TECHNICAL INSTRUCTIONS

FOR

SAFETY RECALL 19TA20

HEADLAMP(S) MAY BECOME INOPERATIVE

CERTAIN 2020 SUPRA

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:

- **Expert Technician (any specialty) + TIN519B Instructor led course**
- **Master Technician (any specialty) + TIN519B Instructor led course**
- **Master Diagnostic Technician + TIN519B Instructor led course**

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.

◄ STOP ►

BEFORE YOU SCHEDULE CUSTOMERS OR INITIATE REPAIRS, READ BELOW:

THE REMEDY WILL REQUIRE CALIBRATION OF THE MILLIMETER WAVE RADAR SENSOR BECAUSE THAT PART IS REMOVED DURING THE REPAIR. DEALERSHIPS DO NOT HAVE THE TOOLS REQUIRED TO CALIBRATE THE MILLIMETER WAVE RADAR SENSOR AS OUTLINED IN THE TECHNICAL INSTRUCTIONS ON TIS.
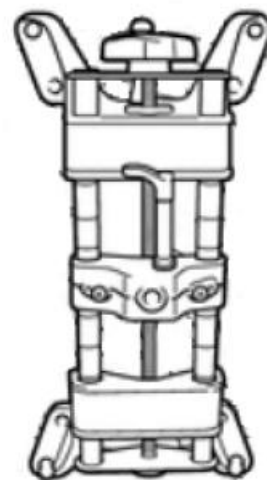
YOU MUST REQUEST A TOOL TO BE LOANED TO YOUR DEALERSHIP FROM YOUR REGION OFFICE. NATIONWIDE SUPPLY OF THESE TOOLS IS VERY LIMITED.

BEFORE SCHEDULING ANY CUSTOMERS, OR INITIATING ANY REPAIRS, PLEASE ENSURE THAT YOU HAVE SECURED A TOOL FOR THE TIME REQUIRED FOR THE CUSTOMER'S APPOINTMENT.

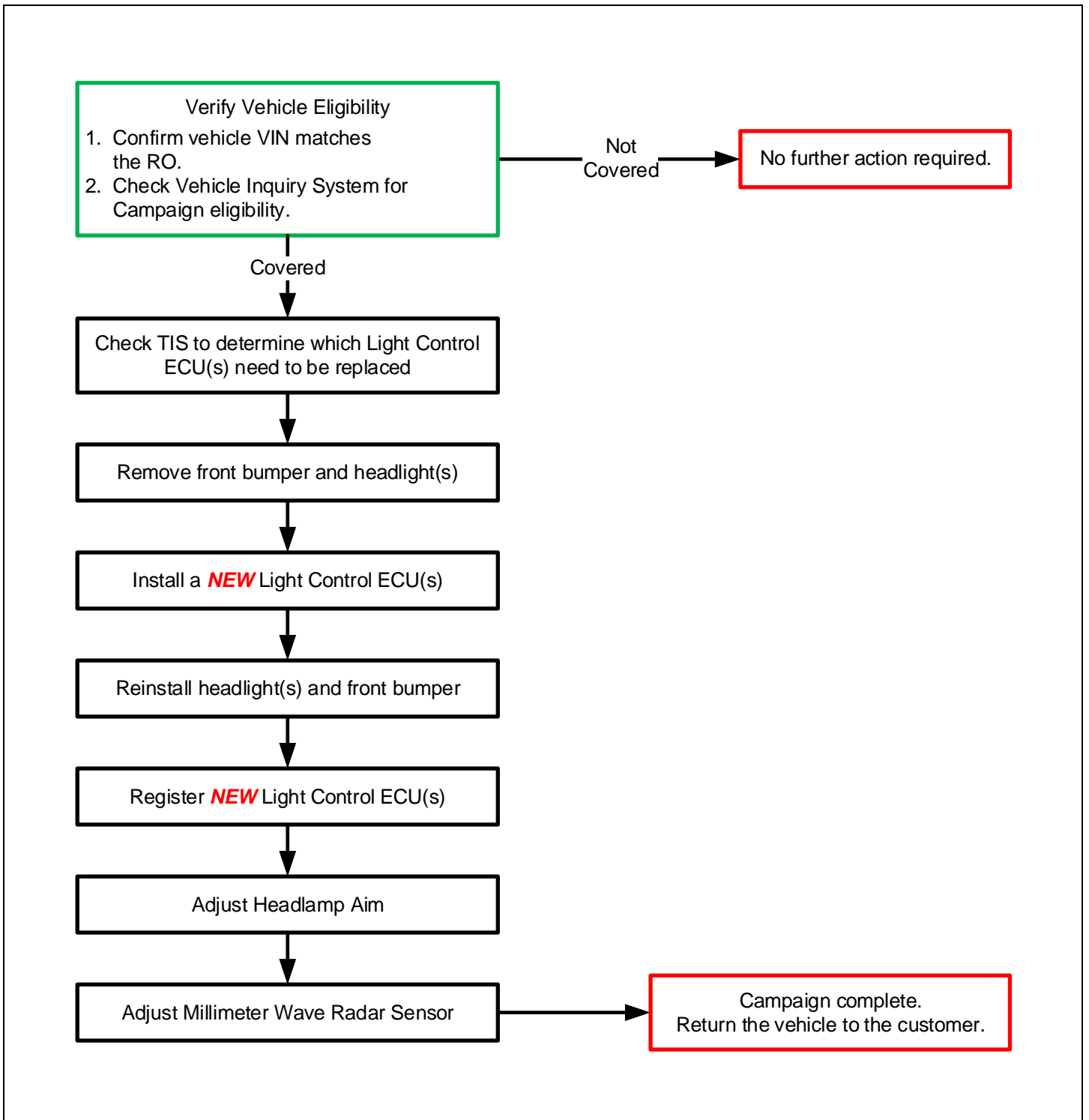**CONTACT YOUR FIELD TECHNICAL SPECIALIST FOR DETAILS ON OBTAINING THESE REQUIRED TOOLS.**
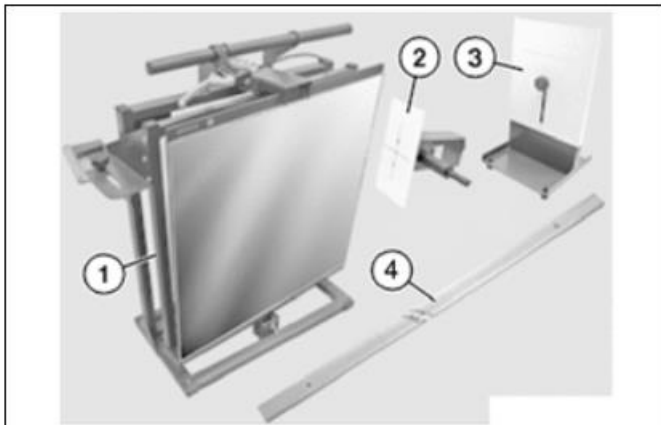
*1	Setting Device
*2	Wheel Laser
*3	Slotted Cover
*4	Rail

Self-Centering Wheel Adapter

I. OPERATION FLOW CHART

Verify Vehicle Eligibility
1. Confirm vehicle VIN matches the RO.
2. Check Vehicle Inquiry System for Campaign eligibility.

→ Not Covered → No further action required.

↓ Covered

Check TIS to determine which Light Control ECU(s) need to be replaced

↓

Remove front bumper and headlight(s)

↓

Install a *NEW* Light Control ECU(s)

↓

Reinstall headlight(s) and front bumper

↓

Register *NEW* Light Control ECU(s)

↓

Adjust Headlamp Aim

↓

Adjust Millimeter Wave Radar Sensor

→ Campaign complete. Return the vehicle to the customer.

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

Part Number	Part Description	Quantity
85967-WAA01	Computer, Light Control	Check TIS to determine if 1 or 2 is required

B. TOOLS & EQUIPMENT

• Techstream with ISTA	• Standard Hand Tools	• Torque Wrench

SST – These Special Service Tools required for this repair:

Part Number	Tool Name	Quantity
09800-WA300	Rail	1 (Dealer supplied)
09800-WA150	MWRS Calibration Kit*	Contact FTS for availability

*The set above includes the following tools:
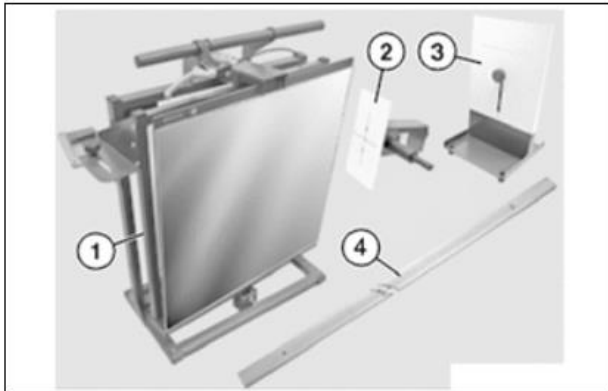
*1	Setting Device
*2	Wheel Laser
*3	Slotted Cover
*4	Rail (Dealer Supplied)
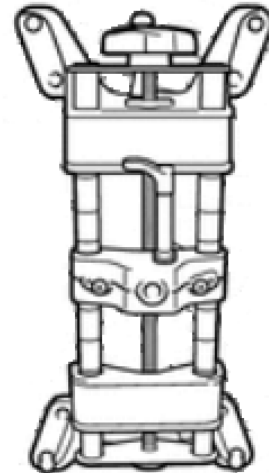
Self-Centering Wheel Adapter

Most dealerships DO NOT have the MWRS Calibration Kit required for this activity. Please contact your Regional Field Technical Specialist for directions on obtaining this required tool.

