TECHNICAL INSTRUCTIONS

FOR

SAFETY RECALL ELB

BRAKE PEDAL SUPPORT ASSEMBLY REPLACEMENT

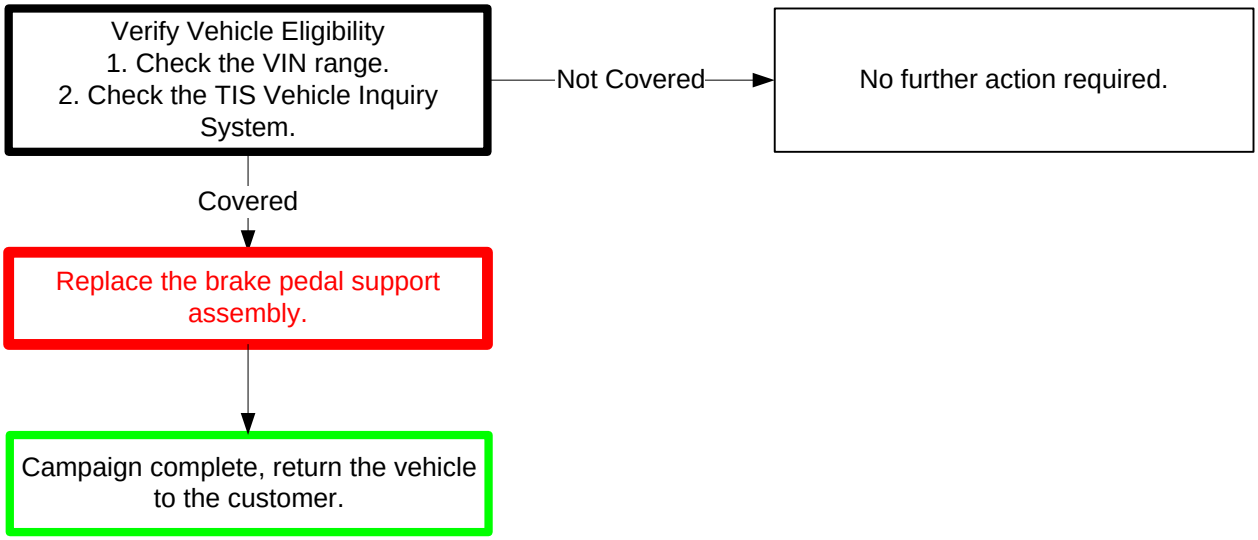
2013 MODEL YEAR GS350

All dealership associates involved in the recall process are required to successfully complete E-Learning course LSC13A. To ensure that all vehicles have the repair performed correctly; technicians performing this recall repair are required to currently hold at least one of the following certifications levels:

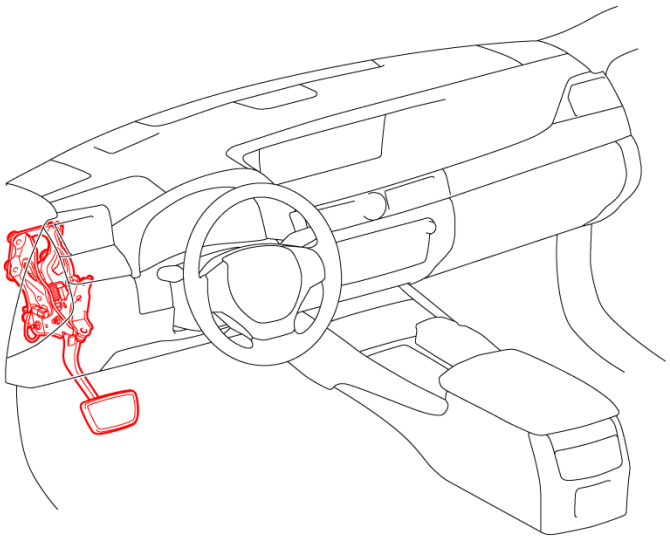
- **Senior or Master Technician**
- **Senior or Master Diagnostic Technician**

I. OPERATION FLOW CHART

The flow chart is for reference only. *DO NOT* use it in place of the full technical instructions. Follow *ALL* steps as outlined in the full technical instructions to confirm the campaign is completed correctly.



II. BACKGROUND



The brake pedal assembly in the subject vehicles contains a brake pedal load sensing switch which allows the brake system to detect brake pedal force application by the driver. Due to a manufacturing error, there is a possibility that the switch could improperly cause the brake system to activate without driver input while driving and without activating the rear brake lights. This could result in unexpected moderate deceleration, increasing the risk of a vehicle crash.

III. IDENTIFICATION OF AFFECTED VEHICLES

A. COVERED VIN RANGE

Model	MY	VDS	START	FINISH
GS 350	2013	BE1BL	5011400	5019491
		CE1BL	5008576	5014098

NOTE:

- Check the TIS Vehicle Inquiry System to confirm the VIN is involved in this Safety Recall, and that the campaign has not already been completed prior to dealer shipment or by another dealer.
- TMS warranty will not reimburse dealers for repairs conducted on vehicles that are not affected or were completed by another dealer.

IV. PREPARATION

A. PARTS

All Vehicles

Part Number	Part Description	Quantity
44785 – 47010	Brake Booster Gasket	1
90015 – AH002	O-Ring (for Brake Master Cylinder)	1

Brake Pedal Support Assemblies vary by drive type and vehicle grade. Only one of the following kits is required.

Drive Type: 2wd Grade: Normal

Part Number	Part Description	Quantity
04004-27330	Brake Pedal Assembly Kit	1

Part Description	Quantity
Brake Pedal Support Assembly	1
Clip	1

Drive Type: 2wd Grade: F-Sport

Part Number	Part Description	Quantity
04004-27430	Brake Pedal Assembly Kit	1

Part Description	Quantity
Brake Pedal Support Assembly	1
Clip	1

Drive Type: 4wd Grade: Normal

Part Number	Part Description	Quantity
04004-27530	Brake Pedal Assembly Kit	1

Part Description	Quantity
Brake Pedal Support Assembly	1
Clip	1

Drive Type: 4wd Grade: F-Sport

Part Number	Part Description	Quantity
04004-27630	Brake Pedal Assembly Kit	1

Part Description	Quantity
Brake Pedal Support Assembly	1
Clip	1

B. MATERIALS

- Protective Tape
- Protective Gloves
- Protective Eye Wear
- Shop Cloth
- Plastic Bag
- Tray
- Vinyl Tube
- DOT 3 Brake Fluid (Approx 1 Liter)
- Lithium Soap Base Glycol Grease or equivalent

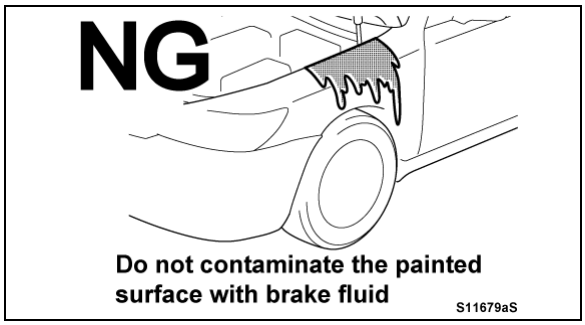
C. TOOLS & EQUIPMENT

- Standard hand tools
- Molding remover set
- Torque wrench
- Techstream
- Wire brush
- Clip Remover
- 10mm Union Nut Wrench

V. SAFETY PRECAUTIONS

CRITICAL INFORMATION – READ THOROUGHLY

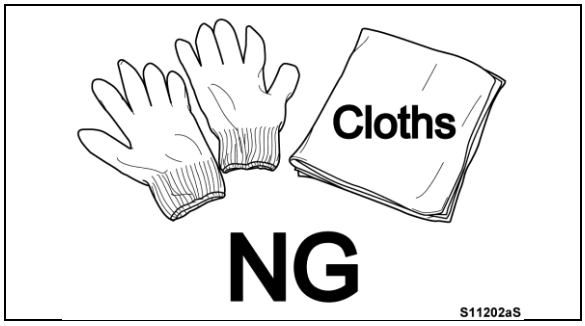
These cautions should be observed when performing this campaign. Failure to follow these cautions could result in damaged parts or inadequate repair quality.



1. HANDLE BRAKE FLUID CAREFULLY

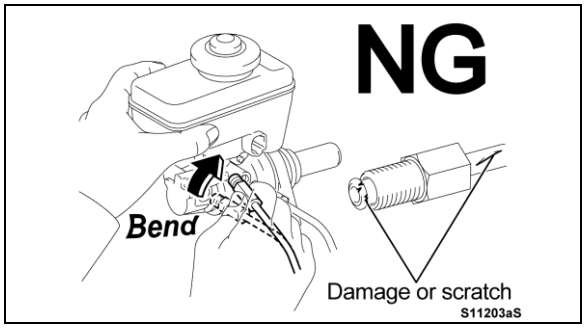
a) ***DO NOT*** allow brake fluid to contact any painted surfaces or the paint may be damaged.

b) ***ALWAYS*** use paper towels when disconnecting and reconnecting brake lines to prevent spillage.



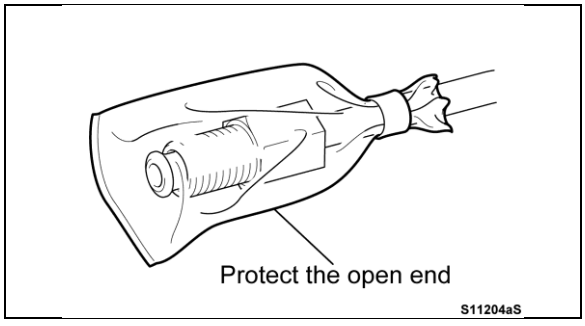
2. DO NOT USE CLOTH RAGS OR GLOVES

a) ***DO NOT*** use any fabric near the open brake system components to avoid threads and fibers from entering the braking system.



3. HANDLE THE BRAKE TUBES CAREFULLY

a) ***DO NOT*** deform, twist, bend, or damage the brake tubes during removal or installation.



