

GROUP 36

PARKING BRAKES

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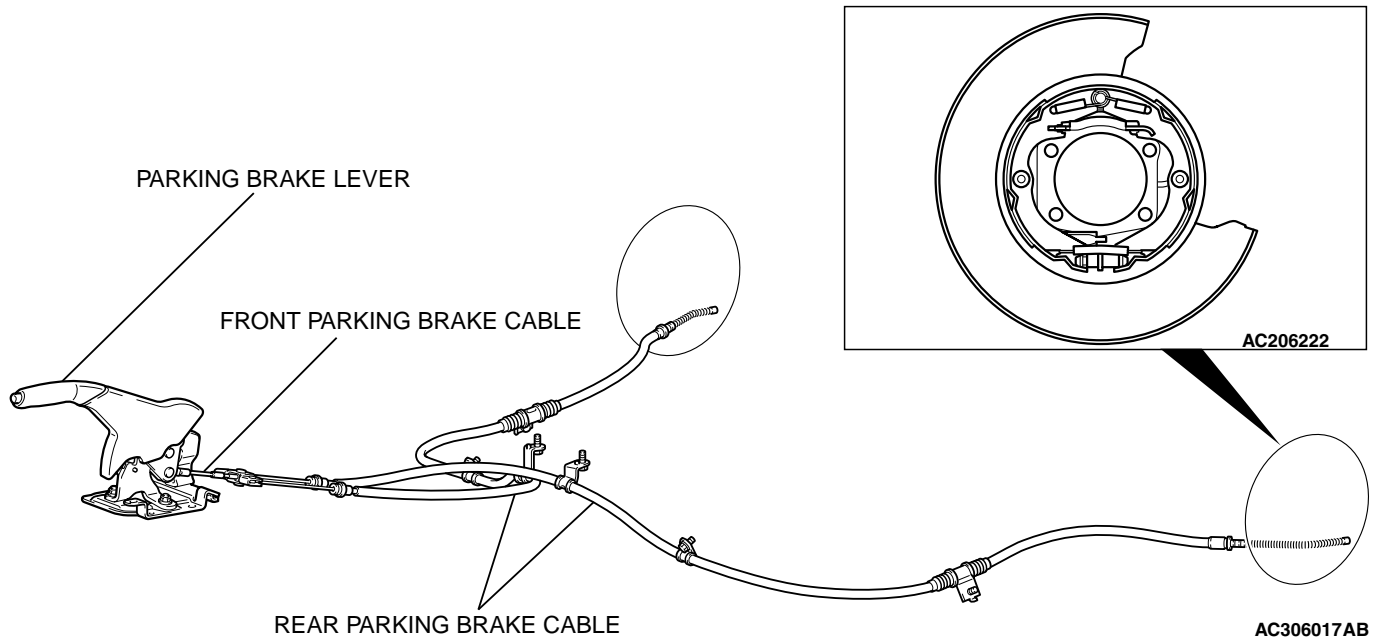
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GENERAL DESCRIPTION

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The parking brakes are a mechanical rear wheel brake design and controlled by a lever.

CONSTRUCTION DIAGRAM



PARKING BRAKE DIAGNOSIS

INTRODUCTION

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If the parking brake is faulty, parking brake effort will become insufficient. The cause may be a malfunction of parking brake parts or the parking brake pedal being out of adjustment.

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 parking brakes fault.

1. Gather Information from the customer.

2. Verify that the condition described by the customer exists.
3. Find the malfunction by following the Symptom Chart.
4. Verify malfunction is eliminated.

SYMPTOM CHART

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SYMPTOM	INSPECTION PROCEDURE	REFERENCE PAGE
Brake drag	–	Refer to GROUP 35A, Basic Brake System Diagnosis – Symptom Chart P.35A-6 .
Insufficient parking brake function	1	P.36-3

SYMPTOM PROCEDURES

INSPECTION PROCEDURE 1: Insufficient Parking Brake Function

DIAGNOSIS

STEP 1. Check the excessive parking brake lever stroke.

Refer to [P.36-3](#).

Q: Is the parking brake lever stroke adjusted properly?

YES : Go to Step 2.

