

2009 Toyota Highlander Limited
2009 BRAKES Parking Brake - Highlander

2009 BRAKES

Parking Brake - Highlander

PARKING BRAKE SYSTEM

PROBLEM SYMPTOMS TABLE

HINT:

Use the following table to help determine the cause of the problem. Likely causes of the problem are indicated in descending order. Check each suspected area in order. Repair or replace the faulty parts or perform adjustments as necessary.

PARKING BRAKE SYSTEM

PARKING BRAKE SYSTEM PROBLEM SYMPTOMS CHART

Symptom	Suspected Area	Refer to
Brake drag	Parking brake pedal travel (Out of adjustment)	<u>PARKING BRAKE SYSTEM</u>
	Parking brake cable (Sticking)	<u>PARKING BRAKE CABLE</u>
	Parking brake shoe clearance (Out of adjustment)	<u>PARKING BRAKE SYSTEM</u>
	Parking brake shoe lining (Cracked or distorted)	<u>PARKING BRAKE ASSEMBLY</u>
	Tension or return spring (Damaged)	<u>PARKING BRAKE ASSEMBLY</u>

ADJUSTMENT

1. INSPECT PARKING BRAKE PEDAL TRAVEL

- a. Fully depress the parking brake pedal to engage the parking brake.
- b. Depress the pedal again to disengage the parking brake.
- c. Slowly depress the parking brake pedal using the specified force, and count the number of clicks.

Parking brake pedal travel:

8 to 10 notches at 300 N (31 kgf, 67 lbf)

If the parking brake pedal travel is not as specified, adjust the parking brake shoe clearance and parking brake pedal travel.

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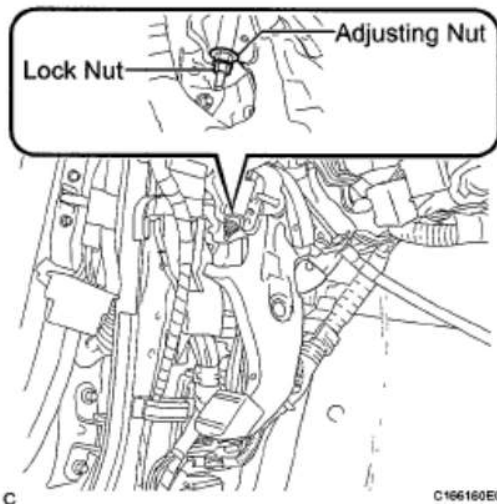
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Fig. 1: Depressing Brake Pedal

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. ADJUST PARKING BRAKE SHOE CLEARANCE AND PARKING BRAKE PEDAL TRAVEL

- a. Remove the driver side knee airbag (See **REMOVAL**).
- b. Completely release the parking brake pedal.
- c. Loosen the lock nut and the adjusting nut to completely release the parking brake cable.
- d. Remove the rear wheel.
- e. Temporarily install the hub nuts.
- f. Remove the shoe adjusting hole plug.



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Fig. 2: Identifying Lock Nut And Adjusting Nut

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- g. Turn the shoe adjuster and expand the shoe until the disc locks.
- h. Turn and contract the shoe adjuster until the disc can rotate smoothly.

Standard:

Return 8 notches.

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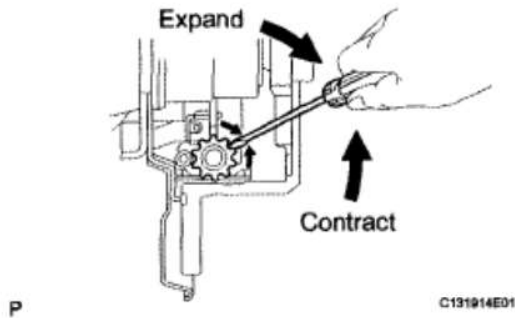


Fig. 3: Adjusting Parking Brake Shoe Clearance
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- i. Check that there is no brake drag against the shoe.
- j. Install the shoe adjusting hole plug.
- k. Turn the adjusting nut until the parking brake pedal travel is corrected to be within the specified range.

Parking brake pedal travel:

8 to 10 notches at 300 N (31 kgf, 67 lbf)

- l. Using a wrench or an equivalent tool, hold the adjusting nut and tighten the lock nut.

Torque: 7.0 N*m (71 kgf*cm, 62 in.*lbf)

- m. Operate the parking brake pedal 3 to 4 times, and check the parking brake pedal travel.
- n. Check that there is no brake drag against the shoe.
- o. Remove the hub nuts.
- p. Install the rear wheel.

Torque: 103 N*m (1050 kgf*cm, 76 ft.*lbf)

- q. Install the driver side knee airbag (See INSTALLATION).

3. INSPECT BRAKE WARNING LIGHT

- a. When operating the parking brake pedal, check that the brake warning light illuminates.

Standard:

The brake warning light always illuminates at the first click.

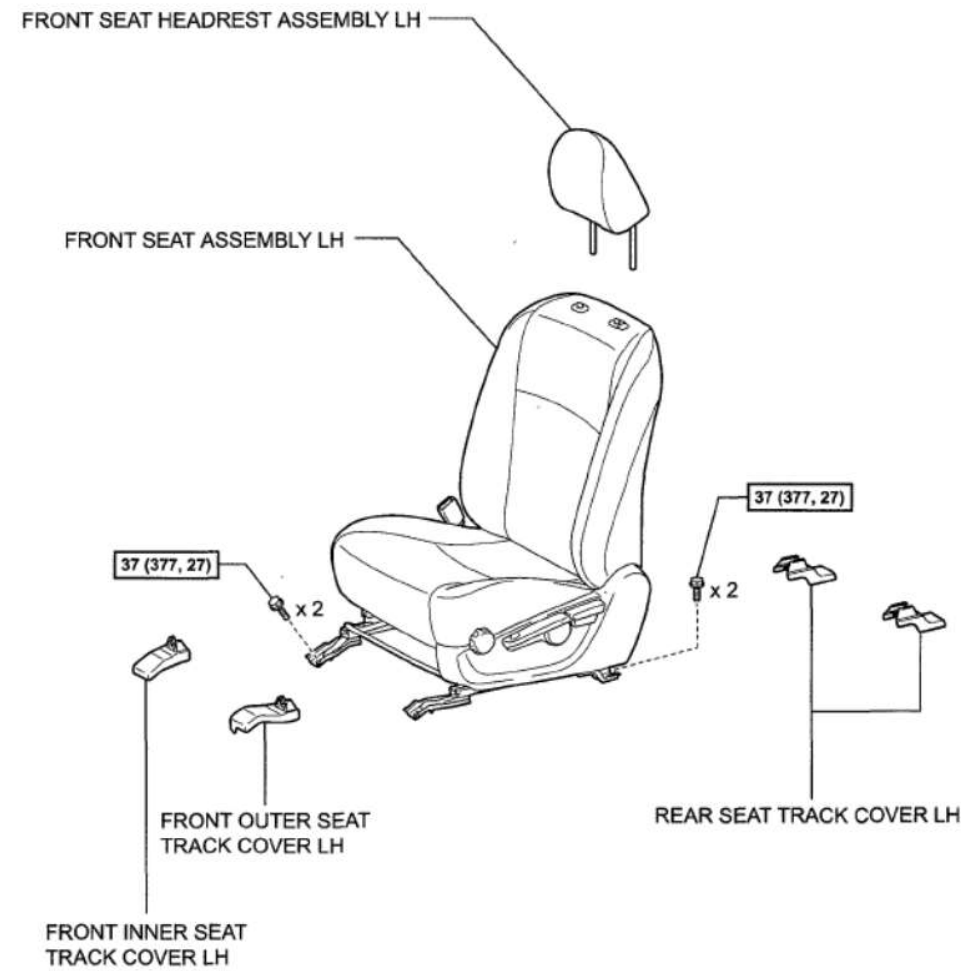
PARKING BRAKE PEDAL

COMPONENTS

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for Manual Seat:



N*m (kgf*cm, ft.*lbf) : Specified torque

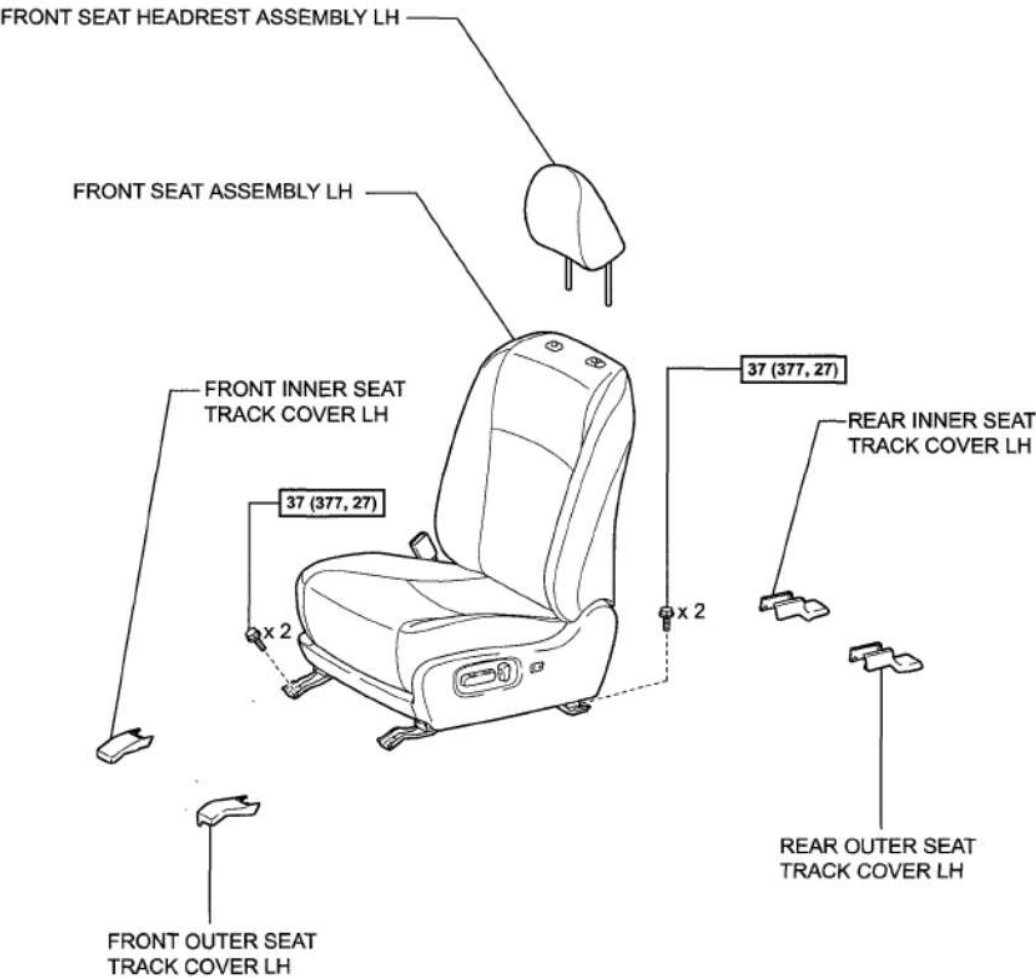
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Fig. 4: Identifying Parking Brake Pedal Components With Torque Specification (1 Of 12)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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for Power Seat:



[N*m (kgf*cm, ft.*lbf)]: Specified torque

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Fig. 5: Identifying Parking Brake Pedal Components With Torque Specification (2 Of 12)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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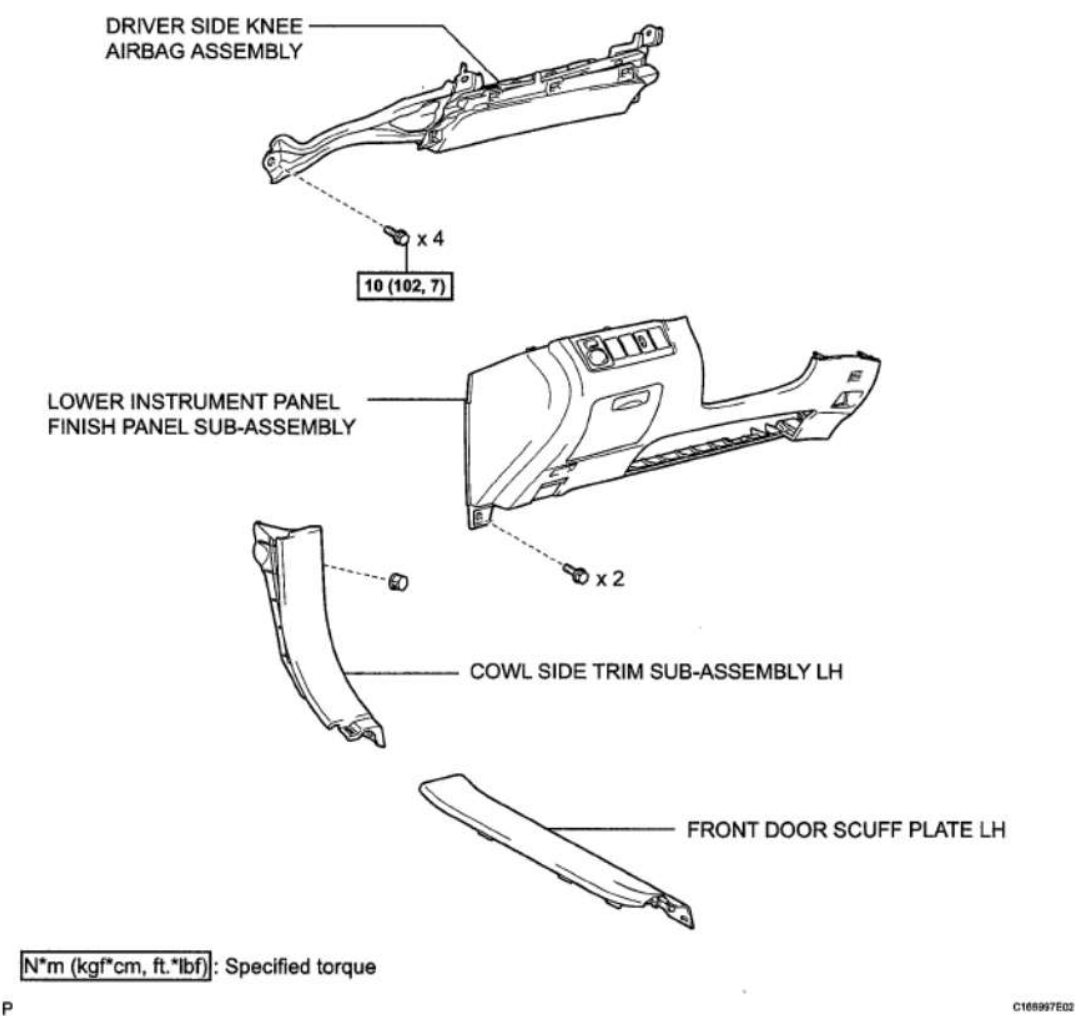


Fig. 6: Identifying Parking Brake Pedal Components With Torque Specification (3 Of 12)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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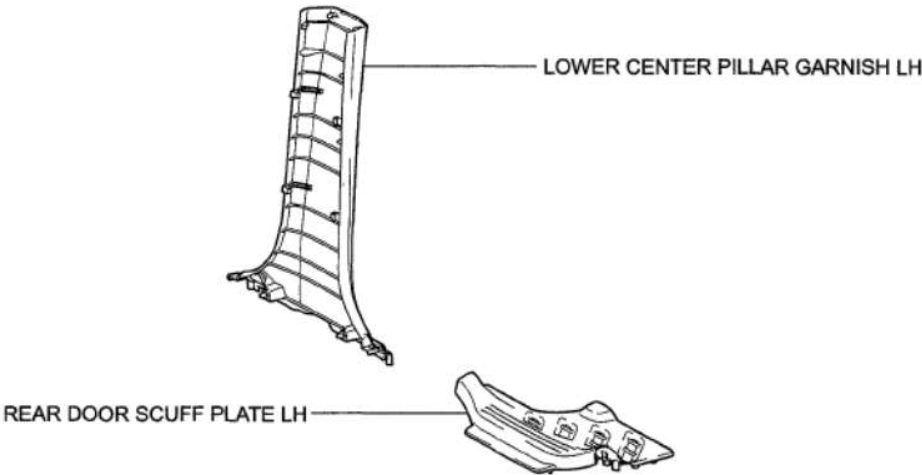


Fig. 7: Identifying Parking Brake Pedal Components With Torque Specification (4 Of 12)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

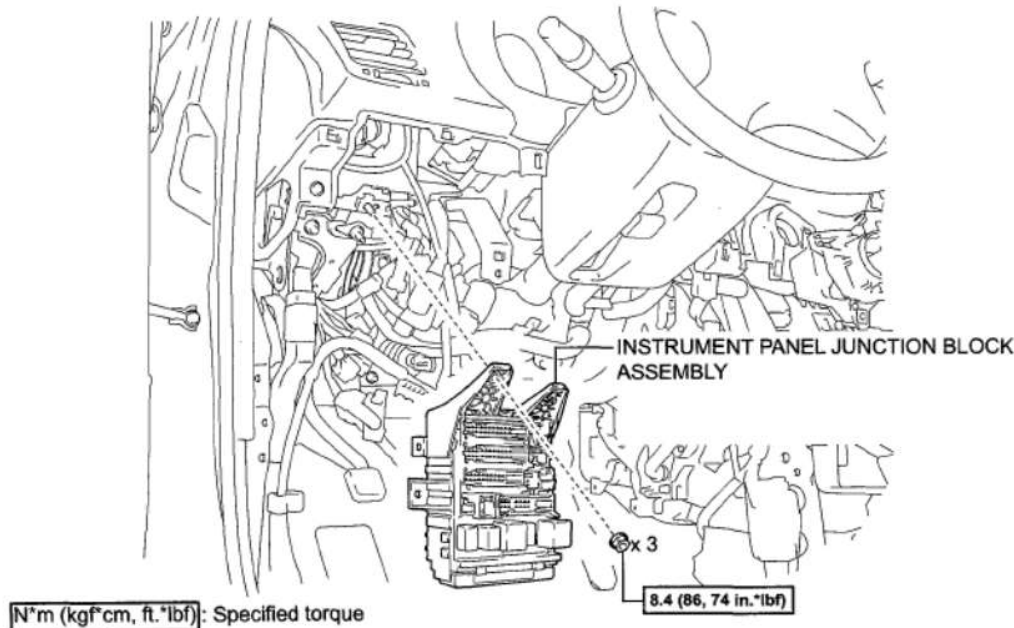
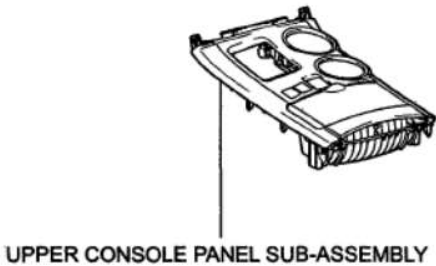
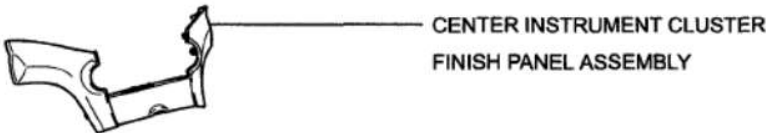
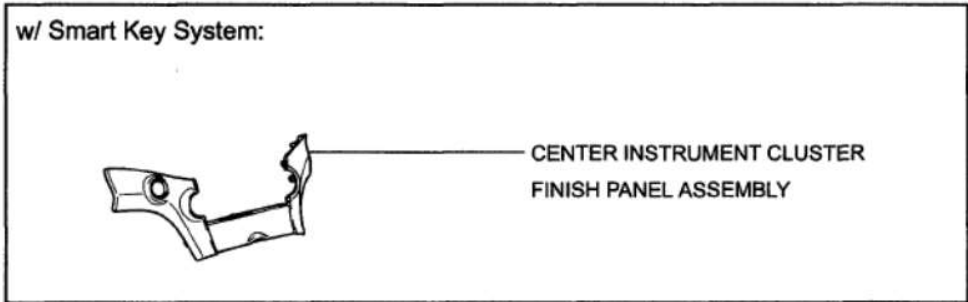


