

Last Modified: 1-7-2022	6.10:8.0.50	Doc ID: RM000005CM800RX
Model Year Start: 2014	Model: RAV4 EV	Prod Date Range: [09/2013 -]
Title: HYBRID / BATTERY CONTROL: HYBRID CONTROL SYSTEM: THC_d0005,THC_d0006; Battery Coolant Pump 1 Malfunction; 2014 MY RAV4 EV [09/2013 -]		

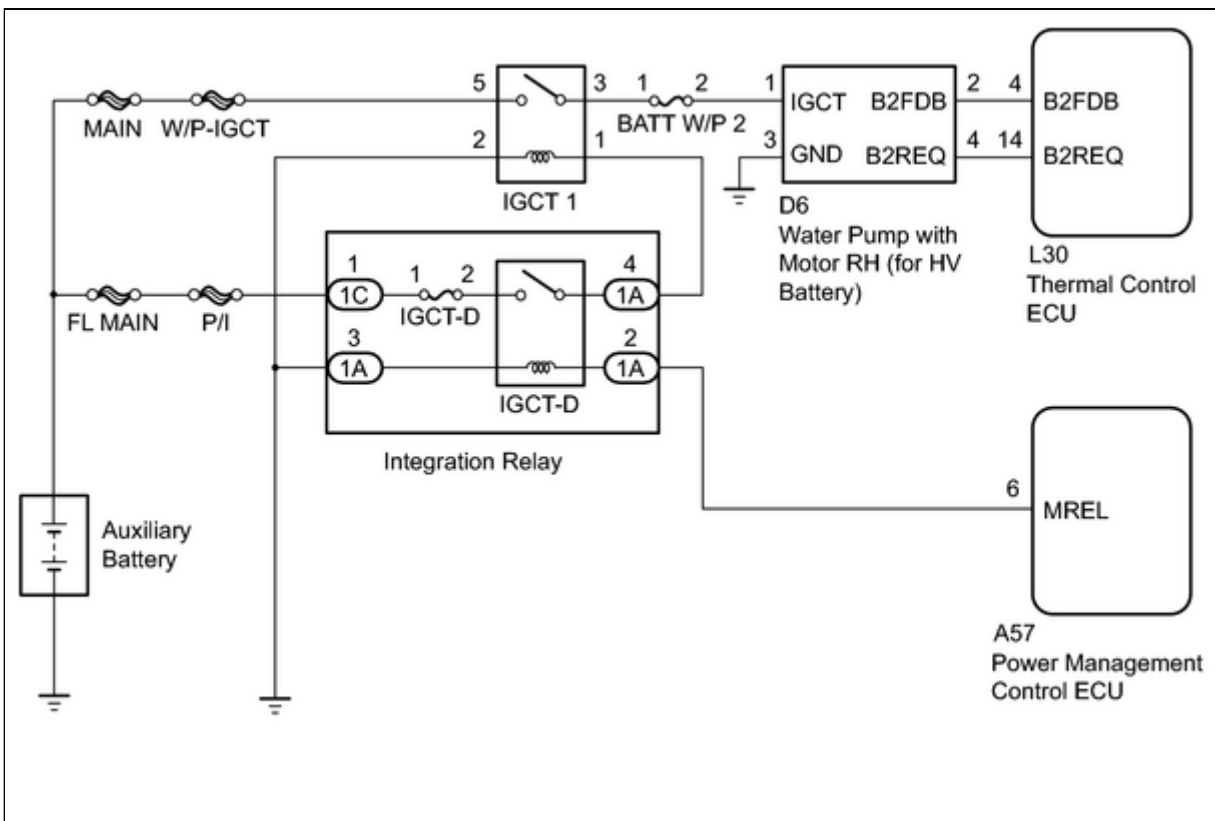
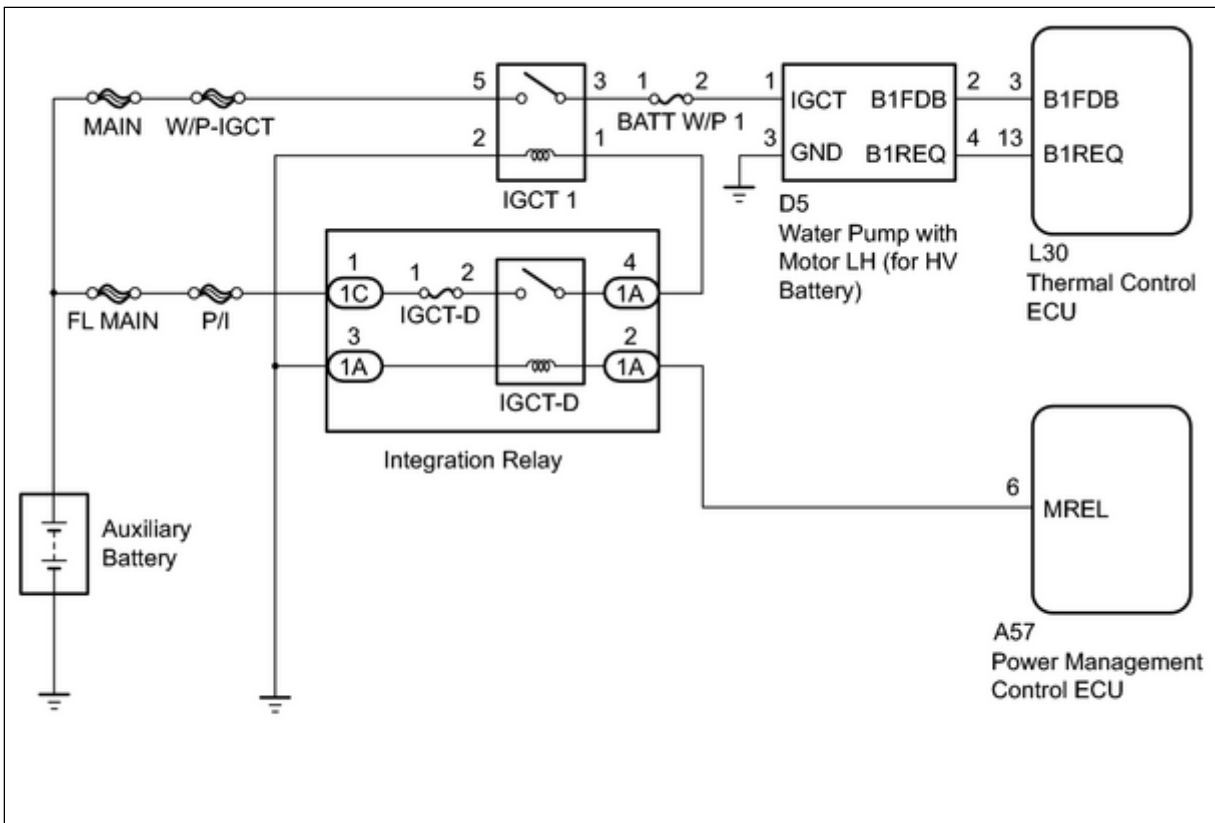
DTC	THC_d0005	Battery Coolant Pump 1 Malfunction
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DTC	THC_d0006	Battery Coolant Pump 2 Malfunction
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DESCRIPTION

ALERT CODE	MONITORING ITEM	DETECTION CONDITION	DETECTION TIMING	TROUBLE AREA
THC_d0005	Battery Coolant Pump 1	Water pump with motor LH (for HV battery) malfunction detected.	-	<ul style="list-style-type: none"> • Water pump with motor LH (for HV battery) • Thermal control ECU • BATT W/P 1 fuse • W/P-IGCT fuse • IGCT 1 relay • Wire harness or connector
THC_d0006	Battery Coolant Pump 2	Water pump with motor RH (for HV battery) malfunction detected.	-	<ul style="list-style-type: none"> • Water pump with motor RH (for HV battery) • Thermal control ECU • BATT W/P 2 fuse • W/P-IGCT fuse • IGCT 1 relay • Wire harness or connector

WIRING DIAGRAM



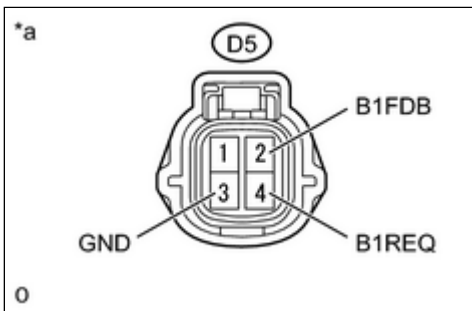
INSPECTION PROCEDURE

NOTICE:

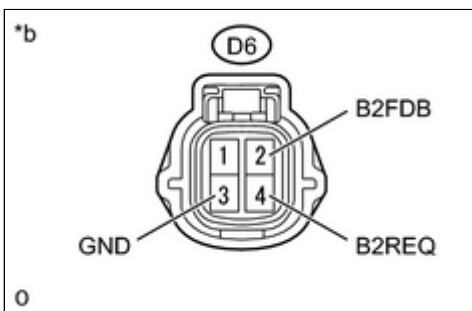
Check the condition of the auxiliary battery, as an alert code may be output due to a drop in the auxiliary battery voltage.

PROCEDURE

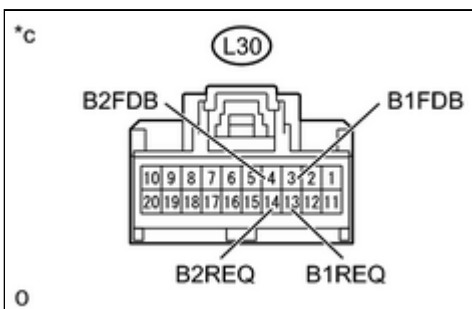
1. CHECK HARNESS AND CONNECTOR (WATER PUMP WITH MOTOR (FOR HV BATTERY) - THERMAL CONTROL ECU)



(a) Disconnect connector D5 from the water pump with motor LH (for HV battery).



(b) Disconnect connector D6 from the water pump with motor RH (for HV battery).



(c) Disconnect connector L30 from the thermal control ECU.

(d) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

for LH Side

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
D5-4 (B1REQ) - L30-13 (B1REQ)	Power switch off	Below 1 Ω
D5-2 (B1FDB) - L30-3 (B1FDB)	Power switch off	Below 1 Ω
D5-3 (GND) - Body ground	Power switch off	Below 1 Ω
D5-4 (B1REQ) or L30-13 (B1REQ) - Body ground and other terminals	Power switch off	1 k Ω or higher
D5-2 (B1FDB) or L30-3 (B1FDB) - Body ground and other terminals	Power switch off	1 k Ω or higher

for RH Side

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
D6-4 (B2REQ) - L30-14 (B2REQ)	Power switch off	Below 1 Ω
D6-2 (B2FDB) - L30-4 (B2FDB)	Power switch off	Below 1 Ω
D6-3 (GND) - Body ground	Power switch off	Below 1 Ω
D6-4 (B2REQ) or L30-14 (B2REQ) - Body ground and other terminals	Power switch off	1 k Ω or higher
D6-2 (B2FDB) or L30-4 (B2FDB) - Body ground and other terminals	Power switch off	1 k Ω or higher

Text in Illustration

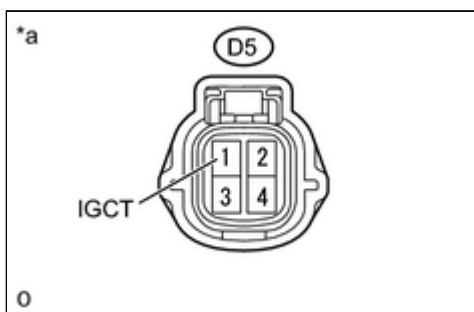
*a	Front view of wire harness connector (to Water Pump with Motor LH (for HV Battery))
*b	Front view of wire harness connector (to Water Pump with Motor RH (for HV Battery))
*c	Front view of wire harness connector (to Thermal Control ECU)

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

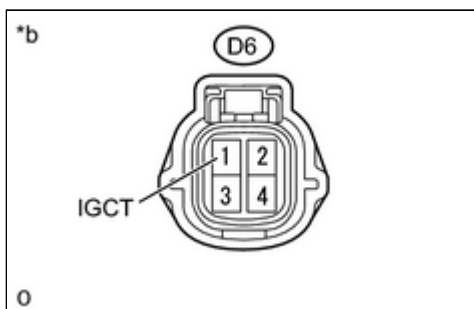
OK



2.	CHECK WATER PUMP WITH MOTOR (FOR HV BATTERY (POWER SOURCE))
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(a) Disconnect connector D5 from the water pump with motor LH (for HV battery).



(b) Disconnect connector D6 from the water pump with motor RH (for HV battery).

(c) Turn the power switch on (IG).

