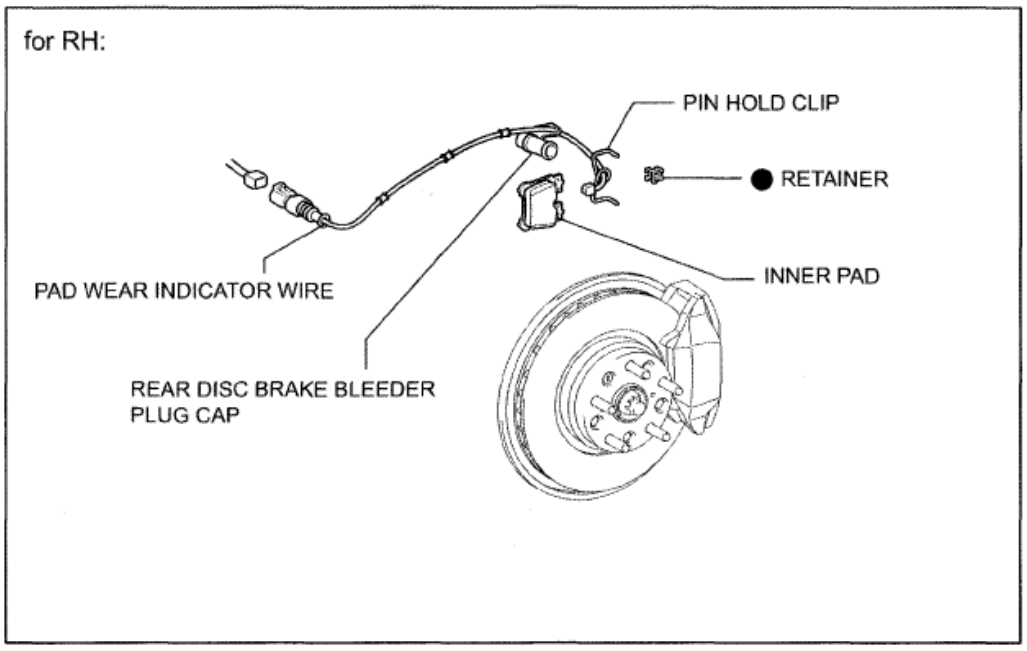
REAR BRAKE

COMPONENTS



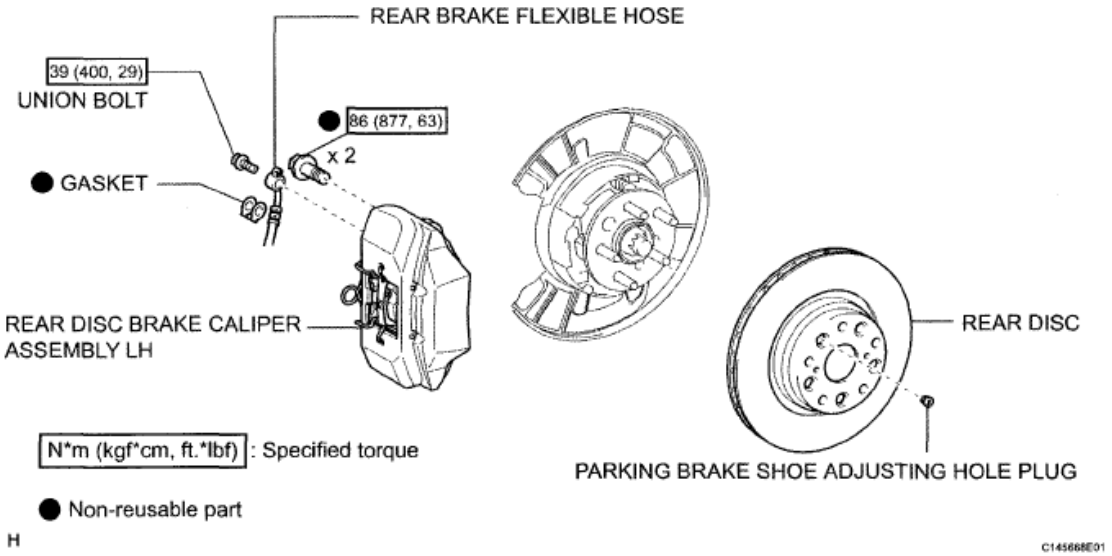


Fig. 112: Identifying Rear Brake Replacement Components With Torque Specifications (1 Of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

