

July 21, 2023

Version 2

Safety Recall: 2020 MDX Brake Master Cylinder Mounting Inspection

Supersedes 23-023, dated June 30, 2023, to revise the information highlighted in yellow.

AFFECTED VEHICLES

Year	Model	Trim	VIN Range
2020	MDX	ALL	Check the iN VIN status for eligibility.

REVISION SUMMARY

- Under WARRANTY CLAIM INFORMATION, the table was updated.
- Under INSPECTION PROCEDURE, step 5 was updated.
- Under REPAIR PROCEDURE, step 16 and 31 was updated.

BACKGROUND

The hex nuts that secure the brake master cylinder to the brake booster may not have been properly torqued to specification, or they may be missing. Over time, the master cylinder could separate from the brake booster, causing brake assist loss, the brake pedal going to the floor, or loss of braking, increasing the risk of crash.

CLIENT NOTIFICATION

Owners of affected vehicles will be sent a notification of this campaign.

Do an iN VIN status inquiry to make sure the vehicle is shown as eligible.

Some vehicles affected by this campaign may be in your new or used vehicle inventory.

Failure to repair a vehicle subject to a recall or campaign may subject your dealership to claims or lawsuits from the customer or anyone else harmed as a result of such failure. Before selling a vehicle in inventory, always check if it is affected by a safety recall by conducting a VIN status inquiry.

CORRECTIVE ACTION

Inspect the nuts on the brake booster. If needed, replace the brake booster and master cylinder.

CLIENT INFORMATION: The information in this bulletin is intended for use only by skilled technicians who have the proper tools, equipment, and training to correctly and safely maintain your vehicle. These procedures should not be attempted by "do-it-yourselfers," and you should not assume this bulletin applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Acura automobile dealer.

PARTS INFORMATION

Expected failure rate is very low. Inspection procedure must be completed to determine if parts replacement is required prior to ordering parts. Do not order for inventory.

Part Name	Part Number	Quantity
Master Cylinder (O-ring included With the Master Cylinder)	46100-TP6-A12	1
Brake Booster (10.5") (Gasket Included With the Brake Booster)	01469-TZ5-A10	1
8 MM Hex Nut	94001-08000-0S	2
8 MM Spring Washer	94111-08800	2

REQUIRED MATERIALS

Part Name	Part Number	Quantity
Acura Dot 3 Brake Fluid	08798-9108A	1
Shin-Etsu G40M Silicone Grease (One tube repairs 50 vehicles).	08798-9013	1

TOOLS INFORMATION

Part Name	Part Number	Quantity
1/4" Drive Flex-Head TechAngle Micro Torque Wrench or Equivalent	ATECH1FS240	1

WARRANTY CLAIM INFORMATION

Operation Number	Description	Flat Rate Time	Defect Code	Symptom Code	Template ID	Failed Part Number
4135B3	Master cylinder nut Inspection only (photos not required).	0.3 hr	6BJ00	ZET00	B23023A	46100-TP6-A12
4131BH	Replace the master cylinder and booster (includes inspection).	1.4 hr	6BJ00	ZET00	B23023B	46100-TP6-A12

Repair Technician

1. When submitting Warranty claim, attach photo of the brake booster bar code to the claim.
2. The Photo Attachments area automatically appears on a warranty claim form whenever PH is indicated on the sublet code, as shown below.

Sublet Information				
Sublet Code	Work Description	Invoice No.	Rental Days	Sublet Amount
PH	PHOTO ATTACHMENT	PHOTO		0.00
<< SELECT >>				
Upload files		File Attachments		

3. To attach a photo to the claim, click the **Upload Images** link.

Sublet Information				
Sublet Code	Invoice No.	Work Description	Sublet Amount	Rental Days
PH	1234567899	PHOTO ATTACHMENT	500.00	
<<SELECT >>				
Upload Images		Photo Attachments	View Images	

4. The Claim File Attachment screen appears. Then, select **Choose File**.

Claim File Attachment

Uploaded JPG/PDF Files 0 (Maximum 12)

Choose File NO FILE CHOSEN Preview Upload

5. Click to highlight an image to be uploaded.

Choose File to Upload

Look in: Warranty Photos

- DSCN3412.jpg
- DSCN3413.jpg**
- dscn3413_hl.jpg
- DSCN3414.jpg
- DSCN3415.jpg

File name: DSCN3413.jpg **Open** Cancel

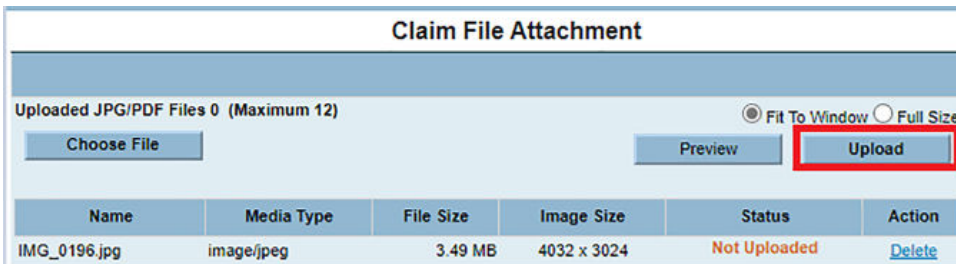
Files of type: All Files (*.*)

6. Click **Open** to select the file.

7. Click **Preview** if you would like to view the image before uploading. The preview image appears.
- NOTE: Fit To Window is selected by default as the size at which the preview images is displayed. Select Full Size if you want to enlarge the image, and use the scrollbars to view different areas of the enlarged image.



8. Click **Upload** to attach the image to the warranty claim.



9. The Uploaded Images count increases each time you upload a photo.
10. When finished attaching photos, click X to close.

INSPECTION PROCEDURE

1. Open air cleaner filter lid. Rotate lid 90 degrees to access the nuts to the brake master cylinder.



**AIR CLEANER
FILTER LID**

2. Visually inspect the two nuts holding the master cylinder.

Are both nuts present and fully seated?

YES - Go to step 3.

NO - If nuts are missing or cross threaded on the master cylinder (not fully seated), take a picture of the barcode on the brake booster, then go to the REPAIR PROCEDURE.

NOTE: Make sure the photo clearly shows the barcode.



BARCODE

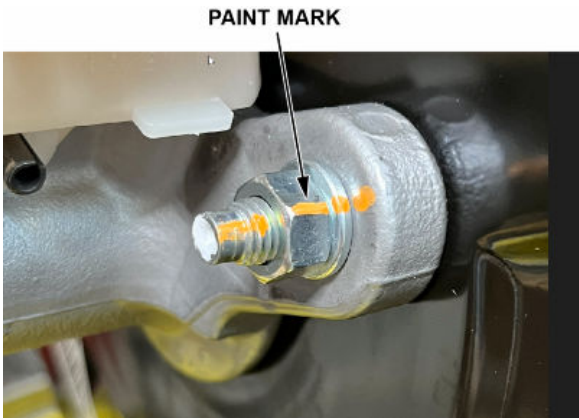
NUTS

NO GOOD



CROSS THREADED

3. Make a paint stripe mark on the studs, nuts, and master cylinder flange as shown below.



4. Using a torque wrench, apply **10 N·m (88.5 in-lb)** to each nut.

5. Check the paint stripe to see if the nuts moved.

If both nuts did not move, the parts are OK. Torque the nuts to **15 N·m (11 lb-ft)**. The inspection is complete and the repair procedure is not needed. Install the air filter lid (photo not required).

If either nut moved and the paint line is no longer aligned, take a picture of the barcode on the side of the brake booster, then go to the REPAIR PROCEDURE.

NOTE: Make sure the photo clearly shows the barcode.

