
GROUP 27

REAR AXLE

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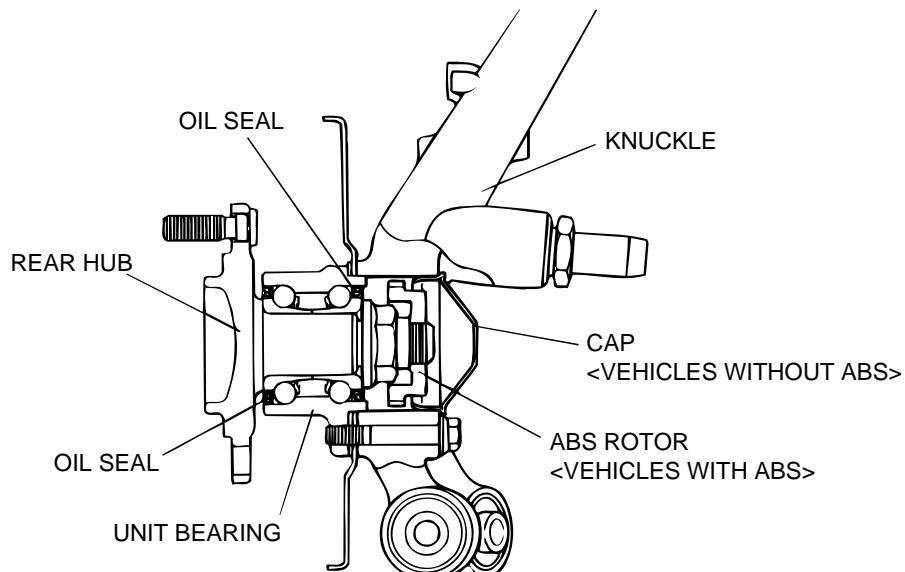
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GENERAL DESCRIPTION

The rear axle consists of a knuckle, rear hub, unit bearing. The unit bearing is press-fitted to the rear hub and bolted to the knuckle. Also, the unit bearing utilizes the same type of double row angular contact ball bearing as does the front axle.

ABS rotor for detecting the vehicle speed is located on the hub assembly, and a speed sensor is located on the knuckle.

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REAR AXLE DIAGNOSIS

INTRODUCTION TO REAR AXLE DIAGNOSIS

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Noise from the rear axle may be caused by defects in the components.

REAR AXLE DIAGNOSTIC TROUBLESHOOTING STRATEGY

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Use these steps to plan your diagnostic strategy. If you follow them carefully, you will be sure that you have exhausted most of the possible ways to find a rear axle fault.

1. Gather information from the customer.

2. Verify that the condition described by the customer exists.
3. Find the malfunction by following the Inspection Chart for Trouble Symptoms.
4. Verify malfunction is eliminated.

SYMPTOM CHART

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SYMPTOM	INSPECTION PROCEDURE	REFERENCE PAGE
Abnormal noise	1	P.27-3

SYMPTOM PROCEDURES

INSPECTION PROCEDURE 1: Abnormal Noise

DIAGNOSIS

STEP 1. Check the wheel nut for looseness.

Q: Are the wheel nuts loosened?

YES : Tighten the nuts, then go to Step 3.
NO : Go to Step 2.

STEP 2. Check the wheel bearing for wear or damage.

Q: Is the wheel bearing in good condition?

YES : Go to step 3.
NO : Replace the part, then go to Step 4.

STEP 3. Check the brake disc for bent or distortion.

Q: Is the brake disc in good condition?

YES : Go to Step 4.
NO : Replace the part, then go to Step 4.

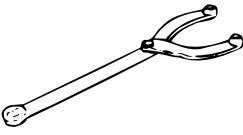
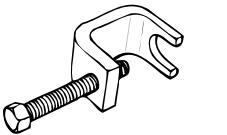
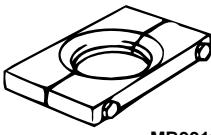
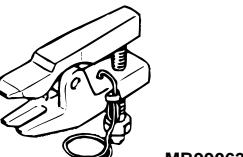
STEP 4. Check trouble symptoms.

