

TECHNICAL INSTRUCTIONS

FOR

SAFETY RECALL K0L

POTENTIAL LOSS OF POWER BRAKE ASSIST

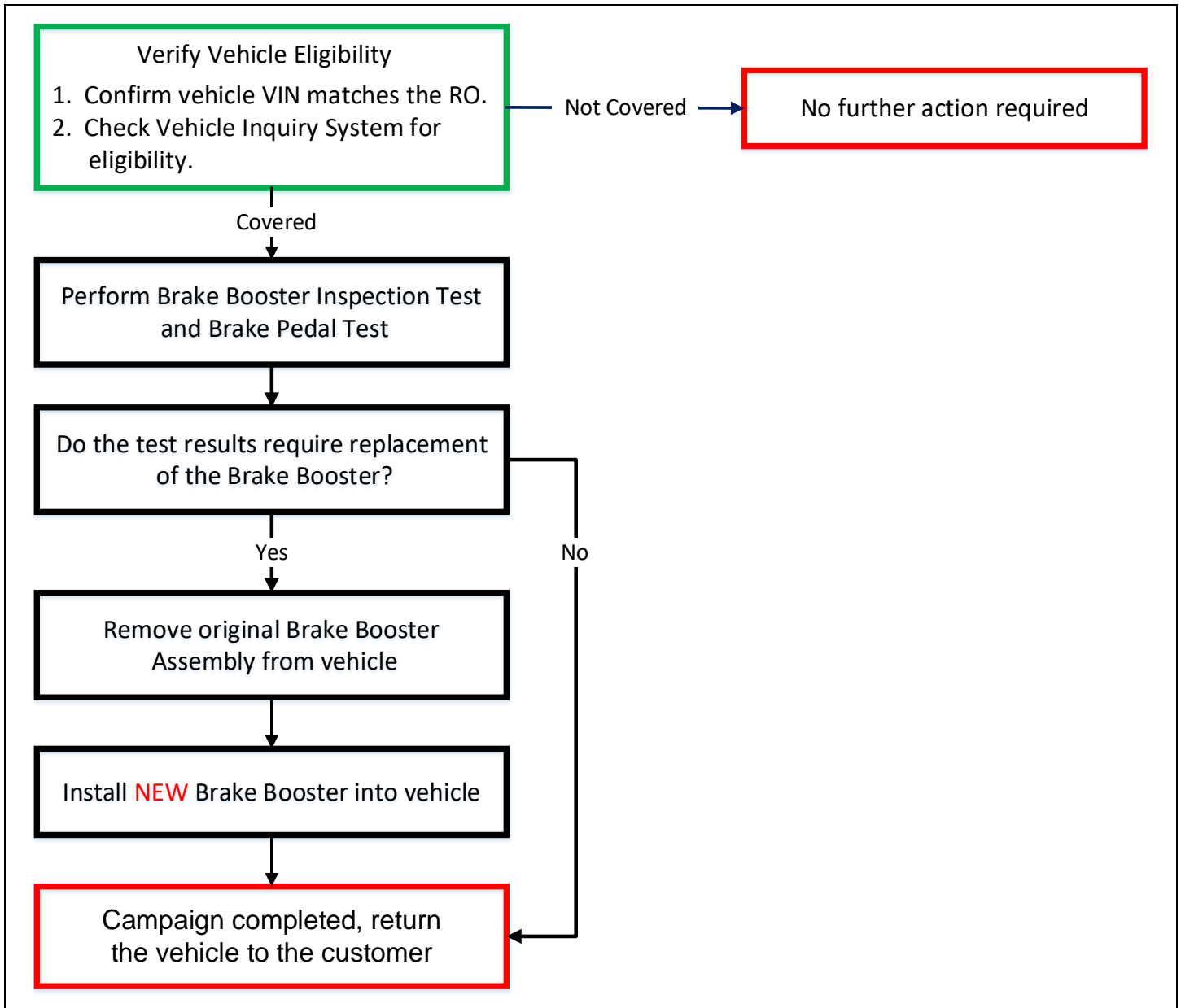
CERTAIN 2020 COROLLA HYBRID

The repair quality of covered vehicles is extremely important to Toyota. All dealership technicians performing this recall are required to successfully complete the most current version of the E-Learning course “Safety Recall and Service Campaign Essentials”. 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 certification levels:

- Certified Technician (Chassis)
- Expert Technician (Chassis)
- Master Technician
- Master Diagnostic Technician

It is the dealership’s responsibility to select technicians with the above certification level or greater to perform this recall repair. Carefully review your resources, the technician skill level, and ability before assigning technicians to this repair. It is important to consider technician days off and vacation schedules to ensure there are properly trained technicians available to perform this repair at all times.

I. OPERATION FLOW CHART



II. IDENTIFICATION OF AFFECTED VEHICLES

- Compare the vehicle VIN to the VIN listed on the Repair Order to ensure they match
- Check the TIS Vehicle Inquiry System to confirm the VIN is involved in this Safety Recall, and that it has not already been completed prior to dealer shipment or by another dealer.
- TMNA warranty will not reimburse dealers for repairs completed on vehicles that are not affected or were completed by another dealer.

III. PREPARATION

A. PARTS

Model	Part Number	Part Description	Quantity
Corolla Hybrid	04009-56647	Brake Pump Assy w/ Accumulator	1

