

DTC	P0617	STARTER RELAY CIRCUIT HIGH
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MONITOR DESCRIPTION

While the engine is being cranked, the battery positive voltage is applied to terminal STA of the ECM. If the vehicle is being driven and the ECM detects the starter control signal (STA), the ECM concludes that the starter control circuit is malfunctioning. The ECM will turn on the MIL and will set a DTC.

DTC No.	DTC Detecting Condition	Trouble Area
P0617	When conditions (a), (b) and (c) are met and the battery (+B) voltage 10.5 V or more is applied for 20 seconds: (1 trip detection logic) (a) Vehicle speed greater than 12 mph (20 km/h) (b) Engine revolution greater than 1,000 rpm (c) STA signal ON	<ul style="list-style-type: none"> • Short in PNP switch assy circuit • PNP switch assy • Ignition switch • ECM

MONITOR STRATEGY

Related DTCs	P0617: Starter signal
Required sensors / components (Main)	Starter relay and PNP switch
Required sensors / components (Related)	CKP sensor and vehicle speed sensor
Frequency of operation	Continuous
Duration	20 sec.
MIL operation	Immediate
Sequence of operation	None

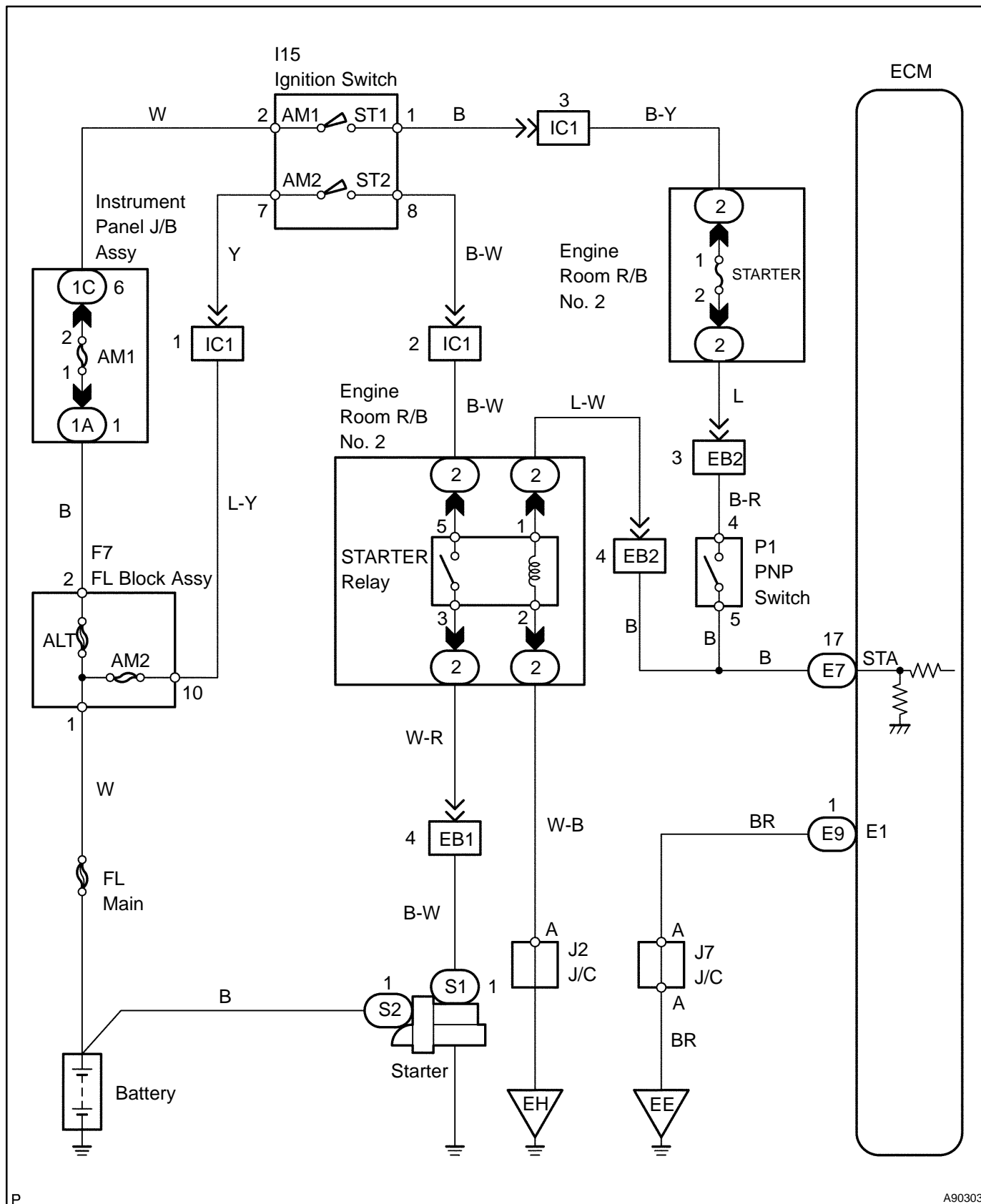
TYPICAL ENABLING CONDITIONS

The monitor will run whenever this DTC is not present	See page 05-16
Battery voltage	10.5 V or more
Vehicle speed	20 km/h (12.4 mph) or more
Engine RPM	1,000 rpm or more

TYPICAL MALFUNCTION THRESHOLDS

Starter signal	ON
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WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

Read freeze frame data using the hand-held tester or the OBD II scan tool. Freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, freeze frame data can help determine if the vehicle was running or stopped, if the engine was warmed up or not, if the air-fuel ratio was lean or rich, and other data from the time the malfunction occurred.

