

PARKING BRAKES

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WARNINGS REGARDING SERVICING OF SUPPLEMENTAL RESTRAINT SYSTEM (SRS) EQUIPPED VEHICLES

WARNING!

- (1) Improper service or maintenance of any component of the SRS, or any SRS-related component, can lead to personal injury or death to service personnel (from inadvertent firing of the air bag) or to the driver and passenger (from rendering the SRS inoperative).
- (2) If it is possible that the SRS components are subjected to heat over 93°C in baking or drying after painting, remove the SRS components (air bag module and SRS-ECU) beforehand.
- (3) Service or maintenance of any SRS component or SRS-related component must be performed only at an authorised MITSUBISHI dealer.
- (4) MITSUBISHI dealer personnel must thoroughly review this manual, and especially its GROUP 52B – Supplemental Restraint System (SRS) before beginning any service or maintenance of any component of the SRS or any SRS-related component.

NOTE

Section titles with the asterisk (*) in the table of contents in each group indicate operations requiring warnings.

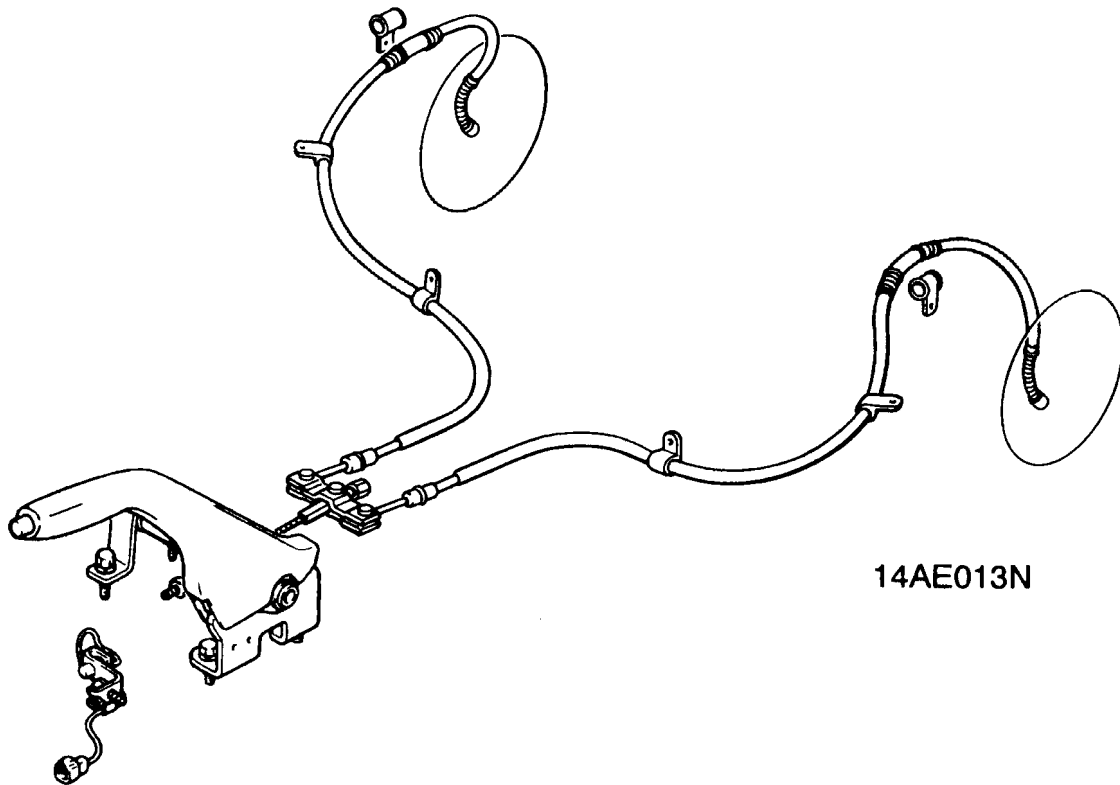
36-2 PARKING BRAKES – General Information/Service Specifications/Lubricants

GENERAL INFORMATION

The parking brake is of a mechanical rear-wheel brake construction employing a drum in disc-type parking brake mechanism.

The operation method utilises a parking brake lever which is in an offset position at the driver's side.

