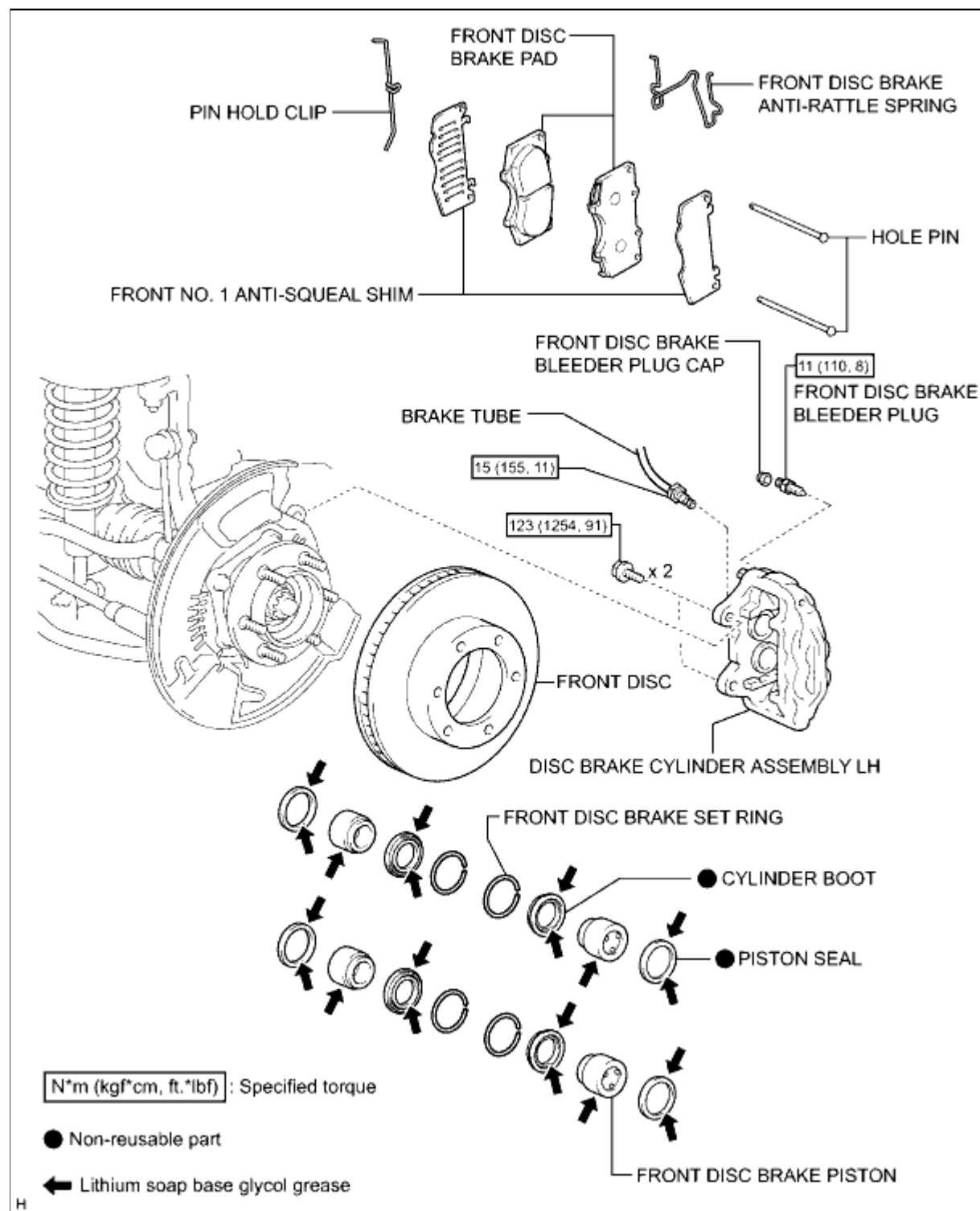


<b>Last Modified:</b> 5-10-2010	6.4 K	<b>From:</b> 200908
<b>Model Year:</b> 2010	<b>Model:</b> 4Runner	<b>Doc ID:</b> RM000001Q8W00FX
<b>Title:</b> BRAKE (FRONT): FRONT BRAKE: COMPONENTS (2010 4Runner)		