Q: Are any noises generated?

YES : Return to Step 1.
NO : This diagnosis is complete.

SPECIAL TOOLS

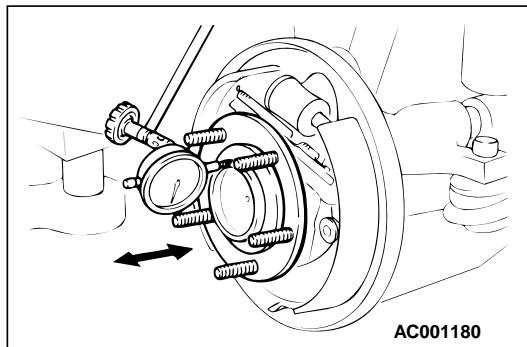
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TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
 MB990767	MB990767 End yoke holder	MB990767-1	Hub fixing
 MB991618	MB991618 Hub bolt remover	General service tool	Hub bolt removal
 MB991248	MB991248 Inner shaft remover	Tool not available	ABS rotor removal
 MB990635	MB990635 or MB991113 Steering linkage puller	MB991113-1, MB990635-01 or General service tool	Ball joint disconnection

ON-VEHICLE SERVICE

WHEEL BEARING END PLAY CHECK

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1. For vehicles with rear disc brakes, remove the caliper assembly, suspend the caliper assembly with a wire and remove the brake disc.

2. For vehicles with rear drum brakes, remove the brake drum.

3. Check the bearing's end play.

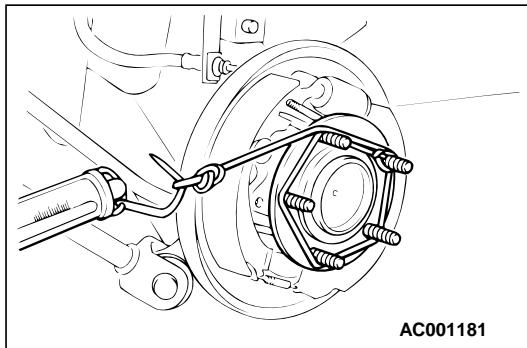
Place a dial gauge against the hub surface; then move the hub in the axial direction and check whether or not there is end play.

Limit: 0.05 mm (0.002 inch)

4. If the play exceeds the limit value, replace the rear hub assembly.

REAR HUB ROTARY-SLIDING RESISTANCE CHECK

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1. For vehicles with rear disc brakes, remove the caliper assembly, suspend the caliper assembly with a wire and remove the brake disc.

2. For vehicles with rear drum brakes, remove the brake drum.

3. After turning the hub a few times to seat the bearing, wind a rope around the hub bolt and turn the hub by pulling at a 90 degree angle with a spring balance. Measure to determine whether or not the rotary-sliding resistance of the rear hub is at the limit value.

Limit: 18 N·m (13 ft-lb)

4. If the rotary-sliding resistance exceeds the limit value, replace the rear hub assembly.

HUB BOLT REPLACEMENT

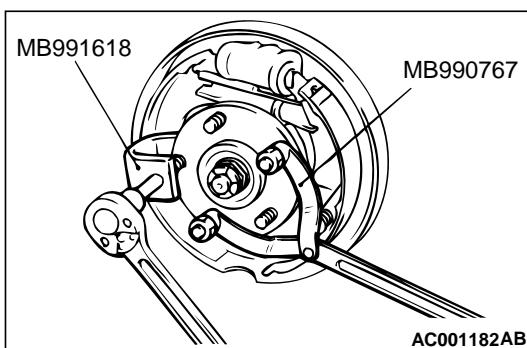
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Required Special Tools:

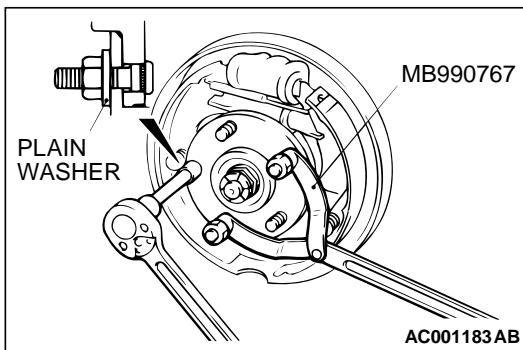
- MB990767: End Yoke Holder
- MB991618: Hub Bolt Remover

1. For vehicles with rear disc brakes, remove the caliper assembly, suspend the caliper assembly with a wire and remove the brake disc.
2. For vehicles with rear drum brake, remove the brake drum.
3. Pull the hub bolt out using special tools MB990767 and MB991618.

