

GROUP 27

REAR AXLE

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GENERAL DESCRIPTION

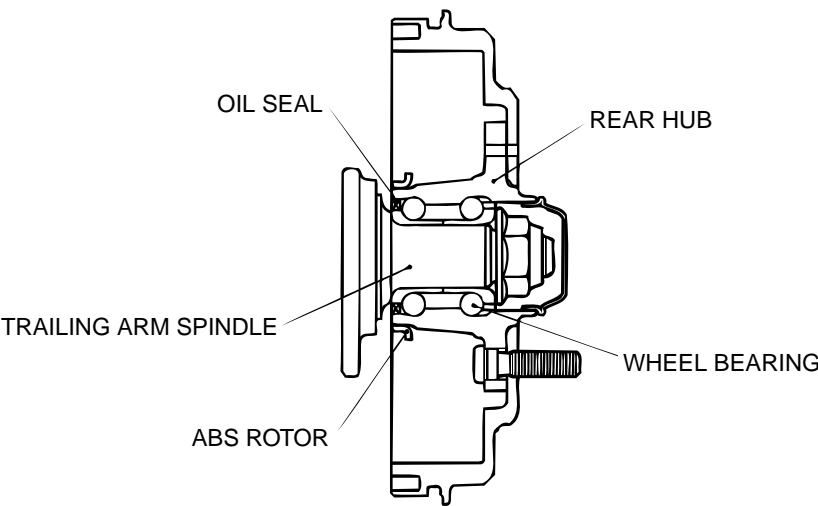
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The rear axle has the following features:

- The wheel bearing is a unit bearing (double-row angular contact ball bearing).

- ABS rotors for detecting the wheel speeds are press-fitted to the rear hub in vehicles with ABS.

CONSTRUCTION DIAGRAM



AC100011AB

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

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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 Step3.

NO : Go to Step 2.

STEP 2. Check the wheel bearing end play.

Refer to P.27-4.

Q: Is the wheel bearing end play within the limit?

YES : Go to Step 3.

NO : Replace the rear hub assembly, then go to Step 4.

STEP 3. Check the rear hub rotary-sliding resistance.

Refer to P.27-5.

Q: Is the rear hub rotary-sliding resistance within the standard value?

YES : Go to Step 4.

NO : Replace the rear hub assembly, then go to Step 4.

STEP 4. Retest the system.

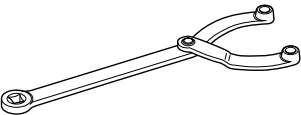
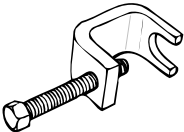
Q: Are any noises generated?

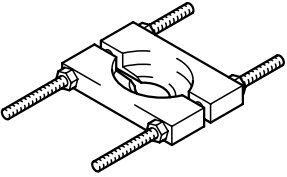
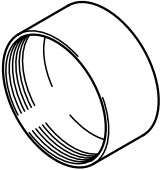
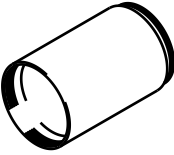
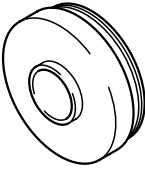
YES : Return to Step 1.

NO : The procedure is complete.

SPECIAL TOOLS

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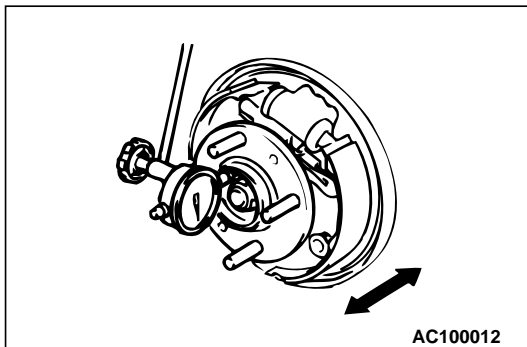
TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
 <p>B990767</p>	MB990767 End yoke holder	MB990767-01	Hub fixing
 <p>MB991618</p>	MB991618 Hub bolt remover	General service tool	Hub bolt removal

TOOL	TOOL NUMBER AND NAME	SUPERSESION	APPLICATION
	MD998801 Remover	MD998348-01 or general service tool	Remove of ABS rotor <Vehicles with ABS>
	MD998812 Installer Cap	—	
	MD998813 Installer 100	—	
	MD998815 Installer adapter	—	

ON-VEHICLE SERVICE

WHEEL BEARING END PLAY CHECK

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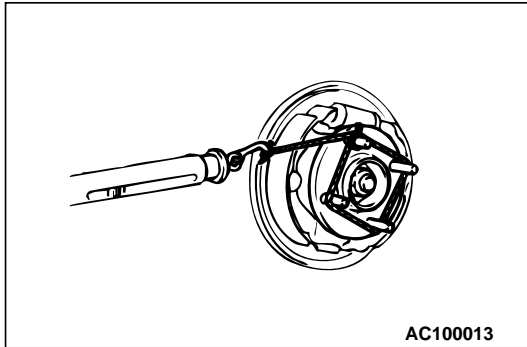
1. Remove the hub cap and brake drum.
2. Check the bearing's end play. Place a dial gauge against the hub surface; then move the hub in the axial direction and check whether or not there is end play.

