

<b>Last Modified:</b> 12-04-2024	6.11:8.1.0	<b>Doc ID:</b> RM100000002BYV8
<b>Model Year Start:</b> 2023	<b>Model:</b> Prius Prime	<b>Prod Date Range:</b> [03/2023 - ]
<b>Title:</b> BRAKE (FRONT): FRONT BRAKE: INSPECTION; 2023 - 2024 MY Prius Prius Prime [03/2023 - ]		

## INSPECTION

## PROCEDURE

### 1. INSPECT BRAKE CYLINDER AND PISTON

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

### 2. INSPECT PAD LINING THICKNESS

- (a) Using a ruler, measure the front disc brake pad lining thickness.

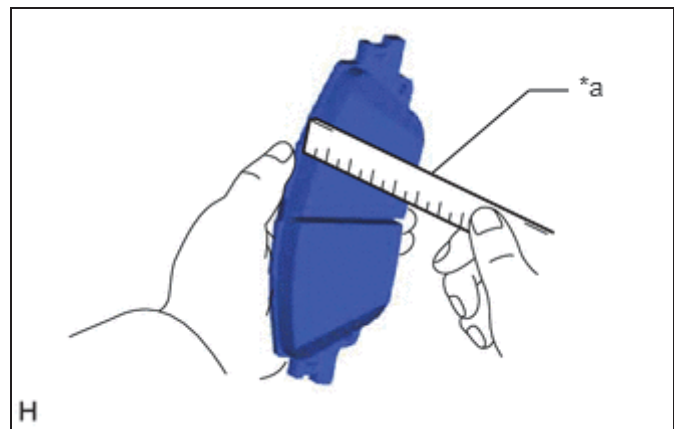
Standard Thickness:

11.0 mm (0.433 in.)

Minimum Thickness:

1.5 mm (0.0591 in.)

Front Disc Brake Pad Lining Thickness:



*a	Ruler
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SPECIFIED CONDITION	RESULT
1.5 mm or higher 0.0591 in. or higher	mm in.

**HINT:**

Be sure to check the front disc thickness when replacing the front disc brake pads with new ones.

- (b) If a front disc brake pad lining thickness is less than the minimum thickness, replace the front disc brake pads.

### 3. INSPECT FRONT DISC BRAKE PAD SUPPORT PLATE

- (a) Make sure that the front disc brake pad support plates have sufficient rebound, no deformation, cracks or wear, and that all rust and dirt is cleaned off. If necessary, replace the front disc brake pad support plates.

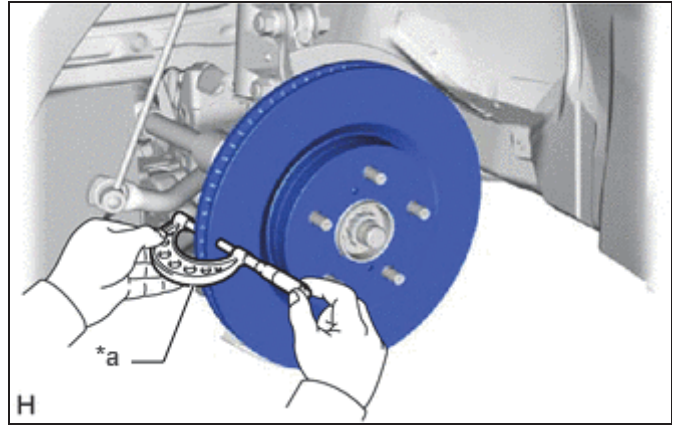
### 4. INSPECT DISC THICKNESS

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

-	STANDARD THICKNESS	MINIMUM THICKNESS
for HEV Model AWD, PHEV Model	28.0 mm (1.102 in.)	25.0 mm (0.984 in.)
for HEV Model 2WD	22.0 mm (0.866 in.)	19.0 mm (0.748 in.)

Front Disc Thickness:

-	SPECIFIED CONDITION	RESULT
for HEV Model AWD	25.0 mm or higher 0.984 in. or higher	mm in.
for PHEV Model	25.0 mm or higher 0.984 in. or higher	mm in.
for HEV Model 2WD	19.0 mm or higher 0.748 in. or higher	mm in.



\*a Micrometer

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

**5. INSPECT DISC RUNOUT**

Pre-procedure1

(a) Inspect the front axle hub bearing looseness and front axle hub runout.

Click here [INFO](#)

(b) Temporarily install the front disc with the 5 hub nuts.

**Torque:**

**103 N·m { 1050 kgf·cm, 76 ft·lbf }**

Procedure1

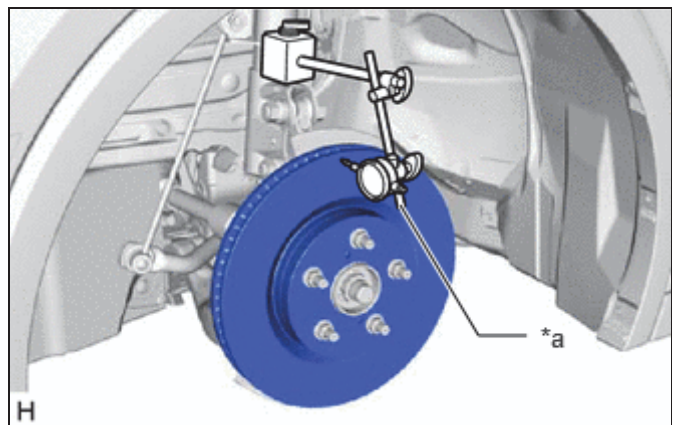
(c) Using a dial indicator with magnetic base, measure the disc runout 10 mm (0.394 in.) from the outer edge of the front disc.

Maximum Disc Runout:

0.05 mm (0.00196 in.)

Front Disc Runout:

SPECIFIED CONDITION	RESULT
0.05 mm or less 0.00196 in. or less	mm in.



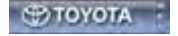
\*a Dial Indicator with Magnetic Base

**NOTICE:**

- Keep the magnet of the dial indicator away from the front speed sensor.
- If the runout exceeds the maximum value, change the installation position of the front disc to minimize the runout. If the runout exceeds the maximum even when the installation position is changed, grind the front disc. If the front disc thickness is less than the minimum, replace the front disc.

Post-procedure1

(d) Remove the 5 hub nuts and front disc.



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<b>Model Year Start:</b> 2023	<b>Model:</b> Prius Prime	<b>Prod Date Range:</b> [03/2023 - ]
<b>Title:</b> BRAKE (FRONT): FRONT BRAKE: INSTALLATION; 2023 - 2024 MY Prius Prius Prime [03/2023 - ]		

## INSTALLATION

### CAUTION / NOTICE / HINT

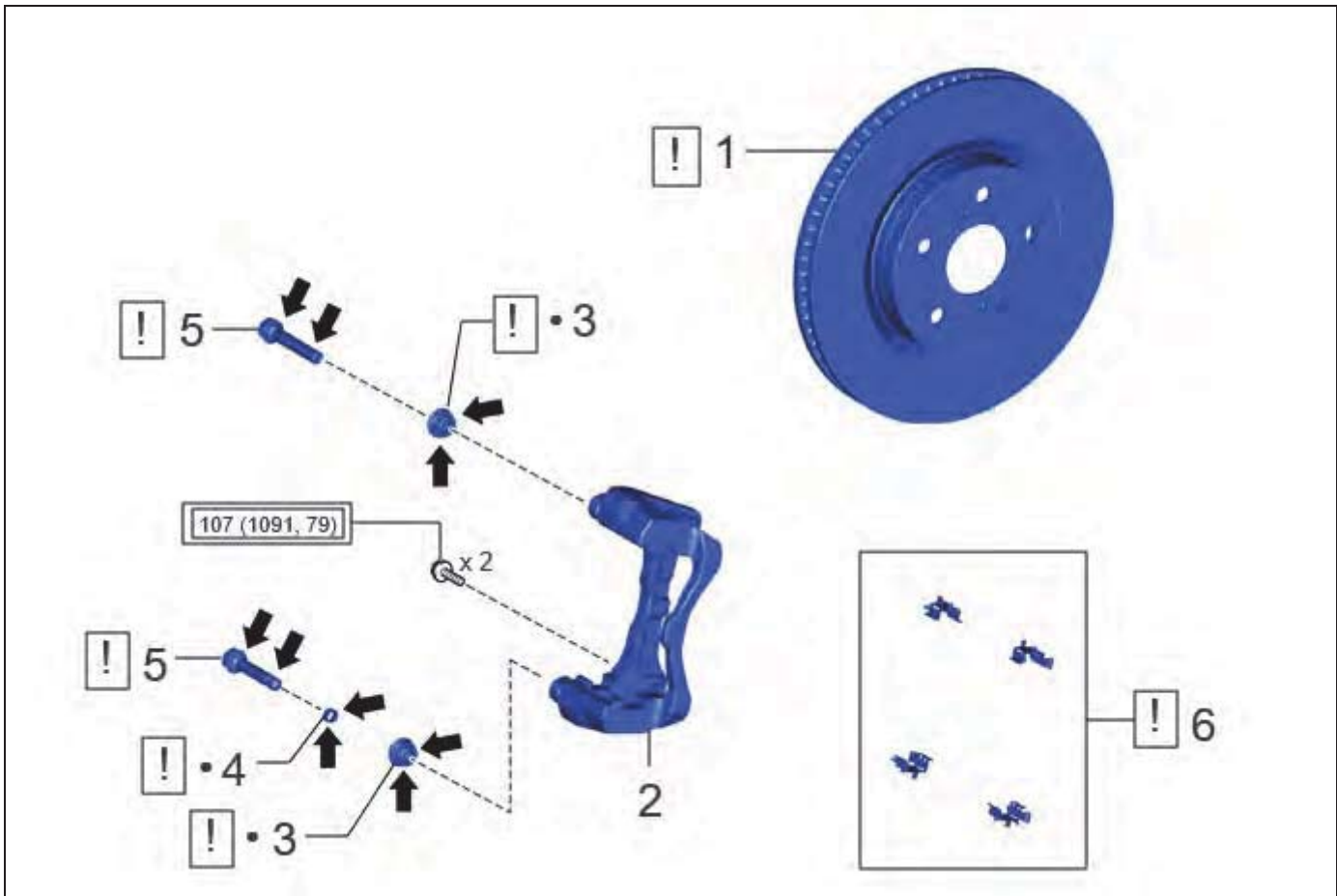
#### NOTICE:




- Immediately after installing the brake pads, the braking performance may be reduced. Always perform a road test in a safe place while paying attention to the surroundings.
- After replacing the front disc brake pads, the brake pedal may feel soft due to clearance between the front disc brake pads and front disc. Depress the brake pedal several times until the brake pedal feels firm.
- After replacing the front disc brake pads, always perform a road test to check the braking performance and check for vibrations.
- While the auxiliary battery is connected, even if the ignition switch is off, the brake control system activates when the brake pedal is depressed or any door courtesy switch turns on. Therefore, when servicing the brake system components, do not operate the brake pedal or open/close the doors while the auxiliary battery is connected.
- When the brake pedal is first depressed after replacing the brake pads or pushing back the disc brake piston, DTCs may be stored. As there is no malfunction, clear the DTC.



#### HINT:

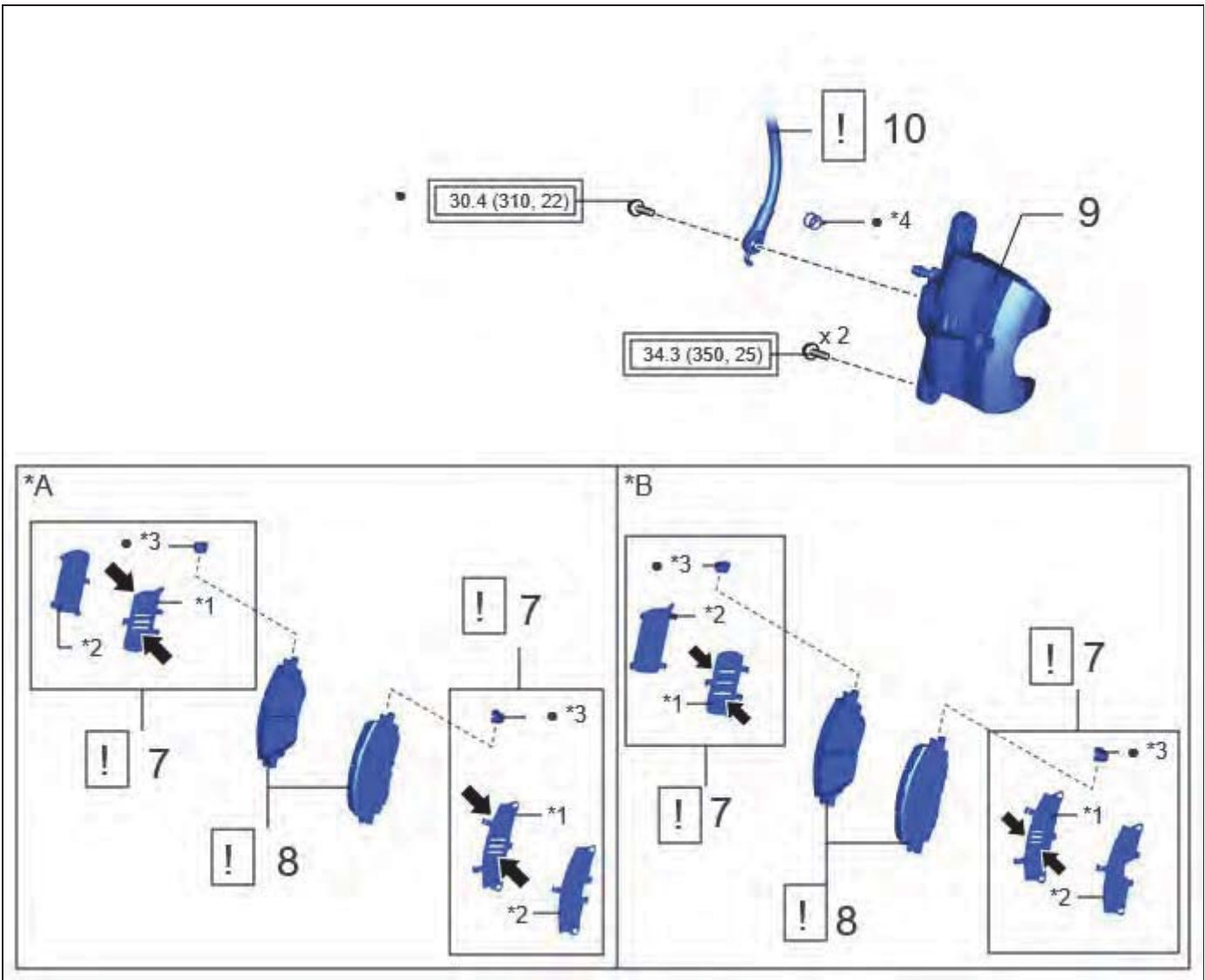
- Use the same procedure for the RH side and LH side.
- The following procedure is for the LH side.

### COMPONENTS (INSTALLATION)





PROCEDURE		PART NAME CODE			
1	FRONT DISC	43512	INFO	-	-
2	DISC BRAKE CYLINDER MOUNTING	47722	-	-	-
3	FRONT DISC BRAKE BUSHING DUST BOOT	-	INFO	-	-
4	FRONT DISC BRAKE CYLINDER SLIDE BUSHIHG	-	INFO	-	-
5	FRONT DISC BRAKE CYLINDER SLIDE PIN	47715A	INFO	-	-
6	FRONT DISC BRAKE PAD SUPPORT PLATE	-	INFO	-	-

	Tightening torque for "Major areas involving basic vehicle performance such as moving/turning/stopping": N*m (kgf*cm, ft.*lbf)	•	Non-reusable part
	Lithium soap base glycol grease	-	-









PROCEDURE		PART NAME CODE			
7	FRONT DISC BRAKE ANTI-SQUEAL SHIM KIT	04945		-	-
8	FRONT DISC BRAKE PAD	-		-	-
9	FRONT DISC BRAKE CYLINDER ASSEMBLY	47750	-	-	-
10	FRONT FLEXIBLE HOSE	47313J		-	-

*A	for HEV Model AWD, PHEV Model	*B	for HEV Model 2WD
*1	FRONT NO. 1 DISC BRAKE ANTI-SQUEAL SHIM	*2	FRONT NO. 2 DISC BRAKE ANTI-SQUEAL SHIM
*3	FRONT DISC BRAKE PAD WEAR INDICATOR PLATE	*4	GASKET

	Tightening torque for "Major areas involving basic vehicle performance such as moving/turning/stopping": N*m (kgf*cm, ft.*lbf)	<ul style="list-style-type: none"> <li>• Non-reusable part</li> </ul>	
	Brake shim grease (Part No. 08887-80409)	-	-



PROCEDURE		PART NAME CODE			
11	CONNECT CABLE TO NEGATIVE AUXILIARY BATTERY TERMINA	-		-	-
12	BLEED BRAKE LINE	-	-	-	
13	FRONT WHEEL	-	-	-	-
14	INITIALIZATION AFTER RECONNECTING AUXILIARY BATTERY TERMINAL	-	-	-	

## PROCEDURE

### 1. INSTALL FRONT DISC



*a	Matchmark	-	-
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(1) Align the matchmarks of the front disc and front axle hub sub-assembly, and install the front disc.