B. TOOLS & EQUIPMENT

- Techstream
- Standard Hand Tools
- Torque Wrench

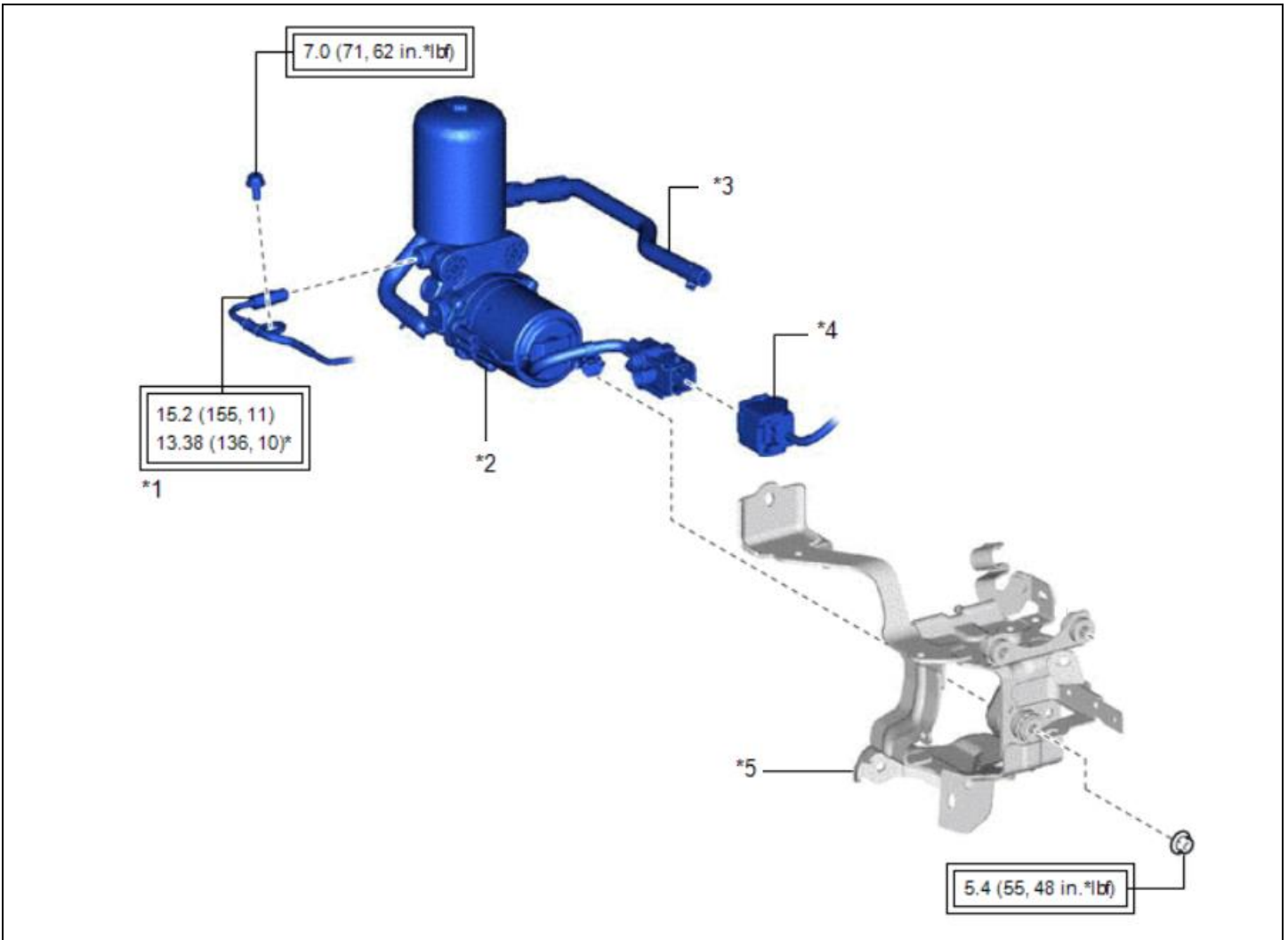
C. MATERIALS


- Brake Fluid: SAE J1703 or FMVSS No. 116 DOT 3; SAE J1704 or FMVSS No. 116 DOT 4

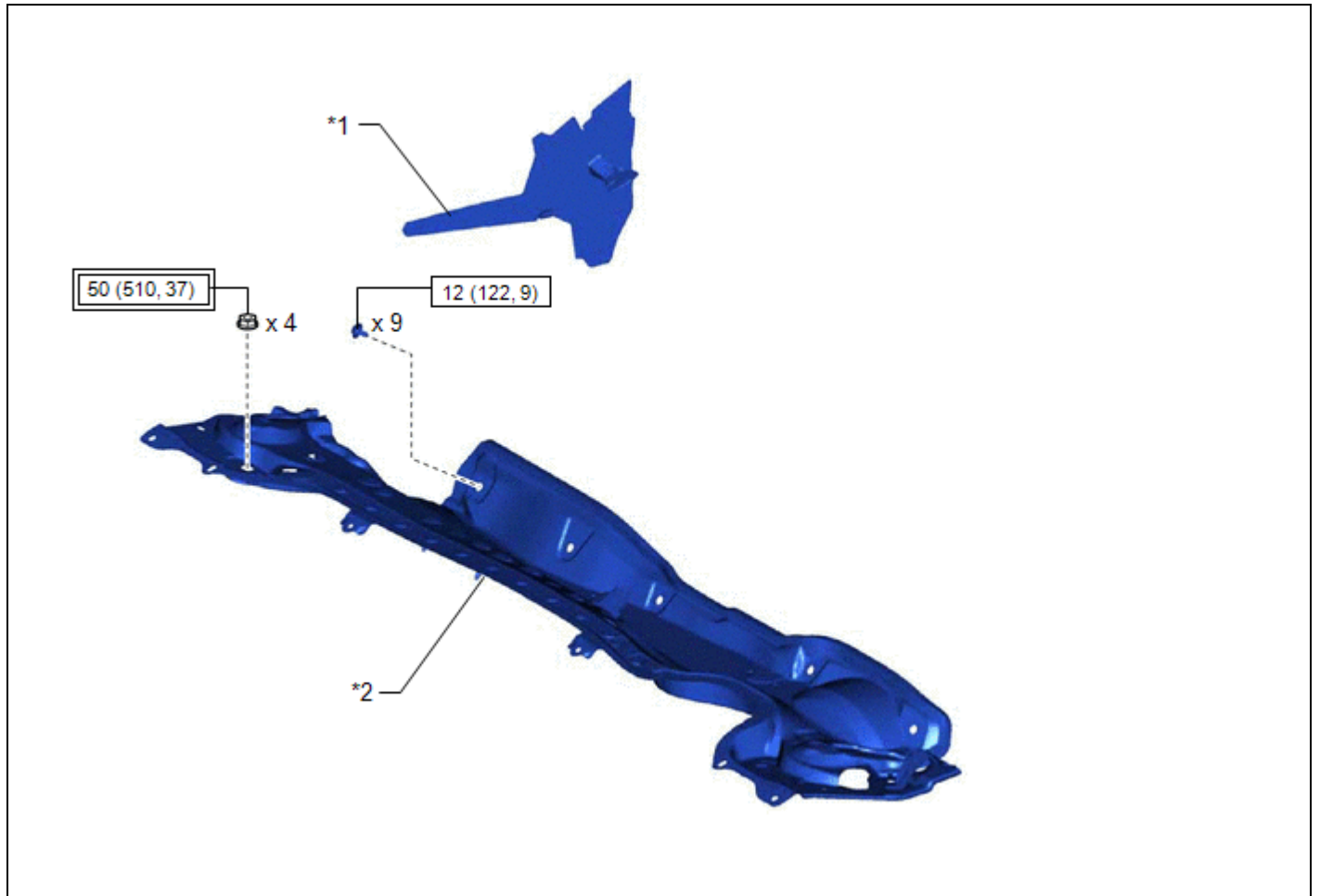
IV. BACKGROUND



In the subject vehicles, there is a possibility the brake booster pump may have been manufactured improperly, and in some cases, it may stop operating. If the brake booster pump stops operating, multiple warning lights and messages will illuminate, and/or audible chimes will sound. In this condition, braking assist could be lost completely after several brake pedal applications, resulting in increased stopping distance. In addition, the Vehicle Stability Control will become deactivated, and other vehicle features could be affected. Deactivating the Vehicle Stability Control system may cause the subject vehicles to not meet the certain requirements of FMVSS No. 126. A deactivated Vehicle Stability Control or a sudden and complete loss of braking assist while driving could increase the risk of a crash.

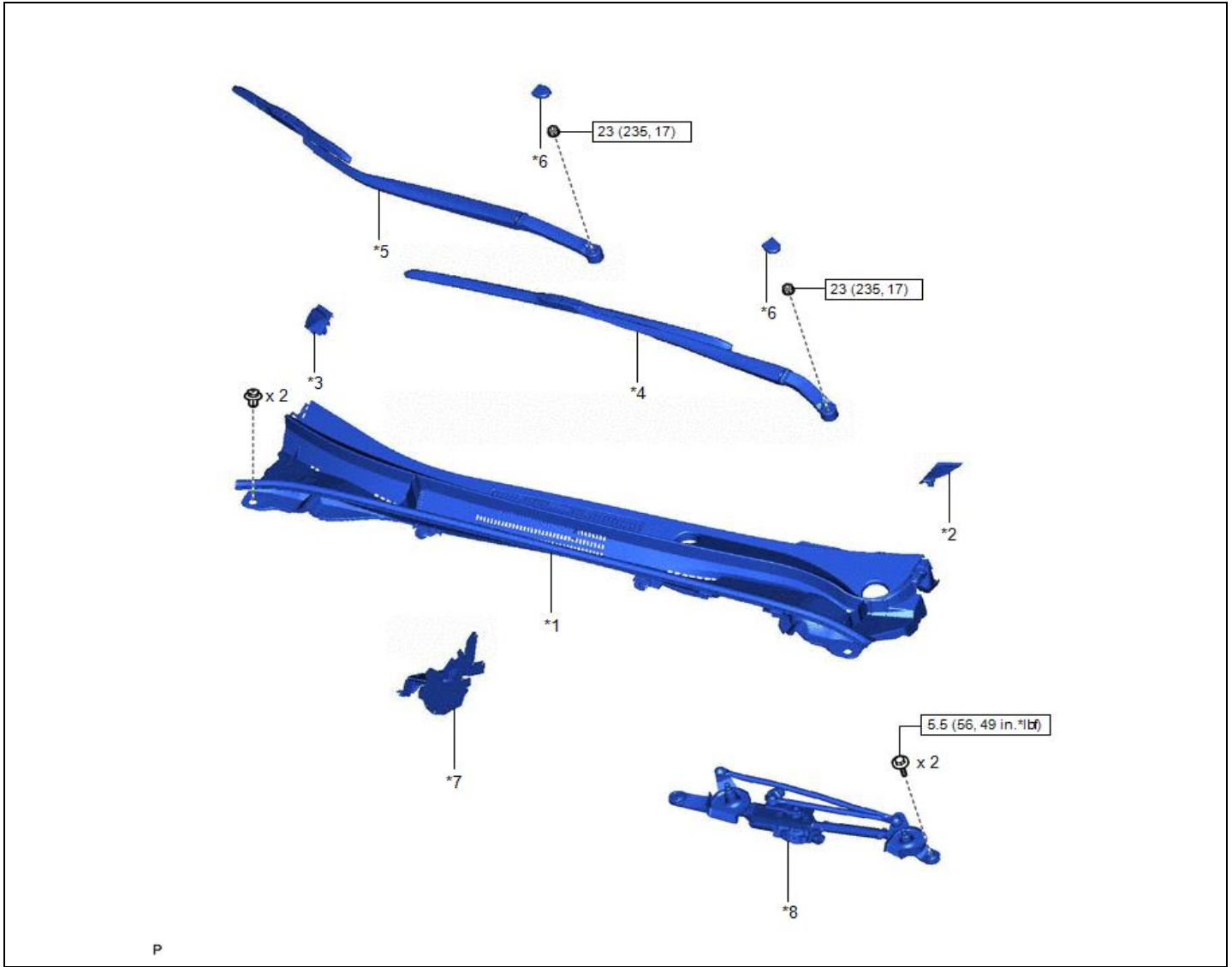
V. COMPONENTS




*1	ACCUMULATOR TO BRAKE MASTER CYLINDER TUBE	*2	BRAKE BOOSTER PUMP ASSEMBLY
*3	NO. 1 BRAKE ACTUATOR HOSE	*4	CONNECTOR
*5	BRAKE ACTUATOR BRACKET ASSEMBLY		
	Tightening torque for "Major areas involving basic vehicle performance such as moving/turning/stopping" : N*m (kgf*cm, ft.*lbf)	*	For use with a union nut wrench



*1	NO. 1 HEATER AIR DUCT SPLASH SHIELD SEAL	*2	OUTER COWL TOP PANEL SUB-ASSEMBLY
	Tightening torque for "Major areas involving basic vehicle performance such as moving/turning/stopping": N*m (kgf*cm, ft.*lbf)		N*m (kgf*cm, ft.*lbf): Specified torque



*1	COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY	*2	COWL WATER EXTRACT SHIELD LH
*3	COWL WATER EXTRACT SHIELD RH	*4	FRONT WIPER ARM AND BLADE ASSEMBLY LH
*5	FRONT WIPER ARM AND BLADE ASSEMBLY RH	*6	FRONT WIPER ARM HEAD CAP
*7	WATER GUARD PLATE	*8	WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY
	N*m (kgf*cm, ft.*lbf): Specified torque	-	-

VI. BRAKE BOOSTER PUMP INSPECTION TEST



1. CHECK FOR DTC'S

- a. Using a Techstream, check for Diagnostic Trouble Codes.

Note: *This Safety Recall covers only the replacement of the brake booster pump, as detailed in these instructions. It does not cover the diagnosis or replacement of any other parts on the vehicle, including the hybrid system.*



It is critical that there are no DTC's present for the following Brake Booster Pump inspection. Correct any DTC's before proceeding.

2. CONFIRM VEHICLE CONDITION

- a. Check the following items before proceeding:

- D/C Cut Fuse is installed (installed during PDS).
- No DTC's are present before starting the test. The Inspection Test will return a false result after a few minutes of operation if DTC's are present.
- Battery Voltage on the Techstream is sufficient for at least 25 minutes of operation.
- Vehicle is Ready On
- Hood is open to allow heat to escape
- **Techstream software is closed.** If the Techstream software is communicating with the vehicle, the check tool will not operate correctly.

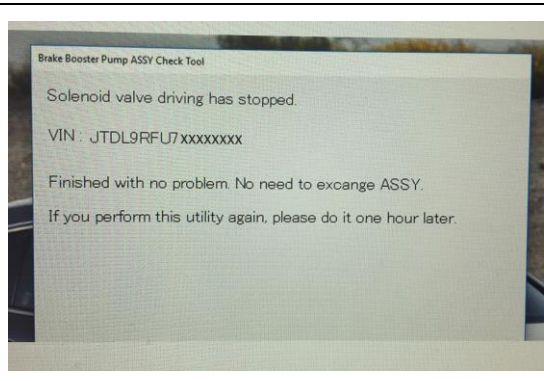
3. RUN BRAKE BOOSTER CHECK TOOL

The Brake Booster Check Tool will run the Brake Booster Pump for 25 minutes, cycling the pump on and off in 5 second intervals. At the end of the test, the software will indicate if it is necessary to replace the brake booster pump. **DO NOT close this screen until a photo is taken for documentation.**

- a. Open the following link to begin the test:

[Brake Booster Check Tool](#)

- b. Select "Next" to begin the test.
- c. Monitor the vehicle and Techstream battery voltage until the test is completed.
- d. **When the test is completed, TAKE A PHOTO OF THE RESULTS SCREEN.**

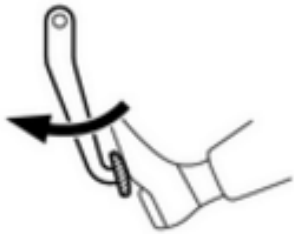
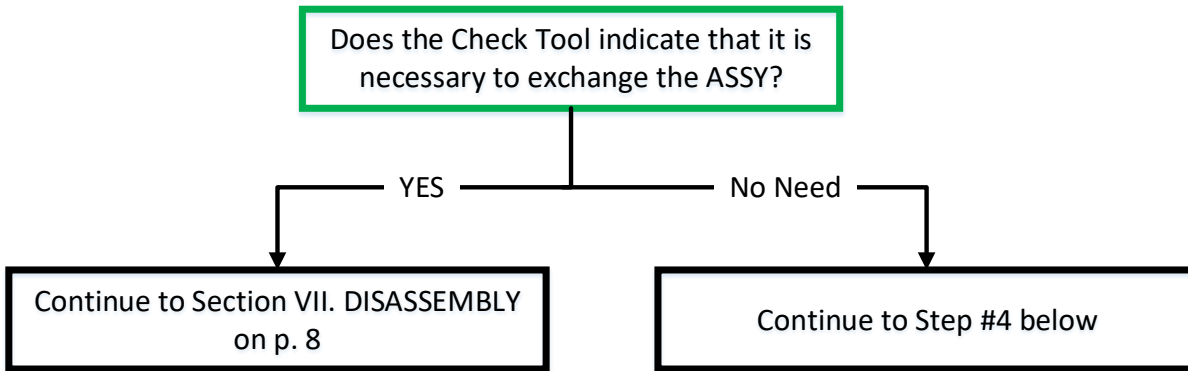


