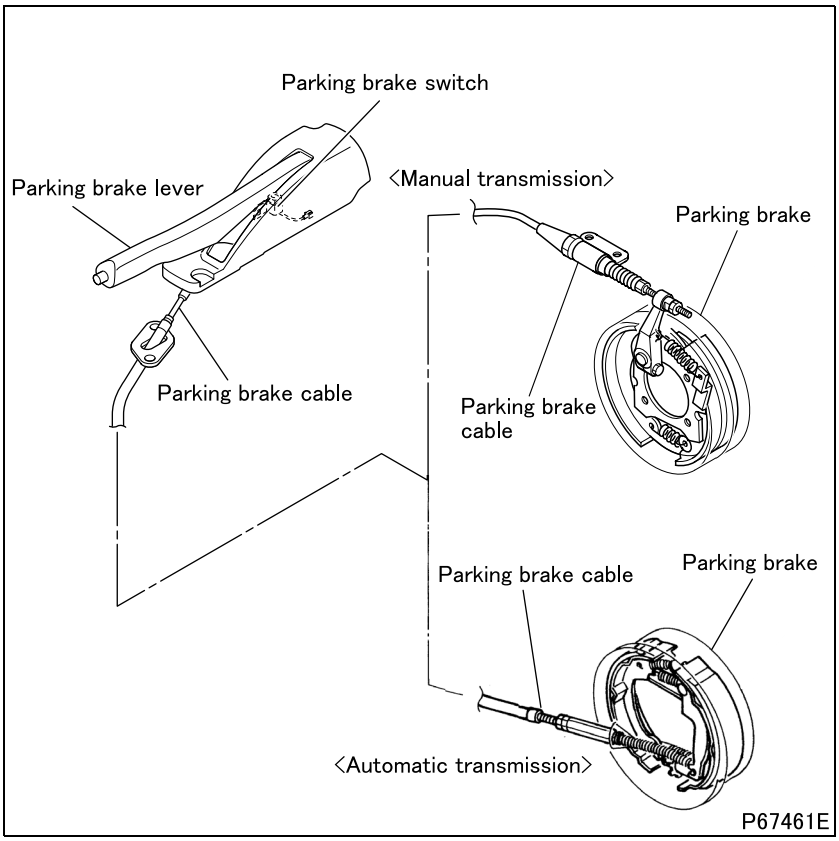
GROUP 36 INDEX

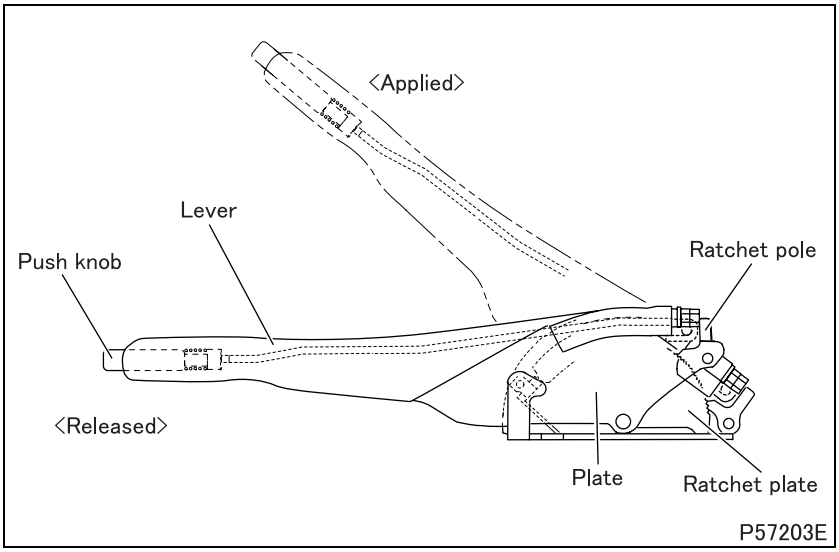
SPECIFICATIONS

Item			Specifications	
Brake	Type		Internal expanding, acting on propeller shaft (driveline parking brake)	
	Operation type		Mechanical cable	
Parking brake	Type		Duo servo type	
	Brake drum I.D.	mm {in}	ϕ190 {7.48}	ϕ203.2 {8.00}
	Lining width × thickness	mm {in}	45 × 4.0 {1.77 × 0.16}	50 × 4.0 {1.97 × 0.16}

