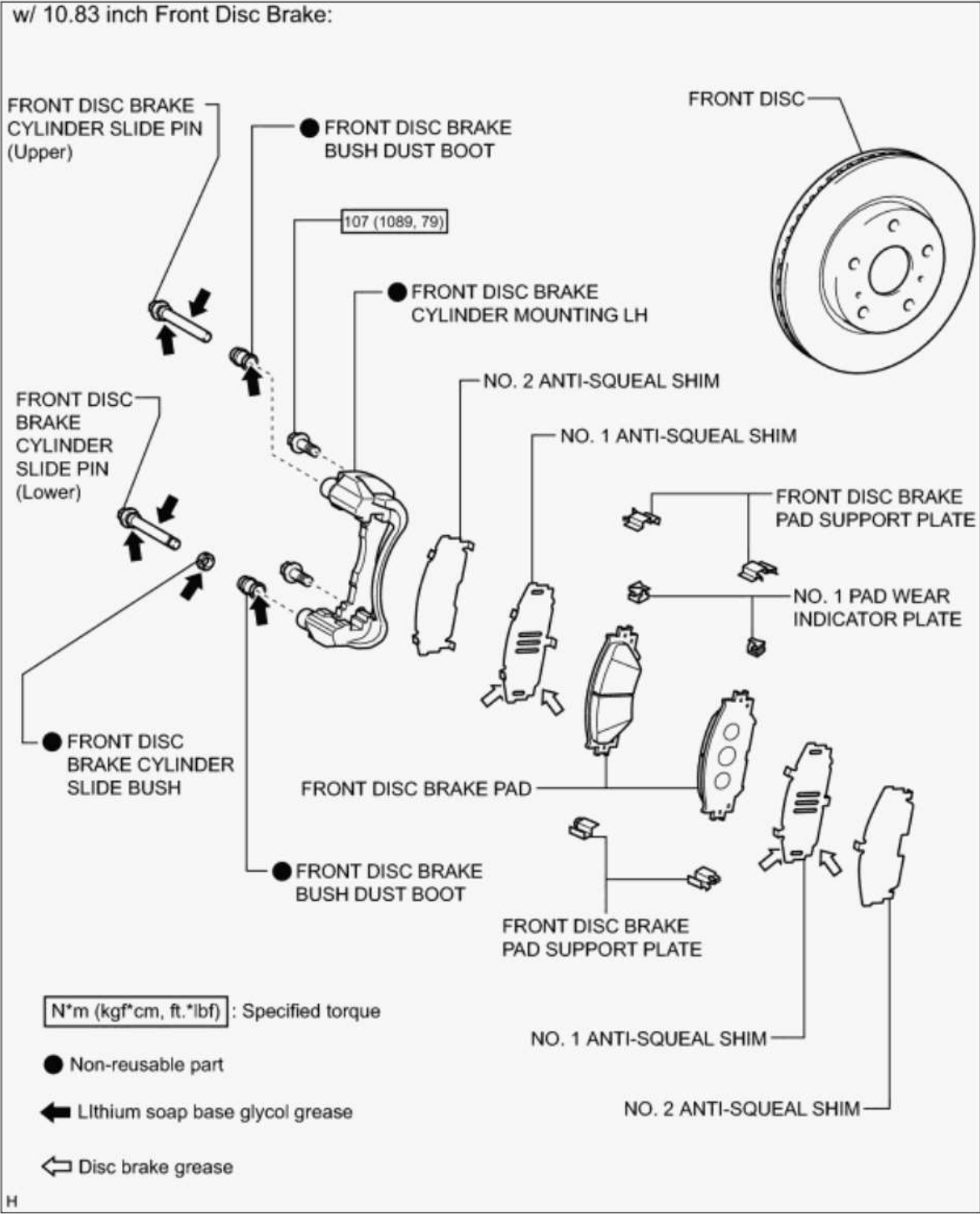


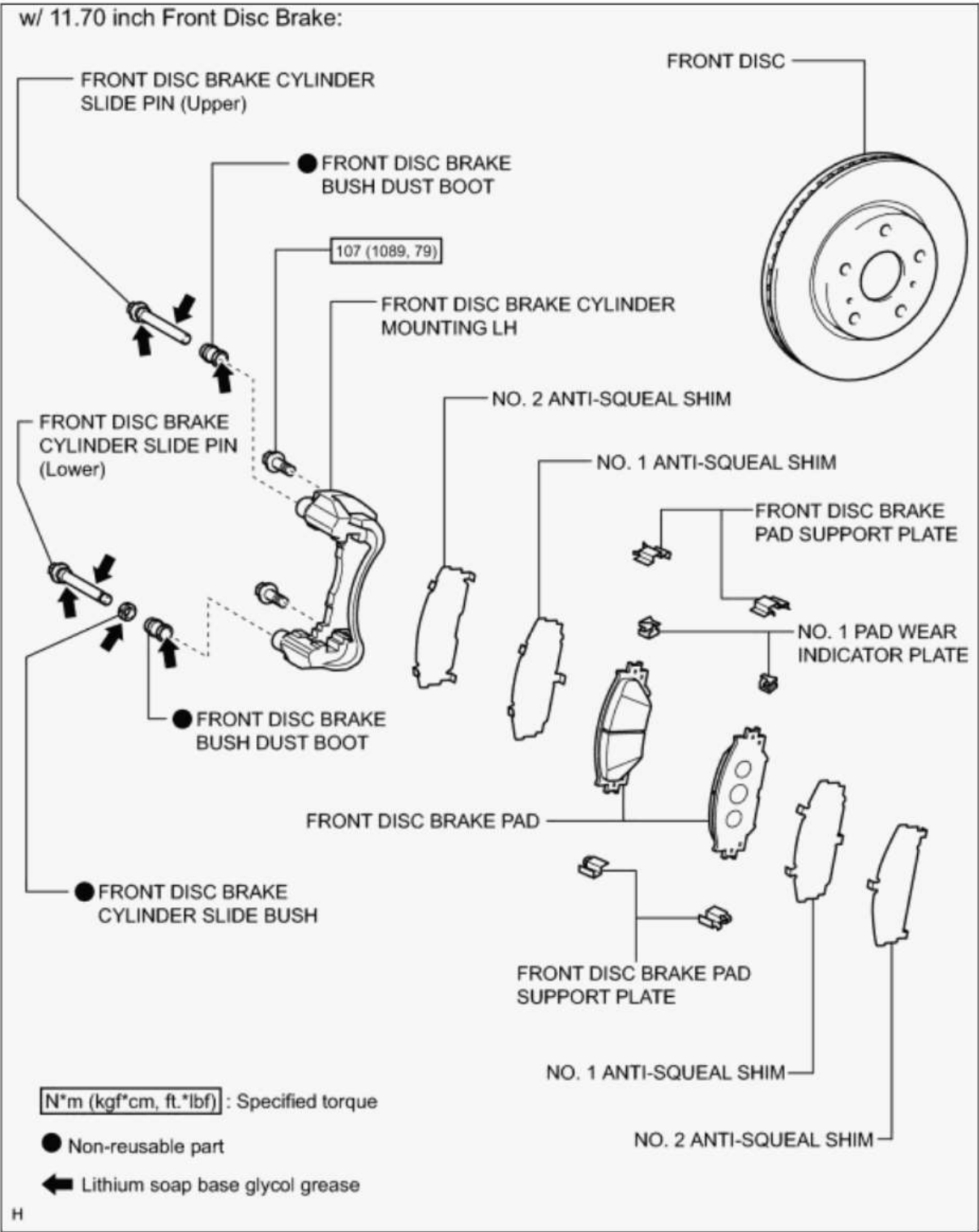
Last Modified: 9-7-2011	6.4 K	From: 201008
Model Year: 2011	Model: RAV4	Doc ID: RM000001HJO00QX
Title: BRAKE: FRONT BRAKE: COMPONENTS (2011 RAV4)		