GOOD



NO GOOD



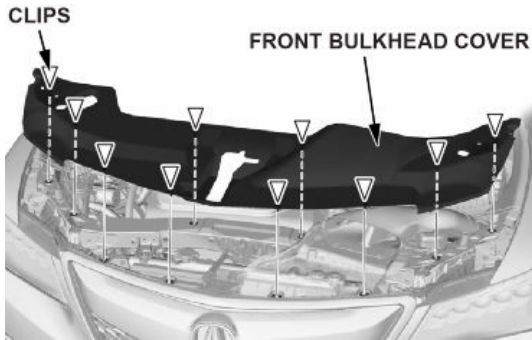
PAINT MARK



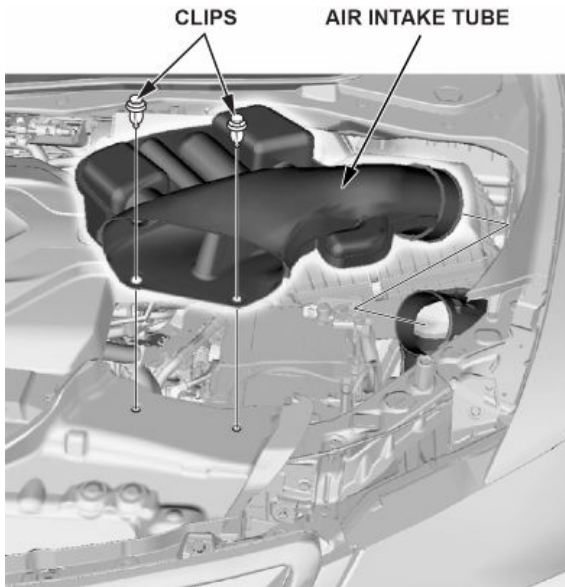
BARCODE

REPAIR PROCEDURE

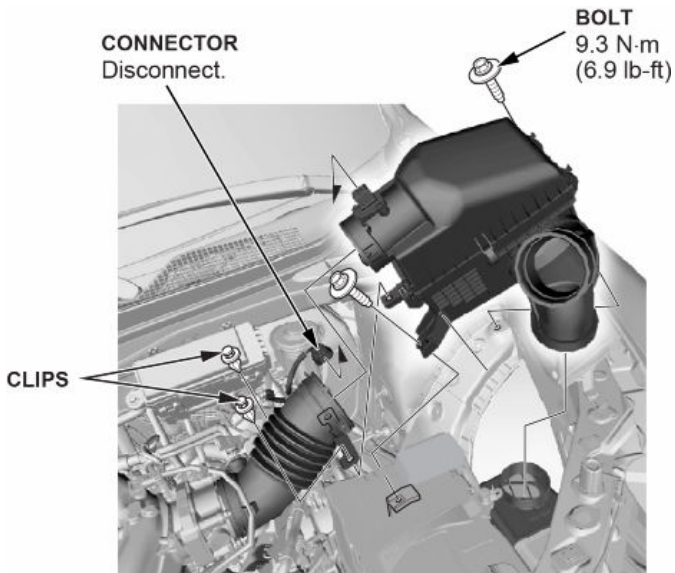
1. Remove the front bulkhead cover.



2. Remove the air intake tube.

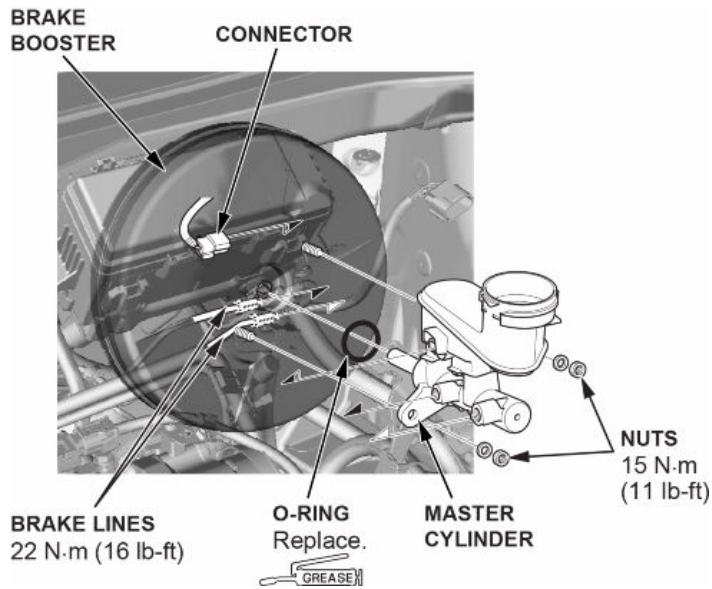


3. Disconnect the MAF sensor/AT sensor connector.

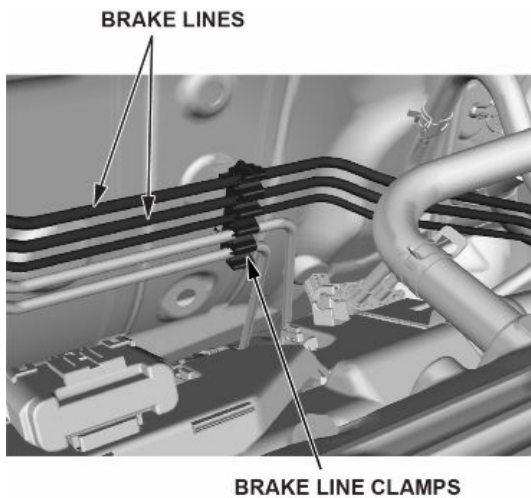


4. Remove the harness clamps, then remove the air cleaner.
5. Remove the master cylinder reservoir cap. Then using a syringe, remove the brake fluid.

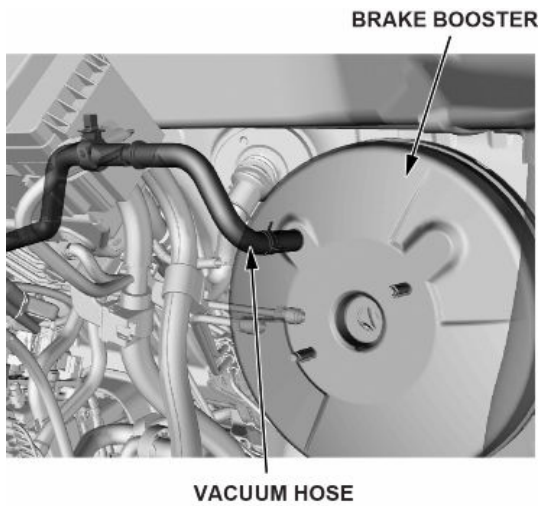
6. Disconnect the brake fluid level switch connector.



7. Disconnect the brake lines from the master cylinder. To prevent spills, cover the brake line joints with clean rags or shop towels.
8. Remove the master cylinder from the brake booster.
NOTE: Be careful not to bend or damage the brake lines.
9. Remove the O-ring from the master cylinder.
10. Release the brake lines from the brake line clamps.
NOTE: Be careful not to bend the brake lines.

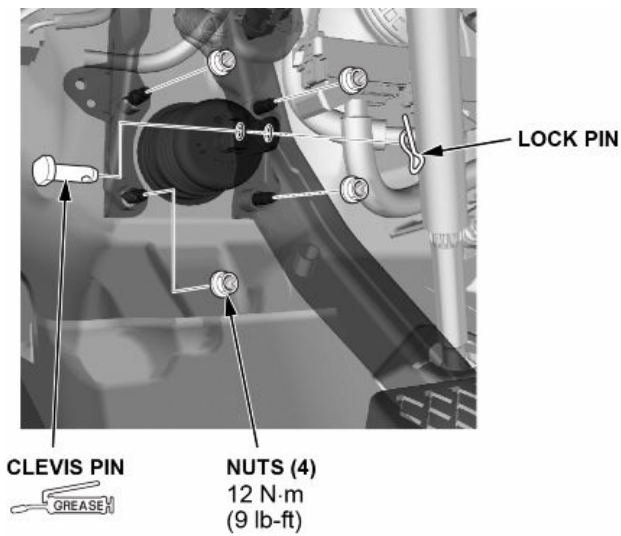


11. Disconnect the brake booster vacuum hose from the brake booster.



12. Remove the clevis pin.

NOTE: Apply multipurpose grease to the yoke pin and the brake pedal.

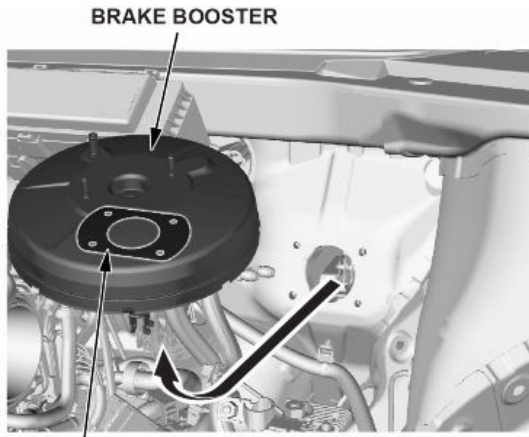


13. Remove the brake booster mounting nuts.

14. Remove the brake booster from the engine compartment.

NOTE:

- Be careful not to bend or damage the brake lines.
- Use the new brake booster gasket during installation.



BRAKE BOOSTER GASKET
Replace.