Fig. 8: Identifying Parking Brake Pedal Components With Torque Specification (5 Of 12)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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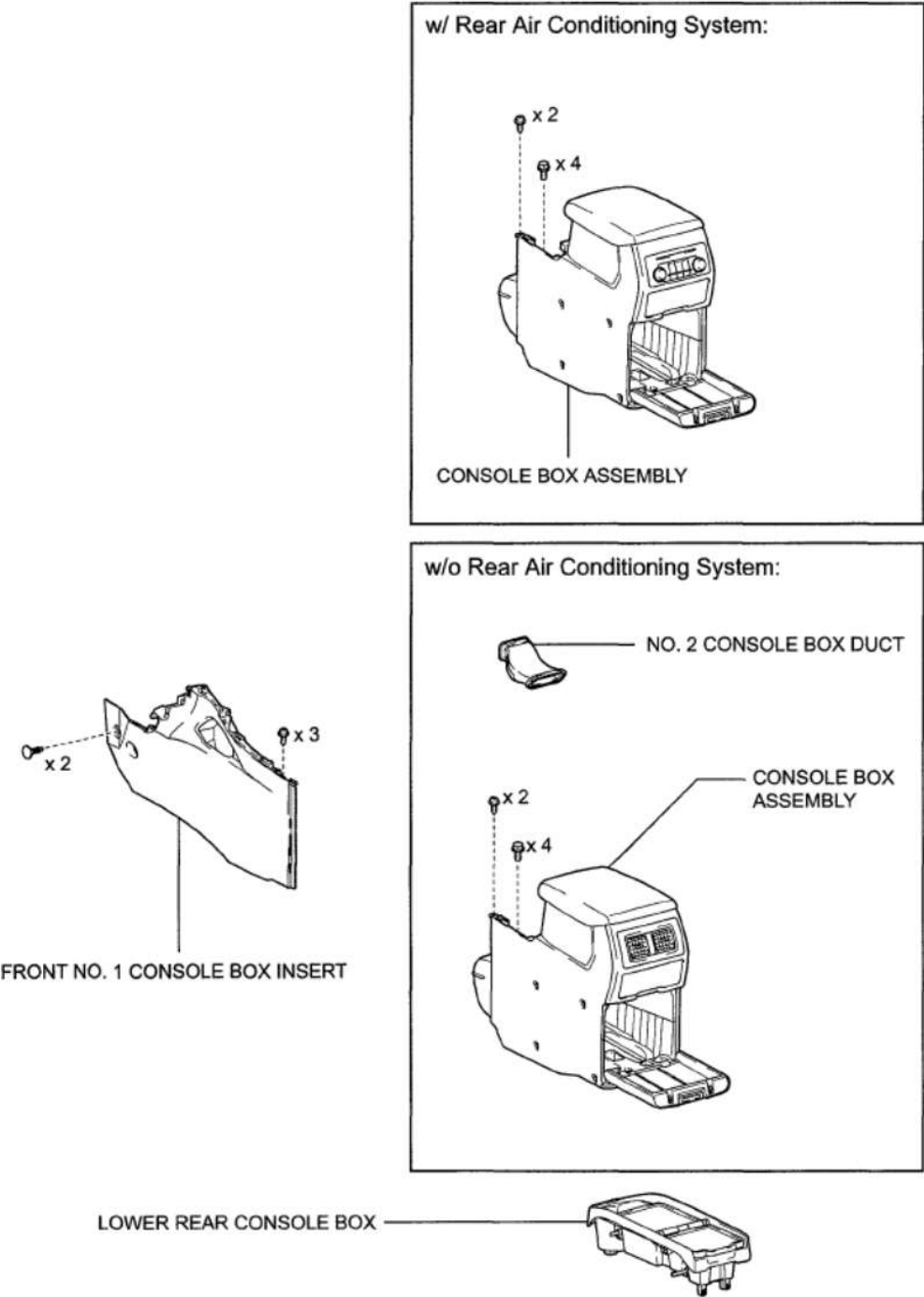
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Fig. 9: Identifying Parking Brake Pedal Components With Torque Specification (6 Of 12)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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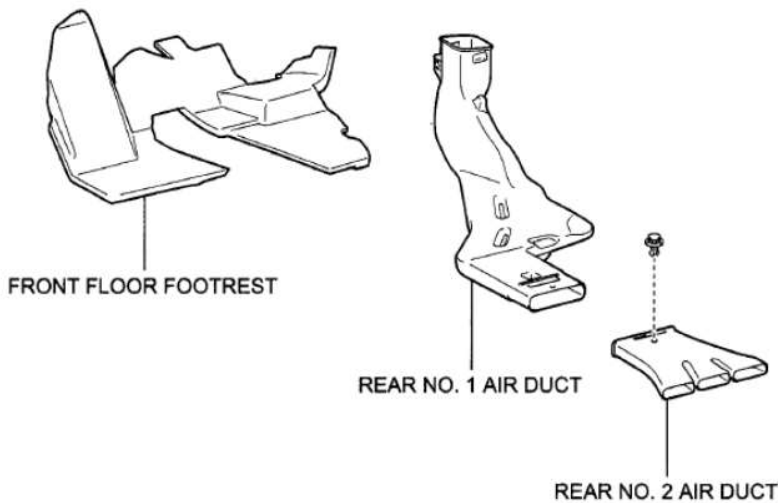
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Fig. 10: Identifying Parking Brake Pedal Components With Torque Specification (7 Of 12)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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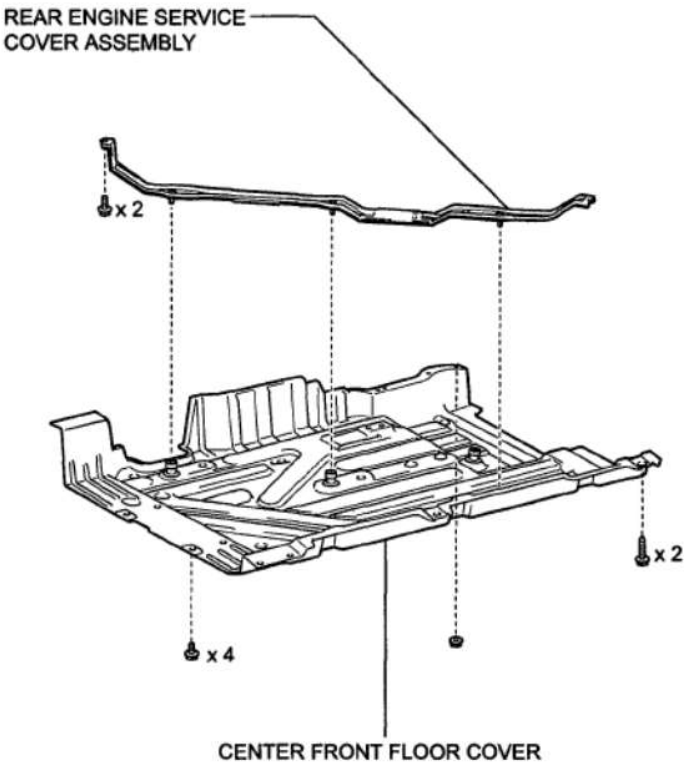
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Fig. 11: Identifying Parking Brake Pedal Components With Torque Specification (8 Of 12)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



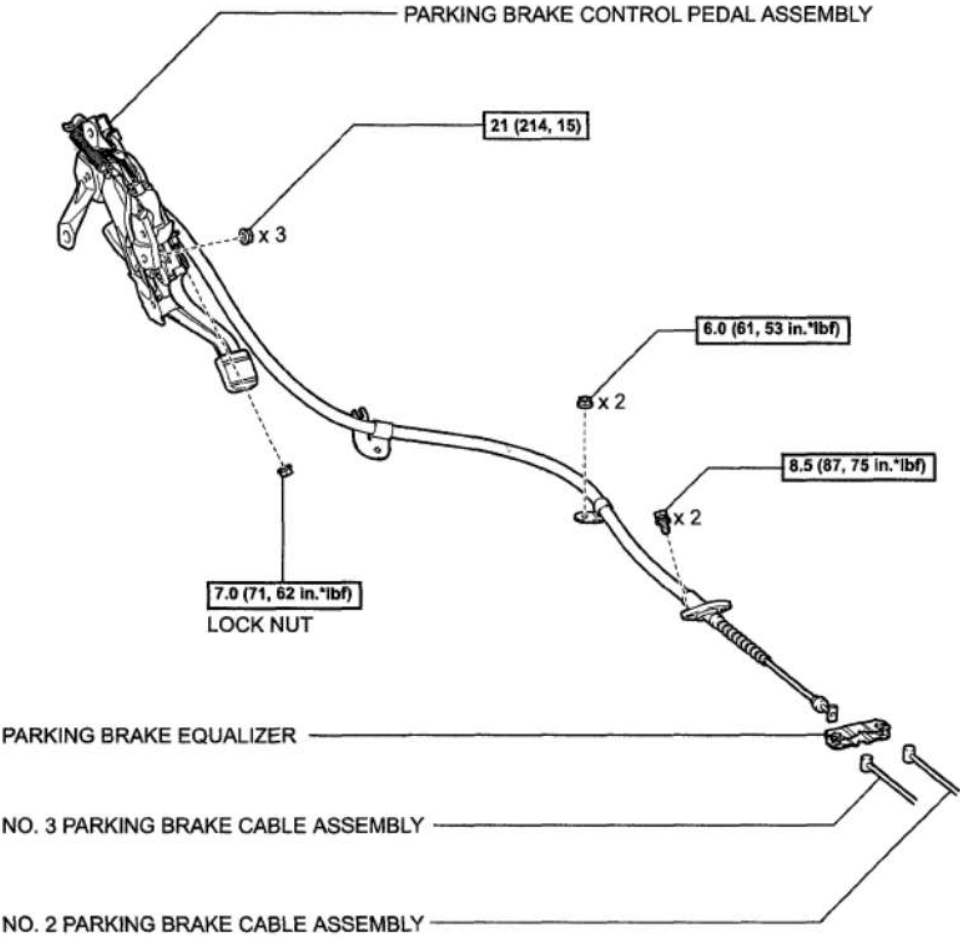
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Fig. 12: Identifying Parking Brake Pedal Components With Torque Specification (9 Of 12)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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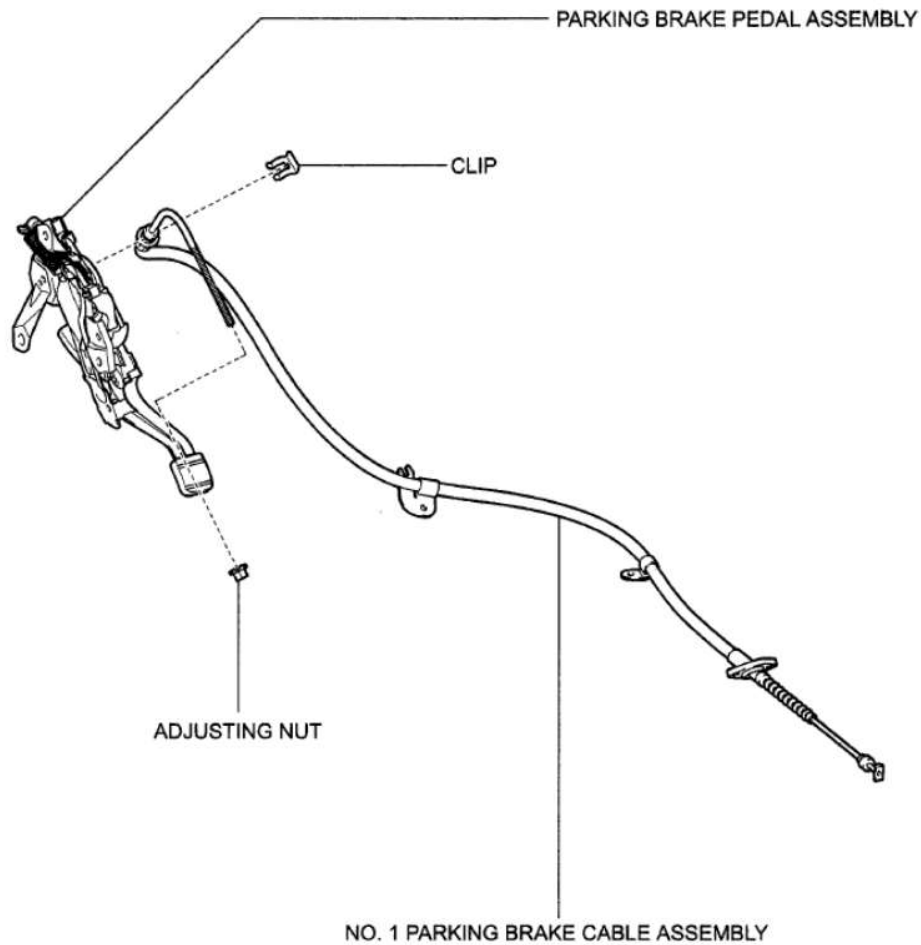
[N*m (kgf*cm, ft.*lbf)]: Specified torque

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Fig. 13: Identifying Parking Brake Pedal Components With Torque Specification (10 Of 12)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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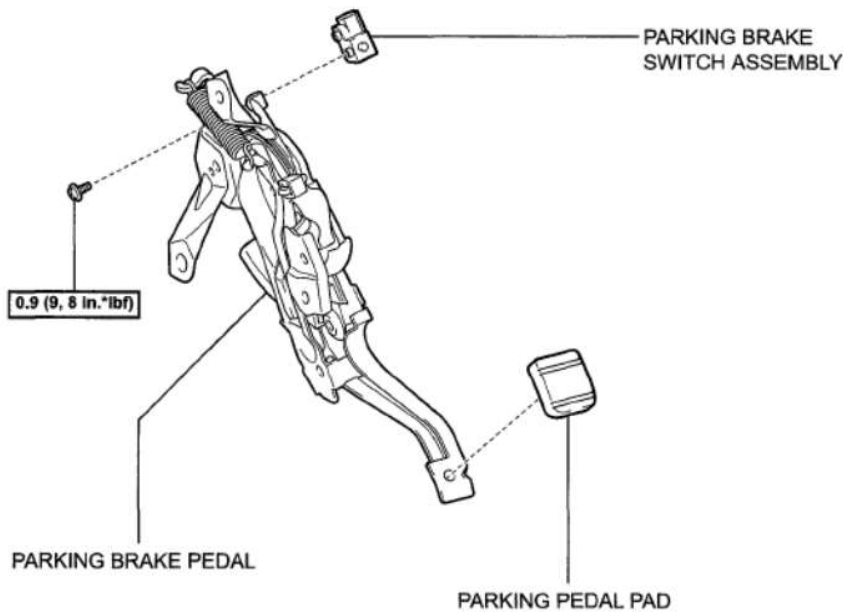
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Fig. 14: Identifying Parking Brake Pedal Components With Torque Specification (11 Of 12)
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[N*m (kgf*cm, ft.*lbf)]: Specified torque

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Fig. 15: Identifying Parking Brake Pedal Components With Torque Specification (12 Of 12)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

CAUTION: Some of these service operations affect the SRS airbag system. Read the precautionary notices concerning the SRS airbag system before servicing the parking brake pedal (see [AIRBAG SYSTEM](#)).

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL (for Manual Seat)

CAUTION: Wait for 90 seconds after disconnecting the cable to prevent the airbag working.

NOTE: When disconnecting the cable, some systems need to be initialized after the cable is reconnected (See [INITIALIZATION](#)).

2. REMOVE FRONT SEAT HEADREST ASSEMBLY LH (for Manual Seat) (See [REMOVAL](#))
3. REMOVE FRONT OUTER SEAT TRACK COVER LH (for Manual Seat) (See [REMOVAL](#))
4. REMOVE FRONT INNER SEAT TRACK COVER LH (for Manual Seat) (See [REMOVAL](#))
5. REMOVE REAR SEAT TRACK COVER LH (for Manual Seat) (See [REMOVAL](#))
6. REMOVE FRONT SEAT ASSEMBLY LH (for Manual Seat) (See [REMOVAL](#))
7. REMOVE FRONT SEAT HEADREST ASSEMBLY LH (for Power Seat) (See [REMOVAL](#))

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8. REMOVE FRONT OUTER SEAT TRACK COVER LH (for Power Seat) (See REMOVAL)
9. REMOVE FRONT INNER SEAT TRACK COVER LH (for Power Seat) (See REMOVAL)
10. REMOVE REAR OUTER SEAT TRACK COVER LH (for Power Seat) (See REMOVAL)
11. REMOVE REAR INNER SEAT TRACK COVER LH (for Power Seat) (See REMOVAL)
12. REMOVE FRONT SEAT ASSEMBLY LH (for Power Seat) (See REMOVAL)
13. REMOVE FRONT DOOR SCUFF PLATE LH (See REMOVAL)
14. REMOVE COWL SIDE TRIM SUB-ASSEMBLY LH (See REMOVAL)
15. REMOVE LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Manual Air Conditioning System) (See REMOVAL)
16. REMOVE LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Automatic Air Conditioning System) (See REMOVAL)
17. REMOVE DRIVER SIDE KNEE AIRBAG ASSEMBLY (See REMOVAL)
18. REMOVE REAR DOOR SCUFF PLATE LH (See REMOVAL)
19. REMOVE LOWER CENTER PILLAR GARNISH LH (See REMOVAL)
20. REMOVE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (See REMOVAL)
21. REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System) (See REMOVAL)
22. REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System) (See REMOVAL)
23. REMOVE UPPER CONSOLE PANEL SUB-ASSEMBLY (See REMOVAL)
24. REMOVE NO. 2 CONSOLE BOX DUCT (w/o Rear Air Conditioning System) (See REMOVAL)
25. REMOVE LOWER REAR CONSOLE BOX (See REMOVAL)
26. REMOVE CONSOLE BOX ASSEMBLY (w/o Rear Air Conditioning System) (See REMOVAL)
27. REMOVE CONSOLE BOX ASSEMBLY (w/ Rear Air Conditioning System) (See DISASSEMBLY)
28. REMOVE FRONT NO. 1 CONSOLE BOX INSERT (See REMOVAL)
29. REMOVE REAR NO. 2 AIR DUCT
 - a. Turn back the front floor carpet assembly.
 - b. Remove the clip and the rear No. 2 air duct.

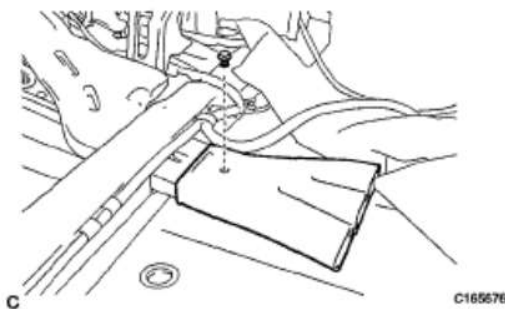


Fig. 16: Identifying Rear No. 2 Air Duct Clip

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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- a. Disengage the wire harness clamp.
- b. Remove the rear No. 1 air duct.

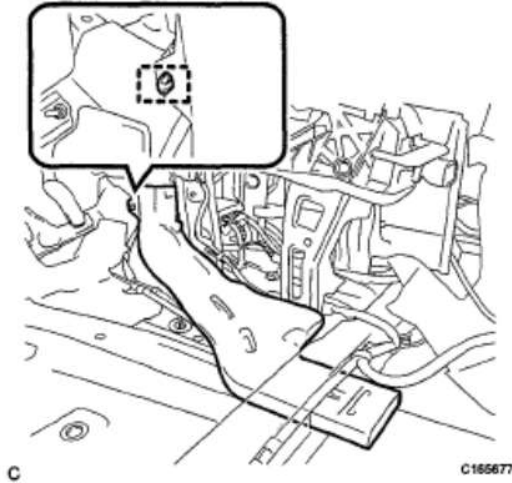


Fig. 17: Identifying Rear No. 1 Air Duct Clip With Wire Harness Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

31. REMOVE FRONT FLOOR FOOTREST

- a. Disengage the 2 clips to remove the front floor footrest.

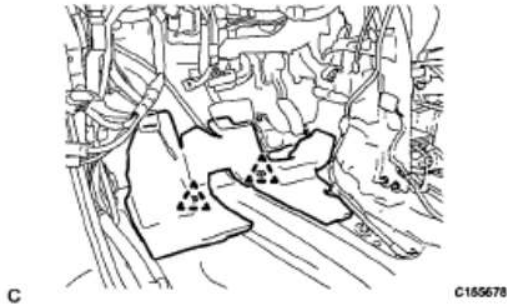


Fig. 18: Identifying Front Floor Footrest Clips
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

32. LOOSEN ADJUSTING NUT

- a. Remove the lock nut and loosen the adjusting nut.

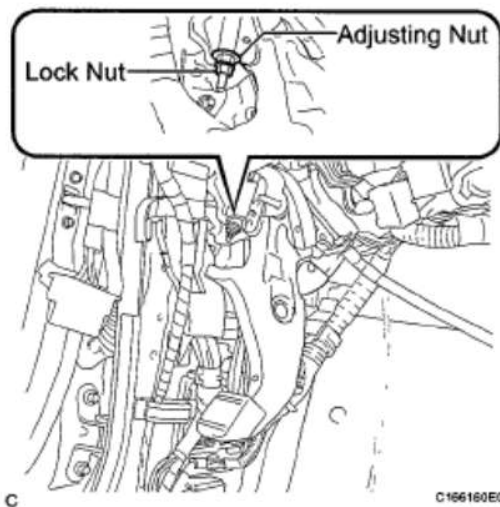
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Fig. 19: Identifying Lock Nut And Adjusting Nut
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

33. REMOVE CENTER FRONT FLOOR COVER

- a. Remove the 4 bolts, 2 screws, and the nut.

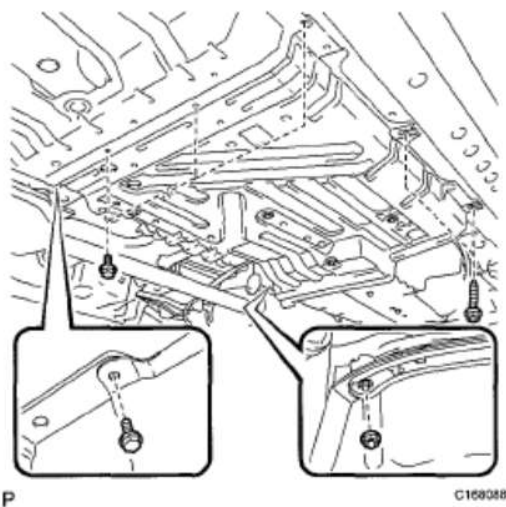


Fig. 20: Identifying Center Front Floor Cover Bolts, Screws And Nut
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Disengage the 4 clips and remove the center front floor cover.