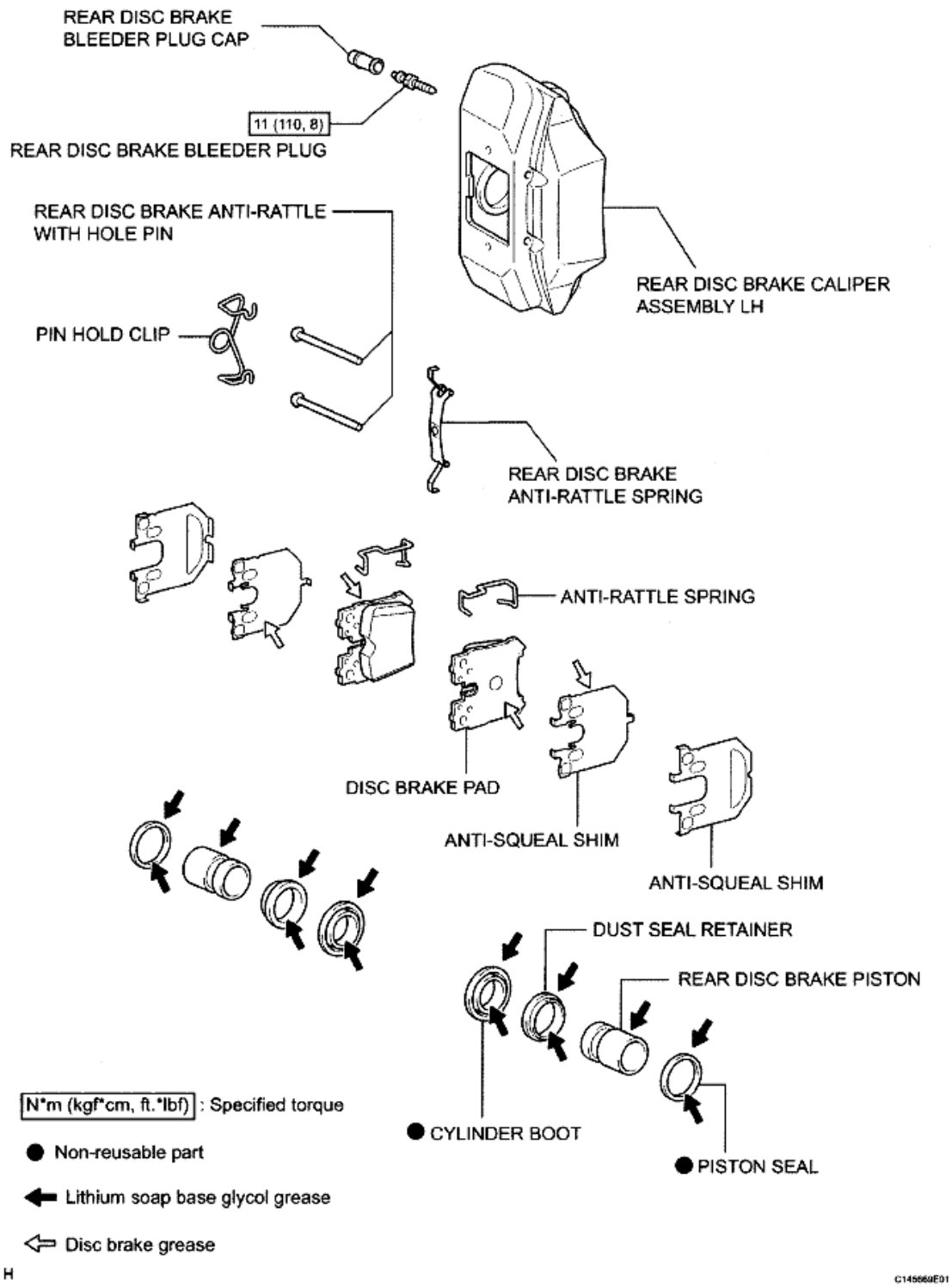


Fig. 113: Identifying Rear Brake Replacement Components With Torque Specifications (2 Of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

NOTE: While the battery is connected, even if the engine switch is off, the brake control system activates when the brake pedal is depressed or the door courtesy switch turns on. Therefore during servicing of the brake system components, do not operate the brake pedal and open/close the doors while the battery is connected.

HINT:

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

1. **REMOVE COWL TOP VENTILATOR LOUVER RH** (See **REMOVAL**)
2. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**

CAUTION: Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.

NOTE: After the engine switch is turned off, the HDD navigation system requires approximately 6 minutes to record various types of memory and settings. As a result, after turning the engine switch off, wait 6 minutes or more before disconnecting the cable from the negative (-) battery terminal.

3. **REMOVE REAR WHEEL**
4. **REMOVE REAR DISC BRAKE PAD KIT**
   a. While pressing the area labeled A, push the hole pin (labeled B) toward the brake caliper, and remove the pin hold clip.

NOTE: The pin hold clip can be used again if it has sufficient rebound; no deformation or wear; and has had all rust, dirt and foreign particles cleaned off.

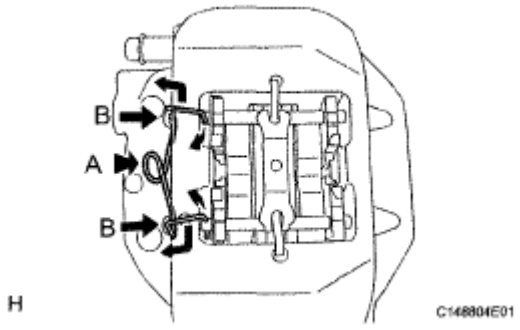


Fig. 114: Locating Hole Pin
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. While pressing the area labeled A, remove the 2 rear disc brake anti-rattles with hole pins (labeled B).
c. Remove the rear disc brake anti-rattle spring.

