

GROUP 33A – FRONT SUSPENSION

BULLETIN No.	SUBJECT	MODEL
33/2002/001	Test procedure for ball joint end play	All



MITSUBISHI

SERVICE BULLETIN

GROUP: 33—Front Suspension

DATE: October 2002

NO. 33/2002/001

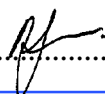
MODEL: ALL

SUBJECT: Test procedure for Ball joint end play

COUNTRIES:

Australia

R.I.WYATT
MANAGER - AFTERSALES
TECHNICAL SUPPORT

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Bulletin Consists of 7 Pages

Purpose

The purpose of this bulletin is to advise of the procedures to be used in establishing the ball joint end play of the front suspension components.

Applicable Manual

Manual	Publication Number	Page
2000 Pre-Delivery inspection and periodic maintenance	PGAE9907	2—45

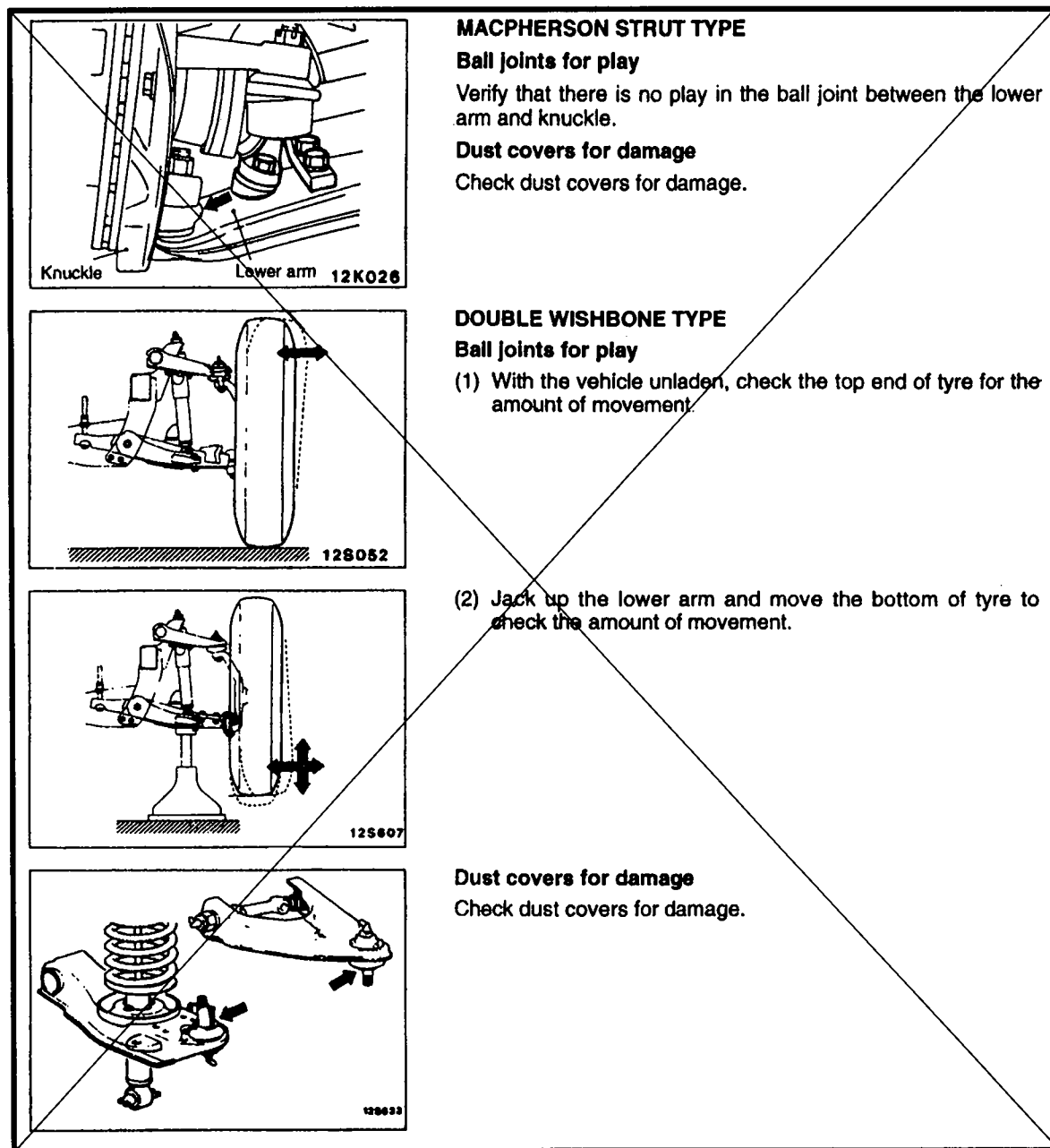
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3. Details:

