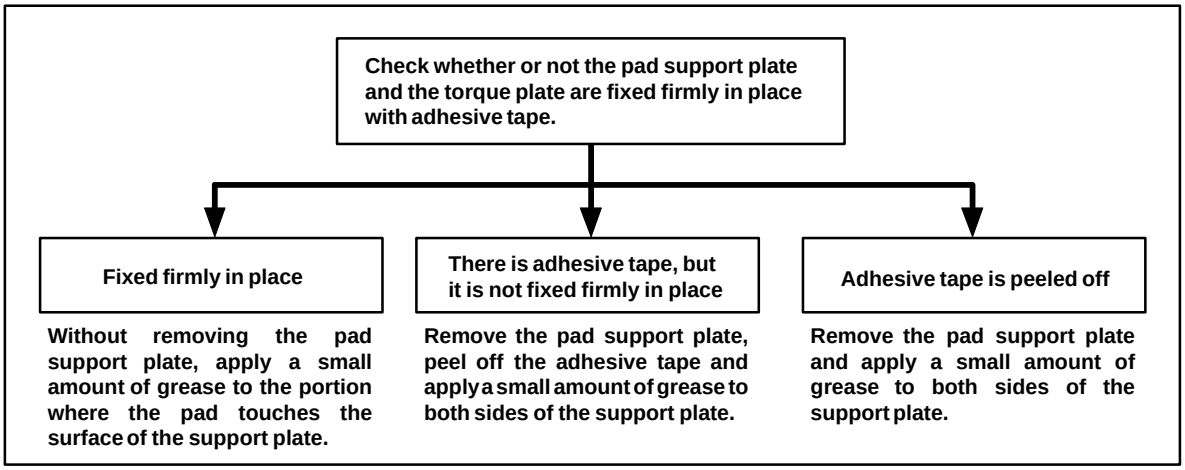
D. Remove the pad support plates from the torque plate. Clean any dust from the pad support plates, torque plates and brake pads.

E. Apply a small amount of the disc brake caliper grease (1–2 mm thick) to both sides of the pad support plates.

NOTE:
Do NOT apply grease to the friction surfaces of the brake pads or the disc rotor.



F. If the pad support plate is fixed to the torque plate with adhesive tape, perform the operation according to the following flow chart.



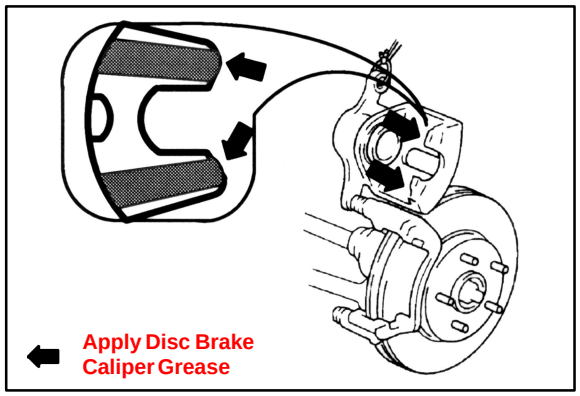
Application Procedure (Continued)

G. Apply a small amount of the disc brake caliper grease (1–2 mm thick) to the caliper as indicated in the illustration.

H. Install the brake pads with the anti–squeal shims.

I. If equipped with anti–squeal spring: Install the anti–squeal springs.

J. Press the piston in firmly and install the brake caliper.



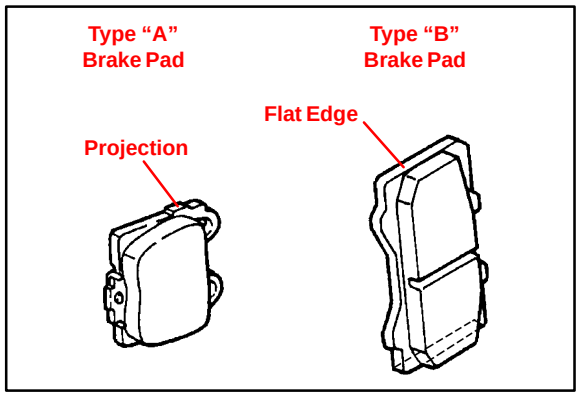
NOTE:
- **Clean excess grease from brake pad and caliper.**
- **Do NOT apply grease to the friction surfaces of the brake pads or the disc rotor.**

K. Install the wheel assembly.

2. Fixed Type Brake Caliper

There are two types of brake pads:

- Type “**A**”: Has a projection on the upper and lower side of the brake pad. (See illustration.)
- Type “**B**”: Has a flat upper and lower edge on the brake pad backing plate.

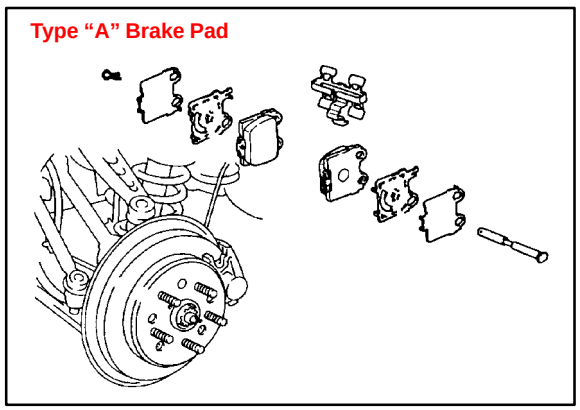


Type “A” Brake Pad

A. Remove the anti–squeal spring, clip and pad guide pin.

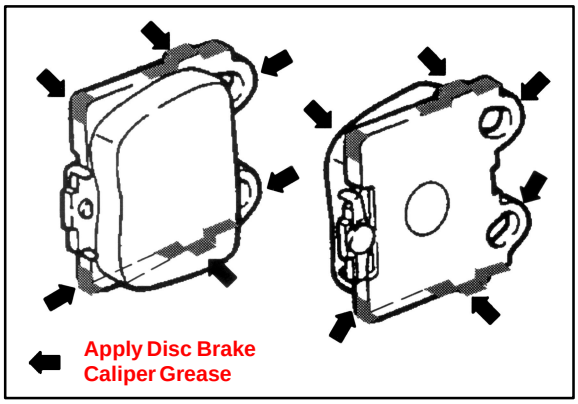
B. Remove the brake pads with the anti–squeal shims.

C. Clean any dust from the brake pads.



Application Procedure (Continued)

D. Apply a small amount of the disc brake caliper grease (1–2 mm thick) to the areas indicated in the illustration.



NOTE:
Do NOT apply grease to the friction surfaces of the brake pads or the disc rotor.

E. Install the brake pads with the anti–squeal shims.

NOTE:
Clean excess grease from the brake pads and caliper.

F. Install the pad guide pin, clip and anti–squeal spring.

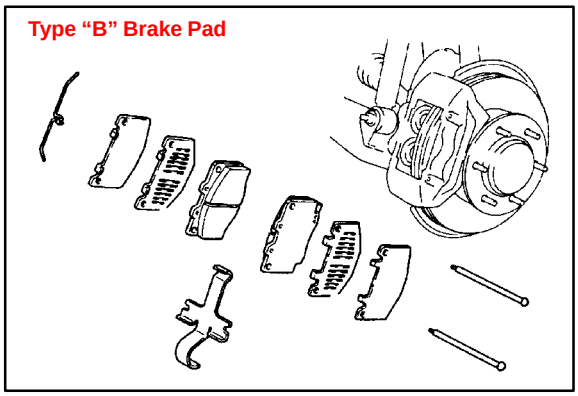
G. Install the wheel assembly.

Type “B” Brake Pad

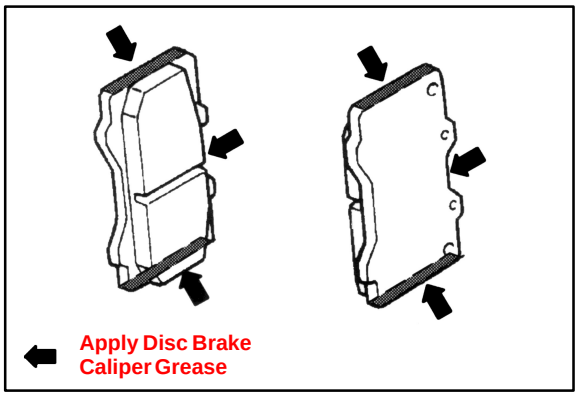
A. Remove the clip, pins and anti–rattle spring/pad retainer clip.

B. Remove the brake pads with the anti–squeal shims.

C. Clean any dust from the brake pads.



D. Apply a small amount of the disc brake caliper grease (1–2 mm thick) to the areas indicated in the illustration.



NOTE:
Do NOT apply grease to the friction surfaces of the brake pads or the disc rotor.

E. Install the brake pads with the anti–squeal shims.

NOTE:
Clean excess grease from the brake pads and caliper.

F. Install the pad guide pin, clip and anti–squeal spring.

G. Install the wheel assembly.

LEXUS

Technical Service Information Bulletin

February 24, 2003

Title:

SULFUR ODOR FROM EXHAUST

Models:

All Models

TSIB

ENGINE

EG001-03

Introduction

Some owners of Lexus vehicles may experience a sulfur–like or “rotten egg” odor from the exhaust system. Sulfur is a natural component of crude oil from which gasoline is refined and the amount of sulfur can be decreased through the refining process. The amount of sulfur in fuel sold in California is regulated, however gasoline sold in other states can have substantially higher sulfur content. Sulfur content also varies considerably between gasoline brands and locations.

Applicable Vehicles

- **All Models.**

Repair Procedure

A sulfur odor emitted from the vehicle’s tailpipe does not necessarily indicate that there is an issue with the engine’s running condition, but is most likely directly related to the fuel. If the vehicle is exhibiting an excessive sulfur odor, the following checks should be performed:

- If the MIL light is ON, check for DTCs and repair as necessary.

If no trouble is found after performing the above check, recommend the customer try a different source of fuel.

Replacement of oxygen sensors, air/fuel ratio sensors or catalytic converters will not reduce the odor and will therefore **not** be considered warrantable.

Warranty Information

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

LEXUS

Technical Service Information Bulletin

April 3, 1998

Title:

EVAP SYSTEM DIAGNOSIS: P0441 / P0446

Models:

ES 300, SC 400, LS 400, LX 450

Introduction The following procedure is recommended for repair of MIL "ON" conditions involving confirmed DTC P0441 and P0446.

Affected Vehicles

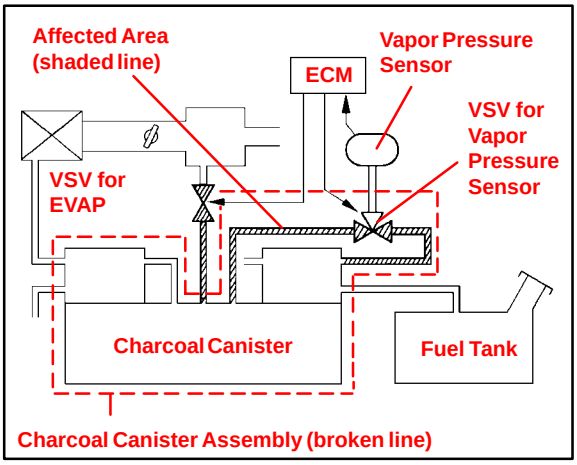
- All **ES 300, SC 400, LS 400, LX 450** that display a code P0441 or P0446.

A. Diagnostics for P0441:

1. Remove Vacuum Hoses between EVAP VSV and Charcoal Canister and discard.
2. If there is a metal vapor pipe between EVAP VSV and Charcoal Canister, clean inside of vapor pipe.
3. Replace EVAP VSV and Charcoal Canister assembly with new parts.
4. Install new vacuum hoses between EVAP VSV and Charcoal Canister.

B. Diagnostics for P0446:

1. Inspect vacuum hoses and pipes between EVAP (Purge) VSV and Charcoal Canister for leaks.
2. Replace Vapor Pressure VSV and Canister.



NOTE:

When performing diagnostics for an occurrence of a MIL "ON" condition, the Diagnostic Trouble Code (DTC) P0441 may be the result of debris in the Evaporative Emission Control System. This may cause blockage of a vapor line, or a stuck VSV, as described in the troubleshooting area of the Repair Manual.

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

LEXUS

Technical Service Information Bulletin

April 27, 2001

Title:

EVAP SYSTEM OPERATION INFORMATION

Models:

All ’96 – ’01 Models

TSIB

Introduction

This service bulletin provides supplemental information regarding the system design, operation, and diagnostics of the Early Type (Non–Intrusive) and Late Type (Intrusive) EVAP Systems found on 1996 model year and later OBD II equipped vehicles.

Applicable Vehicles

MODEL	1996	1997	1998	1999	2000	2001
ES 300	Early	Early	Early	Early	Late	Late
GS 300	N/A	N/A	Early	Early	Early	Late
GS 400	N/A	N/A	Early	Early	Early	N/A
GS 430	N/A	N/A	N/A	N/A	N/A	Late
IS 300	N/A	N/A	N/A	N/A	N/A	Late
LS 400	N/A	N/A	Early	Early	Late	N/A
LS 430	N/A	N/A	N/A	N/A	N/A	Late
LX 470	N/A	N/A	Early	Early	Early	Early
RX 300	N/A	N/A	N/A	Early	Late	Late
SC 300	N/A	N/A	Early	Early	Late	N/A
SC 400	N/A	Early	Early	Early	Late	N/A

Contents

This bulletin is divided into the following sections:

Warranty Information

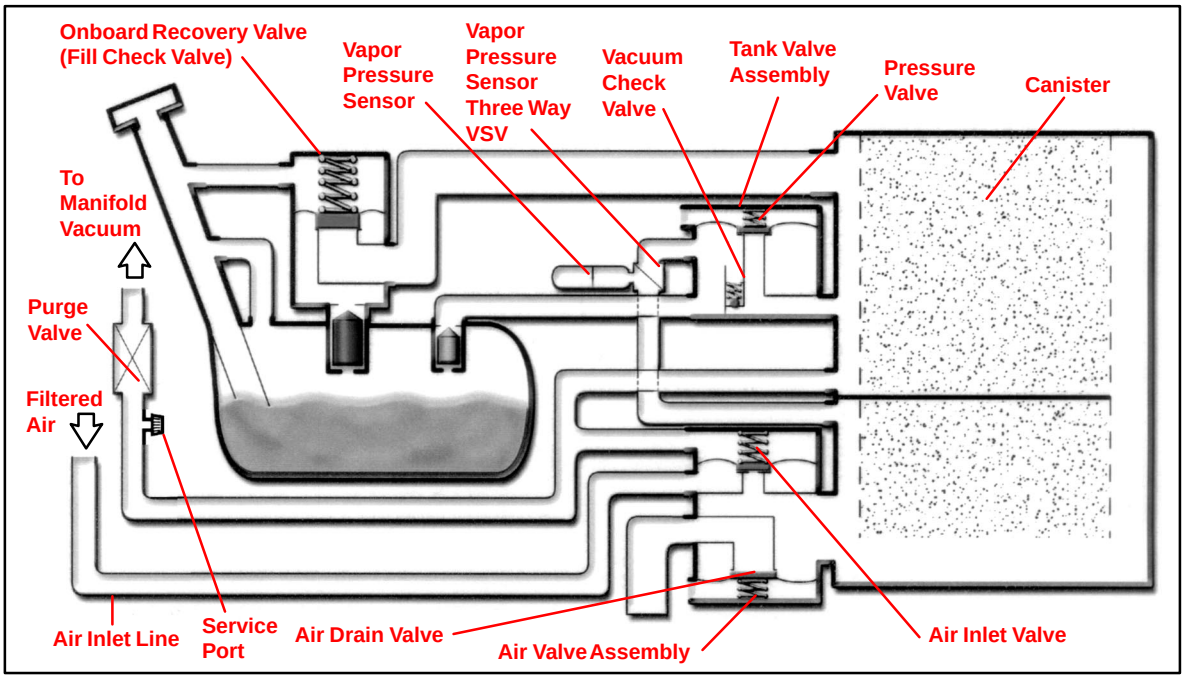
OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

Early Type System Description

Early Type (Non–Intrusive) EVAP System Overview

There are a variety of EVAP systems in use with different monitoring strategies. It is essential that the EVAP system be correctly identified before beginning diagnosis. The Repair Manual is the best source for this information. The following information covers the different systems.

The first system described is the Early Type (Non–Intrusive) EVAP System. Refer to the Applicable Vehicles chart for applicability information.



Purge Operation

When the engine has reached predetermined parameters (closed loop, engine temp. above 125®F, etc.), stored fuel vapors are purged from the canister whenever the purge VSV is opened by the ECM. At the appropriate time, the ECM will turn on the purge VSV.

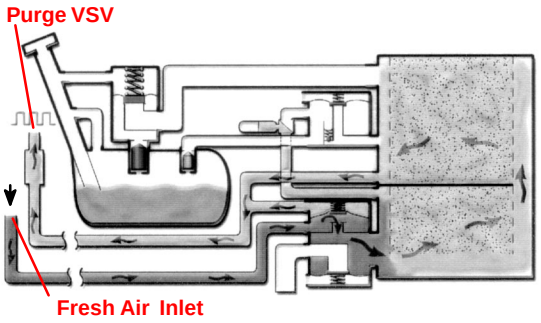


Figure 1. Purge Operation

The ECM will change the duty ratio cycle of the purge VSV thus controlling purge flow volume. Purge flow volume is determined by manifold pressure and the duty ratio cycle of the purge VSV. Atmospheric pressure is allowed into the canister to ensure that purge flow is constantly maintained whenever purge vacuum is applied to the canister (see Figure 1).

Early Type System Description (Continued)

ORVR Operation

During refueling, low pressure above the diaphragm in the onboard recovery valve lifts allowing fuel vapors into the charcoal canister. At the same time, the air drain valve opens and the charcoal absorbs the fuel vapors (see Figure 2).

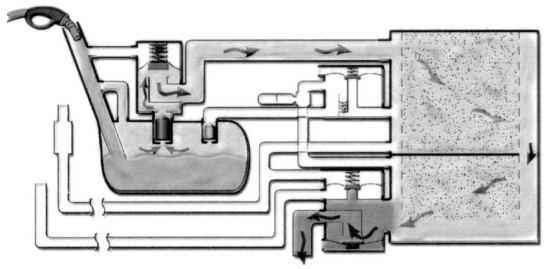


Figure 2. ORVR Operation

Early Type (Non–Intrusive) EVAP System DTCs

EVAP Monitor Leak Operation P0440

The ECM tests for leaks by measuring EVAP system pressure in the lines, charcoal canister, and fuel tank. When the EVAP pressure is higher or lower than atmospheric pressure, the ECM concludes that no leaks are present. EVAP pressure is measured by the vapor pressure sensor. If either the tank or canister purge side is at atmospheric pressure under specific conditions, the ECM determines there is a leak.

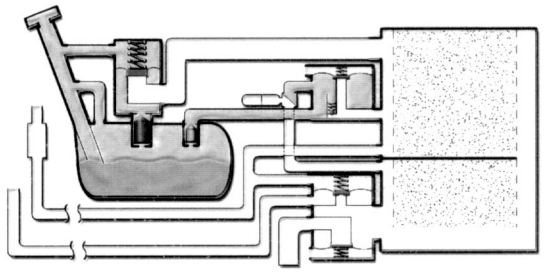


Figure 3. Fuel Tank Side of System

If DTC P0440 is present, the leak is on the fuel tank side of the EVAP system. This also includes the lines between the fuel tank and part of the canister. When the Vapor Pressure sensor is measuring tank pressure, the ECM is observing changes in pressure and comparing tank pressure to atmospheric pressure. No difference in pressure indicates a leak. The ECM may take 20 minutes or more to complete testing the fuel tank side (see Figure 3).

Canister Leak Detection P0446

When the ECM switches the vapor pressure VSV to canister side, the ECM measures canister pressure. A leak on the canister side can set multiple DTCs (see Figure 4).

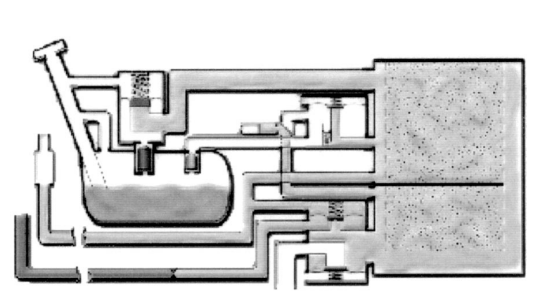


Figure 4. Canister Side of System

Early Type System Description (Continued)

Vapor Purge Flow P0441

The EVAP monitor is designed to detect:

- Restricted vapor purge flow when the purge VSV is open
- Inappropriate vapor purge flow when the purge VSV is closed

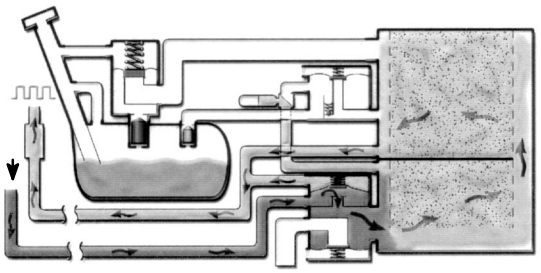


Figure 5. Flow During Purge Operation

Under normal purge conditions, pressure pulsations generated by the cycling of the purge VSV are present in the canister and detected by the Vapor Pressure sensor.

Three–Way VSV P0446

The three–way VSV is connected to the Vapor Pressure sensor, canister, and fuel tank. This VSV allows the Vapor Pressure sensor to detect either canister or tank pressure.

There are two modes the ECM can use to determine if the three–way VSV is malfunctioning. The three–way VSV is judged to be normal if there is pressure difference between the tank and canister when the three–way VSV is switched to look at the charcoal canister and fuel tank side of system.

If there isn't any pressure difference between the fuel tank and canister, the ECM looks for the following conditions:

- During purging, pressure pulsations generated by the purge VSV are not present in the canister as detected by Vapor Pressure sensor, the three–way VSV is judged to be defective.
- If there are pressure pulsations detected by the Vapor Pressure sensor present in the fuel tank, the three–way VSV is judged to be defective.

Late Type System Description

Late Type (Intrusive) EVAP System Overview

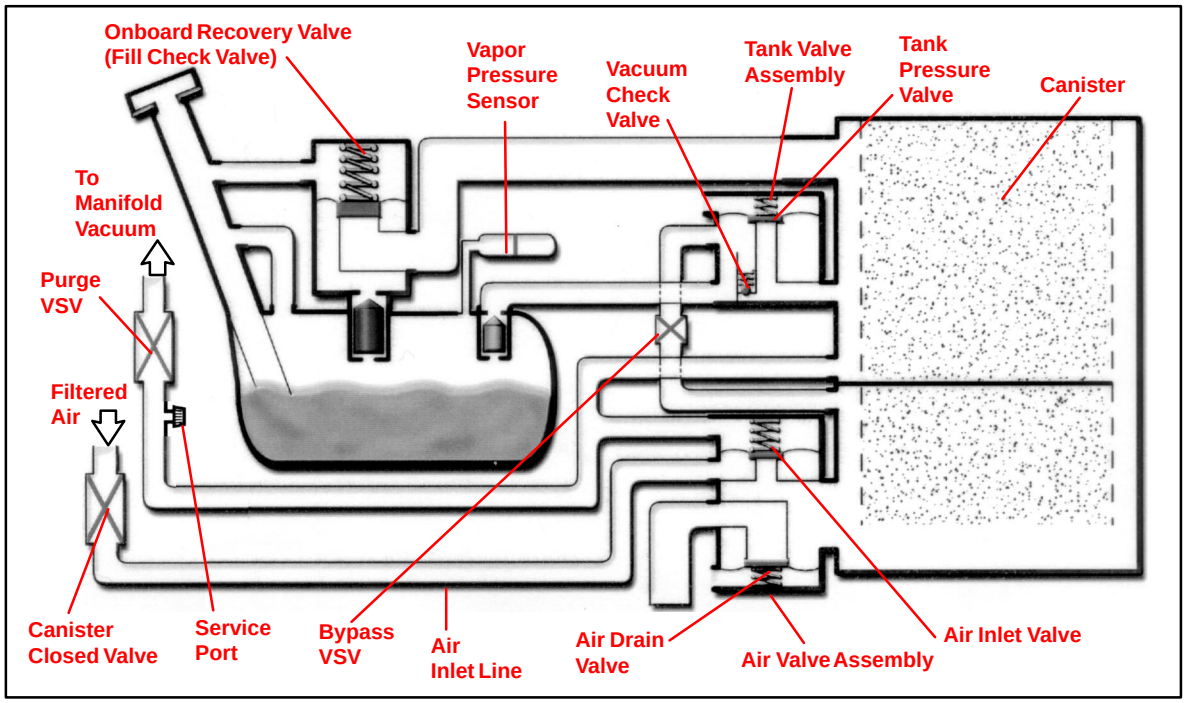
The Late Type EVAP System, also known as the Intrusive type, was developed to meet the very stringent, mandated standard of detecting a hole 0.020 inch (0.5 mm). This system uses many of the same components as the early type EVAP system. Purge, vacuum relief, pressure relief, and ORVR operations are identical to the early type. Refer to the Applicable Vehicles chart for applicability information.

The following changes were made to the Late Type EVAP System:

- Vapor pressure sensor connected to the fuel tank.
- Bypass VSV in the place of the three way VSV.
- Canister Closed Valve (CCV) on the air inlet line.

Late Type System Description (Continued)

Late Type (Intrusive EVAP System)



Tank Side

The bypass VSV and the fill check valve assembly isolates the tank pressure side from the canister side (see Figure 1).

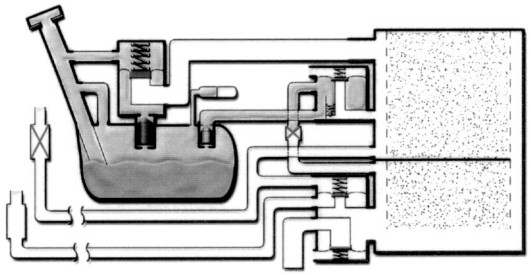


Figure 1. Fuel Tank Side of System

Canister Side

The bypass VSV and the Fill Check valve also isolate the canister side from the tank side (see Figure 2).

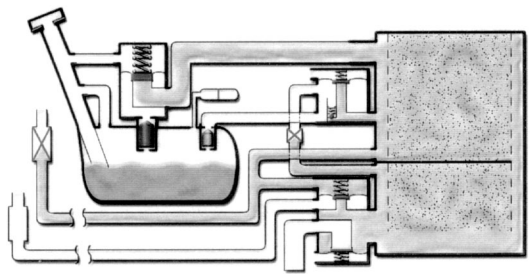


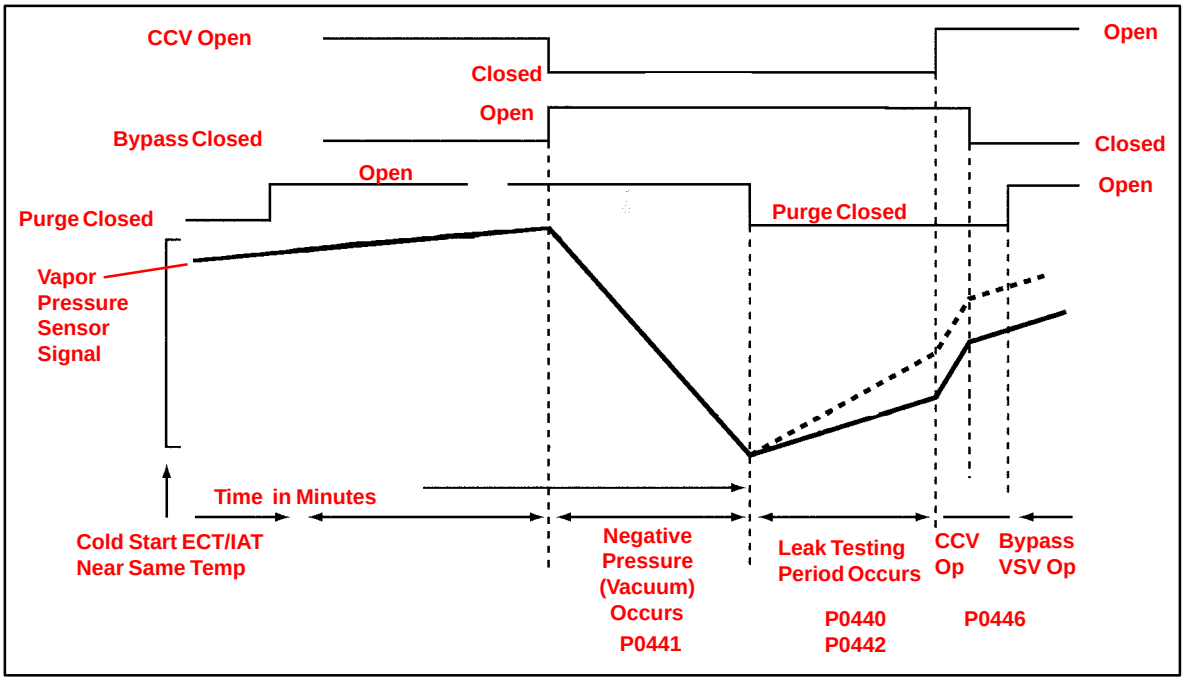
Figure 2. Canister Side of System

Late Type System Monitor Sequence

Late Type (Intrusive) EVAP System Monitor Sequence

The monitoring sequence for leak detection is different from that of the Early Type EVAP System. The Late Type applies a very small vacuum to the EVAP system. The ECM then determines if there is a problem in the system based on the vapor pressure sensor signal.

Monitor Sequence



Monitor Operation

The monitor sequence begins with a cold engine start. The IAT and ECT sensors must have approximately the same temperature reading.

The ECM is constantly monitoring fuel tank pressure. As the temperature of the fuel increases, pressure slowly rises.

The ECM will purge the charcoal canister at the appropriate time (see Figure 1). With bypass VSV closed, pressure will continue to rise in fuel tank.

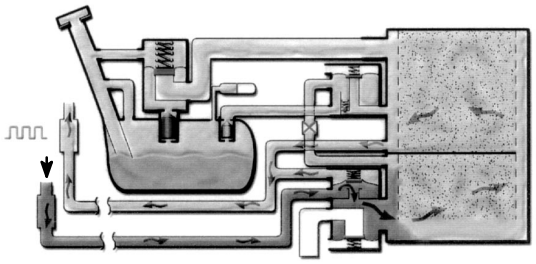


Figure 1. Canister Purge

Late Type System Monitor Sequence (Continued)

Purge VSV Operation – P0441

At a predetermined point, the ECM closes the CCV and opens the Bypass VSV causing vacuum to increase in the entire EVAP system.

The ECM continues to operate the purge VSV until the vacuum is increased to a specified point at which time the ECM closes the purge VSV (see Figure 2).

If the vacuum did not increase, or if the vacuum increased beyond the specified limit, the ECM judges the purge VSV and related components to be faulty.

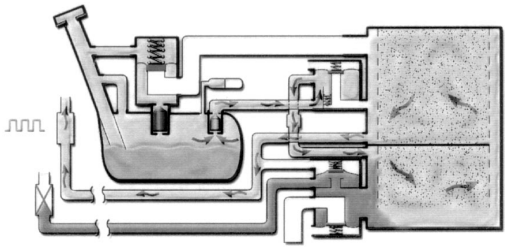


Figure 2. Vacuum Application

Hole Detection P0440 and P0442

The rate of pressure increase as detected by the vapor pressure signal indicates the if there is a leak and if it is a large or small leak.

After purge valve operation, the purge VSV is turned off sealing the vacuum in the system and the ECM begins to monitor the pressure increase (see Figure 3). Some increase is normal. A very rapid, sharp increase in pressure indicates a leak in the EVAP system and sets the DTC P0440.

This monitoring method is also able to distinguish what is called the small leak detection. A pressure rise just above normal indicates a very small hole and will set the DTC P0442.

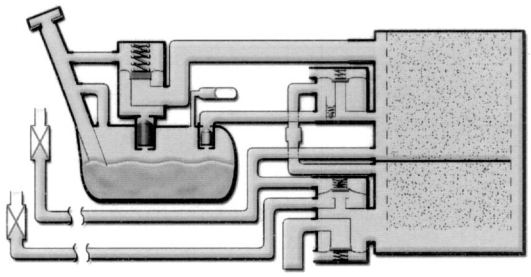


Figure 3. System Sealed

Vent Control, CCV Operation P0446

This stage checks the CCV and vent (air inlet side) operation. When the vapor pressure rises to a specified point, the ECM opens the CCV. Pressure will increase rapidly because of the air allowed into the system. No increase or an increase below specified rate of pressure increase indicates a restriction on the air inlet side.

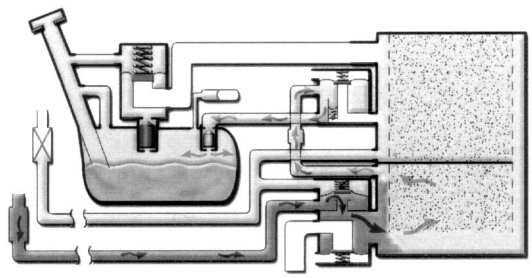


Figure 4. CCV Opens

Late Type System Monitor Sequence (Continued)

Bypass VSV Operation P0446

In the next stage, the ECM closes the bypass VSV. This action blocks air entering the fuel tank side of the system. The pressure rise on the fuel tank side is no longer as great. If there was no change in pressure, the ECM will conclude the bypass VSV did not close.

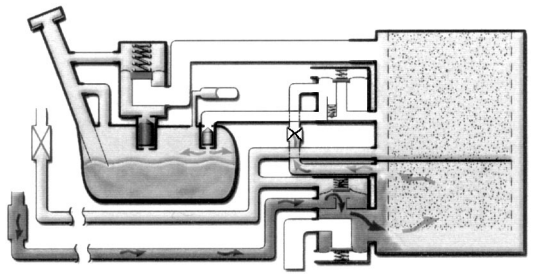


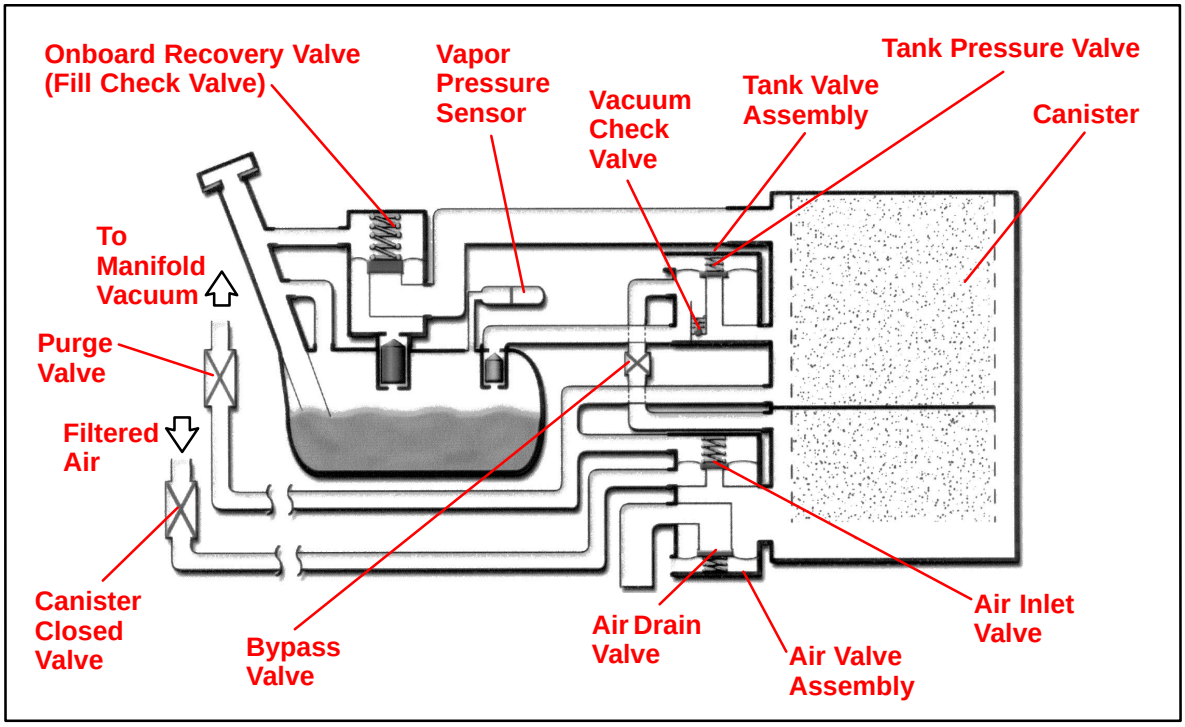
Figure 5. Bypass VSV Closes

Diagnostic Tips for Late Type EVAP System

This diagnostic process tests the EVAP System. The following diagnostic tips may be used in conjunction with the Diagnostic Procedures for EVAP DTCs listed in the Repair Manual. They may be used for all Late Type (Intrusive) EVAP Systems and for all EVAP DTCs. Refer to the Applicable Vehicles chart for applicability information.

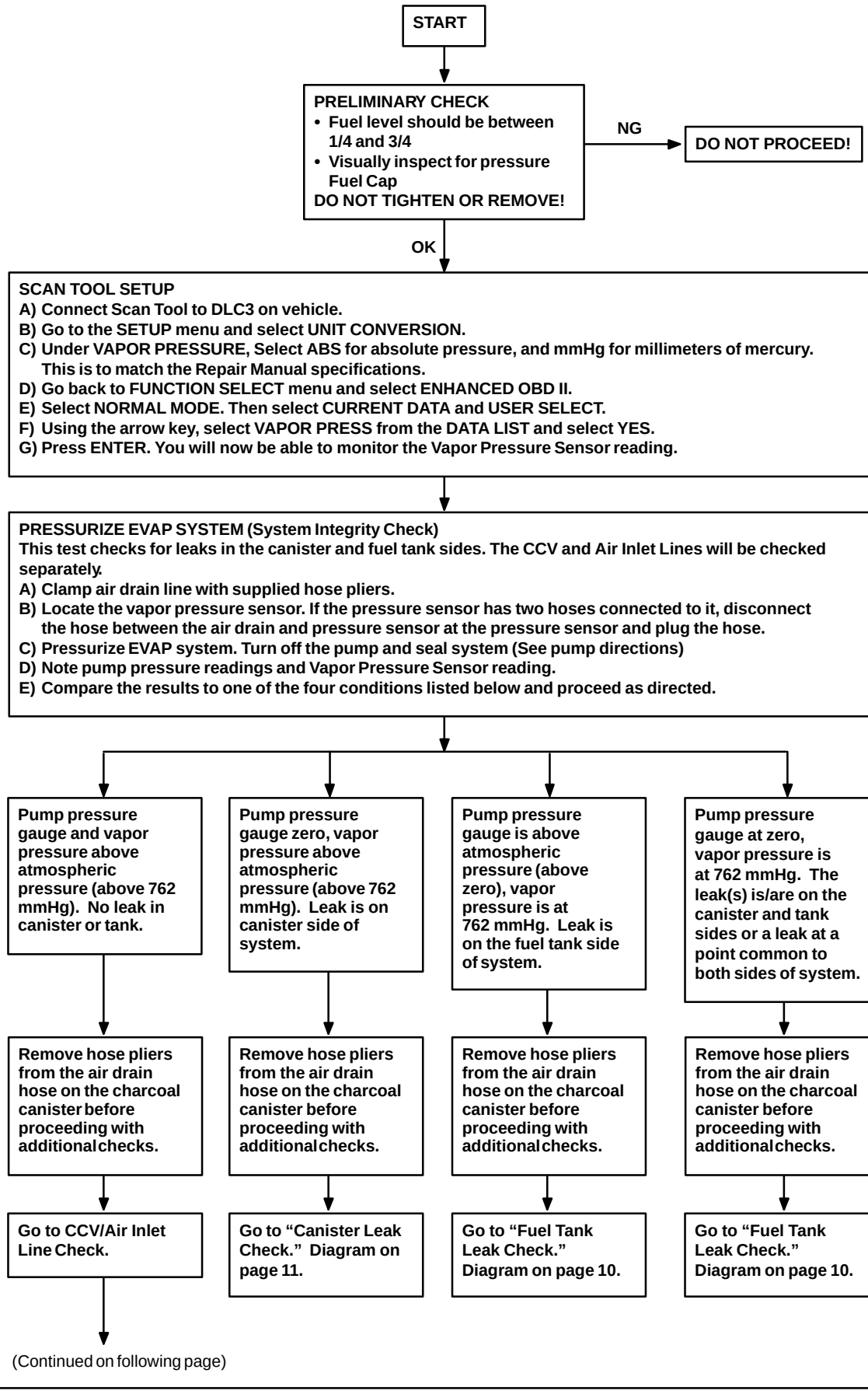
The EVAP System Pressure Test Kit (P/N 00002–6872A) and the Scan Tool can be used to diagnose the EVAP System. Measuring EVAP System pressures using the EVAP System Pressure Tester Gauge and the Scan Tool can aid in the identification of leaks in the system.

System Outline



Diagnostic Tips for Late Type EVAP System (Continued)

Diagnostic Process Flow Chart



(Continued on following page)

Diagnostic Tips for Late Type EVAP System (Continued)

Diagnostic Process Flow Chart (Continued)

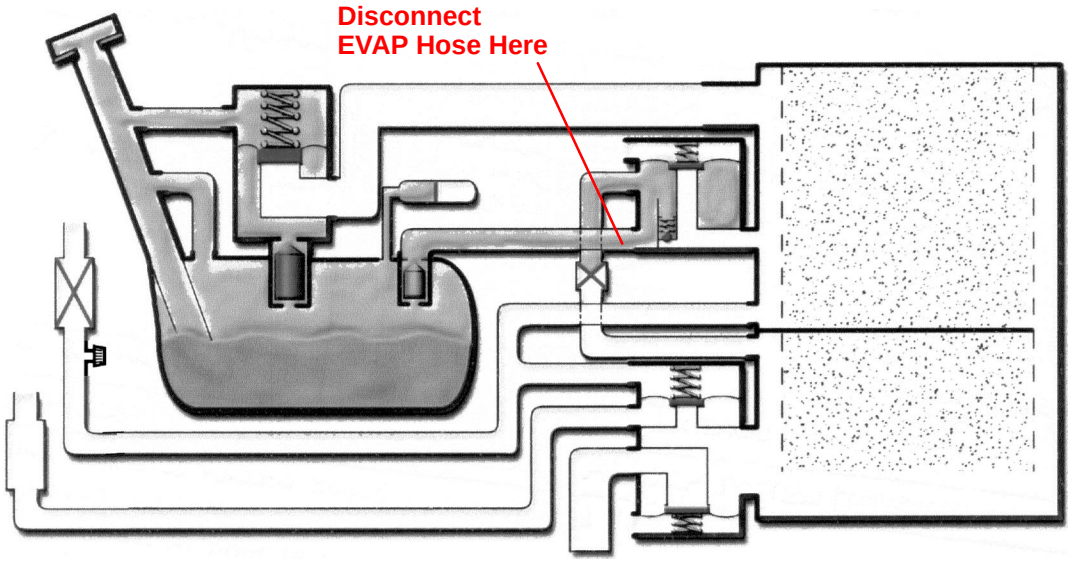
(Continued from previous page)

CCV and Air Inlet Line Check.

A) Disconnect the air inlet line from the charcoal canister.
B) Using the supplied step–down brass adapter (or equivalent) connect the Pressure Supply Hose to the air inlet line.
C) Using the Scan Tool Active Test, turn on the CCV. This will close the CCV.
D) Pressurize the line. Once pressurized, turn off the pump and seal the line (Pressure Hold Switch to "Closed" and Vent Switch to "Closed"). Pressure should hold. If not, check CCV and connections.
E) Next, using the Scan Tool, turn off the CCV. This will open the CCV. The pressure should decrease. If not, check the CCV and connections.
F) After completing the test, reconnect air inlet line to charcoal canister.

Go to "Return Vehicle to Service" on page 11.

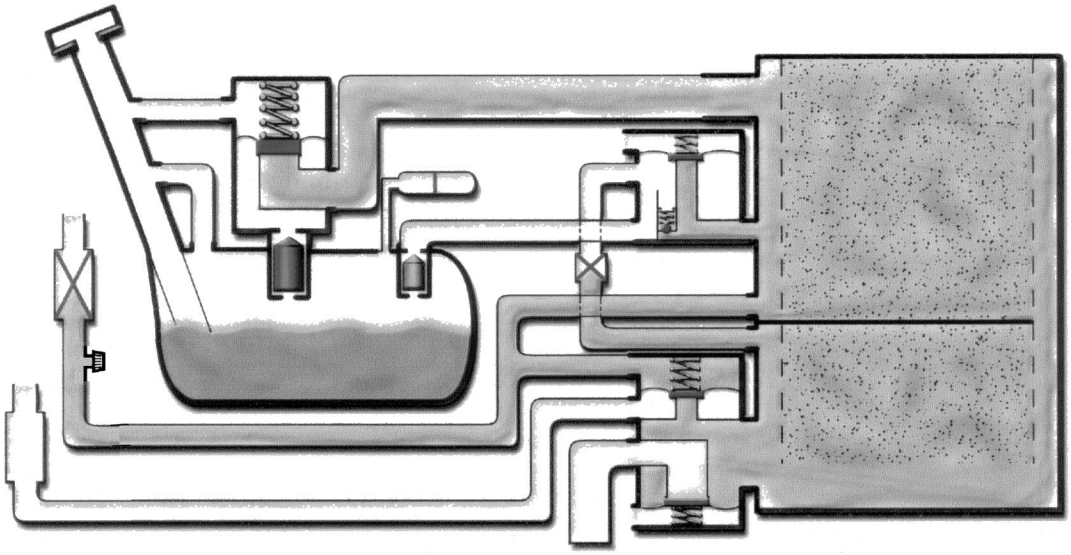
Fuel Tank Leak Check



A. Using the supplied brass step–down adapter, disconnect the EVAP hose from the charcoal canister side as indicated above. Connect Pressure Supply hose from Pressure Test Kit to the EVAP hose and pressurize the fuel tank to 30 mmHg (4 kPa / 0.58 psi).
B. Check that the internal pressure of the tank will hold for 1 minute. Check shaded areas for leaks (soapy water can be used for leak detection). If pressure holds, then perform the Canister Leak Check.
C. When done, reconnect the EVAP line hose to the charcoal canister.

Diagnostic Tips for Late Type EVAP System (Continued)

Canister Leak Check



A. Connect the Pressure Supply hose from the Pressure Test Kit to the Green EVAP System Service Port located on the EVAP Purge VSV line in the engine compartment.
B. Using the directions on the inside of the EVAP System Pressure Test Kit lid, pressurize the EVAP system. Once pressurized, turn off the pump and seal the system (Pressure Hold Switch to "Closed" and Vent Switch to "Closed")
C. With system pressurized at EVAP Service Port, check shaded areas for leaks (soapy water can be used for leak detection).

Return Vehicle to Service

A. After performing above checks, be sure to reconnect all lines and verify that all plugs and hose pliers used for diagnosis have been removed.
B. For additional diagnostic procedures and information, refer to the appropriate Repair Manual.

Technical Service Information Bulletin
February 8, 2002

Title:

READINESS MONITOR DRIVE PATTERNS

Models:

All '96 – '02

Introduction

The On–Board Diagnostic (OBDII) system is designed to monitor the performance of emission–related components and report any detected abnormalities in the form of Diagnostic Trouble Codes (DTCs). Since the various components need to be monitored during different driving conditions, the OBDII system is designed to run separate monitoring programs called Readiness Monitors. Many state Inspection and Maintenance (I/M) programs require that vehicles complete their Readiness Monitors prior to beginning an emissions test.

The current status of the Readiness Monitors can be seen by using the Lexus Diagnostic Tester with version 9.0 software (or newer), or a generic OBDII Scantool. To view the Readiness Monitor status using the Lexus Diagnostic Tester, select "Monitor Status" from the Enhanced OBDII Menu. A status of "complete" indicates that the necessary conditions have been met to run the performance tests for the related Readiness Monitor.

The Readiness Monitor will be reset to "incomplete" if:

- ECU has lost power (battery or fuse).
- DTCs have been cleared.
- The conditions for running the Readiness Monitor have not been met.

In the event that any Readiness Monitor shows "incomplete," follow the appropriate Readiness Monitor Drive Pattern to change the readiness status to "complete." **Refer to the Readiness Monitor Drive Pattern Application Table to determine which drive pattern should be followed.**

Contents

Applicable Vehicles

- **All 1996 – 2002** model year **Lexus** vehicles.

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

Terms & Definitions

J1930 TERM	J1930 DEFINITION	TOYOTA/LEXUS DIAGNOSTIC TESTER PARAMETER
IAT	Intake Air Temperature	Intake Air
ECT	Engine Coolant Temperature	Coolant Temp

Required Tools & Material

TOOLS & MATERIAL	PART NUMBER	QUANTITY
Lexus Diagnostic Tester Kit	01001270	1
12 Megabyte Diagnostic Tester Program Card with version 9.0a Software (or later)	01002593-005	1

NOTE:

A generic OBDII Scantool can be used in place of the Toyota Diagnostic Tester.

CAUTION:

Strict observance of posted speed limits, traffic laws and road conditions are required when performing these drive patterns.

NOTE:

- **These drive patterns represent the fastest method to satisfy all necessary conditions which allow the specific readiness monitor to complete.**
- **In the event that the drive pattern must be interrupted (possibly due to traffic conditions or other factors) the drive pattern can be resumed and, in most cases, the readiness monitor will still set to "complete."**
- **To ensure rapid completion of readiness monitors, avoid sudden changes in vehicle load and speed (driving up and down hills and/or sudden acceleration).**

Readiness Monitor Drive Pattern Application Tables

MODEL YEAR	MODEL	ENGINE	CATEGORY	DRIVE PATTERN NUMBER*									
				EGR		CATALYST		EVAP			O2S/AF SENSOR		HTR
				1	2	3	4	5	6	7	8	9	10
1996	LS 400	1UZ–FE		X		X		X			X		X
	GS 300	2JZ–GE		X		X				X	X		X
	SC 400	1UZ–FE		X		X				X	X		X
	SC 300	2JZ–GE		X		X				X	X		X
	ES 300	1MZ–FE		X		X		X			X		X
	LX 450	1FZ–FE			X	X		N/A			X		X
1997	LS 400	1UZ–FE		X		X		X			X		X
	GS 300	2JZ–FE		X		X				X	X		X
	SC 400	1UZ–FE		X		X				X	X		X
	SC 300	2JZ–GE		X		X				X	X		X
	ES 300	1MZ–FE		X		X		X			X		X
	LX 450	1FZ–FE			X	X		N/A			X		X

*** Readiness Monitor Drive Patterns:**

1. EGR (All Except 1FZ–FE Engine)
2. EGR (For 1FZ–FE Engine)
3. Catalyst (O2S Type)
4. Catalyst (AF Sensor Type)
5. EVAP (Internal Pressure Monitor/Non–Intrusive Type)
6. EVAP (Vacuum Pressure Monitor/Intrusive Type)
7. EVAP (Without Leak Detection)
8. Oxygen Sensor Monitor (Front & Rear O2S System)
9. Oxygen/AF Sensor Monitor (Front AF Sensor & Rear O2S System)
10. Oxygen/AF Sensor Heater Monitor

Readiness Monitor Drive Pattern Application Tables (Continued)

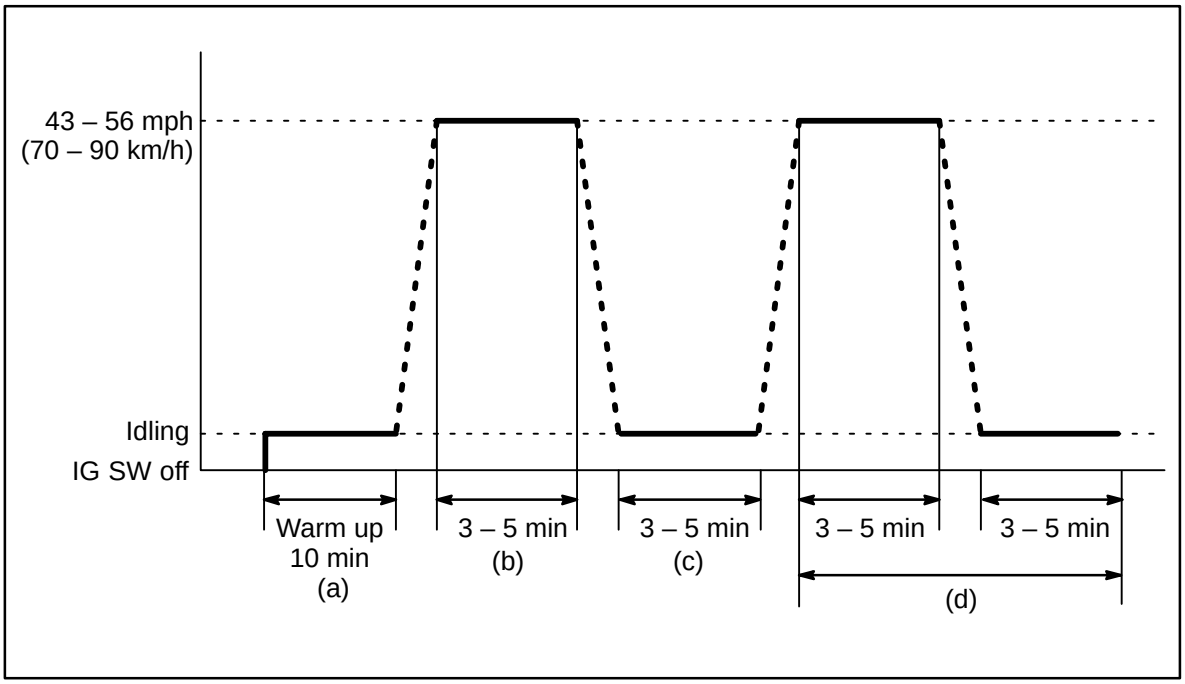
MODEL YEAR	MODEL	ENGINE	CATEGORY	DRIVE PATTERN NUMBER*									
				EGR		CATALYST		EVAP			O2S/AF SENSOR		HTR
				1	2	3	4	5	6	7	8	9	10
1998	LS 400	1UZ–FE		N/A		X		X			X		X
	GS 300	2JZ–FE				X		X			X		X
	SC 400	1UZ–FE				X		X			X		X
	SC 300	2JZ–GE				X		X			X		X
	ES 300	1MZ–FE	Fed	X		X		X			X		X
			CA	X			X	X				X	X
	LX 470	2UZ–FE		X		X		X			X		X
1999	LS 400	1UZ–FE		N/A		X		X			X		X
	GS 400	1UZ–FE				X		X			X		X
	GS 300	2JZ–FE				X		X			X		X
	SC 400	1UZ–FE				X		X			X		X
	SC 300	2JZ–FE				X		X			X		X
	ES 300	1MZ–FE					X	X				X	X
	LX 470	2UZ–FE				X		X			X		X
	RX 300	1MZ–FE					X	X				X	X
2000	LS 400	1UZ–FE		N/A		X			X		X		X
	GS 400	1UZ–FE				X		X			X		X
	GS 300	2JZ–FE				X			X		X		X
	SC 400	1UZ–FE				X			X		X		X
	SC 300	2JZ–FE				X			X		X		X
	ES 300	1MZ–FE					X		X			X	X
	LX 470	2UZ–FE				X		X			X		X
	RX 300	1MZ–FE					X		X			X	X
2001	LS 430	3UZ–FE		N/A		X			X		X		X
	GS 430	3UZ–FE				X			X		X		X
	GS 300	2JZ–FE				X			X		X		X
	IS 300	2JZ–FE				X			X		X		X
	ES 300	1MZ–FE					X		X			X	X
	LX 470	2UZ–FE				X		X			X		X
	RX 300	1MZ–FE					X		X			X	X
2002	LS 430	3UZ–FE		N/A		X			X		X		X
	GS 430	3UZ–FE				X			X		X		X
	GS 300	2JZ–FE				X			X		X		X
	SC 430	3UZ–FE				X			X		X		X
	IS 300	2JZ–FE				X			X		X		X
	ES 300	1MZ–FE					X		X			X	X
	LX 470	2UZ–FE				X			X		X		X
	RX 300	1MZ–FE					X		X			X	X

*** Readiness Monitor Drive Patterns:**

1. EGR (All Except 1FZ–FE Engine)
2. EGR (For 1FZ–FE Engine)
3. Catalyst (O2S Type)
4. Catalyst (AF Sensor Type)
5. EVAP (Internal Pressure Monitor/Non–Intrusive Type)
6. EVAP (Vacuum Pressure Monitor/Intrusive Type)
7. EVAP (Without Leak Detection)
8. Oxygen Sensor Monitor (Front & Rear O2S System)
9. Oxygen/AF Sensor Monitor (Front AF Sensor & Rear O2S System)
10. Oxygen/AF Sensor Heater Monitor

Readiness Monitor Drive Patterns: EGR Monitors

DRIVE PATTERN NO. 1: EGR Monitor (All Except 1FZ–FE Engine)



Preconditions

The monitor will not run unless:

- MIL is OFF.
- Altitude is 7800 feet (2400 m) or less.
- IAT (Intake Air) is 14 ™F (–10 ™C) or greater.

Drive Pattern Procedure

Connect the OBDII Scantool to the DLC3 connector to check monitor status and preconditions.

a. If IAT (Intake Air) is less than 50 ™F (10 ™C) when starting the engine, idle the engine for approximately 10 minutes.
b. Drive the vehicle at 43 – 56 mph (70 – 90 km/h) for a period of 3 – 5 minutes.

NOTE:
- **Do not allow the Throttle Position (TP) to exceed 30%.**
- **Drive with smooth throttle operation and avoid sudden acceleration.**

c. Stop the vehicle and let the engine idle for 3 – 5 minutes.
d. Repeat steps “b” and “c” once.

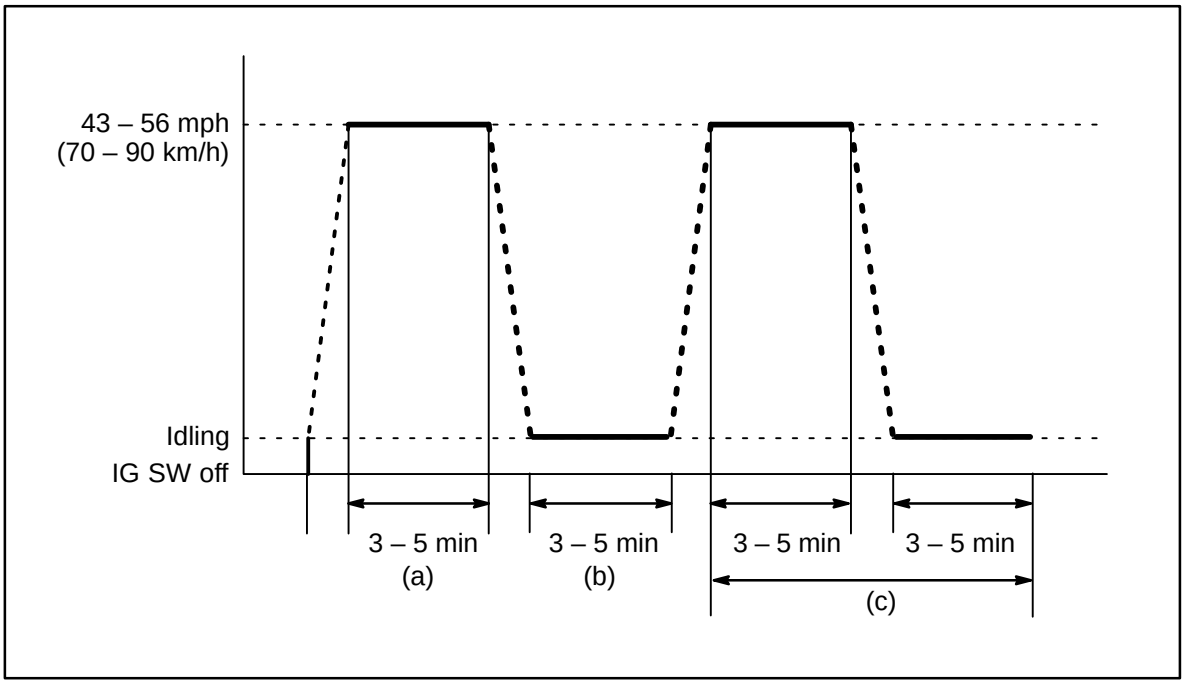
If readiness status does not switch to “complete,” ensure preconditions are met, turn the ignition OFF, then repeat steps “b” through “d.”

NOTE:

The readiness status may not switch to “complete” after the first drive pattern trip if a Pending Code has been set (first trip for a two–trip DTC).
- **Pending Codes are available from the DTC Info Menu in Enhanced OBDII.**
- **Pending Codes indicate a POTENTIAL problem was detected. A second trip is needed to confirm the DTC prior to diagnosis.**
- **Once a second trip is completed, a current DTC will be stored.**

Readiness Monitor Drive Patterns: EGR Monitors (Continued)

DRIVE PATTERN NO. 2: EGR Monitor (for 1FZ–FE Engine)



Preconditions

The monitor will not run unless:

- MIL is OFF.
- Altitude is 7800 feet (2400 m) or less.
- IAT (Intake Air) is 14 °F (–10 °C) or greater.
- ECT (Coolant Temp) is less than 104 °F (40 °C).

Drive Pattern Procedure

Connect the OBDII Scantool to DLC3 to check monitor status and preconditions.

a. Start the engine and as soon as safely possible begin driving the vehicle at 43 – 56 mph (70 – 90 km/h) for a period of 3 – 5 minutes.

NOTE:
- **Do not allow the Throttle Position (TP) to exceed 30%.**
- **Drive with smooth throttle operation and avoid sudden acceleration.**

b. Stop the vehicle and let the engine idle for 3 – 5 minutes.

c. Repeat steps “a” and “b” once.

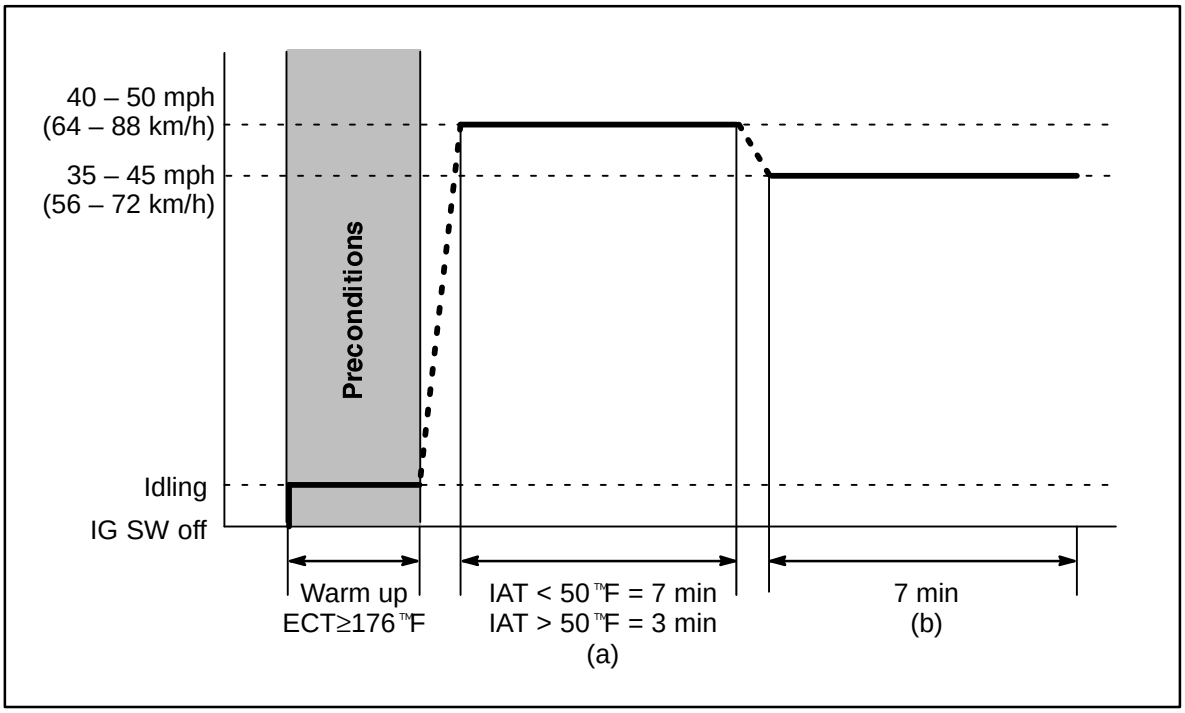
If readiness status does not switch to “complete,” ensure preconditions are met, turn the ignition OFF, then repeat steps “a” through “c.”

NOTE:

The readiness status may not switch to “complete” after the first drive pattern trip if a Pending Code has been set (first trip for a two–trip DTC).
- **Pending Codes are available from the DTC Info Menu in Enhanced OBDII.**
- **Pending Codes indicate a POTENTIAL problem was detected. A second trip is needed to confirm the DTC prior to diagnosis.**
- **Once a second trip is completed, a current DTC will be stored.**

Readiness Monitor Drive Patterns: Catalyst Monitors

DRIVE PATTERN NO. 3: Catalyst Monitor (O2S Type)



Preconditions

The monitor will not run unless:

- MIL is OFF.
- ECT (Coolant Temp) is 176 ™F (80 ™C) or greater.
- IAT (Intake Air) is 14 ™F (–10 ™C) or greater.*

*** For 2002 MY and later vehicles:** The readiness test can be completed in cold ambient conditions (less than 14 ™F / –10 ™C), if the drive pattern is repeated a second time after cycling the ignition OFF.

Drive Pattern Procedure

Connect the OBDII Scantool to DLC3 to check monitor status and preconditions.

Note the IAT (Intake Air) value during engine startup. The driving time must be adjusted during step “a” based upon IAT (Intake Air) value at startup.

a. Drive the vehicle at 40 – 55 mph (64 – 88 km/h) for the time described below:
   - If IAT (Intake Air) was less than 50 ™F (10 ™C) when the engine was started, drive for 7 minutes.
   - If IAT (Intake Air) was greater than 50 ™F (10 ™C) when the engine was started, drive for 3 minutes.

b. Drive the vehicle at 35 – 45 mph (56 – 72 km/h) for approximately 7 minutes.

