TECHNICAL INSTRUCTIONS

21TC02

IMPROPER PROGRAMING IN A 12V BATTERY MANAGEMENT SYSTEM

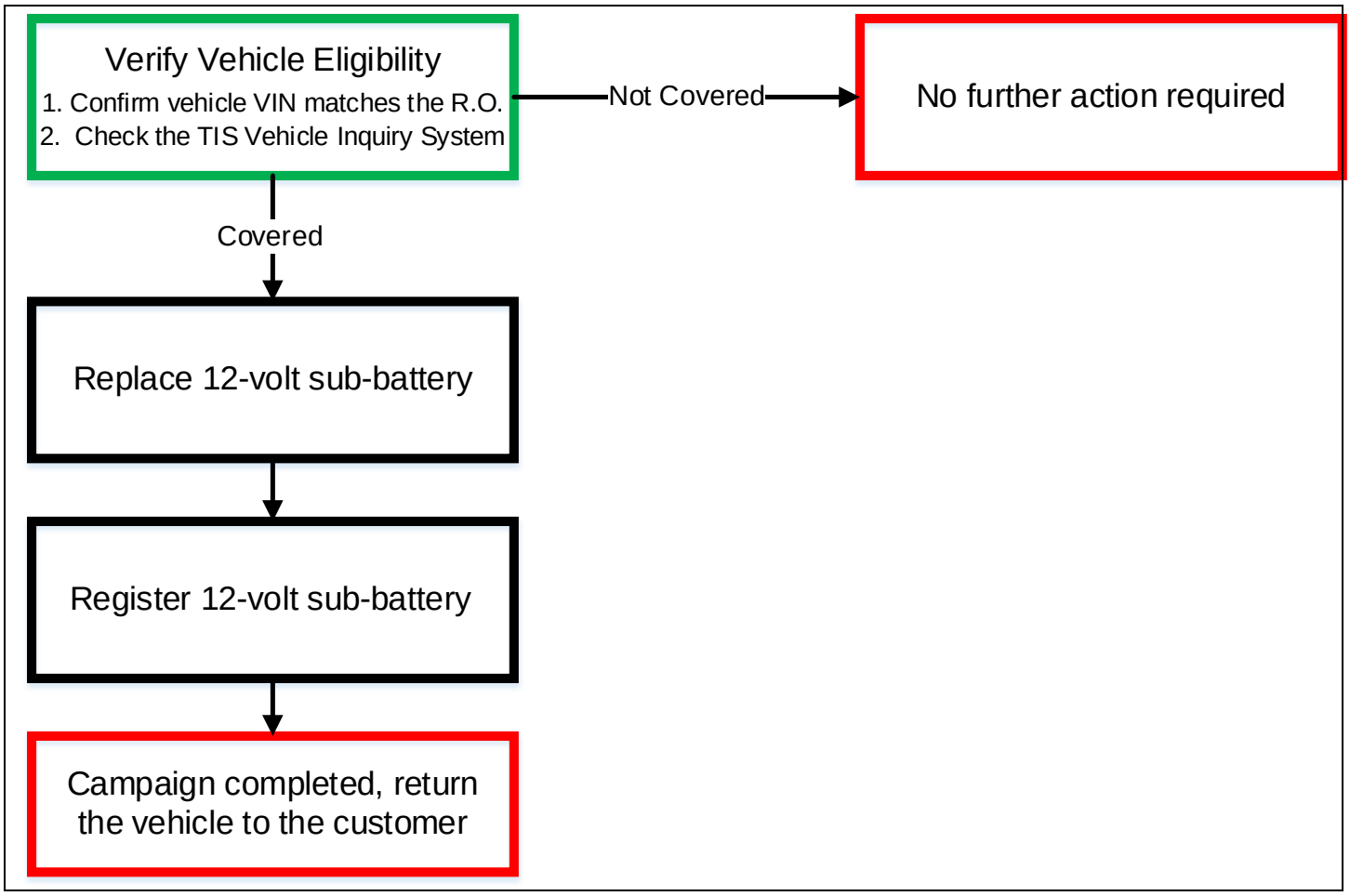
CERTAIN 2021 MODEL YEAR SUPRA VEHICLES

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 have completed all of the following courses:

- **TIN519B – GR Supra New Model Technical Introduction**

Always check which technicians can perform the repair by logging on to https://www.uotdealerreports.com. It is the dealership's responsibility to select technicians with the above certification level or greater to perform this 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 vehicle's 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. BACKGROUND

Due to a software error in the battery management system of the 12V battery located under the vehicle's hood, the engine auto Stop/Start functionality could become deactivated.

IV. PREPARATION

1. PARTS

Part No.	Description	Quantity
28800-WAA13	BATTERY	1
90118-WA243	HEXAGON SCREW WITH FLANGE	4
90118-WA253	HEXAGON SCREW WITH FLANGE	4

2. TOOLS & EQUIPMENT

- o Techstream ADVi
- o Supra Diagnostic Cable (01018-00118)
- o Torque Wrench Angle Gauge (SST 09900-WA010 or equivalent)
- o Wiper Arm Pulling Tool (SST 09800-WA020 or equivalent)
- o DCA-8000 Battery Charger (DCA-8000P T)
- o Standard Hand Tools
- o Torque Wrench

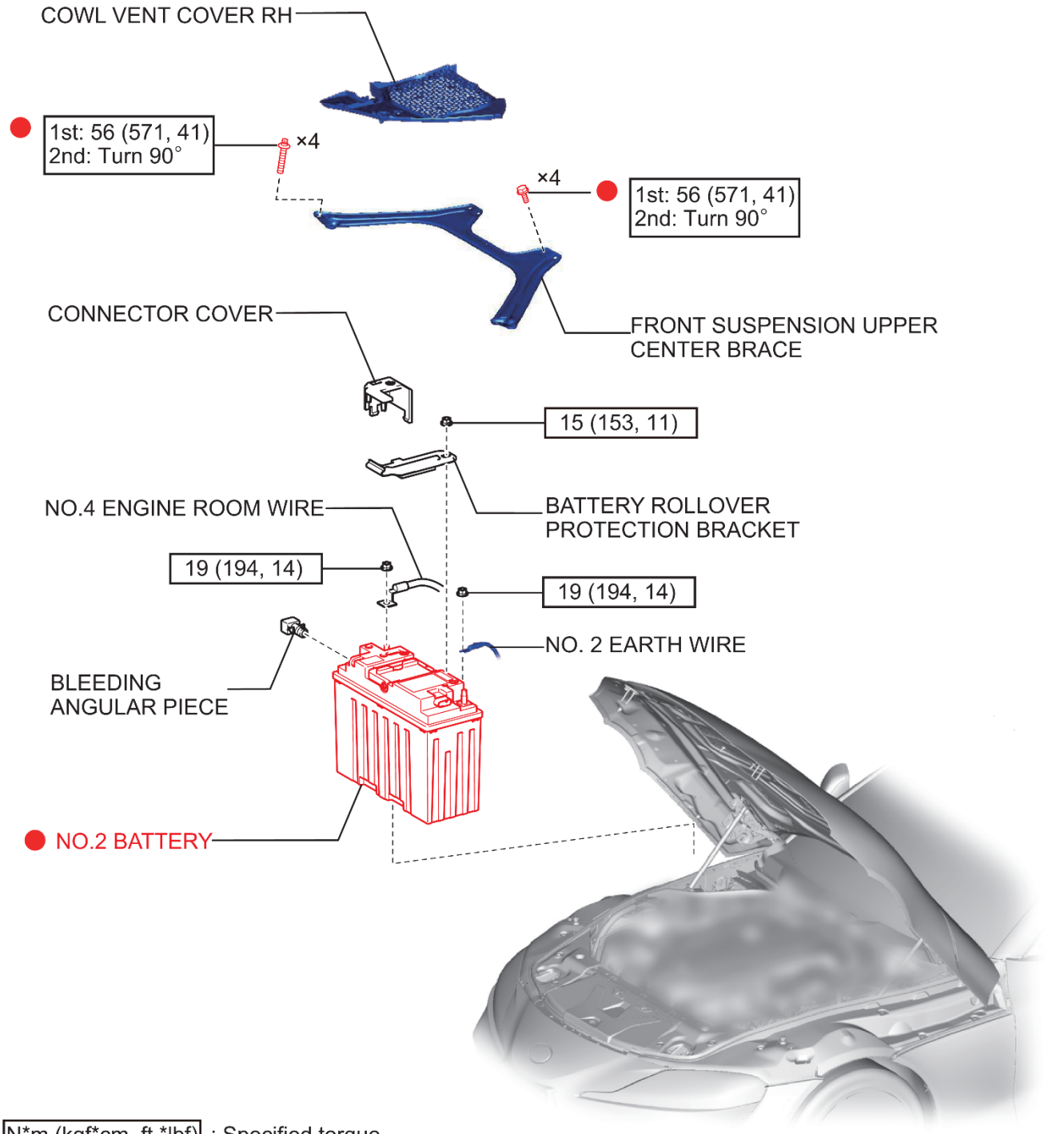
3. BATTERY RECYCLE PROCEDURE

Refer to page 28 for instructions on how to properly recycle the 12-volt lithium ion battery replaced by this Special Service Campaign