PERIODIC INSPECTION AND MAINTENANCE – Operations under the Vehicle 2-45

22. CHECK SUSPENSION ARM BALL JOINTS FOR PLAY, AND DUST COVERS FOR DAMAGE



<Old>

<New>

See the following pages.

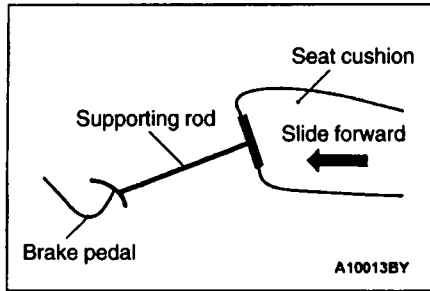
MULTI-LINK TYPE FRONT SUSPENSION

Applicable model - GALANT

LATERAL LOWER ARM BALL JOINT END PLAY CHECK

NOTE

The end play is defined as up and down displacement of the lateral lower arm ball joint which occurs when upward and downward loads are applied to the ball joint.

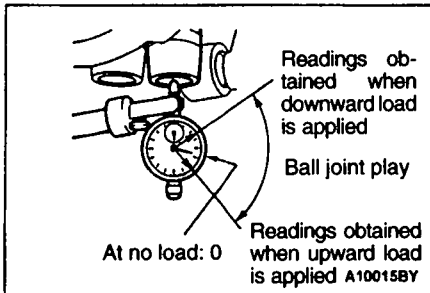
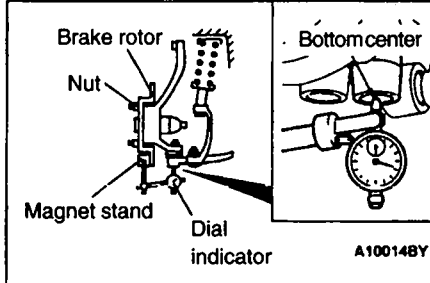


1. Place the car on the lift with the car in straight ahead position.
2. Shake a front tire with your hands to check for the play of the hub.

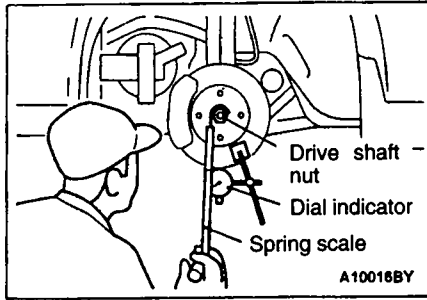
NOTE

Excessive play influences measurement results. If there is play, measure the amount of the play according to the Workshop Manual for proper countermeasures.

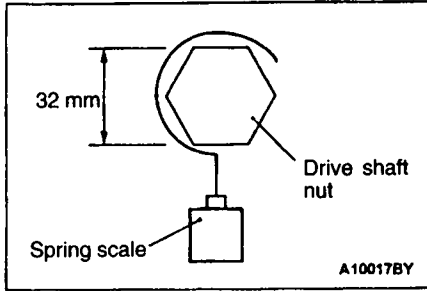
3. In order to prevent the brake rotor from rotating during measurements, insert a supporting rod between the brake pedal and the seat as shown. Check to ensure that the brake rotor does not rotate.
You can also have an assistant depress the brake pedal during measurements.
4. After ascertaining that the steering wheel is placed in straight ahead position, withdraw the ignition key and lift up the car to a height at which you can perform operations easily.
5. Remove the right and left front tires.
6. Inspect the dust cover of the ball joint for breakage visually or by pushing on the cover with your fingers. If breakage is evident, replace the lateral lower arm.
7. To prevent looseness during measurements, secure the brake rotor with wheel nuts at two places.
8. To measure up and down displacement of the ball joint at the bottom center, install a magnet stand to the brake rotor and secure a dial indicator as shown.



