

## BRAKES

### Brake System (Front) (Preparation) - Sienna

#### BRAKE (FRONT)

SST

SST

|  |             |                               |  |
|--|-------------|-------------------------------|--|
|  | 09330-00021 | Companion Flange Holding Tool |  |
|--|-------------|-------------------------------|--|

#### RECOMMENDED TOOLS

RECOMMENDED TOOLS

|  |             |                          |  |
|--|-------------|--------------------------|--|
|  | 09017-1C100 | Union Nut Wrench<br>10mm |  |
|--|-------------|--------------------------|--|

#### EQUIPMENT

EQUIPMENT

|                                   |   |
|-----------------------------------|---|
| Protective tape                   | - |
| Ruler                             | - |
| Micrometer                        | - |
| Dial indicator with magnetic base | - |
| Torque wrench                     | - |

#### LUBRICANT

LUBRICANT

| Item        | Capacity | Classification                  |
|-------------|----------|---------------------------------|
| Brake fluid | -        | SAE J1703 or FMVSS No. 116 DOT3 |

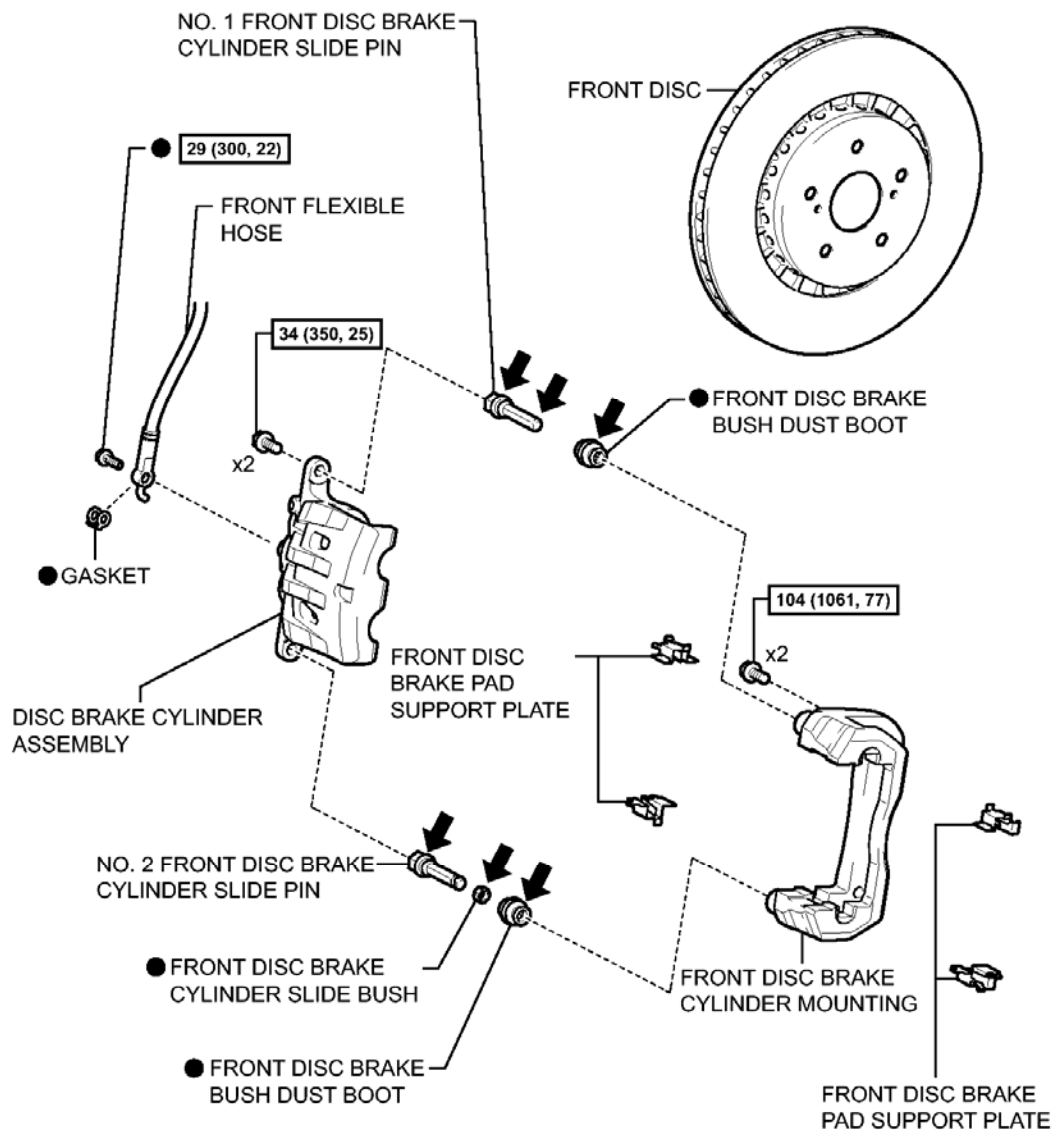
## **BRAKES**

### **Brake System (Front) (Service Information) - Sienna**

#### **FRONT BRAKE**

#### **COMPONENTS**

#### **ILLUSTRATION**



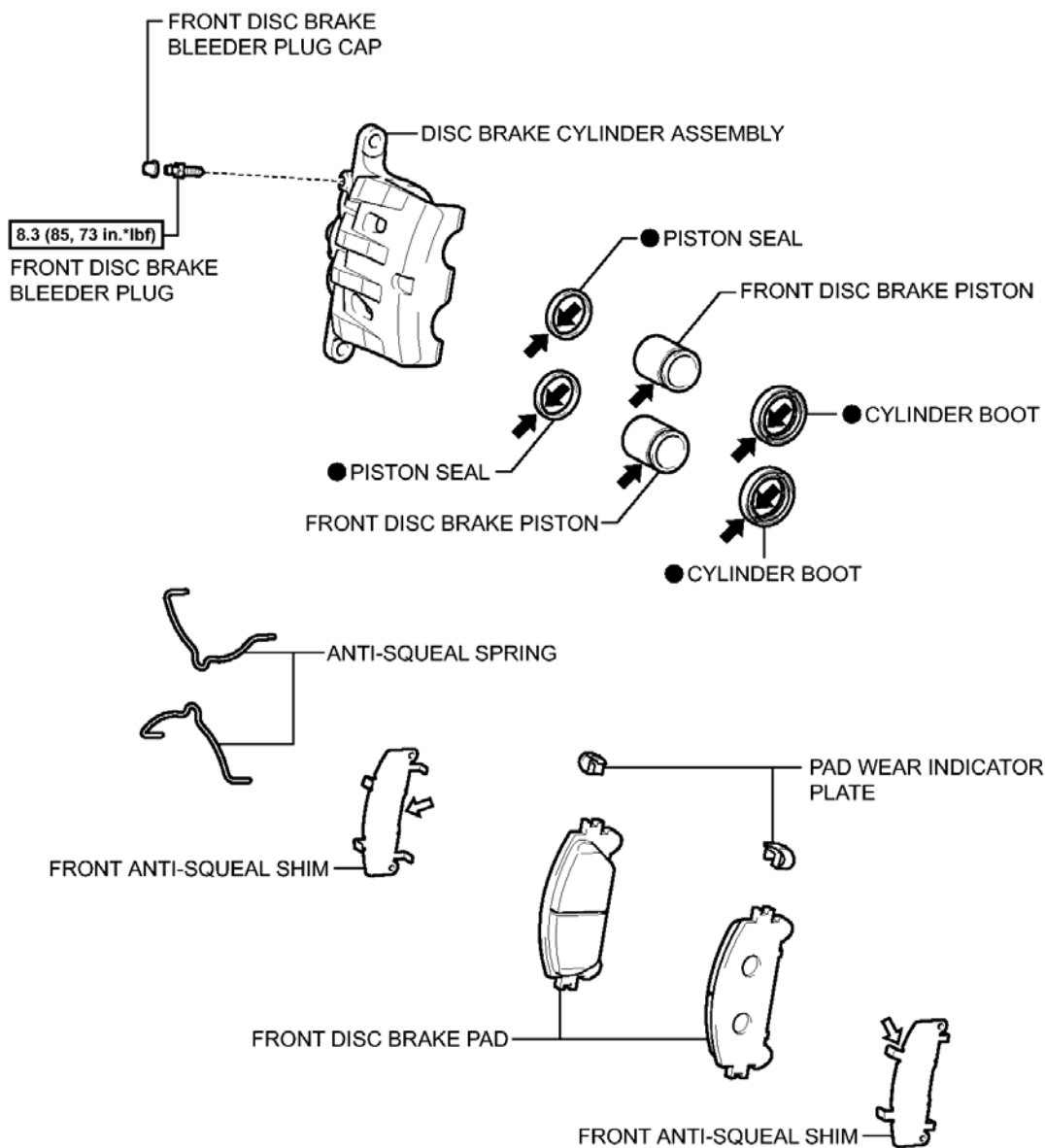
[N\*m (kgf\*cm, ft.\*lbf)] : Specified torque

● Non-reusable part

← Lithium soap base glycol grease

**Fig. 1: Front Brake Replacement Components With Torque Specifications**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION



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

● Non-reusable part

← Lithium soap base glycol grease

⇐ Disc brake grease

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**Fig. 2: Exploded View Of Front Brake Caliper With Torque Specifications**  
**Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.**

## REMOVAL

## REMOVAL

### HINT:

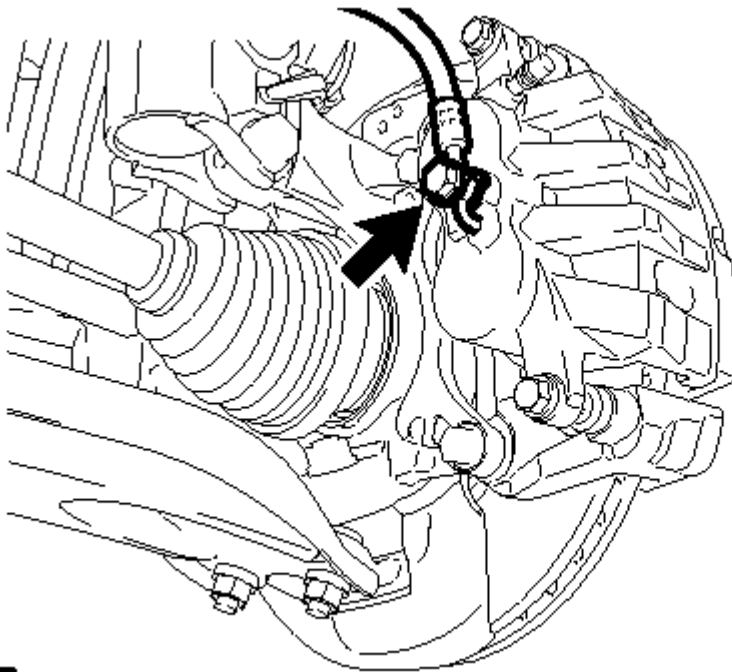
- Use the same procedure for the RH side and LH side.
- The following procedure is for the LH side.

1. **REMOVE FRONT WHEEL**
2. **DRAIN BRAKE FLUID**

**NOTE:** If brake fluid leaks onto any painted surface, immediately wash it off.

3. **DISCONNECT FRONT FLEXIBLE HOSE**

- a. Remove the union bolt and gasket, and disconnect the front flexible hose from the disc brake cylinder assembly.



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**Fig. 3: Identifying Front Flexible Hose Union Bolt & Gasket**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **REMOVE DISC BRAKE CYLINDER ASSEMBLY**

- a. Hold the 2 front disc brake cylinder slide pins and remove the 2 bolts and disc brake cylinder assembly.