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

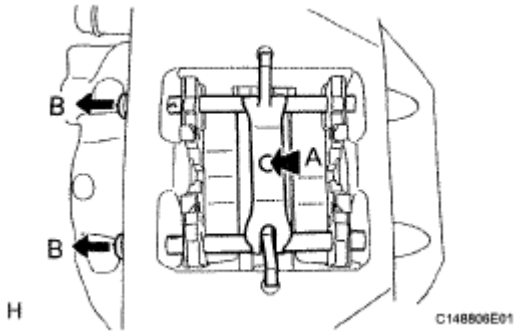


Fig. 115: Identifying Rear Disc Brake Anti-Rattles With Hole Pins
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Remove the 2 pads from the disc brake caliper.
e. Remove the 2 anti-squeal shims and anti-rattle spring from each pad.

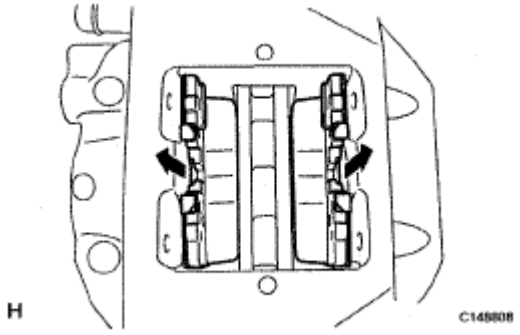


Fig. 116: Locating Disc Brake Caliper
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

f. for RH:

Remove the pad wear indicator wire as follows:

1. Disconnect the pad wear indicator wire connector (labeled A).
2. Detach the 3 clamps (labeled B) and bleeder plug cap (labeled C).

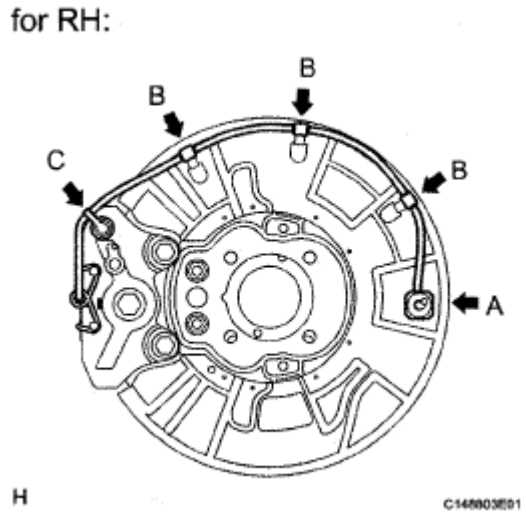


Fig. 117: Locating Clamps, Pad Wear Indicator Wire Connector & Bleeder Plug Cap
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. Remove the retainer and pad wear indicator wire from the inner pad.

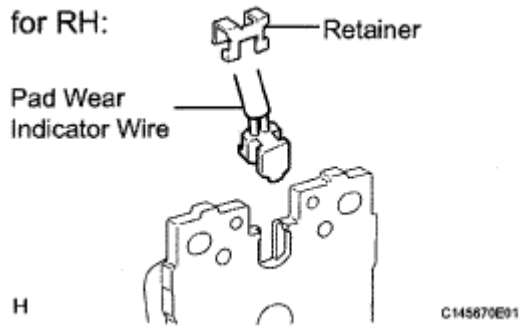


Fig. 118: Identifying Retainer & Pad Wear Indicator Wire
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

5. **DRAIN BRAKE FLUID**

NOTE: Wash brake fluid off immediately if it is spilled on any painted surface.

6. **DISCONNECT REAR BRAKE FLEXIBLE HOSE**
   a. Remove the union bolt and gasket from the disc brake caliper, and then disconnect the flexible hose.

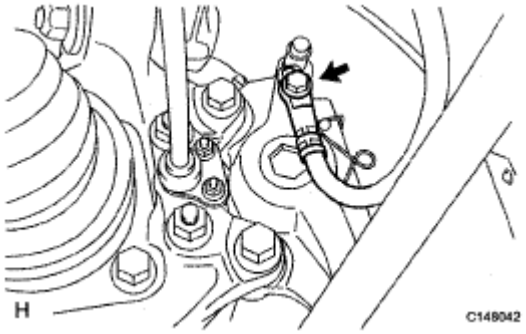


Fig. 119: Locating Union Bolt & Gasket
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

7. **REMOVE REAR DISC BRAKE CALIPER ASSEMBLY LH**
   a. Remove the 2 bolts and disc brake caliper from the knuckle.