V. WORK PROCEDURE TABLE OF CONTENTS

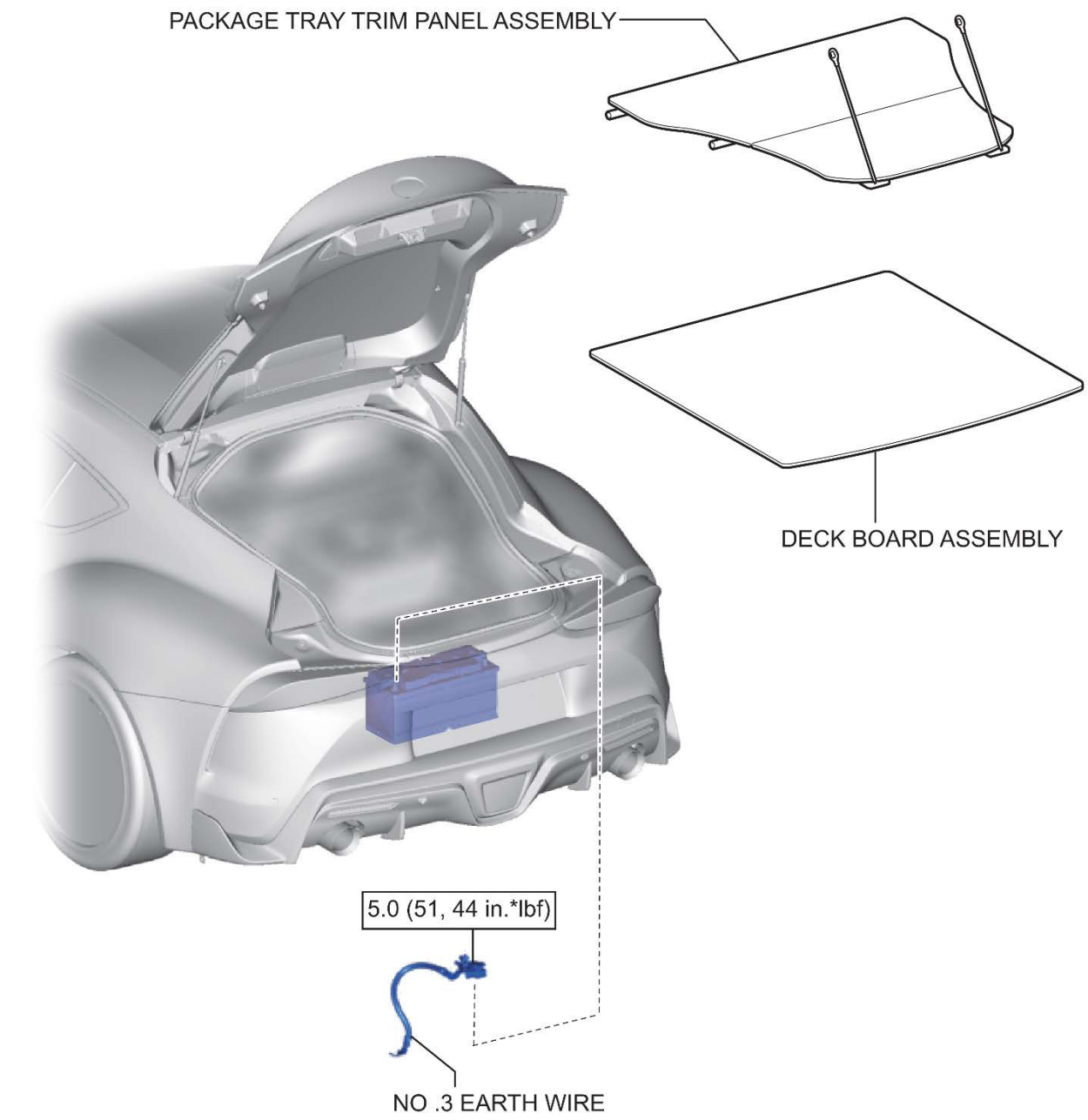
VI. COMPONENTS

● : Replacement part



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

R2102100027

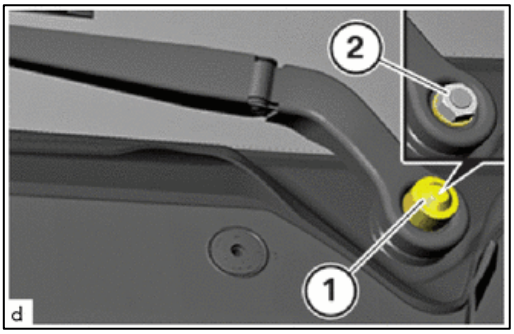


N*m (kgf*cm, ft.*lbf) : Specified torque

R2102100026

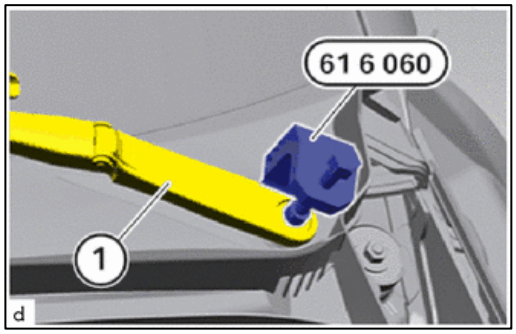
VII. DISCONNECT NEGATIVE CABLE FROM NO. 2 BATTERY (SUB-BATTERY)

1. REMOVE FRONT WIPER ARMS



(1) Remove the front wiper arm head cap.

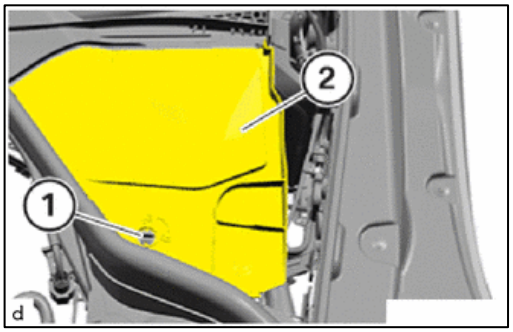
(2) Using a socket wrench 16mm, remove nut.



a. Using special tool (09800-WA020) or equivalent, pull off the front wiper arm and blade assembly LH.

b. Repeat this procedure for the RH wiper arm.

2. REMOVE COWL VENT COVER LH

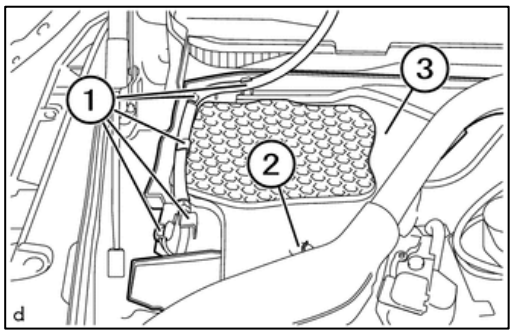


(1) Disengage the lock.

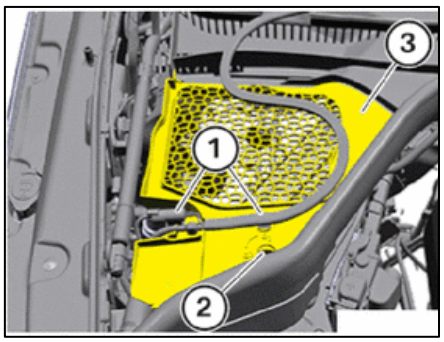
(2) Remove cowl vent cover LH.

3. REMOVE COWL VENT COVER RH

Type A



Type B

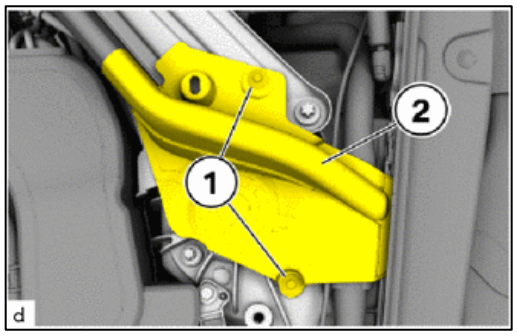


(1) Disconnect the connector and washer nozzle and hose assembly from the cowl vent cover RH.

(2) Disengage the lock.

(3) Remove the cowl vent cover RH.

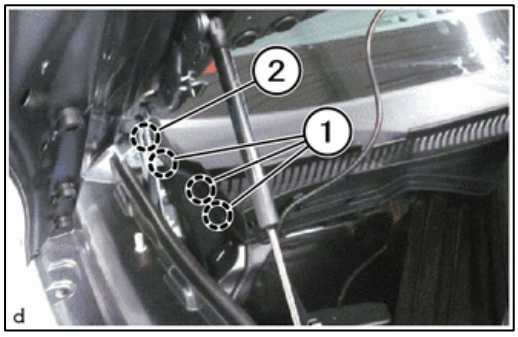
4. REMOVE FRONT FENDER TO COWL SIDE SEAL LH



(1) Remove the clips.

(2) Remove front fender to cowl side seal LH.

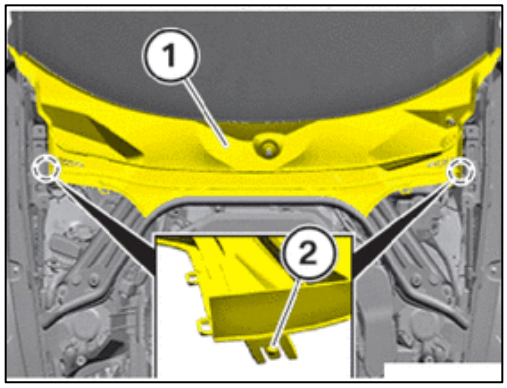
5. REMOVE FRONT FENDER TO COWL SIDE SEAL RH



(1) Disengage the claws.

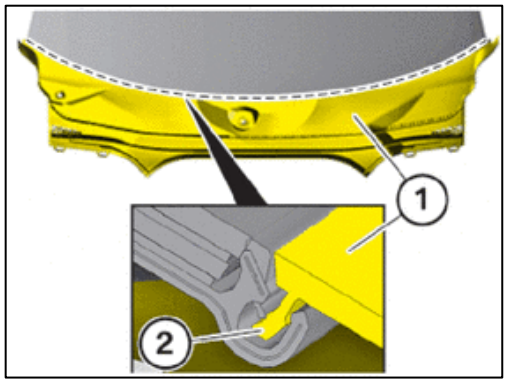
(2) Disengage the guide to remove the water guard plate

6. REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY



(1) Disengage the claws.

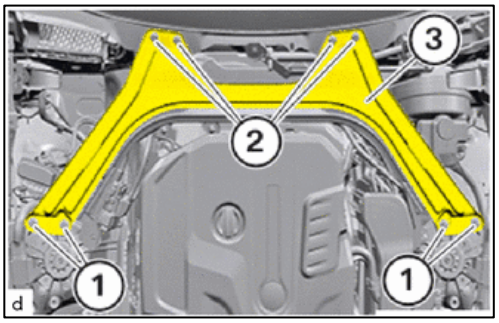
(2) Disconnect the cowl top ventilator louver sub-assembly.



(1) Pull the cowl top ventilator louver sub-assembly upward out of the claw (2) beginning on the side

7. REMOVE UPPER FRONT SUSPENSION CENTER BRACE

NOTICE: Driving without upper front suspension center brace is not permissible.



