

# **TECHNICAL INSTRUCTIONS**

**FOR**

**SAFETY RECALL K0L**

**POTENTIAL LOSS OF POWER BRAKE ASSIST**

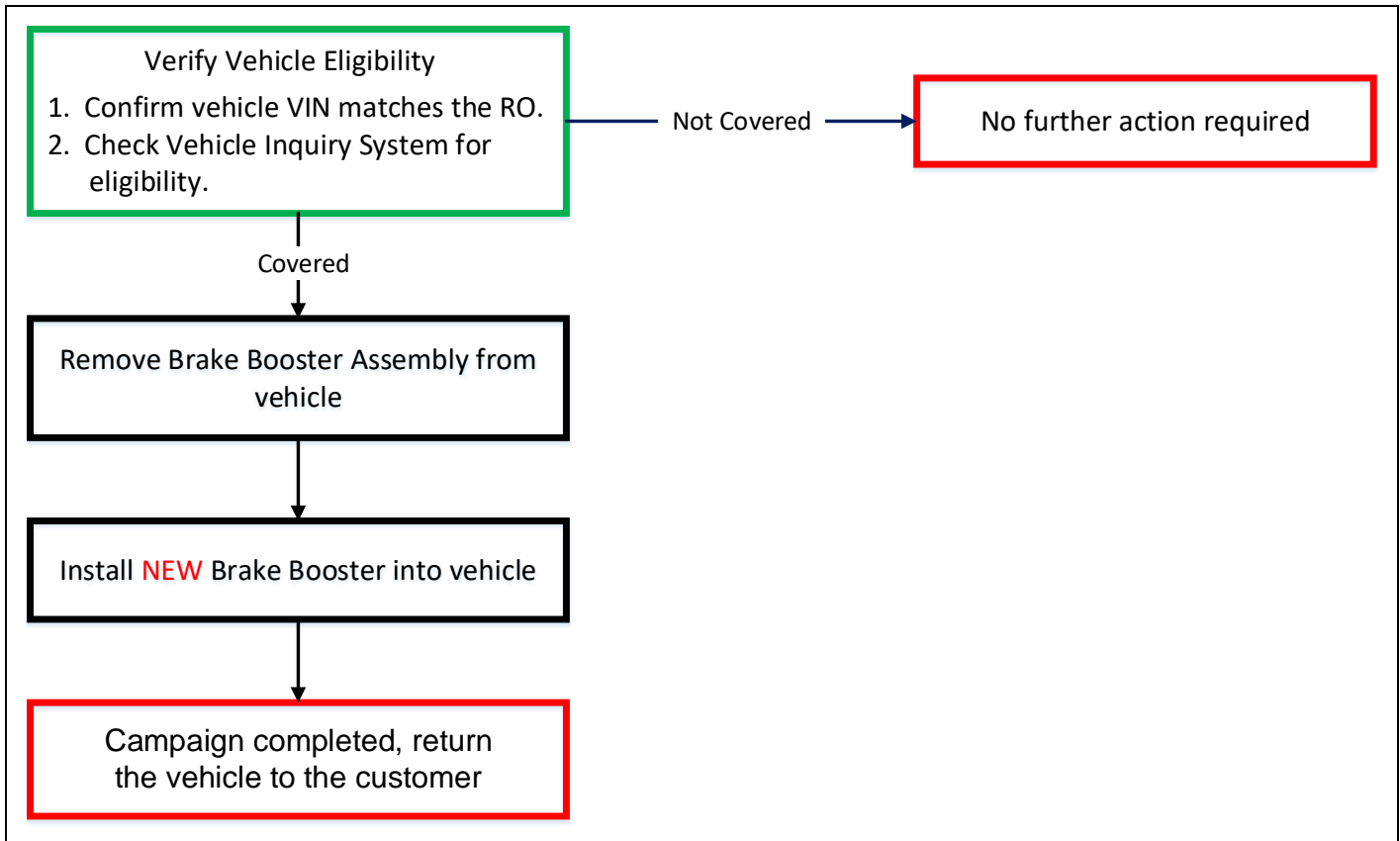
**CERTAIN 2019 RAV4 HYBRID**

The repair quality of covered vehicles is extremely important to Lexus. 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

1. CHECK VEHICLE FOR CAMPAIGN ELIGIBILITY
  - a. Compare the vehicles VIN to the VIN listed on the Repair Order to ensure they match.
  - b. Check the TIS Vehicle Inquiry System to confirm the VIN is involved in this Campaign, and that it has not already been completed.