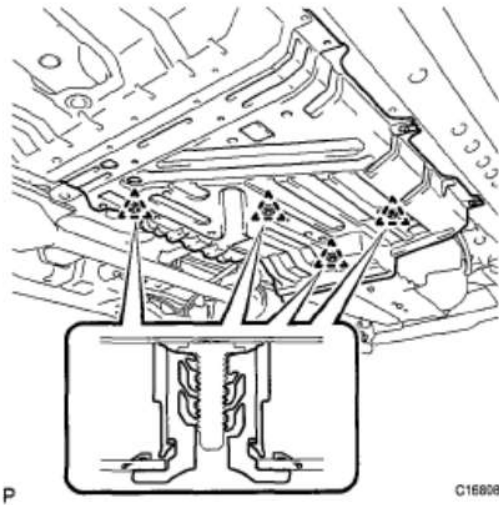
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Fig. 21: Identifying Center Front Floor Cover Clips
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

34. REMOVE REAR ENGINE SERVICE COVER ASSEMBLY

- a. Remove the 2 bolts and the rear engine service cover assembly.

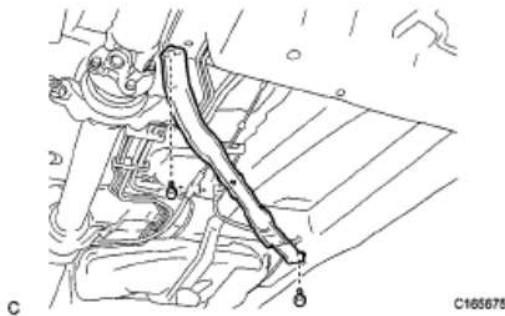


Fig. 22: Identifying Rear Engine Service Cover Assembly Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

35. SEPARATE NO. 3 PARKING BRAKE CABLE ASSEMBLY

- a. Separate the No. 3 parking brake cable assembly from the parking brake equalizer.

36. SEPARATE NO. 2 PARKING BRAKE CABLE ASSEMBLY**HINT:**

Perform the same procedure as for the No. 3 parking brake cable assembly.

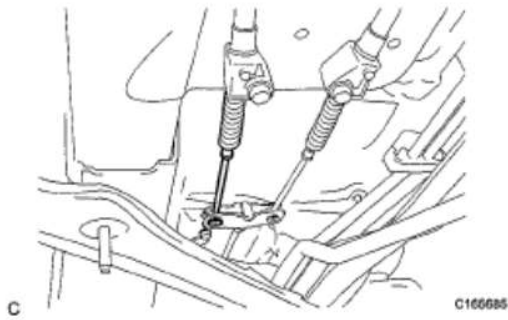
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Fig. 23: Identifying No. 2 Parking Brake Cable Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

37. REMOVE PARKING BRAKE EQUALIZER

- a. Slide the rubber boot as shown in the illustration.

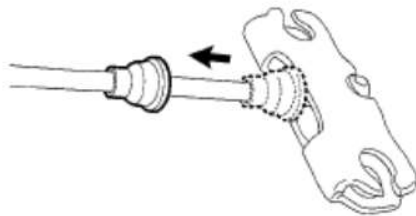


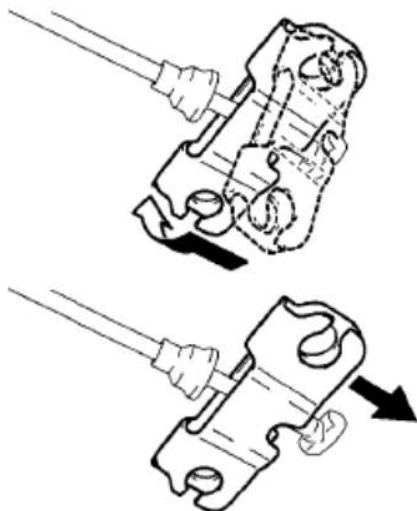
Fig. 24: Sliding Rubber Boot
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Remove the parking brake equalizer from the No. 1 parking brake cable assembly as shown in the illustration.

38. REMOVE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (See REMOVAL)

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Fig. 25: Removing Parking Brake Equalizer From No. 1 Parking Brake Cable Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

39. REMOVE PARKING BRAKE CONTROL PEDAL ASSEMBLY

- Remove the 2 bolts and 2 nuts, and separate the No. 1 parking brake cable assembly.
- Remove the clamp.



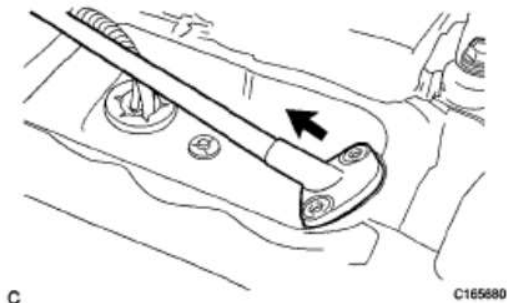
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Fig. 26: Identifying No. 1 Parking Brake Cable Assembly With Bolts, Clamp And Nuts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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- c. Pull out the No. 1 parking brake cable assembly toward the cabin.



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Fig. 27: Pulling Out No. 1 Parking Brake Cable Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- d. Disconnect the parking brake switch connector.

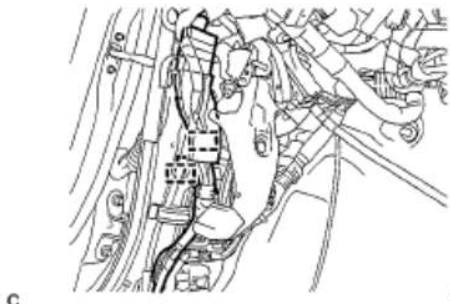


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Fig. 28: Locating Parking Brake Switch Connector
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- e. Disengage the 2 clamps to separate the wire harness clamp.



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Fig. 29: Identifying Wire Harness Clamp

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Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- f. Remove the 3 nuts and the parking brake control pedal assembly.

DISASSEMBLY

1. **REMOVE NO. 1 PARKING BRAKE CABLE ASSEMBLY** (See **REMOVAL**)



Fig. 30: Identifying Parking Brake Control Pedal Assembly Nuts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. **REMOVE PARKING BRAKE SWITCH ASSEMBLY**

- a. Remove the screw and the parking brake switch assembly from the parking brake pedal.



Fig. 31: Identifying Parking Brake Switch Assembly Screw
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. **REMOVE PARKING PEDAL PAD**

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- a. Remove the parking pedal pad from the parking brake pedal.

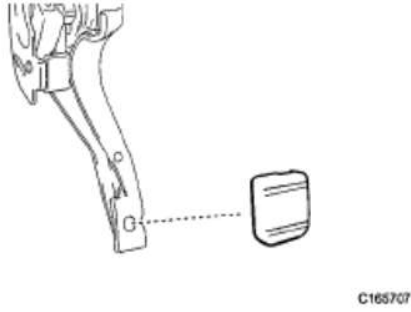


Fig. 32: Identifying Parking Pedal Pad
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REASSEMBLY**1. INSTALL PARKING PEDAL PAD**

- a. Install the parking pedal pad to the parking brake pedal.

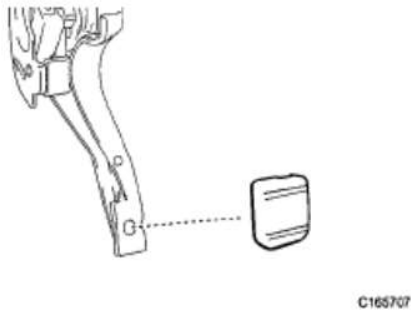


Fig. 33: Identifying Parking Pedal Pad
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. INSTALL PARKING BRAKE SWITCH ASSEMBLY

- a. Install the parking brake switch assembly to the parking brake pedal with the screw.

Torque: 0.9 N*m (9 kgf*cm, 8 in.*lbf)

3. INSTALL NO. 1 PARKING BRAKE CABLE ASSEMBLY (See INSTALLATION)

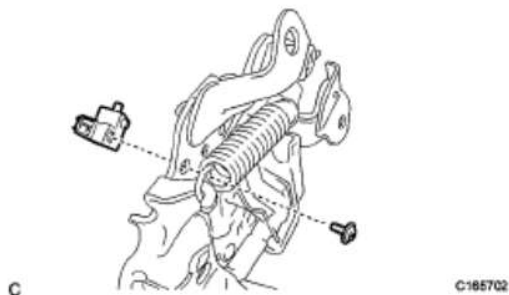
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Fig. 34: Identifying Parking Brake Switch Assembly Screw
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION

1. **INSTALL PARKING BRAKE CONTROL PEDAL ASSEMBLY**
 - a. Install the parking brake control pedal assembly with the 3 nuts.

Torque: 21 N*m (214 kgf*cm, 15 ft.*lbf)



Fig. 35: Identifying Parking Brake Control Pedal Assembly Nuts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Connect the parking brake switch connector.

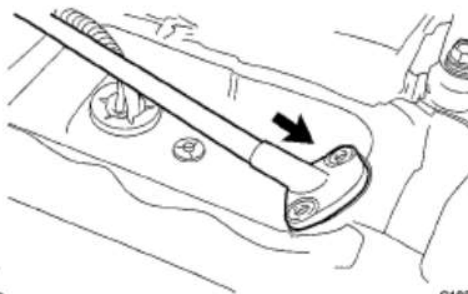
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Fig. 36: Locating Parking Brake Switch Connector
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Insert the No. 1 parking brake cable assembly toward the outside of the cabin.



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Fig. 37: Inserting No. 1 Parking Brake Cable Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- d. Install the No. 1 parking brake cable assembly with the 2 bolts and 2 nuts.

Torque: Bolt**8.5 N*m (87 kgf*cm, 75 in.*lbf)****Nut****6.0 N*m (61 kgf*cm, 53 in.*lbf)**

- e. Install the clamp.

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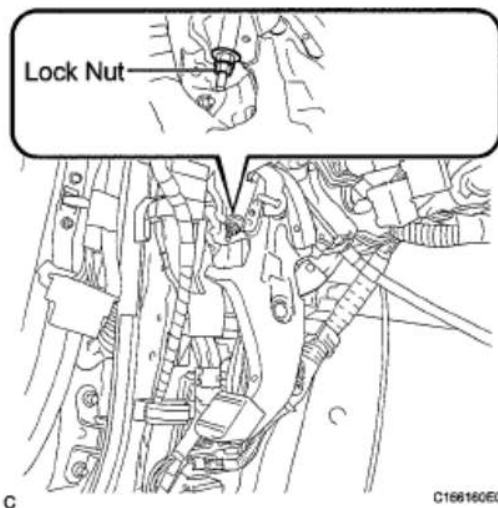
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Fig. 38: Identifying No. 1 Parking Brake Cable Assembly With Bolts, Clamp And Nuts
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- f. Temporarily install the lock nut.

HINT:

After adjusting parking brake pedal travel, tighten the lock nut.



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Fig. 39: Identifying Lock Nut
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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- a. Install the parking brake equalizer to the No. 1 parking brake cable assembly as shown in the illustration.

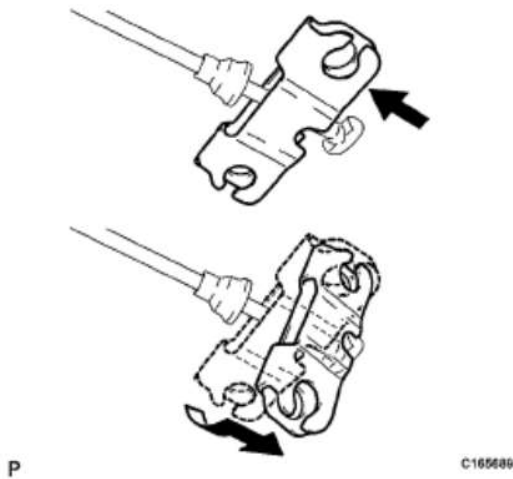


Fig. 40: Installing Parking Brake Equalizer To No. 1 Parking Brake Cable Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Slide the rubber boot back as shown in the illustration.

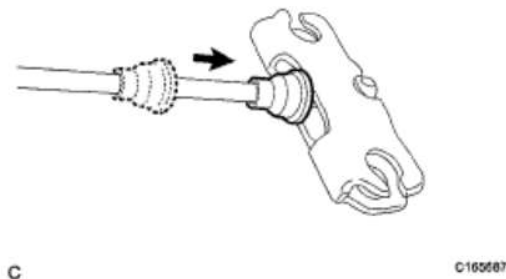


Fig. 41: Sliding Rubber Boot Back
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. CONNECT NO. 3 PARKING BRAKE CABLE ASSEMBLY

- a. Connect the No. 3 parking brake cable assembly to the parking brake equalizer.

4. CONNECT NO. 2 PARKING BRAKE CABLE ASSEMBLY**HINT:**

Perform the same procedure as for the No. 3 parking brake cable assembly.

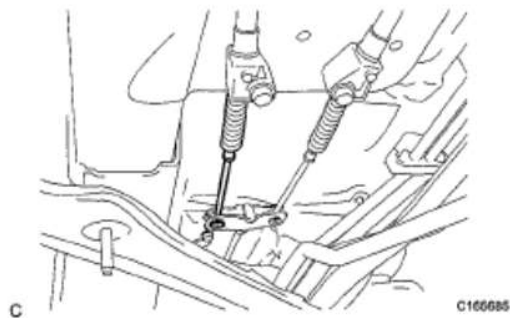
2009 Toyota Highlander Limited**2009 BRAKES Parking Brake - Highlander**

Fig. 42: Identifying No. 3 Parking Brake Cable Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

5. INSTALL REAR ENGINE SERVICE COVER ASSEMBLY

- a. Install the rear engine service cover assembly with the 2 bolts.

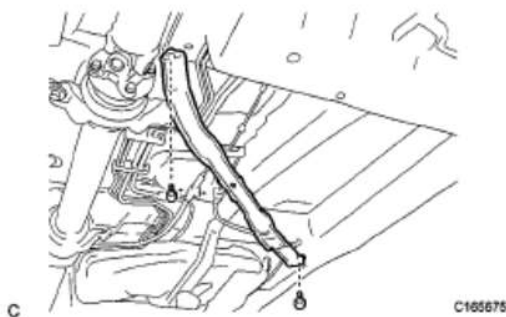
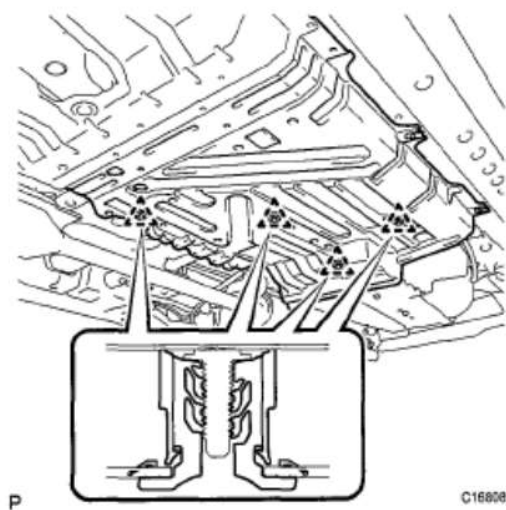


Fig. 43: Identifying Rear Engine Service Cover Assembly Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

6. INSTALL CENTER FRONT FLOOR COVER

- a. Engage the 4 clips to install the center front floor cover.



2009 Toyota Highlander Limited**2009 BRAKES Parking Brake - Highlander**

Fig. 44: Identifying Center Front Floor Cover Clips
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Install the 4 bolts, 2 screws, and the nut.

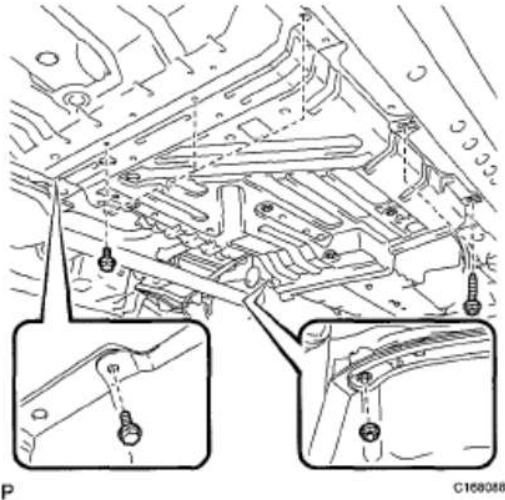


Fig. 45: Identifying Center Front Floor Cover Bolts, Screws And Nut
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

7. INSTALL FRONT FLOOR FOOTREST

- a. Engage the 2 clips to install the front floor footrest.

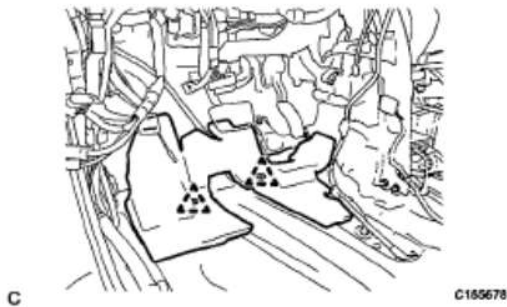


Fig. 46: Identifying Front Floor Footrest Clips
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

8. INSTALL REAR NO. 1 AIR DUCT

- a. Install the rear No. 1 air duct.
b. Engage the wire harness clamp.

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2009 BRAKES Parking Brake - Highlander

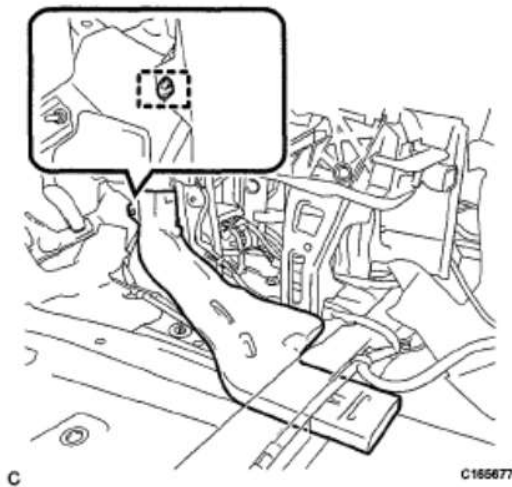


Fig. 47: Identifying Rear No. 1 Air Duct Clip With Wire Harness Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

9. **INSTALL REAR NO. 2 AIR DUCT**
 - a. Install the rear No. 2 air duct with the clip.
 - b. Install the floor carpet.
10. **INSTALL FRONT NO. 1 CONSOLE BOX INSERT** (See INSTALLATION)
11. **INSTALL CONSOLE BOX ASSEMBLY (w/ Rear Air Conditioning System)** (See INSTALLATION)

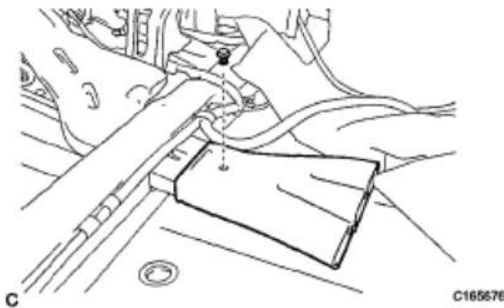


Fig. 48: Identifying Rear No. 2 Air Duct Clip
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

12. **INSTALL CONSOLE BOX ASSEMBLY (w/o Rear Air Conditioning System)** (See INSTALLATION)
13. **INSTALL LOWER REAR CONSOLE BOX** (See INSTALLATION)
14. **INSTALL NO. 2 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See INSTALLATION)
15. **INSTALL UPPER CONSOLE PANEL SUB-ASSEMBLY** (See INSTALLATION)
16. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System)** (See INSTALLATION)

2009 Toyota Highlander Limited**2009 BRAKES Parking Brake - Highlander**

17. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System)** (See **INSTALLATION**)
18. **INSTALL INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY** (See **INSTALLATION**)
19. **INSTALL LOWER CENTER PILLAR GARNISH LH** (See **INSTALLATION**)
20. **INSTALL REAR DOOR SCUFF PLATE LH** (See **INSTALLATION**)
21. **INSTALL LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Manual Air Conditioning System)** (See **INSTALLATION**)
22. **INSTALL LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Automatic Air Conditioning System)** (See **INSTALLATION**)
23. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY LH** (See **INSTALLATION**)
24. **INSTALL FRONT DOOR SCUFF PLATE LH** (See **INSTALLATION**)
25. **INSTALL FRONT SEAT ASSEMBLY LH (for Manual Seat)** (See **INSTALLATION**)
26. **INSPECT FRONT SEAT SLIDE ADJUSTER LOCK (for Manual Seat)** (See **INSTALLATION**)
27. **INSTALL REAR SEAT TRACK COVER LH (for Manual Seat)** (See **INSTALLATION**)
28. **INSTALL FRONT INNER SEAT TRACK COVER LH (for Manual Seat)** (See **INSTALLATION**)
29. **INSTALL FRONT OUTER SEAT TRACK COVER LH (for Manual Seat)** (See **INSTALLATION**)
30. **INSTALL FRONT SEAT HEADREST ASSEMBLY LH (for Manual Seat)** (See **INSTALLATION**)
31. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL (for Manual Seat)**

NOTE: When disconnecting the cable, some systems need to be initialized after the cable is reconnected (See **INITIALIZATION**).