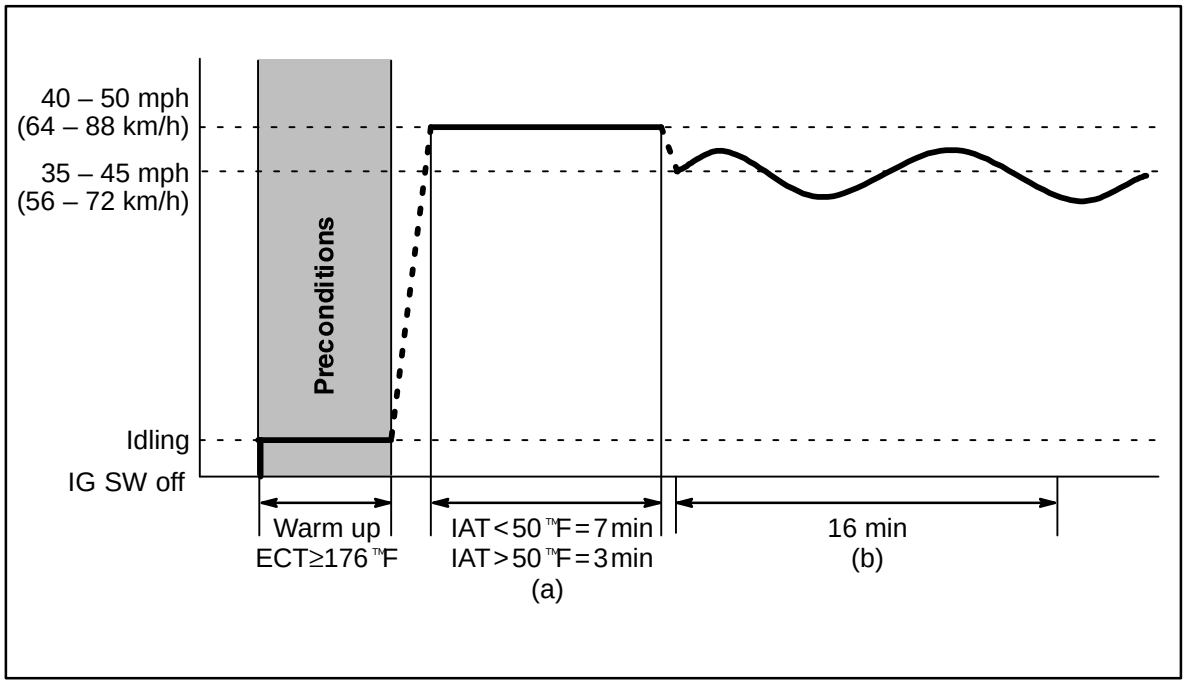
NOTE:
- **Drive with smooth throttle operation.**
- **Avoid sudden acceleration.**
- **Avoid sudden deceleration as much as possible with the throttle fully closed.**

If readiness status does not switch to “complete,” ensure preconditions are met, turn the ignition OFF, then repeat steps “a” and “b.”

NOTE:
The readiness status may not switch to “complete” after the first drive pattern trip if a Pending Code has been set (first trip for a two–trip DTC).
- **Pending Codes are available from the DTC Info Menu in Enhanced OBDII.**
- **Pending Codes indicate a POTENTIAL problem was detected. A second trip is needed to confirm the DTC prior to diagnosis.**
- **Once a second trip is completed, a current DTC will be stored.**

Readiness Monitor Drive Patterns: Catalyst Monitors (Continued)

DRIVE PATTERN NO. 4: Catalyst Monitor (AF Sensor Type)



Preconditions

The monitor will not run unless:

- MIL is OFF.
- ECT (Coolant Temp) is 176 ™F (80 ™C) or greater.
- IAT (Intake Air) is 14 ™F (–10 ™C) or greater.*

*** For 2002 MY and later vehicles:** The readiness test can be completed in cold ambient conditions (less than 14 ™F / –10 ™C), if the drive pattern is repeated a second time after cycling the ignition OFF.

Drive Pattern Procedure

Connect the OBDII Scantool to DLC3 to check monitor status and preconditions.

Note the IAT (Intake Air) value during engine startup. The driving time must be adjusted during step “a” based upon IAT (Intake Air) value at startup.

a. Drive the vehicle at 40 – 55 mph (64 – 88 km/h) for the time described below:
   - If IAT (Intake Air) was less than 50 ™F (10 ™C) when the engine was started, drive for 7 minutes.
   - If IAT (Intake Air) was greater than 50 ™F (10 ™C) when the engine was started, drive for 3 minutes.

b. Drive the vehicle allowing speed to fluctuate between 35 – 45 mph (56 – 72 km/h) for about 16 minutes.

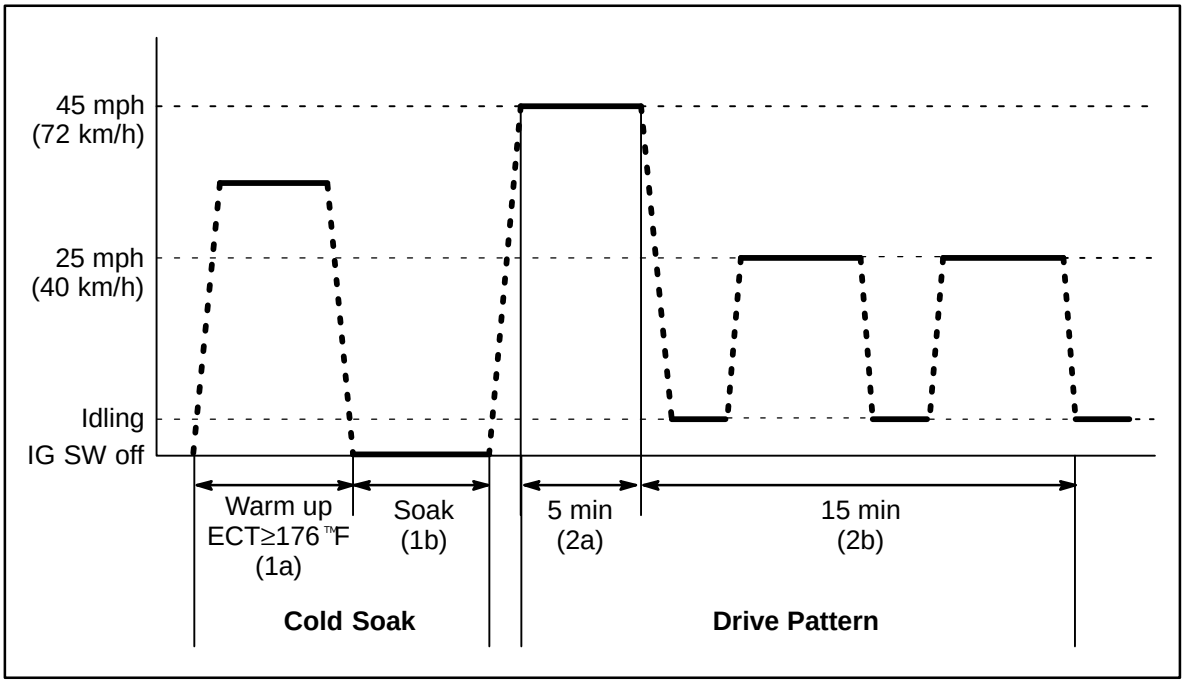
NOTE:
- **Drive with smooth throttle operation.**
- **Avoid sudden acceleration.**
- **Avoid sudden deceleration as much as possible with the throttle fully closed.**

If readiness status does not switch to “complete,” ensure preconditions are met, turn the ignition OFF, then repeat steps “a” and “b.”

NOTE:
The readiness status may not switch to “complete” after the first drive pattern trip if a Pending Code has been set (first trip for a two–trip DTC).
- **Pending Codes are available from the DTC Info Menu in Enhanced OBDII.**
- **Pending Codes indicate a POTENTIAL problem was detected. A second trip is needed to confirm the DTC prior to diagnosis.**
- **Once a second trip is completed, a current DTC will be stored.**

Readiness Monitor Drive Patterns: EVAP Monitors

DRIVE PATTERN NO. 5: EVAP Monitor (Internal Pressure Monitor/Non–Intrusive Type)



Cold Soak Preconditions

The monitor will not run unless:

- MIL is OFF.
- Fuel level is between 1/2 to 3/4 full.
- Altitude is 7800 feet (2400 m) or less.

IMPORTANT:

A cold soak must be performed prior to conducting the drive pattern to complete the Internal Pressure Readiness Monitor.

Cold Soak Procedure

1a. Start the engine and allow ECT (Coolant Temp) to reach 176 ™F (80 ™C) or greater. (This can be done by letting the engine idle or by driving the vehicle.)

1b. Let the vehicle cold soak for 8 hours or until the difference between IAT (Intake Air) and ECT (Coolant Temp) is less than 13 ™F (7 ™C).

■ **Example 1**

- ECT (Coolant Temp) = 75 ™F (24 ™C).
- IAT (Intake Air) = 60 ™F (16 ™C).
- Difference between ECT (Coolant Temp) and IAT (Intake Air) is 15 ™F (8 ™C).
  - ⇒ The monitor will not run because the difference between ECT (Coolant Temp) and IAT (Intake Air) is greater than 13 ™F (7 ™C).

■ **Example 2**

- ECT (Coolant Temp) = 70 ™F (21 ™C).
- IAT (Intake Air) = 68 ™F (20 ™C).
- Difference between ECT (Coolant Temp) and IAT (Intake Air) is 2 ™F (1 ™C).
  - ⇒ The monitor will run because the difference between ECT (Coolant Temp) and IAT (Intake Air) is less than 13 ™F (7 ™C).

Readiness Monitor Drive Patterns: EVAP Monitors (Continued)

Drive Pattern Preconditions

The monitor will not run unless:

- MIL is OFF.
- Fuel level is between 1/2 to 3/4 full.
- Altitude is 7800 feet (2400 m) or less.
- ECT (Coolant Temp) is between 40°F and 95°F (4.4°C – 35°C).
- IAT (Intake Air) is between 40°F and 95°F (4.4°C – 35°C).
- Cold Soak Procedure has been completed.

NOTE:

Before starting the engine, the difference between ECT (Coolant Temp) and IAT (Intake Air) must be less than 13°F (7°C). (Refer to Examples 1 and 2 on previous page.)

Drive Pattern Procedure

- Connect the OBDII Scantool to DLC3 to check monitor status and preconditions.
- Release the pressure in the fuel tank by removing and then reinstalling the fuel tank cap.
- Start the engine and begin driving as directed.

NOTE:

- **Do not turn the ignition off until the drive pattern is complete.**
- **Drive on smooth roads to reduce excessive fuel sloshing.**

2a. Start the engine and as soon as safely possible begin driving at approximately 45 mph (72km/h) for 5 minutes. (See illustration on previous page.)

2b. Drive the vehicle at approximately 25 mph (40 km/h) for 15 minutes and include a minimum of two stops for approximately 30 seconds. (See illustration on previous page.)

The monitor should complete within approximately 20 minutes. If it does not, ensure preconditions are met and repeat the drive pattern process beginning with the Cold Soak Procedure.

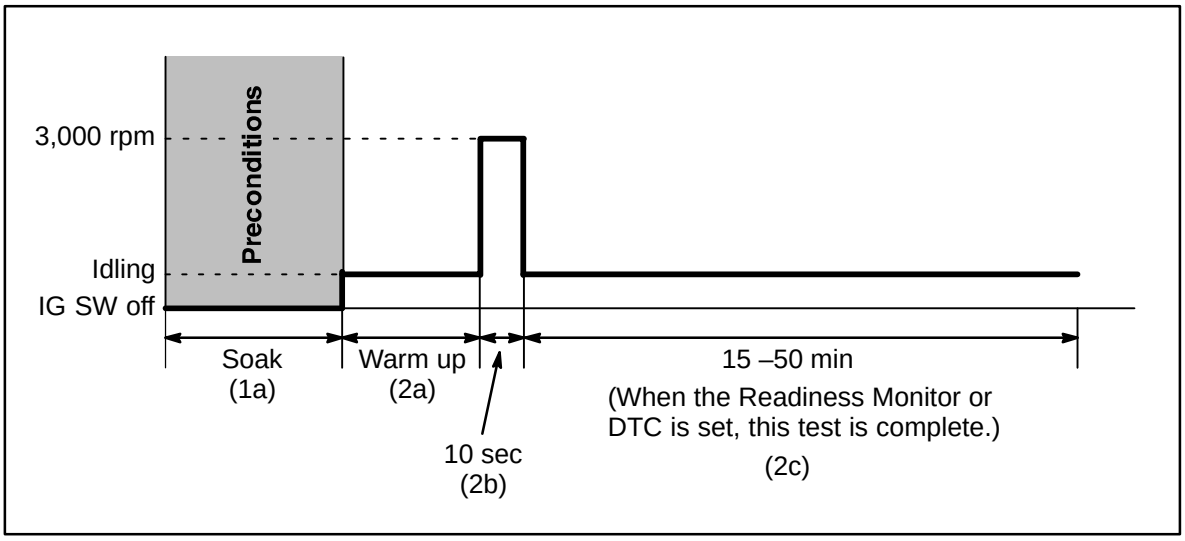
NOTE:

The readiness status may not switch to “complete” after the first drive pattern trip if a Pending Code has been set (first trip for a two–trip DTC).

- **Pending Codes are available from the DTC Info Menu in Enhanced OBDII.**
- **Pending Codes indicate a POTENTIAL problem was detected. A second trip is needed to confirm the DTC prior to diagnosis.**
- **Once a second trip is completed, a current DTC will be stored.**

Readiness Monitor Drive Patterns: EVAP Monitors (Continued)

DRIVE PATTERN NO. 6: EVAP Monitor (Vacuum Pressure Monitor/Intrusive Type)



Cold Soak Preconditions

The monitor will not run unless:

- MIL is OFF.
- Fuel level is between 1/2 to 3/4 full.
- Altitude is 7800 feet (2400 m) or less.

Cold Soak Procedure

1a. Let the vehicle cold soak for 8 hours or until the difference between IAT (Intake Air) and ECT (Coolant Temp) is less than 13 ™F (7 ™C).

- **Example 1**
  - ECT (Coolant Temp) = 75 ™F (24 ™C).
  - IAT (Intake Air) = 60 ™F (16 ™C).
  - Difference between ECT (Coolant Temp) and IAT (Intake Air) is 15 ™F (8 ™C).
    - ⇒ The monitor will not run because the difference between ECT (Coolant Temp) and IAT (Intake Air) is greater than 13 ™F (7 ™C).
- **Example 2**
  - ECT (Coolant Temp) = 70 ™F (21 ™C).
  - IAT (Intake Air) = 68 ™F (20 ™C).
  - Difference between ECT (Coolant Temp) and IAT (Intake Air) is 2 ™F (1 ™C).
    - ⇒ The monitor will run because the difference between ECT (Coolant Temp) and IAT (Intake Air) is less than 13 ™F (7 ™C).

Readiness Monitor Drive Patterns: EVAP Monitors (Continued)

Drive Pattern Preconditions

The monitor will not run unless:

- MIL is OFF.
- Fuel level is between 1/2 to 3/4 full.
- Altitude is 7800 feet (2400 m) or less.*
- ECT (Coolant Temp) is between 40°F and 95°F (4.4°C – 35°C).
- IAT (Intake Air) is between 40°F and 95°F (4.4°C – 35°C).*
- Cold Soak Procedure has been completed.

*** For 2002 MY and later vehicles:** The readiness test can be completed in cold ambient conditions (less than 40°F / 4.4°C) and/or at high altitudes (more than 7800 feet / 2400 m) if the complete drive pattern (including Cold Soak) is repeated a second time after cycling the ignition OFF.

NOTE:

Before starting the engine, the difference between ECT (Coolant Temp) and IAT (Intake Air) must be less than 13°F (7°C). (Refer to Examples 1 and 2 on previous page.)

Drive Pattern Procedure

- Connect the OBDII Scantool to DLC3 to check monitor status and preconditions.
- Release the pressure in the fuel tank by removing and then reinstalling the fuel tank cap.

2a. Start the engine and allow it to idle until ECT (Coolant Temp) is 167°F (75°C) or greater. (See illustration on previous page.)

2b. Race the engine at 3,000 rpm for approximately 10 seconds. (See illustration on previous page.)

2c. Allow the engine to idle with the A/C ON (to create a slight load) for 15 – 50 minutes. (See illustration on previous page.)

NOTE:

If the vehicle is not equipped with A/C put a slight load on the engine by doing the following:

- **Securely set the parking brake.**
- **Block the drive wheels with wheel chocks.**
- **Allow the vehicle to idle in drive for 15 – 50 minutes.**

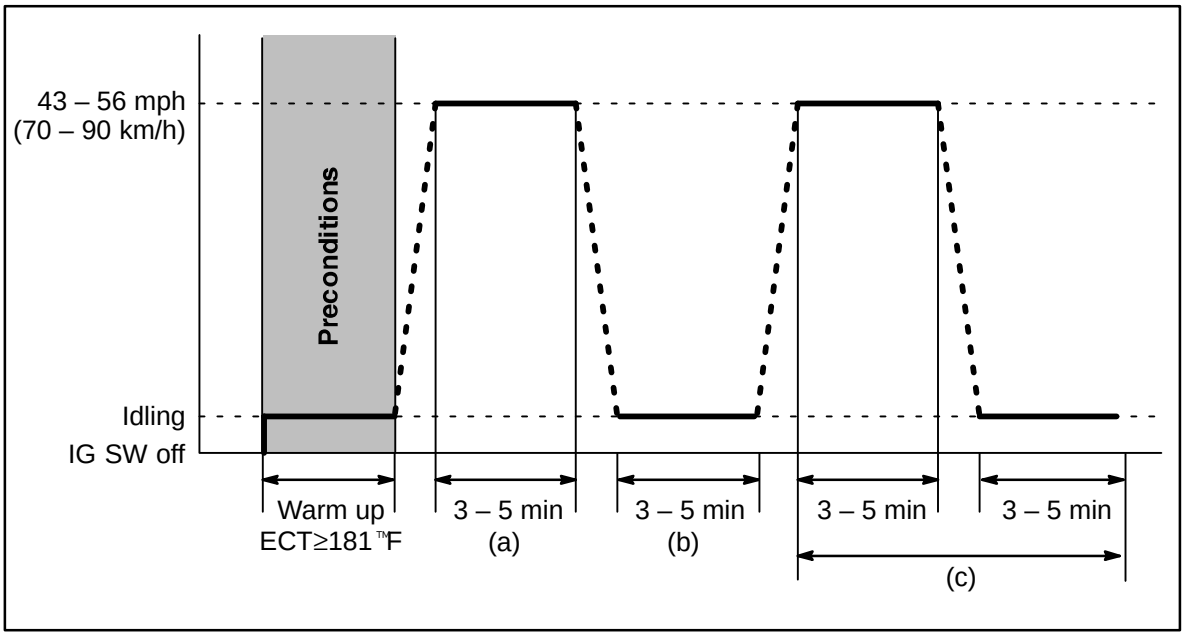
NOTE:

The readiness status may not switch to "complete" after the first drive pattern trip if a Pending Code has been set (first trip for a two–trip DTC).

- **Pending Codes are available from the DTC Info Menu in Enhanced OBDII.**
- **Pending Codes indicate a POTENTIAL problem was detected. A second trip is needed to confirm the DTC prior to diagnosis.**
- **Once a second trip is completed, a current DTC will be stored.**

Readiness Monitor Drive Patterns: EVAP Monitors (Continued)

DRIVE PATTERN NO. 7: EVAP Monitor (Without Leak Detection)



Preconditions

The monitor will not run unless:

- MIL is OFF.
- Altitude is 7800 feet (2400 m) or less.
- ECT (Coolant Temp) is 181°F (83°C) or greater.
- IAT (Intake Air) is 41°F (5°C) or greater.

Drive Pattern Procedure

Connect the OBDII Scantool to DLC3 to check monitor status and preconditions.

a. Drive the vehicle at 43 – 56 mph (70 – 90 km/h) for a period of 3 – 5 minutes.

NOTE:
- **Do not allow the Throttle Position (TP) to exceed 30%.**
- **Drive with smooth throttle operation and avoid sudden acceleration.**

b. Stop the vehicle and let the engine idle for 3 – 5 minutes.

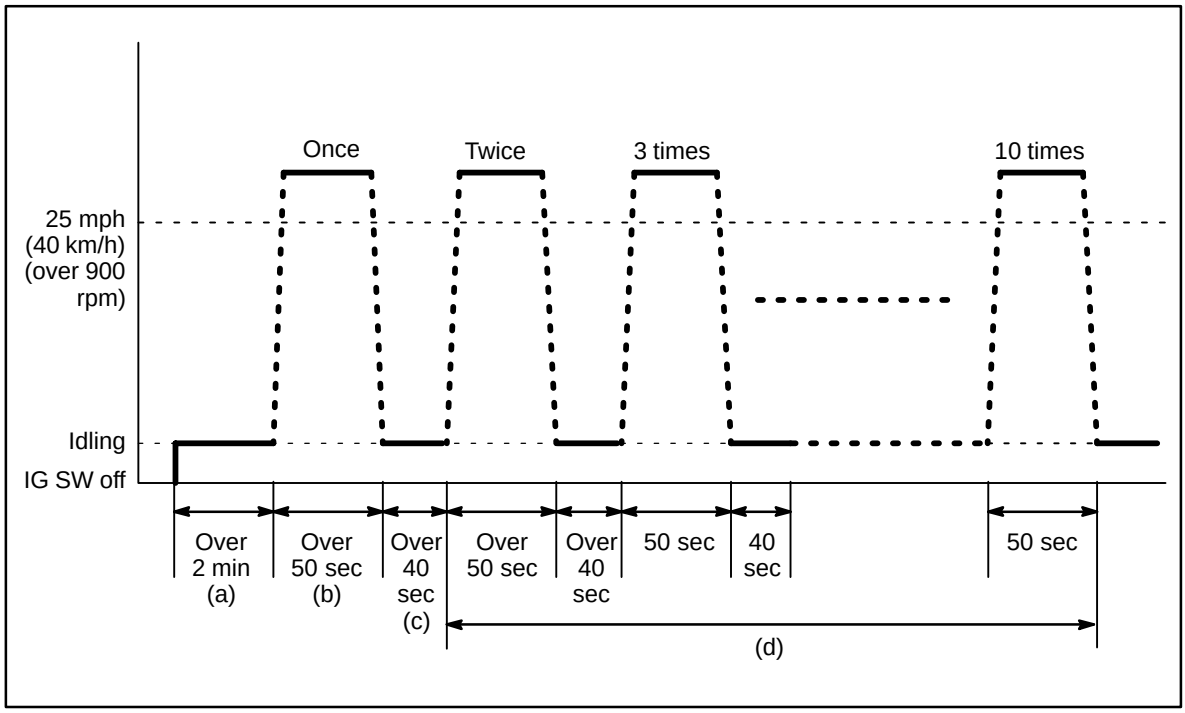
c. Repeat steps “a” and “b” once.

If readiness status does not switch to “complete,” ensure preconditions are met, turn the ignition OFF, then repeat steps “a” through “c.”

NOTE:
The readiness status may not switch to “complete” after the first drive pattern trip if a Pending Code has been set (first trip for a two–trip DTC).
- **Pending Codes are available from the DTC Info Menu in Enhanced OBDII.**
- **Pending Codes indicate a POTENTIAL problem was detected. A second trip is needed to confirm the DTC prior to diagnosis.**
- **Once a second trip is completed, a current DTC will be stored.**

Readiness Monitor Drive Patterns: Oxygen Monitors

DRIVE PATTERN NO. 8: Oxygen Sensor Monitor (Front and Rear O2S System)



Preconditions

The monitor will not run unless:

- MIL is OFF.

Drive Pattern Procedure

Connect the OBDII Scantool to DLC3 to check monitor status and preconditions.

a. Start the engine and allow it to idle for 2 minutes or more.

b. Drive the vehicle at 25 mph (40 km/h) or more for at least 50 seconds. Be sure engine speed remains above 900 rpm.

c. Stop the vehicle and allow the engine to idle for 40 seconds or more.

d. Perform steps “b” and “c” ten times.

If readiness status does not switch to “complete,” ensure preconditions are met, turn the ignition OFF, then repeat steps “a” through “d.”

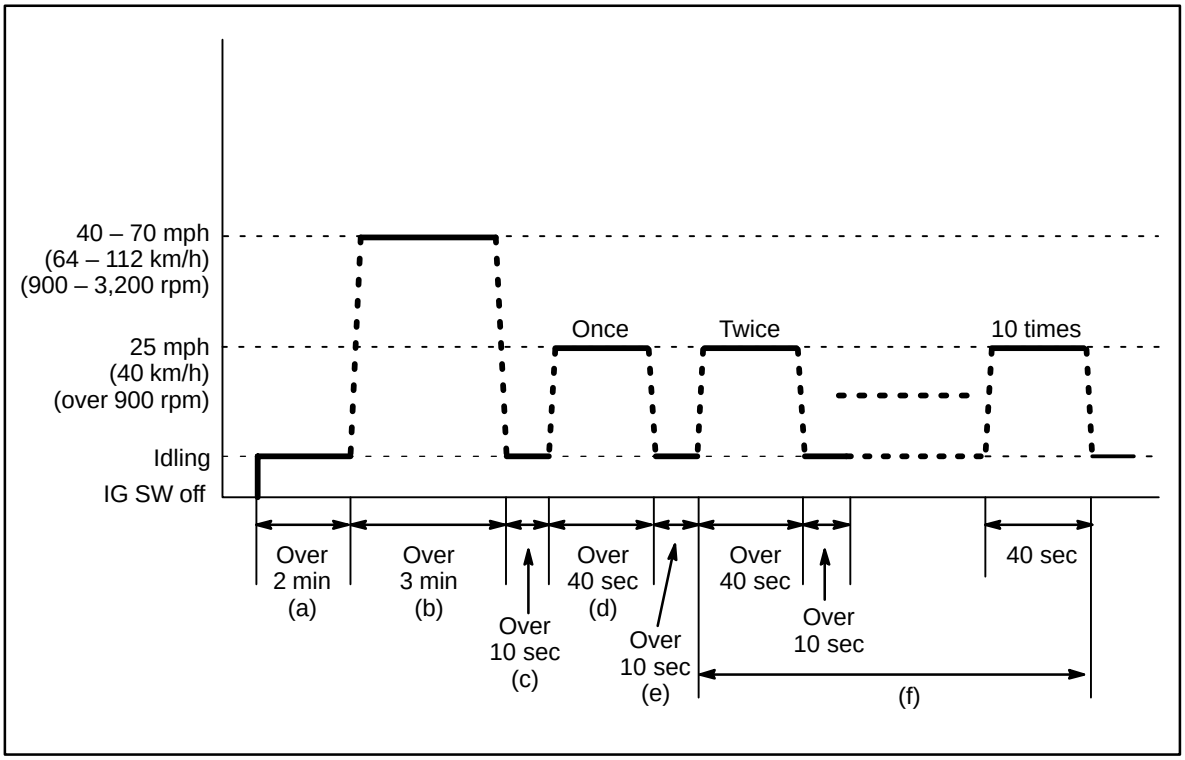
NOTE:

The readiness status may not switch to “complete” after the first drive pattern trip if a Pending Code has been set (first trip for a two–trip DTC).

- **Pending Codes are available from the DTC Info Menu in Enhanced OBDII.**
- **Pending Codes indicate a POTENTIAL problem was detected. A second trip is needed to confirm the DTC prior to diagnosis.**
- **Once a second trip is completed, a current DTC will be stored.**

Readiness Monitor Drive Patterns: Oxygen Monitors (Continued)

DRIVE PATTERN NO. 9: Oxygen/Air Fuel Ratio Sensor Monitor (Front AF Sensor and Rear O2S System)



Preconditions

The monitor will not run unless:

- MIL is OFF.

Drive Pattern Procedure

Connect the OBDII Scantool to DLC3 to check monitor status and preconditions.

a. Start the engine and allow it to idle for 2 minutes or more.

b. Drive the vehicle at 40 – 70 mph (64 – 112 km/h) or more for at least 3 minutes. Be sure to maintain engine speed between 900 and 3,200 rpm.

c. Stop the vehicle and allow the engine to idle for 10 seconds or more.

d. Drive the vehicle at 25 mph (40 km/h) for at least 40 seconds or more. Be sure to maintain engine speed above 900 rpm.

e. Stop the vehicle and allow the engine to idle for 10 seconds or more.

f. Perform steps “d” and “e” ten times.

If readiness status does not switch to “complete,” ensure preconditions are met, turn the ignition switch OFF, then repeat steps “a” through “f.”

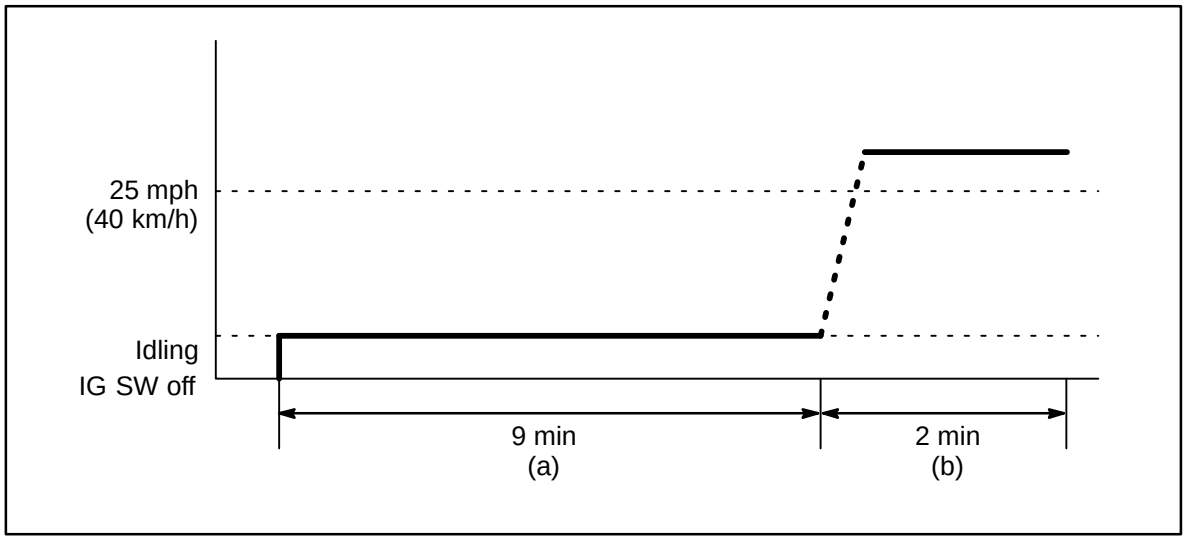
NOTE:

The readiness status may not switch to “complete” after the first drive pattern trip if a Pending Code has been set (first trip for a two–trip DTC).

- **Pending Codes are available from the DTC Info Menu in Enhanced OBDII.**
- **Pending Codes indicate a POTENTIAL problem was detected. A second trip is needed to confirm the DTC prior to diagnosis.**
- **Once a second trip is completed, a current DTC will be stored.**

Readiness Monitor Drive Patterns: Oxygen Monitors (Continued)

DRIVE PATTERN NO. 10: Oxygen/AF Sensor Heater Monitor



Preconditions

The monitor will not run unless:

- MIL is OFF.

Drive Pattern Procedure

Connect the OBDII Scantool to DLC3 to check monitor status and preconditions.

a. Start the engine and allow it to idle for 9 minutes.

b. Drive the vehicle at 25 mph (40 km/h) or more for at least 2 minutes.

If readiness status does not switch to “complete,” ensure preconditions are met, turn the ignition OFF, then repeat steps “a” and “b.”

NOTE:

The readiness status may not switch to “complete” after the first drive pattern trip if a Pending Code has been set (first trip for a two–trip DTC).

- **Pending Codes are available from the DTC Info Menu in Enhanced OBDII.**
- **Pending Codes indicate a POTENTIAL problem was detected. A second trip is needed to confirm the DTC prior to diagnosis.**
- **Once a second trip is completed, a current DTC will be stored.**

Technical Service Information Bulletin
May 29, 1998

Title:
CHARCOAL CANISTER INTERCHANGEABILITY

Models:
'95 – '98 ES 300

TSIB

Introduction

Charcoal Canister Assembly supply parts have been changed to simplify parts production and permit interchangeability with current model vehicles.

Affected Vehicles

- **1995 – 1998** model year **ES 300.**

Parts Information

The following table contains the part number replacement data for the involved models:

OLD PART NUMBER	NEW PART NUMBER	APPLICATION
77740–07011	77740–07012	9508–9604 prod. 96MY ES300
77740–33071	77740–33072	9604–9608 prod. 96MY ES300
77740–33061	77740–33062	9608– prod. 97–98 MY ES300

NOTE:
New part numbers are fully interchangeable with previous part numbers.

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

LEXUS

Technical Service Information Bulletin

March 28, 2005

Title:

RADIATOR CAP INSPECTION

Models:

All Models

TSIB

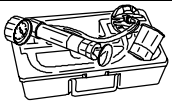
Introduction

The procedure for inspecting the radiator cap has been revised. Please refer to the following procedures when inspecting the radiator cap on all Lexus models.

Applicable Vehicles

- **All Lexus models.**

Required Equipment

MANUFACTURER	EQUIPMENT	QTY
Snap–On/Sun SVTS262A (or equivalent)	Cooling System Tester (Radiator Cap Tester) 	1

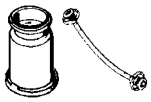
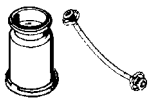
NOTE:

Additional Lexus Approved Dealer Equipment may be ordered by calling Lexus Approved Dealer Equipment at 1–800–368–6787.

Warranty Information

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

Required SSTs

ITEM NO.	SPECIAL SERVICE TOOLS (SSTs)	PART NUMBER	QTY	DRW**
1	**Radiator Cap Test Set*** 	09230–00030–02	1	7
2	**Radiator Cap Test Set (Small)*** 	09230–00020–02	1	7

* Essential SSTs.

** Refers to drawer number in SST Storage System.

NOTE:

Additional SSTs may be ordered by calling SPX/OTC at 1-800-933-8335.

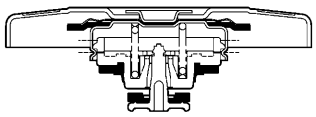
Radiator Cap Identification Procedure

1. Use the illustration below to identify the vehicle's radiator cap type and kPa rating.
2. Proceed to the required inspection procedure for the radiator cap and kPa rating.

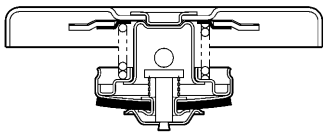
Radiator Cap Identification

kPa Rating

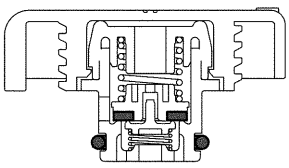
N–Cap



Compact Cap

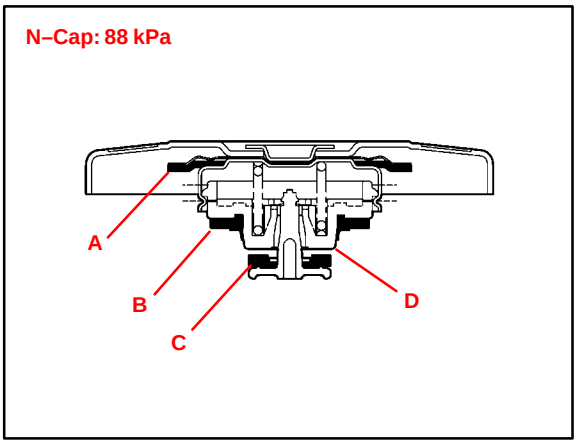


Plastic Cap



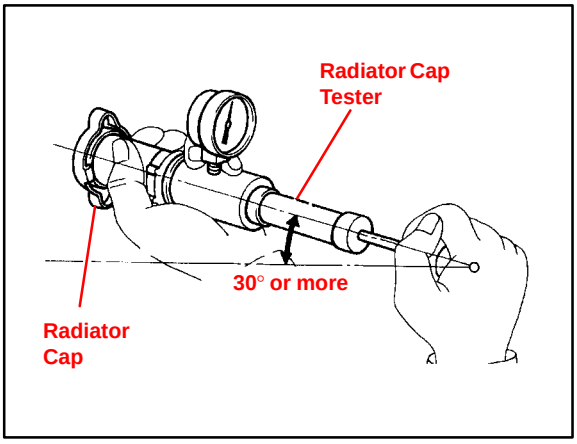
Radiator Cap Inspection Procedure

Type: N–cap, 88 kPa



1. Remove coolant and any foreign material on rubber points "A," "B," and "C."
2. Check that points "A," "B," and "C" are not deformed, cracked, or swollen.
3. Check that points "C" and "D" are not stuck together.
4. Apply engine coolant to points "B" and "C" before using the radiator cap tester.
   - Radiator Cap Tester: Snap–On/Sun P/N SVTS262A (or equivalent)
5. Before installing the radiator cap tester, use the applicable radiator cap adaptor provided in the following SST kits in conjunction with the radiator cap tester:
   - SST P/N 09230–00030–02 (09231–10080–01) or 09230–00020–02 (09231–10060–01)
6. When using the radiator cap tester, tilt it more than 30 degrees.
7. Pump the radiator cap tester several times, and check the maximum pressure.

   Pumping speed: 1 pump/second



HINT:

Stop pumping when the valve opens and read the gauge. The gauge must be within the standard values listed below when the pressure valve opens. The cap is considered OK when the pressure holds steady or falls very slowly, but holds within the standard values listed below for one minute.

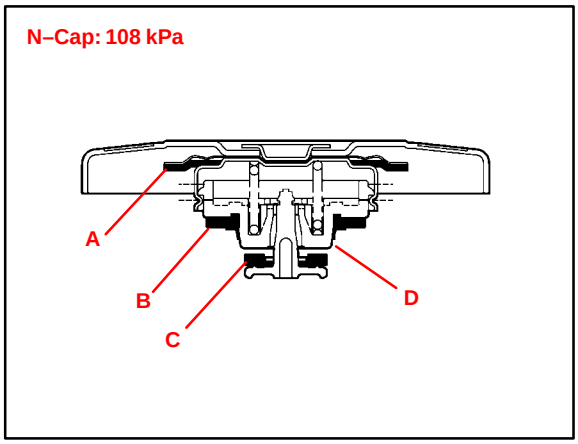
Specification:

VALVE OPENING PRESSURE	SPECIFIED CONDITION
Standard value (for brand–new cap)	74.0 to 103.0 kPa (0.75 to 1.05 kgf/cm^2, 10.7 to 14.9 psi)
Minimum standard value (for in–service cap)	59 kPa (0.60 kgf/cm^2, 8.53 psi)

If the maximum pressure is less than the minimum standard value, replace the radiator cap sub–assembly.

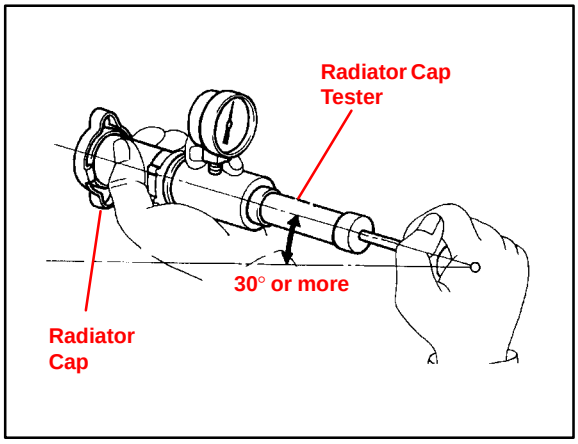
Radiator Cap Inspection Procedure (Continued)

Type: N–cap, 108 kPa



1. Remove coolant and any foreign material on rubber points "A," "B," and "C."
2. Check that points "A," "B," and "C" are not deformed, cracked, or swollen.
3. Check that points "C" and "D" are not stuck together.
4. Apply engine coolant to points "B" and "C" before using the radiator cap tester.
   - Radiator Cap Tester: Snap–On/Sun P/N SVTS262A (or equivalent)
5. Before installing the radiator cap tester, use the applicable radiator cap adaptor provided in the following SST kits in conjunction with the radiator cap tester:
   - SST P/N 09230–00030–02 (09231–10080–01) or 09230–00020–02 (09231–10060–01)
6. When using the radiator cap tester, tilt it more than 30 degrees.
7. Pump the radiator cap tester several times, and check the maximum pressure.

   Pumping speed: 1 pump/second



HINT:

Stop pumping when the valve opens and read the gauge. The gauge must be within the standard values listed below when the pressure valve opens. The cap is considered OK when the pressure holds steady or falls very slowly, but holds within the standard values listed below for one minute.

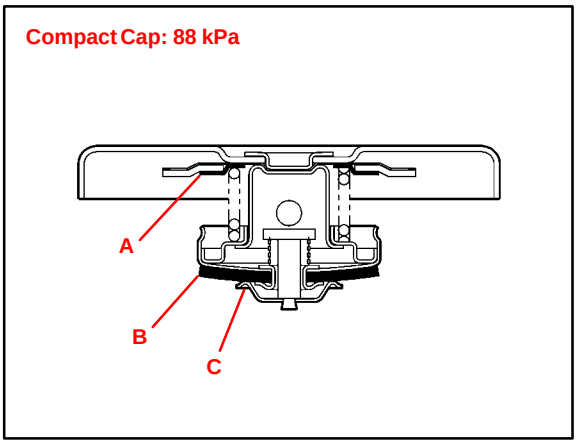
Specification:

VALVE OPENING PRESSURE	SPECIFIED CONDITION
Standard value (for brand–new cap)	93.3 to 122.7 kPa (0.95 to 1.25 kgf/cm^2, 13.5 to 17.8 psi)
Minimum standard value (for in–service cap)	78.5 kPa (0.80 kgf/cm^2, 11.38 psi)

If the maximum pressure is less than the minimum standard value, replace the radiator cap sub–assembly.

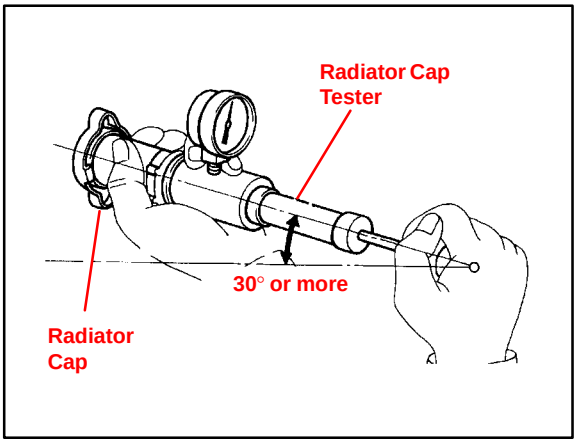
Radiator Cap Inspection Procedure (Continued)

Type: Compact Cap, 88 kPa



1. Remove coolant and any foreign material on rubber points "A," "B," and "C."
2. Check that points "A" and "B" are not deformed, cracked, or swollen.
3. Check that points "B" and "C" are not stuck together.
4. Apply engine coolant to point "B" before using the radiator cap tester.
   - Radiator Cap Tester: Snap–On/Sun P/N SVTS262A (or equivalent)
5. Before installing the radiator cap tester, use the applicable radiator cap adaptor provided in the following SST kits in conjunction with the radiator cap tester:
   - SST P/N 09230–00030–02 (09231–10080–01) or 09230–00020–02 (09231–10060–01)
6. When using the radiator cap tester, tilt it more than 30 degrees.
7. Pump the radiator cap tester several times, and check the maximum pressure.

   Pumping speed: 1 pump/second



HINT:

Stop pumping when the valve opens and read the gauge. The gauge must be within the standard values listed below when the pressure valve opens. The cap is considered OK when the pressure holds steady or falls very slowly, but holds within the standard values listed below for one minute.

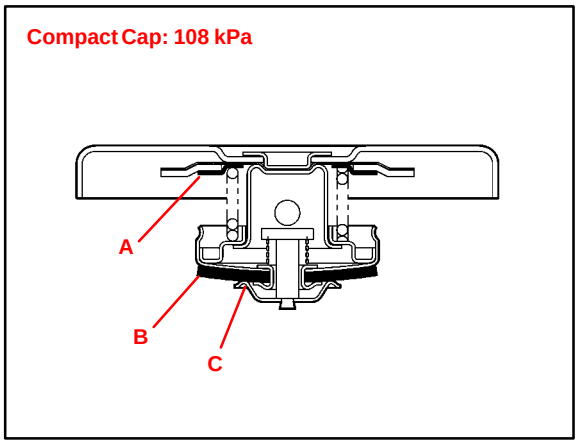
Specification:

VALVE OPENING PRESSURE	SPECIFIED CONDITION
Standard value (for brand–new cap)	74.0 to 103.0 kPa (0.75 to 1.05 kgf/cm^2, 10.7 to 14.9 psi)
Minimum standard value (for in–service cap)	59 kPa (0.60 kgf/cm^2, 8.53 psi)

If the maximum pressure is less than the minimum standard value, replace the radiator cap sub–assembly.

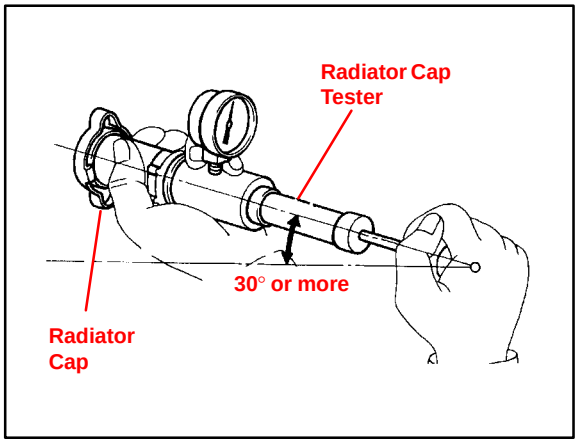
Radiator Cap Inspection Procedure (Continued)

Type: Compact Cap, 108 kPa



1. Remove coolant and any foreign material on rubber points "A," "B," and "C."
2. Check that points "A" and "B" are not deformed, cracked, or swollen.
3. Check that points "B" and "C" are not stuck together.
4. Apply engine coolant to point "B" before using the radiator cap tester.
   - Radiator Cap Tester: Snap–On/Sun P/N SVTS262A (or equivalent)
5. Before installing the radiator cap tester, use the applicable radiator cap adaptor provided in the following SST kits in conjunction with the radiator cap tester:
   - SST P/N 09230–00030–02 (09231–10080–01) or 09230–00020–02 (09231–10060–01)
6. When using the radiator cap tester, tilt it more than 30 degrees.
7. Pump the radiator cap tester several times, and check the maximum pressure.

   Pumping speed: 1 pump/second



HINT:

Stop pumping when the valve opens and read the gauge. The gauge must be within the standard values listed below when the pressure valve opens. The cap is considered OK when the pressure holds steady or falls very slowly, but holds within the standard values listed below for one minute.

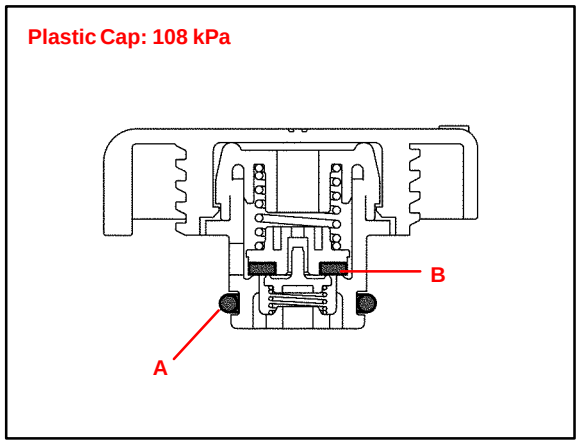
Specification:

VALVE OPENING PRESSURE	SPECIFIED CONDITION
Standard value (for brand–new cap)	93.3 to 122.7 kPa (0.95 to 1.25 kgf/cm^2, 13.5 to 17.8 psi)
Minimum standard value (for in–service cap)	78.5 kPa (0.80 kgf/cm^2, 11.38 psi)

If the maximum pressure is less than the minimum standard value, replace the radiator cap sub–assembly.

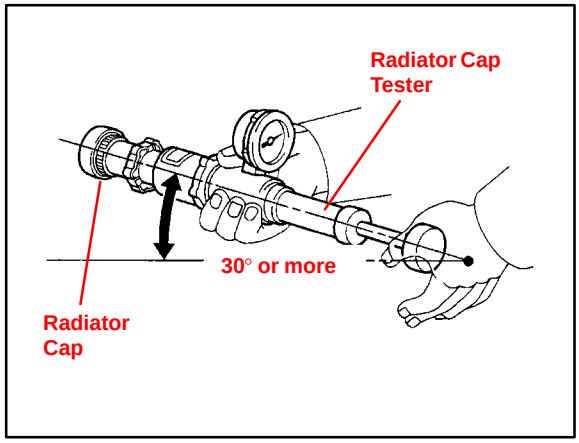
Radiator Cap Inspection Procedure (Continued)

Type: Plastic Cap, 108 kPa



1. Remove coolant and any foreign material on O–ring "A."
2. Check that O–ring "A" is not deformed, cracked, or swollen.
3. Apply engine coolant to O–ring "A" and rubber point "B" before using the radiator cap tester.
   - Radiator Cap Tester: Snap–On/Sun P/N SVTS262A (or equivalent)
4. Before installing the radiator cap tester, use the applicable radiator cap adaptor provided in the following SST kits in conjunction with the radiator cap tester:
   - SST P/N 09230–00030–02 (09231–10080–01) or 09230–00020–02 (09231–10060–01)
5. When using the radiator cap tester, tilt it more than 30 degrees.
6. Pump the radiator cap tester several times, and check the maximum pressure.

   Pumping speed: 1 pump/second



HINT:

Stop pumping when the valve opens and read the gauge. The gauge must be within the standard values listed below when the pressure valve opens. The cap is considered OK when the pressure holds steady or falls very slowly, but holds within the standard values listed below for one minute.

Specification:

VALVE OPENING PRESSURE	SPECIFIED CONDITION
Standard value (for brand–new cap)	93.3 to 122.7 kPa (0.95 to 1.25 kgf/cm^2, 13.5 to 17.8 psi)
Minimum standard value (for in–service cap)	78.5 kPa (0.80 kgf/cm^2, 11.38 psi)

If the maximum pressure is less than the minimum standard value, replace the radiator cap sub–assembly.

Technical Service Information Bulletin
September 3, 2004

Title:

ENGINE BANK 1 AND BANK 2 A/F AND O2 IDENTIFICATION

Models:

Applicable Models

Introduction

This service bulletin provides information on the proper identification of engine bank 1 and engine bank 2 for correct A/F sensor and oxygen sensor replacement.

This bulletin contains information that identifies engine bank 1 and engine bank 2 on the following engines: 1MZ–FE, 3MZ–FE, 1UZ–FE, 2UZ–FE and 3UZ–FE.

- Bank 1 (B1) refers to the bank that includes cylinder No. 1.
- Bank 2 (B2) refers to the bank opposite bank 1.
- Sensor 1 (S1) refers to the sensor that is located before the catalytic converters.
- Sensor 2 (S2) refers to the sensor that is located after the catalytic converters.

Applicable Vehicles

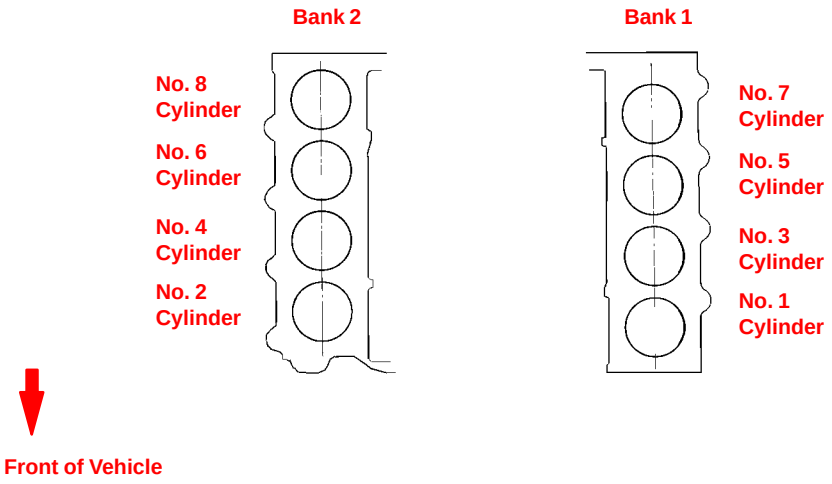
- **1994 – 2003** model year **ES 300** vehicles equipped with **1MZ–FE engine**.
- **2004** model year **ES 330** and **RX 330** vehicles equipped with **3MZ–FE engine**.
- **1998 – 2000** model year **GS 400** vehicles equipped with **1UZ–FE engine**.
- **2003 – 2004** model year **GX 470** vehicles equipped with **2UZ–FE engine**.
- **1990 – 2000** model year **LS 400** vehicles equipped with **1UZ–FE engine**.
- **2001 – 2004** model year **LS 430** and **GS 430** vehicles equipped with **3UZ–FE engine**.
- **1998 – 2004** model year **LX 470** vehicles equipped with **2UZ–FE engine**.
- **1999 – 2003** model year **RX 300** vehicles equipped with **1MZ–FE engine**.
- **1992 – 2000** model year **SC 400** vehicles equipped with **1UZ–FE engine**.
- **2002 – 2004** model year **SC 430** vehicles equipped with **3UZ–FE engine**.

Warranty Information

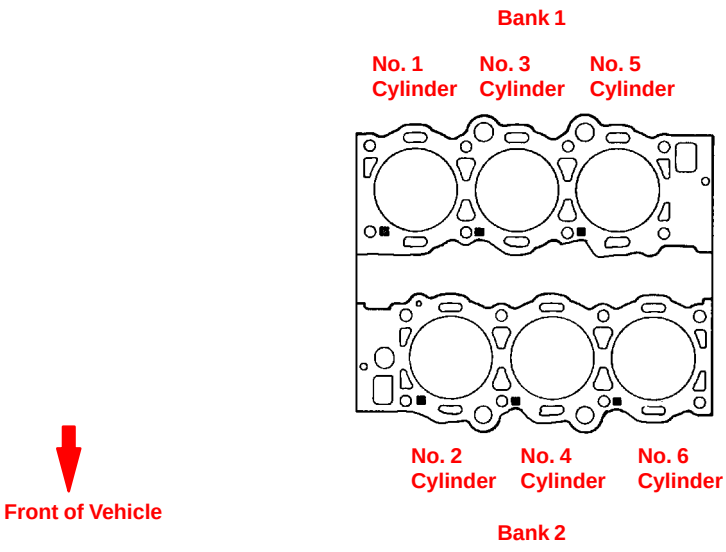
OP CODE	DESCRIPTION	TIME	OFP	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

Engine Bank Identification

1UZ–FE, 2UZ–FE and 3UZ–FE Engine Bank Identification

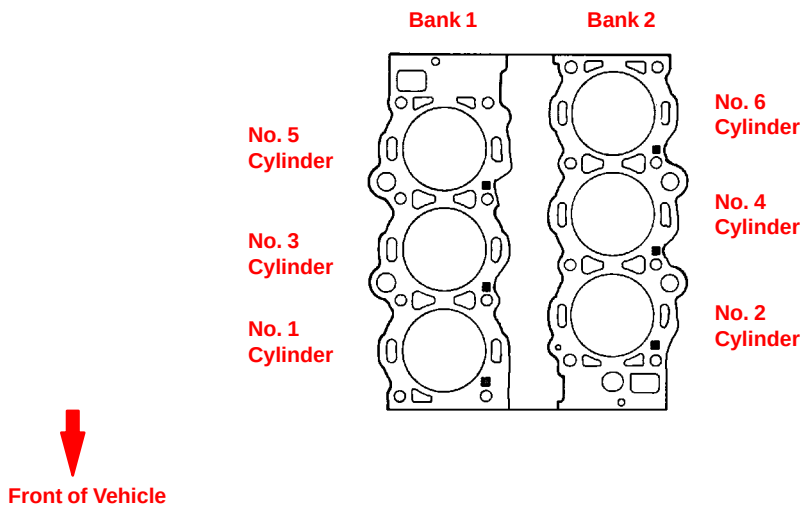


1MZ–FE and 3MZ–FE Engine Bank Identification



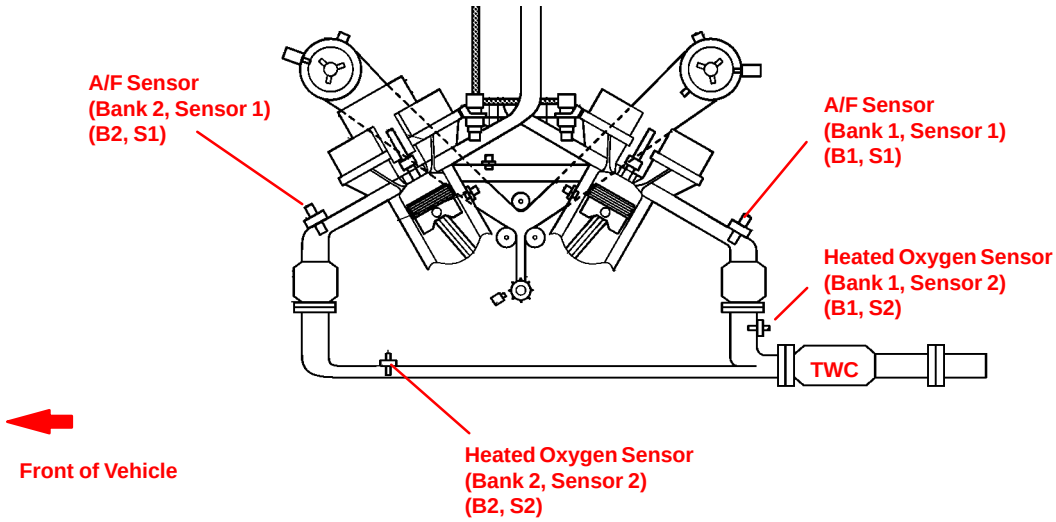
Engine Bank Identification (Continued)

5VZ–FE and 1GR–FE Engine Bank Identification



A/F and O2 Sensor Identification

Sensor Identification (Example of FWD V6)



LEXUS

Technical Service Information Bulletin

February 4, 2000

Title:

WIRELESS OPERATION IMPROVEMENT

Models:

'97 – '99 ES 300

TSIB

ELECTRICAL

EL001–00

Introduction

The antenna matching in the Door Control Receiver has been changed to improve the operating range of the wireless trunk opener function on 1997–1999 ES 300 vehicles.

Applicable Vehicles

- **1997 – 1999 ES 300 vehicles produced before the VIN's listed below.**

Production Change Information

MODEL	ENDING VIN
1999 ES 300	JT8BF28G * X0168000
1999 ES 300	JT8BF28G * X5059850

Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME
89741–33150	89741–33151	Door Control Receiver

Repair Procedure

1. Replace the Door Control Receiver using the part number specified.
2. Route the wire harness away from the ECU to assure the best performance.

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
891101	R & R Door Control Receiver	0.3	89741–33150	87	99

Applicable Warranty*:

This repair is covered under the Lexus Basic Warranty. This warranty is in effect for 48 months or 50,000 miles, whichever occurs first, from the vehicle's in–service date.

* Warranty application is limited to correction of a problem based upon a customer's specific complaint.

LEXUS

Technical Service Information Bulletin

May 4, 2001

Title:

TURN SIGNALS FLASHING ABNORMALLY

Models:

'97 – '01 ES 300

TSIB

ELECTRICAL

EL001-01

Introduction

Some 1997 – 2001 model year ES 300 vehicles may exhibit a condition in which turn signals on one side of the vehicle (either left or right) flash at a different rate than the other side. To correct this situation, the shape of the front turn signal socket has been modified to improve the ground circuit of the bulb.

Applicable Vehicles

- **1997 – 2001** model year **ES 300** vehicles built prior to the VINs specified below.

Production Change Information

MODEL/PLANT	STARTING VIN
MCV20 (Tsutsumi Plant)	JT8BF28G#10293663
MCV20 (TMK Plant)	JT8BF28G#15105850

Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME
99159–10332	90075–60051	Plug Assy, Front Turn Signal Lamp

Repair Procedure

1. Replace the front turn signal plug assembly, on the side that operates abnormally.
2. Inspect the bulb. If wear is visible on the bottom contacts and/or side contact, replace the bulb.

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
EL1010	R & R Front Turn Signal Plug Assembly	0.3	99159–10332	87	41

Applicable Warranty*:

This repair is covered under the Lexus Basic Warranty. This warranty is in effect for 48 months or 50,000 miles, whichever occurs first, from the vehicle's in-service date.

* Warranty application is limited to correction of a problem based upon a customer's specific complaint.

LEXUS

Technical Service Information Bulletin

April 10, 1998

Title:

CIGARETTE LIGHTER SERVICE

Models:

All Model

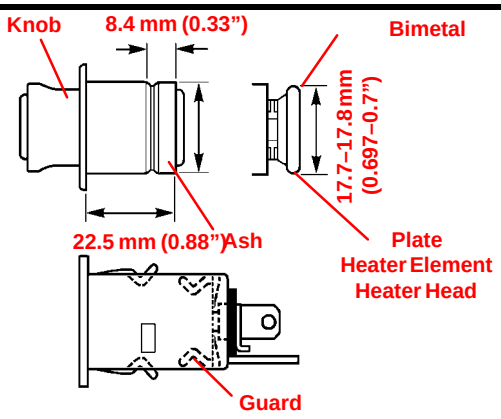
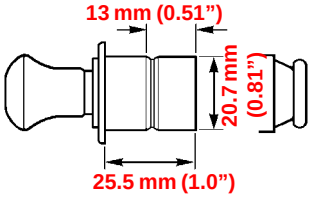
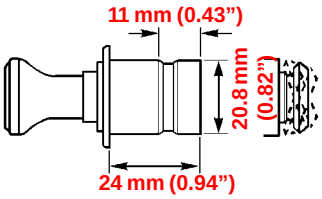
TSIB

Introduction

When receiving customer complaints to repair the lighter or lighter socket, please carefully investigate the cause of the failure to prevent further occurrences. If the customer uses the wrong size lighter element or power accessory plug, damage may occur to the lighter socket. When applicable, instruct the customer to replace the lighter element with original equipment components or to use an appropriate sized accessory plug. Dimensional information included within this document will instruct you on component specifications.

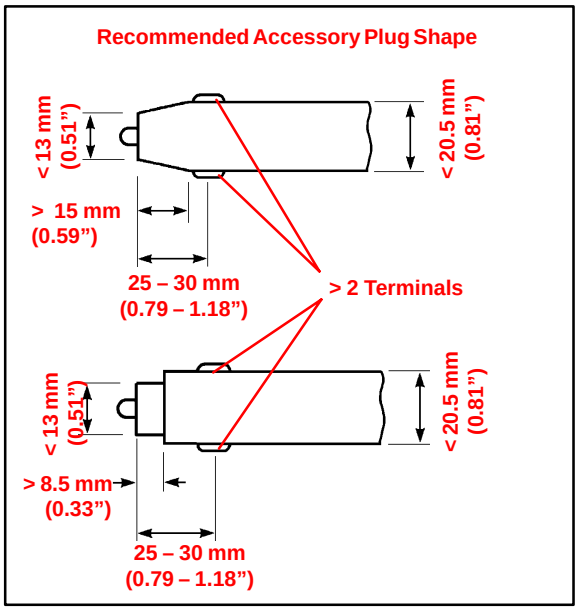
Service Procedure

1. Determine if the lighter is original equipment by using the specifications shown.
   a. If the vehicle has a non–genuine lighter element, it has the possibility to cause a short circuit between the lighter element and the lighter socket, which can result in an open fuse.
   b. A non–genuine lighter element may cause a rattle or bend the socket bimetal contacts.
   c. If a non–genuine lighter element is being used, advise the customer to use an original equipment element.

TYPE	DRAWING WITH DIMESIONS	FEATURES
Genuine		No Problem to use.
Non–Genuine		Too long an ash guard will contact bimetal (positive circuit) plate and cause fuse to melt.
		Excessive free play on the heater head which allows contact between heater element, socket body and bimetal plate, will cause fuse to melt.

Service Procedure (Continued)

2. If the lighter element is original equipment and the lighter socket is bent or pulled out of the dash, please ask the customer about the accessory plug being used in the lighter socket.
    a. The attached specifications in the drawing provide the maximum recommended size of accessory plug. If the customer is using an accessory plug larger than recommended, please advise the customer to use a plug of appropriate size.
    b. Using a power plug larger than the given dimensions may damage the lighter socket.
    c. If the vehicle has a power point socket, advise the customer to use this socket instead of the lighter socket.



Affected Vehicles

- **All** models, **all** model years

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

LEXUS
Technical Service Information Bulletin
September 12, 1997

Title:

AIR CONDITIONING EVAPORATOR ODOR

Models:

'92–96 ES 300, '93–'94 LS 400, All GS 300, SC 300/400, LX 450.

Introduction

A musty odor may be emitted from the air conditioning system of some vehicles which are usually operated in areas with high temperature and humidity. It is most noticeable when the air conditioner is first turned "ON" after the vehicle has been parked for several hours. The odor could result from one or more of the following conditions:

1. Blockage of the evaporator housing drain pipe, resulting in the build up of condensation.

2. Microbial growth in the evaporator, arising from dampness in the evaporator housing where the cooling air flow is dehumidified.

To address excessive air conditioning evaporator odor, check the evaporator housing drain pipe for blockage. If no problems are found, the evaporator and housing should be cleaned and disinfected using the general procedure given on page 2, and the model specific procedure on the pages indicated in the Table of Contents at the bottom of this page.

Affected Vehicles

- While this procedure may be used on any Lexus vehicle, this bulletin gives details specifically for the **'92–'96 ES 300, all GS 300, '93–'94 LS 400, all SC 300/400 and the LX 450.**

Tools & Materials

PART NUMBER	DESCRIPTION OF TOOLS & MATERIALS	QUANTITY	SOURCE
08821–00810–01	Spray Gun Kit	1	OTC
08821–00811–01	Spray Gun (replacement)	(1)	OTC
08821–00812–01	Spray Gun Nozzle (replacement)	(1)	OTC
08821–00813–01	Freshener Mixing Container (replacement)	(1)	OTC
08821–00801–DS	Air Conditioning Freshener	1 per vehicle	TMS

CAUTION:
Wear safety glasses, protective mask, and gloves while working with the freshener.

Warranty Information

OPCODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	No applicable warranty information	–	–	–	–

Table of Contents

General Procedure

1. Preparation of freshener solution:

   (a) Invert freshener container and shake vigorously for 30 seconds.
   (b) Mix 3.4 fl. oz. of freshener (1 container) with 30 fl. oz. to make 1 qt. of solution.

2. Drying the evaporator:
   - Dry the evaporator for 10 minutes with the following settings:
     A/C: . . . . . Off
     Air Outlet: . . . . . Foot
     Mode: . . . . . Recirc.
     Blower: . . . . . High
     Temp: . . . . . Max Warm

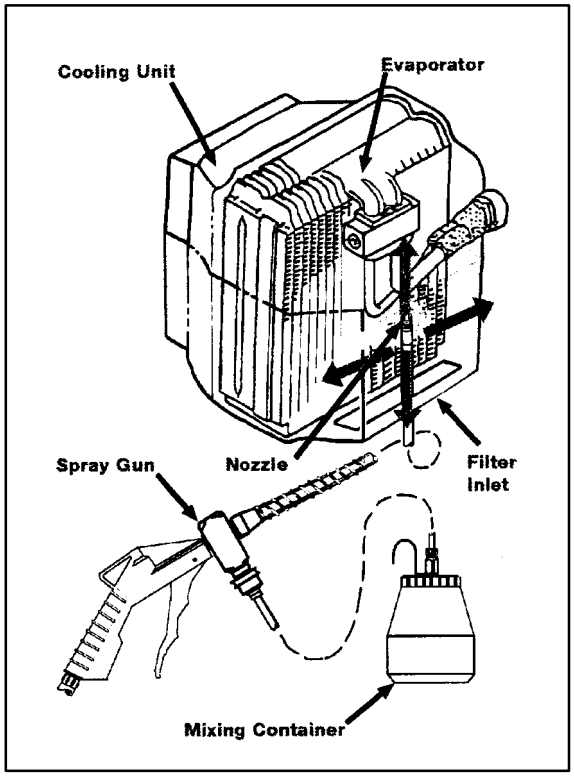
3. Evaporator Treatment Preparation:

   (a) Ensure availability of 30–45 psi compressed air to be used with spray gun for application of freshener.
   (b) Place a tray under the evaporator housing drain hose to collect used cleaning solution.
   (c) Place shop cloth under the evaporator housing in the vehicle to prevent cleaning solution from dripping onto the floor mat.

4. Vehicle Preparation: **See specific model section.**

5. Evaporator treatment:

   (a) Set HVAC mode as follows:
   A/C: . . . . . Off
   Air Outlet: . . . . . Face
   Mode: . . . . . Fresh
   Blower: . . . . . High
   Temp: . . . . . Max Warm
   Windows: . . . . . Open
   (b) Insert spray nozzle into the filter inlet and spray the entire quantity (1 qt.) of freshener solution into the evaporator while moving the nozzle around to cover the complete evaporator surface.
   (c) Turn the blower OFF.



6. Reinstallation of Parts.

7. Completion of Treatment.

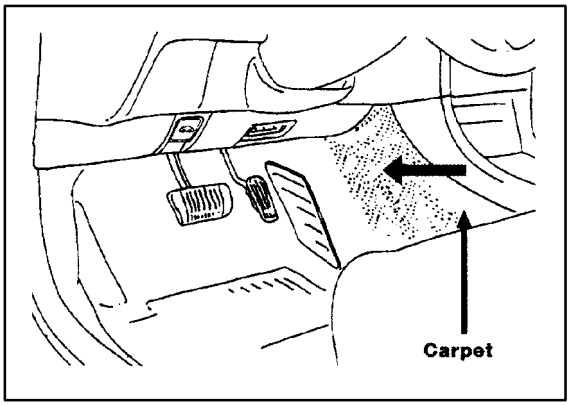
   (a) Dry the evaporator for 30 minutes with the following settings:
   A/C: . . . . . Off
   Air Outlet: . . . . . Foot
   Mode: . . . . . Recirc.
   Blower: . . . . . High
   Temp: . . . . . Max Warm
   Windows: . . . . . Closed
   (b) If the vehicle still has alcohol smell, open windows for ventilation. Do not turn on the AC switch until the evaporator is completely dry as this can reduce the effectiveness of the solution.

CAUTION
Do not get into the vehicle during this drying operation.

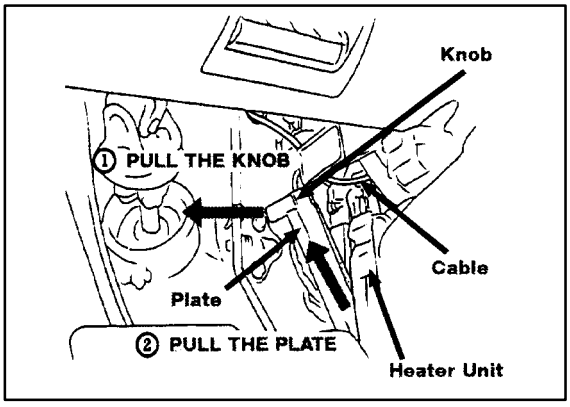
ES 300 ('92–'96)

1. Removal of parts.

(a) Pull down the carpet from the center console as indicated by red arrow in the illustration.



(b) Remove the plate on the side of the heater unit using steps ① and ②, indicated with red arrows to show direction, in the illustration.

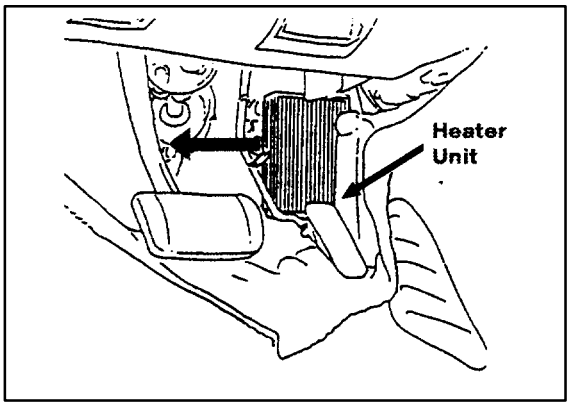


CAUTION:
Do not bend the cable.

NOTE:
The Plate will be reused.

(c) Remove the filter.

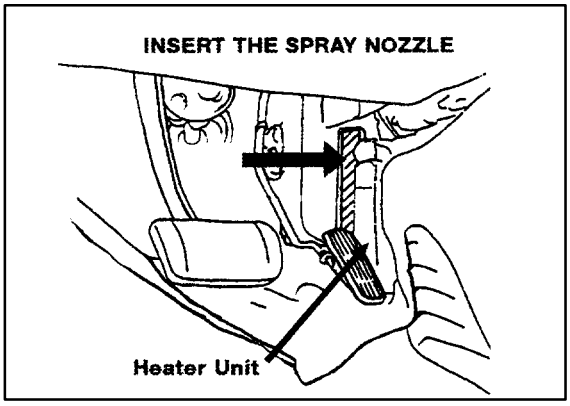
(d) Remove the blower controller.



2. Clean the Evaporator.

- Follow the general procedures given on page 2.

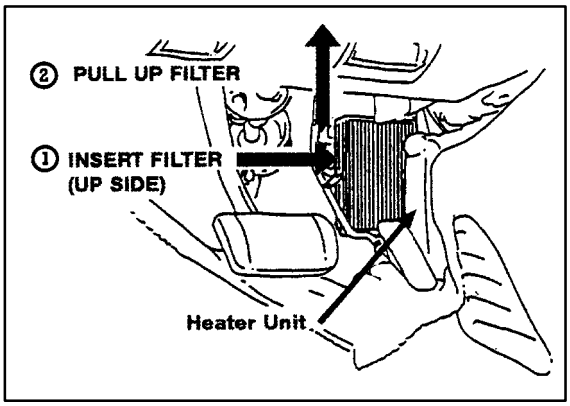
NOTE:
Location for insertion of spray nozzle is indicated by the red arrow in the illustration.



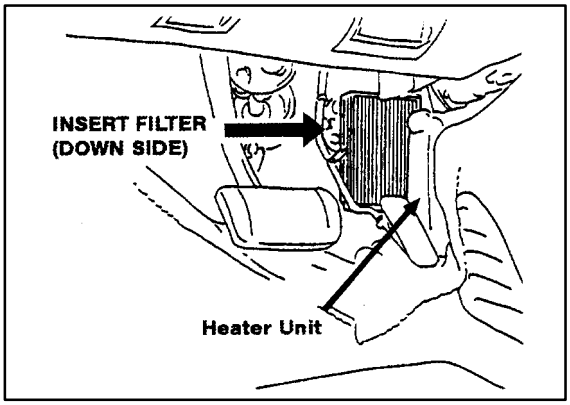
ES 300 ('92–'96) (Continued)

3. Reinstallation of parts.

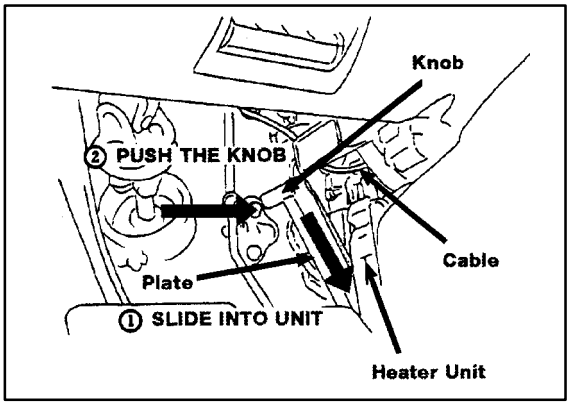
(a) Insert the filter (up side) into the heater unit following the numbered steps shown in the illustration.



(b) Insert the filter (down side) into the heater unit.



(c) Reinstall the plate on the side of the heater unit using steps ① and ②, indicated with **red** arrows to show direction, in the illustration.



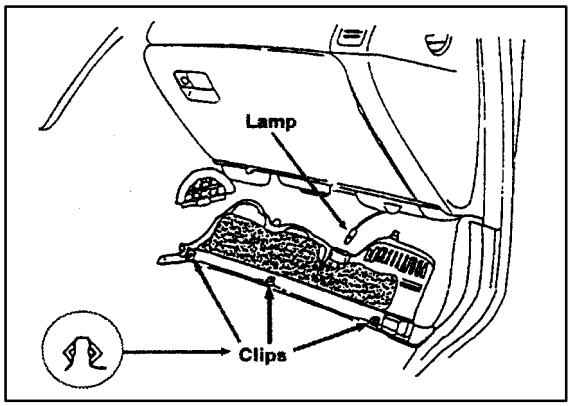
CAUTION:
Confirm that the plate is secure.

(d) Restore the carpet to its original position taking care not to bend the cable.

GS 300 1. Removal of parts.

(a) Remove the undercover.

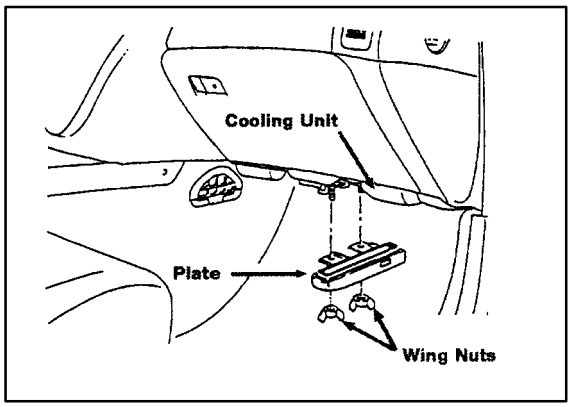
NOTE:
Pull down the clip areas (3 places) of the Undercover to remove.



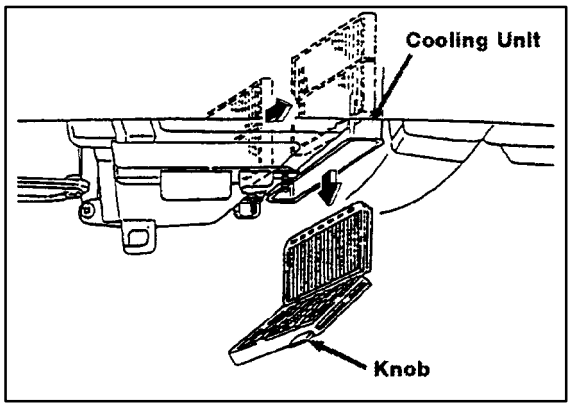
(b) Remove the lamp.

(c) Remove the (2) wing nuts and the plate on the bottom of the cooling unit.

CAUTION:
The plate and wing nuts will be reused.



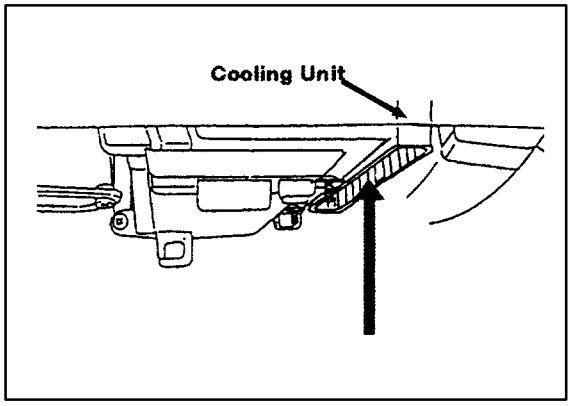
(d) Remove the (2) filters from the cooling unit.



2. Clean the Evaporator.

- Follow the general procedures given on page 2.

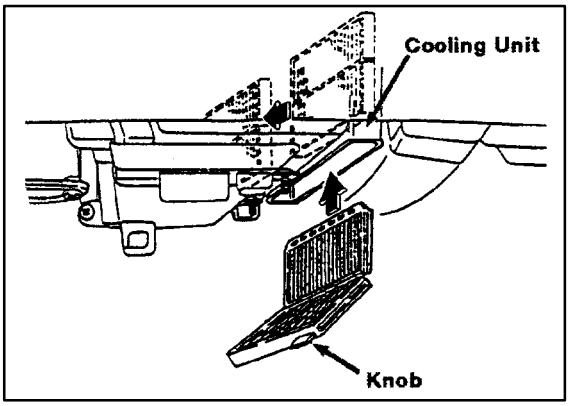
NOTE:
Location for insertion of spray nozzle is indicated by the red arrow in the illustration.



GS 300 (Continued)

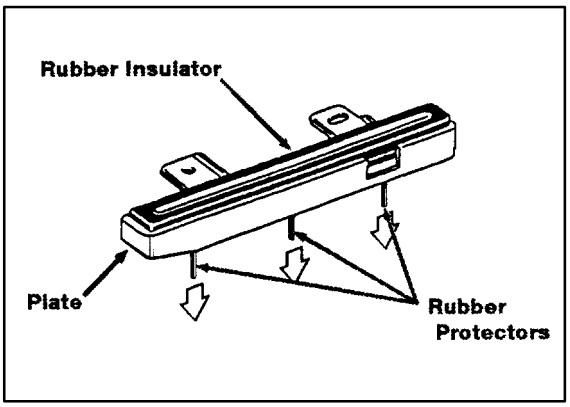
3. Reinstallation of parts.

(a) Insert the (2) filters into the cooling unit as shown in the illustration.



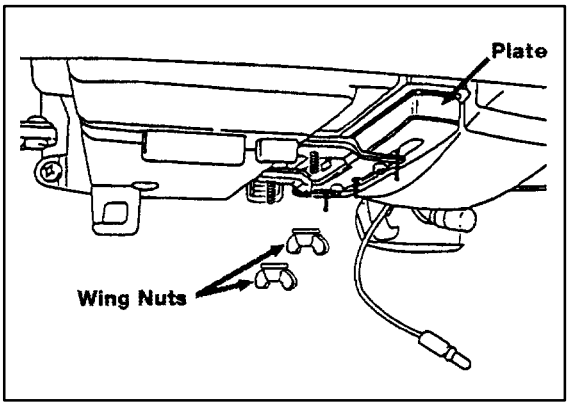
NOTE:
Insert a clean air filter with it's knob facing downwards, then slide it forward and install the second filter in the same manner.

(b) Assemble the rubber insulator on the plate.



CAUTION:
To prevent the cooling unit from leaking water, pull the three rubber projections from the other side of the plate to make sure that the rubber insulator seals properly against the plate.

(c) Install the plate on the cooling unit and secure with the (2) wing nuts.



CAUTION:
To prevent water leaks, verify that the cooling unit and plate are fully secure before tightening the wing nuts.

NOTE:
Before installing the plate on the cooling unit, coat the rubber insulator with water for easier assembly.

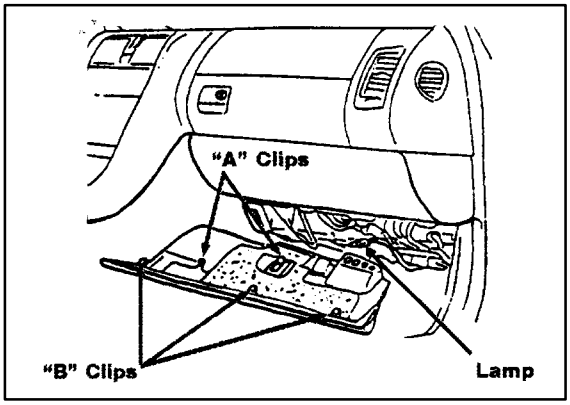
(d) Reinstall the lamp.

(e) Reassemble the Undercover.

LS 400 ('93–'94)

1. Removal of parts.

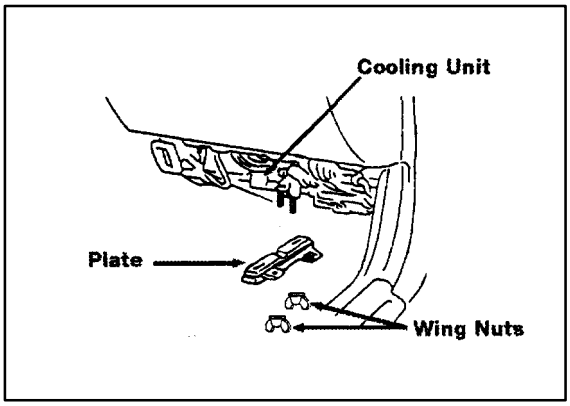
   (a) Remove the undercover.



NOTE:
- **Remove the front of "A" clips.**
- **Pull down the three "B" clip areas of the Undercover to remove.**

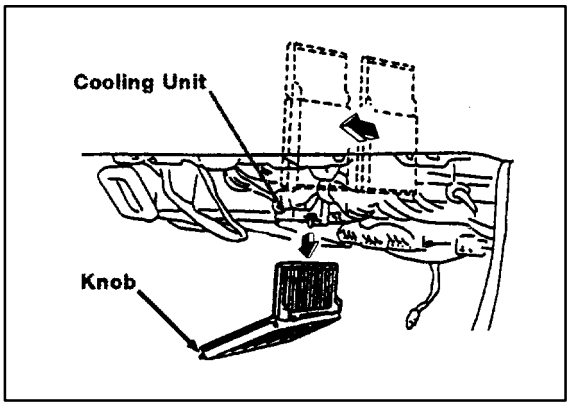
   (b) Remove the lamp.

   (c) Remove the (2) wing nuts and the plate on the bottom of the cooling unit.



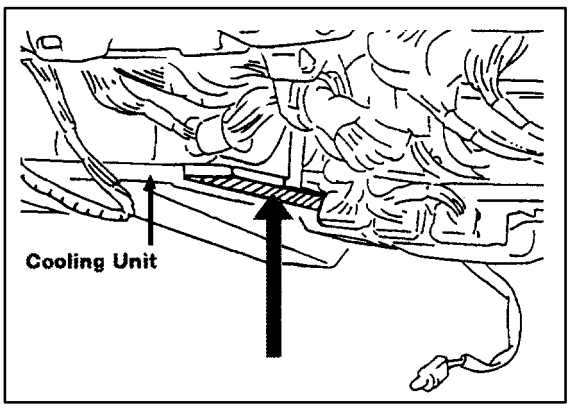
CAUTION:
The plate and wing nuts will be reused.

   (d) Remove the (2) filters from the cooling unit.



2. Clean the Evaporator

   - Follow the general procedures given on page 2.

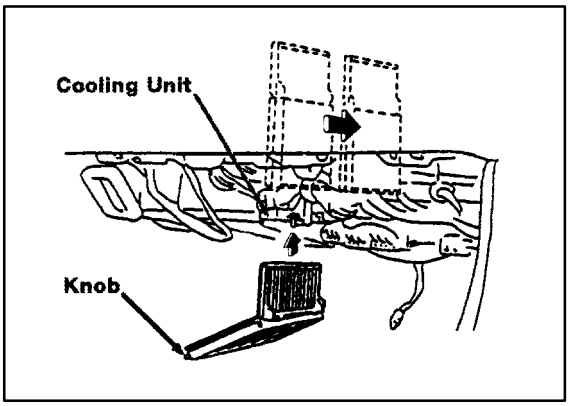


NOTE:
Location for the insertion of spray nozzle is indicated by the red arrow in the illustration.

LS 400 ('93–'94) (Continued)

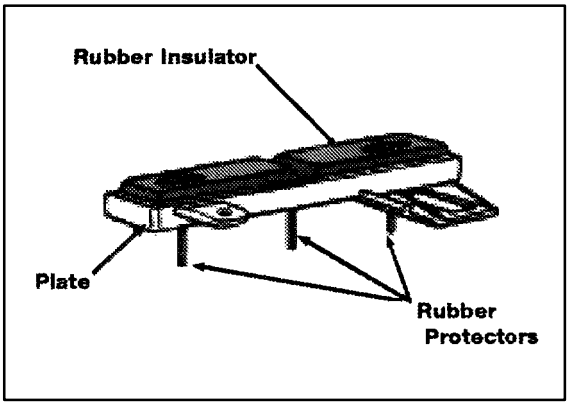
3. Reinstallation of parts.

(a) Insert the (2) filters into the cooling unit as shown in the illustration.



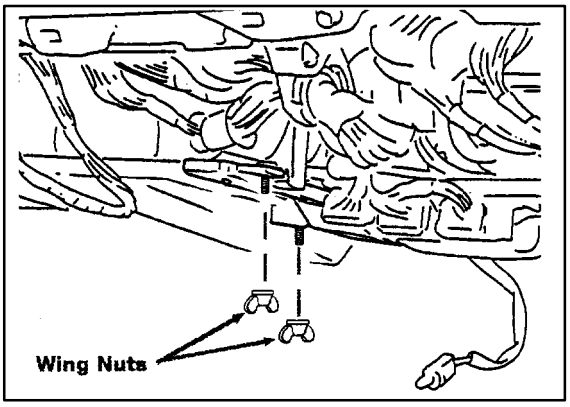
NOTE:
Insert a clean air filter with it's knob facing downwards, then slide it forward and install the second filter in the same manner.

(b) Assemble the rubber insulator on the plate.



CAUTION:
To prevent the cooling unit from leaking water, pull the three rubber projections from the other side of the plate to make sure that the rubber insulator seals properly against the plate.

(c) Install the plate on the cooling unit and secure with the (2) wing nuts.

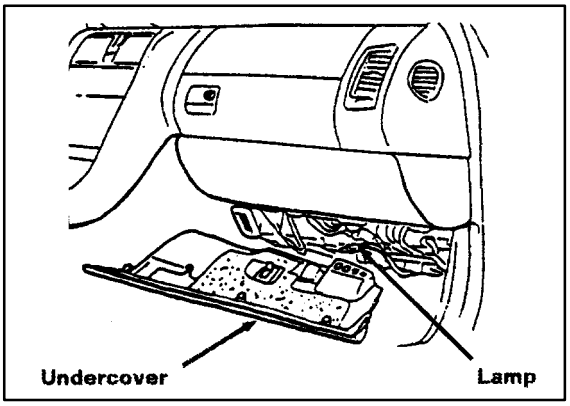


CAUTION:
To prevent water leaks, verify that the cooling unit and plate are fully secure before tightening the wing nuts.

NOTE:
Before installing the plate on the cooling unit, coat the rubber insulator with water for easier assembly.

(d) Reinstall the lamp.

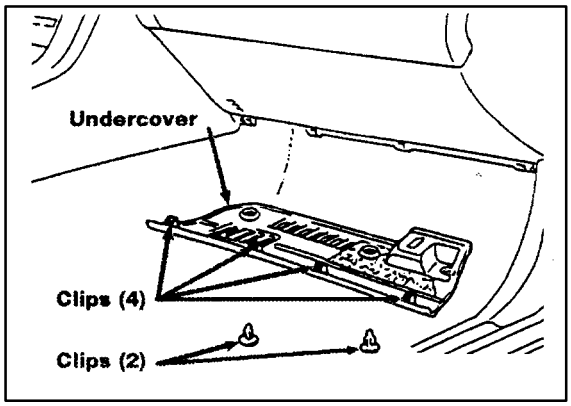
(e) Reassemble the Undercover.



SC 300
SC 400

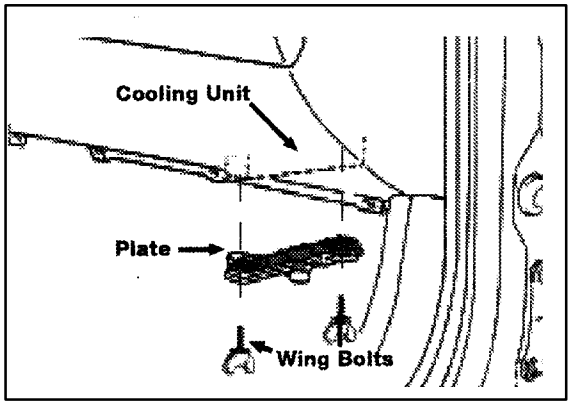
1. Removal of parts.

   (a) Remove two clips using the clip remover then remove the undercover.



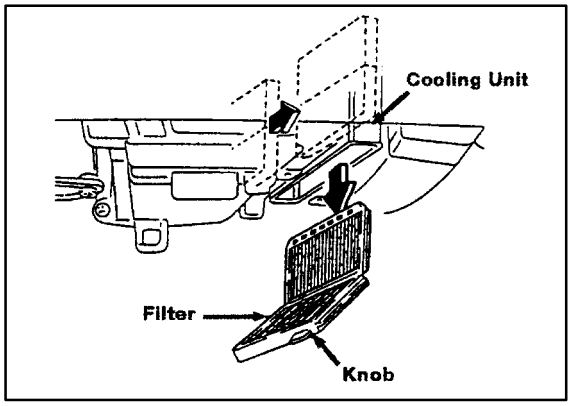
> **NOTE:**
> **Pull down the clip areas (4 places) of the Undercover to remove.**

   (b) Remove the (2) wing nuts and the plate on the bottom of the cooling unit.



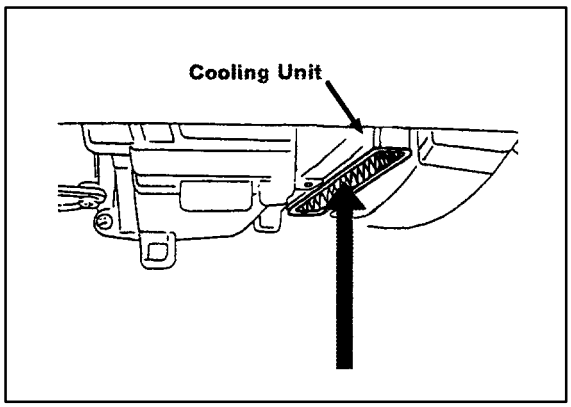
> **CAUTION:**
> **The plate and wing nuts will be reused.**

   (c) Remove the (2) filters from the cooling unit.



2. Clean the Evaporator

   - Follow the general procedures given on page 2.

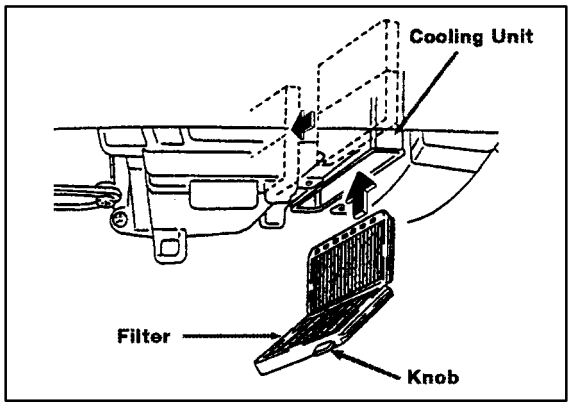


> **NOTE:**
> **Location for the insertion of spray nozzle is indicated by the red arrow in the illustration.**

SC 300
SC 400
(Continued)

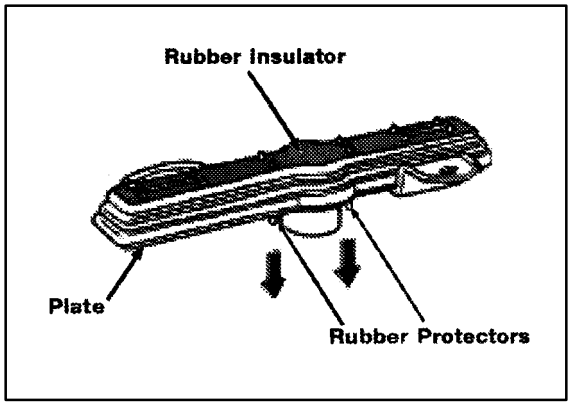
3. Reinstallation of parts.

(a) Insert the (2) filters into the cooling unit as shown in the illustration.



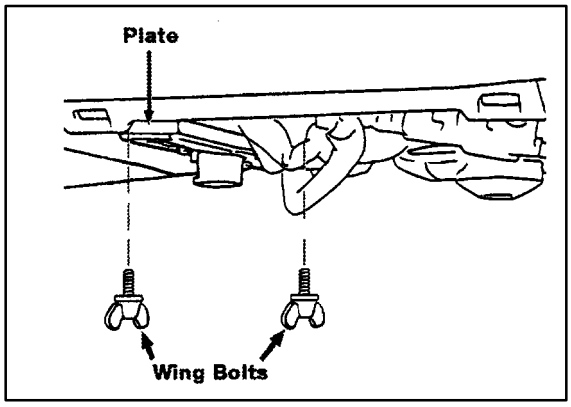
NOTE:
Insert a clean air filter with it's knob facing downwards, then slide it forward and install the second filter in the same manner.

(b) Assemble the rubber insulator on the plate.



CAUTION:
To prevent the cooling unit from leaking water, pull the three rubber projections from the other side of the plate to make sure that the rubber insulator seals properly against the plate.

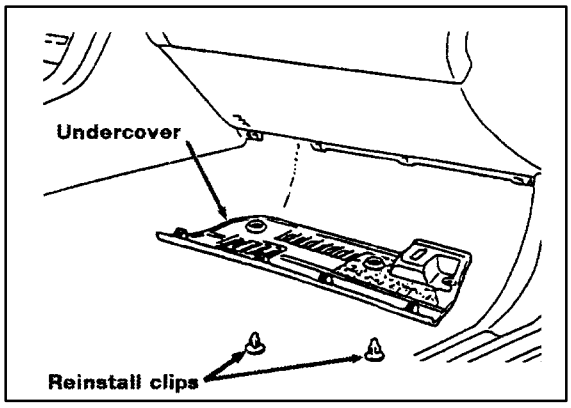
(c) Install the plate on the cooling unit and secure with the (2) wing nuts.



CAUTION:
To prevent water leaks, verify that the cooling unit and plate are fully secure before tightening the wing nuts.

NOTE:
Before installing the plate on the cooling unit, coat the rubber insulator with water for easier assembly.

(d) Reassemble the Undercover.



LX 450 1. Removal of parts.

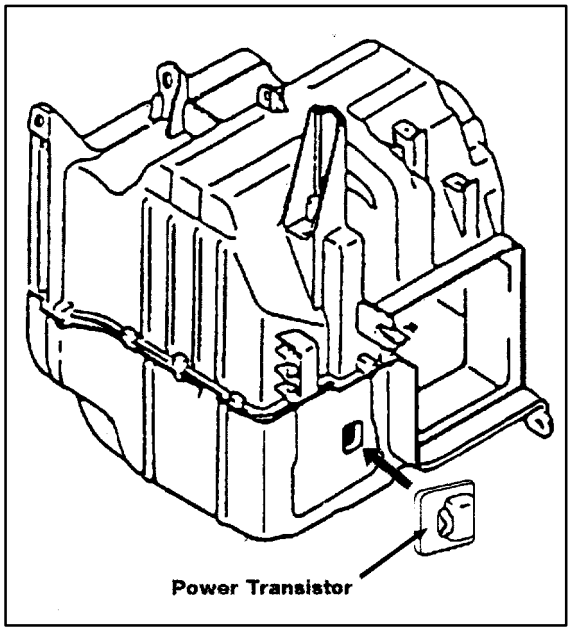
(a) Remove the glove compartment door.
(b) Remove the A/C Amplifier.
(c) Remove power transistor.

2. Clean the Evaporator

- Follow the general procedures given on page 2.

3. Reinstallation of parts.

- Reinstall the parts in reverse order of removal described in step 1.



LEXUS

TECHNICAL SERVICE INFORMATION

REF: HEATING & AIR CONDITIONING
NO: AC003-96
DATE: JUNE 7, 1996
MODEL: ALL MODELS

Title **A/C COMPRESSOR MAINTENANCE FOR STORED VEHICLES**

When a vehicle is stored for a long period, the volume of oil in the A/C compressor may decrease due to oil flow into the condenser, pipes, etc.

If the A/C system is turned on at high engine RPM after a long storage period, A/C compressor damage may result.

To minimize the possibility of damage to the A/C compressor while storing a vehicle, perform the following recommended procedure at least once a month to lubricate the compressor.

RECOMMENDED PROCEDURE FOR A/C COMPRESSOR LUBRICATION:

1. Turn off A/C And blower switches prior to starting engine.
2. Start and warm–up engine until engine speed drops below 1,000 RPM.
3. Turn on the A/C system using the following settings:
   - A/C switch: On
   - Blower Speed: High
   - Engine speed: Below 1,000 RPM
4. Keep A/C on with engine idling for 30 seconds.
5. Turn off A/C system and stop engine.

LEXUS

TECHNICAL SERVICE INFORMATION

REF: AUDIO

NO: AU001–96

MODEL: ALL MODELS

Title **STATIC NOISE ON WEAK AM STATIONS**

Some Lexus audio systems may exhibit audible electrical noise on weak AM stations when various electrical accesssories (turn signals, rear defogger, cruise control, brakes, etc.) are operated.

Poor antenna grounding can cause this condition.

To eliminate or reduce the intensity of the noise use the following repair procedure:

REPAIR PROCEDURE:

1. Play the radio on a strong, static–free AM station and slowly move the tip of the antenna mast forward and back approximately 2 inches (Fig. 1). If static noise is not heard, go to Step 2. If static noise is heard during antenna movement, replace the antenna mast and go to Step 3.

NOTE: Do not touch the antenna mast with your bare hands. Use a glove or non-metallic object to move the antenna. (If you touch the antenna with your hands, you will change the antenna sensitivity).

2. Remove the antenna mast and inspect the base of the mast for corrosion and damage. Clean with 1500 grit sandpaper (Fig. 2).

3. Remove the antenna assembly and inspect the inner fender around the antenna hole for corrosion. Clean with 1500 grit sandpaper (Fig. 3).

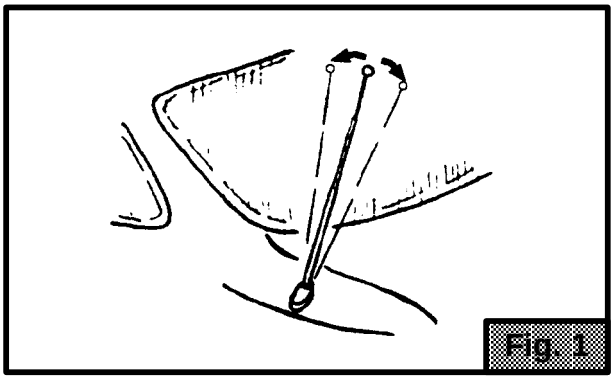


Fig. 1

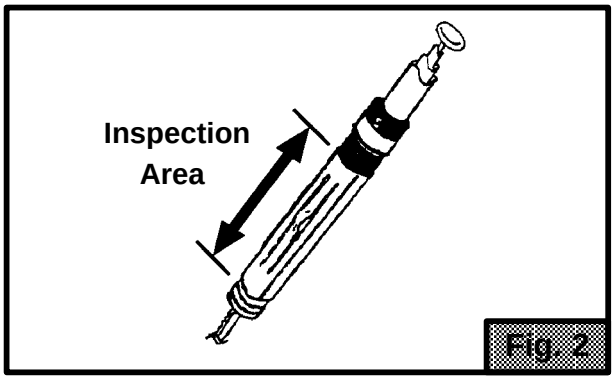


Fig. 2

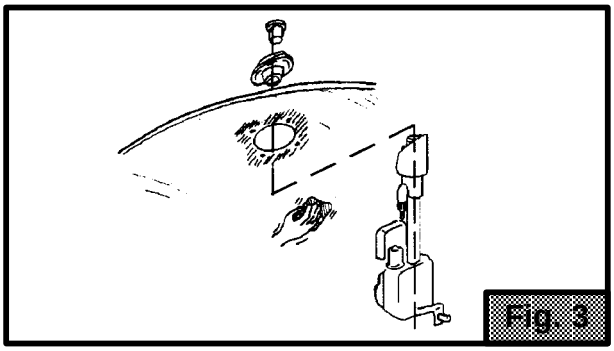
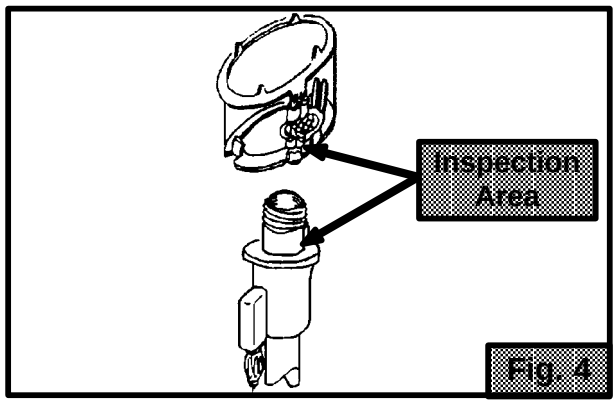


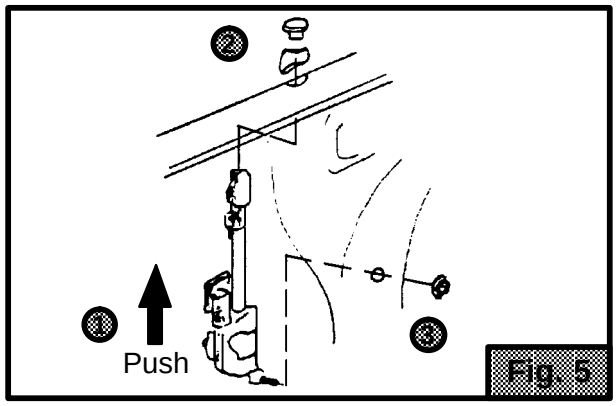
Fig. 3

REPAIR PROCEDURE (Cont'd):

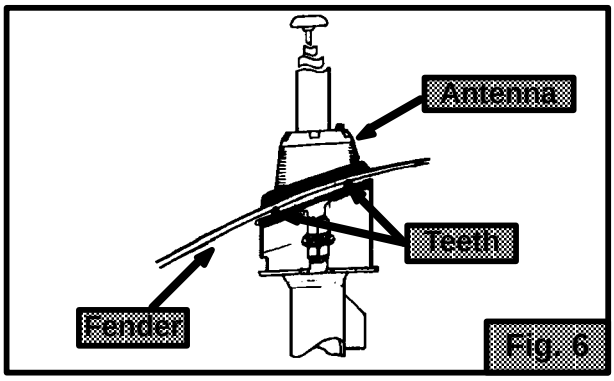
4. Remove the antenna spacer grommet at the top of the antenna assembly and inspect for corrosion. Clean with 1500 grit sandpaper (Fig. 4).



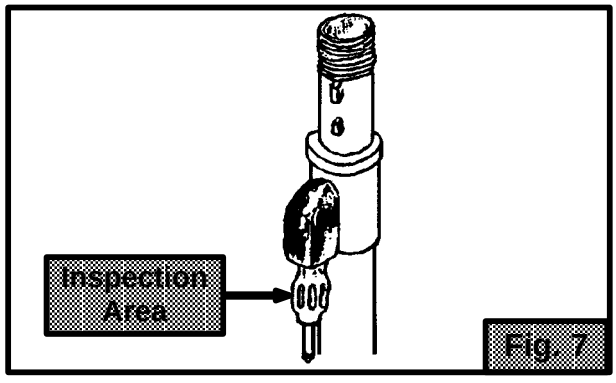
5. Reinstall the antenna assembly. Be sure to install the external antenna nut (escutcheon) first. Then install the nut which holds the assembly to the inner bracket (Fig. 5).



6. Check to make sure that the teeth on the antenna spacer grommet make good contact with the inner fender well (Fig. 6).



7. Inspect the antenna cable connection and clean as necessary. Reconnect the antenna cable, the wire harness and the drain hose (Fig. 7).



WARRANTY INFORMATION:

OPCODE	DESCRIPTION	TIME	OPN	T1	T2
EL5001	Listed TSIB repair procedure (All Items)	1.0	86300–XXXXX	76	73

LEXUS
Technical Service Information Bulletin
May 16, 1997

Title:

CLEANING CASSETTE TAPE HEADS AND CAPSTANS

Models:

All Models

TSIB
AUDIO
AU001–97
REVISED

Introduction

The cassette tape head and capstan should be cleaned regularly to prevent poor sound quality and/or cassettes from jamming.

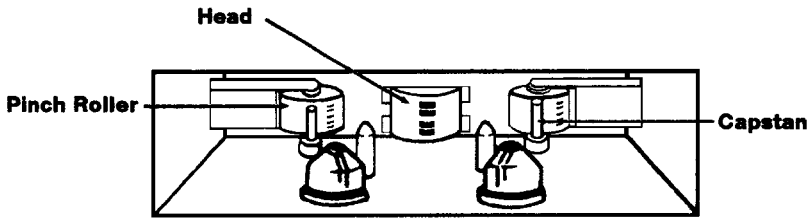


Fig. 1

Conditions

The following conditions can easily be avoided by regularly cleaning the head with a tape cleaner and only using good quality cassettes.

Poor Sound Quality due to Dirty Head

Since the tape head contacts the cassette tape, the tape head accumulates metal oxides and dirt particles from the tape. In time, a layer of dirt forms on the tape head resulting in poor transfer of information between the tape and the tape head. This typically causes a reduction of higher frequencies or a reduction of the brightness in sound quality.

Tape Speed

Tape speed is controlled by the tape capstan and pinch rollers. If the capstan and pinch rollers accumulate dirt, the tape may slip causing the music to play too fast or too slow.

Jamming

Dirt can make the capstans sticky, causing the tape to become entangled in the cassette mechanism. This can cause the cassette to become jammed in the player.

Cassette Tape Head Cleaners

To reduce the occurrence of these conditions, the following approved cassette cleaners are available through the non–parts system (Material Distribution Center).

TOOLS & MATERIALS	MATERIAL NUMBER	DESCRIPTION
Allsop 3 Cassette Recorder Cleaner	00113–AS710–00	Cleaning Cassette and Cleaning Solution with Instruction Sheet

NOTE:
Allow 15 minutes for the cleaning fluid to evaporate before playing a tape.

Cassette Tape Care Procedure

The following precautions should be taken to keep cassettes in good condition:

1. Remove the cassette from the player when the cassette is not in use.

2. Store the cassette in its case.

3. Store the cassette in a cool, dry area away from direct sunlight and magnetic components such as speakers.

4. Avoid touching the tape itself. This could result in poor sound quality or sound drop out.

5. Keep the tape tightly wound as shown in figure 2. Tape speed can be affected by loosely wound tape.

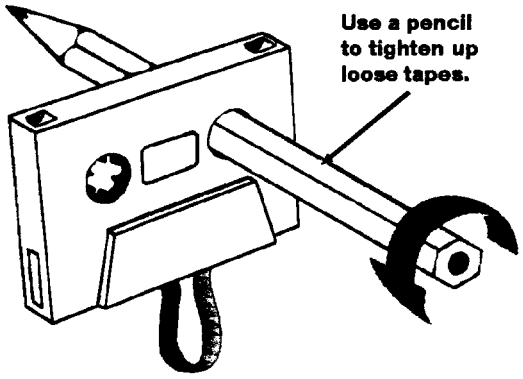


Fig. 2

6. Avoid inserting a cassette into the player if the cassette label is loose or peeling as shown in figure 3. This can cause a cassette to become stuck in the player.

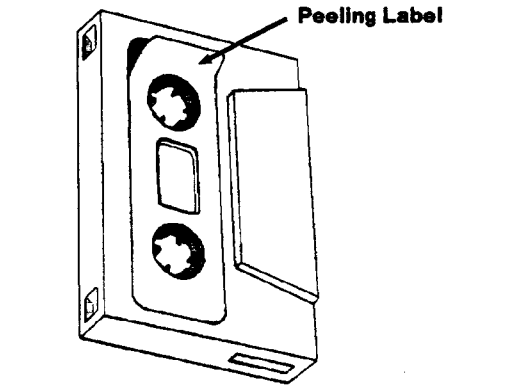


Fig. 3

7. Use cassettes that are 90 minutes or less in length. Cassettes over 90 minutes use extremely thin tape that is subject to stretch, resulting in poor sound quality.

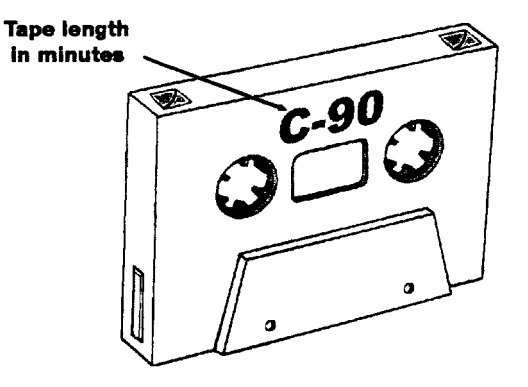


Fig. 4

LEXUS

Technical Service Information Bulletin

February 21, 1997

Title:

WIND NOISE REPAIR KIT

Models:

All Models

TSIB

BODY
BO001-97

Introduction

A kit containing special foam sponge material has been developed. This kit, when used in conjunction with procedures outlined in the Interior and Wind Noise Diagnosis Manual (P/N 00246-30015) and Lexus Service Information Bulletins, should enable effective wind noise repairs.

Affected Vehicles

- **All Models**

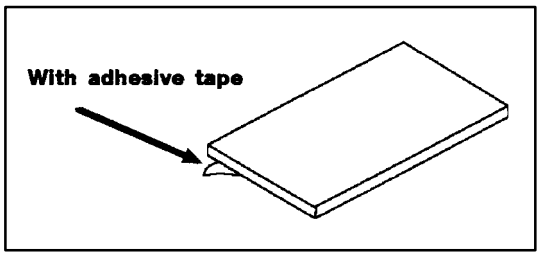
Parts Information

PART NUMBER	PART NAME	SIZE (MM)	QTY
08231-00810	Kit, Wind Noise	– – –	1
08231-00811*	Caulking Sponge Sealant No. 1	297 x 150 (T = 3.0)	2
08231-00812*	Caulking Sponge Sealant No. 2	297 x 150 (T = 5.0)	2
08231-00813*	Caulking Sponge Sealant No. 3	297 x 150 (T = 10.0)	2
08231-00814*	Caulking Sponge Sealant No. 4	297 x 150 (T = 3.0)	2
08231-00815*	Caulking Sponge Sealant No. 5	297 x 150 (T = 5.0)	2
08231-00816*	Caulking Sponge Sealant No. 6	297 x 150 (T = 5.0)	2

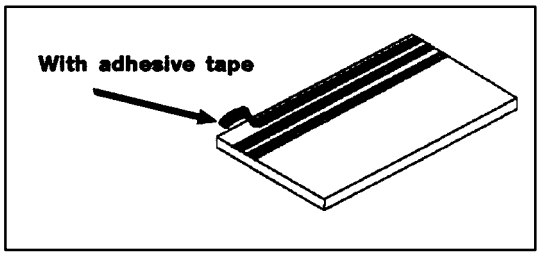
* All of these parts are included in the kit.

Kit Components

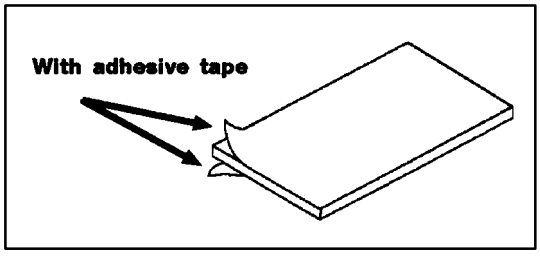
1. Caulking Sponge Sealant No. 1, No. 2 and No. 3 (Ept-sealer).



2. Caulking Sponge Sealant No. 4 and No. 5 (Ept-sealer). This sheet is divided into 27 strips, 5 mm wide.



3. Caulking Sponge Sealant No. 6 (Ept-sealer).



LEXUS

TECHNICAL SERVICE INFORMATION

REF: BODY

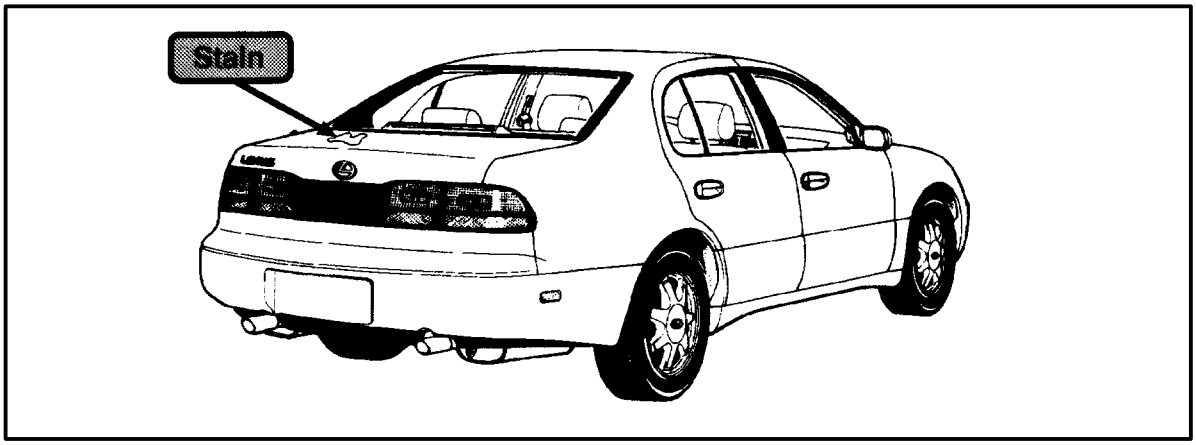
NO: BO002–96

DATE: AUGUST 9, 1996

MODEL: ALL MODELS

Title **STAINS ON RAPGARD APPLIED AREAS**

On some Lexus models, when Rapgard is removed from the vehicle, a stain is left on the paint surface. This stain can be seen under the clear coat and is not a defect of the clear coat. The stain corresponds to a wrinkled area of Rapgard which retained liquids, such as window washer fluid, that left a discoloration.



REPAIR PROCEDURE:

To remove a stain from a vehicle, heat the stain surface to a temperature of 70°C – 80°C. When the stain is removed it will not reappear.

Equipment –

1. Infrared lamp or dryer to heat the surface.
2. Aluminum foil or a damp cloth to protect plastic parts from deformation.

Procedure –

1. Apply aluminum foil to adjoining plastic parts or cool with damp cloth periodically.
2. Use an infrared lamp or dryer on the stain developed area and heat for 5 to 10 minutes at 70°C – 80°C.
3. After heating for 5 minutes, check whether the stain has disappeared. If the stain still remains, reheat the area and check again.

NOTE: Take care that the body's paint surface temperature does not become too high.

WARRANTY INFORMATION:

OPCODE	DESCRIPTION	TIME	OPN	T1	T2
BD6004	Remove stains from paint surface caused by Rapgard	0.6	53301–XXXXX	61	99

LEXUS

TECHNICAL SERVICE INFORMATION

REF: BODY

NO: BO003–96

DATE: NOVEMBER 15, 1996

MODEL: ALL MODELS

Title **SEAT BELT EXTENDERS FOR 1993 THROUGH 1997 MODELS**

Lexus customers who find it necessary to increase the length of their seat belts may obtain Seat Belt Extenders at no cost through their local Lexus dealer.

- The extender is available in black only, in 6, 9, 12, 15 and 18 inch lengths.
- Owners are informed of the seat belt extender availability through the Lexus Owner's Manual included in each vehicle.

The customer *(individual requiring the extender)* must visit a Lexus Dealership to have the required measurements made and to complete the seat belt extender worksheet. The worksheet will allow the proper fitting and selection of a seat belt extender for the customer. The dealership personnel should then determine the applicable part number and place a *Critical Order* through the *TDN Parts Network.*

Included in this bulletin is the information covering the1993 through 1997 model years:

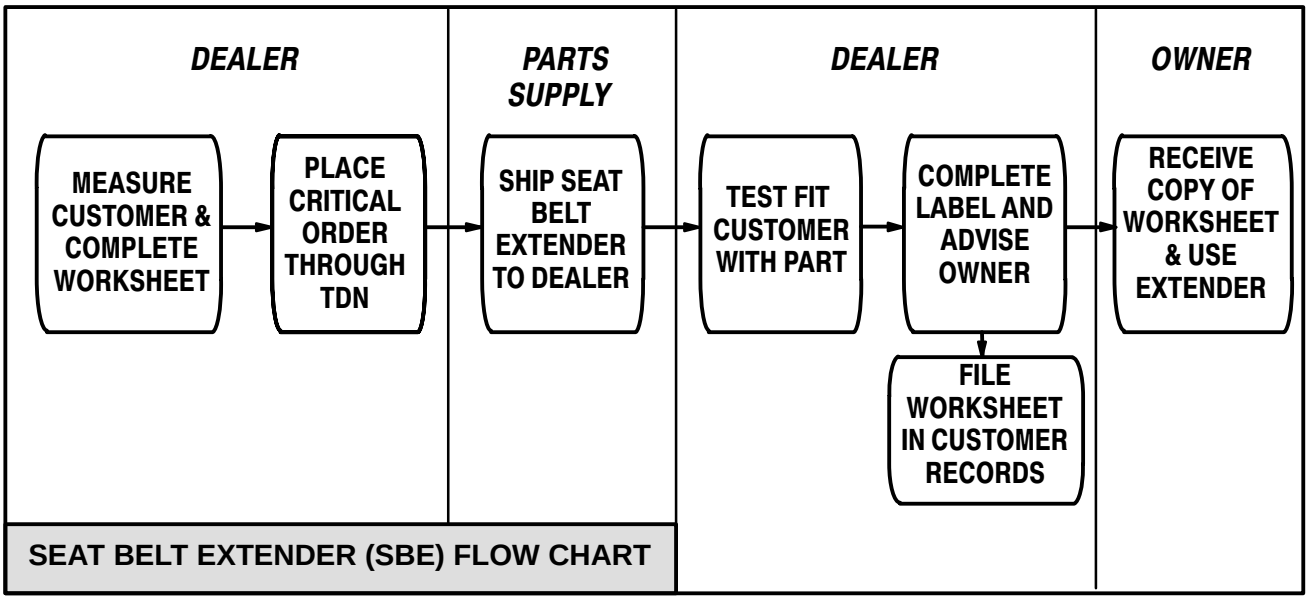
The dealership service department should complete the affixed Seat Belt Extender Label and review the "owner instruction sheet" with the customer. The dealership should give a copy of the completed worksheet to the customer and keep the original in the customer's file.

To assure utmost owner satisfaction, it is recommended that a dealership designate one person to coordinate all activities related to the seat belt extender issue.

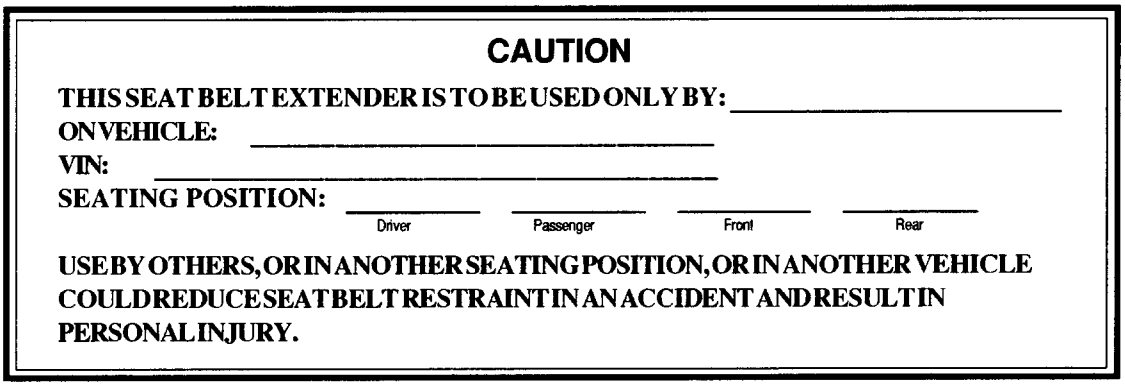
From past sales history, it is recommended that dealerships **do not** stock seat belt extenders due to low demand and the need for customer fitting.

PROCEDURE:

1. Owner requests a seat belt extender from the dealer.
2. Dealer verifies the need for a seat belt extender, obtains a current copy of the TSB, and copies the worksheet.
3. Dealer measures the customer and completes the worksheet. Dealer determines the correct part number and places a Critical Order for the part through the TDN Parts Network.
4. Dealer receives the seat belt extender and calls the customer in to check fit of the part.
5. If the seat belt extender fit is OK, dealership personnel complete the customer information label on the part, explains usage of the part to customer, then gives customer a copy of the completed worksheet.
6. Dealer places a copy of the completed worksheet in the customer's records.



SAMPLE SEAT BELT LABEL:



PART NUMBER INFORMATION:

Locate the series code on the ***series application*** charts, then use the ***part number by length*** chart to identify the correct part number for the specific customer.

FRONT SEAT EXTENDER SERIES APPLICATION TABLE:

Model	1997	1996	1995	1994	1993
LS 400	R-3	R-3	R-3	R-3	R-3
GS 300	N-3	N-3	N-3	N-3	N-3
SC 400	R-3	R-3	R-3	R-3	R-3
SC 300	R-3	R-3	R-3	R-3	R-3
ES 300	R-5	K-4	K-4	K-4	K-4
LX 450	R-3	R-3	-	-	-

REAR SEAT EXTENDER SERIES APPLICATION TABLE:

Model	1997	1996	1995	1994	1993
LS 400	R-3	R-3	R-3	R-3	R-3
GS 300	K-4	K-4	K-4	K-4	K-4
SC 400	R-3	R-3	R-3	R-3	R-3
SC 300	R-3	R-3	R-3	R-3	R-3
ES 300.. Right & Left	R-5	R-3	R-3	R-3	R-3
ES 300..Center	R-3*	-	-	-	-
LX 450	K-4**	K-4**	-	-	-

NOTE: **The extender must not be used for the center rear seat belt (except '97 model ES 300 as noted in the chart).*
***Includes third seat application.*

PART NUMBER BY REQUIRED LENGTH (73399–):

SERIES	6 INCH	9 INCH	12 INCH	15 INCH	18 INCH
K-4	33010	33020	33030	33040	33050
N-3	20011	20021	20031	20041	20051
R-3	50010	50020	50030	50040	50050
R-5	16060	16070	16080	16090	16100

OWNER INSTRUCTION FOR PERSONALIZED SEAT BELT EXTENDER:

CAUTION FOR USE OF SEAT BELT EXTENDERS:

1. Never use the seat belt extender if you can fasten the seat belt without it.

2. Remember the seat belt extender provided for you may not be safe when used in a different vehicle, or for another person or at a seating position different than specified.

3. When the seat belt extender is provided for a rear seat position (with automatic locking retractor), make sure the retractor is locked when in use.

4. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN A LESS EFFECTIVE SEAT BELT RESTRAINT SYSTEM IN CASE OF A VEHICLE ACCIDENT, CAUSING PERSONAL INJURY.

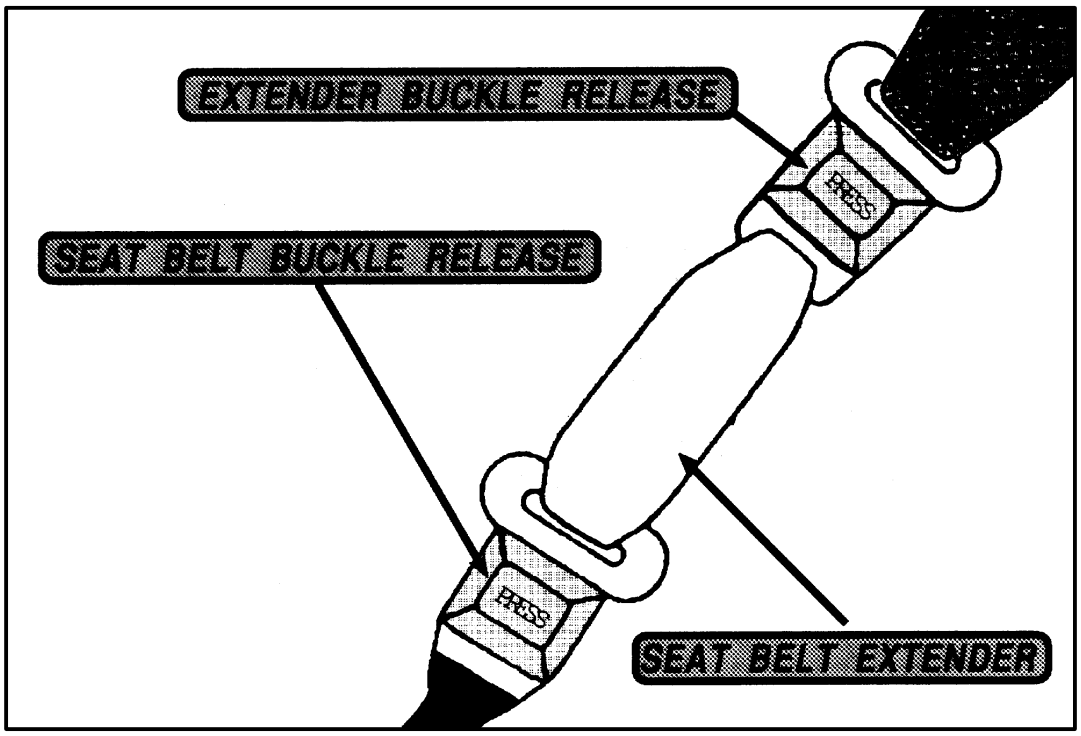
USING THE SEAT BELT EXTENDER:

1. Connect the seat belt extender to the seat belt by inserting the tab into the seat belt buckle so the buckle release buttons of the seat belt extender and the seat belt are located on the same side as shown in the illustration. You will hear a click when the tab properly locks into the buckle.

2. MAKE SURE THAT THE CONNECTION IS SECURE AND THE SEAT BELT EXTENDER IS NOT TWISTED.

3. When releasing the seat belt, press on the buckle release button on the seat belt extender, not on the seat belt. This helps prevent damage to the vehicle interior and seat belt extender.

4. When not in use, remove the extender and store in the vehicle.



OWNER'S MANUAL TEXT:

SEAT BELT EXTENDER

If your seat belt cannot be fastened securely because it is not long enough, a personalized seat belt extender is available from your Lexus dealer free of charge.

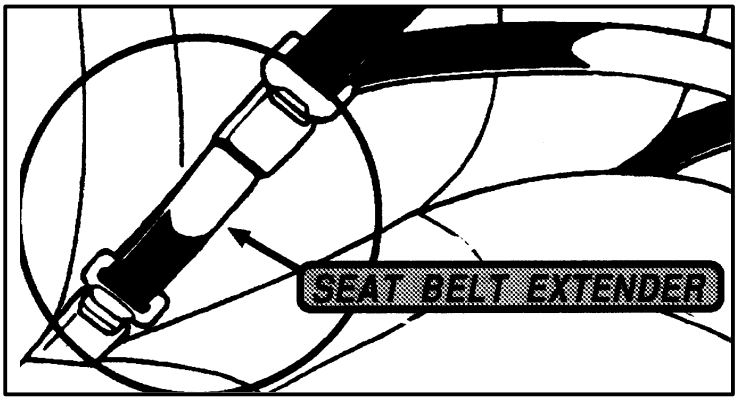
Please contact your local Lexus dealer so that the dealer can order a seat belt extender of the proper required length. Bring the heaviest coat you expect to wear for proper measurement and selection of length. Additional ordering information is available at your Lexus dealer.

CAUTION:

When using the seat belt extender, observe the following. Failure to follow these instructions could result in less effectiveness of the seat belt restraint system in case of a vehicle accident, increasing the chance of personal injury.

- Never use the seat belt extender if you can fasten the seat belt without it.

- Remember that the seat belt extender provided for you may not be safe when used on a different vehicle, or for another person and/or at different seating positions than specified.



To connect the seat belt extender to the seat belt, insert the tab into the seat belt buckle so that the buckle release buttons of the seat belt extender and the seat belt are both facing outward as shown.

You will hear a click when the tab locks into the buckle. When releasing the seat belt, press on the buckle–release button on the seat belt extender, not on the seat belt. This helps prevent damage to the vehicle interior and seat belt extender itself.

When not in use, remove the seat belt extender and store in the vehicle for future use.

CAUTION:

After inserting the tab, make sure that the connection is secure and the seat belt extender is not twisted.

SEAT BELT EXTENDER WORKSHEET

Please copy this original worksheet for each extender needed.

CAUTION: To minimize the chance and/or severity of injury in an accident, the seat belt extender must not be used:

- By anyone but the person for whom it was provided, and
- In any vehicle or seat specified other than the one for which it was provided, and
- With any car child safety seats.

When the seat belt extender is provided for rear seat positions (with automatic locking retractor), make sure the retractor is locked when in use.

In all cases seat belts must be worn below the abdomen by pregnant women.

DEALER	PLEASE PRINT CLEARLY	APPLICANT

DEALER CODE	DEALER NAME		APPLICANT NAME		
ADDRESS			ADDRESS		
CITY AND STATE		ZIP CODE	CITY AND STATE	ZIP CODE	TELEPHONE
DEALER EMPLOYEE NAME	MODEL YEAR	BODY TYPE	SEAT POSITION F / R	VEHICLE IDENTIFICATION NUMBER	

DIRECTIONS FOR DETERMINING PROPER EXTENDER LENGTH

1. Place the seat in the position the person normally uses.
2. With the person in the seat, extend the seat belt as much as possible and see if the belt latches.
3. If the buckle latches but has no slack remaining, the dimension for Figure 2 is zero. If the seat belt does not latch, measure the distance from the seat belt latch edge to the seat belt buckle as shown in Figure 2 below, and note the dimension.
4. Measure the lap area directly below the navel to the edge of the buckle as shown in Figure 1 and note the dimension.
5. The difference between Figure 1 and Figure 2 measurements is the "Allowable Margin". (Do not use this dimension for the extender length.)
6. Take the measurement in Figure 2 and round it up to the next extender size available, without exceeding the "Allowable Margin".

FIGURE 1
DIMENSION FROM NAVEL TO BUCKLE

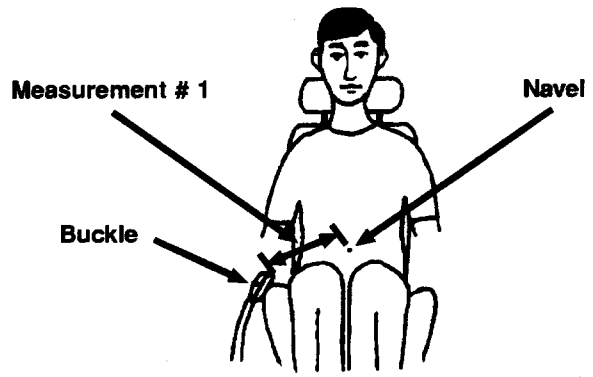
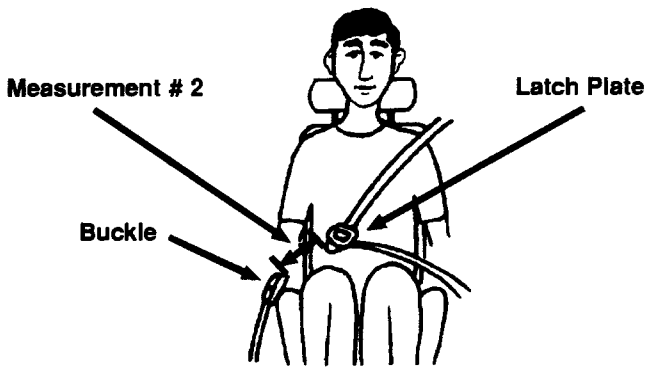


FIGURE 2
DIMENSION FROM LATCH TO BUCKLE



Measurement #1 (Figure 1) - Measurement #2 (Figure 2) = "Allowable Margin"

_____ - _____ = _____

NOTE: The length of the extender must not exceed the "Allowable Margin", due to design and construction features

AUTHORIZATION

The same extender can be used for right and left seating applications. Each seat belt extender will be affixed with a label identifying the owner, vehicle VIN and seating position. Extenders are available in one color only.