NOTE: For vehicles with drum brakes, the hub bolts should be removed near the retainer spring installation position in order to maintain enough clearance for removal.



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4. Install the plain washer to the new hub bolt, and install the bolt with a nut.

REAR AXLE HUB ASSEMBLY

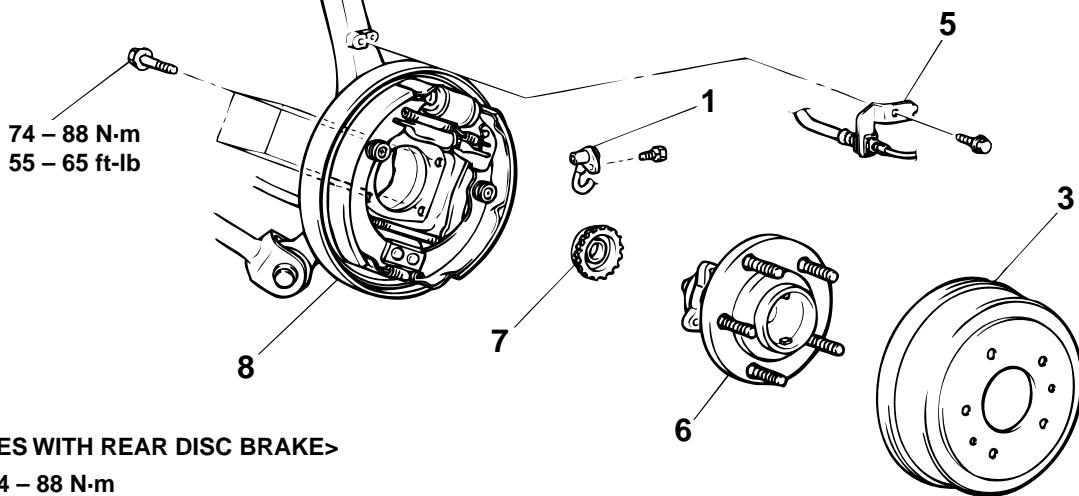
REMOVAL AND INSTALLATION

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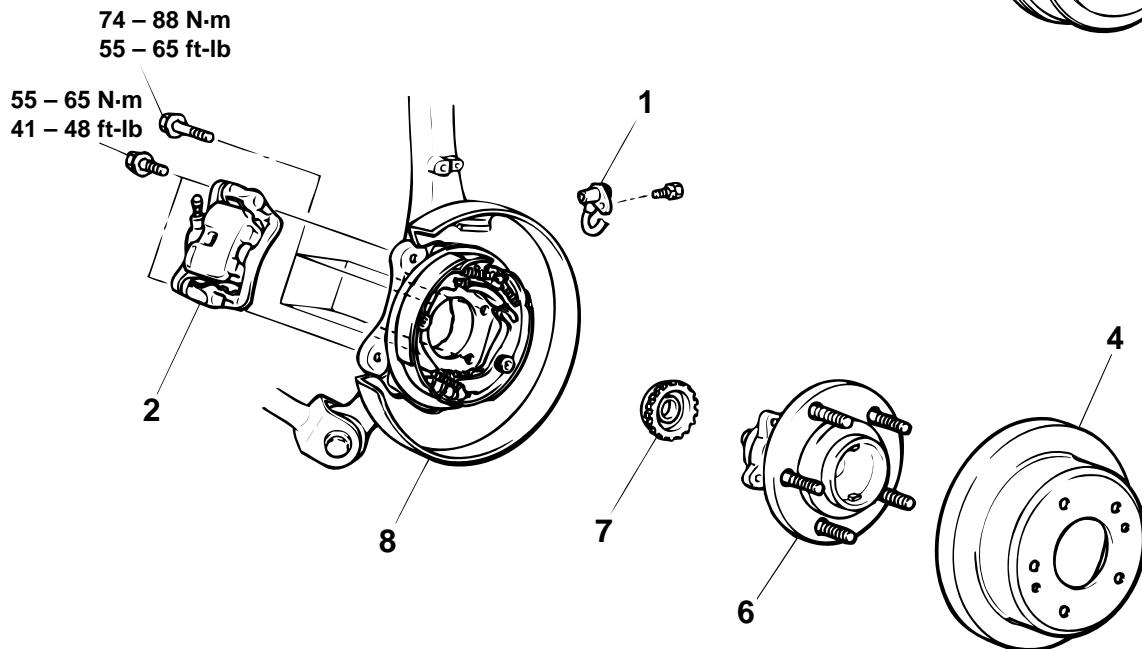
CAUTION