4. SEND PHOTO TO QUALITY COMPLIANCE

- a. Email the photo to:
Quality_Compliance@toyota.com
Subject: K0L (VIN Number)

Note: The photo is being retained for documentation purposes. Quality Compliance will not respond to the email. Continue with the next step once the email is sent.

b. After the test, review the results and determine the next step in the flowchart below:

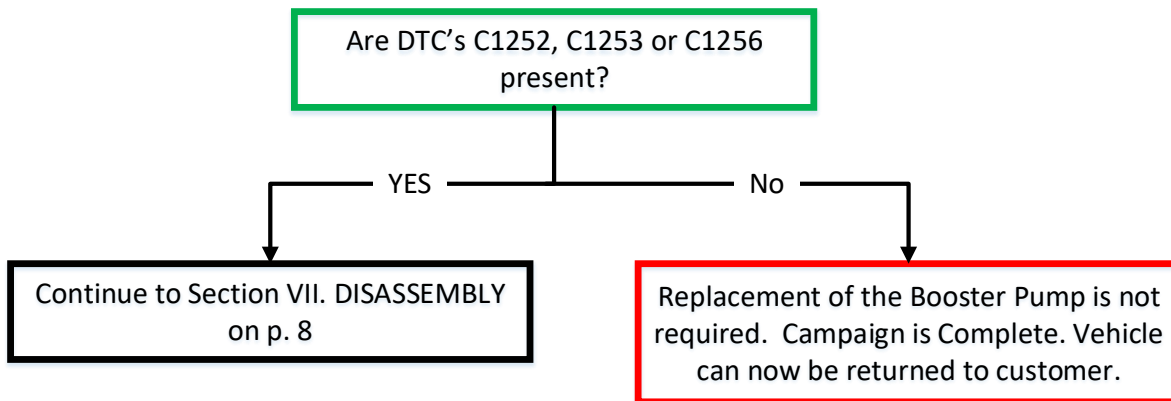


Depress brake pedal 5 times

5. PERFORM BRAKE PEDAL TEST

- a. Depress the brake pedal 5 times.
- b. Check for the following DTC's:
 - C1252
 - C1253
 - C1256

c. After depressing the brake pedal 5 times, determine the next step in the flowchart below:



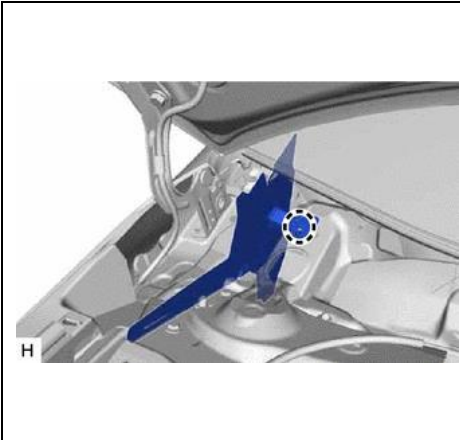
If it is necessary to run the inspection test a second time, wait an hour before restarting the test to lower the temperature of the booster pump motor.

VII. DISASSEMBLY

1. REMOVE WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY

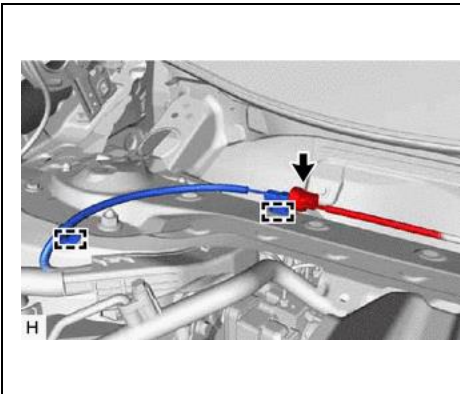
- a. Follow the Repair Manual procedure to remove the windshield wiper assembly.

[WIPER / WASHER: FRONT WIPER MOTOR: REMOVAL; 2020 MY Corolla Corolla Hatchback Corolla HV](#) RM100000001GUQB



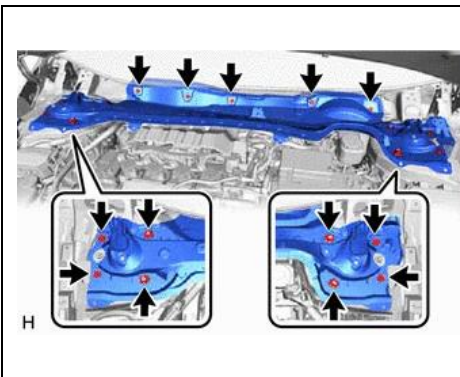
2. REMOVE NO. 1 HEATER AIR DUCT SPLASH SHIELD SEAL

- a. Disengage the claws.



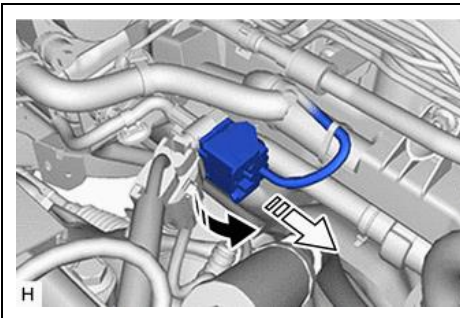
3. REMOVE OUTER COWL TOP PANEL SUB-ASSEMBLY

- a. Disconnect the connector
- b. Disengage the 2 clamps and separate the wire harness from the outer cowl top panel sub-assembly



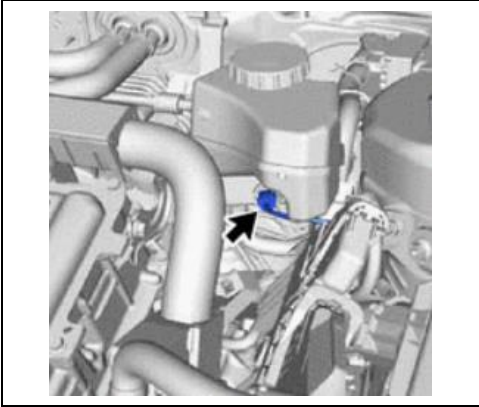
- c. Remove the 9 bolts, 4 nuts and outer cowl top panel sub-assembly

VIII. REMOVE BOOSTER PUMP

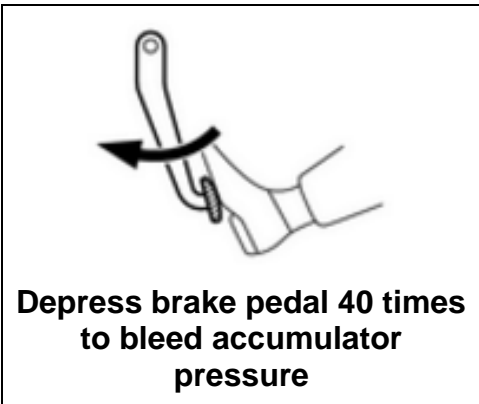


1. DISCONNECT BRAKE BOOSTER CONNECTOR

- a. Confirm the Power Switch is OFF.
- b. Release the lock lever and disconnect the brake booster pump connector.