**NOTICE:**

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

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

**Torque:**

107 N·m { 1091 kgf·cm, 79 ft·lbf }

**3. INSTALL FRONT DISC BRAKE BUSHING DUST BOOT**



	Lithium Soap Base Glycol Grease	-	-
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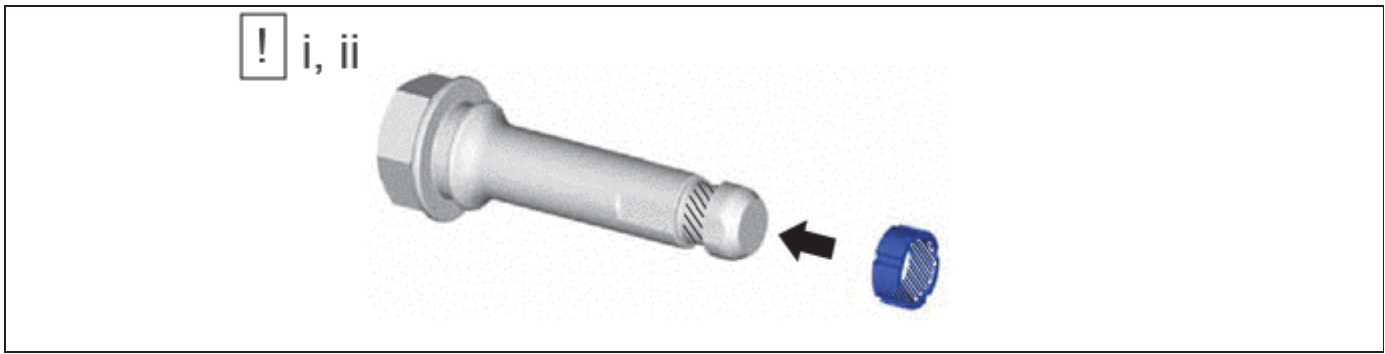
(1) Apply a light layer of lithium soap base glycol grease to the entire circumference of 2 new front disc brake bushing dust boots.

**HINT:**

Apply more than 0.3 g (0.01 oz) of lithium soap base glycol grease to each front disc brake bushing dust boot.

(2) Install the 2 front disc brake bushing dust boots to the front disc brake cylinder mounting.

**4. INSTALL FRONT DISC BRAKE CYLINDER SLIDE BUSHING**



	Lithium Soap Base Glycol Grease	-	-
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- (1) Apply a light layer of lithium soap base glycol grease to the contact surface of the front disc brake cylinder slide pin (lower side) and a new front disc brake cylinder slide bushing.
- (2) Install the front disc brake cylinder slide bushing to the front disc brake cylinder slide pin (lower side).

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



*1	Front Disc Brake Cylinder Slide Pin (Upper Side)	*2	Front Disc Brake Cylinder Slide Pin (Lower Side)
	Lithium Soap Base Glycol Grease	-	-

- (1) Apply a light layer of lithium soap base glycol grease to the sliding part and the sealing surfaces of the 2 front disc brake cylinder slide pins.
- (2) Install the 2 front disc brake cylinder slide pins to the front disc brake cylinder mounting.
- (3) Push each front disc brake cylinder slide pin into the front disc brake bushing dust boot to engage the pin to the boot.

**6. INSTALL FRONT DISC BRAKE PAD SUPPORT PLATE**

	<p><b>NOTICE:</b></p> <p>Be sure to install each front disc brake pad support plate in the correct position and direction.</p>
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**7. INSTALL FRONT DISC BRAKE ANTI-SQUEAL SHIM KIT**



Click here [INFO](#)

## 8. INSTALL FRONT DISC BRAKE PAD



### NOTICE:

- Keep the friction surfaces of the front disc brake pads and front disc free from oil and grease.
- Install the front disc brake pad so that the front disc brake pad wear indicator plate is mounted on the upper side of the vehicle.

## 9. INSTALL FRONT DISC BRAKE CYLINDER ASSEMBLY

Torque:

34.3 N·m { 350 kgf·cm, 25 ft·lbf }

## 10. CONNECT FRONT FLEXIBLE HOSE



### NOTICE:

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

Torque:

30.4 N·m { 310 kgf·cm, 22 ft·lbf }

## 11. CONNECT CABLE TO NEGATIVE AUXILIARY BATTERY TERMINAL



Click here [INFO](#)

## 12. BLEED BRAKE LINE

Click here [INFO](#)

## 13. INSTALL FRONT WHEEL

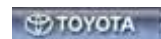
Click here [INFO](#)

## 14. INITIALIZATION AFTER RECONNECTING AUXILIARY BATTERY TERMINAL

### HINT:

When disconnecting and reconnecting the auxiliary battery, there is an automatic learning function that completes learning when the respective system is used.

Click here [INFO](#)



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<b>Model Year Start:</b> 2023	<b>Model:</b> Prius Prime	<b>Prod Date Range:</b> [12/2022 - ]
<b>Title:</b> BRAKE (FRONT): FRONT BRAKE: REASSEMBLY; 2023 - 2024 MY Prius Prius Prime [12/2022 - ]		