4. PROTECT THE BRAKE SYTEM

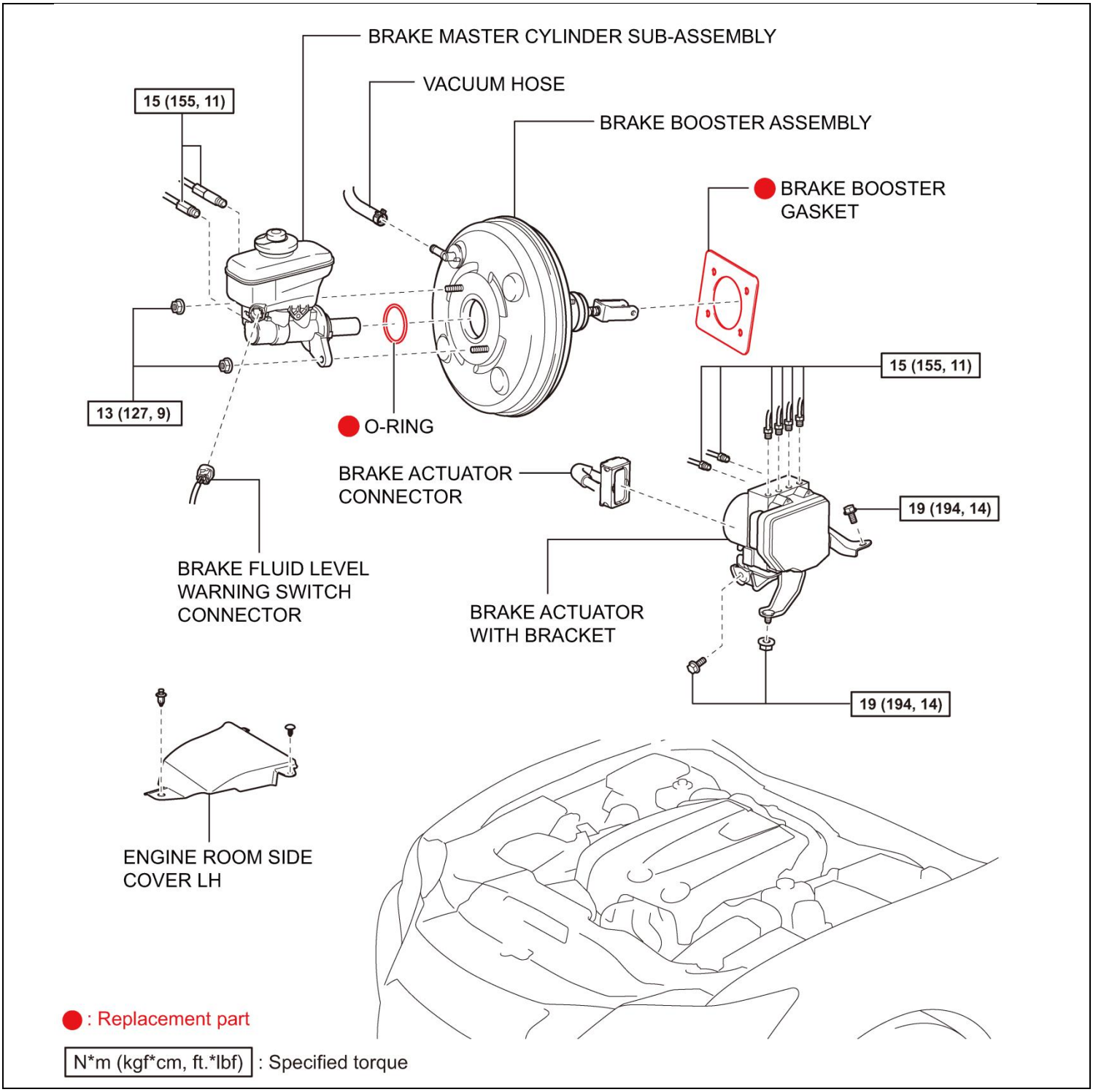
a) Clean components prior to disassembly to avoid contamination.

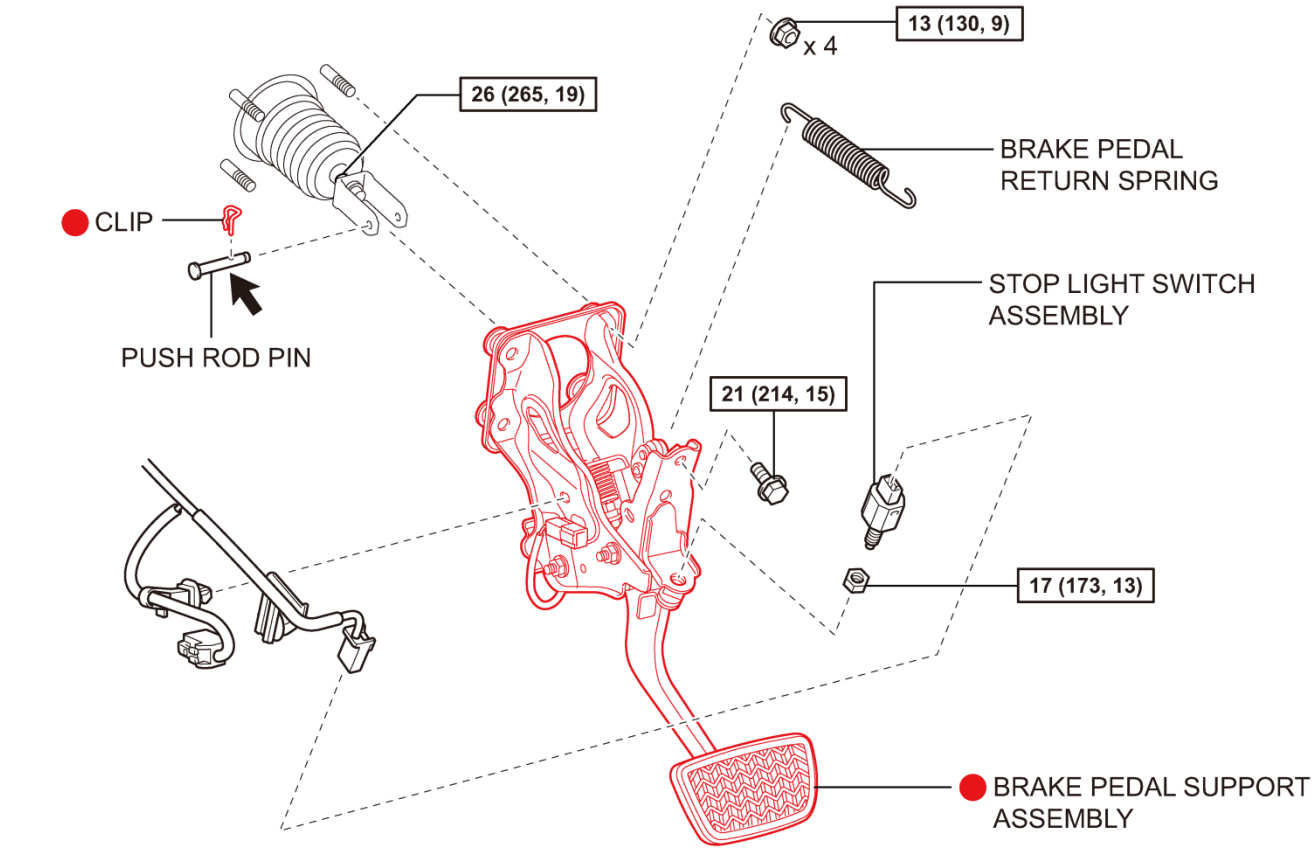
b) Cover open components to avoid contamination.

5. WEAR EYE PROTECTION

a) Bleeding brakes could cause brake fluid to spray outward. Wear protective eyewear when performing these actions.

VI. COMPONENTS





● : Replacement part

◀ : Lithium soap base glycol grease

N*m (kgf*cm, ft.*lbf) : Specified torque

VII. BRAKE PEDAL SUPPORT ASSEMBLY REPLACEMENT

A. BRAKE PEDAL SUPPORT ASSEMBLY REMOVAL

1. CHECK AND RECORD DTCs

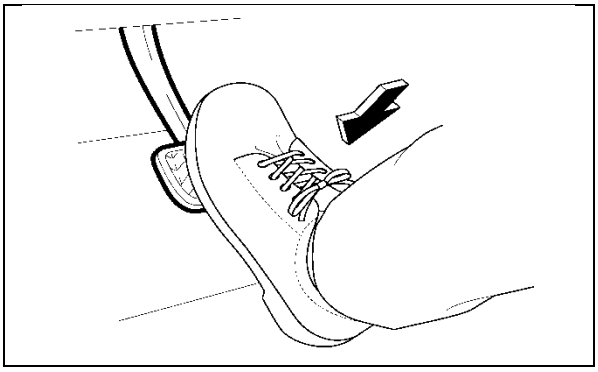
a) Check and record any DTCs to confirm the vehicles original condition.

2. RECORD SYSTEM SETTINGS

a) Record system settings that can be erased when the battery is disconnected.

Note: In some cases a password may be needed to restart the navigation after power is removed, consult with the customer in advance to determine if a password is required.

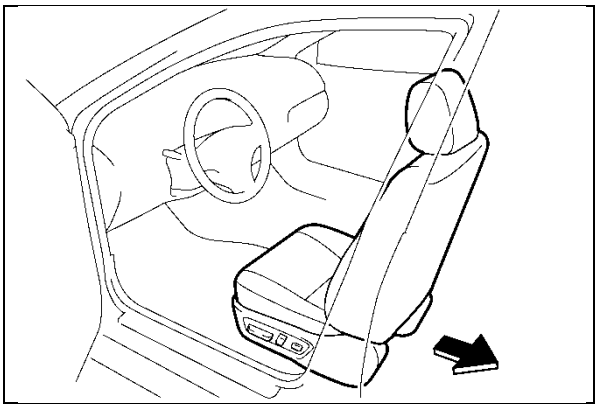
- Audio system settings
- Navigation system setting (previous destination, etc.)
- Seating positions
- Etc.



3. RELEASE THE VACUUM FROM BOOSTER

a) With the engine off firmly depress the brake pedal 10 times to remove the vacuum from the booster.

Make sure to release vacuum from the brake booster before removing the master cylinder, otherwise the piston may come out of the master cylinder, causing brake fluid to leak.



4. ADJUST SEAT POSITION

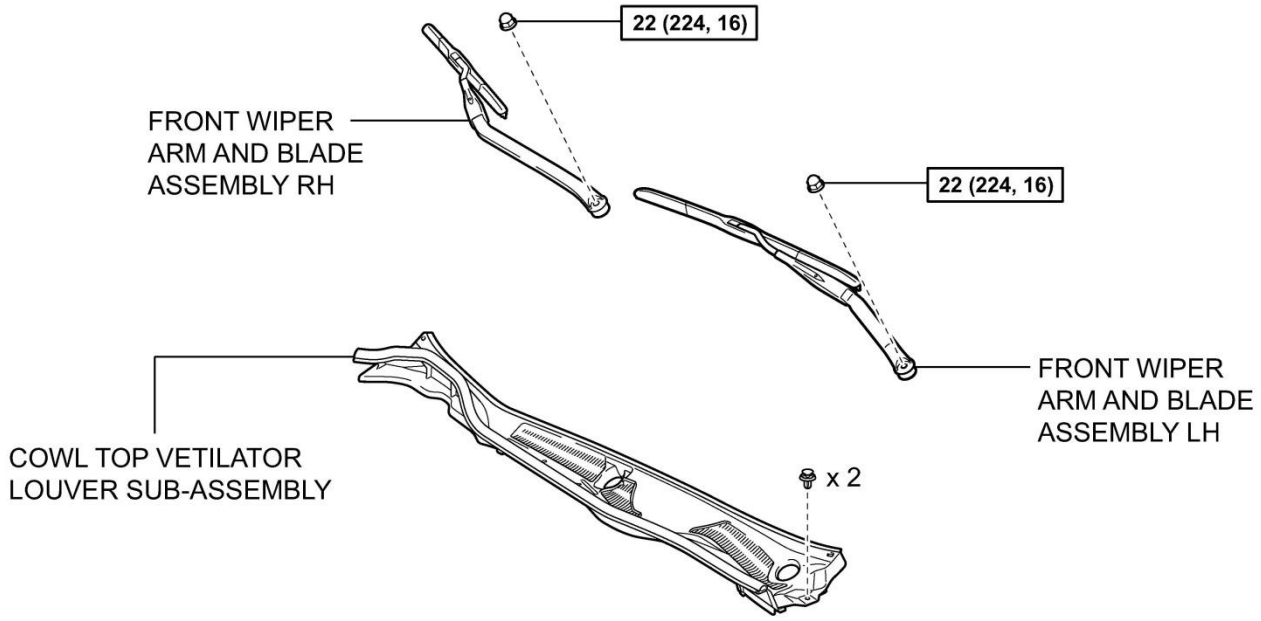
Move the driver's seat to the rear most position.