9. Set the pointer of the dial indicator in approximately the center of the measurement range as shown.
10. Lift up the car so that the center of the hub is brought approximately to the height of shoulders of the operator.

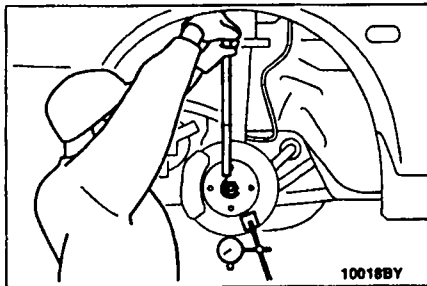


11. Attach the hook of a spring scale to the drive shaft nut of the hub and apply a force of 150 N vertically downward. Record the readings of the dial indicator at this time.



CAUTION

Attach the hook of a spring scale to the drive shaft nut as shown and take care that the hook is not out of position.



12. Attach the hook of a spring scale upside down to the nut and apply a force of 150 N vertically upward. Record the readings of the dial indicator at this time.
13. Calculate difference between the recorded readings of Items 11 and 12 above (amount of ball joint end play). If the end play exceeds the limit, replace the lateral lower arm.

Limit: 0.1 mm

UPPER ARM AND COMPRESSION LOWER ARM BALL JOINT END PLAY CHECK

1. Lift up the car.
2. Move each arm up and down with your hands to check for the end play of the ball joint.
If the end play is evident, replace the arm assembly.

DUST COVERS FOR DAMAGE

Check dust covers for damage.

MULTI-LINK TYPE REAR SUSPENSION

Applicable model - GALANT

TOE CONTROL ARM BALL JOINT END PLAY CHECK

1. Raise the vehicle.
2. Remove the stabilizer link from the lower arm assembly.
3. Move the toe control arm up and down with your hands to check for an excessive play in the axial direction of the ball joint. If there is an excessive play, replace the toe control arm assembly.

DUST COVERS FOR DAMAGE

Check dust covers for damage.

MACPHERSON STRUT TYPE FRONT SUSPENSION

LOWER ARM BALL JOINT END PLAY CHECK

1. Raise the vehicle.
2. Remove the stabilizer bar from the lower arm assembly.
3. Move the lower arm up and down with your hands to check for an excessive play in the axial direction of the ball joint. If there is an excessive play, replace the lower arm assembly.

DUST COVERS FOR DAMAGE

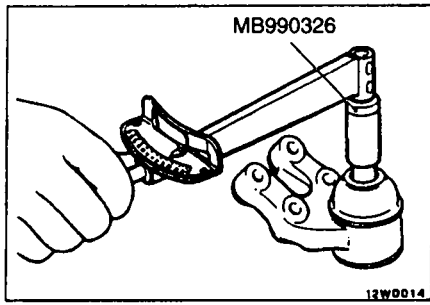
Check dust covers for damage.

DOUBLE WISHBONE TYPE FRONT SUSPENSION

UPPER ARM BALL JOINT END PLAY CHECK

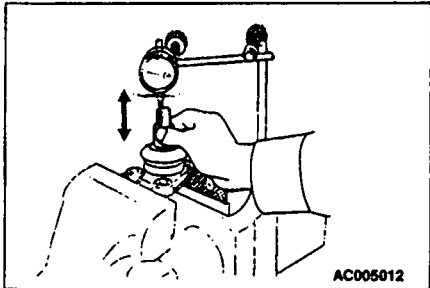
Applicable model - PAJERO/MONTERO (CK)

1. Lift up the car.
2. Move the arm up and down with your hands to check for the end play of the ball joint.
If the end play is evident, replace the upper arm ball joint.



