

BRAKE SYSTEM

BR02F-02

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 IN section.

TROUBLESHOOTING

PROBLEM SYMPTOMS TABLE

BR07J-08

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	4. Brake system (Fluid leaks) 5. Brake system (Air in) 6. Piston seals (Worn or damaged) 7. Rear brake shoe clearance (Out of adjustment) 8. Hydraulic brake booster (Faulty)	DI-374 BR-4 BR-15 BR-25 BR-26
Brake drag	1. Brake pedal freeplay (Minimal) 2. Parking brake lever travel (Out of adjustment) 3. Parking brake wire (Sticking) 4. Rear brake shoe clearance (Out of adjustment) 5. Pad or lining (Cracked or distorted) 6. Piston (Stuck) 7. Piston (Frozen) 8. Anchor or return spring (Faulty) 9. Hydraulic brake booster (Faulty)	BR-9 BR-11 - BR-25 BR-12 BR-21 BR-15 BR-15 BR-21 BR-26
Brake pull	1. Piston (Stuck) 2. Pad or lining (Oily) 3. Piston (Frozen) 4. Disc (Scored) 5. Pad or lining (Cracked or distorted) 6. Hydraulic brake booster (Faulty)	BR-15 BR-12 BR-21 BR-15 BR-15 BR-12 BR-21 BR-26
Hard pedal but brake inefficient	1. Brake system (Fluid leaks) 2. Brake system (Air in) 3. Pad or lining (Worn) 4. Pad or lining (Cracked or distorted) 5. Rear brake shoe clearance (Out of adjustment) 6. Pad or lining (Oily) 7. Pad or lining (Glazed) 8. Disc (Scored) 9. Hydraulic brake booster (Faulty)	DI-374 BR-4 BR-12 BR-21 BR-12 BR-21 BR-25 BR-12 BR-21 BR-12 BR-21 BR-15 BR-26
Noise from brakes	1. Pad or lining (Cracked or distorted) 2. Installation bolt (Loose) 3. Disc (Scored) 4. Pad support plate (Loose) 5. Sliding pin (Worn) 6. Pad or lining (Dirty) 7. Pad or lining (Glazed) 8. Anchor or return spring (Faulty) 9. Anti-squeal shim (Damaged) 10. Shoe hold-down spring (Damaged)	BR-12 BR-21 BR-15 BR-12 BR-15 BR-12 BR-21 BR-12 BR-21 BR-12 BR-21 BR-12 BR-21
Noise from hydraulic brake booster (Abnormal pump motor operation noise)	Accumulator bracket clearance (Out of adjustment)	BR-44

BRAKE - TROUBLESHOOTING

Brake warning light lights up* ¹ (Parking brake lever released)	1. Brake fluid level 2. Hydraulic brake booster power supply system (Faulty)	- BR-26
Brake warning light lights up and brake warning buzzer sounds* ²	Hydraulic brake booster power supply system (Faulty)	BR-26
ABS warning light lights up* ³	1. Anti - lock brake system (Faulty) 2. Hydraulic brake booster power supply system (Faulty)	- BR-26

*¹, *³: The light may stay on for about 60 seconds after the engine is started. It is normal if it goes out after a while.

*², *³: Depressing the brake pedal repeatedly may turn on the warning light and buzzer. It is normal if the light goes off and the buzzer stops sounding after a few seconds.

*³: While ABS warning light is ON.

BRAKE FLUID BLEEDING

BR1ME-01

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.
- When bleeding, keep the amount of the fluid within the line of reservoir between Min. and Max.

NOTICE:

- **Do not let brake fluid remain on painted surfaces. Wash it off immediately.**
- **With the reservoir cap removed, when depressing the brake pedal, the fluid will spray.**

1. FILL RESERVOIR WITH BRAKE FLUID

Fluid: SAE J1703 or FMVSS NO. 116 DOT3

2. In case of using TOYOTA hand-held tester: BLEED HYDRAULIC BRAKE BOOSTER

HINT:

If the hydraulic brake booster has been disassembled, disconnect the brake line from the hydraulic brake booster or if the reservoir becomes empty, bleed the hydraulic brake booster.

- (a) Turn the ignition switch OFF, depress the brake pedal more than 40 times.

HINT:

When a pressure in power supply system is released, reaction force becomes heavy and stroke becomes shorter.

- (b) Turn the ignition switch ON, check that the pump stops after approx. 30 to 40 sec.

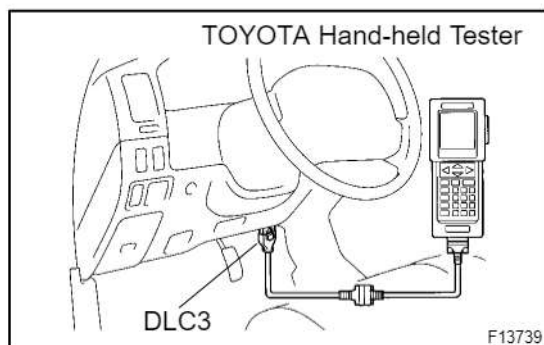
NOTICE:

When the pump does not stop, repeat step (a) and (b) again.

- (c) With the ignition switch remained ON, depress the brake pedal more than 20 times.
- (d) Observe the procedure in step 4 and bleed the right and left front brake caliper.
- (e) Holding the brake pedal depressed, bleed the right and left rear brake caliper.

HINT:

It is not necessary to depress the pedal continuously, as brake fluid flows out by first depressing.



- (f) Connect the TOYOTA hand-held tester.
- (1) Turn the ignition switch OFF, connect the TOYOTA hand-held tester to DLC3.
- (2) Turn the ignition switch ON and select "AIR BLEEDING" on the TOYOTA hand-held tester.

HINT:

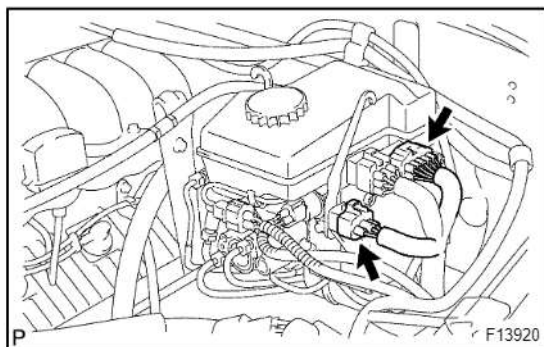
Please refer to the TOYOTA hand-held tester operator's manual for further details.

- (g) Bleed right front brake line.
 - (1) Select "FR LINE" on the TOYOTA hand-held tester.
 - (2) With "FR LINE" turned ON with the TOYOTA hand-held tester, depress the brake pedal and hold it to bleed the right front brake caliper.
 - (3) Repeat step (2) until there are no more air bubbles in the fluid.
- (h) Bleed left front brake line.
 - (1) Select "FL LINE" on the TOYOTA hand-held tester.
 - (2) With "FL LINE" turned ON with the TOYOTA hand-held tester, depress the brake pedal and hold it to bleed the left front brake caliper.
 - (3) Repeat step (2) until there are no more air bubbles in the fluid.
- (i) Bleed rear brake line.
 - (1) Select "RR LINE" on the TOYOTA hand-held tester.
 - (2) With "RR LINE" turned ON with the TOYOTA hand-held tester, bleed the left and right rear brake caliper.
- (j) Disconnect the TOYOTA hand-held tester from DLC3.
- (k) Clear the DTC (See page [DI-224](#)).

**3. In case of using ABS actuator checker (SST):
BLEED HYDRAULIC BRAKE BOOSTER**

HINT:

If the hydraulic brake booster has been disassembled, disconnect the brake line from the hydraulic brake booster or if the reservoir becomes empty, bleed the hydraulic brake booster.



- (a) Disconnect the 2 connectors from the hydraulic brake booster.

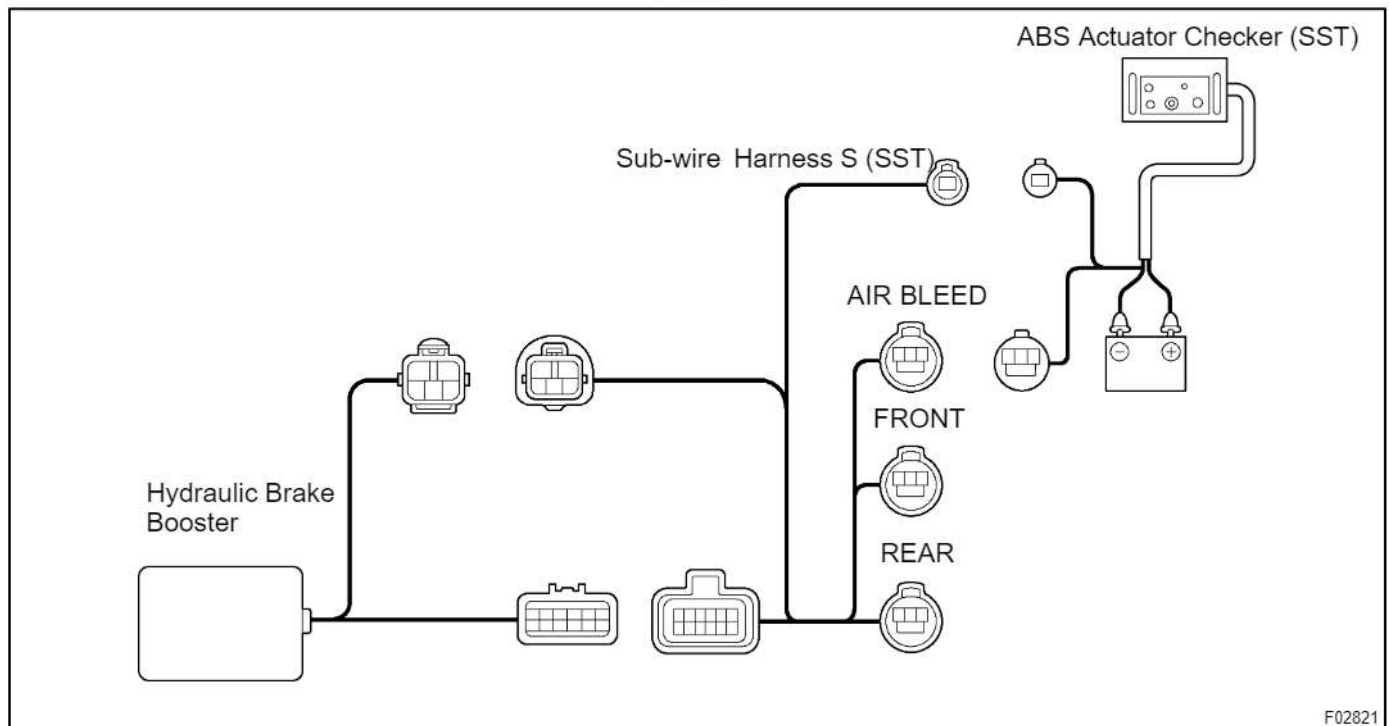
- (b) Connect the ABS actuator checker (SST) to the hydraulic brake booster side wire harness via the sub-wire harness (SST), as shown in the chart below.

SST 09990-00150, 09990-00480

HINT:

Connect the connector with the label of "AIR BLEED" attached to the connector of ABS actuator checker.

- (c) Connect the red cable of the checker to the battery positive (+) terminal and the black cable to the negative (-) terminal.



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- (d) Turn the ignition switch OFF, depress the brake pedal more than 40 times.

HINT:

When a pressure in power supply system is released, reaction force becomes heavy and stroke becomes shorter.

- (e) Turn the ignition switch ON, check that the pump stops after 30 to 40 sec.

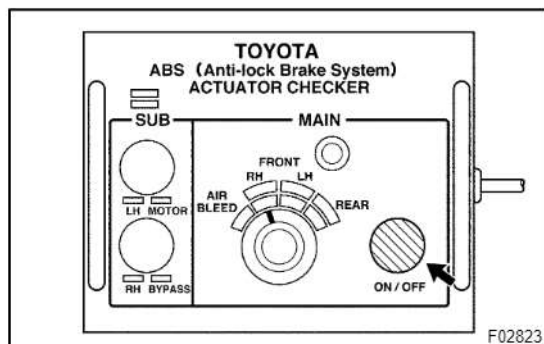
NOTICE:

When the pump does not stop, repeat step (d) and (e) again.

- (f) With the ignition switch remained ON, depress the brake pedal more than 20 times.
- (g) Observe the procedure in step 4 and bleed the right and left front brake caliper.
- (h) Holding the brake pedal depressed, bleed the right and left rear brake caliper.

HINT:

It is not necessary to depress the pedal continuously, as brake fluid flows out by first depressing.

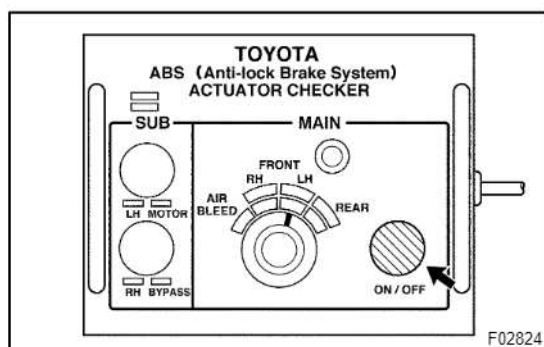


- (i) Bleed right front brake line.
- (1) Turn the selector switch of the ABS actuator checker to the "FRONT RH" position.
 - (2) Push and hold in MAIN push switch, depress the brake pedal and hold it to bleed the right front brake caliper.

NOTICE:

Do not keep the MAIN switch pushed in for more than 10 sec. When operating it continuously, set the interval of more than 20 sec.

- (3) Repeat step (2) until there are no more air bubbles in the fluid.

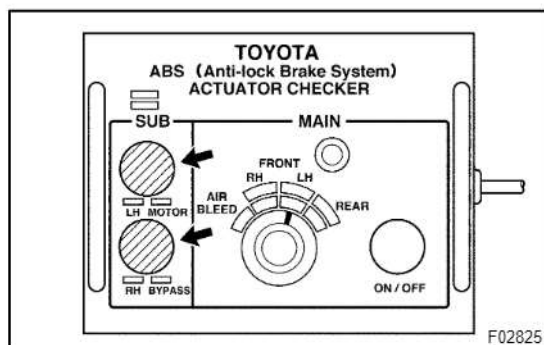


- (j) Bleed left front brake line.
- (1) Turn the selector switch of the ABS actuator checker to the "FRONT LH" position.
 - (2) Push and hold in the MAIN push switch, depress the brake pedal and hold it to bleed the left front brake caliper.

NOTICE:

Do not keep the MAIN switch pushed in for more than 10 sec. When operating it continuously, set the interval of more than 20 sec.

- (3) Repeat step (2) until there are no more air bubbles in the fluid.



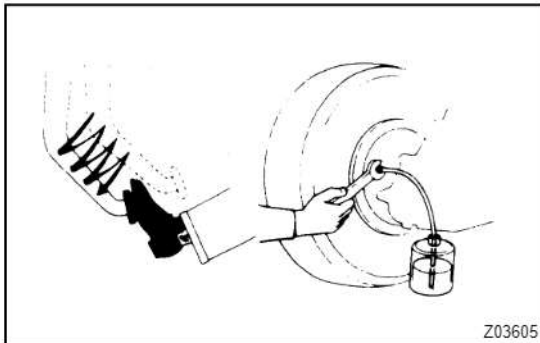
- (k) Bleed right rear brake line.
- (1) Push and hold in the "SUB LH" and "SUB RH" switches, bleed the right rear brake caliper.

NOTICE:

Do not keep the MAIN switch pushed in for more than 10 sec. When operating it continuously, set the interval of more than 20 sec.

- (2) Repeat step (1) until there are no more air bubbles in the fluid.

- (l) Observe the procedure in step (k) and bleed left rear brake line.
- (m) Disconnect the ABS actuator checker (SST) and sub-wire harness (SST) from the actuator.
SST 09990-00150, 09990-00480
- (n) Connect the 2 connectors to the hydraulic brake booster.
- (o) Clear the DTC (See page [DI-224](#)).



4. 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) Repeat the above procedure to bleed the brake line for each wheel.

Torque: 11 N·m (110 kgf·cm, 8 ft·lbf)

5. CHECK FLUID LEVEL IN RESERVOIR

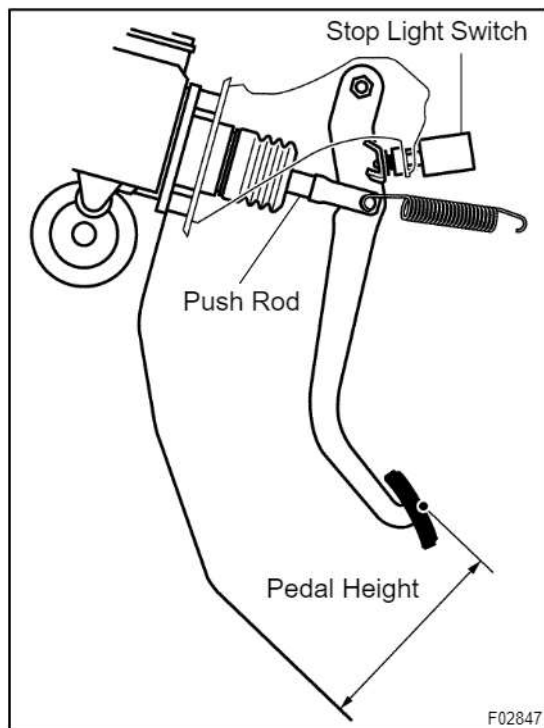
- (a) With the ignition switch OFF, depress the brake pedal more than 40 times.

HINT:

When a pressure in power supply system is released, reaction force becomes heavy and stroke becomes shorter.

- (b) Remove the reservoir cap. Add brake fluid up to the "MAX" line.

Fluid: SAE J1703 or FMVSS NO. 116 DOT3



BRAKE PEDAL ON-VEHICLE INSPECTION

BR1MF-01

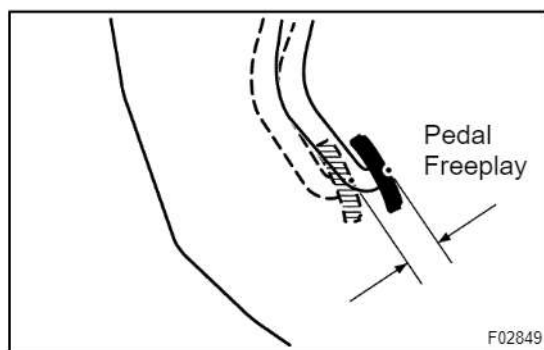
1. CHECK PEDAL HEIGHT

Pedal height from asphalt sheet:

158.1 - 168.1 mm (6.224 - 6.618 in.)

2. IF NECESSARY, ADJUST PEDAL HEIGHT

- Remove the lower finish panel (See page [BO-69](#)).
- Disconnect the connector from the stop light switch.
- Loosen the stop light switch lock nut and remove the stop light switch.
- Loosen the clevis lock nut.
- Adjust the pedal height by turning the pedal push rod.
- Tighten the clevis lock nut.
Torque: 25 N·m (260 kgf·cm, 19 ft·lbf)
- Install the stop light switch.
- Connect the connector to the stop light switch.
- Push the brake pedal in 5 - 15 mm (0.20 - 0.59 in.), turn the stop light switch to lock the nut in the position where the stop light goes off.
- Push the brake pedal in 5 - 15 mm (0.20 - 0.59 in.), check that stop light lights up.
- After adjusting the pedal height, check the pedal freeplay.
- Install the lower finish panel (See page [BO-76](#)).



3. CHECK PEDAL FREEPLAY

- Stop the engine and depress the brake pedal several times until there is no more pressure left in the booster.
- Push in the pedal by hand until the beginning of the second resistance is felt. Measure the distance.

Pedal freeplay: 1 - 6 mm (0.12 - 0.24 in.)

HINT:

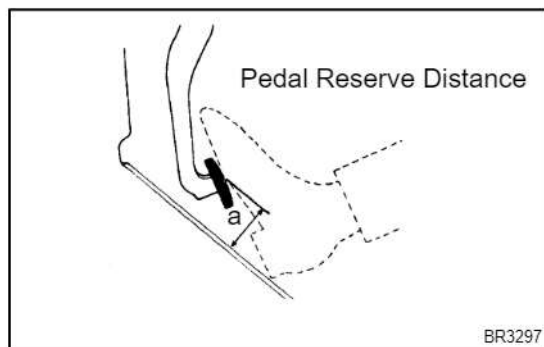
The freeplay to the 1st resistance is due to the play between the clevis and pin. This is magnified up to 1 - 3 mm (0.04 - 0.12 in.) at the pedal.

If incorrect, check the stop light switch clearance.

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

Stop light switch clearance:

0.5 - 2.4 mm (0.020 - 0.094 in.)



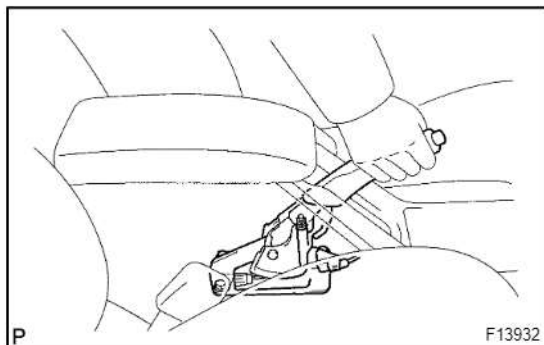
4. CHECK PEDAL RESERVE DISTANCE

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

Pedal reserve distance, 'a', at 490 N (50 kgf, 110.2 lbf):

More than 75 mm (2.83 in.)

If incorrect, troubleshoot the brake system.



PARKING BRAKE LEVER ON-VEHICLE INSPECTION

BR07M-02

1. CHECK THAT PARKING BRAKE LEVER TRAVEL IS CORRECT

Pull the parking brake lever all the way up, and count the number of clicks.

**Parking brake lever travel at 196 N (20 kgf, 44.1 lbf):
7 - 9 clicks**

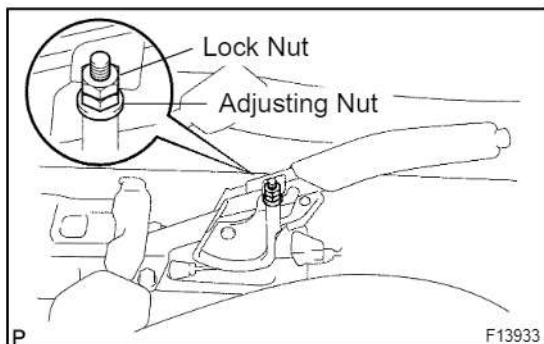
If incorrect, adjust the parking brake.

2. IF NECESSARY, ADJUST PARKING BRAKE LEVER TRAVEL

HINT:

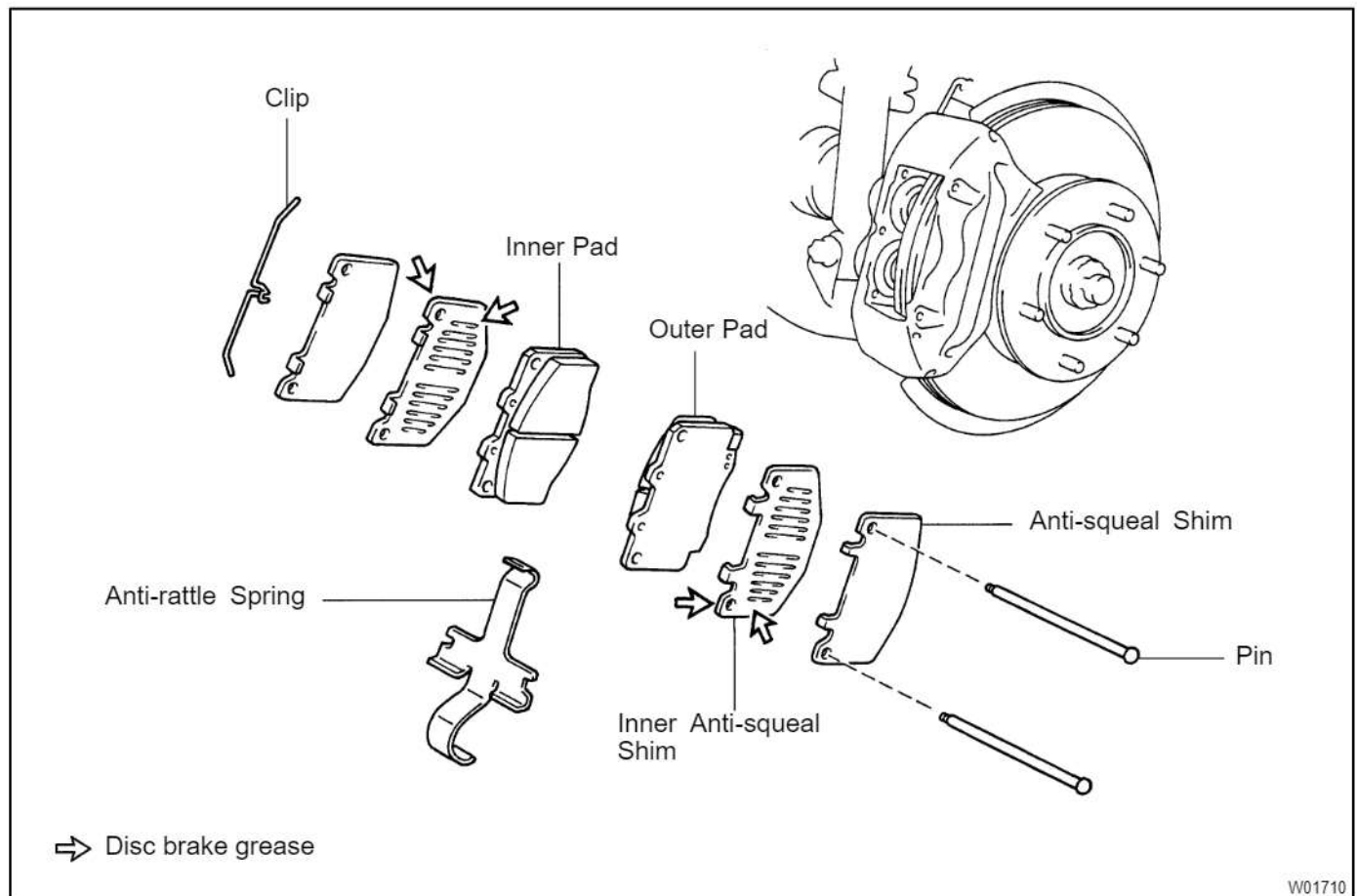
Before adjusting the parking brake lever travel, make sure that the rear brake shoe clearance has been adjusted. For shoe clearance adjustment, see page [BR-25](#).

- Remove the console box.
- Loosen the lock nut and turn the adjusting nut until the lever travel is correct.
- Tighten the lock nut.
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)
- Install the console box.

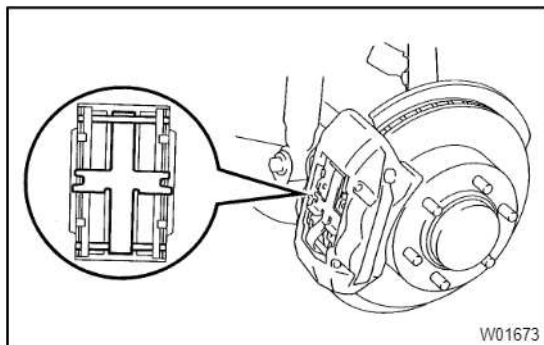


FRONT BRAKE PAD COMPONENTS

BR07X-02



W01710



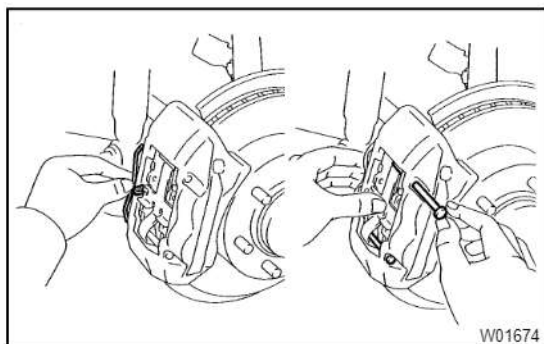
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REPLACEMENT

1. REMOVE FRONT WHEEL
2. INSPECT PAD LINING THICKNESS

Check the pad thickness and replace pads if not within the specification.

Minimum thickness: 1.0 mm (0.039 in.)



W01674

3. REMOVE CLIP, 2 PINS, ANTI-RATTLE SPRING, 2 PADS AND 4 ANTI-SQUEAL SHIMS

NOTICE:

The anti-rattle spring can be used again provided that they have sufficient rebound, no deformation, cracks or wear, and have had all rust, dirt and foreign particles cleaned off.

4. CHECK DISC THICKNESS AND RUNOUT

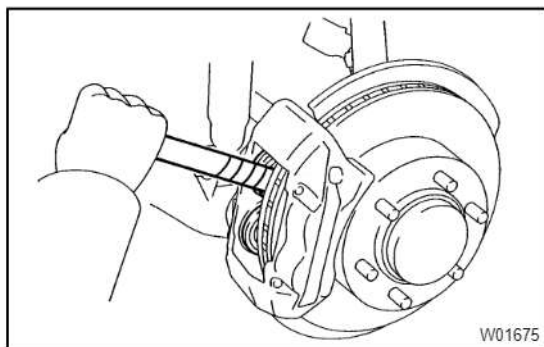
(See page [BR-18](#))

5. INSTALL NEW PADS

NOTICE:

When replacing worn pads, the anti-squeal shims must be replaced together with the pads.

- (a) Draw out a small amount of brake fluid from the reservoir.