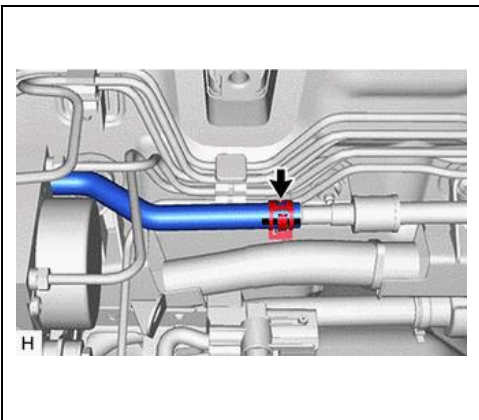


- c. Disconnect the connector from the fluid reservoir on the master cylinder assembly.



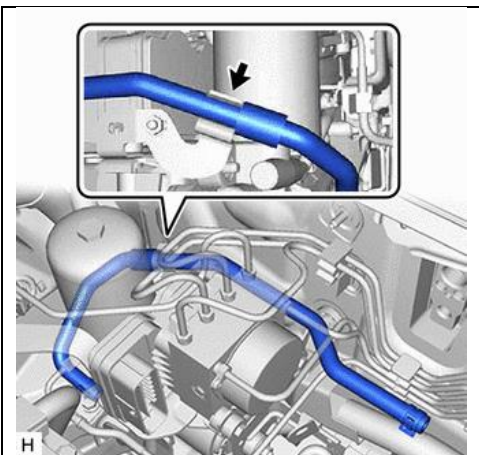
2. **PERFORM ACCUMULATOR PRESSURE ZERO DOWN**
 - a. Verify the brake booster connector is disconnected, as performed in Step# 1.
 - b. Remove brake fluid, if necessary, from the reservoir so that the level is below the Full mark.
 - c. Depress the brake pedal 40 times to bleed the accumulator pressure back to the reservoir.
 - d. Confirm the brake pedal is firm.

Note: During this procedure, it is normal for the buzzer to sound due to the low accumulator pressure.

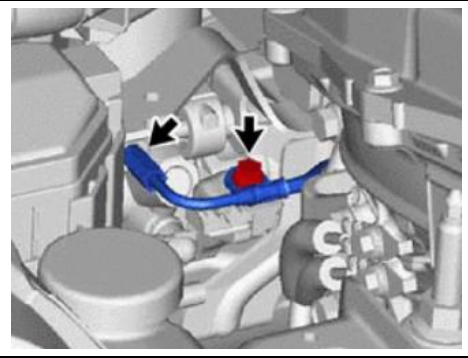


3. **SEPARATE NO. 1 BRAKE ACTUATOR TUBE**
 - a. Slide the clip and remove the hose from the No. 1 brake actuator tube.
 - b. Raise the brake actuator tube to minimize brake fluid drainage.

Note: Be prepared to plug the hose as fluid from the reservoir will leak.



- c. Separate the No. 1 brake actuator hose from the clamp.

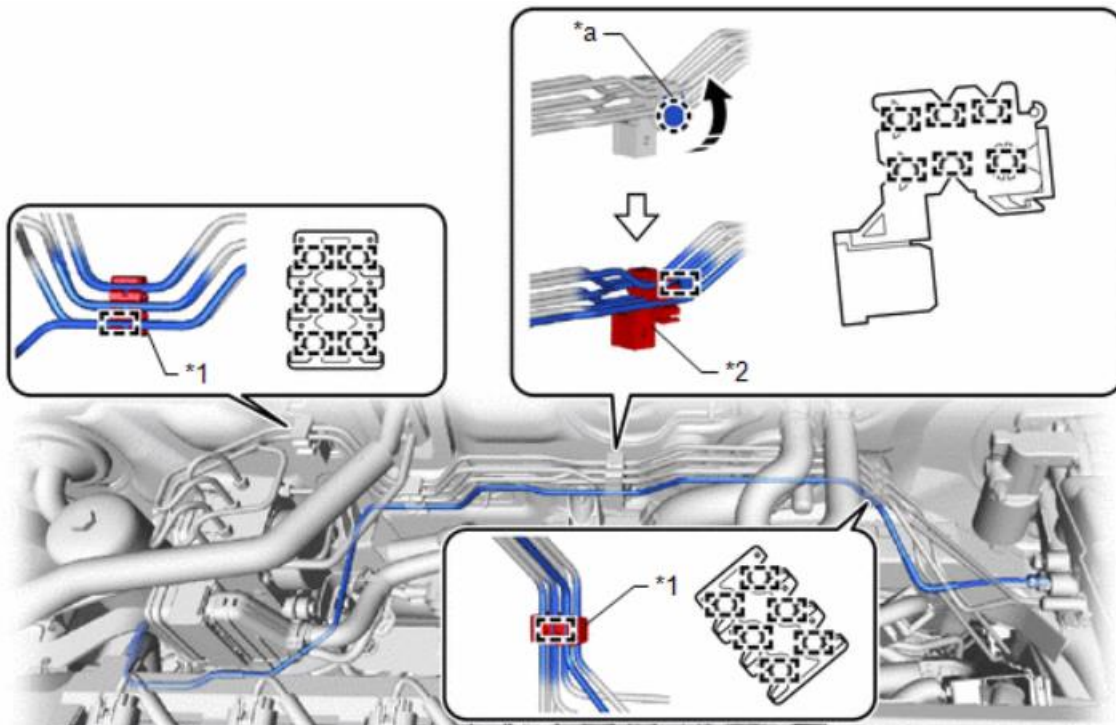


4. REMOVE ACCUMULATOR TO MASTER CYLINDER TUBE

- a. Using a union nut wrench, disconnect the accumulator to master cylinder tube from the booster pump assembly.
- b. Remove the bolt.

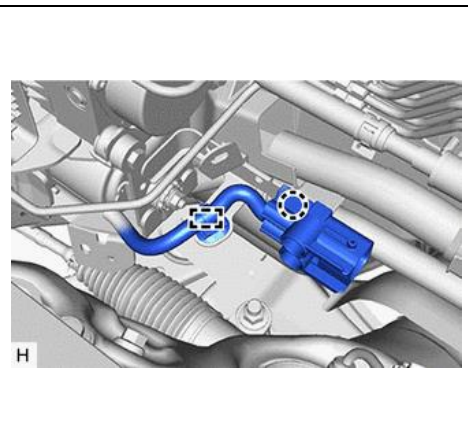
Note: Be careful when moving the accumulator to master cylinder tube as it is still connected to the master cylinder.

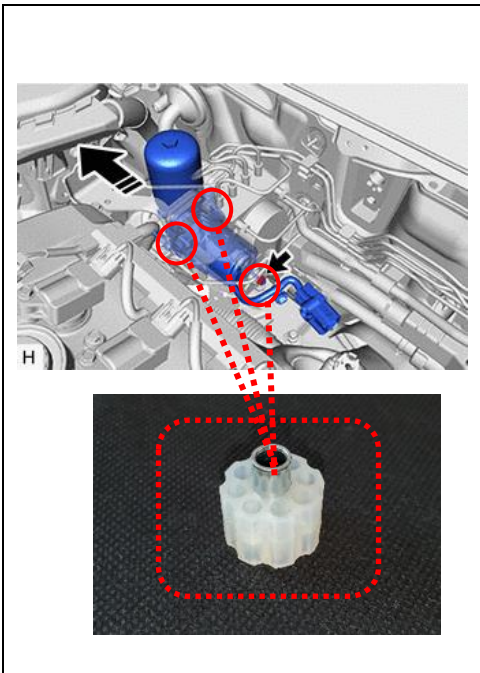
- c. Disengage the claw to separate the clamp cover.
- d. Disengage the 3 clamps and remove the accumulator to master cylinder tube.
- e. Gently slide the tube away from the brake booster.



5. REMOVE BRAKE BOOSTER PUMP

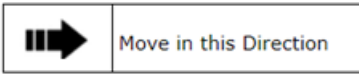
- a. Disengage the claw and clamp to separate the wire harness from the bracket.





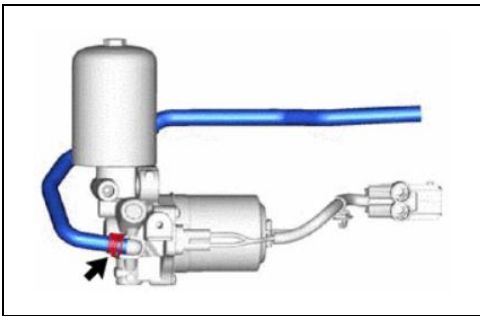
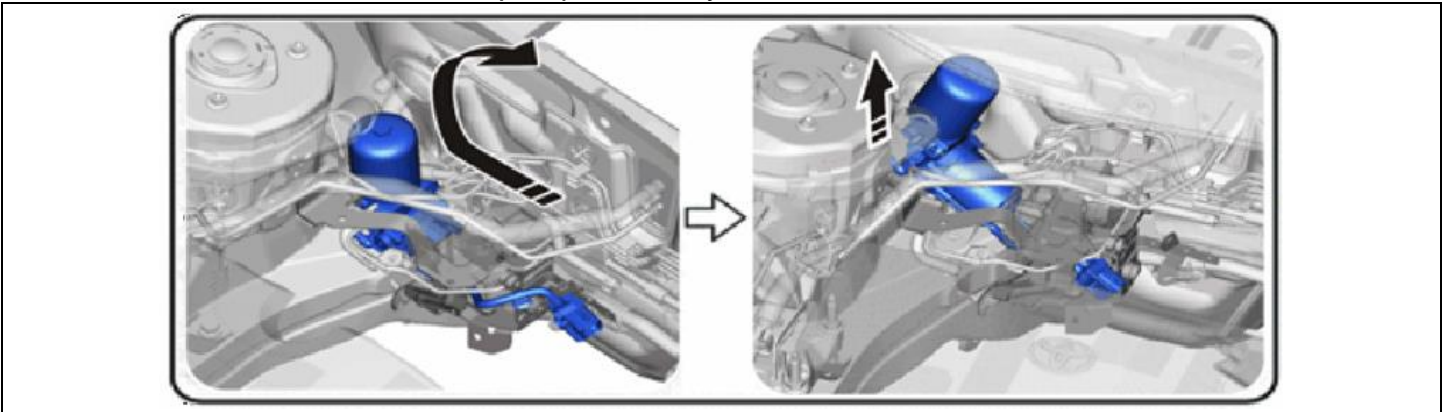
- b. Remove the nut to separate the brake booster pump from the bracket.
- c. Separate the brake booster pump from the bracket.

STOP Be cautious when removing the brake booster to pump to prevent damage to other components.

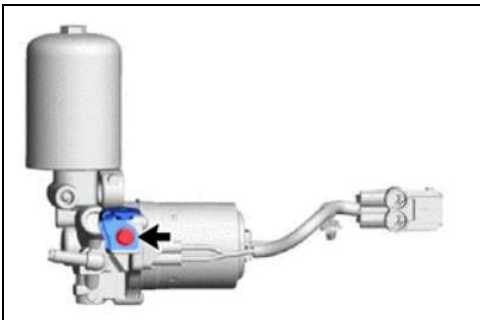


Note: When removing the brake booster pump, be cautious of the mounting bushings as they may fall out. These will be reused in the new booster pump assembly.

- d. Remove the brake booster pump assembly as shown in the illustrations.

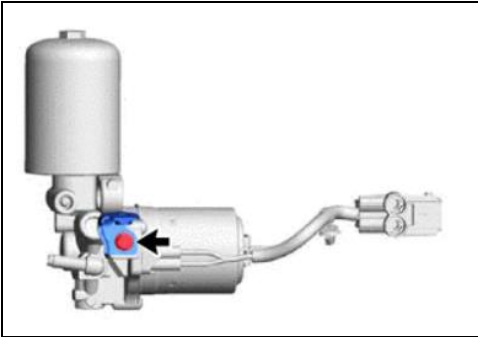


- 6. REMOVE NO. 1 BRAKE ACTUATOR HOSE**
- a. Slide the clip and remove the hose from the booster pump.



- 7. REMOVE BRAKE TUBE CLAMP BRACKET**
- a. Remove the bolt and the brake tube clamp.

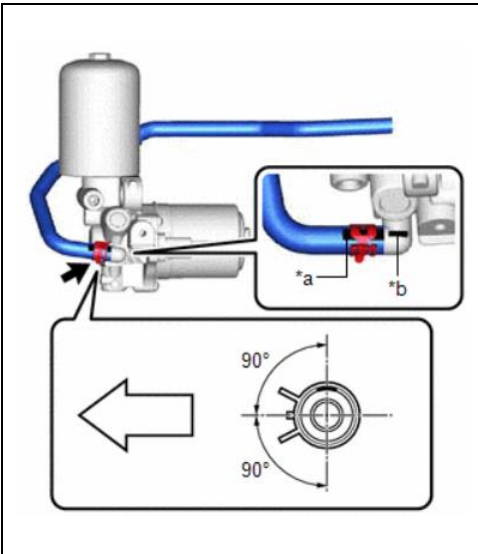
IX. INSTALL NEW BRAKE BOOSTER PUMP



1. INSTALL BRAKE TUBE CLAMP BRACKET


- Install the bracket and bolt onto the **NEW** brake booster pump.

Torque: 7.0 N·m {71 kgf·cm, 62 in.lbs}



2. INSTALL NO. 1 BRAKE ACTUATOR HOSE

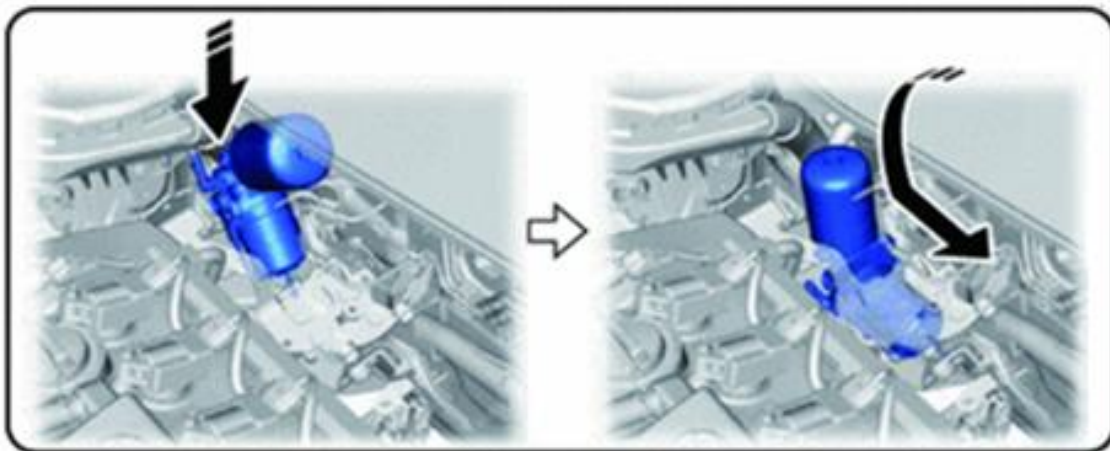
- Install the hose onto the **NEW** brake booster, aligning the mark on the hose with the rib on the pump.
- Install the clip within the range shown.

