

Service Bulletin

AUTOMOBILE	
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SUBJECT : Important inspection of suspension lower arm ball joint

REFERENCE :

1. APPLICABLE MODEL

All models

2. CONDITION / DESCRIPTION

The suspension lower arm ball joint may gradually deteriorate and wear due to a long time use. Therefore, if the vehicle is used continuously without proper inspection, it may become unsafe if the ball stud becomes separated from suspension lower arm. [Fig.1]

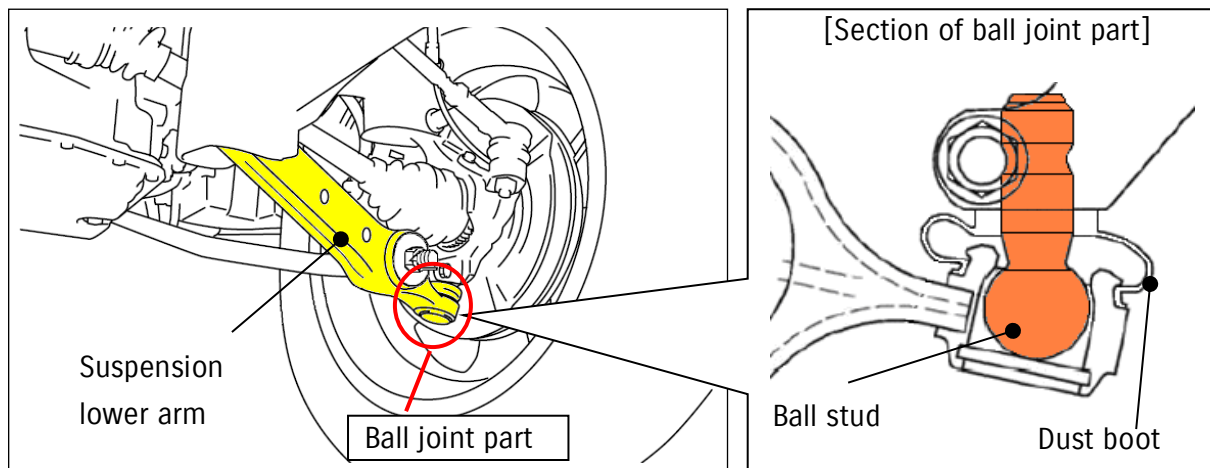


Fig.1 Suspension lower arm ball joint part

3. REPAIR PROCEDURE

Perform the following inspection from (1) to (4) in order and change the suspension lower arm assembly with new one as required.

- (1) Backlash of ball joint
- (2) Water intrusion into dust boot
- (3) Rust of ball joint
- (4) Crack of dust boot

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(1) Inspect backlash of ball joint

- 1) Lift up the vehicle. Remove the tire and wheel. [Fig.2]
- 2) Bolt the front brake disc to wheel hub using washer and nut to prevent it from rattling.
Note : Place them to two points on a diagonal line. [Fig.2]
- 3) Attach the magnet stand with dial indicator attached to front brake disc and set the dial gauge.
Note: The pointer of the dial gauge needs to be set on

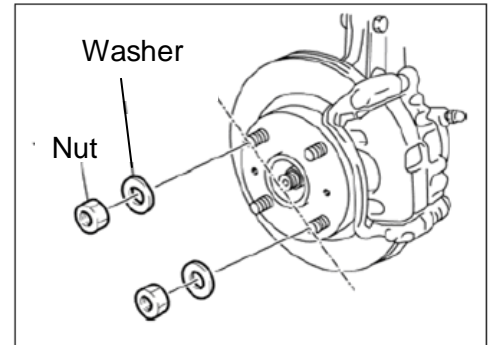


Fig.2 Brake disc fixture

the center of the bottom face of the suspension lower arm ball joint. It must also be placed at a right angle to the bottom face. [Fig.3]