During the initial launch of this campaign, these required tools will not be available in the Supra Loaner Tools program. They must be sourced from your Regional Field Technical Specialist.

IV. BACKGROUND

Certain left and/or right headlamp(s) may experience a loss of function. If a loss of function to the left and/or right headlamp occurred, this would affect headlamp illumination and turn-signal function. Driving without a turn signal or with both headlamps disabled could increase the risk of a crash.
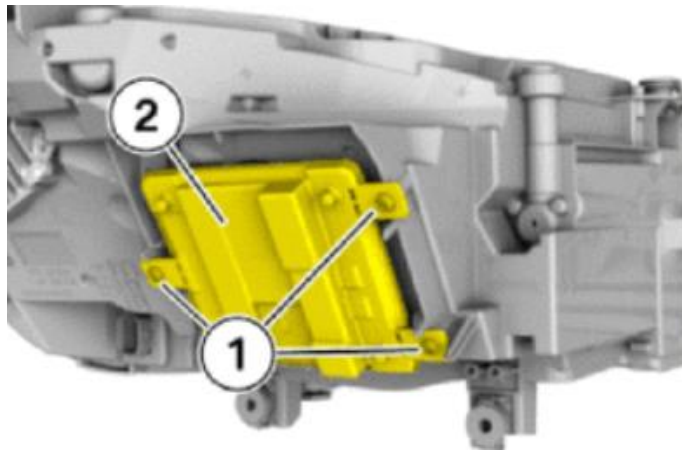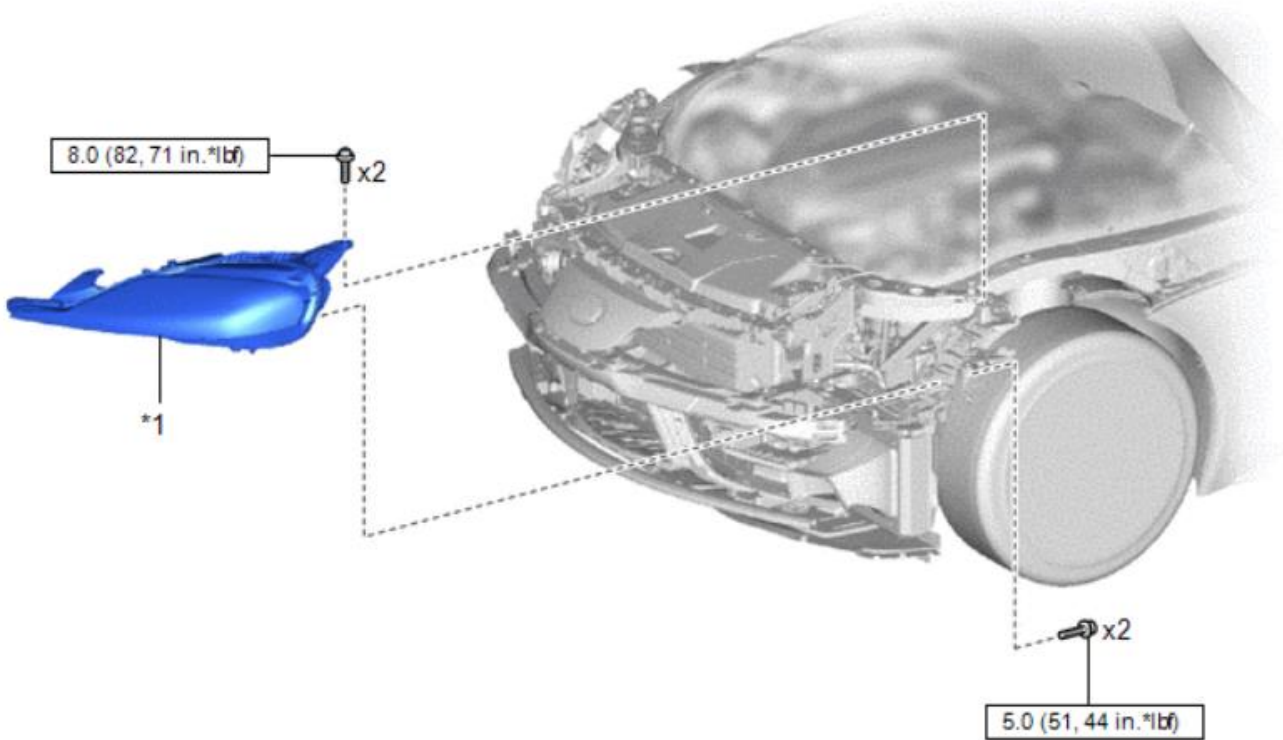

1: Attachment Screws
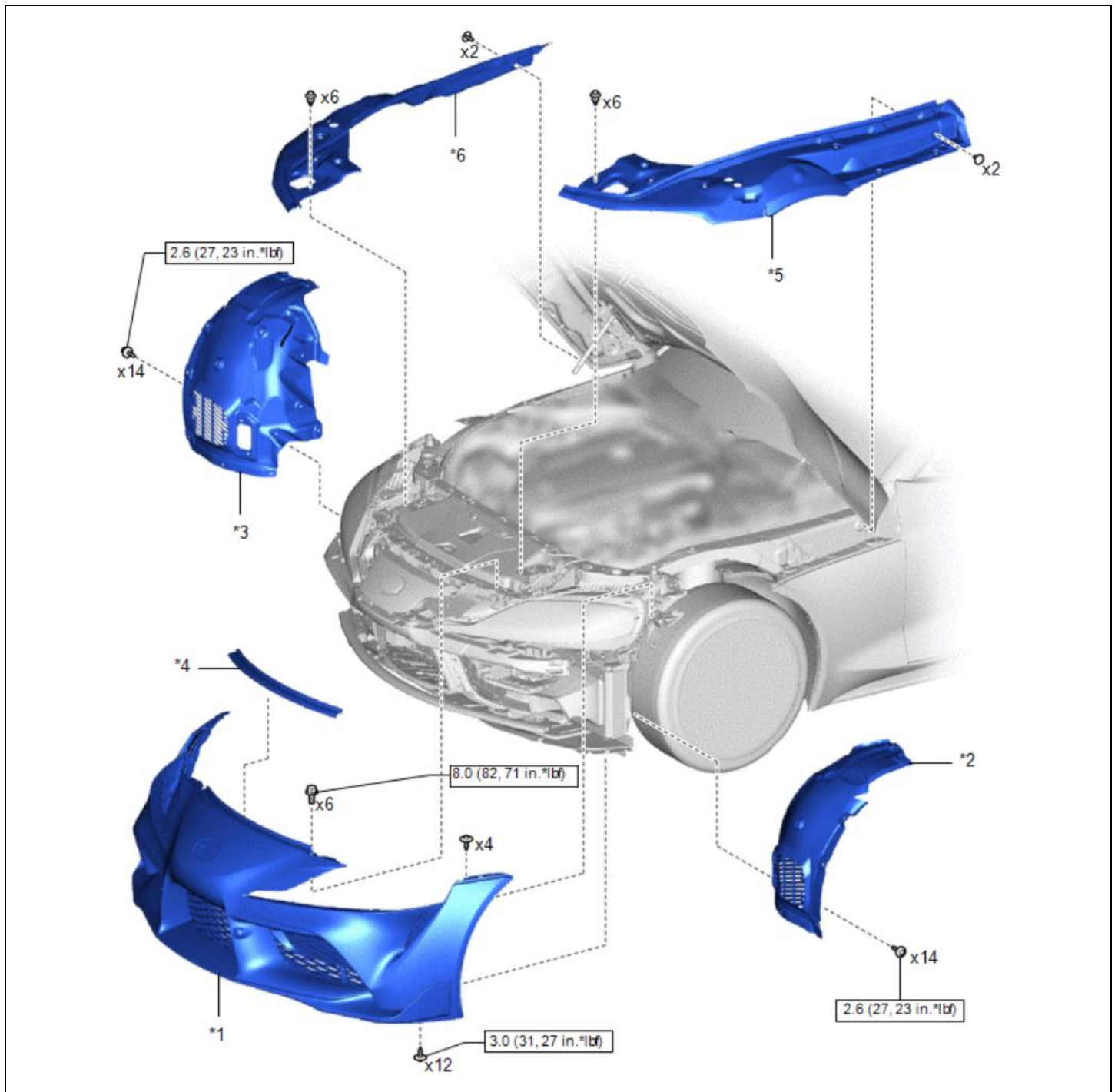2: Light Control ECU on
    back side of headlamp.