(d) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

for LH Side

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
D5-1 (IGCT) - Body ground	Power switch on (IG)	11 to 14 V

for RH Side

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
D6-1 (IGCT) - Body ground	Power switch on (IG)	11 to 14 V

Text in Illustration

*a	Front view of wire harness connector (to Water Pump with Motor LH (for HV Battery))
*b	Front view of wire harness connector (to Water Pump with Motor RH (for HV Battery))

NG ► **GO TO STEP 4**

OK



3. REPLACE WATER PUMP WITH MOTOR (FOR HV BATTERY)

(a) Replace the water pump with motor (for HV battery)  .

(b) Connect the RAV4 EV diagnostic tool to the No. 2 DLC3.

(c) Turn the power switch on (READY).

(d) Turn the RAV4 EV diagnostic tool on.

(e) Enter the following menus: Thermal Test / Thermal System Test.

(f) Perform the "Thermal System Test" Active Test.

(g) Enter the following menus: DTCs.

(h) Read the alert codes.

Result

RESULT	PROCEED TO
Alert code is not output	A
THC_d0005 or THC_d0006 is output	B

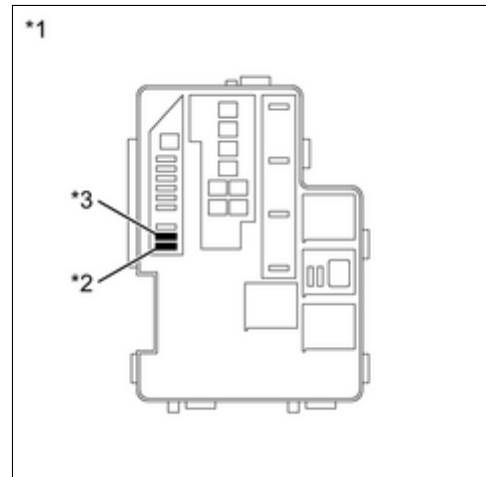
B ► **REPLACE THERMAL CONTROL ECU**

4. CHECK BATT W/P FUSE

- (a) Remove the BATT W/P 1 fuse from the No. 1 motor compartment room relay block and junction block assembly.
- (b) Remove the BATT W/P 2 fuse from the No. 1 motor compartment room relay block and junction block assembly.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
BATT W/P 1 fuse terminals	Always	Below 1 Ω
BATT W/P 2 fuse terminals	Always	Below 1 Ω



Text in Illustration

*1	No. 1 Motor Compartment Room Relay Block and Junction Block Assembly
*2	BATT W/P 1 Fuse
*3	BATT W/P 2 Fuse

NG ► CHECK FOR SHORT IN ALL HARNESSSES AND CONNECTORS CONNECTED TO FUSE AND REPLACE FUSE

OK
▼

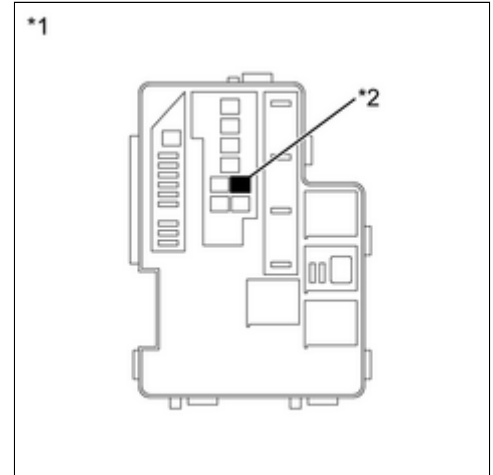
5. CHECK W/P-IGCT FUSE

(a) Remove the W/P-IGCT fuse from the No. 1 motor compartment room relay block and junction block assembly.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
W/P-IGCT fuse terminals	Always	Below 1 Ω



Text in Illustration

*1	No. 1 Motor Compartment Room Relay Block and Junction Block Assembly
*2	W/P-IGCT Fuse

NG ► **CHECK FOR SHORT IN ALL HARNESSES AND CONNECTORS CONNECTED TO FUSE AND REPLACE FUSE**

OK
▼

6.	INSPECT IGCT 1 RELAY
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(a) Inspect the IGCT 1 relay INFO.

NG ► **REPLACE IGCT 1 RELAY**

OK ► **REPLACE HARNESS OR CONNECTOR (IGCT 1 RELAY - WATER PUMP WITH MOTOR (FOR HV BATTERY), AUXILIARY BATTERY)**