COMPONENTS

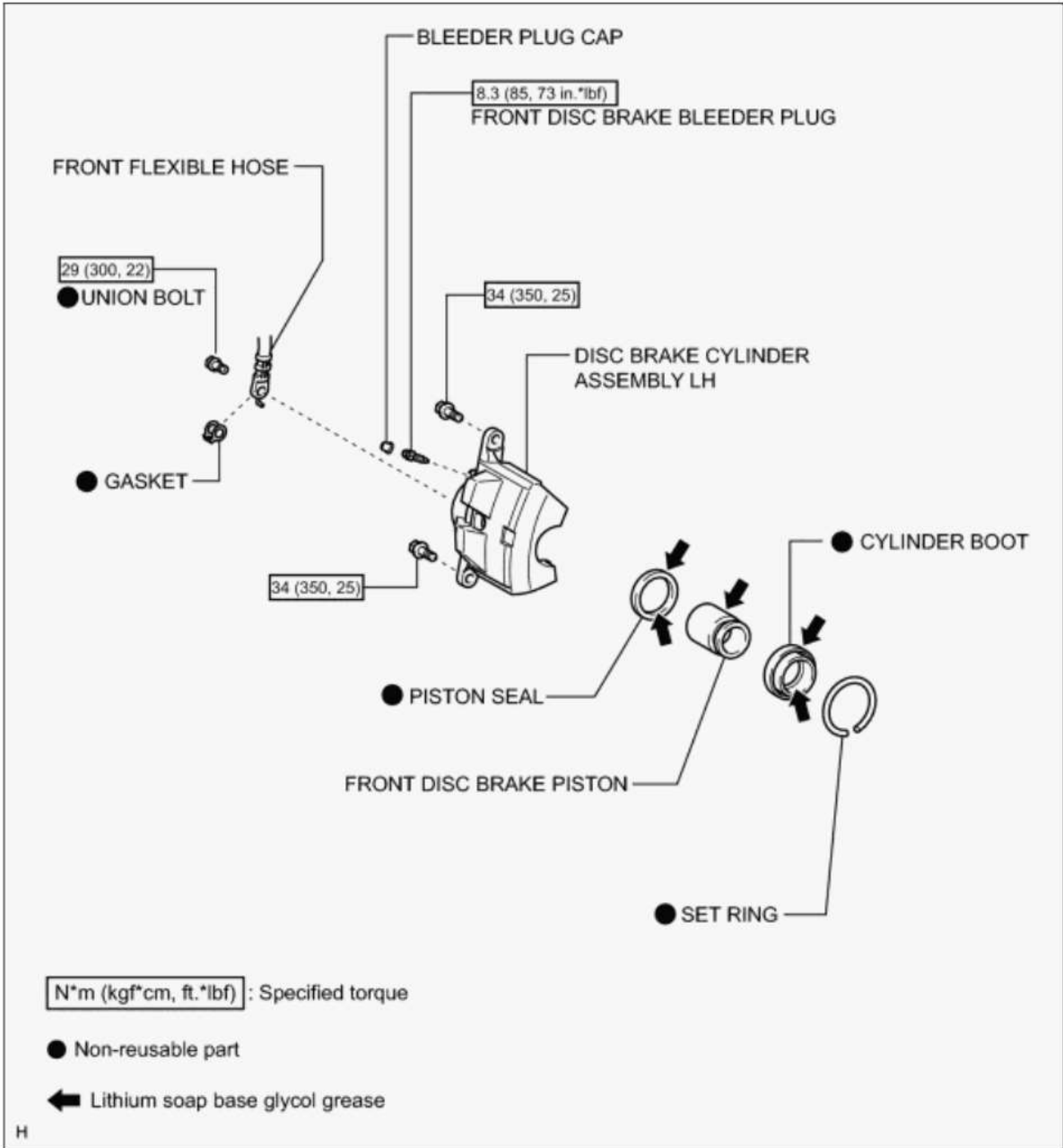
ILLUSTRATION



ILLUSTRATION



ILLUSTRATION



Last Modified: 9-7-2011	6.4 A	From: 201008
Model Year: 2011	Model: RAV4	Doc ID: RM0000010KU00IX
Title: BRAKE: FRONT BRAKE: DISASSEMBLY (2011 RAV4)		

DISASSEMBLY

HINT:

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

1. REMOVE FRONT DISC BRAKE PAD

- (a) Remove the 2 disc brake pads.

2. REMOVE ANTI-SQUEAL SHIM

- (a) Remove the shims from each pad.

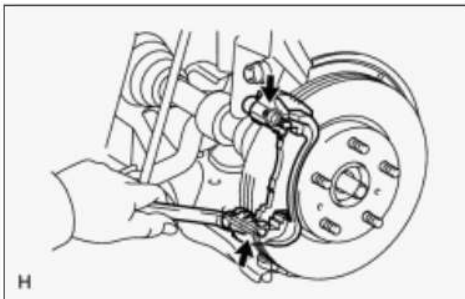
3. REMOVE NO. 1 PAD WEAR INDICATOR PLATE

- (a) Remove the indicator plates from the pads.

4. REMOVE FRONT DISC BRAKE PAD SUPPORT PLATE

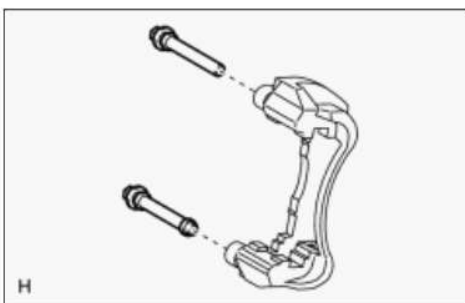
- (a) Remove the 4 plates from the brake cylinder mounting.