V.   COMPONENTS

*1	LIGHT CONTROL LED ECU	☐	N*m (kgf*cm, ft.*lbf): Specified torque

*1	HEADLIGHT ASSEMBLY	☐	N*m (kgf*cm, ft.*lbf): Specified torque

*1	FRONT BUMPER ASSEMBLY	*2	FRONT FENDER LINER LH	
*3	FRONT FENDER LINER RH	*4	HOOD TO RADIATOR SUPPORT SEAL	
*5	FRONT FENDER UPPER PROTECTOR LH	*6	FRONT FENDER UPPER PROTECTOR RH	
▭	N*m (kgf*cm, ft.*lbf): Specified torque	-	-	

| | VI. | DETERMINE LIGHT CONTROL ECU(S) TO REPLACE |

VI. DETERMINE LIGHT CONTROL ECU(S) TO REPLACE

Replacement of the **DRIVER SIDE**, **PASSENGER SIDE**, or **BOTH** Light Control ECU(s) will be required based upon each vehicle's production records. Only perform the replacement(s) that is specified for each specific VIN using the process detailed below.

a. Using Vehicle Inquiry in TIS or Service Lane, search the VIN number to locate the campaign information for each vehicle.

b. Review the MEMO: field to determine which Light Control ECU(s) will require replacement.

Replacement Location:	Vehicle Inquiry Display
DRIVER	**Campaign Description:** Safety Recall 19TA20 (Remedy Notice) – Certain 2020 Model Year Supra Vehicles, **Campaign Status:** Remedy Available **Completion Status:** Not Completed **Memo:** Affected Headlamp ECU: DRIVER SIDE
PASSENGER	**Campaign Description:** Safety Recall 19TA20 (Remedy Notice) – Certain 2020 Model Year Supra Vehicles, **Campaign Status:** Remedy Available **Completion Status:** Not Completed **Memo:** Affected Headlamp ECU: PASSENGER SIDE
BOTH	**Campaign Description:** Safety Recall 19TA20 (Remedy Notice) – Certain 2020 Model Year Supra Vehicles, **Campaign Status:** Remedy Available **Completion Status:** Not Completed **Memo:** Affected Headlamp ECU: BOTH SIDES

Passenger Side   Driver Side
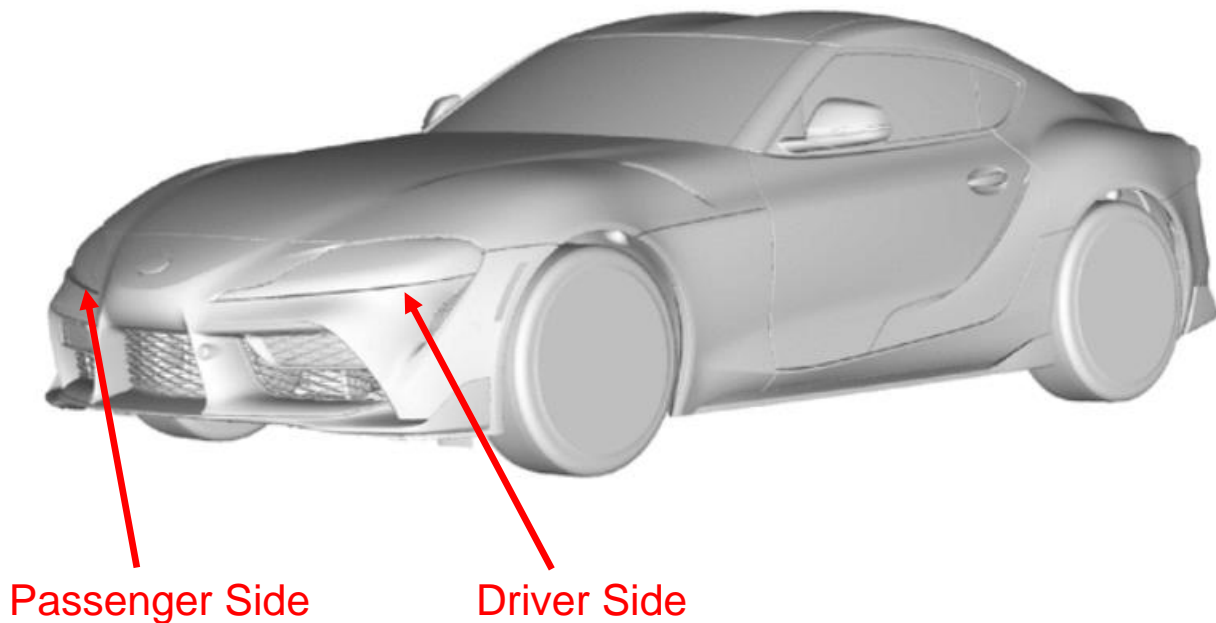
VII. REMOVE LIGHT CONTROL ECU(S)

1. REMOVE FRONT BUMPER

   a. Follow the Repair Manual procedure to remove the front bumper assembly:

   EXTERIOR PANELS / TRIM: FRONT BUMPER: REMOVAL; 2020 MY Supra
   (RM100000001JCMK)

CRITICAL INFORMATION

Shims may be installed at any of 6 bolt locations on the front bumper assembly to properly position the front bumper cover. It will be necessary to inspect and record where and how many shims are installed, and restore them to the original state during front bumper assembly.

Inspect the location and number of shims

R2002060013
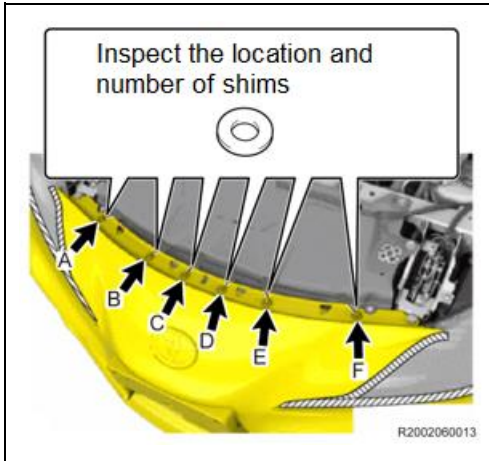
   a. Loosen the 6 bolts, but do not remove them.
   b. Raise the end of the front bumper and inspect where and how many shims are installed between the front bumper and front crossmember.
   c. Record the inspection result in the table below.

   DO NOT perform the inspection after removing the bolts as it could be impossible to identify the location and number of shims. Be sure to perform the inspection when bolts are loosened.

Position	A	B	C	D	E	F
Number of shims						

CRITICAL INFORMATION

There is a hook-&-loop type fastener bar that may remain attached to the bumper cover upon removal.

   a. Confirm that each (Driver and Passenger) fastener bar is installed correctly onto the locating pin of each headlamp.

   Since the bar has locating pins, the bumper cover cannot be installed if the fastener bar is attached to the bumper cover.

   Fastener Bar

   Locating Pin

2. REMOVE HEADLIGHT ASSEMBLY(s)

a. Follow the Repair Manual procedure to remove the effected headlight(s) as determined in Section VI:

LIGHTING (EXT): HEADLIGHT ASSEMBLY: REMOVAL; 2020 MY Supra
(RM100000001JCK4)

3. REMOVE LIGHT CONTROL ECU(s)

a. Follow the Repair Manual procedure to remove the Light Control ECU from the headlight assembly. Be sure to remove only the ECU's (Driver, Passenger, or Both) identified when searching the VIN on Service Lane or Vehicle Inquiry.

LIGHTING (EXT): HEADLIGHT ECU: REMOVAL; 2020 MY Supra
(RM100000001JCL7)

VIII.   INSTALL *NEW* LIGHT CONTROL ECU

1. INSTALL *NEW* LIGHT CONTROL ECU

a. Follow the Repair Manual procedure to install the *NEW* Light Control ECU(s) into the headlight(s) assembly.

LIGHTING (EXT): HEADLIGHT ECU: INSTALLATION; 2020 MY Supra
(RM100000001JCL8)

IX.   INSTALL FRONT BUMPER

1. INSTALL HEADLIGHT ASSEMBLY

a. Follow the Repair Manual procedure to install headlight assembly.