1. Components and Parts



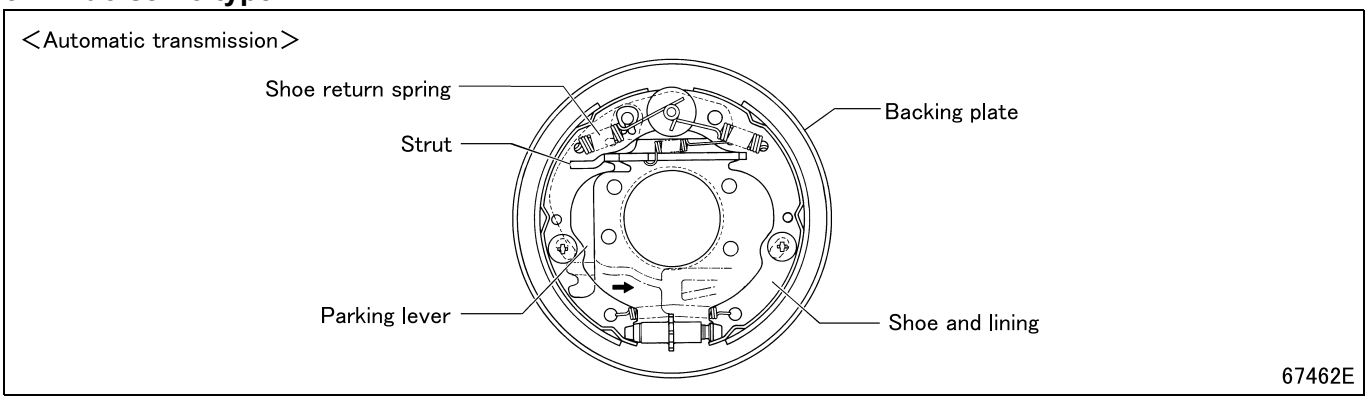
2. Parking Brake Lever



- Pulling the parking brake lever makes the parking brake work, at which point the ratchet pole engages with the ratchet plate and the lever is locked.
- To release the parking brake lever, slightly pull it up while pushing the release knob. This disengages the ratchet pole from the ratchet plate, allowing the parking brake lever to return to the released position.

3. Parking Brake

3.1 Duo servo type



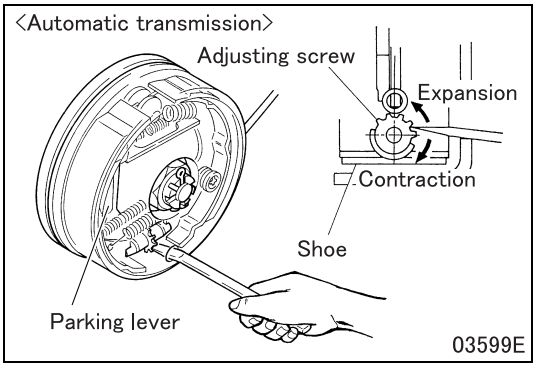
- The parking lever that actuates the shoe and lining is a built-in component of the parking brake body. Pulling the parking brake lever pulls the parking brake cable, which in turn pulls the parking lever.
- When the parking lever is pulled, one shoe and lining is forced to expand with the medium of strut. At the same time, the parking lever directly expands the other shoe and lining. Thus, each shoe and lining assembly works as a leading shoe.
- When the parking brake lever (parking lever) is returned to the released position, the repercussive force of the shoe return spring releases the brake.

