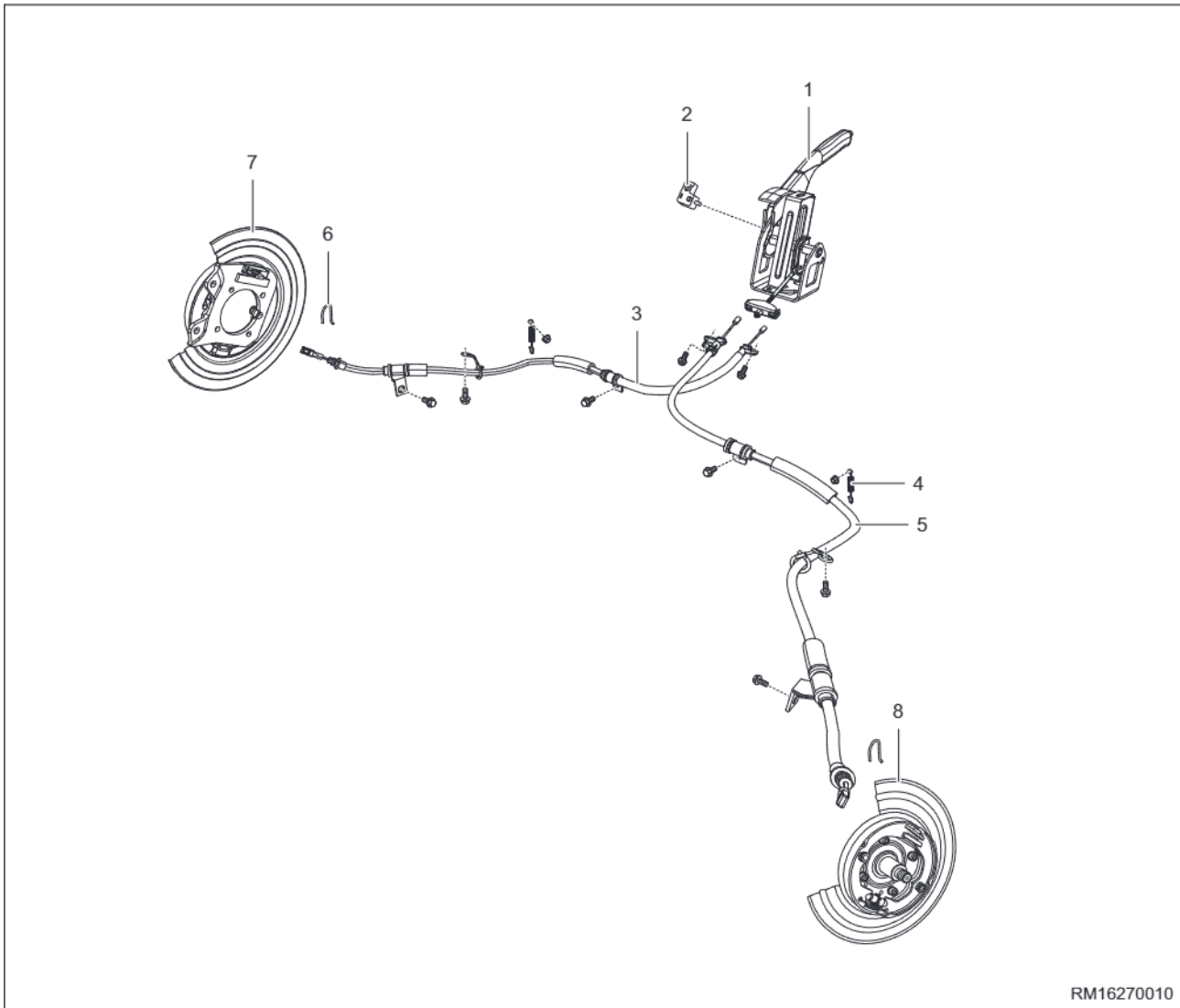

PARKING BRAKE

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GENERAL INFORMATION

Description

Parking Brake Assembly



1 - Parking Brake Control Mechanism Assembly	2 - Parking Brake Switch Assembly
3 - Left Rear Parking Brake Cable Assembly	4 - Spring Hook
5 - Right Rear Parking Brake Cable Assembly	6 - Parking Brake Cable Fixing Clamp
7 - Left Rear Parking Brake Assembly	8 - Right Rear Parking Brake Assembly

All vehicles are equipped with a manual-operated parking brake control mechanism assembly, which is mounted between front seats. The tension balance block is built in parking brake control mechanism assembly. Each rear wheel has an individual parking brake rear cable assembly, which is respectively connected with parking brake control mechanism assembly and parking brake assembly. The parking brake cable is made of flexible wire.

Specifications

Torque Specifications

Description	Torque (N·m)
Wheel Mounting Bolt	110 ± 10
Parking Brake Control Mechanism Adjusting Nut	4.0 ± 0.5
Coupling Nut Between Parking Brake Control Mechanism Assembly and Body	27 ± 3
Coupling Bolt Between Parking Brake Rear Cable Assembly Fixing Bracket and Rear Trailing Arm Assembly	27 ± 3
Coupling Bolt Between Parking Brake Rear Cable Assembly Fixing Bracket and Rear Trailing Arm Assembly Fixing Bracket	50 ± 5
Coupling Nut Between Spring Hook and Body	10 ± 1
Coupling Nut Between Parking Brake Rear Cable Assembly Fixing Bracket and Body	10 ± 1
Coupling Bolt Between Parking Brake Rear Cable Pipe Joint and Body	10 ± 1
Coupling Bolt Between Parking Brake Assembly and Rear Steering Knuckle Assembly	55 - 60

Rear DIH (Drum-in-hat)

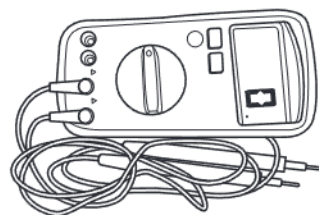
Description	Standard Thickness (mm)	Minimum Thickness (mm)
Rear Brake Shoe Lining	2.8	1