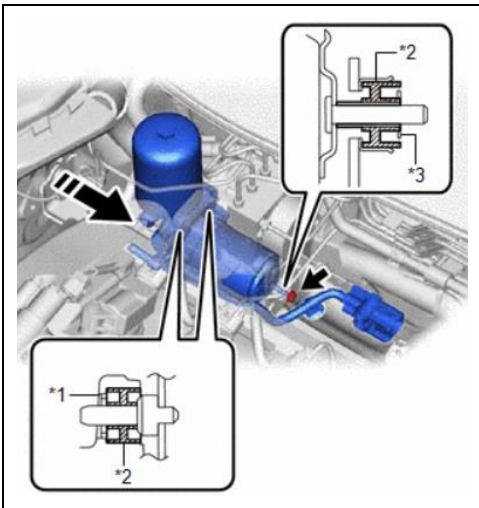
*a	Alignment Mark
*b	Rib of Brake Booster Pump Assembly Port
	Front of the vehicle

3. INSTALL **NEW** BRAKE BOOSTER

- Temporarily install the **NEW** brake booster pump assembly as shown in the illustrations.

Note: Be sure to feed the wire harness and brake actuator hose properly through the mounting bracket, as it was removed.



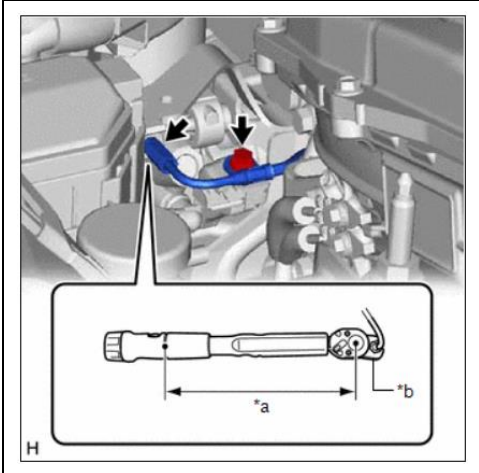


b. Install the nut to the **NEW** brake booster.

Torque: 6.5 N·m, {66 kgf·cm, 58 in.lbs}

Note: Be sure that the mount bushings and collars are properly installed.

*1	Brake Booster Pump Collar
*2	Brake Booster Pump Bushing
*3	Brake Actuator Case Collar



4. INSTALL ACCUMULATOR TO MASTER CYLINDER TUBE

a. Temporarily install the accumulator to master cylinder tube to the brake booster pump.

b. Install the bracket retaining bolt.

Torque: 7.0 N·m {71 kgf·cm, 62 in.lbs}

c. Using a union nut wrench, tighten the accumulator to brake master cylinder tube.

Torque: 15.2 N·m {155 kgf·cm, 132 in.lbs}

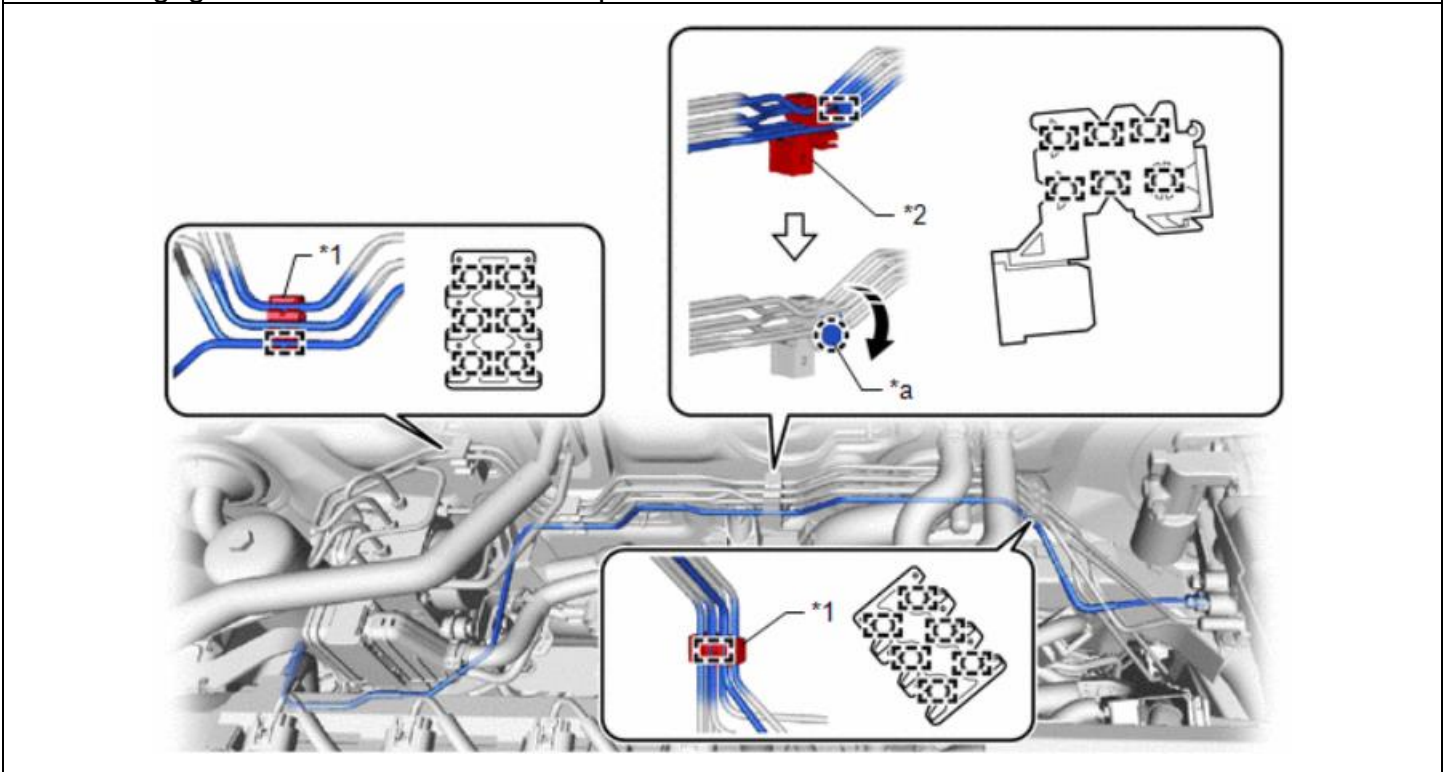
Note: When torquing the master cylinder tube, use the following chart to correctly adjust the torque when using a crowfoot wrench.

Torque Spec: 132 in.lbs		Torque Wrench Setting (in.lbs)									
		Length of Torque Wrench (L): inches									
		10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5
Length of Crowfoot (C): inches	1.00	120.0	120.5	121.0	121.4	121.8	122.2	122.6	122.9	123.2	123.5
	1.25	117.3	118.0	118.5	119.1	119.5	120.0	120.4	120.8	121.2	121.5
	1.50	114.8	115.5	116.2	116.8	117.3	117.9	118.3	118.8	119.2	119.6
	1.75	112.3	113.1	113.9	114.6	115.2	115.8	116.3	116.9	117.3	117.8
	2.00	110.0	110.9	111.7	112.4	113.1	113.8	114.4	115.0	115.5	116.0
	2.25	107.8	108.7	109.6	110.4	111.2	111.9	112.5	113.1	113.7	114.3

Torque Setting = $\frac{\text{Torque Spec} \times L}{C + L}$

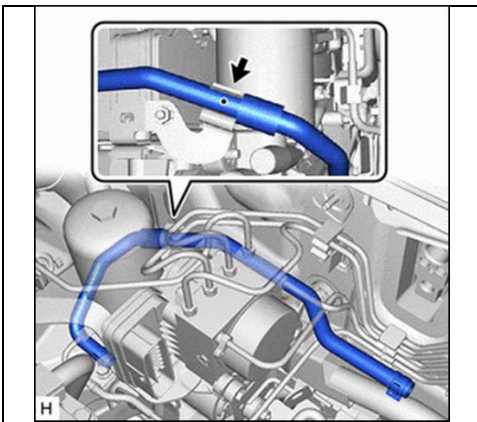
L	Length of torque wrench (in.)
C	Length of crowfoot wrench (in.)