W01675

- (b) Press in the pistons with a monkey wrench handle or an equivalent.

HINT:

- Tape the monkey wrench handle before use.
- Always change the pad on one wheel at a time as there is a possibility of the opposite piston flying out.
- If the piston is difficult to push in, loosen the bleeder plug and push in the piston while letting some brake fluid escape.

- (c) Install the anti-squeal shims to new pads.

HINT:

Apply disc brake grease to both sides of the inner anti-squeal shims (See page [BR-12](#)).

- (d) Install the 2 pads.

NOTICE:

Do not allow oil or grease to get on the rubbing face.

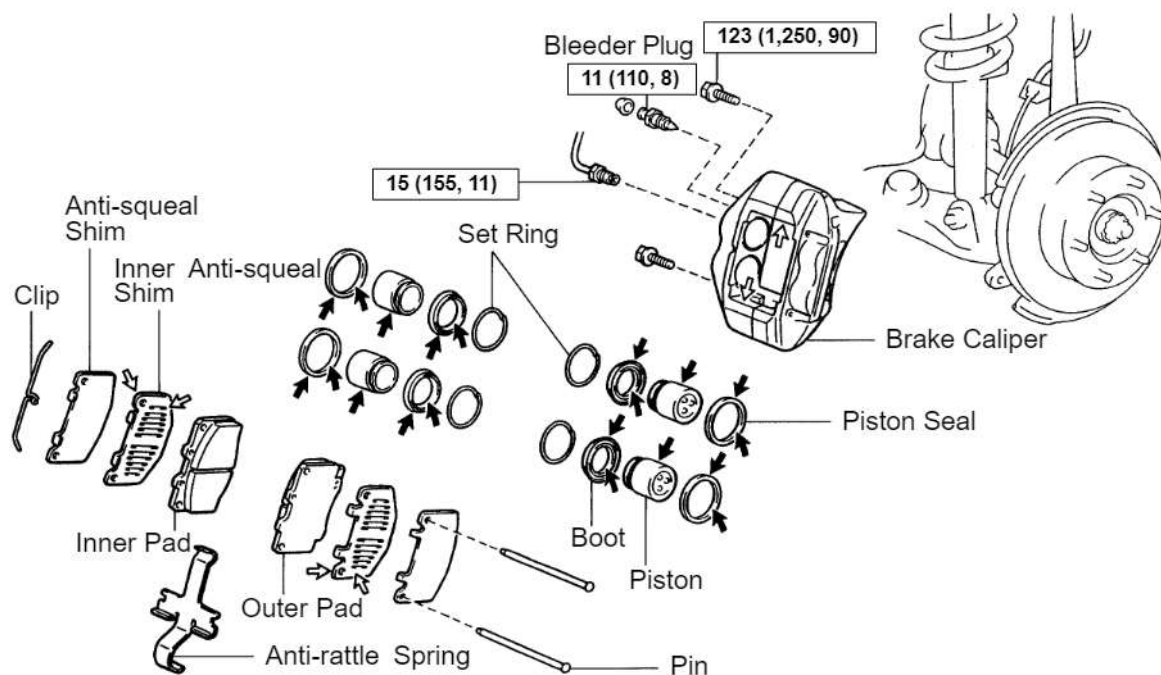
6. INSTALL ANTI-RATTLE SPRING AND 2 PINS

7. INSTALL CLIP

- 8. INSTALL FRONT WHEEL**
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
- 9. DEPRESS BRAKE PEDAL SEVERAL TIMES**
- 10. CHECK THAT FLUID LEVEL IS AT MAX LINE**

FRONT BRAKE CALIPER COMPONENTS

BR07Z-02



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

→ Lithium soap base glycol grease

⇨ Disc brake grease

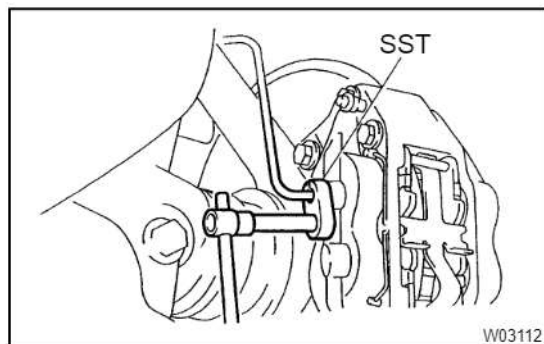
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REMOVAL

1. REMOVE FRONT WHEEL

Remove the front wheel and temporarily fasten the disc with hub nuts.

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

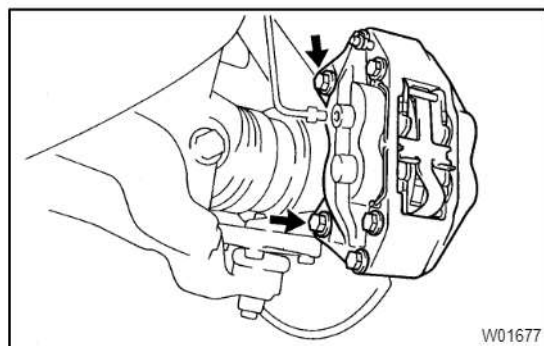


2. DISCONNECT BRAKE LINE

Using SST, disconnect the brake line. Use a container to catch the brake fluid.

SST 09023-00100

Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)

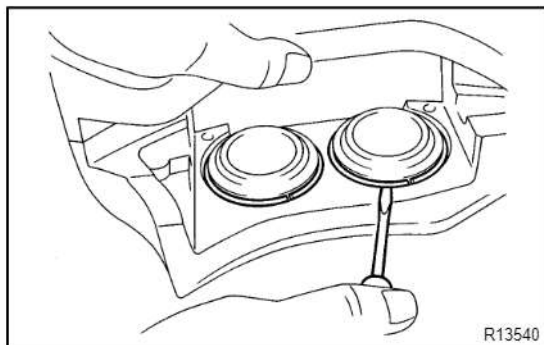


3. REMOVE CALIPER

Remove the 2 mounting bolts and caliper.

Torque: 123 N·m (1,250 kgf·cm, 90 ft·lbf)

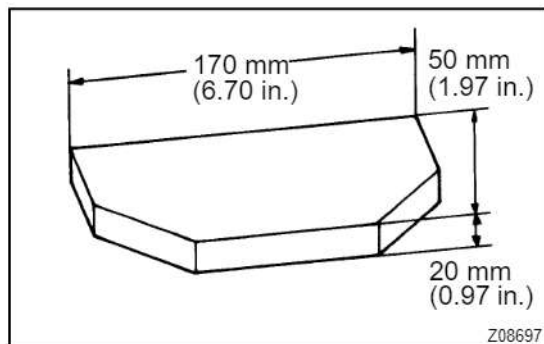
4. REMOVE CLIP, 2 PINS, ANTI-RATTLE SPRING AND 2 PADS WITH 4 ANTI-SQUEAL SHIMS



DISASSEMBLY

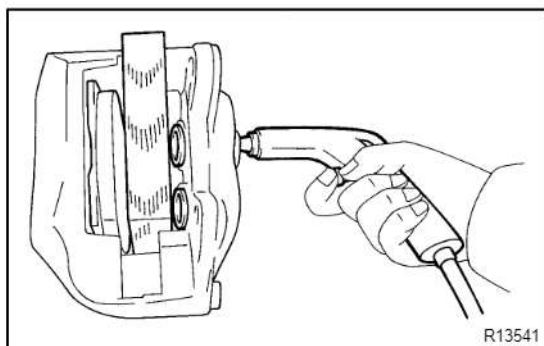
1. REMOVE CYLINDER BOOT SET RINGS AND BOOTS

Using a screwdriver, remove the 4 cylinder boot set rings and boots.



2. REMOVE PISTONS FROM CYLINDER

(a) Prepare the wooden plate to hold the pistons.

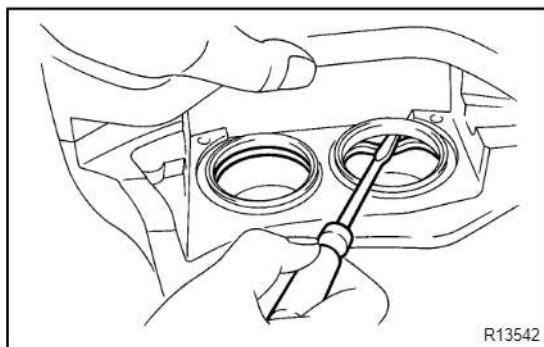


(b) Place the plate between the pistons and insert a pad at one side.

(c) Use compressed air to remove the pistons alternately from the cylinder.

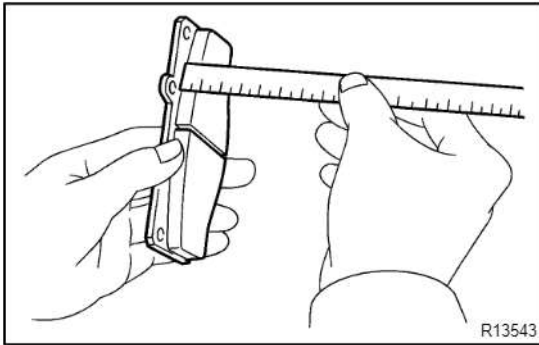
CAUTION:

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



3. REMOVE PISTON SEALS

Using a screwdriver, remove the 4 piston seals from the cylinder.



INSPECTION

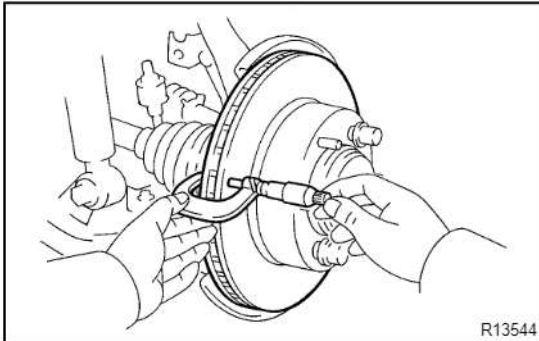
1. MEASURE PAD LINING THICKNESS

Using a ruler, measure the pad lining thickness.

Standard thickness: 11.5 mm (0.453 in.)

Minimum thickness: 1.0 mm (0.039 in.)

Replace the pad if the thickness is less than the minimum (the 1.0 mm slit is no longer visible), or if it shows signs of uneven wear.



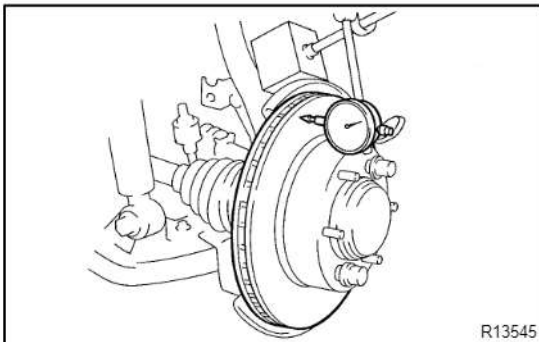
2. MEASURE DISC THICKNESS

Using a micrometer, measure the disc thickness.

Standard thickness: 22.0 mm (0.866 in.)

Minimum thickness: 20.0 mm (0.787 in.)

Replace the disc if the thickness of the disc is at the minimum or less. Replace the disc or grind it on a lathe if it is scored or worn unevenly.



3. MEASURE DISC RUNOUT

Using a dial indicator, measure the disc runout at a position 10 mm (0.39 in.) from the outside edge.

Maximum disc runout: 0.07 mm (0.0028 in.)

If the runout is greater than the maximum, replace the disc or grind it on a "On-Car" brake lathe.

HINT:

Before measuring the runout, confirm that the front hub bearing play is within the specification.

4. IF NECESSARY, ADJUST DISC RUNOUT

(a) Remove the hub nuts and disc. Reinstall the disc 1/6 of a turn round from its original position on the hub. Install and torque the hub nuts.

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

(b) Remeasure the disc runout. Make a note of the runout and the disc's position on the hub.

(c) Repeat (a) and (b) until the disc has been installed on the 4 remaining hub position.

- If the minimum runout recorded in (a) to (c) is less than the maximum disc runout, install the disc in that position.
- If the minimum runout recorded in (a) to (c) is greater than the maximum disc runout, replace the disc and repeat step 3.

REASSEMBLY

Reassembly is in the reverse order of disassembly (See page [BR-17](#)).

NOTICE:

Apply lithium soap base glycol grease to the parts indicated by the arrows (See page [BR-15](#)).

INSTALLATION

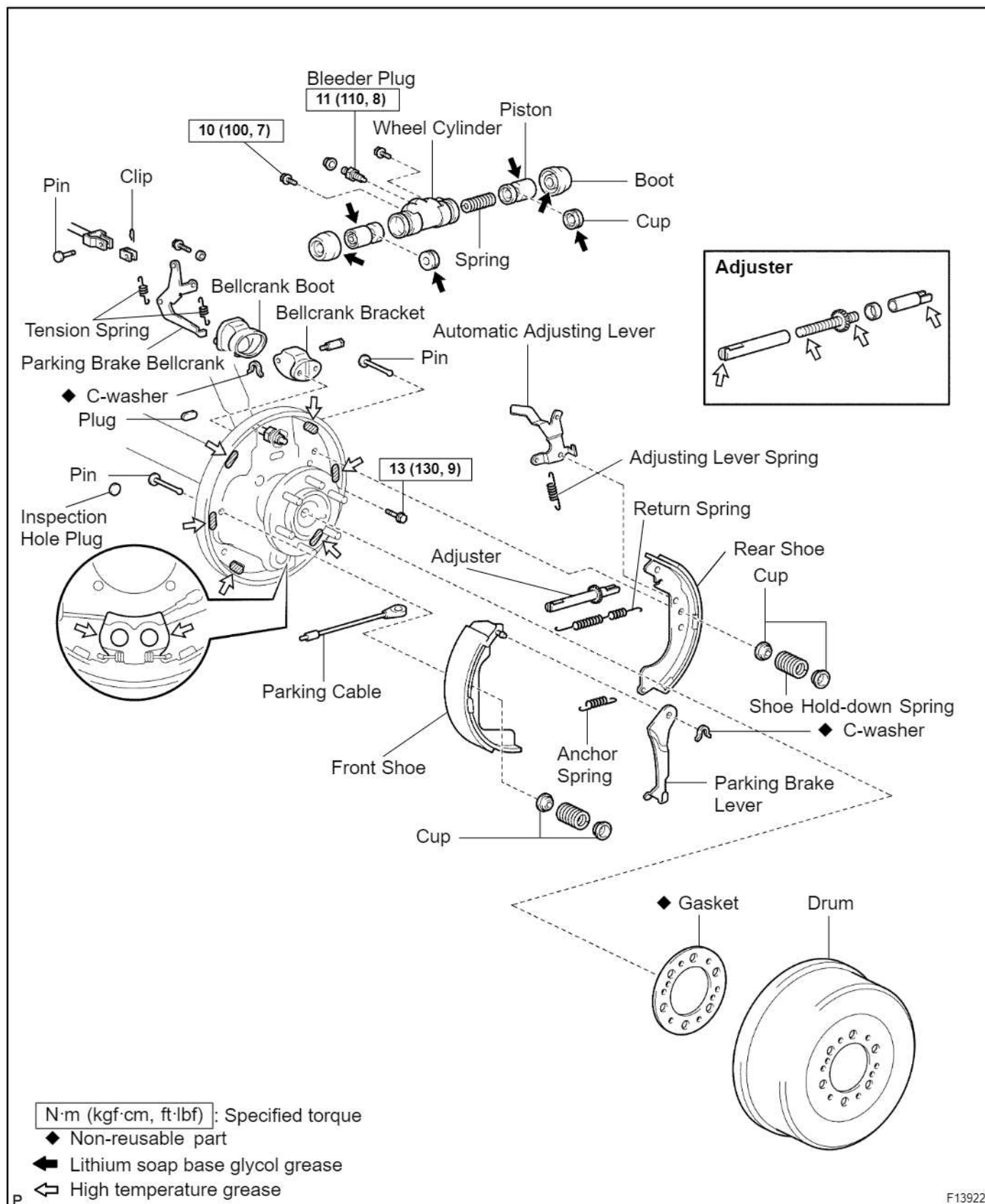
Installation is in the reverse order of removal (See page [BR-16](#)).