Description	Standard Inner Diameter (mm)	Maximum Inner Diameter (mm)
Rear Brake Disc	186	186.2

Tools

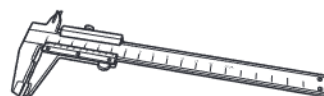
General Tools

Digital Multimeter



RCH0000002

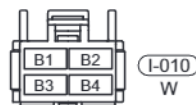
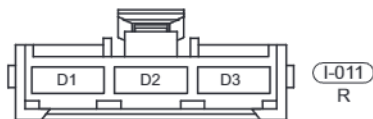
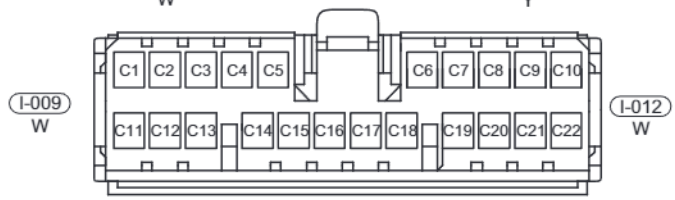
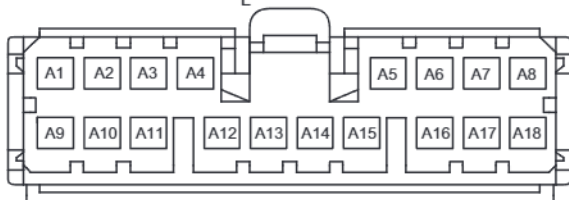
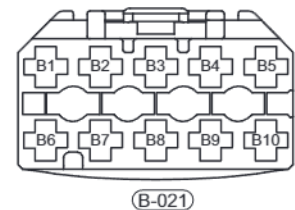
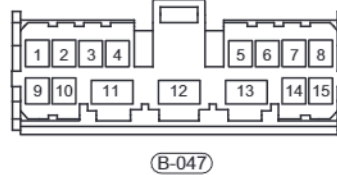
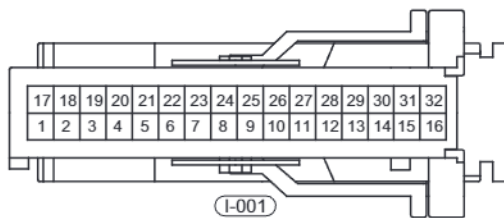
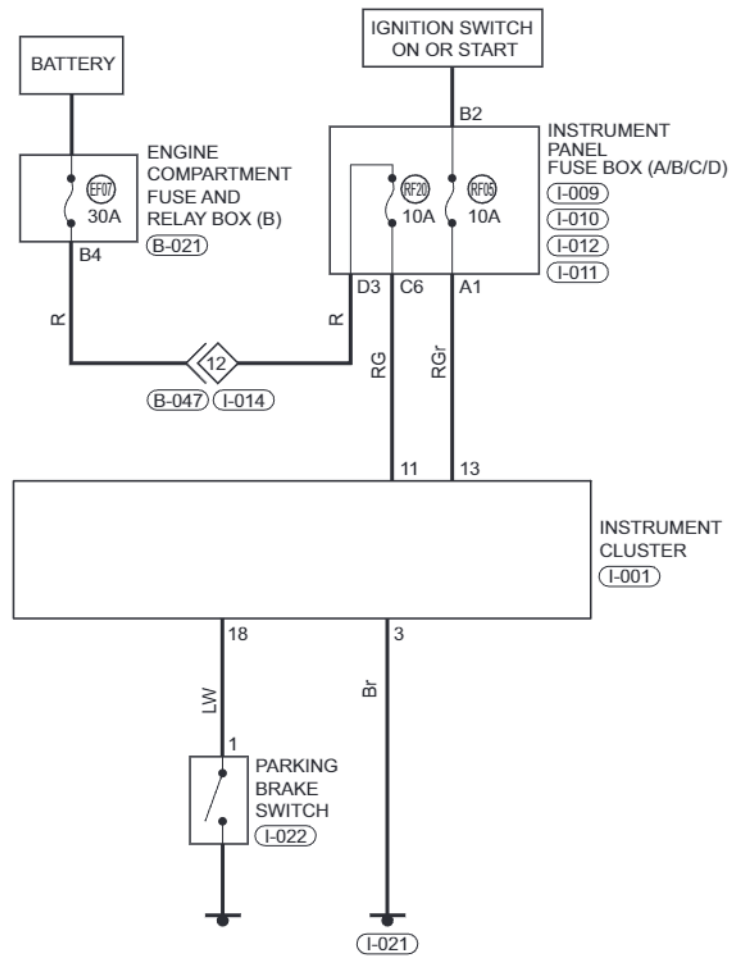
Vernier Caliper



RCH0000019

Circuit Diagram

Parking Brake System



DIAGNOSIS & TESTING

Problem Symptoms Table

HINT:

Use symptoms table below to help determine cause of problem. Check each suspected area in sequence. Repair or adjust faulty components, or replace as necessary.

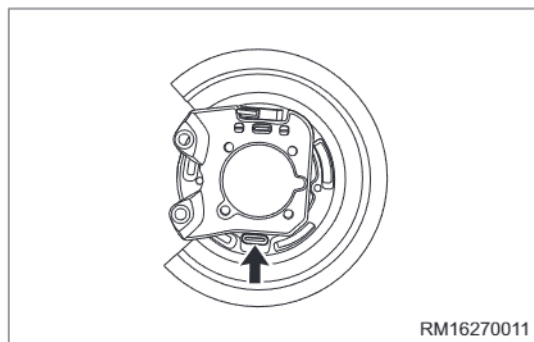
Symptom	Suspected Area	See page
Parking brake catching	Parking brake control mechanism stroke (incorrect)	27-8
	Parking brake shoe clearance (incorrect)	27-8
	Parking brake shoe return tension spring (damaged)	27-19
Abnormal parking brake operation	Parking brake shoe lining (worn)	27-19
	Rear brake disc (excessively worn)	26-39
	Parking brake control mechanism assembly (improperly fixed)	27-12
	Parking brake control mechanism assembly (catching)	27-12
	Parking brake cable assembly (improperly fixed)	27-14
Brake warning light does not come on when parking brake is applied	Warning light circuit (faulty)	27-10