(1) (2) Remove bolts

(3) Remove the upper front suspension center brace

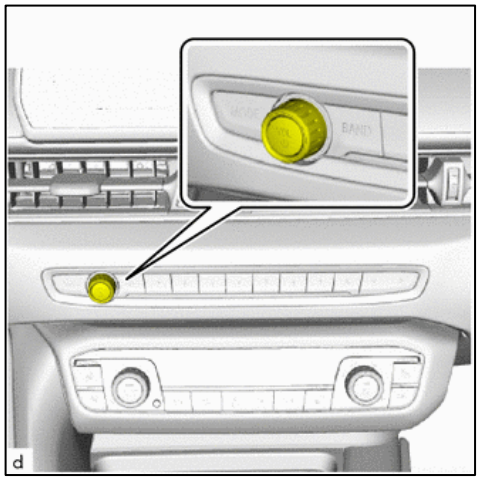
8. DISCONNECT NEGATIVE CABLE FROM NO. 2 BATTERY (SUB-BATTERY)

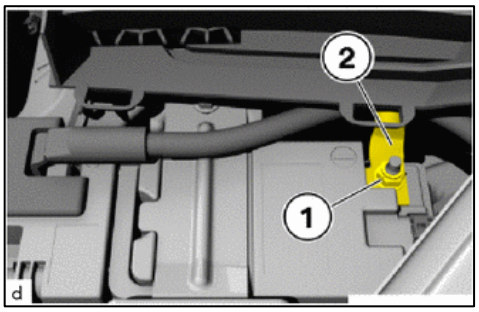
NOTICE:

Check that the START-STOP button (engine switch) is off.

HINT:

Pressing and holding the AUDIO button changes the power source mode to IG OFF.



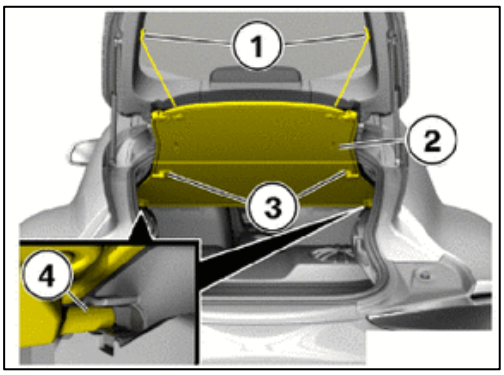


(1) Unfasten nut.

(2) Disconnect negative cable

VIII. DISCONNECT NEGATIVE CABLE FROM MAIN BATTERY (TRUNK BATTERY)

1. REMOVE PACKAGE TRAY TRIM PANEL ASSEMBLY



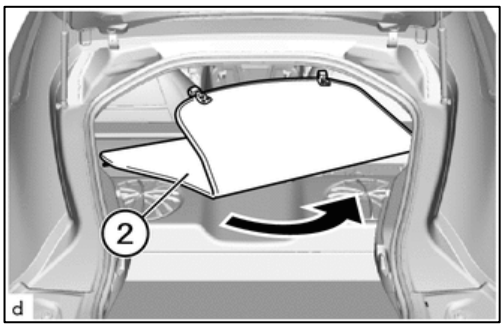
a. Move the RH front seat to the foremost position.

(1) Detach the retaining straps

(2) Detach the rear mountings

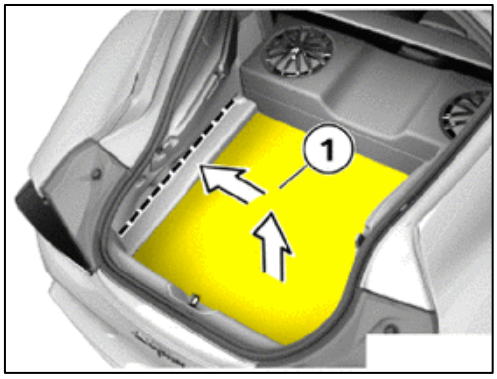
(3) Detach the front guides

(4) Detach the front guides to the rear

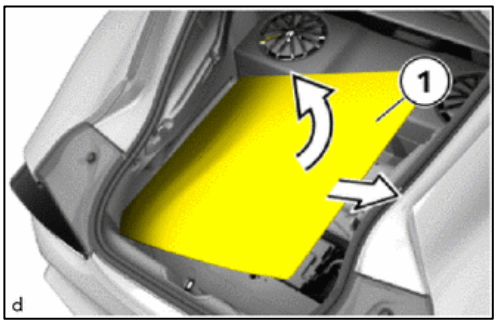


b. Fold the package tray trim panel assembly together and remove

2. REMOVE DECK BOARD ASSEMBLY

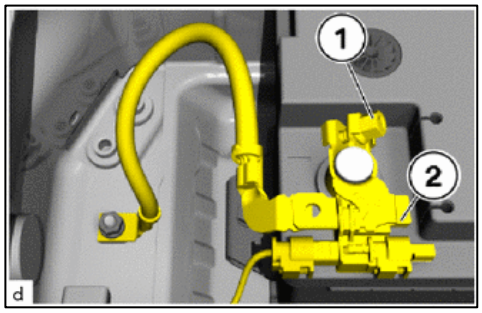


a. Slightly lift the deck board assembly on the right side with a suitable tool.
b. Slide the left edge of the deck board assembly into the recess in the direction of the arrow of the deck board assembly.



c. Slide the left edge of the deck board assembly into the recess in the direction of the arrow of the deck board assembly.

3. DISCONNECT NEGATIVE CABLE FROM MAIN BATTERY (TRUNK BATTERY)

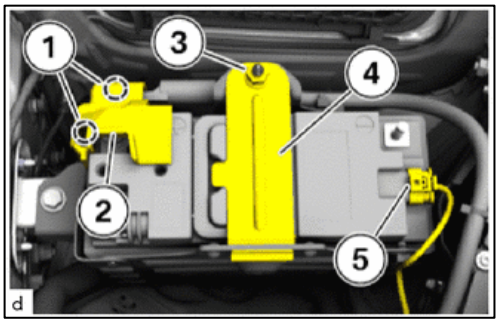


(1) Unfasten nut.

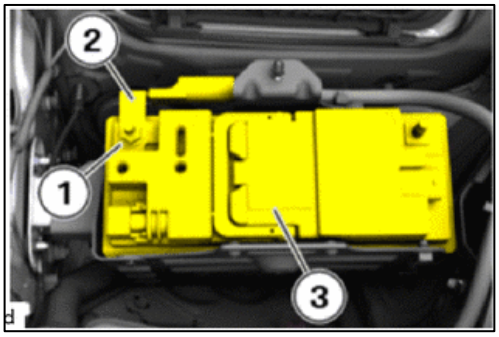
(2) Disconnect negative cable

IX. REMOVE NO. 2 BATTERY (SUB-BATTERY)

1. REMOVE NO. 2 BATTERY (SUB-BATTERY)



1. Loosen the latch mechanisms
2. Remove connector cover
3. Loosen nut
4. Remove battery rollover protection bracket
5. Unlock connector (5) and disconnect



1. Loosen nut
2. Pull off No.4 engine room wire (2) from the battery terminal and secure at side
3. Remove No.2 battery

1. Remove bleeding angular piece

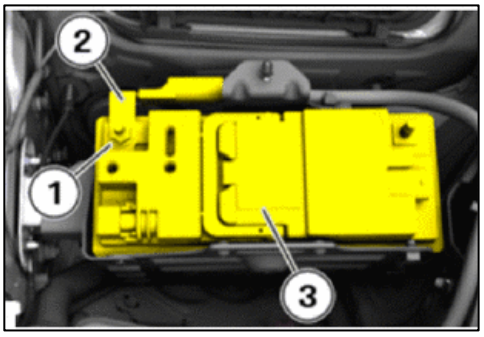
Remember to recycle the old battery following the instructions on page 28 of this document.

X. INSTALL *NEW* NO. 2 BATTERY (SUB-BATTERY)

1. INSTALL BLEEDING ANGULAR PIECE

(1) Install bleeding angular piece to the ***NEW*** No. 2 Battery.

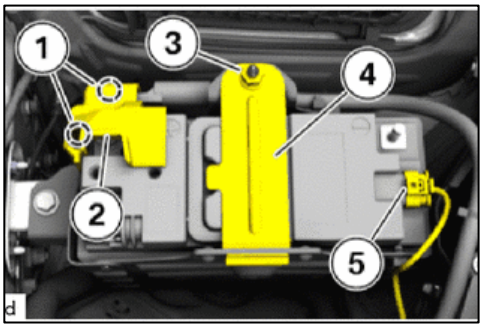
2. INSTALL NO. 2 BATTERY



(3) Install the ***NEW*** No.2 battery.

(2) Connect the positive battery cable

(1) Tighten the nut
Torque:
19 N·m {194 kgf·cm, 14 ft·lbf}



(5) Connect connector and lock

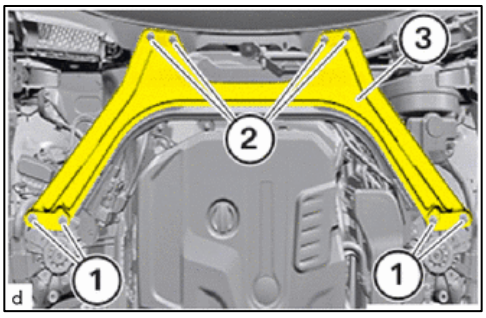
(4) Install battery rollover protection bracket

(3) Tighten nut
Torque:
15 N·m {153 kgf·cm, 11 ft·lbf}

(1) Clip in latch mechanisms on the connector cover (2)

XI. REASSEMBLE VEHICLE

1. INSTALL UPPER FRONT SUSPENSION CENTER BRACE



(3) Position upper front suspension center brace.