CONSTRUCTION DIAGRAM



14AE013N

SERVICE SPECIFICATIONS

Item	Standard value	Limit
Parking brake lever stroke (Operator force: Approx. 196N)	3–5 notches	–
Brake lining thickness mm	2.8	1.0
Brake drum inside diameter mm	168	169

LUBRICANTS

Items	Specified lubricants
Shoe and lining assembly and adjuster contact surfaces	Brake grease SAE J310, NLGI No. 1
Adjuster	

ON-VEHICLE SERVICE

PARKING BRAKE LEVER STROKE CHECK

1. Pull the parking brake lever with a force of approx. 200 N and count the number of notches.

Caution

The 200 N force of the parking brake lever must be strictly observed.

Standard value: 3–5 notches

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

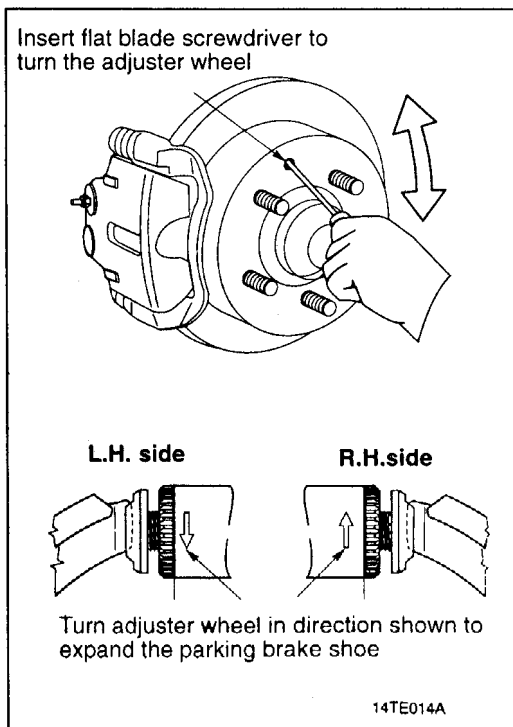
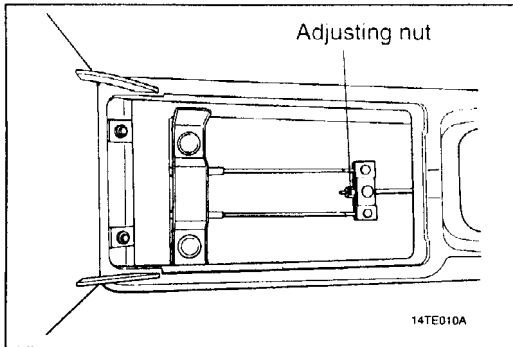
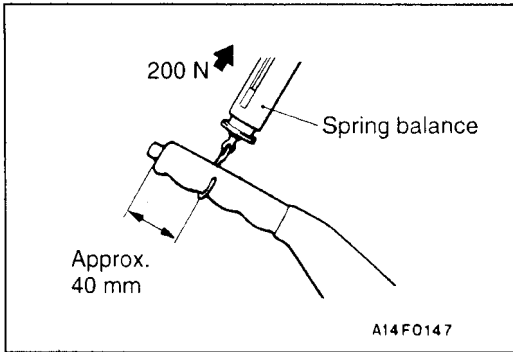
- (1) Remove the inner compartment of the floor console.
- (2) Loosen the parking brake cable adjusting nut to the end of the cable rod, to allow slack in the cables.

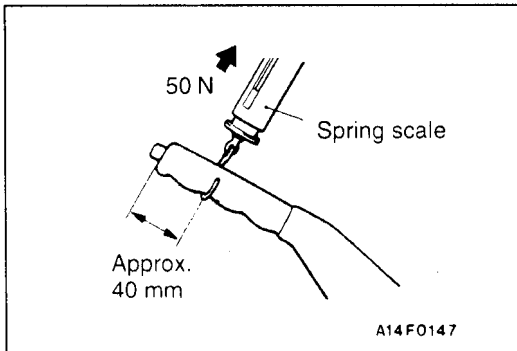
- (3) Jack up the rear of the vehicle and support on jack stands and remove the rear wheels.
- (4) Temporarily install the wheel nuts so that the back of the nuts contact the brake disc and hold the disc in position.
- (5) Remove the brake shoe adjustment hole plug, and insert a flat blade screwdriver to turn the adjuster wheel (to expand the shoe) sufficiently to prevent the disc rotating.
- (6) Rotate the adjuster wheel 5 notches in the reverse direction to allow the disc to rotate freely. Carry out this operation on both sides.
- (7) Remove the temporarily installed wheel nuts and install the rear wheels.
- (8) Tighten the parking brake cable adjusting nut inside the vehicle to achieve a 3–5 notch stroke of the parking brake lever at the specified lever force.