NO : Adjust the parking brake lever stroke or check the parking brake cable routing. Then go to Step 5.

STEP 2. Check the parking brake cable for sticking.

Q: Is the parking brake cable stuck?

YES : Replace the cable. Then go to Step 5.

NO : Go to Step 3.

STEP 3. Check the brake lining and brake drum for wear.

Refer to [P.36-11](#).

Q: Is the brake lining thickness or brake drum inside diameter outside of specification?

YES : Replace the rear brake shoe assembly or rear brake disc (Refer to [P.36-8](#)). Then go to Step 5.

NO : Go to Step 4.

STEP 4. Check for oil, water, etc., on the lining contact surfaces.

Q: Is oil, water, etc., on the lining contact surface?

YES : Replace the part and determine and repair source/cause of foreign material. Then go to Step 5.

NO : Carry out the parking brake lining seating (Refer to [P.36-5](#)) and then go to Step 5.

STEP 5. Retest the system.

Q: Is the malfunction eliminated?

YES : The procedure is complete.

NO : Recheck from Step 1.

ON-VEHICLE SERVICE

PARKING BRAKE LEVER STROKE CHECK AND ADJUSTMENT

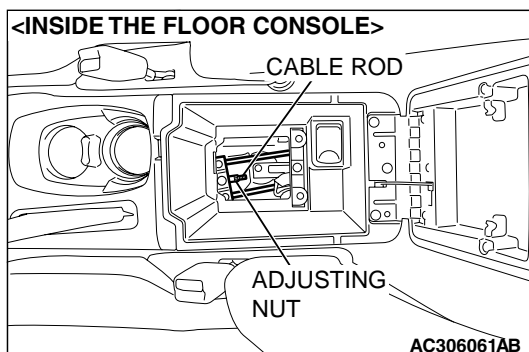
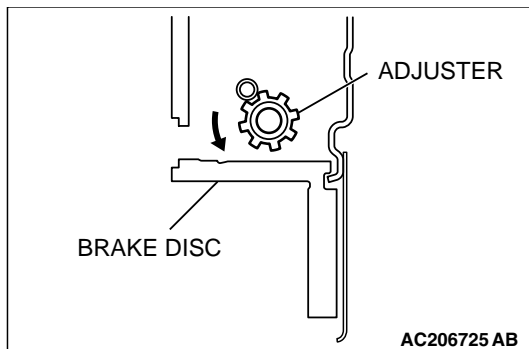
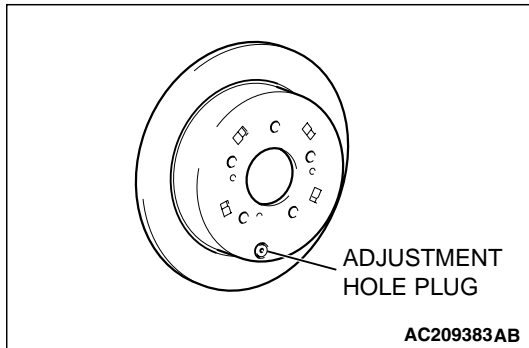
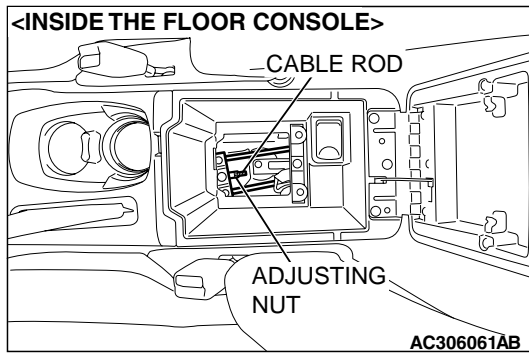
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1. Pull the parking brake lever with a force of approximately 200 N (45 pounds) and count the number of notches.

Standard value: 5 – 7 notches

2. If the parking brake lever stroke is not within the standard value, adjust as described below.

(1) Release the parking brake.



(2) Remove the console inner box tray and plate (Refer to GROUP 52A, Floor Console Assembly P.52A-9), and then loosen the adjusting nut to move it to the cable rod end so that the cable will be free.

(3) Remove the rear wheels, and then remove the adjustment hole plug on the brake disc.