## COMPONENTS

## ILLUSTRATION





<b>Last Modified:</b> 5-10-2010	6.4 A	<b>From:</b> 200908
<b>Model Year:</b> 2010	<b>Model:</b> 4Runner	<b>Doc ID:</b> RM000001Q8X00GX
<b>Title:</b> BRAKE (FRONT): FRONT BRAKE: REMOVAL (2010 4Runner)		

## REMOVAL

### HINT:

- Use the same procedure for the RH and LH sides.
- The procedure listed below is for the LH side.

### 1. REMOVE FRONT WHEEL

### 2. DRAIN BRAKE FLUID

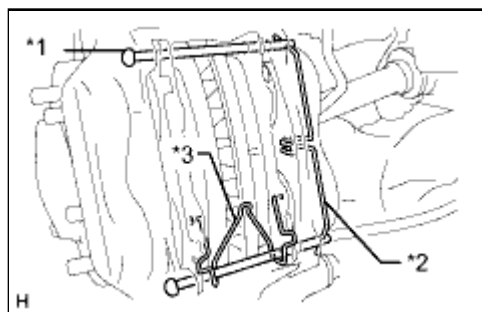
#### NOTICE:

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

### 3. REMOVE FRONT DISC BRAKE PAD

(a) Remove the pin hold clip.

#### Text in Illustration



*1	Hole Pin
*2	Pin Hold Clip
*3	Anti-rattle Spring

#### NOTICE:

The pin hold clip can be reused if it has sufficient rebound; no deformation or wear; and has had all rust, dirt and foreign matter cleaned off.

(b) Remove the 2 hole pins.

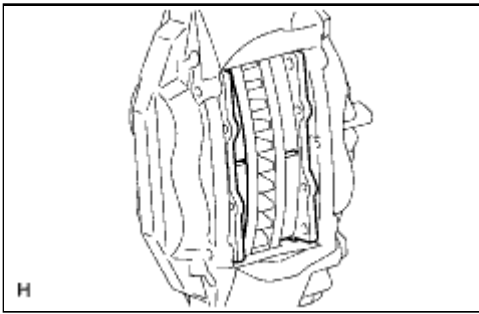


(c) Remove the front disc brake anti-rattle spring.

#### NOTICE:

The anti-rattle spring can be reused if it has sufficient rebound; no deformation, cracks or wear; and has had all rust, dirt and foreign matter cleaned off.

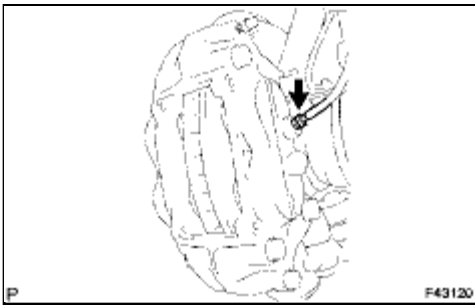
(d) Remove the 2 front disc brake pads from the disc brake



cylinder.

(e) Remove the front No. 1 anti-squeal shims from each pad.

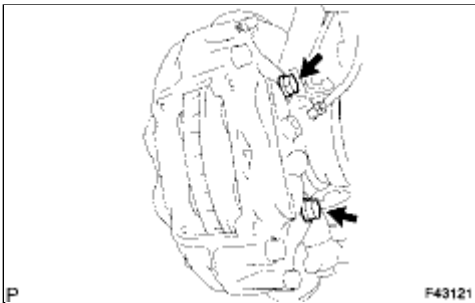
#### 4. REMOVE DISC BRAKE CYLINDER ASSEMBLY LH



(a) Using a union nut wrench, disconnect the brake tube from the disc brake cylinder assembly.

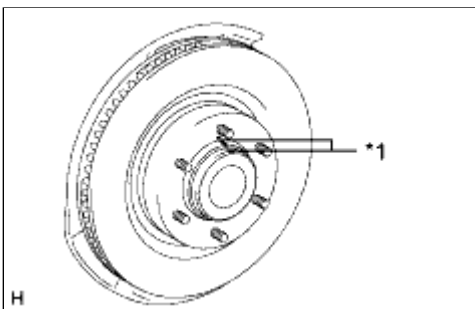
##### HINT:

Use a container to catch brake fluid as it drains out.



(b) Remove the 2 bolts and disc brake cylinder assembly.

#### 5. REMOVE FRONT DISC



(a) Place matchmarks on the disc and axle hub if planning to reuse the disc.

##### Text in Illustration

*1	Matchmark
----	-----------

(b) Remove the front disc.



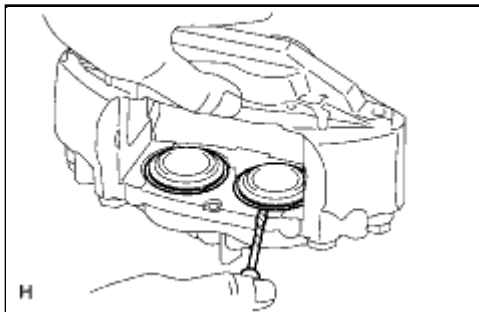
<b>Last Modified:</b> 5-10-2010	6.4 A	<b>From:</b> 200908
<b>Model Year:</b> 2010	<b>Model:</b> 4Runner	<b>Doc ID:</b> RM000001Q8Y00GX
<b>Title:</b> BRAKE (FRONT): FRONT BRAKE: DISASSEMBLY (2010 4Runner)		

## **DISASSEMBLY**

### **HINT:**

- Use the same procedure for the RH and LH sides.
- The procedure listed below is for the LH side.

### **1. REMOVE FRONT DISC BRAKE SET RING**



- (a) Using a screwdriver, remove the 4 front disc brake set rings from the 4 cylinder boots.

### **HINT:**

**Tape the screwdriver tip before use.**

### **2. REMOVE CYLINDER BOOT**

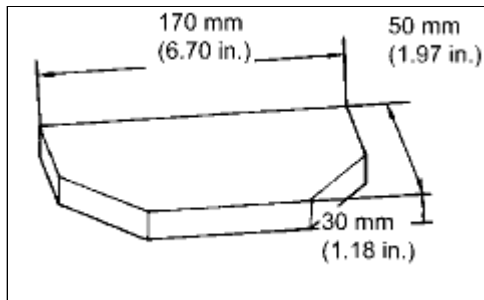
- (a) Using a screwdriver, remove the 4 cylinder boots from the disc brake cylinder.

### **HINT:**

**Tape the screwdriver tip before use.**

### **3. REMOVE FRONT DISC BRAKE PISTON**

- (a) Install one of the front disc brake pads.

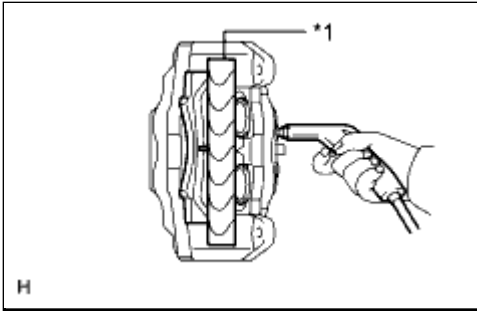


- (b) Install a wooden plate between the front disc brake pistons of the disc brake cylinder to prevent the front disc brake pistons from jumping out.

- (c) Using an air gun, gradually apply air and remove the 2 front disc brake pistons from the disc brake cylinder.