Caution

If the number of brake lever notches engaged is less than the standard value, the cable has been over adjusted. Be sure to adjust it to within the standard value.

- (9) After completing the adjustment, check to be sure that there is no play between the adjusting nut and the pin. Also check that the adjusting nut is securely held by the nut holder.
- (10) With the parking brake lever in the released position, turn the rear wheels to confirm that the rear brakes are not dragging.
- (11) Remove the jack stands and lower the vehicle to the floor. Retorque the wheel nuts to the specified torque.

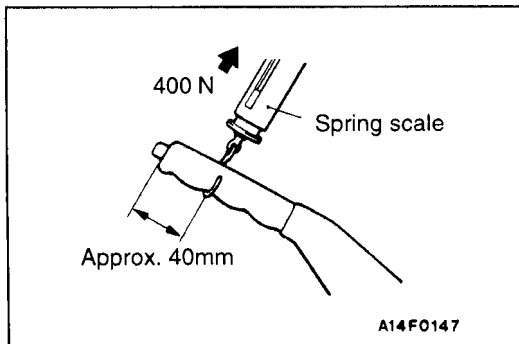




LINING RUNNING-IN

The parking brakes must always be run – in using the following procedure when the parking brake linings or brake disc rotors have been replaced; if the brake drum has been machined or when parking brake performance is insufficient.

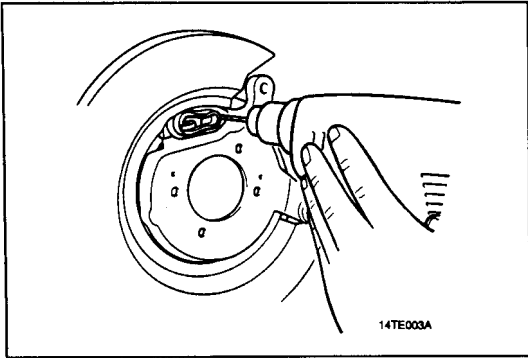
1. Adjust the parking brake stroke to the specified value.
2. Hook a spring scale onto the centre of the parking brake lever grip and pull it with a force of 50 N in a direction perpendicular to the handle.
3. Drive the vehicle in a forward direction at a constant speed of 30 km/h for 50 m.
4. Release the parking brake and let the brakes cool for 5 to 10 minutes.
5. Repeat the procedure in steps (2) to (4) 4–5 times.
6. Repeat step (2) and drive the vehicle at 5 km/h in the reverse direction for 50 m.
7. Repeat this operation twice, allowing the brakes to cool for 5 to 10 minutes between each operation.



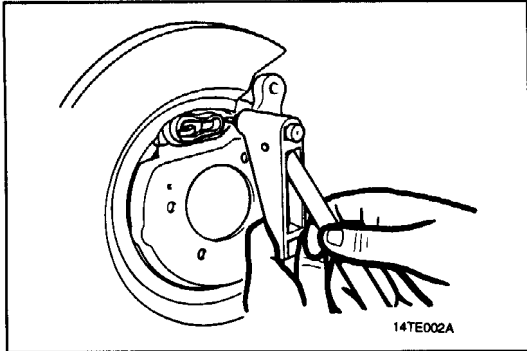
8. Confirm the parking brake is working correctly by parking the vehicle in a large open area (at least 10 m from any obstacles) and apply the parking brake lever with a force of 400 N. It should be possible to stall the engine in both the forward and reverse directions in low gear without the vehicle moving.

Caution

1. **Care must be exercised when undertaking this test. The driver must be ready to apply the footbrake in case of emergency.**
2. **The above test should only be conducted once in the forward and once in the reverse direction.**
3. **The vehicle transmission should never be stalled for more than 3 seconds, as damage to the transmission may result.**

**REPLACING DUST BOOT**

1. Remove the backing plate, refer page 36-9.
2. Drill out the rivet of the dust boot retaining bracket.
3. Remove the old dust boot.