HINT:

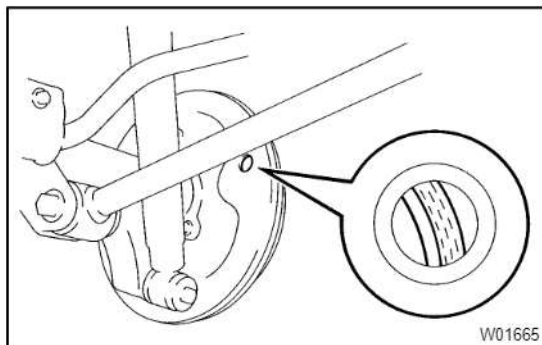
- After installation, fill the brake reservoir with brake fluid and bleed brake system (See page [BR-4](#)).
- Check for leaks.

REAR DRUM BRAKE COMPONENTS

BR085-04



F13922



REMOVAL

1. INSPECT SHOE LINING THICKNESS

Remove the inspection hole plug, and check the shoe lining thickness through the hole.

If less than the minimum, replace the shoes.

Minimum thickness: 1.0 mm (0.039 in.)

2. REMOVE REAR WHEEL

Torque: 110 N·m (1,150 kgf·cm, 83 ft·lbf)

3. RELEASE PARKING BRAKE LEVER

4. REMOVE BRAKE DRUM

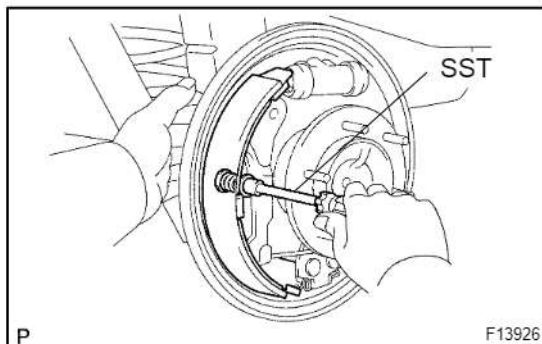
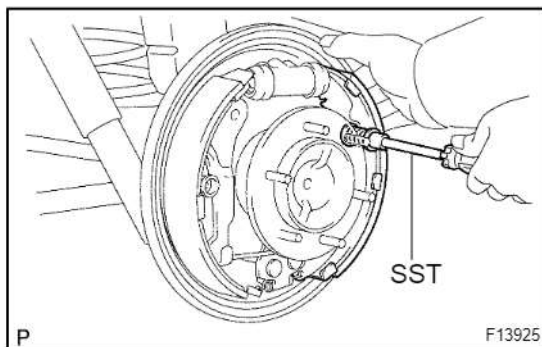
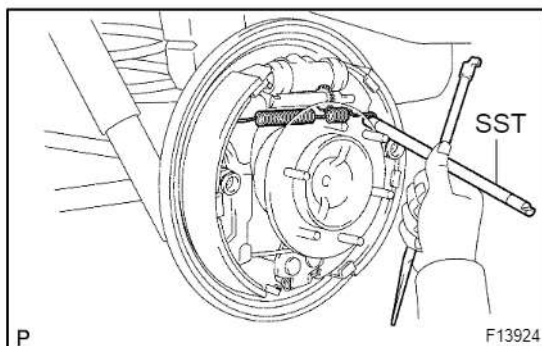
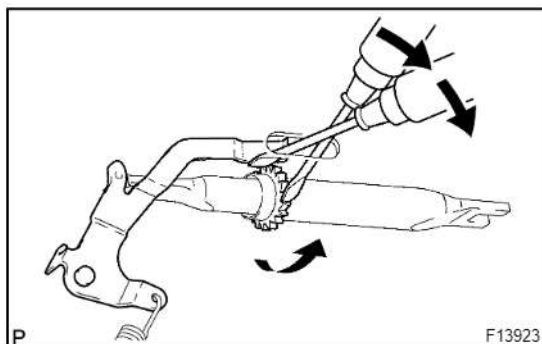
HINT:

If the brake drum cannot be removed easily, do the following steps.

- Remove the adjusting hole plug in the backing plate.
- Insert a screwdriver through the hole in the backing plate, and hold the automatic adjusting lever away from the adjusting bolt.
- Using the other screwdriver, reduce the brake shoe adjustment by turning the adjusting bolt.

5. REMOVE REAR SHOE

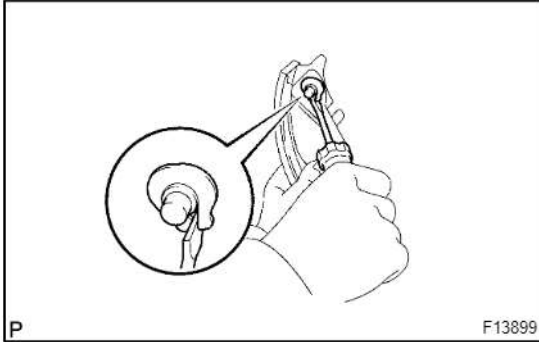
- Using SST, disconnect the return spring from the shoe.
SST 09703-30010
- Remove the return spring from the front shoe.



- Using SST, remove the shoe hold-down spring, cups and pin.
SST 09718-00010
- Remove the adjuster.
- Using needle-nose pliers, remove the adjusting lever spring.
- Remove the automatic adjusting lever.
- Disconnect the anchor spring from the rear shoe and remove the rear shoe.
- Remove the anchor spring from the front shoe.

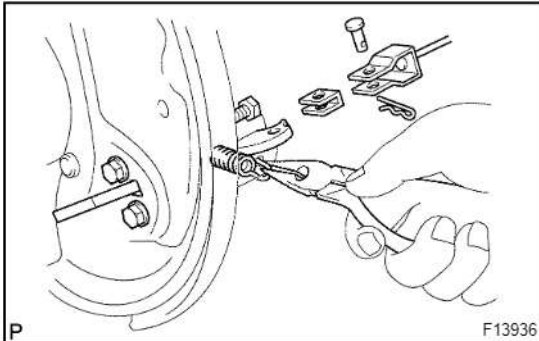
6. REMOVE FRONT SHOE

- Using SST, remove the shoe hold-down spring, cups and pin.
SST 09718-00010
- Disconnect the parking brake cable from the front shoe.
- Remove the front shoe and parking brake cable.



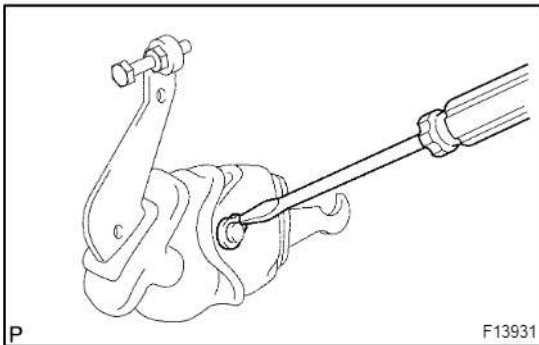
7. REMOVE PARKING BRAKE LEVER

- (a) Using a screwdriver, remove the C-washer.
- (b) Remove the parking brake lever.

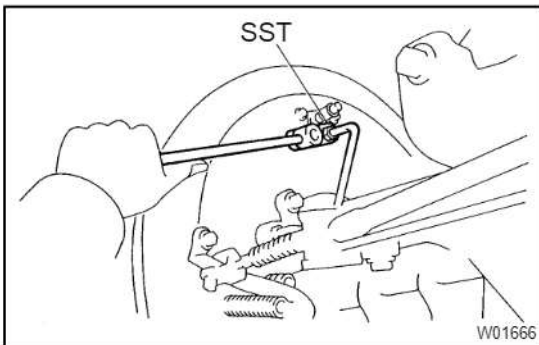


8. REMOVE AND DISASSEMBLE PARKING BRAKE BELLCRANK

- (a) Remove the clip and disconnect the parking brake cable.
- (b) Remove the 2 tension springs.
- (c) Remove the 2 bolts and bellcrank.
Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)
- (d) Remove the bellcrank boot from the bellcrank bracket.



- (e) Using a screwdriver, remove the C-washer and pin.
- (f) Remove the parking brake bellcrank from the bellcrank bracket.



9. REMOVE WHEEL CYLINDER

- (a) Using SST, disconnect the brake line. Use a container to catch the brake fluid.

Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)

SST 09023-00100

- (b) Remove the 2 bolts and the wheel cylinder.

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

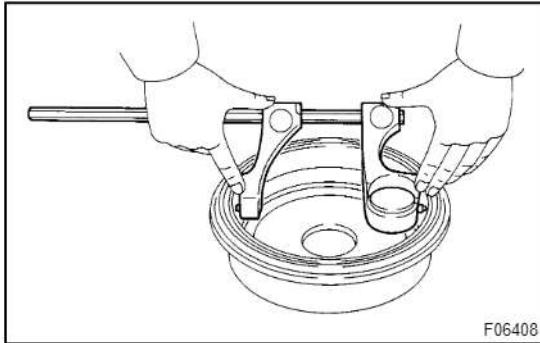
10. DISASSEMBLE WHEEL CYLINDER

- (a) Remove the 2 boots from the wheel cylinder.
- (b) Remove the 2 pistons and spring.
- (c) Remove the 2 cups from the each piston.

INSPECTION

1. INSPECT DISASSEMBLED PARTS

Inspect the disassembled parts for wear, rust or damage.



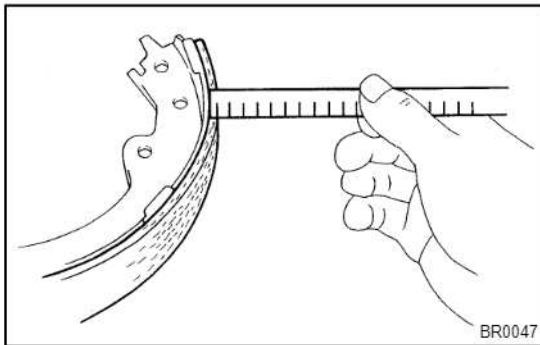
2. MEASURE BRAKE DRUM INSIDE DIAMETER

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

Standard inside diameter: 295.0 mm (11.614 in.)

Maximum inside diameter: 297.0 mm (11.693 in.)

If the drum is scored or worn, the brake drum may be lathed to the maximum inside diameter.



3. MEASURE BRAKE SHOE LINING THICKNESS

Using a ruler, measure the shoe lining thickness.

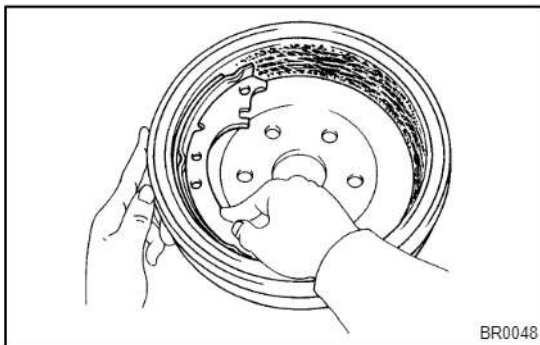
Standard thickness: 6.0 mm (0.236 in.)

Minimum thickness: 1.0 mm (0.039 in.)

If the shoe lining is less than the minimum, or shows signs of uneven wear, replace the brake shoes.

HINT:

If any of the brake shoes have to be replaced, replace all of the rear brake shoes in order to maintain even braking.



4. INSPECT BRAKE LINING AND DRUM FOR PROPER CONTACT

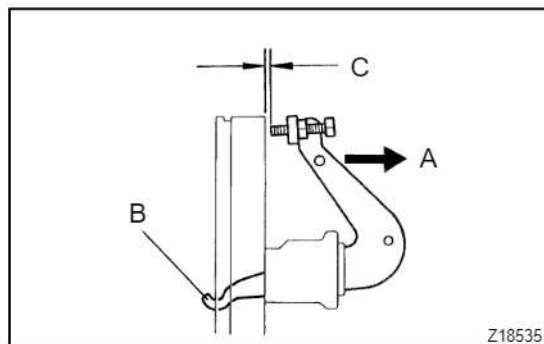
If the contact between the brake lining and drum is improper, repair the lining with a brake shoe grinder, or replace the brake shoe assembly.

INSTALLATION

Installation is in the reverse order of removal (See page [BR-22](#)).

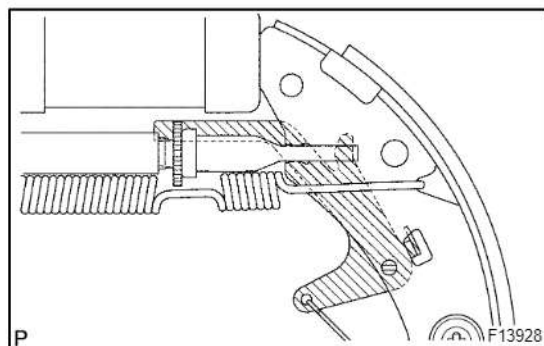
NOTICE:

Apply lithium soap base glycol grease and high temperature grease to the parts indicated by the arrows (See page [BR-21](#)).