### **CAUTION:**

**Do not place your fingers in front of the pistons when applying air.**



(d) Remove the front disc brake pad and wooden plate.

### Text in Illustration

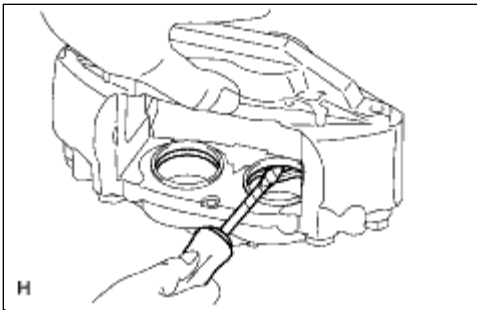
* 1	Wooden Plate
-----	--------------

- (e) Temporarily install the 2 front disc brake pistons that were removed. Then install the front disc brake pad to the side in which the 2 front disc brake pistons are temporarily installed.
- (f) Install a wooden plate between the front disc brake pistons of the disc brake cylinder to prevent the front disc brake pistons from jumping out.
- (g) Using an air gun, gradually apply air and remove the 2 front disc brake pistons from the other side of the front disc brake cylinder.

### **CAUTION:**

**Do not place your fingers in front of the pistons when applying air.**

## 4. REMOVE PISTON SEAL



- (a) Using a screwdriver, remove the 4 piston seals from the disc brake cylinder.

### **HINT:**

**Tape the screwdriver tip before use.**

## 5. REMOVE FRONT DISC BRAKE BLEEDER PLUG CAP

## 6. REMOVE FRONT DISC BRAKE BLEEDER PLUG

<b>Last Modified:</b> 5-10-2010	6.4 G	<b>From:</b> 200908
<b>Model Year:</b> 2010	<b>Model:</b> 4Runner	<b>Doc ID:</b> RM000001Q8V00GX
<b>Title:</b> BRAKE (FRONT): FRONT BRAKE: INSPECTION (2010 4Runner)		

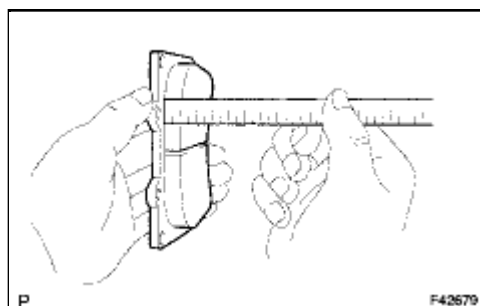
## **INSPECTION**

### **1. CHECK BRAKE CYLINDER AND PISTON**

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

If necessary, replace the disc brake cylinder assembly.

### **2. CHECK PAD LINING THICKNESS**



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

Standard thickness:

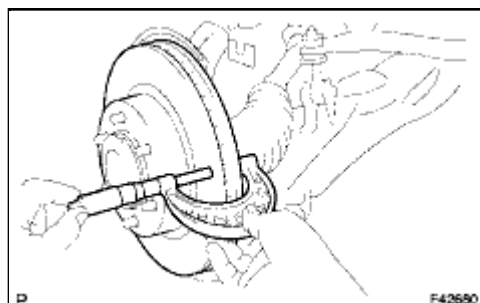
11.3 mm (0.445 in.)

Minimum thickness:

1.0 mm (0.0394 in.)

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

### **3. CHECK DISC THICKNESS**



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

Standard thickness:

32.0 mm (1.26 in.)

Minimum thickness:

29.0 mm (1.14 in.)

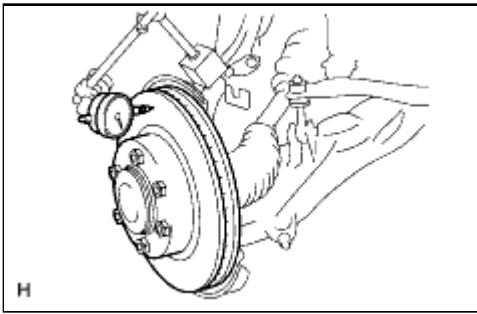
If the disc thickness is less than the minimum, replace the disc.