4. Install the new dust boot onto the backing plate.
5. Place the dust boot retaining bracket onto the backing plate.
6. Re-rivet the dust boot retaining bracket onto the backing plate.

PARKING BRAKE LEVER

REMOVAL AND INSTALLATION

Pre-removal Operation

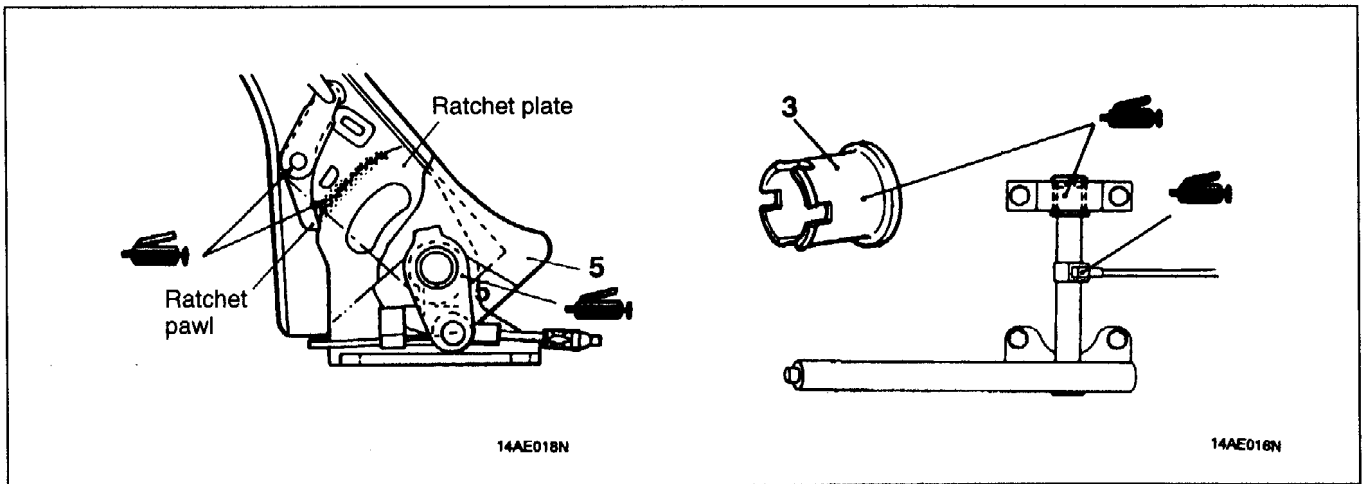
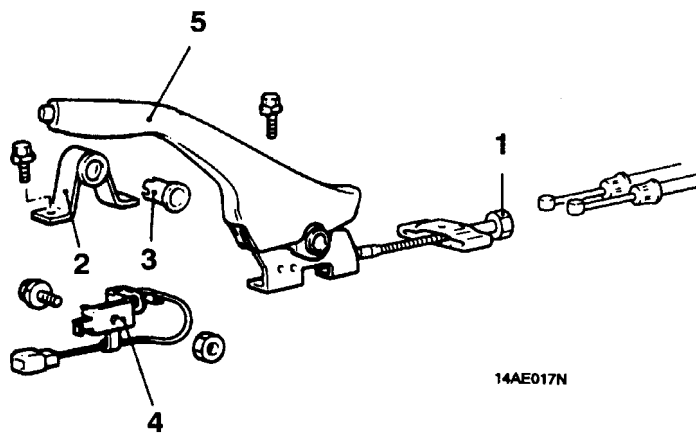
Floor Console Removal
(Refer to GROUP 52A – Floor Console.)

CAUTION: SRS

1. When removing and installing the floor console, do not let it bump against the SRS-ECU or other components.
2. Before removal of SRS-ECU, refer to GROUP 52B – SRS-ECU.