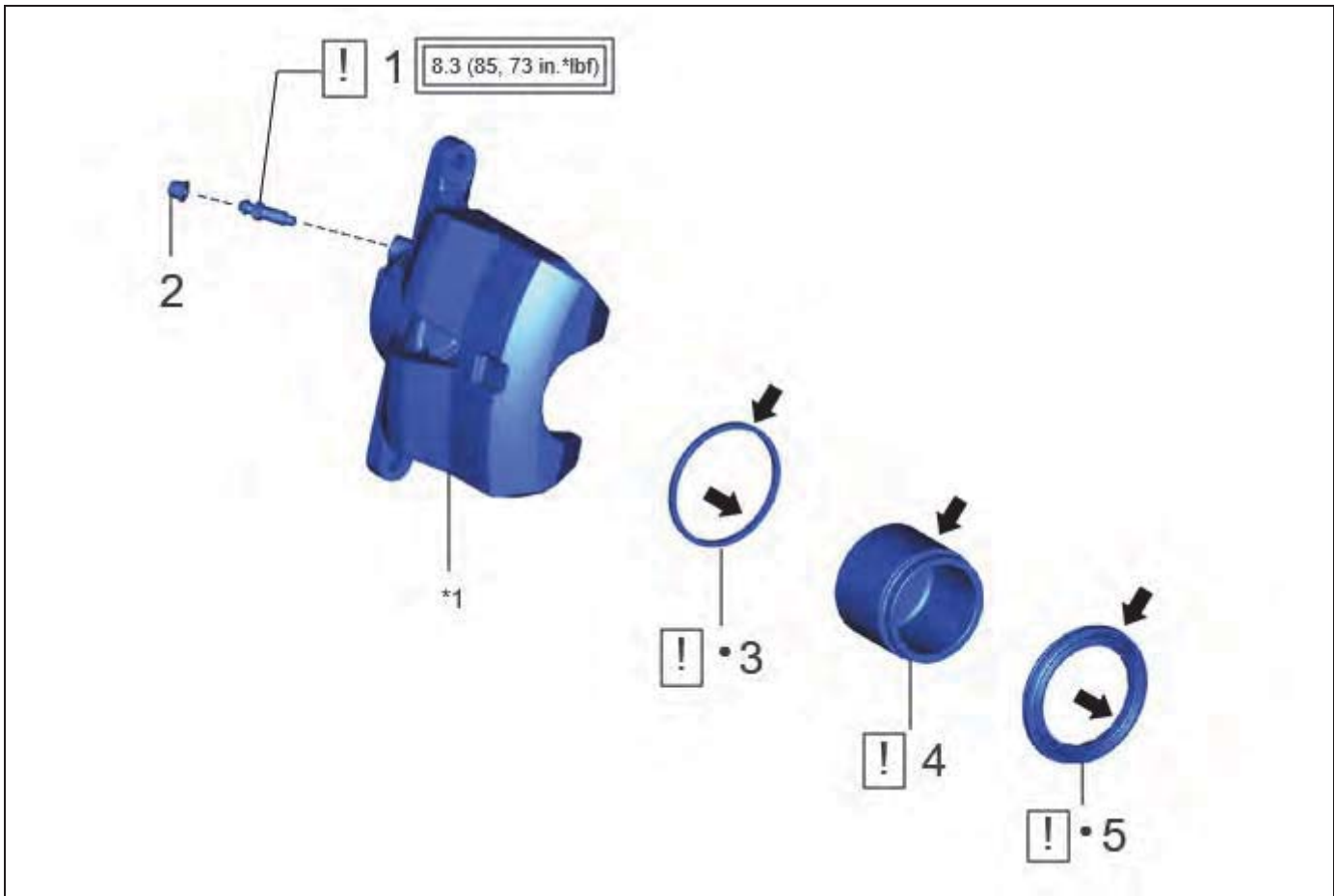
## REASSEMBLY

### CAUTION / NOTICE / HINT




**HINT:**



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

### COMPONENTS (REASSEMBRY)



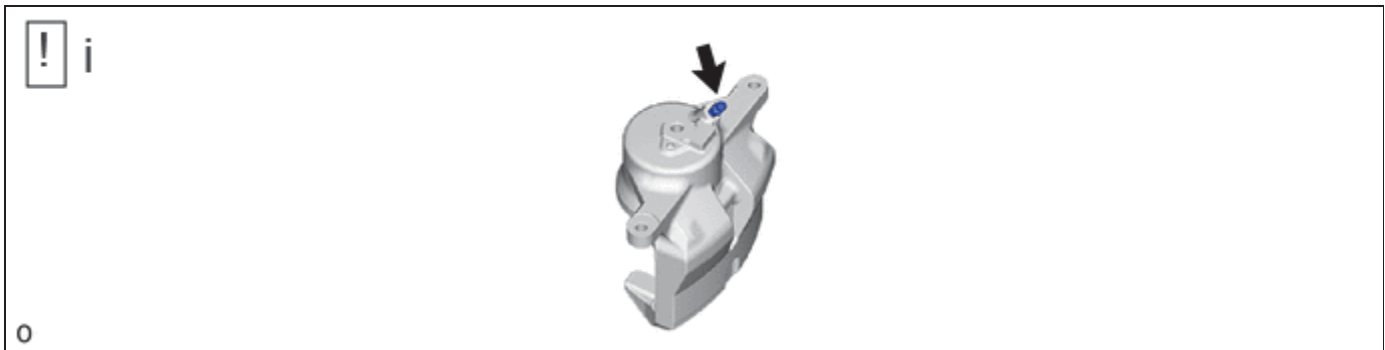
	PROCEDURE	PART NAME CODE	!	📄	⚙️
1	FRONT DISC BRAKE BLEEDER PLUG	47547B	INFO	-	-
2	FRONT DISC BRAKE BLEEDER PLUG CAP	31478B	-	-	-
3	PISTON SEAL	-	INFO	-	-
4	FRONT DISC BRAKE PISTON	47731	INFO	-	-

PROCEDURE		PART NAME CODE				
5	CYLINDER BOOT	-		<a href="#">INFO</a>	-	-

*1	FRONT DISC BRAKE CYLINDER	-	-
•	Non-reusable part		Lithium soap base glycol grease
	Tightening torque for "Major areas involving basic vehicle performance such as moving/turning/stopping": N*m (kgf*cm, ft.*lbf)		

## PROCEDURE

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



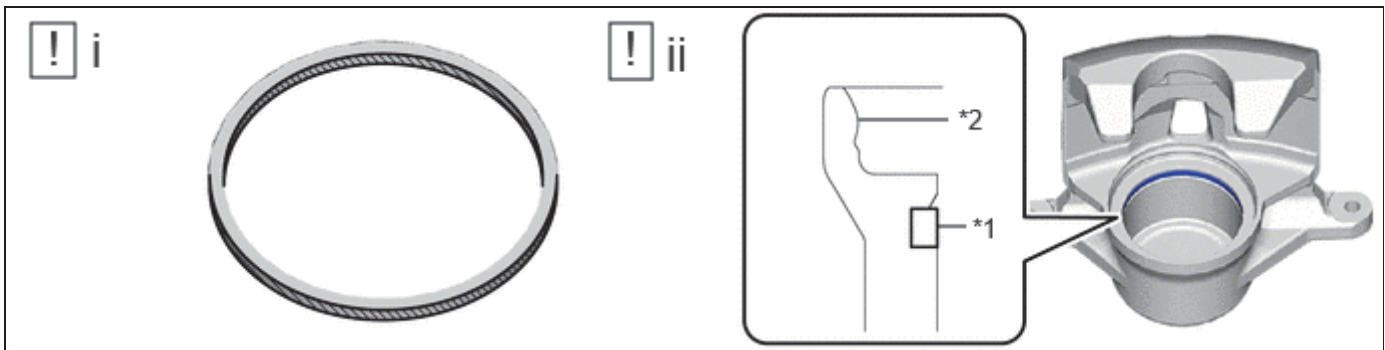
(1) Temporarily install the front disc brake bleeder plug to the front disc brake cylinder.

**HINT:**


Fully tighten the front disc brake bleeder plug after bleeding the system.

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

### 3. INSTALL PISTON SEAL



*1	Piston Seal	*2	Front Disc Brake Cylinder
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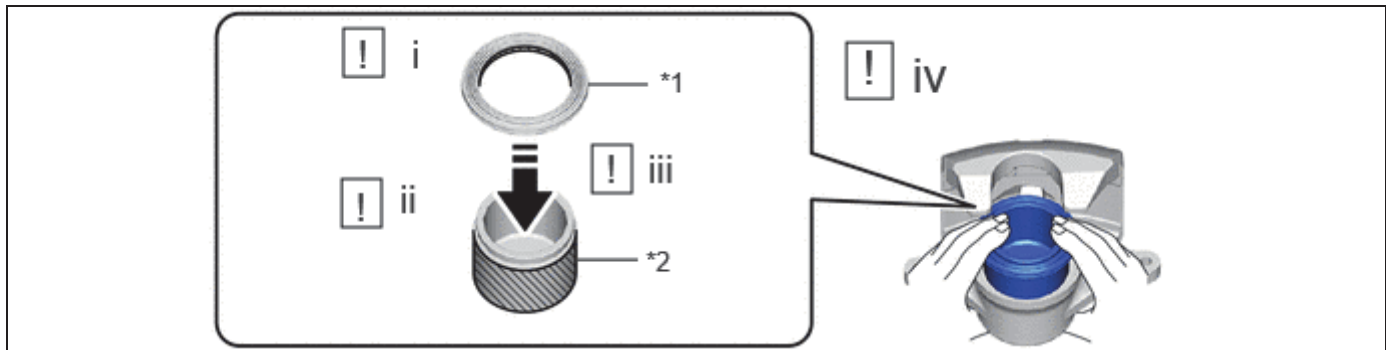
	Lithium Soap Base Glycol Grease	-	-
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- (1) Apply a light layer of lithium soap base glycol grease to the entire circumference of a new piston seal.
- (2) Install the piston seal to the front disc brake cylinder.

**NOTICE:**

Securely install the piston seal into the groove of the front disc brake cylinder.

**4. INSTALL FRONT DISC BRAKE PISTON**



*1	Cylinder Boot	*2	Front Disc Brake Piston
	Lithium Soap Base Glycol Grease	-	-

- (1) Apply a light layer of lithium soap base glycol grease to the entire circumference of a new cylinder boot.
- (2) Apply a light layer of lithium soap base glycol grease to the contact surfaces of the front disc brake piston.
- (3) Install the cylinder boot to the front disc brake piston.

**NOTICE:**

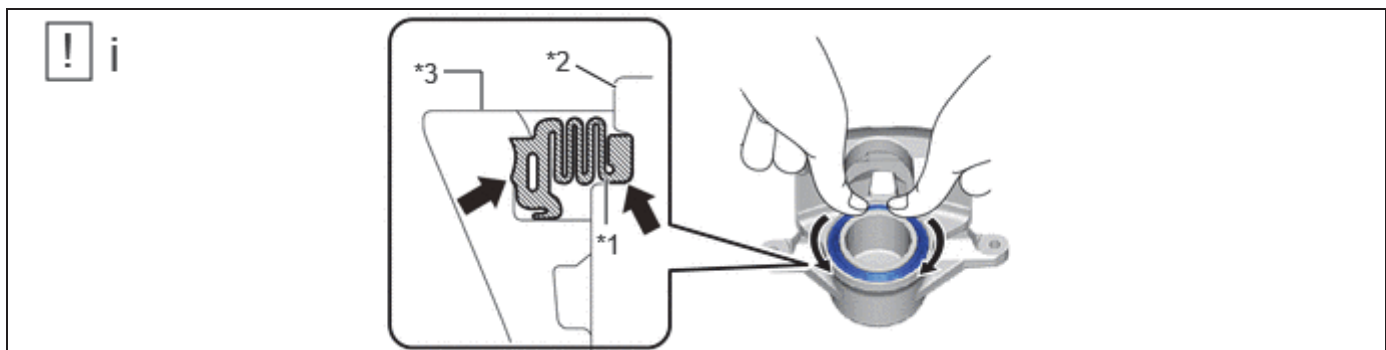
Do not forcibly install the front disc brake piston into the front disc brake cylinder.

- (4) Install the front disc brake piston to the front disc brake cylinder.

**NOTICE:**

Securely install the cylinder boot into the groove of the front disc brake piston.

**5. INSTALL CYLINDER BOOT**

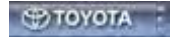


*1	Cylinder Boot	*2	Front Disc Brake Piston
*3	Front Disc Brake Cylinder	-	-

(1) Install the cylinder boot to the front disc brake cylinder as shown in the illustration.

**NOTICE:**

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



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<b>Model Year Start:</b> 2023	<b>Model:</b> Prius Prime	<b>Prod Date Range:</b> [03/2023 - ]
<b>Title:</b> BRAKE (FRONT): FRONT BRAKE: REMOVAL; 2023 - 2024 MY Prius Prius Prime [03/2023 - ]		

## REMOVAL

### CAUTION / NOTICE / HINT

The necessary procedures (adjustment, calibration, initialization, or registration) that must be performed after parts are removed and installed, or replaced during front disc brake removal/installation are shown below.