LIGHTING (EXT): HEADLIGHT ASSEMBLY: INSTALLATION; 2020 MY Supra
(RM100000001JCK7)

2. INSTALL FRONT BUMPER

a. Follow the Repair Manual procedure to install the front bumper assembly:

EXTERIOR PANELS / TRIM: FRONT BUMPER: INSTALLATION; 2020 MY Supra
(RM100000001JCMN)

Note: The procedures detailed in the Repair Manual for Headlamp Assembly Adjustment can be skipped at this time. The Headlamp Assembly will by adjusted in later steps after the Headlamp Control ECU has been registered.

CRITICAL INFORMATION

Shims may be installed at each of 6 bolts on the front bumper assembly. If there are any shims, record where and how many shims are installed, and restore them to the original state when reinstalling the front bumper assembly.

Insert sims back to original location and number.

R2002060014
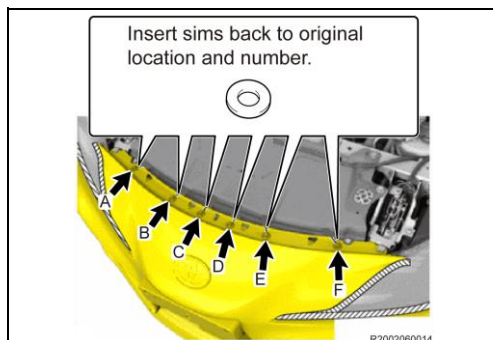
a. After temporarily installing the front bumper, insert the shims according to the positions and number recorded.

Visually confirm that the installation hole on the front bumper and the hole of the shim are aligned. If you push in the shim too much when installing, it may fall off. If you drop a shim, you have to remove the front bumper to pick it up.

X.	REGISTER LIGHT CONTROL ECU

STOP **ISTA 4.21.25.19465 or newer is required for the following procedures. Be sure you have the most current version of ISTA that is published on TIS.**

1. **TRANSPORTATION MODE**
   a. Transportation Mode must be OFF. If the vehicle has not had the Pre-Delivery Service completed, the Transportation Mode may still be ON. Refer to the following TSB for details.

   T-SB-0081-19 Navigation Map Activation and Transport Mode Deletion During PDS

2. **REGISTER LIGHT CONTROL ECU**
   a. Follow each of the steps detailed below to register the **NEW** Light Control ECU(s).

Select:
1. **Operations**
2. **New**
3. **Read Out Vehicle Data**
4. **Complete Identification**
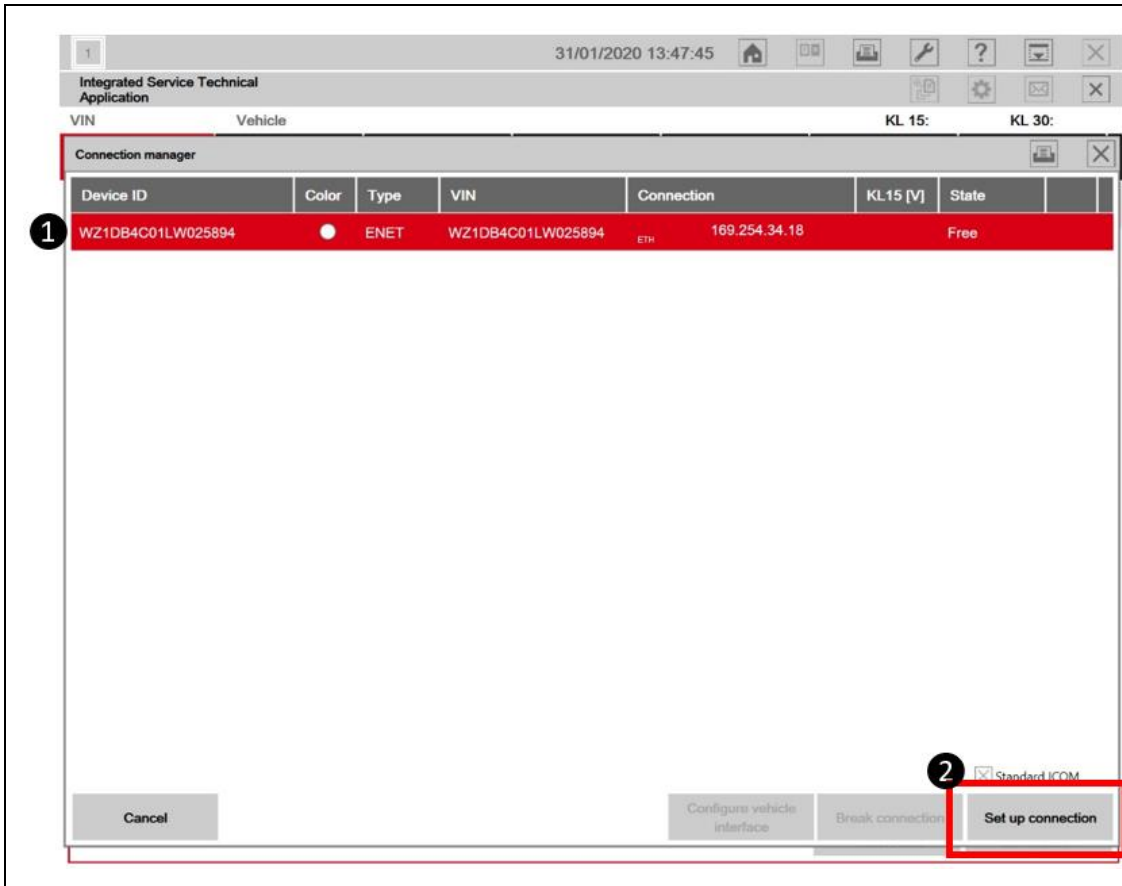
Select:

1. **Highlight VIN**
2. **Set up Connection**
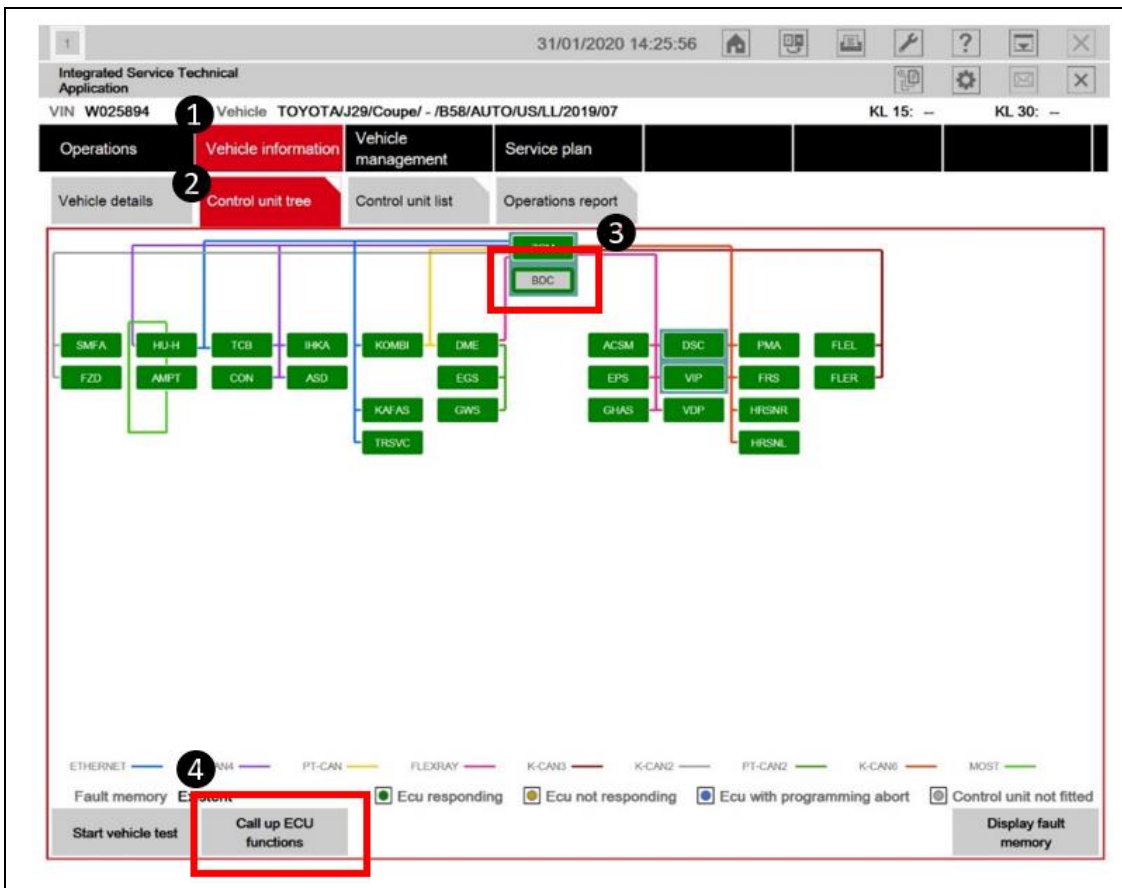
Select:

1. **Vehicle Information**
2. **Control Unit Tree**
3. **BDC icon**
4. **Call Up ECU Functions**
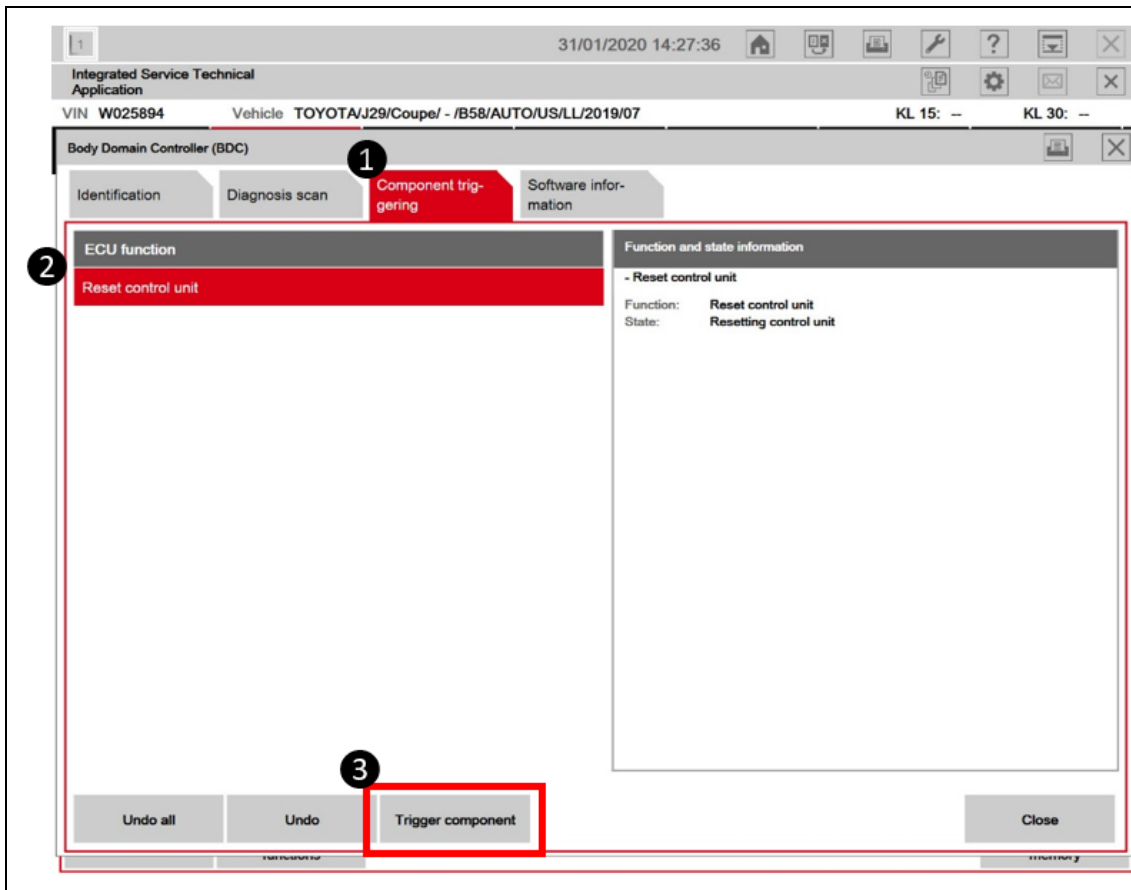
Select:

1. **Component Triggering**
2. **Reset Control Unit**
3. **Trigger component**
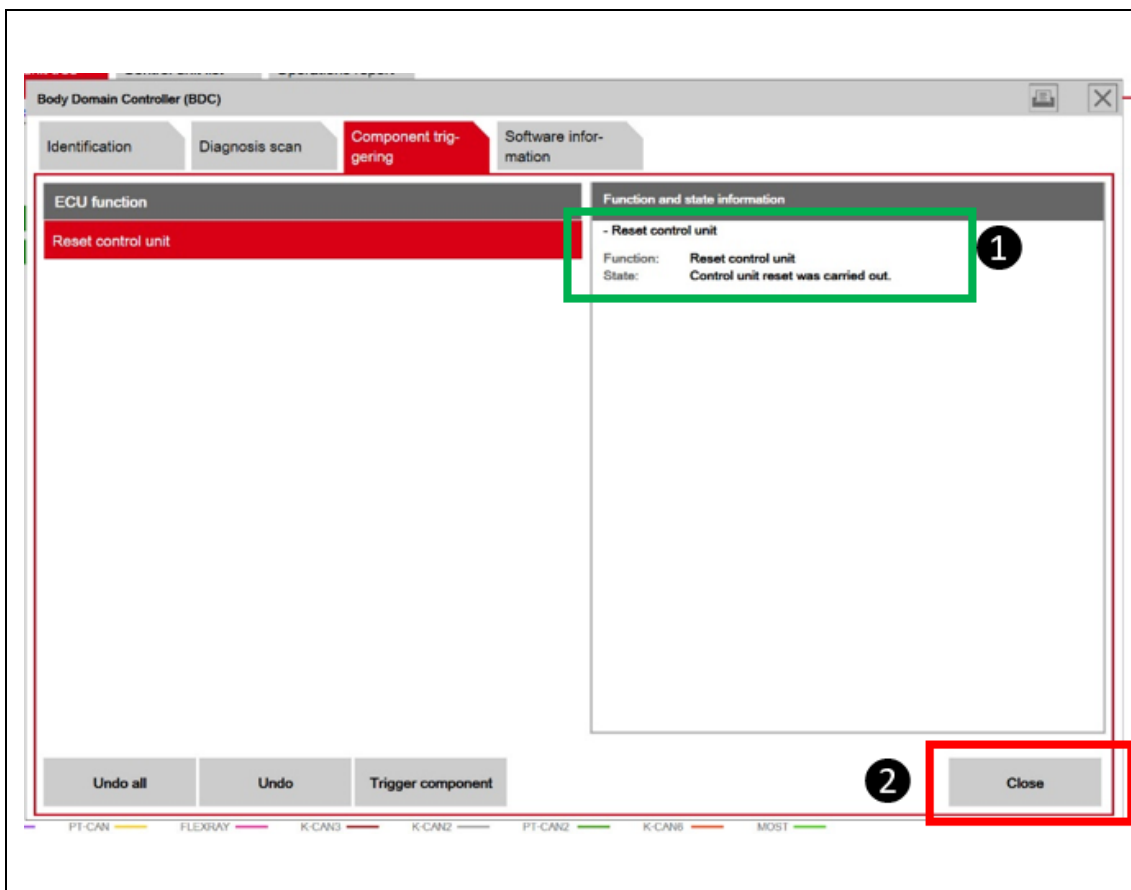
Select:

1. **Confirm Status changes to "Control unit reset was carried out"**
2. **Select Close**

Select:

1. **Vehicle Management**
2. **Control Unit Replacement**
3. **After Replacement**
4. **FLEL if the Drivers Side module was replaced**

   and/or

   FLER if the Passenger Side module was replaced
5. **Display Measures Plan**

Note: If the Power Economy Mode is set, try cycling the diagnosis mode (PAD) and operate multiple electrical components inside the car repeatedly to "wake" the up the system. If this does not work, it may be necessary to disconnect and reconnect ISTA to the vehicle.

Attention:

Power economy mode is set!

Measures plan could not be calculated.

In order to delete the power economy mode the measures plan calculation must be started manually.

To do this, display and recalculate the measures plan using the corresponding button.

PAD mode = press start-stop switch 3 times within 0.8 seconds to enter Diagnostics (PAD) mode

Select:

1. **Service plan**
2. **Programming plan**
3. **Measures Plan**
4. **Install FLEL and/or FLER**
5. **Calculate Measures Plan**

Select:

1. **Execute measures plan**

Select:

1. Continue

Allow the software update to complete.