Post-installation Operation

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



14AE018N

14AE015N

Removal steps

1. Adjusting nut
2. Parking brake stay
3. Bushing
4. Parking brake switch
5. Parking brake lever

PARKING BRAKE CABLE

REMOVAL AND INSTALLATION

Pre-removal Operation

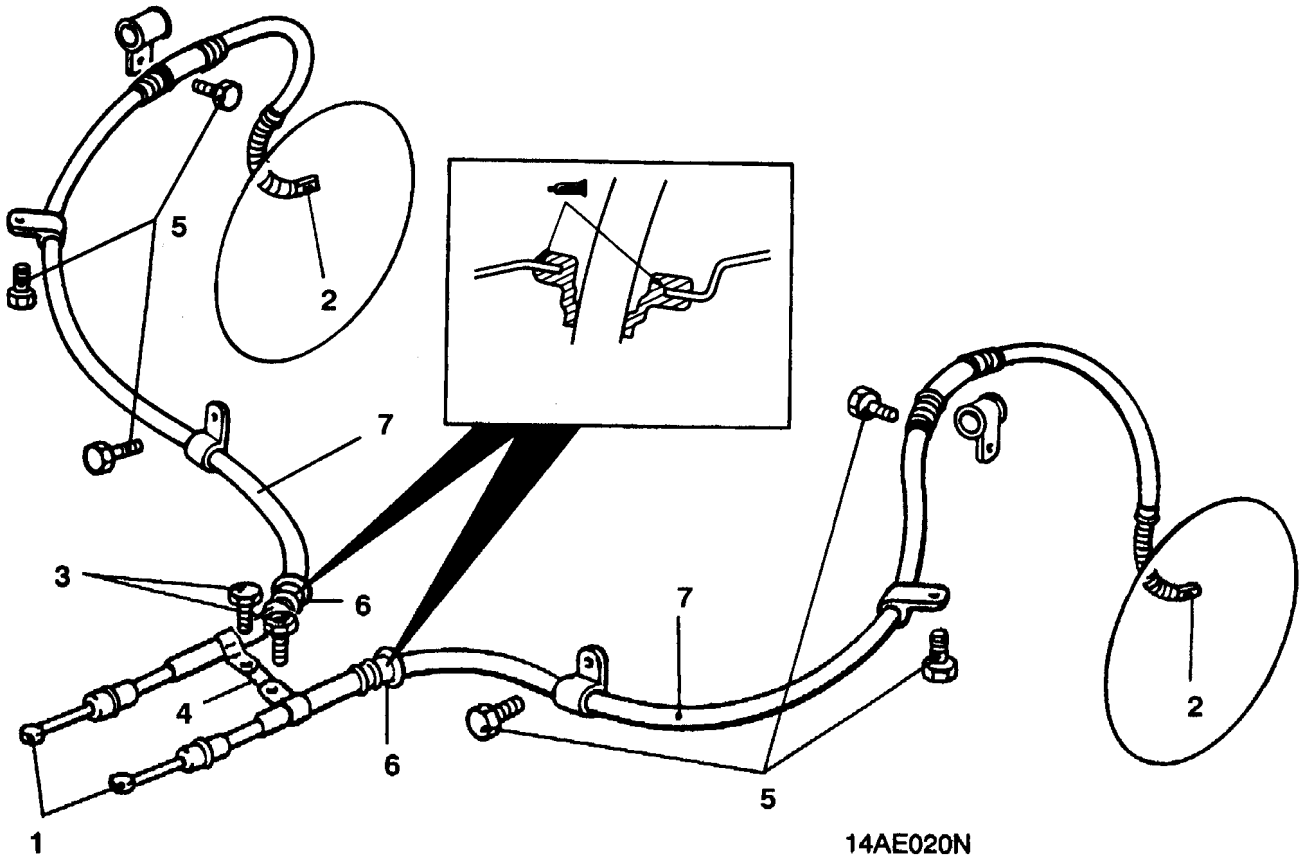
- Floor Console Removal (Refer to GROUP 52A – Floor Console.)

Post-installation Operation

- Parking Brake Lever Stroke Adjustment (Refer to P.36-3.)
- Floor Console Installation (Refer to GROUP 52A – Floor Console.)