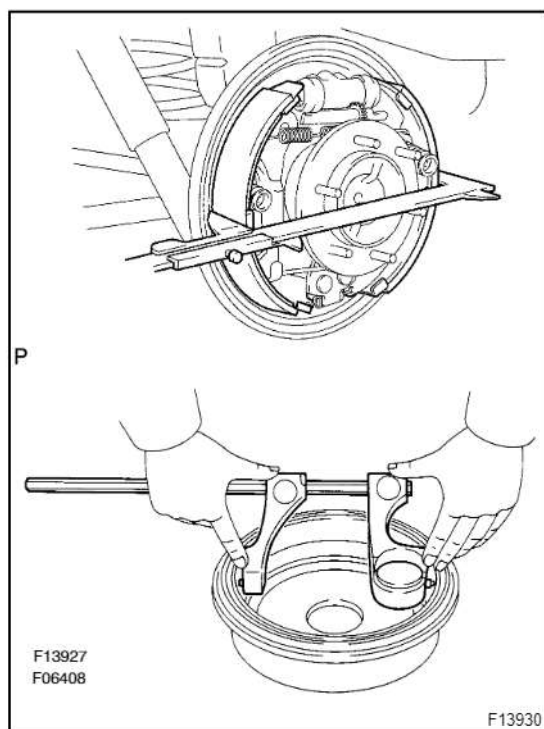
1. ADJUST BELLCRANK

- Lightly pull the bellcrank in direction "A" until there is no slack at part "B".
- In this condition, turn the adjusting bolt so that dimension "C" will be 0.4 - 0.8 mm (0.016 - 0.031 in.).
- Lock the adjusting bolt with the lock nut.
- Connect the parking brake cable to the parking brake bellcrank and install the clip.
- Install the 2 tension springs.



2. CHECK AUTOMATIC ADJUSTING LEVER

Check that the automatic adjusting lever is properly installed. If it is not correct, check for incorrect installation of the rear brakes.



3. CHECK CLEARANCE BETWEEN BRAKE SHOES AND DRUM

- Remove the drum.
- Measure the brake drum inside diameter and diameter of the brake shoes. Check that the difference between the diameters is the correct shoe clearance.

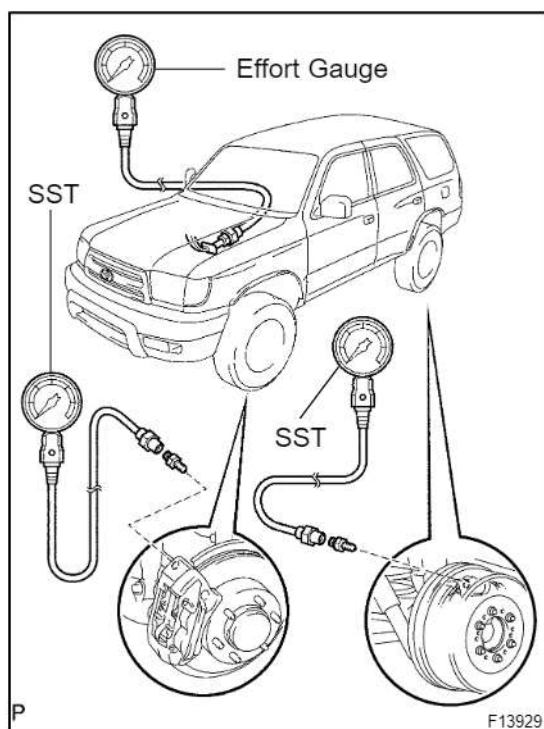
Shoe clearance: 0.5 mm (0.020 in.)

If it is incorrect, check the parking brake system.

4. FILL BRAKE RESERVOIR WITH BRAKE FLUID

5. BLEED BRAKE SYSTEM (See page [BR-4](#))

6. CHECK FOR LEAKS



HYDRAULIC BRAKE BOOSTER ON-VEHICLE INSPECTION

BR123-03

1. CHECK HYDRAULIC BRAKE BOOSTER FLUID PRESSURE CHANGE

- (a) Inspect the battery positive voltage.

Battery positive voltage: 10 - 14 V

- (b) Turn the ignition switch OFF, depress the brake pedal more than 40 times.

HINT:

When a pressure in power supply system is released, reaction force becomes heavy and stroke becomes shorter.

- (c) Install LSPV gauge (SST) and brake pedal effort gauge, bleed air.

SST 09709-29018

- (d) When booster does not operate:

Depress the brake pedal and check fluid pressure.

At 245 N (25 kgf, 55 lbf):

Front brake pressure	Rear brake pressure
2,100 kPa (21 kgf/cm ² , 305 psi) or more	0 kPa (0 kgf/cm ² , 0 psi)

At 343 N (35 kgf, 77 lbf):

Front brake pressure	Rear brake pressure
3,100 kPa (32 kgf/cm ² , 450 psi) or more	0 kPa (0 kgf/cm ² , 0 psi)

- (e) When booster operate:

- (1) Turn the ignition switch ON and wait until the pump motor has stopped.

- (2) Depress the brake pedal and check fluid pressure.

At 49 N (5 kgf, 11 lbf):

Front brake pressure	Rear brake pressure
1,000 - 2,200 kPa (10.2 - 22.4 kgf/cm ² , 145 - 319 psi)	1,200 - 2,400 kPa (12.2 - 24.4 kgf/cm ² , 174 - 348 psi)

At 98 N (10 kgf, 22 lbf):

Front brake pressure	Rear brake pressure
3,400 - 4,600 kPa (34.7 - 46.9 kgf/cm ² , 493 - 667 psi)	3,800 - 5,000 kPa (38.7 - 51.0 kgf/cm ² , 551 - 725 psi)

At 147 N (15 kgf, 33 lbf):

Front brake pressure	Rear brake pressure
5,600 - 6,800 kPa (57.1 - 69.3 kgf/cm ² , 812 - 986 psi)	6,000 - 7,200 kPa (61.2 - 73.4 kgf/cm ² , 870 - 1,044 psi)

At 196 N (20 kgf, 44 lbf):

Front brake pressure	Rear brake pressure
7,800 - 9,000 kPa (79.5 - 91.8 kgf/cm ² , 1,131 - 1,305 psi)	8,200 - 9,400 kPa (83.6 - 95.9 kgf/cm ² , 1,189 - 1,363 psi)

2. In case of using TOYOTA hand-held tester: INSPECT HYDRAULIC BRAKE BOOSTER OPERATION

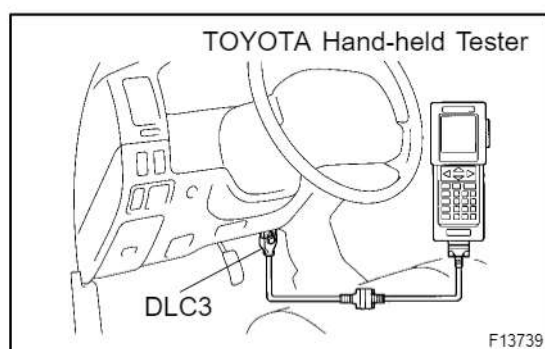
- (a) Inspect the battery positive voltage.
Battery positive voltage: 10 - 14 V
- (b) Turn the ignition switch OFF, depress the brake pedal more than 40 times.

HINT:

When a pressure in power supply system is released, reaction force becomes heavy and stroke becomes shorter.

- (c) Check that the brake pedal becomes heavy to depress. If the pedal does not become to be heavy to depress, check and replace the brake line and hydraulic brake booster.
- (d) Turn the ignition switch ON, check the pump motor operation noise.

If the pump motor does not operate, check and replace the wire harness and pump motor (See page [BR-42](#)).



- (e) Connect the TOYOTA hand-held tester.
 - (1) Connect the TOYOTA hand-held tester to the DLC3.
 - (2) Turn the ignition switch ON.
 - (3) Select the "ACTIVE TEST" mode on the TOYOTA hand-held tester.

HINT:

- Please refer to the TOYOTA hand-held tester operator's manual for further details.
 - To protect the solenoids, TOYOTA hand-held tester turns OFF automatically 2 sec. after every solenoid has been turned ON.
- (f) Inspect the front TRAC & VSC solenoid operation.
 - (1) Select "SA1" and "SA2" on the TOYOTA hand-held tester.
 - (2) With "SA1" and "SA2" turned ON simultaneously with the TOYOTA hand-held tester, depress the brake pedal with stable force and check that the pedal cannot be depressed.

HINT:

To protect the solenoids, TOYOTA hand-held tester turns OFF automatically 2 sec. after every solenoid has been turned ON. If the pedal can be depressed, replace the hydraulic brake booster.

NOTICE:

When operating it continuously, set the interval of more than 20 sec.

- (3) Once, release the brake pedal.

- (4) When the solenoids are OFF, after depressing the brake pedal again and check that the brake pedal can be depressed.

If the pedal cannot be depressed, replace the hydraulic brake booster.

- (g) Inspect the front ABS solenoid operation.
 - (1) Select "SFRH" and "SFLH" on the TOYOTA hand-held tester.
 - (2) With "SFRH" and "SFLH" turned ON simultaneously with the TOYOTA hand-held tester, depress the brake pedal with stable force and check that the brake pedal cannot be depressed.

HINT:

To protect the solenoids, the TOYOTA hand-held tester turns OFF automatically 2 sec. after every solenoid has been turned ON.

If the pedal can be depressed, replace the hydraulic brake booster.

- (3) Once, release the brake pedal when the solenoids are OFF, check that the brake pedal can be depressed.

If the pedal cannot be depressed, replace the hydraulic brake booster.

- (4) Once, release the brake pedal. After depressing and holding the brake pedal with stable force, turn the SFRH and SFRR solenoids ON simultaneously.

HINT:

To protect the solenoids, the TOYOTA hand-held tester turns OFF automatically 2 sec. after every solenoid has been turned ON.

- (5) When the solenoids are OFF, check that the brake pedal can be depressed.

If the pedal cannot be depressed, replace the hydraulic brake booster.

- (6) Once, release the brake pedal. After depressing and holding the brake pedal with stable force, turn the SFLH and SFLR solenoids ON simultaneously.

HINT:

To protect the solenoids, the TOYOTA hand-held tester turns OFF automatically 2 sec. after every solenoid has been turned ON.

- (7) When the solenoids are OFF, check that the brake pedal can be depressed.

If the pedal cannot be depressed, replace the hydraulic brake booster.

- (h) Jack up and support the vehicle.
- (i) Release the parking brake lever.
- (j) Shift the transfer shift lever to "N" position and check that the rear wheels by rotating them by hand.
- (k) Inspect the rear TRAC & VSC solenoid operation.

- (1) Select the "SA3" and "STR" on the TOYOTA hand-held tester.
- (2) Turn the "SA3" and "STR" ON simultaneously with the TOYOTA hand-held tester, and check that the rear wheels does not rotate by hand.

HINT:

When rotating the wheel fast, the fail-safe function is activated and judgement cannot be made properly. So rotate the wheel as slowly as possible.

If the rear wheels rotate, replace the hydraulic brake booster.

- (3) Turn the "SA3" and "STR" OFF simultaneously, and check that the rear wheels by rotating them by hand.

HINT:

- To protect the solenoids, the TOYOTA hand-held tester turns OFF automatically 2 sec. after every solenoid has been turned ON.
- When rotating the wheel fast, the fail-safe function is activated and judgement cannot be made properly. So rotate the wheel as slowly as possible.

NOTICE:

When operating it continuously, set the interval of more than 20 sec.

If the rear wheels stop, replace the hydraulic brake booster.

- (I) Inspect the right rear ABS solenoid.
 - (1) Select the "SA3", "STR" and "SRRH", on the TOYOTA hand-held tester.
 - (2) Turn the "SA3", "STR" and "SRRH" ON simultaneously with the TOYOTA hand-held tester, and check that the right rear wheel by rotating it by hand.

HINT:

- To protect the solenoids, the TOYOTA hand-held tester turns OFF automatically 2 sec. after every solenoid has been turned ON.
- When rotating the wheel fast, the fail-safe function is activated and judgement cannot be made properly. So rotate the wheel as slowly as possible.
- When solenoid is OFF, the wheel might stop temporarily. However if the wheel rotates again, the function works normally.

If the rear wheels stop, replace the hydraulic brake booster.

- (3) Turn the "SA3", "STR" and "SRRH" OFF, and check that the right rear wheel by rotating it by hand.

HINT:

- To protect the solenoids, the TOYOTA hand-held tester turns OFF automatically 2 sec. after every solenoid has been turned ON.
- When rotating the wheel fast, the fail-safe function is activated and judgement cannot be made properly. So rotate the wheel as slowly as possible.

If the right rear wheel stop, replace the hydraulic brake booster.

- (4) Depress the pedal with stable force, then turn the "SRRH" and "SRRR" ON simultaneously.
- (5) When the solenoids are ON, check that the right rear wheel by rotating it by hand.
- (m) Inspect the left rear ABS solenoid operation.
 - (1) Select the "SA3", "STR" and "SRLH" on the TOYOTA hand-held tester.
 - (2) Turn the "SA3", "STR" and "SRLH" ON with the TOYOTA hand-held tester, and check that the left rear wheel by rotating it by hand.

HINT:

When rotating the wheel fast, the fail-safe function is activated and judgement cannot be made properly. So rotate the wheel as slowly as possible.

If the rear wheels stop, replace the hydraulic brake booster.

- (3) Turn the "SA3", "STR" and "SRLH" OFF and check that the left rear wheel by rotating it by hand.

HINT:

- To protect the solenoids, the TOYOTA hand-held tester turns OFF automatically 2 sec. after every solenoid has been turned ON.
- When rotating the wheel fast, the fail-safe function is activated and judgement cannot be made properly. So rotate the wheel as slowly as possible.
- When solenoid is OFF, the wheel might stop temporarily. However if the wheel rotates again, the function works normally.

If the left rear wheel stop, replace the hydraulic brake booster.

- (4) Depress the pedal with stable force, then turn the "SRLH" and "SRLR" ON simultaneously.

HINT:

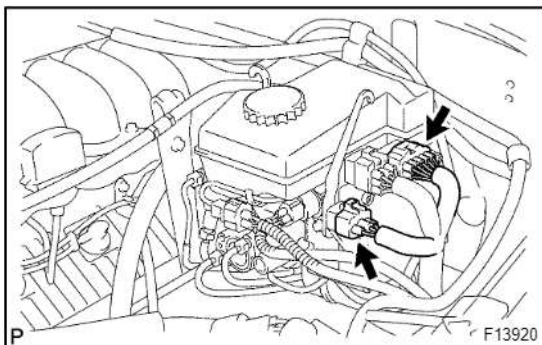
To protect the solenoids, the TOYOTA hand-held tester turns OFF automatically 2 sec. after every solenoid has been turned ON.

- (5) When the solenoids are ON, check that the left rear wheel by rotating it by hand.

HINT:

When rotating the wheel fast, the fail-safe function is activated and judgement cannot be made properly. So rotate the wheel as slowly as possible.

- (n) Lower the vehicle.
- (o) Disconnect the TOYOTA hand-held tester.