Possible causes / Symptoms		Parking brake does not work	Parking brake release not smooth (dragging)	Parking brake lever operating physical force insufficient	Parking brake lever operating physical force excessive	Reference Gr
Parking brake cable	Inner cable stretched or damaged	O	O	O	O	
	Inner cable improperly adjusted	O	O	O	O	
	Front parking cable and rear parking cable improperly connected	O	O	O	O	
	Front parking cable and rear parking cable joints in poor contact	O	O	O	O	
Parking brake lever	Ratchet pole and ratchet plate pawl engaged improperly	O				
	Pulling stroke insufficient		O		O	
	Pulling stroke excessive	O		O		
Parking brake	Shoe clearance insufficient		O		O	
	Shoe clearance excessive	O		O		
	Parking brake drum inner surface deformed or warped	O		O		
	Lining worn unevenly	O		O		
	Brake drum inner surface greasy or oily	O				
	Lining surface greasy or oily	O				
	Shoe return spring fatigued or fractured		O			

1. Adjustment of Parking Brake Shoe Clearance

Service standards: mm {in}

Location	Maintenance item		Standard value	Limit	Remedy
–	Brake shoe clearance	Automatic transmission	0.2 to 0.25 {0.0079 to 0.0098}	–	Adjust



- Chock the front wheels and raise the rear wheels with a jack before adjusting the shoe clearance.
- Operate the parking brake lever to release the parking brake. (The parking lever or camshaft lever is released from locking.)
- Using a standard screwdriver inserted through the shoe adjusting hole in the parking brake drum, turn the adjusting screw in the C direction (expansion) shown to bring the shoe into close contact with the brake drum.
- Turn the adjusting screw 8 notches in the B direction (contraction) shown from the position where the shoe is in close contact with the drum. The shoe clearance should be adjusted to the standard value.

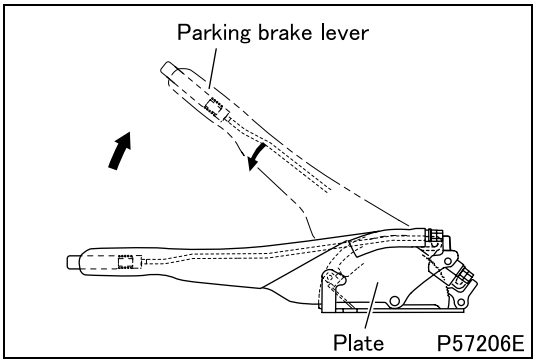
2. Inspection and Adjustment of Parking Brake Lever

Service standards

Location	Maintenance item	Standard value	Limit	Remedy
–	Parking brake lever pulling stroke (with operating physical operating of 300N {67 lbf})	7 to 9 notches	–	Adjust or inspect

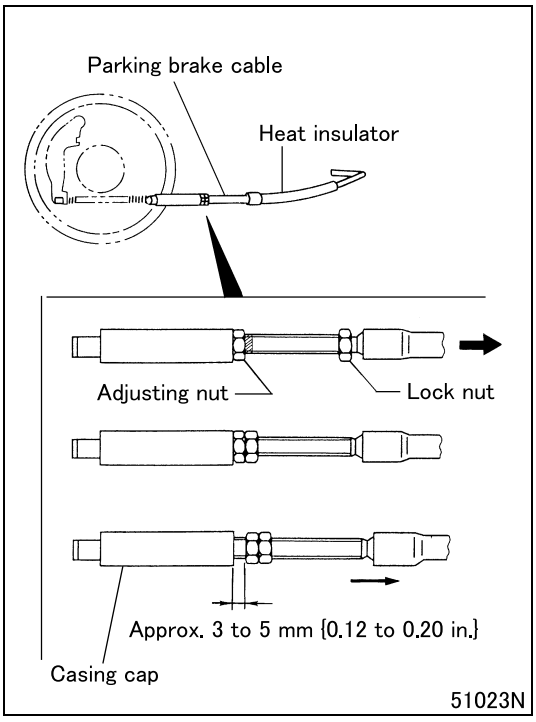
Torque: N·m {lbf·ft}

Mark	Fastener	Torque value	Remarks
–	Lock nut <Automatic transmission>	18.7 to 27.5 {14 to 20}	–



[Inspection]

- Pull the parking brake lever from the released position with an operating physical force of 300N {67 lbf} and count the number of cleared notches.
- If the count of notches deviates from the specified range of standard values, adjust the length of the parking brake cable.
- If the count of notches (pulling stroke) is still out of the specified range after cable length adjustment, check the parking brake shoe clearance.