Preparation for the vehicle programming	

The basic requirement for programming/encoding is that the vehicle is correctly prepared. The following prerequisites must be fulfilled:

- Ensure minimum temperature of 15°C for programmer workplace (prerequisite for correct power window initialisation)
- Park the vehicle on a level surface and move the front wheels to a precise straight-ahead position
- Switch off engine
- Shift the manual transmission to neutral or the automatic transmission to the selector lever position Park
- Release the trailer from the trailer tow hitch and disconnect the connector
- The trailer tow hitch movement range must be kept free
- Make sure that the wipers, side windows and slide/tilt sunroof can move freely
- Guarantee that the headlights are not covered by protective covers
- Make sure the front passenger seat is not subjected to loads by persons or objects.
- Secure the vehicle against rolling by activating the electromechanical parking brake (EMF) and setting the parking brake.
- Remove all the inserted and connected data carriers from the drives and disconnect the data connections (e.g. paired mobile phones)
- Connect current charger authorised by Toyota for J29 either to the vehicle battery or to the positive battery connection point and to the ground
- Do not connect or disconnect the charger during the programming/encoding
- Disconnect any connected high-voltage charging cables prior to working through the measures plan
- Connect the vehicle interface to the workshop network via a LAN cable, while doing so check the cable routing
- Do not route cables through open side windows
- Switch on the ignition or activate the PAD before the vehicle interface is connected to the vehicle

For additional information, see the user documentation for the vehicle programming.

Notice!

If all prerequisites are met, start the measures plan execution with the button 'Continue'. With the button 'Cancel', the execution of the measures plan is cancelled.

Cancel   ❶ Continue

XI.   CLEARING DTC (if present)

If the Malfunction Indicator on the dash is illuminated, perform the following steps:

Select:

1. **Vehicle Management**
2. **Troubleshooting**
3. **Fault Memory**
4. **Calculate test plan**

Select:

1. **Service Plan**
2. **Test Plan**
3. **LED headlight (all versions)**
4. **Display**

Select:

1. **Procedure**
2. **Fault Code**
3. **Continue**

Select:

1. **Continue**

Select:
1. Continue

Select:
1. Continue

Select:

1. Close ABL Module

Select:

1. **Vehicle management**
2. **Troubleshooting**
3. **Fault Memory**
4. **Delete Fault Memory**

- **Confirm that the headlight is operational**
- **Confirm all warning messages are OFF**

XII.	ADJUST HEADLAMP AIM

HINT: The procedure of the aiming adjustment shown in the repair manual is to be revised in March 2020. Until then, use the following procedure.

DO NOT perform headlight adjustment immediately after lowering the vehicle on the vehicle hoist. In this case, move the vehicle for approx. 15 m on its own wheels before headlight adjustment.

HINT: Description is for left component only. Procedure on the right side is identical.

1. **PREPARE VEHICLE FOR HEADLIGHT AIM ADJUSTMENT**
   a. Vehicle parked on level ground.
   b. Check correct adjustment of headlights in relation to engine compartment lid (gap dimensions).

   Vehicle Exterior>DOOR / HATCH>HOOD>ON-VEHICLE INSPECTION; 2020 MY Supra (RM100000001JCST)

   c. Check tire pressure and correct if necessary.
   d. Apply load equivalent to one person on driver's seat (68 kg, 150 lb).
   e. Vehicle with full fuel tank or appropriate additional weight in luggage compartment.

2. **PREPARE FOR HEADLIGHT AIMING (Using a headlight aim test machine)**
   a. Adjust the headlight aim in accordance with the headlight aim test machine instructions.
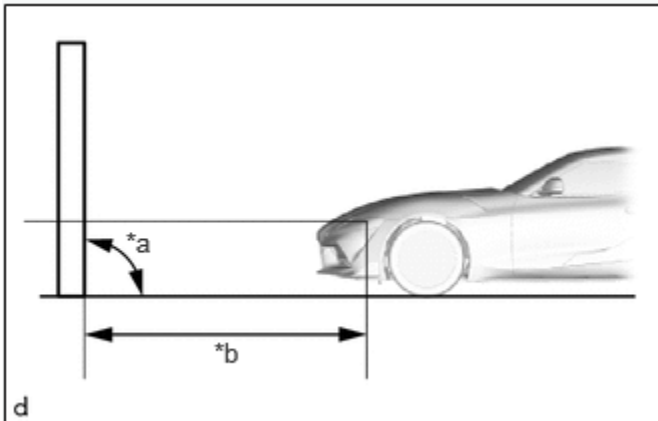
*a	90°
*b	7.62 m or 3 m (25 ft. or 9.84 ft.)

3. **PREPARE VEHICLE FOR HEADLIGHT AIM ADJUSTMENT**
   a. Prepare the vehicle:

   - Place the vehicle in a location that is dark enough to clearly observe the cutoff line. The cutoff line is a distinct line, below which light from the headlights can be observed and above which it cannot.

   - Place the vehicle at a 90° angle to the wall.
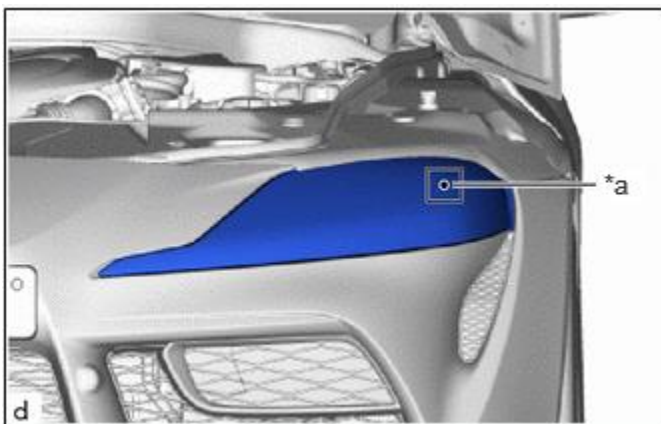
*a	Center Mark

- Create a 7.62 m (25 ft.) distance between the vehicle (center marks of the headlight) and the wall.

- Make sure that the vehicle is on a level surface.
- Bounce the vehicle up and down to settle the suspension.

A distance of 7.62 m (25 ft.) between the vehicle (center marks of the low beam) and the wall is necessary for proper aim adjustment. If unavailable, secure a distance of exactly 3 m (9.84 ft.) for the check and adjustment. (The target zone will change with the distance, so follow the instructions in the illustration).

b. Prepare a open wall area or piece of thick white paper approximately 2 m (6.56 ft.) (height) x 4 m (13.1 ft.) (width) to use as a screen.
c. Draw a vertical line down the center of the screen (V line).
d. Set the screen as shown in the illustration.
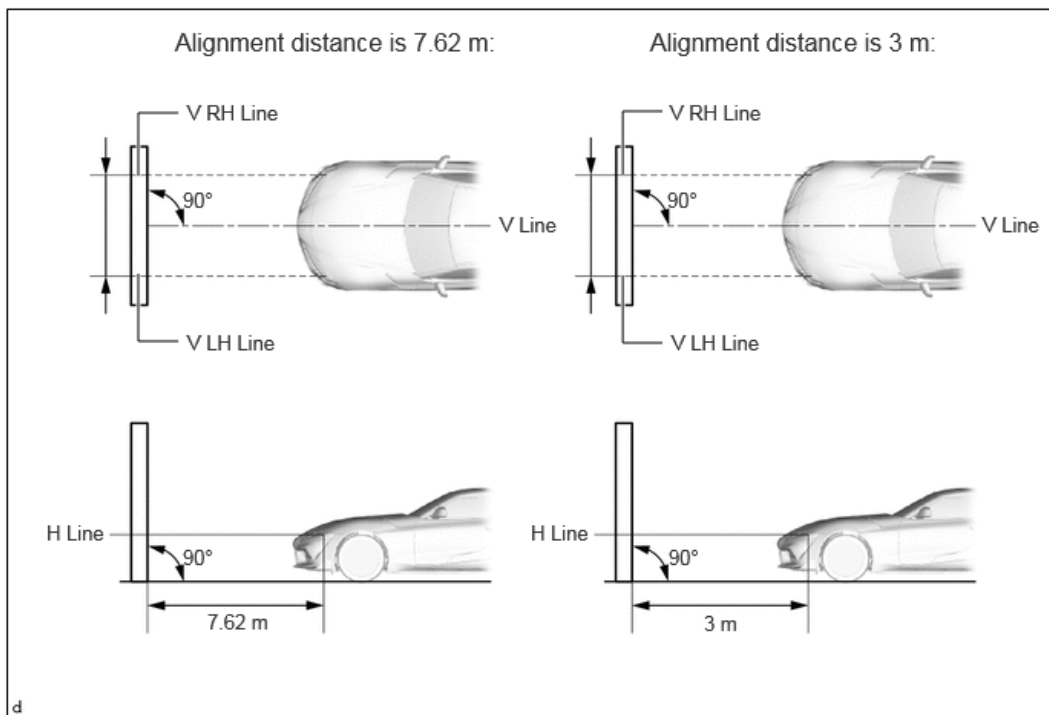
HINT:
- **Stand the screen perpendicular to the ground.**
- **Align the V line on the screen with the center of the vehicle.**
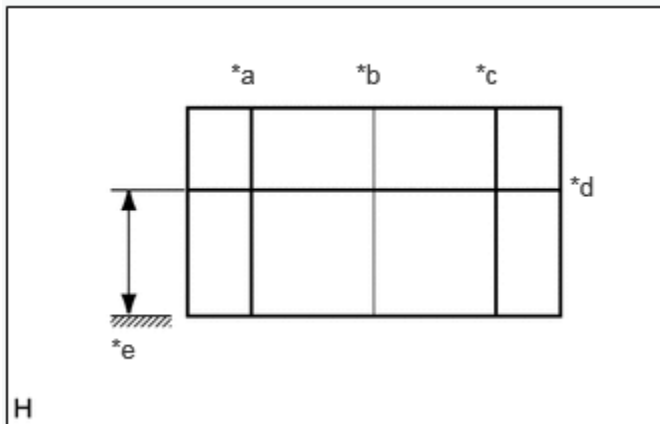
e. Draw base lines (H, V LH, and V RH lines) on the screen as shown in the illustration.