Applicable model – L300, L400

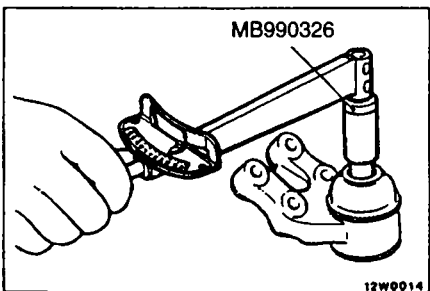
1. Remove the upper arm ball joint.
2. Check the turning torque of the upper arm ball joint. For checking procedures, refer to the Workshop Manual. If the measurement is less than the standard value, perform the step 3 below.



3. Using a dial indicator, check the end play of the ball joint. If the end play is greater than the minimum graduation (0.01 mm) on the dial indicator, replace the upper arm ball joint.

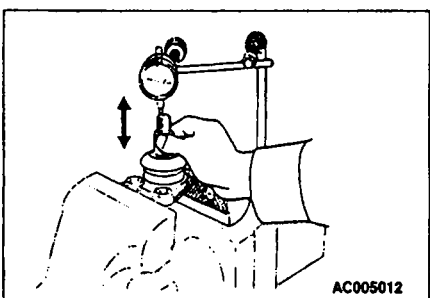
Applicable model – PAJERO/MONTERO (Q), PAJERO SPORT/MONTERO SPORT/NATIVA/CHALLENGER, L200

End play check is not required because a built-in spring ball joint is employed.

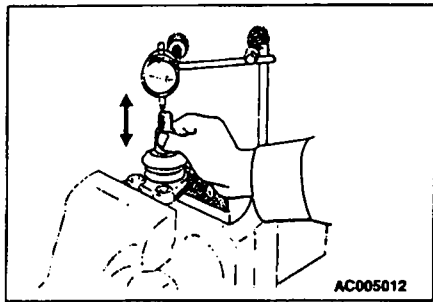


LOWER ARM BALL JOINT END PLAY CHECK Applicable model – PAJERO/MONTERO (CK)

1. Remove the lower arm ball joint.
2. Check the turning torque of the lower arm ball joint. For checking procedures, refer to the Workshop Manual. If the measurement is less than the standard value, perform the step 3 below.



3. Using a dial indicator, check the end play of the ball joint. If the end play is greater than the minimum graduation (0.01 mm) on the dial indicator, replace the lower arm ball joint.



**Applicable model – PAJERO/MONTERO (Q),
PAJERO SPORT/MONTERO SPORT/NATIVA/
CHALLENGER, L200**

1. Remove the lower arm ball joint.
2. Using a dial indicator, check the end play of the ball joint.

Limit: 0.3 mm

3. If the end play exceeds the limit, replace the lower arm ball joint.

Applicable model – L300 (4WD), L400

1. Lift up the car.
2. Disconnect the stabilizer bar and the shock absorber from the lower arm.
3. Move the lower arm up and down with your hands to check for the end play of the ball joint.
If the end play is evident, replace the lower arm ball joint.

Applicable model – L300 (2WD)

End play check is not required because a built-in spring ball joint is employed.

DUST COVERS FOR DAMAGE

Check dust covers for damage.

**DOUBLE WISHBONE TYPE REAR
SUSPENSION
UPPER ARM BALL JOINT END PLAY CHECK**

1. Lift up the car.
2. Move the upper arm up and down with your hands to check for the end play of the ball joint.
If the end play is evident, replace the upper arm ball joint.

**TOE CONTROL ARM BALL JOINT END PLAY
CHECK**

1. Lift up the car.
2. Move the toe control arm fore and aft of the car with your hands to check for the end play of the ball joint.
If the end play is evident, replace the toe control arm assembly.

DUST COVERS FOR DAMAGE

Check dust covers for damage.