The rear hub unit bearing should not be dismantled.

<VEHICLES WITH REAR DRUM BRAKE>



<VEHICLES WITH REAR DISC BRAKE>



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REMOVAL STEPS

1. REAR WHEEL-SPEED SENSOR
<VEHICLES WITH ABS> (REFER TO GROUP 35BP.35B-49)

2. CALIPER ASSEMBLY

3. BRAKE DRUM

4. BRAKE DISC

5. BRAKE HOSE INSTALLATION BRACKET

<<A>>

6. REAR HUB ASSEMBLY

7. ABS ROTOR <VEHICLES WITH ABS>

8. BACKING PLATE

Required Special Tool:

MB991248: Inner Shaft Remover

REMOVAL SERVICE POINTS

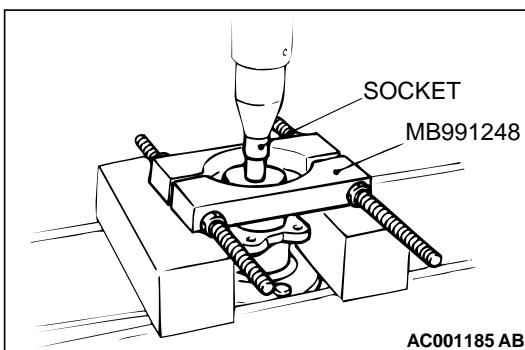
<<A>> CALIPER ASSEMBLY REMOVAL

Remove the caliper assembly and suspend it.

<> ABS ROTOR REMOVAL

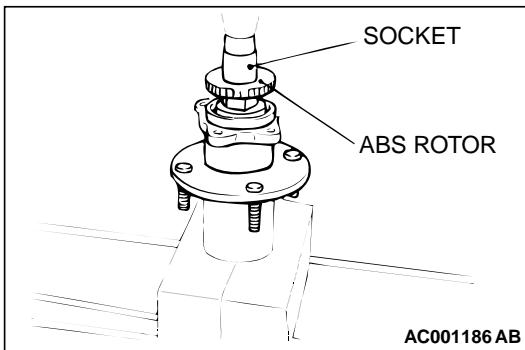
<<C>> BACKING PLATE REMOVAL

Remove the backing plate and suspend it.



INSTALLATION SERVICE POINT

>>A<< ABS ROTOR INSTALLATION



INSPECTION

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- Check the oil seal for crack or damage.
- Check the ABS rotor for chipped teeth.