(4) Use a flat-tip screwdriver to turn the adjuster in the direction of the arrow (the direction which expands the shoe) so that the disc will not rotate by hand. Return the adjuster five notches in the direction opposite to the direction of the arrow.

(5) Install the rear wheels, and then tighten the wheel nuts to 98 ± 10 Nm (73 ± 7 ft-lb).

CAUTION

Be careful that the parking brake lever stroke should be within the standard value. If the stroke is too short, brake dragging can be caused.

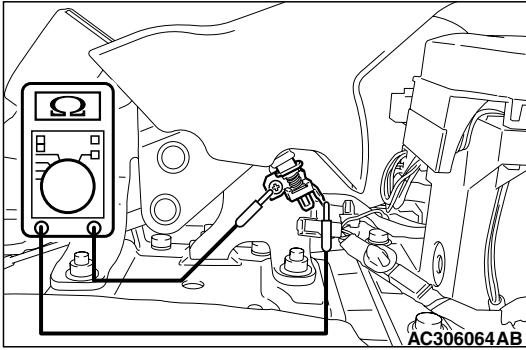
(6) Turn the adjusting nut to adjust the parking brake lever stroke to the standard value. After adjustment, check that the adjust nut and the cable rod is not loose.

(7) Release the parking brake and turn the rear wheels to check that the rear brakes are not dragging.

3. If either of the parking brake cables is replaced, adjust the parking brake lever stroke as described previously, pull the parking brake lever 10 times with approximately 200 N (45 pounds) to eliminate the initial slack of the cable. Then adjust the parking brake lever stroke as described previously again.

PARKING BRAKE SWITCH CHECK

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1. Remove the floor console. (Refer to GROUP 52A, Floor Console P.52A-9.)
2. Check for continuity between the parking brake switch terminal and the switch mounting bolt.

When parking brake pedal is pulled	2 ohms or less
When parking brake pedal is released	Open circuit

PARKING BRAKE LINING SEATING PROCEDURE

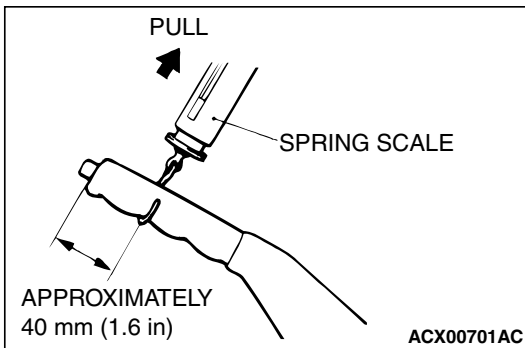
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⚠ CAUTION

Perform lining seating in a place with good visibility, and pay careful attention to safety.

Perform lining seating by the following procedure when replacing the parking brake shoe assemblies or the rear brake discs, or when brake performance is insufficient.

1. Adjust the parking brake lever stroke to the standard value (Refer to P.36-3).
2. Hook a spring scale onto the center of the parking brake lever grip and pull it with a force of 98 – 147 N (22 – 33 pounds) in a direction perpendicular to the handle.
3. Drive the vehicle at a constant speed of 35 – 50 km/h (22 – 31 mph) for 100 meters (328 feet).
4. Release the parking brake and let the brakes cool for five to ten minutes.
5. Repeat the procedure in steps 2. to 4. four to five times.



PARKING BRAKE LEVER

REMOVAL AND INSTALLATION

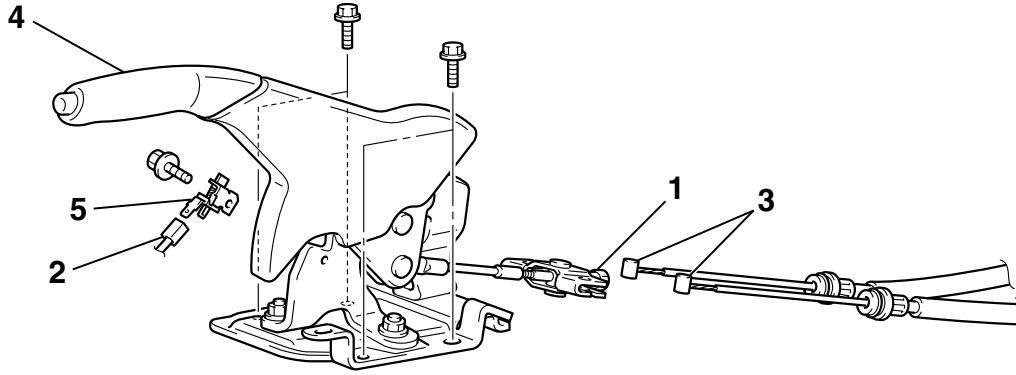
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Pre-removal Operation