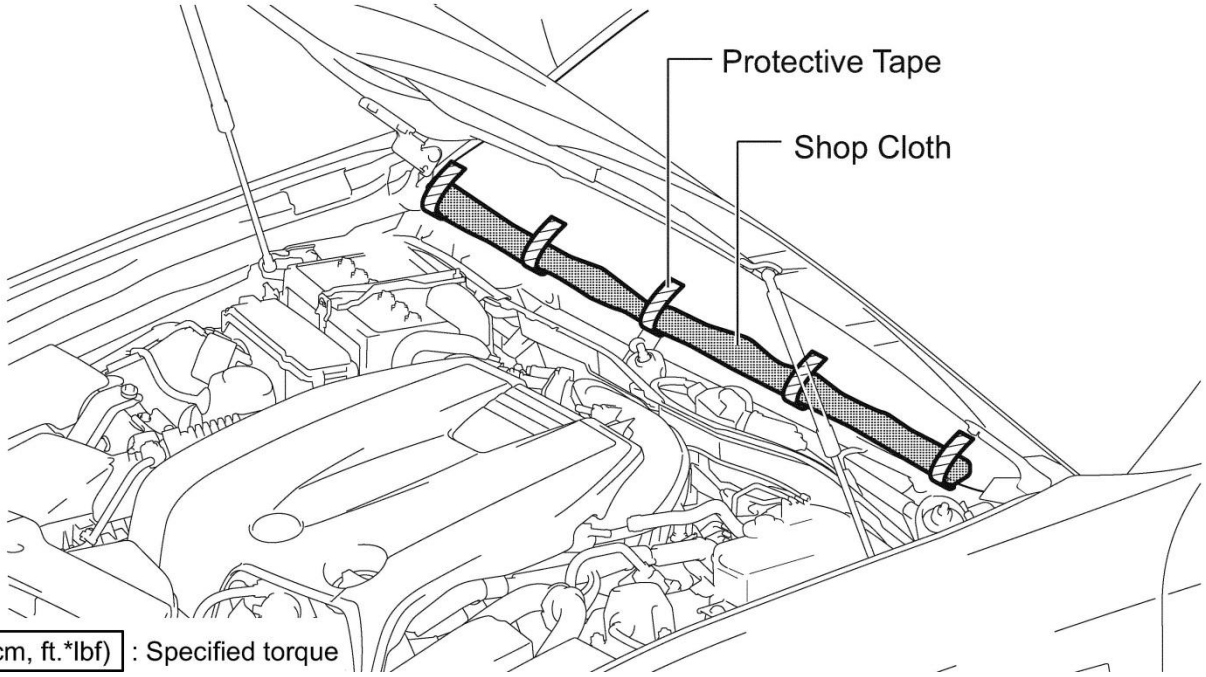
5. DISCONNECT THE NEGATIVE (-) BATTERY CABLE.

- **Wait at least 6 minutes after turning the engine switch off before disconnecting the cable from the negative (-) battery terminal. It takes approximately 6 minutes for the HDD navigation system to save various settings and data.**
- **Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.**
- **When disconnecting the cable, some systems need to be initialized after the cable is reconnected.**

7. REMOVE THE COWL TOP PANEL SUB-ASSEMBLY

a) Refer to **TIS** for removal instructions.
b) To prevent the windshield glass form breaking protect the edge of the windshield with a towel.





N*m (kgf*cm, ft.*lbf) : Specified torque

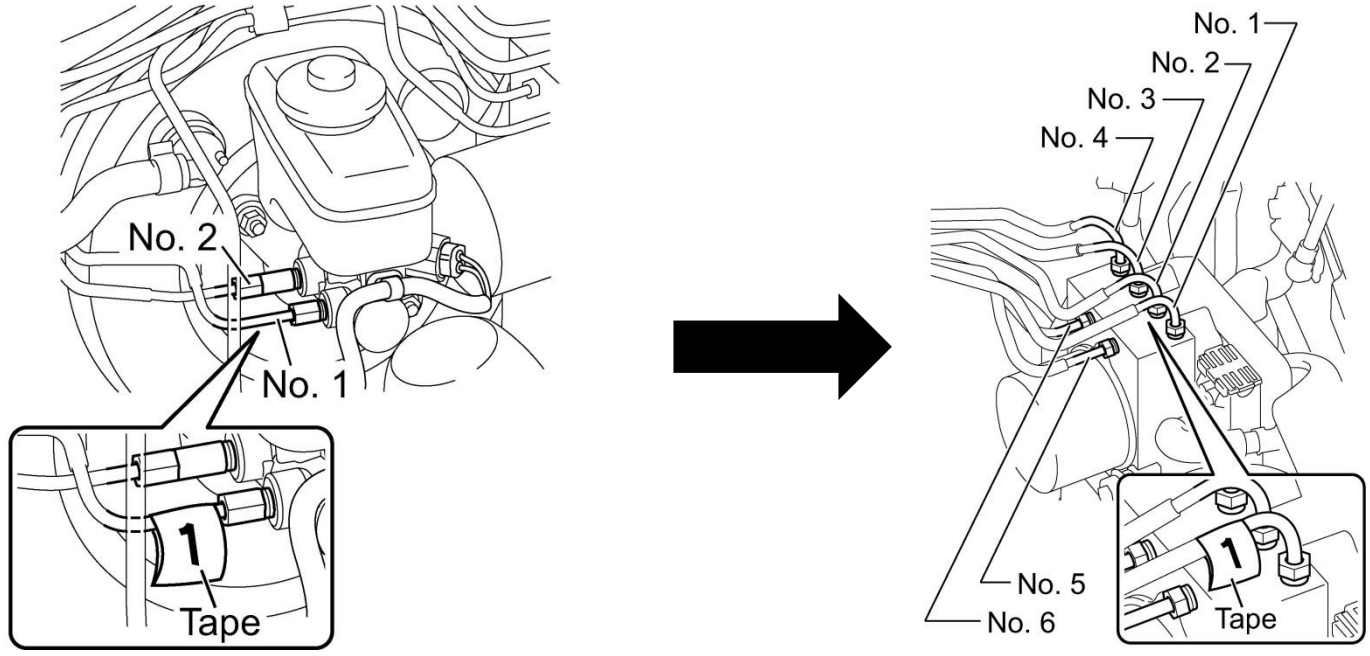
Cover the windshield with pieces of cloth or towell and secure them using tape to protect the windshield from breaking.

8. DRAIN THE BRAKE FLUID

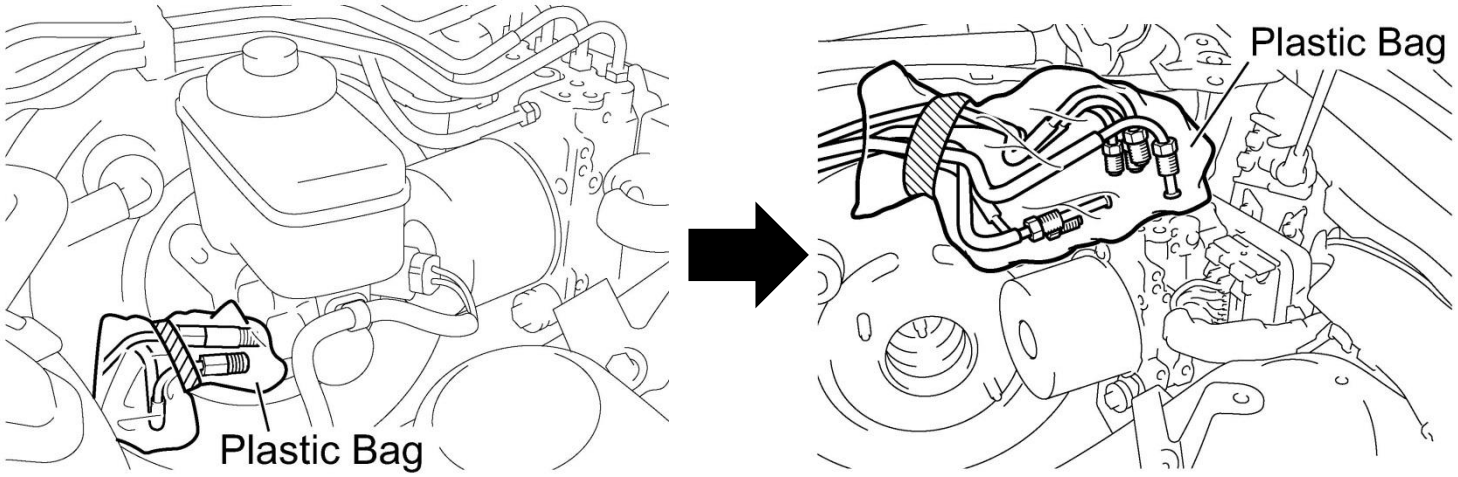
Wash off any spilt brake fluid immediately if it come into contact with any painted surface.

9. REMOVE BRAKE MASTER CYLINDER SUB-ASSEMBLY AND BRAKE ACTUATOR W/BRACKET,

Prior to removal label all brake lines so that they are installed in the correct locations during reassembly.

