BRAKE SYSTEM

32038-03

PRECAUTION

- **Care must be taken to replace each part properly as it could affect the performance of the brake system and result in a driving hazard. Replace the parts with parts having the same part number or equivalent.**
- **It is very important to keep parts and the area clean when repairing the brake system.**
- **If the vehicle is equipped with a mobile communication system, refer to the precaution in the INTRODUCTION section.**

32039-18

PROBLEM SYMPTOMS TABLE

Use the table below to help you find the cause of the problem. The numbers indicate the priority of the likely cause of the problem. Check each part in order. If necessary, replace these parts.

Symptom	Suspect Area	See page
Low pedal or spongy pedal	2. Fluid leaks for brake system	-
	3. Air in brake system	32-4
	4. Piston seals (Worn or damaged)	32-33 32-41
	5. Master cylinder (Fauly)	32-21
	6. Booster push rod (Out of adjustment)	32-8 32-12
Brake drag	1. Brake pedal free play (Minimal)	32-8 32-12
	2. Parking brake pedal travel (Out of adjustment)	33-2
	3. Parking brake wire (Sticking)	33-8 33-11 33-14
	4. Parking brake shoe clearance (Out of adjustment)	33-2
	5. Pad (Cracked or distorted)	32-33 32-41
	6. Piston (Stuck)	32-33 32-41
	7. Piston (Frozen)	32-33 32-41
	8. Tension or return spring (Faulty)	33-16
	9. Booster push rod (Out of adjustment)	32-8 32-12
	10. Vacuum leaks for booster system	32-26
	11. Master cylinder (Faulty)	32-21
Brake pull	1. Piston (Stuck)	32-33 32-41
	2. Pad (Oily)	32-33 32-41
	3. Piston (Frozen)	32-33 32-41
	4. Disc (Scored)	32-33 32-41
	5. Pad (Cracked or distorted)	32-33 32-41
Hard pedal but brake inefficient	1. Fluid leaks for brake system	-
	2. Air in brake system	32-4
	3. Pad (Worn)	32-33 32-41
	4. Pad (Cracked or distorted)	32-33 32-41
	5. Pad (Oily)	32-33 32-41
	6. Pad (Glanzed)	32-33 32-41
	7. Disc (Scored)	32-33 32-41
	8. Booster push rod (Out of adjustment)	32-8 32-12
	9. Vacuum leaks for booster system	32-26

Noise from brakes	1. Pad (Cracked or distorted)	32-33 32-41
	2. Installation bolt (Loose)	32-33 32-41
	3. Disc (Scored)	32-33 32-41
	4. Pad support plate (Loose)	32-33 32-41
	5. Sliding pin (Worn)	32-33 32-41
	6. Pad (dirty)	32-33 32-41
	7. Pad (Glanzed)	32-33 32-41
	8. Tension or return spring (Faulty)	33-16
	9. Anti-squeal shim (Damaged)	32-33 32-41
	10.Shoe hold-down spring (Damaged)	33-16

BRAKE FLUID (From July, 2003)

3211W-03

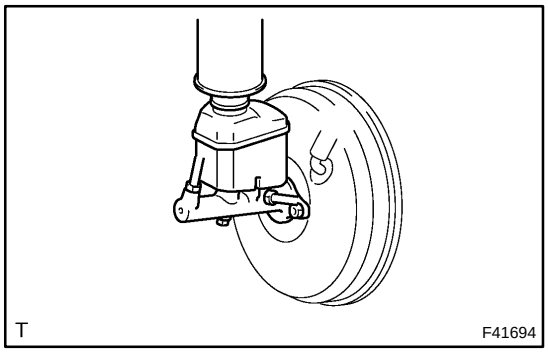
BLEEDING

HINT:

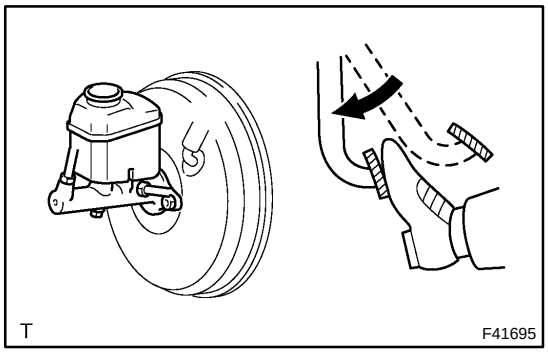
If any work is done on the brake system or if air in the brake lines is suspected, bleed the air from the system.

NOTICE:

Wash off the brake fluied immediately if it comes into contact with a painted surface.



1. FILL RESERVOIR WITH BRAKE FLUID
Fluid: SAE J1703 or FMVSS No. 116 DOT3

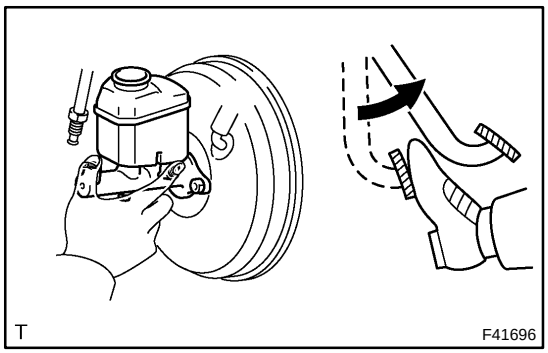


2. BLEED MASTER CYLINDER

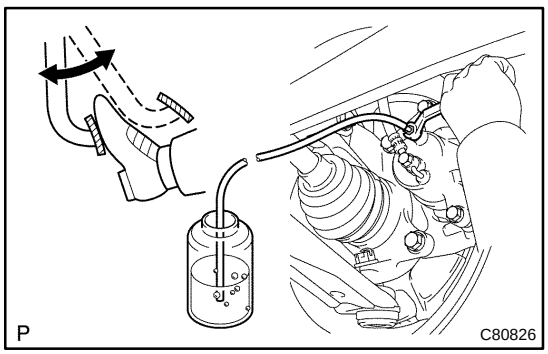
HINT:

If the master cylinder has been disassembled or if the reservoir becomes empty, bleed the air from the master cylinder.

(a) Remove the air cleaner assembly with hose.
(b) Disconnect the brake lines from the master cylinder.
SST 09023-00101
(c) Slowly depress the brake pedal and hold it.



(d) Block off the outer holes with your fingers, and release the brake pedal.
(e) Repeat (c) and (d) 3 or 4 times.
(f) Install the air cleaner assembly with hose.



3. BLEED BRAKE LINE

(a) Connect the vinyl tube to the brake caliper.
(b) Depress the brake pedal several times, then loosen the bleeder plug with the pedal held down.
(c) At the point when fluid stops coming out, tighten the bleeder plug, then release the brake pedal.
(d) Repeat (b) and (c) until all the air in the fluid has been bled out.
(e) Tighten the bleeder plug certainly.
Torque: 8.3 N·m (85 kgf·cm, 73 in.·lbf)

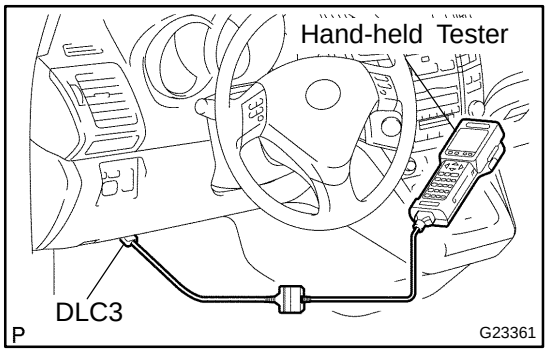
(f) Repeat the above procedure to bleed the air out of the brake line for each wheel.

4. BLEED BRAKE ACTUATOR ASSY (W/ VSC)

NOTICE:

After performing the usual air bleeding in the brake system, if the height or feel of the brake pedal cannot be obtained, perform air bleeding in the brake actuator assy with a hand-held tester by following procedures below.

(a) Depress the brake pedal more than 20 times with the engine off.



(b) Connect the hand-held tester to the DLC3, then turn the ignition switch to the ON position.

NOTICE:

Do not start the engine.

(c) Select "AIR BLEEDING" on the hand-held tester.

HINT:

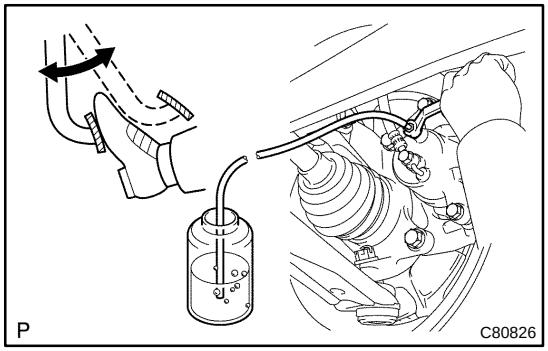
Please refer to the Hand-Held Tester Operator's Manual for further details.

(d) Bleed the air out of the regular brake line in "Step1: Increase" on the hand-held tester display.

NOTICE:

- **Perform the air bleeding by following the steps displayed on the hand-held tester.**
- **Make sure that the brake fluid in the master cylinder reservoir tank does not become empty.**

(1) Connect the vinyl tube to either one of the bleeder plugs.



(2) Depress the brake pedal several times, then loosen the bleeder plug of one of the above wheels with the pedal depressed.

(3) When fluid stops coming out, tighten the bleeder plug, then release the brake pedal.

(4) Repeat (2) and (3) until all air in the fluid is completely bled out.

(5) Tighten the bleeder plug certainly.

Torque: 8.3 N·m (85 kgf·cm, 73 in.·lbf)

(6) Repeat the above procedure to bleed the air out of the brake line for each wheel.

(e) Bleed the air out of the suction line in "Step2: Inhalation" on the hand-held tester display.

NOTICE:

- **Perform the air bleeding by following the steps displayed on the hand-held tester.**
- **Make sure that the brake fluid in the master cylinder reservoir tank does not become empty.**

(1) Connect the vinyl tube to the bleeder plug at the right front wheel or the right rear wheel and loosen the bleeder plug.
(2) Operate the brake actuator assy using the hand-held tester to bleed the air.

NOTICE:

- **The operation stops automatically in 4 seconds.**
- **At this time, be sure to release the brake pedal.**

(3) Check that the operation has stopped, by referring to the hand-held tester display.
(4) Repeat (2) and (3) until all the air in the fluid is completely bled out.
(5) Tighten the bleeder plug certainly.

Torque: 8.3 N·m (85 kgf·cm, 73 in.·lbf)

(6) For the rest of the wheels, bleed the air in the same way as stated in the above procedure.

(f) Bleed the air out of the pressure reduction line in ”Step3: Decrease” on the hand-held tester display.

NOTICE:

- **Perform air bleeding by following the steps displayed on the hand-held tester.**
- **Make sure that the brake fluid in the master cylinder reservoir tank does not become empty.**

(1) Connect a vinyl tube to either one of the bleeder plugs.
(2) Loosen the bleeder plug.
(3) Using the hand-held tester, operate the brake actuator assy using hand-held tester, completely depress the brake pedal and keep it.

NOTICE:

- **The operation stops automatically in 4 seconds. When performing this procedure continuously, an interval of at least 20 seconds is required.**
- **When the operation is completed, the brake pedal slightly goes down. This is a normal phenomenon caused when the solenoid opens.**
- **During this procedure, the pedal seems heavy, but completely depress it so that the brake fluid comes out from the bleeder plug.**
- **Be sure to keep depressing the brake pedal. Never depress and release the pedal repeatedly.**

(4) Tighten the bleeder plug, then release the brake pedal.
(5) Repeat (2) to (4) until all the air in the fluid is completely bled out.
(6) Tighten the bleeder plug certainly.

Torque: 8.3 N·m (85 kgf·cm, 73 in.·lbf)

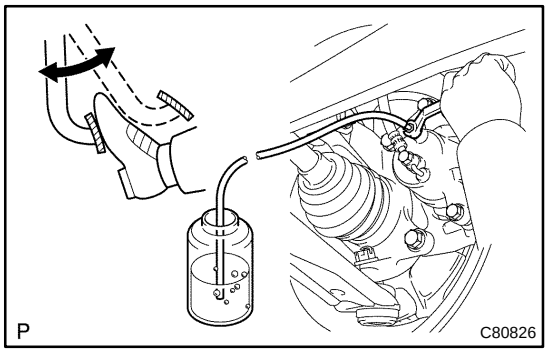
(7) Repeat the above procedure to bleed the air out of the brake line for each wheel.

(g) Bleed the air out of the regular brake line again in ”Step4: Increase” on the hand-held tester display.

NOTICE:

- **Perform air bleeding by following the steps displayed on the hand-held tester.**
- **Make sure that the brake fluid in the master cylinder reservoir tank does not become empty.**

(1) Connect the vinyl tube to either one of the bleeder plug.



(2) Depress the brake pedal several times, then loosen the bleeder plug of one of the above wheels with the pedal depressed.

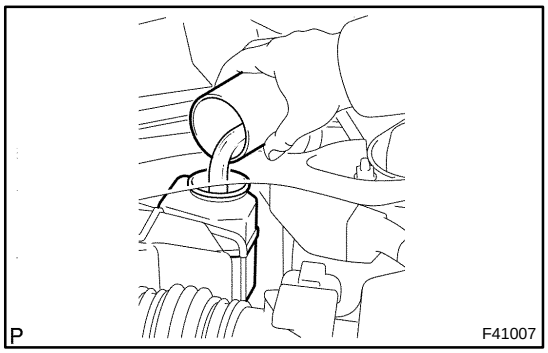
(3) When fluid stops coming out, tighten the bleeder plug, then release the brake pedal.

(4) Repeat (2) and (3) until all the air in the fluid is completely bled out.

(5) Tighten the bleeder plug certainty.

Torque: 8.3 N·m (85 kgf·cm, 73 in.·lbf)

(6) Repeat the above procedure to bleed the air out of the brake line for each wheel.



5. CHECK FLUID LEVEL IN RESERVOIR

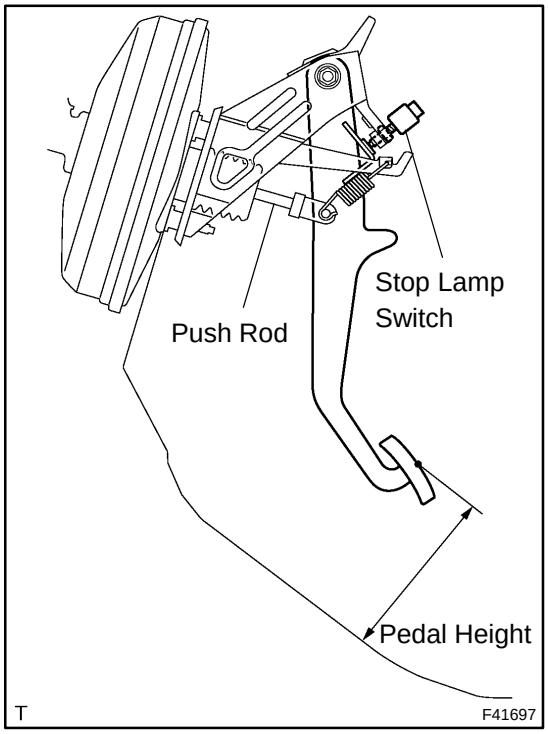
(a) Check the fluid level and add fluid if necessary.

Fluid: SAE J1703 or FMVSS No. 116 DOT3

BRAKE PEDAL SUPPORT ASSY

ADJUSTMENT

320DV-02



1. CHECK AND ADJUST BRAKE PEDAL HEIGHT

(a) Inspect brake pedal height.

Pedal height from asphalt sheet:
144.1 - 154.1 mm (5.673 - 6.067 in.)

(b) Adjust brake pedal height.

(1) Remove the instrument panel finish panel sub-assy lower and instrument panel insert sub-assy lower LH.

(2) Disconnect the connector from the stop lamp switch.

(3) Loosen the stop lamp switch lock nut and remove the stop lamp switch.

(4) Loosen the clevis lock nut.

(5) Adjust the pedal height by turning the pedal push rod.

(6) Tighten the push rod lock nut.

Torque: 26 N·m (265 kgf·cm, 19 ft·lbf)

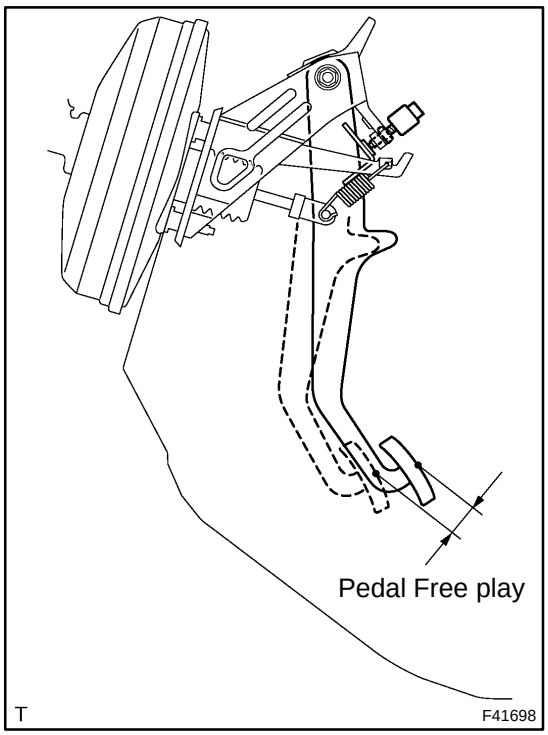
(7) Install the stop lamp switch.

(8) Connect the connector to the stop lamp switch.

(9) Push the brake pedal in 5 - 10 mm (0.20 - 0.39 in.), turn the stop lamp switch to lock the nut in the position where the stop lamp goes off.

(10) After installation, push the brake pedal in 5 - 10 mm (0.20 - 0.39 in.), check that stop lamp lights up.

(11) Install the instrument panel insert sub-assy lower LH and instrument panel finish panel sub-assy lower.



2. CHECK PEDAL FREE PLAY

(a) Stop the engine and depress the brake pedal several times until there is no more vacuum left in the booster.

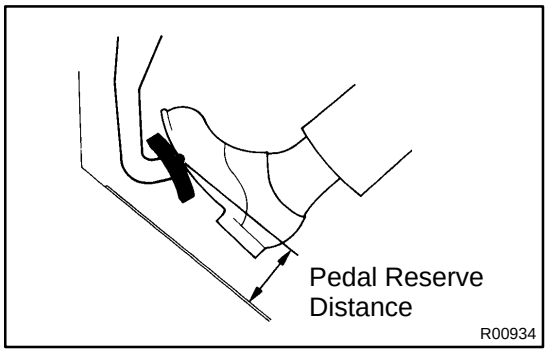
(b) Push in the pedal until the beginning of the resistance is felt. Measure the distance, as shown.

Pedal free play: 1 - 6 mm (0.04 - 0.24 in.)

If incorrect, check the stop lamp switch clearance.

If the clearance is OK, then troubleshoot the brake system.

Stop lamp switch clearance:
0.5 - 2.5 mm (0.020 - 0.098 in.)



3. CHECK PEDAL RESERVE DISTANCE

(a) Release the parking brake pedal.

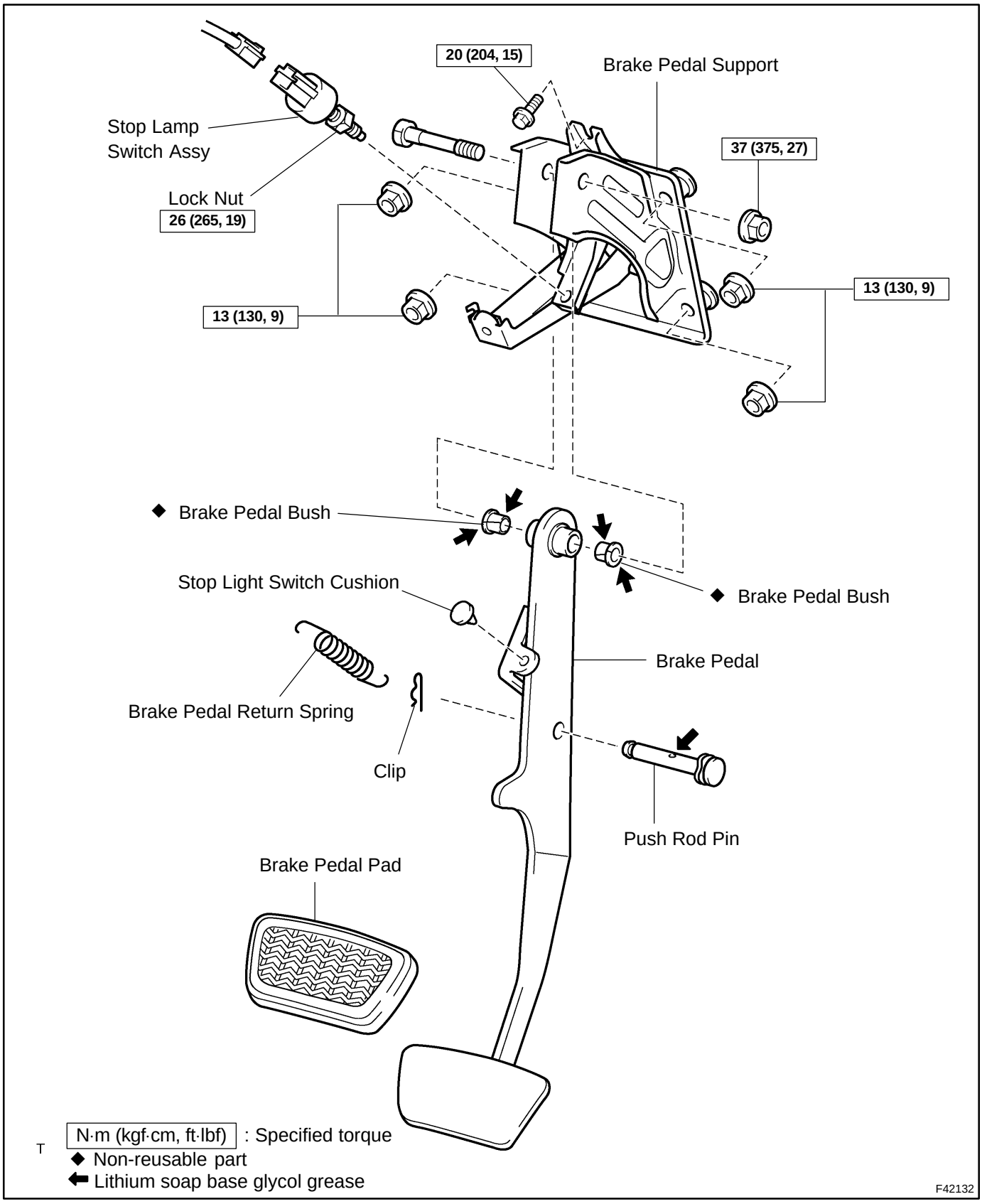
With engine running, depress the pedal and measure the pedal reserve distance, as shown.

Pedal reserve distance from asphalt sheet at 490 N (50 kgf, 110.2 lbf): More than 70 mm (2.76 in.)

If incorrect, troubleshoot the brake system.

320DW-02

COMPONENTS



320DX-02

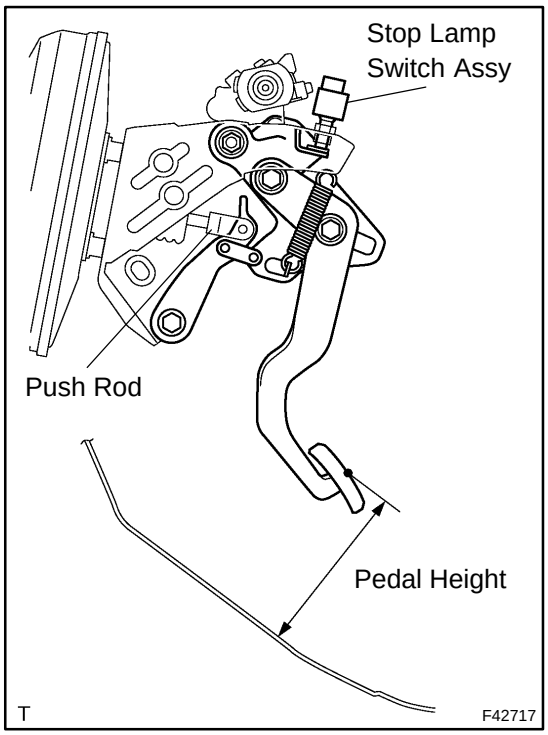
OVERHAUL

1. REMOVE INSTRUMENT PANEL SAFETY PAD SUB-ASSY (SEE PAGE 71-1 1)
2. REMOVE INSTRUMENT PANEL REINFORCEMENT (SEE PAGE 71-1 1)
3. REMOVE BRAKE PEDAL RETURN SPRING
4. REMOVE PUSH ROD PIN
(a) Remove the clip and push rod pin.
5. REMOVE BRAKE PEDAL SUPPORT ASSY
(a) Disconnect the stop lamp switch connector.
(b) Remove the bolt, 4 nuts and brake pedal support assy.
6. REMOVE STOP LAMP SWITCH ASSY
(a) Loosen the lock nut and remove the stop lamp switch.
7. REMOVE BRAKE PEDAL SUB-ASSY
(a) Remove the nut, bolt and brake pedal sub-assy from brake pedal support assy.
8. REMOVE BRAKE PEDAL PAD
9. REMOVE BRAKE PEDAL BUSH
(a) Remove the 2 brake pedal bushes from brake pedal.
10. REMOVE STOP LAMP SWITCH CUSHION
11. INSTALL STOP LAMP SWITCH CUSHION
12. INSTALL BRAKE PEDAL BUSH
(a) Install the new 2 brake pedal bushes to brake pedal.
HINT:
Apply the lithium soap base glycol grease to the parts indicates by arrows (see page 32-10).
13. INSTALL BRAKE PEDAL PAD
14. INSTALL BRAKE PEDAL SUB-ASSY
(a) Install the brake pedal sub-assy with the bolt and nut.
Torque: 37 N·m (375 kgf·cm, 27 ft·lbf)
15. INSTALL STOP LAMP SWITCH ASSY
(a) Install the stop lamp switch with the lock nut.
Torque: 26 N·m (265 kgf·cm, 19 ft·lbf)
16. INSTALL BRAKE PEDAL SUPPORT ASSY
(a) Install the brake pedal support assy with the bolt and 4 nuts.
Torque:
Bolt: 20 N·m (204 kgf·cm, 15 ft·lbf)
Nut: 13 N·m (130 kgf·cm, 9 ft·lbf)
17. INSTALL PUSH ROD PIN
(a) Install the push rod pin and clip.
HINT:
Apply the lithium soap base glycol grease to the parts indicates by arrows (see page 32-10).
18. INSTALL BRAKE PEDAL RETURN SPRING
19. INSTALL INSTRUMENT PANEL REINFORCEMENT (SEE PAGE 71-1 1)
20. INSTALL INSTRUMENT PANEL SAFETY PAD SUB-ASSY (SEE PAGE 71-1 1)
21. CHECK AND ADJUST BRAKE PEDAL HEIGHT (SEE PAGE 32-8)
22. CHECK PEDAL FREE PLAY (SEE PAGE 32-8)
23. CHECK PEDAL RESERVE DISTANCE (SEE PAGE 32-8)

ACCELERATOR & BRAKE PEDAL ASSY (From August, 2002)

320OF-03

ADJUSTMENT



1. CHECK AND ADJUST BRAKE PEDAL HEIGHT

(a) Inspect brake pedal height.

Pedal height from asphalt sheet:

144.1 - 154.1 mm (5.673 - 6.067 in.)

(b) Adjust brake pedal height.

(1) Remove the instrument panel finish panel sub-assy lower and instrument panel insert sub-assy lower LH.

(2) Disconnect the connector from the stop lamp switch assy.

(3) Loosen the stop lamp switch lock nut and remove the stop lamp switch assy.

(4) Loosen the clevis lock nut.

(5) Adjust the pedal height by turning the pedal push rod.

(6) Tighten the push rod lock nut.

Torque: 26 N·m (265 kgf·cm, 19 ft·lbf)

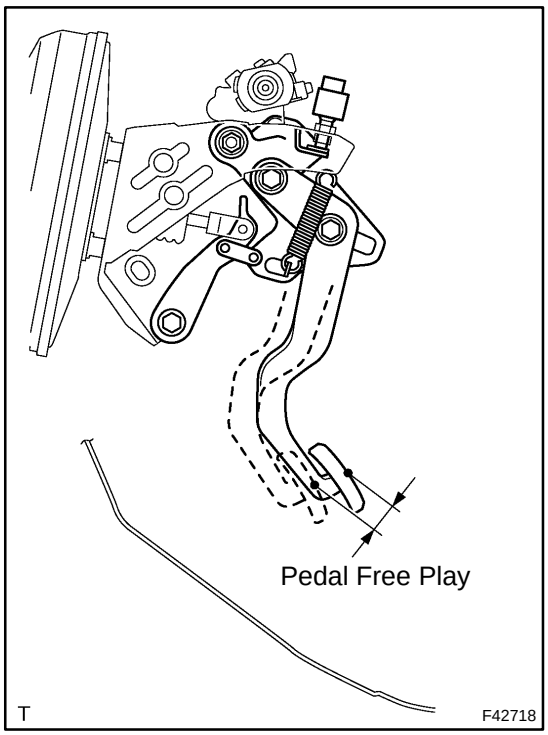
(7) Install the stop lamp switch assy.

(8) Connect the connector to the stop lamp switch assy.

(9) Push the brake pedal in 5 - 10 mm (0.20 - 0.39 in.), turn the stop lamp switch assy to lock the nut in the position where the stop lamp goes off.

(10) After installation, push the brake pedal in 5 - 10 mm (0.20 - 0.39 in.), check that stop lamp lights up.

(11) Install the instrument panel insert sub-assy lower LH and instrument panel finish panel sub-assy lower.



2. CHECK PEDAL FREE PLAY

(a) Stop the engine and depress the brake pedal several times until there is no more vacuum left in the booster.

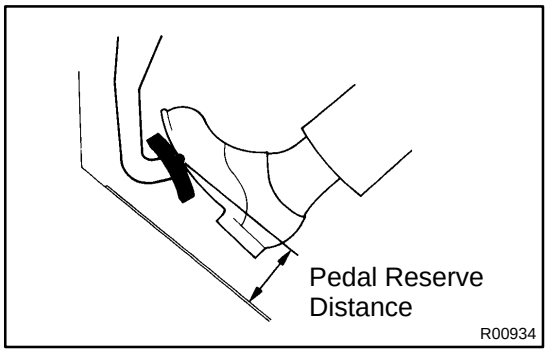
(b) Push in the pedal until the beginning of the resistance is felt. Measure the distance, as shown.

Pedal free play: 1 - 6 mm (0.04 - 0.24 in.)

If incorrect, check the stop lamp switch assy clearance.

If the clearance is OK, then troubleshoot the brake system.

Stop lamp switch clearance:
0.5 - 2.5 mm (0.020 - 0.098 in.)



3. CHECK PEDAL RESERVE DISTANCE

(a) Release the parking brake pedal.

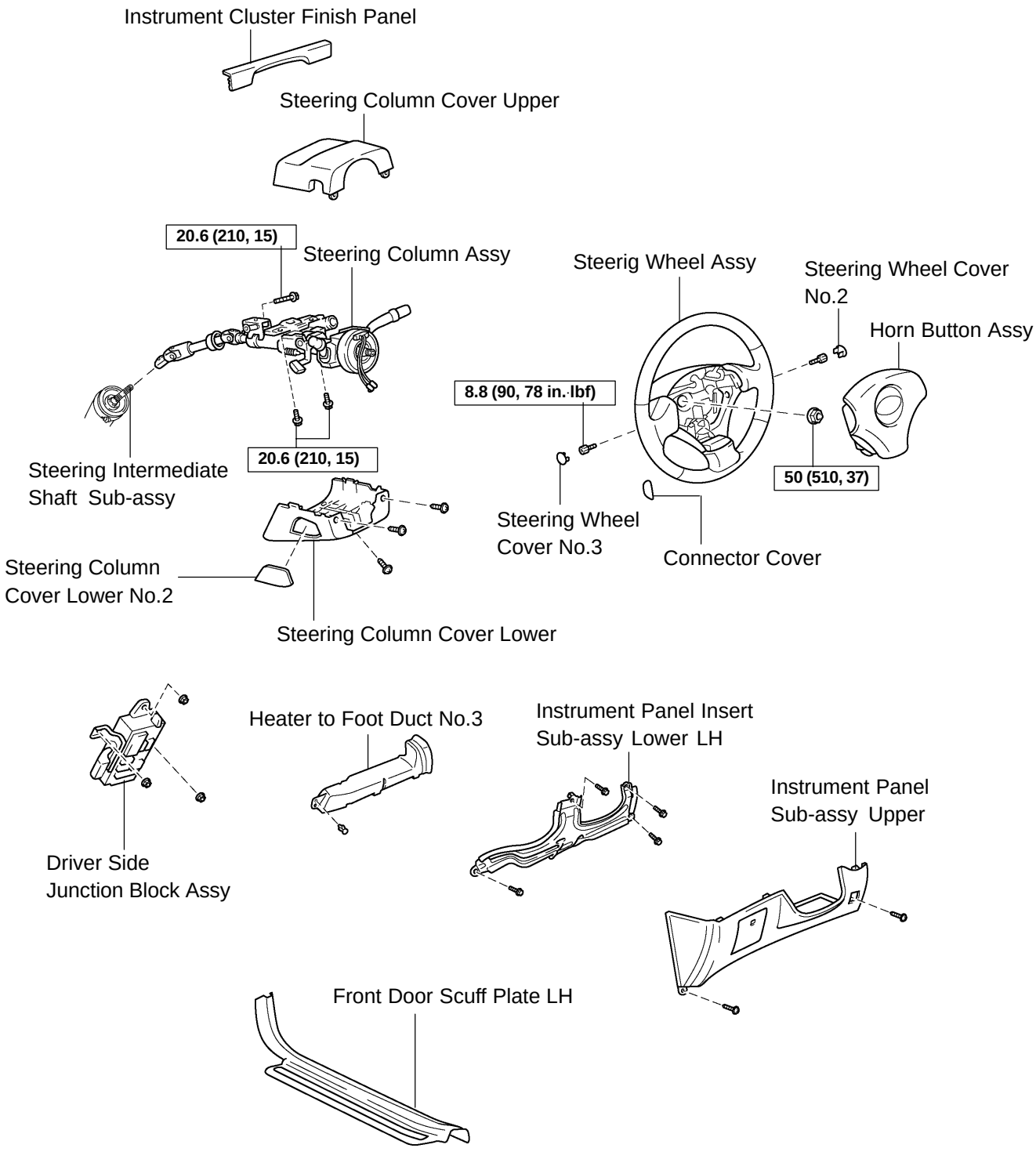
With engine running, depress the pedal and measure the pedal reserve distance, as shown.

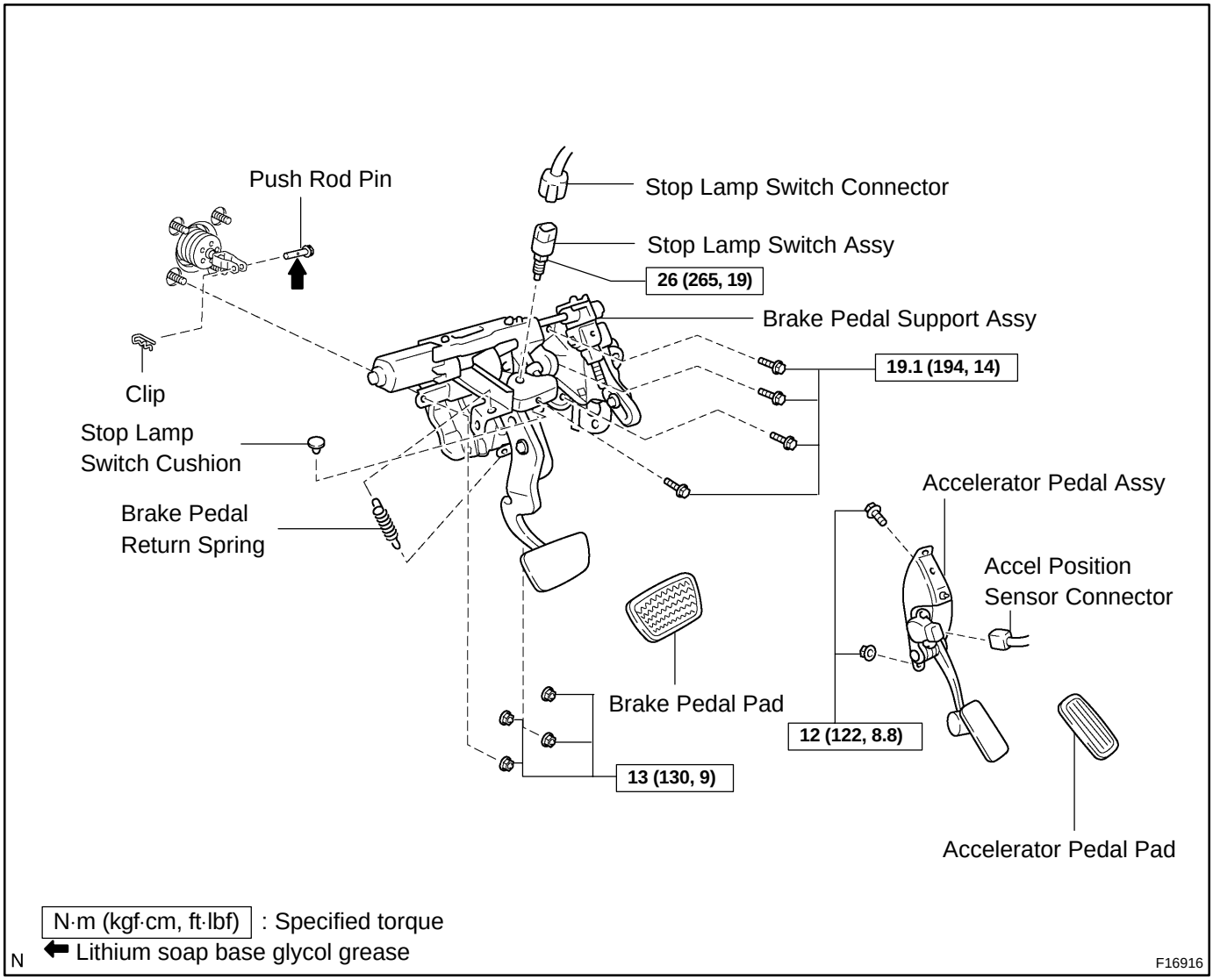
Pedal reserve distance from asphalt sheet at 490 N (50 kgf, 110.2 lbf): More than 63 mm (2.48 in.)