### **4. CHECK DISC RUNOUT**

(a) Install the disc with the 6 hub nuts.

**Torque: 112 N·m (1137 kgf·cm, 82ft·lbf)**





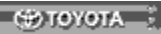
(b) Using a dial indicator, measure the disc runout 10 mm (0.394 in.) from the outer edge of the disc.

Maximum disc runout:

0.05 mm (0.00197 in.)

If the disc runout is more than the maximum, check the bearing play in the axial direction and the axle hub runout INFO. If the bearing play and axle hub runout are normal, adjust the disc runout or grind the disc using an "On-car" brake lathe.

(c) Remove the 6 hub nuts and disc.



<b>Last Modified:</b> 5-10-2010	6.4 A	<b>From:</b> 200908
<b>Model Year:</b> 2010	<b>Model:</b> 4Runner	<b>Doc ID:</b> RM000001Q8Z00GX
<b>Title:</b> BRAKE (FRONT): FRONT BRAKE: REASSEMBLY (2010 4Runner)		

## **REASSEMBLY**

### **HINT:**

- Use the same procedure for the RH and LH sides.
- The procedure listed below is for the LH side.

### **1. TEMPORARILY INSTALL FRONT DISC BRAKE BLEEDER PLUG**

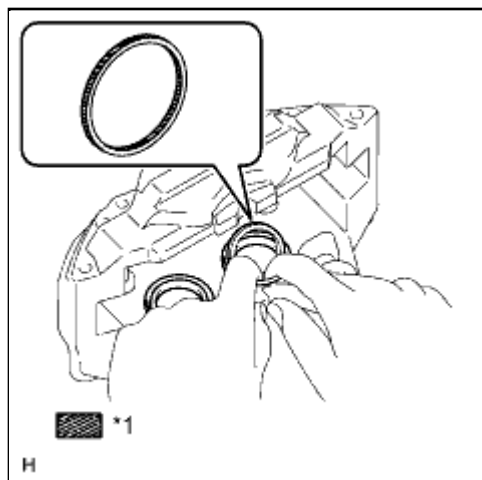
(a) Temporarily install the front disc brake bleeder plug to the disc brake cylinder assembly.

### **HINT:**

The front disc brake bleeder plug will be tightened to the torque specification in the "Bleed Brake Line" procedure.

(b) Install the front disc brake bleeder plug cap to the bleeder plug.

### **2. INSTALL PISTON SEAL**



(a) Apply a light coat of lithium soap base glycol grease to the entire inner and outer circumference of 4 new piston seals.

### **Text in Illustration**

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

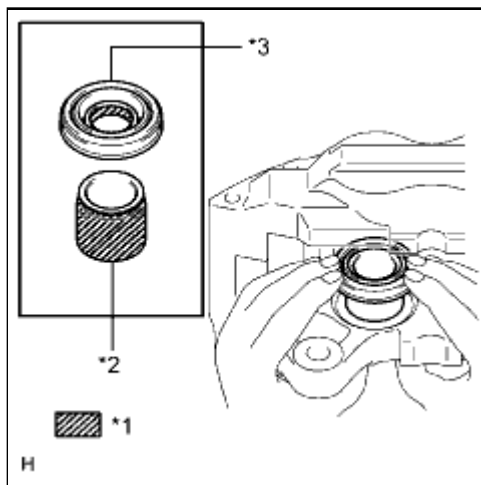
(b) Install the 4 piston seals to the disc brake cylinder assembly.

### **3. INSTALL FRONT DISC BRAKE PISTON**

(a) Apply a light coat of lithium soap base glycol grease to the entire inner circumference of 4 new cylinder boots.