#### Necessary Procedures After Parts Removed/Installed/Replaced

REPLACED PART OR PERFORMED PROCEDURE	NECESSARY PROCEDURE	EFFECT/INOPERATIVE FUNCTION WHEN NECESSARY PROCEDURE NOT PERFORMED	LINK
Tires	<ul style="list-style-type: none"> <li>Initialization*1*2</li> <li>Tire Position Identification*1*2</li> </ul>	Tire Pressure Warning System	Refer to Procedures Necessary When Replacing Parts (for Tire Pressure Warning System) <a href="#">NFC</a>
	Rear television camera assembly optical axis (Back camera position setting)*3	Parking Assist Monitor System	<a href="#">NFC</a>
	Parking assist ECU initialization*3	Panoramic View Monitor System	<a href="#">NFC</a>
		Advanced Park	<a href="#">NFC</a>
<p>*1: Also necessary after performing a tire rotation.</p> <p>*2: It is not necessary to perform this procedure if the tire pressure warning valve and transmitters are installed to the same location.</p> <p>*3: The vehicle height changes because of tire replacement.</p>			

#### HINT:

When the cable is disconnected / reconnected to the auxiliary battery terminal, systems temporarily stop operating. However, each system has a function that completes learning the first time the system is used.

#### Items for which learning is completed by driving the vehicle

EFFECT/INOPERATIVE FUNCTION WHEN NECESSARY PROCEDURE NOT PERFORMED	NECESSARY PROCEDURE	LINK
Front Camera System	Drive the vehicle straight ahead at 35 km/h (22 mph) or more for 5 seconds or more.	<a href="#">NFC</a>

#### Items for which learning is completed by operating the vehicle normally

EFFECT/INOPERATIVE FUNCTION WHEN NECESSARY PROCEDURE NOT PERFORMED	NECESSARY PROCEDURE	LINK
Power Door Lock Control System*1 <ul style="list-style-type: none"> <li>Back door opener</li> </ul>	Perform door unlock operation with door control switch or electrical key transmitter sub-assembly switch.	INFO
Power Back Door System*2	Reset back door close position	INFO
Air Conditioning System	<b>for HEV Model:</b>  After the ignition switch is turned to ON, the servo motor standard position is recognized.  <b>for PHEV Model:</b>  After the ignition switch is turned to ON, the servo motor and expansion valve standard position is recognized.	-
*1: w/o Power Back Door System  *2: w/ Power Back Door System		

## CAUTION / NOTICE / HINT

### NOTICE:

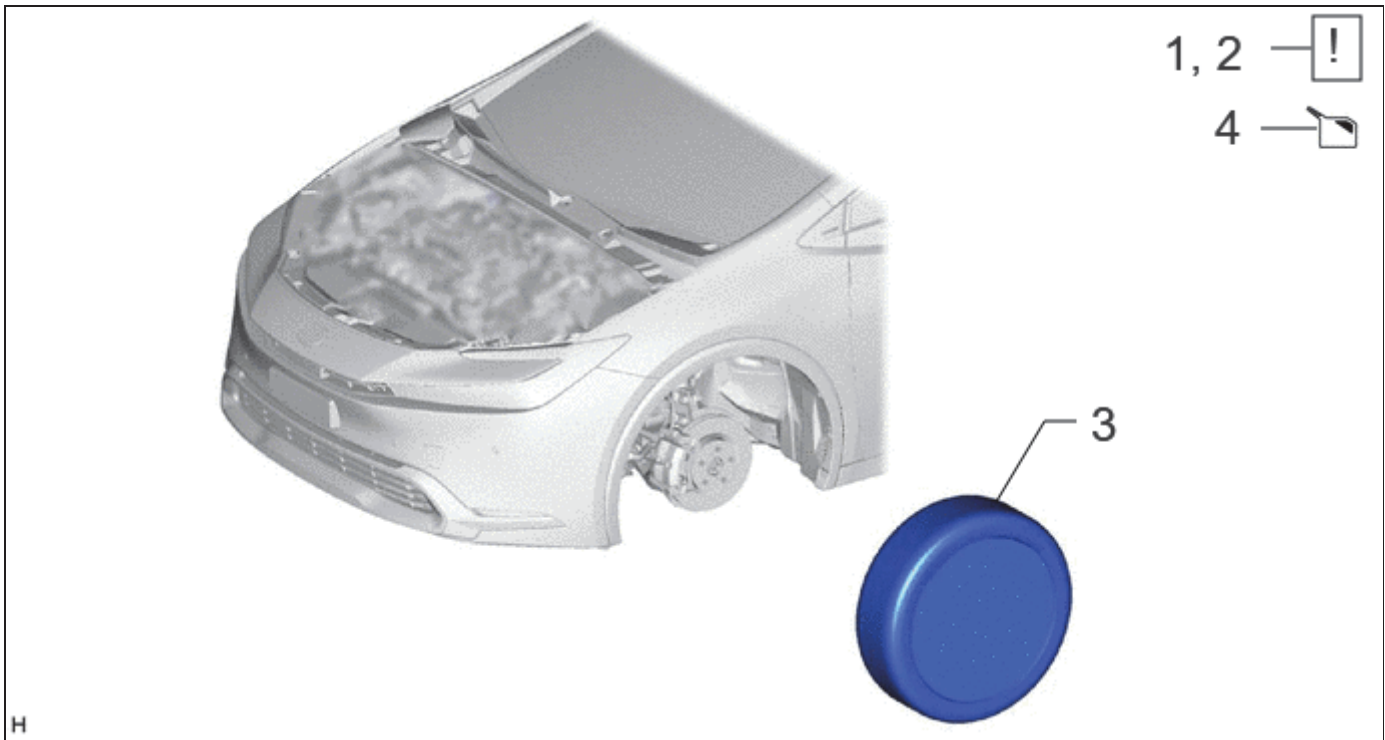
- Immediately after installing the brake pads, the braking performance may be reduced. Always perform a road test in a safe place while paying attention to the surroundings.
- After replacing the front disc brake pads, the brake pedal may feel soft due to clearance between the front disc brake pads and front disc. Depress the brake pedal several times until the brake pedal feels firm.
- After replacing the front disc brake pads, always perform a road test to check the braking performance and check for vibrations.
- While the auxiliary battery is connected, even if the ignition switch is off, the brake control system activates when the brake pedal is depressed or any door courtesy switch turns on. Therefore, when servicing the brake system components, do not operate the brake pedal or open/close the doors while the auxiliary battery is connected.
- When the brake pedal is first depressed after replacing the brake pads or pushing back the disc brake piston, DTCs may be stored. As there is no malfunction, clear the DTC.