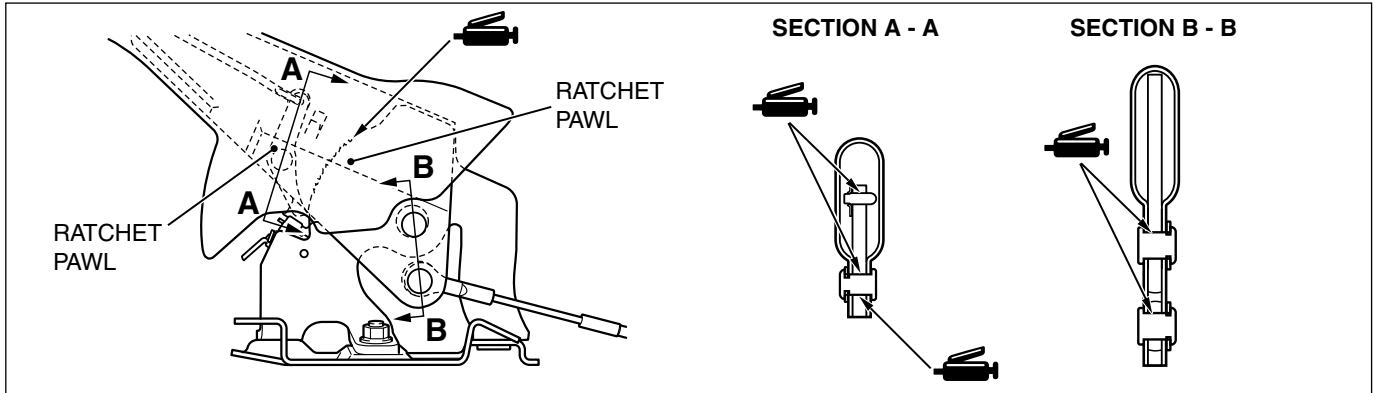
Rear Floor Console Assembly and Rear Console Bracket Removal (Refer to GROUP 52A, Floor Console P.52A-9.)

Post-installation Operation

- Parking Brake Lever Stroke Adjustment (Refer to P.36-3.)
- Rear Console Bracket and Rear Floor Console Assembly Installation (Refer to GROUP 52A, Floor Console P.52A-9.)



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REMOVAL STEPS

1. ADJUSTING NUT
2. PARKING BRAKE SWITCH CONNECTOR
3. PARKING BRAKE CABLE CONNECTION
4. PARKING BRAKE LEVER ASSEMBLY
5. PARKING BRAKE SWITCH