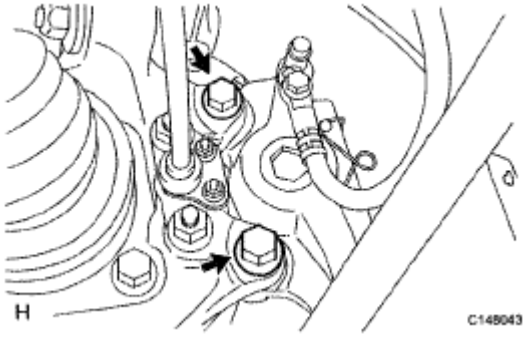


Fig. 120: Locating Bolts & Disc Brake Caliper
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

8. **REMOVE PARKING BRAKE SHOE ADJUSTING HOLE PLUG**
9. **REMOVE REAR DISC**
   a. Put matchmarks on the rear disc and axle hub if planning to reuse the disc.

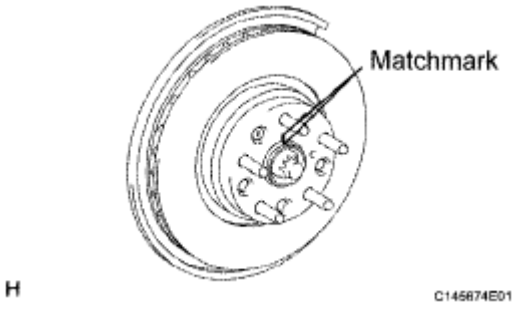


Fig. 121: Identifying Matchmarks On Rear Disc & Axle Hub
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Turn the shoe adjuster until the disc turns freely, and then remove the disc.

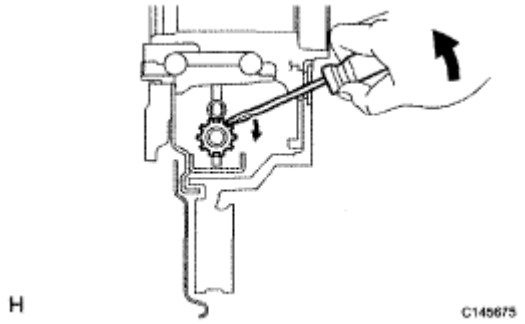


Fig. 122: Turning Shoe Adjuster
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

DISASSEMBLY

HINT:

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

1. **REMOVE CYLINDER BOOT**
   a. Using a screwdriver, remove the 2 cylinder boots from the disc brake caliper.

      HINT:

      Tape the screwdriver tip before use.

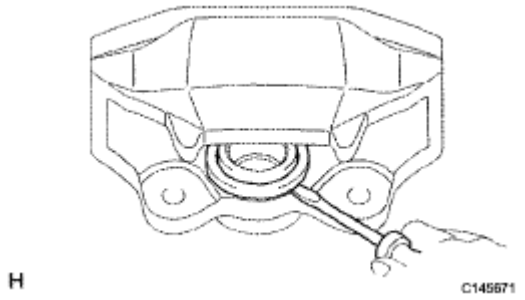


Fig. 123: Using Screwdriver To Remove Cylinder Boots From Disc Brake Caliper
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. **REMOVE REAR DISC BRAKE PISTON**
   a. Install one side of the disc brake pad.
   b. Install a wooden plate between the pistons of the disc brake caliper to prevent the pistons from jumping out.
   c. Using an air gun, gradually apply air and remove the disc brake piston from the cylinder.

CAUTION: Do not place your fingers in front of the pistons when using

compressed air.

d. Remove the brake pad and wooden plate.

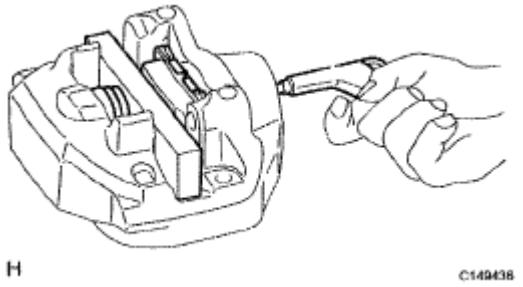


Fig. 124: Applying Air & Removing Disc Brake Piston From Cylinder
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

3. **REMOVE PISTON SEAL**
   a. Using a screwdriver, remove the 2 piston seals from the disc brake caliper.

NOTE: Do not damage the inner cylinder and cylinder groove.

HINT:

Tape the screwdriver tip before use.

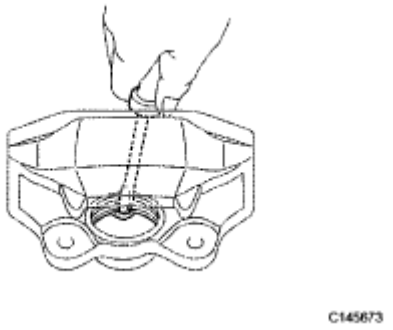


Fig. 125: Using Screwdriver To Remove Piston Seals From Disc Brake Caliper
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **REMOVE REAR DISC BRAKE BLEEDER PLUG CAP**

5. **REMOVE REAR DISC BRAKE BLEEDER PLUG**

INSPECTION

1. **CHECK BRAKE CYLINDER AND PISTON**
   a. Check the cylinder bore and piston for rust or scoring. If necessary, replace the rear disc brake caliper assembly and piston.
2. **CHECK PAD LINING THICKNESS**
   a. Using a ruler, measure the pad lining thickness.