*a	V LH Line
*b	V Line
*c	V RH Line
*d	H Line
*e	Ground
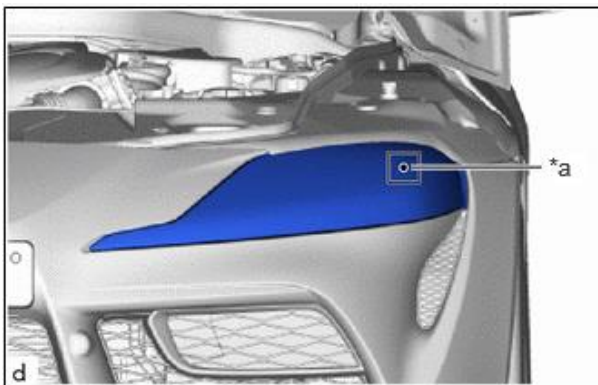
*a	Center Mark

HINT:
Mark the headlight assembly center marks on the screen. If the center mark cannot be observed on the headlight, use the center of the headlight LED unit as the center mark.

f. **H Line (Headlight height):**
Draw a horizontal line across the screen so that it passes through the center marks. The H line should be at the same height as the headlight center marks.

g. **V LH Line and V RH Line (Center mark position of (LH) and (RH) headlights):**
Draw 2 vertical lines so that they intersect the H line at each center mark (aligned with the center mark of the headlight).

4. **INSPECT HEADLIGHT AIMING**
   a. Start the engine.

b. Light switch must be in "low beam/driving light" position (1).

> **DO NOT carry out the headlight adjustment in the "automatic driving lights control" light switch position (2).**

c. Wait 80 seconds after switching on lights. During this time, do not move the vehicle and avoid vibrations.

> **Wheels must be in the straight-ahead position.**
> **DO NOT move the vehicle and steering wheel during the measuring and adjustment procedures.**

d. Cover the headlight on the opposite side to prevent light from the headlight that is not being inspected from affecting the headlight aiming.

> **DO NOT keep the headlight covered for more than 3 minutes. The headlight lens is made of synthetic resin, which may melt or be damaged due to excessive heat.**

e. Check if the cutoff line matches the preferred cutoff line in the following illustration.

> **HINT:**
> - **The low beam and high beam headlight are a unit, Adjusting the aim on the low beam to the correct position should also result in the high beam adjustment being correct.**
> - **If the alignment distance is 7.62 m (25 ft.):**
>   **The low beam cutoff line should be within 101.6 mm (4.00 in.) above or below the H line as well as 101.6 mm (4.00 in.) left or right of the V LH or V RH line (SAE J599).**
> - **If the alignment distance is 3 m (9.84 ft.):**
>   **The low beam cutoff line should be within 39.9 mm (1.57 in.) above or below the H line as well as 39.9 mm (1.57 in.) left or right of the V LH or V RH line (SAE J599).**
> - **If the alignment distance is 7.62 m (25 ft.):**
>   **The high beam center of intensity should be within 101.6 mm (4.00 in.) above or below the H line as well as 101.6 mm (4.00 in.) left or right of the V LH or V RH line (SAE J599).**
> - **If the alignment distance is 3 m (9.84 ft.):**
>   **The high beam center of intensity should be within 39.9 mm (1.57 in.) above or below the H line as well as 39.9 mm (1.57 in.) left or right of the V LH or V RH line (SAE J599).**

Low Beam:
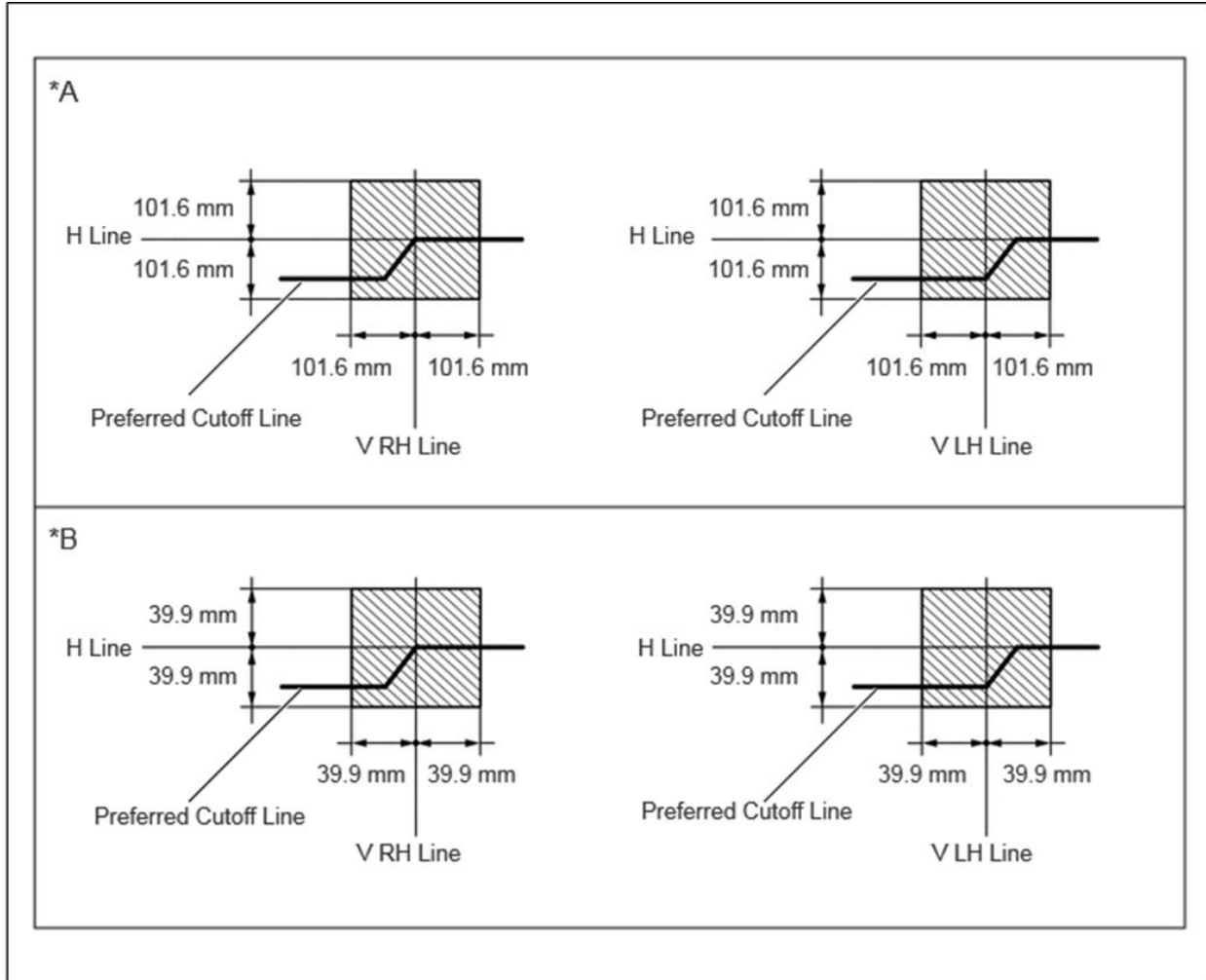
*A	Alignment distance is 7.62 m	*B	Alignment distance is 3 m