If incorrect, troubleshoot the brake system.

320OJ-03

COMPONENTS

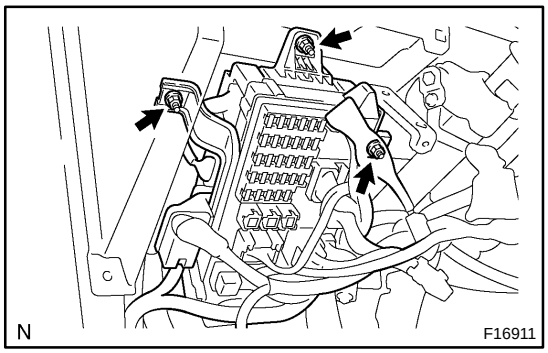



Push Rod Pin
Stop Lamp Switch Connector
Stop Lamp Switch Assy
26 (265, 19)
Brake Pedal Support Assy
19.1 (194, 14)
Clip
Stop Lamp
Switch Cushion
Brake Pedal
Return Spring
Accelerator Pedal Assy
Accel Position
Sensor Connector
Brake Pedal Pad
12 (122, 8.8)
13 (130, 9)
Accelerator Pedal Pad
N·m (kgf·cm, ft·lbf) : Specified torque
Lithium soap base glycol grease
N
F16916

320OG-05

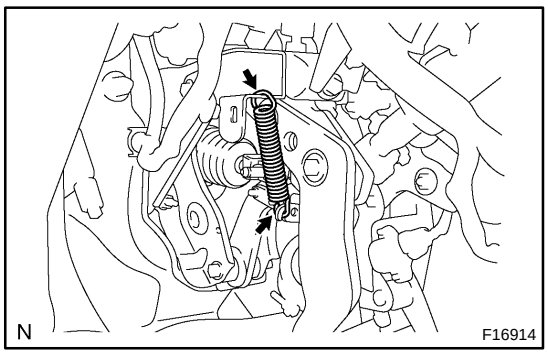
OVERHAUL

1. PRECAUTION (SEE PAGE 60-1)
2. DISCONNECT BATTERY NEGATIVE TERMINAL (SEE PAGE 60-1)
3. PLACE FRONT WHEELS FACING STRAIGHT AHEAD
4. REMOVE STEERING WHEEL COVER LOWER NO.2
5. REMOVE CONNECTOR COVER (SEE PAGE 82-1)
6. REMOVE STEERING PAD SWITCH (SEE PAGE 82-1)
7. REMOVE HORN BUTTON ASSY (SEE PAGE 60-22)
8. REMOVE STEERING WHEEL ASSY (SEE PAGE 50-8)
   SST 09950-50013 (09951-05010, 09952-05010, 09953-05020, 09954-05021)
9. REMOVE FRONT DOOR SCUFF PLATE LH (SEE PAGE 71-1 1)
10. REMOVE INSTRUMENT PANEL SUB-ASSY UPPER (SEE PAGE 71-1 1)
11. REMOVE INSTRUMENT PANEL INSERT SUB-ASSY LOWER LH (SEE PAGE 71-1 1)
12. REMOVE HEATER TO FOOT DUCT NO.3 (SEE PAGE 32-14)
13. REMOVE STEERING COLUMN COVER LWR NO.2 (SEE PAGE 50-8)
14. REMOVE STEERING COLUMN COVER (SEE PAGE 50-8)
15. REMOVE TURN SIGNAL SWITCH ASSY (SEE PAGE 50-8)
16. DISCONNECT FLOOR SHIFT PARKING LOCK CABLE ASSY (SEE PAGE 50-8)
17. DISCONNECT STEERING SLIDING YOKE SUB-ASSY (SEE PAGE 50-8)
18. REMOVE STEERING COLUMN HOLE COVER SUB-ASSY NO.2 (SEE PAGE 50-8)
19. REMOVE STEERING COLUMN ASSY (SEE PAGE 50-8)

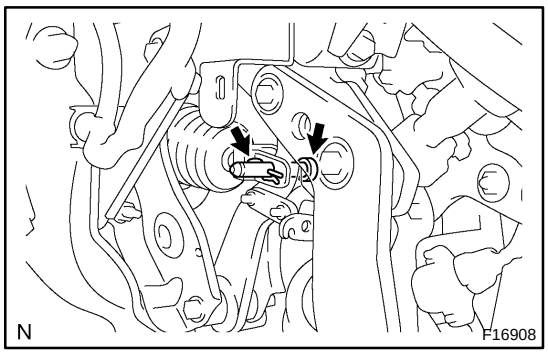


20. REMOVE DRIVER SIDE JUNCTION BLOCK ASSY

(a) Remove the 3 nuts and junction bloke assy, then disconnect the connector.

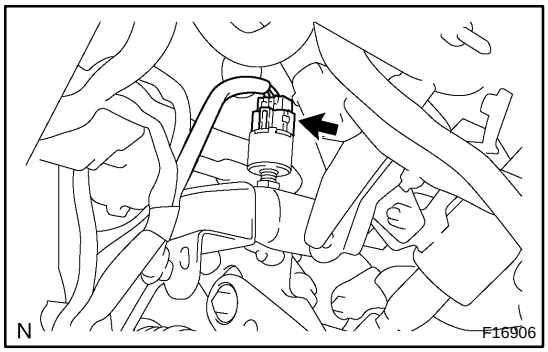


21. REMOVE BRAKE PEDAL RETURN SPRING



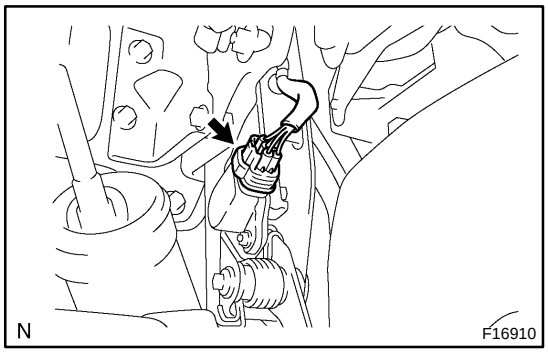
22. REMOVE PUSH ROD PIN

(a) Remove the clip and push rod pin.

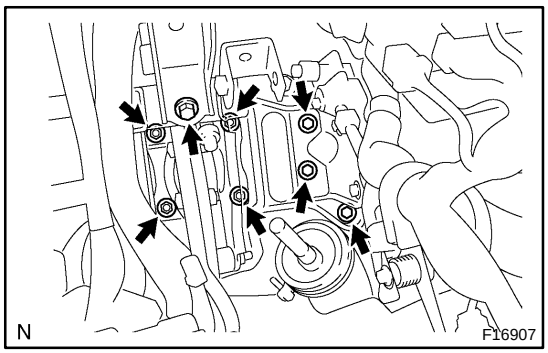


23. REMOVE ACCELERATOR & BRAKE PEDAL ASSY

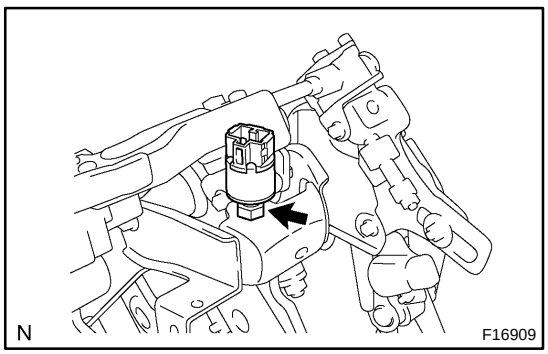
(a) Disconnect the stop lamp switch connector.



(b) Disconnect the accel position sensor connector.



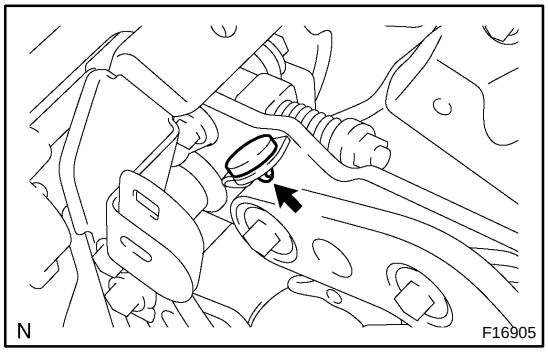
(c) Remove the 4 bolts, nuts and accelerator & brake pedal assy.



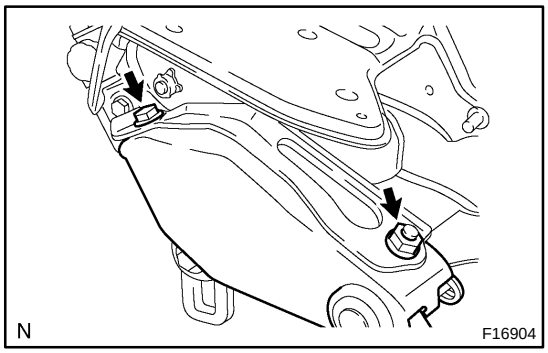
24. REMOVE STOP LAMP SWITCH ASSY

(a) Loosen the nut and remove the stop lamp switch assy.

25. REMOVE BRAKE PEDAL PAD

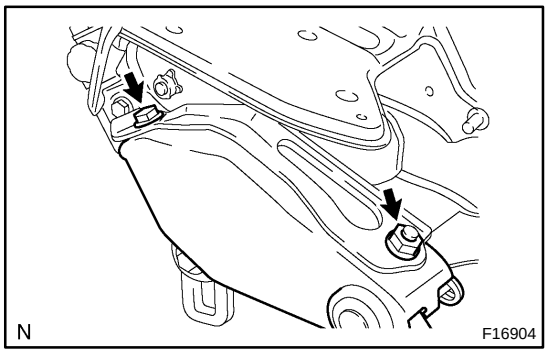


26. REMOVE STOP LAMP SWITCH CUSHION



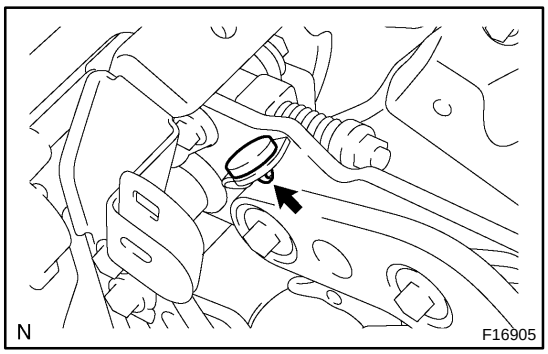
27. REMOVE ACCELERATOR PEDAL ASSY

(a) Remove the bolt, nut and accelerator pedal assy.



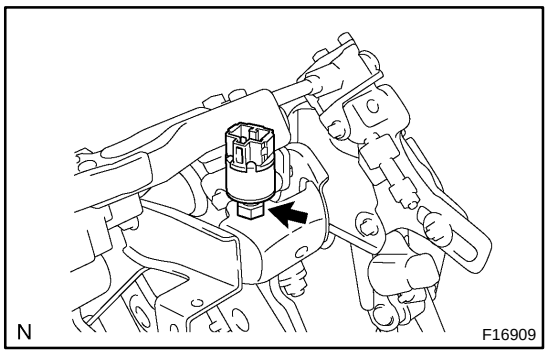
28. INSTALL ACCELERATOR PEDAL ASSY

(a) Install the accelerator pedal assy with nut and bolt.
Torque: 12 N·m (122 kgf·cm, 8.8 ft·lbf)



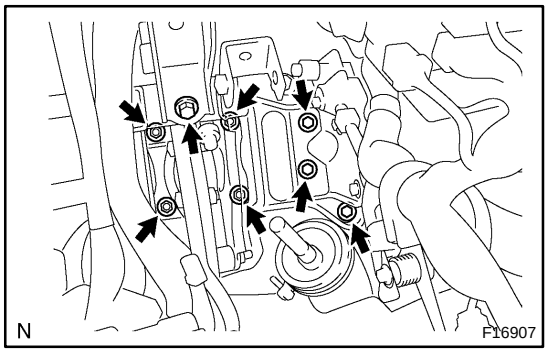
29. INSTALL STOP LAMP SWITCH CUSHION

30. INSTALL BRAKE PEDAL PAD



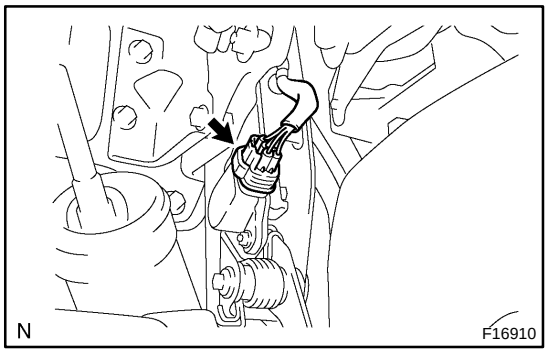
31. INSTALL STOP LAMP SWITCH ASSY

(a) Install the stop lamp switch assy with a nut.
Torque: 26 N·m (265 kgf·cm, 19 ft·lbf)

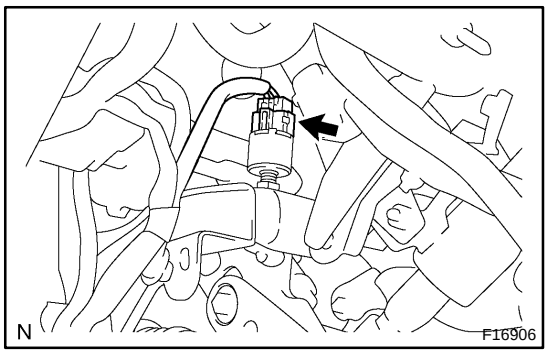


32. INSTALL ACCELERATOR & BRAKE PEDAL ASSY

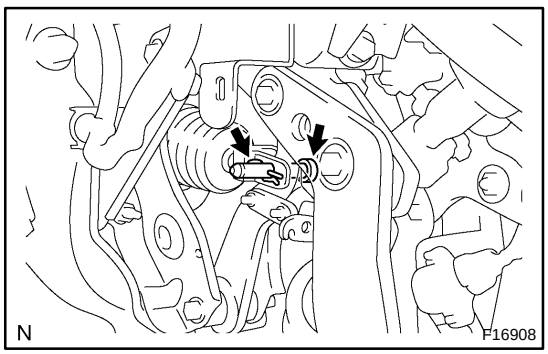
(a) Install the accelerator & brake pedal assy with the 4 nuts and bolts.
Torque:
Nut: 13 N·m (130 kgf·cm, 9 ft·lbf)
Bolt: 19.1 N·m (194 kgf·cm, 14 ft·lbf)



(b) Connect the accel position sensor connector.



(c) Connect the stop lamp switch connector.

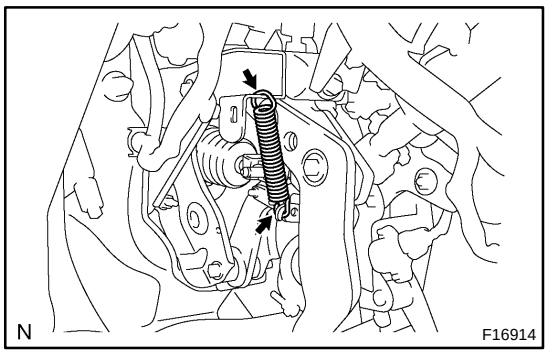


33. INSTALL PUSH ROD PIN

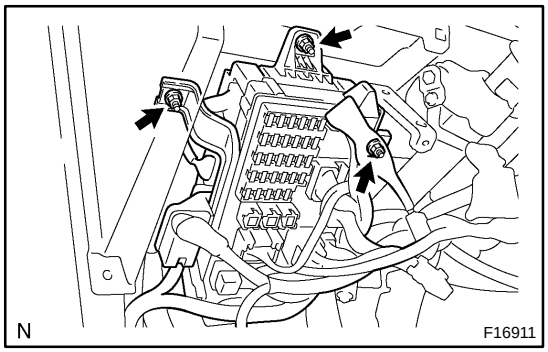
(a) Install the push rod pin and clip.

HINT:

Apply the lithium soap base glycol grease to the parts indicates by arrows (see page 32-14).



34. INSTALL BRAKE PEDAL RETURN SPRING



35. INSTALL DRIVER SIDE JUNCTION BLOCK ASSY

(a) Install the junction block assy with the 3 nuts, then connect the each connector.

36. INSTALL STEERING COLUMN ASSY (SEE PAGE 50-8)
37. CONNECT STEERING SLIDING YOKE SUB-ASSY (SEE PAGE 50-8)
38. CONNECT FLOOR SHIFT PARKING LOCK CABLE ASSY (SEE PAGE 50-8)
39. INSPECT CHECK KEY INTERLOCK OPERATION (SEE PAGE 50-8)
40. INSTALL TURN SIGNAL SWITCH ASSY (SEE PAGE 50-8)
41. INSPECT SPIRAL CABLE SUB-ASSY (SEE PAGE 60-31)
42. INSTALL STEERING COLUMN COVER (SEE PAGE 50-8)
43. INSTALL STEERING COLUMN COVER LWR NO.2 (SEE PAGE 50-8)
44. INSTALL HEATER TO FOOT DUCT NO.3 (SEE PAGE 32-14)
45. INSTALL INSTRUMENT PANEL INSERT SUB-ASSY LOWER LH (SEE PAGE 71-1 1)
46. INSTALL INSTRUMENT PANEL SUB-ASSY UPPER (SEE PAGE 71-1 1)
47. INSTALL FRONT DOOR SCUFF PLATE LH (SEE PAGE 71-1 1)
48. PLACE FRONT WHEELS FACING STRAIGHT AHEAD
49. INSTALL STEERING WHEEL ASSY (SEE PAGE 50-8)
50. INSPECT HORN BUTTON ASSY (SEE PAGE 60-22)
51. INSTALL HORN BUTTON ASSY (SEE PAGE 60-22)
52. INSTALL STEERING PAD SWITCH (SEE PAGE 82-1)
53. INSTALL CONNECTOR COVER (SEE PAGE 82-1)
54. INSTALL STEERING WHEEL COVER LOWER NO.2
55. INSPECT SRS WARNING LIGHT (SEE PAGE 05-818)

BRAKE MASTER CYLINDER SUB-ASSY (From August, 2002)

320DY-06

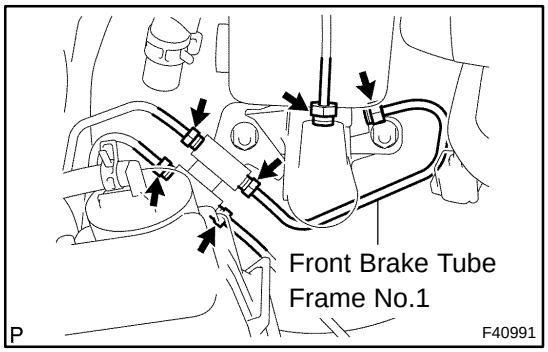
OVERHAUL

1. REMOVE AIR CLEANER ASSY

2. DRAIN BRAKE FLUID

NOTICE:

Wash off the brake fluied immediately if it comes into contact with a painted surface.

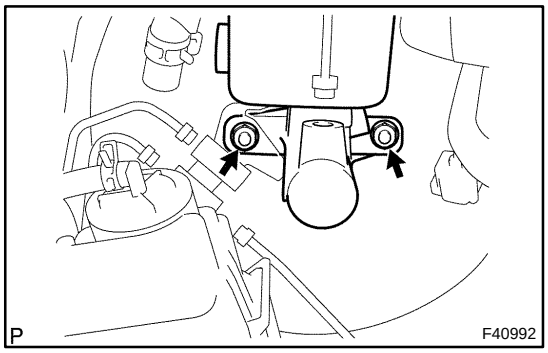


3. REMOVE BRAKE MASTER CYLINDER SUB-ASSY

(a) Disconnect the level warning switch connector.

(b) Using SST, remove the front brake tube frame No.1.
SST 09023-00101

(c) Using SST, disconnect the 4 brake tubes from the master cylinder.
SST 09023-00101



(d) Remove the 2 nuts, pull out the 2-way and brake master cylinder sub-assy.

4. REMOVE BRAKE MASTER CYLINDER RESERVOIR FILLER CAP ASSY

(a) Remove the master cylinder reservoir filler cap assy.

5. REMOVE BRAKE MASTER CYLINDER RESERVOIR STRAINER

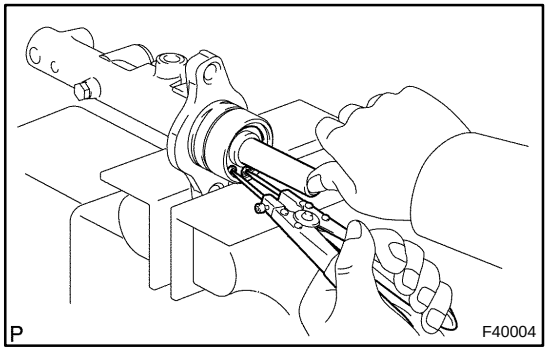
(a) Remove the master cylinder reservoir strainer.

6. REMOVE BRAKE MASTER CYLINDER RESERVOIR SUB-ASSY

(a) Remove the screw and pull out the master cylinder reservoir sub-assy.

7. REMOVE MASTER CYLINDER RESERVOIR GROMMET

(a) Remove the 2 master cylinder reservoir grommets.

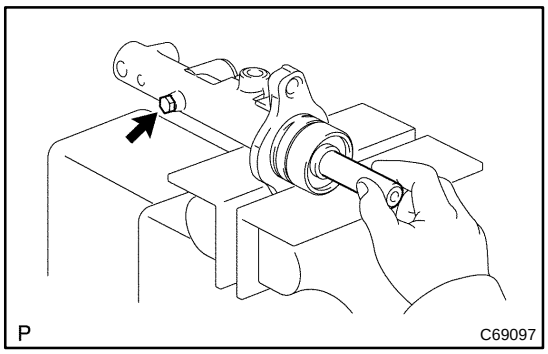


8. REMOVE BRAKE MASTER CYLINDER KIT (W/O VSC)

(a) Place master cylinder in vise.

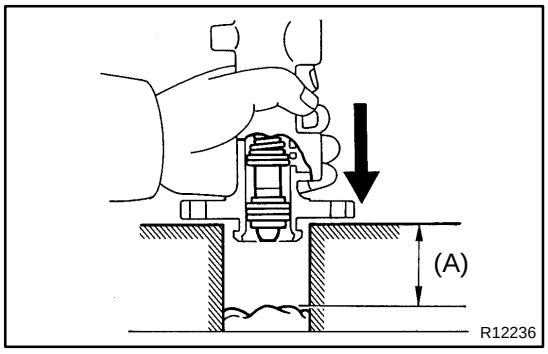
(b) Remove the O-ring.

(c) Push in the piston and remove the snap ring with snap ring pliers.



(d) Push in the piston and remove the piston stopper bolt and gasket.
(e) Remove the No.1 piston sub-assy, pulling straight out not at an angle.

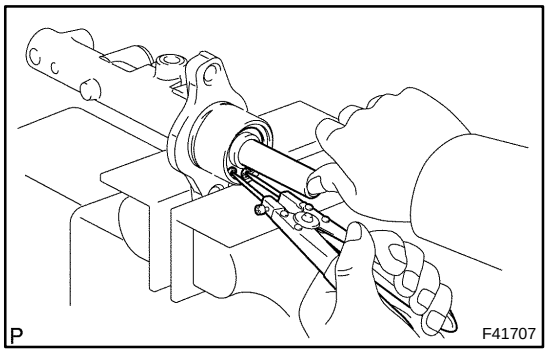
NOTICE:
If pulled out at an angle, there is a possibility that the cylinder bore could be damaged.



(f) Place a waste cloth and 2 wooden blocks on the work table and lightly edges until the No.2 piston sub-assy drops out of the cylinder.

HINT:
Make sure the distance (A) from the rag the top of the blocks is at least 100 mm (3.94 in.).

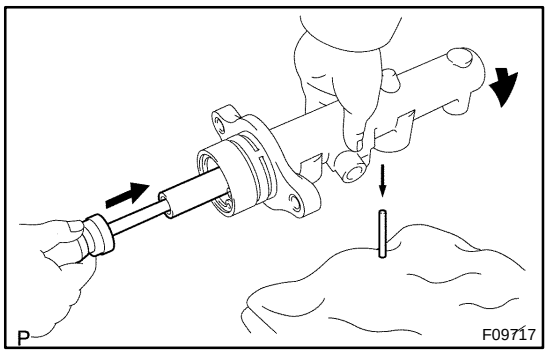
NOTICE:
If pulled out at an angle, there is a possibility that the cylinder bore could be damaged.



9. REMOVE BRAKE MASTER CYLINDER KIT (W/ VSC)

(a) Place master cylinder in vise.
(b) Remove the O-ring.
(c) Push in the piston and remove the snap ring with snap ring pliers.

NOTICE:
If pulled out at an angle, there is a possibility that the cylinder bore could be damaged.

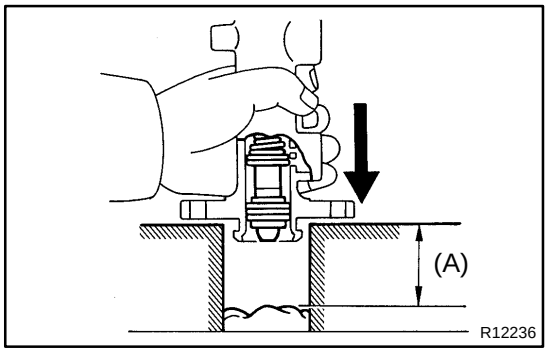


(d) Push in the piston with a screwdriver, and remove the straight pin by turning over the cylinder body.

HINT:
Tape the screwdriver tip before use.

(e) Remove the No.1 piston sub-assy, pulling straight out not at an angle.

NOTICE:
If pulled out at an angle, there is a possibility that the cylinder bore could be damaged.



(f) Place a waste cloth and 2 wooden blocks on the work table and lightly edges until the No.2 piston sub-assy drops out of the cylinder.

HINT:
Make sure the distance (A) from the rag the top of the blocks is at least 100 mm (3.94 in.).

NOTICE:
If pulled out at an angle, there is a possibility that the cylinder bore could be damaged.

10. INSPECT MASTER CYLINDER BODY

(a) Check the cylinder bore for rust or scoring.

11. INSTALL BRAKE MASTER CYLINDER KIT (W/O VSC)

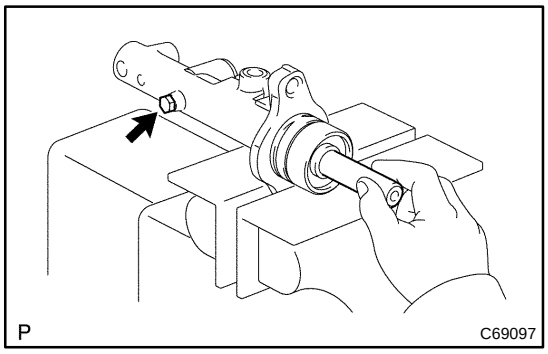
(a) Place master cylinder in vise.

(b) Apply the lithium soap base glycol grease on new No.1 and No.2 piston sub-assy.

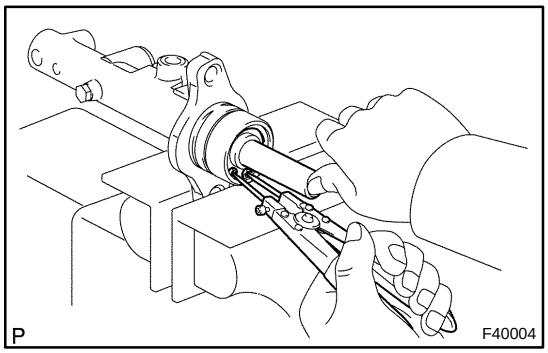
(c) Install the No.2 and No.1 piston sub-assy.

NOTICE:

- **If the piston is inserted at an angle, there is a possibility that the cylinder bore could be damaged.**
- **Be careful not to damage the rubber lips on the pistons.**



(d) Push in the piston and install a new gasket and a new piston stopper bolt.
Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)



(e) Push in the piston and install the snap ring with snap ring pliers.

(f) Apply the lithium soap base glycol grease on a new O-ring and install the O-ring to the master cylinder.

12. INSTALL BRAKE MASTER CYLINDER KIT (W/ VSC)

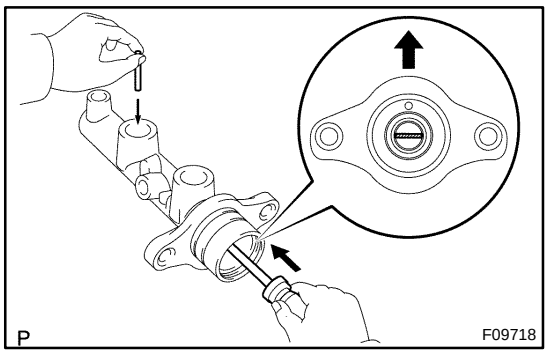
(a) Place master cylinder in vise.

(b) Apply the lithium soap base glycol grease on new No.1 and No.2 piston sub-assy.

(c) Install the No.2 and No.1 piston sub-assy.

NOTICE:

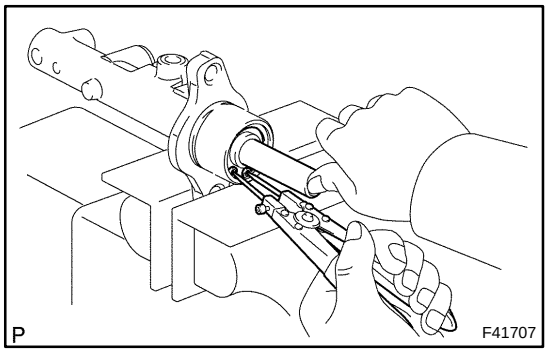
- **If the piston is inserted at an angle, there is a possibility that the cylinder bore could be damaged.**
- **Be careful not to damage the rubber lips on the pistons.**



(d) Install a straight pin.

HINT:

Insert the No.2 piston with the groove positioning horizontally.



(e) Push in the piston and install the snap ring with snap ring pliers.

(f) Apply the lithium soap base glycol grease on a new O-ring and install the O-ring to the master cylinder.

13. INSTALL MASTER CYLINDER RESERVOIR GROMMET

(a) Apply the lithium soap base glycol grease on the 2 master cylinder reservoir grommets.

(b) Install the 2 master cylinder reservoir grommets to the master cylinder reservoir sub-assy.

14. INSTALL BRAKE MASTER CYLINDER RESERVOIR SUB-ASSY

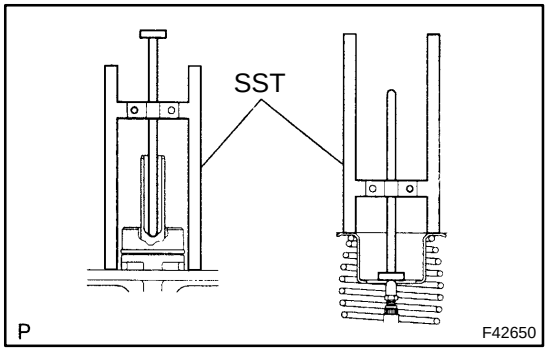
(a) Install the master cylinder reservoir sub-assy to the master cylinder with the screw.

15. INSTALL BRAKE MASTER CYLINDER RESERVOIR STRAINER

(a) Install the brake master cylinder reservoir strainer.

16. INSTALL BRAKE MASTER CYLINDER RESERVOIR FILLER CAP ASSY

(a) Install the brake master cylinder reservoir filler cap assy.



17. INSPECT AND ADJUST BRAKE BOOSTER PUSH ROD

(a) Apply SST to the master cylinder.
SST 09737-00013

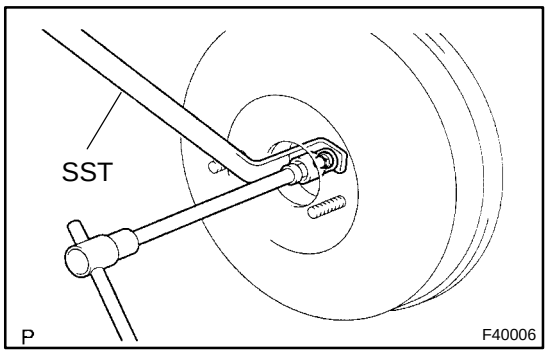
(b) Set SST, on the master cylinder, lower the pin of the SST until it slightly touches the piston.

(c) Apply the chalk to the flat surfaced tip of the SST pin.

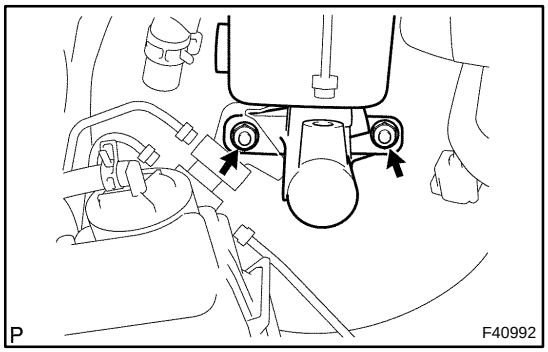
(d) Turn SST upside down and place it clearance between the brake booster and SST.
Clearance: 0 mm (0 in.)

HINT:

- If there is a clearance between the SST main body and the booster shell. It means that the specified value, and no chalk attachment on the booster push rod means that it is more than the specified value.
- Brake booster push rod clearance before shipment is adjusted to be ± 0.105 mm (± 0.004 in.).

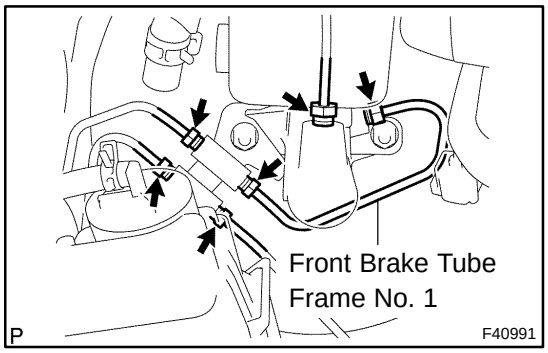


(e) Using SST, adjust the booster push rod length until the push rod lightly touches the pin head.
SST 09737-00020



18. INSTALL BRAKE MASTER CYLINDER SUB-ASSY

(a) Install the master cylinder sub-assy and 2-way with the 2 nuts.
Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)



(b) Using SST and connect the 4 front brake tubes to the master cylinder sub-assy.
Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)
SST 09023-00101

(c) Using SST and install the front brake tube frame No.1 to the master cylinder.
Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)
SST 09023-00101

(d) Connect the level warnig switch connector.

19. FILL RESERVOIR WITH BRAKE FLUID

20. BLEED MASTER CYLINDER (SEE PAGE 32-4)
SST 09023-00101

21. BLEED BRAKE LINE (SEE PAGE 32-4)

22. INSTALL AIR CLEANER ASSY

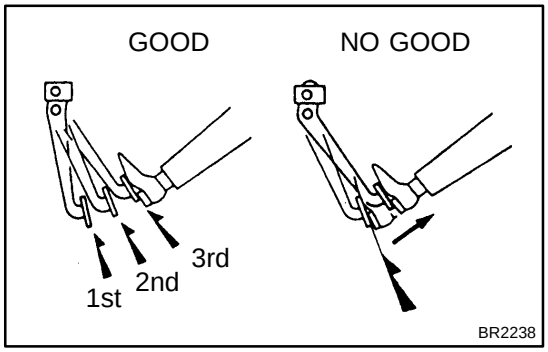
23. CHECK FLUID LEVEL IN RESERVOIR (SEE PAGE 32-4)

24. CHECK BRAKE FLUID LEAKAGE

BRAKE BOOSTER ASSY (From July, 2003)

3203F-08

ON-VEHICLE INSPECTION



1. INSPECT BRAKE BOOSTER

(a) Air tightness check.

(1) Start the engine and stop it after 1 or 2 minutes. Depress the brake pedal several times slowly.