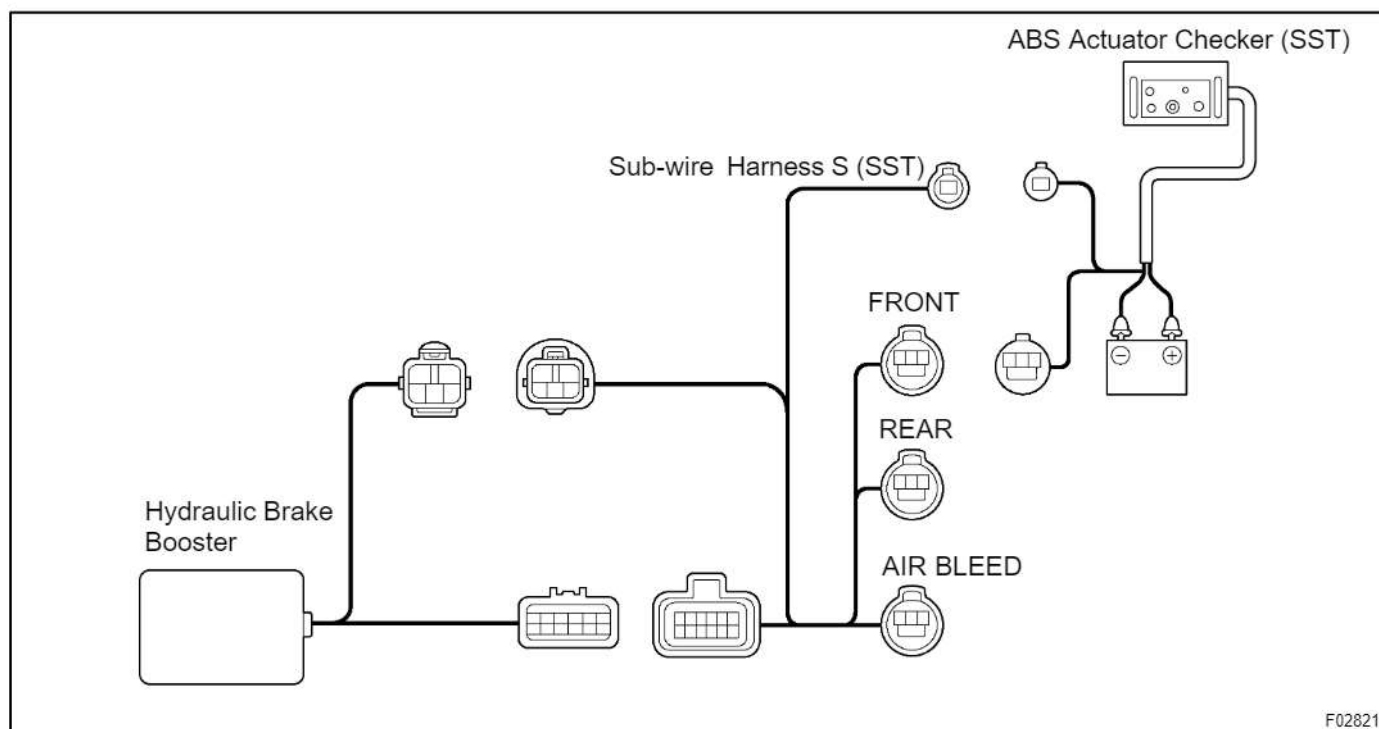
**3. In case of using ABS actuator checker (SST):
INSPECT HYDRAULIC BRAKE BOOSTER OPERATION**

- (a) Inspect the battery positive voltage.
Battery positive voltage: 10 - 14 V
- (b) Disconnect the 2 connectors from hydraulic brake booster.
- (c) Connect the ABS actuator checker (SST) to the hydraulic brake booster side wire harness via the sub-wire harness S (SST), as shown in the following chart.
SST 09990-00150, 09990-00480

HINT:

Connect the connector with the label of "FRONT" attached to the connector of ABS actuator checker.

- (d) Connect the red cable of the checker to the battery positive (+) terminal and the black cable to the negative (-) terminal.



- (e) Place "SHEET G" (SST) of "FRONT" on ABS actuator checker.
SST 09990-00240
- (f) Turn the ignition switch OFF, depress the brake pedal more than 40 times.

HINT:

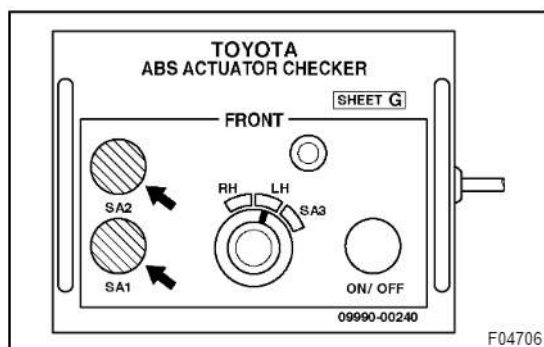
When a pressure in power supply system is released, reaction force becomes heavy and stroke becomes shorter.

- (g) Check that the brake pedal becomes heavy to depress.

If the pedal does not become to be heavy to depress, check and replace the brake line and hydraulic brake booster.

- (h) Turn the ignition switch ON, check the pump motor operation noise.

If the pump motor does not operate, check and replace the wire harness and pump motor (See page BR-42).



- (i) Inspect the front TRAC & VSC solenoid operation.
 (1) Push in and hold the "SA1" and "SA2" switches simultaneously, depress strongly and hold the brake pedal with stable force.

NOTICE:

Do not keep the "SA1" and "SA2" pushed down for more than 10 sec. When operating it continuously, set the interval of more than 20 sec.

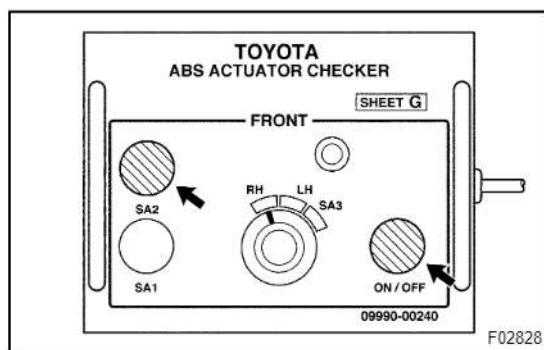
- (2) Check that the brake pedal cannot be depressed. If the pedal can be depressed, replace the hydraulic brake booster.

- (3) Release the "SA1" switch and check that the brake pedal can be depressed.

If the pedal cannot be depressed, replace the hydraulic brake booster.

- (4) Release the "SA2" switch and check that the brake pedal can be depressed.

If the pedal cannot be depressed, replace the hydraulic brake booster.



- (j) Inspect the right front ABS solenoid operation.
 (1) Turn the selector switch to "RH" position.
 (2) Push and hold in the MAIN push switch and "SA2" switch simultaneously, depress and hold the brake pedal with stable force.

NOTICE:

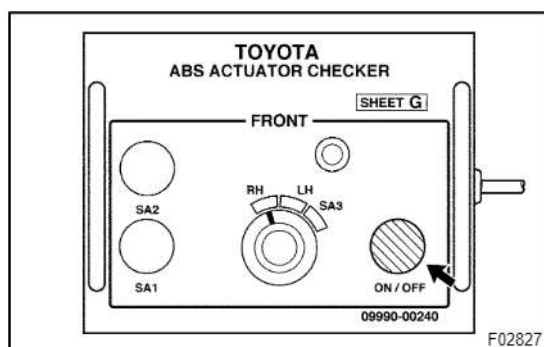
Do not keep the MAIN push switch and "SA2" switch pushed down for more than 10 sec. When operating it continuously, set the interval of more than 20 sec.

- (3) Check that the brake pedal cannot be depressed. If the pedal can be depressed, replace the hydraulic brake booster.

- (4) Release the MAIN push switch and "SA2" switch simultaneously and check that the brake pedal can be depressed.

If the pedal cannot be depressed, replace the hydraulic brake booster.

- (5) Release the brake pedal.



- (6) Depress and hold the brake pedal with stable force, push and hold in MAIN push switch.

NOTICE:

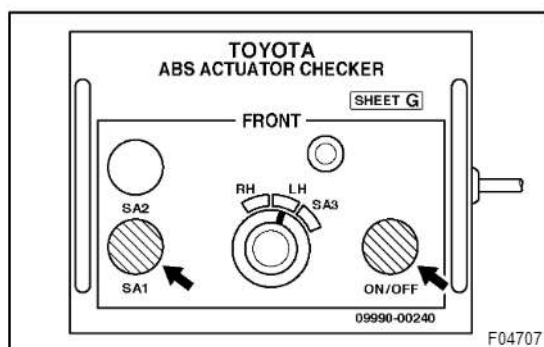
Do not keep the MAIN push switch pushed down for more than 10 sec. When operating it continuously, set the interval of more than 20 sec.

- (7) Check that the brake pedal cannot be depressed. If the pedal can be depressed, replace the hydraulic brake booster.

- (8) Release the MAIN push switch, and check that the brake pedal can be depressed.

If the pedal cannot be depressed, replace the hydraulic brake booster.

- (9) Release the brake pedal.



- (k) Inspect the left front ABS solenoid operation.

- (1) Turn the selector switch to "LH" position.
(2) Push and hold in the MAIN push switch and "SA1" switch simultaneously, depress and hold the brake pedal with stable force.

NOTICE:

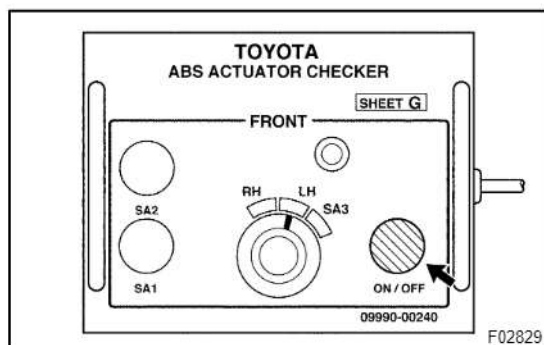
Do not keep the MAIN push switch and "SA1" switch pushed down for more than 10 sec. When operating it continuously, set the interval of more than 20 sec.

- (3) Check that the brake pedal cannot be depressed. If the pedal can be depressed, replace the hydraulic brake booster.

- (4) Release the MAIN push switch and "SA1" switch simultaneously, and check that the brake pedal can be depressed.

If the pedal cannot be depressed, replace the hydraulic brake booster.

- (5) Release the brake pedal.



- (6) Depress and hold the brake pedal with stable force, push and hold in MAIN push switch.

NOTICE:

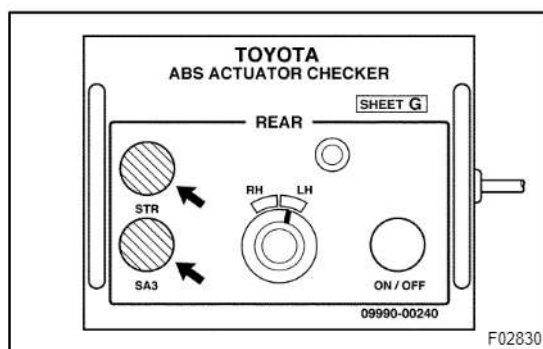
Do not keep the MAIN push switch pushed down for more than 10 sec. When operating it continuously, set the interval of more than 20 sec.

- (7) Check that the brake pedal cannot be depressed. If the pedal can be depressed, replace the hydraulic brake booster.

- (8) Release the MAIN push switch, and check that the brake pedal can be depressed.

If the pedal cannot be depressed, replace the hydraulic brake booster.

- (9) Release the brake pedal.
- (l) Turn the ignition switch OFF, then reconnect the connector of sub-wire harness from the one with label of "FRONT" to "REAR".
- (m) Place "SHEET G" of "REAR" on the actuator checker.
- (n) Jack up and support the vehicle.
- (o) Start the engine and run it at idle.



- (p) Inspect the rear TRAC & VSC solenoid.
 - (1) Release the parking brake lever and shift the shift lever to "L" position.
 - (2) Push and hold the "SA3" switch and "STR" switch simultaneously.

NOTICE:

- Do not keep the "STR" switch pushed down for more than 10 sec.
- Do not keep the "SA3" switch pushed down for more than 5 sec.
- When operating it continuously, set the interval of more than 20 sec.

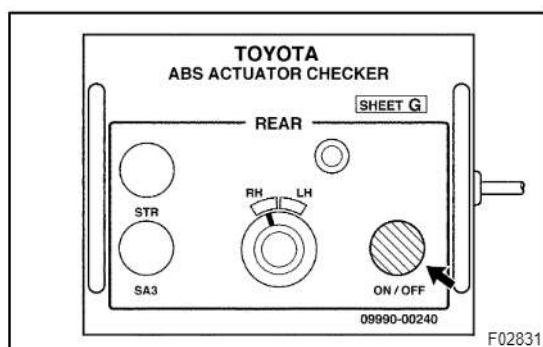
- (3) Check that the rear wheels stop.

If the rear wheels rotate, replace the hydraulic brake booster.

- (4) Release the "SA3" switch and "STR" switch simultaneously.

- (5) Check that the rear wheels rotate.

If the rear wheels stop, replace the hydraulic brake booster.



- (q) Inspect the right rear ABS solenoid.
 - (1) Turn the selector switch to "RH" position.
 - (2) Depress the brake pedal several times and release the brake pedal when the pump begins rotating. Wait until the pump stops.
 - (3) Turn the ignition switch OFF.
 - (4) Depress the brake pedal with a force of 490 N (50 kgf, 110 lbf), record the fluid surface in the reservoir tank of the hydraulic brake booster.

- (5) Press the MAIN push switch for 10 sec., and check that the fluid surface in the reservoir tank of the hydraulic brake booster does not rise up at this time.

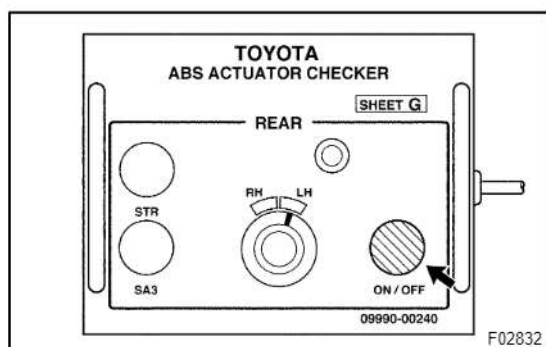
If the fluid surface level rises up, replace the hydraulic brake booster.

NOTICE:

Do not press MAIN push switch for more than 10 sec. When operating the switch continuously, do it an interval of more than 20 sec.

- (6) Start the engine and run it at idle.
- (7) Depress the brake pedal.
- (8) Release the parking brake lever and shift the shift lever to "L" position.
- (9) Once, release the brake pedal. After depressing the brake pedal with stable force, then push and hold MAIN push switch.
- (10) Check that the right rear wheel rotates.

If the right rear wheel stops, replace the hydraulic brake booster.



- (r) Inspect the left rear ABS solenoid.
 - (1) Turn the selector switch to "LH" position.
 - (2) Depress the brake pedal several times and release the brake pedal when the pump begins rotating. Wait until the pump stops.
 - (3) Turn the ignition switch OFF.
 - (4) Depress the brake pedal with a force of 490 N (50 kgf, 110 lbf), record the fluid surface in the reservoir tank of the hydraulic brake booster.
 - (5) Press the MAIN push switch for 10 sec., and check that the fluid surface in the reservoir tank of the hydraulic brake booster does not rise up at this time.