15. Install the new brake booster with a new gasket in reverse order and torque the nuts to **12 N·m (9 lb-ft)**.

16. Install the master cylinder with a new o-ring, hex nuts and spring washers. When replacing master cylinder, the mounting nuts must be tightened uniformly. Alternate torque sequence in **3 N·m (2.2 lb-ft)** increments to reach **15 N·m (11 lb-ft)**. Then install the brake lines, and other remaining parts.

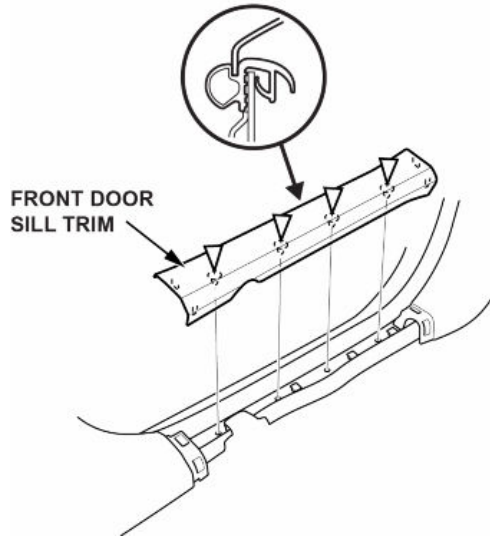
NOTE:

- Coat the new O-ring with silicone grease (Shin-Etsu G40M).
- Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.
- Check the brake pedal height and free play after installing the master cylinder, and adjust it if necessary.
- **Be careful when handling the master cylinder. Do not hold it at the piston, or the piston may separate from the body. If the piston separates from the body, then the master cylinder must be replaced. Do not reinsert the piston back into the master cylinder body.**
- **Before reassembling, check that all the parts are free of dirt and other foreign particles.**

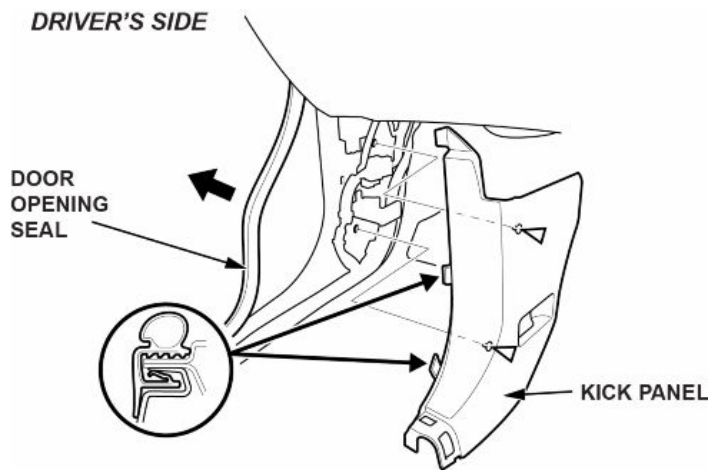
17. Connect the brake lines to the master cylinder.

Check the Brake Pedal and Brake Pedal Position Switch Adjustment

18. Remove front door sill trim.

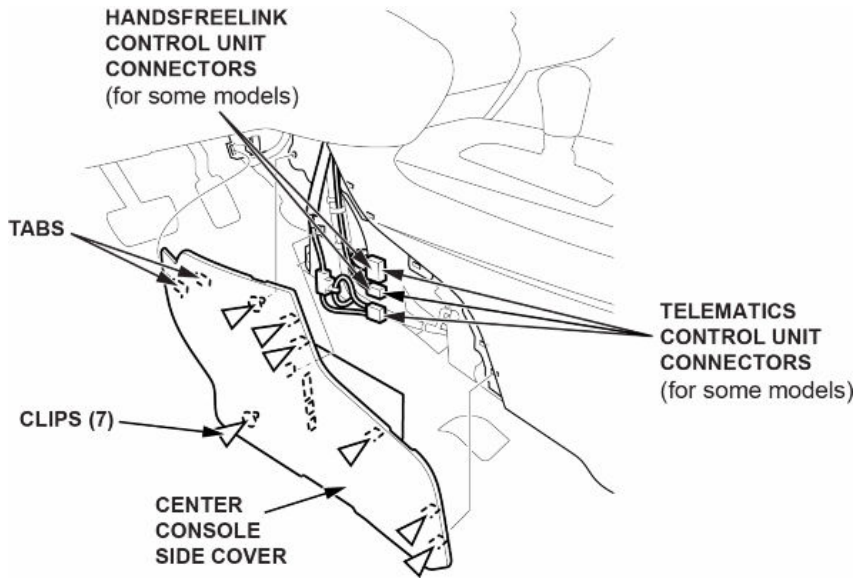


19. Pull out the door opening, then remove the kick panel.



20. Remove the center console side cover.

- Release the fasteners starting from the rear working forward (driver's side only).
- Slide the center console side cover back to free the tabs (driver's side only).