_____ APPLICANT'S SIGNATURE
(Actual user of seat belt extender)

_____ DATE

LEXUS
Technical Service Information Bulletin
April 4, 1997

Title:

FRONT ASHTRAY RECEPTACLE BUZZ NOISE

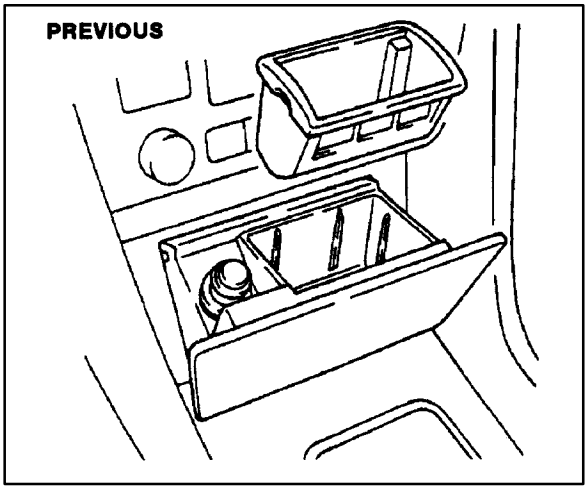
Models:

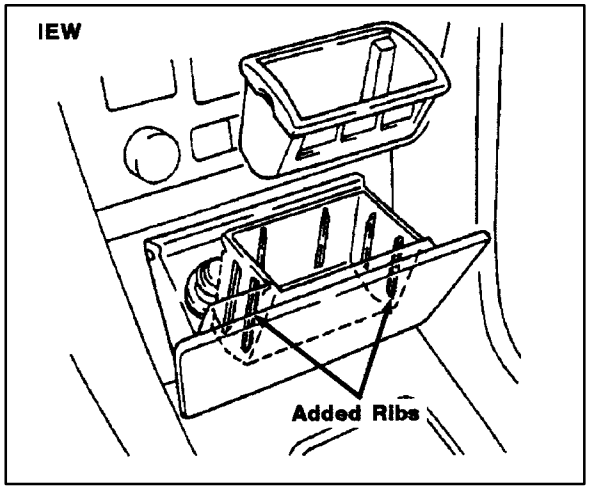
'97 ES 300

TSIB
BODY
BO003-97

Introduction

Lexus implemented a production change to eliminate a noise in the ashtray receptacle. The receptacle now has 2 additional ribs eliminating a buzzing noise between the ashtray insert and receptacle.





Production Change Information

- **1997 ES 300** starting with **VIN JT8BF22G#V0008640**

Warranty Information

OPCODE	DESCRIPTION	TIME	OPN	T1	T2
BD7006	Ashtray Receptacle Assembly	0.2	74110-33060	91	57

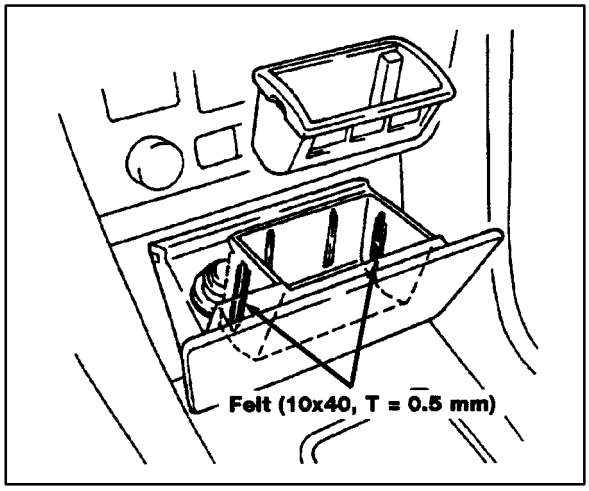
Applicable Warranty:
3 years or 36,000 miles.

Field-Fix Procedures

1. Remove the ashtray insert.
2. Install 1 piece of felt to each rib of the ashtray insert.

   Use felt size of 10 x 40 x 0.5 mm to each rib.

NOTE:
Confirm that the ashtray insert is fully seated in the receptacle after the field-fix procedure is completed.



LEXUS

TECHNICAL SERVICE INFORMATION

REF: BODY

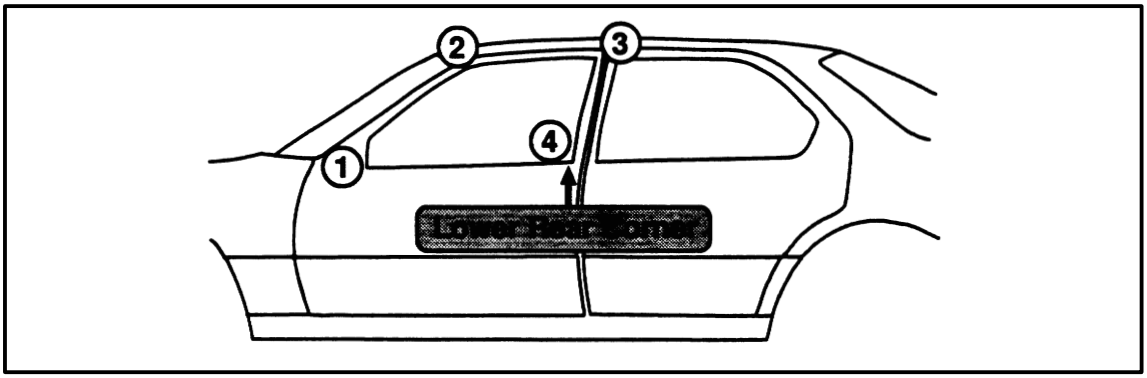
NO: BO004–96

DATE: DECEMBER 6, 1996

MODEL: ES 300

Title **AIR LEAK NOISE FROM FRONT DOOR GLASS AT LOWER REAR CORNER**

To prevent a possible air leak (sometimes described as wind noise) at the lower rear corner of the front door glass, TMC implemented a production change to the interior door trim panel improving the seal between the door glass and door weather strip. The revised trim panel applies light additional pressure on the weather strip effectively eliminating an air leak at the #4 corner.

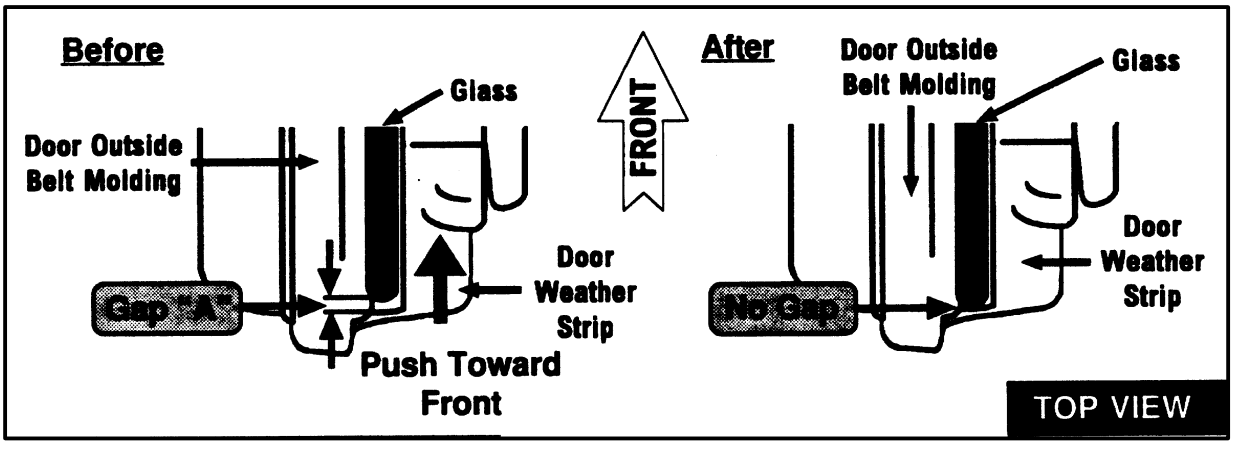


PRODUCTION EFFECTIVE:

Starting VIN: JT8BF22G * V0012715

FIELD–FIX METHOD:

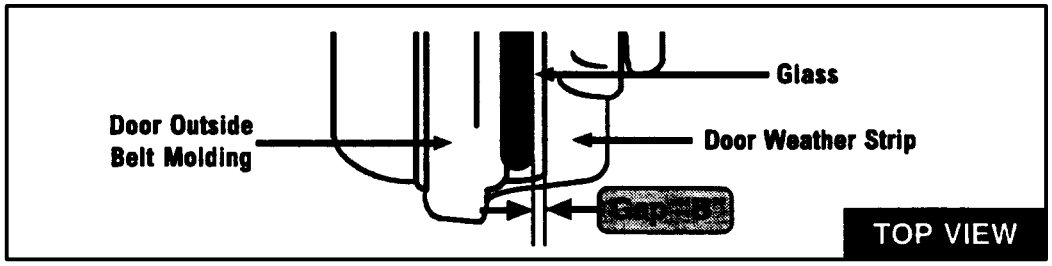
- Apply hand pressure at the top rear of the front door weather strip to eliminate any gap (“A”) between the edge of the glass and weather strip.



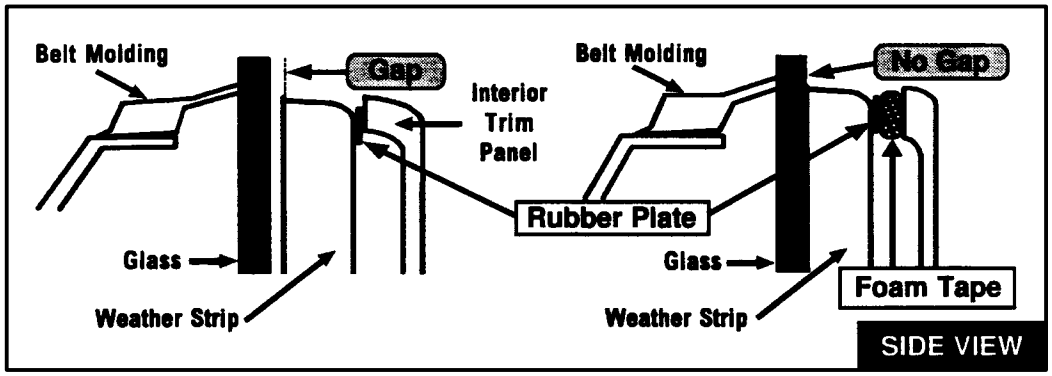
- While sitting in the driver seat, close the door. Make certain it is closed completely.

FIELD–FIX METHOD (CONT'D):

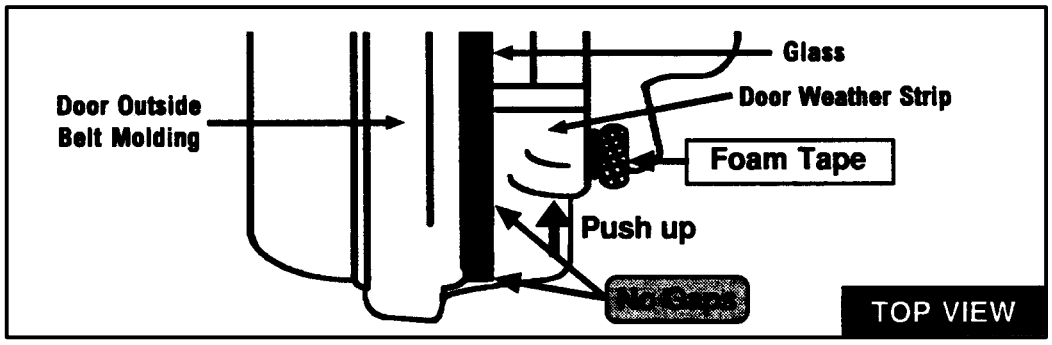
- Measure the gap between the weather strip ("B") and the door glass at the lower rear inside corner of the glass.



- Apply a thickness of foam tape equal to the measured gap plus 1 mm to the door weather strip rubber plate. Pull the weather strip rearward far enough to expose the plate, then apply foam tape (7 mm x 14 mm) to the rubber plate.



- After foam tape is applied to the rubber plate, push the weather strip back into its fully seated position. No gaps should exist at edge of glass or inside of glass at weatherstrip.



CAUTION: Apply only a thickness of foam tape as necessary to eliminate the gap. Using more than the measured amount will interfere with the normal operation of the weather strip to glass in the full down position.

WARRANTY INFORMATION:

OPCODE	DESCRIPTION	TIME	OPN	T1	T2
BD6009	Air leak Noise from front door glass at lower rear corner (#4)	0.5	68173–33020 (RH) 68174–33010 (LH)	59	57

Applicable Warranty Coverage: 4 years/50,000 miles Comprehensive Warranty.

LEXUS
Technical Service Information Bulletin
May 30, 1997

Title:

MOON ROOF RATTLE ON 1997 ES 300

Models:

'97 ES 300

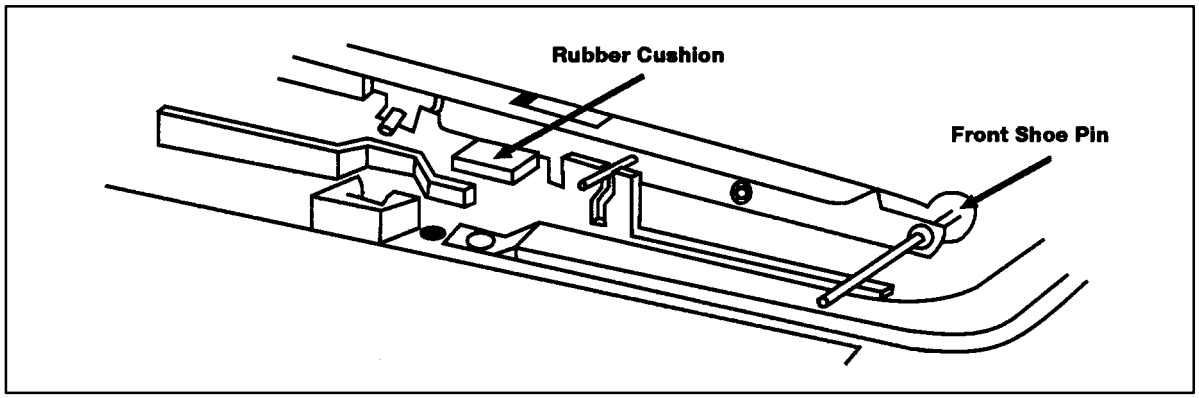
TSIB
BODY
BO004-97
REVISED

Introduction

On some 1997 ES 300 vehicles, a rattle noise from the moon roof sliding rail assembly may be evident. If the noise exists, it is most apparent driving over highway type dots with the moon roof open approximately 100 mm.

Two changes were implemented:

- Increased viscosity of the grease at the front shoe pin.
- Stiffened the rubber cushion on the siding rail.



Product Change Information

VIN	PRODUCTION CHANGE
JT8BF22G * V0003340	Increased Grease Viscosity
JT8BF22G * V0048965	Stiffened Rubber Cushion

Parts Information

NOTE:
Part numbers remain unchanged.

Warranty Information

OPCODE	DESCRIPTION	TIME	OPN	T1	T2
BD7008	Moon Roof Panel R&R and install adhesive back felt tape and grease (both sides), verify condition resolved	0.6	63201-33050	91	43

Field-Fix Procedures

Verify the concern by either road test or static check (static check is to open moon roof approximately 100 mm, then tap lightly by hand on front edge of panel).

If a rattle exists, correct this condition by following the field-fix procedures outlined below:

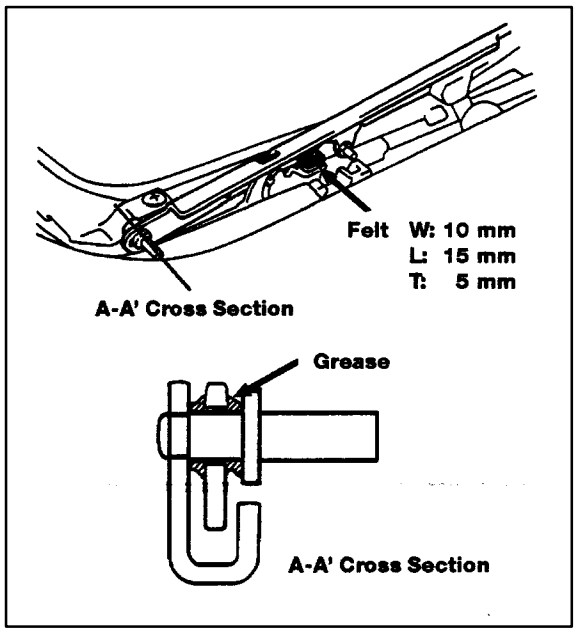
- Remove the moon roof glass panel by first removing the black plastic covers at the base of the moon roof glass on both right and left sides.

> **NOTE**:
> **This must be done from inside the vehicle.**

- Remove the (4) attaching torx head screws holding the moon roof glass panel in place.
- Carefully remove the moon roof glass panel and store it in the trunk while making repairs.
- Use the electric switch to place the assembly in the TILT UP position.
- clean the light gray rubber stop, with a VOC compliant wax and grease remover approved for use in your area. (Check local regulations.)
- Place adhesive back felt tape (W: 10 mm, L:15 mm, T:5 mm) on the rubber stop (both sides).
- Apply high viscosity grease (P/N 00289-1WG00 or equivalent) to the front shoe pin.
- Engage the electric switch returning the assembly to the neutral position.
- Reinstall the moon roof glass panel and make the appropriate flushness adjustments before tightening the attaching screws.

  Flush adjustment specifications:

  ±1.5 mm at front (overflush)
  0 + 1.5 mm at rear (overflush)
  0 – 1.0 mm at rear (underflush)



- Engage the electric switch moving the moon roof panel rearward approximately 100 mm.
- Check for a rattle by tapping lightly (static check) on the front edge of the moon roof glass panel.
- Torque the attaching screws according to the repair manual.
- Reinstall the plastic covers.
- Test drive the vehicle to confirm no noise exists.

LEXUS
Technical Service Information Bulletin
July 25, 1997

Title:

V–BRACE REAR POPPING NOISE

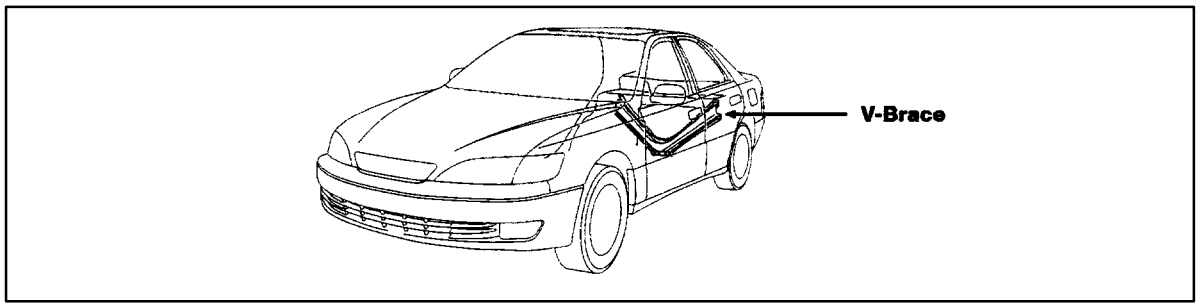
Models:

'97 ES 300

TSIB
BODY
BO005–97
REVISED

Introduction

Some 1997 ES 300s may exhibit a "popping" noise emitting from the rear of the vehicle, especially when turning left or right ar low speeds (10 to 20 m.p.h.) or when going over speed bumps. This noise may be caused by insufficient "V–Brace" weld nut and bolt torque.



Affected Vehicles

- **1997 ES 300s**

Required Tools & Materials

- 3/8" Ratchet with 8" Extension Bar
- 12 mm Deep Well Socket
- Torque Wrench
- Slotted Screw Driver
- Thread Lock Adhesive (Locktite® 242).

Warranty Information

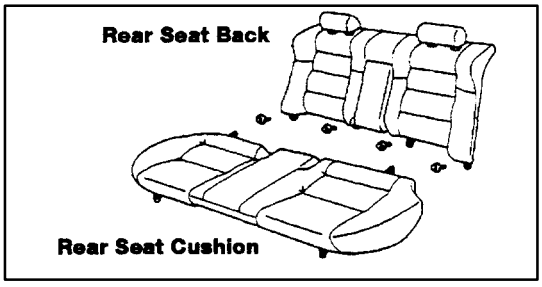
OPCODE	DESCRIPTION	TIME	OPN	T1	T2
710041	Rear Seat Back Assembly	0.3	64241–33010	62	81

Applicable Warranty:
This repair is covered under the Lexus Comprehensive Warranty. This warranty is in effect 48 months or 50,000 miles, whichever occurs first, from the vehicle's in–service date.

Repair Procedure

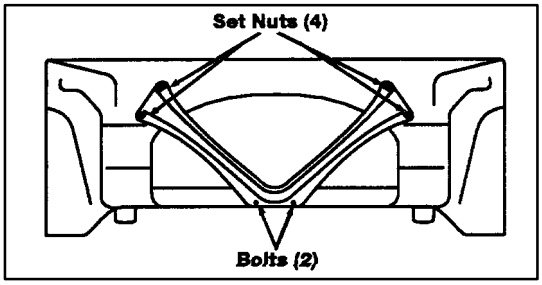
1. Remove the rear seat.

NOTE:
Refer to the Repair Manual (Page BO–86) for seat removal and installation.



2. Remove the 4 set nuts and 2 bolts and apply thread lock adhesive to the threads.
3. Torque the set nuts and bolts on the "V–Brace."

   Torque: 13 ft·lbf (18 N·m, 185 kgf·cm)



4. Reinstall the rear seat.
5. Confirm the condition has been repaired by test driving.

LEXUS
Technical Service Information Bulletin
September 5, 1997

Title:

DASH UNDER COVER LOOSE/FALLING

Models:

'97 ES 300

TSIB

BODY
BO006–97

Introduction

Some ES 300 models may experience the lower dash under cover (below glove compartment) coming loose and/or falling off. The main engine wire harness routing was modified to prevent excessive down force on the under cover.

Production Change Information

- **1997 ES 300s** starting with VINs **JT8BF22G*V0039230**

Warranty Information

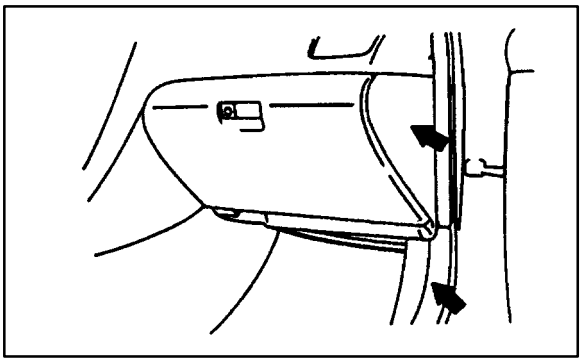
OPCODE	DESCRIPTION	TIME	OPN	T1	T2
BD7017	Move engine wire harness under lower dash	0.5	55607–33040	62	99

Applicable Warranty:
This repair is covered under the Lexus Comprehensive Warranty. This warranty is in effect for 48 months or 50,000 miles, whichever occurs first, from the vehicle's in–service date.

Repair Procedure

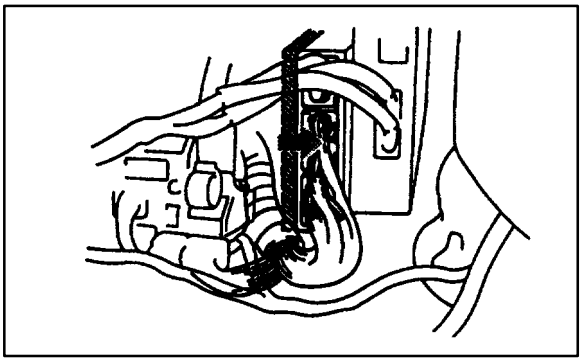
NOTE:
Refer to the ES 300 Repair Manual (Page RS–19) in addition to the illustrations below.

1. Remove the lower dash under cover (No. 2 Under Cover), front door scuff plate and glove compartment assembly (Lower Instrument Panel) as shown in the repair manual.



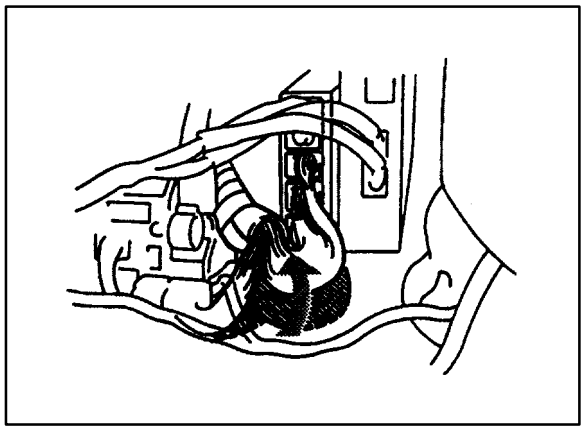
NOTE:
DO NOT disconnect yellow SRS Junction Block.

2. Move the Engine Control Module (ECM) to the right in order to gain clearance between the blower unit junction block and the ECM.



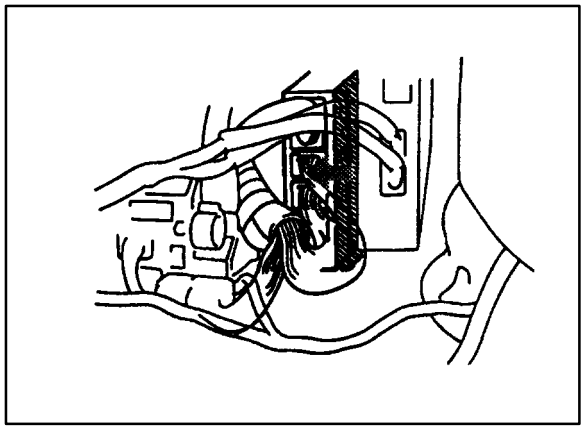
Repair Procedure (Continued)

3. Reposition the engine wire harness by lifting it up between the ECM and the blower unit. Position the engine wire harness on the right side end of the blower junction block as shown.



4. If necessary, move the ECM back to it's original position.

5. Reinstall the glove compartment assembly, front door scuff plate and clip the SRS junction connector back into position on the lower dash under cover (No. 2 Under Cover). Carefully reinstall the lower dash cover, taking care that the rear locating pin and the right rear locating tab are correctly positioned.



LEXUS
Technical Service Information Bulletin
October 24, 1997

Title:
SEAT BELT EXTENDERS

Models:
All '94 through '98 models

TSIB
BODY
BO007-97

Introduction

Lexus customers who find it necessary to increase the length of their sear belts may obtain Seat Belt Extenders at **no cost** through their local Lexus dealer.

- The extender is available in 6 inch, 9 inch, 12 inch, 15 inch and 18 inch lengths.
- The extender is available **only in black**.
- Owners are informed of the seat belt extender availability through the Lexus Owner's Manual included in each vehicle.

The customer (*individual requiring the extender*) must visit a Lexus dealership to have the required measurements made and to compete the seat belt extender worksheet. The worksheet will allow the proper fitting and selection of a seat belt extender for the customer. The dealership personnel should then determine the applicable part number and place a **Critical Order** through the ***TDN Parts Network***.

The dealership service department should compete the affixed Seat Belt Extender Label and review the "owner instruction sheet" with the customer. The dealership should give a copy of the completed worksheet to the customer and keep the original in the customer's file.

To assure utmost owner satisfaction, it is recommended that a dealership designate one person to coordinate all activities related to the seat belt extender issue.

From past sales history, it is recommended that dealerships **do not stock** Seat belt extenders due to low demand and the need for customer fitting.

This bulletin contains the following information:

Affected Vehicles

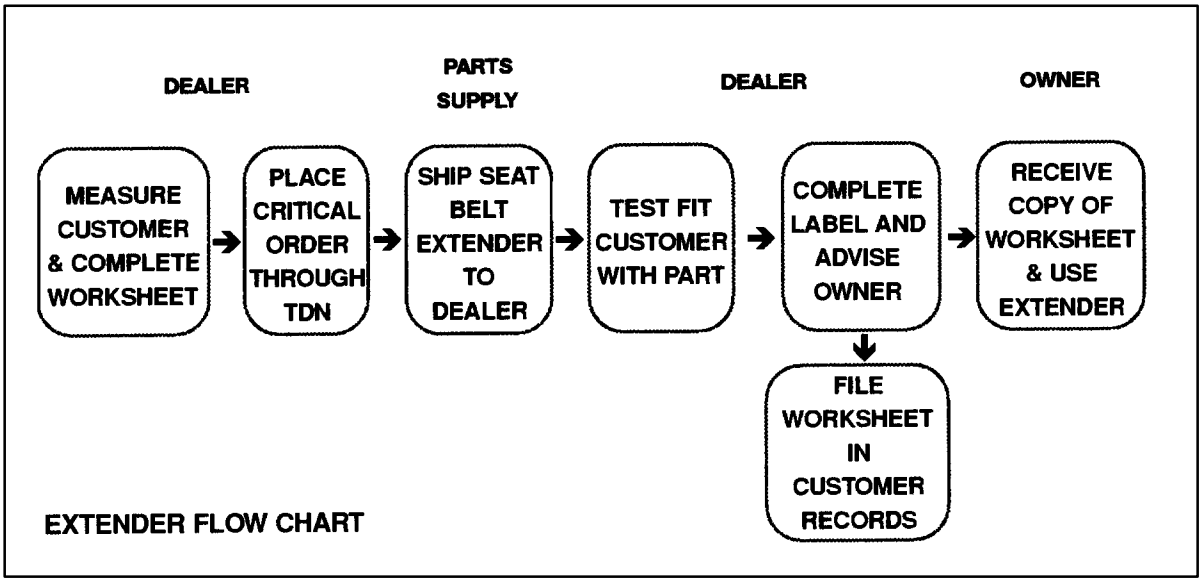
- All **Lexus** models, **1994** through **1998** model years.

Warranty Information

OPCODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not applicable to warranty	–	–	–	–

Procedure

1. Owner requests a seat belt extender from dealer.
2. Dealer verifies the need for a seat belt extender and obtains a current copy of this TSB and copies the worksheet.
3. Dealer measures the customer and completes the worksheet. Dealer determines the correct part number and places a Critical Order for the part through the TDN Parts Network.
4. Dealer receives seat belt extender and calls the customer in to check fit of the part.
5. If the seat belt extender fit is good, dealership personnel completes the customer information label on the part, explains usage of the part, and gives the customer a copy of the completed worksheet.
6. Dealer places a copy of the completed worksheet in the customer's records.



EXTENDER FLOW CHART

Sample Seat Belt Extender Label

CAUTION

THIS SEAT BELT EXTENDER IS TO BE USED ONLY BY: _____

ON VEHICLE: _____

VIN: _____

SEATING POSITION: _____ _____ _____ _____

Driver Passenger Front Rear

USE BY OTHERS, OR IN ANOTHER SEATING POSITION, OR IN ANOTHER VEHICLE COULD REDUCE SEAT BELT RESTRAINT IN AN ACCIDENT AND RESULT IN PERSONAL INJURY.

Front Seat Belt Extender Applications

FRONT SEAT - EXTENDER APPLICATION					
MODEL	**'98**	**'97**	**'96**	**'95**	**'94**
LS 400	R–3	R–3	R–3	R–3	R–3
GS 400	R–5	N/A	N/A	N/A	N/A
GS 300	R–5	N–3	N–3	N–3	N–3
SC 400	R–3	R–3	R–3	R–3	R–3
SC 300	R–3	R–3	R–3	R–3	R–3
ES 300	R–5	R–5	K–4	K–4	K–4
LX 450	N/A	R–3	R–3	N/A	N/A

Rear Seat Belt Extender Applications

REAR SEAT - EXTENDER APPLICATION					
MODEL	**'98**	**'97**	**'96**	**'95**	**'94**
LS 400	R–3	R–3	R–3	R–3	R–3
GS 400	K–5	N/A	N/A	N/A	N/A
GS 300		K–4	K–4	K–4	K–4
SC 400	R–3	R–3	R–3	R–3	R–3
SC 300					
ES 300 (Right & Left)	R–5	R–5	R–3	R–3	R–3
ES 300 (Center)	R–3	R–3*	N/A	N/A	N/A
LX 450	N/A	K–4**	K–4**	N/A	N/A

NOTE:

*** The extender must NOT be used for the center rear seat belt (except on '97 and '98 model ES 300s as noted in the chart).**

**** Includes third seat application.**

Parts Information

PART NUMBER PREFIX: 73399-					
SERIES	**LENGTH**				
	6 INCH	**9 INCH**	**12 INCH**	**15 INCH**	**18 INCH**
K–4	–33010	–33020	–33030	–33040	–33050
K–5	–35010	–35020	–35030	–35040	–35050
N–3	–20011	–20021	–20031	–20041	–20051
R–3	–50010	–50020	–50030	–50040	–50050
R–5	–16060	–16070	–16080	–16090	–16100

Owner Instructions

Failure to follow the recommendations indicated below could result in less effectiveness of the seat belt restraint system in case of vehicle collision, causing personal injury.

The seat belt extender must not be used:

a. By anyone other than for whom it was provided (name recorded on seat belt extender).

b. In any vehicle and/or seat position other than the one for which it was provided.

c. When the seat belt extender is provided for rear seat positions (with automatic locking retractor), make sure the retractor is locked when is use.

If your seat belt cannot be fastened securely because it is not long enough, a personalized seat belt extender is available from your Lexus dealer free of charge.

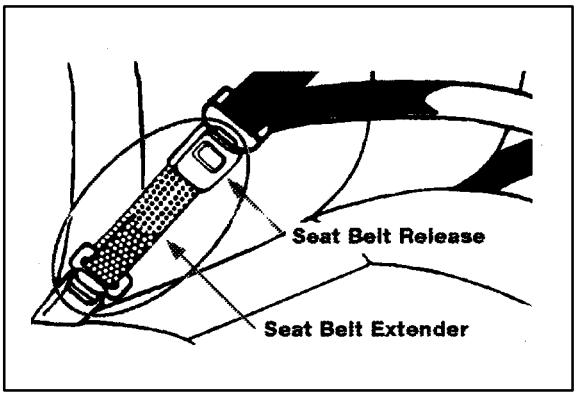
Please contact your local Lexus dealer so that the dealer can order the proper required length for the extender. Bring the heaviest coat you expect to wear for proper measurement and selection of length. Additional ordering information is available at your Lexus dealer.

CAUTION:

When using the seat belt extender, observe the following. Failure to follow these instructions could result in less effectiveness of the seat belt restraint system in case of vehicle accident, increasing the chance of personal injury.

- **Never use the seat belt extender if you can COMFORTABLY fasten the seat belt without it.**
- **Remember that the extender provided for you may not be safe when used on a different vehicle, or for another person or at a different seating position than the one originally intended for.**

To connect the extender to the seat belt, insert the tab into the seat belt buckle so that the "PRESS" signs on the buckle–release buttons of the extender and the seat belt are both facing outward as shown.



You will hear a click when the tab locks into the buckle.

When releasing the seat belt, press on the buckle–release button on the extender, not on the seat belt. This helps prevent damage to the vehicle interior and extender itself.

When not in use, remove the extender and store in the vehicle for future use.

SEAT BELT EXTENDER WORKSHEET

PLEASE COPY THIS ORIGINAL WORKSHEET FOR EACH EXTENDER NEEDED

CAUTIONS:

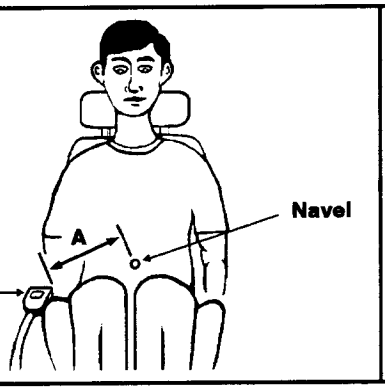
- **To minimize the chance and/or severity of injury in an accident, the seat belt extender must only be used:**
  1. **By the person for whom it was provided**
  2. **In the seat position for which it was provided**
- **The seat belt extender must never be used with any child safety seats.**
- **When the seat belt extender is provided for rear seat positions (with automatic locking retractor), make su th retractor is locked when extender belt is in use.**

DEALER	SEAT BELT EXTENDER APPLICATION		APPLICANT		
DEALER CODE	DEALER NAME		APPLICANT NAME		
ADDRESS			ADDRESS		
CITY & STATE		ZIP	CITY & STATE	ZIP	PHONE
EMPLOYEE NAME	MODEL YEAR	BODY TYPE	SEATING POSITION	VEHICLE IDENTIFICATION	

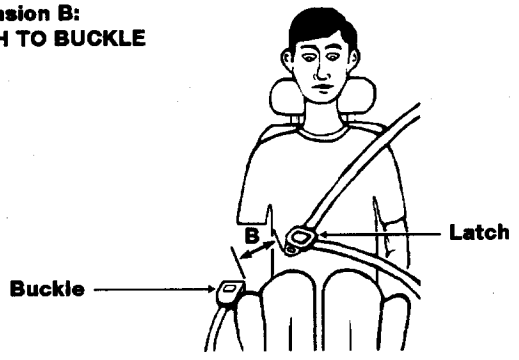
DIRECTIONS FOR DETERMINING PROPER EXTENDER LENGTH

1. **Place the seat in the position the applicant normally uses**
2. **With applicant in the seat, wearing thickest coat expected to be worn, pull belt all the way out and try to buckle belt**
   - **If the belt latches into buckle and feels comfortable against upper chest area, an extender is not needed**
   - **If belt does not buckle continue with step 3**
   - **If buckle latches but belt has no slack remaining, continue with step 3**
3. **Measure distance between applicant's navel and seat belt buckle (dimension A) and enter on worksheet**
4. **With belt all the way out, measure distance between latch tip and buckle tip (dimension B) and enter on worksheet**
   NOTE: If belt latches but there is no slack enter zero as dimension B
5. **Subtract dimension B from dimension A and record number in check number box on worksheet**
6. **Seat belt extender length is dimension B rounded up to next extender length (without exceeding check number)**
   NOTE: If extender length exceeds check number, an extender can not be provided to the customer

Dimension A:
NAVEL TO BUCKLE



Dimension B:
LATCH TO BUCKLE



SEAT BELT EXTENDER CALCULATION		
DIMENSION A:	DIMENSION B:	CHECK NUMBER:

SEAT BELT EXTENDER AUTHORIZATION

- ***The same seat belt extender can be used for right and left seating applications.*** **Each seat belt extender will have a label identifying the owner, VIN and seating position. Seat belt extenders are available only in black.**
- **Applicant's Signature:**_____ **Date:**
  (Actual user of seat belt extender)

LEXUS

TECHNICAL SERVICE INFORMATION

REF: ENGINE

NO: EG002–96

DATE: APRIL 19, 1996

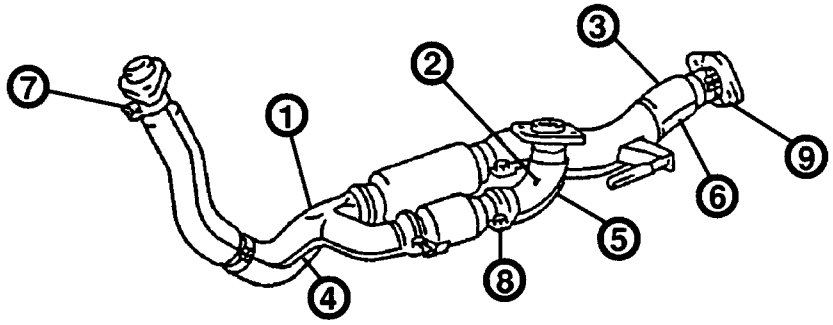
MODEL: ES 300

Title **EXHAUST PIPE PROTECTOR AND CLAMP**

For ES 300s with 1MZ–FE engines, exhaust pipe protectors and clamps are now available as separate supply parts. Part numbers and installation instructions for these parts are provided below.

PART NUMBER INFORMATION:

NUMBER	PART NAME	PART NUMBER	QUANTITY
1	Protector, Exhaust Pipe, Upper No. 2	17522–20010	1
2	Protector, Exhaust Pipe, Upper No. 3	17523–20010	1
3	Protector, Exhaust Pipe, Upper No. 4	17524–62020	1
4	Protector, Exhaust Pipe, Lower No. 2	17594–20010	1
5	Protector, Exhaust Pipe, Lower No. 3	17595–20010	1
6	Protector, Exhaust Pipe, Lower No. 4	17596–62020	1
7	Clamp	90461–12350	1
8	Clamp	90461–12385	1
9	Clamp	90461–12353	1



REPLACEMENT PROCEDURE:

Install protector so there is no noticeable gap or interference between exhaust pipe and protector.

Torque: 100 kgf-cm (7ft-lbs)

LEXUS

TECHNICAL SERVICE INFORMATION

REF: ENGINE

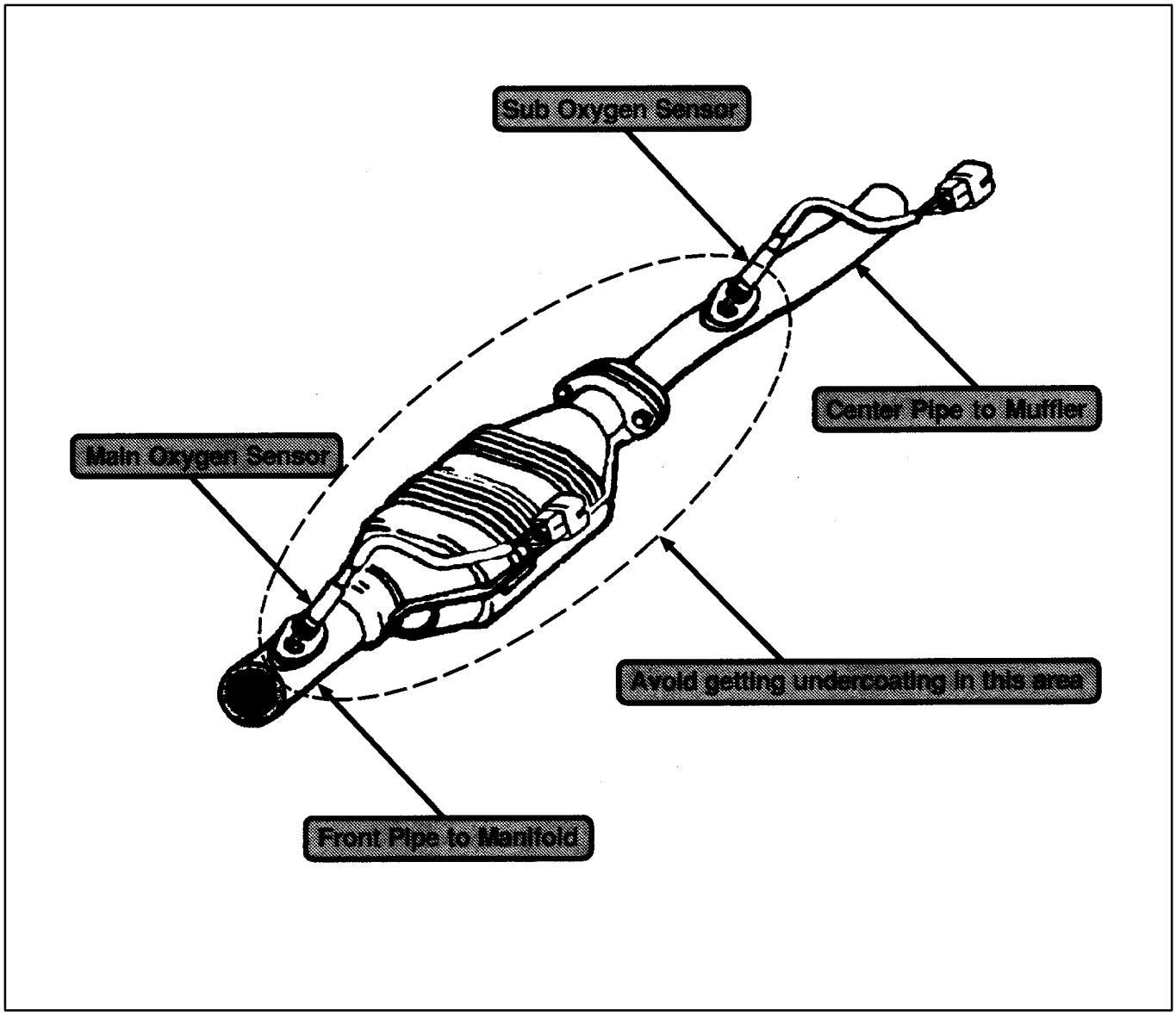
NO: EG004–96

DATE: OCTOBER 11, 1996

MODEL: ALL MODELS

Title **UNDERCOATING ON OXYGEN SENSORS**

During vehicle processing by Dealers, care must be taken to avoid applying undercoating in the area surrounding the Oxygen Sensors. Application of undercoating on or near the Oxygen Sensors can cause insufficient air to flow around the sensor, and inaccurate information storage by the ECM. If this condition occurs, the Malfunction Indicator Light (MIL) may illuminate.



LEXUS
Technical Service Information Bulletin
May 16, 1997

Title:

TAIL PIPE CONTACT WITH HEAT SHIELD

Models:

'97 ES 300

TSIB

Introduction

To prevent contact between the tail pipe and heat shield when turning quickly and/or going over bumps, the Exhaust Pipe Support No. 4 has been changed to prevent excessive movement of the tail pipe assembly.

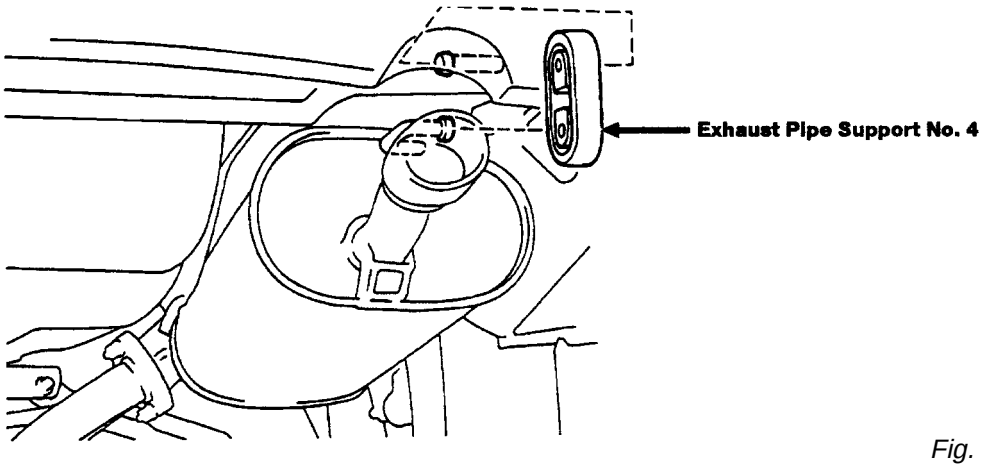


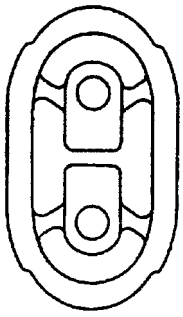
Fig. 1

Affected Vehicles

- **1997 Model Year ES 300** produced **before VIN JT8BF22G#V0021520**.

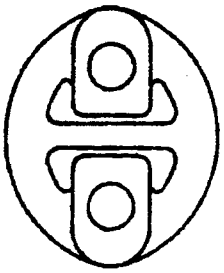
Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME
17565–20050	17565–11160	Support, Exhaust. Pipe No. 4



Previous

Fig. 2



Current

Fig. 3

Warranty Information

OPCODE	DESCRIPTION	TIME	OPN	T1	T2
170281	Exhaust pipe support bracket (for tailpipe)	0.4	17565–20050	91	57

Repair Procedure

1. Remove original exhaust pipe support No. 4 then loosen nuts (as indicated by red arrows in figure 4) to turn the flange of the tail pipe.

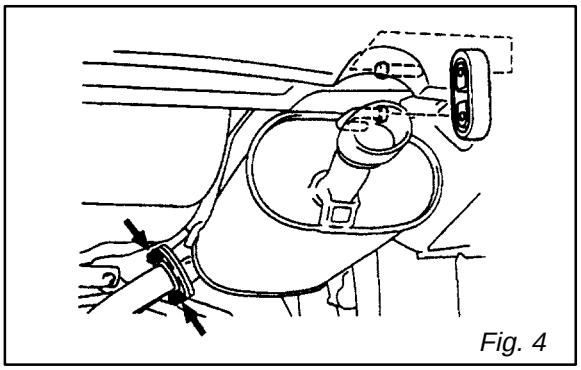


Fig. 4

2. Reposition muffler assembly by pulling down tail pipe assembly (as shown by large arrow in figure 5). While holding tail pipe down, retighten nuts as indicated by two red arrows.

   Torque: 41 ft•lbs (56 N•m, 570 Kgf•cm)

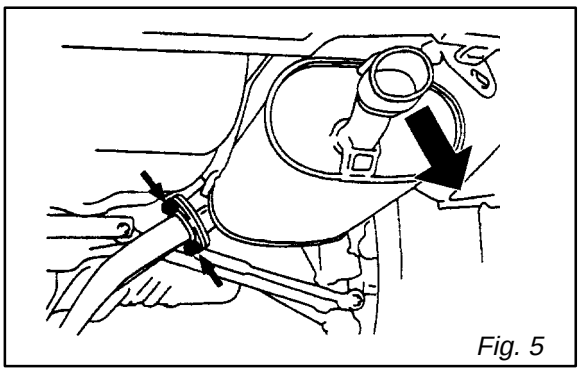


Fig. 5

3. Loosen nuts attaching center exhaust pipe to front exhaust pipe (indicated by red arrows in figure 6). Reposition center pipe by turning counterclockwise as shown. While holding pipe in position, retighten nuts.

   Torque: 41 ft•lbs (56 N•m, 570 Kgf•cm)

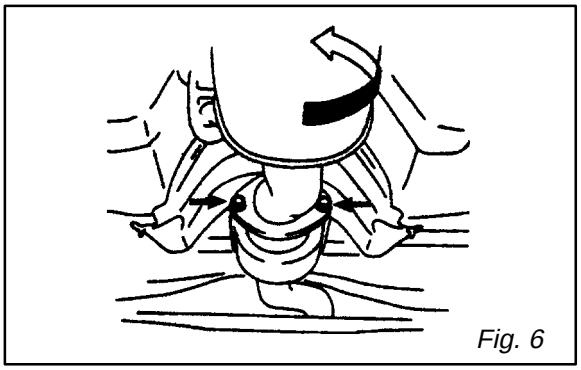


Fig. 6

4. Install new exhaust pipe support No. 4, (P/N 17565–11160).

5. Confirm that clearance between tail pipe and heat shield (A – A' & B – B') is within specification.

   A – A' . . . . . 15 – 27 mm (0.6 – 1.1 in.)
   B – B' . . . . . 20 – 30 mm (0.8 – 1.2 in.)

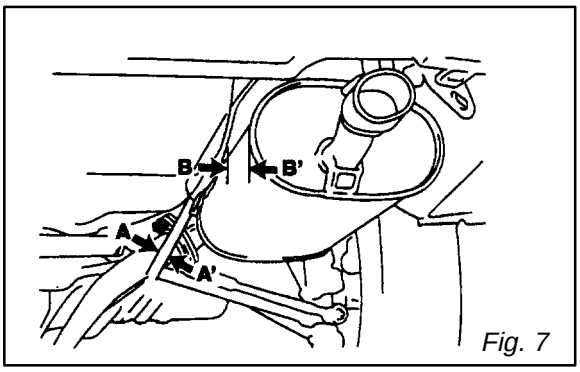


Fig. 7

NOTE:
If clearance is not within specification repeat steps 1 through 4 as required.

LEXUS
Technical Service Information Bulletin
May 30, 1997

Title:

CHARCOAL CANISTER HUMMING NOISE

Models:

'96 – '97 ES 300

Introduction

To eliminate "humming" noise from the charcoal canister at idle or low engine speeds, a revised vacuum hose is now available as a replacement part.

Affected Vehicles

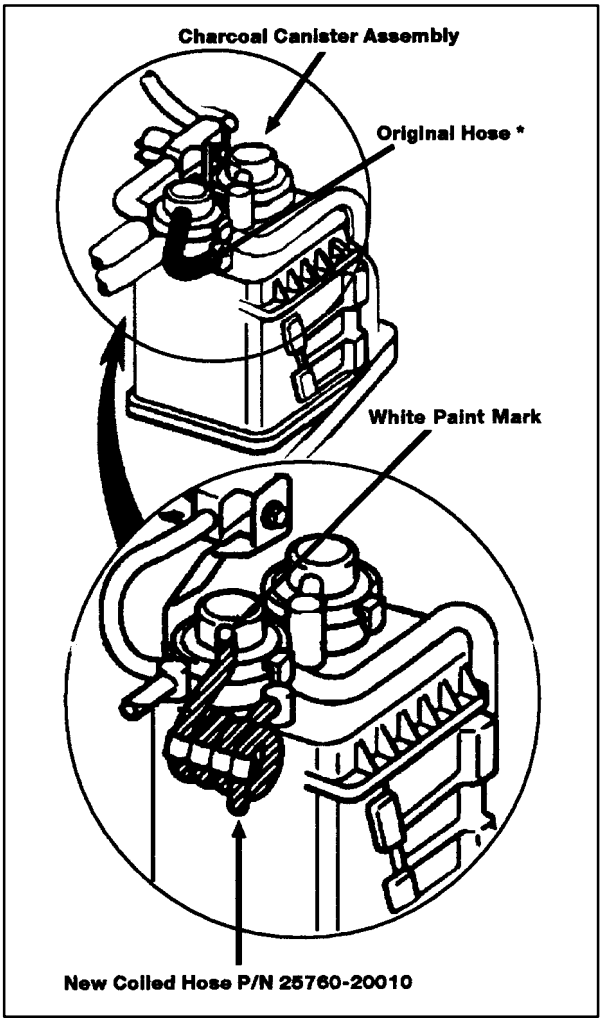
- All **1996 & 1997** Model Year **ES 300s**.

Parts Information

PREVIOUS PART NUMBER	NEW PART NUMBER	PART NAME
N/A*	25760–20010	Hose Assembly, Vacuum Transmitting

Repair Procedure

1. Remove original hose and discard.
2. Install new hose, connecting the end with white paint dot to the diaphragm port as shown.



*** NOTE**
Original hose is not listed as a replacement part but as part of the Charcoal Canister Assembly.

Warranty Information

OPCODE	DESCRIPTION	TIME	OPN	T1	T2
EG7002	Hose Assembly, Vacuum Transmitting	0.5	25760–20010	91	99

LEXUS
Technical Service Information Bulletin
June 20, 1997

Title:

SEAT HEATERS INOPERATIVE

Models:

'97 ES 300

TSIB

Introduction

The electrical connectors for the seat heater are identical in shape and may be inadvertantly cross–connected. Should a customer state that the seat heaters do not operate, it is possible that the control switches are connected improperly. This may be caused by the connection of the right–side heater switch to the left seat and connection of the left side switch to the right seat. If neither seat heater operates, follow the diagnostic procedures listed in the service manual.

Affected Vehicles

- A new assembly check procedure was adopted starting with **VIN JT8BF22G*V0023701** to avoid the possible occurrence of this condition.

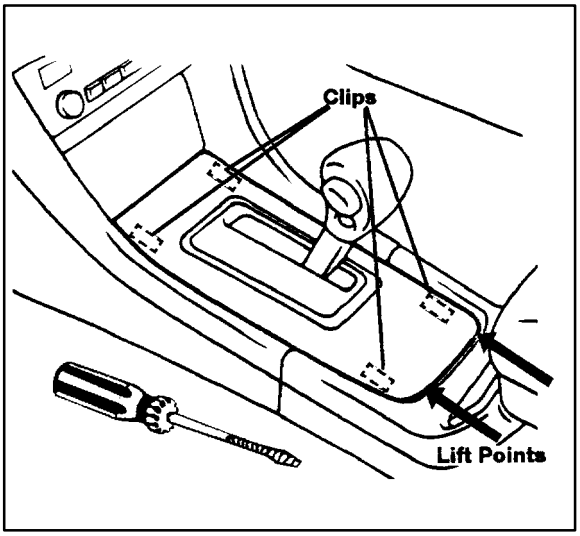
Warranty Information

OPCODE	DESCRIPTION	TIME	OPN	T1	T2
BD6011	Reverse seat heater switch connectors	0.3	84751–33030	72	57

Repair Procedure

1. Lift up the console panel from the back side using a screwdriver.

NOTE:
Take care not to damage the panel. Place tape over the screwdriver tip before attempting this procedure.



2. Inspect the seat heater switch connectors:
   - The **BLACK** seat heater switch connector should be installed in the **DRIVER'S** side switch.
   - The **BLUE** seat heater switch connector should be installed in the **PASSENGER'S** side switch.
3. Reverse position of connectors as necessary.
4. Reinstall the console panel.

Title **BATTERY MAINTENANCE FOR IN–STOCK VEHICLES**

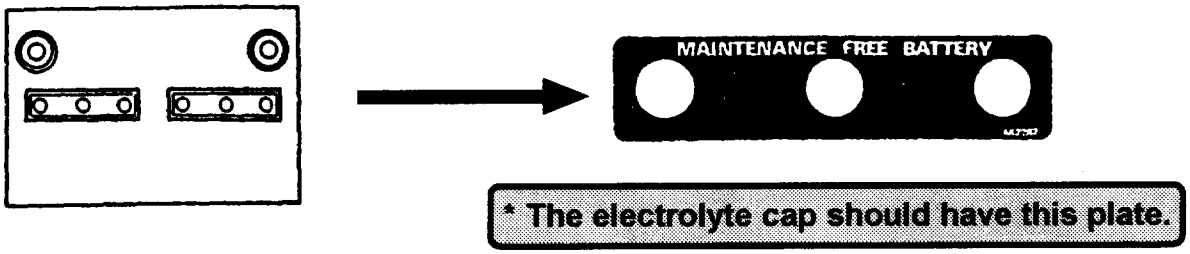
A battery in a stored vehicle is subject to conditions which can reduce its performance and life. These conditions include storage period, temperature, parasitic drain, and battery load. Because of these factors, battery inspection and maintenance are required in order to ensure proper operation and optimal battery life.

As a matter of policy, Lexus does not provide battery warranty coverage for discharged and/or failed batteries due to lack of maintenance; it is the dealer's responsibility to maintain the specified state of charge of the vehicle's battery while in stock.

BATTERY MAINTENANCE RECOMMENDATIONS:

1. A monthly battery inspection is required under normal conditions. If your dealership is located in an area subject to extreme temperatures (hot or cold), periodic maintenance may need to be performed on a more frequent basis. When maintenance requires removal of filler plugs on vehicles with "maintenance free" batteries, new labels are available via the following part numbers:

PART NUMBER	QUANTITY	APPLICABLE BATTERY SIZE
28898–50130	2	80D26L
28898–50140	2	75D31L and 95D31L



* The electrolyte cap should have this plate.

BATTERY MAINTENANCE RECOMMENDATIONS (Cont'd):

2. To reduce battery drain during storage of in–stock vehicles, the dome light fuse of each vehicle should be removed. It is recommended that the fuse remain disconnected until time of delivery. This procedure can reduce battery discharge 60–80 percent. **Additionally, for vehicles in storage for 30 days or more, the negative battery cable should always be disconnected to further reduce battery discharge.**

NOTE 1: For your reference, the electrical systems made inoperative by removing the dome light fuse, are indicated in the appropriate Electrical Wiring Diagram.

NOTE 2: Additional battery maintenance information is available in the Lexus Warranty Reference And Administration Procedures Manual (Policy # 4.10 pages 1–4).

Two test procedures are currently available for evaluating battery performance. These include:

1. Open–Circuit Voltage Test Procedure

2. Specific Gravity Test Procedure

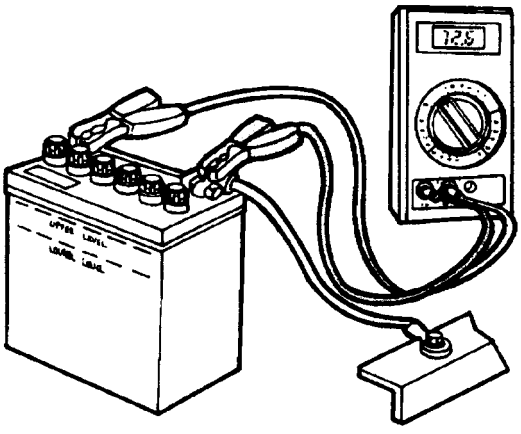
OPEN–CIRCUIT VOLTAGE TEST PROCEDURE:

1. If the battery has recently been charged or if the engine has been run in the last hour, there will be a surface charge on the battery. To remove the surface charge, turn on the headlights for two minutes.

NOTE: Turn off headlights before proceeding with test.

2. With the key out of the ignition, all doors closed, and all electrical accessories off, connect the voltmeter across the battery terminals.

3. Read the voltmeter.



Compare measured voltage to open circuit voltage chart:

OPEN CIRCUIT VOLTAGE (OCV) CHART

RESULTS	OPEN CIRCUIT VOLTAGE	% STATE OF CHARGE	EQUIVALENT SPECIFIC GRAVITY
OK	12.65 Volts	100%	1.265 @ 80°F
	12.40 Volts	75%	1.225 @ 80°F
NG	Less Than 12.40 Volts	<= 50%	1.190 @ 80°F

TEST RESULTS:

1. A fully charged battery will have an open–circuit voltage of at least 12.6 volts.

2. The minimum acceptable voltage is 12.4 volts. If the reading is less than 12.4 volts, charging is necessary. Use the slow charging procedure described below.

CHARGING PROCEDURE:

1. If the test results indicate a charge is necessary, a slow–constant 10–amp or less charge rate is recommended until the battery reaches a full state of charge. Be sure to periodically check and maintain the proper electrolyte levels during charging.

CAUTION: Insure that the charger is turned off before connecting or disconnecting the leads. Always connect the negative lead last. When disconnecting, always disconnect the negative lead first.

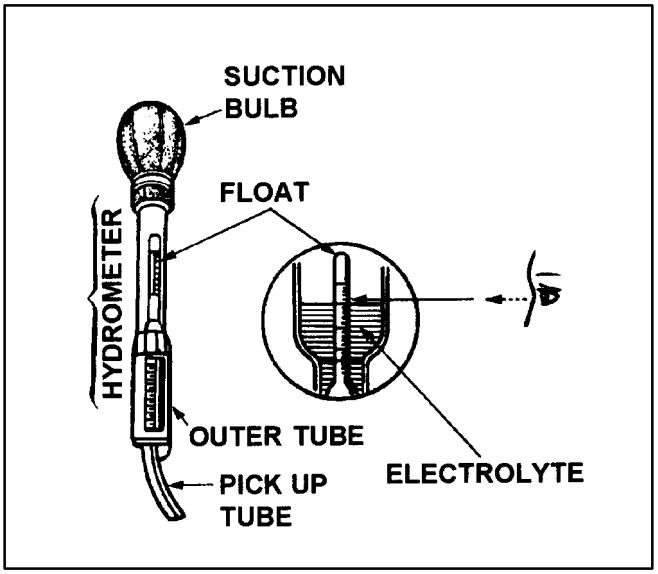
NOTE: For additional information on battery inspection and testing procedures, see “Battery/Starter Circuit Inspection And Testing Procedures” in the “Technicians Handbook For Electrical Circuits And Diagnosis Course” (MDC # 00246–42917).

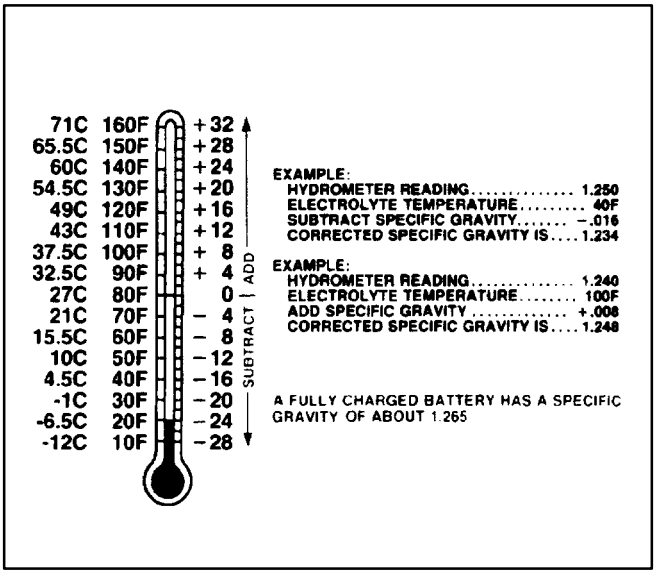
SPECIFIC GRAVITY TEST PROCEDURE:

1. Remove the vent caps or plugs from the battery cells.

2. Take the specific gravity readings with a temperature corrected hydrometer. Follow the procedure described by the manufacturer of your hydrometer.

3. Record the specific gravity of each cell.





TEST RESULTS:

1. A fully charged battery will have a specific gravity reading of approximately 1.265 at 80°F.

2. The minimum standard for this test is a specific gravity reading of 1.190. If the reading is less than 1.190, charging is necessary. Use the slow charging procedure described in this TSIB.

3. A difference of 0.050 or more between highest and lowest cell readings indicates a problem battery. Should you encounter this situation, attempt one recharge using the slow charging procedure described in this TSIB. Allow the battery to stabilize at least 20 minutes after the charge cycle is complete. Recheck the specific gravity of each cell. If the deviation in cell readings still exceeds 0.050, the battery must be replaced.

4. After battery service is complete, reinstall the battery caps/plugs and replace the plug labels as applicable.

LEXUS

TECHNICAL SERVICE INFORMATION

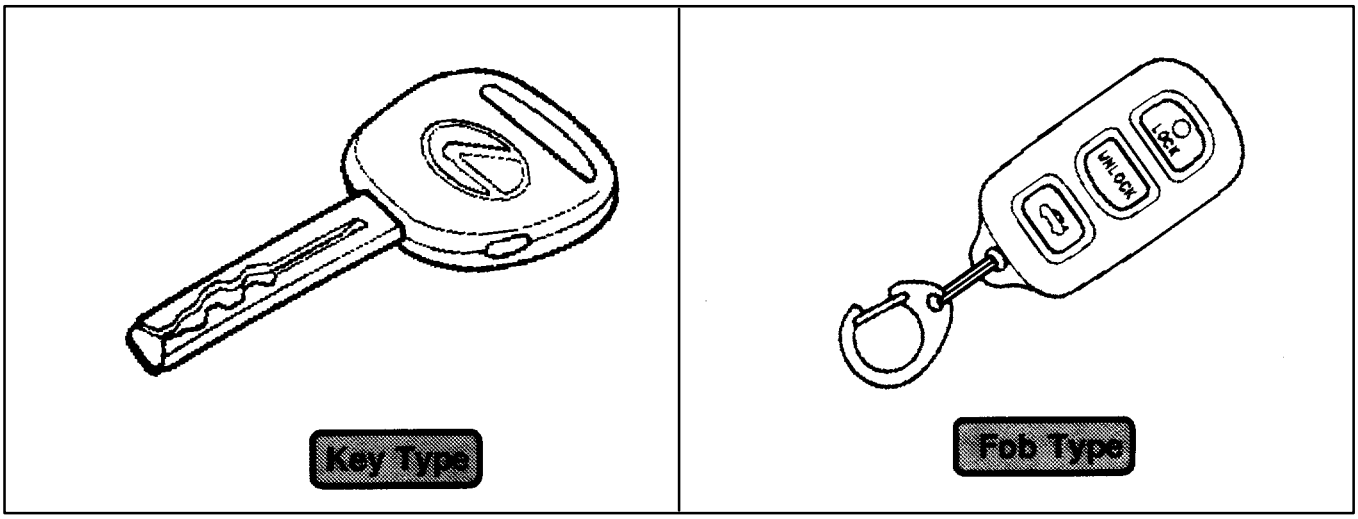
REF: ELECTRICAL

NO: EL003–96

DATE: AUGUST 9, 1996

MODEL: LS 400, GS 300, SC 300, SC 400, ES 300

The following information applies to all 1996 and previous models, except the LX 450, and to both transmitter types shown below:



FEATURES AND LIMITATIONS:

The following features and limitations of Lexus wireless door lock control systems must be thoroughly understood before proceeding with diagnosis.

In the following information, the word **"transmitter"** is used to describe the signal generating device that is an integral part of the key or fob and **"receiver"** is used to describe the wireless door lock ECU.

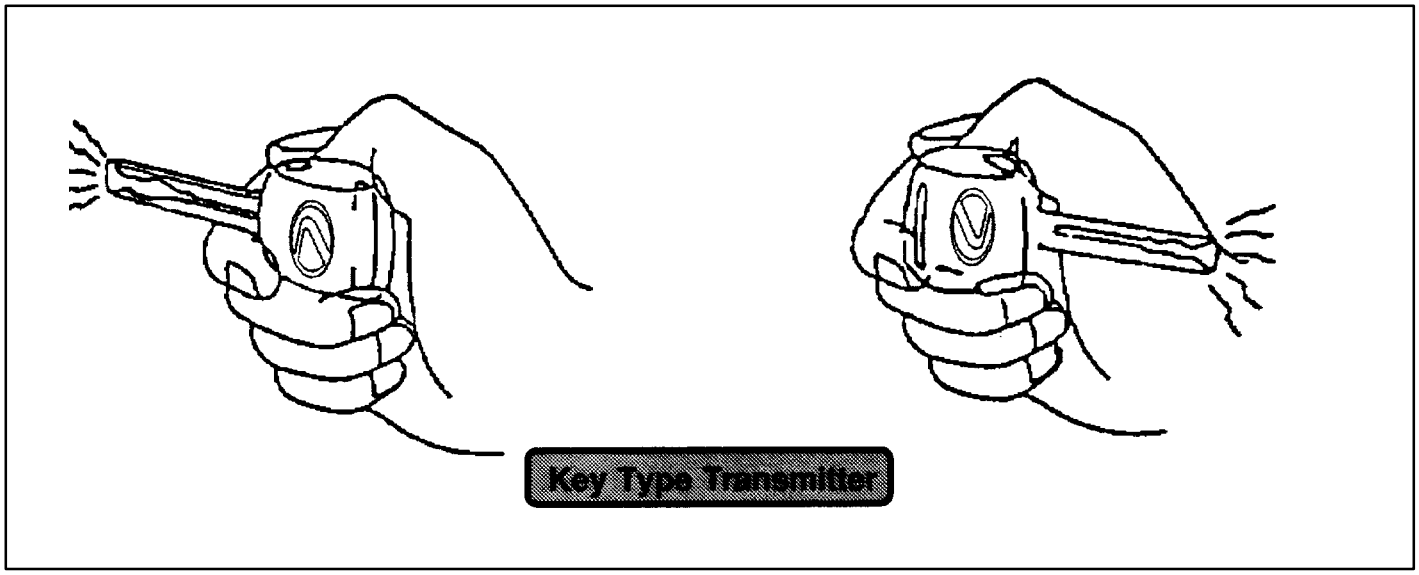
TRANSMITTER CHARACTERISTICS AND RANGE:

1. Weak radio frequency (RF) waves are used by the transmitter to operate the wireless door lock control system. Strong radio waves or RF noise from other sources may shorten the operating distance or prevent operation.

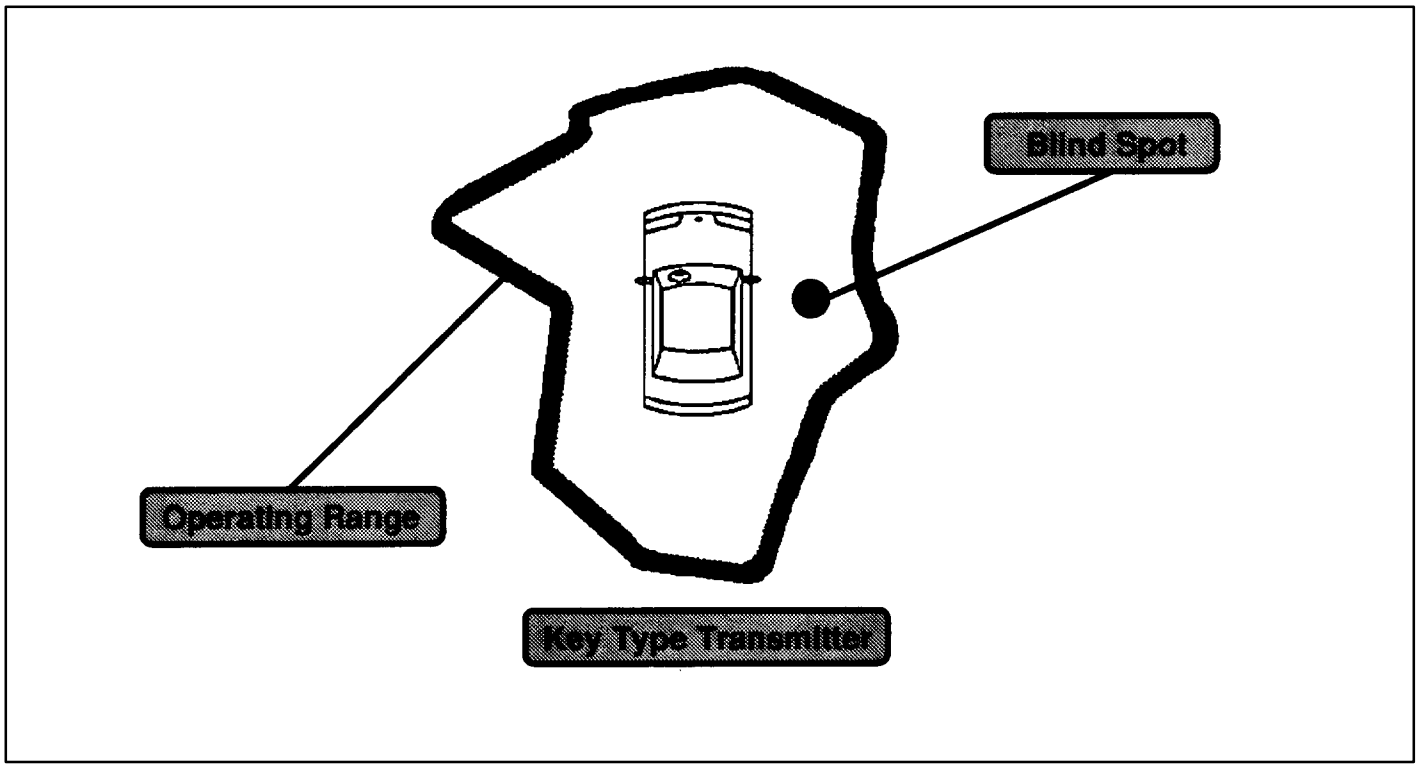
2. When the transmitter battery is weak, operation may be normal for the first one or two activations and then stop as the remaining battery capacity is depleted.

TRANSMITTER CHARACTERISTICS AND RANGE (Cont'd):

3. On key type transmitters, the metal portion of the key serves as an antenna during transmitter operation. For optimum performance, the path between the metal portion of the key and the vehicle should not be obstructed by the operator's hand or other objects.



4. On key type transmitters, the operating distance of the transmitter varies from front to back and side to side as shown below.



NOTE: Diagram represents only a generalized view which may vary depending on the model and operating conditions. Fob type transmitters accommodate a larger transmitter and battery which typically provide increased operating range.

SPECIAL FUNCTIONS:

1. Transmitter Auto Power Off Function *:

Transmitting stops automatically after continually pressing the transmitter button for a fixed amount of time.

- Key type transmitter *: 0.8 – 1.2 seconds
- Fob type transmitter: approximately 10 seconds

***** This power saving feature was added to key type transmitters after the following VINs:

PRODUCTION EFFECTIVE:

MODEL	VIN
SC 300	JT8JZ31C**0017065
SC 400	JT8UZ30C**0035393
GS 300	JT8JS47E**0021034
LS 400	JT8UF11E**0145224
ES 300	JT8GK13T**0001033

2. Auto Lock Function:

If the vehicle is unlocked with the transmitter, the doors will automatically relock if no door is opened within 30 seconds.

3. Chatter Prevention Function:

When the receiver picks up the correct specified code the first time, it rejects subsequent code signals. It stops reception until transmission is suspended for 0.5 seconds or longer to prevent door lock chattering.

4. Transmitter Switch Misoperation Prevention Function:

When the ignition key is in the ignition key cylinder, the receiver will suspend signal reception.

WIRELESS DOOR LOCK CONTROL SYSTEM DIAGNOSIS:

IMPORTANT: All wireless diagnosis must start at this point and proceed as directed. Diagnostic information from this point forward assumes that all preceding steps have been properly performed. If steps are performed improperly or started beyond this point, an erroneous diagnosis may be obtained.

Start here by performing the following power door lock control and theft deterrent system checks:

1. Verify that both interior power door lock control switches will lock and unlock **all** doors.
2. Verify that driver and passenger door key locks will lock and unlock* **all** doors.
3. Verify that the theft deterrent system will arm when all doors are closed and locked.

***** Driver's door key lock must be cycled twice to unlock all doors.

If any of the above items do not operate normally, refer to either the (Power) Door Lock Control System or Theft Deterrent System section of the repair manual for diagnosis. The wireless feature is an enhancement to the power door lock control system and is dependent on proper operation of the power door lock control and theft deterrent systems.

Choose the applicable problem area from the chart shown below and refer to the listed procedure for diagnosis.

Matrix Chart Of Problem Symptoms:

PROBLEM	PROCEDURE	PAGE NUMBER
Wireless inoperative at all times	A	5
Wireless intermittently inoperative	B	7
Wireless has reduced operating distance	B	7
Wireless inoperative at specific locations	C	8

PROCEDURE A – WIRELESS INOPERATIVE AT ALL TIMES:

1. Check battery capacity (See Page 9 – Battery Capacity Check Procedure).

2. Set FM radio to 94.9 MHz* and press the transmitter button while holding transmitter near radio antenna. If noise interference cannot be heard on the radio when the transmitter is depressed, the transmitter is faulty. This test is only used to identify a faulty transmitter, a positive result does not guarantee transmitter integrity or sufficient battery capacity.

* **This test cannot be performed on and does not apply to vehicles equipped with a fob type transmitter which uses a frequency that does not have a multiple in the FM frequency range.**

REMINDER: Transmitters equipped with the Auto Power Off Function quit transmitting 0.8 – 1.2 seconds after depressing the transmitter button (see Page 3).

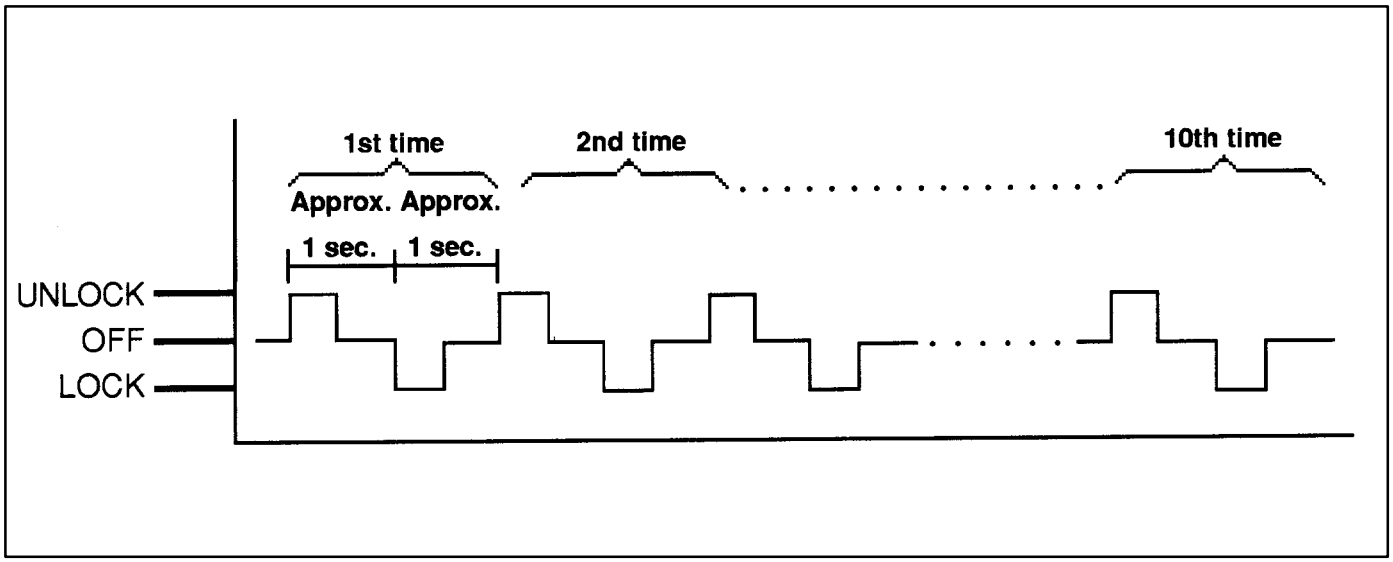
3. Enter diagnostic mode:

   a. Open driver's door.

   b. Lock all doors using the interior power door lock switch.

   c. Insert key in ignition once and remove.

   d. Cycle the door locks (unlock and lock = 1 cycle) using the interior power door lock switch 10 times as shown below (if door locks are cycled too slow or too fast, diagnostic mode will not be initiated).



4. Door locks should cycle (unlock/lock) one time automatically to confirm that diagnostic mode has been entered. If door locks do not cycle, repeat Step 3.

NOTE: If attempts to enter the diagnostic mode fail repeatedly, faulty vehicle harness wiring or a faulty receiver may be the cause. Refer to Matrix Chart of Problem Symptoms in the Wireless Door Lock Control System section of the repair manual for diagnosis.

PROCEDURE A – WIRELESS INOPERATIVE AT ALL TIMES (Cont'd):

5. Within 10 seconds of entering diagnostic mode, press the transmitter button once and count the number of door lock (unlock/lock) cycles. Refer to the applicable chart below:

Non–Programmable Type (Pre–1995):

DOOR LOCK CYCLES	DIAGNOSIS	REPAIR PROCEDURE
0	Wireless antenna, receiver or vehicle wiring harness problem	First perform antenna check (Page 12). If antenna is OK, refer to "Wireless Door Lock Control System" section of Repair Manual for diagnosis.
1	Mismatched key and ROM	Replace key and ROM.
2	Faulty transmitter	Replace transmitter.

Programmable Key Type (1995 and later):

DOOR LOCK CYCLES	DIAGNOSIS	REPAIR PROCEDURE
0	Wireless antenna, receiver or vehicle wiring harness problem	First perform antenna check (Page 12). If antenna is OK, refer to "Wireless Door Lock Control System" section of Repair Manual for diagnosis.
1	Normal	None
2	Transmitter not registered	Key Registration (see Page 11)

Programmable Fob Type (1995 and later):

DOOR LOCK CYCLES	DIAGNOSIS	REPAIR PROCEDURE
0	Faulty transmitter or receiver	Continue with procedure below
1	Transmitter not registered	Key Registration (see Page 11)

Repeat diagnostic mode initiation procedure (Steps 3 through 5) with a known good tranmitter. Do **NOT** register the transmitter first. Count the number of door lock cycles (unlock/lock) and refer to the table below:

DOOR LOCK CYCLES	DIAGNOSIS	REPAIR PROCEDURE
0	Faulty reciever	Replace
1	Original transmitter faulty	Replace original transmitter

PROCEDURE B – WIRELESS IS INTERMITTENTLY INOPERATIVE OR HAS REDUCED OPERATING DISTANCE:

1. Review the Transmitter Characteristics and Range section on Pages 1 and 2.

2. Check battery capacity (see Page 9 – Battery Capacity Check Procedure).

3. Inspect wireless antenna* (see Page 12 – Wireless Antenna Inspection Procedure).

***** This step only applies to key type transmitters (see illustration below). Fob type transmitter systems use an internal antenna in the receiver (1995 and later LS 400 and 1996 and later SC 300/400).

4. If a complaint of intermittent operation **can** be verified, the transmitter is faulty.

5. If a complaint of intermittent operation **cannot** be verified, check for intermittent sticking of the unlock warning switch using the following method:

   a. Insert key in ignition.

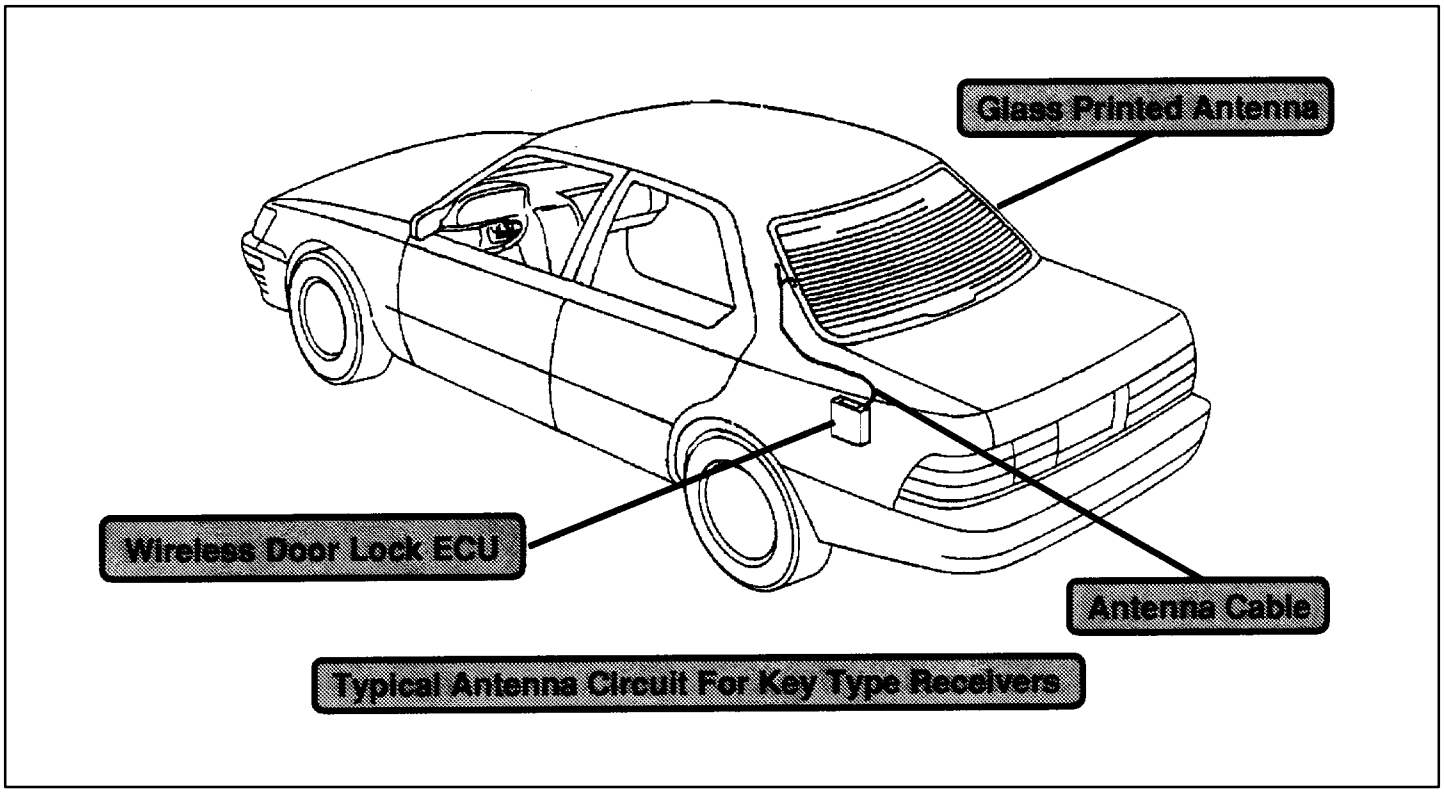
   b. Turn ignition switch from lock to accessory and back to lock.

   c. Remove key.

   d. Check remote lock/unlock operation.

   e. Repeat steps “a” – “d” at least 10 times.

   If remote becomes inoperative during step “d”, unlock detection switch or ignition key cylinder is faulty.



PROCEDURE C – WIRELESS INOPERATIVE AT SPECIFIC LOCATIONS:

This procedure is used to check for the presence of electrical interference at specific locations that may interfere with wireless transmitter/receiver operation. This test is used only to verify the presence of electrical interference at a specific location and **does not** lead to a repair.

IMPORTANT: Verify that the wireless door lock control system operation is normal in **non–compliant areas**. If the system is inoperative at all locations, do not continue with this procedure, refer to Procedure A – Wireless Inoperative At All Times.

Perform the following procedure in the area where the problem is occurring:

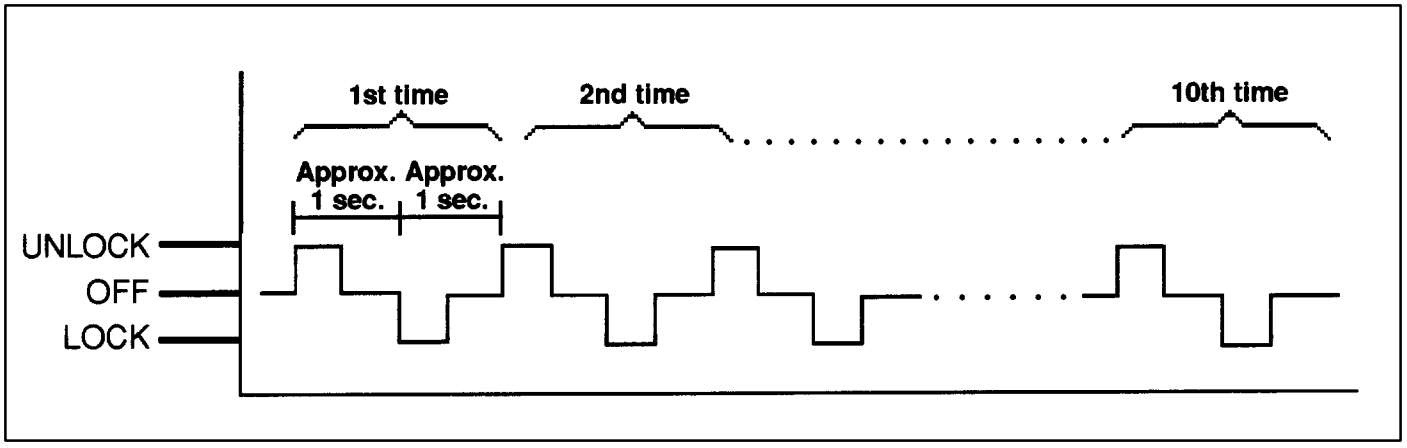
1. Enter the diagnostic mode:

   a. Open the driver's door.

   b. Lock all doors using the interior power door lock switch.

   c. Insert key in ignition once and remove.

   d. Cycle the door locks (unlock and lock = 1 cycle) using the interior power door lock switch 10 times as shown below (if door locks are cycled too slow or too fast, diagnostic mode will not be initiated).



2. Door locks should cycle (unlock/lock) one time automatically to confirm that diagnostic mode has been entered. If door locks do not cycle, repeat Step 1.

3. Within the next 10 seconds, count the number of door lock (unlock/lock) cycles and refer to the chart below:

DOOR LOCK CYCLES	DIAGNOSIS
0	No interference at this time
1 or 2	Outside electrical interference

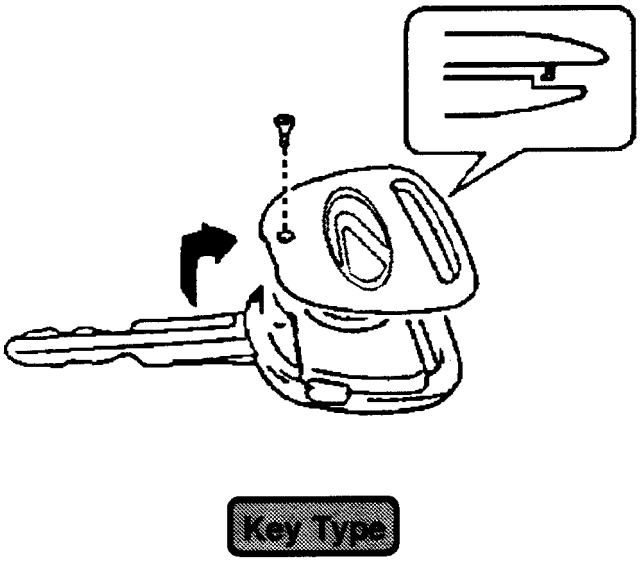
BATTERY CAPACITY CHECK PROCEDURE:

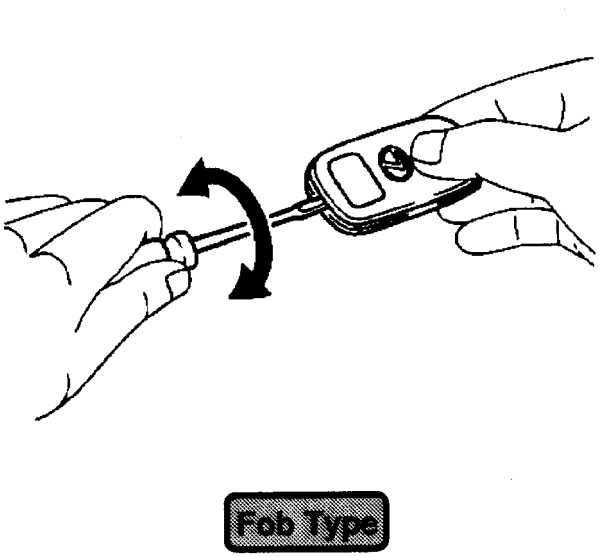
The lithium battery used in the transmitter will measure a voltage of 2.5 volts or more until the battery capacity is fully consumed. To accurately determine the remaining battery capacity, a load must be applied.

NOTE: Make all battery checks at room temperature (low temperatures may adversely affect output).

1. Key Type Transmitters:
   Remove screw, pry cover up slightly, and push cover away from portion of the key.

   Fob Type Transmitters:
   Insert a screwdriver and twist to remove cover.



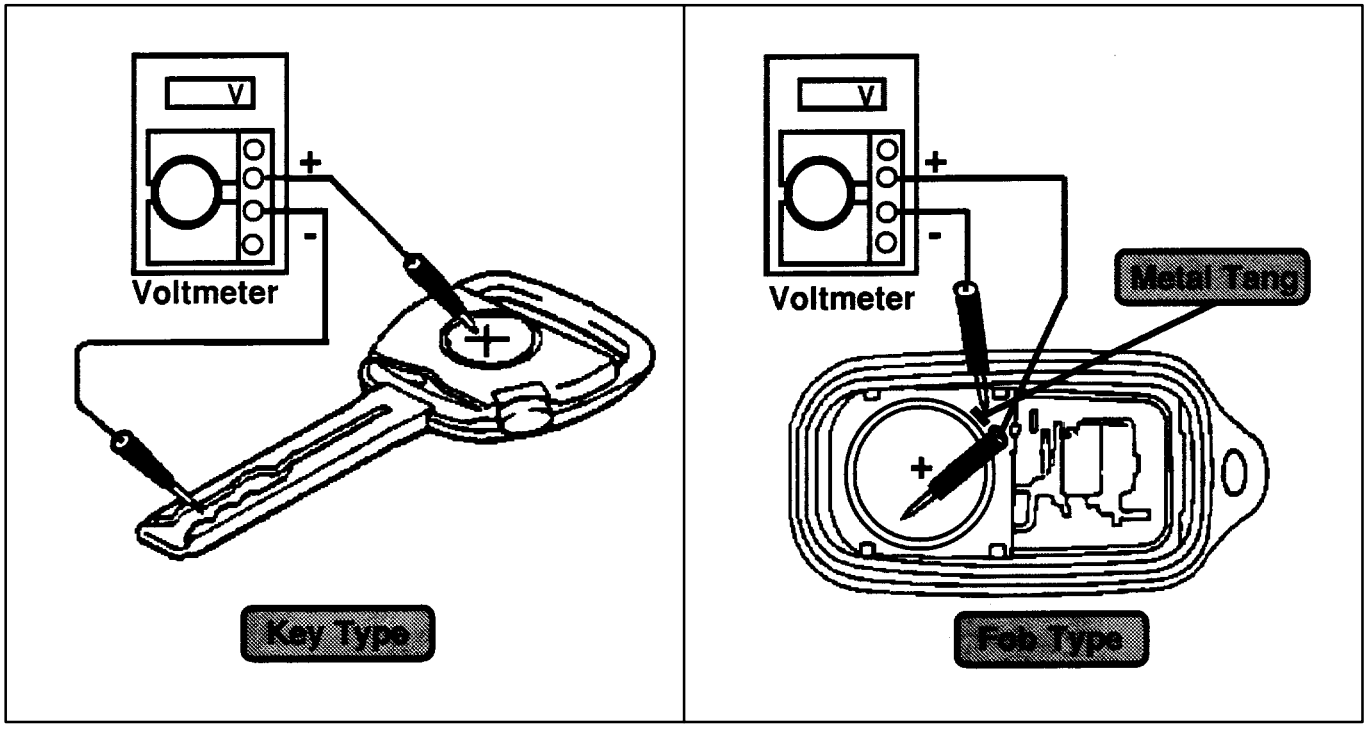


2. Inspect the battery terminals, transmitter case, and cover for corrosion or visible damage. Replace transmitter if necessary.

3. Depress the transmitter button for 1 second and then release for 1 second. Repeat this process 5 times.

BATTERY CAPACITY CHECK PROCEDURE (Cont'd):

4. Connect the positive (+) lead from the tester to the transmitter battery (+) and the negative (–) lead as shown.



5. Depress the transmitter button again and measure the voltage. Verify that the voltage drops when the transmitter button is depressed (no voltage drop may indicate a faulty transmitter). Transmitters equipped with the Auto Power Off Function (see Page 3) will only load the battery for 0.8 – 1.2 seconds after the transmitter button is depressed (voltage must be checked during this time). If loaded battery voltage is below 2.1 volts, replace the battery.

BATTERY INFORMATION:

TRANSMITTER TYPE	BATTERY PART NUMBER	BATTERY TYPE
Key	89706–50010	BR 1216
Fob	89745–50010	CR 2016

KEY REGISTRATION (1995 AND LATER MODELS):

Set initial conditions:

- Key out of ignition
- Driver's door open and unlocked
- All other doors closed and locked

Registration Procedure:

NOTE: Perform all steps with no more than a five second interval between steps.

1. Insert key into ignition for 1 second and remove.
2. Cycle (lock and unlock = 1 cycle) the driver's interior power door lock switch 5 times (1 second in each position).
3. Close and reopen driver's door.
4. Cycle the driver's interior power door lock switch 5 times (1 second in each position).
5. Insert key into ignition and cycle the ignition on and off:
   - One time to add a new code.
   - Two times to add a new code and erase all previously stored codes.
   - Three times to check how many codes are currently registered.
6. Remove key from ignition. Receiver should respond by cycling the door locks a corresponding number of times:
   - One time to add a new code.
   - Two times to add a new code and erase all previously stored codes.
   - One to four times (slowly) to indicate how many codes are registered (end).

NOTE: If no response is given, start over at the beginning of this procedure.

7. Press the transmitter button (any button on fob type transmitters) for 1 second.

NOTE: Receiver should respond by cycling door locks once. If no response is given, start over at the beginning of this procedure.

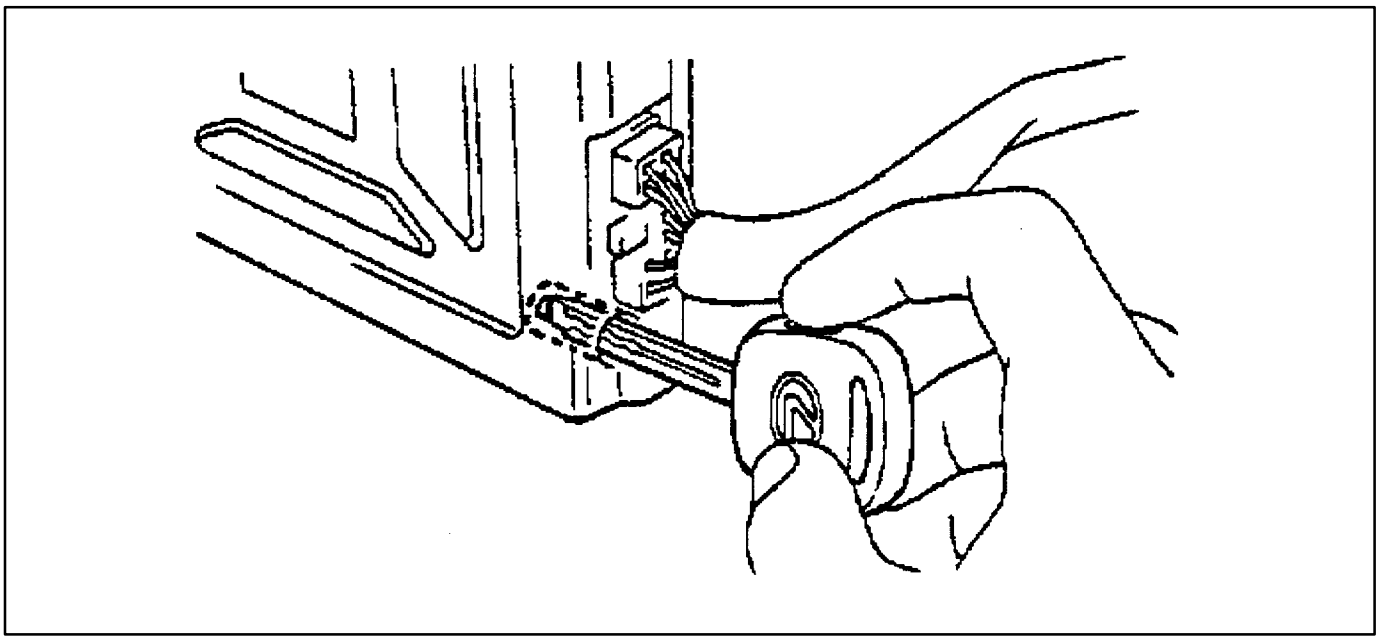
8. Close and reopen driver's door.
9. Press the transmitter button for 1 second. Receiver should respond by cycling door locks:
   - One time to confirm operation is complete.
   - Two times to signal that the code is already registered.

WIRELESS ANTENNA INSPECTION PROCEDURE:

If wireless operation is verifiably inoperative, use **Procedure A**, otherwise use **Procedure B**.

Procedure A:

Remove antenna cable from receiver. Insert key into receiver antenna port as shown below. Press transmitter button several times while monitoring door lock operation.



If door locks are still inoperative, the antenna circuit is not the primary problem.

If door lock operation is consistent:

1. Inspect rear glass for damaged or broken wires and replace glass if necessary.
2. If rear glass is OK, replace wireless antenna cable.

Procedure B:

Perform the following checks:

1. Inspect rear glass for damaged or broken wires and replace glass if necessary.
2. Inspect antenna cable connections at rear glass and at receiver.
3. Physically inspect antenna cable for pinches or breaks and replace cable if necessary.
4. Check continuity through inner coaxial cable wire and replace cable if necessary.

WARRANTY INFORMATION:

OPCODE	DESCRIPTION	TIME	OPN	T1	T2
891101	Transmitter replacement includes key registration or installation of the ROM in the ECU where applicable and all necessary checks and tests	0.3	897XX–50XXX	95	71
EL6002	For VCV10 Transmitter replacement includes the ROM in the ECU where applicable and all necessary checks and tests	0.2	897XX–50XXX	95	71
EL6003	Receiver replacement including all necessary checks and tests	0.3	5974X–50XXX	95	71
830651	Ignition key cylinder R&R including all necessary checks and tests	*	84450–XXXXX	72	71
672101	Door key (unlock/lock) switch R&R including all necessary checks and tests	*	69052–XXXXX	95	71

NOTE: Replacement of the transmitter battery is not warrantable as per the Lexus Warranty Policy & Procedures Manual.

***** Refer to the specific model in the Lexus Flat Rate Manual for repair time.

LEXUS
Technical Service Information Bulletin
March 7, 1997

Title:

1997 PAINT AND REFINISH FORMULA CODES

Models:

All Models

TSIB

Introduction The following is a listing of 1997 Lexus paint codes and corresponding refinish formula codes for 8 (eight) refinish paint companies — BASF, DuPont, PPG, Sherwin Williams, Sikkens, Spies Hecker, ICI and Standox* (Paint and refinish formula codes are located on page 2).

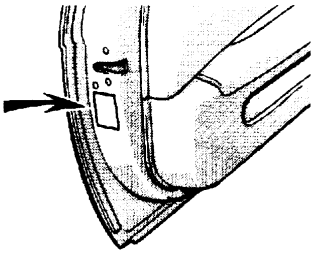
* **Standox** uses the Lexus color code number as their paint code identification number.

Example: The Standox paint code number for Lexus color code 202 (Black Onyx) is 202.

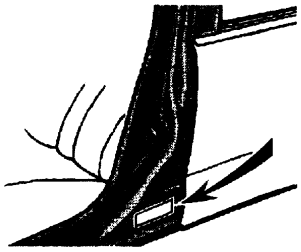
NOTE:
The body color code is indicated on the Certification Label which is located in the driver's door area as shown below.

LS 400

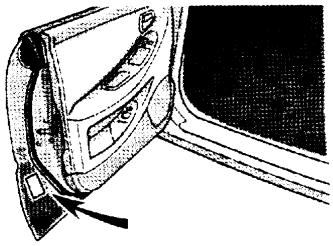
SC 400/300



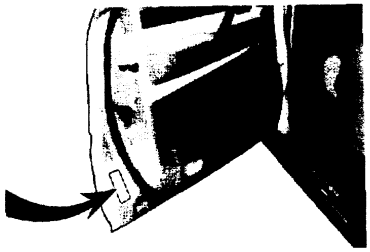
GS 300



ES 300



LX 450



Please contact your local paint representative for the actual paint mixing formulas or for additional assistance in color matching.

Please provide a copy of this information to your Lexus Collision Repair Center.

Paint Codes & Color Names

COLOR CODE	COLOR NAME	BASF	DUPONT	PPG	SHERWIN WILLIAMS	SIKKENS	SPIES-HECKER	ICI
045	Super White	TOY045	H8931	90547	38712	TOY045	16004	NP65
051	Diamond White Pearl	TOY051	L9246 L9247	90822 90826	42872 42873	TOY051	98125 16329	PF76B TD86G
1A0	Platinum Metallic	TOY1A0	N9923	4896	49700	TOY1A0	70809	6ED5B
199	Alpine Silver Metallic	TOY199	L9990	4900	48976	TOY199	70706	5TX1B
1B1	Champagne Pearl	TOY1B1	F2186	5252	53074	TOY1B1	20699	FLT9B
1B2	Antique Sage Pearl	TOY1B2	F2201	5324	54757	TOY1B2	73622	HRE5B
202	Black Onyx	TOY202	F0220	9300	1738SW 8803MS	TOY202	73935	TH21B
3K7	Shadow Rose Quartz	TOY3K7	H9650	4615	46620	TOY3K7	99745	PM71B
3L2	Renaissance Red	TOY3L2	L9992	4902	48978	TOY3L2	30491	5TX3B
3L3	Ruby Red Pearl	TOY3L3	F0294	5042	51162	TOY3L3	30914	6KD3B
3L4	Bordeaux Pearl	TOY3L4	F1803	5164	52886	TOY3L4	33135	ARD1B
4M7	Oyster Pearl	TOY4M7	K9968	27579	48841	TOY4M7	10655	5MK6B
4M9	Cashmere Beige Metallic	TOY4M9	N9924	4903	49702	TOY4M9	20261	6ED6B
4N1	Crystal Quartz Metallic	TOY4N1	F1052	5057	51185	TOY4N1	80373	7VS8B
6M1	Dark Emerald Green Prl.	TOY6M1	W9542	4595	46589	TOY6M1	99746	PM72B
6N0	Moonstone Pearl	TOY6N0	F1053	5049	51187	TOY6N0	61495	7VT1B
6N9	Ebony Teal Pearl	TOY6N9	F1054	5050	51189	TOY6N9	61496	7VT2B
6P2	Classic Green Pearl	TOY6P2	F1850	5173	52889	TOY6P2	61953	BAA7B
6P3	Deep Jewel Green Pearl	TOY6P3	F1805	5166	52887	TOY6P3	61928	ARD3B
6P7	Silver Jade Metallic	TOY6P7	F2719	5332	54755	TOY6P7	64197	HRE3B
8L1	Star Sapphire Pearl	TOY8L1	F1055	5052	51191	TOY8L1	53765	7VT3B
8L3	Blue Velvet Pearl	TOY8L3	F2239	5328	54032	TOY8L3	54676	FRC7B
8L5	Royal Sapphire Pearl	TOY8L5	F2728	5329	54485	TOY8L5	55068	HDJ4B

Paint Applications & Types

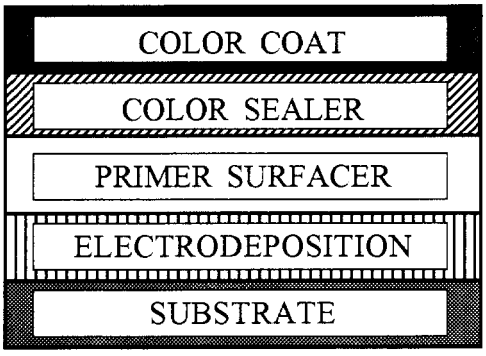
COLOR CODE	LS 400	SC 400	SC 300	GS 300	ES 300	LX 450
045						
051						
1A0						
199						
1B1						
1B2					NEW	
202						
3K7		NEW	NEW			
3L2						
3L3						
3L4						
4M7					NEW	
4M9						
4N1						
6M1						
6N0						
6N9						
6P2		NEW	NEW			
6P3						
6P7	NEW					
8L1						
8L3					NEW	
8L5		NEW	NEW			

Paint Film Cross Sections

PAINT TYPE #1

Solid Color – Non Clear Coat

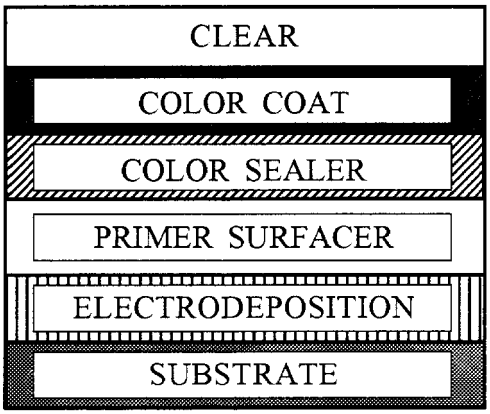
Codes: 202 (Except LX 450)



PAINT TYPE #2

Metallic or Mica Color – Clear Coat

Codes: 1A0, 199, 3K7, 3L3, 3L4 4M7, 4M9 (Except LX 450), 4N1, 6N0, 6P2, 6P3, 6P7, 8L1, 8L3, 8L5

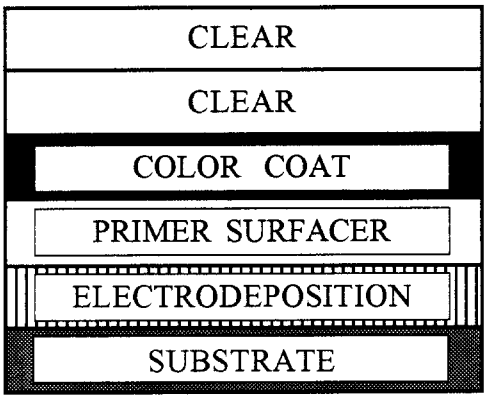


Paint Film Cross Sections (Continued)

PAINT TYPE #3

MIO Color – Two Clear Coats

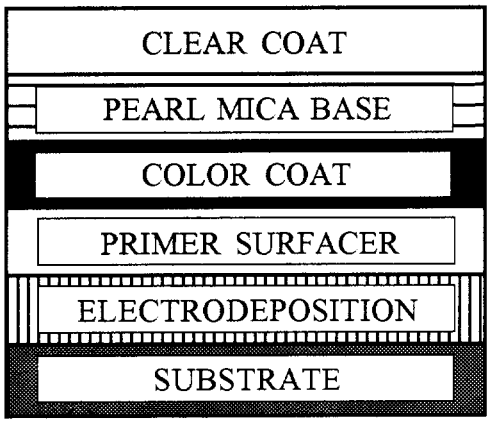
Codes: 6N9



PAINT TYPE #4

Pearl Mica Color – One Clear Coat

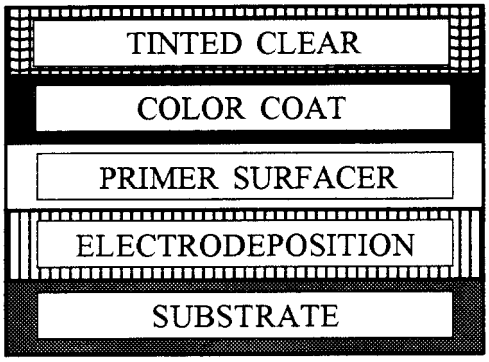
Codes: 051



PAINT TYPE #5

Solid Color – Tinted Clear Coat

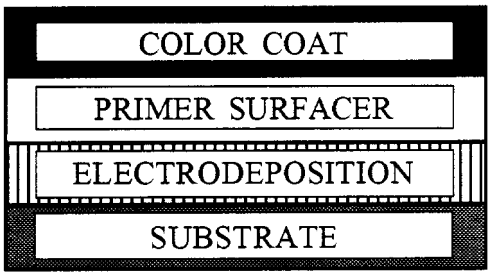
Codes: 3L2



PAINT TYPE #6

Solid Color – Non Clear Coat

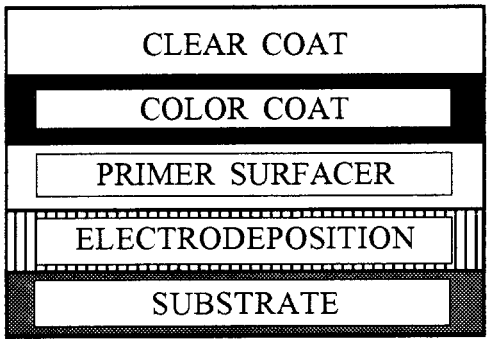
Codes: 045, 202 (LX 450 only)



PAINT TYPE #7

Metallic or Mica Color – Clear Coat

Codes: 1B1, 1B2, 4M9 (LX 450 only), 6M1



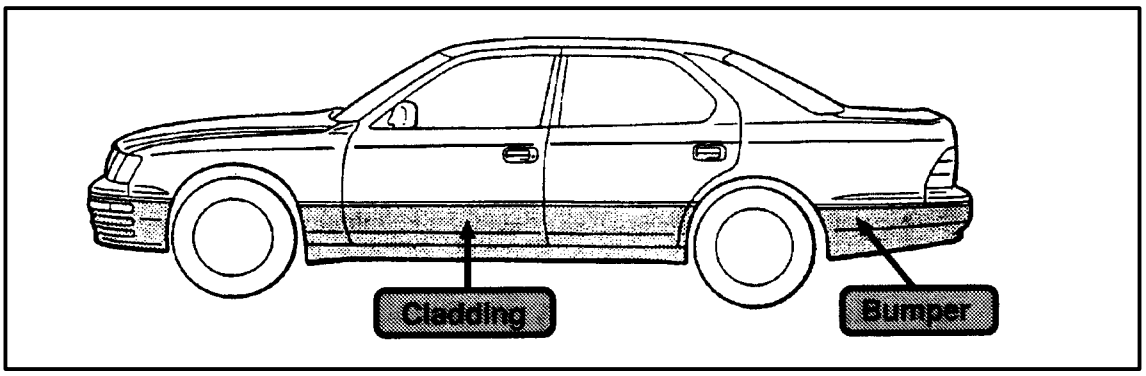
Title **1997 MODEL YEAR PAINT COLORS**

The following information outlines the single and two–tone painting schemes used on 1997 model year Lexus models.

PAINTING METHOD:

Single Color – The cladding and bumpers are painted with the same color.

Two–Tone Color – The claddings and bumpers are painted with a different color from the body color to achieve a two–tone painting scheme.



LS 400 TWO–TONE COLORS:

BODY COLOR	CLADDING COLOR	SINGLE/TWO–TONE NAME
051	UCA29	Diamond White Pearl/Warm Silver Metallic
199	UCA75	Alpine Silver Metallic/Gray Silver Metallic
202	UCA31	Black Onyx/Dark Gray Metallic
4M9	UCA77	Cashmere Beige Metallic/Beige Metallic
4N1	UCA78	Crystal Quartz Metallic/Dark Taupe Metallic
6N0	UCA76	Moonstone Pearl/Medium Gray Metallic
6N9	UCA31	Ebony Teal Pearl/Dark Gray Metallic
6P3	6N0	Deep Jewel Green Pearl/Moonstone Pearl
6P7	UCAA5	Silver Jade Pearl/Greenish Gray Pearl
8L1	UCA32	Star Sapphire Pearl/Dark Bluish Gray Metallic

GS 300 SINGLE AND TWO–TONE COLORS:

BODY COLOR	CLADDING COLOR	SINGLE/TWO–TONE NAME
051	UCA29	Diamond White Pearl/Warm Silver Metallic
199	199	Alpine Silver Metallic (One Color)
202	202	Black Onyx (One Color)
3L3	3L3	Ruby Pearl (One Color)
4M9	4M9	Cashmere Beige Metallic (One Color)
6N0	6N0	Moonstone Pearl (One Color)
6N9	UCA93	Ebony Teal Pearl/Warm Gray Mica Metallic
8L1	8L1	Star Sapphire Pearl (One Color)

ES 300 TWO–TONE COLORS:

BODY COLOR	CLADDING COLOR	TWO–TONE NAME
051	UCA46	Diamond White Pearl/Light Grayish Beige Metallic
1B2	UCAA3	Antique Sage Pearl/Medium Green Gray Metallic
202	UCA45	Black Onyx/Bluish Gray Metallic
3L3	3K2	Ruby Pearl/Dark Red
4M7	UCAA2	Oyster Pearl/Light Brown Gray Metallic
4M9	UCA46	Cashmere Beige Metallic/Light Grayish Beige Metallic
6P2	UCA45	Classic Green Pearl/Bluish Gray Metallic
8L3	UCA45	Blue Velvet Pearl/Bluish Gray Metallic

ES 300 SPECIAL EDITION COLORS:

BODY COLOR	CLADDING COLOR	TWO–TONE NAME
046	UC178	Opal White Pearl/Light Rose Silver Metallic
176	UC196	Silvermist Metallic/Pewter Pearl
202	UC138	Black Onyx/Dark Gray Metallic

LX 450 TWO–TONE COLORS:

BODY COLOR	CLADDING COLOR	TWO–TONE NAME
045	UCA46	Super White/Light Grayish Beige Metallic
1B1	UCA46	Champagne Pearl/Light Grayish Beige Metallic
202	UCA31	Black Onyx/Dark Gray Metallic
4M9	UCA46	Cashmere Beige Metallic/Light Grayish Beige Metallic
6M1	UCA31	Dark Emerald Pearl/Dark Gray Metallic

REPAIR PROCEDURE:

Since heat deformation of the cladding occurs more easily than bumpers, repair and refinishing of these parts is not recommended. If original parts are to be refinished, observe the following precautions during the refinish/drying process:

1. To prevent cladding warpage, firmly hold the cladding in place and keep drying temperature below 50°C (122°F).

2. Since the cladding and bumpers are made of a flexible plastic urethane material, use a 2–part urethane finish paint system with plasticizer for all bumper/cladding repairs.

LEXUS

Technical Service Information Bulletin

February 28, 1997

Title:

PUBLICATION CORRECTION INFORMATION

Models:

'95 - '97 LS 400, '97 GS 300, '97 ES 300, '97 LX 450

TSIB

PG001-97

PRODUCT GENERAL INFORMATION

Introduction

Corrections have been made in the repair manuals listed below. A brief Description of each correction is provided. For further details, refer to the appropriate Correction Page (attached to this TSIB for Dealer Area Office distribution). These pages should be attached in the corresponding publication.

NOTE:
When ordering a technical publication (i.e. Repair Manual, Electrical Wiring Diagram) From the MDC, any Correction Page(s) associated with that particular Publication, will be automatically included with your order.

Additional Correction Pages are available through the Dealer Support Material Network (MDC NPM System) via the corresponding part numbers from the following table:

Parts Information

PUBLICATION	NUMBER	PAGE(S)	DESCRIPTION	PART NUMBER
'95 LS 400 Repair Manual	RM405U1	AT-74	**AUTOMATIC TRANSMISSION**– *TROUBLESHOOTING.* INSPECTION PROCEDURE– Step 1 was completely revised. Step 2, **P** *1. Remove transmission.* was revised to *1. Remove the oil pan.*	00245-RM405-6012
'96 LS 400 Repair Manual	RM439U1	AT-51	**AUTOMATIC TRANSMISSION**– *TROUBLESHOOTING.* INSPECTION PROCEDURE– Step 1 was completely revised. Step 2, **P** *1. Remove transmission.* was revised to *1. Remove the oil pan.*	00245-RM439-6012
'97 LS 400 Repair Manual	RM514U1	BR-18	**BRAKE** - *FRONT BRAKE.* 5. MEASURE DISC RUNOUT - (B) Text revised to include . . . *grind it on a "on-car" brake lathe.*	00245-RM514-6041
	RM514U	BR-24	**BRAKE** - *FRONT BRAKE (Disc Brake)* 4. MEASURE DISC RUNOUT - Text revised to include . . . *grind it on a "on-car" brake lathe.*	
'97 GS 300 Repair Manual	RM512U	BR-17	**BRAKE** - *FRONT BRAKE.* 3. MEASURE DISC RUNOUT - Text revised to include . . . *grind it on a "on-car" brake lathe.*	00245-RM512-6041

Parts Information (Continued)

PUBLICATION	NUMBER	PAGE(S)	DESCRIPTION	PART NUMBER
'97 GS 300 Repair Manual	RM512U	BR-20	**BRAKE** - *REAR BRAKE (Disc Brake).* REAR BRAKE COMPONENTS INSPECTION AND REPAIR. 3. MEASURE DISC RUNOUT - Text revised to include . . . *grind it on a "on-car" brake lathe.*	00245-RM512-6041
'97 ES 300 Repair Manual	RM511U	DI-248	**BRAKE** - *ANTI-LOCK BRAKE SYSTEM.* DTC - REAR SPEED ROTOR FAULTY - Revised to 33, 34.	00245-RM511-6048
'97 LX 450 Repair Manual	RM515U	BR-10	**BRAKE** - *BRAKE BOOSTER ASSEMBLY.* BRAKE BOOSTER ASSEMBLY - Entire page has been revised from Brake Master Cylinder *Removal* and *Disassembly* to Brake Booster Assembly *Operational Test* and *Components.*	00245-RM515-6055

LEXUS
Technical Service Information Bulletin
March 21, 1997

Title:

AIR BAG INFORMATION LABEL ON GLOVE BOX DOOR

Models:

All Models

TSIB

Introduction

Based on the Federal Motor Vehicle Safety Standard (FMVSS) 208, the Air Bag Information label (1) will be hung on the glove box door for vehicles having a passenger side air bag and produced on or after 2/25/97.

NOTE:
The air bag caution label (2) affixed voluntarily on the passenger side end of the vehicle dash will be eliminated with this change.

Affected Vehicles

- **LS 400, GS 300, SC 400, SC 300, ES 300, LX 450 built after February 25, 1997.**

NOTE:
The Air Bag Information label is NOT required on vehicles built prior to 2/25/97.

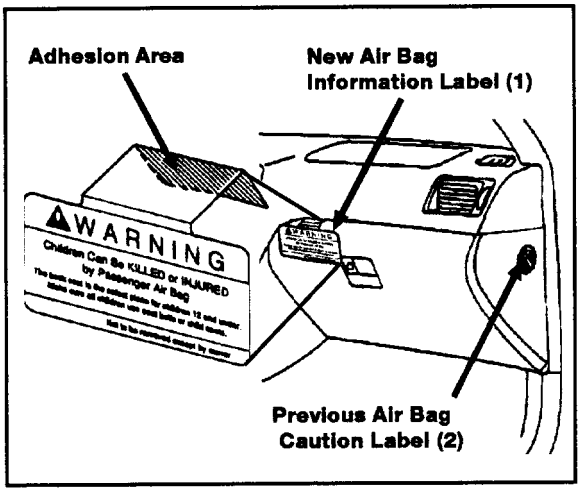
Parts Information

NEW PART NUMBER	PART NAME
74599–06010	Label, Driver and Passenger Information

Procedure

1. During PDS, check to insure that vehicles produced on or after 2/25/97 are in compliance with FMVSS 208 by having the label hung on the glove box door.

2. If the label is missing or damaged, the appropriate label can be ordered through the parts system.



LEXUS
Technical Service Information Bulletin
July 18, 1997

Title:

REPLACEMENT CERTIFICATION LABELS

Models:

All Models

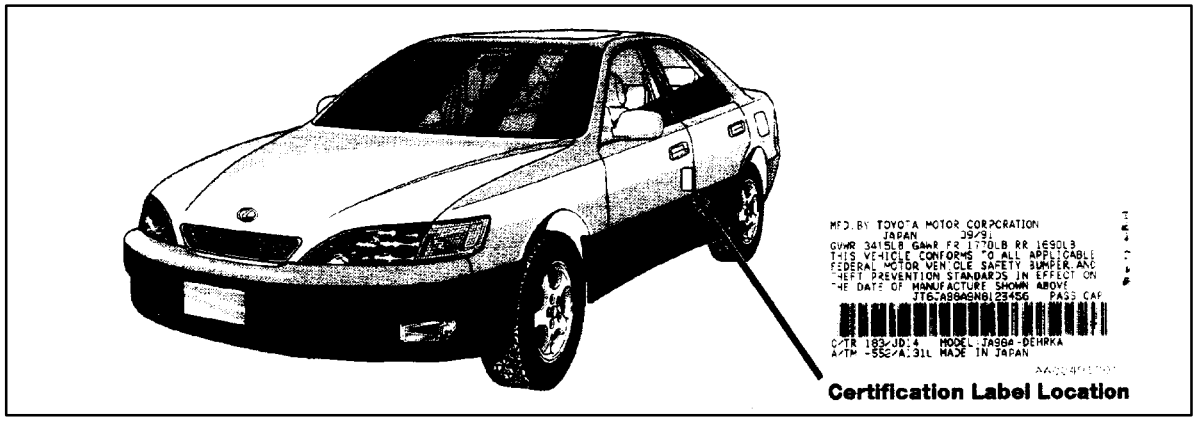
TSIB

PG003-97

PRODUCT GENERAL INFORMATION

Introduction

Replacement Certification Labels (vinyl label affixed to driver's door or door post) **may be** available from Lexus providing the request meets one of the criteria listed below.



Certification Label Location

Affected Vehicles

- All Lexus vehicles.

Certification Label Criteria

1. The vehicle is in an accident and the label is damaged or is attached to a part that will be replaced during the repair.

NOTE:
- **Processing a new label will be delayed if the old certification label is not available.**
- **A new label MAY NOT be available if the vehicle is more than five years old and the old label does not accompany this request.**

2. The label is stolen.

Procurement Procedure

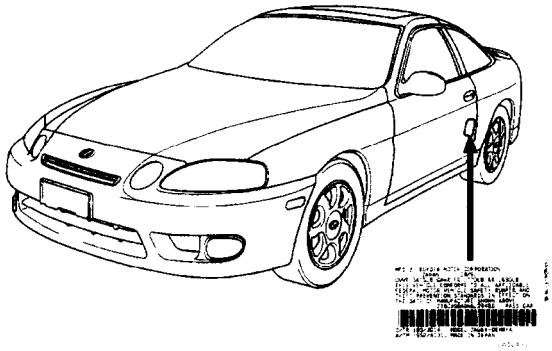
To request a replacement label, complete a copy of the form on the back of this bulletin. Your dealer parts account will be billed $10.00 for each replacement of a damaged or stolen label.

NOTE:
All replacement labels for damaged and/or stolen vehicles are subject to approval by the Technical Compliance Department. If you have any specific questions, contact (310)781-3390.

Warranty Information

- No applicable Warranty Information

APPLICATION FOR REPLACEMENT CERTIFICATION LABEL



REASON FOR REPLACEMENT:

☐ ACCIDENT DAMAGE

☐ STOLEN

☐ OTHER _____
REASON/EXPLANATION

PLEASE PROVIDE CORRECT VIN

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

ATTACH ORIGINAL LABEL HERE

NOTE:
Original label **MUST** accompany this application or order will be delayed.

DEALER INFORMATION

DEALER CODE: ☐☐☐☐☐

DEALER NAME: _____

ADDRESS: _____
STREET ADDRESS

_____
CITY, STATE, ZIP CODE

TELEPHONE: (_____) _____
AREA CODE, TELEPHONE NUMBER

CONTACT: _____
FIRST NAME, LAST NAME

MAIL *(DO NOT FAX)* THE COMPLETED REQUEST FORM WITH THE OLD LABEL TO:

TOYOTA MOTOR SALES, U.S.A. INC.
TECHNICAL COMPLIANCE DEPARTMENT, S203
19001 S. WESTERN AVENUE
TORRANCE, CA. 90509-2991

LEXUS

TECHNICAL SERVICE INFORMATION

REF: PRODUCT GENERAL INFORMATION
NO: PG004–96
DATE: SEPTEMBER 6, 1996
MODEL: ES 300

Title **1997 ES 300 SHORT PIN INSTALLATION DURING PDS**

To minimize battery discharge during transportation and storage, the Short Pin has been removed at the assembly plant.

INSTALLATION PROCEDURE:

The Short Pin is stored in the Engine Room J/B No. 2 in the engine compartment as shown in Figure A.

NOTE: Removal of the Short Pin cuts off the power source to the Dome Fuse and ECU–B fuse.

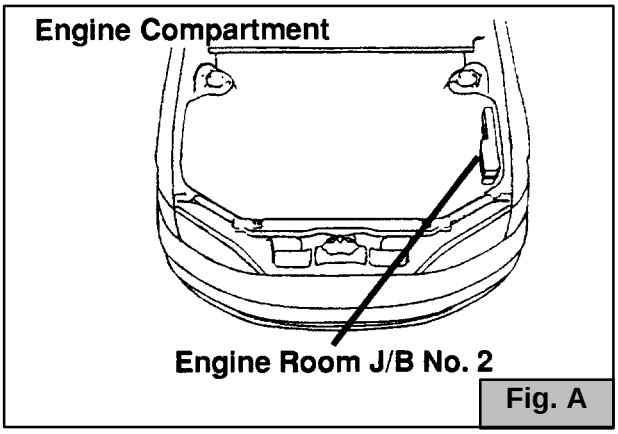


Fig. A

During PDS (Pre-Delivery Service) install the Short Pin in the correct position as shown in Figures B and C.

CAUTION: The Short Pin is not a fuse. Please install only in the position shown in Figure C.

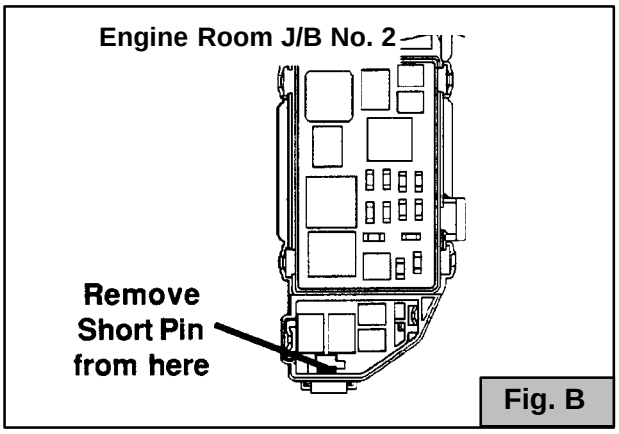


Fig. B

NOTE: If the vehicle is stored at the dealership for a long period of time after PDS, disconnect the negative battery terminal to prevent battery discharge. Refer to TSIB EL002-96 for battery maintenance information.

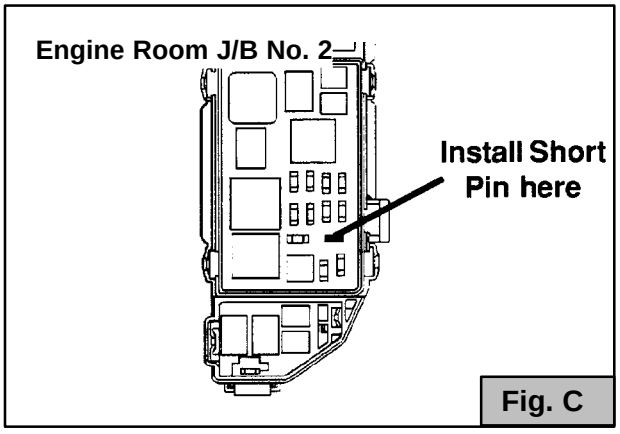


Fig. C

LEXUS
Technical Service Information Bulletin
July 18, 1997

Title:

REPLACEMENT VIN PLATES

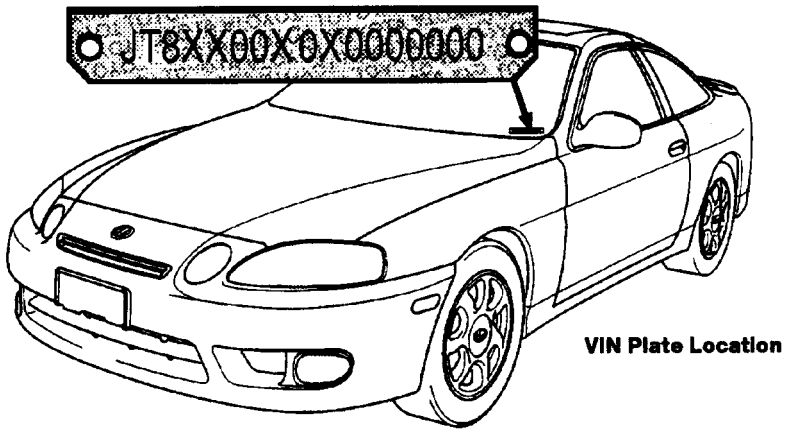
Models:

All Models

TSIB

Introduction

Replacement **VIN** plates (metal plate riveted to dashboard) **may be** available from Lexus providing the request meets one of the criteria listed below.



VIN Plate Location

Affected Vehicles

- All Lexus vehicles.

Replacement VIN Plate Criteria

- The vehicle is in an accident and the plate is damaged.

NOTE:
The plate to be replaced MUST accompany the request.

NOTE:
If a plate is stolen, be sure to contact the State Police or the Department of Motor Vehicles. In most cases the state will issue a unique number so that the original number can be included on stolen vehicle listings. If this is the case, a replacement VIN plate is NOT available from Lexus. However, the original VIN, NOT the state-issued VIN, must be used on all warranty claims.

Procurement Procedure

To request a replacement plate, complete a **copy** of the form on the back of this page. Note that damaged VIN plates must accompany the request form. Your dealer parts account will be billed $10.00 for each replacement of a damaged plate.

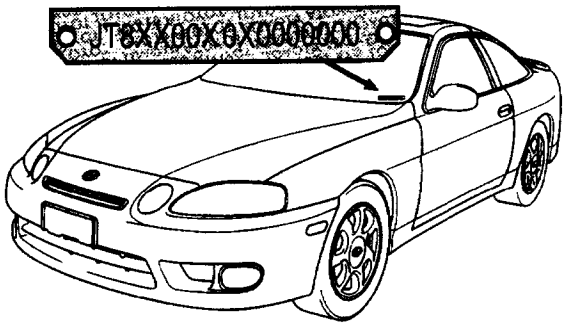
NOTE:
All replacement plates for damaged and/or stolen vehicles are subject to approval by the Technical Compliance Department. If you have any specific questions, contact (310)781-3390.