(2) (1) Install **new** bolts, ***but do not torque***

Follow the torque sequence below

Torque sequence:

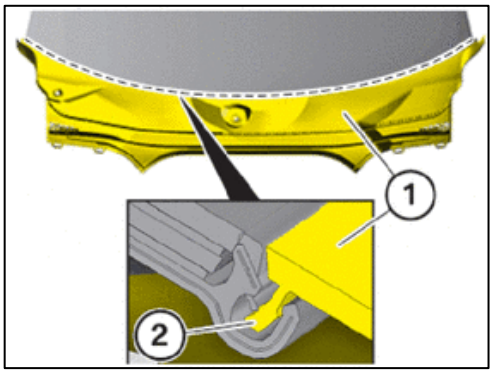
1. Torque all four bolts shown at position (1)

   Torque: 56 N·m {571 kgf·cm, 41 ft·lbf}
   Using a torque angle gauge, tighten the bolts an additional 90 degrees

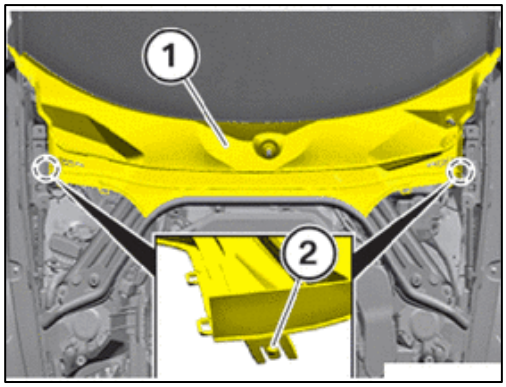
2. Torque all four bolts shown at position (2)

   Torque: 56 N·m {571 kgf·cm, 41 ft·lbf}
   Using a torque angle gauge tighten, the bolts an additional 90 degrees

2. INSTALL COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY

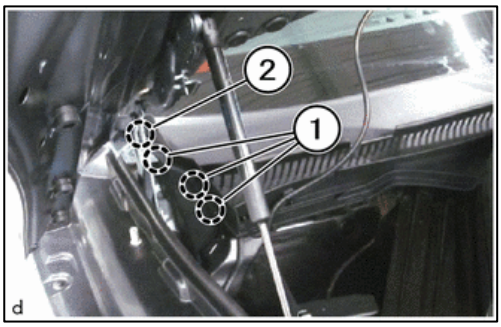


(1) Push the cowl top ventilator louver sub-assembly into the claw (2) beginning on the side



(1) Engage the cowl top ventilator louver sub-assembly in the claws (2)

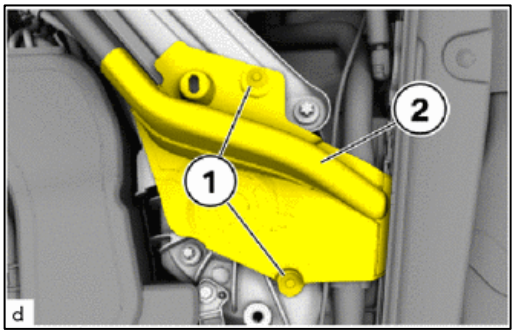
3. INSTALL FRONT FENDER TO COWL SIDE SEAL RH



(2) Engage the guide

(1) Engage the claws

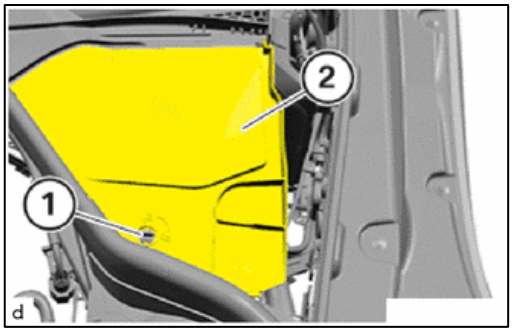
4. REMOVE INSTALL FRONT FENDER TO COWL SIDE SEAL LH



(2) Install front fender to cowl side seal.

(1) Install clips.

5. INSTALL COWL VENT COVER LH

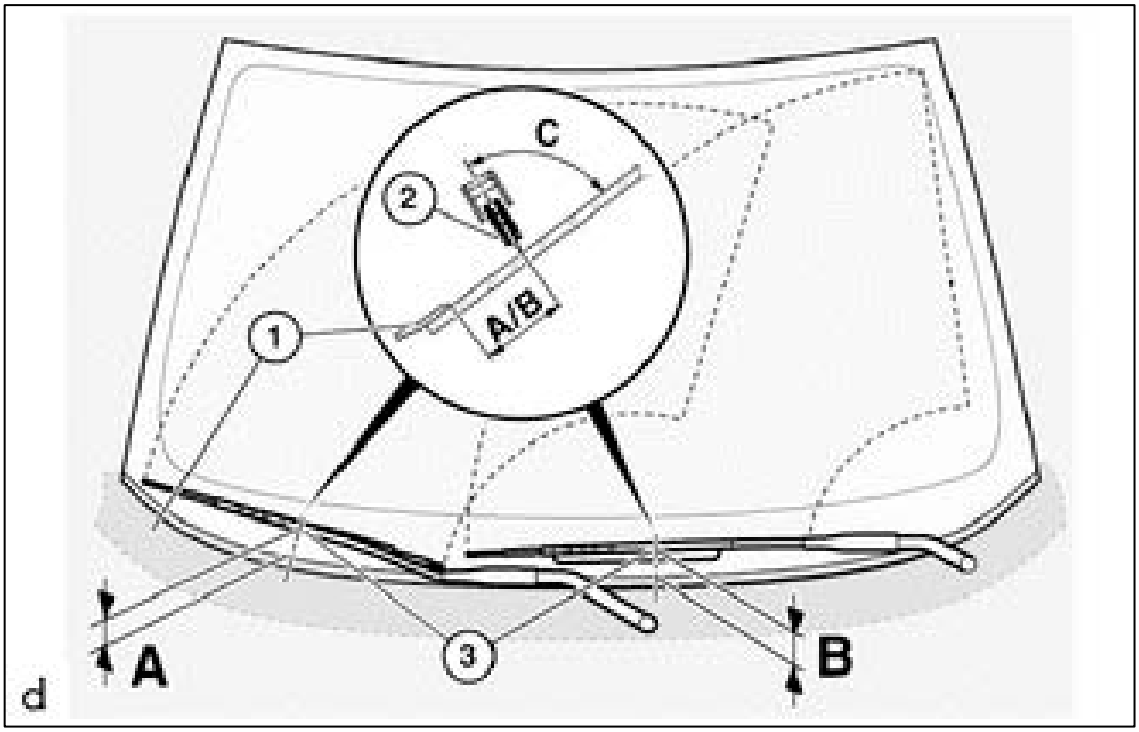


(2) Install the cowl vent cover.

(1) Engage the lock.

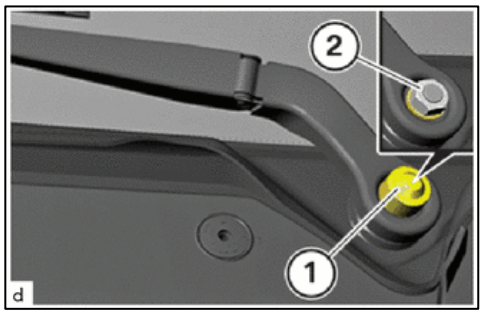
6. POSITION FRONT WIPER ARM AND BLADE ASSEMBLY

a. Connect the wiper arm and blade assembly
b. Correctly position the front wiper arm and blade assembly in relation to the windshield glass edge



AREA	DIMENSION
A	65.0 mm (2.56 in.)
B	58.0 mm (2.28 in.)

7. INSTALL FRONT WIPER ARMS

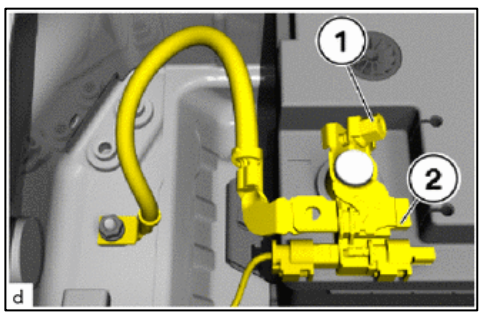


(1) Tighten the nut.

Torque:
35.0 N·m {375 kgf·cm, 26 ft·lbf}

(2) Install the front wiper arm head cap.

8. CONNECT NEGATIVE CABLE TO MAIN BATTERY (TRUNK BATTERY)

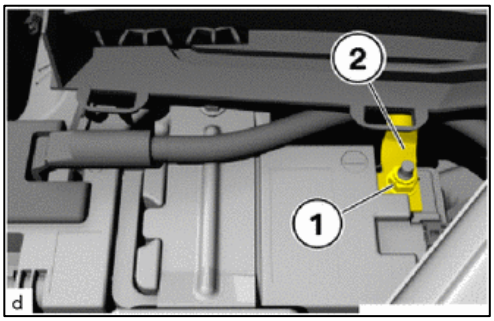


(2) Connect cable

(1) Tighten nut

Torque:
5.0 N·m {51 kgf·cm, 44 in·lbf}

9. CONNECT NEGATIVE CABLE TO NO. 2 BATTERY (SUB-BATTERY)



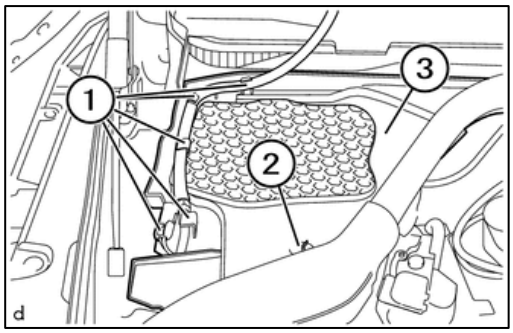
(2) Connect cable

(1) Tighten nut

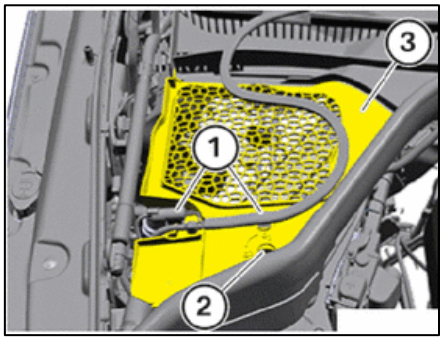
Torque:
19 N·m {194 kgf·cm, 14 ft·lbf}

10. INSTALL COWL VENT COVER RH

Type A



Type B

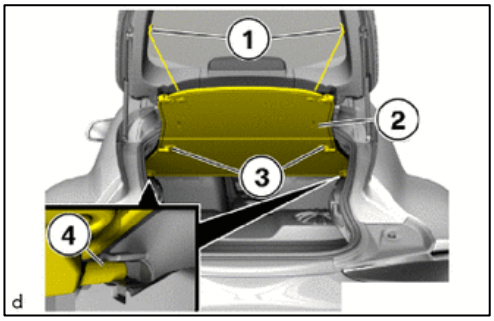


(3) Install the cowl vent cover

(2) Engage the lock

(1) Connect the connector and the washer nozzle and hose assembly to the cowl vent cover RH

11. INSTALL PACKAGE TRAY TRIM PANEL ASSEMBLY



(4) Attach the front guides forward

(3) Attach the rear mounting downward

(2) Fold the package tray trim panel assembly open

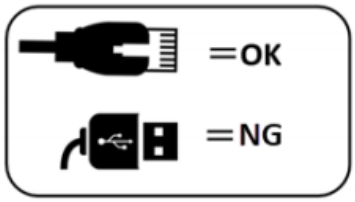
(1) Attach the retaining straps.