<Automatic transmission>

- Pull the outer cable of the parking brake cable with a force of 60 to 100 N {13 to 22 lbf} to zero the parking brake shoe clearance.

CAUTION ⚠

- **When pulling the outer cable, take care not to move heat insulator on the parking brake cable out of place.**

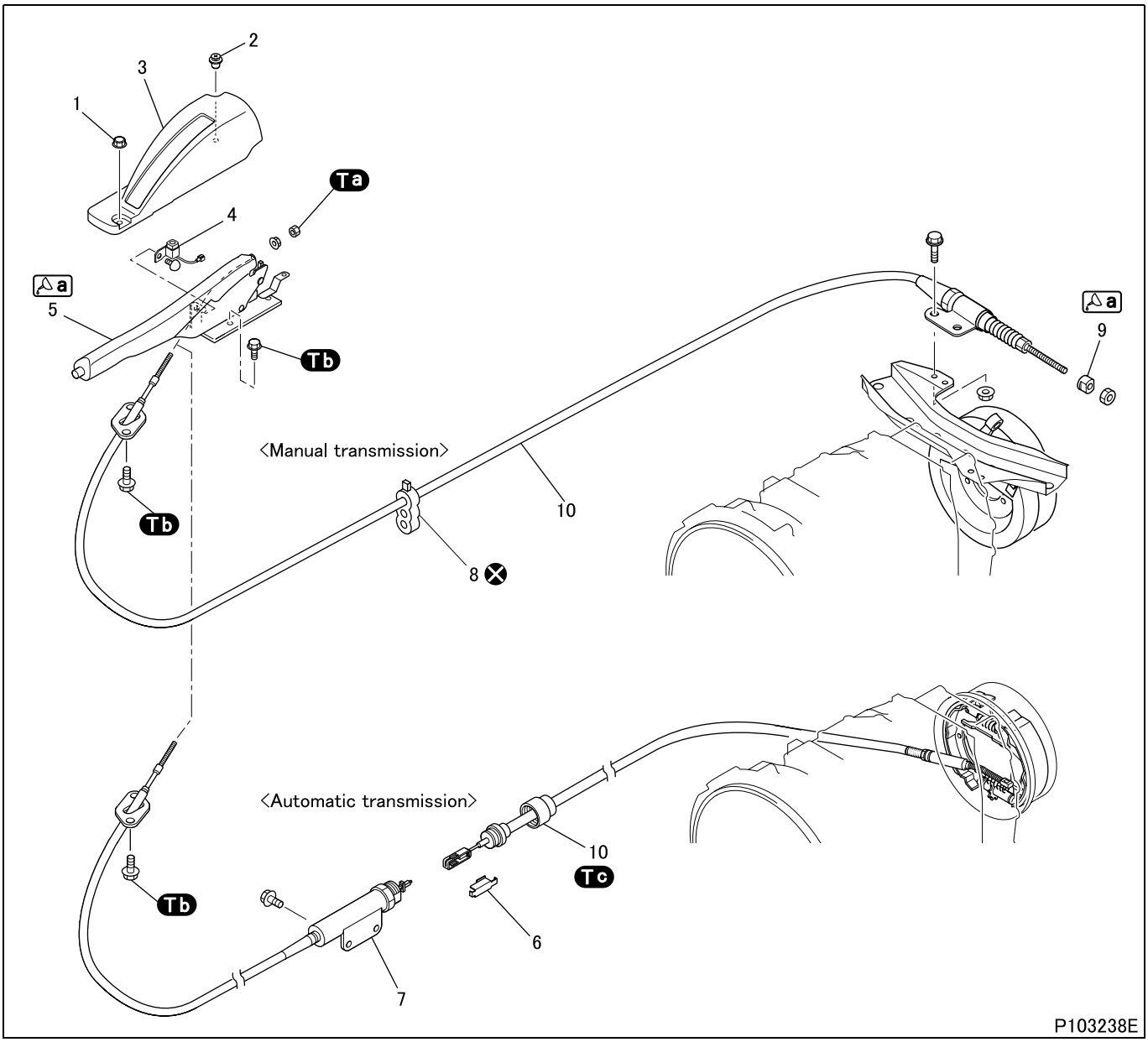
- While pulling the parking brake cable, tighten the adjusting nut until it seats the cable support end.
- Lock the adjusting nut with the lock nut.
- Operate the parking brake lever several times with the force of 500 N {110 lbf}.
- Pull the outer cable of the rear parking brake cable again with the force of 60 to 100 N {13 to 22 lbf}.