Hand-held tester:

1 READ VALUE OF HAND-HELD TESTER (STA SIGNAL)

- (a) Connect the hand-held tester to the DLC3.
- (b) Turn ON the ignition switch. Push the hand-held tester main switch.
- (c) On the hand-held tester, enter the following menus: DIAGNOSIS / ENHANCED OBD II / DATA LIST / ALL / STARTER SIG. Read the values.

Result:

Ignition Switch Condition	ON	START
STA signal	OFF	ON

OK

REPLACE ECM (See page 10-9)

NG

2 INSPECT PARK/NEUTRAL POSITION SWITCH ASSY (See page 05-922)

OK:

When shift lever is in the N position, the PNP switch is ON.

When shift lever is in the P position, the PNP switch is OFF.

NG

REPLACE PARK/NEUTRAL POSITION SWITCH ASSY (See page 40-3) (Go to step 3 AFTER REPLACEMENT)

OK

3 READ VALUE OF HAND-HELD TESTER (STA SIGNAL)

- (a) Connect the hand-held tester to the DLC3.
- (b) Turn ON the ignition switch. Push the hand-held tester main switch.
- (c) On the hand-held tester, enter the following menus: DIAGNOSIS / ENHANCED OBD II / DATA LIST / ALL / STARTER SIG. Read the values.

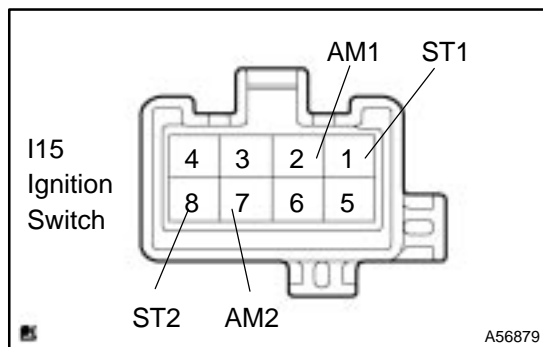
Result:

Ignition Switch Condition	ON	START
STA signal	OFF	ON

OK

SYSTEM OK

NG

4 INSPECT IGNITION OR STARTER SWITCH ASSY

- (a) Measure the resistance of the ignition switch terminals.
Standard:

Switch Condition	Tester Connection	Specified Condition
LOCK	1 - 2	10 k Ω or higher
	7 - 8	
START	1 - 2	Below 1 Ω
	7 - 8	

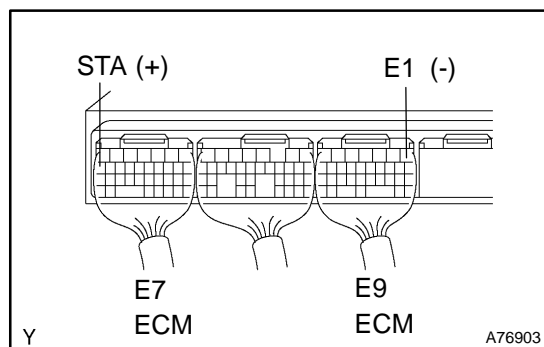
NG**REPLACE IGNITION OR STARTER SWITCH ASSY (Go to next step 5 AFTER REPLACEMENT)****OK****5 READ VALUE OF HAND-HELD TESTER (STA SIGNAL)**

- (a) Connect the hand-held tester to the DLC3.
(b) Turn ON the ignition switch. Push the hand-held tester main switch.
(c) On the hand-held tester, enter the following menus: DIAGNOSIS / ENHANCED OBD II / DATA LIST / ALL / STARTER SIG. Read the values.