Limit: 0.05 mm (0.002 inch)

3. If the play exceeds the limit, the self-locking nut should be tightened to the specified torque 175 ± 25 N·m (130 ± 18 ft·lb) and check the end play again.
4. Replace the rear hub assembly if an adjustment cannot be made to within the limit.

REAR HUB ROTARY-SLIDING RESISTANCE CHECK

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1. Remove the brake drum.
2. 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° 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: 22 N·m (16 ft-lb)

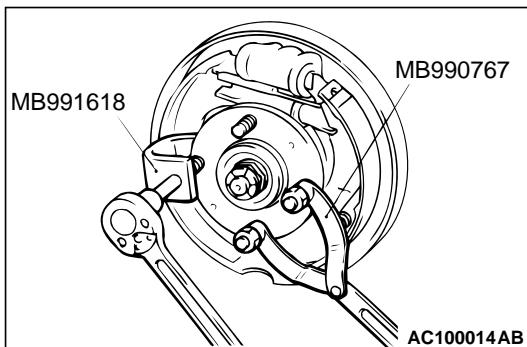
3. If limit value is exceeded, loosen the self-locking nut and then tighten it to the specified torque 175 ± 25 N·m (130 ± 18 ft-lb) and check the rear hub rotary sliding resistance again.
4. Replace the rear hub assembly if an adjustment cannot be made to within the limit.

HUB BOLT REPLACEMENT

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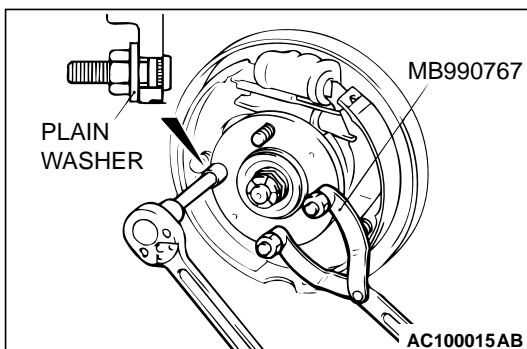
Required Special Tools:

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



1. Remove the brake drum.
2. Use special tools MB990767 and MB991618 to remove the hub bolts.

NOTE: To retain a space for removing the hub bolts, remove near the retainer spring mounting position.