PARKING BRAKE CABLE

REMOVAL AND INSTALLATION

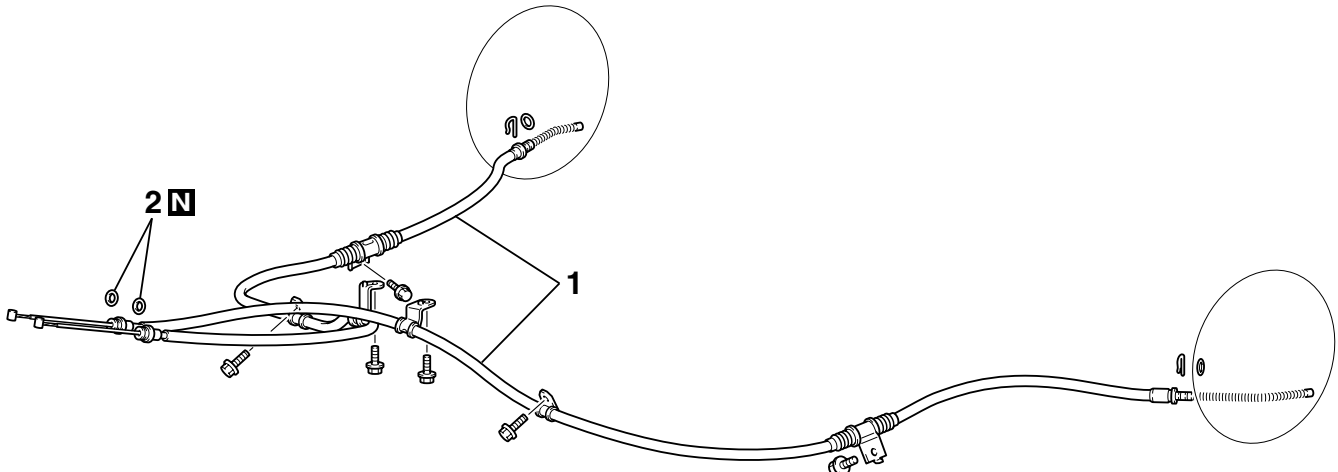
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Pre-removal Operation

- Floor Console Assembly Removal (Refer to GROUP 52A, Floor Console Assembly P.52A-9).

Post-installation Operation

- Floor Console Assembly Installation (Refer to GROUP 52A, Floor Console Assembly P.52A-9).
- Parking Brake Lever Stroke Check and Adjustment (Refer to P.36-3).



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REMOVAL STEPS

- SHOE ASSEMBLY (REFER TO P.36-8).
 - REAR PARKING BRAKE CABLE TO BAKING PLATE CONNECTION (REFER TO P.36-8).
 - FRONT PARKING BRAKE CABLE TO REAR PARKING BRAKE CABLE CONNECTION (REFER TO P.36-6).
1. REAR PARKING BRAKE CABLE
 2. O-RING

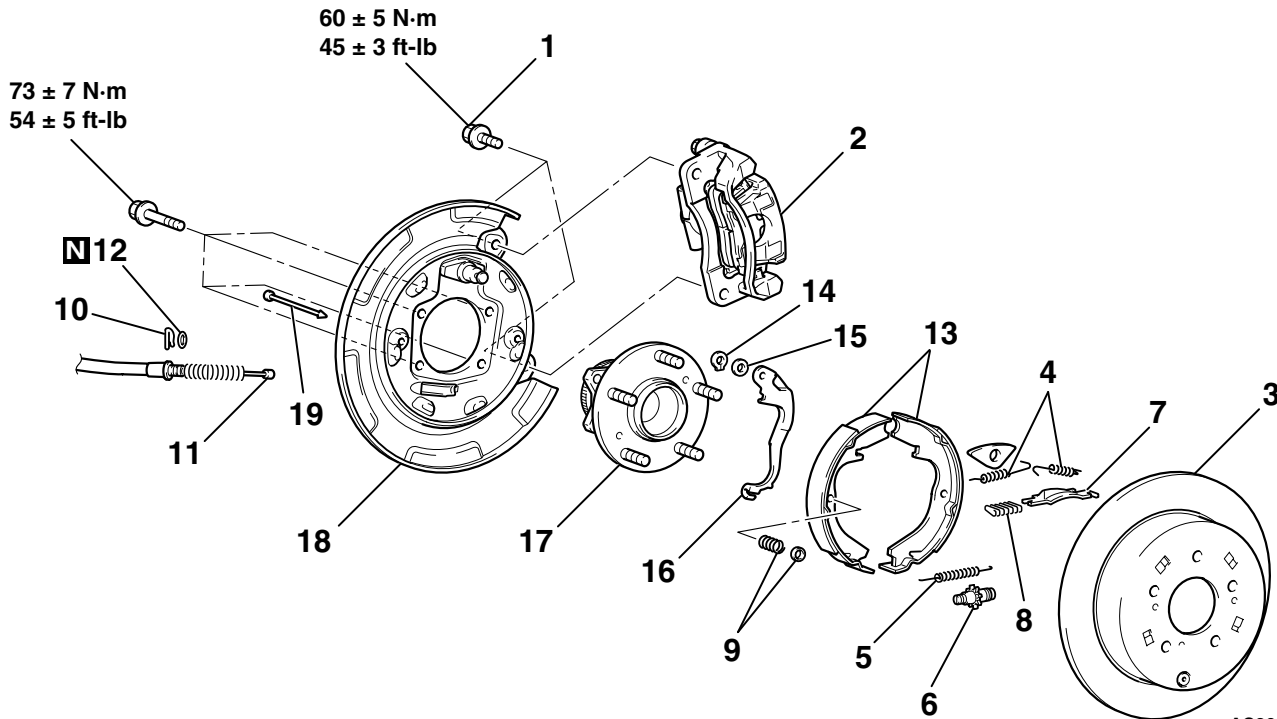
PARKING BRAKE LINING AND DRUM

REMOVAL AND INSTALLATION

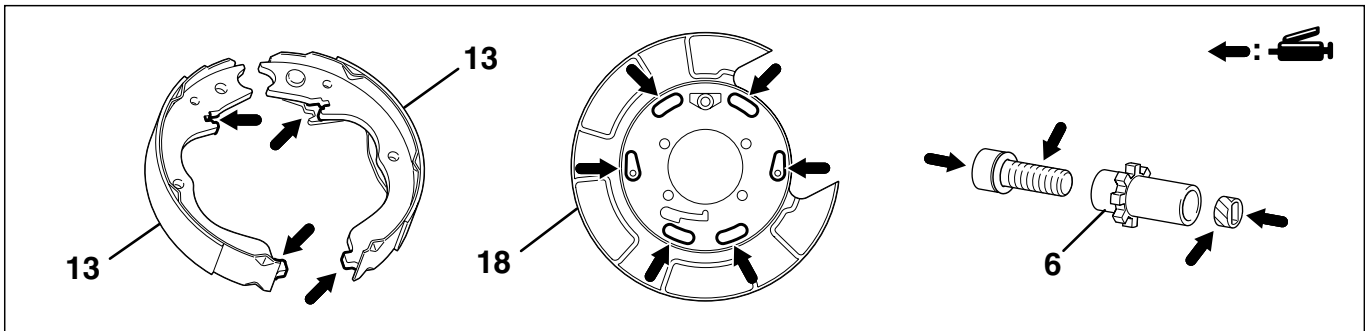
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Post-installation Operation

- Parking Brake Lever Stroke Check and Adjustment (Refer to P.36-3).
- Parking Brake Lining Seating (Refer to P.36-5).



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BRAKE GREASE: BRAKE GREASE SAE J310, NLGI No.1

REMOVAL STEPS

- <<A>> 1. REAR BRAKE BOLT
- <<A>> 2. REAR BRAKE CALIPER ASSEMBLY
- <> 3. REAR BRAKE DISC
- >>C<< 4. SHOE-TO-ANCHOR SPRING
- >>B<< 5. ADJUSTING WHEEL SPRING
- >>B<< 6. REAR BRAKE SHOE SLACK ADJUSTER
- 7. PARKING BRAKE OPERATING LEVER STRUT
- 8. STRUT-TO- SHOE SPRING

REMOVAL STEPS (Continued)

- 9. REAR BRAKE SHOE SPRING CUP AND SHOE HOLD-DOWN SPRING
- 10. PARKING BRAKE CABLE CLIP
- 11. REAR PARKING BRAKE CABLE CONNECTION
- 12. O-RING
- 13. REAR BRAKE SHOE ASSEMBLY
- <<C>> >>A<< 14. REAR BRAKE CHAMBER RETAINER
- 15. REAR BRAKE WASHER
- 16. PARKING BRAKE OPERATING LEVER

REMOVAL STEPS (Continued)

- REAR WHEEL SPEED SENSOR
<VEHICLES WITH ABS> (REFER
TO GROUP 35B, WHEEL SPEED
SENSOR P.35B-107).
17. REAR WHEEL HUB ASSEMBLY
 18. BACKING PLATE
 19. SHOE HOLD-DOWN PIN

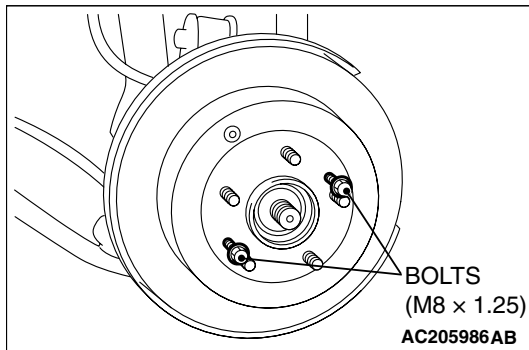
REMOVAL SERVICE POINTS

**<<A>> REAR BRAKE BOLT/REAR BRAKE CALI-
PER ASSEMBLY REMOVAL**

Remove the rear brake caliper assembly and support it with wire or something similar.