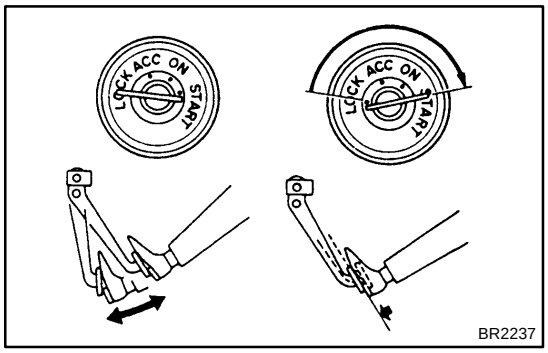
HINT:

If the pedal goes down farthest the 1st time, but gradually rises after the 2nd or 3rd time, the booster is air tight.

(2) Depress the brake pedal while the engine is running, and stop the engine with the pedal depressed.

HINT:

If there is no change in the pedal reserve distance after holding the pedal for 30 seconds, the booster is air tight.



(b) Operating check.

(1) Depress the brake pedal several times with the ignition switch OFF and check that there is no change in the pedal reserve distance.

(2) Depress the brake pedal and start the engine.

HINT:

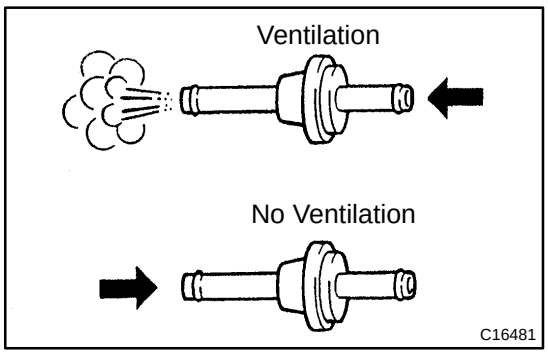
If the pedal goes down slightly, operation is normal.

2. INSPECT VACUUM CHECK VALVE

(a) Check vacuum check valve.

(1) Slide the clip and disconnect the vacuum hose.

(2) Remove the vacuum check valve.

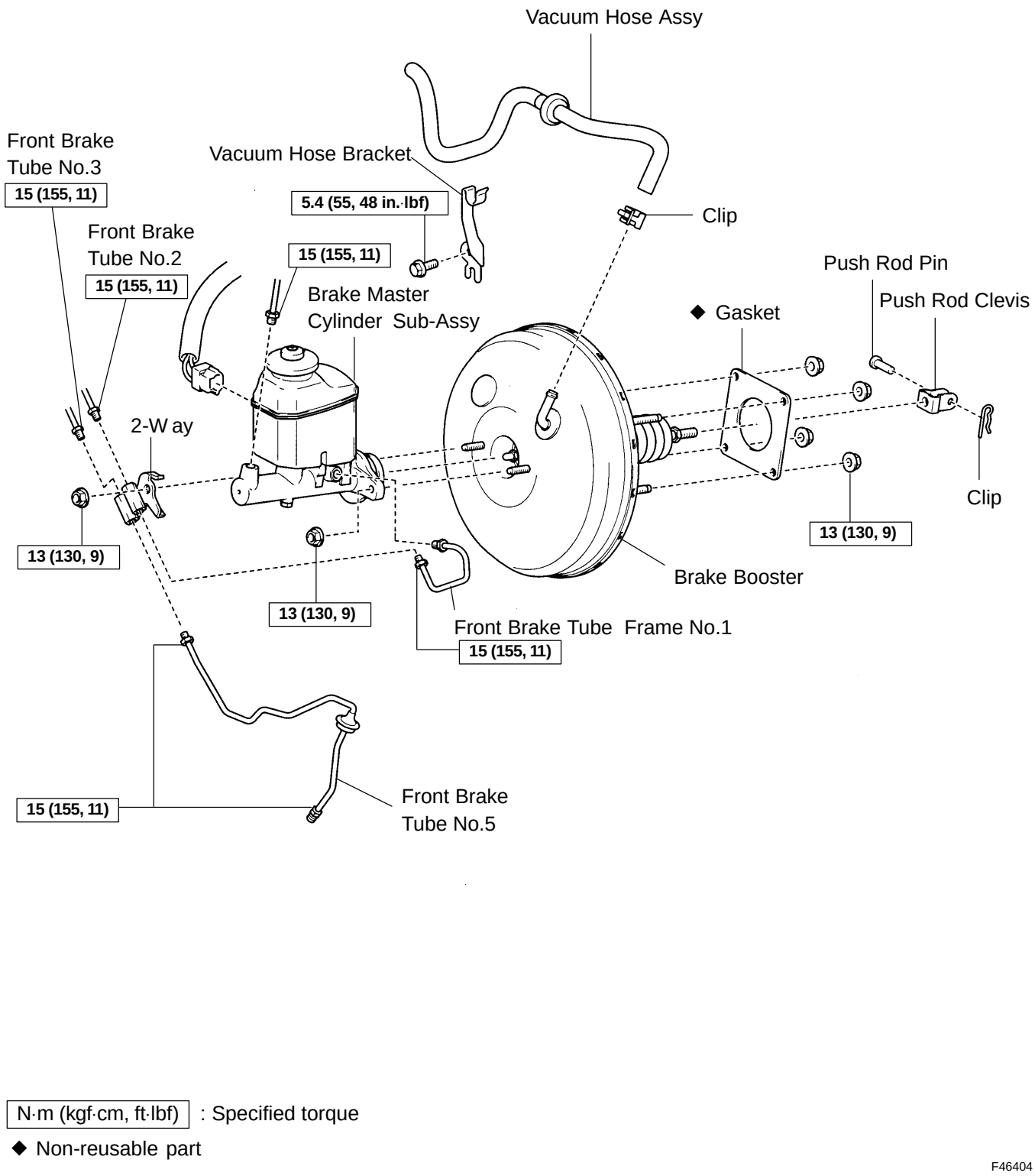


(3) Check that there is ventilation from the booster to engine, and no ventilation from the engine to the booster.

(4) If any fault is found, replace the vacuum check valve.

320DZ-05

COMPONENTS



3211X-04

REPLACEMENT

1. REMOVE AIR CLEANER ASSY

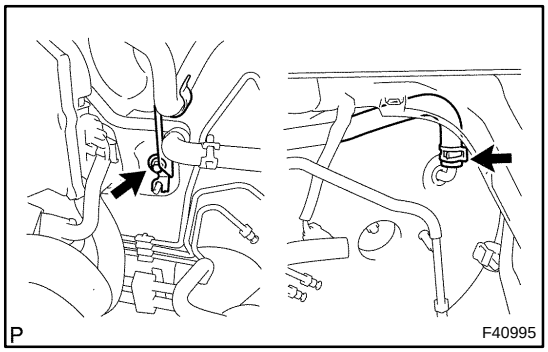
2. DRAIN BRAKE FLUID

NOTICE:

Wash off the brake fluid immediately if it comes into contact with a painted surface.

3. REMOVE BRAKE MASTER CYLINDER SUB-ASSY (SEE PAGE 32-21)

SST 09023-00101



4. REMOVE VACUUM HOSE ASSY

(a) Remove the bolt and separate the vacuum hose from the vacuum hose bracket.

(b) Slide the clip and disconnect the vacuum hose from the brake booster.

5. REMOVE FRONT DOOR SCUFF PLATE LH (SEE PAGE 71-1 1)

6. REMOVE INSTRUMENT PANEL SUB-ASSY UPPER (SEE PAGE 71-1 1)

7. REMOVE INSTRUMENT PANEL INSERT SUB-ASSY LOWER LH (SEE PAGE 71-1 1)

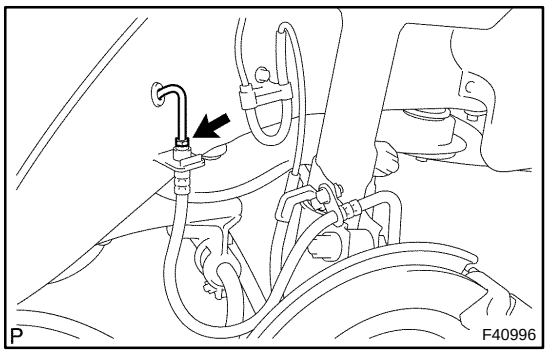
8. REMOVE BRAKE PEDAL RETURN SPRING

9. REMOVE PUSH ROD PIN

(a) Remove the clip and push rod pin.

10. REMOVE BRAKE MASTER CYLINDER PUSH ROD CLEVIS

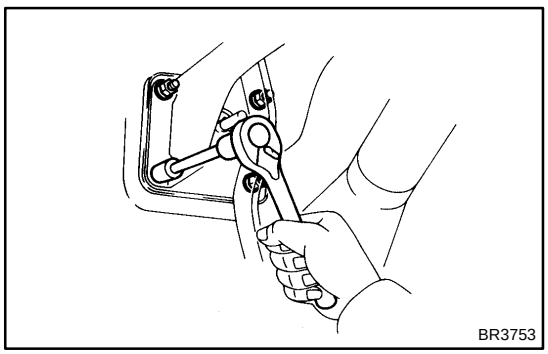
(a) Loosen the lock nut and remove the push rod clevis.



11. REMOVE FRONT BRAKE TUBE NO.5

(a) Using SST and remove the front brake tube No.5.

SST 09023-00101



12. REMOVE BRAKE BOOSTER ASSY

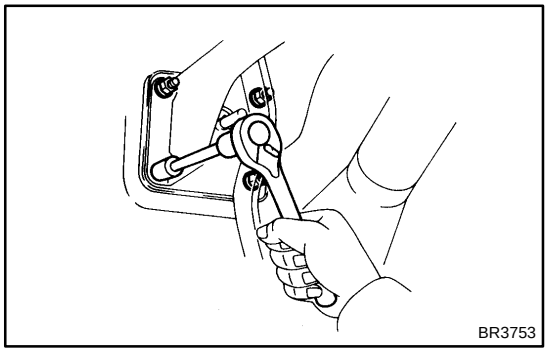
(a) Remove the 4 nuts.

(b) Pull out the brake booster assy.

13. REMOVE BRAKE BOOSTER GASKET

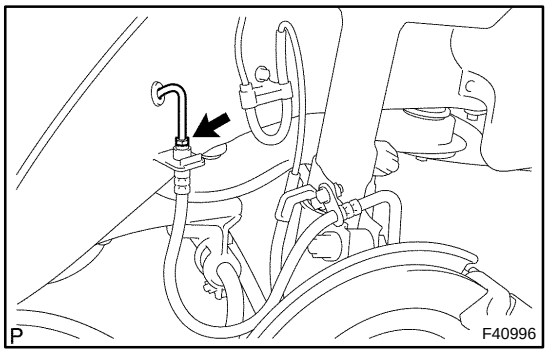
14. INSTALL BRAKE BOOSTER GASKET

(a) Install a new brake booster gasket to the brake booster.



15. INSTALL BRAKE BOOSTER ASSY

(a) Install the brake booster with the 4 nuts.
Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)



16. INSTALL FRONT BRAKE TUBE NO.5

(a) Using SST and install the front brake tube No.5.
Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)
SST 09023-00101

17. INSTALL BRAKE MASTER CYLINDER PUSH ROD CLEVIS

(a) Install the push rod clevis and lock nut.

18. INSTALL PUSH ROD PIN

(a) Install the push rod pin and clip.

HINT:

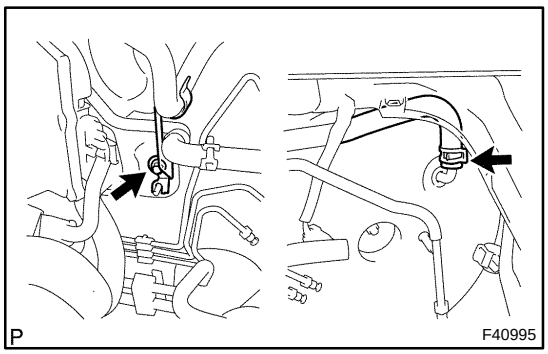
Apply the lithium soap base glycol grease to the part indicate by arrow (see page 32-27).

19. INSTALL BRAKE PEDAL RETURN SPRING

20. INSTALL INSTRUMENT PANEL INSERT SUB-ASSY LOWER LH (SEE PAGE 71-1 1)

21. INSTALL INSTRUMENT PANEL SUB-ASSY UPPER (SEE PAGE 71-1 1)

22. INSTALL FRONT DOOR SCUFF PLATE LH (SEE PAGE 71-1 1)



23. INSTALL VACUUM HOSE ASSY

(a) Install the vacuum hose and vacuum hose bracket to the body with a bolt.
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)

(b) Connect the vacuum hose to the brake booster with the clip.

24. INSPECT AND ADJUST BRAKE BOOSTER PUSH ROD (SEE PAGE 32-21)
SST 09737-00013, 09737-00020

25. INSTALL BRAKE MASTER CYLINDER SUB-ASSY (SEE PAGE 32-21)
SST 09023-00101

26. FILL RESERVOIR WITH BRAKE FLUID

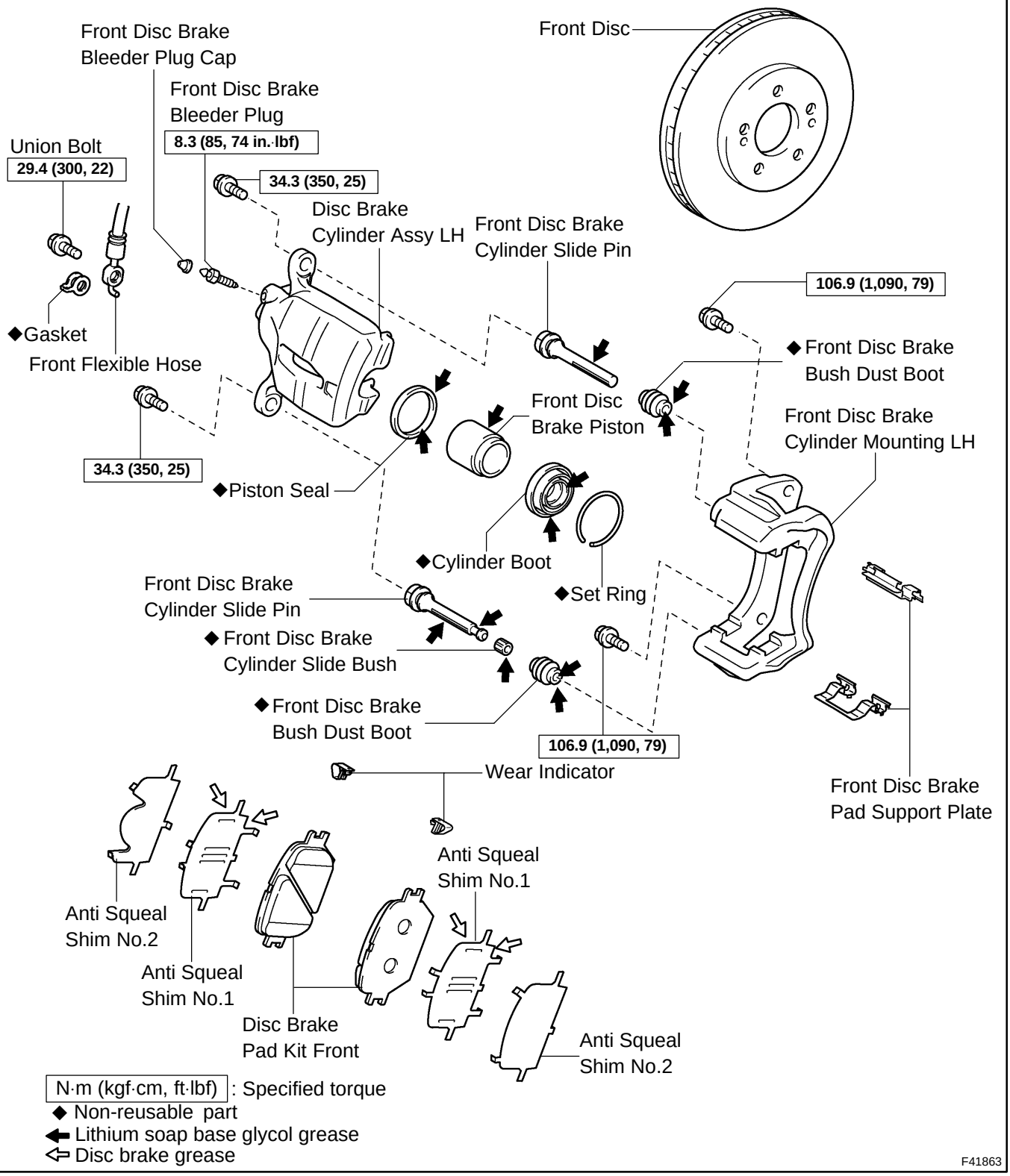
27. BLEED MASTER CYLINDER (SEE PAGE 32-4)
SST 09023-00101
28. BLEED BRAKE LINE (SEE PAGE 32-4)
29. INSTALL AIR CLEANER ASSY
30. CHECK FLUID LEVEL IN RESERVOIR (SEE PAGE 32-4)
31. CHECK BRAKE FLUID LEAKAGE
32. CHECK AND ADJUST BRAKE PEDAL HEIGHT (SEE PAGE 32-8 or 32-12)

FRONT BRAKE

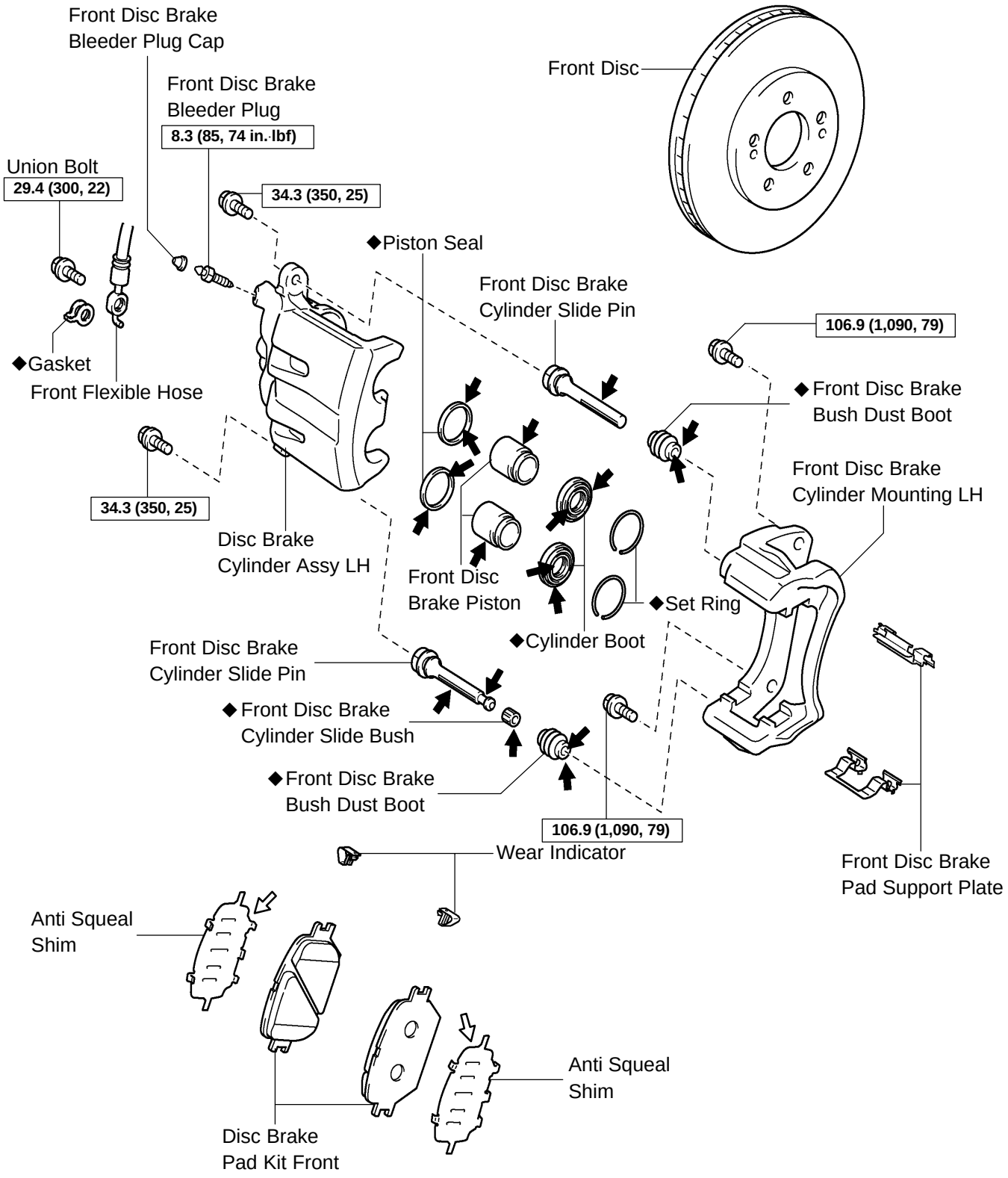
320E5-02

COMPONENTS

Single Piston Type:



Twin Piston Type:



N·m (kgf·cm, ft·lbf) : Specified torque
◆ Non-reusable part
⬅ Lithium soap base glycol grease
⇦ Disc brake grease

T

F41533

320E6-04

OVERHAUL

HINT:

Overhaul the RH side by the same procedures with LH side.

1. REMOVE FRONT WHEEL

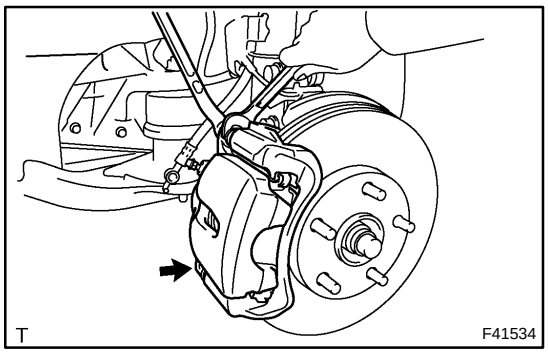
2. DRAIN BRAKE FLUID

NOTICE:

Wash the brake fluid off immediately if it comes into contact with any painted surfaces.

3. DISCONNECT FRONT FLEXIBLE HOSE

(a) Remove the union bolt and a gasket from the disc brake cylinder, then disconnect the flexible hose from the disc brake cylinder.

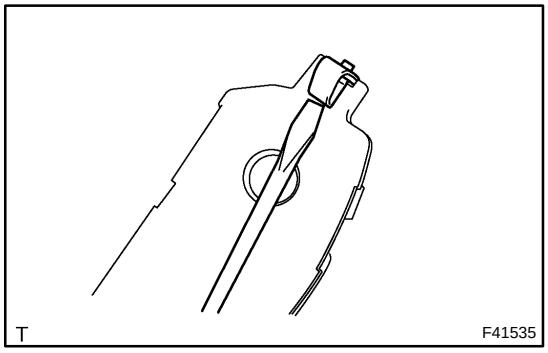


4. REMOVE DISC BRAKE CYLINDER ASSY LH

(a) Remove the 2 bolts and disc brake cylinder.

5. REMOVE DISC BRAKE PAD KIT FRONT (PAD ONLY)

(a) Remove the 2 brake pads with anti squeal shims.



6. REMOVE ANTI SQUEAL SHIM KIT FRONT

(a) Remove the 2 anti squeal shims from 2 brake pads.

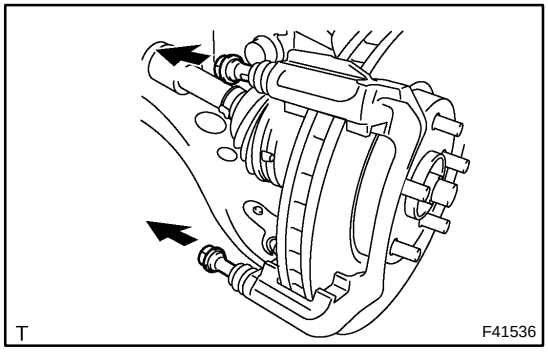
(b) Using a screwdriver, remove the wear indicator from 2 brake pads.

7. REMOVE FRONT DISC BRAKE PAD SUPPORT PLATE

(a) Remove the upper side front disc brake pad support plate.

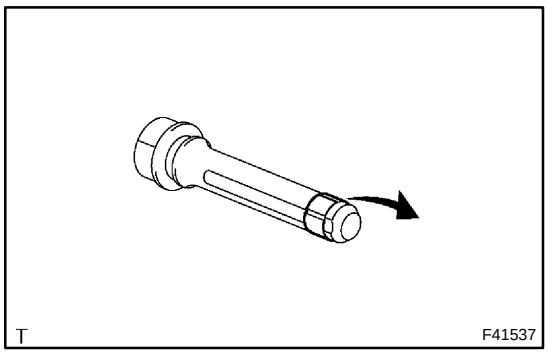
8. REMOVE FRONT DISC BRAKE PAD SUPPORT PLATE

(a) Remove the bottom side front disc brake pad support plate.



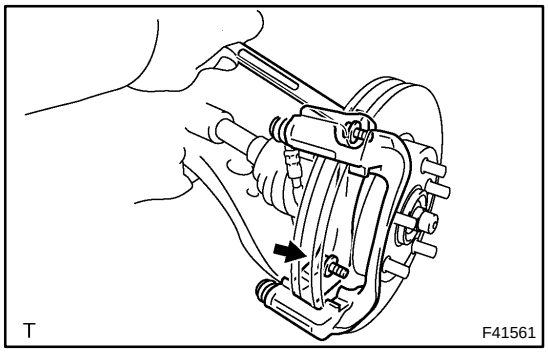
9. REMOVE FRONT DISC BRAKE CYLINDER SLIDE PIN

(a) Remove the 2 cylinder slide pins from the disc brake cylinder mounting.



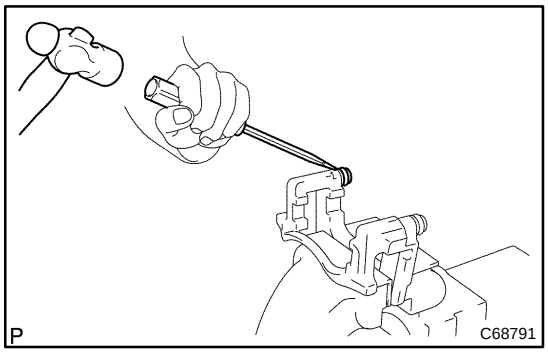
10. REMOVE FRONT DISC BRAKE CYLINDER SLIDE BUSH

(a) Remove the cylinder slide bush from the cylinder slide pin.



11. REMOVE FRONT DISC BRAKE CYLINDER MOUNTING LH

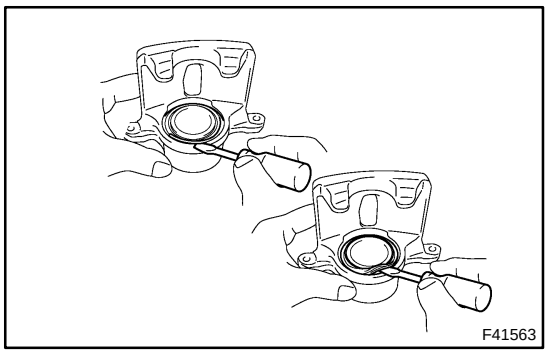
(a) Remove the 2 bolts and disc brake cylinder mounting.



12. REMOVE FRONT DISC BRAKE BUSH DUST BOOT

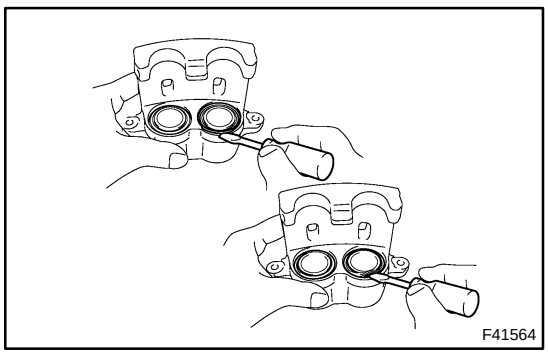
(a) Place front disc brake cylinder mounting in vise.

(b) Using a screwdriver and hammer, remove the 2 bush dust boots from the disc brake cylinder mounting.

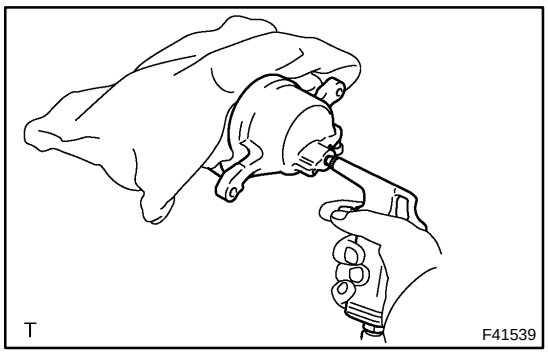


13. REMOVE CYLINDER BOOT

(a) Using a screwdriver, remove the set ring and cylinder boot from the disc brake cylinder (Single piston Type).



(b) Using a screwdriver, remove the 2 set rings and 2 cylinder boots from the disc brake cylinder (Twin piston Type).

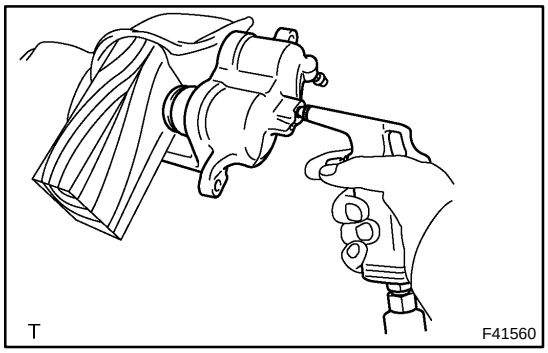


14. REMOVE FRONT DISC BRAKE PISTON

(a) Remove the front disc brake piston (Single piston Type).
  (1) Place a piece of cloth or like, between the piston and the disc brake cylinder.
  (2) Use compressed air to remove the piston from the disc brake cylinder.

CAUTION:
Do not place your fingers in front of the piston when using compressed air.
NOTICE:
Do not spatter the brake fluid.

(b) Remove the 2 front disc brake pistons (Twin piston Type).
  (1) Place a piece of cloth or like, between the piston and the disc brake cylinder.
  (2) Use compressed air to remove one of the piston from the disc brake cylinder.



  (3) Press the removed piston to the cylinder with a certain force that prevent the piston from flying out via a chip of wood. Then blow into the air of compressor again to remove the other piston.

CAUTION:
Do not place your fingers in front of the piston when using compressed air.
NOTICE:
Do not spatter the brake fluid.

15. REMOVE PISTON SEAL

(a) Using a screwdriver, remove the piston seal from the disc brake cylinder (Single piston Type).

NOTICE:
Do not damage the inner cylinder and the cylinder groove.

(b) Using a screwdriver, remove the 2 piston seals from the disc brake cylinder (Twin piston Type).

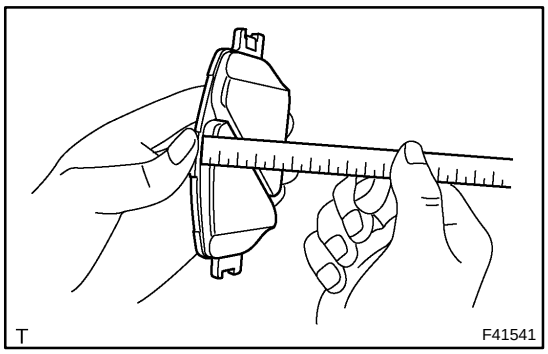
NOTICE:
Do not damage the inner cylinder and the cylinder groove.

16. REMOVE FRONT DISC BRAKE BLEEDER PLUG CAP

17. REMOVE FRONT DISC BRAKE BLEEDER PLUG

18. INSPECT BRAKE CYLINDER AND PISTON

(a) Check the cylinder bore and piston for rust or scoring.



19. INSPECT PAD LINING THICKNESS

(a) Using a ruler, measure the pad lining thickness.

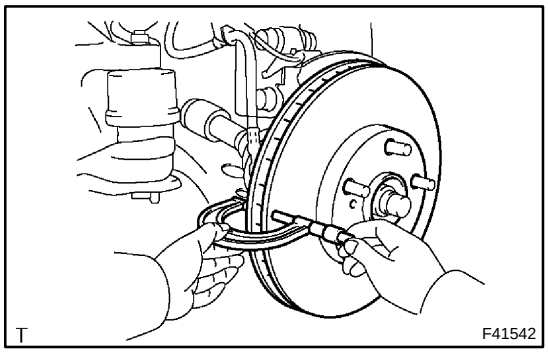
Single piston type:
Standard thickness: 12.0 mm (0.472 in.)
Minimum thickness: 1.0 mm (0.039 in.)
Twin piston type:
Standard thickness: 10.6 mm (0.417 in.)
Minimum thickness: 1.0 mm (0.039 in.)

20. INSPECT FRONT DISC BRAKE PAD SUPPORT PLATE

(a) Make sure that they have sufficient rebound, no deformation cracks or wear, and all rust, dirt are cleaned off.

21. INSPECT FRONT DISC BRAKE PAD SUPPORT PLATE

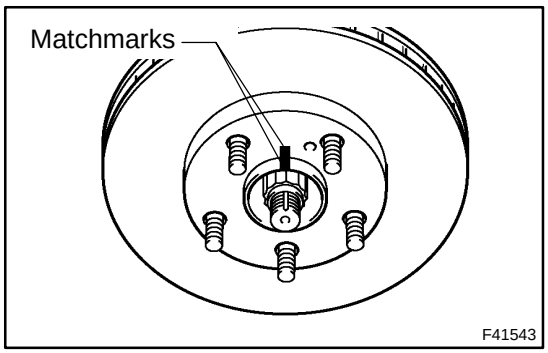
(a) Make sure that they have sufficient rebound, no deformation cracks or wear, and all rust, dirt are cleaned off.



22. INSPECT DISC THICKNESS

(a) Using a micrometer, measure the disc thickness.

Standard thickness: 28.0 mm (1.102 in.)
Minimum thickness: 26.0 mm (1.024 in.)



23. REMOVE FRONT DISC

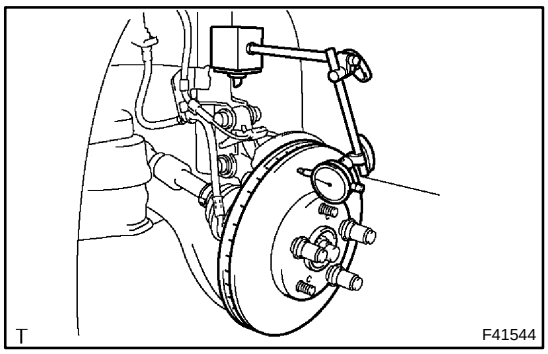
(a) Put matchmarks on the disc and the axle hub.
(b) Remove the disc.

24. INSTALL FRONT DISC

(a) Aligning the matchmarks, install the front disc.

HINT:

When replacing the disc with a new one, select the installation position where the disc has the minimum run-out.



25. INSPECT DISC RUNOUT

(a) Temporarily install the disc with hub nuts.
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

(b) Using a dial indicator, measure the disc runout 10 mm (0.39 in.) away from the outer edge of the disc.
Maximum disc runout: 0.05 mm (0.0020 in.)

(c) If the disc runout is greater than the maximum value, check the bearing play in the axial direction and check the axle hub runout (see page 30-2). If the bearing play and axle hub runout are normal, adjust the disc runout or grind it on a "On-car" brake lathe.

26. TEMPORARILY TIGHTEN FRONT DISC BRAKE BLEEDER PLUG

(a) Temporarily tighten the bleeder plug to the disc brake cylinder.

27. INSTALL FRONT DISC BRAKE BLEEDER PLUG CAP

28. INSTALL PISTON SEAL

(a) Install the piston seal (Single piston Type).
  (1) Apply the lithium soap base glycol grease to a new piston seal.
  (2) Install the piston seal to the disc brake cylinder.

(b) Install the 2 piston seals (Twin piston Type).
  (1) Apply the lithium soap base glycol grease to the 2 new piston seals.
  (2) Install the 2 piston seals to the disc brake cylinder.

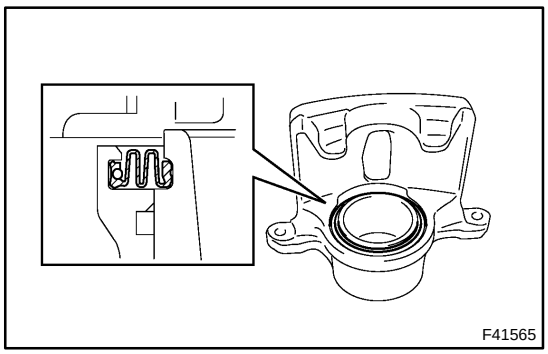
29. INSTALL FRONT DISC BRAKE PISTON

(a) Install the front disc brake piston (Single piston Type).
  (1) Apply the lithium soap base glycol grease to the piston.
  (2) Install the piston to the disc brake cylinder.

NOTICE:
Do not screw the piston forcibly into the disc brake cylinder.

(b) Install the 2 front disc brake pistons (Twin piston Type).
  (1) Apply the lithium soap base glycol grease to the 2 pistons.
  (2) Install the 2 pistons to the disc brake cylinder.

NOTICE:
Do not screw the piston forcibly into the disc brake cylinder.



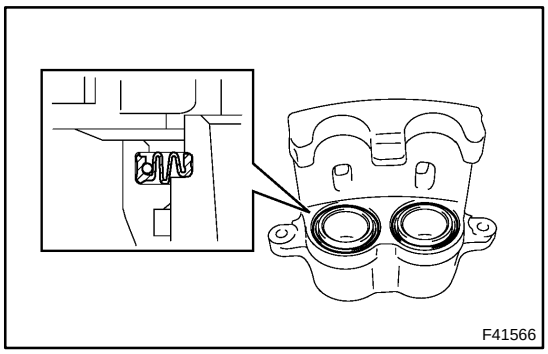
30. INSTALL CYLINDER BOOT

(a) Install the cylinder boot (Single piston Type).
  (1) Apply the lithium soap base glycol grease to a new cylinder boot.
  (2) Install the cylinder boot to the disc brake cylinder.

HINT:
Install the boot securely to the grooves of the cylinder and piston.

  (3) Using a screwdriver, install a new set ring.

NOTICE:
Do not damage the cylinder boot.

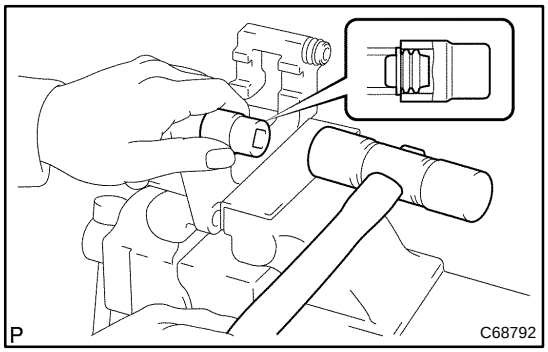


(b) Install the 2 cylinder boots (Twin piston Type).
(1) Apply the lithium soap base glycol grease to the 2 new cylinder boots.
(2) Install the 2 cylinder boots to the disc brake cylinder.

HINT:
Install the boot securely to the grooves of the cylinder and piston.

(3) Using a screwdriver, install the 2 new set rings.

NOTICE:
Do not damage the cylinder boot.



31. INSTALL FRONT DISC BRAKE BUSH DUST BOOT

(a) Place front disc brake cylinder mounting in vise.
(b) Apply the lithium soap base glycol grease to seal surface of 2 new bush dust boots.
(c) Using a socket wrench (19 mm) and hammer, drive the 2 brake bush dust boots into the brake cylinder mounting.

32. INSTALL FRONT DISC BRAKE CYLINDER MOUNTING LH

(a) Install the disc brake cylinder mounting with the 2 bolts.
Torque: 106.9 N·m (1,090 kgf·cm, 79 ft·lbf)

33. INSTALL FRONT DISC BRAKE CYLINDER SLIDE BUSH

(a) Apply the lithium soap base glycol grease to a new cylinder slide bush.
(b) Install the cylinder slide bush to the cylinder slide pin.

34. INSTALL FRONT DISC BRAKE CYLINDER SLIDE PIN

(a) Apply the lithium soap base glycol grease to the sliding part and the seal surface of the 2 cylinder slide pins.
(b) Install the 2 cylinder slide pins to the disc brake cylinder mounting.

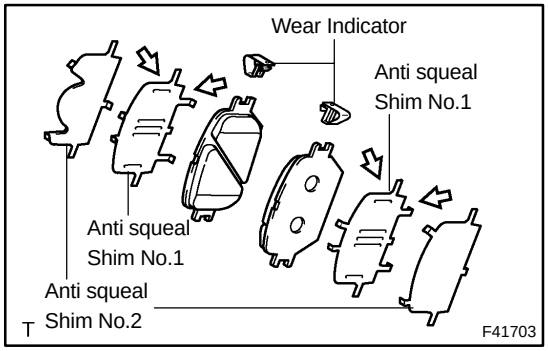
HINT:
Install the cylinder slide pin with cylinder slide bush into the bottom side.

35. INSTALL FRONT DISC BRAKE PAD SUPPORT PLATE

(a) Install the bottom side front disc brake pad support plate.

36. INSTALL FRONT DISC BRAKE PAD SUPPORT PLATE

(a) Install the upper side front disc brake pad support plate.



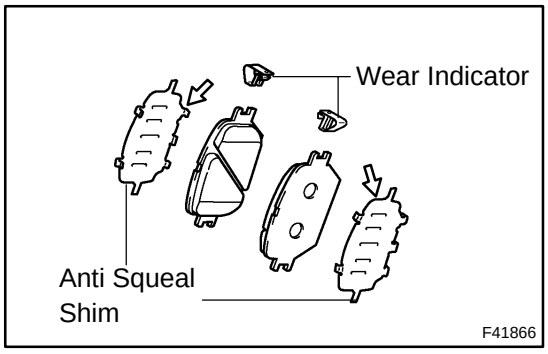
37. INSTALL ANTI SQUEAL SHIM KIT FRONT

(a) Install the anti squeal shim kit front (Single piston Type).
(1) Apply the both sides of anti squeal shim No.1 with pad grease, and install the shim together with anti squeal shim No.2 to each pad.

(2) Install the wear indicator to the 2 brake pads.

NOTICE:

- **When replacing worn pads, the anti squeal shims must be replaced together with the pads.**
- **Install the shims and pad wear indicator correctly of which positions and directions.**



(b) Install the anti squeal shim kit front (Twin piston Type).

(1) Apply the anti squeal shim with pad grease, and install the anti squeal shim to each pad.

(2) Install the wear indicator to the 2 brake pads.

NOTICE:

- **When replacing worn pads, the anti squeal shims must be replaced together with the pads.**
- **Install the shims and pad wear indicator correctly of which positions and directions.**

38. INSTALL DISC BRAKE PAD KIT FRONT (PAD ONLY)

(a) Install the 2 disc brake pads with the pad wear indicator facing upward.

NOTICE:

There should be no oil or grease on the friction surface of the pads and the disc.

39. INSTALL DISC BRAKE CYLINDER ASSY LH

(a) Install the disc brake cylinder with the 2 bolts.

Torque: 34.3 N·m (350 kgf·cm, 25 ft·lbf)

40. CONNECT FRONT FLEXIBLE HOSE

(a) Connect a new gasket and flexible hose with the union bolt.

Torque: 29.4 N·m (300 kgf·cm, 22 ft·lbf)

HINT:

Install the flexible hose lock securely in the lock hold of the disc brake cylinder.

41. FILL RESERVOIR WITH BRAKE FLUID

42. BLEED MASTER CYLINDER (SEE PAGE 32-4)

SST 09023-00101

43. BLEED BRAKE LINE (SEE PAGE 32-4)

44. CHECK FLUID LEVEL IN RESERVOIR (SEE PAGE 32-4)

45. CHECK BRAKE FLUID LEAKAGE

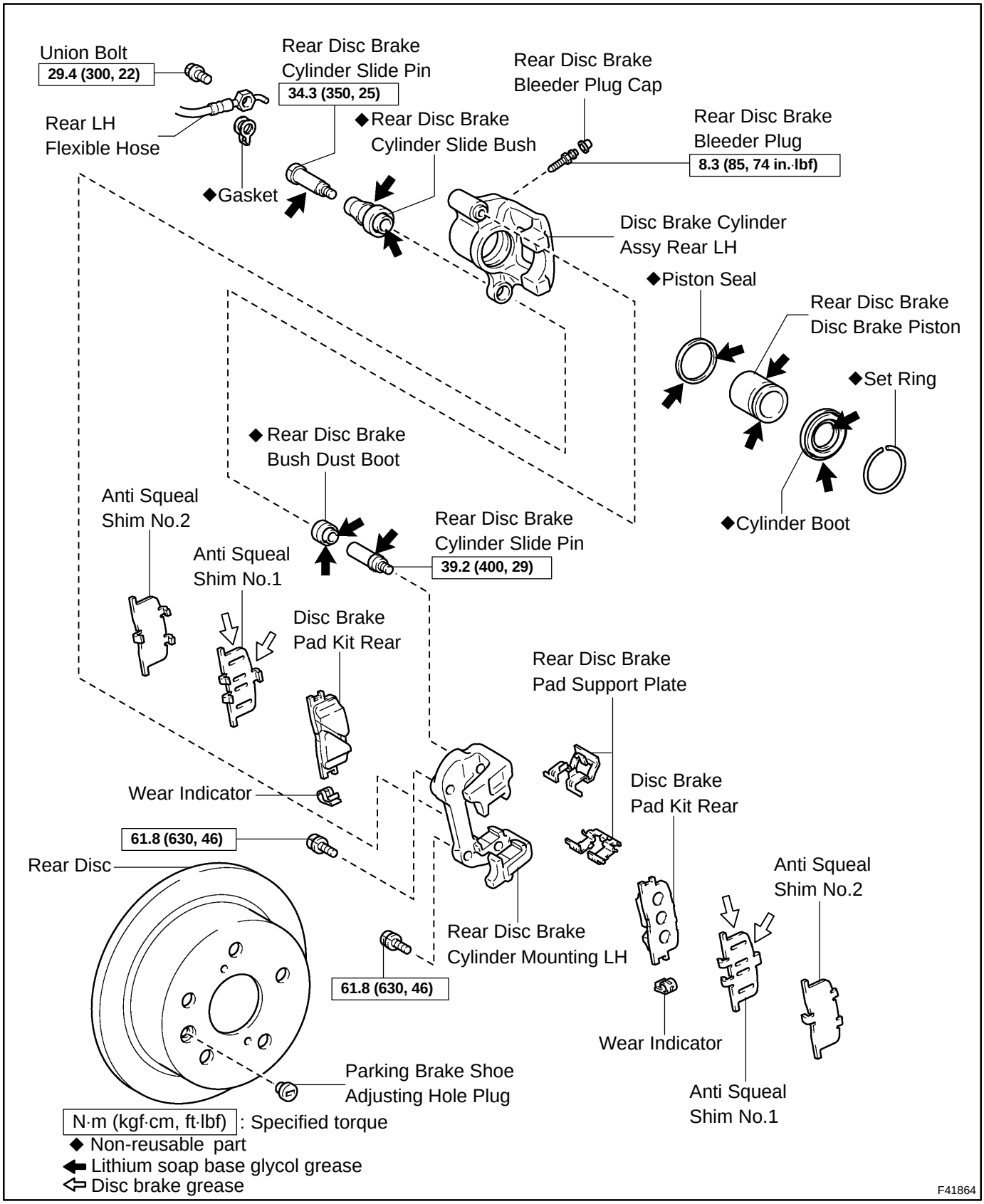
46. INSTALL FRONT WHEEL

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

REAR BRAKE

COMPONENTS

320E7-03



320E8-04

OVERHAUL

HINT:

- Overhaul the RH side by the same procedures with LH side.
- Two types of brake pad exist; one is with slit and the other without slit.

1. REMOVE REAR WHEEL

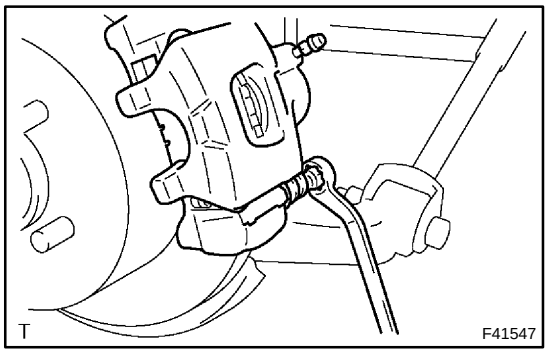
2. DRAIN BRAKE FLUID

NOTICE:

Wash the brake fluid off immediately if it comes into contact with any painted surfaces.

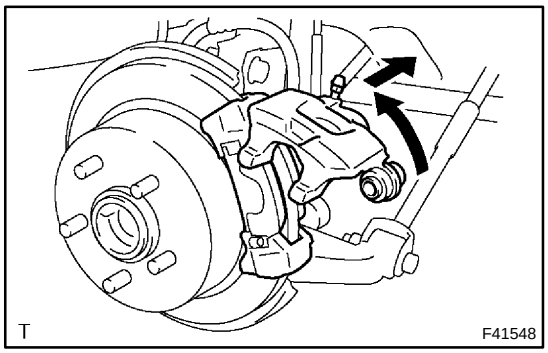
3. DISCONNECT REAR LH FLEXIBLE HOSE

(a) Remove the union bolt and a gasket from the disc brake cylinder, then disconnect the flexible hose from the disc brake cylinder.



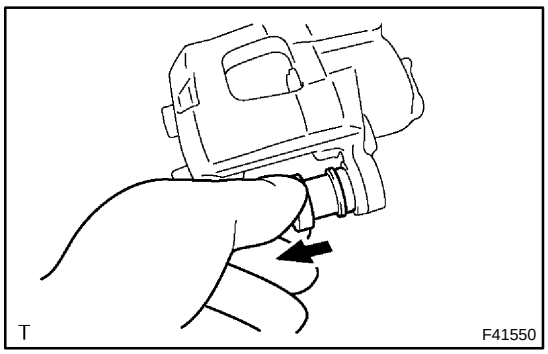
4. REMOVE REAR DISC BRAKE CYLINDER SLIDE PIN

(a) Remove the rear disc brake cylinder slide pin.



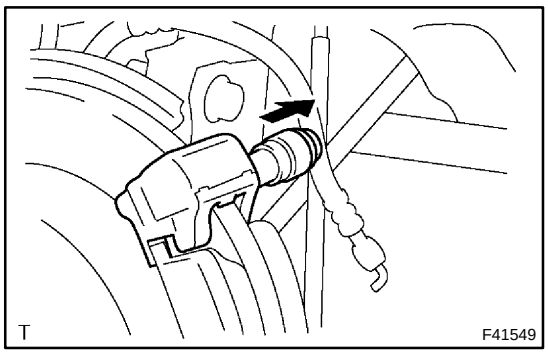
5. REMOVE DISC BRAKE CYLINDER ASSY REAR LH

(a) Lift up the disc brake cylinder and remove the disc brake cylinder.



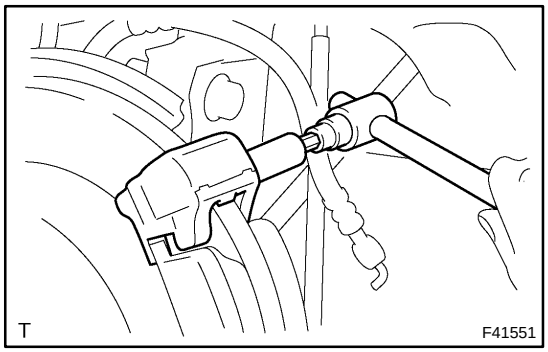
6. REMOVE REAR DISC BRAKE CYLINDER SLIDE BUSH

(a) Remove the cylinder slide bush from the disc brake cylinder.



7. REMOVE REAR DISC BRAKE BUSH DUST BOOT

(a) Remove the bush dust boot from the cylinder slide pin.

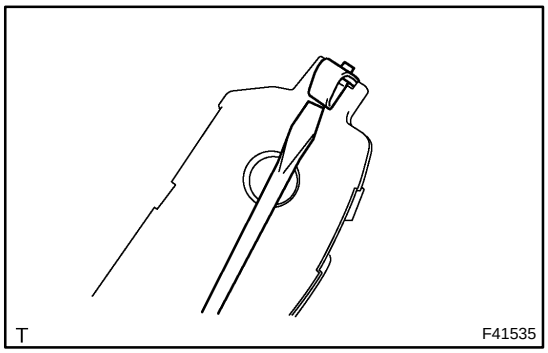


8. REMOVE REAR DISC BRAKE CYLINDER SLIDE PIN

(a) Using a hexagon wrench (8 mm), remove the cylinder slide pin.

9. REMOVE DISC BRAKE PAD KIT REAR (PAD ONLY)

(a) Remove the 2 brake pads with anti squeal shims.



10. REMOVE REAR DISC BRAKE ANTI SQUEAL SHIM KIT

(a) Remove the 2 anti squeal shims from 2 brake pads.

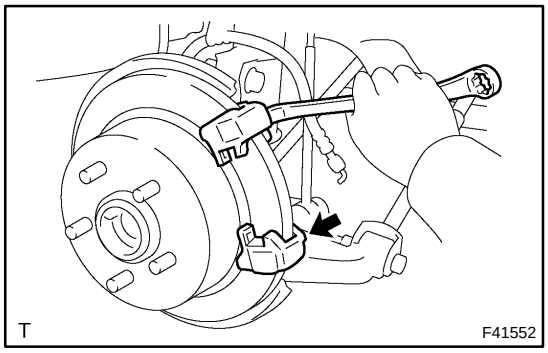
(b) Using a screwdriver, remove the wear indicator from 2 brake pads.

11. REMOVE REAR DISC BRAKE PAD SUPPORT PLATE

(a) Remove the upper side rear disc brake pad support plate.

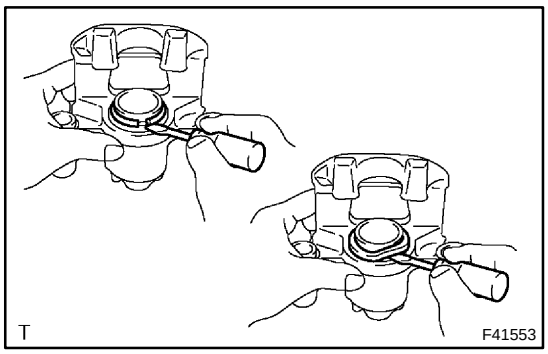
12. REMOVE REAR DISC BRAKE PAD SUPPORT PLATE

(a) Remove the bottom side rear disc brake pad support plate.



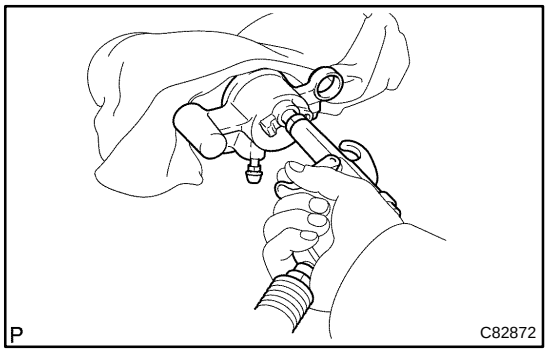
13. REMOVE REAR DISC BRAKE CYLINDER MOUNTING LH

(a) Remove the 2 bolts and disc brake cylinder mounting.



14. REMOVE CYLINDER BOOT

(a) Using a screwdriver, remove the set ring and cylinder boot from the disc brake cylinder.



15. REMOVE REAR DISC BRAKE PISTON

(a) Place a piece of cloth or like, between the piston and the disc brake cylinder.

(b) Use compressed air to remove the piston from the disc brake cylinder.

CAUTION:

Do not place your fingers in front of the piston when using compressed air.

NOTICE:

Do not spatter the brake fluid.

16. REMOVE PISTON SEAL

(a) Using a screwdriver, remove the piston seal from the disc brake cylinder.

NOTICE:

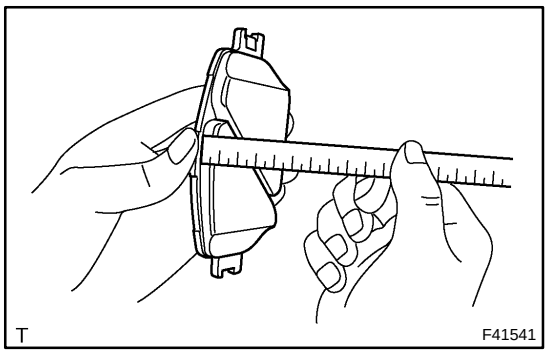
Do not damage the inner cylinder and the cylinder groove.

17. REMOVE REAR DISC BRAKE BLEEDER PLUG CAP

18. REMOVE REAR DISC BRAKE BLEEDER PLUG

19. INSPECT BRAKE CYLINDER AND PISTON

(a) Check the cylinder bore and piston for rust or scoring.



20. INSPECT PAD LINING THICKNESS

(a) Using a ruler, measure the pad lining thickness.

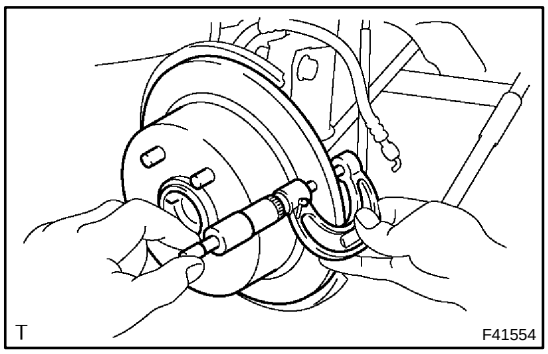
USA, Canada models:
Standard thickness: 10.0 mm (0.394 in.)
Minimum thickness: 1.0 mm (0.039 in.)
Brazil models:
Standard thickness: 11.0 mm (0.433 in.)
Minimum thickness: 1.0 mm (0.039 in.)

21. INSPECT REAR DISC BRAKE PAD SUPPORT PLATE

(a) Make sure that they have sufficient rebound, no deformation cracks or wear, and all rust, dirt are cleaned off.

22. INSPECT REAR DISC BRAKE PAD SUPPORT PLATE

(a) Make sure that they have sufficient rebound, no deformation cracks or wear, and all rust, dirt are cleaned off.

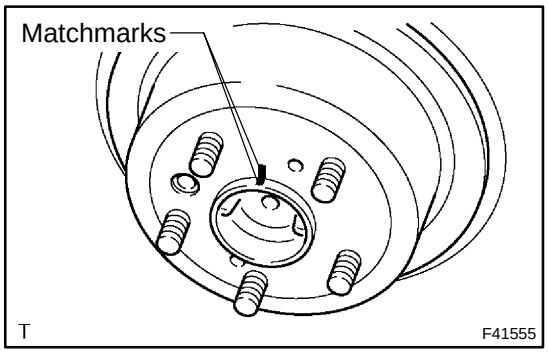


23. INSPECT DISC THICKNESS

(a) Using a micrometer, measure the disc thickness.

USA, Canada models:
Standard thickness: 12.0 mm (0.472 in.)
Minimum thickness: 10.5 mm (0.413 in.)
Brazil models:
Standard thickness: 10.0 mm (0.394 in.)
Minimum thickness: 8.5 mm (0.335 in.)

24. REMOVE PARKING BRAKE SHOE ADJUSTING HOLE PLUG



25. REMOVE REAR DISC

(a) Put matchmarks on the disc and the axle hub.

(b) Remove the disc.

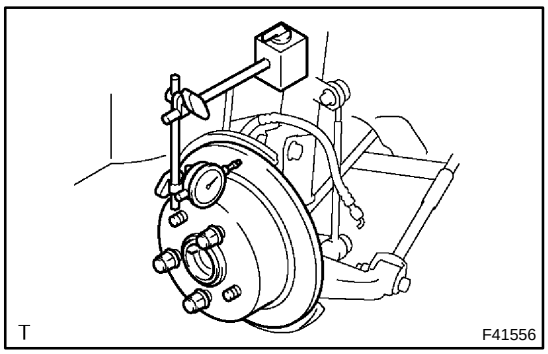
26. INSTALL REAR DISC

(a) Aligning the matchmarks, install the rear disc.

HINT:

When replacing the disc with a new one, select the installation position where the disc has the minimum run-out.

27. INSTALL PARKING BRAKE SHOE ADJUSTING HOLE PLUG



28. INSPECT DISC RUNOUT

(a) Temporarily install the disc with hub nuts.

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

(b) Using a dial indicator, measure the disc runout 10 mm (0.39 in.) away from the outer edge of the disc.

Maximum disc runout: 0.15 mm (0.0059 in.)

(c) If the disc runout is greater than the maximum value, check the bearing play in the axial direction and check the axle hub runout (see page 30-2). If the bearing play and axle hub runout are normal, adjust the disc runout or grind it on a "On-car" brake lathe.

29. ADJUST PARKING BRAKE SHOE CLEARANCE (SEE PAGE 33-16)

30. TEMPORARILY TIGHTEN REAR DISC BRAKE BLEEDER PLUG

(a) Temporarily tighten the bleeder plug to the disc brake cylinder.

31. INSTALL REAR DISC BRAKE BLEEDER PLUG CAP

32. INSTALL PISTON SEAL

(a) Apply the lithium soap base glycol grease to a new piston seal.

(b) Install the piston seal to the disc brake cylinder.

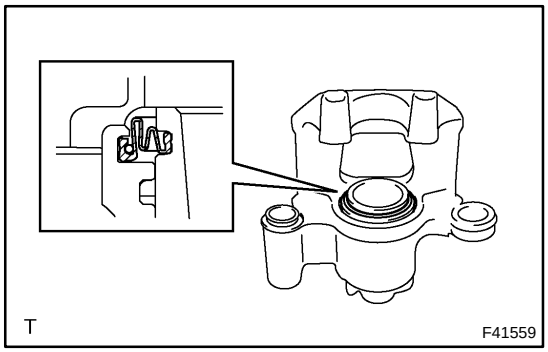
33. INSTALL REAR DISC BRAKE PISTON

(a) Apply the lithium soap base glycol grease to the piston.

(b) Install the piston to the disc brake cylinder.

NOTICE:

Do not screw the piston forcibly into the disc brake cylinder.



34. INSTALL CYLINDER BOOT

(a) Apply the lithium soap base glycol grease to a new cylinder boot.

(b) Install the cylinder boot to the disc brake cylinder.

HINT:

Install the boot securely to the grooves of the cylinder and piston.

(c) Using a screwdriver, install a new set ring.

NOTICE:

Do not damage the cylinder boot.

35. INSTALL REAR DISC BRAKE CYLINDER MOUNTING LH

(a) Install the disc brake cylinder mounting with the 2 bolts.

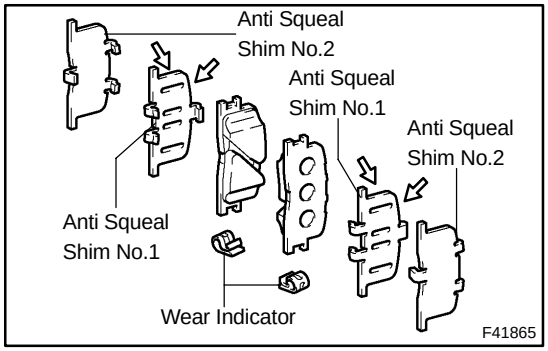
Torque: 61.8 N·m (630 kgf·cm, 46 ft·lbf)

36. INSTALL REAR DISC BRAKE PAD SUPPORT PLATE

(a) Install the bottom side rear disc brake pad support plate.

37. INSTALL REAR DISC BRAKE PAD SUPPORT PLATE

(a) Install the upper side rear disc brake pad support plate.



38. INSTALL REAR DISC BRAKE ANTI SQUEAL SHIM KIT

(a) Apply the both sides of anti squeal shim No.1 with pad grease, and install the shim together with anti squeal shim No.2 to each pad.

(b) Install the wear indicator to the 2 brake pads.

NOTICE:

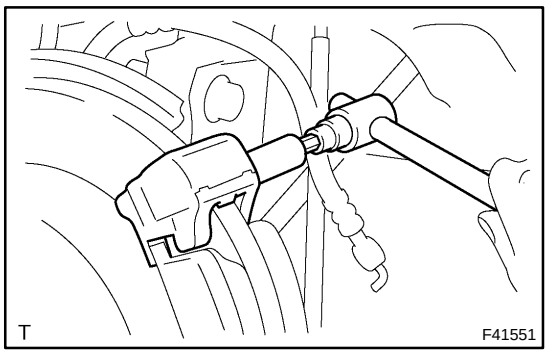
- **When replacing worn pads, the anti squeal shims must be replaced together with the pads.**
- **Install the shims and pad wear indicator correctly of which positions and directions.**

39. INSTALL DISC BRAKE PAD KIT REAR (PAD ONLY)

(a) Install the 2 disc brake pads with the pad wear indicator facing downward.

NOTICE:

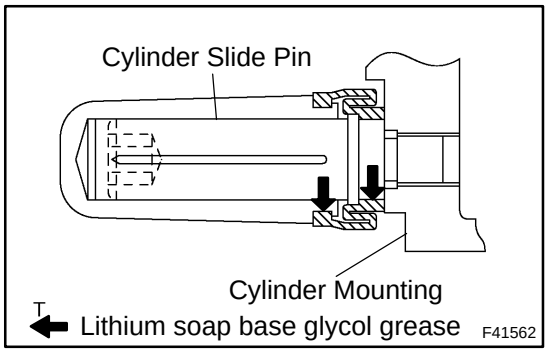
There should be no oil or grease on the friction surface of the pads and the disc.



40. INSTALL REAR DISC BRAKE CYLINDER SLIDE PIN

(a) Using a hexagon wrench (8 mm), install the cylinder slide pin.

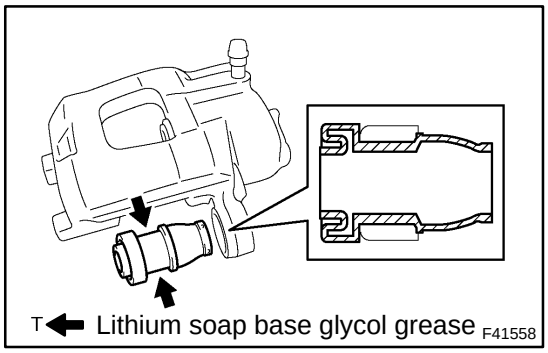
Torque: 39.2 N·m (400 kgf·cm, 29 ft·lbf)



41. INSTALL REAR DISC BRAKE BUSH DUST BOOT

(a) Apply the lithium soap base glycol grease to seal surface of a new bush dust boot.

(b) Install the bush dust boot to the cylinder slide pin.



42. INSTALL REAR DISC BRAKE CYLINDER SLIDE BUSH

(a) Apply the lithium soap base glycol grease to a new cylinder slide bush.

(b) Install the cylinder slide bush to the disc brake cylinder.

43. INSTALL DISC BRAKE CYLINDER ASSY REAR LH

(a) Apply the lithium soap base glycol grease to the cylinder slide pin.

(b) Install the disc brake cylinder to the cylinder slide pin.

44. INSTALL REAR DISC BRAKE CYLINDER SLIDE PIN

(a) Apply the lithium soap base glycol grease to the cylinder slide pin.

(b) Install the cylinder slide pin to the disc brake cylinder.

Torque: 34.3 N·m (350 kgf·cm, 25 ft·lbf)

45. CONNECT REAR LH FLEXIBLE HOSE

(a) Connect a new gasket and flexible hose with the union bolt.

Torque: 29.4 N·m (300 kgf·cm, 22 ft·lbf)

HINT:

Install the flexible hose lock securely in the lock hole of the disc brake cylinder.

46. FILL RESERVOIR WITH BRAKE FLUID

47. BLEED MASTER CYLINDER (SEE PAGE 32-4)

SST 09023-00101

48. BLEED BRAKE LINE (SEE PAGE 32-4)

49. CHECK FLUID LEVEL IN RESERVOIR (SEE PAGE 32-4)

50. CHECK BRAKE FLUID LEAKAGE

51. INSTALL REAR WHEEL

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

BRAKE ACTUATOR ASSY (W/O VSC)

320E1-02

ON-VEHICLE INSPECTION

1. CONNECT HAND-HELD TESTER:

(a) Connect the hand-held tester to the DLC3.

(b) Start the engine and run it at idle.

(c) Select the ACTIVE TEST mode on the hand-held tester.

HINT:

Please refer to the hand-held tester operator's manual for further details.

2. INSPECT ACTUATOR MOTOR OPERATION

(a) With the motor relay ON, check the actuator motor operation noise.

(b) Turn the motor relay OFF.

(c) Depress the brake pedal and hold it for about 15 seconds. Check that the brake pedal cannot be depressed.

(d) With the motor relay ON, check that the pedal does not pulsate.

NOTICE:

Do not keep motor relay ON for more than 5 seconds continuously. When operating it continuously, set the interval of more than 20 seconds.

(e) Turn the motor relay OFF and release the brake pedal.

3. INSPECT RIGHT FRONT WHEEL OPERATION

NOTICE:

Never turn ON the solenoid which is not described below.

(a) With the brake pedal depressed, perform the following operations.

(b) Turn the SFRH and SFRR solenoid ON simultaneously, and check that the pedal cannot be depressed.

NOTICE:

Do not keep solenoid ON for more than 10 seconds continuously. When operating it continuously, set the interval of more than 20 seconds.

(c) Turn the SFRH and SFRR solenoid OFF simultaneously, and check that the pedal can be depressed.

(d) Turn the motor relay ON, and check that the pedal returns.

NOTICE:

Do not keep motor relay ON for more than 5 seconds continuously. When operating it continuously, set the interval of more than 20 seconds.

(e) Turn the motor relay OFF and release the brake pedal.

4. INSPECT OTHER WHEEL OPERATION

(a) As in the same procedure, check the solenoids of other wheels.

HINT:

Left front wheel: SFLH, SFLR

Right rear wheel: SRRH, SRRR

Left rear wheel: SRLH, SRLR

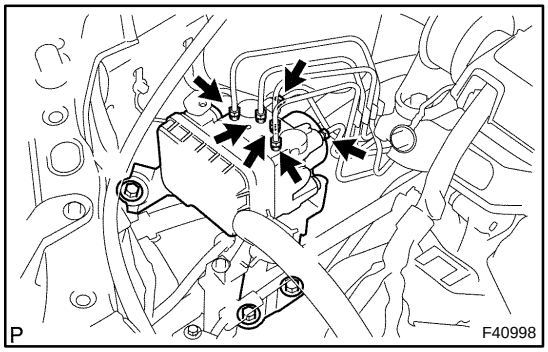
320E2-04

REPLACEMENT

1. DRAIN BRAKE FLUID

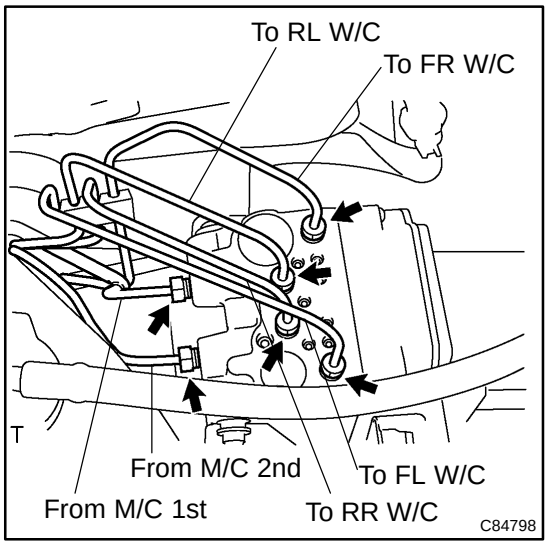
NOTICE:

Wash off the brake fluid immediately if it comes into contact with a painted surface.



2. REMOVE BRAKE ACTUATOR WITH BRACKET

(a) Using SST, disconnect the 6 brake lines from the actuator.
SST 09023-00101



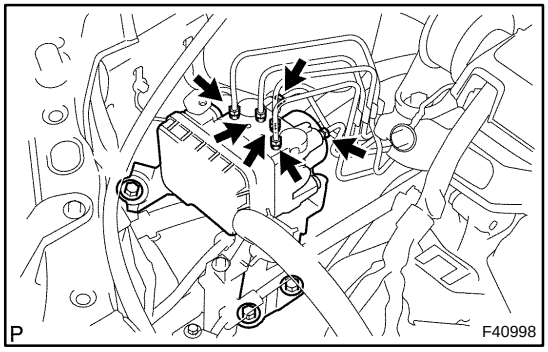
(b) Use tags or make a memo to identify the place to reconnect.
(c) Disconnect the brake actuator connector.
(d) Remove the 3 nuts and brake actuator with bracket.

3. REMOVE BRAKE ACTUATOR ASSY

(a) Remove the 2 nuts and brake actuator from the bracket.
(b) Remove the 2 holders and 3 cushions from the brake actuator.

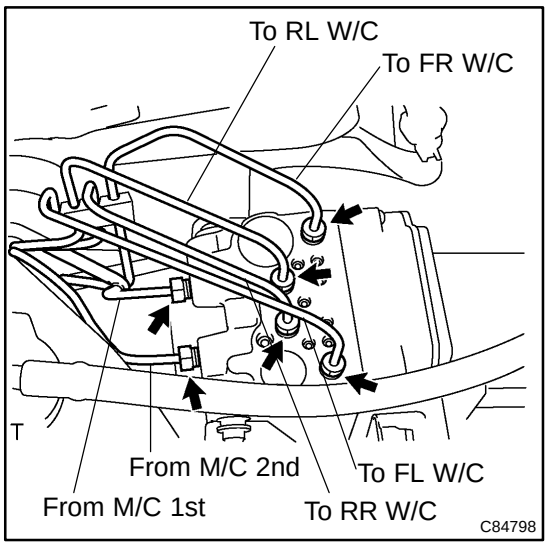
4. INSTALL BRAKE ACTUATOR ASSY

(a) Install the 3 cushions and 2 holders to the brake actuator.
(b) Install the brake actuator to the bracket with the 2 nuts.
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)



5. INSTALL BRAKE ACTUATOR WITH BRACKET

(a) Install the brake actuator with the 3 nuts.
Torque: 19 N·m (194 kgf·cm, 14 ft·lbf)
(b) Connect the brake actuator connector.



(c) Using SST, connect the each brake line to the correct position of brake actuator, as shown in the illustration.
SST 09023-00101
Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)

6. **FILL RESERVOIR WITH BRAKE FLUID**
7. **BLEED MASTER CYLINDER (SEE PAGE 32-4)**
   SST 09023-00101
8. **BLEED BRAKE LINE (SEE PAGE 32-4)**
9. **CHECK FLUID LEVEL IN RESERVOIR (SEE PAGE 32-4)**
10. **CHECK BRAKE FLUID LEAKAGE**
11. **CHECK OPERATION OF BRAKE ACTUATOR (SEE PAGE 32-47)**

BRAKE ACTUATOR ASSY (W/VSC)(From July, 2003)

3203J-09

ON-VEHICLE INSPECTION

1. CONNECT HAND-HELD TESTER:

(a) Connect the hand-held tester to the DLC3.

(b) Start the engine and run it at idle.

(c) Select the ACTIVE TEST mode on the hand-held tester.

HINT:

Please refer to the hand-held tester operator's manual for further details.

2. INSPECT ACTUATOR MOTOR OPERATION

(a) With the motor relay ON, check the actuator motor operation noise.

(b) Turn the motor relay OFF.

(c) Depress the brake pedal and hold it for about 15 seconds. Check that the brake pedal cannot be depressed.

(d) With the motor relay ON, check that the pedal does not pulsate.

NOTICE:

Do not keep motor relay ON for more than 5 seconds continuously. When operating it continuously, set the interval of more than 20 seconds.

(e) Turn the motor relay OFF and release the brake pedal.

3. INSPECT RIGHT FRONT WHEEL OPERATION

NOTICE:

Never turn ON the solenoid which is not described below.

(a) With the brake pedal depressed, perform the following operations.

(b) Turn the SFRH and SFRR solenoid ON simultaneously, and check that the pedal cannot be depressed.

NOTICE:

Do not keep solenoid ON for more than 10 seconds continuously. When operating it continuously, set the interval of more than 20 seconds.

(c) Turn the SFRH and SFRR solenoid OFF simultaneously, and check that the pedal can be depressed.

(d) Turn the motor relay ON, and check that the pedal returns.

NOTICE:

Do not keep motor relay ON for more than 5 seconds continuously. When operating it continuously, set the interval of more than 20 seconds.

(e) Turn the motor relay OFF and release the brake pedal.

4. INSPECT OTHER WHEEL OPERATION

(a) As in the same procedure, check the solenoids of other wheels.

HINT:

Left front wheel: SFLH, SFLR

Right rear wheel: SRRH, SRRR

Left rear wheel: SRLH, SRLR

3211Y-04

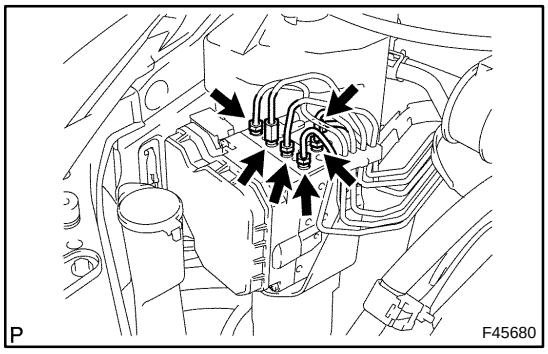
REPLACEMENT

1. DRAIN BRAKE FLUID

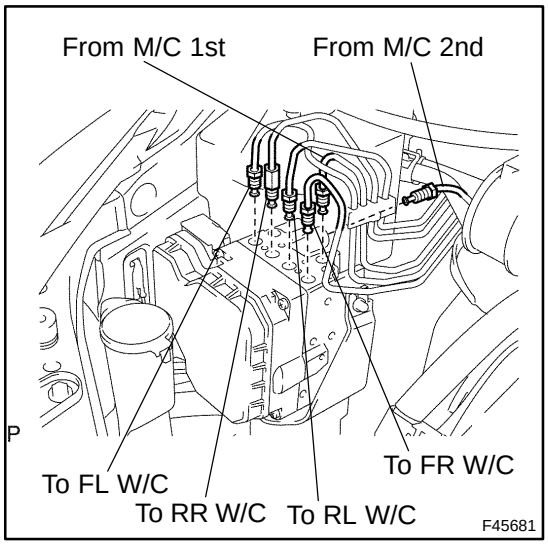
NOTICE:

Wash off the brake fluid immediately if it comes into contact with a painted surface.

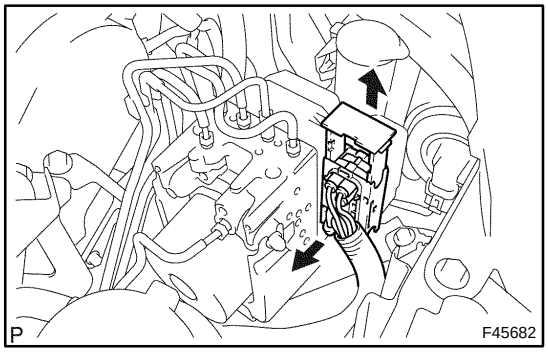
2. REMOVE BRAKE ACTUATOR WITH BRACKET



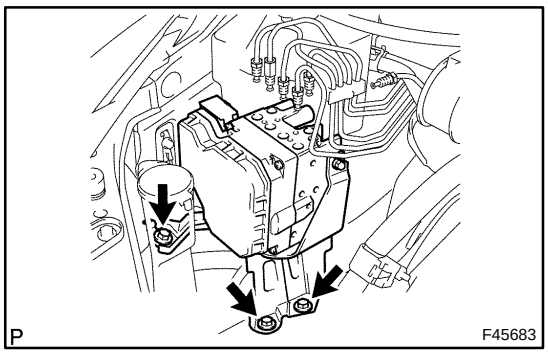
(a) Using SST, disconnect the 6 brake lines from the actuator.
SST 09023-00101



(b) Use tags or make a memo to identify the place to reconnect.



(c) Disconnect the actuator connector.



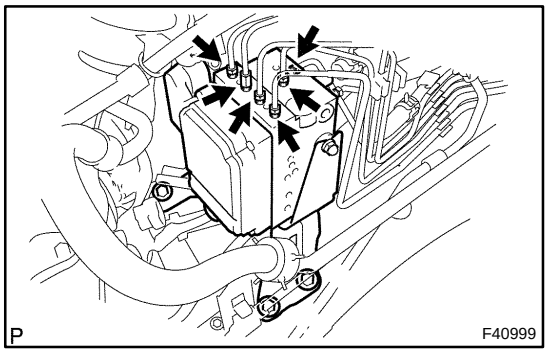
(d) Remove the 3 nuts and brake actuator with bracket.

3. REMOVE BRAKE ACTUATOR ASSY

(a) Remove the 2 nuts and brake actuator from the bracket.

4. INSTALL BRAKE ACTUATOR ASSY

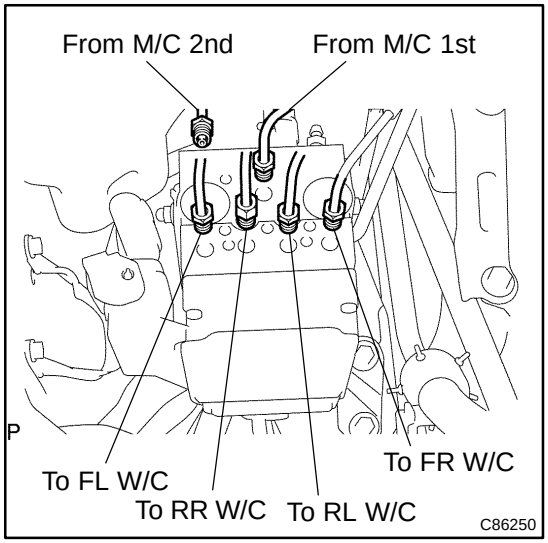
(a) Install the brake actuator to the bracket with the 2 nuts.
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)



5. INSTALL BRAKE ACTUATOR WITH BRACKET

(a) Install the brake actuator with the 3 nuts.
Torque: 19 N·m (194 kgf·cm, 14 ft·lbf)

(b) Connect the brake actuator connector.



(c) Using SST, connect the each brake line to the correct position of brake actuator, as shown in the illustration.
SST 09023-00101
Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)

6. FILL RESERVOIR WITH BRAKE FLUID

7. BLEED MASTER CYLINDER (SEE PAGE 32-4)
SST 09023-00101

8. BLEED BRAKE LINE (SEE PAGE 32-4)

9. BLEED BRAKE ACTUATOR ASSY (W/ VSC) (SEE PAGE 32-4)
SST 09992-00242, 09992-00350

10. CHECK FLUID LEVEL IN RESERVOIR(SEE PAGE 32-4)

11. CHECK BRAKE FLUID LEAKAGE

12. CHECK OPERATION OF BRAKE ACTUATOR (SEE PAGE 32-47)

SPEED SENSOR FRONT LH

3203N-09

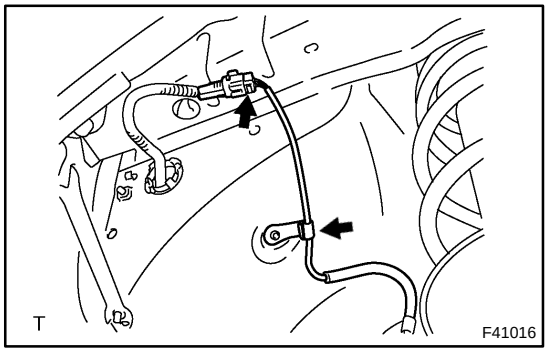
REPLACEMENT

HINT:

Replace the RH side by the same procedures with LH side.

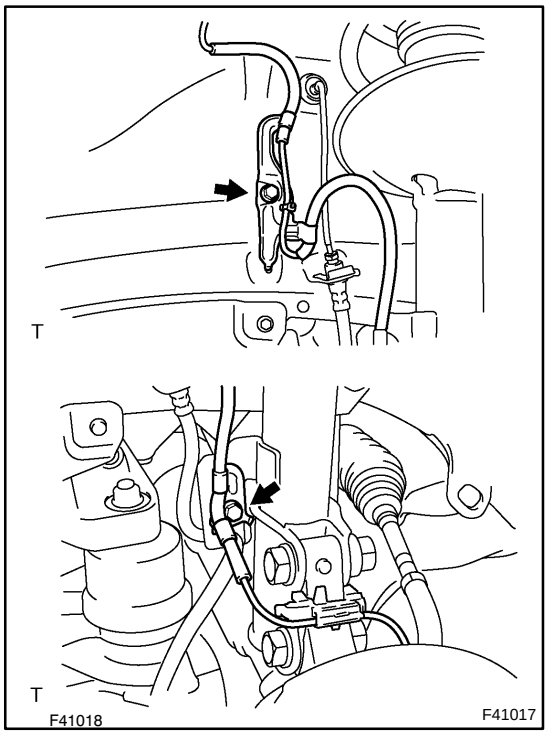
1. REMOVE FRONT WHEEL

2. REMOVE FRONT FENDER LINER LH

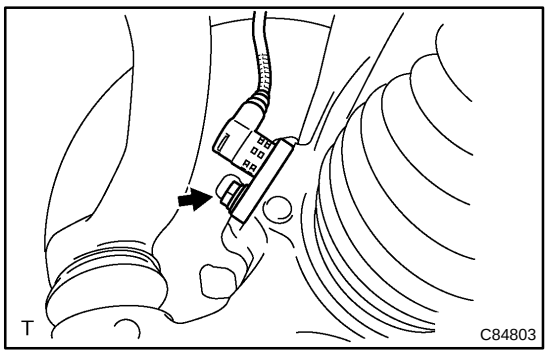


3. REMOVE SPEED SENSOR FRONT LH

(a) Disconnect the speed sensor connector and clamp.



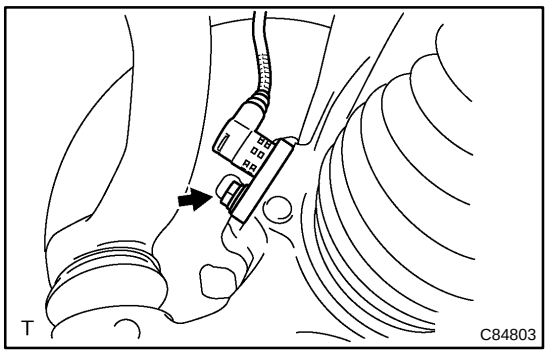
(b) Remove the 2 clamp bolts holding the sensor harness and clamp from the body and shock absorber.



(c) Remove the bolt and speed sensor FR LH.

NOTICE:

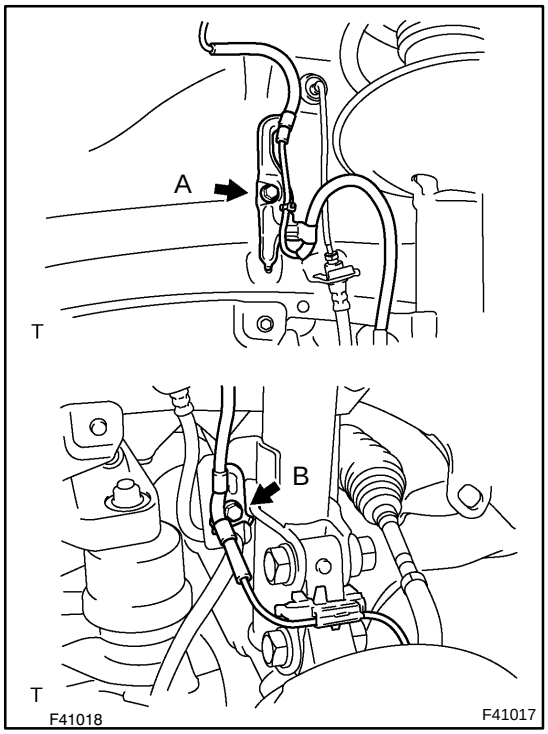
Do not stick and foreign matter on the sensor tip.



4. INSTALL SPEED SENSOR FRONT LH

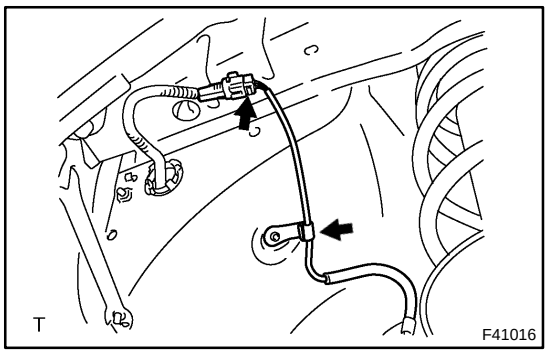
(a) Install the speed sensor FR LH with the bolt.
Torque: 8.0 N·m (82 kgf·cm, 71 in.·lbf)

NOTICE:
Make sure the sensor tip is clean.



(b) Install the sensor harness clamps with the 2 bolts ”A” and ”B” to the body and shock absorber.
Torque:
Bolt A: 5.0 N·m (51 kgf·cm, 44 in.·lbf)
Bolt B: 18.8 N·m (192 kgf·cm, 14 ft·lbf)

(c) Connect the clamp to the knuckle.



(d) Connect the speed sensor connector and clamp.

5. INSTALL FRONT FENDER LINER LH

6. INSTALL FRONT WHEEL
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

7. CHECK ABS SPEED SENSOR SIGNAL (SEE PAGE 05-420 or 05-471)

SKID CONTROL SENSOR

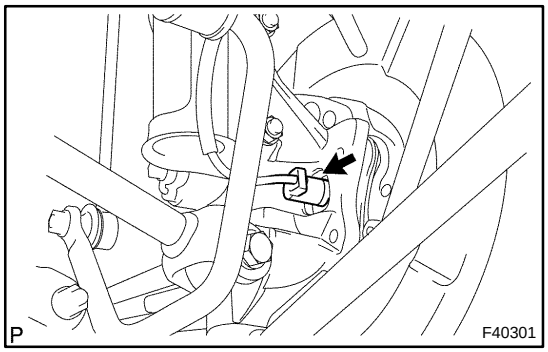
REPLACEMENT

3203O-06

HINT:

Replace the RH side by the same procedure with LH side.

1. REMOVE REAR WHEEL

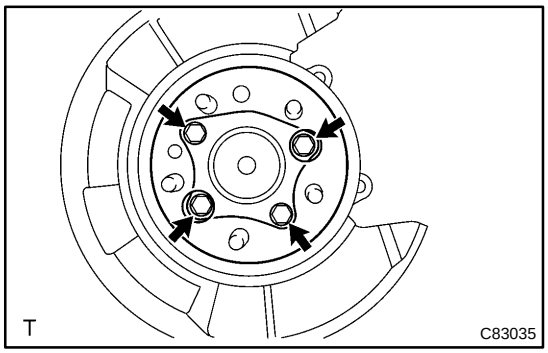


2. SEPARATE SKID CONTROL SENSOR WIRE

(a) Disconnect the connector from the skid control sensor.

3. REMOVE REAR DISC BRAKE CALIPER ASSY LH (SEE PAGE 32-41)

4. REMOVE REAR DISC



5. REMOVE REAR AXLE HUB & BEARING ASSY LH

(a) Remove the 4 bolts and rear axle hub & bearing assy.

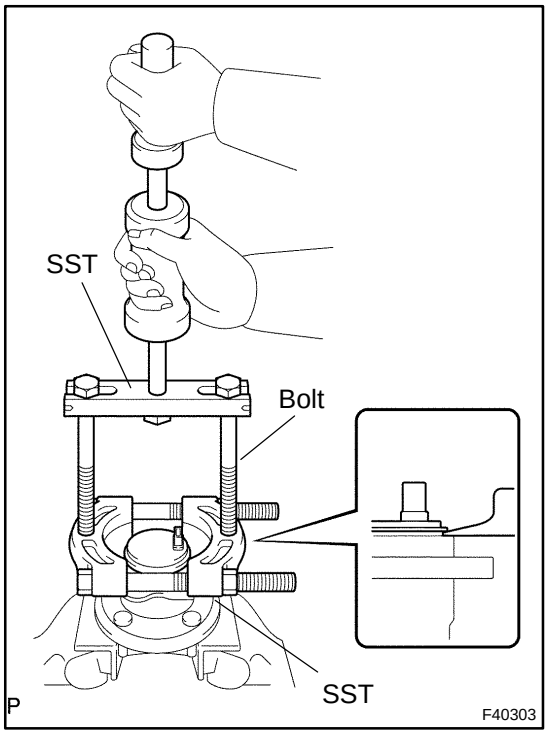
6. REMOVE SKID CONTROL SENSOR

(a) Mount the rear axle hub in a soft jaw vise.

NOTICE:

Replace the axle hub assembly if it is dropped or a strong shock is given to it.

(b) Using a pin punch and hammer, drive out the 2 pins and remove the 2 attachments from SST.



(c) Using SST and 2 bolts (Diameter: 12 mm, pitch: 1.5 mm), remove the skid control sensor from the rear axle hub.

SST 09520- 00031 (09520- 00040), 09521- 00020, 09950-00020

NOTICE:

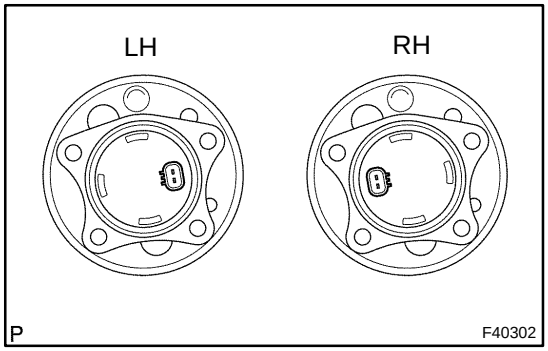
- **If a damage is inflicted to the sensor rotor, replace the axle hub assembly.**
- **Do not scratch the contacting surface of axle hub and speed sensor.**

7. INSTALL SKID CONTROL SENSOR

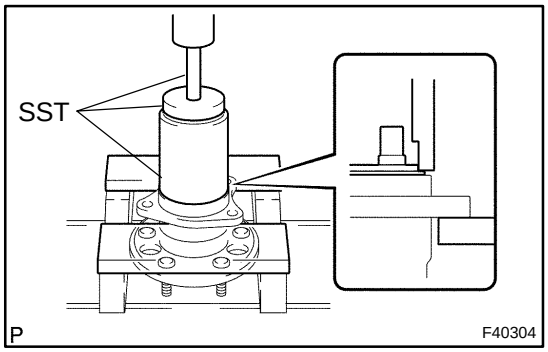
(a) Clean the contacting surface of the axle hub and a new skid control sensor.

NOTICE:

Make sure the sensor rotor is clean.



(b) Place the speed sensor on the axle hub so that the connector is positioned, as shown in the illustration.

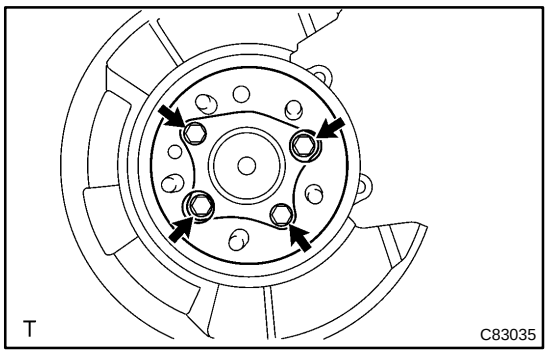


(c) Using SST and a press, install the skid control sensor to the axle hub.

NOTICE:

- **Do not tap the skid control sensor with a hammer directly.**
- **Check that the skid control sensor detection part is clean.**
- **Press in the skid control sensor straight and slowly.**

SST 09830- 36010, 09950- 60010 (09951- 00650), 09950-70010 (09951-07100)



8. INSTALL REAR AXLE HUB & BEARING ASSY LH

(a) Install the rear axle hub & bearing assy with the 4 bolts.
Torque: 80 N·m (816 kgf·cm, 59 ft·lbf)

9. INSTALL REAR DISC

10. INSTALL REAR DISC BRAKE CALIPER ASSY LH (SEE PAGE 32-41)

11. CONNECT SKID CONTROL SENSOR WIRE

12. INSTALL REAR WHEEL
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

13. INSPECT TIRE (SEE PAGE 28-1)

14. MEASURE VEHICLE HEIGHT (SEE PAGE 27-3)

15. INSPECT SIDE SLIP (SEE PAGE 27-3)

16. INSPECT CAMBER (SEE PAGE 27-3)

17. INSPECT TOE-IN (SEE PAGE 27-3)

18. ADJUST CAMBER AND TOE-IN (SEE PAGE 27-3)

19. CHECK ABS SPEED SENSOR SIGNAL (SEE PAGE 05-420 or 05-471)

YAWRATE SENSOR (From July, 2003)

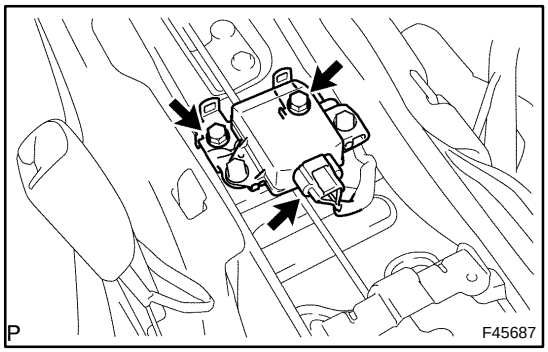
320E4-03

REPLACEMENT

NOTICE:

Do not separate the sensor from the bracket.

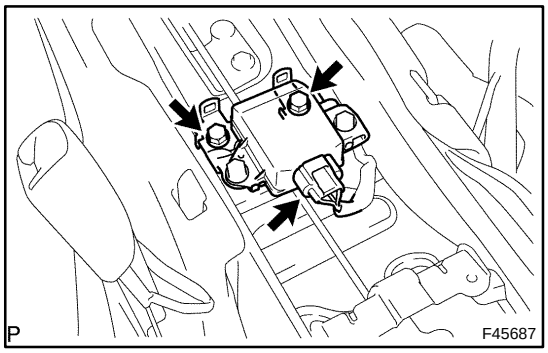
1. **REMOVE CONSOLE PANEL UPPER REAR (SEE PAGE 71-1 1)**
2. **REMOVE RR CONSOLE BOX (SEE PAGE71-1 1)**



3. **REMOVE YAWRATE SENSOR**

(a) Disconnect the yawrate sensor connector.

(b) Remove the 2 bolts and yawrate sensor.



4. **INSTALL YAWRATE SENSOR**

(a) Install the yawrate sensor with the 2 bolts.

Torque: 12.5 N·m (127 kgf·cm, 9 ft·lbf)

(b) Connect the yawrate sensor connector.

5. **INSTALL RR CONSOLE BOX (SEE PAGE 71-1 1)**
6. **INSTALL CONSOLE PANEL UPPER REAR (SEE PAGE 71-1 1)**
7. **PERFORM YAWRATE SENSOR ZERO POINT CALIBRATION (SEE PAGE 05-471)**

STEERING SENSOR

3203S-11

REPLACEMENT

1. PRECAUTION (SEE PAGE 60-1)
2. SEPARATE BATTERY NEGATIVE TERMINAL (SEE PAGE 60-1)
3. PLACE FRONT WHEELS FACING STRAIGHT AHEAD
4. REMOVE HORN BUTTON ASSY (SEE PAGE 60-22)
5. REMOVE STEERING WHEEL ASSY (SEE PAGE 50-8)
6. REMOVE STEERING COLUMN LOWER COVER (SEE PAGE 50-8)
7. REMOVE SPIRAL CABLE SUB-ASSY (SEE PAGE 60-31)
8. REMOVE WINDSHIELD WIPER SWITCH ASSY
9. REMOVE STEERING SENSOR
10. INSTALL STEERING SENSOR
11. INSPECT SPIRAL CABLE SUB-ASSY

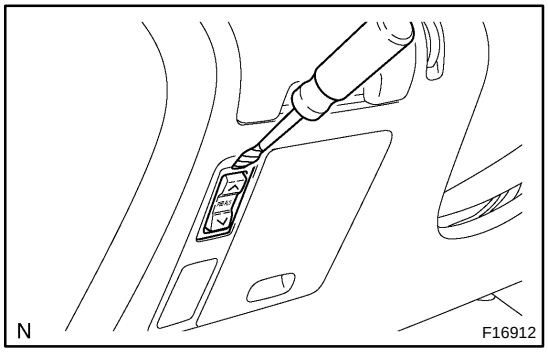
(a) If the following condition is identified, replace the spiral cable sub-assy with new one.
Condition:
Scratches or cracks on the connector
Cracks, dents or chipping of the spiral cable sub-assy

12. INSTALL WINDSHIELD WIPER SWITCH ASSY
13. PLACE FRONT WHEELS FACING STRAIGHT AHEAD
14. INSTALL SPIRAL CABLE SUB-ASSY (SEE PAGE 60-31)
15. INSTALL STEERING COLUMN LOWER COVER (SEE PAGE 50-8)
16. CENTER SPIRAL CABLE (SEE PAGE 60-31)
17. INSTALL STEERING WHEEL ASSY (SEE PAGE 50-8)
18. INSPECT STEERING WHEEL CENTER POINT (SEE PAGE 50-8)
19. INSTALL HORN BUTTON ASSY (SEE PAGE 60-22)
20. INSPECT SRS WARNING LIGHT (SEE PAGE 05-818)

ADJUSTABLE PEDAL SWITCH (From August, 2002)

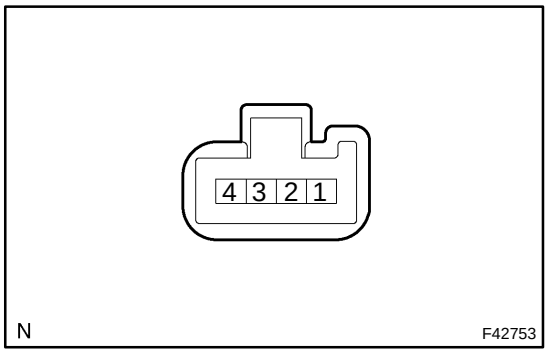
320OH-03

INSPECTION



1. REMOVE ADJUSTABLE PEDAL SWITCH

(a) Using a screwdriver, remove the adjustable pedal switch, then disconnect the connector.



2. INSPECT ADJUSTABLE PEDAL SWITCH

Switch position	Tester connection	Specified condition
OFF	1 - 2 - 3	Continuity
FRONT	1 - 3	Continuity
	2 - 4	
REAR	1 - 2	Continuity
	3 - 4	

3. INSTALL ADJUSTABLE PEDAL SWITCH

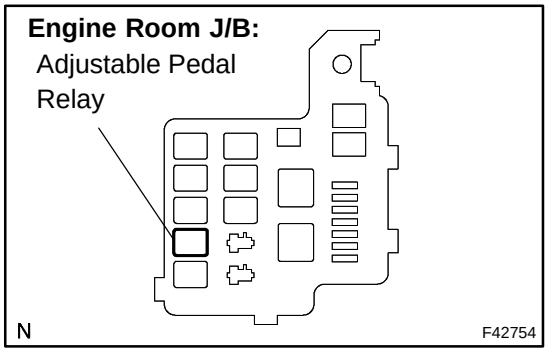
(a) Connect the connector.

(b) Install the adjustable pedal switch.

ADJUSTABLE PEDAL RELAY (From August, 2002)

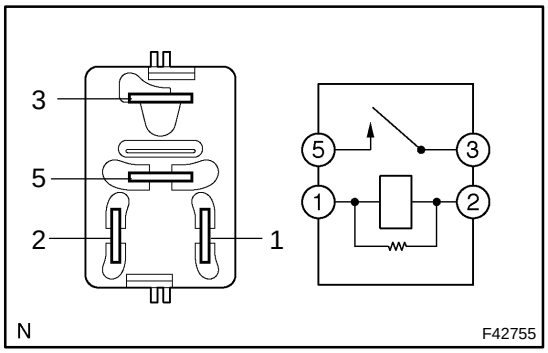
320OI-03

INSPECTION



1. REMOVE ADJUSTABLE PEDAL RELAY

(a) Remove the adjustable pedal relay from the engine room J/B.



2. INSPECT ADJUSTABLE PEDAL RELAY

Condition	Tester condition	Specified condition
Constant	1 - 2	Continuity
	3 - 5	No continuity
Apply +B between terminals 1 and 2	3 - 5	continuity

3. INSTALL ADJUSTABLE PEDAL RELAY

(a) Install the adjustable pedal relay to the engine room J/B.

PARKING BRAKE SYSTEM

3305F-02

PROBLEM SYMPTOMS TABLE

Use the table below to help you find the cause of the problem. The numbers indicate the priority of the likely cause of the problem. Check each part in order. If necessary, replace these parts.

Symptom	Suspect Area	See page
Brake drag	1. Parking brake pedal or lever travel (Out of adjustment)	33-2
	2. Parking brake wire (Sticking)	33-8 33-11 33-14
	3. Parking brake shoe clearance (Out of adjustment)	33-16
	4. Parking brake shoe lining (Cracked or distorted)	33-16
	5. Tension or return spring (Damaged)	33-16

3305G-02

ADJUSTMENT

1. REMOVE REAR WHEEL

2. ADJUST PARKING BRAKE SHOE CLEARANCE(See page 33-16)

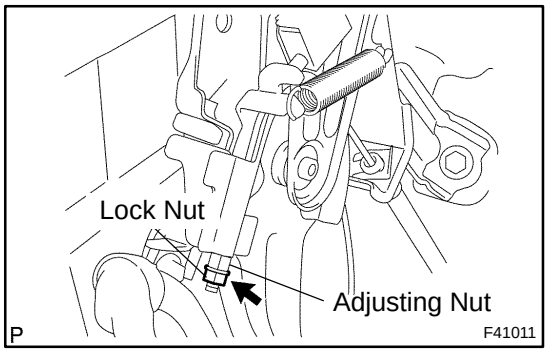
3. INSTALL REAR WHEEL

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

4. INSPECT PARKING BRAKE PEDAL TRAVEL

(a) Slowly depress the parking brake pedal all the way, and count the number of clicks.

Parking brake pedal travel: 3 - 6 clicks at 300 N (31 kgf, 68.3 lbf)



5. ADJUST PARKING BRAKE PEDAL TRAVEL

(a) Depress the parking brake pedal 3 notches to make a room for the procedure, and loosen the lock nut.

(b) Return the parking brake pedal to the original position.

(c) Turn the adjusting nut until the parking brake pedal travel is correct.

(d) Depress the parking brake pedal 3 notches to make a room for the procedure, and tighten the lock nut.

Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)

(e) Return the parking brake pedal to the original position.

(f) Check whether parking brake drags or not.

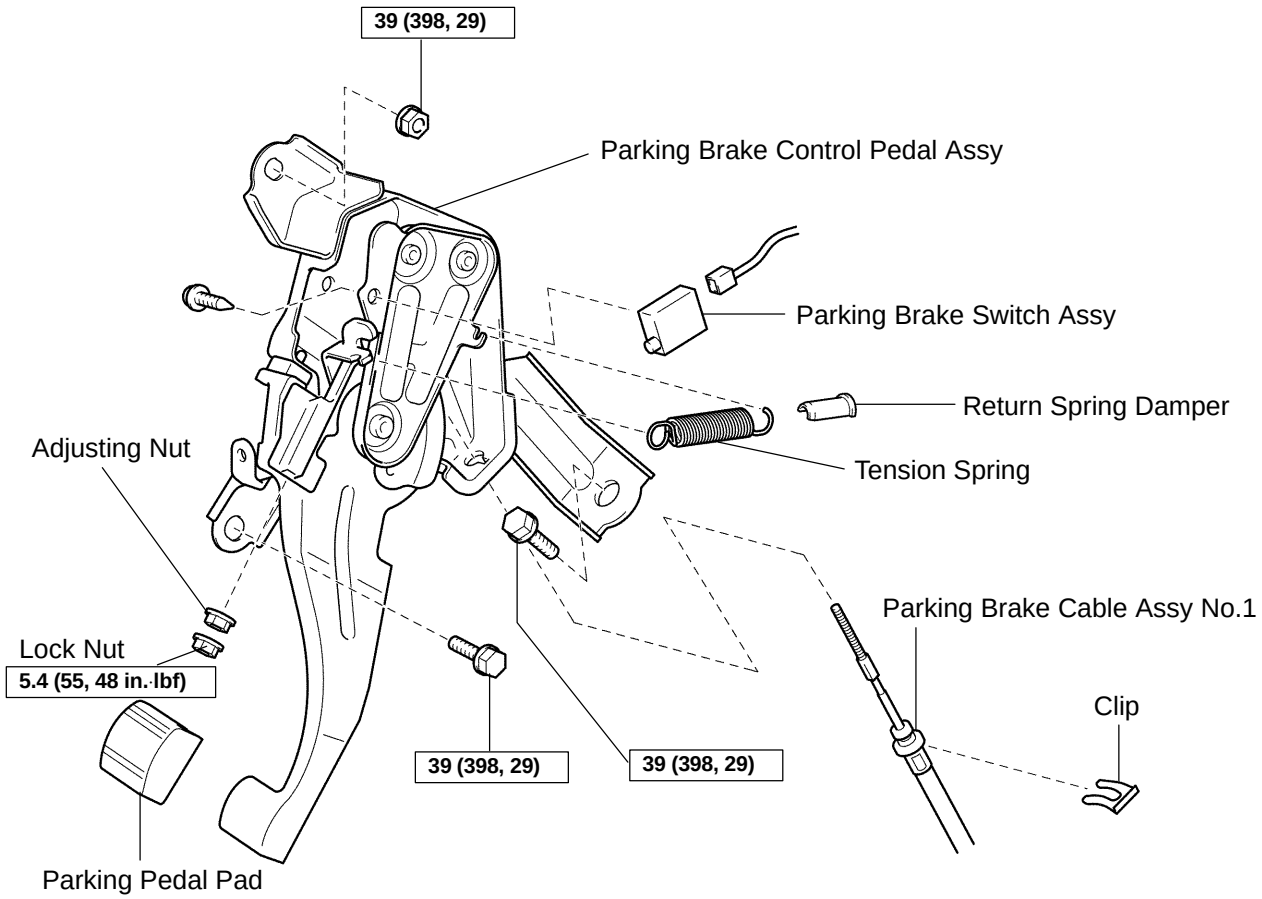
(g) When operating the parking brake pedal, check that the parking brake pedal indicator light lights up.

PARKING BRAKE

3305H-02

COMPONENTS

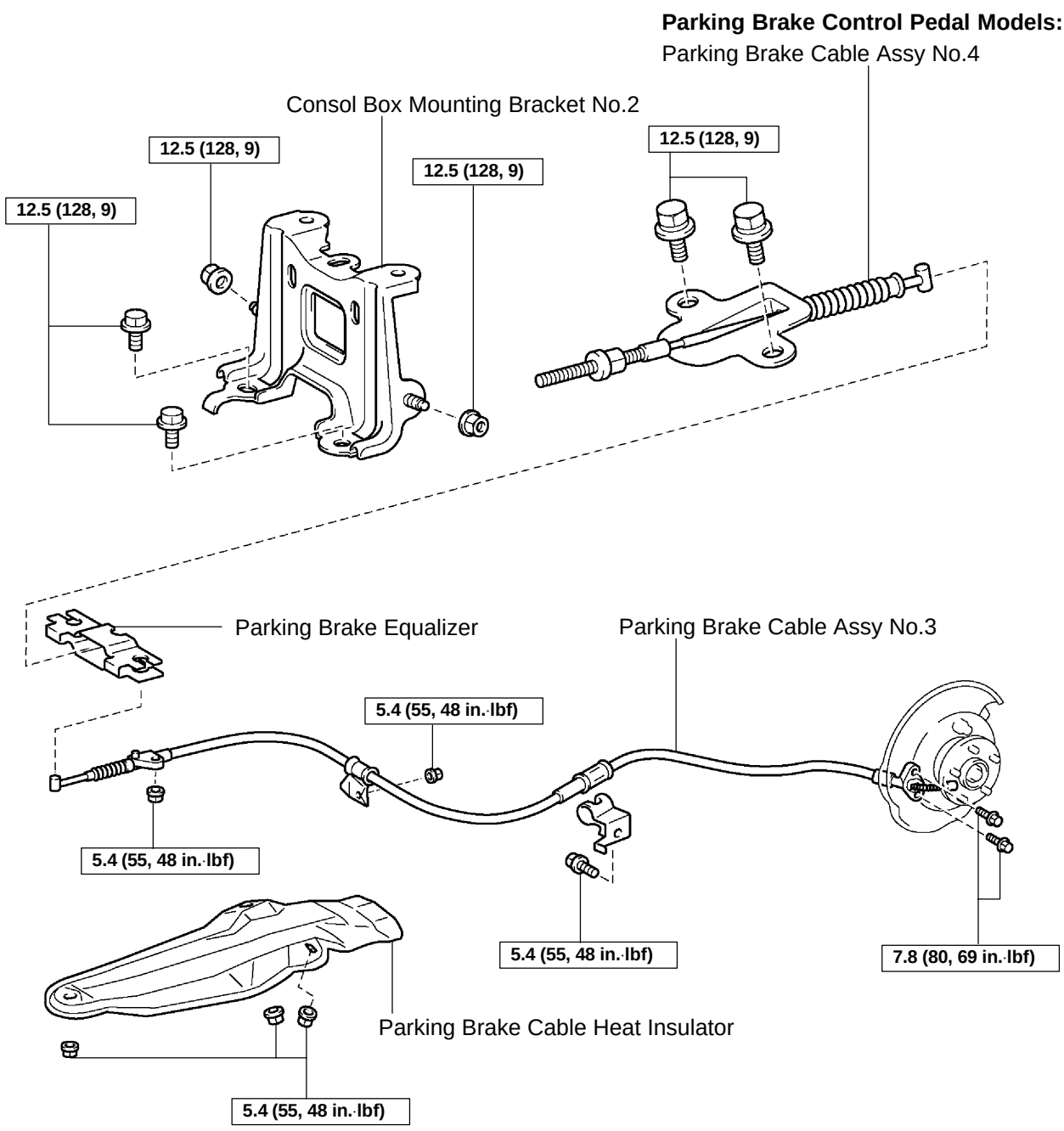
Parking Brake Control Pedal Assy:



P N·m (kgf·cm, ft·lbf) : Specified torque

F41008

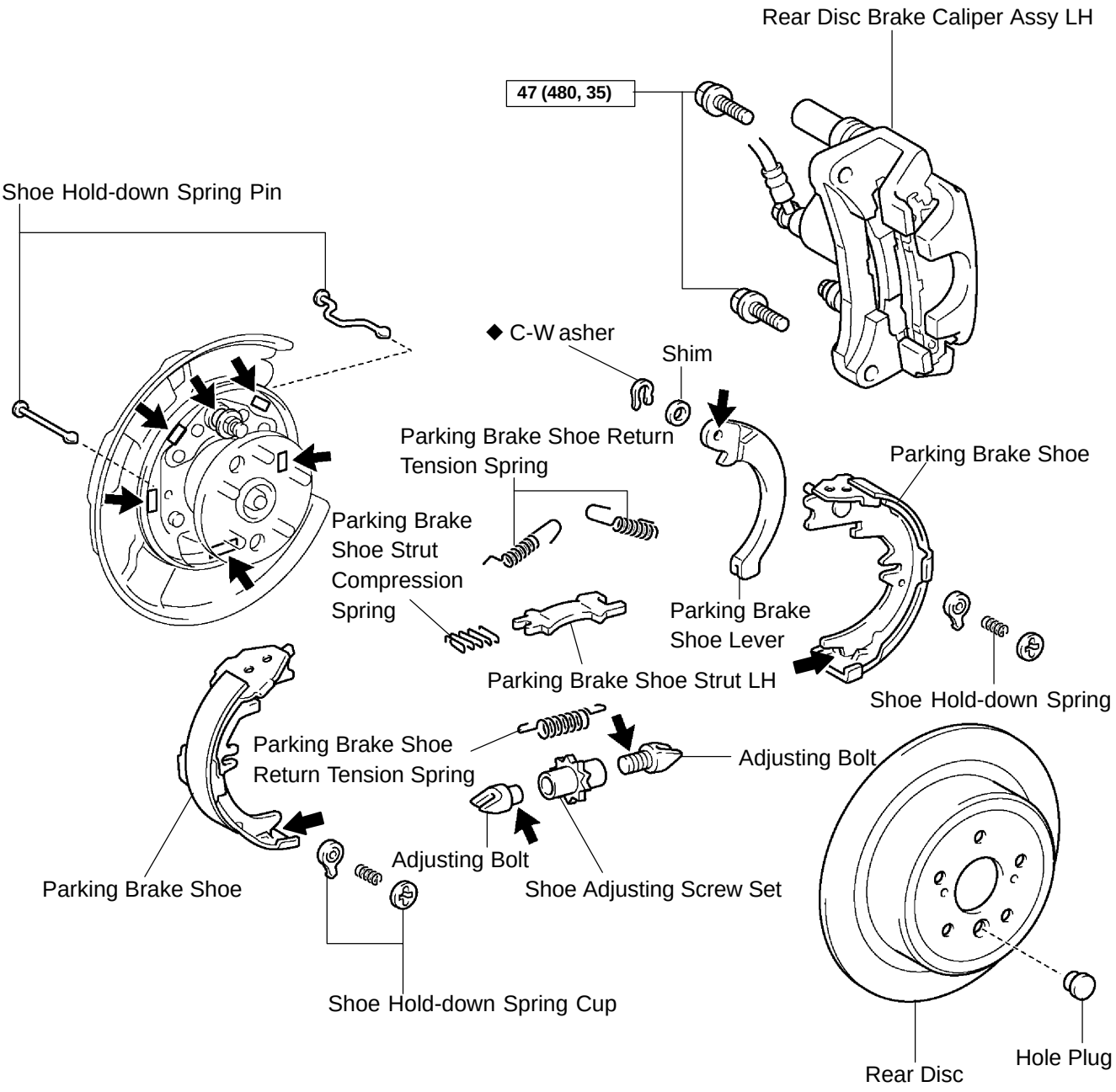
Parking Brake Cable:



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

C90467 F41686

Parking Brake Assy:



N·m (kgf·cm, ft·lbf) : Specified torque
◆ Non-reusable part
⬅ High Temperature grease

C90458 F41967

PARKING BRAKE CONTROL PEDAL ASSY

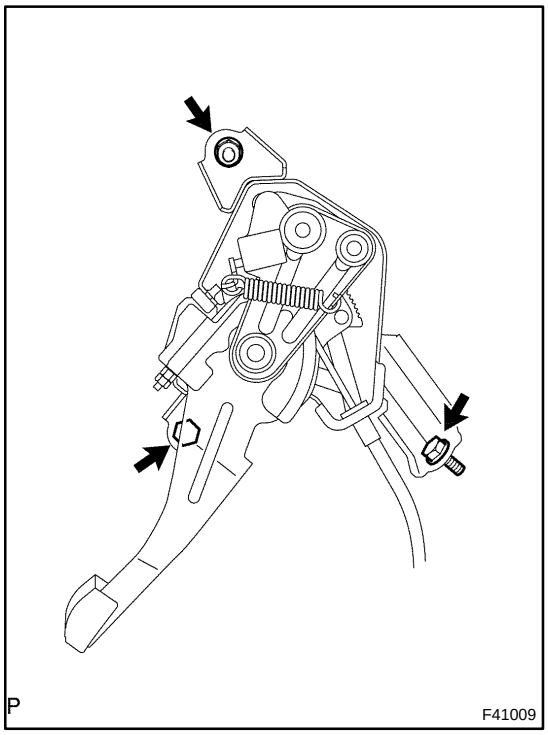
3305I-02

OVERHAUL

HINT:

COMPONENTS: See page 71-8 and 33-3

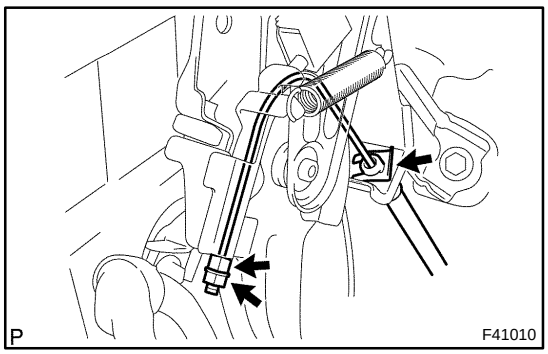
1. **REMOVE INSTRUMENT CLUSTER FINISH PANEL SUB-ASSY(See page 71-1 1)**
2. **REMOVE COMBINATION METER ASSY(See page 71-1 1)**
3. **REMOVE FRONT DOOR SCUFF PLATE LH(See page 71-1 1)**
4. **REMOVE INSTRUMENT PANEL SUB-ASSY UPPER(See page 71-1 1)**
5. **REMOVE INSTRUMENT PANEL INSERT SUB-ASSY LOWER LH(See page 71-1 1)**



6. **REMOVE PARKING BRAKE CONTROL PEDAL ASSY**

(a) Disconnect the parking brake switch connector.

(b) Remove the 2 bolts, nut and parking brake control pedal assy.



7. **DISCONNECT PARKING BRAKE CABLE ASSY NO.1**

(a) Remove the lock nut, adjusting nut and clip, then disconnect the parking brake cable assy No.1 from the parking brake control pedal assy.

8. **REMOVE PARKING BRAKE SWITCH ASSY**

(a) Remove the screw and parking brake switch assy.

9. **REMOVE TENSION SPRING**
10. **REMOVE RETURN SPRING DAMPER**
11. **REMOVE PARKING PEDAL PAD**

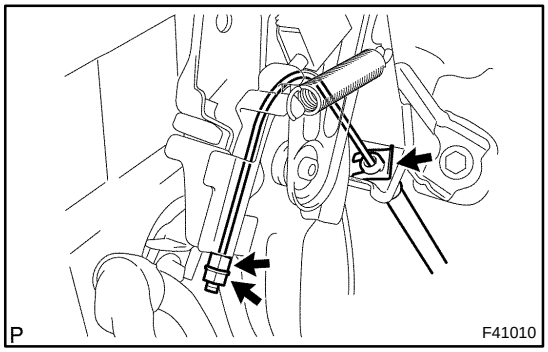
12. INSTALL PARKING PEDAL PAD

13. INSTALL RETURN SPRING DAMPER

14. INSTALL TENSION SPRING

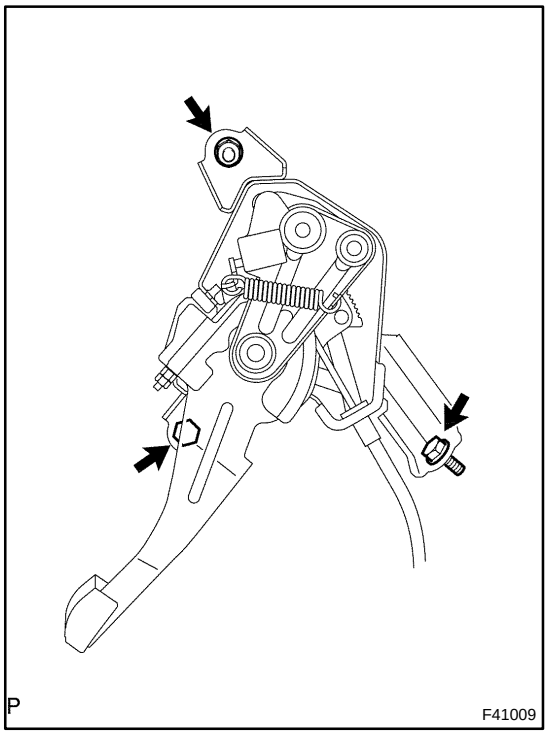
15. INSTALL PARKING BRAKE SWITCH ASSY

(a) Install the parking brake switch assy with the screw.



16. CONNECT PARKING BRAKE CABLE ASSY NO.1

(a) Connect the parking brake cable assy No.1 with the clip, adjusting nut and lock nut.



17. INSTALL PARKING BRAKE CONTROL PEDAL ASSY

(a) Install the parking brake control pedal assy with the 2 bolts and nut.

Torque: 39 N·m (398 kgf·cm, 29 ft·lbf)

(b) Connect the parking brake switch connector.

18. INSTALL INSTRUMENT PANEL INSERT SUB-ASSY LOWER LH

19. INSTALL INSTRUMENT PANEL SUB-ASSY UPPER

20. INSTALL FRONT DOOR SCUFF PLATE LH

21. INSTALL COMBINATION METER ASSY

22. INSTALL INSTRUMENT CLUSTER FINISH PANEL SUB-ASSY

23. INSPECT AND ADJUST PARKING BRAKE PEDAL TRAVEL(See page 33-2)

PARKING BRAKE CABLE ASSY NO.1

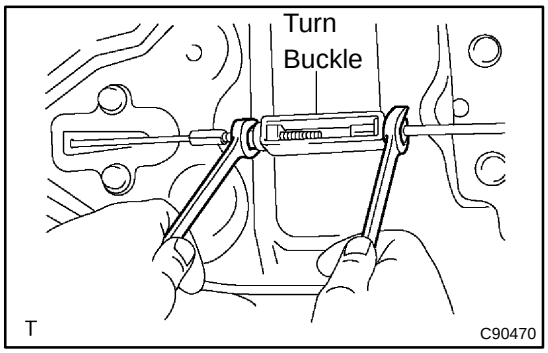
3305J-02

REPLACEMENT

HINT:

COMPONENTS: See page 71-8 and 33-3

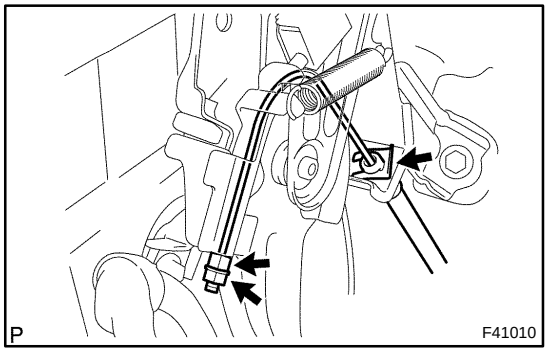
1. **REMOVE FRONT DOOR SCUFF PLATE RH**
2. **REMOVE FRONT DOOR SCUFF PLATE LH**
3. **REMOVE INSTRUMENT PANEL SUB-ASSY UPPER(See page 71-1 1)**
4. **REMOVE INSTRUMENT PANEL INSERT SUB-ASSY LOWER LH(See page 71-1 1)**
5. **REMOVE INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.1(See page 71-1 1)**
6. **REMOVE INSTRUMENT PANEL SUB-ASSY LOWER(See page 71-1 1)**
7. **REMOVE CONSOLE PANEL UPPER REAR(See page 71-1 1)**
8. **REMOVE CONSOLE BOX CARPET**
9. **REMOVE RR CONSOLE BOX(See page 71-1 1)**
10. **REMOVE INSTRUMENT PANEL FINISH PANEL END RH**
11. **REMOVE INSTRUMENT PANEL FINISH PANEL END LH(See page 71-1 1)**
12. **REMOVE AIR DUCT REAR NO.1**
13. **REMOVE AIR DUCT REAR NO.2**
14. **REMOVE CONSOLE BOX DUCT NO.1**
15. **REMOVE YAWRATE SENSOR (W/ VSC)(See page 32-59)**



16. REMOVE PARKING BRAKE CABLE ASSY NO.1

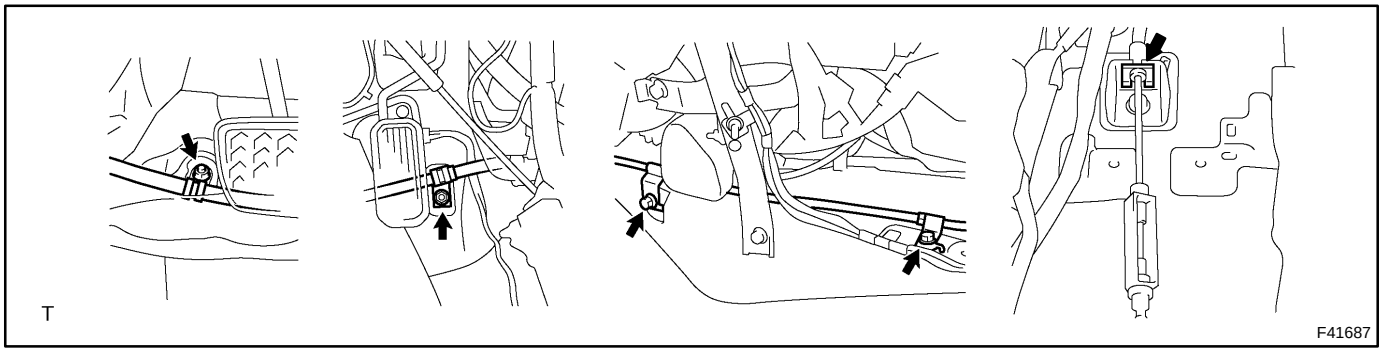
(a) Loosen the turn buckle, disconnect the parking brake cable assy No.1 from the parking brake cable assy No.4.

(b) Remove the 2 bolts and console box mounting bracket No.2.



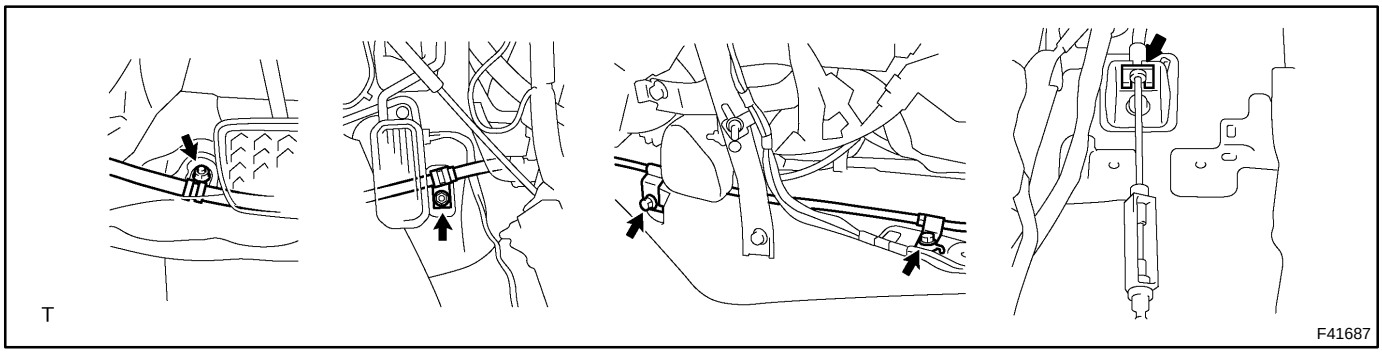
(c) Remove the lock nut, adjusting nut and clip, then disconnect the parking brake cable assy No.1 from the parking brake control pedal assy.

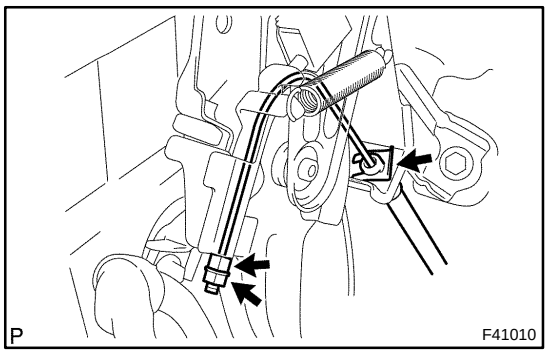
(d) Remove the 2 nuts, 2 bolts, clip and parking brake cable assy No.1.



17. INSTALL PARKING BRAKE CABLE ASSY NO.1

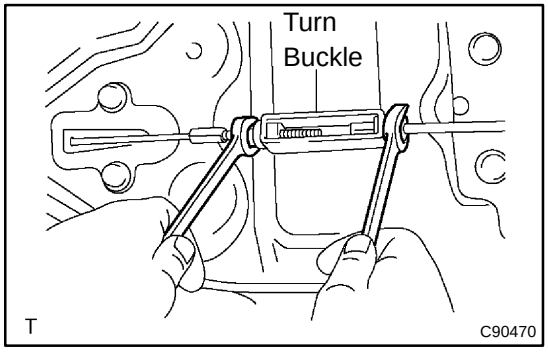
(a) Install the parking brake cable assy No.1 with the 2 nuts, 2 bolts and clip.





(b) Install the parking brake cable assy No.1 with the clip, adjusting nut and lock nut to the parking brake control pedal assy.
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)

(c) Install the console box mounting bracket No.2 with the 2 bolts.
Torque: 12.5 N·m (128 kgf·cm, 9 ft·lbf)



(d) Tighten the turn buckle, connect the parking brake cable assy No.1 to the parking brake cable assy No.4.
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)

18. **INSTALL YAWRATE SENSOR (W/ VSC)(See page 32-59)**
19. **INSTALL CONSOLE BOX DUCT NO.1**
20. **INSTALL AIR DUCT REAR NO.2**
21. **INSTALL AIR DUCT REAR NO.1**
22. **INSTALL INSTRUMENT PANEL FINISH PANEL END LH**
23. **INSTALL INSTRUMENT PANEL FINISH PANEL END RH**
24. **INSTALL RR CONSOLE BOX**
25. **INSTALL CONSOLE BOX CARPET**
26. **INSTALL CONSOLE PANEL UPPER REAR**
27. **INSTALL INSTRUMENT PANEL SUB-ASSY LOWER**
28. **INSTALL INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.1**
29. **INSTALL INSTRUMENT PANEL INSERT SUB-ASSY LOWER LH**
30. **INSTALL INSTRUMENT PANEL SUB-ASSY UPPER**
31. **INSTALL FRONT DOOR SCUFF PLATE LH**
32. **INSTALL FRONT DOOR SCUFF PLATE RH**
33. **INSPECT AND ADJUST PARKING BRAKE PEDAL TRAVEL(See page 33-2)**
34. **CHECK VSC SENSOR SIGNAL (W/ VSC)(See page 05-471)**

PARKING BRAKE CABLE ASSY NO.3

3305K-02

REPLACEMENT

HINT:

- COMPONENTS: See page 33-3
- For parking brake cable No.2, employ the same procedure to the RH side.

1. REMOVE REAR WHEEL

2. REMOVE REAR DISC BRAKE CALIPER ASSY LH

(a) Remove the 2 bolts and separate the rear disc brake caliper assy LH.

HINT:

Do not the flexible hose from the brake caliper assy LH.

3. REMOVE REAR DISC(See page 33-16)

4. REMOVE PARKING BRAKE SHOE RETURN TENSION SPRING(See page 33-16)

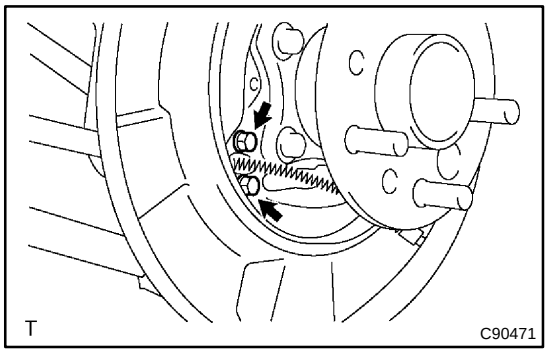
5. REMOVE PARKING BRAKE SHOE STRUT COMPRESSION SPRING(See page 33-16)

6. REMOVE PARKING BRAKE SHOE STRUT LH(See page 33-16)

7. REMOVE PARKING BRAKE SHOE(See page 33-16)

8. REMOVE PARKING BRAKE CABLE HEAT INSULATOR

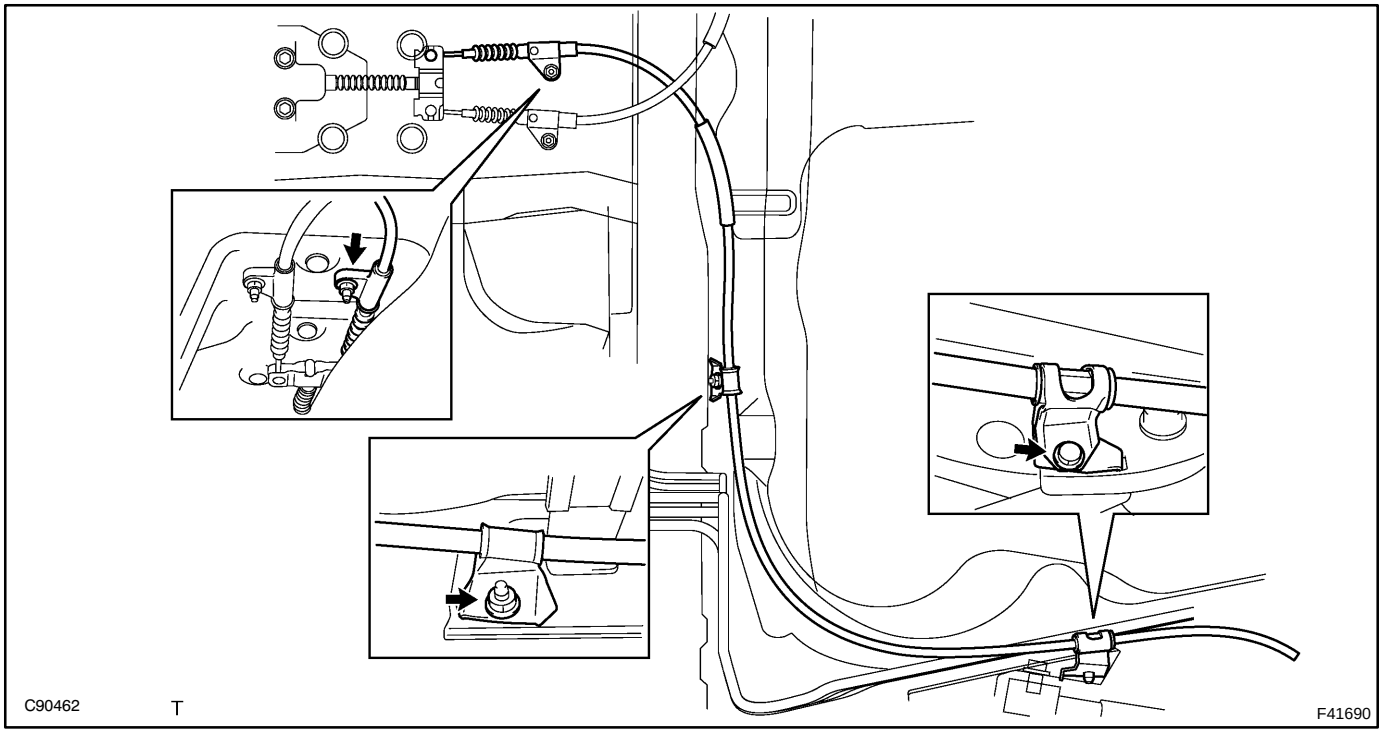
(a) Remove the 3 nuts and parking brake heat insulator.



9. REMOVE PARKING BRAKE CABLE ASSY NO.3

(a) Remove the 2 bolts and disconnect the parking brake cable assy No.3 from the backing plate.

(b) Remove the 2 nuts, bolt and parking brake cable assy No.3.



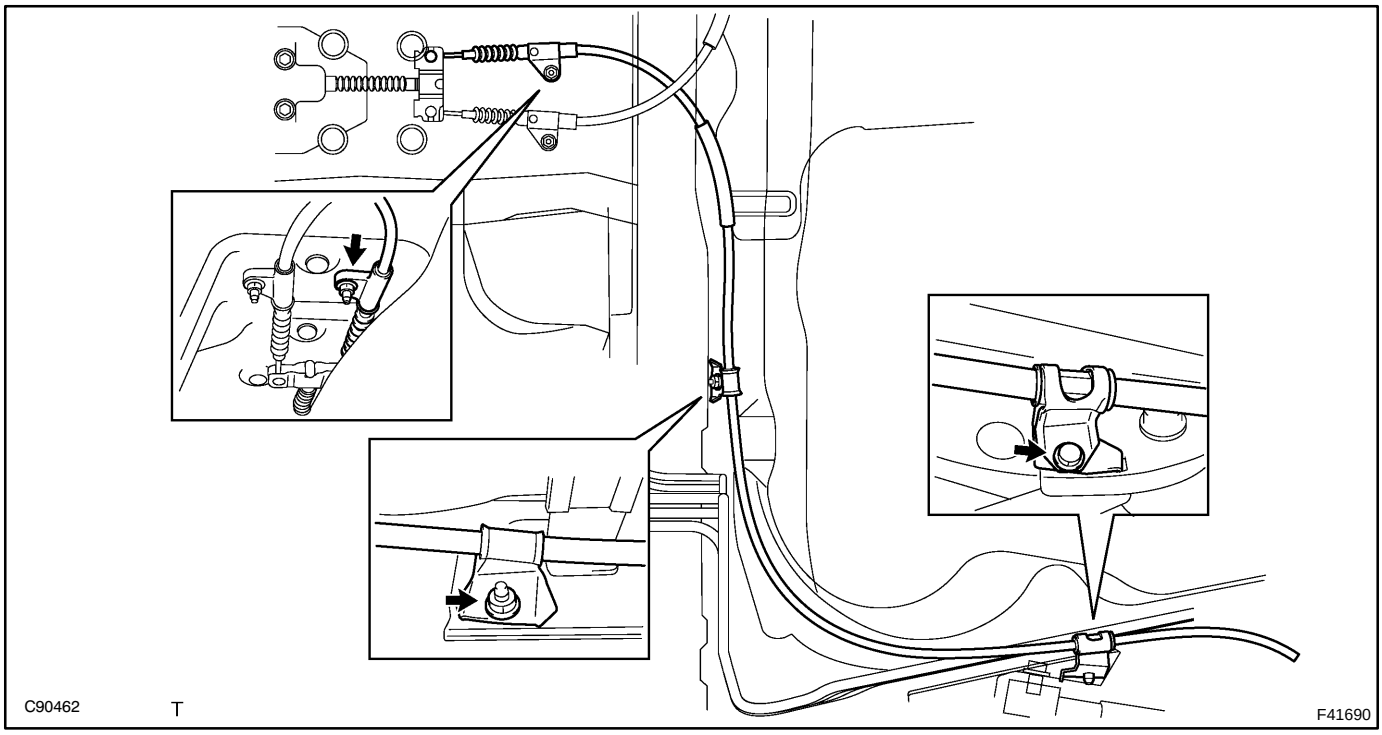
(c) Disconnect the parking brake cable assy No.3 from the parking brake equalizer.

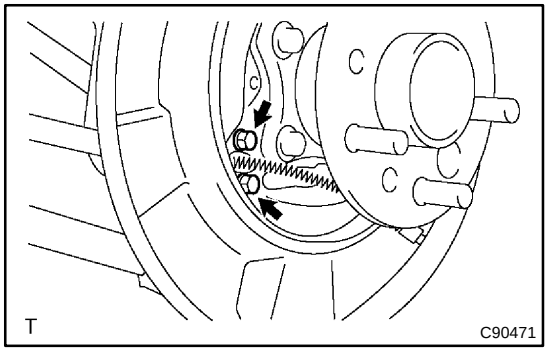
10. INSTALL PARKING BRAKE CABLE ASSY NO.3

(a) Connect the parking brake cable assy No.3 to the parking brake equalizer.

(b) Install the parking brake cable assy No.3 with the 2 nuts and bolt.

Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)





(c) Install the parking brake cable assy No.3 with the 2 bolts to the backing plate.

Torque: 7.8 N·m (80 kgf·cm, 69 in.·lbf)

11. INSTALL PARKING BRAKE CABLE HEAT INSULATOR

(a) Install the parking brake heat insulator with the 3 nuts.

Torque: 5.4 N·m (55 kgf·cm, 48 kgf·cm)

12. APPLICATION HIGH TEMPERATURE GREASE(See page 33-16)

13. INSTALL PARKING BRAKE SHOE(See page 33-16)

14. INSTALL PARKING BRAKE SHOE STRUT LH(See page 33-16)
15. INSTALL PARKING BRAKE SHOE STRUT COMPRESSION SPRING(See page 33-16)
16. INSTALL PARKING BRAKE SHOE RETURN TENSION SPRING(See page 33-16)
17. CHECK PARKING BRAKE INSTALLATION(See page 33-16)
18. INSTALL REAR DISC(See page 33-16)
19. ADJUST PARKING BRAKE SHOE CLEARANCE(See page 33-16)
20. INSTALL REAR DISC BRAKE CALIPER ASSY LH
(a) Install the rear disc brake caliper with the 2 bolts.
Torque: 47 N·m (480 kgf·cm, 35 ft·lbf)
21. INSTALL REAR WHEEL
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
22. INSPECT AND ADJUST PARKING BRAKE PEDAL TRAVEL(See page 33-2)

PARKING BRAKE CABLE ASSY NO.4

3305L-02

REPLACEMENT

HINT:

COMPONENTS: See page 71-8 and 33-3

1. REMOVE CONSOLE PANEL UPPER REAR(See page 71-1 1)

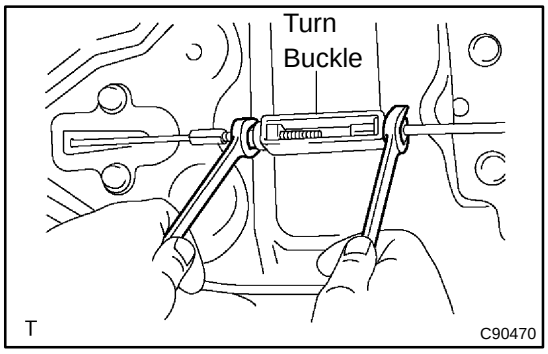
2. REMOVE CONSOLE BOX CARPET

3. REMOVE RR CONSOLE BOX(See page 71-1 1)

4. REMOVE CONSOLE BOX MOUNTING BRACKET NO.2

(a) Remove the 2 bolts and console box mounting bracket No.2.

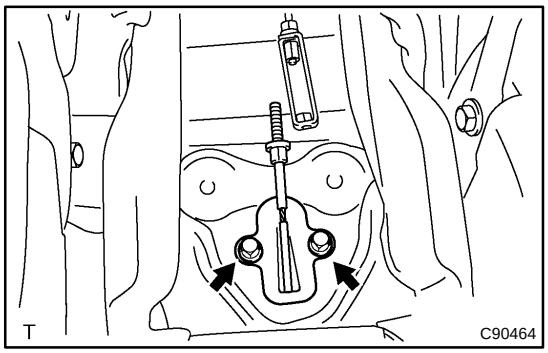
5. REMOVE YAWRATE SENSOR (W/ VSC)(See page 32-59)



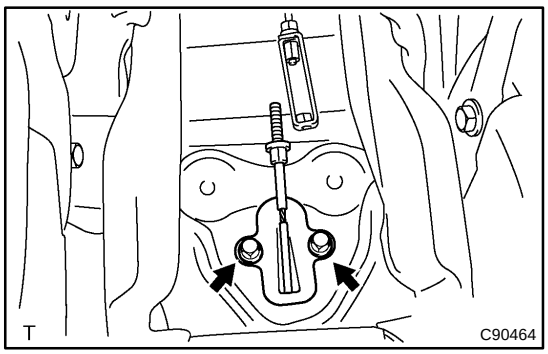
6. REMOVE PARKING BRAKE CABLE ASSY NO.4

(a) Loosen the turn buckle, disconnect the parking brake cable assy No.4 from the parking brake cable assy No.1.

(b) Disconnect the parking brake cable assy No.4 from the parking brake equalizer.



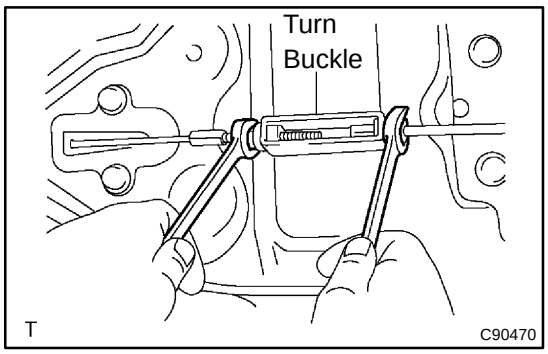
(c) Remove the 2 bolts and parking brake cable assy No.4.



7. INSTALL PARKING BRAKE CABLE ASSY NO.4

(a) Install the parking brake cable No.4 with the 2 bolts.
Torque: 12.5 N·m (128 kgf·cm, 9 ft·lbf)

(b) Connect the parking brake cable assy No.4 to the parking brake equalizer.



(c) Tighten the turn buckle, connect the parking brake cable assy No.4 to the parking brake cable assy No.1.
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)

8. INSTALL YAWRATE SENSOR (W/ VSC)(See page 32-59)
9. INSTALL CONSOLE BOX MOUNTING BRACKET NO.2
(a) Install the console box mounting bracket No.2 with the 2 bolts.
Torque: 12.5 N·m (128 kgf·cm, 9 ft·lbf)
10. INSTALL RR CONSOLE BOX
11. INSTALL CONSOLE BOX CARPET
12. INSTALL CONSOLE PANEL UPPER REAR
13. INSPECT AND ADJUST PARKING BRAKE PEDAL TRAVEL
14. CHECK VSC SENSOR SIGNAL (W/ VSC)(See page 05-471)

PARKING BRAKE ASSY

3305M-03

OVERHAUL

HINT:

- COMPONENTS: See page 33-3
- Overhaul the RH side by the same procedures with LH side.

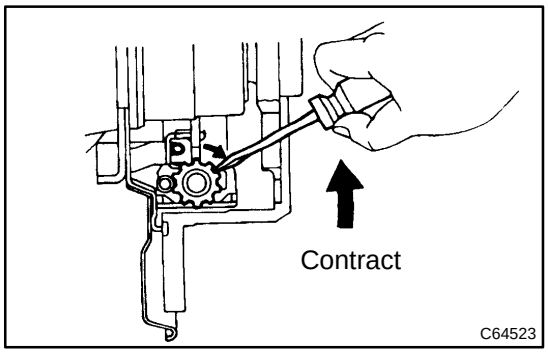
1. REMOVE REAR WHEEL

2. REMOVE REAR DISC BRAKE CALIPER ASSY LH

(a) Remove the 2 bolts and separate the rear disc brake caliper assy LH.

HINT:

Do not disconnect the flexible hose from the brake caliper.

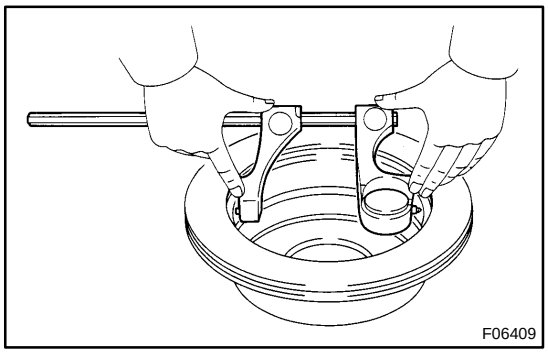


3. REMOVE REAR DISC

(a) Release the parking brake, and remove the rear disc.

HINT:

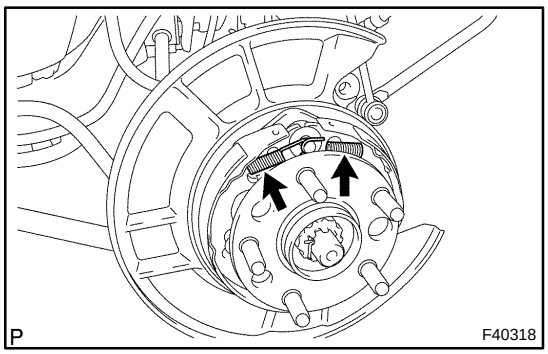
- Put matchmarks on the disc and the axle hub.
- If the disc cannot be removed easily, turn the shoe adjuster until the wheel turns freely.



4. INSPECT BRAKE DISC INSIDE DIAMETER

(a) Using a brake drum gauge or equivalent, measure the inside diameter of the disc.

Standard inside diameter: 170 mm (6.69 in.)
Maximum inside diameter: 171 mm (6.73 in.)



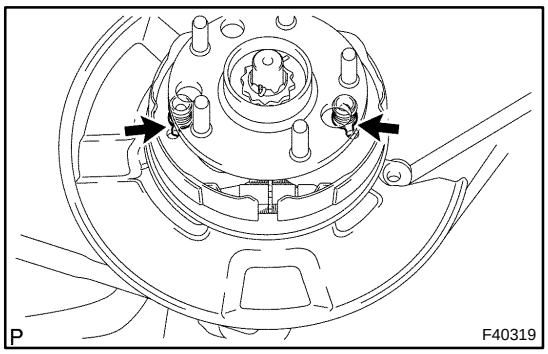
5. REMOVE PARKING BRAKE SHOE RETURN TENSION SPRING

(a) Using a needle-nose pliers, remove the 2 return tension springs.

6. REMOVE PARKING BRAKE SHOE STRUT COMPRESSION SPRING

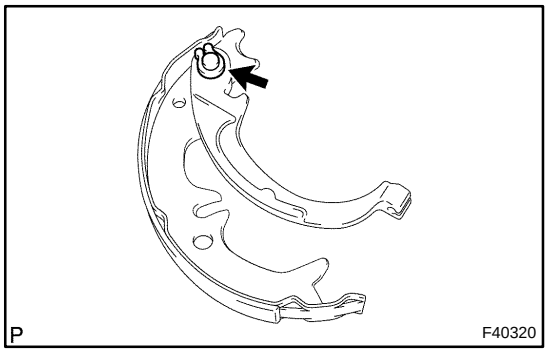
(a) Slide out the front shoe and remove the compression spring.

7. REMOVE PARKING BRAKE SHOE STRUT LH

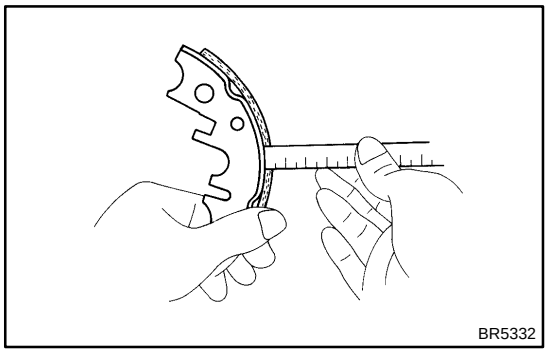


8. REMOVE PARKING BRAKE SHOE

(a) Release the cup claw and remove the front and rear parking brake shoe.
(b) Disconnect the parking brake cable from the shoe lever.
(c) Remove the tension spring and shoe adjuster screw set from the front and rear shoe.
(d) Remove the 2 shoe hold-down springs, 4 cups and 2 pins.



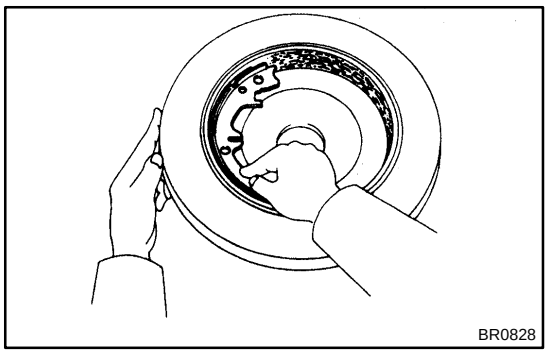
(e) Using a screwdriver, remove the C-washer.
(f) Remove the shim and shoe lever from the parking brake shoe.



9. INSPECT PARKING BRAKE SHOE LINING THICKNESS

(a) Using a ruler, measure the thickness of the shoe lining.
Standard thickness: 2.0 mm (0.079 in.)
Minimum thickness: 1.0 mm (0.039 in.)

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



10. 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.

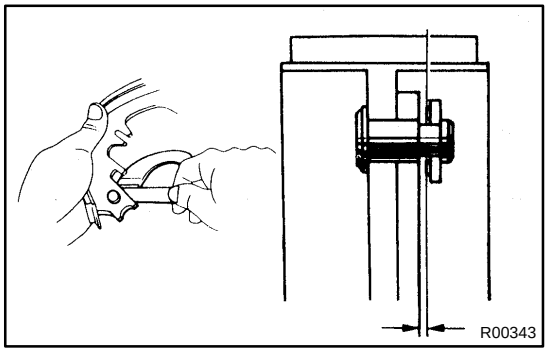
If the contact between the brake disc and the shoe lining is improper, repair it using a brake shoe grinder or replace the brake shoe assembly.

11. APPLICATION HIGH TEMPERATURE GREASE

(a) Apply the high temperature grease to the shoe attached surface of backing plate.

12. INSTALL PARKING BRAKE SHOE

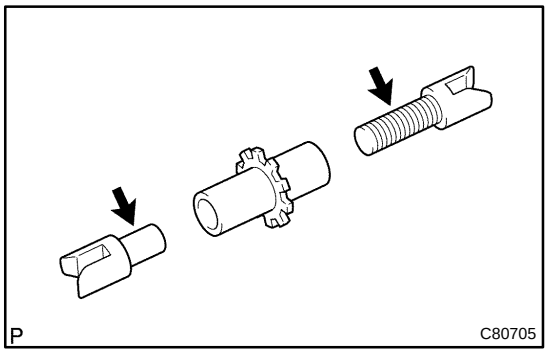
(a) Install the shoe lever and shim to the rear shoe with a new C-washer .



(b) Using a feeler gauge, measure the clearance.
Standard clearance: Less than 0.35 mm (0.0138 in.)

If the clearance is not within the specification, replace the shim with one of the correct size.

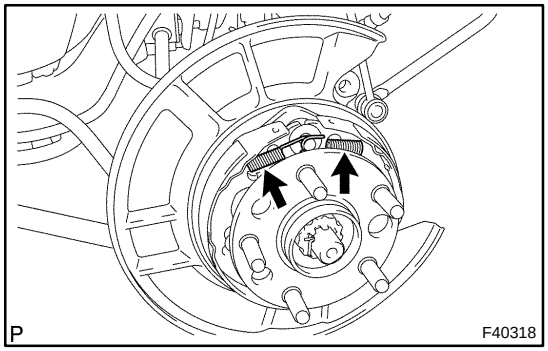
Shim Thickness	Shim Thickness
0.3 mm (0.012 in.)	0.9 mm (0.035 in.)
0.6 mm (0.024 in.)	-



(c) Apply the high temperature grease to the adjusting bolt.
(d) Install the shoe adjusting screw set and tension spring to the front and rear shoe.
(e) Install the 2 pins, 4 cups and 2 shoe hold-down springs.
(f) Connect the parking brake cable to the shoe lever.
(g) Install the front and rear parking brake shoe.

13. INSTALL PARKING BRAKE SHOE STRUT LH

14. INSTALL PARKING BRAKE SHOE STRUT COMPRESSION SPRING



15. INSTALL PARKING BRAKE SHOE RETURN TENSION SPRING

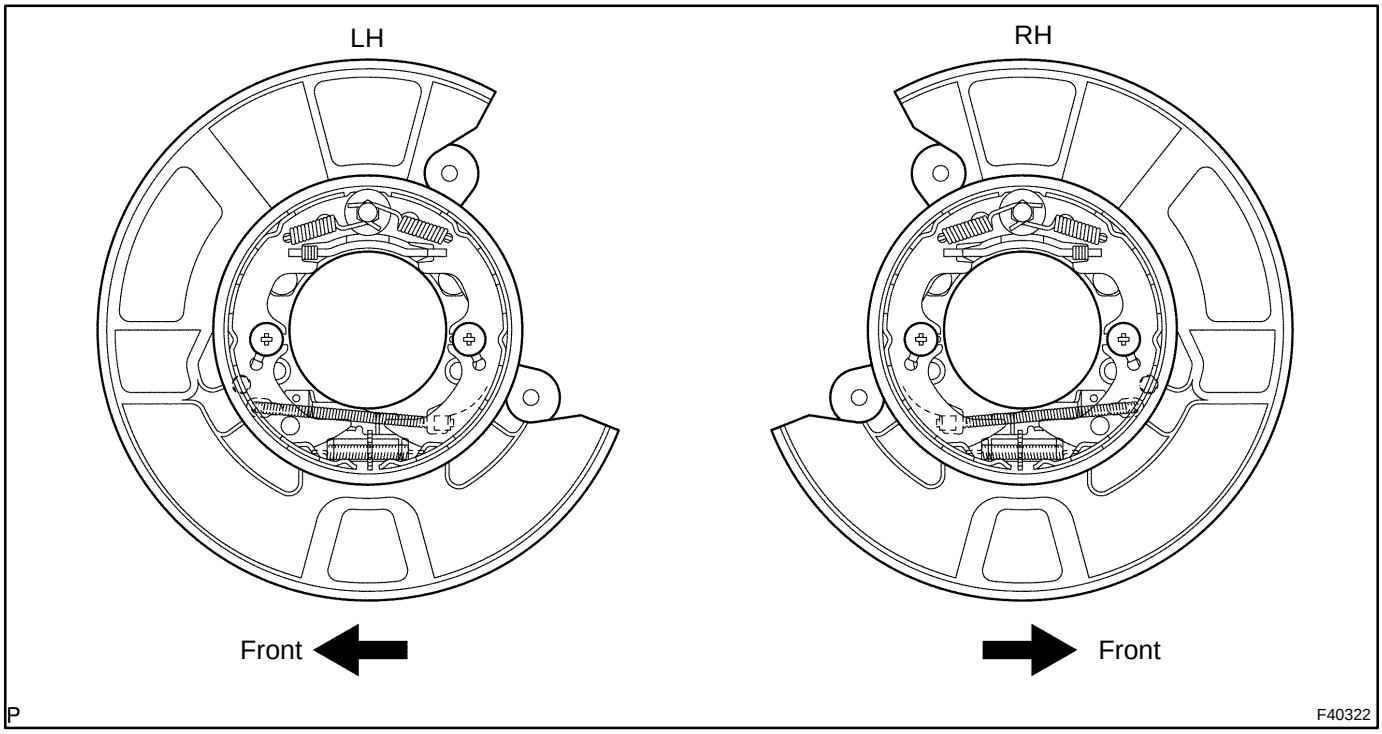
(a) Using a needle nose pliers, install the 2 return tension springs.

16. CHECK PARKING BRAKE INSTALLATION

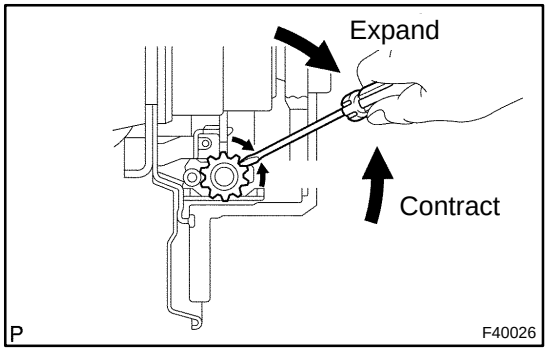
(a) Check that each part is installed properly.

NOTICE:

There should be no oil or grease adhering to the friction surface of the shoe lining and disc.



17. INSTALL REAR DISC(See page 32-41)



18. ADJUST PARKING BRAKE SHOE CLEARANCE

(a) Temporarily install the hub nuts.

(b) Remove the hole plug, and turn the adjuster and expand the shoes until the disc locks.

(c) Contract the shoe adjuster until the disc can rotate smoothly.

Standard : Return 8 notches

(d) Check shoe is no brake drag.

(e) Install the hole plug.

19. INSTALL REAR DISC BRAKE CALIPER ASSY LH

(a) Install the rear disc brake caliper with the 2 bolts.

Torque: 47 N·m (480 kgf·cm, 35 ft·lbf)

20. INSTALL REAR WHEEL

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

21. INSPECT AND ADJUST PARKING BRAKE PEDAL TRAVEL(See page 33-2)

PARKING BRAKE SYSTEM

3305F-02

PROBLEM SYMPTOMS TABLE

Use the table below to help you find the cause of the problem. The numbers indicate the priority of the likely cause of the problem. Check each part in order. If necessary, replace these parts.

Symptom	Suspect Area	See page
Brake drag	1. Parking brake pedal or lever travel (Out of adjustment)	33-2
	2. Parking brake wire (Sticking)	33-8 33-11 33-14
	3. Parking brake shoe clearance (Out of adjustment)	33-16
	4. Parking brake shoe lining (Cracked or distorted)	33-16
	5. Tension or return spring (Damaged)	33-16

3305G-02

ADJUSTMENT

1. REMOVE REAR WHEEL

2. ADJUST PARKING BRAKE SHOE CLEARANCE(See page 33-16)

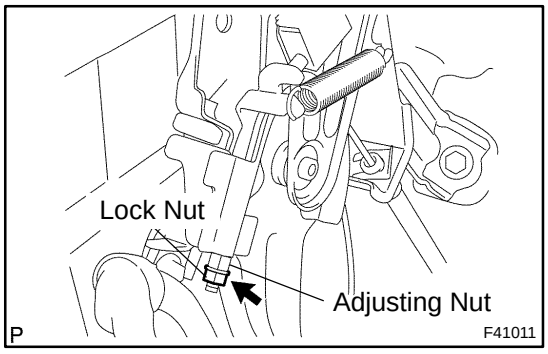
3. INSTALL REAR WHEEL

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

4. INSPECT PARKING BRAKE PEDAL TRAVEL

(a) Slowly depress the parking brake pedal all the way, and count the number of clicks.

Parking brake pedal travel: 3 - 6 clicks at 300 N (31 kgf, 68.3 lbf)



5. ADJUST PARKING BRAKE PEDAL TRAVEL

(a) Depress the parking brake pedal 3 notches to make a room for the procedure, and loosen the lock nut.

(b) Return the parking brake pedal to the original position.

(c) Turn the adjusting nut until the parking brake pedal travel is correct.

(d) Depress the parking brake pedal 3 notches to make a room for the procedure, and tighten the lock nut.

Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)

(e) Return the parking brake pedal to the original position.

(f) Check whether parking brake drags or not.

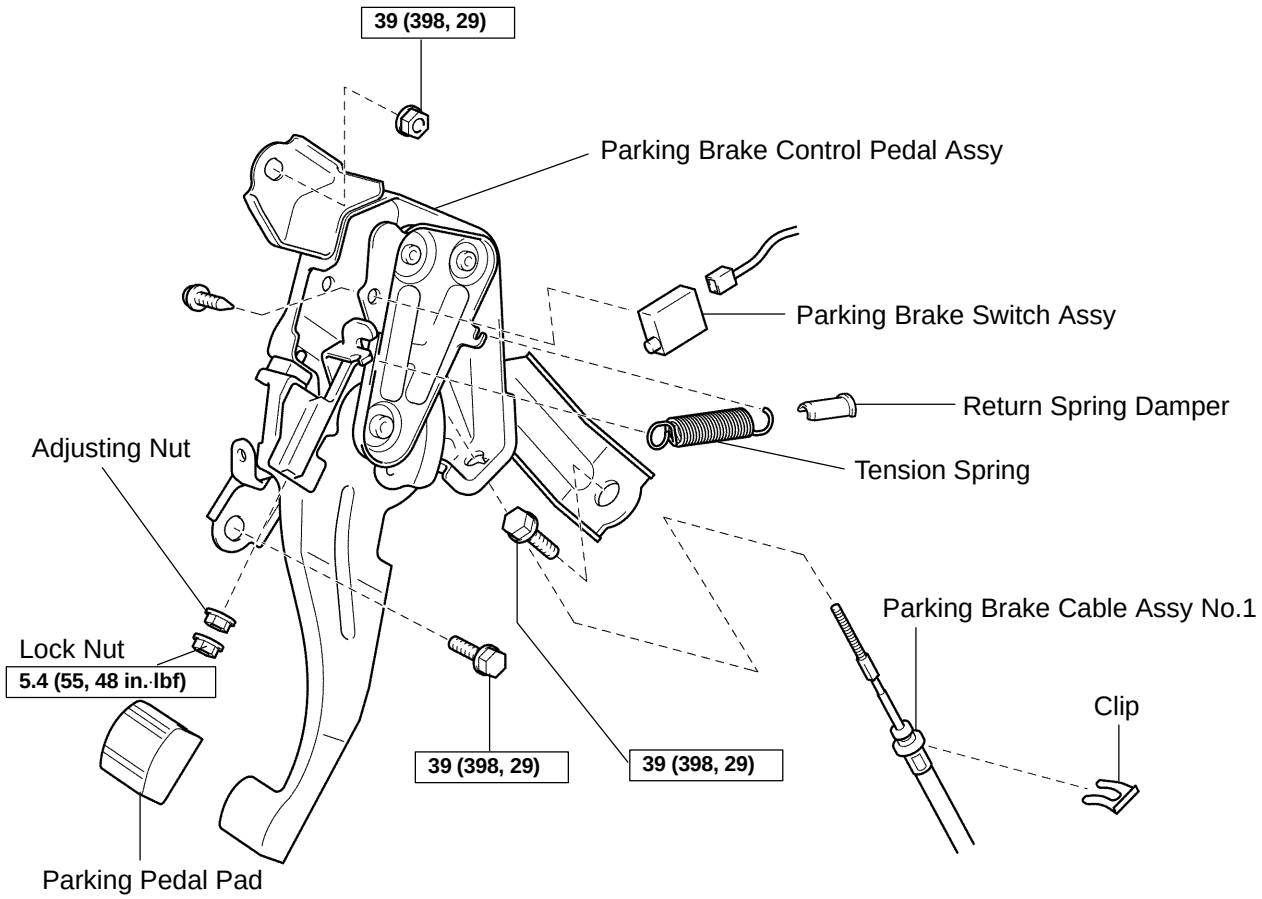
(g) When operating the parking brake pedal, check that the parking brake pedal indicator light lights up.

PARKING BRAKE

3305H-02

COMPONENTS

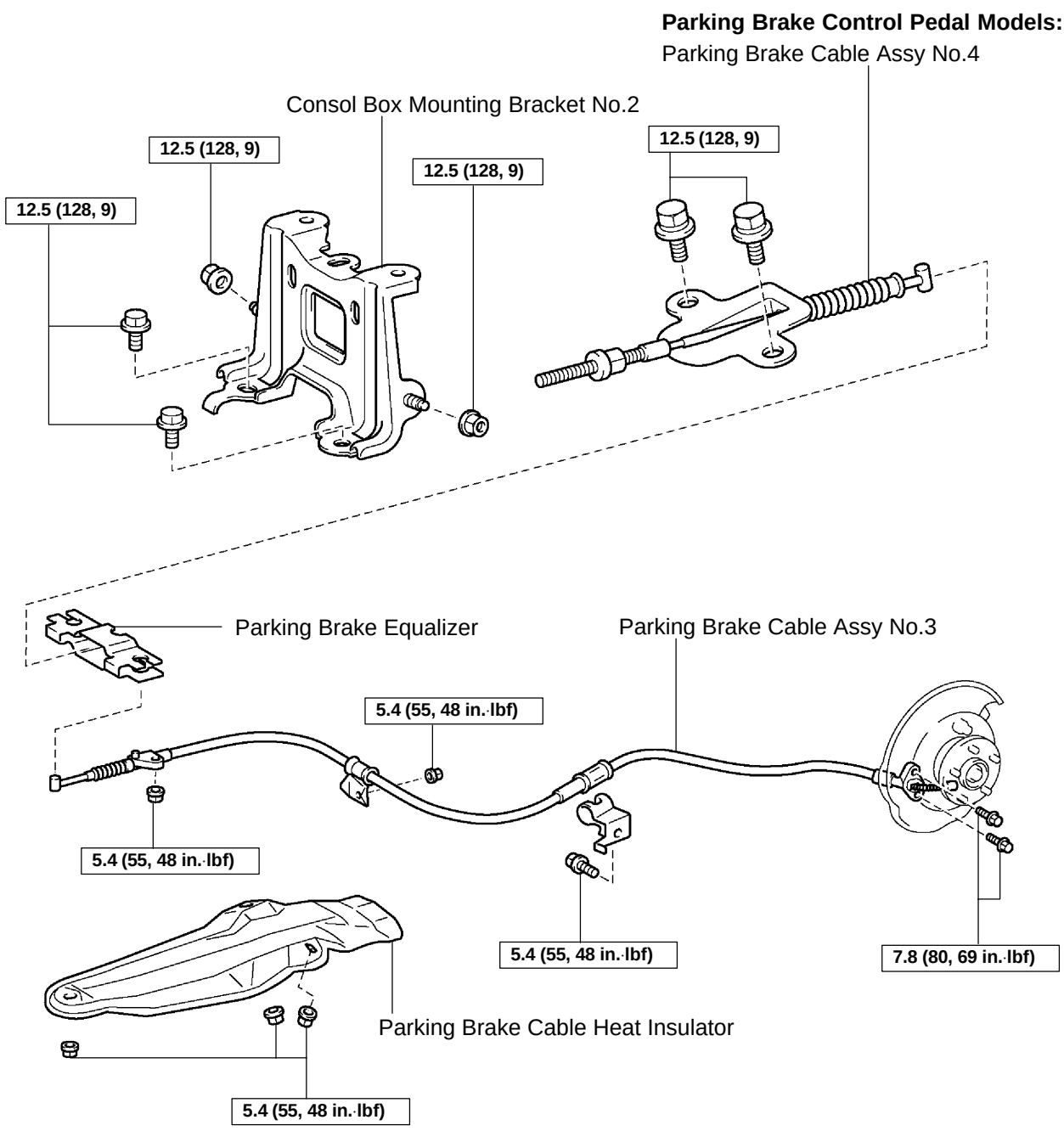
Parking Brake Control Pedal Assy:



P N·m (kgf·cm, ft·lbf) : Specified torque

F41008

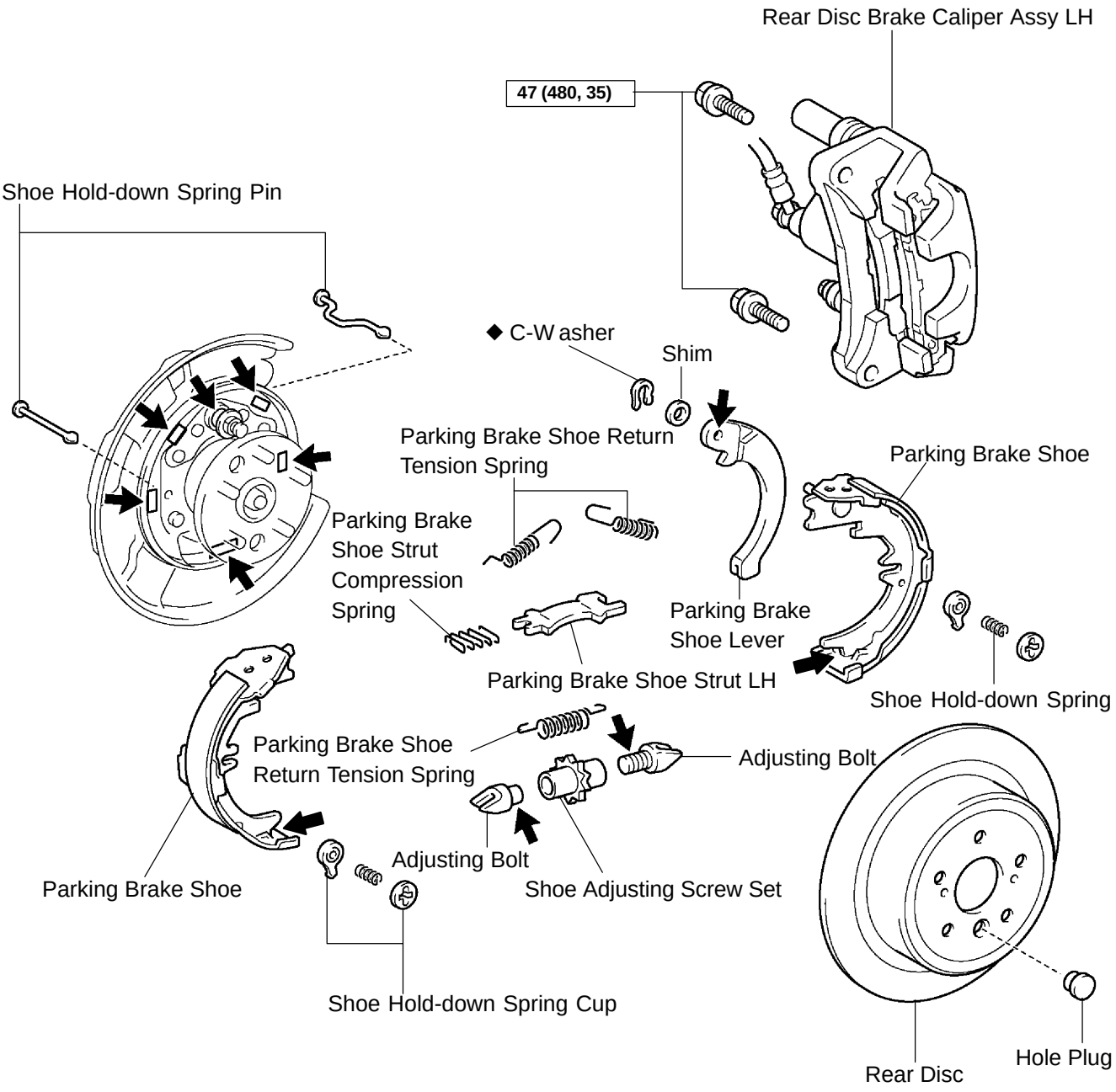
Parking Brake Cable:



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

C90467 F41686

Parking Brake Assy:



N·m (kgf·cm, ft·lbf) : Specified torque
◆ Non-reusable part
⬅ High Temperature grease

C90458 F41967

PARKING BRAKE CONTROL PEDAL ASSY

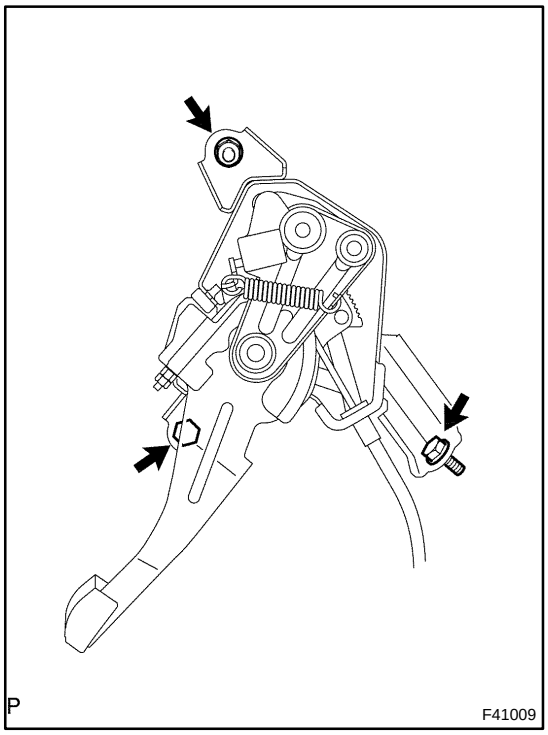
3305I-02

OVERHAUL

HINT:

COMPONENTS: See page 71-8 and 33-3

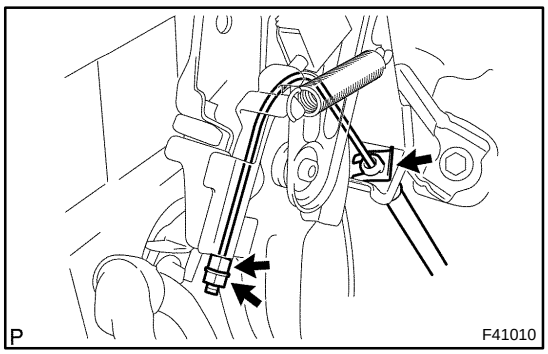
1. **REMOVE INSTRUMENT CLUSTER FINISH PANEL SUB-ASSY(See page 71-1 1)**
2. **REMOVE COMBINATION METER ASSY(See page 71-1 1)**
3. **REMOVE FRONT DOOR SCUFF PLATE LH(See page 71-1 1)**
4. **REMOVE INSTRUMENT PANEL SUB-ASSY UPPER(See page 71-1 1)**
5. **REMOVE INSTRUMENT PANEL INSERT SUB-ASSY LOWER LH(See page 71-1 1)**



6. **REMOVE PARKING BRAKE CONTROL PEDAL ASSY**

(a) Disconnect the parking brake switch connector.

(b) Remove the 2 bolts, nut and parking brake control pedal assy.



7. **DISCONNECT PARKING BRAKE CABLE ASSY NO.1**

(a) Remove the lock nut, adjusting nut and clip, then disconnect the parking brake cable assy No.1 from the parking brake control pedal assy.

8. **REMOVE PARKING BRAKE SWITCH ASSY**

(a) Remove the screw and parking brake switch assy.

9. **REMOVE TENSION SPRING**
10. **REMOVE RETURN SPRING DAMPER**
11. **REMOVE PARKING PEDAL PAD**

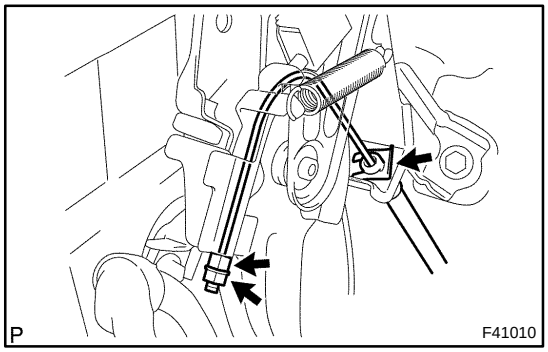
12. INSTALL PARKING PEDAL PAD

13. INSTALL RETURN SPRING DAMPER

14. INSTALL TENSION SPRING

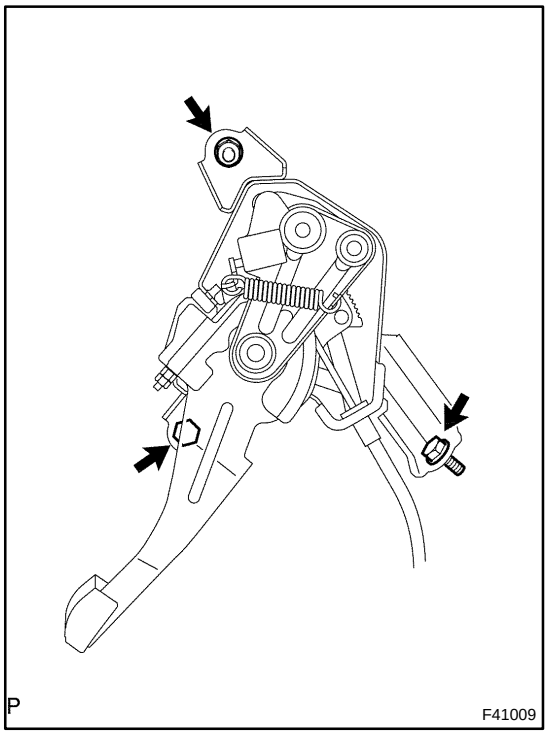
15. INSTALL PARKING BRAKE SWITCH ASSY

(a) Install the parking brake switch assy with the screw.



16. CONNECT PARKING BRAKE CABLE ASSY NO.1

(a) Connect the parking brake cable assy No.1 with the clip, adjusting nut and lock nut.



17. INSTALL PARKING BRAKE CONTROL PEDAL ASSY

(a) Install the parking brake control pedal assy with the 2 bolts and nut.

Torque: 39 N·m (398 kgf·cm, 29 ft·lbf)

(b) Connect the parking brake switch connector.

18. INSTALL INSTRUMENT PANEL INSERT SUB-ASSY LOWER LH

19. INSTALL INSTRUMENT PANEL SUB-ASSY UPPER

20. INSTALL FRONT DOOR SCUFF PLATE LH

21. INSTALL COMBINATION METER ASSY

22. INSTALL INSTRUMENT CLUSTER FINISH PANEL SUB-ASSY

23. INSPECT AND ADJUST PARKING BRAKE PEDAL TRAVEL(See page 33-2)

PARKING BRAKE CABLE ASSY NO.1

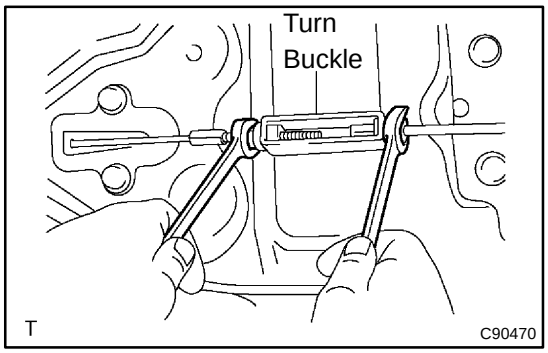
3305J-02

REPLACEMENT

HINT:

COMPONENTS: See page 71-8 and 33-3

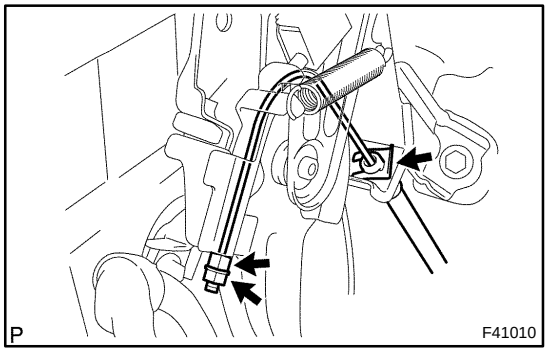
1. **REMOVE FRONT DOOR SCUFF PLATE RH**
2. **REMOVE FRONT DOOR SCUFF PLATE LH**
3. **REMOVE INSTRUMENT PANEL SUB-ASSY UPPER(See page 71-1 1)**
4. **REMOVE INSTRUMENT PANEL INSERT SUB-ASSY LOWER LH(See page 71-1 1)**
5. **REMOVE INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.1(See page 71-1 1)**
6. **REMOVE INSTRUMENT PANEL SUB-ASSY LOWER(See page 71-1 1)**
7. **REMOVE CONSOLE PANEL UPPER REAR(See page 71-1 1)**
8. **REMOVE CONSOLE BOX CARPET**
9. **REMOVE RR CONSOLE BOX(See page 71-1 1)**
10. **REMOVE INSTRUMENT PANEL FINISH PANEL END RH**
11. **REMOVE INSTRUMENT PANEL FINISH PANEL END LH(See page 71-1 1)**
12. **REMOVE AIR DUCT REAR NO.1**
13. **REMOVE AIR DUCT REAR NO.2**
14. **REMOVE CONSOLE BOX DUCT NO.1**
15. **REMOVE YAWRATE SENSOR (W/ VSC)(See page 32-59)**



16. REMOVE PARKING BRAKE CABLE ASSY NO.1

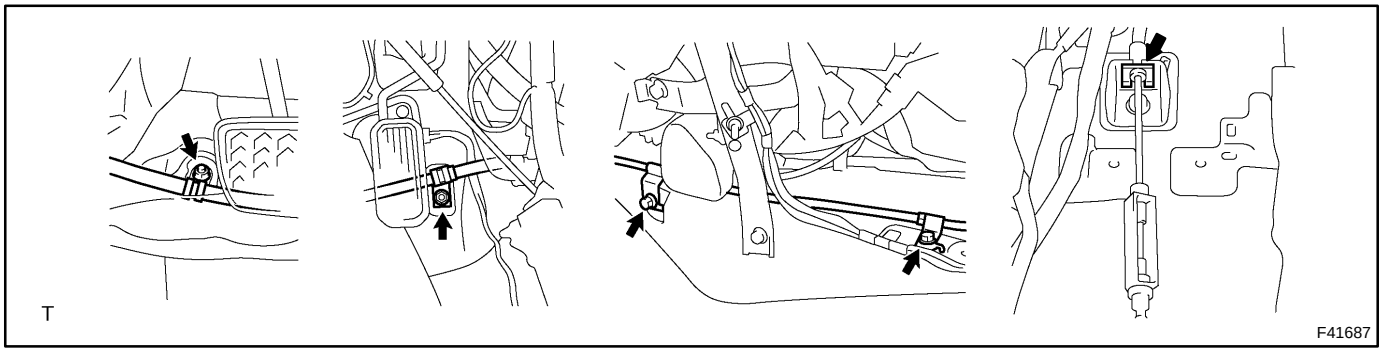
(a) Loosen the turn buckle, disconnect the parking brake cable assy No.1 from the parking brake cable assy No.4.

(b) Remove the 2 bolts and console box mounting bracket No.2.



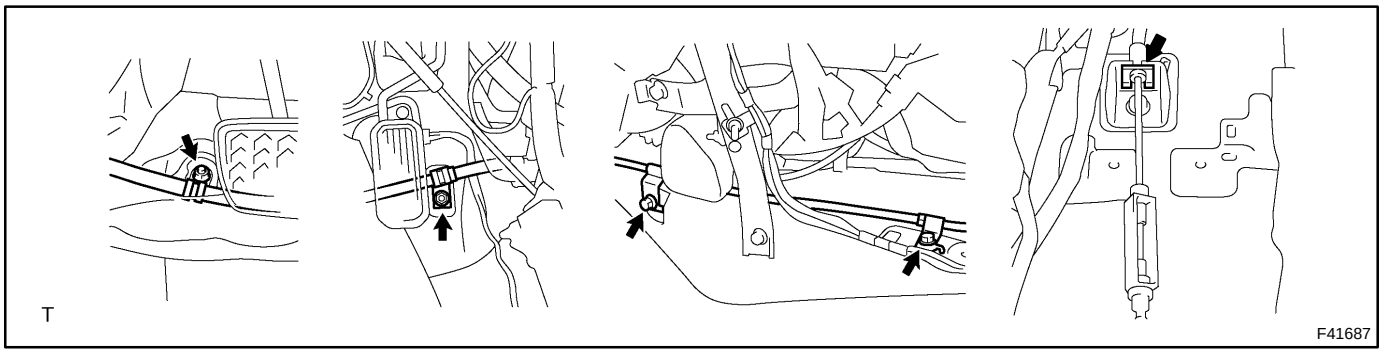
(c) Remove the lock nut, adjusting nut and clip, then disconnect the parking brake cable assy No.1 from the parking brake control pedal assy.

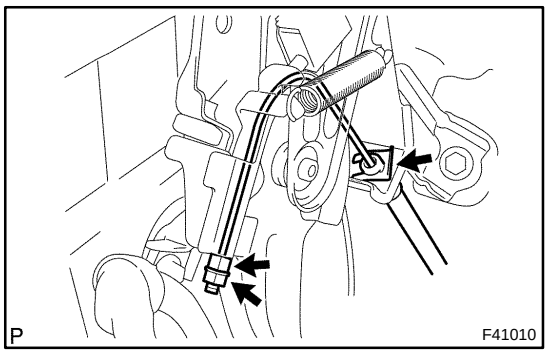
(d) Remove the 2 nuts, 2 bolts, clip and parking brake cable assy No.1.



17. INSTALL PARKING BRAKE CABLE ASSY NO.1

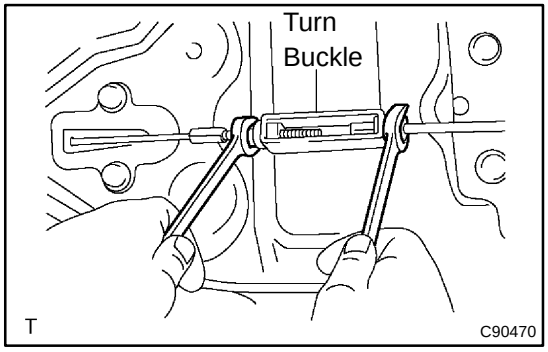
(a) Install the parking brake cable assy No.1 with the 2 nuts, 2 bolts and clip.





(b) Install the parking brake cable assy No.1 with the clip, adjusting nut and lock nut to the parking brake control pedal assy.
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)

(c) Install the console box mounting bracket No.2 with the 2 bolts.
Torque: 12.5 N·m (128 kgf·cm, 9 ft·lbf)



(d) Tighten the turn buckle, connect the parking brake cable assy No.1 to the parking brake cable assy No.4.
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)

18. **INSTALL YAWRATE SENSOR (W/ VSC)(See page 32-59)**
19. **INSTALL CONSOLE BOX DUCT NO.1**
20. **INSTALL AIR DUCT REAR NO.2**
21. **INSTALL AIR DUCT REAR NO.1**
22. **INSTALL INSTRUMENT PANEL FINISH PANEL END LH**
23. **INSTALL INSTRUMENT PANEL FINISH PANEL END RH**
24. **INSTALL RR CONSOLE BOX**
25. **INSTALL CONSOLE BOX CARPET**
26. **INSTALL CONSOLE PANEL UPPER REAR**
27. **INSTALL INSTRUMENT PANEL SUB-ASSY LOWER**
28. **INSTALL INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.1**
29. **INSTALL INSTRUMENT PANEL INSERT SUB-ASSY LOWER LH**
30. **INSTALL INSTRUMENT PANEL SUB-ASSY UPPER**
31. **INSTALL FRONT DOOR SCUFF PLATE LH**
32. **INSTALL FRONT DOOR SCUFF PLATE RH**
33. **INSPECT AND ADJUST PARKING BRAKE PEDAL TRAVEL(See page 33-2)**
34. **CHECK VSC SENSOR SIGNAL (W/ VSC)(See page 05-471)**

PARKING BRAKE CABLE ASSY NO.3

3305K-02

REPLACEMENT

HINT:

- COMPONENTS: See page 33-3
- For parking brake cable No.2, employ the same procedure to the RH side.

1. REMOVE REAR WHEEL

2. REMOVE REAR DISC BRAKE CALIPER ASSY LH

(a) Remove the 2 bolts and separate the rear disc brake caliper assy LH.

HINT:

Do not the flexible hose from the brake caliper assy LH.

3. REMOVE REAR DISC(See page 33-16)

4. REMOVE PARKING BRAKE SHOE RETURN TENSION SPRING(See page 33-16)

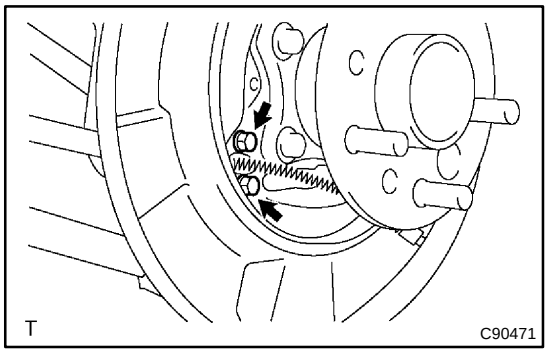
5. REMOVE PARKING BRAKE SHOE STRUT COMPRESSION SPRING(See page 33-16)

6. REMOVE PARKING BRAKE SHOE STRUT LH(See page 33-16)

7. REMOVE PARKING BRAKE SHOE(See page 33-16)

8. REMOVE PARKING BRAKE CABLE HEAT INSULATOR

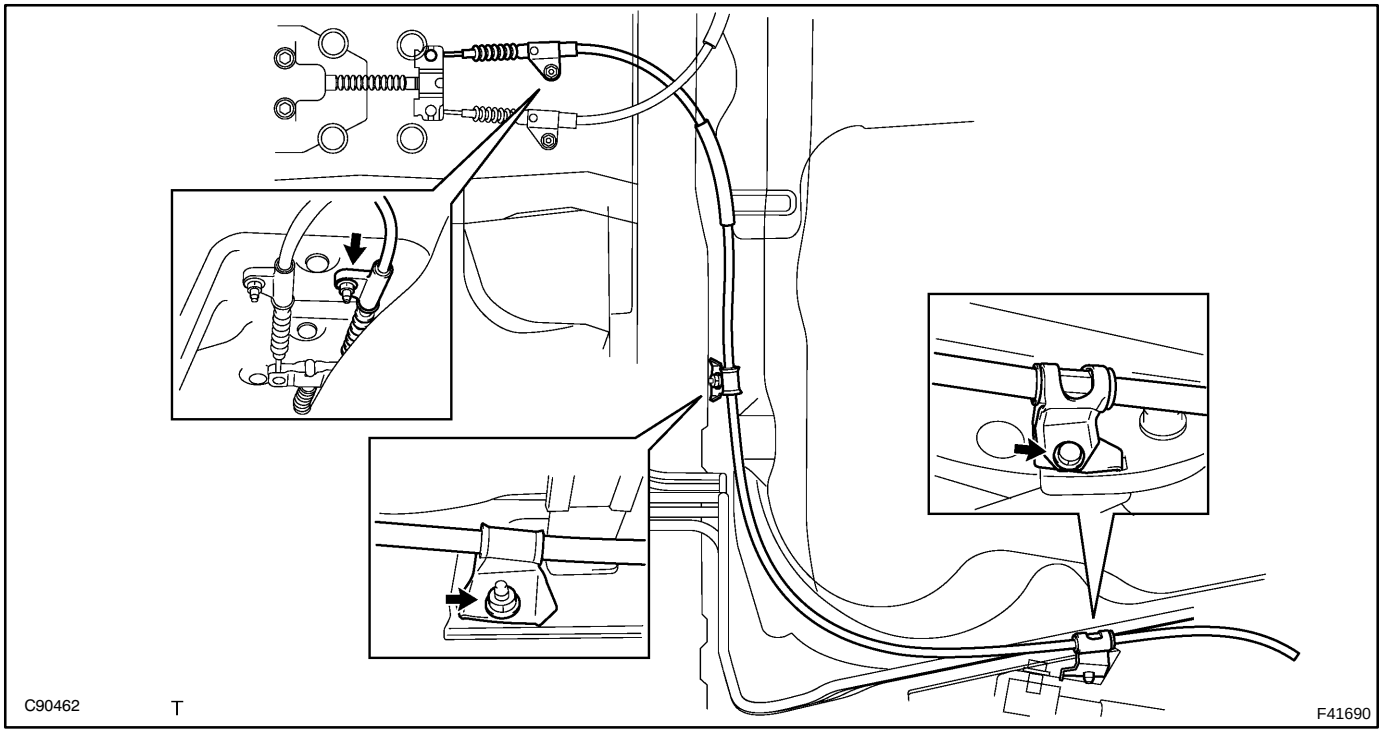
(a) Remove the 3 nuts and parking brake heat insulator.



9. REMOVE PARKING BRAKE CABLE ASSY NO.3

(a) Remove the 2 bolts and disconnect the parking brake cable assy No.3 from the backing plate.

(b) Remove the 2 nuts, bolt and parking brake cable assy No.3.



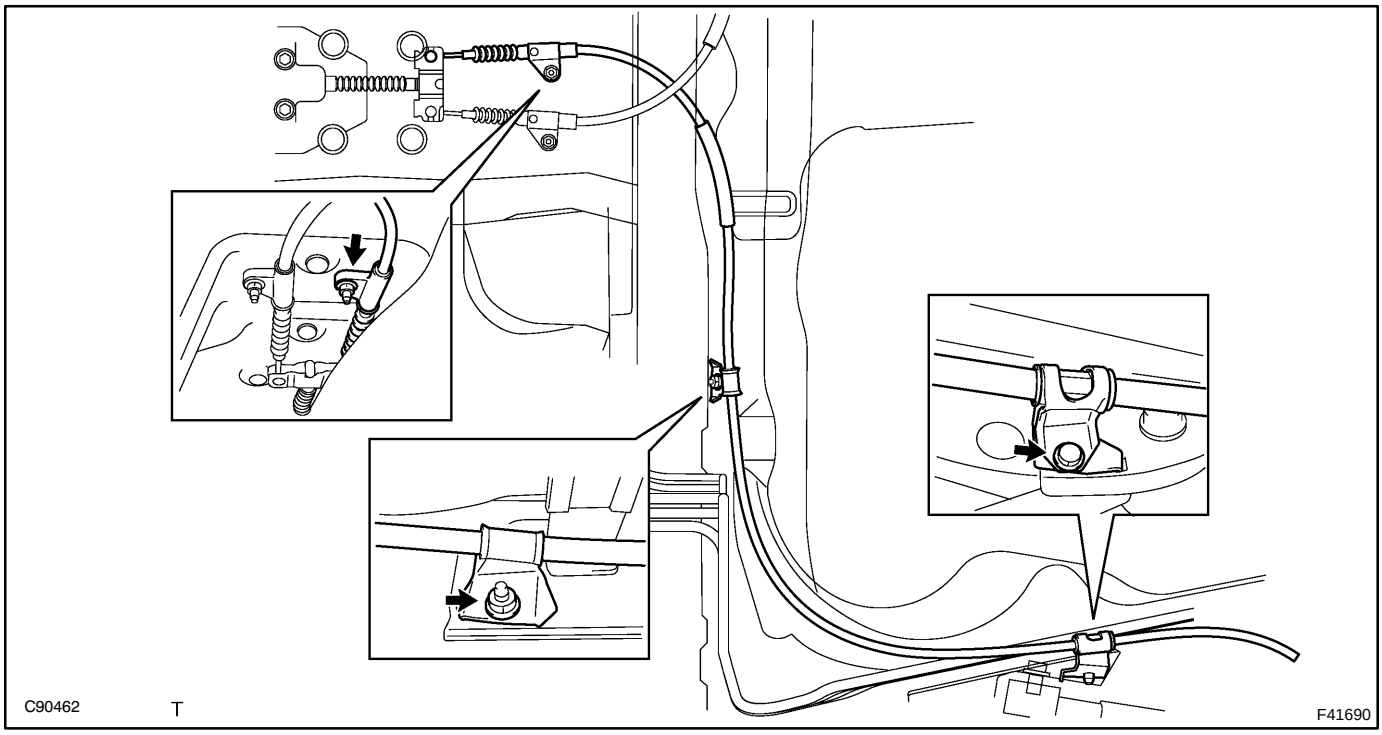
(c) Disconnect the parking brake cable assy No.3 from the parking brake equalizer.

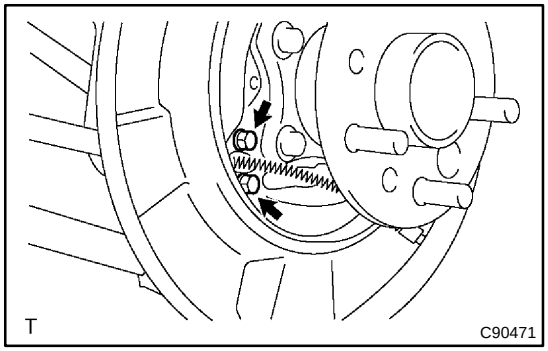
10. INSTALL PARKING BRAKE CABLE ASSY NO.3

(a) Connect the parking brake cable assy No.3 to the parking brake equalizer.

(b) Install the parking brake cable assy No.3 with the 2 nuts and bolt.

Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)





(c) Install the parking brake cable assy No.3 with the 2 bolts to the backing plate.

Torque: 7.8 N·m (80 kgf·cm, 69 in.·lbf)

11. INSTALL PARKING BRAKE CABLE HEAT INSULATOR

(a) Install the parking brake heat insulator with the 3 nuts.

Torque: 5.4 N·m (55 kgf·cm, 48 kgf·cm)

12. APPLICATION HIGH TEMPERATURE GREASE(See page 33-16)

13. INSTALL PARKING BRAKE SHOE(See page 33-16)

14. INSTALL PARKING BRAKE SHOE STRUT LH(See page 33-16)
15. INSTALL PARKING BRAKE SHOE STRUT COMPRESSION SPRING(See page 33-16)
16. INSTALL PARKING BRAKE SHOE RETURN TENSION SPRING(See page 33-16)
17. CHECK PARKING BRAKE INSTALLATION(See page 33-16)
18. INSTALL REAR DISC(See page 33-16)
19. ADJUST PARKING BRAKE SHOE CLEARANCE(See page 33-16)
20. INSTALL REAR DISC BRAKE CALIPER ASSY LH
(a) Install the rear disc brake caliper with the 2 bolts.
Torque: 47 N·m (480 kgf·cm, 35 ft·lbf)
21. INSTALL REAR WHEEL
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
22. INSPECT AND ADJUST PARKING BRAKE PEDAL TRAVEL(See page 33-2)

PARKING BRAKE CABLE ASSY NO.4

3305L-02

REPLACEMENT

HINT:

COMPONENTS: See page 71-8 and 33-3

1. REMOVE CONSOLE PANEL UPPER REAR(See page 71-1 1)

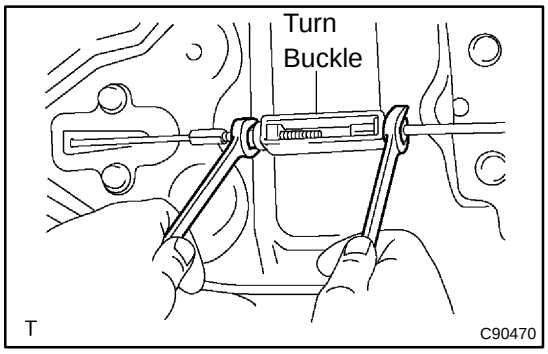
2. REMOVE CONSOLE BOX CARPET

3. REMOVE RR CONSOLE BOX(See page 71-1 1)

4. REMOVE CONSOLE BOX MOUNTING BRACKET NO.2

(a) Remove the 2 bolts and console box mounting bracket No.2.

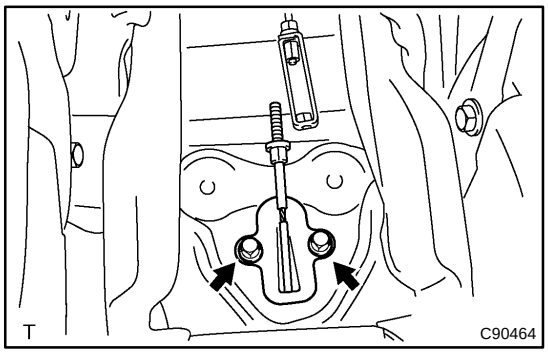
5. REMOVE YAWRATE SENSOR (W/ VSC)(See page 32-59)



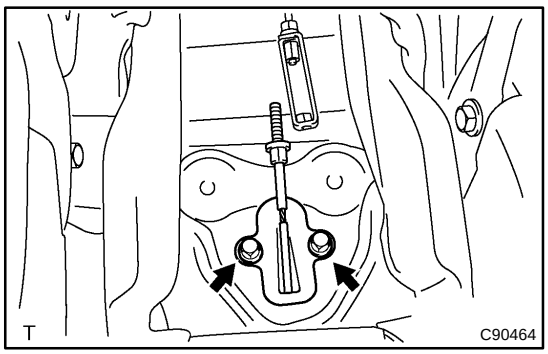
6. REMOVE PARKING BRAKE CABLE ASSY NO.4

(a) Loosen the turn buckle, disconnect the parking brake cable assy No.4 from the parking brake cable assy No.1.

(b) Disconnect the parking brake cable assy No.4 from the parking brake equalizer.



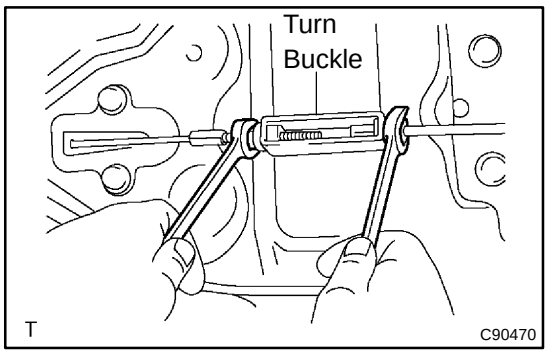
(c) Remove the 2 bolts and parking brake cable assy No.4.



7. INSTALL PARKING BRAKE CABLE ASSY NO.4

(a) Install the parking brake cable No.4 with the 2 bolts.
Torque: 12.5 N·m (128 kgf·cm, 9 ft·lbf)

(b) Connect the parking brake cable assy No.4 to the parking brake equalizer.



(c) Tighten the turn buckle, connect the parking brake cable assy No.4 to the parking brake cable assy No.1.
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)

8. INSTALL YAWRATE SENSOR (W/ VSC)(See page 32-59)
9. INSTALL CONSOLE BOX MOUNTING BRACKET NO.2
(a) Install the console box mounting bracket No.2 with the 2 bolts.
Torque: 12.5 N·m (128 kgf·cm, 9 ft·lbf)
10. INSTALL RR CONSOLE BOX
11. INSTALL CONSOLE BOX CARPET
12. INSTALL CONSOLE PANEL UPPER REAR
13. INSPECT AND ADJUST PARKING BRAKE PEDAL TRAVEL
14. CHECK VSC SENSOR SIGNAL (W/ VSC)(See page 05-471)

PARKING BRAKE ASSY

3305M-03

OVERHAUL

HINT:

- COMPONENTS: See page 33-3
- Overhaul the RH side by the same procedures with LH side.

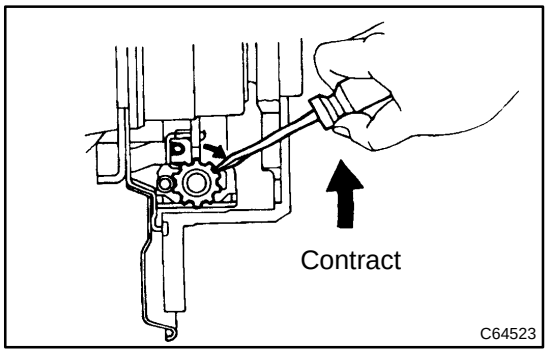
1. REMOVE REAR WHEEL

2. REMOVE REAR DISC BRAKE CALIPER ASSY LH

(a) Remove the 2 bolts and separate the rear disc brake caliper assy LH.

HINT:

Do not disconnect the flexible hose from the brake caliper.

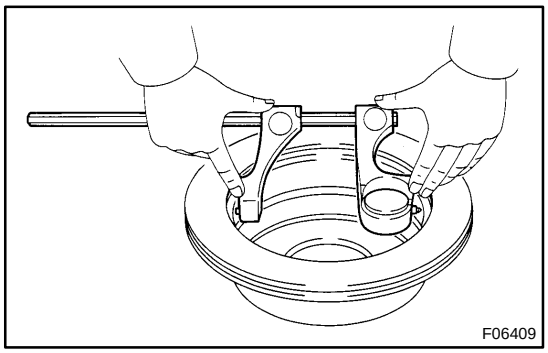


3. REMOVE REAR DISC

(a) Release the parking brake, and remove the rear disc.

HINT:

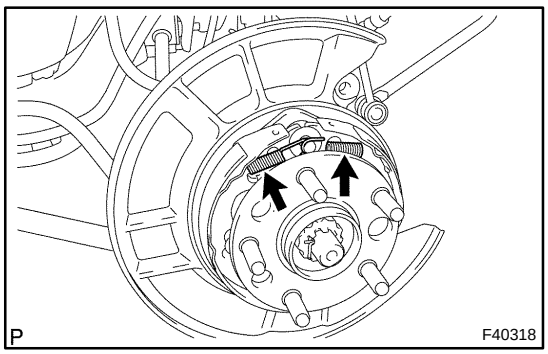
- Put matchmarks on the disc and the axle hub.
- If the disc cannot be removed easily, turn the shoe adjuster until the wheel turns freely.



4. INSPECT BRAKE DISC INSIDE DIAMETER

(a) Using a brake drum gauge or equivalent, measure the inside diameter of the disc.

Standard inside diameter: 170 mm (6.69 in.)
Maximum inside diameter: 171 mm (6.73 in.)



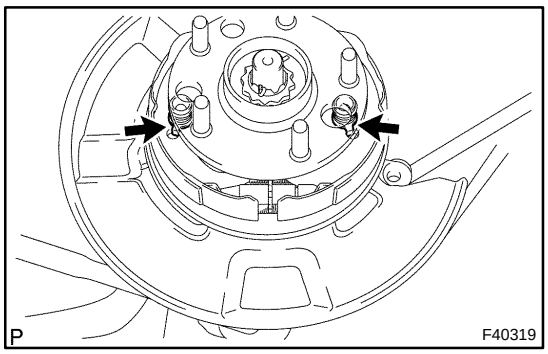
5. REMOVE PARKING BRAKE SHOE RETURN TENSION SPRING

(a) Using a needle-nose pliers, remove the 2 return tension springs.

6. REMOVE PARKING BRAKE SHOE STRUT COMPRESSION SPRING

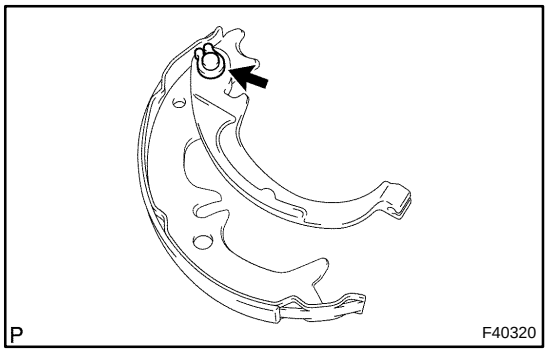
(a) Slide out the front shoe and remove the compression spring.

7. REMOVE PARKING BRAKE SHOE STRUT LH

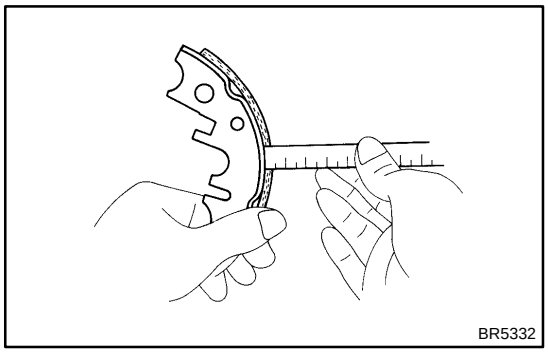


8. REMOVE PARKING BRAKE SHOE

(a) Release the cup claw and remove the front and rear parking brake shoe.
(b) Disconnect the parking brake cable from the shoe lever.
(c) Remove the tension spring and shoe adjuster screw set from the front and rear shoe.
(d) Remove the 2 shoe hold-down springs, 4 cups and 2 pins.



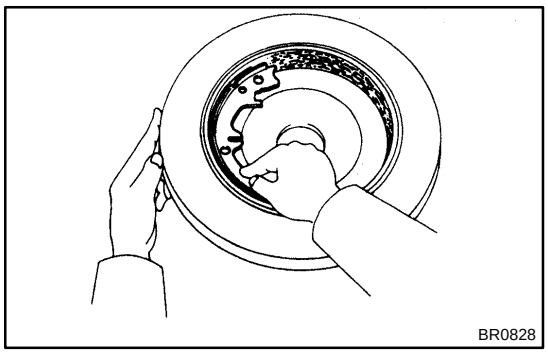
(e) Using a screwdriver, remove the C-washer.
(f) Remove the shim and shoe lever from the parking brake shoe.



9. INSPECT PARKING BRAKE SHOE LINING THICKNESS

(a) Using a ruler, measure the thickness of the shoe lining.
Standard thickness: 2.0 mm (0.079 in.)
Minimum thickness: 1.0 mm (0.039 in.)

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



10. 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.

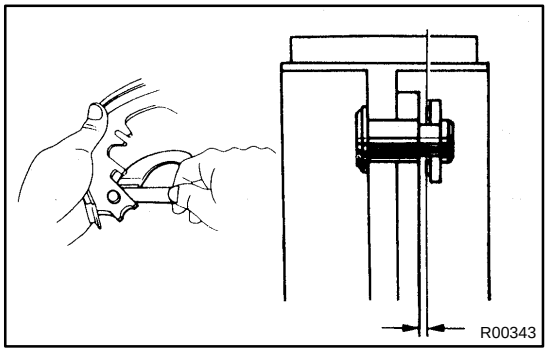
If the contact between the brake disc and the shoe lining is improper, repair it using a brake shoe grinder or replace the brake shoe assembly.

11. APPLICATION HIGH TEMPERATURE GREASE

(a) Apply the high temperature grease to the shoe attached surface of backing plate.

12. INSTALL PARKING BRAKE SHOE

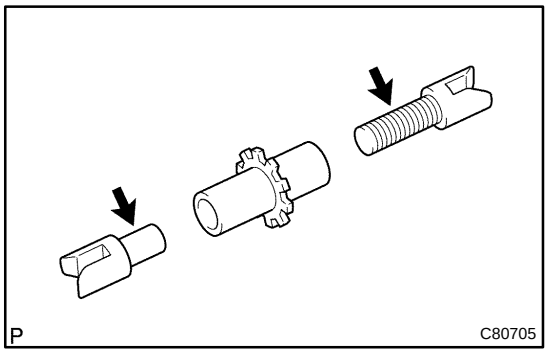
(a) Install the shoe lever and shim to the rear shoe with a new C-washer .



(b) Using a feeler gauge, measure the clearance.
Standard clearance: Less than 0.35 mm (0.0138 in.)

If the clearance is not within the specification, replace the shim with one of the correct size.

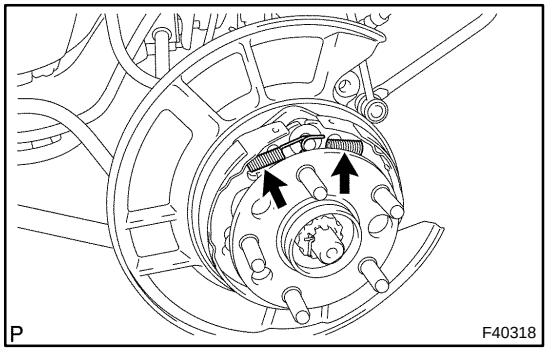
Shim Thickness	Shim Thickness
0.3 mm (0.012 in.)	0.9 mm (0.035 in.)
0.6 mm (0.024 in.)	-



(c) Apply the high temperature grease to the adjusting bolt.
(d) Install the shoe adjusting screw set and tension spring to the front and rear shoe.
(e) Install the 2 pins, 4 cups and 2 shoe hold-down springs.
(f) Connect the parking brake cable to the shoe lever.
(g) Install the front and rear parking brake shoe.

13. INSTALL PARKING BRAKE SHOE STRUT LH

14. INSTALL PARKING BRAKE SHOE STRUT COMPRESSION SPRING



15. INSTALL PARKING BRAKE SHOE RETURN TENSION SPRING

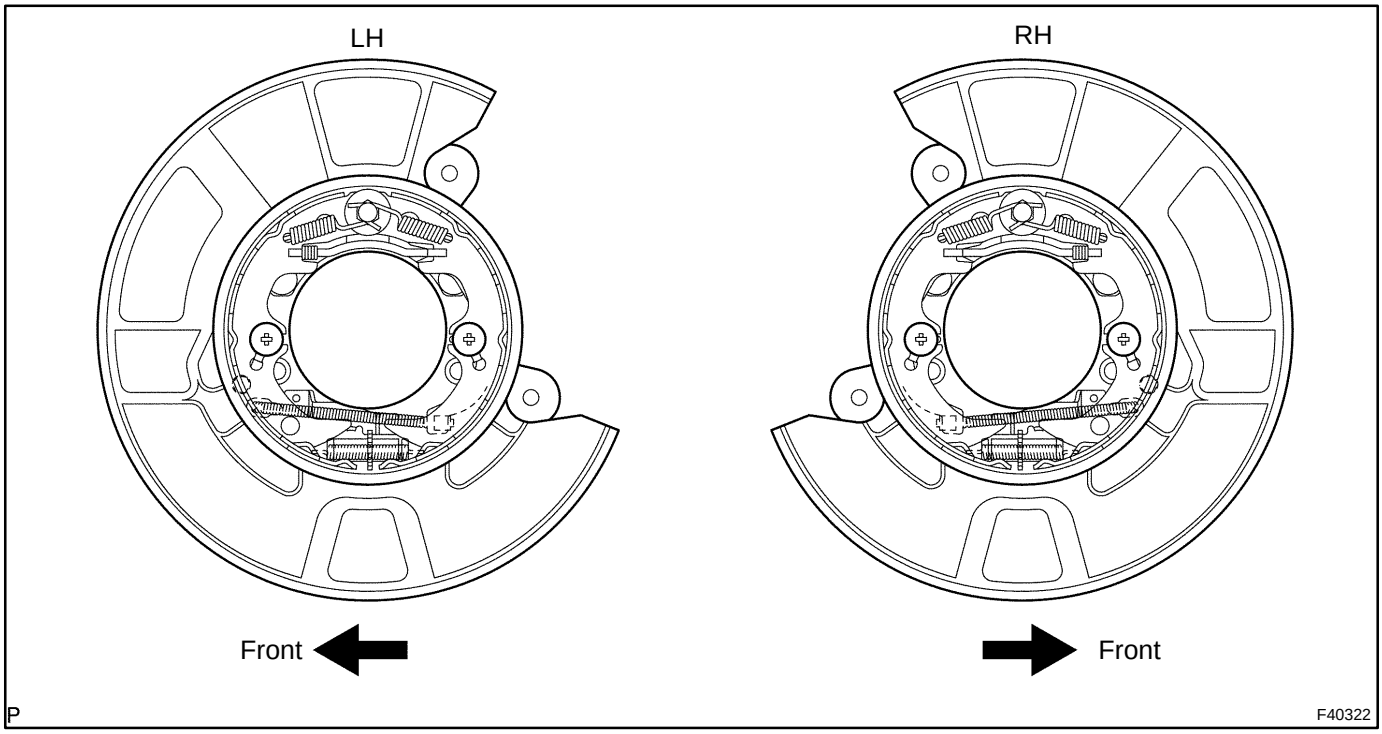
(a) Using a needle nose pliers, install the 2 return tension springs.

16. CHECK PARKING BRAKE INSTALLATION

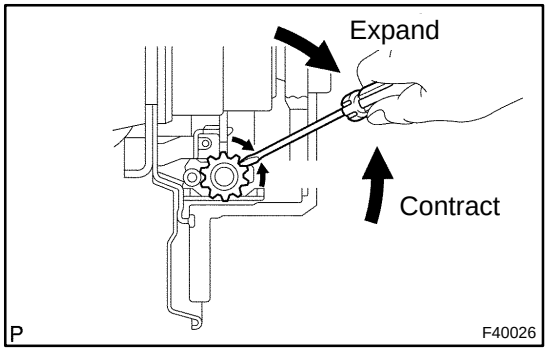
(a) Check that each part is installed properly.

NOTICE:

There should be no oil or grease adhering to the friction surface of the shoe lining and disc.



17. INSTALL REAR DISC(See page 32-41)



18. ADJUST PARKING BRAKE SHOE CLEARANCE

(a) Temporarily install the hub nuts.

(b) Remove the hole plug, and turn the adjuster and expand the shoes until the disc locks.

(c) Contract the shoe adjuster until the disc can rotate smoothly.

Standard : Return 8 notches

(d) Check shoe is no brake drag.

(e) Install the hole plug.

19. INSTALL REAR DISC BRAKE CALIPER ASSY LH

(a) Install the rear disc brake caliper with the 2 bolts.

Torque: 47 N·m (480 kgf·cm, 35 ft·lbf)

20. INSTALL REAR WHEEL

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

21. INSPECT AND ADJUST PARKING BRAKE PEDAL TRAVEL(See page 33-2)