CAUTION ⚠

- **When pulling the outer cable, take care not to move heat insulator on the parking brake cable out of place.**

- Holding the parking brake cable in the pulled state, turn the adjusting nut until its distance from the casing cap becomes 3 to 5 mm {0.12 to 0.20 in} as shown in the illustration.
- Return the parking brake cable to the original position.
- Tighten the lock nut to the specified torque.

PARKING BRAKE CONTROL



●Removal sequence

1 Push nut
2 Push turn rivet
3 Cover
4 Parking brake switch
5 Parking brake lever
6 Cap <Automatic transmission>
7 Front parking brake cable <Automatic transmission>
8 Ball bushing <Manual transmission>
9 Parking brake cable <Manual transmission>
Rear parking brake cable <Automatic transmission>

●Installation sequence

Follow the removal sequence in reverse.

CAUTION ⚠

- **Perform the adjustment of the parking brake lever after installation (see ON-VEHICLE INSPECTION and ADJUSTMENT).**

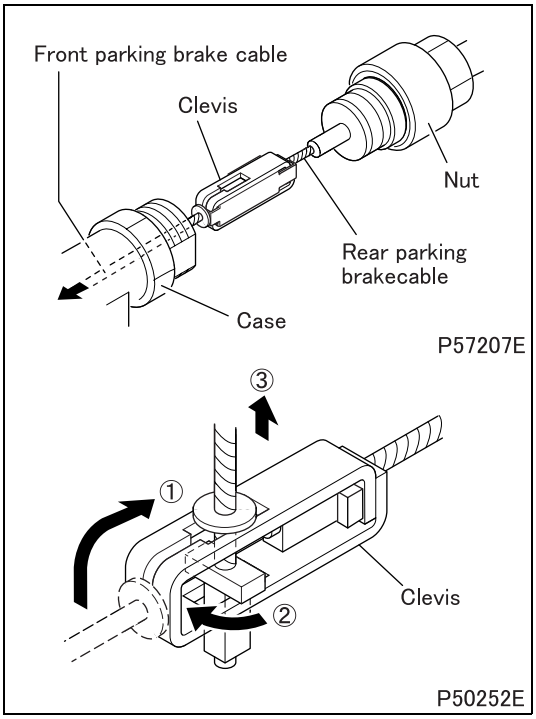
Torque: N·m {lbf·ft}

Mark	Component	Torque value	Remarks
Ta	Nut (parking brake cable attaching)	4 to 6 {3.0 to 4.4}	–
Tb	Bolt (parking brake lever mounting)	12 to 15 {8.9 to 11}	–
	Bolt (parking brake cable attaching)		
Tc	Rear parking brake cable to front parking brake cable connection <Automatic transmission>	62.5 ± 7.5 {46 ± 5.5}	–

Lubricant and/or sealant

Mark	Point of application	Specified lubricant and/or sealant	Quantity
a	Contact surfaces of parking brake lever	Chassis grease [NLGI No. 1 (Li soap)]	As required
	Spherical face of ball bushing <Manual transmission>		