### **Text in Illustration**

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



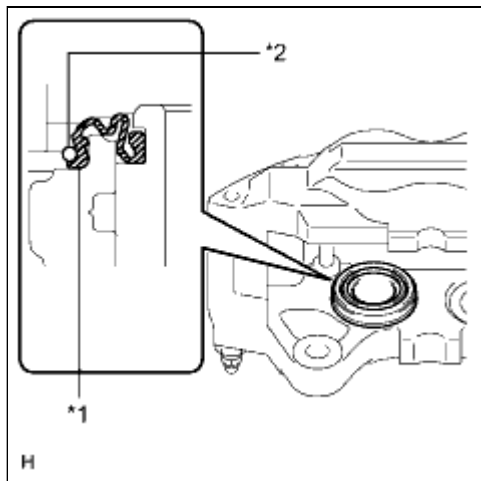
*2	Front Disc Brake Piston
*3	Cylinder Boot

- (b) Apply a light coat of lithium soap base glycol grease to the entire outer circumference of the 4 front disc brake pistons where they contact the cylinder boots and front disc brake cylinder.
- (c) Install the 4 cylinder boots to the 4 front disc brake pistons.
- (d) Install the 4 front disc brake pistons to the front disc brake cylinder.

**NOTICE:**

**Do not forcibly install the piston into the disc brake cylinder.**

**4. INSTALL CYLINDER BOOT**



- (a) Install one side of each of the 4 cylinder boots to the front disc brake cylinder.

**Text in Illustration**

*1	Cylinder Boot
*2	Front Disc Brake Set Ring

**NOTICE:**

- Install the cylinder boot securely into the grooves of the disc brake cylinder and front disc brake piston.
- Do not damage the cylinder boot.

**5. INSTALL FRONT DISC BRAKE SET RING**

- (a) Install the 4 front disc brake set rings.

<b>Last Modified:</b> 5-10-2010	6.4 A	<b>From:</b> 200908
<b>Model Year:</b> 2010	<b>Model:</b> 4Runner	<b>Doc ID:</b> RM000001Q8U00GX
<b>Title:</b> BRAKE (FRONT): FRONT BRAKE: INSTALLATION (2010 4Runner)		

## INSTALLATION

### HINT:

- Use the same procedure for the RH and LH sides.
- The procedure listed below is for the LH side.

### 1. INSTALL FRONT DISC

- (a) Align the matchmarks and install the front disc.

### HINT:

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

### 2. INSTALL DISC BRAKE CYLINDER ASSEMBLY LH

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

**Torque: 123 N·m (1254 kgf·cm, 91ft·lbf)**

- (b) Using a union nut wrench, connect the brake tube to the disc brake cylinder assembly.

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

### **NOTICE:**

Use the formula to calculate special torque values for situations where a union nut wrench is combined with a torque wrench .

### 3. INSTALL FRONT NO. 1 ANTI-SQUEAL SHIM

### **NOTICE:**

If necessary, replace the anti-squeal shim when replacing the brake pad.

- (a) Install the front No. 1 anti-squeal shims to the front disc brake pads.

### **NOTICE:**

There should be no oil or grease on the friction surfaces of the front disc brake pads and the front disc.

### 4. INSTALL FRONT DISC BRAKE PAD

- (a) Install the 2 front disc brake pads to the disc brake cylinder.

- (b) Install the anti-rattle spring between the 2 front disc brake pads.

### **NOTICE:**

The anti-rattle spring can be reused if it has sufficient rebound; no deformation, cracks or wear; and has had all rust, dirt and foreign matter cleaned off.

- (c) Install the 2 hole pins.

- (d) Install the pin hold clip.

### **NOTICE:**

The pin hold clip can be reused if has sufficient rebound; no deformation or wear; and has had all rust, dirt and foreign matter cleaned off.

### 5. BLEED BRAKE LINE



## 6. INSTALL FRONT WHEEL

INFO



TOYOTA