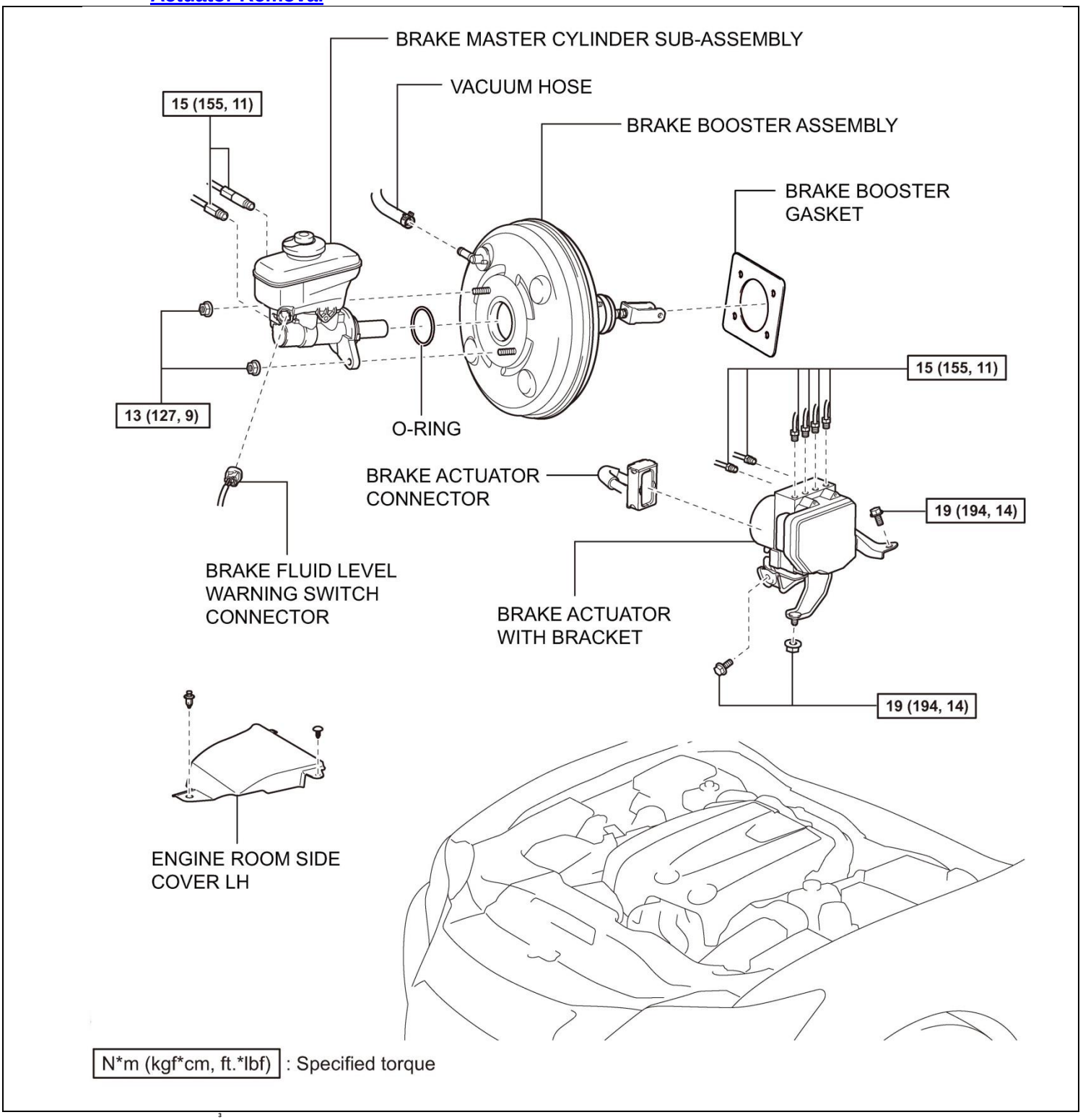


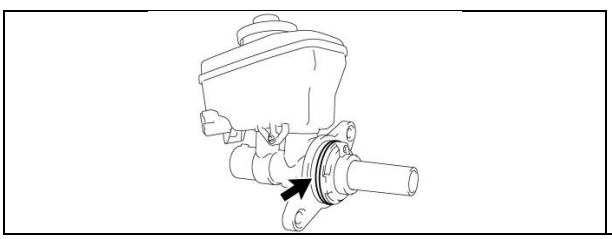
Seal off the brake lines so debris will not contaminate the brake system and to prevent brake fluid form dripping on the paint.



a) Refer to TIS for brake component removal.

- **Brake Booster Removal**
- **Actuator Removal**





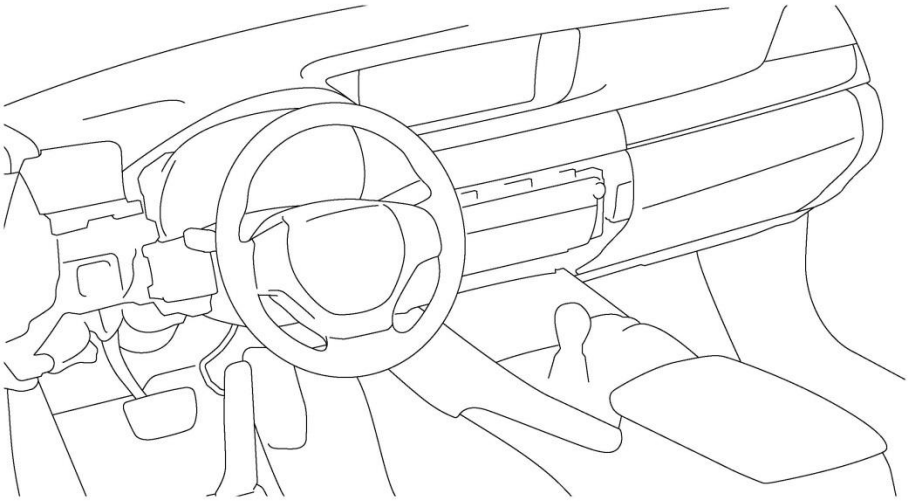
b) Remove the O-ring off the master cylinder to ensure it does not get reused.

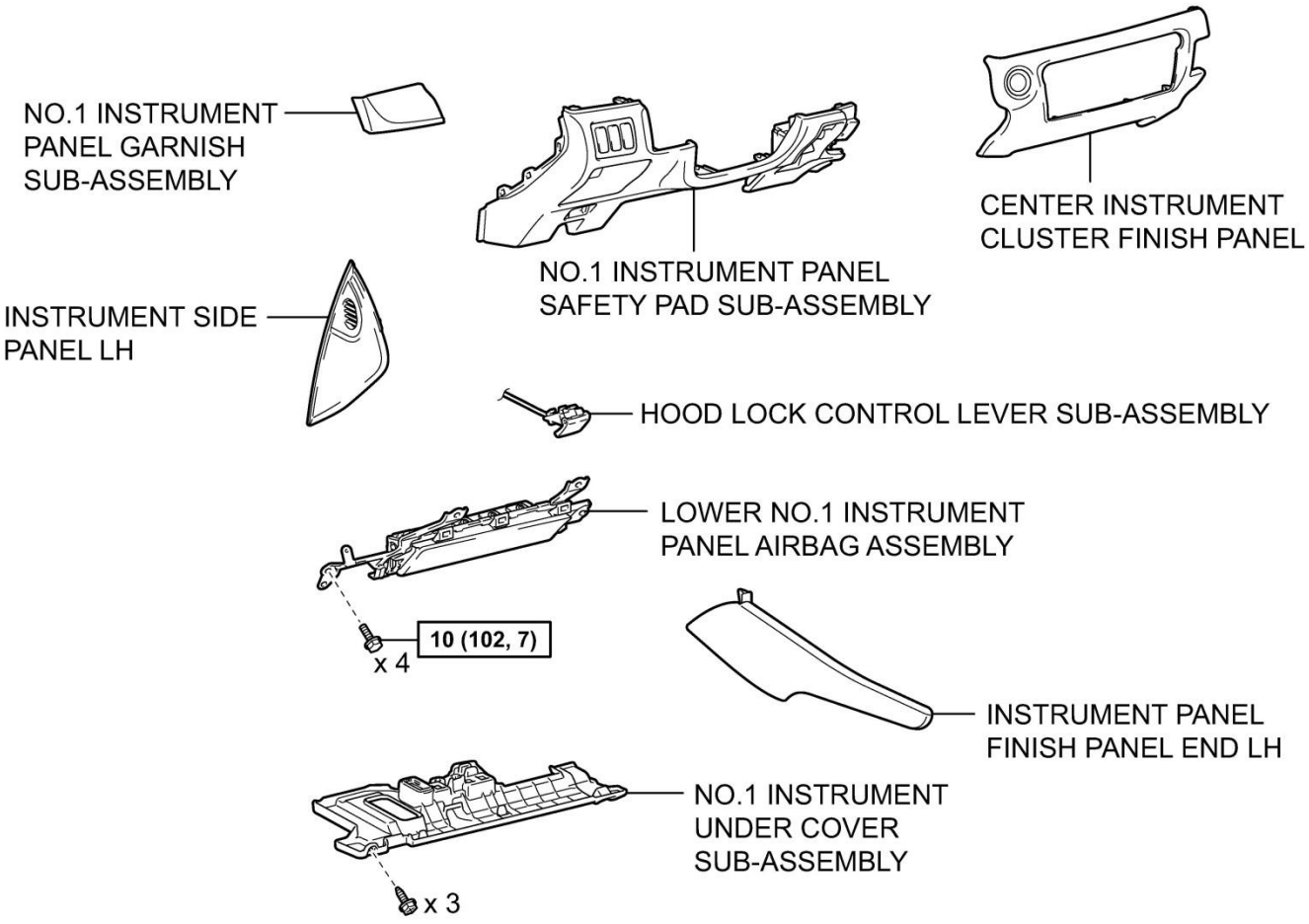
STOP **Remove the O-ring by hand from the master cylinder to ensure it is not damaged.**

10. REMOVE THE FOLLOWING INTERIOR COMPONENTS SHOWN BELOW

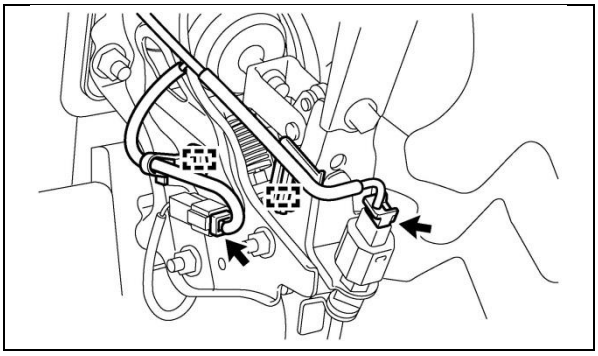
a) Refer to **TIS** for removal instructions.

- Center Instrument Cluster Finish Panel
- LH Side Instrument Panel Finish Panel
- LH Side Instrument Side Panel
- No.1 Instrument Panel Garnish Sub-Assembly
- No. 1 Instrument Panel Under Cover Sub-assembly
- No. 1 Instrument Panel Safety Pad Sub-assembly
- Hood Lock Control Lever Sub-assembly
- Lower No. 1 Instrument Panel Airbag Assembly



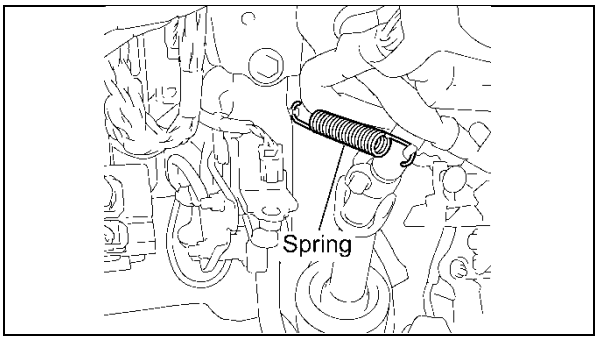


N*m (kgf*cm, ft.*lbf) : Specified torque



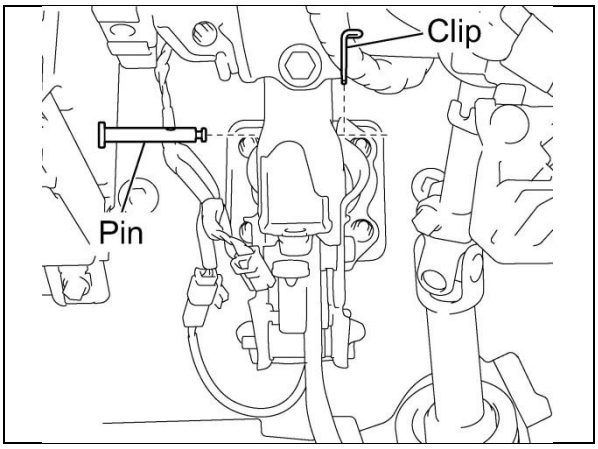
11. REMOVE THE STOP LIGHT SWITCH

a) Disconnect the 2 connectors.
b) Disengage the 2 clamps.
c) Loosen the stop light switch lock nut and remove the switch assembly.



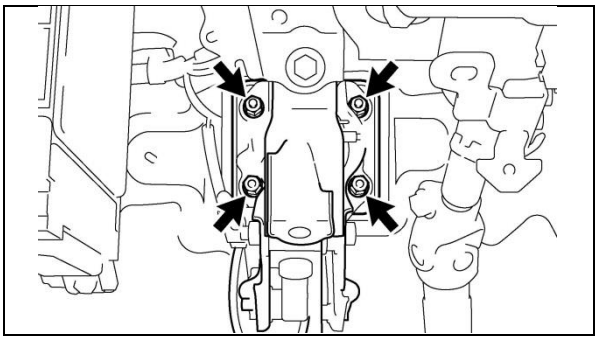
12. REMOVE THE BRAKE PEDAL RETURN SPRING

a) Remove the brake pedal return spring from the brake pedal support.