Warranty Information

- No applicable Warranty Information.

LEXUS

APPLICATION FOR REPLACEMENT VIN PLATE



REASON FOR REPLACEMENT:

☐ ACCIDENT DAMAGE

☐ OTHER _____

REASON OR EXPLANATION

PLEASE PROVIDE CORRECT VIN ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

ATTACH DAMAGED PLATE HERE

DEALER INFORMATION

DEALER CODE: ☐☐☐☐☐

DEALER NAME: _____

ADDRESS: _____
STREET ADDRESS

_____
CITY, STATE, ZIP CODE

TELEPHONE: (_____) _____
AREA CODE, TELEPHONE NUMBER

CONTACT: _____
FIRST NAME, LAST NAME

MAIL *(DO NOT FAX)* THE COMPLETED REQUEST FORM WITH THE OLD PLATE TO:

TOYOTA MOTOR SALES, U.S.A. INC.
TECHNICAL COMPLIANCE DEPARTMENT, S203
19001 S. WESTERN AVENUE
TORRANCE, CA. 90509-2991

LEXUS

TECHNICAL SERVICE INFORMATION

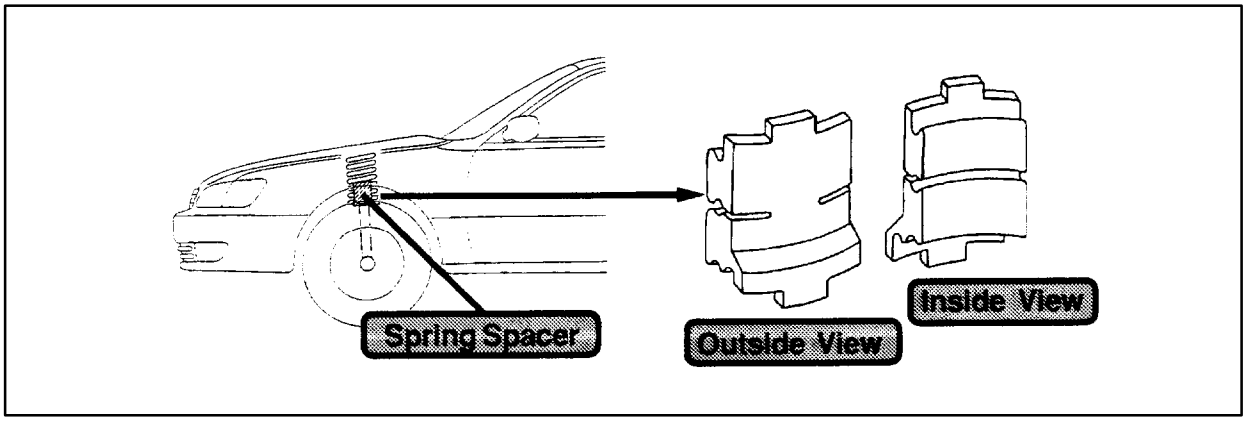
REF: PRODUCT GENERAL INFORMATION

NO: PG005–96

DATE: SEPTEMBER 6, 1996

MODEL: ES 300

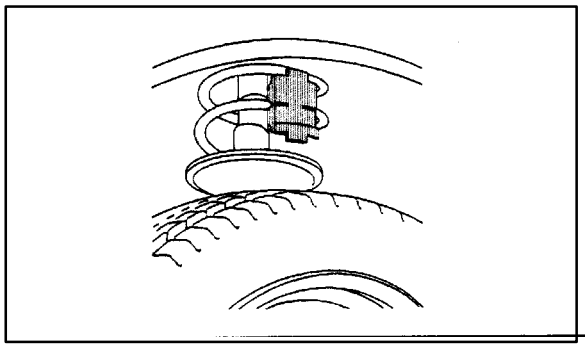
To prevent damage to the underside of the front bumper during vehicle transport, suspension spacers have been installed on the front coil springs for the 1997 ES 300.



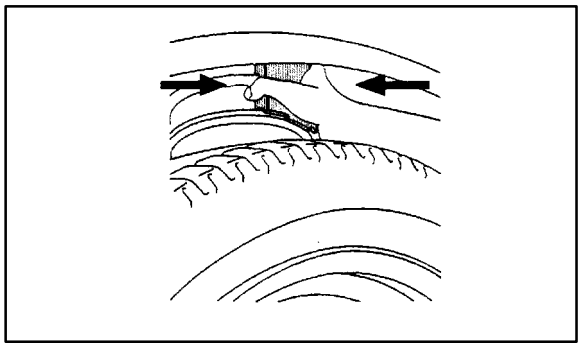
Please use the following procedures to remove the suspension spacers during PDS (Pre–Delivery Service).

SUSPENSION SPACERS REMOVAL PROCEDURE:

1. During the Under Vehicle (On Hoist) checks portion of the Pre-Delivery Service, raise the vehicle to extend the suspension.

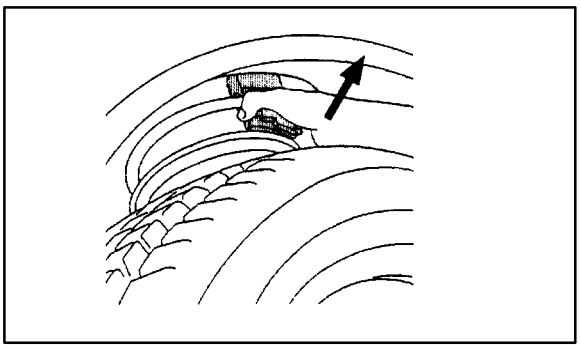


2. Firmly grasp the lower part of the spring spacer with your hand.

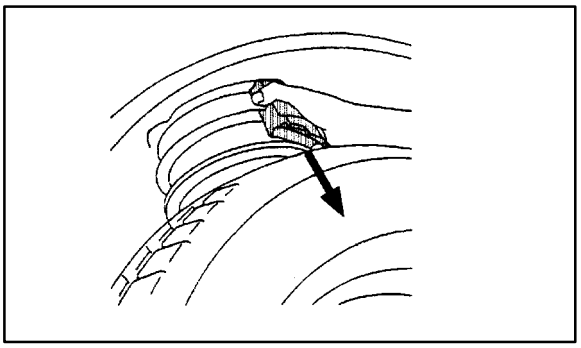


SUSPENSION SPACERS REMOVAL PROCEDURE (Cont’d):

3. Pull the spring spacer toward you and push it upward.



4. Pull the ring spacer downward to remove.



5. Repeat steps 2 through 4 above on the other side to complete removal of the spring spacers.

LEXUS

TECHNICAL SERVICE INFORMATION

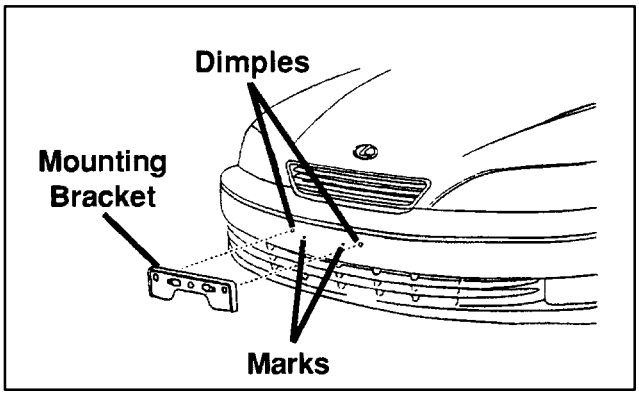
REF: PRODUCT GENERAL INFORMATION
NO: PG006–96
DATE: SEPTEMBER 6, 1996
MODEL: ES 300

Title **1997 ES 300 LICENSE PLATE INSTALLATION DURING PDS**

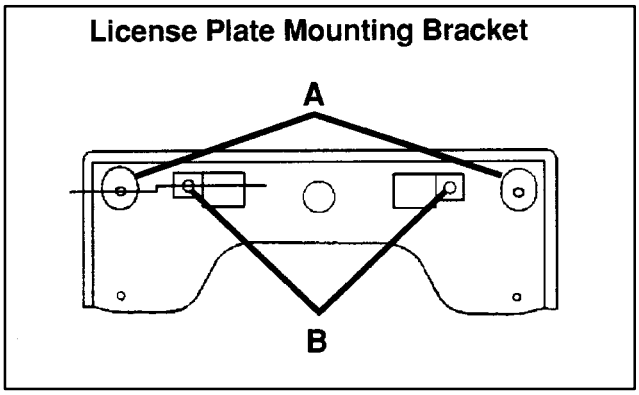
During shipment the 1997 ES 300 front license plate mounting bracket and two attaching screws are placed in a plastic bag in the luggage compartment. Install the mounting bracket cover on the front bumper during PDS (Pre-Delivery Service) according to the following procedures.

FRONT LICENSE PLATE INSTALLATION:

1. Align the holes marked “A” on the mounting bracket with the dimples on the front bumper cover. Mark the location of the holes marked “B” on the front bumper cover.

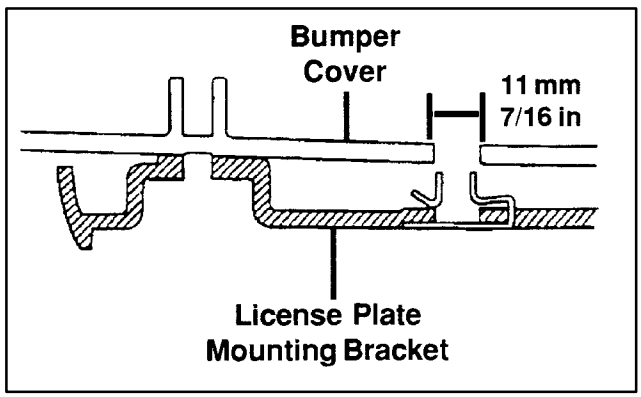


NOTE: Holes marked “A” are used for installation of the mounting bracket to the bumper cover. Holes marked “B” are used for installation of the license plate to the mounting bracket.



2. Drill 2 relief holes, 11 mm (7/16 in.) in diameter, through the bumper cover at the marks made at holes marked “B”. The relief holes provide clearance to prevent the license plate retaining screw from contacting the bumper cover.

NOTE: Do **NOT** drill at the dimples on the front bumper cover.

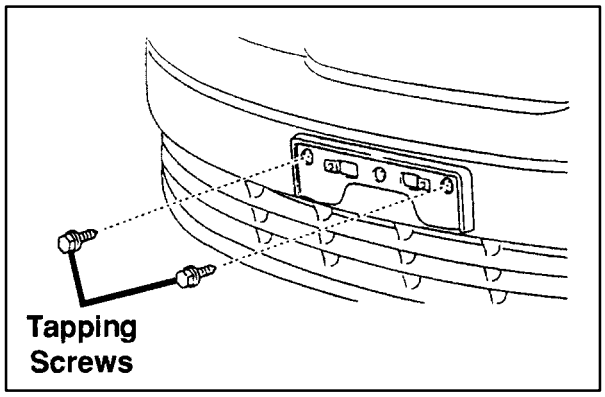


FRONT LICENSE PLATE INSTALLATION:

3. Install the mounting bracket to the front of the bumper cover (at holes marked “A”) using the 2 tapping screws supplied with the bracket.

4. Install the license plate to its bracket using 2 tapping screws with the following dimensions:

- Nominal length (L): < 25.0 mm (9.8 in.)
- Diameter: 6.0 mm (0.24 in.)
- Pitch: 1.0 mm (0.04 in.)



LEXUS

TECHNICAL SERVICE INFORMATION

REF: SPECIAL SERVICE TOOLS

NO: SS001–96

DATE: AUGUST 20, 1996

MODEL: ES 300

Title **VERSION 3.1 DIAGNOSTIC TOOL SET SOFTWARE COMMUNICATION PROBLEM WITH 1997 ES 300**

Due to a change in communication standard for the 1997 ES 300, the Version 3.1 Diagnostic Tool Set Software will display the error message below when the technician attempts to use the ALL DATA list or the ACTIVE TEST functions in ENHANCED OBD II.

NO RESPONSE FROM VEHICLE. CHECK CONNECTION TO VEHICLE. OR THIS TEST IS NOT SUPPORTED FOR THIS VEHICLE.

This problem will be corrected with the release of 1997 Model Year software in November. Until then, there are two alternatives for diagnosing the ES 300 with the current Version 3.1 software:

1. ENHANCED OBD II
   - USER DATA list (less than 50 data lines)
   - Specialized data list from SELECT DATA menu (MISFIRE, O_2 SENSOR, EGR, etc.)
2. CARB ORB II
   - All CARB OBD II function work normally.

LEXUS

Technical Service Information Bulletin

September 26, 1997

Title:

BRAKE BOOSTER PUSH ROD GAUGE (SST)

Models:

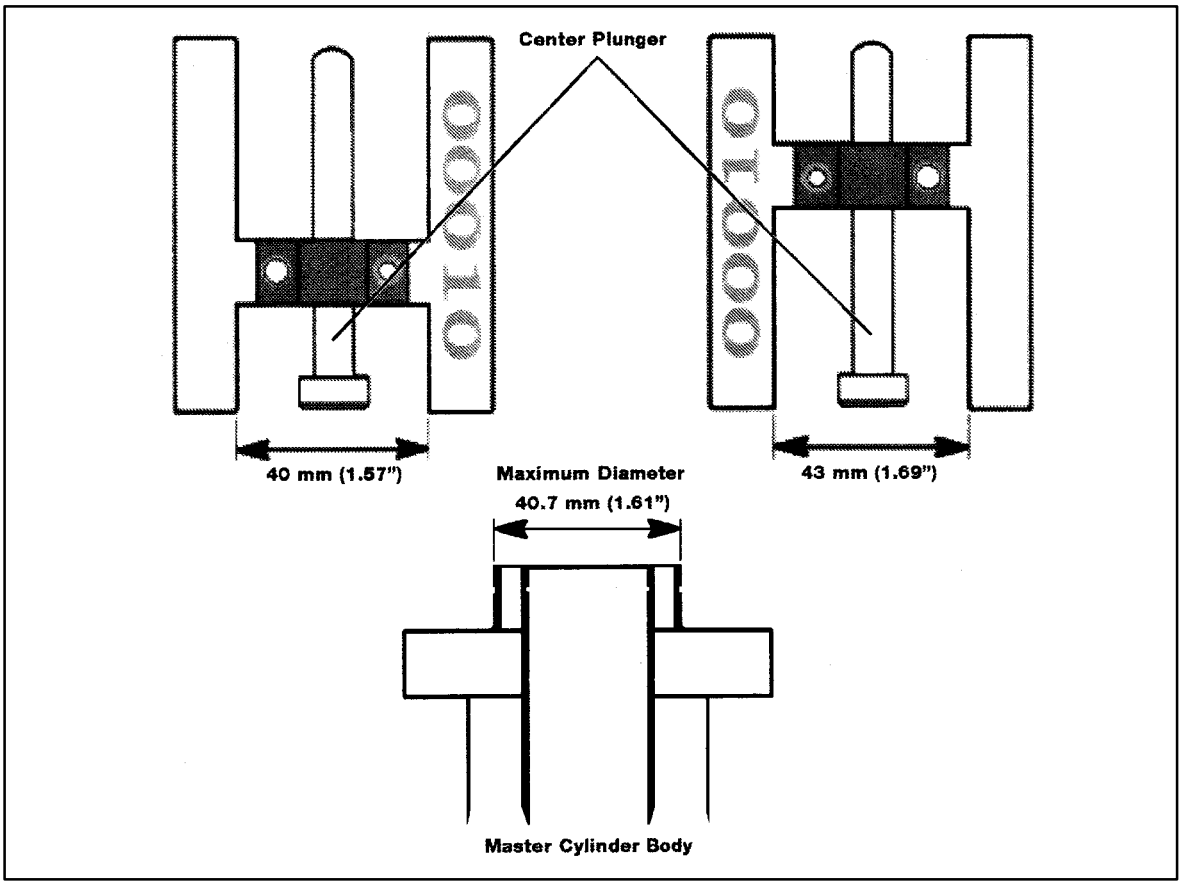
All Models

TSIB

SPECIAL SERVICE TOOLS SS001–97

Introduction

When inspecting or making brake booster push rod adjustments with SST 09737–00010, it is necessary to assure proper tool configuration prior to use. The SST has a reversible center plunger that allows it to function on a wide range of Lexus vehicles. Prior to using, verify that it is configured correctly for the application by checking the master cylinder outer diameter at the point illustrated below. The dimensions for the SST, Part Number 09737–00010, are also shown in the illustrations below.



Parts Information

PART NUMBER	PART NAME
09737–00010	Brake Booster Push Rod Gauge (SST)

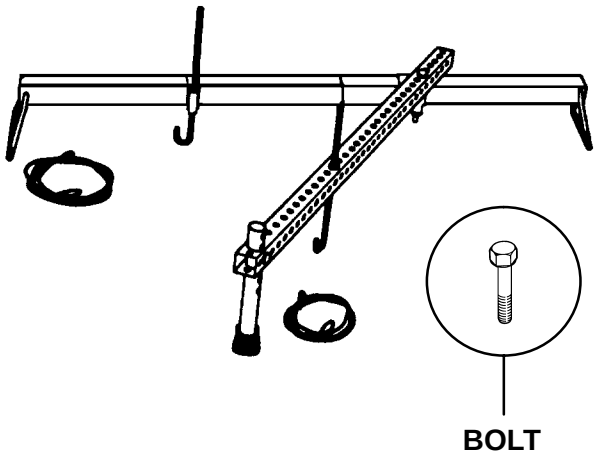
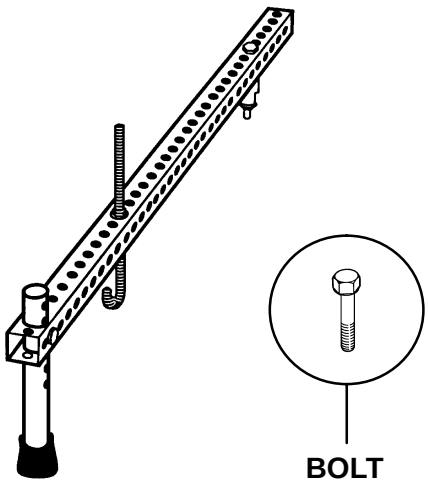
Warranty Information

OPCODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not applicable to warranty	–	–	–	–

Title **ENGINE SUPPORT BAR IMPROVEMENTS**

A new engine support bar, P/N 00002–01724, has been released by OTC. This new tripod design engine support bar, which is designed to support engine weight while transmission service is being performed, supersedes the current bipod engine support bar, P/N 00002–01722.

For dealers who currently own the 00002–01722 engine support bar, OTC has developed an upgrade kit, P/N 00002–01724–U which includes all necessary components and hardware to convert it to the new tripod design. **To avoid the potential for personal injury or property damage, do not use the existing engine support bar without the new upgrade kit.**

00002–01724 TRIPOD ENGINE SUPPORT BAR KIT	00002–01724–U TRIPOD UPGRADE KIT
	

DEALER PRICING IS AS FOLLOWS:

AVAILABLE SST'S		
TOOL NUMBER	**TOOL NAME**	**PRICE**
00002–01724	Tripod Engine Support Bar Kit	$165.35
00002–01724–U	Tripod Upgrade Kit	$ 77.25

For more information and to order these Special Service Tools, please call OTC at 800–933–8335.

LEXUS

TECHNICAL SERVICE INFORMATION

REF: SUSPENSION

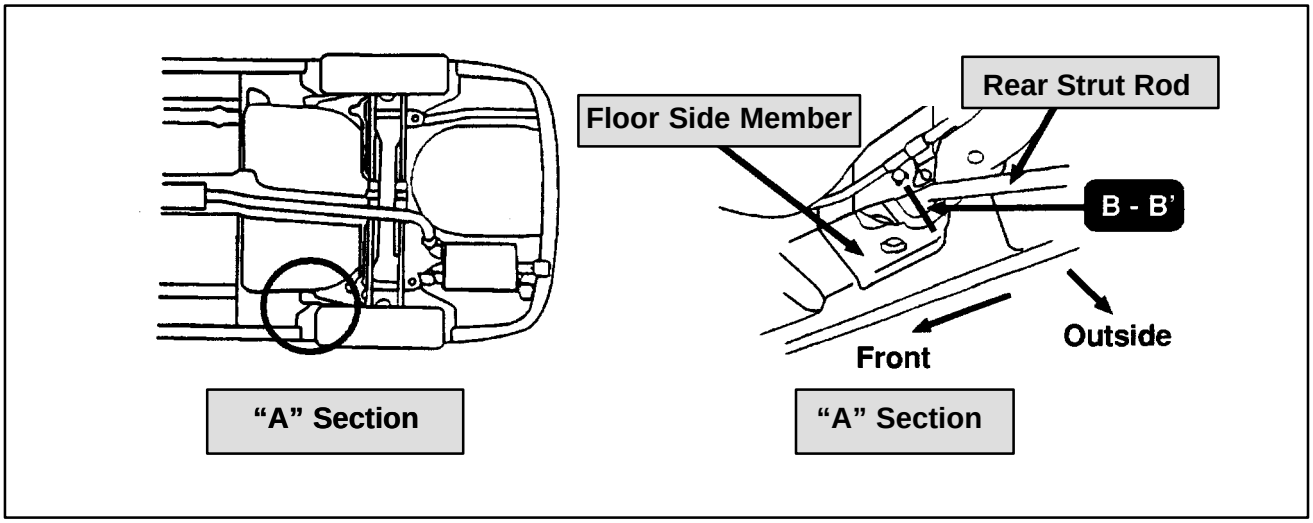
NO: SU005–96

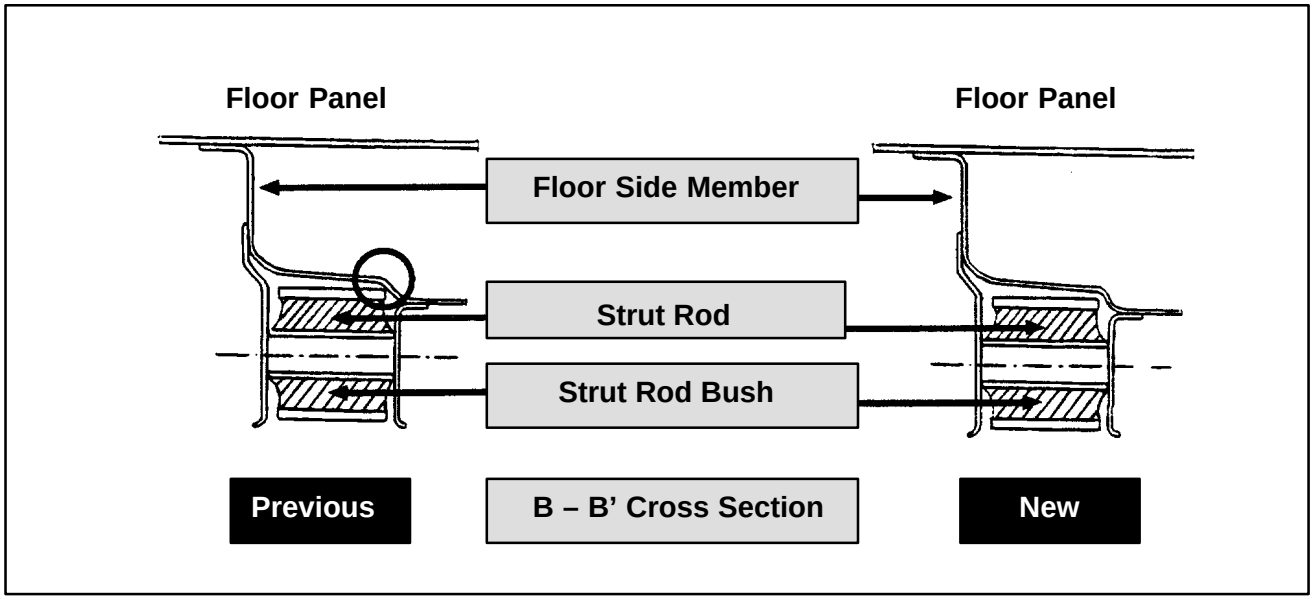
DATE: NOVEMBER 29, 1996

MODEL: ES 300

KNOCKING NOISE UNDER FLOOR IN REAR

To eliminate a knocking noise heard under the floor in the rear, caused by interference between the rear floor side member and the front end of the rear strut rod, the clearance between the side member and the rear strut rod has been increased.





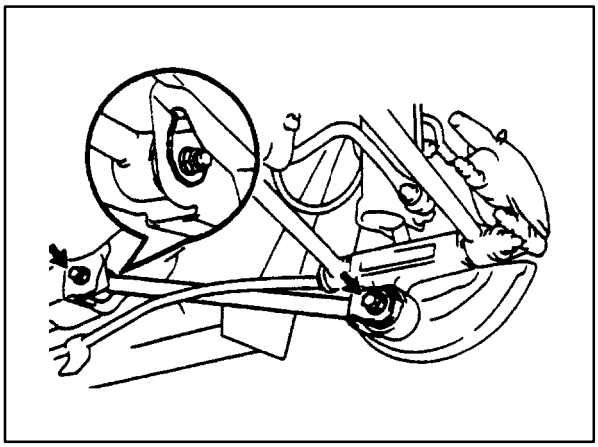
PRODUCTION EFFECTIVE:

Starting VIN: JT8BF22G–V0002236

FIELD FIX PROCEDURE:

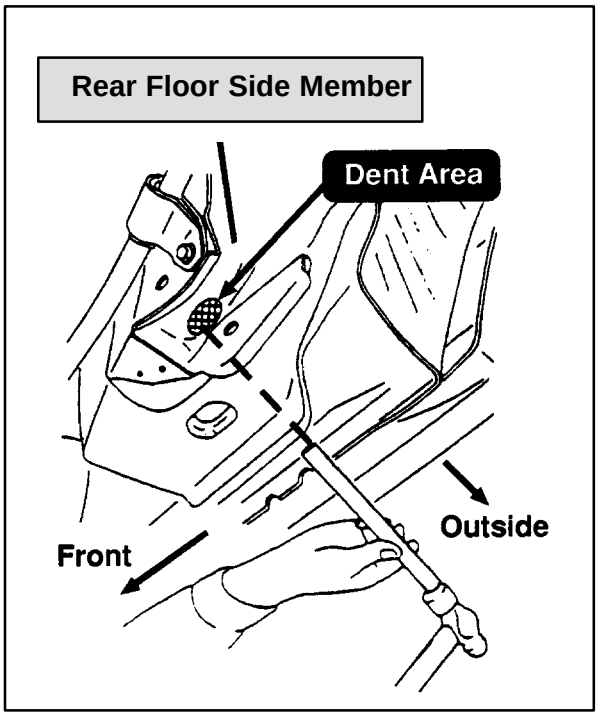
1. Raise vehicle on hoist.

2. Remove rear strut rod.
   a. Remove the bolt and disconnect the parking brake cable.
   b. Remove the two bolts and nuts.
   c.. Remove the strut rod.



3. Using a brass bar and a hammer, dent the cross hatched area of the rear floor side member by about 1–2 mm in order to increase the clearance between the front end of the rear strut rod and the side member. There may be a shinny area where the strut rod has made metal–to–metal contact.

Note*:* Make sure that the end of the brass bar is smooth and rounded to prevent damage to the vehicle floor.

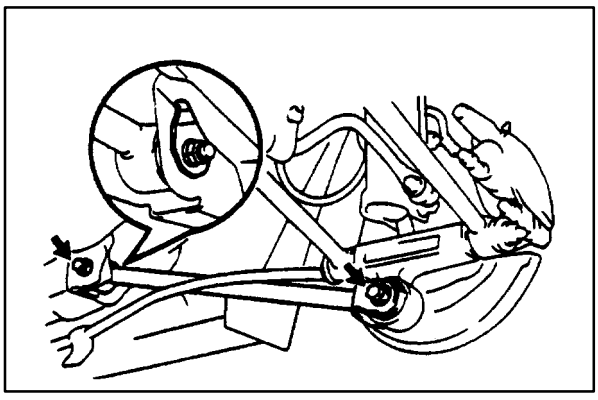


4. Apply a rust preventive sealer to the area that has been modified.
5. Reinstall the rear strut rod with the two bolts and nuts.

Note*:* Do not torque the bolts until the vehicle is lowered and the suspension has been stabilized.

6. Reinstall the parking cable with the bolt.
   Torque: 5.4 N•m (55 Kg•cm, 48 in•lb)

7. Lower the vehicle, stabilize the suspension at ride height, then torque the rear strut rod bolts.
   Torque: 113 N•m (1,150 Kg•cm, 83 ft•lb)



WARRANTY INFORMATION:

OPCODE	DESCRIPTION	TIME	OPN	T1	T2
SU6010	Knocking noise under floor in rear	0.5	48780–33010	91	57

Applicable Warranty Coverage: 4 years/50,000 miles Basic Warranty Coverage.

LEXUS

Technical Service Information Bulletin

October 17, 1997

Title:

TRANSMISSION OIL COOLER INSTALLATION

Models:

'97 ES 300 WITH A541E ATM

Introduction

To prevent overheating of the transmission when towing a weight of more than 1,000 pounds, a transmission oil cooler should be installed. The transmission oil cooler and required hardware for installation are available through normal parts supply.

Towing Capacity

- Up to 2,000 pounds (with transmission cooler installed).

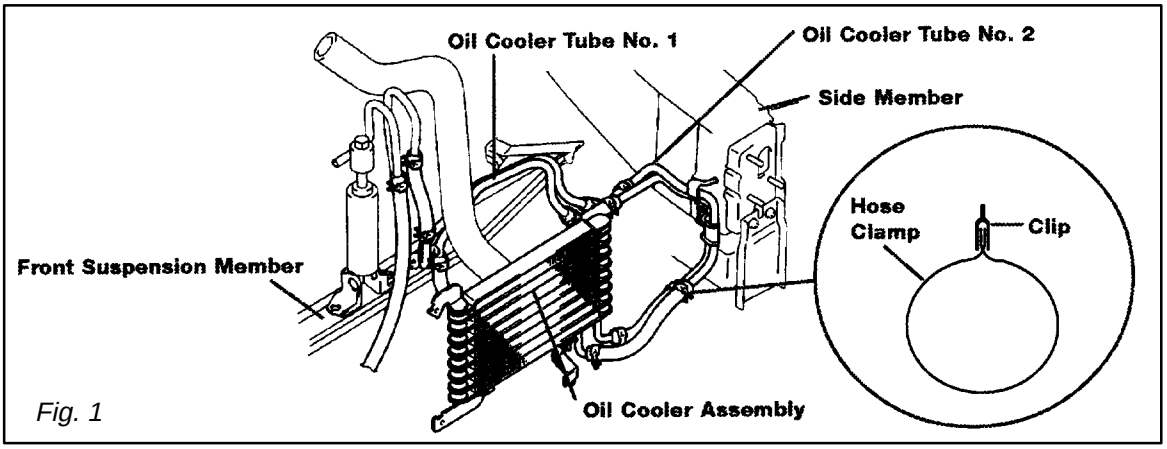


Fig. 1

Affected Vehicles

- **1997 ES 300s** with **A541E** Automatic Transmissions.

Parts Information

PART NUMBER	PART NAME	QTY
32910–33040	Oil Cooler Assembly	1
32907–33050	Oil Cooler Tube No. 2	1
32907–33090	Oil Cooler Tube No. 1	1
90445–17101	180 mm (7.09") Oil Cooler Hose	1
90445–17069	190 mm (7.48") Oil Cooler Hose	1
90445–17139	130 mm (5.12") Oil Cooler Hose	3
90445–17151	140 mm (5.51") Oil Cooler Hose	1
90119–06518	Bolt	3
91611–60816	Bolt	2
90467–16013	Hose Clamp with installation clips	12
90179–06058	Nut	1

Warranty Information

OPCODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	No applicable warranty information	–	–	–	–

Procedure

1. Parts removal in preparation for cooler installation:

   A. Remove the **9** bolts, **2** screws and the center engine under cover.

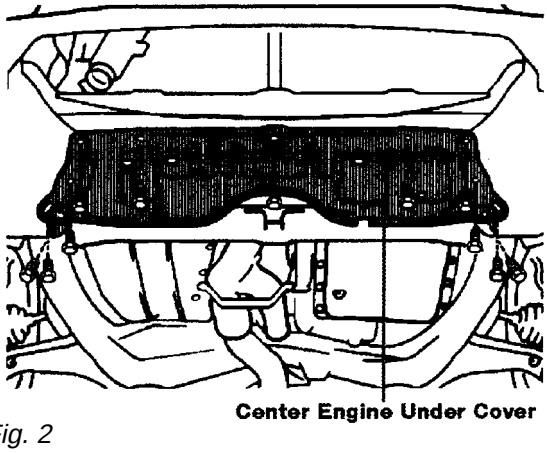


Fig. 2

   B. Remove the engine coolant temperature switch connector and the wire clamp.

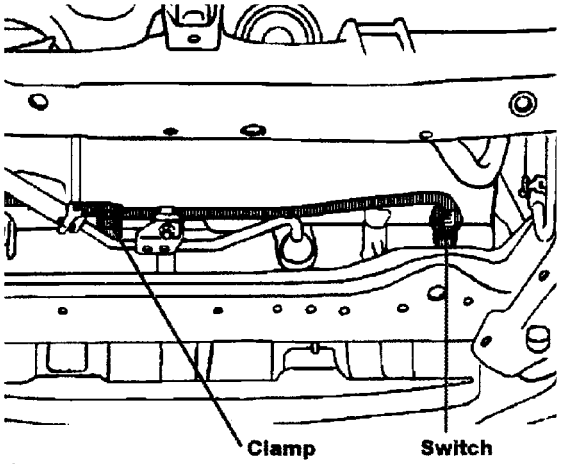


Fig. 3

   C. Remove battery and tray.

   D. Disconnect the cooling fan connector.

   E. Disconnect the No.1 engine coolant temperature switch wire connector.

   F. Remove the **2** bolts and then the cooling fan.

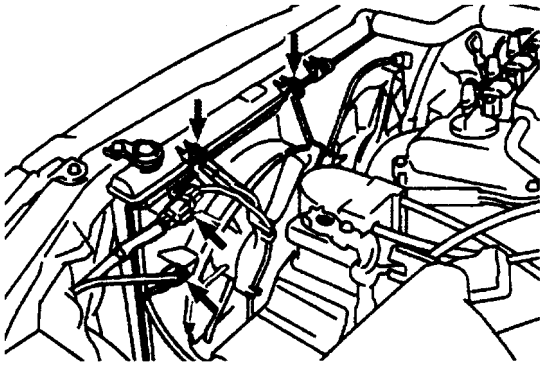


Fig. 4

Procedure (Continued)

2. Cooler Installation:

A. Install the 140 mm (5.51”) hose to the oil cooler tube No. 1 as shown.

NOTE:
Install the hose clamp with the hose clamp clip at the position shown, and use pliers to pull off the clip in the direction indicated by the arrow.

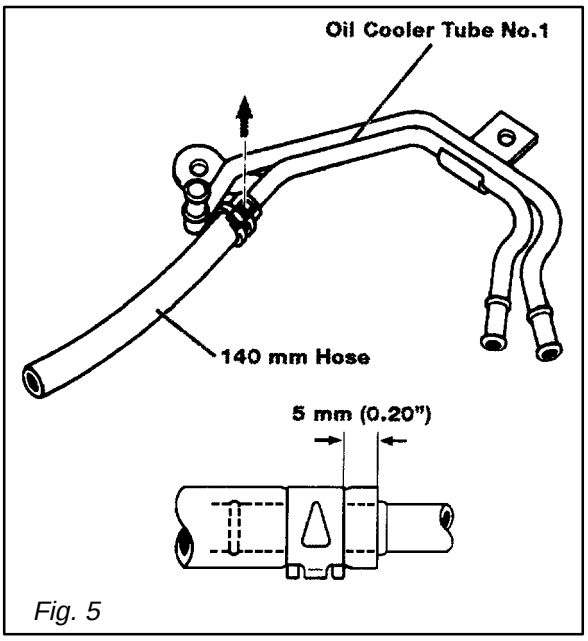


Fig. 5

B. Install the tube bracket onto the left side of the front suspension member with the **2** bolts as shown.

Torque: **62 in•lbf**
(7 N•m/71 kgf•cm)

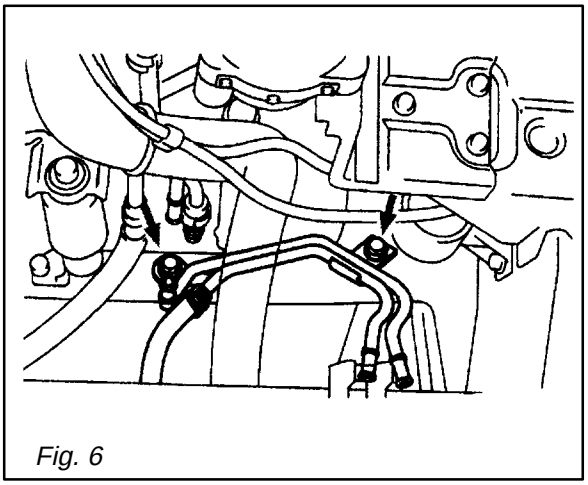


Fig. 6

C. Install the 130 mm (5.12”) hoses and the 180 mm (7.09”) hose to the oil cooler tube No. 2 as shown.

NOTE:
Install the hose clamps with the hose clamp clips at the positions shown, and use pliers to pull off the clips in the direction indicated by the arrows.

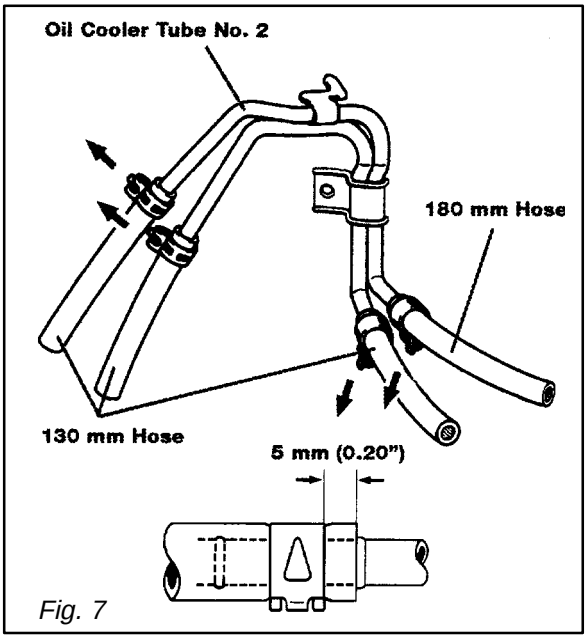


Fig. 7

Procedure
(Continued)

D. Remove the lower side clip of the radiator side LH deflector.

E. Install the tube bracket with the bolt on the side member.

Torque: **62 in•lbf**
(7 N•m/71 kgf•cm)

F. Reinstall the lower side clip of the radiator LH deflector.

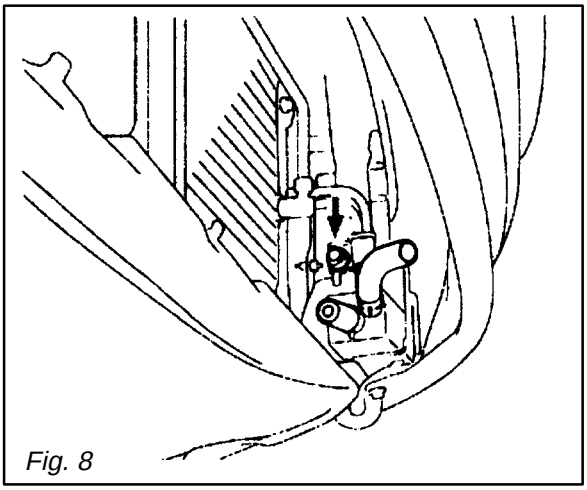


Fig. 8

G. Connect the hoses from the oil cooler tube No.2 to the oil cooler tube No.1.

NOTE:
Install the hose clamps with the hose clamp clips at the positions shown, and use pliers to pull off the clips in the direction indicated by the arrows.

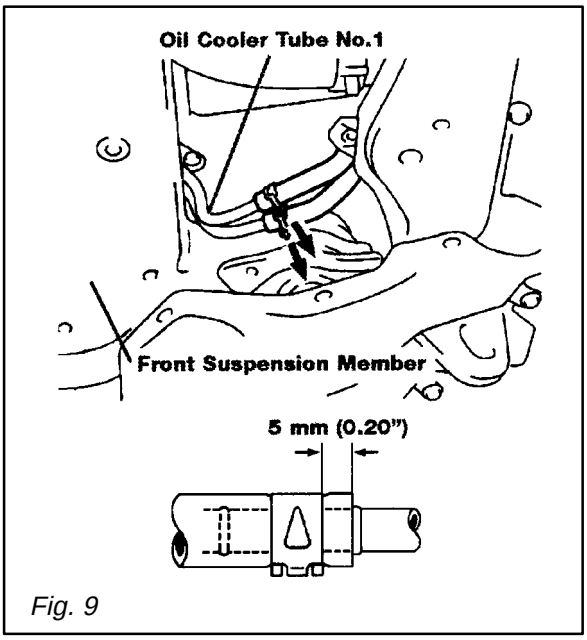


Fig. 9

H. Disconnect the hose from the oil cooler pipe of the radiator LH side.

NOTE:
Place a container below vehicle to catch any leaking ATF. Remove the other end of the hose from transaxle and discard.

I. Connect the hose from oil cooler tube No. 1 to the oil cooler pipe of the radiator LH side.

NOTE:
Install the hose clamp with the hose clamp clip at the position shown, and use pliers to pull off the clip in the direction indicated by the arrow.

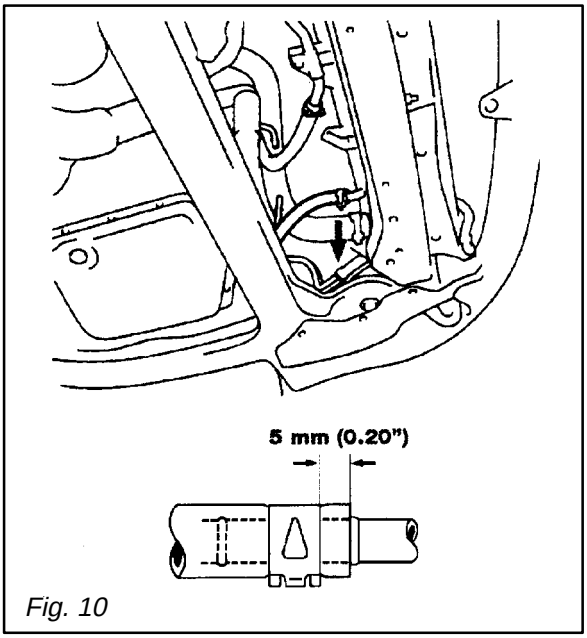
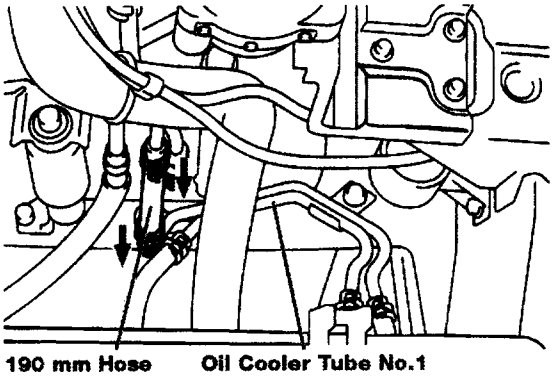


Fig. 10

Procedure
(Continued)

J. Install the 190 mm (7.48”) hose between the oil cooler tube No.1 and transaxle oil cooler tube.

NOTE:
Install the hose clamps with the hose clamp clips at the positions shown, and use pliers to pull off the clips in the direction indicated by the arrows.



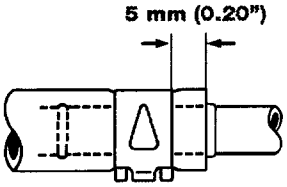


Fig. 11

K. Install the oil cooler onto the center brace and front cross member using the two bolts and nut as illustrated in figure 12.

Torque: **65.5 in•lbf**
(7.4 N•m/75.5 kgf•cm)

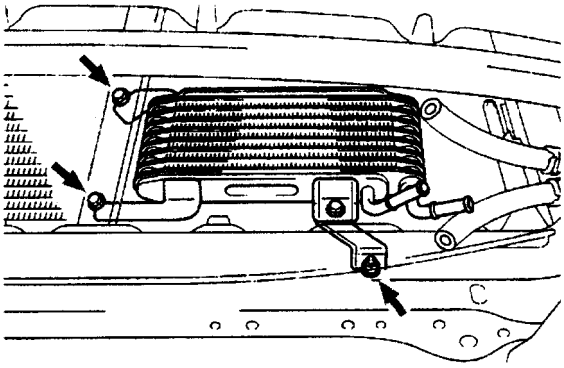


Fig. 12

L. Connect the hoses to the pipes

NOTE:
Install the hose clamps with the hose clamp clips at the positions shown, and use pliers to pull off the clips in the direction indicated by the arrows.

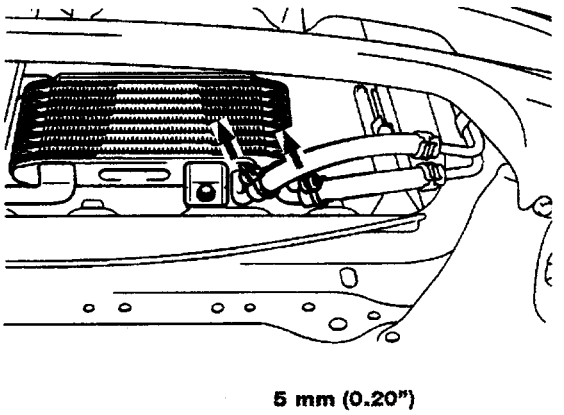


Fig. 13

Procedure (Continued)

3. Final Assembly:

   A. Reconnect the coolant temperature switch connector and wire clamp as illustrated in figure 14.

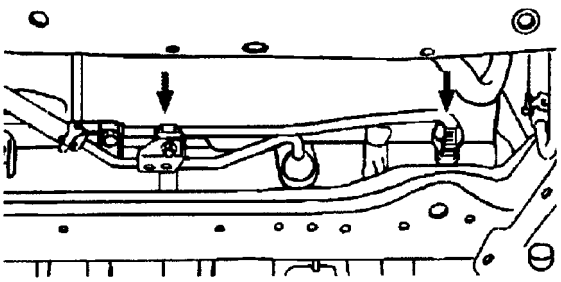


Fig. 14

   B. Install the cooling fan with **2** bolts.

   C. Reconnect the cooling fan connector and the No. 1 engine temperature switch wire connector as shown in figure 15.

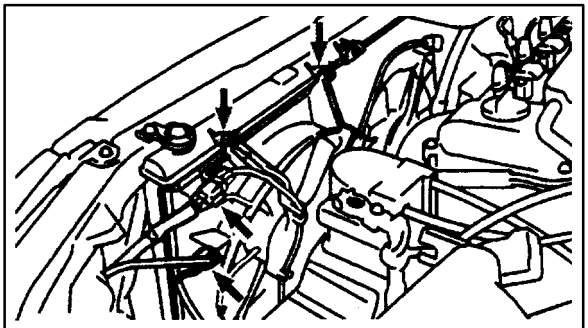


Fig. 15

   D. Reinstall the battery and tray.

   E. Start the engine.

   F. With the engine at idle and the brake pedal depressed, shift the selector into all positions from "**P**" to "**L**", and return to "**P**" position.

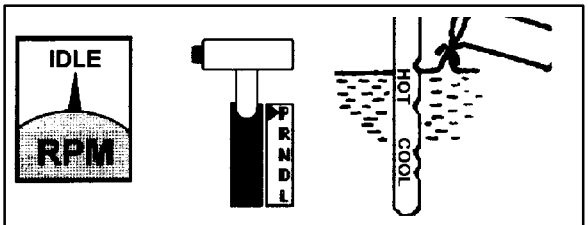


Fig. 16

   G. Check for leaks from the hose joints.

   H. Add new fluid type **ATF D•II** or **DEXRON•III (DEXRON•II)**.

NOTE:
Additional capacity with cooler will be 0.38 US quarts (0.36 liters).

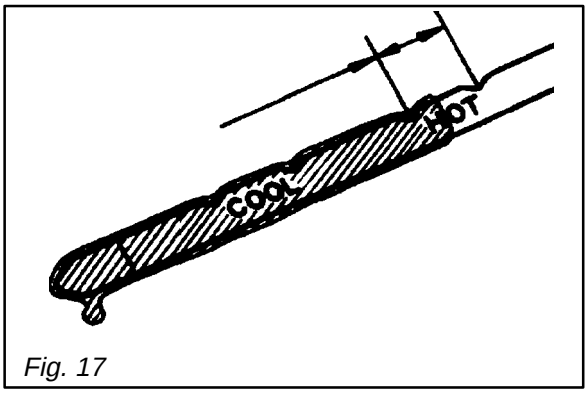


Fig. 17

   I. Shift the selector into all positions from "**P**" to "**L**", and return to "**P**".

   J. Check fluid level with engine idling at normal operating temperature of **158® to 176®F** (**70 to 80®C**) and add more fluid if required.

CAUTION:
Do not overfill.

   K. Shut off the engine and reinstall the center engine under cover with **9** bolts and **2** screws as shown in figure 18.

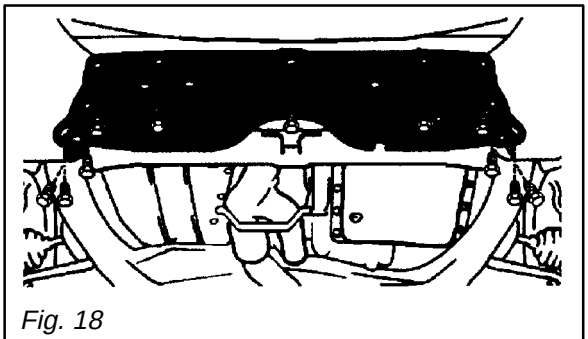


Fig. 18

LEXUS

Technical Service Information Bulletin

October 24, 1997

Title:

OIL PAN, DIP STICK & C1 CLUTCH ON A541E

Models:

'97 ES 300

TSIB

Introduction

The following production changes have occurred on the A541E transaxle:

1. The oil pan and dipstick have been redesigned for increased oil capacity.
2. The C1 clutch has been changed for improved durability.

Transmission Production Change Information

A/T MODEL	A/T SERIAL NO.
A541E	E0619902–

Parts Information

OLD PART NUMBER	NEW PART NUMBER	PART NAME	QTY
30500–33210	30500–33211	Transaxle Assembly, Automatic	1
35106–33010	35106–33020	Pan Sub–assembly, Transaxle Oil *2	1
35103–33120	35103–33160	Gauge Sub–assembly, Transaxle Oil Level *1	1
35701–33030	35701–33050	Shaft Sub–assembly, Input	1
35633–33010	35633–33100	Disc, C1 Clutch	5
35634–33010 35634–33020	35634–33060	Plate, C1 Clutch *1 *3	5
04352–33050	04352–33051	Overhaul Kit, Automatic Transmission	1

*1 Not interchangeable with previous parts.
*2 When using the new oil pan on the old transmission it is necessary to also use the new dip stick.
*3 Quantity: 35634–33010 = 4, 35634–33020 = 1 has been changed to 35634–33060 = 5

Warranty Information

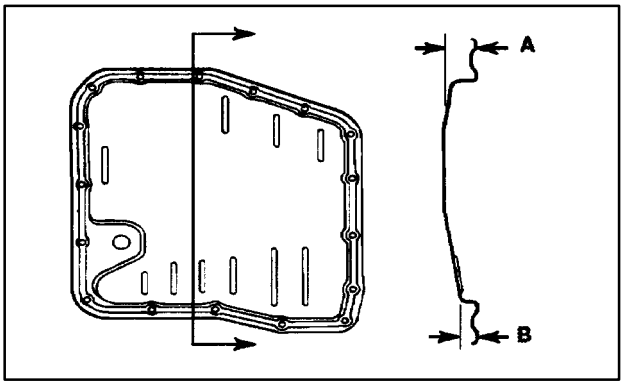
OPCODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

Details of Production Change

1. Transaxle Oil Pan

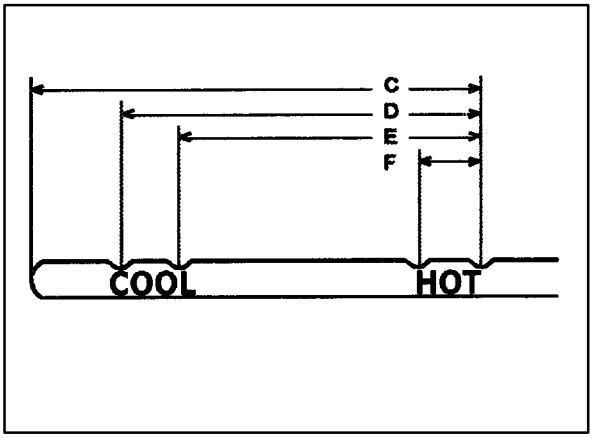
   A. The Oil Pan depth has been increased as indicated by dimensions A and B (illustration and table).

	OLD DIMENSION	NEW DIMENSION
A	31.9 mm (1.256")	34.9 mm (1.374")
B	15.0 mm (0.591")	18.0mm (0.709")



Details of Production Change (Continued)

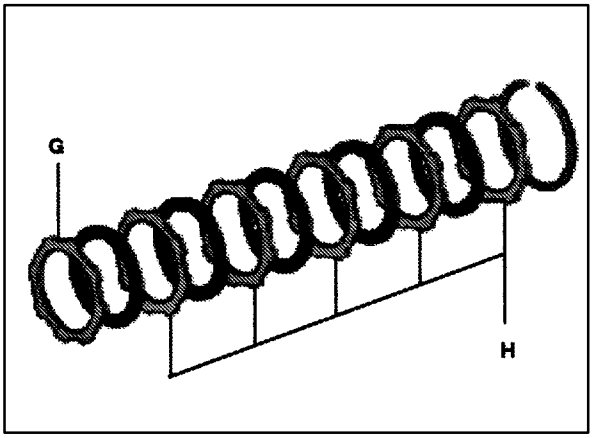
B. With the oil pan change, the oil level gauge (dip stick) has been revised.



	OLD DIMENSION	NEW DIMENSION
C	62 mm (2.44")	
D	41.5 mm (1.634")	50.0 mm (1.969")
E	34.5 mm (1.358")	42.0 mm (1.654")
F	10.0 mm (0.394")	9.0 mm (0.354")

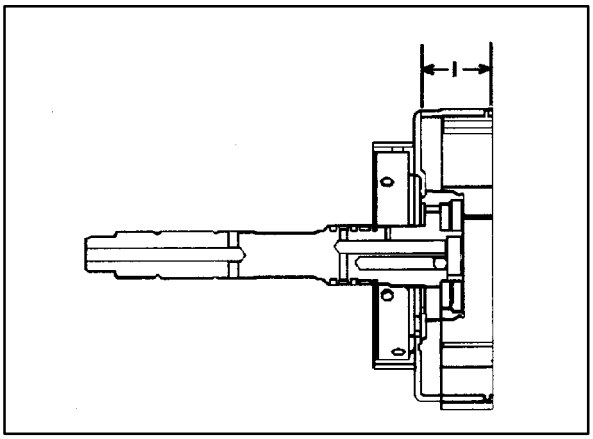
2. Forward Multiple Disc Clutch Assembly

A. C1 clutch plate thickness has been increased to 2.0 mm (0.078").



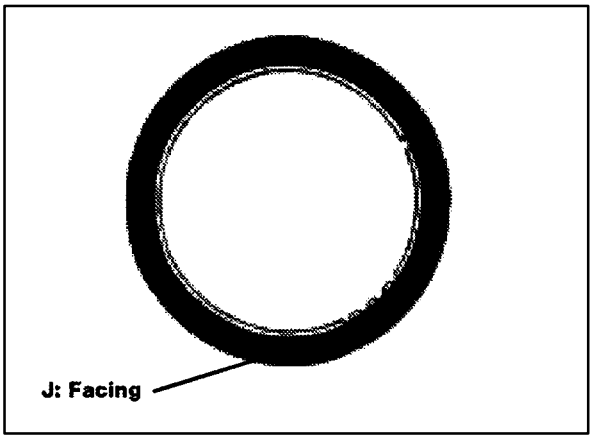
	OLD DIMENSION	NEW DIMENSION
G	1.4 mm (0.055")	2.0 mm (0.078")
H	1.6 mm (0.063")	

B. Input Shaft Sub–Assembly changed to accommodate thicker C1 clutch plates.



	OLD DIMENSION	NEW DIMENSION
I	31.7 mm (1.248")	33.9 mm (1.335")

C. C1 Clutch Disc material has been changed. Identifying marks can be found on the facing.



	PREVIOUS	CURRENT
J	AD505	AD506

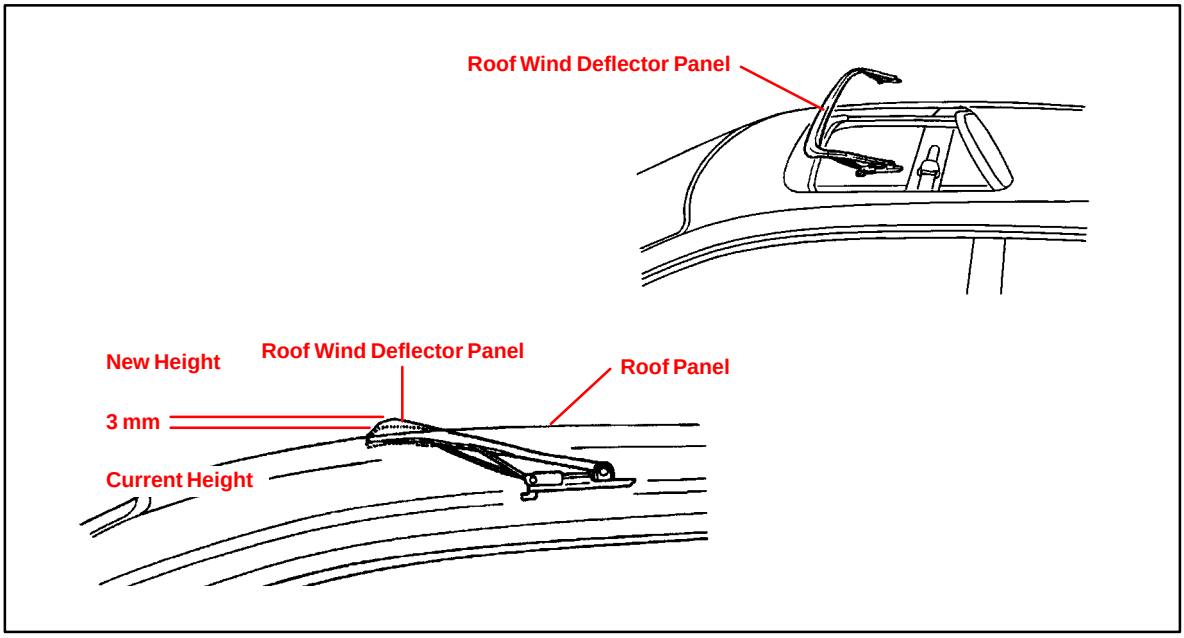
Technical Service Information Bulletin
January 23, 1998

Title:
MOON ROOF WIND THROB NOISE
Models:
'97 & '98 ES 300

NVH
NV001–98

Introduction

To eliminate wind throb on 1997 and 1998 ES 300 vehicles when the moon roof is fully opened, the roof wind deflector has been raised 3 mm as shown.



Production Change Information

- **1997 & 1998 ES 300s** starting with **VINs:**
  JT8BF28G3W0102176 (TMC – Plant Code "0" – 11th digit)
  JT8BF28GXW5029522 (TMK – Plant Code "5" – 11th digit)

Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME
63209–33030	63209–22040	Roof Wind Deflector Panel Sub–Assembly

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
614121	R&R Roof Panel Subassembly	0.2	63209–33030	59	14

Applicable Warranty:

This repair is covered under the Lexus Basic Warranty. This warranty is in effect for 48 months or 50,000 miles, whichever occurs first, from the vehicle's in–service date.

Field Fix Procedure

Replace Roof Wind Deflector Panel subassembly with the new part.

Technical Service Information Bulletin
January 12, 2005

Title:

IRON PARTICLE RUST CONTAMINATION REPAIR

Models:

'94 – Current

TSIB

Introduction

The purpose of this bulletin is to provide information regarding the proper procedures to clean vehicles that may have been subjected to contamination by airborne iron particles such as rail dust.

Applicable Vehicles

- **1994 – Current** model year **Lexus** vehicles.

Required Tools & Materials

TOOLS & MATERIALS	QUANTITY
Auto Magic® Special Cleaner Concentrate™ #713*	1
Rubber Gloves, Aprons, Boots	As Needed
Eye Protection	
Sponges or Wash Mitts	
Pail or Bucket	

* Contact the main office of Auto Wax Company Inc. (1–800–826–0828 or www.automagic.biz) to find a local source for Auto Magic® Special Cleaner Concentrate.™

Condition

During rail transportation or extended storage near industrial areas, vehicles may occasionally be subjected to contamination by airborne iron particles shed from railroad tracks, train wheels, exposure to heavy machinery facilities, grinding, welding, etc.

Inspection

This type of contamination can be identified by the presence of small red or brown particles on the paint surface. These particles are often difficult to see on dark color paints, but can be easily felt when brushing a hand across horizontal body surfaces such as hood, roof, or deck lid.

CAUTION:

Because of the abrasiveness of these small iron particles, polishing or buffing procedures should not be attempted to repair the paint surface of an affected vehicle. This will result in further paint damage and detract from vehicle appearance.

Repair

Washing the affected paint surfaces with Auto Magic® Special Cleaner Concentrate™ is the recommended method to dislodge embedded iron particles and remove the surrounding rust stains. The correct usage of Auto Magic® Special Cleaner Concentrate™ is described in this bulletin.

Warranty Information

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

General Precautions

WARNING:

Auto Magic® Special Cleaner Concentrate™ is a corrosive material. Appropriate personal protection equipment must be worn to protect persons performing the contamination removal procedure. Please refer to the precautions on the product prior to use.

CAUTION:

Consult local or state regulations regarding the handling, use, and disposal of Auto Magic® Special Cleaner Concentrate™ prior to use.

Under no circumstances should contamination removal be performed in direct sunlight or contamination removal solution be allowed to dry on vehicle surfaces, as staining of plastic, rubber, or painted parts may result.

Repair Procedure

1. Move vehicle out of direct sunlight. Initially rinse with cool water then wash with liquid car wash detergent. Rinse again thoroughly with fresh water.

2. Dilute the mixture to a 1:8 ratio for painted surfaces. Use the recommended dilution ratio when applying to any other surface. Apply the diluted cleaner concentrate so that it evenly covers the affected area. Use an appropriate mitt or sponge to agitate the surface.

3. Thoroughly rinse vehicle with fresh water.

4. Inspect vehicle carefully both visually and by feel to determine if all iron particles have been removed. Repeat the wash several times if necessary to achieve complete removal.

5. Dry vehicle with a soft terry cloth towel and apply a non–abrasive, non–silicone glaze to obtain a high–gloss finish.

LEXUS

Technical Service Information Bulletin

April 7, 2000

Title:

CA/50 STATE CERTIFIED EMISSION CONTROL UNDERHOOD LABEL ORDERING

Models:

All Models

TSIB

PG001–00

PRODUCT GENERAL INFORMATION

Introduction

It is no longer necessary to fax the CA/50 State Emission Control Label Order Form to TMS. California (CA) and 50 State Certified underhood emission control labels (emission labels) may now be obtained through your dealership Parts Department utilizing standard replacement parts ordering procedures via the TDN. Follow the guidelines outlined in this TSB to ensure proper label application.

Applicable Vehicles

- **All** model year **Lexus Vehicles.**
  We have included a table showing 1995 – 2000 U.S. model numbers and their exhaust emissions certifications. Please continue to consult the Electronic Parts Catalog (EPC) or the parts microfiche for emission label parts numbers.

NOTE:

Although the California Smog Impact Fee has been discontinued, dealers are still required by regulation to verify the correct emission label is installed on the correct vehicle.

REGULATIONS:

The United States Clean Air Act, Title II, Sections 202, 203, 205, and 207 mandates that the emission control label must correctly match the emissions equipment on the vehicle. Any person violating this requirement is subject to applicable State penalties and a Federal civil penalty of no more than $25,000 for each instance.

Personnel at franchised dealerships are authorized to affix such labels to vehicles and are, therefore, subject to this regulation and the attendant penalties.

- **Do not sell the labels over the counter. Always install the label on the vehicle.**
- **Never install a California and/or 50 State Label on a vehicle that is not a California/50 State Emission Certified Vehicle.**
- **Do not install Federal Emission labels on vehicles that are not Federal Emissions Certified.**

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

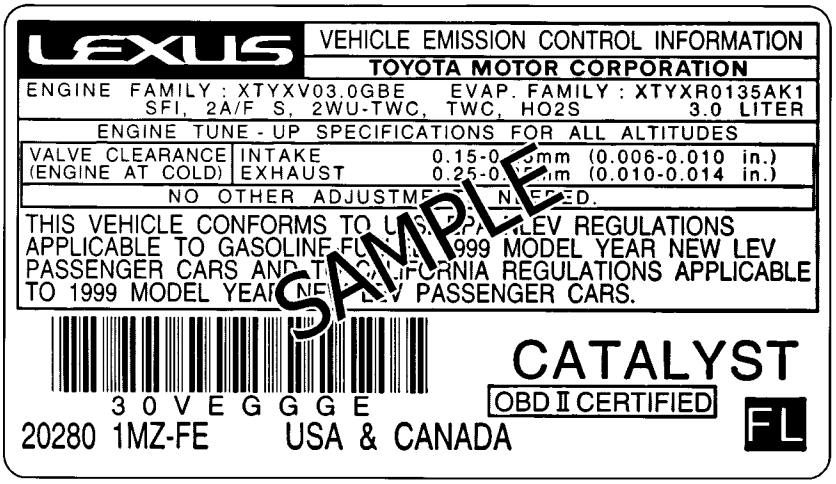
Label Ordering Procedure

To ensure that the emission control labels are affixed to the correct vehicle, it is necessary to follow these procedures:

1. Record the Vehicle Identification Number (VIN) from the vehicle requiring a replacement label.

2. Refer to the Vehicle Detail screen in the Lexus Service Inquiry system to determine the correct 4–digit U.S. model number for the VIN in question.

3. Determine the vehicle's emission certification using the U.S. model number and the attached tables.



4. Once the emissions equipment information is verified, obtain the part number information by consulting the EPC/microfiche.

5. Order the label through your Parts Department, using normal parts ordering procedures via the TDN.

6. When the part arrives, verify that the emission label matches the emissions equipment on the vehicle. This will ensure the correct label is affixed to the vehicle.

1995 MY Emission Control Labels

Year	Model	CA Emission Model No.	50 States Emission Model No.	Federal Emission Model No.
1995	ES 300	9010	N/A	9000
	SC 300	9210, 9211		9200, 9201
	SC 400	9230		9220
	GS 300	9310		9300
	LS 400	9110		9100

1996 MY Emission Control Labels

Year	Model	CA Emission Model No.	50 States Emission Model No.	Federal Emission Model No.
1996	ES 300	9010	N/A	9000
	SC 300	9210, 9211		9200, 9201
	SC 400	9230		9220
	GS 300	9310		9300
	LS 400	9110		9100
	LX 450	9610		9600

1997 MY Emission Control Labels

Year	Model	CA Emission Model No.	50 States Emission Model No.	Federal Emission Model No.
1997	ES 300	9010	N/A	9000
	SC 300	9210, 9211		9200, 9201
	SC 400	9230		9220
	GS 300	9310		9300
	LS 400	9110		9100
	LX 450	9610		9600

1998 MY Emission Control Labels

Year	Model	CA Emission Model No.	50 States Emission Model No.	Federal Emission Model No.
1998	ES 300	9010	N/A	9000
	SC 300	9210		9200
	SC 400	9230		9220
	GS 300	9310		9300
	GS 400	9330		9320
	LS 400	9110		9100
	LX 470	9630		9620

1999 MY Emission Control Labels

Year	Model	CA Emission Model No.	50 States Emission Model No.	Federal Emission Model No.
1999	ES 300	N/A	9000, 9010	N/A
	SC 300		9200, 9210	
	SC 400		9220, 9230	
	GS 300		9300, 9310	
	GS 400		9320, 9330	
	LS 400		9100, 9110	
	RX 300	9410, 9414	9420, 9424	9400, 9404
	LX 470	N/A	9620, 9630	N/A

2000 MY Emission Control Labels

Year	Model	CA Emission Model No.	50 States Emission Model No.	Federal Emission Model No.
2000	ES 300	N/A	9000	N/A
	SC 300		9200	
	SC 400		9220	
	GS 300		9300	
	GS 400		9320	
	LS 400		9100	
	RX 300		9420, 9424	
	LX 470		9620	

LEXUS

Technical Service Information Bulletin

January 1, 1999

Title:

VOLUME 4 INFORMATION

Models:

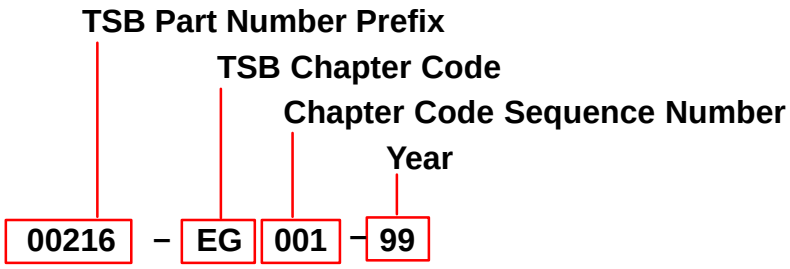
All Models

TSIB

Introduction

Lexus Technical Service Information Bulletins (TSIBs) continue to be one of the most current sources of technical information available. To ensure complete access to this reference source, use the following steps:

- Volume Four will begin with 1999 Technical Service Information Bulletins.
- Place this bulletin along with all 1999 TSIBs into the new binders received with this bulletin.
- Label this new binder “Volume Four“ using the labels provided with the binder.
- Additional copies of 1994 through 1999 TSIBs are available to all Lexus Dealerships through the Non–Parts System (MDC NPM System) by using the following Part Number designation:



Related TSIB Part Numbers

MATERIAL DESCRIPTION	PART NUMBER
1999 TSIB Binder complete with all bulletins issued to date	VOL4
New TSIB Binder and tabs only	00216–00001

LEXUS

Technical Service Information Bulletin

December 24, 1999

Title:

REPAIR MANUAL CORRECTIONS INDEX

Models:

All Models

TSIB

REVISED

PG002–99

PRODUCT GENERAL INFORMATION

Introduction

Corrections have been made in the repair manuals listed below. Corrections available in the last quarter are marked in **red**, and have already been mailed to all dealers.

Parts Information

Correction Pages are available through the Dealer Support Material Network (MDC NPM System) via the corresponding part numbers from the following table:

NOTE:

When ordering a technical publication (i.e. Repair Manual, Electrical Wiring Diagram) from the MDC, any Correction Page(s) associated with that particular Publication will automatically be included with your order.

	Publication	Number	Page(s)	Part Number
ES 300	1997 ES 300	RM511–U	DI–198	00245–RM511–9064
	1998 ES 300	RM577–U	DI–232	00245–RM577–9064
			DI–251	↓
	1999 ES 300	RM667–U1	DI–87	00245–RM667–8122
			DI–92	↓
			DI–94	↓
			DI–107	↓
			DI–234	00245–RM667–9009
			DI–234	00245–RM667–9064
			DI–235	00245–RM667–9009
			DI–243	↓
			DI–244	↓
			DI–245	↓
			DI–253	00245–RM667–9064
			DI–255	00245–RM667–9009
			DI–258	↓
			DI–260	↓
			DI–262	↓
			DI–333	00245–RM667–8101
			IN–19	↓
			IN–20	↓
GS 400/300	1998 GS 400/300	RM583–U1	DI–77	00245–RM583–8122
			DI–81	
			DI–83	
			DI–95	
			DI–283	
			DI–242	
			DI–244	
			DI–256	
		RM583–U2	BE–161	00245–RM583–8118
			BR–4	00245–RM583–8032

	Publication	Number	Page(s)	Part Number
GS 400/300 (Continued)	1998 GS 400/300	RM583–U2	SA–29	00245–RM583–9064
			SA–31	↓
			SA–53	↓
	1999 GS 400/300	RM665–U2	SA–29	00245–RM665–9064
			SF–31	↓
LS 400	1998 LS 400	RM578–U2	BE–170	00245–RM578–8118
			SA–14	00245–RM578–8059
			SA–19	↓
			SA–21	↓
	1998 LS 400	RM578–U2	SA–24	00245–RM578–8059
			SA–53	↓
			SA–56	↓
			SA–75	↓
			SA–78	↓
			SA–79	↓
			SA–80	↓
			SA–110	↓
			SA–114	↓
			SA–124	↓
			SA–125	00245–RM578–9064
LX 470	1998 LX 470	RM620–U	PP–34	00245–RM620–8060
			PP–35	↓
			PP–36	↓
			PP–37	↓
			SS–26	↓
			TR–07	↓
			TR–11	↓
			TR–12	↓
			TR–26	↓
			TR–29	↓
			TR–30	↓
			TR–31	↓
			TR–32	↓
			TR–33	↓
			TR–39	↓
			TR–41	↓
			TR–44	↓
			TR–45	↓
			TR–46	↓
	1998 LX 470	RM620–U1	IN–8	00245–RM620–8039
			DI–221	00245–RM620–8041
			DI–223	00245–RM620–8086
			DI–246	↓
			DI–247	↓
			DI–250	↓
			DI–262	↓

	Publication	Number	Page(s)	Part Number
LX 470 (Continued)	1998 LX 470	RM620–U1	DI–267	↓
			DI–383	00245–RM620–8045
			DI–389	↓
			DI–578	00245–RM620–8118
			SS–29	00245–RM620–9018
	1998 LX 470	RM620–U2	BE–103	00245–RM620–9020
			BR–4	00245–RM620–8039A
			EM–59	00245–RM620–9044
			SA–14	00245–RM620–9018A
			SA–15	↓
			SA–183	00245–RM620–8058
	1998 LX 470	RM620–U2	SR–11	00245–RM620–9029
			SR–15	↓
			SR–16	↓
			SR–17	↓
			SR–20	↓
			SR–21	↓
	1999 LX 470	RM662–U1	SS–30	00245–RM662–9018
			DI–594	00245–RM662–8118
	1999 LX 470	RM662–U2	BE–103	00245–RM662–9020
			EM–59	00245–RM662–9044
			SA–14	00245–RM662–9018A
			SA–15	↓
			SR–11	00245–RM662–9029
			SR–15	↓
			SR–16	↓
			SR–17	↓
			SR–20	↓
			SR–21	↓
RX 300	1999 RX 300	RM662–U1	DI–76	00245–RM626–8122
			DI–80	↓
			DI–82	↓
			DI–93	↓
			IN–21	00245–RM626–8100
			IN–22	↓
			IN–23	↓
		RM626–U2	BE–131	00245–RM626–8118
SC 300/400	1997 SC 400/300	RM513–U	SA–18	00245–RM513–9006
			SA–23	
			SA–25	
			SA–26	
			SA–27	
			SA–28	
	1998 SC 400/300	RM590–U1	DI–466	00245–RM590–8096
			DI–467	↓

	Publication	Number	Page(s)	Part Number
SC 400/300 (Continued)			DI–468	↓
			DI–762	00245–RM590–8118
			PP–72	00245–RM590–9006A
		RM590–U2	SA–27	00245–RM590–9006B
			SA–30	↓
	1999 SC 400/300	RM666–U1	DI–480	00245–RM666–8096
			DI–481	↓
			DI–482	↓
			DI–738	00245–RM666–8118
			PP–72	00245–RM666–9006A
		RM666–U2	SA–27	00245–RM666–9006B
			SA–30	↓

LEXUS

Technical Service Information Bulletin

September 26, 2003

Title:

WARRANTY PARTS MARKING PROCEDURE

Models:

All Models

TSIB

Introduction

Effective September 1, 2003, all warranty parts (as indicated on the next page) must be marked in the area or location of the failure. The technician should complete this procedure after the failed part has been removed from the vehicle and before the part is placed in the 10–bin storage. (Exchanged parts and remanufactured parts are not included in this procedure.)

Failed parts marking will be beneficial in detecting and resolving product and parts quality issues. This will also offer additional opportunities to make future enhancements to our parts and products.

Parts are subject to random inspection in the dealership by field representatives to ensure compliance with this new policy.

Failure to comply with this policy may result in a debit of the corresponding warranty claim(s).

Applicable Vehicles

- All models.

Parts Marking Procedure

All technicians must follow these procedures to ensure proper parts marking:

- Wipe the part clean (no excess fluid should be present).
- Indicate area of defect or failure by marking the specific part(s) with a water resistant permanent marker. Use a color that can be easily seen against the background of the part being marked. For dark surfaces the color yellow is highly recommended as well as the color black for light surfaces.
- Mark the area of failure or defect by drawing a circle, a square, pointing an arrow or adhering tape with an indication of the failed or defect location.
- Attach a completed Warranty Parts Tag (M/N 00404–PRETN–TAGS) to the marked part.

All other parts recovery/shipping policies and procedures apply.

Warranty Information

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

Parts Marking Requirement

Dealers are requested to mark the location of the failure of all warranty parts that are listed below. ***This list is not inclusive.*** There may be other components that can be marked in the area of failure. All other parts that can be marked should be marked.

Parts Marking List

- assist grip assy
- audio (blemish)
- back door garnish
- bumper covers
- cargo cover (retractable)
- carpet
- clutch disc
- clutch flywheel
- combination meter glass
- console and components
- cowl assy
- cowl side trim sub–assy
- cupholders
- cylinder head cover sub–assy
- dash panel insulator assy
- dashboard and trim
- disc wheel
- display panels
- door handle assy
- door moulding
- door trim panel & molding
- emblems
- engine oil pan
- exhaust manifold
- floor and cargo mats
- gear shift knob
- grills
- headlamps
- headliner
- hoses
- instrument panel safety pad sub–assy
- Interior light assemblies and covers
- knobs, levers, handles
- l/pulley pump assy
- mirrors (side and rearview)
- navigation or VES screens
- pillar garnish
- rack and pinion/power steering gear assy
- radiator
- room partition board
- rotors (mark where min. runout is exceeded or warped)
- seat covers/cushions
- seat tracks
- soft trim
- spare tire cover
- steering column cover
- steering wheel
- tail lamps and covers
- transmission oil pan
- visor
- washer jar
- wheel cap
- wheels

Parts Marking List (Continued)

NOTE:

The following parts do not have to be marked unless the technician can determine failure and location.

air induction/ejection systems
all computers
alternators
audio (internal)
batteries
bearings
belts
catalytic converter
crankshaft
cruise control
distributors
EGR systems
engine control systems
exchange parts
exhaust systems
fuel injection systems
fuel injectors
fuel pump
ignition system
internal engine components
internal transmission components
oil cooler
power door lock switches
remanufactured parts
starters
suspension components
valve covers
window regulators
wiper motors

Technical Service Information Bulletin
October 11, 2002

Title:

SUSPENSION BALL JOINT INSPECTION

Models:

Applicable Models

Introduction

This Service Bulletin is to inform you of the inspection method, and free play specification figures for suspension ball joints. The on–vehicle inspection methods have been standardized.

Applicable Vehicles

- **1990 – 2000** model year **LS 400** vehicles.
- **2001 – 2003** model year **LS 430** vehicles.
- **1993 – 2003** model year **GS 300** vehicles.
- **1998 – 2000** model year **GS 400** vehicles.
- **2001 – 2003** model year **GS 430** vehicles.
- **1992 – 2000** model year **SC 300 & SC 400** vehicles.
- **2002 – 2003** model year **SC 430** vehicles.
- **2001 – 2003** model year **IS 300** vehicles.
- **1999 – 2003** model year **RX 300** vehicles.
- **1990 – 2003** model year **ES 250 & ES 300** vehicles.
- **1998 – 2003** model year **LX 470** vehicles.

Warranty Information

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

Inspection Information Table

MODEL	LOCATION	LOWER BALL JOINT OR SUSPENSION BALL JOINT			UPPER BALL JOINT		
		INSP. METHOD	MAX. PLAY	TURNING TORQUE	INSP. METHOD	MAX. PLAY	TURNING TORQUE
LS 400 (UCF10) 1990–1994	Front	1–(A)	0.016 in. (0.4) mm	4 in.•lbf (0.5 N•m) or Less	2	No Play Felt	31 in.•lbf (3.5 N•m) or Less
	Rear	3	No Play Felt	31 in.•lbf (3.5 N•m) or Less			
LS 400 (UCF20) 1995–2000	Front	1–(A)	0.016 in. (0.4) mm	22 in.•lbf (2.5 N•m) or Less			
	Rear	3	No Play Felt	31 in.•lbf (3.5 N•m) or Less			
LS 430 (UCF30) 2001–2003	Front	1–(A)	No Play Felt	31 in.•lbf (3.5 N•m) or Less			
	Rear	3	No Play Felt	31 in.•lbf (3.5 N•m) or Less			
GS 300 (JZS147) 1993–1997	Front	1–(A)	0.016 in. (0.4) mm	27 in.•lbf (3.0 N•m) or Less			
	Rear	1–(A)	No Play Felt	31 in.•lbf (3.5 N•m) or Less			
GS 300, 400, 430 (JZS16#, UZS16#) 1998–2003	Front	1–(A)	0.016 in. (0.4) mm	27 in.•lbf (3.0 N•m) or Less			
	Rear	3	No Play Felt	31 in.•lbf (3.5 N•m) or Less			
SC 300, 400 (JZZ31, UZZ30) 1992–2000	Front	1–(A)	0.016 in. (0.4) mm	27 in.•lbf (3.0 N•m) or Less			
	Rear	1–(A)	No Play Felt	31 in.•lbf (3.5 N•m) or Less			
SC 430 (UZZ40) 2002–2003	Front	1–(A)	0.016 in. (0.4) mm	27 in.•lbf (3.0 N•m) or Less			
	Rear	3	No Play Felt	31 in.•lbf (3.5 N•m) or Less			

Inspection Information Table (Continued)

MODEL	LOCATION	LOWER BALL JOINT OR SUSPENSION BALL JOINT			UPPER BALL JOINT		
		INSP. METHOD	MAX. PLAY	TURNING TORQUE	INSP. METHOD	MAX. PLAY	TURNING TORQUE
IS 300 (JCE10) 2001–2003	Front	1–(A)	0.016 in. (0.4) mm	27 in.•lbf (3.0 N•m) or Less	2	No Play Felt	31 in.•lbf (3.5 N•m) or Less
	Rear	3	No Play Felt	31 in.•lbf (3.5 N•m) or Less			27 in.•lbf (3.0 N•m) or Less
RX 300 (MCU10, 15) 1999–2003	Front	1–(B)	No Play Felt	31 in.•lbf (3.5 N•m) or Less	N/A	N/A	N/A
	Rear	N/A	N/A	N/A	N/A	N/A	N/A
ES 250 & 300 (VZV21, MCV20, 30) 1990–2003	Front	1–(B)	No Play Felt	31 in.•lbf (3.5 N•m) or Less	N/A	N/A	N/A
	Rear	N/A	N/A	N/A	N/A	N/A	N/A
LX 470 (UZJ100) 1998–2003	Front	1–(A)	No Play Felt	27 in.•lbf (3.0 N•m) or Less	2	No Play Felt	40 in.•lbf (4.5 N•m) or Less
	Rear	N/A	N/A	N/A	N/A	N/A	N/A

Free Play Inspection

NOTE:
- **Be sure to check the table for the applicable inspection type based on the vehicle model.**
- **Refer to the table for the standard free play values.**

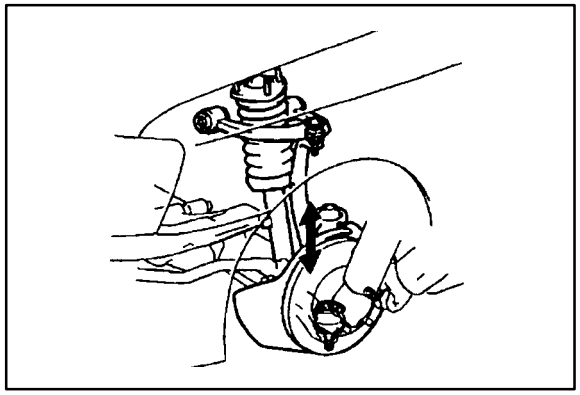
1. Inspect Lower Ball Joint Free Play

A. Move the hub up and down by hand (Most models with wish–bone suspension):

a. Remove the tire.

b. Install the 2 lug nuts.

c. Inspect the free play while moving the lug nuts up and down at a force of 67 lbf (294 N, 30 kgf).

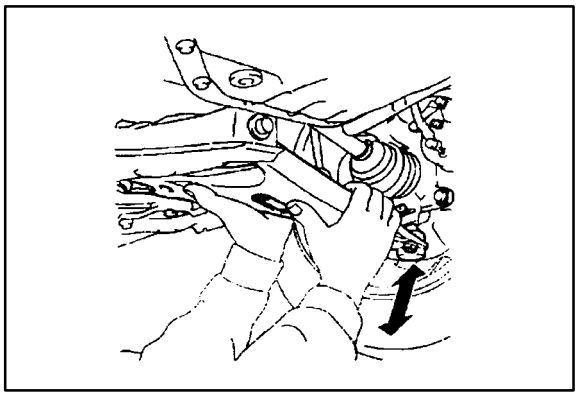


Free Play Inspection (Continued)

B. Move the lower arm by hand (All models with strut type suspension and some models with wish–bone type suspension):

a. Lift up the vehicle.

b. Inspect the free play while moving the lower arm up and down at a force of 67 lbf (294 N, 30 kgf).

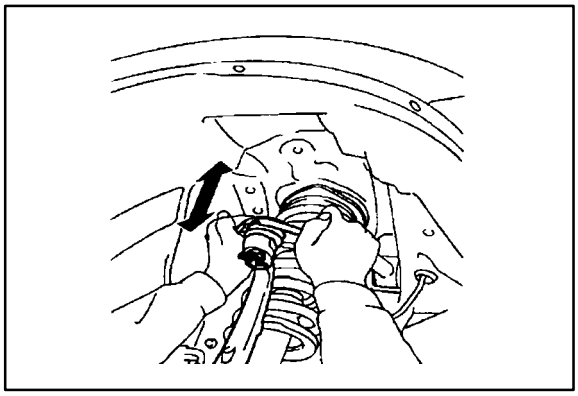


2. Inspect Upper Ball Joint Play

Move the upper arm by hand (Models where the **LOWER** control arm are linked by a torsion bar, and all models using a coil spring.

A. Remove the front tire.

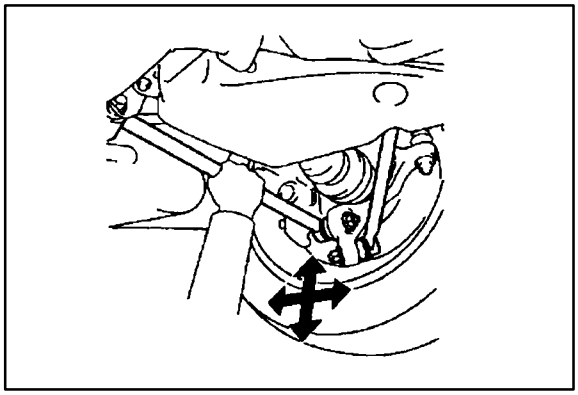
B. Inspect the free play while moving the upper arm up and down at a force of 67 lbf (294 N, 30 kgf).



3. Inspect the Suspension Arm Ball Joint Free Play

A. Lift up the vehicle.

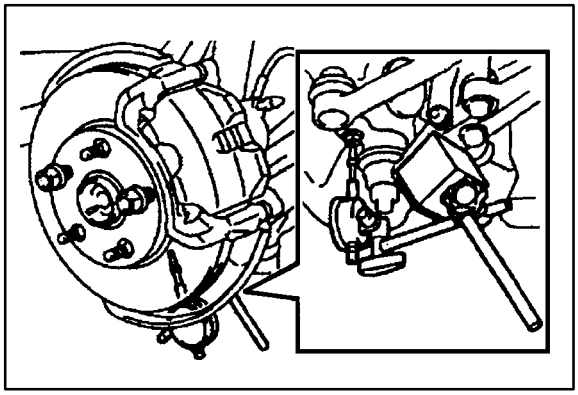
B. Inspect the free play while moving the control arm by hand.



(Reference)

Free Play Inspection Method (Gauge Installation)

- Position the dial gauge between the arm (upper or lower) and the knuckle, and measure free play.
  (This illustration shows how to measure free play for vehicles with double wishbone type suspension with coil spring).



Inspect Ball Joint Dust Cover

Check for cracks and grease leaks on the dust cover (boots).

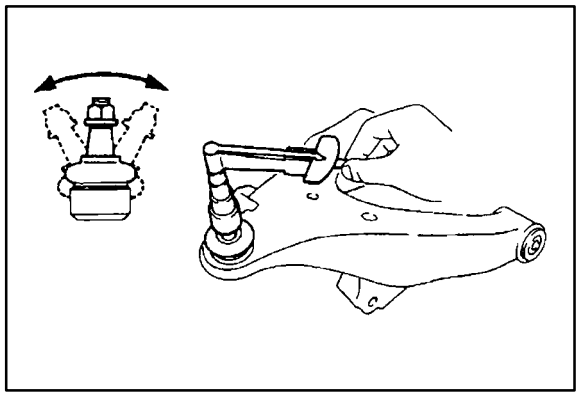
Turning Torque Inspection

Inspect Ball Joint Turning Torque

Move the stud back and forth 5 times, then turn the stud continuously at 3–5 seconds per turn, and measure the turning torque at the 5th turn.

HINT:

Refer to the table for standard values for the turning torque.



Technical Service Information Bulletin
May 4, 2001

Title:
REPLACEMENT CERTIFICATION LABELS

Models:
All Models

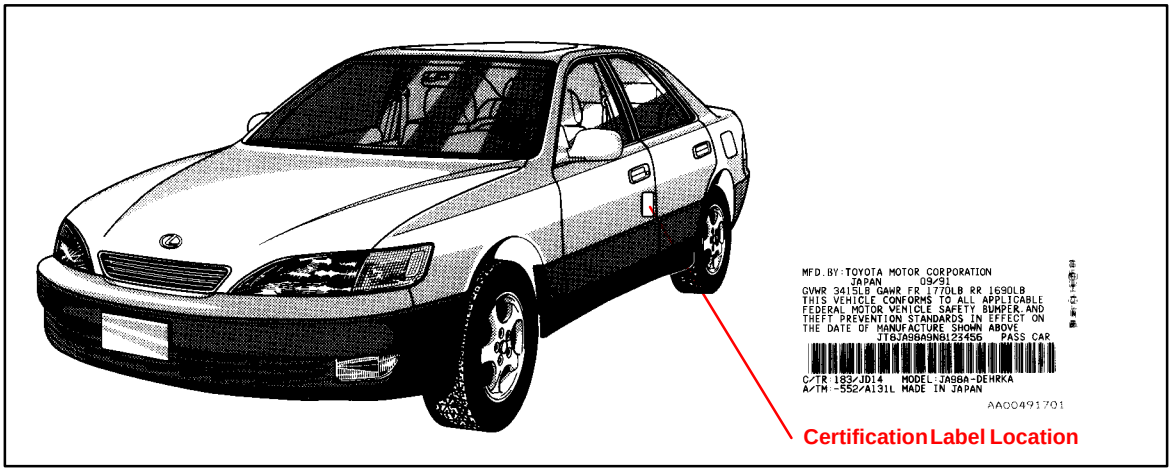
TSIB

PG015-01

PRODUCT GENERAL INFORMATION

Introduction

Replacement Certification Labels (vinyl label affixed to driver's door or door post) **may be** available from Toyota providing the request meets one of the criteria listed below.



Applicable Vehicles

- All Lexus vehicles.

Certification Label Criteria

1. The vehicle is in an accident and the label is damaged or is attached to a part that will be replaced during the repair.

NOTE:
- **Processing a new label *will be delayed significantly if the old certification label is not available.***
- **A replacement label MAY NOT be available if the vehicle is more than 5 years old and the old label does not accompany this request.**

2. The label is stolen.

Procurement Procedure

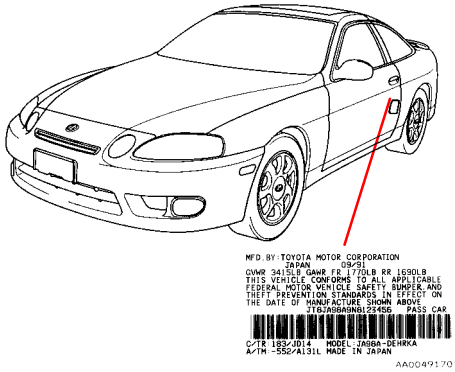
To request a replacement label, complete a copy of the form on the back of this bulletin. Your dealer parts account will be billed $10.00 for each replacement of a damaged or stolen label.

NOTE:
All replacement labels for damaged and/or stolen vehicles are subject to approval by the Technical Compliance Department. If you have any specific questions, contact (310) 468–3390.

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

APPLICATION FOR REPLACEMENT CERTIFICATION LABEL



REASON FOR REPLACEMENT

- ☐ ACCIDENT DAMAGE
- ☐ STOLEN
- ☐ OTHER _____

REASON/EXPLANATION

PLEASE PROVIDE CORRECT VIN _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

ATTACH ORIGINAL LABEL HERE

NOTE:
Original label MUST accompany this application or order will be significantly delayed.

DEALER INFORMATION

DEALER CODE: ☐☐☐☐☐

DEALER NAME: _____

ADDRESS: _____
STREET ADDRESS

_____
CITY, STATE, ZIP CODE

TELEPHONE: ( ) _____
AREA CODE, TELEPHONE NUMBER

CONTACT: _____
FIRST NAME, LAST NAME

MAIL (*DO NOT FAX*) THE COMPLETED REQUEST FORM WITH THE OLD LABEL TO:

TOYOTA MOTOR SALES, U.S.A. INC.
TECHNICAL COMPLIANCE DEPARTMENT, S207
19001 S. WESTERN AVENUE
TORRANCE, CA 90509–2991

LEXUS

Technical Service Information Bulletin

May 4, 2001

Title:

REPLACEMENT VIN PLATES

Models:

All Models

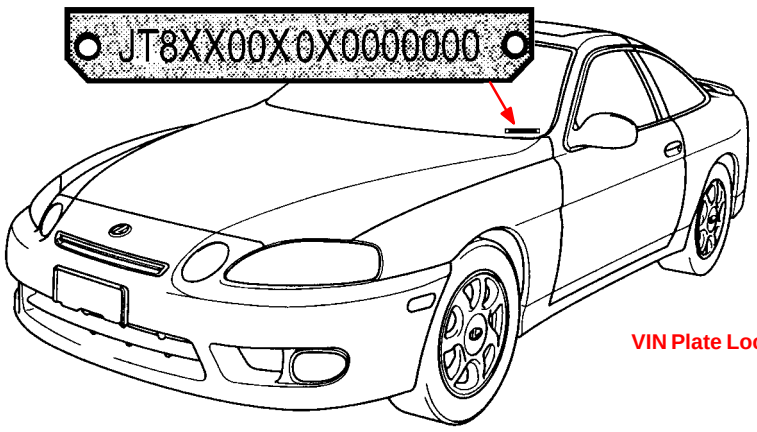
TSIB

PG016-01

PRODUCT GENERAL INFORMATION

Introduction

Replacement **VIN** plates (metal plates riveted to dashboard) **may be** available from Lexus providing the request meets the criteria listed below.



VIN Plate Location

Applicable Vehicles

- All Lexus vehicles.

Replacement VIN Plate Criteria

- The vehicle is in an accident and the plate is damaged.

NOTE:

The original plate to be replaced MUST accompany the request.

NOTE:

If a plate is stolen, be sure to contact the State Police or your State's Department of Motor Vehicles (DMV). In most cases the State DMV will issue a unique number so that the original number can be included on stolen vehicle listings. If this is the case, a replacement plate is NOT available from Lexus. However, the original VIN, NOT the state issued VIN, must be used on all warranty claims.

Procurement Procedure

To request a replacement plate, complete a copy of the form on the back of this page. Note that the damaged VIN plate **MUST** accompany the request form. Your dealer parts account will be billed $10.00 for each replacement of a damaged plate.

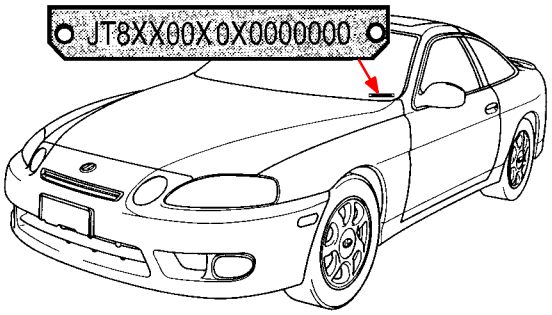
NOTE:

All replacement plates for damaged and/or stolen vehicles are subject to approval by the Technical Compliance Department. If you have any specific questions, contact (310) 468–3390.

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

APPLICATION FOR REPLACEMENT VIN PLATE



REASON FOR REPLACEMENT

☐ ACCIDENT DAMAGE

☐ OTHER _____

REASON/EXPLANATION

PLEASE PROVIDE CORRECT VIN _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

DEALER INFORMATION

DEALER CODE: ☐☐☐☐☐

DEALER NAME: _____

ADDRESS: _____

STREET ADDRESS

_____

CITY, STATE, ZIP CODE

TELEPHONE: ( ) _____

AREA CODE, TELEPHONE NUMBER

CONTACT: _____

FIRST NAME, LAST NAME

MAIL (*DO NOT FAX*) THE COMPLETED REQUEST FORM WITH THE OLD PLATE TO:

TOYOTA MOTOR SALES, U.S.A. INC.
TECHNICAL COMPLIANCE DEPARTMENT, S207
19001 S. WESTERN AVENUE
TORRANCE, CA. 90509–2991

LEXUS

Technical Service Information Bulletin

December 24, 1999

Title:

YEAR 200 READINESS DISCLOSURE

Models:

All Models

TSIB

Introduction

Based upon information we have obtained from our suppliers,[1] all factory–installed systems in Lexus cars and sports utility vehicles distributed and/or sold by Lexus ("Vehicles") will not be affected by the change of date from 1999 to the year 2000.

Lexus anticipates no problems with past, current or future Lexus brand vehicles or Genuine Lexus parts and accessories regarding year 2000 readiness. We hope the following information is helpful to you.

Please contact our Customer Service Department at 1–800–255–3987 should you have any other questions.

Applicable Vehicles

- **All Models**

Warranty

WARRANTY STATEMENT WITH RESPECT TO LEXUS BRAND VEHICLES

Lexus is pleased to confirm that the manufacturer's limited express warranty and Lexus' powertrain warranty warrant that all factory–installed systems in new Vehicles and Lexus Certified Pre–Owned Vehicles shall be free of any defect arising solely due to a change in date from the year 1999 to the year 2000.[2]

With respect to Vehicles no longer covered under such Lexus limited express warranty, Lexus is not aware of any operational safety or functional impact the year 2000 date change would have upon any factory–installed system in Lexus Vehicles. Should Lexus become aware of any material impact to the operational safety or functionality of such systems, Lexus shall publish such information promptly.

WARRANTY STATEMENT WITH RESPECT TO GENUINE LEXUS PARTS AND ACCESSORIES

Lexus is pleased to confirm that the manufacturer's limited express warranty warrants that all new Lexus Genuine Parts and Accessories shall be free of any defect arising solely due to a change in date from the year 1999 to the year 2000.[2]

With respect to products no longer covered under a Lexus limited express warranty, Lexus is not aware of any operational safety or functional impact the year 2000 date change would have upon such products. Should Lexus become aware of any material impact to the operational safety or functionality of such a product, Lexus shall publish such information promptly.

1 Lexus relies on the statements made by its suppliers and has not independently verified such information.

2 Please refer to terms of limited express warranty for disclaimers, limitations and restrictions.

Parts & Accessories

GENUINE LEXUS PARTS AND ACCESSORIES

Based upon information we have obtained from our suppliers,[1] all new Genuine Lexus Parts and Accessories will not be affected by the change of date from 1999 to the year 2000.

DEALER–INSTALLED AND OTHER THIRD PARTY–INSTALLED SYSTEMS/PRODUCTS

Our dealers and distributors may sell and/or install products that are not Genuine Lexus Parts and Accessories. Lexus can only determine the Year 2000 status of Genuine Lexus Parts and Accessories. Therefore, the above statements do not apply to products that are not Genuine Lexus Parts and Accessories or were not installed by the factory. We encourage you to contact your dealer or other relevant third party regarding products installed on your Lexus vehicle(s) that are not Genuine Lexus Parts and Accessories and/or were not installed by the factory to determine any Year 2000 issues associated with those products.

[1] Lexus relies on the statements made by its suppliers and has not independently verified such information.

LEXUS

Technical Service Information Bulletin

September 8, 2003

Title:

DIAGNOSTIC TESTER CONTROLLER AREA NETWORK (CAN) INTERFACE MODULE

Models:

All Models

TSIB

SS001-03

SPECIAL SERVICE TOOLS

Introduction

Over the next three model years, all Lexus vehicles will begin using an all–new diagnostic communication protocol, Controller Area Network (CAN). CAN will be introduced on the 2004 LS 430 this fall. A CAN Interface Module has been distributed to all dealers as an essential Special Service Tool (SST) and will allow the Diagnostic Tester to communicate with CAN–equipped vehicles. Please use the following instructions to install the new CAN Interface Module as soon as it arrives at your dealership.

NOTE:

- **Version 10.2a or later Diagnostic Tester Software must be used to enable communication with CAN–equipped vehicles. Version 10.2a will be distributed to dealers via TIS before CAN–equipped vehicles arrive at dealers.**
- **There is no need to remove the CAN Interface Module when working with non–CAN systems or older software versions (Version 10.1a or earlier). The Diagnostic Tester will communicate with all DLC3/J1962 based systems with the CAN Interface Module installed.**

Applicable Vehicles

- **All Models**.

Required SSTs

SPECIAL SERVICE TOOLS (SSTs)	PART NUMBER	QUANTITY
Lexus Diagnostic Tester Kit* 	01001270	1
CAN Interface Module Kit* 	01002744	1
12 Megabyte Diagnostic Tester Program Card with version 10.2a Software (or later)* 	01002593-005	1

* Essential SSTs.

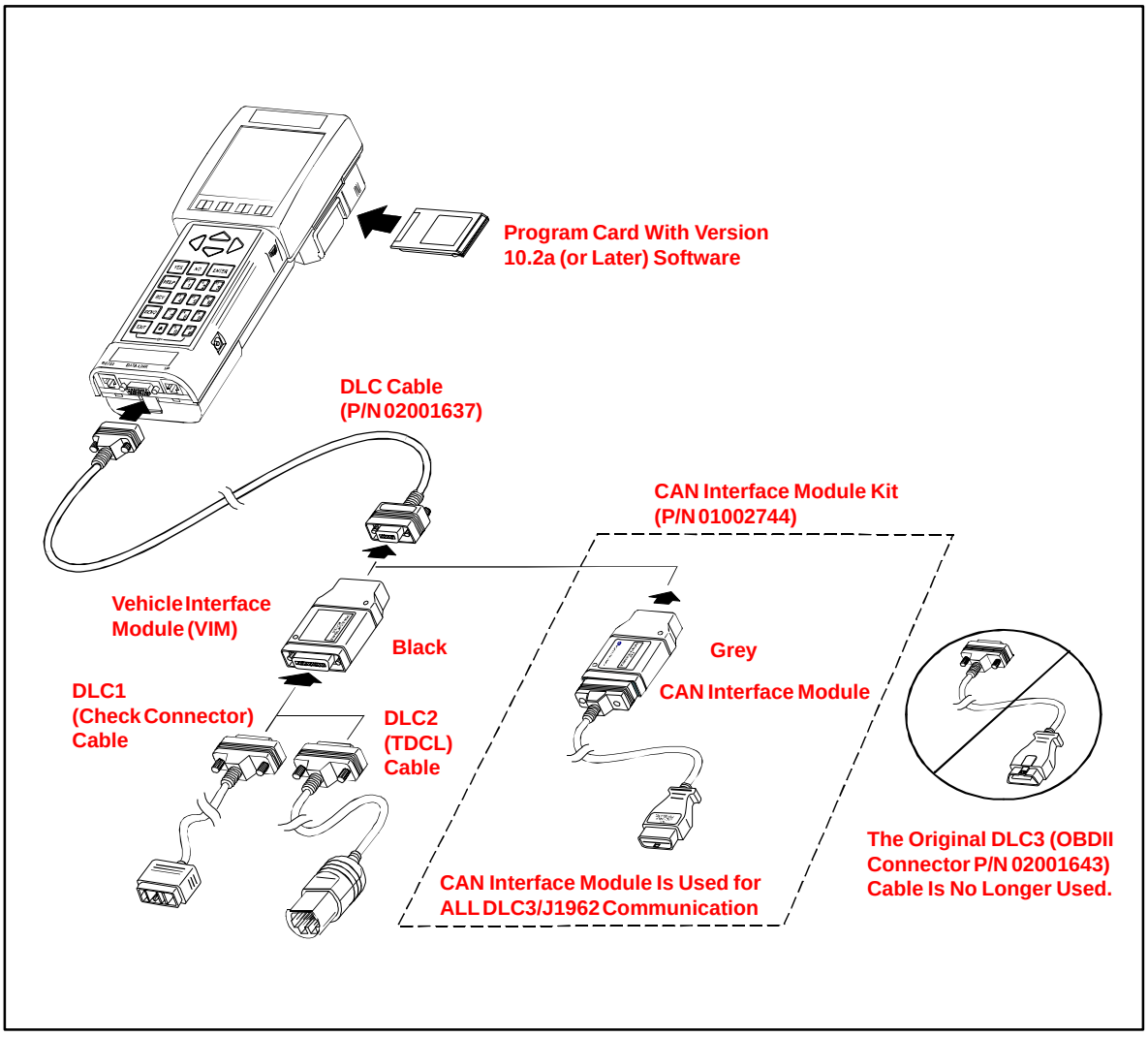
NOTE:

Additional Diagnostic Tester Kits, CAN Interface Modules, Program Cards or SSTs may be ordered by calling SPX/OTC at 1-800-933-8335.

Warranty Information

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

Installation Procedure



1. Remove the original DLC3 Cable and store it in the Diagnostic Tester storage case.
2. Connect the CAN Interface Module to the DLC Cable.
3. Use the Diagnostic Tester with the CAN Module installed for all DLC3/J1962 based vehicle communication.
4. If you experience problems with the Diagnostic Tester or CAN Interface Module, please contact Lexus Special Service Tool Customer Support at 1–800–933–8335.

NOTE:

- **There is no need to remove the CAN Interface Module when working with non–CAN systems or older software versions (Version 10.1a or earlier). The Diagnostic Tester will communicate with all DLC3/J1962 based systems with the CAN Interface Module installed.**
- **For DLC1 and DLC2 communication you must continue to use the Vehicle Interface Module (VIM).**

Technical Service Information Bulletin
June 26, 1998

Title:
1998 SPECIAL SERVICE TOOLS

Models:
All 1997 and 1998 Models

TSIB

Introduction

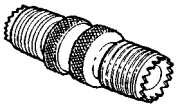
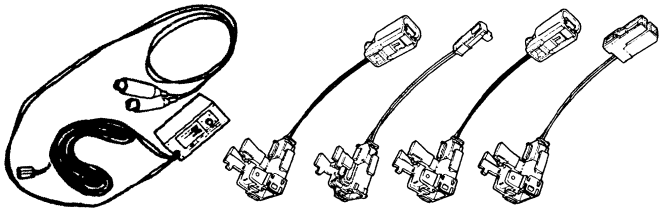
The following bulletin contains information regarding 1997 and 1998 Special Service Tools (SSTs). All new SSTs are listed by tool number, name and model application. All 1998 Essential SSTs are automatically shipped to dealers.

- **Special Service Tools may also be ordered by contacting OTC at 1–800–933–8335.**

Affected Vehicles

- All **1997** and **1998** model year Lexus vehicles.

1998 Essential Special Service Tools

1998 ESSENTIAL SPECIAL SERVICE TOOLS		
TOOL NUMBER	**TOOL NAME**	**APPLICATION**
01001895–U05	Scan Tool Software Update > Support for 98MY vehicles: OBD,Enhanced OBD II, NVH, V–BOB & 5 Gas Analyzer > Multiplex On–Board Diagnostic capability for: 1. Wireless Registration 2. Immobilizer Key Programming 3. ABS Air Bleed > Expanded Help Functions 	All models
02002456	Customize Program Card (for Diagnostic Tester)	LS400, RX300, GS300/400, LX470
09843–18040	Diagnosis Check Wire No. 2	LS400, GS300/400
09843–18050	Navigation Wire Harness No. 2	LS400, GS300/400
09990–00450	ABS Actuator Checker Sub–Harness “P”	ES300, SC300/400
LEX280103	Cellular Phone Antenna Connector 	LS400
09870–00005–02	A/C Quick Joint Disconnect Set 1. 09870–00010 Storage Case 2. 09870–00015 High Side Tool 3. 09870–00025 Low Side Tool	RX300, LX470
09082–00705–02	Airbag Deployment Tool Kit: Includes: 09082–00700 Deployment Tool 09082–00730 Airbag deployment sub–harness #1 09082–00740 Airbag deployment sub–harness #2 for seat belt pretensioner (NEW) 09082–00750 Airbag deployment sub–harness #3 for side airbag (NEW) 09082–00760 Airbag deployment sub–harness #4 for driver/passenger airbag (NEW) TOY28015 Storage Case (NEW) 	All models

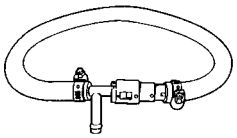
1998 Essential Special Service Tools Continued

1998 ESSENTIAL SPECIAL SERVICE TOOLS		
TOOL NUMBER	**TOOL NAME**	**APPLICATION**
09268–41300	Clamp for EFI Set (add to kit 09268–41047–02) 	LS400, ES300, GS300, GS400, SC300, SC400

1998 Available Special Service Tools

1998 AVAILABLE SPECIAL SERVICE TOOLS		
TOOL NUMBER	**TOOL NAME**	**APPLICATION**
02002455	V–BOB ECU Interface Box #6 for ABS and Engine Systems	LS400, GS300/400, ES300, SC300/400
02002454	ECU Connector Exchange Wire #10 for Cruise Control	97–98 ES300

1997 Essential Special Service Tools

1997 ESSENTIAL SPECIAL SERVICE TOOLS		
TOOL NUMBER	**TOOL NAME**	**APPLICATION**
00002–MP815–L	Battery Tester	All models
09950–60010	Bearing & Seal Driver Set 1	multiple
09950–60020	Bearing & Seal Driver Set 2	multiple
00950–70010	Handle Set	multiple
09990–00410	ABS Actuator Checker Sheet “N”	LS400, SC400
09990–00420	ABS Actuator Checker Sheet “O”	LS400, SC300/400
09990–00430	ABS Actuator Checker Sheet “P”	ES300
09990–00450	ABS Actuator Checker Sub–harness “P”	ES300, LS400, SC400
09082–00730	Airbag Deployment Wire Sub–harness 1	LS400
09817–33190–01	Sensor Socket Wrench (for shocks)	ES300
09992–00350–01	ABS & TRAC Actuator Air Bleed Tool	LS400, SC400
09268–41250–01	EFI Fuel Pressure Gauge T–Joint (Add to 09268–45015–02 Gauge Set) 	All models

1997 Available Special Service Tools

1997 AVAILABLE SPECIAL SERVICE TOOLS		
TOOL NUMBER	**TOOL NAME**	**APPLICATION**
09710–04081	Base, front lower suspension arm bushing	ES300

LEXUS

Technical Service BULLETIN

December 17, 2003

Title:

O2S TEST RESULTS (MODE 05)

Models:

All '96 – '03 & '04 RX 330

TSIB

SS002-03

SPECIAL SERVICE TOOLS

Introduction

This Service Bulletin contains Oxygen Sensor (O2S) Monitor threshold values for all models from 1996 to 2003 and some 2004 models. Starting in 2004, the O2S Monitor threshold values can be found in the repair manual. These values are used when analyzing the O2S test results to determine the O2S condition.

Applicable Vehicles

- **All 1996 – 2003** model year **Lexus** vehicles.
- **2004** model year **RX 330** vehicles.

Function Description

Checking O2S Test Results

To view O2S test results, the O2S Monitor must be completed and the test results must be checked within the same key cycle. If the ignition key is cycled OFF, the O2S test results will be set to the minimum or maximum limits, and all test results will be erased. The O2S test results are stored in the ECU (SAE term: Powertrain Control Module/PCM) when the monitor is complete. The test results are static and will not change once the monitor is complete.

The process for checking O2S test results is described in the following three basic steps:

1. Completing the O2S Readiness Monitor (page 2).
2. Accessing O2S Test Results (page 3).
3. Comparing O2S Test Results to Failure Thresholds (page 4).

Required SSTs

SPECIAL SERVICE TOOLS (SSTs)	PART NUMBER	QUANTITY
Lexus Diagnostic Tester Kit* (or any OBDII Scantool) 	01001270	1
12 Megabyte Diagnostic Tester Program Card with version 10.1a Software (or later)* 	01002593-005	1

* Essential SSTs.

NOTE:
Additional Diagnostic Tester Kits, Program Cards or other SSTs may be ordered by calling SPX/OTC at 1-800-933-8335.

Warranty Information

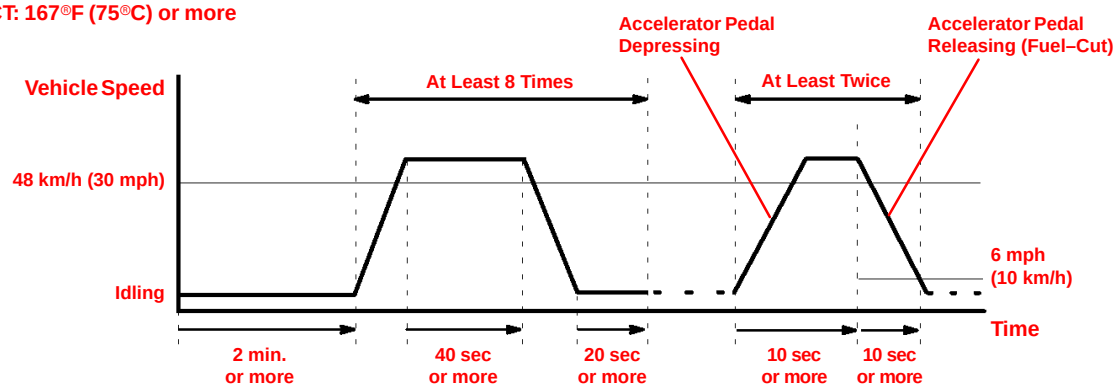
OP CODE	DESCRIPTION	TIME	OFP	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

Completing O2S Readiness Monitor

1. Clear any stored Diagnostic Trouble Codes (DTCs) using the Lexus Diagnostic Tester.
2. Start the engine.
3. Perform the drive pattern below to run and complete the Oxygen Sensor (O2S) Monitor.

O2S Monitor Drive Pattern

ECT: 167®F (75®C) or more



HINT:

The O2S Monitor is completed when the following conditions are met:

- **Two (2) minutes or more passed after the engine start.**
- **The Engine Coolant Temperature (ECT) is 167®F (75®C) or more.**
- **Cumulative running time at 30 mph (48 km/h) or more exceeds 6 minutes.**
- **Vehicle is in closed loop.**
- **The fuel–cut is operated for 8 seconds or more (for Rear O2S Monitor).**

A. Allow the engine to idle for two minutes.

B. Warm up the engine until the Engine Coolant Temperature (ECT) reaches 167®F (75®C).

C. Drive the vehicle over 30 mph (48 km/h) for more than 40 seconds.

D. Stop the vehicle and allow the engine to idle for more than 20 seconds.

E. Repeat steps C and D at least 8 times in one driving cycle. (Do not cycle the ignition key.)

In addition, perform the following steps for the Rear O2S Readiness Monitor:

A. Select second gear.

B. Allow the vehicle to run at 30 mph (48 km/h) or more.

C. Keep the accelerator pedal “off–idle” for more than 10 seconds.

D. Immediately after step C, release the accelerator pedal for at least 10 seconds without depressing the brake pedal (to execute the fuel–cut).

E. Decelerate the vehicle until the vehicle speed reaches less than 6 mph (10 km/h).

F. Repeat steps B – E at least twice in one driving cycle.

Accessing O2S Test Results

1. On the Diagnostic Tester* screen, select the following menus:
   - DIAGNOSTICS
   - CARB OBD II
   - O2S TEST RESULTS

   A list of the available oxygen sensors will be displayed.

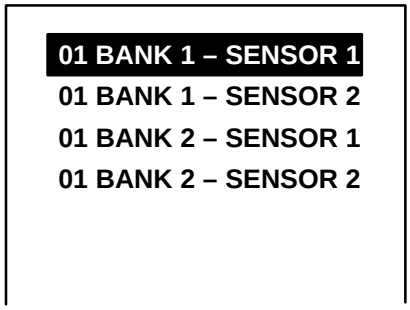
2. Select the desired oxygen sensor and press Enter.

NOTE:

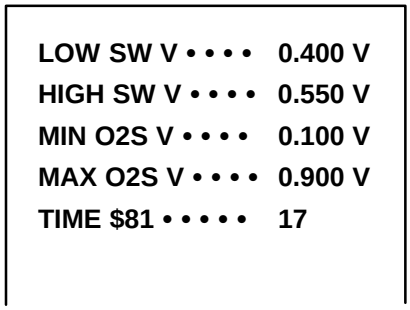
The monitor result of the A/F sensor will not be displayed. If you select "Bank 1–Sensor 1" or Bank 2–Sensor 1" for a vehicle equipped with an A/F sensor, the Diagnostic Tester will display "No parameter to display."

3. Compare the test results with the values listed in the Failure Threshold Chart.

O2S TEST RESULT Screen



TEST DATA Screen



* Although this procedure references the Lexus Diagnostic Tester, the O2S test results can be checked using a generic OBDII scantool. Refer to your OBDII scantool operator's manual for specific procedures.

Comparing O2S Test Results to Failure Thresholds

1. Determine the correct O2S Failure Threshold Chart for your vehicle by looking in the "O2S Application Table," pages 5 – 6 in this bulletin.
2. Select appropriate year, model, and engine for specified O2S Failure Threshold Chart.
3. Compare O2S test results with the specified O2S Failure Threshold Chart. It may be necessary to convert O2S test results to a specific measurement unit using the conversion factor that is supplied in the specified table. See example below:

Example:

A. The Diagnostic Tester displays "17" as a value of the "Time $81" (see illustration).

B. Find the Conversion Factor value of "Time $81" in the O2S Failure Threshold chart below. 0.3906 is specified for Time $81 in this chart.

C. Multiply "17" in step "A" by 0.3906 (Conversion Factor) in step "B." **17 x 0.3906 = 6.6 %**

D. If the answer is within the Standard Value of TEST LIMIT, the "Time $81" can be confirmed to be normal.

Example

LOW SW V • • • •	**0.400 V**
HIGH SW V • • • •	**0.550 V**
MIN O2S V • • • •	**0.035 V**
MAX O2S V • • • •	**0.835 V**
Time $81	**17**
Time $84	**84**
Time $85	**79**

NOTE:

- **"LOW SW V" indicates the O2S voltage when the O2S status changes from rich to lean.**
- **"HIGH SW V" indicates the O2S voltage when the O2S status changes from lean to rich.**
- **If the O2S voltage is lower than "LOW SW V," the O2S status is lean.**
- **If the O2S voltage is higher than "HIGH SW V," the O2S status is rich.**

Example of O2S Failure Threshold Chart:

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $81	Percentage of monitoring time where Oxygen Sensor voltage is less than 0.05V	Multiply 0.3906	%	Within 60%

NOTE:

Before the O2S Monitor completes or after the ignition switch is turned OFF, the Diagnostic Tester displays the viewable upper limit or a lower limit of the test value (example: 0 V, 1.275 V, 0 s [seconds], 10.2 s, 0 and 255).

O2S Application Table

MODEL YEAR	MODEL	ENGINE	CERTIFICATION	SEE CHART NO. (TSB PAGE)
1996	ALL		50–State	1 (p. 7)
1997	ALL		50–State	1 (p. 7)
1998	ES 300	1MZ–FE	California	3 (p. 9)
			Federal	1 (p. 7)
	GS 300	2JZ–GE	50–State	2 (p. 8)
	GS 400	1UZ–FE	50–State	
	LS 400	1UZ–FE	50–State	
	LX 470	2UZ–FE	50–State	
	SC 300	2JZ–GE	50–State	
	SC 400	1UZ–FE	50–State	
1999	ES 300	1MZ–FE	50–State	3 (p. 9)
	GS 300	2JZ–GE	50–State	2 (p. 8)
	GS 400	1UZ–FE	50–State	
	LS 400	1UZ–FE	50–State	
	LX 470	2UZ–FE	50–State	
	RX 300	1MZ–FE	50–State	3 (p. 9)
	SC 300	2JZ–GE	50–State	2 (p. 8)
	SC 400	1UZ–FE	50–State	
2000	ES 300	1MZ–FE	50–State	3 (p. 9)
	GS 300	2JZ–GE	50–State	2 (p. 8)
	GS 400	1UZ–FE	50–State	
	LS 400	1UZ–FE	50–State	
	LX 470	2UZ–FE	50–State	
	RX 300	1MZ–FE	50–State	3 (p. 9)
	SC 300	2JZ–GE	50–State	2 (p. 8)
	SC 400	1UZ–FE	50–State	
2001	ES 300	1MZ–FE	50–State	3 (p. 9)
	GS 300	2JZ–GE	50–State	1 (p. 7)
	GS 430	3UZ–FE	50–State	
	IS 300	2JZ–GE	50–State	
	LS 430	3UZ–FE	50–State	
	LX 470	2UZ–FE	50–State	
	RX 300	1MZ–FE	50–State	4 (p. 9)

O2S Application Table (Continued)

MODEL YEAR	MODEL	ENGINE	CERTIFICATION	SEE CHART NO. (TSB PAGE)
2002	ES 300	1MZ–FE	50–State	8 (p. 13)
	GS 300	2JZ–GE	50–State	5 (p. 10)
	GS 430	3UZ–FE	50–State	6 (p. 11)
	IS 300	2JZ–GE	50–State	5 (p. 10)
	LS 430	3UZ–FE	50–State	6 (p. 11)
	LX 470	2UZ–FE	50–State	7 (p. 12)
	RX 300	1MZ–FE	50–State	13 (p. 22)
	SC 430	3UZ–FE	50–State	6 (p. 11)
2003	ES 300	1MZ–FE	50–State	8 (p. 13)
	GS 300	2JZ–GE	50–State	9 (p. 14–15)
	GS 430	3UZ–FE	50–State	10 (p. 16–17)
	GX 470	2UZ–FE	50–State	11 (p. 18–19)
	IS 300	2JZ–GE	50–State	9 (p. 14–15)
	LS 430	3UZ–FE	50–State	10 (p. 16–17)
	LX 470	2UZ–FE	50–State	12 (p. 20–21)
	RX 300	1MZ–FE	50–State	13 (p. 22)
	SC 430	3UZ–FE	50–State	10 (p. 16–17)
2004	RX 330	3MZ–FE	50–State	14 (p. 23)

O2S Failure Threshold Charts

CHART 1:

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Voltage Monitor

Related DTCs: P0130, P0150, P2195, P2196, P2197 and P2198

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.4 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.55 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Response Monitor

Related DTCs: P0133 and P0153

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $31	Time to change from Lean (≤0.4 V) to Rich (≥0.55 V)	N/A	Second	Between 0 and 1 second
Time $32	Time to change from Rich (≥0.55 V) to Lean (≥0.4 V)	N/A	Second	Between 0 and 1 second

If the time required to change is out of the standard value, the ECM interprets this as a malfunction.

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Voltage Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.4 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.5 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

O2S Failure Threshold Charts (Continued)

CHART 2:

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Voltage Monitor

Related DTCs: P0130, P0150, P2195, P2196, P2197 and P2198

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.35 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.55 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Response Monitor

Related DTCs: P0133 and P0153

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $31	Time to change from Lean (≤0.35 V) to Rich (≥0.55 V)	N/A	Second	Between 0 and 1.1 seconds
Time $32	Time to change from Rich (≥0.55 V) to Lean (≥0.35 V)	N/A	Second	Between 0 and 1.1 seconds

If the time required to change is out of the standard value, the ECM interprets this as a malfunction.

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Voltage Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.4 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.5 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

O2S Failure Threshold Charts (Continued)

CHART 3:

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Voltage Monitor
Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.45 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.6 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

CHART 4:

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Voltage Monitor
Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.5 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.6 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

O2S Failure Threshold Charts (Continued)

CHART 5:

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Voltage Monitor

Related DTCs: P0130, P0150, P2195, P2196, P2197 and P2198

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.4 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.55 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Response Monitor

Related DTCs: P0133 and P0153

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $31	Time to change from Lean (≤0.4 V) to Rich (≥0.55 V)	N/A	Second	Between 0 and 0.9 seconds
Time $32	Time to change from Rich (≥0.55 V) to Lean (≤0.4 V)	N/A	Second	Between 0 and 0.9 seconds

If the time required to change is out of the standard value, the ECM interprets this as a malfunction.

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Voltage Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.4 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.5 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Element Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $81	Percentage of monitoring time where Oxygen Sensor voltage is less than 0.05 V	Multiply 0.3906	%	Between 0 and 80% (A/T) Between 0 and 90% (M/T)
Time $84	Percentage of monitoring time where Oxygen Sensor voltage is 0.70 V or more	Multiply 0.3906	%	Between 20 and 100%
Time $85	Maximum Rich (≤0.45 V) time	Multiply 0.2621	Second	Between 20 and 66.8 seconds

If all the values (Time $81, Time $84 and Time $85) are out of the standard values, the ECM interprets this as a malfunction.

O2S Failure Threshold Charts (Continued)

CHART 6:

Rear O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Voltage Monitor
Related DTCs: P0130, P0150, P2195, P2196, P2197 and P2198

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.4 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.55 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Response Monitor
Related DTCs: P0133 and P0153

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $31	Time to change from Lean (≤0.4 V) to Rich (≥0.55 V)	N/A	Second	Between 0 and 0.9 seconds
Time $32	Time to change from Rich (≥0.55 V) to Lean (≤0.4 V)	N/A	Second	Between 0 and 0.9 seconds

If the time required to change is out of the standard value, the ECM interprets this as a malfunction.

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Voltage Monitor
Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.4 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.5 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Element Monitor
Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $81	Percentage of monitoring time where Oxygen Sensor voltage is less than 0.05 V	Multiply 0.3906	%	Between 0 and 60%
Time $84	Percentage of monitoring time where Oxygen Sensor voltage is 0.70 V or more	Multiply 0.3906	%	Between 20 and 100%
Time $85	Maximum Rich (≤0.45 V) time	Multiply 0.2621	Second	Between 20 and 66.8 seconds

If all the values (Time $81, Time $84 and Time $85) are out of the standard values, the ECM interprets this as a malfunction.

O2S Failure Threshold Charts (Continued)

CHART 7:

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Voltage Monitor

Related DTCs: P0130, P0150, P2195, P2196, P2197 and P2198

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.4 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.55 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Response Monitor

Related DTCs: P0133 and P0153

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $31	Time to change from Lean (≤0.4 V) to Rich (≥0.55 V)	N/A	Second	Between 0 and 0.9 seconds
Time $32	Time to change from Rich (≥0.55 V) to Lean (≤0.4 V)	N/A	Second	Between 0 and 0.9 seconds

If the time required to change is out of the standard value, the ECM interprets this as a malfunction.

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Voltage Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.4 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.5 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Element Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $81	Percentage of monitoring time where Oxygen Sensor voltage is less than 0.05 V	Multiply 0.3906	%	Between 0 and 90%
Time $84	Percentage of monitoring time where Oxygen Sensor voltage is 0.70 V or more	Multiply 0.3906	%	Between 20 and 100%
Time $85	Maximum Rich (≤0.45 V) time	Multiply 0.2621	Second	Between 20 and 66.8 seconds

If all the values (Time $81, Time $84 and Time $85) are out of the standard values, the ECM interprets this as a malfunction.

O2S Failure Threshold Charts (Continued)

CHART 8:

Front O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Voltage Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.5 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.6 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Element Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $81	Percentage of monitoring time where Oxygen Sensor voltage is less than 0.05 V	Multiply 0.3906	%	Between 0 and 95%
Time $84	Percentage of monitoring time where Oxygen Sensor voltage is 0.70 V or more	Multiply 0.3906	%	Between 20 and 100%
Time $85	Maximum Rich (≤0.45 V) time	Multiply 0.2621	Second	Between 20 and 66.8 seconds

If all the values (Time $81, Time $84 and Time $85) are out of the standard values, the ECM interprets this as a malfunction.

O2S Failure Threshold Charts (Continued)

CHART 9:

Rear O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Voltage Monitor

Related DTCs: P0130, P0150, P2195, P2196, P2197 and P2198

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.4 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.55 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Response Monitor

Related DTCs: P0133 and P0153

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $31	Time to change from Lean (≤0.4 V) to Rich (≥0.55 V)	N/A	Second	Between 0 and 1 second
Time $32	Time to change from Rich (≥0.55 V) to Lean (≤0.4 V)	N/A	Second	Between 0 and 1 second

If the time required to change is out of the standard value, the ECM interprets this as a malfunction.

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Frequency Monitor During Engine Idling

Related DTCs: P0133 and P0153

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $33	Average Lean (≤0.4 V) time of one waveform cycle	N/A	Second	**Bank 1:** Between 0 and 3.45 seconds **Bank 2:** Between 0 and 3.7 seconds
Time $34	Average Rich (≥0.55 V) time of one waveform cycle	N/A	Second	**Bank 1:** Between 0 and 3.45 seconds **Bank 2:** Between 0 and 3.7 seconds

If the sum of Time $33 and Time $34 is out of the standard value, the ECM interprets this as a malfunction.

O2S Failure Threshold Charts (Continued)

CHART 9 (Continued):

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Frequency Monitor During Vehicle Running

Related DTCs: P0133 and P0153

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $35	Average Lean (≤0.4 V) time of one waveform cycle	N/A	Second	**Bank 1:** Between 0 and 0.73 seconds **Bank 2:** Between 0 and 0.75 seconds (varies depending on feedback compensation factor)
Time $36	Average Rich (≥0.55 V) time of one waveform cycle	N/A	Second	**Bank 1:** Between 0 and 0.73 seconds **Bank 2:** Between 0 and 0.75 seconds (varies depending on feedback compensation factor)

If the sum of Time $35 and Time $36 is out of the standard value, the ECM interprets this as a malfunction.

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Voltage Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.4 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.5 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Element Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $81	Percentage of monitoring time where Oxygen Sensor voltage is less than 0.05 V	Multiply 0.3906	%	Between 0 and 90%
Time $84	Percentage of monitoring time where Oxygen Sensor voltage is 0.70 V or more	Multiply 0.3906	%	Between 20 and 100%
Time $85	Maximum Rich (≤0.45 V) time	Multiply 0.2621	Second	Between 20 and 66.8 seconds

If all the values (Time $81, Time $84 and Time $85) are out of the standard values, the ECM interprets this as a malfunction.

O2S Failure Threshold Charts (Continued)

CHART 10:

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Voltage Monitor

Related DTCs: P0130, P0150, P2195, P2196, P2197 and P2198

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.4 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.55 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Response Monitor

Related DTCs: P0133 and P0153

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $31	Time to change from Lean (≤0.4 V) to Rich (≥0.55 V)	N/A	Second	Between 0 and 0.9 seconds
Time $32	Time to change from Rich (≥0.55 V) to Lean (≤0.4 V)	N/A	Second	Between 0 and 0.9 seconds

If the time required to change is out of the standard value, the ECM interprets this as a malfunction.

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Frequency Monitor During Engine Idling

Related DTCs: P0133 and P0153

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $33	Average Lean (≤0.4 V) time of one waveform cycle	N/A	Second	Between 0 and 3 seconds
Time $34	Average Rich (≥0.55 V) time of one waveform cycle	N/A	Second	Between 0 and 3 seconds

If the sum of Time $33 and Time $34 is out of the standard value, the ECM interprets this as a malfunction.

O2S Failure Threshold Charts (Continued)

CHART 10 (Continued):

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Frequency Monitor During Engine Idling

Related DTCs: P0133 and P0153

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $35	Average Lean (≤0.4 V) time of one waveform cycle	N/A	Second	Between 0 and 0.75 seconds (varies depending on feedback compensation factor)
Time $36	Average Rich (≥0.55 V) time of one waveform cycle	N/A	Second	Between 0 and 0.75 seconds (varies depending on feedback compensation factor)

If the sum of Time $35 and Time $36 is out of the standard value, the ECM interprets this as a malfunction.

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Voltage Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.4 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.5 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Element Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $81	Percentage of monitoring time where Oxygen Sensor voltage is less than 0.05 V	Multiply 0.3906	%	Between 0 and 60%
Time $84	Percentage of monitoring time where Oxygen Sensor voltage is 0.70 V or more	Multiply 0.3906	%	Between 20 and 100%
Time $85	Maximum Rich (≤0.45 V) time	Multiply 0.2621	Second	Between 20 and 66.8 seconds

If all the values (Time $81, Time $84 and Time $85) are out of the standard values, the ECM interprets this as a malfunction.

O2S Failure Threshold Charts (Continued)

CHART 11:

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Voltage Monitor

Related DTCs: P0130, P0150, P2195, P2196, P2197 and P2198

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.4 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.55 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Response Monitor

Related DTCs: P0133 and P0153

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $31	Time to change from Lean (≤0.4 V) to Rich (≥0.55 V)	N/A	Second	Between 0 and 0.9 seconds
Time $32	Time to change from Rich (≥0.55 V) to Lean (≤0.4 V)	N/A	Second	Between 0 and 0.9 seconds

If the time required to change is out of the standard value, the ECM interprets this as a malfunction.

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Frequency Monitor During Engine Idling

Related DTCs: P0133 and P0153

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $33	Average Lean (≤0.4 V) time of one waveform cycle	N/A	Second	Between 0 and 2.8 seconds
Time $34	Average Rich (≥0.55 V) time of one waveform cycle	N/A	Second	Between 0 and 2.8 seconds

If the sum of Time $33 and Time $34 is out of the standard value, the ECM interprets this as a malfunction.