ON-VEHICLE SERVICE

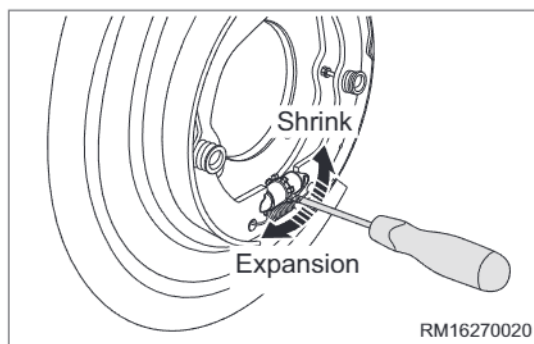
Adjustment

Abnormal parking brake operation may be caused by worn brake shoe lining, incorrect brake shoe clearance adjustment, incorrect parking brake control mechanism stroke or incorrect parking brake component installation. Perform the following procedures to adjust parking brake control mechanism stroke:

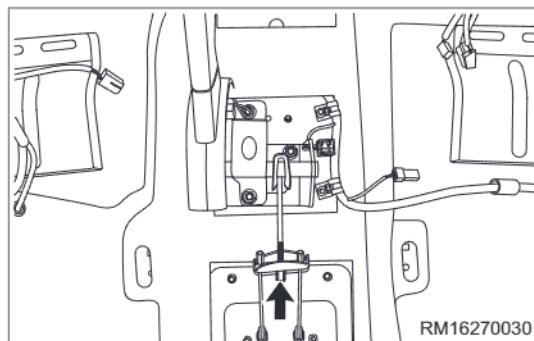
1. Support and raise the vehicle to a proper height.
2. Remove the rear wheel (See page 24-9).
3. Adjust the parking brake shoe clearance:
 - a. Fully release the parking brake control mechanism.
 - b. Using a flat tip screwdriver, pry off the brake shoe adjusting hole plug (arrow).



- c. Rotate the brake shoe clearance adjustment mechanism assembly clockwise or counterclockwise to adjust parking brake shoe clearance.



- d. Attempt to rotate the rear brake disc by hand to confirm that brake disc rotates freely. Check that there is no brake catching for brake shoe.
4. Adjust the parking brake control mechanism stroke:
 - a. Fully release the parking brake control mechanism.
 - b. Rotate the parking brake control mechanism adjusting nut (arrow), until parking brake control mechanism stroke is correct.



- c. Correct judgment method: after adjustment, completely release the parking brake control mechanism and rotate the rear wheel by hand.

OK: Rear wheel can rotate freely without dragging.

Pull up parking brake control mechanism until 1 clicking sound is heard. There is resistance when rotating rear wheel by hand. Pull up parking brake control mechanism until 2 or 3 clicking sounds are heard and rear wheel cannot rotate.

- d. When operating the parking brake control mechanism, check that brake warning light illuminates at the first click.

OK: Parking brake warning light always illuminates at the first click.

- e. Followings should be met after adjusting parking brake control mechanism stroke:

Parking brake force should be less than 250 N when vehicle is parking on a ramp with a slope of 20%.

Parking brake stroke is 3 to 6 teeth when vehicle is driving on general road.

- f. If result is not as specified, repeat above procedures until the parking brake control mechanism stroke is proper.

- 5. Install the rear wheel ([See page 24-9](#)).

Parking Brake Switch Assembly

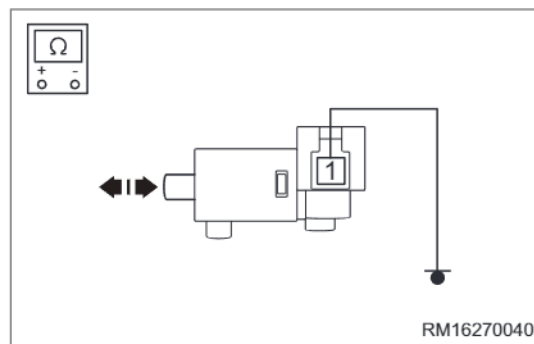
On-vehicle Inspection

1. Disconnect parking brake switch assembly connector, and check the continuity of parking brake switch assembly with ohm band of digital multimeter as shown in table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
Terminal 1 - Body ground	Parking brake applied (switch pin released)	Continuity
	Parking brake released (switch pin pushed)	No continuity

If result is not as specified, replace parking brake switch assembly.

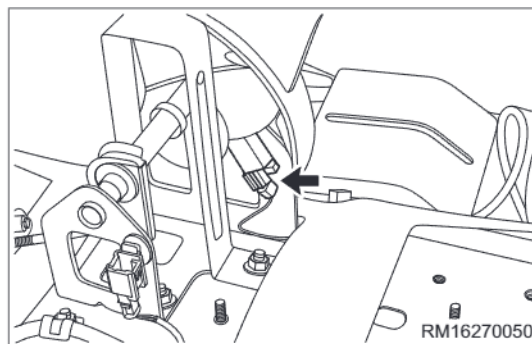


Removal

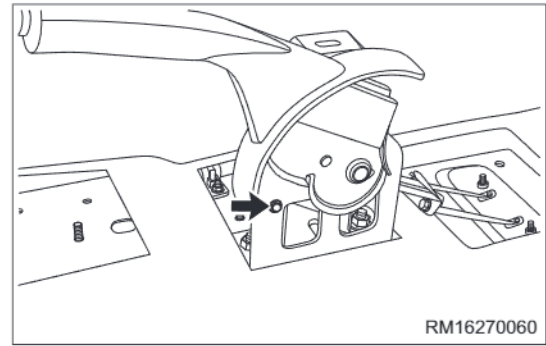
CAUTION

- Be sure to wear necessary safety equipment to prevent accidents when repairing.
- Try to prevent body paint surface from being scratched during removal and installation.