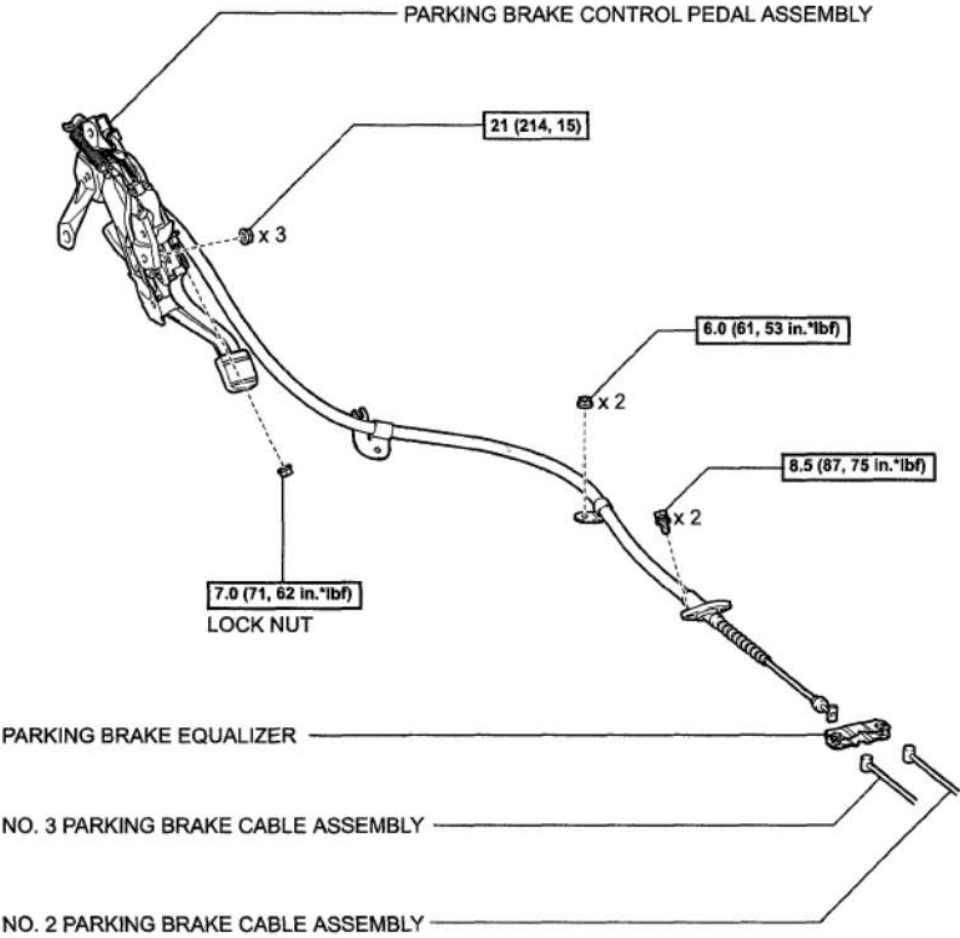
32. **INSTALL FRONT SEAT ASSEMBLY LH (for Power Seat)** (See **INSTALLATION**)
33. **INSTALL REAR INNER SEAT TRACK COVER LH (for Power Seat)** (See **INSTALLATION**)
34. **INSTALL REAR OUTER SEAT TRACK COVER LH (for Power Seat)** (See **INSTALLATION**)
35. **INSTALL FRONT INNER SEAT TRACK COVER LH (for Power Seat)** (See **INSTALLATION**)
36. **INSTALL FRONT OUTER SEAT TRACK COVER LH (for Power Seat)** (See **INSTALLATION**)
37. **INSTALL FRONT SEAT HEADREST ASSEMBLY LH (for Power Seat)** (See **INSTALLATION**)
38. **INSPECT FRONT SEAT ASSEMBLY LH (for Power Seat)** (See **INSTALLATION**)
39. **ADJUST PARKING BRAKE SHOE CLEARANCE AND PARKING BRAKE PEDAL TRAVEL** (See **ADJUSTMENT**)
40. **INSPECT BRAKE WARNING LIGHT** (See **ADJUSTMENT**)

PARKING BRAKE CABLE

COMPONENTS

2009 Toyota Highlander Limited

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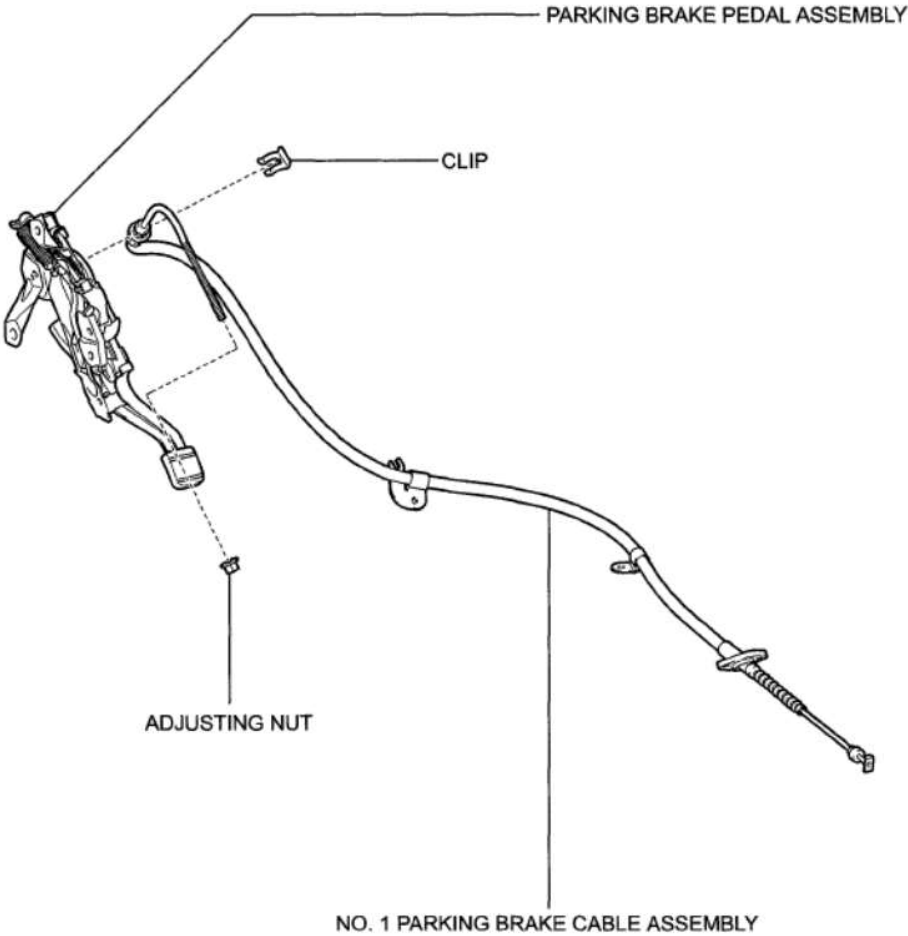
[N*m (kgf*cm, ft.*lbf)]: Specified torque

P C166993E02

Fig. 49: Identifying Parking Brake Cable Components With Torque Specification (1 Of 8)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2009 Toyota Highlander Limited

2009 BRAKES Parking Brake - Highlander

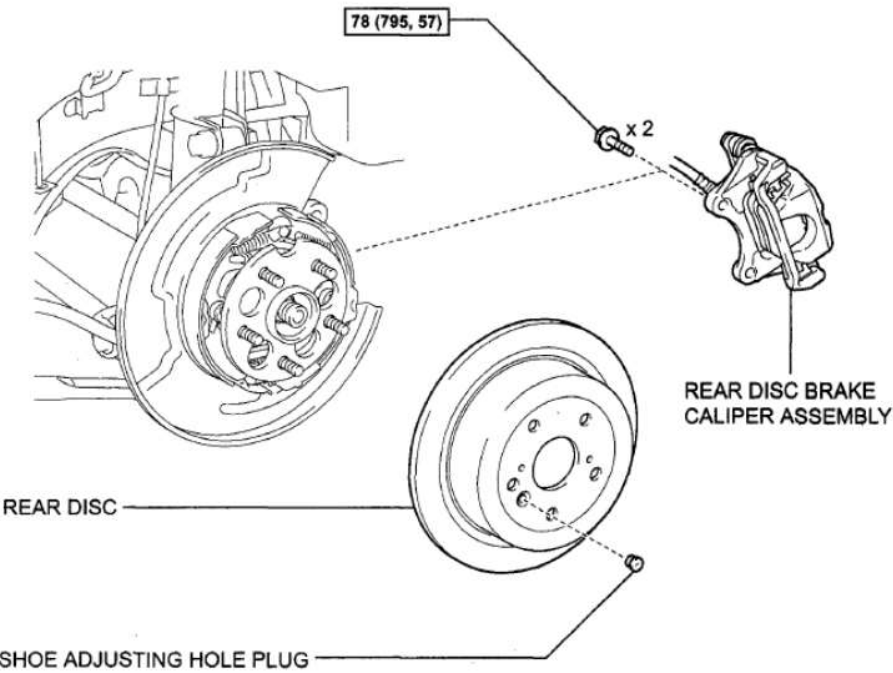


P C166584E02

Fig. 50: Identifying Parking Brake Cable Components With Torque Specification (2 Of 8)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2009 Toyota Highlander Limited

2009 BRAKES Parking Brake - Highlander



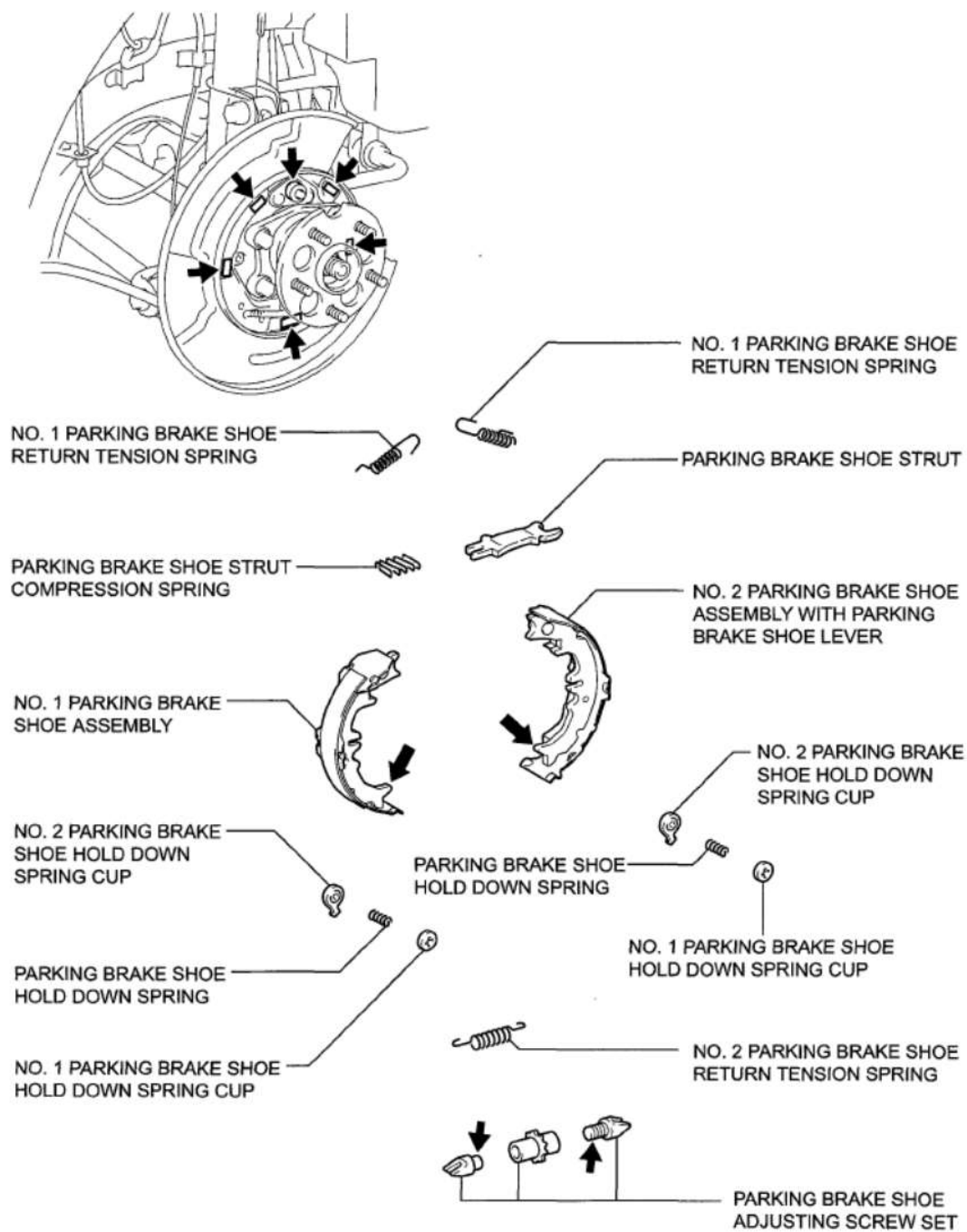
78 (795, 57) N·m (kgf·cm, ft.·lbf): Specified torque

P C166570E01

Fig. 51: Identifying Parking Brake Cable Components With Torque Specification (3 Of 8)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2009 Toyota Highlander Limited

2009 BRAKES Parking Brake - Highlander



P

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Fig. 52: Identifying Parking Brake Cable Components With Torque Specification (4 Of 8)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2009 Toyota Highlander Limited

2009 BRAKES Parking Brake - Highlander

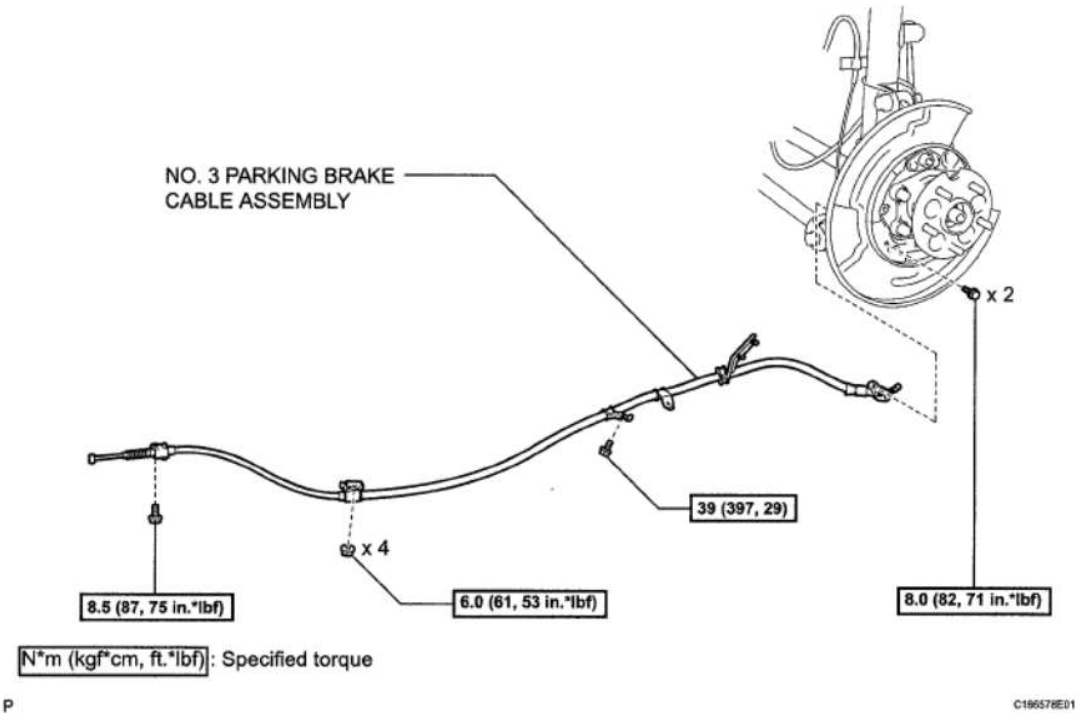


Fig. 53: Identifying Parking Brake Cable Components With Torque Specification (5 Of 8)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

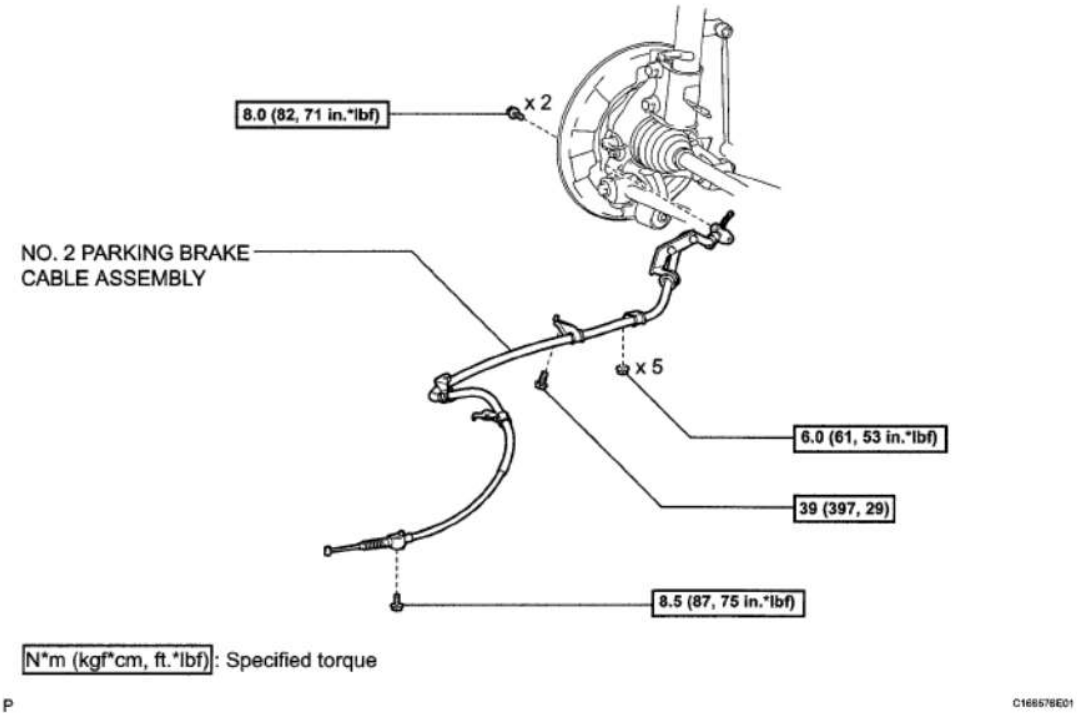
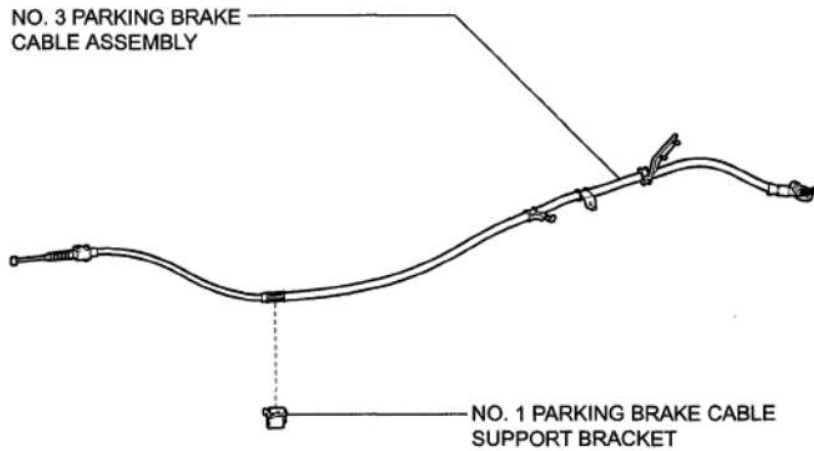


Fig. 54: Identifying Parking Brake Cable Components With Torque Specification (6 Of 8)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2009 Toyota Highlander Limited

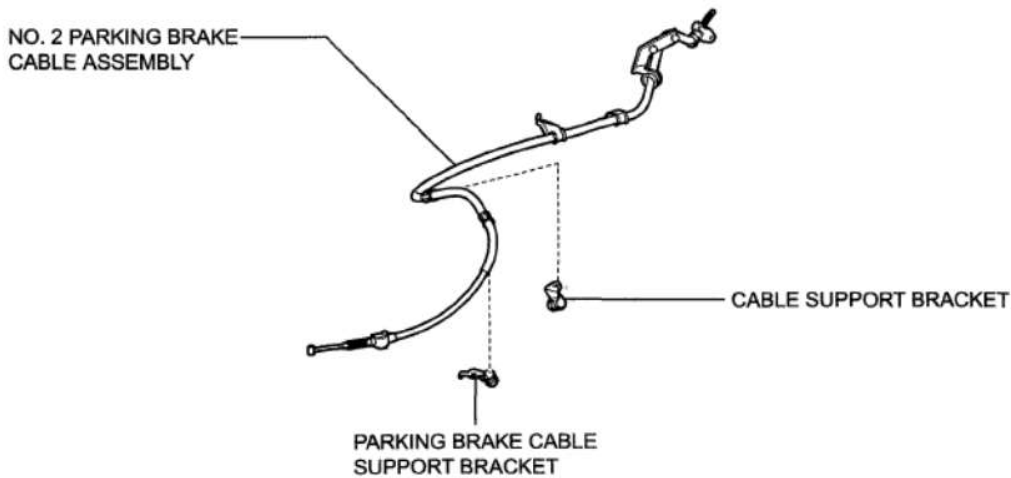
2009 BRAKES Parking Brake - Highlander



P

C100579E01

Fig. 55: Identifying Parking Brake Cable Components With Torque Specification (7 Of 8)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



P

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Fig. 56: Identifying Parking Brake Cable Components With Torque Specification (8 Of 8)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

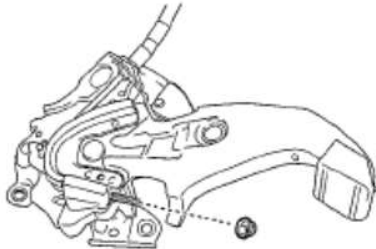
1. REMOVE PARKING BRAKE CONTROL PEDAL ASSEMBLY

HINT:

Refer to the instructions for REMOVAL of the parking brake pedal (See **REMOVAL**).

2009 Toyota Highlander Limited**2009 BRAKES Parking Brake - Highlander****2. REMOVE NO. 1 PARKING BRAKE CABLE ASSEMBLY**

- a. Remove the adjusting nut.

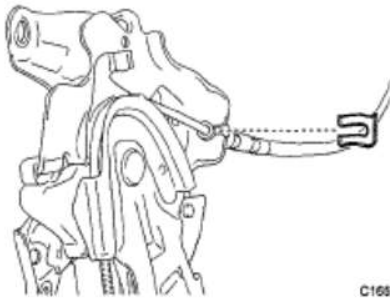


c

C166703

Fig. 57: Identifying Adjusting Nut Of No. 1 Parking Brake Cable Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Remove the clip.

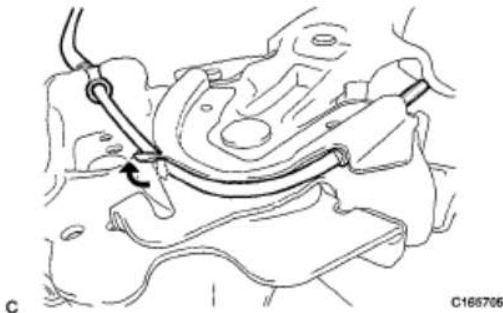


c

C166704

Fig. 58: Identifying No. 1 Parking Brake Cable Assembly Clip
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Pull up the parking brake pedal claw and remove the No. 1 parking brake cable assembly.

3. REMOVE REAR WHEEL**4. SEPARATE REAR DISC BRAKE CALIPER ASSEMBLY (for 2WD) (See REPLACEMENT)****5. SEPARATE REAR DISC BRAKE CALIPER ASSEMBLY (for 4WD) (See REPLACEMENT)**

c

C166706

2009 Toyota Highlander Limited

2009 BRAKES Parking Brake - Highlander

Fig. 59: Pulling Up Parking Brake Pedal Claw
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

6. REMOVE REAR DISC (See INSPECTION)
7. REMOVE NO. 1 PARKING BRAKE SHOE RETURN TENSION SPRING (See DISASSEMBLY)
8. SEPARATE NO. 1 PARKING BRAKE SHOE ASSEMBLY (See DISASSEMBLY)
9. REMOVE PARKING BRAKE SHOE STRUT (See DISASSEMBLY)
10. SEPARATE NO. 2 PARKING BRAKE SHOE ASSEMBLY (See DISASSEMBLY)
11. REMOVE PARKING BRAKE SHOE ADJUSTING SCREW SET (See DISASSEMBLY)
12. REMOVE NO. 1 PARKING BRAKE SHOE ASSEMBLY (See DISASSEMBLY)
13. REMOVE NO. 2 PARKING BRAKE SHOE RETURN TENSION SPRING (See DISASSEMBLY)
14. REMOVE NO. 2 PARKING BRAKE SHOE ASSEMBLY WITH PARKING BRAKE SHOE LEVER (See DISASSEMBLY)
15. REMOVE NO. 3 PARKING BRAKE CABLE ASSEMBLY
 - a. Remove the 2 bolts and separate the No. 3 parking brake cable assembly from the backing plate.
 - b. Remove the 2 bolts, 4 nuts, and the No. 3 parking brake cable assembly.

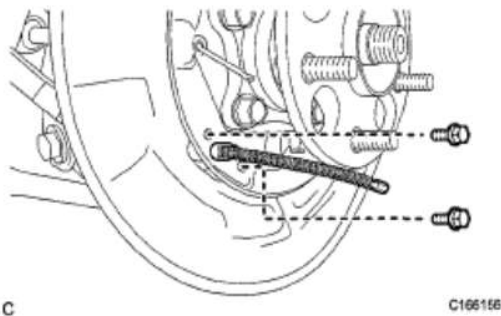


Fig. 60: Identifying No. 3 Parking Brake Cable Assembly With Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2009 Toyota Highlander Limited

2009 BRAKES Parking Brake - Highlander

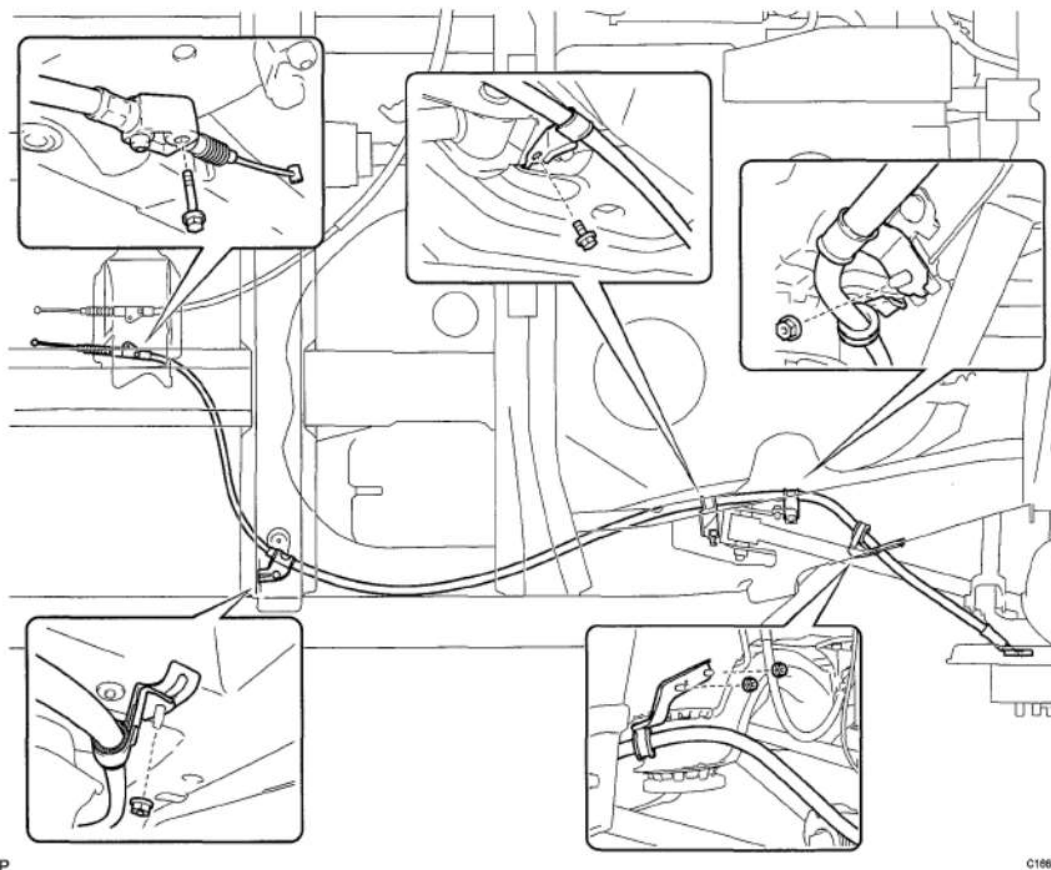


Fig. 61: Identifying No. 3 Parking Brake Cable Assembly With Bolts And Nuts
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

16. REMOVE NO. 1 PARKING BRAKE CABLE SUPPORT BRACKET

- a. Remove the No. 1 parking brake cable support bracket from the No. 3 parking brake cable assembly.

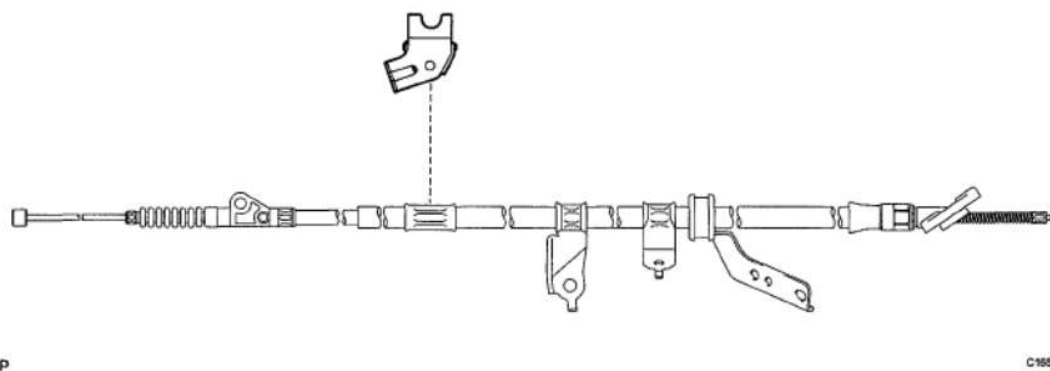


Fig. 62: Identifying No. 1 Parking Brake Cable Support Bracket
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2009 Toyota Highlander Limited

2009 BRAKES Parking Brake - Highlander

17. REMOVE NO. 2 PARKING BRAKE CABLE ASSEMBLY

- a. Remove the 2 bolts and separate the No. 2 parking brake cable assembly from the backing plate.

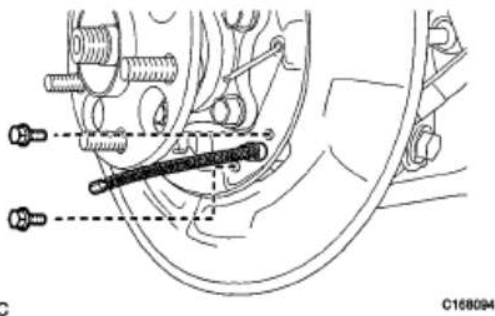
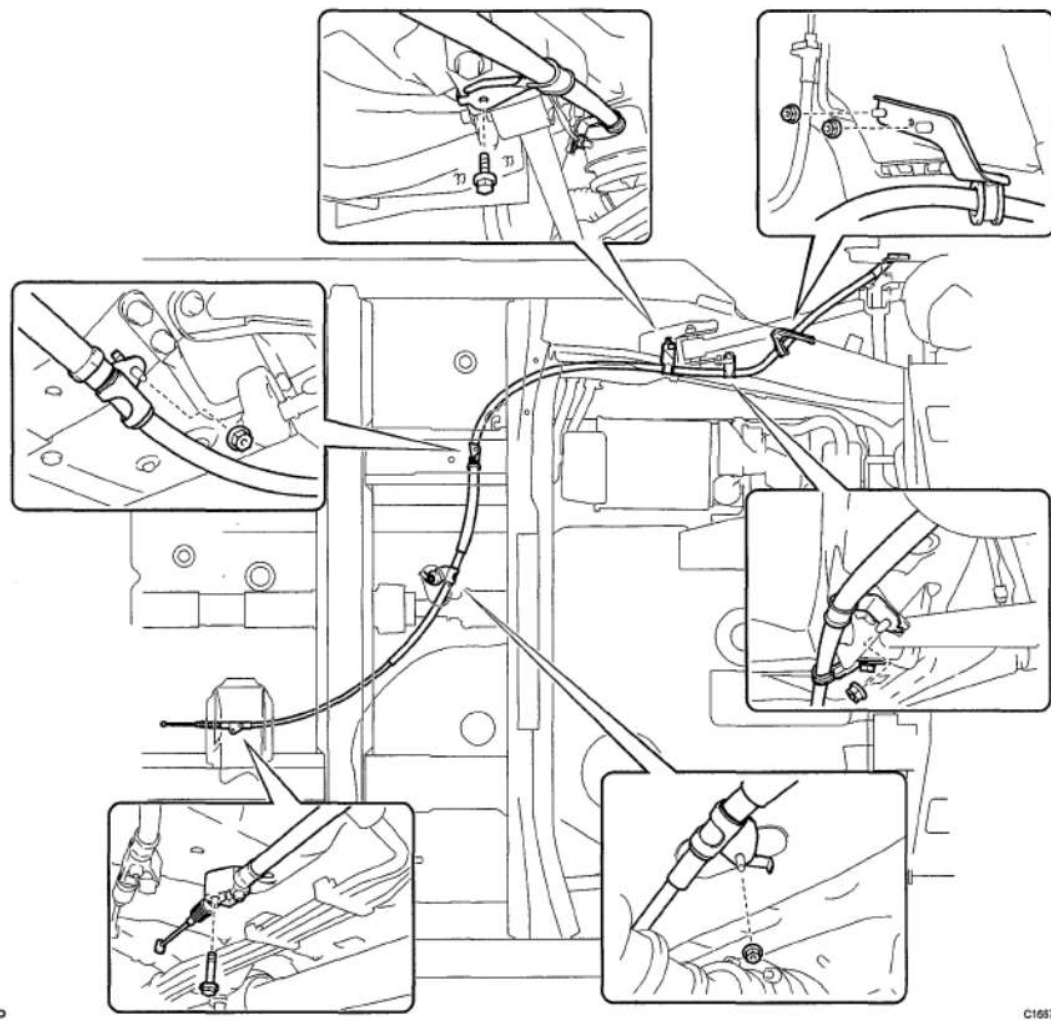


Fig. 63: Identifying No. 2 Parking Brake Cable Assembly With Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Remove the 2 bolts, 5 nuts, and the No. 2 parking brake cable assembly.

2009 Toyota Highlander Limited

2009 BRAKES Parking Brake - Highlander



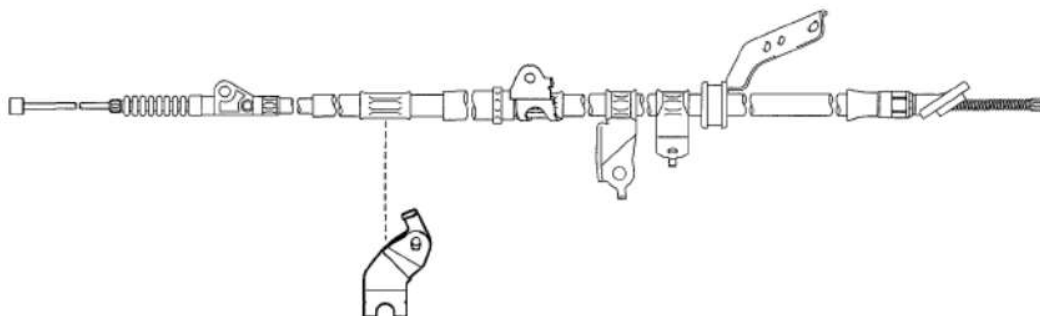
P

C165718

Fig. 64: Identifying No. 2 Parking Brake Cable Assembly With Bolts And Nuts
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

18. REMOVE PARKING BRAKE CABLE SUPPORT BRACKET

- Remove the parking brake cable support bracket from the No. 2 parking brake cable assembly.



P

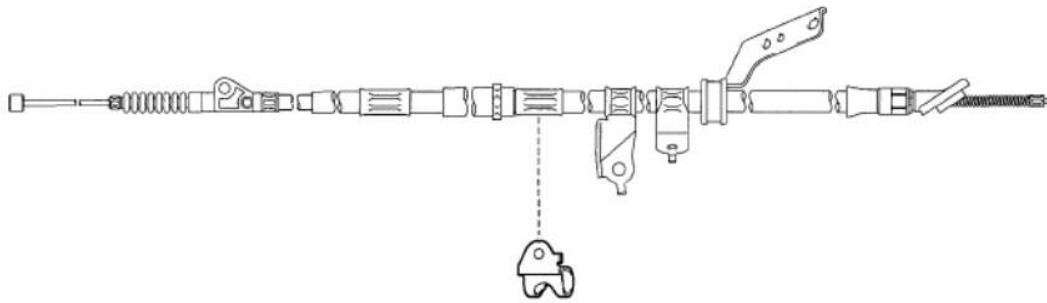
C165584

2009 Toyota Highlander Limited**2009 BRAKES Parking Brake - Highlander**

Fig. 65: Identifying Parking Brake Cable Support Bracket
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

19. REMOVE CABLE SUPPORT BRACKET

- a. Remove the cable support bracket from the No. 2 parking brake cable assembly.



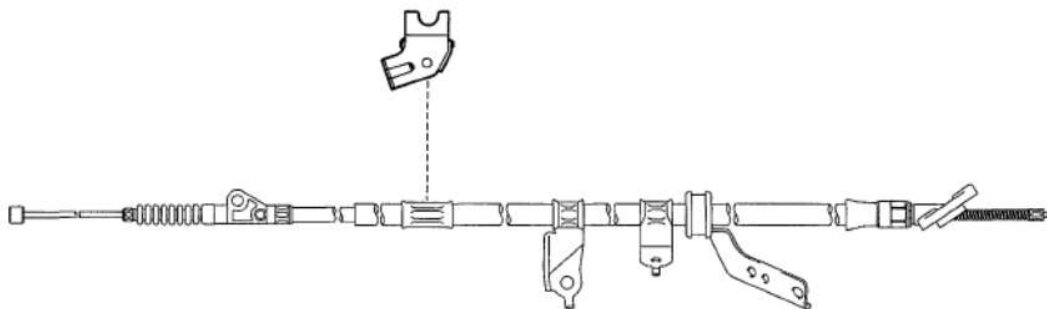
P

C166585

Fig. 66: Identifying Cable Support Bracket
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION**1. INSTALL NO. 1 PARKING BRAKE CABLE SUPPORT BRACKET**

- a. Install the No. 1 parking brake cable support bracket to the No. 3 parking brake cable assembly.



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Fig. 67: Identifying No. 1 Parking Brake Cable Support Bracket
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. INSTALL NO. 3 PARKING BRAKE CABLE ASSEMBLY

- a. Install the No. 3 parking brake cable assembly with the 2 bolts and 4 nuts.

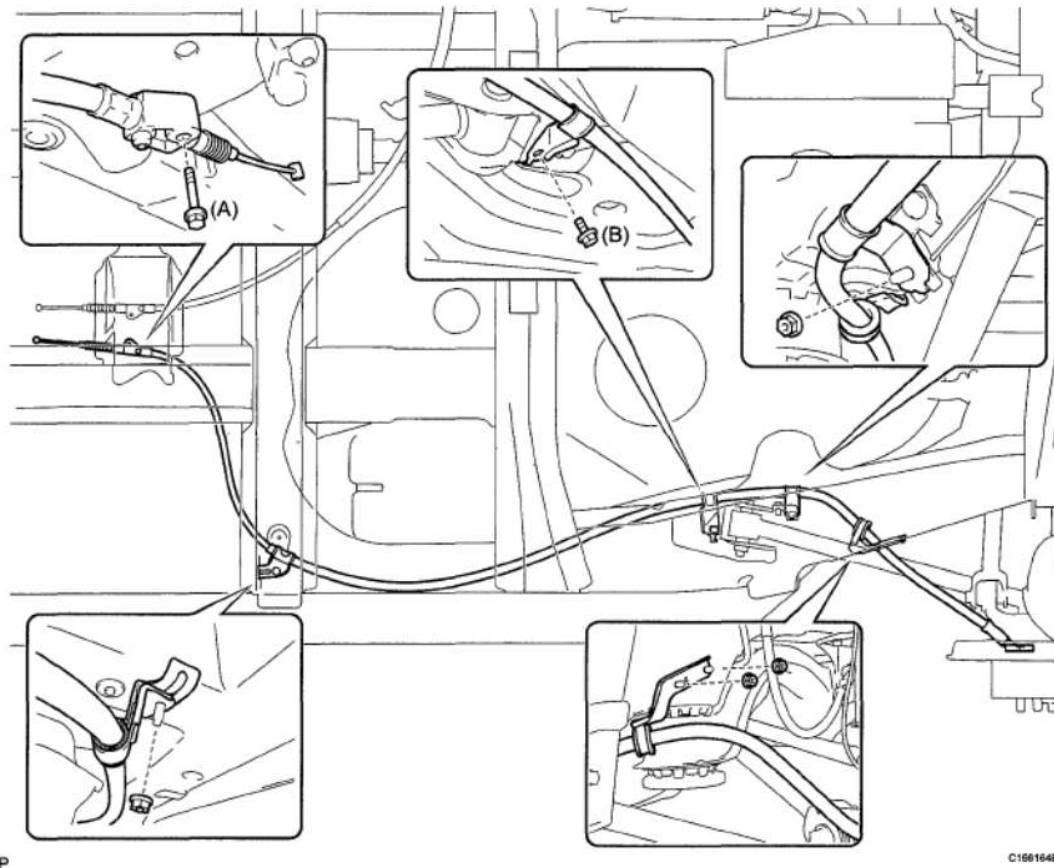
2009 Toyota Highlander Limited**2009 BRAKES Parking Brake - Highlander**

Fig. 68: Identifying No. 3 Parking Brake Cable Assembly With Bolts And Nuts
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Torque: Bolt (A)

8.5 N*m (87 kgf*cm, 75 in.*lbf)

Bolt (B)

39 N*m (397 kgf*cm, 29 ft.*lbf)

Nut

6.0 N*m (61 kgf*cm, 53 in.*lbf)

- b. Install the No. 3 parking brake cable assembly to the backing plate with the 2 bolts.

Torque: 8.0 N*m (82 kgf*cm, 71 in.*lbf)

2009 Toyota Highlander Limited

2009 BRAKES Parking Brake - Highlander

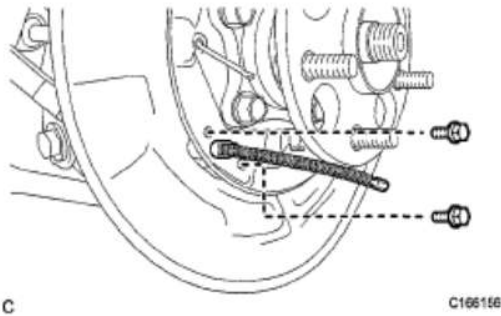


Fig. 69: Identifying No. 3 Parking Brake Cable Assembly With Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. INSTALL CABLE SUPPORT BRACKET

- a. Install the cable support bracket to the No. 2 parking brake cable assembly.

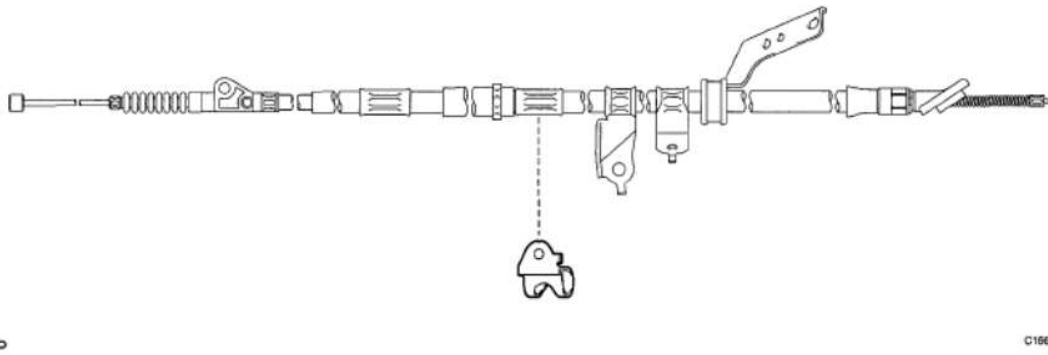


Fig. 70: Identifying Cable Support Bracket
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. INSTALL PARKING BRAKE CABLE SUPPORT BRACKET

- a. Install the parking brake cable support bracket to the No. 2 parking brake cable assembly.

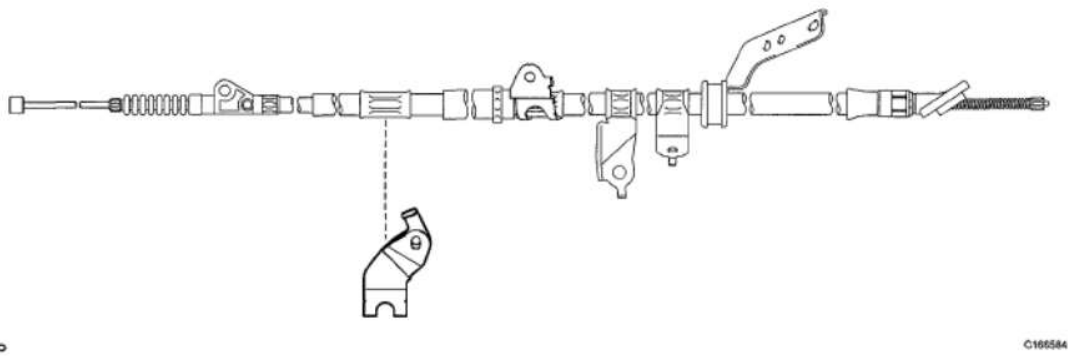


Fig. 71: Identifying Parking Brake Cable Support Bracket
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2009 Toyota Highlander Limited

2009 BRAKES Parking Brake - Highlander

5. INSTALL NO. 2 PARKING BRAKE CABLE ASSEMBLY

- a. Install the No. 2 parking brake cable assembly with the 2 bolts and 5 nuts.

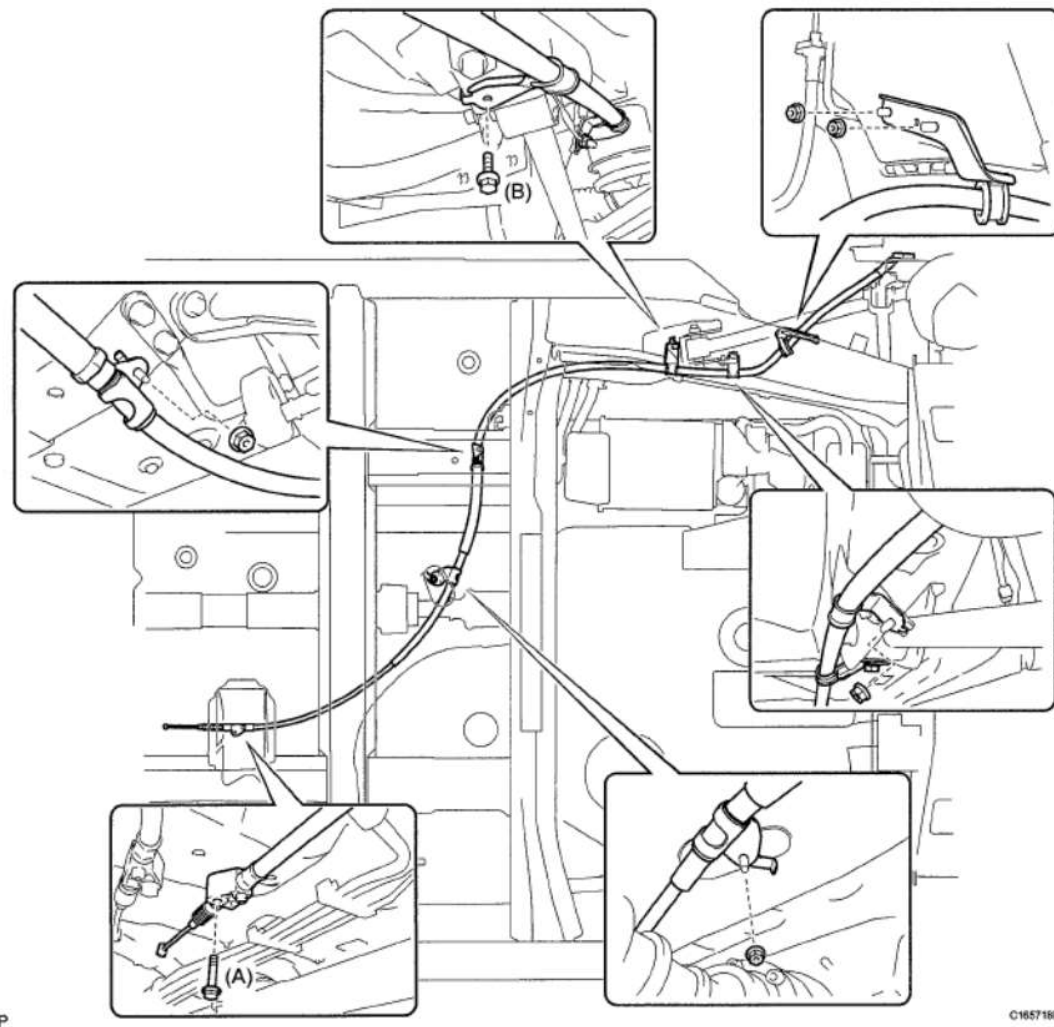


Fig. 72: Identifying No. 2 Parking Brake Cable Assembly With Bolts And Nuts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Torque: Bolt (A)

8.5 N*m (87 kgf*cm, 75 in.*lbf)

Bolt (B)

39 N*m (397 kgf*cm, 29 ft.*lbf)

Nut

6.0 N*m (61 kgf*cm, 53 in.*lbf)

2009 Toyota Highlander Limited

2009 BRAKES Parking Brake - Highlander

- b. Install the No. 2 parking brake cable assembly to the backing plate with the 2 bolts.

Torque: 8.0 N*m (82 kgf*cm, 71 in.*lbf)

6. INSTALL NO. 2 PARKING BRAKE SHOE ASSEMBLY WITH PARKING BRAKE SHOE LEVER (See REASSEMBLY)

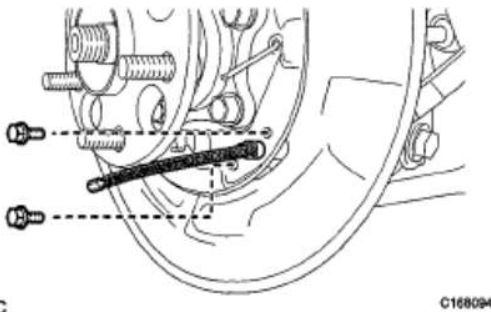


Fig. 73: Identifying No. 2 Parking Brake Cable Assembly With Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

7. INSTALL NO. 2 PARKING BRAKE SHOE RETURN TENSION SPRING (See REASSEMBLY)
8. INSTALL NO. 1 PARKING BRAKE SHOE ASSEMBLY (See REASSEMBLY)
9. INSTALL PARKING BRAKE SHOE ADJUSTING SCREW SET (See REASSEMBLY)
10. INSTALL NO. 2 PARKING BRAKE SHOE ASSEMBLY (See REASSEMBLY)
11. INSTALL PARKING BRAKE SHOE STRUT (See REASSEMBLY)
12. INSTALL NO. 1 PARKING BRAKE SHOE ASSEMBLY (See REASSEMBLY)
13. INSTALL NO. 1 PARKING BRAKE SHOE RETURN TENSION SPRING (See REASSEMBLY)
14. CHECK PARKING BRAKE INSTALLATION (See REASSEMBLY)
15. INSTALL REAR DISC (See REASSEMBLY)
16. INSTALL REAR DISC BRAKE CALIPER ASSEMBLY (for 2WD) (See REPLACEMENT)
17. INSTALL REAR DISC BRAKE CALIPER ASSEMBLY (for 4WD) (See REPLACEMENT)
18. INSTALL REAR WHEEL

Torque: 103 N*m (1050 kgf*cm, 76 ft.*lbf)

19. INSTALL NO. 1 PARKING BRAKE CABLE ASSEMBLY

- a. Pass the No. 1 parking brake cable assembly through the parking brake pedal.
- b. Install the clip to the No. 1 parking brake cable assembly.

2009 Toyota Highlander Limited

2009 BRAKES Parking Brake - Highlander

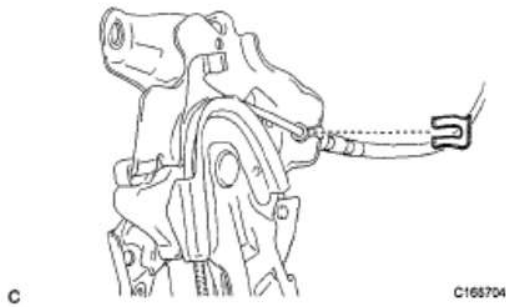


Fig. 74: Identifying No. 1 Parking Brake Cable Assembly Clip
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Temporarily install the adjusting nut.

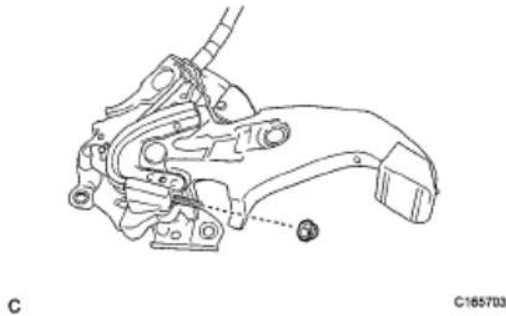


Fig. 75: Identifying Adjusting Nut Of No. 1 Parking Brake Cable Assembly
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- d. Bend the parking brake pedal claw.

20. INSTALL PARKING BRAKE CONTROL PEDAL ASSEMBLY

HINT:

Refer to the instructions for INSTALLATION of the parking brake pedal (See **REASSEMBLY**).

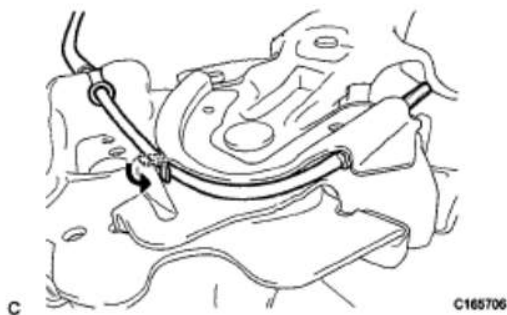


Fig. 76: Bending Parking Brake Pedal Claw
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

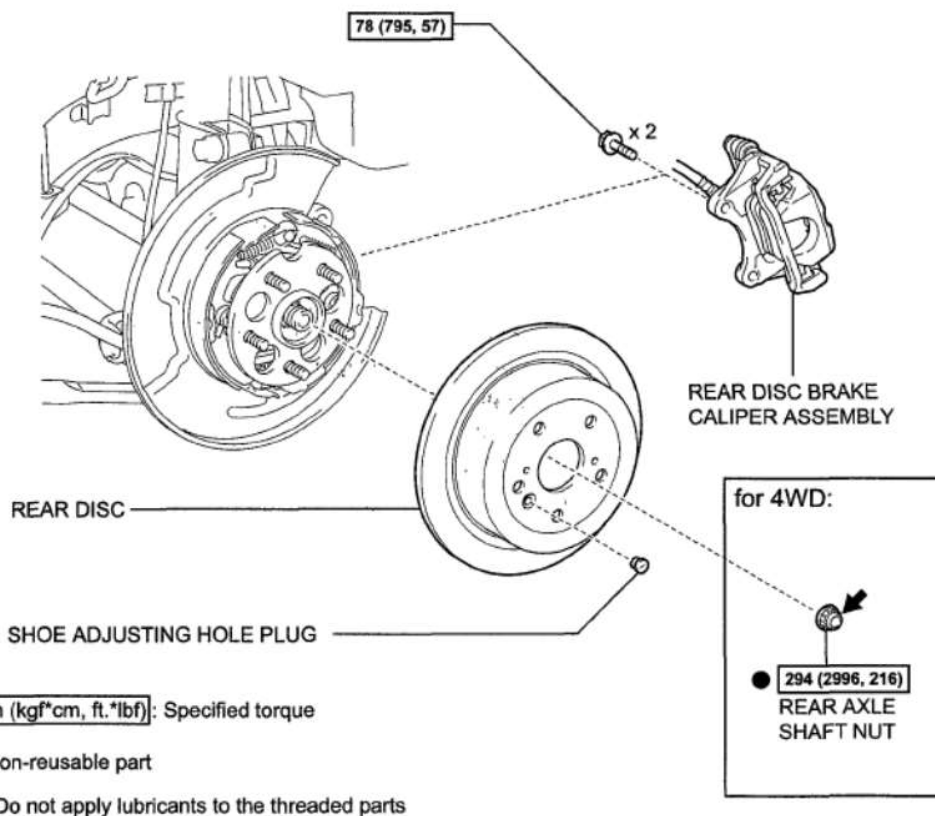
2009 Toyota Highlander Limited

2009 BRAKES Parking Brake - Highlander

21. **BED IN PARKING BRAKE SHOES TO DISCS** (See REASSEMBLY)
22. **ADJUST PARKING BRAKE SHOE CLEARANCE AND PARKING BRAKE PEDAL TRAVEL** (See ADJUSTMENT)
23. **INSPECT BRAKE WARNING LIGHT** (See ADJUSTMENT)

PARKING BRAKE ASSEMBLY

COMPONENTS

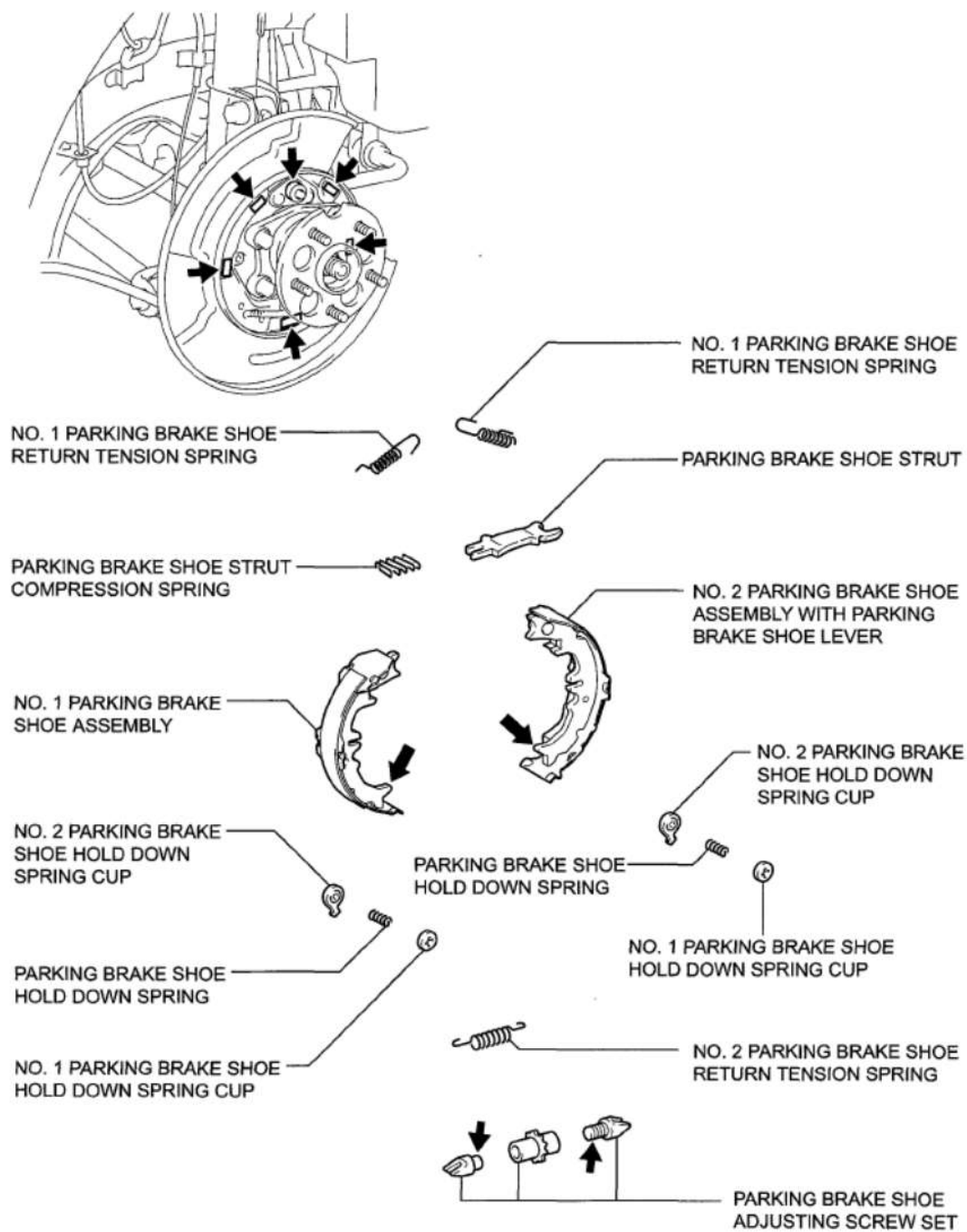


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Fig. 77: Identifying Parking Brake Assembly Components With Torque Specification (1 Of 7)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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2009 BRAKES Parking Brake - Highlander



← High temperature grease

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Fig. 78: Identifying Parking Brake Assembly Components With Torque Specification (2 Of 7)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2009 Toyota Highlander Limited

2009 BRAKES Parking Brake - Highlander

for 2WD:

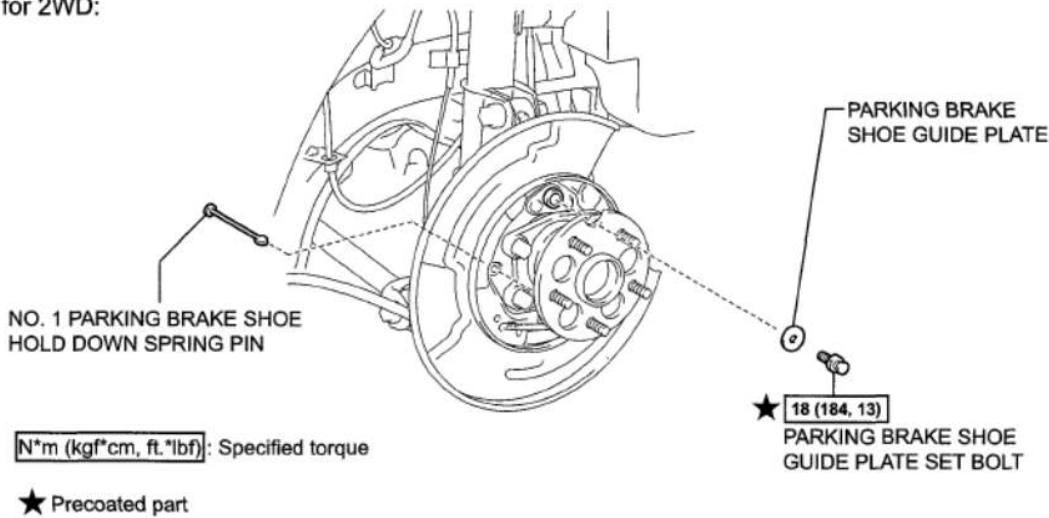


Fig. 79: Identifying Parking Brake Assembly Components With Torque Specification (3 Of 7)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

for 4WD:

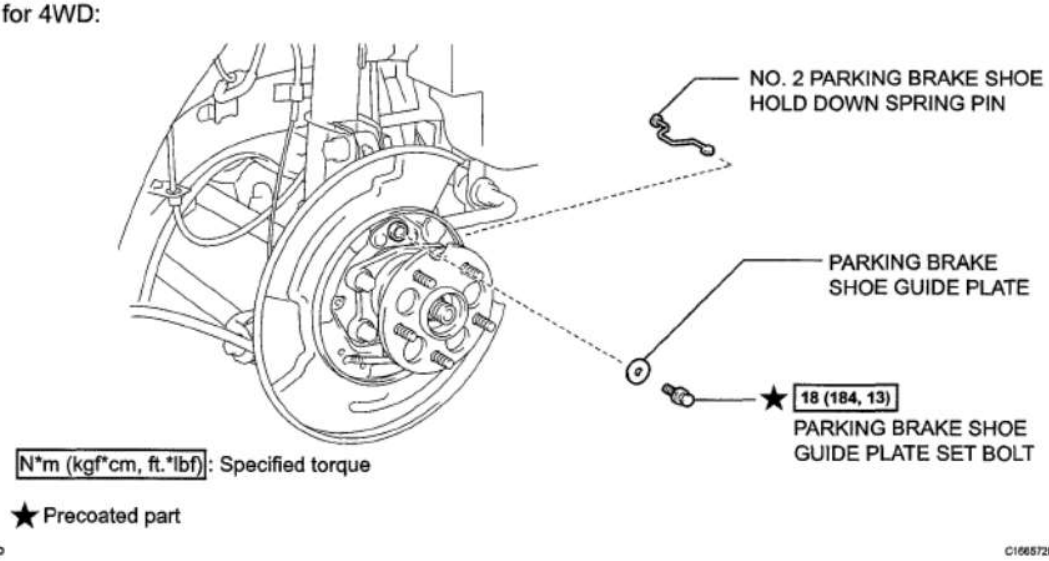


Fig. 80: Identifying Parking Brake Assembly Components With Torque Specification (4 Of 7)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2009 Toyota Highlander Limited

2009 BRAKES Parking Brake - Highlander

for 2WD:

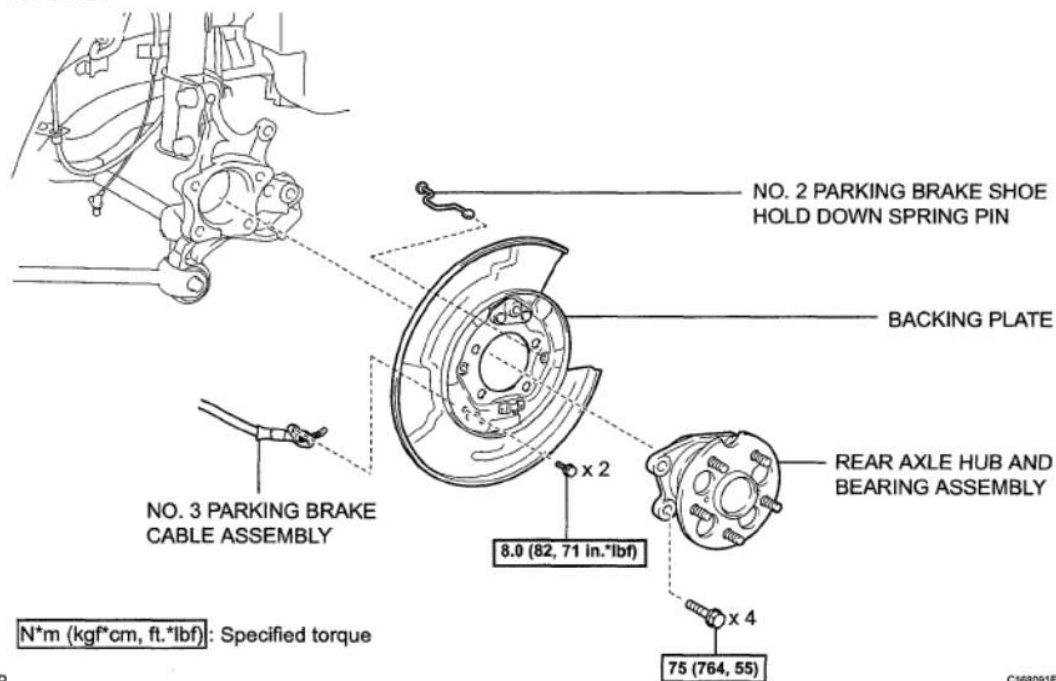


Fig. 81: Identifying Parking Brake Assembly Components With Torque Specification (5 Of 7)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

for 4WD:

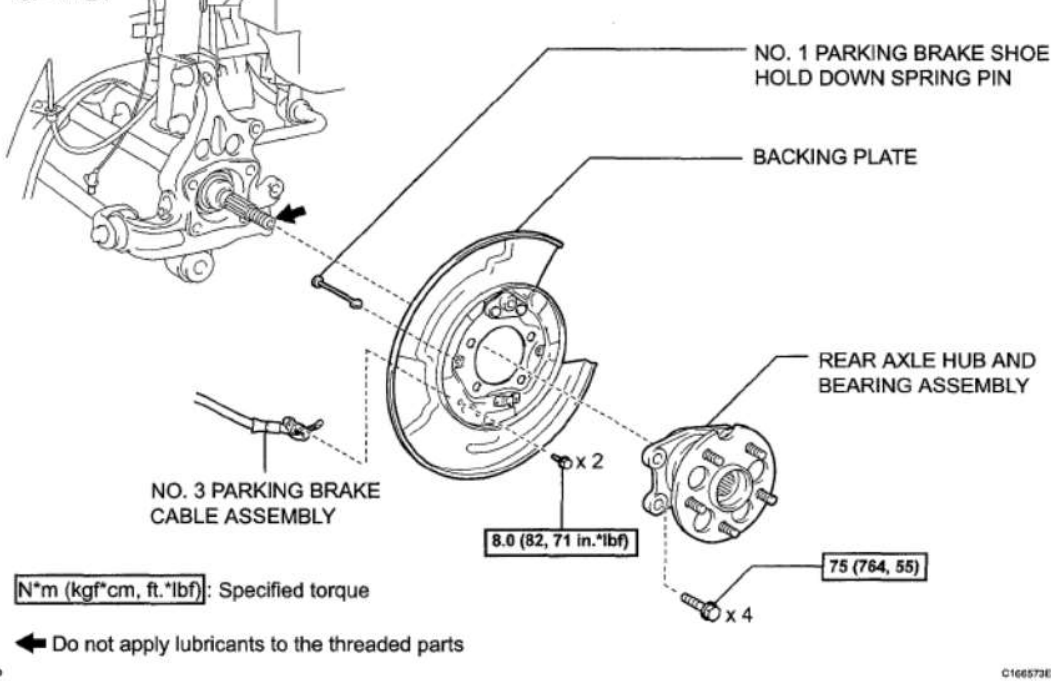


Fig. 82: Identifying Parking Brake Assembly Components With Torque Specification (6 Of 7)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2009 Toyota Highlander Limited

2009 BRAKES Parking Brake - Highlander

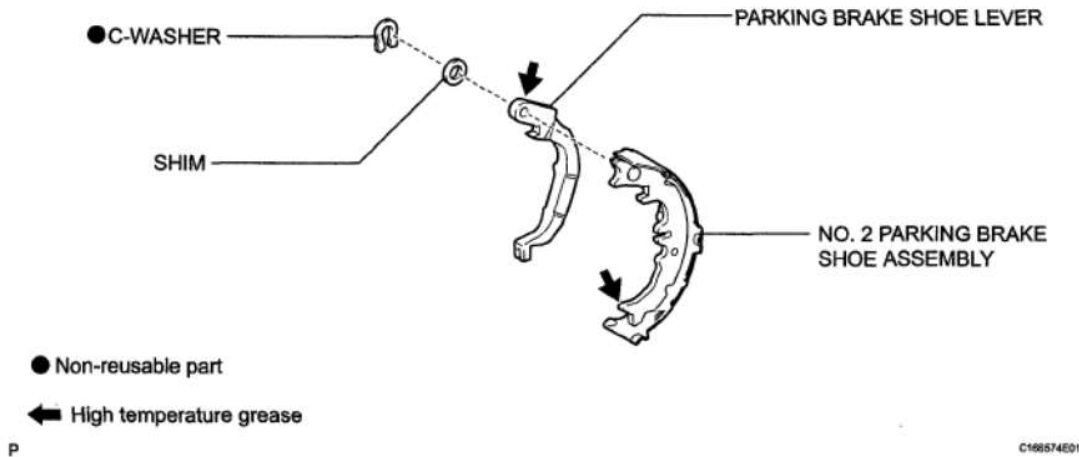


Fig. 83: Identifying Parking Brake Assembly Components With Torque Specification (7 Of 7)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

DISASSEMBLY

HINT:

- Use the same procedures for the RH side and the LH side.
- The procedures listed below are for the LH side.

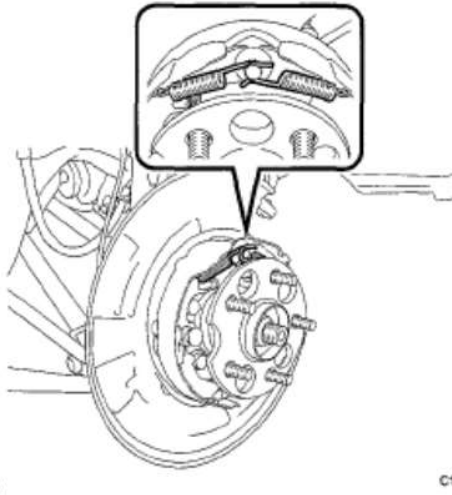
1. REMOVE REAR WHEEL
2. REMOVE REAR AXLE SHAFT NUT (for 4WD)

NOTE: Perform this procedure only when the No. 1 parking brake shoe hold down spring pin is replaced.

HINT:

See REMOVAL .

3. SEPARATE REAR DISC BRAKE CALIPER ASSEMBLY (for 2WD) (See REPLACEMENT)
4. SEPARATE REAR DISC BRAKE CALIPER ASSEMBLY (for 4WD) (See REPLACEMENT)
5. REMOVE REAR DISC (See INSPECTION)
6. REMOVE NO. 1 PARKING BRAKE SHOE RETURN TENSION SPRING
 - a. Remove the 2 No. 1 parking brake shoe return tension springs.

2009 Toyota Highlander Limited**2009 BRAKES Parking Brake - Highlander**

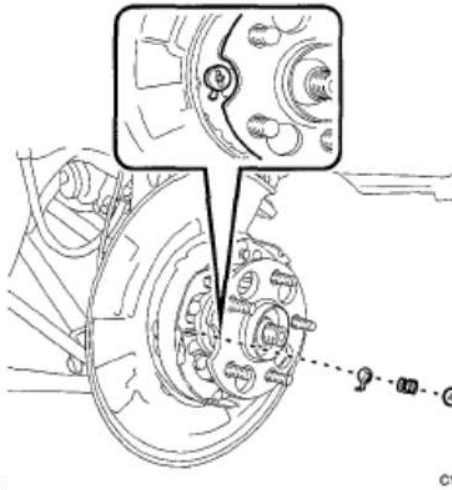
C

C165147

Fig. 84: Identifying No. 1 Parking Brake Shoe Return Tension Springs
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

7. SEPARATE NO. 1 PARKING BRAKE SHOE ASSEMBLY

- a. Remove the No. 1 parking brake shoe hold down spring cup, parking brake shoe hold down spring and No. 2 parking brake shoe hold down spring cup, and separate the No. 1 parking brake shoe assembly from the backing plate.



C

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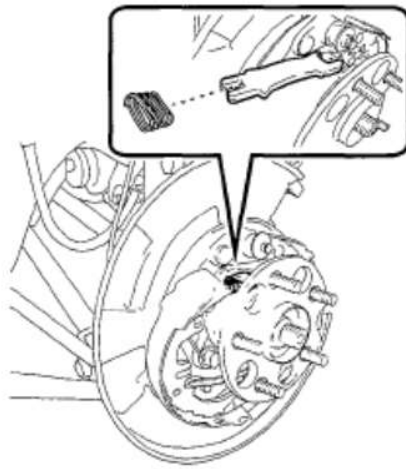
Fig. 85: Identifying No. 1 Parking Brake Shoe Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

8. REMOVE PARKING BRAKE SHOE STRUT

- a. Remove the parking brake shoe strut and the parking brake shoe strut compression spring.

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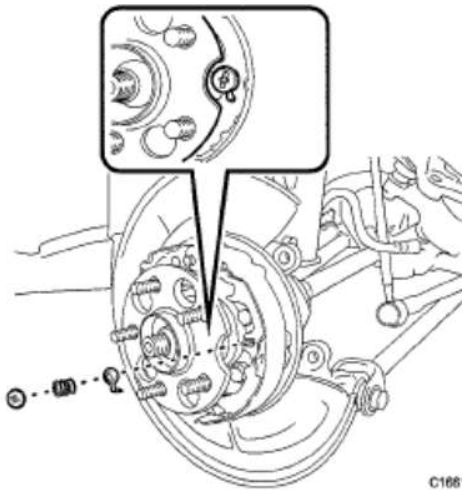
C166140

Fig. 86: Identifying Parking Brake Shoe Strut And Parking Brake Shoe Strut Compression Spring

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

9. SEPARATE NO. 2 PARKING BRAKE SHOE ASSEMBLY

- a. Remove the No. 1 parking brake shoe hold down spring cup, parking brake shoe hold down spring and No. 2 parking brake shoe hold down spring cup, and separate the No. 2 parking brake shoe assembly from the backing plate.



C

C166150

Fig. 87: Identifying No. 2 Parking Brake Shoe Assembly

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

10. REMOVE PARKING BRAKE SHOE ADJUSTING SCREW SET

- a. Remove the parking brake shoe adjusting screw set.

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Fig. 88: Identifying Parking Brake Shoe Adjusting Screw Set
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

11. REMOVE NO. 1 PARKING BRAKE SHOE ASSEMBLY

- a. Separate the No. 2 parking brake shoe return tension spring and remove the No. 1 parking brake shoe assembly.



Fig. 89: Identifying No. 2 Parking Brake Shoe Return Tension Spring And No. 1 Parking Brake Shoe Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

12. REMOVE NO. 2 PARKING BRAKE SHOE RETURN TENSION SPRING

- a. Remove the No. 2 parking brake shoe return tension spring from the No. 2 parking brake shoe assembly.

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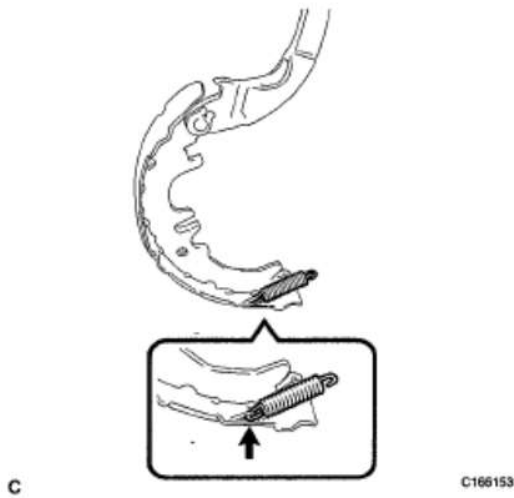


Fig. 90: Locating No. 2 Parking Brake Shoe Return Tension Spring
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

13. REMOVE NO. 2 PARKING BRAKE SHOE ASSEMBLY WITH PARKING BRAKE SHOE LEVER

- Using needle-nose pliers, separate the No. 3 parking brake cable assembly from the parking brake shoe lever as shown in the illustration.

NOTE: Be careful not to damage the No. 3 parking brake cable assembly.

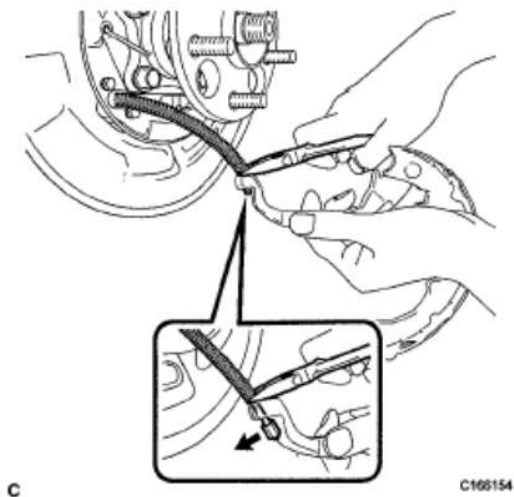


Fig. 91: Separating No. 3 Parking Brake Cable Assembly From Parking Brake Shoe Lever
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

14. REMOVE PARKING BRAKE SHOE LEVER

- Remove the C-washer, shim and the parking brake shoe lever from the No. 2 parking brake shoe assembly.

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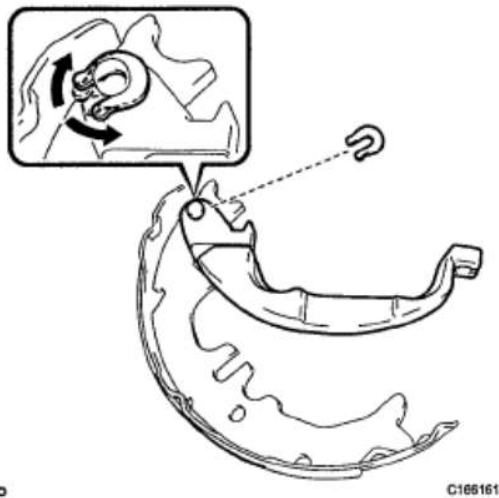


Fig. 92: Removing C-Washer, Shim And Parking Brake Shoe Lever From No. 2 Parking Brake Shoe Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

15. REMOVE PARKING BRAKE SHOE GUIDE PLATE SET BOLT

- a. Remove the parking brake shoe guide plate set bolt and the parking brake shoe guide plate.

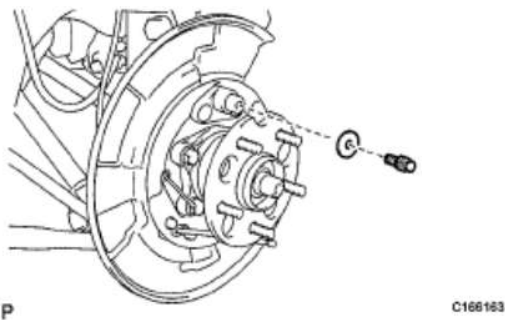


Fig. 93: Identifying Parking Brake Shoe Guide Plate Set Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

16. REMOVE NO. 1 PARKING BRAKE SHOE HOLD DOWN SPRING PIN (for 2WD)

- a. Remove the No. 1 parking brake shoe hold down spring pin.

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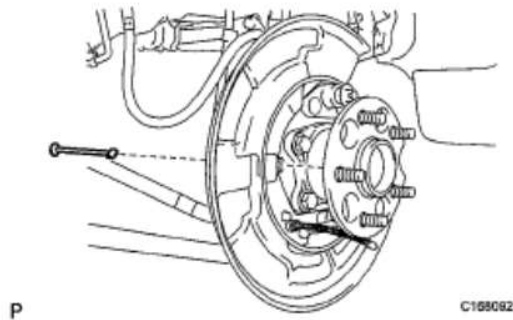


Fig. 94: Identifying No. 1 Parking Brake Shoe Hold Down Spring Pin
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

17. **REMOVE NO. 2 PARKING BRAKE SHOE HOLD DOWN SPRING PIN (for 4WD)**
 - a. Remove the No. 2 parking brake shoe hold down spring pin.

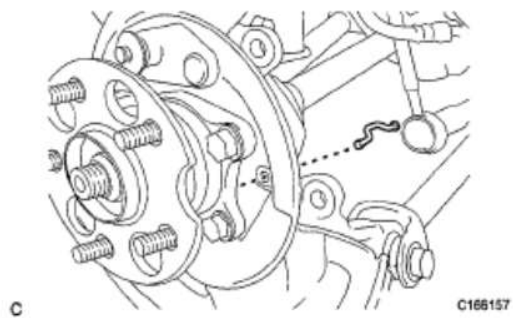


Fig. 95: Identifying No. 2 Parking Brake Shoe Hold Down Spring Pin
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

18. **REMOVE REAR AXLE HUB AND BEARING ASSEMBLY (for 2WD)**

NOTE: Perform this procedure only when the No. 2 parking brake shoe hold down spring pin is replaced.

HINT:

See ON-VEHICLE INSPECTION .

19. **REMOVE REAR AXLE HUB AND BEARING ASSEMBLY (for 4WD)**

NOTE: Perform this procedure only when the No. 1 parking brake shoe hold down spring pin is replaced.

HINT:

See ON-VEHICLE INSPECTION .

2009 Toyota Highlander Limited**2009 BRAKES Parking Brake - Highlander****20. REMOVE NO. 2 PARKING BRAKE SHOE HOLD DOWN SPRING PIN (for 2WD)**

- a. Remove the No. 2 parking brake shoe hold down spring pin.

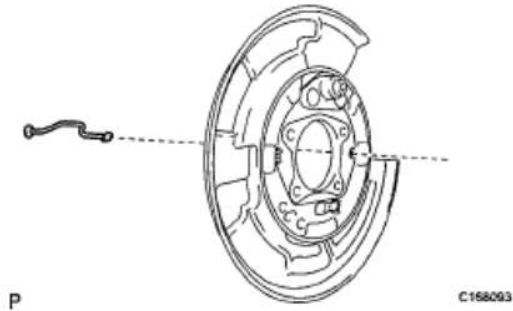


Fig. 96: Identifying No. 2 Parking Brake Shoe Hold Down Spring Pin
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

21. REMOVE NO. 1 PARKING BRAKE SHOE HOLD DOWN SPRING PIN (for 4WD)

- a. Remove the No. 1 parking brake shoe hold down spring pin.

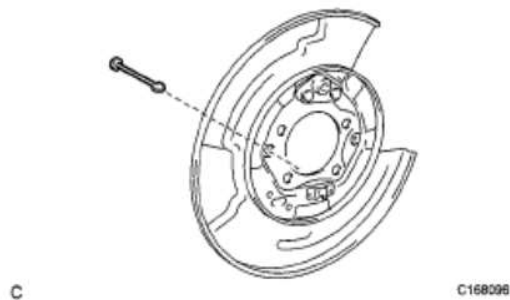


Fig. 97: Identifying No. 1 Parking Brake Shoe Hold Down Spring Pin
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION**1. INSPECT BRAKE DISC INSIDE DIAMETER**

- a. Using a brake drum gauge or an equivalent tool, measure the inside diameter of the disc.

Standard inside diameter:

190 mm (7.48 in.)

Maximum inside diameter:

191 mm (7.52 in.)

If the inside diameter is more than the maximum, replace the rear disc.

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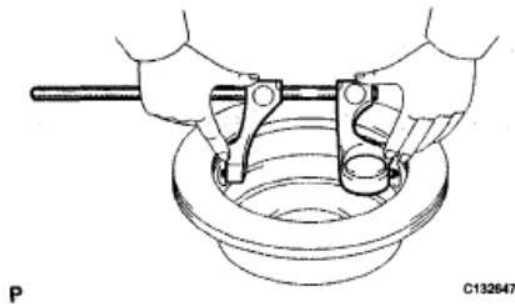


Fig. 98: Measuring Inside Diameter Of Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. INSPECT PARKING BRAKE SHOE LINING THICKNESS

- a. Using a ruler, measure the thickness of the parking brake shoe lining.

Standard thickness:

2.5 mm (0.098 in.)

Minimum thickness:

1.0 mm (0.039 in.)

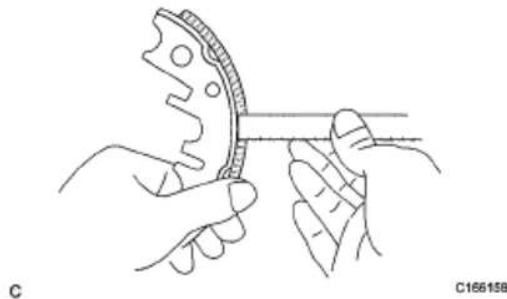


Fig. 99: Measuring Thickness Of Parking Brake Shoe Lining
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

If the lining thickness is less than the minimum, or if there is severe or uneven wear, replace the parking brake shoe assembly.

NOTE: Always replace both the right and left parking brake shoes together.

3. INSPECT BRAKE DISC AND PARKING BRAKE SHOE LINING FOR PROPER CONTACT

- a. Apply chalk to the inside surface of the disc, then grind down the brake shoe lining to fit the disc. If the contact between the disc and the brake shoe lining is improper, repair it using a brake shoe grinder or replace the parking brake shoe assembly.

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NOTE: Always replace both the right and left parking brake shoes together.



Fig. 100: Applying Chalk To Inside Surface Of Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REASSEMBLY

NOTE: Before installation, apply high temperature grease to the parts indicated by arrows (See **PARKING BRAKE ASSEMBLY**).

1. **INSTALL NO. 2 PARKING BRAKE SHOE HOLD DOWN SPRING PIN (for 2WD)**
 - a. Install the No. 2 parking brake shoe hold down spring pin.

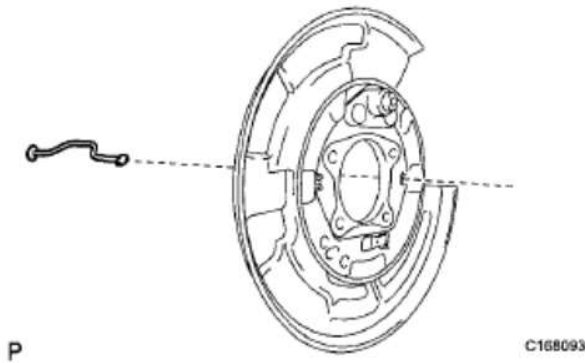


Fig. 101: Identifying No. 2 Parking Brake Shoe Hold Down Spring Pin
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. **INSTALL NO. 1 PARKING BRAKE SHOE HOLD DOWN SPRING PIN (for 4WD)**
 - a. Install the No. 1 parking brake shoe hold down spring pin.
3. **INSTALL REAR AXLE HUB AND BEARING ASSEMBLY (for 2WD)**

NOTE: Perform this procedure only when the No. 2 parking brake shoe hold down spring pin is replaced.

HINT:

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See **INSTALLATION** .

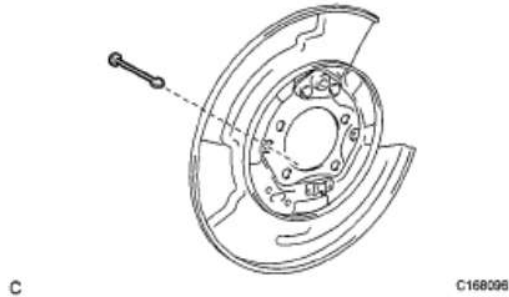


Fig. 102: Identifying No. 1 Parking Brake Shoe Hold Down Spring Pin
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. INSTALL REAR AXLE HUB AND BEARING ASSEMBLY (for 4WD)

NOTE: Perform this procedure only when the No. 1 parking brake shoe hold down spring pin is replaced.

HINT:

See **INSTALLATION** .

5. INSTALL NO. 1 PARKING BRAKE SHOE HOLD DOWN SPRING PIN (for 2WD)

- a. Install the No. 1 parking brake shoe hold down spring pin.

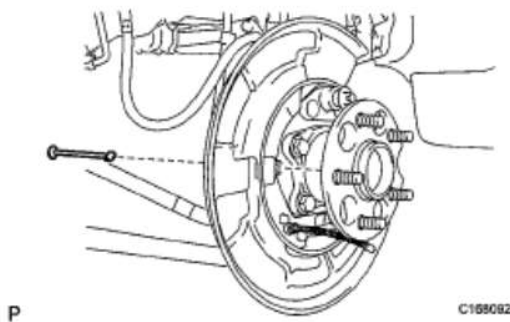


Fig. 103: Identifying No. 1 Parking Brake Shoe Hold Down Spring Pin
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

6. INSTALL NO. 2 PARKING BRAKE SHOE HOLD DOWN SPRING PIN (for 4WD)

- a. Install the No. 2 parking brake shoe hold down spring pin.

7. APPLY HIGH TEMPERATURE GREASE

- a. Apply high temperature grease to the backing plate which makes contact with the shoe.

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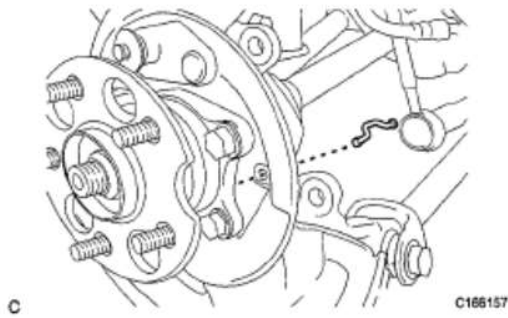


Fig. 104: Identifying No. 2 Parking Brake Shoe Hold Down Spring Pin
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

8. INSTALL PARKING BRAKE SHOE GUIDE PLATE SET BOLT

- a. Apply adhesive to the threads of the parking brake shoe guide plate set bolt.

Adhesive:

Toyota Genuine Adhesive 1344, Three Bond 1344 or equivalent

- b. Install the parking brake shoe guide plate and the parking brake shoe guide plate set bolt.

Torque: 18 N*m (184 kgf*cm, 13 ft.*lbf)

9. INSTALL PARKING BRAKE SHOE LEVER

- a. Apply high temperature grease to the parking brake shoe lever which makes contact with the No. 2 parking brake shoe assembly.

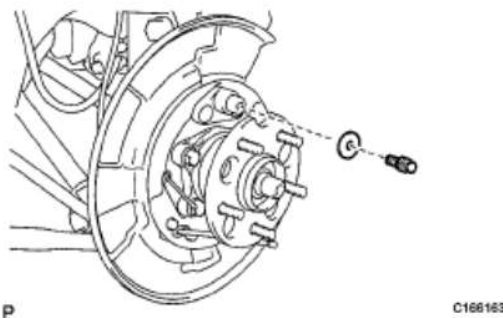


Fig. 105: Identifying Parking Brake Shoe Guide Plate Set Bolt
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Install the parking brake shoe lever and shim to the No. 2 parking brake shoe assembly with a new C-washer.

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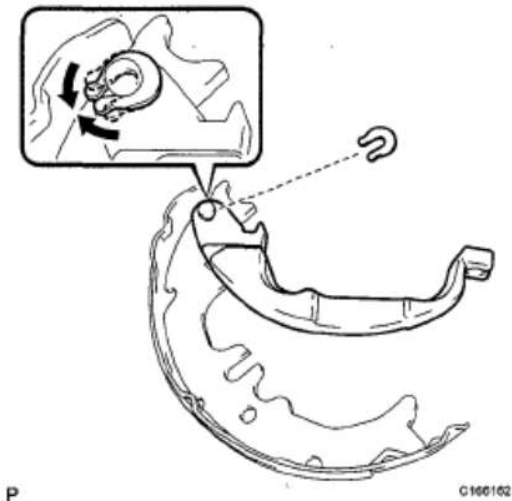


Fig. 106: Installing Parking Brake Shoe Lever And Shim To No. 2 Parking Brake Shoe Assembly With C-Washer
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Using a feeler gauge, measure the clearance between the No. 2 parking brake shoe assembly and parking brake shoe lever.

Standard clearance:

Less than 0.35 mm (0.014 in.)

If the clearance is not as specified, replace the shim with one of the appropriate size.

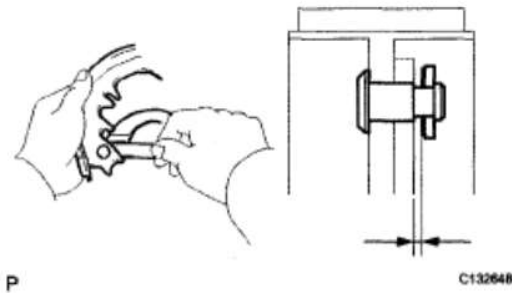


Fig. 107: Measuring Clearance Between No. 2 Parking Brake Shoe Assembly And Parking Brake Shoe Lever
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SHIM THICKNESS REFERENCE

Part No.	Shim Thickness
90564-09184	0.3 mm (0.012 in.)
90564-09185	0.6 mm (0.024 in.)
90564-09186	0.9 mm (0.035 in.)

2009 Toyota Highlander Limited**2009 BRAKES Parking Brake - Highlander****10. INSTALL NO. 2 PARKING BRAKE SHOE ASSEMBLY WITH PARKING BRAKE SHOE LEVER**

- a. Using needle-nose pliers, connect the No. 3 parking brake cable assembly to the parking brake shoe lever as shown in the illustration.

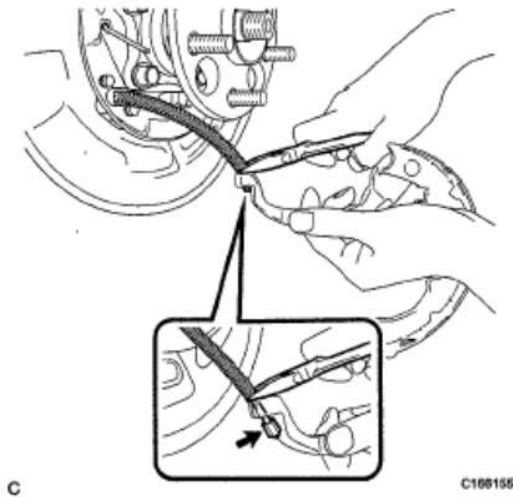


Fig. 108: Connecting No. 3 Parking Brake Cable Assembly To Parking Brake Shoe Lever
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

11. INSTALL NO. 2 PARKING BRAKE SHOE RETURN TENSION SPRING

- a. Install the No. 2 parking brake shoe return tension spring to the No. 2 parking brake shoe assembly.

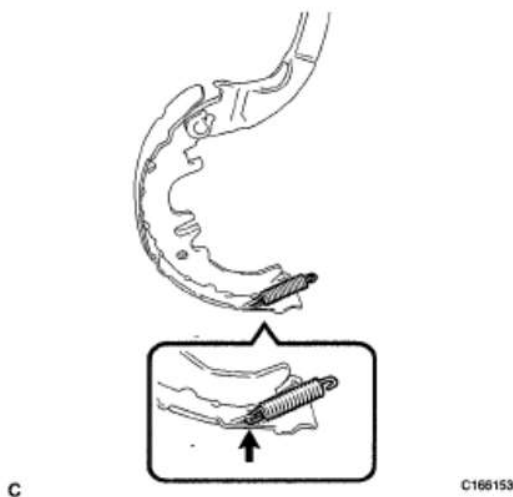


Fig. 109: Locating No. 2 Parking Brake Shoe Return Tension Spring
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

12. INSTALL NO. 1 PARKING BRAKE SHOE ASSEMBLY

- a. Connect the No. 2 parking brake shoe return tension spring to install the No. 1 parking brake shoe

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assembly.

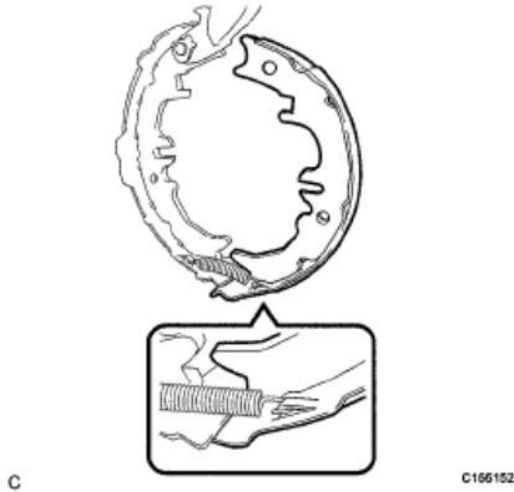


Fig. 110: Identifying No. 2 Parking Brake Shoe Return Tension Spring And No. 1 Parking Brake Shoe Assembly

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

13. INSTALL PARKING BRAKE SHOE ADJUSTING SCREW SET

- a. Apply high temperature grease to the parking brake shoe adjusting screw set as shown in the illustration.

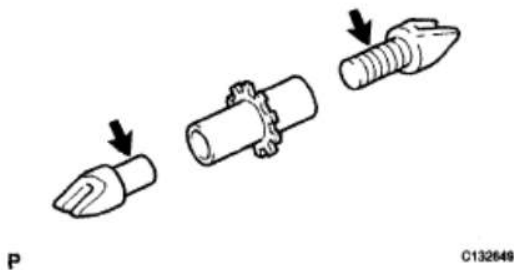


Fig. 111: Locating High Temperature Grease Apply Area Of Parking Brake Adjusting Screw

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Install the parking brake shoe adjusting screw set.

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Fig. 112: Identifying Parking Brake Shoe Adjusting Screw Set
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

14. INSTALL NO. 2 PARKING BRAKE SHOE ASSEMBLY

- a. Install the No. 2 parking brake shoe assembly to the backing plate with the No. 1 parking brake shoe hold down spring cup, parking brake shoe hold down spring, and No. 2 parking brake shoe hold down spring cup.

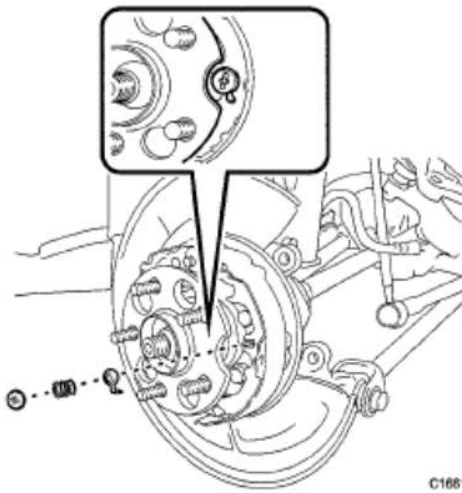


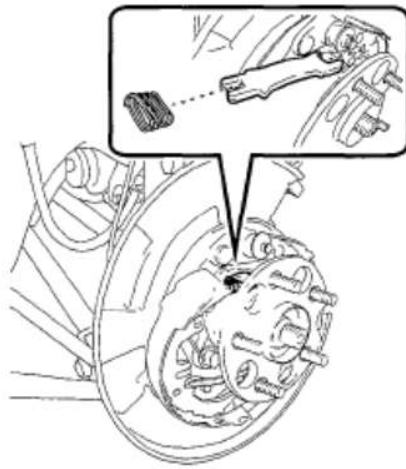
Fig. 113: Identifying No. 2 Parking Brake Shoe Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

15. INSTALL PARKING BRAKE SHOE STRUT

- a. Install the parking brake shoe strut and the parking brake shoe strut compression spring.

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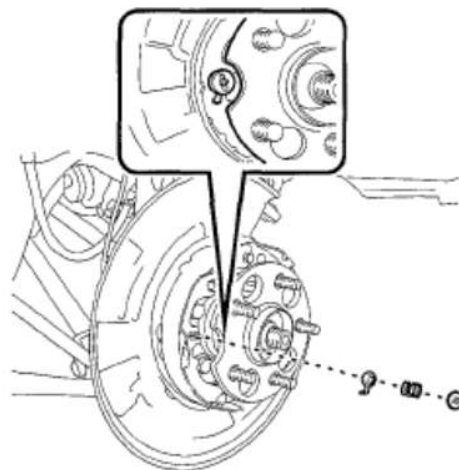
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Fig. 114: Identifying Parking Brake Shoe Strut And Parking Brake Shoe Strut Compression Spring

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

16. INSTALL NO. 1 PARKING BRAKE SHOE ASSEMBLY

- a. Install the No. 1 parking brake shoe assembly to the backing plate with the No. 1 parking brake shoe hold down spring cup, parking brake shoe hold down spring, and No. 2 parking brake shoe hold down spring cup.



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Fig. 115: Identifying No. 1 Parking Brake Shoe Assembly

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

17. INSTALL NO. 1 PARKING BRAKE SHOE RETURN TENSION SPRING

- a. Install the 2 No. 1 parking brake shoe return tension springs.

HINT:

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First install the front side spring and then the rear side spring.

18. CHECK PARKING BRAKE INSTALLATION

- Check that each part is installed properly.

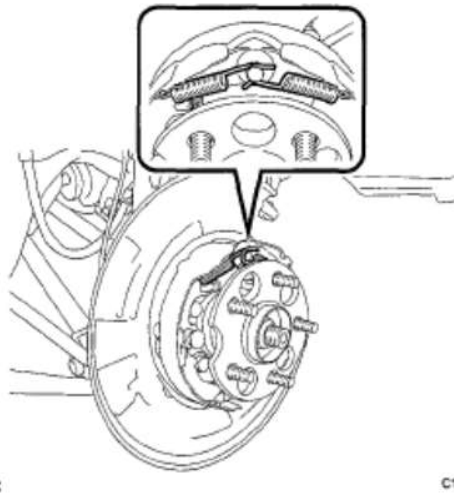


Fig. 116: Identifying No. 1 Parking Brake Shoe Return Tension Springs
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

LH Side:

RH Side:

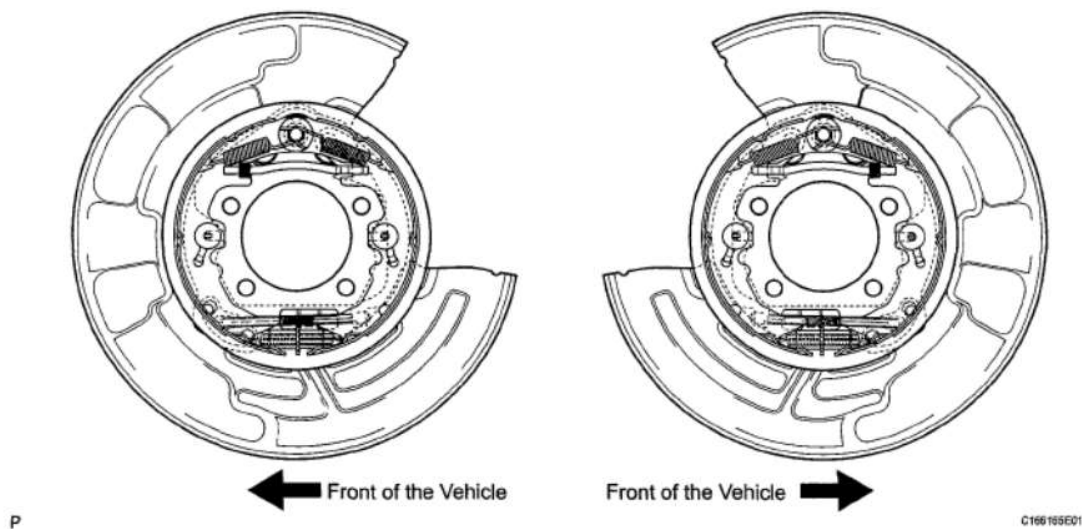


Fig. 117: Identifying Parking Brake Installation Position
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE: There should be no oil or grease on the friction surfaces of the shoe lining and disc.

19. INSTALL REAR DISC (See REASSEMBLY)

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20. **INSTALL REAR DISC BRAKE CALIPER ASSEMBLY (for 2WD)** (See REPLACEMENT)
21. **INSTALL REAR DISC BRAKE CALIPER ASSEMBLY (for 4WD)** (See REPLACEMENT)
22. **INSTALL REAR AXLE SHAFT NUT (for 4WD)**

NOTE: Perform this procedure only when the No. 1 parking brake shoe hold down spring pin is replaced.

HINT:

See INSTALLATION .

23. **ADJUST PARKING BRAKE SHOE CLEARANCE** (See ADJUSTMENT)
24. **INSTALL REAR WHEEL**

Torque: 103 N*m (1050 kgf*cm, 76 ft.*lbf)

25. **BED IN PARKING BRAKE SHOES TO DISCS**
 - a. Drive the vehicle at about 50 km/h (31 mph) on a safe, level and dry road.
 - b. Depress the parking brake pedal with 150 N (15 kgf, 34 lb) of force.
 - c. Drive the vehicle for about 400 m (0.25 mile) in this condition.
 - d. Repeat this procedure 3 times.

NOTE: Set a 5-minute interval between each procedure to prevent the brake assembly from overheating.

26. **ADJUST PARKING BRAKE SHOE CLEARANCE AND PARKING BRAKE PEDAL TRAVEL** (See ADJUSTMENT)