XII. REGISTER NEW NO. 2 BATTERY (SUB-BATTERY)

NOTICES

Supra Diagnostic Cable (01018-00118)

The use of the Supra Diagnostic Cable (01018-00118) is an absolute necessity. In order to maintain successful communication between the Techstream ADVi and the vehicle, the Toyota Supra diagnostic cable must be used. Other interfaces that connect to the Techstream ADVi via USB are NOT allowed. Attempting to use such other devices may cause permanent ECU damage due to the slower communication speed.

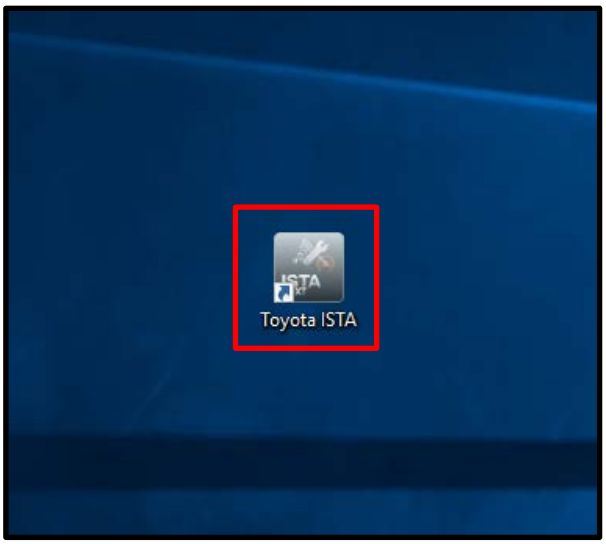


Battery Charger (DCA-8000)

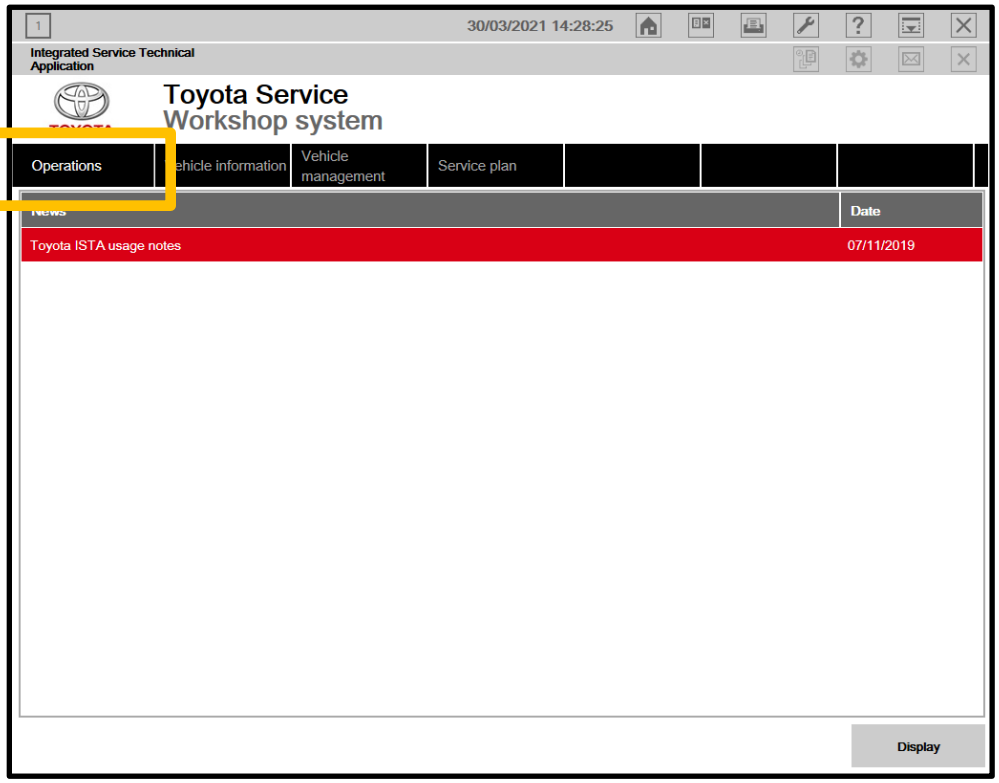
It is recommended to connect the DCA-8000 battery charger while executing the battery registration procedure to avoid depleting the batteries during the procedure.

1. Connect Supra Diagnostic Cable to vehicle diagnostic connector

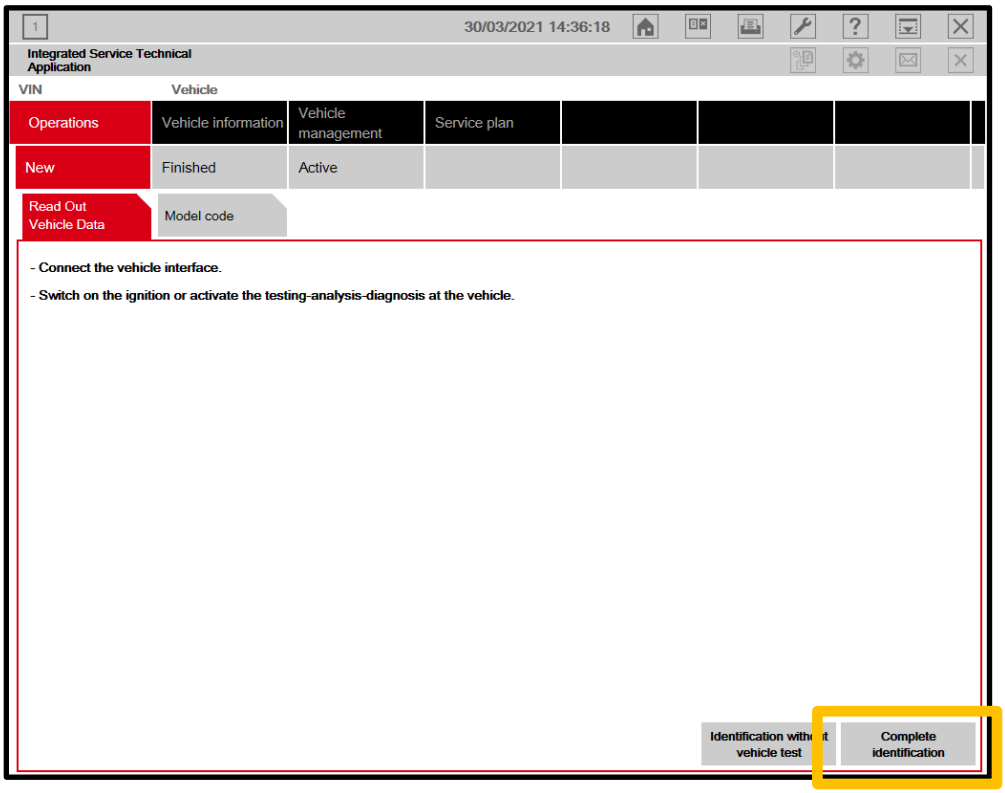
2. Boot up Toyota ISTA



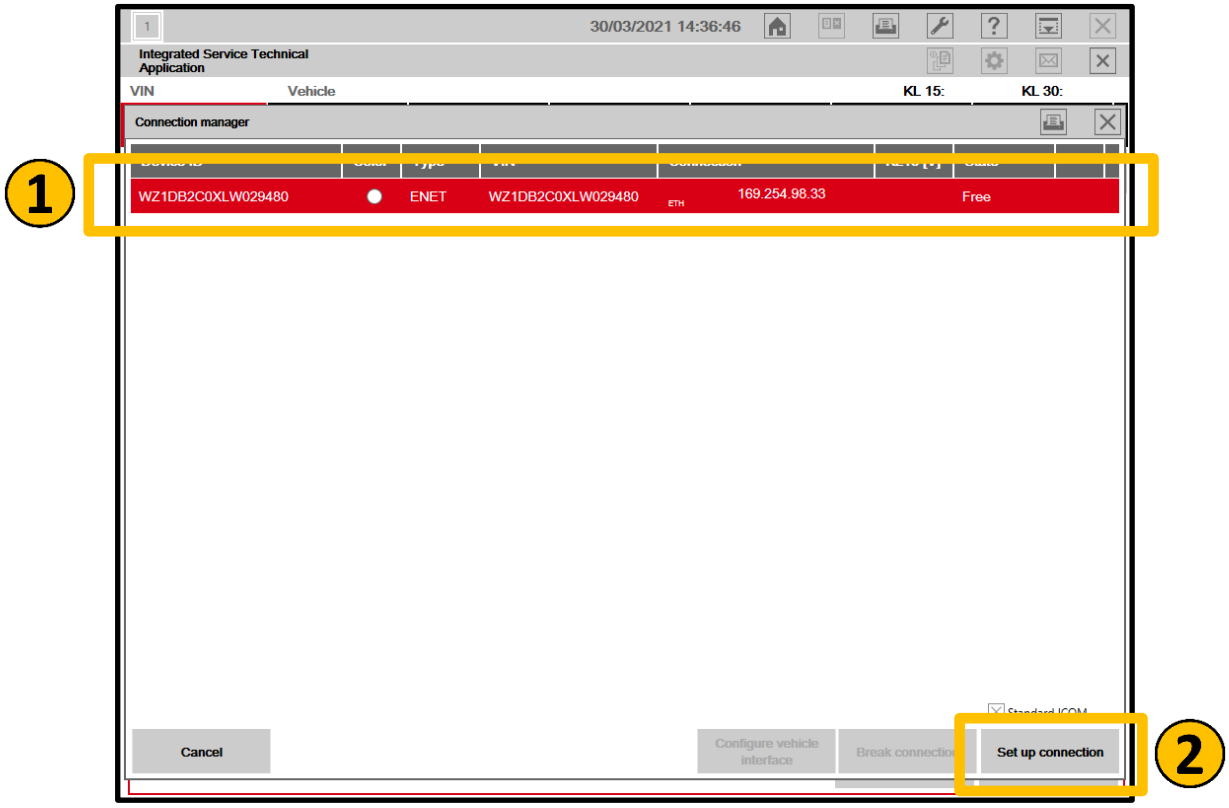
3. Click “Operations”