1. Fix the tire and wheel assembly.
2. Remove the auxiliary fascia console assembly ([See page 46-10](#)).
3. Remove the parking brake switch assembly.
 - a. Disconnect the parking brake switch assembly wire harness connector (arrow) as shown in illustration.



- b. Using a cross screwdriver, loosen the fixing screw (arrow) of parking brake switch assembly.



- c. Remove the parking brake switch assembly.

Inspection

1. Check the parking brake switch assembly.
 - a. Check parking brake switch assembly for wear or breakage. Replace parking brake switch assembly as necessary.
 - b. Check parking brake switch assembly compression spring for damage or weak elasticity. Replace parking brake switch assembly as necessary.

Installation

Installation is in the reverse order of removal.

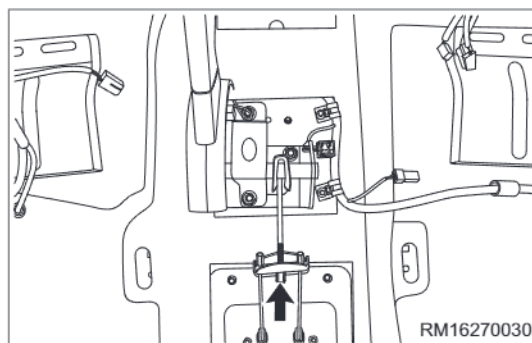
Parking Brake Control Mechanism Assembly

Removal

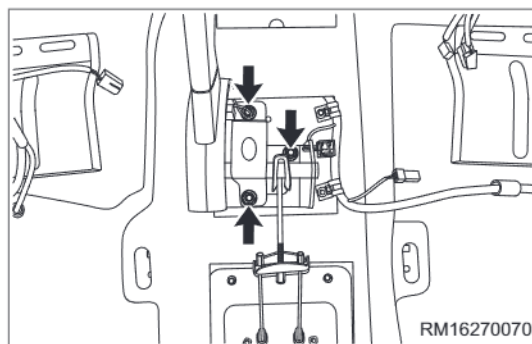
CAUTION

- Be sure to wear necessary safety equipment to prevent accidents when repairing.
- Try to prevent body paint surface from being scratched during removal and installation.

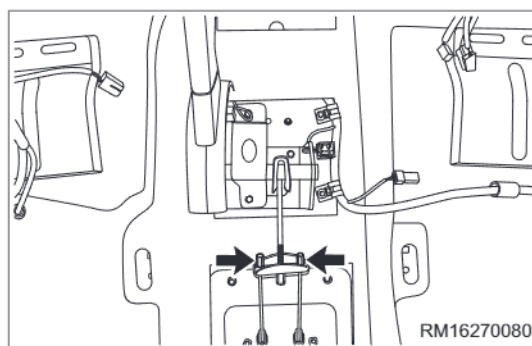
1. Fix the tire and wheel assembly.
2. Remove the auxiliary fascia console assembly (See page 46-10).
3. Remove the parking brake switch assembly (See page 27-10).
4. Remove the parking brake control mechanism assembly.
 - a. Fully release the parking brake control mechanism.
 - b. Loosen the locking nut (arrow) of parking brake control mechanism assembly to release the tension of parking brake cable assembly.
(Tightening torque: $4.0 \pm 0.5 \text{ N}\cdot\text{m}$)



- c. Remove 3 coupling nuts (arrow) between parking brake control mechanism assembly and body.
(Tightening torque: $27 \pm 3 \text{ N}\cdot\text{m}$)



- d. Disengage the parking brake rear cable assembly from two grooves (arrow) on the rear of parking brake control mechanism assembly.



- e. Remove the parking brake control mechanism assembly.

Installation

Installation is in the reverse order of removal.

CAUTION

- Always tighten coupling nuts to specified torques.

HINT:

Be sure to check parking brake control mechanism stroke after installing parking brake control mechanism assembly. Adjust parking brake control mechanism stroke to the proper position by adjusting parking brake control mechanism locking nut if necessary.

Parking Brake Rear Cable Assembly

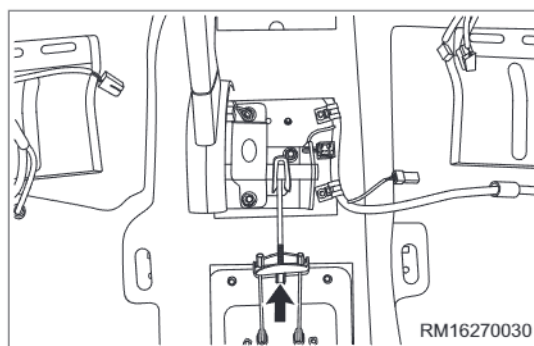
Removal

CAUTION

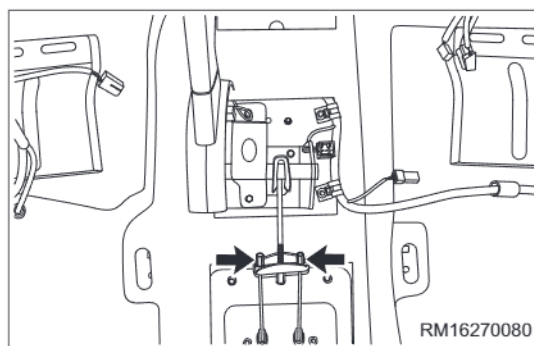
- Be sure to wear necessary safety equipment to prevent accidents when repairing.
- Try to prevent body paint surface from being scratched during removal and installation.