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

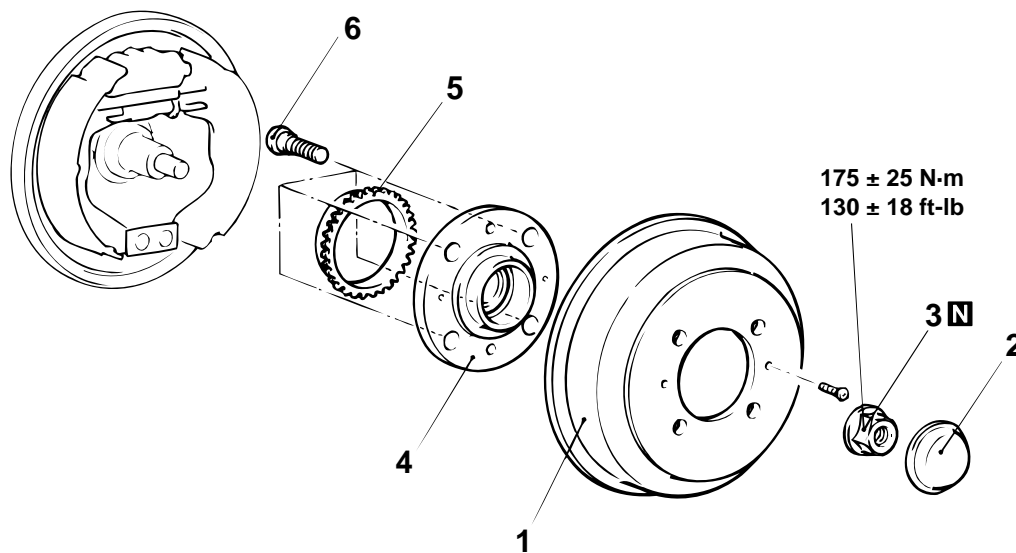
REAR AXLE HUB ASSEMBLY

REMOVAL AND INSTALLATION

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⚠ CAUTION

1. For the vehicles with ABS, care must be taken not to scratch or damage the teeth of the ABS rotor. The ABS rotor must never be dropped. If the teeth of the ABS rotor are chipped, resulting in a deformation of the ABS rotor, it will not be able to accurately detect the wheel rotation speed, and the system will not function normally.
2. The rear hub assembly should not be dismantled. When removing the rear hub assembly, the wheel bearing inner race may be left at the spindle side. In this case, always replace the rear hub assembly, otherwise the hub will damage the oil seal, causing oil leaks or excessive play.



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REMOVAL STEPS

- | | | |
|-------------|----|-------------------------------|
| | 1. | REAR DRUM |
| | 2. | HUB CAP |
| <<A>> >>B<< | 3. | SELF-LOCKING NUT |
| | 4. | REAR HUB ASSEMBLY |
| <> >>A<< | 5. | ABS ROTOR <VEHICLES WITH ABS> |
| | 6. | HUB BOLT |

Required Special Tool:

- MB990767: End Yoke Holder
- MD998801: Remover
- MD998812: Installer Cap
- MD998813: Installer 100
- MD998815: Installer Adapter

<<A>> SELF-LOCKING NUT REMOVAL

Do not apply the vehicle weight to the wheel bearing while loosening the self-locking nut, or the wheel bearing will be damaged.

MB990767

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Diagram illustrating the rear hub assembly components and their assembly sequence:

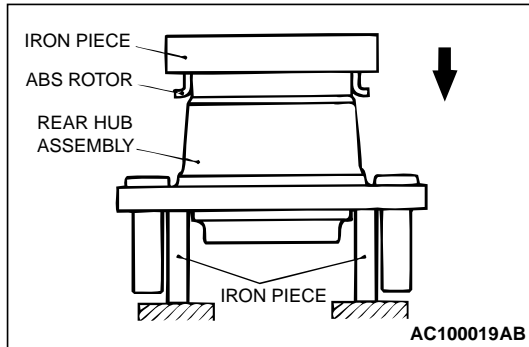
- ABS ROTOR**: The central rotating component.
- MD998801**: A component (likely a bearing or spacer) installed on the axle.
- MD998812**: A component (likely a bearing or spacer) installed on the axle.
- MD998813**: A component (likely a bearing or spacer) installed on the axle.
- MD998815**: A component (likely a bearing or spacer) installed on the axle.
- REAR HUB ASSEMBLY**: The main hub structure.
- IRON PIECE**: A component (likely a bearing or spacer) installed on the axle.

INSTALLATION SERVICE POINT

>>A<< ABS ROTOR INSTALLATION

⚠ CAUTION

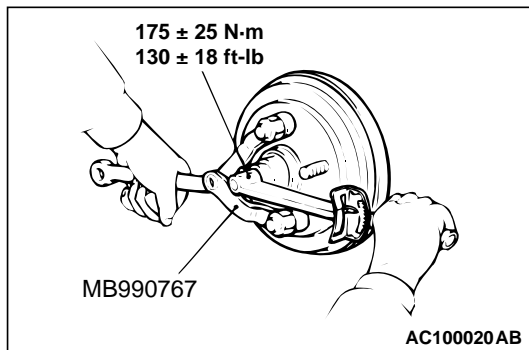
When installing, take care not to deform the ABS rotor. Press-fit the ABS rotor to the rear hub assembly.



>>B<< SELF-LOCKING NUT INSTALLATION

⚠ CAUTION

Before securely tightening the self-locking nuts, make sure there is no load on the wheel bearings. Otherwise the wheel bearing will be damaged.



1. Using special tool MB990767, tighten the self-locking nut.
2. After tightening the self-locking nut, crimp the nut to meet the concave portion of the spindle.

INSPECTION

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- Check the oil seal of the rear hub unit bearing for crack or damage.
- Check the rear hub unit bearing for wear or damage.
- Check the ABS rotor for chipped teeth.

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

M1271004000246

ITEM	SPECIFICATION
Rear hub assembly self-locking nut	175 ± 25 N·m (130 ± 18 ft-lb)

SERVICE SPECIFICATIONS

M1271000300290

ITEM	LIMIT
Wheel bearing end play mm (in)	0.05 (0.002)
Rear hub rotary-sliding resistance N·m (ft-lb)	22 (16)

NOTES