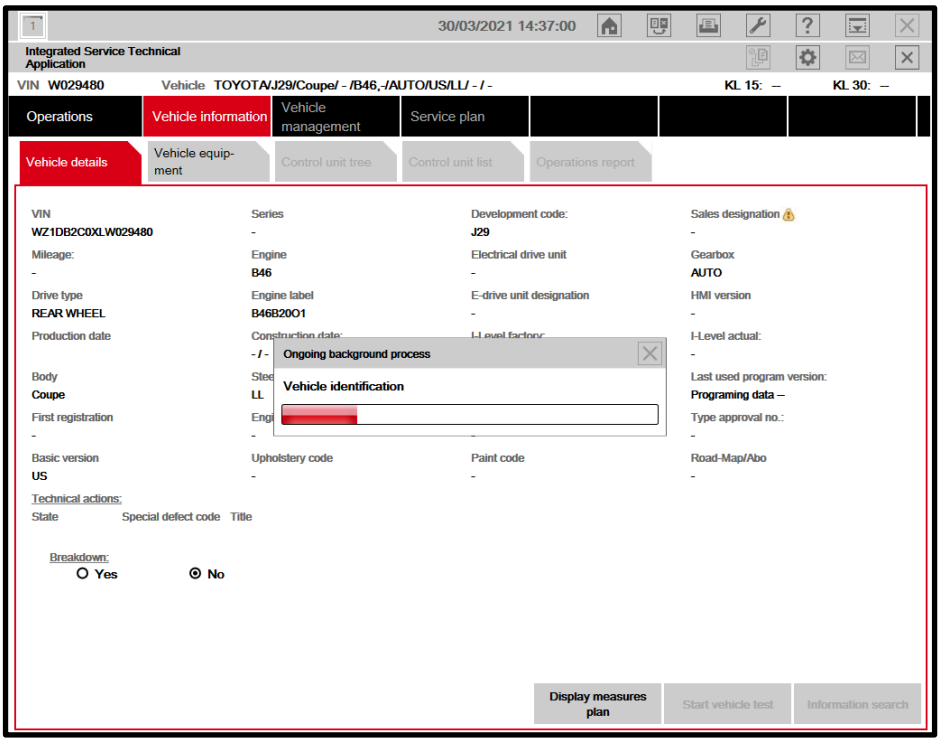
4. Click “Complete identification”



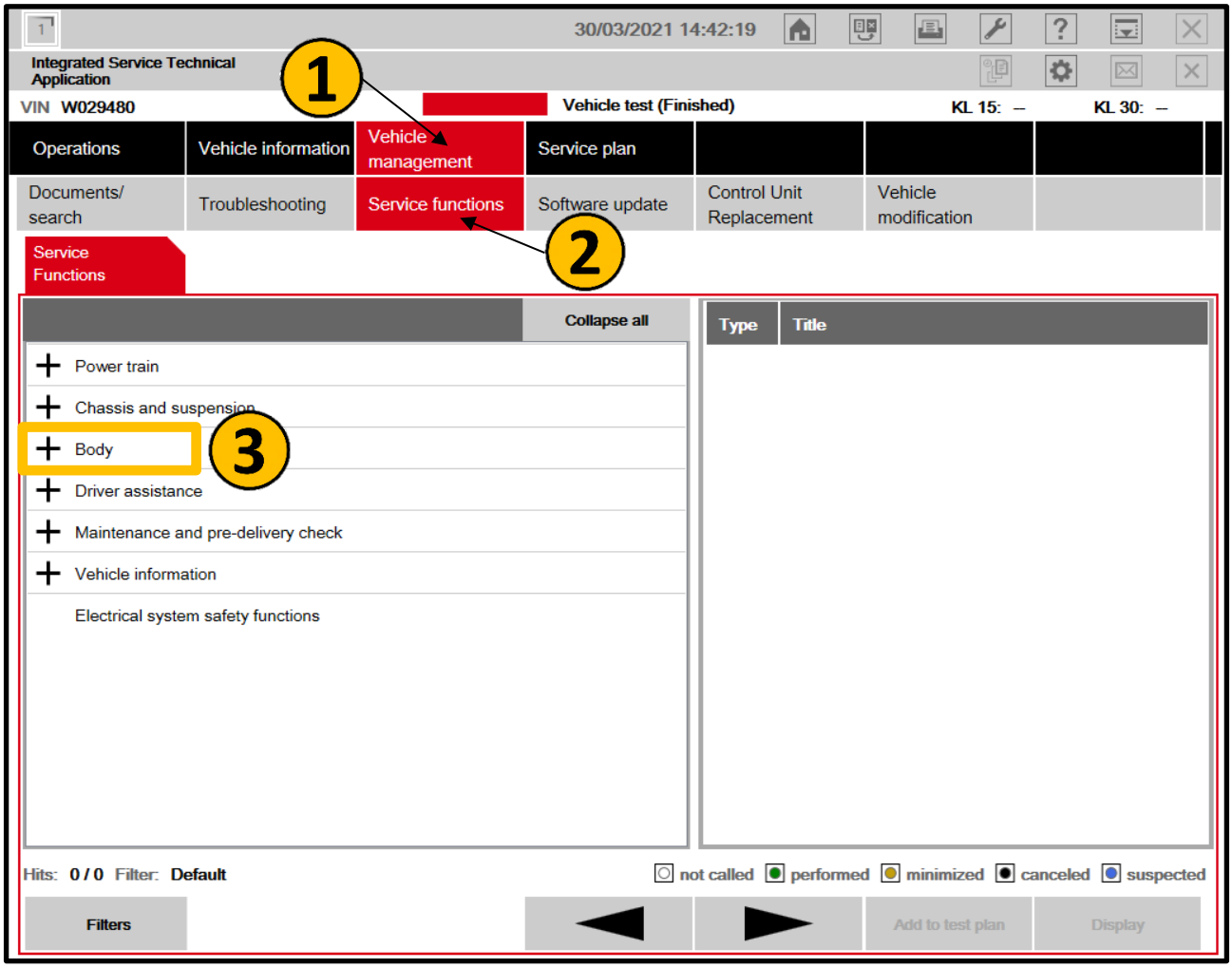
5. Select the VIN for the vehicle
6. Click “Set up connection”



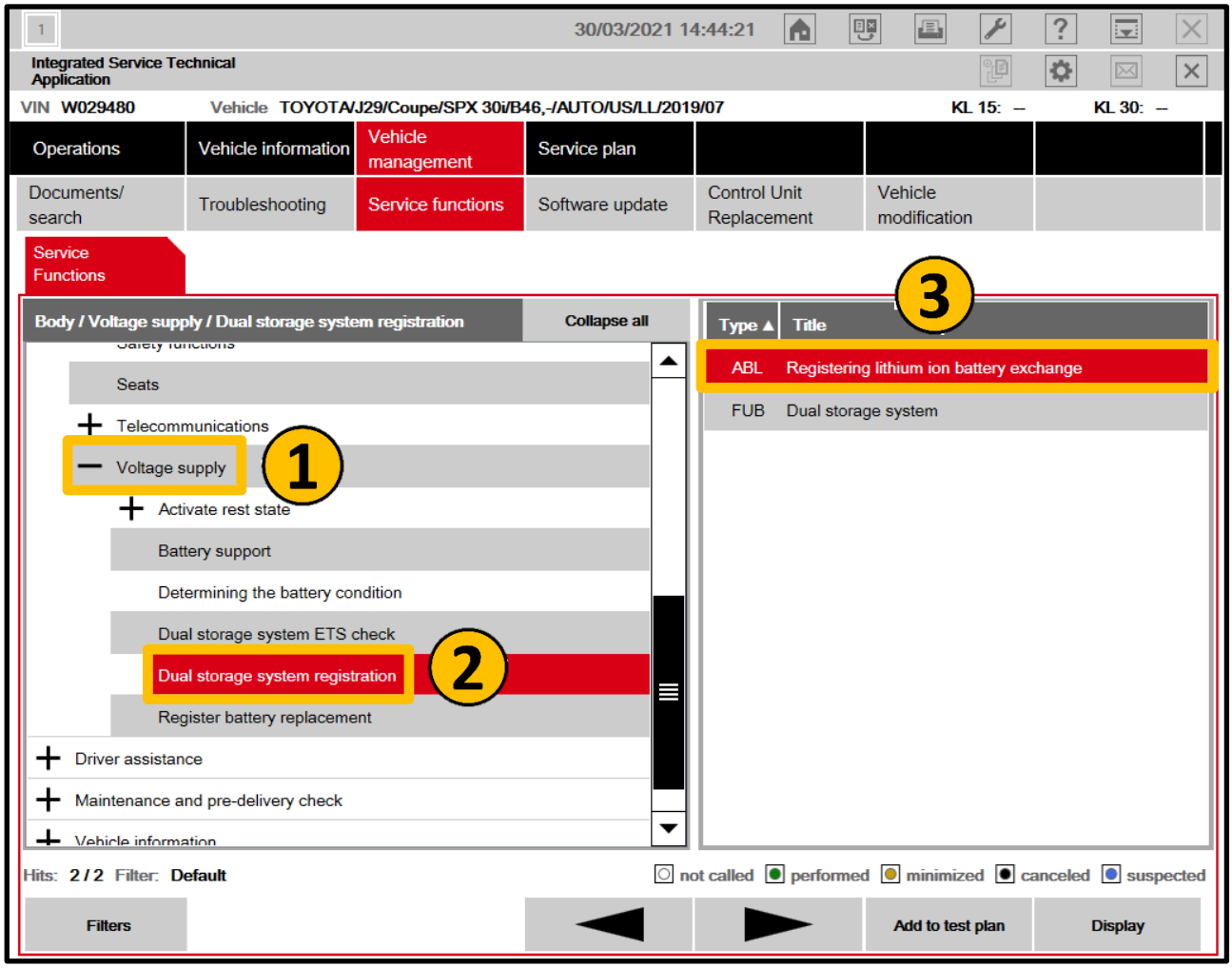
7. Wait for the ISTA software to complete the identification process