HINT:

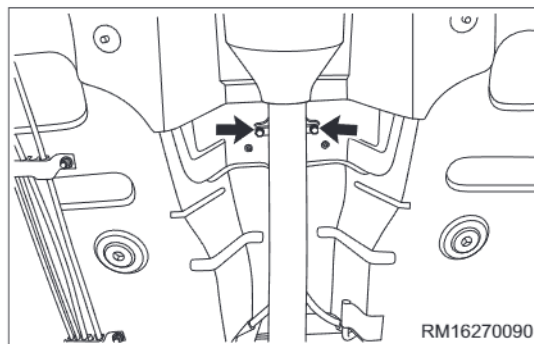
- Use same procedures for right and left sides.
 - Procedures listed below are for left side.
1. Remove the rear wheel (See page 24-9).
 2. Remove the auxiliary fascia console assembly (See page 46-10).
 3. Remove the parking brake rear cable assembly.
 - a. Fully release the parking brake control mechanism.
 - b. Loosen the locking nut (arrow) of parking brake control mechanism assembly to release the tension of parking brake cable assembly.
(Tightening torque: $4.0 \pm 0.5 \text{ N}\cdot\text{m}$)



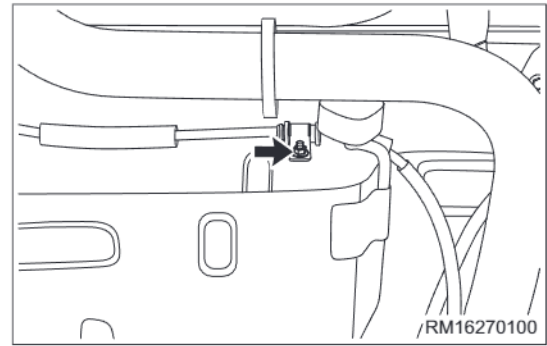
- c. Disengage the parking brake rear cable assembly from two grooves (arrow) on the rear of parking brake control mechanism assembly.



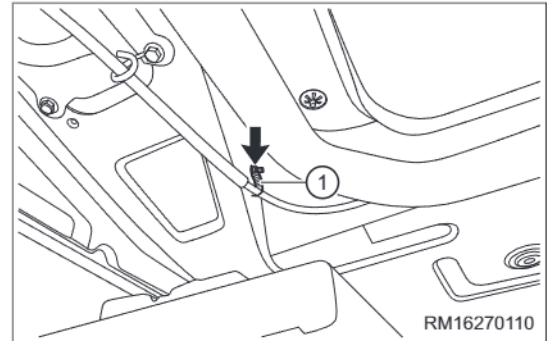
- d. Remove 2 coupling bolts (arrow) between parking brake rear cable assembly pipe joint and body.
(Tightening torque: $10 \pm 1 \text{ N}\cdot\text{m}$)



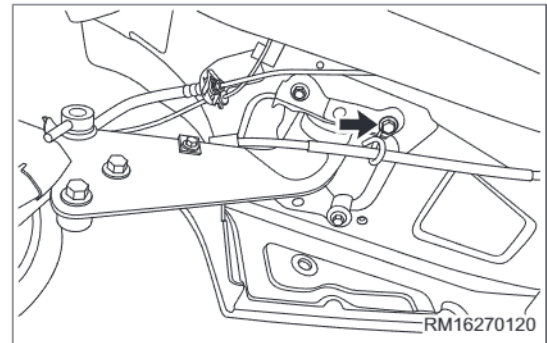
- e. Remove the coupling nut (arrow) between parking brake rear cable assembly fixing bracket and body, and disengage the cable fixing bracket.
(Tightening torque: 10 ± 1 N·m)



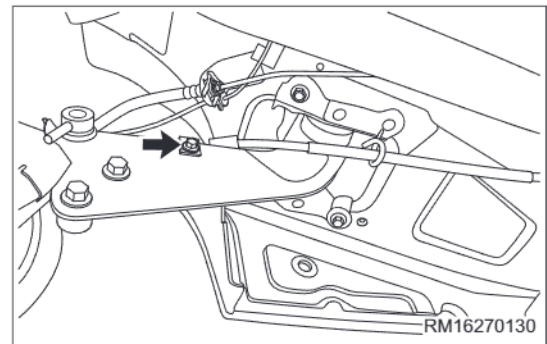
- f. Remove the coupling nut (arrow) between parking brake rear cable assembly spring hook and body, and disengage the spring hook (1).
(Tightening torque: 10 ± 1 N·m)



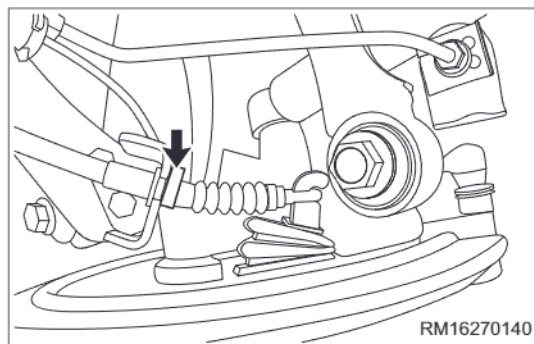
- g. Remove the coupling bolt (arrow) between parking brake rear cable assembly fixing bracket and rear trailing arm assembly fixing bracket, and disengage the cable fixing bracket.
(Tightening torque: 50 ± 5 N·m)



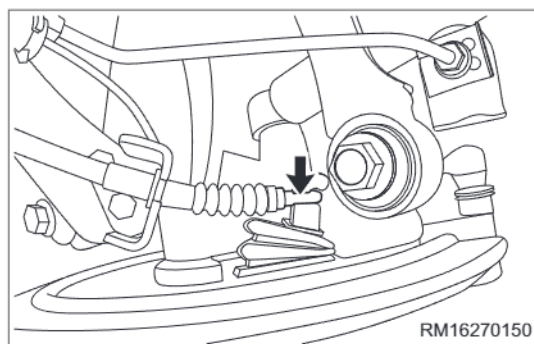
- h. Remove the coupling bolt (arrow) between parking brake rear cable assembly fixing bracket and rear trailing arm assembly, and disengage the cable fixing bracket.
(Tightening torque: 27 ± 3 N·m)



- i. Remove the fixing clamp (arrow) and disengage the parking brake rear cable assembly from fixing bracket.



- j. Disengage the parking brake rear cable assembly end (arrow) from parking pulling arm.



- k. Remove the parking brake rear cable assembly.