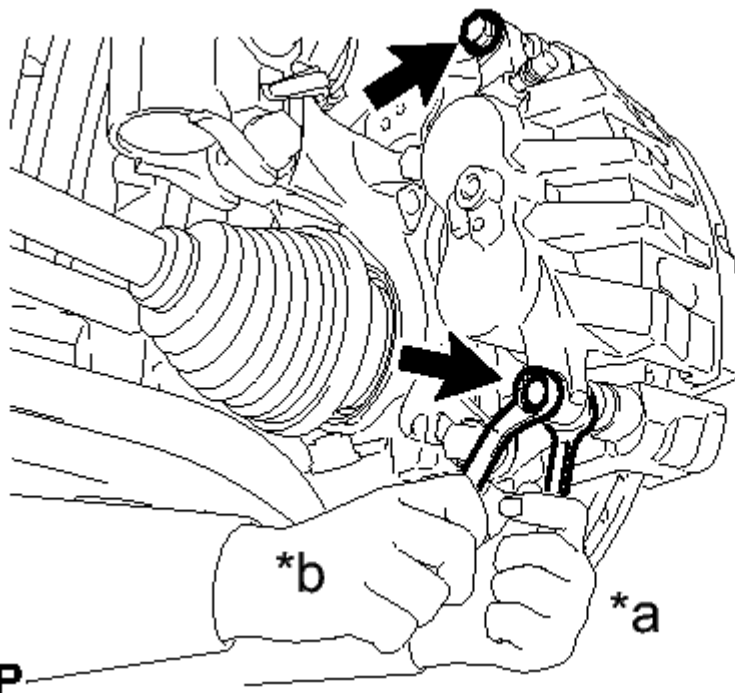


**Fig. 4: Removing Disc Brake Cylinder Assembly Bolts While Holding Slide Pins**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

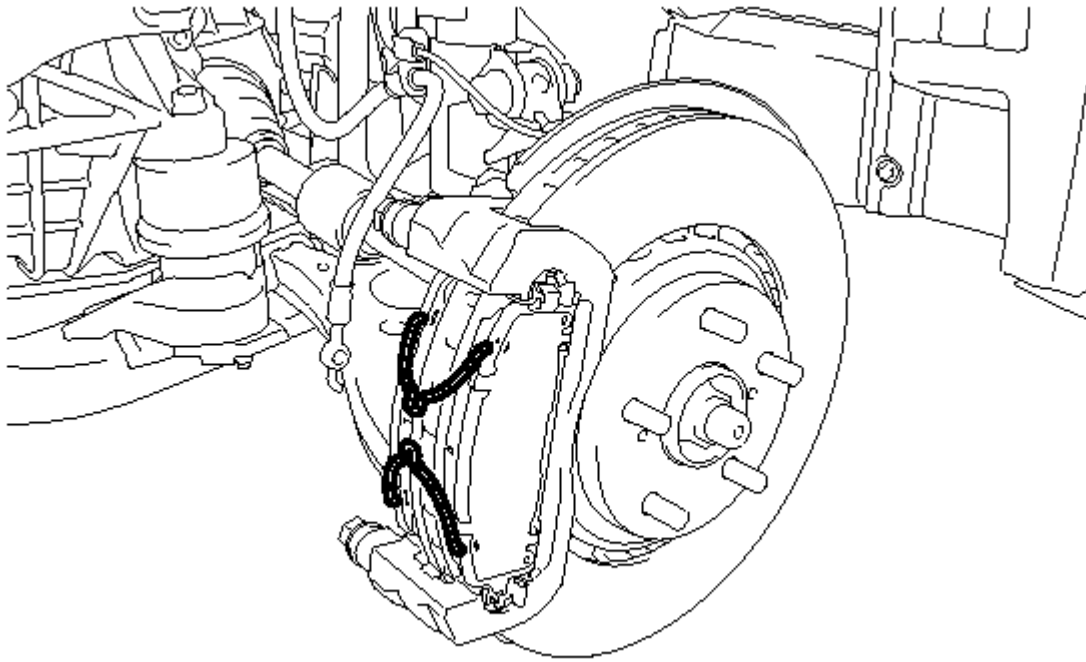
**TEXT IN ILLUSTRATION**

|    |      |
|----|------|
| *a | Hold |
| *b | Turn |

**NOTE:** Remove the disc brake cylinder assembly while holding both of the front disc brake pads because the anti-squeal springs may fall off the front disc brake pads.

**5. REMOVE FRONT DISC BRAKE PAD**

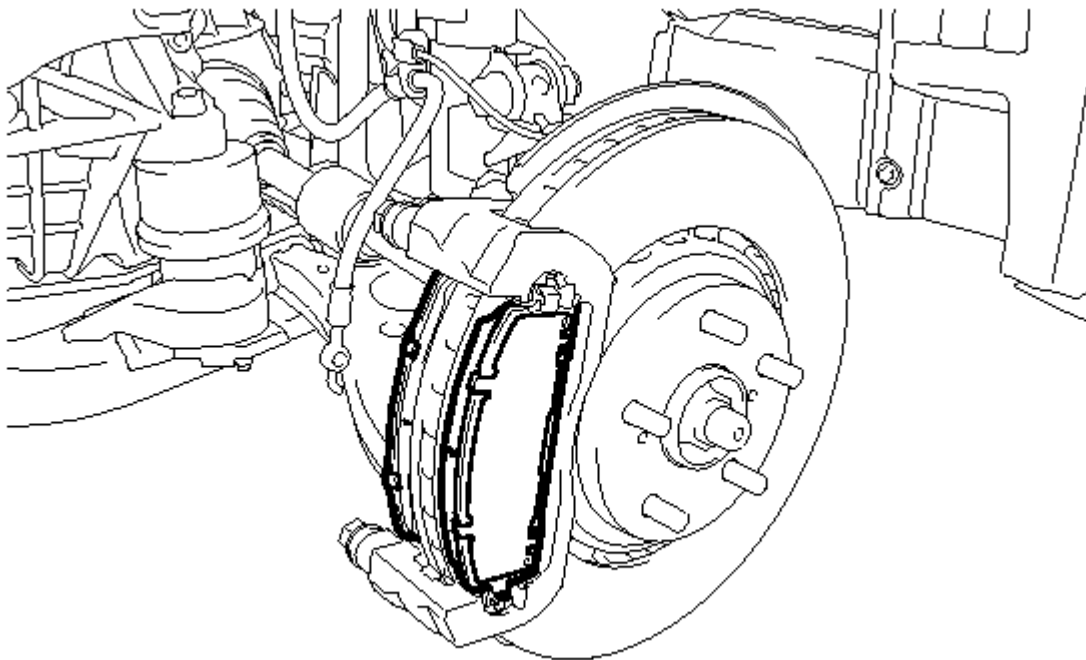
- a. Remove the 2 anti-squeal springs.



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**Fig. 5: Identifying Front Disc Brake Pad Anti-Squeal Springs**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Remove the 2 front disc brake pads from the front disc brake cylinder mounting.



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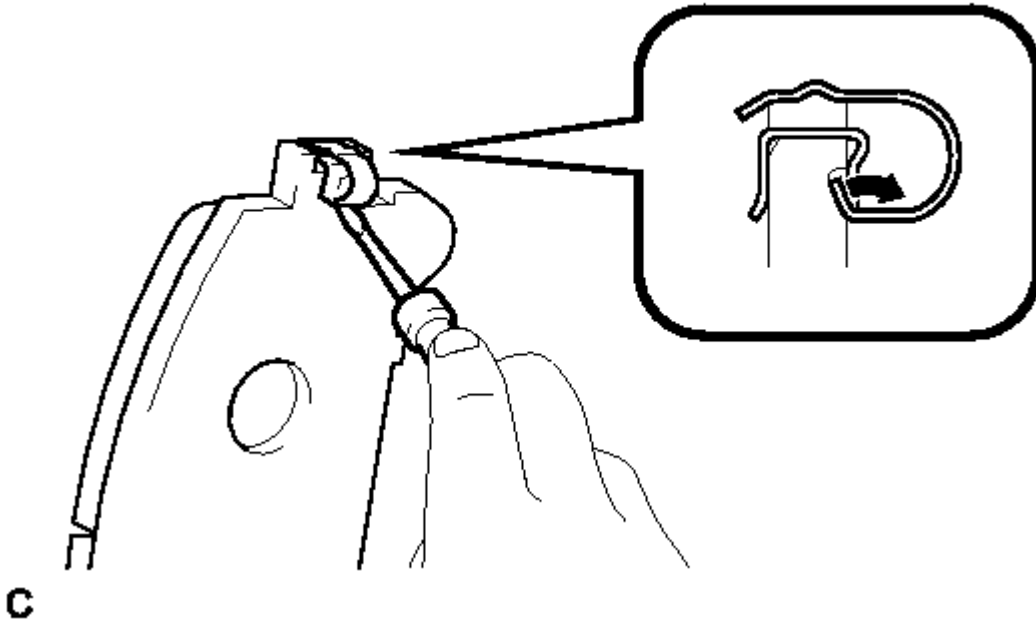
**Fig. 6: Identifying Front Disc Brake Pads**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**6. REMOVE FRONT ANTI-SQUEAL SHIM**

- a. Remove the 2 front anti-squeal shims from the front disc brake pads.

**7. REMOVE PAD WEAR INDICATOR PLATE**

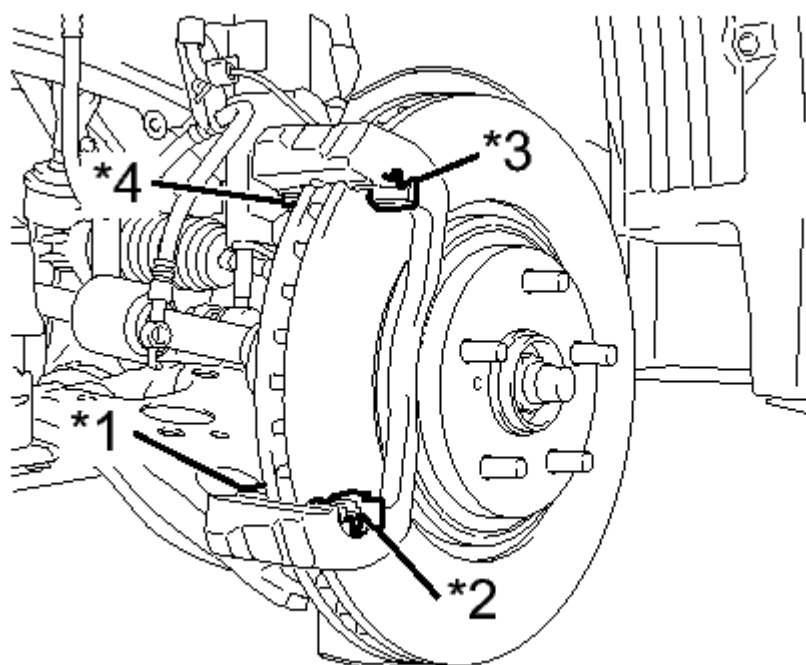
- a. Using a screwdriver, remove the 2 pad wear indicator plates from the front disc brake pads as shown in the illustration.



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**Fig. 7: Removing Pad Wear Indicator Plate With Screwdriver**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**8. REMOVE FRONT DISC BRAKE PAD SUPPORT PLATE**

- a. Remove the 4 front disc brake pad support plates from the front disc brake cylinder mounting.



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**Fig. 8: Identifying Front Disc Brake Pad Support Plates**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**TEXT IN ILLUSTRATION**

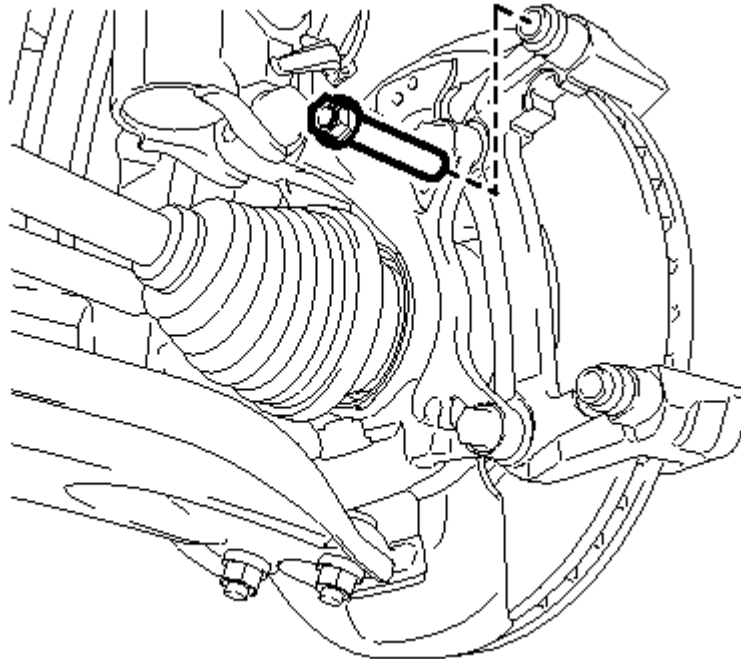
|    |                                                            |
|----|------------------------------------------------------------|
| *1 | No. 1<br>Front<br>Disc<br>Brake<br>Pad<br>Support<br>Plate |
| *2 | No. 2<br>Front<br>Disc<br>Brake<br>Pad<br>Support<br>Plate |
| *3 | No. 3<br>Front<br>Disc<br>Brake<br>Pad<br>Support<br>Plate |
|    | No. 4<br>Front                                             |

|  |                                             |
|--|---------------------------------------------|
|  | Disc<br>Brake<br>*4 Pad<br>Support<br>Plate |
|--|---------------------------------------------|

**NOTE:** Each front disc brake pad support plate has a different shape. Be sure to put an identification mark on each front disc brake pad support plate so that they can be reinstalled to their original position.

**9. REMOVE NO. 1 FRONT DISC BRAKE CYLINDER SLIDE PIN**

- a. Remove the No. 1 front disc brake cylinder slide pin from the front disc brake cylinder mounting.

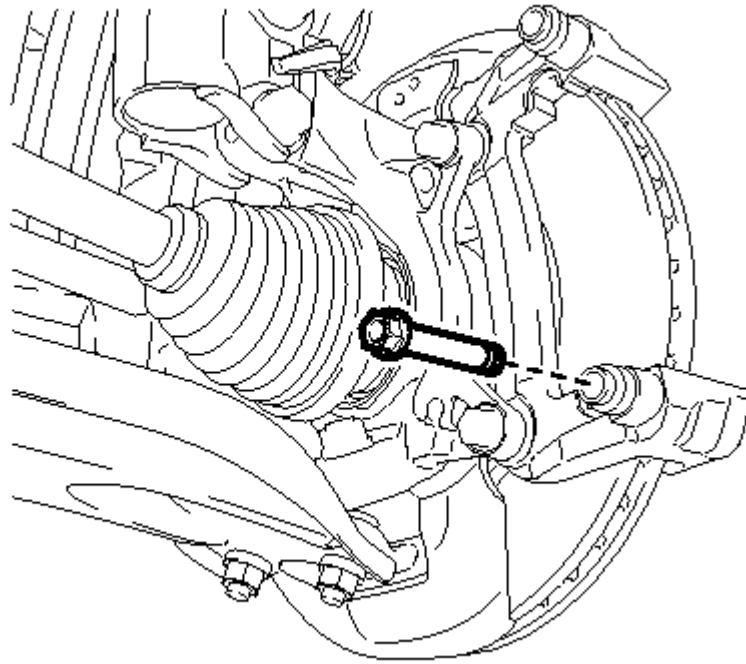


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**Fig. 9: Identifying No. 1 Front Disc Brake Cylinder Slide Pin**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**10. REMOVE NO. 2 FRONT DISC BRAKE CYLINDER SLIDE PIN**

- a. Remove the No. 2 front disc brake cylinder slide pin from the front disc brake cylinder mounting.

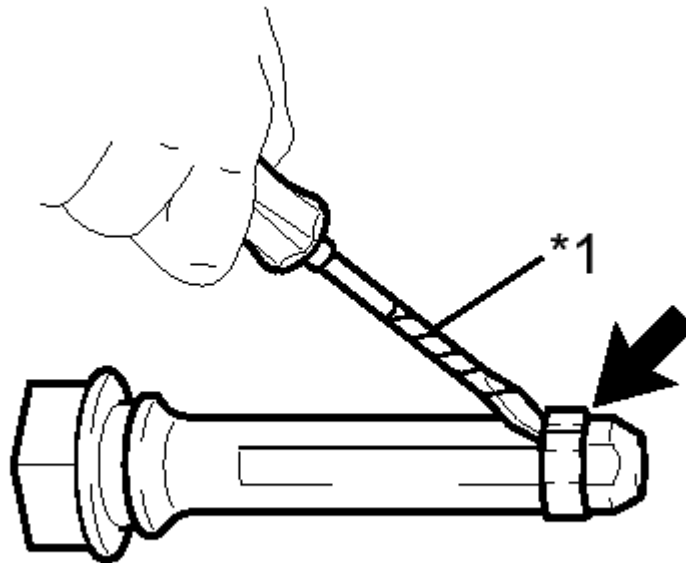


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**Fig. 10: Identifying No. 2 Front Disc Brake Cylinder Slide Pin**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**11. REMOVE FRONT DISC BRAKE CYLINDER SLIDE BUSH**

- a. Using a screwdriver with its tip wrapped with protective tape, remove the front disc brake cylinder slide bush from the No. 2 front disc brake cylinder slide pin.



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**Fig. 11: Removing No. 1 Rear Disc Brake Cylinder Slide Pin Bush With Screwdriver**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

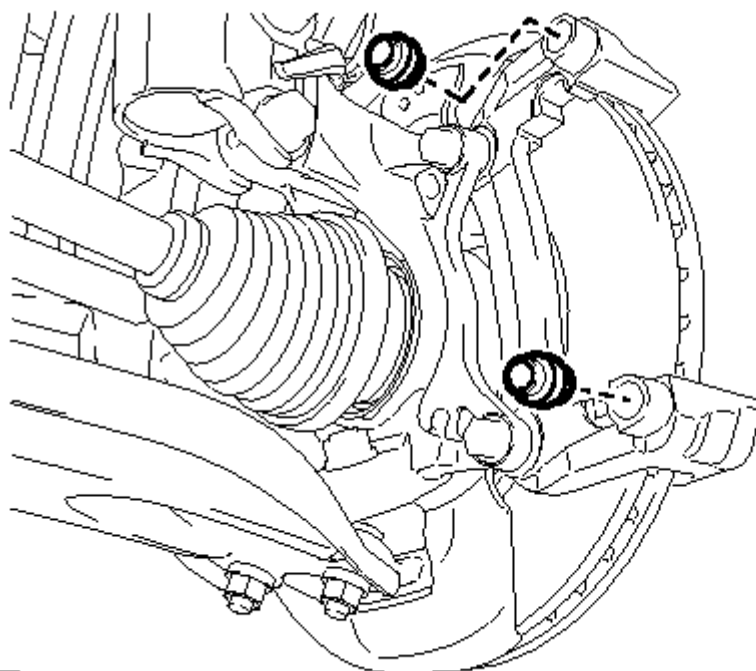
**TEXT IN ILLUSTRATION**



**NOTE:** Do not damage the No. 2 front disc brake cylinder slide pin.

**12. REMOVE FRONT DISC BRAKE BUSH DUST BOOT**

- a. Remove the 2 front disc brake bush dust boots from the front disc brake cylinder mounting.

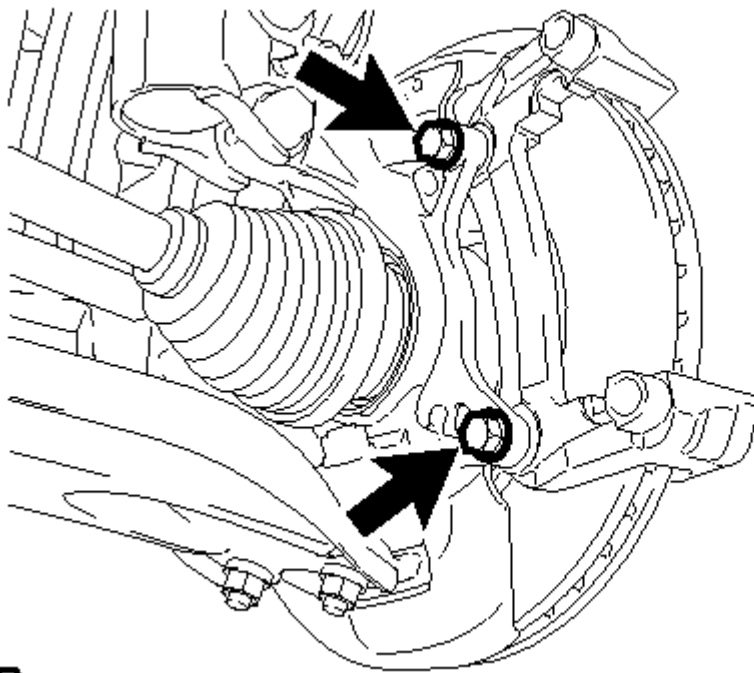


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**Fig. 12: Identifying Front Disc Brake Bush Dust Boots**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**13. REMOVE FRONT DISC BRAKE CYLINDER MOUNTING**

- a. Remove the 2 bolts and front disc brake cylinder mounting from the steering knuckle.

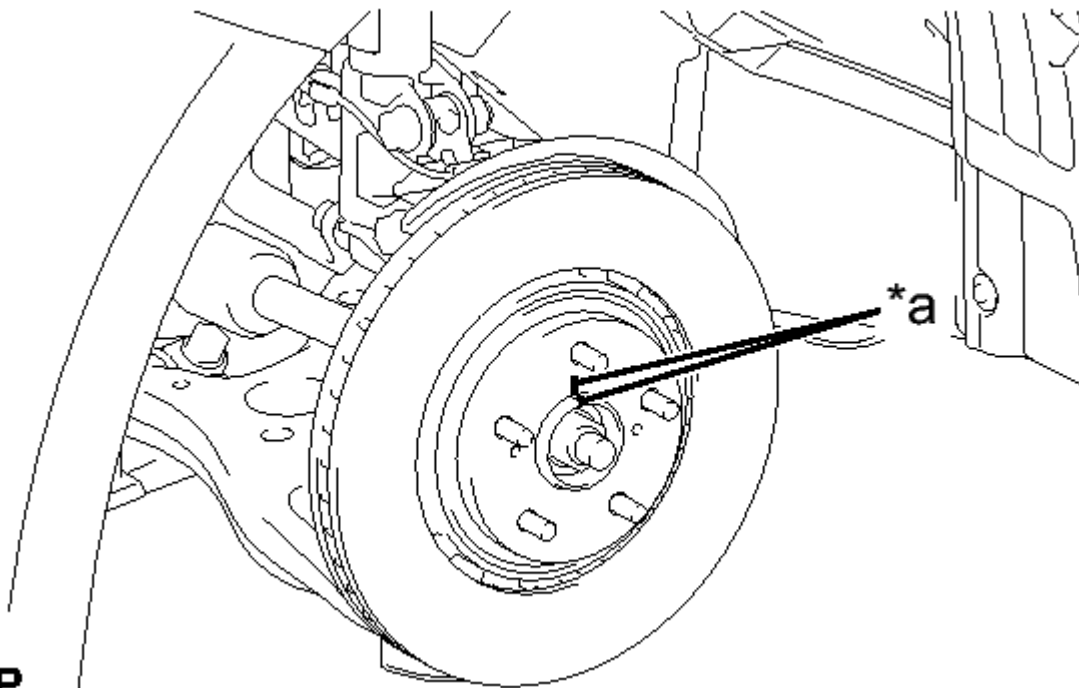


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**Fig. 13: Identifying Front Disc Brake Cylinder Mounting Bolts**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**14. REMOVE FRONT DISC**

- a. Remove the front disc.



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**Fig. 14: Identifying Front Disc & Axle Hub Matchmarks**

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

**TEXT IN ILLUSTRATION**

\*a Matchmark

**HINT:**

Put matchmarks on the disc and the axle hub.

**DISASSEMBLY**

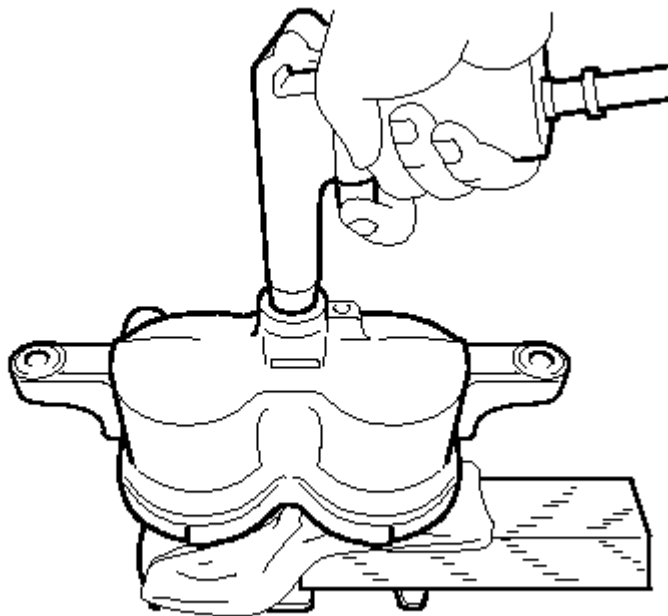
**DISASSEMBLY**

**HINT:**

Perform the removal and installation of the front disc brake piston, cylinder boot and piston seal one side at a time.

**1. REMOVE FRONT DISC BRAKE PISTON**

- a. Place a piece of cloth between the disc brake pistons and the disc brake cylinder assembly.



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**Fig. 15: Removing Front Disc Brake Piston**

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

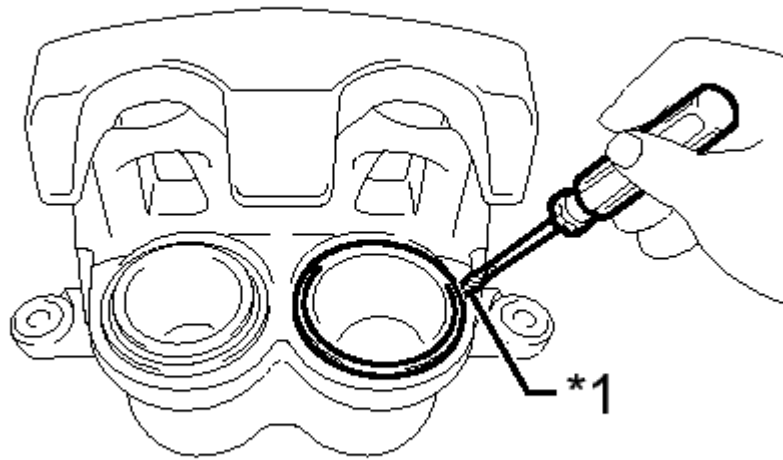
- b. Using compressed air, remove one of the disc brake pistons from the disc brake cylinder assembly.

**WARNING:** Do not place your fingers in front of the front disc brake piston when using compressed air.

**NOTE:** Do not allow any brake fluid to spatter.

## 2. REMOVE CYLINDER BOOT

- a. Using a screwdriver with its tip wrapped with protective tape, remove the cylinder boot from the disc brake cylinder assembly.



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**Fig. 16: Remove The Cylinder Boot**

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

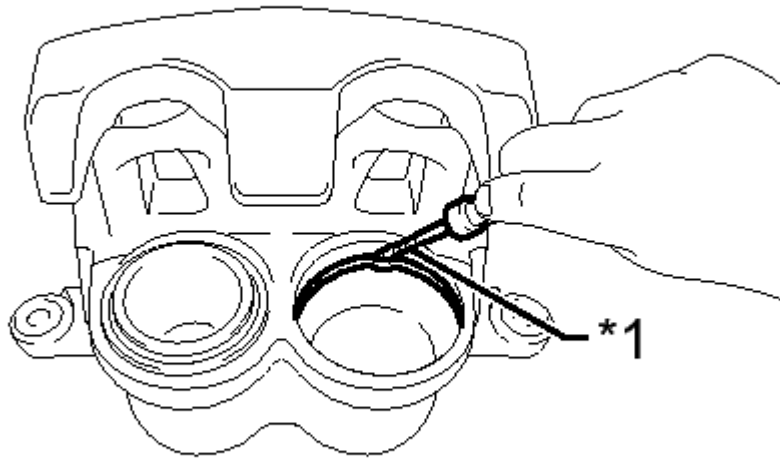
### TEXT IN ILLUSTRATION

|    |                    |
|----|--------------------|
| *1 | Protective<br>Tape |
|----|--------------------|

**NOTE:** Be careful not to damage the front disc brake cylinder.

## 3. REMOVE PISTON SEAL

- a. Using a screwdriver with its tip wrapped with protective tape, remove the piston seal from the disc brake cylinder assembly.



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**Fig. 17: Remove The Piston Seal**

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

**TEXT IN ILLUSTRATION**

|    |                    |
|----|--------------------|
| *1 | Protective<br>Tape |
|----|--------------------|

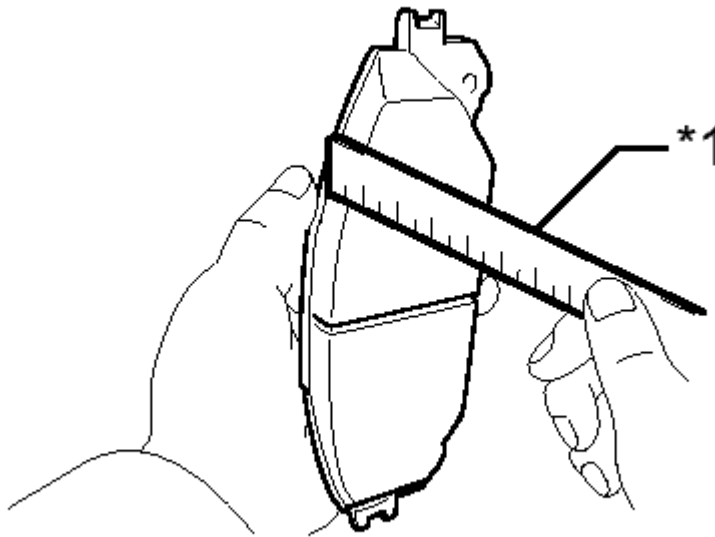
**NOTE:** Be careful not to damage the inner cylinder or cylinder groove.

4. REMOVE FRONT DISC BRAKE BLEEDER PLUG CAP
5. REMOVE FRONT DISC BRAKE BLEEDER PLUG

**INSPECTION**

**INSPECTION**

1. INSPECT PAD LINING THICKNESS
  - a. Using a ruler, measure the pad lining thickness.



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**Fig. 18: Inspecting Brake Pads**

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

**TEXT IN ILLUSTRATION**

**\*1 Ruler**

Standard thickness

12.0 mm (0.472 in.)

Minimum thickness

1.0 mm (0.0394 in.)

If the pad lining thickness is less than the minimum, replace the brake pads.

**HINT:**

Be sure to check wear of the front disc after replacing the brake pads with new ones.

**2. INSPECT DISC THICKNESS**

- a. Using a micrometer, measure the disc thickness.

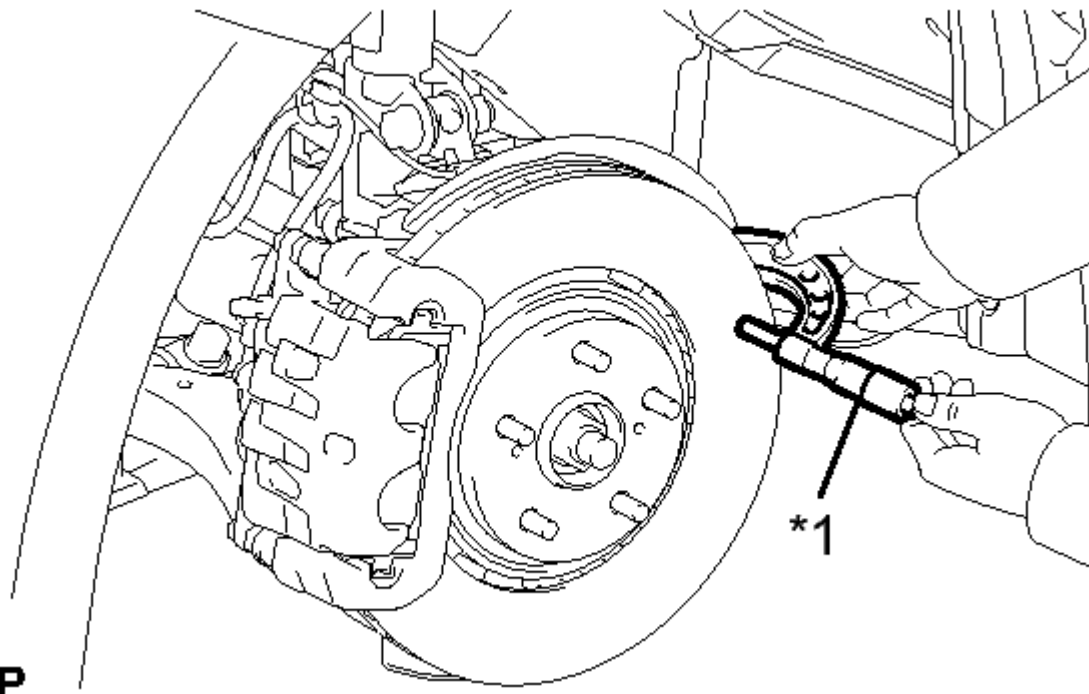


**Fig. 19: Measuring Disc Thickness With Micrometer**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**TEXT IN ILLUSTRATION**

\*1 Micrometer

Standard thickness

28.0 mm (1.10 in.)

Minimum thickness

25.0 mm (0.984 in.)

If the disc thickness is less than the minimum, replace the front disc.

**3. INSPECT BRAKE CYLINDER AND PISTON**

- a. Check the cylinder bore and piston for rust or scoring. If necessary, replace the disc brake cylinder assembly and piston.

**4. INSPECT FRONT DISC BRAKE PAD SUPPORT PLATE**

- a. Inspect the front disc brake pad support plate. If necessary, replace the front brake pad support plate.

**HINT:**

Make sure that the pad support plate has sufficient rebound, no deformation, cracks or wear, and

that all rust and dirt are cleaned off.

## 5. INSPECT DISC RUNOUT

- a. Using SST to hold the disc, tighten the disc with the 5 hub nuts.

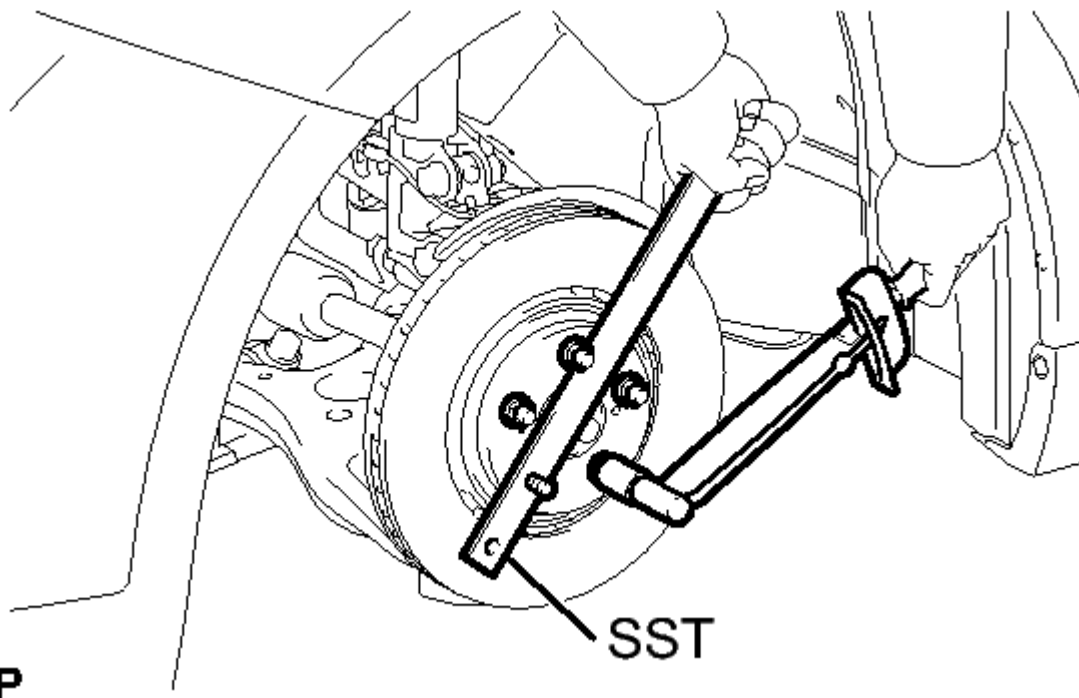
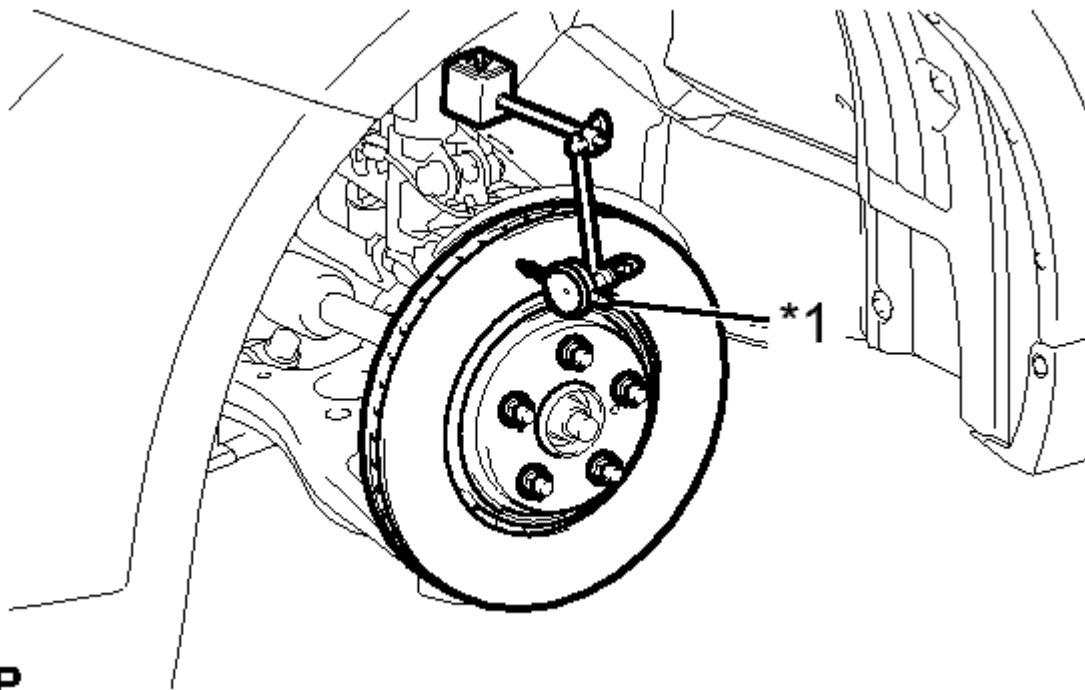


**Fig. 20: Tightening Disc Hub Nuts Using SST & Torque Wrench**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09330-00021

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

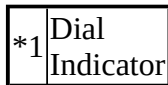
- b. Using a dial indicator, measure the disc runout 10 mm (0.394 in.) away from the outer edge of the front disc.



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**Fig. 21: Measuring Disc Runout With Dial Indicator**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**TEXT IN ILLUSTRATION**



Maximum disc runout

0.05 mm (0.00197 in.)

**NOTE:**

- Keep the magnet of the dial indicator away from the axle hub and speed sensor.
- Install the dial indicator to the shock absorber.

**HINT:**

If the runout exceeds the maximum value, change the installation position of the disc on the front axle hub to minimize the runout. If the runout exceeds the maximum even after the installation position is changed, check the bearing play in the axial direction and the axle hub runout. Refer to **ON-VEHICLE INSPECTION** . If the bearing play and the axle hub runout are normal and if the disc thickness is not within the specified range, grind the disc. If the disc thickness is less than the minimum, replace the disc.

- c. Remove the 5 hub nuts and the front disc.

## REASSEMBLY

## REASSEMBLY

### HINT:

Perform the removal and installation of the front disc brake piston, cylinder boot and piston seal one side at a time.

#### 1. TEMPORARILY TIGHTEN FRONT DISC BRAKE BLEEDER PLUG

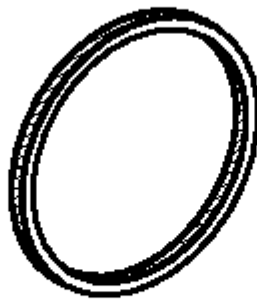
- a. Temporarily tighten the front disc brake bleeder plug to the disc brake cylinder assembly.

#### 2. INSTALL FRONT DISC BRAKE BLEEDER PLUG CAP

- a. Install the bleeder plug cap to the front disc brake bleeder plug.

#### 3. INSTALL PISTON SEAL

- a. Apply a light layer of lithium soap base glycol grease to the entire circumference of a new piston seal.



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**Fig. 22: Identifying Piston Seal Greasing Area**

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

#### TEXT IN ILLUSTRATION

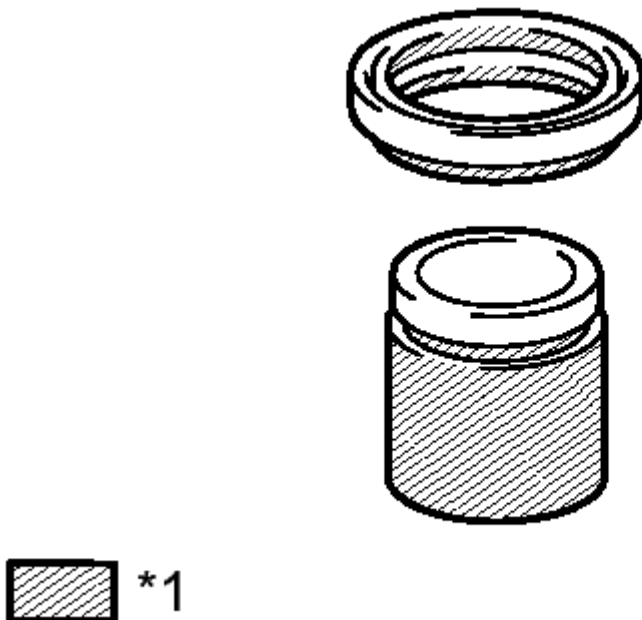
|    |                  |
|----|------------------|
| *1 | Lithium          |
|    | soap             |
|    | base             |
|    | glycol<br>grease |

- b. Install the piston seal to the disc brake cylinder assembly.

**NOTE:**        **Securely install the piston seal into the groove of the disc brake cylinder.**

#### 4. INSTALL CYLINDER BOOT

- a. Apply a light layer of lithium soap base glycol grease to the entire circumference of a new cylinder boot and front disc brake piston.



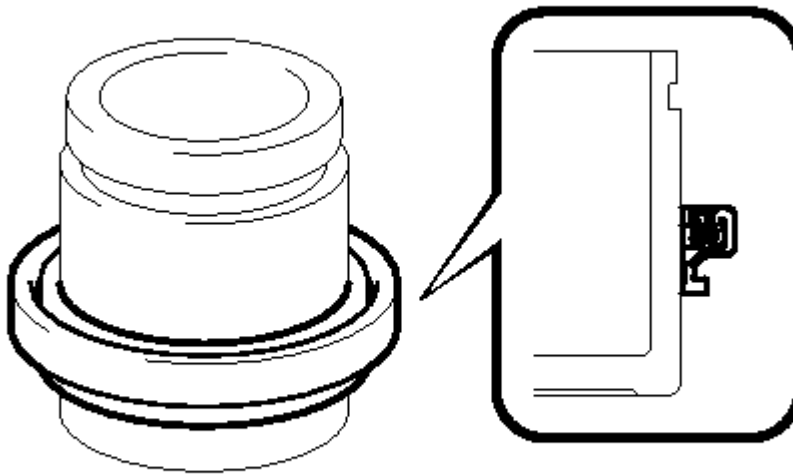
**C**

**Fig. 23: Identifying Cylinder Boot & Piston Greasing Areas**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

#### TEXT IN ILLUSTRATION

|    |                                             |
|----|---------------------------------------------|
|    | Lithium<br>soap<br>base<br>glycol<br>grease |
| *1 |                                             |

- b. Install the cylinder boot to the front disc brake piston as shown in the illustration.

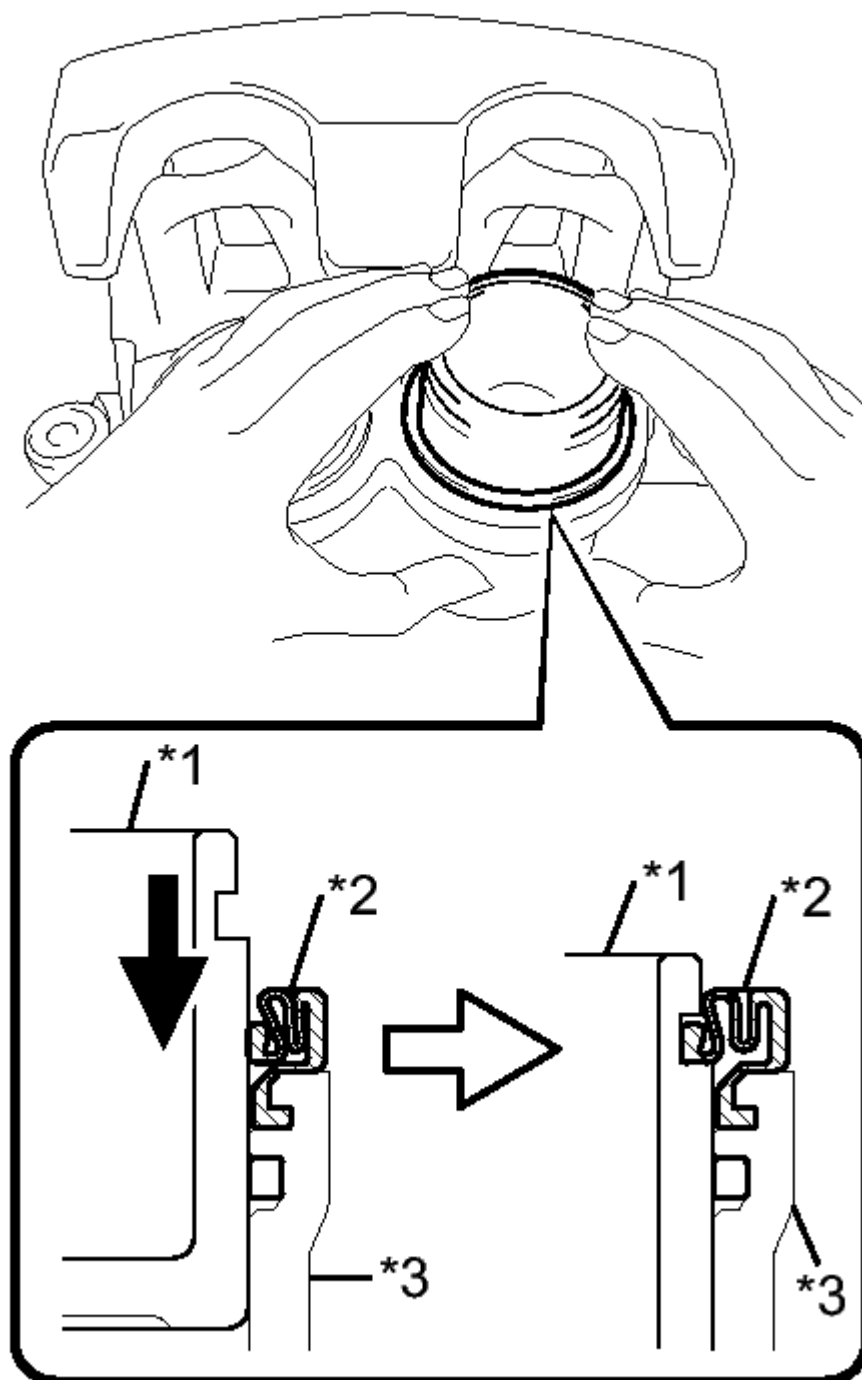


**C**

**Fig. 24: Installing Cylinder Boot To Rear Disc Brake Piston**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**5. INSTALL FRONT DISC BRAKE PISTON**

- a. Install the front disc brake piston and cylinder boot to the disc brake cylinder assembly as shown in the illustration.



**C**

**Fig. 25: Identifying Front Disc Brake Piston & Cylinder Position**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**TEXT IN ILLUSTRATION**

|    |        |
|----|--------|
| *1 | Piston |
|----|--------|

|    |                           |
|----|---------------------------|
| *2 | Cylinder<br>Boot          |
| *3 | Disc<br>Brake<br>Cylinder |

**NOTE:**

- Securely install the cylinder boot into the groove of the cylinder and piston.
- Do not damage the cylinder boot.

## INSTALLATION

### INSTALLATION

**HINT:**

- Use the same procedure for the LH side and RH side.
- The following procedure is for the LH side.

#### 1. INSTALL FRONT DISC

- Align the matchmarks and install the front disc.

**NOTE:**

**When replacing the disc with a new one, select the installation position where the front disc has minimal runout.**

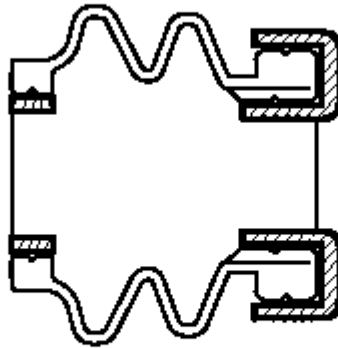
#### 2. INSTALL FRONT DISC BRAKE CYLINDER MOUNTING

- Install the front disc brake cylinder mounting to the steering knuckle with the 2 bolts.

**Torque: 104 N\*m (1061 kgf\*cm, 77 ft.\*lbf)**

#### 3. INSTALL FRONT DISC BRAKE BUSH DUST BOOT

- Apply a light layer of lithium soap base glycol grease to the entire circumference of 2 new front disc brake bush dust boots.