O2S Failure Threshold Charts (Continued)

CHART 11 (Continued):

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Frequency Monitor During Vehicle Running

Related DTCs: P0133 and P0153

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $35	Average Lean (≤0.4 V) time of one waveform cycle	N/A	Second	Between 0 and 0.75 seconds (varies depending on feedback compensation factor)
Time $36	Average Rich (≥0.55 V) time of one waveform cycle	N/A	Second	Between 0 and 0.75 seconds (varies depending on feedback compensation factor)

If the sum of Time $35 and Time $36 is out of the standard value, the ECM interprets this as a malfunction.

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Voltage Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.4 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.5 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Element Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $81	Percentage of monitoring time where Oxygen Sensor voltage is less than 0.05 V	Multiply 0.3906	%	Between 0 and 60%
Time $84	Percentage of monitoring time where Oxygen Sensor voltage is 0.70 V or more	Multiply 0.3906	%	Between 20 and 100%
Time $85	Maximum Rich (≤0.45 V) time	Multiply 0.2621	Second	Between 20 and 66.8 seconds

If all the values (Time $81, Time $84 and Time $85) are out of the standard values, the ECM interprets this as a malfunction.

O2S Failure Threshold Charts (Continued)

CHART 12:

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Voltage Monitor

Related DTCs: P0130, P0150, P2195, P2196, P2197 and P2198

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.4 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.55 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Response Monitor

Related DTCs: P0133 and P0153

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $31	Time to change from Lean (≤0.4 V) to Rich (≥0.55 V)	N/A	Second	Between 0 and 0.9 seconds
Time $32	Time to change from Rich (≥0.55 V) to Lean (≤0.4 V)	N/A	Second	Between 0 and 0.9 seconds

If the time required to change is out of the standard value, the ECM interprets this as a malfunction.

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Frequency Monitor During Engine Idling

Related DTCs: P0133 and P0153

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $33	Average Lean (≤0.4 V) time of one waveform cycle	N/A	Second	Between 0 and 2.8 seconds
Time $34	Average Rich (≥0.55 V) time of one waveform cycle	N/A	Second	Between 0 and 2.8 seconds

If the sum of Time $33 and Time $34 is out of the standard value, the ECM interprets this as a malfunction.

O2S Failure Threshold Charts (Continued)

CHART 12 (Continued):

Front O2S (Bank 1 Sensor 1 and Bank 2 Sensor 1) Frequency Monitor During Vehicle Running

Related DTCs: P0133 and P0153

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $35	Average Lean (≤0.4 V) time of one waveform cycle	N/A	Second	Between 0 and 0.75 seconds (varies depending on feedback compensation factor)
Time $36	Average Rich (≥0.55 V) time of one waveform cycle	N/A	Second	Between 0 and 0.75 seconds (varies depending on feedback compensation factor)

If the sum of Time $35 and Time $36 is out of the standard value, the ECM interprets this as a malfunction.

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Voltage Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.4 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.5 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Element Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $81	Percentage of monitoring time where Oxygen Sensor voltage is less than 0.5 V	Multiply 0.3906	%	Between 0 and 90%
Time $84	Percentage of monitoring time where Oxygen Sensor voltage is 0.70 V or more	Multiply 0.3906	%	Between 20 and 100%
Time $85	Maximum Rich (≥0.45 V) time	Multiply 0.2621	Second	Between 20 and 66.8 seconds

If all the values (Time $81, Time $84 and Time $85) are out of the standard values, the ECM interprets this as a malfunction.

O2S Failure Threshold Charts (Continued)

CHART 13:

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Voltage Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.4 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.6 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Element Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $81	Percentage of monitoring time where Oxygen Sensor voltage is less than 0.5 V	Multiply 0.3906	%	Between 0 and 60%
Time $84	Percentage of monitoring time where Oxygen Sensor voltage is 0.70 V or more	Multiply 0.3906	%	Between 20 and 100%
Time $85	Maximum Rich (≥0.45 V) time	Multiply 0.2621	Second	Between 20 and 66.8 seconds

If all the values (Time $81, Time $84 and Time $85) are out of the standard values, the ECM interprets this as a malfunction.

O2S Failure Threshold Charts (Continued)

CHART 14:

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Voltage Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $07	The minimum voltage during O2S monitoring	N/A	V	Between 0 and 0.45 V
Time $08	The maximum voltage during O2S monitoring	N/A	V	Between 0.5 and 1.275 V

If the sensor voltage is out of the standard value, the ECM interprets this as a malfunction.

Rear O2S (Bank 1 Sensor 2 and Bank 2 Sensor 2) Element Monitor

Related DTCs: P0136 and P0156

TEST ID	DESCRIPTION OF TEST DATA	CONVERSION FACTOR	UNIT	STANDARD VALUE OF TEST LIMIT
Time $81	Percentage of monitoring time where Oxygen Sensor voltage is less than 0.5 V	Multiply 0.3906	%	Between 0 and 80%
Time $84	Percentage of monitoring time where Oxygen Sensor voltage is 0.70 V or more	Multiply 0.3906	%	Between 20 and 100%
Time $85	Maximum Rich (≥0.45 V) time	Multiply 0.2621	Second	Between 20 and 66.8 seconds

If all the values (Time $81, Time $84 and Time $85) are out of the standard values, the ECM interprets this as a malfunction.

LEXUS

Technical Service Information Bulletin

June 7, 2002

Title:

MIDTRONICS BATTERY TESTER SOFTWARE UPDATE

Models:

All Models & Model Years Through Current

TSIB

SS002-02

SPECIAL SERVICE TOOLS

Introduction

The internal software of the Midtronics Battery Tester can now be periodically updated to support future models. New updates will include new battery warranty codes and testing information.

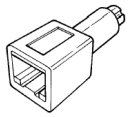
The Technical Information System (TIS) will be the primary distribution method for battery tester software updates. Utilizing the new Midtronics Update Wizard (MUW) and the new essential SST (Midtronics Battery Tester Adapter), you will be able to quickly and easily update your Midtronics Battery Tester.

This bulletin will show you how to use and install the Midtronics Update Wizard to update the Midtronics tester software.

Applicable Vehicles

- **All models and model years through current.**

Required Tools & Material

SPECIAL SERVICE TOOLS (SSTs)	PART NUMBER	QUANTITY
Midtronics Battery Tester* 	00002–MP815–L	1
Midtronics Battery Tester Adapter* 	00002–DMPUC	1

* Essential SSTs.

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

Process Overview

The Midtronics Battery Tester Software Update is a 2-step process:

1. **Installing the Midtronics Update Wizard (MUW).**
   The Midtronics Update Wizard (MUW) is an application that only needs to be installed on the PC one time. This bulletin will provide the steps to install the MUW.
2. **Using the Midtronics Update Wizard (MUW).**
   The Midtronics Update Wizard (MUW) will be used with each battery tester software update. The Update Wizard will walk you through each step to connect the PC to the tester and perform the update.

Operation Procedure: Preparation

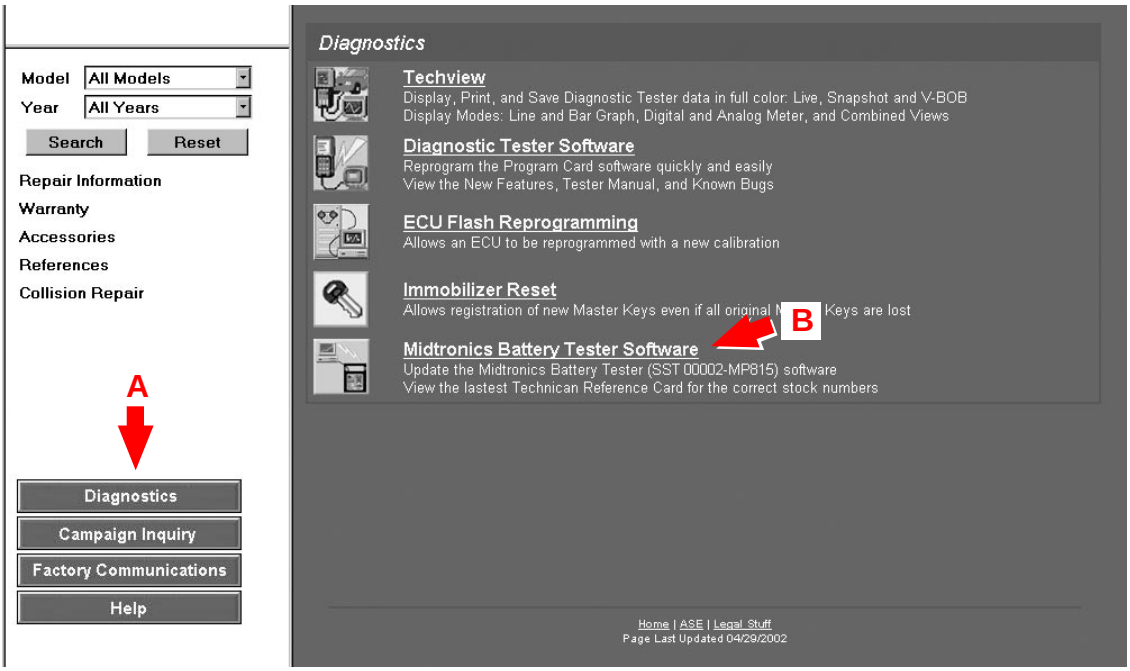
Before Installation or Use of the Midtronics Update Wizard (MUW):

Steps A and B are required to begin the update process. (Refer to Figure 1.)

A. Open TIS (Technical Information System) and go to the “Diagnostics” section.

B. Click on the text “Midtronics Battery Tester Software.”

FIGURE 1.



Operation Procedure

1. Installing the Midtronics Update Wizard (MUW).

NOTE:

The Midtronics Update Wizard only needs to be installed once and must be installed before the rest of the update process can take place. If this step is already complete, continue on to step 2.

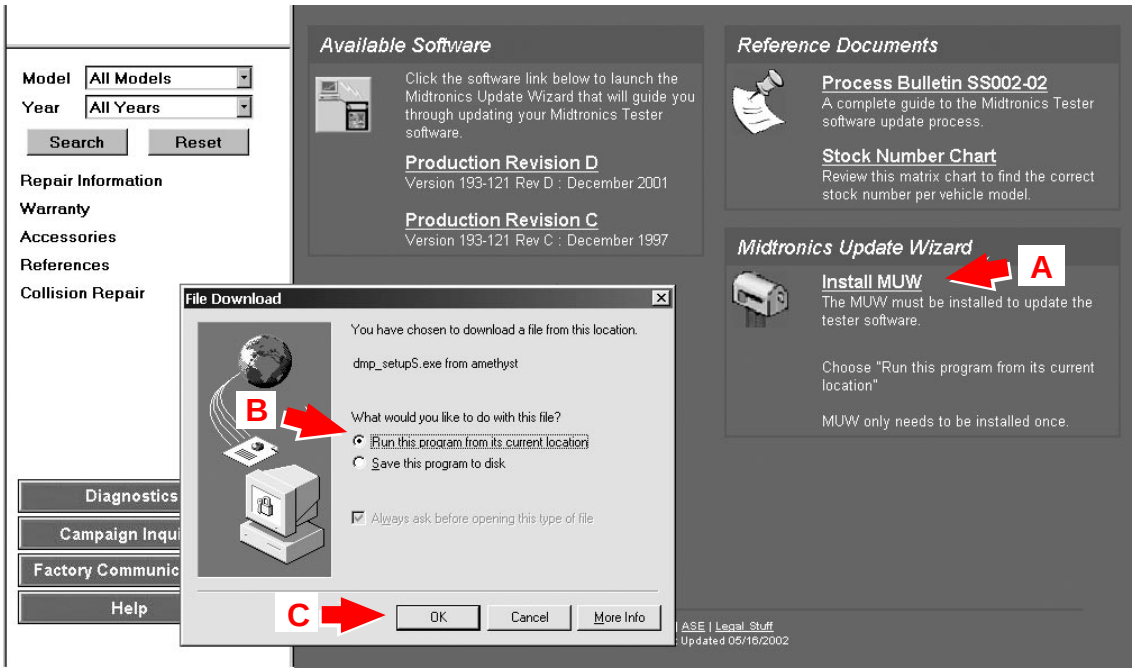
A. Click on the text “Install MUW.” (Figure 2.)

B. The file download window will appear. Click on “Run this program from it’s current location.”

C. Click the “OK” button.

D. Allow the Update Wizard to perform its self–installation. This will take only a few minutes.

FIGURE 2.



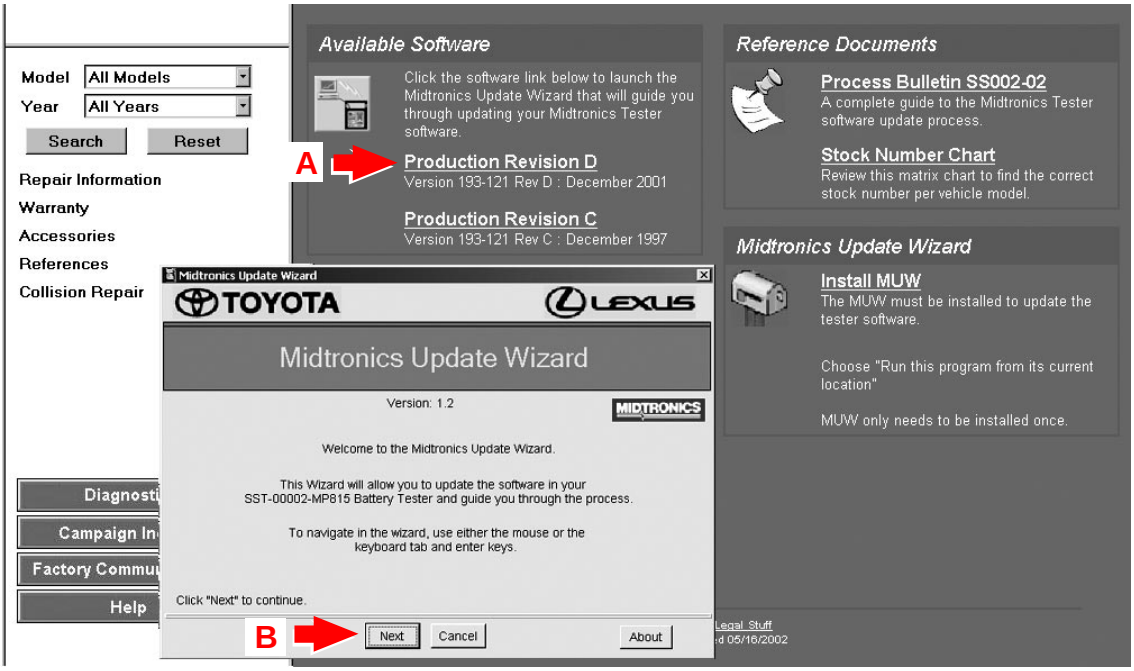
Operation Procedure (Continued)

2. Using the Midtronics Update Wizard (MUW).

A. Click on the latest version of production software. (Figure 3.) This will begin the software update process.

B. The next screen to appear will be the first screen of the software update. Click "Next" to continue.

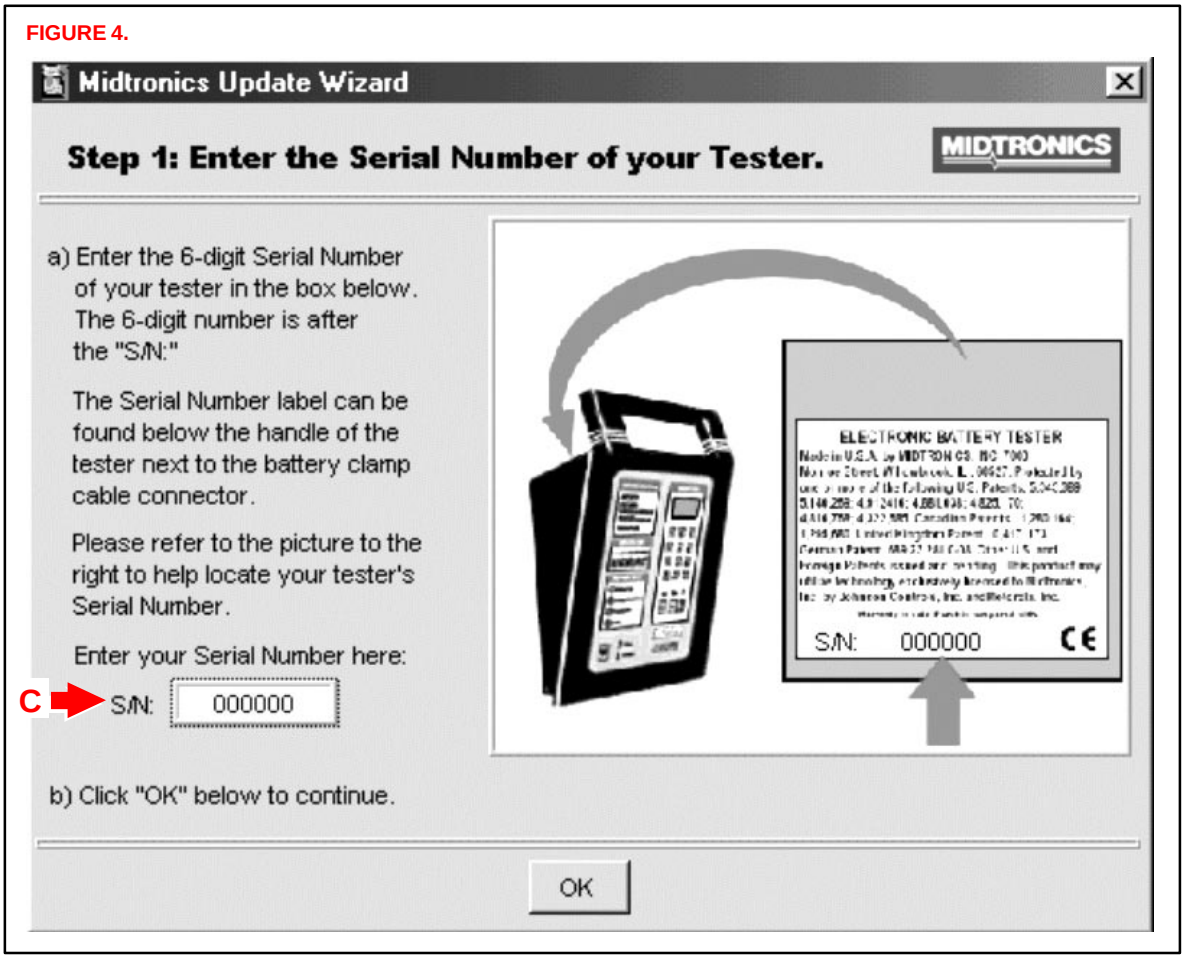
FIGURE 3.



Operation Procedure (Continued)

C. Enter the serial number of the battery tester then click “OK.” (Figure 4.)

FIGURE 4.



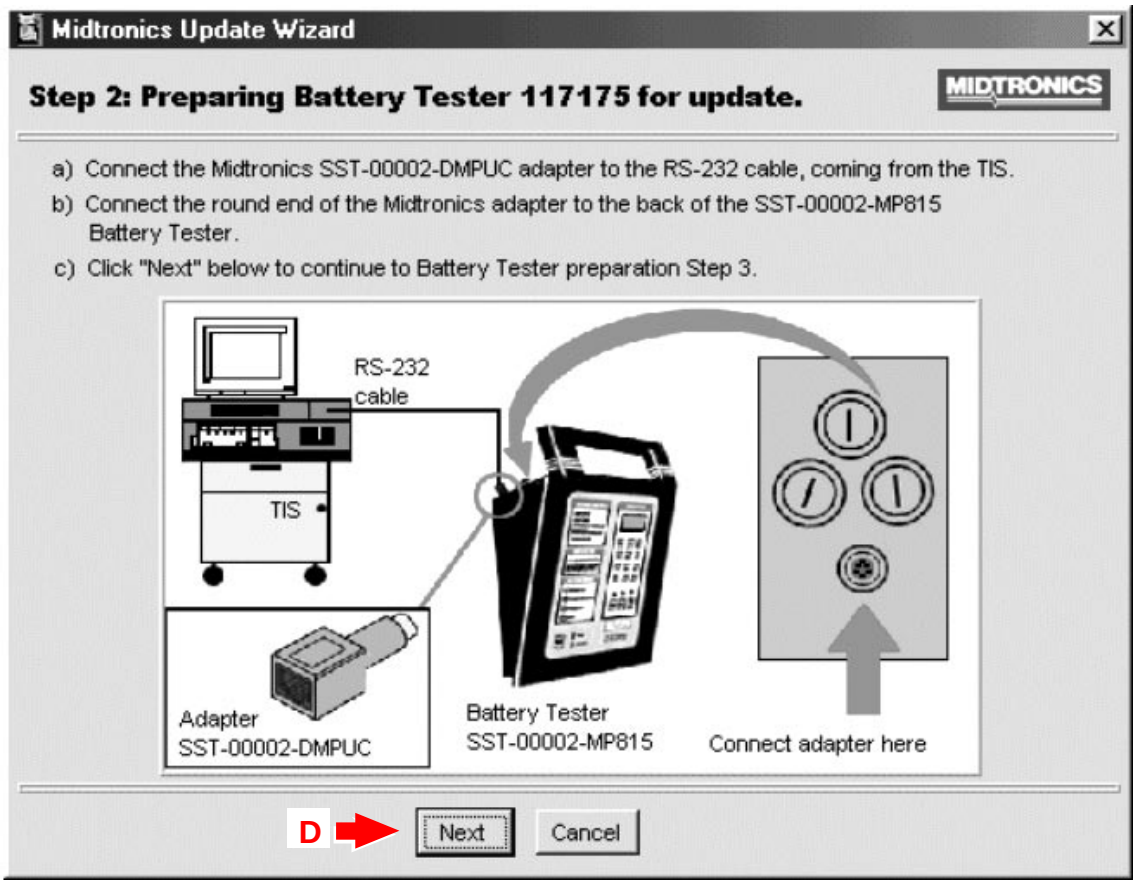
Operation Procedure (Continued)

D. Connect the Midtronics Battery Tester to TIS as instructed (Figure 5), then click "Next."

NOTE:

Connecting the Midtronics Battery Tester to the TIS station will require the use of SST 00002–DMPUC. This is an adapter that allows the TIS RS–232 cable to plug into the Battery Tester. (Figure 5.)

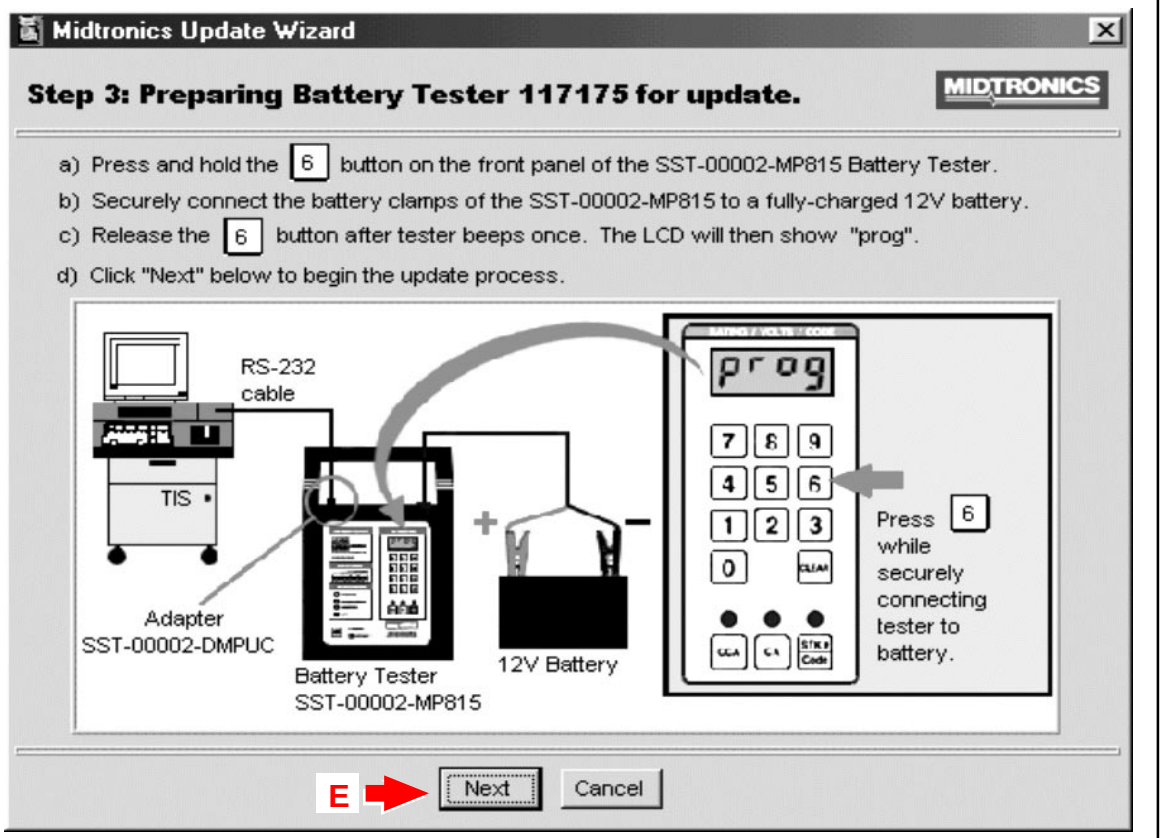
FIGURE 5.



Operation Procedure (Continued)

E. Follow the instructions to put the Midtronics Battery Tester into the correct mode (Figure 6), then click “Next.”

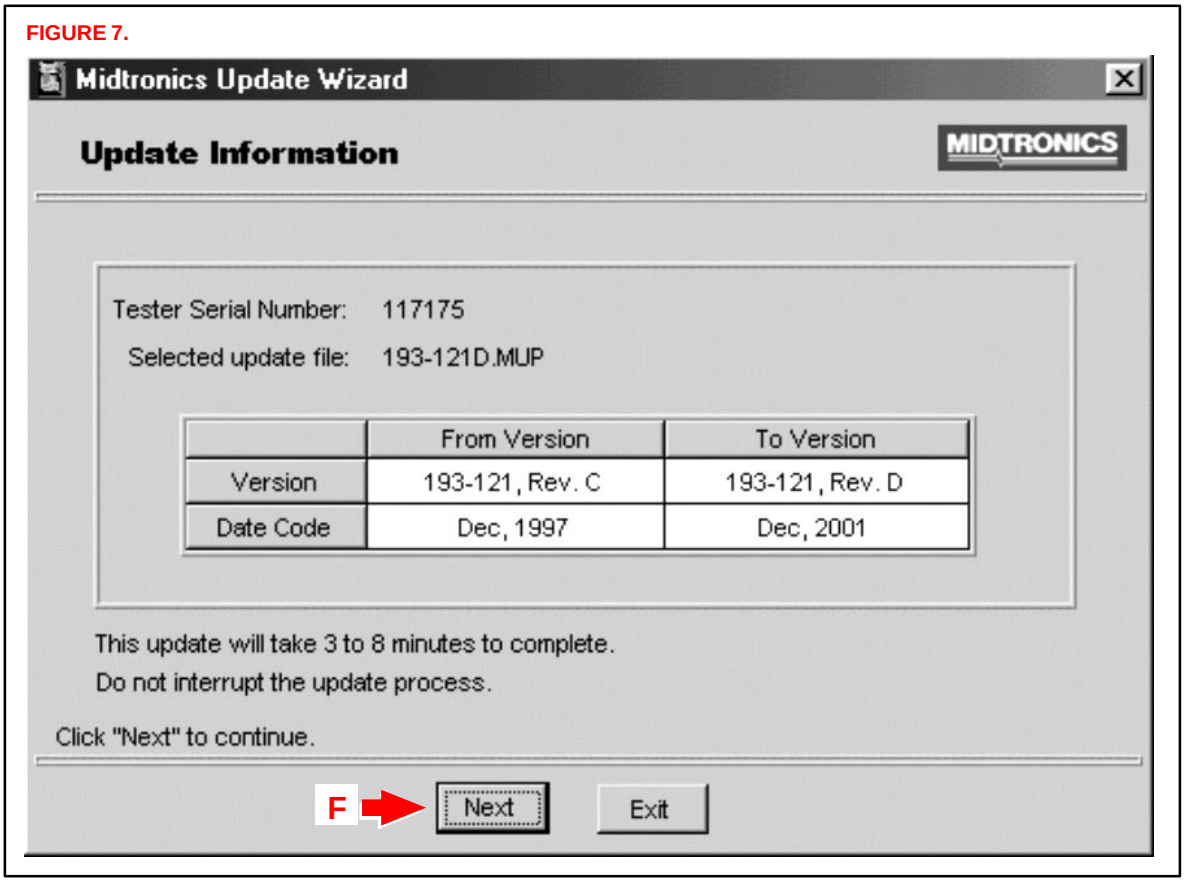
FIGURE 6.



Operation Procedure (Continued)

F. Confirm the software version and click “Next.” (Figure 7.)

FIGURE 7.



Figures 7–1 and 7–2 are confirmation dialogs that will pop up over the Update Information window (Figure 7) when:

- The update file is an older revision level than that found in the battery tester (Figure 7–1) or
- The update file is the same revision level as that found in the tester (Figure 7–2).

Click the “Yes” button to clear the pop–up dialog and continue with the update.

FIGURE 7–1.

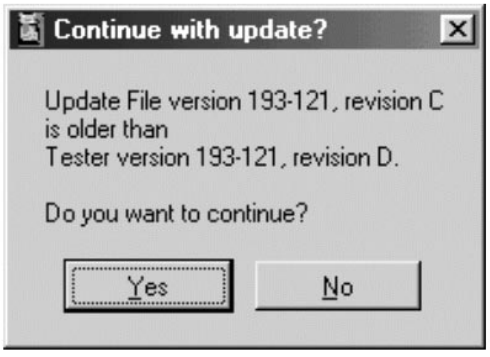
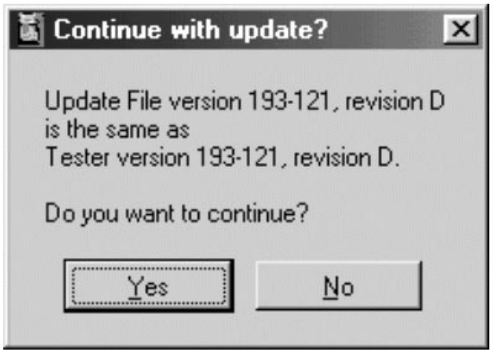


FIGURE 7–2.

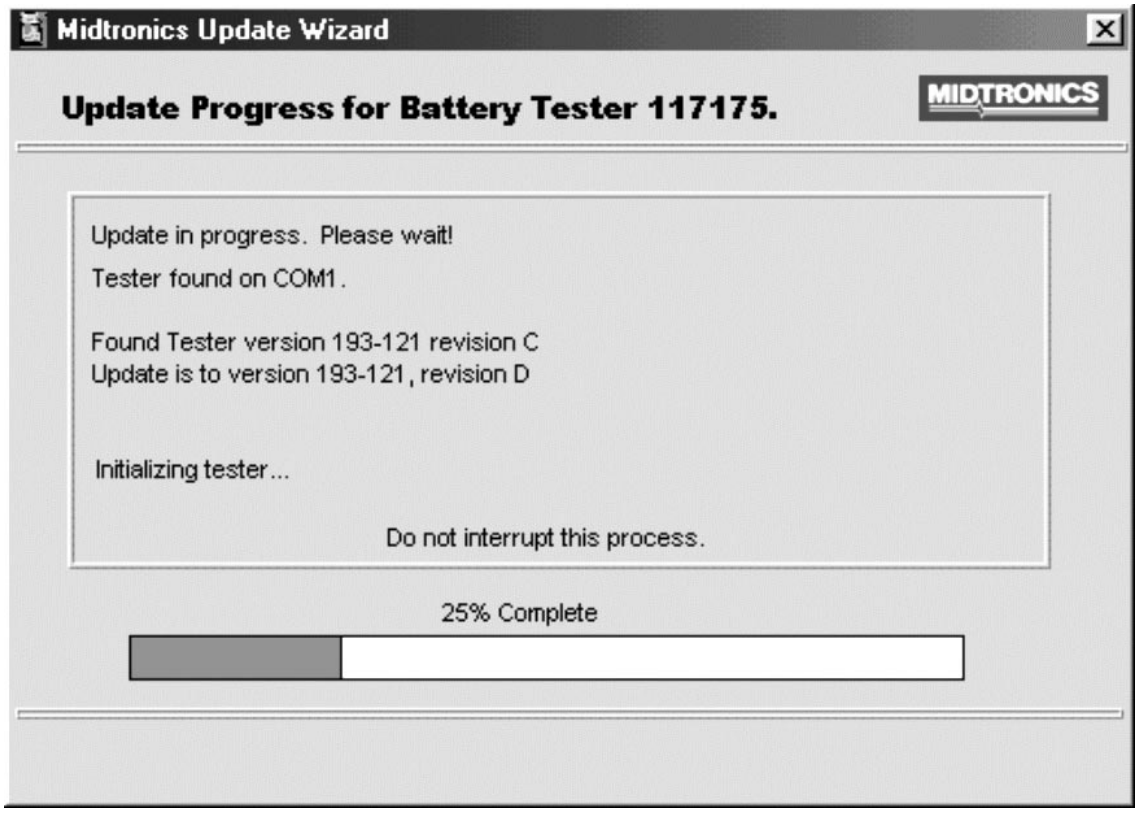


Operation Procedure (Continued)

G. The Midtronics Update Wizard (MUW) will now update the Midtronics Battery Tester software. (Figure 8.)

NOTE:
Do not interrupt this process (it will take approximately 5 minutes).

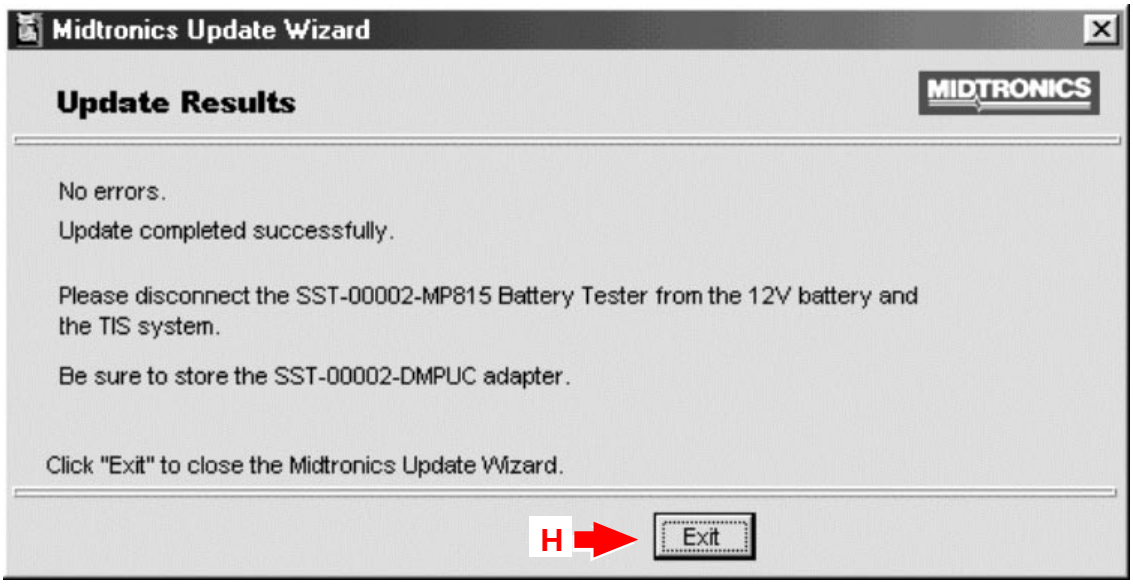
FIGURE 8.



Operation Procedure (Continued)

H. Upon successful completion, the Update Results screen will display “No errors” and the update is now complete. Click on the “Exit” button. (Figure 9.)

FIGURE 9.



Your Midtronics Battery Tester is now updated and ready for use.

NOTE:

BE SURE TO REGULARLY CHECK TIS FOR FUTURE UPDATES:

- **The Midtronics Battery Tester OE Stock Number Card will no longer be printed and shipped. It will be distributed through TIS from now on.**
- **Latest versions of Tester update software will be available on TIS.**

LEXUS

Technical Service Information Bulletin

December 8, 2000

Title:

DIAGNOSTIC TESTER COMMUNICATION ERROR WITH T.I.S.

Models:

All Models

TSIB

Introduction

Certain Diagnostic Testers (SST P/N 02002019) may experience a communication error with the Technical Information System (T.I.S.). To correct this condition, the tester manufacturer, Vetronix Corporation, will recall and update affected units. The following explains how to determine which Diagnostic Testers may exhibit this problem and outlines the procedure to return the tester for repair.

Applicable Diagnostic Testers

Diagnostic Testers within the serial number range below are known to experience these communication errors.

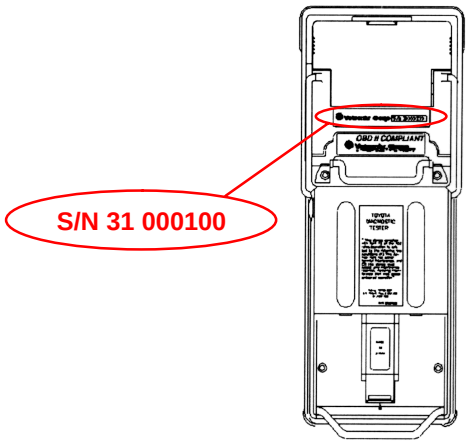
STARTING SERIAL NUMBER	ENDING SERIAL NUMBER
31 000000	31 000100

Repair Procedure

1. Determine the Diagnostic Tester serial number located on the back of the tester (see Figure 1).
2. If the serial number is within the range listed above, call Vetronix Toyota Customer Service at 1-800-321-4889, ext. 3123, to obtain a pre-paid shipping package for the Diagnostic Tester.
3. The shipping package will arrive within 2 business days. Secure the tester in the provided package following the enclosed shipping instructions.

   Diagnostic Testers are guaranteed to be returned within 3 business days from receipt at Vetronix (except over holidays).

Figure 1
Back View of Diagnostic Tester



NOTE:
This update will be performed free of charge.

Diagnostic Testers outside of the serial number range above are not affected and do not need this repair. If a Diagnostic Tester outside this range experiences a similar problem, please call Dealer Daily Support at 1-877-DL-DAILY or Vetronix Toyota Customer Service at 1-800-321-4889, ext. 3123.

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

Technical Service Information Bulletin
February 16, 2001

Title:

STEERING WHEEL NUT SERVICE SPECIFICATION

Models:

All Applicable Models

TSIB

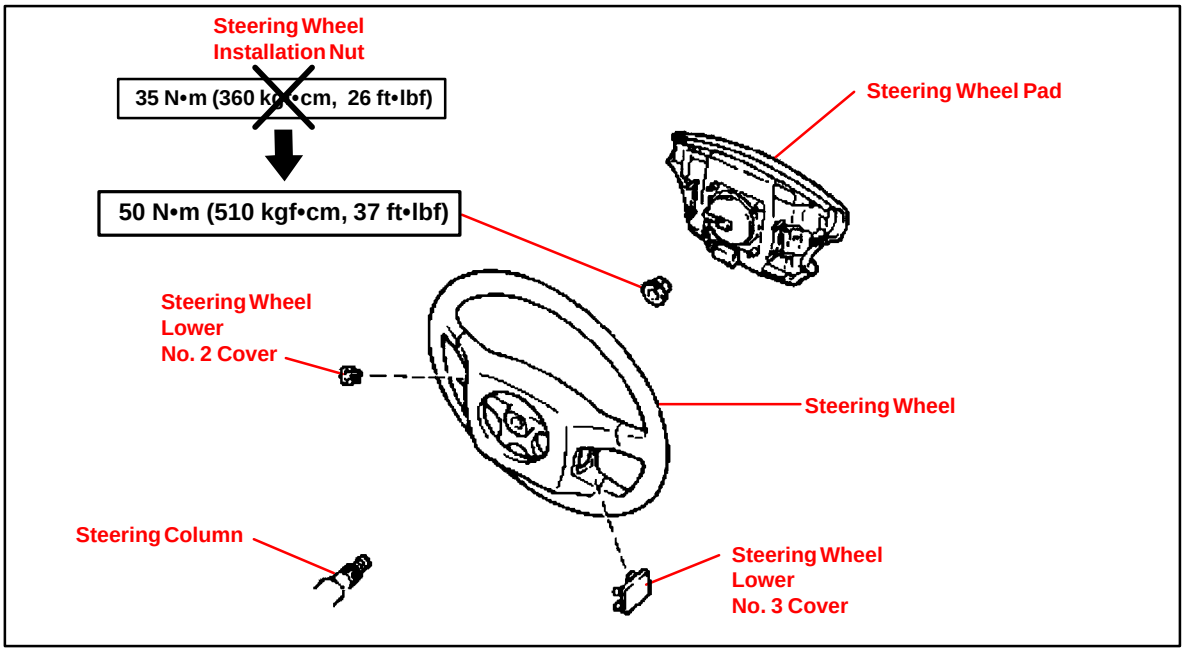
Introduction

To make the steering wheel installation procedure similar for all models, the steering wheel nut tightening torque has been standardized.

Applicable Vehicles

MODEL		MODEL YEARS
LS 400	UCF10, 20	1990 – 2000
SC 400/300	JZZ31, UZZ30	1992 – 2000
GS 400/300	JZS147, 160, UZS160	1993 – 2000
ES 300	MCV10, 20	1994 – 2000
LX 450	FZJ80	1996 – 1997
LX 470	UZJ100	1998 – 2000
RX 300	MCU10, 15	1999 – 2000
IS 300	JCE10	2001

Service Information



Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

STEERING GEAR/STEERING WHEEL REMOVAL AND INSTALLATION

Anytime the steering gear is removed on a vehicle equipped with an SRS airbag, the steering wheel must also be removed. Use of the following steps for reinstallation and re–centering of the steering wheel will prevent possible damage to the spiral cable.

REQUIRED STEPS FOR STEERING GEAR REMOVAL AND INSTALLATION:

Removal:

- Place front wheels facing straight ahead.
- Remove the steering wheel pad.
- Remove the steering wheel.

Installation:

- Place front wheels facing straight ahead.
- Center the spiral cable.
- Install the steering wheel.
- Install the steering wheel pad.

STEERING GEAR/STEERING WHEEL REMOVAL PROCEDURES:

Follow the steps below to remove the steering wheel, before removing the steering gear, from the vehicle.

1. Place front wheels in the straight ahead position.
2. With ignition switch in lock position, disconnect the negative terminal of the battery.
3. Remove Steering wheel pad.

NOTICE: If the airbag connector is disconnected with the ignition switch at “ON” or “ACC,” a “Diagnostic Trouble Code” will be recorded.

Never use airbag parts from another vehicle. When replacing parts, replace with new parts.

a. Remove the steering wheel lower cover.

STEERING GEAR/STEERING WHEEL REMOVAL PROCEDURES (CONT'D):

b. Using a torx socket wrench, loosen the torx screws until the groove along the screw circumference catches on the screw case. SST 09042–00010. (See Fig. 1)

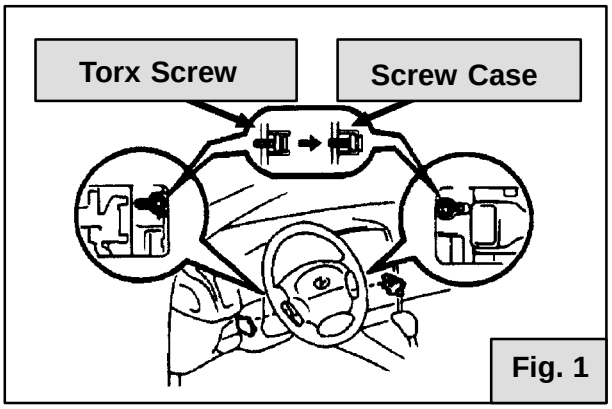


Fig. 1

c. Pull the wheel pad away from the steering wheel and disconnect the airbag connector. (See Fig. 2)

CAUTION: When storing the wheel pad, keep the upper surface of the pad facing up.

Never disassemble the wheel pad.

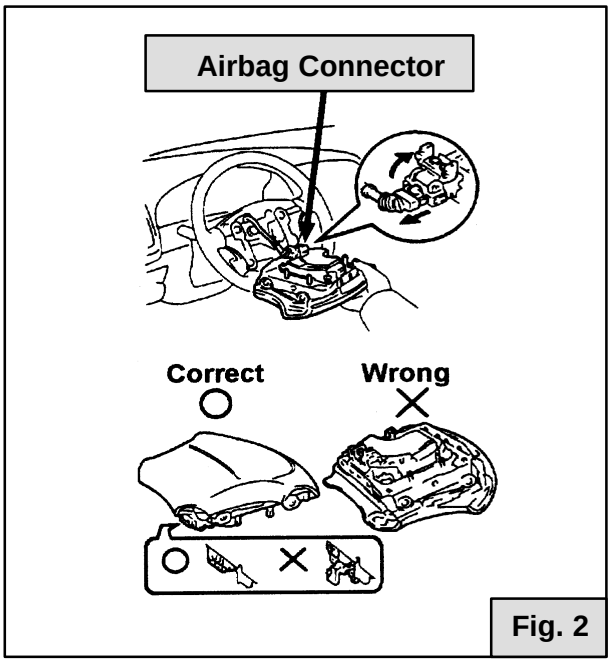


Fig. 2

NOTICE: When removing the wheel pad, take care not to pull the airbag wiring harness.

4. Remove the steering wheel.

a. Disconnect the spiral cable connector.

b. Remove the wheel set nut.

c. Place matchmarks on the wheel and steering main shaft. (See Fig. 3)

d. Using the appropriate SST, remove the wheel. SST 09950–50010 (set includes 09951–05010, 09952–05010, 09953–05020, 09954–05020)

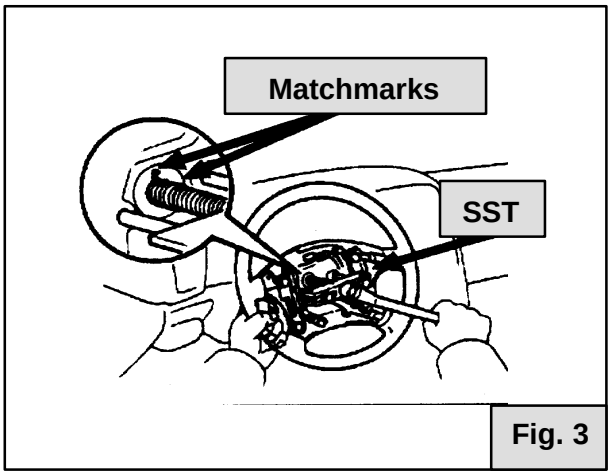


Fig. 3

For further disassembly of the steering column, refer to the Steering (SR) section of the Repair Manual.

STEERING GEAR/STEERING WHEEL INSTALLATION PROCEDURES:

Follow the steps below to install the steering wheel, after installing the steering gear.

1. Place front wheels in the straight ahead position.

STEERING GEAR/STEERING WHEEL INSTALLATION PROCEDURES (Cont'd):

2. Center spiral cable.
   a. Turn the cable counterclockwise by hand until it becomes harder to turn.
   b. Then rotate the cable clockwise about 2.5 or 3 turns to align the marks. (See Fig. 4)

NOTE: The number of turns clockwise varies by model. See the "SR" section of the vehicle's repair manual for the information.

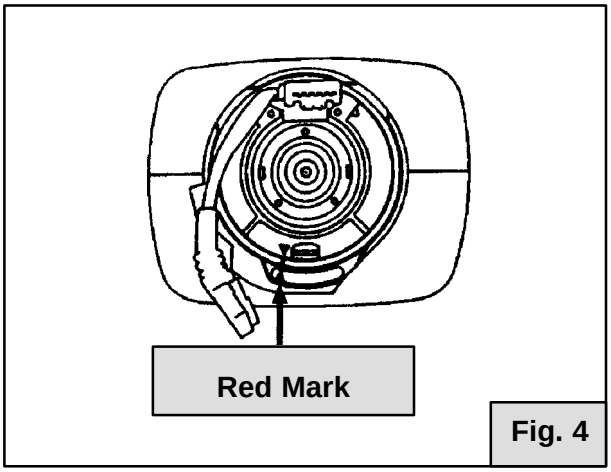


Fig. 4

3. Install the steering wheel.
   a. Align the matchmarks on the wheel and steering main shaft.
   b. Temporarily tighten the wheel set nut.
   c. Connect the spiral cable connector.

4. Bleed Power Steering System (when applicable).
5. Check steering wheel center point.
6. Torque steering wheel set nut. See the applicable vehicle's repair manual for the torque specification.
7. Install steering wheel pad.

NOTICE: Make Sure the pad is centered and installed to the specified torque.

If the pad has been dropped, or there are cracks, dents or other defects in the case or connector, replace the wheel pad with a new one.

When installing the pad, take care that the wiring does not interfere with other parts and is not pinched between other parts.

   a. Connect the airbag wiring connector.
   b. Install the pad after confirming that torx screws are in the screw case.
   c. Using a torx socket, torque the screws to the specification in the vehicle's repair manual.
      SST 09042–00010.
      (See Fig. 5)
   d. Install the steering wheel lower cover.

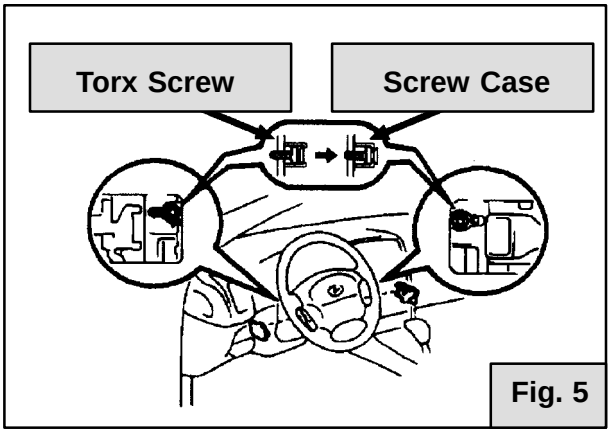
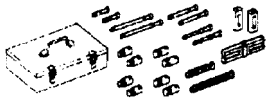
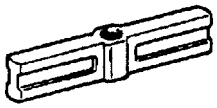
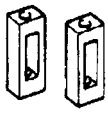
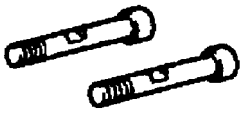


Fig. 5

SST (SPECIAL SERVICE TOOLS):

SSTs	TOOL NUMBER	TOOL NAME	APPLICATION
	09950–50010	Puller C Set	Power tilt/power telescoping steering column
	09951–05010	Hanger 150	
	09952–05010	Slide Arm	
	09953–05020	Center Bolt 150	
	09954–05020	Claw No. 2	

RECOMMENDED TOOLS AND NECESSARY EQUIPMENT:

TOOL	TOOL NUMBER	TOOL NAME	APPLICATION
	09042–00010	Torx Socket T 30	Steering wheel pad

EQUIPMENT: Torque Wrench

LUBRICANT: ATF DEXRON II or III

Technical Service Information Bulletin
May 26, 2000

Title:
STEERING WHEEL NUT

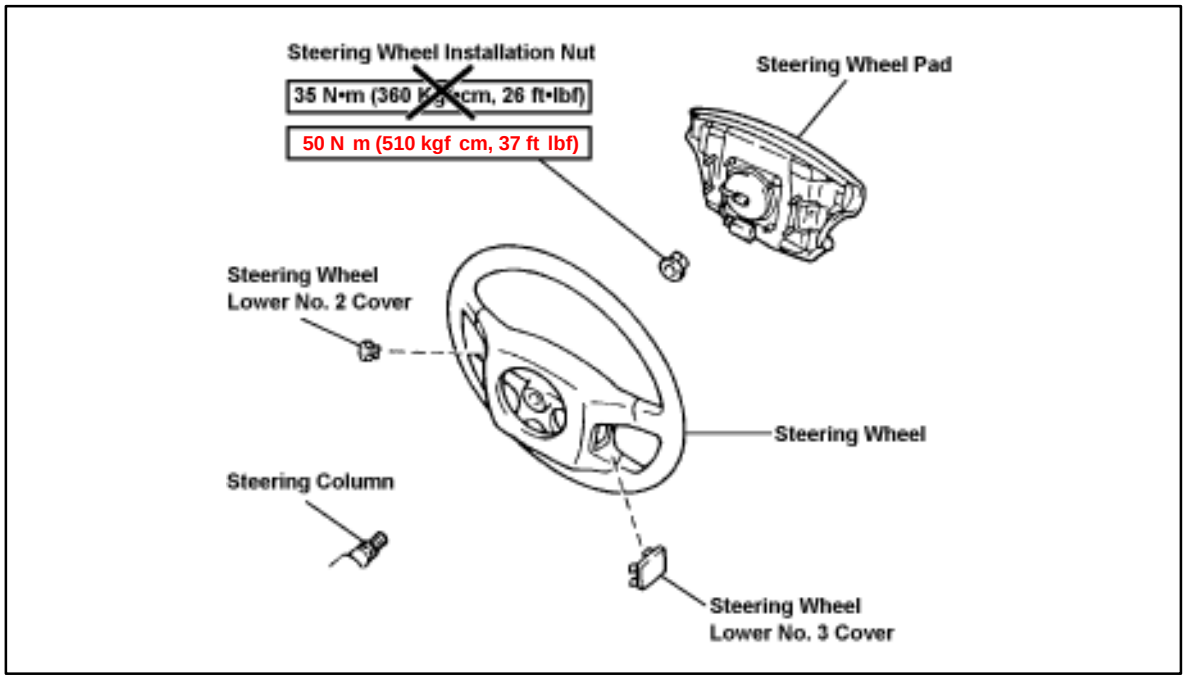
Models:
'94 – '00 ES 300

Introduction

The steering wheel installation nut torque specification has been changed. Please update the repair manuals for the applicable vehicles.

Applicable Vehicles

- **1994 – 2000** model year **ES 300**



Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

LEXUS

Technical Service Information Bulletin

August 14, 1998

Title:

STEERING RACK HOUSING BUSHING NOISE

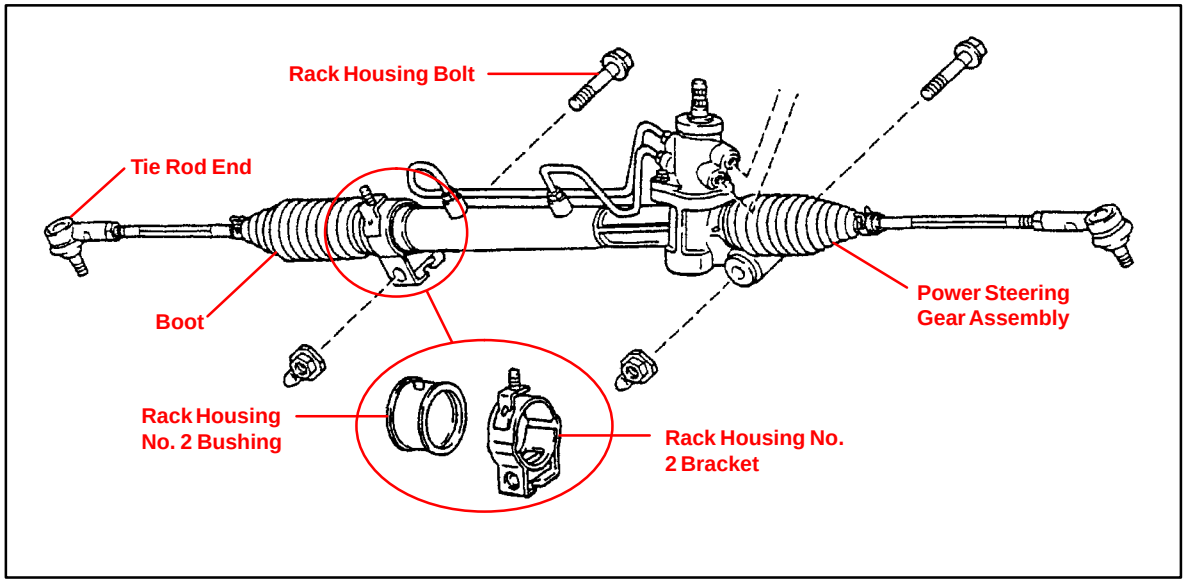
Models:

'97 ES 300

TSIB

Introduction

The Steering Rack Bushing on 1997 ES 300 vehicles has been changed to reduce noise from the Rack Housing Bracket No. 2.



Production Change Information

- **1997 ES 300s** starting with **VIN: JT8BF22G * V0001068**

Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME
45517–33010	45517–33021	Steering Rack Housing Bushing No. 2

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
ST8002	Replace Steering Rack No. 2 Bushing	1.0	45517–33010	91	99

Applicable Warranty*:

This repair is covered under the Lexus Basic Warranty. This warranty is in effect for 48 months or 50,000 miles, whichever occurs first, from the vehicle's in–service date.

* Warranty application is limited to correction of a problem based upon a customer's complaint.

Repair Procedure

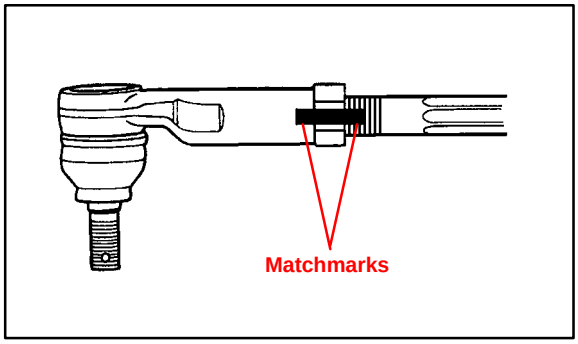
If the customer encounters noise in cold weather, when turning, at very low speed (2–3 mph), replace the Rack Housing Bushing with the updated part.

> **NOTE:**
> **It is not necessary to remove the Steering Rack to replace the bushing.**

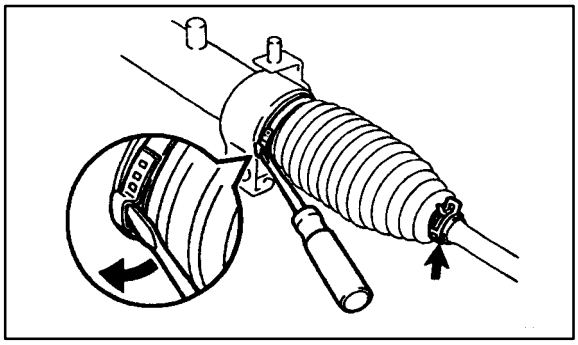
To remove the Rack Housing Bushing:

1. Remove the No. 2 Rack Housing Bolt.
2. Place matchmarks on the tie rod and rack end so that the toe will not be changed.

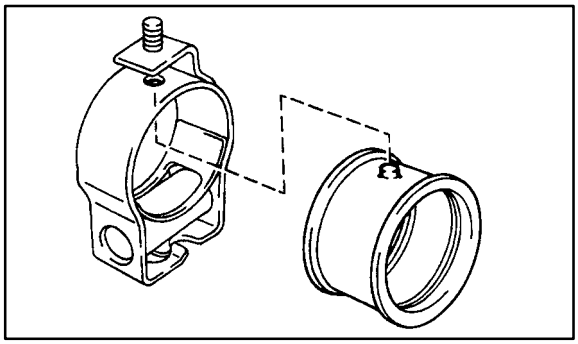
   Remove the Tie Rod End.



3. Remove the Rack Boot, using a screwdriver to loosen the clamp. Be careful not to damage the boot.



4. Remove and replace the Bushing. Be sure to align the projection on the bushing with the hole in the bracket.



5. Reassemble the Rack Boot using a new clamp (P/N 90461–08688).
6. Road test the vehicle to make sure steering wheel is on center.

LEXUS

Technical Service Information Bulletin

May 5, 2000

Title:

REAR ABS SPEED SENSOR REMOVAL

Models:

'97 – '00 ES 300

TSIB

Introduction

This bulletin provides service information regarding the removal of the ABS speed sensor prior to removal of the rear axle and rear suspension.

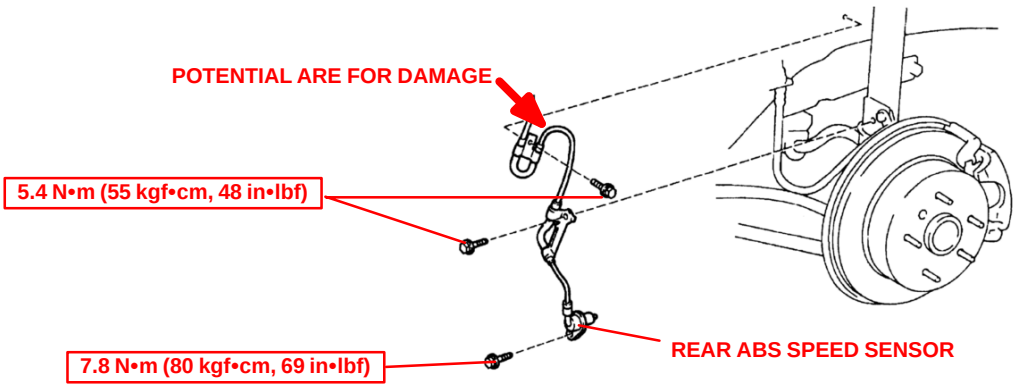
REMINDER:

Failure to remove the ABS speed sensor prior to removal of the rear axle or suspension may cause the ABS warning light to illuminate or damage the ABS speed sensor wire harness.

Applicable Vehicles

- **1997 – 2000** model year **ES 300**

Repair Procedure



NOTE:

Prior to removal/replacement of the rear axle, rear coil spring and rear shock absorber, be sure to remove the rear ABS speed sensor from the rear axle by removing the 3 bolts shown above. Check the speed sensor signal after installation.

Warranty Information

OPCODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable	–	–	–	–

Technical Service Information Bulletin
December 10, 1999

Title:

FRONT SUSPENSION SUPPORT NOISE

Models:

'97–'00 ES 300 & '99–'00 RX 300

TSIB

Introduction

To eliminate a noise occurrence from the front suspension on washboard type road surfaces, the suspension support has been changed.

Applicable Vehicles

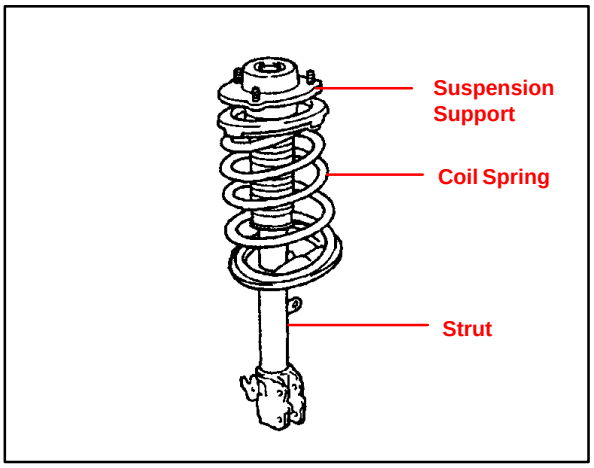
- **1997 – 2000 Model Year ES 300 and 1999 – 2000 Model Year RX 300.**

Production Change Information

The rubber bushing shape of the suspension support has been changed.

NOTE:
This change is not applicable to "Adaptive Variable Suspension" equipped ES 300 vehicles.

MODEL	STARTING VIN
ES 300	JT8BF28G*Y0237725 JT8BF28G*Y5075984
RX 300	JT6GF10U*Y0045378 JT6HF10U*Y0097408



Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
48603–33020	48603–33021	Support Sub–Assembly, Front Suspension RH	1
48609–33120	48609–33121	Support Sub–Assembly, Front Suspension LH	1

Warranty Information

ES 300

OP CODE	COMBO	DESCRIPTION	TIME	OPN	T1	T2
431451	A	R & R Front Suspension Support Assembly (RH and LH)	1.6	48603–33020	91	99
	B	Adjust Toe–in				

RX 300

OP CODE	COMBO	DESCRIPTION	TIME	OPN	T1	T2
431451	A	R & R Front Suspension Support Assembly (RH and LH)	2.0	48603–33020	91	99
	B	Adjust Toe–in				

Applicable Warranty*:
This repair is covered under the Lexus Basic Warranty. This warranty is in effect for 48 months or 50,000 miles, whichever occurs first, from the vehicle's in–service date.

* Warranty application is limited to correction of a problem based upon a customer's specific complaint.

LEXUS

Technical Service Information Bulletin

April 9, 1999

Title:

REVISED DRIVE SHAFT GREASE

Models:

LS 400, GS 300/400, SC 300/400, ES 250/300 & RX 300

TSIB

Introduction

The greases supplied in replacement Inboard and Outboard Drive Shaft Boot Kits for the following models, has been revised.

With this revision, the grease compositions have been changed and are now both the **same color**. To correctly lubricate each joint, consult the Service Repair Manual as to which **size** packet of grease is designated for each Drive Shaft Joint Assembly.

NOTE:

Although Inboard and Outboard greases are now the same color, their compositions are different.

Affected Vehicles

- **All LS 400, GS 300/400, SC 300/400, ES 250/300 & RX 300 Models.**

Required Tools and Material

As outlined in the Service Repair Manual.

Repair Procedure

Refer to the appropriate Repair Manual for installation and lubrication information for Drive Shaft Joint Assemblies.

Warranty Information

OPCODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

LEXUS

Technical Service Information Bulletin

June 19, 1998

Title:

AUTOMATIC TRANSMISSION FLUID TYPE T-IV

Models:

All Models

TSIB

Introduction

The introduction of Automatic Transmission Fluid type T–IV makes type T–II obsolete. Use type T–IV for all applications that specify ATF type T–II.

Affected Vehicles

- All vehicles with Automatic Transmissions specified to use **ATF Types T–II or T–IV.**

	TYPE OF ATF			
SPECIFIED ATF	**Dextron®–III**	**TYPE T**	**TYPE T–II**	**TYPE T–IV**
Dextron®–II or III	**OK**	**X**	**X**	**X**
TYPE T	**X**	**OK**	**X**	**X**
TYPE T–II	**X**	**X**	**OK**	**OK**
TYPE T–IV	**X**	**X**	**X**	**OK**
X = NOT USABLE				

Parts Information

SIZE	NEW PART NUMBER	PART NAME
4 Liter	08886–01705	ATF type T–IV

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

LEXUS

Technical Service Information Bulletin

September 10, 1999

Title:

AUTOMATIC TRANSMISSION FLUIDS

Models:

All Models

TSIB

REVISION NOTICE:

The information contained in this TSIB updates TC003–98 dated June 19, 1998.

Introduction

Automatic Transmission Fluid Type T–IV now replaces Type T–II fluid. Use Type T–IV for all applications that specify ATF Type T–II.

Please refer to the following table for the interchangeability between each ATF.

Applicable Vehicles

- **All vehicles produced after 1990 with Automatic Transmissions specified to use ATF Type T, T–II and T–IV.**

SPECIFIED ATF	TYPE OF ATF			
	DEXRON® II OR III	TYPE T	TYPE T–II	TYPE T–IV
DEXRON® II OR III	OK	X	X	X
TYPE T	X	OK	X	OK
TYPE T–II	X	X	OK	OK
TYPE T–IV	X	X	X	OK
X = NOT USABLE				

NOTICE:

With the exception of mixing ATF Type T with Type T–IV fluids, different types of fluids must not be mixed.

Parts Information

SIZE	NEW PART NUMBER	PART NAME
4 Liter	08886–01705	ATF Type T–IV

Warranty Information

OPCODE	DESCRIPTION	TIME	OPN	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–