8. Click “Vehicle management”
9. Click “Service functions”
10. Click “Body”

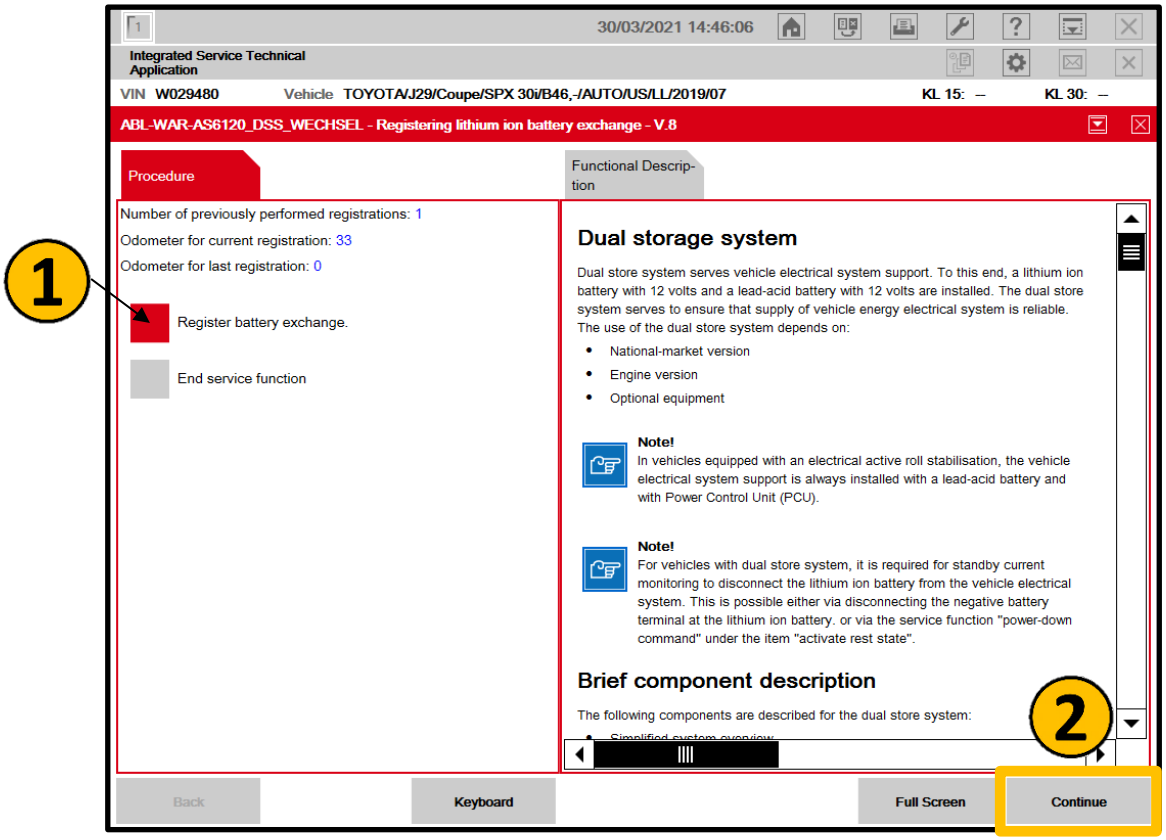


11. Click “Voltage Supply”
12. Click “Dual storage registration”
13. Click “Registering lithium ion battery exchange”

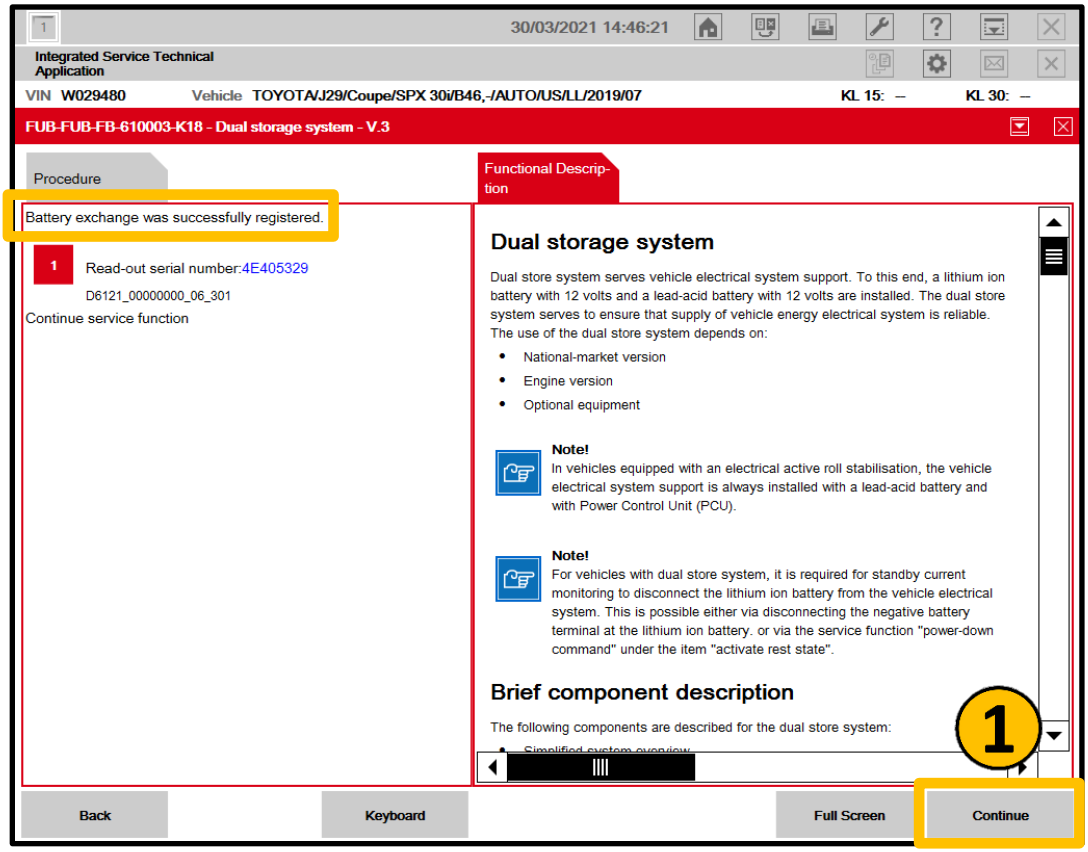


14. Click “Register battery exchange”

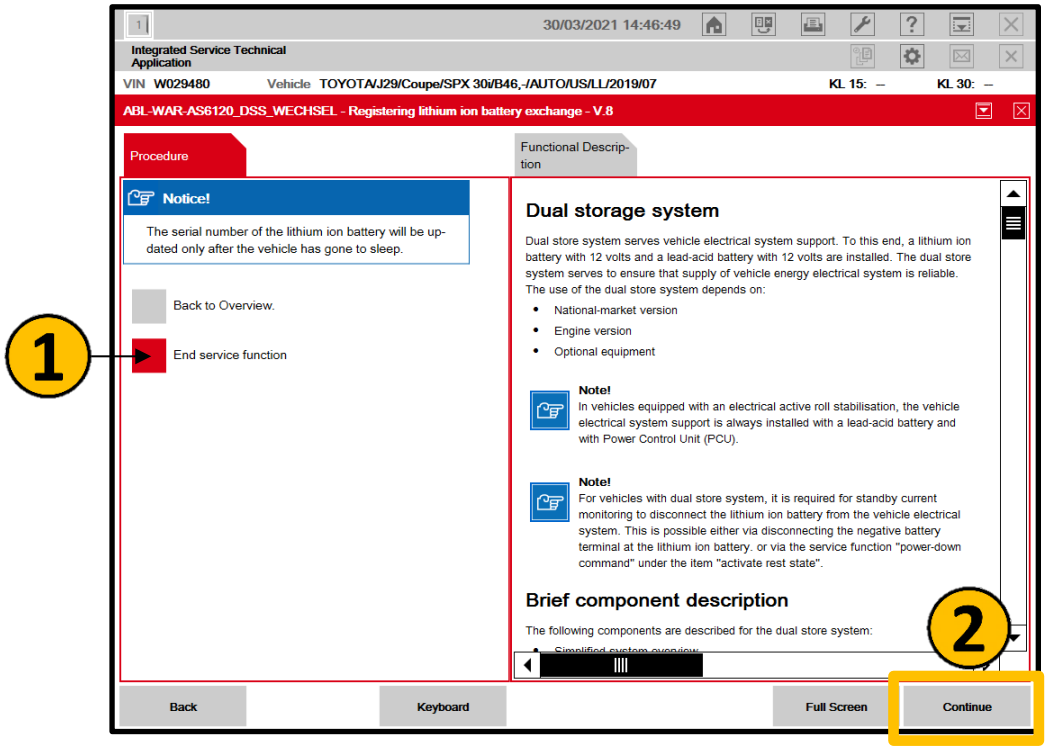
15. Click “Continue”



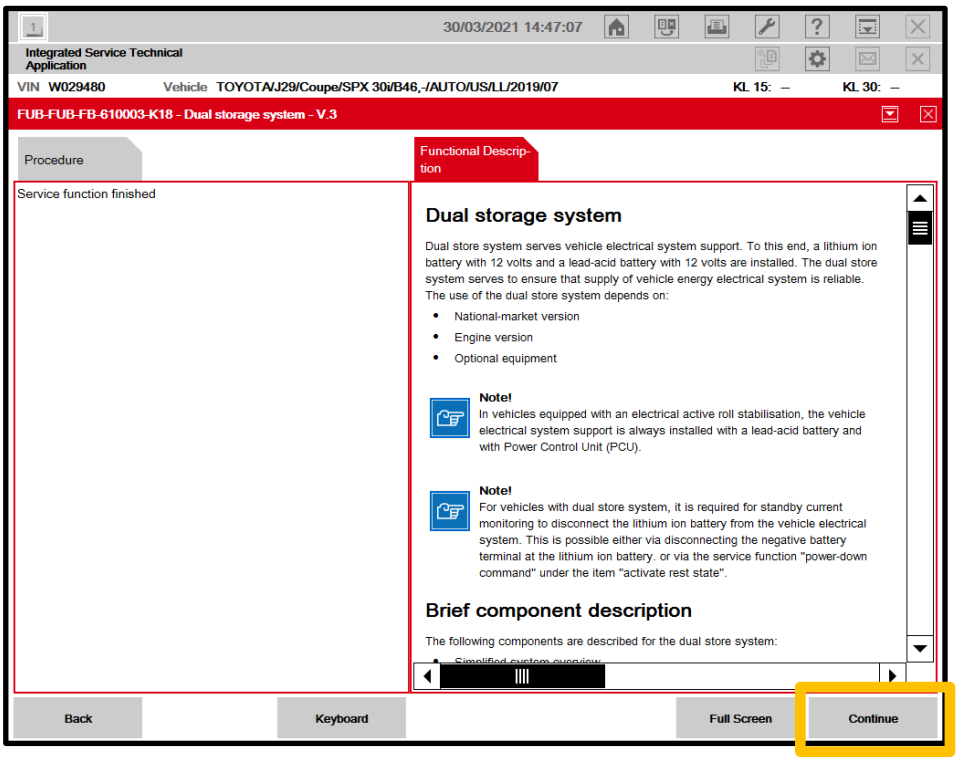
16. After the battery exchange succeeds, click continue.