- a. Engage the 3 clamps to install the accumulator to master cylinder tube.
- b. Engage the claw to close the clamp cover.

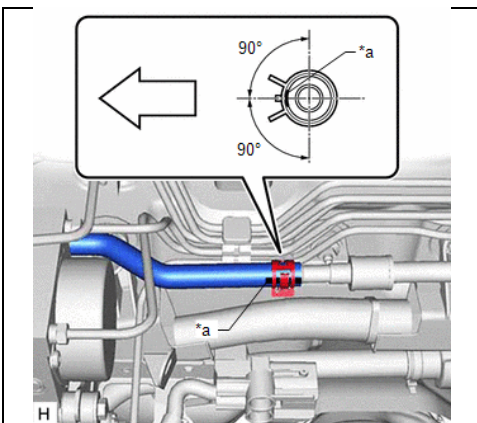


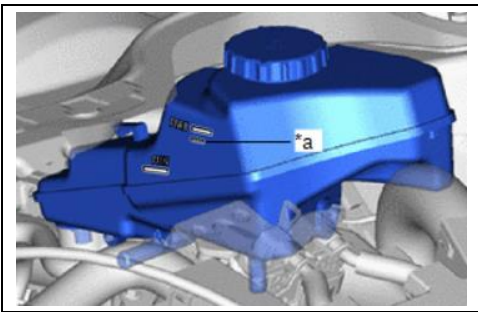
5. INSTALL NO. 1 BRAKE ACTUATOR HOSE

- a. Install the No. 1 brake actuator hose into its bracket.



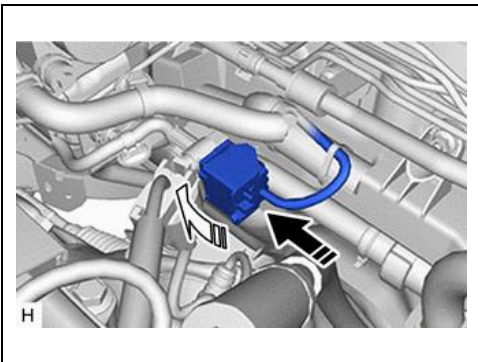
- b. Connect the No. 1 brake actuator hose to the No. 1 brake actuator tube to install it, and slide the clip to secure it.





c. Add approved brake fluid to the reservoir until the fluid level is at the MAX line (*a).

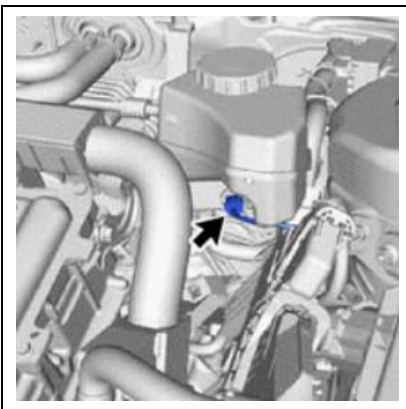
**Standard: Brake Fluid SAE J1703 or FMVSS No. 116 DOT 3
SAE J1704 or FMVSS No. 116 DOT 4**



6. CONNECT ENGINE ROOM MAIN WIRE

- a. Verify that the brake fluid reservoir is full.
- b. Connect the connector to the brake booster pump assembly and lock the lock lever as shown in the illustration.

	<p>The Brake Booster Pump will probably run when this electrical connection is made. Be sure that the brake fluid reservoir is full before connecting the electrical connector.</p>
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- c. Connect the connector to the fluid reservoir on the master cylinder assembly.

7. BLEED BRAKE SYSTEM

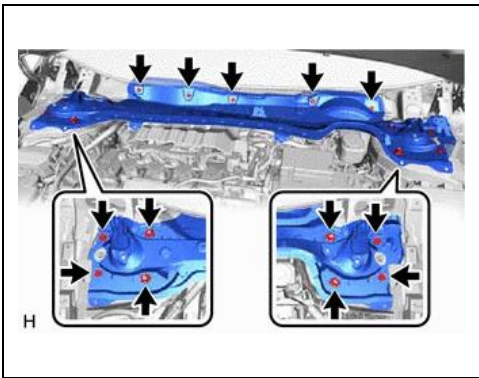
- a. Follow the Repair Manual procedure to bleed the brake system.

[BRAKE SYSTEM \(OTHER\): BRAKE FLUID \(for HV Model\): BLEEDING; 2020 MY Corolla Corolla HV RM100000001GOQE](#)



8. PERFORM HEALTH CHECK AND CLEAR DTC'S

- a. Using a Techstream, check for and clear any Diagnostic Trouble Codes.



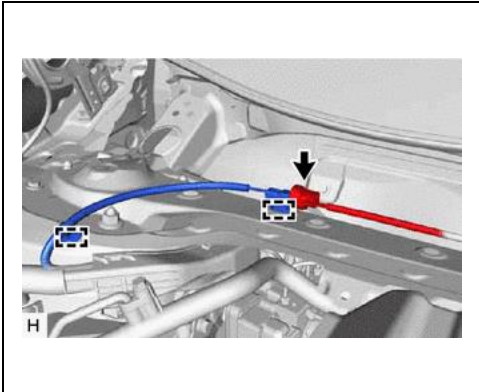
9. INSTALL OUTER COWL TOP PANEL

- a. Install the 9 bolts and 4 nuts of the outer cowl top panel.

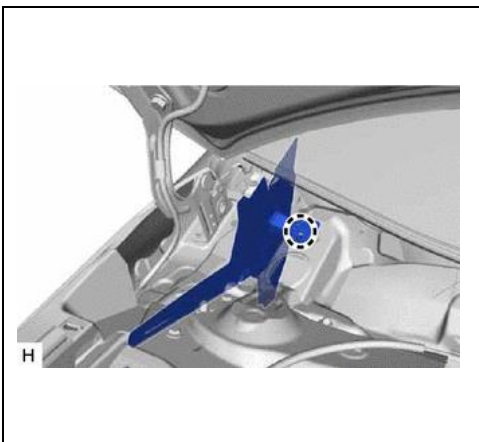
Torque:

Bolts: 12 N·m {122 kgf·cm, 99 in.lbs}

Nuts: 50 N·m {510 kgf·cm, 37 ft.lbs}



- b. Connect the connector.
- c. Engage the 2 clamps to the outer cowl top panel.



8. INSTALL NO. 1 HEATER AIR DUCT SPLASH SHIELD SEAL

- a. Engage the claws.

10. INSTALL WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY

- a. Follow the Repair Manual procedure to install the windshield wiper assembly.

[WIPER / WASHER: FRONT WIPER MOTOR: INSTALLATION; 2020 MY Corolla Corolla Hatchback Corolla HV](#) RM10000001GUQC

◀ VERIFY REPAIR QUALITY ▶

- Confirm the braking performance is normal.
- Confirm the brake fluid level is correct.
- Confirm there are no DTC's present.

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

X. APPENDIX

A. PARTS DISPOSAL

As required by Federal Regulations, please make sure all recalled 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.**

B. CAMPAIGN DESIGNATION DECORDER