Note: TMNA warranty will not reimburse dealers for repairs completed on vehicles that are not affected or were previously completed, even by another dealer.

### III. PREPARATION

#### A. PARTS

Model	Part Number	Part Description	Quantity
RAV4	04009-56942	Brake Pump Assy w/ Accumulator	1

#### B. TOOLS & EQUIPMENT

- Techstream
- Standard Hand Tools
- Torque Wrench

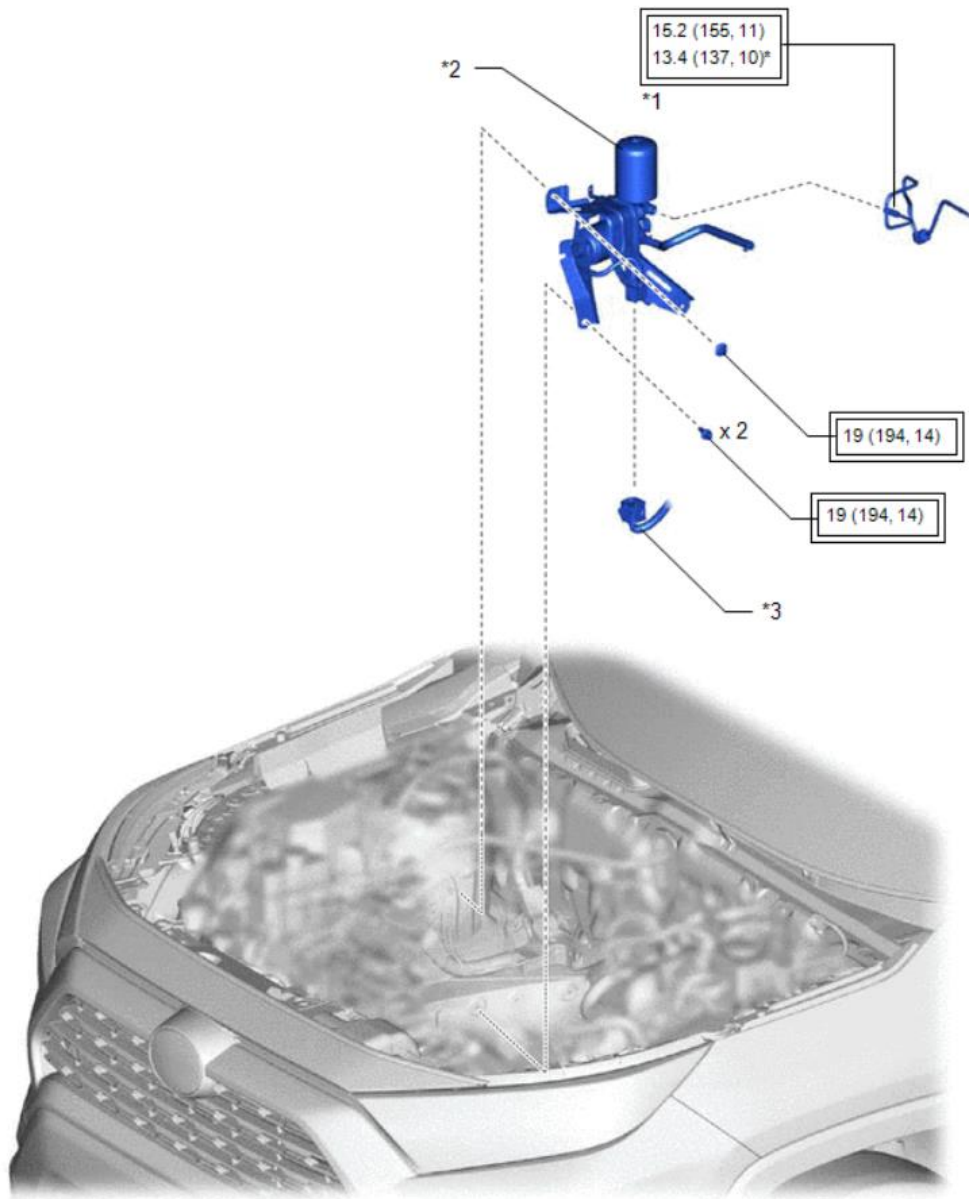
#### C. MATERIALS


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

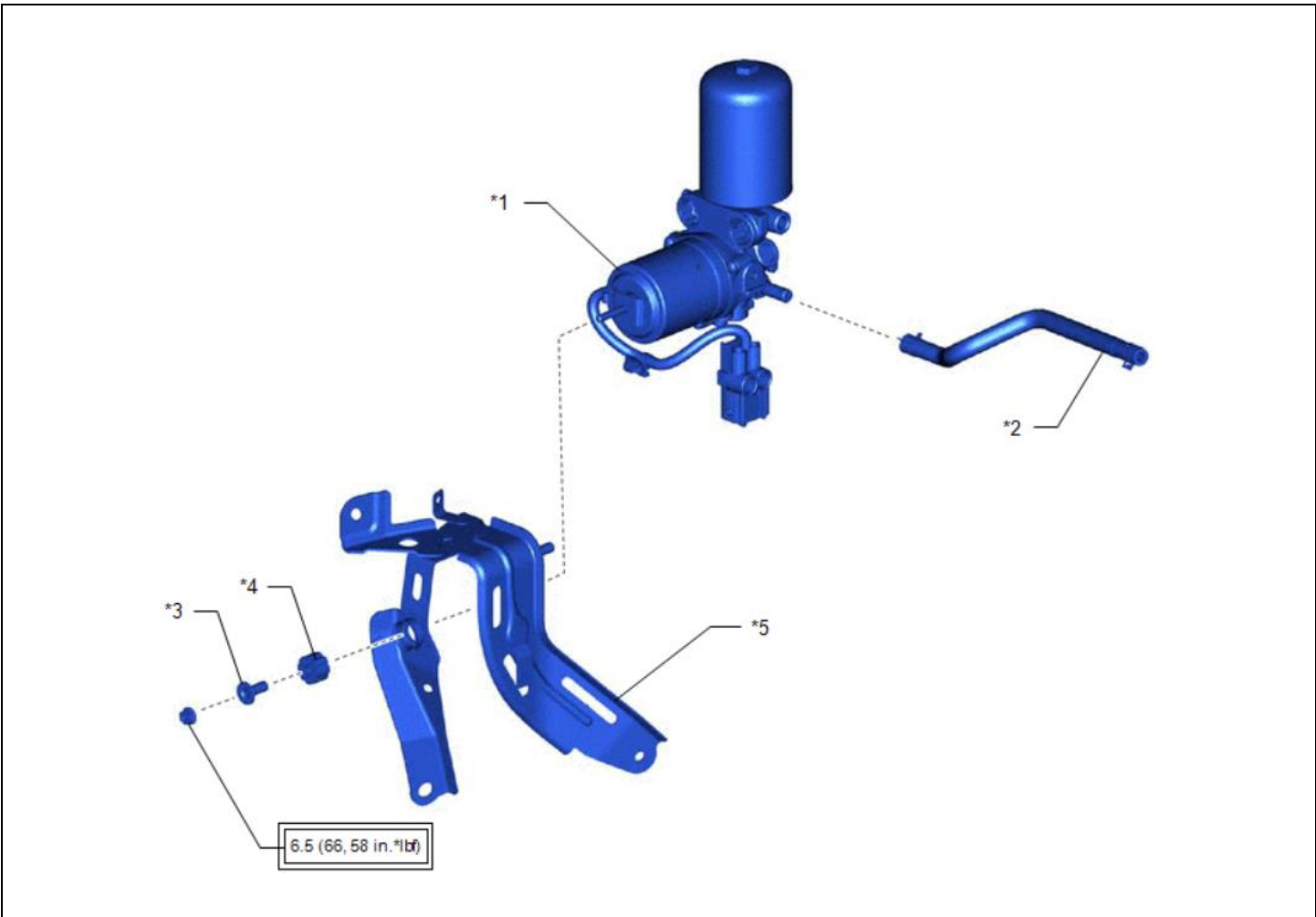
### IV. BACKGROUND


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.

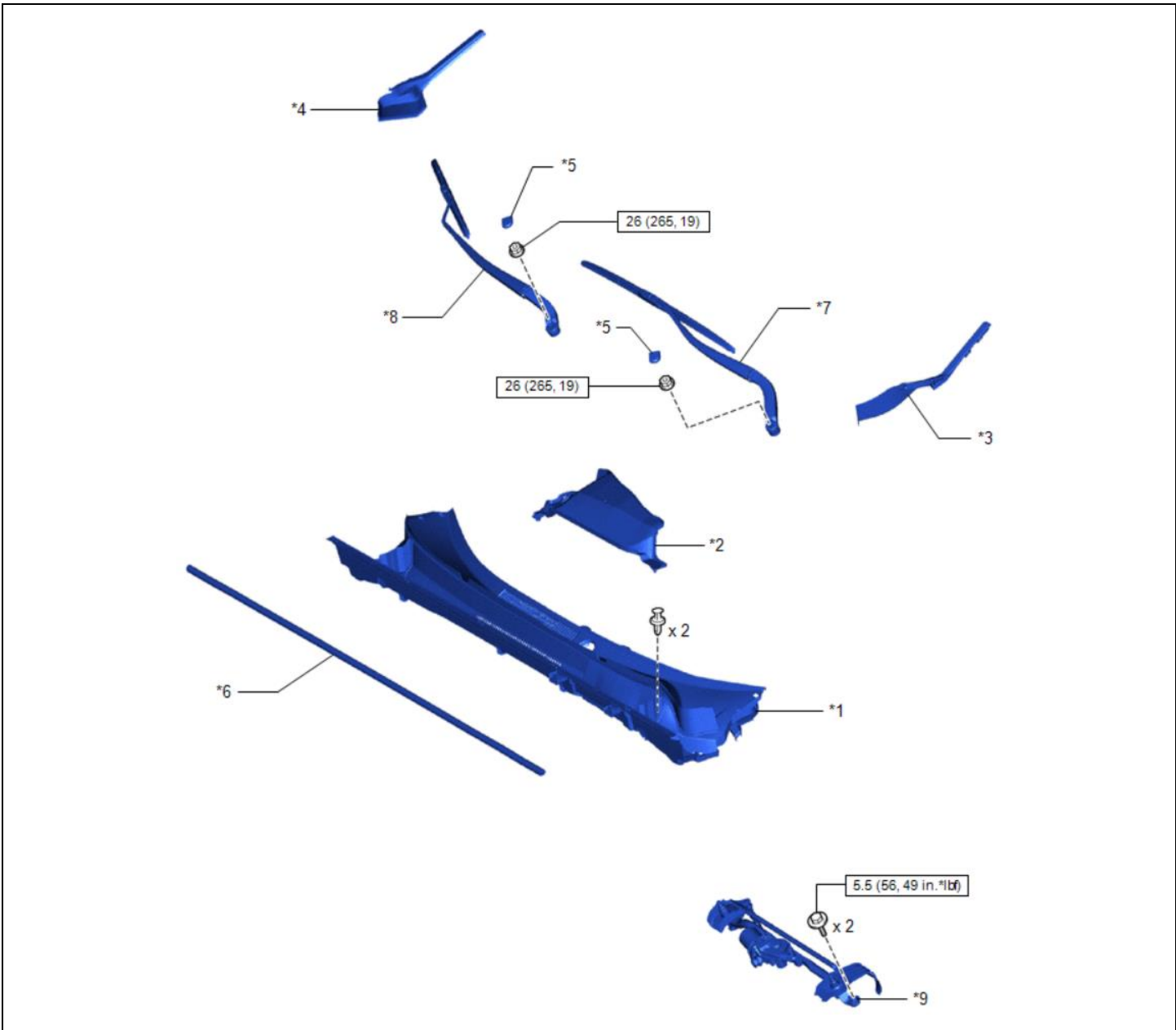
## V. COMPONENTS




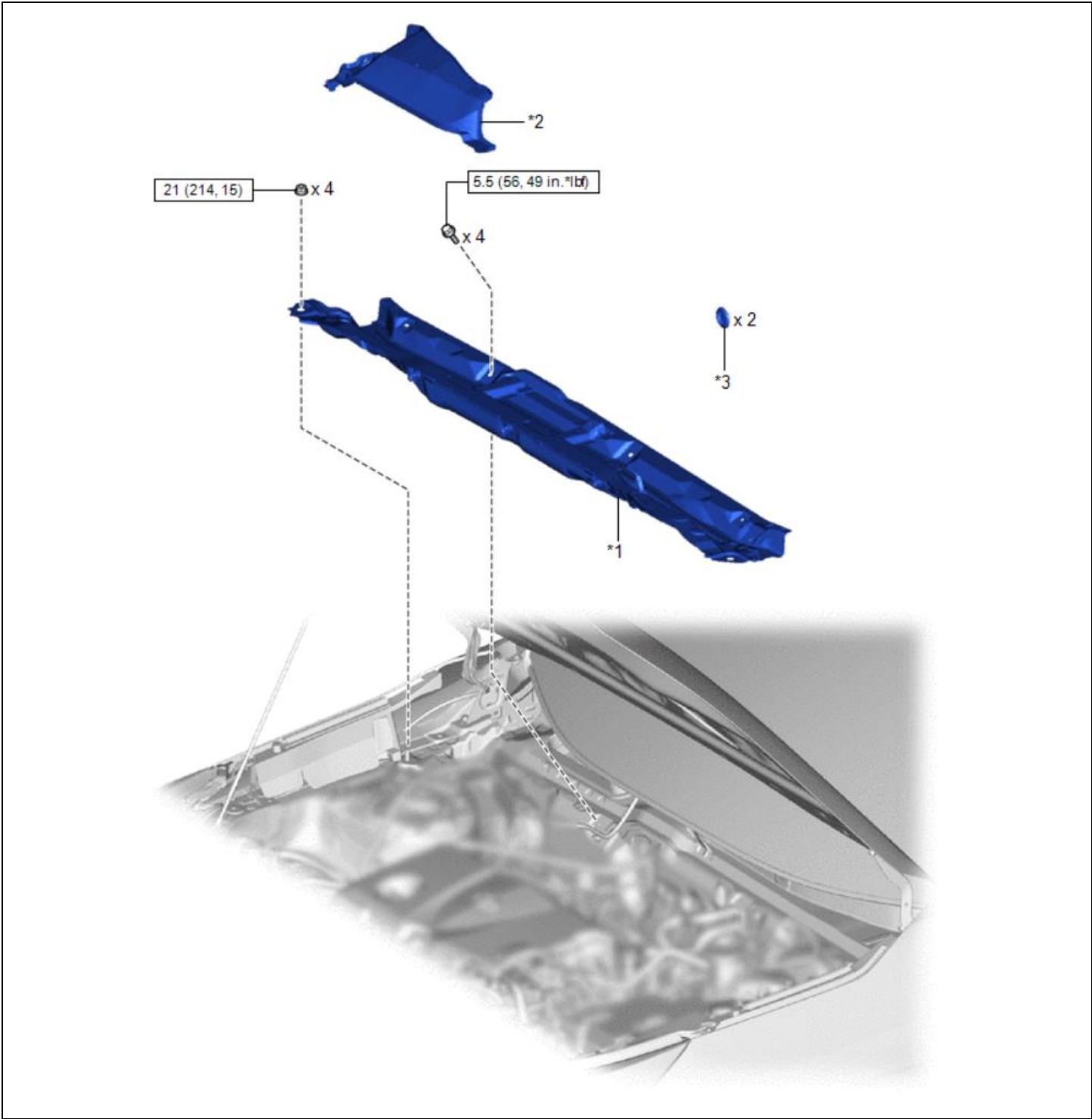
*1	ACCUMULATOR TO BRAKE MASTER CYLINDER TUBE	*2	BRAKE BOOSTER PUMP ASSEMBLY WITH BRACKET
*3	CONNECTOR	-	-
	Tightening torque for "Major areas involving basic vehicle performance such as moving/turning/stopping": N*m (kgf*cm, ft.*lbf)	*	For use with a union nut wrench