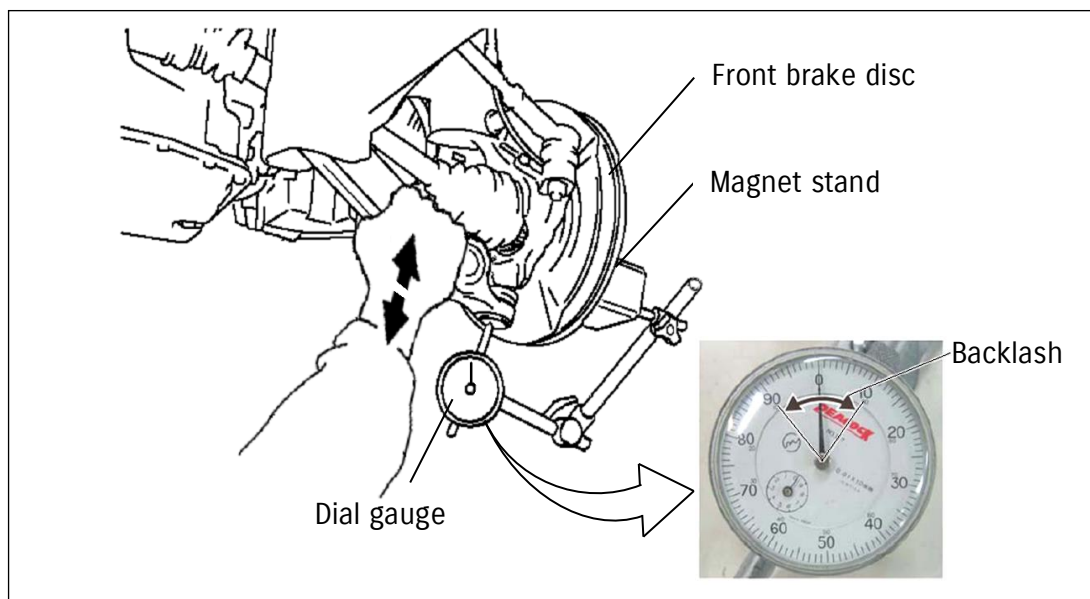


Fig.3 Dial gauge setting

- 4) Rotate the scale plate to the zero-position without loading to the suspension lower arm. [Fig.3]
- 5) Push near the ball joint part of suspension arm to up direction of the vehicle by hand (with approximately 20 – 30N), and hold it for 2-3 seconds while measuring the value of the dial gauge. It shows the amount of backlash in the upward direction. [Fig.3]
- 6) Pull near the ball joint part of suspension arm to down direction of the vehicle by hand (with approximately 20 – 30N), and hold it for 2-3 seconds while measuring the value of the dial gauge. It shows the amount of backlash of downward direction. [Fig.3]
- 7) The total measurements of step 5) and 6) are the total amount of backlash. Based on the value, take action according to the decision criteria described in table 1.

Table1 Judgement criteria for backlash of suspension lower arm

Judgement criteria	Action
Less than 0.2mm	Go to (2) "Inspect water intrusion into dust boot "
More than 0.2mm	Replace the suspension lower arm.

(2) Inspect water intrusion into dust boot

Press lightly the dust boot by thumb to see if there is any water intrusion into the dust boot. [Fig.4]
Based on the observation, take action according to the judgement criteria described in table 2.

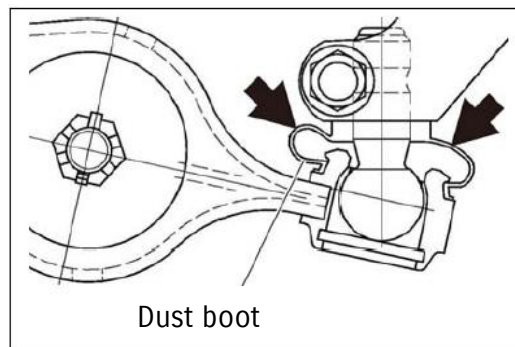


Fig.4 Dust boot pressing

Table2 Judgement criteria for the water intrusion into the dust boot

Judgement criteria	Action
No water leaking from dust boot	Go to (3) "Inspect rust of ball joint"
Water leaking from dust boot	Replace the suspension lower arm.