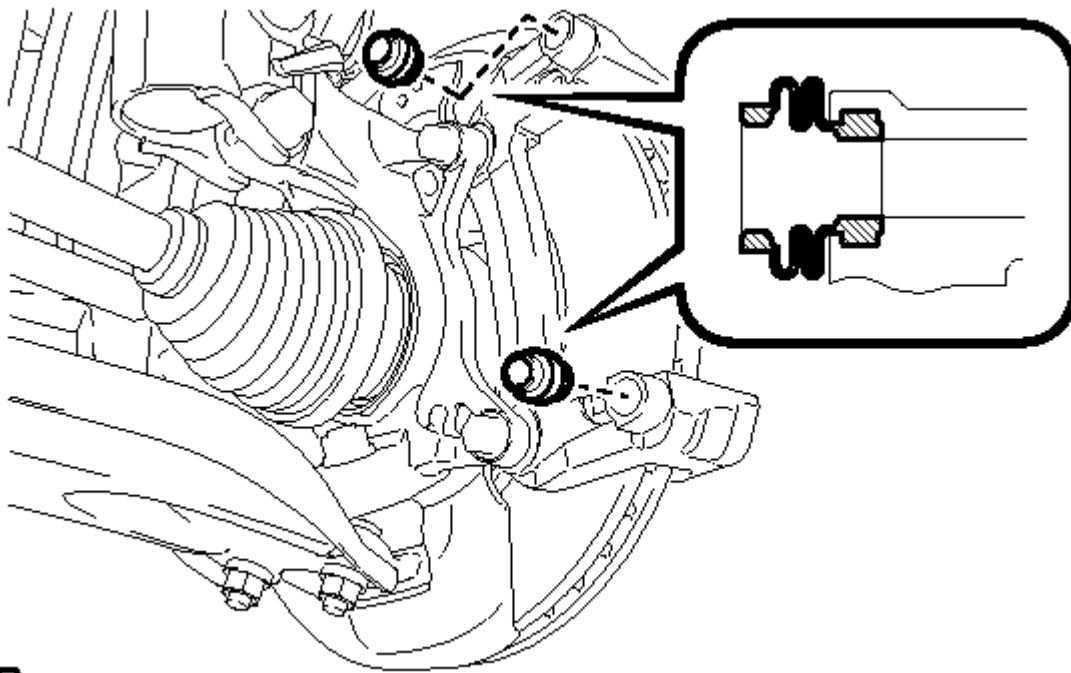
**C**

**Fig. 26: Identifying Dust Boot & Grease Application Areas**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**TEXT IN ILLUSTRATION**

|    |                  |
|----|------------------|
| *1 | Lithium          |
|    | soap             |
|    | base             |
|    | glycol<br>grease |

- b. Install the 2 front disc brake bush dust boots to the front disc brake cylinder mounting.

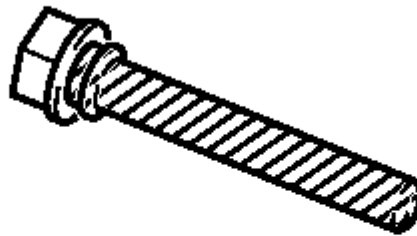


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**Fig. 27: Identifying Front Disc Brake Bush Dust Boots Position**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**4. INSTALL NO. 1 FRONT DISC BRAKE CYLINDER SLIDE PIN**

- a. Apply a light layer of lithium soap base glycol grease to the sliding part and the seal surface of the No. 1 front disc brake cylinder slide pin.



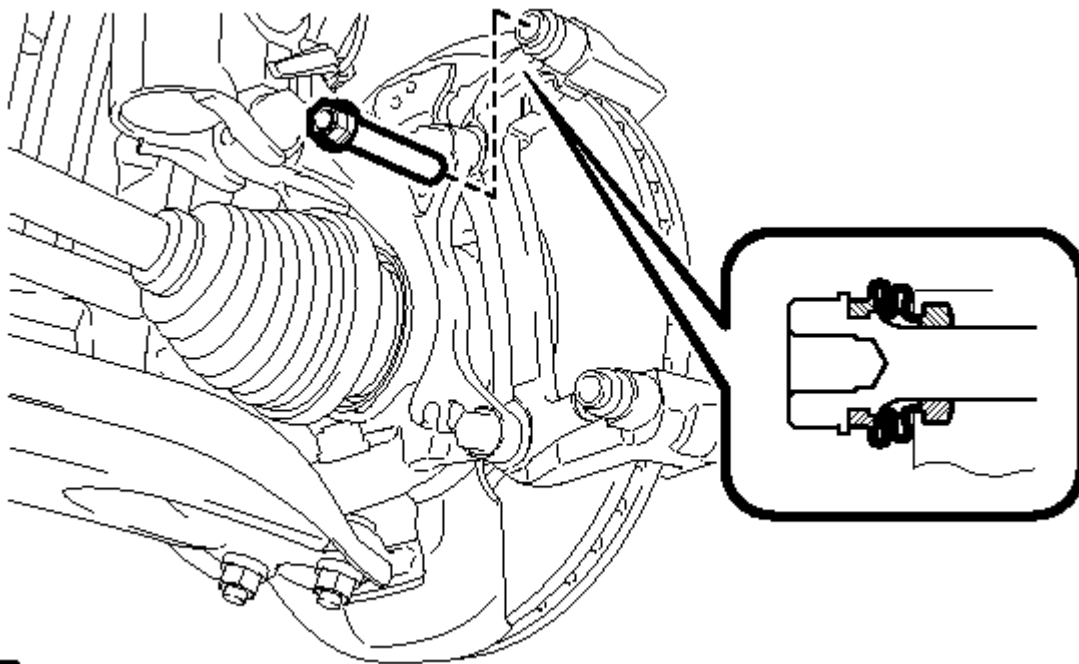
**C**

**Fig. 28: Identifying Slide Pin & Grease Application Area**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**TEXT IN ILLUSTRATION**

|    |         |
|----|---------|
|    | Lithium |
|    | soap    |
| *1 | base    |
|    | glycol  |
|    | grease  |

- b. Install the No. 1 front disc brake cylinder slide pin to the front disc brake cylinder mounting.



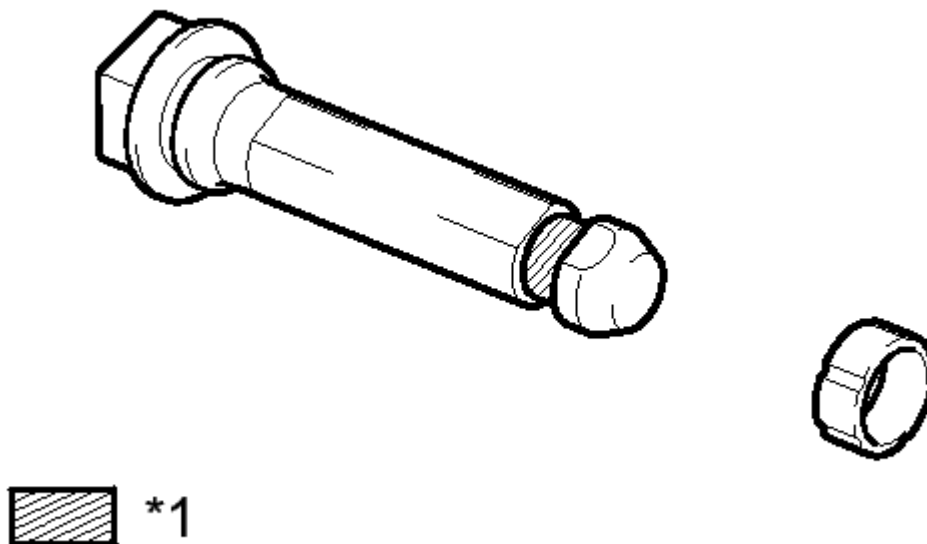
**P**

**Fig. 29: Identifying No. 1 Front Disc Brake Cylinder Slide Pin & Bush Dust Boot Alignment**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Push the No. 1 front disc brake cylinder slide pin into the front disc brake bush dust boot to align them.

**5. INSTALL FRONT DISC BRAKE CYLINDER SLIDE BUSH**

- a. Apply a light layer of lithium soap base glycol grease to the contact surface of the No. 2 front disc brake cylinder slide pin.



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**Fig. 30: Identifying Slide Bush & Grease Application Area**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

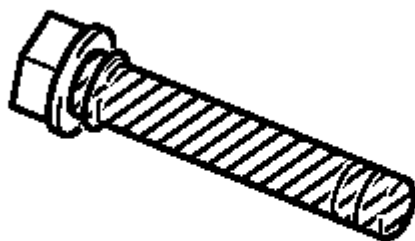
**TEXT IN ILLUSTRATION**

|    |         |
|----|---------|
|    | Lithium |
|    | soap    |
| *1 | base    |
|    | glycol  |
|    | grease  |

- b. Install a new front disc brake cylinder slide bush to the No. 2 front disc brake cylinder slide pin.

**6. INSTALL NO. 2 FRONT DISC BRAKE CYLINDER SLIDE PIN**

- a. Apply a light layer of lithium soap base glycol grease to the sliding part and the seal surface of the No. 2 front disc brake cylinder slide pin.



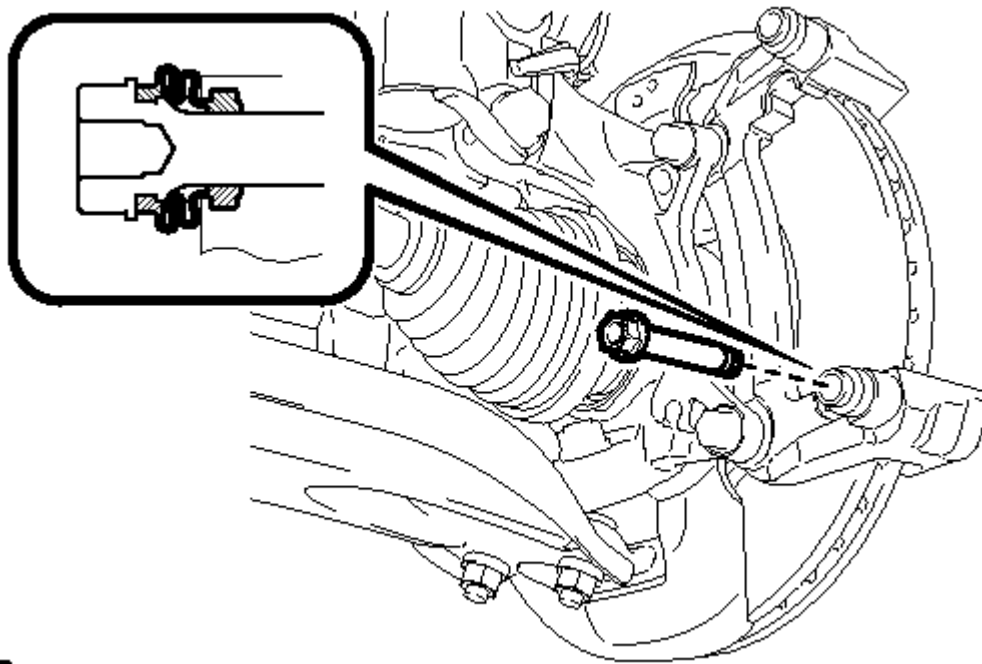
**C**

**Fig. 31: Identifying Slide Pin & Grease Application Area**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**TEXT IN ILLUSTRATION**

|    |         |
|----|---------|
|    | Lithium |
|    | soap    |
| *1 | base    |
|    | glycol  |
|    | grease  |

- b. Install the No. 2 front disc brake cylinder slide pin to the front disc brake cylinder mounting.



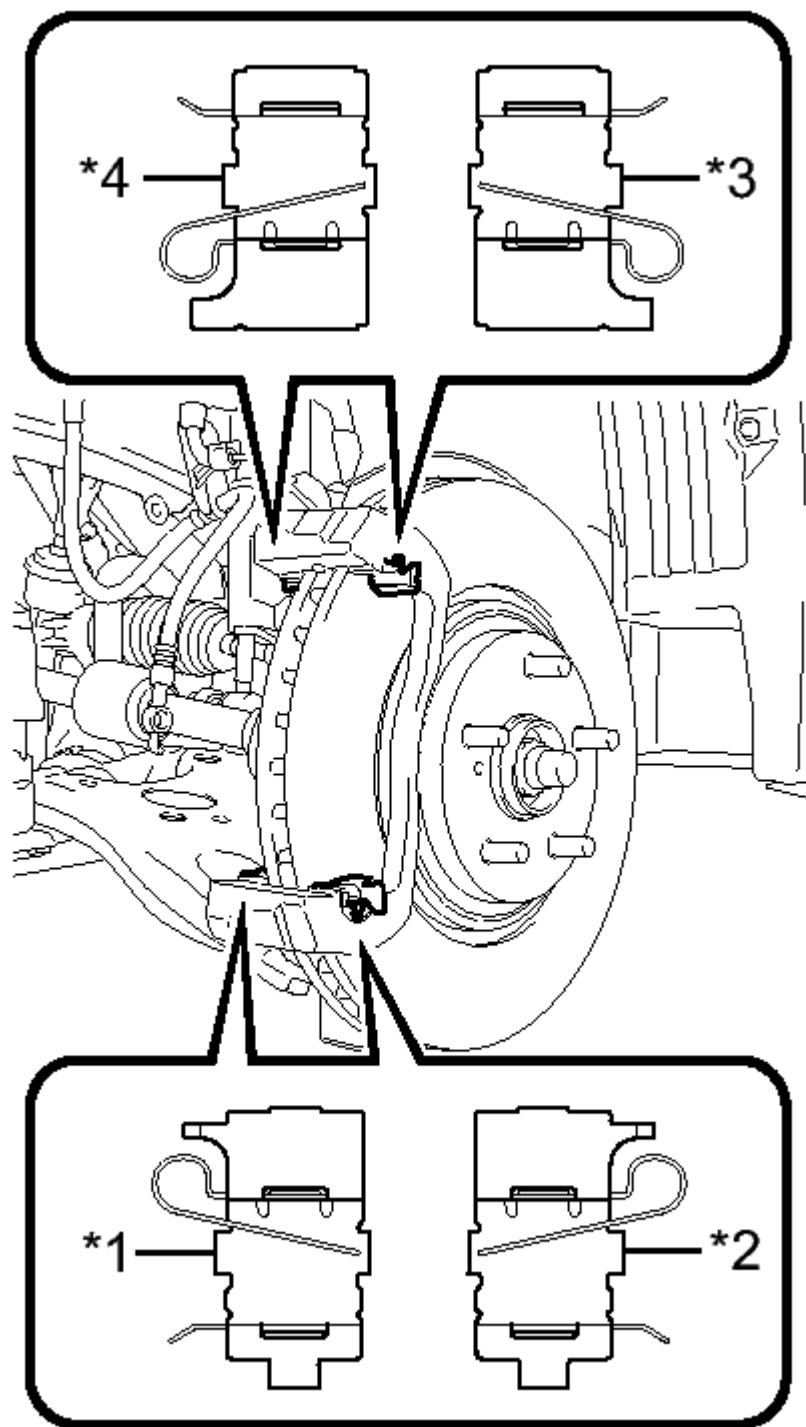
**P**

**Fig. 32: Identifying No. 2 Front Disc Brake Cylinder Slide Pin & Bush Dust Boot Alignment**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Push the No. 2 front disc brake cylinder slide pin into the front disc brake bush dust boot to align them.