      Standard thickness:

      13.5 mm (0.532 in.)

      Minimum thickness:

      1.0 mm (0.0394 in.)

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

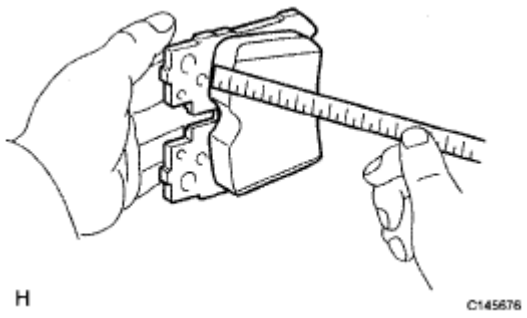


Fig. 126: Measuring Pad Lining Thickness Using Ruler
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. **CHECK REAR DISC BRAKE ANTI-RATTLE SPRING**
   a. Use brake cleaner to clean the rear disc brake anti-rattle spring. Check for deformation and cracks.
   b. When installing the rear disc brake anti-rattle spring to the rear disc brake caliper, check that the spring's force is applied to the hole pin and brake pad.
4. **CHECK REAR DISC THICKNESS**
   a. Using a micrometer, measure the disc thickness.

      Standard thickness:

      12.40 inch disc:

      20.0 mm (0.787 in.)

13.19 inch disc:

22.0 mm (0.866 in.)

Minimum thickness:

12.40 inch disc:

18.0 mm (0.709 in.)

13.19 inch disc:

20.0 mm (0.887 in.)

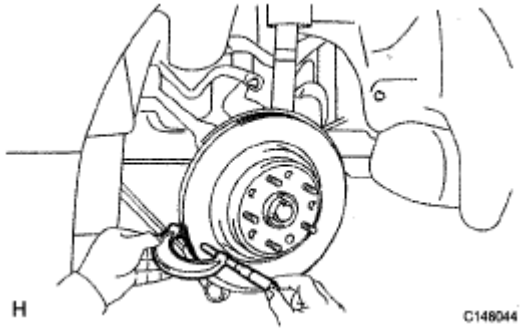


Fig. 127: Measuring Disc Thickness Using Micrometer
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

5. **CHECK DISC RUNOUT**
   a. Using SST to hold the disc, fix the disc in place with the 5 hub nuts.

   SST 09330-00021

   Torque: 140 N*m (1428 kgf*cm, 103 ft.*lbf)

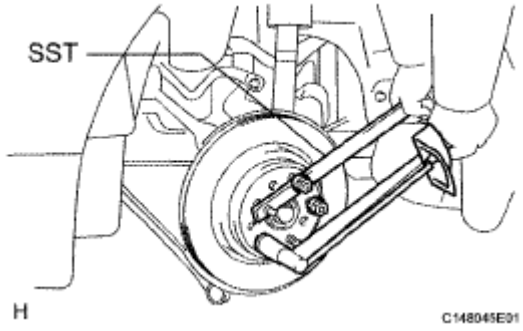


Fig. 128: Holding Disc With SST

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

b. Using a dial indicator, measure the disc runout 10 mm (0.39 in.) from the outer edge of the rear disc.

Maximum disc runout:

0.04 mm (0.0016 in.)

If the runout exceeds the maximum value, change the installation positions of the disc and axle so that the runout will become minimal. If the runout exceeds the maximum even when the installation positions are changed, check the bearing looseness in the axial direction (see **REMOVAL**) and the axle hub runout (see **REMOVAL**). If the bearing looseness 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.

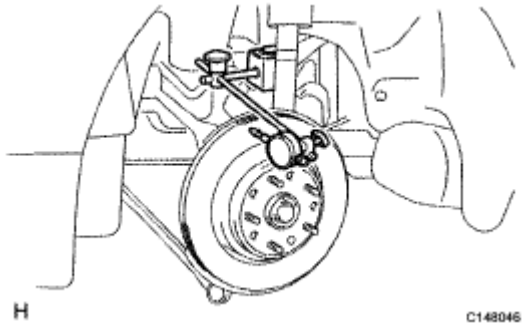


Fig. 129: Measuring Disc Runout
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Remove the rear disc.

REASSEMBLY

HINT:

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

1. **TEMPORARILY INSTALL REAR DISC BRAKE BLEEDER PLUG**
   a. Temporarily install the bleeder plug to the disc brake caliper.

   HINT:

   The bleeder plug will be tightened to a torque specification in the "BLEED AIR FROM REAR BRAKE SYSTEM" procedure.

2. **INSTALL REAR DISC BRAKE BLEEDER PLUG CAP**

3. **INSTALL PISTON SEAL**
   a. Apply lithium soap base glycol grease to 2 new piston seals.
   b. Install the 2 piston seals to the disc brake caliper.