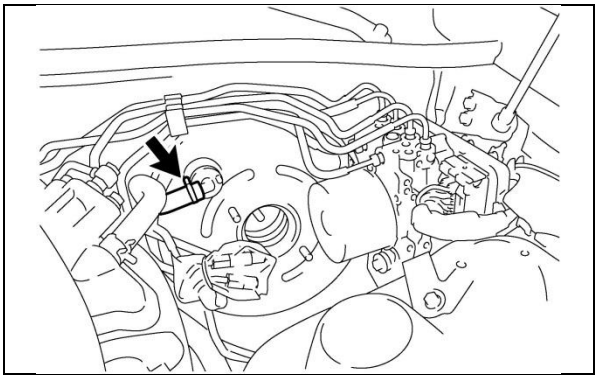
13. REMOVE THE PUSH ROD PIN

a) Remove the clip from the pushrod and dispose of the old clip.
b) Remove the push rod pin.

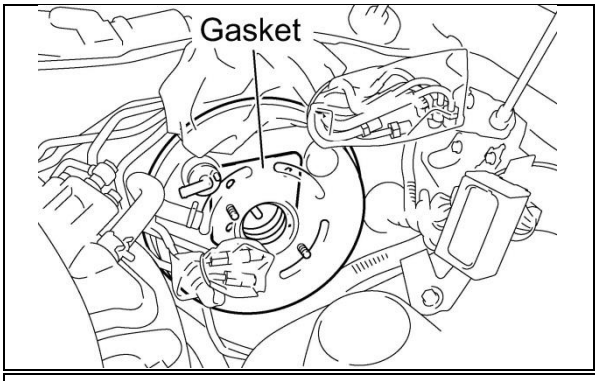


14. REMOVE BRAKE BOOSTER ASSEMBLY

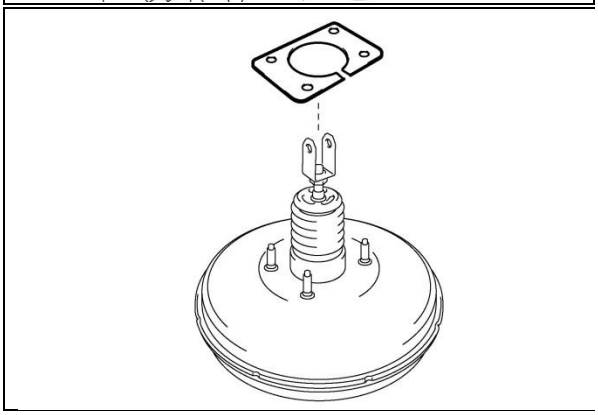
a) Remove the 4 nuts.



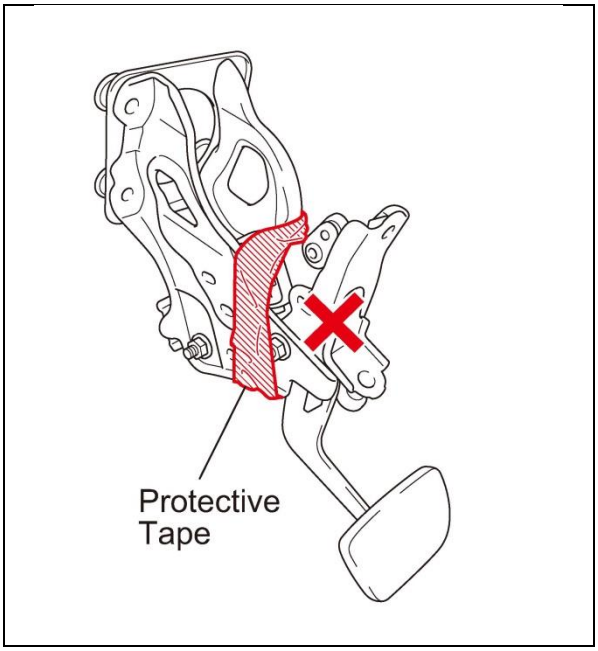
b) Slide the clip and disconnect the vacuum hose.



c) Remove the brake booster assembly with the gasket.



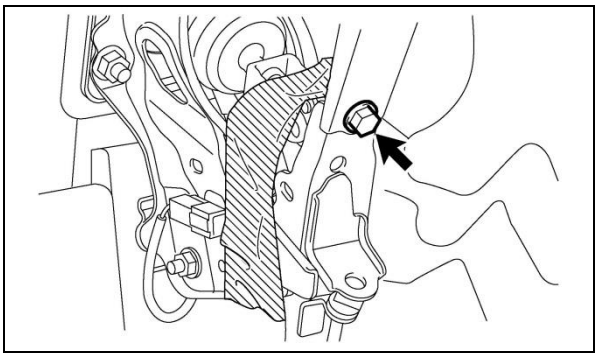
d) Remove the gasket from the booster and discard to ensure it is not reused.



15. REMOVE THE BRAKE PEDAL SUPPORT ASSEMBLY

a) Apply tape to the brake pedal to secure it from moving during the removal process.
b) Mark the brake pedal assembly to ensure it is not reused.

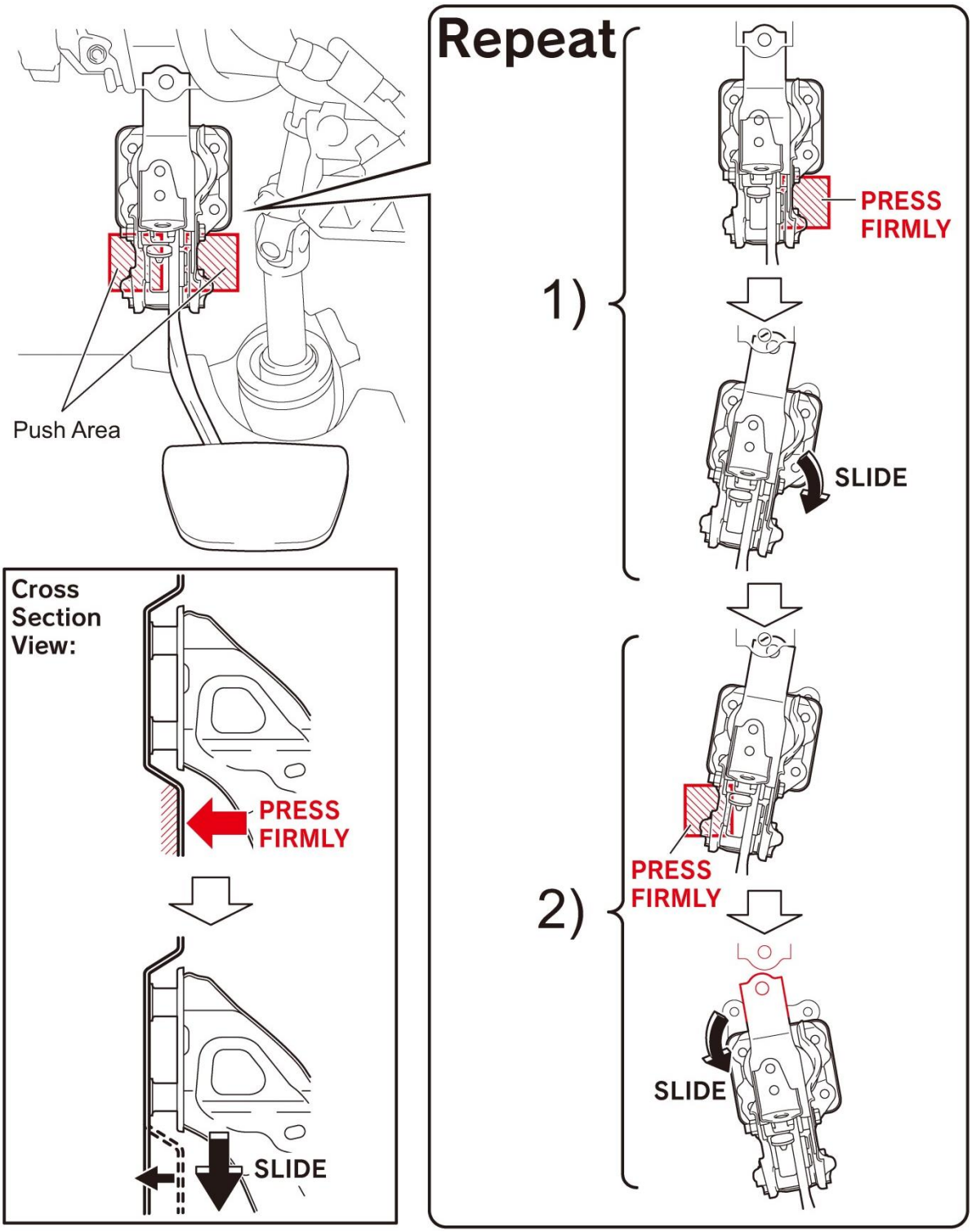
The brake pedal moves easily and can pinch your hand, ensure you secure the pedal with tape before removing.



c) Remove the brake pedal support reinforcement set bolt.

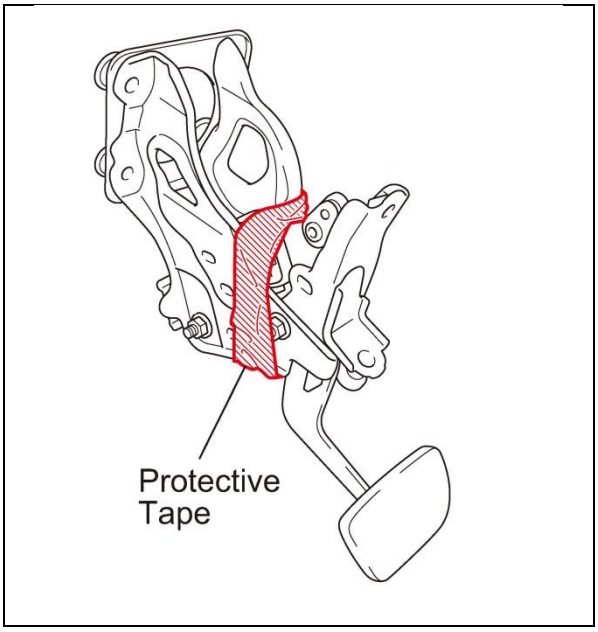
To prevent the brake pedal support assembly from getting caught on the insulator pad, use the following procedure to remove the brake pedal support assembly.

d) To remove the brake pedal support assembly follow steps 1) and 2) below:
   1. Firmly press the insulator pad below the lower right part of the support bracket and slide the support bracket as shown in the illustration to clear the reinforcement bracket connected to the under dash support bar.
   2. Perform the same procedure on the lower left side of the bracket.



e) Place the old brake pedal in a tray so it will not be reused.

B. INSTALL NEW BRAKE PEDAL SUPPORT ASSEMBLY



1. INSTALL THE BRAKE PEDAL SUPPORT ASSEMBLY

a) Apply tape to the brake pedal to secure it from moving during installation process.

To prevent the brake pedal support assembly from getting caught on the insulator pad, use the following procedure to install the brake pedal support assembly.