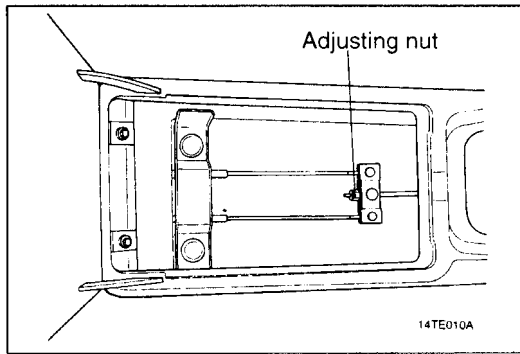
CAUTION: SRS

1. When removing and installing the floor console, do not let it bump against the SRS-ECU or other components.
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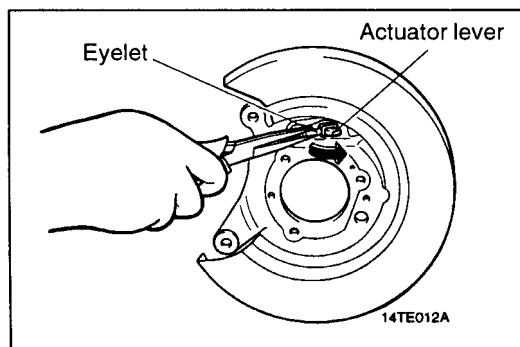
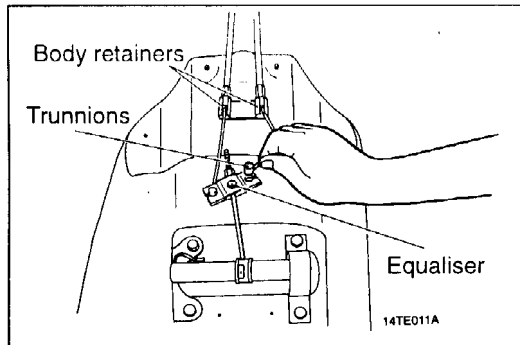


Removal steps

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Park brake cable trunnion 2. Park brake cable actuator lever eyelet 3. Interior park brake cable retaining clamp bolts 4. Interior park brake cable retaining clamp | <ol style="list-style-type: none"> 5. Exterior park brake cable clamp bolts 6. Grommets 7. Cables |
|---|--|

**REMOVAL SERVICE POINTS****◀A▶ PARK BRAKE CABLE TRUNNION REMOVAL**

1. Loosen the park brake cable adjusting nut to the end of the cable rod as shown in the illustration.
2. Unclip the park brake cable trunnions from the equaliser and remove the cable from the body retainers.

**◀B▶ PARK BRAKE CABLE ACTUATOR LEVER EYELET REMOVAL**

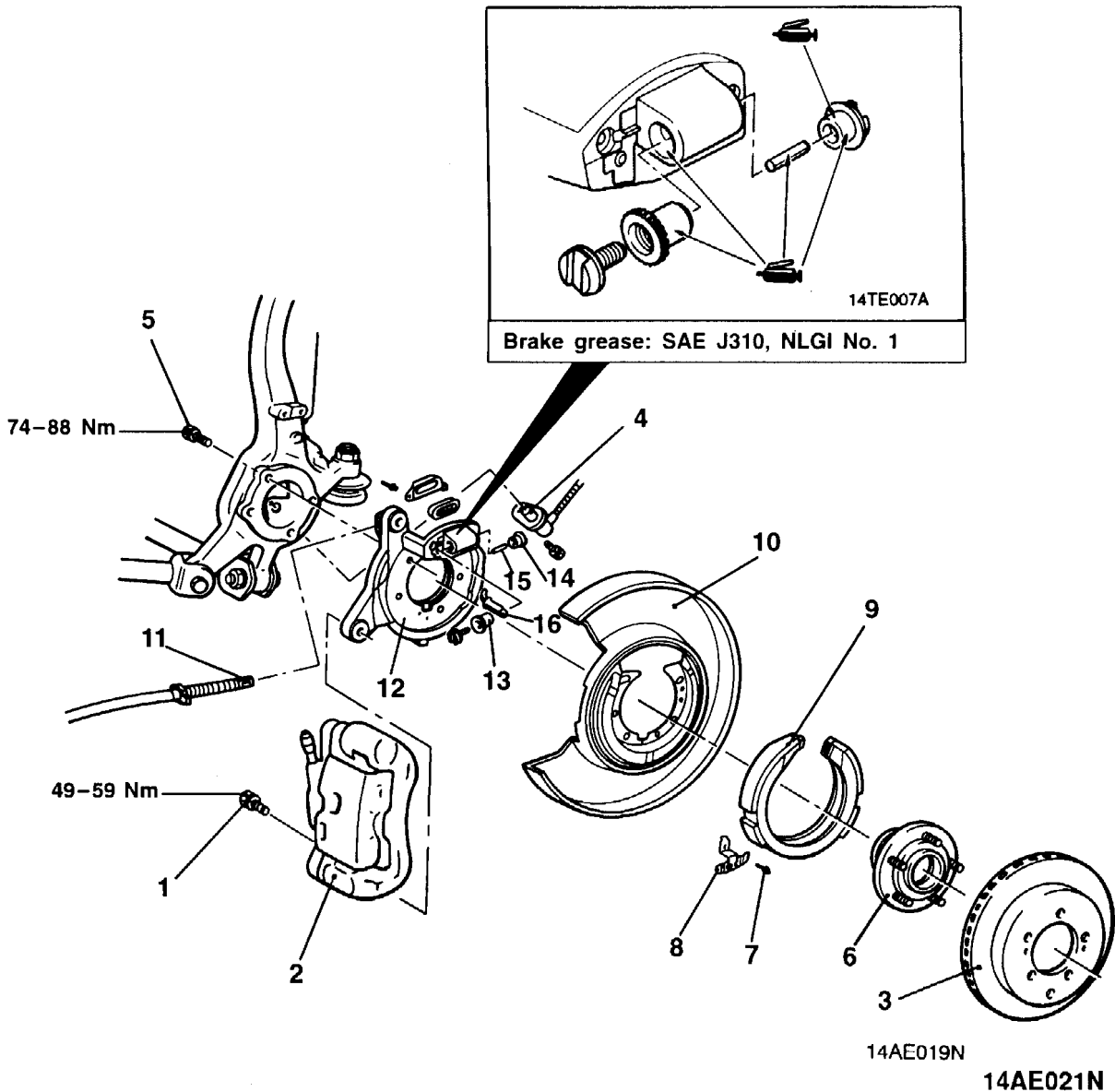
Push the cable towards the rear of the vehicle to release the park brake cable eyelet from the actuator lever.