#### **7. INSTALL FRONT DISC BRAKE PAD SUPPORT PLATE**

- a. Install the 4 front disc brake pad support plates to the front disc brake cylinder mounting as shown in the illustration.



**P**

**Fig. 33: Identifying Front Disc Brake Pad Support Plates**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**TEXT IN ILLUSTRATION**

|       |
|-------|
| No. 1 |
|-------|

|    |                                                            |
|----|------------------------------------------------------------|
| *1 | Front<br>Disc<br>Brake<br>Pad<br>Support<br>Plate          |
| *2 | No. 2<br>Front<br>Disc<br>Brake<br>Pad<br>Support<br>Plate |
| *3 | No. 3<br>Front<br>Disc<br>Brake<br>Pad<br>Support<br>Plate |
| *4 | No. 4<br>Front<br>Disc<br>Brake<br>Pad<br>Support<br>Plate |

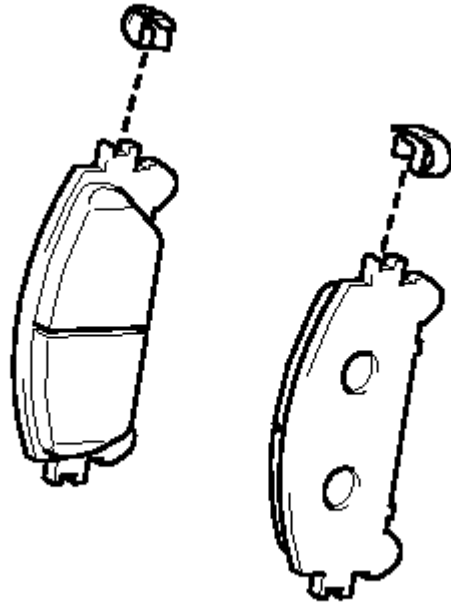
**NOTE:** Be sure to install each front disc brake pad support plate to the correct position and direction.

**HINT:**

The front disc brake pad support plate (lower) has a convex part.

**8. INSTALL PAD WEAR INDICATOR PLATE**

- a. Install the 2 pad wear indicator plates to the pads.



**C**

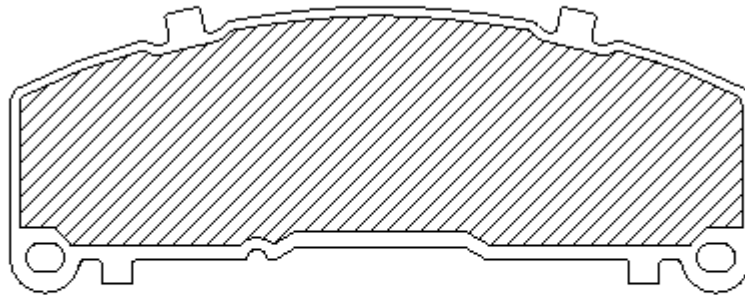
**Fig. 34: Install the 2 Pad Wear Indicator Plates**

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

**NOTE:**        Install the pad wear indicator plates in the correct positions and directions.

**9. INSTALL FRONT ANTI-SQUEAL SHIM**

- a. Apply disc brake grease to the inside of the 2 front anti-squeal shims as shown in the illustration.



**P**

**Fig. 35: Identifying Front Anti-Squeal Shim Greasing Area**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

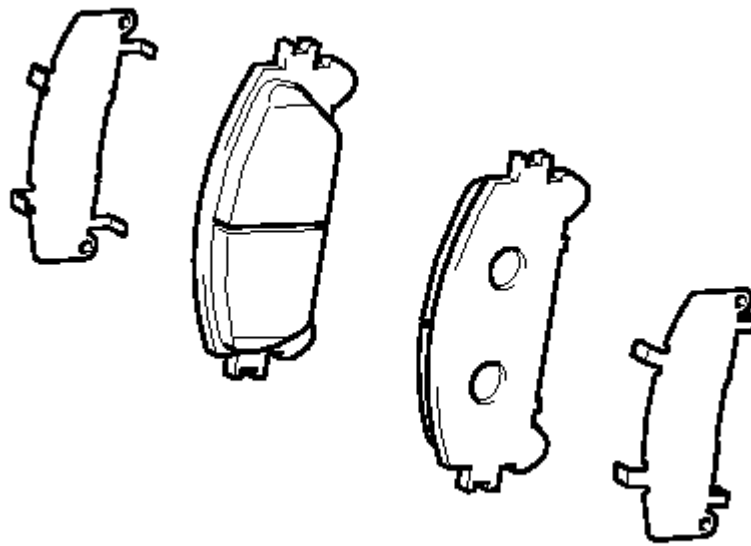
**TEXT IN ILLUSTRATION**

|    |                         |
|----|-------------------------|
| *1 | Disc<br>brake<br>grease |
|----|-------------------------|

**NOTE:**

- When replacing worn pads, the front anti-squeal shims must be replaced together with the pads.
- Apply disc brake grease to the area that contacts the front anti-squeal shims.
- Disc brake grease can come out slightly from the area where the front anti-squeal shims are installed.
- Make sure that disc brake grease is not applied onto the lining surface.

- b. Install the 2 front anti-squeal shims to the front disc brake pads.



**C**

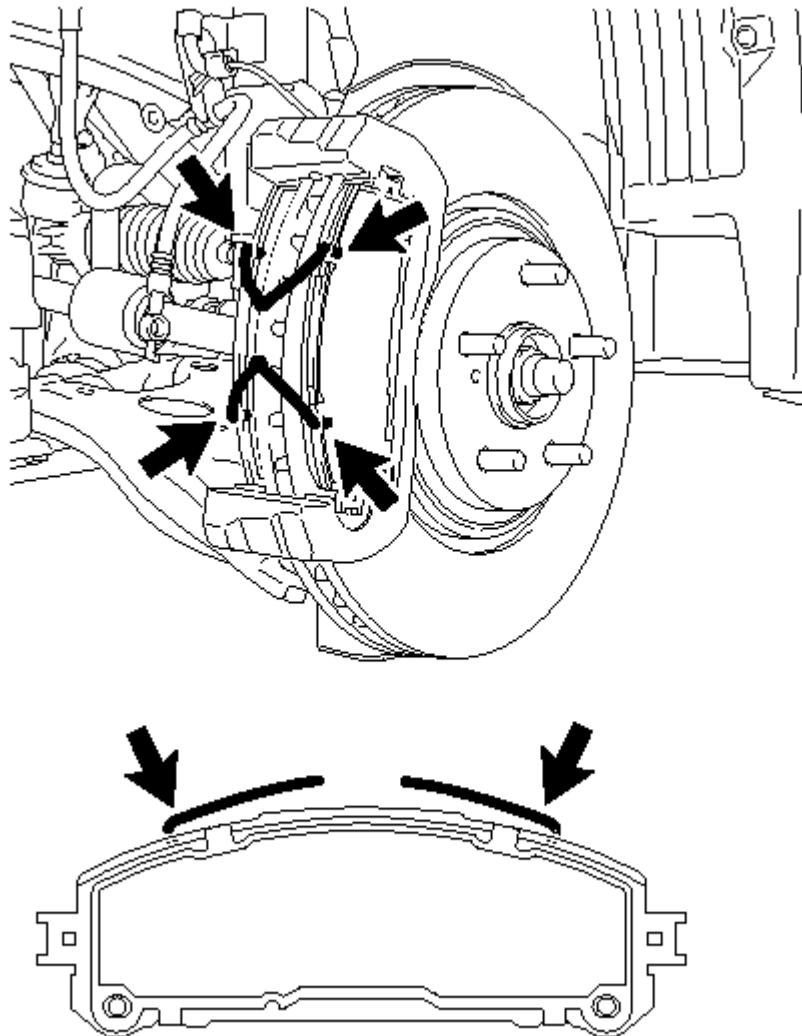
**Fig. 36: Install The 2 Front Anti-Squeal Shims**

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

**NOTE:**        **Install the front anti-squeal shims in the correct positions and directions.**

**10. INSTALL FRONT DISC BRAKE PAD**

- a. Install the 2 front disc brake pads with the front anti-squeal shims to the front disc brake cylinder mounting.
- b. Install the 2 anti-squeal springs to the front disc brake pads.



**P**

**Fig. 37: Identifying Front Disc Brake Pad Anti-Squeal Springs**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**NOTE:**

- When replacing the front disc brake pads with new ones, make sure to replace the anti-squeal springs at the same time.
- Be sure to install the anti-squeal springs into the front disc brake pad installation holes as far as they will go.

**11. INSTALL DISC BRAKE CYLINDER ASSEMBLY**

- a. Hold the 2 front disc brake cylinder slide pins and install the disc brake cylinder assembly with the 2 bolts.

**Torque: 34 N\*m (350 kgf\*cm, 25 ft.\*lbf)**

**NOTE:**

- Install the disc brake cylinder assembly while holding both of the front disc brake pads because the anti-squeal springs may fall off the front disc brake pads.
- Be sure that the anti-squeal springs are installed to the front disc brake pads.

## 12. CONNECT FRONT FLEXIBLE HOSE

- Connect the front flexible hose to the disc brake cylinder assembly with a new gasket and a new union bolt.

**Torque: 29 N\*m (300 kgf\*cm, 22 ft.\*lbf)**

**NOTE:** Install the front flexible hose lock securely in the lock hole in the disc brake cylinder assembly.

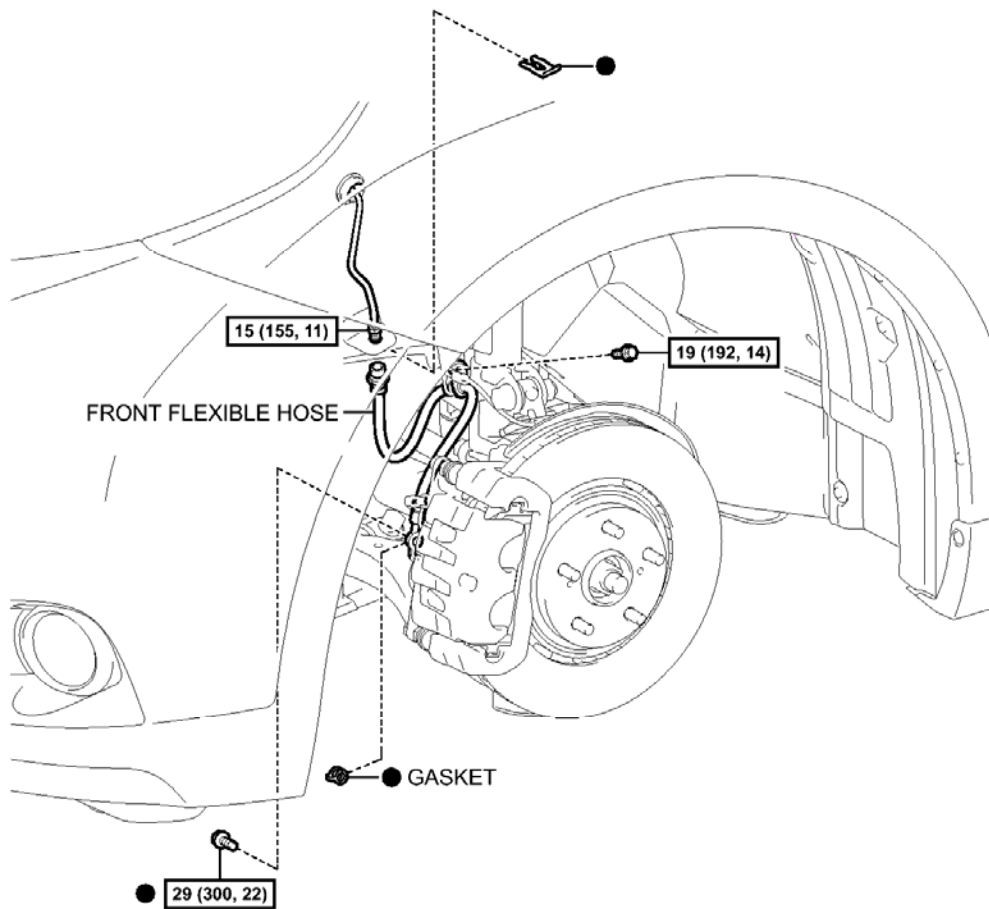
- FILL RESERVOIR WITH BRAKE FLUID** . Refer to REPLACEMENT - Step 2
- BLEED BRAKE LINE** . Refer to BLEEDING - Step 4
- INSPECT FOR BRAKE FLUID LEAK**
- INSPECT FLUID LEVEL IN RESERVOIR** . Refer to ON-VEHICLE INSPECTION - Step 1
- INSTALL FRONT WHEEL**

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

## FRONT BRAKE FLEXIBLE HOSE

### COMPONENTS

### ILLUSTRATION



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

● Non-reusable part

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**Fig. 38: Front Brake Flexible Hose Replacement Components With Torque Specifications**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

## REMOVAL

## REMOVAL

**NOTE:** If both the left and right hoses are disconnected at the same time, be sure to

**place identification marks indicating the position on each side.**

**HINT:**

- Use the same procedure for the LH side and RH side.
- The following procedure is for the LH side.