If the fluid surface level rises up, replace the hydraulic brake booster.

NOTICE:

Do not press MAIN push switch for more than 10 sec. When operating the switch continuously, do it an interval of more than 20 sec.

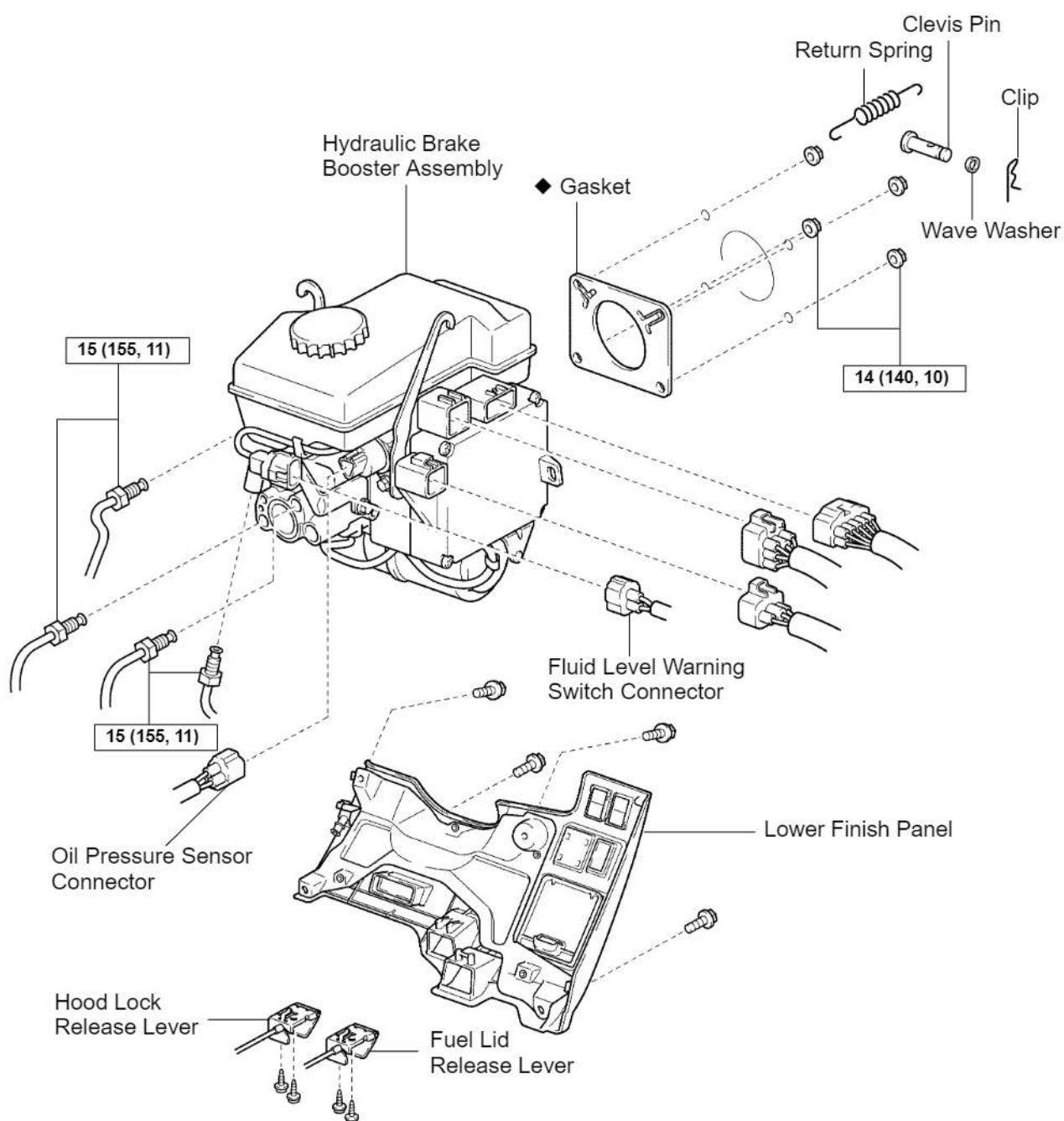
- (6) Start the engine and run it at idle.
- (7) Depress the brake pedal.
- (8) Release the parking brake lever and shift the shift lever to "L" position.
- (9) Once, release the brake pedal. After depressing the brake pedal with stable force, then push and hold MAIN push switch.
- (10) Check that the left rear wheel rotates.

If the left rear wheel stops, replace the hydraulic brake booster.

- (s) Stop the engine and lower the vehicle.

- (t) Remove the "SHEET G" (SST) and disconnect the actuator checker (SST) and sub-wire harness S (SST) from the hydraulic brake booster.
- (u) Connect the 2 connectors to the actuator.
- (v) Clear the DTC (See page [DI-224](#)).

COMPONENTS

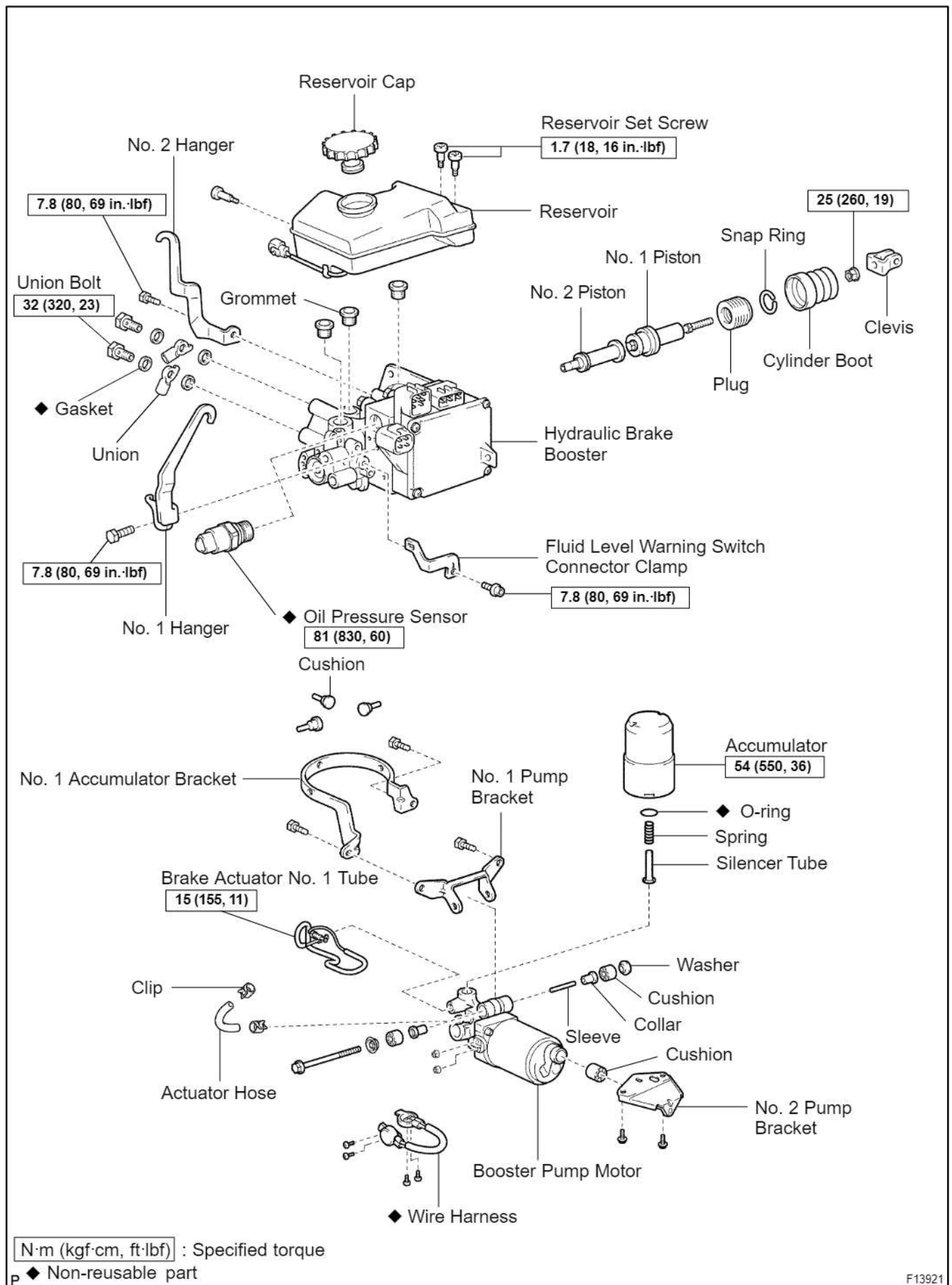


N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part

P

F12667



F13921

REMOVAL

NOTICE:

Before starting the work, make sure that the ignition switch is **OFF** and depress the brake pedal more than 40 times.

HINT:

When a pressure in power supply system is released, reaction force becomes heavy and stroke becomes shorter.

NOTICE:

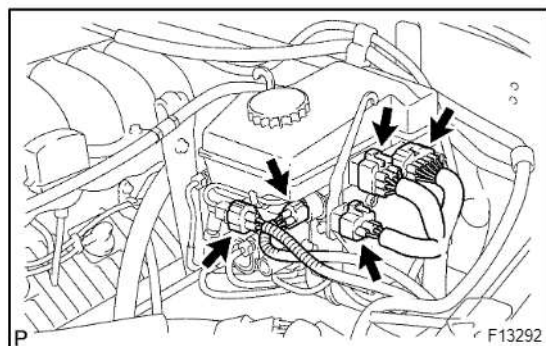
- As high pressure is applied to the brake actuator No. 1 tube, never deform it.
- Until the work is over, do not turn the ignition switch ON.

1. DRAW OUT FLUID WITH SYRINGE

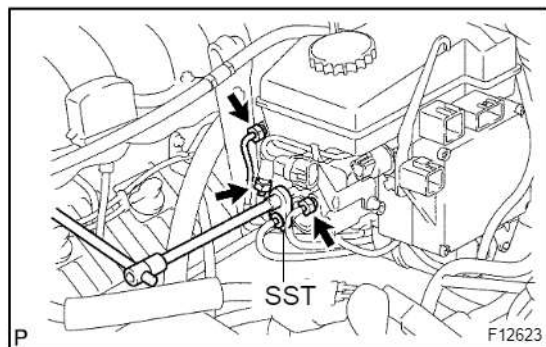
NOTICE:

Do not let brake fluid remain on a painted surface. Wash it off immediately.

2. REMOVE LOWER FINISH PANEL, HOOD LOCK RELEASE LEVER, FUEL LID RELEASE LEVER (See page [BO-66](#))



3. DISCONNECT 5 CONNECTORS



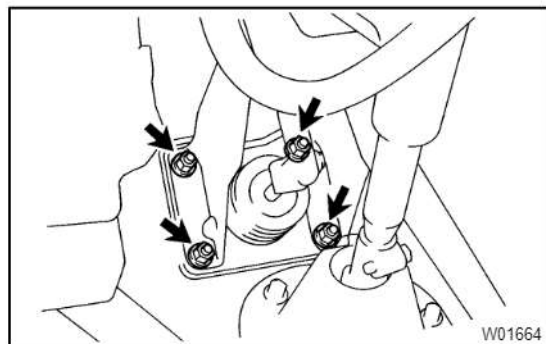
4. DISCONNECT BRAKE LINES

Using SST, disconnect the 4 brake lines.

SST 09023-00100

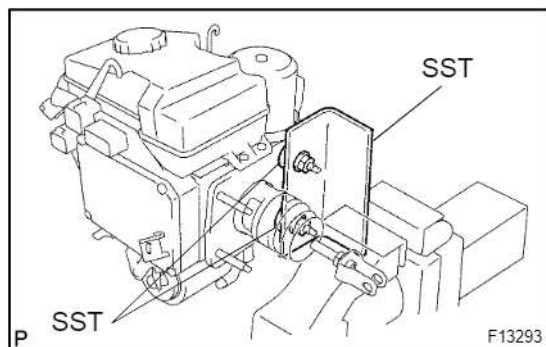
Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)

5. REMOVE RETURN SPRING, CLIP, WAVE WASHER AND CLEVIS PIN



6. REMOVE HYDRAULIC BRAKE BOOSTER ASSEMBLY

- Remove the 4 booster installation nuts.
Torque: 14 N·m (140 kgf·cm, 10 ft·lbf)
- Remove the booster assembly and gasket.



DISASSEMBLY

1. PLACE HYDRAULIC BRAKE BOOSTER IN VISE

Using SST, set the hydraulic brake booster in vise.

SST 09630-00014 (09631-00142),
09950-60010 (09951-00180, 09951-00190)

2. REMOVE FLUID LEVEL WARNING SWITCH CONNECTOR CLAMP

- Disconnect the connector from the clamp.
- Using 5 mm socket hexagon wrench, remove the bolt and fluid level warning switch connector clamp.

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

3. REMOVE RESERVOIR

- Remove reservoir cap.
- Remove the 3 set screws and pull out the reservoir.

Torque: 1.7 N·m (18 kgf·cm, 16 in·lbf)

- Remove the 3 grommets.

4. REMOVE CYLINDER BOOT

- Loosen the lock nut, then remove the clevis and lock nut.

Torque: 25 N·m (260 kgf·cm, 19 ft·lbf)

- Remove the cylinder boot.

5. REMOVE NO. 1 AND NO. 2 HANGERS

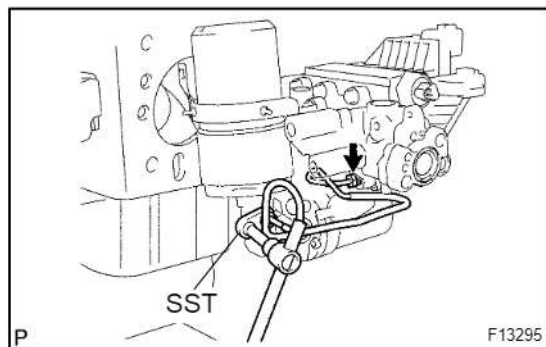
Remove the 2 bolts, No. 1 and No. 2 hangers.

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

6. REMOVE 2 UNIONS

Remove the 2 union bolts, 4 gaskets and 2 unions.

Torque: 32 N·m (320 kgf·cm, 23 ft·lbf)



7. REMOVE BRAKE ACTUATOR NO. 1 TUBE

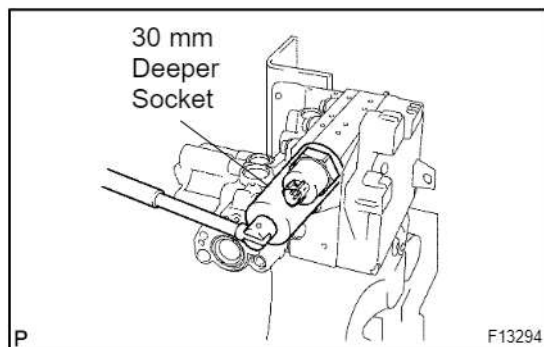
Using SST, remove the brake actuator No. 1 tube.