(3) Inspect rust of ball joint

Separate the ball joint on the control arm from the lower spindle so you can inspect the ball joint. Move the upper sealing area of the dust boot, and inspect the ball joint for rust in the contact area between the ball joint and the dust boot. [Fig.5]

Based on the inspection, take action according to the judgement criteria described in table 3.

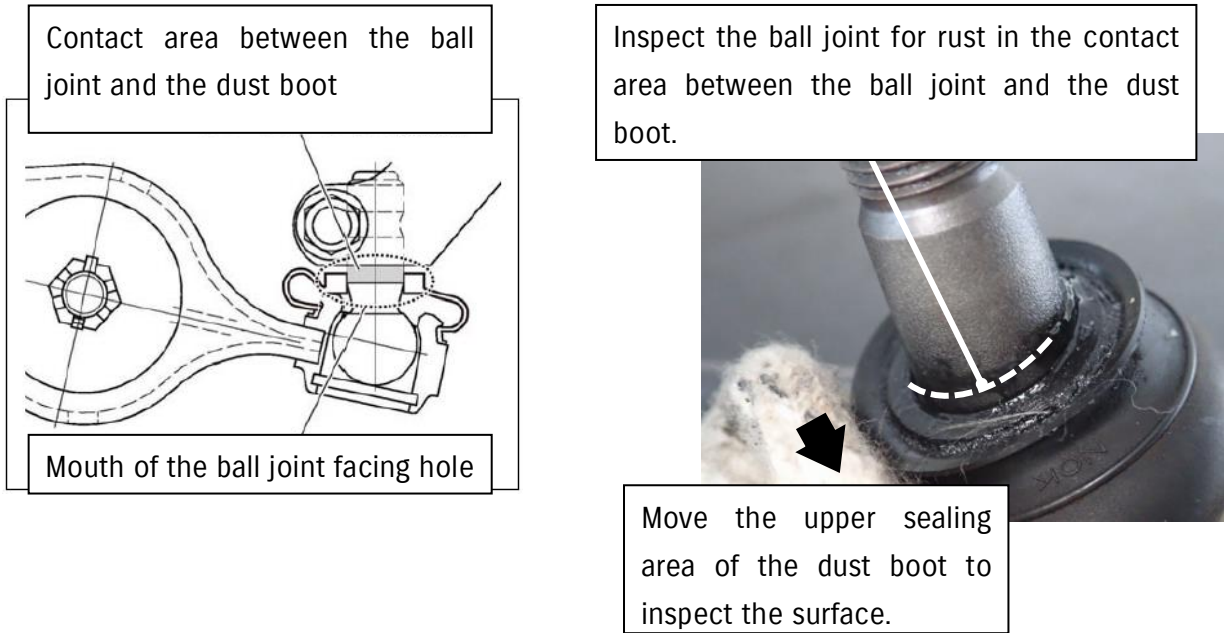


Fig.5 Inspection area for the rust of the ball joint

Table3 Judgement criteria for the rust of the ball joint

Judgement criteria	Action
No rust visible	Go to (4) "Inspect the damage of dust boot"
Rust visible	Replace the suspension lower arm.

(4) Inspect the damage of dust boot

1) Inspect the dust boot if there is damage such as chap, crack or fracture on it. Based on the inspection, take action according to the judgement criteria described in table 4. [Fig.7]