**REMOVAL**

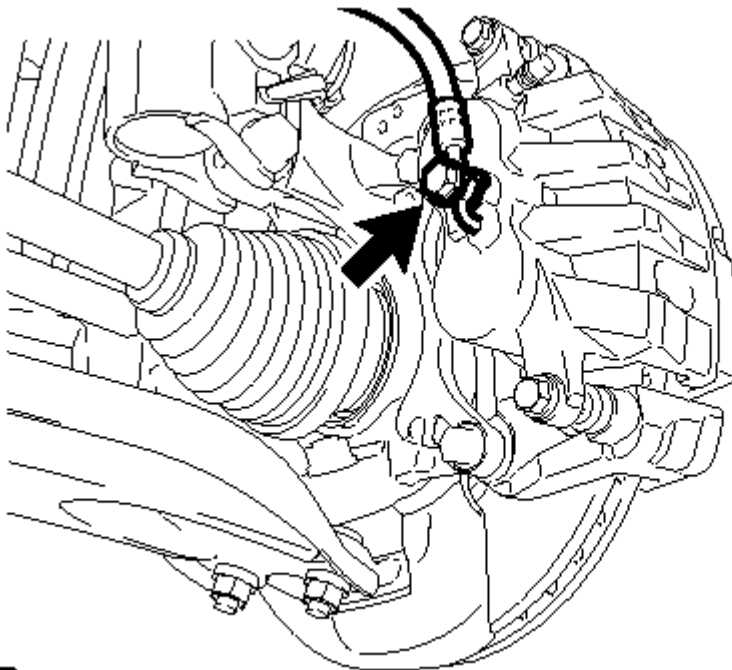
**1. DRAIN BRAKE FLUID**

**NOTE:** If brake fluid leaks onto any painted surface, immediately wash it off.

**2. REMOVE FRONT WHEEL**

**3. REMOVE FRONT FLEXIBLE HOSE**

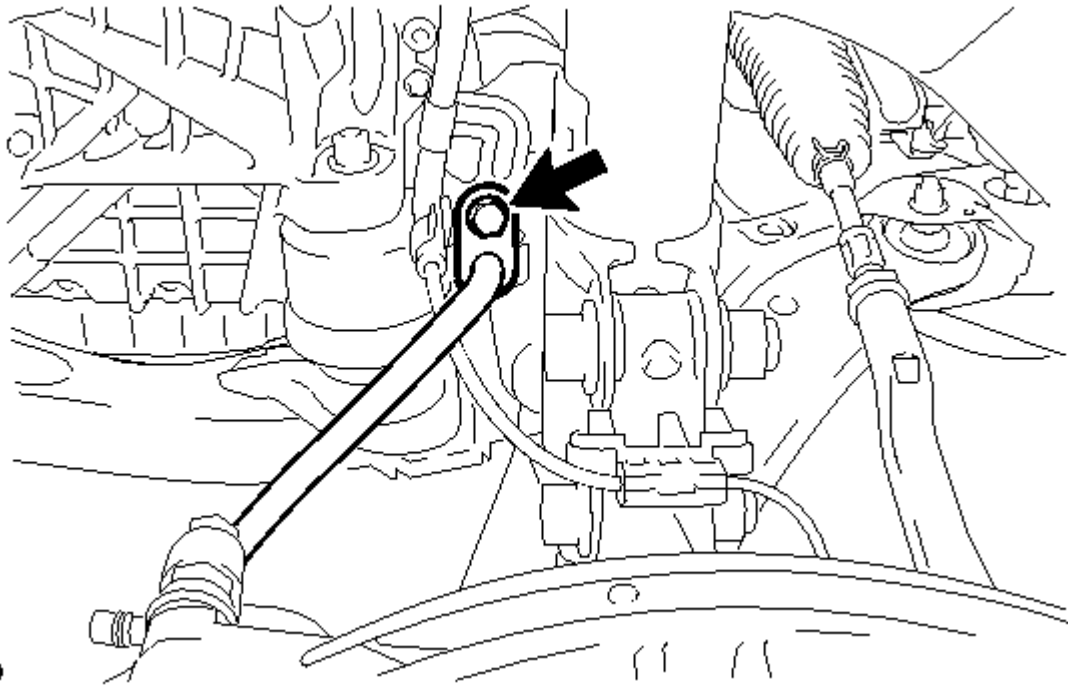
- a. Remove the union bolt and gasket, and separate the front flexible hose.



**P**

**Fig. 39: Identifying Front Flexible Hose Union Bolt & Gasket**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Remove the bolt and front flexible hose from the absorber bracket.

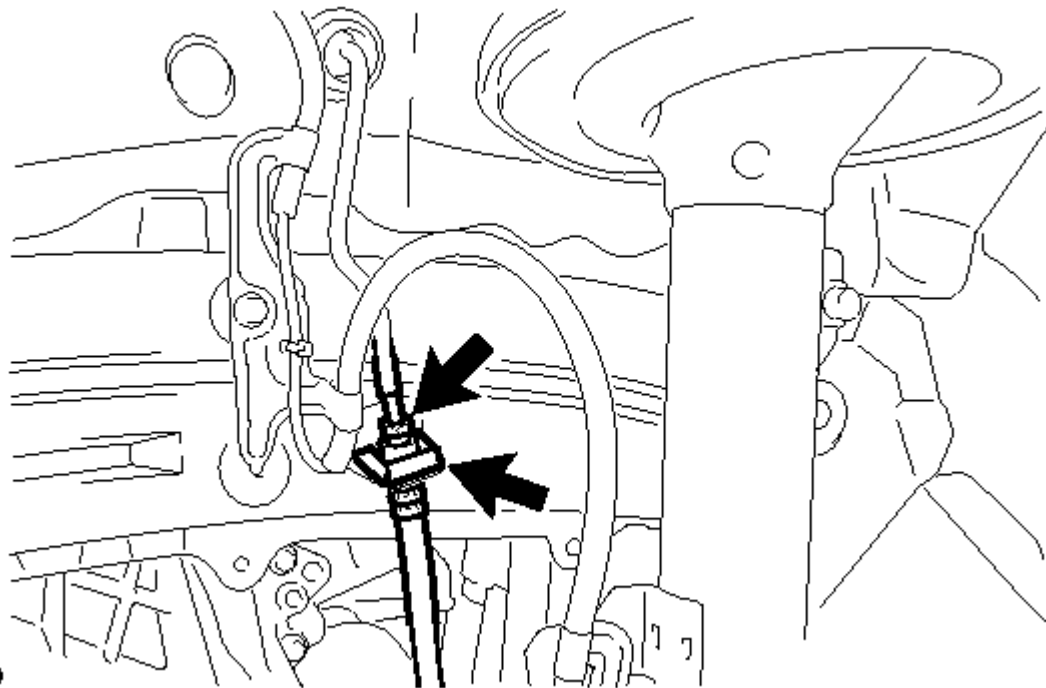


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**Fig. 40: Identifying Brake Line Union Nut**

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

- c. Using a union nut wrench (10 mm), disconnect the brake line from the front flexible hose.



**P**

**Fig. 41: Identifying Front Flexible Hose Union Bolt & Clip**

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

**NOTE:**

- Do not bend or damage the brake line.
- Do not allow any foreign matter such as dirt and dust to enter the brake lines.

d. Remove the clip.

**INSTALLATION****INSTALLATION****NOTE:**

- Because the left and right hoses are not interchangeable, verify the part number when installing the flexible hoses.
- If the hoses are to be reused, connect them after checking the identification marks placed when each hose was disconnected.

**HINT:**

- Use the same procedure for the LH side and RH side.
- The following procedure is for the LH side.

**INSTALLATION****1. INSTALL FRONT FLEXIBLE HOSE**

- a. Connect the front flexible hose to the disc brake cylinder assembly with a new union bolt and a new gasket.

**Torque: 29 N\*m (300 kgf\*cm, 22 ft.\*lbf)**

**HINT:**

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

- b. Install the front flexible hose to the absorber bracket with the bolt.

**Torque: 19 N\*m (192 kgf\*cm, 14 ft.\*lbf)**

- c. Insert the cap of the front flexible hose into the body bracket.

**NOTE:** If the cap of the flexible hose does not match the groove on the bracket, twist the hose slightly (180°Max.) to insert it.

- d. Install the front flexible hose with a new clip.

**NOTE:** Install the clip as far as it will go.

- e. Using a union nut wrench (10 mm), connect the brake line to the front flexible hose.

**Torque: 15 N\*m (155 kgf\*cm, 11 ft.\*lbf)**

**NOTE:**

- Do not bend or damage the brake line.
- Do not allow any foreign matter such as dirt and dust to enter the brake line.
- Use the formula to calculate special torque values for situations where the union nut wrench is combined with a torque wrench. Refer to PRECAUTION .

2. **FILL RESERVOIR WITH BRAKE FLUID** . Refer to REPLACEMENT - Step 2
3. **BLEED BRAKE LINE** . Refer to BLEEDING - Step 4
4. **INSPECT FOR BRAKE FLUID LEAK**
5. **INSPECT FLUID LEVEL IN RESERVOIR** . Refer to ON-VEHICLE INSPECTION - Step 1
6. **INSTALL FRONT WHEEL**

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

## BRAKES

### Brake System (Front) (Service Specifications) - Sienna

## BRAKE (FRONT)

### SERVICE DATA

### SERVICE DATA

|                                  |          |                          |
|----------------------------------|----------|--------------------------|
| Front brake pad lining thickness | Standard | 12.0 mm<br>(0.472 in.)   |
|                                  | Minimum  | 1.0 mm<br>(0.0394 in.)   |
| Front brake disc thickness       | Standard | 28.0 mm<br>(1.10 in.)    |
|                                  | Minimum  | 25.0 mm<br>(0.984 in.)   |
| Front brake disc runout          |          | 0.05 mm<br>(0.00197 in.) |

### TORQUE SPECIFICATIONS

### TORQUE SPECIFICATIONS

| Part Tightened                                                          | N*m | kgf*cm | ft.*lbf |
|-------------------------------------------------------------------------|-----|--------|---------|
| Front disc brake cylinder mounting x Steering knuckle                   | 104 | 1061   | 77      |
| Front disc brake cylinder assembly x Front disc brake cylinder mounting | 34  | 350    | 25      |
|                                                                         |     |        |         |

|                                                                            |     |      |            |
|----------------------------------------------------------------------------|-----|------|------------|
| Front disc<br>brake<br>bleeder<br>plug                                     | 8.3 | 85   | 73 in.*lbf |
| Front<br>flexible<br>hose x<br>Front disc<br>brake<br>cylinder<br>assembly | 29  | 300  | 22         |
| Front<br>wheel                                                             | 103 | 1050 | 76         |
| Brake line<br>x Front<br>brake<br>flexible<br>hose                         | 15  | 155  | 11         |
| Front<br>brake<br>flexible<br>hose x<br>Absorber<br>bracket                | 19  | 192  | 14         |