PARKING BRAKE

REMOVAL AND INSTALLATION

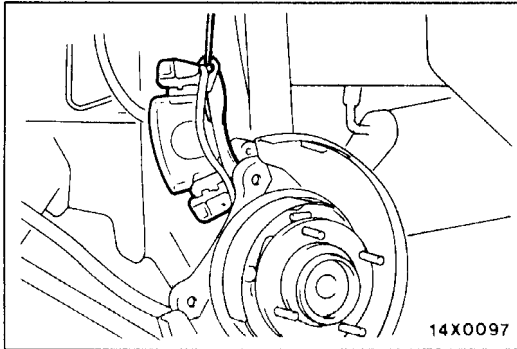
Post-installation Operation

- Parking Brake Lever Stroke Check (Refer to P.36-3.)

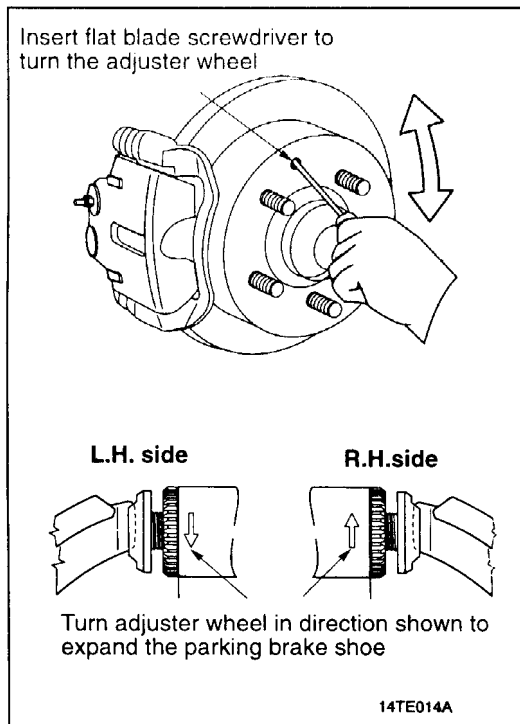


Removal steps

- | | | |
|---------|--------------------------------|---|
| ◀A▶ | 1. Calliper attaching bolts | 10. Splash shield |
| ◀B▶ | 2. Calliper | 11. Parking brake cable to lever connection |
| ◀C▶ ▶C▶ | 3. Disc | 12. Backing plate |
| ◀C▶ ▶C▶ | 4. Speed sensor | 13. Adjuster star wheel |
| | 5. Hub retaining bolts | ▶B▶ ▶B▶ ▶A▶ |
| | 6. Hub | 14. Tappet |
| | 7. Shoe hold down spring screw | 15. Pushrod |
| | 8. Shoe hold down spring | ▶D▶ ▶A▶ |
| ◀B▶ | 9. Shoe | 16. Lever |

**REMOVAL SERVICE POINTS****◀A▶ CALLIPER REMOVAL**

Support the removed calliper with wire to a nearby part to avoid placing stress on the flexible brake hose.

**◀B▶ BRAKE DISC REMOVAL**

If removal of the brake disc is difficult, release the shoe adjuster star wheel to a point where the brake disc is able to be removed by rotating the disc and pulling gently.

Caution

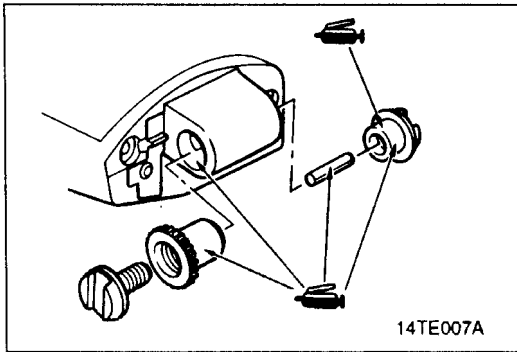
If excessive force is applied to the brake disc, the shoe hold down clip will be damaged.

◀C▶ SPEED SENSOR/HUB REMOVAL

Ensure no damage is caused to the ABS rotor or speed sensor by striking them against each other or other components.

◀D▶ LEVER REMOVAL**NOTE**

Care must be taken when pulling the lever through the boot as damage may result.



INSTALLATION SERVICE POINTS

▶A◀ LEVER INSTALLATION

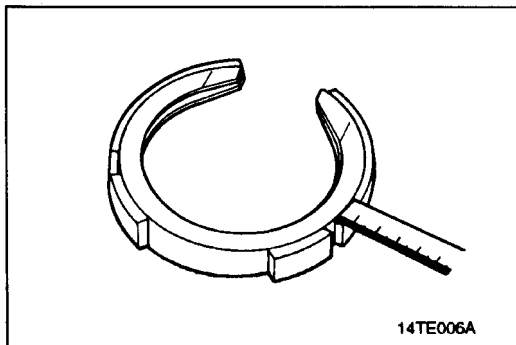
When inserting the lever through the boot, take care not to damage the boot.

▶B◀ PUSHROD/TAPPET INSTALLATION

Pack the inside of the tappet with grease to hold the pushrod during assembly.

▶C◀ HUB/SPEED SENSOR INSTALLATION

Ensure no damage is caused to the ABS rotor or speed sensor by striking them against each other or other components.



INSPECTION

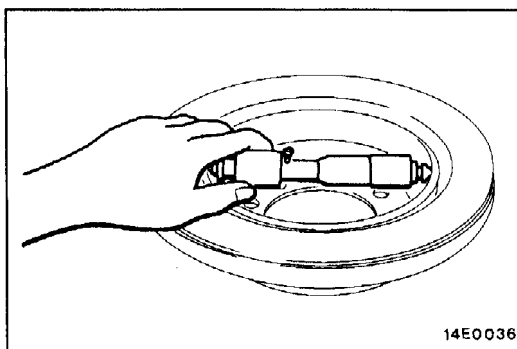
- Clean the backing plate, boot and actuation components.

Caution

1. Do not clean the shoe, only brush off the brake dust.
 2. Only use soap and water to wash the boot as solvents may damage the rubber.
- Measure the brake lining thickness in at least three locations on each side of the shoe. Replace the shoe if less than the limit value of lining exists or if the lining is worn unevenly.

Standard value: 2.8mm

Limit (maximum): 1.0mm



- Using an inside micrometer measure the brake disc inner diameter in two or more locations. Replace the rotor if the inside diameter exceeds the limit value.

Standard value: 168mm

Limit (maximum): 169mm

- Inspect the actuation components for wear or cracking.
- Check the shoe for cracks.