SST 09023-00100

Torque: 15 N·m (155 kgf·cm, 11 ft·lbf)

8. REMOVE BOOSTER PUMP WITH ACCUMULATOR

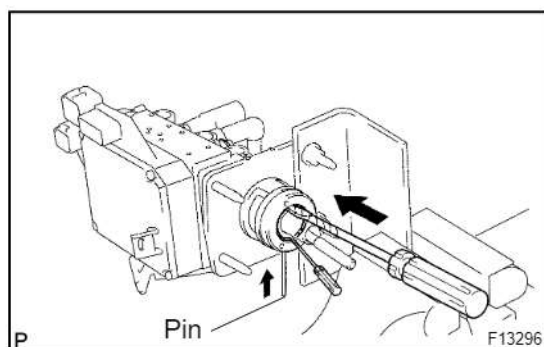
- Remove the 2 clips and actuator hose.
- Remove the 4 screws and wire harness from the booster and pump.
- Remove the 2 bolts and No. 1 accumulator bracket.
- Remove the 3 cushions from the No. 1 actuator bracket.
- Remove the 2 bolts and No. 1 pump bracket.
- Remove the 2 washers, 3 cushions, 2 collars and sleeve.
- Remove the 2 bolts and No. 2 pump bracket.
- Remove the cushion from No. 2 pump bracket.



9. REMOVE OIL PRESSURE SENSOR

Using 30 mm deeper socket wrench and remove the oil pressure sensor.

Torque: 81 N·m (830 kgf·cm, 60 ft·lbf)

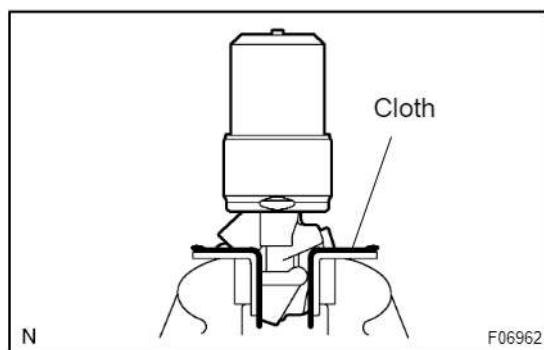


10. REMOVE PISTONS

- Pressing the piston in with a screwdriver, use a pin or an equivalent to push the snap ring from the hole in the body then remove it with another screwdriver.
- Remove the plug and No. 1, No. 2 pistons, pulling straight out, not at an angle.

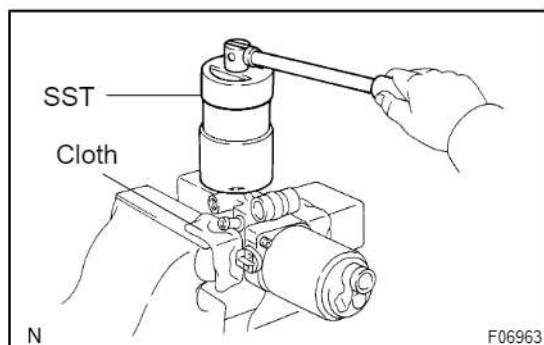
NOTICE:

- If pulled out and installed at an angle, there is a possibility that the cylinder bore could be damaged.
- At the time of reassembly, be careful not to damage the rubber lips on the pistons.



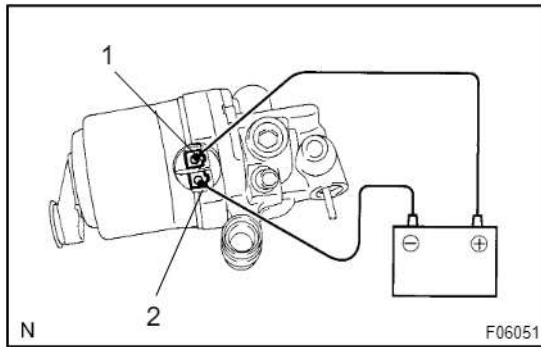
11. PLACE BOOSTER PUMP IN VISE

Place the booster pump with a cloth shown in the illustration on the left.



12. REMOVE ACCUMULATOR FROM BOOSTER PUMP

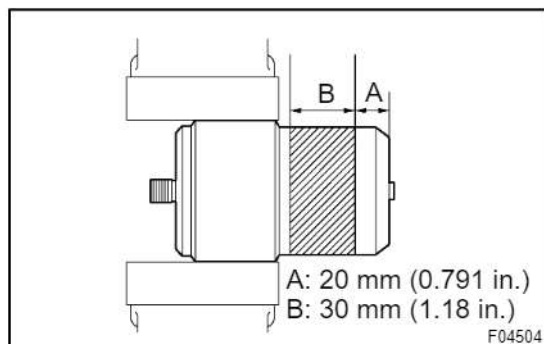
- Using SST, remove the accumulator.
SST 09318-12010
Torque: 54 N·m (550 kgf·cm, 36 ft·lbf)
- Remove the silencer tube, spring and O-ring.



INSPECTION

INSPECT HYDRAULIC BRAKE BOOSTER PUMP MOTOR OPERATION

- (a) Connect the positive (+) lead from the battery to terminal 1 of pump motor, and the negative (-) lead to terminal 2.
- (b) Check that the pump motor operation.



DISPOSAL

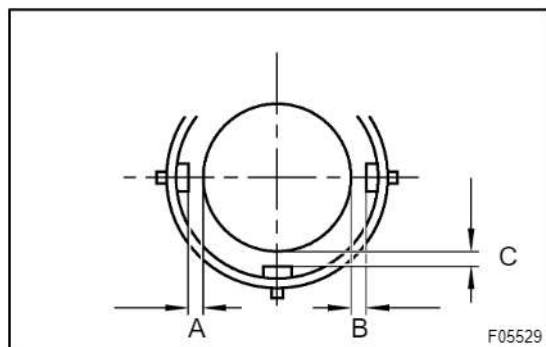
DISPOSAL METHOD OF ACCUMULATOR

- Follow the procedures described below and drain the high pressure gas from the accumulator.
- Place the accumulator in a vise, cover it with a cloth over a saw then cut the accumulator body slowly.

CAUTION:

Never cut at a stretch.

- When the outer body of the accumulator is cut, gas discharges.



REASSEMBLY

Reassembly is in the reverse order of disassembly (See page [BR-40](#)).

INSTALL ACCUMULATOR BRACKET

When installing the accumulator bracket, adjust to secure the clearance (A, B and C) shown in the illustration on the left.

Standard clearance:

A + B: 4.1 mm (0.161 in.) or less

C: 0.3 - 3.8 mm (0.012 - 0.150 in.)

HINT:

Secure more than 0.3 mm (0.012 in.) clearance for A and B each.

INSTALLATION

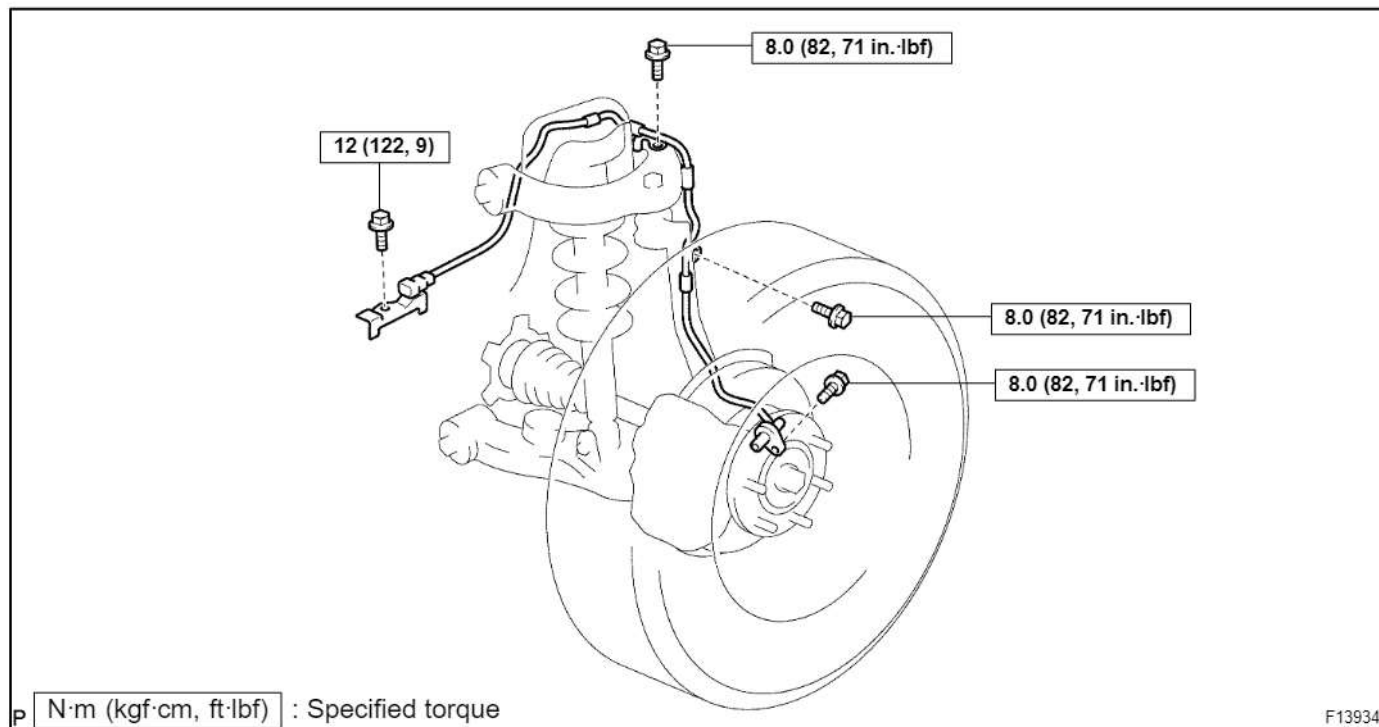
Installation is in the reverse order of removal (See page [BR-39](#)).

HINT:

- After installation, fill the brake reservoir with brake fluid and bleed brake system (See page [BR-4](#)).
- Check for leaks.

FRONT SPEED SENSOR COMPONENTS

BR08H-02



REMOVAL

REMOVE SPEED SENSOR

- (a) Disconnect the speed sensor connector.
- (b) Remove the 4 resin clips and 3 clamp bolts holding the sensor harness from the steering knuckle, upper arm and side rail.

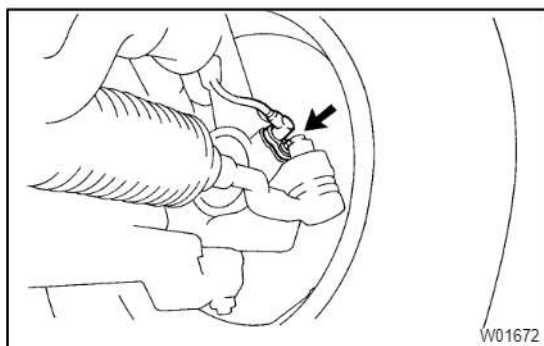
Torque:

Steering knuckle and upper arm:

8.0 N·m (82 kgf·cm, 71 in·lbf)

Side rail:

12 N·m (122 kgf·cm, 9 ft·lbf)



- (c) Remove the speed sensor installation bolt from the steering knuckle.

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

INSTALLATION

Installation is in the reverse order of removal (See page [BR-47](#)).

CAUTION:

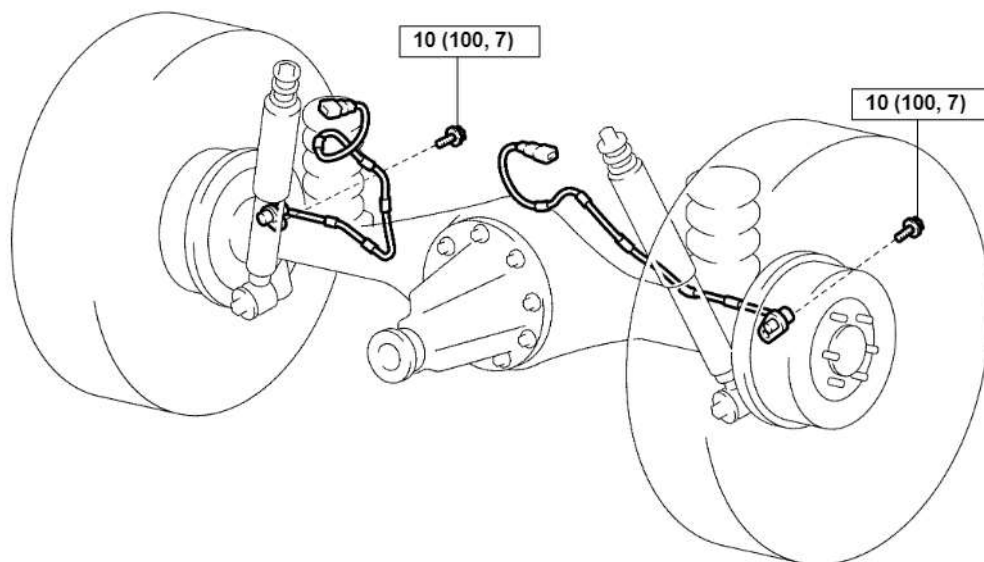
- There are no foreign objects on the sensor or the part of the knuckle to which the sensor is to be installed.
- The sensor is installed flat against the knuckle when you tighten the bolt.

HINT:

After installation, check the speed sensor signal (See page [DI-224](#)).

REAR SPEED SENSOR COMPONENTS

BR08K-02



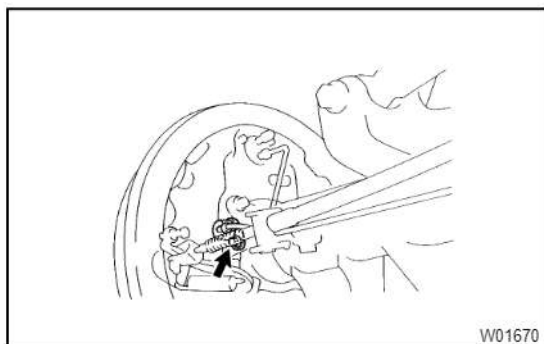
P N·m (kgf·cm, ft·lbf) : Specified torque

F13935

REMOVAL

REMOVE SPEED SENSOR

- (a) Disconnect the speed sensor connector, and pull out the sensor wire harness with grommet.
- (b) Remove the 5 resin clips, holding the sensor wire harness from the frame, upper control arm and axle housing.



- (c) Remove the mounting bolt and speed sensor.
Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

INSTALLATION

Installation is in the reverse order of removal (See page [BR-50](#)).

NOTICE:

Make sure that

- There are no foreign objects on the sensor or the part of the knuckle to which the sensor is to be installed.
- The sensor is installed flat against the knuckle when you tighten the bolt.

HINT:

After installation, check the speed sensor signal (See page [DI-224](#)).