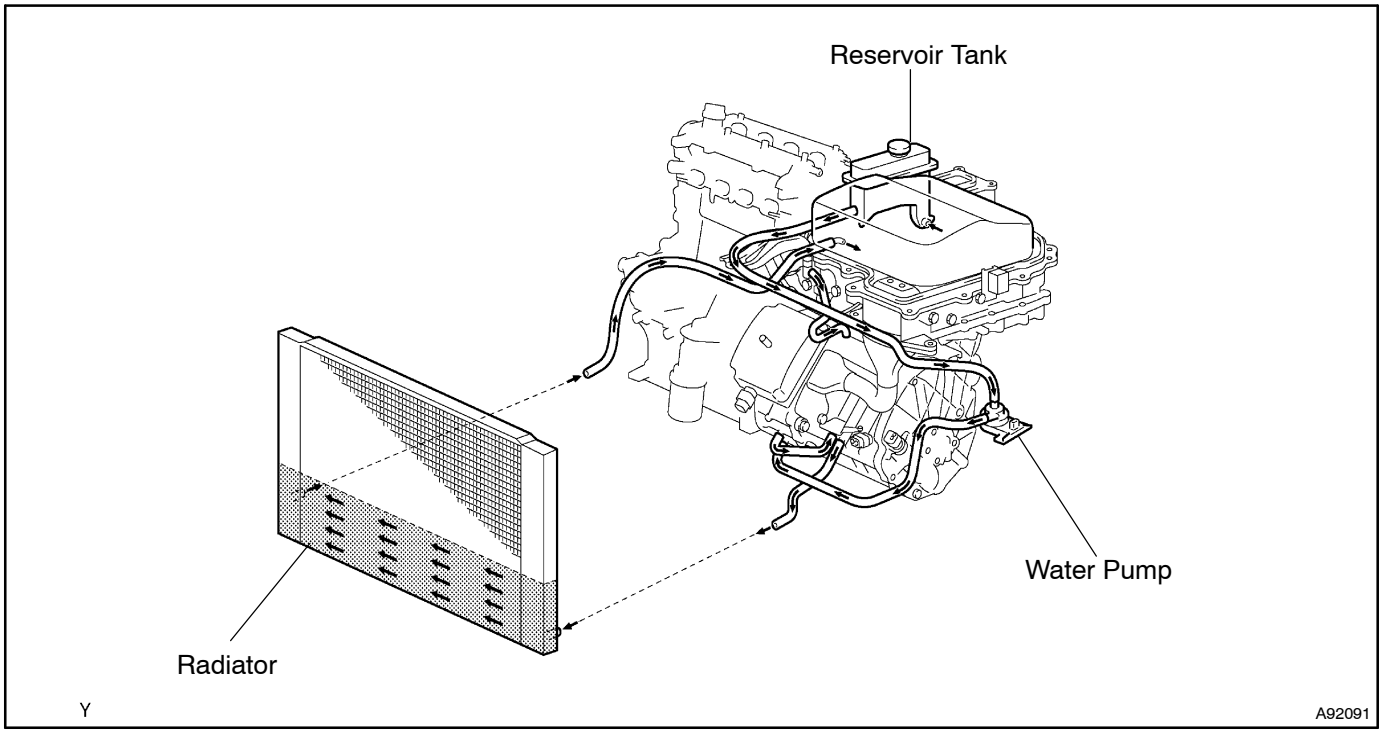
DTC	P0A93/346	INVERTER COOLING SYSTEM PERFORMANCE

DTC	P0A93/347	INVERTER COOLING SYSTEM PERFORMANCE

CIRCUIT DESCRIPTION

The inverter converts the high–voltage direct current of the HV battery into the alternating current for the MG1 and the MG2. The inverter generates heat during the conversion process, and this heat could damage the inverter if a cooling system is unavailable. Therefore, similar to the MG1 and the MG2, the inverter is cooled by a dedicated cooling system, which consists of an electric water pump, cooling fan, and radiator. This cooling system is independent of the engine cooling system.



