TOYOTA

Technical Service BULLETIN

April 6, 2001

Title:

RAV4 EV DTC 2846/22

Models:

'98 RAV4 EV

TSB EV

ELECTRIC VEHICLE

EV002-01

Introduction

Some 1998 model year RAV4 EV vehicles will set a DTC 2846/22 due to a chemical deposit build–up around the battery terminals of the traction battery modules. This bulletin provides procedures for battery pack disassembly and removal of chemical deposits.

Applicable Vehicles

- **1998** model year **RAV4 EV** vehicles **with DTC 2846/22**.
- DTC 2846/22 can also be caused by the following conditions:
  1. Open in LEAKV signal circuit.
  2. Ground fault and HWS controller.
  3. EV control ECU.

Be certain to eliminate the possibility of these three conditions before attempting this repair, following the diagnostic procedures in the Repair Manual, Publication No. RM845U, starting on page DI–75.

NOTE:

This procedure should also be performed on vehicles within the VIN range below ANYTIME the HV traction batteries are removed from vehicles FOR ANY REASON.

Production Change Information

MODEL	VIN RANGE
1998 RAV4 EV	JT3GS10V#W########

Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY/VEHICLE
N/A	G9242–42270	Bus Bar with Cap and Nut	24

Warranty Information

OP CODE	DESCRIPTION	TIME	OPN	T1	T2
EL1004	Remove, Disassemble, Clean, Reassemble & Replace RAV4 EV Traction Battery	6.0	G9242–42270	99	99

Applicable Warranty*:

This repair is covered under the Toyota Comprehensive Warranty. This warranty is in effect for 36 months or 36,000 miles, whichever occurs first, from the vehicle's in-service date.

* Warranty application is limited to correction of a problem based upon a customer's specific complaint.

Required Tools & Material

TOOLS & MATERIALS		
DESCRIPTION	**PART NUMBER**	**QUANTITY**
Insulated Rubber Gloves	00002–03100–S (Small)	1 pair
	00002–03200–M (Medium)	
	00002–03300–L (Large)	
Boric Acid	–	16 oz. (as needed)
Paper Towels	–	As needed

Repair Precaution

BATTERY CONTROL SYSTEM PRECAUTION

CAUTION:

A repair procedure incorrectly performed on the electric vehicle (EV) could cause an electrical shock, leakage or explosion. Be sure to perform repair operations correctly.

1. **Remove key from motor switch.**
2. **Ensure that charge connector is disconnected.**
3. **Always wear insulated gloves.**
4. **Remove service plug and do not start any repair operation before 10 minutes have passed.**
5. **After removing service plug, cover plug connector with rubber or tape.**

CAUTION:

- **Due to the discharge resistance, it takes at least 10 minutes before the 300 V electricity is sufficiently discharged from the condenser in the inverter circuit.**
- **Even after 10 minutes have passed, the following precaution should be observed. Before touching a 300 V cable or any other cable which you cannot identify, use a tester to confirm that the voltage through the cable is 12 V or less.**

6. **Disconnect negative (–) terminal cable from auxiliary battery.**
7. **After removing 300 v cable, be sure to cover terminal using vinyl tape.**
8. **Use insulated tools.**
9. **Do not leave tools or parts (bolts, nuts, etc.) inside cabin.**
10. **Do not wear metallic objects such as pencils or scales.**

CAUTION:

A metallic object may drop and cause a short circuit.

11. **When repairing a vehicle wet with rain, prevent water from dripping from motor hood into motor room.**

Repair Procedure

To perform the repair procedures on those vehicles diagnosed with DTC 2846/22 (High Voltage Current Leakage), follow the procedures below.

Disassembly

Follow the disassembly procedures in the Repair Manual (Pub. No. RM845U) starting on page BA-4.

Cleaning

1. Wearing suitable protective gloves, remove and discard all bus bars, nuts and caps.
2. Prepare a mixture of Boric Acid and water (8 ounces of Boric Acid/1gallon of water) and mix thoroughly.
   A. To ensure the Boric Acid and water remain thoroughly mixed during the cleaning process, constant mixing will be required.
   B. Wearing suitable protective gloves, dip a paper towel in the Boric Acid and water solution. Wipe/clean thoroughly the top of each module within each 12-volt battery pack including module terminals.
   C. Using a dry paper towel, completely dry the top of each module.

Reassembly

NOTE:
- **Before reassembly, inspect all battery cables and wire connectors for corrosion or any chemical deposit around terminals.**
- **If any chemical deposit or corrosion is found, clean with Boric Acid solution and replace with new parts.**

Install new bus bars (blue in color with brown caps) including new nuts.

Torque: 12.7 N•m (130 kfg•cm, 10 ft•lbf)

- Install in the reverse order of removal following the procedures in the Repair Manual (Pub. No. RM845U) starting on page BA-4.

Disposal of Original Bus Bars and Used Paper Towels

1. Bus bars, nuts and caps: Dispose according to state and local regulations.
2. Paper towels: Boric Acid and water neutralizes any alkaline/chemical removed from the battery. Therefore, there are no restrictions for disposing of the used paper towels.

Confirmation Procedure

1. Clear DTC.
2. Check M.I.L.
   A. Turn the motor switch on and confirm that the M.I.L. comes on.
   B. When the READY is on, the M.I.L. should go off.