5. REMOVE FRONT DISC BRAKE CYLINDER MOUNTING LH



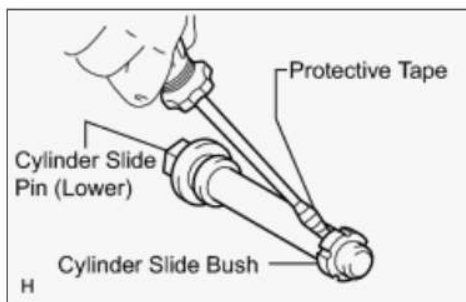
- (a) Remove the 2 bolts and cylinder mounting.

6. REMOVE FRONT DISC BRAKE CYLINDER SLIDE PIN



- (a) Remove the 2 pins (upper and lower) from the mounting.

7. REMOVE FRONT DISC BRAKE CYLINDER SLIDE BUSH



(a) Using a screwdriver, remove the slide bush from the pin (lower).

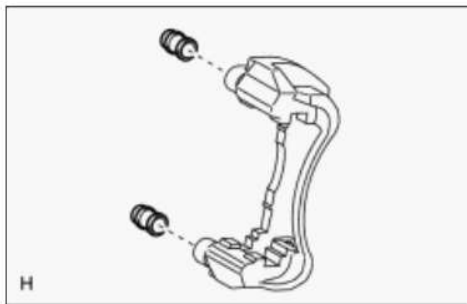
HINT:

Tape the screwdriver tip before use.

NOTICE:

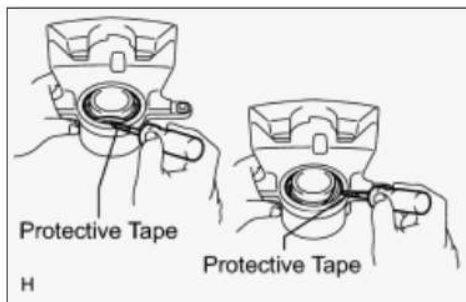
Be careful not to damage the pin.

8. REMOVE FRONT DISC BRAKE BUSH DUST BOOT



(a) Remove the 2 boots from the mounting.

9. REMOVE CYLINDER BOOT



(a) Using a screwdriver, pry out the set ring and boot.

HINT:

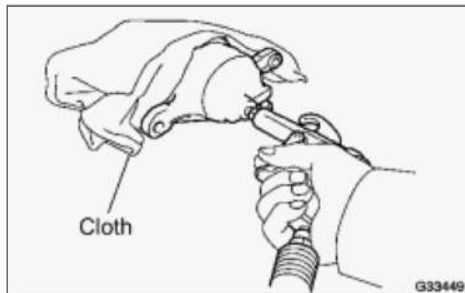
Tape the screwdriver tip before use.

NOTICE:

Be careful not to damage the brake piston and cylinder.

10. REMOVE FRONT DISC BRAKE PISTON

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



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

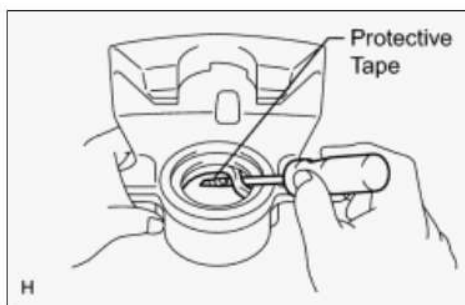
CAUTION:

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

NOTICE:

Be careful not to spatter the brake fluid.

11. REMOVE PISTON SEAL



(a) Using a screwdriver, pry out the seal from the cylinder.

HINT:

Tape the screwdriver tip before use.

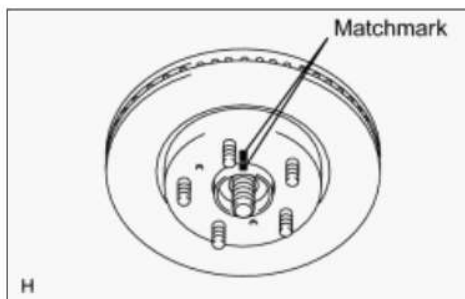
NOTICE:

Be careful not to damage the inner cylinder and piston seal groove.

12. REMOVE FRONT DISC BRAKE BLEEDER PLUG

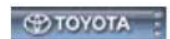
(a) Remove the bleeder plug cap and bleeder plug from the cylinder.

13. REMOVE FRONT DISC



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

(b) Remove the disc.