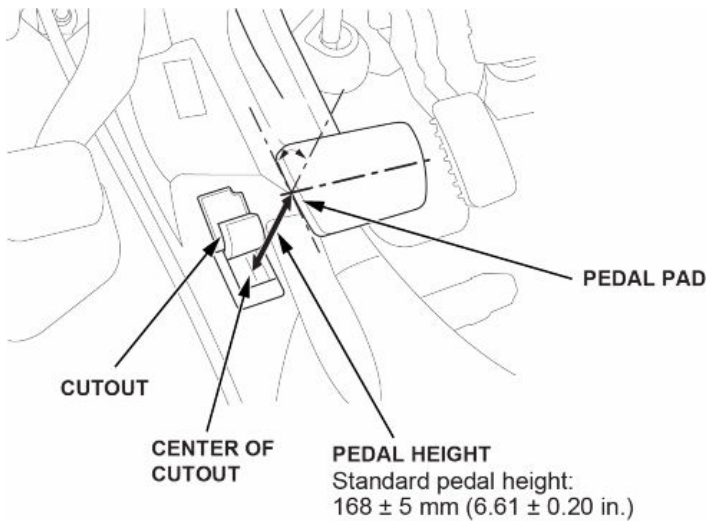


21. Disconnect these connectors (driver's side only).

- Telematics control unit connectors (for some models).
- Handsfreelink control unit connector (for some models).

Brake Pedal Height Inspection

22. Pull back the carpet, and locate the cutout on the insulation



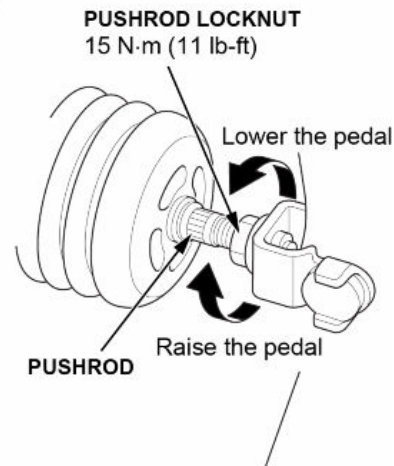
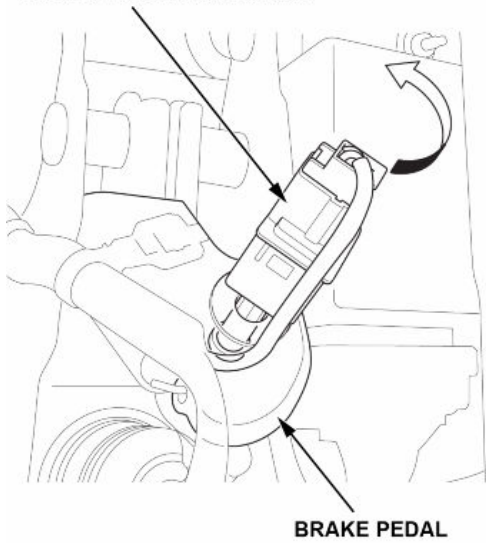
23. With the insulation cutout pulled back, measure the pedal height from the middle left side of the pedal pad to the center of the cutout.

Standard pedal height: 168 + - 5 mm (6.61 + - 0.20 in)

Adjust the Brake Pedal

24. Turn the brake pedal position switch 45 degrees counterclockwise, and pull it back until it is no longer touching the brake pedal.