30/03/2021 14:46:21
Integrated Service Technical Application
VIN W029480
Vehicle TOYOTA/J29/Coupe/SPX 30i/B46,-/AUTO/US/LL/2019/07
KL 15: –
KL 30: –
FUB-FUB-FB-610003-K18 - Dual storage system - V.3
Procedure
Functional Descrip-tion
Battery exchange was successfully registered.
1
Read-out serial number:4E405329
D6121_00000000_06_301
Continue service function
Dual storage system
Dual store system serves vehicle electrical system support. To this end, a lithium ion battery with 12 volts and a lead-acid battery with 12 volts are installed. The dual store system serves to ensure that supply of vehicle energy electrical system is reliable. The use of the dual store system depends on:
National-market version
Engine version
Optional equipment
Note!
In vehicles equipped with an electrical active roll stabilisation, the vehicle electrical system support is always installed with a lead-acid battery and with Power Control Unit (PCU).
Note!
For vehicles with dual store system, it is required for standby current monitoring to disconnect the lithium ion battery from the vehicle electrical system. This is possible either via disconnecting the negative battery terminal at the lithium ion battery. or via the service function "power-down command" under the item "activate rest state".
Brief component description
The following components are described for the dual store system:
1
Back
Keyboard
Full Screen
Continue

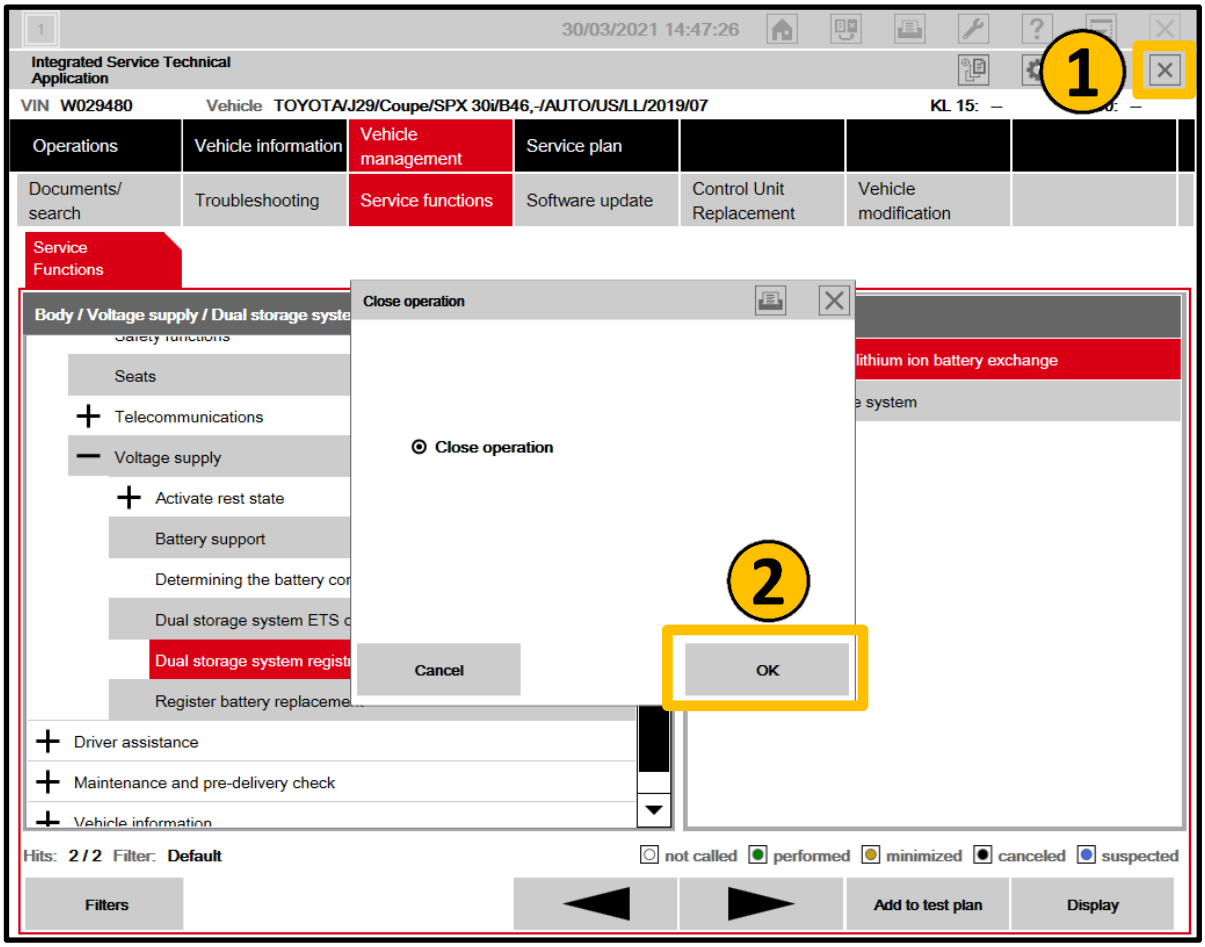
17. Click “end service function”
18. Click “Continue”



19. Click “Continue”



20. Close Toyota ISTA



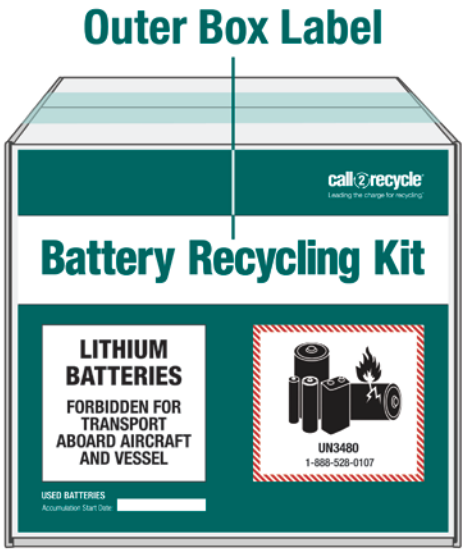
◄ VERIFY REPAIR QUALITY ►

- **Verify that all nuts and bolts involved in the campaign repair have been torqued to the specified values**
- **Confirm that the windshield wiper arms are properly aligned**
- **Ensure the battery is properly disposed. Refer to the Appendix below for disposal instructions**

XIII. RECYCLING INSTRUCTIONS - BATTERY (28800-WAA13

A. RECYCLING INSTRUCTIONS - BATTERY (28800-WAA13)

Toyota has partnered with Call2Recycle to support dealers with a ***FREE OF CHARGE*** recycling method for the 12 Volt Lithium Ion battery replaced under this campaign (28800-WAA13). Replaced batteries will be shipped in compliance with DOT and EPA regulations and responsibly recycled through the Call2Recycle program. There is ***NO CHARGE TO DEALERS*** at any point during this recycling/shipping process.

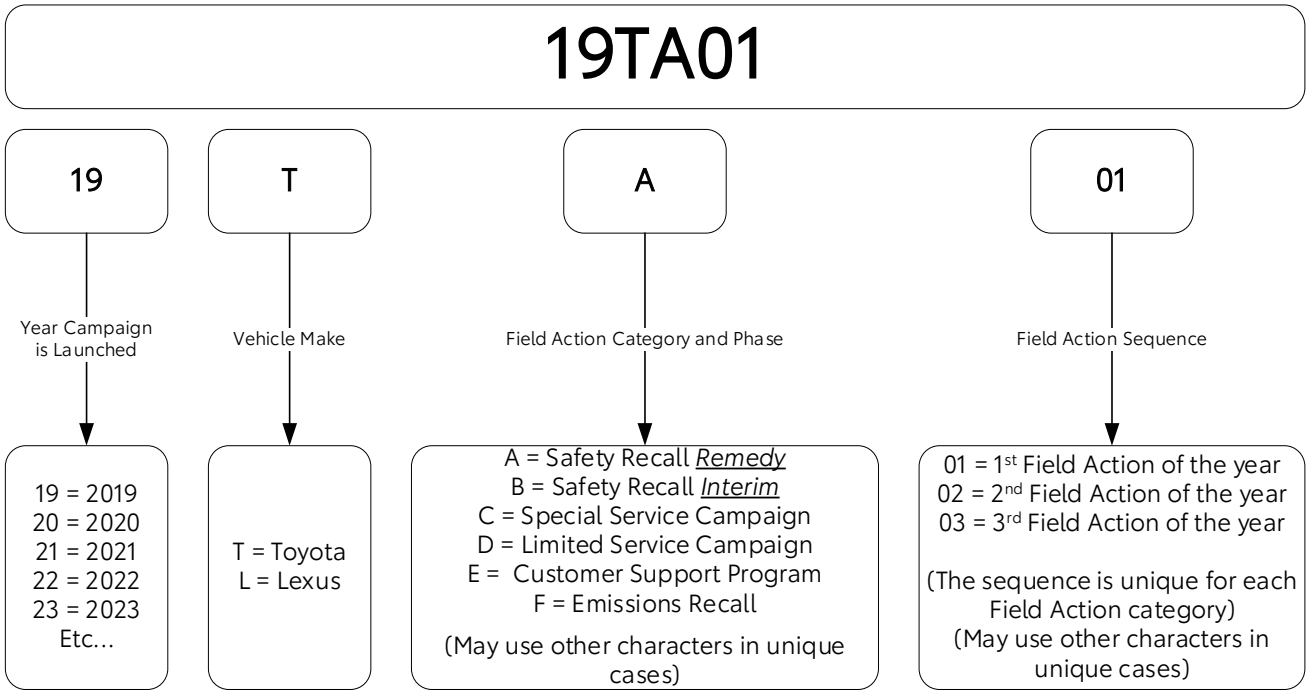


Battery Recycling Steps

1. **Retain the replacement battery's packaging** (box with all internal foam insert pieces) to return the used battery in. If not available or not in good condition, an optional recycling kit with new box will be available from Call2Recyle.
2. **As soon as the battery is removed from the vehicle, print and fill out the *12V Li-ion Used Batteries Label*** then affix it to the side of the battery package with packing tape. For "Accumulation Start Date", write the date that the battery was removed from the vehicle. Click this link to access the label.
3. **Order a recycling kit** by visiting http://www.call2recycle.org/toyota12v or calling 1-888-528-0107.
4. **After the kit arrives at your dealer prepare the kit for return shipping**. Preparation instructions are included in the kit. Preparation instructions for each kit type may also be downloaded from the following links.
    - Battery Recycling Label Pack (most common – labels applied to original battery box)
    - New Battery Recycling Kit (optional – a new pre-labeled box)

Note: To assure prompt battery recycling and related compliance with EPA regulations, complete steps 1-4 and deliver the completed battery recycling kit to your UPS driver as soon as practical.

XIV. CAMPAIGN DESIGNATION/PHASE DECODER



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