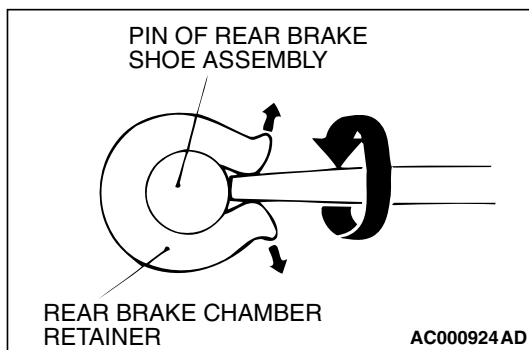
<> REAR BRAKE DISC REMOVAL

If the rear brake disc is seized, install M8×1.25 bolts as shown, and remove the rear brake disc by tightening the bolts evenly and gradually.



**<<C>> REAR BRAKE CHAMBER RETAINER
REMOVAL**

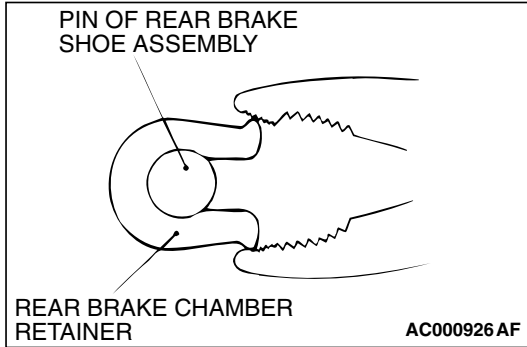
Use a flat-tipped screwdriver or a similar tool to open up the rear brake chamber retainer joint. Then remove the rear brake chamber retainer.



INSTALLATION SERVICE POINTS

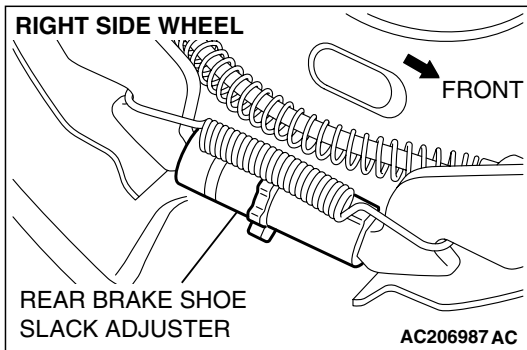
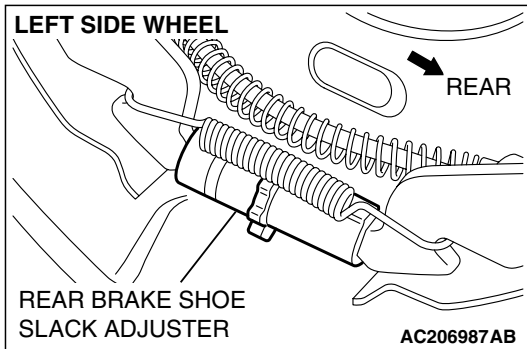
>>A<< REAR BRAKE CHAMBER RETAINER INSTALLATION

Use pliers or a similar tool to close the rear brake chamber retainer end onto the pin.



>>B<< REAR BRAKE SHOE SLACK ADJUSTER INSTALLATION

Install the rear brake shoe slack adjuster as shown.