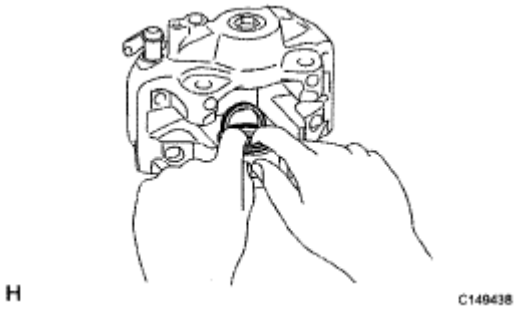


Fig. 130: Identifying Piston Seals & Disc Brake Caliper
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **INSTALL REAR DISC BRAKE PISTON**
   a. Apply lithium soap base glycol grease to the 2 rear disc brake pistons and 2 new cylinder boots.
   b. Install the 2 cylinder boots to the 2 rear disc brake pistons.
   c. Install the 2 pistons into the rear disc brake caliper.

NOTE: Do not forcibly install the piston into the disc brake caliper.

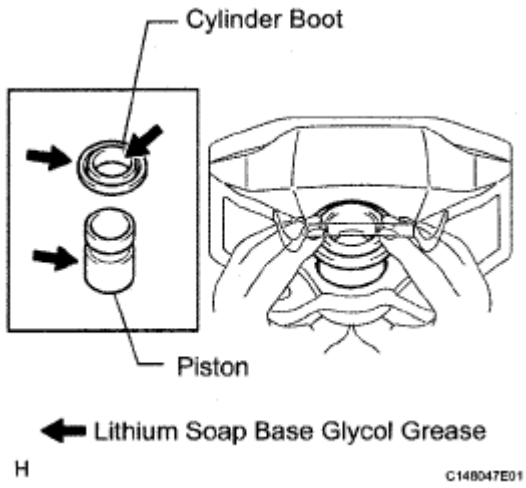


Fig. 131: Applying Lithium Soap Base Glycol Grease To Rear Disc Brake Pistons & Cylinder Boots
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

5. **INSTALL CYLINDER BOOT**
   a. Install one side of each of the 2 cylinder boots to the rear disc brake caliper.

NOTE:

- **Install the cylinder boot securely to the grooves of the cylinder and piston.**
- **Do not damage the cylinder boot.**

INSTALLATION

NOTE: While the battery is connected, even if the engine switch is off, the brake control system activates when the brake pedal is depressed or the door courtesy switch turns on. Therefore during servicing of the brake system components, do not operate the brake pedal and open/close the doors while the battery is connected.

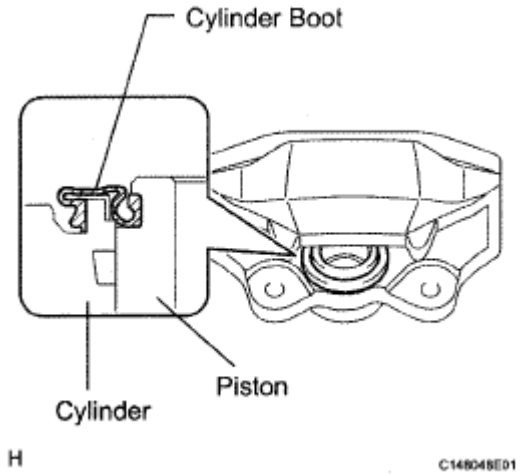


Fig. 132: Identifying Cylinder Boot
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

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

1. **INSTALL REAR DISC**

NOTE: The disc has an identification mark. Make sure of the identification mark when installing the disc.

ITEM IDENTIFICATION MARK TABLE

Item	Identification mark
LH	L
RH	R

HINT:

The disc has no identification mark. The disc can be installed to the LH or RH side.

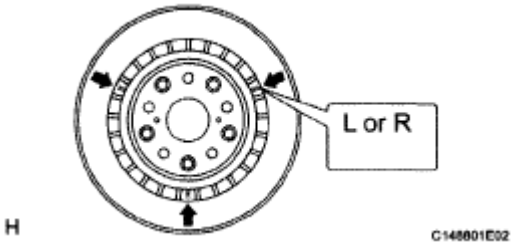


Fig. 133: Locating Disc Identification Mark
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. While aligning the matchmarks, install the rear disc.

   HINT:

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

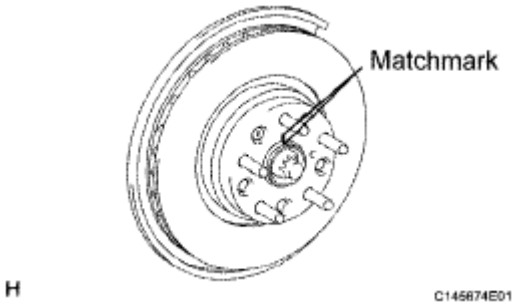


Fig. 134: Aligning Matchmarks
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. **ADJUST PARKING BRAKE SHOE CLEARANCE** (See **ADJUSTMENT**)
3. **INSTALL PARKING BRAKE SHOE ADJUSTING HOLE PLUG**
4. **INSTALL REAR DISC BRAKE CALIPER ASSEMBLY LH**
   a. Install the disc brake caliper with 2 new bolts.