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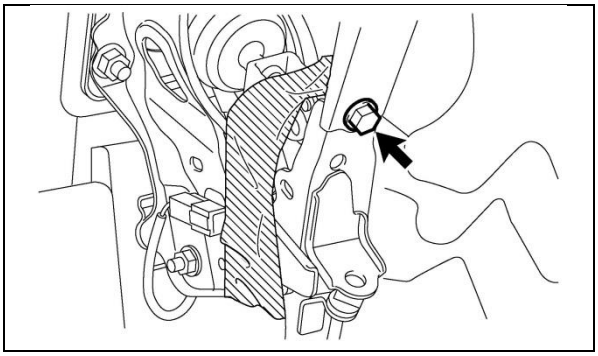
b) To install the brake pedal support assembly follow steps 1- 6 below:

1. Using a curved plastic insulator (such as a cut out water bottle) place the plastic insulator so it wraps around the back side of the pedal support bracket.

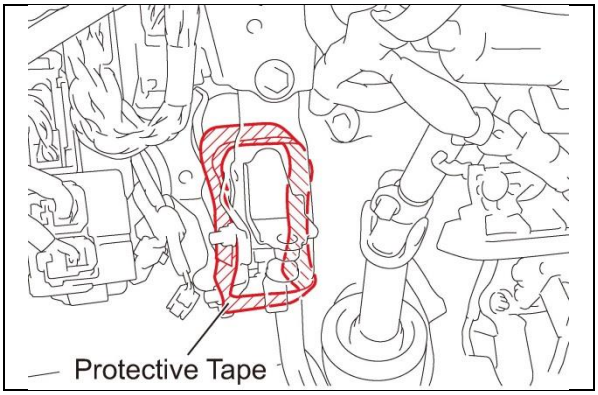
   Water Bottle Instructions: Cut the top and bottom off of the water bottle. Then cut the water bottle length wise to create an 8” x 5.5” plastic sheet.
2. Ensure that the plastic insulator is installed so that the curved portion arcs from the top of the bracket to the bottom.
3. Tilt the pedal assembly back so that the reinforcement bracket can be placed behind the dash support bar bracket.
4. Using the dash support bar bracket as leverage slide the pedal assembly in an upward motion.
5. The plastic will allow the pedal assembly to easily slide on the insulator pad while also protecting it from becoming damaged during installation.
6. After the pedal is installed slide the plastic insulator out from behind the brake pedal support assembly.

Brake Pedal Assembly Installation Video

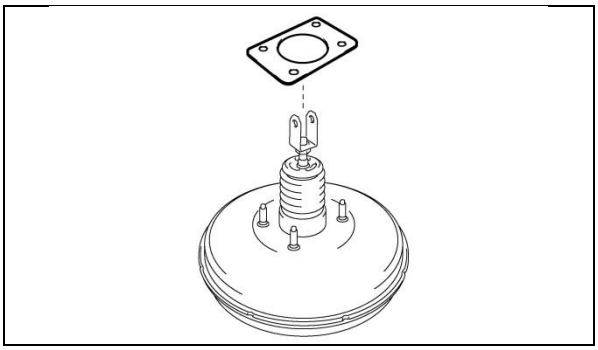


c) Install the reinforcement bracket bolt and torque to spec..

Torque: 15ft. lbf (21N·m)

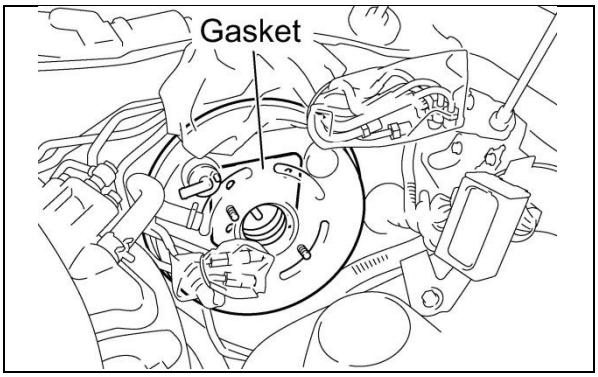


d) Remove the tape supporting the brake pedal.

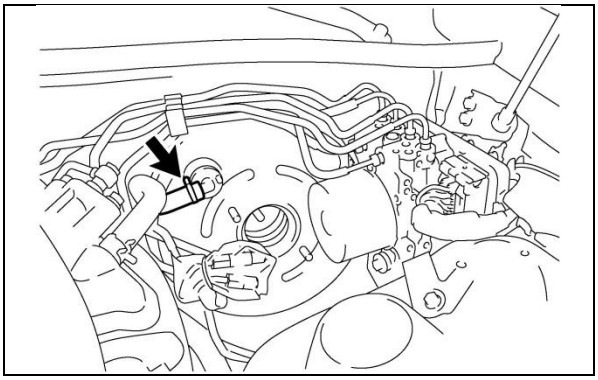


2. REINSTALL THE BRAKE BOOSTER ASSEMBLY

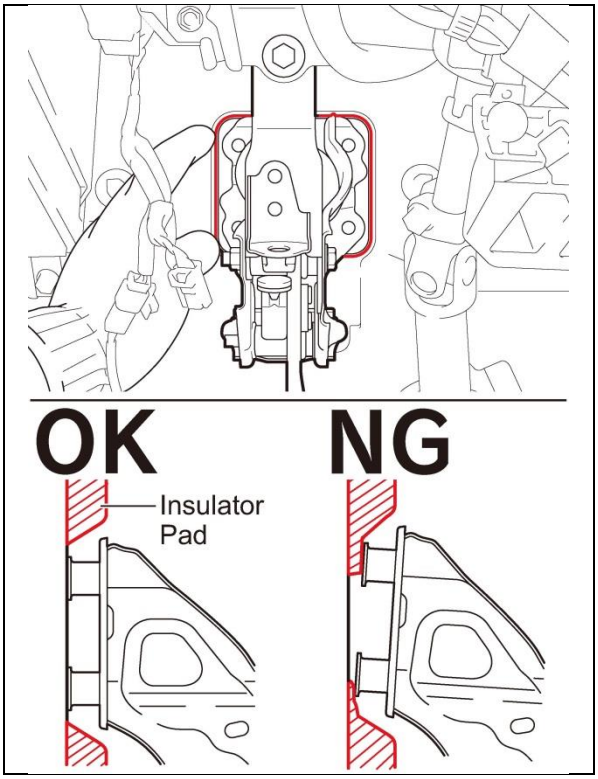
a) Install the ***NEW*** brake booster gasket onto the brake booster assembly.



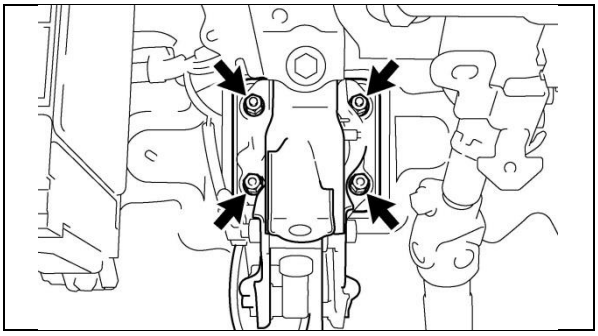
b) Temporarily install the brake booster assembly, ensuring the gasket does not fall off.



c) Reconnect the vacuum hose and clip.



d) Confirm that the insulator pad is not pinched between the brake pedal support assembly and the vehicle body.

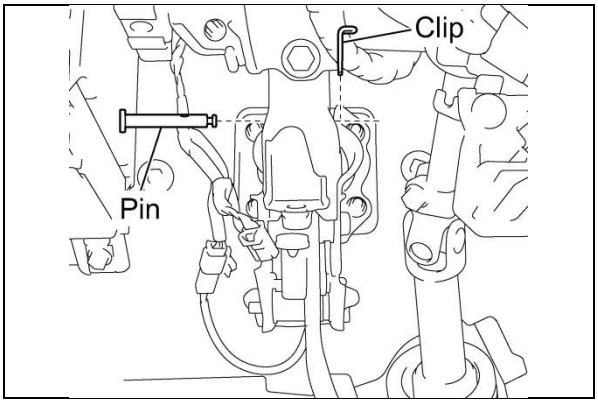


e) Install the 4 brake pedal support assembly and booster assembly nuts and torque to spec.

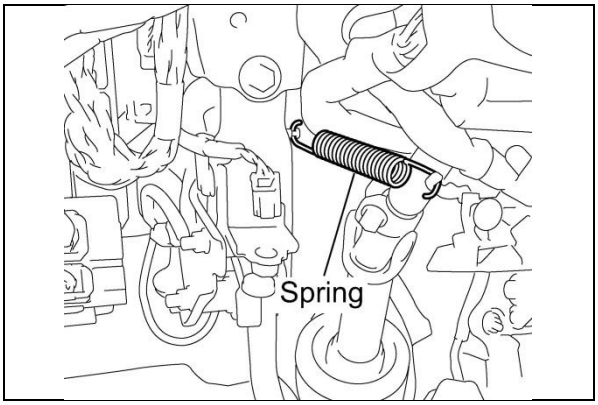
Torque: 9ft. lbf (13 N·m)

3. REINSTALL THE PUSHROD PIN

a) Apply light coat of lithium soap base glycol grease or equivalent to the pushrod pin.



b) **Set the push rod clevis in place and insert the pushrod pin from left side of the vehicle toward the right side of the vehicle.**
c) **Install the *NEW* push rod clip.**
d) **Check that the pedal operates smoothly and the pin does not squeak or make noise.**



4. REINSTALL THE BRAKE PEDAL RETURN SPRING

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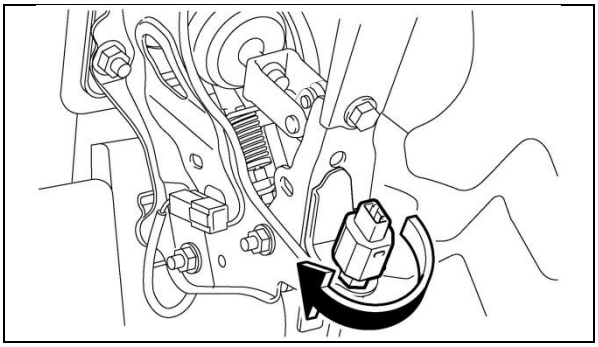
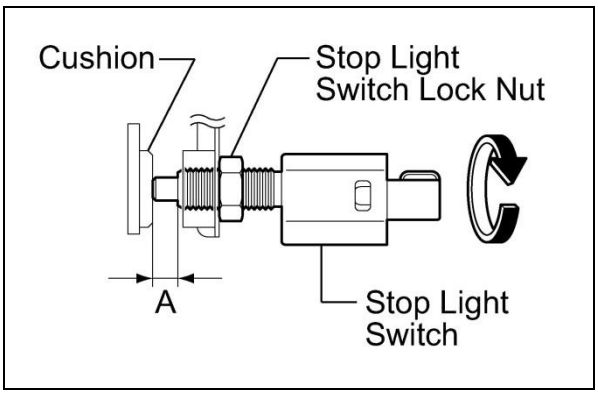


5. REINSTALL THE STOP LAMP SWITCH

a) Reinstall the stop lamp switch and stop lamp switch stopper nut.

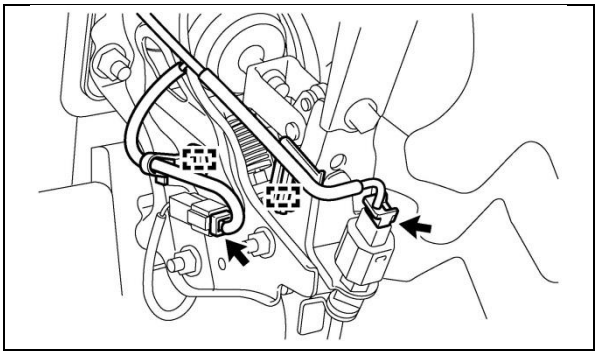


b) Check the stop lamp switch clearance.
   1. Adjust the stop lamp switch so that the clearance between the stop lamp switch cushion and stop lamp switch retaining nut is within spec.