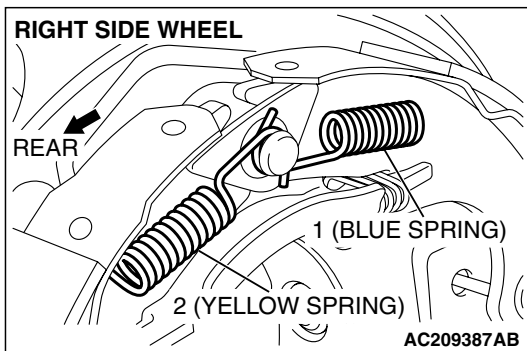
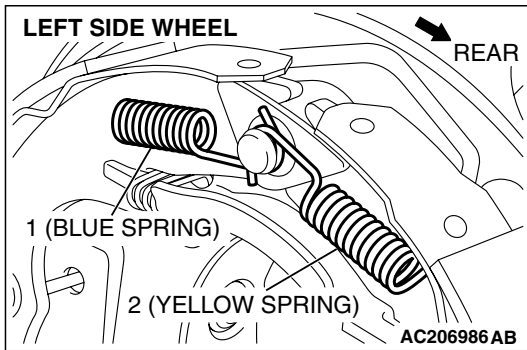


>>C<< SHOE-TO-ANCHOR SPRING INSTALLATION

⚠ CAUTION

The front and rear shoe-to-anchor springs are not interchangeable, so the blue spring must be installed at the front side and the yellow spring must be installed at the rear side.

Install the shoe-to-anchor springs in the order shown in the illustration.

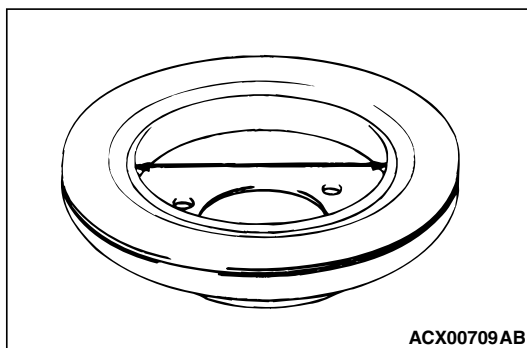
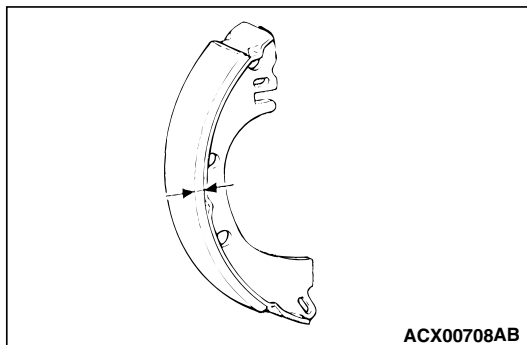


INSPECTION

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PARKING BRAKE LINING AND BRAKE DRUM CHECK

1. Measure the thickness of the brake lining at several places.
Standard value: 2.8 mm (0.11 inch)
Minimum Limit: 1.0 mm (0.04 inch)
2. If the thickness of the brake lining is below the limit, replace the shoe assemblies on both sides of the vehicle. Never replace only one side.
3. Measure the inside diameter of the brake disc in two places or more.
Standard value: 168.0 mm (6.61 inches)
Limit: 169.0 mm (6.65 inches)
4. If the inside diameter exceeds the limit, or if it is excessively worn on one side, replace the brake disc.



SPECIFICATIONS**FASTENER TIGHTENING SPECIFICATIONS**

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ITEM	SPECIFICATION
Parking brake lining and drum	
Rear brake bolt (rear brake caliper assembly mounting bolt)	60 ± 5 N·m (45 ± 3 ft-lb)
Rear wheel hub assembly mounting bolt	73 ± 7 N·m (54 ± 5 ft-lb)

SERVICE SPECIFICATIONS

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ITEMS	STANDARD VALUE	LIMIT
Parking brake lever stroke [Parking brake lever pull force: Approximately 200 N (45 pounds)]	5 – 7 notches	–
Rear brake lining thickness mm (in)	2.8 (0.11)	Minimum 1.0 (0.04)
Brake drum inside diameter mm (in)	168.0 (6.61)	169.0 (6.65)

LUBRICANT

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ITEM	SPECIFIED LUBRICANT
Rear brake shoe slack adjuster	Brake grease SAE J310, NLGI No.1
Backing plate	
Rear brake shoe assembly	