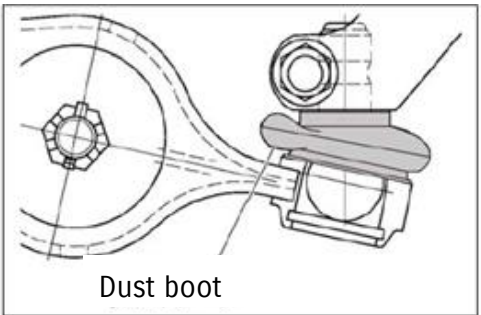


Fig.6 Dust boot

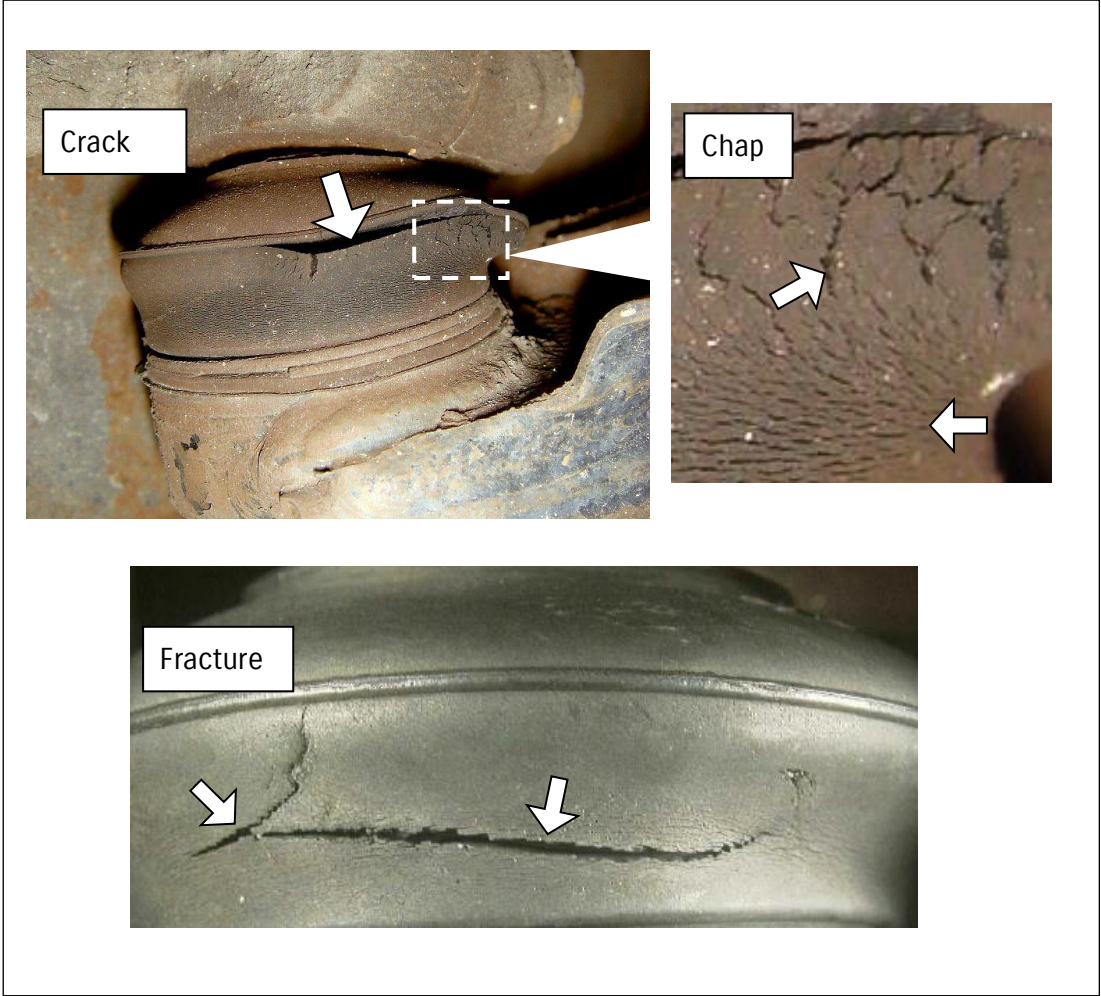


Fig.7 Example of chap, crack or fracture

Table4 Judgement criteria for the damage of the dust boot

Judgement criteria	Action
No occurrence of chap, crack or fracture	Finish the inspection and reassemble (see note below).
Occurrence of chap, crack or fracture [Note]	Replace the suspension lower arm

Note : If the chap, crack or fracture is already reaching inside, the water may intrude into the dust boot and the rust may be generated by it. In this case, change the suspension lower arm with the new one.
 If the chap, crack or fracture is not reaching inside, change the dust boot with new one.