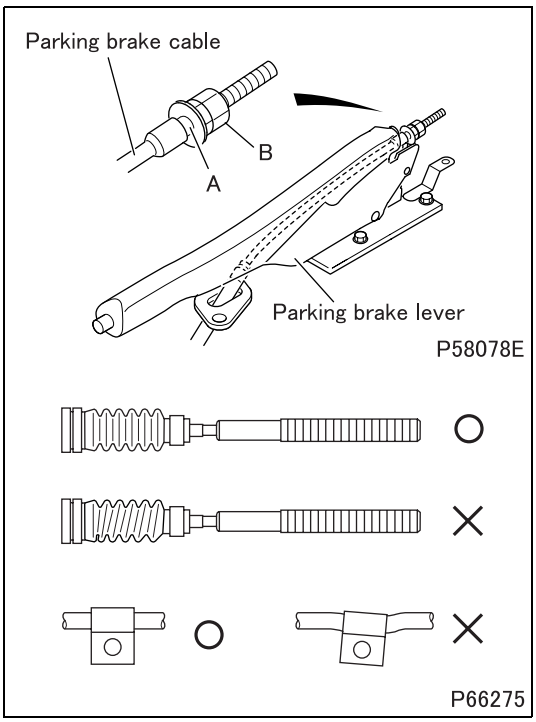
◆Removal procedure◆



■Removal: Front parking brake cable <Automatic transmission>

- Loosen the nut connecting the front and rear parking brake cables, then separate the front parking brake cable case from the rear parking brake cable.
- Remove the cap and pull out the clevis from the front parking brake cable case and remove it at the steps of 1, 2 and 3 in that order as shown.

◆Installation procedure◆

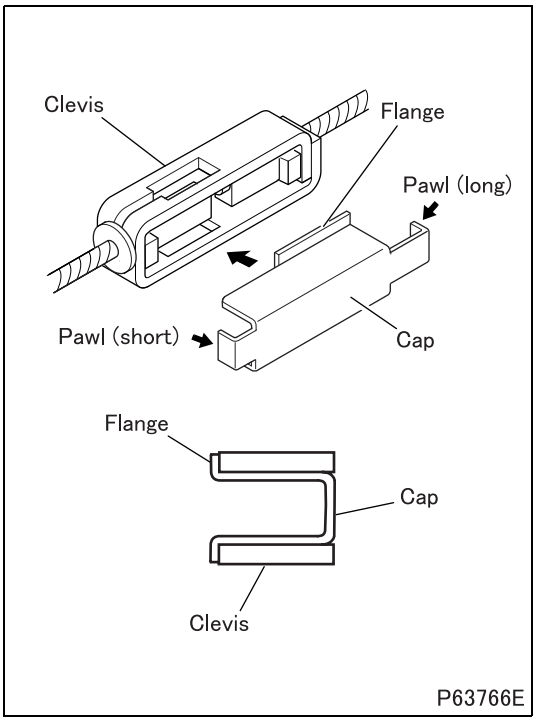


■ **Installation: Front parking brake cable or parking brake cable**

- Connect the front parking brake cable to the rear parking brake cable by following the removal procedure in reverse. <Automatic transmission>
- Attach the parking brake cable to the parking brake lever by fully tightening nut **A**, then tightening nut **B** to the specified torque.

CAUTION ⚠

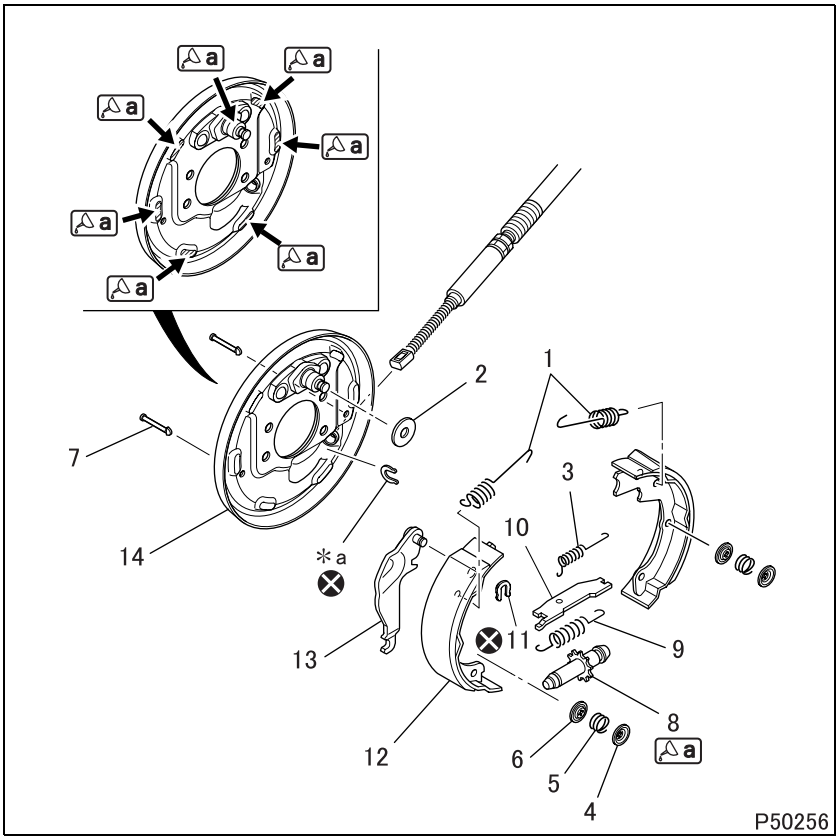
- **Cable bending radius must be at least 100 mm.**
- **The cable must not be bent at clamped portions.**
- **There must not be torsion in the boot.**
- **Avoid any interference with other components when routing the cable.**



