



**Technical Service
Information Bulletin**

October 11, 2002

Title:

SUSPENSION BALL JOINT INSPECTION

Models:

Applicable Models

PRODUCT GENERAL INFORMATION
PG012-02

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	OFF	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

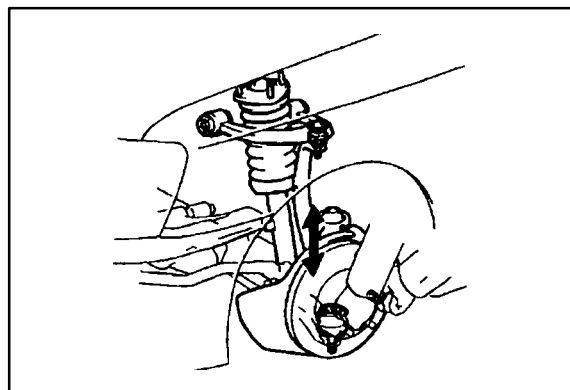
Free Play Inspection

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.

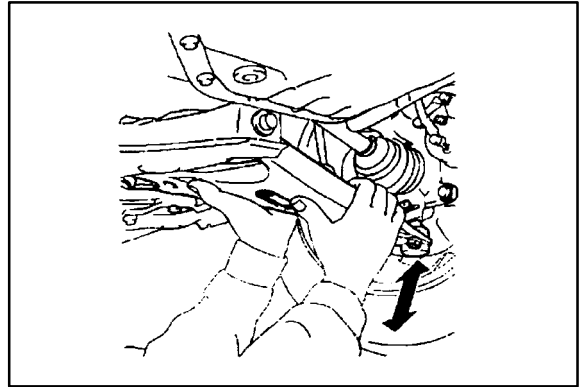
1. Inspect Lower Ball Joint Free Play

- 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)

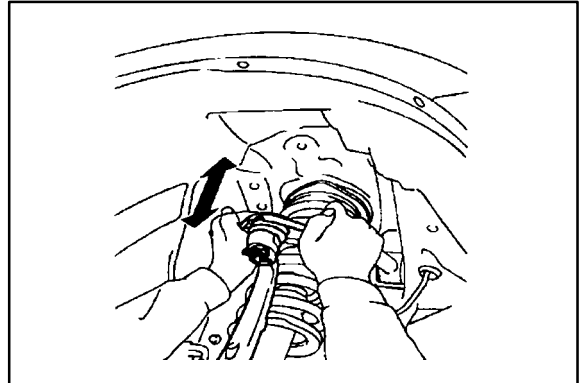
- B. Move the lower arm by hand (All models with strut type suspension and some models with wish-bone type suspension):
- a. Lift up the vehicle.
 - b. Inspect the free play while moving the lower arm up and down at a force of 67 lbf (294 N, 30 kgf).



2. Inspect Upper Ball Joint Play

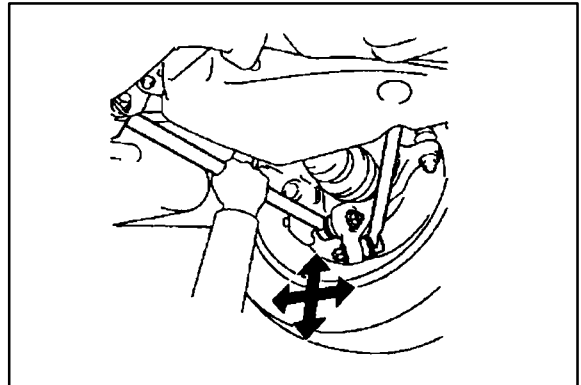
Move the upper arm by hand (Models where the **LOWER** control arm are linked by a torsion bar, and all models using a coil spring).

- 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

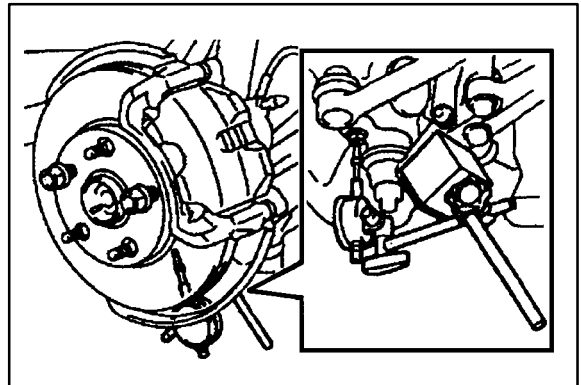
- A. Lift up the vehicle.
- B. Inspect the free play while moving the control arm by hand.



(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.