Installation

Installation is in the reverse order of removal.

CAUTION

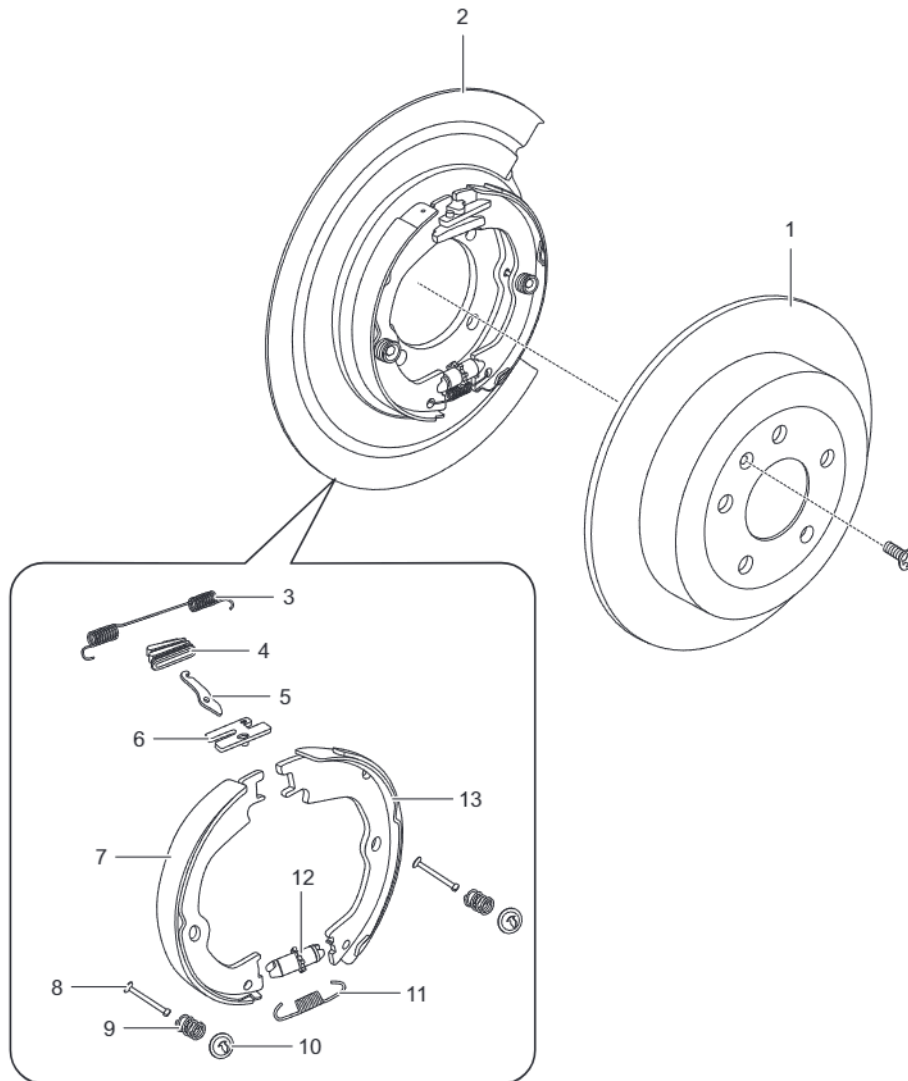
- Always tighten coupling bolts and nuts to specified torques.

HINT:

Parking brake should be adjusted after replacing brake shoe or parking brake cable assembly. Check if parking brake functions properly after adjustment.

- Fully pull up parking brake control mechanism.
- Release parking brake control mechanism and check if rear wheels rotate freely.
- If wheels are difficult to rotate freely, repeat adjustment procedure.
- After driving for a period of time, parking brake control mechanism stroke should be readjusted because of wear of rear brake shoe linings.

Parking Brake Assembly



RM16270160

1 - Rear Brake Disc	2 - Parking Brake Assembly
3 - Brake Shoe Return Tension Spring (Upper)	4 - Parking Pulling Arm Dust Boot
5 - Parking Pulling Arm	6 - Parking Push Rod
7 - Left Parking Brake Shoe Lining	8 - Compression Spring
9 - Brake Shoe Compression Spring	10 - Compression Spring Seat
11 - Brake Shoe Return Tension Spring (Lower)	12 - Brake Shoe Clearance Adjustment Mechanism Assembly
13 - Right Parking Brake Shoe Lining	

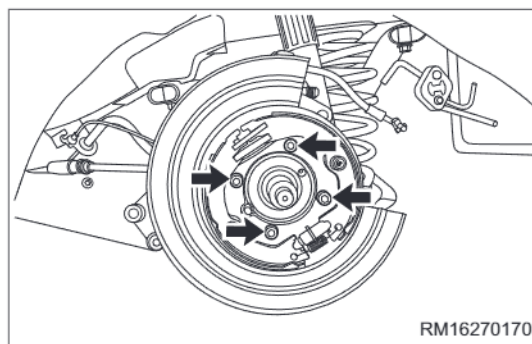
Removal

CAUTION

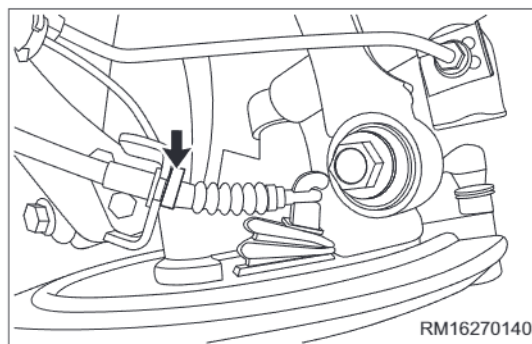
- Be sure to wear necessary safety equipment to prevent accidents when repairing.
- Try to prevent body paint surface from being scratched during removal and installation.

HINT:

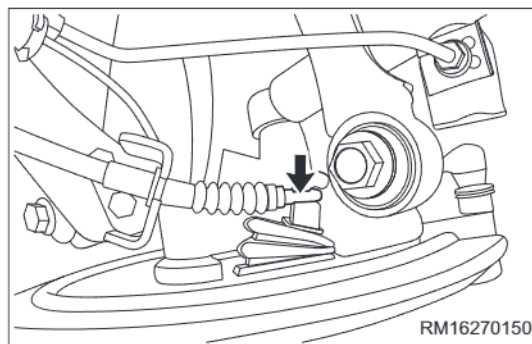
- Use same procedures for right and left sides.
 - Procedures listed below are for left side.
1. Remove the rear left wheel (See page 24-9).
 2. Remove the rear left brake caliper assembly (See page 26-39).
 3. Remove the rear left brake disc (See page 26-39).
 4. Remove the rear left hub bearing assembly (See page 22-20).
 5. Remove the left parking brake assembly.
 - a. Fully release the parking brake control mechanism.
 - b. Remove 4 coupling bolts (arrow) between left parking brake assembly and rear left steering knuckle assembly.
(Tightening torque: 55 - 60 N·m)



- c. Remove the fixing clamp (arrow) and disengage the parking brake rear cable assembly from fixing bracket.



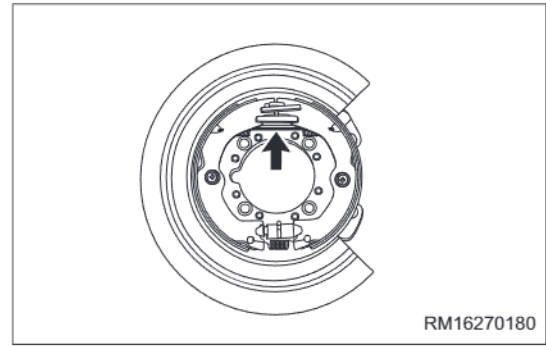
- d. Disengage the parking brake rear cable assembly end (arrow) from parking pulling arm.



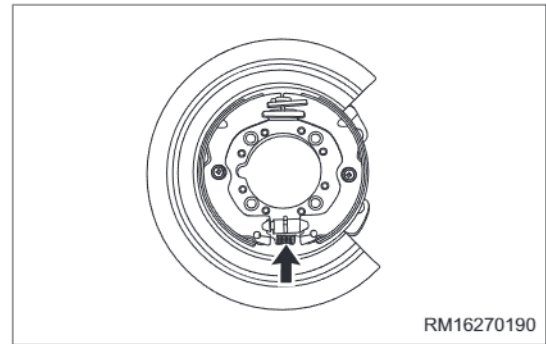
- e. Remove the left parking brake assembly.

Disassembly

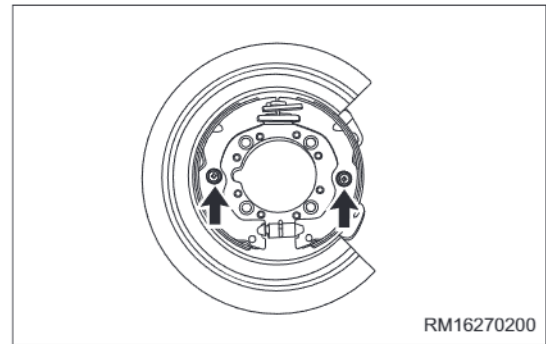
1. Remove the brake shoe return tension spring (upper).
 - a. Using needle-nose pliers, carefully remove the brake shoe return tension spring (upper) as shown in illustration.



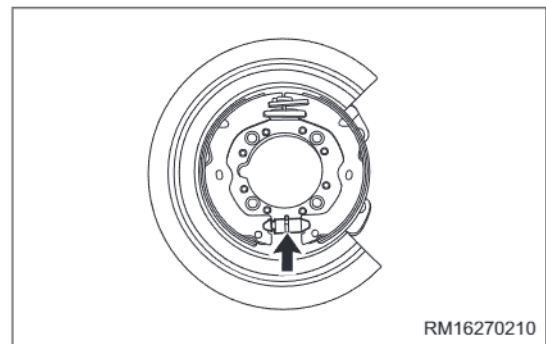
2. Remove the brake shoe return tension spring (lower).
 - a. Using needle-nose pliers, carefully remove the brake shoe return tension spring (lower) as shown in illustration.



3. Remove the brake shoe stopper spring set.
 - a. Using needle-nose pliers, press brake shoe compression spring and rotate compression spring tie rod to remove the stopper spring sets (arrow) on both sides as shown in illustration.

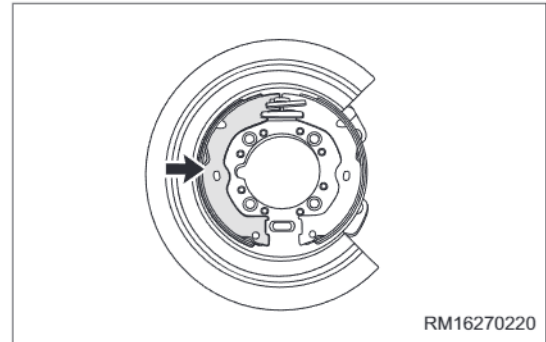


4. Remove the brake shoe clearance adjustment mechanism assembly.
 - a. Disengage the brake shoe linings on both sides and remove the clearance adjustment mechanism assembly as shown in illustration.

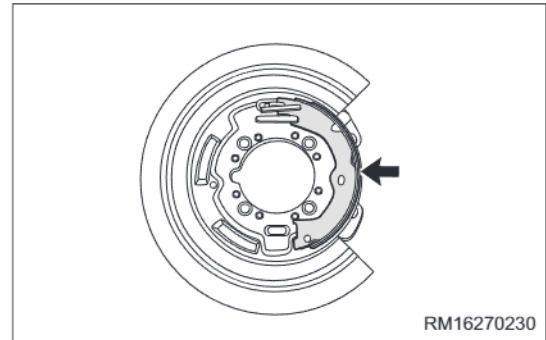


27 - PARKING BRAKE

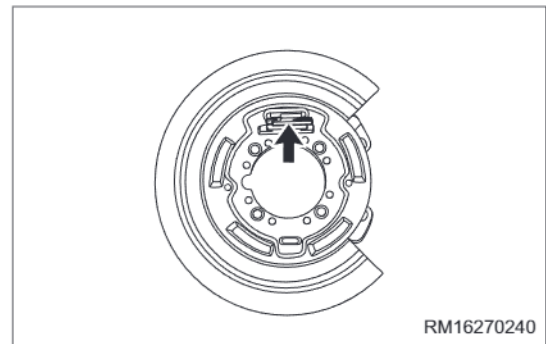
5. Remove the left brake shoe lining.
 - a. Disengage the left brake shoe lining from parking push rod as shown in illustration.



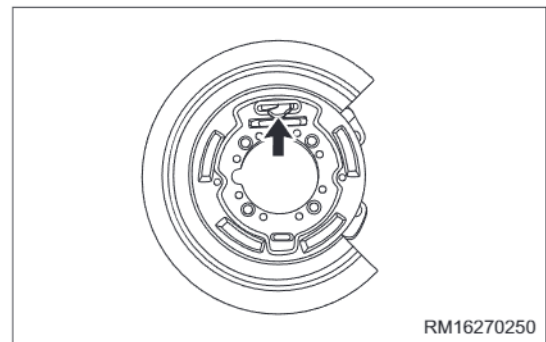
6. Remove the right brake shoe lining.
 - a. Disengage the right brake shoe lining from parking push rod as shown in illustration.



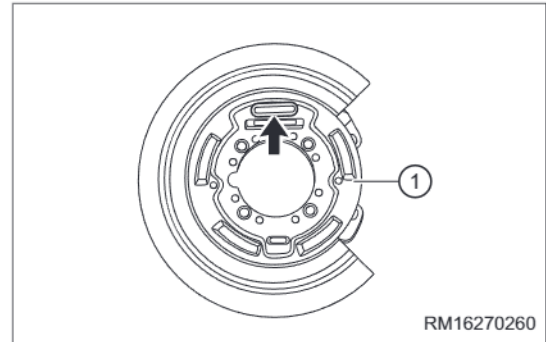
7. Remove the parking push rod.
 - a. Disengage the parking push rod from parking pulling arm as shown in illustration.



8. Remove the parking pulling arm.
 - a. Remove the parking pulling arm from parking pulling arm dust boot as shown in illustration.

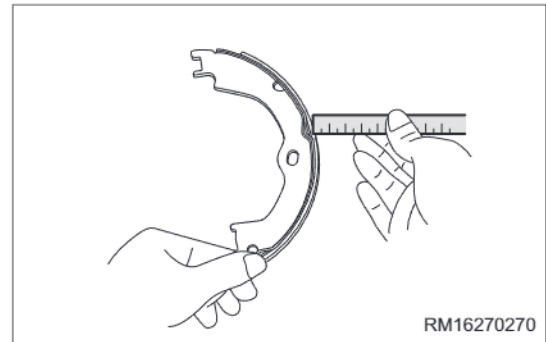


9. Remove the parking pulling arm dust boot.
 - a. Disengage the parking pulling arm dust boot (arrow) from brake caliper mounting board assembly (1) as shown in illustration.



Inspection

1. Check the thickness of brake shoe lining.
 - a. Using a straightedge, measure the thickness of brake shoe lining as shown in illustration.
Standard thickness: 2.8 mm
Minimum thickness: 1 mm

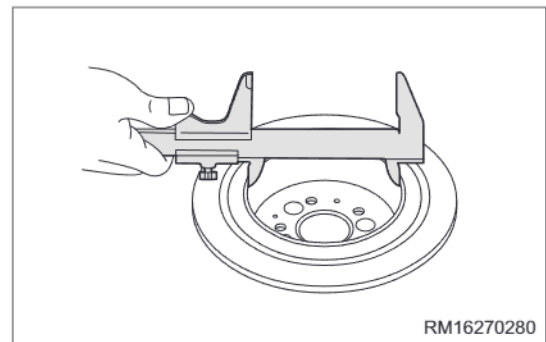


- b. If thickness of brake shoe lining is equal to or less than the minimum value, replace the brake shoe linings.

CAUTION

- Replace the brake shoe linings in pairs. DO NOT replace it alone.

2. Check the rear brake disc inner diameter.
 - a. Using a vernier caliper or equivalent, measure rear brake disc inner diameter.
Standard inner diameter: 186 mm
Maximum inner diameter: 186.2 mm



- b. If rear brake disc inner diameter is more than the maximum value, replace the rear brake disc.
3. Check other components.
 - a. Check if brake shoe return tension spring (upper) is broken, bent, damaged or weak in elasticity. Replace as necessary.
 - b. Check if brake shoe return tension spring (lower) is broken, bent, damaged or weak in elasticity. Replace as necessary.

- c. Check if parking push rod and pulling arm are broken, bent or damaged. Replace as necessary.
- d. Check if parking pulling arm dust boot is worn, cracked or dirty. Replace as necessary.
- e. Check if brake shoe stopper spring sets are broken, bent, damaged or weak in elasticity. Replace as necessary.
- f. Check if brake shoe clearance adjustment mechanism assembly is struck, damaged, or slides off. Replace as necessary.

Assembly

Assembly is in the reverse order of disassembly.

CAUTION

- Adjust brake shoe clearance to the proper position by brake shoe clearance adjustment mechanism assembly after installation is completed.

Installation

Installation is in the reverse order of removal.

CAUTION

- Make sure to tighten fixing bolts to specified torques during installation.
- Make sure to install fixing clamp in place.

HINT:

Parking brake should be adjusted after replacing parking brake shoe. Check if parking brake functions properly after adjustment is completed.

- Fully pull up parking brake control mechanism.
- Release parking brake control mechanism and check if rear wheels rotate freely.
- If wheels are difficult to rotate freely, repeat adjustment procedure.
- After driving for a period of time, parking brake control mechanism stroke should be readjusted because of wear of rear brake shoe linings.