   Clearance Spec (A): 0.87 to 2.4 mm (.0343 to .0944 in)

   2. Torque the stop lamp lock nut to spec.

   Torque Spec: **13ft. lbf (17 N·m)**



STOP **Do not depress the brake pedal.**

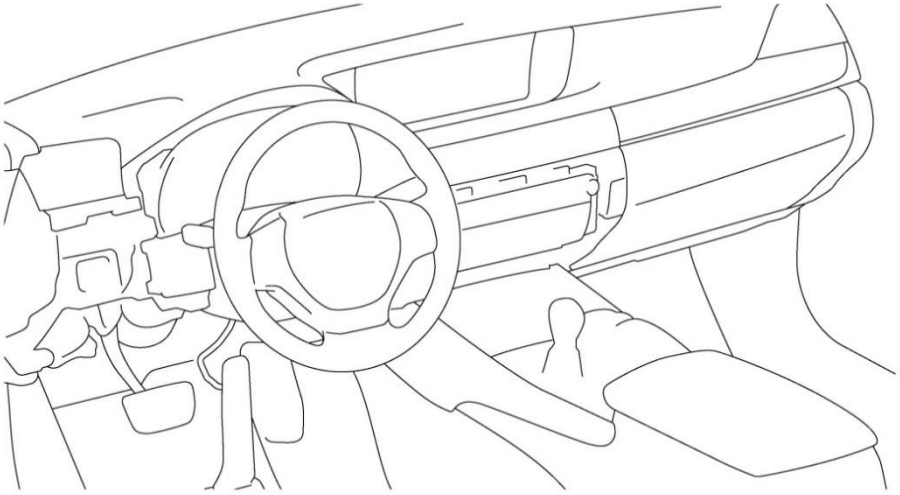
c) Correctly route the wires and engage the two wire harness claws.

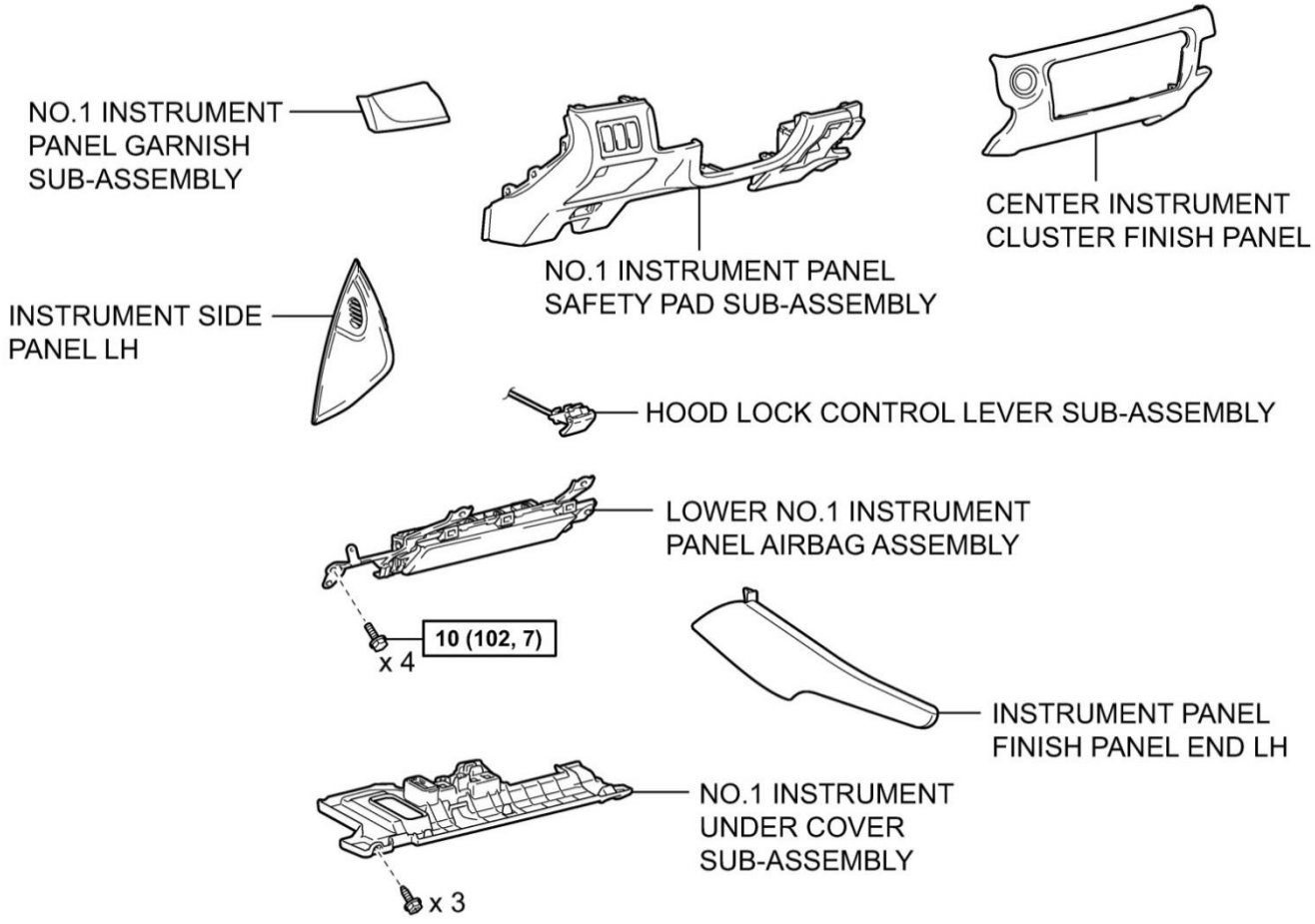
d) Reconnect the 2 connectors.

6. REINSTALL THE FOLLOWING INTERIOR COMPONENTS SHOWN BELOW

a) Refer to **TIS** for installation instructions.

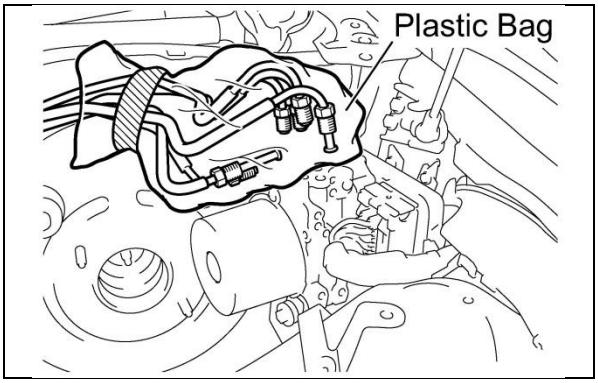
- Lower No. 1 Instrument Panel Airbag Assembly
  Torque Spec: **7ft. lbf (10 N·m)**
- Hood Lock Control Lever Sub-assembly
- No. 1 Instrument Panel Safety Pad Sub-assembly
- No. 1 Instrument Panel Under Cover Sub-assembly
- No.1 Instrument Panel Garnish Sub-Assembly
- LH Side Instrument Side Panel
- LH Side Instrument Panel Finish Panel
- Center Instrument Cluster Finish Panel



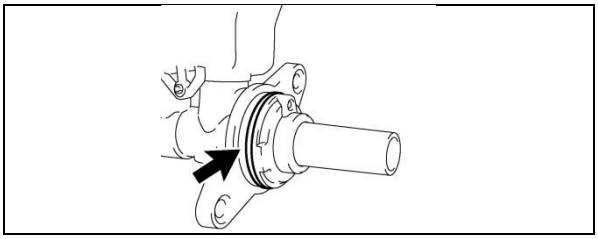


N*m (kgf*cm, ft.*lbf) : Specified torque

7. REINSTALL THE BRAKE ACTUATOR WITH BRACKET AND MASTER CYLINDER



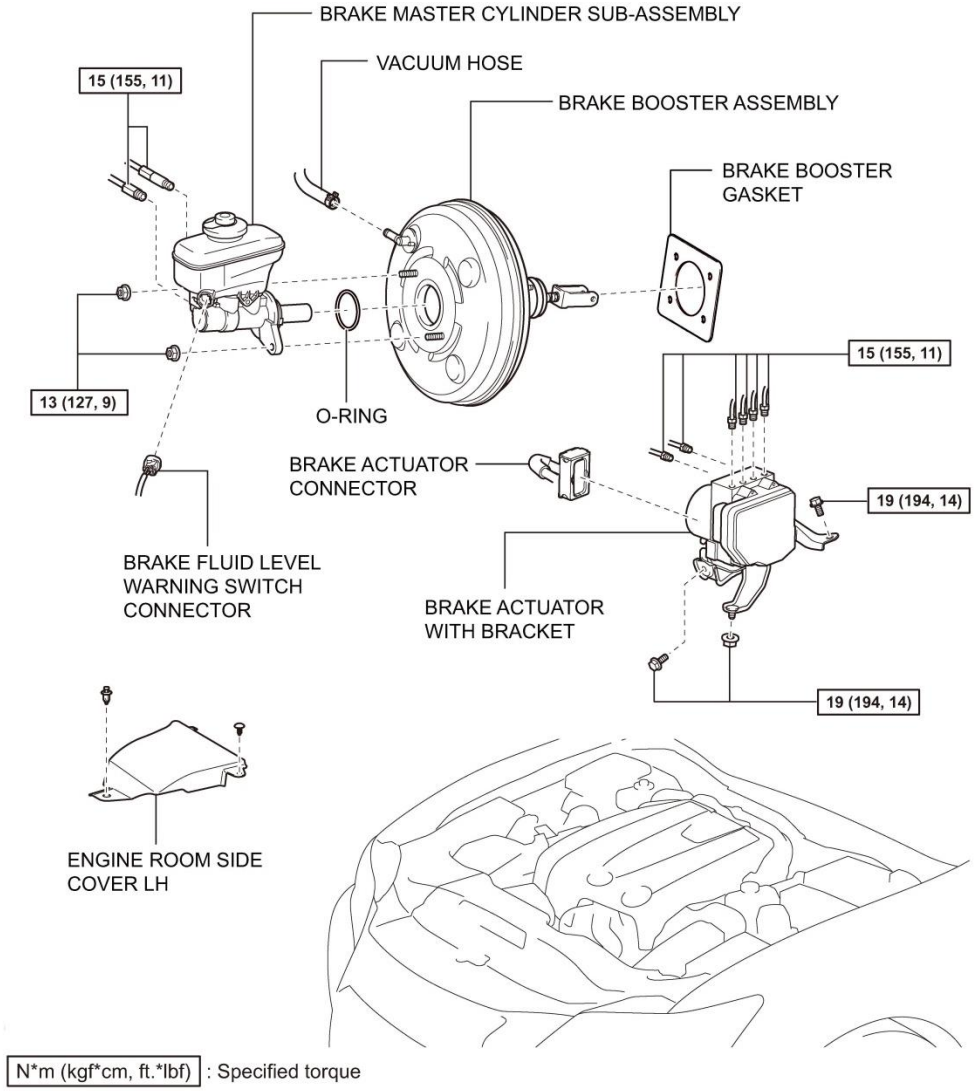
Make sure to remove the plastic bag from the brake lines.