### HINT:

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

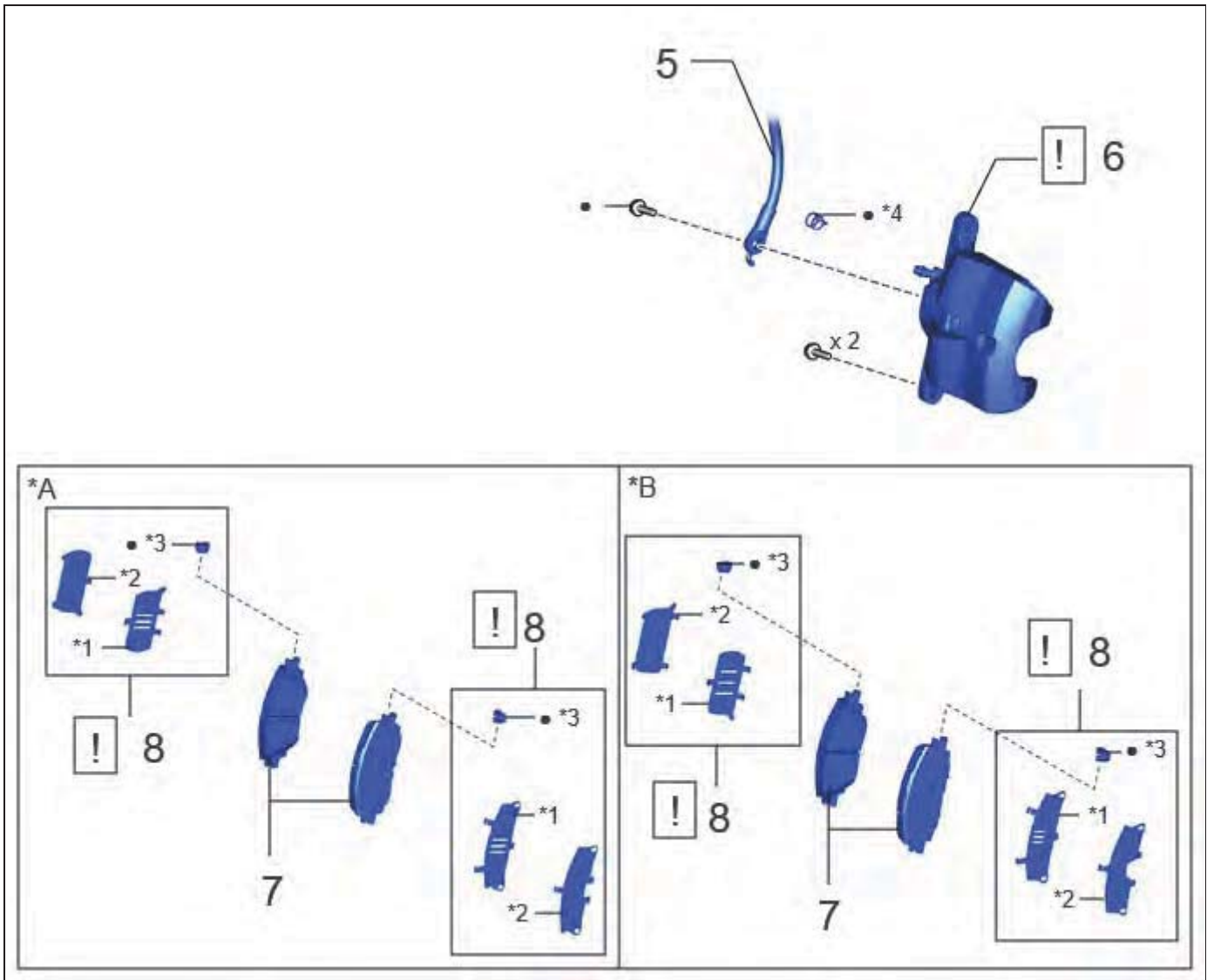
## CAUTION / NOTICE / HINT

### COMPONENTS (REMOVAL)



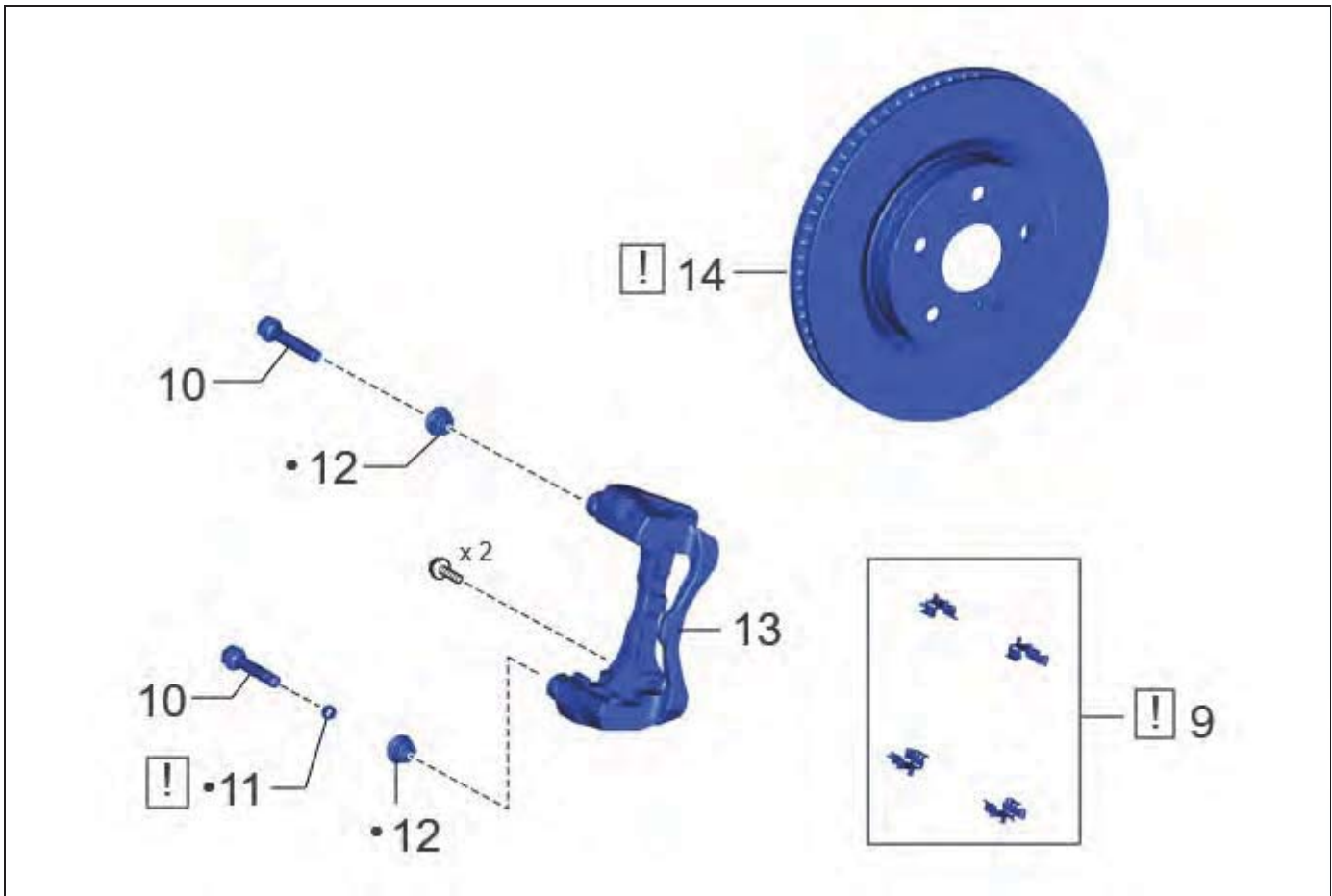
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PROCEDURE		PART NAME CODE			
1	PRECAUTION	-	<a href="#">INFO</a>	-	-
2	DISABLE BRAKE CONTROL	-	<a href="#">INFO</a>	-	-
3	FRONT WHEEL	-	-	-	-
4	DRAIN BRAKE FLUID	-	-	<a href="#">INFO</a>	-



PROCEDURE		PART NAME CODE			
5	FRONT FLEXIBLE HOSE	47313J	-	-	-
6	DISC BRAKE CYLINDER ASSEMBLY	47750	<a href="#">INFO</a>	-	-
7	FRONT DISC BRAKE PAD	-	-	-	-
8	FRONT DISC BRAKE ANTI-SQUEAL SHIM KIT	04945	<a href="#">INFO</a>	-	-

*A	for HEV Model AWD, PHEV Model	*B	for HEV Model 2WD
*1	FRONT NO. 1 DISC BRAKE ANTI-SQUEAL SHIM	*2	FRONT NO. 2 DISC BRAKE ANTI-SQUEAL SHIM
*3	FRONT DISC BRAKE PAD WEAR INDICATOR PLATE	*4	GASKET
•	Non-reusable part	-	-



PROCEDURE		PART NAME CODE			
9	FRONT DISC BRAKE PAD SUPPORT PLATE	-	<a href="#">INFO</a>	-	-
10	FRONT DISC BRAKE CYLINDER SLIDE PIN	47715A	-	-	-
11	FRONT DISC BRAKE CYLINDER SLIDE BUSHING	-	<a href="#">INFO</a>	-	-
12	FRONT DISC BRAKE BUSHING DUST BOOT	-	-	-	-
13	FRONT DISC BRAKE CYLINDER MOUNTING	47722	-	-	-
14	FRONT DISC	43512	<a href="#">INFO</a>	-	-

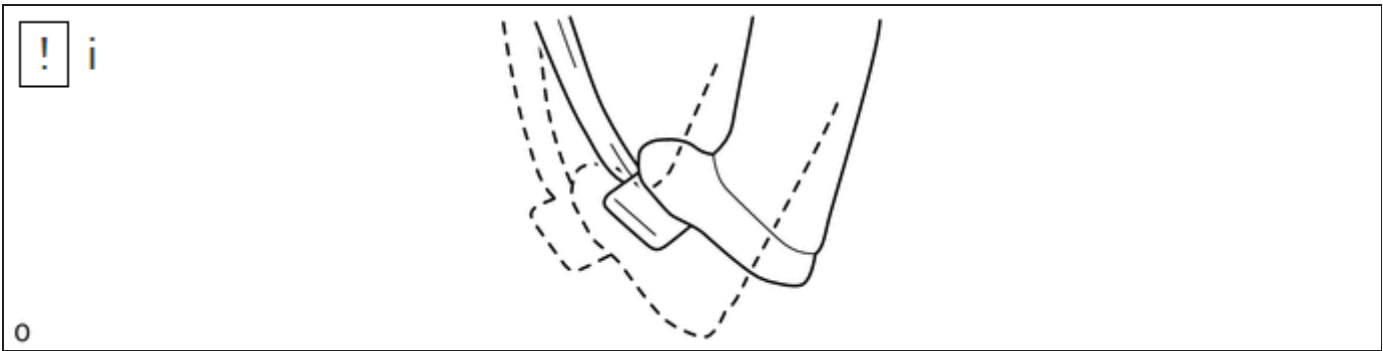
•	Non-reusable part	-	-
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## PROCEDURE

### 1. PRECAUTION

	<p><b>NOTICE:</b></p> <p>After the ignition switch is turned off, there may be a waiting time before disconnecting the negative (-) auxiliary battery terminal.</p> <p>Click here <a href="#">INFO</a></p>
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## 2. DISABLE BRAKE CONTROL



(1) Perform the following procedure to prohibit brake control.

1. Wait 4 minutes after turning the ignition switch off to ensure that the skid control ECU is in sleep mode.

### NOTICE:

After turning the ignition switch off, opening/closing doors or operating the brake pedal will activate the brake control system, so do not open/close any doors or operate the brake pedal.

2. Disconnect the cable from the negative (-) auxiliary battery terminal.

for M20A-FXS: Click here [INFO](#)

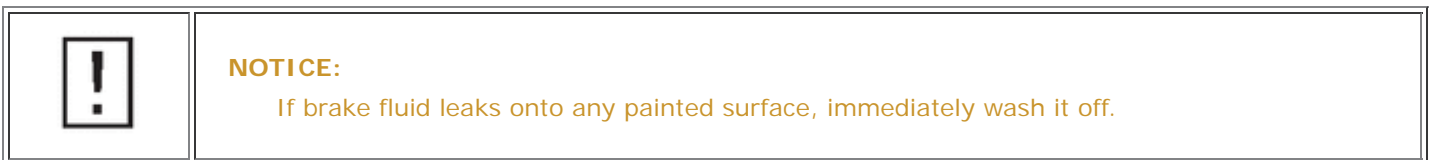
for 2ZR-FXE: Click here [INFO](#)

3. To put the skid control ECU into sleep mode completely, depress the brake pedal 40 times or more.
4. Check that the brake pedal does not stroke.

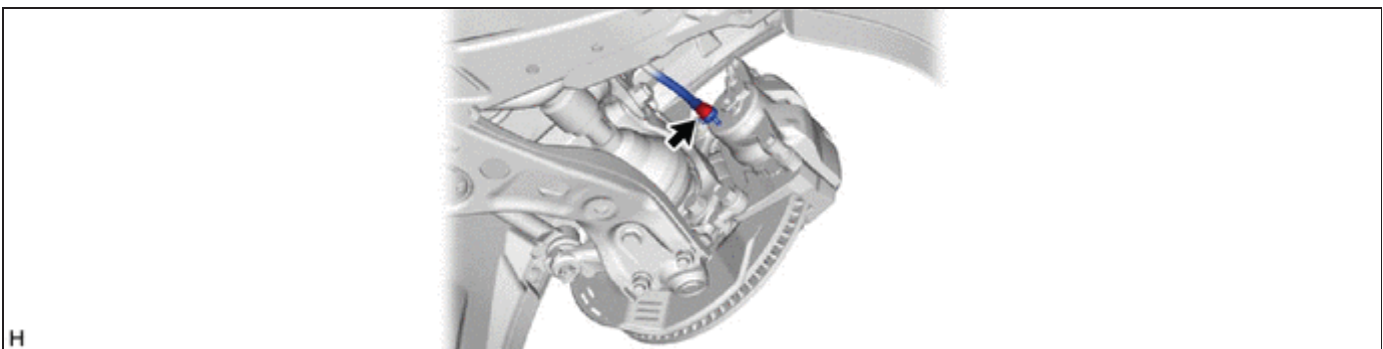
## 3. REMOVE FRONT WHEEL

Click here [INFO](#)

## 4. DRAIN BRAKE FLUID



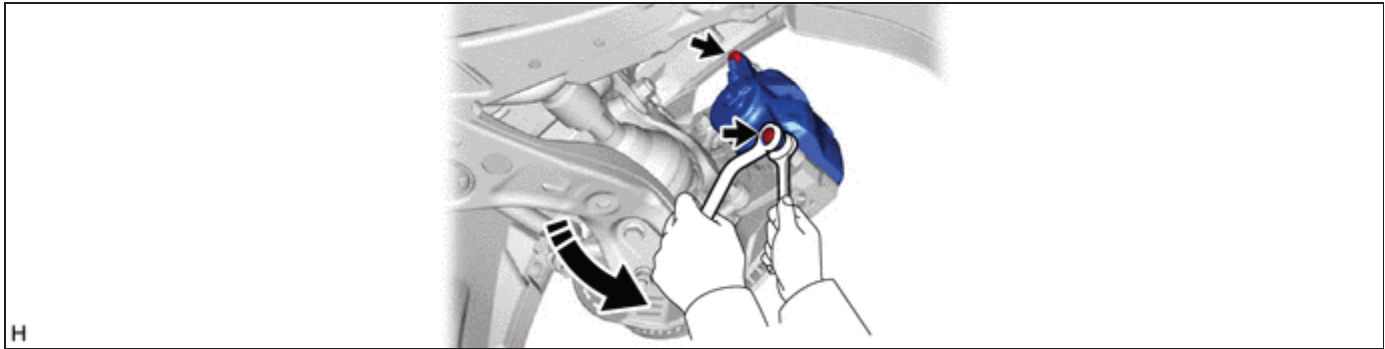
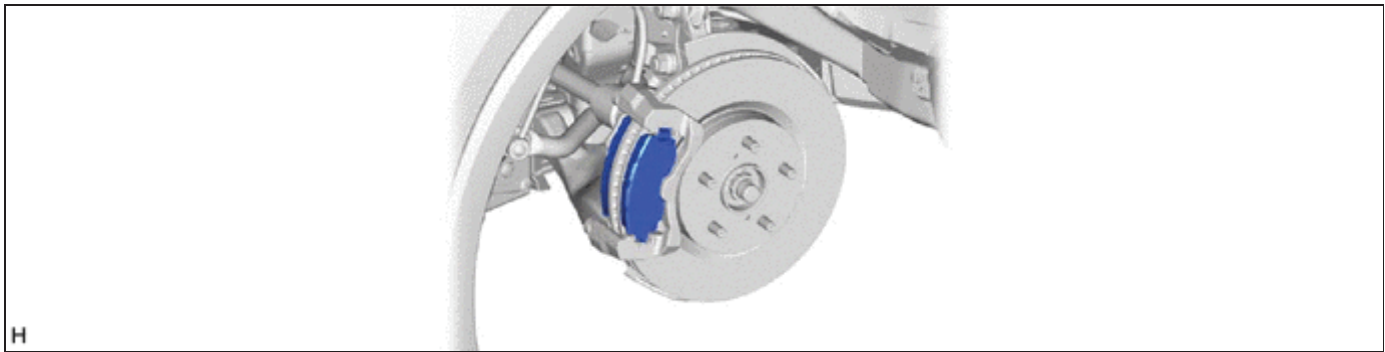
## 5. DISCONNECT FRONT FLEXIBLE HOSE



## 6. REMOVE DISC BRAKE CYLINDER ASSEMBLY

**NOTICE:**

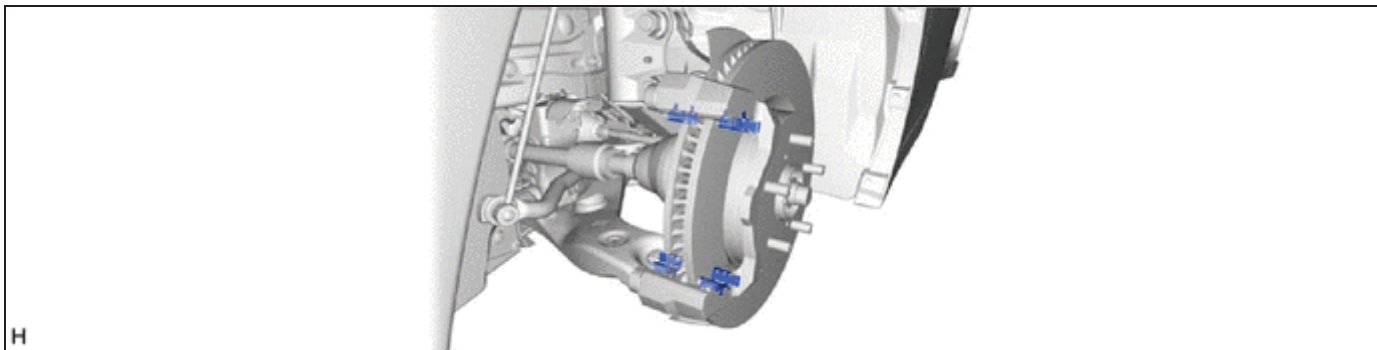
Remove the disc brake cylinder assembly while holding both of the brake pads because the anti-squeal springs may fall off the brake pads.