      Torque: 86 N*m (877 kgf*cm, 63 ft.*lbf)

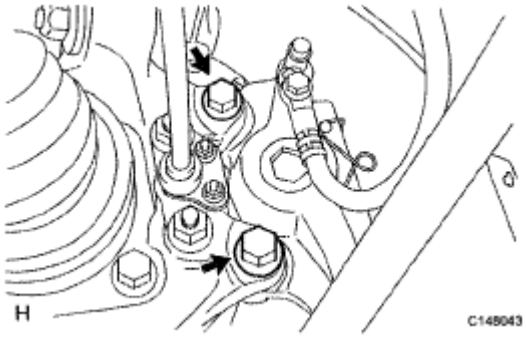


Fig. 135: Locating Bolts & Disc Brake Caliper
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

5. **CONNECT REAR BRAKE FLEXIBLE HOSE**
   a. Connect the flexible hose with the union bolt and a new gasket.

   Torque: 39 N*m (400 kgf*cm, 29 ft.*lbf)

   NOTE: Install the flexible hose lock securely in the lock hole in the disc brake caliper.

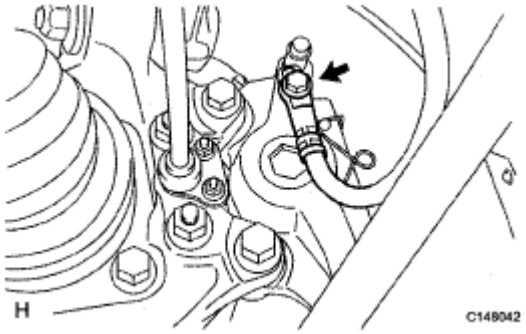


Fig. 136: Locating Union Bolt & Gasket
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

6. **INSTALL REAR DISC BRAKE PAD KIT**

NOTE:

- **When replacing worn pads, the anti-squeal shims must be replaced together with the pad.**
- **Install each shim in the correct position and direction.**
- **Install each pad as shown in the illustration below.**
- **There should be no oil or grease on the friction surface of the pads and the disc.**
- **When the brake pedal is first depressed after replacing the brake pad, DTC C1341, C1342, C1343 and/or C1344 may be output. As there is no malfunction, delete the DTC(s).**

a. for RH:

Install the pad wear indicator wire as follows:

1. Install the pad wear indicator wire and a new retainer to the inner pad.

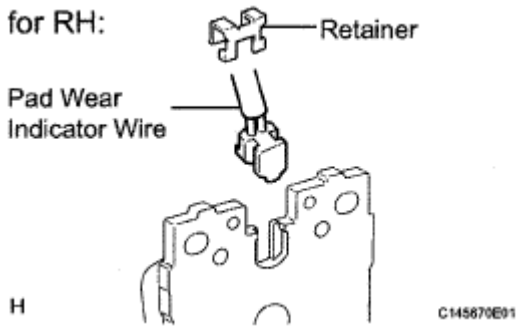


Fig. 137: Identifying Retainer & Pad Wear Indicator Wire
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. Attach the 3 clamps (labeled A) and bleeder plug cap (labeled B).
3. Connect the pad wear indicator wire connector (labeled C).

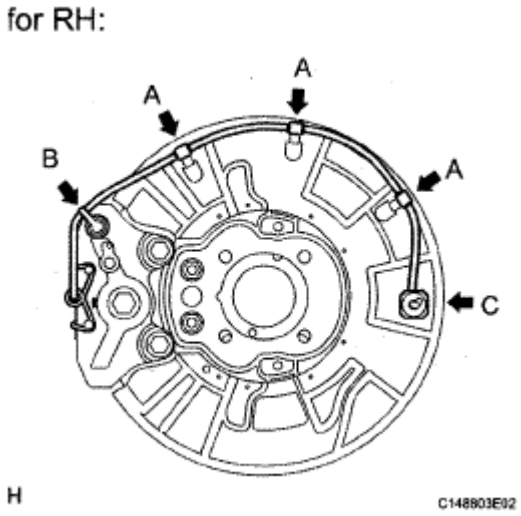


Fig. 138: Locating Clamps, Pad Wear Indicator Wire Connector & Bleeder Plug Cap
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Install the anti-rattle spring to each pad.

HINT:

Install the spring lock securely in the groove of the pad.

c. Apply disc brake grease to the sides of the 2 No. 1 anti-squeal shims that contact the disc brake

pad.

NOTE: Do not apply grease to the sides of the 2 No. 1 anti-squeal shims that contact the No. 2 anti-squeal shims.

d. Install the No. 1 and No. 2 anti-squeal shims to each pad.