*1	BRAKE BOOSTER PUMP ASSEMBLY	*2	NO. 2 BRAKE ACTUATOR HOSE
*3	NO. 2 BRAKE ACTUATOR CASE COLLAR	*4	BRAKE BOOSTER PUMP BUSHING
*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)	-	-



*1	COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY	*2	COWL VENTILATOR SPLASH SHIELD
*3	FRONT FENDER TO COWL SIDE SEAL LH	*4	FRONT FENDER TO COWL SIDE SEAL RH
*5	FRONT WIPER ARM HEAD CAP	*6	HOOD TO COWL TOP SEAL
*7	WINDSHIELD WIPER ARM AND BLADE ASSEMBLY LH	*8	WINDSHIELD WIPER ARM AND BLADE ASSEMBLY RH
*9	WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY		N*m (kgf*cm, ft.*lbf): Specified torque



*1	COWL VENTILATOR PANEL SUB-ASSEMBLY	*2	COWL VENTILATOR SPLASH SHIELD
*3	HOLE PLUG		N*m (kgf*cm, ft.*lbf): Specified torque

## VI. REMOVE ORIGINAL BRAKE BOOSTER PUMP



### 1. CHECK FOR DTC'S

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

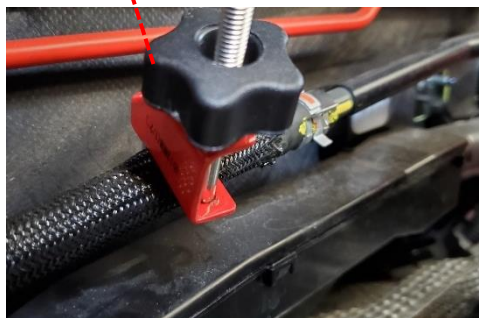
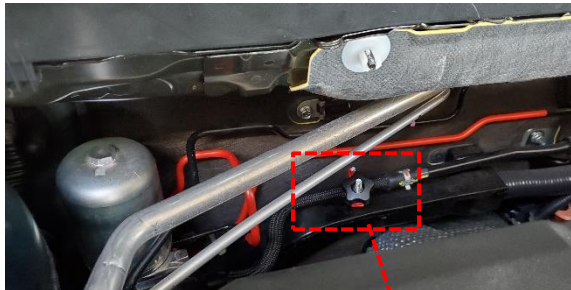
**Note:** *This Safety Recall covers only the replacement of the brake booster pump, as detailed in these instructions. It does not cover the diagnosis or replacement of any other parts on the vehicle, including the hybrid system.*

### 2. REMOVE THE BRAKE BOOSTER PUMP

- a. Follow the Repair Manual procedure to remove the brake booster pump.

[BRAKE SYSTEM \(OTHER\): BRAKE BOOSTER PUMP\(w/o Vacuum Brake Booster\): REMOVAL; 2019 MY RAV4 RAV4 HV](#) RM100000001HIKJ

Note: Clamp the rubber hose between the reservoir and the brake booster pump to prevent the reservoir from draining completely during the pump removal procedure.





## VII. INSTALL NEW BRAKE BOOSTER PUMP

### 1. INSTALL NEW BRAKE BOOSTER PUMP

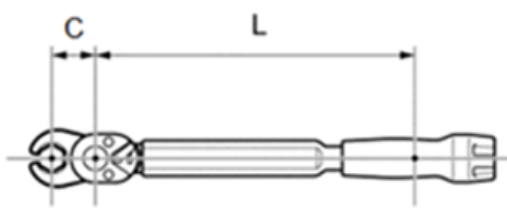
- a. Follow the Repair Manual procedure to install the **NEW** brake booster pump.

[BRAKE SYSTEM \(OTHER\): BRAKE BOOSTER PUMP\(w/o Vacuum Brake Booster\): INSTALLATION; 2019 MY RAV4 RAV4 HV](#) RM100000001GILK

Note: When torquing the master cylinder tube in Step #4, 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. )



### 2. CLEAR DTC'S

- Using a Techstream, perform a Health Check.
- Clear any DTC's that may have been set during this process.
- Perform a second Health Check to confirm that no faults are present.

**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.

## ◀ 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.

## VIII. 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