Last Modified: 9-7-2011	6.4 G	From: 201008
Model Year: 2011	Model: RAV4	Doc ID: RM0000010KR00KX
Title: BRAKE: FRONT BRAKE: INSPECTION (2011 RAV4)		

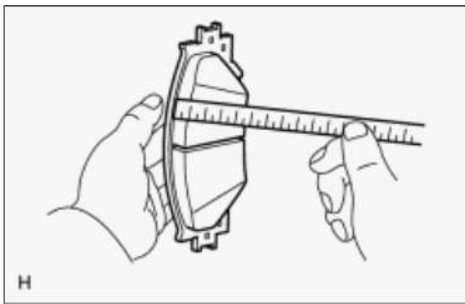
INSPECTION

1. CHECK BRAKE CYLINDER AND PISTON

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

If necessary, replace the cylinder and piston.

2. CHECK PAD LINING THICKNESS



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

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 pad.

3. CHECK FRONT DISC BRAKE PAD SUPPORT PLATE

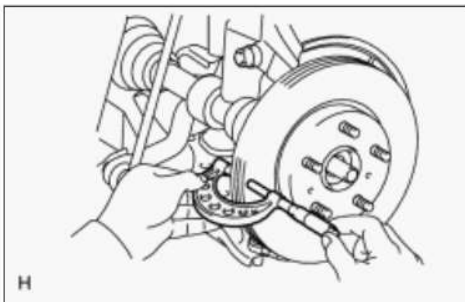
- (a) Check the 4 plates as follows. If necessary, replace the plates.

- (1) Use brake cleaner to clean the pad of the pad support plate and cylinder mounting contact surface. Inspect for deformation, cracks, rust and foreign matter that is difficult to remove.
- (2) Use brake cleaner to clean the pad support plate contact surface of the cylinder mounting. After installing the pad support plate to the cylinder mounting, inspect for looseness and deformation.
- (3) After installing the pad, inspect if the pad falls off easily (due to the spring force of the pad support plate).

4. CHECK DISC THICKNESS

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

Standard Thickness:



ITEM	SPECIFIED CONDITION
10.83 inch disc	25.0 mm (0.984 in.)
11.70 inch disc	28.0 mm (1.102 in.)

Minimum Thickness:

ITEM	SPECIFIED CONDITION
------	---------------------

10.83 inch disc	22.0 mm (0.866 in.)
11.70 inch disc	25.0 mm (0.984 in.)

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

5. CHECK DISC RUNOUT

(a) Check the axle hub bearing  .

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

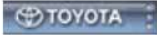
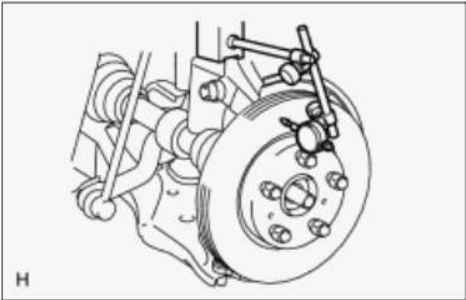
Torque: 103 N·m (1050 kgf·cm, 76ft·lbf)

(c) Using a dial indicator, measure the disc runout 10.0 mm (0.394 in.) from the outer edge of the disc.

Maximum disc runout:
0.05 mm (0.00197 in.)

If the runout is more than the maximum, change the installation positions of the disc and axle so that the runout is the smallest possible. If the runout is more than the maximum even when the installation positions are changed, grind the disc. If the disc thickness is less than the minimum, replace the disc.

(d) Remove the 5 hub nuts and disc.



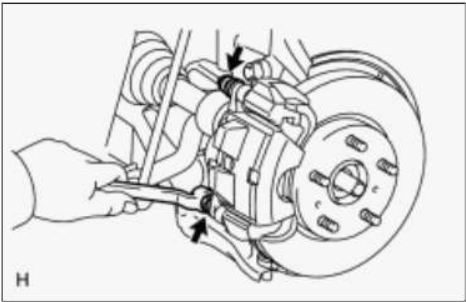
Last Modified: 9-7-2011	6.4 A	From: 201008
Model Year: 2011	Model: RAV4	Doc ID: RM0000010KQ00QX
Title: BRAKE: FRONT BRAKE: INSTALLATION (2011 RAV4)		

INSTALLATION

HINT:

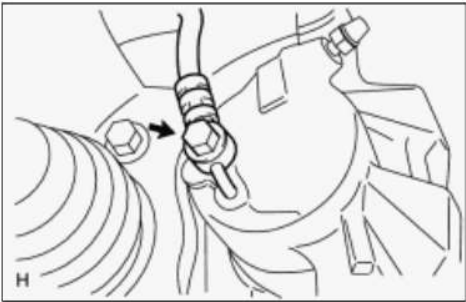
- Use the same procedure for the RH and LH sides.
- The procedures listed below are for the LH side.

1. INSTALL DISC BRAKE CYLINDER ASSEMBLY LH



- (a) Install the cylinder with the 2 bolts.
- Torque: 34 N·m (350 kgf·cm, 25ft·lbf)**

2. CONNECT FRONT FLEXIBLE HOSE

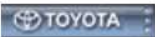


- (a) Install a new gasket and connect the flexible hose with a new union bolt.
- Torque: 29 N·m (300 kgf·cm, 22ft·lbf)**

HINT:

Install the flexible hose lock securely in the lock hole in the cylinder.

3. REMOVE COWL TOP VENTILATOR LOUVER BRACKET LH INFO
4. BLEED BRAKE SYSTEM INFO
5. INSTALL COWL TOP VENTILATOR LOUVER BRACKET LH INFO
6. INSTALL FRONT WHEEL INFO



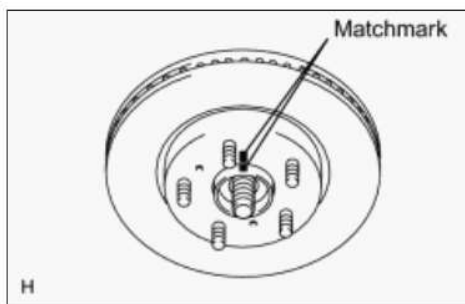
Last Modified: 9-7-2011	6.4 A	From: 201008
Model Year: 2011	Model: RAV4	Doc ID: RM0000010KV00JX
Title: BRAKE: FRONT BRAKE: REASSEMBLY (2011 RAV4)		

REASSEMBLY

HINT:

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

1. INSTALL FRONT DISC



(a) Align the matchmarks and install the disc.

HINT:

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

2. CHECK DISC RUNOUT INFO

3. TEMPORARILY INSTALL FRONT DISC BRAKE BLEEDER PLUG

(a) Temporarily install the bleeder plug to the cylinder.

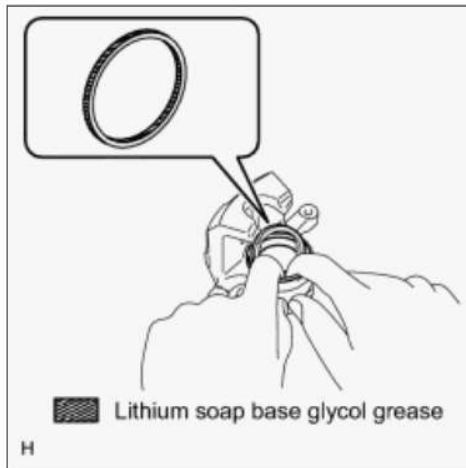
HINT:

The bleeder plug will be tightened to a torque specification in the "BLEED AIR FROM BRAKE LINE" procedures.

(b) Install the bleeder plug cap.

4. INSTALL PISTON SEAL

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



(b) Install the piston seal to the cylinder.

NOTICE:

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

5. INSTALL FRONT DISC BRAKE PISTON



(a) Apply a light coat of lithium soap base glycol grease to the inner and outer circumference of a new cylinder boot, as well as the entire circumference of the top and bottom of the outer edge, as shown in the illustration.

(b) Apply a light coat of lithium soap base glycol grease to the entire outer circumference of the front disc brake piston where it contacts the cylinder boot and front disc brake cylinder.

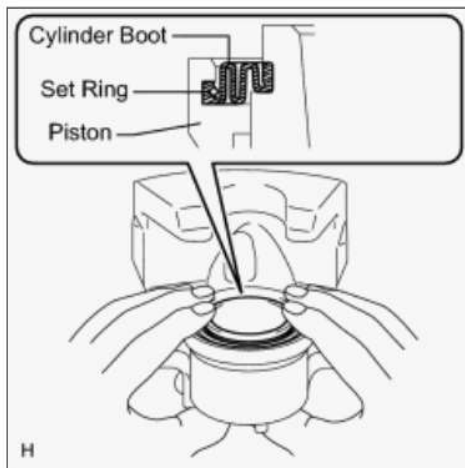
(c) Install the cylinder boot to the front disc brake piston.

6. INSTALL CYLINDER BOOT

(a) Install the front disc brake piston to the front disc brake cylinder.

NOTICE:

Do not forcibly install the piston to the cylinder.



(b) Install the cylinder boot to the cylinder.

NOTICE:

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

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

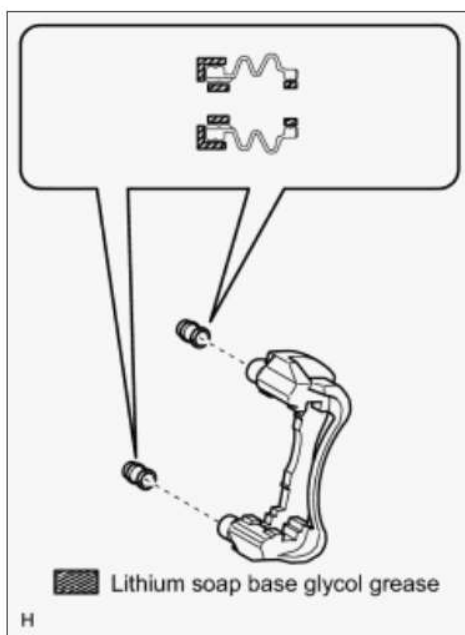
HINT:

Tape the screwdriver tip before use.

NOTICE:

Do not damage the cylinder boot.

7. INSTALL FRONT DISC BRAKE BUSH DUST BOOT



(a) Apply a light coat of lithium soap base glycol grease to the entire circumference of a new rear disc brake bush dust boot where it contacts the rear disc brake cylinder mounting, and the entire inner circumference of its both ends.

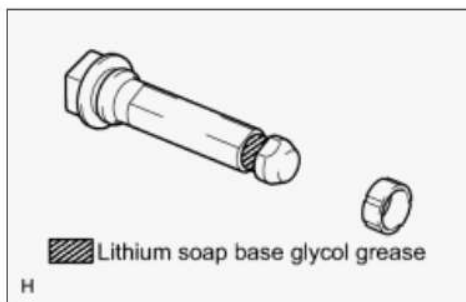
HINT:

Apply at least 0.3 g (0.01 oz.) of lithium soap base glycol grease to the rear disc brake bush dust boot.

NOTICE:

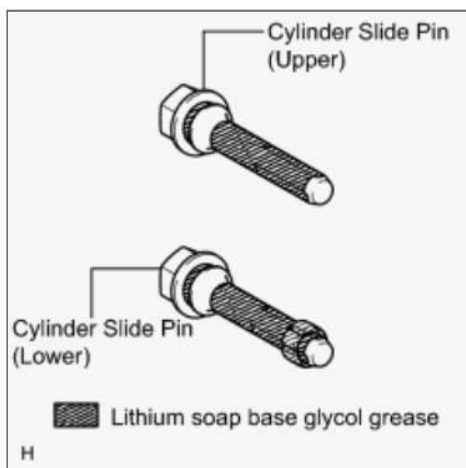
Apply a sufficient amount of lithium soap base glycol grease to the entire circumference of the rear disc brake bush dust boot and rear disc brake cylinder mounting contact surfaces.

(b) Install the 2 boots to the mounting.

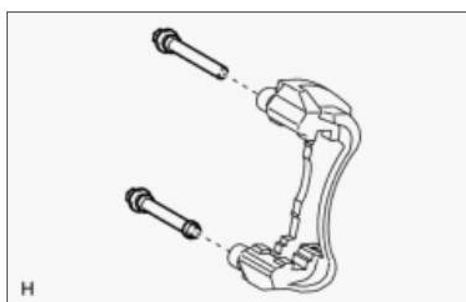
8. INSTALL FRONT DISC BRAKE CYLINDER SLIDE BUSH

- (a) Apply a light coat of lithium soap base glycol grease to the contact surface of the front disc brake cylinder slide pin (lower) where it contacts front disc brake cylinder slide bush.

- (b) Install a new front disc brake cylinder slide bush to the slide pin (lower).

9. INSTALL FRONT DISC BRAKE CYLINDER SLIDE PIN

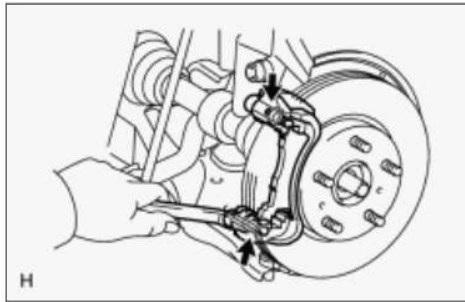
- (a) Apply a light coat of lithium soap base glycol grease to the sliding part and the seal surface of the 2 front disc brake cylinder slide pins.



- (b) Install the 2 slide pins (upper and lower) to the mounting.