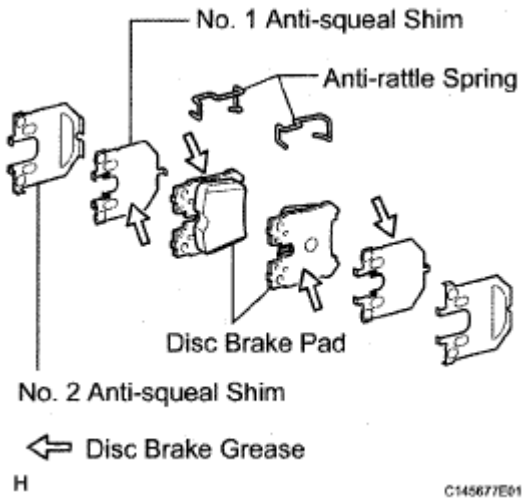


Fig. 139: Identifying No. 1 & No. 2 Anti-Squeal Shims & Anti-Rattle Spring
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

e. Install the 2 pads to the disc brake caliper.

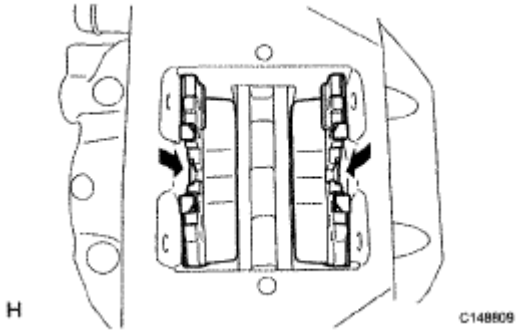


Fig. 140: Locating Disc Brake Caliper Pads
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

f. Install the rear disc brake anti-rattle spring to the disc brake caliper. And then while pressing the area labeled A, install the 2 rear disc brake anti-rattles with hole pins (labeled B).

NOTE: The anti-rattle springs can be used again if they have sufficient rebound; no deformation, cracks or wear; and has had all rust, dirt and foreign particles cleaned off.

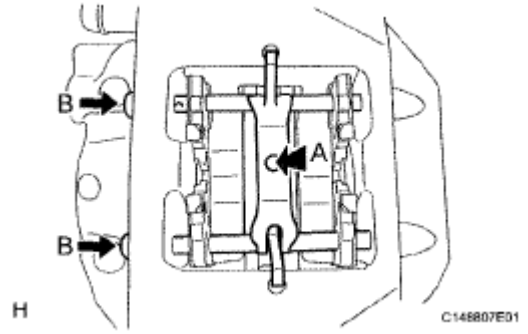


Fig. 141: Locating Disc Brake Anti-Rattles With Hole Pins
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

g. While pressing the area labeled A, slightly pull out the hole pin (labeled B) from the brake caliper, and install the pin hold clip.

NOTE: The pin hold clip can be used again if it has sufficient rebound; no deformation or wear; and has had all rust, dirt and foreign particles cleaned off.

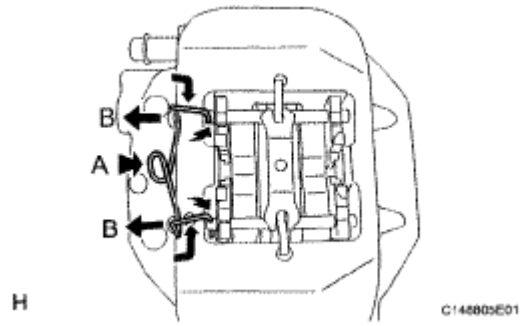


Fig. 142: Locating Hole Pin
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

7. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**
8. **INSTALL COWL TOP VENTILATOR LOUVER RH** (See **INSTALLATION**)
9. **BLEEDING PRECAUTION**

CAUTION: Be sure to read the "PRECAUTION" thoroughly before bleeding (see PRECAUTION).

10. **FILL RESERVOIR WITH BRAKE FLUID** (See **REPLACEMENT**)
11. **DISABLE BRAKE CONTROL** (See **REPLACEMENT**)
12. **BLEED AIR FROM REAR BRAKE SYSTEM** (See **REPLACEMENT**)
13. **CANCEL DISABLE BRAKE CONTROL** (See **REPLACEMENT**)
14. **CHECK AND ADJUST BRAKE FLUID LEVEL IN RESERVOIR** (See **REPLACEMENT**)

15. **INSPECT FOR BRAKE FLUID LEAK**
16. **INSTALL REAR WHEEL**

    Torque: 140 N*m (1,428 kgf*cm, 103 ft.*lbf)

17. **PERFORM INITIALIZATION**
    a. Perform **INITIALIZATION** .

    NOTE: Certain systems need to be initialized after disconnecting and reconnecting the cable from the negative (-) battery terminal.

18. **CLEAR DTC**
    a. Clear the DTCs (see **DTC CHECK/CLEAR**).
19. **CHECK FOR DTC**
    a. If any DTC is set, perform the troubleshooting for that DTC (see **DTC CHECK/CLEAR**).
20. **PERFORM PARKING BRAKE BEDDING**
    a. Perform the parking brake bedding (see **INITIALIZATION**).