■ **Installation: Cap <Automatic transmission>**

- Attach the cap to the clevis of the rear parking brake cable from the direction shown in the illustration.
- Fit the cap into the clevis all the way so that the flange of the cap comes out at the other side of the clevis.

M E M O



●**Disassembly sequence**

1 Shoe return spring
2 Washer
3 Strut spring
4 Shoe holddown cup
5 Shoe holddown spring
6 Shoe holddown cup
7 Shoe holddown pin
8 Adjuster
9 Adjuster spring
10 Strut
11 Retainer
12 Shoe and lining
13 Parking lever
14 Backing plate

***a**: Retainer
⊗: Non-reusable parts

●**Assembly sequence**

Follow the disassembly sequence in reverse.

CAUTION ⚠

- **To prevent poor working of the brake, do not smear the surface of shoe and lining with grease or oil.**
- **When the shoe and lining has been replaced with a new one, always check it for contact with the parking brake drum.**

NOTE

- **Refer to Gr23 for parking brake removal and installation procedures.**

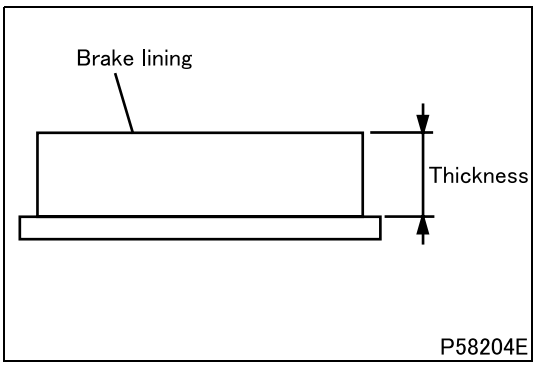
Service standards: mm {in}

Location	Maintenance item	Standard value	Limit	Remedy
1	Installed load of shoe return spring (installed length: 67.1 {2.64})	58.8 ± 5.9 N {13 ± 1.3 lbf}	49 N {11 lbf}	Replace
3	Installed load of strut spring (installed length: 49 {1.93})	29.4 ± 2.9 N {6.6 ± 0.7 lbf}	26 N {5.8 lbf}	Replace
5	Installed load of shoe holddown spring (installed length: 15.5 {0.61})	78.5 ± 7.9 N {18 ± 1.8 lbf}	71 N {16 lbf}	Replace
9	Installed load of adjuster spring (installed length: 78.2 {3.08})	58.8 ± 5.9 N {13 ± 1.3 lbf}	49 N {11 lbf}	Replace
12	Brake lining thickness of shoe and lining	4.0 {0.16}	1.4 {0.053}	Replace

Lubricant and/or sealant

Mark	Points of application	Specified lubricant and/or sealant	Quantity
a	Adjuster ends in contact with shoe and lining	Brake grease (AKB100)	As required
	Backing plate anchor pin and surface in contact with shoe and lining		

◆Inspection procedure◆



■ **Inspection: Brake lining thickness of shoe and lining**

- If the measured value is lower than the limit, replace the shoe and lining.