10. INSTALL FRONT DISC BRAKE CYLINDER MOUNTING LH

- (a) Install the cylinder mounting with the 2 bolts.



Torque: 107 N·m (1089 kgf·cm, 79ft·lbf)

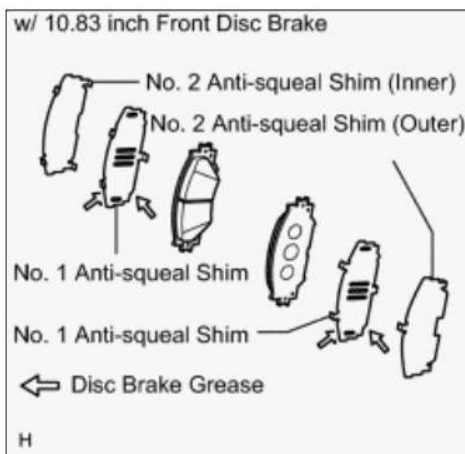
11. INSTALL FRONT DISC BRAKE PAD SUPPORT PLATE

- (a) Install the 4 plates to the mounting.

12. INSTALL NO. 1 PAD WEAR INDICATOR PLATE

- (a) Install the 2 indicator plates to the upper side of the pads.

13. INSTALL ANTI-SQUEAL SHIM KIT FRONT

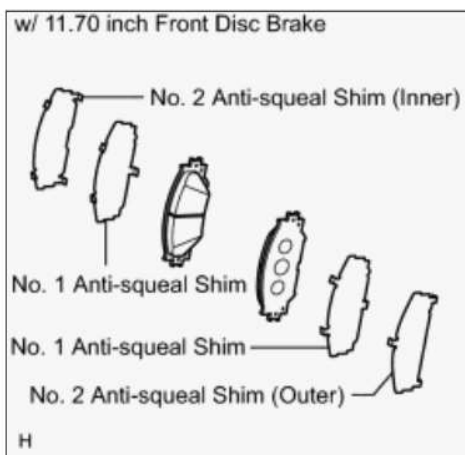


- (a) w/ 10.83 inch Front Disc Brake:

- (1) Apply a light coat of disc brake grease to both sides of each No. 1 shim.
- (2) Install the No. 1 and No. 2 shims to the pads.

NOTICE:

- When replacing a worn pad, the shims must be replaced together with the pads.
- Install the shims in the correct positions and direction as shown in the illustration.



- (b) w/ 11.70 inch Front Disc Brake:

- (1) Install the No. 1 and No. 2 shims to the pads.

NOTICE:

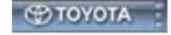
- When replacing a worn pad, the shims must be replaced together with the pads.
- Install the shims in the correct positions and direction as shown in the illustration.

14. INSTALL FRONT DISC BRAKE PAD

(a) Install the 2 disc brake pads to the mounting.

NOTICE:

Make sure there is no oil or grease on the friction surfaces of the pads and disc.



Last Modified: 9-7-2011	6.4 A	From: 201008
Model Year: 2011	Model: RAV4	Doc ID: RM0000010KT00JX
Title: BRAKE: FRONT BRAKE: REMOVAL (2011 RAV4)		

REMOVAL

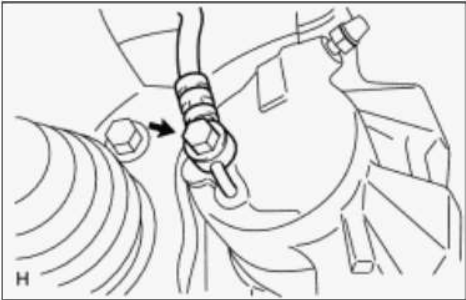
HINT:

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

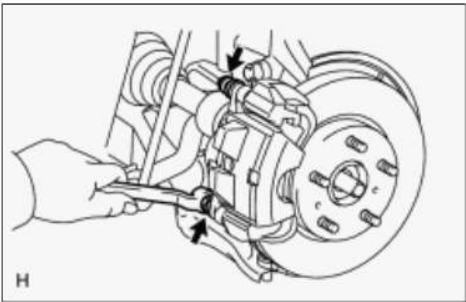
1. REMOVE FRONT WHEEL
2. DRAIN BRAKE FLUID

NOTICE:

Wash off brake fluid immediately if it comes in contact with any painted surface.



3. DISCONNECT FRONT FLEXIBLE HOSE
- (a) Remove the union bolt and gasket.
- (b) Disconnect the flexible hose from the brake cylinder.



4. REMOVE DISC BRAKE CYLINDER ASSEMBLY LH
- (a) Remove the 2 bolts and cylinder.