KNUCKLE

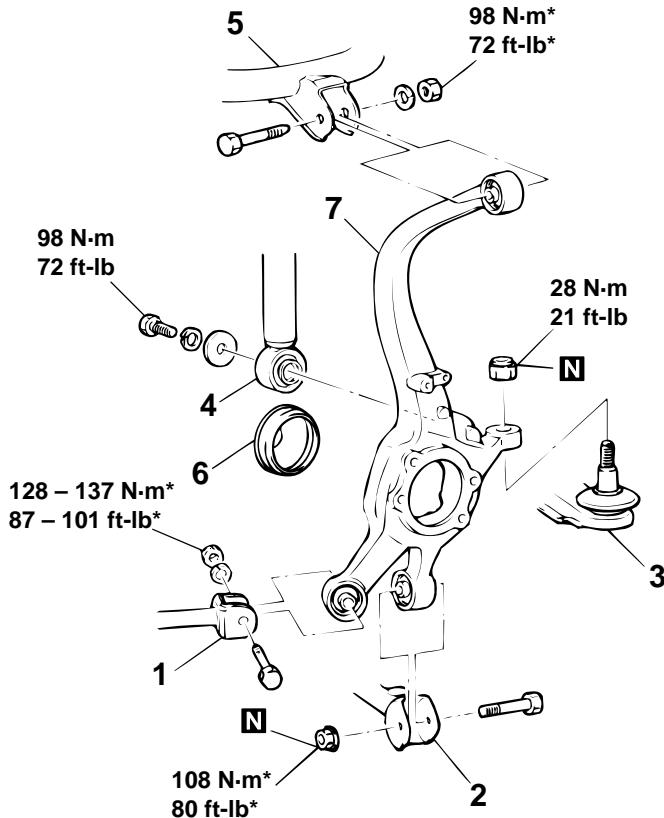
REMOVAL AND INSTALLATION

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CAUTION

* : Indicates parts which should be temporarily tightened, and then fully tightened with the vehicle on the ground in the unladen condition.

Pre-removal Operation	Post-installation Operation
Rear Axle Hub Assembly Removal (Refer to P.27-6.)	<ul style="list-style-type: none"> Check the Dust Cover for Cracks or Damage by Pushing It with Finger. Rear Axle Hub Assembly Installation (Refer to P.27-6.)



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REMOVAL STEPS

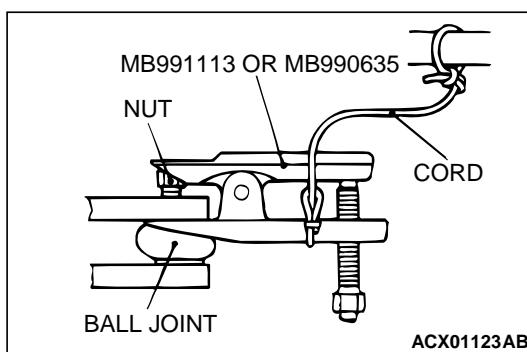
1. TRAILING ARM CONNECTION
2. LOWER ARM CONNECTION
3. TOE CONTROL ARM CONNECTION
4. SHOCK ABSORBER CONNECTION

REMOVAL STEPS (Continued)

5. UPPER ARM CONNECTION
6. HUB CAP <VEHICLES WITHOUT ABS>
7. KNUCKLE

Required Special Tool:

MB991113 or MB990635: Steering Linkage Puller



REMOVAL SERVICE POINT

<<A>> TOE CONTROL ARM DISCONNECTION

CAUTION

- Use special tool MB991113 or MB990635 to loosen the nut from the ball joint instead of removing it.
- Hang special tool MB991113 or MB990635 with ropes to prevent it from falling.

INSPECTION

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Check the knuckle for wear or cracks.

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

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ITEMS	SPECIFICATIONS
Knuckle	
Lower arm assembly to knuckle jam nut	108 N·m (80 ft-lb)
Shock absorber assembly to knuckle bolt	98 N·m (72 ft-lb)
Toe control arm assembly to knuckle jam nut	28 N·m (21 ft-lb)
Trailing arm assembly to knuckle nut	118 – 137 N·m (87 – 101 ft-lb)
Upper arm assembly to knuckle nut	98 N·m (72 ft-lb)
Rear axle hub assembly	
Brake caliper assembly bolt	55 – 65 N·m (41 – 48 ft-lb)
Rear hub assembly bolt	74 – 88 N·m (55 – 56 ft-lb)

SERVICE SPECIFICATIONS

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ITEMS	LIMIT
Wheel bearing end play mm (in)	0.05 (0.002)
Rear hub rotary-sliding resistance N·m (ft-lb)	18 (13)

NOTES