High Beam:
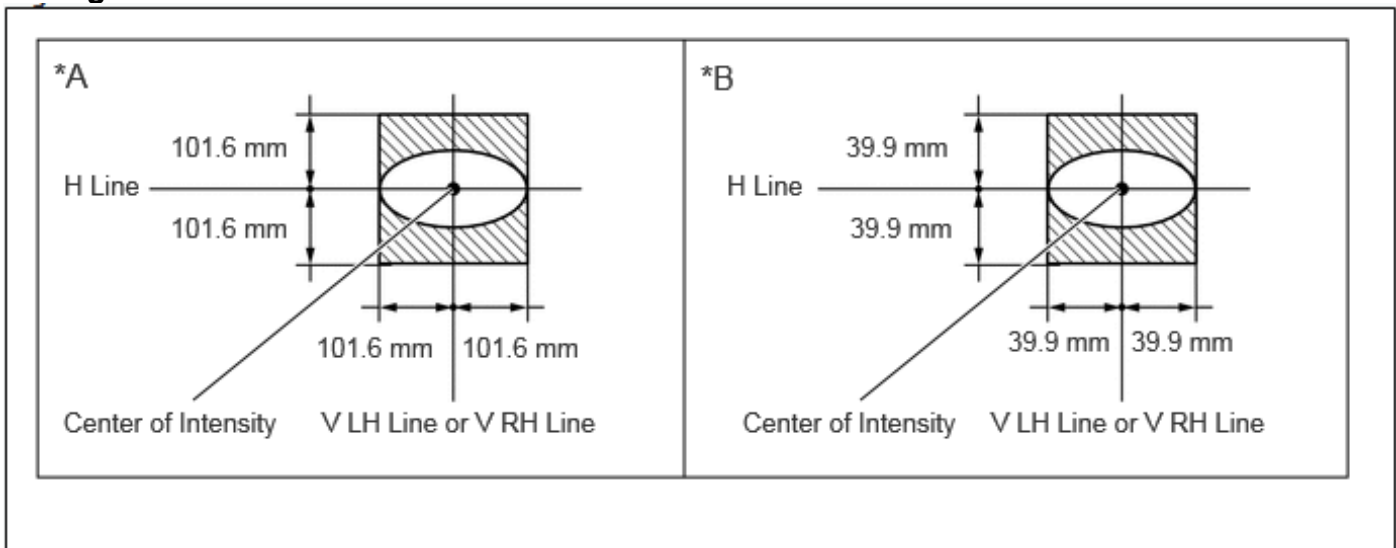
*A	Alignment distance is 7.62 m	*B	Alignment distance is 3 m
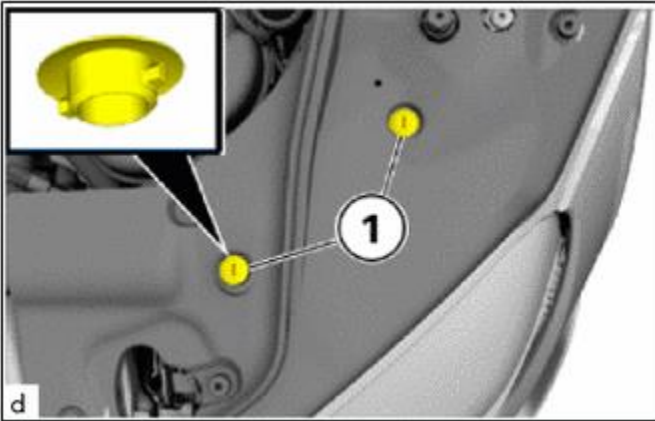
5. ADJUST HEADLIGHT AIMING (if necessary)

a. Turn both covers (1) above the adjusting screws for the light setting by 90° and remove.

b. Adjust the aim vertically:

The final turn of the aiming screw should be made in the clockwise direction. If the screw is tightened excessively, loosen it and then retighten it, so that the final turn of the screw is in the clockwise direction.
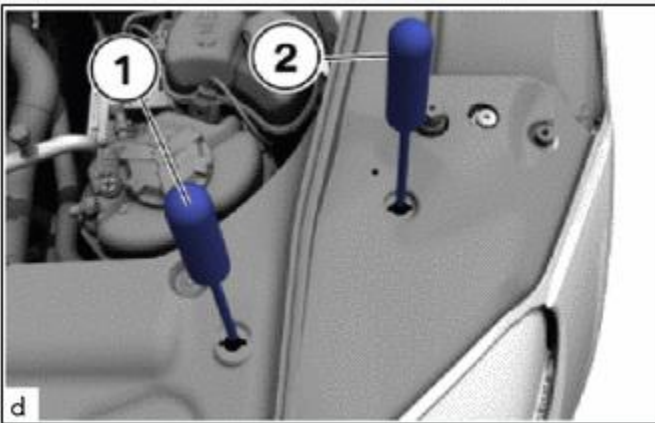
HINT:
- **Since the low beam light and the high beam light are a unit, if the aim on the low beam is correct, the high beam should also be correct. However, check both beams just to make sure.**
- **When adjusting the vertical axis of the headlight, the horizontal axis will also change. It is necessary to adjust the vertical position first, and then correct the horizontal position.**
- **If it is not possible to correctly adjust headlight aim, check the headlight unit and headlight unit lens installation.**
- **Confirm the direction of rotation of the aiming screw by observing it while it is being adjusted. Due to the position of the screwdriver, the direction of rotation of the adjusting screw can be different than the direction of rotation of the screwdriver being used to adjust it.**

c. Adjust the aim of each headlight to the specified range by turning each aiming screw with a screwdriver (1).

d. Adjust the aim horizontally:

The final turn of the aiming screw should be made in the clockwise direction. If the screw is tightened excessively, loosen it and then retighten it, so that the final turn of the screw is in the clockwise direction.

HINT:
- **Since the low beam light and the high beam light are a unit, if the aim on the low beam is correct, the high beam should also be correct. However, check both beams just to make sure.**

- **If it is not possible to correctly adjust headlight aim, check the headlight unit and headlight unit lens installation.**
- **Confirm the direction of rotation of the aiming screw by observing it while it is being adjusted. Due to the position of the screwdriver, the direction of rotation of the adjusting screw can be different than the direction of rotation of the screwdriver being used to adjust it.**

e. Adjust the aim of each headlight to the specified range by turning each aiming screw with a screwdriver (2).
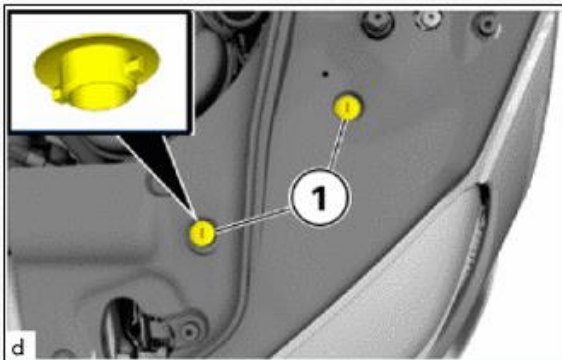

f. Install the covers (1) above the adjusting screws for the light setting and turn by 90°.

XIII.	ADJUST MILLIMETER WAVE RADAR SENSOR

1. **ADJUST MILLIMETER WAVE RADAR SENSOR**
   a. Review the Before Starting Adjustment in the Repair Manual:

   CRUISE CONTROL: MILLIMETER WAVE RADAR SENSOR: BEFORE STARTING ADJUSTMENT; 2020 MY Supra
   (RM100000001L1M7)

   b. Follow the Repair Manual procedure to Adjust the Millimeter Wave Radar Sensor:

   CRUISE CONTROL: MILLIMETER WAVE RADAR SENSOR: ADJUSTMENT; 2020 MY Supra
   (RM100000001L1M8)

   Note: Most dealerships DO NOT have the MWRS Calibration Kit required for this activity. Please contact your Regional Field Technical Specialist for directions on obtaining this required tool.

   During the initial launch of this campaign, these required tools will not be available in the Supra Loaner Tools program. They must be sourced from your Regional Field Technical Specialist

◄ VERIFY REPAIR QUALITY ►

- **Confirm all lighting on the vehicle is operational**
- **Confirm the front bumper alignment is within specification**
- **Confirm that the Malfunction Indicator is OFF**

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

10. APPENDIX

A. PARTS DISPOSAL

In accordance with Federal law, 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

19TA01

19	T	A	01
Year Campaign is Launched	Vehicle Make	Field Action Category and Phase	Field Action Sequence
19 = 2019 20 = 2020 21 = 2021 22 = 2022 23 = 2023 Etc...	T = Toyota L = Lexus	A = Safety Recall _Remedy_ B = Safety Recall _Interim_ C = Special Service Campaign D = Limited Service Campaign E = Customer Support Program F = Emissions Recall (May use other characters in unique cases)	01 = 1st Field Action of the year 02 = 2nd Field Action of the year 03 = 3rd Field Action of the year (The sequence is unique for each Field Action category) (May use other characters in unique cases)

Examples:
19TA01 = Launched in 2019, Toyota, Safety Recall Remedy Phase, 1st Safety Recall Launched in 2019
20TC02 = Launched in 2020, Special Service Campaign, 2nd Special Service Campaign Launched in 2020
21TE05 = Launched in 2021, Customer Support Program, 5th Customer Support Program Launched in 2021