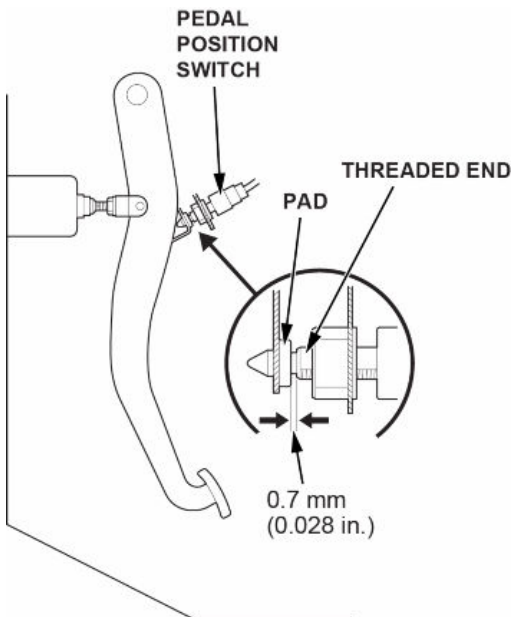
BRAKE PEDAL POSITION SWITCH
Turn 45° counterclockwise.



25. Screw the pushrod in or out with pliers until the standard pedal height from the floor is reached.
26. Tighten the locknut firmly.
NOTE: Do not adjust the pedal height with the pushrod pressed.

Adjust the Brake Pedal Position Switch

27. Lift up the brake pedal by hand.

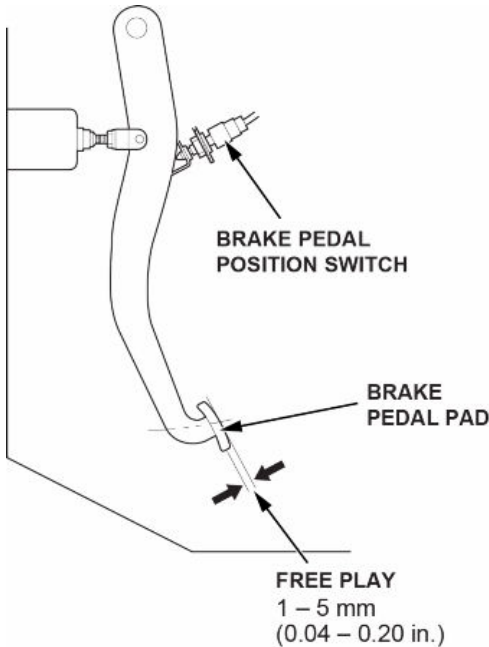


28. Push in the brake pedal position switch until its plunger is fully pressed (threaded end and touching the pad on the pedal arm).
29. Turn the switch 45 degrees clockwise to lock it. The gap between the brake pedal position switch and the pad is automatically adjusted to **0.7 mm (0.028 in)** by locking the switch.
30. Make sure the brake pedal lights go off when the pedal is released.

Check the Brake Pedal Free Play

31. Inspect the free play at the brake pedal pad by pushing the brake pedal by hand. If the brake pedal free play is out of specification, adjust the brake pedal position switch. If the brake pedal free play is insufficient, it may result in brake drag.

Free play 1-5 mm (0.04-0.20 in)



Bleed the Brake System

NOTE:

- If a large amount of air is introduced into the system from a brake system component replacement, first drain the brake fluid into a container from each caliper by pumping the brake pedal slowly before starting the normal brake system bleed.
 - There are three different methods used for bleeding brake systems. The method shown in this procedure is the preferred method for removing the air from the system. For pressure or vacuum bleeding, refer to the tool manufacturer's instructions included with the tool. If you use a commercially available pressure feed bleeder and operate the brake pedal, excessive hydraulic pressure will be applied to the cup inside the master cylinder causing damage. Do not use these methods together.
 - Do not pump the brake pedal when using a pressure-feeding brake bleeder.
32. Attach a clear tube to the bleed screw.
33. Submerge the other end of the clear tube into a clear plastic catch bottle of brake fluid.
34. Have an assistant slowly pump the brake pedal several times then apply steady continuous pressure.
35. Loosen the bleed screw slowly to bleed the fluid into the plastic catch bottle. The brake pedal will travel toward the floor as the fluid is bled from the system.
36. When the brake pedal reaches the floor, have the assistant hold the pedal in that position, then tighten the bleed screw. The brake pedal can now be released.
37. Repeat steps 33 thru 35 until the brake fluid in the clear tube appears fresh and there are no air bubbles in the fluid. Then tighten the bleed screw to the specified torque.
38. Repeat this procedure for each caliper in the bleeding sequence.
- NOTE: If the rear caliper(s) were disassembled and reassembled, proceed to the rear caliper bleed. Otherwise, the bleeding procedure is complete.
39. Spin the wheels to check for brake drag.

END