**7. REMOVE FRONT DISC BRAKE PAD****8. REMOVE FRONT DISC BRAKE ANTI-SQUEAL SHIM KIT**

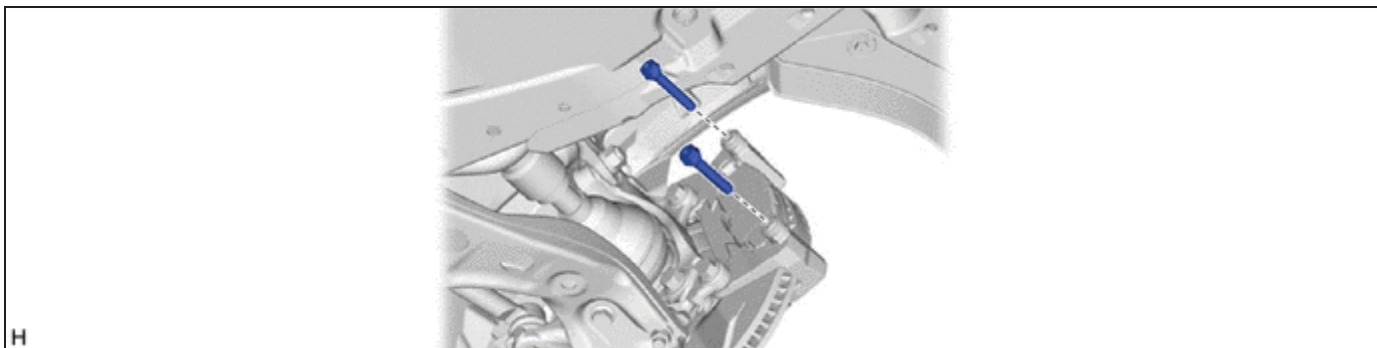
Click here [INFO](#)

**9. REMOVE FRONT DISC BRAKE PAD SUPPORT PLATE****NOTICE:**

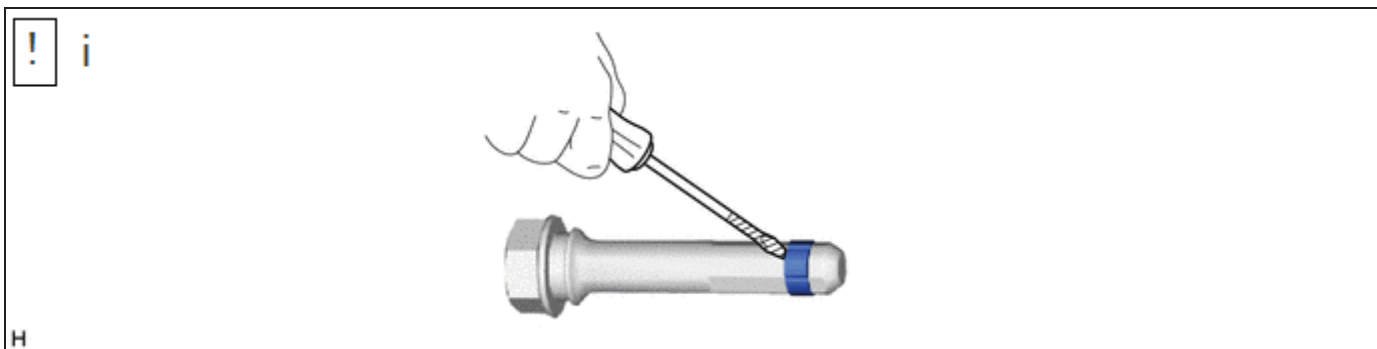
Each front disc brake pad support plate has a different shape. Be sure to put an identification mark on each front disc brake pad support plate so that it can be reinstalled to its original position.



#### 10. REMOVE FRONT DISC BRAKE CYLINDER SLIDE PIN



#### 11. REMOVE FRONT DISC BRAKE CYLINDER SLIDE BUSHING

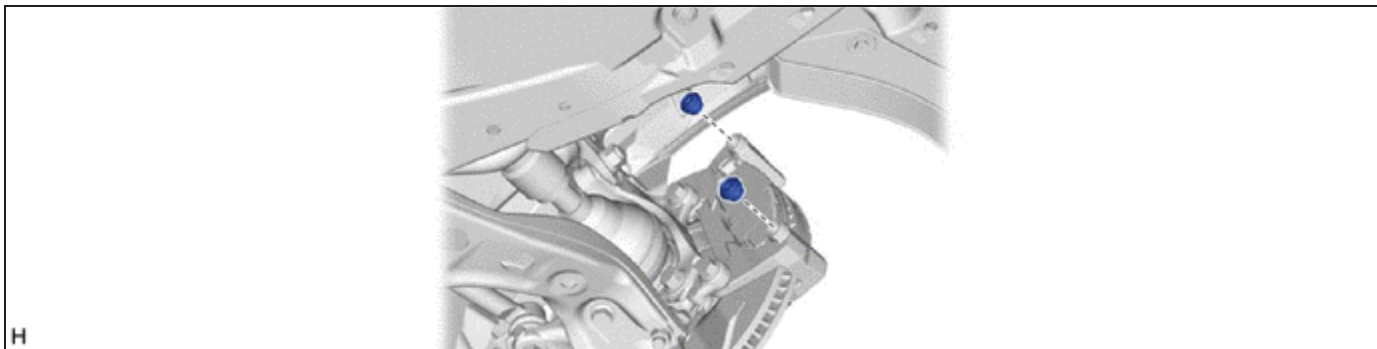


(1) Using a screwdriver with its tip wrapped with protective tape, remove the front disc brake cylinder slide bushing from the front disc brake cylinder slide pin (lower side).

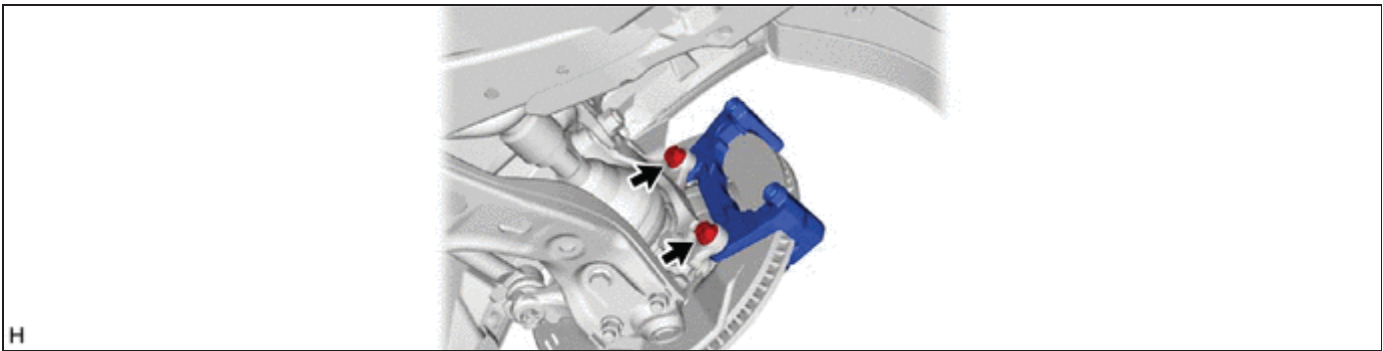
#### NOTICE:

Do not damage the front disc brake cylinder slide pin (lower side).

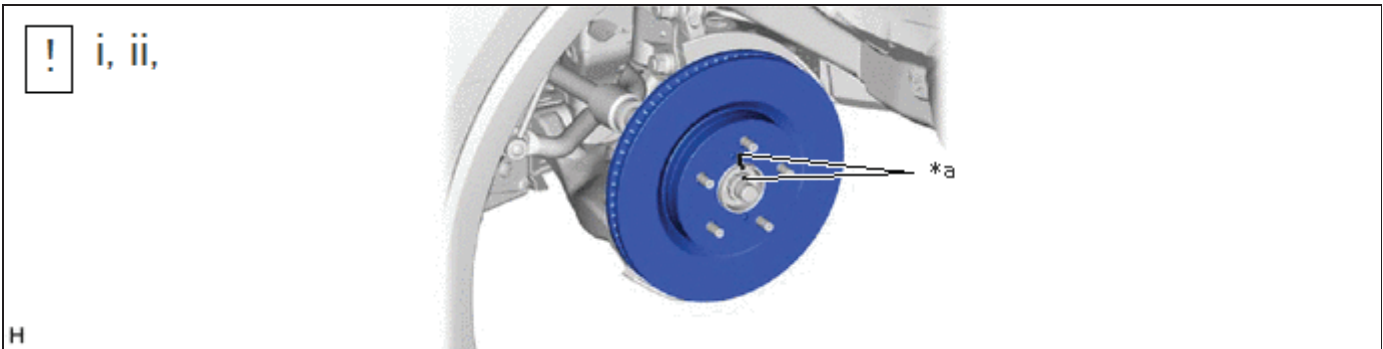
#### 12. REMOVE FRONT DISC BRAKE BUSHING DUST BOOT



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



**14. REMOVE FRONT DISC**



*a	Matchmark	-	-
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- (1) Put matchmarks on the front disc and the front axle hub sub-assembly.
- (2) Remove the front disc.