- **Make sure the O-ring groove is free of foreign matter.**
- **Only clean the groove using a paper towel, do not use a cloth.**
- **To prevent damage install the NEW O-ring by hand..**

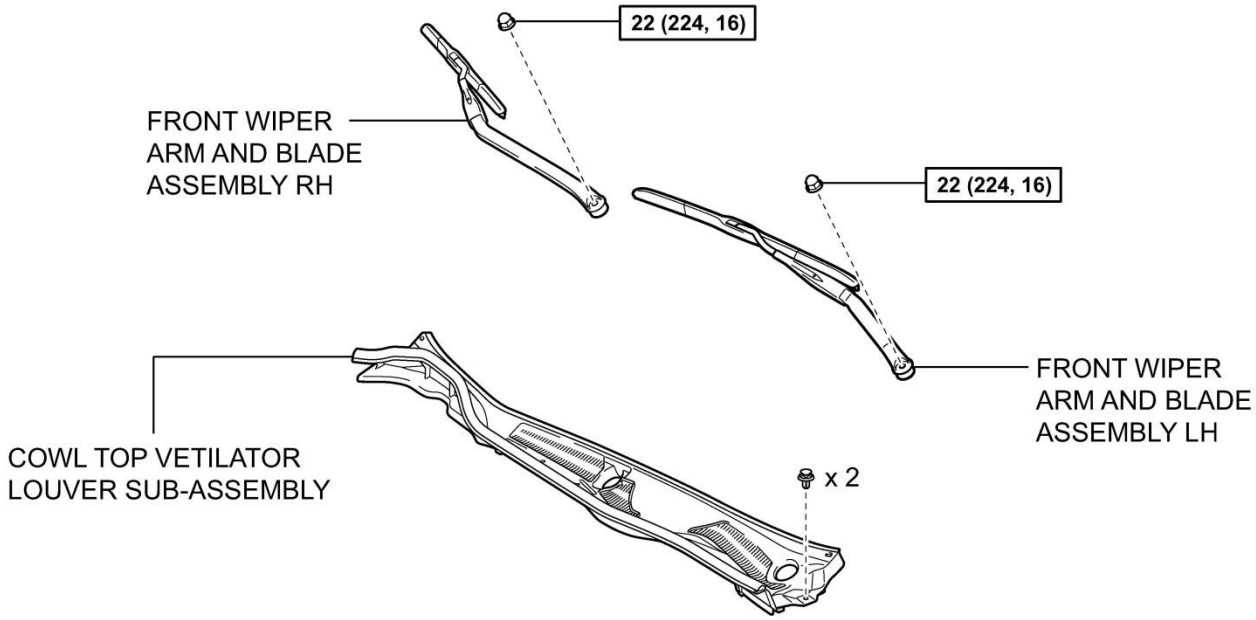
a) Refer to TIS for brake component installation.

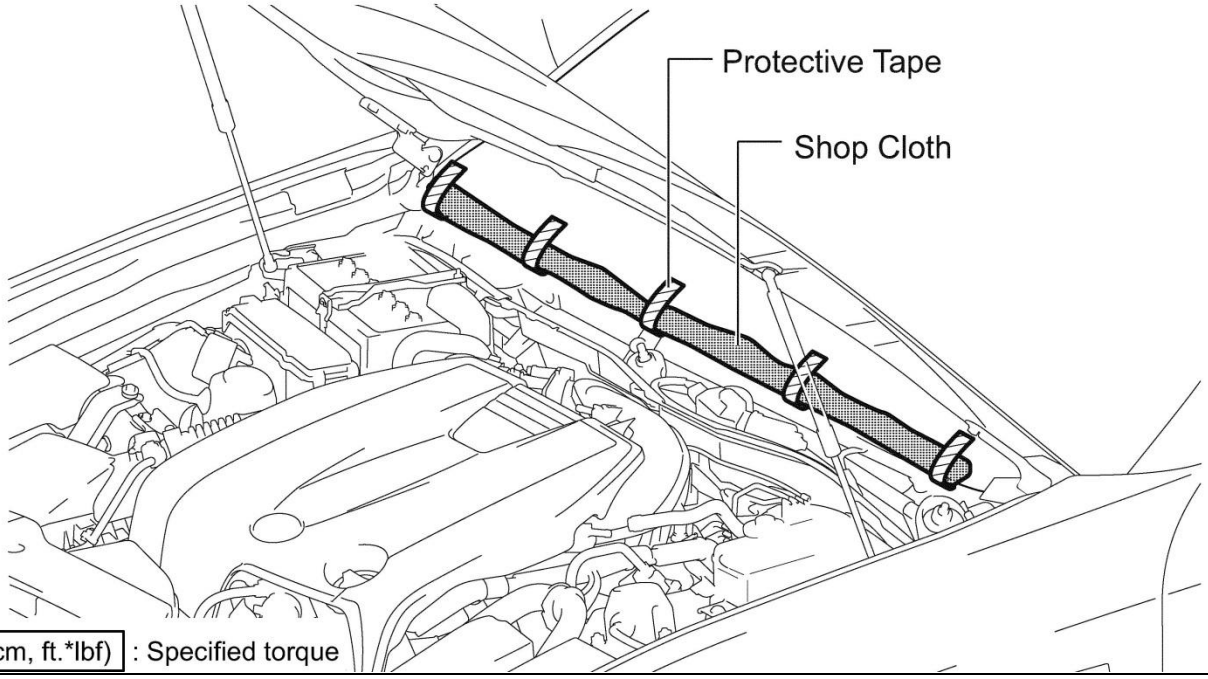
- **Brake Booster Installation**
- **Actuator Installation**



8. REINSTALL THE COWL TOP PANEL SUB-ASSEMBLY

a) Remove the towel protecting the windshield.
b) Refer to **TIS** for reinstallation instructions.





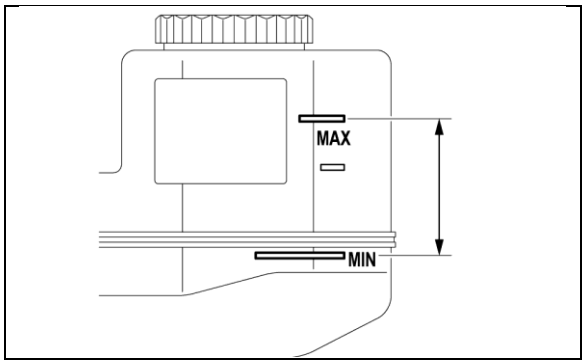
N*m (kgf*cm, ft.*lbf) : Specified torque

9. RECONNECT THE NEGATIVE BATTERY CABLE
TORQUE: 48in lbf (5.4 N·m)

10. BRAKE SYSTEM BLEEDING PRECAUTIONS

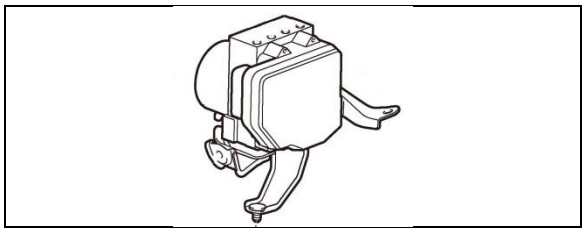
CRITICAL INFORMATION – READ THOROUGHLY

These cautions should be observed when bleeding the brake system. Failure to follow these cautions could result in damaged parts or inadequate repair quality.



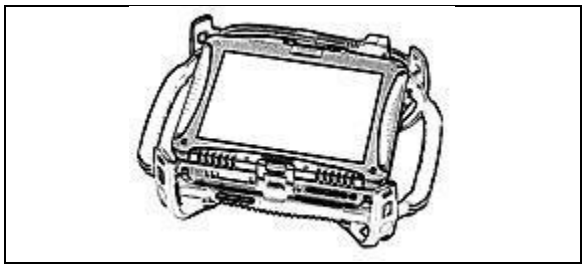
1. FLUID LEVEL

a) To prevent air entering the brake system, ***ALWAYS*** maintain the fluid level between the MIN and MAX lines.



DO NOT RUN ACTUATOR WITH AIR IN BRAKE SYSTEM

a) Do not run the actuator with air in the master cylinder or in the brake system, doing so can cause air to enter the actuator.



3. USE TECHSTREAM

a) Always use Techstream when bleeding the brake system, otherwise damage can occur.

11. BLEED THE HYDRAULIC BRAKE SYSTEM

a) Refer to **TIS** for brake bleeding instructions.

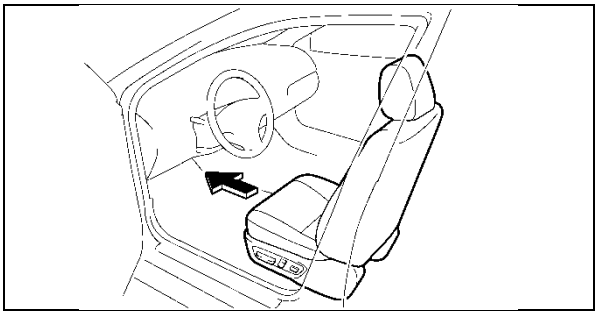
12. CHECK AND ADJUST BRAKE PEDAL HEIGHTS

13. CHECK BRAKE PEDAL FREE PLAY

14. CHECK BRAKE PEDAL RESERVE DISTANCE

Refer to **TIS** for brake pedal adjustment.

It is not necessary to perform the stop lamp switch clearance inspection because it was already performed during installation.



15. RESTORE THE SEATING POSITION

16. RESTORE THE CLOCK, AUDIO AND SYSTEM PRESETS/MEMORY

17. CHECK FOR DTCS

18. ROAD TEST THE VEHICLE

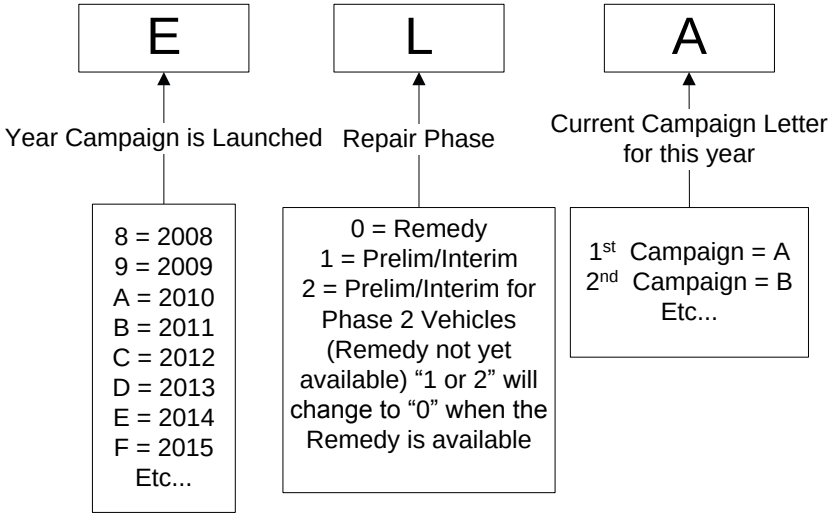
◄ VERIFY REPAIR QUALITY ►

- **Confirm that the pedal is installed properly and that all pedal adjustments have been completed correctly**
- **Confirm that the brakes have been bled properly**
- **Confirm that the stop lamp switch is adjusted properly and that the tail lights work as designed**

If you have any questions regarding this update, please contact your area representative.

VIII. APPENDIX

A. CAMPAIGN DESIGNATION DECODER



B. CAMPAIGN PARTS DISPOSAL

As required by Federal Regulations, please make sure all campaign parts (original parts) removed from the vehicle are disposed of in a manner in which they will not be reused, ***unless requested for parts recovery return.***