The HV control ECU monitors the electric water pump, cooling fan and cooling system, and detects malfunction.

DTC No.	INF Code	DTC Detection Condition	Trouble Area
P0A93	346	Inverter cooling system malfunction (water pump system malfunction)	• Wire harness or connector • Inverter cooling system • Water w/ motor & bracket pump assembly • Cooling fan motor • Cooling fan motor No. 2 • w/ converter inverter assembly
P0A93	347	Inverter cooling system malfunction (electric cooling fan system malfunction)	• Wire harness or connector • Inverter cooling system • Water w/ motor & bracket pump assembly • Cooling fan motor • Cooling fan motor No. 2 • w/ converter inverter assembly

INSPECTION PROCEDURE

1	CHECK QUANTITY OF HV COOLANT

(a) Check that there is a sufficient amount of coolant for the inverter.
OK: There is a sufficient amount of coolant for the inverter

NG → ADD HV COOLANT (See page 22–4)

OK

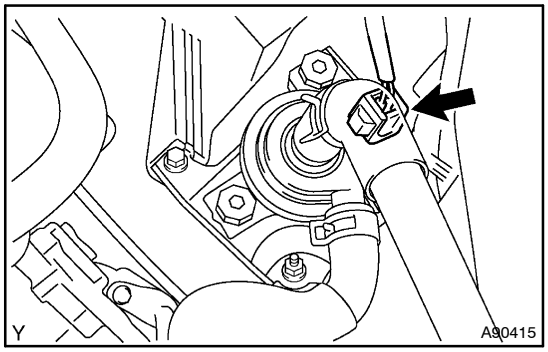
2	CHECK COOLANT HOSE

(a) Check that the hoses of the cooling system are not bent or clogged (see the cooling system on page 05–474).
OK: The hoses of the cooling system are not bent or clogged

NG → CORRECT TO NORMAL CONDITION

OK

3	CHECK CONNECTION CONDITION OF WATER PUMP CONNECTOR(LOOSENESS AND POOR CONTACT)



(a) Check the connection condition of the water pump connector.
OK: Connector has been connected securely and there is no poor connection.

NG → CONNECT SECURELY

OK

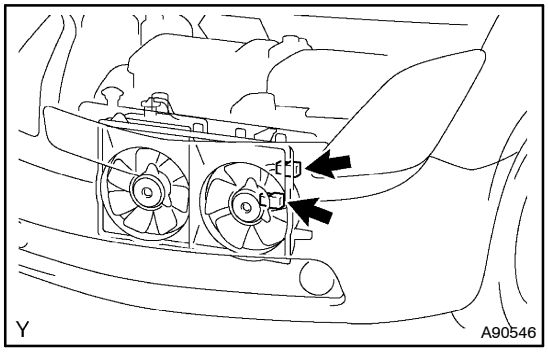
4	CHECK WATER W/MOTOR & BRACKET PUMP ASSY

(a) Turn the power switch ON (IG).
(b) Check the operation of the water pump.
OK: Coolant is sloshing in the reservoir tank

NG → REPLACE WATER W/MOTOR & BRACKET PUMP ASSY

OK

5	CHECK CONNECTION CONDITION OF COOLING FAN MOTOR CONNECTOR(LOOSENESS AND POOR CONTACT)



(a) Check the connection condition of the cooling fan motor connectors.
OK: Connectors have been connected securely and there is no poor connection.

NG → **CONNECT SECURELY**

OK

6	INSPECT COOLING FAN MOTOR (See page 16–8)

NG → **REPLACE COOLING FAN MOTOR AND ADD ENGINE COOLANT**

OK

7	INSPECT COOLING FAN MOTOR NO.2 (See page 16–8)

NG → **REPLACE COOLING FAN MOTOR NO.2 AND ADD ENGINE COOLANT**

OK

REPLACE W/CONVERTER INVERTER ASSY (See page 21–25)