Result:

Ignition Switch Condition	ON	START
STA Signal	OFF	ON

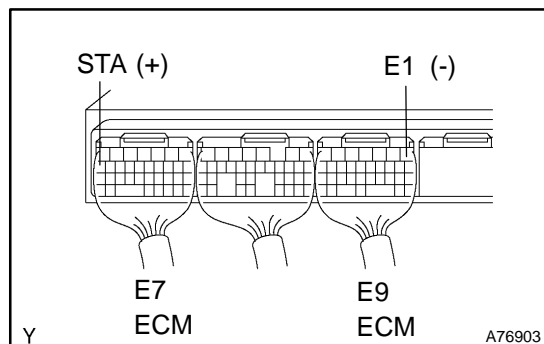
OK**SYSTEM OK****NG****REPAIR OR REPLACE HARNESS AND CONNECTOR**

OBD II scan tool (excluding Hand-held Tester):**1 INSPECT ECM**

- (a) Turn the ignition switch ON.
 (b) Measure the voltage of the ECM connectors.

Standard:

Tester Connection	Condition	Specified Condition
E7-17 (STA) - E9-1 (E1)	Ignition switch ON	0 V
E7-17 (STA) - E9-1 (E1)	Engine cranking	6 V or more

OK**REPLACE ECM (See page 10-9)****NG****2 INSPECT PARK/NEUTRAL POSITION SWITCH ASSY (See page 05-922)****NG****REPLACE PARK/NEUTRAL POSITION SWITCH ASSY (See page 40-3) (Go to next step 3 AFTER REPLACEMENT)****OK****3 INSPECT ECM**

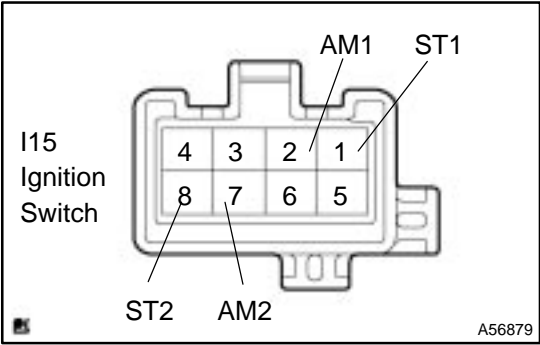
- (a) Measure the voltage of the ECM connectors.

Standard:

Tester Connection	Condition	Specified Condition
E7-17 (STA) - E9-1 (E1)	Ignition switch ON	0 V
E7-17 (STA) - E9-1 (E1)	Engine cranking	6 V or more

OK**SYSTEM OK****NG**

4 INSPECT IGNITION OR STARTER SWITCH ASSY



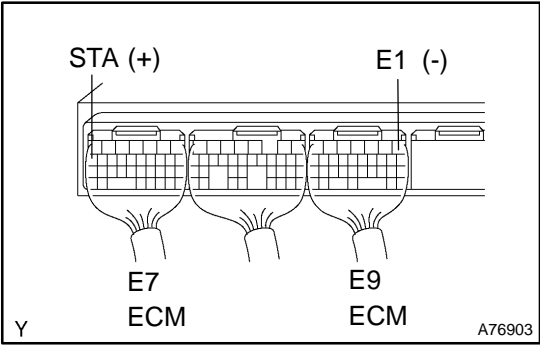
- (a) Measure the resistance of the ignition switch terminals.
Standard:

Switch Condition	Tester Connection	Specified Condition
LOCK	1 - 2	10 kΩ or higher
	7 - 8	
START	1 - 2	Below 1 Ω
	7 - 8	

NG REPLACE IGNITION OR STARTER SWITCH ASSY

OK

5 INSPECT ECM



- (a) Measure the voltage of the ECM connectors.
Standard:

Tester Connection	Condition	Specified Condition
E7-17 (STA) - E9-1 (E1)	Ignition switch ON	0 V
E7-17 (STA) - E9-1 (E1)	Engine cranking	6 V or more

OK SYSTEM OK

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR